



## ANNEX "A" – SPECIFICATIONS

### Title: Electrical Upgrades, YFB Test Site, Iqaluit, Nunavut

**The Contractor hereby agrees to provide the construction services outlined below in this Statement of Requirements.**

#### 1. Introduction

##### 1.1. Objective

Electrical work is requested to install new electrical signal cables, electrical power cables, and fiber cables. This work will involve tracing and locating existing buried electrical signal and power cables (including those damaged in the Iqaluit fire in 2021); trenching for new cables; running new signal, power and fiber cables; terminating power cables and electrical work in the garage including adding a new electrical panel. All work must be compliant with the Nunavut electrical code and all applicable local standards. This statement of work has been created to issue a contract to provide the deliverables listed herein as per the requirements laid out in Section 3.

##### 1.2. Project location

The YFB test site in Iqaluit (2003 Akilliq, Iqaluit, NU X0A-0H0) is used for testing and evaluation of meteorological instruments and equipment. The site includes a Meteorological Service of Canada (MSC) Automated Weather Station (AWS), MSC Automated Weather Observation System (AWOS), NavCanada Automated Weather Observation System (NCAWOS), and instrument compounds for testing and evaluation. The test site is located southwest of the YFB international airport as shown in Figure 1.

Site name:	Iqaluit, NU
Latitude:	N63° 44' 51.20"
Longitude:	W68° 32' 35.80"



**Figure 1. Iqaluit YFB test site (red outline) at 2003 Akilliq, Iqaluit, NU X0A-0H0.**

### 1.3. Existing Infrastructure

Details of the signal and power cables at the site terminating at the weather office building prior to April 5, 2021 are shown in Figure 2. Following a fire at the Weather Office Building on April 5, 2021, power and signal transmission from the test compounds no longer terminate at this location. This work will remove the existing signal and power cables run toward the previous Weather Office Building, and trench and run new signal and power cables underground to the garage for termination. Details of the existing buried power and signal cable are provided in Figure 2. Details of the existing power and signal single line diagrams are provided in Figures 3 to 7.

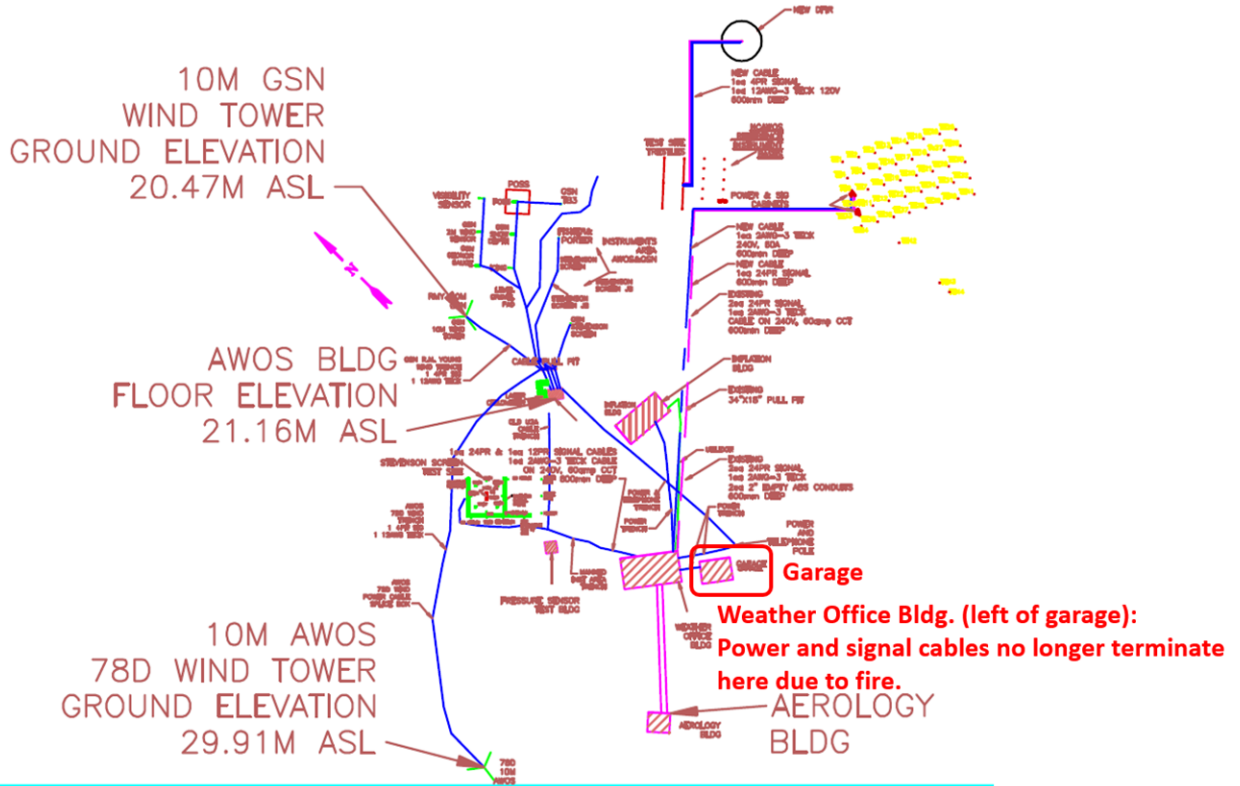
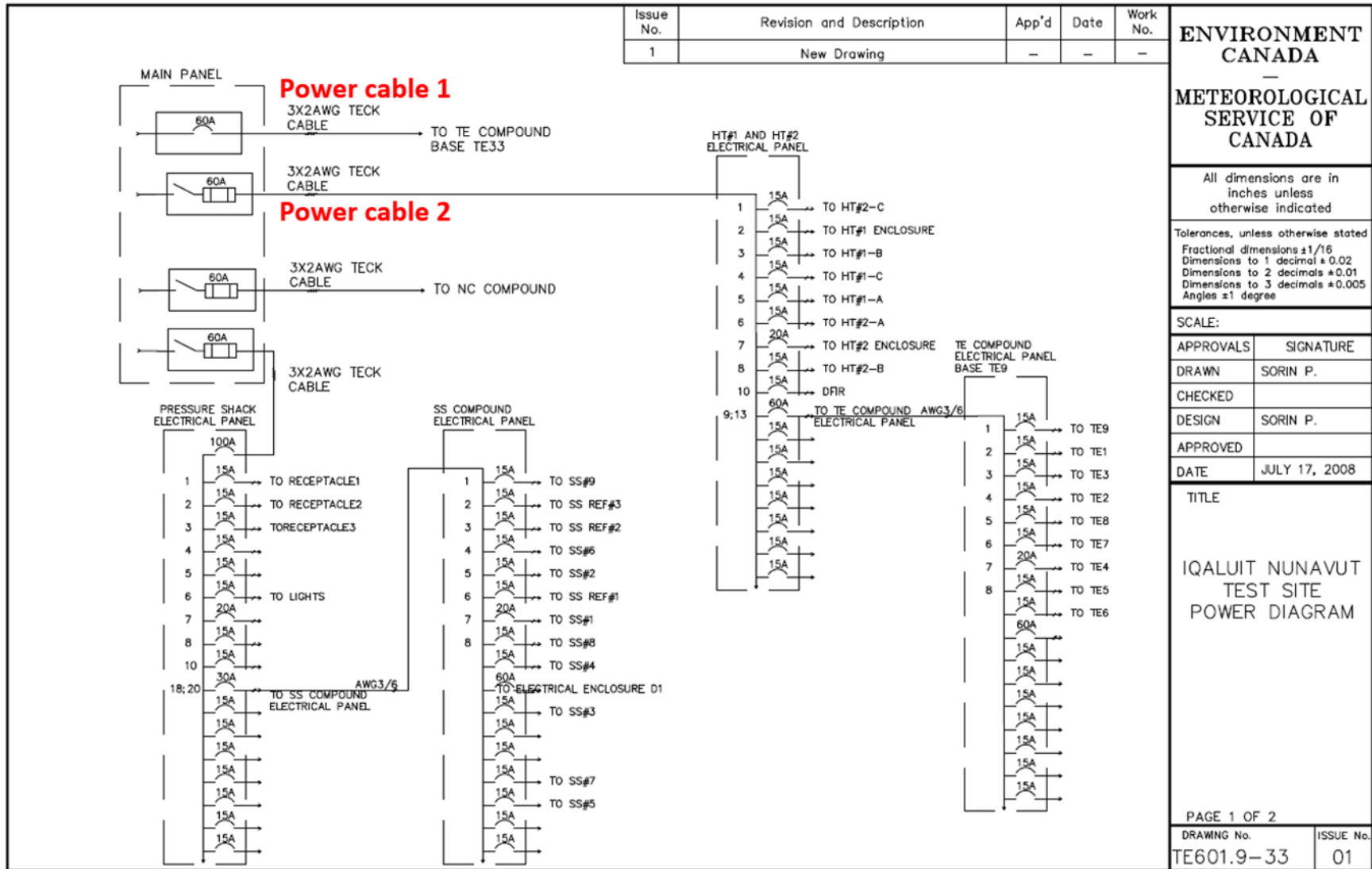


Figure 2. Iqaluit test site general layout and existing cable routing (shown by blue, magenta, and green lines) before April 5, 2021 fire



**ENVIRONMENT CANADA**  
—  
**METEOROLOGICAL SERVICE OF CANADA**

All dimensions are in inches unless otherwise indicated

Tolerances, unless otherwise stated  
Fractional dimensions ±1/16  
Dimensions to 1 decimal ±0.02  
Dimensions to 2 decimals ±0.01  
Angles ±1 degree

SCALE:

APPROVALS	SIGNATURE
DRAWN	SORIN P.
CHECKED	
DESIGN	SORIN P.
APPROVED	
DATE	JULY 17, 2008

TITLE

**IQALUIT NUNAVUT TEST SITE POWER DIAGRAM**

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DRAWING No.	ISSUE No.
TE601.9-33	01

Figure 3. Power single line diagram 1 before April 2021 fire

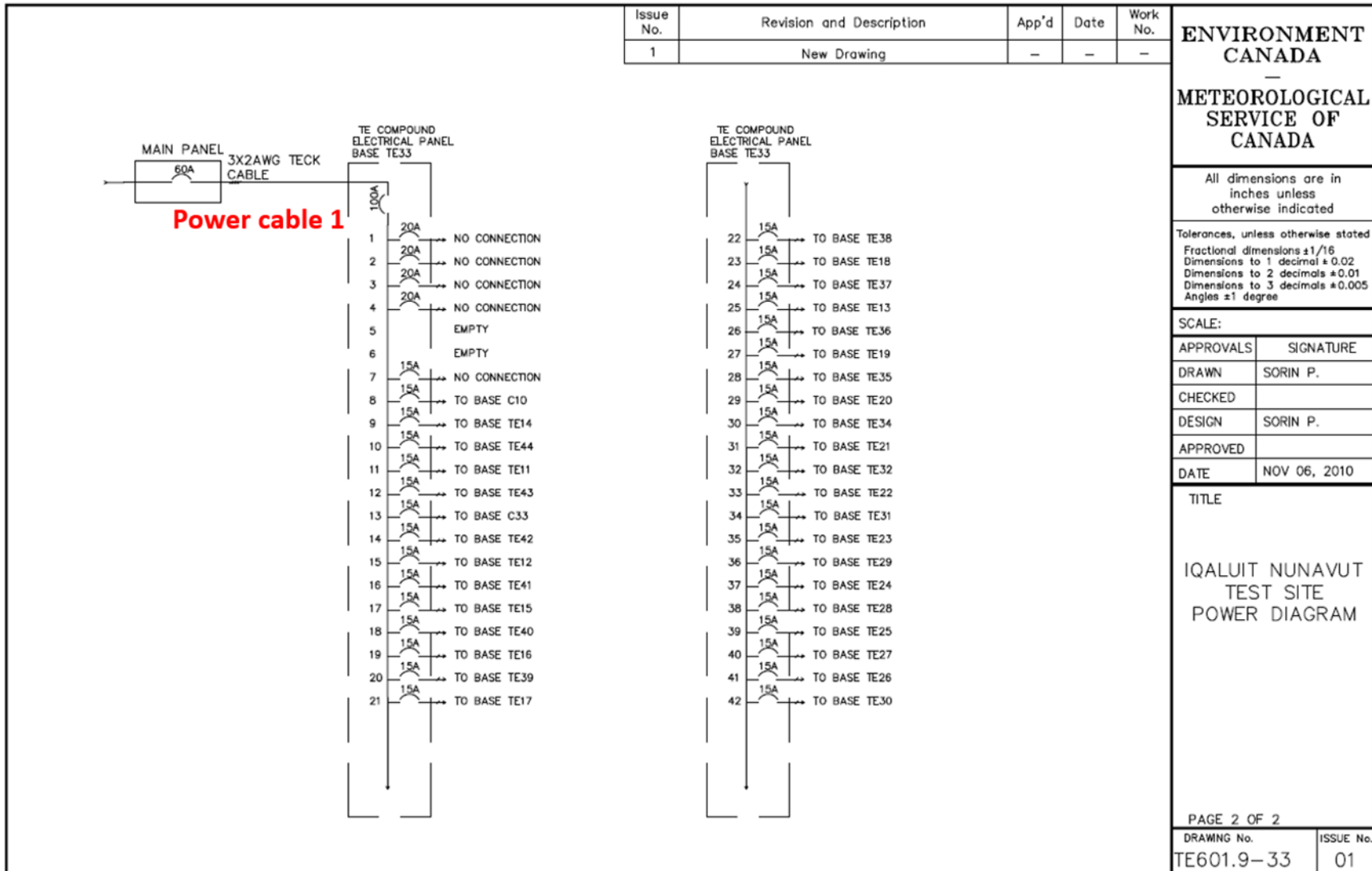


Figure 4. Power single line diagram 2 before April 2021 fire

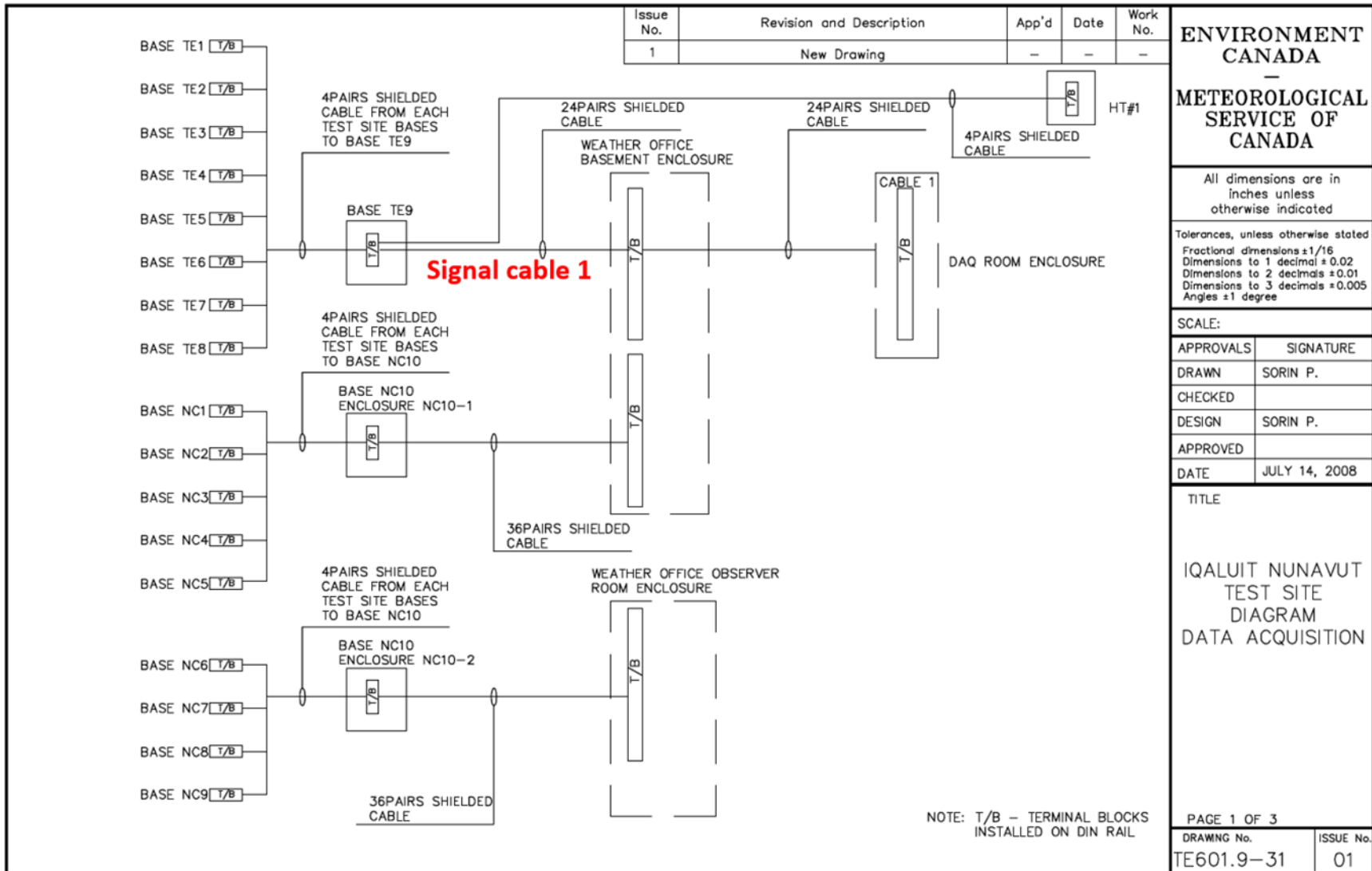


Figure 5. Signal single line diagram 1 before April 2021 fire

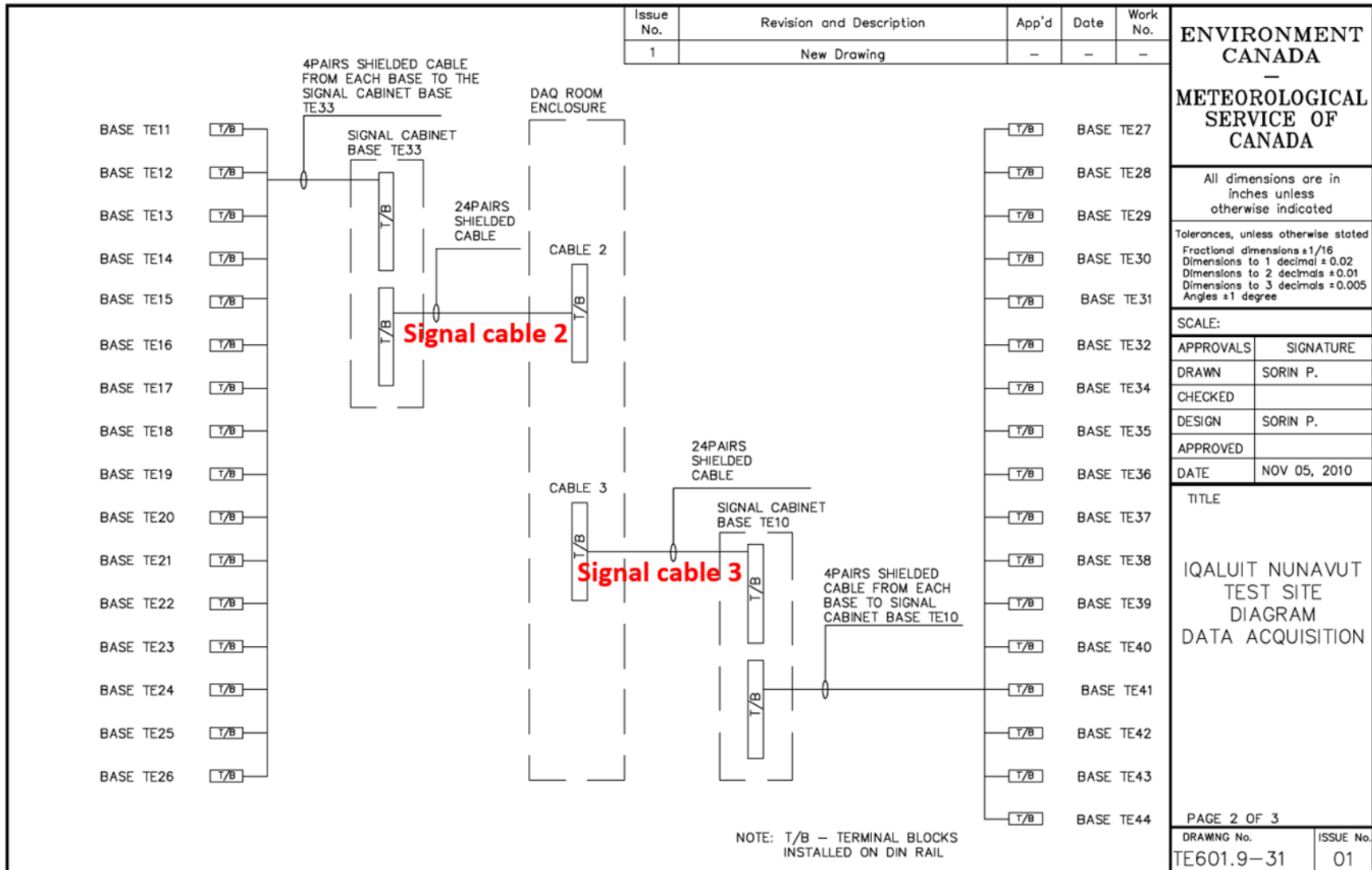


Figure 6. Signal single line diagram 2 before April 2021 fire

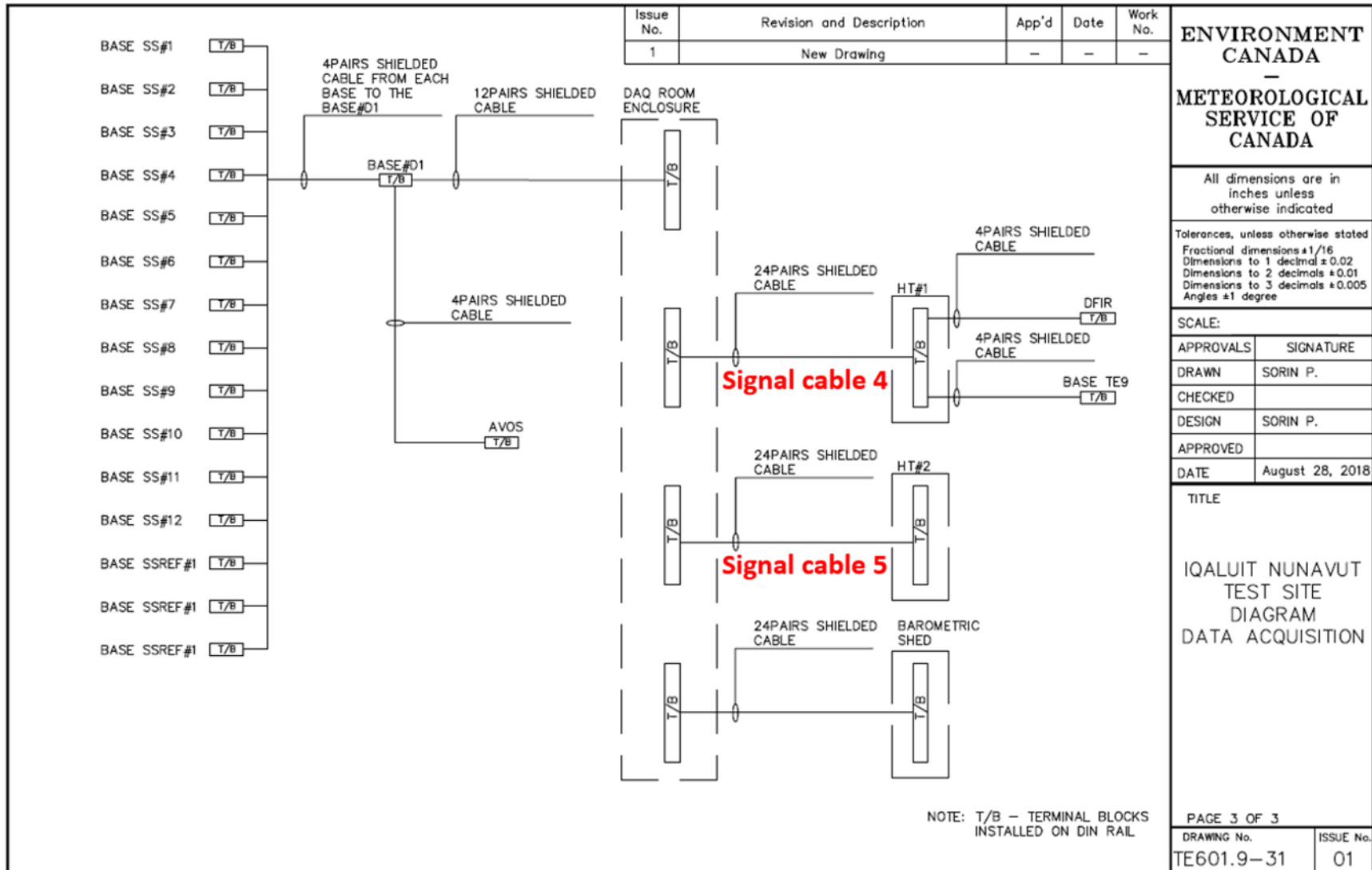


Figure 7. Signal single line diagram 3 before April 2021 fire.





#### 1.4. Reference documents

Construction drawings are attached to this package. Drawings show the existing site conditions and the proposed design for the new electrical cables.

The Specifications must be read in conjunction with all other drawings and documents provided by ECCC. For conditions not explicitly shown, the Contractor must immediately request clarifications from the ECCC Technical Authority. In the event of discrepancies in the Specifications, Drawings, or contract documents, the most stringent requirements apply.

## 2. Requirements

Electrical work is requested to install new electrical signal cables, electrical power cables, and fiber cables. This work will involve tracing and locating existing buried electrical signal and power cables (including those damaged in the Iqaluit fire in 2021); trenching for new cables; running new signal, power and fiber cables; terminating power cables and electrical work in the garage including adding a new electrical panel. All work must be compliant with the Nunavut electrical code and all applicable local standards.

The Contractor must provide construction services for the project, including mobilization and demobilization, all labour and materials, supervision/project management, equipment and supplies, as required. The cable installation must meet the requirements in Table 1. Electrical work must meet the requirements of Table 2. All work must be compliant with the Nunavut electrical code and all applicable local standards. Any changes to the requirements require the written approval of the ECCC Technical Authority.

The Contractor must comply with ECCC design and specifications, federal and territorial regulatory requirements, occupational health and safety regulation, as well as other applicable codes and industry standards.



**Table 1. Cable installation requirements**

The Contractor must provide the followings:

Item	Requirements
1.	<p><b>Trace and mark underground cable paths:</b></p> <p>Trace and mark existing underground cable paths for the following cables <b>to avoid</b>:</p> <ul style="list-style-type: none"> <li>- Power cable from NCAWOS to garage</li> <li>- Power cable from weather office building to inflation bldg.</li> <li>- Compound 1 power and signal cable path</li> <li>- Compound 2 power and signal cable path</li> </ul> <p>Trace and mark existing underground cable paths for the following cables <b>to replace</b> as indicated in Figures 3 to 7:</p> <ul style="list-style-type: none"> <li>- Power cable 1 from base TE33 toward garage</li> <li>- Power cable 2 from base HT#1 toward garage</li> <li>- Signal cable 1 from base TE9 toward garage</li> <li>- Signal cable 2 from base TE33 toward garage</li> <li>- Signal cable 3 from base TE10 toward garage</li> <li>- Signal cable 4 from HT#1 toward garage</li> <li>- Signal cable 5 from HT#2 toward garage</li> </ul> <p>Trace and mark underground paths for the following new power cables (two), signal cables (five), and fiber cables (four) as shown in Figure 8:</p> <ul style="list-style-type: none"> <li>- Replace existing power cable 1 from base TE33 to new main panel (garage)</li> <li>- Replace existing power cable 2 from base HT#1 and HT#2 electrical panel to new main panel (garage)</li> <li>- Replace existing signal cable 1 from base TE9 to garage</li> <li>- Replace existing signal cable 2 from base TE33 to garage</li> <li>- Replace existing signal cable 3 from base TE10 to garage</li> <li>- Replace existing signal cable 4 from HT#1 to garage</li> <li>- Replace existing signal cable 5 from HT#2 to garage</li> <li>- New signal cable 6 from AWOS building to garage (route East to join HT1 path back to garage)</li> <li>- New fiber cable from AWOS building to garage (route East to join HT1 path back to garage)</li> <li>- New fiber cable from AWOS building to base TE33</li> <li>- New fiber cable from AWOS building to compound 1</li> <li>- New fiber cable from AWOS building to compound 2</li> </ul> <p>Marked paths for the new cables should follow the paths of existing power cables 1 and 2 and signal cables 1 to 5, where possible, and <b>avoid existing NCAWOS, compound 1, compound 2 and other unidentified underground cables</b>. The areas around the marked paths for new cables should be traced and marked to identify existing cables near or crossing the marked paths. This includes clearly marking any cable crossings with the NCAWOS power cable, for example.</p>



2.	<p><b>Trenching for new cables:</b></p> <p>Trench paths for new buried signal, power, and fiber cables along marked paths including around the West, South and East sides of the garage as shown in Figure 9. Estimated trenching length for all cables is 500 m as shown in Table 3. Trenching must avoid the traffic area in front of the garage. Trenching must be 750mm MIN depth to accommodate for 600mm MIN cable depth as shown in Figure 11.</p> <p><b>Care must be taken to avoid existing underground signal and power cables including NCAWOS power cable, AWOS instrument cables near AWOS building, weather office cables, inflation building cables, and compound 1 and 2 cables.</b></p>
3.	<p><b>Removal and disposal of existing power and signal cables:</b></p> <p>Existing signal and power cables (power cables 1 and 2 and signal cables 1, 2, 3, 4 and 5 as indicated in Figures 3 to 7) along the trench path must be removed and disposed by the Contractor.</p>
4.	<p><b>Installation of new cables:</b></p> <p>All cables for the installation will be in new (unused) condition and will be supplied by the Contractor. Specifications for the new signal, power, and fiber cables are included in Tables 4, 5, and 6.</p>
5.	<p><b>Power cable routing:</b></p> <p>The Contractor must provide the power cable meeting Table 4 specifications. Evidence that the installed cable meets Table 4 specifications should be provided to the ECCC Technical Authority.</p> <p>Power cables should be routed underground along the following paths as shown in Figure 8:</p> <ul style="list-style-type: none"><li>- Power cable 1 from base TE33 to garage</li><li>- Power cable 2 from base HT#1 to garage</li></ul> <p>2m extra cable length should be provided at each base to enable connection to existing electrical panels. The power cables need to route into the existing electrical panels. Cable ends need to be sealed to prevent water intrusion.</p> <p>All power cables must be routed underground from the base to the West side of the garage around to the Southeast corner of the garage as shown in Figure 9. The cable routing must avoid the traffic area in front of the garage.</p> <p>All cables must be routed in PVC conduit up the East side of the garage near the South end. Slack in the form of a cable loop must be added to prevent damage due to settlement or frost. All cables must be routed into the garage with 5m extra length inside the garage. Free ends of cable in garage should be coiled and tied.</p>



6.	<p><b>Signal cable routing:</b></p> <p>The Contractor will provide the signal cable meeting Table 5 specifications. Evidence that the installed cable meets Table 5 specifications should be provided to the ECCC Technical Authority.</p> <p>Signal cables should be routed underground along the following paths as shown in Figure 8:</p> <ul style="list-style-type: none"><li>- Signal cable 1 from base TE9 to garage</li><li>- Signal cable 2 from base TE33 to garage</li><li>- Signal cable 3 from base TE10 to garage</li><li>- Signal cable 4 from HT#1 to garage</li><li>- Signal cable 5 from HT#2 to garage</li><li>- Signal cable 6 from AWOS building to garage (route East to join HT1 path back to garage)</li></ul> <p>5m extra cable length should be provided at each base to enable connection to the existing junction boxes. The signal cables need to route into the existing junction boxes. Cable ends need to be sealed to prevent water intrusion.</p> <p>All signal cables routed to the garage must travel along the West side of the garage around to the Southeast corner of the garage as shown in Figure 9. The cable routing must avoid the traffic area in front of the garage. All cables must be routed in the Southeast side of the garage near the floor. Slack in the form of a cable loop must be added to prevent damage due to settlement or frost. All cables must be routed into the garage with 10m extra length inside the garage. Free ends of cable in garage should be coiled and tied.</p> <p>Signal cable routed into the AWOS building should enter the Northwest corner through the floor near the location shown in Figure 10. Cable entry into the building should be sealed against water ingress. 10m extra length must be provided inside the AWOS building. Free ends of cable should be coiled and tied.</p>
7.	<p><b>Fiber cable routing:</b></p> <p>The Contractor will provide the Fiber cable meeting Table 6 specifications. Evidence that the installed cable meets Table 6 specifications should be provided to the ECCC Technical Authority.</p> <p>Fiber cables should be routed underground along the following paths as shown in Figure 8:</p> <ul style="list-style-type: none"><li>- Fiber cable from AWOS building to garage (route East to join HT1 path back to garage)</li><li>- Fiber cable from AWOS building to base TE33</li><li>- Fiber cable from AWOS building to compound 1</li><li>- Fiber cable from AWOS building to compound 2</li></ul> <p>5m extra cable length should be provided at each base to enable connection to the existing junction boxes. The fiber cables need to route into the existing junction boxes. Cable ends need to be sealed to prevent water intrusion.</p> <p>All fiber cables routed to the garage must travel along the West side of the garage around to the Southeast corner of the garage as shown in Figure 9. The cable routing must avoid the traffic area in front of the garage. All cables must be routed in the Southeast side of the garage near the floor. Slack in the form of a cable loop must be added to prevent damage due to settlement or frost. All cables must be routed into the garage with 10m extra length inside the garage. Free ends of cable in the garage should be coiled and tied.</p> <p>Fiber cable routed into the AWOS building should enter the Northwest corner through the floor near the location shown in Figure 10. Cable entry into the building should be sealed against water ingress. 10m extra length must be provided inside the AWOS building. Free ends of cable should be coiled and tied.</p>



8.	<b>Cable layout and burial:</b>  Signal and power cable layout and burial must be compliant with the Nunavut electrical code and all applicable local standards. Signal and power cables must be separated by 8" MIN. Cables must be 600mm MIN below grade following the clearance and sand fill recommendations in Figure 11. Flagging tape should be added above the sand to indicate the presence of the installed cables. Backfill must be compacted with mechanical compaction to avoid settlement. If settlement is in excess of 5 cm, 1 year after construction, the Contractor must add fill at their expense to resolve the settlement areas.
9.	<b>Contractor certification:</b>  All electrical work must be performed by contractors certified to perform electrical work in Nunavut as per the Nunavut electrical code.
10.	<b>Inspection of work:</b>  All work must be inspected and approved as required by the Nunavut electrical authority.  Following construction, the Contractor must demonstrate the successful electrification of power cables 1 and 2 and the continuity of all signal cables to the ECCC Technical Authority.



**Table 2. Garage electrical upgrades and power cable termination requirements**

The Contractor must provide the followings:

Item	Requirements
1.	<b>New electrical panel installation:</b>  Install electrical panel in garage on the East wall near the South end as shown in Figure 9. The electrical panel must be installed with four 100 A breakers. Connect the electrical panel to the electrical source on the Northeast side of the garage.
2.	<b>Add receptacles:</b>  Add one quad receptacle on South wall near East end. Add one quad receptacle on East wall near South end. Add 5 additional duplex receptacles along the South and West walls of the garage. Power the receptacles through the new electrical panel or the other existing electrical panels in garage.
3.	<b>Relocate hanging heater:</b>  Relocate the garage heater from the Southeast corner to Northeast corner.
4.	<b>Terminate power cables 1 and 2:</b>  Connect power cable 1 to the base TE33 electrical panel. Connect power cable 2 to the HT#1&HT#2 electrical panel. Connect power cables 1 and 2 to the new electrical panel in the garage.
5.	<b>Contractor certification:</b>  All electrical work must be performed by contractors certified to perform electrical work in Nunavut as per the Nunavut electrical code.
6.	<b>Inspection of work:</b>  All work must be inspected and approved as required by the Nunavut electrical authority.  Following construction, the Contractor must demonstrate to the ECCC Technical Authority that items 1 to 4 have been completed.

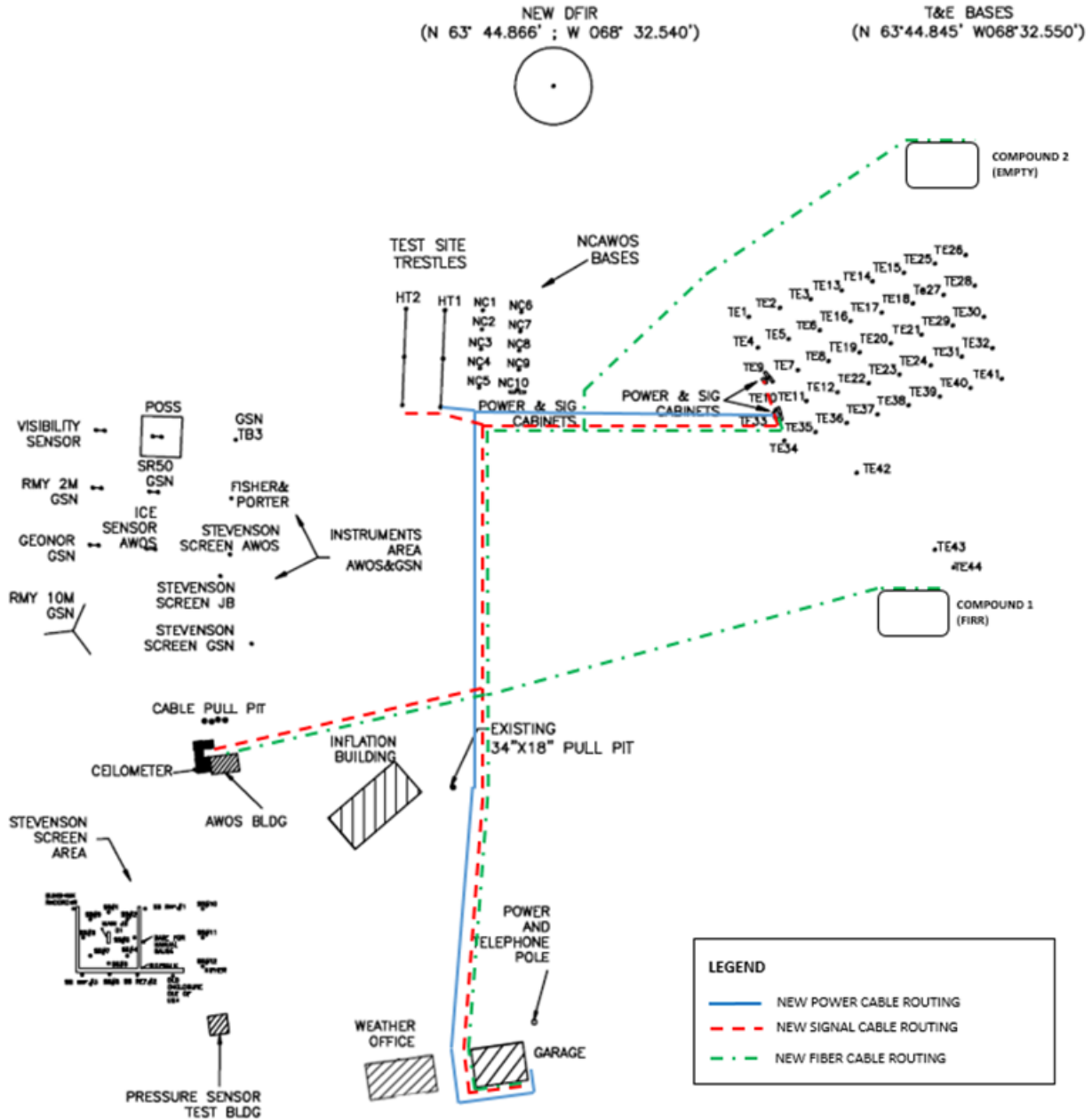


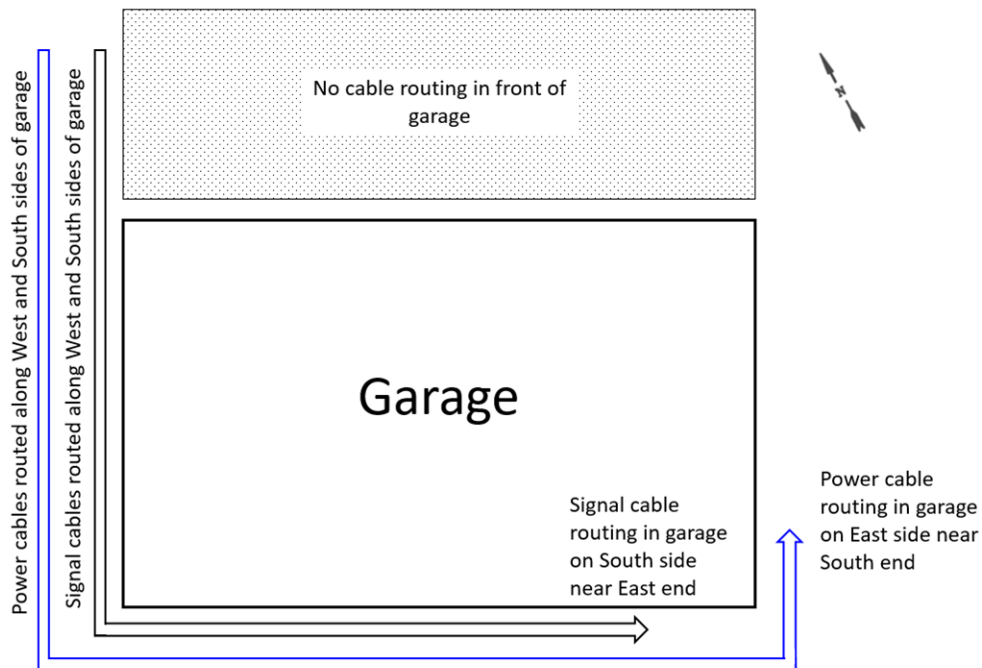
Figure 8. New power, signal, and fiber cable routing



**Table 3. Estimated trench and cable lengths**

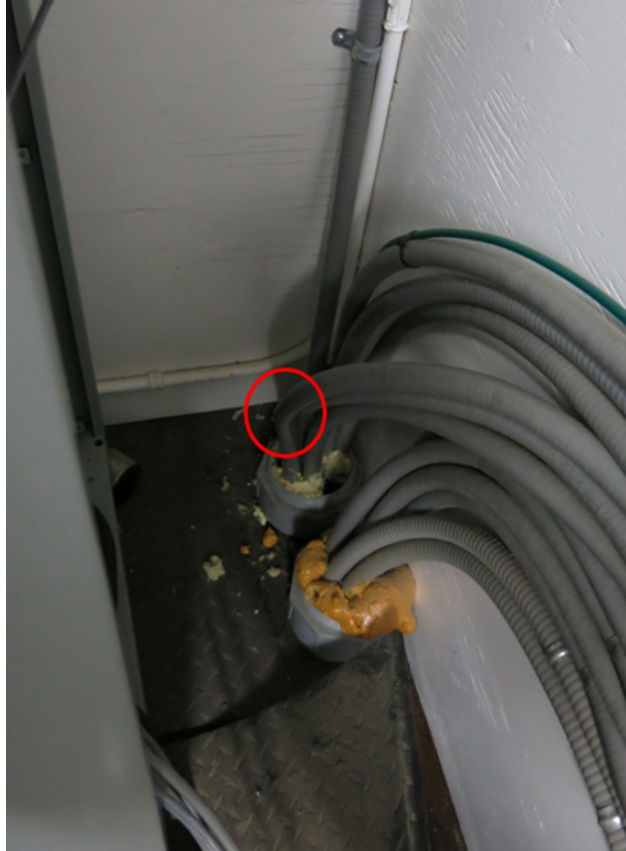
Description	From	To	Length* (m)
Trenching	Along all cable paths	Along all cable paths	500
Power cable P1	Base TE33	Garage	210
Power cable P2	HT#1 and HT#2 electrical panel	Garage	168
Signal cable S1	Base TE9	Garage	210
Signal cable S2	Base TE33	Garage	210
Signal cable S3	Base TE10	Garage	210
Signal cable S4	HT#1	Garage	168
Signal cable S5	HT#2	Garage	168
Signal cable S6	AWOS building	Garage	180
Fiber cable F1	AWOS building	Garage	180
Fiber cable F2	AWOS building	Base TE33	120
Fiber cable F3	AWOS building	Compound 1	144
Fiber cable F4	AWOS building	Compound 2	210

\* Estimated length shown includes 20% extra length to account for routing path differences. Contractor to verify actual lengths.



**Figure 9. Power and signal cable routing around garage**





**Figure 10. Location for signal cable entry in Northwest corner of AWOS building floor.**



**Table 4. Power cable specifications for reference only (Anixter 7TK-0203SJ or equivalent, supplied by Contractor)**

Property	Power Cable
Cable type	TECK 90, 1kV, 120A at 25°C, 0.16Ohm/1000ft at 20°C; temperature rating -40°C to (+90°C dry, +90°C wet)
Conductor size	AWG#2 Compact Bare Copper
Number of conductors	3
Conductor type	Solid
Insulation	Cross-linked polyethylene (XLPE)
Grounding conductor	AWG#6 Compact Bare Copper
Inner jacket	Polyvinyl chloride (PVC), sunlight resistant jacket. Direct burial.
Armor	Galvanized steel, interlocking armor
Outer jacket	Polyvinyl chloride (PVC), sunlight resistant jacket. Direct burial
Certification	The cable shall be certified for CSA C22.2 #131 (TECK90) and CSA C22.2 #174) for use in class 1, division 1 hazardous locations. Flame resistance: rated CSA FT-4 Vertical Tray.

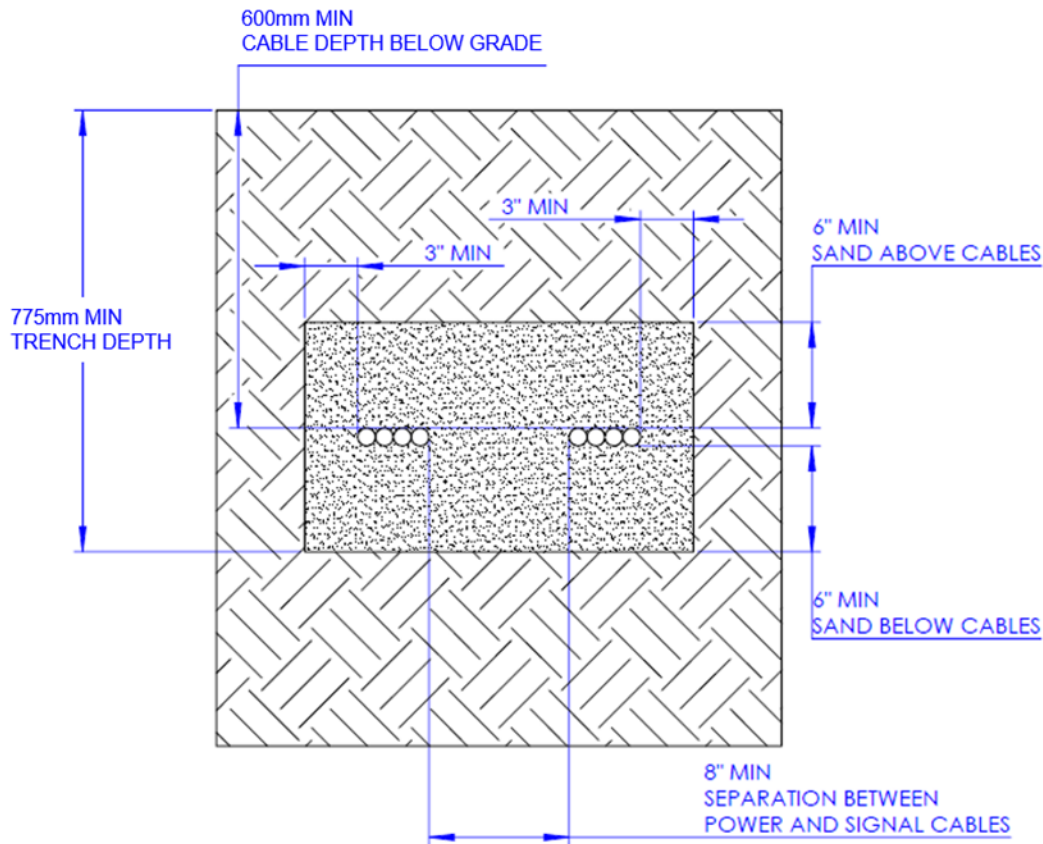
**Table 5. Signal cable specifications for reference only (Anixter 323-739-1824 or equivalent, supplied by Contractor)**

Property	Signal Cable
Cable type	Type ACIC direct earth burial cable, 300V, multiple twisted pairs, individual and overall shield
Conductor size	AWG#18
Number of pairs	24 Pr. Stranded
Conductor type	7 strands soft tinned copper
Insulation	Cross-Linked Polyethylene XLPE ; 105°C dry/90°C wet
Individual pair shielding	Overall aluminum/Mylar shield with drain wire
Overall shielding with drain wire	Overall aluminum/Mylar shield with drain wire
Inner jacket	Polyvinyl chloride (PVC); 105°C dry/90°C wet
Armor	Aluminum interlocking armor
Outer jacket	Polyvinyl chloride (PVC), -40°C to 90°C, FT4, low acid gas, sunlight resistant
Certification	The cable shall be certified in accordance with CSA C22.2 No. 239 and CSA C22.2 No. 174 for use in class 1, division 1 hazardous locations .



**Table 6. Fiber cable specifications for reference only (Anixter 372-BNTOM3-LTHD-12 or equivalent, supplied by Contractor)**

Property	Signal Cable
Cable type	Industrial Fiber OM3, 50/125 um, 10Gb – 300m, temperature range: storage/operating: -40°C to +75°C, Min. Bend Radius: Installation 20 x OD, Long Term 15 x OD, Direct burial, harsh environment. Outer Dia: 0.49in
Conductor size	fiber size 50um
Number of pairs	12 fiber bundles
Conductor type	fiber optic cable
Insulation	Polyethylene (PE)
Individual pair shielding	Gel-filler buffer tube
Inner jacket	Polyethylene (PE)
Outer jacket	Polyethylene (PE)
Certification	Fiber OM3



**Figure 11. Trench profile minimum requirements for signal and power cables**



### 3. Deliverables and Scope

The Contractor must provide mobilization and demobilization, all labour, supervision/project management, equipment, and supplies, as required, to complete the requested Work.

The Contractor is responsible for supplying all equipment and materials for construction.

#### 3.1 Deliverables

The Contractor must provide the following deliverables, see section 3.2 details:

Deliverables	Description
1	Pre-construction deliverables as per Section 3.2.
2	Procurement of power, signal and fiber cables following Section 2 requirements. See Tables 3, 4, 5, and 6.
3	Mobilization and demobilization – including material transportation to the work site.
4	Trace and mark underground cable paths following Section 2. See Table 1.
5	Trenching for new cables following Section 2 requirements. See Table 1 and Figs. 8, 9 and 11.
6	Power, signal and fiber cable installation and burial following Section 2 requirements. See Table 1 and Figs. 8, 9 and 11.
7	Power cable termination and electrical upgrades following Section 2 requirements. See Table 2 and Figs. 8, 9, 10, and 11.
8	Inspection of work following Section 2 requirements. See Tables 1 & 2.
9	Disposal of removed infrastructure and construction waste following Section 2 requirements. See Table 1 Item 3.
10	As-built drawings for cable installation and garage electrical upgrades as per Section 3.2 post-construction deliverables.
11	Documentation and project management activities as per Section 3.2 'During Construction' and 'Post-Construction' activities.

#### 3.2 Scope

The below list details items included in section 3.1 Deliverables.

##### Prior to Construction

- The Contractor must fully understand all provided and relevant documents prior to the works and create a work plan to carry out the construction.
- The Contractor must ensure that all pre-construction deliverables listed below are completed within 15 business days after the contract is awarded. All pre-construction deliverables must be provided to ECCC Technical Authority for review, acceptance and/or approval. ECCC Technical Authority has 5 business days to review and provide comments.
- Authorization from the ECCC Technical Authority is required by the Contractor before mobilization to the work site. The Contractor should notify ECCC Technical Authority at least 8 weeks in advance about the date of mobilization and commencement of work.
- Pre-construction deliverables include:
  - a. Site-specific Health and Safety Plan; including On-site Contingency and Emergency Response Plan. Schedule of Health and Safety meeting with the ECCC Technical Authority;
  - b. Work plan outlining a site access and layout plan, construction methodology in detail, and quality control plan;
  - c. Cable procurement plan for procurement of power, signal, and fiber cables. The Contractor must be responsible for receiving, storing and securing power, signal, and fiber cables prior



- to the Construction activities. The Contractor must demonstrate power, signal and fiber cables to be used for the work meet the specifications in Tables 3, 4, 5, and 6.
- d. Project Schedule including order and delivery of power, signal, and fiber cables; mobilization and work tasks during construction; and
  - e. Construction Standard Operating Procedure (SOP).

#### During Construction

- The Contractor must ensure all the construction activities are performed as per ECCC design and specifications, taking ECCC recommendations into consideration. The Contractor is required to have sufficient equipment and experience to carry out the work. Full documentation throughout the project must be maintained on-site by the Contractor and made available to the ECCC Technical Authority upon request.
- Property belonging to ECCC, a private entity on-site, or related to project must not be damaged. Any damage must be repaired prior to demobilization at the Contractor's expense. Care must be taken to notify ECCC Technical Authority when the Contractor or its subcontractors are on-site.
- Mobilization and demobilization preparatory work and operations including, but not limited to, those for the movement of personnel, equipment, materials, offices, supplies and incidentals to and from the project sites.
- Project management and documentation.
  - a) Collect photographs and videos throughout the construction process including all traced cable paths; trenching; power, signal, and fiber cable routing; cable layout and burial; and garage electrical upgrades. Depth of cables below grade, separation between power and signal cables and sand depths above and below cables must be provided.
  - b) Ensure progress photos and updates are documented daily or when each construction item is completed.
- Cable installation following all Section 2 requirements including:
  - a) Trace and mark underground cable paths following Table 1. Item 1 requirements.
  - b) Trenching for new cables following Table 1. Item 2 requirements and Figs. 8, 9 and 11.
  - c) Removal and disposal of existing power and signal cables following Table 1. Item 3 requirements.
  - d) Installation of new cables following Table 1. Item 4 requirements and Figs. 8, 9 and 11.
  - e) Power cable routing following Table 1. Item 5 requirements and Figs. 8, 9 and 11.
  - f) Signal cable routing following Table 1. Item 6 requirements and Figs. 8, 9 and 11.
  - g) Fiber cable routing following Table 1. Item 7 requirements and Figs. 8, 9 and 11.
  - h) Cable layout and burial following Table 1. Item 8 requirements and Figs. 8, 9 and 11.
  - i) Electrical Contractor certification following Table 1. Item 9 requirements.
  - j) Inspection and approval of work by ECCC Technical Authority and Nunavut electrical authority following Table 1. Item 10 requirements.
- Garage electrical upgrades and power cable termination requirements following Table 2. requirements including:
  - a) New garage electrical panel installation following Table 2. Item 1 requirements.
  - b) Add receptacles in garage following Table 2. Item 2 requirements.
  - c) Relocate hanging heater following Table 2. Item 3 requirements.
  - d) Terminate power cables 1 and 2 following Table 2. Item 4 requirements and Figs. 8, 9, 10 and 11.
  - e) Electrical Contractor certification following Table 2. Item 5 requirements.
  - f) Inspection and approval of work by ECCC Technical Authority and Nunavut electrical authority following Table 2. Item 6 requirements.
- Site clean-up and restoration as per pre-construction condition.



#### Post-Construction

- Contractor to provide all photos and videos and documentation from the construction process.
- Contractor to provide as-built cable installation drawing.
  - a) Updated Figure 8 drawing with installed power, signal, and fiber cable paths and existing traced cable paths.
  - b) Prepare and submit as-built drawings for the site and the garage in both Portable Document Format (PDF) and AutoCAD format, with all essential infrastructure, cables and benchmarks captured and the topography (coordinates/elevations) of all points obtained.
- Construction daily site log (if applicable)
- Health and safety incident report log (if applicable)
- Certification by Nunavut electrical authority of work completed.

### **4. Considerations and General Requirements**

#### **4.1 ECCC and Contractor's General Responsibilities**

##### ECCC Responsibilities

- Obtain all required permissions to undertake the work at the site location.
- Act as a liaison with any involved parties, including the landowner(s) for site access.
- Provide Drawings and Specifications related to the work.
- Provide support and guidance during all phases of the project and as required including review of pre-construction documentation, construction activities, and post-construction documentation.
- Provide field supervision of the following:
  - Trenching depth and path;
  - Addition of sand to trench base;
  - Power, signal, and fiber cable routing;
  - Addition of sand above cables;
  - Garage upgrades;
  - Inspection of cable and garage upgrades at completion of construction and prior to hand-over.
- An inspection will be completed by the ECCC Technical Authority to confirm compliance with the scope of work and to commission the site.
- A certificate of completion will be provided by the ECCC Technical Authority to the Contractor upon satisfactory completion and acceptance of the work, following receipt of all post-construction documentation including certification by the Nunavut electrical authority.

##### Contractor Responsibilities

- Fully understand the construction specifications documents.
- Check and verify all dimensions, quantities, and specifications and notify ECCC Technical Authority of any errors or discrepancies prior to commencing with any work.
- Maintain close coordination and communication with ECCC Technical Authority.
- Provide construction services required as outlined in the scope of work.
- All work must be carried out in accordance with current Nunavut Construction Standards of Practice and meet all relevant Federal, Territorial and Municipal codes and guidelines.
- Abide by all relevant health and safety regulations and perform work in accordance with generally accepted safety practices. The use of personal protective equipment is required.



- The Contractor must remain in compliance with the Canada Labour Code, National Joint Council Occupational Health and Safety Directive, and Worker's Compensation Board guidelines.
- The Contractor must provide ECCC Technical Authority with details of a safe work plan for each construction task.
- The Contractor is responsible for circulation of the Health and Safety Plan to all individuals on site and ensuring that all individuals are in adherence to the Health and Safety Plan.
- The Contractor is expected to follow safe work procedures, including use of proper Personal Protective Equipment (PPE) at all times.
- A complete Basic First Aid Kit must be carried by the Contractor and on-site at all times during construction.

#### 4.2 Schedule

##### Completion of the scope of work

- Completion of the scope of work is anticipated by August 23, 2024 as described in the following:
- Preconstruction deliverables by the Contractor are expected within 15 business days after contract award with 5 business days for the ECCC Technical Authority to review and provide comments. This should include the planned time for cable tracing and construction activities. Construction activities should be performed concurrently with the exception of cable tracing, which can be performed in advance of the construction activities.
- Contractor procurement and receipt of power, signal and fiber cables are expected by July 26, 2024.
- Construction work must commence on or before August 12, 2024 and be completed by August 23, 2024 at the latest.
- Post-construction deliverables to be completed within 2 weeks of construction completion.
- Hours of Work
  - A standard construction workday, used in the estimated project length, is considered 8 hours per day.
  - ECCC will provide support during the length of the project from Monday to Friday 8AM to 5PM.
  - 48-hour notice must be provided for a requirement outside regular hours, however, ECCC cannot guarantee the availability of a representative outside regular work hours.
- If more than 2 separate site visits (e.g. separate site visits for cable tracing and all other construction activities) are required by the ECCC Technical Authority, additional trips will be at the expense of the Contractor.

#### 4.3 Notifications of Non-Compliance

The following procedures will be followed in the case that non-compliance is observed by ECCC.

- The ECCC Technical Authority will notify Contractor in writing of observed non-compliance related to health and safety or any other regulations and requirements.
- After receipt of such notice, the Contractor must inform the ECCC Technical Authority of proposed corrective action(s) within 1 day(s) to obtain acceptance from the ECCC Technical Authority. The ECCC Technical Authority will provide review and acceptance in 3 days.
- Once acceptance has been provided by the ECCC Technical Authority, the Contractor may proceed with the proposed action(s).



- If warranted, the ECCC Technical Authority will issue a Stop Work Order until satisfactory corrective action has been taken by the Contractor.
- Suspensions will be lifted once the corrective action(s) have been proposed and taken by the Contractor, with the acceptance of the ECCC Technical Authority.
- No time extensions will be granted or equitable adjustments will be given to the Contractor for such suspensions.
- In the case where there is immediate danger to the health and safety of a worker or integrity of infrastructure, the Contractor must take immediate actions.

#### **4.4 Safety Plan**

The Contractor must provide Health and Safety Plan, clearly stating the procedures for ensuring safety throughout the project. This should include steps in the case of emergency, in the case of potential construction problems, and everyday procedures to promote safety.

#### **4.5 Unforeseen Obstacles**

When unforeseen obstacles are identified, the Contractor must immediately inform ECCC's Technical Authority via phone or email as soon as reasonably possible. In cases where unforeseen obstacles are being claimed, full documentation including photos illustrating the obstruction in a clear manner and dimensions (to a reasonable degree) as well as an outline of challenges during removal, must be provided to ECCC's Technical Authority for review and file documentation. Unless otherwise agreed upon, it remains the responsibility of the Contractor to remove the obstruction.

#### **4.6 Work Authorization**

The Contractor must ensure that all pre-construction deliverables, including a detailed outline of all work, schedule, project sequence, and items related to Section 3 are provided prior to the mobilization and commencement of work.

A construction methodology for all parts of the Work must be submitted to the ECCC Technical Authority for review prior to any work commencing. ECCC Technical Authority has five (5) business days to review and provide comments.

Delivery of the project on schedule, budget, and safely is the responsibility of the Contractor. ECCC is not obliged to provide guidance or suggestions beyond those outlined in section 4.1. It is the responsibility of the Contractor to ensure that the construction meets the standards and dimensions specified by ECCC. The Contractor should not rely on ECCC to provide construction methodology.

#### **4.7 Damages, Lost Materials, and Defective Work**

Any material that is lost or damaged by the Contractor must be reported to ECCC Technical Authority as soon as reasonably possible and replaced at the Contractor's expense. Extra material is to be returned to ECCC at the completion of the project.

Any Work rejected by ECCC as a result of poor workmanship, use of defective products or damage caused by negligent or deliberate acts or omissions of the Contractor or of its Subcontractors is to be replaced by the Contractor at the Contractor's expense.

### **5. Official Language**

The work will be completed in English.