

Wetland Compensation Plan  
Illinois Route 3 (Federal Aid Project 312)  
Section 102 (RS-5, W-1)  
Job No. D-99-066-00  
BDE Sequence No. 9282  
McClure to Ware  
Alexander and Union Counties, Illinois

Prepared by the  
Illinois Department of Transportation (IDOT)  
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## I. Introduction

This document describes the Illinois Department of Transportation's (IDOT) plan to compensate for unavoidable wetland impacts arising from Federal Aid Project No. 312 (IL Rt. 3) in Alexander and Union Counties (Figure 1).

The project begins on IL Rt. 3, 1.2 miles north of the Illinois 3/146 intersection south of McClure and continues northerly to a point on IL Rt. 3, 364 feet north of the Illinois 3/146 intersection at Ware. The total net length of the improvement is 10.58 miles. Approximately 28 acres of additional right of way will be required.

The proposed improvement will consist of bituminous surface removal, bituminous concrete resurfacing, the construction of bituminous and aggregate shoulders, and the replacement of an existing bridge. Existing foreslopes will be flattened to meet 3R requirements, and existing culverts will be extended as necessary. Four grade raises are proposed to increase the height of the roadway above high water. Other items of work will include the installation of side road and entrance culverts, ditch grading, seeding, pavement striping, and various erosion control items.

A wetland survey for the proposed improvements along IL Rt. 3 was conducted June 5-7, 2001. Wetlands were identified and delineated according to the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987). Field work was performed by the Illinois Natural History Survey (INHS). All potential wetlands within the project corridor were examined. Twenty-seven routine on-site wetland determinations were performed. Twenty-four sites had dominant hydrophytic vegetation, hydric soils, and wetland hydrology. For a description and photos of the natural history of the project area, see Attachment 1, Existing Natural Resources.

Construction will be in new rights-of-way contiguous to existing rights-of-way. There are no practicable alternatives which would avoid adverse wetland impacts. There are unavoidable impacts to approximately 0.221 acres of marsh, 0.97 acres of forested wetlands, 2.044 acres of swamp, and 0.257 acres of other wetlands (scrub-shrub, wet meadow and open water). Total wetland loss is 3.491 acres. In accordance with the IDOT Wetlands Action Plan, adverse impacts are to be compensated for through the development and implementation of an approved wetland compensation plan. Unavoidable impacts will be replaced at a ratio of 5.5:1.0. This ratio was applied—per 17 Ill. Adm. Code Part 1090—because of the presence of the state threatened rice rat (*Oryzomys palustris*) within a site or because of the floristic quality index value was greater than or equal to 20. Total compensatory wetland acreage is 19.206. All wetland impacts occur in the Mississippi River Lower drainage basin.

Wetland impacts and endangered species concerns were coordinated with the Illinois Department of Natural Resources (IDNR) by way of a Biological Resources Review memorandum dated June 2, 2003. In their response, the IDNR recommended that the IDOT make application to the IDNR for authorization for incidental take of marsh rice rats (*Oryzomys palustris*). The IDNR concurred with the wetland impacts, mitigation ratios and mitigation acreage. October 22, 2004, the IDNR granted authorization for the incidental take of marsh rice rats.

The Department of Army, Corps of Engineers (Corps) issued a Nationwide Permit (no. 14) for this project on May 3, 2004.

On June 11, 2004, a contract for this project was let and on August 23, 2004, a contract was awarded.

District Nine of the IDOT will be responsible for implementing the wetland compensation plan described herein.

## II. Wetland Compensation Site Selection

Several sites were assessed for wetland compensation. On-site options, or sites less than one mile from the project area, were considered first. The 125-acre Sugar Camp Creek site met all the criteria for a suitable wetland compensation site. The land for this site was acquired in May 2005. A total of twelve sites were investigated with the following six assessed in further detail:

1. Northwest of the intersection of IL Rt. 3 and Caveness Road (SE/4, SW/4, S. 1, T.13S., R.3W). This site is adjacent to and west of IL Rt. 3. Site assessments were conducted July and August 2003.
2. East of Cape Girardeau, southwest of the intersection of IL Rt. 3 and IL Rt. 146 (NW/4, SW/4, S. 20, T.14S., R.3W.). A preliminary site assessment was conducted by the Illinois State Geological Survey (ISGS) and INHS on March 2, 2004.
3. East of Cape Girardeau, southwest of the intersection of IL Rt. 3 and IL Rt. 146 (SW/4, SE/4, S. 19, T.14S., R.3W.). A site assessment was conducted April 8, 2004.
4. East of Cape Girardeau, southeast of the intersection of IL Rt. 3 and IL Rt. 146 (W/2, S. 21, T.14S., R.3W.). No site assessment was conducted.
5. The Arbeiter site. Just south of the confluence of the Big Muddy River and Beaucoup Creek (SE/4, NE/4, S.1, T.9S., R.2W.). A site assessment was conducted on July 7, 2004.
6. Sugar Camp Creek. Near Benton, IL (SE/4 and S/2, NE/4, S.32, T.5S., R.4E.). Site assessments were conducted December 8, 2004 and December 10, 2004.

The Sugar Camp Creek compensatory wetland mitigation site is located approximately 50 miles northeast of the wetland impact locations. The 125-acre site is located in Franklin County, approximately 10 miles east of Benton. The parcel is the SE ¼ of the NE ¼ and the East ½ of the SE ¼ in Section 32, T. 5 S., R. 4 W. on the Ewing Quadrangle map. The compensatory wetland mitigation site is in the Big Muddy River basin and is out of the basin from the wetland impact locations. See Figure 2, Location Map of Sugar Camp Creek Site.

### III. Wetland Compensation Site Assessment

Baseline conditions at the Sugar Camp Creek wetland compensation site were documented and the suitability of the site was assessed by the INHS and ISGS on December 8 and December 10, 2004, respectively. Copies of both reports are attached to this plan. Both reports assigned favorable ratings to the site for its suitability for wetland compensation. (See Attachment 2 and Attachment 3.)

The entire site was farmed in 2004. Except for the channel of Sugar Camp Creek, the 125-acre site is mapped as prior converted wetland—or PC-- by the USDA-Natural Resources Conservation Service. A majority of the soils of the site are poorly drained or are hydric. Forested wetlands of good natural quality are adjacent to the compensatory wetland mitigation site. These forests are dominated by pin oak (*Quercus palustris*) and their average floristic quality index, in December, was 18.8.

Sugar Camp Creek runs through the site from north to south, and is mapped as a special flood hazard area on the Flood Insurance Rate Map. The site is located in Hydrologic Unit #07140106, approximately one mile north of the confluence of Sugar Camp Creek with the Middle Fork of the Big Muddy River. Multiple potential water sources could supply restored or created wetlands. Potential water sources include: flooding from Sugar Camp Creek, runoff and overland flow from adjacent uplands, perched ground water, and direct precipitation. Numerous hydrologic alterations exist at the site and currently operate to promote drainage. Alterations that could be reversed include berms, ditches, field tile, and culverts.

### IV. Wetland Compensation Plan

The goal of the Sugar Camp Creek compensatory wetland mitigation project is to restore 16.5 acres of forested wetlands and 2.6 acres of emergent wetlands. There are no plans to create, enhance or preserve wetlands. Approximately 19.5 acres of the 125-acre site will be used to provide wetland compensation for IL Rt. 3. The remaining acreage will be farmed (Figure 3).

The proposed plan utilizes the existing grade as much as practical. This is because much of the site is composed of drained hydric soils. No grading or earth moving is proposed in areas slated for restoration of forested wetlands except where necessary to exhume drain tile or fill drainage ditches. Limited earthwork is planned in areas slated for restoration of emergent wetlands. The objective here is to restore meanders or former oxbow wetlands associated with Sugar Camp Creek. Currently the oxbows are drained by way of a ditch connection to Sugar Camp Creek. There will be no importation or stockpiling of topsoil.

Two grasses, Red top (*Agrostis alba*) and wild rye (*Elymus virginicus*) will be seeded over the entire wetland compensation site. Both species are hydrophytic and native. These species will comprise the ground layer vegetation which, over time, will be supplemented by natural regeneration.

Forested wetlands will be restored using bare-root tree seedlings. Approximately 562 trees will be planted per acre. Approximately equal numbers of each species of trees will be planted—Table 1.

Table 1. Species of trees and shrubs proposed for planting at the Sugar Camp Creek wetland compensation site.

<u>Common Name</u>	<u>Scientific Name</u>	<u>Wetland Indicator Status</u>
Swamp white oak	( <i>Quercus bicolor</i> )	FACW+
Pin oak	( <i>Quercus palustris</i> )	FACW
Shumard oak	( <i>Quercus shumardii</i> )	FACW-
Green ash	( <i>Fraxinus pennsylvanica</i> )	FACW
Pecan	( <i>Carya illinoensis</i> )	FACW
Sycamore	( <i>Platanus occidentalis</i> )	FACW
Bald cypress	( <i>Taxodium distichum</i> )	OBL
River birch	( <i>Betula nigra</i> )	FACW
Red-osier	( <i>Cornus stolonifera</i> )	FACW

All tree species and red-osier (a shrub) are hydrophytic and are on the National List of Plant Species that Occur in Wetlands.

Emergent wetland areas will revert to wetlands following restoration of wetland hydrology and through natural regeneration of vegetation.

Two performance standards have been established in order to judge success of the planned wetlands.

A. Each planned wetland community should be a jurisdictional wetland as defined by current federal standards.

1. Predominance of hydrophytic vegetation. More than 50% of the dominant plant species must be hydrophytic.
2. Presence of hydric soils. Hydric soil characteristics should be present, or conditions favorable for hydric soil formation should persist at the site.
3. Presence of wetland hydrology. The compensation area must be either permanently or periodically inundated at average depths less than 2 m (6.6 ft) or have soils that are saturated to the surface for at least 12.5% of the growing season.

B. Each planned wetland community should meet standards for planted species survival and floristic composition.

1. Planted species survivorship. At least 80% of the planted bare root trees and shrubs should be established and living by the end of the five-year monitoring period.
2. Native species composition. At least 50% of the plants present should be non-weedy, native, perennial species.

3. Dominant plant species. None of the three most dominant plant species may be non-native or weedy species, such as cattails, sandbar willow, or reed.

#### V. Wetland Compensation Site Monitoring

The INHS and ISGS will monitor the compensatory wetlands for attainment of the above listed performance standards. The Bureau of Design and Environment (BDE) will initiate the monitoring upon notification by District Nine that all work is complete. Monitoring will begin the growing season following completion of construction of the planned wetland. Monitoring will be conducted once each year and will continue until attainment of the performance standards or until the wetlands are accepted as compensation by the Corps and IDNR. Annual monitoring reports will be coordinated by the BDE with the Corps of Engineers and the IDNR. Reports will be coordinated the winter following the previous growing season.

Monitoring reports will include recommendations for management of the compensatory wetlands, in the event they are not attaining the above listed performance standards.

The INHS will also monitor for the presence of the state-threatened marsh rice rat (*Orozomys palustris*) at the compensatory wetland mitigation site (see Attachment 4, Incidental Take authorization dated October 22, 2004).

#### VI. Long-term Management of the Wetland Compensation Site

District Nine of the Illinois Department of Transportation will own the site in fee until the performance standards are met or until the compensation is accepted by the Corps and the IDNR. After acceptance, the IDOT will transfer the property to a state or federal agency charged with managing wild lands. A conservation easement will be placed over the entire site before the transfer. The easement will ensure that all wetlands will remain as such in perpetuity.

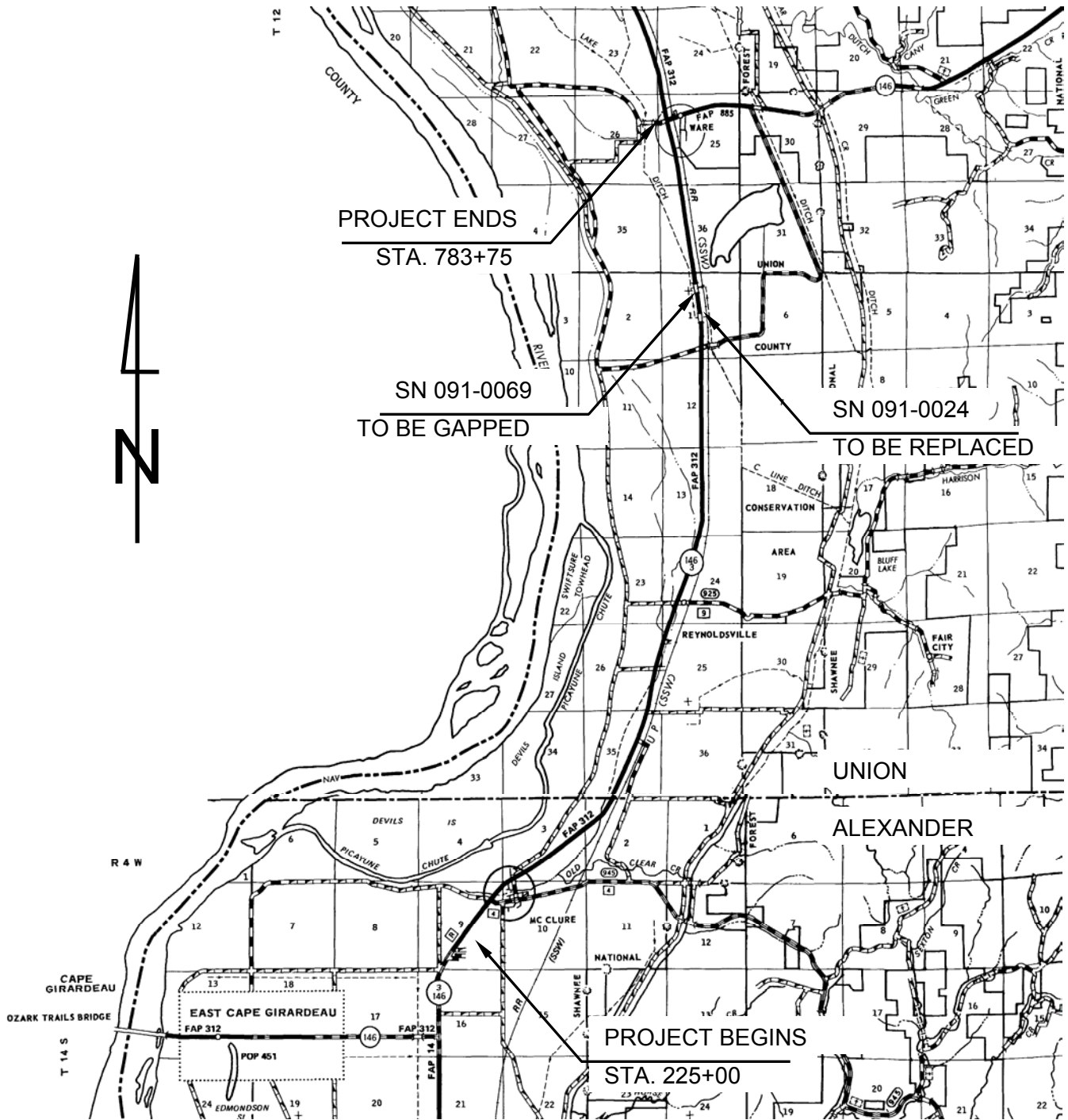


Figure 1. Location Map, IL Rt. 3 (FAP 312), south of McClure to Ware, Alexander and Union Counties

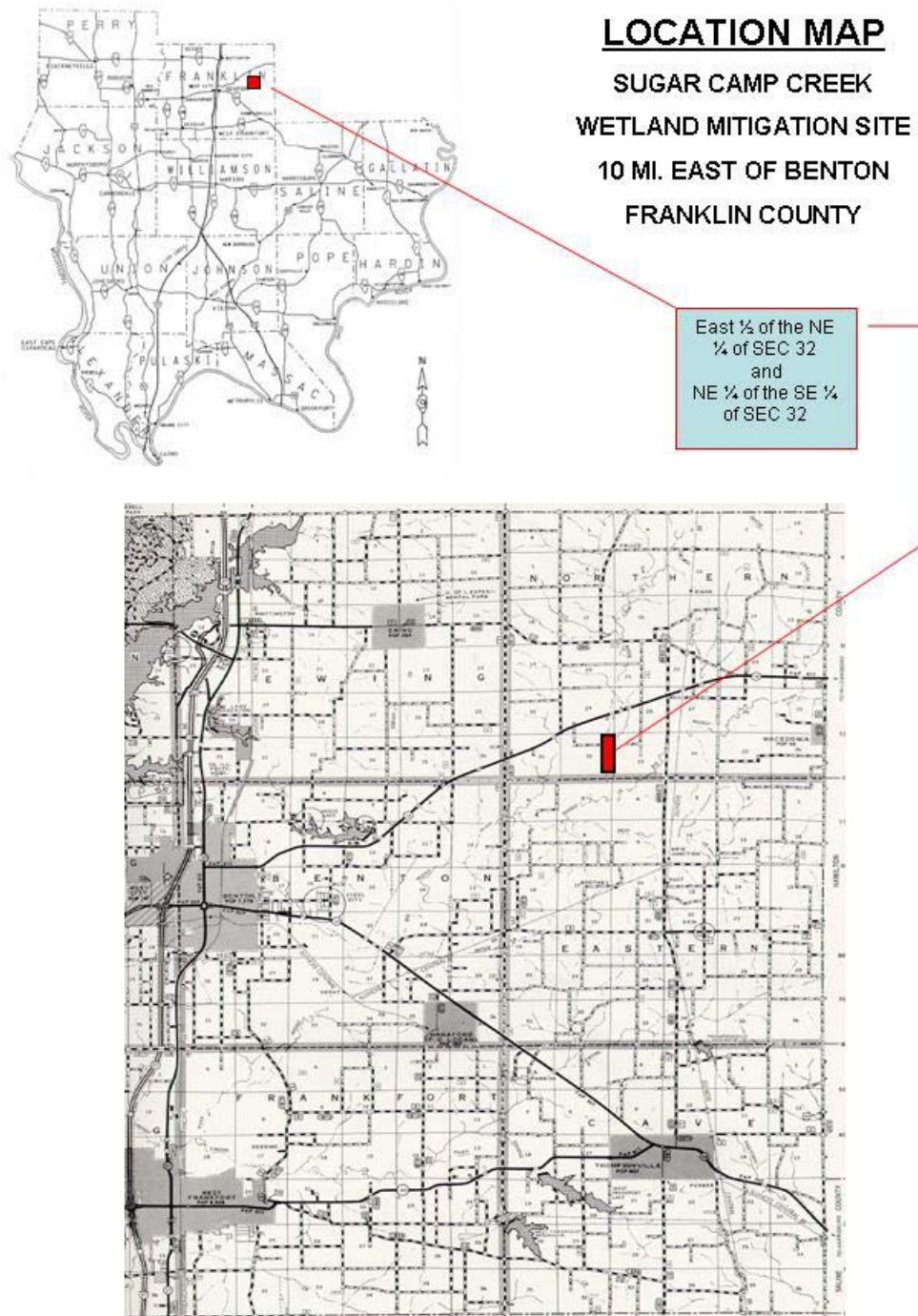


Figure 2. Location Map of Sugar Camp Creek Mitigation Site



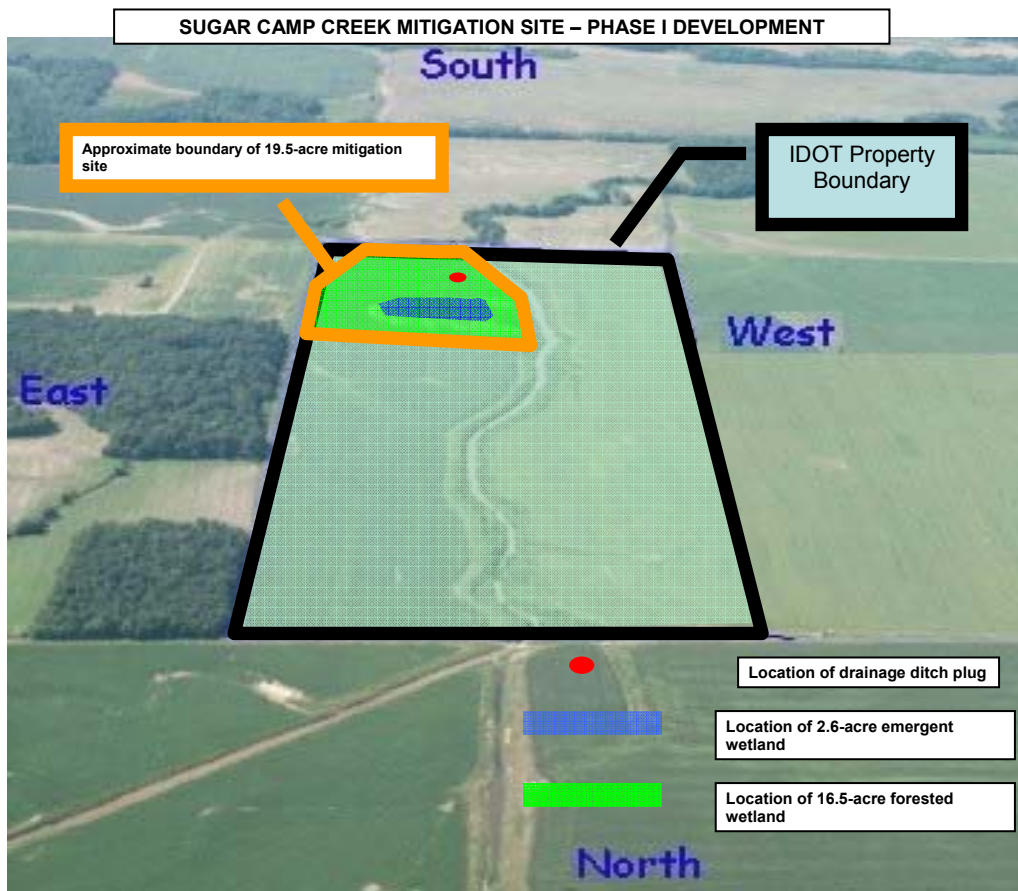


Figure 3. Wetland compensation plan for IL Rt. 3 (FAP 312).