

APPENDIX E
WETLANDS TECHNICAL MEMORANDUM
ROUTE 13 CORRIDOR STUDY

INTRODUCTION

The study corridor is located within the Western Glaciated Plains and Osage Plains of west-central Missouri. The majority of the terrestrial landscape is characterized by flat to gently sloping topography used primarily for agriculture in the form of cultivated crops and grassland. The low-lying areas adjacent to the creeks and rivers throughout the corridor are composed of alluvial soils which were formed by erosion and deposited by water. It is in these areas where the most potential for wetland formation exists. Other areas that could provide potential wetlands include springs, isolated ponds and abandoned strip mine pits.

REGULATORY AUTHORITY

The Clean Water Act regulates discharge of fill or dredged material, unless exempted, into "waters of the United States", which include jurisdictional wetlands and other aquatic habitats. Wetlands are defined for regulatory purposes in the Act, and the exacting definition is used by the EPA and the Corps of Engineers to administer the section 404 permit program:

(wetlands are) those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, bogs, and similar areas. (EPA, 40 CFR 239.3 and CE, 33 CFR 328.3).

As in definitions by other agencies, such as the U.S. Fish and Wildlife Service, this definition recognizes and emphasizes the fact that wetlands possess three essential characteristics: hydric soils, prevalence of hydrophytic vegetation, and wetland hydrology, which is the driving force creating all wetlands. These three characteristics are the mandatory technical criteria required for wetlands determination. Areas must meet all three of these criteria before being designated as wetland.

Hydric Soils are soils that are saturated, flooded or ponded for a sufficient duration during the growing season to develop anaerobic conditions in the upper part. Such conditions favor the growth and regeneration of hydrophytic vegetation. Only when a hydric soil supports hydrophytic vegetation and the area has indicators of wetland hydrology may that soil be considered as a "wetland soil." Using the criteria for hydric soils, the National Technical Committee for Hydric Soils has developed a list of hydric soils.

Hydrophytic Vegetation is defined as rooted, macrophytic plant life growing in water, soil, or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content. Emphasis is placed on the assemblage of plant species that exert a controlling influence on the character of the plant community, rather than on the presence of indicator species. Therefore, an area is considered to have hydrophytic vegetation when, under normal circumstances, more than 50 percent of the composition

of the dominant species from all strata are indicator species. Indicator species are known to occur with a greater frequency in wetlands than others. Those species occurring almost always (> 99% probability) in wetlands under natural conditions are classified as obligate wetland plants (OBL). Species that usually (67% to 99% probability) occur in wetlands, but are occasionally found in nonwetlands, are classed as facultative wet (FACW) plants. Facultative plants (FAC) are equally likely to occur in wetlands or nonwetlands (34-66% probability). Each of these classifications are sometimes further modified to indicate more likely wetland (+) or less likely wetland (-).

An area is said to have **wetland hydrology** when there exists a condition of permanent or periodic inundation (a week or more) at least seasonally during an average rainfall year. This is the driving force behind wetland formation. It affects the types of plants that can grow and the types of soils that develop.

WETLAND CLASSIFICATION

Wetlands are usually classified according to a system developed by the U.S. Fish and Wildlife Service. This system is often referred to as the Cowardin System after its principle author (Cowardin et al, 1979). Five major wetland systems are defined in the Cowardin classification system: marine, estuarine, riverine, lacustrine, and palustrine. This classification also includes deepwater habitats, or permanently flooded lands lying below the deepwater boundaries of wetlands.

It was determined during field investigations that three of the wetland systems mentioned above are represented in the project area: the palustrine system, the riverine system, and the lacustrine system.

The **Palustrine System** includes all (nontidal) wetlands dominated by trees, shrubs and persistent emergents. It also includes wetlands lacking such vegetation but with all of the following four characteristics:

- 1) area less than 8 ha (20 acres);
- 2) lack of active wave-formed or bedrock shoreline features;
- 3) water depth in the deepest part of the basin less than 2m (6.6 feet) as low water; and
- 4) salinity due to ocean-derived salts less than 0.5%.

The palustrine system is bounded by upland or by any of the other four systems.

The **Riverine System** includes all wetlands and deepwater habitats contained within a channel, with two exceptions: 1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens and 2) habitats with water containing ocean-derived salts (in excess of 0.5%). The system is bounded on the landward side by upland, by the channel bank, or by wetlands dominated by trees, shrubs, etc. as above. The system terminates at the downstream end where the channel enters a larger body of water.

The **Lacustrine System** includes wetlands and deepwater habitats with all of the following characteristics: 1) situated in a topographic depression or a dammed river

channel; 2) lacking trees, shrubs, persistent emergents, emergent mosses, or lichens with greater than 30% areal coverage; and 3) total area exceeds 8 ha (20 acres). The Lacustrine System is bounded by upland or by wetland dominated by trees, shrubs, etc., as above. It includes permanently flooded lakes and reservoirs. Islands of palustrine wetlands may lie within the boundaries of the lacustrine system.

It should be noted that the jurisdictional wetland determinations performed for regulatory purposes are not dependent on this classification system but on three mandatory criteria previously discussed. The classification system discussed here is very important for establishing the type of ecosystem being inventoried. The essential distinction is in the regulatory treatment. For example, a rock-bottom streambed classified as an upper perennial riverine wetland with an intermittent water regime is a functioning wetland system under the Cowardin System. However, the regulatory treatment for this stream under Section 404 would be as a "water of the U.S.", not a wetland, because of the fact that hydric soils may be absent (rock bottom). Remember, all three wetland criteria must exist before an area can be called a wetland. Still, if hydrophytic vegetation is present on a mineral soil substrate and a wetland hydrology exists, a case can be made for the fact that hydric soil formation has started. Thus, a wetland determination can be made.

WETLAND IDENTIFICATION AND MAPPING

In order to identify and map streams and potential jurisdictional wetlands within the corridor for the purpose of screening alternative alignments, data was gathered using the following Missouri Highway and Transportation Department protocol:

MHTD Protocol for Identifying Streams And Jurisdictional Wetlands Within Corridors

Minimum mapping data base is to consist of the following:

- Geological Survey (USGS) quadrangle maps for the project area. The alignment corridors must be illustrated on these maps.
- Information gathered from the U.S. Fish and Wildlife Service - National Wetlands Inventory (NWI) maps, identifying potential wetland areas within the alignment corridors, will be transferred to USGS quadrangle maps.
- Information gathered from the U.S. Department of Agriculture - Natural Resources Conservation Service (NRCS, formerly Soil Conservation Service) soil series mapping, identifying potential hydric soils within the alignment corridor, will be transferred to USGS quadrangle maps.
- Information gathered from the U.S. Department of Agriculture - NRCS Food Security Act wetland mapping, identifying potential wetland areas within the alignment corridors, will be transferred to USGS quadrangle maps.

Field Inventory for Preferred Alignment Corridor

Stream drainages and potential jurisdictional wetlands (e.g. sinkholes, stream impoundments, springs) that justify a site inspection must be crossed or otherwise impacted by the preferred alignment corridor and meet the following criteria:

1. Streams/Springs
 - a) Identified on USGS quadrangle maps (springs must be recorded by USGS or DNR); and
 - b) streams identified as having a drainage area exceeding 1.5 square miles, Section 4-09.1(6)(a) MHTD Design Manual.
2. Wetlands
 - a) Areas of potential jurisdictional wetlands adjacent to streams and identified as one of the following:
 - i) streams having a drainage area exceeding 1.5 square miles and/or NWI wetlands;
 - ii) streams having a drainage area exceeding 1.5 square miles and hydric soils or soils containing hydric inclusions; or
 - iii) having NWI wetlands and hydric soils or soils containing hydric inclusions.*
 - b) Areas of potential jurisdictional isolated wetlands identified as one of the following:
 - i) having NWI wetlands;
 - ii) having hydric soils or soils containing hydric inclusions and evidence of hydrology indicated through aerial photographs or reconnaissance surveys; or
 - iii) evidence of saturation or ponding.

*The evidence of 2) a) iii) prevents omission of wetlands indicated on the minimum mapping data base. This alleviates concerns that wetlands included within drainage basins of less than 1.5 square miles will not be addressed.

A revised version of the Wetland Protocol was developed prior to field investigations for the preferred alternative, and is as follows:

**Protocol for Identifying Wetlands within MoDOT
Project Corridors at Various Stages of
Environmental Document Preparation
(Kansas City District Corps of Engineers)
January 12, 1996**

I. Summary of Wetland Identification Tasks.

- A. Compilation of Wetland Inventory Database.
- B. Wetland Impacts Analysis of Alternate Corridors.
- C. Wetland Impacts Analysis for Preferred Corridor.

II. Compiling the Wetland Inventory Database.

The minimum map database for assessment of potential wetland impacts shall consist of the following:

- * U.S. Geological Survey (USGS) 7.5' quadrangle maps for the study area.
- * National Wetlands Inventory (NWI) maps for the study area. The NWI mapping should be overlain on the USGS quadrangles in figures and exhibits.
- * Soils maps from the Natural Resources Conservation Service (NRCS), identifying soil map units dominated by hydric soils and upland map units with hydric inclusions.
- * Food Security Act (FSA) wetland inventory maps from the NRCS, identifying potential wetland areas.

III. Wetland Impacts Analysis for Multiple Corridors.

- A. Upon identification of alignment corridors, locations will be transposed to the minimum map data base.
- B. Potential wetland impacts for each alignment corridor will be assessed from the minimum map data base. The map information can be supplemented with a windshield survey to verify wetland inventory mapping, especially near large wetlands and stream crossings. If mapped wetland areas are considered unlikely to be jurisdictional wetlands after the windshield survey, describe the rationale for this determination in the text of the document. For the purposes of analyzing potential wetland impacts at this stage, assume areas mapped as vegetated wetlands on land inventory maps are regulated as special aquatic (wetlands), unless on-site investigation shows otherwise. In the text of the document, use the term "wetlands" to refer only to the areas mapped as vegetated wetlands (e.g. ponds, typically mapped as palustrine

**ROUTE 13 and ROUTE 7
PRELIMINARY JURISDICTIONAL WETLAND DETERMINATIONS
SUMMARY REPORT**

I. INTRODUCTION

The following overview provides an environmental summary of the field investigations performed to assess waters of the U.S. including potential jurisdictional wetland areas that could be impacted by the construction of the 106.7 meter (350 feet) wide Route 13 and Route 7 preferred alternative alignment. The Missouri Department of Transportation (formerly the Missouri Highway and Transportation Department) requested the investigation for inclusion in the project's Environmental Impact Statement. The project is located in west-central Missouri and travels approximately 70 miles from Lexington to Clinton (see Location Map). The field work was conducted from April 1996 to November 1996 and included a total of 241 sites within the project corridor.

The Project Proponent and the Consultant for the project, and the contact persons, are as follows:

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II. METHODS

The Wetland Protocol, dated January 12, 1996 (see Appendix), outlined the criteria that was used to identify streams and sites of potential jurisdictional wetlands. The "Routine Determination" procedures of the 1987 Corps of Engineers Manual were used at each site on which Right-of-Entry was granted. If it was determined that normal circumstances did not exist on the site, procedures in the 1987 Manual for "Atypical Situations" and "Problem Areas" were referenced. Other references included aerial photography (dated 3-22-1994); NWI maps; NRCS county soil surveys and wetland mapping; county, state and national hydric soils lists; the National List of Plant Species That Occur in Wetlands: 1988 National Summary; and numerous plant identification books (see References in Appendix).

Because of the large number of sites, a soil probe was used rather than a shovel/soil pit approach to hydric soil determination. Wetland determinations were made based on the presence of three parameters: hydrophytic vegetation, wetland hydrology and hydric soils. Site acreages were calculated to determine the area of "waters of the U. S." and wetlands (by type). In most cases measurements were taken with a tape or electronic distance finder. There were also a few sites that were delineated using compass angles and distances.

Sites to which access was denied were remotely evaluated based on visual observations; aerial photography (dated 3-22-1994); NWI maps; NRCS county soil surveys and wetland mapping; county, state and national hydric soils lists; and characteristics of similar sites that had been previously evaluated.

During field investigations, estimates were also made to determine potential impacts to riparian woodland habitat, acreages of which are included on the PJWD data forms. This was in response to a comment made by the U. S. Fish and Wildlife Service requesting that impacts to riparian habitat be included in the

Environmental Impact Statement. In this report, designated riparian woodland habitat areas include not only woodlands in flat or floodplain areas adjacent to the streams, but may also include some components of upland woods adjacent to these streams. These are remnants resulting from previously cleared forest tracts, and which now provide valuable wildlife habitat and travel corridors within agricultural croplands. The potential impacts to these areas are discussed in the EIS in Chapter IV, Section M, "Water Body Modification and Wildlife Impacts".

III. RESULTS, DISCUSSION, AND CONCLUSIONS (By County)

Each site is numbered by station according to its location along the preferred alignment.

A. Lafayette County

The following sites fall under the jurisdiction of the Natural Resources Conservation Service (NRCS):

- 61+00*	- 72+00*	- 148+50*	- 220+00*	- 255+25*
- 270+00*	- 314+50*	- 322+00*	- 342+00*	- 686+50*
- 689+00*	- 710+00*	- 854+00*	- 1023+00*	

3+00

This is a stock pond receiving water from overland flow with no signs of hydrophytic vegetation at the water's edge. Dominant vegetation is non-hydrophytic around perimeter. Surrounding area is Tall Fescue pasture. The soil is ponded and therefore hydric. The NWI map designates this pond as PUBGh. This stock pond is a non-wetland area based on the absence of hydrophytic vegetation. It is a "water of the U.S." with a total pond area of 0.23 acres at the Ordinary High Water Mark.

27+00

At this location the alignment crosses Lick Fork which has a drainage area greater than 1.5 square miles. This area is in the 100 year floodplain and the NWI designation is R2UBG. The banks of the stream stand almost vertical. Hydric soil is present, but dominant vegetation above the OHWM is non-hydrophytic woodland. No wetland hydrology indicators exist above the OHWM therefore there are no wetlands above the OHWM. The stream is a "water of the U.S." covering 0.12 acres at the OHWM within the proposed R.O.W. There is also 1.72 acres of riparian woodland habitat within the R.O.W

61+00*

This site is shown as an intermittent stream on the USGS map, however it is functioning as a grassed waterway between two agricultural crop fields. Hydrophytic vegetation is dominant, consisting mostly of Reed Canary Grass (*Phalaris arundinacea*). Soils are hydric and saturated in the top one inch, and a small 2' wide drainage channel collecting overland flow runs through the area. All three parameters are met making this grassed waterway a wetland comprised of 0.27 acres. The small channel within the waterway contains some water and is considered a "water of the U.S." with an area of 0.02 acres at the OHWM

61+00*

This site is shown as an intermittent stream on the USGS map, however it is functioning as a grassed waterway between two agricultural crop fields. Hydrophytic vegetation is dominant, consisting mostly of Reed Canary Grass (*Phalaris arundinacea*). Soils are hydric and saturated in the top one inch, and a small 2' wide drainage channel collecting overland flow runs through the area. All three parameters are met making this grassed waterway a wetland comprised of 0.27 acres. The small channel within the waterway contains some water and is considered a "water of the U.S." with an area of 0.02 acres at the OHWM

72+00*

This site functions as a grassed waterway between two agricultural crop fields. The NWI designation is PFO1Ch. At some time in the past this area had trees along the drainageway, but they have been removed. Hydrophytic herbaceous vegetation is dominant and the soil is saturated in the top one inch. Hydric soil is present in the waterway. All three parameters are met making this grassed waterway a wetland comprised of 0.16 acres.

105+00

This location is shown as an intermittent stream on the USGS map and designated as PFO1Ch on the NWI map. The stream is dammed farther downstream. It flows through an area of deeply dissected terrain indicative of past strip mining. Wooded areas border the stream with a dominance of non-hydrophytic vegetation above the OHWM. The soils are hydric but there are no wetland hydrology indicators above the OHWM. Field drains from the field to the north flow into the heads of eroded gullies causing undermining and collapse of trees. Only one parameter was met and there are no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.21 acres at the OHWM within the R.O.W. There is a portion of the pond that falls within the R.O.W. which is included in the acreage amount for "waters of the U.S. There is also riparian woodland habitat bordering the stream which covers 2.14 acres.

119+50

No Right-of-Entry was granted for this site. The aerial photo shows a small, inundated pond that could be entirely vegetated. The NWI designation is PEMCh. Based on the aerial photo and characteristics of other similar ponds in the area, the dominant vegetation is most likely hydrophytic herbaceous. The surrounding area is pasture. The soil is probably ponded frequently for long duration based on mapped information and is therefore probably hydric. Overland flow from precipitation is most likely the source of hydrology. All three parameters are most probably met and the entire pond area is most likely an "emergent" wetland covering an estimated area of approximately 0.11 acres.

129+50

No Right-of-Entry was granted for this site. The NWI designation is PUBGhx. The aerial photo shows an inundated pond with a darker vegetated perimeter except at the dam. This vegetated area is most likely hydrophytic herbaceous based on characteristics of similar ponds in the area. Cultivated cropland and pasture surround the pond. The soil is probably ponded frequently for long duration based on mapped information and is therefore probably hydric. Overland flow from precipitation is most likely the source of hydrology. All three parameters are most probably met. The open water area is a "water of the U.S." estimated to cover approximately 0.72 acres, and the perimeter is a wetland "emergent" area estimated to be approximately 0.36 acres.

148+50*

No Right-of-Entry was granted for this site. The aerial photo shows what is most likely a grassed waterway with a drainage swale containing water. This area is also in the floodplain. Based on characteristics of other similar grassed waterways in the area the dominant vegetation is most likely hydrophytic (possibly *Phalaris arundinacea*). There are cultivated crop fields on each side. The soil survey indicates Blackoak and Otter Silt Loam which is on the county, state and national hydric soils lists. All three parameters are most likely met. This grassed waterway is most probably a wetland with an estimated area of 0.35 acres within the R.O.W.

220+00*

This site is a grassed waterway between two cultivated crop fields. The dominant vegetation is hydrophytic grasses. The soil is hydric and there is saturation in the top one-half inch. The source of water is from overland flow. All three parameters are met. This grassed waterway is a wetland of which 0.02 acres fall within the R.O.W.

255+25*

This site is a grassed waterway between two cultivated crop fields. The portion of the waterway that is within the proposed R.O.W. is at the head of the waterway. At this particular location the dominant

vegetation is non-hydrophytic (mostly Tall Fescue). The soil has hydric indicators and is only moist - not saturated. The slope in this area is enough that water flows out quickly enough to prevent ponding or saturation. Since all three parameters are not met (non-hydrophytic vegetation), this portion of the grassed waterway within the R.O.W. is not a wetland.

270+00*

This site is a grassed waterway between two cultivated crop fields. The NWI designation is PEMCh. The source of water is from overland flow. The dominant vegetation is hydrophytic (*Phalaris arundinacea*) - there is one *Rosa multiflora* within the Reed Canary Grass, but the Canary Grass is clearly dominant. There is a drainage pattern within the area and the soil is hydric. All three parameters are met concluding that this grassed waterway is a wetland. It contains 0.18 acres within the R.O.W.

306+50

This is a stock pond receiving water from overland flow with no signs of hydrophytic vegetation at the water's edge. The vegetation is sparse and non-hydrophytic (*Festuca arundinacea*, *Rosa multiflora*). The surrounding area is grazed pasture and there is extensive cattle trampling around the pond. The soil is ponded and therefore hydric. The NWI designation is PUBGh. This stock pond is not a wetland based on the absence of hydrophytic vegetation. It is a "water of the U.S." with a total area of 0.23 acres at the OHWM.

314+50*

This is a low-lying area in a grazed pasture. It contains a dominance of hydrophytic vegetation (*Phalaris* and *Polygonum*). It receives overland flow and is poorly drained because of its flatness and the presence of hydric soils in the form of silty clay. There are some small drainage patterns through the area. The NWI designation for this area is PEMAd and the NRCS designation is "wet pasture" (wp). All three parameters are met confirming the NRCS wetland designation. The total area is 1.5 acres.

322+00*

This is a low flat area, part of which is in the floodplain. It has a small drainage channel through the area and the soil contains hydric indicators. Dead grass shows signs of water flowing through the area. The dominant vegetation is hydrophytic, mostly *Phalaris arundinacea* and *Spartina pectinata*. The NRCS designates this area as a "wet pasture" (wp). This wetland designation is confirmed since all three parameters are met. The area within the R.O.W. covers 1.92 acres.

327+00

This is a low-lying drainage way in the floodplain near existing Route 13. It is within the NRCS "wet pasture" area described in site number 322+00. The NWI map shows a small portion of this area as PEMC. The culvert under Route 13 does not flow well which causes this area to pond and become very poorly drained. The soil is hydric and is saturated above the inundated area. Obligate herbaceous hydrophytic vegetation dominates the perimeter and is present in the standing water. The obligate plants form a clear boundary at the edge of the saturated area as the vegetation changes to a dominance of the Reed Canary Grass and Prairie Cordgrass of the "wet pasture" area (322+00). All three parameters are met concluding that this area is an "emergent" wetland with an area of 0.13 acres.

338+00

At this location the alignment crosses Tabo Creek which is in the floodplain and has a drainage area greater than 1.5 square miles. The NWI designations in this area are R2UBG and PFO1A. The banks of the stream are steep, sharply incised and sparsely vegetated. The dominant vegetation above the Ordinary High Water Mark is non-hydrophytic herbaceous. The surrounding area is grazed pasture as evidenced by

cattle trampling along the stream banks. The soil is not on the hydric soils lists (no sample was taken). There were no wetland hydrology indicators above the OHWM and no indications of frequent or recent flooding above the OHWM. There are no wetlands above the OHWM since all three parameters were not met. There is also no riparian woodland at this location within the R.O.W. This stream is a "water of the U.S." and covers an area of 0.16 acres within the R.O.W.

342+00*

This is a flat area in the floodplain adjacent to Tabo Creek. The NRCS designates this area as a "wet pasture" (wp). 50% of the dominant vegetation is wetter than FAC and 50% is drier than FAC, therefore hydrophytic vegetation is not dominant. The surrounding area is pasture to the north, Tabo Creek to the west, and a hedgerow of trees and a cornfield to the east. The soils are hydric only in the upper 2" layer and below 8". The soil was almost dry when tested. There were no wetland hydrology indicators nor indications of frequent or recent flooding. Since all three parameters were not met, this area is not a wetland.

398+50

No Right-of-Entry was granted for this site. The NWI map designates this pond as PUBGh. A vegetative edge was visible from the road and is probably hydrophytic herbaceous, based on characteristics of similar ponds in the area. The surrounding area is pasture. The soil is ponded and therefore hydric. Overland flow is the source of inundation. All three parameters are most likely met. Based on visual observation, an estimated 0.03 acres of "emergent" wetland probably exists around the perimeter. The open water area is "water of the U.S." and covers an estimated area of approximately 0.19 acres.

510+00

This area is a drainage way into a pond. The NWI designation is PFO1Ch. A wooded area occurs around the perimeter above the steep and sparsely vegetated banks. The dominant vegetation is non-hydrophytic and the surrounding area is grazed pasture. Hydric soil is present and the water that travels through the drainage way comes from overland flow. Since this area lacks a dominance of hydrophytic vegetation, it is not a wetland. The open water area is a "water of the U.S." and covers 0.11 acres at the OHWM. The riparian woodland habitat area is 1.03 acres.

515+00

This area is the south drainage way into the same pond that is fed by the drainage way at site 510+00. The NWI designation is PFO1Ch. A wooded area occurs around the perimeter above the steep and sparsely vegetated banks. The dominant vegetation is non-hydrophytic and the surrounding area is grazed pasture. Hydric soil is present and the water that travels through the drainage way comes from overland flow. Since this area lacks a dominance of hydrophytic vegetation, it is not a wetland. The open water area is a "water of the U.S." and covers 0.07 acres at the OHWM. The riparian woodland habitat area is 0.26 acres.

516+00

This small pond is a potential problem area. The dam is breached and the pond is currently dry. It may still hold water during the rainy season because the bottom of the pond is lower than the breach in the dam. There is a drainage pattern running through the pond. Any water that flows into the pond comes from overland flow. The dominant vegetation in the pond area is hydrophytic herbaceous and the surrounding area is grazed pasture. The soil is hydric. All three parameters are met - although the pond is not currently inundated it contains a drainage pattern through it. The pond area to the edge of hydrophytic vegetation is 0.04 acres and is considered an "emergent" wetland.

536+00

No Right-of Entry was granted for this site. The aerial photo shows an inundated pond and a vegetated edge in the draw down and around the perimeter except at the dam. This vegetation is most likely hydrophytic herbaceous based on characteristics of other similar ponds in the area. The surrounding area is pasture and cultivated crop land. The soil is probably ponded frequently for long duration based on mapped information and is therefore probably hydric. Overland flow from precipitation is probably the source of inundation. All three parameters are most likely met. The wetland "emergent" area is estimated to cover approximately 0.23 acres. The open water is a "water of the U.S." and covers an estimated 0.33 acres.

544+00

No Right-of Entry was granted for this site. The USGS map shows this stream as intermittent and the aerial photo shows trees on each side. Based on characteristics of similar intermittent streams in the area, the dominant vegetation above the OHWM is most likely non-hydrophytic woodland. This area is not in the floodplain and it is most likely that there are no wetland hydrology indicators above the OHWM based on characteristics of similar intermittent streams in the area. The soil survey shows the soil type to be Higgsville silt loam with a low chroma matrix color of 10YR 2/1 in the upper part which is a hydric soil indicator. This is the only parameter that is probably met. There are most likely no wetlands above the OHWM. The stream is a "water of the U.S." with an estimated area of 0.16 acres within the OHWM. There is also a riparian woodland habitat that is estimated to cover approximately 0.48 acres within the R.O.W.

562+00

Although Right-of-Entry to this site was granted, bulls were present and the evaluation was done from the fence, aerial photos and USGS maps. The NWI designates this pond as PUBGh. From the fence it looks as though this stock pond has a hydrophytic herbaceous vegetation ring around its perimeter and in the draw down area. The surrounding area is grazed fescue/bluegrass pasture. The soil is ponded and therefore hydric, and the source of inundation is overland flow from precipitation. All three parameters are met. The "emergent" wetland area is an estimated 0.11 acres. The open water area is a "water of the U.S." and covers approximately 0.26 acres.

570+00

Although Right-of-Entry to this site was granted, bulls were present and the evaluation was done from the fence, aerial photos and USGS maps. The NWI designates this pond as PEMCh. There is currently no visible surface water at this pond. From the fence it looks as though hydrophytic herbaceous vegetation is present from the previous season and occupies the entire pond area. The surrounding area is grazed fescue/bluegrass pasture. The soil was probably ponded frequently for long duration based on mapped information and therefore probably hydric. The source of previous inundation was overland flow from precipitation. All three parameters are probably met long enough during the rainy season for this area to be an "emergent" wetland. The estimated area is approximately 0.04 acres.

582+00

No Right-of-Entry was granted for this site. The USGS map shows this as an intermittent stream. It is in a wooded area and the trees that could be identified from the road and from leaf litter were determined to be non-hydrophytic. Based on characteristics of similar intermittent streams in the area, the dominant vegetation above the OHWM is most likely non-hydrophytic woodland. The area is grazed by horses. According to the soil survey the soil type at this location is not hydric. From the road, the stream banks

look steep and sharply incised even though it is a narrow stream. There are no visible indications of wetland hydrology above the OHWM. It is most likely that all three parameters are not met and that there are no wetlands above the OHWM. This stream is a “water of the U.S.” and covers and estimated 0.06 acres within the OHWM and the R.O.W. The estimated riparian woodland habitat is approximately 1.54 acres.

606+75

This pond is an active sewage lagoon. It is not a wetland nor a “water of the U.S.”.

608+00

This pond is an active sewage lagoon. It is not a wetland nor a “water of the U.S.”.

686+50*

This site is now a cultivated field located in the floodplain. The NWI map shows a small area as PEMC. The existing vegetation was removed and the hydrology was altered. It is cultivated crop land, not a wetland.

689+00*

This site is now a cultivated field located in the floodplain. The NWI map shows a small area as PEMC. The existing vegetation was removed and the hydrology was altered. It is cultivated crop land, not a wetland.

693+00

This narrow stream is shown on the USGS map as intermittent. The NWI map designates this area as PFO1A. The site has been significantly disturbed - the trees along the banks were removed and the stream was channelized. Crops are now planted close to the banks on each side of the stream. The dominant vegetation above the OHWM is hydrophytic - mostly *Phalaris arundinacea*. Hydrophytic vegetation also exists below the OHWM in the stream. There are no indications of hydric soil in the upper 10”, however the mapped type is on the hydric soils lists and is confirmed in the upper 12”. There are no wetland hydrology indicators above the OHWM, therefore all three parameters are not met, and there are no wetlands above the OHWM. This stream is a “water of the U.S.” and occupies 0.16 acres within the OHWM and the R.O.W.

700+00

At this location the alignment crosses Bear Creek. The NWI designation is R4SBF. It is in the floodplain and is a narrow stream with a steep north bank and sparse vegetation. Dominant vegetation above the OHWM is non-hydrophytic herbaceous. The surrounding area is grazed pasture. The mapped soil type is Blackoak & Otter Silt Loam which is on the hydric soils lists. No wetland hydrology indicators are present above the OHWM. Since all three parameters are not met, there are no wetlands above the OHWM. The stream is a “water of the U.S.” and occupies 0.08 acres within the OHWM and the R.O.W. There is no riparian woodland within the R.O.W.

701+00

This site is the result of a small seep, however it is currently dry. When there is sufficient ground water, it seeps from the bottom of the hill and ponds in a low area in the floodplain. The NWI designation is PEMA. The dominant vegetation in the low spot, and in the swale flowing to it, is hydrophytic herbaceous. The surrounding area is grazed pasture. The soil is hydric and the wetland hydrology indicator is the drainage pattern in the area. All three parameters are met - this is an “emergent” wetland caused by a seep. It covers 0.04 acres.

710+00*

This site is a grassed waterway in a grazed pasture near existing Route 13. Dominant vegetation is hydrophytic consisting mostly of grasses (Reed Canary Grass, Bluegrass, Sedge) and one Sycamore tree. The soil is hydric and is saturated in the upper 12". The grassed waterway flows to a box culvert under Route 13. A dam and pond on the other side of Route 13 backs up water through the culvert and into the grassed waterway. All three parameters are met - this grassed waterway is a wetland with an area of 0.30 acres.

737+00

This site is shown as the head of an intermittent stream on the USGS map. However, it is only a small swale that is dry with no visible channel or OHWM at this location. The dominant vegetation is non-hydrophytic trees, shrubs and grasses. No soil sample was taken, but the soil survey shows the soil type as Higginsville silt loam with a matrix color of 10YR 2/1 which would indicate hydric soil. There are no wetland hydrology indicators present. Only one parameter is met therefore this area contains no wetlands nor is it a "water of the U.S."

767+00

This small pond is currently dry due to dry weather conditions. Under normal rainfall conditions it would be inundated. The dominant vegetation is hydrophytic (Cattails). The surrounding area is grazed pasture. The soil is ponded and therefore hydric. Under normal rainfall conditions all three parameters would be met. The entire pond area is vegetated so the wetland "emergent" area is 0.04 acres.

768+00

This is a small pond, currently with very little water. The entire pond area contains hydrophytic vegetation (Cattails, Smartweed and Black Willow). The surrounding area is grazed pasture. The soil is ponded and therefore hydric. The source of inundation is overland flow from precipitation. All three parameters are met. During the growing season there is a minimal amount of open water. The pond is a wetland "emergent" area of 0.08 acres.

770+00

This pond has a ring of hydrophytic vegetation (Cattails, Smartweed, Black Willow) around its perimeter. The surrounding area is grazed pasture. The soil is ponded and therefore hydric. The source of inundation is overland flow from precipitation. All three parameters are met. There is a wetland "emergent" area of 0.12 acres. The open water is a "water of the U.S." covering 0.03 acres.

786+00

At this location the alignment crosses a tributary of Davis Creek in the 100 year floodplain. It is an intermittent stream with steep, sharply incised banks and a R4SBFx designation on the NWI map. There are scattered, non-hydrophytic trees, shrubs and grasses on each side of the stream above the OHWM. The surrounding area is grazed pasture. The soil survey indicates Blackoak and Otter silt loam which is on the hydric soils lists (no sample was taken). No wetland hydrology indicators are present above the OHWM. Less than three parameters are met therefore there are no wetlands above the OHWM. The stream is a "water of the U.S." covering 0.20 acres within the OHWM and the R.O.W. The stream is crossed in two places at this location. The riparian woodland habitat within the R.O.W. covers 0.65 acres.

804+50

This is a small ponded depression with no apparent outlet. The NWI map shows it as PUBFh. The source of inundation is overland flow from precipitation. The dominant vegetation is hydrophytic (Pin Oak, Black Willow, Duckweed). The surrounding area is cultivated crops and ungrazed pasture. The soil is ponded and therefore hydric. All three parameters are met. The open water area is a "water of the U.S." covering 0.21 acres. There is an "emergent" wetland area around the perimeter which covers 0.10 acres, and a ring of "forested" wetland covering 0.05 acres.

806+50

This pond has a ring of Black Willow trees and saplings around the perimeter which have been planted and are periodically trimmed back. The NWI map designates this pond as PUBGh. There are no signs of herbaceous vegetation from the high water mark to the edge of open water. The surrounding area is cultivated crops and pasture. The soil is ponded and therefore hydric. The source of inundation is overland flow from precipitation. All three parameters are met - the wetland area is "forested" and covers 0.04 acres. The open water is a "water of the U.S." covering 0.43 acres.

811+00

This is a small pond that shows signs of petroleum product run-off from the nearby industrial buildings. The NWI map shows this pond as PEMCh. Gas and oil deposits can be seen on the surface in addition to algae. The dominant vegetation is non-hydrophytic (trees, shrubs, grasses). The soil is ponded and therefore hydric. The source of inundation is overland flow from precipitation. Not all of the parameters are met therefore there are no wetlands present. The open water is a "water of the U.S." covering 0.05 acres.

841+00

This narrow stream with somewhat steep banks is shown as intermittent on the USGS map and is in the floodplain. Wooded areas are present on each side of the stream above the OHWM and are dominated by non-hydrophytic vegetation. The soil is non-hydric and there are no wetland hydrology indicators above the OHWM. No parameters are met, therefore there are no wetlands above the OHWM. The stream is a "water of the U.S." covering 0.10 acres within the OHWM and the R.O.W. The riparian woodland habitat area within the R.O.W. is 2.47 acres.

845+00

Although Right-of-Entry for this site was obtained, bulls were present in the pasture so the evaluation was performed from the fence, aerial photo and USGS map. The NWI map designates this pond as PUBGh. It is a stock pond with no visible ring of vegetation at the water's edge. The surrounding area is grazed pasture. The soil is ponded and therefore hydric. The source of inundation is overland flow from precipitation. Hydrophytic vegetation is most likely absent leaving only two parameters met. There are therefore no wetlands present. The pond is a "water of the U.S." covering 0.32 acres.

853+00

This is a stock pond with near vertical banks and no hydrophytic vegetation around the edge. The NWI map shows it as PUBGh. The surrounding area is grazed pasture. The soil is ponded and therefore hydric. The source of inundation is overland flow from precipitation. Hydrophytic vegetation is absent leaving only two parameters met. There are therefore no wetlands present at the pond. The is a "water of the U.S." covering 0.40 acres.

854+00*

This site is a small overflow drainage area from pond 853+00. The NWI map designates this area as PUBFh. It is a swale that is 5' wide by 200' in length. The dominant vegetation in the swale is hydrophytic (Smartweed). The surrounding area is grazed Tall Fescue pasture. The soils are hydric and the top one-half inch is saturated. The source of water is pond overflow and overland flow from precipitation. All three parameters are met. The swale is a "wet pasture" covering 0.02 acres.

862+00

This pond is designated as PUBFh on the NWI map. It has an extensive band of hydrophytic herbaceous vegetation around its perimeter containing Cattails, Smartweed, and Spike Rush. The surrounding area is fescue pasture. The soil is ponded and therefore hydric. The source of inundation is overland flow and roadway drainage flow from a culvert. All three parameters are met - the wetland "emergent" area covers 0.17 acres. The open water area is a "water of the U.S." and covers 0.09 acres.

883+00

At this site the alignment crosses Davis Creek which has a drainage area greater than 1.5 square miles. It is a lower perennial stream in the 100 year floodplain and has steep, sharply incised banks. The NWI map designation is R2UBGx. The NRCS designates this area as "wooded wetland" (ww). Trees are on the banks on each side of the stream. The vegetation above the OHWM is hydrophytic (Box Elder, Silver Maple, Sycamore, Horsetail). The soil survey indicates the soils as Blackoar and Otter silt loams which are on the hydric soils lists. There are no indications of wetland hydrology above the OHWM. Only two parameters are met - there are no wetlands above the OHWM. Davis Creek is a "water of the U.S." with an area of 0.72 acres within the OHWM and the R.O.W. The riparian woodland habitat covers 1.14 acres.

913+00

At this site the alignment crosses North Blackjack Creek which has a drainage area greater than 1.5 square miles. It is a lower perennial stream in the 100 year floodplain and has steep, unstable banks. The NWI map designation is R2UBG. The NRCS designates this area as "wooded wetland" (ww). Trees line the banks on each side of the stream. The vegetation above the OHWM is hydrophytic (Honeylocust, Silver Maple, Box Elder, Cottonwood). The soil survey indicates the soils as Blackoar and Otter silt loams which are on the hydric soils lists. There are no indications of wetland hydrology above the OHWM. Only two parameters are met - there are no wetlands above the OHWM. North Blackjack Creek is a "water of the U.S." with an area of 0.52 acres within the OHWM and the R.O.W. the riparian woodland habitat covers 0.99 acres.

945+00

No Right-of-Entry was granted for this site. The NWI map designates this site as PUBFh. The aerial photo shows an inundated pond with an area of what appears to be herbaceous vegetation around the perimeter except at the dam. The vegetation is most likely hydrophytic based on characteristics of similar ponds in the area. The soil is probably ponded frequently for long duration based on mapped information and is therefore probably hydric. The source of inundation appears to be overland flow from precipitation. It is most likely that all three parameters are met. The wetland area is "emergent" with an area of 0.13 acres. The open water is a "water of the U.S." covering 0.15 acres.

947+50

No Right-of-Entry was granted for this site. The NWI map designates this site as PUBFh. The dam of this pond has been breached, but not completely thereby still holding water. From the road, hydrophytic vegetation (Cattails) are visible around the perimeter of the pond. The soil is probably ponded frequently for long duration based on mapped information and is therefore probably hydric. The source of

inundation is overland flow from precipitation. All three parameters are most likely met. The wetland area is “emergent” with an area of 0.04 acres. The open water is a “water of the U.S.” covering 0.01 acres.

960+00

The USGS map showed a pond in this location. However, it is an old pond remnant. The dam has been breached and it no longer holds water. The dominant vegetation in non-hydrophytic trees, shrubs and grasses. No soil sample was taken, but the soils would still have hydric indicators. Only one parameter is met. There are no wetlands nor “waters of the U.S.” at this location.

1003+00

The NWI map designates this pond as PUBGh. The pond also has a poorly drained overflow area that holds water. There is a ring of hydrophytic vegetation (Cattails) around the pond’s perimeter, and hydrophytic vegetation (Water Pepper, Sedge) growing in the overflow area. The soil is ponded and therefore hydric. The source of water for the pond is overland flow from precipitation. The overflow area not only receives water from the pond, but also from a culvert under Route 13. A terrace on its east side and sedimentation at its northern end prevent the overflow area from draining. All three parameters are met. The wetland area is “emergent” with an area of 0.37 acres. The open water is a “water of the U.S.” covering 0.36 acres.

1023+00*

This site is now an entire field of Oats with some Little Bluestem. It is used for hay. The NWI map shows a small area as PEMAd. Dominant vegetation is non-hydrophytic. No wetland hydrology indicators were present. The soil survey indicates that the mapped soil type (Marshall silt loam) has a matrix color of 10YR 2/1 below 6” which indicates that it is hydric soil. Only one parameter is met. There are no wetlands at this site.

CONCLUSIONS (Lafayette County)

The total potential impacts by classification are 2.78 hectares (6.86 acres) of "emergent" wetland which includes "grassed waterway" and "wet pasture", no impacts to "scrub-shrub", 0.04 hectares (0.09 acres) of "forested" wetland, no impacts to "farmed wetlands", and 2.71 hectares (6.70 acres) of "waters of the U.S."

Total potential impacts to wetland classifications and "waters of the U. S." in Lafayette County are summarized in the following table:

**Lafayette County
TOTAL POTENTIAL JURISDICTIONAL WETLAND IMPACTS
By Wetland Classification
in hectares (acres)**

COUNTY	Emergent	Scrub-shrub	Forested	Farmed Wetland	Waters of the U.S.
Lafayette	2.78 (6.86)	0.00	0.04 (0.09)	0.00	2.71 (6.70)

Note: **Emergent** total also includes **Grassed Waterway** and **Wet Pasture** areas.

**Summary Table for Lafayette County
POTENTIAL JURISDICTIONAL WETLAND IMPACTS
for Sites within the Preferred Alternative Corridor
in acres**

-  Agricultural Sites
-  Non-agricultural Sites

SITE NUMBER	Emergent	Scrub-shrub	Forested	Grassed Waterway (emergent)	Wet Pasture (emergent)	Farmed Wetland	Waters of the U. S.
3+00	-	-	-	-	-	-	0.23
27+00	-	-	-	-	-	-	0.12
61+00	-	-	-	0.27	-	-	0.02
72+00	-	-	-	0.16	-	-	-
105+00	-	-	-	-	-	-	0.21
119+50	0.11	-	-	-	-	-	-
129+50	0.36	-	-	-	-	-	0.72
148+50	-	-	-	0.35	-	-	-
220+00	-	-	-	0.02	-	-	-
255+25	-	-	-	-	-	-	-
270+00	-	-	-	0.18	-	-	-
306+50	-	-	-	-	-	-	0.23
314+50	-	-	-	-	1.50	-	-

SITE NUMBER	Emergent	Scrub-shrub	Forested	Grassed Waterway (emergent)	Wet Pasture (emergent)	Farmed Wetland	Waters of the U. S.
322+00	-	-	-	-	1.92	-	-
327+00	0.13	-	-	-	-	-	-
338+00	-	-	-	-	-	-	0.16
342+00	-	-	-	-	-	-	-
398+50	0.03	-	-	-	-	-	0.19
510+00	-	-	-	-	-	-	0.11
515+00	-	-	-	-	-	-	0.07
516+00	0.04	-	-	-	-	-	-
536+00	0.23	-	-	-	-	-	0.33
544+00	-	-	-	-	-	-	0.16
562+00	0.11	-	-	-	-	-	0.26
570+00	0.04	-	-	-	-	-	-
582+00	-	-	-	-	-	-	0.06
606+75	-	-	-	-	-	-	-
608+00	-	-	-	-	-	-	-
686+50	-	-	-	-	-	-	-
689+00	-	-	-	-	-	-	-
693+00	-	-	-	-	-	-	0.16
700+00	-	-	-	-	-	-	0.08
701+00	0.04	-	-	-	-	-	-
710+00	-	-	-	0.30	-	-	-
737+00	-	-	-	-	-	-	-
767+00	0.04	-	-	-	-	-	-
768+00	0.08	-	-	-	-	-	-
770+00	0.12	-	-	-	-	-	0.03
786+00	-	-	-	-	-	-	0.20
804+50	0.10	-	0.05	-	-	-	0.21
806+50	-	-	0.04	-	-	-	0.43
811+00	-	-	-	-	-	-	0.05
841+00	-	-	-	-	-	-	0.10
845+00	-	-	-	-	-	-	0.32
853+00	-	-	-	-	-	-	0.40
854+00	-	-	-	-	0.02	-	-
862+00	0.17	-	-	-	-	-	0.09
883+00	-	-	-	-	-	-	0.72
913+00	-	-	-	-	-	-	0.52
945+00	0.13	-	-	-	-	-	0.15
947+50	0.04	-	-	-	-	-	0.01
960+00	-	-	-	-	-	-	-
1003+00	0.37	-	-	-	-	-	0.36
1023+00	-	-	-	-	-	-	-
TOTAL ACRES	2.14	0.00	0.09	1.28	3.44	0.00	6.70

The following tables and text provide a breakdown of "waters of the U.S." in these five categories:

1. - Ponds With Potential Jurisdictional Wetland Areas
2. - Ponds Without Potential Jurisdictional Wetland Areas
3. - Stream Crossings
4. - Potential Jurisdictional Wetlands
5. - Non-Wetlands

Lafayette County
POTENTIAL JURISDICTIONAL WETLAND IMPACTS
for Sites within the Preferred Alternative Corridor
in acres

 Agricultural Sites

 Non-agricultural Sites

SITE NUMBER	Emergent	Scrub-shrub	Forested	Grassed Waterway (emergent)	Wet Pasture (emergent)	Farmed Wetland	Waters of the U.S.
PONDS WITH POTENTIAL JURISDICTIONAL WETLAND AREAS							
119+50	0.11	-	-	-	-	-	-
129+50	0.36	-	-	-	-	-	0.72
398+50	0.03	-	-	-	-	-	0.19
516+00	0.04	-	-	-	-	-	-
536+00	0.23	-	-	-	-	-	0.33
562+00	0.11	-	-	-	-	-	0.26
570+00	0.04	-	-	-	-	-	-
767+00	0.04	-	-	-	-	-	-
768+00	0.08	-	-	-	-	-	-
770+00	0.12	-	-	-	-	-	0.03
804+50	0.10	-	0.05	-	-	-	0.21
806+50	-	-	0.04	-	-	-	0.43
862+00	0.17	-	-	-	-	-	0.09
945+00	0.13	-	-	-	-	-	0.15
947+50	0.04	-	-	-	-	-	0.01
1003+00	0.37	-	-	-	-	-	0.36
PONDS WITHOUT POTENTIAL JURISDICTIONAL WETLAND AREAS							
3+00	-	-	-	-	-	-	0.23
306+50	-	-	-	-	-	-	0.23
510+00	-	-	-	-	-	-	0.11
515+00	-	-	-	-	-	-	0.07
606+75	-	-	-	-	-	-	-
608+00	-	-	-	-	-	-	-

SITE NUMBER	Emergent	Scrub-shrub	Forested	Grassed Waterway (emergent)	Wet Pasture (emergent)	Farmed Wetland	Waters of the U. S.
811+00	-	-	-	-	-	-	0.05
845+00	-	-	-	-	-	-	0.32
853+00	-	-	-	-	-	-	0.40
960+00	-	-	-	-	-	-	-
STREAM CROSSINGS							
27+00	-	-	-	-	-	-	0.12
105+00	-	-	-	-	-	-	0.21
338+00	-	-	-	-	-	-	0.16
544+00	-	-	-	-	-	-	0.16
582+00	-	-	-	-	-	-	0.06
693+00	-	-	-	-	-	-	0.16
700+00	-	-	-	-	-	-	0.08
737+00	-	-	-	-	-	-	-
786+00	-	-	-	-	-	-	0.20
841+00	-	-	-	-	-	-	0.10
883+00	-	-	-	-	-	-	0.72
913+00	-	-	-	-	-	-	0.52
POTENTIAL JURISDICTIONAL WETLANDS							
61+00	-	-	-	0.27	-	-	0.02
72+00	-	-	-	0.16	-	-	-
148+50	-	-	-	0.35	-	-	-
220+00	-	-	-	0.02	-	-	-
270+00	-	-	-	0.18	-	-	-
314+50	-	-	-	-	1.50	-	-
322+00	-	-	-	-	1.92	-	-
327+00	0.13	-	-	-	-	-	-
701+00	0.04	-	-	-	-	-	-
710+00	-	-	-	0.30	-	-	-
854+00	-	-	-	-	0.02	-	-
NON-WETLANDS							
255+25	-	-	-	-	-	-	-
342+00	-	-	-	-	-	-	-
686+50	-	-	-	-	-	-	-
689+00	-	-	-	-	-	-	-
1023+00	-	-	-	-	-	-	-
TOTAL ACRES	2.14	0.00	0.09	1.28	3.44	0.00	6.70

The Preferred Alternative could impact 23 ponds consisting of 0.80 hectares (1.97 acres) of "emergent" wetland fringe, 0.04 hectares (0.09 acres) of "forested" wetland fringe and 1.69 hectares (4.19 acres) of open water designated as "Waters of the U. S. "

Eleven (11) stream crossings could occur resulting in potential impacts to 1.02 hectares (2.51 acres) of "Waters of the U. S." (i.e. up to the limit of the ordinary high water mark). Streams with a drainage area greater than 3.89 sq. km. (1.5 sq. miles) that could be impacted include Lick Fork, Tabo Creek, Davis Creek and North Blackjack Creek.

Eleven (11) wetland areas could be impacted including 0.07 hectares (0.17 acres) of "emergent" wetland, 0.52 hectares (1.28 acres) of "grassed waterway" and 1.39 hectares (3.44 acres) of "wet pasture".

**Lafayette County
Potential Jurisdictional Wetland Impacts
for the Preferred Alternative
PONDS and STREAMS**

COUNTY	No.	PONDS - hectares (acres)				STREAMS	
		Wetland Fringe			Waters of the U. S. (open water)	No.	Waters of the U. S.
		Emergent	Scrub-shrub	Forested			
Lafayette	23	0.80 (1.97)	0.00 (0.00)	0.04 (0.09)	1.69 (4.19)	11	1.02 (2.51)

**Lafayette County
Potential Jurisdictional Wetland Impacts
for the Preferred Alternative
WETLANDS**

COUNTY	No.	WETLANDS - hectares (acres)					
		Emergent	Scrub-shrub	Forested	Grassed Waterway	Wet Pasture	Farmed Wetland
Lafayette	11	0.07 (0.17)	0.00 (0.00)	0.00 (0.00)	0.52 (1.28)	1.39 (3.44)	0.00 (0.00)

B. Johnson County (WNE = Warrensburg Northeast)

Each site is numbered by station according to its location along the preferred alignment.

The following sites fall under the jurisdiction of the Natural Resources Conservation Service (NRCS):

- 119+50* - (WNE)218+00* - (WNE)224+00* - 660+00* - 770+00*
- 780+00*

56+00

At this location the alignment crosses a tributary of Flagstaff Creek. It is in the floodplain and is shown as an intermittent stream on the USGS map. Woodland areas exist above the banks of the stream. The dominant vegetation above the OHWM is non-hydrophytic. The soil is non-hydric and there are no wetland hydrology indicators above the OHWM. Steep, eroded banks in some places show shale bedrock at the stream bed level. No parameters are met - there are no wetlands above the OHWM. The stream is a "water of the U.S." covering 0.16 acres within the OHWM. The riparian woodland habitat within the R.O.W. covers 0.86 acres.

83+00

No Right-of-Entry was granted for this site. This stream has a very small channel and is shown as an intermittent stream on the USGS map. From the road, the dominant vegetation appears to be non-hydrophytic (Tall Fescue). The surrounding area is fescue pasture. The soil is most likely non-hydric based on the description in the soil survey. There appear to be no wetland hydrology indicators above the OHWM. No water is visible from the road. It is most likely that less than three parameters are met. There are most likely no wetlands above the OHWM. The estimated area of the OHWM in the channel is approximately 0.08 acres within the R.O.W.

86+00

No Right-of-Entry was granted for this site. It is a culvert outflow area that is poorly drained. Water runs through a culvert under Route 13, into this area then into the stream (83+00). However it looks as though the water does not drain well and ponds before it reaches the stream. The dominant vegetation appears to be hydrophytic (Cattails and Black Willow). The soil is ponded and therefore hydric. All three parameters are most likely met. This is an "emergent" wetland area covering an estimated 0.03 acres.

87+00

No Right-of-Entry was granted for this site. From the road the area looks to be either a small depression that catches overland flow, or a depression that receives outflow from a seep on the hillside. Hydrophytic vegetation (Cattails) appears to be the dominant vegetation. The soil is most likely saturated or inundated for long periods, making it hydric. All three parameters are most likely met. This is most likely an "emergent" wetland with an estimated area of approximately 0.05 acres.

106+50

This is a small tributary of Flagstaff Creek and is shown as intermittent on the USGS map. It has steep eroded banks and runs through a wooded area that exists above its banks. The dominant vegetation above the OHWM is non-hydrophytic woodland. The soil is non-hydric and no wetland hydrology indicators are present above the OHWM. No parameters are met - there are no wetlands at this site. The stream is a "water of the U.S." covering 0.12 acres within the OHWM. The area of riparian woodland habitat is 1.98 acres.

111+00

This is a pond that is designated as PUBFh on the NWI map. It is surrounded by pasture on the west, south and southeast, and by woodland on the north and northeast. The dominant vegetation around its perimeter at the water's edge is hydrophytic with a mixture of trees, shrubs and herbaceous vegetation. The herbaceous vegetation (Cattails, Prairie Cordgrass) is the dominant layer. The soil is ponded and therefore hydric. The source of water is overland flow from precipitation. All three parameters are met. The "emergent" wetland area is 0.04 acres. The open water is a "water of the U.S." and covers 0.15 acres.

116+00

This is a very small pond surrounded by upland trees. It is very shallow, currently holding only 12" of water at the most. The dominant vegetation around the perimeter is hydrophytic, containing trees, shrubs and herbaceous plants. The herbaceous layer (Cattails, Water Star Grass) covers the most area. The soil is ponded and therefore hydric. The source of inundation is overland flow from precipitation. All three parameters are met. The entire pond area, 0.03 acres, is considered "emergent" wetland since it is likely that all of it will be vegetated further in the growing season.

119+50*

This is an area of mostly herbaceous vegetation in a pasture that is grazed by horses. It is a gently sloping, wide swale that receives most of its water from a seep on the hillside at the southeast end. Other sources of water come from overland flow and a culvert under Route 13 to the west. The soil is hydric and saturated, with some areas holding 1" to 2" of surface water. The dominant vegetation is hydrophytic, consisting of a mix of trees, shrubs and herbaceous plants. The majority of areal cover is herbaceous (Smartweed, Sedge). The existence of these plants determined the boundary of the area. All three parameters are met. This is a "wet pasture" covering 0.60 acres.

135+00

No Right-of-Entry was granted for this site. It is shown as the head of an intermittent stream on the USGS map. It runs through a wooded area and is currently dry with a very narrow channel. From the road, the dominant vegetation above the OHWM appeared to be non-hydrophytic woodland. The soil is most likely non-hydric based on the description in the soil survey. Based on visual observation and characteristics of other similar streams in the area, there are most likely no wetland hydrology indicators above the OHWM. It is most likely that no parameters are met. This stream is a "water of the U.S." with an area of 0.03 acres within the OHWM. The riparian woodland habitat covers 0.46 acres within the R.O.W.

150+50

This pond is designated as PUBGh on the NWI map. The majority of this pond contains herbaceous vegetation with very little open water. The dominant vegetation is hydrophytic including Typha, Polygonum, Lemna, Sagittaria. Trees and shrubs are also present near the dam, but the herbaceous layer covers the most area. The surrounding area is hay pasture. The soil is ponded and therefore hydric. The source of inundation is overland flow from precipitation. All three parameters are met. The wetland "emergent" area covers 0.41 acres. The open water is a "water of the U.S." and covers 0.02 acres.

152+25

This pond is a very small depression that is an old inactive sewage lagoon. It is completely vegetated. The dominant vegetation is hydrophytic, the majority of which is herbaceous (Leersia, Sagittaria, Polygonum, Scirpus). The soil is ponded and therefore hydric. The source of inundation is overland flow from precipitation. All three parameters are met. This pond is an "emergent" wetland covering 0.08 acres.

159+00

This is a stock pond with small, but steep livestock trampled banks. A very small band of hydrophytic herbaceous vegetation exists around its perimeter (Polygonum, Cyperus). The surrounding area is grazed pasture. The soil is ponded and therefore hydric. The source of inundation is overland flow from precipitation. All three parameters are met. The wetland band is "emergent" with an area of 0.01 acres. The open water is a "water of the U.S." with an area of 0.18 acres.

180+00

At this location the alignment crosses Blackjack Creek. It is in the 100 year floodplain and is designated as PFO1Ch on the NWI map. It also crosses a tributary of the Creek. It, too, is in the floodplain and is shown as an intermittent stream on the USGS map. Woodland areas exist above the steep banks of the streams. The dominant vegetation above the OHWM is non-hydrophytic woodland. The soils are very sandy with no organics and are therefore non-hydric. The mapped soil is on the hydric soils lists but it is unconfirmed. No wetland hydrology indicators are present above the OHWM - there are no indications of frequent or recent flooding. No parameters are met. There are no wetlands above the OHWM. The streams are "waters of the U.S." and cover 0.40 acres. The riparian woodland habitat covers 9.2 acres within the R.O.W.

200+00

This is a drainageway/stream with a discernible channel flowing to a pond. Both the drainageway and the pond have steep banks. The drainageway is currently dry, but a finger of the pond holding water is in the R.O.W. Wooded areas exist around the pond and drainageway. Trees at the edge of the pond and in the water are dead. Above the OHWM of the drainageway and the pond the vegetation is non-hydrophytic woodland. There is no hydrophytic vegetation at the pond edge. The soils at the pond edge are hydric because of ponding. The source of water is overland flow and inflow from a culvert. There are no wetland hydrology indicators above the OHWM of the drainageway or the pond. Not all parameters are met. There are no wetlands at the pond or above the OHWM of the drainageway. The open water and drainageway are "waters of the U.S." and cover 0.06 acres. The riparian woodland habitat covers 2.12 acres.

203+00

This pond is a remnant of an old sewage lagoon which is now inactive and currently dry. It was a dry spring season, but normal rainfall would likely fill this pond. The vegetation that exists is around the perimeter of the pond. The dominant vegetation is hydrophytic with a mix of trees and shrubs (Willows), and herbaceous plants (Sedge) - half of the area around the edge is herbaceous and the other half is trees and shrubs. The soil is ponded and therefore hydric. The source of inundation with normal precipitation is overland flow. All three parameters would be met under normal circumstances. The "emergent" wetland area is 0.01 acres. The "scrub-shrub" wetland area is 0.01 acres. The normal open water area is 0.02 acres.

217+00

This stream is shown on the USGS map as intermittent. Most of it is currently dry, it is somewhat narrow and its banks are very steep. It runs through a wooded area, the vegetation of which is non-hydrophytic above the OHWM. The soils, according to the soil survey, are non-hydric (no sample was taken). There are no wetland hydrology indicators above the OHWM. No parameters are met. There are no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.08 acres. The riparian woodland habitat covers an area of 6.35 acres within the R.O.W.

272+00

This stream is shown on the USGS map as intermittent. Its banks are steep and eroded, and it currently has very little water present. It runs through a wooded area, the vegetation of which is non-hydrophytic above the OHWM. The soils, according to the soil survey, are non-hydric (no sample was taken). There are no wetland hydrology indicators above the OHWM. Outflow from a culvert under Route 13 runs into this stream, however there is no flowing water until approximately 500' downstream. No parameters are met. There are no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.17 acres. The riparian woodland habitat covers an area of 7.30 acres.

(WNE)118+00

No Right-of-Entry was granted for this site. It was not visible from the road. The USGS map shows this as an intermittent stream. The NWI map shows an area on the stream as PUBGh, however there are no signs of impoundment on the aerial photo. The aerial photo shows a small wooded area on each side of the stream. The dominant vegetation above the OHWM is most likely non-hydrophytic based on characteristics of similar streams in the area. The surrounding area is pasture. The soil could be hydric according to the description in the soil survey which shows the mapped type as a silty clay loam having a matrix color of 10YR 2/1 in the upper part. There are most likely no wetland hydrology indicators above the OHWM based on characteristics of similar streams in the area. It is unlikely that all three parameters are met. There are most likely no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.08 acres. The riparian woodland habitat covers 0.80 acres within the R.O.W.

(WNE)119+00

No Right-of-Entry was granted for this site. The NWI map shows an area as PUBGh, however the recent aerial photo shows a farmstead here but no signs of an impounded area.

(WNE)129+00

The NWI map indicates a PUBFh area at this site, however no impoundment was found at this location, only a garden.

(WNE)130+00

The NWI map indicates a PUBFh area at this site, however no impoundment was found at this location, only a stand of pines.

(WNE)132+00

No Right-of-Entry was granted for this site. The NWI designates this site as PUBGh. It is a pond with an herbaceous vegetation ring around the western half of it. From the fence, the dominant vegetation appears to be hydrophytic (Polygonum, Carex). Trees and shrubs exist on the upland part of the dam, above the area of wetland hydrology. The soil is ponded and therefore hydric. The source of inundation is overland flow from precipitation. All three parameters are met. The "emergent" wetland area covers an estimated 0.04 acres. The open water is a "water of the U.S." with an estimated area of 0.36 acres.

(WNE)133+00

This site is shown as an intermittent stream on the USGS map and as a PFO1Ah area on the NWI map. A dam was constructed upstream (to the north) and very little water flows in the poorly defined, narrow channel. The stream runs through a wooded area, the vegetation of which is non-hydrophytic above the OHWM. The surrounding area is pasture. The soil is hydric, but there are no wetland hydrology indicators above the OHWM. Only one parameter is met. There are no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.01 acres. The riparian woodland habitat covers 0.35 acres.

(WNE)135+00

This site is the draw down area of a large pond that is designated as PUBGh on the NWI map. The vegetation in this area is a mix of trees (*Salix*, *Ulmus americana*), shrubs (*Rosa*, *Symphoricarpos*) and herbaceous plants (*Polygonum*, *Eleocharis*, *Carex*, *Ambrosia*). The dominant vegetation is hydrophytic and the herbaceous layer provides the majority of areal coverage. The surrounding area is grazed pasture. The soils are ponded and therefore hydric. The source of inundation is overland flow and swale inflow from precipitation. The surface water in the draw down area ranges from 0-6". All three parameters are met. The "emergent" wetland area is 0.39 acres. The open water is a "water of the U.S." and covers 0.33 acres.

(WNE)182+50

No Right-of-Entry was granted for this site. It is a pond with an edge that is defined by shallow, vertical banks. The NWI map designates it as PUBGh. From the fence, a 3' band of vegetation around the perimeter appears to be hydrophytic herbaceous. The surrounding area is grazed pasture. The soils are ponded and therefore hydric. The source of inundation is overland flow from precipitation. It is most likely that all three parameters are met. The "emergent" wetland area is an estimated 0.02 acres. The open water is a "water of the U.S." with an area of 0.16 acres.

(WNE)185+00

No Right-of-Entry was granted for this site. The NWI map designates this site as PUBGh. It is a pond with a band of hydrophytic herbaceous vegetation (*Polygonum* and *Eleocharis* are visible from the fence) around its perimeter, with a more extensive area in the draw down. The surrounding area is grazed pasture, but this pond is fenced. The soil is ponded and therefore hydric. The source of inundation is overland flow from precipitation. It is most likely that all three parameters are met. The "emergent" wetland area is an estimated 0.31 acres. The open water is a "water of the U.S." with an area of 0.50 acres.

(WNE)207+00

This is a very small ponded area adjacent to a field terrace. It is currently dry. The area is almost bare except for some *Polygonum* that is beginning to grow, thereby making the dominant vegetation hydrophytic. The soil is hydric and the absence of upland plants (neither dead nor alive) in the depression indicates that this small area was previously inundated. The source of inundation is from overland flow under normal circumstances. All three parameters are met under normal circumstances. The "emergent" wetland area is 0.01 acres.

(WNE)209+00

This is a small pond designated as PUBFh on the NWI map. The band of vegetation around the perimeter of the pond is hydrophytic and variable in width. The vast majority of hydrophytic vegetation is in the herbaceous layer (*Typha*, *Polygonum*, *Carex*). The soil is ponded and therefore hydric. The source of inundation is overland flow from precipitation. All three parameters are met. The "emergent" wetland area is 0.05 acres. The open water is a "water of the U.S." with an area of 0.05 acres.

(WNE)211+50

This is a small pond that was probably an old sewage lagoon from the old farmstead that was previously on this property. It is now inactive. The dominant vegetation, which covers the entire pond area, is hydrophytic. There are a few trees (Willows), but the majority of vegetation is in the herbaceous layer (Cattails, Spike Rush, Water Pepper). The soils are ponded and therefore hydric. The source of inundation is overland flow from precipitation. All three parameters are met. The "emergent" wetland area covers 0.06 acres. There is no open water.

(WNE)218+00*

This is a very small site designated as a "farmed wetland" (fw) by the NRCS and as a PEMAd area on the NWI map. It is an atypical situation - it was converted to agriculture and is currently a crop of corn in the floodplain. No hydrophytic vegetation currently exists, however this particular poorly drained area could have supported hydrophytic vegetation before it was converted. The soil in this particular area is hydric and is slightly moist, however the surrounding soil is dryer. There are no wetland hydrology indicators currently present, however it is a flat area that may hold water long enough during rainy seasons to possess wetland hydrology (the corn crop is stunted in this particular area). Before being converted to agriculture, all three parameters could have been met. This area is a "farmed wetland" with an area of 0.09 acres within the R.O.W.

(WNE)224+00*

This is a site designated as a "farmed wetland" (fw) by the NRCS. It is an atypical situation - it was converted to agriculture and is currently a crop of corn in the floodplain. No hydrophytic vegetation currently exists, however this particular poorly drained area could have supported hydrophytic vegetation before it was converted. The soil in this particular area is hydric and is slightly moist, however the surrounding soil is dryer. There are no wetland hydrology indicators currently present, however it is a flat area that may hold water long enough during rainy seasons to possess wetland hydrology (the corn crop is stunted in this particular area). Before being converted to agriculture, all three parameters could have been met. This area is a "farmed wetland" with an area of 2.15 acres within the R.O.W.

(WNE)230+00

This stream is shown on the USGS map as intermittent. The NRCS designates this area as a "wooded wetland" (ww). The stream is in the 100 year floodplain and is characterized by very steep, sharply incised channel banks. There is also some slumping and minimal terracing. It runs through a wooded area having hydrophytic vegetation above the OHWM of the stream. The mapped soil type is Zook Silty Clay Loam which is on the hydric soils lists, however the mapped type is unconfirmed and the soil samples indicated that the soil is non-hydric above the OHWM. There are no wetland hydrology indicators above the OHWM. Only one parameter is met. There are no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.12 acres. The riparian woodland habitat covers an area of 1.36 acres within the R.O.W.

(WNE)243+00

At this location the alignment crosses the Blackwater River which is in the 100 year floodplain. It has steep vegetated banks, a drainage area greater than 1.5 square miles and a flow greater than 5 cfs. The NWI designation is R2UBG (lower perennial), and the NRCS designates this area as "wooded wetland" (ww). Woodland exists on each side of the River. The dominant woodland vegetation above the OHWM is hydrophytic (FAC and FACW, but no OBL) on each side. The mapped soil type (Dockery Silty Clay Loam) at this location is on the hydric soils lists based on inclusions of Zook Silty Clay Loam. However, the soil samples only confirmed the presence of Dockery soil which is non-hydric, and did not confirm the presence of Zook soil which is hydric. There were no wetland hydrology indicators above the OHWM on either side of the river. Only one parameter is met. The river is a "water of the U.S." with an area of 0.80 acres at the OHWM. The riparian woodland habitat covers 1.12 acres within the R.O.W.

(WNE)245+00

This is a small area within the woodland above the Blackwater River on the southeast side. The NWI designation is PFO1A and the NRCS designation is "wooded wetland" (ww). It is a flat poorly drained area in the floodplain containing hydrophytic vegetation including trees, saplings and a minimal amount

of herbaceous plants. It is a potential problem area because it is currently dry. The soils are hydric and the texture in the upper 10" is clay. There are very shallow water marks on the trees, indicating periodic inundation. After a rain the water would tend to permeate very slowly. The tree canopy shades the area, thus reducing the evaporation rate. The ground is mostly bare except for scattered herbaceous plants and leaf litter. This area was experiencing a recent dry period. Under normal circumstances spring rains would probably inundate or saturate this area. The boundary of this area was located where the bare area terminated. The other side of this line had a dominance of non-hydrophytic vegetation and non-hydric soils. All three parameters are met in this area. It is a "forested" wetland with an area of 0.16 acres.

(WNE)246+00

This area is the woodland above the banks of the Blackwater River on the southeast side. The NWI designation is PFO1A and the NRCS designation is "wooded wetland" (ww). It is in the 100 year floodplain and somewhat flat, but moderately well drained. The dominant woodland vegetation is non-hydric. The soils are hydric in the upper 8" only. There are no wetland hydrology indicators present. Only one parameter is met. This is not a wetland but a riparian woodland habitat which covers 4.26 acres within the R.O.W.

(WNE)250+00

This is an old channel of the Blackwater River before channelization occurred. It is in the 100 year floodplain and shown as an intermittent stream on the USGS map and designated as PFO1A on the NWI map. The NRCS designates this area as a "wooded wetland" (ww). Woodland exists on each side of the stream, the dominant vegetation of which is non-hydrophytic. The mapped soil type (Dockery Silty Clay Loam) at this location is on the hydric soils lists based on inclusions of Zook Silty Clay Loam. However, the soil samples only confirmed the presence of Dockery soil which is non-hydric, and did not confirm the presence of Zook soil which is hydric. There are no wetland hydrology indicators above the OHWM. No parameters are met. There are no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.41 acres. The riparian woodland habitat covers 3.08 acres within the R.O.W.

524+00

This pond is almost entirely vegetated. The NWI map designates this pond as PUBGh. The dominant vegetation is hydrophytic herbaceous plants (Cattails, Duckweed, Smartweed). The surrounding area is grazed pasture. The soil is ponded and therefore hydric. The source of inundation is overland flow from precipitation. All three parameters are met. The "emergent" wetland area covers 0.23 acres. There is no significant open water.

541+00

No Right-of Entry was granted for this site. The USGS map shows this as an intermittent stream. The aerial photo shows some woodland on each side of the stream. Based on characteristics of similar streams in the area the dominant vegetation above the OHWM is most likely non-hydrophytic. The soil survey description indicates that the mapped soil at this location is non-hydric. There are most likely no wetland hydrology indicators above the OHWM based on characteristics of similar streams in the area. It is most likely that all three parameters are not met. There are most likely no wetlands above the OHWM. The stream is a "water of the U.S." with an estimated area of 0.34 acres. The riparian woodland habitat is an estimated 4.53 acres within the R.O.W.

601+00

This is a low area below the dam of a pond (site 601+50). This area and its surroundings are in a past strip mine field. It was mined quite some time ago as the area is now revegetated and is currently a woodland. This low area, however, contains predominantly herbaceous hydrophytic vegetation that

provides the majority of areal coverage. The soils are hydric and the area is saturated in top one inch. The source of water is seepage from the dam. All three parameters are met. This area is an "emergent" wetland covering 0.07 acres.

601+50

This pond is shown as PUBGh on the NWI map. It is a stock pond in a previously strip mined area. The banks are very steep and almost vertical in some places. The steep banks at the water's edge minimize vegetative growth. The dominant vegetation that exists around the pond is non-hydrophytic trees, shrubs and herbaceous plants. The soils are ponded and therefore hydric. The source of inundation is overland flow from precipitation. Only two parameters are met. There are no wetlands, but this is a "water of the U.S." with an area of 0.38 acres.

613+00

This stream is shown on the USGS map as intermittent and is in the 100 year floodplain. At this location it is the confluence of two tributaries and a narrow band of woodland borders each side of the streams. At the eastern edge of the proposed R.O.W. the NWI map shows a small area as PEMC. The dominant vegetation above the OHWM is non-hydrophytic woodland. The soil is hydric, but there are no wetland hydrology indicators above the OHWM. Only one parameter is met. There are no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.31 acres within the OHWM. The riparian woodland habitat covers 0.70 acres within the R.O.W.

622+00

This pond is designated as PUBGh on the NWI map. It is used as a stock pond and has a vegetated edge around the southern half of the pond, the majority of which is in the draw down area. This herbaceous vegetation is hydrophytic containing Polygonum, Scirpus, and Echinochloa. The surrounding area is grazed pasture to the south, east and west, and woodland to the north. The trees at the south end of the pond are in the upland. The soil is ponded and therefore hydric. The source of inundation is overland flow from precipitation. All three parameters are met. The "emergent" wetland area covers 0.21 acres. The open water is a "water of the U.S." and covers 0.76 acres.

625+50

No Right-of-Entry was granted for this site. The NWI designates this pond as PUBGh and the aerial photo shows inundation. There is most likely a ring of hydrophytic herbaceous vegetation around the perimeter of the pond based on characteristics of similar ponds in the area. The soil is probably ponded frequently for long duration based on mapped information and therefore probably hydric. The source of inundation is most likely overland flow from precipitation. All three parameters are most likely met. The estimated "emergent" wetland area is approximately 0.02 acres. The open water is a "water of the U.S." with an estimated area of approximately 0.08 acres.

626+00

This pond is designated as PUBGh on the NWI map. It is a stock pond with a narrow band of vegetation around two-thirds of its perimeter. This vegetative ring is hydrophytic (Smartweed, Bulrush, Cottonwood) and predominantly herbaceous. The soil is ponded and therefore hydric. The source of inundation is overland flow from precipitation. All three parameters are met. The "emergent" wetland covers 0.02 acres. The open water is a "water of the U.S." and covers 0.56 acres.

630+50

This pond is designated as PUBGh on the NWI map. It is a circular pond almost completely surrounded by dam structure except at the inflow area. Hydrophytic vegetation exists around the perimeter of the

pond (Cattails, Bulrush and Willow), the majority of which is the herbaceous layer. The surrounding area is grazed pasture, and scattered trees surround the pond in the upland area. The soil is ponded and therefore hydric. The source of inundation is overland and swale flow from precipitation. The pond has no natural outflow area, but there is a pump and electric outlet that may be used to discharge water. All three parameters are met. The “emergent” wetland area is 0.05 acres. The open water is a “water of the U.S.” with an area of 0.09 acres.

632+00

The NWI map designates this area as PUBGh. It is a remnant of an old pond whose dam has been breached, however it looks as though it still holds some water under normal circumstances (it has recently been a dry spring). It is a potential problem area because there is currently no surface water or saturation. Hydrophytic vegetation (Reed Canary Grass) is dominant in the lowest area where the water would collect. Little Bluestem is growing in the area above the Reed Canary Grass (upland/non-wetland). The soil is hydric and the source of water is normally overland flow from precipitation. All three parameters would be met under normal rainfall conditions. The “emergent” wetland area is 0.04 acres.

639+00

This stream is shown on the USGS map as intermittent and is in the 100 year floodplain. It has a very narrow (2') channel that is currently dry. It is bordered on each side with scattered trees and shrubs. The dominant vegetation above the OHWM is non-hydrophytic. The surrounding area is grazed pasture. No soil sample was taken, however the soil survey mapped type (Sampsel Silty Clay Loam) is a non-hydric mollisol. There are no wetland hydrology indicators above the OHWM. All three parameters are not met. There are no wetlands above the OHWM. The stream is a “water of the U.S.” with an area of 0.30 acres within the OHWM. The riparian woodland habitat covers 1.59 acres within the R.O.W.

651+50

This stream is shown on the USGS map as intermittent and is in the 100 year floodplain. The east half of this stream in the R.O.W. is designated by the NRCS as “wooded wetland” (ww). It has steep banks with a narrow (5') channel that is currently dry. It is bordered on each side with scattered trees and shrubs. The dominant vegetation above the OHWM is non-hydrophytic. The surrounding area outside the trees is pasture to the north and cultivated crop to the south. The soil is hydric, but there are no wetland hydrology indicators above the OHWM. Only one parameter is met. There are no wetlands above the OHWM. The stream is a “water of the U.S.” with an area of 0.20 acres within the OHWM. The riparian woodland habitat covers 0.52 acres within the R.O.W.

658+00

At this location the alignment crosses Bear Creek which is a lower perennial stream that is designated as R2UBG on the NWI map and is in the 100 year floodplain. It has steep eroded banks and is wooded on each side. The NRCS designates the wooded area as a “wooded wetland” (ww) and the NWI map designates this same area as PFO1A. The dominant vegetation above the OHWM is non-hydrophytic. The surrounding area outside the woodland is cultivated cropland. No soil sample was taken, but the soil survey shows the mapped type as Nodaway Silt Loam which is on the hydric soil lists based on inclusions. Visual observations determined that the soil was non-hydric and very sandy as sloughing occurred regularly along the banks. There are no wetland hydrology indicators above the OHWM. No parameters are met, therefore there are no wetlands above the OHWM. The stream is a “water of the U.S.” with an area of 0.48 acres within the OHWM. The riparian woodland habitat covers 1.43 acres within the R.O.W.

660+00*

No Right-of-Entry was granted for this site. It is in a low, flat poorly drained area in the 100 year floodplain. The NRCS designation for this area is "wet pasture" (wp). The aerial photo shows what is most likely herbaceous vegetation that is most likely hydrophytic. The soil survey shows the mapped soil type at this location as Blackoar Silt Loam which is on the hydric soils lists. It is assumed the NRCS found indications of wetland hydrology at this site (low, flat poorly drained area in the floodplain). It is most likely that all three parameters are met. The "wet pasture" area covers an estimated 2.41 acres within the R.O.W.

662+00

No Right-of-Entry was granted for this site. The NRCS designates this area as a "wooded wetland" (ww). It is a low, flat poorly drained area in the 100 year floodplain - probably the ditches of the railroad embankment. The ditches would most likely hold water or become saturated at least during the rainy season. The aerial photo shows tree cover on each side of the railroad tracks, and it is most likely that this vegetation is hydrophytic. The soil survey shows the mapped soil type at this location as Blackoar Silt Loam which is on the hydric soils lists. It is most likely that all three parameters are met. This area is likely to be classified as a "forested" wetland with an estimated area of approximately 0.80 acres.

666+50

No Right-of-Entry was granted for this site. The USGS map shows a marsh/swamp in this area. The NRCS designates it as a "wet pasture" (wp) and the NWI map designates it as PEMC. The aerial photo shows pasture or some type of herbaceous vegetation. This is a low, flat poorly drained area in the 100 year floodplain. It is most likely that wetland hydrology indicators are present. The soil survey shows the mapped soil type at this location as Blackoar Silt Loam and Zook Silty Clay Loam, both of which are on the hydric soils lists. All three parameters are most likely to be met. The area is most likely an "emergent" wetland with an estimated area of 3.62 acres within the R.O.W.

680+00

No Right-of-Entry was granted for this site. The USGS map shows this stream as intermittent. From the road it looks to have very steep banks and only shallow standing water. A narrow band of woodland vegetation borders each side of the stream. The owner on the south side of Montserrat Road said that this tributary flows over Montserrat Road about 3 times a year. However, he said the water comes up quickly, but goes down just as quickly also. If water gets above the OHWM it doesn't stay there long enough to support hydrophytic vegetation. From the road, hydrophytic vegetation is not apparently visible - mostly upland plants. Other streams in this area with similar character have non-hydrophytic vegetation above the OHWM. The soil survey shows the mapped soil type at this location as Zook Silty Clay Loam which is on the hydric soils lists. It is likely that not all three parameters are met. There are most likely no wetlands above the OHWM. The stream is a "water of the U.S." with an estimated area of 0.21 acres at the OHWM. The riparian woodland habitat area is estimated to be approximately 0.48 acres within the R.O.W.

684+00

The NWI map designates this pond as PUBGh. It is used as a stock pond and has a small band of hydrophytic herbaceous vegetation (Callitriche) at the north end. There were no signs of vegetation around the remainder of the pond. The surrounding area is grazed pasture. The soil is ponded and therefore hydric. The source of inundation is overland flow from precipitation. All three parameters are met only at the north end. The "emergent" wetland at this location covers 0.06 acres. The open water is a "water of the U.S." with an area of 1.87 acres.

685+00

This site contains a ponded area and an adjacent intermittent stream as shown on the USGS map. The ponded area is a potential problem area because it is currently dry (it has been a dry spring). It is a low depression that collects water during rains or when the stream floods. The owner stated that the stream floods about 3 times a year. Although the water rises quickly and recedes quickly, the depression holds that water long enough to support hydrophytic vegetation. There are two Black Willows in the depression and some dead vegetation at the edge and in the overflow area that appear to be Sedges of the genus *Cyperus*. The soils are hydric and the source of inundation is from flooding and overland flow from precipitation. Under normal circumstances all three parameters are met. This depression area contains an "emergent" wetland with an area of 0.02 acres. The area that would normally be open water ("water of the U.S.") covers 0.09 acres.

The small intermittent stream that runs adjacent to the depression is narrow with steep banks. It is in the 100 year floodplain but is currently dry. The dominant vegetation above the OHWM is non-hydrophytic (Tall Fescue). No soil sample was taken near the stream, however the soil survey shows the mapped type as Sampsel Silty Clay Loam which has a matrix color of 10YR 2/1, indicating hydric soil. There are no wetland hydrology indicators above the OHWM. Only one parameter is met. There are no other wetlands above the OHWM except for the depression previously discussed. The stream is a "water of the U.S." with an area of 0.06 acres within the OHWM.

701+00

This intermittent stream is shallow, very narrow and currently dry. Scattered trees and shrubs form a narrow band on each side of the stream. The dominant vegetation is non-hydrophytic. The soil survey mapped soil is a non-hydric mollisol. There are no wetland hydrology indicators above the OHWM. No parameters are met. There are no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.04 acres within the OHWM. The riparian woodland habitat covers 0.24 acres within the R.O.W.

731+00

This stream is shown as intermittent on the USGS map. It has steep eroded banks with trees and shrubs lining each side of the stream above the banks. The dominant vegetation is non-hydrophytic (mostly Osage Orange). The soils are non-hydric in the upper 10 inches. There are no wetland hydrology indicators above the OHWM. No parameters are met. There are no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.45 acres within the OHWM. The riparian woodland habitat covers 1.09 acres within the R.O.W.

741+50

No Right-of-Entry was granted for this site. This is a stream that is shown as intermittent on the USGS map. It is barely distinguishable on the aerial photo. Based on characteristics of other similar streams in the area the dominant vegetation is most likely non-hydrophytic. The aerial photo shows only pasture - no trees visible. The soil is most likely non-hydrophytic based on the description of the mapped type in the soil survey. It is most likely that there are no wetland hydrology indicators above the OHWM based on characteristics of similar streams in the area. It is most likely that no parameters are met and therefore no wetlands above the OHWM. The stream is a "water of the U.S." covering an estimated area of 0.04 acres at the OHWM.

749+00

This pond is designated on the NWI map as PUBGh. It is very flat around the edges giving it a somewhat large area of hydrophytic herbaceous vegetation (Polygonum, Eleocharis, Callitriche) at its perimeter. The soil is ponded and therefore hydric. The source of inundation is overland flow and swale flow from precipitation. All three parameters are met. The "emergent" wetland area covers 0.50 acres. The open water is a "water of the U.S." covering 0.35 acres.

755+00

This pond is designated on the NWI map as PUBGh. It is surrounded by extensive areas of Black Willow trees. Other areas around the pond's perimeter consist of mostly herbaceous vegetation (Polygonum and Eleocharis). The dominant vegetation around the pond is hydrophytic, and the surrounding area is pasture (non-hydrophytic). The water level is currently low because of the dry spring season, however the hydrophytic vegetation stops abruptly where the high water mark can be seen. The soil is ponded and therefore hydric. The source of inundation is overland flow and swale flow from precipitation. All three parameters are met. The "emergent" wetland area covers 0.81 acres and the "forested" wetland area covers 0.48 acres. The open water is a "water of the U.S." and covers 0.74 acres

770+00*

This area is now cultivated crop land (corn). The NWI map designates this area as PEMA. There is currently not an NRCS wetland designation for this area. Hydrophytic vegetation may or may not have been present before alteration occurred. The existing vegetation was removed and the area was regraded to alter the hydrology. The mapped soil type in this area (Blackoak Silt Loam) is on the hydric soils lists but soil samples did not confirm it. The samples indicated non-hydric soil in the upper 10 inches. There are no wetland hydrology indicators present. This area is in the 100 year floodplain, however there are no indications of frequent or recent flooding. All three parameters are not met and were probably not met before alteration occurred. This is not a wetland.

778+50

At this location the alignment crosses East Bear Creek which is a lower perennial stream designated as R2UBG on the NWI map. It is in the 100 year floodplain and has a drainage area greater than 1.5 square miles. The NRCS previously designated this area as "wooded wetland" but that agency has since changed it to "non-wetland" status. Trees, shrubs/saplings and herbaceous plants line each side of the stream. The vegetation above the OHWM is hydrophytic, none of which are obligate plants (Black Willows are growing below the OHWM). The mapped soil type is on the hydric soils lists based on inclusions, however the soil sample did not confirm the mapped type but indicated non-hydric soil. Some slumping of soil is occurring, forming slight terraces 4'-6' above the current water level. There are no wetland hydrology indicators above the OHWM. Only one parameter is met. There are no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.23 acres within the OHWM. The riparian woodland habitat covers 0.55 acres within the R.O.W.

780+00*

This area is now cultivated crop land (corn). The NWI map designates this area as PEMA. The NRCS designation was previously a "wooded wetland", but that agency has since changed it to a "non-wetland" status. Hydrophytic vegetation may or may not have been present before alteration occurred. The existing vegetation was removed and the area was regraded to alter the hydrology. The mapped soil type in this area (Freeburg Silt Loam) is on the hydric soils lists based on inclusions, but soil samples did not confirm it. The samples indicated non-hydric soil in the upper 12 inches. There are no wetland hydrology indicators present. This area is in the 100 year floodplain, however there are no indications of frequent or recent flooding. All three parameters are not met and were probably not met before alteration occurred. This is not a wetland.

785+00

At this location the alignment crosses East Bear Creek, which is a lower perennial stream with a drainage area greater than 1.5 square miles, and designated as R2UBG on the NWI map. In this same area it also crosses a tributary of East Bear Creek which is shown as an intermittent stream on the USGS map. Both streams are in the 100 year floodplain and have very steep eroded banks. They are located in a wooded area designated as PFO1A on the NWI map, and as "wooded wetland" (ww) by the NRCS. The dominant vegetation above the OHWM is non-hydrophytic woodland. The soils are hydric, but there are no wetland hydrology indicators above the OHWM. Only one parameter is met. There are no wetlands above the OHWM. East Bear Creek and its intermittent tributary are both "waters of the U.S." covering an area of 1.15 acres within the OHWM. The riparian woodland habitat covers an area of 3.27 acres within the R.O.W.

791+00

This area is designated as PEMA on the NWI map. It is a drainageway or shallow swale in a flat area in the 100 year floodplain adjacent to the stream at site 795+00. The swale contains hydrophytic vegetation (Polygonum, Cyperus) and the surrounding area is Tall Fescue, mowed and used for hay. The soil in the swale is hydric and the hydrology indicator is the drainage pattern. The swale is poorly drained as water would tend to sit in this area after rains. All three parameters are met. The "emergent" wetland covers an area of 0.01 acres.

795+00

This stream is shown on the USGS map as intermittent. Most of the stream has steep eroded banks with a narrow band of tree cover on each side. The dominant vegetation above the OHWM is non-hydrophytic. Some of the plants below the OHWM include Black Willow, Sycamore, Smartweed, Chufa, Flatsedge, American Elm and Barnyard Grass. The surrounding area is mowed pasture. The soil is non-hydric and there are no wetland hydrology indicators above the OHWM. No parameters are met. There are no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.76 acres within the OHWM. The riparian woodland habitat covers an area of 0.30 acres with the R.O.W.

807+00

This pond is designated on the NWI map as PUBGh. It is a stock pond surrounded by grazed pasture. There is a small band of hydrophytic herbaceous vegetation (Polygonum, Echinochloa) halfway around its perimeter on the south and west sides. The north and east sides have vertical banks which are sparsely vegetated. The soil is ponded and therefore hydric. The source of inundation is overland flow from precipitation. All three parameters are met. The "emergent" wetland area covers 0.01 acres and the open water is a "water of the U.S." and covers 0.15 acres.

810+00

This stream is shown on the USGS map as intermittent. Most of the stream has steep eroded banks with a narrow band of tree cover on each side. The dominant vegetation above the OHWM is non-hydrophytic. The surrounding area is grazed pasture. The soil is non-hydric and there are no wetland hydrology indicators above the OHWM. No parameters are met. There are no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.62 acres within the OHWM. The riparian woodland habitat covers an area of 0.62 acres with the R.O.W.

818+00

This pond is designated on the NWI map as PUBGh. It is a stock pond surrounded by grazed pasture. Much of the perimeter of the pond is hydrophytic herbaceous vegetation (Typha, Eleocharis, Potamogeton, Cyperus) including some Black Willow trees along the dam. The soil is ponded and therefore hydric. The source of inundation is overland flow from precipitation. All three parameters are met. The "emergent" wetland area covers 0.08 acres and the open water is a "water of the U.S." and covers 0.30 acres.

827+00

This stream is shown on the USGS map as intermittent. Most of the stream has steep eroded banks with a narrow band of tree cover on each side. The dominant vegetation above the OHWM is non-hydrophytic. The surrounding area is grazed pasture. The soil is non-hydric and there are no wetland hydrology indicators above the OHWM. No parameters are met. There are no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.56 acres within the OHWM. The riparian woodland habitat covers an area of 1.12 acres with the R.O.W.

831+00

This area is designated as PEMA on the NWI map. It is a low flat area adjacent to the stream (827+00). It is poorly drained and water feeds into this area from a large pasture west of County Road 301 and from the roadway ditch. The majority of the dominant vegetation is hydrophytic herbaceous (Polygonum, Cyperus, Amaranthus rudis). There are also a few trees that comprise a small portion of the total area of hydrophytic vegetation (Quercus bicolor, Ulmus rubra, Gleditsia triacanthos, Salix nigra). The soil is hydric and the wetland hydrology indicator is the drainage pattern. All three parameters are met. The "emergent" wetland area is 0.25 acres.

839+00

No Right-of-Entry was granted for this site. This is a hazardous materials site. It is a waste disposal lagoon for dead animal carcasses and innards. There are no wetlands and it is not a "water of the U.S."

850+00

No Right-of-Entry was granted for this site. This pond is designated on the NWI map as PUBGh and the area above the pond is designated as PUBFh. This area above the pond appears to be dominated by Maclura pomifera trees which are FACU. From the road there appears to be a ring of hydrophytic herbaceous vegetation around the perimeter and one Black Willow tree at the dam. The surrounding area is grazed pasture. The soil is ponded and therefore hydric. The source of inundation is overland flow from precipitation and there is no discernible overflow area. All three parameters are most likely met around the pond but not at the area designated as PUBFh. The estimated "emergent" wetland area around the pond is 0.10 acres. The open water is a "water of the U.S." with an estimated area of 0.31 acres

859+00

This stream is shown on the USGS map as intermittent. It has a very small channel that is currently dry and is lined with trees and shrubs on both sides. The dominant vegetation above the OHWM is non-hydrophytic and the surrounding area is grazed fescue pasture. The soil is non-hydric and there are no wetland hydrology indicators above the OHWM. No parameters are met. There are no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.04 acres within the OHWM. The riparian woodland habitat covers an area of 0.25 acres with the R.O.W.

894+00

At this location the alignment crosses West Bear Creek, which has a drainage area greater than 1.5 square miles. It is an intermittent stream designated as R4SBF on the NWI map and as a “wooded wetland” by the NRCS. It has a wide channel with steep eroded banks and woodland on each side of the stream. The dominant vegetation above the OHWM is non-hydrophytic woodland. The soil is non-hydric and there are no wetland hydrology indicators above the OHWM. No parameters are met. There are no wetlands above the OHWM. The stream is a “water of the U.S.” with an area of 0.32 acres within the OHWM. The riparian woodland habitat on the east side of the stream covers an area of 0.64 acres with the R.O.W.

896+00

This area is the forest above West Bear Creek (894+00) on the west side. It is designated as a “wooded wetland” (ww) by the NRCS. It is a gently sloping area, the dominant vegetation of which is non-hydrophytic woodland according to the FAC Neutral test. Some of the plants include Red Oak, Shagbark Hickory, Bitternut Hickory, Gooseberry, Roughleaf Dogwood, Geum, Catchweed Bedstraw, Woodland Sedge, and Greenbriar. The soil is non-hydric and there are no wetland hydrology indicators above the OHWM. No parameters are met. There are no wetlands above the OHWM. This is a riparian woodland habitat with an area of 0.61 acres within the R.O.W.

924+00

No Right-of-Entry was granted for this site. The evaluation was performed from County Road 350 and from the aerial photo and USGS map. The stream is shown as intermittent on the USGS map. It has a small channel and very steep eroded banks with woodland on each side above the banks. From the road, the dominant vegetation above the OHWM of this stream appears to be non-hydrophytic. The mapped soil in this area is Blackoat Silt Loam which is on the hydric soils lists. There are most likely no wetland hydrology indicators above the OHWM based on characteristics of other similar streams in the area. It is most likely that only one parameter is met and that there are no wetlands above the OHWM. The stream is a “water of the U.S.” and has an estimated area of 0.21 acres within the OHWM. The riparian woodland habitat covers an estimated 3.80 acres within the R.O.W.

941+50

No Right-of-Entry was granted for this site. The aerial photo and USGS map show drainage to and away from an area that resembles a small pond surrounded by trees in the middle of a field. It is most likely that the dominant vegetation is hydrophytic in the tree layer around the outside with a band of hydrophytic emergent vegetation surrounding a small open water area. The soil is probably ponded frequently for long duration based on mapped information and therefore probably hydric. The source of inundation is most likely overland flow from precipitation. It is most likely that all three parameters are met. The “emergent” wetland area around the pond is estimated to be 0.01 acres, the “forested” wetland area is estimated to be 0.02 acres, and the open water is a “water of the U.S.” which is an estimated 0.03 acres.

950+00

No Right-of-Entry was granted for this site. This stream is shown on the USGS map as intermittent. It has a narrow channel with vertical eroded banks and very little water present. Above the banks, the stream is bordered by woodland of varying width. Dominant plants distinguishable from the road are *Celtis occidentalis* (FAC-) and Tall Fescue (FACU+). It is most likely that the dominant vegetation above the OHWM along this stream is non-hydrophytic. The surrounding area is pasture. The mapped soil type is Samsel Silty Clay Loam which is a non-hydric mollisol. Based on characteristics of similar streams in the area there are most likely no wetland hydrology indicators above the OHWM. It is most likely that no parameters are met and that there are no wetlands above the OHWM. The stream is a “water of the U.S.” and has an estimated area of 0.05 acres within the OHWM. The riparian woodland habitat covers an estimated 0.63 acres within the R.O.W.

953+00

No Right-of-Entry was granted for this site. The NWI designates this pond as PUBGh. It is a stock pond with nearly vertical edges around the entire perimeter. From the road, there appears to be no hydrophytic vegetation at the water's edge. The surrounding area is grazed pasture. The soil is ponded and therefore hydric. The source of inundation appears to be overland flow from precipitation. Only two parameters are most likely met. There are no wetlands. The pond is a "water of the U.S." with an estimated area of 0.22 acres.

979+50

This is a decorative pond with a small band of hydrophytic herbaceous vegetation (*Polygonum*, *Typha*, *Sagittaria*, *Cyperus*) around most of the perimeter, with a more extensive area in the overflow. The surrounding area is mowed lawn. The soil is hydric and the source of inundation is overland flow from precipitation. All three parameters are met. The "emergent" wetland area is 0.05 acres. The open water is a "water of the U.S." which covers 0.16 acres.

986+00

This pond is designated as PUBGh on the NWI map. It has a band of hydrophytic vegetation around its perimeter, the majority of which is herbaceous (*Leersia*, *Typha*, *Scirpus*, *Sagittaria*, *Ludwigia*). There are a few scattered Black Willows in the inflow area of the pond. The soil is ponded and therefore hydric. The source of inundation is inflow from a culvert pipe under Route 13 and overland flow from precipitation. All three parameters are met. The "emergent" wetland area is 0.29 acres. The open water is a "water of the U.S." which covers 1.59 acres.

988+00

This is a low area below the dam of pond 986+00. The dominant vegetation is an hydrophytic mix of trees, shrubs/saplings and herbaceous plants including *Salix nigra*, *Rhus glabra*, *Leersia*, *Scirpus*, *Juncus*, *Carex*, *Solidago* and *Mimulus*. The trees and shrubs/saplings are concentrated around the backside of the dam and outlet area. The herbaceous plants taper towards the outlet of this area and terminate at the edges where saturation ends and where the slope begins to rise. The soil is hydric and saturated in the top one inch. The source of water is seepage from the dam and drainage from the dam's outflow pipe. All three parameters are met. The "emergent" wetland area covers 0.14 acres and the "forested" wetland area covers 0.04 acres.

989+50

No Right-of-Entry was granted for this site. This pond is designated as PUBFh on the NWI map. From the road, a ring of hydrophytic vegetation around the perimeter is visible. Distinguishable plants include *Populus deltoides* and *Salix nigra* along the dam, and *Sagittaria*, and *Polygonum* around the pond edges. The majority of areal coverage is in the herbaceous layer. The surrounding area is pasture used for haying. The soil is ponded and therefore hydric and the source of inundation is inflow from a culvert pipe under County Road 400 and overland flow from precipitation. All three parameters are met. The "emergent" wetland area is 0.08 acres. The open water is a "water of the U.S." which covers 0.12 acres.

997+00

No Right-of-Entry was granted for this site. At this location the alignment crosses Fletcher Creek which is in the 100 year floodplain and shown as a perennial stream on the USGS map. It has very steep eroded banks with soil that looks somewhat rocky. Small wooded areas border each side of the stream. The dominant vegetation above the OHWM is most likely non-hydrophytic based on characteristics of similar streams in the area and based on visual observations from the road. Some Willows are visible below the

OHW. The surrounding area outside the woodland is pasture. The mapped soil type is Blackoat Silt Loam which is on the hydric soils lists. There are most likely no wetland hydrology indicators above the OHWM based on characteristics of similar streams in the area. It is most likely that only one parameter is met and that there are no wetlands above the OHWM. The stream is a "water of the U.S." with an estimated area of 0.24 acres at the OHWM. The riparian woodland habitat covers an estimated area of 0.20 acres.

1009+00

This pond is designated as PUBFh on the NWI map. It is a small pond with a dam made of asphalt rubble. There is exposed bedrock around the perimeter of the pond and in the upland areas above the pond. A large portion of the pond, particularly the draw down area, contains hydrophytic vegetation (Salix, Platanus, Typha, Scirpus, Carex, Leersia), the majority of areal coverage being in the herbaceous layer. The surrounding area is ungrazed pasture. The soil is ponded and therefore hydric and the source of inundation is overland flow from precipitation. All three parameters are met. The "emergent" wetland area is 0.05 acres. The open water is a "water of the U.S." which covers 0.02 acres

1015+00

This is a quarry pit that, according to the owner, will be filled in and the land reclaimed when operations are complete. The steep, unvegetated banks are composed of shale clay and rock. It is neither a wetland nor a "water of the U.S."

1030+00

This is a quarry pit that, according to the owner, will be filled in and the land reclaimed when operations are complete. The original pit is no longer in the location shown on the aerial photo. It was filled in, but a new pit adjacent to Route 13 is now open which is the one shown on the photo page. The vertical, unvegetated banks are composed of shale and rock. It is neither a wetland nor a "water of the U.S."

1047+00

No Right-of-Entry was granted for this site. This stream is shown on the USGS map as intermittent. The aerial photo shows water in this area which is low, flat and poorly drained. The channel is very narrow and barely discernible from the road. It appears that hydrophytic herbaceous vegetation is present in the drainageway above the OHWM of the stream. The surrounding area is pasture - ungrazed at the present time. Based on observations of the topography, it appears that water would most likely collect in this drainageway after a rain and be slow to drain. The aerial photo shows ponded water in this area and the soil is probably ponded or flooded frequently for long duration. Therefore it is probably a hydric soil. It is most likely that all three parameters are met. The "emergent" wetland area above the OHWM is an estimated 0.08 acres. The stream is a "water of the U.S." with an estimated area of 0.01 acres at the OHWM.

1065+00

No Right-of-Entry was granted for this site. This stream is shown on the USGS map as intermittent. It has a small channel with vertical eroded banks. A portion of the stream within the R.O.W. is wooded on each side above the banks. From the road there appears to be no hydrophytic vegetation above the OHWM. Some Willows exist below the OHWM. The mapped soil type is Sampsel Silty Clay Loam which is a non-hydric mollisol. Based on visual observations and characteristics of similar streams in the area, there are most likely no wetland hydrology indicators above the OHWM. It is most likely that no parameters are met and that there are no wetlands above the OHWM. The stream is a "water of the U.S." with an estimated area of 0.05 acres at the OHWM. The riparian woodland habitat has an estimated area of 0.22 acres within the R.O.W.

1101+00

This stream is a tributary of Brawley Creek and is shown on the USGS map as being perennial. It is in the 100 year floodplain and the banks are sandy, rocky and eroded. Wooded areas border each side of the stream above the banks. The dominant vegetation above the OHWM is non-hydrophytic (Black Locust, Osage Orange, Black Cherry, Multiflora Rose, Tall fescue). Hydrophytic vegetation is present below the OHWM. The soils are hydric, but sandy. No wetland hydrology indicators are present above the OHWM. Only one parameter is met. There are no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.24 acres at the OHWM. The riparian woodland habitat has an area of 0.64 acres within the R.O.W

1126+50

No Right-of-Entry was granted for this site. This stream is shown as intermittent on the USGS map. It has very steep eroded banks with very little water in the stream bed. There are a few scattered trees and shrubs along the stream and a wooded area begins on the north side of the stream in the west half of the proposed R.O.W. *Celtis occidentalis* (FAC-) and *Rosa multiflora* (FACU) are distinguishable from the road. The dominant vegetation above the OHWM is most likely non-hydrophytic based on characteristics of similar streams in the area. The mapped soil type is a non-hydric soil according to the soil survey description. Based on visual observations and characteristics of similar streams in the area there are most likely no wetland hydrology indicators above the OHWM. It is most likely that no parameters are met and that there are no wetlands above the OHWM. The stream is a "water of the U.S." with an estimated area of 0.08 acres at the OHWM. The riparian woodland habitat has an estimated area of 0.30 acres within the R.O.W.

1141+00

This pond is designated as PUBGh on the NWI map. It has extensive areas of hydrophytic trees, shrubs/saplings and herbaceous vegetation around its perimeter including *Acer saccharinum*, *Salix nigra*, and *Typha latifolia*. The soil is ponded and therefore hydric, and the source of inundation is overland flow and inflow from a culvert under Route 13. All three parameters are met. The "emergent" wetland area is 0.49 acres and the "forested" wetland area is 0.06 acres. The open water is a "water of the U.S." which covers 0.22 acres.

1148+00

This small round pond is a depression with no discernible outflow. It is in an area surrounded by ungrazed pasture to the north, east and west, and by woodland to the south. There is a band of hydrophytic vegetation (*Salix*, *Ulmus americana*, *Quercus palustris*, *Carex*, *Polygonum*) around the pond's perimeter except at the south end by the dam. The vast majority of this vegetation is in the herbaceous layer. The soil is ponded and therefore hydric and the source of inundation is overland flow from precipitation. All three parameters are met. The "emergent" wetland area is 0.02 acres. The open water is a "water of the U.S." which covers 0.03 acres.

1148+25

This small pond is a depression with no discernible outflow. It is in an area surrounded by woodland. There is a band of hydrophytic vegetation (*Salix*, *Ulmus americana*, *Acer saccharinum*, *Carex*, *Polygonum*) around the pond's perimeter except at the south end by the dam. The vast majority of this vegetation is in the herbaceous layer. The soil is ponded and therefore hydric and the source of inundation is overland flow from precipitation. All three parameters are met. The "emergent" wetland area is 0.02 acres. The open water is a "water of the U.S." which covers 0.02 acres

1149+00

This is a flat, poorly drained area below pond 1148+25 and adjacent to the stream at 1150+00. It is a wooded area, the dominant vegetation of which is hydrophytic. It could be a recently developing wet area because there are large Osage Orange trees at the fringe that are dying. The soil is hydric and saturated in the top one inch. The source of saturation appears to be seepage from the dam of pond 1148+25. All three parameters are met. The area is a "forested" wetland covering an area of 0.10 acres.

1150+00

This stream is shown on the USGS map as intermittent. It has a very narrow channel with vertical banks. On each side of the stream Woodland areas exist, the dominant vegetation of which is non-hydrophytic. The soil has hydric indicators, but is sandy and moderately well drained. There are no wetland hydrology indicators above the OHWM. Only one parameter is met. There are no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.04 acres at the OHWM. The riparian woodland habitat has an area of 2.31 acres within the R.O.W.

1153+00

This pond has only recently been excavated. It has sloping eroded banks and a small ring of hydrophytic herbaceous vegetation (Salix, Carex, Typha, Rumex crispus) around its perimeter. Currently the pond is not full - the water is not up to the vegetation ring. The soil is ponded and therefore hydric and the source of inundation is overland flow from precipitation. All three parameters are met. The "emergent" wetland area is 0.05 acres. The open water is a "water of the U.S." which covers 0.17 acres.

1173+00

At this location the alignment crosses Brawley Creek which is in the 100 year floodplain. This stream is shown on the USGS map as perennial and has a drainage area greater than 1.5 square miles. It has a wide channel with sandy/rocky bars and eroded banks. The area above the banks is woodland, the dominant vegetation of which is non-hydrophytic. The soil is non-hydric and there are no wetland hydrology indicators above the OHWM. Only one parameter is met. There are no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.30 acres at the OHWM. The riparian woodland habitat on the north side of the stream has an area of 2.40 acres within the R.O.W. (See 1174+00 for south side of the creek.)

1174+00

This is a wooded area above Brawley Creek on the south side. This woodland contains non-hydrophic vegetation including Hackberry, Ohio Buckeye, Honey Locust, Indian Current, Coralberry, Catchweed Bedstraw, and Virginia Creeper. The soil is hydric, but there are no wetland hydrology above the OHWM. Only one parameter is met and there are no wetlands above the OHWM. This is a riparian woodland habitat with an area of 1.20 acres.

1202+00

No Right-of-Entry was granted for this site. This is a stream that has a narrow channel and is shown on the USGS map as intermittent. Within the R.O.W. it runs on the north side and south side of County Road PP. On the north side it has steep eroded banks and is surrounded by grazed pasture. On the south side it runs through a wooded area with predominantly Walnut trees (visual observation from the road). Based on visual observation and characteristics of similar streams in the area, the dominant vegetation above the OHWM is most likely non-hydrophytic. The mapped soil type is non-hydric according to the description in the soil survey. It is most likely that there are no wetland hydrology indicators above the OHWM based on visual observation and characteristics of similar streams in the area. It is most likely that no parameters are met and that there are no wetlands above the OHWM. The stream is a "water of the U.S." with an

estimated area of 0.08 acres at the OHWM. The riparian woodland habitat on the south side of County Road PP has an estimated area of 1.55 acres within the R.O.W.

1235+50

This pond is designated as PUBGh on the NWI map. It has a small ring of hydrophytic herbaceous vegetation (*Eleocharis*, *Juncus*, *Agrostis alba*) around the edge, and a colony of Cattails in the center of the pond. One Cottonwood tree is growing at the north water's edge. The surrounding area is grazed pasture. The soil is ponded and therefore hydric and the source of inundation is overland flow from precipitation. All three parameters are met. The "emergent" wetland area is 0.42 acres. The open water is a "water of the U.S." which covers 0.06 acres.

1286+00

This stream is shown on the USGS map as intermittent. The stream channel and its banks are very rocky as it runs through a wooded area comprised of non-hydrophytic vegetation (*Maclura pomifera*, *Rosa multiflora*, *Chenopodium album*, *Ambrosia artemisifolia*) above the OHWM. The soils are non-hydric and there are no wetland hydrology indicators above the OHWM. No parameters are met. There are no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.08 acres at the OHWM. The riparian woodland habitat has an area of 0.52 acres within the R.O.W.

1303+00

No Right-of-Entry was granted for this site. This stream is shown on the USGS map as intermittent. It has somewhat eroded banks and is bordered on each side by wooded areas located above the banks. The dominant vegetation above the OHWM is most likely non-hydrophytic based on visual observation from the road and on characteristics of similar streams in the area. The mapped soil type is Zook Silty Clay Loam which is on the hydric soils lists. Based on visual observation and on characteristics of similar streams in the area there are most likely no wetland hydrology indicators above the OHWM. It is most likely that only one parameter is met and that there are no wetlands above the OHWM. The stream is a "water of the U.S." with an estimated area of 0.12 acres at the OHWM. The riparian woodland habitat has an estimated area of 1.04 acres within the R.O.W.

1305+00

No Right-of-Entry was granted for this site. This pond is designated as PUBFh on the NWI map. From the road it appears to have an herbaceous vegetative ring around the perimeter that is most likely hydrophytic. There are also a couple of Black Willow trees at the water's edge. The soil is ponded and therefore hydric and the source of inundation seems to be overland flow from precipitation. It is most likely that all three parameters are met. The "emergent" wetland area is an estimated 0.03 acres. The open water is a "water of the U.S." which covers an estimated 0.11 acres.

1320+00

No Right-of-Entry was granted for this site. This stream is shown on the USGS map as intermittent. It runs through a wooded area that most likely contains non-hydrophytic vegetation based on visual observation from the road and on characteristics of similar streams in the area. The mapped soil type is Zook Silty Clay Loam which is on the hydric soils lists. Based on visual observation and on characteristics of similar streams in the area there are most likely no wetland hydrology indicators above the OHWM. It is most likely that only one parameter is met and that there are no wetlands above the OHWM. The stream is a "water of the U.S." with an estimated area of 0.13 acres at the OHWM. The riparian woodland habitat has an estimated area of 4.48 acres within the R.O.W.

1393+00

No Right-of-Entry was granted for this site. The aerial photo shows an inundated pond in this location. From the road this pond appears to be surrounded by Black Willow and Cottonwood trees. It is most likely that there is also some herbaceous hydrophytic vegetation at the pond edge, but the dominant layer seems to be the trees. The soil is ponded and therefore hydric and the source of inundation is most likely overland flow and swale inflow from precipitation. It is most likely that all three parameters are met. The "forested" wetland area is an estimated 0.05 acres. The open water is a "water of the U.S." which covers an estimated 0.19 acres.

1398+50

No Right-of-Entry was granted for this site. The NWI map designates this area as PUBGh. This is a low, flat, poorly drained draw down area leading into a pond to the east (which is out of the R.O.W.). From the fence, the draw down area appears to contain Salix, Typha, Polygonum and other herbaceous vegetation that is most likely hydrophytic. The surrounding area is pasture. The soil is most likely hydric because it would be ponded or saturated during the rainy season. The source of water is overland flow and swale inflow from precipitation. All three parameters are most likely met. The "emergent" wetland has an estimated area of 0.22 acres.

1400+50

This is a low, flat poorly drained area with a small (1' to 2') drainage channel running through it. It is a potential problem area because it is currently neither ponded nor saturated. It contains a mix of hydrophytic trees, shrubs/saplings and herbaceous plants, the dominant layer being the shrubs/saplings. The vegetation includes Salix nigra, Populus deltoides, Cornus drummondii, Diospyros virginiana, and Phalaris arundinacea. The surrounding area is pasture to the east, and cultivated crop to the west, north and south. The soil is hydric and somewhat dry. The wetland hydrology indicator is the drainage pattern. Water may back up into this area during the rainy season. All three parameters are met. This is a "scrub-shrub" wetland area covering 0.18 acres.

1406+00

This pond is designated as PUBFh on the NWI map. It is a small pond with a band of Black Willows and Cottonwood trees around its perimeter and a colony of Duckweed covering the water. This vegetation is hydrophytic and the surrounding area is a cultivated milo field. The soil is ponded and therefore hydric and the source of inundation is overland flow from precipitation. All three parameters are met. The "emergent" wetland area is 0.21 acres and the "forested" wetland area is 0.04 acres. There is no open water.

1425+00

No Right-of-Entry was granted for this site and it was not visible from the road. The aerial photo shows that the stream runs through a wooded area, most of it being on the east side of the stream. Based on characteristics of similar streams in the area the dominant vegetation above the OHWM is most likely non-hydrophytic. The mapped soil type is Sampsel Silty Clay Loam which is a non-hydric mollisol. Based on characteristics of similar streams in the area there are most likely no wetland hydrology indicators above the OHWM. It is most likely that no parameters are met and that there are no wetlands above the OHWM. The stream is a "water of the U.S." with an estimated area of 0.06 acres at the OHWM. The riparian woodland habitat has an estimated area of 0.90 acres within the R.O.W.

1440+00

No Right-of-Entry was granted for this site. It is not quite visible from the road, but the aerial photo shows inundation and the NWI map designates the site as PUBFh. Based on characteristics of similar

ponds in the area there is most likely a band of hydrophytic herbaceous vegetation around the perimeter of the pond. The soil is probably ponded frequently for long duration based on mapped information and therefore probably hydric. The source of inundation is most likely overland flow from precipitation. All three parameters are most likely met. The "emergent" wetland area is an estimated 0.13 acres. The probable open water is a "water of the U.S." with an estimated area of 0.30 acres.

1511+50

No Right-of-Entry was granted for this site and it is not visible from the road. This is a stream that is shown on the USGS map as intermittent. The aerial photo shows that it is bordered on each side with trees. Based on characteristics of similar streams in the area the dominant vegetation above the OHWM is most likely non-hydrophytic. The mapped soil type is Zook Silty Clay Loam which is on the hydric soils lists. Based on characteristics of similar streams in the area there are most likely no wetland hydrology indicators above the OHWM. It is most likely that only one parameter is met and that there are no wetlands above the OHWM. The stream is a "water of the U.S." with an estimated area of 0.06 acres at the OHWM. The riparian woodland habitat has an estimated area of 0.26 acres within the R.O.W.

CONCLUSIONS (Johnson County)

The total potential impacts by classification are 5.24 hectares (12.94 acres) of “emergent” wetland which includes “grassed waterway” and “wet pasture”, 0.08 hectares (0.19 acres) of “scrub-shrub”, 0.71 hectares (1.75 acres) of “forested” wetland, 0.91 hectares (2.24 acres) of “farmed wetlands”, and 8.53 hectares (21.07 acres) of “waters of the U.S.”

Total potential impacts to wetland classifications and “waters of the U. S.” within the preferred alternative corridor in Johnson County are summarized in the following table:

**Johnson County
TOTAL POTENTIAL JURISDICTIONAL WETLAND IMPACTS
By Wetland Classification
in hectares (acres)**

COUNTY	Emergent	Scrub-shrub	Forested	Farmed Wetland	Waters of the U.S.
Johnson	5.24 (12.94)	0.08 (0.19)	0.71 (1.75)	0.91 (2.24)	8.53 (21.07)

Note: **Emergent** total also includes **Grassed Waterway** and **Wet Pasture** areas.

**Johnson County
POTENTIAL JURISDICTIONAL WETLAND IMPACTS
for Sites within the Preferred Alternative Corridor
in acres**

 Agricultural Site

 Non-agricultural Site

SITE NUMBER	Emergent	Scrub-shrub	Forested	Grassed Waterway (emergent)	Wet Pasture (emergent)	Farmed Wetland	Waters of the U. S.
56+00	-	-	-	-	-	-	0.16
83+00	-	-	-	-	-	-	0.08
86+00	0.03	-	-	-	-	-	-
87+00	0.05	-	-	-	-	-	-
106+50	-	-	-	-	-	-	0.12
111+00	0.04	-	-	-	-	-	0.15
116+00	0.03	-	-	-	-	-	-
119+50	-	-	-	-	0.60	-	-
135+00	-	-	-	-	-	-	0.03
150+50	0.41	-	-	-	-	-	0.02
152+25	0.08	-	-	-	-	-	-
159+00	0.01	-	-	-	-	-	0.18
180+00	-	-	-	-	-	-	0.40
200+00	-	-	-	-	-	-	0.06

SITE NUMBER	Emergent	Scrub-shrub	Forested	Grassed Waterway (emergent)	Wet Pasture (emergent)	Farmed Wetland	Waters of the U. S.
203+00	0.01	0.01	-	-	-	-	0.02
217+00	-	-	-	-	-	-	0.08
272+00	-	-	-	-	-	-	0.17
(WNE) 118+00	-	-	-	-	-	-	0.08
(WNE) 119+00	-	-	-	-	-	-	-
(WNE) 129+00	-	-	-	-	-	-	-
(WNE) 130+00	-	-	-	-	-	-	-
(WNE) 132+00	0.04	-	-	-	-	-	0.36
(WNE) 133+00	-	-	-	-	-	-	0.01
(WNE) 135+00	0.39	-	-	-	-	-	0.33
(WNE) 182+50	0.02	-	-	-	-	-	0.16
(WNE) 185+00	0.31	-	-	-	-	-	0.50
(WNE) 207+00	0.01	-	-	-	-	-	-
(WNE) 209+00	0.05	-	-	-	-	-	0.05
(WNE) 211+50	0.06	-	-	-	-	-	-
(WNE) 218+00	-	-	-	-	-	0.09	-
(WNE) 224+00	-	-	-	-	-	2.15	-
(WNE) 230+00	-	-	-	-	-	-	0.12
(WNE) 243+00	-	-	-	-	-	-	0.80
(WNE) 245+00	-	-	0.16	-	-	-	-
(WNE) 246+00	-	-	-	-	-	-	-
(WNE) 250+00	-	-	-	-	-	-	0.41
524+00	0.23	-	-	-	-	-	-
541+00	-	-	-	-	-	-	0.34
601+00	0.07	-	-	-	-	-	-

SITE NUMBER	Emergent	Scrub-shrub	Forested	Grassed Waterway (emergent)	Wet Pasture (emergent)	Farmed Wetland	Waters of the U. S.
601+50	-	-	-	-	-	-	0.38
613+00	-	-	-	-	-	-	0.31
622+00	0.21	-	-	-	-	-	0.76
625+50	0.02	-	-	-	-	-	0.08
626+00	0.02	-	-	-	-	-	0.56
630+50	0.05	-	-	-	-	-	0.09
632+00	0.04	-	-	-	-	-	-
639+00	-	-	-	-	-	-	0.30
651+50	-	-	-	-	-	-	0.20
658+00	-	-	-	-	-	-	0.48
660+00	-	-	-	-	2.40	-	-
662+00	-	-	0.80	-	-	-	-
666+50	3.62	-	-	-	-	-	-
680+00	-	-	-	-	-	-	0.21
684+00	0.06	-	-	-	-	-	1.87
685+00	0.02	-	-	-	-	-	0.15
701+00	-	-	-	-	-	-	0.04
731+00	-	-	-	-	-	-	0.45
741+50	-	-	-	-	-	-	0.04
749+00	0.50	-	-	-	-	-	0.35
755+00	0.81	-	0.48	-	-	-	0.74
770+00	-	-	-	-	-	-	-
778+50	-	-	-	-	-	-	0.23
780+00	-	-	-	-	-	-	-
785+00	-	-	-	-	-	-	1.15
791+00	0.01	-	-	-	-	-	-
795+00	-	-	-	-	-	-	0.76
807+00	0.01	-	-	-	-	-	0.15
810+00	-	-	-	-	-	-	0.62
818+00	0.08	-	-	-	-	-	0.30
827+00	-	-	-	-	-	-	0.56
831+00	0.25	-	-	-	-	-	-
839+00	-	-	-	-	-	-	-
850+00	0.10	-	-	-	-	-	0.31
859+00	-	-	-	-	-	-	0.04
894+00	-	-	-	-	-	-	0.32
896+00	-	-	-	-	-	-	-
924+00	-	-	-	-	-	-	0.21
941+50	0.01	-	0.02	-	-	-	0.03
950+00	-	-	-	-	-	-	0.05
953+00	-	-	-	-	-	-	0.22
979+50	0.05	-	-	-	-	-	0.16
986+00	0.29	-	-	-	-	-	1.59

SITE NUMBER	Emergent	Scrub-shrub	Forested	Grassed Waterway (emergent)	Wet Pasture (emergent)	Farmed Wetland	Waters of the U. S.
988+00	0.14	-	0.04	-	-	-	-
989+50	0.08	-	-	-	-	-	0.12
997+00	-	-	-	-	-	-	0.24
1009+00	0.05	-	-	-	-	-	0.02
1015+00	-	-	-	-	-	-	-
1030+00	-	-	-	-	-	-	-
1047+00	0.08	-	-	-	-	-	0.01
1065+00	-	-	-	-	-	-	0.05
1101+00	-	-	-	-	-	-	0.24
1126+50	-	-	-	-	-	-	0.08
1141+00	0.49	-	0.06	-	-	-	0.22
1148+00	0.02	-	-	-	-	-	0.03
1148+25	0.02	-	-	-	-	-	0.02
1149+00	-	-	0.10	-	-	-	-
1150+00	-	-	-	-	-	-	0.04
1153+00	0.05	-	-	-	-	-	0.17
1173+00	-	-	-	-	-	-	0.30
1174+00	-	-	-	-	-	-	-
1202+00	-	-	-	-	-	-	0.08
1235+50	0.42	-	-	-	-	-	0.06
1286+00	-	-	-	-	-	-	0.08
1303+00	-	-	-	-	-	-	0.12
1305+00	0.03	-	-	-	-	-	0.11
1320+00	-	-	-	-	-	-	0.13
1393+00	-	-	0.05	-	-	-	0.19
1398+50	0.22	-	-	-	-	-	-
1400+50	-	0.18	-	-	-	-	-
1406+00	0.21	-	0.04	-	-	-	-
1425+00	-	-	-	-	-	-	0.06
1440+00	0.13	-	-	-	-	-	0.30
1511+50	-	-	-	-	-	-	0.06
TOTAL ACRES	9.93	0.19	1.75	0.00	3.01	2.24	21.07

The following tables and text provide a breakdown of "waters of the U.S." in these five categories:

1. - Ponds With Potential Jurisdictional Wetland Areas
2. - Ponds Without Potential Jurisdictional Wetland Areas
3. - Stream Crossings
4. - Potential Jurisdictional Wetlands
5. - Non-Wetlands

Johnson County
POTENTIAL JURISDICTIONAL WETLAND IMPACTS
for Sites within the Preferred Alternative Corridor
in acres

 Agricultural Site

 Non-agricultural Site

SITE NUMBER	Emergent	Scrub-shrub	Forested	Grassed Waterway (emergent)	Wet Pasture (emergent)	Farmed Wetland	Waters of the U. S.
PONDS WITH POTENTIAL JURISDICTIONAL WETLAND AREAS							
111+00	0.04	-	-	-	-	-	0.15
116+00	0.03	-	-	-	-	-	-
150+50	0.41	-	-	-	-	-	0.02
152+25	0.08	-	-	-	-	-	-
159+00	0.01	-	-	-	-	-	0.18
203+00	0.01	0.01	-	-	-	-	0.02
(WNE) 132+00	0.04	-	-	-	-	-	0.36
(WNE) 135+00	0.39	-	-	-	-	-	0.33
(WNE) 182+50	0.02	-	-	-	-	-	0.16
(WNE) 185+00	0.31	-	-	-	-	-	0.50
(WNE) 207+00	0.01	-	-	-	-	-	-
(WNE) 209+00	0.05	-	-	-	-	-	0.05
(WNE) 211+50	0.06	-	-	-	-	-	-
524+00	0.23	-	-	-	-	-	-
622+00	0.21	-	-	-	-	-	0.76
625+50	0.02	-	-	-	-	-	0.08
626+00	0.02	-	-	-	-	-	0.56
630+50	0.05	-	-	-	-	-	0.09
632+00	0.04	-	-	-	-	-	-

SITE NUMBER	Emergent	Scrub-shrub	Forested	Grassed Waterway (emergent)	Wet Pasture (emergent)	Farmed Wetland	Waters of the U. S.
684+00	0.06	-	-	-	-	-	1.87
685+00	0.02	-	-	-	-	-	0.15
749+00	0.50	-	-	-	-	-	0.35
755+00	0.81	-	0.48	-	-	-	0.74
807+00	0.01	-	-	-	-	-	0.15
818+00	0.08	-	-	-	-	-	0.30
850+00	0.10	-	-	-	-	-	0.31
941+50	0.01	-	0.02	-	-	-	0.03
979+50	0.05	-	-	-	-	-	0.16
986+00	0.29	-	-	-	-	-	1.59
989+50	0.08	-	-	-	-	-	0.12
1009+00	0.05	-	-	-	-	-	0.02
1141+00	0.49	-	0.06	-	-	-	0.22
1148+00	0.02	-	-	-	-	-	0.03
1148+25	0.02	-	-	-	-	-	0.02
1153+00	0.05	-	-	-	-	-	0.17
1235+50	0.42	-	-	-	-	-	0.06
1305+00	0.03	-	-	-	-	-	0.11
1393+00	-	-	0.05	-	-	-	0.19
1406+00	0.21	-	0.04	-	-	-	-
1440+00	0.13	-	-	-	-	-	0.30
PONDS WITHOUT POTENTIAL JURISDICTIONAL WETLAND AREAS							
(WNE) 119+00	-	-	-	-	-	-	-
(WNE) 129+00	-	-	-	-	-	-	-
(WNE) 130+00	-	-	-	-	-	-	-
601+50	-	-	-	-	-	-	0.38
839+00	-	-	-	-	-	-	-
953+00	-	-	-	-	-	-	0.22
1015+00	-	-	-	-	-	-	-
1030+00	-	-	-	-	-	-	-
STREAM CROSSINGS							
56+00	-	-	-	-	-	-	0.16
83+00	-	-	-	-	-	-	0.08
106+50	-	-	-	-	-	-	0.12
135+00	-	-	-	-	-	-	0.03
180+00	-	-	-	-	-	-	0.40
200+00	-	-	-	-	-	-	0.06
217+00	-	-	-	-	-	-	0.08

SITE NUMBER	Emergent	Scrub-shrub	Forested	Grassed Waterway (emergent)	Wet Pasture (emergent)	Farmed Wetland	Waters of the U. S.
272+00	-	-	-	-	-	-	0.17
(WNE)							
118+00	-	-	-	-	-	-	0.08
(WNE)							
133+00	-	-	-	-	-	-	0.01
(WNE)							
230+00	-	-	-	-	-	-	0.12
(WNE)							
243+00	-	-	-	-	-	-	0.80
(WNE)							
250+00	-	-	-	-	-	-	0.41
541+00	-	-	-	-	-	-	0.34
613+00	-	-	-	-	-	-	0.31
639+00	-	-	-	-	-	-	0.30
651+50	-	-	-	-	-	-	0.20
658+00	-	-	-	-	-	-	0.48
680+00	-	-	-	-	-	-	0.21
701+00	-	-	-	-	-	-	0.04
731+00	-	-	-	-	-	-	0.45
741+50	-	-	-	-	-	-	0.04
778+50	-	-	-	-	-	-	0.23
785+00	-	-	-	-	-	-	1.15
795+00	-	-	-	-	-	-	0.76
810+00	-	-	-	-	-	-	0.62
827+00	-	-	-	-	-	-	0.56
859+00	-	-	-	-	-	-	0.04
894+00	-	-	-	-	-	-	0.32
924+00	-	-	-	-	-	-	0.21
950+00	-	-	-	-	-	-	0.05
997+00	-	-	-	-	-	-	0.24
1047+00	0.08	-	-	-	-	-	0.01
1065+00	-	-	-	-	-	-	0.05
1101+00	-	-	-	-	-	-	0.24
1126+50	-	-	-	-	-	-	0.08
1150+00	-	-	-	-	-	-	0.04
1173+00	-	-	-	-	-	-	0.30
1202+00	-	-	-	-	-	-	0.08
1286+00	-	-	-	-	-	-	0.08
1303+00	-	-	-	-	-	-	0.12
1320+00	-	-	-	-	-	-	0.13
1425+00	-	-	-	-	-	-	0.06
1511+50	-	-	-	-	-	-	0.06

SITE NUMBER	Emergent	Scrub-shrub	Forested	Grassed Waterway (emergent)	Wet Pasture (emergent)	Farmed Wetland	Waters of the U. S.
POTENTIAL JURISDICTIONAL WETLANDS							
86+00	0.03	-	-	-	-	-	-
87+00	0.05	-	-	-	-	-	-
119+50	-	-	-	-	0.60	-	-
(WNE) 218+00	-	-	-	-	-	0.09	-
(WNE) 224+00	-	-	-	-	-	2.15	-
(WNE) 245+00	-	-	0.16	-	-	-	-
601+00	0.07	-	-	-	-	-	-
660+00	-	-	-	-	2.41	-	-
662+00	-	-	0.80	-	-	-	-
666+50	3.62	-	-	-	-	-	-
791+00	0.01	-	-	-	-	-	-
831+00	0.25	-	-	-	-	-	-
988+00	0.14	-	0.04	-	-	-	-
1149+00	-	-	0.10	-	-	-	-
1398+50	0.22	-	-	-	-	-	-
1400+50	-	0.18	-	-	-	-	-
NON-WETLANDS							
(WNE) 246+00	-	-	-	-	-	-	-
770+00	-	-	-	-	-	-	-
780+00	-	-	-	-	-	-	-
896+00	-	-	-	-	-	-	-
1174+00	-	-	-	-	-	-	-
TOTAL ACRES	9.93	0.19	1.75	0.00	3.01	2.24	21.07

The Preferred Alternative could impact 42 ponds consisting of 2.21 hectares (5.46 acres) of "emergent" wetland fringe, 0.004 hectares (0.01 acres) of "scrub-shrub" wetland fringe, 0.26 hectares (0.65 acres) of "forested" wetland fringe and 4.33 hectares (10.69 acres) of open water designated as "Waters of the U. S. "

Forty-three (43) stream crossings could occur resulting in potential impacts to 4.20 hectares (10.38 acres) of "Waters of the U. S." (i.e. up to the limit of the ordinary high water mark). Streams with a drainage area greater than 3.89 sq. km. (1.5 sq. miles) that could be impacted include the Blackwater River, Bear Creek, East Bear Creek, West Bear Creek and Brawley Creek. The Blackwater River, where it is crossed by the Preferred Alternative, is below the headwaters.

Seventeen (17) wetland areas could be impacted including 1.80 hectares (4.47 acres) of “emergent” wetland, 0.07 hectares (0.18 acres) of “scrub-shrub” wetland, 0.44 hectares (1.10 acres) of “forested” wetland, 1.22 hectares (3.01 acres) of “wet pasture” and 0.91 hectares (2.24 acres) of “farmed wetland”.

**Johnson County
Potential Jurisdictional Wetland Impacts
for the Preferred Alternative
PONDS and STREAMS**

COUNTY	No.	PONDS - hectares (acres)				STREAMS	
		Wetland Fringe			Waters of the U. S. (open water)	No.	Waters of the U. S.
		Emergent	Scrub-shrub	Forested			
Johnson	42	2.21 (5.46)	0.004 (0.010)	0.26 (0.65)	4.33 (10.69)	43	4.20 (10.38)

**Johnson County
Potential Jurisdictional Wetland Impacts
for the Preferred Alternative
WETLANDS**

COUNTY	WETLANDS - hectares (acres)						
	No.	Emergent	Scrub-shrub	Forested	Grassed Waterway	Wet Pasture	Farmed Wetland
Johnson	17	1.80 (4.47)	0.07 (0.18)	0.44 (1.10)	0.00 (0.00)	1.22 (3.01)	0.91 (2.24)

C. Henry County

Each site is numbered by station according to its location along the preferred alignment.

The following sites fall under the jurisdiction of the Natural Resources Conservation Service (NRCS):

- 26+00* - 547+00* - 558+50* - 822+00* - (Rte7)140+00*

3+00

No Right-of-Entry was granted for this site. The NWI map designates this pond as PUBGh. From the road this pond with small, somewhat vertical banks appears to have a narrow band of what is most likely hydrophytic vegetation around the water's edge. The soil is ponded and therefore hydric and the source of inundation appears to be overland flow and swale inflow from precipitation. All three parameters are most likely met. The "emergent" wetland area is an estimated 0.01 acres. The open water is a "water of the U.S." with an estimated area of 0.15 acres.

26+00*

No Right-of-Entry was granted for this site. This is a grassed waterway between two ungrazed pasture areas. From the road, the dominant vegetation appears to be Reed Canarygrass (FACW+). The soil is most likely hydric - the hydric soil indicator is an "aquic moisture regime". The wetland hydrology indicator is a the drainage pattern which is a small 2' channel that runs through the area. All three parameters are most likely met. This is a "grassed waterway" wetland area covering an estimated 0.24 acres. The stream channel is a "water of the U.S." with an estimated area of 0.02 acres at the OHWM.

39+00

No Right-of-Entry was granted for this site. The NWI designates this area as PEMCh. From the road, there appears to be no hydrophytic vegetation present at this location. The surrounding area is pasture, ungrazed at the present time. The mapped soil type is non-hydrophytic based on the soil survey description. There are no visible signs of inundation or saturation. The culvert under Tote 13 at this location drains adequately enough to prevent back-up. There are most likely no other wetland hydrology indicators present. It is most likely that not all three parameters are met and that there are no wetlands nor "waters of the U.S." at this location.

56+00

This stream is shown on the USGS map as intermittent. The streambed is at bedrock and is currently dry. The banks are steep and there is woodland on each side of the stream above the banks. The dominant vegetation above the OHWM is non-hydrophytic with a mix of trees, shrub/saplings, herbaceous vegetation and vines. The soil is hydric, but there are no wetland hydrology indicators above the OHWM. Only one parameter is met and there are no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.18 acres at the OHWM. The riparian woodland habitat covers an area of 4.09 acres within the R.O.W.

84+00

This stream is shown on the USGS map as intermittent. The aerial photo shows water in this area, however there is no water flowing in the small (3' OHWM) channel at the present time. This is a low, flat area that looks as though it would drain slowly after rains occur. The dominant vegetation above the OHWM is hydrophytic and contains a small number of trees (*Ulmus americana*, *Gleditsia triacanthos*), with a large area of herbaceous plants (*Ambrosia trifida*, *Commelina communis*, *Aster vimineus*, *Desmodium paniculatum*, *Festuca arundinacea*). The surrounding area is fescue pasture. The soil is hydric and only somewhat moist. The wetland hydrology indicator is the drainage channel. All three

parameters are met. This is an “emergent” wetland (vegetated drainageway) covering an area of 0.26 acres. The stream is a “water of the U.S.” with an area of 0.02 acres at the OHWM.

149+50

No Right-of-Entry was granted for this site. The NWI map designates this pond as PUBGh. From the road, hydrophytic vegetation (Black Willow and Arrowhead) is visible around the pond’s perimeter with an extensive area at the draw down or inflow area. This vegetated area is also visible on the aerial photo. The surrounding area is pasture - recently mowed for hay. The soil is ponded and therefore hydric and the source of inundation is most likely overland flow from precipitation. It is most likely that all three parameters are met. The “emergent” wetland area is an estimated 0.05 acres. The “forested” wetland area is an estimated 0.22 acres. The open water is a “water of the U.S.” with an estimated area of 0.22 acres.

221+50

No Right-of-Entry was granted for this site. The NWI map designates this pond as PUBGh. This pond is visible on the aerial photo and from the road. It appears that the southwest half of the pond has a mix of trees and saplings (Willows) at the edge, and the northeast half contains herbaceous hydrophytic vegetation. The surrounding area is cultivated crop land. The soil is ponded and therefore hydric and the source of inundation appears to be overland flow from precipitation. All three parameters are most likely met. The “emergent” wetland area is an estimated 0.07 acres. The “scrub-shrub” wetland area is an estimated 0.04 acres. The open water is a “water of the U.S.” with an estimated area of 0.14 acres.

249+00

This pond is designated as PEMFh on the NWI map. It is an atypical situation - it was inundated at one time, but is currently dry because of terracing above the pond which altered and reduced the hydrology inflow. It may still hold some water under normal rainfall conditions but not as much as it previously had. Hydrophytic vegetation is present. A ring of Black Willow trees exists around the perimeter of the pond, and *Polygonum pennsylvanicum* and *Rumex crispus* are present in the herbaceous layer within the pond area. There are also FACU plants such as Tall Fescue and Common Ragweed in the herb layer. Some remnants of Cattails remain but none are presently alive. The surrounding area is soybean field. The soil is hydric and the source of water, although greatly altered, is overland flow from precipitation. All three parameters are met under normal conditions. The “emergent” wetland area is 0.01 acres. The “forested” wetland area is 0.02 acres. The open water is a “water of the U.S.” with an area of 0.02 acres.

251+50

The NWI map designates this area as PEMFh. This pond is currently dry. It is an atypical situation because regrading and terracing have significantly altered the inflow hydrology to this pond remnant. Overland flow has been diverted and is no longer a source of inundation. The dominant vegetation is now non-hydrophytic (Tall Fescue, Common Ragweed), even though some Black Willows are still alive. The soil was previously ponded therefore it is hydric. Only one parameter is met. There is no longer a wetland nor a “water of the U.S.”

288+00

This stream is shown on the USGS map as intermittent, and designated on the NWI map as PFO1A. It runs through a wooded area and has a small channel that is currently dry. The woodland vegetation above the OHWM is non-hydrophytic. The soil is hydric. There are no wetland hydrology indicators above the OHWM. Only one parameter is met and there are no wetlands above the OHWM. The stream is a “water of the U.S.” with an area of 0.06 acres at the OHWM. The riparian woodland habitat covers an area of 0.74 acres within the R.O.W.

346+00

No Right-of-Entry was granted for this site. This stream is in the 100 year floodplain and is shown on the USGS map as intermittent, and designated as PFO1A on the NWI map. From the road there is no visible running or standing water. It runs through a wooded area and has a somewhat small channel with eroded banks. Based on characteristics of similar streams in the area and on visual observations from the road, the dominant vegetation appears to be non-hydrophytic above the OHWM. The mapped soil type is described as Summit Silty Clay Loam which is a non-hydric mollisol. Based on characteristics of similar streams in the area, there are most likely no wetland hydrology indicators above the OHWM. It is most likely that no parameters are met and that there are no wetlands above the OHWM. The stream is a "water of the U.S." with an estimated area of 0.06 acres at the OHWM. The riparian woodland habitat covers an estimated area of 0.76 acres within the R.O.W.

371+00

No Right-of-Entry was granted for this site. This stream is in the 100 year floodplain and is shown on the USGS map as intermittent, and designated as R4SBC on the NWI map. It has a very small channel and currently no running water. From the road, it appears that hydrophytic vegetation exists only below the OHWM. The dominant vegetation above the OHWM appears to be non-hydrophytic. The surrounding area is grazed pasture. The mapped soil type is described as Summit Silty Clay Loam which is a non-hydric mollisol. There appear to be no wetland hydrology indicators above the OHWM. It is most likely that not all three parameters are met and that there are no wetlands above the OHWM. The stream is a "water of the U.S." with an estimated area of 0.05 acres at the OHWM.

380+00

This stream is shown on the USGS map as intermittent. It has a variable width channel and eroded banks of varying depths. It runs through a grazed fescue pasture and the dominant vegetation above the OHWM is non-hydrophytic (Tall Fescue, Common Ragweed, Osage Orange). The soil is hydric. There are no wetland hydrology indicators above the OHWM. Only one parameter is met and there are no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.07 acres at the OHWM.

399+00

This is a large decorative pond with a very small (2') band of hydrophytic vegetation around its perimeter, the majority of which is herbaceous (Carex, Typha, Rumex). The surrounding area is mowed turf with scattered trees. The soil is hydric and the source of inundation is overland flow from precipitation. All three parameters are met. The "emergent" wetland area is 0.03 acres. The open water is a "water of the U.S." with an area of 0.59 acres.

406+00

The USGS shows an intermittent stream at this location, however the field investigation found a spring but no signs of a stream channel. The spring flows out into a drainage area that possesses hydrophytic herbaceous vegetation (Carex vulpinoidea). There is also a Black Willow near the spring outlet. The surrounding area is grazed Tall Fescue pasture. The soil is continually saturated and therefore hydric. The source of hydrology is ground water from the spring. All three parameters are met. The "emergent" wetland area covers 0.04 acres.

466+00

This stream is shown on the USGS map as intermittent, and designated as PFO1A on the NWI map. It has steep eroded banks and areas where sloughing has occurred. It is in the 100 year floodplain and has woodland areas on each side of the stream. The woodland vegetation is non-hydrophytic above the OHWM. The soil is hydric. There are no wetland hydrology indicators above the OHWM. Only one

parameter is met and there are no wetlands above the OHWM. The stream is a “water of the U.S.” with an area of 0.45 acres at the OHWM. The riparian woodland habitat covers an area of 0.90 acres within the R.O.W.

500+00

This stream is shown on the USGS map as intermittent, and designated as R4SBC on the NWI map. It has a small channel with vertical eroded banks. Scattered trees line each side of the stream above its banks. The dominant vegetation above the OHWM is non-hydrophytic. The surrounding area is grazed fescue pasture. The soil is hydric. There are no wetland hydrology indicators above the OHWM. Only one parameter is met and there are no wetlands above the OHWM. The stream is a “water of the U.S.” with an area of 0.22 acres at the OHWM. The riparian woodland habitat covers an area of 0.28 acres within the R.O.W.

510+00

This pond is an abandoned strip mining pit and is designated as PUBFx on the NWI map. It is a long narrow pond with steep banks and no discernible outflow or overflow area. It has a very narrow (2') band of hydrophytic vegetation consisting of trees, saplings and herbaceous plants (*Salix*, *Populus deltoides*, *Platanus occidentalis*, *Cyperus esculentus*). The surrounding area is grazed pasture. The soil is hydric and the source of inundation is overland flow from precipitation. All three parameters are met. The “scrub-shrub” wetland area is 0.05 acres. The open water is a “water of the U.S.” with an area of 0.52 acres.

518+00

This stream is in the floodplain and is shown on the USGS map as intermittent. It has steep eroded banks with some sloping terraces (5% or more). It runs through a wooded area, the dominant vegetation of which is non-hydrophytic above the OHWM. The surrounding area is grazed pasture as evidence of cattle trampling can be seen around the stream. The soil is hydric. There are no wetland hydrology indicators above the OHWM. Only one parameter is met and there are no wetlands above the OHWM. The stream is a “water of the U.S.” with an area of 0.22 acres at the OHWM. The riparian woodland habitat covers an area of 0.94 acres within the R.O.W.

532+00

This site is the draw down area of an old abandoned strip mining pit. The NRCS designates this area as an “artificial wetland” (aw). The portion of this area that is within the proposed R.O.W. is completely vegetated with hydrophytic plants (*Salix*, *Typha*, *Eleocharis*, *Cyperus*), the majority being *Typha*. There is about six inches of surface water in this area. The edges that are not inundated are saturated. The soil is hydric and the source of hydrology is overland flow from precipitation. The pond itself is excavated and has no discernible overflow or outflow area thus causing the water to remain in the draw down area for long periods. All three parameters are met. The “emergent” wetland area covers 0.43 acres. There is no open water within the R.O.W.

544+00

This stream is shown on the USGS map as intermittent. At this location it is the very beginning of a channel that is very narrow. The channel disappears and becomes a shallow swale to the north. It is a potential problem area because there is currently no surface water or saturation, it is only somewhat moist. Water is most likely present only during the rainy season. The vegetation within the stream channel's OHWM and in the swale is a dominance of hydrophytic herbaceous plants (*Echinochloa*, *Cyperus*, *Bidens*). The surrounding area is grazed pasture. The soil in the swale is hydric and the wetland hydrology is the drainage pattern, the source being overland flow from precipitation. Under normal

circumstances all three parameters would be met. The swale area is an "emergent" wetland covering an area of 0.04 acres. The stream channel is a "water of the U.S." with an area of 0.01 acres at the OHWM.

547+00*

This site is shown on the USGS map as an intermittent stream. It is a vegetated drainageway between two cultivated milo fields. Hydrophytic herbaceous vegetation is present in the center of the drainageway (Bidens, Echinochloa). There are also a few Cattails and a sapling Cottonwood. Within the drainageway, a band of Tall Fescue lies between the hydrophytic vegetation and the cultivated crop. A small channel (18") within the drainageway is visible. The soil is hydric and saturated in the top 6 inches. The source of hydrology is overland flow from precipitation. All three parameters are met. This is a wetland "emergent" area covering 0.10 acres within the R.O.W. The channel is a "water of the U.S." covering 0.01 acres within the R.O.W.

558+50*

This site is shown on the USGS map as an intermittent stream. It is, however, a field of milo with no channel nor evidence of a waterway. The soil is non-hydric and there are no wetland hydrology indicators. There are no wetlands nor "waters of the U.S."

591+00

This pond is designated as PUBGx on the NWI map. It is in a relatively flat area and has a wide band (30') of hydrophytic herbaceous vegetation around much of its perimeter, both in the water and on the shore. The surrounding area is grazed pasture on the east, west and north. To the south there is a stand of Osage Orange trees. The soil is ponded and therefore hydric and the source of inundation is overland flow from precipitation. All three parameters are met. The "emergent" wetland area covers 0.18 acres. The open water is a "water of the U.S." with an area of 0.20 acres.

616+50

No Right-of-Entry was granted for this site. This stream is indicated on the USGS map as intermittent, and designated on the NWI map as PFO1A. It is lined on each side with woodland. From the road some of the trees that are distinguishable are Honeylocust, American Elm, and Hackberry. Based on these visual observations and on characteristics of similar streams in the area, it is most likely that the dominant vegetation above the OHWM is non-hydrophytic. The mapped soil type is Urich Silt Loam which is on the hydric soils lists. Based on characteristics of similar streams in the area there are most likely no wetland hydrology indicators above the OHWM. It is most likely that not all three parameters are met and that there are no wetlands above the OHWM. The stream is a "water of the U.S." with an estimated area of 0.63 acres at the OHWM. The riparian woodland habitat covers an estimated area of 3.16 acres within the R.O.W.

658+00

This site is designated on the NWI map as PFO1A, and designated as a "wooded wetland" (ww) by the NRCS. It is a forested area to the north of Deer Creek. The dominant vegetation is non-hydrophytic woodland containing such plants as Black Walnut, Honeylocust, Shagbark Hickory, Indiancurrent Coralberry, Clearweed, Yellow Ironweed and Virginia Creeper. The soil is non-hydric and there are no wetland hydrology indicators present. No parameters are met - there are no wetlands. This is a riparian woodland habitat with an area of 4.82 acres within the R.O.W.

661+00

At this location the alignment crosses Deer Creek which has a drainage area greater than 1.5 square miles. It is shown on the USGS map as a perennial stream and designated on the NWI map as PFO1A. It

has very steep eroded banks and a varying width channel with very little water in it. The dominant vegetation above the OHWM is non-hydrophytic woodland on the south side of the Creek (see 658+00 for the north side). Some of the plants include Shagbark Hickory, Red Mulberry, Indiancurrent Coralberry, Stinging Nettle, Nimblewill, Geum, and Virginia Creeper. The soil is non-hydric and there are no wetland hydrology indicators above the OHWM. The stream is a "water of the U.S." with an area of 0.66 acres at the OHWM. The riparian woodland habitat covers an area of 2.25 acres within the R.O.W.

667+00

This area is comprised of a stand of mostly *Betula nigra* (River Birch) and *Platanus occidentalis* (Sycamore). Other plants include *Fraxinus pennsylvanica* saplings, *Festuca arundinacea*, *Commelina communis*, and *Solidago gigantea*. The dominant vegetation is hydrophytic. All trees are fairly young, indicating that the conditions have not been in existence for a long period of time. It could have previously been cultivated cropland. Upland plants dominate the area outside the tree stand.

The soil is on the hydric soils lists and was confirmed as being hydric, but this area is currently dry and there is no dam or impoundment to hold water here. The source of water, when it is present, comes from irrigation of the cropland just to the south of this area. Therefore, when irrigation ceases, hydrology ceases. Wetland hydrology most likely did not occur prior to the irrigation practices (it is an upland site). This area is not classified as a wetland.

679+00

This pond is designated as PUBGh on the NWI map. It is a very large pond with extensive areas of hydrophytic herbaceous vegetation (*Leersia*, *Polygonum*, *Ludwigia*, *Potamogeton*, *Eleocharis*, *Cyperus*) both in the water and on the flat shoreline. Black Willow and Sycamore trees, and Elderberry shrubs also exist among the herbaceous plants, but are minimal in number. The surrounding area is cultivated crops to the north, and forest to the west and south. The soil is ponded and therefore hydric. The source of inundation is principally from the stream that was dammed to make the pond. The secondary source of hydrology is overland flow from precipitation. The pond also acts as a source of pumped irrigation for the cultivated crop field to the north. All three parameters are met. The "emergent" wetland area covers 2.62 acres. The open water is a "water of the U.S." covering 4.08 acres. The riparian woodland habitat on the south side of the pond covers an area of 0.60 acres within the R.O.W.

688+00

No Right-of-Entry was granted for this site. This pond is designated as PUBGh on the NWI map. The aerial photo shows inundation and a band of herbaceous vegetation around the perimeter. The vegetation is most likely hydrophytic based on characteristics of similar ponds in the area. The surrounding area is pasture to the east and forest to the west. The soil is probably ponded frequently for long duration based on mapped information and therefore probably hydric. The source of inundation is overland flow from precipitation. All three parameters are most likely met. The "emergent" wetland area is an estimated 0.43 acres. The open water is a "water of the U.S." with an estimated area of 1.15 acres.

696+50

This pond is designated as PUBGh on the NWI map. It is a somewhat long narrow pond with a band of hydrophytic vegetation around its perimeter and a more extensive area of hydrophytic vegetation in the draw down. Some of these areas are predominantly trees and shrubs/saplings (*Salix*, *Gleditsia*), and other areas are predominantly herbaceous (*Polygonum*, *Ludwigia*, *Carex*). The surrounding area is cultivated crop and pasture to the south, west and east, and forest to the north. The soil is ponded and therefore hydric and the source of inundation is overland flow from precipitation and swale inflow. All

three parameters are met. The "emergent" wetland area is 0.34 acres and the "scrub-shrub" wetland area is 0.15 acres. The open water is a "water of the U.S." with an area of 1.19 acres.

705+00

This stream is shown on the USGS map as intermittent, and designated on the NWI map as PEMA. It is a vegetated drainageway between two cultivated crops. The aerial photo shows standing water in this area. There is a small (3') channel running through the drainageway that, in some places, becomes non-existent. A 20' wide portion down the middle of the drainageway contains hydrophytic herbaceous vegetation. The remainder of the vegetation on each side is non-hydrophytic. The soil is hydric in the area containing hydrophytic vegetation and the wetland hydrology indicator is the drainage pattern. All three parameters are met. This is an "emergent" wetland with an area of 0.18 acres. The stream channel is a "water of the U.S." with an area of 0.03 acres at the OHWM.

733+00

This stream is shown on the USGS map as intermittent, and designated on the NWI map as PEMA. It has very steep banks and only a small amount of water in the stream bed. A narrow band of woodland borders each side of the stream. The dominant vegetation above the OHWM is non-hydrophytic trees (Persimmon, Osage Orange, Honeylocust, Shagbark Hickory), shrubs/saplings (Osage Orange, Multiflora Rose), and herbaceous plants (Common Ragweed, Smooth Crabgrass, Nimbewill). The surrounding area is grazed pasture outside the woodland, and there is some trash dumping on the north side of the stream such as construction materials, wood chips, and household waste. The soil is non-hydric and there are no wetland hydrology indicators above the OHWM. No parameters are met and there are no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.16 acres at the OHWM. The riparian woodland habitat covers an area of 0.48 acres within the R.O.W.

744+00

This pond is designated as PUBGh on the NWI map. It has a narrow band of hydrophytic herbaceous vegetation around its perimeter and is used as a stock pond. The surrounding area is grazed pasture. The soil is ponded and therefore hydric and the source of inundation is overland flow from precipitation. All three parameters are met. The "emergent" wetland area is 0.03 acres. The open water is a "water of the U.S." with an area of 0.08 acres.

753+50

This pond is designated as PUBGh on the NWI map. It has a large open water area and a narrow band of hydrophytic herbaceous vegetation around its perimeter. The surrounding area is grazed pasture. The soil is ponded and therefore hydric and the source of inundation is overland flow and swale inflow from precipitation. All three parameters are met. The "emergent" wetland area is 0.05 acres. The open water is a "water of the U.S." with an area of 0.64 acres.

754+00

This pond is designated as PUBGh on the NWI map. It is a small pond, the entire area of which contains hydrophytic herbaceous vegetation. The surrounding area is grazed pasture. The soil is ponded and therefore hydric and the source of inundation is overland flow and swale inflow from precipitation. All three parameters are met. The "emergent" wetland area is 0.25 acres. There is no open water.

755+50

This pond is designated as PUBGh on the NWI map. It is a large pond with areas of hydrophytic vegetation around its perimeter, the majority of which is herbaceous. At the draw down, which is the most extensive area of hydrophytic vegetation, there are also a few Bald Cypress and Black Willow

trees. The surrounding area is grazed pasture to the south and east, and woodland to the north and west. The soil is ponded and therefore hydric and the source of inundation is overland flow, swale inflow, and overflow from pond 754+00. All three parameters are met. The “emergent” wetland area is 0.41 acres. The open water is a “water of the U.S.” with an area of 0.81 acres.

758+50

This pond is designated as PUBGh on the NWI map. It is a small circular pond with a dam around three-fourths of its perimeter. It could be an old inactive sewage lagoon (there is an old homestead nearby). Hydrophytic herbaceous vegetation is growing in and around the entire pond area. The surrounding area is grazed pasture. The soil is ponded and therefore hydric and the source of inundation is overland flow from precipitation. All three parameters are met. The “emergent” wetland area is 0.05 acres. There is no open water.

775+00

This pond is designated as PUBGh on the NWI map. It is a small circular pond with hydrophytic herbaceous vegetation growing in and around the entire pond area. The surrounding area is woodland to the north and east, and hay field to the south and west. There are some trees and shrubs in the upland area on the dam (Osage Orange, Honeylocust, multiflora rose). The soil is ponded and therefore hydric and the source of inundation is overland flow from precipitation. All three parameters are met. The “emergent” wetland area is 0.08 acres. There is no open water.

820+00

This is a vegetated drainageway in a soybean field in the 100 year floodplain. It has a small 2' wide drainage pattern running through it. The dominant vegetation is hydrophytic, the majority of which is herbaceous with only a few scattered trees. The hydrophytic vegetation area is about 12' wide in the center of the drainageway. The soil is hydric and saturated. The source of saturation is overland flow and swale inflow from precipitation. All three parameters are met. This drainageway is an “emergent” wetland with an area of 0.11 acres within the R.O.W.

822+00*

This area is designated as PEMAh on the NWI map. This is a low, flat swale area that is poorly drained. It is currently a soy bean crop in the floodplain. It can be considered an atypical situation since this area, before conversion, most likely contained hydrophytic vegetation similar to that found on the west side of the road in the drainageways (see 828+00). The soil is hydric and saturated in the top 2 inches. This area is poorly drained because the road acts as a dike. The source of saturation is overland flow and swale inflow from precipitation. All three parameters would most likely have been met before alteration. This area is a “farmed wetland” with an area of 0.79 acres. However, there is currently no official NRCS designation as such.

825+00

This site is designated on the NWI map as PEMAh. It is an upland area in the floodplain. The dominant vegetation is non-hydrophytic herbaceous, the soil is hydric, and there are no wetland hydrology indicators present. Only one parameter is met. It is not a wetland.

826+50

This pond is located within an area of the floodplain designated as PEMAh on the NWI map. It is a pond that is entirely vegetated with hydrophytic herbaceous plants (and a sapling Willow). There is no open water and no discernible outflow. The soil is ponded and therefore hydric and the source of inundation is

overland flow from precipitation. All three parameters are met. The "emergent" wetland area is 0.07 acres. There is no open water.

828+00

This area is designated as PEMAh on the NWI map. It is a drainage swale in the floodplain. It is a potential problem area because there is currently no surface water or saturation, but the hydrology would most likely be present during the rainy season. The dominant vegetation within the swale is hydrophytic, the majority of which is herbaceous (Tickseed Sunflower, Pinkweed, Nutsedge, Cocklebur, Yellow Foxtail, Blue Vervain), with a few scattered shrubs/saplings (Black Willow, Buttonbush). The surrounding area is open field (non-agricultural). The soil is hydric and the wetland hydrology indicator is the drainage pattern. All three parameters are met. This is an "emergent" wetland with an area of 0.88 acres.

832+50

At this location the alignment crosses Deer Creek which is in the 100 year floodplain. It is a lower perennial stream and is designated on the NWI map as R2UBG. It has a drainage area greater than 1.5 square miles and a wide channel with very steep banks. The area above the stream banks on the east side is designated as PEMAh on the NWI map. The dominant vegetation above the OHWM is hydrophytic herbaceous (Cocklebur, Pinkweed, Barnyard Grass, Chufa Flatsedge). All of the trees in the area are now dead - most likely due to the flood of 1993. The soil above the OHWM is hydric. This area is a potential problem area because it currently has no surface water or saturation. During the rainy season this area most likely becomes saturated. There are two secondary wetland hydrology indicators that are present - oxidized root channels in the upper 12", and a positive FAC Neutral Test. The source of water is from overland flow and flooding. All three parameters are met under normal conditions. The "emergent" wetland above the OHWM has an area of 0.87 acres. The stream is a "water of the U.S." with an area of 0.46 acres at the OHWM.

833+50

This site is the area above the banks of Deer Creek on the west side. It is designated as PEMAh and PFO1Ah on the NWI map, and as "wooded wetland" (ww) and "wetland emergent" (we) by the NRCS. There are two terraces above the OHWM and the dominant vegetation on these terraces is hydrophytic herbaceous (Cocklebur, Pinkweed, Barnyard Grass, Chufa Flatsedge, Ivyleaf Morning Glory, Tickseed Sunflower, Buttonbush). All of the trees in the area are now dead - most likely due to the flood of 1993. The area to the west is a soybean field. The soil is hydric. This area is a potential problem area because it currently has no surface water or saturation. During the rainy season this area most likely becomes saturated. There are two secondary wetland hydrology indicators that are present - oxidized root channels in the upper 12", and a positive FAC Neutral Test. The source of water is from overland flow and flooding. All three parameters are met under normal conditions. The "emergent" wetland has an area of 1.06 acres within the R.O.W.

838+00

This site is designated on the NWI map as PEMAh. It is an upland area in the floodplain. The dominant vegetation is non-hydrophytic herbaceous, the soil is non-hydric, and there are no wetland hydrology indicators present. No parameters are met. It is not a wetland.

839+00

This site is in the floodplain and on the north edge of an area that is designated as PEMAh on the NWI map. It is a small drainage swale that flows to Deer Creek. It is a potential problem area because there is currently no surface water or saturation, but the hydrology would most likely be present during the rainy

season. The dominant vegetation within the swale is hydrophytic, the majority of which is herbaceous (Giant Ragweed, Tickseed Sunflower, Barnyard Grass, Chufa Flatsedge), with a few scattered shrubs/saplings (Buttonbush). There are also some dead trees in the swale, most likely due to the flood of 1993. The surrounding area is open field (non-agricultural) to the south, and cultivated crop land to the north. The soil is hydric and the wetland hydrology indicator is the drainage pattern. All three parameters are met under normal conditions. This is an "emergent" wetland with an area of 0.36 acres within the R.O.W.

840+00

This site is a low area in the 100 year floodplain. It is designated on the NWI map as PEMCh (seasonally flooded), and as "wetland emergent" (we) by the NRCS. The dominant vegetation is hydrophytic, the majority of which is herbaceous (Pinkweed, Cocklebur, Tickseed Sunflower, Barnyard Grass, Rough Sumpweed), with a few scattered shrub/saplings (Black Willow, Buttonbush). The area to the north is open field (non-agricultural) containing non-hydrophytic vegetation. The Pinkweed in the PEMCh area formed a very noticeable boundary line between hydrophytic and non-hydrophytic vegetation. The soil is hydric. This area is a potential problem area because it currently has no surface water or saturation. During the rainy season this area most likely becomes saturated. There are two secondary wetland hydrology indicators that are present - oxidized root channels in the upper 12", and a positive FAC Neutral Test. There was also some flood debris at the boundary of this area.. The source of water is from overland flow and flooding. All three parameters are met under normal conditions. The "emergent" wetland has an area of 0.31 acres within the R.O.W.

841+00

This site is designated on the NWI map as PEMAh. It is an upland area in the floodplain. The dominant vegetation is non-hydrophytic herbaceous, the soil is hydric, and there are no wetland hydrology indicators present. Only one parameter is met. It is not a wetland.

844+00

This site is in the floodplain and on the west edge of an area designated on the NWI map as PEMAh. It is a low flat area that is poorly drained because the railroad embankment acts as a dike and prevents water from draining to Coal Creek. The dominant vegetation is hydrophytic, the majority of which is herbaceous (Tickseed Sunflower, Barnyard Grass, Rice Cutgrass, Blunt Spike Rush, Pinkweed, Purple Gerardia), with a few scattered trees and shrub/saplings (Black Willow, Buttonbush). There are also some dead trees within the area, most likely due to the flood of 1993. The soil is hydric and saturated in the upper 12 inches. Small drainage channels also run through the area. The source of saturation is overland flow from precipitation. All three parameters are met. The "emergent" wetland area covers 1.11 acres within the R.O.W.

847+00

At this location the alignment crosses Coal Creek which is in the 100 year floodplain. It is shown on the USGS map as a perennial stream and is in an area designated on the NWI map as PFO1Ah. It has a drainage area greater than 1.5 square miles and a 30' wide channel with very steep banks. The dominant vegetation above the OHWM on the east side of the stream is hydrophytic herbaceous (Cocklebur, Pinkweed, Barnyard Grass, Ivyleaf Morning Glory, Nutall's Waterhemp, Common Dayflower). All of the trees in the area are now dead - most likely due to the flood of 1993. The soil above the OHWM is hydric and is saturated beginning at 5 inches. The source of hydrology is ground water (high water table) and flooding. All three parameters are met. The "emergent" wetland above the OHWM has an area of 0.91 acres. The stream is a "water of the U.S." with an area of 0.39 acres at the OHWM.

848+00

This site is the first (bottom) terrace on the west side of Coal Creek above the OHWM. It is in the floodplain and designated as PFO1Ah on the NWI map. The dominant vegetation is hydrophytic herbaceous (Cocklebur, Ivyleaf Morning Glory, Common Dayflower, Clearweed, Pinkweed). There are also some dead trees within the area, most likely due to the flood of 1993. The soil is hydric and very moist with saturation beginning at 14 inches. There are some drainage patterns running through the area and the source of hydrology is flooding, overland flow, and ground water (high water table) which would most likely be in the upper 12 inches with wetter conditions in the spring. The main wetland hydrology indicator is the drainage patterns through the area. All three parameters are met. The "emergent" wetland area covers 1.24 acres within the R.O.W.

850+00

This site is the second (upper) terrace on the west side of Coal Creek above the OHWM. It is in the floodplain and designated as PFO1Ah and PEMAh on the NWI map. It has a slight elevation change above the first (upper) terrace and a vegetation change. The dominant vegetation is hydrophytic, consisting of herbaceous plants (Pinkweed, Rice Cutgrass, Barnyard Grass) and a small number of Swamp White Oak trees. All other trees throughout the area are dead, most likely due to the 1993 flood. The west boundary of this area is marked by a sharp rise in elevation and an abrupt change in vegetation. The soil is hydric and is saturated, beginning at the surface. There are some drainage patterns running through the area. The source of saturation is overflow from a pond to the west of the site. The overflow eventually develops into sheet flow down the slope that leads to this area. Some of this water may also have its origin as golf course irrigation run-off from the course on the west side of Route 13. All three parameters are met. The "emergent" wetland area covers 3.72 acres within the R.O.W.

855+00

This site is designated on the NWI map as PEMAh. It is an upland area in the floodplain, but just above the wetland area described at site 850+00. The dominant vegetation is non-hydrophytic herbaceous, the soil is hydric, and there are no wetland hydrology indicators present. Only one parameter is met. It is not a wetland.

858+00

This site is a drainageway that leads to Truman Reservoir and is also a low area below a pond, the dam of which was built in the drainage way. It is in the floodplain and designated as PFO1Ah on the NWI map. The dominant vegetation is hydrophytic, the majority of which is herbaceous (Tickseed Sunflower, Pinkweed, Rice Cutgrass, Mild Water Pepper, Common Dayflower, Trumpet Creeper). There are also some scattered trees (Swamp White Oak, Honeylocust, Sycamore) and shrubs (Buttonbush) growing throughout the area. Many dead trees are here, most likely due to the 1993 flood. At the southwest boundary of this area the vegetation quickly changes to non-hydrophytic woodland. The soil is hydric and the source of hydrology is overflow from the pond, and flooding when the lake backs up into this area. The main wetland hydrology indicator is the drainage pattern through the area. All three parameters are met. The "emergent" wetland area covers 1.32 acres. The riparian woodland habitat area is 2.61 acres within the R.O.W.

870+00

This site is a drainageway that leads to Truman Reservoir. It is in the floodplain and designated as PFO1Ah on the NWI map. The dominant vegetation is hydrophytic, the majority of which is herbaceous (Tickseed Sunflower, Rice Cutgrass, Barnyard Grass, False Nettle). There are also a few scattered trees (Swamp White Oak, Pin Oak) and shrubs/saplings (Buttonbush, Green Ash) growing throughout the area. Many dead trees are here, most likely due to the 1993 flood. At the boundary of this area the vegetation

quickly changes to non-hydrophytic woodland. The soil is hydric and very moist. There is a drainage pattern through the area and the source of hydrology is overland flow and flooding when the lake backs up into this area. All three parameters are met. The “emergent” wetland area covers 0.02 acres. The riparian woodland habitat area is 9.18 acres within the R.O.W.

878+00

This site is designated on the NWI map as PEMAh. It is an upland area in the floodplain, but just above the wetland area described at site 880+00. The dominant vegetation is non-hydrophytic herbaceous, the soil is hydric, and there are no wetland hydrology indicators present. Only one parameter is met. It is not a wetland.

880+00

This site is a drainage way that leads to Truman Reservoir. It is in the floodplain and designated as PEMAh on the NWI map. The dominant vegetation is hydrophytic, the majority of which is herbaceous (Pinkweed, Rice Cutgrass). There are also a few scattered trees and shrubs/saplings (Black Willow, Green Ash) growing within the drainageway. At the boundary of this area the Pinkweed and Rice Cutgrass disappear and the non-hydrophytic plants take over (Giant Foxtail, White Snakeroot, Sowthistle). The surrounding area is open field (non-agricultural). The soil is hydric and the source of hydrology is overland flow, highway ditch flow, and flooding when the lake backs up into this area. All three parameters are met. The “emergent” wetland area covers 0.14 acres within the R.O.W.

880+50

This site is a drainageway below the dam of pond 882+00. It flows into the drainageway at site 880+00. It is in the floodplain and designated as PEMAh on the NWI map. The dominant vegetation is hydrophytic, the majority of which is herbaceous (Rice Cutgrass, Tickseed Sunflower, Barnyard Grass, Mild Water Pepper). There are also a few scattered shrub/saplings (Black Willow) growing within the drainageway. At the boundary of this area there is an abrupt change in vegetation as the non-hydrophytic plants take over (Giant Foxtail, White Snakeroot, Sowthistle). The surrounding area is open field (non-agricultural). The soil is hydric and the source of hydrology is pond outflow, dam seepage, overland flow from precipitation, and flooding when the lake backs up into this area. All three parameters are met. The “emergent” wetland area covers 0.10 acres within the R.O.W.

882+00

This pond is in the floodplain and designated as PUBGh on the NWI map. It is a shallow circular pond with a very flat shoreline except at the dam. It has extensive areas of hydrophytic vegetation consisting of trees, shrubs/saplings, and herbaceous plants. Along the dam, and at the two draw down areas on the south side, the vegetation is dominated by trees and shrubs/saplings (Black Willow, Green Ash, Sycamore). The remainder of the pond’s edges are comprised of herbaceous vegetation (Blunt Spike Rush, Mild Water Pepper, Water Primrose, Tooth Cup, Barnyard Grass). The soil is ponded and therefore hydric and the source of inundation is overland flow and swale inflow from precipitation. All three parameters are met. The “emergent” wetland area is 0.17 acres and the “forested” wetland area is 0.16 acres. The open water is a “water of the U.S.” with an area of 0.48 acres.

891+50

This site is a drainage way that leads to Truman Reservoir. It is in the floodplain and designated as PFO1Ah on the NWI map. It is a very flat area that is poorly drained. It is a potential problem area because there is currently no surface water or saturation present. The dominant vegetation is hydrophytic, the majority of areal coverage being in the tree layer (Pin Oak, Persimmon, Slippery Elm). The soil is hydric and the source of hydrology under normal conditions is culvert inflow and ditch inflow from

Route 13, overland flow, and flooding when the lake backs up into this area. There is a drainage pattern running through this area also. All three parameters are met under normal seasonal conditions. This is a "forested" wetland area covering 0.86 acres within the R.O.W.

(Rte7)20+00

This stream is in the 100 year floodplain and is shown on the USGS map as intermittent. It has a narrow channel with vertical banks and is currently dry. It runs through a wooded area, the dominant vegetation of which is non-hydrophytic. The soil is hydric, but there are no wetland hydrology indicators above the OHWM. Only one parameter is met and there are no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.05 acres at the OHWM. The riparian woodland habitat area covers 0.87 acres within the R.O.W.

(Rte7)23+00

This stream is shown on the USGS map as intermittent. It has a narrow channel with vegetated banks. The dominant vegetation above the OHWM is hydrophytic, the majority of which is herbaceous (Giant Ragweed, Late Goldenrod, Curly Dock, Smartweed, Yellow Foxtail). There are also a few Black Willow trees and saplings along the stream. At the boundary of this area and the upland, the vegetation quickly changed to Tall Fescue. The soil is hydric and the source of hydrology is overland flow from precipitation and flooding from culvert back up (blockage in the culvert under the county road prevents it from draining adequately). Some of the dead vegetation above the OHWM showed signs of water flow (laid down in the downstream direction). All three parameters are met above the OHWM. The stream is a "water of the U.S." with an area of 0.02 acres at the OHWM. The "emergent" wetland area covers an area of 0.08 acres within the R.O.W.

(Rte7)57+00

This stream is shown on the USGS map as intermittent. It has a narrow channel with steep banks and very little water present. It runs through a wooded area, the dominant vegetation of which is non-hydrophytic. The soil is non-hydric, and there are no wetland hydrology indicators above the OHWM. No parameters are met and there are no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.07 acres at the OHWM. The riparian woodland habitat area covers 0.73 acres within the R.O.W.

(Rte7)93+00

This pond is designated as PUBGh on the NWI map. It is in somewhat of a depression with a dam occupying two-thirds of the pond's perimeter. There is a small ring of hydrophytic herbaceous vegetation (Rice Cutgrass and Water Pepper) around the entire edge of the pond. The soil is ponded and therefore hydric, and the source of inundation is overland flow from precipitation. All three parameters are met. The "emergent" wetland area covers 0.02 acres. The open water is a "water of the U.S." with an area of 0.19 acres.

(Rte7)117+00

This pond is designated as PUBFh on the NWI map. It is a circular pond with a dam that occupies half of its perimeter. There is a relatively wide (11') band of hydrophytic herbaceous vegetation (Spike Rush, Chufa Flatsedge, Rice Cutgrass, Bladderwort, Water Starwort) around the entire edge of the pond. Two Black Willow trees are also present at the dam on the northeast side. The soil is ponded and therefore hydric, and the source of inundation is overland flow from precipitation. All three parameters are met. The "emergent" wetland area covers 0.07 acres. The open water is a "water of the U.S." with an area of 0.09 acres.

(Rte7)122+50

No Right-of-Entry was granted for this site. This stream is in the floodplain and is shown as intermittent on the USGS map. It has a narrow channel with very steep eroded banks and is currently dry. About half of the stream within the R.O.W. is bordered by woodland. Based on characteristics of similar streams in the area, the vegetation above the OHWM is most likely non-hydrophytic. The mapped soil type is Deepwater Silt Loam and Coweta Fine Sandy Loam, both of which are non-hydric based on the descriptions in the soil survey. There are most likely no wetland hydrology indicators above the OHWM based on characteristics of similar streams in the area. It is most likely that no parameters are met and that there are no wetlands above the OHWM. The stream is a "water of the U.S." with an area of 0.18 acres at the OHWM. The riparian woodland habitat area covers 0.32 acres within the R.O.W.

(Rte7)126+50

No Right-of-Entry was granted for this site. The NWI map designates this pond as PUBGh. It is not visible from the road, but the aerial photo shows a circular inundated area. Its small size and proximity to the house seem to suggest that it is most likely an active sewage lagoon. It is not a wetland nor a "water of the U.S."

(Rte7)138+00

No Right-of-Entry was granted for this site. This stream is in the floodplain and is shown on the USGS map as intermittent. It is designated as PFO1A on the NWI map and as a "wooded wetland" (ww) by the NRCS. The stream runs through a wooded area and based on the characteristics of other similar streams in the area it is most likely that the vegetation above the OHWM is non-hydrophytic. The mapped soil type is Verdigris Silt Loam which is on the hydric soils lists based on inclusions. Based on the findings of other similar streams in the area it is most likely that the majority of the soil at this site does not contain hydric inclusions. There are most likely no wetland hydrology indicators above the OHWM based on characteristics of similar streams. It is most likely that not all three parameters are met and that there are no wetlands above the OHWM. The stream is a "water of the U.S." with an estimated area of 0.16 acres at the OHWM. The riparian woodland habitat area covers an estimated 3.50 acres within the R.O.W

(Rte7)140+00*

No Right-of-Entry was granted for this site. This area is designated as a "wet pasture" by the NRCS. Field verification can not be made and it is not visible from the road so it is assumed that all three parameters are met at this site. It is a "wet pasture" with an estimated area of 0.18 acres within the R.O.W.

(Rte7)141+50

No Right-of-Entry was granted for this site. At this location the alignment crosses Town Creek which has a drainage area greater than 1.5 square miles. This stream is in the floodplain and is shown on the USGS map as perennial. It is designated as PFO1A on the NWI map and as a "wooded wetland" (ww) by the NRCS. The stream runs through a wooded area and based on the characteristics of other similar streams in the area it is most likely that the vegetation above the OHWM is non-hydrophytic. The mapped soil type is Verdigris Silt Loam which is on the hydric soils lists based on inclusions. Based on the findings of other similar streams in the area it is most likely that the majority of the soil at this site does not contain hydric inclusions. There are most likely no wetland hydrology indicators above the OHWM based on characteristics of similar streams. It is most likely that not all three parameters are met and that there are no wetlands above the OHWM. The stream is a "water of the U.S." with an estimated area of 0.24 acres at the OHWM. The riparian woodland habitat area covers an estimated 3.67 acres within the R.O.W.

(Rte7)151+50

No Right-of-Entry was granted for this site. This pond is shown on the USGS map and can be seen on the aerial photo as a circular inundated area. It most likely has a ring of hydrophytic herbaceous vegetation around the edge based on characteristics of similar ponds in the area. The soil is probably ponded frequently for long duration based on mapped information and therefore probably hydric. The source of inundation is most likely overland flow from precipitation. It is most likely that all three parameters are met. The "emergent" wetland area covers an estimated 0.04 acres. The open water is a "water of the U.S." with an estimated area of 0.18 acres.

(Rte7)170+00

No Right-of-Entry was granted for this site. This pond can be seen on the aerial photo as a circular inundated area with a relatively wide band of vegetation on the north side opposite the dam and narrower bands on the other sides of the pond. It is most likely that the vegetation is hydrophytic herbaceous based on characteristics of similar ponds in the area. The soil is ponded and therefore hydric and the source of inundation is most likely overland flow from precipitation. It is most likely that all three parameters are met. The "emergent" wetland area covers an estimated 0.08 acres. The open water is a "water of the U.S." with an estimated area of 0.06 acres.

(Rte7)178+00

No Right-of-Entry was granted for this site. This stream is in the floodplain and is shown on the USGS map as intermittent. It is designated as PFO1A on the NWI map. The stream runs through a wooded area and based on the characteristics of other similar streams in the area it is most likely that the vegetation above the OHWM is non-hydrophytic. The mapped soil type is Verdigris Silt Loam which is on the hydric soils lists based on inclusions. Based on the findings of other similar streams in the area it is most likely that the majority of the soil at this site does not contain hydric inclusions. There are most likely no wetland hydrology indicators above the OHWM based on characteristics of similar streams. It is most likely that not all three parameters are met and that there are no wetlands above the OHWM. The stream is a "water of the U.S." with an estimated area of 0.82 acres at the OHWM. The riparian woodland habitat area covers an estimated 4.72 acres within the R.O.W.

CONCLUSIONS (Henry County)

The total potential impacts by classification are 7.59 hectares (18.76 acres) of “emergent” wetland which includes “grassed waterway” and “wet pasture”, 0.10 hectares (0.24 acres) of “scrub-shrub”, 0.51 hectares (1.26 acres) of “forested” wetland, 0.32 hectares (0.79 acres) of “farmed wetlands”, and 6.49 hectares (16.03 acres) of “waters of the U.S.”

Total potential impacts to wetland classifications and “waters of the U. S.” within the preferred alternative corridor in Henry County are summarized in the following table:

**Henry County
TOTAL POTENTIAL JURISDICTIONAL WETLAND IMPACTS
By Wetland Classification
in hectares (acres)**

COUNTY	Emergent	Scrub-shrub	Forested	Farmed Wetland	Waters of the U.S.
Henry	7.59 (18.76)	0.10 (0.24)	0.51 (1.26)	0.32 (0.79)	6.49 (16.03)

Note: Emergent total also includes Grassed Waterway and Wet Pasture areas.

**Henry County
POTENTIAL JURISDICTIONAL WETLAND IMPACTS
for Sites within the Preferred Alternative Corridor
in acres**

 Agricultural Sites

 Non-agricultural Sites

SITE NUMBER	Emergent	Scrub-shrub	Forested	Grassed Waterway (emergent)	Wet Pasture (emergent)	Farmed Wetland	Waters of the U. S.
3+00	0.01	-	-	-	-	-	0.15
26+00	-	-	-	0.24	-	-	0.02
39+00	-	-	-	-	-	-	-
56+00	-	-	-	-	-	-	0.18
84+00	0.26	-	-	-	-	-	0.02
149+50	0.05	-	0.22	-	-	-	0.22
221+50	0.07	0.04	-	-	-	-	0.14
249+00	0.01	-	0.02	-	-	-	0.02
251+50	-	-	-	-	-	-	-
288+00	-	-	-	-	-	-	0.06
346+00	-	-	-	-	-	-	0.06
371+00	-	-	-	-	-	-	0.05
380+00	-	-	-	-	-	-	0.07
399+00	0.03	-	-	-	-	-	0.59

SITE NUMBER	Emergent	Scrub-shrub	Forested	Grassed Waterway (emergent)	Wet Pasture (emergent)	Farmed Wetland	Waters of the U. S.
406+00	0.04	-	-	-	-	-	-
466+00	-	-	-	-	-	-	0.45
500+00	-	-	-	-	-	-	0.22
510+00	-	0.05	-	-	-	-	0.52
518+00	-	-	-	-	-	-	0.22
532+00	0.43	-	-	-	-	-	-
544+00	0.04	-	-	-	-	-	0.01
547+00	0.10	-	-	-	-	-	0.01
558+50	-	-	-	-	-	-	-
591+00	0.18	-	-	-	-	-	0.20
616+50	-	-	-	-	-	-	0.63
658+00	-	-	-	-	-	-	-
661+00	-	-	-	-	-	-	0.66
667+00	-	-	-	-	-	-	-
679+00	2.62	-	-	-	-	-	4.08
688+00	0.43	-	-	-	-	-	1.15
696+50	0.34	0.15	-	-	-	-	1.19
705+00	0.18	-	-	-	-	-	0.03
733+00	-	-	-	-	-	-	0.16
744+00	0.03	-	-	-	-	-	0.08
753+50	0.05	-	-	-	-	-	0.64
754+00	0.25	-	-	-	-	-	-
755+50	0.41	-	-	-	-	-	0.81
758+50	0.05	-	-	-	-	-	-
775+00	0.08	-	-	-	-	-	-
820+00	0.11	-	-	-	-	-	-
822+00	-	-	-	-	-	0.79	-
825+00	-	-	-	-	-	-	-
826+50	0.07	-	-	-	-	-	-
828+00	0.88	-	-	-	-	-	-
832+50	0.87	-	-	-	-	-	0.46
833+50	1.06	-	-	-	-	-	-
838+00	-	-	-	-	-	-	-
839+00	0.36	-	-	-	-	-	-
840+00	0.31	-	-	-	-	-	-
841+00	-	-	-	-	-	-	-
844+00	1.11	-	-	-	-	-	-
847+00	0.91	-	-	-	-	-	0.39
848+00	1.24	-	-	-	-	-	-
850+00	3.72	-	-	-	-	-	-
855+00	-	-	-	-	-	-	-
858+00	1.32	-	-	-	-	-	-
870+00	0.02	-	-	-	-	-	-

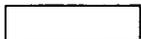
SITE NUMBER	Emergent	Scrub-shrub	Forested	Grassed Waterway (emergent)	Wet Pasture (emergent)	Farmed Wetland	Waters of the U. S.
878+00	-	-	-	-	-	-	-
880+00	0.14	-	-	-	-	-	-
880+50	0.10	-	-	-	-	-	-
882+00	0.17	-	0.16	-	-	-	0.48
891+50	-	-	0.86	-	-	-	-
(Rte7) 20+00	-	-	-	-	-	-	0.05
(Rte7) 23+00	0.08	-	-	-	-	-	0.02
(Rte7) 57+00	-	-	-	-	-	-	0.07
(Rte7) 93+00	0.02	-	-	-	-	-	0.19
(Rte7) 117+00	0.07	-	-	-	-	-	0.09
(Rte7) 122+50	-	-	-	-	-	-	0.18
(Rte7) 126+50	-	-	-	-	-	-	-
(Rte7) 138+00	-	-	-	-	-	-	0.16
(Rte7) 140+00	-	-	-	-	0.18	-	-
(Rte7) 141+50	-	-	-	-	-	-	0.24
(Rte7) 151+50	0.04	-	-	-	-	-	0.18
(Rte7) 170+00	0.08	-	-	-	-	-	0.06
(Rte7) 178+00	-	-	-	-	-	-	0.82
TOTAL ACRES	18.34	0.24	1.26	0.24	0.18	0.79	16.03

The following tables and text provide a breakdown of "waters of the U.S." in these five categories:

1. - Ponds With Potential Jurisdictional Wetland Areas
2. - Ponds Without Potential Jurisdictional Wetland Areas
3. - Stream Crossings
4. - Potential Jurisdictional Wetlands
5. - Non-Wetlands

Henry County
POTENTIAL JURISDICTIONAL WETLAND IMPACTS
for Sites within the Preferred Alternative Corridor
in acres

 Agricultural Sites

 Non-agricultural Sites

SITE NUMBER	Emergent	Scrub-shrub	Forested	Grassed Waterway (emergent)	Wet Pasture (emergent)	Farmed Wetland	Waters of the U. S.
PONDS WITH POTENTIAL JURISDICTIONAL WETLAND AREAS							
3+00	0.01	-	-	-	-	-	0.15
149+50	0.05	-	0.22	-	-	-	0.22
221+50	0.07	0.04	-	-	-	-	0.14
249+00	0.01	-	0.02	-	-	-	0.02
399+00	0.03	-	-	-	-	-	0.59
510+00	-	0.05	-	-	-	-	0.52
591+00	0.18	-	-	-	-	-	0.20
679+00	2.62	-	-	-	-	-	4.08
688+00	0.43	-	-	-	-	-	1.15
696+50	0.34	0.15	-	-	-	-	1.19
744+00	0.03	-	-	-	-	-	0.08
753+50	0.05	-	-	-	-	-	0.64
754+00	0.25	-	-	-	-	-	-
755+50	0.41	-	-	-	-	-	0.81
758+50	0.05	-	-	-	-	-	-
775+00	0.08	-	-	-	-	-	-
826+50	0.07	-	-	-	-	-	-
882+00	0.17	-	0.16	-	-	-	0.48
(Rte7) 93+00	0.02	-	-	-	-	-	0.19
(Rte7) 117+00	0.07	-	-	-	-	-	0.09
(Rte7) 151+50	0.04	-	-	-	-	-	0.18
(Rte7) 170+00	0.08	-	-	-	-	-	0.06

SITE NUMBER	Emergent	Scrub-shrub	Forested	Grassed Waterway (emergent)	Wet Pasture (emergent)	Farmed Wetland	Waters of the U. S.
PONDS WITHOUT POTENTIAL JURISDICTIONAL WETLAND AREAS							
251+50	-	-	-	-	-	-	-
(Rte7)							
126+50	-	-	-	-	-	-	-
STREAM CROSSINGS							
56+00	-	-	-	-	-	-	0.18
288+00	-	-	-	-	-	-	0.06
346+00	-	-	-	-	-	-	0.06
371+00	-	-	-	-	-	-	0.05
380+00	-	-	-	-	-	-	0.07
466+00	-	-	-	-	-	-	0.45
500+00	-	-	-	-	-	-	0.22
518+00	-	-	-	-	-	-	0.22
544+00	0.04	-	-	-	-	-	0.01
558+50	-	-	-	-	-	-	-
616+50	-	-	-	-	-	-	0.63
661+00	-	-	-	-	-	-	0.66
705+00	0.18	-	-	-	-	-	0.03
733+00	-	-	-	-	-	-	0.16
832+50	0.87	-	-	-	-	-	0.46
847+00	0.91	-	-	-	-	-	0.39
(Rte7)							
20+00	-	-	-	-	-	-	0.05
(Rte7)							
23+00	0.08	-	-	-	-	-	0.02
(Rte7)							
57+00	-	-	-	-	-	-	0.07
(Rte7)							
122+50	-	-	-	-	-	-	0.18
(Rte7)							
138+00	-	-	-	-	-	-	0.16
(Rte7)							
141+50	-	-	-	-	-	-	0.24
(Rte7)							
178+00	-	-	-	-	-	-	0.82
POTENTIAL JURISDICTIONAL WETLANDS							
26+00	-	-	-	0.24	-	-	0.02
84+00	0.26	-	-	-	-	-	0.02
406+00	0.04	-	-	-	-	-	-
532+00	0.43	-	-	-	-	-	-

SITE NUMBER	Emergent	Scrub-shrub	Forested	Grassed Waterway (emergent)	Wet Pasture (emergent)	Farmed Wetland	Waters of the U. S.
547+00	0.10	-	-	-	-	-	0.01
820+00	0.11	-	-	-	-	-	-
822+00	-	-	-	-	-	0.79	-
828+00	0.88	-	-	-	-	-	-
833+50	1.06	-	-	-	-	-	-
839+00	0.36	-	-	-	-	-	-
840+00	0.31	-	-	-	-	-	-
844+00	1.11	-	-	-	-	-	-
848+00	1.24	-	-	-	-	-	-
850+00	3.72	-	-	-	-	-	-
858+00	1.32	-	-	-	-	-	-
870+00	0.02	-	-	-	-	-	-
880+00	0.14	-	-	-	-	-	-
880+50	0.10	-	-	-	-	-	-
891+50	-	-	0.86	-	-	-	-
(Rte7) 140+00	-	-	-	-	0.18	-	-
NON-WETLANDS							
39+00	-	-	-	-	-	-	-
658+00	-	-	-	-	-	-	-
667+00	-	-	-	-	-	-	-
825+00	-	-	-	-	-	-	-
838+00	-	-	-	-	-	-	-
841+00	-	-	-	-	-	-	-
855+00	-	-	-	-	-	-	-
878+00	-	-	-	-	-	-	-
TOTAL ACRES	18.34	0.24	1.26	0.24	0.18	0.79	16.03

a. Route 13

The Preferred Alternative could impact 19 ponds consisting of 1.96 hectares (4.85 acres) of “emergent” wetland fringe, 0.10 hectares (0.24 acres) of “scrub-shrub” wetland fringe, 0.16 hectares (0.40 acres) of “forested” wetland fringe and 4.16 hectares (10.27 acres) of open water designated as “Waters of the U. S.”

Seventeen (17) stream crossings could occur resulting in potential impacts to 1.50 hectares (3.70 acres) of “Waters of the U. S.” (i.e. up to the limit of the ordinary high water mark). Streams with a drainage area greater than 3.89 sq. km. (1.5 sq. miles) that are impacted include Deer Creek and Coal Creek.

A total of twenty-two (22) wetland areas could be impacted including 5.34 hectares (13.20 acres) of “emergent” wetland, 0.35 hectares (0.86 acres) of “forested” wetland, 0.10 hectares (0.24 acres) of “grassed waterway” and 0.79 hectares (0.32 acres) of “farmed wetland”.

b. Route 7

The Preferred Alternative for Route 7 could impact 4 ponds consisting of 0.08 hectares (0.21 acres) of “emergent” wetland fringe and 0.21 hectares (0.52 acres) of open water designated as “Waters of the U. S.”

Seven (7) stream crossings could occur resulting in potential impacts to 0.62 hectares (1.54 acres) of “Waters of the U. S.” (i.e. up to the limit of the ordinary high water mark). Town Creek is the only stream that could be impacted by this alternative that has a drainage area greater than 3.89 sq. km. (1.5 sq. miles).

One (1) wetland area, classified as a “wet pasture”, could be impacted and contains 0.07 hectares (0.18 acres).

**Henry County
Potential Jurisdictional Wetland Impacts
for the Preferred Alternative
PONDS and STREAMS**

COUNTY	No.	PONDS - hectares (acres)				STREAMS	
		Wetland Fringe			Waters of the U. S. (open water)	No.	Waters of the U. S.
		Emergent	Scrub-shrub	Forested			
Henry	19	1.96 (4.85)	0.10 (0.24)	0.16 (0.40)	4.16 (10.27)	17	1.50 (3.70)
Henry (Rte 7)	4	0.08 (0.21)	0.00 (0.00)	0.00 (0.00)	0.21 (0.52)	7	0.62 (1.54)

**Henry County
Potential Jurisdictional Wetland Impacts
for the Preferred Alternative
WETLANDS**

COUNTY	WETLANDS - hectares (acres)						
	No.	Emergent	Scrub-shrub	Forested	Grassed Waterway	Wet Pasture	Farmed Wetland
Henry	22	5.34 (13.20)	0.00 (0.00)	0.35 (0.86)	0.10 (0.24)	0.00 (0.00)	0.32 (0.79)
Henry (Rte 7)	1	0.03 (0.08)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.07 (0.18)	0.00 (0.00)

IV. PROJECT CONCLUSIONS

The total potential impacts by classification for the entire project are 15.61 hectares (38.56 acres) of "emergent" wetland which includes "grassed waterway" and "wet pasture", 0.18 hectares (0.43 acres) of "scrub-shrub", 1.26 hectares (3.10 acres) of "forested" wetland, 1.23 hectares (3.03 acres) of "farmed wetlands", and 17.73 hectares (43.80 acres) of "waters of the U.S."

Total potential impacts to wetland classifications and "waters of the U. S." within the preferred alternative corridor for the entire project are summarized in the following table:

**Summary Table of
TOTAL POTENTIAL JURISDICTIONAL WETLAND IMPACTS
By Wetland Classification
in hectares (acres)**

COUNTY	Emergent	Scrub-shrub	Forested	Farmed Wetland	Waters of the U.S.
Lafayette	2.78 (6.86)	0.00 0.00	0.04 (0.09)	0.00 0.00	2.71 (6.70)
Johnson	5.24 (12.94)	0.08 (0.19)	0.71 (1.75)	0.91 (2.24)	8.53 (21.07)
Henry	7.59 (18.76)	0.10 (0.24)	0.51 (1.26)	0.32 (0.79)	6.49 (16.03)
TOTALS	15.61 (38.56)	0.18 (0.43)	1.26 (3.10)	1.23 (3.03)	17.73 (43.80)

Note: **Emergent** total also includes **Grassed Waterway** and **Wet Pasture** areas.

The Preferred Alternative for Route 13 and Route 7 could impact 88 ponds consisting of 5.05 hectares (12.49 acres) of "emergent" wetland fringe, 0.104 hectares (0.25 acres) of "scrub-shrub" wetland fringe, 0.46 hectares (1.14 acres) of "forested" wetland fringe and 10.39 hectares (25.67 acres) of open water designated as "Waters of the U. S."

Seventy-eight (78) stream crossings could occur resulting in potential impacts to 7.34 hectares (18.13 acres) of "Waters of the U. S." (i.e. up to the limit of the ordinary high water mark).

Fifty-one (51) wetland areas could be impacted including 7.25 hectares (17.92 acres) of "emergent" wetland, 0.07 hectares (0.18 acres) of "scrub-shrub" wetland, 0.79 hectares (1.96 acres) of "forested" wetland, 0.62 hectares (1.52 acres) of "grassed waterway", 2.68 hectares (6.63 acres) of "wet pasture" and 1.23 hectares (3.03 acres) of "farmed wetland".

**Summary Table of
Potential Jurisdictional Wetland Impacts
for the Preferred Alternative
PONDS and STREAMS**

COUNTY	No.	PONDS - hectares (acres)				STREAMS	
		Wetland Fringe			Waters of the U. S. (open water)	No.	Waters of the U. S.
		Emergent	Scrub-shrub	Forested			
Lafayette	23	0.80 (1.97)	0.00 (0.00)	0.04 (0.09)	1.69 (4.19)	11	1.02 (2.51)
Johnson	42	2.21 (5.46)	0.004 (0.010)	0.26 (0.65)	4.33 (10.69)	43	4.20 (10.38)
Henry	19	1.96 (4.85)	0.10 (0.24)	0.16 (0.40)	4.16 (10.27)	17	1.50 (3.70)
Henry (Rte 7)	4	0.08 (0.21)	0.00 (0.00)	0.00 (0.00)	0.21 (0.52)	7	0.62 (1.54)
TOTAL	88	5.05 (12.49)	0.104 (0.25)	0.46 (1.14)	10.39 (25.67)	78	7.34 (18.13)

**Summary Table of
Potential Jurisdictional Wetland Impacts
for the Preferred Alternative
WETLANDS**

COUNTY	WETLANDS - hectares (acres)						
	No.	Emergent	Scrub-shrub	Forested	Grassed Waterway	Wet Pasture	Farmed Wetland
Lafayette	11	0.07 (0.17)	0.00 (0.00)	0.00 (0.00)	0.52 (1.28)	1.39 (3.44)	0.00 (0.00)
Johnson	17	1.80 (4.47)	0.07 (0.18)	0.44 (1.10)	0.00 (0.00)	1.22 (3.01)	0.91 (2.24)
Henry	22	5.34 (13.20)	0.00 (0.00)	0.35 (0.86)	0.10 (0.24)	0.00 (0.00)	0.32 (0.79)
Henry (Rte 7)	1	0.03 (0.08)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.07 (0.18)	0.00 (0.00)
TOTAL	51	7.25 (17.92)	0.07 (0.18)	0.79 (1.96)	0.62 (1.52)	2.68 (6.63)	1.23 (3.03)