

# TELECOMMUNICATIONS



# Tectonic

PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.



[www.tectonicengineering.com/teleco](http://www.tectonicengineering.com/teleco)

# ABOUT US

Tectonic Engineering & Surveying Consultants P.C. (Tectonic) was founded in 1986 and is a multi-disciplined engineering and professional service firm, employing a staff of over 500 professionals. Tectonic has over 30 years experience, with a reputation for offering professional quality services to its clients; earning a ranking in the ENR Top 500 Engineering Design Firms since 2001, with a current national ranking within the Top 30 of Telecommunication Design Firms and in the Top 10 of Towers/Antennae Design Firms.

Tectonic's success stems from a philosophy of providing clients with superior service through a staff of quality-minded professionals. When you choose Tectonic, you work with some of the finest professionals in the business; professionals who will earn your trust and confidence, every day, every project.

## MISSION STATEMENT

### TECTONIC'S GOALS, MISSION STATEMENT AND PHILOSOPHY

Tectonic has been guided by a focused philosophy and goals since the firm's beginning - vision, integrity and technical expertise. Simply put, Tectonic's goals are to:

- Maintain the highest standard of quality on each and every project.
- Complete projects within budget and on-time.
- Exceed our Client's expectations.

*"Practical Solutions, Exceptional Service"*







# DEPLOYMENT AND SERVICES

Tectonic's Telecommunication Division has over 30 years of experience providing site acquisition, engineering, permitting, program and construction management for wireless networks. Tectonic provides the in-house technical expertise and practical solutions to expedite project deployment in a cost-effective turnkey package.

Tectonic provides comprehensive turnkey services for the following telecommunication deployments and implementation programs:

- **Site Acquisition**

- **A/E and Professional Services**

- **Construction Management**

- **Wireless Deployments**

- New Builds
- Site Modifications
- Small Cells / Nodes
- 5G Deployment
- CRAN / Hubs
- Facilities
- iDAS / oDAS
- IoT
- Landline and Fiber







# SITE ACQUISITION SERVICES

Tectonic provides site acquisition and real estate support services to telecommunication clients in the public and private sectors comprised of carriers, tower companies, public utility companies and municipalities. Tectonic's turnkey solutions include services associated with all aspects of telecommunication network systems nationwide.

## **Site Acquisition Services**

Site Identification

Site Audits

Leasing

Zoning Analysis

Municipal Permitting

Due Diligence

Program Management

A&E Coordination

Building and Electrical Permits

Regulatory Compliance

Third Party Vendor Management





# A/E AND PROFESSIONAL SERVICES

Tectonic's technical staff maintains multiple Professional Engineering registrations nationwide.

## **A/E Services**

- Program Management
- Construction Management
- Site Due Diligence
- Site Visits / Audits
- Tower and Mount Analysis
- Lease Exhibits
- Zoning and Construction Drawings
- Structural Assessment / Design
- Foundation Investigations
- Photo Simulations
- Permitting
- NEPA / Phase I and II Studies

## **Professional Services**

- Civil Engineering
- Geotechnical Investigations
- Structural Engineering / Analysis
- Environmental Studies
- Surveying







# CONSTRUCTION SERVICES

Tectonic offers a practical, experienced and proven approach managing projects from concept to completion. The firm tailors its resources to meet the demands of each client. Tectonic's professionals provide turnkey construction management solutions for telecommunication projects nationwide.

## **Construction Management Services**

Project Status Reporting  
Owner and Contractor Meetings  
Bid Packages and Bid Walks  
Estimating / Bill of Materials  
Contractor/Subcontractor Scheduling  
Construction Oversight / QA/QC  
Shop Drawing Review  
Change Order Compliance  
Construction Procurement

Materials Storage  
Small Cell Construction  
Project Coordination with Design,  
Permitting & Special Inspections  
Project Scheduling & Budgeting  
Development and Maintaining Project  
Tracker / Schedules  
Coordination of Professional Services  
Project Close Out Packages







# DAS SERVICES

Tectonic provides a full range of design services for the programming and development of both indoor and outdoor Distributed Antenna System (DAS) installations throughout the nation. We have provided comprehensive services ranging from site surveys, feasibility evaluation and due diligence, A/E drawings, permitting and construction compliance. Our extensive experience with wireless carriers, venue managers, and wireless asset management firms, enables Tectonic to deliver and execute these projects effectively and efficiently from concept to completion.

## **DAS venues include the following:**

High Rise Commercial Office Buildings

Hospitals

Stadiums

Entertainment

Tunnels

Shopping Malls

Mass Transit Systems

Hotels and Casinos

Colleges and Universities

Municipal Solutions







# CRAN, EDGE & NETWORK FACILITIES

Tectonic provides comprehensive Network Facility Switch Design on new facilities, expansions, and upgrades. Our team provides the full range of permitting, A&E design, construction compliance and management and professional services resulting in cohesive, seamless projects. Compliance with client-specific Network Facility Standards, as well as, all applicable local, state and federal codes, and standards is integral in our design and commissioning process.

- Master Planning
- Site Due-Diligence / Feasibility Studies
- Design and Permitting
- Facility Commissioning
- Civil / Site Engineering
- Electrical Design and Upgrades
- Security Systems

- M.E.P. / HVAC Engineering
- Structural / Seismic Analysis
- Geotechnical Investigations
- Emergency Power Design
- Fire Suppression
- Security Systems







## REFERENCES

### **Gary Bailey**

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### **Frank Wise**

Former Executive Director  
Verizon Wireless  
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### **Amjad Syed**

Director / Project Operations  
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### **Gene Fassett**

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### **Mike Fox**

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### **John Marino**

Manager, Engineering Development - NJ  
T-Mobile  
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### **Mark Cusumano**

Vice President, Operations - East  
Boingo Wireless  
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# CLIENTS

Verizon Wireless

AT&T

T-Mobile

Dish

Sprint

Crown Castle

SBA

American Tower

Verizon Business Landline

Aristotle Unified Communications

US Cellular

Boingo

American Water

Ericsson

Bechtel

Eco-Site

Lend Lease

Starry

Uniti Towers







# VERIZON WIRELESS EXPERIENCE

The following are some representative projects in multiple markets performed by Tectonic;

**A/E and Professional Services:** Bell Atlantic (Legacy) and GTE

**Turnkey:** Engineering Design, Zoning/Permitting, Structural and Construction Compliance and Management for over 15,000 Rooftop, Co-locate and Raw-land Sites.

**CRAN:** Provided site acquisition and A/E services for over 500 CRAN Facilities / Sites.

**Generator:** Turnkey Deployment Services for 2000 Generator Sites in multi-markets.

**Small Cell:** Site Acquisition, Permitting and Engineering Design of 1500 Small Cells, nationwide.

**Project Management:** Project Management for 600 Sites for EMS Compliance.

**Facilities:** Civil, Architectural and Structural Design for Single Aggregation Point (SAP) Master Plan MSC Switch Expansion and Emergency Power Upgrades. Engineering QA and QC for Existing MSC Switch Upgrades.

**Structural:** Tower Structural & Mount Analysis for over 5000 sites.

**A/E:** Engineering for Upgrades of 400 Alltel Legacy Sites.

**S/A and A/E:** Site Audits on 18,000 Wireless Sites for "Due Diligence".





## AT&T EXPERIENCE

The following are some representative projects in multiple markets performed by Tectonic;

**A/E and Professional Services:** Cell One (Legacy) and NY Metro Market Sites.

**A/E:** Engineering Design for New Site Builds and Multiple Upgrades of over 7,500 sites.

**A/E:** Engineering Design Services for over 150 Head End, DAS and GPS Fiber Route sites.

**A/E and CM:** Engineering Design and Construction Compliance Services for 1,200 sites for Triton PCS - Suncom AT&T in the Mid Atlantic Region.

**A/E and CM:** Engineering Design and Construction Management Services for 1000 Rawland and Colocation sites.

**Turnkey:** Engineering Design, Retrofit, Permitting and Construction Inspection services for over 50 sites for AT&T Affiliate Dobson Communications.

**Turnkey:** Engineering Design, Permitting, Program Management and Construction Inspection Services for over 350 sites for AT&T/Metro-One.

**S/A and A/E:** Engineering Design, Retrofit, Permitting and Construction Inspection Services for over 500 sites for AT&T/Cingular.

**A/E and CM:** Engineering Design and Construction Compliance Services for over 1,200 sites for TritonPCS - Suncom / AT&T in the Mid Atlantic region.

**A/E:** Engineering Design Services for over 400 sites for telcorp in Midwest and New England.







# AT&T TURFING EXPERIENCE

The following are some representative projects in multiple markets performed by Tectonic in support of AT&T Turfing Vendors;

**A/E:** Bechtel: Engineering Design and Professional Services Support for over 8,000 AT&T Upgrade Sites.

**A/E:** Black & Veatch: Engineering Design and Professional Services Support for over 4,000 sites consisting of Rooftop, Rawland/New-Build and Co-locate sites.

**A/E, S/A and CM:** Ericsson: Engineering Design and Support Services (Permitting, Structural Analysis, FDNY Compliance & Construction Inspection) in support of AT&T 2C and 3C Upgrades for over 200 Rooftop and Co-locate Sites.

**A/E:** Ericsson: Design and Permitting Support Services for over 140 HVAC & 80 Generator Upgrades and 600 site upgrades.

**A/E:** Ericsson: Engineering and Design Services for the Grand Central Station DAS Head End Room and Backup Generator Installation for AT&T and other Carriers.

**A/E:** Smartlink: Engineering Design Services for over 135 sites for the AT&T LTE, 2C and 3C Upgrade Projects.



# T-MOBILE EXPERIENCE

The following are some of the representative projects in multiple markets performed by Tectonic;

**Turnkey:** Omnipoint & Voicestream (Legacy) in North East, Mid Atlantic and Midwest Markets.

**A/E and C/M:** Engineering Design, Construction Inspection and Support Services for over 750 rooftop, co-locate and DAS Hub sites.

**Turnkey:** Turnkey Deployment Services for 120 sites as part of the Modernization Project.

**A/E:** Engineering Design Services for over 200 sites as part of the AAV Upgrade.

**A/E:** Engineering Design and Coordination for Modernization and 700MHz upgrades along the Amtrak right-of-way.

**A/E:** Engineering design and Permitting for Utility line colocation on Utility line structures.

**A/E:** Architectural & Engineering Services for Upgrades of 300 T-Mobile/VoiceStream Sites.

**Facilities:** Design, Permitting and Construction Management of two major Network Switches for T-Mobile/Metro-PCS.

**A/E:** Engineering Design of over 400 former Metro PCS New Build sites.

**Turnkey:** Site Acquisition, Permitting, Structural and Architectural & Engineering Services for 50 Upgrade & New Build Sites.

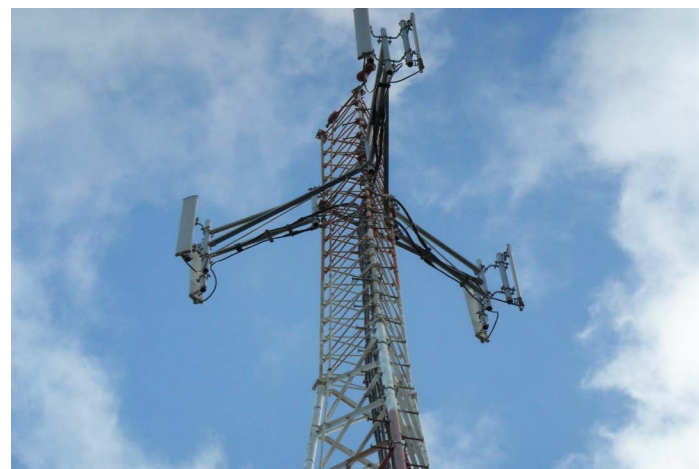
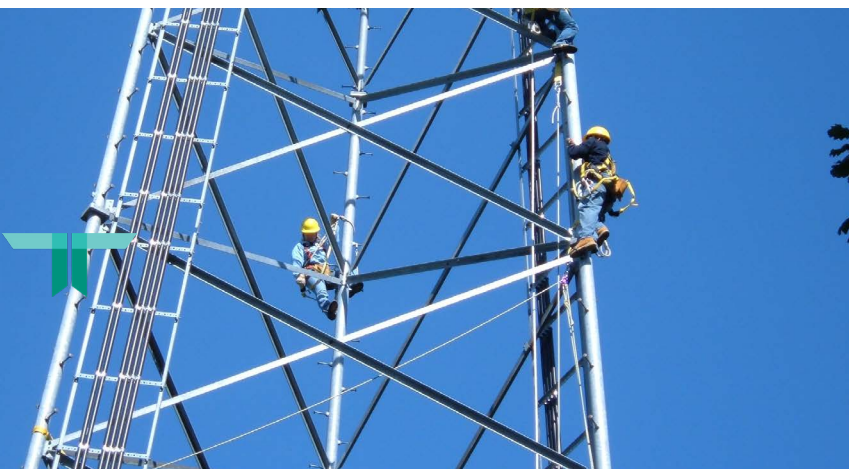
**S/A and A/E:** Site Acquisition & Architectural & Engineering Services for 270 UMTS Upgrades.

**A/E:** Architectural & Engineering for 150 sites.

**S/A and A/E:** Eco-Site in support of T-Mobile - Site Acquisition, Architectural & Engineering, Survey, Geotechnical, & Photo Simulations services for over 35 macro tower development sites.

**S/A and A/E:** Omnipoint – Real Estate & Architectural & Engineering services for 200 sites.

**A/E:** Omnipoint/Voicestream 350 New Build Sites in multiple markets.

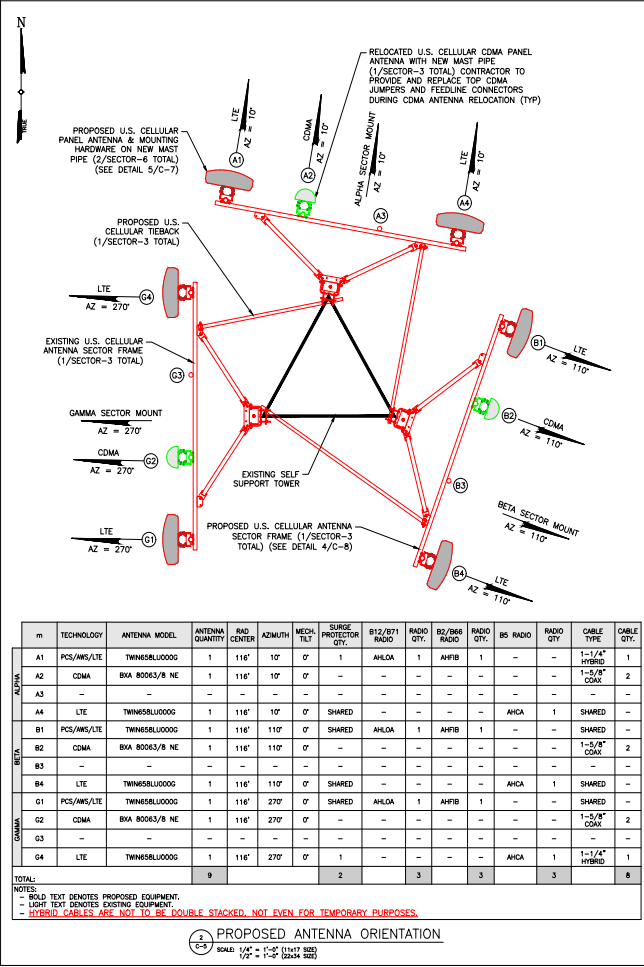
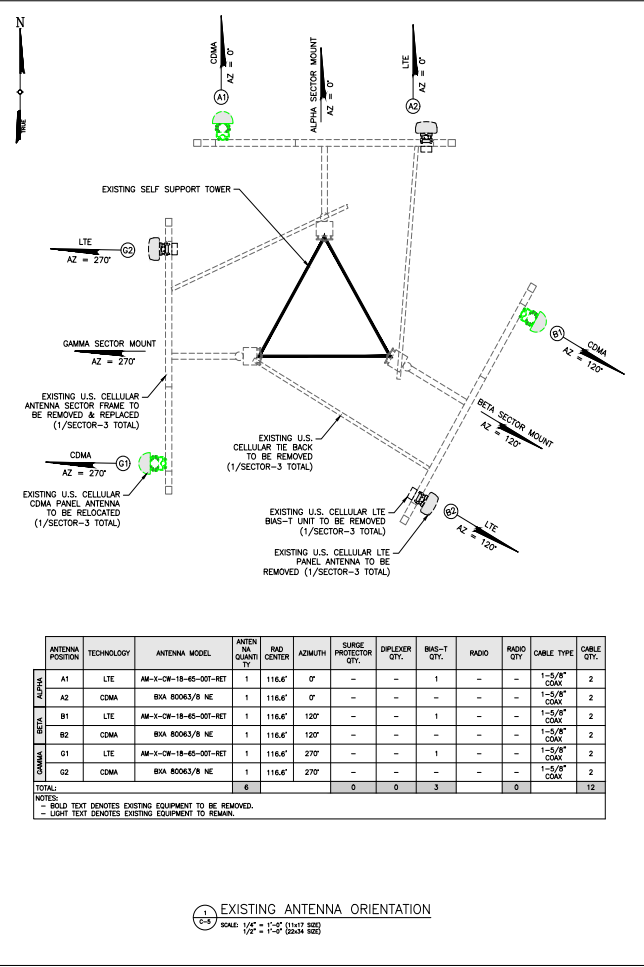




# US CELLULAR EXPERIENCE

Tectonic provided full A/E Services and Technical Coordination of US Cellular’s recent 4G LTE and 5G Upgrades to its existing Network in the following states:  
North Carolina, Missouri, Oklahoma, Tennessee and Texas.

Tectonic provided Tower and Mount Mapping Services; Tower / Mount Structural Analysis; Tower Modification Designs; Civil Engineering and NEPA / Regulatory Compliance and all other services as required.



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Phone: 312.769.1839  
Fax: 312.769.1838  
Email: info@tectonicllc.com  
Website: www.tectonicllc.com

ENGINEERING CERTIFICATE  
OF AUTHORIZATION NO. C-1839

ANTENNA CONFIGURATION

NO. DATE ISSUE  
0 11/28/18 FOR COMMENT OR  
1 12/29/18 FOR COMMENT LP  
2 02/24/20 FOR CONSTRUCTION LP

WORK ORDER NUMBER 9815.191

CHECKED BY  
SET TYPE FINAL  
SHEET NUMBER C-5



# SPRINT EXPERIENCE

The following are some representative projects in multiple markets performed by Tectonic;

**A/E and Professional Services:** Engineering Design, Permitting and Construction Management Services of over 5,500 New Build sites, in the Northeast, Mid Atlantic, Midwest and Western markets.

**S/A and A/E:** Lendlease in support of Sprint - Site Acquisition and Architectural & Engineering services for over 380 rooftop sites.

**A/E:** Engineering Design services of over 400 sites for the Network Vision Upgrades.

**Turnkey:** Turnkey Services (Site Acquisition, Engineering, Permitting and Construction Management) on over 100 sites for the 2.5 upgrade project.

**A/E:** Engineering Design Services of over 600 sites for the 2.5 Upgrade Project.

**A/E and C/M:** Construction Management for 500 new build sites and Engineering Design for 100 Collocation sites for the PCS Project.

**A/E and C/M:** Engineering Design and Construction Management for 400 IWO/Sprint Affiliate sites in Upstate NY.

**Turnkey:** Turnkey Services for 600 UbiquiTel/Sprint Affiliate New Build sites.

**A/E:** Architectural & Engineering for 600 sites in the Midwest.

**A/E:** Engineering Design for 150 Georgia PCS/Sprint Affiliate sites

**S/A and A/E:** Site Acquisition, Permitting and Engineering Design Services for 1,500 Sprint/Nextel sites.

**A/E:** Bechtel in Support of Sprint - Engineering Design and Professional Services Support for over 1,000 Rooftop, Rawland and Co-locate sites.

**A/E:** Nexius in Support of Sprint – Site Design Visit and Lease Exhibit Drawings for the Alternate Access Vendor (AAV) & Network Vision Projects on 160 sites.







# CROWN CASTLE EXPERIENCE

The following are some representative projects in multiple markets performed by Tectonic;

**A/E:** Engineering Design, Structural Analysis, Surveying and Environmental Support Services for over 1,500 Rooftop, New Site Build and Co-locate Sites.

**A/E:** Engineering Design Services for 60 Sites for the LightSquared Project.

**A/E:** Engineering Design Services for 45 LTE Sites for AT&T Turfing Contract.

**Structural:** National Structural and Tower Analyses Vendor for Tower Reinforcement Design.

**A/E:** Architectural & Engineering Services for the Empire State Plaza Distributed Antenna System.

**S/A and A/E:** Site Acquisition, Civil Engineering & Environmental Services for 150 Sites.

**A/E:** Civil Engineering, Structural, Environmental & Geotechnical Services for New York State / office of General Services related to Crown Castle Asset Management.

**A/E:** Architectural & Engineering Design and ROW Permit Due Diligence for 75 DAS/Small Cell Nodes.





## SBA EXPERIENCE

The following are some representative projects in multiple markets performed by Tectonic;

**Turnkey:** Real Estate/Permitting, Architectural & Engineering, Environmental & Geotechnical and Construction Management for 100 New Build sites, in Eastern and Western US.

**Turnkey:** Sprint Keebler Project – Architectural & Engineering, Structural Analysis, Environmental, Construction Inspection and Survey Services for 350 sites.

**A/E:** AT&T Foxtrot Project – Architectural & Engineering, Structural Analysis, Zoning, Photo Simulations, Environmental Studies, Surveying and Construction Certificates for 150 sites.

**A/E:** Engineering Design of 30 Rooftop Sites.







# AMERICAN TOWER EXPERIENCE

The following are representative projects in multiple markets performed by Tectonic;

**A/E:** Engineering Design for New Site Builds and Multiple Upgrades of over 7,500 sites for the National Contract to provide Land Survey Services on an ongoing basis for the American Tower Due-Diligence Team

**A/E:** Architectural & Engineering, Survey, Geotechnical and Environmental Services provided on 1,100 Sites .

**A/E:** Provided engineering, survey and geotechnical services for 300 sites for AT&T / Triton PCS in Mid Atlantic region.





# AMERICAN WATER EXPERIENCE

The following are some representative projects in multiple markets performed by Tectonic;

**Project Management and A/E:** Nationwide Program Management Services as it relates to public safety and wireless carrier antenna & equipment installations on American Water's portfolio of over two-thousand Water Tanks, Rooftops and Rawland Property Assets. Tectonic has been exclusively providing these services to American Water uninterrupted since 2002.





# CLIENT EXPERIENCES (CONT'D)

## **Dish**

Dish retained Tectonic as a Nationwide Vendor to provide Site Acquisition and Engineering Services for its standalone 5G network. Tectonic has been scheduled to provide these professional services in Dish's key markets including the Northeast, Southeast and the West regions. Tectonic is currently providing services to Dish in the initial Northeast market prior to start of implementation services in Dish's other markets.

## **AT&T TARP Services For Mount Analyses Reports (MAR)**

Tectonic is a national certified firm providing TARP services for AT&T Site Development Firms with the responsibility to provide Mount Analysis Reports.

Tectonic will prepare the mount analysis reports without a mount review form for third party review that will provide considerable time savings for all AT&T's Site Development Vendors.

## **Starry**

Tectonic is providing Site Acquisition and full Engineering services to Starry Internet. Tectonic is currently working with Starry in New York City, NY and Washington, DC providing engineering services including Electrical, Structural and Site designs as well as Due Diligence and Leasing services.

## **Aristotle Unified Communications**

Tectonic is providing statewide services for Aristotle for development of CBRS sites across Arkansas. For 150 new site builds, Tectonic currently provides full Site Acquisition services including Due Diligence, Leasing and Permitting; as well as Engineering, Geotechnical and Environmental Compliance Design Services.

## **Boingo**

Tectonic is providing Engineering, Design and Construction services for Boingo DAS systems at numerous facilities throughout the United States, including large theatre venues and airports in more than 36 major cities. Tectonic also provided professional design / permitting services for Boingo wireless networks in campuses, municipal facilities, hospitals, tunnels, theatres and stadiums in many large metropolitan locations.





# PROFESSIONAL SERVICES

Program Management

Civil Engineering

Structural Engineering

Tower & Mount Analysis

Geotechnical Engineering

Environmental Services

Land Surveying

Construction Compliance

Construction Management



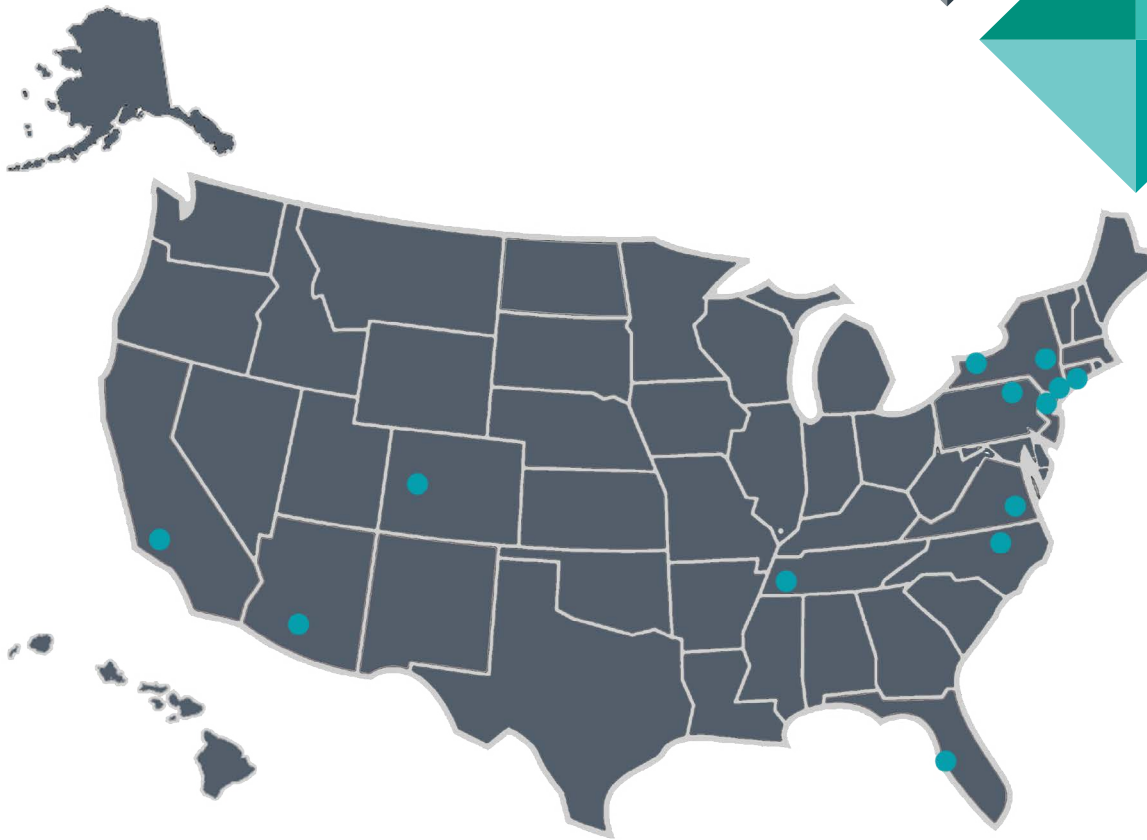
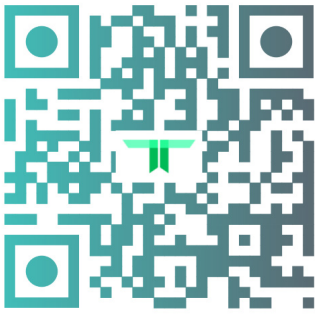




When You Choose Tectonic, You Work With The  
Finest Professionals In The Business - Professionals  
Who Understand Your Goals And Put Their Skills And  
Expertise To Work For You - Professionals Who Earn  
Your Trust And Confidence, Every Day And On Every  
Project.

Providing “Practical Solutions - Exceptional Service”





TECTONIC Office Locations.

Arizona | California | Colorado | Connecticut | Florida | New Jersey  
New York | North Carolina | Pennsylvania | Tennessee | Virginia

### **TECTONIC Telecommunications Division**

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# **Tectonic**

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