

**APPLICATION PROCEDURES FOR
PLACEMENT OF UNDERGROUND WATER
AND SEWER PIPELINES IN THE VICINITY OF
TRANSPORTATION FACILITIES UNDER THE
JURISDICTION OF ALBERTA TRANSPORTATION**

- 1.0 Application Procedures
- 2.0 General Construction Guidelines
- 3.0 General Conditions for Placement of Underground Water And Sewer Pipelines
Within Provincial Highway Right-Of-Way

September , 2013

1.0 APPLICATION PROCEDURES

In accordance with Section 7 of the *Highways Development and Protection Regulation* (which came in force in January 2010) a permit from Alberta Transportation is required for any utility work that is within the permit areas which vary depending on the classification of the highway

- Within the highway right-of-way, and
- In the case of a freeway: within 115 metres from the roadway centre-line or 30 metres beyond the limit of the freeway, whichever is greater;
- In the case of a multi-lane highway: within 60 metres from the roadway centre-line or 30 metres beyond the limit of the highway, whichever is greater;
- In the case of a major two-lane highway: within 60 metres from the roadway centre-line or 30 metres beyond the limit of the highway, whichever is greater;
- In the case of a minor two-lane highway: within 50 metres from the roadway centre-line or 30 metres beyond the limit of the highway, whichever is greater.

Since the department may have plans to upgrade the provincial highway system from time to time, it is recommended that the applicant consult with Alberta Transportation for advice.

Application for any work related to construction and/or modification of existing and planned water/sewer lines paralleling or crossing provincial highways under the jurisdiction of Alberta Transportation shall be submitted to the appropriate Transportation District Office (map and contact list:

<http://www.transportation.alberta.ca/4450.htm>).

The applicant shall allow up to 30 working days for application processing.

NOTE: For water/sewer lines that parallel an existing provincial highway, within the highway right-of-way, an agreement for water/sewer installations within the provincial highway right-of-way is required in addition to the application for permit. (This requirement does not apply to pipeline that is less than 1.6 km long).

Application for water/sewer line 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. In case of sewer lines it should also state whether the line is for sanitary sewage or storm drainage.

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 the 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 the crossing plan for each proposed crossing. Attached to these procedures are sample crossing plans.

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, e.g. paved, graveled or dirt,
- d) Slope pipe below highway (minimum 1:120), and

- e) Minimum depth of cover – (i) 1.4 metres for sewer, and (ii) 2.5 metres for water line throughout the highway right-of-way and within 30 metres each side of its right-of-way 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) Pipe material,
 - b) Pipe dimension,
 - c) Maximum operating pressure,
 - d) Minimum yield strength of pipe, and
 - e) Fittings, if any.
 - II. Casing pipe specifications (cased crossings only):
 - a) Pipe material,
 - b) Pipe dimension, and
 - c) Minimum yield strength and information if a casing pipe is new or used.

2.0 GENERAL CONSTRUCTION GUIDELINES

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 PARALLEL PIPELINE

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

2.03 CROSSING UNDER PAVEMENT - METHOD OF CROSSING

The open cut method for pipeline installation at any 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.

2.04 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 a road shall be 2.5 metres for water and 1.4 metres for sewer lines under the lowest point within the highway right-of-way.

2.05 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.

2.06 SLOPE OF PIPELINE CROSSING

The pipeline shall be placed from one end to the other with a minimum gradient of 1 in 120.

2.07 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 provincial highway, unless approval is obtained from the appropriate Operations Manager.

2.08 CASED CROSSING

Where casing is required, it shall be continuous and inserted by boring or driving or other approved method.

2.09 DIAMETER OF CASING

The diameter of the casing shall be at least 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.

2.10 MINIMUM LENGTH OF CASING

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

2.11 SEALED CASING

The casing shall be satisfactorily sealed to the carrier pipe at both ends.

2.12 CASING NOT TO CARRY OTHER UTILITIES

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

2.13 VENTING OF CASING PIPE

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

2.14 BORED OR AUGERED CROSSING

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

2.15 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 pipe of the bore size shall be installed to form a cased crossing.

2.16 BORING IN NON-COHESIVE SOILS

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

2.17 DRAINAGE STRUCTURE

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

2.18 PIPELINE ATTACHMENTS TO BRIDGE STRUCTURES

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

2.19 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.

2.20 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 materials 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.

2.21 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.

2.22 WORK IN THE MEDIAN

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

2.23 WATER LINES -- CONSTRUCTION MATERIALS

A heavy wall continuous steel or heavy wall continuous P.E. pipe shall be used for uncased water lines located beneath the road.

Should a cased plastic pipe be used it must be installed in an outer continuous casing and adequately supported at the point where it leaves the casing in order to prevent sheering.

2.24 MANHOLES

Manholes located within the highway right-of-way shall be placed flush with the adjacent ground.

2.25 MANHOLES IN THE ROADWAY SIDESLOPES

No manholes shall be placed in the sideslopes unless special approval is obtained from the appropriate Operations Manager.

2.26 MANHOLES IN THE MEDIAN

No manholes shall be located within the centre median of multi-lane highways unless a special permit is obtained from the appropriate Operations Manager.

2.27 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.

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

2.28 CONSTRUCTION SIGNING

Contractors are to meet the requirements of the latest edition of the *Traffic Accommodation in Work Zones* manual published by Alberta Transportation. The manual is available on the internet at <http://www.transportation.alberta.ca/597.htm>.

If the signing requirements are not met, the appropriate 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.

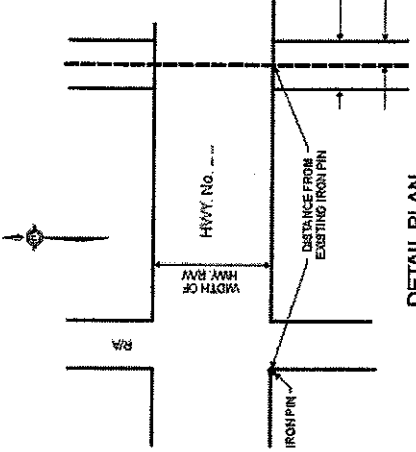
3.0 GENERAL CONDITIONS FOR PLACEMENT OF UNDERGROUND WATER AND SEWER PIPELINES WITHIN PROVINCIAL HIGHWAY RIGHT-OF-WAY

- 3.1 The underground water and/or sewer pipeline(s) (the “Line(s)”) shall be placed in such a fashion so as not to interfere with the operation and maintenance of the highway facility, and where practical, the future upgrading of the highway facility.
- 3.2 The Applicant agrees that the Alberta Transportation (the “Minister”) may modify from time to time, as required, the *Application Procedures for Placement of Underground Water and Sewer Pipelines in the Vicinity of Transportation Facilities under the Jurisdiction of Alberta Transportation*, to better reflect current changes in technology, construction methods or safety requirements.
- 3.3 All work inside the highway right-of-way shall conform to current standards and regulations and be carried out in such a manner so as not to endanger public safety.
- 3.4 If the Applicant is required to perform Work within the highway right-of-way, the Applicant shall assume the role of a prime contractor as defined by the *Occupational Health and Safety Act*, RSA 2000, c.0-2 or latest version.
- 3.5 The Applicant shall indemnify and hold harmless the Minister, his employees and agents from any and all claims, demands, actions and cost whatsoever that may arise, directly or indirectly, from the construction, operation, and maintenance of the Line(s) in the highway right-of-way.
- 3.6 The Minister shall indemnify and hold harmless the Applicant, its employees, agents, and contractors from any and all claims, demands, actions and cost whatsoever that may arise, directly or indirectly, from the construction, operation and maintenance of the highway.
- 3.7 The Applicant shall be responsible for all of the costs to repair any damages to the highway resulting from the placement, maintenance and operation of the Line(s) in the highway right-of-way.
- 3.8 The presence of the Line(s) within the highway right-of-way shall under no circumstances increase the Minister’s costs for highway operation, construction or maintenance, and if so, the additional costs shall be borne by the Applicant with exception of the lines subject to special programs agreed to between the Minister and the Applicant.

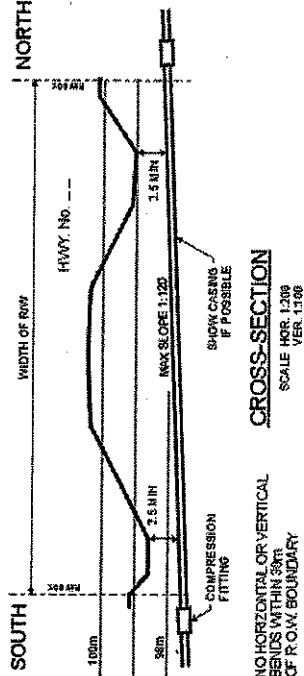
- 3.9 The Applicant places Line(s) in the highway right-of-way entirely at his own risk, and, except as provided in Clause 3.6, the Minister, his representative or agent, shall not be responsible or liable in any way to the Applicant, its contractors, agents or its customers for any damage or loss to the Line(s).
- 3.10 The Applicant agrees to relocate the Line(s) in a timely fashion to a location approved by the Minister if and when required by highway or highway related work approved by the Minister. The Applicant shall be solely responsible for all such line modification and/or relocation costs. Any additional costs due to delay in relocating the Line(s), caused directly by the actions or inactions of the Applicant, shall be borne by the Applicant.
- 3.11 The Minister will provide adequate notification to the Applicant if line modification and/or relocation is required due to highway or highway related work. A minimum of two (2) months notification will be provided.
- 3.12 In the event highway or highway related work authorized by the Minister involves a ground disturbance within five (5) metres of the line location, except in an emergency, the Minister or authorized representative or agent shall give forty-eight (48) hours notice (weekends and statutory holidays excluded) to the Operator, through Alberta First Call. The Operator shall, within forty eight (48) hours notice, mark or expose the Line(s). The Line(s) shall then be hand exposed by the Operator before excavation machinery is used. The costs to maintain current membership in Alberta First Call, locate, mark and expose the Line(s) shall be borne by the Operator.
- 3.13 Following any work done by the Applicant, his representatives or contractors, the Applicant shall restore the highway right-of-way, to the original or better condition.
- 3.14 The Applicant shall be responsible for proper and adequate line marking as well as maintenance of the line markers within the highway right-of-way.

- CARRIER PIPE DETAIL**
- SURVEYING
 - PIPELINE
 - WALL THICKNESS
 - NOM. THICKNESS
 - OPERATING PRESSURE
 - TEST PRESSURE
 - MIN. YIELD STRENGTH
 - PIPE SPEC.
 - CORR. COEFF.
 - CATHODIC PROTECTION

- CASING DETAIL**
- PIPE SIZE
 - WALL THICKNESS
 - MATERIAL, NEW, OLD



DETAIL PLAN
SCALE 1:1000



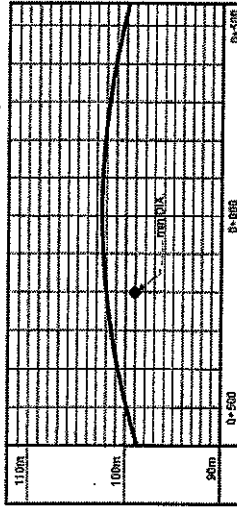
CROSS-SECTION
SCALE HOR. 1:200
VER. 1:100

REVISIONS

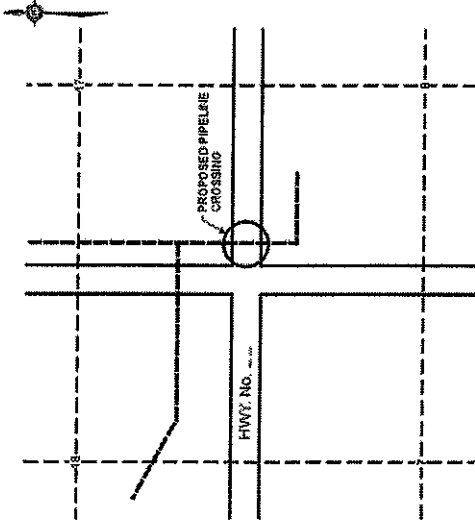
DATE	DESCRIPTION	BY

**SAMPLE DWG.
SEWER LINE X-JING**

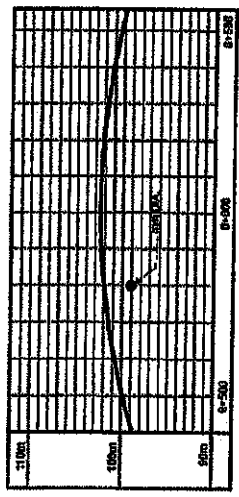
DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ FILE NO.: _____
 APPROVED BY: _____ SCALE: R.L.T.D.
 DRAWING NO.: _____



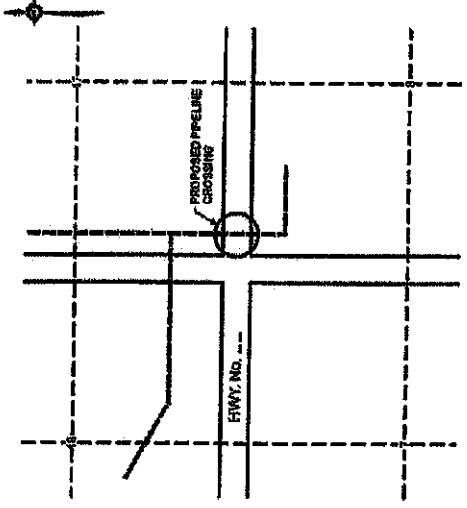
PROFILE ALONG C. OF HIGHWAY
SCALE HOR. 1:5000
VER. 1:300



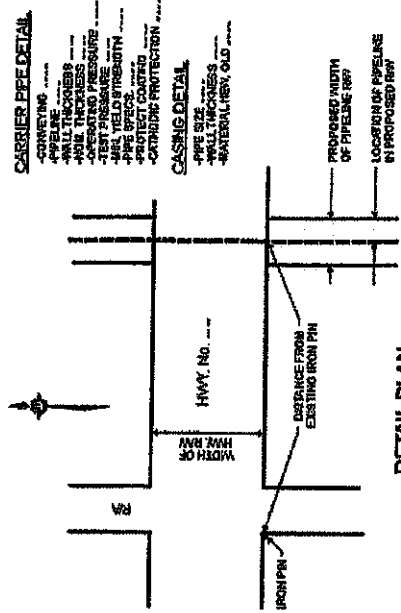
LOCATION PLAN
SCALE 1:10000



PROFILE ALONG C. OF HIGHWAY
SCALE HOR. 1:500
VER. 1:200



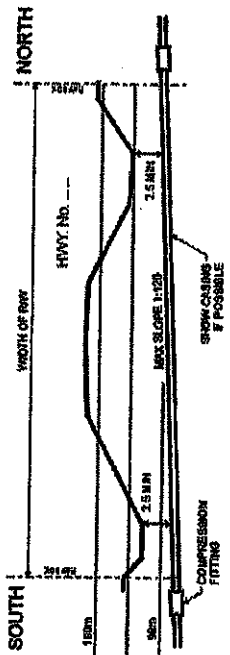
LOCATION PLAN
SCALE 1:1000



DETAIL PLAN
SCALE 1:100

- CARRIER FREE DETAIL**
- CONCRETE
 - PIPELINE
 - WALL THICKNESS
 - JOINT THICKNESS
 - JOINT STRENGTH
 - TEST PROGRAM
 - WALL YIELD STRENGTH
 - PIPE SPEC.
 - JOINT COATED
 - CARBIDE PROTECTION

- CASING DETAIL**
- PIPE SIZE
 - WALL THICKNESS
 - MATERIAL, NEW, OLD



CROSS-SECTION
SCALE HOR. 1:200
VER. 1:50

NON HORIZONTAL OR VERTICAL
BENDS WITHIN 50M
OF ROW BOUNDARY

REVISIONS

DATE	DESCRIPTION	BY

**SAMPLE DWG.
WATER LINE X-ING**

DESIGNER	CHECKED	DATE
APPROVED BY		

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