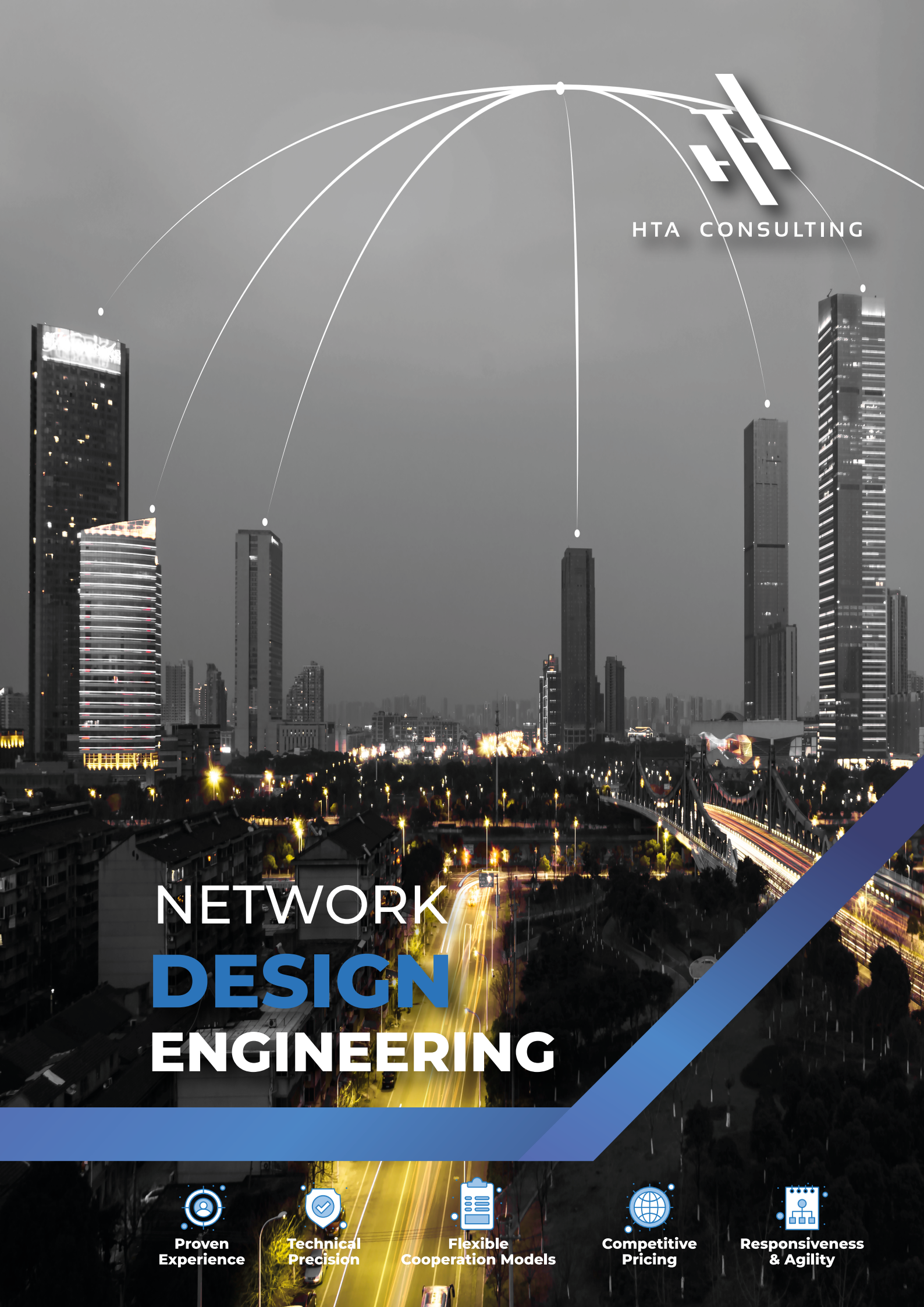

HTA CONSULTING
NETWORK
DESIGN
ENGINEERING
Proven Experience
Technical Precision
Flexible Cooperation Models
Competitive Pricing
Responsiveness & Agility

HTA CONSULTING

COMPANY **OVERVIEW**

HTA Consulting is a leading Tunisian telecom engineering firm specializing in comprehensive fiber optic network design and planning solutions. Established as a center of excellence in FTTH/FTTx infrastructure, we bridge the gap between vision and reality, transforming initial concepts and field data into construction-ready engineering packages that power digital future.

Our expertise spans the complete lifecycle of fiber network deployment—from initial site surveys and GIS mapping through detailed engineering design, structural calculations, regulatory compliance, and final construction documentation. We serve as trusted technical partners to telecom operators, Internet Service Providers (ISPs), and engineering contractors.

OUR **MISSION**

To deliver high-quality, precision -engineered technical studies that enable our clients to deploy robust, scalable, and cost-effective fiber optic networks. We transform raw field survey data and mapping information into comprehensive, construction-ready design packages that meet international standards while respecting local regulations and site-specific constraints.

CORE COMPETENCIES **& DIFFERENTIATORS**

Technical Excellence

Our engineering team comprises 15 to 30 highly qualified professionals holding advanced engineering degrees from Tunisia's leading technical universities. Each engineer brings specialized expertise in:

Telecom Civil Engineering

Infrastructure planning underground and aerial deployment methods, right-of-way management, and construction methodology.

Geographic Information Systems (GIS)

Spatial data management, network modeling, geospatial analysis, and digital cartography.

WHY CHOOSE HTA CONSULTING

HTA CONSULTING

1. Responsiveness & Agility

In the fast-paced telecom industry, timing is critical. We pride ourselves on rapid response times, flexible project scheduling, and the ability to scale our team to meet tight deadlines without compromising quality. Our streamlined processes and experienced team enable us to deliver comprehensive engineering studies in timeframes that keep your project on schedule.

2. Proven Track Record

Our portfolio includes successful delivery of large-scale fiber network programs. We have designed networks serving thousands of subscribers, calculated loads for thousands of poles and towers, and prepared countless permit packages that achieved regulatory approval on first submission.

3. Competitive Pricing

Operating from Tunisia provides us with a strategic cost advantage while maintaining standard quality. Our competitive pricing structure, combined with flexible engagement models, delivers exceptional value—allowing you to access premium engineering expertise at highly attractive rates.

4. Flexible Cooperation Models

We adapt to your preferred working relationship:

- **Full Project Outsourcing:** Complete design responsibility from concept to construction documentation
- **Staff Augmentation:** Our engineers work as extensions of your team
- **Technical Advisory:** Specialized expertise on specific challenges or design reviews
- **Capacity Support:** Surge capacity during peak project periods

5. Technical Precision

Our commitment to accuracy and detail minimizes costly construction issues. We deliver:

- Comprehensive optical budget calculations
- Accurate material bills of quantities
- Clash-free design coordination
- Construction-ready deliverables

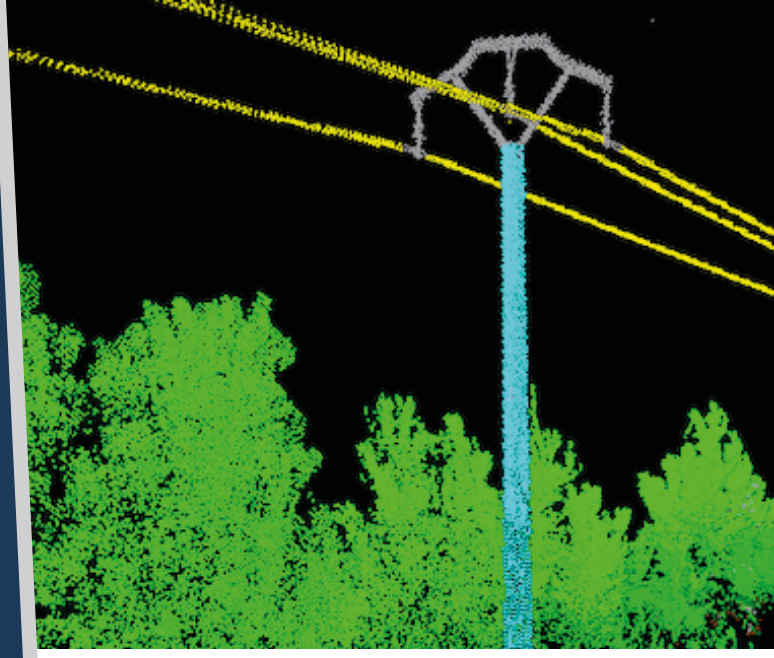
HTA CONSULTING

SERVICES **PORTFOLIO**

1. GIS MAPPING & GEOSPATIAL DATA MANAGEMENT

Overview

Geographic Information Systems form the foundation of modern network management and planning. Our GIS mapping services create accurate, comprehensive digital representations of your fiber network infrastructure, transforming complex physical networks into intuitive, manageable geospatial databases that drive operational efficiency and strategic planning.Our expertise spans the complete lifecycle of fiber network deployment—from initial site surveys and GIS mapping through detailed engineering design, structural calculations, regulatory compliance, and final construction documentation. We serve as trusted technical partners to telecom operators, Internet Service Providers (ISPs), and engineering contractors.



Key Deliverables

Network Inventory Mapping

- Complete spatial database of all fiber cables with route geometry, cable specifications, fiber count, installation date, and ownership
- Precise locations of all optical splitters with split ratios, insertion losses, port utilization, and connectivity
- Distribution points, joint closures, termination boxes, and splice points with detailed attribute data
- Customer connection points with service address, activation status, and service plan information

Infrastructure Asset Mapping

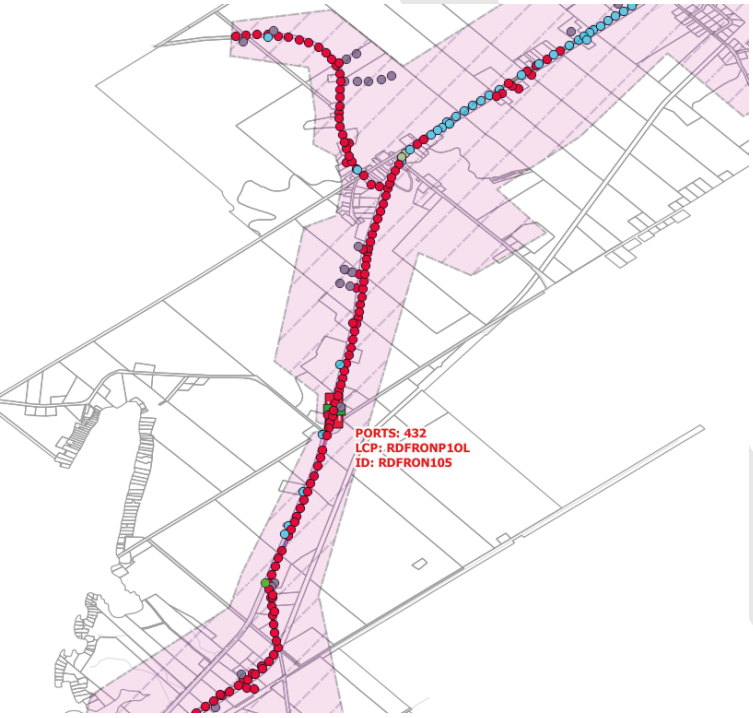
- Underground conduit networks with depth, diameter, material, capacity, and occupancy data
- Aerial cable routes with attachment points, span lengths, and clearance heights
- Pole and support structure inventory with coordinates, heights, ownership, and shared-use status
- Central offices, node locations, and active equipment sites with equipment inventories

2. FTTH & FTTX NETWORK DESIGN

HTA CONSULTING

Overview

Fiber to the Home (FTTH) and Fiber to the X (FTTx) network design is our core specialty. We create optimized, end-to-end passive optical network designs that balance capital efficiency with future scalability, ensuring your fiber infrastructure serves customers reliably today while accommodating tomorrow's capacity demands.



Service Description

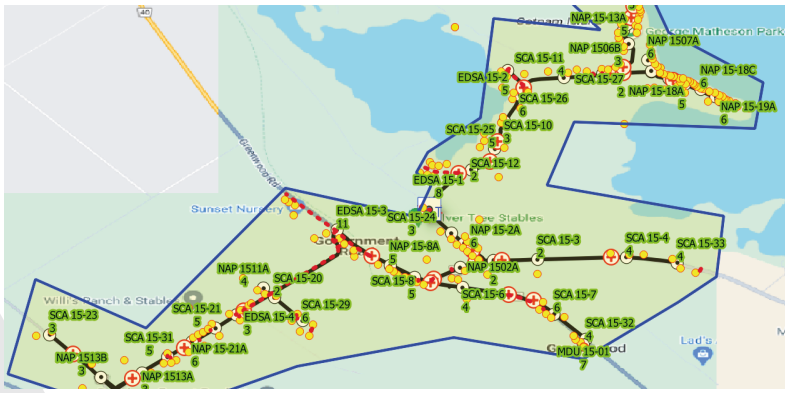
Our FTTH/FTTx design services cover the complete network architecture from central office to customer premises, encompassing:

- Network Architecture Design
- Route Planning & Optimization
- Optical Network Engineering

Key Deliverables

Design Drawings & Plans

- Network overview maps showing complete architecture
- Feeder route plans with cable specifications and splice point locations
- Distribution area plans showing splitter locations and drop cable coverage
- Building entry and in-building distribution details
- Manhole and hand-hole plans with duct entry/exit details



Technical Documentation

- Optical link budget calculations for every subscriber segment
- Fiber core assignment tables and splice schedules
- Equipment specifications and technical datasheets
- Testing and commissioning procedures

HTA CONSULTING

SERVICES PORTFOLIO

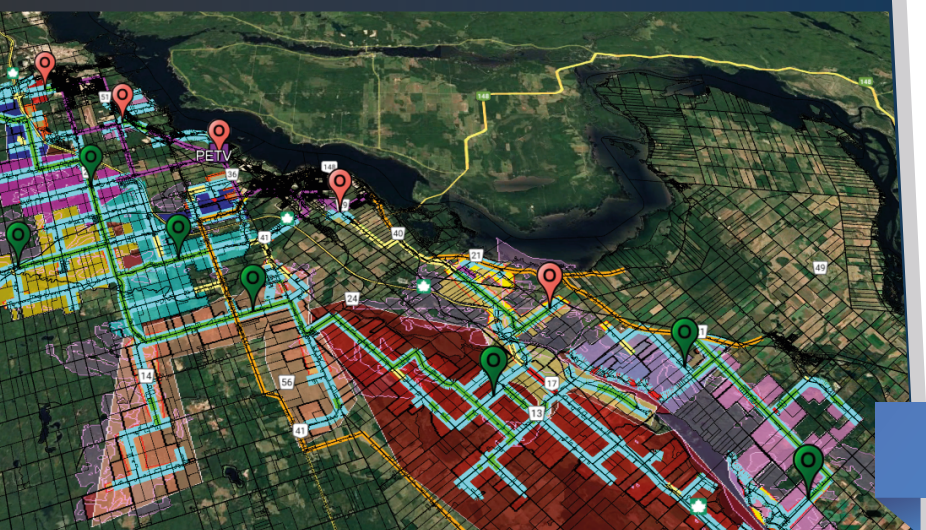
3. CIVIL DESIGN & ENGINEERING

Overview

Safe, compliant aerial fiber deployment requires rigorous structural analysis of existing pole infrastructure. Our civil engineering services provide comprehensive load calculations and structural assessments ensuring poles can safely support additional fiber cable, lashing hardware, and related equipment while maintaining compliance with safety standards and local regulations.

Service Description

We perform detailed structural analysis for aerial fiber optic deployments, evaluating existing utility poles for their capacity to accommodate new fiber cable installations. Our engineering approach considers all relevant load factors, environmental conditions, and safety margins to ensure installations meet or exceed applicable codes.



Technical Approach & Methodology

Data Collection

Our analysis begins with comprehensive data gathering:

- Pole surveys capturing height, circumference, material, class, and condition
- Existing attachment inventory (power, communications, lighting)
- Make-ready requirements identification
- Photographic documentation of existing conditions
- Geospatial coordinates for GIS integration

Engineering Analysis

We perform calculations using industry-standard methods:

- Moment analysis at ground line and critical sections
- Stress calculations compared to allowable material limits
- Factor of safety verification per code requirements
- Reinforcement requirements for overstressed poles
- Guy wire analysis for additional support where needed

Deliverables & Reporting

Comprehensive documentation of our analysis:

- Individual pole reports with pass/fail status and safety factors
- Reinforcement recommendations for poles requiring strengthening
- Replacement specifications for poles failing structural criteria
- Priority rankings for make-ready work
- Cost estimates for pole work requirements

HTA CONSULTING

4. TOWER DESIGN & STRUCTURAL ENGINEERING

Overview

Telecommunications towers support critical infrastructure requiring meticulous structural engineering to ensure safety, reliability, and regulatory compliance. Our tower design services deliver complete structural solutions from foundation to tip, engineered to support antenna systems, microwave dishes, fiber optic equipment, and auxiliary systems while withstanding environmental loads and meeting all applicable codes.

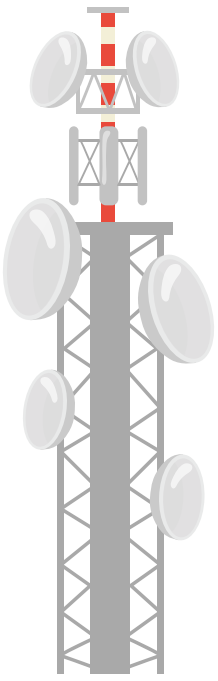
Client Benefits

Optimized Investment

- Right-sized structures avoiding over-engineering and unnecessary cost
- Future capacity provisioning for additional equipment
- Foundation designs appropriate for soil conditions avoiding costly failures

Construction Efficiency

- Clear, detailed drawings minimizing field questions and errors
- Accurate material quantities supporting procurement and budgeting
- Constructability review ensuring practical, buildable designs



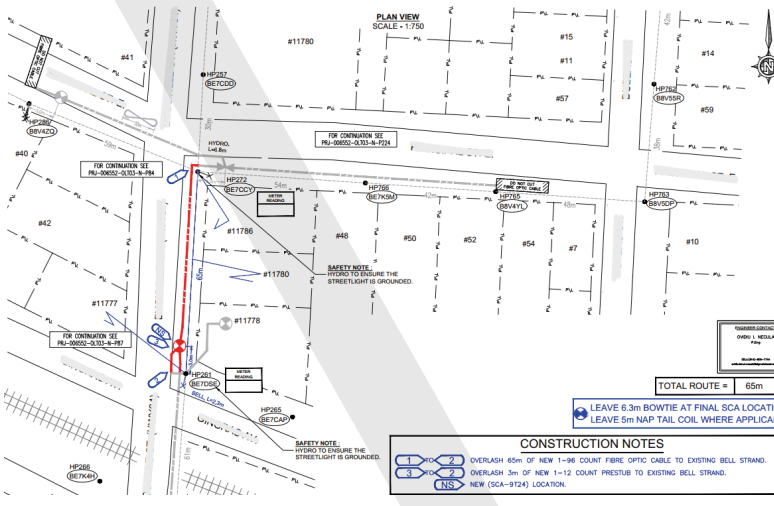
5. PERMIT PACKAGES & REGULATORY APPROVALS

Overview

Navigating the complex regulatory landscape of telecom infrastructure deployment requires expertise, attention to detail, and deep understanding of local authority requirements. Our permit package preparation services streamline the approval process, delivering complete, compliant application packages that achieve first-submission approval while accelerating project timelines.

Permit Type Coverage

- Municipal construction permits for underground and aerial fiber deployment
- Right-of-way permits for public street and highway construction
- Building permits for equipment shelters and equipment rooms
- Tower construction permits and zoning approvals
- Utility coordination and joint-use agreements
- Environmental permits and approvals where required



OUR TOOLS

AutoCAD

BricsCAD®

MicroStation

BLUEBEAM
A NEMETSCHEK COMPANY

Comac

SimPAS

Cap-FT M

ZONEDGE

Ge smallworld

QGIS

ArcGIS

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