



ATC OUTDOOR DAS

March 9, 2011

Northampton Township
Northampton Township Complex
55 Township Road
Richboro, PA 18954

I. Background

ATC Outdoor DAS, LLC ("ATC ODAS") designs, builds, owns, operates and maintains complete Distributed Antenna Systems ("DAS") solutions that allow telecommunication providers to deliver the coverage they need, while balancing community aesthetic demands and municipal permitting requirements. DAS is a fiber-fed network that relies upon a series of antennas installed atop existing or proposed poles in the right of way to provide a localized solution for mobile devices. Such a network allows users to move seamlessly from DAS to towers or rooftops.

Since 2001, American Tower Corporation ("ATC"), parent company of ATC ODAS, has been designing and deploying DAS solutions to meet the needs of our customers. ATC has diverse experience working closely with telecommunication providers in planning, designing and redesigning their networks for optimum coverage and capacity. ATC ODAS utilizes DAS systems when zoning regulations, permitting restrictions, or space limitations preclude the construction of a tower. The DAS network can deliver increased coverage and capacity for multiple telecommunication carriers with minimal impact on the community.

II. The Northampton Distributed Antenna System

The DAS proposed by ATC ODAS, located within and near the Township of Northampton, Pennsylvania, consists of one hub and 71 nodes, all connected by a combination of underground and aboveground fiber optic cabling ("Northampton DAS"). ATC ODAS proposes to locate 60 of the 71 nodes in Northampton. The nodes will be located on existing utility poles owned by Philadelphia Electric Company ("PECO"), Verizon (ILEC), and/or Comcast. ATC ODAS is also looking to locate some nodes on existing street lights or on proposed new poles, all within the public right-of-way. The nodes will be connected to each other and the hub by fiber optic lines located within the public right-of-way.



ATC OUTDOOR DAS

ATC ODAS proposes to locate the hub, which will consist primarily of DAS operating equipment, within an existing ATC tower site. This space will provide 1000 square feet which is needed to shelter the operating equipment for multiple carrier customers.

Currently, the Northampton DAS calls for running approximately 30.0 miles of fiber optic cabling aboveground, and approximately 9.0 miles is proposed to be placed underground.

III. Conclusion

As a premier telecommunications infrastructure provider with more than 34,000 sites in nine countries, ATC recognizes the importance of keeping communities and their residents connected. The Northampton DAS will deliver increased coverage and capacity for multiple carriers with minimal impact to your community.

Additionally, the Northampton DAS will preserve and increase the amenities of Northampton by developing a reliable local telecommunications infrastructure that will help support the security of instant communication, such as calling 911. ATC ODAS may work with the community to customize the design of the Northampton DAS to best suit the needs of the township. The Northampton DAS will promote and conserve the convenience, safety and general welfare of the citizens of Northampton by enhancing telecommunication services within the township and by providing a strong, secure infrastructure to protect and serve your community.

Very truly yours,



David Callender

IN THE COURT OF COMMON PLEAS OF BUCKS COUNTY, PENNSYLVANIA
CIVIL ACTION – LAW

ATC OUTDOOR DAS, LLC

v.

BOARD OF SUPERVISORS OF
NORTHAMPTON TOWNSHIP

and

MICHAEL T. SOLOMON


No.: 2011-09455

ORDER

AND NOW, this 5th day of January, 2012 ~~December, 2011~~, upon consideration of Plaintiff's Motion for Peremptory Judgment, Defendant's answer thereto, Defendant's Preliminary Objections, Plaintiff's response thereto and Defendant's subsequent response, as well as Defendant's Motion to Dismiss Plaintiff's Peremptory Judgment, Plaintiff's response thereto and Defendant's subsequent response, and having heard oral argument on December 13, 2011, it is hereby ORDERED and DECREED that;

2. Plaintiff's Motion for Peremptory Judgment is GRANTED on Count I of Plaintiff's Complaint in favor of Plaintiff, and thus, Defendant's Motion to Dismiss is DENIED.
3. Defendants are ordered to issue Plaintiff an exemption under Sections 106-4.B(6) and 106-4.B(9) of the ROW Ordinance so as to permit ATC to enter upon and use the public rights-of-way within Northampton Township to install the DAS Infrastructure.
4. Defendant's Preliminary Objections are OVERRULED.

BY THE COURT.


WALLACE H. BATEMAN, JR., J.



COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA PUBLIC UTILITY COMMISSION
P.O. BOX 3265, HARRISBURG, PA 17105-3265

IN REPLY PLEASE
REFER TO OUR FILE

December 22, 2008

A-2008-2072972

JOHN C DODGE ESQUIRE
BRIAN A NIXON ESQUIRE
1919 PENNSYLVANIA AVE NW
SUITE 200
WASHINGTON DC 20006

Application of ATC Outdoor DAS, LLC for approval to offer, render, furnish
or supply telecommunication services as a Competitive Access Provider to the public in the
Commonwealth of Pennsylvania.

To Whom It May Concern:

This is to advise you that the Commission in Public Meeting on December 18, 2008 adopted
an Order in the above entitled proceeding.

An Order has been enclosed for your records.

Very truly yours,


James J. McNulty
Secretary

Encls
Cert. Mail
MH

**PENNSYLVANIA
PUBLIC UTILITY COMMISSION
Harrisburg, PA 17105-3265**

Public Meeting held December 18, 2008

Commissioners Present:

James H. Cawley, Chairman
Tyrone J. Christy, Vice Chairman
Robert F. Powelson,
Kim Pizzingrilli
Wayne E. Gardner

Application of ATC Outdoor DAS, LLC for approval to offer, render, furnish or supply telecommunication services as a Competitive Access Provider to the Public in the Commonwealth of Pennsylvania.

A-2008-2072972

ORDER

BY THE COMMISSION:

On September 11, 2008, ATC Outdoor DAS, LLC (Applicant or ATC Outdoor) filed an Application seeking a Certificate of Public Convenience pursuant to the Telecommunications Act of 1996, 47 U.S.C. § § 201, *et seq.*, (TA-96) and to Chapter 11 of the Public Utility Code (Code) (66 Pa. C.S. § 1101, *et seq.*) evidencing authority to operate as a Competitive Access Provider (CAP) throughout the Commonwealth of Pennsylvania. The Applicant was granted provisional authority pursuant to our Secretarial Letter dated November 6, 2008, to provide the proposed CAP services pursuant to its proposed tariff during the pendency of the application process.

The Applicant is a Delaware Limited Liability Company with its principal place of business at 116 Huntington Ave., Eleventh Floor, Boston, MA 02116, phone (617) 375-7500, fax (617) 375-7575. Correspondence to resolve complaints may be

directed to either David Peirce in Cary, North Carolina, at (919) 466-6665 or Janae Walker Bronson in Woburn, Massachusetts, at (781) 926-4545. The Applicant complied with 15 Pa. C.S. § 8981, relating to a Foreign Limited Liability Company. The Applicant's registered office provider is CT Corporation System, 116 Pine St., Suite 320 Harrisburg, PA 17101. The Applicant will not be using a fictitious name. The Applicant understands that if it plans to cease doing business within the Commonwealth of Pennsylvania, it is under a duty to request authority from the Commission for permission prior to ceasing.

The Applicant complied with notice requirements set forth in our Application form by serving a copy of its application upon the Office of Consumer Advocate, the Office of Small Business Advocate and the Office of the Attorney General. No protests were filed. No hearings were held.

ATC Outdoor has affiliates doing business in Pennsylvania; however, none of ATC Outdoor's subsidiaries are jurisdictional public utilities. The Applicant's service is charged at the applicable rates set forth in their tariff. ATC Outdoor will provide facilities-based non-switched local transport services, through a combination of its own facilities and facilities to be leased from a variety of telecommunications carriers, to customers throughout the Commonwealth of Pennsylvania. ATC Outdoor's services will be both intrastate and interstate. One service will rely on a technical platform known as a "Distributed Antenna System," or "DAS." A DAS consists of the following: Base Station Hotel, Optical Conversion equipment, Remote Nodes and Access Points. Also, ATC Outdoor plans to provide Radio Frequency ("RF") or optical transport and backhaul services for voice and data providers. The services will be provided on a monthly basis and will be available twenty-four (24) hours per day and seven (7) days per week. At this time, however, ATC Outdoor does not intend to furnish traditional residential or business local telephone services or switched, interexchange telephone service.

The Applicant has demonstrated that it is financially capable of providing telecommunication services as a CAP. We conclude that the Applicant meets the requirements for certification as a CAP,¹ consistent with this Order.

Premised upon our review of the Application and the proposed tariff, and consistent with our Orders, the Code, our Regulations and the TA-96, we conclude that the Applicant's proposed services do not raise concerns at this time regarding safety, adequacy, reliability, or privacy. We note, however, deficiencies in the proposed tariff. See Appendix A. We shall direct the Applicant to revise its tariff in accordance with the changes noted in Appendix A of this Order.² The Applicant shall, thereafter, file its Initial Tariff reflecting the requested changes on or before sixty (60) days from the date of entry of this Order. Copies of the Initial Tariff shall also be served upon the same entities receiving service of the original Application. If the time required for such resolution and filing exceeds sixty (60) days, the Applicant may request an extension of an additional sixty (60) days with the Commission's Secretary. Thus, if the Initial Tariff is not filed within 60 days (120 days including the extension) of the entry of this Order, the Application will be dismissed and the authority granted herein will be revoked without further Commission Order. To the extent that the proposed tariff contains rates, the Initial Tariff may become effective on one (1) day's notice from the date upon which it is filed and served.

We note that the Commission will only approve tariff provisions regarding limitation of liability consistent with law. The Commission does not have jurisdiction to determine liability or award monetary damages. Any tariff provisions contained in the Initial Tariff regarding limitation of liability found to be inconsistent with any applicable

¹ CAP authority may not be used to access the Public Switched Network or toll calling. If a utility with CAP authority wishes to provide access to the Public Switched Network or to provide local or IXC (intraLATA or interLATA) calling services to its customers, the utility must also have been granted CLEC and/or IXC authority by this Commission.

laws, rules and regulations will be deemed inoperative and superseded. Any claim against the public utility and/or public utility's customer regarding liability outside the limited scope of the tariff must be filed in court for determination of liability and monetary damages.

Conclusion

Accordingly, we shall grant the Application. Upon the establishment of filed rates and the approval of the Initial Tariff, a Certificate of Public Convenience shall be issued evidencing the Applicant's authority to provide services as a CAP in the Commonwealth of Pennsylvania, consistent with this Order and our decisions in such other proceedings; **THEREFORE,**

IT IS ORDERED:

1. That the Application of ATC Outdoor DAS, LLC at Docket No. A-2008-2072972, for authority to operate as a Competitive Access Provider throughout the Commonwealth of Pennsylvania is granted, consistent with this Order.
2. That the Applicant shall comply with all the provisions of the Public Utility Code, as now exist or as may be hereafter amended, and with all pertinent rules, regulations, and Orders of this Commission, now in effect or as may be prescribed by this Commission.
3. That the authority granted herein, to the extent that it duplicates authority now held by or subsequently granted to the Applicant, shall not be construed as conferring more than one operating right to the Applicant.

² Regardless of the review process, any tariff provision(s) inconsistent with the provisions of the Code, the TA-96, or our Regulations or Orders will be deemed inoperative and superseded. (52 Pa. Code § 64.213).

4. That the Applicant maintain accurate accounting records that segment its Competitive Access Provider revenues in the state.

5. That in accordance with Commission Orders entered October 5, 2005 at M-00041857 and on August 21, 2006 at L-00050176, the applicant shall follow the reporting requirements outlined at the following website:

http://www.puc.state.pa.us/telecom/docs/Reporting_Requirements021308.doc

6. That the Applicant shall file such affiliated interest agreements as may be necessary relative to any transactions with affiliates within 30 days of this Order.

7. That the Applicant shall file its Initial Tariff consistent with the requisite changes noted in Appendix A of this Order, within sixty (60) days after the date of entry of this Order. **The Applicant is directed to identify any changes made to the proposed Initial Tariff that are in addition to the changes noted in Appendix A.** The Applicant shall serve copies of its Initial Tariff on each entity receiving a copy of the original Application. The Initial Tariff may become effective on or after one (1) day's notice from the date upon which it is filed and served.

8. That the Competitive Access Provider tariff shall reflect on its face that it is a "Competitive Access Provider Tariff." Changes and/or additions made to the approved, filed tariff shall be made in the form of supplements, consecutively numbered in the order of their filing dates, and the tariff designation shall be in the following manner: Supplement No. ___ to Tariff Telephone Pa. P.U.C. No. ___.

9. That the Applicant shall add its Pennsylvania tariff to its website. If the Applicant does not maintain a website, the Commission will host its tariff on the Commission's website.

a. Within 30 days of the filing of its Initial Tariff, the Applicant shall add the tariff to its website and mark it "Pending."

- b. Within 30 days of receipt of its Certificate of Public Convenience, the Applicant shall make any required modifications to the tariff on its website and remove the "Pending" notation. Thereafter the Applicant will continually update the website whenever any supplemental revisions to the tariff are approved by the Commission such that the website tariff is a true and accurate representation of its tariff on file with the Commission.
- c. The Applicant shall contact Cyndi Page (717-787-5722; cypage@state.pa.us) of the Commission's Communications Office, to create a link from the Commission's website to the Applicant's website. If the Applicant does not maintain a website, the Applicant shall contact Cyndi Page to have its tariff added to the Commission's website and to update the tariff upon subsequent approval of supplemental revisions to the tariff.

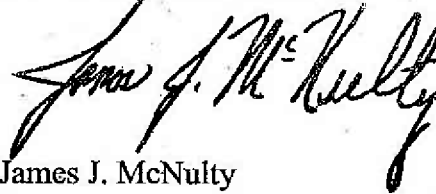
10. That upon the establishment of filed rates and the approval of the Initial Tariff, a Certificate of Public Convenience shall be issued authorizing the Applicant to furnish services as a Competitive Access Provider within the Commonwealth of Pennsylvania, consistent with this Order.

11. That in the event that the Applicant has not, on or before sixty (60) days (120 days including an approved extension) from the date of entry of this Order, complied with the requirements set forth herein; the Application at Docket No. A-2008-2072972 will be dismissed and the authority granted herein revoked without further Commission Order.

12. That if the Applicant plans to cease doing business within the Commonwealth of Pennsylvania, it shall request authority from the Commission for permission prior to ceasing.

13. That a copy of this Order be served on the Department of Revenue,
Bureau of Corporation Tax.

BY THE COMMISSION,



James J. McNulty
Secretary

(SEAL)

ORDER ADOPTED: December 18, 2008

ORDER ENTERED: DEC 22 2008

APPENDIX A

ATC Outdoor DAS, LLC
Docket No. A-2008-2072972
Proposed tariff for
Competitive Access Provider

The proposed tariff contains certain deficiencies that must be addressed by the Applicant before the tariffs can be approved and the Certificate of Public Convenience issued. **The Applicant must submit a copy of this Appendix with its revised compliance tariff. On that copy please note the page/sheet of the compliance tariff where the required revision is located for each item below.**

1. Correct title to read:

ATC Outdoor DAS, LLC
Competitive Access Provider Carrier
Regulations and Schedule of Charges

2. Title Page: need to add territory to which tariff applies (Throughout Commonwealth of Pennsylvania).
3. Original sheet No.'s 20-24, Section 4, Explanation of Terms: This should be at the beginning of tariff. Preferably the first section. Rename to read Definitions Section. All terms in the Definitions Section must appear somewhere in the tariff. However, the following terms do not appear elsewhere and must therefore be removed from the Definitions Section: LATA, Link, Local Service, Resale of Service, Sharing and Telephone Call.
4. Revise Table of Contents pursuant to changes made in revised tariff.
5. Original Sheet No. 1, Check Sheet: There are 29 original sheets. The tariff has a total of 26 original sheets. Revise Check Sheet and delete sheets 27-29.
6. Original Sheet No. 4, Explanation of Symbols: only include 3 symbols: (C) To signify change, (D) To signify decrease in rate and (I) To signify increase in rate. Exclude all other symbols
7. All pages should contain an issued and effective date.

8. **Missing:** The company did not provide a page for future revisions, typically labeled "List of Modifications" as per 52 Pa. Code § 53.21 (10) and 52 Pa. Code § 53.21. This page should be right after the Table of Contents.
9. **Missing:** company did not provide page explaining the Tariff Format. This page should be preferably inserted right after Table of Contents. The Table of Contents should then reference this page. Use sample tariff Format provided in Appendix B.
10. **All Pages:** State the utility's authority (e.g. Competitive Access Provider) as per ordering paragraph.

TARIFF FORMAT

- A. Page Numbering – Page numbers appear in the upper right corner of the page. Pages are numbered sequentially. However, new pages are occasionally added to the Tariff. When a new page is added between pages already in effect, a decimal is added. For example, a new page added between pages 14 and 15 would be 14.1.
- B. Page Revision Numbers – Revision numbers also appear in the upper right corner of each page. These numbers are used to determine the most current page version on file with the Pennsylvania Public Utility Commission. For example, the 4th revised Page 14 cancels the 3rd revised Page 14. Because of various suspension periods, deferrals, etc., the most current page number on file with the Pennsylvania Public Utility Commission is not always the Tariff page in effect. Consult the Check Sheet for the page currently in effect.
- C. Paragraph Numbering Sequence – There are nine levels of paragraph coding. Each level of coding is subservient to its next higher level:
- 2.
 - 2.1.
 - 2.1.1.
 - 2.1.1.A.
 - 2.1.1.A.1.
 - 2.1.1.A.1.(a).
 - 2.1.1.A.1.(a).I.
 - 2.1.1.A.1.(a).I.(i).
 - 2.1.1.A.1.(a).I.(i).(1).
- D. Check Sheets – When a Tariff filing is made with the Pennsylvania Public Utility Commission, an updated Check Sheet accompanies the Tariff filing. The Check Sheet lists the pages contained in the Tariff, with a cross reference to the current revision number. When new pages are added, the Check Sheet is changed to reflect the revision. All revisions made in a given filing are designated by an asterisk (*). There will be no other symbols used on this page if these are the only changes made to it (i.e., the format, etc., remain the same, just revised revision levels on some pages). The Tariff user should refer to the latest Check Sheet to find out if a particular page is the most current on file with the Pennsylvania Public Utility Commission.

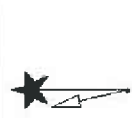
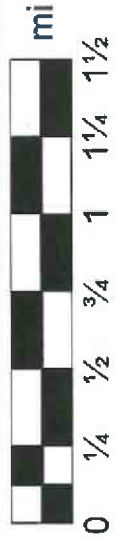
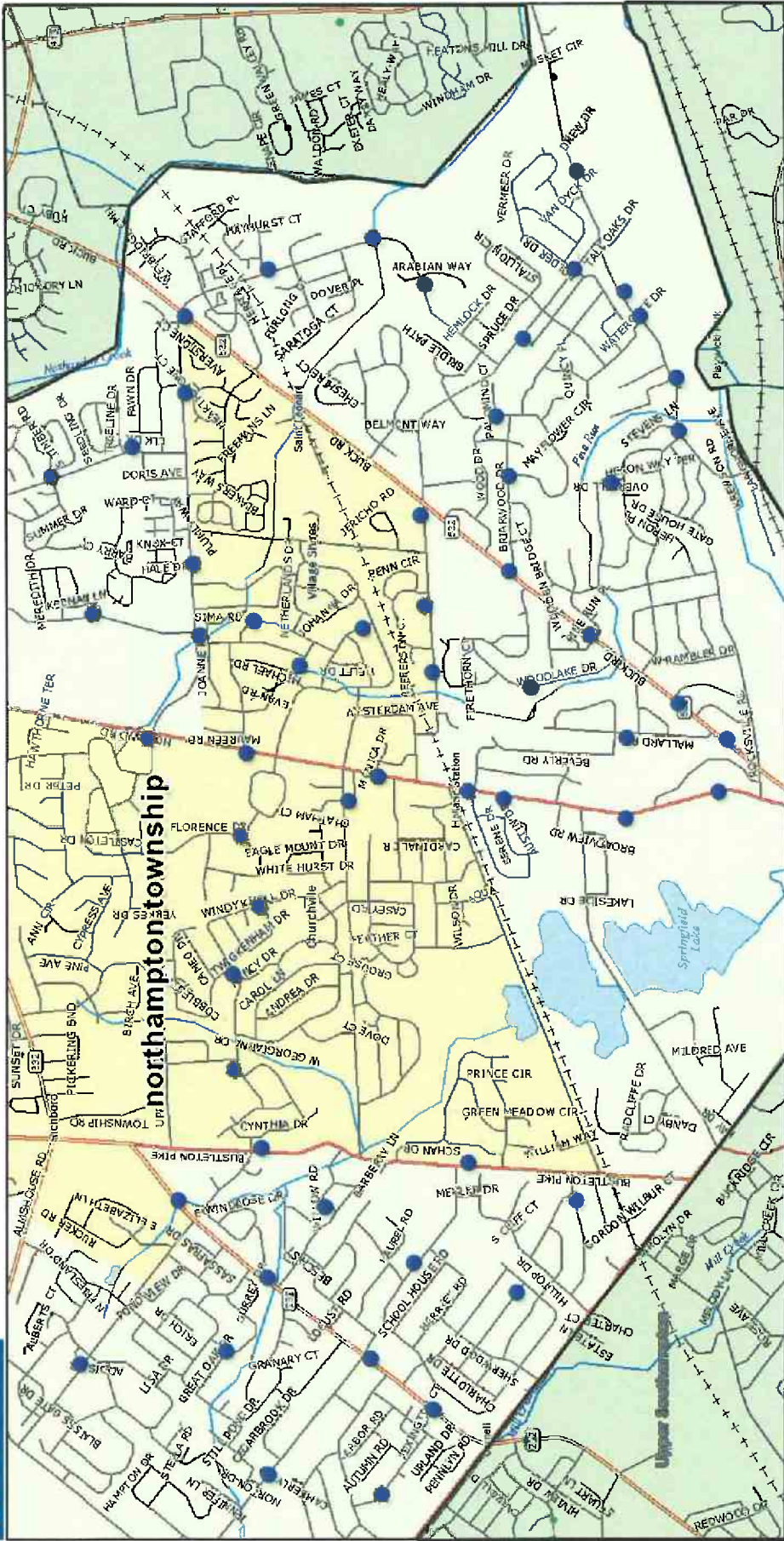
Highlighted Properties are Proposed to Receive New 25' Fiberglass Poles.

Node #	Latitude	Longitude	Address Description	Address	City	State	Zip Code	Municipality
183	40.21372	-75.02661	Across from 276 TANYARD, Corner of WENDY	353 TANYARD RD	RICHBORO	PA	18954	NORTHAMPTON
188	40.20339	-75.03457	693 NEW RD	271 NEW RD	SOUTHAMPTON	PA	18966	NORTHAMPTON
189	40.19786	-75.02632	259 SECOND ST PIKE	193 STHY 232	SOUTHAMPTON	PA	18966	NORTHAMPTON
190	40.20853	-75.01500	Front of the WAWA Food Market, 750 SECOND ST PIKE	688 STHY 232	RICHBORO	PA	18954	NORTHAMPTON
191	40.20353	-75.02060	Just West of WILLOW GREEN on SECOND ST PIKE	399 STHY 232	RICHBORO	PA	18954	NORTHAMPTON
192	40.20573	-75.02578	Corner GREAT OAK DR & WOODLAND DR, side of GREAT OAK DR	70 GREAT OAK DR	SOUTHAMPTON	PA	18966	NORTHAMPTON
193	40.20388	-75.01139	BUSTLETON PIKE & TANYARD, South of ANTHONY DR, side of 671 BUSTLETON PIKE	685 BUSTLETON PIKE	CHURCHVILLE	PA	18954	NORTHAMPTON
194	40.20021	-75.01543	57 WILLOW RD	14 WILLOW RD	SOUTHAMPTON	PA	18966	NORTHAMPTON
195	40.19530	-75.01921	173 NEW RD	777 NEW RD	SOUTHAMPTON	PA	18966	NORTHAMPTON
196	40.19724	-75.03599	41 FOXWOOD RD, front of 56 BOXWOOD	56 BOXWOOD RD	SOUTHAMPTON	PA	18966	NORTHAMPTON
197	40.19438	-75.03018	Across from 123 SECOND ST PIKE	80 STHY 232	SOUTHAMPTON	PA	18966	NORTHAMPTON
198	40.18981	-75.02155	159 STRATFORD DR	123 STRATFORD DR	SOUTHAMPTON	PA	18966	NORTHAMPTON
199	40.19239	-75.01254	402 BUSTLETON PIKE, front of 347 BUSTLETON PIKE	342 BUSTLETON PIKE	SOUTHAMPTON	PA	18966	NORTHAMPTON
208	40.18654	-75.01508	50 VALLEY DR	82 VALLEY DR	SOUTHAMPTON	PA	18966	NORTHAMPTON
213	40.21543	-74.96324	Side of 5 SOUTH TIMBER	341 SAINT LEONARDS RD	SOUTHAMPTON	PA	18966	NORTHAMPTON
214	40.21994	-74.96948	1153-332 STATE HWY, across from 1039	1161 STHY 332	SOUTHAMPTON	PA	18966	NORTHAMPTON
216	40.21305	-74.97309	Across from XFMR on ROCKWAY & KEENAN LN	(No street address available)	CHURCHVILLE	PA	18966	NORTHAMPTON
218	40.21101	-74.96118	0.00000	199 SAINT LEONARDS RD	SOUTHAMPTON	PA	18966	NORTHAMPTON
219	40.20807	-74.95721	DOE RUN DR & MIDDLE HOLLAND, across street from 571 MIDDLE HOLLAND RD	578 MIDDLE HOLLAND RD	VILLAGE SHIRES	PA	18966	NORTHAMPTON
220	40.20806	-74.95146	BUCK RD & MIDDLE HOLLAND RD	1078 STHY 532	VILLAGE SHIRES	PA	18966	NORTHAMPTON
221	40.20339	-74.94837	side of 123 SIGNAL HILL RD, corner of SIGNAL HILL & STONEYFORD RD	528 STONEYFORD RD	SOUTHAMPTON	PA	18966	NORTHAMPTON
222	40.20739	-74.97435	JODI RD & MIDDLE HOLLAND RD	248 MIDDLE HOLLAND RD	VILLAGE SHIRES	PA	18966	NORTHAMPTON
223	40.20759	-74.96950	Across the street from corner @ LIBERTY DR on HOLLAND RD	374 MIDDLE HOLLAND RD	VILLAGE SHIRES	PA	18966	NORTHAMPTON
224	40.19775	-74.94595	Btwn 184 & 198 STONEYFORD RD	360 STONEYFORD RD	SOUTHAMPTON	PA	18966	NORTHAMPTON
225	40.19479	-74.94937	167 STONEYFORD RD	185 STONEYFORD RD	SOUTHAMPTON	PA	18966	NORTHAMPTON
226	40.18937	-74.95284	PEPPERELL DR & HOLLAND RD, 975 EAST HOLLAND RD	951 E HOLLAND RD	FEASTERVILLE TREVISE	PA	19053	NORTHAMPTON
228	40.18395	-74.94987	1176 BRIDGETOWN PIKE	445 BRIDGETOWN PIKE	FEASTERVILLE TREVISE	PA	19053	NORTHAMPTON
229	40.18642	-74.94112	Front of 1408 BRIDGETOWN PIKE	711 BRIDGETOWN PIKE	FEASTERVILLE TREVISE	PA	19053	NORTHAMPTON
230	40.18666	-74.94819	Corner of E. HOLLAND & POLDER DR, 7 POLDER DR	3 POLDER DR	FEASTERVILLE TREVISE	PA	19053	NORTHAMPTON

Node #	Latitude	Longitude	Address Description	Address	City	State	Zip Code	Municipality
231	40.18767	-74.93433	Next to Driveway at 1614 BRIDGETOWN PIKE	913 BRIDGETOWN PIKE	FEASTERVILLE TREVOSÉ	PA	19053	NORTHAMPTON
236	40.19489	-74.96584	Opposite 1050 BUCK RD	475 E HOLLAND RD	VILLAGE SHIRES	PA	18966	NORTHAMPTON
237	40.19024	-74.96982	BUCK RD & BRIARWOOD DR (Side of #7 BRIARWOOD DR)	1363 STHY 532	SOUTHAMPTON	PA	18966	NORTHAMPTON
238	40.18108	-74.95616	277 BRIDGETOWN PIKE, Front of 978	243 BRIDGETOWN PIKE	FEASTERVILLE TREVOSÉ	PA	19053	NORTHAMPTON
239	40.18074	-74.95983	Across from 871 BRIDGETOWN PIKE RD	129 BRIDGETOWN PIKE	FEASTERVILLE TREVOSÉ	PA	19053	NORTHAMPTON
240	40.18581	-74.97430	Side of 10 PINE RUN DR	1431 STHY 532	SOUTHAMPTON	PA	18966	NORTHAMPTON
241	40.18453	-74.96333	Side of 121 BROOKSIDE DR	OVERHILL DR (No street address available)	SOUTHAMPTON	PA	18966	NORTHAMPTON
242	40.19028	-74.96304	Side of 119 BRIARWOOD DR	96 BRIARWOOD DR	SOUTHAMPTON	PA	18966	NORTHAMPTON
243	40.21005	-74.98187	Corner of HOLLAND & UPPER HOLLAND; NW Corner of intersection	595 UPPER HOLLAND RD	RICHBORO	PA	18954	NORTHAMPTON
244	40.20435	-74.97361	Side of 145 TULIP RD	143 TULIP RD	VILLAGE SHIRES	PA	18966	NORTHAMPTON
245	40.19827	-74.97372	Side of 123 DUTCH DR	163 DUTCH DR	VILLAGE SHIRES	PA	18966	NORTHAMPTON
246	40.20465	-74.98284	Side of 1120 HOLLAND RD	1166 HOLLAND RD	CHURCHVILLE	PA	18966	NORTHAMPTON
247	40.20169	-74.97663	Utility easement side of 80 DAVID RD	75 DAVID RD	VILLAGE SHIRES	PA	18966	NORTHAMPTON
248	40.19761	-74.98449	944 HOLLAND RD, HOLLAND RD & MONICA	944 HOLLAND RD	CHURCHVILLE	PA	18966	NORTHAMPTON
250	40.19462	-74.97226	331 E HOLLAND RD (Rear of 28 GRANT AVE)	317 E HOLLAND RD	VILLAGE SHIRES	PA	18966	NORTHAMPTON
251	40.20495	-74.98893	Front of 54 ELSA WAY, 54 FLORENCE	49 FLORENCE DR	CHURCHVILLE	PA	18954	NORTHAMPTON
252	40.19928	-74.98627	579 LOWER HOLLAND RD, OPP of 593 LOWER HOLLAND RD	648 LOWER HOLLAND RD	CHURCHVILLE	PA	18966	NORTHAMPTON
254	40.20515	-75.00538	Corner of TORRESDALE DR & West LYNFORD RD, Front of 58 TORRESDALE	145 W LYNFORD RD	CHURCHVILLE	PA	18954	NORTHAMPTON
255	40.20522	-74.99887	Side of 91 W. LYNFORD RD	LYNFORD RD (No street address available)	CHURCHVILLE	PA	18954	NORTHAMPTON
256	40.20408	-74.99402	Opposite of 34 WINDY KNOLL DR	102 WINDY KNOLL DR	CHURCHVILLE	PA	18954	NORTHAMPTON
260	40.19260	-74.98559	Across from 827 HOLLAND RD	788 HOLLAND RD	SOUTHAMPTON	PA	18966	NORTHAMPTON
262	40.19044	-74.98590	672 HOLLAND RD (Between 707 & 715 HOLLAND)	721 HOLLAND RD	SOUTHAMPTON	PA	18966	NORTHAMPTON
263	40.18916	-74.97809	Side of 205 WOODLAKE DR	155 WOODLAKE DR	SOUTHAMPTON	PA	18966	NORTHAMPTON
264	40.18095	-74.97922	Side of 8 TWIST DR	1507 STHY 532	SOUTHAMPTON	PA	18966	NORTHAMPTON
265	40.17834	-74.98196	377 BUCK RD	1545 STHY 532	SOUTHAMPTON	PA	18966	NORTHAMPTON
266	40.18377	-74.98742	479 HOLLAND RD	578 HOLLAND RD	SOUTHAMPTON	PA	18966	NORTHAMPTON
267	40.18362	-74.98159	Side of 140 MALLARD RD	130 MALLARD RD	SOUTHAMPTON	PA	18966	NORTHAMPTON
268	40.17846	-74.98552	357 HOLLAND RD	417 HOLLAND RD	SOUTHAMPTON	PA	18966	NORTHAMPTON
270	40.19095	-74.95872	Side of 84 PONDEROSA	109 PONDEROSA DR	SOUTHAMPTON	PA	18966	NORTHAMPTON
271	40.19436	-74.97707	Next to 223 E. HOLLAND DR @ PINE VIEW DR	213 E HOLLAND RD	VILLAGE SHIRES	PA	18966	NORTHAMPTON
419	40.18295	-74.95166	WATERGATE & BRIDGETOWN PIKE, SW of 148 WATERGATE	386 BRIDGETOWN PIKE	FEASTERVILLE TREVOSÉ	PA	19053	NORTHAMPTON



XMap® 6



Data Zoom 12-6

MN (12.3° W)

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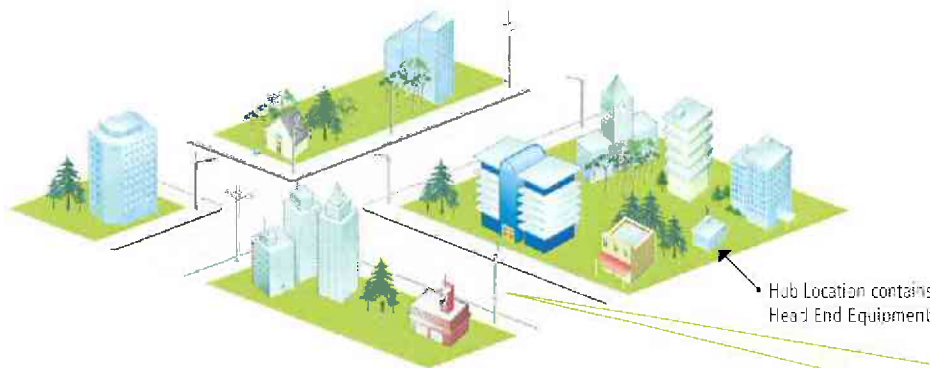
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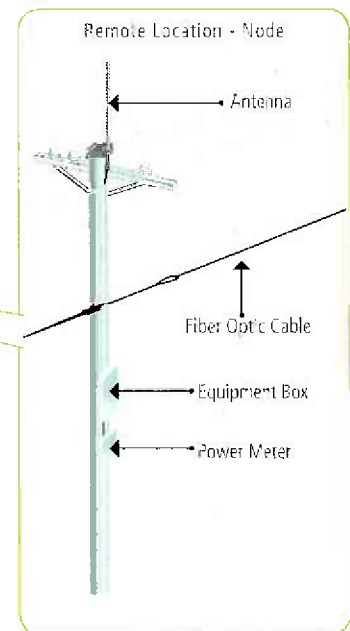
Outdoor DAS

An outdoor DAS transmits a wireless signal in a similar way as an in-building system. The DAS includes nodes that are strategically placed on existing utility poles, street lights, traffic signals and other structures every half to three-quarter mile within the coverage area. The nodes connect to a hub via fiber optic cable. The hub contains American Tower's head-end equipment and the service provider's Base Transceiver Station (BTS).

Typical Outdoor DAS Installation



1. The user's RF signal is received by the antenna on the node.
2. The signal is transmitted via the coaxial cable to the node's equipment box, which contains the amplifier and RF to light converter.
3. The fiber optic cable connects from the equipment box (either underground or aerial) to the hub.
4. The head-end equipment at the hub site converts optical back to RF and sends the RF signal through the coaxial cable to the service provider's BTS.
5. Calls are then routed through the service provider's Public Switched Telephone Network (PSTN) and transmitted via the landline network or back out through the DAS equipment.



Hub – In-Building & Outdoor Systems

This diagram is a sample design for an American Tower DAS hub. It shows equipment for three major wireless service providers, as well as the American Tower neutral host cabinet, HVAC unit, Telco panel and electrical transformer. You can see the coaxial cable connecting the service provider equipment to the neutral host cabinet, as well as the fiber optic cable that flows from the neutral host cabinet to transmit wireless signal throughout the coverage area.

