Important: Warranty Disclaimer for Plans

For the convenience of our clientele, this website makes available conceptual plans that can be helpful in planning buildings, facilities, or other structures. They were developed over many years by engineers at Land Grant universities through the former USDA Cooperative Farm Buildings Plan Exchange. Regardless of the original intent, these are older plans that provide conceptual information only, and are not to be considered or used as construction plans.

These plans do not claim to represent the most current technology or the most recent construction techniques, standards, or codes. For example, over the years there have been changes in the National Design Specifications for Wood Construction, changes in the strengths and types of building materials, and changes in fasteners, among other things. Those changes, along with variations in climate, building codes, and other factors, make it imperative that professional services be utilized for your specific project. Suggested services include, but are not limited to, structural design, assurance of compliance with codes and regulations, site selection, construction supervision, and provision for utilities, waste management, and access. These plans do not replace the need for competent design assistance in developing safe, legal, and well-functioning agricultural buildings and systems.

Neither the University of Kentucky, the Midwest Plan Service, the United States Department of Agriculture, nor any of the cooperating Land Grant universities, warranty these plans. They are for conceptual use only and are not for use as construction plans.
REINFORCED CONCRETE BEAM & SLAT DETAIL
SCALE 1\(\frac{1}{2}\)"=1'-0"

EXTerior Perspective

Automatic Electrically Heated Livestock Waterer

- UG with ground from switch box
- The waterer must be mechanically connected to the ground wire of the electrical system to avoid the possibility of shock
- Provide mechanical protection for water pipe and heating tape

Section B-B
Water Supply Detail
SCALE 1\(\frac{1}{2}\)"=1'-0"

- 2\(\frac{1}{2}\)"x2" Rigid Insulation
- 4'-0"
- Shut Off Valve
- Water Supply Pipe

- NO 4 Re-Bars 16" OC Vertically & Horizontally
- NO 4 Re-Bars 12" OC Vertically & Horizontally both sides of cross wall
- NO 4 Re-Bar 30" Long 16" OC

Detail A
Post Connection Detail
SCALE 1"=1'-0"

- 6x6 Pressure Treated Post
- Concrete Curb
- Pressure Treated Form Boards
- \(\frac{1}{2}\)"x1" Wide "U" Shape Strap Iron set at least 8" deep into concrete & bolted to post with two \(\frac{3}{4}\)" bolts
- 3\(\frac{3}{8}\)"x14" Notch in wall 8'-0" O.C. to receive concrete beam
**FLOOR AND FOUNDATION PLAN**

**SCALE:** 1/4"=1'-0"

**CONCRETE TANK NOTES**

- **CROSS WALLS:** REINFORCED FOR A PRESSURE OF 40 PCF-FLUID
- **PERIMETER WALLS:** REINFORCED FOR A PRESSURE OF SOIL WITH MODERATE DRAINAGE (EQUIV OF 30 PCF-FLUID) IF HIGHEST WATER TABLE AT BUILDING SITE IS MORE THAN 2' ABOVE FLOOR LEVEL, INSTALL FOOTING TIL AND SIMP PUMP TO RELIEVE PRESSURE OR CHECK WITH ENGINEER FOR AMOUNT OF ADDITIONAL REINFORCING
- **WALL THICKNESSES:** AN 8" THICK WALL REQUIRES MORE STEEL THAN A 6" THICK WALL BECAUSE OF RELATIONSHIP BETWEEN EXPANSION-CONTRACTION AND THE VOLUME OF CONCRETE. AN 8" THICK WALL MAY STILL BE LOWER COST BECAUSE OF DIFFICULTY OF PLACING STEEL AND CONCRETE IN 6" PONDS
- **PRECAUTIONS:** THIS DESIGN IS SAFE FOR MANY BUILDING SITES. THE GREATEST DANGER OF A WALL FAILURE IS DURING BACKFILLING. BEAMS AND SLATS SHOULD BE IN PLACE BEFORE BACKFILLING. TEMPORARY BRACING COULD BE USED TO HELP WITHSTAND WATER PRESSURE FROM A HEAVY RAIN OR VEHICLE WHEEL LOADS DURING BACKFILLING.

**BASED ON PLAN NO 567**

UNIV OF ILL

**COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS**

DEPARTMENT OF AGRICULTURAL ENGINEERING

UNIVERSITY OF ILLINOIS AT CHAMPAIGN-URBANA

AND

UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING

**CONFINEMENT BEEF BARN**

REAR DRIVEWAY GABLE ROOF

ILL '73 6160 SHEET 1 OF 3

**CUTAWAY PERSPECTIVE**

**SLIDING DOOR EVERY OTHER 8'-0" SECTION**

- **PACKED EARTH OR GRAVEL ALLEY**
- **6X6 TREATED POSTS 8'-0" OC**
- **1'-0" DIA X 8" FOOTINGS 8'-0" OC**

**COMMERCIAL PEN PARTITION**

- **WATERER, ONE EVERY TWO PENS**
- **1'-6 5/8" WALL FOOTINGS**
- **1'-2 1/8" REINFORCED CONCRETE BEAMS**
- **10" DIA CONCRETE COLUMNS 8'-0" OC**
- **6 SIDE WALLS**
- **48'-0" LENGTH VARIABLE IN 48'-0" INCREMENTS**

**GATE EACH PEN FOR PIT ACCESS**

**LEAVE 4 CONSECUTIVE SLATS LOOSE FOR PIT ACCESS**

**FORWARD SIX CONCRETE SLATS 73'-0" OC**

**SLIDING DOOR**

**PRECAST FEED BUNK**