

RFP NO.: 10-64

**ELEVEN (11) COMPREHENSIVE COMMUNICATIONS
TOWER SYSTEMS**

PROPOSAL REQUIREMENTS



St. Johns County Board of Commissioners
St. Johns County Purchasing Department
2446 Dobbs Road
Saint Augustine, Florida 32086

NOTICE TO RESPONDENTS
PROPOSAL NO. 10-64
PROVIDE COMPREHENSIVE COMMUNICATIONS TOWER SYSTEMS

Notice is hereby given that proposals will be received until **Thursday, August 26, 2010 at 4:00 P.M.** by Lou Nester, Contract Coordinator, St. Johns County Purchasing Department, 2446 Dobbs Road, St. Augustine, Florida 32086, for **ELEVEN (11) Comprehensive Communications Tower Systems**. Proposals will be furnished to the Evaluators promptly after the **4:00 PM. deadline.** **PROPOSALS RECEIVED AFTER THE 4:00 PM DEADLINE WILL NOT BE ACCEPTED.**

Many packages can be downloaded from the Internet. Check the agency's site for download availability and any applicable fees. Vendors registered with DemandStar.com, Inc. can download packages at no cost from their website - www.onvia.com.

RFP packages/specifications are also available from Lou Nester at Email: lnester@sjcfl.us or call 904-209-0164.

Award and execution of this contract is contingent upon budget approval by the St. Johns County Board of County Commissioners.

St. Johns County reserves the right to accept or reject any or all proposals, waive minor informalities, or award the proposal which best serves the interests of St. Johns County.

Any respondent affected adversely by an intended decision with respect to the award of any proposal, shall file with the Purchasing Department for St. Johns County, a written notice of intent to file a protest not later than seventy-two (72) hours (excluding Saturday, Sunday and legal holidays) after the posting of the proposal tabulation. Protest procedures may be obtained in the Purchasing Department.

BOARD OF COUNTY COMMISSIONERS
OF ST. JOHNS COUNTY, FLORIDA
CHERYL STRICKLAND, CLERK

BY: _____
DEPUTY CLERK

TO: THE BOARD OF COUNTY COMMISSIONERS
OF ST. JOHNS COUNTY, FLORIDA

DATE: _____, 2010

PROPOSAL

If awarded a Purchase Order on the basis of this proposal, the undersigned pledges to provide the services as specified in the Proposal and County Specifications barring delays due to strikes, fires, transportation difficulties or other causes beyond the control of the undersigned.

The undersigned declares that the statements and representations made in this proposal are true in every respect and that the said proposal is in all respects fair and made without collusion or fraud, and that no member of the County Board, or any other agent or employee of the County, directly or indirectly, is interested in this proposal or in any profits expected to accrue there from.

The following proposal is presented:

PROVIDE TOWERS AND FURNISH REQUESTED TOWER SPACE TO ST. JOHNS COUNTY AT NO COST WHILE RENTING ADDITIONAL TOWER SPACE TO OTHER CUSTOMERS. ELEVEN (11) TOWERS WILL BE BUILT ON COUNTY FURNISHED PROPERTY.

1. **St. Johns County requires the installation of communications and microwave antennas at various heights on each of the Eleven (11) towers which are depicted in Table 0-1 ANTENNA – MICROWAVE MATRIX contained herein under section 3.16.4.**
2. **Advise date the Towers will be operational: _____.**
3. **Respondents should provide a projection of what, if any, income the County may be entitled to from collocated tenants.**
4. **The County will assist with the permitting of these sites as Public Safety Communications facilities and will waive all County permitting fees.**
5. **The successful respondent shall provide technical support and representatives for any public meetings deemed to be necessary by the County.**
6. **For the purpose of this RFP, antennas, transmission lines and antenna mounting hardware are not included in this procurement, but are identified for the purpose of defining the anticipated tower loading for the communications system.**
7. **Please note that the County has specified desired outcome of the RFP, if your firm cannot comply with all stated requirements, please submit a proposal based on your firm's capabilities and business needs. All proposals will be considered and ranked.**

NOTE: Respondent is required to provide drawings/specifications and/or brochure on all buildings and tower systems being proposed.

I certify that the product/service presented in the above proposal meets or exceeds the County specifications and that I, the undersigned Respondent, declare that I have carefully examined the specifications, terms and conditions of this RFP and I am thoroughly familiar with its provisions and quality and type of coverage called for and offer a proposal herein. The undersigned further declares that he has not divulged, discussed or compared his response with any other respondent and has not colluded with any other respondent or parties to a RFP whatsoever for any fraudulent purpose.

COMPANY: _____

ADDRESS: _____

MINORITY OR WOMAN OWNED BUSINESS: _____

FEDERAL ID NO. OR SOCIAL SECURITY NO.: _____

SIGNATURE: _____

(Typed or Printed Signature)

TITLE: _____

DATE: _____

TELEPHONE NO.: _____

FAX NO. _____

Remarks to Proposer

An Original and six (6) copies (for a total of seven (7) sets) of your proposal and supplemental information must be placed in an envelope with the company name and address and plainly marked **“RFP NO. 10-64 Comprehensive Communications Tower Systems”**.

THE TOWERS ARE REQUIRED IN ELEVEN (11) DIFFERENT LOCATIONS. Review Site Map Included in specifications.

All Proposals must be signed manually in ink or indelible pencil by a responsible officer of your company. All pages must be initialed as they are reviewed.

Affidavit - Attachment A must be completed and attached to seller’s proposal.

The Board of County Commissioners and St. Johns County reserve the right to reject any or all proposals, waive minor formalities or award the business to the business whose proposal best services the interest of St. Johns County.

PURCHASING DEPARTMENT

DATE: _____
Acceptance of Proposal

BY: _____

MINIMUM SPECIFICATIONS and CONDITIONS

BOARD OF COUNTY COMMISSIONERS OF ST. JOHNS COUNTY, FLORIDA

FOR: COMPREHENSIVE COMMUNICATION TOWER SYSTEM

INTRODUCTION:

St. Johns County is soliciting Qualified Contractors from qualified firms to provide Eleven (11) Towers through out St. Johns County. See tower location map within this specification. An equipment building will be furnished under or near the tower site as per Specifications included in this document.

The successful respondent is also expected to maintain developed roads to the tower site. Maintain the tower and antennas in good working order, providing cleared area around the tower to prevent fires within a safe distance of the tower, and carrying out the duties required by the County that shall be agreed upon by the County and the successful respondent.

All services shall be provided in accordance with the requirements published within this solicitation document and addendums thereto.

“In the event that a Contract/Agreement is Attached to the RFP, such Attached Contract/Agreement is for Discussion Purposes Only, and Not Necessarily Reflective of any Contract That May Be Ultimately Entered into By the County. In the event that a Contract/Agreement is Not Attached to the RFP, it is expressly understood that the Board of County Commissioner’s (Boards) preference/selection of any Proposal does not constitute an award of a Contract/Agreement with the County. It is anticipated that subsequent to the Board’s preference/selection of any Proposal, Contract negotiations will follow between the County and the selected Proposer. It is further expressly understood that no Contractual relationship exists with the County until a Contract has been executed by both the County, and the selected Proposer. The County reserves the right to delete, add to, or modify one or more components of the selected Proposer’s Proposal, in order to accommodate changed or evolving circumstances that the County may have encountered, since the issuance of the RFP. It is further understood, Proposer (whether selected or not) may not seek or claim any award and/or re-imbursement from the County for any expenses, costs, and/or fees (including attorney’s fees) borne by any Proposer, during the entire RFP process. Such expenses, costs, and/or fees (including attorney’s fees) are the sole responsibility of the Proposer. By submitting a Proposal, a Proposer agrees to be bound by these terms and provisions of the RFP.”

TOWER SPECIFICATIONS:

3.16 Tower Sites

3.16.1 General

The Proposer shall utilize tower site locations to be provided by St. Johns County according to Site Location Map as depicted in 3.16.4. The order of priority for site selection shall be as follows:

- A. Existing County communications facilities and new sites.
- B. Development of new communication sites on County owned property
- C. Sites within the County that are to be used as tower sites as listed and depicted in the Site Location Map in 3.16.4.

3.16.2 Examination of Sites and Specifications

The Proposer is required to carefully examine the specifications for each site considered for the proposed system, to familiarize themselves thoroughly regarding any and all conditions and requirements that may in any manner affect the work to be performed under this procurement. The County's radio infrastructure equipment must be installed in a secure environment and protected from unauthorized access. If appropriate existing shelters or equipment rooms are available that meet the requirements stated herein, and they can be used to adequately house the radio equipment, the Proposer may propose the use of these facilities. The Proposer shall comply with the requirements of this RFP when proposing site modifications or upgrades.

3.16.3 County Communications Sites.

The County provided tower sites shall be used by the Proposers. The County realizes that some of the current tower sites may be low and require fill. When this situation is experienced a representative of the County must be contacted.

3.16.4 Tower Sites with required equipment list.

SITE DEVELOPMENT MATRIX

		Main Tower (Site 1)	Fire Rescue Admin (Site 2)
Site Location and Function	Site Status Overview	Existing County owned site	County owned building - needs equipment room and tower
	Street Address	3111 Agricultural Center Drive	3657 Gaines Road
	Coordinates	29°54'20.8"N 81°24'53.2"W	29°56'08.9"N 81°21'43.8"W
	Owner	St. Johns County	St. Johns County
	Lying In	PIN: 087550-0010	PIN: 073050-0060
	Communications System Functionality	800 MHz RF Site	Backup Control Point
Tower Structure	Tower Structure Height and Type	New 250' SS	New SS, Height to be determined
	Communications System Equipment Shelter Requirements	12' x 36' Concrete Generator/Equipment Shelter	Space in new building for a new communications system equipment room.
	Backup Power Requirements	New 40kVA Propane Generator, 1000 gal. tank	Existing
	Site Elevation Requirements	Above 100 yr flood plain	Above 100 yr flood plain
	Communications Site Development Requirements	Upgrade site to support new equipment shelter, new tower structure, electrical service, generator, collocated tenants, and site elevation requirements.	Allocate space in new building for Sheriff and Fire Rescue dispatch, construct a new communications system equipment room. Determine if a tower can be constructed.

SITE DEVELOPMENT MATRIX (cont.)

Switzerland (Site 3)	St. Augustine (Site 4)	Fire Station #17 (Site 5)
New County owned - "Greenfield" site	New County owned - "Greenfield" site	New County owned - construct at existing County fire station
Borrow Pit Road	1955 US1 Dixie Hwy	10001 Cartwheel Bay Ave.
30°05'00.1"N 81°37'51.5"W	29°51'50.3"N 81°19'27.0"W	30°03'35.3"N 81°32'04.4"W
St. Johns County	St. Johns County	St. Johns County
PIN: 003500-0000	PIN: 135074-0000	PIN: 026430-0030
800 MHz RF Site	800 MHz RF Site	800 MHz RF Site
New 250' SS	New 250' SS	New 250' SS
12' x 36' Concrete Generator/Equipment Shelter	12' x 36' Concrete Generator/Equipment Shelter	12' x 36' Concrete Generator/Equipment Shelter
New 40kVA Propane Generator, 1000 gal. tank	New 40kVA Propane Generator, 1000 gal. tank	New 40kVA Propane Generator, 1000 gal. tank
Above 100 yr flood plain & Category 5 storm surge	Above 100 yr flood plain & Category 5 storm surge	Above 100 yr flood plain
Construct new site to support equipment shelter, electrical service, generator, collocated tenants, and site elevation requirements	Construct new site to support equipment shelter, electrical service, generator, collocated tenants, and site elevation requirements	Construct new site to support equipment shelter, electrical service, generator, collocated tenants, and site elevation requirements

SITE DEVELOPMENT MATRIX (cont.)

Site 6	Site 7	Site 8
New - "Greenfield" site To Be Determined	New County owned - "Greenfield" site	New - "Greenfield" site To Be Determined
Very remote, located in forest	Burke Floyd Road at State Road 207	West of I-95 just south of St. Johns County Golf Course, very remote in forest
29°53'54.4"N 81°30'57.9"W	29°45'44.0"N 81°27'43.9"W	29°47'27.4"N 81°22'12.9"W
To Be Determined	St. Johns County	To Be Determined
	PIN: 033670-0000	
800 MHz RF Site	800 MHz RF Site	800 MHz RF Site
New 250' SS	New 250' SS	New 250' SS
12' x 36' Concrete Generator/Equipment Shelter	12' x 36' Concrete Generator/Equipment Shelter	12' x 36' Concrete Generator/Equipment Shelter
New 40kVA Propane Generator, 1000 gal. tank	New 40kVA Propane Generator, 1000 gal. tank	New 40kVA Propane Generator, 1000 gal. tank
Above 100 yr flood plain & Category 5 storm surge	Above 100 yr flood plain	Above 100 yr flood plain
Construct new site to support equipment shelter, electrical service, generator, collocated tenants, and site elevation requirements	Construct new site to support equipment shelter, electrical service, generator, collocated tenants, and site elevation requirements	Construct new site to support equipment shelter, electrical service, generator, collocated tenants, and site elevation requirements

SITE DEVELOPMENT MATRIX (cont.)

Site 9	SW County (Site 10)	SE County (Site 11)
New County owned – "Greenfield" site	New County owned - "Greenfield" site	New - "Greenfield" site To Be Determined
Stratton Road North about 1/10 mile North of Stratton Road	3870 Flagler Estates Blvd. west of Hwy 13	9700 Block of Dixie Hwy, west side
30°02'38.9"N 81°25'31.3"W	29°40'00.9"N 81°25'14.2"W	29°40'33.8"N 81°17'33.7"W
St. Johns County	St. Johns County	To Be Determined
PIN: 070725-0000	PIN: 141692-0020	
800 MHz RF Site	800 MHz RF Site	800 MHz RF Site
New 250' SS	New 250' SS	New 250' SS
12' x 36' Concrete Generator/Equipment Shelter	12' x 36' Concrete Generator/Equipment Shelter	12' x 36' Concrete Generator/Equipment Shelter
New 40kVA Propane Generator, 1000 gal. tank	New 40kVA Propane Generator, 1000 gal. tank	New 40kVA Propane Generator, 1000 gal. tank
Above 100 yr flood plain	Above 100 yr flood plain	Above 100 yr flood plain & Category 5 storm surge
Construct new site to support equipment shelter, electrical service, generator, collocated tenants, and site elevation requirements	Construct new site to support equipment shelter, electrical service, generator, collocated tenants, and site elevation requirements	Construct new site to support equipment shelter, electrical service, generator, collocated tenants, and site elevation requirements

TABLE 0-1 ANTENNA – MICROWAVE MATRIX

Site Name	Antenna	Transmission Lines	Function	Ant Height AGL (ft.)*	Ant Azimuth (deg.)
Main Tower Site 1	(4) BCR-80010-180	(4) 1 1/4"	800 MHz TX	250	75
	(2) BMR12-OT0.75	(2) 7/8" & 3/8"	800 MHz RX	250	0
	8' MW Dish	EW63	To Site 9	160	356
	4' MW Dish	EW63	To Site 2	180	57
	4' MW Dish	EW63	To Combined Dispatch	130	315
	8' MW Dish	EW63	To Site 8	120	161
	6' MW Dish	EW63	To Site 4	105	118
Fire Rescue Administration Site 2	4' MW Dish	EW63	To Site 1	60	237
Switzerland Site 3	(4) BMR10-BT2.5	(4) 1 1/4"	800 MHz TX	200	130
	(2) BMR12-OT0.75	(2) 7/8" & 3/8"	800 MHz RX	250	0
	4' MW Dish	EW63	To Site 5	105	106
	6' MW Dish	EW63	To Site 6 (Main)	175	152
	8' MW Dish	EW63	To Site 6 (Diversity)	135	152
St. Augustine Site 4	(4) BCR-80010-180	(4) 1 1/4"	800 MHz TX	230	75
	(2) BMR12-OT0.75	(2) 7/8" & 3/8"	800 MHz RX	250	0
	6' MW Dish	EW63	To Site 1	135	298
Fire Station #17 Site 5	(4) BMR10-BT0.75	(4) 1 1/4"	800 MHz TX	230	135
	(2) BMR12-OT0.75	(2) 7/8" & 3/8"	800 MHz RX	250	0
	4' MW Dish	EW63	To Site 9	112	99
	4' MW Dish	EW63	To Site 3	110	286
Site 6	(4) BCR-80010-180	(4) 1 1/4"	800 MHz TX	230	65
	(2) BMR12-OT0.75	(2) 7/8" & 3/8"	800 MHz RX	250	0
	6' MW Dish	EW63	To Site 7	130	161
	6' MW Dish	EW63	To Site 3 (Main)	175	332
	8' MW Dish	EW63	To Site 3 (Diversity)	135	332
Site 7	(4) BCR-80010-180-3	(4) 1 1/4"	800 MHz TX	230	80
	(2) BMR12-OT0.75	(2) 7/8" & 3/8"	800 MHz RX	250	0
	6' MW Dish	EW63	To Site 6	117	341
	6' MW Dish	EW63	To Site 10	105	159

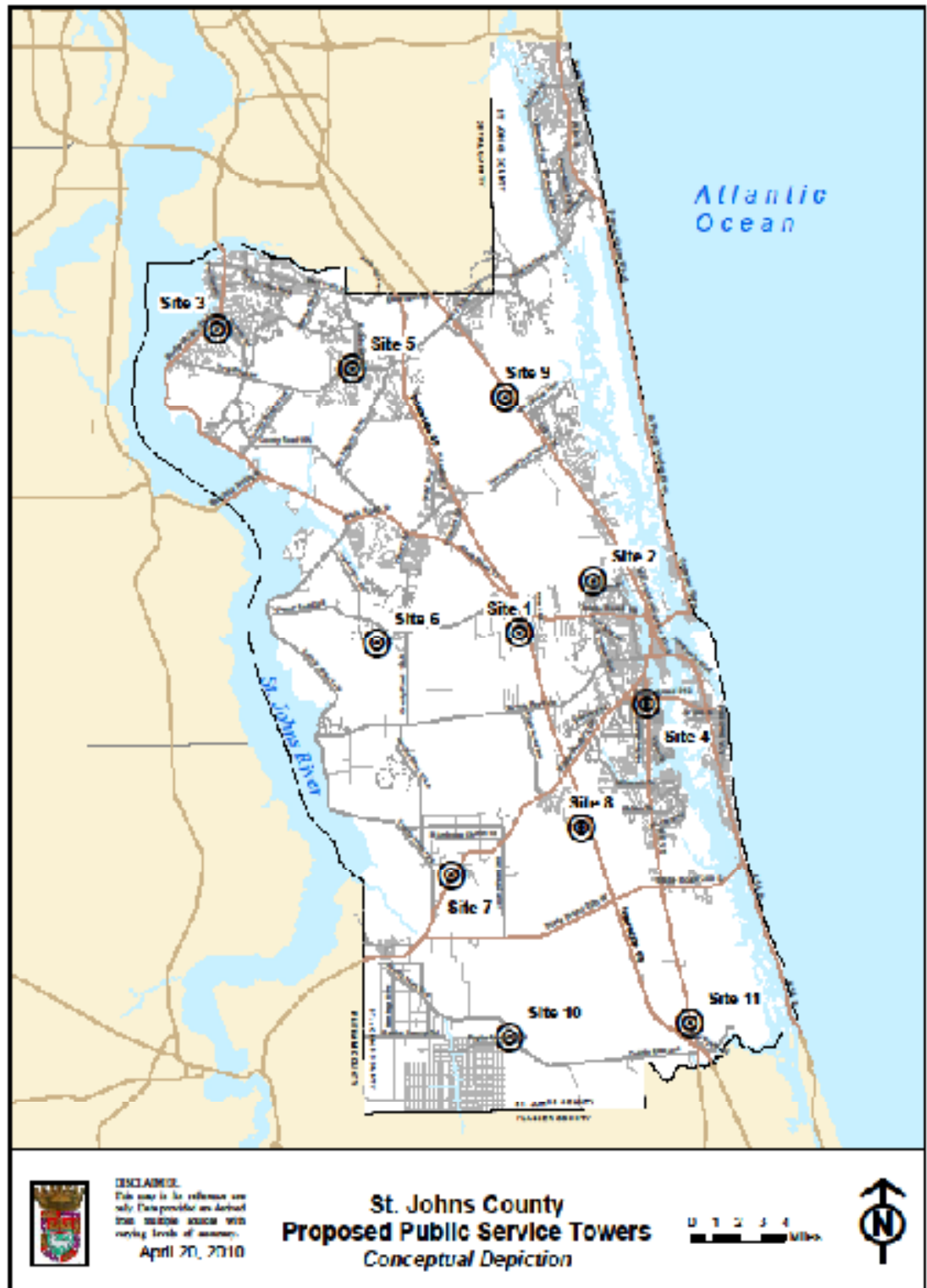
*NOTE: Antenna heights are center for MW and mounting height for 800 MHz; all microwave (MW) dish sizes are estimates only; all 800 MHz side-mounted antennas on 6 ft standoffs minimum.

TABLE 0-1 ANTENNA – MICROWAVE MATRIX (cont.)

Site Name	Antenna	Transmission Lines	Function	Ant Height AGL (ft.)*	Ant Azimuth (deg.)
Site 8	(4) BCR-80012-3	(4) 1 1/4"	800 MHz TX	230	80
	(2) BMR12-OT0.75	(2) 7/8" & 3/8"	800 MHz RX	250	0
	6' MW Dish	EW63	To Site 11	120	149
	8' MW Dish	EW63	To Site 1	110	341
Site 9	(4) BCR-80010-180	(4) 1 1/4"	800 MHz TX	230	70
	(2) BMR12-OT0.75	(2) 7/8" & 3/8"	800 MHz RX	250	0
	4' MW Dish	EW63	To Site 5	105	279
	6' MW Dish	EW63	To Ponte Vedra	110	14
SW County Site 10	8' MW Dish	EW63	To Site 1	110	176
	(4) BMR10-BT0.75	(4) 1 1/4"	800 MHz TX	200	10
	(2) BMR12-OT0.75	(2) 7/8" & 3/8"	800 MHz RX	250	0
	6' MW Dish	EW63	To Site 7	106	339
SE County Site 11	6' MW Dish	EW63	To Site 11	110	85
	(4) BMR10-BT0.75	(4) 1 1/4"	800 MHz TX	200	350
	(2) BMR12-OT0.75	(2) 7/8" & 3/8"	800 MHz RX	250	0
	6' MW Dish	EW63	To Site 10	117	265
	6' MW Dish	EW63	To Site 8	125	330

*NOTE: Antenna heights are center for MW and mounting height for 800 MHz; all microwave (MW) dish sizes are estimates only; all 800 MHz side-mounted antennas on 6 ft standoffs minimum.

Site Location Map



3.17 Towers and Facilities.

The Contractor shall install the communications towers, equipment shelters, and other necessary facilities and make all necessary electrical and mechanical connections. The Contractor shall be responsible for all electrical connections to the communications equipment shelters. Routing of wires and cables shall be neat and orderly. General site preparation, specific building foundation and tie-down, and landscaping shall be the responsibility of the Contractor. The Contractor shall comply with all Permitting Requirements

3.17.1 Technical Requirements.

All equipment must be of current manufacture and all towers shall be self supporting by design, including component parts, and production techniques that result in high quality, long-life equipment and facilities. This RFP includes explicit technical and functional parameters which are not intended to limit equipment design. The intent is to establish the minimum acceptable parameters, performance standards, and design criteria. The Contractor is responsible for ensuring that their design meets all functional requirements of this project.

3.17.2 Communications Towers.

The County requires implementation of self supporting towers. All tower legs and cross members shall be solid – no tubular legs or cross members are permitted. In the event that construction of new communications towers is proposed, the towers, foundations, and related equipment shall be engineered, furnished, and installed by the Contractor at the designated sites. This includes the furnishing of all labor and materials and performing all necessary operations required for the complete installation. The design of the towers and foundations must be certified by a qualified Professional Engineer (P.E.) licensed to practice in the State of Florida.

The Contractor shall file with the Federal Aviation Administration (FAA) application Form 7460-1 (Notice of Proposed Construction or Alteration) for all new towers regardless of tower height. Upon approval by the FAA for the proposed tower height, the Contractor shall file with the Federal Communication Commission (FCC) to obtain an Antenna Structure Registration (ASR) number. The Contractor shall submit with the FAA Form 7460-1 a certified survey letter verifying the coordinates and tower base elevation in NAD 83 Datum. The certified survey letter verifying the coordinates and tower base elevation must meet FAA “2C Accuracy” requirements. The Contractor shall furnish and display the ASR number in a conspicuous place so that it is readily visible near the base of the antenna structure. Materials used to display the ASR number must be weather-resistant and of sufficient size to be easily seen at the base of the tower. The Contractor shall file the required notifications with the FAA and FCC notifying them that the construction of the tower is complete. Towers shall adhere to the latest of all applicable industry standards, specifications, FAA requirements, TIA/EIA-222, ASCE-7, and Florida, or local building code requirements. Standards listed herein are meant to serve as a guide and shall be superseded by any and all current applicable industry standards, FAA requirements, and/or local codes at the time of the installation.

3.17.2.1 Construction Materials

All steel materials used in the construction of the towers shall be galvanized, new, and shall conform to the latest version of TIA/EIA-222 with respect to physical properties, manufacture, workmanship, and factory finishes. All towers shall be considered “used primarily for essential communications” and Class III in accordance with the Classification of Structures contained in TIA/EIA-222. The lighting system shall conform with the specifications as outlined in Section 3.17.2.13 ‘Dual Lighting System’.

3.17.2.2 Site Plans

The Contractor’s site plans depicting the location of the tower, transmission line bridge, equipment shelter, and generator as well as proposed locations of wireless communications equipment shall be determined in conjunction with the County to ensure that there is no interference to current or planned facilities or operations. Two copies of the site plan shall be delivered to the County for review and comment within 30 days after execution of the contract between the parties. An additional two copies of the site plan must be furnished to the County's technical consultant.

3.17.2.3 Tower Design Requirements

Unless otherwise stated herein, the tower shall be designed, constructed, and installed to meet the following minimum requirements, and shall further be in accordance with the applicable requirements of Standard TIA/EIA-222, latest revision with ice if applicable, as well as the local building codes in effect at the site of installation.

3.17.2.4 Tower Loading Requirements

Any new tower shall be designed for the required antenna loading proposed plus a 100% additional loading to allow for future expansion. Please state the amount of loading that is reserved for St. Johns County. St. Johns County reserves the right to reserve additional space for Governmental use.

3.17.2.5 Antenna Mounting Requirements

The land mobile antenna mounts are defined herein for the purpose of defining the anticipated loading of the communications system. The antenna side arm brackets and antenna mounting masts shall be fabricated of galvanized steel. The land mobile antenna mounts shall be capable of supporting their respective equipment loads and specified wind conditions. The towers shall be designed to maximize their efficiency to support antenna loads. There will be six-foot side arm brackets in a star configuration to support the land mobile antennas. The side arm brackets shall extend directly outward from the tower. The side arm bracket shall include an integral vertical antenna mounting mast to permit proper installation of antennas. Antenna mounts should be engineered by the tower manufacturer.

3.17.2.6 Wind Speed and Ice Requirements

The Contractor is responsible for verification of TIA/EIA-222, ASCE-7, Florida, or local building code, most recent issue, requirements for wind and ice loading. The highest of the basic wind loading speed shall be used in all cases. If the highest basic wind speed prescribed by the aforementioned standards is less than 155 mph, a minimum of 155 mph shall be used for the basic wind speed. The tower, including foundation, shall be designed and constructed for a basic wind speed of 155 mph with the current and specified future antenna loads.

3.17.2.7 Twist and Sway Requirements

The tower shall be designed to ensure that the twist and sway limits at the microwave antenna mounting position do not exceed minus 10dB points under conditions of 155 mph basic wind speed.

3.17.2.8 Corrosion Protection

All tower steel shall be hot-dip galvanized after fabrication in accordance with the requirements of Standard TIA/EIA-222, latest revision. No tubular members allowed. All hardware and other attachments, including antenna mounts, shall be galvanized or constructed of inherently corrosion resistant materials suitable for such applications. All exposed portions of anchor bolts, step bolts, or climbing ladders shall be galvanized.

3.17.2.9 Tower Grounding System

The tower shall be provided with protective grounding meeting the requirements as specified herein. Ground connections shall be made to factory welded steel plates attached to legs approximately three (3) feet above the leg base. Welding of ground tabs shall be accomplished prior to galvanizing.

3.17.2.10 Transmission Line and Waveguide Support

A transmission line support system (cable ladder) shall be provided to securely attach antenna transmission lines. Holes shall be provided in the tower support members, tower hanger adapter plates, or separate ladder structures to allow installation of Andrew Model 42396A series bolt-in cable hangers, or equivalent. The ladder structures shall be spaced at maximum three-foot intervals. The 3/8-inch and 3/4-inch mounting holes shall be precision punched or drilled and sufficiently separated to accommodate the bolt-in hangers. The transmission line support system shall be furnished for all land mobile and microwave transmission lines supplied under this contract. The tower will require a transmission line bridge facility approximately nine feet above ground extending from the tower cable ladder to the equipment shelter wave guide entry ports. The bridge facility shall be installed so that it is self-supporting with its own foundations and not rigidly attached to the tower or equipment shelter.

3.17.2.11 Climbing Facility Requirements

The tower shall be provided with a climbing ladder and safety cable. The climbing ladder shall not be attached to tower legs in any manner that would interfere with attachment of antennas or installation of transmission lines on the transmission line support system. St. Johns County is requesting the exclusive use of non-climbing legs for their towers.

3.17.2.12 Platforms

Platforms shall be provided at 100-foot intervals so that a climber may step momentarily from the climbing ladder to secure a position for resting while climbing the tower. The platform shall consist of a level platform of grating which allows room for one person to sit and/or stand.

3.17.2.13 Dual Lighting System

This Section is applicable in the event that tower lighting is required. While this Section specifies a dual lighting system, should the FAA not require a dual lighting system, then red obstruction lighting for nighttime operation shall be required.

The Contractor shall furnish and install a dual lighting system with the tower. The lighting system shall consist of medium intensity white beacon for daytime lighting and red obstruction lighting for nighttime operation. The lighting system shall conform to all FAA, NEC, local, and FCC Regulations, and shall further conform to FAA publication AC 70/7460-1K. The lighting system shall be a "No EMI or RF" interference model such as the Flash Technology FTS 362 Dual LED model.

The medium intensity lighting system shall operate on a daytime only basis and shall generate an effective peak intensity as directed by the FAA for the day and twilight modes of operation, and shall be turned off for the night mode of operation. The medium intensity white lighting system shall be composed of FAA standard L-864/L-865 omni directional lights and associated power supply/control circuitry.

The nighttime obstruction lighting shall be provided in accordance with FAA requirements, typically by red obstruction lighting composed of a top-mounted L-864/L-865 omni directional beacon and L-810 steady-burning obstruction lights at intermediate level(s) in accordance with tower height. Failure of the L-864/L-865 red lighting shall cause an automatic change to the L-864/L-865 white lighting operating in the nighttime mode.

The system control circuitry and alarm points shall be housed in a cabinet designed for installation inside of the new equipment shelter. Interconnecting cables between the lights and the control circuitry shall comply with the NEC as well as all local electrical codes in effect at the site of installation. Interconnecting cables shall be securely attached to the tower structure. Plastic or nylon-type cable ties shall not be used.

The dual lighting system shall be controlled by a photoelectric control device that will prevent overlap operation of the daytime and nighttime lighting systems. The

photoelectric sensing device(s) shall be installed to face the north sky, with the sensor's lens aligned along a horizontal, such that proper operation of the sensing device will occur in accordance with FAA Advisory Circular AC 70/7460-1K or the latest version.

Placement of both lighting systems on the towers shall be in a manner that allows unobstructed view through 360°, and may require multiple lighting units.

The system control circuitry shall provide for synchronization and intensity control of the obstruction lighting system, and shall monitor the overall integrity of the lighting system for component failures or improper operation. Alarm outputs shall be provided for individual beacon status and intensity status, to indicate component failures and system failures, as Form C relay contacts. The Contractor shall wire and label all alarms to a Contractor-provided Type 66 block in the communications equipment shelter.

3.17.2.14 Marking

Tower lighting systems are the preferred method of marking towers. Painting of the tower and associated equipment and hardware is not allowed unless specifically required by the FAA.

3.17.3 Tower Foundation Design Requirements.

The tower foundations shall be designed to be suitable for all current conditions at the tower site and shall meet or exceed the following requirements.

3.17.3.1 Design Criteria

Tower foundations for the antenna tower with the specified loads shall be designed to meet or exceed the requirements of Standard TIA/EIA-222, latest revision, and the Florida and local building codes in effect at the site of installation.

3.17.3.2 Soil Requirements

The tower foundations shall be designed with respect to the specified tower structure, and antenna/equipment loads and the actual soil conditions at the tower site. The Contractor must provide for foundation design documentation based upon the soil conditions at the site of installation and the antenna structure design requirements of this RFP.

The Contractor shall perform his own geotechnical investigation at the site of actual tower installation. The soil analysis shall include field borings, laboratory testing, and a report containing a summary of the analysis with an evaluation and recommendations for structural foundations. The report shall be generated and certified by a Professional Engineer, licensed to practice in the State of Florida and qualified in the area of subsurface investigation and engineering evaluation.

The number of field borings to be performed at the site and their depths shall be appropriate for the antenna tower and loads described in this RFP.

Two (2) copies of the soils report shall be provided to the County's Project Manager. Two (2) additional copies of the soils report shall be provided to the County's technical consultant.

3.17.4 Tower Submittal Data Requirements.

3.17.4.1 Tower Design Documentation Requirements (Excluding Foundation)

The following documentation shall be submitted:

3.17.4.2 Tower Designs

The Contractor shall obtain sufficient professional engineering documentation to show that the tower structure meets or exceeds all requirements of this RFP. Such documentation shall:

- Include complete plans and drawings showing all tower materials, hardware, and accessories, as well as details for proper assembly and installation
- Include the following written statement:
"This tower design meets or exceeds all requirements of RFP No. 10-64 document."
- Be approved, signed, dated, and sealed by a qualified Professional Engineer qualified and authorized pursuant to State of Florida law

3.17.4.3 Tower Manufacturer's Certification

All tower materials, hardware, and accessories shown on the plans and drawings shall be approved in writing by the tower manufacturer as being suitable for the purposes shown.

3.17.4.4 Tower Foundation Design Documentation Requirements

The Contractor shall obtain sufficient professional engineering documentation to show that the foundations meet or exceed the requirements of RFP No. 10-64. Such documentation shall:

- Include complete plans and drawings showing all foundation materials, as well as details for proper installation.
- Include the following written statement:
"These foundation designs meet or exceed all requirements of RFP 10-64 document."
- Be approved, signed, dated, and sealed by a qualified Professional Engineer registered in the State of Florida
- Be submitted in accordance with this RFP

3.17.4.5 Submittal Data and Notification Requirements

At no later than 15 calendar days prior to foundation excavation for the tower, the Contractor shall deliver four signed and sealed copies of all required tower structure and foundation design documentation to the County Project Manager.

These submittals are in addition to any documentation submittals that may be required by the local building official. The Contractor shall contact the local building official to determine the submittals required.

Two (2) copies of each required submittal shall be provided to the County's technical consultant.

3.17.4.6 Construction Notifications

For the tower structure, the Contractor shall notify the County as to construction status at the following times:

- Ten days prior to start of tower installation - notify as to the start date of construction and estimated completion date of construction
- The day the tower reaches the maximum height
- The day tower installation is completed

A building inspector is required to be present during pours and concrete sample retrieval. The Contractor shall notify the County when these tasks are scheduled.

3.17.5 Equipment Shelter Requirements

Prefabricated concrete equipment shelters shall be provided to house all microwave, land mobile radio equipment and the backup power generator. The equipment shelters shall be designed for the express purpose of housing electronic radio equipment and related components within a controlled environment necessary for the proper operating conditions of the equipment to be installed. Equipment shelters shall be provided with an integral generator equipment room. An equipment building with a backup generator will be furnished at each tower for the exclusive use by St. Johns County and the equipment of any existing MOU (School Board, Health Department, FBI, DEA, Forestry and Amateur Radio). The doors will be keyed for St. Johns County's use only.

3.17.5.1 General Requirements

The equipment shelters shall be engineered, furnished, and installed by the Contractor. This includes all labor, materials, foundations, transportation, and site preparation as necessary for the complete installation of an equipment shelter at each designated site. The equipment shelters shall accommodate the County's 15 channel trunked simulcast radio system plus allow for future expansion. The equipment shelters shall be a minimum of 12 feet by 36 feet in size measured to the outside of finished walls including the 12 feet

by 10 feet generator room. The height shall be nine feet finished floor to finished ceiling. Future expansion should be based on the following equipment:

- A maximum of 30 trunked repeaters and network equipment
- 5 mutual aid 700/800 MHz base stations
- The County's current conventional equipment
- All microwave radio equipment and related components
- UPS and DC Power Plants

The buildings shall be equipped with secure doors, power distribution panels, air conditioning systems, grounding systems, and any other necessary appurtenances to provide for an integrated communications building.

General construction shall be steel reinforced high strength precast concrete with a horizontal wind loading of 155 mph. The shelter walls and roof shall be bullet proof to a 30.06 rifle – point blank range (per UL-752 Level 4D). The communications equipment shelter shall be provided with a concrete aggregate finish and the roof color shall be white. The final configurations of the equipment shelters shall be designed to meet the unique physical layout of the communications site. The relative positioning of utility ground, transmission line bulkhead entrance, and power distribution system shall be determined by the Contractor in accordance with site limitations and the resultant communications system and microwave system design. The building configurations must be approved by the County and its technical consultant.

3.17.5.2 Site Elevation Requirements

As a coastal county, the County is extremely concerned that their system function during severe weather conditions such as tropical storms and hurricanes. Site construction shall be performed in a manner that considers the storm surge consistent with a Category 5 hurricane; 155 mph wind speed, the applicable flood and storm surge levels, and the 100 year floodplain level.

Communication shelter floors, associated emergency generator equipment, fuel tanks, and other critical components shall be installed a minimum of four (4) feet above the 100 year floodplain and the storm surge level of a Category 5 hurricane. The Flood Plain will be based on a model added with language to be determined. The Contractor shall provide stairs where needed to enable access to the equipment shelters.

3.17.5.3 Site Preparation

Clearing of brush, trees, or any other obstructions, including the removal of asphalt or concrete, and final grading is the responsibility of the Contractor and must be in compliance with County approved Site Plans and the St. Johns County Land Development Code. The Contractor shall coordinate with the County's Project Manager as to the extent

and schedule for such work to ensure that there is no interference to concurrent operations at the sites. Any tree stumps resulting from clearing shall be grubbed. The Contractor shall comply with all environmental protection requirements.

The building and tower base shall be graded so as to prevent the pooling and standing of run-off water. The final grade shall slope away in all directions from the tower base and building. These areas (extending to three feet outside the fence) shall be treated to prevent the recurrence of vegetative growth. The Contractor shall check local codes before applying a chemical defoliant. The Contractor shall treat the newly fenced area with a County approved herbicide and shall provide and install the weed prevention material. The contractor shall furnish and install gravel or crushed rock to cover the newly fenced area. The gravel or crushed rock shall be obtained locally and shall not exceed two inches in diameter, so that foot traffic is not difficult. The depth of gravel or rock shall be greater than four inches.

3.17.5.4 Wall Sections

The wall sections shall be equipped with a vapor shield and have a minimum R value 11. Interior surfaces shall have a white textured finish wall covering with molding on all corners. All floor/wall intersections shall have four-inch vinyl baseboards installed. Molding shall also be provided at wall/ceiling intersections and all wall panel intersections. All exterior wall surfaces shall have an aggregate rock finish.

3.17.5.5 Ceilings

The building ceilings interior shall have a textured white finish with moldings on all corners. The ceilings shall be capable of supporting the required electrical equipment and cable trays with a minimum load of twenty four (24) ½-inch foam transmission lines and the proposed electrical fixtures.

3.17.5.6 Roof Sections

The roof sections shall be equipped with a vapor shield and have a minimum R value of 19. The roof sections shall be designed and constructed with a 1/8-inch per foot (minimum) pitch for drainage. All voided areas between the roof and the ceiling shall be filled with fiberglass insulation with vapor shield. Roof minimum loading is 150 lb per square foot. (live load) minimum.

3.17.5.7 Floors

The floors shall be concrete, and coated and cured with a chemical curing compound, and shall receive a minimum of one coat liquid sealer. The floor covering shall be an industrial grade vinyl covering fastened in a proper manner to the concrete floor with waterproof vinyl cement. The floors shall be of sufficient thickness and strength to support all communications and related equipment loads. Floor minimum loading is 300 lbs. per square foot, (live load).

3.17.5.8 Doors

One entrance to each building equipment room and generator room shall be provided. The County wishes to implement their keyless entry system for equipment shelter access. The County must maintain a mechanical key entry system to any tower site that may be without power. The Contractor shall work with the County to ensure compatibility of the entrance door with the electronic keyless access system.

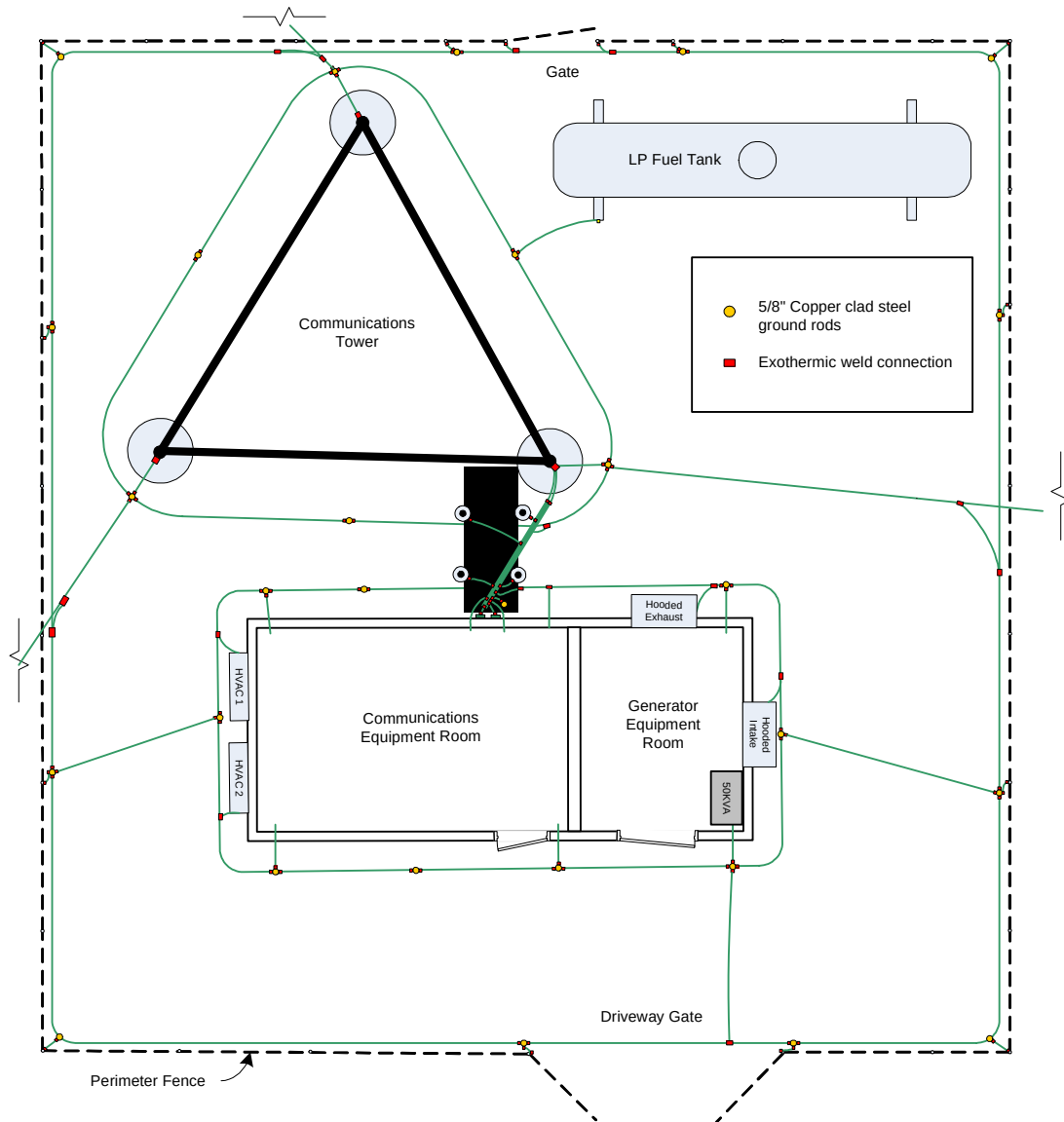
3.17.5.9 Locks and Keys

Equipment shelters and integrated equipment rooms shall be equipped with high security lock sets and dead bolts identically keyed. St. Johns County will be exclusive from other tower users. All locks and keys shall be approved by the St. Johns County Sheriff's Office.

3.17.5.10 Entrance

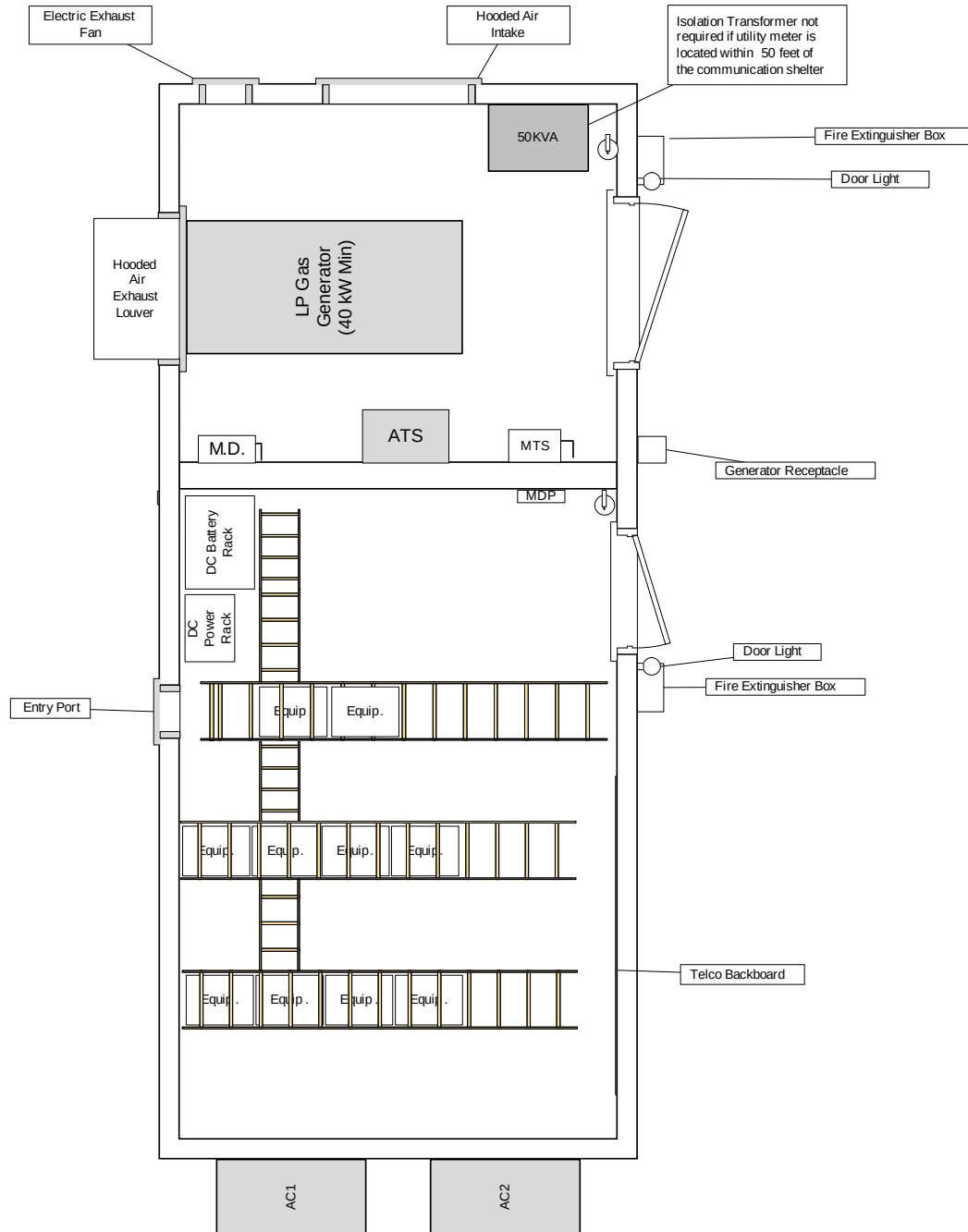
The entrance to the equipment shelter shall be graded or concrete steps installed such that the distance from the grade or final step to the shelter floor does not exceed eight inches.

FIGURE 3-1 SJC TYPICAL SITE LAYOUT AND GROUNDING DETAIL



DRIVEWAY GATE SHOULD ALIGN WITH GENERATOR DOOR TO ALLOW FOR REPAIR OR REPLACEMENT.

FIGURE 3-2 SJC TYPICAL EQUIPMENT SHELTER DETAIL



THE ISOLATION TRANSFORMER SHALL BE LOCATED INSIDE THE GENERATOR EQUIPMENT SHELTER.

FIGURE 3-3 SJC TYPICAL PROTECTED EQUIPMENT SHELTER DETAIL

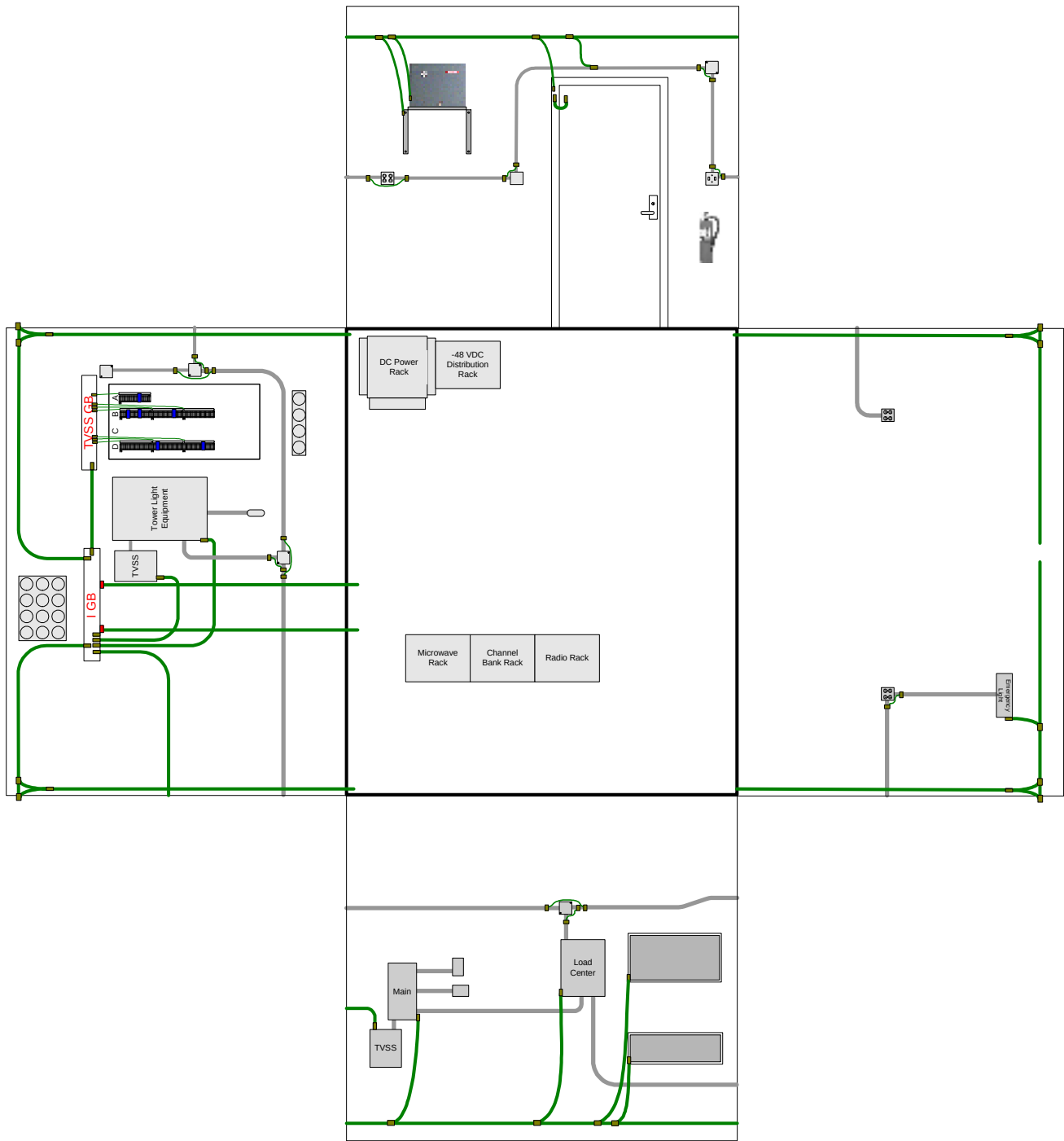
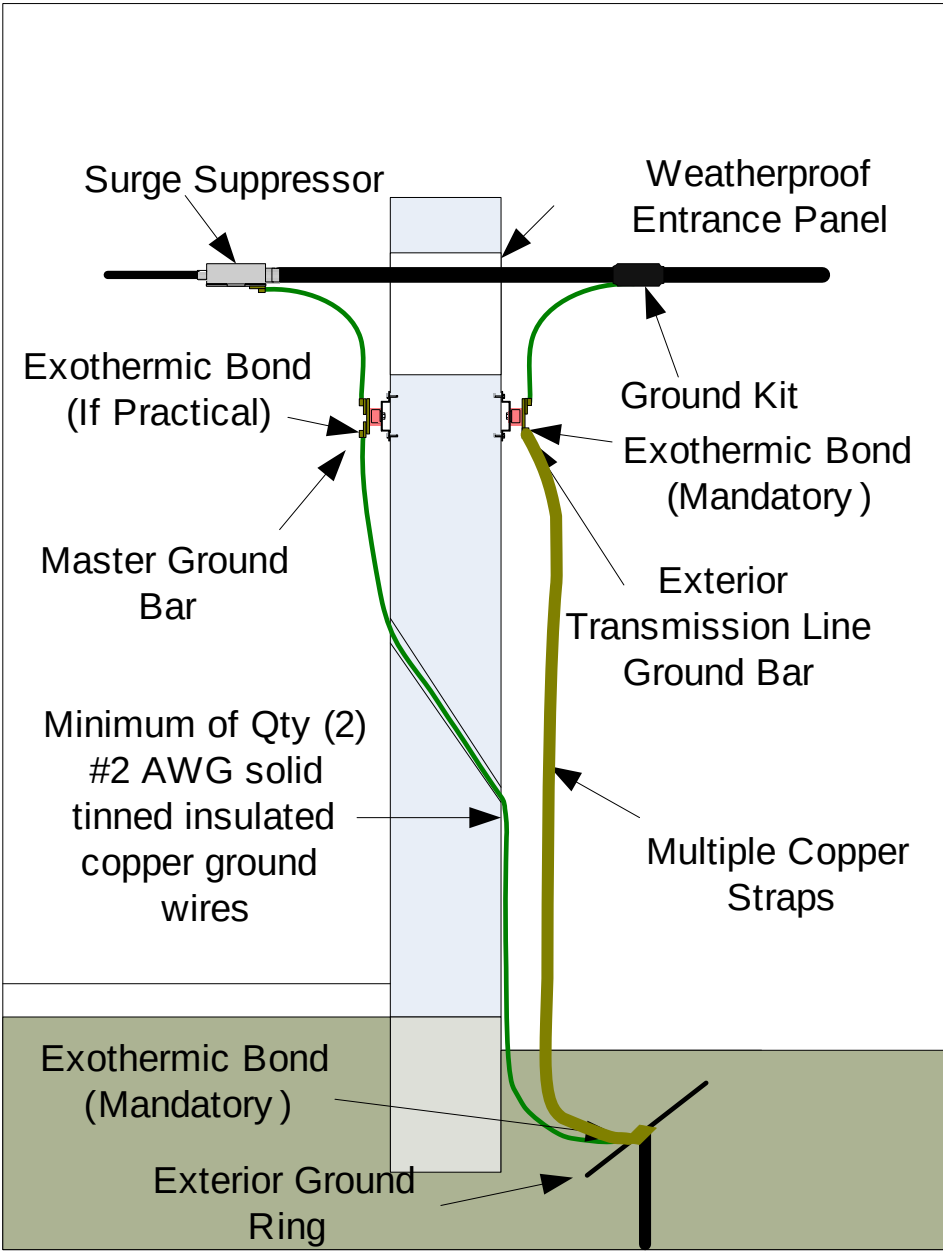


FIGURE 3-4 SJC TYPICAL TRANSMISSION LINE ENTRY PORT GROUNDING



3.17.5.11 Electrical System

The electrical system includes the entrance facility, main breaker or fused disconnect switch, isolation transformer, power line surge protection, electrical power distribution panel, emergency generator automatic transfer switch, generator surge protection, etc. Commercial power sources shall be evaluated by the Contractor. Any equipment and/or materials needed to provide adequate commercial power shall be identified by the Contractor and provided as part of the contract. The Contractor will pay the electrical utility costs associated with providing the service. The Contractor shall define the exact electrical interface required at the site of work, and shall furnish the various electrical components commensurate with the required and available electrical service.

All electrical wiring and installations shall be performed by the Contractor, and shall conform to the NEC and local codes in effect at the site of installation and at the time of installation.

It is assumed that the communications equipment shelter's electrical service meter will be remotely located. If the electrical service meter is located more than fifty feet from the communications equipment shelter's main disconnect then an isolation transformer will be required. If the electrical service meter is located less than fifty feet from the communications equipment shelter's main disconnect the isolation transformer requirement may be omitted. The isolation transformer shall be located inside the generator equipment shelter. The main power shall enter into the isolation transformer to allow for a new neutral to ground bond to be established. The main power shall then feed a primary disconnect switch to allow for the manual disconnection of commercial power. The main power shall then be routed to an automatic transfer switch that will switch to emergency generator power in the event commercial power is lost. The load side of the automatic transfer switch shall then feed a manual transfer switch that is connected to an external generator connector. The load side of the manual transfer switch shall feed the load center.

The isolation transformer shall be a Square D 50S6HIS or equivalent properly sized to support the equipment shelter electrical service, and shall be located inside the generator equipment shelter.

The equipment shelter's electrical power shall be interfaced with the emergency power provided by the emergency power generator.

The Contractor shall provide a load center configuration sized to meet system requirements plus a 50% growth factor. The load center shall not be rated for less than 200 amp service.

The load center shall contain separate, appropriately sized circuit breakers for the HVAC units or, as necessary, each major component thereof. Distribution shall be provided for all building electrical facilities and appliances and County-furnished telecommunications and radio communications equipment.

A four-plex grounded receptacle group shall be installed on the outside of the cable tray at typical 20.5 inch intervals corresponding to equipment rack locations. Each duplex receptacle of the four-plex group shall be protected by a separate 20 amp circuit breaker.

Four-plex receptacles shall be installed every four feet on each wall of the equipment shelters at a level of four feet above the floor. The wall receptacle loads shall be protected by a sufficient quantity of 20A circuit breakers to meet the requirements of NEC and local electrical codes. All electrical conduits shall be installed in a neat and orderly fashion to provide an aesthetically appealing layout. Symmetry shall be employed throughout.

FIGURE 3-5 TYPICAL SITE ELECTRICAL WITH ISOLATION TRANSFORMER

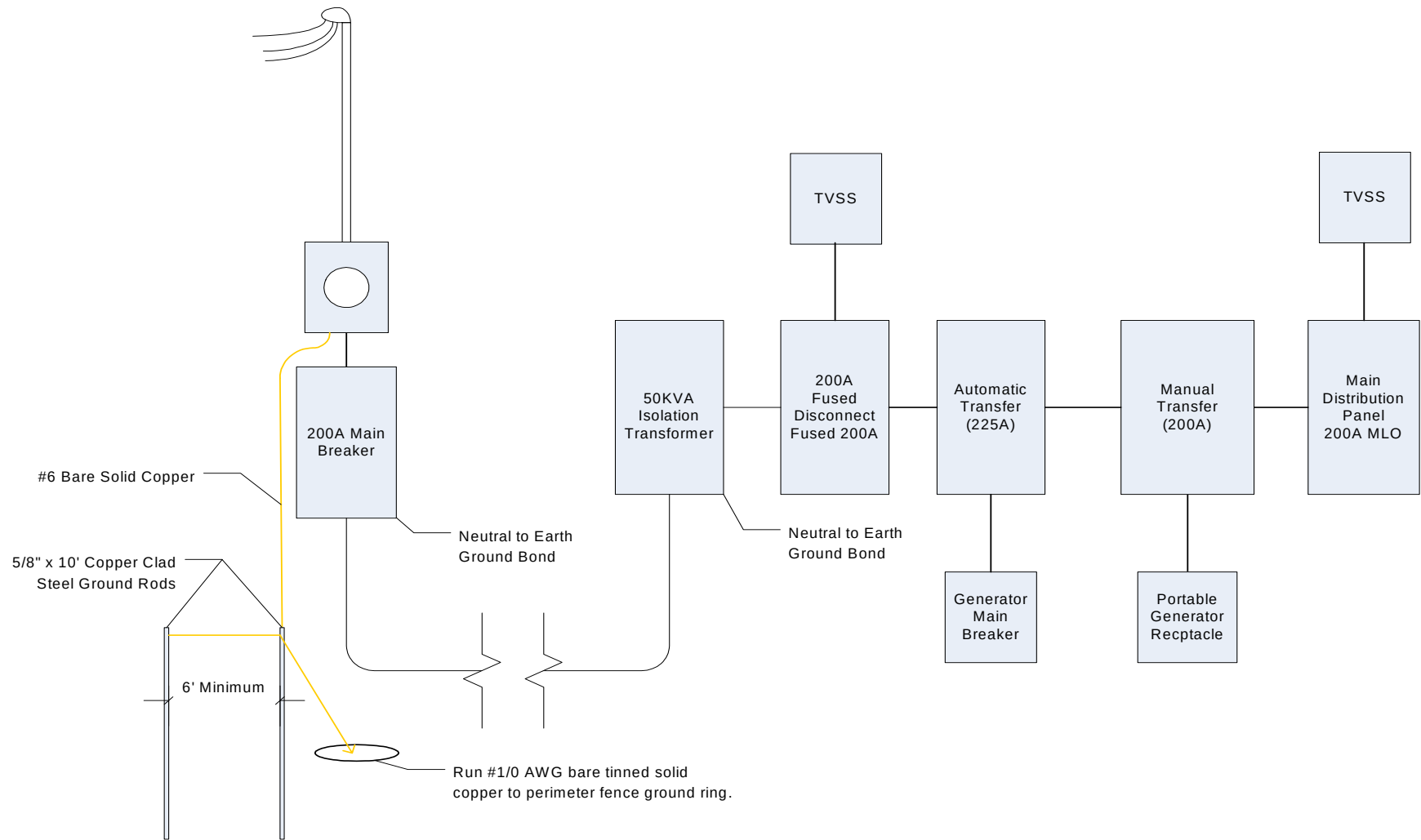
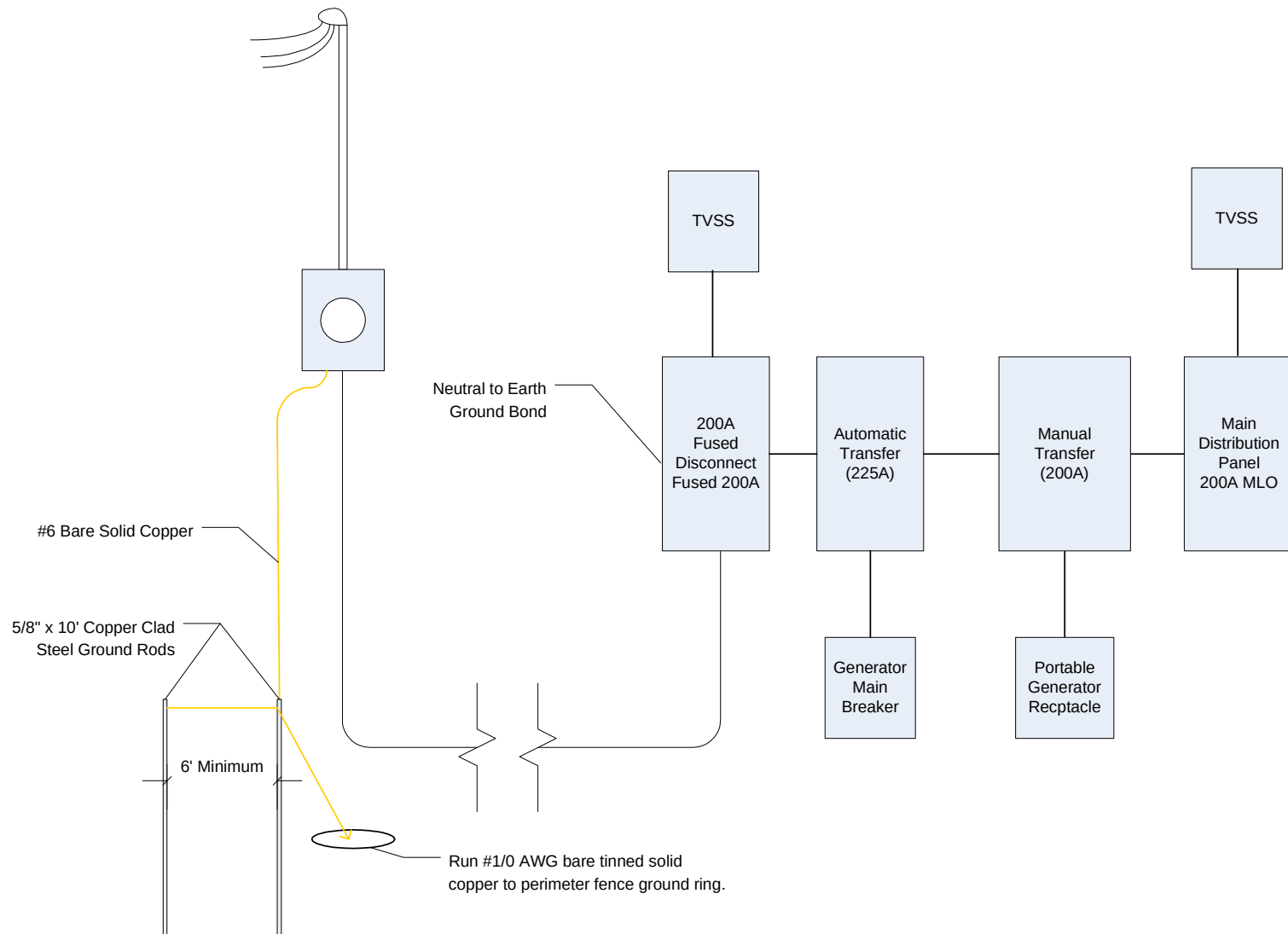


FIGURE 3-6 TYPICAL SITE ELECTRICAL WITHOUT ISOLATION TRANSFORMER



3.17.5.12 Lighting

Fluorescent light fixtures shall be supplied for the equipment and generator rooms. The light switches shall be mounted interior to the building adjacent to the door opening. Single pole circuit breakers shall be provided to protect the lighting circuits. A sufficient quantity of light fixtures shall be supplied to provide a uniform light level (void of shadows) throughout the building of 150 foot candles at four feet above the floor and one foot from the walls.

The Contractor shall furnish and install one 35W high-pressure sodium vandal resistant floodlight with motion detector mounted on the outside near each entrance door and an interior light switch shall be furnished and installed to control the lights.

Interior two-head emergency light with exit sign, rechargeable batteries, charger, pilot, and test light shall be supplied.

3.17.5.13 Site Alarm System

All alarm conductors shall be in conduit. The conduits necessary for installing the alarm conductors shall be 3/4-inch EMT conduit. Conduit and wires necessary for power connection shall be routed to the equipment room and terminated in the alarm junction box.

The following alarms shall be provided and wired to the Contractor-provided type 66 block. Each termination must be labeled and interfaced with the communications system alarm system.

- Power Fail relay alarm dry contact
- Door intrusion alarms, all doors, magnetic reed type
- HVAC failure alarm dry contact type
- Fire/smoke alarms and fire suppression system discharge and trouble alarm, dry contact type (if applicable)
- TVSS failure, dry contact
- High and low temperature alarms, dry contact type
- All generator system alarms as detailed in the Generator Section
- UPS/Rectifier alarms
- Tower lighting alarms

3.17.5.14 Telephone Backboard

A telephone backboard (TBB) of dimensions eight feet high by four feet wide and consisting of 3/4-inch plywood shall be installed on the interior wall of the building. The TBB shall be painted gray with fire-retardant paint.

Two, two-inch diameter ports with threaded caps for telephone/fiber cable entry shall be installed beneath the telephone backboard.

3.17.5.15 Fire Detection and Suppression System

The shelter shall have a fire rating of at least 2 hours.

The communications equipment room smoke and fire detection shall include a combination of ionization/photoelectric smoke detectors in conformance with UL 268 standards and shall be installed in a cross-zoned detector configuration.

The communications equipment room shall include a high and low temperature alarm. The generator room shall include a high temperature alarm.

Separate wall-mounted portable fire extinguishers; one five-pound all-purpose dry chemical Class ABC, and one seven-pound minimum Class BC CO2 extinguisher, shall be located adjacent to the door of the equipment and generator rooms.

FM 200 or other equivalent agent fire suppression system, conforming to NFPA Standards 72E, and sized to provide 5 - 7% concentration at full discharge and effective against Class A, B, and C fires shall be provided. Additional requirements include:

- All air conditioning shall be automatically shut down prior to discharge
- The fire suppression system shall be capable of being manually discharged and manually aborted
- Initial visible and audible warning for personnel evacuation and confirmation, secondary warning upon discharge, with adjustable delay prior to discharge (capable of 30 to 60 second delay)
- Warning light on building exterior adjacent to entrance door
- Warning system shall provide dry contact closures to indicate fire alarm, FM200 discharge, and trouble to enable connection to the microwave alarm system provided by others
- FM200 signage at building entrance

3.17.5.16 HVAC System

Two wall mounted vertical wall air conditioner units and a controller, sized to meet the Contractor's BTU load requirements, shall be provided for the equipment room. The air conditioner units shall be provided with the manufacturer's "corrosion resistant" option or be treated by a process similar to Adsil® Microguard®.

The controller shall provide for unattended heating and cooling of the communications equipment shelter's equipment room without personnel intervention. The controller shall have a time delay to prevent the HVAC system from sustaining compressor damage if energized prematurely following a power failure, provide for redundancy operation (alternating operation between the two units) and capacity (both units operating) as heating and cooling conditions may require. The alarm inputs and outputs shall be configured in a "normally closed" configuration and wired to a site alarm punch block.

The HVAC units shall be capable of safely operating when the outside temperature falls below 60° F, allowing continuous interior equipment cooling and dehumidification in cold weather. The HVAC units shall be furnished with reheat mode and a heat strip to meet the Contractor's requirements.

To mitigate a high temperature condition within the communications equipment shelter, the Contractor shall provide an exhaust system consisting of an exhaust fan with back draft louver, motorized air intake louver, remote thermostat, screened exhaust weather hood, and filtered air intake weather hood. The exhaust system shall be sized to the building volume, but in no case shall the exhaust fan be less than 12 inches in diameter.

3.17.5.17 Cable Trays

Cable trays, 24 inches in width, shall be provided to support the electrical power conduits and duplex circuits, a minimum of (15) ½-inch coaxial transmission lines, and all control and alarm wires associated with the radio communications equipment. Cable tray construction shall be painted steel or anodized aluminum. The cable trays shall be installed in a suspended fashion, 12 to 18 inches below the ceiling. All cable trays shall be fabricated in an open ladder-type arrangement to permit easy cable routing anchored to the walls where practical and suspended from the ceiling as necessary. Bonding jumpers shall be installed at all section splices of the cable trays.

3.17.5.18 Transmission Line Entrance Panel

A metallic transmission line entry panel shall be provided in the wall of the equipment shelter for waveguide entry, Andrew type 204673 or approved equivalent. The transmission line entry panel shall be bonded to the exterior ground bar.

The bulkhead panel shall have a minimum of 24 ports. All bulkhead panel ports shall accommodate ½-inch to 1-5/8-inch coaxial transmission lines. The bulkhead panel shall be equipped with pre-punched/pre-drilled surge protector mounting plates. The bulkhead panel shall be equipped to accommodate 24 surge suppressors such as the Poly Phaser Model IS-B50LN-C2 protectors.

3.17.5.19 Surge Suppression

Any and all metallic conductors entering the equipment shelter shall be protected with the appropriate surge protection devices. Surge suppressors shall be installed and bonded to the interior ground system as near as possible to the point of entry of the equipment shelter. Surge suppression shall be installed for the following:

- Commercial electrical service
- All transmission lines - RF surge suppressors shall be installed on all transmission lines at the transmission line entry port. All surge suppressors shall be bonded to the ground system at the entry port
- Tower lighting system – photo cell and lighting conductors (if applicable)
- Telephone, control, data conductors (includes fuel gauge conductors) - Any and all metallic conductors entering the equipment shelter shall be protected with suitable surge protection devices

For the electrical service, parallel surge protection devices shall be provided for each equipment shelter. Surge protection shall be installed as follows:

- At the main service disconnect switch, before the input of the automatic transfer switch

These units shall be an Atlantic Scientific Corporation ZMS 150, p.n. 11214, or equivalent, and be installed with disconnect switches to allow for service of the devices. The surge protection devices shall be installed indoors in accordance with the manufacturer's instructions, with particular attention to minimizing lead length. The units shall provide isolated dry contacts for remote monitoring of protector status, replaceable surge protection modules, and offer normal mode protection:

- Line-to-line
- Line-to-ground
- Line-to-neutral
- Neutral-to-ground

An additional Atlantic Scientific Corporation ZMS+150SSM, p.n. 19800, or equivalent, surge protection device shall be installed at the load center. The surge protection devices shall be installed in accordance with the manufacturer's instructions, with particular attention to minimizing lead length and connected through a dedicated breaker for maintenance purposes. The units shall provide isolated dry contacts for remote monitoring of protector status, replaceable surge protection modules, and offer normal mode protection:

- Line-to-line
- Line-to-ground
- Line-to-neutral
- Neutral-to-ground

The tower light controller TVSS device shall be Atlantic Scientific TLP series, appropriate for the tower light controller provided or specified, or approved equivalent. The Contractor shall mechanically connect the tower light controller TVSS device to its associated flat copper ground. The TVSS device shall be configured to protect all tower light lines (all markers, strobes, and beacons) coming into the tower light controller. In addition, the Contractor shall supply a TVSS device for the photo-sensor input to the tower light controller. The protector shall meet or exceed the protection provided by the Atlantic Scientific TLP series tower light controller TVSS device.

Each tower light controller TVSS device shall be supplied with a spare module for each type of module provided.

3.17.5.20 Foundations

The equipment shelter shall be securely attached to a reinforced concrete pad or continuous footer type foundation. The foundation shall be designed with respect to the actual soil conditions at the site location. The foundation shall be capable of supporting the equipment shelter, generator, air conditioner, building accessories, and all communications equipment. The foundation shall be designed and constructed to place the building above the high water mark associated with the 100 year floodplain map and localized severe storms.

3.17.5.21 First-Aid Kit

The Contractor shall furnish a wall-mounted First-Aid Kit for the communications equipment shelter. The kit shall include, but not be limited to, adhesive bandages, bandage pads, ammonia inhalants, iodine wipes, triangular bandage, eyewash solution, insect sting wipes, and an instant cold pack.

3.17.5.22 Eye Wash Station

The Contractor shall provide and install a 32 oz. double bottle emergency eye wash station at each communication site. The emergency eye wash station shall be Fendall's Eyesaline ® Wall Station model number 32-000462-0000 or approved equivalent.

3.17.5.23 Building Ground and Bonding System

The equipment shelter shall be provided with a grounding and bonding system as described in the Grounding and Bonding System Section.

3.17.5.24 Equipment Shelter Submittal Data and Notification Requirements

Equipment Shelter Design Documentation Requirements (Excluding Foundations)

The Contractor shall provide sufficient documentation to show that the equipment shelter meets or exceeds all requirements of this RFP. The Contractor shall be responsible for obtaining all required permits. Such documentation shall:

- Include complete plans and drawings showing all material, hardware, and accessories, as well as details for proper assembly and installation
- Be approved, signed, dated, and sealed by a registered Professional Engineer qualified and authorized pursuant to Florida law, or by a registered architect

Design Documentation Requirements (Foundations)

The Contractor shall provide sufficient professional engineering documentation to show that the foundation meets or exceeds the requirements of this RFP. Such documentation shall:

- Include complete plans and drawings showing all foundation materials, as well as details for proper installation
- Be approved, signed, dated, and sealed by a registered Professional Engineer qualified and authorized pursuant to Florida law

3.17.5.25 Design Documentation and Submittal

At no later than 15 calendar days prior to foundation excavation, the Contractor shall deliver two (2) signed and sealed copies of all required equipment shelter structure and foundation design documentation to County Project Manager.

These submittals are in addition to any documentation submittals that may be required by the local building official and fire official. The Contractor shall contact the local building official and fire official to determine the submittals that are required. The Contractor shall obtain sufficient documentation to show that the equipment shelter meets or exceeds all requirements of the RFP and County, State, and Federal applicable codes. The Contractor shall be responsible for obtaining all required permits.

An additional copy of each required submittal shall be provided to the County's technical consultant.

3.17.5.26 Construction Notifications

The Contractor shall notify the County as to construction status at the following times:

- Ten days prior to start of site construction - notify as to the start date of construction and estimated completion date of construction
- The day installations are completed

A County building inspector is required to be present during concrete pours and concrete sample retrieval. The Contractor is required to notify the County when these tasks are scheduled.

3.17.6 Fencing

On those sites not zoned residential or commercial, an eight (8) foot high, commercial grade chain-link fence with razor wire above the 8-foot level shall be installed around the County's site facilities, including tower, equipment shelter, generator, and fuel storage tank. Those sites zoned residential or commercial will require an eight (8) foot high masonry wall with razor wire above the 8-foot level which shall be built around the County's site facilities, including tower, equipment shelter, generator, and fuel storage tank. The fence or wall shall be constructed with a two-section, 10-foot wide gate for vehicular access and aligned with the generator door. A rear 'walk through' gate shall be installed near the propane tank. The fence posts shall be spaced no more than ten feet apart. The Gate shall have an Alarm Access Card which will accommodate alarming to the St. Johns County Sheriff's Department (SJSO) and also shall include a mechanical key lock to accommodate access during power outages.

3.17.6.1 Material

Fencing

A minimum eight foot finished masonry wall shall be required around all Antenna Towers located in a residential or commercial zoning district; provided however, in all other zoning districts, the fence may be any type of security fence. Access to the tower shall be through a locked gate. All Respondents shall submit a site specific drawing detailing an 8-foot high by 8" concrete block wall, with razor wire above the 8-foot level, along with proposed footings, wall cap, and wall finish which complies with all Land Development Code regulations. The selected Respondent shall submit a signed and sealed set of engineered wall construction drawings for approval by St. Johns County.

The fabric shall be woven with a 9-gauge aluminum alloy wire in a 2-inch (50mm) mesh and shall meet the requirements of ASTM F 1183 for aluminum alloy wire. Razor wire shall be 1400 –1500 MPA, with a diameter of 2.4 – 2.5 mm galvanized steel, wire with 2-point 0.45 - 0.5 mm barbs, and shall conform to the requirements of ASTM A 585, Class II.

Line posts, rails and braces shall be aluminum alloy and shall conform to the requirements of ASTM B 429, alloy 6063-T6, Schedule 40, for extruded pipe and tube, and ASTM B 221, alloy 6063-T6, for extruded bar, shape and tube.

Roll-formed sections shall be fabricated from material meeting the requirements of ASTM A570, Grade 45, and shall be coated with zinc-5% aluminum mesh metal alloy in accordance with ASTM F 1234, Type C. The dimension of the posts, rails, and braces shall be in accordance with Tables I through VI of Federal Specification RR-F-191/3.

Gate frames shall consist of aluminum alloy pipe and the fabric shall be of the same type material used in the fence.

Tension wires shall be 7-gauge coiled spring aluminum wire. Wire fabric ties shall be aluminum wire, not less than 9-gauge.

Miscellaneous fittings and hardware shall be wrought or cast aluminum alloy. Razor wire support arms shall withstand a load of 300 pounds applied vertically to the outermost end of the arm. The support arms shall be configured to place the razor wire on the outside of the fence.

Concrete shall be of a commercial grade with a minimum 28-day compressive strength of 2500 psi (13700 kPa).

3.17.7 Construction Methods

All trees, brush, stumps, logs and other debris which would interfere with the proper construction of the fence in the required location shall be removed a minimum width of 3 feet on each side of the fence centerline before starting fencing operations.

All posts shall be set in concrete at a minimum depth of 36 inches below grade. The concrete shall be thoroughly compacted around the posts by tamping or vibrating and shall have a smooth finish slightly higher than the ground and sloped to drain away from the posts. All posts shall be set plumb and to the required grade and alignment. No material shall be installed on the posts, nor shall the posts be disturbed in any manner within 7 days after the individual post footing is complete.

Should rock be encountered at a depth less than the planned footing depth, a hole 2 inches larger than the greatest dimension of the posts shall be drilled to a depth of 12 inches. After the posts are set, the remainder of the drilled hole shall be filled with grout, composed of one part Portland cement and two parts mortar sand. Any remaining space above the rock shall be filled with concrete in a manner as described above.

The top rail shall be continuous and shall pass through the post tops. The coupling used to join the top rail lengths shall allow for expansion. Horizontal brace rails, with diagonal truss rods and turnbuckles, shall be installed at all terminal posts.

The wire fabric shall be firmly attached to the posts and braced. All wire shall be stretched taut and shall be installed to the required elevations. The fence shall generally follow the contour of the ground, with the bottom of the fence fabric no less than 1 inch or no more than 4 inches from the ground surface. Grading shall be performed where necessary to provide a neat appearance.

3.17.8 Earthwork and Landscaping

The Contractor is required to remove all trees and stumps as necessary inside the area for the antenna site. The Contractor is responsible for final grading and must be in compliance with County approved Site Plans and the St. Johns County Land Development Code. The Contractor shall also construct a 12-foot wide driveway. The Contractor will assume responsibility for all landscaping as required by the Land Development Code.

FIGURE 3-7 TYPICAL CHAIN-LINK FENCE DETAIL

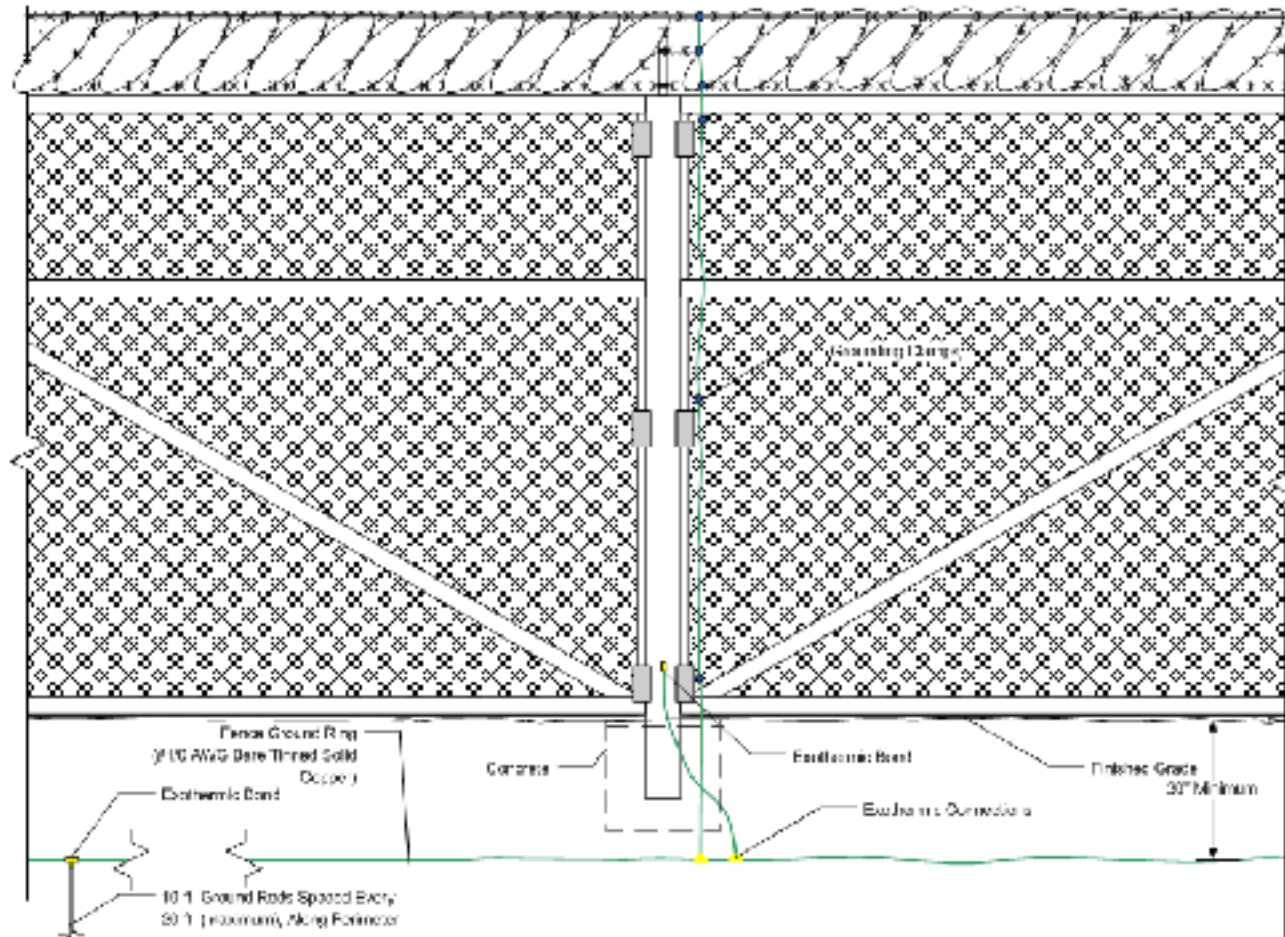
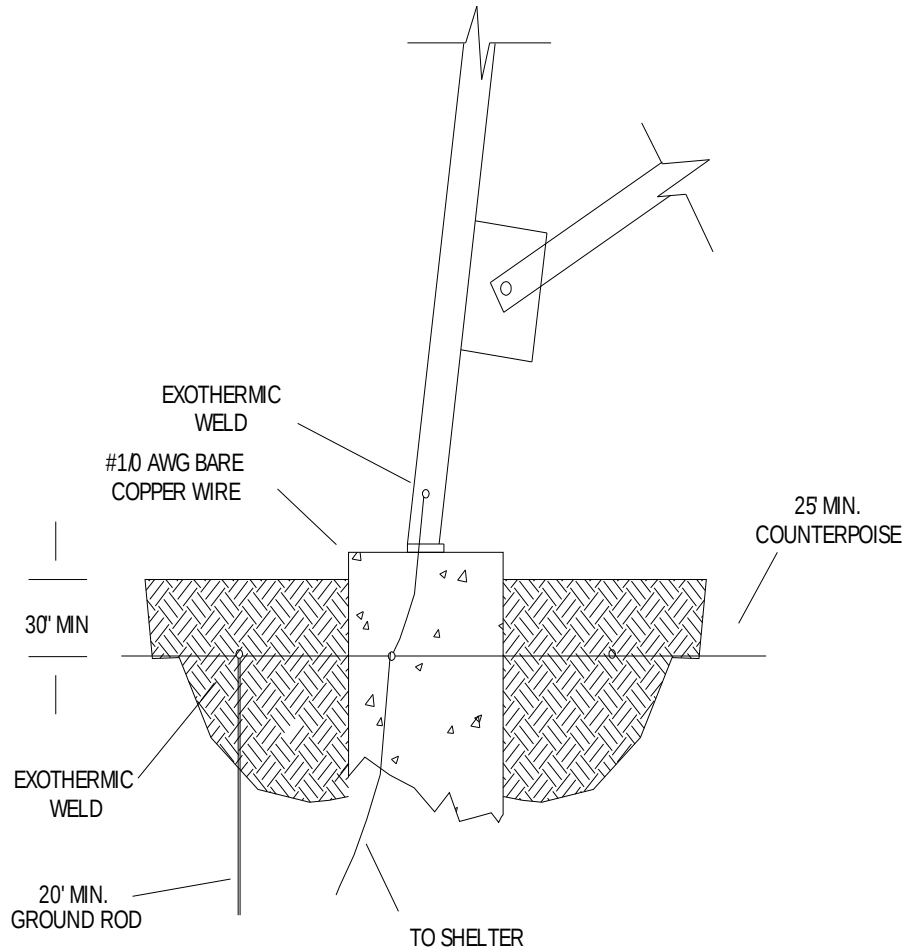


FIGURE 3-8 TYPICAL SELF-SUPPORTING TOWER BASE GROUNDING SYSTEM



3.18 Emergency Power Generator

A standby emergency power generator shall be provided at each communications infrastructure site, and shall be capable of delivering electrical power output to support the electrical equipment and shelter loads plus a 50% growth factor. No generators shall be rated for less than 40KW Standby output.

The generators shall be configured for indoor installation wherever possible and be furnished complete with all accessories and equipment needed for the proper indoor operation of the units. The accessories and equipment shall include, but not be limited to, cooling ducts and intake piping, starting batteries, battery racks, battery chargers, battery cables, cooling systems, residential grade exhaust silencers with exhaust pipes and rain caps, automatic frequency regulators, vibration isolators, fuel lines, fuel regulators, fuel filter/water separators, fuel storage tanks, conduits, junctions boxes, wiring, instrument panels, local power duplex receptacle, remote alarm panels mounted inside the equipment room of the communications equipment shelter, mounting bases, etc.

The generator shall develop the minimum required power utilizing LP gas fuel, installed per the manufacturer's recommendations and in conformance with any applicable local codes. The emergency generator power systems shall be configured for LP vapor withdrawal.

All fuel, water, and exhaust systems plumbing shall be flexible to meet vibration design criteria and meet applicable safety codes. The generator mounting base shall also be installed to meet vibration design criteria. The engine/generator set shall include a mounting base support structure designed and constructed with vibration isolators to prevent excessive vibration of the engine/ generator during normal operation. If the generator is installed outdoors, the generator shall be installed on a reinforced concrete slab foundation. Additionally, the foundation plan for the engine/generator set shall be shown on the design plans prepared for the communications equipment shelter foundation.

All generator equipment shall be installed in compliance with local building and electrical codes.

3.18.1 Single Manufacturer

The generator set equipment, including the engine, AC alternator, exciter, voltage regulator, and automatic transfer switch, shall be designed and manufactured by a single source manufacturer who has been regularly engaged in the production of engine-generator sets for a minimum of ten years. The emergency power generating system described herein, including specific components shall be factory built, factory tested, and shipped by this single source manufacturer, so there is one source of supply and responsibility for warranty claims, documentation, parts, and service. The County has a preference for Caterpillar products due to their prior experience and local support from Caterpillar.

This manufacturer shall have a local representative who can provide factory-trained servicemen, required stock of replacement parts, and technical assistance.

Contractors shall specify the manufacturer of this subsystem.

3.18.2 Engines

The generator shall be driven by an engine that is liquid-cooled. The engine shall operate at 1800 RPM and be equipped with shutdown devices for overspeed, high coolant temperature, and low oil pressure.

A starting battery shall be supplied for the engine and shall be securely mounted in battery rack within the engine-generator set mounting base (skidbase) at a location readily accessible for maintenance.

A voltage regulated float-type battery charger shall be provided for the engine-generator sets. The chargers shall be equipped with float and equalize charge settings and provide both low and high battery alarms via dry contact closure type alarm monitoring points. The charger power shall be supplied from the normal AC power source and provide an automatically variable charging current in accordance with battery needs. The battery charger shall be installed inside of the transfer switch enclosure.

3.18.3 Fuel System

The primary source of fuel shall be propane. The Contractor shall provide an above ground propane fuel tank and all fuel system piping and regulation equipment sized as required for proper fuel flow to the engine. The tank shall be sized to provide a minimum of 120 hours of continuous operation at 100% rated generator output and shall not be less than 1000 gallon water capacity.

Tank installation and all connections and plumbing to connect the fuel system to the engine shall comply with applicable codes and regulations, and shall also comply with NFPA-58 standards.

The tank shall be installed and anchored in a manner that will prevent it from moving in a flood or storm surge condition.

A fuel level sensing device shall provide a dry contact closure-type alarm monitoring point for the fuel tanks to issue an alarm when the tank is less than ¼ full. A TVSS device shall be installed on the fuel sensing probe cable as it enters the equipment shelter.

The Contractor shall fill the fuel tank prior to system acceptance.

3.18.4 Engine Cooling System

The engine shall be radiator cooled by an engine-mounted radiator system, including belt-driven fan, coolant pump, and thermostat temperature control.

The radiator shall be provided with a duct adapter flange permitting the attachment of an air discharge duct to direct the discharge of radiator air through louvers or dampers mounted on the equipment shelter wall.

The Contractor shall fill the engine cooling systems with a 50% ethylene glycol antifreeze solution as recommended by the generator manufacturer.

3.18.5 Exhaust System

An exhaust system with a “critical silencer” residential type muffler shall be provided and sized as recommended by the manufacturer. The Contractor shall mount the muffler so that its weight is not supported by the engine.

A flexible exhaust connection shall be provided as required for connection between the engine exhaust manifold and exhaust line, in compliance with applicable codes and regulations.

The Contractor shall mount and install all exhaust components as recommended by the manufacturer and as required to comply with all applicable codes and regulations. All components shall be properly sized to ensure proper operation without excessive back pressure when installed. The installation shall allow for pipe expansion and contraction.

3.18.6 Alternator

The alternator shall meet the specifications listed in this Section.

The alternator shall be capable of providing the specified power capacity at no less than a 0.8 power factor. The output shall be 60 Hz and commensurate with site requirements. The Contractor is fully responsible for defining the exact electrical interface required at the site of work, and shall furnish the various electrical components commensurate with the available electrical service.

The alternator shall be a 105°C rise model, separately-excited (PMG excitation), single-bearing, self-aligning, four-pole, synchronous type and direct drive centrifugal blower for proper cooling and minimum noise, with a temperature compensated solid-state voltage regulator and a brushless rotating rectifier exciter system. No brushes will be allowed.

The alternator shall be directly connected to the engine flywheel housing and driven through a flexible coupling to ensure permanent alignment; gear driven alternators are not acceptable.

The broad range, re-connectible alternator shall have 12 leads brought out to allow connection by the user to obtain any of the available voltages for the unit.

The voltage regulator shall provide no load to full load regulation of rated voltage within $\pm 2\%$ during steady-state conditions.

Frequency regulation shall be by an electronic isochronous governor ($\pm 0.5\%$) from steady-state no load to steady-state rated load.

3.18.7 Wiring

The Contractor shall provide and install all the electrical wiring necessary to connect the standby emergency power generator, automatic transfer panel, dry contact closure type alarm monitoring points, and equipment shelter electrical loads.

All wiring shall meet or exceed manufacturer specifications for designated load requirements of the equipment to be supported. All wiring shall be run in conduit and meet applicable NEC and local codes. All electrical materials and work shall be inspected and approved by the building inspector with jurisdiction at the site of installation.

3.18.8 Instrumentation

At a minimum, the generator set shall include the following instrumentation:

- Voltmeter
- Frequency Meter
- Running Time Meter
- Fuel Gauge
- Ammeter with Phase Selector Switch
- Oil Pressure Gauge
- Coolant Temperature Gauge

3.18.9 Generator Exerciser

A plant exerciser timer shall be provided to periodically operate the engine-generator without user presence or intervention to maintain the reliability of the unit. The timer shall be a user-programmable solid-state 168 hour (seven day) clock timer adjustable to day of week, time of day, and duration of exercise period. The timer shall incorporate a selector switch to choose whether the engine-generator exercises with load or without load.

3.18.10 Local Control and Alarms

A control box local to the generator set shall be provided containing the start, run, and stop switches for manual operation, and remote control terminals for connection to the

automatic load transfer control panel. AC line circuit breakers, commensurate to the electrical interface required at each site, shall be provided.

Remote alarm dry contact closures shall be provided and shall include the following alarms:

- Control switch not in auto position
- Generator running, confirmation alarm
- Low lube oil pressure
- High coolant temperature
- Low engine temperature
- Over crank
- Overspeed
- Low battery voltage
- High battery voltage

The generator shall shut down automatically under certain alarm conditions including:

- Engine over-speed
- Low oil pressure
- High coolant temperature
- Low coolant level

3.18.11 Outdoor Protective Housing

In the event that the generator must be installed outdoors, the generator shall be provided with a factory installed outdoor protective housing. The housing shall be made of corrosion-resistant, heavy gauge, reinforced sheet steel, and shall attach to the generator set's mounting base and radiator cowling. Easy access to the engine-generator shall be provided by removable locking panels on each side of the housing. A hinged locking door shall be provided to allow access to the instrument panel.

3.18.12 Automatic Load Transfer Controls

3.18.12.1 General Requirements

An automatic load transfer switch shall be provided to transfer AC load between commercial power and the standby emergency power generator specified herein. The automatic transfer switch shall be sized for proper operation in accordance with the transferred loads.

The automatic load transfer control unit shall be installed indoors and contained in a NEMA 1 enclosure suitable for mounting indoors, and furnished with all necessary relays, component parts, and circuits, together with U.L. listed and tested electrical and mechanical interlock contactors or circuit breakers to provide the following functions:

- Time delayed automatic start of, and transfer to, the emergency power generator system for any of the following conditions:
- Commercial power failure
- Under-voltage condition for any and all phases
- Overvoltage condition for any and all phases
- Over/under frequency condition for any and all phases

Voltage sensors shall be temperature compensated, and voltage dropout and pickup ranges shall be adjustable, typically to 80% and 90% of normal line voltage, respectively. Frequency bandwidth shall be adjustable in terms of pickup and dropout. Time delays shall be adjustable, but factory set to approximately three seconds and ten seconds for time delayed start and time delayed transfer, respectively.

Additionally, protection shall be provided for low and high generator voltage and over/under generator frequency. Appropriate sensors shall be provided to ensure that load is not transferred, or that load is disconnected, when these parameters are out of (adjustable) limits.

Upon return or stabilization of commercial power for an adjustable period of approximately ten minutes, the load shall be transferred back to commercial power. The generator shall continue to run in an unloaded condition (engine cool-down) for an adjustable period of approximately five minutes after transfer to commercial power, and then automatically shut down.

Each contact pole of the main transfer device shall be capable of handling both inductive and non-inductive loads and allow for inrush currents of 20 times the continuous rating. The continuous current rating of the transfer switch shall be sufficient to handle the capacity of its associated plant specified herein and loads being transferred.

The transfer switch shall include integral metering of frequency, voltage, and current.

3.19 Grounding and Bonding System

All communications towers, equipment shelters, and sites shall be provided with a protective grounding and bonding system for protection of equipment and personnel. The grounding system shall be designed to provide a resistance to earth of not more than 5Ω . The grounding system shall be in compliance with the standards and requirements delineated in the NEC and these specifications. This will include, but not be limited to, connecting equipment shelter interior grounds, exterior grounds, fuel tank, perimeter fencing, and tower grounds to develop a single point grounding configuration. Interconnection of these items by copper conductors as specified in this document forms the site grounding system.

The Contractor is required to provide the driven ground rods, conductors, connectors, all exothermic welds, and all associated components for the entire site grounding system. The ground rods shall be as depicted in the drawings and located no closer than 20 feet and no farther than 40 feet apart. When bonding two dissimilar metals, proper bimetallic transition connectors shall be utilized. The connections between dissimilar metals shall be protected with a non-oxide grease compound. Unless indicated otherwise, the ground rods shall be a minimum of $5/8"$ X 20' ground rod with pointed ends to facilitate driving, and have a uniform covering of electrolytic copper metallicity bonded to a rigid steel core. The copper to steel bond shall be corrosion resistant. The rod length shall be clearly stamped near the top of the rod.

The Contractor will be required to verify that the overall grounding system meets the grounding specifications. If it is determined that the resistance to earth is greater than 5Ω , the Contractor will be required to modify the grounding system to achieve a ground resistance of 5Ω or less.

3.19.1 Perimeter Grounds

A perimeter ground system shall be provided for the interior and exterior of equipment shelters and around the base of the towers. All grounding runs for the interior or exterior perimeter grounds shall be installed in a manner to minimize impedance, and shall be consistent with good engineering procedures; no sharp bends or right angles will be allowed. The bend radius of any grounding or bonding conductor shall be no less than 8 inches. The interior halo ground shall be connected to the interior ground bar (IGB) which is bonded to the exterior ground bar (EGB).

3.19.2 Exterior Grounding and Bonding

On the exterior of the building, the EGB shall serve as the bonding point for the transmission line entry port panel and the transmission line grounding kits. The grounding kits shall attach directly to the EGB. The EGB shall be exothermically bonded to the external perimeter ground via three (3) $2" \times 1/8"$ thick copper straps. The EGB and straps shall be exothermically bonded to the shelter's external perimeter ground.

All exterior grounding system conductor connections shall be exothermically welded (CADWELD™ or equivalent) to their respective terminals, interconnections, and ground rods unless specified otherwise. The building exterior and tower perimeter grounds shall consist of a continuous run of #1/0 AWG (minimum) solid tinned copper wire (stranded conductors are not acceptable) buried at a minimum depth of 30 inches below ground level and at a minimum distance of 36 inches from building walls and tower foundations.

A ground test well shall be installed by the Contractor for troubleshooting and/or inspection of the grounding electrode system components. The ground test well shall be constructed of PVC tubing, 8 inches or greater in diameter, and have a removable cover to keep debris out. The Contractor shall submit an installation design for each site location for the County's approval before installation. The ground test well shall be the single ground point location for the following:

- Old shelter to tower ground ring (if applicable)
- New shelter to tower ground ring
- New shelter electrical utility ground location

The cable bridge support posts shall be bonded to the exterior ground system. The cable bridges shall NOT be bonded to the tower structure or the equipment shelter EGB. All bonds shall be exothermic. The bonds shall be made with minimum #1/0 AWG solid tinned copper wire. The horizontal transmission cable bridge sections shall be bonded together using a #2 AWG solid tinned copper wire with mechanical connections.

The Contractor shall bond the external generator (if applicable) and the fuel tank to the exterior ground system using #1/0 AWG tinned solid copper wire in accordance with NEC requirements.

The security fence shall be bonded to the exterior ground system. Ground attachments to the fence posts shall be exothermic and at each corner and gate post, at a minimum. At each corner post a #1/0 AWG solid copper wire shall be bonded to the razor wire and the fence mesh at three locations using split bolts. The mesh shall be bonded to the copper wire at the top, center, and bottom of the fence and the copper conductor bonded to the exterior ground system. A #1/0 AWG tinned solid copper wire shall be installed between the two gate posts at a minimum depth of 30 inches below level grade or below the freeze line, whichever is greater. The gates shall be bonded to the gate posts by bonding jumpers exothermically welded and installed between the gates and the gate posts. Additional attachment points may be necessary to ensure that the entire fence is grounded to the common site ground formed by the tower perimeter ground and the building exterior perimeter ground.

Any metallic object within the tower compound or within 5 feet of the tower compound shall be bonded to the ground system. If any object outside the compound is bonded to the ground system, any object within 5 feet of that object shall also be bonded. All bonds shall be made with #1/0 AWG solid tinned copper wire, exothermically bonded to the ground system, and exothermically bonded to the object where practical. At a minimum, the bond

to the object shall be a double lug connection. The following items, if applicable, shall be bonded to the exterior ground system:

- Skid or metal frame of the equipment shelter
- Telco ground and/or any other metallic shields, conduits, etc.
- HVAC units
- Storage tanks within the compound whether above or below ground
- Metallic piping
- All railings, hand rails, and other metallic structures
- Light posts or external light fixtures
- Any other grounding systems present at the site

3.19.3 Interior Grounding and Bonding

An IGB shall be furnished and installed as depicted. The IGB shall be the primary terminating point for all communications equipment and racks, generator and associated components, electrical enclosures, ancillary equipment, and cable tray grounds in the shelter. If local electrical codes will not allow the bonding of the main utility disconnect ground to the interior ground bar, and then the building exterior ground shall be connected to the AC utility ground rod.

A #2 AWG copper ground wire shall be installed around the interior perimeter of the generator room and each room of the communications equipment shelter. Each loop shall be connected together. The ground wires shall be supported from the wall by a minimum of 1½ -inches using Hanger HSC150 Halo Stand-off Clamps, or approved equivalent. Any splices of the interior perimeter ground shall be made with irreversible crimp connections. The automatic transfer switch, manual transfer switch, distribution panels, AC power TVSS devices, tower light controller TVSS devices, battery racks, and other ancillary equipment and enclosures shall be bonded to the communications equipment shelter interior perimeter ground bus using #2 AWG jacketed copper ground wire jumpers. The jumpers shall be bonded to the interior perimeter ground using irreversible crimp connections and mechanically connected to the equipment using double lug compression connectors.

All other metallic objects (door frames air conditioners, alarm system, wall mounted communications equipment, etc.) shall be directly bonded to the interior perimeter ground with the shortest possible #6 AWG minimum copper wire. The jumpers shall be bonded to the interior perimeter ground bus using irreversible crimp connections and mechanically connected to the equipment using double lug compression connectors.

The door shall be bonded to the doorframe using a braided #2 AWG flexible welding cable.

Cable runs of #2 AWG (minimum) stranded copper wire with green insulating jacket shall be placed on the outside of the cable trays running lengthwise and horizontally in the building and shall be bonded to the IGB. Conductor connections forming interior halo, equipment ground drops, and connections to conductors passing through the building may be made by mechanical compression or crimped connections.

The cable tray shall be bonded to the IGB with a #2 AWG bonding jumper. All points where cable tray sections meet must be made electrically continuous by the use of grounding straps. The Contractor shall remove the paint between mating attachments of cable tray sections.

Irreversible compression connections, also known as C-type compression taps, are suitable for interior connections. All irreversible compression connectors shall be UL-listed, made of the same material of the materials being bonded and properly sized. The materials shall be cleaned with a wire brush and coated with a conductive antioxidant compound prior to crimping. All crimping shall be made using the manufacturer recommended compression tool.

Ground lugs shall be used to connect grounding conductors to equipment or ground bars. All ground lugs shall be two-hole ground lugs where possible. Ground lug connections shall consist of a compression connected ground lug, properly sized bolts, lock washers, and nuts. All hardware shall be stainless steel and UL-listed.

Ground lugs shall be crimped to the ground conductor using the manufacturer recommended compression tool. Paint and other nonconductive coatings applied to equipment shall be removed from the surface and threads prior to making the connection to ensure good electrical continuity. Bare metallic surfaces shall also be cleaned with a wire brush. All surfaces shall be coated with a conductive antioxidant compound prior to making the connection.

3.19.4 Tower Grounding and Bonding

The base of each tower leg shall be connected to the external perimeter ground system. At each tower leg a 4" by 1/8" thick copper strap shall be bonded to the tower leg at a height of approximately 3 feet above the leg base to permit a direct path from the tower leg to the ground rod without incorporating bends to pass over tower foundations; no sharp bends are allowed. All connections to ground rods and subterranean ground wire cable runs shall be a minimum of 30 inches below grade and made by exothermic weld (CADWELD™ or equivalent). The Contractor shall obtain County acceptance of exterior grounding system and exothermic connections prior to burial.

A tower ground bar (TGB) of minimum dimensions 1/4-inch thick by three inches by 36 inches shall be installed four inches below the tower/ice bridge interface on the tower cable ladder. The TGB shall be installed on the inside of the cable ladder with stainless steel hardware and be electrically insulated from the tower. The TGB shall be bonded to the tower perimeter ground system via two #1/0 AWG tinned solid copper conductors, one on

each end of the bar. The connection to the tower ground system shall be achieved without bends, if possible.

3.19.4.1 Existing Building Grounding and Bonding

The Contractor shall make their best effort to locate a suitable low impedance building ground for connection of the IGB. The connection point should be the main building electrical service ground or building structural steel.

4.0 REFERENCES:

Respondents must provide a list of references (**Attachment “C”**) for the same or similar services provided within the last five (5) years. Please provide three (3) references. This list must include the following:

- The name of the facility, organization or firm for which such services were provided.

5.0 GOVERNING LAWS AND REGULATIONS:

The respondent is required to be familiar with and shall be responsible for complying with all Federal, State and local laws, ordinances, Water Management District, rules and regulations that, in any manner, affect the work. This agreement shall be governed by the laws of the State of Florida and the County both as to interpretation and performance.

6.0 INTERPRETATIONS, CLARIFICATIONS AND ADDENDA:

The County shall not be responsible for oral interpretations given by a County employee, representative, or others on RFP documents or addenda. The issuance of a written addendum is the only official method whereby interpretations, clarification or additional information can be given that would change the terms and conditions of the proposal. If any addenda's are issued to this RFP, prior to submitting the proposal, it shall be the sole responsibility of each respondent to contact the St. Johns County Purchasing Department to determine if addenda were issued, and if so, to obtain such addenda for attachment to the proposal. Each respondent shall acknowledge receipt of such addenda in the space provided on the addendum form.

7.0 INDEMNITY:

To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, its officials and employees, from and against liability, claims, damages, losses and expenses, including attorney's fees, arising out of or resulting from performance of the work, provided that such liability, claims, 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) including loss of use resulting there from, but only to the extent caused in whole or in part by negligent acts or omissions of the Contractor, a Subcontractor, or anyone directly or indirectly employed by them or anyone for whose

acts they may be liable, regardless of whether or not such liability, claim, damage, loss or expense is caused in part by a party indemnified hereunder.

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

8.0 QUALITY AND PERFORMANCE:

If the selected contractor fails to maintain acceptable timely service or provides substandard service, this may be cause for immediate termination. The St. Johns County Board of County Commissioners reserves the right to accept or reject any or all proposals, reserves the right to waive any informalities or irregularities in the proposal or examination process, reserves the right to select low best competitor, and reserves the right to award projects and/or contracts in the best interest of the County. All contracts are subject to annual budget approval by the Board of County Commissioners.

9.0 EVALUATION OF PROPOSALS:

St. Johns County reserves the right to act as sole judge of the content of the proposals submitted for evaluation and selection by St. Johns County.

The evaluation of the proposals will be conducted by an Evaluation/Selection Committee assigned by the Purchasing Director. The Committee is generally comprised of St. Johns County personnel but may include expert(s) from the private sector.

Proposals will be evaluated in accordance with the following Evaluation Criteria: Technical Approach, Work History, Tower Requirements, Project Schedule, and Financial Qualifications. Please see attached **Evaluation Sheet**. Evaluators will individually review proposals. Final rankings will be summarized and a recommendation will be presented to the Board of County Commissioners for approval and authorization to enter into an agreement with the selected Firm. Selected Firms will be notified if presentations/interviews are required. The County desires to avoid the expense to all parties of unnecessary presentations. Every reasonable effort will be made to make recommendations based upon the written submittals alone. If one or more suppliers can not be clearly determined by the ranking system, then the requesting department head shall request the Purchasing Manager to set-up the top ranked Firms for presentations/interviews. A detailed resume will be required for the Manager.

The County may elect to conduct oral interviews or presentations from one or more of the proposal respondents. If the County elects to conduct oral presentations or interviews, such presentations or interviews will be open to the public.

St. Johns County, at its option, may reject any and all proposals submitted, or enter into negotiations with one or more of the highest rated responsive firms, if deemed in the best interest of St. Johns County.

Proposals will be evaluated on a WEIGHTED BASIS. The County reserves the right to make selections based on the submittals only or to request presentations before determining the final ranking. The criteria listed below will be used in the evaluation process to determine the successful respondent.

- A. **TECHNICAL APPROACH** – To include approach to proposed requirements as stated herein, conformance to required forms, the organization of sellers proposal, ability to provide services required, and understanding of the County’s needs.
Weight for this category is 0 to 10.
- B. **WORK HISTORY** – Past Municipal Government work experiences for similar projects including Program, Performance including quality of proposals, programs, operational and management plans. Past history in furnishing tower space.
Weight for this category is 0 to 15.
- C. **TOWER REQUIREMENTS** – Will the proposer provide the towers buildings, and county space on towers as stated in the RFP?
Weight for this category is 0 to 50.
- D. **PROJECT SCHEDULE** - For each proposed tower site provide a project schedule to include design, permitting, commencement of construction, and availability of the allocated tower space for use by the County.
Weight for this category is 0 to 25.
- E. **FINANCIAL QUALIFICATIONS** – Provide proof of Financial Capability And Financial Stability necessary to provide the material, equipment and all Other resources as stated in the proposal.
Weight for this category is 0 to 50.

Note: Each proposer must furnish proper data that would allow the Evaluators to score Items A through E above.

.. **EVALUATION SHEET**
FOR RANKING OF COMPREHENSIVE COMMUNICATION TOWER SYSTEM INSTALLER
ST. JOHNS COUNTY, FLORIDA
BOARD OF COUNTY COMMISSIONERS

DATE:

CRITERIA FOR RANKING:

FIRM	A. TECHNICAL APPROACH 0 TO 10	B. WORK HISTORY 0 TO 15	C. TOWER REQUIREMENTS 0 TO 50	D. PROJECT SCHECULE 0 TO 25	E. FINANCIAL QUALIFICATIONS 0 TO 50		TOTALS

To avoid duplication, the Director of Purchasing or his designee will contact and rank references.

SIGNATURE OF RATER: _____ **PRINT NAME:** _____ **DATE:** _____

10. Due Date/Location:

An original and six (6) copies (for a total of seven) of the Letters of Interest and supplemental information will be received until 4:00 p.m. local time on August 26, 2010. Mail or deliver all proposals to Lou Nester, Contract Coordinator, St. Johns County Purchasing Department, 2446 Dobbs Road, St. Augustine, FL 32086, phone number (904) 209-0164. Proposals will not be accepted after the 4 P.M. deadline. M/F: RFP 10-64, Comprehensive Communication Tower System.

11. BASIS OF AWARD

St. Johns County reserves the right to make the award to the best overall respondent after considering the Respondents proposal, qualifications, references and evaluations.

12. PROTEST PROCEDURE

Any proposer or person substantially and adversely affected by an intended decision or by any term, condition, procedure or specification with respect to any solicitation of proposals shall file with the Purchasing Department for St. Johns County, a written notice of intent to protest no later than 72 hours (excluding Saturdays, Sundays and legal holidays for employees of St. Johns County) after the posting either electronically or by other means of the notice of intended action, by posting electronically or by other means of a procedure, specification, term or condition which the person intends to protest, or the right to protest such matter shall be waived. The protest procedures may be obtained from the Purchasing Department and are included in the County's Purchasing Manual. All of the terms and conditions of the County's Purchasing Manual are incorporated by reference and are fully binding.'

13. QUESTIONS

All questions pertaining to this RFP shall be directed to Lou Nester, Contract Coordinator, (904) 209-0164, not later than seven (7) business days prior to the proposal due date to allow ample time to answer any questions and issue required addenda. Questions must be submitted in writing by email: lnester@sjcfl.us, fax (904-209-0165), or may be delivered in person or mailed to the St. Johns County Purchasing Department, 2446 Dobbs Road, St. Augustine, Florida 32086. Office hours are 8:00 a.m. until noon, and 1:00 p.m. until 5:00 p.m., Monday through Friday, except County holidays.

The St. Johns County Board of County Commissioners reserves the right to reject or accept any or all proposals and to negotiate the proposal with the respondent whose proposal best serves the interest of St. Johns County.

ATTACHMENT A - AFFIDAVIT

ST. JOHNS COUNTY BOARD OF COUNTY COMMISSIONERS

TO: ST. JOHNS COUNTY BOARD OF COUNTY COMMISSIONERS
ST. AUGUSTINE, FLORIDA

At the time the proposal is submitted, the Respondent shall attach to his/her proposal a sworn statement.

The sworn statement shall be an affidavit in the following form, executed by an officer of the firm, association or corporation submitting the proposal and shall be sworn to before a person who is authorized by law to administer oaths.

STATE OF _____ COUNTY OF _____. Before me, the undersigned authority, personally appeared _____ who, being _____ duly sworn, deposes and says he is (Title) _____ of _____ (Firm) the respondent submitting the attached proposal for the services covered by the RFP document for RFP No. 10-64, Eleven (11) Comprehensive Communication Tower Systems.

The affiant further states that no more than one proposal for the above referenced project will be submitted from the individual, his/her firm or corporation under the same or different name and that such respondent has no financial interest in the firm of another respondent for the same work. That he, his firm, association or corporation has neither directly, nor indirectly entered into any agreement, participated in any collusion nor otherwise taken any action in restraint of free competition in connection with this firm's proposal on the above described project. Furthermore, neither the firm nor any of its officers are debarred from participating in public contract lettings in any other state.

(Respondent)

By _____

(Title)

Sworn and subscribed to before me this _____ day of _____, 2010.

Notary Public
My Commission Expires: _____

RESPONDENT ON ALL COUNTY PROJECTS MUST EXECUTE & ATTACH THIS AFFIDAVIT TO EACH PROPOSAL.

14. RESPONDENTS RESPONSIBILITY, INTERPRETATIONS, CLASSIFICATIONS AND ADDENDA.

The County shall not be responsible for oral Interpretations given by a County Employee, representative, or others on RFP documents or addendums. The issuance of a written addendum is the only official method whereby interpretations, clarification or additional information can be given that would change their terms and conditions of the proposal. If any addendum is issued to this RFP, prior to submitting the proposal, it shall be the sole responsibility of each proposer to contact the St. Johns County Purchasing Department to determine if an addendum was issued and if so, to obtain such addenda for attachment to the proposal. Each proposer shall acknowledge receipt of such addenda in the space provided on the addenda form. (Attachment "B").

15. ADDENDA.

Addenda will be sent by facsimile from the Purchasing Department to all who are known by the Project Director to have received a complete set of RFP Documents. Copies of Addenda will be made available for inspection wherever RFP Documents are on file for that purpose.

Each Respondent will ascertain prior to submitting his proposal that he has received all Addenda's issued, and he shall acknowledge their receipt in the space provided in the RFP Proposal Form as (Attachment "B").

The undersigned acknowledges

ATTACHMENT “B”

ADDENDUM ACKNOWLEDGMENT

Receipt of the following addenda to the Request for Proposal (indicate number and date of each):

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

FAILURE TO SUBMIT ACKNOWLEDGEMENT OF ANY ADDENDUM THAT AFFECTS THE PROPOSAL PRICES IS CONSIDERED A MAJOR IRREGULARITY AND MAY BE CAUSE FOR REJECTION OF THE PROPOSAL.

NAME OF BUSINESS

BY: _____

SIGNATURE

PRINTED NAME AND TITLE

MAILING ADDRESS

CITY, STATE, ZIP CODE

TELEPHONE NUMBER

ATTACHMENT “C”

**REFERENCE LIST
(ATTACH ADDITIONAL SHEETS IF NECESSARY)**

Facility/Organization/Firm Name:		
Tower Location Address:		
City:	State:	Zip Code:
Point of Contact:		Date(s) of Work:
Phone Number:	Fax Number:	E-mail:
Brief Description of Tower(s)		
Briefly Describe the services provided to the governmental entity.		
Reference Response (To be completed by County Staff):		

Facility/Organization/Firm Name:		
Tower Location Address:		
City:	State:	Zip Code:
Point of Contact:		Date(s) of Work:
Phone Number:	Fax Number:	E-mail:
Brief Description of Tower(s)		
Briefly describe the services provided to the governmental entity.		
Reference Response (To be completed by County Staff):		

**ATTACHMENT “C” CONTINUED
REFERENCE LIST**

Facility/Organization/Firm Name:		
Tower Location Address:		
City:	State:	Zip Code:
Point of Contact:		Date(s) of Work:
Phone Number:	Fax Number:	E-mail:
Brief Description of Tower(s) 		
Briefly describe the services provided to the governmental entity. 		
Reference Response (To be completed by County Staff): 		

THIS FORM MUST BE COMPLETED AND RETURNED WITH YOUR PROPOSAL

ATTACHMENT “D”

16.0 INSURANCE REQUIREMENTS

Insurance Requirements - Major Construction Contracts

The contract price exceeds \$1,000,000 or where unusual hazards exist.

Insurance Requirements

- a) Workers’ compensation – to meet statutory limits in compliance with the Workers Compensation Law of Florida. This policy must include Employer Liability with a limit of \$100,000 for each accident, \$500,000 disease policy limit and \$100,000 disease each employee limit. Longshoreman’s insurance, if applicable, must meet statutory limits.
- b) Commercial general liability – coverage shall provide minimum limits of liability of \$1,000,000 per occurrence, \$2,000,000 Aggregate, for bodily injury and property damage. This shall include coverage for:
 - 1. Premises/operations
 - 2. Products/complete operations
 - 3. Contractual liability
 - 4. Independent contractors
 - 5. Broad form property damage
 - 6. X, C, U and personal injury with employment exclusion deleted
- c) Business auto liability – coverage shall provide minimum limits of liability of \$1,000,000 per occurrence, \$2,000,000 aggregate for bodily injury and property damage. This shall include coverage for:
 - 1. Owned autos
 - 2. Hired autos
 - 3. Non-owned autos
- d) Umbrella or Excess Liability Insurance covering workers compensation, commercial general liability and business auto liability with minimum limits of liability of \$3,000,000.

Builder Risk Insurance

Builders Risk insurance will be provided by the prime contractor(s) involved in the construction of a new building or the improvement, alteration or renovation of an existing structure. This coverage should be considered an automatic and mandatory requirement on projects involving new construction or major additions to existing structures.

- a) Builders risk - shall be “all risk” with limits equal to 100% of the completed value of the structure(s), building(s) or addition(s).
- b) Waiver of occupancy endorsement – enables the county to occupy the facility under construction/renovation during such activity.

Insurance Requirements - Major Construction Contracts, continued

- c) Machinery/equipment endorsement – when the contract calls for the installation of machinery or equipment, the policy must be endorsed to provide coverage during transit and installation.
- d) Deductible – the maximum deductible allowable under this coverage is \$25,000 per claim.

Special Requirements

- a) Prior to execution of a contract, a certificate of insurance will be provided that shall provide for the following:
 - 1. St. Johns County will be named as additional insured on the commercial general liability, business auto liability, umbrella or excess liability and the builder's risk policies.
 - 2. St. Johns County will be given thirty (30) days notice prior to cancellation or modification of any stipulated insurance.
- b) It is the responsibility of the contractor to insure that all subcontractors comply with all insurance requirements.
- c) It should be remembered that these are minimum requirements which are subject to modification in response to high hazard operations.

NOTE: The State of Florida has a no-fault automobile insurance requirement. The Contractor shall be certain coverage is provided which conforms to any specific stipulation in the law.

16.1 Property Insurance

Contractor shall purchase and maintain property insurance with the form of policy for this coverage shall be A Completed Value. The Contractor shall provide this coverage and shall be in the amount of the initial Contract Price as well as subsequent modifications thereto for the entire Work at the site on a replacement cost basis without voluntary deductibles.

16.2 Certificate of Insurance

The Contractor shall furnish one copy of each Certificate of Insurance herein required for each copy of the Agreement which shall specifically set forth evidence of all coverage required by paragraphs 16.1 and 16.2 naming the Owner as additionally insured.

The Contractor shall furnish to the Owner copies of any endorsements that are subsequently issued amending coverage or limits.

INSURANCE CERTIFICATE

A Certificate of Insurance, naming the St. Johns County Board of County Commissioners as an additional insured, will be required from the successful respondent at the time of signing of the contract. Certificates of Insurance are to be authorized in writing by an officer of the insurance company or companies, identifying their agent and executed by the agent with a copy of the agent's license by the insurance company attached. The Certificate must reflect the required coverage's and guarantee St. Johns County that at least a 30 day written notice of cancellation or material change in coverage's will be given to St. Johns County. Original Certificate of Insurance will be faxed or mailed directly from the insurance company. Insurance Certificates which are faxed or mailed from the successful contractor will not be accepted. Certified copies of all policies must accompany the Certificate of Insurance when requested by the County.