



Irrigation Engineering: System Design

- Reservoirs & Intakes
- Supply & Distribution
- Pump Stations
- Multiple Pressure Zone Systems
- Flush Systems

WEI has considerable experience designing irrigation systems and hydraulic components therefor, including open channel flow facilities for conveyance, erosion control, and maintenance (storm and irrigation water), closed or piped systems for similar and scour velocity concerns (domestic, wastewater, and irrigation lines), and pump station design of various types for various conditions (storm, domestic, and irrigation water pump stations). Pump stations can be simple or elaborate with variable frequency drives, harmonic filters, and power factor correction, with single and multi-stage (vertical turbine) types, and with site and remote monitoring and control.

Selected Projects



Ruby Canyon Estates North & South, Mack, CO

Designed a pump station having two 40 horsepower five stage vertical turbine pumps and one 10 horsepower four stage vertical turbine pump. The pump motors had variable frequency drives with harmonic filters and power factor correction with controls for constant pressure conditions. The pump station had check valves, butterfly valves, bladder pressure tanks, an air release valve, and magnetic flow meters. The design included a low maintenance intake facility.

Private 5 Acre Homesite Irrigation System, Castle Valley, UT

Evaluated existing irrigation system and alternatives for retrofit. Finding no practical solution to resolving problems with the newly installed irrigation system, was hired as an expert witness to testify in court regarding existing design deficiencies and impracticality of retrofitting the system. Based on our testimony and supporting documents, homeowner was fully refunded for all costs of the inadequate and unsuitable system.

32-1/2 Road, Mesa County, CO

Design of a 1/4 mile long concrete ditch replacement with a pipe irrigation system and related appurtenances for irrigation laterals and turnouts along the way.



Ruby Canyon Estates, Mack, CO

Designed a pump station having two 20 horsepower four stage vertical turbine pumps and one 10 horsepower four stage vertical turbine pump. The pump motors had variable frequency drives with harmonic filters and power factor correction with controls for constant pressure conditions. The pump station had check valves, butterfly valves, bladder pressure tanks, air release valves, and magnetic flow meters. The design included a low maintenance intake facility.

Hacienda Heights, Loma, CO

Designed irrigation distribution system for a 35 acre subdivision and a pump station. Both distribution system and pump station were provided with easy to use flush drains. The pump station was design with a low-maintenance intake from an irrigation reservoir. Alternatively, if necessary easements could be obtained, a design without a pump station was prepared for a new high-pressure line from the irrigation company lateral per their requirements.

South Avenue Reconstruction, Grand Junction, CO

As part of a 4 block street reconstruction project, designed landscaping irrigation main system on both sides of the street.

Benson Estates, Fruita, CO

Designed irrigation distribution system and pump station for a 12 lot subdivision.