



**RALPH E. CAWTHORN
AGRICULTURAL CONSERVATION EASEMENT PROGRAM –
WETLAND RESERVE EASEMENTS (ACEP-WRE)
TREE PLANTING PLAN
66-7103-1201-9HK
EASEMENT ACRES – 138.9 ACRES
TREE PLANTING ACRES – 103.4 ACRES
LOCATION: T4N, R4W, SECS. 7 AND 8, PRAIRIE CO., AR**

All site prep and planting activities MUST be according to this prescription and established NRCS specifications. Activities not meeting these specifications will not be paid.

All technical questions should be referred to the NRCS inspector for this project (Rich Johnson at 501-676-0283 ext. 110).

CURRENT CONDITIONS

The easement is located in within one mile of the White River in the Lower White-Bayou Des Arc watershed in the Delta. It lies near a large concentration of WRP easements and public lands, notably Bayou DesArc Wildlife Management Area and Cache River National Wildlife Refuge. About 92% of the easement is composed of agricultural land that was in rice production through 2013, but is currently fallow, and the remainder consists of patches of mature bottomland hardwood forest. Of the portion to be reforested, about 78% is poorly drained Dewitt (Crowley) silt loam, 0-1% slopes, pH 5.3, on the terraces; 15% well-drained Dubbs silt loam, 1-3% slopes, pH 5.6, on the natural levees; and 7% somewhat poorly drained Commerce silt loam, 0-1% slopes, pH 7.2, on the stream terraces. None of the tract is within the five-year flood zone.

PRESCRIPTION

A total of 103.4 acres will be reforested to bottomland hardwoods, which occurred here prior to site's conversion to agricultural use. Site preparation and tree planting will be conducted as described below under 490-Tree/Shrub Site Preparation and 612-Tree/Shrub Establishment, respectively.

490-Tree/Shrub Site Preparation

Trees will be planted either by hand or by machine.

The following site preparation will be done if tree planting is done by hand:

1. August-October, 2014 – The site will be fallow in 2014. When soil conditions are dry, on all 103.4 acres to be planted to trees, all rice levees will be removed to ground level by means of a levee plow. After the levees are removed, all 103.4 acres will be mowed and



will then be subsoiled (ripped) on 10-foot centers (subsoiling specifications attached). Sufficient time must be allowed for rainfall (at least one inch) to completely close furrows prior to planting seedlings.

2. On all 103.4 acres to be planted to trees, a herbicide that is 75% sulfometuron methyl by weight will be sprayed in a 4-foot-wide band centered over the rips at a rate of 4 oz/ac + 1% surfactant v/v in a total spray volume of 10-15 gpa, either at the time of ripping or up until the time seedlings are planted (but not after they are planted). **HERBICIDE APPLICATIONS MUST BE IN ACCORDANCE WITH THE LABELS OF THE PRODUCTS USED!**

The following site preparation will be done if tree planting is done by machine:

August-October, 2014 – The site will be fallow in 2014. When soil conditions are dry, on all 103.4 acres to be planted to trees, all rice levees will be removed to ground level by means of a levee plow.

612-Tree/Shrub Establishment

Trees will be planted either by hand or by machine.

The following specifications will be followed if tree planting is done by hand:

A total of 103.4 acres will be planted to a mixture of native bare-root bottomland hardwood trees to assure establishment of a diverse forest community (see attached map). The seedlings will be planted between January 1 and March 31, 2015, on a 10-foot x 10-foot spacing (436 trees/acre), after the subsoiled furrows have closed sufficiently by rainfall. A stand will be judged successful if after three years a minimum of 50% of the prescribed number of planted seedlings (218 trees/acre) survive. NRCS will decide if volunteer seedlings in addition to the planted seedlings will allow the stand to meet ACEP-WRE objectives. The establishment of bottomland hardwoods will provide a diverse plant community similar to natural conditions.

Tree planting will be performed by hand. It will be conducted as per NRCS tree planting specifications (attached). The site is fairly homogenous and thus one tree species group (Tree Group 1) adapted to soils with poor internal drainage will be planted on most of it, and a 2-row-wide strip of baldcypress and water tupelo (Tree Group 2) will be planted along the MSU full-pool line. A total of 45,200 trees will be planted.



Tree Group 1 102.7 acres			Tree Group 2 0.7 acres		
Species	%	Number of Trees	Species	%	Number of Trees
Nuttall Oak	10,400	23.2	Baldcypress	50.0	200
Willow Oak	10,400	23.2	Water Tupelo	50.0	200
Water Oak	5,200	11.6			
Pecan	1,000	2.2			
Green Ash	10,400	23.2			
Sugarberry	5,200	11.6			
Persimmon	1,000	2.2			
Baldcypress	1,200	2.8			
Total	100.0	44,800		100.0	400

The following specifications will be followed if tree planting is done by machine:

A total of 103.4 acres will be planted to a mixture of native bare-root bottomland hardwood trees to assure establishment of a diverse forest community (map attached). The seedlings will be planted between January 1 and March 31, 2015, on a 10-foot x 10-foot spacing (436 trees/acre). A stand will be judged successful if after three years a minimum of 50% of the prescribed number of planted seedlings (218 trees/acre) survive; the NRCS will decide if volunteer growth in addition to the planted seedlings allow the stand to meet ACEP-WRE objectives. The establishment of bottomland hardwoods will provide a diverse plant community similar to natural conditions.

Tree planting will be performed by machine. It will be conducted as per NRCS tree planting specifications (attached), as well as these additional criteria:

1. Trees must be planted at sufficient depth to allow for settling of the pinched soil created by the packing wheels of the machine planter, so as to not expose seedling root collars.
2. Avoid excessive rutting (greater than 6 inches) to the extent practicable.

The site is fairly homogenous and thus one tree species group (Tree Group 1) adapted to soils with poor internal drainage will be planted on most of it, and a 2-row-wide strip of baldcypress and water tupelo (Tree Group 2) will be planted along the MSU full-pool line. A total of 45,200 trees will be planted.

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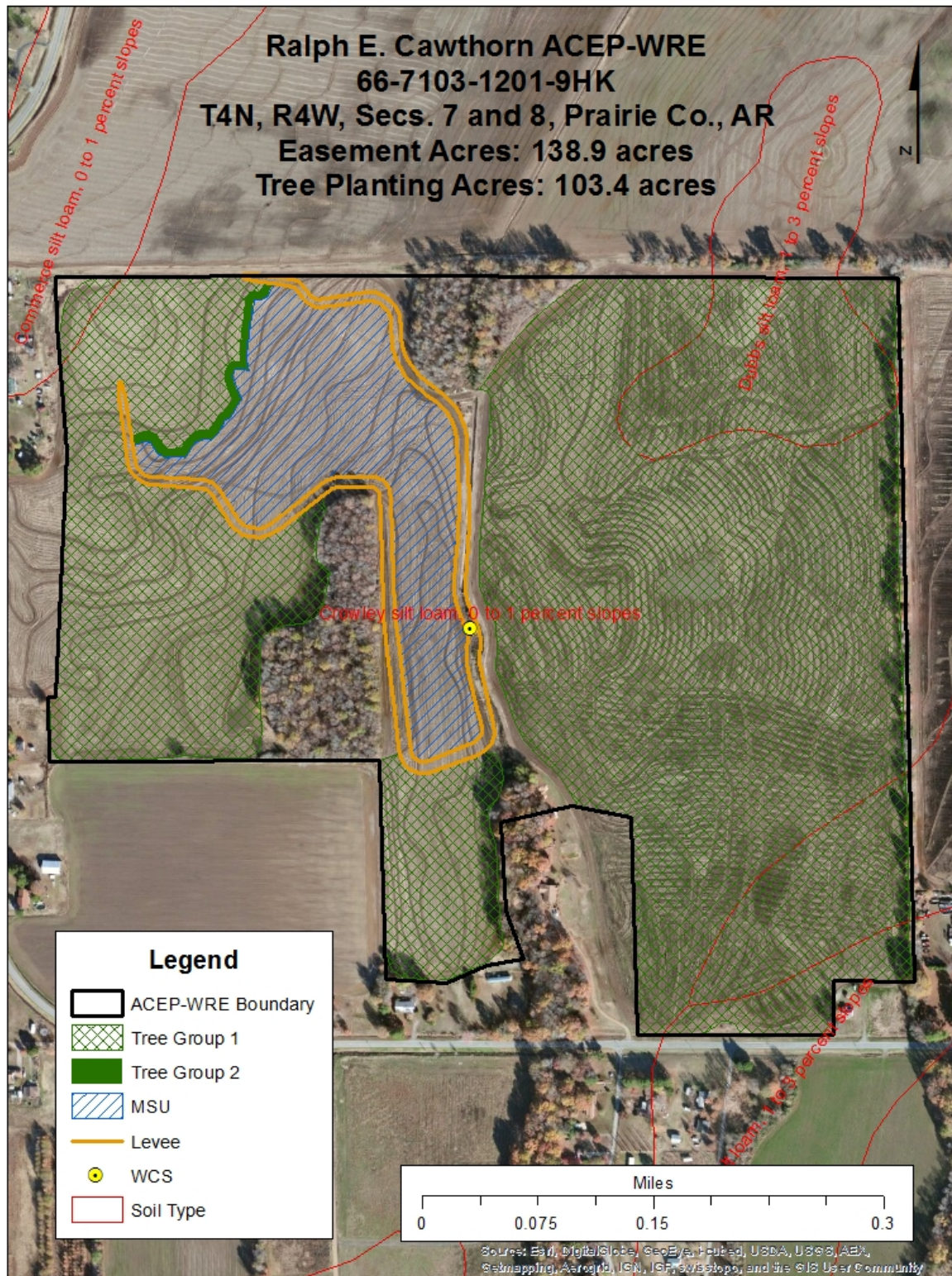


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ACEP-WRE TREE PLANTING SPECIFICATIONS

1. Planting rates will be as specified in the tree planting plan for each restoration site. Actual planted numbers of trees will not drop more than 5% below the specified rate.
2. Seedlings planted will be healthy, viable trees which meet the following size specifications:
 - a. A minimum root collar diameter of ¼ inch above the swell is required for all oak species and desired for all other hardwood species. Non-oak species may be smaller so long as all other specifications are met.
 - b. A minimum tap root length of 6 inches below the root collar.
 - c. Ratio of the length of the shoot to the length of the tap root should be 1.5 to 2.5 unless top pruned at the seedling nursery. Seedlings top pruned at the seedling nursery are acceptable. No top pruning should be done at the planting site. Tops should be proportional to the tap root length (9 to 15 inches above the root collar for 6 inch root).
 - d. Healthy first order laterals and fibrous roots must be present.
 - e. Roots must be moist, not moldy, with NO overabundance of lenticels, and not discolored (inside or out). The outside of the roots should not be black, the cambium cannot be discolored, and the internal part should be white or creamy in color.
 - f. Root pruning at the planting site is strongly discouraged. The tap and lateral roots will not be pruned unless the length of the roots prohibits the proper planting of the seedling. It is better to leave the tips of lateral roots exposed after planting than to prune. Tap roots will not be pruned to less than the minimum required root length. Laterals will not be pruned less than 5 inches.
3. Seedling bags will be checked prior to distribution to the planting crew to ensure seedling sizes meet specifications. Approval for planting trees that do not meet these criteria must be obtained from the NRCS State Forester.
4. A minimum of 85% of the trees planted must meet the following planting specifications:
 - a. Seedlings must be planted so as the swelling at the root collar is below ground the ground line. Seedlings must NOT be planted with root collar above the ground line. The root collar of the trees will be planted 1-2 inches below the ground surface.
 - b. Planting bars must be at least 10 inches long to prevent shallow planting depths.
 - c. Planting holes will be closed tightly around the roots with no air pockets.
 - d. Roots must be planted straight down and not twisted, balled, L-shaped or U-shaped. Tap root will not exceed 30 degrees from perpendicular. Minimal lateral roots may be exposed after planting. No part of the taproot will be exposed.
 - e. Seedlings will meet the size requirements stated in Item 2 above.



5. Trees will be stored/handled before and during planting to achieve maximum survival:
 - a. Keep all planting stock in a cool environment (preferably < 50 degrees F) out of direct sunlight and wind. Internal bag or box temperatures will not exceed 60 degrees F.
 - b. Seedlings should be stored in a working cold storage facility until they are delivered to the planting site. Ideally, only a one day supply of seedlings should be removed from the cold storage facility at a time. Seedlings should be stored between 34 and 40 degrees. Seedlings must not be stored above 50 degrees for more than a day.
 - c. Seedlings “hot planted” will not be stored in cold storage longer than 48 hours prior to planting.
 - d. Protect planting stock from desiccation and freezing during temporary storage and delivery to the planting site. Seedlings will be kept moist during the planting process. Opened bundles of trees will be re-closed while on the planting site.
 - e. Planting bags or similar devices are required for all planters.
 - f. Seedlings will be kept moist during the planting process. Seedlings with dry roots are unacceptable and must not be planted.
 - g. Planters will not carry more than one tree in their hand at a time.
 - h. No planting will be done when air or soil temperatures fall below 32 degrees F or rise above 70 degrees F. Exception will be made when air temperatures drop to as low as 28 degrees but will rise to 32 degrees within 2 hours. No exception will be made when air temperatures drop below 28 degrees.
 - i. Only baldcypress, tupelo gum, overcup oak, bitter pecan or green ash seedlings may be planted in standing water. These species will only be planted in water less than 6 inches in depth. No other species will be planted in temporarily ponded water greater than 2 inches in depth.
6. No species substitutions will be made without prior written authorization from the Designated Conservationist. Species from the alternate list for each contract will not require further authorization.



ACEP-WRE SUBSOILING (RIPPING) SPECIFICATIONS

1. Subsoiling will be performed only when and where specified in the planting plan. This decision will be based on penetrometer readings and soil moisture conditions.
2. Subsoiling will be done in August-October prior to the tree planting season when the soil is dry.
3. Subsoiling depth will be at least 12-15 inches (deeper rips are allowed).
4. Subsoiling will be done on 10-foot centers for 10-ft. x 10-ft. spacings, on 12-foot centers for 12-ft. x 12-ft., 12-ft. x 10 ft., or 12 ft. x 8-ft. spacings, and on 15-foot centers for 15-ft. x 15-ft. spacings.
5. Subsoiling will not be performed during periods of excessive soil moisture. Soil must be fractured and NOT sliced.