

**APPLICATION PROCEDURES FOR
PLACEMENT OF UNDERGROUND OIL AND
HIGH PRESSURE GAS PIPELINES IN THE VICINITY OF
TRANSPORTATION FACILITIES UNDER THE
JURISDICTION OF ALBERTA TRANSPORTATION**

- 1.0 Application Procedures
- 2.0 Installation Guidelines for Rural-Designed Highways

February, 2010

1.0 APPLICATION PROCEDURES

Applications for crossing of highways under the jurisdiction of Alberta Transportation by oil and/or gas pipelines shall be submitted to the appropriate Regional Office.

The applicant shall allow a minimum 30 working days for the application processing.

Application for oil and/or gas crossing public roads other than highways within the boundaries of any Municipal District or County shall be submitted to the appropriate Municipality.

1.01 APPLICATION REQUIREMENTS

The application should clearly state the **purpose** of the application, the **type** of the facility, method of construction, and provide the legal land description, number of the highway involved, and particulars of the contact person responsible for the application.

Incomplete applications without proper documentation will be returned without review.

A copy of the permit issued shall be provided to the contractor and made available for verification at the construction site at all times.

No construction may be undertaken without a valid permit.

Only work covered by original permit can be performed at the site. Any additional work, variation or change from the proposal covered by the original permit requires additional approval(s).

Each of the drawings submitted with application shall have a number for reference purposes.

The application should contain a key plan showing proposed crossing location(s) and two (2) copies of crossing plan for each proposed crossing.

Each crossing plan shall include:

- 1) Key plan at a suggested scale of 1:10,000 indicating legal land description for the proposed crossing including appropriate section number, township, range;
- 2) Detail plan of the crossing at a minimum scale of 1:1000 showing a dimensional tie along the centre-line of the highway or road to the known

point, the proposed angle of the crossing and the pipeline alignment to a minimum distance of 50 metres on each side of the highway right-of-way.

- 3) Proposed surveyed cross-section of the crossing at a minimum horizontal scale of 1:200 and vertical 1:100.

The cross-section has to show:

- a) Width of the existing highway right-of-way.
 - b) Width of proposed highway right-of-way (if known).
 - c) Type of road surface, i.e. paved, graveled or dirt.
 - d) Slope pipe below highway (maximum 1:120), and
 - e) Minimum depth of cover - 1.4 metres under the lowest point in the cross-section throughout the highway right-of-way and within 30 metres each side of its boundaries;
- 4) Profile along the centre-line of the highway or road for minimum distance of 400 metres in each direction from the crossing at a minimum horizontal scale of 1:5000 and vertical 1:200; and
- 5) Pipe specifications of pipeline at the crossing site including:
- I. Carrier pipe specifications:
 - a) Outside diameter,
 - b) Wall thickness,
 - c) Maximum operating pressure,
 - d) Minimum yield strength of pipe, and
 - e) Fittings, if any.
 - II. Casing pipe specifications (cased crossings only):
 - a) Outside diameter,
 - b) Wall thickness, and
 - c) Minimum yield strength and information if a casing pipe is new or used.

2.0 INSTALLATION GUIDELINES FOR RURAL-DESIGNED HIGHWAYS

2.01 CONSTRUCTION COMMENCEMENT AND COMPLETION

The applicant shall contact the appropriate Operations Manager or Development and Planning Technologist at least two working days prior to commencement of construction to review the project.

The applicant shall contact the appropriate Operations Manager or Development and planning Technologist at least two working days prior to construction completion to allow for site inspection if required.

2.02 ACCEPTABLE PIPELINE MATERIAL

Cased crossing shall be constructed in adherence to the latest edition of CSA Standards for oil and gas lines respectively (except where legislation establishes a stricter standard, in which case the stricter standard applies).

Uncased heavy wall pipe meeting CSA Standards shall be accepted in lieu of cased crossing.

2.03 PARALLEL PIPELINE

No pipeline right-of-way or easement shall be placed closer than 30 metres outside the right-of-way boundary of a highway unless prior approval is obtained from the appropriate Operations Manager.

2.04 CROSSING UNDER PAVEMENT - METHOD OF CROSSING

The open cut method for pipeline installation at any provincial public highway is not permitted.

The crossing of highway and pavement surfaces shall be constructed by boring or jacking methods in such a manner that the road grade is not disturbed.

The proposed method of installation shall be shown on the plan of the crossing attached to the application.

2.05 MINIMUM DEPTH OF COVER ON THE HIGHWAY OR ROAD RIGHT-OF-WAY

The minimum depth of cover over the pipeline where it crosses the right-of-way of a highway or road and within 30 metres each side of its boundaries shall be 1.4 metres under the lowest point in the cross-section.

2.06 INTERSECTION ANGLE OF PIPELINE CROSSING OF THOROUGHFARE

The desirable angle of crossing is between 70 and 90 degrees; however other angles may also be accepted in special circumstances upon approval of the Operations Manager.

2.07 CASED CROSSING

Where casing is used, it shall be continuous and inserted by boring or driving or other approved method. Casing shall be designed to be of equal or greater life span than the carrier pipe.

2.08 DIAMETER OF CASING

The diameter of the casing shall be a minimum of 5 centimetres greater (2") than the diameter of the carrier pipe. An exception to this is steel casing of polyethylene pipe, where the next size diameter of pipe may be used.

2.09 MINIMUM LENGTH OF CASING

The casing shall extend across full width of the highway or road right-of-way.

2.10 SPACER INSULATION OF CASING AND CATHODIC PROTECTION

All cased crossings shall be provided with sufficient spacer insulators to prevent the carrier pipe from touching the casing pipe and to prevent transmission of electric currents between the carrier pipe and the casing pipe. Where cathodic protection is planned, the test leads shall be outside the outer boundaries of the right-of-way of the highway or road. The casing shall be satisfactorily sealed to the carrier pipe at both ends.

2.11 VENTING OF CASING PIPE

Vents shall not be placed within the limits of the highway right-of-way.

2.12 CASING NOT TO CARRY OTHER UTILITIES

No cables of any kind shall be placed within the casing of any pipeline.

2.13 BORED OR AUGURED CROSSING

Casing shall be fitted into a bored or augured hole of such diameter as to provide a snug fit for the casing.

2.14 BORE SIZE

The bore size for heavy wall pipe shall be no more than one pipe size larger than the installed pipe. If the bore is larger than one pipe size, a casing pipe the size of the bore shall be installed.

2.15 BORING IN NON-COHESIVE SOILS

Closed boring method shall be used in non-cohesive soil conditions.

2.16 DRAINAGE STRUCTURES

A pipeline shall not run through a culvert or drainage structure.

2.17 PIPELINE ATTACHMENTS TO BRIDGE STRUCTURES

No pipeline shall be attached to a bridge structure without the written consent of the appropriate Regional Bridge Engineer.

2.18 SLOPE OF PIPELINE CROSSING

The pipeline shall be placed with a maximum gradient of 1 in 120.

2.19 HORIZONTAL AND VERTICAL PIPELINE BENDS

No horizontal and/or vertical pipe bends are permitted throughout the right-of-way and within 30 metres of the right-of-way boundaries of a highway, unless approval is obtained from the appropriate Operations Manager.

2.20 OPEN EXCAVATION, MATERIAL AND EQUIPMENT STORAGE

No open excavation shall be constructed, nor shall any material or equipment be deposited or stored any closer than 6 metres of a bridge or earth retaining structure (without special consent of the appropriate Regional Bridge Engineer), and 4 metres from the shoulder break of a highway, or a toe of sideslope, whichever distance is greater.

2.21 BACKFILLING OF OPEN TRENCHES

The backfilling of all trenches in the highway right-of-way or within 6 metres of bridge pier or earth retaining structure shall be undertaken immediately after the installation has been placed and passed any necessary inspection. Backfill material shall be thoroughly compacted with mechanical compactors and the owner of the pipeline will be held responsible for any settling in backfill for a period of three years after the completion of the work.

2.22 WASTE MATERIAL

All waste material shall be removed and all disturbed areas shall be leveled and trimmed in approved manner and re-seeded where necessary to restore the right-of-way to at least as good as original or better conditions.

2.23 WORK IN THE MEDIAN

No work shall be undertaken in the median of a divided highway unless approved by the appropriate Operations Manager.

2.24 CONSTRUCTION SAFETY

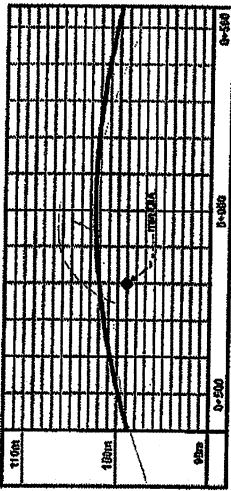
All reasonable precautions shall be undertaken during construction to protect and safeguard public safety and property owners. This includes barricading, signing and flagpersons as required, to protect and safeguard the lives and property of the travelling public and adjacent property owners. At no time shall the highway or public roadway be closed to traffic. Where normal traffic patterns are to be interrupted due to ditching or other operations, prior approval must be first obtained. Suitable signs shall be erected and if required, a flagperson(s) shall be used to direct traffic through the disruption area as approved by the appropriate Operations Manager. All flagperson(s) must be properly certified.

No work is to be conducted during darkness or reduced visibility.

2.25 CONSTRUCTION SIGNING

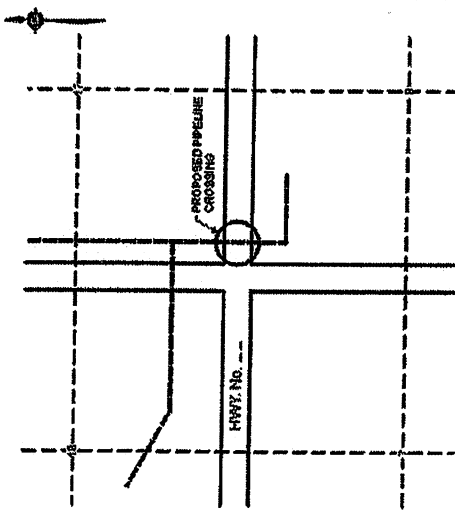
Contractors are to meet the requirements of the latest edition of the *Traffic Accommodation in Work Zones 2008 (1st Edition)* manual published by Alberta Transportation. The manual is available on the internet at www.transportation.alberta.ca/3815.htm .

If the signing requirements are not met, the Operations Manager or his representatives have the right to halt all construction until proper signing is erected. The signs are to be removed immediately following construction completion.



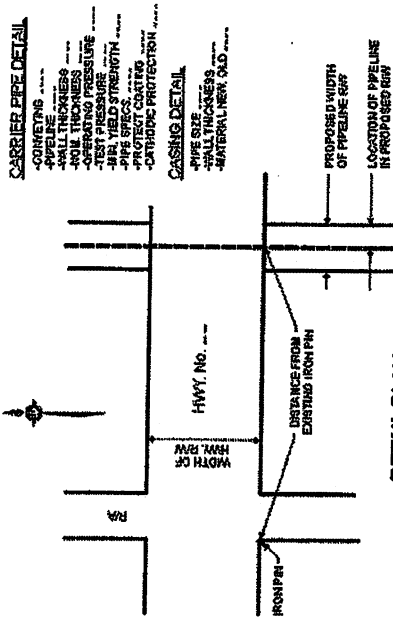
PROFILE ALONG C/L OF HIGHWAY

SCALE: HORIZ. 1:2000
VER. 1:200



LOCATION PLAN

SCALE 1:10000



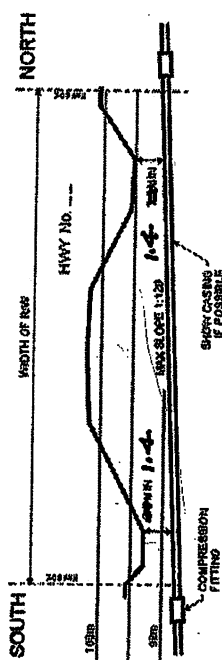
DETAIL PLAN

SCALE 1:1000

- CARRIER PIPE DETAIL**
- CONCRETE
 - PIPE
 - PIPE THICKNESS
 - PIPE WALL THICKNESS
 - OPERATING PRESSURE
 - TEST PRESSURE
 - MIN. YIELD STRENGTH
 - PROTECTIVE COATING
 - CATHODIC PROTECTION

- CASING DETAIL**
- PIPE SIZE
 - WALL THICKNESS
 - MATERIAL, WELT, S&D

- PROPOSED WIDTH OF PIPELINE ROF
- LOCATION OF PIPELINE IN PROPOSED HWY



CROSS-SECTION

SCALE: HORIZ. 1:200
VER. 1:100

NO HORIZONTAL OR VERTICAL BENDS WITHIN 30M OF R.O.W. BOUNDARY

REVISIONS

DATE	DESCRIPTION	BY

SAMPLE DWG. PIPELINE X-ING

AREA NO.	GRID NO.	FIELD NO.	PROJECT NO.
ISSUED BY	APPROVED BY	SCALE: 1:100	PROJECT NO.

Alberta Transportation District Office Locations / Phone Numbers

ATHABASCA	Unit #2, Jewell Building, 3603 – 53rd Street T9S 1A9	(780) 675-2624	transdevelopmentathabasca@gov.ab.ca
CALGARY	2nd Floor, Willowglen Business Park, 803 Manning Road N.E. T2E 7M8	(403) 297-6311	transdevelopmentcalgary@gov.ab.ca
EDSON	Room 202, Provincial Building, 111 – 54th Street T7E 1T2	(780) 723-8250	transdevelopmentedson@gov.ab.ca
FORT MCMURRAY	6th Floor, West Tower, Provincial Building, 9915 Franklin Avenue T9H 2K4	(780) 743-7430	Application.Permit.FM@gov.ab.ca
GRANDE PRAIRIE	1401, Provincial Building, 10320 – 99th Street T8V 6J4	(780) 538-5310	transdevelopmentgrandeprairie@gov.ab.ca
HANNA	P.O. Box 1300, Provincial Building, 401 Centre Street T0J 1P0	(403) 854-5550	transdevelopmenthanna@gov.ab.ca
LETHBRIDGE	3rd Floor, Administration Building, 909 3rd Avenue N. T1H 0H5	(403) 381-5426	transdevelopmentlethbridge@gov.ab.ca
PEACE RIVER	3rd Floor, Provincial Building, Bag 900, Box 29, 9621 96 Avenue, T8S 1T4	(780) 624-6280	transdevelopmentpeaceriver@gov.ab.ca
RED DEER	#401, Provincial Building, 4920 - 51st Street T4N 6K8	(403) 340-5166	transdevelopmentreddeer@gov.ab.ca
STONY PLAIN	Room 223, Provincial Building, 4709 – 44th Avenue T7Z 1N6	(780) 963-5711	transdevelopmentstonyplain@gov.ab.ca
VERMILION	Box 28, Provincial Building, 4701 – 52nd Street T9X 1J9	(780) 853-8178	transdevelopmentvermilion@gov.ab.ca