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30 Years of Service

CONSERVATION DRAINAGE

Controlled Drainage / Subirrigation (CDSI)

Background Report
and
Design Guide

Prepared for:

Land Improvement Contractors of Ontario
Agriculture and Agri-Food Canada
Ontario Ministry of Agriculture, Food and Rural Affairs

Prepared by:

Hunter and Associates

January 18, 2008

Our File No.: 06-412

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January 7, 2008 Our File No.: 06-412

Mr. Don Lobb, Chair HAND DELIVER
Steering Committee
Southern Ontario CDSI Project
Don Lobb & Associates
1009 Boston Mills Road
Caledon, ON L7C 0N1

Re: Controlled Drainage Subirrigation (CDSI) Potential – Southern Ontario Project

Dear Mr. Lobb:

We are pleased to provide our Controlled Drainage Subirrigation Background Report including The Drainage Guide (Manual).

The Drainage Guide with Examples is included as Sec 4.0 and the Operational Guide as Sec 5.0. Definitions and Supporting Diagrams are enclosed in Sec 1.0. Sec 2.0 provides a summary of CDSI research from Southern Ontario and nearby Northwestern Ohio and provides the basis for the Sec 4.0 Design Guide. Sec 3.0 provides an analysis of summer precipitation and stream flow runoff availability as an analogue for potential controlled drainage capture. This section also provides an estimate of supplementary soil and pond water storage necessary to satisfy crop moisture demands through subirrigation for approximately 8 in 10 years for Southwestern and Eastern Ontario in support of stable high crop yields with low nutrient residuals for economic and environmental benefit.

The Design and Operational Guide is intended as an initial Supplement to the Ministry of Agriculture, Food and Rural Affairs Drainage Guide for Ontario (2007) and to be integrated into future editions. However the CDSI Design Guide still requires an additional period of scrutiny by the CDSI Steering Committee followed by the Drainage and Farmer Community.

There is also a need to scale up the CDSI plot research in Southern Ontario to commercial farm demonstration scale and to encourage agricultural drain tubing manufacturers to develop improved water level control devices suitable for installation on fields with gradients above 0.5 %.

We are available to further update this report as comments may be received.

Yours truly,

Garry T. Hunter, M.A.Sc., P.Eng.
President
Hunter and Associates

GTH/wp

cc: Sid Vander Veen
Jim Myslik
R. Wade Morrison
John Johnston
Laura Sider

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