Building Broadband Faster in Ontario

Provincial statement of intent and a guideline to support accelerated broadband deployment

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Part 1 Provincial Statement of Intent

1.1 Provincial Statement of Intent to support accelerated broadband deployment

The Government of Ontario has committed almost $4B to connect every region of Ontario to reliable, high speed internet by the end of 2025.

In April 2021, the Ontario Legislature passed the *Supporting Broadband and Infrastructure Expansion Act, 2021*. A key outcome of this legislation was that it enacted the *Building Broadband Faster Act, 2021* (BBFA). The main purpose of the BBFA is to expedite the delivery of broadband projects of provincial significance by removing barriers to building broadband projects.

Since the introduction of the BBFA, the Province has consistently identified the expectation that all partners involved in broadband deployment would work collaboratively to further reduce administrative barriers, support timely broadband deployment and contain costs.

To further support broadband deployment, the Province intends to move ahead with a suite of measures, including this Guideline (see Part 2 of this document), proposed regulations under the BBFA and the *Ontario Energy Board Act* (OEBA), a process for addressing make-ready and pole-attachment costs and the introduction of proposed legislative amendments, with the goal of taking every measure possible to ensure every household and business in Ontario has access to high-speed internet.

The suite of proposed new regulatory and legislative measures would help to make provisions outlined in the Guideline binding, with appropriate enforcement mechanisms. Together, they would help to achieve the government's commitment to 100 percent connectivity by the end of 2025.

Guideline

The Ministry of Infrastructure and Infrastructure Ontario have developed the Guideline to reduce barriers, speed up broadband deployment and support the successful implementation of the BBFA. Stakeholders and partner ministries provided input into the development of the Guideline. The Guideline reflects current legislative and regulatory authority under the BBFA and OEBA and will be updated if additional powers/measures are put in place.

In summary, the Guideline:

- Sets out new and best-practice processes and timelines when internet service providers (ISPs) work with local distribution companies (LDCs) and other parties to deploy internet fibre through third-party hydro pole attachments and accessing rights-of-way (ROW) to deploy fibre underground.
- Introduces a new information and data gathering platform - the Broadband One Window (BOW). The platform is an electronic system to support timely approvals, permitting, and locate decisions related to broadband projects. Parties are being asked to also provide relevant infrastructure data through this platform to enhance

information sharing and proactively anticipate and address issues.
- Establishes the role of a new Technical Assistance Team (TAT) that would provide support, informal advice and assistance to municipalities, ISPs and LDCs on the implementation of the Guideline and implementation of provincial broadband projects.

Regulations

To further support rapid deployment of broadband infrastructure, the Province intends to bring forward proposals to make a number of regulations under the BBFA and OEBA. These include:

1. **Two BBFA regulations** (effective November 30, 2021)

    A. Regulation to designate provincial broadband projects. This regulation would define designated broadband projects as those "*where funding, in full or in part, has been provided through the Ministry of Infrastructure for the purpose of deploying broadband and high-speed internet infrastructure in Ontario*." The BBFA grants the Minister of Infrastructure the following authorities, with respect to designated broadband projects:
        i. Issue notices to municipalities that broadband project proponents require municipal service and right of way access to complete necessary work related to such projects.
        ii. Make orders requiring the municipal service and right of way access necessary to facilitate delivery of a designated project, and the proponent and the municipality shall comply with that order.
        iii. Issue notices requiring electricity distributors and transmitters to coordinate with broadband project proponents to complete necessary work related to such projects where a distributor or transmitter has not met a regulated requirement. (Note: this authority would come into effect if proposed OEBA regulations are made – see item 2 below).
        iv. Where a party noted above fails to complete required work, the Minister would be authorized to order the completion of work or authorize the proponent to undertake the work to facilitate delivery of a designated project. (Note: this authority would come into effect if proposed OEBA regulations are made – see item 2 below).

    B. Minister's regulation to enable pay-for-delay and pay-for-redesign claims when there are cost impacts created by delays or avoidable mistakes by underground infrastructure owners. This regulation would enable an internet service provider to make a claim for damages to the Ontario Land Tribunal when a member of Ontario One Call creates a delay in the construction process and/or need for redesign due to inaccurate locates or delays in the locate process beyond a 10 business-day period set out in the BBFA specific to broadband projects.

2. **Regulations under the OEBA**

The Ministry of Energy will develop proposed regulations under the OEBA, which will include:

A. Setting the wireline pole attachment charge methodology and requiring local distribution companies (LDCs) to consult with internet and telecom service providers as part of their long-term capital planning processes. This regulation is, subject to required approvals, expected to take effect on January 1, 2022 in order to reduce costs for ISPs.

B. Requirements for LDCs to comply with Guideline provisions including (but not limited to): performance timeline standards and processes related to pole attachments and make-ready work, including when those standards may be *temporarily* suspended, situations when internet service providers may employ contractors to complete such make-ready work, and data sharing requirements in order to enable the Broadband One Window platform. These regulation(s) are, subject to required approvals, anticipated to be in place February 2022.

C. If required, establishing a process governing payments to LDCs related to make ready costs.

3. **BBFA regulation on administrative penalties:** In alignment with Ministry of Energy regulations, MOI proposes that a regulation would be made prescribing penalties associated with non-compliance with Minister's Orders under the BBFA.

Proposed Legislative Amendments

In order to enhance enabling authority and compliance mechanisms to accelerate broadband infrastructure deployment, the Province proposes to introduce legislative amendments in winter 2022. If passed by the Legislature, the suite of proposed provincial authorities and mechanisms would:

1. Require municipalities to comply with a service standard:
    - Key focus is to direct turn around time for rights of way permits

2. Require infrastructure data sharing by municipalities and other parties:
    - Comprehensive data to be provided proactively for all designated projects

3. Require the use of One Window by municipalities:
    - One Window as the single, digitized platform required for permit application through implementation

4. Ontario One Call:
    - Under the BBFA, require electronic asset data sharing by members of Ontario One Call with IO using the One Window platform

Related Changes Led by the Ministry of Government and Consumer Services (MGCS)

MGCS is developing a legislative proposal under the *Ontario Underground Infrastructure Notification System Act, 2012* (the One Call Act) to address issues with late locates and enhance locate delivery across the province. These changes will apply to and benefit broadband projects as well.

The Province proposes to introduce targeted legislative amendments in winter-spring 2022 to address immediate pressure points in the locate delivery system, enhance governance and oversight, and improve compliance tools. Proposed changes are under development and subject to consultation. If passed by the Legislature, these amendments would include:

1. Mandating the use of a dedicated locator model where a single locator is pre-identified to better provide the excavator/project owner with control over timing of locates.

2. Standardizing and extend locate validity periods to 90 days, eliminating the frequency of relocates and improving the remarking process to be more efficient.

Additional Mechanisms to Accelerate Broadband Deployment

Broadband Coordinator

Subject to direction from the Minister of Infrastructure, Infrastructure Ontario will act as a "Broadband Coordinator" to operate the One Window platform and help mediate disputes, including payments to LDCs related to make ready costs if such a process is not established through commercial arrangements.

Technical Assistance Team

A technical assistance team will be established to support LDCs and municipalities with high-speed internet projects with implementation and compliance supports.

Dispute Resolution

Both the Broadband Coordinator and the Technical Assistance Team would support informal dispute resolution to prevent escalation to formal dispute resolution bodies to the extent possible.

Provincial Interministerial Committee

MOI will establish an oversight committee that will focus on streamlining deployment and resolving matters across ministries that arise and could impact on projects.

Part 2 Building Broadband Faster Act Guideline

2.1 General and Administrative Provisions

Purpose of the BBFA Guideline

This Guideline serves as a companion guide to the *Building Broadband Faster Act, 2021* (BBFA). It is a key tool in enabling the Government's Accelerated High-Speed Internet Program (AHSIP) that was announced in March 2021 which together with provincially funded broadband projects aim to provide access to high-speed internet to 100 percent of Ontario households by the end of 2025. The Guideline has been designed to enhance the co-ordination and engagement among project stakeholders related to the deployment of high-speed internet infrastructure, including streamlining processes associated with attaching high-speed internet wirelines to Local Distribution Company (LDC)-owned electric utility poles and providing timely access to municipal and provincial rights-of-way (ROWs). It is recognized that Internet Service Providers (ISP), also known as Telecommunications Service Providers (TSPs), need timely access to LDC poles and ROWs. Efficiencies in the process and recommended by this Guideline can have a a positive impact on project-level costs, complexity and timelines related to the efficient deployment of broadband networks.

The Guideline is a tool that can be used by, but is not limited to use by, LDCs, ISPs/TSPs, Ontario One Call and their respective third parties in coordinating installation and service provision as well as Infrastructure Ontario (IO), the Ontario Ministry of Transportation (MTO), municipalities, Indigenous communities and government partners such as the Electrical Safety Authority (ESA) and the Ontario Energy Board (OEB).

This Guideline provides recommended guidance in order for participants to:

- Encourage early and good faith communication and collaboration among participants;
- Expedite the safe and cost-effective delivery of designated broadband projects;
- Meet the Ontario government's goal to connect every region in Ontario to essential, reliable, high-speed internet by the end of 2025; and,
- Facilitate municipalities and LDCs providing timely access to their infrastructure on reasonable terms, including municipal rights-of-way and LDC owned poles to support high-speed internet projects.

Enhancing the impact of this Guideline

The Ontario government has committed to ensuring that every community has access to high-speed internet by the end of 2025. This Guideline, if followed correctly, will be a vital tool in helping to achieve this ambitious goal.

MOI and its AHSIP delivery partner, IO, recognize that parties and stakeholders that play a role in broadband deployment must all be equally compelled to comply with the provisions, processes and timelines outlined in the Guideline in order to provide a positive impact to faster broadband deployment as part of high-speed interent projects in the province.

Under the Statement of Intent (section 1.1), the Government of Ontario is planning for a suite of regulatory and legislative measures to be put in place in order to make mandatory the provisions in this Guideline. It is the expectation of the government that as these structures are put in place, all parties must do their utmost to comply with the provisions contained in this Guideline.

ISPs in Ontario are federally regulated and to support their performance under the Guideline, MOI will look to make these provisions mandatory for ISPs involved in designated broadband projects as part

of project contracting.

Once these measures, approved and proposed, are fully in place, MOI will update the Guideline to reflect these requirements.

Additional Background

While the Government of Ontario has been working to expand access to high-speed internet throughout the Province for several years, the COVID-19 pandemic highlighted the essential role of reliable high-speed internet for participating fully in today's economy, including through the workplace, educational institutions, telemedicine and online commerce. As of September 2021, an estimated 700,000 premises, representing about 1.4 million people in Ontario, lack access to basic broadband connectivity, defined by the Canadian Radio-television and Telecommunications Commission (CRTC) as speed levels of 50 Mbps download/10 Mbps upload.

To address this, in March 2021, Ontario announced a commitment of nearly $4 billion to connect every region to high-speed internet by the end of 2025 as part of theAHSIP. This is the largest single investment in high-speed internet, in any province, by any government in Canadian history.

As part of its plan, Ontario also announced a new innovative procurement process to help connect underserved and unserved communities. This procurement launched in September 2021 and is being led by Infrastructure Ontario. Combined with existing application-based programs underway, the procurement process, with a reverse auction, will help ensure that every home and business in Ontario has access to high-speed internet by the end of 2025.

In March 2021, Ontario also introduced the *Supporting Broadband and Infrastructure Expansion Act*, 2021 (SBIEA). The legislation received Royal Assent in April 2021 and enacted the BBFA and made amendments to the *Ontario Energy Board Act, 1998* (OEBA).

The purpose of the BBFA is to expedite the delivery of designated broadband projects, prescribed under regulation, by streamlining processes and removing barriers that may result in additional costs and delays in reaching these unserved and underserved communities across Ontario. This legislation builds on the Government's 2019 Up to Speed: Ontario's Broadband and Cellular Action Plan (The Action Plan), which outlined a plan to expand broadband and cellular access into unserved and underserved communities.

Link to the SBIEA, which includes an explanatory note: Supporting Broadband and Infrastructure Expansion Act, 2021, S.O. 2021, c. 2 - Bill 257 (ontario.ca).

Link to the BBFA: Building Broadband Faster Act, 2021, S.O. 2021, c. 2, Sched. 1 (ontario.ca).

To Whom this Guideline Applies

This Guideline is intended to apply to:

- A Successful Proponent, who is legally bound by the Project Agreement entered into with the Government of Ontario for a designated broadband projects which are being funded by Ontario
- LDCs whose service territories include coverage of the geographic areas where there are designaged broadband projects or LDCs who otherwise anticipate performing or supporting high-speed internet projects and wish to adopt practices within it .
- Ontario municipalities whose municipal boundaries include the geographic areas where there are designated broadband projects.

- Members of Ontario One Call in facilitating timely locates of underground infrastructure.
- Any other person with infrastructure within a right-of-way for a desginated broadband project and any other person whose cooperation is required to carry out a designated broadband project.

These parties are hereto defined as 'provincially funded project stakeholders'.

This Guideline would also be of benefit for other relevant parties, including locate service providers (LSP), construction contractors, engineering providers, geography information systems providers, and surveyors.

Role of Infrastructure Ontario

IO, in supporting the program management of AHSIP activities on behalf of MOI, may carry out the following tasks related to designated broadband projects :

- Working collaboratively with broadband stakeholders and parties to help support the implementation of this Guideline, including but not limited to working proactively with Municipalities and LDCs to ensure timely co-ordination with ISPs
- Developing, administering, maintaining and supervising the Broadband One Window (BOW) platform, including development of an application guide
- Developing a uniform contract that could be used between ISPs and LDCs
- Undertaking a mapping exercise to establish eligible project areas
- Developing resources for applicants and proponents
- Verifying project milestone completion
- Assessing and reporting on funding recipients' progress, performance, and compliance with funding conditions
- Publishing reports, approved by MOI, on broadband funding performance

Role of Parties in Provincially Funded Broadband Projects

This Guideline is meant to provide recommended guidance and best practices to all parties engaging in designated broadband projects which are being funded by Ontario.

The provincially funded project stakeholders are expected to engage in good faith, without prejudice, in a manner consistent with the spirit of partnership and collaboration. Stakeholders are expected to ensure that they conduct their work in such a way that ensures the safe deployment and ongoing operation of broadband, municipal, transportation, electrical, and other infrastructure assets.

The legislative authorities outlined in the OEBA and its regulations and the BBFA and its regulations are primarily envisioned in their application as backstops/safeguards in the event that cooperation or negotiation between provincially funded projects does not result in an adherence to Performance Timelines (PTs) and any other aspect of the Guideline.

Application

This Guideline is intended to apply to any any designated broadband project. The practices articulated

in the Guideline could be adopted for other broadband projects in Ontario.

Applicable Law

Nothing in this Guideline is meant to limit the obligations that any party has to comply with any other applicable law, including but not limited to the latest versions of:

- The BBFA;
- The OEBA;
- Ontario Regulation 22/04 (Electrical Distribution Safety) made pursuant to the *Electricity Act, 1998* ("Electrical Distribution Safety Regulation" or "Ont. Reg. 22/04");
- Canadian Standards Association C22.3 No.1, the Electrical Distribution Safety regulation notes CSA Standard C22.3 No. 1-15 (or latest) for overhead distribution lines and CSA Standard C22.3 No. 7-15 for underground systems as amended from time to time;
- *Occupational Health and Safety Act* (OHSA) and Regulations;
- Ontario Regulation 164/99 (Electrical Safety Code) made pursuant to the *Electricity Act, 1998* ("Ontario Electrical Safety Code" or "OESC") and,
- *Ontario Underground Infrastructure Notification System Act, 2012* (One Call Act).

Amendments to the Guideline

Amendments to this Guideline must be approved by the MOI in consultation with the Minister of Energy (ENERGY) and posted on the MOI website.

Bulletins

MOI may, at times, publish non-binding bulletins to this Guideline. The purpose of these bulletins is to provide specific information on issues, conflicts and/or misunderstanding where there is a need for immediate or additional clarification. Bulletins will be posted as supplements to this Guideline and will allow provincially funded project stakeholders to subscribe to an RSS feed for posted updates.

2.2 Accelerating Access to LDC Poles and Rights-Of-Way

This section sets out processes and timelines that are recommended to be followed by LDCs and municipalities and is limited to any designated broadband project in respect of which the Successful Proponent has confirmed its intention to use the Broadband One Window (**BOW**) platform for the provincially funded project

Attaching to LDC-Owned Poles

This section outlines the BOW authorization process for LDC owned pole attachments, including the engineered design requirements as well as the applicable standards to which stakeholders are expected to adhere.

If there is agreement for parties to use the BOW, the general steps to acquire an LDC-approved authorization application to access an LDC owned pole are set out in Table 1 below.

If parties are not using BOW, a Successful Proponent and an LDC are free to negotiate and agree upon any terms and conditions outside what is set out below.

Table 1: Aerial Route on LDC-Owned Poles

	Activity	Process Details
1	**Determination of possible route**	• The Successful Proponent determines possible route using best industry practices including digital maps, available information from BOW and existing network records • The Successful Proponent submits planned route to BOW and requests outstanding information from LDCs and existing attachers • IO circulates notification of planned/possible route to all known implicated parties (i.e., municipalities, LDCs, Enbridge and other telecoms)
2	**Field inspection/survey**	• The Successful Proponent and LDC coordinate prior to field inspection/survey of the poles applied for and determine who will be developing engineered designs as the ESA guidelines allow for both owner (i.e., the LDC) developed designs and applicant (i.e., the Successful Proponent) developed plans or work instructions • LDCs and existing attachers provide information requested by Successful Proponent
3	**Professional Engineer Approved Design Drawings** • Structural analysis • Telecom attachment • Any power make-ready	• The Successful Proponent or LDC (as agreed) conducts pole loading structural analysis, prepares P.Eng. approved design drawings (certifying that the design meets the requirements of CSA 22.3 No.1-15 (or latest) and Ontario Reg. (22/04) and determines what telecom and power make-ready work, if any, needs to be completed for safe attachment. Ontario Reg. 22/04 notes CSA Standard C22.3 No. 1-15 for overhead distribution lines and CSA Standard C22.3 No. 7-15 for underground systems. For Successful Proponent led-designs, the Successful Proponent must provide materials to the LDC to review and to inform subsequent steps. • Appendix 1: Application Requirements, Templates and Forms provides templates of Basic Drawing Requirements and Design Requirements that may be used
4	**Determination of Sequencing of Make-Ready Work** • Triage of power make-ready work • Determine requirements needed to accommodate make-ready work.	• The Successful Proponent or LDC (as agreed during coordination prior to field inspection/survey) determines whether any power make-ready work can be completed safely in parallel with any attachment (including any temporary work) or whether power make-ready work needs to be completed prior to attachment (i.e., "triage" of power make-ready work). • Appendix 2: Further Reducing Complex Make-Ready Work provides guidance on triage of power make-ready work

	Activity	Process Details
5	**Authorization application approval** • Authorization application form • Professional Engineer Approved Design Drawings • Full Pole Loading Structural Analysis	• The Successful Proponent submits to BOW an application form including Professional Engineer Approved Design Drawings and Full Pole Loading Structural Analysis to the BOW. To ensure quality submissions, it is recommended that this analysis is conducted using industry standard software. • IO, as administator of the AHSIP, reviews application (see Preliminary Authorization Review Checklist below) to ensure all required information has been submitted • LDC reviews and approves application. Timelines may be suspended for any issues or deficiency identified by the LDC (including if the LDC has any planned work that may impact the provincially funded project that has not been previously flagged) if reported to IO via the BOW. • LDC engages directly with Successful Proponent to address any deficiencies in authorization application documents. If there are disputes, parties are encouraged to resolve these among themselves in a spirit of collaboration. • Appendix 1: Application Requirements, Templates and Forms provides information to be included on each application form including Professional Engineer Approved Design Drawings and Full Pole Loading Structural Analysis
6	**LDC issues quote for Power Make-Ready Work**	• LDC (if completing the make-ready work) provides a quote for any make power ready work and the Successful Proponent provides Purchase Order or certified cheque as determined by the LDC
7	**Advising timing of construction (with ROP)**	• Some municipalities may require a Road Occupancy Permit and have associated timelines and processes that must be adhered to
8	**Advising timing of construction (without ROP, note that #7 would not apply in this instance)**	• Where a Road Occupancy Permit is not required, the Successful Proponent notifies the municipality directly prior to work commencement within the established PT
9	**Completion of Make-Ready Work**	• The Successful Proponent and LDC negotiate coordination of any power and telecom make-ready work, including planning any necessary outages . See the Section on One-Touch Make-Ready below. • Where an LDC is unable to complete the make-ready work within the PTs outlined in Table 2 below, the Successful Proponent is expected to use a pre-qualified contractor to conduct the power and telecom make-ready work at its own cost and risk. The LDC is expected to ensure that there are no unintended obstacles to the granting of access to its electricity infrastructure.
10	**LDC issues authorization**	• LDC issues authorization via BOW or through existing process
11	**Wireline attachments**	• The Successful Proponent coordinates with other Telecom carriers to conduct any other telecom make-ready work at

	Activity	Process Details
		this time as the Successful Proponent installs its attachment with the same crews
12	**As-built drawings submitted to LDC**	• The Successful Proponent installs attachment and submits "As Built" drawings to an LDC including an acceptable Record of Inspection form. Appendix 1: Application Requirements, Templates and Forms provides a template Record of Inspection form. • The connection of any required bonding of the communication strand should be requested at this time and the LDC may provide a separate quote and obtain a purchase order (**PO**) for this work as a separate project from the application process
13	**LDC conducts post-build inspection**	• The LDC conducts any post-build inspection. The LDC may recover reasonable costs of post-build inspection from the Successful Proponent. • As a term of the project agreement, the TSP should provide a "120-day indemnity clause" to the LDC stating that if the Successful Proponent has done the power make-ready work during which time any faults/problems are deemed to be the responsibility of the Successful Proponent unless it can proven otherwise. The details are set out below under the heading "120-day Indemnity Clause"
14	**Authorization closed**	• LDC invoices Successful Proponent based on actual costs once any outstanding issues discovered in the inspections are resolved

Table 2: Performance Timelines Aerial Route on LDC-Owned Poles

	Activity[1]	Performance Timeline (Business Days)		
		Up to 30 poles	**30-60 poles**	**60-200 poles[2]**
1	**Determination of possible route [3] [4]**	N/A		
2	**Field inspection/survey**	5	10	20
3	**Professional Engineer approved design drawings** • Structural analysis • Telecom attachment	35	40	60

[1] PT provided in the first four activities (determination of possible route; field inspection/survey; P.Eng. approved design drawings; and determination of make-ready work) are only intended to apply to LDCs (i.e., in instances where they choose to conduct this work for owner-developed designs or if they choose to accompany the Successful Proponent for the field inspection/survey).
[2] Applications submitted for more than 200 poles in one submission may be subject to negotiation and discussion of timelines to ensure feasibility.
[3] LDCs should note whether they will opt in or out of participating in the field inspection/survey within 5 business days.
[4] LDCs should advise within 5 business days whether they will opt in or out of participating in the field survey.

	Activity[1]	Performance Timeline (Business Days)		
		Up to 30 poles	**30-60 poles**	**60-200 poles[2]**
	• Any power make-ready work			
4	**Determination of sequencing of make-ready work** • Triage of power make-ready work • Determine requirements needed to accommodate make-ready works			
5	**Authorization application approval** • Authorization application Form • Professional Engineer Approved Design Drawings • Full Pole Loading Structural Analysis	15	20	40
6	**LDC issues quote for power make-ready** In the instances where there is no make-ready and the permit can be issued at this point, a buffer of 5 business days may be added to this step to issue the permit (as step 9 would no longer apply)			
7	**Advising timing of construction** (in instances where ROP is required)	5 (in advance of start date)	5 (in advance of start date)	5 (in advance of start date)
8	**Advising timing of construction** (where ROP is not required)	5	5	5
9	**Completion of make-ready work[5]**	Simple 25 Complex 40	Simple 30 Complex 60	Simple 35 Complex 80
10	**LDC issues authorization**	5	5	5
11	**Wireline attachments**	Subject to permit validity timelines as stipulated by the LDC		
12	**As-built drawings submitted to LDC**			
13	**LDC conducts post-build inspection**	Within 120 of receipt of completion notification	Within 120 of receipt of completion notification	Within 120 of receipt of completion notification
14	**LDC closes authorization**	20	20	20

[5] There is an understanding that approximately 10% of the poles in any given run may require complex make-ready; this timeline is in reference to the make-ready work on those poles.

IO Preliminary Review Checklist

Upon receipt of a new authorization application, IO will perform the following cursory review steps:

- Review the authorization application form and confirm that all information has been filled out completely and accurately
- Confirm that the required design drawings are included with the authorization application form and appear to comply with the Drawing Requirements
- Confirm that the required Pole Loading Structural Analysis files are attached

If the above criteria are included and complete in the application package, the authorization will be assigned an application number, which will be communicated to the Successful Proponent and LDC for tracking purposes. It will then be forwarded to the LDC for detailed review.

One-Touch Make-Ready

As part of the AHSIP, this Guideline provides for several mechanisms, processes and tools to expedite access to LDC poles while also ensuring that safety standards are met. This Guideline adopts the One-Touch Make-Ready (**OTMR**) process as an option whereby Successful Proponents and LDCs should coordinate resources and elect that one crew of resources, rather than multiple crews, undertake the work to prepare poles for new attachments and subsequently attach to the LDC pole.

This Guideline adopts as a baseline the Electrical Safety Authority (**ESA**)'s definition of "make-ready work" which is as follows: "make ready work" to consist of the practice of rearranging, installing or removing equipment in order to safely accommodate additional infrastructure in or on a supporting structure of a distribution line. The following are the different types of make-ready work that may occur:

1. Telecommunications-Related ("Telecom") Make-Ready

Telecom make-ready is all work performed within the Communications Space dealing with telecom attachments. This work primarily involves rearranging or removing existing telecom strand, fibre and other equipment (e.g., splice enclosures, power supplies) in order to:

- Make space in the Communications Space for the new telecom attachment
- Fix inadequate separation between existing telecom attachments (but does not include working in the power space of the pole)
- Fix inadequate ground clearance for existing telecom attachments

TSPs are encouraged to proactively work with their host LDCs to accommodate the timely and responsive relocation of telecom assets and infrastructure from poles which the LDC has identified as being in need of replacement or upgrade.

2. Simple Power Make-Ready

Simple power make-ready is non-complex work that is performed outside of the Communications Space, including the following:

- Replace missing copper ground wire on pole
- Rearrange or shorten transformer conductor dips (e.g., drip loops) encroaching in the Communications Space
- Tension and move (i.e., raise) the neutral to create required separation from the telecom attachments
- Relocate solar panels and smart meters that are blocking access to the Communications Space

While not strictly "make-ready work", after the telecom strand has been installed, ISPs and LDCs should continue to consult electrical safety codes, standards and other documents applicable in the circumstances.

3. Complex Power Make-Ready

Complex power make-ready is work that is conducted primarily within the Power Space requiring specialized crews. Some of it is required to correct deficiencies in the power facilities, including:

- Pole replacement, including transferring existing power attachments to the new pole
- Reframe top of pole
- Replace insulators
- Relocate transformers (that are too low)

See Appendix 2: Further Reducing Complex Make-Ready Work for innovative approaches to make ready work.

Pre-qualified Contractors for OTMR

The PTs for an LDC conducting power make-ready work with its own internal or sub-contracted resources are set out in Table 2 above. Where an LDC indicates to a Successful Proponent that it is unable to meet its PTs, the Successful Proponent may, employ pre-qualified contractors to conduct any power make-ready work in addition to its own telecom make-ready work. Other telecom parties within the communication space are encouraged to authorize the Successful Proponent to conduct any Telecom make-ready work on its infrastructure.

A Successful Proponent availing itself of the OTMR process should sign a 120-day indemnity clause agreement (see below).

LDCs are encouraged to maintain a list of contractors that are pre-qualified to:

- Operate within the power space; and
- Operate within both the power space and the communications space.

Where LDCs fail to maintain such a list, a Successful Proponent may propose a qualified contractor for an LDC's approval. LDCs are expected to act reasonably in approving or denying a contractor proposed by the Successful Proponent

Deploying resources that are qualified to operate in both the power and communications spaces will allow a Successful Proponent to conduct any make-ready work and attachments in a safe, efficient and timely manner.

The LDC may mandate reasonable requirements for contractors relating to issues of safety and reliability, such as the use of particular hardware or equipment (e.g., LDC-approved bolts, screws or other parts) with respect to make-ready work.

120-day Indemnity Clause

For power make-ready work conducted by the Successful Proponent, a 120-day indemnity clause, which should be included in each agreement entered into between the LDC and TSP, is expected to take effect once the Successful Proponent has submitted "As Built" drawings to an LDC including a completed Record of Inspection form. This provides the LDC and any existing ISPs attached to the LDC pole time to conduct their own inspections and also provides the TSP with clarity related to the timelines associated with telecom equipment deployment.

LDCs and existing ISPs must notify the Successful Proponent of any damage to their respective infrastructure within the 120-day period following the date on which the Successful Proponent submitted "As Built" drawings to an LDC including a completed Record of Inspection form. The LDC-TSP contract is anticipated to include provisions that deem that unless a Successful Proponent can demonstrate otherwise, the damage will be assumed to be caused by the Successful Proponent. Further provisions of the contract are anticipated to stipulate that within 30 days of receiving a notice from an LDC or existing ISP, the Successful Proponent should remedy the identified damage at its own expense or attempt to otherwise resolve the matter with the LDC or existing ISP through the dispute resolution process provided for in the contract. [6]

Appendix 1: Application Requirements, Templates and Forms provides a template 120-day Indemnity consent agreement.

The 120-day indemnity clause could include:

- The Successful Proponent acknowledges that the LDC is relying on the ISP's own inspection in approving the authorization
- The Successful Proponent understands and accepts all risks with respect to its work
- The Successful Proponent accepts remediation costs with respect to any temporary installations it installs
- Any damage that occurs to the structure within 120 business days of completion of the Successful Proponent's work will be prima facie assumed to have been caused by the Successful Proponent unless it can demonstrate another cause
- While the OTMR process allows time for the review of Successful Proponent-proposed designs, authorizations for the AHSIP process must be stamped by a professional engineer, assuming the LDC does not review or challenge engineering but instead conducts an inspection post deployment
    - The Successful Proponent may either accept the risk of having to redo work if corrections are required or may proactively request pre-deployment or simultaneous inspection by the LDC to confirm what is required with respect to its application
    - If the Successful Proponent compromises safety, electrical system reliability or acts in a manner that is prohibited by the contract, the Successful Proponent's ability to avail itself of the OTMR process can be revoked by an LDC with written reasons

Accessing Buried Routes on Municipal Rights-of-Way

This section outlines the BOW Municipal Consent (and Road Occupancy Permit, where required) Application process. The recommended general steps and PTs to acquire an approved Municipal Consent and Road Occupancy Permit to access a municipal right-of-way (ROW) are as follows:

Table 3: Buried Route on Municipal Rights of Way

	Activity	Process Details
1	**Underground Drawings of proposed route**	• The Successful Proponent prepares underground drawings of the proposed route using any data that is in the BOW as well as any other information sources (e.g., Google maps). • Appendix 1: Application Requirements, Templates and Forms provides Standard Utility Offsets drawing as well as specific drawing requirements that may be used for municipalities who do not currently have such drawings available.
2	**Submissions of preliminary drawings ("mark-up circulation")**	• The Successful Proponent submits preliminary drawings to infrastructure owners via the BOW. • IO circulates preliminary drawings (i.e., conducts a mark-up circulation) to all parties that have infrastructure in the ROW (i.e., municipalities, LDCs, Enbridge and other telecoms). • Respondents review and advise IO of any conflicts between the proposed running line and their buried assets within the specified time (specified in the PT on Table 4) of receiving the mark-up circulation from the BOW. • IO provides revised mark-up circulation to the Successful Proponent. The Successful Proponent uses mark-ups to resolve any conflicts and finalize drawings.

3	**Municipal application submitted to municipality via BOW**
	• Drawings showing potential route
	• Municipal Consent
	• Road Occupancy Permit if required by municipality
		• A complete application includes:
		  o Drawings showing the potential route
		  o Application form for Municipal Consent
		  o Road Occupancy Permit application if required by municipality
		• Appendix 1: Application Requirements, Templates and Forms provides a template for Municipal Consent that may be used by municipalities who do not currently have such forms available.
		• A municipality may require that an ISP obtain a Road Occupancy Permit.
		• IO reviews application to ensure all required information has been submitted and forward complete application to municipality for approval.

4	**Municipality reviews complete application and issues Municipal Consent (with reasonable conditions) and Road Occupancy Permit where applicable.**	• Municipality reviews and approves application. The clock will stop for any issues or deficiencies (including if the municipality has any planned work that may impact the provincially funded project that has not been previously flagged). • The municipality engages directly with the Successful Proponent to address any deficiencies in permit application documents

	Activity	Process Details
5	**Locate request lodged through Ontario One Call**	• Successful Proponents are encouraged to use a dedicated locator. Appendix 4: Ontario One Call provides more information on the Dedicated Locator Model. • The Successful Proponent and municipality work to resolve any potential conflicts (e.g., redesign running line with consent). • Locates are to be conducted within the PT set out in the BBFA (i.e., and noted in Table 4). This is regardless of whether a dedicated locator is used or whether individual infrastructure owners use their own locators.
6	**Advising timing of construction**	• Some municipalities may require a Road Occupancy Permit and have associated timelines and processes that may be adhered to. • Where a Road Occupancy Permit is not required, the Successful Proponent notifies the municipality directly prior to work commencement within the established PT.
7	**ISP performs construction followed by restoration of the ROW**	• The Successful Proponent and municipality work together to resolve any conflicts where existing facilities are not located as shown in the mark-up or locates. • The Successful Proponent performs the construction and restores surfaces, unless the municipality has indicated otherwise, within a reasonable time determined by the municipality.
8	**Notice of work completion and As-built drawings submitted to municipality via BOW**	• The ISP submits to the BOW a Notice of Work Completion and As-Built drawing detailing any amendments from an initial plan. • The BOW forwards the Notice of Work Completion and As-Built drawing to the municipality. • Appendix 1: Application Requirements, Templates and Forms provides a template Notice of Work Completion and As-Built drawing that municipalities may use.
9	**Municipality inspection any restoration work**	• The municipality may inspect restoration work and follows up with the Successful Proponent for any outstanding issues.

Table 4: Performance Timelines for Buried Route on Municipal Rights of Way

	Activity	Performance Timeline (Business Days)	
		Up to 30 km of ground	**30 km + of ground**
1	**Underground Drawings of proposed route**	Successful Proponent with timelines set out in Project Agreement.	
2	**Owners of buried assets review and respond to submissions of preliminary drawings ("mark-up circulation") in BOW**	20	20
3	**Municipal application submitted to municipality via BOW**	Successful Proponent with timelines set out in Project Agreement.	

	Activity	Performance Timeline (Business Days)	
		Up to 30 km of ground	**30 km + of ground**
4	**Municipality reviews complete application and issues Municipal Consent (with reasonable conditions) and Road Occupancy Permit where applicable**	10	15
5	**Infrastructure owners respond to locate request lodged through Ontario One Call** • For both dedicated locator model or standard process (individual infrastructure owners use their own locators)	10	10
6	**Advising timing of construction**[7]	5 (in advance of start date)	5 (in advance of start date)
7	**ISP performs construction followed by restoration of the ROW**	Negotiated with municipality. Successful Proponent with timelines set out in Project Agreement.	
8	**Notice of work completion and As-built drawings submitted to municipality via BOW**	15	20
9	**Municipality inspection any restoration work**	As negotiated with municipality	

Accessing Provincial Highways

This section outlines the Ontario Ministry of Transportation's (**MTO**) Public Service Commitment (**PSC**) of 35 days. A Successful Proponent will require an Encroachment Permit for any installation or works upon, under or within the limits of a Provincial Highway ROW placed by someone other than MTO.

The general steps to acquire an Encroachment Permit to access a Provincial Highway ROW are as follows:

1. The Successful Proponent submits a permit application to MTO via the Highway Corridor Management System. The Successful Proponent notifies the BOW that it has submitted a permit through the Highway Corridor Management System.
2. The MTO has a general PSC of 35 days between the time the Successful Proponent submits their permit application via Highway Corridor Management System to the time the MTO issues its encroachment permit.
3. Successful Proponents are encouraged to raise any concerns with the MTO and the MOI in the event that the MTO does not meet its PSC.

[7] Some municipalities may have shorter timelines for notice of work to issue a Road Occupancy Permit, Successful Proponents may adhere to municipality timelines instead of PT. Where a Road Occupancy Permit is not required, the Successful Proponent notifies the municipality directly within 5 days prior to work commencement.

2.3 Technical Assistance Team (TAT)

IO may establish a Technical Assistance Team (TAT) to assist with various aspects under this Guideline. More specifically, the TAT may:

1. Provide technical assistance, negotiation support and quality assurance to various permit and authorization applicants.
2. Provide extra support for those smaller municipalities and LDCs who may struggle to meet the demands of the AHSIP.
3. Work with Successful Proponents, LDCs, municipalities and other parties involved in the deployment of broadband to reduce barriers for provincially funded projects.

The TAT may also:

1. Provide informal mediation support in mitigating and managing conflicts, supporting collaborative dialogue between parties.
2. Serve a quality assurance and application support function to reduce errors and missing information in applications for authorizations and permits.
3. Offer a technical capacity to help interpret standards, for example supporting ISPs looking to identify feasible new means and methods to accelerate broadband deployment within the regulated safety framework.

Resolving Disputes

The Guideline contemplates and recommends that parties will collaborate to resolve disputes amongst themselves in a spirit of cooperation. Where a resolution cannot be reached, informal disputes may be referred to IO for assistance in finding a resolution parties can agree upon. Parties seeking to make use of IO's mediation support should adopt the use of BOW to ensure IO has sufficient and detailed project information necessary to provide assistance in the dispute. Appropriate parties may choose to escalate the dispute to an appropriate resolution body.

Appendix 1: Application Requirements, Templates and Forms

Application Requirements and Guidance Documents

This section includes reference guidance for:

1. As-Built Drawings and Records
2. Drawing Requirements
3. P.Eng. Design Drawings Requirements and Structural Analysis
4. Standard Utility Offsets

Sample Template and Forms

This section includes the following sample templates and forms:

5. Sample One-Touch Make-Ready Agreement
6. Sample Application for Aerial Attachment
7. Sample Materially Insignificant Declaration
8. Sample Certificate of Deviation
9. Broadband One Window Record of Municipal Access Agreements
10. Sample Application for Municipal Consent
11. Sample Application for Road Occupancy
12. Sample Notice of Completion
13. Sample Record of Inspection Form

As-Built Drawings and Records

GENERAL

Municipal, regulatory and other approving authorities often call upon Successful Proponents (and their engineering consultants) to provide records of completed works.

The purpose of this Guideline is to provide guidance for the preparation of record drawings or documents, as well as the preparation of as-built drawings or documents.

The records, documents and as-built drawings should be supplied to the LDC or Municipality within the PT stipulated in the Guideline.

As a minimum, the drawings / documents should include, but are not limited to:

- Any offset dimensions for above grade installed facilities from the specified locations including poles, down guys, pedestals, fibre-optic splice closures , attachment heights;
- Any offset dimensions for below grade installed facilities from the specified locations, including but not limited to trenches, subsurface chambers, subsurface boxes and vaults;
- All references to pictures taken;
- Any changes to bonding or grounding;
- Any new additional items installed that were not on the original design drawings;
- Any items not installed that were not on the original design drawings; and,
- Any materials that were substituted from the materials on the original design drawings.

The Professional Engineers Ontario (PEO) has published a document titled *Preparing As-Built and Record Documents*, which provides the distinction between As-Built and Record information. These are summarized below.

<u>Records</u>

- Record documents are prepared based on information that was observed by a practitioner or by someone under the practitioner's supervision. After a practitioner has reviewed the record documents and is satisfied that they are accurate, the practitioner must seal the documents.
- For record documents, the original design practitioner's seal should be removed. Practitioners preparing record documents must apply their seal.

<u>As-Built</u>

- As-built documents are prepared based on information gathered during construction or fabrication by someone other than a practitioner or someone under their supervision. Often, the information is provided by the contractor in the form of red-line mark-ups of the design drawings. If a practitioner then proceeds to revise the design documents to incorporate the red-line mark-ups, these documents should be clearly marked as "As-Built Documents" and not sealed.
- As-built documents should not be sealed. The original design engineer's seal must be removed when preparing as-built documents.

Successful Proponents may also want to reference the ESA's Guideline for Third Party Attachments.

AERIAL DRAWINGS

Once the new plant has been installed or the modifications to an existing attachment have been completed (regardless of whether Standard Designs, or an Approved Plan were used), the construction should be inspected and approved in accordance with the following references:

- Ontario Regulation 22/04;
- ESA – Technical Guidelines for Inspection and Approval of Construction; and
- ESA – Guideline for Third Party Attachments

A Professional Engineer or ESA or a Qualified Person identified in the Local Distribution Company's (LDC) Construction Verification Program must prepare a Record of Inspection and a Certificate of Construction.

For telecommunication plant installations, the LDC could complete the construction inspection themselves, have the Proponent do it, or both. It is dependent upon the territory and the LDC involved.

Typically, the inspector (note: this is not an ESA inspector) performs a post construction inspection since pole line installations are visibly verifiable after construction. The exceptions are the installation of anchors and ground rods / plates which are buried and not visibly verifiable after construction. It is advisable to observe these before they are buried or the red lines from the construction contractor will need to be relied upon.

The "Record" of this inspection can be in the form of marking compliances and deviations on the Issued for Construction drawings, work instructions assembled from Standard Designs, or a separate document (for example). Any unacceptable deviations should be noted on the Record of Inspection for resolution by the appropriate party. Once the unacceptable deviations have been remedied, the Record of Inspection can be finalized, signed and dated by the Professional Engineer or ESA or Qualified Person, and a Certificate of Construction can be completed.

The Certificate of Construction can be a separate document or it can be a stamp or signature added to the Record of Inspection and/or construction drawings. It should include the following information:

- name and signature of the inspecting Professional Engineer, ESA representative or qualified person;
- name of the LDC; and,
- confirmation that the construction meets the plan, work instruction, or Standard Design; and date of certification.

The Record of Inspection and Certificate of Construction are to be sent to the LDC who must retain them in the event of an ESA audit.

UNDERGROUND DRAWINGS

For buried telecommunications installations, any necessary design modifications and field changes made by the Successful Proponent or requested by the road authority or municipality during construction are to be included.

It is important to predetermine the level of post construction deliverable that is required, as this will impact the level of inspection that is required. For buried installations, after the construction has been

completed and most items are concealed (except pedestals for example) inspection accuracy will be limited. During construction inspection will provide the best scenario for accuracy.

During construction "field returns" may be Issued for Construction (IFC) drawings marked up by the construction contractor, the construction inspector, or both.

This information is then added to the original IFC drawings and updated to the final version. Refer back to the GENERAL section of this document to determine what the final version of drawing is called (Record Drawing vs. As-Built Drawing).

The information changes from the field returns that are placed on the final drawing are more easily identified with a cloud around the change, along with a drawing version or issuance number in a triangle beside the cloud.

Both the field returns and the final drawing are to be retained by the Proponent as well as copies sent to the approving authorities that permitted the construction.

Drawing Requirements

GENERAL

This section contains guideline information only to assist Successful Proponents / ISPs and governing/approving authorities of rights-of-way such as municipalities with the preparation of drawings that will assist in the permitting process. These guidelines are not prescriptive or binding, rather they provide good practice for drawing preparation.

This Guideline, along with the other appropriate standards form the basis for complete submissions. Successful Proponents should confirm if the minimum drawing requirements are outlined within the LDC Occupancy Agreement or within the Municipal Consent agreement.

In 2002, the ASCE published the ASCE 38-02, "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data" document, outlining a credible system to classify quality of utility location information in design plans. The standard defines SUE requirements and sets out guidance for the collection and depiction of subsurface utility information. ASCE 38-02 sets out guidelines for how to qualify the accuracy of mapping existing infrastructure and relay information to a drawing.

All parties submitting drawings of buried infrastructure should follow the requirements outlined in the American Society of Civil Engineers (ASCE) 38-02, ASCE 75 or CSA S250 for all submitted informationto the BOW. The ASCE 38-02, ASCE 75 is generally two-dimensional data focused and CSA S250 is a more modern quality standard which reflects modern technical developments to specify accuracy in three-dimensional data collection.

BASIC DRAWING REQUIREMENTS

The basic requirements apply to all drawings.

a. Title block (name & address of Successful Proponent, date, north point, drawing/project number, location of project)
b. Name & phone number of the Project Manager for the specific application
c. Language: English/French as appropriate
d. Scale & Dimensions: Metric
e. Scale Size: (e.g., 1:1000, 1: 500, 1: 250)
f. Legend of symbols
g. Key Map
h. Certified standards that have been applied
i. Street names: clearly indicated

PROJECT SPECIFIC DRAWING ORIENTATION REQUIREMENTS

The orientation requirements apply to all drawings.

a. North Point
b. Key Map
c. Street names: clearly indicated
d. Sidewalks, driveways, curbs, trees, buildings, bridges, rivers, railroads, other utilities if they add clarity to specific issues
e. Lot lines and/or buildings, and house numbers
f. Horizontal offset measurements from proposed facilities to existing infrastructure (ie poles, buildings, other utilities, traffic, street lighting, signs, bridges etc.) and above grade elements that may be in conflict (e.g., trees, shrubs, pedestals, street lights, bus shelters etc.)

PROJECT SPECIFIC DRAWING REQUIREMENTS - AERIAL

The project specific requirements apply for every segment proposed on the drawings as they apply to aerial drawings. These sheets contain the specific construction details required for the approving authority (e.g., municipality) to grant permit and for the Successful Proponent (or their contractors) to build. The minimum recommended content to be contained in the drawing area are described below.

North Arrow	Sidewalks where applicable
Legend	Mature tree dripline where applicable
Scale (or NTS if not to scale)	Location of above grade structures
Street Names	Location and depth of ditches
Property Addresses	Location and type of all existing facilities
Building Numbers	Location and type of all proposed facilities
911 Address if applicable	Easements as applicable
Lot number	Property lines
Concession Number	Guard Rails
City, Town or Township	Fencing
Edge of Roadway, pavement and curbs	River features
Horizontal and vertical clearances	Bridges

Notes:

a. Sidewalks, driveways, trees, buildings, bridges, rivers, railroads, other utilities to be included if they add clarity to specific issues
b. Clearly indicated poles and strands and their ownership for aerial designs
c. Proposed cable and Support Strands clearly indicated with heavier line style
d. Proposed cable to be over-lashed to existing support strand and indicate owner of that support strand
e. Indicate which side of the pole the wire is to be attached
f. Slack storage & splice can locations
g. Electrical bonding locations
h. Proposed ground rods
i. Dips and/or risers
j. Ducts, guards, and/or concrete work on poles for dips and/or risers
k. Cable dip/riser details
l. Proposed and existing Successful Proponent anchoring
m. Make ready work anticipated by the Successful Proponent with the Owner's poles or third-party Attachments
n. Railroad, major highway, & river crossing engineering details & associated profiles
o. Pole height contact detail (by drawing or table) indicating dimensions above grade for all existing telecommunications / CATV contacts by name, streetlight contacts, lowest Hydro contacts (neutral, secondary, primary, transformers, unprotected Hydro riser/dips) for both new and existing support strands.
p. Horizontal offset measurements for proposed pole contact close construction to buildings, other non-Owner overhead systems (e.g., traffic, street lighting, signs), and/or bridges.
q. Wiring, wire routing, and Attachment methods to the pole.
r. Caution notes that impact the safe installation of the facilities
s. Clear indication of road names

PROJECT SPECIFIC DRAWING PROVISIONS - UNDERGROUND

The project specific provisions apply for every segment proposed on the drawings as they apply to buried drawings. These sheets contain the specific construction details needed for the approving authority (e.g., municipality) to make a determination of granting a permit and for the Successful Proponent (or their contractors) to build. The minimum recommended content to be contained in the drawing area are described below.

North Arrow	Sidewalks where applicable
Legend	Mature tree dripline where applicable
Scale (or NTS if not to scale)	Location of subsurface structures
Street Names	Location and depth of ditches
Property Addresses	Location and type of all existing facilities
Building Numbers	Location and type of all proposed facilities
911 Address if applicable	Details of proposed road crossing profiles
Lot number	Property lines
Concession Number	Easements as applicable
City, Town or Township	Guard Rails
Edge of Roadway, pavement and curbs	Fencing
Roadway crossings as applicable	Horizontal and vertical clearances
Depth of cover	Joint trench profile, as applicable
Bridges	River features

Notes:

a. Railroad, major highway, & river crossing engineering details & associated profiles should be explicit.
b. Construction notes should detail the size, location and types of conduits, vaults, cables/fibre or other facilities.
c. The method of construction (drilling, boring, ploughing, other) should be provided.
d. Profile view of the buried facilities that displays the depth of installation relative to grade and its position within the trench (trench and road crossing profiles) for all road types.
e. Caution notes that impact the safe installation of the facilities are to be included.
f. A plan view showing proposed running lines in relation to the streets, curbs, driveways, sidewalks and property lines.
g. Profiles of the running line at crossing locations or as otherwise dictated by the Approving Authority for permit acquisition.
h. Representation of new (bold) and existing (normal line weight) Successful Proponent cables and duct.
1) Text labeling the size (diameter) of all existing and new distribution cables shown on the drawing within the Construction Notes block.
i. Representation of other utilities' facilities if required by the Approving Authorities.
j. A Construction Notes block that identifies on an "arb by arb" basis the scope of work to be completed. This information includes (but is not limited to) where to install cable / conduit, vaults, and pits and the proposed method of construction for example.
k. Numeric "arbing" should be sequential throughout the entire project design drawing.
    a. Arbs at match lines from drawing to drawing should be the same numeric value.
    b. Each page requires beginning and ending arbs to show the construction identified on the page.

c. Where possible create match line at a permanent landmark (i.e. utility pole, pedestal, lot line).

l. All risers to aerial drawings should identify associated drawings by their designated drawing number.

m. Construction notes must be specific to the work activity identified in the limits of each individual page as noted by the beginning and ending arbs. If there is an ADDITIONAL NOTES Block, it must contain at a minimum the following mandatory notes as required by the Successful Proponent:

DRAWINGS ARE NOT TO SCALE. THE CONTRACTOR SHOULD VERIFY ALL DIMENSIONS ON SITE AND REPORT ANY DISCREPANCIES TO THE ORIGINATOR BEFORE COMMENCING THE WORK. THE CONTRACTOR MUSTBE FAMILIAR WITH THIS COMPLETE PACKAGE, INCLUSIVE OF ALL EXHIBITS PRIOR TO COMMENCING WORK.

n. Details for any equipment to be installed are to be included only on the page where it is represented in the plan view.

o. All pedestals should have an inset on the drawing showing both the dimensions of the vault and above grade portions.

p. When required by the approving authority (e.g., municipality), include tree canopy dimensions and tree protection details on the page where it is represented in the plan view.

q. For underground projects, locations of vaults are to be shown relative to curbs or other fixed monuments.

r. A full Bill of Material should be included if required from the approving authorities (e.g., municipalities).

MULTI-SHEET PROVISIONS

All sheets of multi-sheet drawings should be of the same type within a specific project.

a. All information sheets (Schedules, Exhibits) to be identified by alphabetical designation in the title block as A, B, C and so on.

b. All drawing sheet numbering should include the drawing number and total number of drawings, as “Drawing 1 of 1,” “Drawing 1 of 2,” or “Dwg 1 of 2”, “Dwg 2 of 2” and should be uniform for all related sheets.

c. The drawing area indicating the proposed construction should be oriented such that North points to the top of sheet by an industry accepted North Arrow symbol.

d. Where projects have both aerial and buried requirements, aerial portions and buried portions should be on separate design drawings, each following their design requirements.

e. Continuation notes (where the break occurs to be continued on a different page) should be clearly indicated.

TITLE BLOCK PROVISIONS

The title block should contain the minimum information stated below.

a. Key map
b. Legend
c. Successful Proponent Logo
d. Revision Information
e. Design Firm Logo, Address, Phone Number (if a Design Firm is used)
f. Project Number
g. Project Data: Project Type, Project Name, Scale, Date, Drawing Number and the sheet number of the total number included

COVER SHEET

The first sheet of a drawing set should be a "Cover Page" and always contain the following information:

a. Successful Proponent logo and applicable office location
b. Project Name as provided by Successful Proponent
c. Project Location, including street and city reference
d. Project Type (e.g., Buried Fibre Optic Installation)
e. Successful Proponent Project Number
f. Design Firm Project Number
g. Drawing List (use full titles; e.g.., 'SCHEDULE A – KEY MAP')
h. Design firm logo, address, phone number
i. Drawing date to match the latest revision date; positioned at bottom centre of page under Design Firm logo
j. Map of sheets, outlining the sheet numbers on a map
k. Initial date of drawing creation

<u>Bottom of Page:</u>

l. Block with Successful Proponent contact for approving authority (e.g., municipality) information
m. Block with Successful Proponent Planning contact information
n. Block with approving authority (e.g., municipality) contact information
o. Number of page designation required (alphabetical or numerical or both)
p. Revision block showing all changes; identify change and drawing page number and date
q. Permit Kilometers block showing totals for the project

SPECIALTY PERMITS

Specialty permits may be required based on the route selected and whether the proposed running line for the facilities falls within the jurisdiction of the governing authority (e.g., municipality). The Successful Proponent will be required to contact or access published materials in order to determine any specific drawing requirements for each type of permit.

SAMPLE DRAWINGS

Sample drawings are shown below for a typical telecommunications installation.

ISP COMPANY LOGO

PROJECT NAME:	CRAIG RD. FIBRE INSTALLATION
PROJECT LOCATION:	CRAIG RD., WHITE ST. TO JOHN RD.
PROJECT TYPE:	AERIAL FIBRE OPTIC INSTALLATION
ISP PROJECT #:	XXXXX
ENGINEERING PROJECT #:	2021-XXXX

DRAWING LIST

SITE SPECIFIC DRAWINGS	DRAWING NUMBER
KEY MAP	A
NOTES	B
LEGEND	C
AERIAL TYPICALS	D
CRAIG RD.	1 OF 2
CRAIG RD. & JOHN RD.	2 OF 2
DESIGN DATA	E1-E2
SPLICE SCHEMATIC	F
BILL OF MATERIALS	G

POLES WITH EXISTING ATTACHMENT	0
ADDITIONAL POLES REQUESTED FOR ATTACHMENT	0

PERMIT METERS	
TOTAL	0

ROUTE SUMMARY	
CABLE TYPE	###
STRAND SIZE	###

POLE OWNER DISTRIBUTION	
HYDRO	0
ISP	0

MAKE READY SUMMARY	
HYDRO	0
TOWN/CITY OF ----	0
ISP 1	0
ISP 2	0

CONSULTANT'S LOGO

TODAY'S DATE

CONSULTANT CONTACT:	ISP CONTACT:
JANE DOE	JOE SMITH
PHONE: (705) 444-4444	PHONE: (705) 555-555
JANE.DOE@CONSULTANT.COM	JOE.SMITH@ISP.COM

SCHEDULE 'A'
KEYMAP

CITY / TOWNSHIP OF ANYWHERE

CONSULTANT CONTACT:	ISP CONTACT:
JANE DOE	JOE SMITH
PHONE: (705) 444-4444	PHONE: (705) 555-555
JANE.DOE@CONSULTANT.COM	JOE.SMITH@ISP.COM

ADDITIONAL NOTES:

DRAWINGS ARE NOT TO BE SCALED. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON SITE AND REPORT ANY DISCREPANCIES TO THE ORIGINATOR BEFORE COMMENCING THE WORK. THE CONTRACTOR MUST BE FAMILIAR WITH THIS COMPLETE PACKAGE, INCLUDING OF ALL EXHIBITS PRIOR TO COMMENCING WORK.

COA

P. ENG STAMP

ISP LOGO

NO.	DATE	DESCRIPTION	BY	APP
3	DD-MM-YYYY	ISSUED FOR APPROVAL	--	--
2	DD-MM-YYYY	PRELIMINARY	--	--
1	DD-MM-YYYY	SHEETS CREATED	--	--

CONSULTANT LOGO

PROJECT TYPE: AERIAL FIBRE OPTIC INSTALLATION		
PROJECT NAME: CRAIG RD. FIBRE INSTALLATION		
DRAWN BY: --	DESIGNED BY: --	CLIENT NO.: XXXXX
CHECKED BY: --	APPROVED BY: --	SCALE: N.T.S.
DRAWING NO.: A		DATE: DD-MM-YYYY

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SCHEDULE 'B' NOTES

ISP REQUIREMENTS:

DRAWING NOTES:

CONSTRUCTOR INSTALLATION REQUIREMENTS:

CONSTRUCTOR DOCUMENTATION REQUIREMENTS

AERIAL CONSTRUCTION

KEY MAP (N.T.S)

CITY / TOWNSHIP OF ANYWHERE

CONSULTANT CONTACT:	ISP CONTACT:
JANE DOE	JOE SMITH
PHONE: (705) 444-4444	PHONE: (705) 555-555
JANE.DOE@CONSULTANT.COM	JOE.SMITH@ISP.COM

ADDITIONAL NOTES:

DRAWINGS ARE NOT TO BE SCALED. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON SITE AND REPORT ANY DISCREPANCIES TO THE ORIGINATOR BEFORE COMMENCING THE WORK. THE CONTRACTOR MUST BE FAMILIAR WITH THIS COMPLETE PACKAGE, INCLUSIVE OF ALL EXHIBITS PRIOR TO COMMENCING WORK.

COA

P. ENG STAMP

ISP LOGO

NO.	DATE	DESCRIPTION	BY	APP
3	DD-MM-YYYY	ISSUED FOR APPROVAL	--	--
2	DD-MM-YYYY	PRELIMINARY	--	--
1	DD-MM-YYYY	SHEETS CREATED	--	--

CONSULTANT LOGO

CONSULTANT'S NO: 2021-XXXX

PROJECT TYPE: AERIAL FIBRE OPTIC INSTALLATION

PROJECT NAME: CRAIG RD. FIBRE INSTALLATION

DRAWN BY:	DESIGNED BY:	CLIENT NO.:
--	--	XXXXX
CHECKED BY:	APPROVED BY:	SCALE:
--	--	N.T.S.
DRAWING NO.:		DATE:
B		DD-MM-YYYY

SCHEDULE 'C' LEGEND

LINETYPES

GENERAL
NEW UNDERGROUND
EXISTING UNDERGROUND
NEW AERIAL COAX
NEW AERIAL FIBRE
EXISTING AERIAL FIBRE
EXISTING AERIAL COAX
NEW AERIAL STRAND
EXISTING AERIAL STRAND
FENCE
GUARD RAIL
RAILROAD
CENTERLINE
RIGHT-OF-WAY
CURB
SIDEWALK
DITCH
UNDERGROUND UTILITIES (EXISTING)

HYDRO
TRAFFIC SIGNAL
ISP 1
ISP 2
ISP 3
GAS
WATER
STORM SEWER
SANITARY SEWER
PIPELINE
ABANDONED UTILITY

ENGINEERING SYMBOLS

UNDERGROUND/AERIAL	EXISTING	NEW
HANDHOLE	HH	HH
MANHOLE	MH	MH
PEDESTAL		
NODE		
GROUND ROD		
DOWN GUY & ANCHOR		
SIDEWALK DOWN GUY & ANCHOR		
LOOPBACK (STORAGE SLACK)		30m
SPAN GUY		
OPTICAL SPLICE ENCLOSURE		
COPPER SPLICE		
COIL (STORAGE SLACK)		15m
CABLE RISER (DIP)		
CROSSOVER CLAMP		

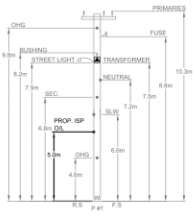
GENERAL

		HP# POLE#
WOODEN POLE	●	
CONCRETE POLE	○	
STEEL POLE		
GAS/WATER VALVE		
TRAFFIC CONTROL BOX		
SIGN	×	
SHRUB		
TREE		
STORM SEWER MANHOLE		
SANITARY SEWER MANHOLE		
HYDRO MANHOLE		
WATER MANHOLE		
FIRE HYDRANT		
CATCH BASIN		
FOREIGN PEDESTAL		
HYDRO VAULT		
FOREIGN HANDWELL	HW	
HORIZONTAL CONTROL MONUMENT		
TRANSFORMER VAULT		
IRON BAR		SIB
STANDARD IRON BAR		
WORK OPERATION		
METRE READING BOX	METER READING	

CONSTRUCTION NOTES

1 TO 2 OVERLASH 44.6m OF NEW 72 FOC TO EXISTING 12 FOC & 1" STRAND.
A INSTALL NEW ANCHOR
B1 BOND STRAND AND LEAVE SUFFICIENT LENGTH OF COIL FOR HYDRO CONNECTION TO MGN
B2 BOND STRAND TO EXISTING VERTICAL GROUND WIRE
D INSTALL NEW RISER
DG INSTALL DOWN GUY ON EXISTING ANCHOR
FN FOSC NEW
G INSTALL GROUNDING ELECTRODE, CONDUCTOR AND CONNECT TO MESSENGER STRAND
LB NEW LOOPBACK (60m SLACK STORE)
LC NEW POLE MOUNT LCP
MR MAKE READY LOCATION
RA REMOVE EXISTING ANCHOR
RG REMOVE EXISTING DOWN GUY
SB STRAND TO STRAND BOND
SG NEW SPAN GUY
SS SLACK SPAN
TT TREE TRIMMING
XC NEW CROSSOVER CLAMP

POLE PROFILE (TYPICAL)



(ENGINEERING) NO.	HP1
POLE NO.	52557
REFERENCE NO.	4524
HEIGHT	55'
CLASS/CIRCUMFERENCE	2
YEAR OF THE POLE	-
TX NO.	-
HYDRO GROUND (Y/N)	Y
S/L GROUNDED (Y/N)	N

KEY MAP (N.T.S)

CITY / TOWNSHIP OF ANYWHERE

CONSULTANT CONTACT:	ISP CONTACT:
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JANE.DOE@CONSULTANT.COM	JOE.SMITH@ISP.COM

ADDITIONAL NOTES:

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COA

P. ENG STAMP

ISP LOGO

NO.	DATE	DESCRIPTION	BY	APP
3	DD-MM-YYYY	ISSUED FOR APPROVAL	--	--
2	DD-MM-YYYY	PRELIMINARY	--	--
1	DD-MM-YYYY	SHEETS CREATED	--	--

CONSULTANT LOGO

CONSULTANT'S NO: 2021-XXXX

PROJECT TYPE: AERIAL FIBRE OPTIC INSTALLATION

PROJECT NAME: CRAIG RD. FIBRE INSTALLATION

DRAWN BY:	DESIGNED BY:	CLIENT NO.:
--	--	XXXXX
CHECKED BY:	APPROVED BY:	SCALE:
--	--	N.T.S.
DRAWING NO.:		DATE:
C		DD-MM-YYYY

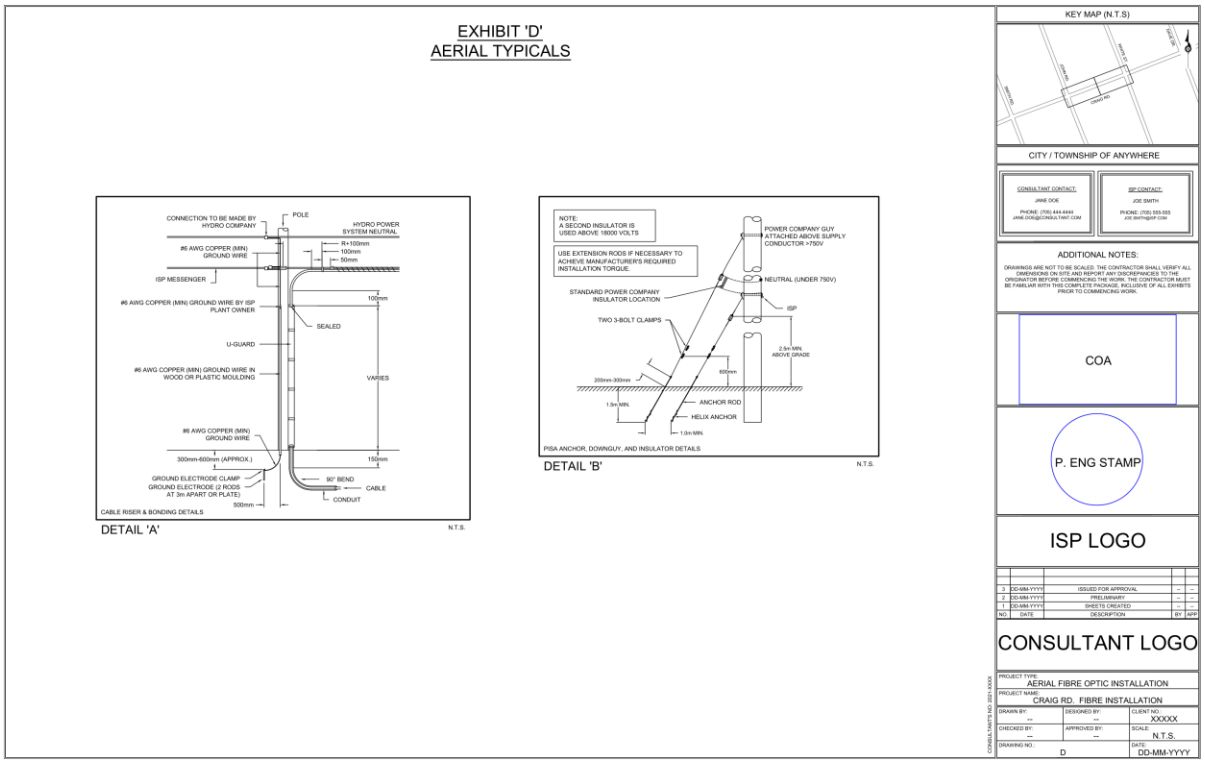
EXHIBIT 'D'
AERIAL TYPICALS
DETAIL 'A'
N.T.S.
DETAIL 'B'
N.T.S.
KEY MAP (N.T.S)
CITY / TOWNSHIP OF ANYWHERE
CONSULTANT CONTACT:
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PHONE: (705) 444-4444
JANE.DOE@CONSULTANT.COM
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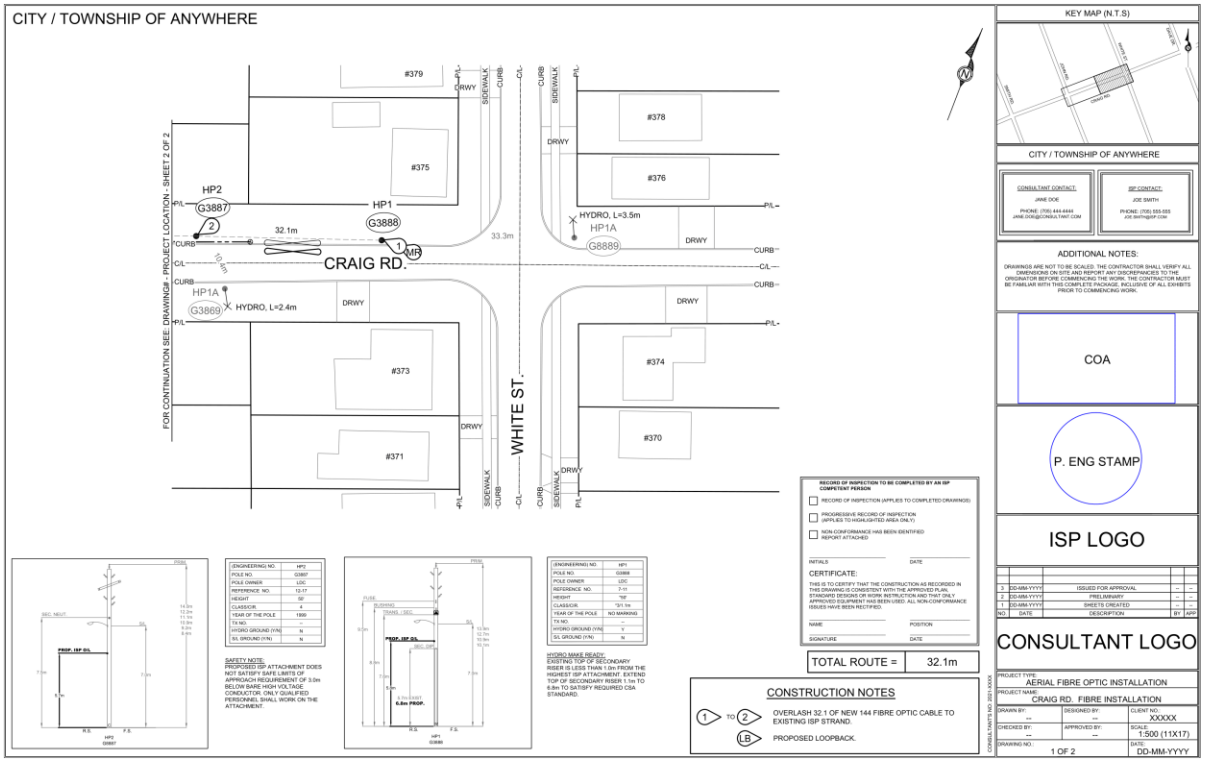
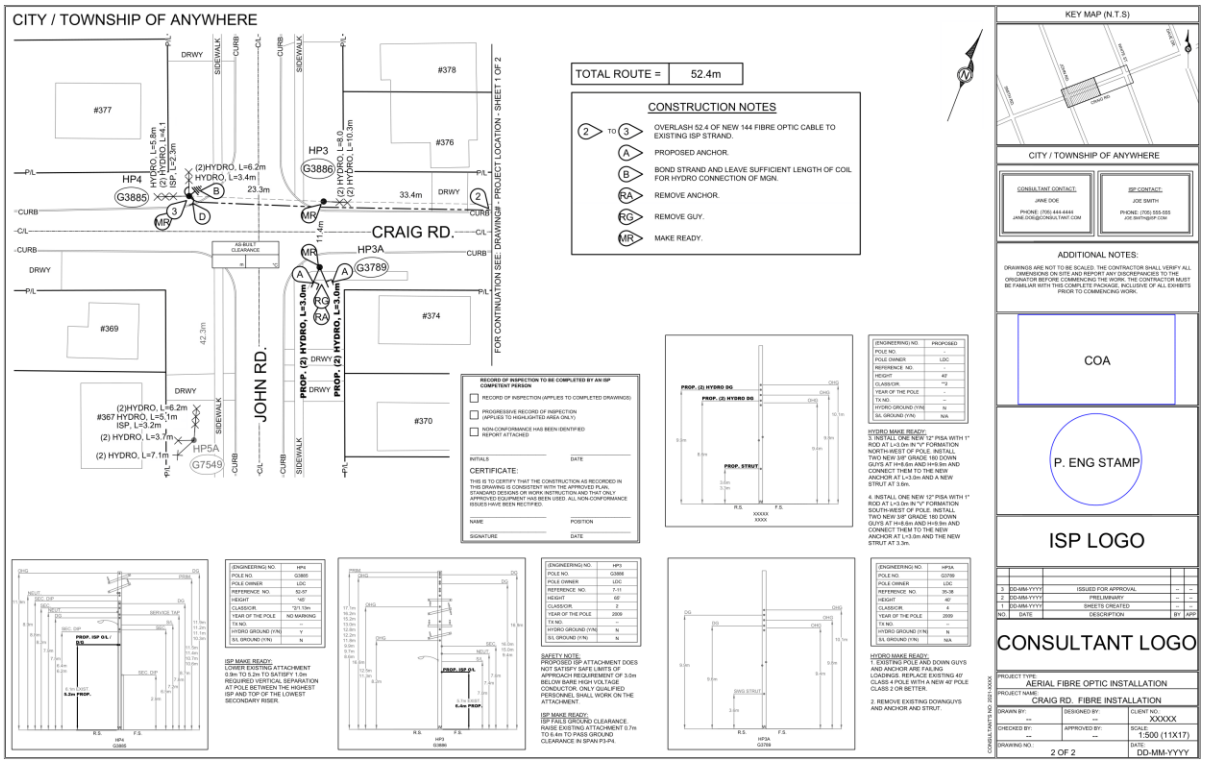
COA
P. ENG STAMP
ISP LOGO
CONSULTANT LOGO
PROJECT TYPE: AERIAL FIBRE OPTIC INSTALLATION
PROJECT NAME: CRAIG RD. FIBRE INSTALLATION
DRAWN BY: --
DESIGNED BY: --
CLIENT NO.: XXXXX
CHECKED BY: --
APPROVED BY: --
SCALE: N.T.S.
DRAWING NO.: D
DATE: DD-MM-YYYY


CITY / TOWNSHIP OF ANYWHERE
FOR CONTINUATION SEE DRAWINGS - PROJECT LOCATION - SHEET 2 OF 2
CRAIG RD.
WHITE ST.
HP1
HP2
HP1A
HYDRO, L=3.5m
HYDRO, L=2.4m
32.1m
33.3m
RECORD OF INSPECTION TO BE COMPLETED BY AN ISP COMPETENT PERSON
RECORD OF INSPECTION (APPLIES TO COMPLETED DRAWINGS)
PROGRESSIVE RECORD OF INSPECTION (APPLIES TO HIGHLIGHTED AREA ONLY)
NON CONFORMANCE HAS BEEN IDENTIFIED REPORT ATTACHED
CERTIFICATE:
THIS IS TO CERTIFY THAT THE CONSTRUCTION AS RECORDED IN THIS DRAWING IS CONSISTENT WITH THE APPROVED PLAN, APPROVED SPECIFICATIONS, INSTRUCTION AND THAT ONLY APPROVED EQUIPMENT WAS BEEN USED. ALL NON-CONFORMANCE ISSUES HAVE BEEN RECTIFIED.
TOTAL ROUTE = 32.1m
CONSTRUCTION NOTES
OVERLASH 32.1 OF NEW 144 FIBRE OPTIC CABLE TO EXISTING ISP STRAND.
PROPOSED LOOPBACK.
KEY MAP (N.T.S)
CITY / TOWNSHIP OF ANYWHERE
ADDITIONAL NOTES:
COA
P. ENG STAMP
ISP LOGO
CONSULTANT LOGO
PROJECT TYPE: AERIAL FIBRE OPTIC INSTALLATION
PROJECT NAME: CRAIG RD. FIBRE INSTALLATION
SCALE: 1:500 (11X17)
DRAWING NO.: 1 OF 2
DATE: DD-MM-YYYY


CITY / TOWNSHIP OF ANYWHERE
TOTAL ROUTE = 52.4m
CONSTRUCTION NOTES
OVERLASH 52.4 OF NEW 144 FIBRE OPTIC CABLE TO EXISTING ISP STRAND.
PROPOSED ANCHOR.
BOND STRAND AND LEAVE SUFFICIENT LENGTH OF COIL FOR HYDRO CONNECTION OF MGN.
REMOVE ANCHOR.
REMOVE GUY.
MAKE READY.
CRAIG RD.
JOHN RD.
FOR CONTINUATION SEE: DRAWING#: PROJECT LOCATION - SHEET 1 OF 2
KEY MAP (N.T.S)
ADDITIONAL NOTES:
COA
P. ENG STAMP
ISP LOGO
CONSULTANT LOGO
AERIAL FIBRE OPTIC INSTALLATION
CRAIG RD. FIBRE INSTALLATION
2 OF 2
DD-MM-YYYY

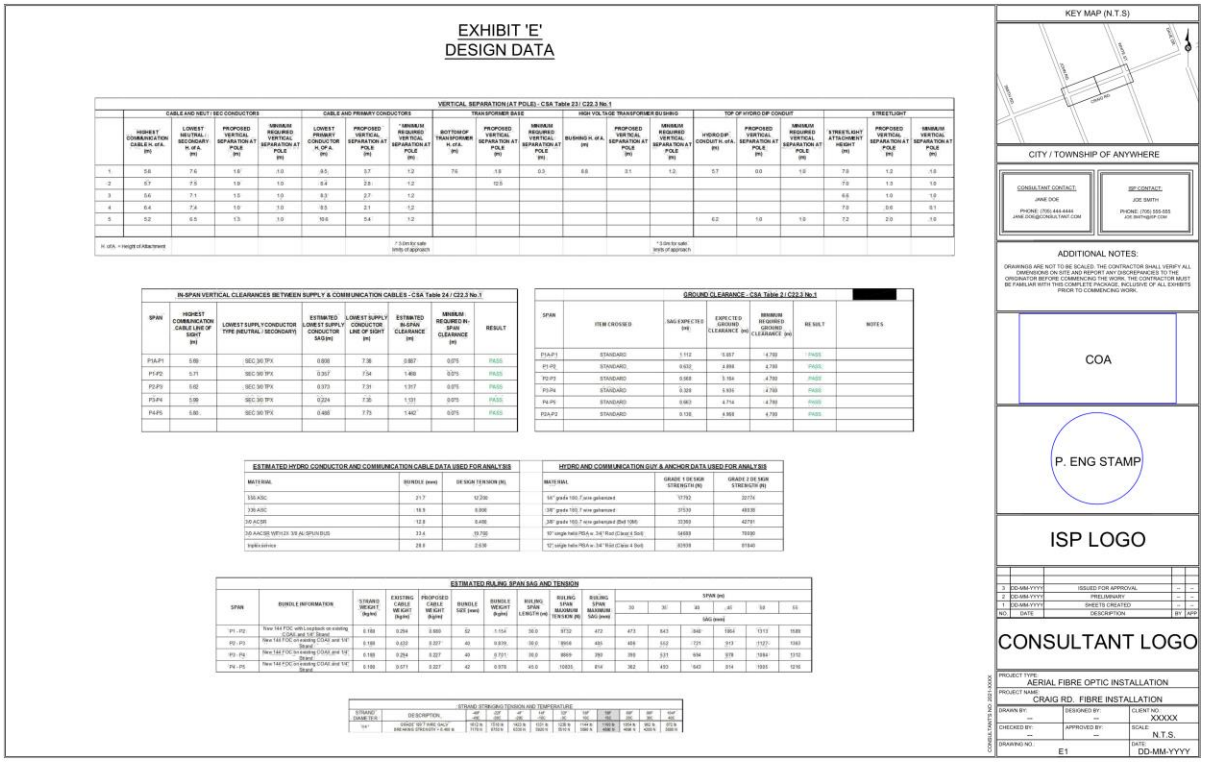


EXHIBIT 'E'
DESIGN DATA
VERTICAL SEPARATION (AT POLE) - CSA Table 23 / C22.3 No.1
IN-SPAN VERTICAL CLEARANCES BETWEEN SUPPLY & COMMUNICATION CABLES - CSA Table 24 / C22.3 No.1
GROUND CLEARANCE - CSA Table 2 / C22.3 No.1
ESTIMATED HYDRO CONDUCTOR AND COMMUNICATION CABLE DATA USED FOR ANALYSIS
HYDRO AND COMMUNICATION GUY & ANCHOR DATA USED FOR ANALYSIS
ESTIMATED RULING SPAN SAG AND TENSION
KEY MAP (N.T.S)
CITY / TOWNSHIP OF ANYWHERE
ADDITIONAL NOTES:
COA
P. ENG STAMP
ISP LOGO
CONSULTANT LOGO
AERIAL FIBRE OPTIC INSTALLATION
CRAIG RD. FIBRE INSTALLATION
E1
N.T.S.
DD-MM-YYYY

EXHIBIT 'E'
DESIGN DATA

Project Analysis Summary

Lead: Lead Location: P1

Load	Pole Length/Class	Maximum Load %						Pole Strength Remaining	Loading Adjusted by Strength?	Clearance Violations Present?
		Pole	Guy	Anchor	Cross Arm	Insulator	Sidewalk Brace			
Measured Design	15.2 m/3	14.84 Nom stress at 5.00 m	No Data	No Data	No Data	No Data	No Data	85.08%	Y	N

Lead: Lead Location: P2

Load	Pole Length/Class	Maximum Load %						Pole Strength Remaining	Loading Adjusted by Strength?	Clearance Violations Present?
		Pole	Guy	Anchor	Cross Arm	Insulator	Sidewalk Brace			
Measured Design	10.2 m/4	15.50 Nom stress at 2.00 m	No Data	No Data	No Data	No Data	No Data	100%	Y	N

Lead: Lead Location: P3A

Load	Pole Length/Class	Maximum Load %						Pole Strength Remaining	Loading Adjusted by Strength?	Clearance Violations Present?
		Pole	Guy	Anchor	Cross Arm	Insulator	Sidewalk Brace			
Measured Design	13.7 m/3	15.50 Nom stress at 2.00 m	19.70 (Guy#1)	5.48 (Anchor#1)	No Data	No Data	No Data	100%	Y	N

Lead: Lead Location: P3

Load	Pole Length/Class	Maximum Load %						Pole Strength Remaining	Loading Adjusted by Strength?	Clearance Violations Present?
		Pole	Guy	Anchor	Cross Arm	Insulator	Sidewalk Brace			
Measured Design	15.2 m/3	27.1 Nom stress at 5.00 m	1.23 (Guy#Guy#1)	No Data	No Data	No Data	No Data	100%	Y	N

Lead: Lead Location: P4A

Load	Pole Length/Class	Maximum Load %						Pole Strength Remaining	Loading Adjusted by Strength?	Clearance Violations Present?
		Pole	Guy	Anchor	Cross Arm	Insulator	Sidewalk Brace			
Measured Design	12.2 m/4	140.84 Nom stress at 5.00 m	125.1 (Guy#2)	110.99 (Anchor#1)	No Data	No Data	61.75 (Sidewalk#Sidewalk#1)	100%	Y	N
Recommended Design	12.2 m/2	41.25 Nom stress at 5.00 m	75.67 (Guy#3)	64.73 (Anchor#2)	No Data	No Data	61.75 (Sidewalk#Sidewalk#2)	100%	Y	N

Lead: Lead Location: P4

Load	Pole Length/Class	Maximum Load %						Pole Strength Remaining	Loading Adjusted by Strength?	Clearance Violations Present?
		Pole	Guy	Anchor	Cross Arm	Insulator	Sidewalk Brace			
Measured Design	10.6 m/2	14.07 Nom stress at 10.00 m	28.17 (Guy#Guy#2)	27.39 (Anchor#1)	No Data	No Data	No Data	100%	Y	Y

Lead: Lead Location: P5

Load	Pole Length/Class	Maximum Load %						Pole Strength Remaining	Loading Adjusted by Strength?	Clearance Violations Present?
		Pole	Guy	Anchor	Cross Arm	Insulator	Sidewalk Brace			
Measured Design	13.7 m/2	24.44 Nom bending	38.17 (Guy#3)	41.03 (Anchor#2)	No Data	No Data	No Data	100%	Y	N

PROPOSED DOWN GUY AND ANCHOR SUMMARY								INSTALLED BY CONSTRUCTOR	
POLE NUMBER	DESCRIPTION	NOTE	STREET NAME	LEAD DISTANCE (m)	GUY DESIGN TENSION (N)	MINIMUM STRAND SIZE	ANCHOR SIZE	INSTALLATION TORQUE (lbf)	DATE OF INSTALLATION
P4A	PROPOSED HYDRO V-GUY (H=9.9m) AND ANCHOR	PROPOSED	MONAGHAN RD	3.0m	19798	PROPOSED 3/8" grade 180	PROPOSED 12" Single Helix PSA with 1" rod (NORTH-WEST OF POLE)		
	PROPOSED HYDRO V-GUY (H=8.6m) AND ANCHOR	PROPOSED			24280	PROPOSED 3/8" grade 180			
P4A	PROPOSED HYDRO V-GUY (H=9.9m) AND ANCHOR	PROPOSED	MONAGHAN RD	3.0m	30629	PROPOSED 3/8" grade 180	PROPOSED 12" Single Helix PSA with 1" rod (SOUTH-WEST OF POLE)		
	PROPOSED HYDRO V-GUY (H=8.6m) AND ANCHOR	PROPOSED			36324	PROPOSED 3/8" grade 180			
ALL EXISTING DOWN GUYS AND ANCHORS ARE ADEQUATE UNLESS NOTED ABOVE									

KEY MAP (N.T.S)

CITY / TOWNSHIP OF ANYWHERE

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COA

P. ENG STAMP

ISP LOGO

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1	DD-MM-YYYY	SHEETS CREATED	--	--

CONSULTANT LOGO

CONSULTANT'S NO: 2021-XXX

PROJECT TYPE: AERIAL FIBRE OPTIC INSTALLATION
PROJECT NAME: CRAIG RD. FIBRE INSTALLATION

DRAWN BY: --	DESIGNED BY: --	CLIENT NO.: XXXXX
CHECKED BY: --	APPROVED BY: --	SCALE: N.T.S.
DRAWING NO.: E2		DATE: DD-MM-YYYY

EXHIBIT 'G'
BILL OF MATERIALS

AERIAL																																					
CABLE															STRAND																			POLES			MAKE READY		
DRAWING NO.	AERIAL FIBRE TAGS	288 FOC	144 FOC	48 FOC	24 FOC	600 COAX	540 COAX	625 COAX	QR715 COAX	750 COAX	LOOPBACKS	SPLICE ENCLOSURE	OVERLASH	TREE TRIMMING	STRAND - 3/8"	STRAND - 1/2"	SIDEWALK ANCHOR/PIPE	EXTENSION SIDEARM	LASH WIRE	GROUND WIRE #6 COPPER	GROUND ROD 16mm (5/8") x 2400mm (8')	3/8" OVERHEAD GUY	1/2" OVERHEAD GUY	1" DOWNGUY	3/8" DOWNGUY	SIDEWALK STRUT	ANCHORS 16mm (5/8") ROD	ANCHORS 19mm (3/4") ROD	SPLICE TRAYS	"C" CLAMP 100mm (4") GAL.	TRANSFER	U-GUARD	RISER POLES	# OF POLE ATTACHMENTS	MAKE READY - EXISTING ISP	MAKE READY - ISP	MAKE READY - HYDRO
1			35m								1																											1
2			104m																						2	2										2		1
TOT			84.5								1														2	2										2		2

KEY MAP (N.T.S)

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CONSULTANT LOGO

CONSULTANT'S NO: 2021-X

PROJECT TYPE: AERIAL FIBRE OPTIC INSTALLATION
PROJECT NAME: CRAIG RD. FIBRE INSTALLATION

DRAWN BY: --	DESIGNED BY: --	CLIENT NO.: XXXXX
CHECKED BY: --	APPROVED BY: --	SCALE: N.T.S.
DRAWING NO.: G		DATE: DD-MM-YYYY

P.Eng. Design Drawings, Structural Analysis and Design Provisions

GENERAL

This document, relating to the design and construction of telecommunications facilities either in proximity to Local Distribution Companies' (LDC) electrical plant, or in proximity to buried utilities is intended to be used in conjunction with the latest issuances of Ontario Reg. 22/04, the Electrical Safety Authority (ESA) Bulletins and requirements, CSA Standards 22.3 No.1 (Overhead Systems) and CSA Standards 22.3 No. 7 (Underground Systems), and *the Occupational Health and Safety Act* (OHSA). The Successful Proponent is responsible for compliance with all rules and applicable municipal, provincial, or federal laws, codes, and regulations. In all situations, it is the responsibility of the Successful Proponent to be familiar with and adhere to the OHSA, CSA standards during installation, maintenance, and related activities involving their facilities attached to any LDCs facilities.

OVERVIEW

Aerial

The Successful Proponent is to be aware that LDC's poles are part of an overhead electrical distribution system, and that all of the power lines attached to the poles should be presumed energized at all times. All persons, including the Successful Proponent's employees and contractors, must exercise caution and take all reasonable precautions when working on or near electric utility poles and/or near high-voltage lines.

Where Federal and Provincial regulations directly address construction activity in the vicinity of overhead electric lines, and violators are subject to criminal penalties and civil liabilities, these laws apply to employers, contractors, owners and any other parties or persons responsible for or engaged in construction activities.

The Distribution Pole includes:

a) Pole-Top Zone
b) The Electrical Supply Zone or Supply Space
c) Neutral Zone or Clearance Zone
d) Communications Space

The Pole-Top Zone is the pole space located at the top of the pole above the energized portion of the pole.

The electrical supply zone or supply space is reserved for electrical supply facilities. Most supply space wiring consists of uninsulated conductors. The supply space may include separate facilities operating at different voltages; for safety reasons, typically the highest voltages are located uppermost on the pole.

The neutral zone is the safety zone, or "neutral" space, between the lowest electrical supply conductor or equipment and the highest communication cables or equipment.

The communications space is the lower portion of pole containing telecommunications attachments, and other communications cables.

Underground

All proposed buried telecommunications facilities must be designed and installed in compliance with local, provincial, and national standards. The running lines for cable must comply with the approved

offsets defined by the ESA (Regulation 22/04) governing road and municipal authority. Additional approvals may also be required for access to other rights-of-way including creek or waterway crossings, or railway crossings and facilities must be designed and installed in compliance with the requirements of the respective governing authority (e.g., municipality).

DESIGN, ENGINEERING AND CONSTRUCTION PROVISIONS

Design Considerations - Aerial

1. The design should be designed to meet CSA 22.3 No. 1.
2. Telecommunication attachments should be installed as high as permissible within the Communication Space on the pole.
3. Where there are no previous attachments on the pole, the first attachment should typically be placed at the highest position that complies with the minimum clearance, separation and spacing (clearance) requirements specified by CSA 22.3 No. 1 specifications, as amended from time to time, and the standards of the LDC. In such cases, subsequent attachments should be made at the next highest position while maintaining minimum required clearances from the ground, supply and other communication facilities.
4. If a pre-existing violation is identified, new attachments can be installed only if the new attachments can meet CSA 22.3 No. 1 specifications, CSA C22.3 No. 5.1, clearance requirements, or the existing attachments are adjusted to provide adequate clearance.
5. For attachments proposed on LDC poles located on private property, prior permission must be obtained from the property owners. An LDC assumes no responsibility for securing any permission that may be required, and the Successful Proponents should not assume that permission exists based solely on the presence of an LDC's facilities.
6. An LDC will not obtain or negotiate rights-of-way for the benefit of a Successful Proponent and no guarantee is given by an LDC of permission, from property owners, municipalities or others. Successful Proponents should in all cases be solely responsible for obtaining consent, where necessary, from landowners and governmental entities involved.

Construction Considerations - Aerial

1. Communications cables are typically designed for installation on the same side of poles (typically the street side) as LDC's neutral and secondary conductors and any existing communications cables. In the absence of any existing installations on LDC's poles, communications cables should be installed on the street side of poles.
2. Communications cables should be designed for installation within the communication space as high off the ground as possible and to conform to CSA 22.3 No. 1 specifications and/or LDC's Standards.
3. The Successful Proponent must ground and bond its messenger in accordance with requirements of the CSA 22.3 No. 1 specifications and the OHSA, as amended from time-to-time. Only LDC and its approved contractors are authorized to bond the telecom bonding wire to the LDC neutral conductor. The Successful Proponent should leave on the pole a coil of bonding wire of sufficient length to allow LDC or its contractor to uncoil the wire and make the final bonding connection to the LDC neutral conductor.
4. Communication cables should be identified by tagging every cable at every pole. Existing untagged cables should be identified at every pole during normal maintenance. Untagged cables may be treated as unauthorized attachments.

5. The Successful Proponent is responsible for coordinating adjustments of existing attachments with appropriate third parties; prior permission to adjust existing cable facilities between any new Successful Proponent and any existing attacher should occur before any adjustments are made.
6. Horizontal or vertical extension arms should not be used by the Successful Proponent to achieve required vertical clearances and/or horizontal separation.
7. The Successful Proponent should avoid 3rd party cable risers on three-phase primary cable riser poles, or poles with pole-top switches.
8. Only one U-Guard is allowed per pole.
9. Overlashing should be permitted only on cable attachments and telecommunications attachments. The owner of the cable supporting the overlashed installation is responsible for maintaining both the supporting cable and the overlashed cable in compliance with CSA 22.3 No.1.
10. Overlashing to a Successful Proponent's existing cable can be accommodated under the same design criteria as other communication installations, including post-installation inspection and pole loading. The Successful Proponent may apply for a materially insignificant attachment if the results support the submission of a declaration.
11. Make-Ready work should be performed before any proposed overlashing will be performed.
12. The communications grounding system should be on the opposite side of the pole from LDC ground wire with the grounds connected together at the base of the pole.
13. All guying should be considered as part of the structure, with a design/installation consisting of proper tension to support the attachment(s). Guying locations are typically installed at Successful Proponent's dead-ended facilities, line deflections and/or when a LDC guy is present. Guying adds stability to a pole structure, with one end of the cable secured to the pole structure, and the other anchored to the ground at a distance from the pole structure's base.
14. Each company should independently guy and anchor its respective facilities. Guying is required for third-party attachments in all cases where such facilities add an unbalanced tension load to the pole.
15. Guy anchors are part of an LDC's post-Installation Inspection review. Communication cables must be properly guyed and anchored before tensioning. Successful Proponent must install separate guying and anchoring devices to secure their cables. The Successful Proponent is responsible for ensuring that communication cables are independently guyed and anchored.
16. Attachment to LDC's anchors are not permitted.
17. The Successful Proponent should coordinate with the LDC for all vegetation trimming necessary on or around its attachments, both during and after installation. The LDC may or may not provide any vegetation trimming services for communication facilities.

<u>Design Considerations – Underground</u>

The design should be designed to meet CSA 22.3 No. 1. The telecommunication plant should adhere to (but not limited to) the following to satisfy client, Right of Way authority and applicable specifications requirements;

- minimum depths of cover;
- minimum separation from other infrastructure or objects;
- grounding and bonding; and,
- joint trenching design where applicable.

<u>Construction Considerations – Underground</u>

The Successful Proponent should ensure that a Road Occupancy Permit (ROP) and/or Municipal Consent (MC) is obtained prior to commencing any activities in the ROW. All conditions of the ROP and any conditions required by the Municipal Access Agreement (MAA) should be adhered to.

Before commencing the work, the Successful Proponent's contractor should obtain locates to inform themselves of the location of all existing services and infrastructure that may be impacted by their installation activities.

AERIAL DRAWINGS

For submissions based on approved standard designs developed the Successful Proponent, the Successful Proponent will need to supply information to the LDC to ascertain that the proposed attachment is in accordance with the approved standard designs. After review and approval by the owner the permission is granted to proceed with construction. These submissions need only to be prepared by a competent person, as defined by the LDC.

For submission based on the Successful Proponent providing the work plans and wok instructions assembled by a P.Eng, the LDC will grant permission to proceed after a review of the design.

The P.Eng stamped drawings are to be prepared using industry applicable software that has been approved for use by the LDC. The outputs of the software should include, for each affected pole, the relevant information for each of the items below:

- Location Analysis Summary
- Design Properties
- Load Case Properties
- Loading
- Pole Strength
- Pole Static Analysis
- Wire End Points and Wires
- Downguys and Anchors
- Cross Arms
- Insulators and other Equipment (e.g., Transformers, Streetlight Arms etc.)
- Strength Case Appendix
- Load Case Appendix

All drawings should conform to the drawing provisions noted above. A pole profile is required for each affected pole indicating existing and proposed attachments. See Figure 1.

The ESA *Guideline for Third Party Attachments* can be referred to for additional information.

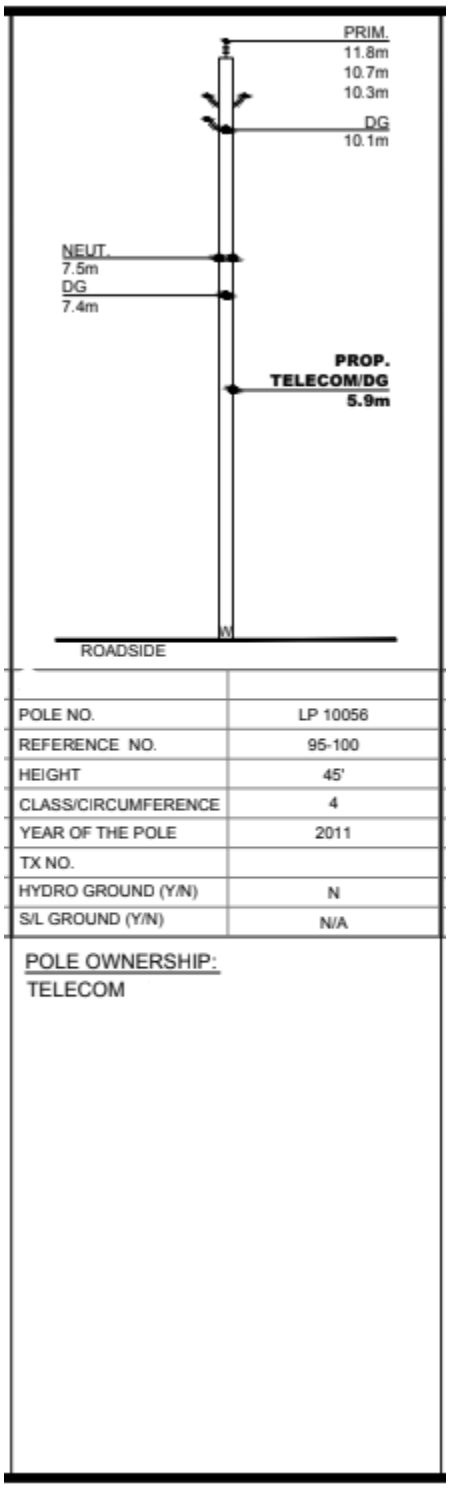


Figure 1: Sample Pole Profile

The drawings should include the seal of the responsible P.Eng, as well as a signed Certificate of Approval (COA). See Figure 2.

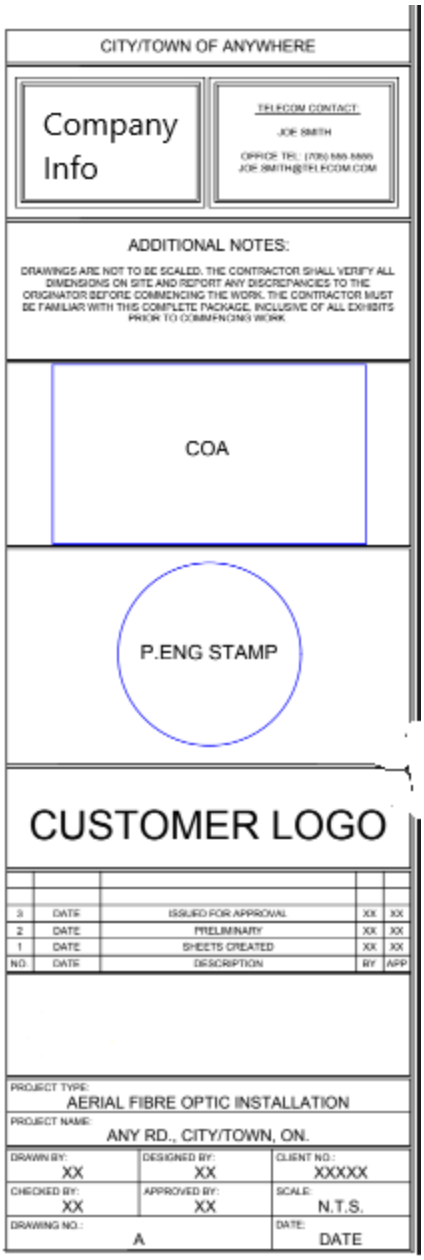


Figure 2: P.Eng Stamp Example

The drawings should also include:

- Key Map
- Constructor installation requirements
- Constructor documentation requirements
- Aerial construction information
- Summary of buried and aerial permit kilometers
- Distribution of pole ownership quantities
- A Make-Ready summary, by attachment owner

- Aerial typical details
- Design data summary tables indicating:
    - Vertical separations at each pole
    - Ground clearance at each span
    - In-span clearances between supply and communications cables
    - Estimated ruling span sag and tension
    - Hydro and communication guy & anchor data used
    - Loading results
- Proposed down guy and anchor summary
- Bill of Materials

Standard Utility Offsets

GENERAL

This document contains guideline information only to assist ISPs and Governing Authorities with the preparation of drawings that will assist in the permitting process. These guidelines are not prescriptive or binding, rather provide good practice for drawing preparation.

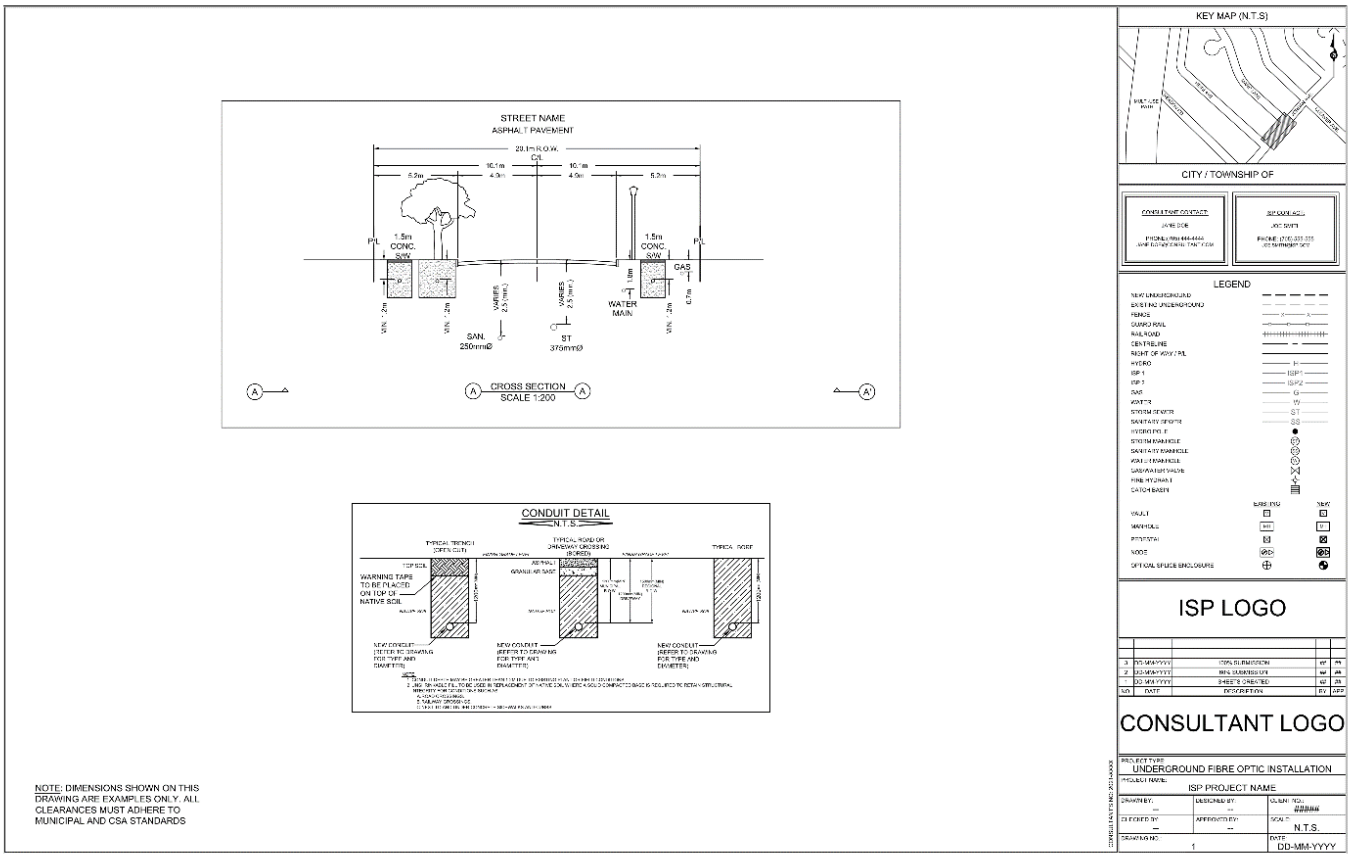
This Guideline, along with the other appropriate standards form the basis for complete submissions. Successful Proponents should confirm if the minimum drawing requirements are outlined within the LDC Occupancy Agreement or within the Municipal Consent agreement.

STANDARD UTILITY OFFSET DRAWINGS

The basic requirements that are stated in *Basic Drawing Requirements* section above should apply to any utility offset drawings prepared.

SAMPLE DRAWING

A sample drawing is shown below for a typical installation.



Sample One-Touch Make-Ready Sample Agreement

The sample agreement provided below is intended to serve as a sample only, users should consult legal counsel to ensure the agreement is adapted to their specific needs and circumstance.

This Agreement is made as of _____ ___, _____:

BETWEEN:

[*Local Distribution Company*], a _____ licensed by the Ontario Energy Board under Part V of the *Ontario Energy Board Act*

(the "**LDC**")

AND:

[*Successful Proponent*], a _____ incorporated under the laws of _____

(the "**Successful Proponent**")

WHEREAS:

A. The Successful Proponent is carrying out the construction of broadband network infrastructure (the "**Project**") under the Province of Ontario's *Ontario Connects: Accelerated High Speed Internet Program*.

B. The Project is a *Designated Broadband Project* under **[The Building Broadband Faster Act Guideline]** (the "**Guideline**").

C. On the date hereof, the LDC has granted the Successful Proponent a permit (the "**Permit**") to attach broadband network infrastructure to the LDCs support structure(s), as described in further detail in the Permit (the "**Attachment**").

D. Pursuant to the one-touch make-ready process set out in Section **[2]** of the Guideline, the LDC has advised the Successful Proponent that the LDC is unable to undertake and complete the power and telecom make-ready work on the LDC's support structure(s) required in connection with the Attachment (the "**Make-Ready Work**") in accordance with the applicable performance timelines set out in the Guideline.

E. In order to expedite completion of the Attachment, the Successful Proponent desires to undertake and complete the Make-Ready Work at its own cost and risk.

F. Pursuant to Section 2 of the Guideline, as a condition to undertaking and completing the Make-Ready Work at its own cost and risk, the Successful Proponent must enter into this Agreement with the LDC.

NOW THEREFORE, in consideration of the mutual covenants and agreements of the parties hereinafter contained and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

1. The Successful Proponent acknowledges and hereby agrees that the LDC has, in the context of issuing the Permit, reviewed whether sufficient spare capacity is available on the structure(s) to accommodate the Attachment but the LDC will not conduct a pre-work inspection for

compliance of the structure(s) with construction standards and/or health and safety risks for workers or the public.

2. The Successful Proponent further acknowledges and agrees that the LDC is relying on the information and assessment provided by the Successful Proponent with respect to any structural or other issues with the structure(s) which are inconsistent with applicable construction standards.

3. The LDC hereby authorizes the Successful Proponent to undertake and complete the Make-Ready Work in accordance with this Agreement and the applicable requirements of the Guideline and the Permit.

4. If, as of the date hereof, the LDC has provided the Successful Proponent in writing a list of contractors pre-qualified by the LDC to carry out the Make-Ready Work, the Successful Proponent must select a contractor from such list to carry out the Make-Ready Work. Otherwise the Successful Proponent may propose a qualified contractor for the LDC's approval, and such approval by the LDC should not be unreasonably withheld, conditioned or delayed.

5. The Successful Proponent may proceed with its Attachment prior to the completion of the Make-Ready Work if:

    a. the Successful Proponent has reviewed any structural or other issues with the structure(s) which are inconsistent with applicable construction standards and a professional engineer ("**P. Eng.**") of or for the Successful Proponent has certified that the Attachment can nevertheless proceed in a safe manner, in compliance with applicable law;

    b. a P. Eng. of or for the Successful Proponent has provided to the LDC a signed request and declaration in the form attached as Sample Materially Insignificant Declaration to the Guideline (Appendix 1) stating that the Attachment is "materially insignificant" (within the meaning given to such term in the Electrical Safety Authority guidelines), and the LDC has confirmed to the Successful Proponent in writing that the LDC deems the Attachment to be "materially insignificant".

    The LDC must review and respond to the request and declaration described in Section 5.b above within the performance time period specified in the Guideline.

6. The Successful Proponent acknowledges that the structure(s) will be deemed to be under its control during the performance of the Make-Ready Work for the purposes of compliance with Electrical Safety Authority requirements and guidelines and health and safety obligations arising from the Canada Labour Code and its regulations.

7. In the event that the Attachment cannot be safely performed until Make-Ready Work can be permanently completed, the Successful Proponent may apply to the LDC for a temporary facility, for Successful Proponent's exclusive use, to bypass a structure requiring Make-Ready Work (a "**Temporary Facility**"). The Successful Proponent acknowledges that any request for the installation or use of a Temporary Facility which comes in contact with a structure of the LDC or which may increase the maintenance or replacement costs of a structure of the LDC should be submitted in advance to the LDC, in the standard form requested by the LDC (if any), accompanied by detailed, signed and sealed (P.Eng.) plans of the proposed Temporary Facility and other documents that may be required by the LDC.

8. Each application for a Temporary Facility should be made in a separate application by the Successful Proponent. In addition, any modification, addition or removal that the Successful

Proponent wishes to make to its Temporary Facilities requires the filing of a new application. The Successful Proponent acknowledges that such application may be submitted to a technical committee comprised of technical experts from the LDC and other owners of support structures and that the Successful Proponent may be invited to present its request to the committee. The LDC reserves the right to accept the request as submitted, to propose an alternative at the Successful Proponent's expense, to return the request to the Successful Proponent if it is incomplete, or to reject the request within **[30]** days. If the Successful Proponent believes that a type of Temporary Facility could be performed without P.Eng. stamped plans or otherwise deviating from the Temporary Facilities process set out herein, the Successful Proponent may submit a proposal with a process specific to that type of Temporary Facility to the technical committee for evaluation.

9. The Successful Proponent agrees to clearly identify its Temporary Facilities as being in the Successful Proponent's name with the notation "Temporary Facility" and, upon completion of the work on the Temporary Facilities, to perform, at its expense, the work to remediate or make the Temporary Facilities permanent within **[90]** days of the completion of the preparatory work including the removal of any Temporary Facilities owned by the Successful Proponent such as poles, conduits, pads, overhead conduits, etc., unless another time period is agreed upon by the parties, after which time the temporary facility will be considered an unauthorized attachment. Any unidentified temporary facility will be considered an unauthorized attachment.

10. Upon completion of the Attachment and Make-Ready Work, the Successful Proponent should deliver to the LDC "As Built" drawings for the Attachment and Make-Ready Work which should include a completed record of inspection form in accordance with the Guideline.

11. The Successful Proponent agrees that any and all damages of any nature whatsoever which may reasonably be considered to result or arise directly or indirectly from the Successful Proponent's performance of the Make-Ready Work and/or the installation, use or modification of any Temporary Facility, in each case which occurred during or within a period of 120 days following delivery by the Successful Proponent of "As Built" drawings for the Attachment and Make-Ready Work pursuant to Section 10 above, should be deemed to have been a result of the Successful Proponent's work, except to the extent that the Successful Proponent can demonstrate that another reason was the cause of such damages.

12. During the 120-day period described in Section 11 above, the LDC and any existing internet service provider attached to the relevant structure (an "**Existing ISP**") should have the opportunity to conduct inspections of the Make-Ready Work and any Temporary Facility work for the purpose of identifying any damage, and must notify the Successful Proponent of any damage to their respective infrastructure prior to the end of such 120-day period. Except to the extent the Successful Proponent can demonstrate that its Make-Ready Work or Temporary Facility work did not cause such damages, the Successful Proponent should, at its own cost, rectify the damages identified by the LDC and/or the Existing ISP within 30 days of receipt of written notice of such damages by the Successful Proponent, unless a longer period of time is agreed between the parties, acting reasonably.

13. The Successful Proponent should notify the LDC's representative as soon as possible of any incident, non-conformity or other situation affecting safety or the integrity of one or more structures arising from or following the execution of the Make-Ready Work and/or the installation, use or modification of a Temporary Facility in order to allow the LDC to carry out any necessary verification and work required to rectify the situation.

14. The Successful Proponent should inform the LDC upon completion of its work and certify that the Make-Ready Work and/or the installation, use or modification of a Temporary Facility, as

applicable, was conducted safely in compliance with the work conditions required by the Successful Proponent's engineer in consideration of the work to be done.

15. The Successful Proponent acknowledges that the Make-Ready Work and any Temporary Facility work is subject to the conditions set forth herein and in the Permit and that the Successful Proponent's rights to perform the Make-Ready Work and any Temporary Facility work hereunder may be revoked at any time by the LDC if, in the LDC's reasonable opinion, the Successful Proponent is conducting the work in a manner inconsistent with industry standard, including, without limitation, in the event of a breach or failure to respect the conditions set out herein or in the Permit, a failure by the Successful Proponent, its personnel or contractors, to comply with applicable health and safety standards or if the LDC becomes aware of any incidents relating to unsafe practices likely to endanger a person's health or safety. The LDC should provide written notice to the Successful Proponent which should include the LDC's reasons for its decision.

16. The Successful Proponent acknowledges and agrees that it should exercise its rights and perform its obligations under this Agreement at its own cost and risk without recourse to the LDC.

17. This Agreement will be interpreted in accordance with the laws and regulations of the Province of Ontario and the laws and regulations of Canada applicable therein, without regard to conflict of laws principles. Any dispute between the parties hereunder should be resolved pursuant to the dispute resolution procedures in Section **[3]** of the Guideline.

18. No amendment to this Agreement should be effective unless it is made in writing and signed by the parties hereto. Neither party may transfer or assign this Agreement or any part thereof, or its rights, duties or obligations under this Agreement, without the prior written consent of the other party.

19. This Agreement may be signed in counterparts and such counterparts may be delivered by facsimile or by other acceptable electronic transmission, each of which when executed and delivered should constitute an original document; these counterparts taken together should constitute one and the same Agreement.

20. This Agreement has been executed on behalf of the LDC and Successful Proponent as of the date first written above:

[INSERT LEGAL NAME OF LDC]

By: _____
Name:
Title:

By: _____
Name:
Title:

I/We have the authority to bind the corporation.

[INSERT LEGAL NAME OF SUCCESSFUL PROPONENT]

By: _____
Name:
Title:

By: _____
Name:
Title:

I/We have the authority to bind the corporation.

Sample Application for Aerial Attachment

PART 1: REQUEST INFORMATION FROM LDCs

GENERAL

Date Requested: _____

Successful Proponent Name: _____

Successful Proponent Phone: _____

CONTACT INFORMATION

Provide the contact information for the party requesting the Aerial Attachment on behalf of the Successful Proponent.

(Individual) Prime Contact Name: _____

Title: _____

Office Phone: _____

Cell Phone: _____

Email: _____

POLE DATA

Pole Information (note: the information needs to be verified in the field).

Number: _____

Height: _____

Class: _____

Installed Date: _____

Primary Conductor:

Size: _____

Tension: _____

Type: _____

Neutral

Size: _____

Tension: _____

Type: _____

Secondary conductor

Size: _____

Tension: _____

Type: _____

Plans:

Are there any LDC plans to replace or upgrade the pole within the next 5 years, and if yes, when?
_____

PROJECT LOCATION

Provide details that describe the submission geographically.

Project Location Information			
Lot Numbers or Address	**Nearest Intersection**	**Township, Village, Town or City**	**Region, County or District**

Provide a sketch of the location of the proposed attachments, including streets and the locations of the affected poles.

PART 2: SUBMIT PERMIT APPLICATION

Any specific technical requirements, dependent on the LDC, can either be provided on forms or included within the drawings. All application fees are to be provided at this time.

GENERAL

Date Submitted: _____

Successful Proponent Name: _____

Successful Proponent Phone: _____

Location (nearest major intersection): _____

Date of Signed Occupancy Agreement: _____

CONTACT INFORMATION

Provide the contact information for the party requesting the Aerial Attachment on behalf of the Successful Proponent.

(Individual) Prime Contact Name: _____

Title: _____

Office Phone: _____

Cell Phone: _____

Email: _____

PROJECT DESCRIPTION

*Enter **Yes** or **No** for each of the items below for the proposed work within the Right Of Way.*

New Installation _____

Replace Existing Facilities _____

Upgrade Existing Facilities _____

Alter Existing Facilities _____

Underground Work _____

Aerial Work _____

Excavation Required ____

Expected Date of the work to commence _____

Expected Date of the completion of the work _____

Existing LDC Support Strand to be used _____

Existing ISP Support Strand to be used? _____

Has permission been granted to use the support strand? _____

Design Standards to be applied – Owner developed? _____

Design Standards to be applied - Successful Proponent developed? _____

Design Standards to be applied – USF? _____

Design Standards to be applied – Other? _____ Standards by? _____

PROJECT LOCATION

Provide details that describe the submission geographically.

Project Location Information			
Lot Numbers or Address	**Nearest Intersection**	**Township, Village, Town or City**	**Region, County or District**

Drawing Number	Street	From Location	To Location	Comments

Provide a sketch of the location of the proposed attachments, including streets and the locations of the affected poles.

Provide a Description of the Proposed Work

_____
_____
_____
_____

FULLY ENGINEERED PROCESS

If the Successful Proponent is providing the detailed engineering, then the detailed information on all attachments (strand and messenger) including quantity, size (diameter in mm), line tension (kN), and type (fiber, size of fibre count, copper, etc.) are to be provided (either in the form of the table below, or with the contents of the table below included on the drawings).

Pole #	Street Name	Type (new, overlash)	Max Cable Diameter	Existing Permit	Tension Change	Deadend	Deflection Pole	Approval (Y/N)

DEVIATIONS FOR NON-STANDARD MATERIALS AND DESIGNS

Where the designs or materials used do not conform to the required standards, the Successful Proponent is to complete the information to request approval. A sample template for a P.Eng to fill out to approve a deviation is below.

Name of P.Eng. requesting deviation(s) _____

Title of P.Eng. _____

Company Name of P.Eng. _____

Email of P.Eng. _____

TYPE OF DEVIATION (Material - barcode or stock code) or (Design type - engineering or operations)	DESCRIPTION OF DEVIATION

PERMISSION TO OVERLASH ON POLES

If permission to overlash on an existing strand is required, the information below is to be supplied.

Date:	
Applicant (Company):	
Applicant Contact Name & Number:	
FAX:	
Applicant E-mail address:	
Municipality:	

Street: (Where work is being requested)	
Pole Owner:	
Applicant's Project No:	
Number of Poles Applicant is overlashing to existing Strand	
Existing Support Strand Owner	
Existing Support Strand Owner Permission Granted By: (Contact) Name & Number	
Additional Comments	

SUBMISSION REQUIREMENTS

A complete Aerial Attachment Permit Application requires submission of:

- the required Application Fee;
- the Drawings completed in accordance with the requirements stated; and
- The appropriate sections completed application on this form.

RETURNED BY THE LDC

Once the LDC has received and reviewed the Application, the information below should be completed by the LDC or its agent.

Permit Number _____

Approved by _____

Title _____

Date of Approval _____

Comments _____

Deposit Amount $_____

Sample Materially Insignificant Declaration

BACKGROUND

ESA Bulletin DB-07-15v2, *Distributor Information Bulletin,* contains direction on how an LDC may demonstrate compliance with Regulation 22/04, with respect to "materially insignificant" alterations to electrical equipment. ESA views "materially insignificant" (MI) alterations to consist of any work that does not materially change the existing electrical equipment, typically relating to forces on poles & strength of poles. ESA recognizes that some forms of overlashing, , including but not limited to flags, traffic signs and flower baskets may be deemed "materially insignificant". The following are key points from the bulletin.

Where the Successful Proponent is undertaking the P.Eng. Design Drawings and they indicate that the proposed work is "materially insignificant", the Permit Application should include a request and a declaration signed by a P.Eng. that the attachment be considered "materially insignificant".

As per ESA's direction, the LDC may exempt "materially insignificant" work from the audit requirements of Sections 7 and/or 8 of Regulation 22/04 and that work will be deemed in compliance with Regulation 22/04.

GENERAL

Date Submitted: _____

Successful Proponent Name: _____

Successful Proponent Phone: _____

Location (nearest major intersection): _____

Date of Signed Occupancy Agreement: _____

CONTACT INFORMATION

Provide the contact information for the party requesting the Materially Insignificant Alteration on behalf of the Successful Proponent.

(Individual) Prime Contact Name: _____

Title: _____

Office Phone: _____

Cell Phone: _____

Email: _____

PROJECT DESCRIPTION

*Enter **Yes** or **No** for each of the items below for the proposed work within the Right Of Way.*

New Installation _____

Replace Existing Facilities _____

Upgrade Existing Facilities _____

Alter Existing Facilities _____

Expected Date of the work to commence _____

Expected Date of the completion of the work _____

Existing LDC Support Strand to be used _____

Existing ISP Support Strand to be used? _____

Has permission been granted to use the support strand? _____

PROJECT LOCATION

Provide details that describe the submission geographically.

Project Location Information			
Lot Numbers or Address	**Nearest Intersection**	**Township, Village, Town or City**	**Region, County or District**

Drawing Number	Street	From Location	To Location	Comments

Provide a sketch of the location of the proposed attachments, including streets and the locations of the affected poles.

Provide a Description of the Proposed Work

_____
_____
_____

MATERIALLY INSIGNIFICANT ALTERATION DECLARATION

The Materially Insignificant Alteration Declaration (MIAD) provides the basic information regarding incremental pole loading resulting for service cable over-lash to an existing permitted attachment.

The MIAD provides the data along with proposed parameters and conditions that confirm that the proposed attachments will not cause any material structural or loading change.

The declaration, dependent on the project, standards, span lengths and location, can be submitted:

- Either as a single form for the entire project;
- As a form for each pole affected;
- As a form for a grouping of poles.

Consideration is still required for:

- The Successful Proponent to perform a survey to confirm the existing facilities and to prepare drawings for submission.
- Defects that directly affect the structural capacity of the pole (i.e. physical damage such as vehicle damage to a pole or anchor) should be communicated to the pole owner.
- The existing separations and clearances have already been approved by the prior design and or audit. If not, calculations by the Successful Proponent will be required.
- That any additional strands added do not affect the existing already approved clearances.
- An existing installation, where the grounding or bonding have already been approved on the basis of the prior design or audit.

Materially Insignificant Alteration Declaration

The installation work covered by this document meets the safety requirements of Regulation 22/04 as the work does not change the existing electrical equipment or materially change the forces on poles and strength of poles.

_____ _____

Name **Date**

_____

Signature and Professional Designation

ENGINEERED DRAWINGS

Where required by the LDC, the Successful Proponent should submit engineered drawings to facilitate installation and to provide complete records.

Sample Certificate of Deviation

CERTIFICATE OF DEVIATION APPROVAL

ESA bulletin DB11-12-v2, *Distributor Information Bulletin,* 2 contains direction on when a Certificate of Deviation may be applied and the conditions where Approval for the deviation is permitted. More information, including examples, can be found in the Distributor bulletins section of www.esasafe.com.

Accepting deviations can be done through the use of a "Certificate of Deviation Approval". All deviations are to be listed on the Certificate of Deviation Approval.A *Certificate of Deviation Approval* must be signed by a P.Eng. (either the ISP or LDC's P.Eng depending on the party developing the engineered designs)

A sample is seen below.

Certificate of Deviation Approval

The installation work covered by this document meets the safety requirements of Section 4 of Regulation 22/04 with the following deviations:

_____

_____

_____

_____ _____

Name **Date**

_____

Signature and Professional Designation

CERTIFICATE OF DEVIATION – CERTIFIED LISTS

ESA Distributor Bulletin DB-02-16-v1, provides guidance on when a Certificate of Deviation for Certified lists can be applied. It provides direction on how an LDC may demonstrate compliance with Regulation 22/04, with respect to deviations from required standards. ESA accepts that a certified list of deviations from section 5 "When safety standards met" of Regulation 22/04, approved by a P.Eng., is acceptable to meet the requirements of Regulation 22/04. More information, including examples, can be found in the Distributor bulletins section of esasafe.com.

A sample is seen below.

LDC COMPANY NAME & LOGO
Certificate of Deviation Approval for Non-Standard Items. This certifies that the below list of deviations from CSA standards will not materially affect the safety of any person or property, if not resolved immediately. These items can be resolved over time through maintenance, pole line rebuild and street light replacement programs. The items covered by this Certificate are deemed to not be an imminent safety hazard for workers that are "qualified" to work in the communications space on poles, based on their knowledge, training and experience levels required. This Certificate is not intended to be applied to new pole lines or any situation where a pole is being replaced anyways. In those cases, it is expected that the entire pole be brought up to 100% CSA standards compliancy. The workers are "qualified" in their ability to recognize electrical hazards and other potential safety concerns, which may cause them to implement specific safety measures or work procedures to avoid the item. They are required to take a training module called "Health and Safety Guidelines for Contractors - Working at Heights Module", among other requirements before they are deemed qualified. This Certificate can only be applied to Third Party Company projects, at their discretion, by inclusion of this Certificate into their attachment application. On a per attachment application basis, the exact poles and pole spans where this Certificate of Deviation Approval is being applied will be clearly identified on a separate form, completed by a competent person. A suitable form is attached to this Certificate, but similar forms are also acceptable. Third Party Company and the LDC may agree to identify some of these items through existing Joint Use Processes, or other agreed methods, rather than this form.

Prepared by:_ _	_____	Date:	_____
Name of P.Eng.	_____	Signature:	_____

Deviations for Non-Standard Items

Project Name:	**Municipality:**
Permit #:	**Date:**

Street	Bar code/ Pole #	Description of Deviation

Prepared by:_ _ _____ Date: _____

Position: _ _____

Broadband One Window Record of Municipal Access Sample Agreements

A Municipal Access Agreement (MAA) is a legal agreement that provides telecommunication companies the ability to construct, maintain, relocate and operate their equipment within rights-of-ways that are under the jurisdiction of a municipality. It states the roles, responsibilities and requirements for both the signatory and the municipality and deals primarily with issues such as municipal consent, hazardous substances and materials, road occupancy permits, rights-of-way, costs to be carried by municipalities, third party and sub-contractor agreements, service level agreements, maintenance and repair responsibilities as well as equipment use and invoicing.

The One Window system can be used to maintain a database confirming all applied for MAAs, confirming all executed MAAs, maintain a map of which municipalities require an MAA and provide an interface for submission.

MAA FORM

Successful Proponent: _____

Individual Applicant's Name: _____

Application date: _____

Applicant's email: _____

Applicant's Phone: _____

Applicant's Consultant Name: _____

Consultant's email: _____

Consultant's Phone: _____

Municipality Name: _____

Existing MAA in Place (Y/N): _____

Date of Application: _____

Date of Executed Agreement: _____

Expiry date of MAA: _____

SAMPLE MAA CONTENTS

Use of ROWs
Permits to Conduct Work
Manner of Work
Remedial Work
Permits to Conduct Work
Relocation of Plant
Permits to Conduct Work
Term and Termination
Insurance
Liability and Indemnification
Environmental Liability
Force Majeure
Dispute Resolution
Notices
General

Sample Application for Municipal Consent

GENERAL

Date Submitted: _____

Successful Proponent Name: _____

Successful Proponent Phone: _____

Location (nearest major intersection): _____

CONTACT INFORMATION

Provide the contact information for the party requesting Municipal Consent on behalf of the Successful Proponent.

(Individual) Prime Contact Name: _____

Title: _____

Office Phone: _____

Cell Phone: _____

Email: _____

Fax: _____

PROJECT DESCRIPTION

*Enter **Yes** or **No** for each of the items below for the proposed work within the Right Of Way.*

New Installation _____

Replace Existing Facilities _____

Upgrade Existing Facilities _____

Alter Existing Facilities _____

Underground Work _____

Aerial Work _____

Excavation Required ____

Directional drilling or boring required _____

Expected Date of the work to commence _____

Expected Date of the completion of the work _____

Provide a Description of the Proposed Work

_____
_____
_____

SUBMISSION PROVISIONS

In some jurisdictions, the Successful Proponent will be required to obtain approvals from all other regulatory authorities prior to submitting the MC application, showing all owners' facility locations and confirming no conflicts exist.

The Successful Proponent should also have considered if a joint-build venture with any other facility owner was considered, agreed to or declined.

Where required under the guidelines established by the Professional Engineers of Ontario, the application drawings should be signed and sealed by a Professional Engineer.

All minimum horizontal and vertical clearances to existing facilities should be maintained in accordance with published specifications. Stated clearances may be reduced with the written permission of the affected facilities owner(s).

The Successful Proponent may choose to 'bundle' several drawings together as a single application for projects which involve continuous installation over large distances. These should be summarized and listed in the table below.

For pole line installations, all existing poles, poles to be removed and proposed poles are to be shown. This includes all guying and anchoring.

Drawing Number	Street	From Location	To Location	Comments

SUBMISSION REQUIREMENTS

A complete Municipal Consent Application requires submission of:

- the required Application Fee;
- the Drawings completed in accordance with the requirements stated;
- This completed application form; and
- Confirmation of all other required approvals from other agencies.

RETURNED BY THE MUNICIPALITY

Once the Municipality has received and reviewed the Application, the information below should be completed by the Approver.

Municipal Consent Number _____

Approved by _____

Date of Approval _____

Comments _____

Deposit Amount $_____

Additional Comments _____

Sample Application for Road Occupancy

This permit expires 6 months from the date of issue

GENERAL

Date Submitted: _____

Successful Proponent Name: _____

Successful Proponent Phone: _____

Work Location (nearest major intersection): _____

CONTACT INFORMATION

Provide the contact information for the party requesting Road Occupancy Permit on behalf of the Successful Proponent.

(Individual) Prime Contact Name: _____

Title: _____

Office Phone: _____

Cell Phone: _____

Email: _____

Fax: _____

TYPE OF WORK

*Enter **Yes** or **No** for each of the items below for the proposed work within the Right of Way.*

New Installation _____

Replace Existing Facilities _____

Upgrade Existing Facilities _____

Alter Existing Facilities _____

Underground Work _____

Aerial Work _____

Excavation Required ____ Length (m) _____ Width (m) _____

Directional drilling or boring required _____ Length (m) _____

Expected Date of the work to commence _____

Expected Date of the completion of the work _____

Provide a Description of the Proposed Work

_____
_____
_____

AFFECTED ASSETS

Indicate which assets may be affected by the work

Roadway	Sewers
Signs	Curbs
Gutters	Drains
Sidewalk	Boulevard (grass)
Trees	Storm sewers
Pedestals	Traffic Lights
Street Lights	Fire Hydrants
Bus Shelters	Interlocking Brick
Multi-Use Trails	Bollards

WORK LOCATION

Provide a sketch of the location of the work, including lots, streets, the locations of buildings and the location of the construction/work zone.

MUNICIPAL CONSENT NUMBER

Provide the approved consent number.

_____

RESTORATION DETAILS

Provide the anticipated restoration requirements and timing.

_____
_____
_____

SUBMISSION REQUIREMENTS

A complete Road Occupancy Permit Application requires submission of:

- The required Application Fees (application fee plus encroachment deposit);
- This completed application form;
- Completed submission of Insurance related requirements;
- The work location sketch; and
- Written confirmation has been provided to all other affected infrastructure owners.

PERMIT DETAILS

1. The Successful Proponent must have a valid Municipal Access Agreement (MAA) if applicable and must follow the requirements of the MAA or any and all By-laws governing work on public lands imposed by the City/Town/Region.
2. Permits are to be issued by the Utility Coordinator. Up to seven business days are required for processing.
3. The Deposit and Administration and Inspection fees should be paid by the Successful Proponent.
4. The Successful Proponent should notify all affected property owners in writing before work commences. The notification will include utility name, expected duration, contact name and phone number. Short term emergency repair work is excluded from this clause.
5. The Successful Proponent must submit the amount and agree to the terms for Liability Insurance as stated by the City/Town/Region.
6. The Successful Proponent agrees to indemnify and save harmless the City/Town/Region, its officers, employees, servants and agents from and against all liability, claims, demands, suits, arising out of or in any way connected with the granting of this Permit and/or said construction or excavation.
7. The Successful Proponent waives as against the City/Town/Region, its officers, employees, servants and agents any claims that it may have arisen out of or in any way connected with the granting of this Permit and/or the said construction or excavation.
8. The Successful Proponent will provide any cash deposit required by the City/Town/Region with the permit application. The balance of the deposit should be returned twelve (12) months after the

work has been completed if all conditions of the MC are met. Any costs in excess of the deposit amount will be billed to the Successful Proponent.

9. Prior to issuing a permit, the Successful Proponent must have proof of all required approvals and permits.
10. Prior approval must be obtained from the City/Town/Region for closing or restricting any road at any time except under emergency circumstances. The hours of work for closing or restricting any road at any time should be at the discretion of the Municipal Engineer.
11. The Successful Proponent will be charged for the erection and maintenance of detour signs along the detour route at a rate in effect at that time.
12. In case of emergency work, notice should be given and an application for permit made as soon as possible after commencement of the work, namely on the same day, or, if too late in the day, then within one hour of the opening of the Municipal/Regional Office on the following work day.
13. The Successful Proponent should prior to the commencement of any work, obtain stakeouts from all Owners of underground plant and should comply with any instructions from the plant Owners when working in proximity to their plant. All existing plant must be protected, supported, backfilled and compacted to the satisfaction of the plant owner.
14. The Successful Proponent should adhere to all required backfill and restoration requirements.
15. The City/Town/Region reserves the right to do any remedial or restoration work that in the opinion of the City/Town/Region has not been adequately performed by the Successful Proponent. The City/Town/Region will invoice the Successful Proponent for the cost of such remedial or restoration work.
16. The Successful Proponent guarantees and warrants that with ordinary wear and tear the said work should for a period of twenty-four (24) months from the date of completion, remain in such condition and will meet with the approval of the City/Town/Region and that they will, upon being required by the Municipal Engineer, make good in a manner satisfactory to the Municipal Engineer any imperfections therein due to materials used in the construction thereof or workmanship.
17. No open cutting of the roadway will be allowed between November 1 to April 15 unless agreed to prior by the City/Town/Region.
18. Door Hanger Notification letters, in accordance with City/Town/Region requirements, must be provided to all residences affected by the work. This includes trenchless technologies installing utility assets.
19. The Successful Proponent should file a "Notice of Project" with the Ontario Ministry of Labour prior to commencing any work on the road allowance for works exceeding $50,000. A copy of the notice should be submitted to the City/Town/Region.
20. All works should be carried out in compliance with the Occupational Health and Safety Act times and should adhere to the rules and regulations as set out in the Ontario Traffic Manual Book 7. The applicant should supply all signs, flashers and barricades required to close lanes and detour traffic around the immediate working area.
21. All trees in the working area should be protected in accordance with the stated requirements of the City/Town/Region.

22. A copy of this Road Occupancy Permit, the Conditions of approval and stakeout information should be on site at all times.
23. All work must be in compliance with the Approved Municipal Consent drawings.
24. The permit holder is encouraged to take pre-construction photos of the entire area within the project limits. These must be made available upon request by the City/Town/Region in the event that disputes arise regarding responsibility for damages.
25. All excess material must be removed off-site at the expense of the permit holder.

RETURNED BY THE MUNICIPALITY

Once the Municipality has received and reviewed the Application, the information below should be sent back by the Approver.

ROP Permit Number _____

Approved by _____

Date of Approval _____

Comments _____

Fees Owing $_____

Additional Comments _____

Sample Notice of Completion

BACKGROUND

The Successful Proponent is to submit a *Notice of Work Completion* followed by As-Built drawings detailing any changes from the initial plan

GENERAL

Date Submitted: _____

Successful Proponent Name: _____

Successful Proponent Phone: _____

Work Location (nearest major intersection): _____

(Individual) Prime Contact Name: _____

Title: _____

Office Phone: _____

Cell Phone: _____

Email: _____

Fax: _____

TYPE OF WORK COMPLETED

Indicate each of the items below that have been completed.

Underground Work _____

Aerial Work _____

New Installation _____

Replace Existing Facilities _____

Upgrade Existing Facilities _____

Alter Existing Facilities _____

Excavation Required ____ Length (m) _____ Width (m) _____

Directional drilling or boring required _____ Length (m) _____

Date of the completion of the work _____

Comments

_____

_____

_____

PERMIT NUMBERS

Complete the fields as applicable.

Municipal Consent Number _____

LDC Permit Number _____

ROP Permit Number _____

Approved by _____

Date of Approval _____

Comments _____

RESTORATION DETAILS

Provide any future required restoration requirements and timing.

_____
_____
_____

Sample Record of Inspection Form

A "record of inspection" means a record prepared by a professional engineer, ESA, or a qualified person identified in the owner's construction verification program, detailing the inspection of a constructed or repaired portion of an electrical distribution system with respect to the safety standards set out in section 4 of the Regulation.

A record of inspection is to include sufficient description to identify the work and equipment inspected. A record of inspection can consist of an engineered plan, an as-built drawing, or a set of work instructions signed and dated by a professional engineer or ESA or a qualified person. A sample Record of Inspection is seen below.

RECORD OF INSPECTION FOR PLANNED CONSTRUCTION

Project Name _____

Project Location _____

MC Number _____

ROP Number _____

INSPECTION TYPE	COMPLY?		COMMENTS or DETAILS OF NON-COMPLIANCE
	YES	NO	
The approved plan has been followed, and construction was completed in accordance with the certified design drawings			
OR			
Standard designs applied correctly and construction completed in accordance with certified standard designs			
OR			
Like-for-Like or replacement of existing construction presents no undue hazard: • Metal parts are grounded • Live parts are adequately barriered or insulated • Minimum clearances to buildings, signs and grounds are maintained • Structure has adequate strength (replaced with same or better)			
AND			
Approved equipment was used			

Name: _____

Title: _____

Signature: _____

Date: _____

If a non-compliance is identified, the details should be identified and an action plan stated. Additionally, the completion date and verification date should be stated, followed by a Non-Compliance Correction Inspection. An example is provided below.

Details of Non-Compliance	Corrective Action Required
At Pole P1234, the telecom was installed 0.7m lower than shown on the design drawings.	At pole 1234, telecom to be raised to comply with the drawings. Drawing #100-101, Rev 1, Sheet 3 *Telecom raised on Sept 22, 2021*

Non-Compliance Correction Inspection

Name: _____

Title: _____

Signature: _____

Date: _____

Drawing Number: _____

All field records from the CVP process should be attached with the Record of Inspection, as well as any field records from the Corrective Actions taken.

Appendix 2: Further Reducing Complex Make-Ready Work

This Guideline stipulates that unless otherwise agreed to between a Successful Proponent and an LDC, designs and construction should be done to CSA standards (or other standards recognized by ESA under Regulation 22/04). Where an LDC requests that designs and construction be done to higher LDC specific requirements the LDC may be required to justify its specific requirements to the OEB on the grounds that the requirements for attachment are not reasonable.

Examples of these alternative approaches may include:

Underground Dips

"Underground Dip" refers to deviating from a contiguous aerial proposed route and "dipping" down a pole to transition to a "buried" path for a limited distance until an aerial attachment is again feasible. Typically, this "dipping/riser" exercise would take place prior to making a physical attachment to the actual pole that requires complex make-ready work. This approach requires the placement of an "Anchor & Down Guy" to support the single sided attachment strain being applied to the pole. This exercise will need to be repeated at the next pole where a "Riser/Dip" will be placed to transition back up the pole and continue the linear aerial proposed route.

Temporary Attachments

- Installation of a horizontal extension arm may allow for the required amount of attachment separation (depending on its length – typically 18"). This may, in some instances, temporarily create a safe working space until the required amount of space is available.
- Space crowding entails installing a typical permanent attachment as normal, but at less than the required separation. This resolution only works for ISP-related separation (not with power separation compliance) and can possibly impact the pole's structure by having holes through the pole less than 12" apart. However, this structural concern may not be an issue if the pole is being replaced to resolve a complex make-ready issue. Another concern is if a splice enclosure proposed, if so, rubbing can occur and ultimately cause damage to the ISP.
- Pole boxing allows for the new attachment to be placed on the opposite side of the pole from which all other attachments were installed. This is only feasible in the event that the pole needs to be replaced and at the time of replacement the new pole is placed in a position where the "boxing event" can be remedied without cutting the cable. Typically this approach needs to be executed near a road with clear, unobstructed access.

Appendix 3: Broadband One Window

Broadband One Window (BOW) Platform

Broadband projects can be extremely complex undertakings in the absence of efficient coordination and collaboration between the many infrastructure parties involved including ISPs.These stakeholders are responsible for a myriad of coordination processes designed to ensure matters such as public safety, permitting, and approvals. In order to be effective, the coordination processes require cooperation from all parties under predictable conditions, with timely and pertinent information sharing.

The Broadband One Window (**BOW)** platform is a combination of:

- a Geographic Information System (**GIS**) platform
- a Utility Coordination Dashboard (**UCD**)
- a Utility Infrastructure Repository (**UIR**)
- a Corridor Management System (**CMS**)
- an Electronic Document Management System (**EDMS**)

The **BOW** was designed to support the design, procurement, construction and management of provincially funded projects through enhanced information sharing, process coordination and monitoring.

The **BOW** uses web-based software platforms applying the capabilities of Microsoft Power BI for reporting and analysis, Environmental Systems Research Institute (ESRI) ArcGIS for spatial and mapping information and Jira for case (ticket) management.

The **UCD** component provides a streamlined, integrated approach to project management, performance tracking and case management. It also provides scalable and flexible business intelligence, enablement and visualization capability for the broadband program.

The **UIR** component collects infrastructure data required to support the completion of provincially funded project, enables proactive decision making, provides a repository for the data and a framework for sharing, viewing and accessing the data. In addition, the UIR has the ability to expand to include all future broadband projects regardless of the build type.

The **CMS** is to help local governments and *utilities* manage public capital assets.

The **EDMS** supports broadband infrastructure by adding spatially enabled joint-use management software to manage telecommunications equipment attachments on LDC poles to assist agencies in improving their communications, streamlining workflows, and tracking historical work data.

The BOW platform allows the IO, in consultation with any project stakeholder, to review the impact(s) of any application or project activity. Early identification of issues at the planning stage for the project and the continuous updating would eliminate some of the issues and delays that are seen today.

In summary, the BOW would be a portal for all infrastructure owners to integrate, standardize and streamline project implementation, project management, performance tracking and real-time project status with the goal of expediting the installation of additional infrastructure to adequately provide broadband services to the Province of Ontario. Ultimately, the BOW would be able to:

- Receive applications to obtain *utility* infrastructure data

- Standardize the application and processing activities for permits and authorizations
- Present live key project KPIs
- Standardize project tracking processes

The BOW would increase certainty and predictability and ultimately provide the capability to support smaller municipalities and smaller LDCs to meet their project delivery for the provincially funded initiative. BOW access would be available to all stakeholders in provincially funded projects but limited to their specific assigned projects and activities. As such, ISPs would only see content and data relevant to their projects, municipalities would only see projects within their border and LDCs would only see projects within their licensed service area.

Interoperability is possible in two ways: (1) real-time integration with ArcGIS Online or (2) Nightly batch updates/extractions. In both cases each organization would cover its respective costs. Organizations with existing platforms may seek applicable arrangements through IO who would determine a feasible approach as appropriate.

Mapping & Geographic Information Systems (GIS)

Geospatial data, or data with a geographic component, combines locational, attribute and temporal information that is collected through geospatial mapping. The technique of geospatial mapping uses software to analyze data about geographical or terrestrial databases through the use of a GIS. These are programs, or a combination of programs, that work together to help users effectively display geospatial data through management, manipulation, customization, analysis and creation of visual displays.

Geospatial data are most useful when they can be discovered, shared and used, which is one capability of the BOW process while maintaining the security and confidentiality of sensitive information pertaining to critical infrastructure. Geospatial-enabled data provides visual insight into project and program status, various subsurface utility engineering (**SUE**) quality levels, major milestones of each unique project and identifies risks and conflicts at a program level. By implementing this functionality through the BOW platform, geospatial data enable users to convey information in location-based analytics using intuitive and interactive data visualization to make informed decisions, visualize trends, and monitor status in real time.

The acquisition, integration and consolidation of geospatial data sources from multiple parties and infrastructure sources in one central location on the BOW platform would provide easy access, transparency and enhancement of project information. This would result in a streamlined process for decision making, route selection and determination on the option to select underground or aboveground locations for broadband infrastructure placement, which would assist in expediting the installation of additional infrastructure to adequately provide broadband services across the Province of Ontario.

All parties submitting drawings of buried infrastructure should follow the requirements outlined in the American Society of Civil Engineers (ASCE) 38-02, ASCE 75 orCSA S250 for all submitted information to IO. The ASCE 38-02, ASCE 75 is generally two-dimensional data focused and CSA S250 is a more modern quality standard which reflects modern technical developments to specify accuracy in three-dimensional data collection.

Application Submission Requirements – CSA S250, ASCE 38-02 or ASCE 75

In 2002, the ASCE published the ASCE 38-02, "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data" document, outlining a credible system to classify quality of utility location information in design plans. The standard defines SUE requirements and sets out guidance for

the collection and depiction of subsurface utility information. ASCE 38-02 sets out guidelines for how to qualify the accuracy of mapping existing infrastructure and relay information to a drawing.

All submitted existing subsurface utility information on engineered drawings and designs should meet or exceed the system requirements outlined in ASCE 38-02 and ASCE 75, to ensure alignment in SUE information provided in the BOW Application and to result in better designs, enhance damage prevention efforts and develop strategies to reduce risk by improving the reliability of information.

The standard defines four quality levels outlining methods used to determine the location of underground assets: Quality Level A, Quality Level B, Quality Level C and Quality Level D**.** Refer to Figure 1 and Table 1.

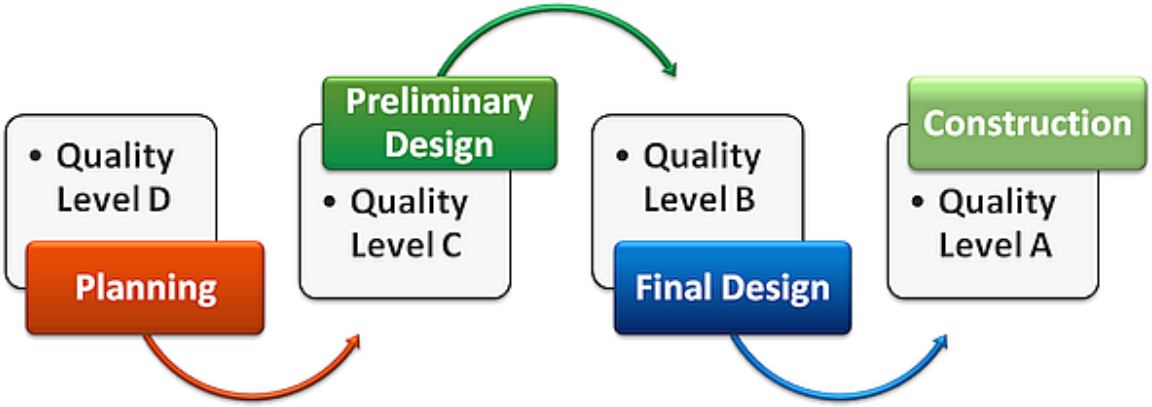


Figure 3: Four SUE Levels

Table 1: SUE Levels

Level D:	Utility records are requested, researched by the utility, marked-up and returned to the requester.
Level C:	Using surface surveying techniques, above ground features of subsurface utilities are identified and recorded.
Level B:	Using surface geophysical equipment and techniques, subsurface utilities are determined and are associated with the horizontal position on the ground surface.
Level A:	Where existing records of underground site conditions may be incorrect, incomplete or have multiple cables buried over several years, SUE Level A allows the physical discovery of buried cables. This is a large contributor to avoiding conflicts. Exposing and recording the size and configuration of a subsurface utility, and it's precise vertical and horizontal location is crucial. Using subsurface geophysical equipment and techniques, subsurface utilities are determined and recorded in three dimensions and are associated with the horizontal position on the ground surface.

The basic deliverable for utility information is in Computer Aided Design (**CAD**) file format or a plan sheet that assigns quality levels A, B, C or D to each asset. Quality level A data typically requires a supplemental data form for additional information.

In 2011, the Canadian Standard Association (**CSA**) published "Mapping of Underground Utility Infrastructure", CSA S250. This standard defines SUE and sets guidance for the collection and depiction of subsurface utility information. CSA S250 sets out requirements for classifying and specifying the accuracy of mapping records for newly installed or exposed infrastructure.

The CSA S250 requires a finer degree of accuracy for detailing and defining the positional location of the infrastructure that correlates to better-defined reliability in accuracy of records. It is a more modern quality standard that reflects new, modern technical developments specify accuracy in 3D. The CSA S250 serves as an additional standard to complement, rather than replace, ASCE 75.

The standard defines six levels of accuracy for recording the location of underground infrastructure when infrastructure has been exposed either by potholing or excavation: Record accuracy level 0, Record accuracy level 1, Record accuracy level 2, Record accuracy level 3, Record accuracy level 4, and Record accuracy level 5.

All submitted mapping records should meet or exceed the guidelines defined in the CSA S250, to streamline data sharing and accurately record the presence and location of utility infrastructure. The standard encourages a managed systems approach to mapping and record keeping by establishing:

- Governance for utility infrastructure records management and mapping
- Procedures to improve mapping accuracy
- Uniform format for utility feature descriptions
- Processes for notification of GIS errors and practices when sharing data

Use of the BOW Platform in Provincially Funded Projects

Post commercial close, the IO's role would focus on using the BOW platform to report on project success through the following metrics:

- Administration and tracking of projects
  This view enables users to have a clear overview of the projects that have been initiated across the Province. This can be viewed by area, lot, ISP or other data filters that users require.

- Monitoring of Contracts
  This view enables users to have a clear overview of the project's contract status across the Province. The display can be selected to include items such as contract start date, terms of contract, amount of contract, ISP, length of main lines, the number of premises included in the contract or other data that users require.

- Issuance of Subsidy Payments
  This view enables users to have a clear overview of the project's subsidies supplied to the ISPs, and can be viewed by ISP, area, lot, by value of subsidies or other data filters that users require.

- Visualization of Ongoing Projects
  This view enables users to have a clear overview of the project's conflicts across the Province, by ISP, with several levels such as:

  - Contract status
  - Main line and segment build locations
  - Area map by ISP
  - Ongoing sue work status or other essential details
  - The completion percentage of construction by area, by ISP, by project or other combinations
  - An indication of the number of safety related incidents across all projects (near misses, days without incidents, number of incidents, days lost to injuries)
  - An overall indication of the risk status (on track, at risk) for timely completion

- Coordination between Stakeholders
  This view enables users to have a clear overview of the project owners, infrastructure owners and the status of upcoming projects that require coordination.

- Dispute Management
  This view enables users to have a clear visual overview of the number of existing unresolved disputes across the Province by various filters such as contract, segment, component and LDC.

- Accomplishment Reporting
  This view enables users to visually determine the accomplishments at various stages of the project, including:

  - Number of existing projects across the Province by date started and date completed
  - Number of projects completed ahead of schedule
  - The performance of each LDC involved
  - Variances for cost and schedule
  - The actual expenditure of the project compared to its budget
  - Any other essential indicators

Provincially Funded Project Stakeholders

All ISPs undertaking provincially funded projects are strongly encouraged to use the BOW platform for end-to-end project submissions, coordination and completion to limit project delays and conflicts. The mechanisms established within this Guideline and the dispute mediation support from IO are available to participants who use BOW.

In addition, BOW would provide insight into the Lots for ISPs and would open that data up to municipalities and LDCs after the Successful Proponent is awarded. BOW would notify municipalities and LDCs of the awards and the targeted addresses and proposed construction approach to open the avenue for early consultations.

The BOW Platform would provide approved stakeholders with processes and tools that would spatially:

- Track *markup circulation requests*. All users would have the ability to centrally request pre-engineering markups for all associated utilities through a spatial interface. All stakeholders would have the ability to track the progress of all requests.

- Track municipal consent and road occupancy permits requests. ISPs and utilities would have the ability to track the progress of all requests.

- Track joint use applications to LDCs.

The BOW Platform would provide users with data in the following two ways:

- Spatially Linked: Metrics captured and aggregated and exported to a non-spatial format which can be displayed and interacted with.

- Spatially Driven: Metrics or KPI's which are directly driven based on location. These can be dynamically driven based on the spatial limits.

Furthermore, the BOW platform would be a portal to the One-Touch Make-Ready scheme and capture LDC, municipal and MTO Public Service Commitments (PSC) as well as stakeholder coordination and activities. The BOW Platform would provide users with several key benefits including:

- A single source of accuracy for information related to the project (managing security, privacy, and storage methods)
- A common platform for spatial data (managing the collection, conversion and cleansing of data sets)
- Enhanced transparency with respect to reporting
- Customizable analysis and reporting (using complex methods and analytical capability through tools to predict current and future performance of LDC relocations)
- Enhanced document management
- Tracking submission and approval management (managing and tracking submissions, actions and approvals incidents and linking it back to KPIs and continuous improvement)
- A single location to obtain project metrics, KPIs, project information, LDC collaboration and data
- Reducing resource constraints by applying technology
- Program management consolidation that brings the project into a streamlined process

Appendix 4: Ontario One Call - Streamlining locates for Provincially Funded Projects

Ontario Underground Infrastructure Notification System (One Call) Act, 2012

In 2012, Ontario passed the *Ontario Underground Infrastructure Notification System Act* (One Call Act) centralizing the utility locate system in Ontario under Ontario One Call. Utility location requests ("locate requests") are requests made by an excavator working on behalf of the company constructing in the ROW. Locate requests are submitted by the excavator to Ontario One Call who, in turn, request owners or operators of underground infrastructure (e.g., municipal water and wastewater pipes, natural gas pipelines, telecom fibre and electricity wires) to identify in the field the location of their buried assets so that the excavator can avoid damaging them while working in that area. Under the One Call Act, utility owners are required to make all reasonable attempts to respond to a locate request with accurate markings in the field in five business days turnaround time, with certain exceptions.

To reduce project risk resulting from unforeseen costs and delays posed by the late delivery of locates, the SBIEA set a firm delivery timeline of ten business days for provincially funded projects. While the SBIEA did not set out a new process or any additional changes for requesting locates, this Guideline proposes changes to the utility locate system to mitigate current risks of late and inaccurate locates, an issue raised by stakeholders throughout the stakeholder consultation process. This Guideline also recommends that ISPs undertaking provincially funded projects use the Dedicated Locator Model described below.

Standard Locate Request Process

In response to locate requests, which may only be requested when a permit has been issued, infrastructure owners must also provide readily available information regarding the operator's abandoned and out-of-service underground facilities as shown on maps, drawings, diagrams, or other records used in the operator's normal course of business, without cost to the ISP. Prior to the excavation start time on the notice, an owner or operator of underground infrastructure should locate and mark or otherwise provide the approximate horizontal location of the underground facilities of the underground infrastructure. The ISP should determine the location of the underground facility without damage using the field locates provided, before excavating within one meter of the marked location of the underground facility.

Within 10 business days after receiving a notice for boundary survey from One Call (excluding Saturdays, Sundays and holidays, unless otherwise agreed to between the locator and operator), or the time specified in the notice (whichever is later), an owner or operator of underground infrastructure should locate and mark or otherwise provide the approximate horizontal location of the underground facilities of the operator, without cost to the ISP.

For the purposes of this section, the approximate horizontal location of the underground facilities is a strip of land 1 meter on either side of the underground facilities. The markers used to designate the approximate horizontal location of underground facilities must be using paint or a flag(s) that follow the current colour code standard used by One Call. If the operator cannot complete marking of the excavation or boundary survey area within the established PT, the operator should promptly contact the excavator or land surveyor.

An owner of underground infrastructure who provides information to a person who is not a unit of government may indicate any portions of the information which are proprietary and may require the

Successful Proponent to provide appropriate confidentiality protection. The information obtained from affected owners or operators of underground infrastructure must include records identified in this Guideline and in document CI/ASCE 75, entitled "Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data" and must depict the utility quality level of that information.

Dedicated Locator Model

To enhance the efficiency of the locates process, Successful Proponents are encouraged to use a Dedicated Locator. Under a Dedicated Locator Model, a single locator is contracted (in this case by the Successful Proponent) to locate underground infrastructure on behalf of all infrastructure owners. Such a model provides the Successful Proponent with control over the timing of the locates. In addition, under a Dedicated Locator Model, the cost of the locate is borne by the Successful Proponent and not the individual infrastructure owners.

The Dedicated Locator Model has been successful on large-scale projects across Ontario and the industry at large and had strong support through the Guideline consultations.

Ontario One Call has outlined the following benefits of a Dedicated Locator Model[8]:

- Enhanced efficiency
- Reduced downtime as the locates are completed under the direction of the ISP
- Promotion of damage prevention and safer excavation practices
- Increased control: allows ISPs to get locates when, where and as often as their project requires
- Better flexibility when unanticipated conflicts require project changes
- Potential to reduce reliance and burden on regular pool of public locate service providers who are also expected to complete standard locates requests for homeowners and less complex tickets

Setting up a Dedicated Locator

As is currently the case, the cost of the Dedicated Locator will be borne by the ISP; accordingly, in the case of a bid in the reverse auction, IO expects that ISPs adopting a dedicated locator model would include the anticipated costs within their auction bid. Dedicated Locators must be certified by all infrastructure owners (gas, hydro, ISPs, municipalities) with infrastructure in a provincially funded project area. To reduce undue certification processes, Successful Proponents are encouraged to select from the pre-existing certified pool of dedicated locators in regions with existing available resources. In regions that currently do not deploy dedicator locators, ISPs will need work with the underground infrastructure owners to certify a Dedicated Locator. Through the stakeholder consultation process, IO learned that this is not an onerous undertaking. Once the Dedicated Locator is established, the Successful Proponent will set up a profile for the newly certified Dedicated Locator with Ontario One Call noting that the Dedicated Locator will conduct locate requests on their behalf for all their provincially funded projects.

Additional Considerations

The use of the Dedicated Locator model will ensure a number of benefits and promote overall project efficiency. However, the following additional considerations should be taken to ensure that locates for provincially funded projects are not delayed:

[8] Ontario One Call, Dedicated Locator. https://www.ontarioonecall.ca/wp-content/uploads/DedicatedLocator.pdf

- Successful Proponents should ensure that the timing and input of locate requests are for the areas necessary for the project phase as opposed to blanket requests covering the span of the entire project area. This will reduce the backlog in the locates system and ensure that locates do not expire prior to the start of construction in the identified area. Locates for the provincially funded projects have a maximum locate 'block' of no more than 10 premises or 150m, whichever is the greater.
- Dedicated Locators must be registered with Ontario One Call with an indicator on file noting that they will be serving provincially funded projects.
- IO is working with Ontario One Call to ensure that all locate requests for the provincially funded projects be uniquely identified as provincially funded project locates to be prioritized by infrastructure owners and One Call (dispatching the requests) where a Dedicated Locator is not deployed.

Locates Liability and Penalty Scheme

While it is expected that most Successful Proponents will avail themselves of Dedicated Locators, the Guideline provides safeguards for those choosing to proceed with individual infrastructure owner locators. Pay for delay and pay for redesign provisions prescribed in regulation under the BBFA. provide Successful Proponents with recourse before the OLT for delayed and/or inaccurate locates that result in delays to a provincially funded project.

The Ontario Land Tribunal, is an independent, quasi-judicial administrative tribunal with jurisdiction that including hearings and deciding appeals in relation to a broad range of planning and development issues, municipal governance and other matters. Under the SBIEA, the OLT may adjudicate matters related to the BBFA. The Act sets out who is eligible to make an appeal to the OLT and the procedures that must be followed to do so. Information regarding the OLT appeals process is available on the Ontario Land Tribunal's website and may be accessed here: Forms - Tribunals Ontario - Environment & Land Division (gov.on.ca).

Pay-for-Delay

Successful Proponents can make a claim for damages should locates be unreasonably delayed beyond the ten-day legislated PT. Any such delay also puts a burden on other infrastructure owners that provided their locates within the 10-business day PT as the current locates provided expire. In this event, the infrastructure owners who responded in a timely fashion must now redeploy their locates team to the field at additional costs to complete the second locate. As such, an ISP may bring a claim against an infrastructure owner who caused a delay which resulted in a significant impact on their provincially funded project's timelines or cost.

The claims for the pay-for-delay penalty scheme will be adjudicated through the OLT, and must not be arbitrated by One Call.

Pay-for-Redesign

Successful Proponents can make a claim for damages should infrastructure owners provide inaccurate locates that result in the need for redesign. It is recognized that there will be instances of error in records and separation of what's built and what is maintained in the asset management registry of infrastructure owners. The objective of this penalty scheme is to target asset owners who repeatedly fail to update their records and mis-locate their asset despite prior notification and/or repeat incidences.

The claims for the pay-for-redesign penalty scheme may be sought at the OLT. However, they must not be arbitrated by One Call.

Glossary

3G: The term for the 3rd generation wireless telecommunications standards usually with network speeds of less than 1 Mbps

4G: The term for 4th generation wireless telecommunications standards usually with network speeds greater than 1 Mbps

5G: The term for emerging 5th generation wireless telecommunications standards usually associated with network speeds of up to 1 Gpbs or more

Aerial Route: Deployment of broadband infrastructure by means of attachment to above ground support structures such as LDC-owned poles

Anchor: A device that supports and holds in place conductors when they are terminated at a pole or structure

As-built drawings: As-built drawings are prepared based on information gathered during construction or fabrication by someone other than a practitioner or someone under their supervision. Often, the information is provided by the contractor in the form of red-line mark-ups of the design drawings. If a practitioner then proceeds to revise the design documents to incorporate the red-line mark-ups, these documents should be clearly marked as "As-Built Documents" and not sealed

Attacher: An entity that will attach or have attached its cable / fibre to a pole owned / controlled by an LDC. Attachers are ISPs who will have third-party attachments.

Attachment: A single connection of the attacher's equipment to the support structure that has a direct or indirect influence on the performance, appearance, and safety of the support structure or the structure owner's ability to access and maintain it. The attacher may have multiple attachments to a support structure (such as an LDC-owned pole).

Bandwidth: The capability of telecommunications and internet networks to transmit data and signals

Bilateral Aerial Structure: Pole line on both sides of a roadway

Broadband: The term broadband commonly refers to high-speed internet access that is always on and faster than traditional dial-up access. Broadband includes several high-speed transmission technologies, such as fiber, wireless, satellite, digital subscriber line and cable. The CRTC defines universal service objective as having access to actual download speeds of at least 50 Mbps and actual upload speeds of at least 10 Mbps

BBFA: *Building Broadband Faster Act, 2021;* the BBFA creates a suite of new legislative measures that will streamline project set-up and delivery as it pertains to planning and installing essential broadband infrastructure and services

Business Day (or Days): Means a day from Monday to Friday, other than a holiday as defined in section 87 of the *Legislation Act, 2006*

Designated Broadband Project: As prescribed under regulation under the *Building Broadband Faster Act, 2021*, every broadband project where funding, in full or in part, has been provided through the Ministry of Infrastructure for the purposes of deploying broadband and high-speed internet infrastructure in Ontario is a designated broadband project for the purposes of the Act.

Designated Broadband Project Stakeholders: Proponents, distributors, transmitters, municipalities, members of Ontario One Call, any other person with infrastructure within a right-of-way for a Designated Broadband Project and any other person whose cooperation is required to carry out a Designated Broadband Project.

Design Load: The actual, expected load or loads that a device or structure will support in service

Electronic Scoring Reverse Auction (ESRA): The ESRA is an auction structure that allows the Province to assign scores to ISPs based on price and other well-defined non-price attributes in their proposals. This structure offers the Province the flexibility to highlight specific policy objectives based on the weights used for various attributes.

Encroachment Permit: Required by MTO to perform work within a highway corridor

Fiber (also referred to as Fiber Strand): A flexible hair-thin glass or plastic strand that is capable of transmitting large amounts of data at high transfer rates as pulses or waves of light

Fixed Wireless Broadband Access: The use of wireless devices/systems in connecting two fixed locations, such as offices or homes. The connections occur through the air, rather than through fiber, resulting in a less expensive alternative to a fiber connection.

Fixed Wireline Attachment: A "Fixed Wireline Attachment", for the AHSIP program, is a high-speed physical attachment of facilities (fibre optic cable(s) and fibre-optic splice closures) capable of delivering internet access services at prescribed minimum speeds. These facilities are attached to a pole owned by others and must be installed and maintained in compliance with regulations, standards and owner's safety practices such that all parties have access to their facilities and no worker or public safety issues exist.

Ground: An electrical term meaning to connect to the earth

Ground Fault: An undesired current path between ground and an electrical potential

Guys/Anchors: Support structures to balance loading on bisect and dead-end poles

Improving Connectivity for Ontario program (ICON): The ICON program is part of Up to Speed: Ontario's Broadband and Cellular Action Plan, which outlines the strategy to expand access to broadband and cellular connectivity in identified areas of need

Internet Service Provider (ISP): An entity that provides internet connections and services to individuals and organizations. Typically, ISPs also provide additional services such as email accounts and webhosting. Note the terms ISPs, TSP and WISP refers to the same service providers and can be used interchangeably.

Local Distribution Company (LDC): A local electricity distribution company is a power distribution company that is responsible for distributing power from transmission lines to people's homes and businesses in an exclusive distribution area and is licensed by the OEB. Also referred to as distributors or transmitters.

Lots: For the purposes of ESRA, the Province is segmented into 49 areas, referred as 'auction lots' (or lots). This segmentation is done based on census divisions.

LTE (Long Term Evolution): A 4G wireless broadband technology that provides speeds up to 100 Mbps download and 30 Mbps upload

Make Ready Costs: Costs associated with preparing a LDC pole to receive a new fiber attachment

Mark-up Circulation: Circulation of preliminary drawings to all parties (e.g., municipalities, LDCs, Utilities and other ISPs) that may have infrastructure in the ROW so that they may review and mark any conflicts between the proposed running line and their buried assets.

Materially Insignificant: Any new attachment deemed to immaterially impact structure as outlined in ESA's materially insignificant work – distributor bulletin (: https://esasafe.com/assets/files/esasafe/pdf/Utilities/Bulletins/DB-07-15-v2.pdf)

Minister: Refers to the Minister of Infrastructure or such other members of the Executive Council to whom responsibility for the administration of the BBFA is assigned or transferred under the *Executive Council Act*

Municipal Access Agreement: A Municipal Access Agreement (MAA) is a legal agreement that provides companies the ability to construct, maintain, relocate and operate their equipment within right-of-ways that are under the jurisdiction of a municipality. It states the roles, responsibilities and requirements for both the signatory and the municipality and deals primarily with issues such as municipal consent, hazardous substances and materials, road occupancy permits, rights-of-way, costs to be carried by municipalities, third party and sub-contractor agreements, service level agreements, maintenance and repair responsibilities as well as equipment use and invoicing.

Municipal Consent (MC): is provided by a municipality for a utility company to occupy a specific location within the Municipal rights-of-way. Utility locations and separations have been established for various road cross-sections to avoid conflicts in the planning of projects by various utilities occupying the rights-of-way and to minimize the impact of proposed work on any adjacent infrastructure. MCs are only issued to utility companies, commissions, agencies and private Applicants who have the authority to construct, operate and maintain their infrastructure within the right-of-way as established through legislation or terms of a Municipal Access Agreement (MAA) where they apply and are approved. An MC gives a company permission to install or move facilities and is required when a road needs to be excavated.

Network Infrastructure: The hardware and software components of a network that provide network connectivity and allow the network to function

One Touch: One-touch make-ready policies try to avoid delay and redundancy by having all make-ready work (such as rearranging several existing attachments) performed at the same time by a single crew.

Ontario Energy Board (OEB): The OEB is Ontario's independent regulator of the electricity and natural gas sectors. Its activities include making rules to protect consumers, setting rates, and licensing all participants in the electricity sector including the Independent Electricity System Operator (IESO), generators, transmitters, distributors, wholesalers and electricity retailers, as well as natural gas marketers who sell to low volume customers.

Overlashing: Overlashing is the practice of attaching an additional fibre optic cable over an existing aerially deployed fibre optic cable attached to a LDC pole

Performance Timelines: standard timelines allotted to Designated Broadband Project Stakeholders, particularly LDCs, municipalities and members of Ontario One Call that must be adhered to in the provision of access to

Positive Deviation: The process of removing an existing cable and replacing with cable of lesser

weight or smaller diameter, thereby positively impacting the load characteristics

Professional Engineer: a person who holds a licence or temporary licence under the Professional Engineers Act (Ontario Regulation 22/04)

Rights-of-Way (ROW): ROW are legal rights to pass through property owned by another. ROW are frequently used to secure access to land for digging trenches, deploying fiber, constructing towers and deploying equipment on existing towers and LDC poles.

Road Occupancy Permit (ROP): A Road Occupancy Permit is required by some municipalities when working within the municipal right-of-way. Activities that require a road occupancy permit include temporary lane closures or construction related road closures, mobile crane work, temporary scaffolding or hoarding, crossing the boulevard for temporary construction site access, disposal bins located in the roadway or public laneway, storage of materials and equipment located in the roadway or public laneway, workers on the road or the blockage of sidewalks. Some municipalities may not require this permit and need only to be notified.

Service Area: The entire area within which a service provider either offers or intends to offer broadband service

Southwestern Integrated Fibre Technology (SWIFT) Project: A non-profit municipally led broadband expansion project created to improve internet connectivity in underserved communities and rural areas across Southwestern Ontario.

Strand: Braided steel wire that supports Bell cable (copper or fibre) 10M (larger) or 6M (smaller)

Subsurface Utility Engineering (SUE): Subsurface Utility Engineering (SUE) is an engineering discipline that involves the investigation of buried utilities and identifies the conflicts they may pose to a project design in order to mitigate associated risks.

Successful Proponent: An ISP that entered into the Project Agreement with the Government of Ontario to carry out a provincially funded project in a Service Area.

Telecommunications Service Providers (Telecom): A entity that has traditionally provided telecommunication services. However, for the purposes of this Guideline, Telecom is used synonymously and interchangeably with ISP.

Utility: a utility (or "public utility as defined in the *Public Utilities Corporation Act,* 1990) means any water works, gas works, electric heat, light or power works, telegraph and telephone lines, railways however operated, street railways and works for the transmission of gas, oil, water or electrical power or energy, or any similar works supplying the general public with necessaries or conveniences.