


DISTURBED WOODED AREA = 1.21 ACRES
 DISTURBED AREA TO BE REPLANTED AT RATE OF
 302/ACRE AT 12' STAGGERED SPACING, ACCORDING TO
 ATTACHED SPECIES LIST. TREES ARE NOT BE PLANTED
 WITHIN 30' OF THE RAILROAD.

 WOODED AREA

401/404 Permit Application
 L & I Bridge Replacement over Flatrock River
 Applicant; Louisville and Indiana Railroad
 Agent; Janssen and Spaans Engineering

**DISTURBED WOODED AREA
 AND RESTORATION AREA**
LOUISVILLE AND INDIANA RAILROAD
FLATROCK RIVER BRIDGE - MP 40.19
COLUMBUS, INDIANA

HORIZONTAL SCALE	BRIDGE FILE
VERTICAL SCALE	DESIGNATION
SURVEY BOOK	SHEETS
CONTRACT	of PROJECT

Removal of trees measuring 10" diameter-breast-height or greater will be mitigated by replanting within the removed area. Trees will be cut at or above ground level and stumps left in place. The seedlings will be 1" to 2" diameter-breast-height and be selected from the following list. They will be planted at 12 foot staggered spacing at a rate of 302 per acre. Seedlings will not be planted within 30 feet of the railroad. At least five species shall be chosen from the following list including hickory, oak and maple. One species will not comprise more than 20% of the plantings.

<u>Common Name</u>	<u>Scientific Name</u>
Red Maple	Acer saccharum
River Birch	Betula nigra
Bitternut hickory	Carya cordiformis
Hackberry	Celtis occidentalis
American Sycamore	Platanus occidentalis
Swamp White Oak	Quercus bicolor
Pin Oak	Quercus palustris

Any substitutions to the above list shall be submitted to DNR for approval prior to installation. Contact Daniel Gautier at DGautier@dnr.IN.gov or (812) 334-1137.

HERBACEOUS REVEGETATION

This work shall consist of revegetating ground within the Floodway using a native herbaceous seed mixture. Erosion control blanket or similar product shall be placed on slopes 3:1 or greater. Use of biodegradable products is preferable.

The entire project limits are within the floodway. This seed mixture will be applied at the rate of 115 oz/acre and shall consist of the following:

<u>Common Name</u>	<u>Scientific Name</u>	<u>Rate Oz/ Acre</u>
Side-Flowering Aster	<i>Aster lateriflorus</i>	3
Blue-Joint Grass	<i>Calamagrostis canadaensis</i>	2
Emory's Sedge	<i>Carex emoryi</i>	2
Shoreline Sedge	<i>Carex hyalinolepis</i>	3
Larger Straw Sedge	<i>Carex normalis</i>	5
Fox Sedge	<i>Carex vulpinoidea</i>	2
Honewort	<i>Cryptotaenia canadensis</i>	64
Virginia Wild Rye	<i>Elymus virginus</i>	16
Riverbank Wild Rye	<i>Elymus riparius</i>	2
Spotted Joe-Pye-Weed	<i>Eupatorium maculatum</i>	2
Fowl Manna Grass	<i>Glyceria striata</i>	2
Orange Jewelweed	<i>Impatiens capensis</i>	2
Great Blue Lobelia	<i>Lobelia siphilitica</i>	1
American Bugleweed	<i>Lycopus americanus</i>	1
Virginia Blue Bells	<i>Mertensia virginica</i>	2
Green-headed Coneflower	<i>Rudbeckia laciniata</i>	2
Cup-Plant	<i>Silphium perfoliatum</i>	2
Wingstem	<i>Verbesina alternifolia</i>	2

Variances in seed mix may be necessary due to availability. Ratios of grasses, sedges and forbs shall remain in proportion. Seed may be applied as a total mix or in several passes if certain species are not compatible during mixing/application. Sand or other approved material may be used as a filler to facilitate seeding. Fertilizer will not be applied.

Annual Ryegrass (*Lolium multiflorum*) will be used as a temporary application if required.