



REQUEST FOR BIDS
For
ECONOMIC DEVELOPMENT TRANSPORTATION PROJECT FUND
(EDTPF) INFRASTRUCTURE IMPROVEMENTS
SIGNALIZATION PACKAGE

CAPE CANAVERAL SPACEPORT
BREVARD COUNTY, FLORIDA
FDOT FM# 439053-1-54-01

RFB-SF-01-0-2019

Issued and Published: September 5, 2019

Due Date: October 03, 2019

Space Florida (“SF”) is dedicated to fostering the growth and development of a sustainable and world-leading aerospace industry in the State of Florida. SF promotes aerospace business development by facilitating business financing, spaceport operations, research and development, workforce development, and innovative education programs. SF is an independent special district and a subdivision of the State of Florida and is governed by Part II of Chapter 331 of the *Florida Statutes*.

Scope of Work

The Project consists of constructing traffic signalization improvements at seven (7) locations/intersections on or near the Cape Canaveral Spaceport in Brevard County, Florida. The locations are on property owned/managed either by NASA, US Air Force, and Canaveral Port Authority (with Florida Department of Transportation [FDOT]). The improvements include, but are not limited to, mobilization, maintenance of traffic, demolition, erosion control, conduit, wire, electrical, traffic signalization equipment, video detection and ancillary components, mast arms, foundations, pavement markings, pavement markings removal, signage, and associated related improvement as outlined within the bid documents for complete and operational signalized intersections and accepted by the property owner, FDOT and Space Florida. Additional locations with similar signalization improvements may be added to this scope based on Project requirements.

Space Florida intends to award a notice to proceed no later than October 17, 2019 to comply with grant funding requirements. The Bid Form is attached hereto as **Attachment “A”**. The



draft AIA, A104 is attached hereto as **Attachment “B”**. The Project Manual is attached hereto as **Attachment “C”**. The Plans are attached hereto as **Attachment “D”**.

Director of Contracts: All vendor communications concerning this solicitation should be directed **in writing** to the Director of Contracts listed below.

Name: Annette O’Donnell
Address: Space Florida
505 Odyssey Way, Suite 300
Exploration Park, FL 32953
Telephone: 321-730-5301, Extension 144
E-Mail: aodonnell@spaceflorida.gov

Prospective vendors shall not contact, communicate with, or discuss any matter relating in any way to this RFB with any SF employee or SF board or committee member, other than Director of Contracts. Any such communication initiated by a prospective vendor may be grounds for disqualifying the prospective vendor from consideration for award of this RFB.

INSTRUCTIONS TO VENDORS

Deadline and Delivery of the Bid Packages: All bid packages must be received by the Director of Contracts no later than 12:00 noon (EST) on: **Thursday, October 3, 2019**. Unless otherwise specified herein, bids must be sealed in one package and clearly labeled “REQUEST FOR BIDS RFB-SF-01-0-2019 FOR ECONOMIC DEVELOPMENT TRANSPORTATION PROJECT FUND (EDTPF) INFRASTRUCTURE IMPROVEMENTS –SIGNALIZATION PACKAGE,” on the outside of the package. Late bids will not be accepted. Vendors accept all risks of late delivery of mailed bids regardless of fault. Faxed and e-mailed bids will be deemed non-responsive.

Minimum Qualifications: Contractor shall be prequalified with the Florida Department of Transportation per Florida Law (Chapter 337.14 F.S.) And Rules of the State of Florida, Department of Transportation, (Chapter 14-22, F.A.C.).

Licenses, Permits, Local Laws and Requirements: The selected vendor shall secure all licenses and permits, and must become familiar with any local conditions, which may, in any manner, affect the services required. The vendor is required to carefully examine the RFB terms and to become thoroughly familiar with all conditions and requirements that may in any manner affect the work to be performed under the resulting contract. Prior to contracting with SF, owners of all forms of business doing business in the State of Florida, except sole proprietorships, must register with and be in good standing with the Florida Department of Corporations. A foreign corporation cannot transact business in the State of Florida until it obtains a certificate of authority from the Department of State.



Withdrawal of Bids: A vendor may request a bid be withdrawn from consideration prior to the date and time the bids are due. Bids that have been submitted to SF become a public record, subject to public record retention requirements.

Preliminary Schedule: These dates are estimates only and are subject to change by SF and the schedule of pertinent events for this solicitation may be viewed on SF’s website @ www.spaceflorida.gov .

Event	Date	Time (EST)
Legal Notice sent to Florida Today	8/29/2019	N/A
Announcement of RFB, published on SF’s website & Demand Star	9/5/2019	
Question Submission Deadline	9/23/2019	12:00 Noon
Notice of Sealed Bid Opening published in Fla. Admin. Register and on Space Florida website NLT	9/26/2019	12:00 Noon
Question Responses Posted NLT	9/27/2019	12:00 Noon
Bids Due	10/3/2019	12:00 Noon
Sealed Bid Opening (Public Forum)	10/3/2019	1:00 PM
Notice to Intent to Award Posted NLT	10/4/2019	N/A
Notice of Full Award Posted NLT	10/17/2019	N/A

*All questions must be submitted by e-mail to aodonnell@spaceflorida.gov. All answers will be posted to the SF and Demand Star websites.

Submittal Instructions: The bid package must be submitted on 8-1/2” X 11” paper, Times New Roman, 12-point font. Vendors must submit one (1) hard copy original, three (3) hard copies and one (1) soft copy on a USB Drive in Adobe Acrobat (.pdf) format. The bid package, including all hard and soft copies, must be submitted in a sealed envelope.

The bid package is limited to ten (10) one-sided pages. Permitted exclusions to the qualification package page limit are: Front cover and back-cover pages, Title Page, Table of Contents, Index or Divider inserts and Financial Statements. ** Please refer to the Trade Secrets and Proprietary Confidential Business Information regarding your Financial Statements.*

Vendor’s bid shall specifically identify and address and include, in the same order presented below, each of the following Sections A-D, including each subsection. If there is no information to present for a specific section or subsection, state the reason such as “not applicable” or “there is no information that we wish to present”. Failure to follow these instructions may result in a bid being deemed non-responsive.

- A. Title Page:** Identify the RFB subject, RFB number, name of vendor, vendor address, vendor phone and facsimile number, primary point of contact, primary point of contact’s title and e-mail address for receipt of notifications and date of submittal.



B. Letter of Transmittal: The letter must be signed by a representative authorized to contractually bind the vendor and include the title or authority of the representative. The letter shall not exceed two pages and it shall briefly state the understanding of the vendor regarding the work to be performed, confirmation of meeting the minimum qualifications, and make a positive commitment to perform the work within the specified time period. The following must be included:

1. Type of business (sole proprietorship, partnership, corporation, etc.)
2. State of incorporation.
3. Headquarters location and whether offices are located in the State of Florida, and if so, where.
4. The names and contact information of the persons who will be authorized to make representations for the vendor.
5. A certification that the vendor will furnish the goods and services specified in the bid package at the prices quoted in the bid, and that the bid will remain firm for sixty (60) days after the date that the bid package is submitted in order for SF to evaluate the bids and make an award.
6. Confirmation of any and all addenda.

C. Eligibility:

1. Provide proof of legal entity and authorization to do business within the State of Florida.
2. Provide a minimum of three specific references with appropriate contact information for “similar” projects, period of performance for the specific engagement, and the value of services performed. Projects must have been completed within the past five (5) years.
3. Indicate financial wherewithal and stability of firm.
4. Indicate any potential conflicts of interest with SF or at the vendor’s firm, office, or engagement team level.

D. Schedule of Bid Items: The vendor shall complete and submit one original “Bid Form” attached hereto as **Attachment “A”**.

Method to Award: Bids will be evaluated based on the lowest-priced responsive and responsible bidder. The contract will be awarded to a single vendor. SF may select some or all of what is listed in the Bid Documents. Equipment selection will be based upon the desired equipment, cost of the equipment, days to furnish and install, and the available budget. The project is based on a construction schedule, therefore calendar days to furnish and install is important and will be considered in the selection of the vendor. In the event SF is unable to reach an agreement with the lowest-price responsive and responsible bidder, SF may attempt to negotiate an agreement with the second-highest-ranked vendor, and so on, until an agreement is reached.

Right to Reject Bids: SF reserves the right to make an award it determines to be in its best interests or to reject any and all bids. Further, SF, in making its award decision, retains the



authority to waive what it considers to be minor irregularities in the bid or to seek clarification on certain issues from any vendor submitting a bid. Failure to provide requested information may result in the rejection of the bid.

Notice of Intent to Award: The Notice of Intent to Award will be posted on the SF and Demand Star websites.

Disputes: Failure to file a protest within the time prescribed in subsection 120.57(3) of the *Florida Statutes*, or failure to post the bond or other security required by law within the time allowed for filing a bond shall constitute a waiver of proceedings under Chapter 120 of the *Florida Statutes*.

Property of SF: All information submitted by vendor will become part of the project file and, unless otherwise exempt or confidential in accordance with Florida law, will become a public record. All bids and accompanying documentation will become the property of SF and will not be returned.

Trade Secrets and Proprietary Confidential Business Information: Trade secrets and proprietary confidential business information are not solicited, nor desired, as information to be submitted with bid packages. The *Florida Statutes* and the State Constitution govern whether information in a bid package is confidential or exempt from the Public Records Act. If information is submitted in the bid packages which the vendor deems to be a trade secret or proprietary confidential business information under the provisions of section 288.075 of the *Florida Statutes*, or any other *Florida Statutes*, the information shall be submitted with the bid package in a **separate, clearly marked envelope referencing the specific statutory citation for such exemption.**

Submitted bid packages which are marked “confidential” (or other similar language) in their entirety, or those in which a significant portion of the submitted bid packages is marked “confidential” may be deemed non-responsive by SF. SF is not obligated to agree with the vendor’s claim of an exemption and, by submitting a reply or other submission; the vendor agrees to be responsible for defending its claim that each and every portion of the separately marked information is exempt from inspection and copying under the Public Records Act. The vendor agrees that it shall protect, defend, and indemnify, including attorney’s fees and costs, SF for any and all claims and litigation (including litigation initiated by SF) arising from or relating to vendor’s claim that the separately marked portions of its reply are not subject to disclosure. If the vendor fails to separately mark portions of its bid package, SF is authorized to produce the entire document, data or records submitted by the vendor in responding to a public records request for these records.

Compliance with Laws: Vendor shall comply with all laws, rules, codes, ordinances, licensing and bonding requirements that are applicable to this RFB and the conduct of vendor’s business, including those of Federal, State, and local agencies having jurisdiction and authority. By way of non-exhaustive example, the vendor shall comply with the Florida Sunshine Law and Public Records Act, Immigration and Nationality Act, the Americans with Disabilities Act, and all



prohibitions against discrimination on the basis of race, religion, sex, creed, national origin, handicap, marital status or veteran's status. The selected vendor understands and will comply with subsection 20.055(5) of the Florida Statutes.

Convicted Vendors: Vendor affirms that it is aware of the provisions of Section 287.133(2)(a) of the *Florida Statutes* and that at no time has vendor been convicted of a public entity crime.

Discriminatory Vendors: Vendor affirms that it is aware of the provisions of Section 287.134(2)(a) of the *Florida Statutes*, and that at no time has vendor been placed on the discriminatory vendor list.

Vendor's Representation and Authorization: In submitting a bid, the vendor understands, represents, and acknowledges the following (if the vendor cannot so certify to any of following, the vendor shall submit with its bid a written explanation).

1. The vendor is not currently under suspension or debarment by the State or any other governmental authority.
2. The vendor, its affiliates, subsidiaries, directors, officers, and employees are not currently under investigation by any governmental authority and have not in the last ten years been convicted or found liable for any act prohibited by law in any jurisdiction, involving conspiracy or collusion with respect to bidding on any public contract.
3. The vendor has no delinquent obligations to the State, including a claim by the State for liquidated damages under any other contract.
4. The bid is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive bid.
5. The prices and amounts in the bid have been arrived at independently and without consultation, communication, or agreement with any other Vendor or potential Vendor; neither the prices nor amounts, actual or approximate, have been disclosed to any Vendor or potential Vendor, and they will not be disclosed before the opening of the bids.
6. Neither the vendor nor any person associated with it in the capacity of owner, partner, director, officer, principal, investigator, project director, manager, auditor, or position involving the administration of federal funds:
 - a. Has within the preceding three years been convicted of or had a civil judgment rendered against them or is presently indicted for or otherwise criminally or civilly charged for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a Federal, State, or local government



transaction or public contract; violation of Federal or State antitrust statutes; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property; or

- b. Has within the preceding three years of this certification had one or more Federal, State, or local government contracts terminated for cause or default.

Vendor's Cost to Develop Bid: Costs for developing bids responsive to this RFB are entirely the obligations of the vendor and shall not be chargeable in any manner to SF.

Contract: Will be a fixed price modified AIA, A104 and SF reserves the rights to modify prior to entering into a contract with the lowest responsive, responsible and qualified bidder and a draft copy attached hereto as **Attachment "B"**.

By submitting a bid, the vendor agrees to all the terms and conditions of the contract attached hereto as Attachment B, without revision.

SPACE FLORIDA



Attachment “A”

Bid Form



BID FORM

BIDDER: _____

DATE: _____

BID NO.: RFB-SF-01-0-2019

FACILITY NAME: Cape Canaveral Spaceport

PROJECT DESCRIPTION: EDTPF Signalization Package

BID FORM					
Item No.	Item Description	Quantity	Unit	Unit Price	Total Amount/Item
1	NASA Parkway @ Space Commerce Way	1	Lump Sum	\$	\$
2	NASA Parkway @ KSC Visitor Center North Entrance	1	Lump Sum	\$	\$
3	NASA Parkway @ Kennedy Parkway	1	Lump Sum	\$	\$
4	Kennedy Parkway @ Schwartz Road	1	Lump Sum	\$	\$
5	Kennedy Parkway @ Saturn Causeway	1	Lump Sum	\$	\$
6	SR-401 @ Grouper Road	1	Lump Sum	\$	\$
7	Phillips Parkway @ Poseidon Avenue	1	Lump Sum	\$	\$
8	Owner's Allowance	1	Lump Sum	\$ 150,000.00	\$ 150,000.00
Total Bid*					\$

**Includes all work at each intersection, for a complete and operational signalized intersection, including, but not limited to, the informational pay items listed on the plans.*



NOTE: The contractor should read the contract documents for the requirements for construction, insurance and contractual obligations before submitting a bid proposal, for a single lump sum price for each complete and operational signalized intersection. It is the intent of the Owner to award only one (1) contract for work bid in this advertisement. The award will be made to the lowest responsive, responsible and qualified bidder based on the total sum amount bid for each and any, all, or none of the intersection that the Owner determines to be in their best interest to construct. The contractor should verify the quantities to be included in the construction contract. The contractor shall furnish Space Florida with a Public Construction Bond in 100% of the total estimated amount of the contract. The Public Construction Bond shall continue in effect for one (1) year after completion and acceptance of the work as guarantee against construction defects. The contractor in his/her bid shall include the cost of said bond.

(Name of Bidder)

(Authorized Signature)

(Title)

(Mailing Address)

(City, State, Zip)

(Federal ID No. or SS No.)

(Phone Number)

(Fax Number)

(Date)

SPACE FLORIDA



Attachment “B”

Draft Copy of modified fixed price contract: A1A, A104



Standard Abbreviated Form of Agreement Between Owner and Contractor

AGREEMENT made as of the ___ day of October in the year 2019
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

Space Florida, an independent special district, a body politic and corporate, and a subdivision of the State of Florida
505 Odyssey Way, Suite 300
Exploration Park, FL 32953
321-730-5307

and the Contractor:
(Name, legal status, address and other information)

TBD
Contractor's License No.: _____

for the following Project:
(Name, location and detailed description)

**ECONOMIC DEVELOPMENT TRANSPORTATION PROJECT FUND (EDTPF)
INFRASTRUCTURE IMPROVEMENTS SIGNALIZATION PACKAGE**

Cape Canaveral Spaceport
Kennedy Space Center, Florida

The Engineer:
(Name, legal status, address and other information)

~~**Jones Edmunds (Design Engineer)**~~
~~3910 S. Washington Ave, Suite 210~~ **TBD**
~~Titusville, FL 32780~~
~~321-269-2950~~

AECOM (Construction Administration Engineer),
7650 Courtney Campbell Causeway
Tampa, FL 33607

Whenever in this Agreement, the term "Architect" is used, it shall mean the Engineer.

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

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ARTICLE 1 THE WORK OF THIS CONTRACT

The Contractor shall execute and pay for the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

The Work consists of constructing traffic signalization improvements at seven (7) locations/intersections on or near the Cape Canaveral Spaceport in Brevard County, Florida. The locations are on property owned/managed either by NASA, US Air Force, and Canaveral Port Authority (with Florida Department of Transportation [FDOT]). The improvements include, but are not limited to, mobilization, maintenance of traffic, demolition, erosion control, conduit, wire, electrical, traffic signalization equipment, video detection and ancillary components, mast arms, foundations, pavement markings, pavement markings removal, signage, and associated related improvement as

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outlined within the bid documents for complete and operational signalized intersections and accepted by the property owner, FDOT and Space Florida.

ARTICLE 2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 2.1 The date of commencement of the Work shall be:

(Check one of the following boxes.)

- The date of this Agreement.
- A date set forth in a notice to proceed issued by the Owner.
- Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)

The Date of Commencement of the construction of the Work for the Project shall be on or before October 20, 2019, This is an absolute date with no exceptions or extensions for any reason.

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 2.2 The Contract Time shall be measured from the date of commencement.

§ 2.3 Substantial Completion

§ 2.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:

(Check the appropriate box and complete the necessary information.)

- Not later than () calendar days from the date of commencement of the Work.
- By the following date:

§ 2.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work

Substantial Completion Date

§ 2.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 2.3, liquidated damages, if any, shall be assessed as set forth in Section 3.5.

ARTICLE 3 CONTRACT SUM

§ 3.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be one of the following:

(Check the appropriate box.)

- Stipulated Sum, in accordance with Section 3.2 below
- Cost of the Work plus the Contractor's Fee, in accordance with Section 3.3 below
- Cost of the Work plus the Contractor's Fee with a Guaranteed Maximum Price, in accordance with Section 3.4 below

(Based on the selection above, complete Section 3.2, 3.3 or 3.4 below.)

§ 3.2 The Stipulated Sum shall be _____ and 00/100 Dollars (\$ _____ .00), subject to additions and deductions as provided in the Contract Documents. See Exhibit "B" for Contract Sum

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User Notes:

(1514946932)

breakdown. Contractor's clarifications to the scope of Work are attached as Exhibit "C". The Work shall be performed in accordance with the schedule attached as Exhibit "D".

For Change Orders or Construction Change Directive Work, the amount for overhead shall be 8% and for profit 8% added or deducted for a total of sixteen percent (16%) of the Cost of the Work that is added or deducted, respectively ("Contractor's Fee"). Such Contractor's Fee includes all profit, overhead, general conditions costs, and insurance (but not additional bond costs, if applicable), except if a Change Order extends the Date of Substantial Completion, then Contractor's reasonable extended daily general conditions costs shall be added to the cost of the Change Order per §14.5. Likewise, subcontractors shall not add general conditions costs, except that if the change includes an increase in the Contract Time, then extended daily general conditions costs may be added in accordance with §14.5. However, fee shall not be reduced for deductive Change Orders arising as a result of the Sales Tax Savings Program of Article 22, except fee shall be reduced on the amount of the sales tax savings.

- For Change Order Work accomplished by the Contractor's own forces, overhead and profit shall be a maximum of 10% of the Cost of the Work.
- For Change Order Work accomplished by Subcontractors, Subcontractor's overhead and profit shall be a maximum of 10% of the Cost of the Work.

§ 3.2.1 The Stipulated Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

Exhibit "B", if any.

§ 3.2.2 Unit prices, if any:

(Identify the item and state the unit price and the quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit (\$0.00)
Exhibit "B", if any		

§ 3.2.3 Allowances, if any, included in the stipulated sum:

(Identify each allowance.)

Item	Price
Owner's Allowance	\$100,000

§ 3.3 Cost of the Work Plus Contractor's Fee n/a

§ 3.3.1 The Cost of the Work is as defined in Exhibit A, Determination of the Cost of the Work.

§ 3.3.2 The Contractor's Fee:

(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee and the method of adjustment to the Fee for changes in the Work.)

§ 3.4 Cost of the Work Plus Contractor's Fee With a Guaranteed Maximum Price

§ 3.4.1 The Cost of the Work is as defined in Exhibit A, Determination of the Cost of the Work.

§ 3.4.2 The Contractor's Fee:

(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee and the method of adjustment to the Fee for changes in the Work.)

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§ 3.4.3 Guaranteed Maximum Price n/a

§ 3.4.3.1 The sum of the Cost of the Work and the Contractor’s Fee is guaranteed by the Contractor not to exceed (\$), subject to additions and deductions by changes in the Work as provided in the Contract Documents. This maximum sum is referred to in the Contract Documents as the Guaranteed Maximum Price. Costs which would cause the Guaranteed Maximum Price to be exceeded shall be paid by the Contractor without reimbursement by the Owner. *(Insert specific provisions if the Contractor is to participate in any savings.)*

§ 3.4.3.2 The Guaranteed Maximum Price is based on the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:
(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

§ 3.4.3.3 Unit Prices, if any:
(Identify the item and state the unit price and the quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit (\$0.00)
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§ 3.4.3.4 Allowances, if any, included in the Guaranteed Maximum Price:
(Identify each allowance.)

Item	Price
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§ 3.4.3.5 Assumptions, if any, on which the Guaranteed Maximum Price is based:

§ 3.4.3.6 To the extent that the Contract Documents are anticipated to require further development, the Guaranteed Maximum Price includes the costs attributable to such further development consistent with the Contract Documents and reasonably inferable therefrom. Such further development does not include changes in scope, systems, kinds and quality of materials, finishes or equipment, all of which, if required, shall be incorporated by Change Order.

§ 3.4.3.7 The Owner shall authorize preparation of revisions to the Contract Documents that incorporate the agreed-upon assumptions contained in Section 3.4.3.5. The Owner shall promptly furnish such revised Contract Documents to the Contractor. The Contractor shall notify the Owner and Architect of any inconsistencies between the agreed-upon assumptions contained in Section 3.4.3.5 and the revised Contract Documents.

§ 3.5 Liquidated damages, if any:
(Insert terms and conditions for liquidated damages, if any.)

Liquidated Damages. If the Contractor fails to substantially complete the Work before the agreed upon Date of Substantial Completion set forth in this Agreement (including any extension granted by the Owner in writing), then the Contractor agrees to pay the Owner, as liquidated damages, a sum equal to the (Contract Sum * 10%)/365 per calendar day until Substantial Completion of the Work is actually achieved. Such amount is agreed upon as a reasonable measure of the damages that the Owner will sustain from the Contractor’s failure to timely complete the Work. Owner and the Contractor recognize the delays, expense and difficulties involved in providing in an arbitration or judicial proceeding the actual loss suffered by the Owner if the Work is not completed on time and accordingly, instead of requiring such proofs, they agree upon the above-stated amount as liquidated damages for delay (but not as

a penalty). The foregoing liquidated damages shall be in lieu of all other monetary remedies that the Owner shall have in the event of the Contractor's delay in completing the Project.)

ARTICLE 4 PAYMENT

§ 4.1 Progress Payments

§ 4.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 4.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month.

§ 4.1.3 Provided that an Application for Payment is received by the Architect not later than the 25th day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the 20th day of the next month. If an Application for Payment is received by the Architect after the date fixed above, payment shall be made by the Owner not later than twenty five (25) days after the Architect receives the Application for Payment.

(Federal, state or local laws may require payment within a certain period of time.)

§ 4.1.4 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold retainage from the payment otherwise due as follows:

(Insert a percentage or amount to be withheld as retainage from each Application for Payment and any terms for reduction of retainage during the course of the Work. The amount of retainage may be limited by governing law.)

10% retainage shall be withheld. At 50% completion of the Project, retainage shall be reduced to 5% for each subsequent progress payment in accordance with Florida Statutes Section 218.735. Upon Substantial Completion of the entire Work all retainage shall be released except 150% of the value of punch list Work, incomplete Work, and defective Work shall be withheld.

§ 4.1.5 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

(Insert rate of interest agreed upon, if any.)

Per Florida Statute Chapter 218..

§ 4.2 Final Payment

§ 4.2.1 Contractor shall submit its final pay request within 45 days of Final Completion of the Project. Final payment, constituting the entire unpaid balance of the Contract Sum, less 150% of the value of punch list Work, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 18.2, and to satisfy other requirements, if any, which extend beyond final payment;
- .2 the Contractor has submitted a final accounting for the Cost of the Work, where payment is on the basis of the Cost of the Work with or without a Guaranteed Maximum Price;
- .3 the Contractor has delivered to the Owner a Contractor's Final Affidavit pursuant to Florida Law and a final Certificate for Payment has been issued by the Architect in accordance with Section 15.7.1;
- .4 Contractor has delivered to Owner a certification that the Work does not contain any asbestos; and
- .5 Contractor has delivered to Owner a certification from the Building Department that the building permit has been finalized and closed out

§ 4.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, but in no event until all the conditions of § 4.2.1 have been met.

ARTICLE 5 DISPUTE RESOLUTION

§ 5.1 Binding Dispute Resolution

For any claim subject to, but not resolved by, mediation pursuant to Section 21.5, the method of binding dispute resolution shall be as follows:

(Check the appropriate box.)

Init.

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- Arbitration pursuant to Section 21.6 of this Agreement
- Litigation in a court of competent jurisdiction
- Other (*Specify*)

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, claims will be resolved in a court of competent jurisdiction.

ARTICLE 6 ENUMERATION OF CONTRACT DOCUMENTS

§ 6.1 The Contract Documents are defined in Article 7 and, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 6.1.1 The Agreement is this executed AIA Document A104™–2017, Standard Abbreviated Form of Agreement Between Owner and Contractor.

§ 6.1.2 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:

(Insert the date of the E203–2013 incorporated into this Agreement.)

Not Used.

§ 6.1.3 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
none			

§ 6.1.4 The Specifications:

(Either list the Specifications here or refer to an exhibit attached to this Agreement.)

See Exhibit E

Section	Title	Date	Pages

§ 6.1.5 The Drawings:

(Either list the Drawings here or refer to an exhibit attached to this Agreement.)

See Exhibit E

Number	Title	Date

§ 6.1.6 The Addenda, if any:

Number	Date	Pages
See Exhibit E		

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are enumerated in this Article 6.

§ 6.1.7 Additional documents, if any, forming part of the Contract Documents:

- .1 Other Exhibits:
(Check all boxes that apply.)

Init.

Exhibit A, Determination of the Cost of the Work.

AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204-2017 incorporated into this Agreement.)

The Sustainability Plan:

Title	Date	Pages
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Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
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.2 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents.)

Exhibit A – Determination of the Cost of the Work for Change Orders
Exhibit B - Breakdown of the Contract Sum and Clarifications
Exhibit C – Contractor’s Clarifications
Exhibit D – Schedule
Exhibit E - Drawings and Specifications
Exhibit F – Audit Requirements

ARTICLE 7 GENERAL PROVISIONS

§ 7.1 The Contract Documents

The Contract Documents are enumerated in Article 6 and consist of this Agreement (including, if applicable, Supplementary and other Conditions of the Contract), Drawings, Specifications, Addenda issued prior to the execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 7.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind between any persons or entities other than the Owner and the Contractor.

§ 7.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor’s obligations. The Work may constitute the whole or a part of the Project.

Init.

§ 7.4 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 7.5 Ownership and use of Drawings, Specifications and Other Instruments of Service

§ 7.5.1 Drawings, specifications, Instruments of Service and other documents including those in electronic form, prepared by the Architect or Contractor and furnished for the Project are the property of Owner. The Owner shall retain all common law, statutory and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Owner's reserved rights.

§ 7.5.2 The Contractor, Subcontractors, Sub-subcontractors and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to the protocols established pursuant to Sections 7.6 and 7.7, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner.

§ 7.6 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form

§ 7.7 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

§ 7.8 Severability

The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 7.9 Notice

§ 7.9.1 Except as otherwise provided in Section 7.9.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:

(If other than in accordance with AIA Document E203–2013, insert requirements for delivering Notice in electronic format such as name, title and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

Electronic mail may be used by the parties using the email addresses in § 19.4 and § 19.5.

§ 7.9.2 Notice of Claims shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 7.10 Relationship of the Parties

Where the Contract is based on the Cost of the Work plus the Contractor's Fee, with or without a Guaranteed Maximum Price, the Contractor accepts the relationship of trust and confidence established by this Agreement and covenants with the Owner to cooperate with the Architect and exercise the Contractor's skill and judgment in furthering the interests of the Owner; to furnish efficient business administration and supervision; to furnish at all times an adequate supply of workers and materials; and to perform the Work in an expeditious and economical manner consistent with the Owner's interests. The Owner agrees to furnish and approve, in a timely manner, information required by the Contractor and to make payments to the Contractor in accordance with the requirements of the Contract Documents.

ARTICLE 8 OWNER

§ 8.1 Information and Services Required of the Owner

§ 8.1.1 n/a.

§ 8.1.2 The Owner shall furnish all necessary surveys and a legal description of the site.

§ 8.1.3 The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 8.1.4 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 9.6.1, the Owner shall secure and pay for other necessary approvals, easements, assessments, and charges required for the construction, use, or occupancy of permanent structures or for permanent changes in existing facilities.

§ 8.2 Owner's Right to Stop the Work

If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents, or repeatedly fails to carry out the Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order is eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity.

§ 8.3 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents, and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to any other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 15.4.3, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including the Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 21.

ARTICLE 9 CONTRACTOR

§ 9.1 Review of Contract Documents and Field Conditions by Contractor

§ 9.1.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 9.1.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 8.1.2, shall take field measurements of any existing conditions related to that portion of the Work and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies, or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made

in the Contractor's capacity as a contractor and not as a licensed design professional unless otherwise specifically provided in the Contract Documents.

§ 9.1.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 9.2 Supervision and Construction Procedures

§ 9.2.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters.

§ 9.2.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for or on behalf of the Contractor or any of its Subcontractors.

§ 9.3 Labor and Materials

§ 9.3.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 9.3.2 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

§ 9.3.3 The Contractor may make a substitution only with the consent of the Owner, after evaluation by the Architect and in accordance with a Modification.

§ 9.4 Warranty

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. For a period of one (1) year after the date of Substantial Completion (and longer if extended warranties are provided in the Contract Documents for certain materials, equipment, and installations), the Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation or normal wear and tear under normal usage. All other warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 15.6.3.

§ 9.5 Taxes

The Contractor shall pay sales, consumer, use, and other similar taxes that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 9.6 Permits, Fees, Notices, and Compliance with Laws

§ 9.6.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded. Such permit fees are included in the Contract Sum.

§ 9.6.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work. If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or

lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 9.7 Allowances

The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. The Owner shall select materials and equipment under allowances with reasonable promptness. Allowance amounts shall include the costs to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts. Contractor's costs for unloading and handling at the site, labor, installation, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowance.

§ 9.8 Contractor's Construction Schedules

§ 9.8.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work. The approved Schedule is attached as Exhibit "D".

§ 9.8.2 The Contractor shall perform the Work in general accordance with the most recent schedule submitted to the Owner and Architect.

§ 9.9 Submittals

§ 9.9.1 The Contractor shall review for compliance with the Contract Documents and submit to the Architect Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents in coordination with the Contractor's construction schedule and in such sequence as to allow the Architect reasonable time for review. By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them; (2) determined and verified materials, field measurements, and field construction criteria related thereto, or will do so; and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents. The Work shall be in accordance with approved submittals.

§ 9.9.2 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents.

§ 9.9.3 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents or unless the Contractor needs to provide such services in order to carry out the Contractor's own responsibilities. If professional design services or certifications by a design professional are specifically required, the Owner and the Architect will specify the performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional. If no criteria are specified, the design shall comply with applicable codes and ordinances. Each Party shall be entitled to rely upon the information provided by the other Party. The Architect will review and approve or take other appropriate action on submittals for the limited purpose of checking for conformance with information provided and the design concept expressed in the Contract Documents. The Architect's review of Shop Drawings, Product Data, Samples, and similar submittals shall be for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. In performing such review, the Architect will approve, or take other appropriate action upon, the Contractor's Shop Drawings, Product Data, Samples, and similar submittals.

§ 9.10 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 9.11 Cutting and Patching

The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly.

§ 9.12 Cleaning Up

The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus material from and about the Project.

§ 9.13 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 9.14 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 9.15 Indemnification

§ 9.15.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section 9.15.1.

§ 9.15.2 In claims against any person or entity indemnified under this Section 9.15 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 9.15.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 10 ARCHITECT

§ 10.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction, until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified in writing in accordance with other provisions of the Contract. However, any approvals, certificates, or decisions of the Architect are subject to the approval of Owner. At Owner's discretion, the duties of the Architect described herein may be performed by the Owner or the Owner's representative.

§ 10.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 10.3 The Architect will visit the site at intervals appropriate to the stage of the construction to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general, if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 10.4 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 10.5 Based on the Architect's evaluations of the Work and of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 10.6 The Architect has authority to reject Work that does not conform to the Contract Documents and to require inspection or testing of the Work.

§ 10.7 The Architect will review and approve or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 10.8 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect will make initial decisions on all claims, disputes, and other matters in question between the Owner and Contractor but will not be liable for results of any interpretations or decisions rendered in good faith.

§ 10.9 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

ARTICLE 11 SUBCONTRACTORS

§ 11.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site.

§ 11.2 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the Subcontractors or suppliers proposed for each of the principal portions of the Work. The Contractor shall not contract with any Subcontractor or supplier to whom the Owner or Architect has made reasonable written objection within ten days after receipt of the Contractor's list of Subcontractors and suppliers. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 11.3 Contracts between the Contractor and Subcontractors shall (1) require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by the terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by the Contract Documents, assumes toward the Owner and Architect, and (2) allow the Subcontractor the benefit of all rights, remedies and redress against the Contractor that the Contractor, by these Contract Documents, has against the Owner.

ARTICLE 12 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 12.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 12.2 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's activities with theirs as required by the Contract Documents.

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§ 12.3 The Owner shall be reimbursed by the Contractor for costs incurred by the Owner which are payable to a Separate Contractor because of delays, improperly timed activities, or defective construction of the Contractor. The Owner shall be responsible to the Contractor for costs incurred by the Contractor because of delays, improperly timed activities, damage to the Work, or defective construction of a Separate Contractor.

ARTICLE 13 CHANGES IN THE WORK

§ 13.1 By appropriate Modification, changes in the Work may be accomplished after execution of the Contract. The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, with the Contract Sum and Contract Time being adjusted accordingly. Such changes in the Work shall be authorized by written Change Order signed by the Owner, Contractor, and Architect, or by written Construction Change Directive signed by the Owner and Architect. Upon issuance of the Change Order or Construction Change Directive, the Contractor shall proceed promptly with such changes in the Work, unless otherwise provided in the Change Order or Construction Change Directive.

§ 13.2 Adjustments in the Contract Sum and Contract Time resulting from a change in the Work shall be determined by mutual agreement of the parties or, in the case of a Construction Change Directive signed only by the Owner and Architect, by the Contractor's cost of labor, material, equipment, and reasonable overhead and profit, unless the parties agree on another method for determining the cost or credit. Pending final determination of the total cost of a Construction Change Directive, the Contractor may request payment for Work completed pursuant to the Construction Change Directive. The Architect will make an interim determination of the amount of payment due for purposes of certifying the Contractor's monthly Application for Payment. When the Owner and Contractor agree on adjustments to the Contract Sum and Contract Time arising from a Construction Change Directive, the Architect will prepare a Change Order.

§ 13.3 Subject to the Owner's written approval, the Architect will have authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work.

§ 13.4 If concealed or unknown physical conditions are encountered at the site that differ materially from those indicated in the Contract Documents or from those conditions ordinarily found to exist, the Contract Sum and Contract Time shall be equitably adjusted as mutually agreed between the Owner and Contractor; provided that the Contractor provides notice to the Owner and Architect promptly and before conditions are disturbed.

ARTICLE 14 TIME

§ 14.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing this Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 14.2 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 14.3 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 14.4 The date of Substantial Completion is the date certified by the Architect in accordance with Section 15.6.3.

§ 14.5 If the Contractor is delayed at any time in the commencement or progress of the Work by changes ordered in the Work, by fire, acts of God, abnormal adverse weather conditions not reasonably anticipatable, unavoidable casualties or any causes beyond the Contractor's control or responsibility, or by other causes which the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine, subject to the provisions of Article 21; however, the Contract Sum shall not be increased, except for a per diem payment as described below. It is the express and bargained for intent of the parties that the risk of any monetary damages caused by any delays described in this Section or any other delays from any other cause are accepted and assumed entirely by Contractor, and in no event shall any claim relating thereto for an increase in the

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Contract Sum be made or recognized, except for the per diem payment as described below. Contractor's sole remedy for any delay, impact, disruption, or interruption caused by any of the reasons listed in this Section shall be an equitable extension of time to perform the Work for each day of such delay that impacts the critical path schedule of the Project that extends the Date of Substantial Completion, and a per diem payment not to exceed the Contractor's reasonable extended daily general conditions costs per day for each day of such delay that impacts the critical path schedule of the Project that extends the Date of Substantial Completion. Contractor shall not make any other claim nor seek any other damages of any kind against Owner or Architect for any delays, impacts, disruptions, or interruptions of any kind. If a Contractor caused delay runs concurrent with such delays, Contractor shall not be entitled to any extension of time or per diem payment for the concurrent period of delay. Delays caused by labor disputes, delivery delays, and dispute resolution proceedings are considered within the Contractor's control and shall not be grounds for a delay claim. This Section does preclude recovery of damages for delay by Contractor under any other provisions of the Contract Documents.

Extensions of time will be granted only if the item, task, or other phase of construction delayed is critical to the Work and so indicated in the Contractor's Schedule.

Extensions of time due to adverse weather conditions not reasonably anticipated will be granted only because of such inclement weather occurring on a normal working day and preventing the execution of the major or critical item of construction ordinarily performed at the time. Extensions of time for weather delays will be considered only if such inclement weather exceeds that normally recorded by the National Weather Bureau for the same month and location.

ARTICLE 15 PAYMENTS AND COMPLETION

§ 15.1 Schedule of Values

§ 15.1.1 Where the Contract is based on a Stipulated Sum or the Cost of the Work with a Guaranteed Maximum Price pursuant to Section 3.2 or 3.4, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Stipulated Sum or Guaranteed Maximum Price to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy required by the Architect. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 15.1.2 The allocation of the Stipulated Sum or Guaranteed Maximum Price under this Section 15.1 shall not constitute a separate stipulated sum or guaranteed maximum price for each individual line item in the schedule of values.

§ 15.2 Control Estimate

§ 15.2.1 Where the Contract Sum is the Cost of the Work, plus the Contractor's Fee without a Guaranteed Maximum Price pursuant to Section 3.3, the Contractor shall prepare and submit to the Owner a Control Estimate within 14 days of executing this Agreement. The Control Estimate shall include the estimated Cost of the Work plus the Contractor's Fee.

§ 15.2.2 The Control Estimate shall include:

- .1 the documents enumerated in Article 6, including all Modifications thereto;
- .2 a list of the assumptions made by the Contractor in the preparation of the Control Estimate to supplement the information provided by the Owner and contained in the Contract Documents;
- .3 a statement of the estimated Cost of the Work organized by trade categories or systems and the Contractor's Fee;
- .4 a project schedule upon which the Control Estimate is based, indicating proposed Subcontractors, activity sequences and durations, milestone dates for receipt and approval of pertinent information, schedule of shop drawings and samples, procurement and delivery of materials or equipment the Owner's occupancy requirements, and the date of Substantial Completion; and
- .5 a list of any contingency amounts included in the Control Estimate for further development of design and construction.

§ 15.2.3 When the Control Estimate is acceptable to the Owner and Architect, the Owner shall acknowledge it in writing. The Owner's acceptance of the Control Estimate does not imply that the Control Estimate constitutes a Guaranteed Maximum Price.

§ 15.2.4 The Contractor shall develop and implement a detailed system of cost control that will provide the Owner and Architect with timely information as to the anticipated total Cost of the Work. The cost control system shall compare the Control Estimate with the actual cost for activities in progress and estimates for uncompleted tasks and proposed changes. This information shall be reported to the Owner, in writing, no later than the Contractor's first Application for Payment and shall be revised and submitted with each Application for Payment.

§ 15.2.5 The Owner shall authorize preparation of revisions to the Contract Documents that incorporate the agreed-upon assumptions contained in the Control Estimate. The Owner shall promptly furnish such revised Contract Documents to the Contractor. The Contractor shall notify the Owner and Architect of any inconsistencies between the Control Estimate and the revised Contract Documents.

§ 15.3 Applications for Payment

§ 15.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 15.1, for completed portions of the Work. The application shall be notarized, if required; be supported by all data substantiating the Contractor's right to payment that the Owner or Architect require; shall reflect retainage if provided for in the Contract Documents; and include any revised cost control information required by Section 15.2.4. Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 15.3.2 With each Application for Payment where the Contract Sum is based upon the Cost of the Work, or the Cost of the Work with a Guaranteed Maximum Price, the Contractor shall submit payrolls, petty cash accounts, receipted invoices or invoices with check vouchers attached, and any other evidence required by the Owner to demonstrate that cash disbursements already made by the Contractor on account of the Cost of the Work equal or exceed progress payments already received by the Contractor plus payrolls for the period covered by the present Application for Payment, less that portion of the progress payments attributable to the Contractor's Fee.

§ 15.3.3 Payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment stored, and protected from damage, off the site at a location agreed upon in writing.

§ 15.3.4 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or other encumbrances adverse to the Owner's interests.

§ 15.4 Certificates for Payment

§ 15.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner of the Architect's reasons for withholding certification in whole or in part as provided in Section 15.4.3. The Architect's Certificate of Payment is subject to the approval of the Owner.

§ 15.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluations of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means,

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methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 15.4.3 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 15.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 15.4.1. If the Contractor and the Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 9.2.2, because of

- .1 defective Work not remedied;
- .2 third-party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 15.4.4 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 15.4.3, in whole or in part, that party may submit a Claim in accordance with Article 21.

§ 15.5 Progress Payments

§ 15.5.1 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to sub-subcontractors in a similar manner. As a condition to each progress payment the Contractor shall have furnished Owner with a partial lien waiver and release signed by Contractor, conditioned upon payment for all Work performed that is included in the current Application for Payment in the form attached to the Contract or if not attached, in a form approved by Owner, and shall have furnished Owner with partial unconditional lien waivers and releases signed by all subcontractors, suppliers, persons or entities furnishing any labor or material, equipment, services, and materials for the Project and for all Work performed by same that is included in the respective prior Application for Payment. In addition, as a condition to each progress payment, in the event that any liens have been filed against the Project, the Contractor shall have either recorded a satisfaction of such lien or transferred the lien to a bond satisfactory to Owner within ten (10) days of notice from Owner.

§ 15.5.2 Neither the Owner nor Architect shall have an obligation to pay or see to the payment of money to a Subcontractor or supplier except as may otherwise be required by law.

§ 15.5.3 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 15.5.4 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 15.6 Substantial Completion

§ 15.6.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 15.6.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 15.6.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. When the Architect determines that the Work or designated portion thereof is substantially complete, the Architect will issue a Certificate of Substantial Completion which shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 15.6.4 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 15.7 Final Completion and Final Payment

§ 15.7.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions stated in Section 15.7.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 15.7.2 Final payment shall not become due until the Contractor has delivered to the Owner a complete release of all liens arising out of this Contract or receipts in full covering all labor, materials and equipment for which a lien could be filed, or a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including costs and reasonable attorneys' fees.

§ 15.7.3 The making of final payment shall constitute a waiver of claims by the Owner except those arising from

- .1 liens, claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 15.7.4 Acceptance of final payment by the Contractor, a Subcontractor or supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of the final Application for Payment.

ARTICLE 16 PROTECTION OF PERSONS AND PROPERTY

§ 16.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- .1 employees on the Work and other persons who may be affected thereby;

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- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation, or replacement in the course of construction.

The Contractor shall comply with, and give notices required by, applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons and property and their protection from damage, injury, or loss. The Contractor shall promptly remedy damage and loss to property caused in whole or in part by the Contractor, a Subcontractor, a sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 16.1.2 and 16.1.3. The Contractor may make a claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 9.15.

§ 16.2 Hazardous Materials and Substances

§ 16.2.1 The Contractor is responsible for compliance with the requirements of the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents, and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 16.2.2 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area, if in fact, the material or substance presents the risk of bodily injury or death as described in Section 16.2.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 16.2.3 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

ARTICLE 17 INSURANCE AND BONDS

§ 17.1 Contractor's Insurance

§ 17.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in this Section 17.1 or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the insurance required by this Agreement from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 18.4, unless a different duration is stated below:

§ 17.1.2 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than One Million (\$1,000,000) each occurrence, Two Million (\$2,000,000) general aggregate, and Two Million (\$ 2,000,000) aggregate for products-completed operations hazard, and umbrella excess liability coverage of \$5,000,000, providing coverage for claims including

- .1 damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;

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- .2 personal and advertising injury;
- .3 damages because of physical damage to or destruction of tangible property, including the loss of use of such property;
- .4 bodily injury or property damage arising out of completed operations; and
- .5 the Contractor's indemnity obligations under Section 9.15.

§ 17.1.3 Automobile Liability covering vehicles owned by the Contractor and non-owned vehicles used by the Contractor, with policy limits of not less than One Million (\$1,000,000) per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance, and use of those motor vehicles along with any other statutorily required automobile coverage.

§ 17.1.4 The Contractor may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as those required under Section 17.1.2 and 17.1.3, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers.

§ 17.1.5 Workers' Compensation at statutory limits.

§ 17.1.6 Employers' Liability with policy limits not less than One Million (\$1,000,000) each accident, One Million (\$1,000,000) each employee, and One Million (\$1,000,000) policy limit.

§ 17.1.7 If the Contractor is required to furnish professional services as part of the Work, the Contractor shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than One Million (\$1,000,000) per claim and One Million (\$1,000,000) in the aggregate.

§ 17.1.8 If the Work involves the transport, dissemination, use, or release of pollutants, the Contractor shall procure Pollution Liability insurance, with policy limits of not less than One Million (\$1,000,000) per claim and One Million (\$1,000,000) in the aggregate.

§ 17.1.9 Coverage under Sections 17.1.7 and 17.1.8 may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than One Million (\$1,000,000) per claim and One Million (\$1,000,000) in the aggregate.

§ 17.1.10 The Contractor shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Section 17.1 at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written request. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the period required by Section 17.1.1. The certificates will show the Owner as an additional insured on the Contractor's Commercial General Liability and excess or umbrella liability policy.

§ 17.1.11 The Contractor shall disclose to the Owner any deductible or self-insured retentions applicable to any insurance required to be provided by the Contractor.

§ 17.1.12 To the fullest extent permitted by law, the Contractor shall cause the commercial liability coverage required by this Section 17.1 to include (1) the Owner, the Architect, and the Architect's Consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Architect and the Architect's Consultants, CG 20 32 07 04. Certificates of Insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work. Each policy shall contain a provision that the policy will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. The

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Contractor shall cause the commercial liability coverage required by the Contract Documents to include: (1) NASA, the United States Air Force, the United States Navy, Owner, the Designer and the Designer's Consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) NASA, the United States Air Force, the United States Navy, and Owner as an additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 17.1.13 Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by this Section 17.1, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 17.1.14 Other Insurance Provided by the Contractor

(List below any other insurance coverage to be provided by the Contractor and any applicable limits.)

Coverage	Limits
Excess Liability, Umbrella form	Three Million (\$3,000,000)

§ 17.2 Owner's Insurance

§ 17.2.1 Owner's Liability Insurance

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 17.2.2 Property Insurance

§ 17.2.2.1 Contractor shall purchase and maintain, from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located, property insurance written on a builder's risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis. The property insurance coverage shall be no less than the amount of the initial Contract Sum, plus the value of subsequent Modifications and labor performed or materials or equipment supplied by others. The property insurance shall be maintained until Substantial Completion and thereafter as provided in Section 17.2.2.2, unless otherwise provided in the Contract Documents or otherwise agreed in writing by the parties to this Agreement. This insurance shall include the interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors in the Project as insureds. This insurance shall include the interests of mortgagees as loss payees. If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles, unless such costs are caused by the acts, omissions, or negligence of Contractor and in such event Contractor shall pay such costs not covered because of the deductibles. Builder's Risk insurance shall include interests of NASA, the United States Air Force, the United States Navy, Owner, the Contractor, Subcontractors and sub-subcontractors in the Project.

§ 17.2.2.2 Unless the parties agree otherwise, upon Substantial Completion, the Owner shall continue the insurance required by Section 17.2.2.1 or, if necessary, replace the insurance policy required under Section 17.2.2.1 with property insurance written for the total value of the Project that shall remain in effect until expiration of the period for correction of the Work set forth in Section 18.4.

§ 17.2.2.3 If the insurance required by this Section 17.2.2 is subject to deductibles or self-insured retentions, the Owner shall be responsible for all loss not covered because of such deductibles or retentions.

§ 17.2.2.4 If the Work involves remodeling an existing structure or constructing an addition to an existing structure, the Owner shall purchase and maintain, until the expiration of the period for correction of Work as set forth in Section 18.4, "all-risks" property insurance, on a replacement cost basis, protecting the existing structure against direct physical loss or damage, notwithstanding the undertaking of the Work. The Owner shall be responsible for all co-insurance penalties.

§ 17.2.2.5 Prior to commencement of the Work, Contractor shall secure the insurance, and provide evidence of the coverage, required under this Section 17.2.2 and, upon the Owner's request, provide a copy of the property insurance policy or policies required by this Section 17.2.2. The copy of the policy or policies provided shall contain all applicable conditions, definitions, exclusions, and endorsements.

§ 17.2.2.6 Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by this Section 17.2.2, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration.

§ 17.2.2.7 Waiver of Subrogation

§ 17.2.2.7.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by and paid by property insurance required by this Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this Section 17.2.2.7 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 17.2.2.7.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 17.2.2.7.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 17.2.2.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements, written where legally required for validity, the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 17.2.3 Other Insurance Provided by the Owner

(List below any other insurance coverage to be provided by the Owner and any applicable limits.)

Coverage

Limits

§ 17.3 Performance Bond and Payment Bond

§ 17.3.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in the Contract Documents on the date of execution of the Contract. See Section 22.2 below for requirements.

§ 17.3.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

ARTICLE 18 CORRECTION OF WORK

§ 18.1 The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed, or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

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§ 18.2 In addition to the Contractor's obligations under Section 9.4, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 15.6.3, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty.

§ 18.3 If the Contractor fails to correct nonconforming Work within a reasonable time, the Owner may correct it in accordance with Section 8.3.

§ 18.4 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 18.5 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Article 18.

ARTICLE 19 MISCELLANEOUS PROVISIONS

§ 19.1 Assignment of Contract

Neither party to the Contract shall assign the Contract without written consent of the other, except that the Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 19.2 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. Venue for any dispute shall be exclusively in the State Courts in the County where the Project is located

§ 19.3 Tests and Inspections

Tests, inspections, and approvals of portions of the Work required by the Contract Documents or by applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities shall be made at an appropriate time. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 19.4 The Owner's representative:

(Name, address, email address and other information)

Heidi Corder-Jensen

hcorder-jensen@spaceflorida.gov

321-730-5301_x238

§ 19.5 The Contractor's representative:

(Name, address, email address and other information)

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Email address to be provided by Contractor Representative

§ 19.6 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

ARTICLE 20 TERMINATION OF THE CONTRACT

§ 20.1 Termination by the Contractor

If the Architect fails to certify payment as provided in Section 15.4.1 for a period of 30 days through no fault of the Contractor, or if the Owner fails to make payment as provided in Section 4.1.3 for a period of 30 days, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner payment for Work executed. Contractor shall not be entitled to any payment, damages, fees, costs, or profits for Work not yet performed.

§ 20.2 Termination by the Owner for Cause

§ 20.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 20.2.2 When any of the reasons described in Section 20.2.1 exists, the Owner, without prejudice to any other remedy the Owner may have and after giving the Contractor seven days' notice, terminate the Contract and take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor and may finish the Work by whatever reasonable method the Owner may deem expedient. Upon request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 20.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 20.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 20.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Architect, upon application, and this obligation for payment shall survive termination of the Contract.

§ 20.3 Termination by the Owner for Convenience

The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause. As the Contractor's sole remedy hereunder, Owner shall pay the Contractor for the Work completed as of the effective date of the termination of this Agreement. Contractor shall not be entitled to any payment, damages, fees, costs, or profits for Work not yet performed.

§ 20.4 In the event of any termination, the Contractor shall upon Owner's request, assign any and all subcontracts and purchase orders to Owner. Contractor shall have clauses in all its subcontracts and purchase orders allowing such assignment to Owner. As a precondition to any payment due Contractor as a result of any termination of this Agreement, Contractor shall execute any and all documents necessary to assign all rights and benefits of such subcontracts and purchase orders to Owner.

ARTICLE 21 CLAIMS AND DISPUTES

§ 21.1 Claims, disputes, and other matters in question arising out of or relating to this Contract, including those alleging an error or omission by the Architect but excluding those arising under Section 16.2, shall be referred initially to the Architect for decision. Such matters, except those waived as provided for in Section 21.11 and Sections 15.7.3 and 15.7.4, shall, after initial decision by the Architect or 30 days after submission of the matter to the Architect, be subject to mediation as a condition precedent to binding dispute resolution. Venue for mediation shall be exclusively in the State Courts of the County where the Project is located.

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§ 21.2 Notice of Claims

§ 21.2.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 18.2, shall be initiated by notice to the Architect within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 21.2.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 18.2, shall be initiated by notice to the other party.

§ 21.3 Time Limits on Claims

The Owner and Contractor shall commence all claims and causes of action against the other and arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in this Agreement whether in contract, tort, breach of warranty, or otherwise, within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 21.3. Venue for any dispute shall be exclusively in the State Courts where the Project is located.

§ 21.4 If a claim, dispute or other matter in question relates to or is the subject of a mechanic's lien, the party asserting such matter may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 21.5 The parties shall endeavor to resolve their disputes by mediation which, unless the parties mutually agree otherwise, shall in accordance with Florida Statutes.

§ 21.6 Continuing Contract Performance

Pending final resolution of a Claim, except as otherwise agreed in writing, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 21.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive claims against each other for consequential damages arising out of or relating to this Contract, except for Owner's right to liquidated damages. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for losses of use, principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, lost bonding capacity, loss of future work, loss of productivity and for loss of profit except anticipated profit arising directly from the Work properly performed.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination of this Agreement, except for Owner's right to liquidated damages, as provided in this Agreement, for Contractor's delay,

22. Other Provisions.

22.1 Owner shall be entitled to make any decision or approval required by this Agreement to be made by the Architect. Any decision of Owner shall supersede any decision of the Architect. Any time Contractor shall be required to notify or report to Architect such notice or report shall be also be made to Owner.

22.2 Bonds. Contractor shall furnish unconditional performance and payment bonds in an amount equal to 100% of the Contract Sum covering faithful performance of the Agreement and payment of all obligations arising thereunder. The cost of the bonds is included in the Contract Sum. The bonds shall comply with the requirements of Florida Statutes Section 255.05; however, "Conditional" Payment Bonds shall not be acceptable. Proper Power of Attorney

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shall accompany said bonds. Said bonds shall be delivered to the Owner. Contractor shall record the bonds in the public records of the County where the Project is located. No Work shall commence on the Project until the Notice of Commencement and copies of the Payment Bonds are recorded and certified copies thereof are posted at the Project site.

22.3. There are no intended or unintended third party beneficiaries of this Agreement, and no parties other than the Owner and the Contractor shall have the right to enforce this Agreement. Contractor is and shall remain an independent contractor and not an employee of Space Florida or an agent of the State of Florida. This Agreement shall not be construed as a teaming, joint venture or other such arrangement. Nothing in this Agreement shall grant to either party the right to make commitments of any kind for or on behalf of the other party without the prior written consent of the other party.

22.4 Discrimination Prohibited. The Contractor and the Contractor's Subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, or national origin. The Contractor shall take affirmative action to ensure that qualified applicants are employed if work is available, and that employees are treated during employment without regard to their race, religion, color, sex, or national origin. Contractor agrees to post in places available to all employees and applicants for employment, notices setting forth the policies of nondiscrimination.

22.5 Conflicts. This Agreement shall have precedence in the event of any conflicts between this Agreement and any of the Drawings, Specifications, Contractor's Proposal or Quotation Form, attachments, or other documents incorporated by reference to this Agreement.

22.6 The Contract Sum includes a \$100,000 allowance sum for the Owner's exclusive and sole use to cover costs for Owner approved Change Orders, with all unspent allowance sums accruing to the benefit of the Owner. At Final Completion, the Contract Sum shall be reduced by Change Order by the amount of the unspent allowance sum. Expenditure of Owner's allowance funds by the Contractor shall be done only with written approval of the Owner.

22.7 Contractor agrees to remove from the Project any employee, Subcontractor, or Subcontractor employee that commits any breach of the Contract Documents or any breach of the Owner's written rules and regulations regarding jobsite conduct.

22.8 Contractor shall require all construction personnel to maintain a neat general appearance at all times. Shirts, trousers, and proper shoes are required apparel. The display of vulgar words, signs, or figures is prohibited. Sandals and flip-flops are prohibited on the Project site.

22.9 Construction personnel shall not use profanity, illegal drugs, or alcohol on the Project site.

22.10 The use of radios, tape players, cd players, boom boxes, sound producing devices, and the like are prohibited on the Project site.

22.11 Smoking and all tobacco products are prohibited on the Project site, and prohibited anywhere on Owner's property. Tobacco is defined as tobacco products including, but not limited to, cigars, cigarettes, e-cigarettes, pipes, chewing tobacco and snuff. Failure to abide by this policy may result in civil penalties levied under Chapter 386, Florida Statutes and/or contract enforcement remedies.

22.12 Sales Tax Savings Program. The Owner is a not-for-profit, tax exempt organization. The Contractor shall work with and assist the Owner to prevent payment of taxes not due.

Notwithstanding anything herein to the contrary, because Owner is exempt from sales tax and wishes to generate sales tax savings for the Project. Owner reserves the right to make direct purchases of various construction materials and equipment included in the Work. Before purchasing materials or equipment for the Project or a combination of like items that exceed \$5,000 in cost, Contractor shall identify in writing to Owner all materials and equipment or a combination of like items to be included in the Work that will generate sales tax savings if purchased direct by Owner. Contractor shall comply with the written procedures for Owner Purchased materials provided by Owner to Contractor and shall incorporate a similar provision to this provision in all of its subcontracts requiring the Subcontractors'

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compliance with said procedures. Owner shall execute direct purchase orders with vendors for such Owner Purchased materials. The purchase orders shall contain Owner's Consumer Certificate of Exemption number. Owner shall acquire title to all Owner Purchased materials at the time same are delivered to the Project site. Owner shall obtain insurance on the Owner Purchased Materials and Owner shall assume all risk of loss and theft for the Owner Purchased Materials upon their delivery to the Project site and until they are incorporated into the real property. Vendors shall invoice Owner directly for the Owner Purchased Materials. Owner shall pay vendors directly for the Owner Purchased Materials. Contractor represents and warrants that it will use its best efforts to cooperate with Owner in implementing this sales tax savings program in order maximize cost savings for the Project. Upon the execution of a purchase order, Owner and Contractor shall execute a Change Order decreasing the Contract Sum by the total cost, including the saved sales tax for the materials or equipment purchased directly by Owner under said purchase order. With respect to all direct purchases by Owner, Contractor shall remain responsible for coordinating, installing, inspecting, storing, safekeeping, handling, warranting, installation, and quality control for all direct purchases. Notwithstanding anything herein to the contrary, Contractor expressly acknowledges and agrees that any materials or equipment directly purchased by Owner pursuant to this Paragraph shall be included within and covered to the same extent as all other warranties and performance guarantees provided by Contractor pursuant to the terms of the Contract Documents, including bonds. Owner assigns to Contractor any and all warranties and rights Owner may have from any manufacturer or supplier of any such direct purchases by Owner. The Parties understand that the above Owner direct purchase procedures are generally not available to purchase fabricated materials from a vendor that, in addition to fabricating them, also installs those same fabricated materials into the Project.

The Owner agrees to indemnify and hold harmless the Contractor, its Subcontractors, vendors and suppliers from and against the payment of or liability for any sales or use taxes arising out of or resulting from the Owner purchasing materials for the Project under the Owner's sales tax exempt status, and for which the Owner or the Contractor, Subcontractors, vendors or suppliers should become liable, but only upon the condition that Contractor has properly complied with the Owner's written sales tax program procedures.

22.13 Contractor shall permit Owner to have reasonable access to Contractor's records, account books, bills, invoices, payrolls, daily logs, and other records related to the Project. Contractor shall preserve such records for five (5) years after Substantial Completion of the Project.

22.14 The Contractor shall ascertain, coordinate, and minimize interruptions to Owner's library operations that exist on or near the Project sites. To avoid impacts to Owner's library operations, Contractor has anticipated the need to use non-standard work hours and has included same in the Contract Sum. No claims for extras or requests for Change Orders based upon premium or overtime work due to non-standard work hours as defined by this Section shall be submitted to Owner.

22.15 Sovereign Immunity. Space Florida's limits of liability are set forth in Section 768.28 of the Florida Statutes, and nothing herein shall be construed to extend the liabilities of Space Florida beyond that provided in Section 768.28 of the Florida Statutes. Nothing herein is intended as a waiver of Space Florida's sovereign immunity under Section 768.28 of the Florida Statutes. Nothing hereby shall inure to the benefit of any third party for any purpose, including but not limited to anything which might allow claims otherwise barred by sovereign immunity or operation of law. Furthermore, all of Space Florida's obligations under this Agreement are limited to the payment of no more than the per person amount limitation and the aggregate contained in Section 768.28 of the Florida Statutes, even if the sovereign immunity limitations of that statute are not otherwise applicable to the matters as set forth herein.

In no event shall Space Florida be liable to Contractor for indirect, special, or consequential damages, including, but not limited to, loss of revenue, loss of profit, cost of capital, or loss of opportunity regardless of whether such liability arises out of contract, tort (including negligence), strict liability, or otherwise. Space Florida shall not assume any liability for the acts, omissions, or negligence of Contractor its agents, servants, employees, or subcontractors. In all instances, Contractor shall be responsible for any injury or property damage resulting from any activities conducted by Contractor.

22.16 The Contractor and the Contractor's Subcontractors shall, in all solicitations or advertisements for employees placed by them or on their behalf, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex or national origin.

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22.17 Prohibition against Contingent Fees. Contractor warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the Contractor to solicit or secure this Agreement and that it has not paid or agreed to pay any person, company, corporation, individual, or firm, other than a bona fide employee working solely for Contractor any fee, commission, percentage, gift or other consideration contingent upon or resulting from the award or making of this Agreement.

22.18 Contractor shall be responsible for maintaining in good condition all cultivated grass plots, trees, shrubs, and landscaping on the Project site. If damaged, Contractor shall restore same to its original condition after completion of the Work.

22.19 The provisions of Florida Statute Chapter 558 are waived by both parties and shall not be applicable to this Agreement.

22.20 Public Entity Crime. Contractor affirms that it is aware of the provisions of Section 287.133(2)(a), Florida Statutes, and that at no time has Contractor been convicted of a Public Entity Crime. Contractor agrees that it shall not violate such law and further acknowledges and agrees that any conviction during the term of this Agreement may result in termination of this Contract by Owner.

22.21 Scrutinized Companies List.

a. By executing this Agreement, Contractor certifies that it is not: (1) listed on the Scrutinized Companies that Boycott Israel List, created pursuant to section 215.4725 of the Florida Statutes, (2) engaged in a boycott of Israel, (3) listed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to section 215.473 of the Florida Statutes, or (4) engaged in business operations in Cuba or Syria. Pursuant to section 287.135(5) of the Florida Statutes, Owner may immediately terminate this Agreement for cause if the Contractor is found to have submitted a false certification as to the above or if the Contractor is placed on the Scrutinized Companies that Boycott Israel List, is engaged in a boycott of Israel, has been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or has been engaged in business operations in Cuba or Syria, during the term of the Agreement. If Owner determines that the Contractor has submitted a false certification, Owner will provide written notice to the Contractor. Unless the Contractor demonstrates in writing, within 90 calendar days of receipt of the notice, that Owner's determination of false certification was made in error, Owner shall bring a civil action against the Contractor. If Owner's determination is upheld, a civil penalty equal to the greater of \$2 million or twice the amount of this Agreement shall be imposed on the Contractor, and the Contractor will be ineligible to bid on any Agreement with a Florida agency or local governmental entity for three years after the date of Owner's determination of false certification by the Contractor.

b. If federal law ceases to authorize the states to adopt and enforce the contracting prohibition in this Section, this Section shall be null and void without further action of the parties.

22.22 Public Records.

a. To the extent Contractor is acting on behalf of Owner as provided under Subsection 119.011(2) of the Florida Statutes, Contractor shall:

i. Keep and maintain public records required by Owner to perform the services under this Agreement.

ii. Upon request from Owner's custodian of public records, provide Owner with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the costs provided in Chapter 119 of the Florida Statutes or otherwise provided by law.

iii. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the Agreement term and following completion of the Agreement if the Contractor does not transfer the records to Owner.

iv. Upon completion of the Agreement, transfer, at no cost, to Owner all public records in possession of Contractor or keep and maintain public records required by Owner to perform the service. If the Contractor transfers all public records to Owner upon completion of the Agreement, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon completion of the Agreement, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to Owner, upon request

from Owner's custodian of public records, in a format that is compatible with the information technology systems of Owner.

b. If the Contractor fails to provide the public records to Owner within a reasonable time the Contractor may be subject to penalties under Section 119.10 of the Florida Statutes. Further, Owner may exercise any remedies at law or in equity, including, without limitation, the right to (i) impose sanctions and assess financial consequences, (ii) withhold and/or reduce payment, and (iii) terminate this Agreement in accordance with the terms hereof.

Contractor shall defend, at its own cost, indemnify, and hold harmless Owner, their officers, directors, and employees from and against all claims, damages, losses, and expenses, (including but not limited to fees and charges of attorneys or other professionals and court and arbitration or other dispute resolution costs) arising out of or resulting from Contractor's failure to comply with the terms of this Section.

c. **IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS AGREEMENT, CONTACT OWNER'S CUSTODIAN OF PUBLIC RECORDS FOR THIS PROJECT, DESIREE MAYFIELD AT 321-695-5301, DMAYFIELD@SPACEFLORIDA.GOV, 505 Odyssey Way, Suite 300, Exploration Park, FL 32953.**

22.23 Contractor shall not use any funds received pursuant to this Agreement for lobbying the Florida Legislature, the judicial branch, or any state agency.

22.24 Contractor represents that it is not on the State's discriminatory vendor list and that for services related to this Agreement, Contractor shall not transact business with any entity that has been placed on the State's discriminatory vendor list.

22.25 All activities under or pursuant to this Agreement are subject to the availability of appropriated funds by the Legislature of the State of Florida. Owner shall immediately notify Contractor should funds become unavailable. In such case, either party shall have the right to stop work and/or terminate this Agreement.

22.26 E-Verify. Contractor shall utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all employees hired by Contractor during the term of this Agreement; and Contractor shall expressly require any subcontractors to likewise utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all employees hired by the subcontractors during the contract term. The Department of Homeland Security's E-Verify system can be found at: http://www.dhs.gov/files/programs/gc_1185221678150.shtm

The employment by Contractor or any of its subcontractors of unauthorized aliens, as described by Section 274A(e) of the Immigration and Nationalization Act, shall be cause for termination of this Agreement.

Only those employees determined eligible to work within the United States shall be employed under this Agreement.

22.27 Contractor shall coordinate and conduct with its subcontractors a Project Warranty Inspection at the Project site on a mutually convenient date within the 14 day period before the expiration of the one (1) year warranty period.

22.28 The following documents that are incorporated by reference and Contractor shall comply with all terms, conditions, and requirements of same:

____ FDOT Funding Agreement dated June 13, 2017, contract No. GON09.____

22.29 Contractor is familiar with and shall comply with all applicable federal, state and local laws, rules, regulations, and requirements, including NASA, US Air Force, and US Navy directives, as applicable.

22.30 Contractor shall preserve all contract records and documents for the entire term of this Agreement and for five (5) years after the later of: (i) the date of submission of Contractor's final services, or (ii) until all claims (if any) regarding the Agreement are resolved. During such period of time, Contractor shall retain and maintain all records

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and make such records available for an audit as may be requested by Owner. The records shall be subject at all times to inspection, review, or audit by State personnel of the Office of the Auditor General, Chief Financial Officer, and Office of the Chief Inspector General. Owner may, at any time and for any reason whatsoever, review, audit, copy, examine and investigate in any manner, any records of Contractor which include, but are not limited to, papers, independent auditor working papers, books, documents, vouchers, bills, invoices, requests for payment, accounting records, and other supporting documentation, which according to generally accepted accounting principles, procedures and practices, sufficiently and properly reflect all costs expended in the performance of this Agreement.

22.31 To the extent applicable, Contractor shall comply with the audit requirements of Section 215.97 of the Florida Statutes and those found in Exhibit "F" attached, Audit Requirements. Contractor shall include the audit and record keeping requirements provided for in this Section and in Exhibit "F", in all subcontracts and for all sub-recipients of state funds according to Section 215.97 of the Florida Statutes. For purposes of this Agreement, "sub-recipient" shall be defined in accordance with Subsection 215.99(2)(x) of the Florida Statutes.

22.32 NASA's Right for Access and Inspection. NASA may enter the Project site for the purposes of inspections and demolition work. Contractor shall have no claim on account of such entries against NASA, or any officer, agent, employee, or related entity thereof.

22.32 Contractor warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the Contractor to solicit or secure this Agreement and that he or she has not paid or agreed to pay any person, company, corporation, individual, or firm, other than a bona fide employee working solely for the Contractor any fee, commission, percentage, gift, or other consideration contingent upon or resulting from the award or making of this Agreement.

22.33 Contractor shall require language in each of its subconsultants' contracts providing for Owner's ownership of all Project documents.

22.34 Contractor shall provide a harassment-free workplace, with any allegation of harassment given priority attention and action by management. Contractor shall insert a similar provision in accordance with this Section, in all subcontracts for this Project.

22.35 Contractor shall not be entitled to any claim for delay because of restrictions associated with accessing the Project site. The Project site is an active US government installation. There will be delays and work stoppages due to government activities at or near the Project site. Contractor's vehicles and personal will be subject to delays and inspections upon entering the property and Contractor has included these delays in its Contract Sum. Contractor shall coordinate daily with the designated Owner representative prior to arriving on-site to avoid delays and work-stoppages due to other government activities at or near the Project site. Material deliveries require minimum 48 hour prior advance coordination with Owner.

22.36 Contractor shall indemnify, defend, save and hold harmless the NASA-KSC, United States Air Force, United States Navy, State of Florida, Department of Transportation, Space Florida, and its Officers, Directors, and employees to the fullest extent permitted by law from and against all claims, damages, losses, liens, and expenses, (including but not limited to fees and charges of attorneys or other professionals and court and arbitration or other dispute resolution costs) to the extent caused by (i) the performance of services under this Agreement by Contractor or any person or organization directly, or indirectly, employed by Contractor to perform or furnish any of the services or anyone for whose acts any of them may be liable; (ii) breach of the terms of this Agreement by Contractor or any person or organization directly, or indirectly, employed by Contractor to perform or furnish any of the services or anyone for whose acts any of them may be liable; (iii) violations of applicable law by any person or organization directly or indirectly employed by Contractor to perform or furnish any services under this Agreement or anyone for whose acts any of them may be liable; (iv) injury or death of any third parties (including Space Florida employees and agents and those of Contractor), or damage to property to the extent attributable to the negligence or misconduct of Contractor or any person or organization directly, or indirectly, employed by Contractor to perform or furnish any of the services under this Agreement or anyone for whose acts any of them may be liable; or (v) the negligence, recklessness, or intentional wrongful misconduct of Contractor and persons employed or utilized by Contractor in the performance of this Agreement.

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In claims against any person or entity indemnified under this Section by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this Section shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

At Space Florida's election and upon notification to Contractor, Contractor shall assume the defense or settlement of any third-party claim arising under this Agreement with counsel satisfactory to Space Florida; provided, however that Contractor shall not settle any such claim in an amount over \$10,000.00 without Space Florida's prior written consent. Notwithstanding the foregoing, (a) Space Florida shall have the right at Space Florida's option and expense, to participate fully in the defense or settlement of any third-party claim; and (b) if Contractor does not continuously defend or settle any third-party claim within 30 days after it is notified of the assertion or commencement thereof, then (i) Space Florida shall have the right, but not the obligation, to undertake the defense or settlement of such claim for the account and at the risk of the Contractor, and (ii) Contractor shall be bound by any defense or settlement that Space Florida may make as to such claim. Space Florida shall also be entitled to join Contractor in any third-party claim for the purpose of enforcing any right of indemnity hereunder.

22.37 Safety and Health Plan. Prior to commencement of the Work the Contractor shall submit to the Owner a Safety and Health Plan, or similar documentation, describing how the Contractor intends to ensure the safety and health of personnel and protect property from damage. The Safety and Health Plan, or similar documentation, shall include descriptions of policies, procedures, and techniques for all anticipated working conditions that will be encountered throughout the services to be provided.

22.38 Temporary buildings (storage sheds, yards, shops, offices, and other facilities), if used, may be erected by Contractor but only with approval by Owner and shall be built to meet all CCAFS codes with labor and materials furnished by Contractor without additional expense to Owner, the U.S. Government, the U.S. Air Force, or the U.S. Navy. One (1) week prior to commencing work, Contractor shall provide Owner representative with a list of proposed temporary facilities or other equipment requiring a lay down area. Upon completion of the Work, such temporary facilities, equipment and utilities shall be removed by Contractor at Contractor's sole expense within seven (7) calendar days.

22.39 Access. Access by Contractor to NASA facilities or property is contingent upon compliance with NASA security and safety policies and guidelines including, but not limited to, standards on badging, credentials, and facility and IT system/application access.

22.40 There are no intended or unintended third party beneficiaries of this Agreement, and no parties other than the Owner and the Contractor shall have the right to enforce this Agreement.

22.41 Conflicts. This Agreement shall have precedence in the event of any conflicts between this Agreement and any of the Drawings, Specifications, Contractor's Proposal or Quotation Form, attachments, or other documents incorporated by reference to this Agreement.

22.42 Contractor shall maintain a redlined set of drawings at the job site to show any deviations made from the Contract drawings, and which reflect the "As-Built" conditions. These drawings shall clearly identify all dimensions established in the field and all deviations to the drawings, as approved by the Owner representative. All red-line drawings shall be turned-over and provided to Owner within two (2) weeks of Final Completion.

22.43 If the scope of Work to be performed by Contractor is determined to be subject to the requirements of the Davis-Bacon Act, Contractor shall comply with all wage determinations and other applicable provisions.

22.44 Prohibition of Use of NASA Name and Emblems. Contractor shall not use "National Aeronautics and Space Administration" or "NASA" in a way that creates the impression that a product or service has the authorization, support, sponsorship, or endorsement of NASA, which does not, in fact, exist. Contractor may not use NASA emblems (i.e., NASA Seal, NASA Insignia, NASA logotype, NASA Program Identifiers, and the NASA Flag) without review and approval by both Owner and NASA.

22.45 Safety.

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- a. Contractor shall comply with Kennedy NASA Procedural Requirements (KNPR) 8715.3-3, Kennedy Space Center ("KSC") Safety Procedural Requirements for Owner Organization's Operating in Exclusive-Use Facilities, with the tailored version of KNPR 8715.3-3 Chapter 7 replacing Chapter 7 of the KNPR.
- b. Contractor shall comply with the tailored version of KNPR 8715.3 - 3, Chapter 7 Mishaps and Close Calls as follows:
- i. KSC-Reportable Mishaps are unplanned events arising from the acts or omissions of Contractor 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 Owner or Contractor, its agents or invited guests.
 - Damage to property outside the Shuttle Landing Facility defined area.
 - High visibility or high public interest event, including events that could bring OSHA or media attention to NASA.
- c. Contractor shall report all KSC-Reportable Mishaps to Owner, within a reasonable time upon the event being known (after appropriate emergency/medical response is notified and prior to the notification of OSHA), by notifying the Owner's Project Manager identified in this Agreement.
- d. Contractor will support the safety culture at KSC, and report any unsafe activity, condition, event, or source of danger that they observe at KSC to Owner.
- e. Contractor shall comply with NASA regulations, and all other laws, policies, and guidelines that pertain to security, fire and emergency management.

22.46 Waiver of Claims as Required by NASA. Contractor hereby waives all claims against Owner, NASA, its related entities, and employees of NASA and employees of NASA's related entities for injury, death, damage, or loss arising from or related to activities conducted under this Agreement for any injury to, or death of, Contractor's employees or the employees of Contractor's related entities, or for damage to, or loss of, Contractor's property or the property of its related entities arising from or related to activities conducted under this Agreement, whether such injury, death, damage, or loss arises through negligence or otherwise, except in the case of Owner's or NASA's willful misconduct.

22.47 ENVIRONMENTAL COMPLIANCE.

1. Contractor 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, including items related to the space program. In the event such items are discovered at the Airport, Contractor shall cease its activities at the site and immediately notify the Space Florida's Airfield Manager.
2. Contractor shall take measures to prevent the release of hazardous materials at, about, or beneath the Airport. Contractor shall immediately report spills, releases, or emissions of hazardous materials that exceed a "Reportable Quantity" to Space Florida's Airfield Manager. 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.
3. Contractor 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 the Space Florida Aviation Manager.
4. Contractor shall comply with applicable oil pollution prevention regulations under Title 40 Part 112 of the Code of Federal Regulations.

22.48 Contractor hereby waives all claims against NASA, its related entities, and employees of NASA and employees of NASA's related entities for injury, death, damage, or loss arising from or related to activities conducted under this Agreement. Contractor waives all claims against the Government (except for such claims which result from the gross negligence or willful misconduct of the Government or its agents) for any such loss, damage, personal injury or death occurring as a consequence of the conduct of activities or the performance of Contractor's responsibilities under this Agreement.

22.49 Contractor is encouraged to use Florida's minority and service-disabled veteran businesses as subcontractors under this Agreement. The Certified Vendor Directory can be accessed from the website of the Florida Department of Economic Opportunity of Management Services, Office of Supplier Diversity located at: https://www.dms.myflorida.com/agency_administration/office_of_supplier_diversity_osd

22.50 It is the policy of FDOT that disadvantaged business enterprises as defined in 49 CFR Part 26, as amended, shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with FDOT funds under this Agreement. Construction Manager and its subcontractors agree to ensure that Disadvantaged Business Enterprises as defined in applicable federal and state regulations have the opportunity to participate in the performance of subcontracts under this Agreement. In this regard, Construction Manager shall take all necessary and reasonable steps in accordance with applicable federal and state regulations, to ensure that the Disadvantaged Business Enterprises have the opportunity to compete for and perform subcontracts.

22.51 Prohibited Interests: No member, officer, or employee of Space Florida during this tenure or for two years thereafter shall have any interest, direct or indirect, in this Contract or the proceeds thereof. Construction Manager and its subcontractors shall not enter into any contract, subcontract, or arrangement in connection with the Project or any property included or planned to be included in the Project, in which any member, officer, or employee of Owner during the term of this Agreement and for two years thereafter has any interest, direct or indirect. If any such present or former member, officer, or employee involuntarily acquires or had acquired prior to the beginning of his or her tenure with Owner, any such interest, and if such interest is immediately disclosed to Owner, Owner with prior approval of FDOT, may waive the prohibition contained in this subsection, provided, that any such present member, officer or employee shall not participate in any action by Owner relating to such contract, subcontract, or arrangement. Construction Manager shall insert in each of their subcontracts, the following provision: "No member, officer, or employee of Space Florida during the term of this Agreement and for two years thereafter shall have any interest, direct or indirect, in this contract or the proceeds thereof."

This Agreement entered into as of the day and year first written above.

OWNER (Signature)

CONTRACTOR (Signature)

(Printed name and title)

(Printed name and title)

Exhibit A – Determination of the Cost of the Work For Change Order Work

COST OF THE WORK

§ 6.1 Costs to Be Reimbursed

§ 6.1.1 The term Cost of the Work shall mean the actual costs necessarily incurred by the Contractor in the proper performance of the Work. Such costs shall be at rates not higher than the standard paid at the place of the Project except with prior consent of the Owner. The Cost of the Work shall include only the items set forth in Sections 6.1 through 6.7.

§ 6.1.2 Where any cost is subject to the Owner's prior approval, the Contractor shall obtain this approval prior to incurring the cost. The parties shall endeavor to identify any such costs prior to executing Guaranteed Maximum Price Amendment.

§ 6.2 Labor Costs

§ 6.2.1 Wages of construction workers directly employed by the Contractor to perform the construction of the Work at the site or, with the Owner's prior approval, at off-site workshops.

§ 6.2.2 Wages or salaries of the Contractor's supervisory and administrative personnel when stationed at the site with the Owner's prior approval.

(If it is intended that the wages or salaries of certain personnel stationed at the Contractor's principal or other offices shall be included in the Cost of the Work, identify below, the personnel to be included, whether for all or only part of their time, and the rates at which their time will be charged to the Work.)

None.

§ 6.2.3 Wages and salaries of the Contractor's supervisory or administrative personnel (including Contractor's Project Manager) engaged at factories, workshops or on the road, in expediting the production or transportation of materials or equipment required for the Work, but only for that portion of their time required for the Work. Prior to commencing the Work, the Contractor shall submit to the Owner for approval, a list of supervisory and field office personnel, their duties on the Work and their respective pay rates, and anticipated hours for the Project that will be assigned as a Cost of the Work. Time and wages beyond 40 hours per week for salaried personnel will not be reimbursed.

§ 6.2.4 Costs paid or incurred by the Contractor for taxes, insurance, contributions, assessments and benefits required by law or collective bargaining agreements and, for personnel not covered by such agreements, customary benefits such as sick leave, medical and health benefits, holidays, vacations and pensions, provided such costs are based on wages and salaries included in the Cost of the Work under Sections 6.2.1 through 6.2.3.

§ 6.2.5 Relocation and temporary out of town living costs of personnel, but only if approved by Owner in writing.

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§ 6.3 Subcontract Costs

Payments made by the Contractor to Subcontractors in accordance with the requirements of the subcontracts.

§ 6.4 Costs of Materials and Equipment Incorporated in the Completed Construction

§ 6.4.1 Costs, including transportation and storage, of materials and equipment incorporated or to be incorporated in the completed construction.

§ 6.4.2 Costs of materials described in the preceding Section 6.4.1 in excess of those actually installed to allow for reasonable waste and spoilage. Unused excess materials, if any, shall become the Owner's property at the completion of the Work or, at the Owner's option, shall be sold by the Contractor. Any amounts realized from such sales shall be credited to the Owner as a deduction from the Cost of the Work.

§ 6.5 Costs of Other Materials and Equipment, Temporary Facilities and Related Items

§ 6.5.1 Costs of transportation, storage, installation, maintenance, dismantling and removal of materials, supplies, temporary facilities, machinery, equipment and hand tools not customarily owned by construction workers that are provided by the Contractor at the site and fully consumed in the performance of the Work. Costs of materials, supplies, temporary facilities, machinery, equipment and tools that are not fully consumed shall be based on the cost or value of the item at the time it is first used on the Project site less the value of the item when it is no longer used at the Project site. Costs for items not fully consumed by the Contractor shall mean fair market value.

§ 6.5.2 Rental charges for temporary facilities, machinery, equipment and hand tools not customarily owned by construction workers that are provided by the Contractor at the site and costs of transportation, installation, minor repairs, dismantling and removal. Rates of Contractor-owned equipment and quantities of equipment shall be subject to the Owner's prior approval. The total rental cost of any piece of equipment for the duration of the Project that the Contractor or any related party owns shall not exceed 75% of the fair market value of that equipment at the commencement of the rental period. Where a rental agreement contains an option to purchase and this option is exercised, the equity accrued shall be credited to the Owner against the total rental cost of that equipment on the Work. Prior to beginning the Work, the Contractor shall submit a list to the Program Manager and Owner of rental equipment owned by the Contractor or a related party of the Contractor indicating the fair market value at commencement of the Work and the proposed rental rates. The Contractor shall attach to each monthly Application for Payment an itemized list of rental equipment owned by the Contractor or a related party and the applicable rates for such equipment used on the Project during that period.

§ 6.5.3 Costs of removal of debris from the site of the Work and its proper and legal disposal.

§ 6.5.4 Costs of document reproductions, facsimile transmissions and long-distance telephone calls, postage and parcel delivery charges, telephone service at the site and reasonable petty cash expenses of the site office. There shall be no markup on these expenses.

(Paragraph deleted)

§ 6.5.5 That portion of the reasonable expenses of the Contractor's supervisory or administrative personnel incurred while traveling in discharge of duties connected with the Work.

§ 6.5.6 Costs of materials and equipment suitably stored off the site at a mutually acceptable location, subject to the Owner's prior approval.

(Paragraph deleted)

§ 6.5.7 Job site vehicle shall be limited to one per site or as agreed to in writing by the Owner. Rental rates for the job site vehicle shall include gas, maintenance, repairs, and taxes and licenses and shall not be billed separately. This single job site vehicle is in addition to the supervisors' vehicle allowances.

§ 6.6 Miscellaneous Costs

(Paragraphs deleted)

§ 6.6.1 Premiums for that portion of insurance and bonds required by the Contract Documents that can be directly attributed to this Contract. Self-insurance for either full or partial amounts of the coverages required by the Contract Documents, with the Owner's prior approval. If the Owner optionally implements and funds directly an Owner Controlled Insurance Program (OCIP) for the Project, no insurance costs other than the insurance costs required in the OCIP contract provisions to be paid by Contractor shall be included in the Cost of the Work. However, the cost of the Performance and Payment Bonds required for the Contractor by this Agreement shall be included in the Cost of the Work.

§ 6.6.2 Sales, use or similar taxes imposed by a governmental authority that are related to the Work and for which the Contractor is liable.

§ 6.6.3 Fees and assessments for the building permit and for other permits, licenses and inspections for which the Contractor is required by the Contract Documents to pay.

§ 6.6.4 Fees of laboratories for tests required by the Contract Documents, except those to be provided by the Owner and those related to defective or nonconforming Work for which reimbursement is excluded by the Contract Documents, and which do not fall within the scope of Section 6.7.3.

§ 6.6.5 Royalties and license fees paid for the use of a particular design, process or product required by the Contract Documents.

§ 6.6.6 Small tools shall be treated as a Cost item and are defined as those tools costing five hundred dollars (\$500.00) or less. A record showing the disposition of these tools is to be on file at the Contractor's office on the project site. Ownership of small tools not consumed during construction shall remain with the Owner upon completion of the Project.

§ 6.6.7 Deposits lost for causes other than the Contractor's negligence or failure to fulfill a specific responsibility in the Contract Documents.

§ 6.6.8 Legal, mediation and arbitration costs, including attorneys' fees, other than those arising from disputes between the Owner and Contractor, reasonably incurred by the Contractor after the execution of this Agreement in the performance of the Work and with the Owner's prior approval, which shall not be unreasonably withheld.

§ 6.6.9 In lieu of renting certain items of equipment, machinery and tools, valued at more than five hundred dollars (\$500.00) from the Contractor or other third parties, the Owner reserves the right to have those items purchased and maintained as a Cost of the Work. A record showing the

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disposition of these items is to be on file at the Contractor's office on the project site. Ownership of the items not consumed during construction shall remain with the Owner upon completion of the Project.

§ 6.6.10 Bond costs for Contractor's subcontractors.

§ 6.7 Other Costs and Emergencies

§ 6.7.1 Other costs incurred in the performance of the Work if, and to the extent, approved in advance in writing by the Owner.

§ 6.7.2 Costs incurred in taking action to prevent threatened damage, injury or loss in case of an emergency affecting the safety of persons and property.

§ 6.7.3 Costs of repairing or correcting damaged or nonconforming Work executed by the Contractor, Subcontractors or suppliers, provided that such damaged or nonconforming Work was not caused by negligence or failure to fulfill a specific responsibility of the Contractor and only to the extent that the cost of repair or correction is not recovered by the Contractor from insurance, sureties, Subcontractors, suppliers, or others.

§ 6.7.4 The costs described in Sections 6.1 through 6.7 shall be included in the Cost of the Work, unless such costs are excluded by the provisions of Section 6.8.

§ 6.8 Costs Not To Be Reimbursed

§ 6.8.1 The Cost of the Work shall not include the items listed below:

- .1 Salaries and other compensation of the Contractor's personnel stationed at the Contractor's principal office or offices other than the site office, except as specifically provided in Section 6.2;
- .2 Expenses of the Contractor's principal office and offices other than the site office;
- .3 Overhead and general expenses, except as may be expressly included in Sections 6.1 to 6.7;
- .4 The Contractor's capital expenses, including interest on the Contractor's capital employed for the Work;
- .5 Except as provided in Section 6.7.3 of this Agreement, costs due to the negligence or failure of the Contractor, Subcontractors and suppliers or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable to fulfill a specific responsibility of the Contract;
- .6 Any cost not specifically and expressly described in Sections 6.1 to 6.7;
- .7 Costs, other than costs included in Change Orders approved by the Owner, that would cause the Guaranteed Maximum Price to be exceeded; and
- .8 Costs for services incurred during the Preconstruction Phase, unless provided for in a separate Change Order.
- .9 Payments to Contractor's employees over and above their regular pay (bonuses, incentive pay, profit sharing, severance pay, etc.), including salary increases not identified in the Contractor's bid proposal.
- .10 Technology, Data Processing, Project Specific Web Sites, or Project Management System Cost incurred by the Contractor in preparing the Project Schedule, Payroll, Accounting, Project Cost Reports or Project Status Reports and any other reports necessary to the progress of the Work.
- .11 Any fees paid to Contractor organizations (AGC, ABC, etc.).
- .12 Contractor's business license.
- .13 Recruitment or training costs of personnel.

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- .14 Overtime expense of any salaried personnel.
- .15 Except as provided in Section 6.7, any cost not specifically and expressly described in Section 6.
- .16 Bond costs for Contractor's suppliers.

§ 6.9 Discounts, Rebates and Refunds

§ 6.9.1 Cash discounts obtained on payments made by the Contractor shall accrue to the Owner. Trade discounts, commissions, volume discounts, rebates, refunds and amounts received from sales of surplus materials and equipment shall accrue to the Owner, and the Contractor shall make provisions so that they can be obtained.

§ 6.9.2 Amounts that accrue to the Owner in accordance with the provisions of Section 6.9.1 shall be credited to the Owner as a deduction from the Cost of the Work.

(Table deleted)(Paragraphs deleted)

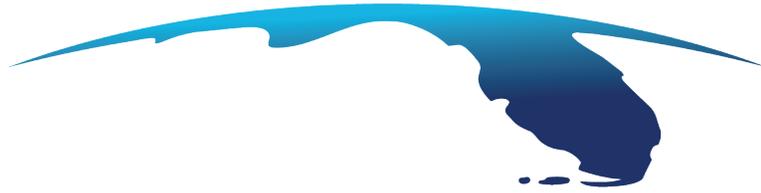
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SPACE FLORIDA



**Attachment “C”
Project Manual**

S P A C E F L O R I D A



**ECONOMIC DEVELOPMENT TRANSPORTATION
PROJECT FUND (EDTPF) INFRASTRUCTURE
IMPROVEMENTS –**

SIGNALIZATION PACKAGE

RFB-SF-01-0-2019

**BID DOCUMENTS
PROJECT MANUAL**

**Prepared for:
Space Florida**

**Dated:
September 5, 2019**

**ECONOMIC DEVELOPMENT TRANSPORTATION PROJECT FUND (EDTPF)
INFRASTRUCTURE IMPROVEMENTS – SIGNALIZATION PACKAGE**

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SECTION	TITLE
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DIVISION 00 - BIDDING AND CONTRACT REQUIREMENTS

(Provided by Owner via Bid Advertisement)

DIVISION 01 - GENERAL REQUIREMENTS

(As applicable, the language provided within the following apply)

01 11 00	SUMMARY
01 21 00	OWNER’S ALLOWANCES
01 22 00	MEASUREMENT AND PAYMENT
01 31 10	CONTROL OF WORK
01 31 13	PROJECT COORDINATION
01 32 18	CONSTRUCTION SCHEDULE, PHASING (BAR CHART)
01 32 33	PHOTOGRAPHIC DOCUMENTATION
01 33 18	SUBMITTAL PROCEDURES
01 35 13	PROJECT PROCEDURES FOR AVIATION AND SPACEPORT FACILITIES
01 35 43	PREVENTION, CONTROL AND ABATEMENT OF EROSION AND WATER POLLUTION
01 35 50	CONSTRUCTION SAFETY AND SECURITY REQUIREMENTS
01 41 00	INCLUSION OF FDOT STANDARD SPECIFICATIONS AND ROADWAY STANDARDS
01 42 16	DEFINITIONS AND STANDARDS
01 45 00	QUALITY CONTROL SERVICES
01 50 00	TEMPORARY FACILITIES
01 51 00	UTILITIES
01 74 19	CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL
01 78 00	PROJECT CLOSEOUT
01 78 36	WARRANTIES
01 79 00	DEMONSTRATION AND TRAINING

**DIVISION II AND III –FLORIDA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
SPECIFICATIONS**

FDOT	SPECIAL PROVISIONS/TECHNICAL SPECIFICATIONS
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APPENDIX

1. TERRACON GEOTECHNICAL ENGINEERING REPORT DATED 08/28/19
2. EXAMPLE OF NASA KSC FORM 26-312 UTILITY LOCATE/EXCAVATION PERMIT REQUEST (DIG PERMIT) 19184 FOR PROJECT'S GEOTECHNICAL BORINGS, DATED 06/04/19
3. EXAMPLE OF USAF FORM 103 BASE CIVIL ENGINEERING WORK CLEARANCE REQUEST (DIG PERMIT) FOR PROJECT'S GEOTECHNICAL BORINGS, DATED 06/12/19
4. NASA KSC RECORD OF ENVIRONMENTAL CONSIDERATION NO. 10678 DATED 06/18/19

END OF TABLE OF CONTENTS

DIVISION 1

SECTION 01 11 10
SUMMARY

PART 1 - GENERAL

1.01 DESCRIPTION

A. Project/Work Identification:

**ECONOMIC DEVELOPMENT TRANSPORTATION PROJECT FUND (EDTPF)
INFRASTRUCTURE IMPROVEMENTS – SIGNALIZATION PACKAGE**

Cape Canaveral Spaceport, Florida

B. Project Work Description:

1. The EDTPF Infrastructure Improvements – Signalization Package (Project) includes work items shown within the bid documents (plans and specifications) for complete and operational signalized intersections and acceptance of the property owners: NASA, US Air Force, Canaveral Port Authority/FDOT, and Space Florida. The following is a summary of major work items at the intersections below:

- a. Space Commerce Way and NASA Parkway– Removal of existing eastbound traffic signal mast arm assembly, and placement of two new eastbound traffic signal mast arms assembly. NASA is land owner for this intersection.
- b. NASA Parkway and KSC Visitor Complex North Entrance – Removal of existing traffic signal mast arm assembly (both directions), placement of two new traffic signal mast arms (both directions), one new pedestal mounted traffic signal (eastbound), new guardrail, and Florida Power and Light power line de-energizing coordination. NASA is land owner for this intersection.
- c. Kennedy Parkway and Westbound Ramp to NASA Parkway – Trim existing end of mast arm and relocate traffic signal heads. NASA is land owner for this intersection.
- d. Kennedy Parkway and Schwartz Road – Trim existing southbound traffic mast arm/relocate traffic signal heads and install one pedestal mounted traffic signal. NASA is land owner for this intersection.
- e. Kennedy Parkway and Saturn Causeway – Removal of existing pedestal traffic signals and placement of new pedestal traffic signals. NASA is land owner for this intersection.
- f. SR-401 and Grouper Road (Port Canaveral/FDOT) – Removal of existing eastbound traffic signal mast arm assembly, new traffic mast arm assembly for both direction, and removal of westbound

traffic mast arm/signals. FDOT/Canaveral Port Authority are land owner for this intersection.

- g. Phillips Parkway and Poseidon Avenue– Removal of existing eastbound traffic signal mast arm assembly, removal of existing westbound traffic arm signals, install new traffic signal mast arm assembly (both directions), install new pedestal mounted traffic signal. USAF 45th Space Wing is land owner for this intersection.
- h. Other miscellaneous items to support signalization modifications i.e., mobilization, maintenance of traffic, erosion control, demolition, mast arms, foundations, conduit/electrical modifications, traffic signalization equipment, video detection and ancillary components, pavement markings, markings removal, sign panels, traffic controller assembly, signage modifications etc.
- i. Coordination of work activities with NASA KSC and USAF.
- j. Owner’s Allowance.

This Project will be constructed under a single prime contract.

D. Contract Documents:

- 1. Requirements of the Work are contained in the Contract Documents, and include cross-references herein to published information, which is not necessarily bound therewith.

E. Intent:

- 1. The intent of the Contract is to provide for construction and completion in a workmanlike manner, in every detail, of the Work described. It is further intended that the Contractor shall furnish all labor, materials, equipment, tools, transportation, and supplies required to complete the Work in a workmanlike manner in accordance with the Contract Documents.

1.02 LIMITS OF CONSTRUCTION

- A. All existing facilities disturbed outside the construction limits indicated on Plans, shall be restored, to the Owner's satisfaction, at the Contractor's expense.

1.03 CONSTRUCTION LAYOUT AND STAKES

- A. The Contractor shall furnish all lines and measurements necessary for the proper protection and control of the work under these Contract Documents.

1.04 SCHEDULING

- A. The Contractor shall be responsible for the planning and scheduling, and the coordination of all Work performed under the Contract Documents, and the entire project as a whole so that materials will arrive on schedule and installation will proceed without delay.

1.05 COOPERATION BETWEEN CONTRACTORS

- A. The Owner reserves the right to contract for and perform other or additional construction on or near the Work covered by the Contract Documents.
- B. There will be other contractors working near project limits for NASA, USAF, Port Canaveral and other entities. When separate contracts are let within or near the limits of this Project, the Contractor shall conduct their work so as not to interfere with or hinder the progress of completion of the construction performed by other contractors.
- C. The Contractor shall arrange his/her Work and shall place and dispose of the materials being used as not to interfere with the operations of the other contractors within or near the limits of this Project. The Contractor shall join his/her Work with that of the others in an acceptable manner and shall perform it in proper sequence to that of the others.

END OF SECTION 01 11 10

SECTION 01 21 00
OWNER'S ALLOWANCES

PART 1 - GENERAL

The allowance for this project is established to assist Owner and Contractor to construct Signalization Improvements to include: Florida Power and Light transmission power line deenergizing, NASA and USAF (land owner) requirements or permitting costs, and other miscellaneous/unforeseen conditions that may arise during the construction of the project.

1.01 DESCRIPTION OF REQUIREMENTS

- A. Owner's allowances in the amounts indicated, and as described below have been established for certain types of Work. The Contractor shall perform such Work only upon receipt of approval from Owner.
- B. Definitions and Explanations: Certain requirements of the Work related to each allowance are shown and specified in the Contract Documents. The allowance has been established in lieu of additional requirements for that Work, and further requirements thereof (if any) will be issued by Owner.
 - 1. Coordinate allowance Work with related Work to ensure that each selection is completely integrated and interfaced with related Work.

1.02 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Technical specification sections, apply to this section.

1.03 SUMMARY

- A. Section includes administrative and procedural requirements governing allowances.
 - 1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.
 - 2. Allowances from this section shall be listed and subtotaled on the bid forms provided. The total value for all allowances will be included in the Grand Total bid on the Bid Price and Signature Page provided in the bid forms.
- B. Types of allowances include the following:
 - 1. Lump sum allowances.
 - 2. Quantity allowances.

1.04 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, Contractor to provide the Owner/Engineer with the date when final selection and purchase of each product, system or service described by an allowance must be completed to avoid delaying the work.
- B. At Owner/Engineer's request, Contractor to obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the work.
- C. Contractor to Purchase products, and systems or services selected by Owner/Engineer from the designated supplier/vendor. A prequalified service vendor - Signal Connections has been included as part of this allowance account.

1.05 ACTION SUBMITTALS

- A. Contractor to submit proposals for purchase of products or systems included in allowances, in the form specified for Field Orders.

1.06 INFORMATIONAL SUBMITTALS

- A. Contractor to submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- B. Contractor to coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.07 COORDINATION

- A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.08 LUMP-SUM AND QUANTITY ALLOWANCES

- A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner/Engineer under allowance and shall include taxes, freight, and delivery to project site. Use each allowance only as directed by Owner/Engineers review and only by approved Field Orders that indicate amounts to be charged to each allowance.
- B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner under allowance shall be included as part of the Contract Sum and not part of the allowance.
- C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.

1. If requested by Owner/Engineer, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.
- D. At Project Closeout, credit unused amounts remaining in each allowance to Owner by Field Order.
- E. All costs associated for construction coordination and/or project management between the Contractor and Owner/Engineer/CEI/Vendor shall be incidental to the lump sum pay item for each signalization intersection.

1.09 ADJUSTMENT OF ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, prepare a Field Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
1. Include installation costs in purchase amount only where indicated as part of the allowance.
 2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
 3. Submit substantiation of a change in scope of work, if any, claimed in Field Orders related to unit-cost allowances.
 4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.
- B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.
1. Do not include Contractor's or subcontractor's indirect expense in the Field Order proposed cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
 2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

PART 2 - PRODUCTS

2.01 The Owner's Allowance is set up to accommodate unknown and unforeseen conditions associated with the following:

- A. Florida Power and Light transmission power line deenergizing.
- B. NASA and USAF (land owner) easement requirements costs.

- C. Other miscellaneous/unforeseen conditions that may arise during the construction of the project.

PART 3 - EXECUTION

3.01 EXAMINATION

Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.02 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.03 SCHEDULE OF OWNER'S ALLOWANCES

- A. These allowances shall cover the net cost of the materials and equipment delivered and unloaded at the Site, all applicable taxes, labor and installation costs as applicable.
- B. Should the aggregate of charges for all approved allowance work items issued by the Owner under the Allowances be less than the amount of the Allowance, the Final Contract Sum shall be decreased by the amount of the difference. No Work shall be performed that would cause total charges under the Allowances to exceed the authorized allowance amount. The authorized allowance amount may be increased by Change Order.
- C. The following allowance amounts shall be included in the Contract Sum Bid Amount on the Bid Form:

Space Florida Pay Item No. 8 – Owner's Allowance: \$150,000

END OF SECTION 01 21 00

SECTION 01 22 00
MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 MEASUREMENT

A. Measurement of Quantities Lump Sum:

The following requirements, in general, apply to those to items listed as Lump Sum:

1. The term "Lump Sum" when used as a Unit Price Item of payment will mean complete payment for the Work described in the Contract Documents.
2. When a complete signal, structure, or structural unit (in effect, "Lump Sum" Work) is specified as the unit of measurement, the unit will be construed to include all necessary incidentals, permits, mobilization, maintenance of traffic, labor, materials, fittings and accessories for a complete operation system or work item.

B. Measurement of Quantities Unit Price:

The following requirements, in general, apply to those to items listed by unit prices:

1. All "Unit Price" Work completed under the Contract will be measured by the Engineer or Owner, using United States Customary Units of Measurement.
2. The method of measurement and computations to be used in determination of quantities of material furnished and of Work performed under the Contract will be those methods generally recognized as conforming to good engineering practice.
3. Unless otherwise specified, longitudinal measurements for area computations will be made horizontally, and no deductions will be made for individual fixtures (or leave-outs) having an area of 9 square feet or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the Plans or ordered in writing by the Engineer.
4. Structures will be measured according to neat lines shown on the Plans or as altered to fit field conditions.
5. Unless otherwise specified, all Contract Unit Price Items which are measured by the linear foot such as electrical ducts, conduits, pipe culverts, underdrains, and similar items shall be measured parallel to the base or foundation upon which such items are placed.
6. In computing volumes of excavation the average end area method or other acceptable methods will be used.
7. The thickness of plates and galvanized sheet used in the manufacture of corrugated metal pipe, metal plate pipe culverts and arches, and metal cribbing will be specified and measured in decimal fraction of inches.

8. The term "ton" will mean the short ton consisting of 2,000 pounds avoirdupois. All materials which are measured or proportioned by weights shall be weighed on accurate, approved scales, by competent, qualified personnel at locations designated by the Engineer or Owner. If material is shipped by rail, the car weight may be accepted, provided that only the actual weight of material is paid for. However, car weights will not be acceptable for material to be passed through mixing plants. Trucks used to haul material being paid for by weight shall be weighed empty daily at such times as the Engineer or Owner directs, and each truck shall bear a plainly legible identification mark.
9. Materials to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured therein at the point of delivery. Vehicles for this purpose may be of any size or type acceptable to the Engineer or Owner, provided that the body is of such shape that the actual contents may be readily and accurately determined. All vehicles shall be loaded to at least their water level capacity and all loads shall be leveled when the vehicles arrive at the point of delivery.
10. When requested by the Contractor and approved by the Engineer or Owner in writing, material specified to be measured by the cubic yard may be weighed and such weights will be converted to cubic yards for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the Engineer or Owner and shall be agreed to by the Contractor before such method of measurement of pay quantities is used.
11. Bituminous materials will be measured by the gallon or ton. When measured by volume, such volumes will be measured at 60-degrees F or will be corrected to the volume at 60-degrees F using ASTM D 1250 for asphalts or ASTM D 633 for tars.
12. Net certified scale weights or weights based on certified volumes in the case of rail shipments will be used as a basis of measurement, subject to correction when bituminous material has been lost from the car or the distributor, wasted, or otherwise not incorporated in the Work.
13. When bituminous materials are shipped by rail or truck transport, net certified weights by volume, subject to correction for loss or foaming may be used for computing quantities.
14. Cement will be measured by the ton or hundredweight.
15. Timber will be measured by the thousand feet board measure (MFBM) actually incorporated in the structure. Measurement will be based on nominal widths and thickness and the extreme length of each piece.
16. When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe conduit, etc. and these items are identified by gage, unit weight, section dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.

17. Scales for weighing materials which are required to be proportioned or measured and paid for by weight shall be furnished, erected, and maintained by the Contractor, or be certified permanently installed commercial scales.
18. Scales shall be accurate within one-half percent of the correct weight throughout the range of use. The Contractor shall have the scales checked under the observation of the Engineer or Owner before beginning Work and at such other times as requested. The intervals shall be uniform in spacing throughout the graduated or marked length of the beam or dial and shall not exceed one-tenth of one percent of the nominal rated capacity of the scale, but not less than one pound. The use of spring balances will not be permitted.
19. Beams, dials, platforms, and other scale equipment shall be so arranged that the operator and inspector can safely and conveniently view them.
20. Scales shall be tested for accuracy and serviced before use at a new site. Platform scales shall be installed and maintained with the platform level and rigid bulkheads at each end.
21. Scales "overweighing" (indicating more than correct weight) shall not be permitted to operate and all materials received subsequent to the last previous correct weighing-accuracy test will be reduced by the percentage of error in excess of one-half of one percent.
22. In the event inspection reveals the scales have been "underweighing" (indicating less than correct weight) they shall be adjusted and no additional payment to the Contractor will be allowed for materials previously weighed and recorded.
23. All costs in connection with furnishing, installing, certifying, testing and maintaining scales for furnishing check weights and scale house; and for all other items specified in this section, for the weighing of materials for proportioning or payment, shall be included in the Unit Contract Prices for the various items of the Project.
24. When the estimated quantities for a specific portion of the Work are designated as the pay quantities in the Contract, they shall be the final quantities for which payment for such specific portion of the Work will be made, unless the dimensions of said portion of the Work shown on the Plans are revised by the Engineer. If revised dimensions result in an increase or decrease in the quantities of such Work, the final quantities for payment will be revised in the amount represented by the authorized changes in the dimensions.

1.02 PAYMENT

- A. Payment for Lump Sum shall be made on a percentage basis, for constructed and approved work, via progress payment applications as established in the contract between Space Florida and Contractor. The Contractor progress payment application will be approved or certified by both Engineer and/or Owner's appointed representatives.

- B. Payment for Unit Price items shall be made for constructed and approved quantities as established in the contract between Space Florida and Contractor. The Contractor progress payment application will be approved or certified by both Engineer and/or Owner's appointed representatives.

END OF SECTION 01 22 00

SECTION 01 31 10
CONTROL OF WORK

PART 1 - GENERAL

1.01 AUTHORITY OF THE ENGINEER

- A. The Engineer will decide any and all questions which may arise as to the quality and acceptability of materials furnished, work performed, and as to the manner of performance and rate of progress of the Work. The Engineer will decide all questions which may arise as to the interpretation of the Contract Documents relating to the Work, the fulfillment of the Contract on the part of the Contractor, and the rights of different contractors on the Project. The Engineer will determine the amount and quality of the several kinds of work performed and materials furnished which are to be paid for the under the Contract. The Engineer will coordinate all final approval with Owner and Owner's representatives.

1.02 CONFORMITY WITH PLANS AND SPECIFICATIONS

- A. All Work and all materials furnished shall be in reasonably close conformity with the lines, grades, grading sections, cross sections, dimensions, material requirements, and testing requirements that are specified (including specified tolerances) in the Contract Documents.
- B. If the Engineer finds the materials furnished, work performed, or the finished product not within reasonably close conformity with the Contract Documents but that the portion of the Work affected will, in Engineer's opinion, result in a finished product having a level of safety, economy, durability, and workmanship acceptable to the Owner, Engineer will advise the Owner of Engineer's determination that the affected work be accepted and remain in place. In this event, the Engineer will document their determination and recommend to the Owner a basis of acceptance which will provide for an adjustment in the Contract Sum for the affected portion of the Work. The Engineer's determination and recommended Contract Sum adjustments will be based on good engineering judgment and such tests or retests of the affected work as are, in Engineer's opinion, needed. Changes in the Contract Sum shall be covered by contract modifications as applicable.
- C. If the Engineer finds the materials furnished, Work performed, or the finished product are not in reasonably close conformity with the Contract Documents and have resulted in an unacceptable finished product, the affected Work or materials shall be removed and replaced or otherwise corrected by and at the expense of the Contractor in accordance with the Engineer's written orders.
- D. For the purpose of this Section, the term "reasonably close conformity" shall not be construed as waiving the Contractor's responsibility to complete the Work in accordance with the Contract Documents. The term shall not be construed as waiving the Engineer's right to insist on strict compliance with the Contract Documents during the Contractor's prosecution of the Work, when, in the Engineer's opinion, such compliance is essential to provide an acceptable finished portion of the Work.

- E. For the purpose of this Section, the term "reasonably close conformity" is also intended to provide the Engineer with the authority to use good architectural and engineering judgment in their determination as to acceptance of Work that is not in strict conformity but will provide a finished product equal to or better than that intended by the requirements of the Contract Documents.

1.03 COORDINATION OF CONTRACT DOCUMENTS

- A. The Contract Documents and all referenced standards cited are essential parts of the Contract Requirements. A requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete Work. In case of discrepancy, figured dimensions, unless obviously incorrect, shall govern over scaled dimensions. Cited standards for materials or testing shall be considered as standard specifications.
- B. Any table, gradation, size, dimension, rate, mix, method, nomenclature, pay item number (if applicable), basis of payment or method of measurement shown on the Plans, which is in variance with the Standard Specifications, shall be considered an amendment or supplement to the applicable specification.
- C. The Contractor shall not take advantage of any apparent error or omission on the various Contract Documents. In the event the Contractor discovers any apparent conflict, error or discrepancy, Contractor shall immediately call upon the Engineer for Engineer's interpretation and decision, and such decision shall be final.

1.04 ENGINEER'S PLANS

- A. The Plans furnished by the Engineer consist of general drawings showing such details as are necessary to give a comprehensive idea of the construction contemplated. Roadway Plans show, in general; alignment, profile grades, typical cross sections and general cross sections. Structure Plans, in general; show in detail all dimensions of the Work contemplated.
- B. When the Structure Plans do not show dimensions in detail, they will show general features and such details as necessary to give a comprehensive idea of the structure.
- C. Not all conflicts are known within the Project area. Not all conflicts are shown on the Plans. The Contractor is solely responsible for the location and protection of all equipment and facilities which are to remain in service and in place during and after all Project Work.

1.05 FIELD NOTES

- A. Adequate field notes and records shall be kept as layout work is accomplished. These field notes and records shall be available for review by the Owner and Engineer as the Work progresses and copies shall be furnished to the Owner and Engineer at the time of completion of the Project.

- B. An inspection or checking of the Contractor's field notes or layout work by the Engineer and/or Owner and the acceptance of all or any part thereof, shall not relieve the Contractor of their responsibility to achieve the lines, grades, and dimensions shown in the Plans and Specifications.

1.06 AUTHORITY AND DUTIES OF INSPECTORS

- A. Inspectors employed by the Owner shall be authorized to inspect all Work done and all materials furnished. Such inspection may extend to all or any part of the Work and to the preparation, fabrication, or manufacture of the materials to be used. Inspectors are not authorized to revoke, alter, or waive any provision of the Contract. Inspectors are not authorized to issue instructions contrary to the Plans and Specifications or to act as foreman for the Contractor.
- B. Inspectors employed by the Owner are authorized to notify the Contractor or their representatives of any failure of the Work or materials to conform to the requirements of the Contract, Plans, or Specifications and to reject such nonconforming materials in question until such issues can be referred to the Engineer for their decision.

1.07 INSPECTION OF THE WORK

- A. All materials and each part or detail of the Work shall be subject to inspection by the Owner and/or Engineer. The Owner and/or Engineer shall be allowed access to all parts of the Work and shall be furnished with such information and assistance by the Contractor as is required to make a complete and detailed inspection.
- B. If the Owner and/or Engineer requests it, the Contractor, at any time before acceptance of the Work, shall remove or uncover such portions of the finished Work as may be directed. After examination, the Contractor shall restore said portions of the Work to the standard required by the Plans and Specifications. Should the Work thus exposed or examined prove acceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be paid for as extra work; but should the Work so exposed or examined prove unacceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be at the Contractor's expense.
- C. All Work performed or materials used without supervision or inspection by the Owner and/or Engineer may be ordered removed and replaced at the Contractor's expense unless the Owner and/or Engineer failed to inspect after having been given reasonable notice in writing that the Work was to be performed.
- D. Should the Contract Work include relocation, adjustment, or any other modification to existing facilities, not the property of the Owner, authorized representatives of the owners of such facilities shall have the right to inspect such Work. Such inspection shall in no sense make any facility owner a party to the Contract, and shall in no way interfere with the rights of the parties to this Contract. Inspection and/or approval of the Work or any portion thereof shall not relieve the Contractor of responsibility for faulty materials or workmanship.

1.08 REMOVAL OF REJECTED AND UNAUTHORIZED WORK

- A. All Work which does not conform to the requirements of the Contract Documents shall be considered rejected, unless otherwise determined acceptable by the Owner and/or Engineer as provided in Item 1.02 - CONFORMITY WITH PLANS AND SPECIFICATIONS of this Section.
- B. Rejected Work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or any other cause found to exist prior to the Final acceptance of the Work, shall be removed immediately and replaced in an acceptable manner in accordance with the provisions of AIA Document A107 Standard Form of Agreement Between Owner and Contractor for a Project of Limited Scope, as modified.
- C. Work performed contrary to the instructions of the Owner and/or Engineer, work performed beyond the lines shown on the Plans or as given, except as herein specified, or any extra work done without authority, shall be considered as unauthorized and will not be paid for under the provisions of the Contract. Work so performed may be ordered removed or replaced at the Contractor's expense.
- D. Upon failure on the part of the Contractor to comply forthwith with any order of the Owner and/or Engineer made under the provisions of this Section, the Owner and/or Engineer shall have the authority to cause rejected work to be remedied or removed and replaced and unauthorized work to be removed and to deduct the costs (incurred by the Owner) from any monies due or to become due the Contractor.

1.09 MAINTENANCE DURING CONSTRUCTION

- A. The Contractor shall maintain the Work during construction and until the Work is accepted. This maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces so that the Work is maintained in satisfactory condition at all times. All Work shall be protected during any delay between phases or sub-phases of construction required to complete the Work.

1.10 FAILURE TO MAINTAIN THE WORK

- A. Should the Contractor at any time fail to maintain the Work as provided in Item 1.09 - MAINTENANCE DURING CONSTRUCTION of this Section, the Owner and/or Engineer will immediately notify the Contractor of such noncompliance. Such notification shall specify a reasonable time within which the Contractor shall be required to remedy such unsatisfactory maintenance condition. The time specified will give due consideration to the urgency that exists.
- B. Should the Contractor fail to respond to the Owner's and/or Engineer's notification, the Owner and/or Engineer may suspend any work necessary for the Owner to correct such unsatisfactory maintenance condition, depending on the urgency that exists. All maintenance cost incurred by the Owner, shall be deducted from monies due or to become due the Contractor.

END OF SECTION 01 31 10

SECTION 01 31 13
PROJECT COORDINATION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section includes minimum administration and supervisory requirements necessary for coordination of Work on the Project include but are not necessarily limited to the following:
1. Pre-Construction Conference.
 2. Coordination and Progress Meetings.
 3. Pre-Installation Conferences.
 4. Preconstruction and Progress Photographs.
 5. Reporting and Schedules.
 6. Special Reports.

1.02 COVENANT OF GOOD FAITH AND FAIR DEALING

- A. This Contract imposes an obligation of good faith and fair dealing in its performance and enforcement.
- B. The Contractor, Owner and the Engineer, with a positive commitment to honesty and integrity, agree to the following mutual duties:
1. Each will function within the laws and statutes applicable to their duties and responsibilities.
 2. Each will assist in the other's performance.
 3. Each will avoid hindering the other's performance.
 4. Each will proceed to fulfill its obligations diligently.
 5. Each will cooperate in the common endeavor of the Contract.

1.03 PRECONSTRUCTION CONFERENCE

- A. Before beginning Work at the Site, the Contractor shall attend a preconstruction conference and bring the Project Management Team employed for this Project. In the event a Team member is unable to attend, the Contractor shall bring a Letter of Introduction in which Contractor advises the full names and duties of the Team member(s) and states that they are assigned to the Project and will be in full responsible charge. This conference will be called by the Owner who will arrange for other interested parties to be present.

- B. The Contractor shall also notify their major subcontractors and suppliers of this meeting if their attendance is required. At this time, all parties will discuss the Project under Contract and prepare a program of procedure in keeping with requirements of the Contract Documents. The Contractor's Team shall henceforth make every effort to expeditiously coordinate all phases of the Work, including the required reporting procedure, to obtain the end result within the full purpose and intent of the Contract Documents for this Project.

1.04 COORDINATION AND PROGRESS MEETINGS

- A. The Owner will prepare a written memorandum on required coordination activities. Included will be such items as required notices, reports, and attendance at meetings. This memorandum will be distributed to each entity performing construction at the Project Site.
- B. In addition to specific coordination and pre-installation meetings for each element of Work, and other regular project meetings for other purposes, hold general progress meetings each week with time coordinated with the preparation of payment request. Require each party then involved in planning, coordination, or performance of Work to be properly represented at each meeting. Review present and future needs including interface requirements, time, sequences, deliveries, access, site utilization, temporary facilities and services, hours of work, hazards and risks, housekeeping, change orders, and documentation of information for payment requests.
- C. Provide and updated schedule and discuss whether each element of current Work is ahead of schedule, on time, or behind schedule in relation with updated progress schedule. Determine how behind-schedule Work will be expedited, and secure commitments from parties involved. Discuss whether schedule revisions are required to ensure that current Work and subsequent Work will be completed within Contract Time.
- D. Review everything of significance which could affect progress of Work.
- E. The Contractor shall record results of the meeting and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

1.05 PRE-INSTALLATION CONFERENCES

- A. Well in advance of installation of every major unit of Work which requires coordination and interfacing with other Work, meet at Project Site with installers and representatives of manufacturers and fabricators who are involved in or affected by unit of Work, and in coordination or integration with other Work which has preceded or will follow.
- B. Advise Owner and Engineer of schedule meeting dates.
- C. At each meeting review progress of other work and preparations for particular work under consideration, including requirements of Contract Documents, options, related change orders, purchases, deliveries, shop drawings, product data, quality control samples, possible conflicts, compatibility problems, time schedules, weather limitations, temporary facilities, space and access limitations, structural limitations, governing regulations, safety, inspection and testing requirements, required performance results, recording requirements, and protection.

- D. Record significant discussions of each conference, and record agreements and disagreements, along with final plan of action. Distribute record of meeting promptly to everyone concerned, including Owner and Engineer.

1.06 PRECONSTRUCTION AND PROGRESS PHOTOGRAPHS

- A. Preconstruction and progress photographs, and videos are required only if Section 01 32 33 – PHOTOGRAPHIC DOCUMENTATION is included in the Contract Requirements, however, if Contractor elects to photograph or video any or all parts of the Work, Contractor shall promptly forward one (1) copy each to the Owner and Engineer at Contractor's own expense.
- B. The photographs and/or videos shall be labeled with the item and date of exposure and properly identified and categorized with the name of the person taking the photos and/or video.

1.07 REPORTING AND SCHEDULES

- A. Within three (3) days after each meeting date, distribute copies of minutes-of-the-meeting to each entity present and to others who should have been present.
- B. Include brief summary, in narrative form, of progress of Work since previous meeting and report.
- C. Schedule Updating:
 - 1. Immediately following each meeting, where revisions to Progress Schedule have been made or recognized, revise Progress Schedule.
 - 2. Re-issue revised schedule concurrently with report of each meeting.

1.08 SPECIAL REPORTS

- A. Reporting Unusual Events: When an event of an unusual and significant nature occurs at the site, Contractor shall prepare and submit a special report to the Owner and Engineer. List chain of events, persons participating, response by the Contractor's personnel, an evaluation of the results or effects and similar pertinent information. Advise the Owner and Engineer as soon as possible when such events are known.
- B. Submit special reports directly to the Owner and Engineer within one (1) day of occurrence. Submit a copy of the report to other entities that are affected by the occurrence within one (1) day of the occurrence.

END OF SECTION 01 31 13

SECTION 01 32 18
CONSTRUCTION SCHEDULE, PHASING (BAR CHART)

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope:

1. Contractor shall adhere to Construction Scheduling and Phasing required for proper execution of the Work as described herein and indicated on the Plans.

PART 2 - PRODUCTS

2.01 CONSTRUCTION SCHEDULE

A. Preliminary Schedule:

1. Within 15 days after date of Notice of Award, Contractor shall submit Contractor's preliminary network phasing diagram (Preliminary Schedule) indicating a comprehensive overview of the Project including an activity line for each of the work segments to be performed at the site.
 - a. Arrange schedule to indicate required phasing of Work as outlined below and in the Contract Documents, and to indicate time allowances for submittals, material acquisitions including the scheduled dates for Purchase Orders or subcontract issuance or execution, inspections, and similar time margins.
 - b. Contractor may submit suggestive modifications and revisions to Work sequencing and barricade arrangements indicated in the Plans. All suggestions are dependent on Owner's acceptance and approval.
 - c. Submitted schedule shall be reviewed for comment by Engineer and Owner for conformance to overall project completion time criteria. Lack of this information shall be cause for rejection of schedule.

B. Bar-Chart Schedule:

1. Subsequent to review and comment by the Owner of the Preliminary Schedule, the Contractor shall submit a comprehensive bar-chart type Construction Schedule indicating a time bar for each significant category or unit of work to be performed. Arrange schedule to indicate required phasing of units, and to show time allowances for submittals, material acquisitions including the scheduled dates for Purchase Orders or subcontract issuance or execution, inspections, and similar time margins.

- a. Show critical submittal dates related to each time bar or prepare separate coordinated listing of critical submittal dates.
 - b. Superimpose an S-curve on schedule to show "estimated" total dollar-volume of work performed at any date during Contract Time: with a column of cost figures in left hand margin, ranging from zero to Contract Sum.
 - c. Submit updated schedule and S-curve with monthly pay request as herein specified.
2. This initial Construction Schedule, along with digital media containing all activity data including but not limited to Early Start, Early Finish, Late Start, Late Finish and Float, shall be submitted to the Engineer and Owner for review and comment within thirty (30) calendar days after the date of the Notice To Proceed but no later than seven (7) calendar days before the first Application for Payment request is submitted. Review and recognition of this schedule shall not relieve the Contractor of responsibility for scheduling of the Work and maintaining progress in accordance with the Contract Documents.

The initial Construction Schedule will be recognized by the Engineer and Owner when it is prepared in accordance with the Contract Documents.

C. Submittal:

1. Following initial revision of schedule, after Engineer's and Owner's review, the Contractor shall print and distribute schedule to entities with a need-to-know responsibility, including three (3) copies each to the Engineer and Owner. Post in temporary office space. Revise at intervals matching payment requests, and re-distribute and re-post. Provide copies required with payment requests. The schedule shall also be provided to the owner in Microsoft Project format at each of the progress meetings.

D. Maintenance of Schedule:

1. The Contractor's Construction Schedule shall be updated on a monthly basis, and a copy thereof submitted with each of the Contractor's Applications for Payment. The Engineer will not recommend for payment by the Owner, an Application for Payment without the Contractor's submission of a monthly schedule update. The updated Construction Schedule shall include copies of issued Purchase Orders and Contracts (subcontracts) for materials and services scheduled to have been purchased during the period of time covered by the Application for Payment.
2. If the Contractor's Monthly Schedule Update reflects, or, Engineer or Owner determines that the Contractor is at least ten percent (10%) behind the original Construction Schedule or fourteen (14) or more calendar days behind the original Construction Schedule for:
 - a. the work as a whole;

- b. a major Contract item;
- c. an major item of work;

then the Contractor shall submit with the Monthly Schedule Update its proposed plan for bringing the work back on schedule and completing the Work within the Contract Time(s).

3. The Construction Schedule shall be coordinated by the Engineer and Owner with the overall schedule for the total Project as a whole. The Contractor shall revise the Construction Schedule promptly in accordance with the conditions of the work, subject to approval by the Engineer and Owner.
4. The Contractor shall comply fully with all time and other requirements of the Contract Documents. Recommendation of an Application for Payment by the Engineer and payment thereon by the Owner, without the submission of a Monthly Schedule Update, shall not constitute a waiver of the requirements for such updates, nor shall it relieve the Contractor from the obligation to complete the Work within the Contract Time(s).
5. Should a review indicate the Work has fallen behind the recognized Construction Schedule; at the option of the Engineer or Owner; funds equal to the established liquidated damages for the number of calendar days behind schedule shall be withheld until the Work is brought back on schedule.
6. If the Work is determined to be unsatisfactory for any reason and requires removal and replacement, rework, or any action that will affect the operation of Exploration Park; it will be considered part of the Schedule and if the time period exceeds that specified, liquidated damages shall be assessed.
7. If the Engineer or Owner has determined that the Contractor should be permitted to extend the time for completion as provided in Article 14.5 of AIA Document A107 Standard Form of Agreement Between Owner and Contractor for a Project of Limited Scope, as modified, the date(s) in the Construction Schedule shall be adjusted accordingly to retain their same relationship to the adjusted date of Final Acceptance, and the dollar value of Work to be completed as of the first of each month shall be adjusted prorate.

PART 3 - EXECUTION

3.01 PHASING/SEQUENCING

1. The phasing and sequencing of Work of this Contract shall be determined by the Contractor and as identified within contract documents. The Contractor will have to adhere to launch and mission requirements within NASA KSC and USAF properties.

2. Phased construction schedule shall include all requirements for submittals, material and equipment procurement, material stockpiling, setting up Contractor's staging area, surveying of existing conditions and preparation of necessary schedules to meet the rigid requirements for project completion.
3. All work for this project shall be completed as follows and as established between the winning contractor and owner.
 - A. Mobilization/lead time – 90 calendar days (construction activities will be permitted during this timeframe)
 - B. Construction/substantial completion – 60 calendar days
 - C. Final completion – 30 calendar days
2. Typical construction hours for this project are from 0700 to 1800 hours. Any construction activities outside of this time frame shall be coordinated with Owner and respective land owners.
3. Contractor shall be permitted to work simultaneously at all intersection of the project; however, maintenance of traffic measures meeting the requirements of FDOT shall be in place. Contractor maybe requested to alter the mot or working schedules as KSC and CCAFS frequently have large launch/mission specific infrastructure that get transported throughout the limits of the project.
4. Cape Canaveral Spaceport has mandated "no dig days" due to launches/operational restrictions; therefore, prior to digging or at the beginning of the work day, contractor shall ensure areas where the digging is to occur are not within "no dig day" zones. Prior to excavation, the contractor shall daily contact USAF cape support duty office at 321-853-5211 for critical day status. Prior to excavation, the contractor shall daily contact NASA KSC ISC duty office at 321-861-5050 for critical day status.

END OF SECTION 01 32 18

SECTION 01 32 33
PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Preconstruction photographs.
 - 2. Periodic construction photographs.
 - 3. Final completion construction photographs.
 - 4. Preconstruction video recordings (if required by Owner).
 - 5. Periodic construction video recordings (if required by Owner).

1.02 RELATED REQUIREMENTS

- A. SUBMITTAL PROCEDURES: Section 01 33 18.
- B. PROJECT CLOSEOUT: Section 01 78 00.
- C. DEMONSTRATION AND TRAINING: Section 01 79 00.

1.03 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For photographer.
- B. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph and/or video recording (if applicable). Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
- C. Digital Photographs: Submit image files within three days of taking photographs.
 - 1. Digital Camera: Minimum sensor resolution of 12 megapixels.
 - 2. Format: Minimum 3200 by 2400 pixels, in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.

3. Identification: Provide the following information with each image description in file metadata tag:
 - a. Name of Project.
 - b. Name and contact information for photographer.
 - c. Name of Engineer.
 - d. Name of Contractor.
 - e. Date photograph was taken.
 - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
 - g. Unique sequential identifier keyed to accompanying key plan.

- D. Construction Photographs: Submit two prints of each photographic view within seven days of taking photographs.
 1. Format: 8-by-10-inch smooth-surface matte prints on single-weight, commercial-grade photographic paper; enclosed back to back in clear plastic sleeves that are punched for standard three-ring binder.
 2. Identification: On back of each print, provide an applied label or rubber-stamped impression with the following information:
 - a. Name of Project.
 - b. Name and contact information for photographer.
 - c. Name of Engineer.
 - d. Name of Contractor.
 - e. Date photograph was taken if not date stamped by camera.
 - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
 - g. Unique sequential identifier keyed to accompanying key plan.

- E. Video Recordings (if required by Owner): Submit video recordings within **seven** days of recording.
 1. Submit video recordings in digital video disc format acceptable to Owner and/or Engineer.

2. Identification: With each submittal, provide the following information:
 - a. Name of Project.
 - b. Name and address of photographer.
 - c. Name of Engineer.
 - d. Name of Contractor.
 - e. Date video recording was recorded.
 - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
 - g. Weather conditions at time of recording.
3. Transcript: Prepared on 8-1/2-by-11-inch paper, punched and bound in heavy-duty, three-ring, vinyl-covered binders. Mark appropriate identification on front and spine of each binder. Include a cover sheet with same label information as corresponding video recording. Include name of Project and date of video recording on each page.

1.04 QUALITY ASSURANCE

- A. Photographer Qualifications: An individual who has been regularly engaged as a professional photographer of construction projects for not less than three years.

1.05 USAGE RIGHTS

- A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

PART 2 - PRODUCTS

2.01 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of 12 megapixels, and at an image resolution of not less than 3200 by 2400 pixels.
- B. Digital Video Recordings (if required by Owner): Provide high-resolution, digital video disc in format acceptable to Owner and/or Engineer.

PART 3 - EXECUTION

3.01 CONSTRUCTION PHOTOGRAPHS

- A. Photographer: Engage a qualified photographer to take construction photographs.
- B. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
 - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- C. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
 - 1. Date and Time: Include date and time in file name for each image.
 - 2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Owner and Engineer.
- D. Preconstruction Photographs: Before starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Owner and/or Engineer.
 - 1. Flag construction limits before taking construction photographs.
 - 2. Take photographs to show existing conditions adjacent to property before starting the Work.
 - 3. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- E. Periodic Construction Photographs: Take photographs monthly, coinciding with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
- F. Final Completion Construction Photographs: Take color photographs after date of Final Acceptance for submission as project record documents. Owner and/or Engineer will inform photographer of desired vantage points.
 - 1. Do not include date stamp.

- G. Additional Photographs: Owner and/or Engineer may request photographs in addition to periodic photographs specified. Additional photographs will be paid for by Change Order and are not included in the Contract Sum.
1. Three days' notice will be given, where feasible.
 2. In emergency situations, take additional photographs within 24 hours of request.
 3. Circumstances that could require additional photographs include, but are not limited to, the following:
 - a. Special events planned at Project site.
 - b. Immediate follow-up when on-site events result in construction damage or losses.
 - c. Substantial Completion of a major phase or component of the Work.
 - d. Extra record photographs at time of Final Acceptance.
 - e. Owner's request for special publicity photographs.

3.02 CONSTRUCTION VIDEO RECORDINGS

- A. None

END OF SECTION 01 32 33

SECTION 01 33 18
SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals. These documents shall be submitted electronically via Space Florida Document Management System which is a Box.com based system. A project specific email will be provided to Contractor.

1.02 RELATED REQUIREMENTS

- A. CONSTRUCTION SCHEDULE, PHASING (BAR CHART): Section 01 32 18.
- B. PROJECT CLOSEOUT: Section 01 78 00.
- C. OPERATION AND MAINTENANCE DATA
- D. DEMONSTRATION AND TRAINING

1.03 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Engineer's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals" or "submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Engineer's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."
- C. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.
- D. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.04 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Engineer and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Initial Submittal Schedule: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal Schedule: Submit concurrently with the first complete submittal of Contractor's construction schedule.
 - a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
4. Format: Arrange the following information in a tabular format:
 - a. Scheduled date for first submittal.
 - b. Specification Section number and title.
 - c. Submittal category: Action; informational.
 - d. Name of subcontractor.
 - e. Description of the Work covered.
 - f. Scheduled date for Engineer's final release or approval.
 - g. Scheduled date of fabrication.
 - h. Scheduled dates for purchasing.
 - i. Scheduled dates for installation.
 - j. Activity or event number.

1.05 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Engineer's Digital Data Files: Electronic digital data files of the Contract Drawings will NOT be provided by Engineer for Contractor's use in preparing submittals.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
 4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Engineer's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow 15 days for review of each resubmittal.
 4. Sequential Review: Where sequential review of submittals by Engineer's consultants, Owner, or other parties is indicated and/or required, allow 21 days for initial review of each submittal.
- D. Electronic Submittals (If acceptable to Owner and Engineer in lieu of paper submittals): Identify and incorporate information in each electronic submittal file as follows:
1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
 2. Name file with submittal number or other unique identifier, including revision identifier.
 - a. File name shall follow Space Florida project number and specification number requirements. Revisions shall be clearly identified.
 3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Engineer.
 4. Transmittal Form for Electronic Submittals: Use electronic form acceptable to Owner, containing the following information:

- a. Project name.
 - b. Date.
 - c. Name and address of Engineer.
 - d. Name of Contractor.
 - e. Name of firm or entity that prepared submittal.
 - f. Names of subcontractor, manufacturer, and supplier.
 - g. Category and type of submittal.
 - h. Submittal purpose and description.
 - i. Specification Section number and title.
 - j. Specification paragraph number or drawing designation and generic name for each of multiple items.
 - k. Plan number and detail references, as appropriate.
 - l. Location(s) where product is to be installed, as appropriate.
 - m. Related physical samples submitted directly.
 - n. Indication of full or partial submittal.
 - o. Transmittal number, numbered consecutively.
 - p. Submittal and transmittal distribution record.
 - q. Other necessary identification.
 - r. Remarks.
5. Metadata: Include the following information as keywords in the electronic submittal file metadata:
- a. Project name.
 - b. Number and title of appropriate Specification Section.
 - c. Manufacturer name.
 - d. Product name.
- E. Options: Identify options requiring selection by Engineer.
- F. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Engineer on previous submittals, and deviations from

requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.

- G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
 - 1. Note submittal number, date and content of previous submittal.
 - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 - 3. Resubmit submittals until they are marked with approval notation from Engineer's action stamp.
- H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Engineer's action stamp.

PART 2 - PRODUCTS

2.01 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
 - 1. Submit electronic submittals (If acceptable to Owner and Engineer in lieu of paper submittals) via email as PDF electronic files.
 - a. Engineer will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
 - 2. Action Submittals: Submit four paper copies of each submittal unless otherwise indicated. Engineer will return two copies.
 - 3. Informational Submittals: Submit two paper copies of each submittal unless otherwise indicated. Engineer will not return copies. Engineer will provide acknowledgment of receipt to the Contractor.
 - 4. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
 2. Mark each copy of each submittal to show which products and options are applicable.
 3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
 - i. For equipment, include the following in addition to the above, as applicable:
 - j. Wiring diagrams showing factory-installed wiring.
 - k. Printed performance curves.
 - l. Operational range diagrams.
 - m. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 4. Submit Product Data before or concurrent with Samples.
 5. Submit Product Data in the following format:
 - a. PDF electronic file (If acceptable to Owner and Engineer in lieu of paper submittals).
 - b. Three paper copies of Product Data unless otherwise indicated. Engineer will return two copies.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

- a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 22 by 34 inches.
 3. Submit Shop Drawings in the following format:
 - a. PDF electronic file (If acceptable to Owner and Engineer in lieu of paper submittals).
 - b. Four opaque copies of each submittal. Owner/Engineer will retain two copies; remainder will be returned.
- D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
 2. Manufacturer and product name, and model number if applicable.
 3. Number and name of room or space.
 4. Location within room or space.
 5. Submit product schedule in the following format:
 - a. PDF electronic file (If acceptable to Owner and Engineer in lieu of paper submittals).
 - b. Three paper copies of product schedule or list unless otherwise indicated. Engineer will return two copies.
- E. Contractor's Construction Schedule: Comply with requirements specified in Section 01 32 18 – CONSTRUCTION SCHEDULE, PHASING (BAR CHART).

- G. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 01 45 00 – QUALITY CONTROL SERVICES.
- H. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 01 78 00 – PROJECT CLOSEOUT.
- J. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of engineers and owners, and other information specified.
- K. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- L. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- M. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- N. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- O. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- P. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- Q. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- R. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - 1. Name of evaluation organization.
 - 2. Date of evaluation.
 - 3. Time period when report is in effect.
 - 4. Product and manufacturers' names.
 - 5. Description of product.

6. Test procedures and results.
7. Limitations of use.
- S. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- T. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- U. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- V. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

PART 3 - EXECUTION

3.01 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.
- B. Project Closeout and Maintenance Material Submittals: See requirements in Section 01 78 00 – PROJECT CLOSEOUT.
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.02 ENGINEER'S ACTION

- A. Action Submittals: Engineer will review each submittal, make marks to indicate corrections or revisions required, and return it. Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- B. Informational Submittals: Engineer will review each submittal and will not return it, or will return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.

- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Engineer.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Submittals not required by the Contract Documents may be returned by the Engineer without action.

END OF SECTION 01 33 18

SECTION 01 35 13
PROJECT PROCEDURES FOR AVIATION AND SPACEPORT FACILITIES

PART 1 - GENERAL

1.01 AVIATION AND SPACEPORT FACILITY OPERATIONS

- A. All facilities within Cape Canaveral Spaceport are aviation and/or spaceport facilities.
- B. Aviation and spaceport facility operations shall be maintained throughout this Contract within NASA Kennedy Space Center (KSC) and United States Air Force Cape Canaveral Air Force Station (CCAFS). The Contractor shall in no way curtail or handicap normal operational characteristics of the aviation and spaceport facilities except as specifically indicated and specified in these Contract Documents.

1.02 LAUNCH DELAYS

- A. Cape Canaveral Spaceport frequently launches rockets which require closure of certain areas and open trenches and/or excavations. Contractor shall coordinate with NASA and USAF as necessary to ensure launch missions are not sacrificed and make the required changes as mandated by NASA and USAF at no additional cost to the Owner.
- B. Contractor maybe requested to adjust lane closures or temporary traffic devices to accommodate launch infrastructure.
- C. On launch days contractors shall expect traffic and other work restrictions. Typical launch windows are 2 to 4 days.

1.03 WEATHER ADVISORY

- A. Contractor shall adhere to NASA KSC and CCAFS weather advisory restriction for construction activities.

1.04 PERMITS, LICENSES AND TAXES

- A. Contractor shall be required to procure all permits and licenses; pay all charges, fees and taxes; and arrange for all inspections and similar procedural items as required by the code enforcement authorities having jurisdiction.
- B. The Contractor shall give all notices necessary and incidental to the due and lawful prosecution of the Work so as not to delay the completion of the Project. The Contractor's plea that insufficient Contract Time was specified shall not be a valid reason for extension of Contract Time.
- C. The Contractor shall recognize the amount of time required to obtain dig permits through NASA and the USAF and submit the permit requests far enough in advance of the need to avoid a delay in the work. Extended permit processing time shall not be a valid reason for extension of Contract Time.
- D. The Contractor shall comply with all directions presented on the dig permit.

1.05 VERIFICATION OF EXISTING CONDITIONS

- A. Prior to bidding and commencing with construction, the Contractor shall familiarize themselves as to the existing conditions. Should the Contractor discover any inaccuracies, errors, or omissions between the actual existing conditions and the Contract Documents, Contractor shall within seven (7) calendar days prior to the Receipt of Bids, notify the Owner and/or Engineer in writing. Submission of Bid by the Contractor shall be held as an acceptance of the existing conditions by the Contractor.

1.06 MAINTENANCE OF TRAFFIC

- A. It is the explicit intention of the Contract that the safety of pedestrians, vehicles and aircraft, as well as the Contractor's equipment and personnel, is the most important consideration. It is understood and agreed that the Contractor shall provide for the free and unobstructed movement of vehicles and aircraft in the operations areas of the aviation and spaceport facility with respect to Contractor's own operations and the operations of all Contractor's subcontractors as specified in Section 01 35 50 - CONSTRUCTION SAFETY AND SECURITY REQUIREMENTS. It is further understood and agreed that the Contractor shall provide for the uninterrupted operation of visual and electronic signals (including power supplies thereto) used in the guidance of vehicles and aircraft while operating to, from, and upon the aviation and spaceport facility as specified in Section 01 51 00 - UTILITIES.
- B. Should it be necessary for the Contractor to complete portions of the Contract Work for the beneficial occupancy of the Owner prior to completion of the whole Work, such "phasing" of the Work shall be specified herein and indicated on the Plans. When so specified, the Contractor shall complete such portions of the Work on or before the date specified or as otherwise specified.
- C. If the Contractor, with the concurrence of the Owner and/or Engineer, elects to complete one increment of Work prior to completion of the whole Work, the Owner may accept the Work for beneficial occupancy. Upon completion of any portion of the Work listed above, such portion shall be accepted by the Owner and/or Engineer in accordance with General Conditions of the Contract for Construction, as modified.
- D. When the Work is in, or near vehicular traffic and pedestrian areas, arrange the Work so as to avoid disruption of normal traffic patterns. Provide, erect and maintain effective barricades, danger signals, signs and equipment to provide protection of the Work and the safety of the pedestrians throughout the area.
- E. The Contractor shall maintain traffic within the limits of the Project for the duration of the construction period, including all temporary suspensions of Work. It shall include the construction and maintenance of all necessary detour facilities; the furnishing, installing and maintaining of traffic control and safety devices during construction, the control of dust, and any other special requirements for safe and expeditious movement of aircraft, vehicular traffic and pedestrians.
 - 1. Beginning Date of Contractor's Responsibility: The Contractor's responsibility for maintenance of traffic shall begin on the day Contractor starts Work on the Project or on the date of the Notice to Proceed whichever is earlier, and shall continue until the

date of Final Acceptance.

2. Number of Traffic Lanes: Unless otherwise specified, the Contractor shall close no more than one (1) lane on each roadway. The effective width of each lane used for maintenance of traffic shall be at least as wide as the traffic lanes existing in the area prior to commencement of construction. Traffic control and warning devices shall not encroach on lanes used for maintenance of traffic. All closures on any traffic lanes shall be coordinated with the Owner a minimum of seven (7) calendar days prior to any closure.
 3. High Traffic Areas: When the Work is in or near vehicular traffic and pedestrian areas, arrange the Work so as to avoid disruption of normal traffic patterns. Provide, erect and maintain effective barricades, variable message boards, danger signals, signs and equipment to provide protection of the Work and the safety of pedestrians throughout the area.
 4. The Contractor shall call Cape Support (CCAFS) or the Duty Office (KSC) as appropriate prior to changing any traffic pattern.
- F. The Contractor shall be responsible for performing daily inspections, including weekends and holidays with some inspections at night time, of the installations on the Project and replacing all equipment and devices not conforming to the approved standards during that inspection. The Owner and/or Engineer shall be advised of the schedule of these inspections and be given the opportunity to join in the inspection as deemed necessary.
- G. Sections Not Requiring Traffic Maintenance: Contractor shall not be required to maintain traffic over those portions of the Project where no Work is to be accomplished or where construction operations will not affect existing roads. Contractor, however, shall not obstruct nor create a hazard to any traffic during the prosecution of the Work and shall be responsible for repair of all damage to existing pavement or facilities caused by Contractor's operations.
- H. Traffic Plan: The Contractor shall present its Maintenance of Traffic Plan at the Pre-Construction Conference. Maintenance of Traffic Plan shall be in written form and include a minimum of 3 full-size sets of plan sheets which indicate the type and location of all signs, lights, barricades, variable message boards, arrow boards, striping and barriers to be used for the safe passage of pedestrians and vehicular and aircraft traffic through the Project. The plan shall indicate conditions and set-up for each phase of the Contractor's activities. In no case may the Contractor begin Work until the Maintenance of Traffic Plan has been approved in writing by the Owner. Modifications to the Maintenance of Traffic Plan that may become necessary shall also be approved in writing. Except in an emergency, no changes to the approved plan will be allowed until approval to change such plan has been received.
- I. Traffic During Construction: All construction vehicles are required to use existing public traffic routes. Normal public traffic lanes are not to be used as staging areas for arriving delivery vehicles. The Contractor's employees shall utilize the designated Contractor employee parking area.
1. Adequate accommodations for intersecting and crossing traffic shall be provided and maintained and, except where specific permission is given, no road or street crossing

the Project shall be blocked or unduly restricted.

- J. The State of Florida, Manual of Traffic Control and Safe Practices for Street and Highway Construction, Maintenance and Utility Operations, sets forth the basic principles and prescribes minimum standards to be followed in the design, application, installation, maintenance, and removal of all traffic control devices and all warning devices and barriers which are necessary to protect the public and workmen from hazards within the Project limits. The standards established in the aforementioned manual constitute the minimum requirements for normal conditions and additional traffic control devices, warning devices, barriers or other safety devices will be required where unusual, complex or particular hazardous conditions exist.
- K. Installation: The Contractor shall be responsibility for installation and maintenance of adequate traffic control devices, warning devices and barriers, for the protection of the traveling public and workmen, as well as to safeguard the Work. The required traffic control devices, warning devices and barriers shall be erected by the Contractor prior to creation of any hazardous condition and in conjunction with all necessary re-routing of traffic. The Contractor shall immediately remove, turn or cover all devices or barriers which do not apply to existing conditions.
1. The Contractor shall make the Owner aware of any scheduled operation which will affect patterns or safety, sufficiently in advance of commencing such operation to permit Owner's review of the plan for installation of traffic control devices or barriers proposed by the Contractor.
 2. The Contractor shall assign one of its employees the responsibility of maintaining the position and condition of all traffic control devices, warning devices and barriers throughout the duration of the Contract. The Owner shall be kept advised at all times as to the identification and means of contacting this employee on a twenty-four (24) hour basis.
 3. Refer to Section 01 35 50 - CONSTRUCTION SAFETY PLAN AND SECURITY REQUIREMENTS for additional requirements.
- L. Maintenance of Devices and Barriers: Traffic control devices, warning devices, and barriers shall be kept in the correct position, properly directed, clearly visible and clean, at all times. Damaged, defaced or dirty devices or barriers shall immediately be repaired, replaced or cleaned as directed.
- M. Flagmen: The Contractor shall provide competent flagmen to direct traffic where one-way operation in a single lane is in effect and in other situations as may be required by the standards established herein.
- N. Contractor Signing: The Contractor may furnish and install construction traffic directional signs along the existing traffic route. The signs shall depict Contractor's logo or name, directional arrows and "deliveries". Signs shall be of sufficient size to have 6" inch high message and shall be located at each decision point. All signs and their locations shall be approved by the Owner and/or Engineer. **NO OTHER SIGNS ARE PERMITTED WITHIN THE AVIATION AND SPACEPORT COMPLEX,**

- O. Material Deliveries: The Contractor shall make its own material and equipment deliveries. No deliveries shall be made by vendors or suppliers without escort by a representative of the Contractor.
- P. Construction Personnel Traffic: All construction personnel shall be restricted to construction areas. They shall wear shirts with sleeves and long pants at all times. The workers shall wear high visibility vests or shirts.
- Q. Character of Workers: The Contractor shall, at all times, employ sufficient labor and equipment for prosecuting the Work to full completion in the manner and time required by the Contract Documents. All workers shall have sufficient skill and experience to properly perform the Work assigned to them. Workers engaged in special Work or skilled Work shall have sufficient experience in such Work and in the operation of the equipment required to perform the Work satisfactorily.

1.07 METHODS AND EQUIPMENT

- A. All equipment which is proposed to be used on the Work shall be of sufficient size and in such mechanical condition as to meet requirements of the Work and to produce a satisfactory quality of work. Equipment used on any portion of the Work shall be such that no injury to previously completed work, adjacent property, or existing facilities will result from its use.
- B. When the methods and equipment to be used by the Contractor in accomplishing the Work are not prescribed in the Contract, the Contractor is free to use any methods or equipment that will accomplish the Work in conformity with the requirements of the Contract Documents.
- C. When the Contract specifies the use of certain methods and equipment, such methods and equipment shall be used unless others are authorized by the Owner and/or Engineer.

1.08 HOURS OF WORK

- A. Cape Canaveral Spaceport have mission critical days and no dig days when construction activities will not be allowed. During construction Contractor shall coordinate these days on a routine basis. Work may proceed as indicated on Plans or directed by the Owner, land owners and/or Engineer.
- B. Cape Canaveral Spaceport has mandated "no dig days" due to launches/operational restrictions; therefore, prior to digging or at the beginning of the work day, contractor shall ensure areas where the digging is to occur are not within "no dig day" zones. Prior to excavation, the contractor shall daily contact USAF Cape Support duty office at 321-853-5211 for critical day status. Prior to excavation, the contractor shall daily contact NASA KSC ISC Duty Office at 321-861-5050 for critical day status.

1.09 CLEAN-UP AND TRASH REMOVAL

- A. The Contractor shall be responsible for daily trash clean-up and trash removal. Accumulation of trash and debris shall not be permitted and the Owner may at any time direct the Contractor to immediately remove their trash and debris from the site of the Work when in the opinion of the Owner such trash constitutes a nuisance or in any way hinders the Work or normal operation of the Aviation and Spaceport Facility. If the Contractor should fail to remove its trash and debris from the site of the Work in a timely manner, the Owner may

have this Work performed and deduct the cost of such from Contractor's payment.

1.10 CLEANING AND PROTECTION

- A. Clean and protect Work in progress and adjoining Work on the basis of continuous daily maintenance. Apply temporary covering on installed work to protect work from damage or deterioration.
- B. Clean and perform maintenance on installed work as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- C. Supervise performance of the Work in such a manner and by such means which will ensure that none of the Work, whether completed or in progress, is subjected to harmful, dangerous, damaging or otherwise deleterious exposure during the construction period.
- D. Protection of Existing Facilities:
 - 1. Existing surfaces and materials of the Owner's property not requiring Work by the Contract Documents that are damaged by the Contractor's operations shall be immediately repaired. Repaired surfaces and materials shall match existing adjacent undamaged surfaces and materials. Repair Work shall be coordinated with the Owner and/or Engineer with regard to time and method.
 - 2. All roads used by the Contractor during construction shall be restored and/or replaced to their original condition.
- E. Hazardous Materials:
 - 1. ANY PRODUCT OR MATERIAL THAT CONTAINS ASBESTOS MATERIAL SHALL NOT BE PERMITTED ON THIS PROJECT.
 - 2. ANY PAINT CONTAINING LEAD SHALL NOT BE USED ON THIS PROJECT.
- F. Overhead Protection:
 - 1. The operation of cranes and other hoisting equipment shall be established in writing by the Contractor. This plan of operation shall be subject to approval by the Owner and/or Engineer.

1.11 CONSERVATION AND SALVAGE

- A. Construction operations shall be carried out with the maximum possible consideration given to conservation of energy, water and materials. In addition consideration shall be given to salvaging materials and equipment involved in performance of the Work but not incorporated therein. Refer to Plans or other sections of the Specifications for required disposition of salvage materials, as applicable, which are the Owner's property.

END OF SECTION 01 35 13

SECTION 01 35 43
PREVENTION, CONTROL AND ABATEMENT OF
EROSION AND WATER POLLUTION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Contractor shall comply with requirements for prevention, control and abatement of erosion, siltation and water pollution resulting from construction operations until Final Acceptance of the Project as described within and the contract documents.
- B. All applicable provisions of local Codes concerning grading, filling, excavation, and soil removal shall be complied with.

1.02 PERMITS

- A. The Contractor shall obtain all Federal, State, and local permits and to conduct their Work in the manner designated by all applicable permits. Violations of any permit by the Contractor will in no way involve the Owner regardless of who obtained the permit initially.

1.03 ECOLOGICAL REQUIREMENTS

- A. Take sufficient precautions to prevent pollution of rivers, streams, lakes, tidal waters, reservoirs, canals, and other water impoundments with fuels, oils, bitumens, calcium chloride or other harmful materials. Also, conduct and schedule operations so as to avoid interference with movement of migratory fish. No residue from dust collectors or washers shall be dumped into any live stream.
- B. Construction operations in rivers, streams, lakes, tidal waters, reservoirs, canals, and other water impoundments shall be restricted to those areas where it is necessary to perform filling or excavation to accomplish the Work shown in the Plans and to those areas which must be entered to construct temporary or permanent structures. As soon as conditions permit; rivers, streams, lakes, tidal waters, reservoirs, canals, and other water impoundments shall be promptly cleared of all obstructions placed therein or caused by construction operations.
- C. Except as necessary for construction, excavated material shall not be deposited in rivers, streams, lakes, tidal waters, reservoirs, canals, and other water impoundments, or in a position close enough thereto to be washed away by high water or runoff.
- D. Do not disturb lands or waters outside the limits of construction except as may be found necessary and authorized by the Owner.

1.04 SCHEDULING/COORDINATION

- A. Clearing and grubbing shall be so scheduled and performed that grading operations can follow immediately thereafter. Grading operations shall be so scheduled and performed that permanent erosion control features can follow immediately thereafter if conditions on the Project permit.
- B. Schedule operations such that the area of unprotected erodible earth exposed at any one time is not larger than the minimum area necessary for efficient construction operations; and the duration of exposed, uncompleted construction to the elements shall be as short as practicable.

1.05 PROTECTION OF STORM DRAINS

- A. Storm drainage facilities, both open and closed conduit, serving the construction area shall be protected from pollutants and contaminants.
- B. If the Owner determines that siltation of drainage facilities has resulted due to the Project, the Owner will advise the Contractor to remove and properly dispose of the deposited materials.
- C. Should the Contractor fail to or elect not to remove the deposits, the Owner will provide maintenance cleaning as necessary and charge all costs of such service against the amount of money due or to become due the Contractor.

1.06 PREVENTION, CONTROL AND ABATEMENT REQUIREMENTS

- A. Provide, install, construct, and maintain all coverings, mulching, sodding, sand bagging, berms, slope drains, hay and straw bales, sedimentation structures, or other devices necessary to meet City, State and Federal regulatory agency codes, rules and laws, and as indicated on the Plans.
- B. The locations of and methods of operation in all detention areas, borrow pits, material supply pits and disposal areas furnished by the Contractor shall meet the approval of the Owner as being such that erosion during and after completion of the Work will not likely result in detrimental siltation or water pollution.
- C. The Owner may limit the surface areas of unprotected erodible earth exposed by clearing and grubbing, excavation or filling operations and may direct the Contractor to provide immediate erosion or pollution control measures to prevent siltation or contamination of any river, stream, lake, tidal water, reservoir, canal, and other water impoundment or to prevent damage to the Project or property outside the Project Right-of-Way.

END OF SECTION 01 35 43

SECTION 01 35 50
CONSTRUCTION SAFETY AND SECURITY REQUIREMENTS

PART 1 - GENERAL

1.01 PURPOSE AND OBJECTIVE

- A. This Section establishes safety and security guidelines including methods, procedures, rules and authorities to be adhered to on the Aviation and Spaceport Facility during construction of the Shuttle Landing Facility, Fuel Farm Storage during said construction period.
- B. This Contract is intended to provide for the optimum degree of safety to aviation and spaceport personnel; aircraft, both parked and operating; vehicles; equipment and associated facilities; and to the Contractor's operations consistent with minimum interference to the movement of personnel, aircraft, and/or vehicles engaged in the day-to-day operation of the Aviation and Spaceport Facility. The Contractor shall observe all rules and regulations and all other operational limitations which may be imposed from time to time. Contractor shall provide marking, lighting, barricades, signs, or other measures which are required to properly identify Contractor's construction areas, work sites, equipment, vehicles, storage areas, and/or conditions which may be hazardous to facility operations.
- C. If the Contractor fails to maintain the marking, lighting, barricades, signs, etc., as required above, the Owner will cause appropriate safety measures to be installed by others and all costs thereof shall be charged to the Contractor and deducted by the Owner from monies due to the Contractor.
- D. Following are the general safety plan objectives that shall be achieved in order to maximize safety and to minimize time and economic loss to the Aviation and Spaceport Facility, construction contractors and others directly affected by the Project.
 - 1. Keep the Aviation and Spaceport Facility operational for all users.
 - 2. Minimize delays to Aviation and Spaceport Facility operations.
 - 3. Maintain safety of Aviation and Spaceport Facility operations.
 - 4. Minimize delays to construction operations.
 - 5. Minimize Aviation and Spaceport Facility operation/construction-activity conflicts.
- E. The Contractor shall regard these objectives when formulating their schedules and operational activities.

- F. The Contractor's responsibility for safety and security shall begin on the day Contractor starts Work or on the date of Notice to Proceed, whichever is earlier, and continues until Final Acceptance of the Work.

1.02 SAFETY PROCEDURES

- A. The Contractor shall be responsible to maintain the Work area in a safe, hazard free condition at all times. This will include barricades, fencing, taping up sharp corners or all other precautions necessary for protection of personnel. Should the Owner and/or Engineer find the area unsafe at any time, Owner and/or Engineer will notify the Contractor, and the Contractor shall take whatever steps necessary to remedy the unsafe condition. Should the Contractor not be immediately available for corrective action, the Owner may remedy the problem and the Contractor shall reimburse the Owner for the expense of such correction.
- B. Fire Control: Flame cutting will be permitted only on steel parts that cannot be removed in any other manner and only when at least one person is standing by exclusively with a fire extinguisher within ten (10) feet of the Work and within full view of the area. The fire extinguisher shall have been tested and ready for use. The Contractor shall submit a fire protection plan for approval prior to conducting the Work requiring said protection plan.
- C. Work Near Fire Alarm (where applicable): Caution shall be exercised as necessary when working near fire alarms so as not to accidentally activate fire alarms, doors or barriers.
- D. Protection of Property: Fixed structures, equipment, paving, landscaping and vehicles (automobiles, trucks, etc.) shall be protected with drop cloths, shielding and other appropriate measures to assure maximum protection of all property and vehicles.

END OF SECTION 01 35 50

SECTION 01 41 00
INCLUSION OF FDOT STANDARD SPECIFICATIONS
AND ROADWAY STANDARDS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Contractor shall comply with requirements for referenced Florida Department of Transportation (FDOT) Standard Specifications and Roadway Standards indicated on Plans. The project will be procured and executed by Space Florida and not FDOT. Space Florida will retain the Engineer of Record or Designer of the Project and will also have an independent Construction Engineering and Inspection (CEI) Consultant.

1.02 FDOT STANDARD SPECIFICATIONS

- A. The July 2019 Edition of the FDOT Standard Specifications for Road and Bridge Construction, as amended, shall apply to and form a part of this Contract as if fully written herein where referenced. Where a FDOT Section is cited that contains references to other Sections, they shall also be included as though written therein.
- B. Materials and workmanship specified or indicated with reference to FDOT Standard Specifications shall be in accordance with the referenced articles, sections, and paragraphs of the Standard Specifications, except that contractual and payment provisions do not apply.

1.03 FDOT DESIGN STANDARDS

- A. The July 2019 Edition of the Florida Department of Transportation (FDOT) Design Standards, as amended, shall apply to and form a part of this Contract as if fully written herein where referenced. Where a FDOT Standard is cited that contains references to other Standards, they shall also be included as though written therein.

1.04 ELECTRONIC COPIES

- A. Electronic copies of the July 2019 Edition FDOT Standard Specifications for Road and Bridge Construction can be downloaded from the following site:

<https://www.fdot.gov/programmanagement/Implemented/SpecBooks/default.shtm>

- B. Electronic copies of the latest Edition FDOT Design Standards can be downloaded from the following site:

<https://www.fdot.gov/design/standardplans/ds.shtm>

PART 2 – PRODUCTS

“Not Used”

EDTPF Infrastructure Improvements
Signalization Package

PART 3 – EXECUTION

“Not Used”

PART 4 MODIFICATIONS FDOT SPECIFICATIONS

4.01 TERMS

The terms defined in the General Requirements of the Contract Documents may be different from the terms used in the FDOT Division 1 Specifications. The following paragraphs redefine the FDOT terms to be consistent with the Contract Documents.

- A. The term “Department” as used in the FDOT Specifications shall mean the same as the term “Owner” as defined in the Contract Documents.
- B. The term “Engineer” as used in the FDOT Specifications shall mean the same as the term “Owner’s Representative” as defined in the Contract Documents. The Owner intends to hire an independent consulting firm to provide Construction Engineering and Inspection (CEI) services, who will be independent of the Engineer of Record.
- C. The term “Engineer of Record” as used in the FDOT Specifications shall mean the same as the term “Designer or Engineer” as defined in the Contract Documents.
- D. The term “Inspector” as used in the FDOT specifications shall mean the same as the term “Owner’s Representative” as defined in the Contract Documents.
- E. The term “Proposal Form” as used in the FDOT Specifications shall mean the same as the term “Bid Form” as used in the Contract Documents.
- F. The term “Proposal Guaranty” as used in the FDOT Specifications shall mean the same as the term “Bid Bond” in the Contract Documents
- G. The term “Right of Way” as used in the FDOT Specifications shall include all areas of the project site and shall not be limited to roadway areas only.
- H. The term “Secretary” as used in the FDOT Specifications shall mean the same as the term “Owner” as defined in the Contract Documents.
- I. The term “Special Provisions” as used in the FDOT Specifications shall mean the same as the term “Contract Documents” as defined in the Contract Documents.
- J. The term “Specialty Engineer” as used in the FDOT specifications shall mean the same as the term “Designer or Engineer” as defined in the Contract Documents.
- K. The term “Specifications” as used in the FDOT Specifications shall mean the same as the term “Contract Documents” as defined in the Contract Documents.

- L. The “Supplemental Agreement,” “Supplemental Specifications,” and “Technical Specifications” as used in the FDOT Specifications shall mean the same as the term “Contract Documents” as defined in the Contract Documents.

4.02 PAY ITEMS

The FDOT Specifications define specific pay items, methods of measurement and basis of payment for particular types of work. Payment for all items under this Agreement shall be consistent with the bid items defined on the Space Florida Bid Form for EACH complete and operational signalization intersection.

4.03 FDOT DIVISION I

The FDOT Division I General Requirements and Covenants shall not apply to the project. These will be per Owner’s contractual requirements. For references directed towards FDOT Division I within the FDOT Divisions II and III, the Owner and contract terms shall govern.

END OF SECTION 01 41 00

SECTION 01 42 16
DEFINITIONS AND STANDARDS

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

A. General:

1. This Section specifies procedural and administrative requirements for compliance with governing regulations and the codes and standards imposed upon the Work. These requirements include the obtaining of permits, licenses, inspections, releases and similar requirements associated with regulations, codes and standards.
2. "Regulations" is defined to include laws, statutes, ordinances, and lawful orders issued by governing authorities, as well as those rules, conventions and agreements within the construction industry which effectively control the performance of the Work regardless of whether they are lawfully imposed by governing authority or not.

1.02 DEFINITIONS

A. General Requirements:

1. The provisions or requirements of Division 01 sections apply to the entire Work of this Contract and, where so indicated, to other elements which are included in this Project.

B. Whenever the following terms are used in the Contract Documents or any other documents or instruments pertaining to the construction of this Project, the intent and meaning shall be interpreted as follows:

1. ACCESS ROAD. The right-of-way, the roadway and all improvements constructed thereon connecting the project to a public highway.
2. ADVERTISEMENT. A public announcement, as required by local law, inviting bids for Work to be performed and materials to be furnished. Also referred to as "Invitation to Bid" or "Notice to Bidders."
3. APPROVE. Where used in conjunction with Owner's and/or Engineer's response to submittals, requests, applications, inquiries, reports and claims by the Contractor, the meaning of term "approved" will be held to limitations of Owner and Engineer's responsibilities and duties as specified in the General Conditions of the Contract for Construction, as modified. In no case will "approval" by Owner and/or Engineer be interpreted as a release of Contractor from responsibilities to fulfill requirements of the Contract Documents.
4. APPROVED AS NOTED. Where used in conjunction with the Owner and/or Engineer's response to submittals, requests, applications, inquires, reports, and

claims by the Contractor, the meaning of the term "Approved as Noted" indicates that the item or material submitted is approved subject to corrections noted. Correction and re-submittal of the item is not required unless specifically called for in the notations. Approval of Contractor's submitted item does not constitute approval of the design. Approval does not permit any deviation from the Contractor's requirements and does not relieve the Contractor of the responsibility for errors or deficiencies in design, dimension, details, or for coordinating installation and/or construction with actual conditions at the Site.

5. AWARD. The acceptance, by the Owner, of the Contractor's Price Proposal.
6. BID. The written offer of the Bidder (when submitted on the approved Bid Form) to perform the Work and furnish the necessary materials and labor in accordance with the provisions of the Contract Documents.
7. BID BOND. The security furnished with a Bid to guaranty that the Bidder will enter into a Contract if Bidder's Bid is accepted by the Owner.
8. BIDDER. Any individual, partnership, firm or corporation, acting directly or through a duly authorized representative, who submits a Bid for the Work contemplated.
9. BUILDING AREA. An area on the Project Site to be used, considered, or intended to be used for buildings or other facilities or rights-of-way together with all buildings and facilities located thereon.
10. CALENDAR DAY. Every day shown on the calendar.
11. CONSTRUCTION SCHEDULE. The Contractor-prepared schedule as adjusted from time to time in accordance with the Contract Documents showing planned and actual progress by items of the Work.
12. DIRECTED, REQUESTED, ETC. Where not otherwise explained, terms such as "directed", "requested", "authorized", "selected", "accepted", and "permitted" mean "directed by Owner and/or Engineer", "requested by Owner and/or Engineer", and similar phrases. However, no such implied meaning will be interpreted to extend Owner and/or Engineer's responsibility into the Contractor's area of construction supervision.
13. DRAINAGE SYSTEM. The system of pipes, ditches, and structures by which surface or subsurface waters are collected and conducted from the project area.
14. PLANS (OR DRAWINGS). The official Plans (or Drawings) or exact reproductions which show the location, character, dimensions and details of the Project and the Work to be performed and which are to be considered as a part of the Contract Documents.

15. ENGINEER. The term Engineer shall have the same meaning as the term Architect or Designer as defined and used in the in the Form of Agreement Between Owner and Contractor an in the General Conditions in the Contract documents. The Engineer is the Professional Engineer or Engineering Firm registered in the State of Florida that develops the criteria and concept for the project, performs the analysis, and is responsible for the preparation of the Plans and Specifications.
16. EQUIPMENT. All machinery, together with the necessary supplies for upkeep and maintenance, and also all tools and apparatus necessary for the proper construction and acceptable completion of Work.
17. EXPERIENCED. The term "experienced" when used with the term "Installer" means having a minimum of five (5) previous Projects similar in size and scope to this Project, being familiar with the procedures required, and having complied with requirements of the authority having jurisdiction.
18. EXTRA WORK. An item of Work not provided for in the awarded Contract as previously modified by Work Order or Change Order but which is found by the Owner and/or Engineer to be necessary to complete the Work within the intended scope of the Contract as previously modified.
19. FEDERAL SPECIFICATIONS. The Federal Specifications and Standards, and supplements, amendments and indices thereto are prepared and issued by the General Services Administration of the Federal Government. They may be obtained from the Specifications Unit, 7th and D Street, SW, Washington, DC 20406, Tele: (202) 472-2205 or 472-2140.
20. FURNISH. Except as otherwise defined in greater detail, the term "furnish" is used to mean supply and deliver to Project Site, ready for unloading, unpacking, assembly, installation, etc., as applicable in each instance.
21. GENERAL EXPLANATION. A substantial amount of specification language consists of definitions of terms found in the Contract Documents. Certain terms used in Contract Documents are defined in the article. Definitions and explanation contained in this Section are not necessarily either complete or exclusive, but are general for the Work to the extent that they are not stated more explicitly in another element of the Contract Documents.
22. INDICATED. The term "indicated" is a cross-reference to graphic representations, notes, or schedules on plans, to other paragraphs or schedules in the Specifications, and to similar means of recording requirements in Contract Documents. Where terms such as "shown", "noted", "scheduled", and "specified" are used in lieu of "indicated", it is for purpose of helping reader locate cross-reference, and no limitation of location is intended except as specifically noted.
23. INSPECTOR. An authorized representative of the Owner assigned to make all necessary inspections and/or tests of the Work performed or being performed, or of the materials furnished or being furnished by the Contractor.

24. **INSTALL.** Except as otherwise defined in greater detail, the term "install" is used to describe operations at Project Site including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations, as applicable in each instance.
25. **INSTALLER.** The term "installer" is defined as the entity (person or firm) engaged by the Contractor, its subcontractor or sub-subcontractor for performance of a particular unit of Work at the Project Site, including installation, erection, application, and similar required operations. It is a general requirement that such entities (installers) be expert in the operations they are engaged to perform.
26. **INTENTION OF TERMS.** Whenever, in these Specifications or on the Plans; the words "directed," "required," "permitted," "ordered," "designated," "prescribed," or words of like import, are used, it shall be understood that the direction, requirement, permission, order, designation, or prescription of the Owner and/or Engineer is intended; and similarly, the words "approved," "acceptable," "satisfactory," or words of like import, shall mean approved by, or acceptable to, or satisfactory to the Owner and/or Engineer.
- a. All reference to a specific requirement of a numbered paragraph of the Specifications or a cited standard shall be interpreted to include all general requirements of the entire section, specification item, or cited standard that may be pertinent to such specific reference.
27. **LABORATORY.** The official testing laboratories of the Contractor or Owner or such other laboratories as may be designated by the Owner and/or Engineer.
28. **MATERIALS.** Any substance specified for use in the construction of the Contract Work.
29. **NO EXCEPTIONS TAKEN.** The term "no exceptions taken" where used in conjunction with the Owner and/or Engineer's action on the Contractor's submittals, applications, and requests, is limited to the Owner and/or Engineer's duties and responsibilities as stated in the General Conditions of the Contract for Construction, as modified.
- a. Refer to Section 01 33 18 – SUBMITTAL PROCEDURES for more specific information.
30. **NOT APPROVED.** Where used in conjunction with the Owner and/or Engineer's response to submittals, requests, applications, inquires, reports, and claims by the Contractor; the meaning of the term "Not Approved" indicates that the item or material is unsatisfactory, and shall be revised, new material prepared in accordance with notations, and resubmitted. Material marked in this manner shall not be released for any Work.
31. **NOTICE TO PROCEED.** A written notice to the Contractor to begin the actual Contract Work. If applicable, the Notice to Proceed shall state the date on which the Contract Time begins.

32. OWNER. The term Owner shall mean the party of the first part or the contracting agency signatory to the Contract. Space Florida is the Owner unless otherwise indicated in the Contract), and includes their agents, employees, representatives and contractors when acting at its direction or on its behalf.
33. PAVEMENT. The combined surface course, base course, and subbase course, if any, considered as a single unit.
34. PAYMENT BOND. The approved form of security furnished by the Contractor and Contractor's Surety as a guaranty that the Contractor will complete the Work in accordance with the terms of the Contract.
35. PERFORMANCE BOND. The approved form of security furnished by the Contractor and Contractor's Surety as a guaranty that the Contractor will complete the Work in accordance with the terms of the Contract and will complete the guarantee of the Work specified therein.
36. PROJECT. The agreed Scope of Work to construct a new Fuel Farm Storage facility for Space Florida at the Shuttle Landing Facility.
37. PROJECT SITE. The term "project site" is defined as the space available to the Contractor for performance of the Work, either exclusively or in conjunction with others performing other Work, as part of the Project. The extent of the project site may or may not be identical with the description of the land upon which the project is to be built.
38. PROVIDE. Except as otherwise defined in greater detail, the term "provide" means furnish and install, complete, and ready for intended use, as applicable in each instance.
39. RELATED DOCUMENTS. Contract Documents, Project Manual, Plans, General Conditions of the Contract for Construction, as modified, General Requirements, reports, and Specification Sections, apply to Work of this Contract.
40. RETENTION. Retention (or retainage) is the amount of compensation for Work accomplished by the Contractor which is retained by the Owner to be paid to the Contractor as specified herein.
41. SHOP DRAWINGS. All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the Contractor, a subcontractor, manufacturer, supplier or distributor and which illustrate the equipment, material or some portion of the Work.

42. SPECIFICATIONS. A part of the Contract Documents containing the written directions and requirements for completing the Contract Work. Standards for specifying materials or testing which are cited in the Specifications or referenced shall have the same force and effect as if included in the Contract physically.
43. SPECIFICATION TEXT FORMAT. Construction Specification Institute (CSI) formatting guidelines using the 2004 six-digit numbering system. Underscoring facilitates scan reading; no other meaning.
44. STRUCTURES. Project facilities such as buildings, bridges, culverts, catch basins, inlets, retaining walls, cribbing, storm and sanitary sewer lines, waterlines, underdrains, electrical ducts, manholes, handholes, lighting fixtures and bases, transformers, flexible and rigid pavements, vaults; and other manmade features of the Project that may be encountered in the Work and not otherwise classified herein.
45. SUBGRADE. The soil which forms the pavement foundation.
46. SUPERINTENDENT. The Contractor's executive representative who is present on the Work during progress, authorized to receive and fulfill instructions from the Owner and/or Engineer, and who shall supervise and direct the construction.
47. SURETY. The corporation, partnership, or individual, other than the Contractor, executing Contract Bonds which are furnished to the Owner by the Contractor.
48. TESTING LABORATORIES. The term "testing laboratory" is defined as an independent entity engaged to perform specific inspections or tests of the Work, either at the Project Site or elsewhere; and to report, and (if required) interpret results of those inspections or tests.
49. TRADES. Use of titles such as "carpentry" is not intended to imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.
50. UNIT PRICE ITEM (PAY ITEM). A specific unit of Work for which a price is provided in the Contract.

1.03 SPECIFICATION FORMAT AND CONTENT EXPLANATION

A. General:

1. This Article is provided to help the user of the specifications to more readily understand the format, language, implied requirements and similar conventions of content. None of the following explanations shall be interpreted to modify the substance of the Contract requirements.

B. Specification Format:

1. The Division I specifications are organized based upon the Construction Specifications Institute's (CSI's) formatting guidelines. The Technical Specifications are based on FDOT Standard Specifications for Road and Bridge Construction.

C. Specification Content:

1. This Project Specification has been produced employing certain conventions in the use of language as well as conventions regarding the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:
 - a. In certain circumstances, the language of the specifications and other Contract Documents is of the abbreviated type. It implies words and meanings that will be interpreted as plural and plural words will be interpreted as singular where applicable and where the full context of the Contract Documents so indicates.
 - b. Imperative Language is used generally in the specifications. Requirements expressed imperatively are to be performed by the Contractor. At certain locations in the text, for clarity, contrasting subjective language is used to describe responsibilities which must be fulfilled indirectly by the Contractor or by others when so noted.

1.04 INDUSTRY STANDARDS

A. Applicability of Standards:

1. Except where more explicit or stringent requirements are written into the Contract Documents, applicable construction industry standards have the same force and effect as if bound into or copied directly into the Contract Documents. Such industry standards are made a part of the Contract Documents by reference. Individual specification sections indicate which codes and standards the Contractor must keep available at the Project Site for reference.
 - a. Referenced standards (standards referenced directly in the Contract Documents) take precedence over non-referenced standards that are recognized in industry for applicability to the Work.
 - b. Non-referenced standards are defined as not being applicable, except as a general requirement of whether the Work complies with recognized construction industry standards.

B. Publication Dates:

1. Except as otherwise indicated, where compliance with an industry standard is required, comply with standard in effect as of date of Contract Documents.

C. Conflicting Requirements:

1. Where compliance with two or more standards is specified, and where these standards establish different or conflicting requirements for minimum quantities or quality levels, the most stringent requirement will be enforced, unless the Contract Documents specifically indicate a less stringent requirement. Refer requirements that are different, but apparently equal, and uncertainties as to which quality level is more stringent to the Owner and/or Engineer for a decision before proceeding.
2. Minimum Quantities or Quality Levels: In every instance the quantity or quality level shown or specified is intended to be the minimum for the Work to be provided or performed. Unless otherwise indicated, the actual Work may either comply exactly, within specified tolerances, with the minimum quantity or quality specified, or may exceed that minimum within reasonable limits. In complying with these requirements, the indicated numeric values are either minimum or maximum values, as noted or as appropriate for the context of the requirements. Refer instances of uncertainty to the Owner and/or Engineer for decision before proceeding.

D. Copies of Standards:

1. The Contract Documents require that each entity performing Work be experienced in that part of the Work being performed. Each entity is also required to be familiar with industry standards applicable to that part of the Work. Copies of applicable standards are not bound with the Contract Documents.
 - a. Where copies of standards are needed for proper performance of the Work, the Contractor is required to obtain such copies directly from the publication source.
 - b. Although certain copies of standards needed for enforcement of the requirements may be required submittals, the Owner and/or Engineer reserves the right to require the Contractor to submit additional copies of these standards as necessary for enforcement of requirements.

E. Abbreviations and Names:

1. Trade association names and titles of general standards are frequently abbreviated. Where acronyms or abbreviations are used in the specifications or other Contract Documents they are defined to mean the recognized name of the trade association, standards generating organization, governing authority or other entity applicable to the context of the text provision. Refer to the "Encyclopedia of Associations," published by Gale Research Co., available in most libraries.

F. Comply with applicable standards for work, promulgated by organizations, associations, institutes, societies, boards and generally recognized organizations including:

- American Association of State Highway and Transportation Officials.AASHTO
- American Concrete Institute. ACI
- The Associated General Contractors of America, Inc. AGC
- American Gear Manufacturers AssociationAGMA

American Institute of Architects	AIA
American Society for Testing and Materials	ASTM
American Wire Gauge	AWG
American Wood Preservers Association	AWPA
American Water Works Association	AWWA
Cast Iron Pipe Research Association	CIPRA
Concrete Reinforcing Steel Institute	CRSI
Institute of Electrical & Electronic Engineers	IEEE
Sheet Metal and Air Conditioning Contractors National Association	SMACNA
Air Moving & Conditioning Association	AMCA
American Wood Preservers Bureau	AWPB
Air Conditioning & Refrigeration Institute	ARI
Federal Specifications	FED. SPEC.
Institute of Boiler & Refrigeration	IBR
Tubular Exchange Manufacturers Association	TEMA
Industrial Power Cable Engineers Association	IPCEA
Joint Industry Council	JIC
Steel Boiler Institute	SBI
Steel Door Institute	SDI
Acoustical Materials Association	AMA
Aluminum Association	AA
American Association of State Highway and Transportation Officials	AASHTO
American Concrete Institute	ACI
American Gas Association	AGA
Architectural Precast Association	APA
American Institute of Steel Construction	AISC
American Society for Testing and Materials	ASTM
American Gas Association	AGA
American Institute of Steel Construction	AISC
American National Standards Institute	ANSI
American Welding Society	AWS
American Plywood Association	APA
American Petroleum Institute	API
Architectural Woodworking Institute	AWI
American Society of Heating, Refrigerating & Air Conditioning Engineers	ASHRAE
Concrete Reinforcing Steel Institute	CRSI
Contracting Plasterers and Lathers International Association	CPLIA
Factory Mutual Engineering Corporation	FM
Florida Department of Transportation	FDOT
Flat Glass Jobbers Association	FGJA
Gypsum Association	GA
Metal Lath Manufacturers Association	MLMA
Metal Lath/Steel Framing Association	ML/SFA
Military Specifications	MIL SPEC.
National Terrazzo & Mosaic Association	NTMA
National Electrical Manufacturers Association	NEMA
National Electric Code	NEC
National Fire Protection Association	NFPA
National Association of Architectural Metal	NAAM

National Concrete Masonry Association	NCMA
National Roofing Contractors Association	NRCA
National Woodwork Manufacturers Association	NWMA
National Lumber Manufacturers Association	NLMA
National Bureau for Lathing and Plastering	NBLP
Post-Tensioning Institute	PTI
Portland Cement Association	PCA
Product Standards	PS
Precast Concrete Institute	PCI
Rubber Manufacturer's Association	RMA
Research Council on Riveted and Bolted Structural Joints	RCRBSJ
Sealing and Waterproofers Institute	SWI
Southern Pine Inspection Bureau	SPIB
Steel Joist Institute	SJI
Steel Structures Painting Council	SSPC
Stucco Manufacturer's Association	SMA
Tile Council of America	TCA
Underwriter's Laboratories	UL
United States Department of Commerce - United States Postal Service	USPS
United States Department of Commerce-Commercial Standards	CS
United States Gypsum Company	USG
Vermiculite Institute	VI
Warnock Hersey	WH
West Coast Lumber Inspection Bureau	WCLIB

- G. Where more than one quality is set forth in such Standards and reference is not made in these Specifications to which specific quality is intended, the better shall be bid upon and furnished. Where under such Standards, options occur, the Owner and/or Engineer shall be called upon to designate which applies.

1.05 CODES/MANUFACTURER'S RECOMMENDATIONS

- A. Applicable code requirements are included herein by this reference. However, such are minimum criteria and no reduction from the Plans or Specifications is permitted, even if allowed by applicable code.
- B. Electrical and mechanical apparatus, fixtures and equipment shall bear approved device label of Underwriter's Laboratories.
- C. The local building code and the Florida Building Code (latest adopted edition as amended) apply to all Work. In the event a conflict occurs between the local vs. Florida Code, the greater requirements shall govern.
- D. Specifically, comply with following codes and/or Standards:
 1. Florida Building Code, Latest Adopted Edition, as amended.
 2. Local Building Code.
 3. Local Public Utility Regulations.

4. Local Water Department Regulations/Standards.
 5. Florida Plumbing Code, Latest Adopted Edition, as amended.
 6. Florida Mechanical Code, Latest Adopted Edition, as amended.
 7. Florida Fuel Gas Code, Latest Adopted Edition, as amended.
 8. National Electric Code.
 9. ASME Code for unfired pressure vessels.
 10. Building exits code (life safety code), NFPA 101.
 11. Standards of National Board of Fire Underwriters.
 12. ASHRAE Safety Code for Mechanical Refrigeration.
 13. National Fire Codes.
 14. National Fire Protection Association.
 15. Occupational Safety and Health Act (OSHA)
 16. International Council of Building officials.
 17. Housing and Urban Development.
 18. Council of American Building Officials.
 19. ANSI A17.1 Safety Code for Elevators and Escalators.
 20. American National Standards Institute (ANSI).
 21. Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction and FDOT Design Standards, latest adopted edition(s), as amended.
 22. Florida Department of Environmental Regulation.
 23. United States Environmental Protection Agency.
 24. Americans with Disabilities Act (ADA).
 25. Governing County Environmental Protection Commission.
- E. Comply with recommendations of pertinent manufacturer to achieve first quality work.

1.06 ABBREVIATED SPECIFICATIONS

- A. In order to shorten these Specifications, certain terminology and form common in specification writing is employed. Following words are often omitted when meaning remains clear without same, i.e., "the," "the Contractor shall," "of," "a," "shall comply

with," etc.

- B. Uses of a period or colon after a general mention of a material lists means - "shall be," or "shall comply with." Example:

"Portland Cement: ASTM C 150, Type 1."

1.07 SUBMITTALS

- A. Permits, Licenses, and Certificates:

1. For the Owner's records, submit copies of permits, licenses, certificates, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgements, and similar documents, correspondence, and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work.

- a. Refer to Section 01 78 00 - PROJECT CLOSEOUT for more detailed instructions.

END OF SECTION 01 42 16

SECTION 01 45 00
QUALITY CONTROL SERVICES

PART 1 - GENERAL

1.00 DESCRIPTION OF REQUIREMENTS

1. Contractor shall utilize FDOT Quality Control practices as mandated by FDOT Standard Specifications for Road and Bridge Construction for this signalization improvements project. All Quality Control Services shall be paid for by the Contractor. The Contractor shall submit a quality control plan to comply with the contract documents. All quality control costs shall be the responsibility of the Contractor.
2. All independent quality assurance/acceptance materials testing will be paid for by the Owner using an independent testing consultant.

1.01 SUMMARY

- A. General: Required inspection and testing services are intended to assist Owner and/or Engineer in the determination of probable compliance of the Work with requirements specified or indicated. These required services do not relieve the Contractor of responsibility for compliance with these requirements or for compliance with requirements of the Contract Documents.
- B. Definitions: Quality control services include inspections and tests and related actions including reports performed by independent agencies and governing authorities, as well as directly by the Contractor. These services do not include Contract enforcement activities performed directly by the Owner and/or Engineer.
 1. Specific quality control requirements for individual units of Work are specified in the Sections of these Specifications that specify the individual element of the Work. These requirements, including inspections and tests, cover both production of standard products, and fabrication of customized Work. These requirements also cover quality control of the installation procedures.
 2. Inspections, tests and related actions specified in this Section and elsewhere in the Contract Documents are not intended to limit the Contractor's own quality control procedures which facilitate overall compliance with requirements of the Contract Documents. Requirements for the Contractor to provide quality control services by the Owner and/or Engineer, governing authorities or other authorized entities are not limited by the provisions of this Section.
- C. Quality Control: When the Contract specifies the use of certain methods and equipment, such methods and equipment shall be used unless others are authorized by the Owner and/or Engineer.
 1. If the Contractor desires to use a method or type of equipment other than specified in the Contract, Contractor may request authority from the Owner and/or Engineer to do so. The request shall be in writing and shall include a full description of the methods and equipment proposed and of the reasons for desiring to make the change. If approval is given, it will be on the condition that

the Contractor will be fully responsible for producing Work in conformity with the Contract Documents.

2. If, after trial use of the substituted methods or equipment, the Owner and/or Engineer determines that the Work produced does not meet Contract requirements, the Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining Work with the specified methods and equipment.
3. The Contractor shall remove all deficient Work and replace it with Work of specified quality, or take such other corrective action as the Owner and/or Engineer may direct. No change will be made in the Contract Sum or in Contract Time as a result of authorizing a change in methods or equipment under this subsection.

D. **Source of Supply and Quality Requirements:** The materials used on the Work shall conform to the requirements of the Contract Documents. Unless otherwise specified, such materials that are manufactured or processed shall be new (as compared to used or reprocessed). Modifications to existing materials shall be performed in accordance with manufacturer's recommendations and/or the Plans.

1. In order to expedite the inspection and testing of materials, the Contractor shall furnish complete statements to the Owner and/or Engineer as to the origin, composition, and manufacture of all materials to be used in the Work. Such statements shall be furnished promptly after execution of the Contract but, in all cases, prior to delivery of such materials.
2. At the Owner and/or Engineer's option, materials may be approved at the source of supply before delivery is stated. If it is found after trial that sources of supply for previously approved materials do not produce specified products, the Contractor shall furnish materials from other sources.

E. **Samples, Tests, and Cited Specifications:** All materials used in the Work will be inspected, tested, and approved by the Owner and/or Engineer before incorporation in the Work. All work in which untested materials are used without approval or written permission of the Owner and/or Engineer shall be performed at the Contractor's risk. Materials found to be unacceptable and unauthorized will not be paid for and, if directed by the Owner and/or Engineer, shall be removed at the Contractor's expense.

1. All tests performed by or on behalf of the Owner are for the Owner's monitoring purposes only. No approval of materials by the Owner and/or Engineer shall relieve the Contractor of their obligation to provide and use materials that conform in all respects with the Contract requirements, and if the Contractor chooses to rely on the results of such tests or such approvals as evidence or indication that the materials supplied do in fact so conform, the Contractor does so at its sole risk.

F. **Certification of Compliance:** The Owner and/or Engineer may permit the use, prior to sampling and testing, of certain materials or assemblies when accompanied by manufacturer's certificates of compliance stating that such materials or assemblies fully comply with the requirements of the Contract. The certificate shall be signed by the manufacturer. Each lot of such materials or assemblies delivered to the Work shall be

accompanied by a Certificate of Compliance in which the lot is clearly identified.

1. Materials or assemblies used on the basis of Certificates of Compliance may be sampled and tested at any time and if found not to be in conformity with Contract requirements will be subject to rejection whether in place or not.
 2. The form and distribution of Certificates of Compliance shall be as approved by the Owner and/or Engineer.
 3. When a material or assembly is specified by "brand name or equal" and the Contractor elects to furnish the specified "brand name," the Contractor shall be required to furnish the manufacturer's Certificate of Compliance for each lot of such material or assembly delivered to the Work. Such Certificate of Compliance shall clearly identify each lot delivered and shall certify as to:
 - a. Conformance to the specified performance, testing, quality or dimensional requirements; and,
 - b. Suitability of the material or assembly for the use intended in the Contract Work.
 4. Should the Contractor propose to furnish an "or equal" material or assembly, Contractor shall furnish the manufacturer's certificates of compliance as hereinbefore described for the specified brand name material or assembly. However, the Owner and/or Engineer will be the sole judge as to whether the proposed "or equal" is suitable for use in the Work.
 5. The Owner and/or Engineer reserve the right to refuse permission for use of materials or assemblies on the basis of Certificates of Compliance.
- G. Plant Inspection: The Owner and/or Engineer may inspect, at its source, any specified material or assembly to be used in the Work. Manufacturing plants may be inspected from time to time for the purpose of determining compliance with specified manufacturing methods or materials to be used in the Work and to obtain samples required for his/her acceptance of the material or assembly.
1. Should the Owner and/or Engineer conduct plant inspections, the following conditions shall exist:
 - a. The Owner and/or Engineer shall have the cooperation and assistance of the Contractor and the producer with whom Contractor has contracted for materials.
 - b. The Owner and/or Engineer shall have full entry at all reasonable times to such parts of the plant that concern the manufacture or production of the materials being furnished.
 - c. If required by the Owner and/or Engineer, the Contractor shall arrange for adequate office or working space that may be reasonably needed for conducting plant inspections. Office or working space shall be conveniently located with respect to the plant.

2. It is understood and agreed that the Owner and/or Engineer shall have the right to retest any material which has been tested and approved at the source of supply after it has been delivered to the Site. The Owner and/or Engineer shall have the right to reject only material which, when retested, does not meet the requirements of the Contract Documents.
- H. Storage of Materials: Materials shall be so stored as to assure the preservation of their quality and fitness for the Work. Stored materials, even though approved before storage, may again be inspected prior to their use in the Work. Stored materials shall be located so as to facilitate their prompt inspection. The Contractor shall coordinate the storage of all materials with the Owner and/or Engineer. Unless otherwise shown on the Plans, the storage of materials and the location of the Contractor's plant and parked equipment or vehicles shall be as directed by the Owner and/or Engineer. Private property shall not be used for storage purposes without written permission of the Owner or lessee of such property. The Contractor shall make all arrangements and bear all expenses for the storage of materials on private property. Upon request, the Contractor shall furnish the Owner and/or Engineer a copy of the property owner's permission.
1. All storage sites on the Project Site or private property shall be restored to their original condition by the Contractor at their entire expense, except as otherwise agreed to (in writing) by the Owner or lessee of the property.
- I. Unacceptable Materials: All materials or assemblies that do not conform to the requirements of the Contract Documents shall be considered unacceptable and shall be rejected. The Contractor shall remove any rejected material or assembly from the Site of the Work, unless otherwise instructed by the Owner and/or Engineer.
1. Rejected material(s) or assembly(ies) that have been corrected by the Contractor shall not be returned to the Site of the Work until such time as the Owner and/or Engineer has approved its use in the Work.

1.02 TESTING BORNE BY THE CONTRACTOR

- A. Unless otherwise specified herein, all quality control testing costs shall be borne by the Contractor. An independent testing laboratory selected by and responsible to the Contractor and acceptable to the Owner and/or Engineer shall perform all testing required by the Contract Documents or other testing as directed by the Owner and/or Engineer.
- B. The Contractor shall bear the cost of testing under the following conditions:
1. If substitute materials or equipment are proposed by the Contractor, Contractor shall pay the cost of all tests which may be necessary to satisfy the Owner and/or Engineer that specification requirements are satisfied. The Contractor shall pay for the Owner and/or Engineer's time spent in review and administrating such proposed substitution.
 2. If materials or workmanship are used which fail to meet specification requirements, the Contractor shall pay the cost of all testing and retesting deemed necessary by the Owner and/or Engineer to determine the safety or suitability of the material or element.

3. The Contractor shall pay for all testing costs including, but not limited to, power, fuel, and equipment cost which may be required for complete testing of all equipment and systems for proper operation.
4. The Contractor shall pay for all standby time required when operations are delayed by the Contractor.

1.03 RETEST RESPONSIBILITY

- A. Where results of required inspections, tests or similar services prove unsatisfactory and do not indicate compliance of related Work with the requirements of the Contract Documents, then the cost of all retests shall be the responsibility of the Contractor, regardless of whether the original test was the Contractor's responsibility. The cost of retesting of Work revised or replaced by the Contractor is the Contractor's responsibility, where required tests were performed on original Work.

1.04 RESPONSIBILITY FOR ASSOCIATED SERVICES

- A. The Contractor shall be required to cooperate with the independent agencies performing required inspections, tests and similar services. Provide such auxiliary services as are reasonably requested. Notify the Testing Agency sufficiently in advance of operations to permit assignment of personnel. These auxiliary services include but are not necessarily limited to the following:
 1. Providing access to the Work.
 2. Taking samples or assistance with taking samples.
 3. Delivery of samples to Testing Laboratories.
 4. Security and protection of samples and test equipment at the Project Site.

1.05 COORDINATION

- A. The Contractor shall coordinate with each independent agency engaged to perform inspections, tests and similar services for the Project and shall coordinate the sequence of activities so as to accommodate required services with a minimum of delay in the progress of the Work. The Contractor shall coordinate the Work so as to avoid the necessity of removing and replacing work to accommodate inspections and tests. The Contractor shall be responsible for scheduling times for inspections, tests, taking of samples and similar activities. The testing shall not be used as justification for claims for extension of Contract Time.

1.06 QUALITY ASSURANCE

- A. Qualification for Service Agencies: Except as otherwise indicated, Contractor shall only engage inspection and test service agencies, including independent testing laboratories, which are prequalified as complying with "Recommended Requirements for Independent Laboratory Qualification" by the American Council of Independent Laboratories, and which are recognized in the industry as specialized in the types of inspections and tests to be performed.

1.07 SUBMITTALS

- A. Refer to Section 01 33 18 – SUBMITTAL PROCEDURES for the general requirements on submittals. The Contractor shall submit a certified written report of each inspection, test or similar service, performed by or on behalf of the Contractor directly to the Owner and/or Engineer in triplicate. Submit additional copies of each written report directly to a governing agency, when the agency so directs.
- B. Report Data: Written reports of each inspection, test or similar service shall include, but not be limited to the following:
 - 1. Name of testing agency or test laboratory.
 - 2. Dates and locations of samples and tests or inspections.
 - 3. Names of individuals making the inspection or test.
 - 4. Designation of the Work and test method. Complete inspection or test data.
 - 5. Test results.
 - 6. Interpretations of test results.
 - 7. Notation of significant ambient conditions at the time of sample-taking and testing.
 - 8. Comments or professional opinion as to whether inspected or tested Work complies with requirements of the Contract Documents.
 - 9. Recommendations on retesting, if applicable.

1.08 INSPECTION OF CONDITIONS

- A. Installer's Inspection of Conditions: Require the installer of each major unit of Work to inspect the substrate to receive Work and conditions under which the Work is to be performed. The installer shall report all unsatisfactory conditions in writing to the Contractor. Do not proceed with the Work until unsatisfactory conditions have been corrected in a manner acceptable to the installer.

- B. Manufacturer's Instructions: Where installations include manufactured products, comply with the manufacturer's applicable instructions and recommendations for installation, to the extent that these instructions and recommendations are more explicit or more stringent than requirements indicated in the Contract Documents.
- C. Inspect each item of materials or equipment immediately prior to installation. Reject damaged and defective items.
- D. Provide attachment and connection devices and methods for securing Work. Secure Work true to line and level, and within recognized industry tolerances. Allow for expansion and building movement. Provide uniform joint width in exposed Work. Arrange joints in exposed Work to obtain the best visual effect to the satisfaction and approval of the Owner and/or Engineer. Refer questionable visual-effect choices to the Owner and/or Engineer for final decision.
- E. Recheck measurements and dimensions of the Work, as an integral step of starting each installation.
- F. Install each unit of Work during weather conditions and project status which will insure the best possible results in coordination with the entire Work. Isolate each unit of Work from incompatible Work as necessary to prevent deterioration.
- G. Coordinate enclosure of the Work with required inspections and tests, so as to minimize the necessity of uncovering Work for that purpose.
- H. Mounting Heights: Where mounting heights are not indicated, mount individual units of Work at industry recognized standard mounting heights for the particular application indicated. Refer questionable mounting height choices to the Owner and/or Engineer for final decision.

1.09 REPAIR AND PROTECTION

- A. Upon completion of inspection, testing, sample-taking and similar services performed on the Work, repair damaged Work and restore substrates and finishes to eliminate deficiencies, including deficiencies in the visual qualities of exposed finishes. Protect Work exposed by or for quality control service activities, and protect repaired Work. Repair and protection shall be the Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing or similar services.

END OF SECTION 01 45 00

SECTION 01 50 00
TEMPORARY FACILITIES

PART 1 - GENERAL

1.01 SUMMARY

- A. Specific administration and procedural minimum actions are specified in this Section, as extensions of provisions in the Contract Documents. Provisions of this Section are applicable to, but not by way of limitation; temporary services and facilities including utility services, construction and support facilities, security and protection provisions, and support facilities. This section is comprehensive in nature and shall apply “as applicable” to features of work and the Contractor’s methodology.
- B. Furnish, install, maintain, and protect temporary utilities, construction facilities, and controls necessary for construction at locations and in a manner which will be safe, nonhazardous, sanitary, and protective of persons and property, and free of deleterious effects.
- C. Provide and maintain methods, equipment, and temporary construction, as necessary to provide controls over environmental conditions at Project Site and related areas under Contractor's control.
- D. Remove physical evidence of temporary facilities at completion of Work.
- E. Provide temporary services and facilities ready for use when first needed to avoid delay in the Work. Maintain, expand and modify as needed. Do not remove until no longer needed, or replaced by authorized use of permanent facilities.
 - 1. Temporary utilities required include, but are not limited to:
 - a. Water service and distribution.
 - b. Temporary electric power and light.
 - c. Telephone service.
 - d. Storm and sanitary sewer.
 - 2. Temporary construction and support facilities required include, but are not limited to:
 - a. Temporary heat.
 - b. Field offices and storage sheds.
 - c. Sanitary facilities, including drinking water.

- d. Temporary enclosures.
 - e. Temporary Project identification signs.
 - f. Waste disposal services.
3. Security and protection facilities required include, but are not limited to:
- a. Temporary fire protection.
 - b. Barricades, warning signs, lights.
 - c. Environmental protection.

1.02 GENERAL DEFINITIONS

- A. Energy Considerations: Administer the use of temporary facilities in a manner which conserves energy, but without delaying Work or endangering persons or property; comply with reasonable requests by Owner and/or Engineer.
- B. Costs: Except as otherwise indicated, Contractor shall pay for all costs associated with the temporary facilities, including use charges. Temporary facilities remain the property and responsibility of the Contractor.
- C. Dust Control: Adequate measures shall be taken to prevent the transfer of dust to all other areas of the Site.
- D. Noise Control: Where Work is being conducted in or adjacent to occupied areas, the Contractor shall make every effort to keep construction noise to a minimum.
- E. Environmental Protection: Review exposure to possible environmental problems with Owner and/or Engineer. Establish procedures and discipline among tradesmen and provide needed facilities which will protect against environmental problems (pollution of air, air quality, water and soil, excessive noise, and similar problems).

1.03 QUALITY ASSURANCE

- A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction, including, but not limited to:
 - 1. Building Code requirements.
 - 2. Health and safety regulations.
 - 3. Utility company regulations.
 - 4. Police, Fire Department and Rescue Squad rules.
 - 5. Environmental protection regulations.

- B. Standards: Comply with the requirements of NFPA Code 241, "Building Construction and Demolition Operations", ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition", and the NECA Electrical Design Library, "Temporary Electrical Facilities."
 - 1. Refer to "Guidelines for Bid Conditions for Temporary Job Utilities and Services", prepared jointly by AGC and ASC, for industry recommendations.
 - 2. Comply with NEMA, NECA and UL standards and regulations for temporary electric service. Install service in compliance with National Electric Code (NFPA 70).
- C. Inspections: Inspect and test each service before placing temporary utilities in use. Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.04 SUBMITTALS

- A. Reports and Tests:
 - 1. Submit copies of reports and permits required or necessary for installation and operation, including reports of tests, inspections and meter readings performed on temporary utilities, and permits and easements necessary for installation, use and operation.
- B. Implementation and Termination Schedule:
 - 1. Submit a schedule indicating implementation and termination of each temporary utility within fifteen (15) days of the date established for commencement of the Work.

1.05 PROJECT CONDITIONS

- A. Temporary Utilities:
 - 1. Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Owner and/or Engineer, change over from use of temporary service to use of permanent service.
- B. Conditions of Use:
 - 1. Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload facilities, or permit them to interfere with progress. Do not allow hazardous, dangerous or unsanitary conditions, or public nuisances to develop or persist on the Site.

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

3.01 INSTALLATION

- A. General: Use qualified tradesmen for installation of temporary services and facilities, or to disconnect existing services or facilities that must be temporarily removed to complete the Work. Locate temporary services and facilities where they will serve the entire Project adequately and result in minimum interference with performance of the Work.
- B. Ensure that the proper permits are secured before starting any utility Work. Require that tradesmen accomplishing this Work be licensed as required by local authority for the Work performed.
- C. Relocate, modify, and extend services and facilities, as required, during the course of the Work so as to accommodate the entire Work of the Project. Do not remove until facilities are no longer needed, or are replaced by authorized use of completed permanent facilities.

3.02 TEMPORARY STAGING AREAS

- A. If required, the staging area(s) locations to house the Contractor's field offices (if used) and equipment shall be coordinated and as approved by land owners (Owner, NASA, USAF and/or FDOT).
- B. The Contractor may provide a trailer or portable type field office for their own use. Location of field office within staging area shall be approved by the Owner. Costs for connections to utilities shall be paid for by the Contractor. The Contractor shall be responsible for obtaining and paying for all utilities that they require.
- C. The Contractor may erect and maintain throughout the life of the Contract, at Contractor's expense, a six foot (6') high fence of chain link fence fabric around the perimeter of the staging area. Contractor shall install vehicle and pedestrian gates as necessary to provide adequate ingress/egress to their exclusive sites. The Contractor is solely responsible for their own security. Upon completion of all Work, remove all construction fencing and barricades from the Project Site.

3.03 TEMPORARY STORAGE AND SPOIL AREAS

- A. The Contractor's vehicles, equipment, and materials shall be stored in the staging areas coordinated and as approved by land owners (Owner, NASA, USAF and/or FDOT). Upon completion of the Work, the storage area shall be cleaned-up and returned to their original condition to the satisfaction of the Owner. No special payment will be made for clean-up and restoration of the storage area. Personal vehicles shall not be permitted beyond the Contractor's staging area(s). Drivers of personal vehicles being operated beyond this Contractor's Staging Area shall be subject to loss of permission to enter the construction site.

- B. Stockpile areas shall be used to store all materials needed for the Project and may or may not be fenced at the Contractor's option. However, yellow flashing barricades shall be installed where potential conflicts with ground vehicular traffic might occur.
- C. No stockpile areas for the storage of bulk materials are provided. All materials removed by excavation shall be transported off the site by the Contractor. It shall not be stockpiled on the Project Site.
- D. If an additional storage area is needed, the Contractor shall request it from the Owner. The request will be reviewed on the basis of what is to be stored and the area required. The Contractor shall provide all necessary fencing and/or security.
- E. All waste material, including rubble and debris, shall be removed from the Project Site at the Contractor's expense. No hazardous materials shall be stored on site. Burning on site is prohibited.
- F. Equipment not in use during construction, nights, and/or holidays shall be parked in the staging area. Exceptions will only be approved by the Owner when absolutely necessary. Parking of construction worker's private vehicles shall be within the staging area or in separate areas approved by the Owner.

3.04 TEMPORARY UTILITY INSTALLATION

A. General:

1. The Contractor shall coordinate the requirements for temporary utilities with the Owner and shall install at the Contractor's expense all necessary utilities in a safe, acceptable manner. Should leaks, breaks, etc., occur during installation or use, the Contractor shall immediately notify the Owner and the appropriate utility personnel and promptly repair the utility so as to keep disruption of service to a minimum.
2. Engage the appropriate local utility company to install temporary service or connect to existing service. Where the company provides only part of the service, provide the remainder with matching, compatible materials and equipment; comply with the company's recommendations.
 - a. Arrange with the utility company and existing users for a time when service can be interrupted, where necessary, to make connections for temporary service.
 - b. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
 - c. Cost or use charges for temporary facilities are not chargeable to the Owner, and shall not be accepted as a basis of claims for a Change Order.

B. Water Service:

1. General: The Contractor shall provide and pay for all water. Maintain hose connections and outlet valves in leakproof condition. Where finish work below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize the possibility of water damage. Drain water promptly from pans as it accumulates.
2. Water Hoses: Employ heavy-duty abrasion-resistant hoses with a pressure rating greater than the maximum pressure of the water distribution system to provide water into each work area. Provide fittings as required to allow for connection to existing wall hydrants or spouts, as well as temporary water heating equipment, branch piping, showers, shut-off nozzles and equipment.
3. Install water service and distribution piping of sizes and pressures adequate for construction until permanent water service is in use.
4. Sterilize temporary potable water piping prior to use.
5. Non-Potable Water: Where non-potable water is used, mark each outlet with adequate health-hazard warning signs.

C. Electrical Service:

1. General: The Contractor shall provide and pay for all electricity.
 - a. Provide a weatherproof, grounded temporary electric power service and distribution system of sufficient size, capacity, and power characteristics to accommodate performance of Work during the construction period. Install temporary lighting adequate to provide sufficient illumination for safe work and traffic conditions in every area of Work.
 - b. Supply temporary electrical service to construction site utilizing a State of Florida Certified Electrician. Contractor shall comply with applicable NEMA, NECA and UL standards and governing regulations for materials and layout of temporary electric service.
 - c. Provide weathertight, grounded temporary electrical service-entrance and distribution system, with automatic ground-fault circuit interrupters and ground-fault interrupter features of proper types, sizes, electrical ratings and characteristics to fulfill Project requirements during construction period.
 - d. Provide meters, transformers, and overcurrent protective devices at main distribution panel for power and light circuitry. Provide disconnections for equipment circuits.

- e. Connect service to Local Power Company main supply in the manner directed by utility company officials. Pay usage charges for electricity used by entities authorized to perform the Work at the Site. Exercise control over power usage to conserve energy.
 - f. Except where overhead service must be used, install electric power service underground.
 - g. Replace all damaged receptacles; provide temporary extension rings, wiring, boxes, and related hardware to allow power, telephone, and systems to function normally during the interim period between removal of existing surface treatment(s) and installation of new treatment.
2. Power Distribution System:
- a. All wiring and grounding shall meet all safety requirements of the National Electrical Code, Florida Department of Commerce, Bureau of Workman's Compensation and Local requirements. In addition, all wire shall be so sized that it is not overloaded according to the National Electrical Code, and all wire used shall be fused to adequately protect that wire according to the Code referred to.
 - b. Provide circuits of proper sizes, characteristics, and ratings for each use indicated. Install wiring overhead, and risers vertically where least exposed to damage. Provide rigid steel conduit to protect wiring on grade, floors, decks or other areas exposed to possible damage.
 - c. Provide properly configured NEMA polarized outlets to prevent insertion of 110-120 Volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light, for connection of power tools and equipment.
 - d. Electric power shall be limited to 120-Volts for lighting and hand tools that can be operated on a circuit protected at 15-Amps.
 - e. Provide grounded extension cords; use "hard service" cords where exposed to abrasion and traffic. Provide weatherproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas where construction activities are in progress.

- f. Lockout: In all facilities wherever possible, lockout all existing power to or through the work area as described below. Unless specifically noted otherwise, existing power and lighting circuits to the work area shall not be used. All power and lighting to the work area shall be provided from temporary electrical panel described below.
 - (1) Lockout power to work area by switching of all breakers serving power or lighting circuits in work area. Label breakers with tape over breaker with notation "DANGER Circuit Being Worked On." Lock panel and have all keys under control of Contractor's Superintendent, Owner and/or Engineer.
 - (2) Lockout power to circuits running through work area wherever possible by switching off all breakers serving these circuits. Label breakers with tape over breaker with notation "DANGER Circuit Being Worked On." Sign and date danger tag. Lock panel and supply keys to Contractor, Owner and/or Engineer. If circuits cannot be shut down for any reason, label at intervals 4'-0" on center with tags reading, "DANGER Live Electric Circuit. Electrocutation Hazard."
- g. Temporary Electrical Panel: Provide temporary electrical panel sized and equipped to accommodate all electrical equipment and lighting required by the Work. Connect temporary panel to existing facility electrical system. Protect with circuit breaker or fused disconnect. Locate temporary panel as directed by the Owner and/or Engineer.
- h. Circuit Protection: Protect each circuit with a ground fault circuit interrupter (GFCI) of proper size located in the temporary panel. Do not use outlet type GFCI devices.
- i. Temporary Wiring: Inside the work area shall be type UF non-metallic sheathed cable located overhead and exposed for surveillance. Do not wire temporary lighting with plain, exposed (insulated) electrical conductors. Provide liquid tight enclosures or boxes for wiring devices.
- j. Number of Branch Circuits: Provide sufficient branch circuits as required by the Work. All branch circuits are to originate at temporary electrical panel.

3. Temporary Lighting:
- a. Lockout: In facilities, wherever possible, lockout all existing power to lighting circuits in work area. Unless specifically noted otherwise, existing lighting circuits to the work area shall not be used. All lighting to the work area shall be provided from temporary electrical panel described above.
 - b. Provide the following or equivalent where natural lighting or existing facility lighting does not meet the required light level:
 - (1) One (1) 200-Watt incandescent lamp per 1,000 square feet of floor area, uniformly distributed, for general construction lighting, or equivalent of a similar nature. Provide sufficient temporary lighting to ensure proper workmanship everywhere; by combined use of daylight, general lighting, and portable plug-in task lighting.
 - c. Provide lighting in areas where Work is being performed as required to supply a 100 foot candle minimum light level.
 - d. Provide lighting in any area being subjected to a visual inspection as required to supply a 100 foot candle minimum light level.
 - e. Wherever overhead roof deck has been installed, provide temporary lighting with local switching.
 - f. Install and operate temporary lighting that will fulfill security and protection requirements, without operating the entire system, and will provide adequate illumination for construction operations and traffic conditions.
 - g. Provide general service fluorescent lamps of wattage required for adequate illumination. Protect lamps with guard cages or tempered glass enclosures, where exposed to breakage. Provide exterior type fixtures where exposed to weather or moisture. Provide local switching to allow lights to be turned off in patterns to conserve energy.
 - h. Number of Lighting Circuits: Provide sufficient lighting circuits as required by the Work. All lighting circuits shall originate at temporary panel.
 - i. Circuit Protection: Protect each circuit with a ground fault circuit interrupter (GFCI) of proper size located in the temporary panel.

D. Temporary Telephones:

1. Where existing telephone service is unavailable, the Contractor may install a temporary job telephone at the Contractor's own expense. All charges for calls made from such telephone shall be paid by the Contractor.
2. Provide temporary telephone service for all personnel engaged in construction activities, throughout the construction period. Install telephone on a separate line for each temporary office and first aid station. Where an office has more than two occupants, install a telephone for each additional occupant or pair of occupants.
3. At each telephone, post a list of important telephone numbers.

E. Sewers and Drainage:

1. If sewers are available, provide temporary connections to remove effluent that can be discharged lawfully. If sewers are not available or cannot be used, provide drainage ditches, dry wells, stabilization ponds and similar facilities. If neither sewers nor drainage facilities can be lawfully used for discharge of effluent, provide containers to remove and dispose of effluent off the Site in a lawful manner.
 - a. Filter out excessive amounts of soil, construction debris, chemicals, oils and similar contaminants that might clog sewers or pollute waterways before discharge.
 - b. Connect temporary sewers to the municipal system as directed by the Sewer Department Officials.
 - c. Maintain temporary sewers and drainage facilities in a clean, sanitary condition. Following heavy use, restore normal conditions promptly.
2. Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff or storm water from heavy rains.

3.05 TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES INSTALLATION

A. General:

1. Locate field offices, storage sheds, sanitary facilities and other temporary construction and support facilities for easy access.
2. Maintain temporary construction and support facilities until near Final Acceptance of the Whole Work. Remove prior to Final Acceptance of the Whole Work.

3. Provide incombustible construction for offices, shops and sheds located within the construction area, or within 30 feet of building lines. Comply with requirements of NFPA 241.
4. The Contractor shall furnish all temporary wiring, piping connection and other apparatus that is needed to operate the utilities and shall remove all evidence of same when Work is complete.
5. The Contractor shall be responsible for obtaining and paying for utilities that Contractor request at the Job Site.
6. The Contractor shall at all times protect excavations, trenches, existing buildings, and materials, from rain water, ground water, backup and leakage of sewers, drains, and other piping, and from water of any other original and shall remove promptly all accumulation of water. The Contractor shall provide and operate all pumps, piping and other equipment necessary to this end.
7. Provide facilities and services as necessary to effectively protect Project from losses and persons from injury during the course of the Work.
8. Do not interrupt existing services serving occupied or used facilities, except when authorized in writing by the Owner. Provide temporary services during interruptions to existing utilities, as acceptable to the Owner and/or Engineer.
9. Provide scaffolds, staging, ladders, stairs, ramps, runways, platforms, railings, hoists, cranes, chutes, other facilities, and equipment required by personnel and to perform Work and facilitate inspection.
10. Comply with reasonable requests of governing authorities performing inspections.

B. Field Offices (if required by Contractor):

1. Provide insulated, weathertight temporary office(s) of sufficient size to accommodate required office personnel working on the Project Site. Keep the office clean and orderly for use for progress meetings. Furnish and equip offices with (optional) adequate furniture, heat, air conditioning, lights, telephones, water cooler, private toilet complete with water closet, lavatory, mirror, medicine cabinet and janitor services. Location of field office shall be approved by the Owner. Costs for connections to utilities shall be paid for by the Contractor. Contractor is responsible for obtaining and paying for all utilities that Contractor requires.

- C. Storage and Fabrication Sheds (If required by Contractor):
1. Install storage and fabrication sheds, sized, furnished and equipped to accommodate materials and equipment involved, including temporary utility service. Sheds can be open shelters or fully enclosed spaces within the building or elsewhere on the site.
- D. Temporary Heat:
1. Provide temporary heat required by construction activities, for curing or drying of completed installations or protection of installed construction from adverse effects of low temperatures or high humidity. Select safe equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce the ambient condition required and minimize consumption of energy.
 2. Provide adequate forced ventilation of enclosed areas for curing of installed materials, to disperse humidity, and to prevent hazardous accumulations of dust, fumes, vapors, or gases.
 3. Prior to enclosure, provide heating as necessary to protect Work, materials, and equipment against damage from dampness and cold.
 4. Provide temporary heating units that have been tested and labeled by UL, FM or other recognized trade association related to the type of fuel being consumed.
 5. Heating Facilities:
 - a. Except where use of the permanent system is authorized, provide vented self-contained LP gas or fuel oil heaters with individual space thermostatic control.
 - b. Use of gasoline-burning space heaters, open flame, or salamander type heating units is prohibited.
- E. Sanitary Facilities:
1. Include temporary toilets, wash facilities and drinking water fixtures. Comply with regulations and health codes for the type, number, location, operation and maintenance of fixtures and facilities. Install where facilities will best service the Project's needs.
 2. Provide toilet tissue, paper towels, paper cups and similar disposable materials for each facility. Provide covered waste containers for used material.

3. Toilets:
 - a. Install single occupant self-contained toilet units of a chemical type, properly vented and fully enclosed with a shell of glass fiber, reinforced polyester or other similar non-absorbent material. Use of pit-type privies will not be permitted. Provide minimum ratio of one toilet per twenty-five (25) construction personnel, or a greater number of toilets if required by governing regulations; provide separate toilet facilities for male and female personnel. Thoroughly disinfect each unit minimum twice each week. Provide means to lock door from outside and keep locked at all times except during hours that construction personnel are at Project.

F. Wash Facilities:

1. Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up for a healthy and sanitary condition. Dispose of drainage properly. Supply cleaning compounds appropriate for each condition.
2. Provide safety showers, eye-wash fountains and similar facilities for convenience safety and sanitation of personnel.

G. Drinking Water Fixtures:

1. Provide drinking water coolers including paper supply.

H. Drinking Water Facilities:

1. Provide ice water cooler type drinking water units, including paper supply.
2. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45-degrees F to 55-degrees F.
3. The Contractor shall provide all temporary lines and connection(s) from existing sources of the water as required for the Work. Contractor shall be responsible for proper drainage of water used.

I. Dewatering Facilities and Drainage:

1. Maintain construction work free of water accumulation. Do not endanger the Work or adjacent properties.

- J. Miscellaneous Facilities:
1. Provide miscellaneous facilities as needed, including ladders, runways, shoring, scaffolding, railing, bracing, barriers, closures, platforms, temporary partitions, and similar items.
- K. Temporary Enclosures:
1. Provide temporary enclosure for protection of construction in progress and completed, from exposure, foul weather, other construction operations and similar activities.
 2. Where heat is required, provide temporary enclosures where there are no other provisions for containment of heat. Coordinate enclosure with ventilation and material drying or curing requirements to avoid dangerous conditions and effects.
 3. For job-built temporary offices, shops and sheds, within the construction area, provide UL labeled, fire treated lumber and plywood for framing, sheathing and siding.
- L. Temporary Lifts and Hoists:
1. Provide facilities for hoisting materials and employees. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities. Do not permit employees to ride hoists which comply only with requirements for hoisting materials.
- M. Project Identification and Temporary Signs:
1. Prepare project identification and other signs; install signs where they will inform the public and persons seeking entrance to the Project.
 2. Contractor's identification sign located at their staging Area:
 - a. Contractor may provide one (1) 8-foot x 4-foot x 3/4" exterior grade plywood sign, properly supported with bottom 5-foot above grade. Engage professional sign painter to apply graphics and lettering as approved by the Owner and/or Engineer. **NO OTHER SIGNS ARE PERMITTED ON THE PROJECT SITE.**

3.06 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. General: Provide a neat and uniform appearance in security and protection facilities acceptable to the Owner and/or Engineer. Maintain Project Site in a safe, lawful and publicly acceptable manner. Take necessary measures to prevent erosion.
 - 1. Temporary Construction Barricades:
 - a. Where required, the Contractor shall be fully responsible for the protection of the public and adjacent areas during the construction process by installing construction barricades subject to the approval of the Engineer and/or Owner.

- B. Temporary Fire Protection:
 - 1. Until fire protection needs are supplied by permanent facilities, install and maintaining temporary fire protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers," and NFPA 241 "Standard for Safeguarding Construction, Alterations and Demolition Operations."
 - a. Locate fire extinguishers where convenient and effective for their intended purpose.
 - b. Store combustible materials in containers in fire-safe locations.
 - c. Maintain unobstructed access to fire extinguishers and other access routes for fighting fires. Prohibit smoking in hazardous fire exposure areas.
 - d. Provide and maintain temporary fire protection during construction in accordance with requirements of the local protection code.
 - e. Provide Type "A" fire extinguishers for temporary offices and similar spaces where there is minimal danger of electrical or grease-oil-flammable liquid fires. In other locations provide type "ABC" dry chemical extinguishers, or a combination of several extinguishers of NFPA recommended types for the exposures in each case. Extinguishers shall have a minimum UL rating of ZA-10BC.
 - f. Provide supervision of welding operations, combustion type temporary heating units, and similar sources of fire ignition.

C. Security Enclosure and Lockup:

1. Storage:

- a. Where materials and equipment are to be stored and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.

D. Environmental Protection:

1. Provide protection, operate temporary facilities and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways and subsoil might be contaminated or polluted, or that other undesirable effects might result. Avoid use of tools and equipment which produce harmful noise. Restrict use of noise making tools and equipment to hours that will minimize complaints from persons or firms near the Project Site.
2. Install and operate temporary facilities and perform construction activities in manner which reasonably will be conservative and avoid waste of energy and materials including water.
3. Provide facilities, establish procedures, and conduct construction activities in compliance with regulations controlling construction activities at Project Site.

E. Dust Control:

1. Provide positive methods and apply dust control materials to minimize raising dust from construction operations, and provide positive means to prevent airborne dust from dispersing into atmosphere.

F. Water Control:

1. Provide methods to control surface water to prevent damage to Project Site, or adjoining properties.
2. Control fill, grading, and ditching to direct surface drainage away from excavations, pits and other construction areas; and to direct drainage to proper runoff.
3. Provide, operate, and maintain hydraulic equipment of adequate capacity to control surface and water.
4. Dispose of drainage water in manner to prevent flooding, erosion, or other damage to any portion of Site or to adjoining areas.

G. Pest and Rodent Control:

1. Provide pest and rodent control as necessary to prevent infestation of construction or storage area.
2. Employ methods and use materials which will not adversely affect conditions at Project Site or on adjoining properties.
3. Should the use of rodenticides or pesticides be considered necessary, submit informational copy of proposed program to Owner with copy to Engineer; clearly indicate:
 - a. Area or areas to be treated.
 - b. Materials to be used, with copy of manufacturer's printed instructions.
 - c. Pollution preventative measures to be employed.
4. Use of any rodenticide or pesticide shall be in full accordance with manufacturer's printed instructions and recommendations.
5. Before deep foundation Work has been completed, retain a local exterminator or pest control company to recommend practices to minimize attraction and harboring of rodents, roaches and other pests. Employ this service to perform extermination and control procedures at regular intervals so that the Project will be relatively free of pests and their residues at Final Acceptance of the Work. Perform control operations in a lawful manner using environmentally safe materials.

H. Debris Control:

1. Maintain areas under Contractor's control free of extraneous debris.
2. Initiate and maintain specific program(s) to prevent accumulation of debris at Project Site, storage and parking area, or along access roads and haul routes.
 - a. Provide containers for deposit of debris as specified.
 - b. Prohibit overloading of trucks to prevent spillages on access and haul routes.
 - c. Provide periodic inspection of traffic areas to enforce requirements.

3. Schedule daily collection and disposal of debris.
4. Provide additional collections and disposal of debris whenever periodic schedule is inadequate to prevent accumulation.
5. Transport debris and waste material in covered trucks.

I. Pollution Control:

1. Provide methods, means, and facilities required to prevent contamination of soil, water, or atmosphere by discharge of noxious substances from construction operations.
2. Provide equipment and personnel, perform emergency measures required to contain any spillage, and to remove contaminated soil or liquids.
3. Excavate and dispose of contaminated earth off site, and replace with suitable compacted fill and topsoil.
4. Take special measures to prevent harmful substances from entering public waters.
5. Prevent disposal of wastes, effluents, chemicals, or other such substances adjacent to streams, or in sanitary or storm sewers.
6. Provide systems for control of atmospheric pollutants.
7. Prevent toxic concentrations of chemicals.
8. Prevent harmful dispersal of pollutants into atmosphere.

J. Collection and Disposal of Waste:

1. Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80-degrees F. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material in a lawful manner.
2. In case of non-compliance with the above, the Owner, after having given a 24-hour notice, has the right to take any corrective action required at the expense of the Contractor.

3. Burying or burning of waste materials on the Project Site or washing waste materials down sewers shall not be permitted. Provide rodent proof containers to encourage depositing of wastes by construction personnel.

3.07 OPERATION, TERMINATION AND REMOVAL

A. Supervision:

1. Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse. Do not permit temporary installations to be abused or endangered.

B. Maintenance:

1. Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.
2. Maintain operation of temporary enclosures, heating, cooling, humidity control ventilation and similar facilities on a 24-hour day basis where required to achieve indicated results and to avoid possibility of damage. Do not allow unsanitary conditions, public nuisances or hazardous conditions to develop or persist on the Project Site.

C. Protection:

1. Prevent water filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.

D. Termination and Removal:

1. Remove each temporary service and facility promptly when need has ended, or when replaced by use of a permanent facility, but no later than Final Acceptance of the Work. Complete, or, if necessary, restore permanent work delayed because of interference with the temporary service or facility. Repair damaged work, clean exposed surfaces and replace work which cannot be repaired.
2. At Final Acceptance of the Work, clean and renovate permanent services and facilities that have been used to provide temporary services and facilities during the construction period.

3. At Final Acceptance of the Work, clean and renovate permanent facilities that have been used during the construction period, including but not limited to:
 - a. Replace air filters and clean inside of ductwork and housings.
 - b. Replace significantly worn parts and parts that have been subject to unusual operating conditions.
 - c. Replace lamps that are burned out or noticeably dimmed by substantial hours of use.

END OF SECTION 01 50 00

SECTION 01 51 00
UTILITIES

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. Existing facilities, utilities, and features depicted on the Plans are not guaranteed to be accurate with respect to location, condition, and characteristics. There may be additional facilities, utilities, and features existing that could affect the construction of the Work which are not depicted or described in the Contract Documents.
- B. Prior to bidding, the Contractor shall make a thorough investigation of the Project Site to satisfy itself as to the location, condition, and characteristics of any and all facilities, utilities, and features which may affect Contractor's work. No additional compensation will be made for any extra expense relating to an existing facility, utility, or feature.
- C. The Contractor hereby agrees to make no claims against the Owner and/or Engineer relating to the existence or lack thereof, location, condition, and/or characteristics of any existing facilities, utilities, or features.
- D. Contractor shall pay for the removal and installation of all utilities required by the Contract Documents.
- E. The Contractor, Owner, Engineer and utility agencies will try to deconflict any potential signal foundations conflicts with existing utilities. If standard utility clearances cannot be achieved for signal foundations or roadway construction, the Contractor maybe requested to expose and protect existing conflicting utilities by encasing with 12" concrete all around or other means, the conflicting utilities. This shall be considered incidental to the project.

1.02 PROTECTION OF EXISTING UTILITIES

- A. The term "utilities" includes NASA, USAF and Port Canaveral power and control cables; local utility company power lines; telephone cables, lines and fiber optics; law enforcement department lines; computer cables; airfield lighting cables; underground electrical and communication lines; water lines; irrigation lines; HVAC equipment; sanitary force mains; sanitary lines; and fuel and gas lines. These utilities may be located in the areas of construction. Disruption of these utilities could seriously disrupt the operation of the Spaceport. Although the Plans tend to locate the cables and all utilities including fuel and gas lines, actual locations are uncertain, and the Contractor shall be required to verify all locations.
- B. All intentional temporary interruption of existing utilities for the purpose of carrying out the Work shall be carried out so as to minimize the length of scope of the interruption. Before any such interruption, Contractor shall give a minimum of 48 hours written notice to the Owner.
- C. The Owner reserves the right to authorize the construction, reconstruction, or

maintenance of any public or private utility service, or a utility service of another government agency at any time during the progress of the Work.

- D. Except as listed in the Contract Documents, the Contractor shall not permit any individual, firm, or corporation to excavate or otherwise disturb such utility services or facilities located within the limits of the Work without the written permission of the Owner.
- E. Should the Owner, public or private utility service, NASA, USAF, or a utility service of another government agency be authorized to construct, reconstruct, or maintain such utility service or facility during the progress of the Work, the Contractor shall cooperate with such utility service facility by arranging and performing the Work in this Contract so as to facilitate such construction, reconstruction, or maintenance by others. In addition, the Contractor shall control its operations to prevent the unscheduled interruption of such utility services, and other facilities. It is understood and agreed that the Contractor shall not be entitled to make any claim due to such authorized construction by others or for any delay to the Work resulting from such authorized construction. The Contractor shall coordinate all Work with all utility services.
- F. To the extent that such public or private utility services, NASA, USAF, or utility services of another governmental agency are known to exist within the limits of the Contract Work, the approximate locations have been indicated on the Plans.
- G. It is understood and agreed that the Owner does not guarantee the accuracy or the completeness of the location information relating to existing utility services, NASA/USAF facilities or structures that may be shown on the Plans or encountered in the Work. All inaccuracies or omissions in such information will not relieve Contractor of their responsibility to protect such existing features from damage or unscheduled interruption of service.
- H. It is further understood and agreed that Contractor shall, upon execution of the Contract, notify all utility services, NASA, USAF, or other facilities of the Contractor's plan of operations. A copy of each notification shall be given to the Owner.
- I. In addition to the general written notification hereinbefore provided, it shall be the responsibility of the Contractor to keep such individual utility service, NASA, USAF and Owner advised of changes in Contractor's plan or operation that would affect such utility service or NASA facility.
- J. Prior to commencing the Work in the general vicinity of an existing utility service, the Contractor shall again notify each such utility service, NASA, USAF or other land owners in writing, through the Owner, of Contractor's plan of operations. If, in the Contractor's opinion, assistance is needed to locate the utility service, or the presence of a representative of the utility service or NASA/USAF is desirable to observe the Work, such advice shall be included in the written notification. Such notification shall be given through the Owner by the most expeditious means to reach the utility service no later than two (2) normal business days prior to the Contractor's commencement of operations in such general vicinity.

- K. Failure of the Contractor to properly coordinate in advance, Work and/or repairs on or near existing utilities shall be cause for the Owner to suspend Contractor's operations in the general vicinity of such utilities.
- L. Power and control cables leading to and from any facilities, will be marked in the field by the utility company, NASA and/or USAF personnel for the information of the Contractor, before any Work in the general vicinity is started. Thereafter, through the entire time of the Work, the Contractor shall not allow any construction equipment to cross these cables without first protecting the cable with steel boiler plate, or similar structural devices, on 3-feet either side of the marked cable route. All excavation within 3-feet of existing cables shall be accomplished by hand digging only.
- M. Approval to Work in areas where active utility services or NASA/USAF facilities are located, is subject to withdrawal at any time because of change in the weather, emergency conditions on the existing airfield areas, anticipation of emergency conditions, and for any other reason determined by the Owner or the designated NASA, USAF and/or utility service representative. All instructions by the Owner, the utility service, NASA, or USAF to the Contractor to clear any given area, at any time, shall be immediately executed. Construction shall be commenced in the cleared area only when additional instructions are issued by the Owner.
- N. These provisions intend to make perfectly clear the need for protection of USAF, NASA and utility company cables and other utilities and facilities by the Contractor at all times.
- O. Where the outside limits of an underground utility service have been located and staked on the ground, the Contractor shall be required to use excavated methods acceptable to the Owner within 3-feet of such outside limits at such points as may be required to insure protection from damage due to the Contractor's operations.
- P. If damage occurs to any utilities, the Contractor will be assessed a fee of liquidated damages per cut per cable, line or strand, which liquidated damages shall only represent the expense incurred by the Owner in coordinating the repair, and which shall not prevent the Owner or others from recovering from the Contractor other costs, damages, or expenses of any other nature incurred on account of damages to utilities.
- Q. Should the Contractor damage or interrupt the operation of a utility service or NASA/USAF facility by accident or otherwise, Contractor shall immediately notify the proper utility service or NASA/USAF facility and the Owner and shall take all reasonable measures to prevent further damage or interruption of service. The Contractor, in such event, shall cooperate with the utility service, NASA or USAF facility and the Owner continuously until such damage has been repaired and service restored to the satisfaction of the utility service, USAF or NASA facility.

- R. The Contractor shall immediately repair, at Contractor's expense, with identical material by skilled workmen, all utilities, cables, and other facilities, which are damaged by Contractor's workmen, equipment, or Work. Prior approval of the appropriate utility service and/or NASA/USAF facility, and Owner shall be obtained for the materials, workmen, time of day or night, method of repairs, and for any temporary or permanent repairs the Contractor proposed to make to all NASA or USAF cables or utility service damaged by the Contractor.

- S. All Cape Canaveral Spaceport facilities located on NASA and USAF spaceport property, including underground cables, pavements, piping, buildings, turfed areas, vehicles and other facilities/improvements, that are damaged by the Contractor shall, at the election of the Owner, (1) be replaced/repared by the Contractor to the satisfaction of the Owner or (2) be replaced/repared by the Owner at the Contractor's expense.

PART 2 – PRODUCTS

Not Applicable

PART 3 – EXECUTION

Not Applicable

END OF SECTION 01 51 00

SECTION 01 74 19
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Salvaging nonhazardous demolition (if applicable) and construction waste.
 - 2. Recycling nonhazardous demolition (if applicable) and construction waste.
 - 3. Disposing of nonhazardous demolition (if applicable) and construction waste.

1.02 RELATED WORK

- A. PROJECT PROCEDURES FOR AVIATION AND SPACEPORT FACILITIES: Section 01 35 13.
- B. DEFINITIONS AND STANDARDS: Section 01 42 16.

1.03 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.04 PERFORMANCE REQUIREMENTS

A. Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling and salvage of materials.

1. Include, in general and as applicable, the following recyclable and salvageable items:

a. Demolition Waste:

- (1) Asphalt paving.
- (2) Concrete.
- (3) Concrete reinforcing steel.
- (4) Brick.
- (5) Concrete masonry units.
- (6) Wood studs.
- (7) Wood joists.
- (8) Plywood and oriented strand board.
- (9) Wood paneling.
- (10) Wood trim.
- (11) Structural and miscellaneous steel.
- (12) Rough hardware.
- (13) Roofing.
- (14) Insulation.
- (15) Doors and frames.
- (16) Door hardware.
- (17) Windows.
- (18) Glazing.
- (19) Metal studs.
- (20) Gypsum board.
- (21) Acoustical tile and panels.
- (22) Carpet.
- (23) Carpet pad.
- (24) Demountable partitions.
- (25) Equipment.
- (26) Cabinets.
- (27) Plumbing fixtures.
- (28) Piping.
- (29) Supports and hangers.
- (30) Valves.
- (31) Sprinklers.
- (32) Mechanical equipment.
- (33) Refrigerants.
- (34) Electrical conduit.
- (35) Copper wiring.

- (36) Lighting fixtures.
- (37) Lamps.
- (38) Ballasts.
- (39) Electrical devices.
- (40) Switchgear and panelboards.
- (41) Transformers.

b. Construction Waste:

- (1) Masonry and CMU.
- (2) Lumber.
- (3) Wood sheet materials.
- (4) Wood trim.
- (5) Metals.
- (6) Roofing.
- (7) Insulation.
- (8) Carpet and pad.
- (9) Gypsum board.
- (10) Piping.
- (11) Electrical conduit.
- (12) Packaging: Salvage or recycle 100 percent of the following uncontaminated packaging materials:
 - Paper.
 - Cardboard.
 - Boxes.
 - Plastic sheet and film.
 - Polystyrene packaging.
 - Wood crates.
 - Plastic pails.

1.05 INFORMATIONAL SUBMITTALS

- A. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- B. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- C. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.06 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.
- B. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

1.07 WASTE MANAGEMENT PLAN

- A. If required by Owner, develop a waste management plan according to ASTM E 1609 and requirements in this Section. Plan shall consist of waste identification, waste reduction work plan, and cost/revenue analysis. Distinguish between demolition and construction waste. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.

PART 2 – PRODUCTS

Not Applicable

PART 3 – EXECUTION

3.01 PLAN IMPLEMENTATION

- A. Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
- B. Comply with operation, termination, and removal requirements in Section 01 50 00 – TEMPORARY FACILITIES.
- C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Designate and label specific areas on Project Site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
 - 2. Comply with Section 01 50 00 – TEMPORARY FACILITIES for controlling dust and dirt, environmental protection, and noise control.

3.02 SALVAGING DEMOLITION WASTE

- A. Any items to be salvaged that are not shown on the plans shall be identified by the owner.
- B. Salvaged Items for Reuse in the Work: Salvage items for reuse and handle as follows:
 - 1. Clean salvaged items.
 - 2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
 - 3. Store items in a secure area until installation.
 - 4. Protect items from damage during transport and storage.
 - 5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.
- C. Salvaged items used for sale and/or donation are not permitted on Project Site.
- D. Salvaged Items for Owner's Use: Salvage items for Owner's use and handle as follows:
 - 1. Clean salvaged items.
 - 2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
 - 3. Store items in a secure area until delivery to Owner.
 - 4. Transport items to Owner's storage area designated by Owner.
 - 5. Protect items from damage during transport and storage.

3.03 RECYCLING DEMOLITION AND/OR CONSTRUCTION WASTE, GENERAL

- A. Recycle paper and beverage containers used by on-site workers.
- B. Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.
- C. Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.
 - 1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project Site. Include list of acceptable and unacceptable materials at each container and bin.

- a. Inspect containers and bins for contamination and remove contaminated materials if found.
2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
4. Store components off the ground and protect from the weather.
5. Remove recyclable waste from Owner's property and transport to recycling receiver or processor.

3.04 RECYCLING DEMOLITION WASTE

- A. Asphalt Paving: Break up and transport paving to asphalt-recycling facility.
- B. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.
 1. Pulverize concrete to maximum 1-1/2-inch size.
- C. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.
 1. Pulverize masonry to maximum 1-1/2-inch size.
 2. Clean and stack undamaged, whole masonry units on wood pallets.
- D. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.
- E. Metals: Separate metals by type.
 1. Structural Steel: Stack members according to size, type of member, and length.
 2. Remove and dispose of bolts, nuts, washers, and other rough hardware.
 3. Piping: Reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinklers, and other components by type and size.
 4. Conduit: Reduce conduit to straight lengths and store by type and size.

3.05 RECYCLING CONSTRUCTION WASTE

A. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
2. Polystyrene Packaging: Separate and bag materials.
3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

B. Wood Materials:

1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

C. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location.

3.06 DISPOSAL OF WASTE

- A. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
- B. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- C. Burning: Do not burn waste materials.
- D. Disposal: Remove waste materials from Owner's property and legally dispose of them.

END OF SECTION 01 74 19

SECTION 01 78 00
PROJECT CLOSEOUT

PART 1 - GENERAL

1.01 SUMMARY

- A. Closeout is hereby defined to include general requirements near end of Contract Time, in preparation for Final Acceptance, Final Payment, normal termination of Contract, occupancy by Owner and similar actions evidencing completion of the Work. Specific requirements for individual units of Work are specified in other sections. Time of closeout is directly related to Final Acceptance, and therefore may be a single time period for whole Work or a series of time periods for individual parts of the Work which have been certified as substantially complete at different dates. The time variation, if any, shall be applicable to other provisions of this Section.
- B. Each complete and operational signalization intersection shall be approved and accepted by Owner, USAF, NASA, FDOT and Engineer, depending on the land owner or jurisdiction the land falls within.

1.02 PREREQUISITES TO FINAL ACCEPTANCE

- A. Prior to requesting Owner, NASA, USAF, FDOT and/or Engineer's inspection for Final Acceptance, for either the whole Work or designated portions thereof, complete the following and list known exceptions in request:
 - 1. In Progress Payment request, coincide with, or first following date claimed, show 100% completion for portion of Work claimed as substantially complete for Final Acceptance, or list incomplete items, value of incompleteness, and reasons for being incomplete.
 - 2. Include supporting documentation for completion as indicated in the Contract Documents.
 - 3. Submit statement showing accounting of changes to the Contract Sum.
 - 4. Advise Owner of pending insurance change-over requirements.
 - 5. Obtain and submit releases enabling Owner's full and unrestricted use of the Work and access to services and utilities, including, where required, occupancy permits, operating certificates, and similar releases.
 - 6. Deliver tools, spare parts, extra stocks of materials, and similar physical items to Owner.
 - 7. Make final change-over of locks and transmit keys to Owner, and advise Owner's personnel of change-over in security provisions.
 - 8. Complete start-up testing of systems, and instructions of Owner's operating-maintenance personnel.
 - 9. Discontinue, or change over, and remove from Project Site temporary facilities and services, along with construction tools and facilities, mock-ups, and similar

elements.

B. Cleaning and Repairs:

1. Immediately prior to the Owner and/or Engineer's inspection for Final Acceptance of the whole Work or designated portions thereof, the Contractor shall completely clean the premises. Concrete and ceramic surfaces shall be cleaned and washed. Resilient coverings shall be cleaned, waxed and buffed. Woodwork shall be dusted and cleaned. Sash, fixtures, and equipment shall be thoroughly cleaned. Stains, spots, dust, marks, and smears shall be removed from all surfaces. Hardware and all metal surfaces shall be cleaned and polished. Glass and plastic surfaces shall be thoroughly cleaned by professional window cleaners. All damaged, broken or scratched glass or plastic shall be replaced by the Contractor at the Contractor's expense. Refer to Section 01 74 00 - CONSTRUCTION CLEANING.

C. Inspection Procedures:

1. Incomplete Items Prior to Substantial Completion prior to Final Acceptance:
 - a. One (1) week prior to Scheduled Date of Substantial Completion for Final Acceptance, the Contractor shall furnish the Owner and Engineer a list of items which Contractor anticipates to be incomplete at Date of Substantial Completion prior to Final Acceptance.
 - b. The Owner and/or Engineer will review the list and confirm its acceptability, or itemize objections and transmit such to the Contractor for Contractor's action. Approval of this list by Owner and/or Engineer will be a precondition for conducting the Substantial Completion inspection.
2. Upon receipt of Contractor's request for inspection, the Owner and/or Engineer will either proceed with inspection or advise Contractor of prerequisites that are not fulfilled. Following initial inspection, the Owner and/or Engineer will either prepare the Substantial Completion for Final Acceptance documentation or advise Contractor of Work which shall be performed prior to issuance of documents. The Owner and/or Engineer will repeat inspection when requested and when assured that the Work has been Substantially Completed for Final Acceptance. Results of completed inspection will form initial "Punch List".

D. Re-inspection Procedures:

1. Following Substantial Completion of a designated portion, the Contractor shall correct or remedy all Punch List items to the satisfaction of the Owner and/or Engineer within a thirty (30) calendar days after the Date of Substantial Completion of the designated portion. If subsequent inspections are necessary after the thirty (30) calendar day period in order to eliminate all deficiencies, the cost of all subsequent inspections with respect to Owner and Engineer time shall be paid by the Contractor. When ready, the Contractor shall request in writing a Final Inspection for Final Acceptance of the Work. If necessary, procedures will be repeated.

2. Following Substantial Completion for Final Acceptance of the Whole Work, the Contractor shall correct or remedy all "Punch List" items to the satisfaction of the Owner and/or Engineer within thirty (30) calendar days after the Date of Substantial Completion for Final Acceptance of the Whole Work. If subsequent inspections are necessary after thirty (30) calendar days in order to eliminate all deficiencies, the cost of all substantial inspections with respect to Owner and/or Engineer's time shall be paid by the Contractor. When ready, the Contractor shall request in writing a final inspection of the Work. Upon completion of re-inspection, the Owner and/or Engineer will either prepare a certificate of Final Acceptance or advise Contractor of Work that is not completed or obligations that are not fulfilled as required for Final Acceptance. If necessary, procedures will be repeated. In the event of unacceptable Work discovered on the Final Inspection, payment will be withheld until all Punch List items are corrected to the Owner and/or Engineer's satisfaction.

1.03 PREREQUISITES FOR FINAL ACCEPTANCE

- A. Prior to requesting Owner and/or Engineer's final inspection for certification of Final Acceptance as required by the General Conditions of the Contract for Construction, as modified, complete the following and list known exceptions in requests:
 1. Submit certified copy of Owner and/or Engineer's final "punch list" of itemized Work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and has been endorsed and dated by Owner and/or Engineer.
 2. Submit final meter readings for utilities, measured record of stored fuel, and similar data either as of time of Substantial Completion for Final Acceptance or when Owner took possession of and responsibility for corresponding elements of the Work.
 3. ~~Complete Final Cleaning up requirements, including touch up of marred surfaces. Refer to Section 01 74 00 CONSTRUCTION CLEANING.~~
 4. Touch-up and otherwise repair and restore marred exposed finishes.

1.04 PREREQUISITES TO FINAL PAYMENT

- A. Final Payment: Final Payment will be made after Final Acceptance of the whole Work by the Owner and/or Engineer upon request by the Contractor on condition that the Contractor:
 1. Acceptance and Final Payment: The Owner and/or Engineer will check the final estimate submitted by the Contractor of the items of Work actually performed. The Contractor shall approve the Owner's and/or Engineer's final estimate or advise the Owner and/or Engineer of their objections to the final estimate which are based on disputes in measurements or computations of the final quantities to be paid under the Contract as amended by Change Order.

2. The Contractor and Owner and Engineer shall resolve all disputes (if any) in the measurement and computation of final quantities to be paid within thirty (30) calendar days of the Contractor's submission of the final estimates. If, after such thirty (30) day period, a dispute still exists, the Contractor may approve the Owner and/or Engineer's estimate under protest of the portions of Work in dispute, and such disputed quantities shall be considered by the Owner as a claim in accordance with the General Conditions of the Contract for Construction, as modified.
 - a. After the Contractor has approved, or approved under protest, the Owner and/or Engineer's final estimate, final payment will be processed based on the entire sum, or the undisputed sum in case of approval under protest, determined to be due the Contractor less all previous payments and all amounts to be deducted under the provisions of the Contract. All prior progress payments shall be subject to correction in the final estimate and payment.
 - b. If the Contractor has filed a claim for additional compensation under the provisions of the General Conditions of the Contract for Construction, as modified, or under the provisions of this Section, such claims will be considered by the Owner in accordance with governing law. Upon final adjudication of such claims, any additional payment determined to be due the Contractor will be paid pursuant to a supplemental, final estimate.
3. Furnish properly executed complete releases of lien (2 copies) from all suppliers and subcontractors who have furnished materials or labor for the Work and submit supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
4. Furnish Contractor's Affidavit of Release of Liens (2 copies) that all suppliers and subcontractors have been paid in full. In the event they have not been paid in full, the Owner shall retain a sufficient sum to pay them in full and at Owner's option may make direct payment as provided in Chapter 84, Florida Statutes, as amended, to obtain complete releases of lien.
5. Furnish Contractor's Affidavit of Debts and Claims (2 copies).
6. Furnish required sets of Record Documents and Project Manual and maintenance and operating instructions.
7. Furnish guarantees signed by subcontractors, material suppliers, and countersigned by the Contractor for operating equipment.
8. Submit specific warranties, workmanship-maintenance bonds, maintenance agreements, final certifications and similar documents.

9. Furnish a signed guarantee, in form acceptable to Owner and Engineer agreeing to repair or replace as decided by the Owner and Engineer, all Work and materials that prove defective within one (1) year (or more) from the date of Final Acceptance, including restoration of all other Work damaged in making such repairs or replacements.
10. Furnish Consent of Surety to Final Payment (2 copies).
11. Submit updated final statement, accounting for final changes to Contract Sum.
12. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
13. Certify that all Social Security, Unemployment and all other taxes (City, State, Federal Government) have been paid.
14. Provide receipt as applicable, of affidavits certifying all labor standards of local, state, or federal requirements have been complied with by the Contractor.
15. Submit actual DBE participation percentages.
16. Contractor's Final Application for Payment.

1.05 COMPLIANCES

- A. Comply with safety standards and governing regulations for cleaning operations. Do not burn waste materials at site, or bury debris or excess materials on Owner's property, or discharge volatile or other harmful or dangerous materials into drainage systems; remove waste materials from Project Site and dispose of in a lawful manner.
- B. Where extra materials of value remaining after completion of associated Work have become Owner's property, dispose of these as directed by Owner.

1.06 RECORD DOCUMENT SUBMITTALS

- A. Specific requirements for record documents are shown in this Section. Other requirements are indicated in the General Conditions of the Contract for Construction, as modified. General submittal requirements are indicated in "Submittals" sections. Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistant location; provide access to record documents for Owner and Engineer's reference during normal working hours.
 1. Definition: Record copies are defined to include those documents or copies relating directly to performance of the Work, which Contractor is required to prepare or maintain for Owner's records, recording the Work as actually performed. In particular, record copies show changes in the Work in relation to way in which shown and specified by original Contract Documents; and show additional information of value to Owner's records, but not indicated by original Contract Documents.

- a. Record copies include newly-prepared drawings (if any are specified), marked-up copies of contract drawings, shop drawings, specifications, addenda and change orders, marked-up product data submittals, record samples, field records for variable and concealed conditions such as excavations and foundations, and miscellaneous record information on work which is otherwise recorded only schematically or not at all.
 2. Record Drawings: Owner and/or Engineer will organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on cover of each set.
 3. Record Project Manual: Upon completion of mark-up, submit to Owner and/or Engineer for Owner's records.
 4. Record Product Data: Upon completion of mark-up, submit complete set to Owner and/or Engineer for Owner's records.
 5. Record Sample Submittal: Comply with Owner and/or Engineer's instructions for packaging, identification marking, and delivery to Owner's sample storage space.
 6. Miscellaneous Record Submittals: Complete miscellaneous records and place in good order, properly identified and bound or files, ready for continued use and reference. Submit to Owner and/or Engineer for Owner's records.
 7. Maintenance Manuals: Complete, place in order, properly identify and submit to Owner and/or Engineer for Owner's records.
- B. Project Record Drawings:
1. Record Drawings: The Contractor shall maintain a set of Record Drawings at the job site. These shall be kept legible and current and shall be available for inspection at all times by the Owner and/or Engineer. Show all changes or Work added on these Record Drawings in a contrasting color.
 - a. Mark-up Procedure: During progress of the Work, maintain a full size white-set (blue-line or black-line) of Contract Plans and shop drawings, with mark-up of actual installations which vary substantially from the Work as originally shown. Mark whatever drawing is most capable of showing actual physical condition, fully and accurately. Where shop drawings are marked-up, mark cross-reference on contract drawings at corresponding location. Mark with erasable colored pencil, using separate colors where feasible to distinguish between changes for different categories of Work at same general location. Mark-up important additional information either shown schematically or omitted from original drawings. Use personnel proficient at recording graphic information in production of marked-up record prints.

- b. Give particular attention to information on Work concealed, which would be difficult to identify or measure and record at a later date. Note alternate numbers, change order numbers and similar identification. Require each person preparing mark-up to initial and date mark-up and indicate name of firm. Label each sheet "PROJECT RECORD" in 1-1/2 inch high letters.
 - c. Actual position of all underground and otherwise concealed civil, mechanical and electrical; lines, conduit, pipes, ducts, etc. Items in areas with accessible ceilings or other ready access shall not be considered as being concealed.
 - d. In showing changes in the Work, use the same legends as used on the original drawings. Indicate exact locations by dimensions and exact elevations by job datum. Give dimensions from a permanent point.
 - e. When manholes, boxes, underground conduits, plumbing hot or chilled water lines, inverts, etc., are involved as part of the Work, the Contractor shall furnish true elevations and locations, all properly referenced by using the original bench mark used for this Project.
2. Record Drawings shall contain the names, addresses and phone number(s) of the Contractor and the major sub-contractors.
 3. The Owner and/or Engineer shall be the sole judge of the acceptability of the Record Drawings. Receipt and acceptance of the Record Drawings is a prerequisite for Final Payment.
 4. As-Built Survey – Contractor shall provide as-built topographic survey using an FDOT certified surveyor of each signal, mast arm, foundations, pavement as a cross section across roadway.

C. Record Project Manual:

1. During progress of the Work, maintain one copy of the Project Manual, including addenda, change orders and similar modifications issued in printed form during construction, mark-up variations (of substance) in actual Work in comparison with text of specification and modification as issued. Give particular attention to substitutions, selection of options, and similar information on Work where it is concealed or cannot otherwise be readily discerned at a later date by direct observation. Note related record drawing information and product data, where applicable.
2. Where manual is printed on one side of page only, mark variation on blank left-hand pages of Project Manual, facing printed right-hand pages containing original text affected by variation.

3. Upon completion of the Work, the document information maintained during construction (Addenda, Alternates, Construction Change Directives, Change Orders, Work Orders, Etc.) shall be recorded as follows:
 - a. Neatly cross out the non-conforming portion of the Project Manual and add by writing in the revised portion of the Project Manual. Do not revise the Project Manual by "cutting and pasting" the actual Addenda, Alternates, Construction Change Directive, Change Orders, Work Orders, etc., as actually issued by the Owner and/or Engineer. The revisions have to be actually written by the Contractor.
 - b. The Volume(s) of Project Manual shall be clearly marked "PROJECT RECORD" in 1-1/2 inch high letters and bear the name of the Contractor and where applicable, the name of the Subcontractor.
 - c. The Contractor shall review the completed Record Project Manual and ascertain that all data furnished on the Project Manual is accurate and truly represents the Work as actually installed.
 - d. Deviations from the method of executing Record Project Manual as described above will be considered just cause for disapproval by the Owner and/or Engineer and the Contractor shall be required to conform and resubmit.
 - e. Submit the Record Project Manual to the Owner and/or Engineer for compliance review and approval.
 - f. Upon Owner and/or Engineer's approval, the Contractor shall submit the completed Record Project Manual and two (2) copies of the Record Project Manuals (at Contractor's expense).

D. Record Product Data:

1. During progress of the Work, maintain one copy of each product data submittal, and mark-up significant variations in the actual Work in comparison with submitted information. Include both variations in product as delivered to site, and variations from manufacturer's instructions and recommendations for installation. Give particular attention to concealed products and portions of the Work which cannot otherwise be readily discerned at a later date by direct observation. Note related change orders and mark-up of record drawings and specifications. Upon completion of mark-up, submit three (3) complete sets of product data submittal to Owner and/or Engineer for Owner's records. Label each data submittal "PROJECT RECORD" in 1-1/2 inch high letters.

E. Record Sample Submittal:

1. Immediately prior to date(s) of Final Acceptance, Owner and/or Engineer will meet with Contractor at site, and will determine if any of submitted samples maintained by Contractor during progress of the Work are to be transmitted to Owner for record purposes. Comply with Owner and/or Engineer's instructions for packaging, identification marking, and delivery to Owner's sample storage space. Dispose of other samples in manner specified for disposal of surplus and waste materials, unless otherwise indicated by Owner and/or Engineer.

F. Miscellaneous Record Submittals:

1. Refer to other sections of these Contract Documents for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the Work. Immediately prior to date(s) of Final Acceptance, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference.
2. Submit three (3) sets to Owner and/or Engineer for Owner's records. Categories of requirements resulting in miscellaneous work-records are recognized to include, but not limited to, the following:
 - a. Required field records on excavations, foundations underground construction, wells and similar Work.
 - b. Accurate survey showing locations and elevations of underground lines, including invert elevations of drainage piping, valves, tanks and manholes.
 - c. Surveys establishing lines and levels of building.
 - d. Soil treatment certification.
 - e. Inspection and Test Reports: Where not processed as shop drawings or product data.
 - f. Concrete mix design record.
 - g. Concrete block certification.

G. Digital Electronic Format:

1. Submit final Record Documents, after review and approval by the Owner and/or Engineer, in digital electronic format as follows:
 - a. Format: Same digital data software programs (AutoCAD, Revit, MSWord, PDF); version, and operating system as original Contract Documents. All formatting and tabular data shall be preserved.

- b. After the documents are in correct digital electronic format, they shall be submitted to the Owner on the following media:
 - (1) CDR (minimum 650 MB capacity per disk).
- c. All media transmittals shall be accompanied by a detailed paper printout of the files on each media. This printout shall consist of:
 - (1) File name.
 - (2) File size.
 - (3) Date of creation.
 - (4) Submittal number.
 - (5) A brief but accurate description of the file.
 - 1. Record Digital Data Files: Immediately before inspection for Final Acceptance, review marked-up record prints with Owner and Engineer. When authorized, prepare a full set of corrected digital data files of the Contract Drawings and, as follows:
- d. Refer instances of uncertainty to Owner and/or Engineer for resolution.
- e. Owner and/or Engineer will furnish Contractor one set of digital data files of the Contract Drawings for use in recording information.
- f. Refer to Section 01 33 18 – SUBMITTAL PROCEDURES for requirements related to use of Owner and/or Engineer’s digital data files.

1.07 GUARANTEES AND WARRANTIES

- A. As a condition precedent to Final Acceptance, all guarantees and warranties as specified under various sections of the Contract Documents and per requirements of Section 01 78 36 - WARRANTIES shall be obtained by the Contractor, addressed to and in favor of the Owner, and delivered to the Owner, in duplicate giving a summary of guarantees attached and stating the following in respect to each:
 - 1. Character of Work affected
 - 2. Name of Subcontractors
 - 3. Period of Guarantee
 - 4. Conditions of Guarantee
- B. Delivery of said guarantees and/or warranties shall not relieve the Contractor from any obligations assumed under any other provision of the Contract.

- C. If, within any guarantee period, repairs or changes are required in connection with the guaranteed Work, which in the opinion of the Owner and/or Engineer is rendered necessary as the result of the use of materials, equipment or workmanship, which are defective, or inferior, or not in accordance with the terms of the Contract, the Contractor shall, upon receipt of notice from the Owner, and without expense to the Owner, proceed within seven (7) calendar days to:
 - 1. Place in satisfactory conditions in every particular all of such guaranteed Work, correct all defects therein, and make good all damages to the structure or site.
 - 2. Make good all Work or materials, or the equipment and contents of structures or site disturbed in fulfilling any such guarantee.
- D. If the Contractor, after notice, fails to comply with the terms of the guarantee, the Owner may have the defects corrected and the Contractor and Contractor's Surety shall be liable for all expenses incurred in connection therewith, including Owner and/or Engineer's fees.

1.08 OPERATING INSTRUCTIONS AND MAINTENANCE MANUALS

- A. As a condition precedent to Final Acceptance, complete operating instructions and maintenance manuals shall be obtained by the Contractor for each and every piece of equipment or system furnished under the Contract. Organize operating and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual heavy-duty 2-inch, 3-ring vinyl-covered binders, with pocket folders for folded sheet information.
 - 1. Mark appropriate identification on front and spine of each binder.
 - a. Submit three (3) copies of each completed manual on equipment and systems, in final form, to the Owner and/or Engineer for distribution. Provide separate manuals for each unit of equipment, each operating system, and each electric and electronic system.
 - b. Refer to Specification Sections for individual requirements on operating and maintenance of the various pieces of equipment and operating systems.
- B. Equipment and Systems:
 - 1. Provide the following information for each piece of equipment, building operating systems, and electric or electronic system.

- a. Description: Provide a complete description of each unit and related component parts, including the following:
 - (1) Equipment or system function.
 - (2) Operating characteristics.
 - (3) Limiting conditions.
 - (4) Performance curves.
 - (5) Engineering data and tests.
 - (6) Complete nomenclature and number of replacement parts.

- b. Manufacturer's Information: For each manufacturer of a component part of piece of equipment provide the following:
 - (1) Printed operating and maintenance instructions.
 - (2) Assembly drawings and diagrams required for maintenance.
 - (3) List of items recommended to be stocked as spare parts.

- c. Maintenance Procedures: Provide information detailing essential maintenance procedures, including the following:
 - (1) Routine operations.
 - (2) Trouble-shooting guide.
 - (3) Disassembly, repair and reassembly.
 - (4) Alignment, adjusting and checking.

- d. Operating Procedures: Provide information on equipment and system operating procedures, including the following:
 - (1) Start-up procedures.
 - (2) Equipment or system break-in.
 - (3) Routine and normal operating instructions.
 - (4) Regulation and control procedures.
 - (5) Instructions on stopping.
 - (6) Shut-down and emergency instructions.
 - (7) Summer and winter operating instructions.
 - (8) Required sequences for electric or electronic systems.
 - (9) Special operating instructions.

- e. Servicing Schedule: Provide a schedule of routine servicing and lubrication requirements, including a list of required lubricants for equipment with moving parts.

- f. Controls: Provide a description of the sequence of operation and as-installed control diagrams by the control manufacturer for systems requiring controls.

- g. Coordination Drawings: Provide each Contractor's Coordination Drawings.
 - (1) Provide as-installed color-coded piping diagrams, where required for identification.
- h. Valve Tags: Provide charts of valve tag numbers, with the location and function of each valve.
- i. Circuit Directories: For electric and electronic systems, provide complete circuit directors of panelboards, including the following:
 - (1) Electric service.
 - (2) Controls.
 - (3) Communication.

1.09 REPLACEMENT MATERIALS

- A. As a condition precedent to Final Acceptance, Contractor shall store at the Project Site, in location directed by Owner and/or Engineer, all replacement materials which may be required by other Sections of these Contract Documents.

PART 2 - PRODUCTS

Not Applicable

PART 3 -EXECUTION

3.01 EQUIPMENT OPERATIONAL DEMONSTRATIONS

- A. Subsequent to Final Acceptance of the whole Work or designated portions thereof, and prior to Final Payment, the Contractor shall provide a competent and experienced person (or persons) thoroughly familiar with the Work to demonstrate to, and instruct the Owner's personnel in operation, adjustment and maintenance of products, equipment and systems. This instruction shall include normal start-up, run, stop, and emergency operations, location and operation of all controls, alarms and alarm systems, etc. The instruction shall include tracing the system in the field and on the diagrams in the instruction booklets so that the Owner's operating personnel will be thoroughly familiar with both the system and the data supplied. Provide instruction at mutually agreed upon times.
 - 1. Use operation and maintenance manuals for each piece of equipment or system as the basis of instruction. Review contents in detail to explain all aspects of operation and maintenance.
 - 2. For equipment that requires seasonal operation, provide similar instruction during other seasons.

- B. If installers and/or Contractor's personnel are not experience in procedures, provide instruction be manufacturer's representatives. Include a detailed review of the following items as examples, but not in way of limitation:
1. Maintenance manuals.
 2. Record documents.
 3. Spare parts and materials.
 4. Tools.
 5. Lubricants.
 6. Fuels.
 7. Identification systems.
 8. Control sequences.
 9. Hazards.
 10. Cleaning.
 11. Warranties and bonds.
 12. Maintenance agreements and similar continuing commitments.
 13. Similar procedures and facilities.
- C. As part of instruction for operating equipment, demonstrate the following procedures as examples, but not in way of limitation:
1. Start-up.
 2. Shut down.
 3. Emergency operations.
 4. Noise and vibration adjustments.
 5. Safety procedures.
 6. Economy and efficiency adjustments.
 7. Effective energy utilization.
 8. Similar operations.
- D. Review maintenance and operations in relation with applicable warranties, agreements to maintain, bonds, and similar continuing commitments.
- E. Owner and Engineer shall be notified in writing of scheduling and completion of all equipment operational instructions and demonstrations with Owner's personnel.

END OF SECTION 01 78 00

SECTION 01 78 36
WARRANTIES

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. This Section specifies general administrative and procedural requirements for warranties required by the Contract Documents, including manufacturer's standard warranties on products and special warranties.
1. Refer to the General Conditions of the Contract for Construction, as modified, for terms of the Contractor's special warranty of workmanship and materials.
 2. General closeout requirements are included in Section 01 78 00 - PROJECT CLOSEOUT.
 3. Specific requirements for warranties for the Work and products and installation that are specified to be warranted, are included in the individual Sections of the Specifications.
 4. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.
- B. Disclaimers and Limitations:
1. Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

1.02 ASSIGNMENT OF MANUFACTURERS' OR OTHER SELLERS' WARRANTIES

- A. The Contractor shall assign to the Owner any and all manufacturers' or other sellers' warranties that come with any products, material or supplies which are incorporated into or are consumed in the Project in any way. Assignment of such warranties shall be effective on the date of Final Acceptance. To the extent that any such warranties do not extend to subsequent purchasers or owners or such warranties contain a limitation on assignment, the Contractor agrees that the Contractor purchased the products, materials and supplies on behalf of the Owner with the intent that the Owner be the intended recipient of any warranties. All documents associated with or describing any such warranties shall be delivered to the Engineer along with the other Project Final Acceptance documents and shall be deemed to be a part of the required Final Acceptance documentation. The Contractor shall not take any action or fail to act in any way which voids any such warranties. All subcontracts shall contain a similar provision which requires subcontractors to assign any such warranties to the Owner.

- B. All costs for manufacturers' or other sellers' warranties shall be borne by the Contractor, as no separate payment shall be made for this work. All costs associated with this warranty shall be included in the Lump Sum Cost of this Work. The Owner reserves the sole right to determine defects in the materials and systems installed or modified by this Project and the acceptability of the warranty repair and defect correction, including adjustment of equipment provided as a part of this Project.

1.03 DESCRIPTION OF REQUIREMENTS/DEFINITIONS

A. Categories of Specific Warranties:

- 1. It is recognized that warranties on the Work are in several categories, including those of the Conditions of the Contract and including (but not necessarily limited to) the following specific categories related to the individual units of work specified in the individual Sections of these Specifications:
 - a. **Special Warranty (Guarantee):** A warranty specifically written and signed by the Contractor for a defined portion of the Work; and, where required, countersigned by subcontractor, installer, manufacturer or other entity engaged by Contractor; formerly generally recognized as (and sometimes specified in Contractor Documents as) a "guarantee".
 - b. **Specified Product Warranty:** A warranty which is required by Contract Documents, to be provided for a manufactured product which is incorporated into the Work; regardless of whether the manufacturer has published the warranty without consideration for specific incorporation of product into the Work, or has written and executed the warranty as a direct result of contract documents requirements.
 - c. **Coincidental Product Warranty:** A warranty which is not specifically required by Contract Documents (other than as specified in this Section); but which is available on a product incorporated into the Work, by virtue of the fact that manufacturer of product has published the warranty in connection with purchases and uses of product without regard for specific applications except as otherwise limited by terms of the warranty.

B. Definition: Manufactured Product:

- 1. A physical item for incorporation into the Work, which has been produced from raw or natural materials by a manufacturing process, and which is purchased from a manufacturer either specifically for the Work or for Contractor's/Subcontractor's/ Fabricator's/Installer's stock from which it is drawn for incorporation into the Work.

C. General Limitations:

1. It is recognized that specific warranties are intended primarily to protect Owner against failure of Work to perform as required, and against deficient, defective and faulty materials and workmanship, regardless of sources. Except as otherwise indicated, specific warranties do not cover failures in Work which result from:
 - a. Damage or defect caused by abuse,
 - b. Modifications not executed by the Contractor,
 - c. Improper or insufficient maintenance,
 - d. Improper operations, or normal wear and tear under normal usage.
2. Although, manufacturer's commitments in product warranties on products used in the Work are generally written to exclude product failures which result from failure of other work (such as failure of substrate supporting product), such limitations in product warranties do not relieve Contractor of the more general warranties on Work which incorporates use of such products. Except as otherwise indicated, this same relationship applies to units of Work performed by other entities (other than manufacturers), such as fabricators, installers and subcontractors who are required to countersign special project warranties with Contractor for such units of Work.

1.04 WARRANTY REQUIREMENTS

A. Related Damages and Losses:

1. When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.

B. Reinstatement of Warranty:

1. When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty.

C. Replacement Cost:

1. Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor shall be responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.

D. Owner's Recourse:

1. Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, right and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.
 - a. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.
2. The Owner reserves the right to refuse to accept Work for the project where a special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.

1.05 SUBMITTALS

A. Submit written warranties to the Owner prior to the date certified for Final Payment.

1. When a special warranty is required to be executed by the Contractor, or the Contractor and a subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties.
2. Submit a draft to the Owner for approval prior to final execution.
 - a. Refer to individual Sections of the Specifications for specific content requirements, and particular requirements for submittal of special warranties.
3. Submit specific warranties for beginning of the warranty periods. Date(s) shall be inserted to correspond with certification or acceptance dates, as established by and accepted by the Owner.

B. Form of Submittal:

1. Compile two copies of each required warranty properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.
2. Bind warranties in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2" by 11" paper.

- a. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address and telephone number of the installer.
 - b. Identify each binder on the front and the spine with the typed or printed title "WARRANTIES AND BONDS," the Project title or name, and the name of the Contractor.
3. When operating and maintenance manuals are required for warranted construction, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

Not Applicable

END OF SECTION 01 78 36

SECTION 01 79 00
DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. This Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
 - 1. Demonstration of operation of systems, subsystems, and equipment.
 - 2. Training in operation and maintenance of systems, subsystems, and equipment.
 - 3. Demonstration and training video.

1.02 SUBMITTALS

- A. Instruction Program: Submit two (2) copies of outline of instructional program for demonstration and training, including a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
 - 1. At completion of training, submit two (2) complete training manuals for Owner's use.
- B. Qualification Data: For instructor.
- C. Attendance Record: For each training module, submit list of participants and length of instruction time.
- D. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.
- E. Demonstration and Training Video: Submit two (2) copies within seven (7) days of end of each training module.
 - 1. Identification: On each copy, provide an applied label with the following information:
 - a. Name of project.
 - b. Name and address of photographer.

- c. Name of Owner and Engineer.
 - d. Name of Contractor.
 - e. Date video was recorded.
 - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
2. Transcript: Prepared on 8-1/2 by 11-inch paper, punched and bound in heavy-duty, 3-ring, vinyl-covered binders. Mark appropriate identification on front and spine of each binder. Include a cover sheet with same label information as the corresponding video. Include name of Project and date of video on each page.

1.03 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative experienced in operation and maintenance procedures and training.
- C. Photographer Qualifications: A professional photographer who is experienced photographing construction projects.
- D. Pre-instruction Conference: Conduct conference at Project Site. Review methods and procedures related to demonstration and training including, but not limited to, the following:
 1. Inspect and discuss locations and other facilities required for instruction.
 2. Review and finalize instruction schedule and verify availability of educational materials, instructor's personnel, audiovisual equipment, and facilities needed to avoid delays.
 3. Review required content of instruction.
 4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

1.04 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations.

- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by the Owner and/or Engineer.

PART 2 – PRODUCTS

2.01 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections, and as follows as an example:
 - 1. Fueling tanks and equipment.
 - 2. Electrical service and distribution, including transformers, switchboards, panelboards, uninterruptible power supplies, and motor controls.
 - 3. Communication systems, including, as applicable; intercommunication, surveillance, clocks and programming, voice and data, and television equipment.
- B. Training Modules: As applicable, develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:
 - 1. Basis of System Design. Operational Requirements, and Criteria: Include the following:
 - a. System, subsystem, and equipment descriptions.
 - b. Performance and design criteria if Contractor is delegated design responsibility.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.
 - f. Operating characteristics.
 - g. Limiting conditions.
 - h. Performance curves.
 - 2. Documentation: Review the following items in detail:
 - a. Emergency manuals.
 - b. Operations manuals.

- c. Maintenance manuals.
 - d. Project Record Documents.
 - e. Identification systems.
 - f. Warranties and bonds.
 - g. Maintenance service agreements and similar continuing commitments.
3. Emergencies: Include the following, as applicable:
- a. Instructions on meaning of warnings, trouble indications, and error messages.
 - b. Instructions of stopping.
 - c. Shutdown instructions for each type of emergency.
 - d. Operating instructions for conditions outside of normal operating limits.
 - e. Sequences for electric or electronic systems.
 - f. Special operating instructions and procedures.
4. Operations: Include the following, as applicable:
- a. Startup procedures.
 - b. Equipment or system break-in procedures.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Control sequences.
 - f. Safety procedures.
 - g. Instructions on stopping.
 - h. Normal shutdown instructions.
 - i. Operating procedures for emergencies.
 - j. Operating procedures for system, subsystem, or equipment failure.
 - k. Seasonal and weekend operating instructions.
 - l. Required sequences for electric or electronic systems.
 - m. Special operating instructions and procedures.
5. Adjustments: Include the following:
- a. Alignments.
 - b. Checking adjustments.
 - c. Noise and vibration adjustments.

- d. Economy and efficiency adjustments.
- 6. Troubleshooting: Include the following:
 - a. Diagnostic instructions.
 - b. Test and inspection procedures.
- 7. Maintenance: Include the following:
 - a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.
 - c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Procedures for routine cleaning.
 - e. Procedures for preventative maintenance.
 - f. Procedures for routine maintenance.
 - g. Instruction on use of special tools.
- 8. Repairs: Include the following:
 - a. Diagnosis instructions.
 - b. Repair instructions.
 - c. Disassembly; component removal, repair and replacement; and reassembly instructions.
 - d. Instructions for identifying parts and components.
 - e. Review of spare parts needed for operation and maintenance.

PART 3 – EXECUTION

3.01 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a combined training manual.
- B. Set up instructional equipment at instruction location.

3.02 INSTRUCTION

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.
- B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

1. Owner will furnish Contractor with names and positions of participants.
- C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
- D. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of an oral, a written, or a demonstration performance-based test.
- E. Cleanup: Collect used and leftover educational materials and remove from Project site or turn over to Owner as directed. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

3.03 DEMONSTRATION AND TRAINING VIDEOS

- A. General: Engage a qualified commercial photographer to record demonstration and training videos. Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
 1. At the beginning of each training module, record each chart containing learning objective and lesson outline.
- B. Video Format: Provide high-quality DVD color videos.
- C. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to show area of demonstration and training. Display continuous running time.
- D. Narration: Describe scenes on video by audio narration by microphone while (or by dubbing audio narration off-site after) video is recorded. Include description of items being viewed. Describe vantage point, indicating location, direction (by compass point), and elevation or story of construction.
- E. Transcript: Provide a typewritten transcript of the narration. Display images and running time captured from video opposite the corresponding narration segment.

END OF SECTION 01 79 00

DIVISION II & III

The Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction July 2019 Electronic Version can be found at:

<https://www.fdot.gov/programmanagement/Implemented/SpecBooks/default.shtm>

APPENDIX

The includes the following:

1. Terracon Geotechnical Engineering Report dated 08/28/19
2. Example of NASA KSC Form 26-312 Utility Locate/Excavation Permit Request (Dig Permit) 19184 for Project's geotechnical borings, dated 06/04/19.
3. Example of USAF Form 103 Base Civil Engineering Work Clearance Request (Dig Permit) for Project's geotechnical borings, dated 06/12/19.
4. NASA KSC Record of Environmental Consideration No. 10678 dated 06/18/19



Geotechnical Engineering Report

**Cape Canaveral Air Force Station (CCAFS)
Economic Development Transportation Project Fund (EDTPF)
Cape Canaveral, Brevard County, Florida**

August 28, 2019

Terracon Project No. H1175260

Prepared for:

AECOM

Tampa, Florida

Prepared by:

Terracon Consultants, Inc.

Winter Park, Florida



August 28, 2019



AECOM
7650 West Courtney Campbell Causeway
Tampa, Florida 33607

Attn: Mr. Bunti Patel, P.E.
P: [813] 636-2445
E: Bunti.Patel@aecom.com

Re: Geotechnical Engineering Report
Cape Canaveral Air Force Station (CCAFS)
Economic Development Transportation Project Fund (EDTPF)
Cape Canaveral, Brevard County, Florida
Terracon Project No. H1175260

Dear Mr. Patel:

Terracon Consultants, Inc. (Terracon) has completed the geotechnical engineering services for the above referenced project in Cape Canaveral, Florida.

This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning design parameters for the signal foundations at the proposed project site.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report, or if we may be of further service, please contact us.

Sincerely,

Terracon Consultants, Inc.

Certificate of Authorization No. 9330

Shenna McMaster, P.E.
Senior Geotechnical Engineer
Florida PE # 57537

Brendan O'Brien, P.E.
Senior Geotechnical Engineer

This report has been electronically signed and sealed by Shenna McMaster, P.E. on the date adjacent to the Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Terracon Consultants, Inc. 1675 Lee Road Winter Park, Florida 32789
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Environmental



Facilities



Geotechnical



Materials

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SOIL PARAMETERS FOR MAST ARM SIGNAL POLE STRUCTURES
SITE LOCATION AND EXPLORATION PLANS
EXPLORATION RESULTS

Geotechnical Engineering Report
Cape Canaveral Air Force Station (CCAFS)
Economic Development Transportation Project Fund (EDTPF)
Cape Canaveral, Brevard County, Florida
Terracon Project No. H1175260
August 28, 2019

INTRODUCTION

This report presents the results of our subsurface exploration and geotechnical engineering services performed for the proposed signal pole foundations to be located at six intersections within Kennedy Space Center, Cape Canaveral Air Force Station, and Port Canaveral.

The purpose of these services is to provide geotechnical engineering information and recommendations relative to design of drilled shaft foundations for the proposed signal pole structures.

The geotechnical engineering Scope of Services for this project included the advancement of nine test borings to depths ranging from 10 to 40 feet below existing site grades at the proposed signal pole locations.

Maps showing the site locations are shown in the **Site Location and Exploration Plans** section. The results of the laboratory testing performed on soil samples obtained from the site during the field exploration are included on the boring logs in the **Exploration Results** section.

PROJECT DESCRIPTION

The involves the replacement and/or addition of traffic signal poles at six intersections within Kennedy Space Center, CCAFS, and Port Canaveral:

- NASA Parkway and Space Commerce Way
- NASA Parkway and Kennedy Space Center Visitor Center
- Kennedy Parkway North and Schwartz Road
- Kennedy Parkway North and Saturn Causeway
- SR 401 and Grouper Road
- Phillips Parkway and Poseidon Avenue

Drilled shaft foundations are anticipated to support new pedestal and mast arm signal poles.

REVIEW OF AVAILABLE DATA

USGS Quadrangle Map

Based on the United States Geological Survey (USGS) Quadrangle maps, “Orsino, Florida” and “Cape Canaveral, Florida”, the intersections appear to be near elevation +5 feet, NGVD. Excerpts of the USGS Quadrangle Maps containing the subject intersections are shown in the **Site Location and Exploration Plans** section (Exhibits A-1A to A-1C).

USDA Soil Survey

Excerpts of the United States Department of Agriculture (USDA) Brevard County, Florida Soil Survey containing the subject intersections are shown in the **Site Location and Exploration Plans** section (Exhibits A-2A to A-2C). Soils found in the vicinity of the project site are listed in the following table:

USDA Map Symbol	USDA Soil Name	Depth of Seasonal High Groundwater Table for Site in its Natural Condition
2	Anclote sand, frequently ponded, 0 to 1 percent slopes	0 to 6 inches
6	Basinger fine sand, depressional	Within 10 inches
9	Canaveral-Anclote Complex, gently undulating	12 to 36 feet
10	Canaveral-Urban land complex	30 to 60 inches
21	Riviera and Winder soils, depressional	0 inches
28	Immokalee sand, 0 to 2 percent slopes	6 to 18 inches
49	Pomello sand	18 to 42 inches
58	Turnbull and Riomar soils, tidal	0 inches
69	Urban land	Depends on established drainage facilities
71	Wabasso sand, 0 to 2 percent slopes	6 to 18 inches

It should be noted that the Soil Survey is not intended as a substitute for site-specific geotechnical exploration; rather it is a useful tool in planning a project scope in that it provides information on soil types likely to be encountered. Boundaries between adjacent soil types on the Soil Survey maps

are approximate. The establishment of roadside drainage canals may have impacted groundwater levels.

Potentiometric Surface

Based on review of the St. John's River Water Management District (SJRWMD) potentiometric maps of the upper Floridan Aquifer for this project area, the estimated elevation of the artesian head appears to be near +20 feet. The ground surface elevation at the project is near +5 feet, NGVD. Although artesian head conditions were not observed during drilling, artesian conditions should be anticipated during construction.

SUBSURFACE EXPLORATION

Subsurface conditions were explored at nine locations performing Standard Penetration Test (SPT) borings to depths ranging from 10 to 40 feet below the existing ground surface. Due to access restrictions of the drill rig, borings could not be performed at the locations of signal poles at MA-1, MA-3, MA-4, and P-3. The approximate locations and the results of the soil borings are presented in the **Exploration Results** section of this report.

The boring locations were laid out at the project site by Terracon and AECOM personnel. The locations indicated on the attached exhibits are based on use of a hand-held GPS device. The locations of the borings should be considered accurate only to the degree implied by the means and methods used to define them.

The SPT soil borings were drilled with an ATV or truck-mounted, rotary drilling rig equipped with a CME automatic hammer. The boreholes were advanced with a cutting head and stabilized with the use of bentonite (drillers' mud). Soil samples were obtained by the split spoon sampling procedure in general accordance with the Standard Penetration Test (SPT) procedure. In the split spoon sampling procedure, the number of blows required to advance the sampling spoon the last 12 inches of an 18-inch penetration or the middle 12 inches of a 24-inch penetration by means of a 140-pound hammer with a free fall of 30 inches, is the standard penetration resistance value (N). This value is used to estimate the in-situ relative density of cohesionless soils and the consistency of cohesive soils. The sampling depths and penetration distance, plus the standard penetration resistance values, are shown on the boring logs.

A CME automatic SPT hammer was used to advance the split-barrel sampler in the borings performed on this site. A significantly greater efficiency is achieved with the automatic hammer compared to the conventional safety hammer operated with a cathead and rope. This higher efficiency has an appreciable effect on the SPT-N value. The effect of the automatic hammer's efficiency has been considered in the interpretation of the subsurface data for this report.

Portions of the samples from the borings were sealed in glass jars to reduce moisture loss, and then the jars were taken to our laboratory for further observation and classification. Upon completion, the boreholes were backfilled with hole plug.

GENERAL SUBSURFACE CONDITIONS

The soil samples obtained from the borings were visually classified in accordance with the Unified Soil Classification System (USCS). Stratification boundaries between soil types should be considered approximate as the actual transition between soil types may be gradual. Detailed subsurface conditions encountered in the borings are shown on the **Report of Core Borings** sheet in the **Exploration Results** section of this report.

The boreholes were observed during drilling for the presence and level of groundwater. Groundwater was observed at a depth of about 5 to more than 10 feet below grade at each boring at the time of drilling (July and August 2019). Due to the use of driller's mud to stabilize boreholes, accurate groundwater level measurements could not be obtained below a depth of 10 feet. Groundwater levels will fluctuate with the amount of local rainfall and with site development.

It should be recognized that fluctuations of the groundwater table will occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the borings were performed. In addition, perched water can develop within higher permeability soils overlying less permeable soils. Therefore, groundwater levels during construction or at other times in the future may be higher or lower than the levels indicated on the boring logs.

Normal seasonal high groundwater levels were estimated based on observed ground water levels, review of USDA Brevard County Soil Survey, existing grades and drainage, rainfall history and geotechnical engineering judgement. The observed and estimated normal seasonal high groundwater levels are shown adjacent to each of the boring profiles on the attached **Report of Core Borings** sheet in the **Exploration Results** section of this report. Groundwater levels will fluctuate with the amount of local rainfall and with site development.

These seasonal water table estimates do not represent the temporary rise in water table that occurs immediately following a storm event, including adjacent to other stormwater management facilities. This is different from static groundwater levels in wet ponds and/or drainage canals which can affect the design water levels of new, nearby ponds. The seasonal high water table may vary from normal when affected by extreme weather changes, localized or regional flooding, karst activity, future grading, drainage improvements, or other construction that may occur on or around the site following the date of this report.

LABORATORY TESTING

The soil samples retrieved from the boring locations were transported to our laboratory for visual examination and selective soil testing. The results of our laboratory testing are presented on the attached **Report of Core Borings** sheet in the **Exploration Results** section of this report. Laboratory testing was performed in general accordance with the appropriate Florida methods.

EVALUATION AND RECOMMENDATIONS

The following results are based on the project characteristics previously described, the data obtained in our field exploration and our experience with similar subsurface conditions. As previously mentioned, it is our understanding that signal pole structures will be constructed at the six subject intersections within Kennedy Space Center, Cape Canaveral Air Force Station, and Port Canaveral.

It is our understanding that drilled shaft foundation design will be based on the Florida Department of Transportation's (FDOT) *Drilled Shaft Design for Sign & Signal Structures* program. Soil parameters recommended for use in drilled shaft foundation design are presented on the tables in the **Soil Parameters For Mast Arm Signal Pole Structures** section of this report.

At the location of MA-6 (intersection of SR 401 and Grouper Road), the average blow count (N_{60} value) is less than 5 within the explored depth of the boring of 40 feet. For foundation design of the drilled shaft at this location it is recommended to base the design on using an N_{60} value of 4 and an equivalent "omega" factor reduction (i.e. 0.4). Also, it is recommended to add 1 shaft diameter to the estimated drilled shaft length. However, due to the very soft clay observed at 28 to 33 feet, a drilled shaft length of at least 35 feet is recommended if the calculated minimum length exceeds 25 feet. We do not recommend the bottom of the drilled shaft to be within the very soft clay layer.

Continuous inspection of the drilled shaft construction should be conducted by a Geotechnical Engineer or their representative. The Inspector should verify that the drilled shaft has the minimum embedment depths and that the bottom is free of drilling spoil and other loose materials. We emphasize that the inspection is an extension of shaft design and is critical in achieving the required shaft capacity.

We recommend the following notes be added to the plans:

"Layers of dense sand may be encountered at this site. Such materials may make shaft excavations and/or temporary casing installation difficult. The Contractor shall expect to encounter these type materials at all shaft locations and shall use specialized equipment and/or procedures as necessary to facilitate shaft excavation and/or temporary casing installation.

When temporary casing is used, the casing tip shall be reinforced and the casing thickness shall be adequate to prevent causing damage/deformation during installation through dense layers.”

“Natural slurry shall not be relied upon to prevent caving of soils and maintaining an open hole. Otherwise, drilled shafts shall be constructed in accordance with Section 455.”

“Artesian conditions were not observed during drilling. Based on review of the St. Johns River Water Management District Potentiometric maps of the Floridan Aquifer for the project area, the potential artesian head elevation is estimated to be +20 feet, NGVD. The contractor shall be prepared to use temporary casing or other methods as necessary to control artesian water up to a head elevation of +20 feet NGVD.”

CORROSIVITY

Corrosion series testing was not within the geotechnical engineering scope of services. We have reviewed the FDOT Corrosion Maps. The site is in Area 3, which indicates extremely corrosive environment. We recommend that the environmental classification be considered “extremely aggressive” for design of both steel and concrete.

GENERAL COMMENTS

This report is based on the results of a limited number of borings and may not accurately reflect conditions between or away from boring locations. Variations of the subsoil conditions between or away from boring locations may occur. If conditions not discussed in this report are observed, we request the opportunity to review our recommendations.

Our services have been performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. Terracon is not responsible for the conclusions, opinions, or recommendations made by others based on this data.

The scope of the investigation was intended to evaluate soil conditions within the influence zone of the structure foundation systems. The analysis and recommendations submitted in this report are based upon the data obtained from the soil borings performed at the locations indicated. If any subsoil variations become evident during the course of this project, a re-evaluation of the recommendations contained in this report will be necessary after we have had an opportunity to observe the characteristics of the condition encountered. The applicability of the report should also be reviewed in the event significant changes occur in the design, nature or location of the proposed structure.

The scope of our services does not include any environmental assessment or investigation for the presence or absence of hazardous or toxic materials in the soil, groundwater, or surface water

Geotechnical Engineering Report

CCAFS EDTPF ■ Cape Canaveral, Florida

August 28, 2019 ■ Terracon Project No. H1175260



within or beyond the site studied. Any statements in this report regarding odors, staining of soils, or other unusual conditions observed are strictly for the information of the Contractor and the owner.

SOIL PARAMETERS FOR DRILLED SHAFT FOUNDATION DESIGN

**SOIL PARAMETERS
 MAST ARM SIGNAL POLE STRUCTURES
 CCAFS EDTPF ROADWAY IMPROVEMENTS
 CAPE CANAVERAL AIR FORCE STATION, BREVARD COUNTY, FLORIDA
 TERRACON PROJECT NO. H1175260**

(Borings MA-2, MA-5, P-1, P-2, and P-4)

Soil Type (sand or clay)	Sand	
Soil Friction Angle (ϕ_{soil})	30°	
Soil Cohesion (c_{soil})	0 psf	
Moist Soil Unit Weight (above Watertable) (γ_{soil})*	105 pcf	
Effective Soil Unit Weight (below Watertable) (γ_{soil})*	50 pcf	
At-Rest Pressure Coefficient (K_0)	0.5	
Coefficient of Friction between Soil and Shaft (μ)	0.5	
Design Water Table Depth*	MA-2	7 feet
	MA-5	4.5 feet
	P-1	4 feet
	P-2	4 feet
	P-4	6 feet

* Please note that *Drilled Shaft Design for Sign & Signal Structures* utilizes a single soil profile. Therefore, to account for the effects of the watertable, weighted averages for effective soil unit weight and effective shaft unit weight should be used. As such, determining an appropriate drilled shaft embedment length may require multiple iterations.

If required, “omega” reduction values (reduction for torsional capacity for blow counts less than 15) based on average N_{60} blow counts at various depth at each boring is referenced in the table below:

Boring #	Depth of Shaft				
	10 ft.	15 ft.	20 ft.	25 ft.	30 ft.
MA-2	N/A	12	12	15	>15
MA-5	N/A	>15	>15	>15	>15
P-1	N/A	15	12	12	12
P-2	6	N/A	N/A	N/A	N/A
P-4	N/A	11	12	15	15

**SOIL PARAMETERS
 MAST ARM SIGNAL POLE STRUCTURES
 CCAFS EDTPF ROADWAY IMPROVEMENTS
 CAPE CANAVERAL AIR FORCE STATION, BREVARD COUNTY, FLORIDA
 TERRACON PROJECT NO. H1175260**

(BORING MA-6)

Soil Type (sand or clay)	Sand	
Soil Friction Angle (ϕ_{soil})	28°	
Soil Cohesion (c_{soil})	0 psf	
Moist Soil Unit Weight (above Watertable) (γ_{soil})*	100 pcf	
Effective Soil Unit Weight (below Watertable) (γ_{soil})*	45 pcf	
At-Rest Pressure Coefficient (K_0)	0.53	
Coefficient of Friction between Soil and Shaft (μ)	0.40	
Design Water Table Depth*	MA-6	4.5 feet

* Please note that *Drilled Shaft Design for Sign & Signal Structures* utilizes a single soil profile. Therefore, to account for the effects of the watertable, weighted averages for effective soil unit weight and effective shaft unit weight should be used. As such, determining an appropriate drilled shaft embedment length may require multiple iterations.

If required, “omega” reduction values (reduction for torsional capacity for blow counts less than 15) based on average N_{60} blow counts at various depth at each boring is referenced in the table below:

Boring #	Depth of Shaft			
	15 ft.	20 ft.	25 ft.	35 ft.
MA-6	5	4	4	4

At the location of MA-6, the average blow count (N_{60} value) is less than 5 within the explored depth of the boring of 40 feet. For foundation design of the drilled shaft at this location it is recommended to base the design on using an N_{60} value of 4 and an equivalent “omega” factor reduction (i.e. 0.4). Also, it is recommended to add 1 shaft diameter to the estimated drilled shaft length. However, due to the very soft clay observed at 28 to 33 feet, a drilled shaft length of at least 35 feet is recommended if the calculated minimum length exceeds 25 feet. We do not recommend the bottom of the drilled shaft to be within the very soft clay layer.

**SOIL PARAMETERS
 MAST ARM SIGNAL POLE STRUCTURES
 CCAFS EDTPF ROADWAY IMPROVEMENTS
 CAPE CANAVERAL AIR FORCE STATION, BREVARD COUNTY, FLORIDA
 TERRACON PROJECT NO. H1175260**

(Borings MA-7, MA-8, and P-5)

Soil Type (sand or clay)	Sand	
Soil Friction Angle (ϕ_{soil})	29°	
Soil Cohesion (c_{soil})	0 psf	
Moist Soil Unit Weight (above Watertable) (γ_{soil})*	100 pcf	
Effective Soil Unit Weight (below Watertable) (γ_{soil})*	45 pcf	
At-Rest Pressure Coefficient (K_0)	0.52	
Coefficient of Friction between Soil and Shaft (μ)	0.45	
Design Water Table Depth*	MA-7	6 feet
	MA-8	6 feet
	P-5	6 feet

* Please note that *Drilled Shaft Design for Sign & Signal Structures* utilizes a single soil profile. Therefore, to account for the effects of the watertable, weighted averages for effective soil unit weight and effective shaft unit weight should be used. As such, determining an appropriate drilled shaft embedment length may require multiple iterations.

If required, “omega” reduction values (reduction for torsional capacity for blow counts less than 15) based on average N_{60} blow counts at various depth at each boring is referenced in the table below:

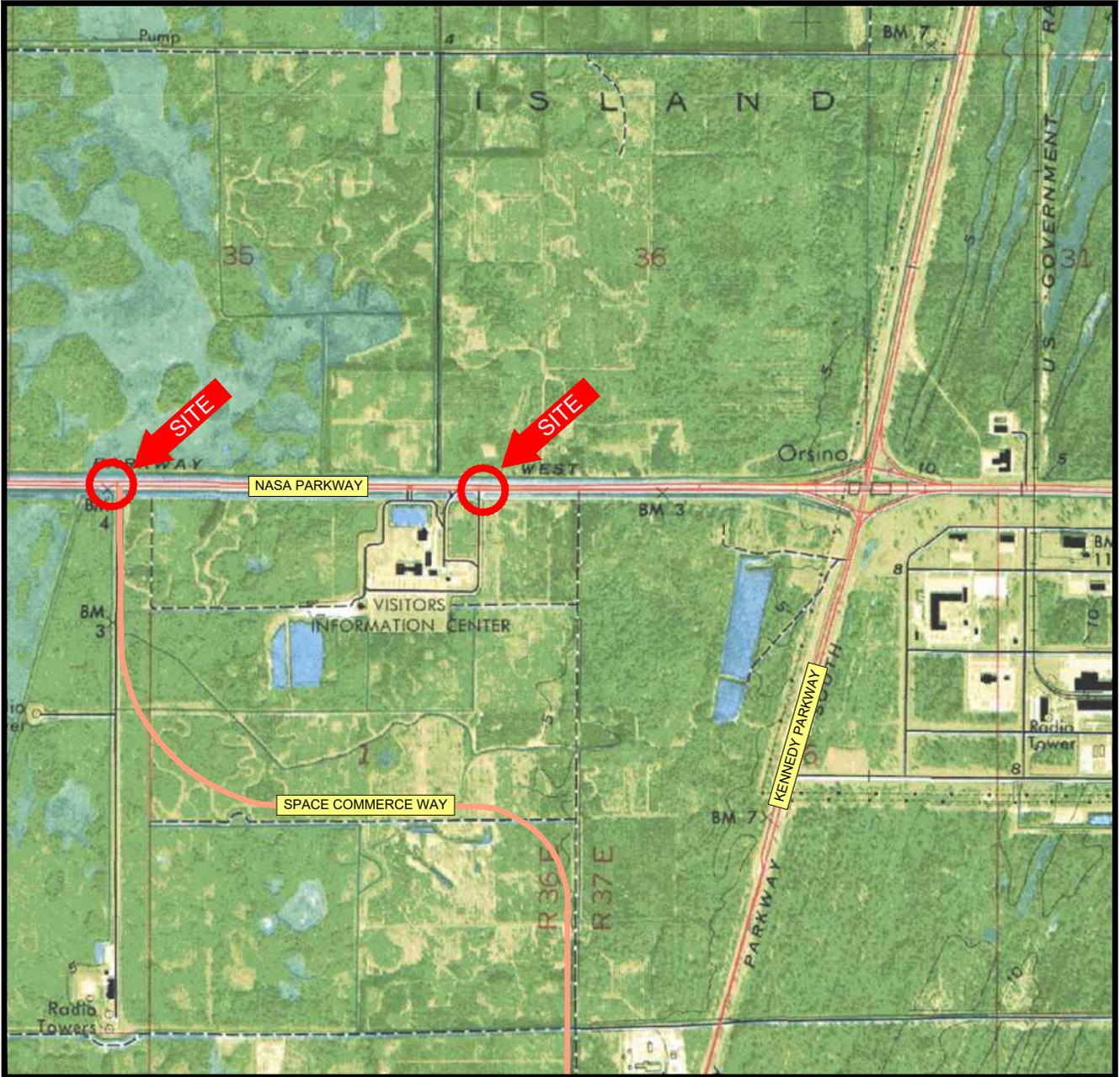
Boring #	Depth of Shaft				
	10 ft.	15 ft.	20 ft.	25 ft.	30 ft.
MA-7	N/A	7	7	11	15
MA-8	N/A	6	7	14	>15
P-5	7	N/A	N/A	N/A	N/A

SITE LOCATION AND EXPLORATION PLANS

Contents:

Topographic Vicinity Maps (USGS Quadrangle)

Soils Map



SCALE 1"=2000'



ORSINO, FLORIDA
 ISSUED: 1976
 7.5 MINUTE SERIES (QUADRANGLE)



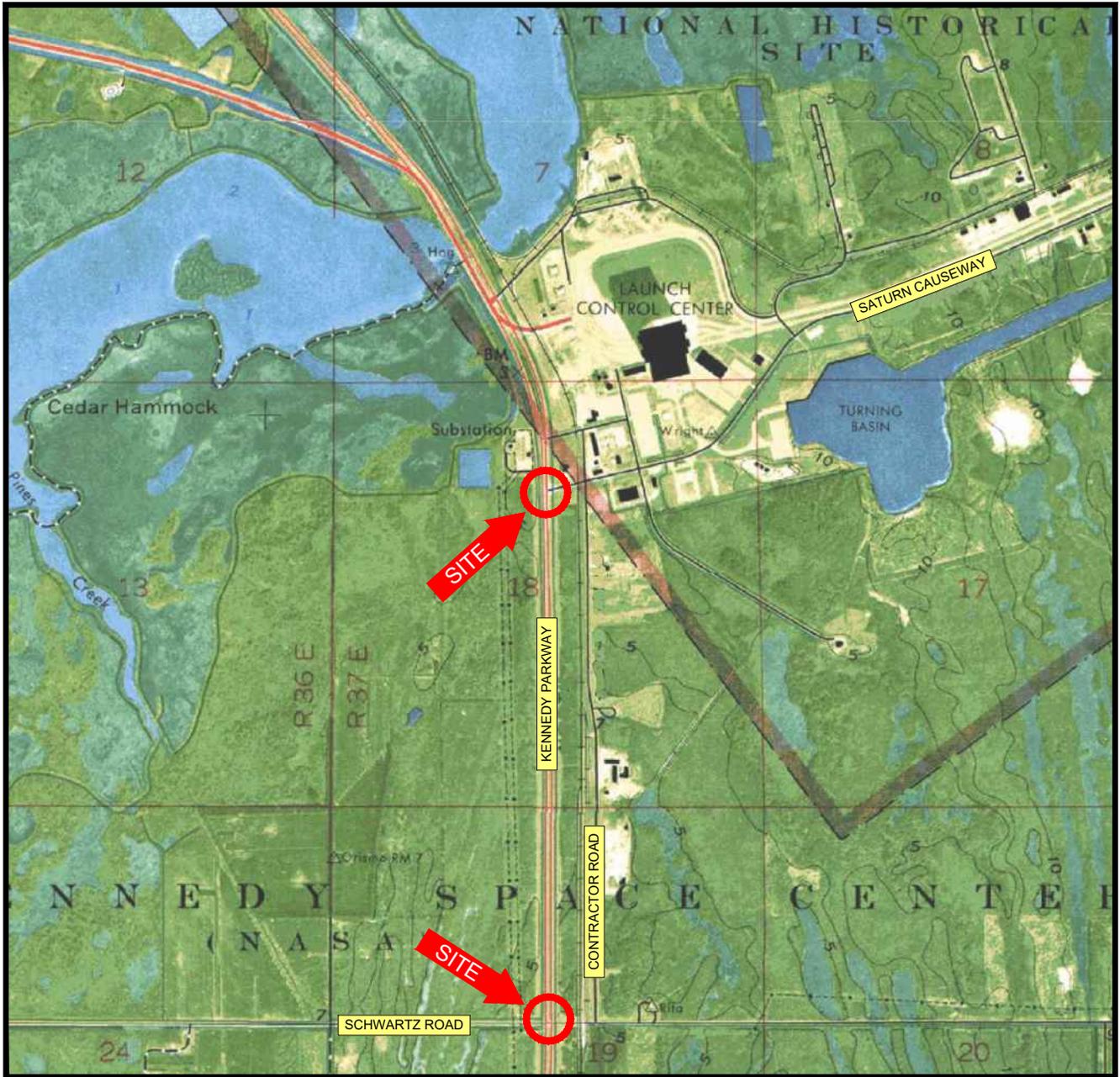
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Project Mngr:	SM	Project No.	H1175260
Drawn By:	AS	Scale:	AS SHOWN
Checked By:	SM	File No.	H1175260
Approved By:	AMS	Date:	8-23-19

Terracon
 Consulting Engineers and Scientists
 1675 LEE ROAD WINTER PARK, FLORIDA 32789
 PH. (407) 740-6110 FAX. (407) 740-6112

TOPOGRAPHIC VICINITY MAP
 GEOTECHNICAL ENGINEERING REPORT
 CCAFS - ECONOMIC DEVELOPMENT TRANSPORTATION PROJECT FUND (EDTPF)
 CAPE CANAVERAL AIR FORCE STATION
 CAPE CANAVERAL, BREVARD COUNTY, FLORIDA

EXHIBIT
A-1A



SCALE 1"=2000'



ORSINO, FLORIDA
 ISSUED: 1976
 7.5 MINUTE SERIES (QUADRANGLE)



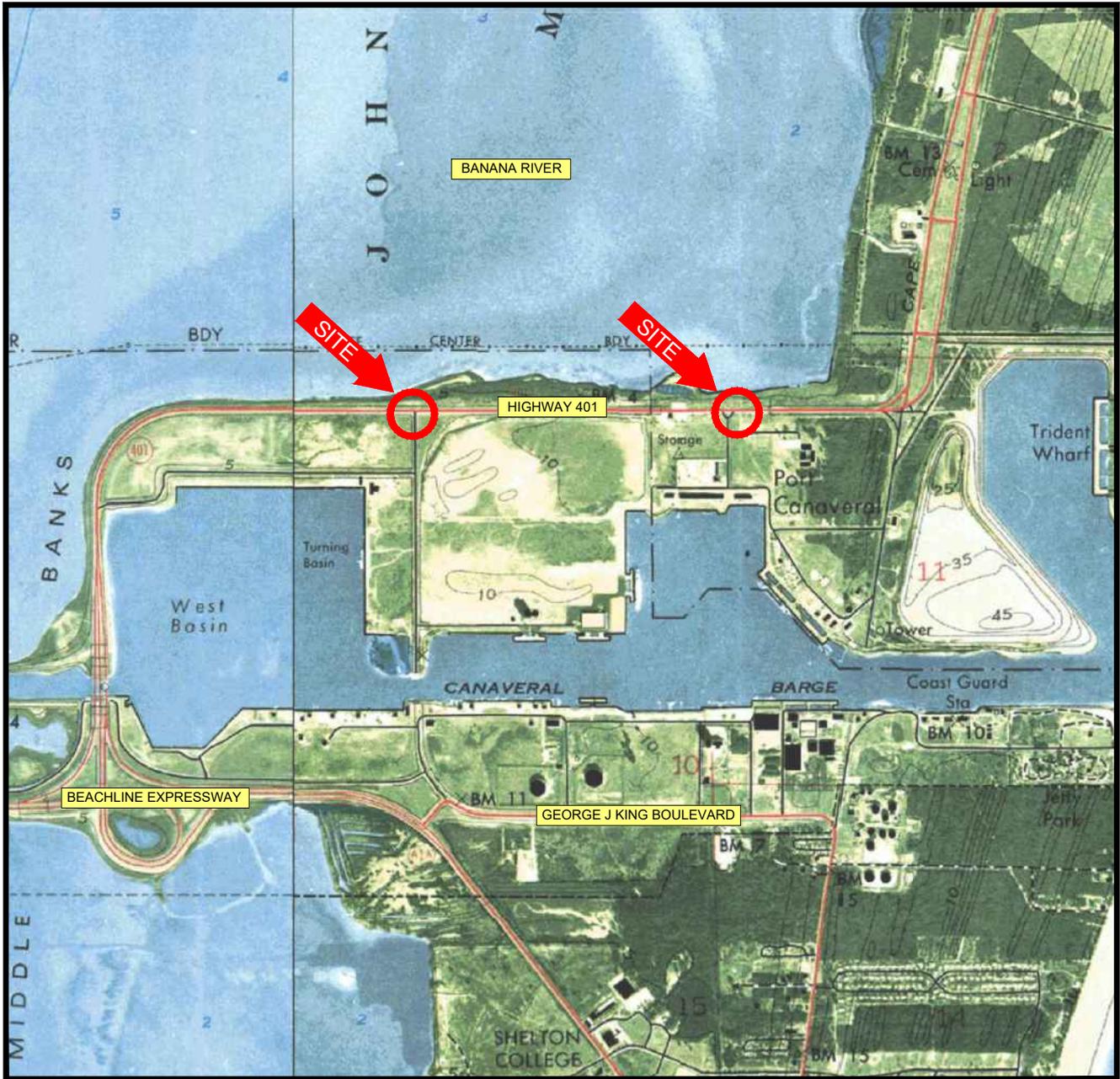
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Project Mngr:	SM	Project No.	H1175260
Drawn By:	AS	Scale:	AS SHOWN
Checked By:	SM	File No.	H1175260
Approved By:	AMS	Date:	8-23-19

Terracon
 Consulting Engineers and Scientists
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TOPOGRAPHIC VICINITY MAP
 GEOTECHNICAL ENGINEERING REPORT
 CCAFS - ECONOMIC DEVELOPMENT TRANSPORTATION PROJECT FUND (EDTPF)
 CAPE CANAVERAL AIR FORCE STATION
 CAPE CANAVERAL, BREVARD COUNTY, FLORIDA

EXHIBIT
 A-1B



SCALE 1"=2000'



CAPE CANAVERAL, FLORIDA
 ISSUED: 1976
 7.5 MINUTE SERIES (QUADRANGLE)



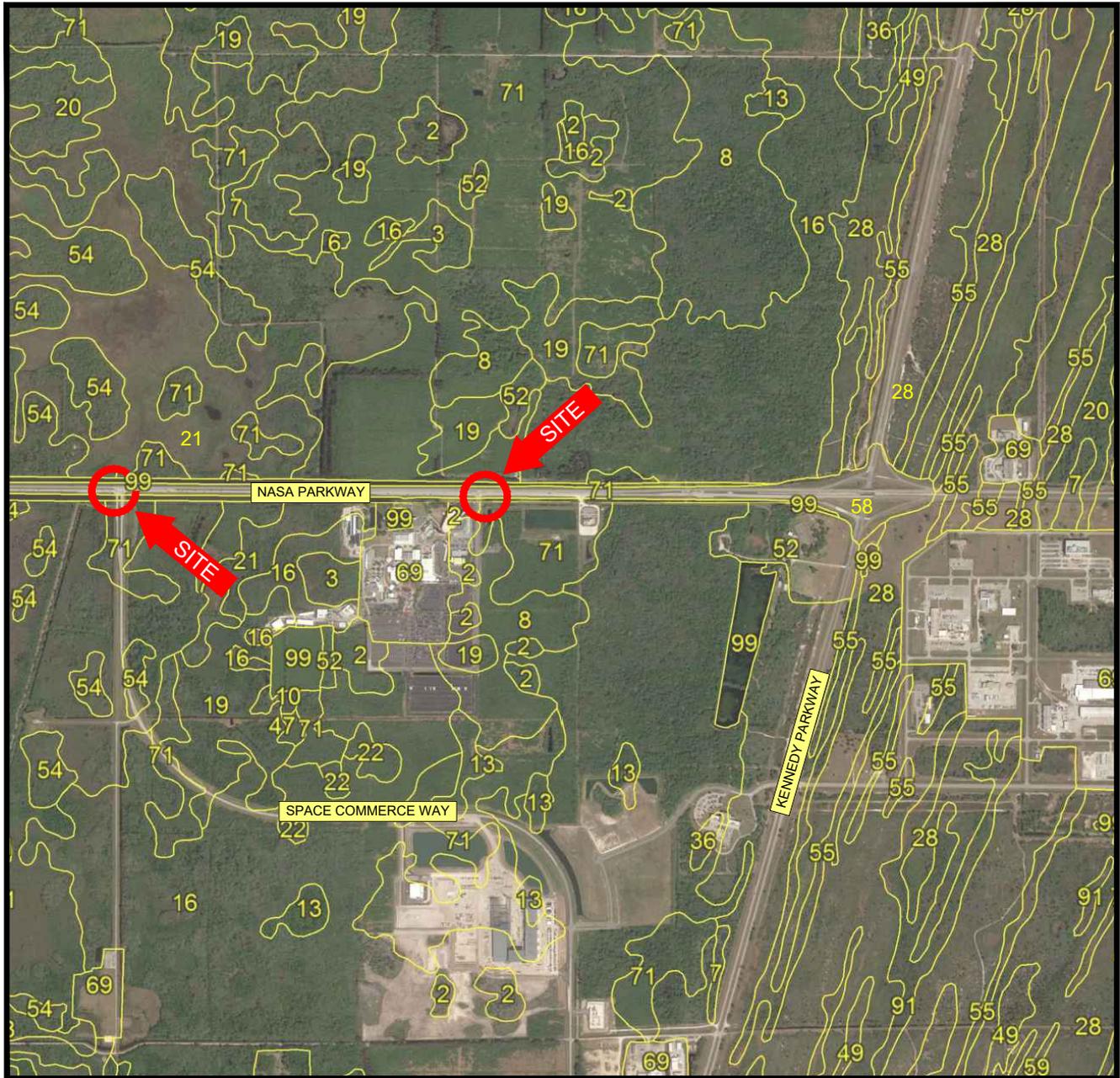
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Project Mgr:	SM	Project No.	H1175260
Drawn By:	AS	Scale:	AS SHOWN
Checked By:	SM	File No.	H1175260
Approved By:	AMS	Date:	8-23-19

Terracon
 Consulting Engineers and Scientists
 1675 LEE ROAD WINTER PARK, FLORIDA 32789
 PH. (407) 740-6110 FAX. (407) 740-6112

TOPOGRAPHIC VICINITY MAP
 GEOTECHNICAL ENGINEERING REPORT
 CCAFS - ECONOMIC DEVELOPMENT TRANSPORTATION PROJECT FUND (EDTPF)
 CAPE CANAVERAL AIR FORCE STATION
 CAPE CANAVERAL, BREVARD COUNTY, FLORIDA

EXHIBIT
 A-1C



SCALE 1"=2000'



U.S.D.A. SOIL SURVEY FOR BREVARD COUNTY, FLORIDA

SOIL LEGEND

2	ANCLOTE SAND, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES	58	TURNBULL AND RIOMAR SOILS, TIDAL
16	COPELAND-BRADENTON-WABASSO COMPLEX, LIMESTONE SUBSTRATUM	71	WABASSO SAND, 0 TO 2 PERCENT SLOPES
21	RIVIERA AND WINDER SOILS, DEPRESSIONAL	99	WATER
28	IMMOKALEE SAND, 0 TO 2 PERCENT SLOPES		



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Project Mngr:	SM	Project No.	H1175260
Drawn By:	AS	Scale:	AS SHOWN
Checked By:	SM	File No.	H1175260
Approved By:	AMS	Date:	8-23-19

Terracon
 Consulting Engineers and Scientists
 1675 LEE ROAD WINTER PARK, FLORIDA 32789
 PH. (407) 740-6110 FAX. (407) 740-6112

SOILS MAP
GEOTECHNICAL ENGINEERING REPORT
 CCAFS - ECONOMIC DEVELOPMENT TRANSPORTATION PROJECT FUND (EDTPF)
 CAPE CANAVERAL AIR FORCE STATION
 CAPE CANAVERAL, BREVARD COUNTY, FLORIDA

EXHIBIT

A-2A

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SCALE 1"=2000'



U.S.D.A. SOIL SURVEY FOR BREVARD COUNTY, FLORIDA

SOIL LEGEND	
6	BASINGER SAND, DEPRESSIONAL
28	IMMOKALEE SAND, 0 TO 2 PERCENT SLOPES
49	POMELLO SAND



Project Mngr:	SM	Project No.	H1175260
Drawn By:	AS	Scale:	AS SHOWN
Checked By:	SM	File No.	H1175260
Approved By:	AMS	Date:	8-23-19

Terracon
 Consulting Engineers and Scientists
 1675 LEE ROAD WINTER PARK, FLORIDA 32789
 PH. (407) 740-6110 FAX. (407) 740-6112

SOILS MAP
GEOTECHNICAL ENGINEERING REPORT
 CCAFS - ECONOMIC DEVELOPMENT TRANSPORTATION PROJECT FUND (EDTPF)
 CAPE CANAVERAL AIR FORCE STATION
 CAPE CANAVERAL, BREVARD COUNTY, FLORIDA

EXHIBIT

A-2B

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SCALE 1"=2000'



U.S.D.A. SOIL SURVEY FOR BREVARD COUNTY, FLORIDA

SOIL LEGEND

- 9 CANAVERAL-ANCLOTE COMPLEX, GENTLY UNDULATING
- 10 CANAVERAL-URBAN LAND COMPLEX
- 69 URBAN LAND



Project Mngr:	SM
Drawn By:	AS
Checked By:	SM
Approved By:	AMS

Project No.	H1175260
Scale:	AS SHOWN
File No.	H1175260
Date:	8-23-19

Terracon
 Consulting Engineers and Scientists
 1675 LEE ROAD WINTER PARK, FLORIDA 32789
 PH. (407) 740-6110 FAX. (407) 740-6112

SOILS MAP
GEOTECHNICAL ENGINEERING REPORT
 CCAFS - ECONOMIC DEVELOPMENT TRANSPORTATION PROJECT FUND (EDTPF)
 CAPE CANAVERAL AIR FORCE STATION
 CAPE CANAVERAL, BREVARD COUNTY, FLORIDA

EXHIBIT
A-2C

EXPLORATION RESULTS

Contents:

Report of Core Boring Sheets

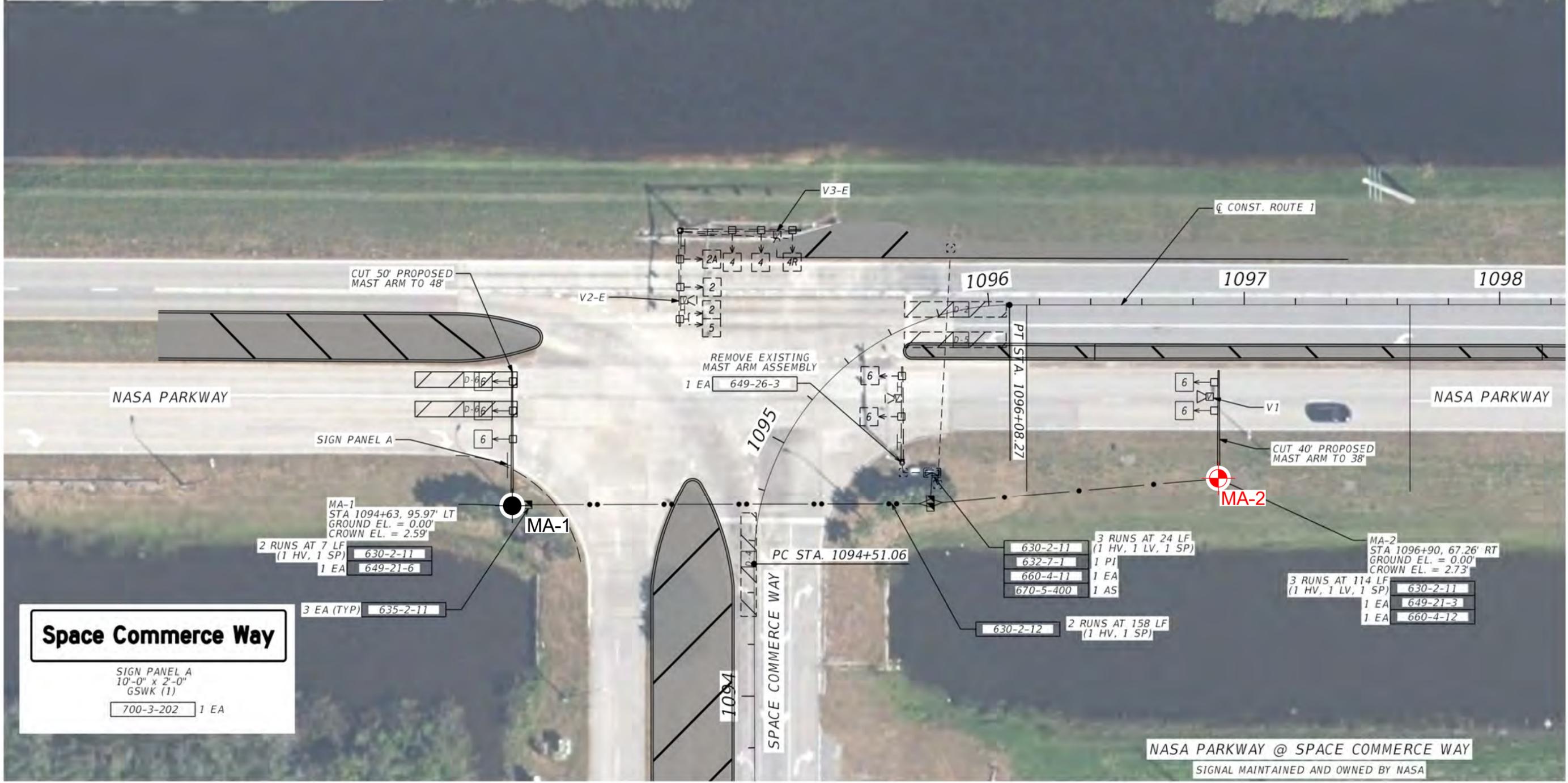
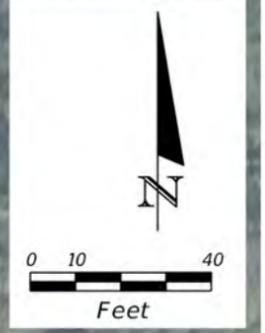
TRAFFIC SIGNAL HEAD DETAIL



VIDEO DETECTOR CHART	
CAMERA	MOVEMENT
V1	D-6
V2-E	D-2, D-5
V3-E	D-4

LEGEND

- APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING
- BORING NOT PERFORMED DUE TO LACK OF ACCESS FOR DRILL RIG



Space Commerce Way

SIGN PANEL A
10'-0" x 2'-0"
GSWK (1)

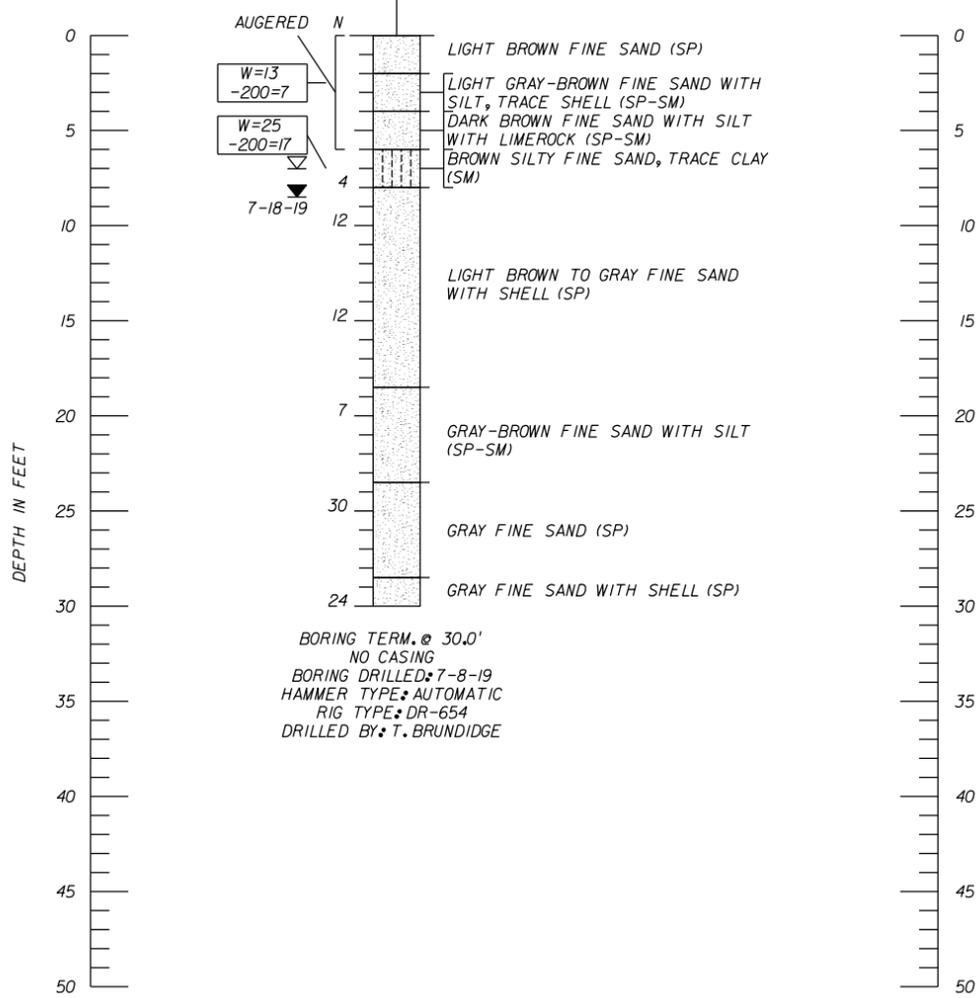
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NASA PARKWAY @ SPACE COMMERCE WAY
SIGNAL MAINTAINED AND OWNED BY NASA

REVISIONS					DRAWN BY: MG 8-19-19	CHECKED BY: SM 8-19-19	DESIGNED BY:	CHECKED BY:	SPACE FLORIDA EDTPF SIGNALIZATION PLANS			SHEET TITLE:		REF. DWG. NO.
DATE	BY	DESCRIPTION	DATE	BY					DESCRIPTION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	REPORT OF CORE BORINGS	
					SHENNA L. McMASTER, P.E. P.E. LICENSE NUMBER 57537 TERRACON 1675 LEE ROAD WINTER PARK, FLORIDA 32789 CERTIFICATE OF AUTHORIZATION No. 8830				BREVARD 439053-1-54-01			CCAFS-ECONOMIC DEVELOPMENT TRANSPORTATION PROJECT FUND (EDTPF)-CAPE CANAVERAL AIR FORCE STATION		

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

BORING No. MA-2
 STATION: 1096+90
 OFFSET: 67' RT.
 LATITUDE: 28.526106
 LONGITUDE: -80.692371



BORING TERM. @ 30.0'
 NO CASING
 BORING DRILLED: 7-8-19
 HAMMER TYPE: AUTOMATIC
 RIG TYPE: DR-654
 DRILLED BY: T. BRUNDIDGE

LEGEND

	SAND		SILTY SAND
(SP)	UNIFIED SOIL CLASSIFICATION GROUP SYMBOL		
	ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)		
	NORMAL ESTIMATED SEASONAL HIGH GROUNDWATER LEVEL		
W=0 -200=0	NATURAL MOISTURE CONTENT (%) FINES PASSING No. 200 SIEVE (%)		
N	STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS OTHERWISE NOTED		

AUTOMATIC HAMMER

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1 3/8 in.
SPOON OUTSIDE DIA.	2 in.
ASTM STANDARD DROP AUTOMATIC HAMMER	30 in.
AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 3
LOOSE	3-8
MEDIUM DENSE	8-24
DENSE	24-40
VERY DENSE	GREATER THAN 40

SILTS AND CLAYS

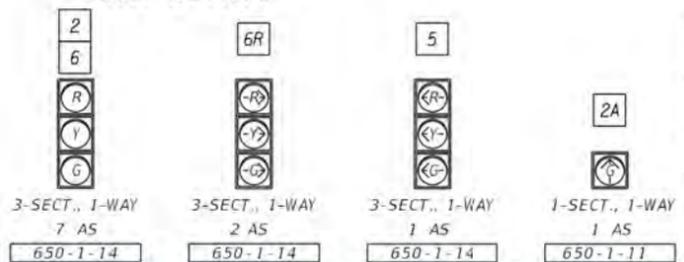
CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 1
SOFT	1-3
FIRM	3-6
STIFF	6-12
VERY STIFF	12-24
HARD	GREATER THAN 24

- NOTES:**
- LAYER BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL LAYERS AT EACH TEST HOLE LOCATION ONLY. SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED.
 - BASED ON A REVIEW OF THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT POTENTIOMETRIC MAPS OF THE UPPER FLORIDAN AQUIFER FOR THIS PROJECT AREA, THE POTENTIAL ARTESIAN HEAD ELEVATION IS ESTIMATED TO BE +20 FEET NGVD. THE CONTRACTOR SHALL BE PREPARED TO USE TEMPORARY CASING OR OTHER METHODS AS NECESSARY TO CONTROL ARTESIAN WATER UP TO A HEAD ELEVATION OF +20 FEET (NGVD).
 - STATION AND OFFSET REFERENCES THE CENTERLINE OF CONSTRUCTION OF ROUTE 1.
 - LATITUDE AND LONGITUDE AT BORING LOCATION ARE BASED ON USING A HAND HELD GPS DEVICE.

REVISIONS						SHENNA L. McMASTER, P.E. P.E. LICENSE NUMBER 57537 TERRACON 1675 LEE ROAD WINTER PARK, FLORIDA 32789 CERTIFICATE OF AUTHORIZATION No. 8830	DRAWN BY: MG 8-19-19 CHECKED BY: SM 8-19-19 DESIGNED BY: CHECKED BY:	SPACE FLORIDA EDTPF SIGNALIZATION PLANS			SHEET TITLE: REPORT OF CORE BORINGS	REF. DWG. NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION			ROAD NO.	COUNTY	FINANCIAL PROJECT ID		

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

TRAFFIC SIGNAL HEAD DETAIL

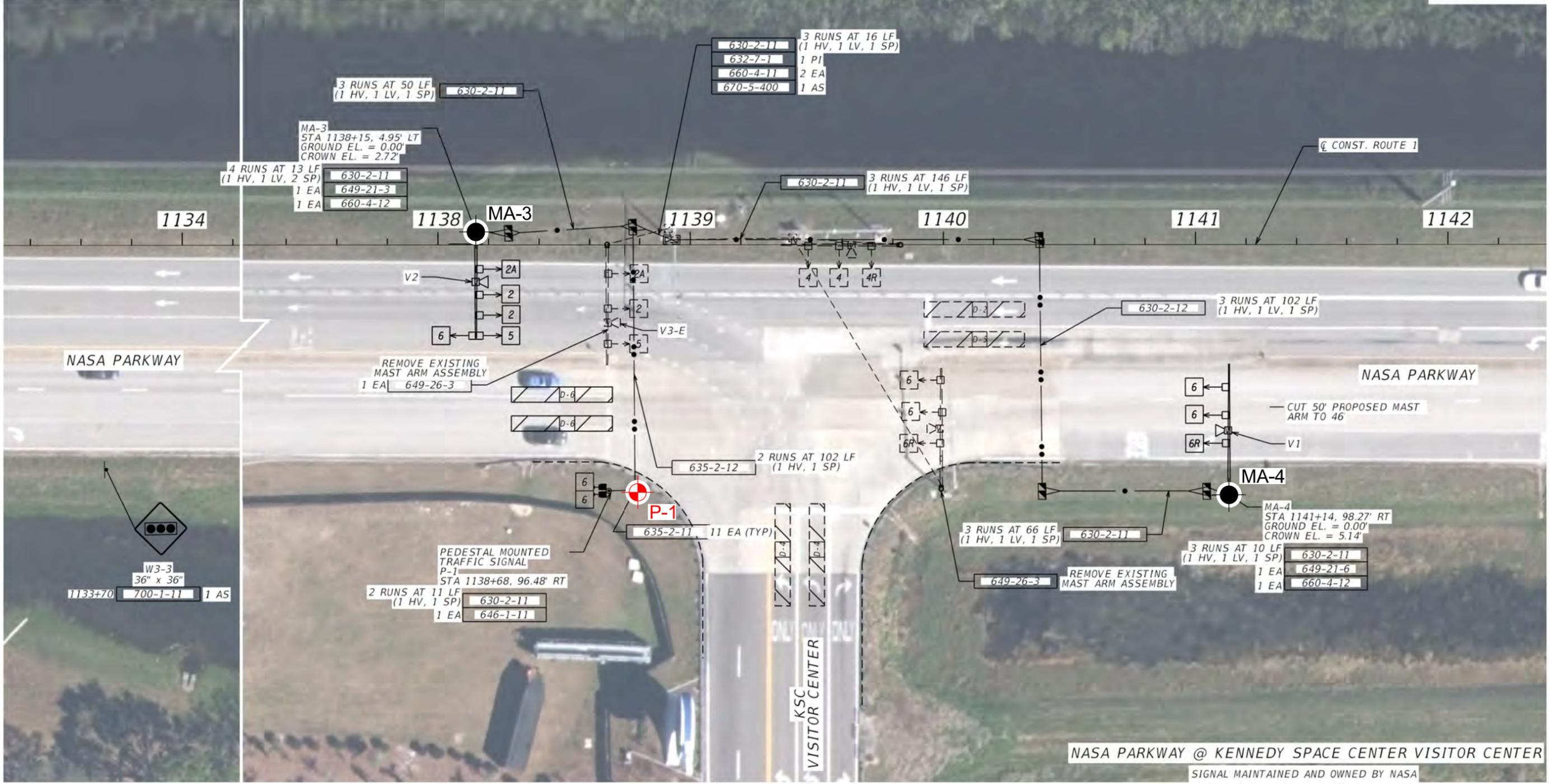
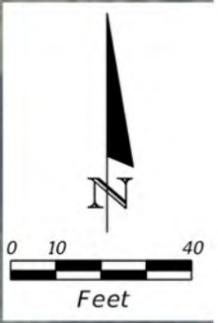


VIDEO DETECTOR CHART

CAMERA	MOVEMENT
V1	D-6
V2	D-2, D-5
V3-E	D-4

LEGEND

- APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING
- BORING NOT PERFORMED DUE TO LACK OF ACCESS FOR DRILL RIG



NASA PARKWAY @ KENNEDY SPACE CENTER VISITOR CENTER
SIGNAL MAINTAINED AND OWNED BY NASA

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

SHENNA L. McMASTER, P.E.
P.E. LICENSE NUMBER 57537
TERRACON
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: MG 8-19-19
CHECKED BY: SM 8-19-19
DESIGNED BY:
CHECKED BY:
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION
ROAD NO. COUNTY FINANCIAL PROJECT ID
BREVARD 439053-1-54-01

SHEET TITLE: **REPORT OF CORE BORINGS**
PROJECT NAME: CCAFS-ECONOMIC DEVELOPMENT TRANSPORTATION PROJECT FUND (EDTPF)-CAPE CANAVERAL AIR FORCE STATION
REF. DWG. NO.
SHEET NO.
TERRACON Project No. HI175260
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THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

LEGEND

-  SAND
-  SILTY SAND
- (SP) UNIFIED SOIL CLASSIFICATION GROUP SYMBOL
-  ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
-  NORMAL ESTIMATED SEASONAL HIGH GROUNDWATER LEVEL
- $W=0$
 $-200=0$ NATURAL MOISTURE CONTENT (%)
FINES PASSING No. 200 SIEVE (%)
- N STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS OTHERWISE NOTED

AUTOMATIC HAMMER

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1 3/8 in.
SPOON OUTSIDE DIA.	2 in.
ASTM STANDARD DROP AUTOMATIC HAMMER	30 in.
AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

GRANULAR MATERIALS

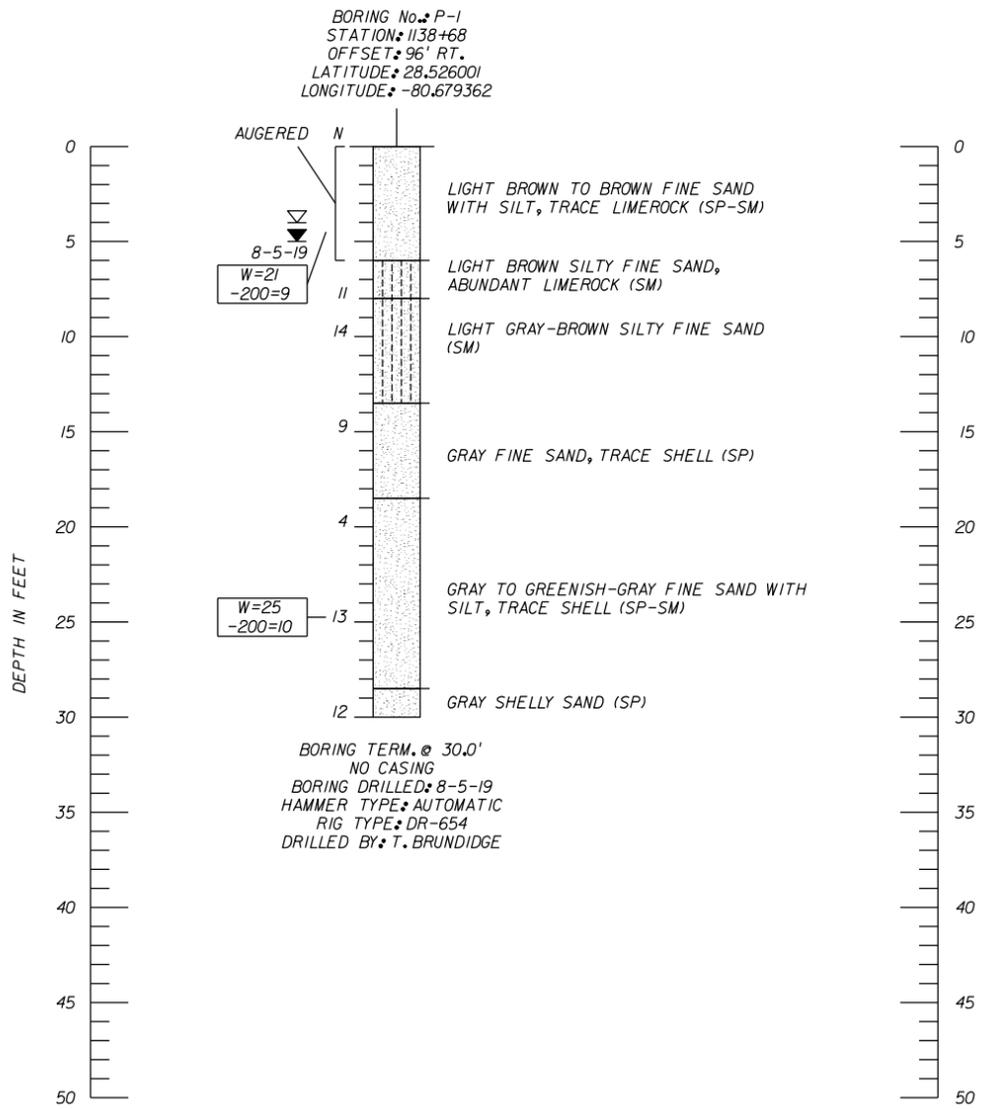
RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 3
LOOSE	3-8
MEDIUM DENSE	8-24
DENSE	24-40
VERY DENSE	GREATER THAN 40

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 1
SOFT	1-3
FIRM	3-6
STIFF	6-12
VERY STIFF	12-24
HARD	GREATER THAN 24

NOTES:

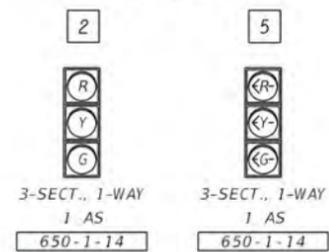
- 1) LAYER BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL LAYERS AT EACH TEST HOLE LOCATION ONLY. SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED.
- 2) BASED ON A REVIEW OF THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT POTENTIOMETRIC MAPS OF THE UPPER FLORIDAN AQUIFER FOR THIS PROJECT AREA, THE POTENTIAL ARTESIAN HEAD ELEVATION IS ESTIMATED TO BE +20 FEET NGVD. THE CONTRACTOR SHALL BE PREPARED TO USE TEMPORARY CASING OR OTHER METHODS AS NECESSARY TO CONTROL ARTESIAN WATER UP TO A HEAD ELEVATION OF +20 FEET (NGVD).
- 3) STATION AND OFFSET REFERENCES THE CENTERLINE OF CONSTRUCTION OF ROUTE 1.
- 4) LATITUDE AND LONGITUDE AT BORING LOCATION ARE BASED ON USING A HAND HELD GPS DEVICE.



REVISIONS						DRAWN BY: MG 8-19-19	SPACE FLORIDA EDTPF SIGNALIZATION PLANS			SHEET TITLE: REPORT OF CORE BORINGS	REF. DWG. NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
						CHECKED BY: SM 8-19-19				PROJECT NAME: CCAFS-ECONOMIC DEVELOPMENT TRANSPORTATION PROJECT FUND (EDTPF)-CAPE CANAVERAL AIR FORCE STATION	SHEET NO.
						DESIGNED BY:	BREVARD	439053-1-54-01			
						CHECKED BY:					

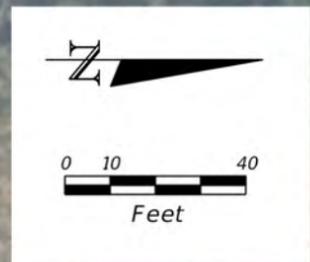
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

TRAFFIC SIGNAL HEAD DETAIL



LEGEND

- APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING
- BORING NOT PERFORMED DUE TO LACK OF ACCESS FOR DRILL RIG



KENNEDY PARKWAY N @ SCHWARTZ ROAD
SIGNAL MAINTAINED AND OWNED BY NASA

REVISIONS						DRAWN BY: MG 8-19-19	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET TITLE: REPORT OF CORE BORINGS	REF. DWG. NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
						CHECKED BY: SM 8-19-19				PROJECT NAME: CCAFS-ECONOMIC DEVELOPMENT TRANSPORTATION PROJECT FUND (EDTPF)-CAPE CANAVERAL AIR FORCE STATION	SHEET NO.
						DESIGNED BY:	BREVARD	439053-1-54-01			
						CHECKED BY:				PROJECT NO.:	

SHEENNA L. McMASTER, P.E.
 P.E. LICENSE NUMBER 57537
 TERRACON
 1675 LEE ROAD
 WINTER PARK, FLORIDA 32789
 CERTIFICATE OF AUTHORIZATION No. 8830

TERRACON Project No. HI175260
 mgarcia
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THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

LEGEND

-  SAND
- (SP) UNIFIED SOIL CLASSIFICATION GROUP SYMBOL
- GNE TO 10' GROUNDWATER LEVEL NOT ENCOUNTERED TO THE DEPTH OF 10.0 FEET
-  NORMAL ESTIMATED SEASONAL HIGH GROUNDWATER LEVEL
-  NATURAL MOISTURE CONTENT (%)
FINES PASSING No. 200 SIEVE (%)
- N STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS OTHERWISE NOTED

AUTOMATIC HAMMER

STANDARD PENETRATION TEST DATA
 SPOON INSIDE DIA. 1 3/8 in.
 SPOON OUTSIDE DIA. 2 in.
 ASTM STANDARD DROP AUTOMATIC HAMMER
 AVG. HAMMER DROP 30 in.
 HAMMER WEIGHT 140 lbs.

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 3
LOOSE	3-8
MEDIUM DENSE	8-24
DENSE	24-40
VERY DENSE	GREATER THAN 40

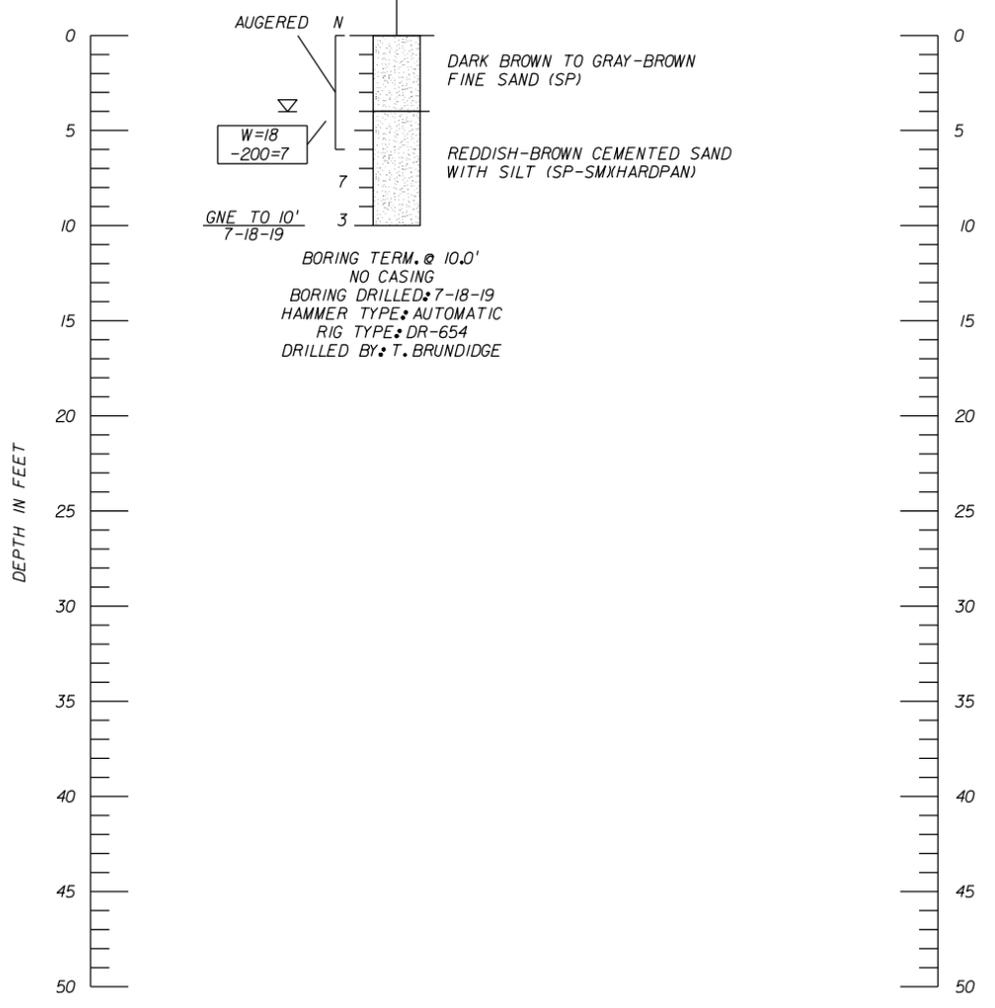
SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 1
SOFT	1-3
FIRM	3-6
STIFF	6-12
VERY STIFF	12-24
HARD	GREATER THAN 24

NOTES:

- 1) LAYER BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL LAYERS AT EACH TEST HOLE LOCATION ONLY. SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED.
- 2) BASED ON A REVIEW OF THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT POTENTIOMETRIC MAPS OF THE UPPER FLORIDAN AQUIFER FOR THIS PROJECT AREA, THE POTENTIAL ARTESIAN HEAD ELEVATION IS ESTIMATED TO BE +20 FEET NGVD. THE CONTRACTOR SHALL BE PREPARED TO USE TEMPORARY CASING OR OTHER METHODS AS NECESSARY TO CONTROL ARTESIAN WATER UP TO A HEAD ELEVATION OF +20 FEET (NGVD).
- 3) STATION AND OFFSET REFERENCES THE CENTERLINE OF CONSTRUCTION OF ROUTE 1.
- 4) LATITUDE AND LONGITUDE AT BORING LOCATION ARE BASED ON USING A HAND HELD GPS DEVICE.

BORING No. P-2
 STATION: 1320+97
 OFFSET: 30' RT.
 LATITUDE: 28.562757
 LONGITUDE: -80.655554



BORING TERM. @ 10.0'
 NO CASING
 BORING DRILLED: 7-18-19
 HAMMER TYPE: AUTOMATIC
 RIG TYPE: DR-654
 DRILLED BY: T. BRUNDIDGE

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

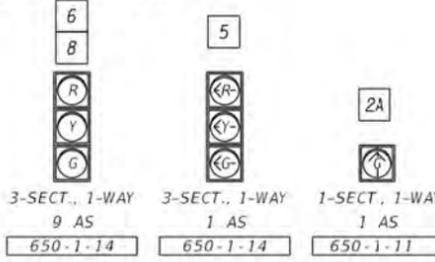
SHENNA L. McMASTER, P.E.
 P.E. LICENSE NUMBER 57537
 TERRACON
 1675 LEE ROAD
 WINTER PARK, FLORIDA 32789
 CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: MG 8-19-19	SPACE FLORIDA EDTPF SIGNALIZATION PLANS	ROAD NO.	COUNTY	FINANCIAL PROJECT ID
CHECKED BY: SM 8-19-19				
DESIGNED BY:				
CHECKED BY:				

SHEET TITLE: REPORT OF CORE BORINGS	REF. DWG. NO.
PROJECT NAME: CCAFS-ECONOMIC DEVELOPMENT TRANSPORTATION PROJECT FUND (EDTPF)-CAPE CANAVERAL AIR FORCE STATION	SHEET NO.

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

TRAFFIC SIGNAL HEAD DETAIL



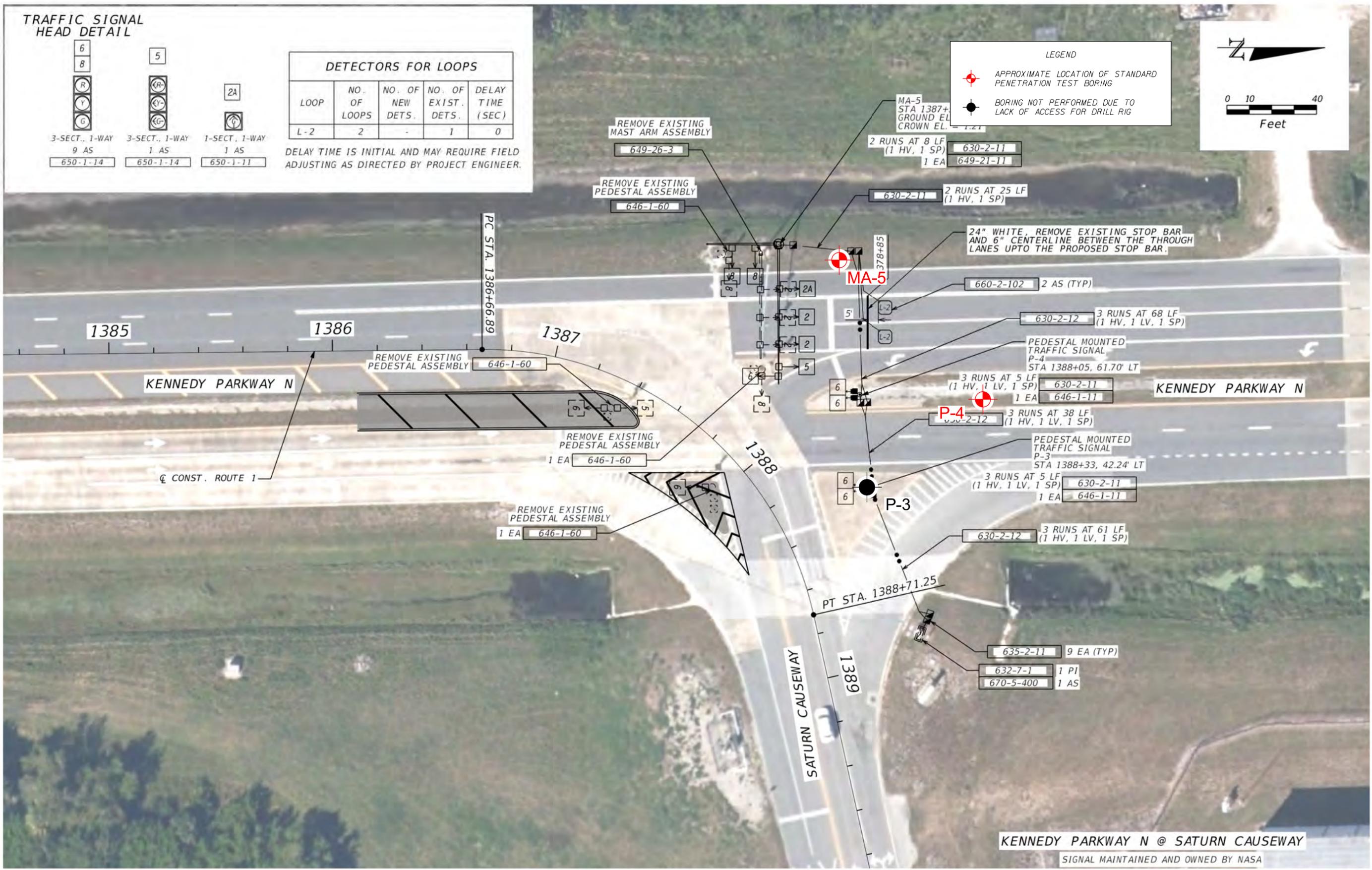
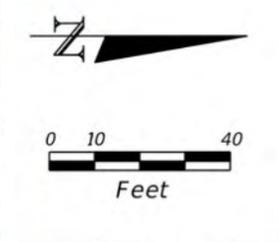
DETECTORS FOR LOOPS

LOOP	NO. OF LOOPS	NO. OF NEW DETS.	NO. OF EXIST. DETS.	DELAY TIME (SEC)
L-2	2	-	1	0

DELAY TIME IS INITIAL AND MAY REQUIRE FIELD ADJUSTING AS DIRECTED BY PROJECT ENGINEER.

LEGEND

- APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING
- BORING NOT PERFORMED DUE TO LACK OF ACCESS FOR DRILL RIG



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

SHENNA L. McMASTER, P.E.
 P.E. LICENSE NUMBER 57537
 TERRACON
 1675 LEE ROAD
 WINTER PARK, FLORIDA 32789
 CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: MG 8-19-19
 CHECKED BY: SM 8-19-19
 DESIGNED BY:
 CHECKED BY:
 STATE OF FLORIDA
 DEPARTMENT OF TRANSPORTATION
 ROAD NO. COUNTY FINANCIAL PROJECT ID
 BREVARD 439053-1-54-01

SHEET TITLE: REPORT OF CORE BORINGS
 PROJECT NAME: CCAFS-ECONOMIC DEVELOPMENT TRANSPORTATION PROJECT FUND (EDTPF)-CAPE CANAVERAL AIR FORCE STATION
 REF. DWG. NO.
 SHEET NO.
 TERRACON Project No. HI175260
 mgarcia 8/28/2019 1:54:41 PM N:\CADD\FDOT-Projects\439053\geotech\sptbsg07.dgn

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

LEGEND

-  SAND
-  SILTY SAND
- (SP) UNIFIED SOIL CLASSIFICATION GROUP SYMBOL
-  ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
-  NORMAL ESTIMATED SEASONAL HIGH GROUNDWATER LEVEL
- GNE TO 10' GROUNDWATER LEVEL NOT ENCOUNTERED TO THE DEPTH OF 10.0 FEET
-  NATURAL MOISTURE CONTENT (%)
FINES PASSING No. 200 SIEVE (%)
ORGANIC CONTENT (%)
- N STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS OTHERWISE NOTED

AUTOMATIC HAMMER
STANDARD PENETRATION TEST DATA
 SPOON INSIDE DIA. 1 3/8 in.
 SPOON OUTSIDE DIA. 2 in.
 ASTM STANDARD DROP AUTOMATIC HAMMER
 AVG. HAMMER DROP 30 in.
 HAMMER WEIGHT 140 lbs.

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 3
LOOSE	3-8
MEDIUM DENSE	8-24
DENSE	24-40
VERY DENSE	GREATER THAN 40

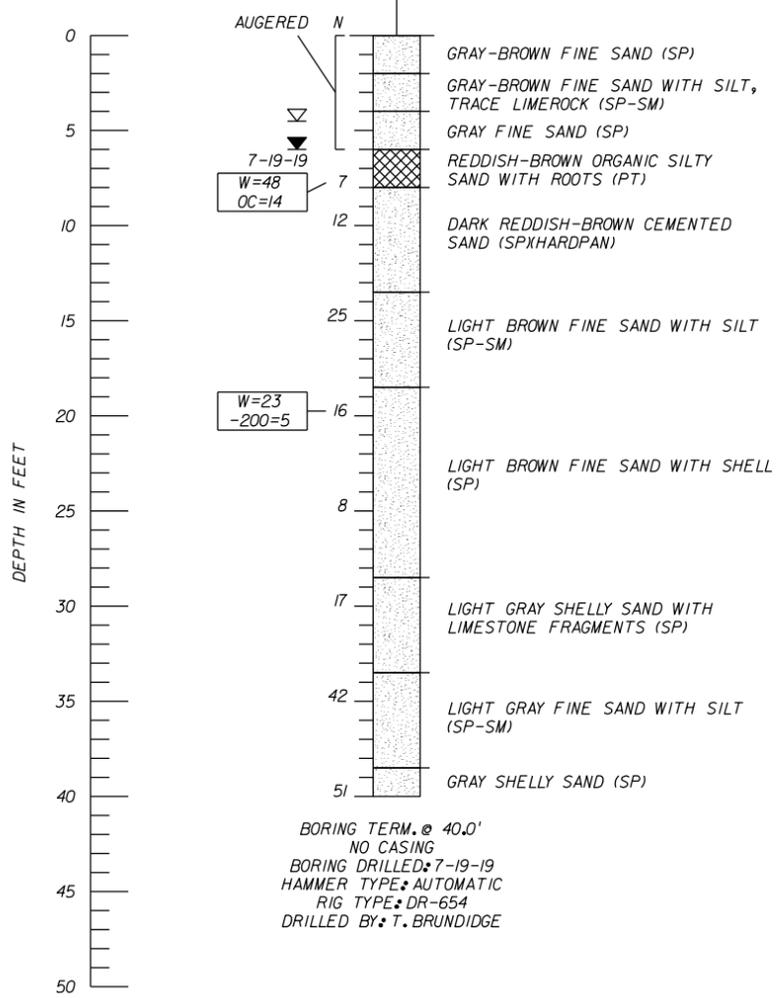
SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 1
SOFT	1-3
FIRM	3-6
STIFF	6-12
VERY STIFF	12-24
HARD	GREATER THAN 24

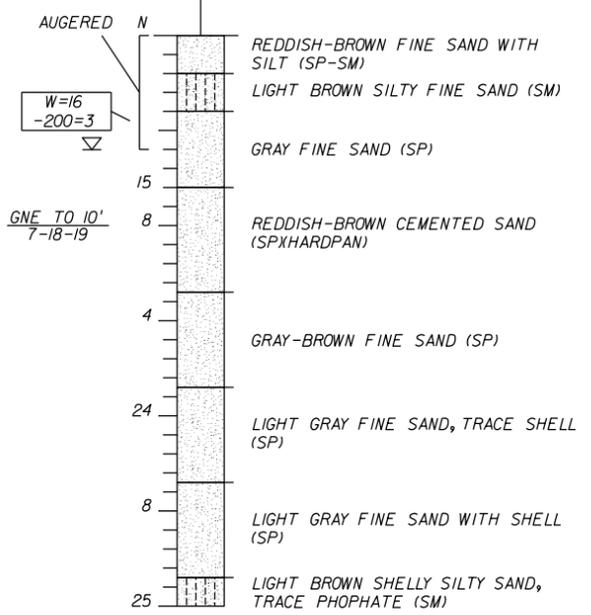
- NOTES:**
- LAYER BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL LAYERS AT EACH TEST HOLE LOCATION ONLY. SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED.
 - BASED ON A REVIEW OF THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT POTENTIOMETRIC MAPS OF THE UPPER FLORIDAN AQUIFER FOR THIS PROJECT AREA, THE POTENTIAL ARTESIAN HEAD ELEVATION IS ESTIMATED TO BE +20 FEET NGVD. THE CONTRACTOR SHALL BE PREPARED TO USE TEMPORARY CASING OR OTHER METHODS AS NECESSARY TO CONTROL ARTESIAN WATER UP TO A HEAD ELEVATION OF +20 FEET (NGVD).
 - STATION AND OFFSET REFERENCES THE CENTERLINE OF CONSTRUCTION OF ROUTE 1.
 - LATITUDE AND LONGITUDE AT BORING LOCATION ARE BASED ON USING A HAND HELD GPS DEVICE.

BORING No. MA-5
 STATION: 1387+70
 OFFSET: 100' LT.
 LATITUDE: 28.581168
 LONGITUDE: -80.655867

BORING No. P-4
 STATION: 1388+20
 OFFSET: 115' LT.
 LATITUDE: 28.581360
 LONGITUDE: -80.655664



BORING TERM. @ 40.0'
 NO CASING
 BORING DRILLED: 7-19-19
 HAMMER TYPE: AUTOMATIC
 RIG TYPE: DR-654
 DRILLED BY: T. BRUNDIDGE



BORING TERM. @ 30.0'
 NO CASING
 BORING DRILLED: 7-18-19
 HAMMER TYPE: AUTOMATIC
 RIG TYPE: DR-654
 DRILLED BY: T. BRUNDIDGE



REVISIONS						DRAWN BY: MG 8-19-19 CHECKED BY: SM 8-19-19 DESIGNED BY:	SPACE FLORIDA EDTPF SIGNALIZATION PLANS			SHEET TITLE: REPORT OF CORE BORINGS		REF. DWG. NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME:	SHEET NO.	
							BREVARD	439053-1-54-01	CCAFS-ECONOMIC DEVELOPMENT TRANSPORTATION PROJECT FUND (EDTPF)-CAPE CANAVERAL AIR FORCE STATION			

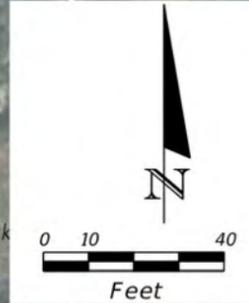
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

TRAFFIC SIGNAL HEAD DETAIL

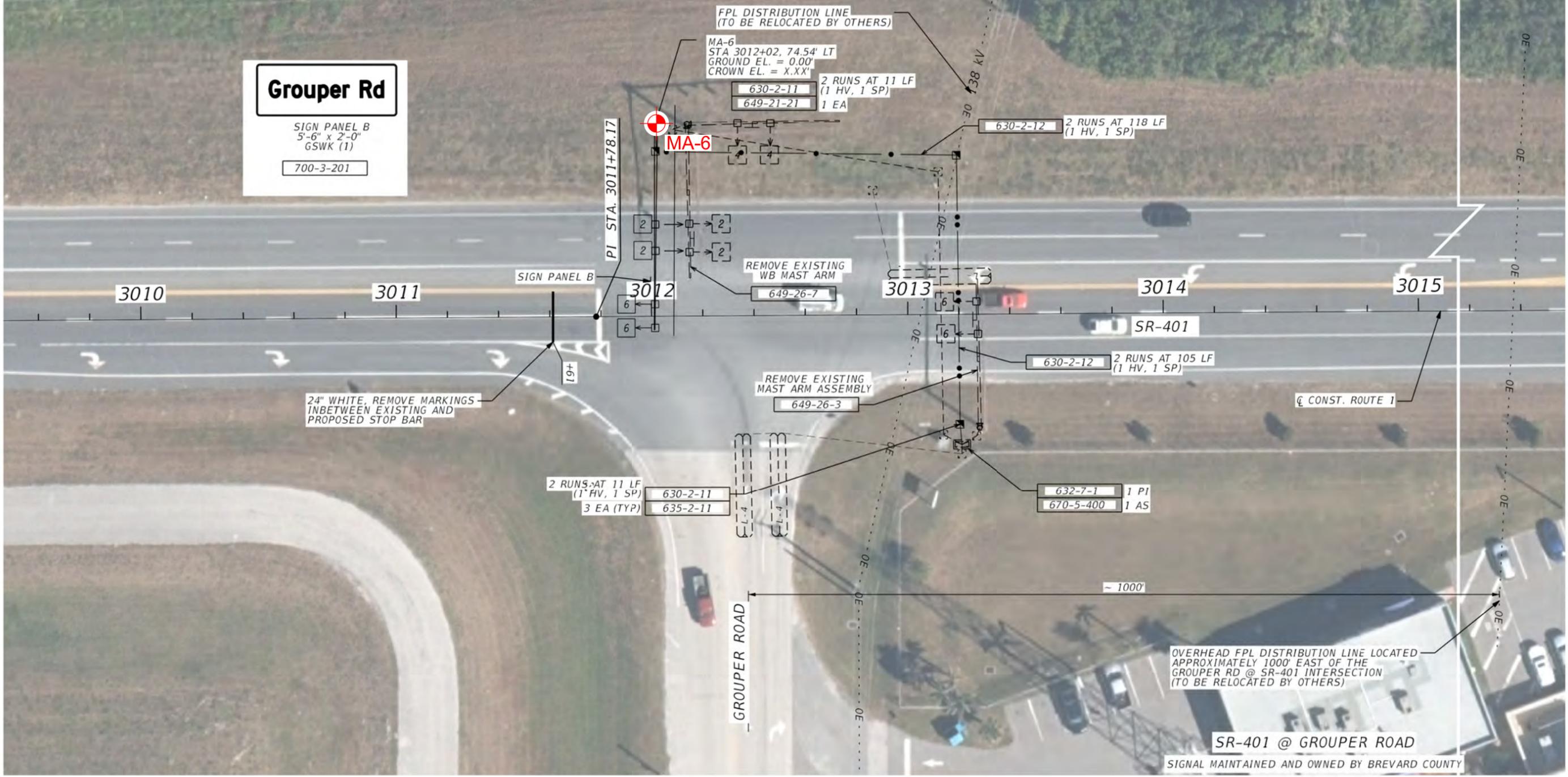


LEGEND

- APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING
- BORING NOT PERFORMED DUE TO LACK OF ACCESS FOR DRILL RIG



Grouper Rd
SIGN PANEL B
5'-6" x 2'-0"
GSWK (1)
700-3-201



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

SHENNA L. McMASTER, P.E.
P.E. LICENSE NUMBER 57537
TERRACON
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: MG 8-19-19
CHECKED BY: SM 8-19-19
DESIGNED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO. COUNTY FINANCIAL PROJECT ID
BREVARD 439053-1-54-01

SHEET TITLE: **REPORT OF CORE BORINGS**

PROJECT NAME: **CCAFS-ECONOMIC DEVELOPMENT TRANSPORTATION PROJECT FUND (EDTPF)-CAPE CANAVERAL AIR FORCE STATION**

REF. DWG. NO.

SHEET NO.

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

LEGEND

-  SAND
-  CLAY
-  CLAYEY SAND
- (SP) UNIFIED SOIL CLASSIFICATION GROUP SYMBOL
-  ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
-  NORMAL ESTIMATED SEASONAL HIGH GROUNDWATER LEVEL
- W=0 NATURAL MOISTURE CONTENT (%)
- 200=0 FINES PASSING No. 200 SIEVE (%)
- LL= LIQUID LIMIT (%)
- PI= PLASTICITY INDEX (%)
- N STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS OTHERWISE NOTED

AUTOMATIC HAMMER
STANDARD PENETRATION TEST DATA
 SPOON INSIDE DIA. 1 3/8 in.
 SPOON OUTSIDE DIA. 2 in.
 ASTM STANDARD DROP AUTOMATIC HAMMER
 AVG. HAMMER DROP 30 in.
 HAMMER WEIGHT 140 lbs.

GRANULAR MATERIALS

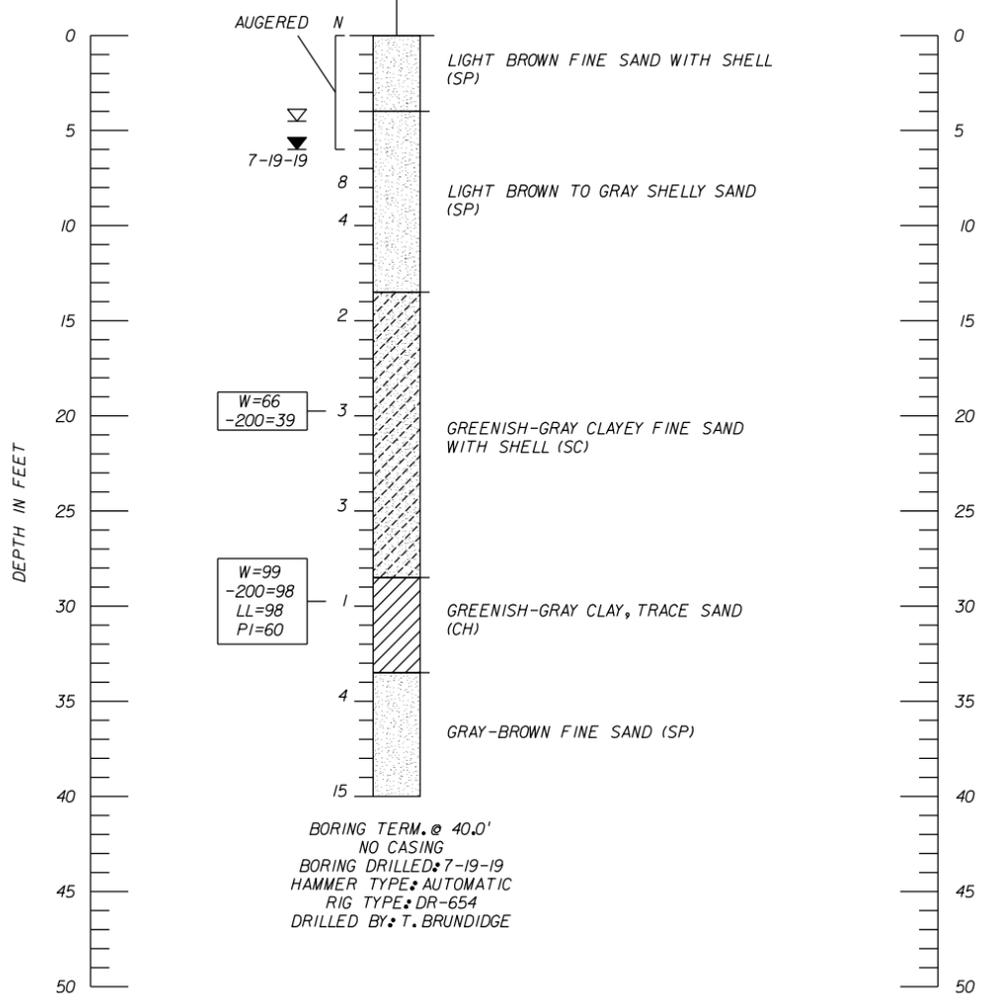
RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 3
LOOSE	3-8
MEDIUM DENSE	8-24
DENSE	24-40
VERY DENSE	GREATER THAN 40

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 1
SOFT	1-3
FIRM	3-6
STIFF	6-12
VERY STIFF	12-24
HARD	GREATER THAN 24

- NOTES:**
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 - BASED ON A REVIEW OF THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT POTENTIOMETRIC MAPS OF THE UPPER FLORIDAN AQUIFER FOR THIS PROJECT AREA, THE POTENTIAL ARTESIAN HEAD ELEVATION IS ESTIMATED TO BE +20 FEET NGVD. THE CONTRACTOR SHALL BE PREPARED TO USE TEMPORARY CASING OR OTHER METHODS AS NECESSARY TO CONTROL ARTESIAN WATER UP TO A HEAD ELEVATION OF +20 FEET (NGVD).
 - STATION AND OFFSET REFERENCES THE CENTERLINE OF CONSTRUCTION OF ROUTE 1.
 - LATITUDE AND LONGITUDE AT BORING LOCATION ARE BASED ON USING A HAND HELD GPS DEVICE.

BORING No. MA-6
 STATION: 3012+02
 OFFSET: 75' LT.
 LATITUDE: 28.418911
 LONGITUDE: -80.620065



BORING TERM: @ 40.0'
 NO CASING
 BORING DRILLED: 7-19-19
 HAMMER TYPE: AUTOMATIC
 RIG TYPE: DR-654
 DRILLED BY: T. BRUNDIDGE

REVISIONS

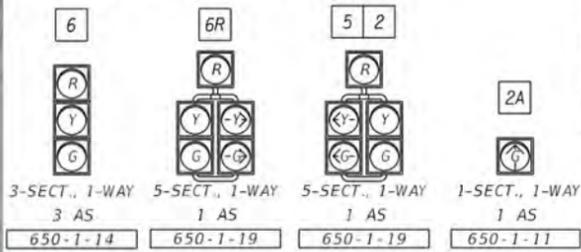
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

SHENNA L. McMASTER, P.E.
 P.E. LICENSE NUMBER 57537
 TERRACON
 1675 LEE ROAD
 WINTER PARK, FLORIDA 32789
 CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: MG 8-19-19	SPACE FLORIDA EDTPF SIGNALIZATION PLANS		
CHECKED BY: SM 8-19-19	ROAD NO.	COUNTY	FINANCIAL PROJECT ID
DESIGNED BY:		BREVARD	439053-1-54-01
CHECKED BY:			

SHEET TITLE: REPORT OF CORE BORINGS	REF. DWG. NO.
PROJECT NAME: CCAFS-ECONOMIC DEVELOPMENT TRANSPORTATION PROJECT FUND (EDTPF)-CAPE CANAVERAL AIR FORCE STATION	SHEET NO.

TRAFFIC SIGNAL HEAD DETAIL

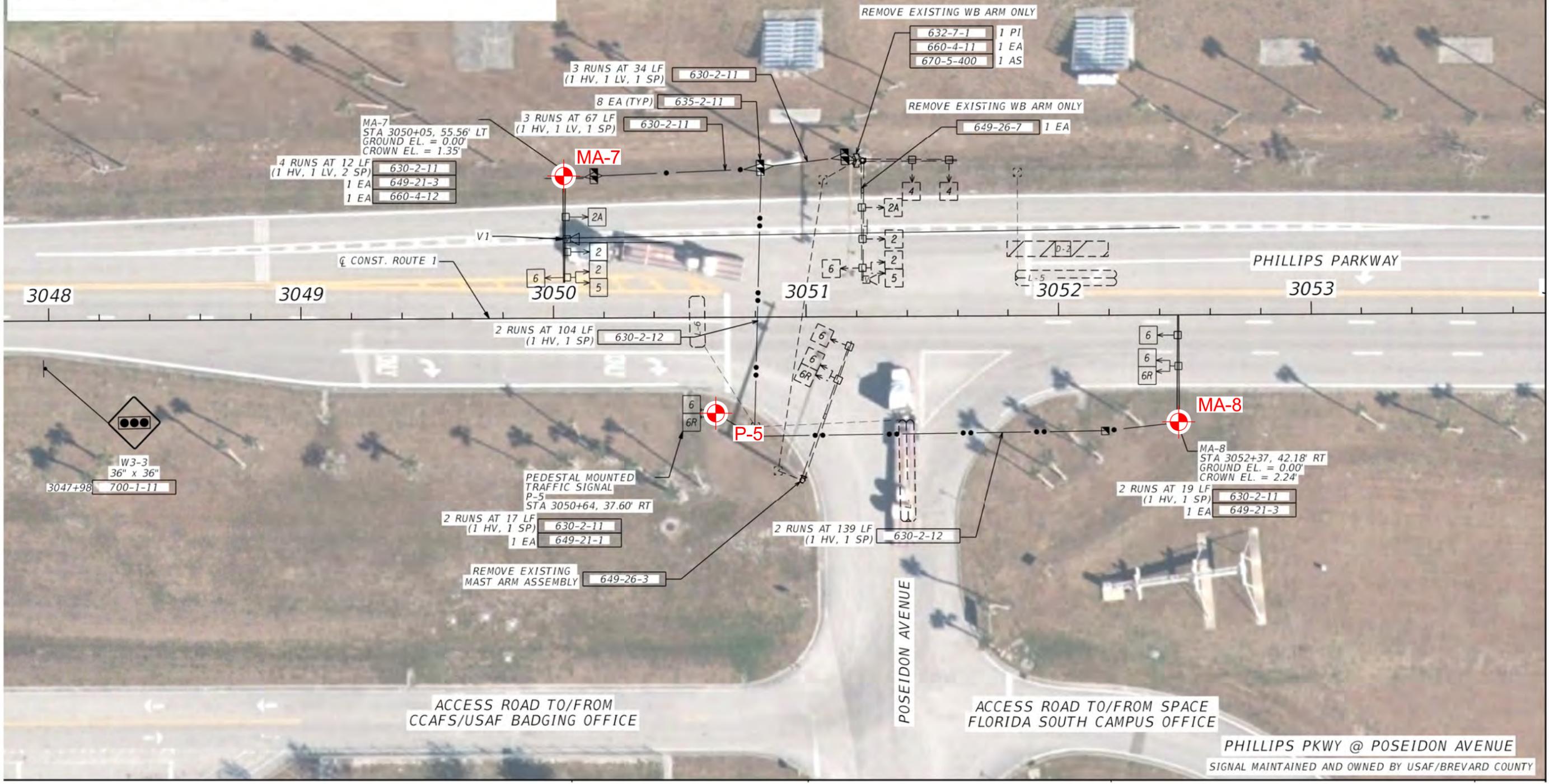
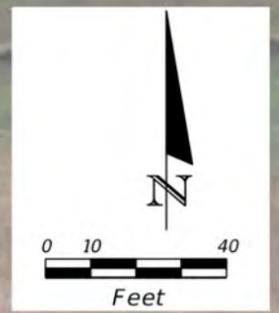


VIDEO DETECTOR CHART

CAMERA	MOVEMENT
V1	D-2

LEGEND

- APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING
- BORING NOT PERFORMED DUE TO LACK OF ACCESS FOR DRILL RIG



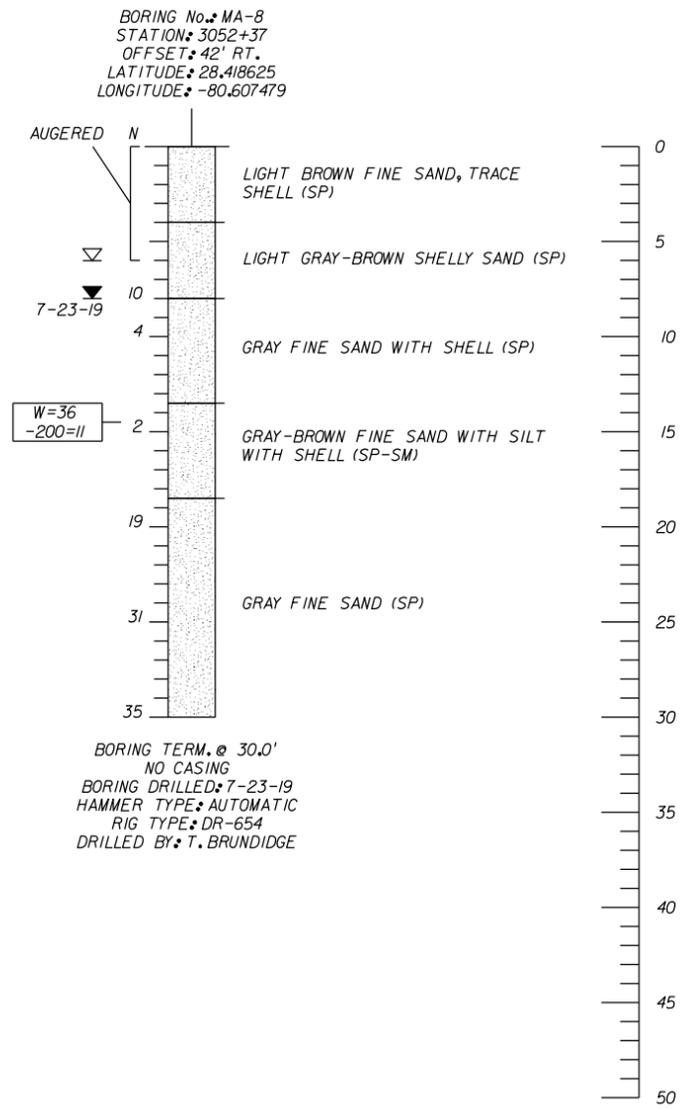
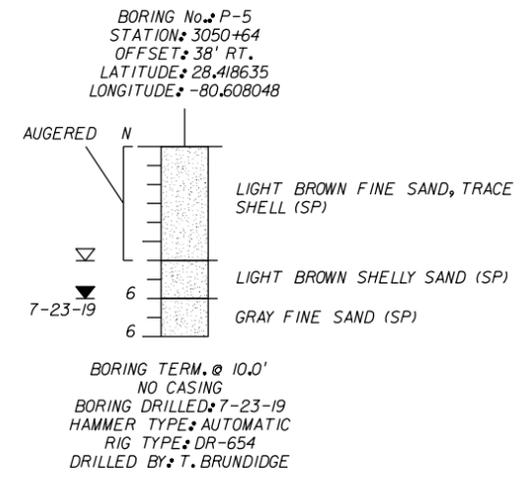
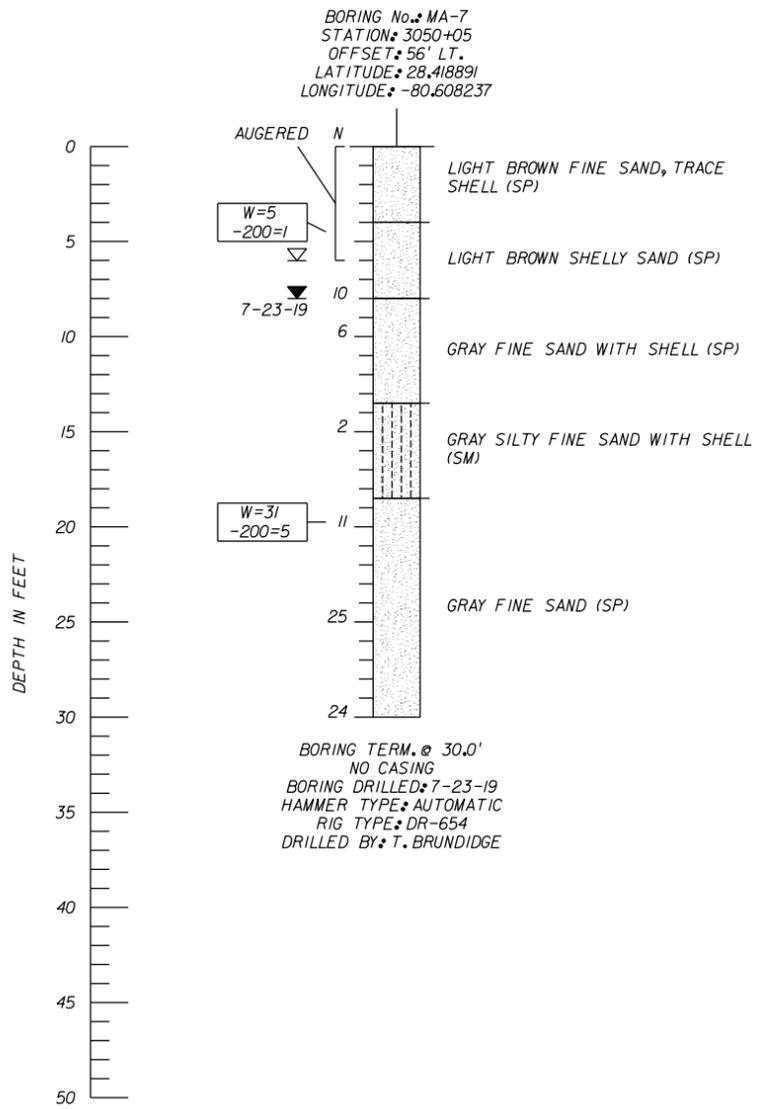
REVISIONS						DRAWN BY: MG 8-19-19	CHECKED BY: SM 8-19-19	DESIGNED BY:	CHECKED BY:	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET TITLE: REPORT OF CORE BORINGS		REF. DWG. NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION					ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME:	CCAFS-ECONOMIC DEVELOPMENT TRANSPORTATION PROJECT FUND (EDTPF)-CAPE CANAVERAL AIR FORCE STATION	
											BREVARD	439053-1-54-01			

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

LEGEND

-  SAND
-  SILTY SAND
- (SP) UNIFIED SOIL CLASSIFICATION GROUP SYMBOL
-  ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
-  NORMAL ESTIMATED SEASONAL HIGH GROUNDWATER LEVEL
- | |
|--------|
| W=0 |
| -200=0 |

 NATURAL MOISTURE CONTENT (%)
FINES PASSING No. 200 SIEVE (%)
- N STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS OTHERWISE NOTED



AUTOMATIC HAMMER

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1 3/8 in.
SPOON OUTSIDE DIA.	2 in.
ASTM STANDARD DROP AUTOMATIC HAMMER	
AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 3
LOOSE	3-8
MEDIUM DENSE	8-24
DENSE	24-40
VERY DENSE	GREATER THAN 40

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 1
SOFT	1-3
FIRM	3-6
STIFF	6-12
VERY STIFF	12-24
HARD	GREATER THAN 24

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REVISIONS						DRAWN BY: MG 8-19-19	SPACE FLORIDA EDTPF SIGNALIZATION PLANS			SHEET TITLE: REPORT OF CORE BORINGS		REF. DWG. NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME: CCAFS-ECONOMIC DEVELOPMENT TRANSPORTATION PROJECT FUND (EDTPF)-CAPE CANAVERAL AIR FORCE STATION		SHEET NO.
							BREVARD	439053-1-54-01				

SHENNA L. McMASTER, P.E.
P.E. LICENSE NUMBER 57537
TERRACON
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
CERTIFICATE OF AUTHORIZATION No. 8830

mgarcia
8/28/2019 12:18:38 PM
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THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

Patel, Bunti A.

From: EPR NASA <ksc-isc-digpermit@mail.nasa.gov>
Sent: Tuesday, June 04, 2019 4:29 PM
To: gnesel@spaceflorida.gov
Cc: Patel, Bunti A.; jeffery.s.beyer@nasa.gov; ksc-isc-digpermit@mail.nasa.gov
Subject: Approved: EPR 19184 Permit Request Submitted by Gerard Nesel -- EPR
Attachments: SF0073PER-EDTPF_KSC26-312-Utility-Locate-Excavation-Permit-Request-190531_2019_5_31_14_48_55_915.pdf; 19184-map.png

Importance: High

Permit Request: 19184 (Status: Approved)

IMPORTANT: If digging does not begin within 21 days from the time of utility locate (permit approval), this permit shall be suspended and a new locate will be required. Please call at least 72 hours prior to digging to schedule utility locates.

The Excavator shall maintain a copy of the EPI signed/ approved permit on site at all times.

The Excavator is required to contact BOTH authorities to schedule utility locates:

- 1) **Locator support for non-managed KSC utilities (ex. Florida City Gas, AT&T, etc.):** Sunshine 811 at **800-432-4770** or 811 (cell). Create an account and request at www.online811.com
- 2) **Locator support for KSC managed utilities:** Primary: **321-749-4840** Alternate: **321-529-4796**

Sunshine 811 Suggested Location Information	
Location	Various intersections throughout KSC

The Excavator is required to obtain a Sunshine 811 ticket number prior to ISC locates being performed.

You must call Sunshine 811 prior to contacting ISC locators to obtain your Sunshine 811 ticket number. Please copy this ticket number on to your approved Excavation Permit Request (EPR) email and show it to the KSC EPI prior to ISC performing KSC utility locates. This is to be completed prior to calling KSC EPI for locate.

The Excavator is required to only obtain signature of KSC Excavation Permit Inspector:

You must schedule a KSC EPI to meet with you on site for the KSC utility locate and to obtain their required signature this permit before excavation can commence.

IMPORTANT INFORMATION:

- EPR will be **immediately cancelled** should digging begin prior to approval from the EPI.
- Utility Locate/EPR will be **immediately cancelled** if original EPI paint markings are not maintained.
- You must **hand dig within 24 inches** in either direction of all EPI paint markings.
- Do **not remove or disturb thrust blocks**. A thrust block is a configured piece of concrete located underground at water and sewer utility piping to prevent movement from line pressure fluctuations. When excavating soil at location known to contain buried water or sewer lines, **do not remove any buried concrete without prior approval**.
- An EPR can remain in the approval status is one year. All work expecting to extend longer than one year must be re-submitted as a new request, including an updated map and scope of work.
- If the scope of work for the original Utility Locate/EPR is changed or the completion date needs to be extended, you are required to call ISC Master Planning Office 321-867-2406.

- When the job is complete, please call the ISC Master Planning Office 321-867-2406. **This permit will be closed upon expiration unless an extension is requested.**
- Accidental Utility line damage, excluding Gas main damage, call the ISC Duty Office at 321-861-5050.
- Accidental Gas Main damage evacuate the area then call 321-867-7911 (cell) or 911 (landline only), call the ISC Duty Office at 321-861-5050.
- Category Code V Permits must call the ISC Duty office daily and observe all critical days as directed by the ISC Duty Office.

EPR Contact Information:

EPR Administrator's Information:

Questions regarding your Utility Locate/Excavation Permit Request, such as approving, revising the time or scope of work, updating any information within this permit.	EPR Administrator Phone: 321-867-2406 Fax: 321-867-1175 Email: KSC-ISC-DIGPERMIT@mail.nasa.gov
Questions regarding your Utility Locate/Surveying, such as utilities markings and area surveying.	EPI Supervisor Phone: 321-861-7945 Fax: 321-861-6556 Email: david.j.irwin@nasa.gov
Questions regarding Florida City Gas owned natural gas utilities <u>not including</u> : emergencies, gas leaks, and locate requests.	Florida City Gas Sr. Account Executive Phone: 786-459-3655 Fax: 772-871-2044 Email: FSmalley@aglresources.com

Permit Request: 19184 (Status: Approved)

Scope of Work / Justification	
Scope of Work/Justification	This dig permit is only for engineering geotechnical investigations/Standard penetrating test (SPT) borings for proposed mast poles/signals at the following intersections: Space Commerce Way/NASA Pkwy; NASA Pkwy/Visitor Complex North Entrance; Kennedy Parkway/Schwartz Road; and Kennedy Pkwy/Saturn Causeway.
Submitter's Information	
Submitter First Name	Gerard
Submitter Last Name	Nesel
Submitter Email Address	gnesel@spaceflorida.gov
Submitter Company Name	Space Florida
Submitter Phone	321-730-5301 x118
Submitter Fax	321-730-5307
Technical Contact Information	
Technical Contact First Name	Bunti
Technical Contact Last Name	Patel

Technical Contact Email Address	Bunti.patel@aecom.com
Technical Contact Phone	813-636-2445
Technical Contact Fax	813-287-8591
NASA COTR Contact Information	
NASA COTR First Name	Jeffery
NASA COTR Last Name	Beyer
NASA COTR Email Address	jeffery.s.beyer@nasa.gov
NASA COTR Phone	321-867-6215
Permit Request Info	
PermitType	Dig
PermitStatus	Approved
Permit Start Date	06/18/2019
Permit End Date	06/17/2020
Estimated Completion Date	06/28/2019
Facility Info	
Facility	M6-0213
Grid	M6
Additional Forms and Identifying Numbers	
Environmental Check List Completed	No
Category Codes	
1	I
2	IV
3	V
Related Documents	
File Name	Description
SF0073PER-EDTPF_KSC26-312-Utility-Locate-Excavation-Permit-Request-190531.pdf	

Reviews

Reviewed By:	Date:	Results:	Comments:
Locator	6/4/2019 9:50:59 AM	Agree	JM
Environmental	6/4/2019 2:23:56 PM	Agree	Approved for geotechnical investigation. Please submit a KSC Environmental Checklist to ksc-dl-environmental-checklist@mail.nasa.gov for the proposed mast poles and traffic signals.
Master Planner	5/31/2019 3:11:22 PM	Agree	RS
Final	6/4/2019 4:28:51 PM	Agree	AL
Map			
Map associated with this request		19184-map.png	

Attention: Map rotated 90 degrees, right side is NORTH >>>>>>



Permit Request: 19184 (Status: Approved)

Sunshine 811 Call Ticket Number	
Ticket Number	

Approved by: Jeff McDowell

Approved by: Roberto Cosme

Approved by:

Approved by:

Notes:

[] LOCATED AREA TO BE HAND EXCAVATED ONLY!

Locator's Signature: _____

Reason for Hand Excavation: _____

EXCAVATION PERMIT CATEGORIES:

If you have questions about assigned category codes contact the Excavation Permit Inspectors at Primary: **321-749-4840** Alternate: **321-529-4796**.

Note: for permits with more than one category code, the most restrictive category code applies.

For critical categories that have locations specifically defined (Categories 1, 5, 6) the affected range of the category shall be 60" beyond the defined location. Beyond the 60" range the category shall default to Category 4.

LAUNCH

For the latest launch, landing or test schedule, contact the **ISC Duty Office at 321-861-5050**.

Category I *

Prior to any KSC launch all excavation will cease seventy-two (72) hours prior to launch, test or landing at, around or involving the following KSC facilities:

Launch Control Center - LCC (K6-0900)	Old MILA Area	Communication Distribution and Switching Center - CD&SC (M6-0138)	Operations & Checkout O&C (M6-0355)
LC 39 A & B (all areas and buildings inside the fence) & all 8 Repeater Stations. ¹	Press Site (all buildings, roads, parking areas in and around the area.)	Payload Facility Supporting Launch (M7-0777, & M7-0360) ²	Central Instrumentation Facility (M6-0342)
VAB Repeater - VABR (K7-1193)	Banana River Repeater Station (M7-0531)	CCF - Converter Compressor Facility (K7-0468)	Shuttle Landing Facility -SLF (runway and all associated buildings and infrastructure)
C-5 Substation (K6-1141)	Tel IV & South Repeater Station (N6-1118)	VAB (K6-0848) and VAB Utility Annex (K6-0947)	

1 - Facilities (J7-0986, J7-1736, J8-2204, K6-1193, K7-0089, K7-0422, K7-0709, M7-0531, & N6-1118).

2 - Mission Specific - Including but not limited to these facilities. (M7-0777 - Launch Abort System Facility, and M7-0360 - Space Station Processing Facility (SSPF)).

Excavation may resume at facilities in the table above four (4) hours after launch. Excavation will not occur at the SLF (16) until after landing.

Category II

LC-39 Active Pads – All excavation (except emergencies) will stop when the launch vehicle rolls out to the Pad. Excavation may resume following Pad safing and washdown after launch.

Category III

LC-39 Deactive Pads – Excavation will cease 2 hours before sunset on launch -1 (L-1) day or 12 hours prior to launch from Active Pad. Whichever is earlier. Excavation may resume 4 hours after launch from the Active Pad.

Category IV

Excavation may proceed in all areas and times not covered by Categories I, II or III.

Category V

Prior to digging you must call the ISC Duty Office at 321-861-5050 DAILY.

Air Force Launch Operations – Excavation and switching of critical power will cease on launch critical days (24 hours, launch count to include launch day) at the following KSC facilities and utilities:

Kennedy Parkway, NASA Parkway & Saturn Causeway utility corridors	Tel IV & South Repeater Station (N6-1118)	Banana River Repeater Station (M7-0531)	Utility Corridors East of Orsino Substation serving CCAFS	Area south from LC-39B along Phillips Parkway.
All Camera, Radar & Weather Sites	Shuttle Landing Facility	KARS Park	Pump Station 7 (K8-1740)	Old MILA Area
Press Site (all buildings, roads, parking areas in and around the area)		Complex 41 (all facilities and areas inside the fence)	Area east from the Converter Compressor Facility .CCF (K7-0468) to Pad 39A	

Category VI

Prior to digging you must call the ISC Duty Office at 321-861-5050 DAILY.

Air Force Non-Launch Operations – Excavation and switching of critical power will cease on non-launch critical days (program specific test days) at the following KSC facilities and utilities:

Kennedy Parkway, NASA Parkway & Saturn Causeway utility corridors	Tel IV & South Repeater Station (N6-1118)	Banana River Repeater Station (M7-0531)	Utility Corridors East of Orsino Substation serving CCAFS	Pump Station 7 (K8-1740)
Space X ViaSat Antenna, Tracking Station (J6-0553)	All Camera, Radar & Weather Sites	Complex 41 (all facilities and areas inside the fence)	Area south from LC-39B along Phillips Parkway	
Press Site (all buildings, roads, parking areas in and around the area)		Area east from the Converter Compressor Facility -CCF (K7-0468) to Pad 39A		

Category VII

For all SLF operations (current and future), excavation will cease on launch and landing critical days (L-1, launch count to include launch day, program specific test days, and landing -1 day). Excavation may proceed in all areas up to 2 hours prior to sunset on landing -1 day, or 12 hours prior to landing, whichever is earlier. Excavation may proceed at all facilities, except for the SLF, 1 hour after a successful landing. Excavation will stop at, around, and/or involving the SLF and involved facilities, at the start of Launch Countdown. Excavation may proceed in this area after Landing, AND with approval from SLF Operations at 321-867-2100.

Utility Locate / Excavation Permit Request

1. Date 5/31/2019	2. Master Planning Site Plan Number	3. Project (PCN) No.	4. Work Order Number	5. Check One <input checked="" type="checkbox"/> Permit to Dig <input type="checkbox"/> Locate Only / No Digging
6. Requester's Name (REQUIRED) Gerard Nesel		7. Email (REQUIRED) gnesel@spaceflorida.gov	8. Phone Number (REQUIRED) 321-730-5301x118 (845) 416-5033 (cell)	9. Fax Number (REQUIRED) 321-730-5307
10. Requester's Company (REQUIRED) Space Florida			11. Mail Code / Address 505 Odyssey Way, Suite 300 Exploration Park, FL 32953	
12. Technical Contact (REQUIRED) Bunti Patel		13. Email (REQUIRED) Bunti.patel@aecom.com	14. Phone Number (REQUIRED) 813-636-2445	15. Fax Number (REQUIRED) 813-287-8591
16. KSC NASA Contact Name (REQUIRED) Jeffery Beyer			17. Email (REQUIRED) jeffery.s.beyer@nasa.gov	18. Phone Number (REQUIRED) 321-867-6215
19. Building Number (REQUIRED)	20. Grid Number (REQUIRED) Varies	21. Secondary Location (Building Number / Additional Info.) (REQUIRED)		
22. Estimated Start Date (REQUIRED) 06/18/2019			23. Estimated End Date (REQUIRED) 6/28/2019	
24. Emergency request justification (if required)				
25. Reason for permit / Statement of work (REQUIRED) This dig permit is only for engineering geotechnical investigations/Standard penetrating test (SPT) borings for proposed mast poles/signals at the following intersections: Space Commerce Way/NASA Pkwy; NASA Pkwy/Visitor Complex North Entrance; Kennedy Parkway/Schwartz Road; and Kennedy Pkwy/Saturn Causeway. MAP / SKETCH, WITH AREA TO BE LOCATED / EXCAVATED CLEARLY MARKED, IS ATTACHED (REQUIRED)				

See next page for completion and process instructions.

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. **The Excavator is required to contact BOTH authorities to schedule utility locates:**
 - 1) Locator support for KSC managed utilities: Ryan Ostarly 321-289-2372 or Jeff McDowell 321-749-4840
 - 2) Locator support for City Gas owned natural gas line: Sunshine One-Call at 800-432-4770 or 811 (cell).
For Natural Gas locate, it is recommended that you create an account and request at www.online811.com
4. **The Excavator is required to obtain signature of KSC Excavation Permit Inspector (EPI) only:**
You must schedule a KSC Excavation Permit Inspector (EPI) to meet with you on site for the KSC utility locate and to obtain the required signature from the KSC EPI on this permit. 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 OSB I, K6-1096, Room 2113 N1
Mail Code	ISC-4325
Phone	(321) 867-2406
Fax	(321) 867-1175
Email	KSC-ISC-DIGPERMIT@mail.nasa.gov

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

Space Florida Economic Development Transportation
Project Funds (EDTPF) Infrastructure Improvements

Dig Permit Summary

10ft SPT:

All pedestal mounted traffic signal locations (pg. T-7, T-9, T-10)

30ft SPT:

MA-1 (pg. T-6)

MA-2 (pg. T-6)

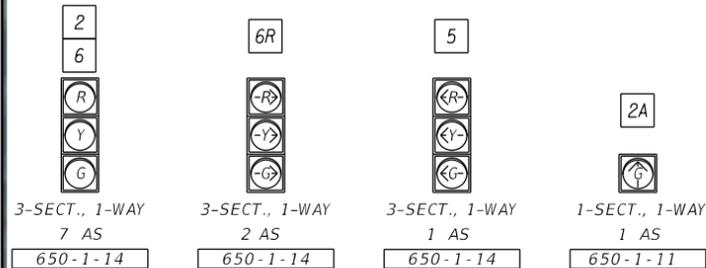
MA-3 (pg. T-7)

MA-4 (pg. T-7)

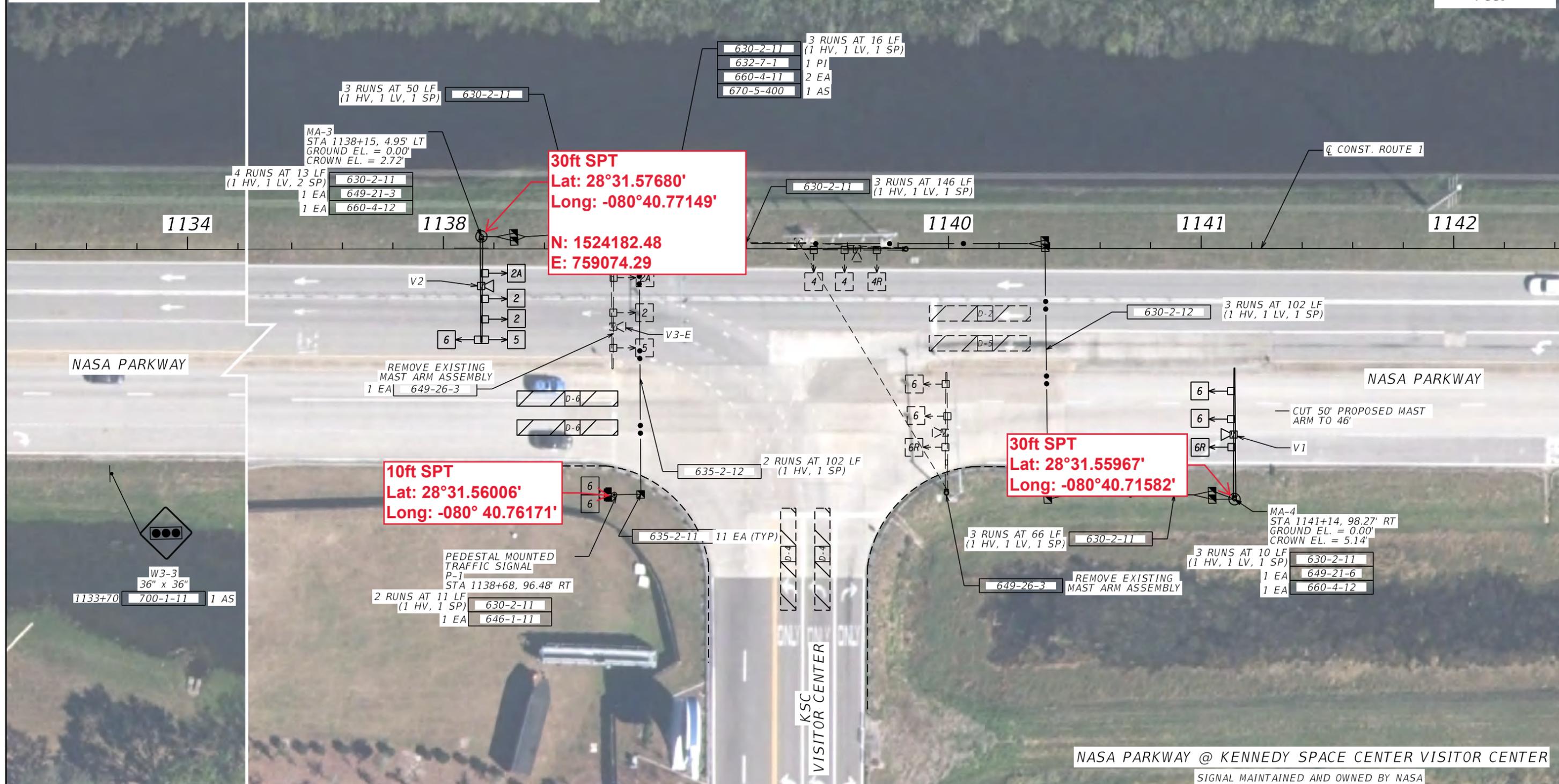
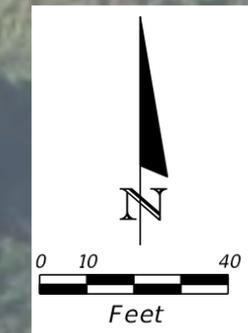
40ft SPT:

MA-5 (T-10)

TRAFFIC SIGNAL HEAD DETAIL



VIDEO DETECTOR CHART	
CAMERA	MOVEMENT
V1	D-6
V2	D-2, D-5
V3-E	D-4



NASA PARKWAY @ KENNEDY SPACE CENTER VISITOR CENTER
SIGNAL MAINTAINED AND OWNED BY NASA

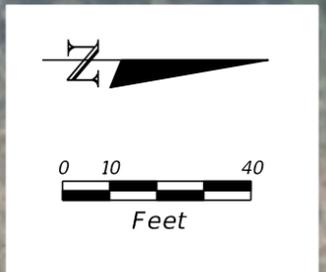
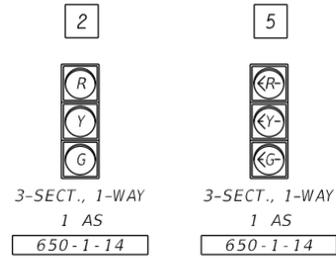
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

AECOM Technical Services, Inc.
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 8115
Patrick B. Nevah, P.E. No. 72369

SPACE FLORIDA EDTPF SIGNALIZATION PLANS		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	BREVARD	439053-1-54-01

SIGNALIZATION PLAN (2)
SHEET NO. T-7

TRAFFIC SIGNAL HEAD DETAIL

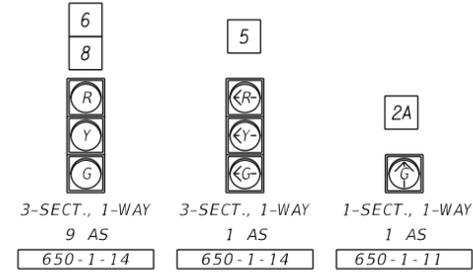


10ft SPT
Lat: 28°33.75644',
Long: -080°39.33322'

KENNEDY PARKWAY N @ SCHWARTZ ROAD
SIGNAL MAINTAINED AND OWNED BY NASA

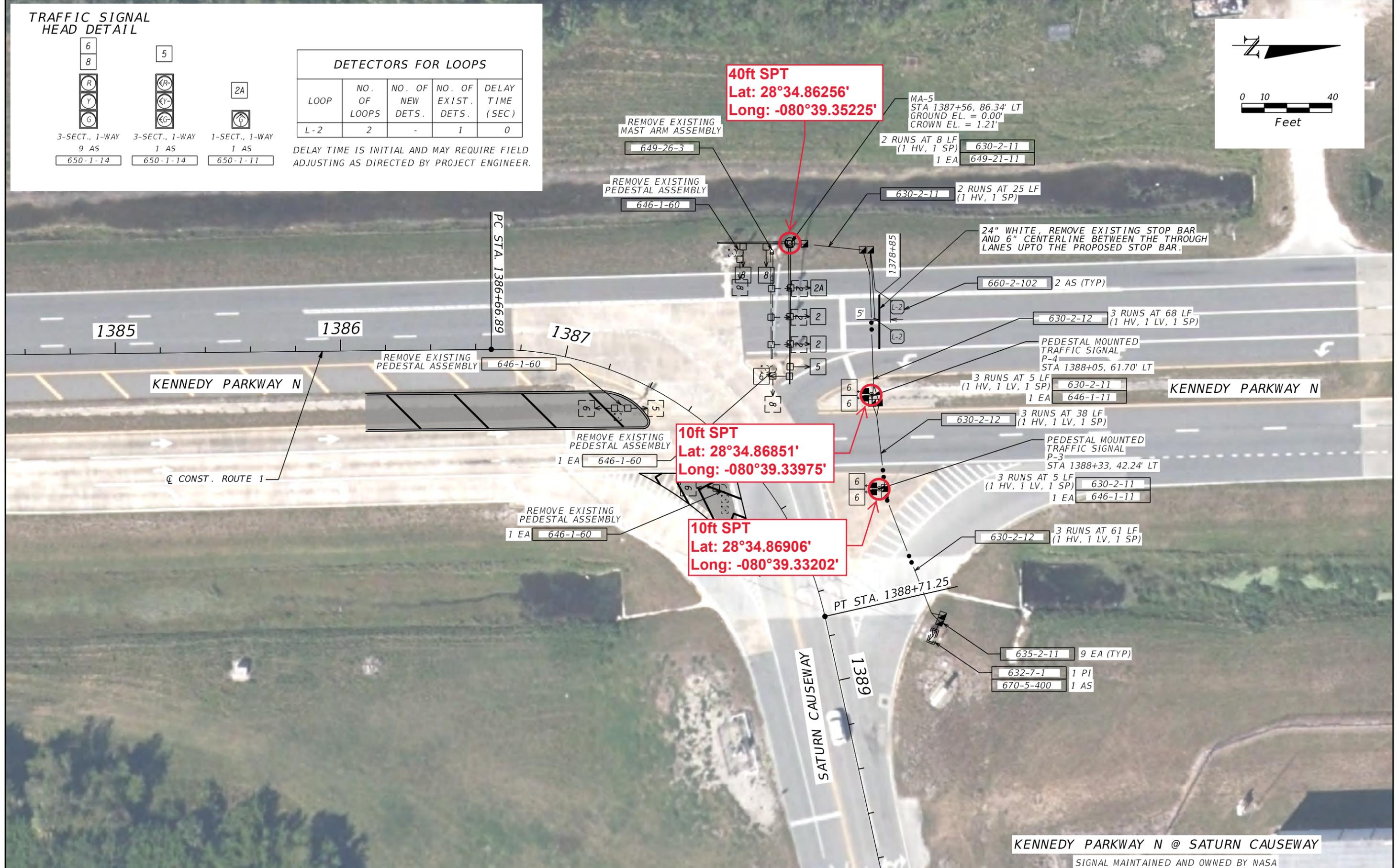
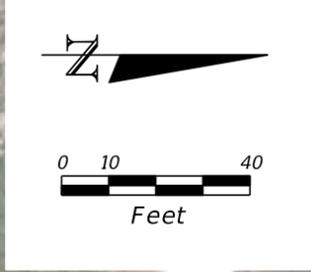
REVISIONS				AECOM Technical Services, Inc. 7650 West Courtney Campbell Causeway Tampa, FL 33607-1462 C.A. No. 8115 Patrick B. Nevah, P.E. No. 72369	SPACE FLORIDA EDTPF SIGNALIZATION PLANS		SHEET NO. T-9
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	
					BREVARD	FINANCIAL PROJECT ID 439053-1-54-01	SIGNALIZATION PLAN (4)

TRAFFIC SIGNAL HEAD DETAIL



DETECTORS FOR LOOPS				
LOOP	NO. OF LOOPS	NO. OF NEW DETS.	NO. OF EXIST. DETS.	DELAY TIME (SEC)
L-2	2	-	1	0

DELAY TIME IS INITIAL AND MAY REQUIRE FIELD ADJUSTING AS DIRECTED BY PROJECT ENGINEER.



KENNEDY PARKWAY N @ SATURN CAUSEWAY

SIGNAL MAINTAINED AND OWNED BY NASA

REVISIONS				AECOM Technical Services, Inc. 7650 West Courtney Campbell Causeway Tampa, FL 33607-1462 C.A. No. 8115 Patrick B. Nevah, P.E. No. 72369	SPACE FLORIDA EDTPF SIGNALIZATION PLANS			SHEET NO. T-10
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
					BREVARD	439053-1-54-01	SIGNALIZATION PLAN (5)	

30096449

RECEIVED APR 05 2019

BASE CIVIL ENGINEERING WORK CLEARANCE REQUEST (See Instructions on Reverse)		DATE PREPARED 3/25/19
1. Clearance is requested to proceed with work at <u>Borings at Phillips Parkway/Poseidon Avenue for signals foundation design</u> on Work Order No. <u>53249500</u> , Contract No. _____, involving excavation or utility disturbance per attached sketch. This area <input type="checkbox"/> has <input checked="" type="checkbox"/> has not been staked or clearly marked.		
2. TYPE OF FACILITY/WORK INVOLVED-		
<input checked="" type="checkbox"/> A. PAVEMENTS	<input type="checkbox"/> D. FIRE DETECTION & PROTECTION SYSTEMS	<input type="checkbox"/> G. AIRCRAFT OR VEHICULAR TRAFFIC FLOW
<input type="checkbox"/> B. DRAINAGE SYSTEMS	<input type="checkbox"/> E. UTILITY	<input checked="" type="checkbox"/> OVERHEAD <input checked="" type="checkbox"/> UNDERGROUND
<input type="checkbox"/> C. RAILROAD TRACKS	<input type="checkbox"/> F. COMM	<input type="checkbox"/> OVERHEAD <input type="checkbox"/> UNDERGROUND <input checked="" type="checkbox"/> I. OTHER
3. DATE CLEARANCE REQUIRED ASAP		4. DATE OF CLEARANCE
5. SIGNATURE OF REQUESTING OFFICIAL Gerard J. Nesel <small>Digitally signed by Gerard J. Nesel Date: 2019.03.27 15:44:52 -0400</small>		6. TELEPHONE NO. 845-416-5033
7. ORGANIZATION Space Florida		
8. BASE CIVIL ENGINEERING	ORGANIZATION	REMARKS (Use Reverse for additional comments)
A. ELECTRICAL DISTRIBUTION		
B. STEAM DISTRIBUTION		
C. WATER DISTRIBUTION		
D. POL DISTRIBUTION		
E. SEWER DISTRIBUTION		
F. ENVIRONMENTAL		
G. PAVEMENTS/GROUNDS		
H. FIRE PROTECTION		
I. ZONE IRP		
J. MASTER PLANNING	<i>Real Property Engineering</i>	
9. SECURITY POLICE		
10. SAFETY		
11. COMMUNICATIONS		
12. BASE OPERATIONS	<i>Site</i>	
13. CABLE TV		
14. COMMERCIAL UTILITY COMPANY		
<input type="checkbox"/> TELEPHONE		
<input type="checkbox"/> GAS		
<input type="checkbox"/> ELECTRIC		
15. OTHER (Specify)		
16. REQUESTED CLEARANCE <input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> DISAPPROVED		
17. TYPED NAME AND SIGNATURE OF APPROVING OFFICER (Chief of Operations Flight or Chief of Engineering Flight) ROBERT D. SAMSEL, DAFC <i>[Signature]</i>		17. DATE SIGNED 6/12/19
AF FORM 103, AUG 94 (EF-V1) (PerFORM PRO) PREVIOUS EDITIONS ARE OBSOLETE.		
INSTRUCTIONS		
The BCE work clearance request is used for any work (contract or in-house) that may disrupt aircraft or vehicular traffic flow, base utility services, protection provided by fire and intrusion alarm system, or routine activities of the installation. This form is used to coordinate the required work with key base activities and keep customer inconvenience to a minimum. It is also used to identify potentially hazardous work conditions in an attempt to prevent accidents. The work clearance request is processed just prior to the start of work. If delays are encountered and the conditions at the job site change (or may have changed) this work clearance must be reprocessed.		

Line locate B4 dig

No Issues

No Issues

No Issues

No known IRP concerns

PDF FORM 1354 Required

No Issues

ESURE mode coord. noted w/ 45200/SEA

Call fire comm locs 853 2141

No site plan required

[Signature]

4/19/19

[Signature]

4/19/19

5/15/19

9/10/19

4/16/19

AF FORM 103 ATTACHMENT

WORK ORDER NUMBER: _____

HAND DIG ONLY: YES NO

LOCATORS INITIALS: _____

Sean O'Brien

OPERATIONAL RESTRICTIONS:

Hand dig within 24 inches in all directions of locator markings. Contact Utility Locator if marks have faded or are disturbed in any manner. Customer shall mark or coordinate with the locator, a white paint border around the area to excavate. Do not excavate outside of the area marked with this border.

CUSTOMER MUST COORDINATE WITH:

COMM. LOCATES

(CALL 321.853.2141)

GAS LINE LOCATES CONTACT:

Sunshine State One Call @ 811 or 1-800-432-4770

Locate Ticket Number _____

NATURAL RESOURCES SURVEY:

Customer must coordinate with the Air Force Natural Resources (45 CES/CEIE-C) office at least 3 weeks prior to mobilization unless as emergency. Contact numbers: 321.853.6822, 321.794.5268 or 321.853.0964 (to determine if any wildlife or habitat needs to be protected. 45th CES/CEIE-C

APPROVED: _____

Notify CLOIS Locator for remarking of utilities if required.

SEAN O'BRIEN (CLOIS LOCATOR SERVICES)

321-476-4357 (Office)

321-423-0582 (Cell)

321-853-5211 (Cape Support)

REPORT ALL UTILITY BREAKS TO CAPE SUPPORT IMMEDIATELY.

CRITICAL DAY NOTICE

Contractor SHALL contact Cape Support, 321.853.5211, each day prior to commencing any digging or excavation work.

Work Order/Dig Permit number will be required for permission to proceed.

Request locator service only within 45 days of the estimated start of the excavation operation.

Maintain marks per locator instructions or request remarking by the locator. (Locator response may require a 72 hour notice)

Notify the Duty Office or permit administrator when excavation operations have been completed.

CUSTOMER PRINTED NAME

CUSTOMER SIGNATURE

DATE

SWO ENG.

RECEIVED APR 05 2019

BASE CIVIL ENGINEER WORK REQUEST

Form Approved OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average .3 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to the Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project 0704-0188, Washington DC 20503. Please DO NOT RETURN your form to either of these addresses. Send your completed form to HQ AFESC/DEMG

SECTION I - TO BE COMPLETED BY REQUESTER

1. FROM Space Florida	2. OFFICE SYMBOL N/A	3. DATE OF REQUEST March 25, 2019	4. WORK REQUEST NO. (For BCE Use) 30075727
---------------------------------	--------------------------------	---	--

5. NAME AND PHONE NO. OF REQUESTER Gerard Nesel, Space Florida, 321-981-0987	6. REQUIRED COMPLETION DATE December 31, 2019	7. BUILDING, FACILITY, OR STREET ADDRESS WHERE WORK IS TO BE ACCOMPLISHED Phillips Pkwy, Cape Road, and Central Control Road
--	---	--

8. DESCRIPTION OF WORK TO BE ACCOMPLISHED

For CE review and coordination only. Work to be performed by Space Florida contractor. *Site Plan Req'd JCL*

Infrastructure improvements for the transportation of Blue Origin flight hardware from the Blue Origin Manufacturing Complex in Exploration Park, KSC to SLC 36 (Phillips Parkway), past 39A, to Cape Road, Phillips Pkwy and Control Road and from the Port to SLC 36 (Phillips Parkway and Central Control Road).

9. BRIEF JUSTIFICATION FOR WORK TO BE ACCOMPLISHED (Not required for maintenance and repair)

Select areas along the transportation route require road and infrastructure improvements which may include light pole relocation, modification to the south gate wall, utility relocation (if within the top 12 inches of earthwork), roadway widening, or signal/signage modifications to allow the flight hardware to pass.

10. DONATED RESOURCES
- JON: 53249500 *TOP*

<input type="checkbox"/> FUNDS	<input type="checkbox"/> LABOR	<input type="checkbox"/> MATERIAL	<input type="checkbox"/> CONTRACT BY REQUESTER	<input type="checkbox"/> NONE
--------------------------------	--------------------------------	-----------------------------------	--	-------------------------------

5. NAME OF REQUESTER Gerard Nesel Space Florida Spaceport Development Program Manager	12. GRADE OF REQUESTER N/A	13. SIGNATURE OF REQUESTER Gerard J. Nesel Digitally signed by Gerard J. Nesel Date: 2019.03.25 16:27:20 -04'00'
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14. COORDINATION <i>4/10/19</i>	<i>FD 4/10/19</i>	<i>checklist 4-10-19</i>	<i>JCL CEN PL 4-10-19</i>	<i>4/10/19</i>	<i>4/10/19</i>	<i>4/10/19</i>
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SECTION II - FOR BASE CIVIL ENGINEER USE

15. WORK ORDER (Place an "X" in the appropriate box.)

<input type="checkbox"/> IN-SERVICE	<input type="checkbox"/> SELF-HELP	<input type="checkbox"/> CONTRACT	<input type="checkbox"/> SABER
-------------------------------------	------------------------------------	-----------------------------------	--------------------------------

16. DIRECT SCHEDULED WORK (Place an "X" in the appropriate box.)

<input type="checkbox"/> EMERGENCY	<input type="checkbox"/> URGENT	<input type="checkbox"/> ROUTINE	<input type="checkbox"/> SELF-HELP	<input type="checkbox"/> M/C
------------------------------------	---------------------------------	----------------------------------	------------------------------------	------------------------------

17. SELF-HELP (Place an "X" in the appropriate box.)

<input type="checkbox"/> BRIEFING REQUIRED	<input type="checkbox"/> ADEQUATE COORDINATION	<input type="checkbox"/> INSPECTION REQUIRED
--	--	--

SECTION III - COMPLETE ONLY IF WORK IS TO BE ACCOMPLISHED BY WORK ORDER

18. WORK CLASS	19. PRIORITY	20. ESTIMATED HOURS	21. ESTIMATED FUNDED COST	22. ESTIMATED TOTAL COST
----------------	--------------	---------------------	---------------------------	--------------------------

<input type="checkbox"/> 23. THERE IS NO NEED FOR AN ENVIRONMENTAL ASSESSMENT (AFR 19-2)	<input checked="" type="checkbox"/> 24. A WRITTEN ASSESSMENT IS BEING/HAS BEEN PROCESSED <i>EA for C/36/11</i>	<input type="checkbox"/> 25. APPROVED	<input type="checkbox"/> 26. DISAPPROVED
--	---	---------------------------------------	--

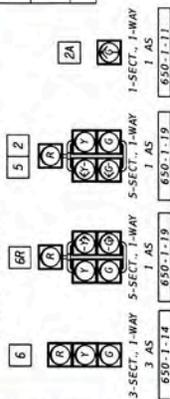
27. REMARKS
Permitting required. Coord w/CEIE x 4.2899. Natural resource survey/103 rd. Construction license/EBS reqmts apply

SECTION IV - APPROVING AUTHORITY

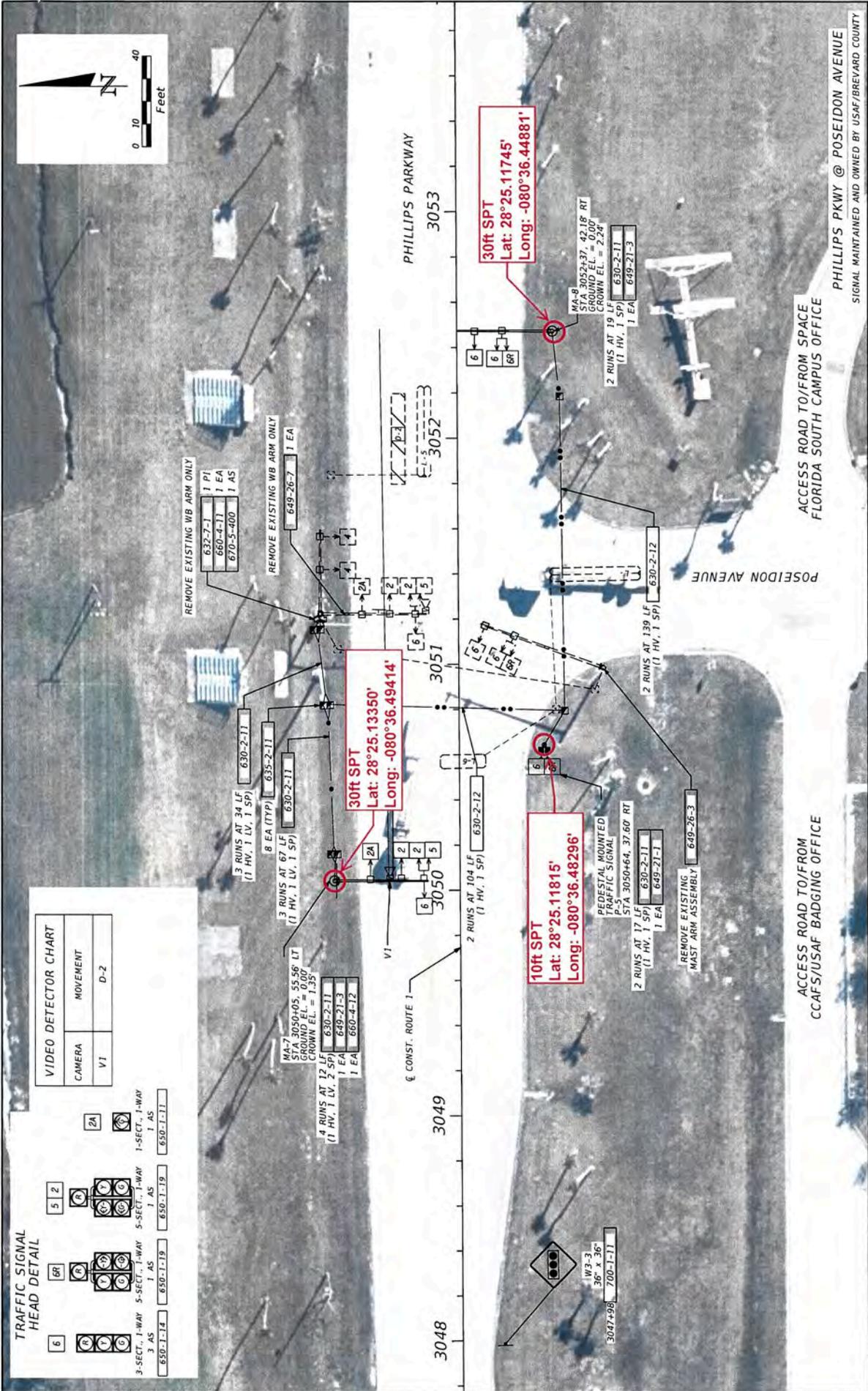
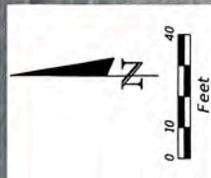
28. NAME AND GRADE (Please Type or Print) ROBERT D. SAMSEL, DAFC	29. SIGNATURE <i>[Signature]</i>	30. DATE 4/10/19
--	-------------------------------------	----------------------------

CONFIGURED SYSTEMS
CCB APPROVAL
NOT REQUIRED

TRAFFIC SIGNAL HEAD DETAIL



VIDEO DETECTOR CHART	
CAMERA	MOVEMENT
V1	D-2



REVISIONS		DESCRIPTION	
DATE	DATE	DESCRIPTION	DATE

AECOM Technical Services, Inc. 7650 West Courtney Tampa, FL 33607-1462 C.A. No. 8115 Patrick B. Nevah, P.E. No. 72369		SPACE FLORIDA EDP/FP SIGNALIZATION PLANS	
1/20/2019		ROAD NO.	FINANCIAL PROJECT ID
650-1-11			439053-1-54-01
		COUNTY	
			BREVARD
		PHILLIPS PKWY @ POSEIDON AVENUE	
		SIGNAL MAINTAINED AND OWNED BY USAF/BREVARD COUNTY	
		ACCESS ROAD TO/FROM SPACE FLORIDA SOUTH CAMPUS OFFICE	
		ACCESS ROAD TO/FROM SPACE CCAFS/USAF BADGING OFFICE	
		SHEET NO.	
		T-12	
		SIGNALIZATION PLAN (7)	

Patel, Bunti A.

From: EPR NASA <ksc-isc-digpermit@mail.nasa.gov>
Sent: Tuesday, June 04, 2019 4:29 PM
To: gnesel@spaceflorida.gov
Cc: Patel, Bunti A.; jeffery.s.beyer@nasa.gov; ksc-isc-digpermit@mail.nasa.gov
Subject: Approved: EPR 19184 Permit Request Submitted by Gerard Nesel -- EPR
Attachments: SF0073PER-EDTPF_KSC26-312-Utility-Locate-Excavation-Permit-Request-190531_2019_5_31_14_48_55_915.pdf; 19184-map.png

Importance: High

Permit Request: 19184 (Status: Approved)

IMPORTANT: If digging does not begin within 21 days from the time of utility locate (permit approval), this permit shall be suspended and a new locate will be required. Please call at least 72 hours prior to digging to schedule utility locates.

The Excavator shall maintain a copy of the EPI signed/ approved permit on site at all times.

The Excavator is required to contact BOTH authorities to schedule utility locates:

- 1) **Locator support for non-managed KSC utilities (ex. Florida City Gas, AT&T, etc.):** Sunshine 811 at **800-432-4770** or 811 (cell). Create an account and request at www.online811.com
- 2) **Locator support for KSC managed utilities:** Primary: **321-749-4840** Alternate: **321-529-4796**

Sunshine 811 Suggested Location Information	
Location	Various intersections throughout KSC

The Excavator is required to obtain a Sunshine 811 ticket number prior to ISC locates being performed.

You must call Sunshine 811 prior to contacting ISC locators to obtain your Sunshine 811 ticket number. Please copy this ticket number on to your approved Excavation Permit Request (EPR) email and show it to the KSC EPI prior to ISC performing KSC utility locates. This is to be completed prior to calling KSC EPI for locate.

The Excavator is required to only obtain signature of KSC Excavation Permit Inspector:

You must schedule a KSC EPI to meet with you on site for the KSC utility locate and to obtain their required signature this permit before excavation can commence.

IMPORTANT INFORMATION:

- EPR will be **immediately cancelled** should digging begin prior to approval from the EPI.
- Utility Locate/EPR will be **immediately cancelled** if original EPI paint markings are not maintained.
- You must **hand dig within 24 inches** in either direction of all EPI paint markings.
- Do **not remove or disturb thrust blocks**. A thrust block is a configured piece of concrete located underground at water and sewer utility piping to prevent movement from line pressure fluctuations. When excavating soil at location known to contain buried water or sewer lines, **do not remove any buried concrete without prior approval**.
- An EPR can remain in the approval status is one year. All work expecting to extend longer than one year must be re-submitted as a new request, including an updated map and scope of work.
- If the scope of work for the original Utility Locate/EPR is changed or the completion date needs to be extended, you are required to call ISC Master Planning Office 321-867-2406.

- When the job is complete, please call the ISC Master Planning Office 321-867-2406. **This permit will be closed upon expiration unless an extension is requested.**
- Accidental Utility line damage, excluding Gas main damage, call the ISC Duty Office at 321-861-5050.
- Accidental Gas Main damage evacuate the area then call 321-867-7911 (cell) or 911 (landline only), call the ISC Duty Office at 321-861-5050.
- Category Code V Permits must call the ISC Duty office daily and observe all critical days as directed by the ISC Duty Office.

EPR Contact Information:

EPR Administrator's Information:

Questions regarding your Utility Locate/Excavation Permit Request, such as approving, revising the time or scope of work, updating any information within this permit.	EPR Administrator Phone: 321-867-2406 Fax: 321-867-1175 Email: KSC-ISC-DIGPERMIT@mail.nasa.gov
Questions regarding your Utility Locate/Surveying, such as utilities markings and area surveying.	EPI Supervisor Phone: 321-861-7945 Fax: 321-861-6556 Email: david.j.irwin@nasa.gov
Questions regarding Florida City Gas owned natural gas utilities <u>not including:</u> emergencies, gas leaks, and locate requests.	Florida City Gas Sr. Account Executive Phone: 786-459-3655 Fax: 772-871-2044 Email: FSmalley@aglresources.com

Permit Request: 19184 (Status: Approved)

Scope of Work / Justification	
Scope of Work/Justification	This dig permit is only for engineering geotechnical investigations/Standard penetrating test (SPT) borings for proposed mast poles/signals at the following intersections: Space Commerce Way/NASA Pkwy; NASA Pkwy/Visitor Complex North Entrance; Kennedy Parkway/Schwartz Road; and Kennedy Pkwy/Saturn Causeway.
Submitter's Information	
Submitter First Name	Gerard
Submitter Last Name	Nesel
Submitter Email Address	gnesel@spaceflorida.gov
Submitter Company Name	Space Florida
Submitter Phone	321-730-5301 x118
Submitter Fax	321-730-5307
Technical Contact Information	
Technical Contact First Name	Bunti
Technical Contact Last Name	Patel

Technical Contact Email Address	Bunti.patel@aecom.com
Technical Contact Phone	813-636-2445
Technical Contact Fax	813-287-8591
NASA COTR Contact Information	
NASA COTR First Name	Jeffery
NASA COTR Last Name	Beyer
NASA COTR Email Address	jeffery.s.beyer@nasa.gov
NASA COTR Phone	321-867-6215
Permit Request Info	
PermitType	Dig
PermitStatus	Approved
Permit Start Date	06/18/2019
Permit End Date	06/17/2020
Estimated Completion Date	06/28/2019
Facility Info	
Facility	M6-0213
Grid	M6
Additional Forms and Identifying Numbers	
Environmental Check List Completed	No
Category Codes	
1	I
2	IV
3	V
Related Documents	
File Name	Description
SF0073PER-EDTPF_KSC26-312-Utility-Locate-Excavation-Permit-Request-190531.pdf	

Reviews

Reviewed By:	Date:	Results:	Comments:
Locator	6/4/2019 9:50:59 AM	Agree	JM
Environmental	6/4/2019 2:23:56 PM	Agree	Approved for geotechnical investigation. Please submit a KSC Environmental Checklist to ksc-dl-environmental-checklist@mail.nasa.gov for the proposed mast poles and traffic signals.
Master Planner	5/31/2019 3:11:22 PM	Agree	RS
Final	6/4/2019 4:28:51 PM	Agree	AL
Map			
Map associated with this request		19184-map.png	

Attention: Map rotated 90 degrees, right side is NORTH >>>>>>

Permit Request: 19184 (Status: Approved)

Sunshine 811 Call Ticket Number	
Ticket Number	

Approved by: Jeff McDowell

Approved by: Roberto Cosme

Approved by:

Approved by:

Notes:

[] LOCATED AREA TO BE HAND EXCAVATED ONLY!

Locator's Signature: _____

Reason for Hand Excavation: _____

Permit Request: 19184 (Status: Approved)

EXCAVATION PERMIT CATEGORIES:

If you have questions about assigned category codes contact the Excavation Permit Inspectors at Primary: **321-749-4840** Alternate: **321-529-4796**.

Note: for permits with more than one category code, the most restrictive category code applies.

For critical categories that have locations specifically defined (Categories 1, 5, 6) the affected range of the category shall be 60" beyond the defined location. Beyond the 60" range the category shall default to Category 4.

LAUNCH

For the latest launch, landing or test schedule, contact the **ISC Duty Office at 321-861-5050**.

Category I *

Prior to any KSC launch all excavation will cease seventy-two (72) hours prior to launch, test or landing at, around or involving the following KSC facilities:

Launch Control Center - LCC (K6-0900)	Old MILA Area	Communication Distribution and Switching Center - CD&SC (M6-0138)	Operations & Checkout O&C (M6-0355)
LC 39 A & B (all areas and buildings inside the fence) & all 8 Repeater Stations. ¹	Press Site (all buildings, roads, parking areas in and around the area.)	Payload Facility Supporting Launch (M7-0777, & M7-0360) ²	Central Instrumentation Facility (M6-0342)
VAB Repeater - VABR (K7-1193)	Banana River Repeater Station (M7-0531)	CCF - Converter Compressor Facility (K7-0468)	Shuttle Landing Facility -SLF (runway and all associated buildings and infrastructure)
C-5 Substation (K6-1141)	Tel IV & South Repeater Station (N6-1118)	VAB (K6-0848) and VAB Utility Annex (K6-0947)	

1 - Facilities (J7-0986, J7-1736, J8-2204, K6-1193, K7-0089, K7-0422, K7-0709, M7-0531, & N6-1118).

2 - Mission Specific - Including but not limited to these facilities. (M7-0777 - Launch Abort System Facility, and M7-0360 - Space Station Processing Facility (SSPF)).

Excavation may resume at facilities in the table above four (4) hours after launch. Excavation will not occur at the SLF (16) until after landing.

Category II

LC-39 Active Pads – All excavation (except emergencies) will stop when the launch vehicle rolls out to the Pad. Excavation may resume following Pad safing and washdown after launch.

Category III

LC-39 Deactive Pads – Excavation will cease 2 hours before sunset on launch -1 (L-1) day or 12 hours prior to launch from Active Pad. Whichever is earlier. Excavation may resume 4 hours after launch from the Active Pad.

Category IV

Excavation may proceed in all areas and times not covered by Categories I, II or III.

Category V

Prior to digging you must call the ISC Duty Office at 321-861-5050 DAILY.

Air Force Launch Operations – Excavation and switching of critical power will cease on launch critical days (24 hours, launch count to include launch day) at the following KSC facilities and utilities:

Kennedy Parkway, NASA Parkway & Saturn Causeway utility corridors	Tel IV & South Repeater Station (N6-1118)	Banana River Repeater Station (M7-0531)	Utility Corridors East of Orsino Substation serving CCAFS	Area south from LC-39B along Phillips Parkway.
All Camera, Radar & Weather Sites	Shuttle Landing Facility	KARS Park	Pump Station 7 (K8-1740)	Old MILA Area
Press Site (all buildings, roads, parking areas in and around the area)		Complex 41 (all facilities and areas inside the fence)	Area east from the Converter Compressor Facility .CCF (K7-0468) to Pad 39A	

Category VI

Prior to digging you must call the ISC Duty Office at 321-861-5050 DAILY.

Air Force Non-Launch Operations – Excavation and switching of critical power will cease on non-launch critical days (program specific test days) at the following KSC facilities and utilities:

Kennedy Parkway, NASA Parkway & Saturn Causeway utility corridors	Tel IV & South Repeater Station (N6-1118)	Banana River Repeater Station (M7-0531)	Utility Corridors East of Orsino Substation serving CCAFS	Pump Station 7 (K8-1740)
Space X ViaSat Antenna, Tracking Station (J6-0553)	All Camera, Radar & Weather Sites	Complex 41 (all facilities and areas inside the fence)	Area south from LC-39B along Phillips Parkway	
Press Site (all buildings, roads, parking areas in and around the area)		Area east from the Converter Compressor Facility -CCF (K7-0468) to Pad 39A		

Category VII

For all SLF operations (current and future), excavation will cease on launch and landing critical days (L-1, launch count to include launch day, program specific test days, and landing -1 day). Excavation may proceed in all areas up to 2 hours prior to sunset on landing -1 day, or 12 hours prior to landing, whichever is earlier. Excavation may proceed at all facilities, except for the SLF, 1 hour after a successful landing. Excavation will stop at, around, and/or involving the SLF and involved facilities, at the start of Launch Countdown. Excavation may proceed in this area after Landing, AND with approval from SLF Operations at 321-867-2100.

Utility Locate / Excavation Permit Request

1. Date 5/31/2019	2. Master Planning Site Plan Number	3. Project (PCN) No.	4. Work Order Number	5. Check One <input checked="" type="checkbox"/> Permit to Dig <input type="checkbox"/> Locate Only / No Digging
6. Requester's Name (REQUIRED) Gerard Nesel		7. Email (REQUIRED) gnesel@spaceflorida.gov	8. Phone Number (REQUIRED) 321-730-5301x118 (845) 416-5033 (cell)	9. Fax Number (REQUIRED) 321-730-5307
10. Requester's Company (REQUIRED) Space Florida			11. Mail Code / Address 505 Odyssey Way, Suite 300 Exploration Park, FL 32953	
12. Technical Contact (REQUIRED) Bunti Patel		13. Email (REQUIRED) Bunti.patel@aecom.com	14. Phone Number (REQUIRED) 813-636-2445	15. Fax Number (REQUIRED) 813-287-8591
16. KSC NASA Contact Name (REQUIRED) Jeffery Beyer			17. Email (REQUIRED) jeffery.s.beyer@nasa.gov	18. Phone Number (REQUIRED) 321-867-6215
19. Building Number (REQUIRED)	20. Grid Number (REQUIRED) Varies	21. Secondary Location (Building Number / Additional Info.) (REQUIRED)		
22. Estimated Start Date (REQUIRED) 06/18/2019			23. Estimated End Date (REQUIRED) 6/28/2019	
24. Emergency request justification (if required)				
25. Reason for permit / Statement of work (REQUIRED) This dig permit is only for engineering geotechnical investigations/Standard penetrating test (SPT) borings for proposed mast poles/signals at the following intersections: Space Commerce Way/NASA Pkwy; NASA Pkwy/Visitor Complex North Entrance; Kennedy Parkway/Schwartz Road; and Kennedy Pkwy/Saturn Causeway. MAP / SKETCH, WITH AREA TO BE LOCATED / EXCAVATED CLEARLY MARKED, IS ATTACHED (REQUIRED)				

See next page for completion and process instructions.

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. **The Excavator is required to contact BOTH authorities to schedule utility locates:**
 - 1) Locator support for KSC managed utilities: Ryan Ostarly 321-289-2372 or Jeff McDowell 321-749-4840
 - 2) Locator support for City Gas owned natural gas line: Sunshine One-Call at 800-432-4770 or 811 (cell).
For Natural Gas locate, it is recommended that you create an account and request at www.online811.com
4. **The Excavator is required to obtain signature of KSC Excavation Permit Inspector (EPI) only:**
You must schedule a KSC Excavation Permit Inspector (EPI) to meet with you on site for the KSC utility locate and to obtain the required signature from the KSC EPI on this permit. 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 OSB I, K6-1096, Room 2113 N1
Mail Code	ISC-4325
Phone	(321) 867-2406
Fax	(321) 867-1175
Email	KSC-ISC-DIGPERMIT@mail.nasa.gov

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

Space Florida Economic Development Transportation
Project Funds (EDTPF) Infrastructure Improvements

Dig Permit Summary

10ft SPT:

All pedestal mounted traffic signal locations (pg. T-7, T-9, T-10)

30ft SPT:

MA-1 (pg. T-6)

MA-2 (pg. T-6)

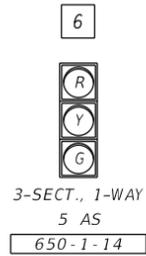
MA-3 (pg. T-7)

MA-4 (pg. T-7)

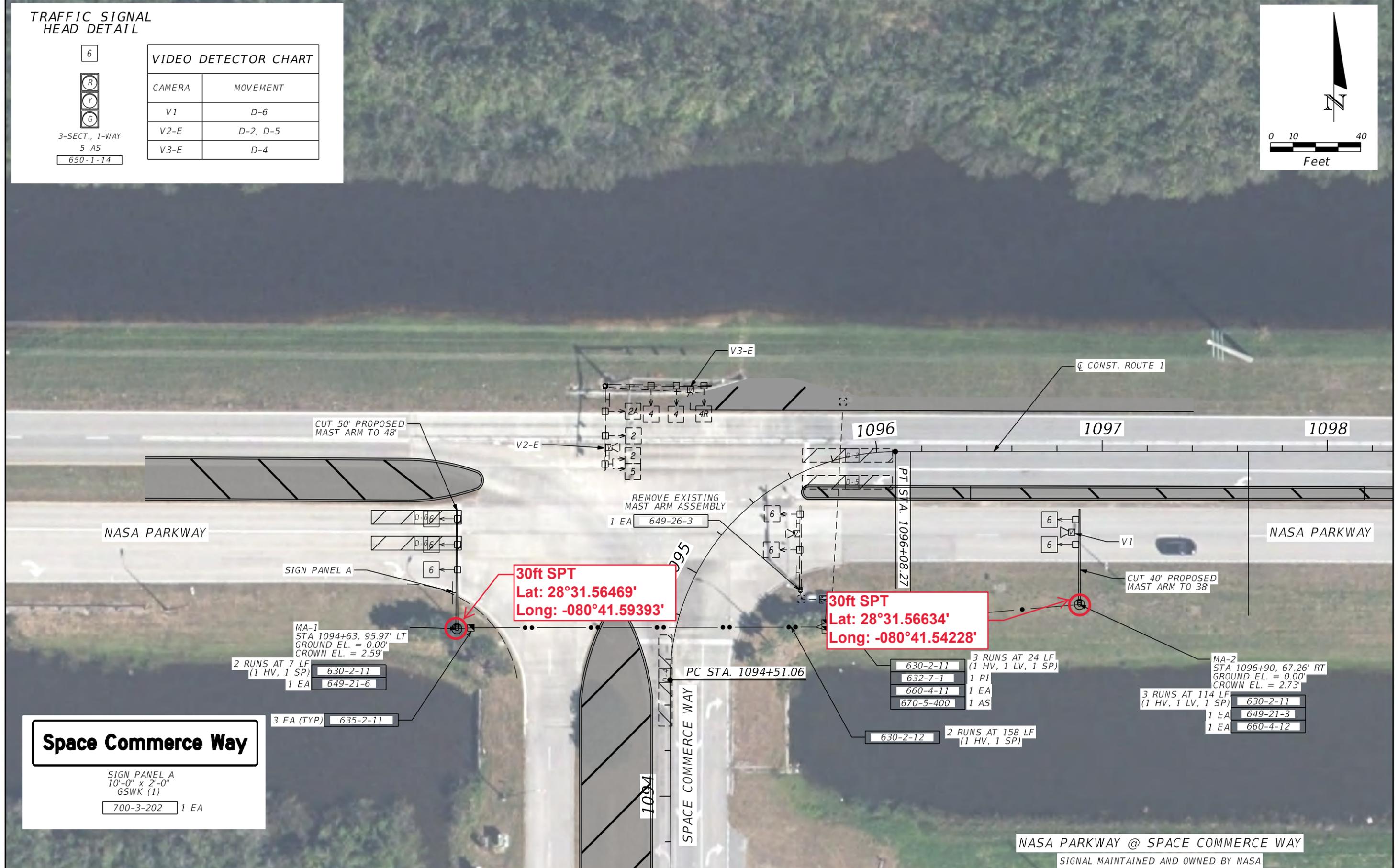
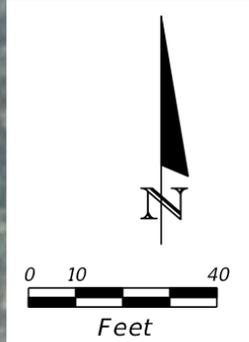
40ft SPT:

MA-5 (T-10)

TRAFFIC SIGNAL HEAD DETAIL



VIDEO DETECTOR CHART	
CAMERA	MOVEMENT
V1	D-6
V2-E	D-2, D-5
V3-E	D-4

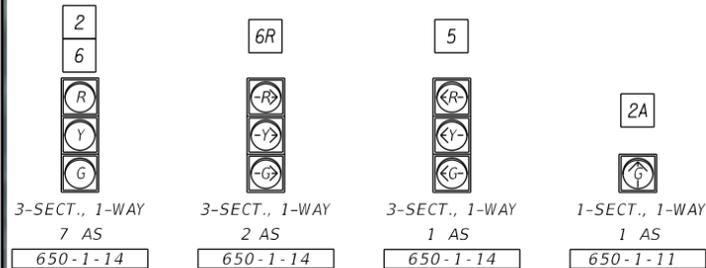


Space Commerce Way

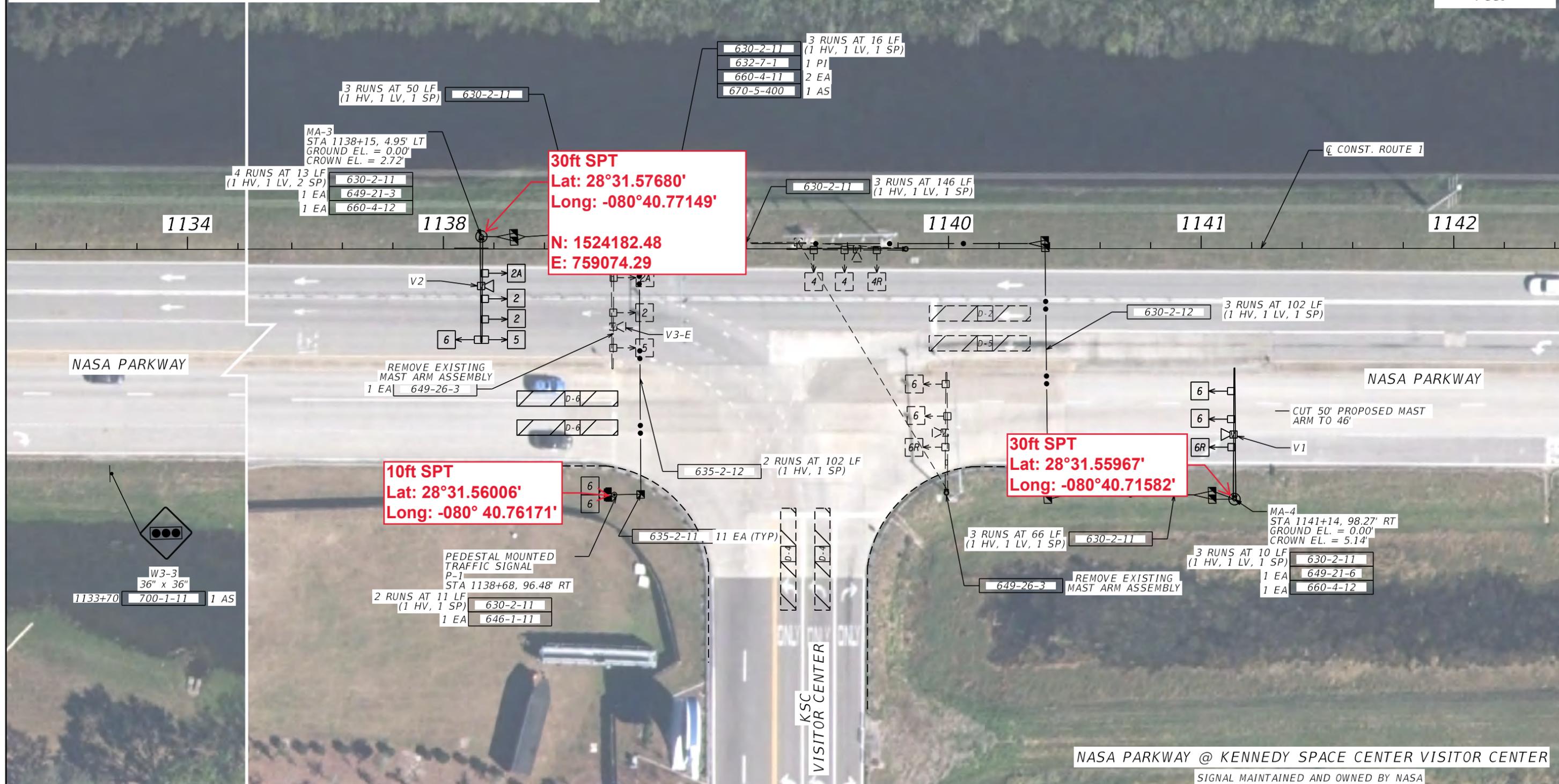
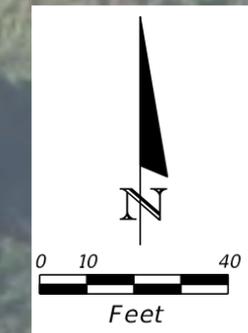
NASA PARKWAY @ SPACE COMMERCE WAY
SIGNAL MAINTAINED AND OWNED BY NASA

REVISIONS				AECOM Technical Services, Inc. 7650 West Courtney Campbell Causeway Tampa, FL 33607-1462 C.A. No. 8115 Patrick B. Nevah, P.E. No. 72369	SPACE FLORIDA EDTPF SIGNALIZATION PLANS		SHEET NO. T-6
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	
					BREVARD	FINANCIAL PROJECT ID 439053-1-54-01	

TRAFFIC SIGNAL HEAD DETAIL



VIDEO DETECTOR CHART	
CAMERA	MOVEMENT
V1	D-6
V2	D-2, D-5
V3-E	D-4



NASA PARKWAY @ KENNEDY SPACE CENTER VISITOR CENTER
SIGNAL MAINTAINED AND OWNED BY NASA

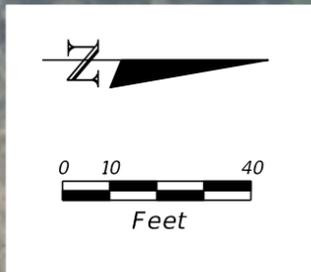
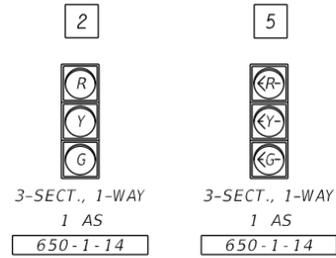
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

AECOM Technical Services, Inc.
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 8115
Patrick B. Nevah, P.E. No. 72369

SPACE FLORIDA EDTPF SIGNALIZATION PLANS		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	BREVARD	439053-1-54-01

SIGNALIZATION PLAN (2)
SHEET NO. T-7

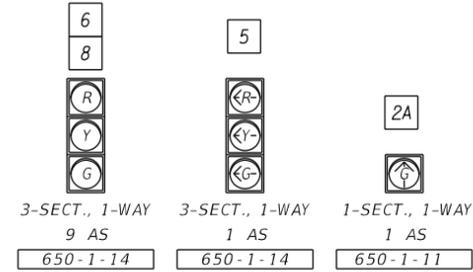
TRAFFIC SIGNAL HEAD DETAIL



KENNEDY PARKWAY N @ SCHWARTZ ROAD
SIGNAL MAINTAINED AND OWNED BY NASA

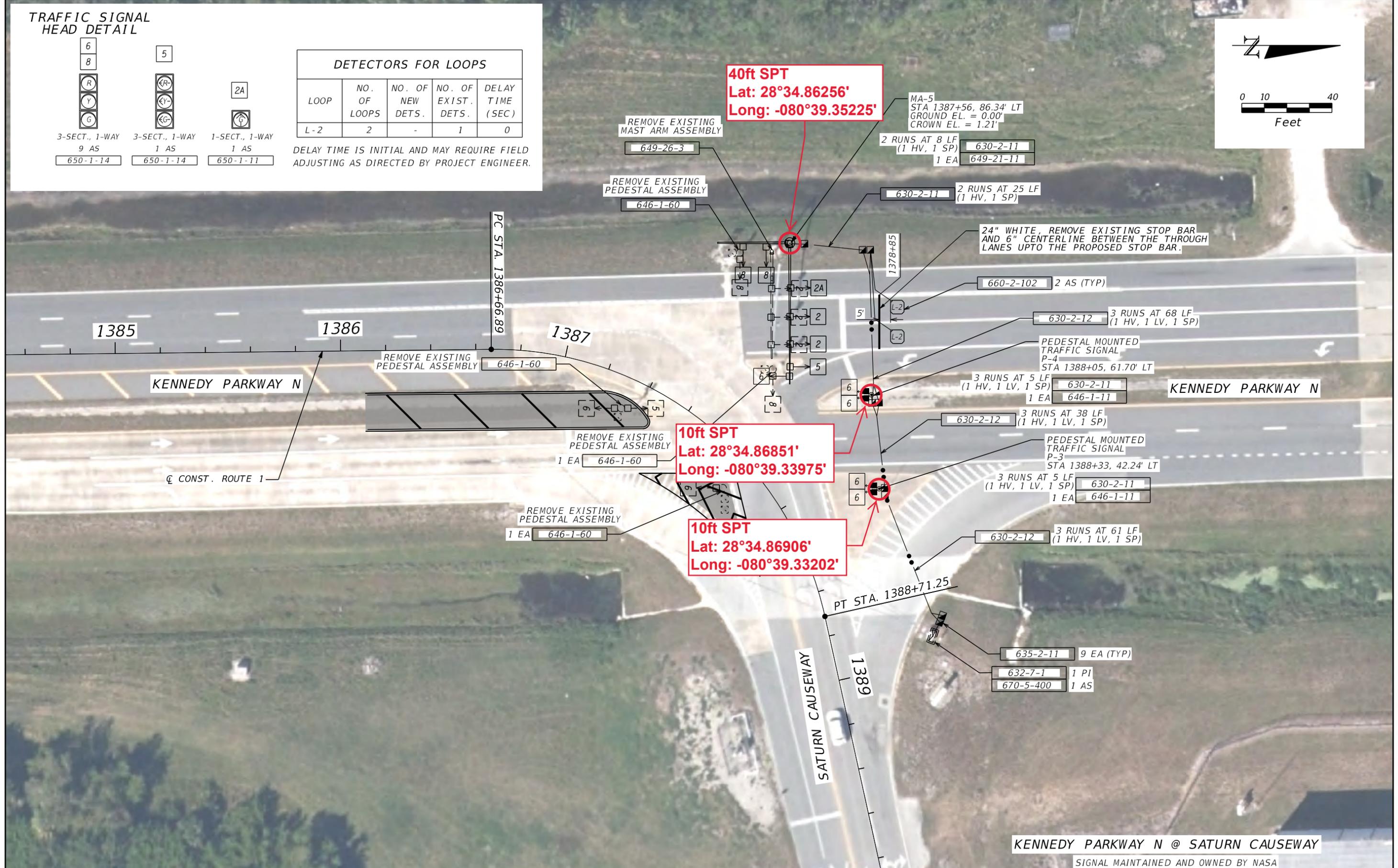
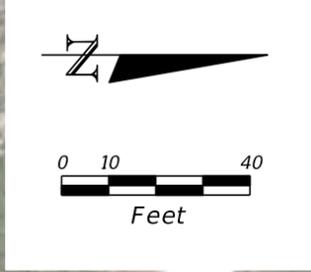
REVISIONS				AECOM Technical Services, Inc. 7650 West Courtney Campbell Causeway Tampa, FL 33607-1462 C.A. No. 8115 Patrick B. Nevah, P.E. No. 72369	SPACE FLORIDA EDTPF SIGNALIZATION PLANS			SHEET NO. T-9
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
					BREVARD	439053-1-54-01	SIGNALIZATION PLAN (4)	

TRAFFIC SIGNAL HEAD DETAIL



DETECTORS FOR LOOPS				
LOOP	NO. OF LOOPS	NO. OF NEW DETS.	NO. OF EXIST. DETS.	DELAY TIME (SEC)
L-2	2	-	1	0

DELAY TIME IS INITIAL AND MAY REQUIRE FIELD ADJUSTING AS DIRECTED BY PROJECT ENGINEER.



KENNEDY PARKWAY N @ SATURN CAUSEWAY
SIGNAL MAINTAINED AND OWNED BY NASA

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

AECOM Technical Services, Inc.
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 8115
Patrick B. Nevah, P.E. No. 72369

SPACE FLORIDA EDTPF SIGNALIZATION PLANS		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	BREVARD	439053-1-54-01

SIGNALIZATION PLAN (5)

SHEET NO.
T-10

SPACE FLORIDA



**Attachment “D”
Plans**

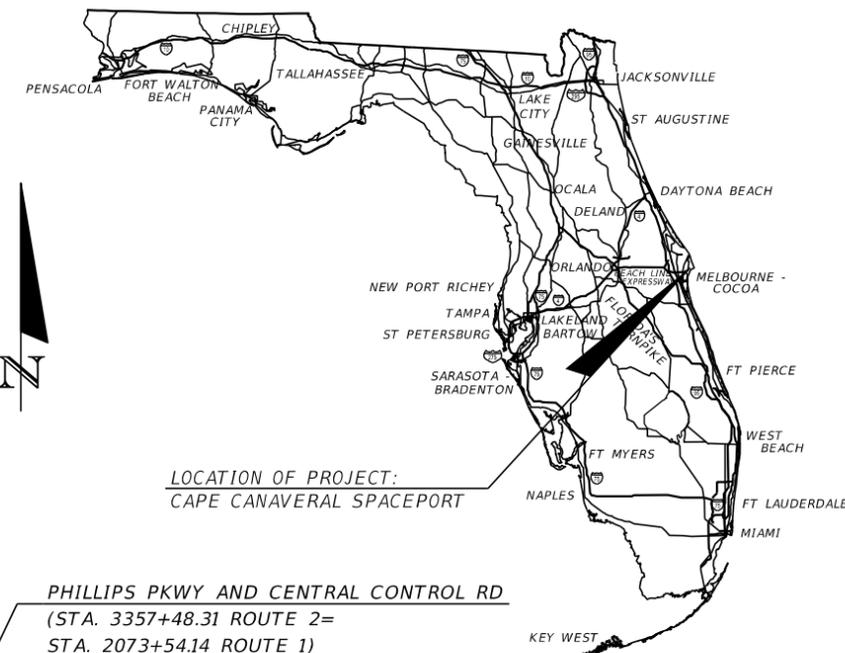
SPACE FLORIDA ECONOMIC DEVELOPMENT TRANSPORTATION PROJECT FUND (EDTPF) INFRASTRUCTURE IMPROVEMENTS

SIGNALIZATION PACKAGE

FINANCIAL PROJECT ID 439053-1-54-01

DRAWING INDEX OF IMPROVEMENTS

SHEET NO.	SHEET DESCRIPTION
T-1	KEY SHEET
T-2 - T-4	GENERAL NOTES (1-3)
T-5	TABLULATION OF QUANTITIES
T-6 - T-12	SIGNALIZATION PLAN (1-7)
T-13	GUIDE SIGN WORK SHEET
T-14	MAST ARM TABULATION
T-15	PEDESTAL MOUNTED SIGNAL DETAIL
T-16	STANDARD MAST ARM ASSEMBLIES DATA TABLE



PHILLIPS PKWY AND CENTRAL CONTROL RD
(STA. 3357+48.31 ROUTE 2=
STA. 2073+54.14 ROUTE 1)

**SUBMITTAL: BID
DATE: 09/05/2019**

SIGNALIZATION PLANS ENGINEER OF RECORD:

PATRICK B. NEVAH, P.E. NO.: 72369
AECOM TECHNICAL SERVICES, INC.
7650 W. COURTNEY CAMPBELL CSW
TAMPA, FLORIDA 33607
VENDOR NO.: 952661922-011
CERTIFICATE OF AUTHORIZATION NO.: 8115

SPACE FLORIDA PROJECT MANAGER:
STEVE SZABO, P.E.

SPACE FLORIDA



SHEET
NO.

T-1

PROJECT LAYOUT - SIGNALIZATION PLANS

SHEET NO.	INTERSECTION NO.	DESCRIPTION OF WORK
T-6	1	NASA PARKWAY AT SPACE COMMERCE WAY
T-7	2	NASA PARKWAY AT KSC VISITOR CENTER
T-8	3	NASA PARKWAY AT KENNEDY PARKWAY
T-9	4	KENNEDY PARKWAY AT SCHWARTZ ROAD
T-10	5	KENNEDY PARKWAY AT SATURN CAUSEWAY
T-11	6	SR 401 AT GROUPER ROAD
T-12	7	PHILLIPS PARKWAY AT POSEIDON AVENUE

GOVERNING STANDARD PLANS:

FLORIDA DEPARTMENT OF TRANSPORTATION, FY2018-19 STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION AND APPLICABLE INTERIM REVISIONS (IRS).

STANDARD PLANS FOR ROAD CONSTRUCTION AND ASSOCIATED IRS ARE AVAILABLE AT THE FOLLOWING WEBSITE: [HTTP://WWW.FDOT.GOV/DESIGN/STANDARDPLANS](http://www.fdot.gov/design/standardplans)

ROUTE 1:
MANUFACTURING COMPLEX TO SLC-36

BEGIN ROUTE 1:
BLUE ORIGIN MANUFACTURING FACILITY

BEGIN ROUTE 2:
PORT TO GROUPER ROAD

ROUTE 2:
PORT TO SLC-36

END ROUTE 1 AND ROUTE 2:
SLC-36

GENERAL NOTES

1. SPACE FLORIDA WILL BE THE GOVERNING ENTITY FOR THIS PROJECT. THE LAND IS OWNED BY NASA WITHIN KENNEDY SPACE CENTER (KSC) LIMITS, UNITED STATES AIR FORCE (USAF) WITHIN CAPE CANAVERAL AIR FORCE STATION (CCAFS), AND FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT)/CANAVERAL PORT AUTHORITY WITHIN SR-401 AND GROUPEL ROAD INTERSECTION. THE CONTRACTOR SHALL COORDINATE ACCESS TO AND HAUL ROUTES WITHIN WITH SPACE FLORIDA AND THE AFOREMENTIONED ENTITIES PRIOR TO BEGINNING CONSTRUCTION OPERATIONS. SPACE FLORIDA HAS OBTAINED CONSTRUCTION EASEMENTS FROM NASA, USAF AND CANAVERAL PORT AUTHORITY WHICH THE CONTRACTOR SHALL COMPLY WITH.
2. ALL EXISTING DIMENSIONS, MEASUREMENTS, AND FEATURES SHOWN ON THE PLANS ARE APPROXIMATE, OBTAINED FROM THE BEST INFORMATION AVAILABLE, AND SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR AND DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER/OWNER IMMEDIATELY.
4. ANY DAMAGE TO EXISTING INFRASTRUCTURE/FACILITIES TO REMAIN INCLUDING, BUT NOT LIMITED TO, SIDEWALKS, BUILDINGS, CONCRETE SLABS, UTILITIES, PAVEMENT, UTILITIES, LIGHTING, GRASS AREAS, FENCE, GATES, AND SIGNS SHALL BE REPLACED IN KIND BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
5. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE PROVIDED FROM THE BEST INFORMATION AVAILABLE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCURATELY LOCATE UNDERGROUND UTILITIES BEFORE WORK IS PERFORMED IN THE AREA THAT COULD DAMAGE ANY UNDERGROUND UTILITIES. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER PRIOR TO COMMENCING WORK IN ANY AREA. UNIDENTIFIED UTILITIES/STRUCTURES SHALL BE LOCATED, IDENTIFIED, AND REPORTED PROMPTLY TO THE ENGINEER. IF, IN THE COURSE OF THE WORK, ANY UTILITY LINE IS DAMAGED, THE CONTRACTOR SHALL MAKE AN IMMEDIATE, CONTINUOUS EFFORT TO RESTORE SERVICE AS SOON AS POSSIBLE AT NO EXPENSE TO THE OWNER.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH 45TH SW, NASA KSC ISC DUTY OFFICE SUPPORT, AND ALL UTILITY OWNERS THAT HAVE UTILITIES WITHIN THE LIMITS OF CONSTRUCTION FOR BOTH UTILITY IMPACTS AND UTILITY LOCATES.
7. IN CASE OF DISCREPANCIES BETWEEN ANY PORTION OF CONTRACT DOCUMENTS AND REFERENCED REQUIREMENTS, OWNER AND/OR REGULATORY AGENCIES WILL DETERMINE WHICH REQUIREMENT GOVERNS.
8. THE CONTRACTOR IS RESPONSIBLE FOR ANY WATER AND OTHER UTILITIES NEEDED TO ACCOMPLISH THE WORK. THE CONTRACTOR SHALL COORDINATE WITH NASA KSC OR USAF UTILITY CONTRACTOR COMPANIES FOR TEMPORARY SERVICES IF NEEDED AND IF AVAILABLE AND OBTAIN APPLICABLE METERS AND PERMITS IF NECESSARY. THE OWNER IS UNDER NO OBLIGATION TO PROVIDE TEMPORARY SERVICES.
9. PRIOR TO START OF WORK, THE CONTRACTOR SHALL ARRANGE TO HAVE A QUALIFIED EMPLOYEE FUNCTIONING IN THE CAPACITY OF CONSTRUCTION SUPERINTENDENT. THE CONSTRUCTION SUPERINTENDENT WILL BE REQUIRED TO BE ON-SITE AT ALL TIMES DURING CONSTRUCTION, WILL BE AUTHORIZED TO ACT ON THE CONTRACTOR'S BEHALF, AND WILL BE AVAILABLE FOR CONTACT AND TO BE ON SITE IF NEEDED, ON A 24 HOUR/DAY, 7 DAYS A WEEK BASIS.
10. NASA KSC, CCAFS AND CANAVERAL PORT AUTHORITY FACILITIES WILL BE ACTIVE DURING THE CONSTRUCTION OF THIS CONTRACT. THE CONTRACTOR WILL BE EXPECTED TO CONDUCT THE WORK SUCH THAT THE SAFETY OF OPERATIONS IS NOT REDUCED AND THAT THE OPERATIONS ARE MAINTAINED AT ALL TIMES, EXCEPT AS MAY BE SPECIFICALLY PROVIDED FOR IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS ADVISED AND SHALL ACCEPT AS AN IMPORTANT CONSIDERATION OF THE WORK, THAT THE MAINTENANCE OF SAFE, SECURE, AND EFFICIENT OPERATION OF THE FACILITIES IS AN INTEGRAL PART OF THE WORK, AND THAT SOME AREAS ARE RESTRICTED AND WORK IN THESE AREAS MAY NOT BE PERMITTED OR RESTRICTED DURING CERTAIN PORTIONS OF THE CONSTRUCTION PERIOD.
11. THE CONTRACTOR IS ADVISED THAT OTHER CONSTRUCTION ACTIVITIES MAY BE TAKING PLACE IN AND AROUND THE PROJECT AREA. CONTRACTOR IS REQUIRED TO COORDINATE THEIR ACTIVITIES WITH OTHER CONTRACTORS THAT MAY BE WORKING IN THE AREA.
12. THE CONTRACTOR IS ADVISED THAT ALL HIS/HER EMPLOYEES WORKING INSIDE THE CCAFS AND WITHIN NASA PROPERTY MUST CONFORM TO ALL FACILITY SECURITY REQUIREMENTS.
13. THE CONTRACTOR WILL BE RESPONSIBLE FOR ACQUIRING AND SUBMITTING ALL PERMITS REQUIRED FROM USAF, NASA KSC, FDOT, PORT CANAVERAL, BREVARD COUNTY OR OTHER GOVERNING AGENCIES THAT APPLY TO THIS PROJECT. CONTRACTOR SHALL OBTAIN NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION GENERIC PERMIT FOR STORMWATER DISCHARGES.

14. ALL UTILITY OUTAGES ASSOCIATED WITH NEW UTILITY INSTALLATION OR MODIFICATIONS OF EXISTING UTILITIES (I.E., POWER, WATER, SEWER, COMMUNICATIONS) SHALL BE COORDINATED WITH SPACE FLORIDA, CONSTRUCTION ENGINEERING AND INSPECTION (CEI), ENGINEER, NASA KSC, PORT CANAVERAL, AND USAF. WORK SHALL NOT BEGIN UNTIL APPROVAL HAS BEEN GRANTED BY NASA KSC, USAF, AND/ OR SPACE FLORIDA. ALL EXISTING FIXTURES SUCH AS WATER MAIN VALVES AND HYDRANTS SHOULD ONLY BE OPERATED BY AUTHORIZED NASA KSC OR USAF APPROVED CONTRACTORS, UNLESS EXPRESS PERMISSION OR OVERSIGHT IS PROVIDED. UTILITY OUTAGES FOR SUCH SYSTEMS MUST BE COORDINATED AND APPROVED THROUGH NASA KSC OR USAF PRIOR TO WORK BEING PERFORMED.
 15. CONTRACTOR SHALL ADHERE TO RULES AND REGULATIONS MANDATED BY USAF 45TH SPACE WING FOR CONSTRUCTION ACTIVITIES WITHIN CCAFS.
 16. THE CONTRACTOR SHALL LEGALLY DISPOSE OF, OFF OF USFS/NASA/FDOT/PORT CANAVERAL PROPERTY, ALL EXCESS OR UNUSABLE MATERIAL FROM ANY PORTION OF THIS CONTRACT'S CONSTRUCTION ACTIVITIES. THE COST OF ANY REMOVAL, DISPOSAL AND HAULING SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
 17. CONTRACTOR SHALL ADHERE TO RULES AND REGULATIONS MANDATED BY NASA KSC, USAF 45TH SPACE WING, FDOT, AND PORT CANAVERAL FOR CONSTRUCTION ACTIVITIES WITHIN THE PROJECT.
- SIGNAL NOTES
1. NO SOFT DIGS OR TEST HOLES WERE PERFORMED DURING THE ENGINEERING ANALYSIS. MAST ARM LOCATIONS WILL BE ADJUSTED TO ELIMINATE UTILITY CONFLICTS. DURING MOBILIZATION AND PRIOR TO THE CONSTRUCTION OF THE FOUNDATION, THE CONTRACTOR SHALL EXCAVATE 7 FEET DIAMETER HOLES 5' FEET DEEP TO ENSURE NO UTILITY CONFLICTS EXIST. THIS COST SHALL BE INCIDENTAL TO THE NEAREST PAY ITEM. IF STANDARD UTILITY CLEARANCES CANNOT BE ACHIEVED FOR SIGNAL FOUNDATIONS OR ROADWAY CONSTRUCTION, THE CONTRACTOR MAYBE REQUESTED TO EXPOSE AND PROTECT EXISTING CONFLICTING UTILITIES BY ENCASING WITH 12" CONCRETE ALL AROUND OR OTHER MEANS, THE CONFLICTING UTILITIES. THIS SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
 2. IT SHOULD BE NOTED THAT NO TEST BORINGS WERE MADE WHERE CONDUIT RUNS ARE TO BE INSTALLED BY JACKING, DIRECTIONAL BORING, OR TRENCHING. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE THE JOB SITE CONDITIONS BEFORE SUBMITTING BID PROPOSALS IN ACCORDANCE WITH THE SPECIFICATIONS.
 3. THE CONTRACTOR SHALL HAND DIG THE FIRST 4' AT EACH POLE LOCATION TO VERIFY NO UTILITY CONFLICTS.
 4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE RESPECTIVE UTILITY COMPANIES PRIOR TO INSTALLATION OF CONCRETE POLE ASSEMBLIES, MAST ARM ASSEMBLIES, PEDESTAL SIGNAL POLES, CONDUIT, OR ANY OTHER EXCAVATION OF ANY KIND.
 5. EXISTING SIGNALIZATION SHALL REMAIN IN PLACE AND FULLY OPERATIONAL TO THE EXTENT POSSIBLE AND SHALL BE USED FOR MAINTENANCE OF TRAFFIC AS REQUIRED. COST OF REMOVAL AFTER PROPOSED SIGNALS ARE IN PLACE SHALL BE INCLUDED IN THE SIGNALIZATION PAY ITEMS.
 6. THE CONTRACTOR SHALL VERIFY COLOR CODES FOR BOTH SIGNAL AND INTERCONNECT CABLE WITH THE MAINTAINING AGENCY BEFORE ORDERING. WIRING DIAGRAMS SHALL BE IN ACCORDANCE WITH FDOT SPECIFICATIONS.
 7. ALL CABLING MUST BE LABELED BY CABLE AND BY WIRE WITH PERMANENT LEGIBLE, WEATHERPROOF TAGS THAT ARE SECURELY ATTACHED TO EACH CABLE. ALL SPARES MUST BE LABELED AS SPARES IN ASSOCIATED RUN SUCH AS "WB ARM" FOR THE WESTBOUND MAST ARM SPARES. LABELING MUST BE ATTACHED TO CABLE NEAR THE TERMINATION POINT.
 8. CABINET WIRING IS TO BE NEATLY BUNDLED, SEPARATED, AND WIRING SLACK SHALL BE STORED IN NEAREST PULL BOXES AND NOT IN THE CABINET.
 9. SIX FEET OF ADDITIONAL SIGNAL CABLE SLACK SHALL BE WOUND INSIDE THE UPRIGHT AND SUPPORTED BY THE CABLE CLAMP SUCH THAT THE TERMINAL BLOCK CAN BE REMOVED FROM THE UPRIGHT TO ALLOW FOR TROUBLE SHOOTING.
 10. THE CABLE GRIP SHALL BE OF SUFFICIENT SIZE TO NOT COMPROMISE THE INSULATION ON THE SIGNAL CABLE.
 11. PULL BOXES SHALL BE INSTALLED A MINIMUM OF 5 FEET BEHIND CURB. PULL BOXES SHALL BE INSTALLED 7 FEET FROM EDGE OF PAVEMENT WHERE CURB IS NOT PRESENT.

12. ALL PULL BOXES AND COVERS ARE TO BE OF APPROVED DESIGN AND MATERIALS AND SHALL BE CONSTRUCTED OF NON-METALLIC COMPOSITE MATERIAL. ALL PULL BOX COVERS SHALL HAVE THE APPROPRIATE IDENTIFICATION LABELS "TRAFFIC SIGNAL" MOLDED IN TO THE MATERIAL.
 13. DIRECTIONALLY DRILLED CONDUIT RUNS SHALL INCLUDE A SPARE CONDUIT AT THE DROP-IN PRICE. THE SPARE CONDUIT SHALL BE TURNED UP AND CAPPED IN THE SAME PULL BOX AS THE REQUIRED BORED CONDUIT.
 14. ALL SIGNAL HEADS SHALL BE CONSTRUCTED EXCLUSIVELY OF POLYCARBONATE MATERIAL, BLACK IN COLOR, WITH TUNNEL VISORS, AND SHALL BE SUPPLIED WITH L.E.D. OPTICAL ASSEMBLIES /ALL INDICATIONS.
 15. EXISTING LOOPS DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
 16. EXISTING SECTION CORNERS, ¼SECTION CORNERS, PROPERTY CORNERS, OR MONUMENTS TO BE DISTURBED BY CONSTRUCTION SHALL BE REFERENCED AND RESET BY A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF FLORIDA.
 17. THE MAINTAINING AGENCY FOR TRAFFIC SIGNALS AT GROUPEL ROAD/SR-401 SHALL BE BREVARD COUNTY TRAFFIC ENGINEERING OPERATIONS. THE SIGNALS WITHIN POSIEDON AVE AND SR-401 ARE MAINTAINED BY USAF. ALL OTHER SIGNALS ARE MAINTAINED BY NASA KSC. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY, IN WRITING, THE AGENCIES BELOW AND PROVIDE A MINIMUM NOTICE OF THREE BUSINESS DAYS PRIOR TO THE START OF TRAFFIC SIGNAL INSTALLATION OR ANY WORK WHICH MAY IMPACT THE NORMAL OPERATION OF ANY EXISTING TRAFFIC SIGNAL.
- BREVARD COUNTY TRAFFIC ENGINEERING/OPERATIONS
580 MANOR DRIVE
MERRITT ISLAND, FLORIDA 32952
(321) 455-1440
- NASA KSC
JEFFERY BEYERS
PROJECT MANAGER AND SPACE FLORIDA LIAISON
(321) 867-6215
- NASA KSC
MICHAEL CANNON
TRAFFIC SIGNALS MAINTENANCE
(321) 861-5029
- USAF 45TH/CCAFS
GREG DEAL
PROJECT MANAGER AND SPACE FLORIDA LIAISON
(321) 853-0919
- CANAVERAL PORT AUTHORITY
PATRICK HAMMOND, PE
PROJECT MANAGER CONSTRUCTION
321- 394-3419.
18. THE CONTRACTOR SHALL COORDINATE THE FINAL ACCEPTANCE INSPECTION IN ACCORDANCE WITH FDOT SPECIFICATIONS 611-2.2 WITH BOTHE THE ENGINEER OF RECORD AND THE MAINTAINING AGENCY AT LEAST TEN DAYS IN ADVANCE SO THAT THEY CAN BE PRESENT. SIGNAL INSTALLATION INSPECTION REQUIREMENTS SHALL BE IN ACCORDANCE WITH FDOT SPECIFICATION 105-8.9.
 19. THE CONTRACTOR IS REQUIRED TO INSPECT THE INSTALLATION OF THE TRAFFIC SIGNALS IN ACCORDANCE WITH FDOT SPECIFICATION 105-5.10. THE CONTRACTOR SHALL COORDINATE THE FINAL ACCEPTANCE INSPECTION IN ACCORDANCE WITH FDOT SPECIFICATION 611-2.2 WITH THE ENGINEER AT LEAST TEN DAYS IN ADVANCE. THE MAINTAINING AGENCY AND RAY MARLIN AT (386)943-5318 SHOULD ALSO BE CONTACTED TEN DAYS BEFORE THE INSPECTION IS TO BE PERFORMED SO THEY MAY BE PRESENT.
 20. AT TIME OF FINAL PROJECT INSPECTION, THE CONTRACTOR SHALL FURNISH TO THE INSPECTOR THREE COMPLETE SETS OF AS-BUILT PLANS. ONE SET SHALL BE LEFT IN CABINET (WHICH SHOULD BE IN A WEATHER PROOF) AND TWO SHALL BE GIVEN TO THE LOCAL MAINTAINING AGENCY.
 21. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ELEVATIONS PRIOR TO ORDERING AND FABRICATION OF MAST ARMS.

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DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
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GENERAL NOTES (1)

22. THE EQUIPMENT, INSTALLATION, AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION /FDOT SPECIFICATIONS AND THE FOLLOWING, UNLESS OTHERWISE NOTED:

A. FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION AND WORKBOOK.

B. FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD PLANS LATEST EDITIONS AND MODIFICATIONS.

C. BREVARD COUNTY SUPPLEMENTAL SPECIFICATIONS FOR SIGNALIZATION AND HIGHWAY LIGHTING, LATEST EDITION.

D. IF CONFLICTS ARISE, THE BREVARD COUNTY SUPPLEMENTAL SPECIFICATIONS SHALL GOVERN.

PAY ITEM NOTES

1. THE CONTRACTOR SHALL BID ON THE SPACE FLORIDA BID FORM PAY ITEMS PROVIDED FOR A SINGLE LUMP SUM PRICE FOR EACH COMPLETE AND OPERATIONAL SIGNALIZED INTERSECTION. THE CONTRACTOR SHOULD READ THE CONTRACT DOCUMENTS FOR THE REQUIREMENTS FOR CONSTRUCTION SCOPE OF WORK, INCIDENTALS, INSURANCE AND CONTRACTUAL OBLIGATIONS, AND INCLUDE THE COSTS IN THE CONTRACTOR'S BID UNDER THE NEAREST APPLICABLE BID ITEM.

2. ALL FDOT PAY ITEMS, DESCRIPTIONS AND QUANTITIES PROVIDED ARE FOR INFORMATIONAL PURPOSES.

3. THE OWNER'S ALLOWANCE MANAGEMENT SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT. AS APPROVED BY SPACE FLORIDA, THE OWNER'S ALLOWANCE IS TO BE UTILIZED FOR UNFORESEEN CONDITIONS, UTILITY RELOCATION EXPENSES, FPL POWERLINES DE-ENERGIZING, AND OTHER USAF/NASA EXPENSES.

4. ALL UTILITIES COORDINATION ON THIS PROJECT SHALL BE CONSIDERED INCIDENTAL TO THE NEAREST APPLICABLE PAY ITEM FOR EACH COMPLETE AND OPERATIONAL SIGNALIZED INTERSECTION.

5. ALL SALVAGABLE ITEMS (SIGNALS AND MAST ARMS) SHALL BECOME PROPERTY OF THE LAND OWNERS. AS APPLICABLE, DISPOSAL OF NON SALVAGABLE ITEMS FROM LAND OWNED BY USAF OR NASA KSC, SHALL BE DISPOSED OF AS DIRECTED BY USAF OR NASA KSC.

6. 110-1-1 PAY ITEM SHALL INCLUDE THE COST OF TREE AND STUMP REMOVAL NECESSARY FOR SIGNAL INSTALLATION.

7. 649-26-3 PAY ITEM SHALL INCLUDE THE COST OF TRIMMING THE LENGTH OF ARM AS CALLED FOR IN THE PLAN SHEETS, CAPPING THE ENDS OFF, CUTTING THE SIGNAL WIRE TO THE NEW LENGTH AND DISPOSAL.

8. 649-26-7 PAY ITEM SHALL INCLUDE THE COST OF REMOVING THE EXISTING WB ARM AND ATTACHMENTS, AS WELL AS CAPPING OFF THE FLANGE AT THE UPRIGHT AT THE POSEIDON AVENUE AND PHILLIPS PARKWAY INTERSECTION.

9. 650-1-70: PAY ITEM TO COVER ALL NECESSARY ITEMS TO RECONNECT SIGNAL HEAD TO EXISTING MAST ARM, INCLUDING WIRING AND ACCESS TO WIRING FROM MAST ARM.

10. 660-4-11 & 660-4-12 PAY ITEM SHALL INCLUDE THE COST OF SUNSHIELDS AND POINT DISCHARGE DISSIPATION TERMINALS FOR EACH CAMERA. AN INTEGRATED MENU-DRIVEN INTERFACE, COAX LINE PROTECTORS AND CAMERA POWER PROTECTORS ARE ALSO INCLUDED, AND REQUIRED, UNDER THIS PAY ITEM. COORDINATE WITH THE MAINTAINING AGENCY LISTED ON THE PLANS TO SELECT A SYSTEM THAT IS COMPLIANT WITH THEIR EXISTING EQUIPMENT.

11. 670-5-400 PAY ITEM TO COVER ALL NECESSARY ITEMS TO RECONNECT SIGNAL HEAD TO EXISTING MAST ARM AND CABINET, INCLUDING DRILLING THE CABINET FOUNDATION IF SPARES ARE UNUSABLE/UNAVAILABLE, WIRING AND ACCESS TO WIRING FROM MAST ARM.

SAFETY AND SECURITY NOTES

1. NASA KSC BADGING - ALL CONTRACTOR AND SUBCONTRACTOR PERSONNEL NEEDING ACCESS TO THE NASA KSC SHALL OBTAIN A BADGE VIA THE NASA BADGING ID STATION LOCATED ON SR 405 NASA PARKWAY WEST OF KSC MAIN GATE. APPLICATION FORMS SHALL BE REQUESTED FROM SPACE FLORIDA; ONCE COMPLETED AND SIGNED THEY SHALL BE SUBMITTED TO SPACE FLORIDA FOR FINAL SIGNATURES. SPACE FLORIDA WILL FORWARD BADGING FORMS TO NASA KSC; NASA KSC RESERVES THE RIGHTS TO DENY BADGES DEPENDENT ON SECURITY AND BACKGROUND CHECKS. ALL CONTRACTOR PERSONNEL SHALL PROVIDE TWO FORMS OF VALID U.S. IDENTIFICATION MEDIA. THE BADGES ARE FREE; HOWEVER, THERE IS A CHARGE FOR LOST BADGES. TYPICALLY, IT TAKES APPROXIMATELY 3 BUSINESS DAYS.

2. USAF CCAFS BADGING - ALL CONTRACTOR AND SUBCONTRACTOR PERSONNEL NEEDING ACCESS TO THE USAF CCAFS SHALL OBTAIN A BADGE VIA THE CCAFS BADGING ID STATION LOCATED ON SR 401 PHILLIPS PARKWAY WEST OF CCAFS MAIN GATE. APPLICATION FORMS SHALL BE REQUESTED FROM SPACE FLORIDA; ONCE COMPLETED AND SIGNED THEY SHALL BE SUBMITTED TO SPACE FLORIDA FOR FINAL SIGNATURES. SPACE FLORIDA WILL FORWARD BADGING FORMS TO USAF; USAF RESERVES THE RIGHTS TO DENY BADGES DEPENDENT ON SECURITY AND BACKGROUND CHECKS. ALL CONTRACTOR PERSONNEL SHALL PROVIDE TWO FORMS OF VALID U.S. IDENTIFICATION MEDIA. THE BADGES ARE FREE; HOWEVER, THERE IS A CHARGE FOR LOST BADGES. TYPICALLY, IT TAKES APPROXIMATELY 3 BUSINESS DAYS.

3. VEHICLE/EQUIPMENT INSPECTIONS: ALL CONTRACTOR, VENDOR, AND SUBCONTRACTOR PERSONNEL VEHICLES AND EQUIPMENT SHALL ADHERE TO NASA KSC AND CCAFS REQUIREMENTS. THESE MUST GO THROUGH THE SECURITY CHECK LOCATED AT THE RESPECTIVE BADGING STATIONS. EVERYONE NEEDING TO ACCESS KSC AND CCAFS WILL BE REQUIRED TO HAVE AN APPROVED BADGE.

4. GROUND CONTROL - CONTRACTOR VEHICLES WILL NOT BE PERMITTED ON SECURED AREAS WITHIN NASA KSC AND CCAFS. CONTRACTOR SHALL ENSURE CONTRACTOR PERSONNEL AND VEHICLE REFRAIN FROM TOURING OTHER AREAS OF NASA KSC AND CCAFS.

5. ROADWAY CLOSURES - ROADS SHALL NOT BE CLOSED WITHOUT APPROVAL OF SPACE FLORIDA, NASA KSC, USAF, FDOT AND PORT CANAVERAL. A MINIMUM OF SEVEN DAYS WRITTEN NOTICE OF REQUESTED CLOSING SHALL BE SUBMITTED TO LAND OWNERS VIA SPACE FLORIDA, WHO WILL COORDINATE THE REQUEST WITH USAF/NASA KSC/FDOT/PORT CANAVERAL.

6. OPEN TRENCHES ANY CONSTRUCTION ACTIVITY OR OPEN TRENCHES SHALL BE CLEARLY MARKED, AND ALL TRENCHING MUST BE CONSTRUCTED TO MEET THE TRENCH SAFETY ACT.

7. STOCKPILE, EROSION AND DUST CONTROL STOCKPILED MATERIAL AND DUST CONTROL SHALL BE TREATED IN SUCH A MANNER AS TO PREVENT MOVEMENT RESULTING FROM WIND CONDITIONS IN EXCESS OF 10 KNOTS OR RAIN WASHOUTS.

8. INSPECTIONS - UPON COMPLETION OF THE CONTRACTOR'S WORK AND PRIOR TO OPENING FOR USE, THE CONTRACTOR WILL ARRANGE FOR INSPECTIONS BY SPACE FLORIDA, NASA KSC, USAF, PORT CANAVERAL, FDOT OR OTHER REGULATORY AGENCIES (IF APPLICABLE) FOR CONFORMANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

9. STAGING/STORAGE AREA - THE CONTRACTOR SHALL USE AN APPROVED STAGING AREA BY SPACE FLORIDA, NASA KSC, USAF, FDOT, PORT CANAVERAL AND SHALL BE RESPONSIBLE FOR THE SECURITY AND SAFETY OF THEIR EQUIPMENT AND MATERIALS.

10. CONTRACTOR ACTIVITIES ARE RESTRICTED TO THE AREA WITHIN THE IMMEDIATE PROJECT CONSTRUCTION LIMITS EXCEPT FOR ACCESS TO THE SITE. ALL MATERIALS DELIVERY VENDORS AND SUBCONTRACTOR SHALL BE

11. SPILLS: CCAFS AND NASA KSC HAS SPECIFIC PROCEDURES FOR SPILLS. ALL SPILLS MUST BE REPORTED TO CCAFS CAPE SUPPORT AT 321-853-5211 OR NASA KSC DUTY OFFICE: 321-861-5050.

12. HAZARDOUS/CONTROLLED WASTE: IN THE EVENT HAZARDOUS WASTE IS GENERATED FOLLOW CCAFS HAZARDOUS WASTE MANAGEMENT PLAN AND CONTACT 321-853-6985.

PROJECT PHASING AND SCHEDULING NOTES

1. ALL WORK FOR THIS PROJECT SHALL BE COMPLETED AS FOLLOWS AND AS ESTABLISHED BETWEEN THE WINNING CONTRACTOR AND SPACE FLORIDA.

A. MOBILIZATION/LEAD TIME 90 CALENDAR DAYS (CONTRACTOR WILL BE PERMITTED TO PERFORM CONSTRUCTION ACTIVITIES WITHIN THIS TIMEFRAME)

B. CONSTRUCTION/SUBSTANTIAL COMPLETION 60 CALENDAR DAYS

C. FINAL COMPLETION 30 CALENDAR DAYS

2. TYPICAL CONSTRUCTION HOURS FOR THIS PROJECT ARE FROM 0700 TO 1800 HOURS. ANY CONSTRUCTION ACTIVITIES OUTSIDE OF THIS TIME FRAME SHALL BE COORDINATED WITH SPACE FLORIDA AND RESPECTIVE LAND OWNERS.

3. CONTRACTOR SHALL BE PERMITTED TO WORK SIMULTANEOUSLY AT ALL INTERSECTIONS ON THE PROJECT; HOWEVER, MAINTENANCE OF TRAFFIC MEASURES MEETING THE REQUIREMENTS OF FDOT SHALL BE IN PLACE. CONTRACTOR MAYBE REQUESTED TO ALTER THE MOT OR WORKING SCHEDULES AS KSC AND CCAFS FREQUENTLY HAVE LARGE LAUNCH/MISSION SPECIFIC INFRASTRUCTURE THAT GET TRANSPORTED THROUGHOUT THE LIMITS OF THE PROJECT.

4. CAPE CANAVERAL SPACEPORT (KSC AND CCAFS) HAS MANDATED "NO DIG DAYS" DUE TO LAUNCHES/OPERATIONAL RESTRICTIONS; THEREFORE, PRIOR TO DIGGING OR AT THE BEGINNING OF THE WORK DAY, CONTRACTOR SHALL ENSURE AREAS WHERE THE DIGGING IS TO OCCUR ARE NOT WITHIN "NO DIG DAY" ZONES. PRIOR TO EXCAVATION, THE CONTRACTOR SHALL DAILY CONTACT USAF CAPE SUPPORT DUTY OFFICE AT 321-853-5211 FOR CRITICAL DAY STATUS. PRIOR TO EXCAVATION, THE CONTRACTOR SHALL DAILY CONTACT NASA KSC ISC DUTY OFFICE AT 321-861-5050 FOR CRITICAL DAY STATUS.

5. WHEN ROAD CONSTRUCTION WORKERS ARE INSIDE ANY OF THE QUANTITY-DISTANCE (QD) ARCS FOR EXPLOSIVES SAFETY PURPOSES ON CCAFS, THEN A RISK ASSESSMENT (RA) NEEDS TO BE ACCOMPLISHED AND COORDINATED WITH USAF SW/SEW. IF ON NASA KSC SIDE, THIS NEEDS TO BE COORDINATED WITH THE APPROPRIATE NASA CONTACTS.

TEMPORARY TRAFFIC CONTROL NOTES

1. PLACE A PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) 14 DAYS IN ADVANCE OF THE PROPOSED CONSTRUCTION START DATE ALONG THE APPROACHES TO THE PROJECT LIMITS AT LEAST 500 FEET IN ADVANCE OF THE WORK ZONE LIMITS SUGGESTED MESSAGES:

CONST
BEGINS

MONTH
DAY

2. PLACE ADVANCE WARNING SIGNS, WORK ZONE SIGNS, AND TRAFFIC CONTROL DEVICES AS REQUIRED PER 2019 / 2020 STANDARD PLAN INDEXES 102-612 AND 102-613.

3. USING INDEXES 102-612 AND 102-613, CLOSE LANE ADJACENT TO AREA ADJACENT TO SIGNAL INSTALLATION.

4. EACH DAY PRIOR TO ANY WORK REQUIRING TRAFFIC CONTROL, THE CONTRACTOR SHALL NOTIFY THE KSC DUTY OFFICE (321-861-5050) OR CAPE SUPPORT (321-853-5211) AS APPROPRIATE.

CIVIL/UTILITIES NOTES

1. THE UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE AND WERE OBTAINED FROM BEST INFORMATION AVAILABLE. THESE ARE APPROXIMATE AND MUST BE FIELD EXPOSED WITHIN 5 FEET OF SIGNAL FOUNDATIONS AND OTHER PROPOSED UNDERGROUND IMPROVEMENTS OF THE PROJECT. THE UTILITIES PROVIDED IDENTIFIED DURING THE GEOTECHNICAL BORINGS DIG PERMITTING PROCESS INCLUDED, BUT ARE NOT LIMITED TO:

SUNSHINE 811 (CELL) (800)-432-4770

LEVEL 3 COMMUNICATIONS (801)-364-1063

ATT (800)-778-9140

BRIGHT HOUSE (800)-778-9140

COCOA WATER (321)-433-8404

CENTURY LINK (877)-366-8344

CITY GAS (321)-288-1126/(786)-459-3655

FPL (800)-778-9140

NASA KSC LOCATOR SUPPORT (321)-749-4840

USAF/CCAFS COMM LOCATES (321)-853-2141

USAF/CCAFS UTILITIES (321)-423-0582

SEAPORT CANAVERAL (321)-785-2713.

2. ALL EXISTING DRAINAGE/STORMWATER STRUCTURES AND FEATURES ARE TO REMAIN OPERATIONAL IN THEIR EXISTING CAPACITY UNLESS OTHERWISE NOTED.

3. THE CONTRACTOR SHALL VERIFY THAT ALL REQUIRED CLEARANCES CAN BE MET, AND IF ANY CANNOT BE MET, THE CONTRACTOR SHALL NOTIFY THE OAR/ENGINEER/CEI IN WRITING A MINIMUM OF 14 WORKING DAYS PRIOR TO CONSTRUCTING ANY SUCH ITEM.

4. THE CONTRACTOR SHALL NOTIFY THE OAR/ ENGINEER/CEI IN WRITING A MINIMUM OF 14 WORKING DAYS PRIOR TO MAKING ANY CONNECTION TO THE WATER, SEWER, COMMUNICATION, ELECTRIC, OR OTHER UTILITY SERVICE. ADDITIONALLY, THE CONTRACTOR SHALL OBTAIN WRITTEN AUTHORIZATION FROM THE CONTRACTING OFFICER A MINIMUM OF 14 WORKING DAYS PRIOR TO INTERRUPTING WATER, SEWER, COMMUNICATION, ELECTRICAL, OR OTHER UTILITY SERVICE.

5. CONTRACTOR SHALL HAND EXCAVATE WITHIN 4 FEET OF ALL EXISTING UNDERGROUND UTILITIES.

6. REGRADE AREAS SURROUNDING THE IMPROVEMENTS TO PROVIDE POSITIVE DRAINAGE AND PREVENT LOCALIZED PONDING OR LOW SPOTS IN BETWEEN THE FOUNDATIONS.

7. ALL EXCAVATIONS, CORING, AND DIGGING OPERATIONS ASSOCIATED WITH CONSTRUCTION WITHIN CCAFS AND KSC LIMITS REQUIRE A DIG PERMIT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING DIG PERMITS, INCLUDING LOCATOR SERVICES SPECIFIC FOR KSC, CCAFS, AND SUNSHINE 811 SERVICE FOR THE PROJECT. ALL DIGGING ACTIVITIES SHALL BE COORDINATED, DEPENDING ON LOCATION, WITH USAF 45TH SW CAPE SUPPORT, NASA KSC ISC DUTY OFFICE SUPPORT, SPACE FLORIDA, AND SPACE FLORIDA CEI, EACH DAY PRIOR TO COMMENCING ANY DIGGING OR EXCAVATION WORK.

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8. NASA KSC DIG PERMIT: ALL CONSTRUCTION WITHIN KSC REQUIRE A DIG PERMIT VIA, "KSC FORM 26-312V3 NS (REV. 08/09)". AN APPROVED DIG PERMIT NUMBER SHALL BE REQUIRED FOR PERMISSION TO PROCEED. DIG PERMIT AND SPECIFIC LOCATOR SERVICES CAN BE OBTAINED THROUGH 321-749-4840. WHEN THE LOCATOR SERVICE (INCLUDING SUNSHINE 811 SERVICE) HAS BEEN COMPLETED, THE DIG PERMIT WILL BE ISSUED BY KSC.

9. CCAFS DIG PERMIT: ALL CONSTRUCTION WITHIN CCAFS LIMITS REQUIRE A DIG PERMIT VIA, "USAF AF FORM 332/103". AN APPROVED DIG PERMIT NUMBER SHALL BE REQUIRED FOR PERMISSION TO PROCEED. REQUIRED FORMS INCLUDE FORM 332 (WORK REQUEST FORM) AND FORM 103 (WORK CLEARANCE FORM). FORM 332 (PREPARED BY THE CONTRACTOR) DEFINES THE PROJECT AND RESULTS IN FORM 103 (PREPARED BY THE USAF) DEFINING THE WORK REQUIREMENTS. FORM 103 IDENTIFIES EXCAVATION RESTRICTIONS AND REQUIRES THE CONTRACTOR TO CONTACT LOCATOR SERVICES FOR UTILITIES, COMM LINES, ENVIRONMENTAL, AND SUNSHINE811SERVICE. WHEN FORM 103 HAS BEEN COMPLETED BY THE CONTRACTOR, THE CONTRACTOR WILL THEN BE ISSUED A DIG PERMIT BY CCAFS. CONTRACTOR WILL BE REQUIRED TO SIGN THE FINAL DIG PERMIT AFTER ALL APPROVAL ARE GRANTED; A COPY WILL NEED TO BE SUBMITTED TO USAF AND SPACE FLORIDA.

10. ALL WORK ACTIVITES WITHIN THE INTERSECTION OF GROUPER ROAD/SR-401 INTERSECTION SHALL BE HANDLED AS STATE PROPERTY AND LOCATOR SERVICES SHALL BE OBTAINED PRIOR TO ANY EXCAVATION. IN ADDITION, SEAPORT CANAVERAL SHALL BE CONTACTED TO LOCATE THE FUEL LINE WITHIN THE VICINITY OF THE PROJECT: ADAM LOCKE, SEAPORT CANAVERAL MAINTENANCE MANAGER, 321-785-2713. THE CANAVERAL PORT AUTHORITY CONTACT WILL BE PATRICK HAMMOND, PE, PROJECT MANAGER CONSTRUCTION, 321- 394-3419.

11. ALL DESIGN DEVELOPMENT AND/OR CONSTRUCTION SHALL COMPLY WITH THE CAPE CANAVERAL SPACEPORT DEVELOPMENT MANUAL (LATEST VERSION), FOUND ON THE SPACE FLORIDA WEBSITE.

12. CONTRACTOR SHALL CONTACT USAF NATURAL RESOURCES OFFICE AT LEAST 3 WEEKS PRIOR TO MOBILIZATION AT 321-853-6822/321-794-5268/321-853-0964 TO DETERMINE IF ANY WILDLIFE OR HABITAT NEEDS TO BE PROTECTED FOR ALL ACTIVITIES WITHIN SR 401 AND POSEIDON AVE/CCAFS PROPERTY.

13. CONTRACTOR SHALL CONTACT SPACE FLORIDA AT LEAST 3 WEEKS PRIOR TO MOBILIZATION TO DETERMINE IF ANY WILDLIFE OR HABITAT NEED TO BE PROTECTED FOR ALL ACTIVITIES WITHIN NASA KSC LIMITS. THIS PROJECT WAS GRANTED A RECORD OF ENVIRONMENTAL CONSIDERATIONS NO. 10678. REC #: 10678 WHICH IS PROVIDED AS AN APPENDIX TO THE PROJECT MANUAL.

14. CONTRACTOR SHALL COMPLY WITH THE NASA KSC RECORD OF ENVIRONMENTAL CONSIDERATIONS NO. 10678 REQUIREMENTS ASSOCIATED WITH CONSTRUCTION IMPACTS AND CONSTRUCTION MATERIALS/WASTE CLEANUP.

15. CONTRACTOR SHALL COORDINATE WITH USAF ENVIRONMENTAL ALL CONCRETE WASHOUT AREAS, AND REMOVAL OF CONSTRUCTION WASTE.

16. FPL POWERLINE AT NASA PARKWAY/KSC NORTH VISITOR COMPLEX ENTRANCE:
- NO CONSTRUCTION WILL BE ALLOWED WITHIN 15 FEET (RADIALY) OF THE CLOSEST FPL LINE ALONG NASA PARKWAY. THIS COMPLIES WITH THE OSHA REQUIREMENTS.

- WHEN THE LINE NEEDS TO BE DEENERGIZED IT WILL COST APPROX. \$10,000/DAY WHICH WILL BE PAID OUT OF THE OWNER'S ALLOWANCE ACCOUNT. A "REQUEST" WILL BE PUT IN BY THE CONTRACTOR. THESE REQUESTS NEED TO BE COORDINATED BY THE CONTRACTOR 30 CALENDAR DAYS PRIOR TO BEGINNING OF CONSTRUCTION ACTIVITIES WITH FPL.

- CONTRACTOR DEENERGIZING REQUESTS CAN BE FURTHER DELAYED BY FPL DUE TO OTHER ON-GOING WORK ORDER OR EMERGENCIES.

- ALTERNATELY, IF POSSIBLE, THE CONTRACTOR CAN UTILIZE A LOWER RIG TO MAINTAIN THE 15 FEET CLEARANCE FROM THE LOWEST/CLOSEST FPL LINE. THIS SHOULD BE CONSIDERED AND EXAMINED BY THE CONTRACTOR DURING THE SITE INVESTIGATIONS AND PRIOR TO PREPARING THE BIDS.

- PERMANENT OBSTRUCTION OR THE TOP OF NEW MAST ARMS CANNOT BE WITHIN 9 FEET (RADIALY) OF THE LOWEST/CLOSEST FPL LINE.

- FOR PLANNING PURPOSES, THE LOW SAG POINT, BETWEEN POLES ON EAST/WEST SIDE OF THE EXISTING SIGNAL AT KSC NORTH VISITOR COMPLEX/NASA PKWY, IS APPROXIMATELY 31 FEET.

REVISIONS				AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 C.A. NO. 8115 PATRICK B. NEVAH, P.E. NO. 72369	SPACE FLORIDA EDTPF SIGNALIZATION PLANS			GENERAL NOTES (3)	SHEET NO. T-4
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					BREVARD	439053-1-54-01			

TABULATION OF QUANTITIES ** FOR INFORMATIONAL PURPOSES ONLY**

FDOT PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS													
			T-6		T-7		T-8		T-9		T-10		T-11		T-12	
			PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL
101-1	MOBILIZATION	LS														
102-1	MAINTENANCE OF TRAFFIC	LS														
104-10-3	SEDIMENT BARRIER	LF	308		518				142		83		248		400	
104-11	FLOATING TURBIDITY BARRIER	LF	120		60											
110-1-1	CLEARING AND GRUBBING	LS	1		1				1		1		1		1	
630-2-11	CONDUIT, FURNISH & INSTALL, OPEN TRENCH	LF	145		316				28		22		140		194	
630-2-12	CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE	LF	158		204				238		148		105		243	
632-7-1	SIGNAL CABLE - NEW OR RECONSTRUCTED INTERSECTION, F&I	PI	1		1				1		1		1		1	
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24" COVER SIZE	EA	5		13				3		4		3		8	
646-1-11	ALUMINUM SIGNALS POLE, FURNISH & INSTALL, PEDESTAL	EA			1				1		3				1	
646-1-60	ALUMINUM SIGNALS POLE, REMOVE	EA									3					
649-21-6	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 50'	EA	2		1										1	
649-21-10	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 60'	EA			1										1	
649-21-21	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 78'	EA											1			
649-26-3	STEEL MAST ARM ASSEMBLY, REMOVE, SHALLOW	EA	1		2		1		1				1		1	
649-26-7	STEEL MAST ARM ASSEMBLY, REMOVE, REMOVE ARM AND ATTACHMENTS; POLE REMAINS	EA											1		1	
650-1-11	TRAFFIC SIGNAL, F&I, ALUMINUM, 1 SECTION, 1 WAY	AS			1										1	
650-1-14	TRAFFIC SIGNAL, F&I, ALUMINUM, 3 SECTION, 1 WAY	AS			9				4		6		4		6	
650-1-19	TRAFFIC SIGNAL, F&I, ALUMINUM, 5 SECTION, 1 WAY	AS													2	
650-1-70	TRAFFIC SIGNAL, RELOCATE- INCLUDES REMOVAL AND REINSTALLATION	AS					1		2							
660-4-11	VEHICLE DETECTION SYSTEM - VIDEO, F&I, CABINET EQUIPMENT	EA	1		2										1	
660-4-12	VEHICLE DETECTION SYSTEM - VIDEO, F&I, ABOVE GROUND EQUIPMENT	EA	1		2										1	
670-5-400	TRAFFIC CONTROLLER ASSEMBLY, MODIFY	AS	1		1				1		1		1		1	
700-1-11	SINGLE POST SIGN, F&I GROUND MOUNT, UP TO 12 SF	AS			1				1						1	
700-3-201	SIGN PANEL, FURNISH & INSTALL OVERHEAD MOUNT, UP TO 12 SF	EA											1			
700-3-202	SIGN PANEL, FURNISH & INSTALL OVERHEAD MOUNT, 12-20 SF	EA	1													
711-11-125	THERMOPLASTIC, STANDARD, WHITE, SOLID, 24" FOR STOP LINE AND CROSSWALK	LF									12		20			
711-17	THERMOPLASTIC, REMOVE EXISTING THERMOPLASTIC PAVEMENT MARKINGS: NON-CONFLICTING ONLY	SF									24		50			

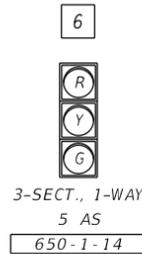
TABULATION OF QUANTITIES				SUMMARY OF EROSION AND SEDIMENT CONTROL DEVICES									
SPACE FLORIDA BID FORM PAY ITEM	DESCRIPTION	UNIT	GRAND TOTAL		LOCATION STA. TO STA.		SIDE	SEDIMENT BARRIER		FLOATING TURBIDITY BARRIER		DESIGN NOTES	CONSTRUCTION REMARKS
			PLAN	FINAL				0104 10 3		0104 11			
								LF		LF			
1	NASA PARKWAY @ SPACE COMMERCE WAY	LS	1										
2	NASA PARKWAY @ KSC VISITOR CENTER NORTH ENTRANCE	LS	1		1093+90.00	to	1094+60.00	RT			120.0		
3	NASA PARKWAY @ KENNEDY PARKWAY	LS	1		1094+50.00	to	1094+70.00	LT	108.0				
4	KENNEDY PARKWAY @ SCHWARTZ ROAD	LS	1		1095+20.00	to	1097+15.00	RT	193.0				
5	KENNEDY PARKWAY @ SATURN CAUSEWAY	LS	1		1137+90.00	to	1140+40.00	LT	300.0				
6	SR-401 @ GROUPER ROAD	LS	1		1138+50.00	to	1138+90.00	RT	65.0				
7	PHILLIPS PARKWAY @ POSEIDON AVENUE	LS	1		1140+30.00	to	1140+30.00	RT			60.0		
8	OWNER'S ALLOWANCE	LS	1		1140+30.00	to	1141+40.00	RT	154.0				
					1320+90.00	to	1321+05.00	RT	38.0				
					1322+30+00	to	1322+45.00	RT	45.0				
					1322+25.00	to	1322+60.00	RT	59.0				
					1387+90.00	to	1388+10.00	LT	38.0				
					1388+75.00	to	1388+90.00	LT	45.0				
					3011+75.00	to	3013+30.00	LT	203.0				
					3013+10.00	to	3013+30.00	RT	45.0				
					3049+80.00	to	3050+30.00	LT	196.0				
					3050+50.00	to	3051+25.00	RT	61.0				
					3052+15.00	to	3053+05.00	RT	143.0				
					SUB-TOTAL				1693.0		180.0		
					TOTAL				1693		180		

ALL SILT FENCE AND TURBIDITY BARRIER LIMITS SHOWN ARE APPROXIMATE. CONTRACTOR TO ADJUST TO MINIMIZE CONSTRUCTION IMPACTS AND TO KEEP OUT OF SWALES/CANALS, TO ENSURE CONSTRUCTION DEBRIS/RUNOFF IS CONTAINED. FINAL LOCATIONS SHALL BE APPROVED BY ENGINEER/OWNER/CEI CONSULTANT.

<table border="1"> <thead> <tr><th colspan="4">REVISIONS</th></tr> <tr><th>DATE</th><th>DESCRIPTION</th><th>DATE</th><th>DESCRIPTION</th></tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>				REVISIONS				DATE	DESCRIPTION	DATE	DESCRIPTION					AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 C.A. NO. 8115 PATRICK B. NEVAH, P.E. NO. 72369		SPACE FLORIDA EDTPF SIGNALIZATION PLANS <table border="1"> <tr><th>ROAD NO.</th><th>COUNTY</th><th>FINANCIAL PROJECT ID</th></tr> <tr><td> </td><td>BREVARD</td><td>439053-1-54-01</td></tr> </table>			ROAD NO.	COUNTY	FINANCIAL PROJECT ID		BREVARD	439053-1-54-01	SHEET NO. T-5	
REVISIONS																												
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID																										
	BREVARD	439053-1-54-01																										

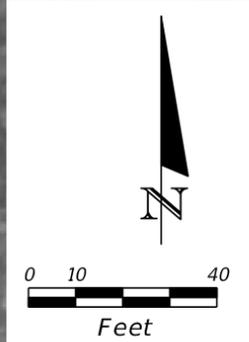
TABULATION OF QUANTITIES

TRAFFIC SIGNAL HEAD DETAIL



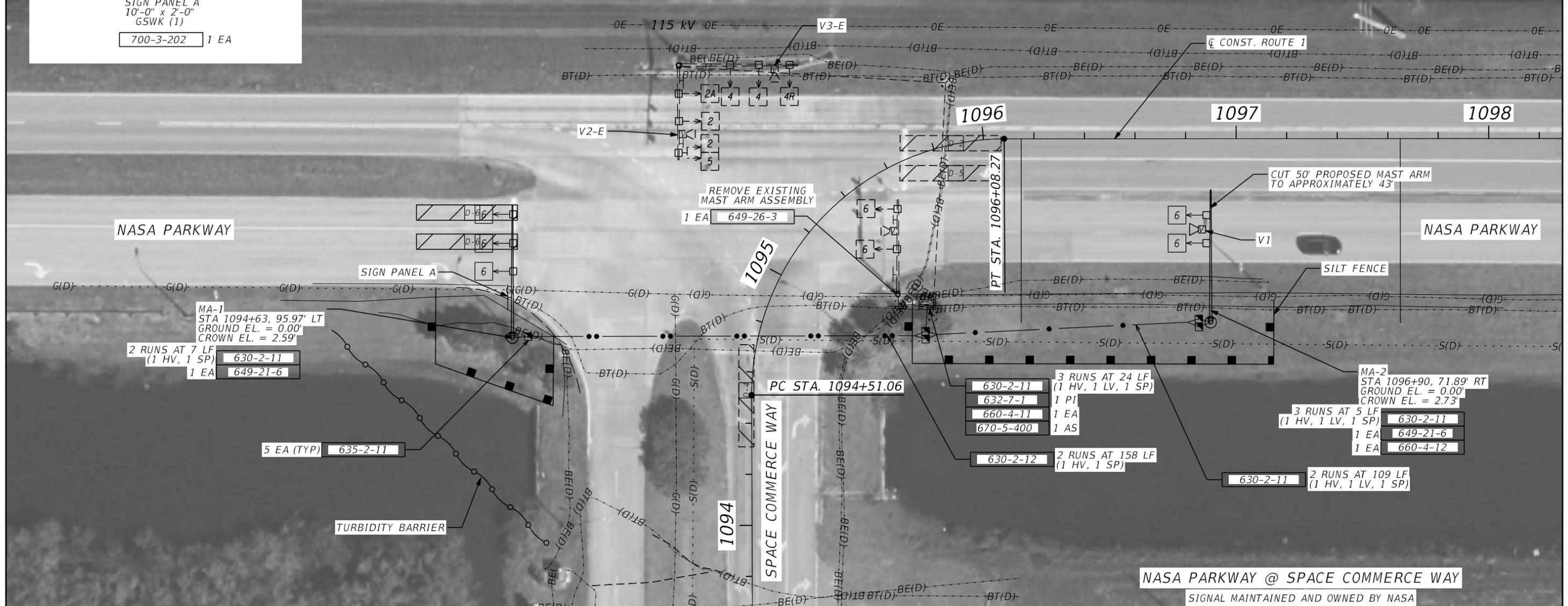
VIDEO DETECTOR CHART

CAMERA	MOVEMENT
V1	D-6
V2-E	D-2, D-5
V3-E	D-4



Space Commerce Way

SIGN PANEL A
10'-0" x 2'-0"
GSWK (1)
700-3-202 1 EA

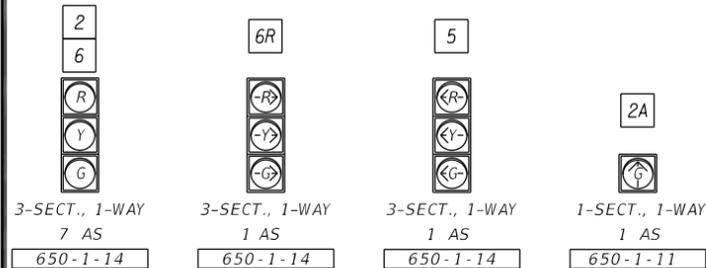


NASA PARKWAY @ SPACE COMMERCE WAY
SIGNAL MAINTAINED AND OWNED BY NASA

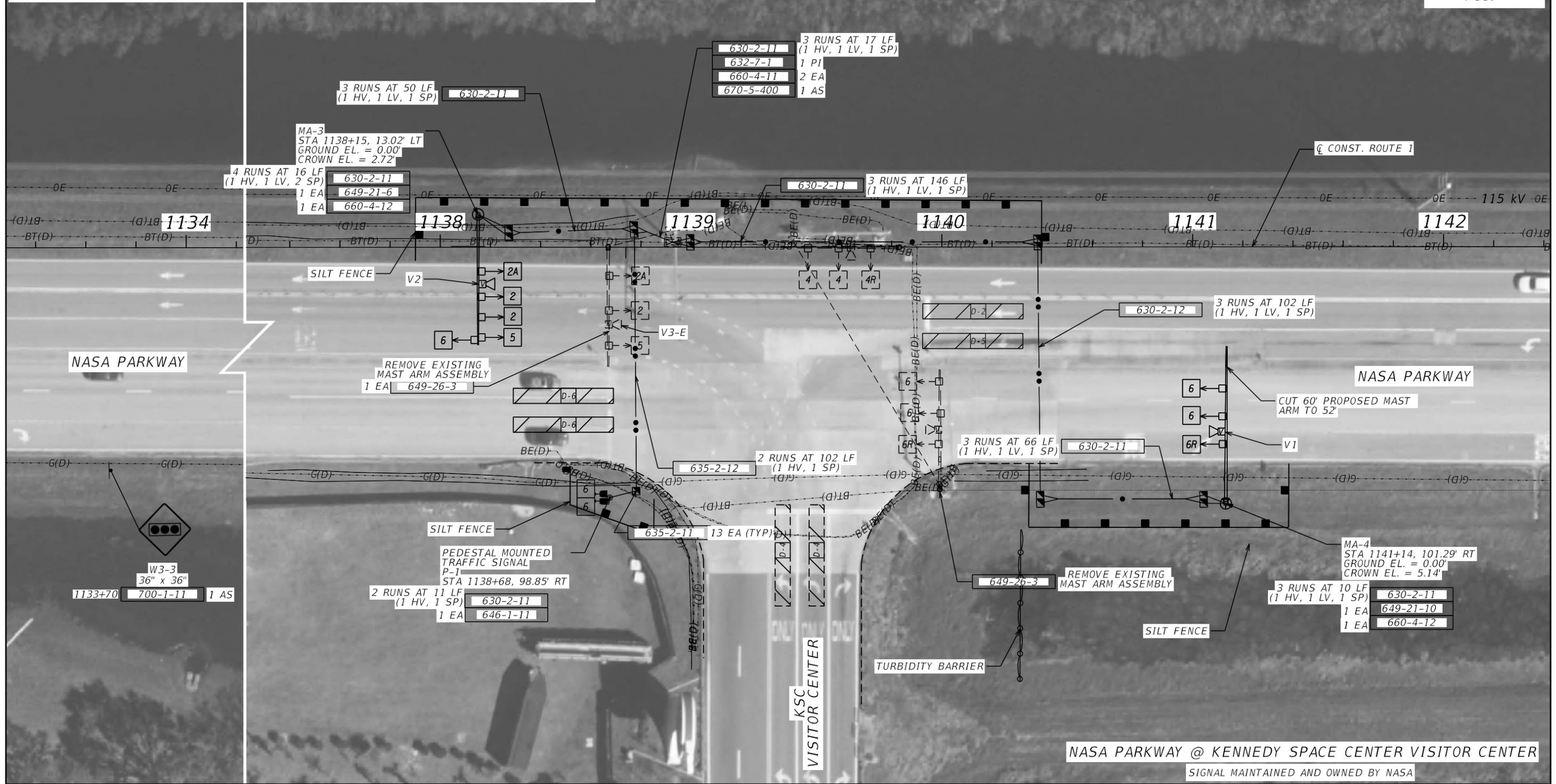
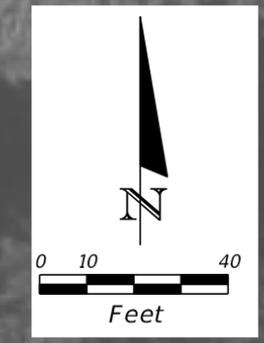
REVISIONS				AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 C.A. NO. 8115 PATRICK B. NEVAH, P.E. NO. 72369	SPACE FLORIDA EDTPF SIGNALIZATION PLANS		SHEET NO. T-6
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	
					BREVARD	FINANCIAL PROJECT ID 439053-1-54-01	

SIGNALIZATION PLAN (1)

TRAFFIC SIGNAL HEAD DETAIL



VIDEO DETECTOR CHART	
CAMERA	MOVEMENT
V1	D-6
V2	D-2, D-5
V3-E	D-4



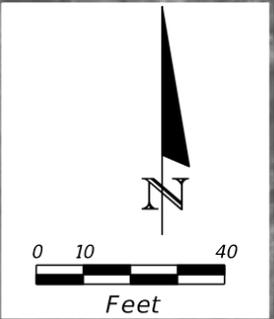
NASA PARKWAY @ KENNEDY SPACE CENTER VISITOR CENTER
 SIGNAL MAINTAINED AND OWNED BY NASA

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

AECOM TECHNICAL SERVICES, INC.
 7650 WEST COURTNEY
 CAMPBELL CAUSEWAY
 TAMPA, FL 33607-1462
 C.A. NO. 8115
 PATRICK B. NEVAH, P.E. NO. 72369

SPACE FLORIDA EDTPF SIGNALIZATION PLANS		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	BREVARD	439053-1-54-01

SIGNALIZATION PLAN (2)
 SHEET NO. T-7



NASA PARKWAY @ KENNEDY PARKWAY
 SIGNAL MAINTAINED AND OWNED BY NASA

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

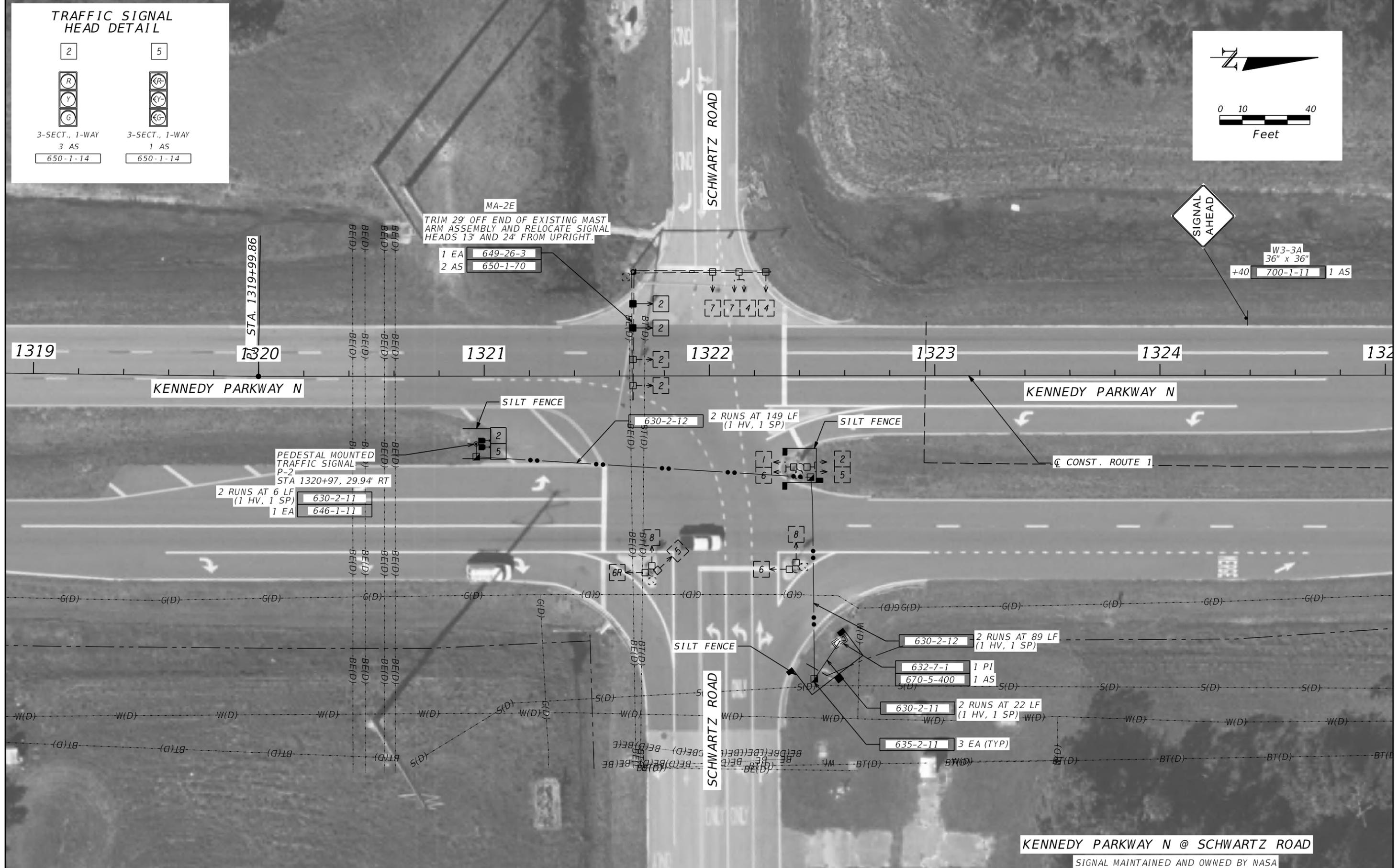
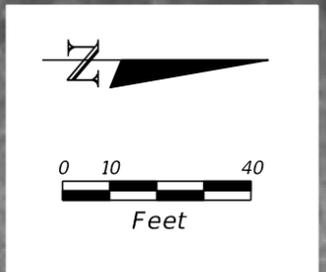
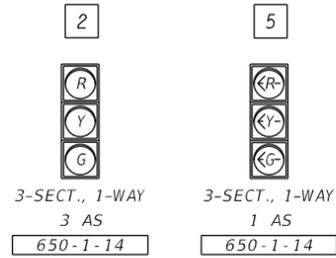
AECOM TECHNICAL SERVICES, INC.
 7650 WEST COURTNEY
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 TAMPA, FL 33607-1462
 C.A. NO. 8115
 PATRICK B. NEVAH, P.E. NO. 72369

SPACE FLORIDA EDTPF SIGNALIZATION PLANS		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	BREVARD	439053-1-54-01

SIGNALIZATION PLAN (3)

SHEET NO.
 T-8

TRAFFIC SIGNAL HEAD DETAIL



KENNEDY PARKWAY N @ SCHWARTZ ROAD
SIGNAL MAINTAINED AND OWNED BY NASA

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	BREVARD	439053-1-54-01

SIGNALIZATION PLAN (4)

SHEET NO.
T-9

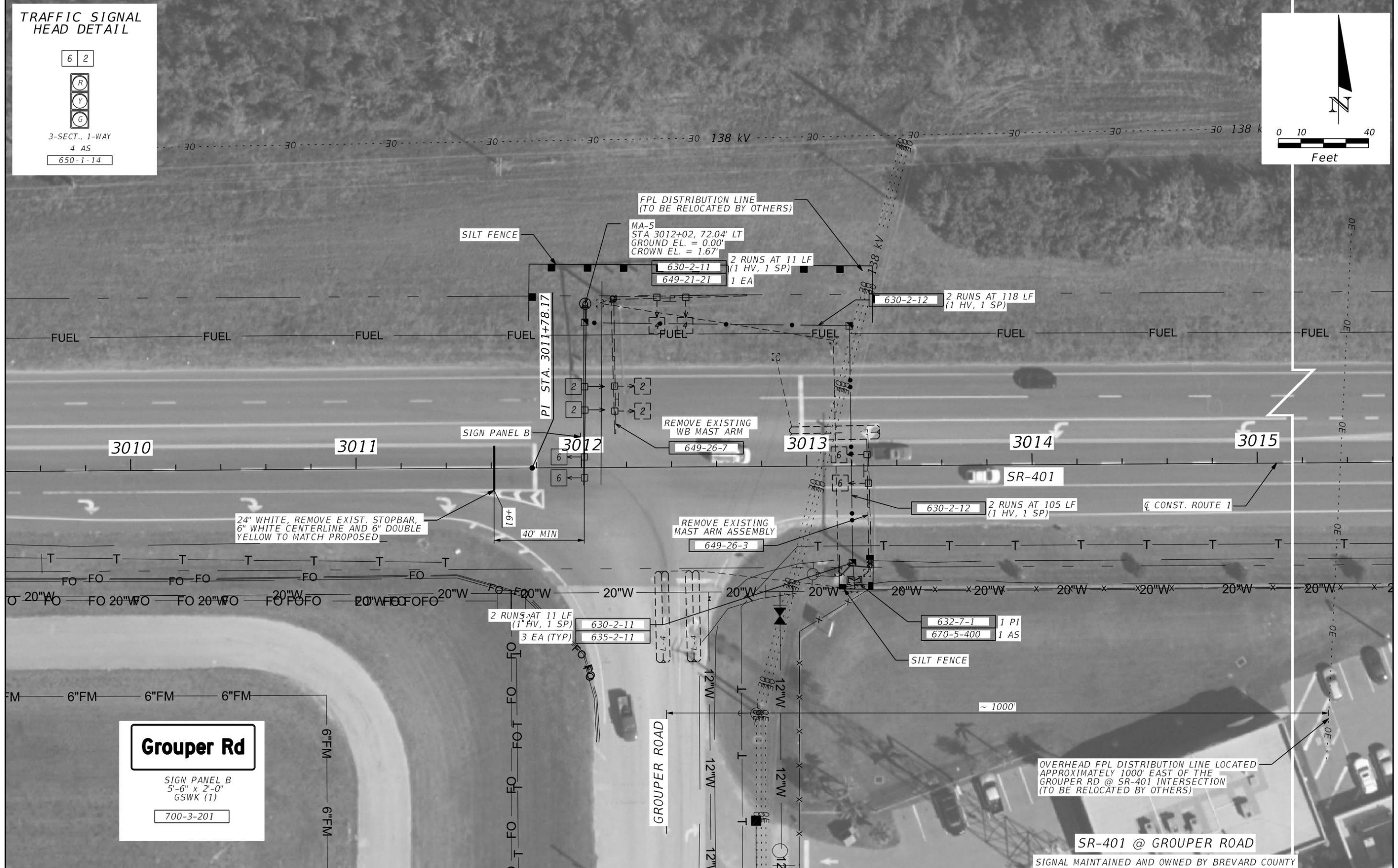
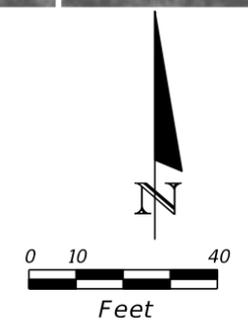
TRAFFIC SIGNAL HEAD DETAIL

6 2



3-SECT., 1-WAY
4 AS

650-1-14



Grouper Rd
SIGN PANEL B
5'-6" x 2'-0"
GSWK (1)
700-3-201

OVERHEAD FPL DISTRIBUTION LINE LOCATED APPROXIMATELY 1000' EAST OF THE GROUPER RD @ SR-401 INTERSECTION (TO BE RELOCATED BY OTHERS)

SR-401 @ GROUPER ROAD
SIGNAL MAINTAINED AND OWNED BY BREVARD COUNTY

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

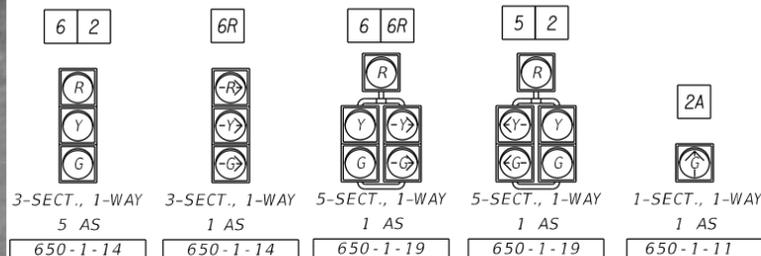
AECOM TECHNICAL SERVICES, INC.
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SPACE FLORIDA EDTPF SIGNALIZATION PLANS		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	BREVARD	439053-1-54-01

SIGNALIZATION PLAN (6)

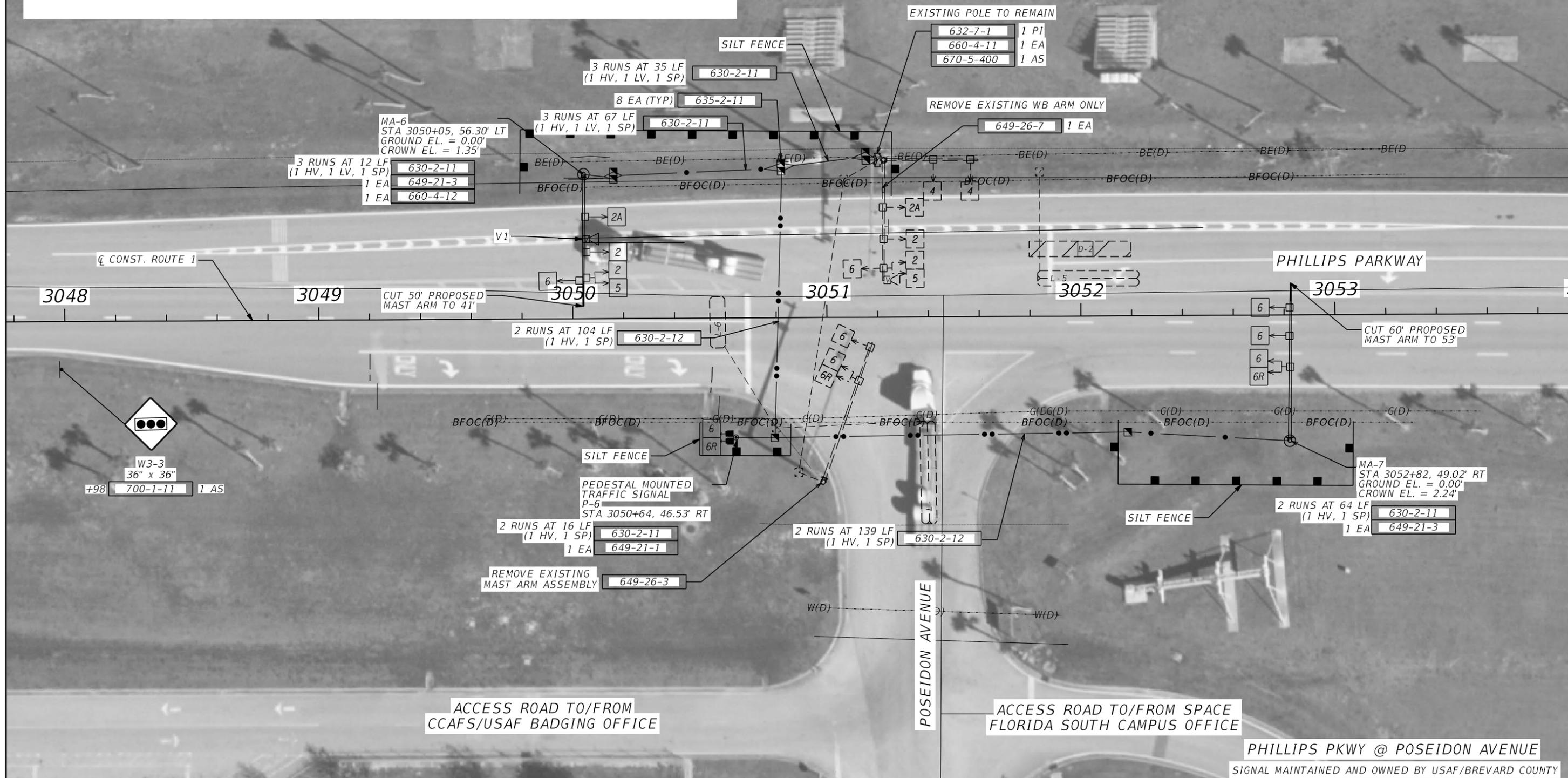
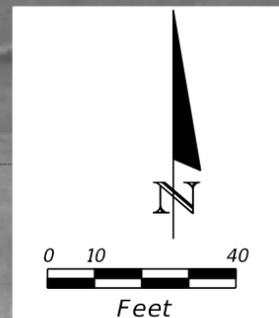
SHEET NO.
T-11

TRAFFIC SIGNAL HEAD DETAIL



VIDEO DETECTOR CHART

CAMERA	MOVEMENT
V1	D-2



ACCESS ROAD TO/FROM
CCAFS/USAF BADGING OFFICE

POSEIDON AVENUE

ACCESS ROAD TO/FROM SPACE
FLORIDA SOUTH CAMPUS OFFICE

PHILLIPS PKWY @ POSEIDON AVENUE
SIGNAL MAINTAINED AND OWNED BY USAF/BREVARD COUNTY

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

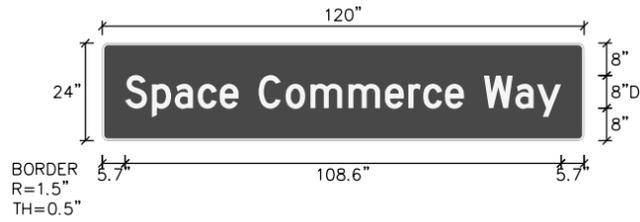
AECOM TECHNICAL SERVICES, INC.
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SPACE FLORIDA EDTPF SIGNALIZATION PLANS		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	BREVARD	439053-1-54-01

SIGNALIZATION PLAN (7)

SHEET NO.
T-12

SIGN NAME	A		QTY	1	SIGN NUMBER		STATION(S)	
PANEL	BORDER							none
WIDTH	10'-0"	WIDTH	0.5"					
HEIGHT	2'-0"	RADII	1.5"					
LEGEND	White	COLOR	White					
COLOR	Green							
SYMBOL(S)	ANGLE	X	Y	WID	HT			
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Land	COLUMN SIZE	AVERAGE LENGTH				

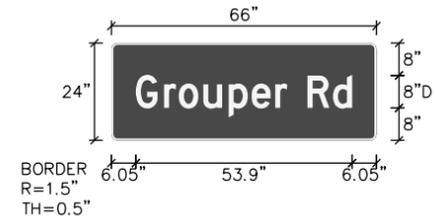


NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE
-----------------------	-----------------	-------------------	------	---------

COPY	S	p	a	c	e	C	o	m	m	e	r	c	e	W	a	y	L				
SPACE	5.7	6.6	5.7	5.8	5.4	4.7	5	6.7	6.2	9.4	9.1	5.8	3.7	5.4	4.7	5	7.8	5.4	6	5.7	108.6

COPY																					
SPACE																					
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SPACE																					
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SPACE																					
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COPY																					
SPACE																					
COPY																					
SPACE																					

SIGN NAME	B		QTY	1	SIGN NUMBER		STATION(S)	
PANEL	BORDER							none
WIDTH	5'-6"	WIDTH	0.5"					
HEIGHT	2'-0"	RADII	1.5"					
LEGEND	White	COLOR	White					
COLOR	Green							
SYMBOL(S)	ANGLE	X	Y	WID	HT			
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Land	COLUMN SIZE	AVERAGE LENGTH				



NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE
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COPY	G	r	o	u	p	e	r	R	d	L			
SPACE	6.1	7	3.7	6.1	6.3	5.8	5.8	3	5	6.3	4.8	6.1	53.9

COPY																					
SPACE																					
COPY																					
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SIGN NAME			QTY		SIGN NUMBER		STATION(S)	
PANEL	BORDER							
WIDTH	WIDTH							
HEIGHT	RADII							
LEGEND	COLOR							
COLOR								
SYMBOL(S)	ANGLE	X	Y	WID	HT			
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Land	COLUMN SIZE	AVERAGE LENGTH				

NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE
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COPY																					
SPACE																					
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SPACE																					
COPY																					
SPACE																					

SIGN NAME			QTY		SIGN NUMBER		STATION(S)	
PANEL	BORDER							
WIDTH	WIDTH							
HEIGHT	RADII							
LEGEND	COLOR							
COLOR								
SYMBOL(S)	ANGLE	X	Y	WID	HT			
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Land	COLUMN SIZE	AVERAGE LENGTH				

NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE
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COPY																					
SPACE																					
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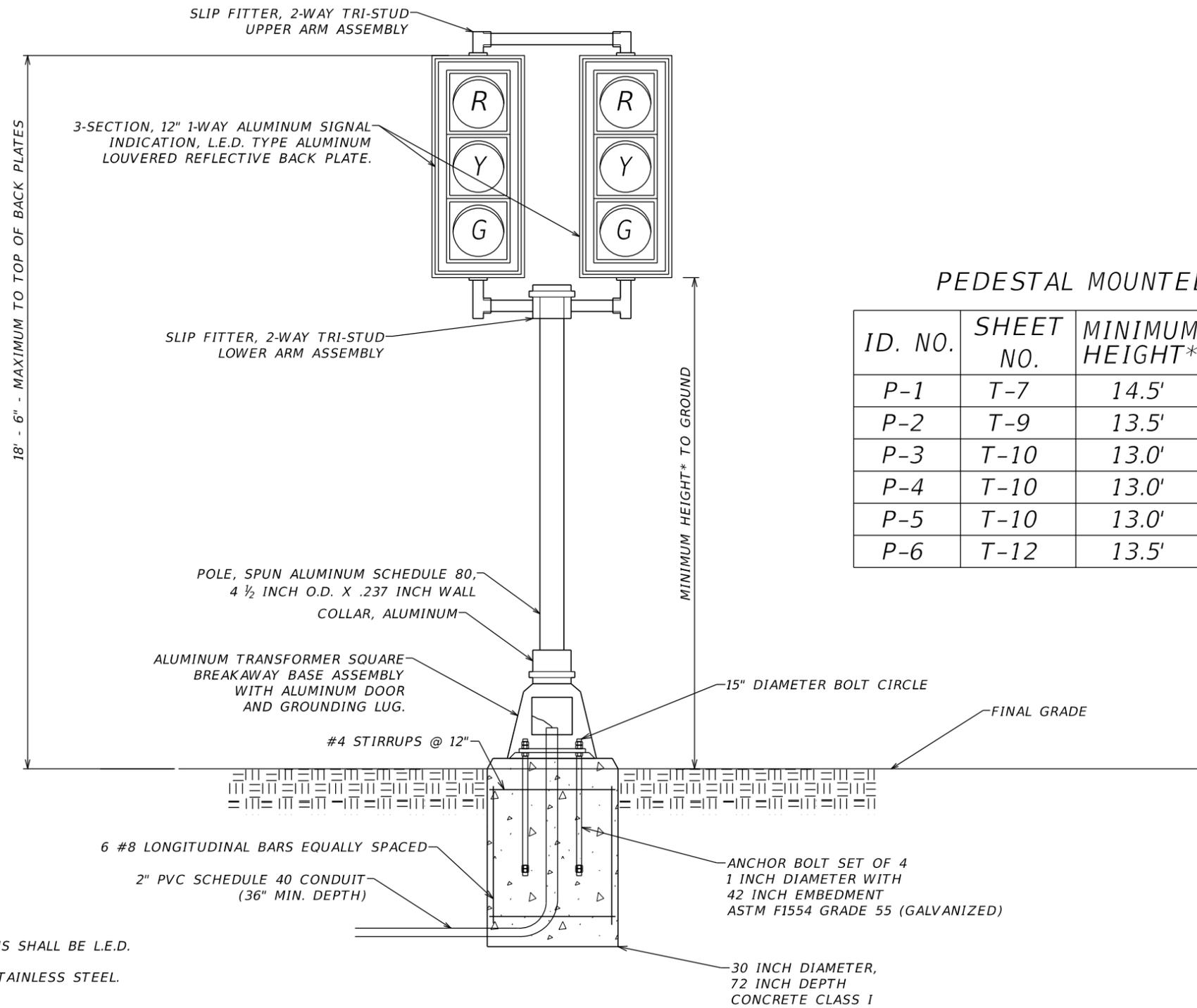
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

AECOM TECHNICAL SERVICES, INC.
7650 WEST COURTNEY
CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
C.A. NO. 8115
PATRICK B. NEVAH, P.E. NO. 72369

SPACE FLORIDA EDTPF SIGNALIZATION PLANS		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	BREVARD	439053-1-54-01

GUIDE SIGN WORK SHEET

SHEET NO.
T-13



PEDESTAL MOUNTED SIGNAL TABLE

ID. NO.	SHEET NO.	MINIMUM HEIGHT*	STATION	OFFSET
P-1	T-7	14.5'	1138+68	98.85' RT
P-2	T-9	13.5'	1320+97	29.94' RT
P-3	T-10	13.0'	1388+33	42.24' LT
P-4	T-10	13.0'	1388+05	61.70' LT
P-5	T-10	13.0'	1387+56	37.49' LT
P-6	T-12	13.5'	3050+64	46.53' RT

CONSTRUCTION NOTES:

1. TRAFFIC SIGNAL INDICATIONS SHALL BE L.E.D.
2. ALL FASTENERS SHALL BE STAINLESS STEEL.

REVISIONS				AECOM TECHNICAL SERVICES, INC. 7650 WEST COURTNEY CAMPBELL CAUSEWAY TAMPA, FL 33607-1462 C.A. NO. 8115 PATRICK B. NEVAH, P.E. NO. 72369	SPACE FLORIDA EDTPF SIGNALIZATION PLANS			PEDESTAL MOUNTED SIGNAL DETAIL	SHEET NO. T-15
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					BREVARD	439053-1-54-01			