

# NEBRASKA PRACTICE DOCUMENTATION REQUIREMENTS

## WATER WELL (642)

### I. GENERAL

Minimum documentation requirements for this practice are outlined below. Documentation for associated practices or system components shall follow the appropriate practice documentation requirements. Additional documentation requirements can be found in the General Documentation Requirements section of the Nebraska Practice Documentation Requirements Manual.

#### A. References

1. National Engineering Manual (NEM)
2. Nebraska Field Office Technical Guide (FOTG)
3. National Engineering Handbook (NEH), Part 650, Chapter 12
4. Nebraska Health and Human Services Regulation & Licensure (NHHSR&L) Title 178 NAC 12
5. Conservation plan for the unit
6. Local supplemental criteria

### II. RESOURCE INVENTORY AND SURVEYS

#### A. Design Investigations

1. Well capacity requirements for the intended purpose.
2. Well depth and yield estimates
3. Geologic review, as required.
4. UNL Conservation and Survey Division well records.
5. Location of underground utilities.

#### B. Design Surveys

1. Not applicable in most cases.
2. Field survey notes will conform to NEM Part 540 and follow standard field note documentation as illustrated in Technical Release 62 (TR-62) and/or Nebraska Standard Format for Engineering Notes Transmittal Sheets No. 3. Survey notes will be prepared such that they exhibit legible, logical, clear and concise data.

#### C. Environmental Inventory

1. NEPA inventory of resources -- form NE-CPA-52 must be completed by NRCS during planning
2. Wetland effects, if applicable
3. Archeological/Historical/Cultural Resources
  - a. Complete all continuing environmental requirements stemming from planning as expressed in the General Documentation Requirements section of the Nebraska Practice Documentation Requirements Manual.

### **III. DESIGN**

- A. Design Data
  - 1. Well design will follow the criteria stated in NEFOTG Standard 642 and all pertinent NHHSR&L regulations.
  - 2. Quantity and cost estimates.
- B. Permits
  - 1. Registration with Nebraska Department of Natural Resources.

### **IV. PLANS AND SPECIFICATIONS**

- A. Plans
  - 1. Form NE-ENG-64 or equivalent.
  - 2. Well location and pertinent features. Include map orientation.
  - 3. Types and sizes/dimensions of all manufactured well components -- casing, well screens, etc.
  - 4. Quantities of sealing and fill materials – grout, bentonite, gravel packs, etc.
  - 5. Construction notes -- add notes to clarify a component and furnish directions for installations to supplement standard specifications as needed.
    - a. Construction plans shall include a statement requiring the contractor to notify the Nebraska One-Call System (Diggers Hotline) regarding utilities on the construction site. See the General Documentation Requirements section of the Nebraska Practice Documentation Requirements Manual for the recommended statement.
    - b. Add notes as necessary to identify avoidance and, if needed, protection areas and boundaries associated with cultural resources, threatened or endangered species, or other resources needing temporary protection during installation.
- B. Specifications
  - 1. Nebraska FOTG Conservation Practice specifications, component specifications from NEH Part 650, Engineering Field Handbook Appendix 1, or equivalent, modified as needed. Additional specifications may be written to provide full material and installation instructions.
- C. O&M Plans
  - 1. As specified in Well, (642) Standard in Nebraska FOTG
- D. Plans, Specifications, O&M Plans Delivery
  - 1. Case folder
  - 2. Transmittal letter copy

### **V. LAYOUT**

- A. Layout Surveys
  - 1. Stake and/or flag well location as required.
  - 2. Use field notebook, forms, etc.
- B. Quantity Computations

## VI. COMPLIANCE CHECKING

- A. State statutes mandate that wells can only be installed by individuals licensed to do so, or by a landowner on land owned by them.
- B. Record in field notebook, on construction plans, etc.
  - 1. Well log with information required by NHHSR&L
  - 2. Statement of compliance -- statement that construction is completed according to plans and specifications, signed and dated by the person certifying completion.
- C. "As Built" Plans
  - 1. Refer to NEM, 512.51 and 512.52
  - 2. "As Built" plans are a record of constructed facilities. "As Built" plans are required when a significant change in design occurs during construction or when the job is designated Class V or higher. Changes are superimposed in a different color (usually red), or differentiated in some other manner (such as a drawing a box around the as-built value) on the official file copy and show:
    - a. Significant<sup>1</sup> design changes.
    - b. Significant<sup>1</sup> changes in linear measurement.
    - c. Final quantities -- may be based on layout stake notes, if no changes were approved and work meets planned lines and grades.
    - d. Identify as "As Built" on plans.

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<sup>1</sup> Determination of "significant" is a matter of judgment by the technician. As a general rule, changes that exceed normal measuring error allowances, normal construction tolerances, and methods of mathematical computation, should be considered as significant.