ADDENDUM NO. _1_                                                                 DATE: May 12, 2015

BID#: ITB-DOT-14/15-9042-JP

BID TITLE: Furnish and Install Radio Tower – FTE Jupiter Tower Replacement

OPENING DATE: May 27, 2015 at 3:00p.m., Local Time

Please see the attached answers to the questions and the attached edits to the Technical Specifications and Appendix A, Design Package to the above referenced ITB.

The following are the Revision Instructions (Revised May 11, 2015):

1. Delete Technical Specifications Cover Page and Replace with Revision 1, Technical Specifications Cover Page
2. Delete Page 1 of 19 and Replace with Revision 1*, Page 1 of 19**
3. Delete Page 4 of 19 and Replace with Revision 1, Page 4 of 19
4. Delete Appendix A, Sheet IT-1 and Replace with Rev 1***, Appendix A, Sheet IT-1**
5. Delete Appendix A, Sheet IT-2 and Replace with Rev 1***, Appendix A, Sheet IT-2**
6. Delete Appendix A, Sheet IT-3 and Replace with Rev 1***, Appendix A, Sheet IT-3**
7. Delete Appendix A, Sheet IT-4 and Replace with Rev 1***, Appendix A, Sheet IT-4**
8. Delete Appendix A, Sheet IT-5 and Replace with Rev 1***, Appendix A, Sheet IT-5**
9. Delete Appendix A, Sheet IT-6 and Replace with Rev 1***, Appendix A, Sheet IT-6**
10. Delete Appendix A, Sheet IT-8 and Replace with Rev 1***, Appendix A, Sheet IT-8**
11. Delete Appendix A, Sheet IT-9 and Replace with Rev 1***, Appendix A, Sheet IT-9**
12. Delete Appendix A, Sheet IT-10 and Replace with Rev 1***, Appendix A, Sheet IT-10**
13. Delete Appendix A, Sheet IT-12 and Replace with Rev 1***, Appendix A, Sheet IT-12**
14. Delete Appendix A, Sheet IT-13 and Replace with Rev 1***, Appendix A, Sheet IT-13**

Bidders must acknowledge receipt of this Addendum by completing and returning to the Procurement Office, by no later than the time and date of the bid opening. Failure to do so may subject the bidder to disqualification.

Joyce Plummer, Procurement Agent

_____________________________________Bidder
_____________________________________Address

_____________________________________Submitted by (Signature)

Failure to file a protest within the time prescribed in Section 120.57(3), 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, Florida Statutes.
1. On Sheet IT-3 the following items are not called out in the Tower Design Criteria Table:
   a. 202’ – DB-222 and lines
   b. 192’ – 10’ Omni with TTA and lines
   c. 184’ – 20’ Omni and lines
   d. 185’ – 532-70 Dipole and lines
   e. 178’ – 532-70 Dipole and lines
   f. 145’ – 20’ Omni and lines
   g. 141’ – 532-70 Dipole and lines
   h. 137’ – 532-70 Dipole and lines
   i. 119’ – DB-420 and lines
   j. 107’ – DB-408 and lines
   k. 105’ – 10’ Omni and line
   l. 101’ – 3’ Dish and lines

   Answer: Sheet IT-3 and IT-10 have been revised and reissued with this addendum.

2. On Sheet IT-10 TX line info for the Microwaves differ from the information on IT-3 Table, Which is correct?

   Answer: Sheet IT-3 and IT-10 have been revised and reissued with this addendum.

3. On Sheet IT-10 Table on New tower loading is missing TX line information on most of the antennas, Will be using the same as the existing?

   Answer: Sheet IT-10 has been revised and reissued with this addendum.

4. On Sheet IT-10 Omni Antennas are not specified type, do you have RF information for the antennas? What are they connected to, expected gain, Frequency, etc.

   Answer: Sheet IT-5 and IT-10 has been revised and reissued with this addendum. The Tequesta 13’ Omni and 3’ dish will be relocated to the new tower. The Vendor shall install new 7/8” coax and ¼” CAT5 POE cable to facilitate the relocation of the Tequesta antennas.

5. On Sheet IT-7 #14. ...presently marked with stakes. Proposed tower leg locations are based on soil borings and good..., Has a Geotechnical already been ran on this location, If so can we get results, If not are we to assume it is part of scope, as it is not spelled out?

   Answer: Soil Borings are being performed. The Soil boring report will be provided as a future addendum to this procurement.
6. Since we are doing the cut over and testing can we get a list of radio and microwave equipment that is in use?

Answer: FDOT representatives and CE&I will be on site to facilitate cut-over and testing. The microwave radio is Harris DVM6-45. The new waveguide must be terminated to the radio at the top of rack – rectangular waveguide port, per Sheet IT-5, 2.3. The LMR radio coaxial lines must terminate to the bulkhead surge protective devices, per Sheet IT-5, 2.5.

UCI Construction Services

1. The lightning rod on Sheet IT-10 is in black lettering; is this an error? If so, what size lightning rod is the contractor to provide?

Answer: Sheet IT-10 has been revised and reissued with this addendum. The air terminal shall be sized such that the top is the highest point on the tower.

2. There are no details for an access road to go through the new 10ft wide gate the contractor is to install. Is a new access road required in this bid or just provide a gate opening? If a road is required, what FDOT standard are we to follow and how far from the parking lot are we to extend it?

Answer: No, a new access road is not required.

3. Is the contractor required to remove the existing access road (asphalt) and restore this area?

Answer: No

4. Please clarify the cable size for the “future” antenna systems in New Tower Loading Diagram, sheet IT-10.

Answer: Sheet IT-10 has been revised and reissued with this addendum.

5. If we’re to build a new access road, will the contractor be installing a culvert to allow continuous flow of water?

Answer: No

6. Because we’ve not received the Soil’s boring report to date, please consider a one week extension of the bid due date.

Answer: That will be determined when the Addendum with the Soil Boring Report is published.
EXHIBIT A

FLORIDA DEPARTMENT OF TRANSPORTATION

TECHNICAL SPECIFICATIONS

FOR

FTE JUPITER TOWER REPLACEMENT

REVISION 1

May 11, 2015
1. PROJECT SCOPE

1.1 General

This document provides technical specifications and delineates the requirements for replacing the Florida Department of Transportation’s (FDOT’s) Florida’s Turnpike Enterprise (FTE) Jupiter 204-foot guyed telecommunications tower and radio antenna systems. This project will supply and install a 220-foot solid rod member self-supporting tower and radio antenna systems. The self-supporting tower and foundation shall be erected then new radio antennas and grounding systems shall be furnished and installed in accordance with these specifications and plans. The existing microwave and land mobile radio systems shall be cut-over from the existing guyed tower to the newly erected self-supporting tower and antenna systems. Finally, the guyed tower shall be dismantled and new fenced compound facilities shall be furnished and installed.

The main elements of this project include, but are not limited to:

- Submit proposed transportation Maintenance Of Traffic plans for review and approval of the FDOT.
- Submit proposed tower and foundation structural analysis and structure assembly design plans for review and approval of the FDOT.
- Submit proposed antennas, transmission line, tower lighting, and grounding systems installation design plans for review and approval of the FDOT.
- Obtain required building permits and coordinate all FAA and FCC filings.
- Furnish and install the concrete drilled pier tower foundations.
- Furnish and erect the 220-foot self-supporting tower.
- Furnish and install all antennas, waveguides, coaxial cables, tower obstruction lighting system, required appurtenances and exterior grounding systems.
- Inspect all installation work.
- Perform waveguide air pressure leak tests. FDOT to witness.
- Perform antennas, waveguides, and coaxial cables time and frequency sweep measurements. FDOT to witness.
- Cut-over operational microwave and land mobile radio systems to the new antenna systems, including microwave antenna path alignments. FDOT to witness.
- Perform and verify microwave receive signal level performance measurements. FDOT to witness.
- Dismantle 204-foot guyed tower and remove all associated foundations 3-feet below grade.
portions of the work; or changes in the method of shipment or packaging and place of delivery, upon appropriate approvals as allowed by FDOT’s procurement code.

If any change order initiated by the FDOT causes an increase or decrease in the cost or time required for the performance of any part of the work under the contract, an equitable adjustment shall be made by the FDOT in the contract price or delivery schedule, or both, and the contract shall be modified in writing accordingly. Adjustments to contract price for labor shall be based on the actual direct labor and burden reasonably incurred in the additional or unforeseen work, plus a mark-up not to exceed 10 percent. Adjustments to contract price for actual equipment and supplies shall be based on the actual cost of equipment and supplies incorporated into the work, including Vendor paid transportation charges, reasonably incurred in the additional or unforeseen work, plus a mark-up not to exceed 10 percent.

1.7 **No Waiver of Contract**

Changes made by the FDOT shall not be considered to waive any of the provisions of the contract, nor may the Vendor make any claim for loss of anticipated profits because of the changes, or by reason of any variation between the approximate quantities and the quantities of work actually performed. All work shall be performed as directed by the FDOT and in accordance with the contract documents.

1.8 **Site Access and Security Requirements**

The FDOT system addressed in this contract supports public safety applications such as Intelligent Transportation Systems and Highway Maintenance. To ensure security for the system, FDOT requires that Vendor or Sub-Vendor employees submit to security background checks performed by the Florida Department of Law Enforcement after award of contract. At any time that employees of the Vendor are working at an FDOT communications site, a minimum of one of those employees on the site shall possess this clearance.

1.9 **Right to Remove Personnel from Project**

The FDOT has the right to remove any Vendor or Sub-Vendor personnel from the project for any reason. The FDOT shall send a written notification to the Vendor, via fax, that a particular person shall be removed from the project. The Vendor shall remove the particular person from the project within 24 hours of transmission of the written notice.
INDEX OF PLANS

SHEET NO. SHEET DESCRIPTION

IT-1 KEY SHEET
IT-2 GENERAL NOTES
IT-3 TOWER DESIGN CRITERIA NOTES
IT-4 INSTALLATION AND MOT NOTES
IT-5 CUT-OVER PLAN AND INSPECTION NOTES
IT-6 SITE LAYOUT PLAN
IT-7 PERIMETER LAYOUT PLAN
IT-8 SITE GROUNDING DETAIL
IT-9 FACILITIES REMOVAL PLAN
IT-10 TOWER LOADING DIAGRAMS
IT-11 DISH ORIENTATION DETAILS
IT-12 - IT-14 COMMUNICATIONS BUILDING PLANS
IT-15 – IT-16 RSL MEASUREMENTS FORM
(17 PAGES) REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING EVALUATION
(7 PAGES) LIMITED LEAD-BASED PAINT SCREENING #12506-MM16
INDEX NO. 802 FDOT DESIGN STANDARDS FOR FENCE TYPE B

GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION,
DESIGN STANDARDS DATED 2014,
AND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION DATED 2014,
AS AMENDED BY THESE PLANS AND CONTRACT DOCUMENTS.

JUPITER TOWER SITE

FLORIDA'S TURNPIKE ENTERPRISE TOWERS REFURBISHMENT AND REPAIRS PROJECT

ENGINEER OF RECORD: DANNIELLE MORALES
P.E. NO.: 68460

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

DATE REVISION DESCRIPTION DATE REVISION DESCRIPTION
6/12/2015 01 CHANGES TO IT-2 THROUGH IT-6, IT-12, AND IT-13
1. The vendor shall be responsible for verifying all conditions and measurements relating to the work in the field prior to proceeding with installation, removal, and disposal activities. The vendor shall coordinate any necessary inspections required for this work.

2. The vendor shall provide all equipment, materials, and services required to complete this project. The vendor is responsible for verifying the completeness of materials required and suitability of devices to meet these plans. The vendor shall provide and install, without claim, any additional equipment and services required for operation per these plans.

3. The vendor shall be responsible for determining local facilities for delivering, storing, and legally disposing of post-installation materials.

4. The vendor shall protect and preserve all existing utilities, excluding those requiring relocations or redeployment in these plans, located within the installation limits of the project.

5. The vendor shall not bring any hazardous materials onto the project site. Should the vendor require such for performing the work, the vendor shall request, in writing, permission from FDOT. The vendor shall provide the turnpike contamination impact coordinator (CIC) with a copy of the material safety data sheet (MSDS) for each hazardous material proposed for use. The vendor shall coordinate with the turnpike CIC prior to issuing written approval to the vendor. Because state law does not treat petroleum products that are properly containerized and intended for equipment use as hazardous material, such products do not need MSDS submittal. Turnpike contamination impact coordinator. Mark Milligan, P.G.

TEL: 407.264.3408  
CELL: 407.951.2205  
EMAIL: Mark.Milligan@FDOT.state.fl.us

6. The vendor is responsible for determining if there are any coatings/paint or materials on the tower that would be considered hazardous to work on, any structural components. Copies of any test reports are to be provided to FDOT. If any items are found that meet the definition of a hazardous waste under either Florida environmental protection regulations or United States of America environmental protection regulations, the materials shall be disposed of in accordance with the more strict of the regulations and FDOT shall be provided with documentation of the proper disposal to include a signed copy of the manifest where the waste was received at the disposal site within 10 days of the disposal of the materials.

7. Any known or suspected hazardous material found on the project site by the vendor shall be immediately reported to FDOT. Should the vendor notify the protection of the area of known or suspected contamination from further activity and or any hazardous material found. The turnpike CIC will arrange for investigation, identification, and remediation of the hazardous material. The vendor shall not return to the area of contamination until approval is provided by FDOT. The turnpike cic will advise FDOT. Turnpike contamination impact coordinator. Mark Milligan, P.G.

8. The vendor is responsible for obtaining any permits (DEP, South Florida Water Management District, etc.) and meeting building, electrical, and safety requirements, including associated fees. The vendor is responsible for contacting applicable building officials for permit applications and submitting to the FDOT for signature.

9. The vendor is responsible for coordinating all necessary notifications of work and construction with the Federal Aviation Administration (FAA) and Federal Communications Commission (FCC) with the FDOT project manager. All FAA and FCC filings will be handled by the vendor based on this coordination.

10. The vendor shall submit all detailed design plans for FDOT review and approval per these plans and specifications. The vendor shall not begin installation work until all design submittals are approved in writing by the FDOT project manager.

11. The vendor shall submit an installation schedule to FDOT for review and approval.

12. The vendor must coordinate all site work with FDOT. The contact person is Nandy Pierce, 855.410.5668.

13. All tower and antenna installation work shall be done by tower climbers certified by or approved by the vendor.

14. The vendor shall coordinate each element with the schedule with other installation activities and show each activity in the schedule.

15. The vendor shall notify all utility owners through sunshine state one call of Florida (811) three business days in advance of beginning installation on the job site. Note that not all utility companies are members of the sunshine state one call. The vendor shall instruct them to contact the vendor. The vendor shall coordinate with turnpike intelligent transportation department (ITD) department for location of turnpike its fiber in the area. If relocation of fiber is necessary, the vendor shall coordinate this effort with turnpike its department as well. The contractors for turnpike its department are:

John Easterling, P.E., PTOE  
Eric Gordon, P.E.

TEL: 954.394.1560  
TEL: 407.265.3575  
EMAIL: John.Easterling@FDOT.state.fl.us  
EMAIL: Eric.Gordon@FDOT.state.fl.us

16. The vendor shall field locate all buried grounding, conduits, structures, and utilities in and around the work area prior to commencing any excavations. All digging and excavating inside and around the site compound shall be performed in accordance with good engineering practices. The use of heavy excavating machinery is not permitted inside the fenced area other than for excavating the old tower foundation and for drilling new shafts.

17. The FDOT shall be notified 72 hours in advance of any scheduled interruptions during cut-over for safety personnel. The vendor shall perform safety training for scheduled interruptions. The vendor shall notify FDOT at least two hours in advance of all necessary communications disruptions and such planned outage with the anticipated outage time.

18. The vendor shall request permission, the use of equipment, and the storage of materials to areas within the limits of installation. Any off-site storage area is the responsibility of the vendor.

19. The vendor shall provide security for his/her equipment and shall conduct his/her operations so as to avoid interference with its operations.

20. All existing driveways, easements, and grounds shall be protected or restored to initial condition if damaged or disturbed as a result of installation.

21. The vendor shall maintain in a neat and sanitary condition such accommodations for the use of his/her employees as may be required to comply with regulations of the county or the department of health and rehabilitative services. No nuisance will be permitted.

22. The vendor shall be responsible for removing and legibly disposing of trash in a timely manner.

23. All equipment and services furnished by the vendor as part of this project shall be warranted to be free from defects in material and workmanship. In the event any such defects in equipment or services become evident within the warranty period, the vendor shall correct the defect by repairing or replacing the defective component or equipment at no cost to FDOT during the warranty period. The warranty period shall be a minimum of 12 months from date of final acceptance. Claims under any of the warranties herein are valid if made within 30 days after termination of the warranty period.

24. The vendor shall be responsible for all electrical waveguides, flexible rectangular waveguide, coaxial cables, power/data cables, and respective hardware and conduits. Any bends, kinks, or deformation will render the entire waveguide useless. The vendor is responsible for contacting applicable building officials for proper installation and the storage of materials to areas within the limits of installation. Any off-site storage area is the responsibility of the vendor. No nuisance will be permitted.

25. The vendor shall be responsible for ensuring the site is secured by temporary fencing at the end of each day.

APPLICABLE PUBLICATIONS AND STANDARDS:

1. ACI 336.3R-93: DESIGN AND CONSTRUCTION OF DRILLED PIERS
2. ANSI/AISI S220-2: STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTEENNAS, STRUCTURE CLASSIFICATION 0-8
3. APPURTENANT MANUFACTURER’S INSTRUCTIONS AND STANDARD PRACTICES
4. APPLICABLE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (O.S.H.A.) PRACTICES
5. ASTM A122: STANDARD SPECIFICATION FOR ZINC (HOT GALVANIZED) COATINGS ON PRODUCTS FABRICATED FROM ROLLED, PREFORMED, AND FORGED STEEL SHAPES, PLATES, BARS, AND STRIP
6. ASTM A153: STANDARD SPECIFICATION FOR ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE
7. ESA-81: MEASURING GROUND RESISTANCE AND POTENTIALS IN THE GROUND
8. FHWA HN-10-016: MEASURING SHAFTS: CONSTRUCTION PROCEDURES AND LRFD DESIGN METHODS
9. FLORIDA BUILDING CODE, 2010 EDITION
10. FDOT GENERAL NOTES FOR ROAD AND BRIDGE DESIGN
11. FDOT 2014 DESIGN STANDARDS
12. FEDERAL AVIATION ADMINISTRATION REGULATIONS
13. IEEE 837: STANDARD FOR QUALIFYING PERMANENT CONNECTIONS USED IN SUBSTATION GROUNDING
14. NATIONAL ELECTRICAL CODE (NEC) (NFPA 70), 2014 EDITION
15. NEC ARTICLE 250: GROUNDING AND BONDING
16. NSF: NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
17. UL 467: STANDARDS FOR GROUNDING AND BONDING EQUIPMENT
18. WORLD TRADE CENTER (WTC) FIRE PROTECTION ASSOCIATION (WTCFPA)
ALL OTHER ELEVATIONS ARE REFERENCED TO THE TOWER BASE PLATE – (322) – TABLE IN NOTE:

- LIGHTNING PROTECTION: OBSTRUCTION LIGHTING SYSTEM, ETC. SHALL NOT BE INCLUDED IN THE WIND LOADING OF THE TOWER.
- THE ANCHOR BOLTS SHALL BE PROPERLY DESIGNED IN ACCORDANCE WITH ANSI-T12-22-G-2. FOR THE PURPOSES OF DESIGN, THE ANCHOR BOLTS SHALL BE DESIGNED ASSUMING THAT NO GROUT IS INSTALLED UNDER THE BASE PLATE.
- IF USED, ALL FACE, PLAN AND HP REDUNDANT BRACING MEMBERS ON THE NEW TOWER MUST BE TRIGONALIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ANSI-T12-22-G-2, TABLE 4.7. ANY TOWER DESIGN INCLUDING NON-TRIGONALIZED BRACING MEMBERS WILL BE CONSIDERED IN NON-COMPLIANCE WITH THESE SPECIFICATIONS.
- FOR TOWER DESIGNS USING DOUBLE ANGLE MEMBERS, OR OTHER BUILT UP MEMBERS, THESE MEMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ANSI-T12-22-G-2, SECTION 4.5.3 (E. THE SLENDERNESS OF THE MEMBERS MUST BE ADJUSTED IN ACCORDANCE WITH THE APPLICABLE STITCH BOLT MODIFICATION FACTOR-A).
- ALL GUSSET PLATES, CONNECTION PLATES, BRACING MEMBERS, ETC. SHALL HAVE CONNECTIONS THAT ARE PROPERLY DESIGNED AND DETAILLED FOR BOLT HOLE BENDING, BLOCK SHEAR, AND RIPPLES PER THE REQUIREMENTS OF ANSI-T12-22-G-2 SECTION 4.9.6 AS WELL AS ALL OTHER FORCES APPLIED TO THEM. ALL GUSSET PLATES, CONNECTION PLATES, ETC. SHALL BE DETAILLED SO THAT THE WORK LINES HAVE A CONTINUOUS LOAD PATH ALONG THE GUSSET STEEL OR CONNECTION PLATE STEEL TO THE MEMBERS BEING CONNECTED. DETAILING THAT INDUCES BENDING FORCES INTO THE GUSSETS OR CONNECTION PLATES, OR THAT DO NOT PROVIDE A CONTINUOUS LOAD PATH ALONG THE WORK LINES SHALL BE CONSIDERED IN NON-COMPLIANCE WITH THESE SPECIFICATIONS.
- THE WORK LINES SHALL BE MINIMUM 12 INCHES ABOVE FINISHED GRADE. CORNERS SHALL HAVE A MINIMUM ONE (1) INCH CHAMFER. THE TOP OF THE PIERS SHALL BE SLOPED TO DRAIN WATER FROM THE CENTER.
- THE FOUNDATIONS SHALL BE DESIGNED FOR TOWER REACTIONS 10 PERCENT HIGHER THAN CALCULATED FOR TOWER DESIGN.

THE FOUNDATION MATERIALS SHALL MEET OR EXCEED THE FOLLOWING CRITERIA. CONCRETE Fc = 3,000 PSI AT 28 DAYS, REINFORCED STEEL ASTM A-160 GRADE 60, CEMENT ASTM C 150 TYPE 1 LOW-ALKALI CONTENT WITH A Na2O EQUIVALENT LESS THAN 0.5 PERCENT.

CONCRETE DESIGN MIX SHALL BE SUBMITTED TO THE FDOT PROJECT MANAGER FOR REVIEW AND APPROVAL.

PROPER GUSSET/TAB DESIGN

IMPROPER GUSSET/TAB DESIGN
THE VENDOR SHALL SUBMIT A DETAILED INSTALLATION PLAN FOR APPROVAL BY FDOT. THE PLAN SHALL INCLUDE A DETAILED SCHEDULE OF EVENTS DETAILING EACH PHASE OF INSTALLATION, INCLUDING A PROJECTED TIMELINE.

ALL EQUIPMENT AND COMPONENT PARTS FURNISHED SHALL BE NEW, MEET OR EXCEED THE MINIMUM REQUIREMENTS STATED HEREIN, AND FUNCTIONAL. ALL ARTICLES OR ATTACHMENT SHALL BE SUBSTITUTED OR APPLIED CONTRARY TO THE MANUFACTURER'S RECOMMENDATIONS AND STANDARD PRACTICES.

THE VENDOR IS RESPONSIBLE FOR CLEANING OF BRUSH, TREES, OR ANY OTHER OBSTRUCTIONS, INCLUDING THE REMOVAL OF FENCING, ASPHALT OR CONCRETE. ANY TREE STUMPS RESULTING FROM CLEARING SHALL BE GRUBBED. ALL ENVIRONMENTAL PROTECTION REQUIREMENTS SHALL BE CONFORMED TO AND CUSTODIES AND BOUNDARIES SHALL BE CLEANED TO THE SATISFACTION OF FDOT.

THE VENDOR SHALL BE RESPONSIBLE FOR REMOVING AND LEGALLY DISPOSING OF THE TRASH GENERATED FROM THE INSTALLATION, INCLUDING BOXES FOR LUMBS AND DRINKS, DAILY. THE VENDOR SHALL NOT ALLOW TRASH TO BLOW AROUND OR BE LEFT FROM ANY CONSTRUCTION SITE.

THE VENDOR SHALL PROVIDE AND INSTALL A NEW 220 FT. SOLID ROD MEMBER SELF-SUPPORTING TOWER AND CONCRETE DRILLED SHAFT FOUNDATIONS PER THESE PLANS.

THE VENDOR SHALL PROVIDE AND INSTALL A NEW HORIZONTAL TRANSMISSION LINE BRIDGE AND ALL ASSOCIATED SUPPORT AND INSTALLATION HARDWARE. THE TRANSMISSION LINE BRIDGE SHALL INCLUDE TWO LEVELS OF TRUPEZE KITS, INSTALLED WITH MAXIMUM STRAND RELIEF RELIEF JUNCTION BOXES EVERY 100 FT. (MAXIMUM). THE WAVEGUIDE TRANSMISSION LINES MOUNTED ON THE TOP LEVEL OF THE BRIDGE SUPPORT SECURED TO THE TOWER AND PROVIDE SUPPORT FOR THE WAVEGUIDE AND COAXIAL TRANSMISSION LINES INTO THEIR RESPECTIVE BULKHEAD PORTS. THE HORIZONTAL TRANSMISSION LINE BRIDGE SHALL BE SUPPORTED SEPARATE FROM THE TOWER AND SHALL RUN FROM THE FACE OF THE TOWER TO WITHIN 3 IN. OF THE TRANSMISSION LINE BRIDGE SUPPORTS PER THE CONSTRUCTION BUILDING RELIEF BOXES.

THE VENDOR SHALL PROVIDE AND INSTALL THE TOWER LIGHTING PROTECTION AND GROUNDING SYSTEM PER THESE PLANS.

THE VENDOR SHALL PROVIDE AND INSTALL A NEW TECHNOSTROBE LED-B-HYBRID-48V-3ML DUAL LED FLASH HEAD OBSTRUCTION LIGHTING SYSTEM PER THESE PLANS. THE TOWER LIGHTING SYSTEM SHALL BE MOUNTED TO THE TOWER WITH GALVANIZED OR STAINLESS STEEL HARDWARE. ALL TOWER LIGHTING CABLES SHALL BE INSTALLED IN APPROPRIATELY SIZED GALVANIZED STEEL CONDUIT. THE CONDUIT SYSTEM SHALL BE SECURED TO THE TOWER WITH GALVANIZED OR STAINLESS STEEL HARDWARE. THE TOWER LIGHTING SYSTEM CONDUCT SHALL BE SECURED TO THE TOWER USING STAINLESS STEEL HARDWARE.


THE VENDOR SHALL PROVIDE AND INSTALL ALL ANTENNAS, CCTV CAMERAS WITH LOWERING DEVICES, ELIPTICAL AND FLEXIBLE RECTANGULAR WAVEGUIDES, COAXIAL TRANSMISSION LINES, CCTV POWER/DATA CABLES, ASSOCIATED MOUNTING AND INSTALLATION HARDWARE, AND ALL OTHER TOWER APPURTENANCES.

THE VENDOR SHALL FURNISH AND INSTALL A GALVANIZED POLE WITH STAINLESS STEEL EYE BOLT TO ATTACH THE CAMERA LOWERING DEVICE MESSANGER WIRE FOR MAINTENANCE AND LOWERING PURPOSES. THE POLE SHALL BE A MINIMUM 6 FT ABOVE THE GROUND LEVEL TO ALLOW ACCESS. THE VENDOR SHALL INSTALL A GALVANIZED STAINLESS STEEL MESSANGER (GUIDE) WIRE BETWEEN EACH CAMERA LOWERING DEVICE AND THE POLE. THE MESSANGER WIRES SHALL BE ARCHED AT THE TOP OF THE POLE TO ALLOW ACCESS TO THE STEEL HARDWARE TO ALLOW ADEQUATE CLEARANCE FROM THE TOWER LEGS WHEN LOWERING THE CAMERAS FOR MAINTENANCE.

ALL WAVEGUIDES AND COAXIAL TRANSMISSION LINES SHALL BE HOISTED UP THE TOWER USING APPROPRIATELY SIZED HOISTING GRIPS. THE VENDOR SHALL INSTALL THE LADDER AND HOISTING WAVEGUIDE SECTIONS MAY BE INSTALLED ON THE TOP LEVEL OF THE BRIDGE MOUNTED TO THE TOWER LIGHTING SYSTEM BRIDGE SECURED TO THE TOWER WITH GALVANIZED OR STAINLESS STEEL BOLT ON HANGERS AND HARDWARE. THE HANGERS SHALL BE SPACED WITH A MAXIMUM OF 36 IN. ON CENTER. THE VENDOR SHALL INSTALL AND POWER SUPPLY FOR THE WAVEGUIDES AND COAXIAL TRANSMISSION LINES. HOISTING GRIPS SHALL BE SECURED TO THE TOWER AND PROVIDE SUPPORT FOR THE WAVEGUIDES AND COAXIAL TRANSMISSION LINES. HOISTING GRIPS SHALL BE SECURED AT INTERVALS NOT TO EXCEED 200 FT. FLEXIBLE RECTANGULAR WAVEGUIDE SECTIONS MAY BE INSTALLED ON THE TOP LEVEL OF THE BRIDGE MOUNTED TO THE TOWER LIGHTING SYSTEM BRIDGE SECURED TO THE TOWER WITH GALVANIZED OR STAINLESS STEEL BOLT ON HANGERS AND HARDWARE. THE HANGERS SHALL BE SPACED WITH A MAXIMUM OF 36 IN. ON CENTER.

THE VENDOR SHALL PROVIDE AND INSTALL ALL CABLES, DATA CABLES SHALL BE INSTALLED IN THE APPROPRIATELY SIZED GALVANIZED CONDUITS. THE CONDUITS SHALL BE SECURED TO THE TOWER WITH STAINLESS STEEL HARDWARE WITH MAXIMUM SEPARATION OF 10 FT ON CENTER. THE VENDOR SHALL PROVIDE AND INSTALL ALL SUPPORT PROTECTION DEVICES FOR THE CAMERA SYSTEMS AT BOTH ENDS OF THE POWER/ DATA CABLES. THE SURGE PROTECTION DEVICES SHALL BE INSTALLED AND GROUNDED INSIDE THE TOWER TOP CONNECTION BOX AND MOUNTED TO THE TRANSMISSION LINE BULKHEAD INSIDE THE SHELTER.

THE VENDOR SHALL FURNISH TWO (2) MIDSPEED POE INJECTORS INSIDE THE COMMUNICATION BUILDING FOR FUTURE INSTALLATION BY OTHERS.

THE WAVEGUIDES AND COAXIAL TRANSMISSION LINES SHALL BE SECURED TO THE OVERHEAD TRUPEZE HANGERS AND CABLE TRAYS INSIDE THE COMMUNICATIONS BUILDING IN ACCORDANCE WITH THE COMMUNICATIONS BUILDING PLAN. SEE SHEET IT-12.

THE WAVEGUIDES AND COAXIAL TRANSMISSION LINES SHALL BE SECURED TO THE TOP LEVEL OF THE BRIDGE MOUNTED TO THE TOWER LIGHTING SYSTEM BRIDGE SECURED TO THE TOWER WITH GALVANIZED OR STAINLESS STEEL BOLT ON HANGERS AND HARDWARE. THE HANGERS SHALL BE SPACED WITH A MAXIMUM OF 36 IN. ON CENTER.

THE VENDOR SHALL BE RESPONSIBLE FOR VERIFYING CORRECT SIZE, GENDER, AND SUITABILITY OF ALL WAVEGUIDE AND COAXIAL TRANSMISSION DEVICES, WAVEGUIDE PROTECTION DEVICES, AND A DETAILED LIST OF CONNECTORS AND SURGE PROTECTION DEVICES TO THE FDOT PROJECT MANAGER FOR REVIEW AND APPROVAL.

ALL WAVEGUIDES (ELIPTICAL AND FLEXIBLE) AND ANTENNA SYSTEMS SHALL BE FREQUENCY DOMAIN SWEEPT TESTED AND TIME DOMAIN SWEEPT TESTED PRIOR TO CUT-TO-OVER TO OPERATIONS.

THE VENDOR SHALL SUBMIT A DETAILED INSTALLATION PLAN FOR APPROVAL BY FDOT. THE PLAN SHALL INCLUDE A DETAILED SCHEDULE OF EVENTS DETAILING EACH PHASE OF INSTALLATION, INCLUDING A PROJECTED TIMELINE.

THE VENDOR SHALL SUBMIT THE MOT PLAN TO THE FDOT FOR REVIEW AND APPROVAL. AFTER APPROVAL OF THE MOT PLAN, THE VENDOR SHALL PROVIDE A MINIMUM TWO-WEEK NOTICE PRIOR TO IMPLEMENTATION TO ALLOW FOR APPROPRIATE NOTIFICATION.


ALL SPECIFIC SKILLS SHALL BE COMPLETLY COVERED OR REMOVED WHEN NOT IN USE.

INSTALL ADVANCE WARNING SIGNS AND TRAFFIC CONTROL DEVICES UTILIZING FDOT STANDARD INDEX 860 SERIES.

THE VENDOR SHALL ADHERE TO STANDARD MTO INDEXES WHEN WORK TAKES PLACE OVER TRAVEL LANES.

GROUNDED MOUNTED SIGNS MAY BE USED IN LIEU OF POST MOUNTED SIGNS ONLY IF INSTALLATION OPERATIONS WILL NOT EXCEED A 12 HOUR PERIOD. SIGNS ARE TO BE PER THE FDOT STANDARD INDEX 860 SERIES AND AS SPECIFIED IN THE MTOC.

INSTALL CONSTRUCTION SIGNS PRIOR TO COMMENCEMENT OF CONSTRUCTION AND MAINTAIN SAME PER THE FDOT 2014 DESIGN STANDARDS AND FDOT INDEXES.

THE VENDOR SHALL ADHERE TO STANDARD MTO INDEXES WHEN WORK TAKES PLACE OVER TRAVEL LANES.

INSTALL CONSTRUCTION SIGNS PRIOR TO COMMENCEMENT OF CONSTRUCTION AND MAINTAIN SAME PER THE FDOT 2014 DESIGN STANDARDS AND FDOT INDEXES.

THE VENDOR SHALL ADHERE TO STANDARD MTO INDEXES WHEN WORK TAKES PLACE OVER TRAVEL LANES.

THE VENDOR SHALL ADHERE TO STANDARD MTO INDEXES WHEN WORK TAKES PLACE OVER TRAVEL LANES.

THE VENDOR SHALL ADHERE TO STANDARD MTO INDEXES WHEN WORK TAKES PLACE OVER TRAVEL LANES.

THE VENDOR SHALL ADHERE TO STANDARD MTO INDEXES WHEN WORK TAKES PLACE OVER TRAVEL LANES.
THE VENDOR SHALL SUBMIT A DETAILED COMMUNICATION CUT OVER PLAN FOR APPROVAL BY FDOT. THE PLAN SHALL INCLUDE A DETAILED SCHEDULE OF EVENTS DETAILING EACH PHASE OF INSTALLATION, INCLUDING A PROJECTED TIMELINE.

1. GENERAL

1.1 THE VENDOR SHALL PROVIDE AND INSTALL ANTENNAS, ELLIPITCAL WAVEGUIDES, FLEXIBLE RECTANGULAR WAVEGUIDES (BETWEEN DISH AND ELLIPITCAL WAVEGUIDE), COAXIAL CABLES, MOUNTING APPARATUS, AND INSTALLATION HARDWARE, SOFTWARE, LABOR, AND INSTALLATION PROCEDURES TO EFFECT PROPER INSTALLATION OF THE RADIO ANTENNA SYSTEMS.

2. PRE CUT-OVER

2.1 INSTALL TOWER, ANTENNAS, ELLIPITCAL AND FLEXIBLE RECTANGULAR WAVEGUIDES, COAXIAL TRANSMISSION LINES.

2.2 INSTALL NEW AIR PRESSURIZATION MANIFOLD EQUIPMENT.

2.3 INSTALL WAVEGUIDES FROM ANTENNA POSITION TO MICROWAVE RACK POSITION AND IMMEDIATELY PRESSURIZE.

2.4 EACH NEW PRESSURIZED ANTENNA SYSTEM SHALL BE VERIFIED TO BE FREE OF LEAKS. THE VENDOR SHALL PERFORM A PRESSURE TEST THAT SHALL START AT NOON AND RUN FOR A PERIOD OF 48 HOURS. AT THE START OF THE TEST, THE VENDOR SHALL CLOSE THE VALVE FOR THE PRESSURIZED WAVEGUIDE AND RECORD THE PRESSURE. AT THE END OF THE TEST, THE VENDOR SHALL RECORD THE PRESSURE FOR THE WAVEGUIDE AND COMPARE IT TO THE ORIGINAL PRESSURE. IF THE DIFFERENCE IN PRESSURE IS LESS THAN OR EQUAL TO 1 PSI (6.9 KPA), THEN THE LINE WILL BE CONSIDERED TO BE FREE OF LEAKS. IF THE DIFFERENCE IN PRESSURE OF THE WAVEGUIDE IS GREATER THAN 1 PSI, THEN THE VENDOR SHALL REPAIR THE LINE AND REPEAT THE TEST. WITHOUT CLAIM.

2.5 INSTALL NEW COAXIAL TRANSMISSION LINES TO THE SHELTER BULKHEAD MOUNTED SURGE PROTECTIVE DEVICES (DO NOT CONNECT TO ANTENNA).

2.6 THE RADIO ANTENNA SYSTEMS’ RETURN LOSS SHALL BE CORRELATED WITH THE SYSTEM COMPONENT RETURN LOSS SPECIFICATIONS OF THE MANUFACTURER. THE RADIO ANTENNAS, WAVEGUIDES, AND COAXIAL TRANSMISSION LINES SHALL BE SWEEPT IN BOTH FREQUENCY DOMAIN AND TIME DOMAIN WITH APPROPRIATE LABORATORY-GRADE VECTOR NETWORK Analyzer TEST EQUIPMENT, AND PRINTED DOCUMENTATION OF THE TEST RESULTS SHALL BE SUBMITTED TO THE FDOT FOR APPROVAL. THE VENDOR SHALL SUBMIT A LIST OF TEST EQUIPMENT, WITH CALIBRATION DATES, TO THE FDOT PROJECT MANAGER FOR REVIEW AND APPROVAL PRIOR TO TESTING.

3. CUT-OVER

3.1 PERFORM JUPITER INTERCHANGE COORDINATE SITE RECEIVE SIGNAL LEVEL (RSL) MEASUREMENTS. RECORD EXISTING ANTENNA SYSTEMS RSL MEASUREMENTS ONTO THE FDOT APPROVED FORMS. SEE IT-15 AND IT-16. JUPITER INTERCHANGE DIVERSITY RSL MEASUREMENTS FOR THE NEW ANTENNA.

3.2 CUT-OVER THE NEW JUPITER INTERCHANGE DIVERSITY ANTENNA FOR PEAK MAIN LOBE RSL. UTILIZATION OF THE LABORATORY-GRADVE VECTOR NETWORK Analyzer FOR ANTENNA ALIGNMENT IS RECOMMENDED.

3.3 ALIGN THE NEW JUPITER INTERCHANGE DIVERSITY ANTENNA RSL onto the RSL FORM AND VERIFY PROPER RSL PERFORMANCE FOR THE NEW ANTENNA.

3.4 CUT-OVER THE NEW WEST PALM BEACH INTERCHANGE DIVERSITY ANTENNA RSL onto the RSL FORM and VERIFY PROPER RSL PERFORMANCE FOR THE NEW ANTENNA.

3.5 CUT-OVER THE NEW WEST PALM BEACH INTERCHANGE DIVERSITY ANTENNA RSL onto the RSL FORM and VERIFY PROPER RSL PERFORMANCE FOR THE NEW ANTENNA.

3.6 CUT-OVER THE NEW WEST PALM BEACH INTERCHANGE DIVERSITY ANTENNA RSL onto the RSL FORM and VERIFY PROPER RSL PERFORMANCE FOR THE NEW ANTENNA.

3.7 RECORD THE CUTOVER JUPITER INTERCHANGE DIVERSITY RSL onto the RSL FORM and VERIFY PROPER RSL PERFORMANCE FOR THE NEW ANTENNA.

3.8 RECORD THE CUTOVER JUPITER INTERCHANGE DIVERSITY RSL onto the RSL FORM and VERIFY PROPER RSL PERFORMANCE FOR THE NEW ANTENNA.

3.9 ALIGN THE NEW WEST PALM BEACH INTERCHANGE DIVERSITY ANTENNA FOR PEAK MAIN LOBE RSL. UTILIZATION OF THE LABORATORY-GRADVE VECTOR NETWORK Analyzer FOR ANTENNA ALIGNMENT IS RECOMMENDED.

3.10 RECORD THE CUTOVER WEST PALM BEACH INTERCHANGE DIVERSITY RSL onto the RSL FORM and VERIFY PROPER RSL PERFORMANCE FOR THE NEW ANTENNA.

3.11 CUT-OVER THE NEW WEST PALM BEACH INTERCHANGE MAIN ANTENNA TO THE JUPITER INTERCHANGE MICROWAVE RADIO. THE VENDOR SHALL UTILIZE THE EXISTING FLEXIBLE RECTANGULAR WAVEGUIDE AT THE RADIO END FOR CUTOVER. THE OLD WAVEGUIDE SHALL REMAIN PRESSURIZED UNTIL SUCCESSFUL CUTOVER.

3.12 CUT-OVER THE NEW WEST PALM BEACH INTERCHANGE MAIN ANTENNA TO THE JUPITER INTERCHANGE MICROWAVE RADIO. THE VENDOR SHALL UTILIZE THE EXISTING FLEXIBLE RECTANGULAR WAVEGUIDE AT THE RADIO END FOR CUTOVER. THE OLD WAVEGUIDE SHALL REMAIN PRESSURIZED UNTIL SUCCESSFUL CUTOVER.

3.13 CUT-OVER THE NEW JUPITER INTERCHANGE MAIN ANTENNA RSL onto the RSL FORM and VERIFY PROPER RSL PERFORMANCE FOR THE NEW ANTENNA.

3.14 CUT-OVER ALL NEW COAXIAL CABLES TO THE JUPITER INTERCHANGE LAND MOBILE RADIO EQUIPMENT, WHILE MINIMIZING RADIO SYSTEM DOWNTIME.

3.15 REMOVE ALL NEW ANTENNAS AND RELOCATE TO THE NEW JUPITER INTERCHANGE TOWER. CUTOVER NEW CABLES TO THE TEQUESTA PUBLIC SAFETY ANTENNAS, WHILE MINIMIZING DOWNTIME.

INSPECTION NOTES:

1. THE INSPECTION SHALL BE PERFORMED BY THE VENDOR AND WITNESSED BY FDOT. THE VENDOR SHALL NOTIFY FDOT AT LEAST 10 DAYS PRIOR TO COMPLETION OF INSTALLATION. THE VENDOR AND FDOT SHALL VERIFY JOINTLY THAT ALL INSTALLATION WORK IS CORRECTLY INSTALLED AND FUNCTIONAL.

2. THE VENDOR SHALL NOTIFY FDOT AT LEAST TWO DAYS PRIOR TO COMPLETION OF GROUNDING INSTALLATION FOR INSPECTION. GROUNDING INSTALLATIONS ARE INSPECTED BY THE VENDOR AND WITNESSED BY FDOT.

3. GROUNDING SHALL BE INSPECTED FOR PROPER CONNECTION TYPES, TIGHTNESS, WORKMANSHIP, AND CONFORMANCE WITH THE APPROVED DESIGN. ANY EXOTHERMIC BONDS THAT ARE DEEMED UNSATISFACTORY SHALL BE REPAIRED BY THE VENDOR WITH NEW BONDS, WITHOUT CLAIM.

4. DURABILITY OF THE INSPECTION SHALL BE ACCOMPLISHED WITH THE RECOMMENDATIONS OF PHAVAL(10-116 "DRILLED SHAFTS: CONSTRUCTION PROCEDURES AND LRP DESIGN METHODS") AND ACI 355.9R-95 "DESIGN AND CONSTRUCTION OF DRILLED PIERS": NON-DESTRUCTIVE INTEGRITY TESTS ARE NOT REQUIRED FOR THIS TELECOMMUNICATIONS PROJECT.

5. FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SECTION 455 DOES NOT APPLY FOR THIS PROJECT.

6. THE SITE SHALL BE INSPECTED TO BE FREE OF DEBRIS AND THAT EXCAVATIONS ARE BACKFILLED AND COMPOND RESTORED.

1. The vendor shall submit tower, foundation, antenna systems, site layout, and construction staging area design plans to the FDOT project manager for review and approval.

2. The vendor shall remove two (2) existing parking spaces for new gate entry to the site. The vendor shall stripe the parking spaces to deter any further public parking. In addition, the vendor shall appropriately cut and finish the curbing at the new access gate. During construction, an adjacent parking space may be temporarily reserved to facilitate site access.

Upon completion, the vendor shall install two (2) new permanent spaces as shown in these design plans.

3. The vendor shall furnish and install tower foundations per these plans.

4. The vendor shall furnish and install a new 220 ft. galvanized solid rod member self-supporting tower per these plans. The tower shall be designed to support the antennas, lines, and appurtenances, and per the design criteria delineated on Sheet IT-3.

5. The vendor shall secure the tower site compound at all times. Additional or temporary type B fencing may be required. The vendor shall be responsible for all additional fencing, at no additional cost to FDOT.

6. The vendor shall furnish and install a tower safety climbing assembly on the new 220 ft. self-supporting tower. The climbing assembly shall be manufactured specifically for the tower that is installed. The climbing assembly may include step bolts or a climbing ladder.

7. The vendor shall furnish and install antennas, CCTV cameras with lowering devices and messenger wires, obstruction lighting system: elliptical and flexible rectangular waveguides, coaxial cables, and CCTV lowering and power/data cables per sheets IT-10, IT-11, and IT-12. The vendor shall submit a detailed antenna system mounting design to the FDOT project manager for review and approval. The vendor shall submit a detailed interior and exterior cable management design plan to the FDOT project manager for review and approval. The vendor shall submit a detailed CCTV mounting system design plan to the FDOT project manager for review and approval. The vendor shall submit a detailed obstruction lighting system design plan to the FDOT project manager for review and approval. The vendor shall install the grounding system per IT-8.

8. The vendor shall install the grounding system per IT-8.

9. The FDOT or approved representative shall inspect tower, antennas, and grounding system installations.

10. The vendor shall test antenna systems, cut-over radio systems and align antennas.

11. The vendor shall remove guyed tower and facilities and install new perimeter fence per sheet IT-9.

12. The FDOT or approved representative shall perform a final inspection of complete job.

**Legend:**
- **NEW INSTALLATION**
- **SOIL BORING**
- **CAMERA LOWERING**
1. THE VENDOR SHALL SUBMIT A DETAILED GROUNDING PLAN TO THE FDOT PROJECT MANAGER FOR REVIEW AND APPROVAL.

2. EXISTING TOWER AND PARTIAL FENCING REMOVED FOR VISUAL CLARITY.

3. ALL GROUND RODS SHALL BE 10 FEET LONG, COPPER-CLAD STEEL WITH A MINIMUM DIAMETER OF 5/8 IN.

4. THE INSTALLATION OF GROUND RODS SHALL BE PER THESE SPECIFICATIONS.

5. ALL GROUNDING CONDUCTORS SHALL BE EQUIPPED WITH SURGE PROTECTIVE DEVICES (SPD) PER THESE SPECIFICATIONS. ALL SPDs SHALL BE CONNECTED DIRECTLY TO THE BULKHEAD UPON ENTERING THE COMMUNICATIONS BUILDING.

6. THE INSTALLATION OF GROUND RODS SHALL BE PER THESE SPECIFICATIONS.

7. THE VENDOR SHALL NOT BACKFILL OPENINGS WHERE UNDERGROUND GROUND CONDUCTORS AND BELOW GROUND INSTALLATIONS OF GROUND WIRE ARE EXPOSED.

8. NEW BOND CONNECTIONS SHALL BE EIGHT.

9. THE VENDOR SHALL CLEAN AND PREPARE ALL GROUND CONDUCTORS AND SURFACES PRIOR TO PERFORMING EXOTHERMIC BONDS.

10. THE VENDOR SHALL INSTALL THE GROUND BUS BAR AT A POINT BETWEEN 431987 AND 431988.

11. THE VENDOR SHALL INSTALL A GROUND BUS BAR AT THE BASE OF THE TOWER.

12. THE VENDOR SHALL EXOTHERMICALLY BOND THE NEW GROUNDING SYSTEM LINE BRIDGE SUPPORT POLES TO THE NEW TOWER GROUND RING WITH #2 AWG TINNED SOLID COPPER WIRE.

13. ALL EXOTHERMIC BONDS SHALL BE ONE SHOT UNLESS PRE-APPROVED IN WRITING BY THE FDOT PROJECT MANAGER.

14. THE VENDOR SHALL NOT BACKFILL OPENINGS WHERE UNDERGROUND GROUNDING SYSTEM IS MADE UNTIL FDOT HAS INSPECTED AND APPROVED THE GROUNDING SYSTEM.

15. ALL RADIO FREQUENCY (RF) WAVEGUIDES AND COAXIAL TRANSMISSION LINE SHALL BE GROUNDED TO THE TOWER AND BULKHEAD AT A MINIMUM OF FOUR (4) LOCATIONS PER THESE SPECIFICATIONS: 1) TOP OF TRANSMISSION LINE SYSTEM, 2) MIDDLE OF THE TRANSMISSION LINE SPAN, 3) BASE OF THE TOWER WHERE TRANSITION IS MADE TO THE HORIZONTAL TRANSMISSION LINE BRIDGE (TOWER BASE GROUND BUS BAR), AND 4) AT THE TRANSMISSION LINE BULKHEAD PRIOR TO ENTERING THE COMMUNICATIONS BUILDING.

16. NEW GROUNDING SHALL BE PER FDOT DESIGN STANDARDS FOR FENCE TYPE B, INDEX NO 602.
1. The vendor shall submit a detailed removal/demolition plan for approval by FDOT. The plan shall include a detailed schedule of events detailing each phase of removal/demolition; a safety plan detailing the activities and the actions to be taken to mitigate hazards; and an emergency plan.

2. The vendor shall remove a portion of the existing fence system per these specifications.

3. The vendor shall remove the old obstruction lighting system, including but not limited to, power supplies, controllers, SPOS, ballasts, conduits, and all associated electrical and grounding conductors in both the communications room and the generator room. The vendor shall leave the circuit breaker in place and switch it to the "off" position. See Sheet IT-14.

4. The vendor shall dismantle and remove 204 ft. guyed tower.

5. The vendor shall remove tower base foundation and all guy anchor foundations no less than 3 ft. below existing grade.

6. The vendor shall submit a detailed site restoration plan to the FDOT Project Manager for review and approval.

7. The vendor shall install new perimeter fencing per these plans and per FDOT 2014 Design Standards for Fence Type B, Index No 802. The vendor shall match the existing fence and gate heights to their respective compounds. The vendor has flexibility as to the actual layout of the new perimeter fencing. The vendor shall install a new double gate, 10 ft. wide (min.). The gate shall have gate-closing arrangements that are anchored in concrete in the ground (female pipe receptacle anchored in concrete).

8. The vendor shall backfill and compact all excavations, holes and trenches (after inspection and approval is performed by FDOT), level compound with top soil, and sod all disturbed areas to match surrounding ground cover.

9. The vendor shall legally dispose of all tower steel foundation material, fencing, extraction material, debris, and trash.

Existing guyed tower paint has tested positive for lead based paint. Reference: Limited lead based paint screening R01000-02257 included in these plans.

---

Legend:
- **Existing Installation**
- **To Be Removed**

---

**Facilities Removal Plan**

---

**Contacts**

- Florida Department of Transportation
- 651 Suan Avenue St. AS 80
- Tallahassee, FL 32399-0450
- Phone: (850) 410-5800
- Fax: (850) 410-5501
**DESCRIPTION**

1. INSTALL TOWER FOUNDATIONS AND STEEL PER THESE PLANS.
2. INSTALL 48 VDC LED DUAL DAY/NIGHTTIME TOWER LIGHTING SYSTEM PER THESE PLANS.
3. INSTALL ALL ANTENNAS, CCTV CAMERAS AND LOWERING DEVICES WITH MESSAGING WIRES, TRANSMISSION LINES, CCTV POWER DATA CABLES, CONSULTS, SURGE PROTECTION, AND ASSOCIATED MOUNTING AND GROUNDING HARDWARE PER THESE PLANS. THE TOP OF THE AIR TERMINAL MUST BE THE HIGHEST POINT ON THE TOWER.
4. INSTALL CCTV LOWERING DEVICE SECURITY BOXES, AND ASSOCIATED MOUNTING HARDWARE, AT THE BASE OF THE TOWER.

**NOTES:**

- REMOVE ALL TOWER STEEL, GUY W IRES, AND FOUNDATIONS PER THESE PLANS.
- REMOVE AND INSTALL ON NEW TOWER AS L AND M.
- ****THE CCTV CAMERAS SHALL BE AXIS O8H5-E MK X CAMERAS WITH CLS CTM'THSDH-XV-PAT LOWERING DEVICES, THE CAMERAS SHALL BE POWERED AND CONTROLLED BY AXIS T8124 DC MODPAN POE INJECTORS. THE SURGE PROTECTION DEVICES SHALL BE CITEL M8R-POE-A.

**EXISTING TOWER LOADING DIAGRAM**

**NEW TOWER LOADING DIAGRAM**
THE VENDOR SHALL INSTALL THE NEW CCTV POWER.

THE VENDOR SHALL INSTALL A NEW GAS DISTRIBUTION MANIFOLD KIT AND ASSOCIATED GAUGES AND PLASTIC TUBING FOR THE NEW WAVEGUIDES. THE VENDOR SHALL INTEGRATE THIS EQUIPMENT WITH THE EXISTING PRESSURIZATION EQUIPMENT.

THE VENDOR SHALL INSTALL THE NEW SURGE PROTECTIVE DEVICES DIRECTLY ON THE TRANSMISSION LINE BULKHEAD.

THE VENDOR SHALL ROUTE THE NEW COAXIAL TRANSMISSION LINES ALONG THE OVERHEAD CABLE TRAYS, PARALLEL TO THE EXISTING UHF COAXIAL TRANSMISSION LINES TO THE APPROPRIATE UHF RADIO RACKS. THE VENDOR SHALL SECURE THE TRANSMISSION LINES TO THE OVERHEAD CABLE TRAYS WITH ZIP TIES, AT 36 IN. INTERVALS, MAXIMUM.

THE VENDOR SHALL INSTALL THE NEW CCTV POWER DATA CABLES IN THE TRANSMISSION LINE BULKHEAD, AND NEATLY COIL ALL EXCESS CABLE FOR FUTURE TERMINATION. EXCESS CABLE LENGTHS SHALL BE MINIMUM 15 FT. THE VENDOR SHALL ALSO PROVIDE THE MIDSPAN POE INJECTORS INSIDE THE COMMUNICATIONS BUILDING FOR FUTURE INSTALLATION BY OTHERS.

THE VENDOR SHALL REMOVE THE OLD WAVEGUIDES AND ASSOCIATED PRESSURIZATION TUBING AFTER SUCCESSFUL CUTOVER OF THE MICROWAVE ANTENNA SYSTEMS. THE VENDOR SHALL CAP AND CLOSE OFF ALL UNSED GAUGES TO PREVENT AIR LEAKS.

THE VENDOR SHALL INSTALL NEW BOOT COVERS ON ALL USED AND UNUSED BULKHEAD PORTS.
NOTES:

1. The vendor shall install the new 48 VDC tower obstruction lighting system and associated surge protection. Surge protection shall be advanced protection technologies TWL series specific to the Technostrobe LED-B-Hybrid-48V-3.0 Obstruction Lighting System.

2. The vendor is responsible for determining the best locations for equipment and all associated conduits and mounting and grounding hardware.

3. The approximate location of this equipment above is for diagrammatical purposes only. The vendor shall relocate the FCC licenses.

4. The vendor shall relocate the safety kit to the interior north wall.