

# Enbridge Pipeline Crossing Guidelines, Canada

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**Application Guidance Details**

July 2024 v2.1

# Application Guidance Details

## SCOPE

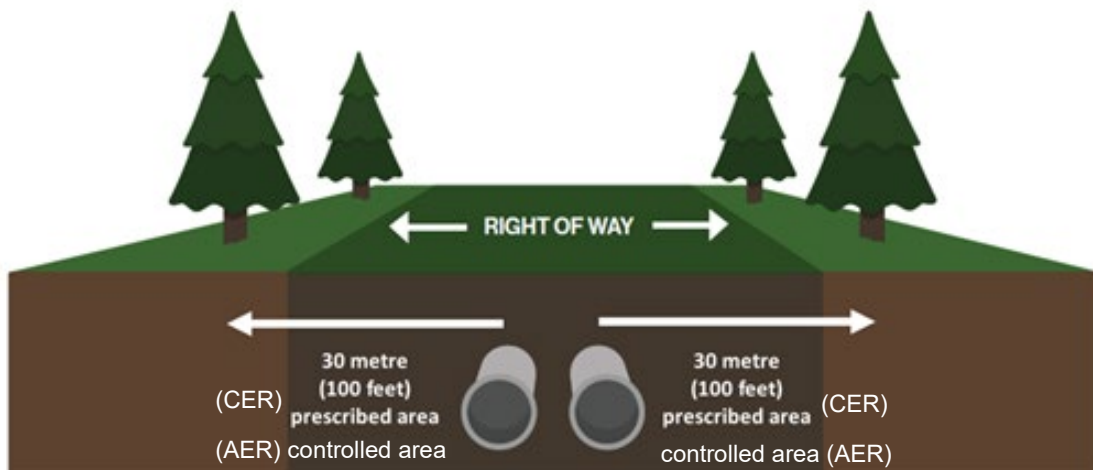
The application guidance contained within is applicable to Enbridge's Liquids Pipeline assets and CER-regulated Gas Storage & Transmission Operations (STO) assets.

For crossing application guidance applicable to Enbridge's Gas Transmission & Midstream assets (such as Westcoast Energy Inc. or Maritimes & Northeast Pipeline), please visit [www.enbridge.com/crossings](http://www.enbridge.com/crossings). If you require help to determine which assets your work will be affecting, please call 1-800-668-2951 (option 2) or email [CrossingsCanada@enbridge.com](mailto:CrossingsCanada@enbridge.com) and we will direct you accordingly.

### 1. WHO REQUIRES CONSENT?

Consent is governed by the Canada Energy Regulator (CER) for interprovincial or international (federally regulated) pipelines and the Alberta Energy Regulatory (AER) for intra-provincial (provincially regulated) pipelines within the Province of Alberta. To ensure our pipelines and facilities operate safely written consent from Enbridge must be obtained in Canada before any of the following occur:

- Construction or installation of a new facility across, on, along or under Enbridge's pipeline and/or right-of-way.
- Ground disturbance activities in the prescribed area (CER) or controlled area (AER) which extends 30m from each side of the centerline of the pipeline.
- Operation or movement of vehicles, mobile equipment or machinery across Enbridge's right-of-way, outside of the travelled portion of a highway or public road (except those exempted under Section 49(1) of the Alberta Pipeline Rules or the Canada Energy Regulator Pipeline Damage Prevention Regulations – Authorizations Section 13 (1) & (2) – See section 2 of this document).
- Using explosives within 300m of Enbridge's pipeline right-of-way.
- Use of the prescribed area or controlled area for storage or workspace purposes.
- Subdivision development across, on, along or over Enbridge's pipeline and/or right-of-way.
- Landowners wishing to install agricultural drainage tile across, on, along or under Enbridge's pipeline and/or right-of-way.



## Ground Disturbance

Activities that cause a ground disturbance include, but are not limited to, the following:

• digging	• clearing and stump removal
• excavation	• subsoiling
• trenching	• blasting/using explosives
• ditching	• quarrying
• tunneling	• grinding and milling of asphalt/concrete
• boring/drilling/pushing	• seismic exploration
• augering	• driving fence posts, bars, rods, pins, anchors or pilings
• topsoil stripping	• plowing to install underground infrastructure
• land levelling/grading	• crossing of buried pipelines or other underground infrastructure by heavy loads off the travelled portion of a public roadway
• tree or shrub planting	• installing agricultural drainage tile

Under section 2 of the Canadian Energy Regulator Act, ground disturbance does NOT include:

- Cultivation to a depth of less than 45cm below the surface of the ground.
- Any activity to a depth of less than 30cm and that does not result in reduction of the depth of earth cover over the pipeline less than that approved at time of construction.

## 2. CROSSING A PIPELINE WITH AN AGRICULTURAL VEHICLE OR MOBILE EQUIPMENT

**For pipelines regulated by the Canada Energy Regulator**, the *Canadian Energy Regulator Pipeline Damage Prevention Regulations – Authorizations* provides that persons operating agricultural vehicles or mobile equipment across pipelines may do so in low-risk areas, under certain conditions:

- the loaded axle weight and tire pressures of the vehicle or mobile equipment are within the manufacturer’s approved limits and operating guidelines; AND
- the point of crossing has not been the subject of a notification from the pipeline company that crossing at that location could impair the pipeline’s safety or security.

This applies to vehicles or mobile equipment used for agricultural activities in the production of crops and the raising of animals and includes pasturing and cultivation activities such as tillage, plowing, disking and harrowing.

**For pipelines regulated by the Alberta Energy Regulator**, the *Alberta Pipeline Rules* provides that persons operating vehicles or equipment across pipelines outside of the upgraded and traveled portion of a highway or public road may do so without the pipeline company’s consent, under certain conditions:

- the vehicle or equipment is designed to minimize ground pressure (when crossing Enbridge’s pipelines this means tracked equipment with less than 6.0psi ground pressure); or
- a vehicle used for agricultural operation; or
- an off-highway vehicles as defined in section 117(a)(iii) to (viii) of the Traffic Safety Act; or
- a commercial vehicle or a private passenger vehicle as defined in the Traffic Safety Act, having a nominal chassis rating of not greater than 2 tonnes.

However, if the above exemptions do not apply, then an application must be submitted to Enbridge for further review and processing.

### 3. HOW TO APPLY FOR ENBRIDGE CONSENT

The applicant must submit a written request, either by completing the Application Form (attached) or a letter with equivalent information, together with the applicable drawing(s) to the respective Enbridge crossings department as set out in the *Contact Us* section of this document.

The drawing(s) must be prepared in accordance with the minimum standards as set out in the *Drawing Requirements* section of this document.

Enbridge's Equipment Specification and Data Sheet (attached) must also be completed for any vehicle/ mobile equipment crossing applications.

For federally regulated pipelines, the applicant may petition the Commission for approval of construction activity if:

- the applicant cannot comply with the terms and conditions as set out in the company's written consent;
- the applicant feels the terms and conditions in the company's written consent are excessive; or
- If the company refused to grant approval to the applicant for reasons of pipeline integrity, public safety, or company policy.

An application can be filed with the Commission by writing to:

**Secretary of the Commission  
Canada Energy Regulator  
Suite 210, 517 – 10<sup>th</sup> Ave SW  
Calgary AB T2R 0A8  
Phone: 1-877-288-8803  
Online: [www.cer-rec.gc.ca](http://www.cer-rec.gc.ca)**

Applications may be filed with the Commission by mail, courier or facsimile by calling the toll-free number at 1-877-288-8803. Applications can also be uploaded through the CER's Applications and Filings Portal on the CER website at Home / Applications and Filings / Submit Applications and Regulatory Documents / File under the CER Act / OPR: CER Act – Guide C (<http://www.cer-rec.gc.ca/pplctnflng/sbmt/nbpr-eng.html>).

### 4. DRAWING REQUIREMENTS

The following represents the minimum information that is required to be shown on the drawing(s) for Enbridge to review your application. Dimensions must be shown on the drawing(s) and may be done in either imperial or metric units (if metric, then to one decimal point).

NOTE: incomplete drawings and/or an incomplete application will be rejected back to the applicant.

#### Permanent Installations

All proposed permanent installation drawings MUST contain the following items:

1. Plan Number, including any revision number and the respective date.
2. North Arrow.
3. Scale.
4. Legend.
5. Location indicator including legal land description, PIN, GPS coordinates.
6. Plan view of whole quarter section or affected area including:
  - Lot lines, road limits;
  - Proposed facilities (including curbs, footing, guard rails, guy wires, poles, fences, etc.) with tie dimensions to lot survey line preferably along pipeline and/or right-of-way boundary;

- Location of cathodic test lead terminals (if applicable).
7. Cross section view and/or profile view including:
    - For surface structures, show profile along pipeline(s) with highest elevation;
    - For underground facilities show profile along facility;
    - Property lines, pipeline(s) and depth of cover;
    - All underground facilities must maintain an even elevation across the entire width of right-of-way except for gravity type facilities or those facilities installed by HDD;
    - Drill path plan for HDD installations;
    - Unsupported span (m) of Enbridge pipeline for open cut installations.
  8. Crossing Angle.
  9. Crossing location circled in red.
  10. Identify all affected Enbridge facilities, right-of-way(s) and pipeline markers.
  11. Method of Installation (MOI) (*\*Refer to Interpretation/Definitions section*).
  12. Minimum Clearance (*\*Refer to Interpretation/Definitions section*).
  13. Facility specifications:
    - PIPE/CABLE: pipe diameter, pipe material, product conveyed, cable size, if cable is within a conduit, conduit material, cable voltage; unsupported span (meters) of existing pipeline if MOI is open cut;
    - ROAD: width of road, cover at ditch, cover at center of road, surface material, road type/use; design loading calculation; indicate if any Government or Provincial setback requirements;
    - OVERHEAD POWER: pole number(s), location of pole/guy wire/anchors/etc., method of installation of pole/guy wire/anchors/etc., horizontal clearance to pipe from proposed pole/guy wire/anchors/etc., vertical clearance to ground/grade, voltage, type of power (AC/DC), AC mitigation plan may be required;
    - PIPE RACK: height of pipe rack, pile location(s), pile clearance to Grantor's facility, pile installation method; alternate access route provided for rural locations;
    - DRAINAGE TILE: location of tiles and incremental cost analysis.
  14. Complete the Equipment Specification and Data Sheet, when required.

### Temporary Activities

All temporary drawings MUST contain the following:

1. Plan Number, including any revision number and the respective date.
2. North Arrow.
3. Scale.
4. Legend.
5. Location indicator including legal land description, PIN, GPS coordinates.
6. Plan view of whole quarter section or affected area.
7. Temporary activities location circled in red.
8. Identify all affected Enbridge facilities, right of way(s) and/or PLA/easement ownership.
9. Facility specifications:
  - WORKSPACE: location, measurement of workspace, purpose;

- ACCESS OF ROW: location, kilometer usage of ROW, width of access; egress/ingress points, complete the Equipment Specification and Data Sheet (attached);
- EQUIPMENT CROSSING: complete the Equipment Specification and Data Sheet (attached);
- ROAD USE: indicate road(s) to be utilized, km usage, reason required, frequency of use; complete the Equipment Specification and Data Sheet (attached);
- GEOPHYSICAL: project/prospect name, number of reading units/lines, type of source, CER approval required (Y/N).

## 5. INTERPRETATIONS / DEFINITIONS

For crossing application purposes, Enbridge defines the following as:

**Grantee** means the applicant or the facility owner: a company, a person, a municipality or government body, etc.

**Method of Installation** means OPEN CUT or HDB or HDD; all defined as follows:

### OPEN CUT

Enbridge defines open cut as trench methodology wherein access is gained to the required level underground for the proposed installation, maintenance or inspection of a pipe, conduit or cable. The excavated trench is then backfilled, and the surface restored.

### HORIZONTAL DIRECTIONAL BORE (HDB)

Enbridge defines horizontal directional bore as meeting ALL of the following:

- The designed horizontal distance of the crossing shall be less than or equal to 150m (500ft) in length; AND
- The depth of the pipeline installation shall be limited to 8m (25ft) to the centre (cross-section) of the pilot hole and measured to the corresponding surface location; AND
- Straight alignment in the horizontal plane; AND
- Pilot bit is steerable and trackable.

### HORIZONTAL DIRECTIONAL DRILL (HDD)

Enbridge defines horizontal directional drill as an *HDB* that DOES NOT meet all of the criteria for an *HDB*. An *HDD* will satisfy some but not all of a, b and c above and will satisfy d.

**Minimum Clearance** means the required distance between the existing Enbridge facility and the proposed facility based on the selected *Method of Installation*.

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**Minimum clearance required for installation ABOVE Enbridge facility by OPEN CUT is 0.3m**

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**Minimum clearance required for installation BELOW Enbridge facility by OPEN CUT is 0.6m**

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**Minimum clearance required for installation BELOW Enbridge facility by HDB is 1.0m**

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**Minimum clearance required for installation BELOW Enbridge facility by HDD is 3.0m**

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**Minimum clearance required for road installation from bottom of ditch to top of Enbridge facility is 0.9m and from centerline of road to top of Enbridge facility is 1.2m**

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**Minimum clearance required for railway installation from bottom of ditch to top of Enbridge *uncased* facility is 1.83m and from centerline of rail bed to top of Enbridge *uncased* facility is 3.05m**

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**Minimum clearance required for railway installation from bottom of ditch to top of Enbridge *cased* facility is 0.91m and from centerline of rail bed to top of Enbridge *cased* facility is 1.68m**

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## 6. WRITTEN CONSENT

After applying for written consent, Enbridge will review the proposed installation and/or temporary activities application in order to ensure that the proposed work will not pose a risk to existing Enbridge facilities, as well as, to ensure that any access required to existing facilities for maintenance or in an emergency situation will not be impeded.

Some applications may require further engineering assessment which will require additional time to review the proposed installation and/or temporary activities prior to Enbridge issuing consent. All efforts will be made to provide an agreement within an appropriate timeframe, however, please ensure that your application request is submitted with ample lead time.

## 7. CONTACT US

To obtain written consent from Enbridge, please contact the respective office set out below:

REGION	CONTACT INFORMATION
<b>LIQUIDS PIPELINES - WESTERN CANADA</b> (Alberta, Saskatchewan, Manitoba and Norman Wells)	Lands & ROW 330, 10180 – 101 Street Edmonton AB T5J Phone: 780-378-2228 Email: <a href="mailto:crossingrequests@enbridge.com">crossingrequests@enbridge.com</a>
<b>LIQUIDS PIPELINES - EASTERN CANADA</b> (Ontario and Quebec)	Lands & ROW 109 Commissioners Rd W London ON N6A 4P1 Phone: 1-800-668-2951 (option #2) Email: <a href="mailto:est.reg.crossing@enbridge.com">est.reg.crossing@enbridge.com</a>
<b>GAS STORAGE &amp; TRANSMISSION OPERATIONS</b> (Ontario)	Lands & ROW 109 Commissioners Rd W London ON N6A 4P1 Phone: 1-800-668-2951 (option #2) Email: <a href="mailto:STOCrossings@enbridge.com">STOCrossings@enbridge.com</a>

For more information on Enbridge Gas Distribution please click the link: <https://www.enbridgegas.com/safety/before-you-dig>.

## 8. ONE CALL CENTRES

Before putting a shovel in the ground, whether it is in your backyard or a commercial jobsite, please do a locate request to safely identify any buried utility lines at [www.clickbeforeyoudig.com](http://www.clickbeforeyoudig.com). Your local one call centre can also be reached by phone as shown below:

CALL OR CLICK BEFORE YOU DIG!!	
<b>British Columbia</b> <a href="https://www.bconecall.bc.ca/">https://www.bconecall.bc.ca/</a> 1-800-474-6886	<b>Alberta</b> <a href="http://albertaonecall.com">http://albertaonecall.com</a> 1-800-242-3447
<b>Saskatchewan</b> <a href="http://www.sask1stcall.com">www.sask1stcall.com</a> 1-866-828-4888	<b>Manitoba</b> <a href="http://www.clickbeforeyoudigmb.com/">http://www.clickbeforeyoudigmb.com/</a> 1-800-940-3447
<b>Ontario</b> <a href="http://www.on1call.com">www.on1call.com</a> 1-800-400-2255	<b>Quebec</b> <a href="http://www.info-ex.com">www.info-ex.com</a> 1-800-663-9228
<b>Northwest Territories</b> 1-867-587-7000	
Or contact the pipeline company directly	

## 9. REGULATORS

In Canada, Enbridge has pipelines that are regulated by both the federal government and provincial governments. For more information on any of the regulators please visit their respective website.

Canada Energy Regulator: [www.cer-rec.gc.ca](http://www.cer-rec.gc.ca)

Alberta Energy Regulator: [www.aer.ca](http://www.aer.ca)

## 10. DEVELOPMENT ON OR NEAR THE RIGHT-OF-WAY

Enbridge should be consulted early in the design phase with regards to proposed subdivisions, roads and utilities, and municipal landscaping.

*Subdivisions* – Enbridge highly recommends that our right-of-way be used as a passive green space or as part of a linear park system. Permanent structures on the right-of-way are not permissible.

*Roads and Utilities* – Roads may be permitted to cross and/or run parallel to the right-of-way, but no portion of a road allowance can be located on the right-of-way (apart from approved road crossings). Enbridge will review the location of utilities which are often proposed within the road allowance.

*Landscaping* – Projects such as pedestrian pathways may be permitted if they do not impede Enbridge's access along its right-of-way for operational and/or maintenance activities. Enbridge's written consent will specify the permitted landscaping requirements.

## 11. DAMAGE PREVENTION

Enbridge's underground facilities must be positively identified, to Enbridge's satisfaction, prior to the start of any proposed construction activities.

Enbridge's representative(s) have the authority to stop work at any time due to safety, environmental or operational concerns and/or unforeseen circumstances or emergency situations.

**\*\*IMMEDIATELY NOTIFY ENBRIDGE IF YOU COME INTO CONTACT WITH THE PIPE! \*\***

As a small scratch or dent in the pipeline's coating can impact long term safety of the pipeline and must be assessed by Enbridge.

Please note that obstacles or unapproved above ground installations located on an Enbridge right-of-way, such as sheds, trailers, boats and pools can interfere with Enbridge's access of their right-of-way. Permanent structures on the right-of-way are NOT permissible.

Enbridge must be contacted before conducting any blasting activities within 300m of the pipeline right-of-way so that Enbridge can review the proposed plans in order to see if there might be potential impacts to its facilities. Blasting activities related to prospecting for mines and minerals within 40m of a federally regulated pipeline right-of-way requires permission from the Canada Energy Regulator.

## 12. EMERGENCY SITUATIONS

In an emergency situation please provide as much notice, as is practicable, to Enbridge prior to commencement of any construction, excavation, installation or temporary crossing of existing pipelines and/or rights-of-way in order to access the emergency site.

Enbridge classifies an emergency situation as:

- A risk to human life;
- Required emergency repairs of public services; or
- To contain an environmental emergency.





In an emergency situation please call: **1-877-420-8800** (toll free) and/or contact your local One Call provider at the numbers listed in section 8.

### **13. DISCLAIMER**

THESE GUIDELINES ARE INTENDED TO PROVIDE USEFUL CROSSING APPLICATION GUIDANCE INFORMATION TO THE APPLICANT.

SUBMISSION OF AN APPLICATION MEETING THE REQUIREMENTS AS SET OUT HEREIN DOES NOT CONSTITUTE WRITTEN CONSENT FROM ENBRIDGE.

ALL APPLICATIONS WILL BE REVIEWED BY ENBRIDGE TO DETERMINE WHETHER THE APPLICATION WILL BE APPROVED OR REJECTED.



# THIRD PARTY CROSSING APPLICATION FORM

Word document: Press F11 to advance to next form field

## The APPLICANT INFORMATION

**Grantee\* Full Legal Name for Agreement:**  
insert

**Regulator:** *Choose an item.*  
**Other** insert

**Grantee Address for Service:**  
insert

**Grantor/Enbridge Entity**  
*Choose an item.*

**Application by Broker/Land Consultant**  
Yes  No

**Broker/Land Consultant Name:**  
insert

**Contact Person Name:**  
insert

**Contact Person Phone Number:**  
insert

**File Number:**  
insert

**Broker/Land Consultant Address:**  
insert

## CROSSING INFORMATION

**Expected construction start and end date(s):** insert

**Permanent Installation**

Crossing   
Drainage Tile   
Pole/Pile Installation   
Other  insert

**Temporary Activities**

Workspace   
Equipment Crossing   
Access of ROW   
Geophysical   
Road Use   
Proximity   
Other  insert

**Location indicator including affected legal land description(s), PIN and GPS Coordinates (Longitude and Latitude in Decimal Degree):**  
insert

**Grantor's Affected Disposition(s) (Alberta) (i.e. PLA # or License # or Line #):**  
insert

**Grantee's Field Contact Information:**

Name: insert  
Phone: insert  
Email: insert



# THIRD PARTY CROSSING APPLICATION FORM

Word document: Press F11 to advance to next form field

**Details of Grantee’s Proposed Permanent Installation and/or Purpose of Temporary Activities**  
insert

**Method of Installation\*** (For permanent installations)

Open Cut  HDB  HDD

**Drawing(s) Attached**

Yes  No

**Drawing Requirements Met \***

Yes  No

**Equipment Specification and Data Sheet Attached \***

Yes  No  N/A

**Notes/Additional Information:** insert

**SUBMIT TO:**

**LIQUIDS PIPELINES  
WESTERN CANADA**  
(Alberta, Saskatchewan, Manitoba  
and Norman Wells)

**Department: Lands & ROW**

Address:  
330, 10180 – 101 Street  
Edmonton AB T5J 3S4

Email: [crossingrequests@enbridge.com](mailto:crossingrequests@enbridge.com)

**LIQUIDS PIPELINES  
EASTERN CANADA**  
(Ontario and Quebec)

**Department: Lands & ROW**

Address:  
109 Commissioners Rd W  
London ON N6A 4P1

Email: [est.reg.crossing@enbridge.com](mailto:est.reg.crossing@enbridge.com)

# Equipment Specification and Data Sheet(s)



In order to properly conduct an analysis on the requested crossing the following general information and appropriate data sheets are required to be completed.

**Steps:**

1. Complete the *Applicant – Information and Details* document for each crossing application
2. Add and complete the *Data Sheet – Equipment or Vehicle with Tires* for EACH piece of equipment
3. Add and complete the *Data Sheet – Equipment with Tracks* for EACH piece of equipment
4. Return fully completed general information and data sheets and any other pertinent information

## Applicant Information

Applicant Name:	
Applicant Contact Person Name:	
Email:	
Phone Number:	
Applicant Reference/File Number:	

## Details

Description and Purpose of Crossing:				
Location Indicator (legal land description, PIN, etc.)				
GPS Coordinates (Latitude & Longitude Decimal Degree):				
Duration:	Temporary		Permanent	
Start Date:		End Date:		
Equipment or Vehicle with Tires:	Yes	No	Datasheet:	
Equipment with Tracks:	Yes	No	Datasheet:	

# Data Sheet – Equipment with Tracks

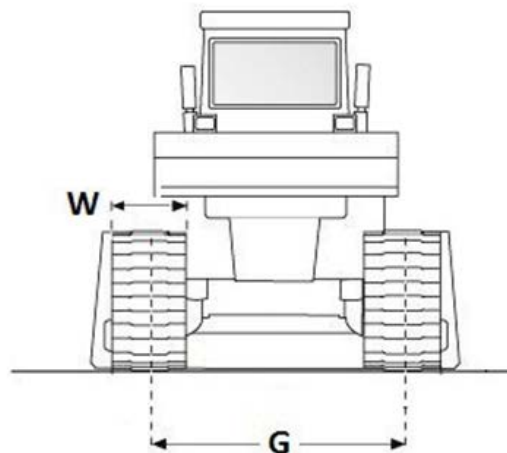
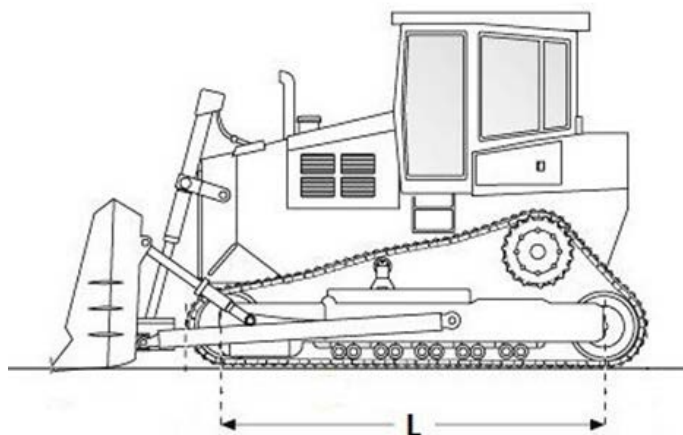


Complete this data sheet for each piece of equipment with tracks.

## Equipment with Tracks

INDICATE UNITS

Manufacturer:			
Model:			
Equipment Description:			
Fully Loaded Gross Vehicle Weight:			
	Track Shoe Width (refer to <b>W</b> below)	Track Length on Ground (refer to <b>L</b> below)	Track Gauge (on center) (refer to <b>G</b> below)
Units			
Track			



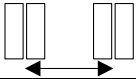
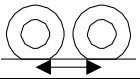
# Data Sheet – Equipment or Vehicle with Tires

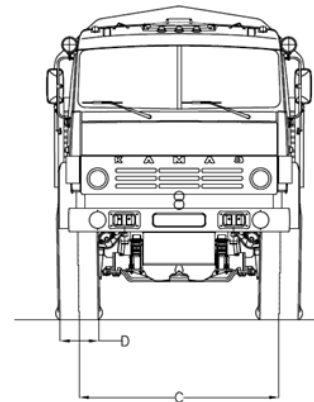
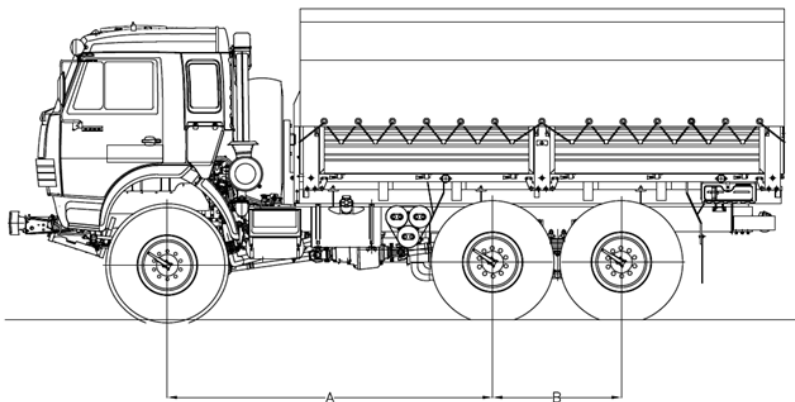


Complete this data sheet for **EACH** piece of equipment or vehicle with tires.  
**EXCLUSION:** pick up trucks of one ton or less

## Equipment or Vehicle with Tires

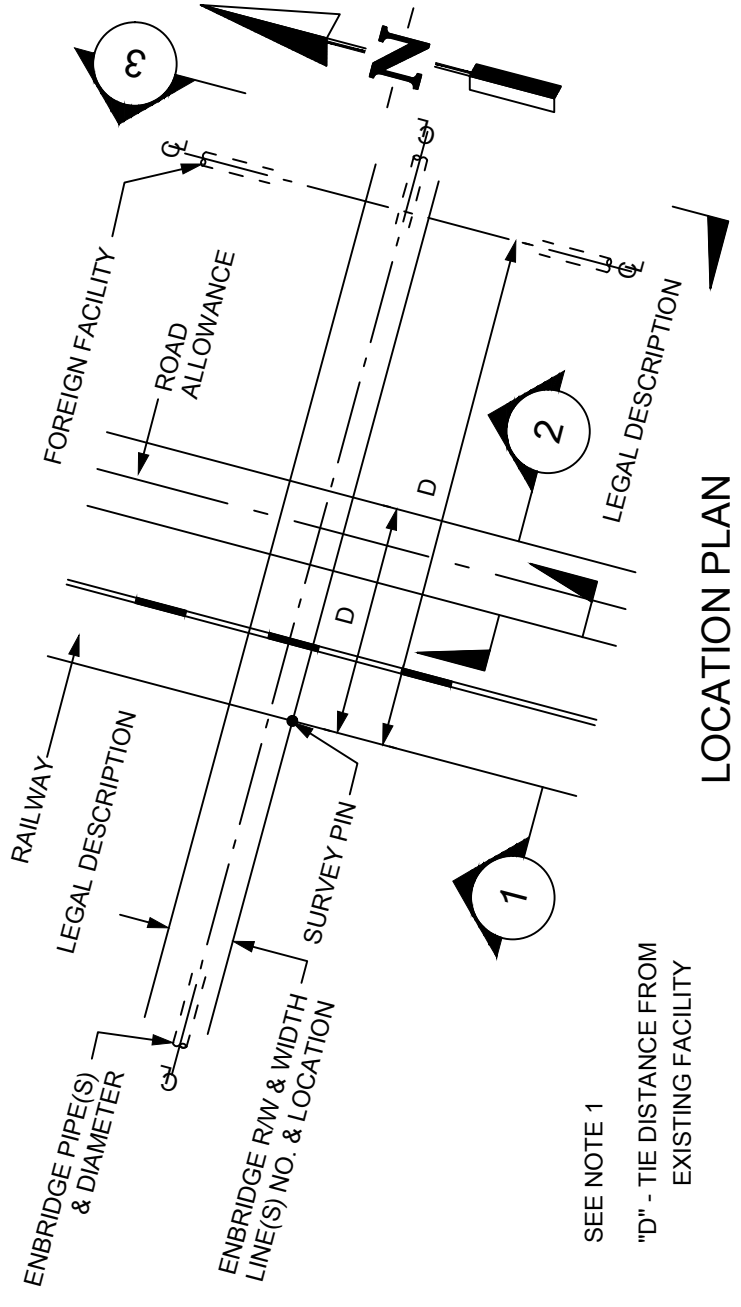
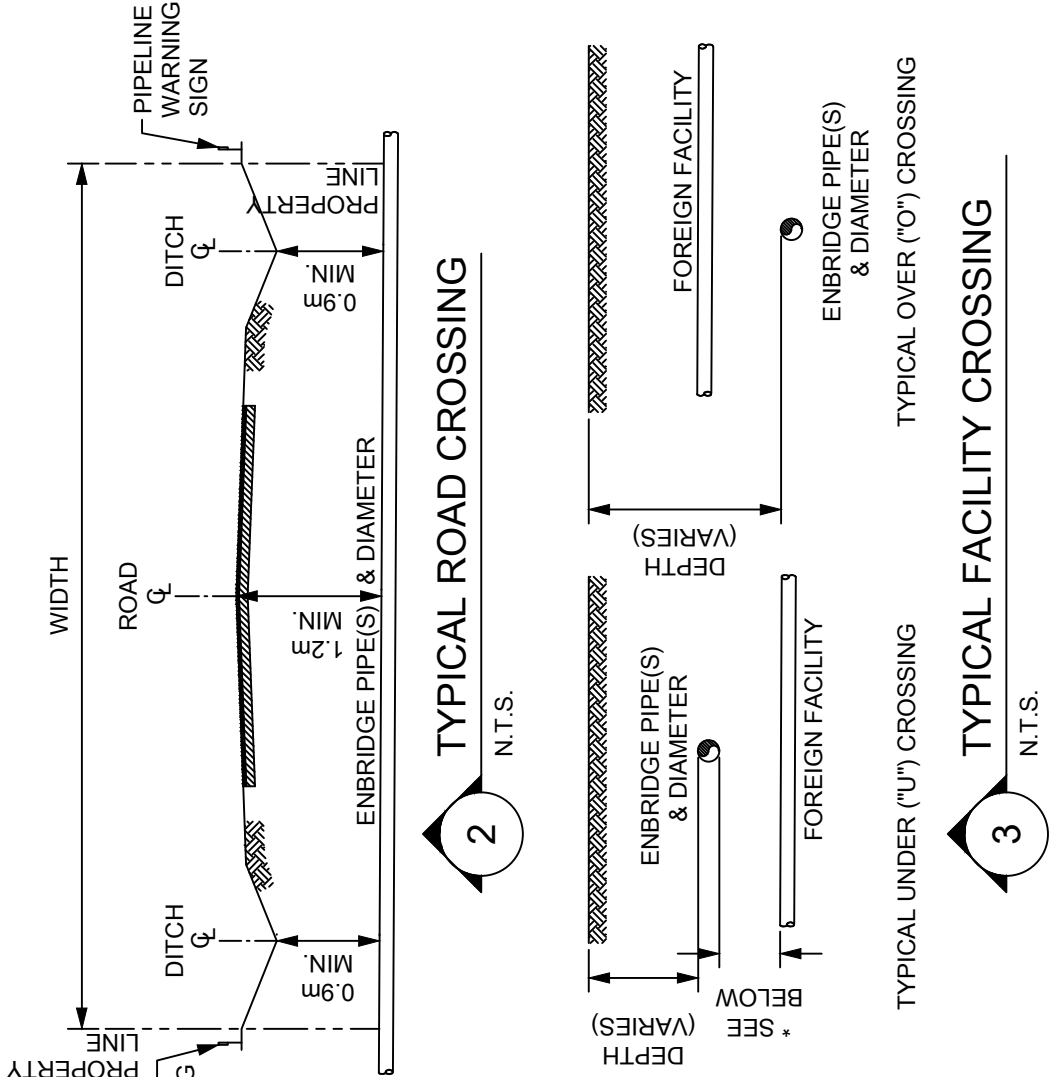
**INDICATE UNITS**

Manufacturer:						
Model:						
Equipment Description:						
Fully Loaded Gross Vehicle Weight:						
Road legal without overweight permit?		Yes			No	
Axle	Maximum Loaded Weight PER Axle	Number of Tires PER Axle	Tire Width (refer to D below)	Tire Pressure	Distance between Tire Set Centerlines (refer to C below)	Centerline Distance to Previous Axle (refer to A below) (refer to B below)
						
Units						
Steering						
2 <sup>nd</sup>						
3 <sup>rd</sup>						
4 <sup>th</sup>						
5 <sup>th</sup>						
6 <sup>th</sup>						
7 <sup>th</sup>						



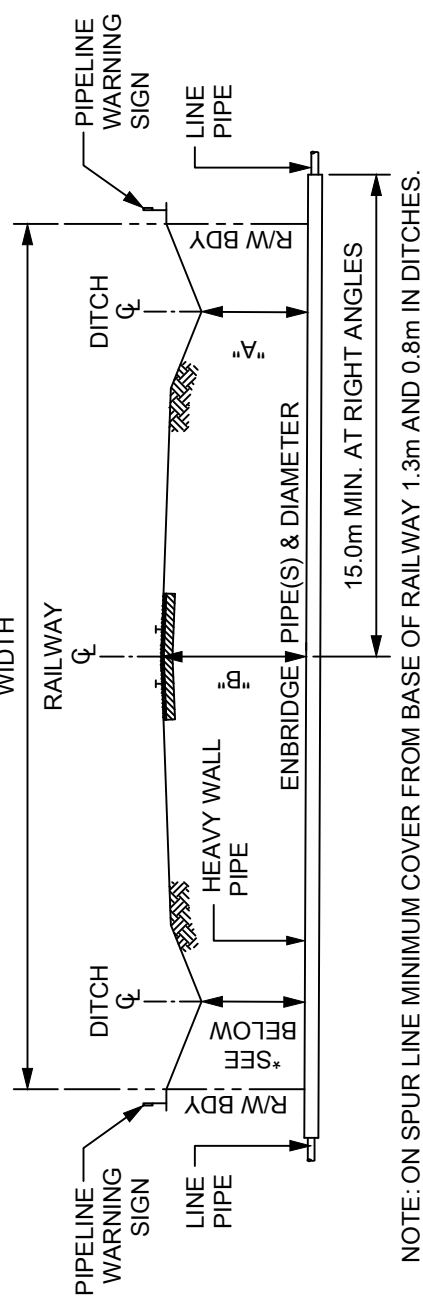
**NOTE:**

1. ENBRIDGE PIPELINES OPERATE UNDER HIGH PRESSURE THEREFORE ENBRIDGE REPRESENTATIVE(S) MUST BE PRESENT DURING CONSTRUCTION.
2. THIS DRAWING IS FOR REFERENCE ONLY. ACTUAL SITE DETAILS OR REQUIREMENTS MAY VARY.



SEE NOTE 1

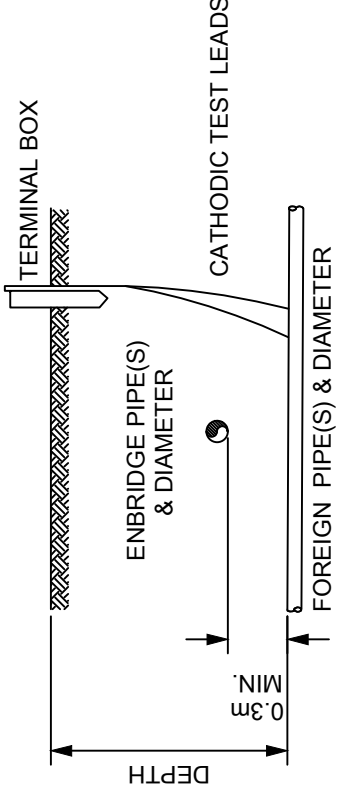
"D" - TIE DISTANCE FROM EXISTING FACILITY



NOTE: ON SPUR LINE MINIMUM COVER FROM BASE OF RAILWAY 1.3m AND 0.8m IN DITCHES.

* MINIMUM CLEARANCE:		
	"A"	"B"
CASED	0.91m	1.68m
UNCASED	1.83m	3.05m

**\* MINIMUM CLEARANCE:**  
 -0.3m IF OPEN CUT ABOVE ENBRIDGE PIPES  
 -0.6m IF OPEN CUT BELOW ENBRIDGE PIPES  
 -1.0m IF HDD UNDER ENBRIDGE PIPES  
 -3.0m IF HDD UNDER ENBRIDGE PIPES



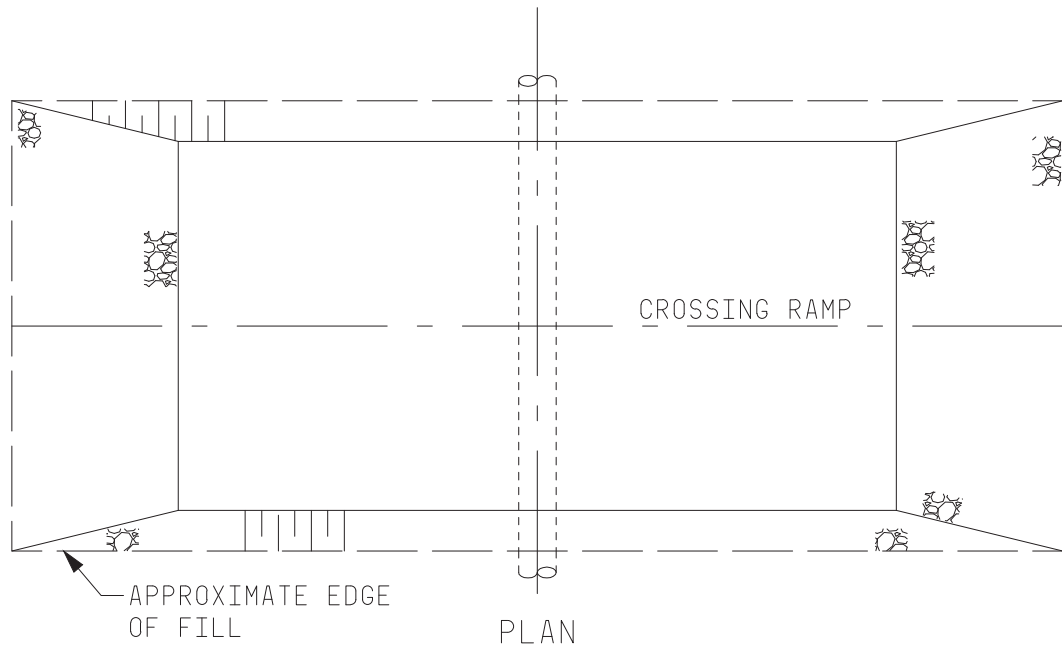
REFERENCE DRAWINGS	
3	AS BUILT INTERNATL DRAFTING DRA-34
2	ENBRIDGE STANDARD PIPING & REVISIONS AS PER STANDARDS U.S.A. 2002-03 & REVISED AS PER STANDARDS U.S.A. 2002-03
1	REVISIONS AS PER OPERATIONS INFORMATION
REV. NO.	REVISION
DATE	DATE
CHK. BY	CHK. BY
APPR. BY	APPR. BY

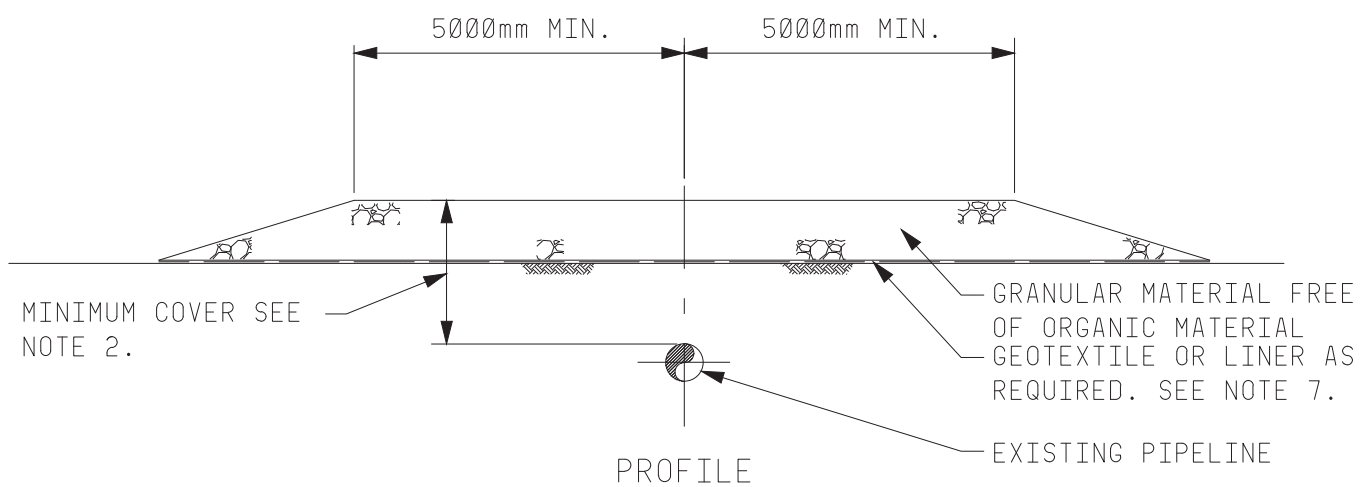
BY: ME	CHK: EH	ENG: HCFROST	ENB APPR: GAFALLDER
DATE: 30 AUG 08	SCALE: NTS	STATUS: AS BUILT	
DWG. NO:	B-1.02-5052-0	REV. NO:	3



TYPICAL CROSSING DETAILS FOR THIRD PARTY APPLICANTS CROSSING ENBRIDGE PIPELINES CANADA



PLAN



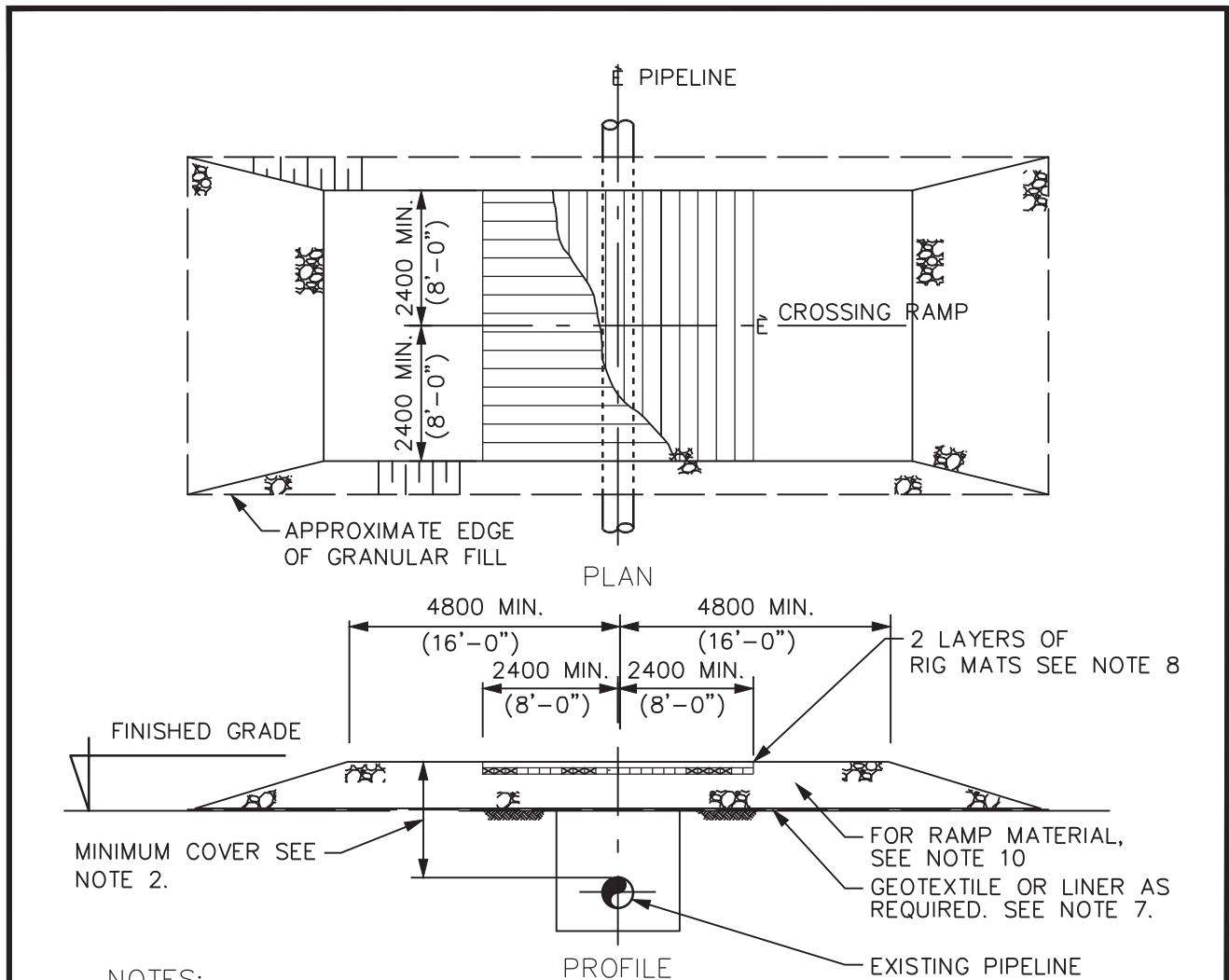
PROFILE

NOTES:

1. ON COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL REMOVE COMPLETE RAMP AND RESTORE AREA TO ORIGINAL CONDITION.
2. MINIMUM COVER SHALL BE AS SPECIFIED IN THE CROSSING AGREEMENT.
3. LENGTH OF RAMP TO VARY IN ACCORDANCE WITH CROSSING ANGLE.
4. RAMP WIDTH SHALL BE MINIMIZED AS MUCH AS POSSIBLE, AND SHALL NOT ENCROACH BOUNDARIES SET IN THE CROSSING AGREEMENT.
5. RAMP SIDE SLOPE SHALL NOT BE STEEPER THAN 1V:4H.
6. RAMP SHALL BE COMPACTED, AND HAVE A CROSS FALL TO ENSURE THAT WATER WILL NOT POND ON THE RAMP CAUSING EXCESSIVE RUTTING.
7. A GEOTEXTILE OR LINER BARRIER TO BE INSTALLED AT THE DISCRETION OF THE ENBRIDGE FIELD REPRESENTATIVE.
8. REFER TO DRAWING A-1.8-43105 FOR FRENCH VERSION. REFERE AU DESSIN A-1.8-43105 POUR VERSION FRANCAISE.

A-1.8-43105-0		TYPICAL DESIGN DETAIL		
REFERENCE DRAWINGS				
2	FRENCH TRANSLATION REFERENCE AS PER IDR 583	2019 JAN 11 MM	BLB	ENB
1	AS BUILT INTERNAL DRAFTING ID 304	20 MAR 18 BLB	GB	ENBRIDGE
REV NO.	REVISION DESCRIPTION	DATE BY	CHK	APPR.
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TYPICAL DESIGN DETAIL TYPICAL TEMPORARY CROSSING RAMP WITH EARTH				
BY: GB	CHK: GG	ENG.:	ENB APPR:	
DATE: 14 FEB 18	SCALE: NTS		STATUS: AS BUILT	
DWG. NO.:	A-1.8-42872-0			REV. NO. 2





NOTES:

1. ON COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL REMOVE COMPLETE RAMP AND RESTORE AREA TO ORIGINAL CONDITION.
2. MINIMUM COVER SHALL BE AS SPECIFIED IN THE CROSSING AGREEMENT.
3. LENGTH OF RAMP TO VARY IN ACCORDANCE WITH CROSSING ANGLE.
4. RAMP WIDTH SHALL BE MINIMIZED AS MUCH AS POSSIBLE, AND SHALL NOT ENCR OACH BOUNDARIES SET IN THE CROSSING AGREEMENT.
5. RAMP SIDE SLOPE SHALL NOT BE STEEPER THAN 1V:4H.
6. RAMP SHALL BE COMPACTED, AND HAVE A CROSS FALL TO ENSURE THAT WATER WILL NOT POND ON THE RAMP CAUSING EXCESSIVE RUTTING.
7. A GEOTEXTILE OR LINER BARRIER TO BE INSTALLED DURING SPRING, SUMMER AND FALL SEASONS.
8. RIG MATS SHALL BE STAGGERED OR PLACED IN A PERPENDICULAR ORIENTATION FROM THE PREVIOUS LAYER SO THAT THE EDGES DO NOT LINE UP
9. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE NOTED
10. SNOW OR ICE CAN BE USED AT THE DISCRETION OF THE ENBRIDGE FIELD REPRESENTATIVE.
11. REFER TO DRAWING A-1.8-43106 FOR FRENCH VERSION. REFERE AU DESSIN A-1.8-43106 POUR VERSION FRANCAISE.

A-1.8-43106-0		TYPICAL DESIGN DETAIL	
REFERENCE DRAWINGS			
3	AS BUILT DR. IDR 743	20 JUN 19 MF	AE ENB
2	FRENCH TRANSLATION REFERENCE AS PER IDR 583	11 JAN 19 MM	BLB ENB
1	AS BUILT INTERNAL DRAFTING ID 304	20 MAR 18 BLB	GB ENBRIDGE
REV. NO.	REVISION DESCRIPTION	DATE BY	CHK APPR.
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TYPICAL DESIGN DETAIL TYPICAL TEMPORARY CROSSING RAMP WITH RIG MATS			
BY: GB	CHK: GG	ENG.:	ENB APPR:
DATE: 14 FEB 18	SCALE: NTS	STATUS: AS BUILT	
DWG. NO.: A-1.8-42873-0			REV. NO.: 3