

## **Tobacco Barn Renovation and Design for Meat Goat Production**

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In the fall of 2003, Mr. Joe Lawson, Owsley Co. meat goat producer, Mr. Paul Sizemore, Owsley Co. Extension Agent for Agriculture and Natural Resources joined forces with the University of Kentucky, departments of Animal Sciences and Bio-Systems and Agricultural Engineering in redesigning an existing tobacco barn, making it suitable for the production of meat goat.

The barn was typical of many barns in eastern and south central Kentucky. In general, these barns are small, 5 to 6 bents deep and 2 to 3 tiers high. Most of the barn drives are 10' to 12' wide with 10' x 10' bents on each side of the drive. Here, we planned to develop the right side of the barn for kid and doe pens and the left side would remain as an animal run-in-shed and kid creep center.

Close-In Kidding: First, Joe Larson added a close-in-kidding area at the east end of the barn (See Floor Plan Design Sheet below). This provides a kidding area outside the barn proper where corralled pre-parturient does can freely walk into a well-bedded kidding area and give birth without the stress of separation anxiety. Anxiety and stress is expressed when a doe is separated from the herd and forced to kid in isolated pens. Close-in kidding provides a safe, sanitary natural kidding environment.

Ventilation: Secondly, renovated barns must have a good ventilation system. At the same time the barn should be without direct drafts on newborn kids. This seems as if you have cake and now you want to eat it. So, just what does this mean, good ventilation without a draft?

Tobacco barns were constructed to have good ventilation systems. Ventilation, or passive air exchange between the in side air and the outside air is essential for proper curing of burley tobacco. Direct drafts on newborn kids can be controlled in renovated barn by nailing 1" x 4" x 8' wooded strips over the open spaces between the 12" barn siding boards. This diverts air movement into the kidding area while maintaining good air flow 8' above the heads of the doe and kids. Likewise, the sides of the doe and kid nursing stalls are open and allow cross ventilation but, the door of the stalls are solid and effectively diverts air movement from the center drive over the top of the kid pens. In addition, the large barn doors can remain closed in cold weather and standard 24" x 7'6" access doors can be installed within the large barn doors. This reduces the frequency of sudden and excessive airflow into the barn.

Hay storage should be limited to the driveway area. The area above animal housing should remain open to facilitate movement of water-saturated air from around the doe and kids. This simple concept can drastically reduce respiratory and pneumonia problems.

Pen Details: Picture number 6 shows the internal pen design. Pens are designed to be functional and accessible (See Top View Pens below). Each 10' x 10' bent has 2 – 4' x 10' pens. The left and right sides of the pens are equally accessible because of the 2' walkways separating the bents and pens. As an option, each pen can be sub-divided with a drop in door making 4 pens per bent each 4' x 5' in dimension with a swing out door located in the center walk way at the back side and between the pens.

Electrical Improvements: A new 100 amp electrical box was installed in the barn. Many tobacco barns are ill equipped electrically because there is no need for it when curing tobacco. Each pen is equipped with an electrical outlet. Each pen can operate a heat lamp without causing a breaker to flip while kidding at 0 degrees F. Likewise, trying to assist a doe during birth at mid-night without the benefit of adequate lighting in the pens and kidding areas is like threading a needle in a dark closet. Lighting is important for doe assistance, reading drug labels and for maintaining sanity during stressful activities.

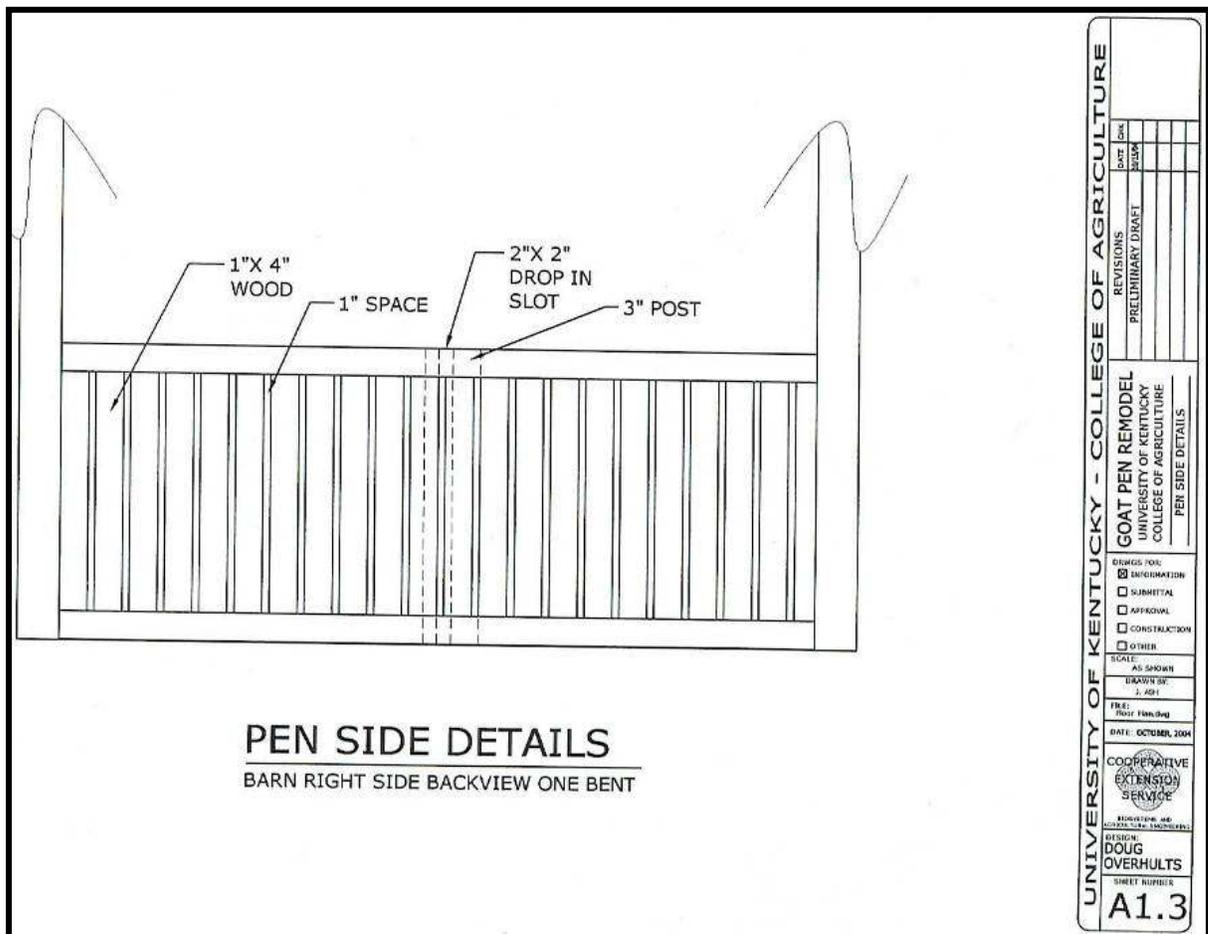
Lockable Feed and Drug Room: The left side of the barn (See Floor Plan below) is equipped with a 10' x10' feed storage and drug room. The door has a latch and lock so that neither man nor beast has access to the contents without Joe Larson knowing it. Likewise, the feed room has adequate light for reading and measuring activities.

Costs: This renovation cost less than \$2000. The majority of the materials were wood from trees harvested on the farm. Secondly, labor costs were minimized because the farm owner and family did most of the work. In addition, a well was dug 500' from the barn and water was piped to the barn. This was done with USDA – Livestock Water Construction cost share money. There are plans to install a hot water heater in the barn in the coming months. Do an all out search for financial assistance for barn renovation project. Phase I cost share is also available for barn renovation projects.

Overall conclusions for this study show that Panacur has been effective in declining the population of fecal egg count. Cydectin was only used in worse case scenarios. Ivomectin was used as a rotation among the different classes of dewormers.

The work in the overall trial has been very positive and the most important point found has been that controlling parasites is more than just administering dewormer.

It includes sound herd management, rotation and pasture management, administering proper dose of dewormers and knowing the resistance status of the herd or flock.



Original Drive



Pictures 1 and 2

Right Side Of Drive



Renovation of Interior of Barn  
Kid and Doe Pens to the Right,  
Feed and Medical Storage to the Left



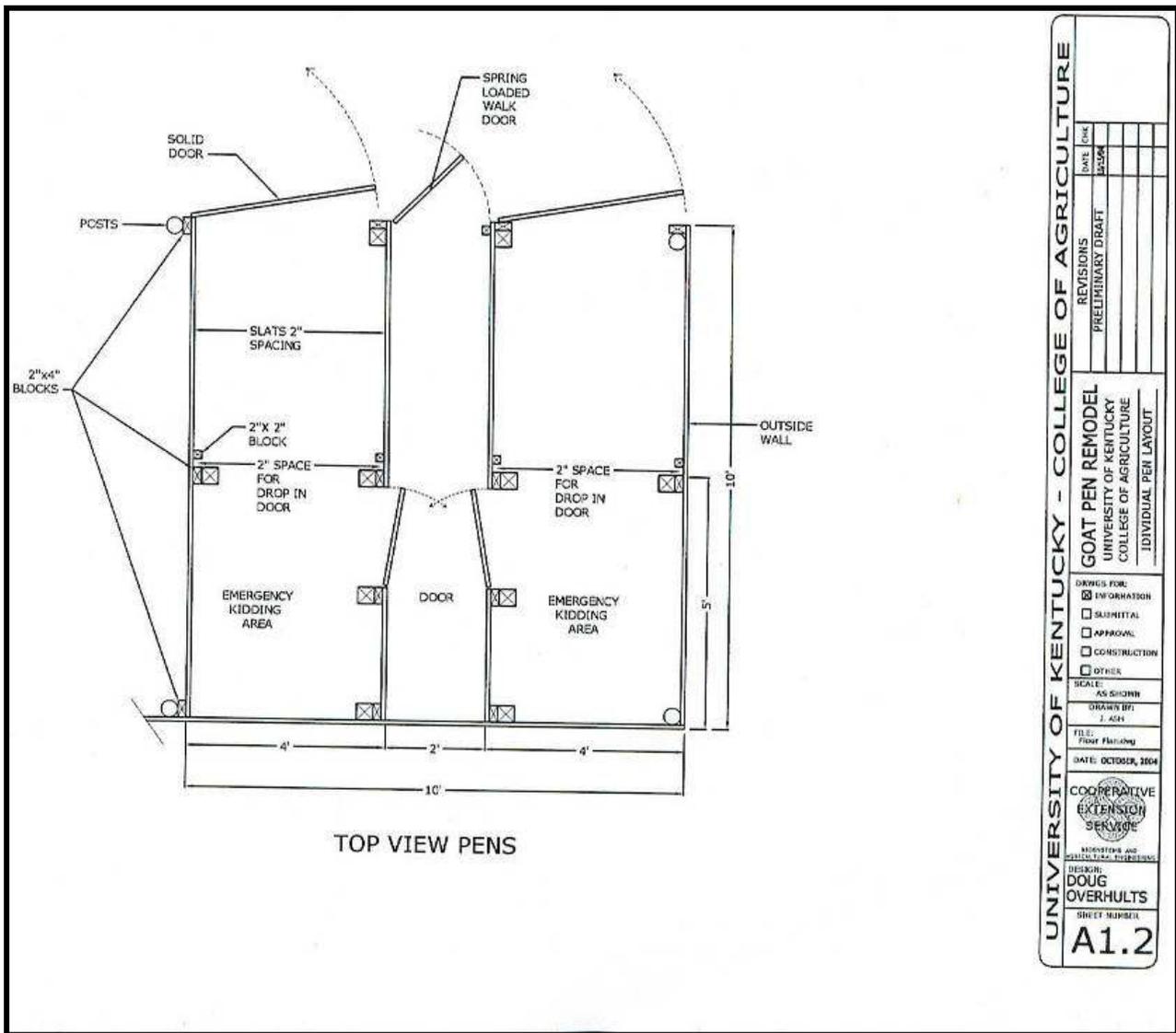
Pictures 3 and 4



Pictures 5 and 6

Entrance to New Shed Spring 2004  
Left and Right Side  
Close-in Kidding Area





TOP VIEW PENS

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REVISIONS	DATE	CHK
PRELIMINARY DRAFT	10/20/04	

GOAT PEN REMODEL  
UNIVERSITY OF KENTUCKY  
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INDIVIDUAL PEN LAYOUT

DRAWN FOR:

- INFORMATION
- SUBMITTAL
- APPROVAL
- CONSTRUCTION
- OTHER

SCALE: AS SHOWN

DRAWN BY: J. AHA

FILE: Goat Pen Layout

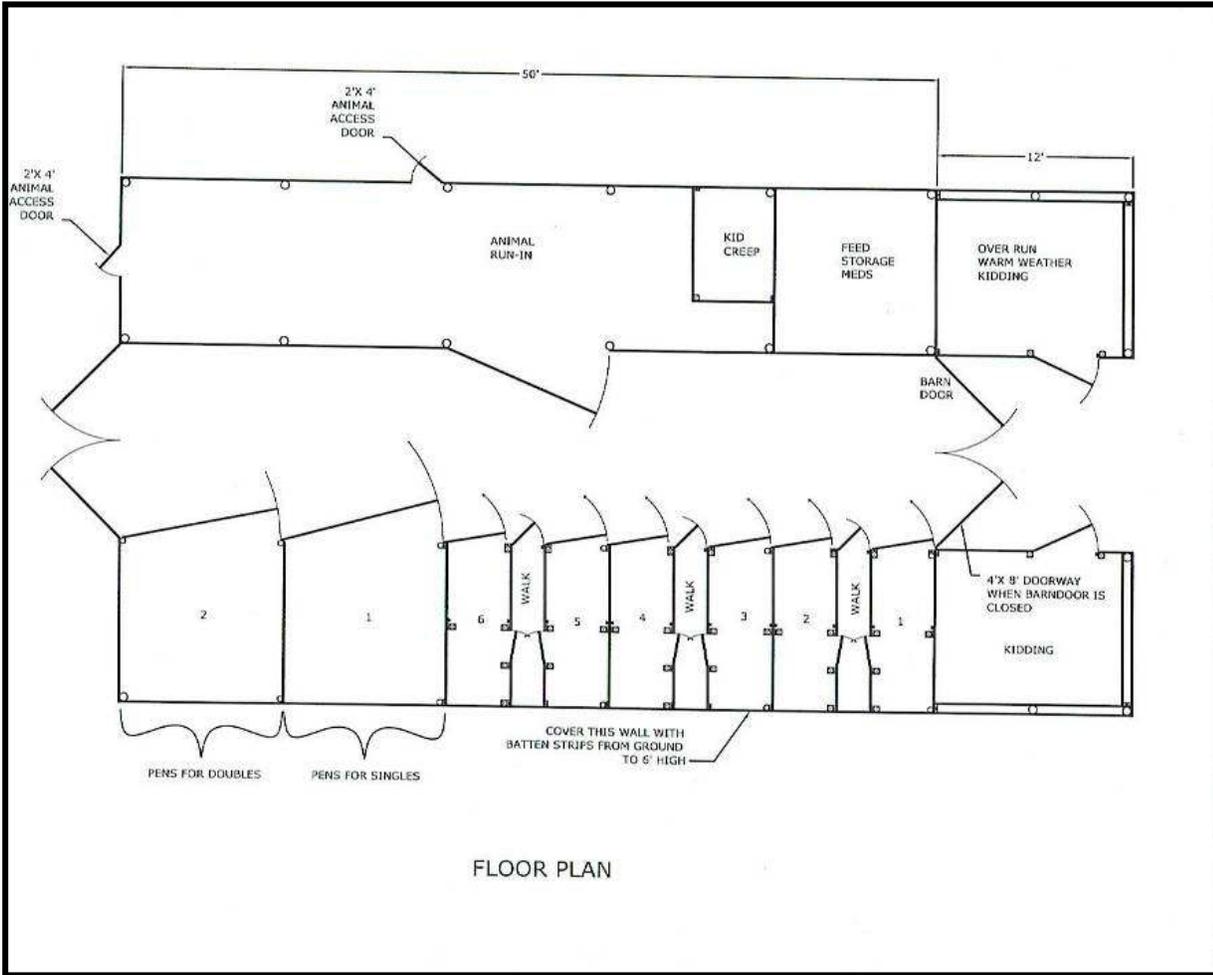
DATE: OCTOBER, 2004

COOPERATIVE EXTENSION SERVICE

RESEARCH DOUG OVERHULTS

SHEET NUMBER

**A1.2**



FLOOR PLAN

UNIVERSITY OF KENTUCKY - COLLEGE OF AGRICULTURE

REVISIONS	DATE	BY	DESCRIPTION
1			
2			
3			
4			
5			
6			
7			
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GOAT PEN REMODEL  
UNIVERSITY OF KENTUCKY  
COLLEGE OF AGRICULTURE  
FLOOR PLAN

DESIGNED FOR:  INFORMATION  
 SUBMITTAL  
 APPROVAL  
 CONSTRUCTION  
 OTHER

SCALE: AS SHOWN  
 DRAWN BY: J. ASH  
 FILE: Floor Plan.dwg  
 DATE: OCTOBER, 2004

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DOUG  
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**A1.1**