We Pioneered Engineered Solutions

Trinity Meyer Utility Structures is the transmission industry’s premier provider of engineered solutions. For more than a half-century, we have pioneered solutions to some of the transmission industry’s most complex challenges. More than simply a resource for all of your structure needs, Trinity Meyer is a strategic partner, committed to working with you from concept to project completion, and providing you with engineered solutions that satisfy your needs, your schedule, and your budget.

No other utility structure provider can match the unparalleled innovation, collaboration, and engineering excellence of Trinity Meyer. In fact, our expertise helped shape the accepted guidelines used by national standards organizations such as the American Society of Testing Materials (ASTM), American Welding Society (AWS), and the American Society of Civil Engineers (ASCE).

We understand that today’s transmission solutions require a customized approach, based upon a true comprehension of transmission challenges. Our long history of designing, fabricating, and delivering tubular steel structures reflects this understanding, and is evidenced all across North America.

Trinity Meyer has solved innumerable project challenges with innovative, engineered solutions designed to address precise structure needs.
We don’t just construct poles. We partner and collaborate with you, ensuring that our highly experienced engineers deliver the optimal structure design for your project.

Our standard-setting, custom-engineered transmission structures are products of our meticulous methodology, unmatched capabilities, and a team of experts able to solve even the most complex application challenges. We have proven our abilities time and again, in projects of every size and nature.

**Keys to our success:**
- Design innovation
- Engineering excellence
- Manufacturing expertise
- Smart, tailor-made solutions
- Collaborative relationships
We actively invest in engineering breakthroughs and new best practices that raise the bar for the entire transmission industry. From testing and design methodologies to corrosion resistant coatings and time-saving innovations, Trinity Meyer is a true leader in the steel structure industry.

Meyer QuickPin®

Traditional arm connections require arm brackets to be bolted onto through plates using numerous short nuts and bolts. Trinity Meyer designed a better way with our proprietary QuickPin® – the world’s fastest arm connection. Instead of securing nuts and bolts with cumbersome and time-consuming tools, QuickPin® uses unthreaded, tapered pins for easy arm alignments, contributing to faster construction and faster time to energization. It provides the same performance as bolted connections at one-third the installation time.

California’s Pacific Gas & Electric Company (PG&E) dramatically reduced its pole installation time and costs by choosing Trinity Meyer’s innovative QuickPin® arm connections instead of traditional bolted connections.

The Meyer QuickPin® Arm Connection will save you money and let you energize your line faster.

- One-third the installation time
- Use less equipment
- Reduce inspection costs
- Save construction time
- Energize faster
- Vibration-tested by NEETRAC
For installations in areas with a restrictive right of way (ROW) and less-than-ideal soils, Trinity Meyer developed the Meyer QuickPier™ Adapter. This innovation, paired with helical pile foundations, allows for rapid and economical installation of steel structures with no excavation, field welding, or concrete foundation curing times. It is a transitional piece that mounts on embedded helical piers or micropiles, allowing base plated steel structures to be connected easily and with minimal ground disturbance.

The Meyer QuickPier™ Adapter is a 21st century innovation.

- Significant potential foundation cost savings
- Fastest pole to pier installation
- No field welding or excavation
- Adjustable for installation variabilities
- GLMs exceeding 7000 ft-kips

Eversource Energy was able to reduce connection time and overcome wet, swampy soil and an underlying rock layer with the Meyer QuickPier™ Adapter. The transitional piece kept ground disturbance to a minimum while facilitating the installation process.
Trinity Meyer has considerable experience in designing and manufacturing tubular steel structures for very large applications up to 765kV. No matter how high the voltage, how tall the structure, or how many structures are needed, we can provide the optimized engineered solutions you need.

Large Project Applications

An alternative to lattice structures was required for the 42-mile, 500kV Pinal Central-Tortolita project for Tucson Electric Power (TEP). The utility chose new A-frame substation structures and 180 tubular steel poles from Trinity Meyer. Trinity Meyer monopole structures were chosen because of their smaller footprint compared to wide-legged lattice structures, and also for their ease and efficiency of construction.

Large river crossings require large transmission structure solutions. PECO enlisted Trinity Meyer to develop the single-circuit suspension structure that now crosses the Delaware River. It stands over 300 feet tall, weighs more than 400,000 lbs, and features a crossarm catwalk. Tampa Electric chose Trinity Meyer for help with its Alafia River crossing. The 220-ft steel monopole crossing structures are eight feet in diameter and have a span of more than 1,600 feet, the longest of any in Tampa Electric’s transmission system.

This was the first 500kV project built by TEP, and the first 500kV transmission line using monopoles in more than five years in the southwestern U.S.
Nearly 1,600 structures were required for the 345kV/161kV Arrowhead-Weston project by American Transmission Company (ATC), which was the largest transmission line project underway in the country at that time. Double-circuit steel structures from Trinity Meyer now support the 234-mile line connecting Duluth, MN, and Wausau, WI. The project was completed and energized ahead of schedule, earning ATC an EEI Edison Award.

The Central California Path 15 project faced unique challenges in routing high-voltage transmission lines through environmentally sensitive and economically critical agricultural areas. Tubular steel structures were chosen, rather than lattice towers, to minimize the footprint and to provide more options for spanning these vulnerable areas. These custom-designed Trinity Meyer 500kV structures are used in the most sensitive areas of the 84-mile project between the Los Banos and Gates substations.

CapX2020, a joint initiative of 11 transmission-owning utilities in Minnesota, North Dakota, South Dakota and Wisconsin, is the largest development of new transmission in the upper Midwest in nearly 40 years. CapX2020 projects are projected to cover a distance of nearly 800 miles. An example is XCEL Energy’s North Rochester-Northern Hills 161kV segment in Minnesota. Trinity Meyer was selected to provide 153 single-circuit tangent structures for this project.
Beauty Forged by Function

For some customers, aesthetics play an important role when integrating transmission structures into established environments. Trinity Meyer can work with you to design steel structures that balance aesthetic preferences with functional requirements.

The XCEL Energy/Northern States Power Company (NSP) Riverside/Main Street project required 115kV galvanized transmission poles that would be aesthetically pleasing while concealing the double-circuit tangent configuration. To meet this need, Trinity Meyer designed the graceful arch structures now standing throughout downtown Minneapolis.

Using steel, there are unlimited design options to accommodate even the most demanding applications.

Trinity Meyer was the first to use corrosion-resistant weathering steel in its utility structures. Self-weathering steel poles are very similar in color to wood poles, allowing them to easily blend into wooded backgrounds.

These 115kV galvanized transmission poles are designed to be aesthetically pleasing while concealing the double-circuit tangent configuration.
For a Competitive Renewable Energy Zones (CREZ) project in Texas, the Lower Colorado River Authority had to overcome challenges such as rugged topographies and winding routes. For the Big Hill-Kendall segment, double-circuit transmission lines in a portal structure were chosen to meet this need. Trinity Meyer designed and delivered the 345kV galvanized running-angle portal structures.

The Ostrander-Troutdale project by Bonneville Power Administration (BPA) in Oregon had to address receding shoreline concerns and design for delta configurations, while maintaining precise conductor configurations and locations. Trinity Meyer collaborated with BPA to develop a 500kV galvanized single-circuit, double-bundled structure shaped like Superman’s famous emblem to solve the project’s challenges.

Similar concerns were faced for BPA’s Big Eddy-Troutdale line. Trinity Meyer delivered 230kV galvanized single-circuit Y-frame structures that resemble a martini glass to address the receding shoreline concerns while also reducing the environmental impact and maintaining precise conductor locations.
Creative Solutions for Unique Locales

Complex projects are solved with Trinity Meyer’s proprietary software and custom-engineered solutions. Whether it’s poor soil conditions, difficult environmental challenges, a restrictive right of way (ROW), or distinctive regulatory concerns, our solutions have been designed and validated through years of comprehensive full-scale structural testing.

For TEP’s 345kV Springerville project in Arizona, Trinity Meyer designed and constructed EMF-reducing steel structures that resemble tennis rackets. The double-circuit monopole structures are built to support the high-power transmission lines while limiting human and wildlife exposure to EMF.

Installation ease and flexibility was required for the high-voltage Woodward EHV-Thistle project for Oklahoma Gas & Electric (OG&E). Approximately 195 double-circuit tangent structures were supplied by Trinity Meyer, featuring interchangeable pole tops with both flanged and slip-jointed connections on a single structure. Installation of the 345kV galvanized structures was further simplified with Trinity Meyer’s patented QuickPin® arm connections.

Southern California Edison (SCE) sought a small environmental footprint for a new project in a region with high potential seismic activity. We designed and delivered tangent Y-frame structures, which were successfully tested and validated at the Meyer test facility prior to installation.
When Reliant Energy looked to increase capacity while replacing a single-circuit wood line with triple-circuit steel poles within an already crowded, 150-ft ROW, it turned to Trinity Meyer. Fifty-four extra-tall galvanized steel structures were designed, varying in height from 163 to 193 feet. Deadend poles were designed and fabricated with circular pull-off plates to allow for line angles from zero to ninety degrees. Additionally, provisions were made for line taps off the future 138kV line.

Challenged with a difficult-to-access, crowded ROW in environmentally sensitive wetlands, Gulf Power sought help from Trinity Meyer to replace 115kV single circuit lattice towers with 230kV double circuit structures using existing lattice foundations. Trinity Meyer developed a unique structure solution that utilized compound angles to match existing foundations while transitioning to a tubular top. Structures were designed in modular sections to meet weight limitations for helicopter erection. Installation for fifteen structures was completed in two days.

Great Basin Transmission needed a solution that would reduce foundation costs and environmental impacts. Trinity Meyer developed single-circuit tangent guyed-V structures that are the first of their kind. The reverse-tapered structures are lighter in weight and have a smaller environmental footprint than a two-legged H-frame structure. The design prevents the perching of predatory raptors and minimizes destruction of regionally sensitive habitats.
Trinity Meyer offers the desirable flexibility of steel. Not only is steel lighter and stronger than either wood or concrete, it offers an infinite number of design options to fit even the most demanding situation. Steel aesthetically accommodates the most challenging ROW and foundation constraints while allowing for numerous finish options to provide a more pleasing final appearance. Typically, installation for steel structures takes less time, less labor, and less equipment.

Steel is more reliable in storms and high winds. The strength and durability of tubular steel structures keeps them standing during conditions where wood poles could fall, causing cascading failures. Steel structures can be built tall enough to carry transmission lines above existing trees, further minimizing the risk of outages. Wood poles, by comparison, increase storm restoration effort and costs because they must be replaced frequently.

Steel is more environmentally responsible and nearly 100% recyclable. Chemical preservatives in wood poles have the potential to leach into water sources and the soil, leading many governments to classify the poles as hazardous waste upon disposal.

Steel is economical. Steel poles support longer spans, so fewer poles are needed. That means less labor, hardware and equipment, and lower installation and maintenance costs.

The Flexibility of Steel

- Reduced weight (typically 1/3 to 1/2 the weight of a comparable wood pole)
- Self-grounding capabilities
- Verifiable conformance of strength, dimensions and capabilities
- Optional inclusion of arms and hardware for monopoles and H-frames
- No hardware loosening due to wood shrinkage
The standard design and high-strength material used in the fabrication of our Light Duty (LD) poles ensures confidence through the stability and reliability associated with steel. While typically half the weight of wood poles, the strength of steel, coupled with an optimized design, makes it possible to extend spans. This reduces the number of poles, insulators, and hardware needed, along with the associated cost of construction and maintenance.

Idaho Power needed 230kV single-circuit weathering steel H-frame structures to replace 14 miles of storm damaged wood structures. Trinity Meyer was able to greatly expedite delivery by using an existing LD pole design for the legs, along with wood cross arms provided by Idaho Power. The first orders of Trinity Meyer’s LD poles were shipped in just four weeks – less than half the normal time for a multi-legged structure. The entire job, 183 structures in total, was completed in just 10 weeks.

In addition to our readily available current stock, Trinity Meyer can assist you in configuring a light duty steel structure stocking program uniquely suited to your needs.
Trinity Meyer is one of the industry’s only ISO 9001:2008 certified structure suppliers, ensuring the highest level of manufacturing quality. We helped to shape many of the manufacturing standards used in the industry today, including ASTM, AWS, and ASCE guidelines, and we are fully committed to continuous improvement.

Our manufacturing team includes some of the best and brightest in the industry. Each member has the extensive experience needed to assure the highest quality steel structure products.

Because so much is riding on our structures, we strive for weld performance excellence. We use 100% full penetration welds on all arm bracket to arm shaft welds. Full penetration welds with reinforcing fillet welds provide the greatest assurance against weld failure.

Trinity Meyer was the first to do full-scale vertical testing. Our full-scale structure testing facility has been used to complete hundreds of structure and product tests. The results are integrated into our proprietary DECANT design software and coupled with our use of finite element analysis to provide the optimal engineered solution for your structure needs.

Full-scale vertical testing provides greater accuracy than mockup or horizontal testing. Vertical testing allows for the true effects of a structure’s own weight, in its deflected position, to be realized when forces are added.
Collaborative Benefits

Teamwork and collaboration are the hallmarks of every Trinity Meyer project. It is the foundation for Trinity Meyer’s many long-standing customer relationships. As your committed strategic partner, your success is our goal.

The Badger Coulee Transmission Line is a very large, ambitious, three-year construction project. It is the largest transmission project that ATC has ever done. An estimated 1,068 poles, representing approximately 35 million pounds of fabricated steel, will stand an average of 120 feet tall along the 180-mile route. Trinity Meyer was able to offer suggestions early in the planning process that helped ATC reduce the total installed costs.

With Trinity Meyer’s engineering support for the structures as well as innovations such as QuickPin® arm connections to dramatically reduce the installation time, ATC was able to secure lower construction bids. Trinity Meyer’s strong supplier relationships also allowed ATC to lock in favorable steel prices to further help reduce total installed cost.

At Trinity Meyer, we take a partnership approach to every project – from concept to completion – and work to meet your needs, timetable, and budget. Our early involvement and expert engineering designs can help you reduce costs, save time, and improve the project outcome. We will work closely with your design and construction teams to coordinate the fabrication, delivery, and installation of innovative, engineered solutions.

Count on Trinity Meyer for your next transmission project.

Construction crews are able to move a drop trailer provided by Trinity Meyer along the ROW to offload poles where needed, eliminating the extra steps of unloading and reloading the trailer, saving significant construction time and costs.