USDA United States Department of Agriculture

Natural Resources Conservation Service

Woven Wire Fence

Alabama Fence Job Sheet No. 382C

The woven wire fence is suited for the restraint and management of most species and classes of livestock. When constructed in accordance with these specifications, the woven wire fence provides quality fencing and a proven physical barrier with a lifespan of about twenty years. The woven wire fence is quite feasible on most sites. Construction costs vary but is likely to costs more to install than barb wire or high tensile-strand electric fencing. The repairs to woven wire fences may be more difficult

High tensile woven wire fence is now available. Some brands may be electrified. This wire uses special weave joint connections. Considering fewer post requirements and labor to install this fence, its costs are likely to be quite competitive with barbed wire or high tensile strand wire fencing.

Following are basic specifications for construction. It includes electrified high tensile woven wire. Additional information is located within the attached drawings and in the Alabama NRCS Construction Specifications or Fence Job Sheet number AL382A. These may be located using this link to the Electronic Field Office Technical Guide (EFOTG) (http://efotg.sc.egov.usda.gov/treemenuFS.aspx).

This job sheet may be used in conjunction with woven wire fence practices identified in the Alabama Environmental Quality Incentives Program (EQIP).

Primary Purpose(s):

Check All That Apply	Purpose
	Exclusion of livestock for protection and improvements of natural resources.
	Exclusion of animals and humans for safety concerns.
	Cross fencing for prescribed grazing and improvements in natural resources.
	Fencing for small ruminant prescribed grazing.

Component	Specifications
Wire	• Standard galvanized woven wire with the top and bottom strands of number 12 1/2 gauge or larger. Vertical stay wires shall be 14 ½ gauge or larger and spaced not more than 12 in. apart. • High tensile steel (14 ½ gauge), class III galvanized may also be used. One or more strands of barb wire spaced approximately 4 to 6 in. apart shall be added at the top. Electrified smooth high tensile wire may also be used. • Finished heights should be at least 42 in. above ground.
Line Posts	Use new standard steel "T" or "U" posts (≥ 1.25 lbs/linear ft.); or, May use new preservative wooden posts (nominal 3 in. diameter) that meet federal TT-W-571 or the AWPA specifications, see below treatment options; or high quality, untreated posts of red cedar with one-half diameter made of heartwood, pine heartwood, osage orange, black and honey locust, catalpa or mulberry • Used utility poles must meet requirements in the associated attachment. Posts spacing: ≤ 25 ft. for high tensile woven wire, ≤ 50 ft. if electrified; otherwise, ≤ 16 ft. for standard galvanized woven wire. Wood posts will be placed ≥ 2 ft. in the ground and steel posts will be driven ≥ 18 in. in the ground. Sandy or moist soils may require deeper placement. • **Receive approval from NRCS before using trees as fence posts.**
Brace Units	• For high tensile woven wire systems: line brace or pull assemblies shall be ≤ 1320 ft. apart in flat, straight sections. For traditional galvanized, woven wire the spacing will be ≤ 660 ft. In addition, they will be located at major changes in slope and/or changes in direction regardless of wire type. • **Brace and pull assembly units will follow the attached drawings unless advanced approval is granted.** • Use wooden anchor posts (≥ 5" nominal diameter) and cross members (≥ 4" in nominal diameter); or steel anchor posts (≥ 2.5 inches nominal diameter) and steel cross members (≥ 2.0 inches nominal diameter). Cross members will be at least 8 feet long, placed 8 – 12 inches below top of the fence post. • Used utility poles must meet requirements in the associated attachment. • Corner or gate brace assembly anchor posts, and in-line brace units will be set 30". deep in concrete in 12" diameter hole or set 36" deep.
New Wood Posts Preservative Treatment Levels (AWPA. U1-15 or Later)	**Treatment** — **Retention lb./ft3 (General Use)** Creosote coal tar — 8 Copper naphthenate — .055 Pentachlorphenol — .4 Amoniacal copper zinc arsenate — .4 Alkaline copper quat (ACQ)* — .4 Copper azole, type B (CA-B)* — .21 Copper azole, type C (CA-C)* — .15 Dispersed copper azole (ESR — .15

*Do not use aluminum fasteners with these treatments because of corrosion. Do not use landscape timbers for fence construction.

Attachments:
AL-ECS-382-01 Single Corner Post or Angle Brace Assembly with Sliding Plate
AL-ECS-382-06 Wire Fence Braces (Floating In-Line Corner and H-braces)
AL-ECS-382-12 Woven Wire Fence (typical)
Job Sheet No. AL382A Selection and Use of Wood Utility Poles in Fence Systems

All substitutions in materials or modifications in design from those given under these specifications contained herein must be approved by NRCS in writing prior to beginning construction.

Practice Design (planning process) and Construction Certification

Landowner/Cooperator: _____

Field Office: _____

Farm/Tract Number: _____

All substitutions in materials or modifications in design from those given under specifications must be approved by NRCS prior to beginning construction.

Planned Fence Amounts and Construction Approval*

Farm No.	Tract Number	Field Number	Fence Run Number	Planned Length	Applied Length	Meets Standards and Specifications/Approved by:	Date Fence Construction Approved

Additional Planning Notes:

***Attach drawings or maps that identify planned fence run identification, locations, length and constructed location and lengths**.

Approved Modifications:

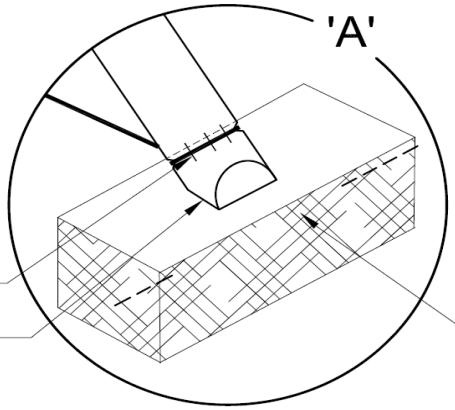
Prepared By: _____ **Date:** _____

Landowner signature: _____ **Date:** _____

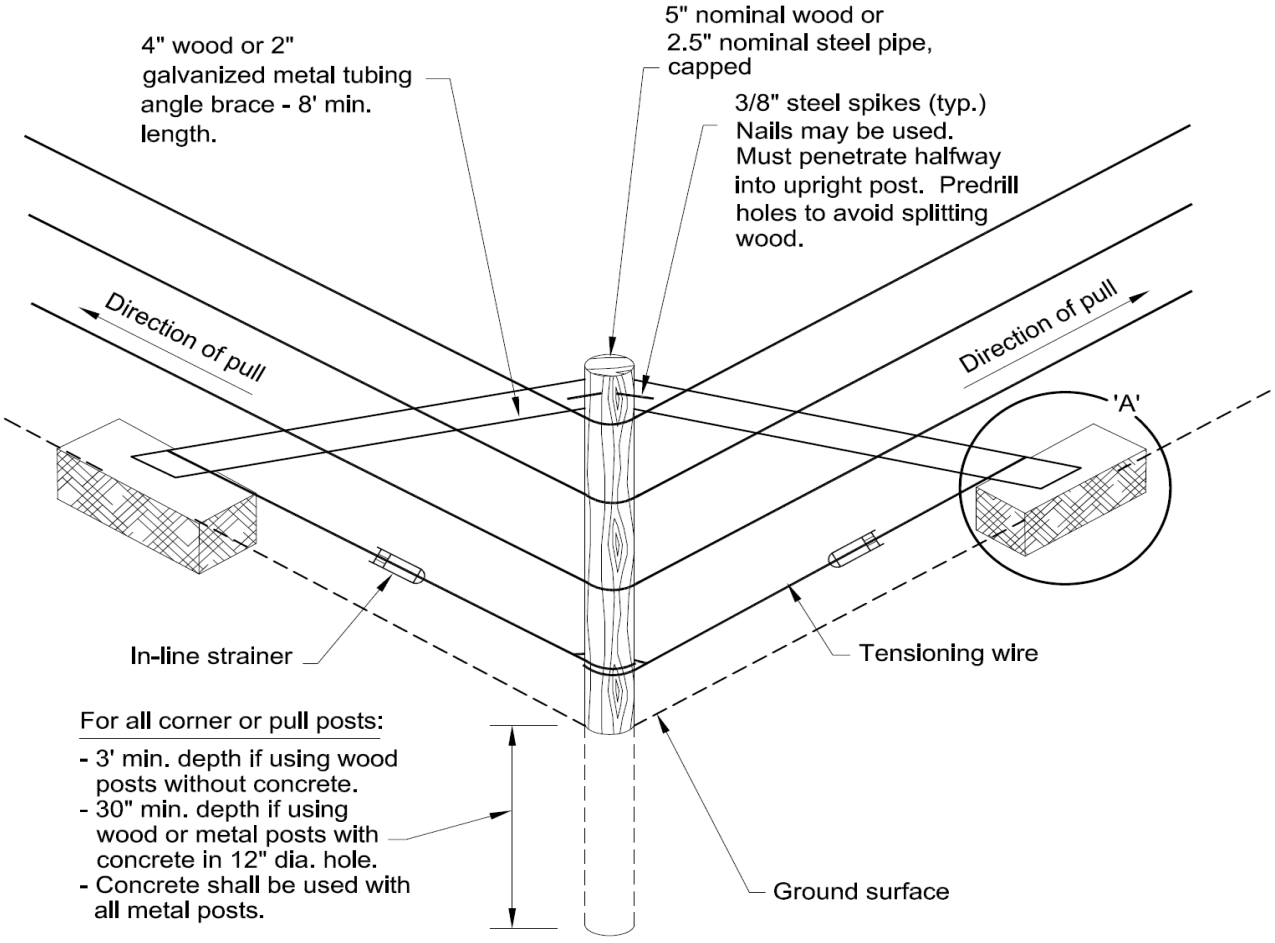
Post Fence Construction Notes:

Prepared By:_____ **Date:**_____

Landowner signature:_____ **Date:**_____



DETAIL 'A'



SINGLE POST CORNER OR ANGLE BRACE ASSEMBLY WITH SLIDING PLATE

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Drawn		Drawing Name AL-ECS-382-01
Checked		
Approved	5/12	Rev. 2/16
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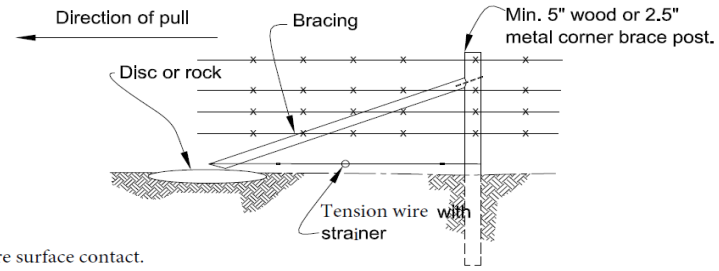
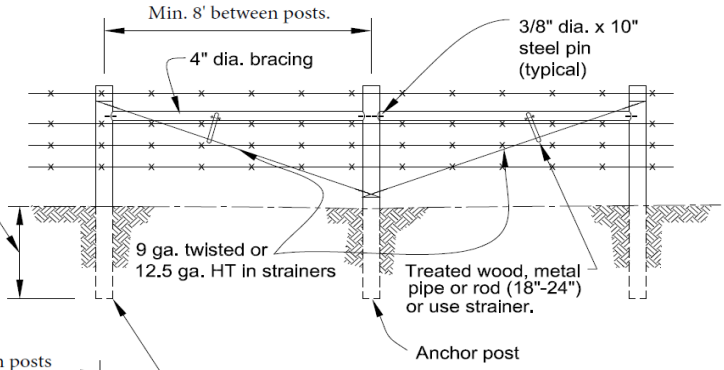
Notes for floating brace:
1. Use 2" dia. steel pipe or 4" dia. wood cross-member. Landscape timbers are not permitted.
2. Use 8" spike nail or brace pin at connection to post.
3. Use 15" min. disc blade or flat stone as shown. Min. 200 sq. in. surface area. Do not use cinder blocks.
4. Notch brace member 3/8" at lower end to accept tension wire. Make slight cut on lower side of angle brace to provide more surface contact.
5. Cinch tension wires both directions with wire or crimping sleeve.
6. Set posts in ground at least 36" deep (or 30" deep in concrete) in 12" dia. hole.
7. Steel reinforced solid concrete block or treated board min. of 2 inches thick may also be used to support the angle brace.

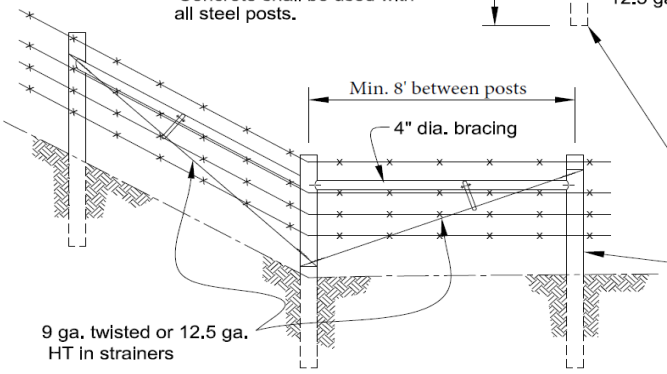


FLOATING BRACE

For ALL corner or pull posts:
- 3' min. depth if using wood posts without concrete.
- 30" min. depth if using wood or steel posts with concrete in 12" dia. hole.
- Concrete shall be used with all steel posts.



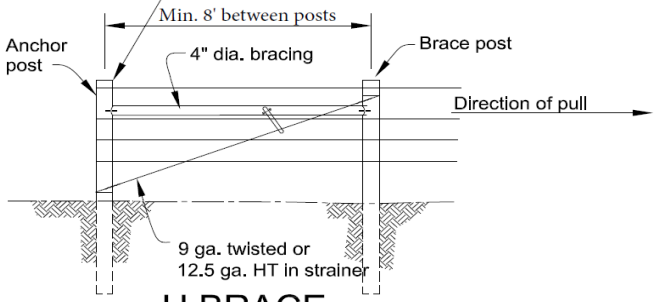
IN-LINE BRACE



5" dia. in-line brace, non-corner wood post or 2.5" nominal steel post.

5" dia. wood corner posts or 2.5" nominal steel post, capped.

CORNER BRACE



H BRACE

For all horizontal brace members:
Min. of 8' long
Min. 4" diameter treated wood or 2" diameter steel pipe
Place 8" - 12" below top of fence post.

Drawing not to scale. Standardized drawing must be adapted to the specific site.

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WIRE FENCE BRACES
(Floating, In-line, Corner and H-braces)

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Designed	
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Checked	
Approved	5/12

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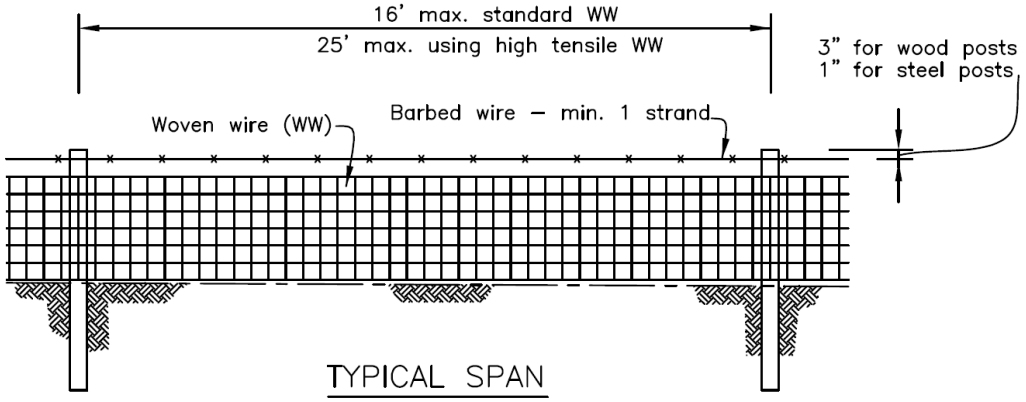
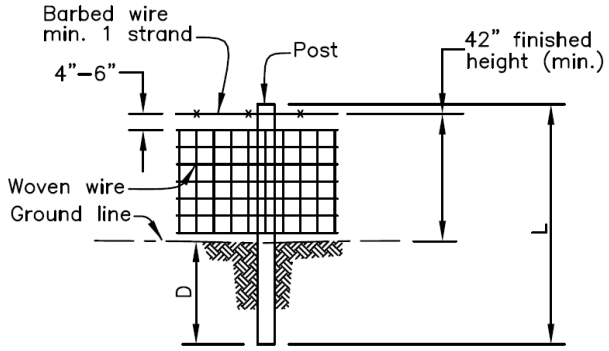
USDA–NRCS ALABAMA STANDARD DRAWING	FOTG SECTION IV CONSERVATION PRACTICE CODE 382 – FENCE WOVEN WIRE FENCE	STANDARD DRAWING NO. AL–ECS–382–12 APPROVED: 5/12 DRAWN BY: REVISED BY: E.J. 2/16



TYPICAL SPAN



WOVEN WIRE W/ONE BARB DETAIL

WOVEN WIRE

Standard: Top and bottom wires shall be 12 1/2 gauge or heavier. Line and stay wires shall be 14 1/2 gauge or heavier.

High Tensile: Wire shall be 14 gauge or heavier.

LINE	Wood:	L = 6 ft. min. D = 2 ft. min. Dia. = 3 in. min. *Do not use landscape timbers	Steel:	L = 5.5 ft. min. D = 18 in. min. Standard "T" or "U" > 1.25 lbs/ft
CORNER OR GATE	Wood:	Dia. = 5 in. min. D = 3 ft. min. or 30" w/ concrete	Steel:	Dia. = 2 7/8 in. min. (capped) D = 30 in. w/concrete

STAPLES: 9 gauge (min), 1 1/2" w/barbs for softwoods and 1" for hardwoods

BARBED WIRE: Minimum of 1 strand

OTHER WIRE: **Woven wire may be topped with high tensile electric wire instead of barbed wire, especially if fence is for horses. Use additional strands as needed to meet the desired construction criteria and the purposes for the fence.**

Drawing not to scale. Standardized drawing must be adapted to the specific site.

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Selection and Use of Wood Utility Poles in Fence Systems

Alabama Guide Sheet No. AL382A

In order to meet the national and state NRCS conservation practice standards (CPS), fencing materials shall be durable and of high quality. Wood utility poles may be used in fencing in limited circumstances and primarily for gate posts, pull assemblies, and bracing.

The section from the wood utility pole (called utility fence post) used in fencing must be of high quality, without rot, structural damage or damage from insects or woodpeckers. Additionally, it must be free of drilled holes, non-fence related appurtenances, or visible cracks into the heart wood of the post.

To check the utility posts for internal rot strike the post in question with a hammer to detect voids or rot in the wood. Voids will make “hollow sounds” when the post is struck by the hammer. Typically hammers will rebound more from a solid post than when hitting a section with an internal decay pocket. The internal decay pocket may also cause a sound that is dulled compared to the crisp sound of a solid pole section.

When internal rot is detected in the utility pole, either replace the pole or trim the pole as needed to ensure the section used for the post is rot free.

Due to their high risk of rot, sections of older utility poles that have previously been used at ground level and below shall not be used as a fence post.

The heartwood of the utility fence post must equal or exceed the diameter of the planned post in the NRCS Fence standard. See examples in Figures 1 and 2. The non-heartwood or outer shell of the post must be of sufficient quality to properly hold appurtenances needed in fencing, such as staples, nails, stand-off insulators or gates.

Used wooden utility fence posts will be a minimum of class 10 American National Standards Institute (ANSI) or about 12 inches in diameter.

Utility fence posts shall be installed according to instructions in Alabama CPS, Fence, Code 382, and related guidance documents. For example, the length of the utility fence post must equal or exceed the designed post length. In addition, all installed posts will have an impervious barrier placed on top of post to keep water from entering into the post.

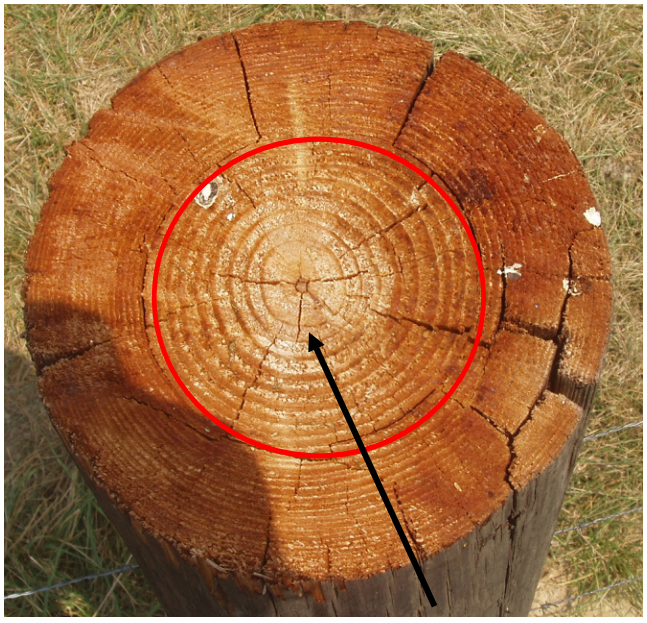

Figure 1. Suitable Utility Post. The red circle shows the approximate boundary of heartwood. Wood splits are mostly from outer edge of post to the edge of the heartwood.

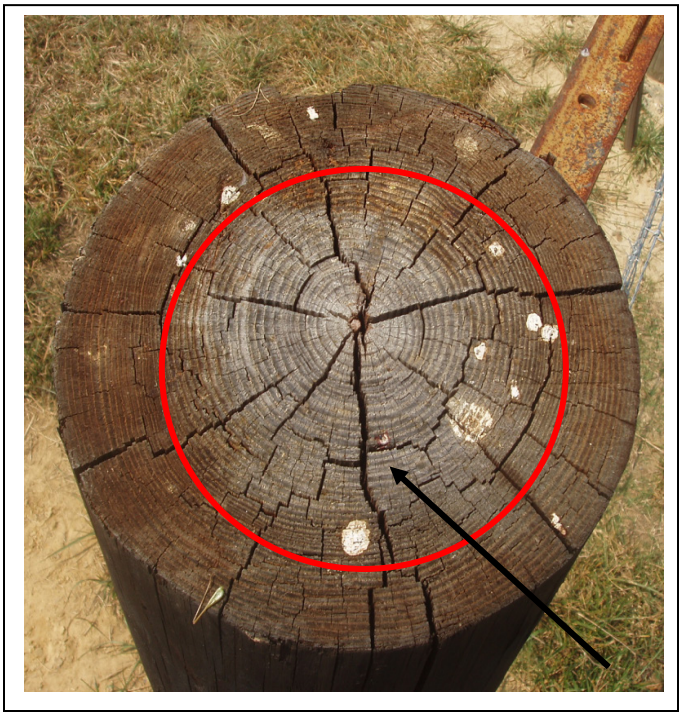

Figure 2. Non-suitable Utility Post. The red circle depicts the approximate boundary of heartwood. Numerous cracks penetrate into the center.

References

USDA RUS Bulletin, 1730B-121, Wood Pole Inspection and Maintenance, http://www.rd.usda.gov/files/UEP_Bulletin_1730B-121.pdf

Standard Specifications for Wood Poles, USDA Forest Service, http://www.fpl. fs.fed.us/documnts/pdf1997/wolfe97b.pdf