2020 Drainage Workshop
Designing & Installing Subsurface Agricultural Drainage Systems
February 12-14, 2020
Macon Comfort Inn
1821 North Missouri • Macon, MO

From this ...
For a hands-on education in the latest techniques involved with the design and installation of integrated water management systems, using research results from MU’s Greenley Research Center.

To gain more customers by increasing your skills to include the design and installation of subsurface drainage systems.

To understand the environmental benefits of drainage water management.

To discover the pitfalls and short-cuts of subsurface drainage installation ... before you get in the field.

To take advantage of the opportunity to ask the experts about subsurface drainage design and installation.

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**Workshop Agenda**

**WEDNESDAY, FEBRUARY 12**

- Noon  Registration
- 1:00pm  Welcome and Introductions
- 1:15pm  Introduction to Drainage Water Management
- 1:30pm  MU Drainage and Sub-irrigation (MUDS) Research Update
- 2:30pm  Water Movement in Soils
  - Processes and Terminology
  - Important Soil Properties
  - Hydraulic Conductivity
  - Soil Water Concepts
- 3:15pm  Break
- 3:30pm  Engineering Standards and Specs
  Planning Considerations
  - Needs: Surface or Subsurface Drainage, Water Table Management, or Nutrient Management
  - System Layout & Outlet Locations
  - Utilities Determination - One-Call
  Subsurface Drain Design, Pipe Capacity
  - Class Problem 1, Using Design Tables and Standards
- 5:00pm  Adjourn for the day

**THURSDAY, FEBRUARY 13**

- 8:00am  Class Problem 2 & 3 - Using Design Tables and Standards
- 8:45am  Lateral Design
- 9:15am  Making a Topographic Map from Survey Points
- 9:45am  Break
- 10:00am  Class Problem 4
- 11:15am  Planning Considerations
  - The importance of an On-Site Evaluation of Soil Properties
  - Wetland Determination
- 12:00pm  Lunch Provided
- 1:00pm  Class Problem 5 – System Design
- 2:30pm  Class Problem 5 – Review and Discussion
- 3:00pm  Break
- 3:15pm  Pipe Installation Considerations

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**Workshop Agenda (Cont.)**

**THURSDAY, FEBRUARY 13 (Cont.)**

- 3:45pm  Class Problem 6
  - Field Topographic Map
  - Soils, Other Information, Web Soil Survey
- 5:00pm  Adjourn for the day

**FRIDAY, FEBRUARY 14**

- 8:00am  TSP Provider Training
- 8:30am  Continue work on Design Problem 6
- 9:45am  Break
- 10:00am  Presentation and Summary of Problem 6 Drainage Design
- 11:00am  Nitrogen Treatment for Drainage Systems
- 12:00pm  Lunch Provided
- 1:00pm  Contractor/Industry/Farmer/University Panel Discussion
- 3:00pm  Adjourn

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**POST WORKSHOP TOUR**

Following the Workshop, attendees will have the opportunity to tour the Grace Greenley Farm in Novelty, MO, the first holistic drainage water recycling research project in Missouri.

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**Why Should You Attend?**

- For a hands-on education in the latest techniques involved with the design and installation of integrated water management systems, using research results from MU’s Greenley Research Center.
- To gain more customers by increasing your skills to include the design and installation of subsurface drainage systems.
- To understand the environmental benefits of drainage water management.
- To discover the pitfalls and short-cuts of subsurface drainage installation ... before you get in the field.
- To take advantage of the opportunity to ask the experts about subsurface drainage design and installation.
In Missouri, there is a rising demand for patterned, subsurface drainage systems. Developments in materials, the design process and installation equipment have fueled a new approach to an old agricultural management technique.

The Natural Resources Conservation Service (NRCS), Missouri Department of Natural Resources, University of Missouri (MU), and Missouri Land Improvement Contractors Association (LICA) have partnered to present these new developments in a workshop on integrated water management design and installation.

This is an outstanding program which will use both lecture and hands-on problems to cover the details of planning a subsurface drainage system, including engineering standards and specifications, design tables, sizing of pipes, drainage design, design of mains and laterals, drain tile spacing, and controlled drainage and subirrigation design principles.

Attendees will learn about the most current MU Drainage/Subirrigation research results, and ancillary issues, such as underground utilities and potential wetlands concerns.

A panel discussion will give attendees an opportunity to get their questions answered by a local farmer using a subsurface drainage system, NRCS representatives familiar with the applicable standards, a LICA contractor who has installed many systems, a tiling industry representative, and University personnel with their research perspectives.

Following the Workshop, attendees will have the opportunity to tour the Grace Greenley Farm in Novelty, MO, the first holistic drainage water recycling research project in Missouri.

What Is A Drainage Workshop?

Workshop Location

Macon Comfort Inn
1821 North Missouri
Macon, MO
Ph: 660-395-8000

We will provide:
- Engineering Scales
- Lunches and breaks

You will need to bring:
- Notepaper
- Pen or pencil
- Calculator

Registration

The registration fee for this Workshop is $50 per person. No on-site registration will be available. Space is limited to the first 50 registrants. Registrations with full, non-refundable payment must be received by February 5, 2020.

Make check payable to:
Missouri LICA
1101 West High Street
Jefferson City, MO 65109

TO REGISTER BY PHONE OR FOR QUESTIONS:
Call Debbie @ 573-634-3001

Name of Attendees: (Please print)
__________________________________________  
__________________________________________  
__________________________________________  

Company:_________________________________

City/State:_________________________________

Phone:____________________________________

Registration

Workshop Sponsors

Greenley Research Center
University of Missouri

United States Department of Agriculture
Natural Resources Conservation Service

Missouri Chapter
Land Improvement Contractors of America

LICA
Respects to Professional Contractors of Soil & Water