Fictional One-Acre Irrigation Planning Example

Revision B · July 28, 2026 · US customary drawing units (feet)

Conceptual irrigation planning example - not a site-specific construction or engineered design.

This package demonstrates drawing organization, source-data labeling, preliminary hydraulic screening, and the questions reserved for a qualified designer or contractor. It includes the one-acre example and a separate fictional orchard-retrofit drawing for side-by-side CAD comparison. It does not depict Kevin’s property or any other real parcel.

Site and Layout Basis

Item	Example value	Status
Site boundary	208.7 ft × 208.7 ft (approximately 1 acre)	Fictional geometry; not surveyed
Planting layout	100 tree or windbreak locations; 10 rows × 10; 20 ft spacing	Concept assumption
Pilot / expansion	20-tree pilot plus two 40-tree expansion zones	Expansion follows pilot verification
Water source	1,500 gal elevated tank; operating water elevation 119.0 ft	Fictional; source yield and refill rate unknown
Field elevation	99.2 to 104.0 ft from four assumed corner markers	Field survey required
Pipe routing	265 ft of 1.0 in nominal supply/mainline; 2,000 ft of 0.5 in nominal laterals	Candidate sizes only

Included Comparison Drawing

File	Scope	Intended use	Status
north_orchard_retrofit_concept_rev1.dxf	Separate fictional North Orchard Retrofit / Block A concept	Compare a denser, higher-complexity layer, annotation, equipment, and review-flag structure with the one-acre example	Preliminary concept for professional review only; not source data for the one-acre example

The two DXFs are independent fictional scenarios. Dimensions, flows, quantities, pressure assumptions, and equipment labels in one drawing do not amend or validate the other.

Preliminary Hydraulic Summary

Illustrative emitter discharge is 0.01 GPH per planting location under continuous operation. Static head is screened from the assumed operating water elevation to the high point. Manufacturer response curves and field pressure tests remain required.

Zone	Plants	Demand GPH	Demand GPM	24-hour gal	Planning note
A - pilot	20	0.20	0.0033	4.8	Two rows; field-test before expansion
B - expansion	40	0.40	0.0067	9.6	Four rows; inactive until pilot review
C - expansion	40	0.40	0.0067	9.6	Four rows; inactive until pilot review
All zones	100	1.00	0.0167	24.0	Illustrative 24-hour operation

Hydraulic item	Example result	Interpretation
Static head above field high point	15.0 ft / approximately 6.50 PSI	Based on assumed tank water level and assumed field high point
Screened field operating pressure	Approximately 5.7 PSI	Allows a conceptual 0.8 PSI for fitting and pipe losses; recalculate with surveyed lengths
Minimum candidate pressure	1.0 PSI	Emitter-specific value must be confirmed from the selected product curve
Tank duration at full illustrative demand	62.5 days before refill	Arithmetic only; excludes crop demand, reserve, evaporation, and operational limits

Assumptions Register

ID	Assumption	Why it matters	Verification
A-01	Boundary is a square one-acre planning envelope.	Controls lengths, row count, and routing.	Parcel record and boundary survey.
A-02	Four elevation markers approximate a uniform grade.	Controls gravity pressure and drainage.	Topographic survey or verified GPS elevations.
A-03	Tank operating level is 119.0 ft and storage is 1,500 gal.	Controls static head and available runtime.	Measure tank geometry, level band, and outlet elevation.
A-04	One 0.01 GPH emitter candidate serves each tree.	Controls zone flow and daily demand.	Select product and confirm pressure-discharge curve.
A-05	Pipe is clean PE/PVC with negligible loss at the shown flow.	Controls pressure at remote points.	Confirm material, inside diameter, fittings, and installed condition.
A-06	24-hour continuous operation is agronomically acceptable.	Controls daily delivery and tank duration.	Soil, root-zone, weather, and crop review.

Designer-Review Flags and Source Record

Designer-Review Flags

- **Survey:** Replace the fictional boundary and assumed elevations with verified site data.
- **Water source:** Verify usable storage, refill rate, water quality, outlet elevation, and backflow requirements.
- **Hydraulics:** Recalculate static and residual pressure with actual inside diameters, lengths, fittings, valves, filtration, and selected emitter curves.
- **Filtration and flushing:** Confirm mesh, service flow, pressure loss, maintenance access, and terminal flushing details.
- **Agronomy:** Confirm per-plant demand, placement, wetting geometry, runtime, salinity management, and seasonal controls.
- **Constructability:** Verify utilities, crossings, trench or surface routing, anchors, freeze/UV exposure, protection, and isolation points.
- **Approval:** Identify the qualified designer or contractor responsible for final equipment selection, field verification, construction approval, and professional responsibility.

Revision Table

Revision	Date	Purpose	Issued by
A	2026-07-28	Public fictional planning example for workflow inspection	Nano Flow Irrigation
B	2026-07-28	Added the North Orchard Retrofit DXF as an independent fictional comparison drawing	Nano Flow Irrigation

Source-Data Table

Source	File / reference	Reliability	Use in drawing
Boundary	Generated 208.7 ft square	Fictional	Planning envelope only
Elevation	Four generated corner markers	Assumed	Gravity screening only
Planting	Generated 10 × 10 grid	Assumed	Count, spacing, and zone example
Water source	Generated tank and elevation	Assumed	Static-head example
Hydraulics	Arithmetic at 0.01 GPH per emitter	Concept calculation	Zone-demand and tank-duration example
Comparison drawing	north_orchard_retrofit_concept_rev1.dxf	Separate fictional planning output	CAD organization and scenario comparison only; excluded from one-acre calculations

Manufacturer data	Not supplied	Missing	Designer-review flag

Drawing Layer Guide

Layer	Contents
BOUNDARY / ELEVATION	Site envelope and assumed elevation markers
TANK / FILTERS / GAUGES / VALVES	Water source and preliminary headworks components
MAINLINE / PILOT / FUTURE	Proposed routing and staged zones
TREE / FLUSH	Planting locations and lateral terminations
DIMENSIONS / ANNOTATIONS / TITLEBLOCK	Pipe lengths, nominal diameters, notes, and revision context

Preliminary layouts accelerate professional review. Final equipment selection, field verification, construction approval, and professional responsibility remain with the project's qualified designer or contractor.

No real parcel, owner, or private property information was used in this sample.