

APPLICATION FOR UNDERGROUND PIPELINE ON TWIN CITIES & WESTERN RAILROAD

Date _____

1. At what city or village is permit desired? _____
2. Full name and address of applicant: _____

3. If applicant is a corporation in what state is it incorporated? _____
4. Product to be handled in pipeline: _____
5. Pipeline Data:
 - a. outside diameter _____ f. actual working pressure _____
 - b. inside diameter _____ g. type of joint _____
 - c. pipeline material _____ h. coating _____
 - d. specifications _____ i. method of installation _____
 - e. wall thickness _____ j. is cathodic protection provided? _____
6. a. Depth of pipeline under track (top of tie to bottom of casing) _____
b. Angle of crossing _____
7. If pipeline is to be placed longitudinally with track, give:
 - a. Location of pipe in relation to centerline of nearest track _____
 - b. Depth of coverage (ground line to top of pipe) _____
8. If pipe is to be placed under track, give:
 - a. Location of pipe measured from center line of nearest roadway _____
 - b. Location of pipe measured from a fixed railroad fixture, such as a culvert _____
9. If installation is to be by jacking or boring method give location of jacking and receiving pits:
 - a. Depth _____
 - b. Distance facing pole to centerline of nearest track (measured normal) _____
10. Reference plans (to be forwarded with original application):
 - a. Drawing number _____
 - b. prepared by: _____
11. Please provide the Section _____ Township _____ Range _____

Applicant agrees that if installation requires any or all of the following work; bridging, protection of track or other railway facilities by work or flagging, engineering and/or supervision; such work is to be performed by railway employees and the cost borne by Applicant.

RETURN INFORMATION TO:

TWIN CITIES & WESTERN RAILROAD COMPANY
ATTN: SHAUNA GRUBER
2925 12TH STREET EAST
GLENCOE, MN 55336
(320) 864-7202 FAX (320) 864-7205

CONSTRUCTION OF PIPE LINES ON RAILWAY RIGHT OF WAY

GENERAL REQUIREMENTS. Pipe lines under railway tracks or across or along railway right of way shall conform to current American Railway Engineering Association Specifications if constructed in the United States and shall conform to current regulations regarding pipe line crossings under railroad as issued and amended by the Board of Transport Commissioners of Canada if constructed in Canada or where laws or orders of public authority prescribe a higher degree of protection than specified herein, then the higher degree of protection so specified shall be adhered to.

Plans and specifications for proposed installation shall be submitted to railway Superintendent Maintenance & Engineering and meet the approval of the railway company before construction is begun. Plans shall be drawn to scale showing the relation of the proposed pipe line, angle of crossing, location of valves, railway survey station, right of way line and general layout of tracks and railway facilities. Plan should also show a cross-section (or sections) from field survey, showing pipe in relation to actual profile of ground and tracks, complete description of material to be used, and location of jacking and receiving pits. If open cutting or tunneling is necessary, details of sheeting and method of supporting tracks or driving tunnel should be shown.

The execution of the work on the railway right of way, including the supporting of tracks, shall be subject to the inspection and direction of the Superintendent Maintenance & Engineering of the Railway Company.

Pipe lines shall be installed under tracks by boring or jacking if practicable. Boring excavation must not exceed the outside diameter of the pipe. Jacking or boring of corrugated metal pipe, or pipe with flanges, bells or couplings will not be permitted.

Pipe lines shall be located, where practicable, to cross tracks at approximately right angles thereto but preferably at not less than 45 degrees and shall not be placed within a culvert, under railway bridges or closer than 45 feet to any portion of any railway bridge, building or other important structure, except in special cases and then by special design as approved by the Director Engineering (Region) of the Railway Company.

Pipe lines laid longitudinally on railway right of way shall be located as far as practicable from any tracks or other important structures. Pipe lines carrying flammable products or products under pressure located within 40 feet of the centerline of any track or where there is danger of damage from leakage to any bridge, building or other important structure, shall be encased or of special design as approved by the Director Engineering (Region) of the Railway Company.

Pipe lines laid longitudinally on the railway right of way, shall be buried not less than 5' from the ground surface to top of pipe.

If additional tracks are constructed in the future, or Railway Company determines that roadbed should be widened, the casing shall be extended correspondingly.

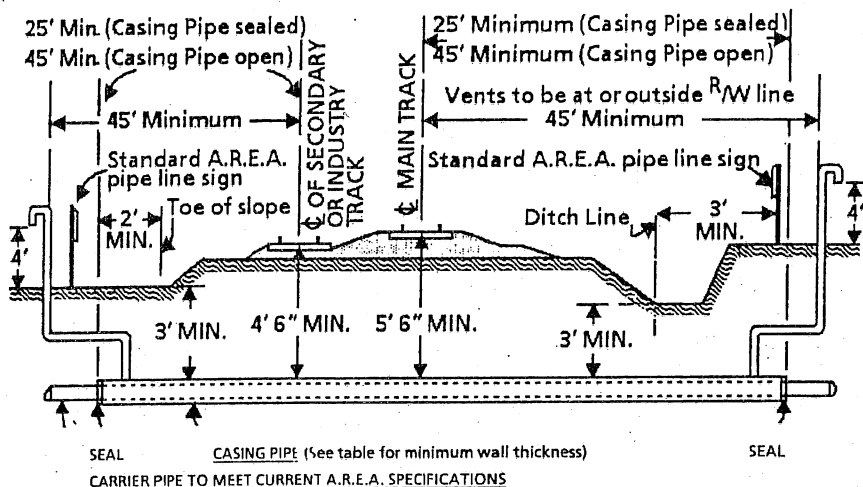
PIPE LINES CARRYING FLAMMABLE SUBSTANCES

This includes oil, gas, gasoline, petroleum products or other flammable or highly volatile substance under pressure.

APPROVED CASING PIPE:

Steel for all pressures.

ALL MINIMUM DIMENSIONS MEASURED NORMAL TO ϕ OF OUTSIDE TRACK



SEAL CASING PIPE (See table for minimum wall thickness)
 CARRIER PIPE TO MEET CURRENT A.R.E.A. SPECIFICATIONS
 Inside diameter of casing pipe shall exceed outside diameter of carrier pipe by 2" for carrier pipe less than 8" diameter, 3 1/2" for 8" to 16" carrier pipe and 4 1/2" for carrier pipe greater than 16" diameter.

PIPE LINES CARRYING NON-FLAMMABLE SUBSTANCES

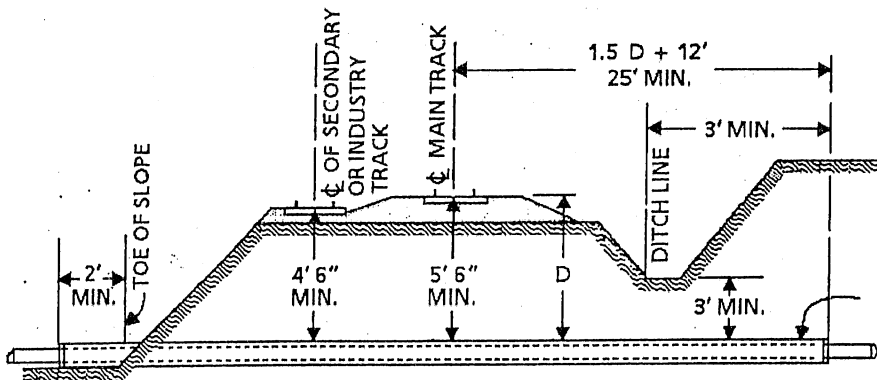
This includes steam, water or any non-flammable substance which from its nature or pressure might cause damage if escaping on or in the vicinity of railway property. Sewers and drains do not require casing pipe unless conditions exist which will endanger security of track, but should be of sufficient strength to withstand E-80 railway loading.

APPROVED CASING PIPE:

Steel for all pressures.

Reinforced Concrete or Corrugated Metal for pressures less than 100 P.S.I.

ALL MINIMUM DIMENSIONS MEASURED NORMAL TO ϕ OF OUTSIDE TRACK



CASING PIPE (See table for minimum wall thickness)

Where the ends of the casing are at or above ground surface and above high water level they may be left open, provided drainage is afforded in such manner that leakage will be conducted away from railway tracks or structures.

CARRIER PIPE TO MEET CURRENT A.R.E.A. SPECIFICATIONS

Inside diameter of casing pipe shall exceed outside diameter of carrier pipe, joints or couplings by 2" for carrier pipe less than 6" in diameter and 4" for carrier pipe 6" in diameter and larger.

CASING PIPE FOR E-80 LOADING

WALL THICKNESS FOR STEEL CASING PIPE
 (MINIMUM YIELD STRENGTH 35,000 P.S.I.)

PIPE COATED & CATHODICALLY PROTECTED MIN. THICKNESS INCHES	PIPE NOT COATED & CATHODICALLY PROTECTED MIN. THICKNESS INCHES	DIAMETER OF PIPE INCHES
0.188	0.188	UNDER 14
0.219	0.281	14 AND 16
0.250	0.312	18
0.281	0.344	20
0.312	0.375	22
0.344	0.406	24
0.375	0.438	26
0.406	0.469	28 AND 30
0.438	0.500	32
0.469	0.531	34 AND 36
0.500	0.563	36, 40 AND 42
0.531	0.594	44 AND 46
0.563	0.625	48
0.594	0.656	50
0.625	0.688	52
0.656	0.719	54
0.688	0.750	56 AND 58
0.719	0.781	60
0.750	0.813	62
0.781	0.844	64
0.813	0.875	66 AND 68
0.844	0.906	70
0.875	0.938	72

REINFORCED CONCRETE PIPE:

Minimum pipe strength shall conform to current A.S.T.M. C-76 Class IV, wall "B". If no analysis is performed and fill depth \leq 14 feet, Class V, wall "B" shall be used. For fills > 14 feet, an analysis must be performed.

CORRUGATED METAL PIPE:

Pipe shall be galvanized, fiber bonded and asphalt coated.

GAGE OF METAL BEFORE GALVANIZING U.S. STD. GAGE	DIAMETER OF PIPE INCHES
14	18 AND UNDER
12	24, 30 AND 36
10	42 AND 48

Where the ends of the casing are below ground, they shall be suitably protected against the entrance of foreign material, but shall not be tightly sealed.