BROWN COUNTY RSD

BROWN COUNTY, INDIANA

PRELIMINARY ENGINEERING REPORT

FOR:

BEAN BLOSSOM, WOODLAND LAKE, LITTLE FOX LAKE AND FREEMAN RIDGE WASTEWATER FACILITIES

March 2018

PREPARED FOR:

BROWN COUNTY RSD BOARD MEMBERS

JUDY SWIFT-POWDRILL	PRESIDENT
PHIL LEBLANC	VICE-PRESIDENT
DEBBIE LARSH	SECRETARY/TREASURER
MIKE LEGGINS	MEMBER

PREPARED BY:

LADD ENGINEERING, INC.
1127 Brookside Drive
Lebanon, IN 46052
765-482-9219

GLOSSARY OF TERMS

Abbreviation of some technical terms is used throughout this report for brevity. Terms are listed as follows:

BCRSD	-	Brown County Regional Sewer District
BOD5	-	5-Day Biological Oxygen Demand
CBDG	-	Community Development Block Grant
CFF	-	Community Focus Fund
CFR	-	Code of federal Regulations
E. Coli	-	Escherichia coli (coliform bacteria)
EA	-	Each
EDA	-	Economic Development Administration
EDIT	-	Economic Development Income Tax
EDU	-	Equivalent Dwelling Unit
FIRM	-	Flood Insurance Rate Map
gal	-	gallons
gpd	-	gallons per day
gpm	-	gallons per minute
IDEM	-	Indiana Department of Environmental Management
HRSD	-	Helmsburg Regional Sewer District
IAC	-	Indiana Administrative Code
IDNR	-	Indiana Department of Natural Resources
IN-RCAP	-	Indiana Rural Community Assistance Programs
IOCRA/OCRA	-	Indiana Office of Community and Rural Affairs
LF	-	Linear Feet
LS	-	Lump Sum
lbs	-	pounds
mg/l	-	milligrams per liter
mgd/MGD	-	million gallons per day
ml	-	milliliters
MBR	-	Membrane Bioreactor
MBBR	-	Moving Bed Biofilm Reactor
MG	-	million gallons
MHI	-	Median Household Income
MHP	-	Mobile Home Park
O, M, & R	-	Operation, Maintenance and Replacement
NH3	-	Ammonia Nitrogen
NPDES	-	National Pollutant Discharge Elimination System
P	-	Phosphorus
PER	-	Preliminary Engineering Report
PW	-	Present Worth
RCAP	-	Rural Community Assistance Programs
RD	-	Rural Development
RFM	-	Re-Circulating Filter Media
RSD	-	Regional Sewer District

RUS	-	Rural Utility Service
s.u.	-	standard unit
SDI	-	Subsurface Drip Irrigation
SRF	-	State Revolving Fund
STEP	-	Septic Tank Effluent Pressure
TSS	-	Total Suspended Solids
UV	-	Ultraviolet
WW	-	wastewater
WWTP	-	Wastewater Treatment Plant
USDA	-	United States Department of Agriculture

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Exhibit No.

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Appendix

SECTION 1

GENERAL INFORMATION AND PROJECT PLANNING AREA

1.1 Location

The Bean Blossom Regional Sewer District (BBRSD), recently renamed the Brown County Regional Sewer District, is located in Brown County, Indiana. The BBRSD was originally formed in 2006, was expanded in April 2013, then renamed to the Brown County Regional Sewer District. The District boundary includes all unincorporated areas of Brown County, and excludes the existing Helmsburg Regional Sewer District, Gnaw Bone Regional Sewer District, Cordry Sweetwater Conservancy District, and Town of Nashville. This study focuses on the unincorporated Bean Blossom Area, Woodland Lake Area, Little Fox Lake Area, Freeman Ridge Road Area, and Greasy Creek Road Area as there is a history of septic system problems and these areas have concentrated homes and/or businesses. The service area includes portions of Sections 25 and 36 of Jackson Township, portions of Sections 28, 29, 30 and 31of Hamblen Township, and portions of Sections 6, 7 and 18 of Washington Township, of the Second Principal Meridian, as shown on the Bean Blossom, Morgantown and Nashville Quadrangles, State of Indiana, United States Geological Survey map. The Greasy Creek Road Area will only be within the service area if the conveyance to Nashville for treatment alternative is selected. Refer to Appendix A for the 2006 IDEM Notice of Decision and correspondence related to the expansion of the Regional Sewer District in 2013, and Exhibit 1.1 for a topographical map of the proposed service areas.

1.2 Environmental Resources Present

An environmental review was undertaken in 2009 for a project to install a wastewater collection system in Bean Blossom and conveying the wastewater to the Helmsburg WWTP. A copy of the correspondence received from the review agencies is included in Appendix B.

1.2.1 Land Use/Farmland/Previously Classified Lands

The land use within the service area primarily consists of low and medium density residential areas. There are a few small businesses that are spread throughout Bean Blossom. A 27-lot mobile home park and the Bill Monroe Music Festival properties are located in Bean Blossom. The Woodland and Little Fox Lake Areas are surrounded by residential homes, some occupied seasonally and some year-round. The proposed sewers will be installed within existing roadway right-of-way, or within

easements in residential areas. No impact, except for the wastewater treatment plant site alternative, to prime farmland will occur as a result of this project. The construction and operation of the proposed project will not impact any known monuments, National Natural Landmarks, wild and scenic rivers, wilderness areas, State or National Parks, reservations or recreational areas. As such, there are no environmental consequences and no need for mitigation efforts related to these concerns.

1.2.2 Flood Plains

A construction in a Floodway Permit from the Indiana Department of Natural Resources, Division of Water will be required where structures are constructed within the Beanblossom Creek, Hoppers Branch or Greasy Creek flood plain. This permit will require that the top of all proposed structures be designed at a minimum of two feet above the 100-year flood elevation. A utility crossing a creek is exempt from a permit as long as the crossing meets the IDNR requirements. A copy of the Flood Insurance Rate Map (FIRM) is presented on Exhibit 1.2.

1.2.3 Wetlands

According to the National Wetlands Inventory Map, the wetlands within the study area impacted by this project are primarily the water bodies. Crossing of any streams will be accomplished via directional boring, which will not disturb any designated Wetlands. Refer to Exhibit 1.3 for a wetlands map.

1.2.4 Historic Sites and Structures

There are several historic sites and structures located within the study area. Maps and descriptions for identified historic sites and structures are taken from the Brown County Interim Report and provided in Appendix C. Refer to Exhibit's 1.4 (A & B) for a map showing historic sites and structures in the planning area. The SHPO letter dated October 26, 2009, located in Appendix B, indicated that no historic buildings, structures, districts, or objects listed in or eligible for inclusion in the National Register of Historic Places with the probable area of potential effects.

1.2.5 Biological Resources

Plant life in the project planning area consists of residential landscaping and open fields. Typical wildlife such as rabbit, squirrel, raccoon, opossum, chipmunk and various birds comprise the animal community. A portion of the proposed project is within the range of the federally endangered Indiana bat. Refer to the October 7, 2009 letter from the United States Department of Interior Fish and Wildlife Service in

Appendix B. The construction and operation of the project is not anticipated to negatively impact any known habitats, as construction will be undertaken considering the requirements outlined in the 10/7/09 Fish and Wildlife letter.

The project will be implemented to minimize any impact to endangered and non-endangered species and their habitat. Where applicable, bare and disturbed areas will be re-vegetated with a mixture of grasses (excluding all varieties of fescue), legumes, native shrubs and hardwood tree species, upon completion. Some tree clearing is anticipated for this project.

1.2.6 Water Quality Issues

Water quality will not be negatively impacted as a result of the construction and operation of the proposed project. The pipes crossing the larger streams will be installed via directional drilling to avoid negative water quality impacts. Water quality in the service areas will be improved with the installation of the proposed wastewater system, as current failing on-site septic systems that degrade the water quality will be eliminated. During construction the contractor will be required to comply with a Stormwater Pollution Prevention Plan that addresses sedimentation, petroleum products, hazardous materials, etc. to reduce the risks of water pollution, which will be reviewed and approved by the Brown County Soil Water Conservation Service and IDEM.

1.2.7 Coastal Resources

The project will have no effect on the Lake Michigan Coastal Zone.

1.2.8 Socio-Economic Issues

There will be no negative effect on the economics or location of minority and/or low-income populations.

1.2.9 Miscellaneous Issues

1.2.9.1 Air Quality

Construction activities should not impact ozone, airborne pollutants or other current or future air quality concerns other than minor fumes and dust typically generated during such activity. The adverse impacts caused by dust may be alleviated by periodically wetting the exposed soil and unpaved roadways to reduce suspension of particles, constructing wind barriers, or treating the area with chemical stabilizers, if applicable. The dust and fumes are short term impact, lasting only during the construction phase.

1.2.9.2 Noise

Construction activities may generate noise which typically results from such activities. To reduce noise impacts, work activities can be limited to normal daytime hours. The noise is a short-term impact, lasting only during the construction phase.

1.2.9.3 Open Space and Recreational Opportunities

The proposed project's construction and operation will neither create nor destroy open space and recreational opportunities.

1.2.9.4 Transportation

The proposed pipe installation for this project will be parallel to or cross several county roads, State Road 135, State Road 45, and State Road 46. It is anticipated that the pipes will be directional drilled across the roads, thereby minimizing the impacts to them. Traffic control measures will be required in the plans if it becomes necessary to temporarily close a lane off, etc. A permit will be required from the Indiana Department of Transportation and most likely the Brown County Highway Department for work done adjacent to these roads.

1.3 Population Trends

An income survey conducted by Ball State University in 1998, demonstrated that the population of the Bean Blossom and Woodland Lake planning areas was 471 persons. An income survey conducted by Ball State University in 2002 for the Bean Blossom Area indicated a population of approximately 160 persons. There have not been any significant changes since these surveys were conducted. Approximately 90% of the Bean Blossom Area land area has been developed into an estimated 71 residential, single-family homes and 12 business, commercial, or institutional establishments listed as follows:

- Staley's 27-Lot Mobile Home Park
- Bill Monroe Music Park and Campground
- St. David's Episcopal Church
- Brownie's Restaurant
- Bean Blossom Mennonite Church
- Fire Department
- Furniture Store
- Veterinary Clinic
- Dog Grooming Business
- Beauty Salon
- Brown County Water
- Antique Store

Also included in the Bean Blossom planning area is the Old Settler's Road Area, which is located west of St. Rd. 135 and North of Hoppers Branch and includes 14 residential homes and Brownies Restaurant. Also located in the Old Settler's Road Area is a Lutheran Church, which has a recently constructed on-site mound septic system and therefore will not be served at this time but remains a future possibility. The Woodland Lake portion of the planning area includes a residential lake community containing approximately 66 existing residential homes and approximately 13 existing residential homes between Woodland Lake and Bean Blossom. The Little Fox Lake Area is strictly a residential lake community containing approximately 18 existing residential homes. The Freeman Ridge Area is comprised of approximately 32 residential homes. The Greasy Creek Road Area, proposed to be served consists of approximately 46 residential equivalent homes/businesses.

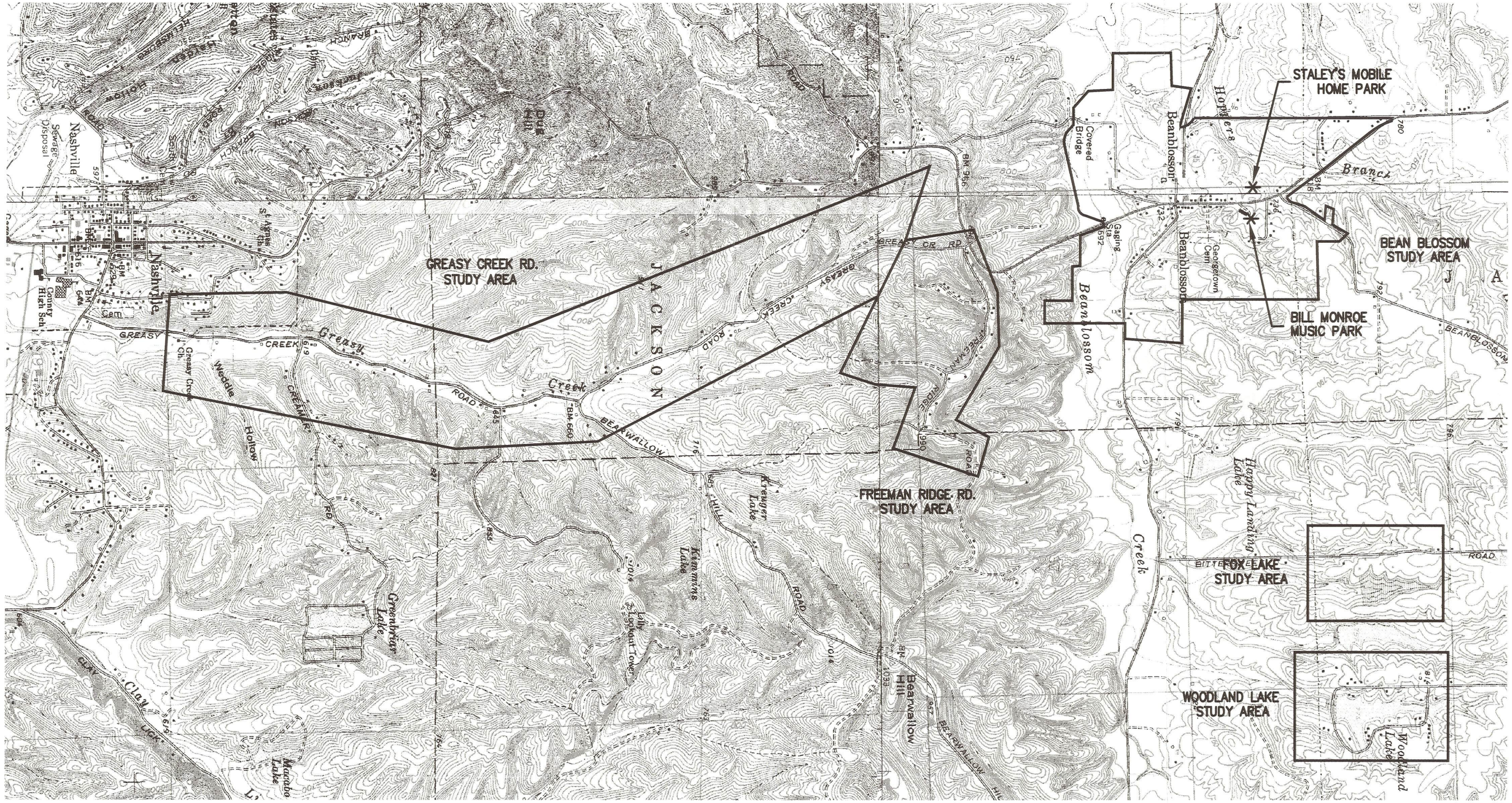
The estimated future customers for the service area based on undeveloped land are shown in Table 1.1.

Table 1.1
Estimated Future Development In Planning Area

Study Area	Residential	Business/Commercial
Bean Blossom	6	5
Old Settler's Road	4	1
Woodland Lake	8	0
Little Fox Lake	4	0
Freeman Ridge Road	4	0
Greasy Creek Road	10	2
Total	36	8

1.4 Community Engagement

Previous studies have been prepared, one by R.W. Armstrong & Associates in January 2001, one by Ladd Engineering, Inc. in September 2003 and another by Ladd Engineering, Inc. in September 2009. Each of these studies included a public hearing, which drew in residents of the proposed service area. In addition, several letters of support for a project were received in 1998 from local residents and businesses, and are provided in Appendix D. Letters from the District Board have been sent out to potential customers and many have attended the District Board Meetings during the development of this PER. Continued efforts will be offered by the Brown County RSD to keep the local citizens informed. The Brown County RSD meets monthly and these meetings are open to the public.



2000 0 1000 2000

1 inch = 2000ft.

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Brown County RSD

PRELIMINARY ENGINEERING REPORT

Exhibit 1.1
SERVICE AREA
TOPOGRAPHIC MAP

GREASY CREEK RD.
STUDY AREA

FREEMAN RIDGE RD.
STUDY AREA

STALEY'S MOBILE
HOME PARK

BEAN BLOSSOM
STUDY AREA

BILL MONROE
MUSIC PARK

FOX LAKE
STUDY AREA

WOODLAND LAKE
STUDY AREA

JACKSON BRANCH RD
JEFFERSON ST
ARTIST DR
GREASY CREEK RD
CREAMER RD
OLD STATE RD 46
WYCHWOOD DR
TURNING TREE DR
FOREST FIELDS DR
FREEMAN RIDGE RD
BEAR WALLOW HILL RD
WALLOW HOLLOW RD
COVERED BRIDGE RD
OLD SETTLERS RD
Beanblossom
GATESVILLE RD
POWER LINE ACCESS RD
PINE TREE LN
BITTERSWEET RD
W SHORE DR
SOUTH SHORE DR
EAST SHORE DR
135

2000 0 1000 2000

1 inch = 2000ft.

November 8, 2016

Floodplains - FIRM (June 2016)

- Floodway
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance, Protected by Levee
- 0.2% Annual Chance Flood Hazard

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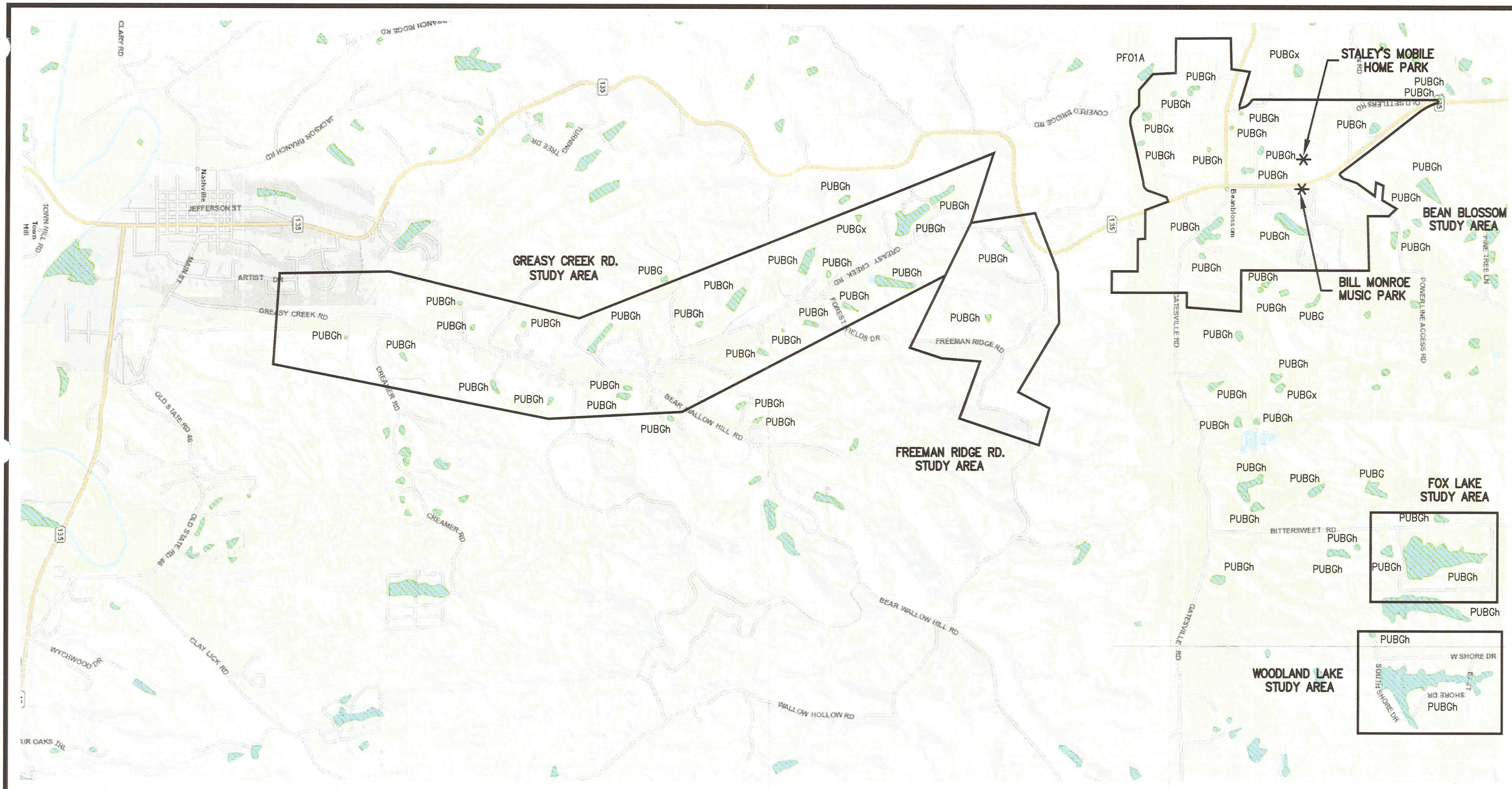
PRELIMINARY ENGINEERING REPORT

Exhibit 1.2
FLOOD MAP



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1 inch = 2000ft.

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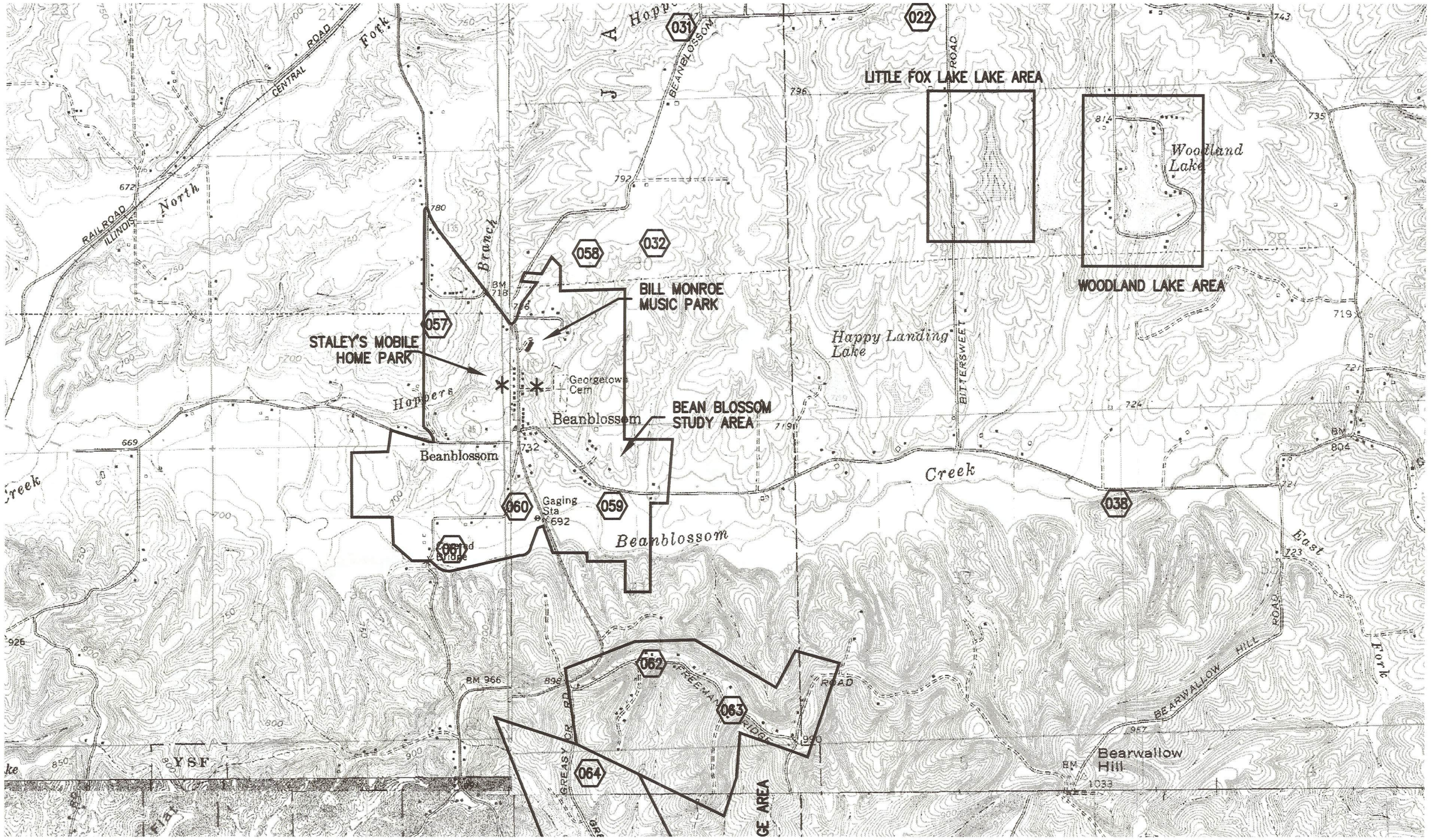
PRELIMINARY ENGINEERING REPORT

Exhibit 1.3
WETLANDS MAP



2000 0 1000 2000

1 inch = 2000ft.

No.	Rating	Description
022	C	Bethel Cemetary
030	C	Clarence & Oma Jane Zody Farm
031	N	Bind Farm
032	C	Hartman House
038	N	Columbus Parsley Farm
057	C	Waltman's Grove – Clupper's Grove

No.	Rating	Description
058	C	House, Bean Blossom–Spearsville Road
059	C	Brummet House
060	N	Lowell Waltman House
061	O	Bean Blossom Covered Bridge
062	C	Center House
063	C	Freeman Orchard

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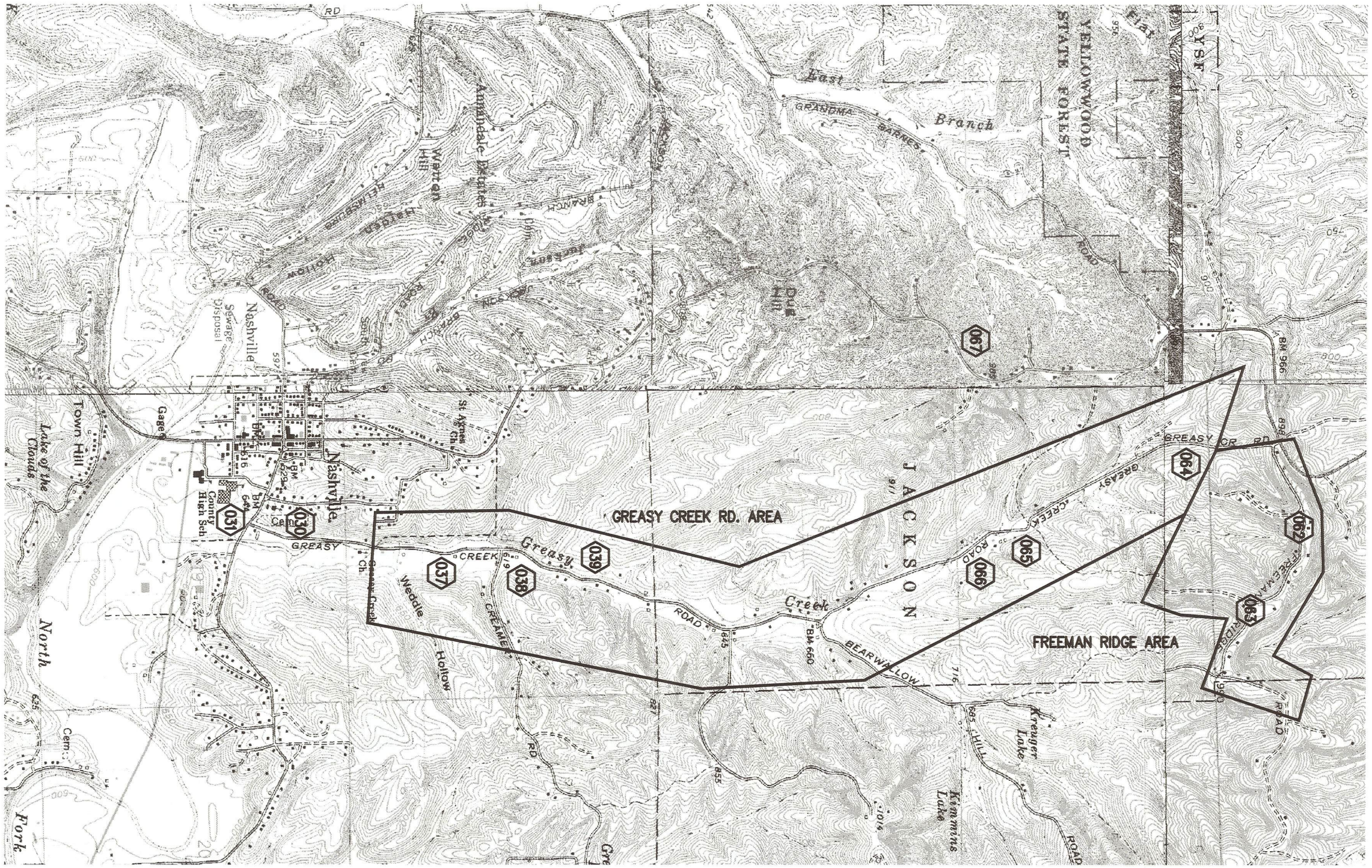
PRELIMINARY ENGINEERING REPORT

Exhibit 1.4A
HISTORICAL
SITES MAP



2000 0 1000 2000

1 inch = 2000ft.

No.	Rating	Description
030	C	Greenlawn Cemetary
031	N	Brown County Poor Farm
037	C	William Weddle Farm Greasy Creek Rd
038	C	Commercial Building Greasy Creek Rd
039	C	Farm Greasy Creek Rd

No.	Rating	Description
064	C	Hope House, Freeman Ridge Road
065	C	House Greasy Creek Road
066	C	Curry Bohm House Greasy Creek Rd
067	C	Farm, Grandma Barnes Road
062	C	Center House
063	C	Freeman Orchard

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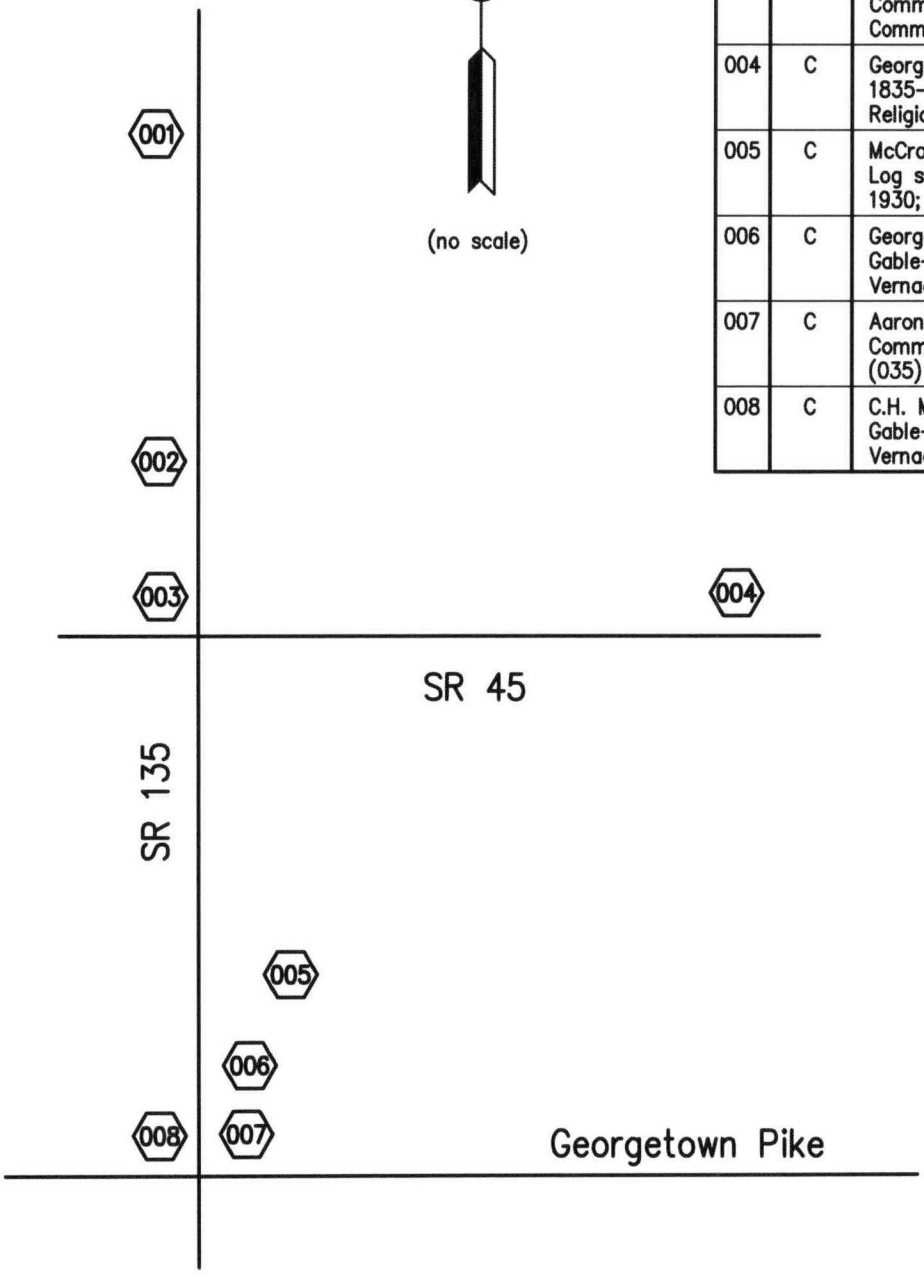
PRELIMINARY ENGINEERING REPORT

Exhibit 1.4B
HISTORICAL
SITES MAP



No.	Rating	Description
001	C	George Snyder House, SR 135; T-plan/Italianate, c.1880; Architecture Vernacular/Construction (035)
002	N	House, SR 135; Central Passage/ Greek Revival, c.1860; Architecture Vernacular/Construction (035)
003	C	Hammond Rund Grocery, SR 135; Commercial Vernacular, c.1880; Commerce, Vernacular/Construction (035)
004	C	Georgetown Cemetary, SR 135; 1835-present; Exploration/Settlement Religion (035)
005	C	McCrory-Gwin House, SR 135; Log single-pin/Rustic Revival, c.1850/ 1930; Vernacular/Construction (035)
006	C	Georgetown Funeral Parlor, SR 135; Gable-front, c.1880; Commerce Vernacular/Construction (035)
007	C	Aaron Zody Grocery Store, SR 135; Commerce, Vernacular/ Construction (035)
008	C	C.H. McDonald Grocery, SR 135; Gable-front, c.1900/c.1930; Commerce Vernacular/Construction (035)

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PRELIMINARY ENGINEERING REPORT

Exhibit 1.4C
Bean Blossom
Historical Sites