

Environment Act Licence

Manitoba
Environment



Licence No.
Issue Date March 25, 1994

In accordance with the Manitoba Environment Act (C.C.S.M. c. E125)

THIS LICENCE IS ISSUED TO:

Agassiz Irrigation Association Incorporated: "the Licencee"

for the construction and operation of the Development being three water storage dugouts and related intake and outlet works for irrigation water supply in SE 13-2-5W and N 11-1-4W in the Rural Municipality of Stanley, and NE 1-1-3W in the Rural Municipality of Rhineland, subject to the following specifications, limits, terms and conditions:

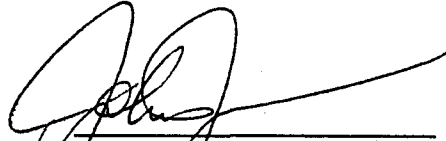
Specifications, Limits, Terms and Conditions

1. The Licencee shall construct and operate the Development in accordance with the Environment Act Proposal dated July 5, 1993, PFRA drawings 117600, 117601A, 117602, 117603, 205300, 205301 and 205302, and the supplementary information contained in the February, 1994 report *Response to Manitoba Environment Request for Additional Information on the Agassiz Irrigation Association Project*.
2. The Licencee shall, prior to commencing construction at each site, submit to the Director, evidence that the potential for heritage resources at each site has been examined to the satisfaction of the Historic Resources Branch.
3. The Licencee shall obtain authorization from the Manitoba Water Resources Branch for works undertaken on Provincial Waterways.
4. The Licencee shall not undertake construction activities which result in siltation or sediment deposition on or immediately adjacent to waterways between April 1 and June 15 of any year.
5. The Licencee shall ensure that measures are taken during the construction of the Development to minimize the deposition of sediment in waterways.
6. The Licencee shall obtain all necessary permits from Manitoba Highways and Transportation for access and structures within 38.1 m of the right-of-way adjacent to the site in NE 1-1-3W.

- The Licencee shall, prior to beginning construction activities at the site on N 11-1-4W, submit, for the approval of the Director, detailed plans equivalent to those submitted for the other two sites.
8. The Licencee shall ensure that natural or constructed channel areas which are exposed to high velocity water flows are protected with rip-rap or gradient control structures to limit erosion.
 10. The Licencee shall replace trees and shrubs removed during the construction of the Development so that no long term net loss of wildlife habitat occurs. Cut trees useable for fuelwood shall be salvaged. Other trees and branches shall be stacked in small piles near the dugouts to provide temporary shelter for wildlife.
 11. The Licencee shall ensure that the combined capacity of pumps used to divert water into the Development does not exceed 2.27 m³/s at each site.
 12. The Licencee shall ensure that minimum instream flows are maintained in each waterway below its diversion point at all times while water is being diverted into the corresponding dugout. These minimum instream flows shall be 0.2 m³/s below the diversion points in SE 13-2-5W and N 11-1-4W, and 0.122 m³/s below the diversion point in NE 1-1-3W. Prior written approval from the Director shall be required to reduce these flows.
 13. The Licencee shall ensure that buried pipelines which are installed on cultivated land or land in its natural state are installed in accordance with the methodology illustrated in the attached Figures 1 to 3.
 14. The Licencee shall monitor instream flows, seepage from reservoirs, and land impacts as proposed. All data shall be forwarded to Manitoba Environment, Manitoba Natural Resources, and the Prairie Farm Rehabilitation Administration.
 15. The Licencee shall on a daily basis monitor streamflows, diversion rates and pumping durations when dugout filling is occurring. Dugout water levels and pumping rates and durations shall be monitored when water is being used from the dugouts. An annual report on this operating data for each dugout shall be provided to Manitoba Environment, Manitoba Natural Resources and the Prairie Farm Rehabilitation Administration.
 16. The Licencee shall ensure that all waste oil products generated by the machinery used in the construction and operation of the Development are collected and disposed of in accordance with applicable Manitoba Environment and legislative requirements.
 17. The Licencee shall ensure that fuel storage areas established for the construction and operation of the Development shall comply with the requirements of *Manitoba Regulation 97/88R* respecting *Storage and Handling of Gasoline and Associated Products*.

Revocation

If, in the opinion of the Director, the Licencee has exceeded or is exceeding the limits, or has not complied or is not complying with the specifications, terms or conditions set out herein, the Director may revoke this Licence either temporarily or permanently.



Larry Strachan, P. Eng.
Director,
Environment Act

File No: 3636.00

R/W
BOY.

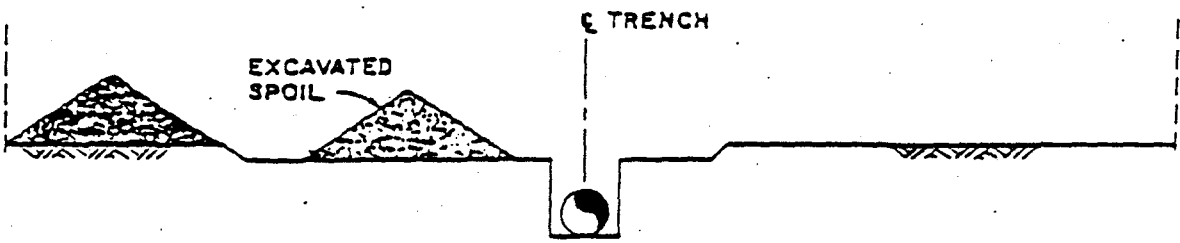
SPOIL SIDE

WORK SIDE

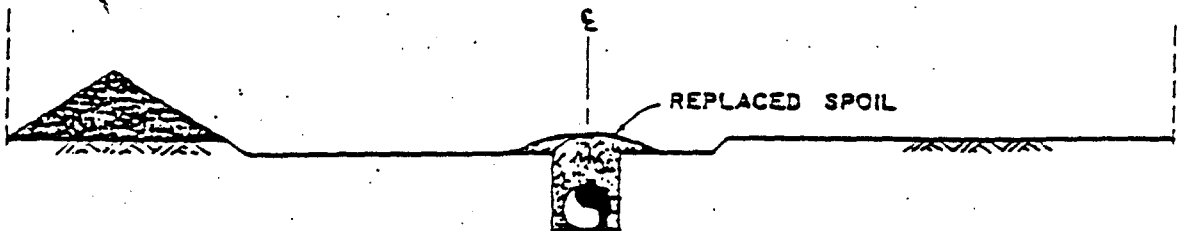
R/W
BOY.



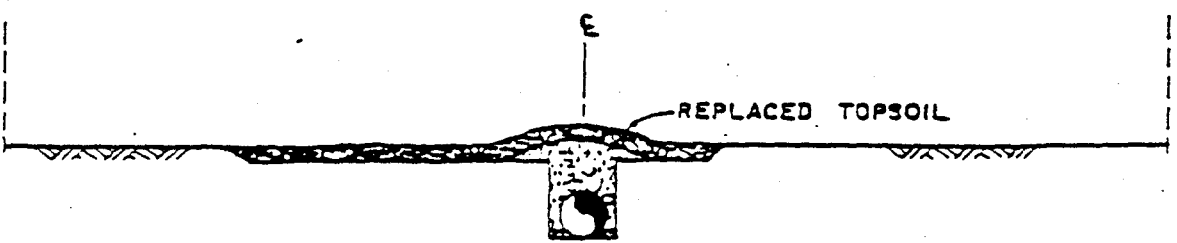
1. TOPSOIL STRIPPED
N.T.S.



2. TRENCH EXCAVATED
N.T.S.



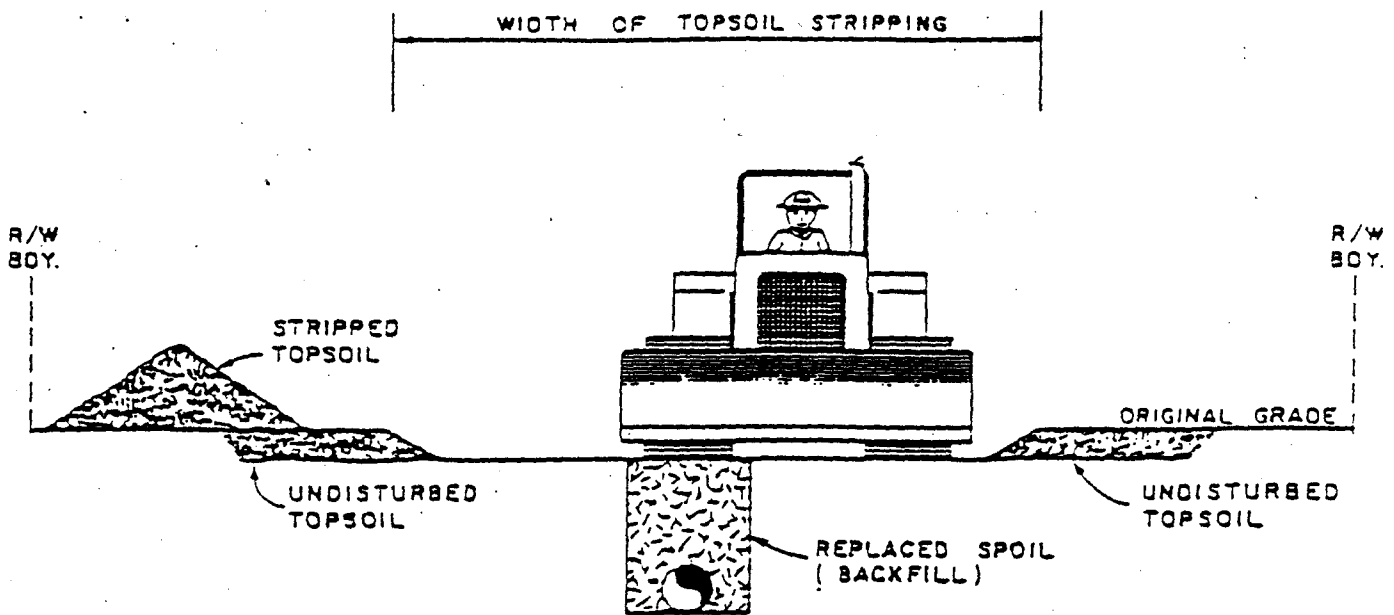
3. TRENCH BACKFILLED
N.T.S.



4. TOPSOIL REPLACED
N.T.S.

SEQUENCE OF TOPSOIL HANDLING

FIGURE 1



PROFILE
N.T.S.

Notes:

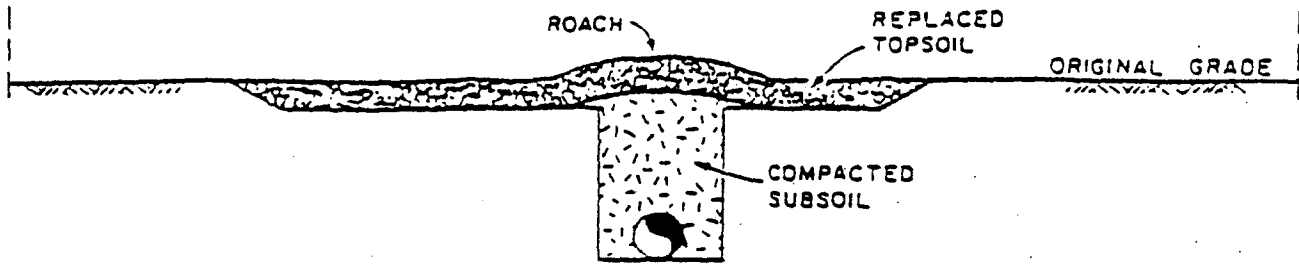
1. Except in rocky or muskeg areas, compact the backfilled subsoil to minimize settlement. The degree of compaction which can be achieved is limited by soil type, frost and moisture content, depth of cover, pipe strength and insulation, and other factors. Typically, compaction is achieved by a few passes with a crawler tractor. In special cases such as irrigated fields and open cut road crossings, 100% compaction is desirable and requires special equipment and compaction in multiple lifts.
2. Dispose of excess subsoil in locations satisfactory to the landowner and in a manner which will prevent mixing with topsoil.

COMPACTION OF BACKFILL

FIGURE 2

R/W
BOY.

R/W
BOY.



PROFILE

N.T.S.

Notes

1. Roach the trench to compensate for settlement and changes in natural drainage patterns. The height of the roach depends upon land use, the degree of compaction achieved, and soil frost. Frozen soils require higher roaches than non-frozen soils. In agricultural lands, including forested lands in the yellow area, the roach should be low and wide (unfrozen case) to facilitate topsoil replacement. A higher roach is acceptable on forested land provided drainage and wildlife are unaffected. Typical values for roaching of representative soil types are presented below. The higher numbers in the range represent the worst case (frozen or clods).

Type of Backfill	Swell Coefficient (r)
blasted rock	.00 - .05
sand & gravel	.05 - .10
sand	.08 - .15
silty sand	.10 - .15
silt	.10 - .20
clay	.10 - .25
organic (muskeg)	.50 - 1.00

$$R = r \times D \quad \text{where } R = \text{height of roach}$$

$$r = \text{swell coefficient}$$

$$D = \text{depth of trench}$$

2. Leave periodic gaps in roach (e.g., 250 m), at all obvious drainage courses and at trench breakers (Dwgs. No. 12-3a and -3b) to allow for surface run-off. These gaps may require maintenance the following year to fill in settled areas.
3. Replace topsoil evenly after trench has settled or has been compacted.

Source: Formula adapted from Transcanada Pipelines, 1979.

ROACHING THE TRENCH

FIGURE 3