EXHIBIT C
Anne Arundel County Guide to Carriers for the Installation of Cellular Sites on Water Tanks

The following document outlines the steps required to perform a collocation or modification to an existing install on an Anne Arundel County owned Water Tanks.

I. Point of Contacts

The point of contact for all leasing information is John Dodds, representing the Department of Central Services. The point of contact for all work related to the collocation at the County is Matt Mirenzi, representing the Department of Public Works (DPW). Datanet Engineering, Inc. is a consultant that Anne Arundel County has hired to manage and inspect all Water Tanks cellular installations and modifications. The point of contact at Datanet Engineering, Inc. is Colleen Leary. All contact information is listed below.

All leasing information will be coordinated with the Department of Central Services representative. All onsite meetings, installation construction and maintenance related activities will be coordinated with the DPW representative. There may be an overlap or gap in obtaining a signed lease and when you will be permitted to move forward with construction as these items are handled by two different departments in the County.

Contact	Phone	Fax
Mr. Matt Mirenzi **Anne Arundel County Department of Public Works (DPW)** **Utility Operations Administrator** **Water Operations** 437-A Maxwell Frye Road Millersville, MD 21108 Email: mmirenzi@aacounty.org	(410) 222-8410	(410) 222-8475
Mr. John Dodds **Anne Arundel County Department of Central Services** **Leasing Department** 2660 Riva Rd. Annapolis, MD 21401 Email: REDODD60@aacounty.org	(410) 222-7913	(410) 222-7978
Ms. Colleen Leary **Datanet Engineering, Inc.** 11416 Reisterstown Road Owings Mills, MD 21117 Email: cleary@datanetengineering.com	Office: (410) 654-1800 Cell: (443) 220-6228	(410) 654-3711

II. Approval Process and Required Documents

a. Communication Requirements

The Carrier will include their company name on all written correspondence including any plans, emails, and letters. The proper name for the Water Tank the Carrier wishes to install an antenna system will be supplied by the DPW Representative, which must be used by the Carrier on all written communication, lease exhibits, drawings, and emails.

The Carrier will include a date on all written submittals and directly on all lease exhibits and construction drawing revisions. Every lease exhibit and construction drawing, including revisions, must be submitted as two 11x17 paper copies and a PDF file (sent via email) to the DPW Representative.

The Carrier will supply a list of point of contacts that represent their company to the DPW and Central Services Representatives for Anne Arundel County upon starting the process to lease antenna mounting space.

During construction or maintenance, the Carrier will notify the DPW Representative of any complaints from neighboring properties to the Water Tank.

b. Modifications of Existing Antenna Systems

1. **Minor Modification to Installed Antenna Systems** (Does not require lease adjustment, but requires approval from DPW Representative). Examples include:

    a) Replacement antenna installed with no new brackets or welding and antennas are not being relocated.
    b) Replacement cables installed in the same location as old cables.
    c) Work conducted on the ground in the leased area.
    d) A change or modification solely within the interior of the Carrier's equipment shelter.

2. **Major Modification to Installed Antenna Systems** (May require a lease adjustment and requires approval from DPW Representative). Examples include:

    a) Increasing the number of antennas located in new areas of the tank that will require welding.
    b) Any new underground work.
    c) Work that will result in increasing the area of the facilities located on the ground.

c. New Installation of Antenna Systems

1. Existing Obsolete Antenna Systems From Other Carriers

On a few Anne Arundel County Water Tanks, there are existing antennas and equipment belonging to Carriers who have gone out of business. The County requires that the first Carrier planning on installing their equipment on these tanks is required to remove all appurtenances and discard them at no cost to the County.

2. Site Acquisition Meeting

To begin the collocation process a Site Acquisition Meeting may be conducted with notification to the DPW representative. The onsite meeting will identify the proposed location for the cabinets or shelter, location of antennas, and cable routing. A rough idea for the feasibility for connecting to local utilities may also be identified if they have not already been installed by another Carrier. The DPW Representative will provide a copy of each Water Tank's portfolio to the Carrier in either PDF format or paper copy, if available. If there are as-built drawings available, the DPW Representative will distribute them in the same format.

3. Carrier Feasibility Considerations

a) Engineering analysis

It is in the best interest of the Carrier to perform an engineering analysis, at the Carrier's expense to focus on such items as radio frequency interference, radio frequency radiation, and structural integrity. If radio interference occurs with the installation of the Carrier's antenna(s), the Carrier will be held to the conditions of the Lease.

b) Portable Antenna Testing

Portable antenna testing may be performed by the Carrier for site viability. Testing will be on a first come, first served basis.

c) Technical Design Requirements

Proposed design must conform to technical requirements detailed in Section III.b. of this document.

4. Lease Exhibits (aka Simple Drawings and/or Site Utilization Plan)

Following the initial Site Acquisition Meeting, proposed Lease Exhibits will be drafted by the Carrier and sent to the DPW representative for review. A sample Lease Exhibit may be found in Attachment A. The Lease Exhibit will include the following information:

a) Site layout, to include:
- Proposed location of ground-based equipment
- Proposed size (e.g. area) of ground space that will be utilized
- Any existing above-ground features
- Property line
- Proposed access road additions (if any)
- Proposed fencing additions (if any)

b) General view of ground-based equipment

c) Path of all cable lines from equipment area to antenna locations

d) Number and location of antennas, including RAD centers

e) Utility locations (e.g. electrical service)

f) Listing of proposed radio frequencies that will be utilized

g) "Signature block" for Carrier approval and DPW representative approval

A comment letter will be generated by the DPW representative within 20 calendar days of receipt of the Carrier's submittal. Once all the requested changes have been made, the Carrier will forward a final set of Lease Exhibits to the DPW representative for a final review. Final review of the Lease Exhibits will be completed by the DPW Representative within 20 calendar days. If there are no errors, the final approval of the Lease Exhibits will be made by the DPW Representative at that time.

After the lease exhibits, along with the lease, have been signed by all parties, the County will accept the next phase of review for Construction Drawings.

5. Construction Drawings (aka Zoning Drawings)

Proposed Construction Drawings will be drafted by the Carrier and sent to the DPW Representative for review. A sample construction drawing may be found in Attachment B.

A comment letter will be generated from the DPW Representative within 20 calendar days of receipt of these drawings. Once all requested changes have been made, the Carrier will forward a final set of Construction Drawings to the DPW Representative for final review. If there are no errors, the final approval of the Construction Drawings will be completed by the DPW Representative within 20 calendar days.

Sometimes there are other departments in Anne Arundel County that will review the Lease Exhibits or Construction Drawings and insert additional comments during the process. This may delay the approval process.

Please note, that permission to proceed with installation will not occur until the Construction Drawings have been approved and the lease agreement has been fully executed.

Once the final construction drawings have been approved, any changes must be approved by the DPW Representative prior to the revision. Verbal approval will be granted whenever possible.

The construction drawing approval will expire six (6) months from the date they are signed by the DPW Representative. If construction has not been completed after six months, the Carrier will have to start the approval process from the beginning.

6. Pre Bid Meeting (Optional for Carrier)

Once an approved set of Construction Drawings have been received by the Carrier, a Pre-Bid meeting may be held on-site for the purposes of selecting a contractor. The Carrier will notify the DPW Representative or its designee when the pre bid meeting will occur. A DPW Representative or its designee will attend the meeting upon request by the Carrier. Any technical questions which arise during the pre bid meeting that are not outlined in the Construction Drawings may be forwarded to the DPW Representative for resolution.

7. Pre Construction Meeting

After a Contractor is selected by the Carrier, a Pre-Construction Meeting may be scheduled with a DPW representative or its designee onsite to review the specific details and logistics for access, inspection, and completing the installation as per the contract documents. The pre construction meeting will be held within 10 calendar days from when the DPW Representative receives the following required documents:

- A list of all contractors and sub-contractors that will be working on-site.

- A schedule outlining an estimated time frame for all major work. The schedule will include time periods for each part of the project, as well as the planned work that will be performed on each day.
- Copies of all required permits (such as building permits, electrical permits, etc.).
- Manufacturer's equipment specifications, if not previously submitted to the DPW representative.

8. Estimated Timeline for the Approval Process

The average timeline from when Lease Exhibits are received by the DPW Representative from the Carrier and the installation of an antenna system may begin is a minimum of two months, assuming minimal re-submittals are required. See Attachment C.

III. Construction Phase

a. General Requirements

1. Access/Security

The Carrier will be given access to the site by either connecting a padlock to the existing ones or by receiving a key issued by the Anne Arundel County DPW Representative. These key(s) are to be signed for by the Carrier representative and held by the project foreman for the contractor hired by the Carrier.

The existing access gate will be shared by all parties using the grounds. No exclusive gates will be permitted.

Security of the Water Tank is one of the highest regards in Anne Arundel County. The only individuals allowed on the site are the employees of the Contractor, the Carrier Representatives, Sub-Contractors, Datanet Engineering, Inc., and Anne Arundel County. If any unauthorized personnel are onsite, the Carrier, Contractor, or Sub-Contractor will call the DPW Representative immediately. At the end of the day, it is the responsibility of the last person onsite to secure all gates, hatches, and doors to their original condition.

2. Safety

While working at the Water Tank Site(s), all applicable safety measures will be followed pertaining to this type of work (OSHA, MOSH, EPA, Tank Safety Standards, etc.). If at any time, Anne Arundel County or Datanet Engineering, Inc. reports that there are any unsafe or dangerous practices that have taken place on the site, work will STOP immediately until the

situation is evaluated and resolved. The County has the authority to issue a Stop Work Order and have it enforced by law enforcement officers.

3. Work Hours

The hours from which work is allowed onsite is as follows:

Monday through Friday: 8:00 a.m. to 5:00 p.m.
Saturday: No work is permitted without special approval.
Sunday: No work is permitted.

The hours on Monday through Friday may be adjusted based upon the sole discretion of the County. Requests for adjustments to the work hours may be made to the DPW Representative. If there are neighborhood, business, school or other complaints, the hours of work may be modified at any time by the DPW Representative. This will be discussed during the Pre-Construction meeting.

If work is approved to be conducted on Saturdays, there will be no painting or welding work performed on the Water Tank or site. Work that may be permitted on Saturday is rigging, site work, antenna installation, coax cable pulling, and other miscellaneous tasks.

4. Approved Paint/Welding Contractors

Due to the expense that Anne Arundel County has invested in painting the Water Tanks, only approved Paint Contractors will be allowed to perform the interior cleaning, welding, surface preparation, and painting on the Water Tank or standpipe and the appurtenances being attached. Certain items that are being fabricated and are to be hot-dipped galvanized may be welded by another party. All paint manufacturers' product data sheets will be followed unless otherwise stated.

The following Paint Contractors are approved by the County:

Approved Paint Contractors	Phone	Fax
Mr. George Tarantino **Bay Town Painting Inc.** 33 Stahl Point Road Baltimore, MD 21226	410-609-2626	410-609-0303
Mr. Nick Kaliakoudas **K&K Painting & Construction** 1704 Joplin Street Baltimore, MD 21224 Email: kkpaint@msn.com	410-633-2381	410-633-0720
Mr. Jim Laskaridas **Mediterranean Construction Company** 6903 North Point Road Baltimore, MD 21219 Email: laskaridis1954@aol.com	410-477-2852	(410) 388-2129

5. Fencing/Driveway Details

If fencing will be installed it will be installed to Anne Arundel County Standard Fence Detail. The Anne Arundel County requirements may be found at http://www.aacounty.org/DPW/Engineering/DesignManual.cfm.

If a driveway is to be installed or modified, all work will be completed as outlined in the approved Construction Drawings.

6. Existing Antenna Systems In Service

Existing antenna systems on Water Tanks that are in service may not be disturbed or altered in any way by the Carrier.

7. Carrier Antenna Systems and Equipment Identification

Each antenna will identify the Carrier by a metal tag fastened securely to its bracket on the Water Tank. Each transmission line will identify the Carrier by tagging the line at the conduit opening where it enters the Carrier's equipment building/area. Each equipment area and all equipment on the ground will identify the Carrier.

8. Inspections

There may be various stop points when Anne Arundel County and/or Datanet Engineering, Inc. will require an inspector to review the materials, installation, welds, surface preparation and other items prior to the contractor proceeding with the work.

b. General Exterior Requirements

1. Antennas may only be attached to support legs. The Lessee will maintain a minimum of six (6) feet horizontal and vertical clearance with any existing antennas.

2. No penetrations through support legs, wind rods or other superstructure components will be permitted.

3. All control, power and signal cables to the antennas will be attached externally to the legs in conduit and shall be placed so as to minimize public view.

4. There shall be no permanent ladders, lugs or climbing rungs attached to any portion of the tank to service the antennas or support equipment.

5. All wiring between the equipment building and the tank base shall be underground and the lines shall be clearly marked from above with permanent monuments. It shall be the responsibility of the Lessee to identify all underground utilities within the confines of the tank site which will be crossed/paralleled by the Lessee's installation activities.

6. All power and telephone requirements for the antenna/building operation shall be the responsibility of the Lessee. The existing County services shall not be used. Any costs incurred to bring power/telephone to the ground equipment area shall be at the Lessee's expense.

7. Landscaping/screening may be required for the equipment building at the discretion of the Department of Public Works, all costs of which shall be borne by the Lessee.

c. Exterior Requirements for Water Tank/Standpipe (Bowl, Fluted Column, Leg)

The general water tank painting, welding and surface preparation details are as follows:

1. Mounting Details for Antenna Masts

There are various mounting details for antenna masts and arrays which are not outlined in this guide. If during the design phase of an installation, it is determined that there needs to be a new mounting detail, the Carrier, the County or Datanet Engineering, Inc. may submit a proposed point of attachment with detailed figures.

2. Cable Installations, Cable Shroud and Welding Brackets

Standard details for cable shrouds must be followed in accordance with Attachment D. Standard details for cable welding brackets must be followed in accordance with Attachment E.

3. Duct Bank(s)

All coax cable runs will be installed in underground concrete encased duct bank(s). Ice bridges carrying the cables to the tank, tank leg, or support column are not permitted. There may be a small ice bridge installed to protect the cables as they exit the shelter or cabinet.

A concrete pad will be formed around the PVC duct bank housing the coax cables as they terminate at both ends. If a cable shroud is installed, a "doghouse" will be installed around the lowest section making a smooth transition from grade to the standard shroud panels. This lowest section will be bolted to the concrete with appropriate anchors. The shrouds will not be fabricated with a hot dipped galvanized finish. Any shrouds with said finish, will be rejected and cannot be installed.

4. Cables

Due to the need for Anne Arundel County to maintain the Water Tanks in the future, the Carrier may propose in their design to install additional cable length that will allow a temporary reposition of the antenna during the County's maintenance of the Water Tank in lieu of completely removing the antenna. Installing the additional cable length does not guarantee that the Carrier will be exempt from completely removing all cables and antennas for maintenance purposes.

5. Surface Preparation of the Substrate

Prior to having any items welded to the surface, all areas will be Power-Tool Cleaned in accordance with SSPC-SP3 to remove all existing coatings. The edges of the substrate will be feathered back a minimum of one (1) inch evenly around the area to be welded. The item to be welded will then be attached as detailed approved Construction Drawing. All welds will be performed by a Certified AWS D1.1 Welder (credentials must be applicable for the type of weld to be performed). All welds will be ground smooth as per NACE RP0178-Condition C for the interior and Condition D for the exterior, or non-immersion. All welds will be inspected visually by Datanet Engineering, Inc.'s inspector prior to application of primer. Any areas not accepted will be repaired and re-inspected.

6. Surface Preparation for All Items being Welded to the Water Tank

As stated previously, all items to be welded to the Water Tank will only be fabricated from Carbon Steel (with absolutely no galvanized finish). The steel re-pads, tabs, cable shrouds, painter's ring, or other items will be abrasively blasted as per NACE 02/SSPC-SP10 Near-White Metal Finish. The steel will be primed in shop conditions within six (6) hours of the surface being blasted. Again, all surface preparation work described in this guide will be performed by one of the approved paint contractors listed in section IV.b. After all surface preparation is completed; Datanet Engineering, Inc.'s inspectors will review the surfaces. If the area is not accepted, all defects will be re-blasted or corrected prior to the application of the prime coat.

Notice must be given to Datanet Engineering, Inc. 48 hours in advance via a telephone call prior to all of the blasting and priming of any items pertaining to the installation of a cellular antenna system. The coax support tabs will be abrasively blasted leaving a one (1) inch area unpainted on all surfaces, which are to be welded. Basically, if a welding stick is going to be within one (1) inch of the surface, do not paint in that area. Additional coats can be applied in the shop to minimize coatings application in the field. However, any damage caused to the painted surfaces will be repaired by the Carrier at no additional cost to the County.

Inspection of all items before and after each coat will be performed by Datanet Engineering, Inc. Any item not inspected prior to application of coating will not be accepted and will be rejected. The surface will then be prepared as directed by Datanet Engineering, Inc. and the coatings re-applied.

7. Welding

All personnel performing welding on the Water Tank will be Certified ASME Section 9 or AWS D1.1. The certification will be submitted to Datanet Engineering, Inc. at the beginning of the project and prior to the start of any welding. The certified welder may not be allowed to perform said services if the certification does not apply to the type of welds to be performed.

All metal to be welded to the Water Tank will only be fabricated from Carbon Steel. No galvanized finished pieces are allowed to be welded to the Water Tank.

All items to be welded will be completed using Shielded Metal Arc "Stick" welding. The type of welding rode and the number of passes shall be determined on a case-by-case basis.

After all items are welded and before the primer coat is applied, a Datanet Engineering, Inc. inspector will visually inspect all welded areas to verify conformance with NACE RP0178 standards. The Carrier's Paint Contractor or General Contractor will provide access to all areas for inspection. Before any coatings application is performed, new welds will be roughened to achieve a profile equivalent to a 40-60 grit sandpaper texture. Conformance with this requirement will be determined by Datanet Engineering, Inc.'s inspector.

Under **NO** circumstances will an inhibitor or coating other than the approved primer be applied to the surface of the steel.

Before any welding is performed on the Water Tank, protective welding blankets or other measures will be installed to contain and minimize the slag, debris, and sparks caused from the welding. ANY damaged areas to the water tank coating caused by the construction will be repaired by the approved Paint Contractor at the Carrier's expense. Damage to the coating is constituted by mechanical, physical, burn marks, from rolling beads of slag, or any areas noted by the Datanet Engineering, Inc. inspector. The repair procedures for all damaged areas will require a minimum of Power Tool Cleaning in accordance with SSPC-SP11.

d. Interior of the Water Tank

It is extremely important to be mindful that the Water Tanks are generally in use and holding drinking water. Due to the water being in the Water Tanks, **Every Precaution Necessary** will be taken to ensure the there is ZERO disturbance to the environment inside the Water Tank. If for any reason any testing of the water (due to possible contamination by the Contractor) is required, the cost will be billed to the Carrier.

1. Initial Cleaning, Surface Preparation and Coating of the Interior

If items were welded to the exterior of the Water Tank Bowl or Standpipe, repairs to the interior coatings will be required. To complete this task, the water tank will need to be drained. Coordination with the DPW Representative will be required to complete this portion of the work. The Water Tanks cannot always be drained. There are certain times of the year due to peak demand for water and fire protection that the Water Tanks will not be drained. This time frame is normally from May thru September. If that is the case, a later date in the Fall or Spring will be selected for the interior work to be completed. There will be no cost to the County for delaying this portion of the project because of the draining issues.

Once the Water Tank is drained, there is residual water that sometimes cannot be removed by the normal draining process. This is usually a small

quantity of water. It is the Carrier's responsibility to remove the remaining water via a sump pump. The water should be drained out of the water tank into the nearest storm drain. Per Maryland Department of the Environment (MDE) regulations, the drained water must be de-chlorinated.

All equipment brought into the Water Tank will be clean and free of dirt, debris, oil, and foreign material. All necessary rigging to abrade and paint the Heat-Affected Zones (HAZ) on the interior will be provided and installed by the Carrier's Contractor. Any additional rigging pass-throughs installed will be welded on the interior as well as the exterior following the same standards of NACE RP0178.

All HAZ areas will be power tool cleaned as per SSPC-SP 11 Power Tool Clean to Bare Metal. The visual area of the discolored coatings will be removed along with 2" beyond the furthermost edge of the item welded onto the exterior, whichever is larger. The edges will be feathered to a smooth transition. Only the approved coating system will be used on the interior and it will be NSF 61 approved.

Before and after surface preparation, after prime coat, and before and after any subsequent coats of paint, Datanet Engineering, Inc. will have full access to inspect all areas. The Carrier's Paint Contractor will provide means to inspect these areas safely. A low-voltage Holiday tester will be used to verify that the interior coatings are Holiday-free. All areas noted having insufficient millage on noted Holidays will be repaired accordingly.

If any areas are coated below the water line, a Solvent Rub Test will be performed by Datanet Engineering, Inc. to verify that the coating has fully cured.

It is Datanet Engineering, Inc.'s sole discretion for acceptance of the interior cleaning, surface preparation and coating.

2. Final Cleaning and Placing the Water Tank back into Service

One of the approved Paint Contractors will perform all interior cleaning of the Water Tank after all surface preparation and painting have been completed and inspected. The cleaning of the interior will comply with industry standards and as directed by Datanet Engineering, Inc. After all surface preparations and coatings applications are complete; the Carrier's Paint Contractor will perform low-pressure washing of all surfaces to remove any contaminants, dirt, paint, dust, paint dust, oil, debris and any other foreign matter. This will all be inspected by Datanet Engineering, Inc. prior to acceptance.

All rubber gaskets on access hatches opened during the interior painting will be replaced with an equivalent gasket. There are sometimes odd shapes to the gaskets, therefore, it is recommended to order the new one as soon as possible. A local distributor and fabricator of gaskets is Paramount Packing & Rubber, 410-789-2233.

After the tank has sufficiently been cleaned, the filling of the tank will begin. This again, will require coordination with the DPW Representative. Once the tank has reached 5% by volume, a quantity of Sodium Hypochlorite will be added by Datanet Engineering, Inc. based upon the Method 3 AWWA D100 chlorination method. The materials will be paid for by the Carrier's Paint Contractor.

There will be a number of tests taken in accordance with AWWA Method 3 testing for the chlorination of a water tank and the filling. A chlorine residual, ph, VOC and bacteriological samples will be collected by Datanet Engineering, Inc. and delivered to a certified laboratory. All testing costs will be the responsibility of the Carrier using a vendor approved by the County. If any of the water quality tests fails, the Water Tank will be drained and cleaned by the Carrier's Paint Contractor at no additional cost to the County or Datanet Engineering, Inc., and re-filled as per the procedures mentioned above. The same testing will be performed for the water until all tests are acceptable to Anne Arundel County.

e. Post Construction Inspection

When the Carrier's contractor has completed the installation, they will request a post construction inspection the DPW Representative. Any items noted as being in need of repair shall be completed within 30 days of notice. Conditional acceptance shall be given after all punch list items are complete. Failure to complete these items will be cause for termination of the lease.

IV. General Maintenance of the Antenna Systems and Leased Area

It is the responsibility of the Carrier to maintain the installed antenna systems and leased areas. Routine housekeeping and grounds keeping are required in the leased areas. During maintenance, the Carrier is expected to follow the applicable guidelines listed in this document.

V. Carrier Liability

Datanet Engineering, Inc. is the onsite inspector and representative for Anne Arundel County. All work is subject to inspection by either the County or Datanet Engineering, Inc. personnel at any time. Photos and/or video are on file showing the original condition of all sites prior to any work completed. The sites will be

returned to the original condition by the Carrier. The Carrier is responsible for any damages or disturbances.

It is the responsibility of the Carrier to comply with Miss Utility regulations prior to any excavation. The Carrier is responsible for securing any necessary County permits prior to starting construction.