

ENGINEERING SERVICES

Providing detailed engineering for every project, including civil, structural, telecom and electrical elements.

Phasor Engineering is Canada's Utility Services Powerhouse.

In 2022, all of Valard's engineering and geomatics services were reorganized into Phasor Engineering, a Quanta Services Company. This merger combined the individual success of each team into a fully integrated Professional Services company focused on our client's power system design and technical support needs.

PROUD TO BE PART OF THE

W Valard Group of Companies

WHY CHOOSE PHASOR?

Our team consists of experienced professionals, knowledgeable in every sector of the utility industry. With dozens of engineers dedicated to providing services for our clients, Phasor is well equipped to handle a wide array of project requirements.

FIVE SPECIALIZED TEAMS

SUBSTATIONS - Electrical, P&C, SCADA and Studies Engineering

LINES - Transmission and Distribution

TELECOMMUNICATIONS - Fibre, Coax, and Permitting

CIVIL - Foundations, Geotechnical, Structural, Transportation, Civil Work and Others

GEOMATICS - Construction Layout, Spatial Data Acquisition

GET IN TOUCH

HARVIR MANN | President

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SUBSTATIONS

WE ALWAYS RISE TO THE CHALLENGE

All stations and substations ranging from 600V through to 500kV for utilities, and public and private companies across Canada in various sectors. This includes full turnkey EPC and everything in between.

Phasor's Substations group also has experience in renewables and utility scale battery storage.

SCOPE OF SERVICES

IN-DEPTH STUDIES

- Power Systems Studies
- Grounding Studies
- Lighting Studies

PHASED DESIGN PROCESS

- Conceptual Design
- Preliminary Design

OTHER SERVICES

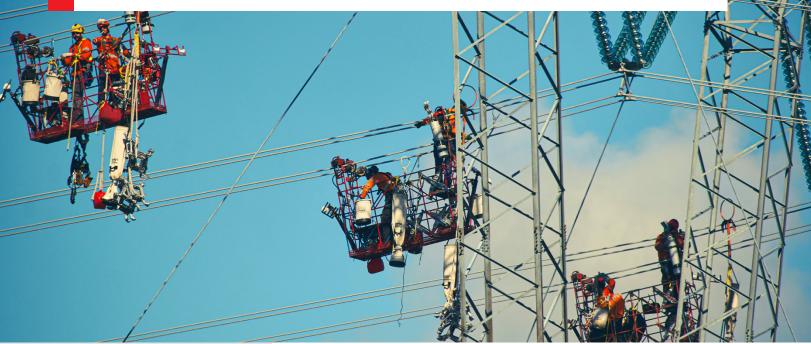
- IEC 61850
- Commercial PRP (parallel redundancy protocol)
- Network architecture design
- · Reliability analysis

- AC Station Services and DC Supply Studies
- Protection Coordination and Settings Studies
- · Detailed Design
- Advanced HMI and data concentrator implementation
- Factory Acceptance Testing (FAT) featuring full substation simulation

MICHAEL REYNEN | Substations Engineering Manager

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LINES TRANSMISSION AND DISTRIBUTION



THE LINES WE BUILD CONNECT COMMUNITIES

We can help with development of transmission and distribution networks from route planning to energization.

Phasor's experience includes designing lines ranging from 500kV down to 4.16kV.

Services span from initial concept analysis and early stage development to design, construction support, and operations and maintenance. In addition, Phasor provides for POI and preferred route plans, reports on EA aspects and inputs into various permit processes.

SCOPE OF SERVICES

TRANSMISSION (69kV to 500kV)

- Conductor selection and optimization
- Structure selection and optimization
- · Feasibility studies
- · Lattice tower design
- Steel pole / wood pole design
- Route selection and structure spotting using PLS-CADD

DISTRIBUTION (4kV to 69kV)

- Greenfield / Brownfield utility & industrial projects (oilfield, mining, etc.)
- Overhead and underground applications
- Conductor sizing and equipment specification

- Development of material and construction specifications
- Factory inspection, type testing and development of inspection and test plans
- Thermal uprating, line remediation, re-conductoring and as-built line modelling
- Field Engineering and Inspection
- Pole Line Analysis for joint-use telecom applications
- Non-linear analysis of poles
- Field Engineering and Inspection

CHRIS LEE | Transmission Engineering Manager

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TELECOMMUNICATIONS

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Specializing in Outside Plant (OSP) Telecommunications for service providers and utilities within Canada, our team is proficient with the design of fiber & coax infrastructure and permitting for aerial & underground placement. Experienced with feeder, distribution and service wire design within commercial and residential settings our team is keen to partner with you on your next project.

SCOPE OF SERVICES

DESIGN

- Fiber to the Home (FTTH)
- Commercial Fiber
- Residential Coax
- Commercial Coax
- Fiber Distribution Hub

DRAFTING

- AutoCAD
- MicroStation

PERMITTING

- · Local Municipality
- Joint Use
- Railway

- Node Launch
- Node Split
- Relocates
- Overbuilds
- GCOMM
- SpatialNet
- Pipeline
- Transportation

MYLES WHITAKER | Telecom Design Manager

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WE HAVE THE EXPERTISE TO TACKLE ANY PROJECT, NO MATTER THE COMPLEXITY

Phasor's Civil Engineering group provides designs and successfully completes projects for the infrastructure, energy, and oil and gas sectors.

SCOPE OF SERVICES

FOUNDATION

- Foundation design including deep foundation and anchors
- Wind turbine foundation
- Shoring design

GEOTECHNICAL

- Geotechnical construction
 support
- · Geotechnical desktop study
- · Slope stability analysis

STRUCTURAL

- · Steel structure design
- Tower design

CIVIL WORK & OTHERS

Site grading

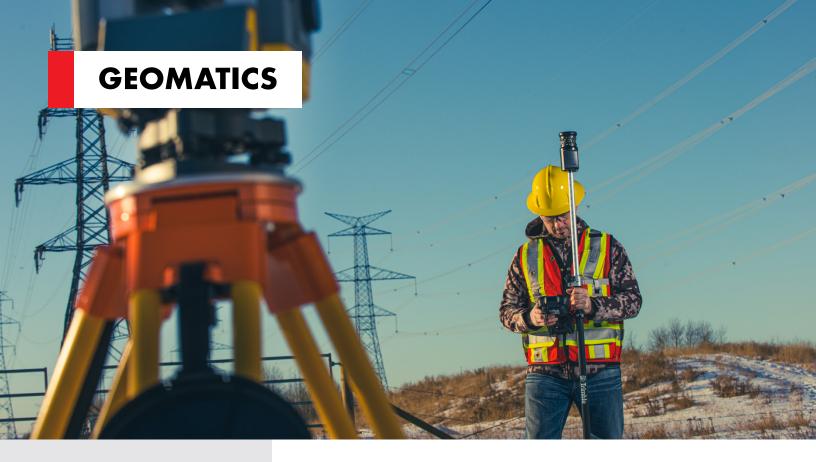
MISCELLANEOUS

• Site support and post site inspection

- Retaining wall design
- Pile monitoring, PDA, CAPWAP and WEAP analysis
- Detailed geotechnical study including drilling, rock coring and reporting
- Dynamic analysis
- · Rooftop studies
- Lifting plan
- Value Engineering

AMIN EL GENDY | Civil Engineering Manager

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POWER IN PRECISION

Phasor's Geomatics group applies the latest technology to get the spatial information you need to design, build and monitor your power infrastructure.

With expertise in traditional terrestrial surveys, GPS and both aerial and terrestrial scanning technologies, we can gather the information you need and present it in a number of ways, such as plans or 3D models tailored to your unique requirements.

SCOPE OF SERVICES

CONSTRUCTION LAYOUT

- High-Precision Construction Layout
- Right of Way Surveying and Staking
- Powerline stringing

SPATIAL DATA ACQUISITION

- 3D Terrestrial Scanning
- Aerial Photo Acquisition via Drone
- LiDAR Acquisition

SPATIAL DATA REPRESENTATION

- 3D Models
- Topographical Plans

Substation Sites and other Power Infrastructure

Lines, Distribution Networks,

- 3D photos for pole loads analysis
- · GPS as-built surveys

• Layout of Transmission

- GIS
- s Volume Calculations

OTHER SERVICES

Boundary Surveys

STEVEN VAN BERKEL | Director of Geomatics Operations

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