

MEX'ER

UTILITY STRUCTURES



MEYER

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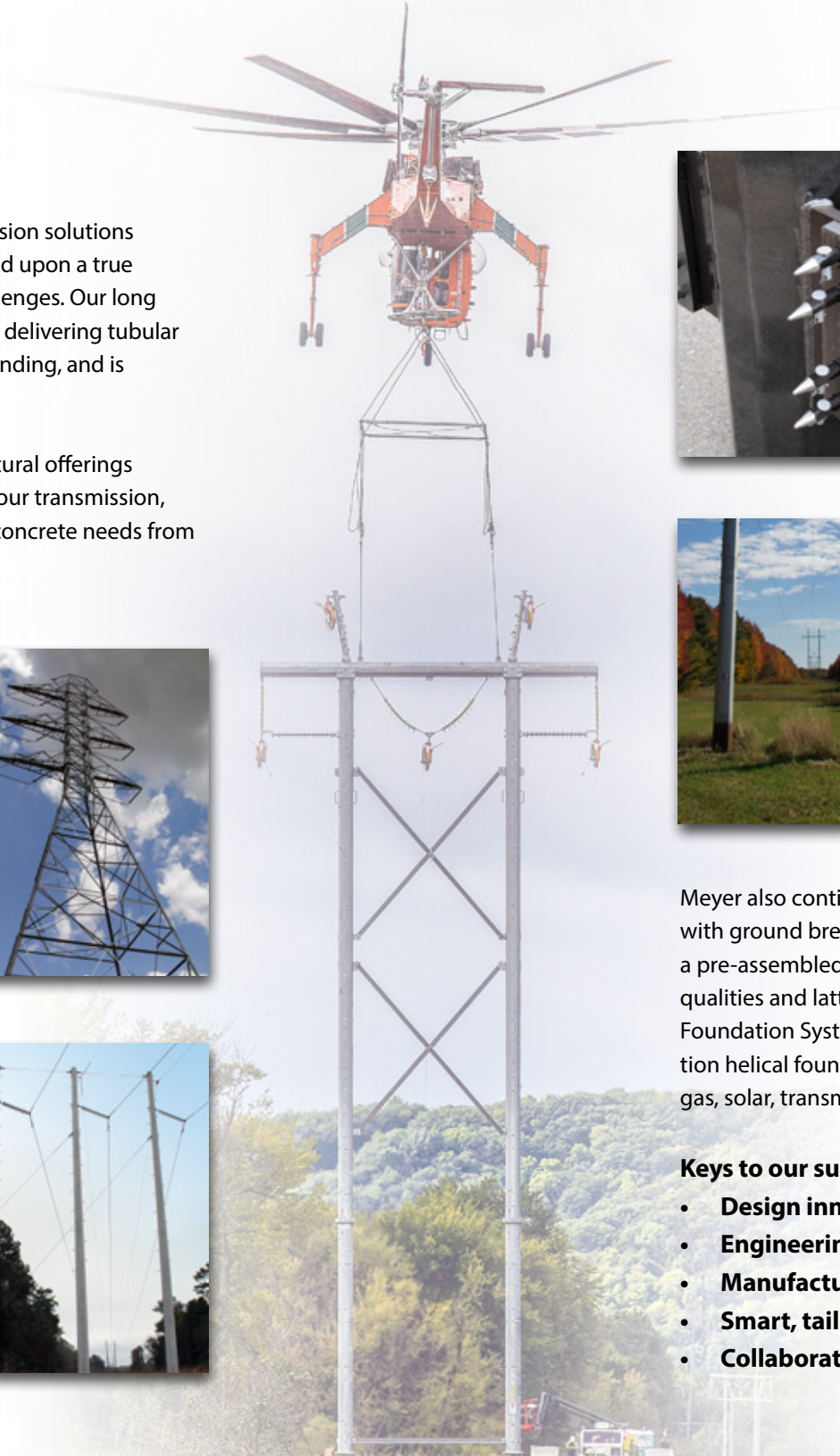
Meyer Utility Structures is the transmission industry's premier provider of transmission and distribution structure solutions. For more than a half-century, we have pioneered solutions to some of the transmission industry's most complex challenges. More than simply a resource for all your structure needs,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

Meyer continues to expand its structural offerings and engineered solutions for all of your transmission, distribution, lattice, substation and concrete needs from 69kV to 765kV.



Meyer also continues to move transmission forward, with ground breaking innovations such as TOWERpole, a pre-assembled light-duty lattice tower with monopole qualities and lattice weight, and the QuickPier Helical Foundation System, a patent-pending and quick installation helical foundation system ideal for a wide range of oil, gas, solar, transmission and substation applications.

Keys to our success:

- **Design innovation**
- **Engineering excellence**
- **Manufacturing expertise**
- **Smart, tailor-made solutions**
- **Collaborative relationships**

Engineering Based Innovations

Meyer QuickPin®

Traditional arm connections require plates to be bolted onto arm brackets using numerous short nuts and bolts. 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 time to energization. It provides the same performance as bolted connections at one-third the installation time.

The Meyer Utility Structures 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



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

Meyer QuickPier™ Adapter

For installations in areas with a restrictive right of way (ROW) and less-than-ideal soils, 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 Utility Structures QuickPier™ Adapter is the fastest pole to pier installation foundation.

- **Faster installation**
- **Lower total installed costs**
- **Proven in full-scale testing**
- **Compatible with industry standards**
- **Adjustable to field conditions**
- **Eliminates the need for concrete**

MeyerClad® Plus

MeyerClad® Plus is Meyer's innovative protectant against below-grade corrosion. MeyerClad® Plus is a dielectric barrier coating, offering superior protection against abrasion, UV exposure, chemicals, soil acidity, stray currents, fresh water, and salt water. It outperforms other below-grade coatings due to significantly fewer dissolved solids.

MeyerClad® Plus offers superior protection against:

- **Abrasion**
- **UV exposure**
- **Chemicals**
- **Soil acidity**
- **Stray currents**
- **Water**



Manufacturing and Testing

Meyer is an AISC certified structure supplier, 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.

Once a steel structure is designed, it is manufactured with the greatest of care and attention to detail. 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.

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.

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 solutions for your structure needs.



Collaborative Engineering

Meeting Unique Project Considerations

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. Meyer was able to offer suggestions early in the planning process that helped ATC reduce the total installed costs.

With 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. Meyer's strong supplier relationships also allowed ATC to lock in favorable steel prices to further help reduce total installed cost.

Swift Storm Response

When weather events wreak havoc on a community, Meyer comes through with expedited service to help you to get the lines back up and the power restored as quickly as possible. Meyer can help to develop optimum stocking programs at any of our facilities to reduce lead times, decrease inventory cost, and guarantee material availability.

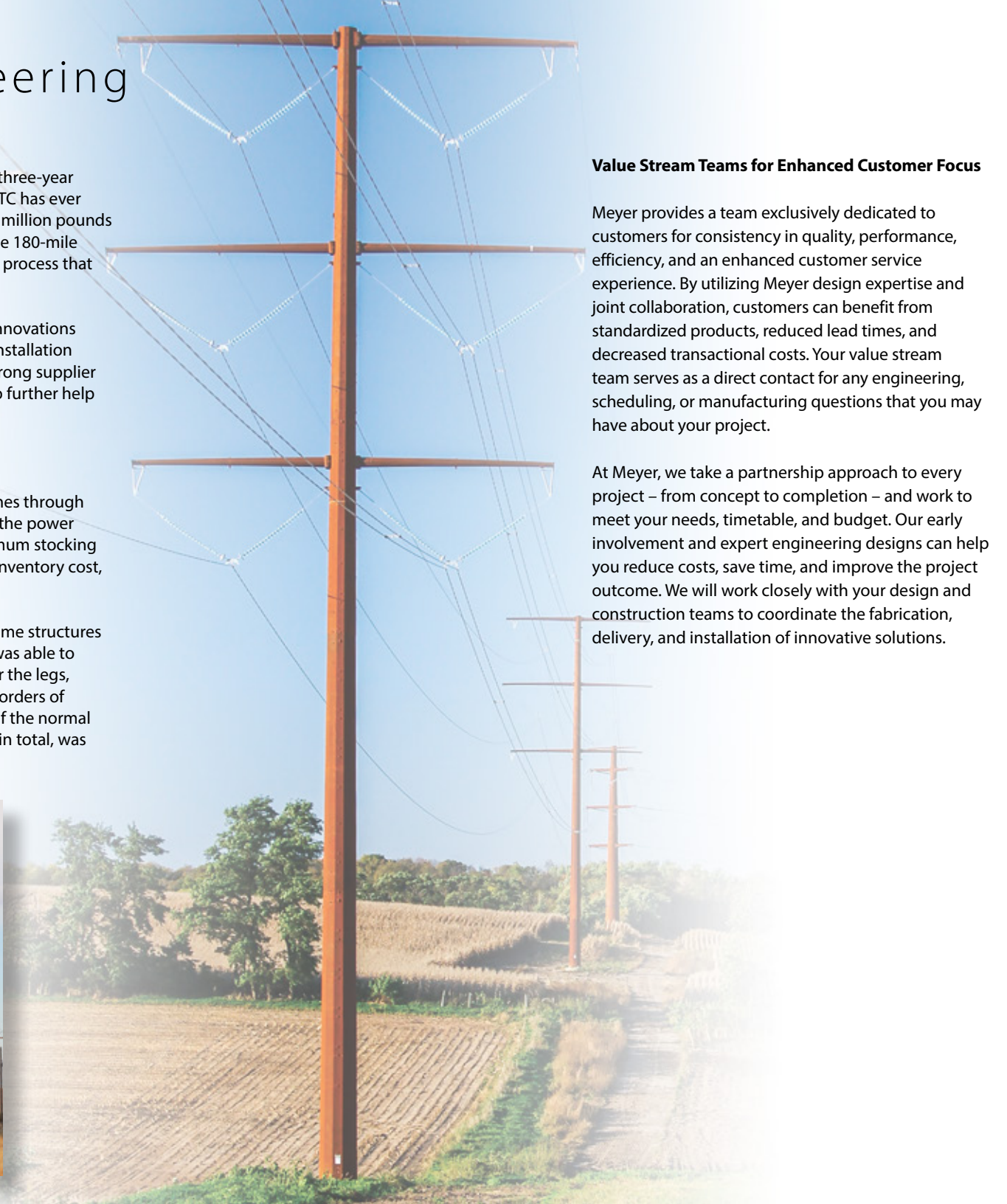
Idaho Power needed 230kV single-circuit weathering steel H-frame structures to replace 14 miles of storm damaged wood structures. Meyer was able to greatly expedite delivery by using an existing LD pole design for the legs, along with wood cross arms provided by Idaho Power. The first orders of Meyer's 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.



Value Stream Teams for Enhanced Customer Focus

Meyer provides a team exclusively dedicated to customers for consistency in quality, performance, efficiency, and an enhanced customer service experience. By utilizing Meyer design expertise and joint collaboration, customers can benefit from standardized products, reduced lead times, and decreased transactional costs. Your value stream team serves as a direct contact for any engineering, scheduling, or manufacturing questions that you may have about your project.

At 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 solutions.



Comprehensive Design Solutions

Lattice Towers for Transmission Lines

Meyer Utility Structures possesses additional capacity to design, detail and supply an array of steel and aluminum lattice towers through collaboration with our sister company, FORMET.

FORMET uses CNC state of the art technology to manufacture steel lattice towers from 115kV to 500kV and aluminum lattice towers from 230kV to 500kV

TOWERpole

TOWERpole is an innovative light duty equivalent lattice tower. Constructed in forty-foot sections, these pre-assembled steel poles have a small lattice footprint, require minimal field assembly and possess the low weight qualities of a lattice structure. Up to 25% less structure weight than comparable steel monopole and up to 30% less structure cost.



Substation

Meyer Utility Structures has the ability to provide both pre-fabricated high and low profile substation steel structures.

The quality and reliability of our substation structures is held in the highest regard. All substation structure types are prototyped for fit-up preceding fabrication to ensure accuracy in drawings, production, and assembly. FORMET also utilizes certified in-house inspectors for internal inspection and examination of all critical welds of substation structures.



Light Duty and Distribution Class Solutions

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.

In addition to our readily available current stock, Meyer can assist you in configuring a light duty steel structure stocking program uniquely suited to your needs.

Prestressed Static Cast and Spun Concrete

With over 20 years in the concrete pole business, Meyer Utility Structures prestressed static cast and spun concrete poles represent the ultimate choice for power distribution and transmission hardening.

Meyer Utility Structures static cast concrete poles are available in standard class pre-engineered WPE structures from 30' class 3 to 110' class H6.

Custom designed spun structures are available from 50' to 140' with strengths up to 36,000 lb. tip loads and higher.



Innovative Design Solutions



No Project Requirement Too Large

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 solutions you need.



PECO
Alafia River Crossing



Tucson Electric Power

Long Span River Crossing Solutions

Large river crossings require large transmission structure solutions. PECO enlisted 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 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 1600 feet, the longest span of any in Tampa Electric's transmission system.

Cost Savings for Large Projects

An upgrade for Tucson Electric Power (TEP) covers approximately 41 miles between the Pinal Central Substation east of Casa Grande and TEP's Tortolita Substation, and help the utility improve service to more than 417,000 customers in the southern Arizona area. It consists of 180 new tubular steel poles ranging from 150-190 feet tall, and additional substation equipment. QuickPin arm connections were utilized to significantly reduce line construction time and labor costs. Specifying QuickPin connections early in the construction bidding allowed the savings to be passed on from the contractor to the utility.

800 Miles of Reliable Energy

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. Meyer was selected to provide 153 single-circuit tangent structures for this project.



CapX2020

Innovative Design Solutions

Beauty Forged by Function

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





CREZ
Big Hill to Kendall

Structure Designs for Rugged Terrain

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. Meyer designed and delivered the 345kV galvanized running-angle portal structures.

Configurations for Environmental Responsibility

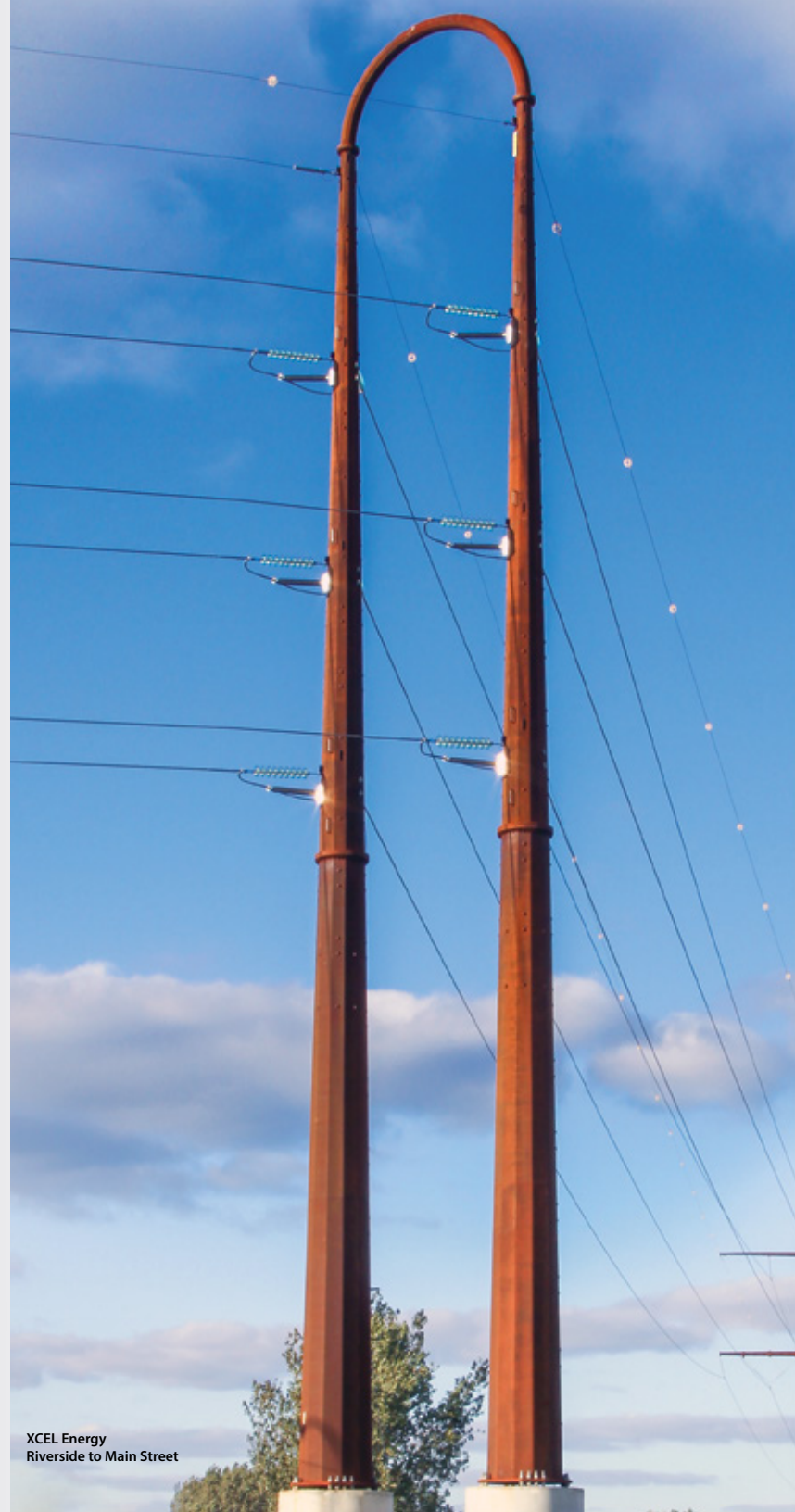
The Ostrander-Troutdale project by Bonneville Power Administration (BPA) in Oregon had to address receding shoreline concerns and design for delta configurations, while maintaining precise conductor configurations and locations. Meyer collaborated with BPA to develop a 500kV galvanized single-circuit,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



BPA
Ostrander to Troutdale

Graceful Structures with Functionality

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, Meyer designed the graceful arch structures now standing throughout downtown Minneapolis.



XCEL Energy
Riverside to Main Street

Innovative Design Solutions

Creative Outcomes for Unique Locales

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





Designs for Crowded Right of Ways

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 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.

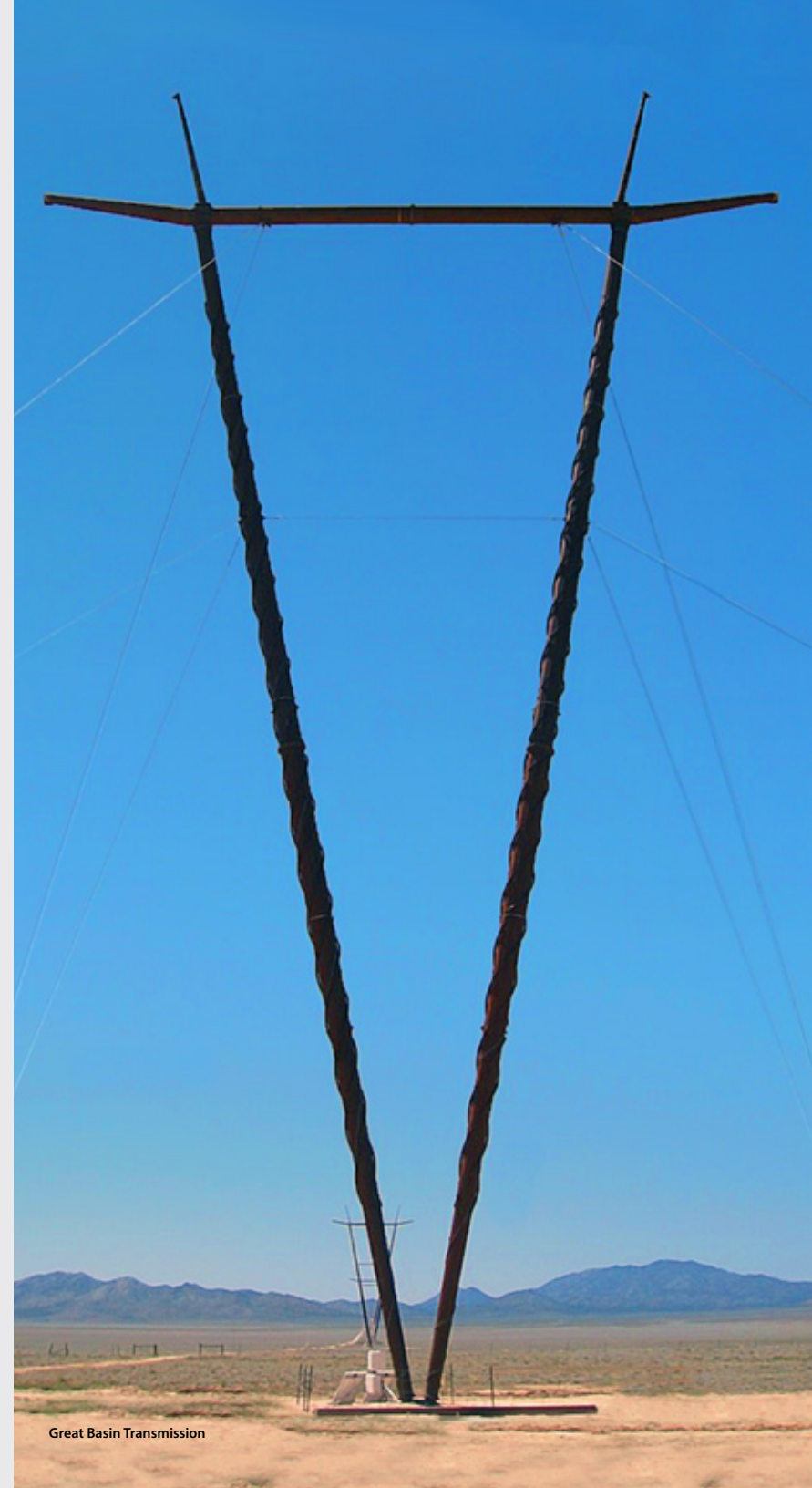
Options for Various Field Conditions

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.



First of Their Kind Designs

Great Basin Transmission needed a solution that would reduce foundation costs and environmental impacts. 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.



Great Basin Transmission



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**Count on Meyer Utility Structures
for your next transmission project.**

meyerutilitystructures.com

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