

# **AGRICULTURAL DRAINAGE**

Our drainage experts listen to landowners' concerns to ensure our design provides the capacity necessary for modern agricultural production. Time, settlement, tile size, sediment, and modern farming practices necessitate change. Our drainage engineers evaluate facilities, recommend repair and/or improvement strategies, and prepare a design based on the strategy with the best opportunity for acceptance by beneficiaries.

Our involvement in drainage projects extends from standard repairs to complex, multi-jurisdictional projects with political, environmental, funding, and wetland considerations. We provide a full range of design, wetland delineation, construction, water quality improvements, and watershed analysis services.

### Minnesota Statute 103E

With more than 65 years of agricultural drainage experience, our drainage engineers have intricate knowledge of the repair, improvement, and separable maintenance processes that may be appropriate for your system and beneficiaries. We are familiar with the premier attorneys that work with your county board and work seamlessly in preparing the appropriate documents needed in the legal process. We have also worked with many of the professional viewers that update and determine the appropriate distribution of benefits relative to new improvements and separable maintenance.

#### **Drone Services**

Bolton & Menk's services include using licensed drone pilots to fly existing open channels to document associated conditions. Our pilots are both FAA and MnDOT certified for commercial operations. Further, our drones provide laser scanning that can be used to more accurately determine elevations along the corridor. This capability allows for competitive services by limiting the time field staff spend gathering information. Our drone flight can also provide video documentation for use in hearings with the benefiting property owners.

## **GIS Integration**

We understand the importance of drainage mapping. Knowing what you have and where it's located is one of our fundamental services. We accurately locate facilities and produce maps for you when you need them.

## Other Agricultural Drainage Services

- Drainage Repairs & Improvements
- Stormwater Management Planning
- Surface & Subsurface Systems Design & Construction
- Permitting Assistance/Application
- Construction Administration
- Storm Drainage Utility Systems Development
- Stormwater Monitoring & Treatment
- Hydrologic Analysis
- Hydraulic Design

- Wetland Delineation, Restoration, & Mitigation
- Drainage & Floodplain Surveys
- Integrated Drainage Improvements
- Nutrients Removal Wetlands

