

2020 Drainage Workshop

*Designing & Installing Subsurface
Agricultural Drainage Systems*

February 12-14, 2020

**Macon Comfort Inn
1821 North Missouri ♦ Macon, MO**

From this ...



To This!



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

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
Final Questions, Summary and Evaluation
- 3:00pm Adjourn

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.

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.

What Is A Drainage Workshop?

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.

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Workshop Sponsors



Greenley Research Center
University of Missouri



United States Department of Agriculture
Natural Resources Conservation Service



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: _____

Workshop Location



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

We will provide:

- ♦ Resource/Reference Manual
- ♦ Engineering Scales
- ♦ Lunches and breaks

You will need to bring:

- ♦ Notepaper
- ♦ Pen or pencil
- ♦ Calculator