

# Network / Data Center Facilities



# Tectonic

PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.



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

# ABOUT US

Tectonic Engineering was founded in 1986 and is a multi-disciplined engineering and professional service firm, employing a staff of approximately 500 professionals. Tectonic has over 39 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 of 216.

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"





## NETWORK / EDGE & CRAN / FACILITY SERVICES

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
- Locating Services Edge Facilities

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



# PROFESSIONAL SERVICES

## Civil Engineering

Cost and Feasibility Studies  
Grading and Drainage Design  
Hydraulic and Hydrologic Analyses  
Infrastructure/Utility Evaluations  
Landscape Planning  
Municipal Engineering  
Regulatory Permitting/Compliance  
Environmental Impact Studies  
Roadway and Highway Design  
Site Planning and Design  
Storm water Management Plans  
Low-Impact Design  
Transportation/Traffic Engineering  
Visual Resource Renderings and Photo  
Simulations  
Water Resource Investigation and  
Design  
Water and Wastewater Systems  
Design  
Wetland Delineation and Mitigation

## Structural Engineering

Structural Design  
Structural Investigations  
Code Compliance Review  
Construction Support  
Feasibility Studies  
Forensic Assessment  
Plan Review  
Seismic Analysis  
Transmission Structures Design &  
Retrofit  
Communication Tower Analysis  
Construction Support  
Sheeting & Shoring  
Crane Loading Analysis  
Temporary Structures  
Specialty Fabrications  
Aerial Tower Inspections / Inventories  
Line of Sight Perspective Videos  
Complete Drone Services



# PROFESSIONAL SERVICES

## Geotechnical Engineering

Design Phase Services  
Foundation Design and Analysis  
Subsurface Investigations  
Soil and Rock Mechanics  
Laboratory Soil and Rock Testing  
Hydrogeologic Studies  
Retaining Wall Studies and Design  
Seismic Analysis (including site specific)  
Ground Improvement Design  
Slope Stabilization Design  
Forensic Investigations  
Dewatering Systems  
Earth Support Systems  
Pile Load Test  
Sub-Grade Evaluations  
Underpinning Systems  
Vibrations and Blasting

## Environmental Services

Due Diligence  
Phase I and II Environmental Site Assessments  
NEPA Investigations and Reports  
Environmental Impact Statements  
Wetland Delineation  
Wetland Mitigation Plans  
Avian/Bat/Threatened & Endangered Species Assessments  
Air Monitoring  
Brownfield Redevelopment



# NETWORK SWITCH FACILITY PROJECTS

**Verizon Wireless - Rochester, NY MSC Single Aggregation Point Master Plan Expansion** - Project Management, Architectural, Civil Engineering including storm water and utility requirements, Property/Topographic Surveying, Structural Engineering, Geotechnical Engineering

**Verizon Wireless - Plymouth Meeting, PA MSC Single Aggregation Point Master Plan Expansion** - Project Management, Architectural, Civil Engineering including storm water and utility requirements, Property/Topographic Surveying, Structural Engineering, Geotechnical Engineering

**Verizon Wireless - Pennsylvania, New York, Nevada, North Carolina MSC Single Aggregation Point Master Plan Expansion & Upgrades** - Project Management and Design Services for Architectural, Fire Resistance, Civil, Geotechnical, and Structural Engineering for HVAC, Electrical, Generator and Building Upgrades

**T-Mobile/MetroPCS - Hawthorne, NY Switching Facility** - Design, Permitting, and Engineering Services which included Architectural Design and Code Review, Seismic Compliance, Mechanical, Electrical, Plumbing, Fire Suppression, Security & Alarm Design.

**T-Mobile/Metro PCS – Fairfield, NJ New Switch and Office Build** – Program Management, Architectural & Engineering and Permitting for the Full Design and Development of the Switch and Associated office space

**Verizon Wireless - Windsor, CT Mobile Switching Center Renovation** – Program Management and Architectural & Engineering Design for 8,000 Square Feet of Network Equipment Switching Space

**Verizon Wireless - Macon, GA MSC 480 Volt Service Upgrades** – Program Management, Architectural & Engineering Design including Demolition, Structural, Electrical and Mechanical Plans. Tectonic also provided Construction Inspection Services

**Verizon Wireless – Philadelphia & Harrisburg, PA & Wilmington, DE Baseline Commissioning Survey & Testing** - Survey and Testing of existing Infrastructure Systems for Compliance with Verizon Standards and Comprehensive Report & Recommendations

**Verizon Wireless – Richmond, VA-** Tectonic provided special inspection services to monitor conformance to design and construction documents.



# NETWORK SWITCH FACILITY PROJECTS

**Verizon Wireless** - New York, Connecticut & Texas New MSC Design Services – Zoning & Code Review, Architectural Design, Power Design, Network Equipment Layout, Grounding and LP Design, Site/Civil Design, Structural/Seismic Design

**SunCom/AT&T** - Richmond, VA Telecommunication Switching Facility Expansion - Structural Design, Facility Design, Electric/HVAC, Construction Inspection/Resident Engineering, Zoning/Permitting

**Verizon Wireless** - Yonkers, NY Dual Switching Facility/SAP Expansion– Program Management, Architectural & Engineering, Zoning/Permitting and Surveying

**Verizon Wireless** - Dallas / Fort Worth New MSC - Programmatic Facility Design, Civil/Site Design, Architectural/Life Safety Design, Code/Network Compliance Review, Geotechnical Design, Survey

**Verizon Wireless** - Windsor, CT Mobile Switching Center Renovation - Full Facility Analysis & Master Plan including Structural/Seismic Design, Civil/Site Design, Code/Life Safety Design, MEP Design Boundary & Topographic Survey, Fire Suppression, Zoning Support & Approvals

**Verizon Wireless** - Pennsylvania and New Jersey MSC Switch Design Expansions including Architectural/ADA/Life Safety, Structural/Seismic, Mechanical Systems, Electrical Systems, Plumbing Systems, Security, Fire Detection/Fire Suppression, Building Automation Systems, Basis of Design, Project Specifications, Equipment Cuts/Systems Review, and Engineering Cost Estimates/Project Schedule



Verizon Switch - Yonkers, NY



# CRAN FACILITY PROJECTS

## **CRAN Services - Verizon Wireless Southwest (NM, AZ, NV and TX)**

Tectonic is providing A/E Design Services for CRAN (Centralized Radio Access Network) Hubs throughout the Southwest for Verizon Wireless. These sites have been identified as requiring Medium Sized Hubs to centralize numerous cell sites within the regional areas. Services include Civil, HVAC, Fire Protection, AC / DC Electrical Power Upgrades and Structural Engineering services to provide redundancy and convert the existing buildings into Network Grade Hub Facilities.

## **CRAN Services – Verizon Wireless Northeast & Southeast (CT, NC, SC and TN)**

Tectonic is currently providing Real Estate and A/E Design services CRAN hubs in Verizon Wireless' Southeast and Northeast Region. These existing cell sites have been identified as possible Medium Sized Hubs in order to centralize numerous cell sites within the regional areas of both markets. Tectonic services include completion of all Phase 1 requirements including due diligence, leasing review, site feasibility assessments and preliminary leasing documents.

## **CRAN / DAS Services – Verizon Wireless Southeast (Lynchburg, VA)**

Liberty University in Lynchburg, VA has requested that VZW provide a medium hub head end for the proposed Distributed Antenna System throughout the school. This CRAN Medium HUB will require a complete fit out of the tenant space to include upgrades in Electrical Power, Emergency Generators, HVAC Upgrades, Fire Protection and Access Controls.

## **Large HUB A/E Services – Verizon Wireless Northeast (LaGrange, NY)**

The LaGrange Large Hub currently has approximately 100 cell sites connected in this Facility. Tectonic is providing A/E Design Services to include Electrical and Emergency power service upgrades and HVAC Upgrades for additional cooling. AC power and HVAC studies to determine/verify the existing loads and future loads. HVAC Alarms, controls and monitoring were also designed to be compliant with the current VZW NSTD 3000 standards.



# REFERENCES

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Verizon SAP - Rochester, NY



# PROFESSIONAL SERVICES

## Land Surveying

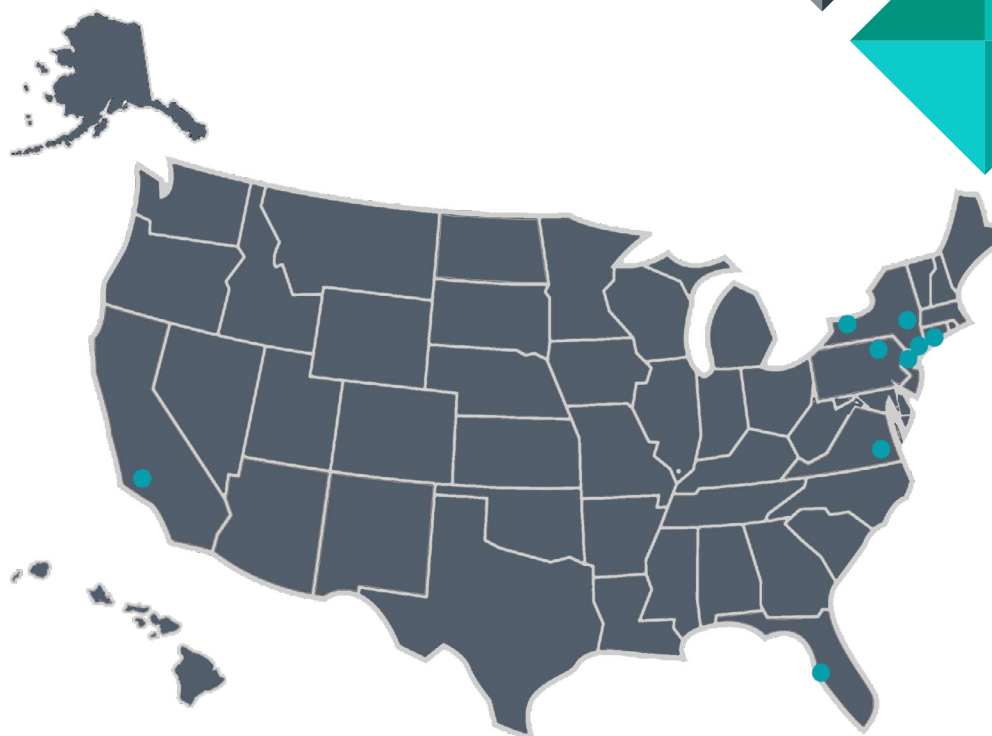
Acquisition/ROW  
Aerial Control  
ALTA/ACSM Land Title  
Certified Boundary  
Geodetic Control  
GIS Mapping  
Property Subdivision  
Route Surveys  
Topographic  
Wetland Delineation  
Anchor Bolt Location  
As-Built Plans  
Baseline Location  
Construction Layout  
Litigation Support  
Steel Plumbness Surveys

## Construction Services

Blasting and Vibration Monitoring  
Claims Analyses  
Constructability Reviews  
Contract Administration  
QA/QC Programs  
Resident Engineering  
Technical Inspections  
Asphalt Pavement  
Concrete  
Fire stopping  
Fireproofing  
Roofing  
Soils Inspection  
Subgrades  
Structural Steel  
Rock Bolts  
Structural Cold-Formed Steel  
Masonry  
Precast Concrete  
Post-tensioned Concrete







TECTONIC Office Locations.

California | Connecticut | Florida | New Jersey  
New York | Pennsylvania | Virginia

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**Tectonic**

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