

FARMSTEAD ENERGY IMPROVEMENT (Maple Syrup) CONSTRUCTION SPECIFICATION (374)

1. SCOPE

The work shall consist of furnishing materials and installing selected components prescribed in an On-farm Energy Audit completed through a Conservation Activity Plan 122 and/or ASABE Standard S612 as outlined in this specification and the attached drawing and details.

2. EQUIPMENT AND MATERIALS

Equipment and materials installed shall match the type and size recommendations found in the On-farm Energy Audit. Changes require an approved revision by the audit TSP.

3. INSTALLATION

Installation shall conform to all applicable codes, laws and regulations.

Installation shall be as per drawings and manufacturer's requirements.

All changes need prior approval.

Changes to audit recommendations must be obtained in writing by the landowner from the audit writer prior to approval and implementation.

Installation shall be by a qualified professional (Manufacturers' Representatives, Equipment Companies, Ag Building Companies, Electricians, etc.)

4. SPECIFICATIONS

The following specifications supplement the information given on the drawings. The qualified professional that does the work shall meet the requirements applicable to their work and must

also meet these specifications. Unlisted components shall meet the requirements specified in the Energy Audit.

RO Systems

- Specifically for Maple Syrup
- All pumps stainless steel
- TDS monitor
- High pressure valve
- Food grade PVC
- Powder coated frame
- Installation manual
- Flow meters for concentrate and permeate
- #304 stainless steel membrane housing
- Designated maple sap membranes
- 1-year parts warranty or better
- Equipment specifications match or exceed audit TSP requirements.

Enhanced pre-heater, small

- Unit < 40 SF
- Concentrate sap Brix from 2% to 4% or more
- Copper tubing or #304 stainless steel
- Equipment specifications match or exceed audit TSP requirements.

Enhanced pre-heater, large

- Unit 40 SF or larger.
- Concentrate sap Brix from 2% to 4% or more.
- Copper tubing or #304 stainless steel
- Equipment specifications match or exceed audit TSP requirements.

High Efficiency Pans

- Does not include Arch
- #304 stainless steel
- Equipment specifications match or exceed audit TSP requirements

High Efficiency Arch

- Equipment specifications match or exceed audit TSP requirements.
- Does not include high efficiency pans
- Equipment specifications match or exceed audit TSP requirements

Variable Speed Drive

The associated electric motor (can be a separate item if existing motor was not 3-phase) and drive equipment must be installed and functional. Wiring, breaker switches, etc. for the motor and variable speed drive must be installed and functional. Use shielded wire between the controller and motor. The controller panel(s) and 3-phase inverter must be securely mounted and operate the attached electric motor and equipment.

Motor Upgrades (Electric)

The driven equipment (pump, fan, etc.) must be installed and functional. The motor and control panel(s) must be securely mounted and functional. Wiring, breaker switches, etc. must be installed and functional.

5. SAFETY

Electrical wiring shall be installed to meet national, state, or local electrical code, whichever is more restrictive. The work must be done by a qualified professional. Existing services requiring upgraded or extension shall be done at owner's expense.

Equipment shall be installed with all required safety shields and warning signs.

Components exposed to humid or wet conditions shall have additional moisture protection.

Components with liquid systems shall be protected from freezing or means to drain the liquids for winterization.

6. SUBMITTALS

The producer shall provide invoices that verify the type, material, or size of component being installed. This can include manufactures literature.

The producer must provide a copy of approved revisions to the drawings.

The producer shall provide verification that modifications for facility are approved by integrator, if applicable.

The producer shall provide a certification from the qualified professional(s) that the installation was installed as per manufactures requirements.

Qualified professional includes Manufactures' Representatives, Equipment Companies, Ag Building Companies, Electricians, etc.

Producer self-installation, other than changing light bulbs, requires qualified profession sign-off.

7. ADDITIONAL CONDITIONS WHICH APPLY TO THIS PROJECT ARE: