TRANSPORTATION PLANNING REPORT

STATE ROUTE 66

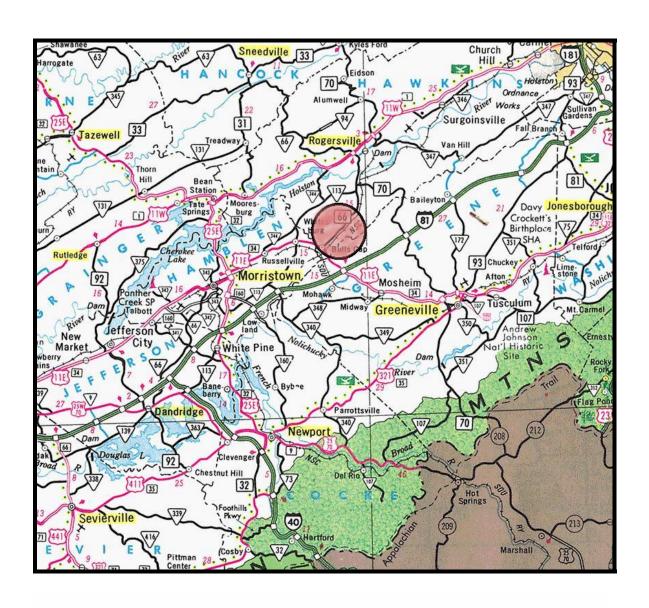
FROM STATE ROUTE 34 (U.S. 11E)
TO IMPROVED SECTION NEAR LOG MILE 5.30
HAWKINS COUNTY
PIN# 107579.00

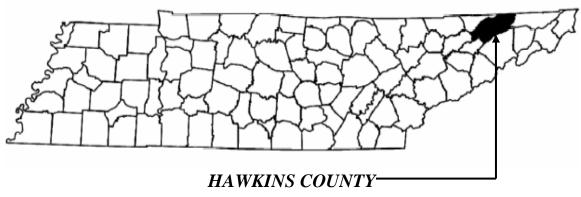


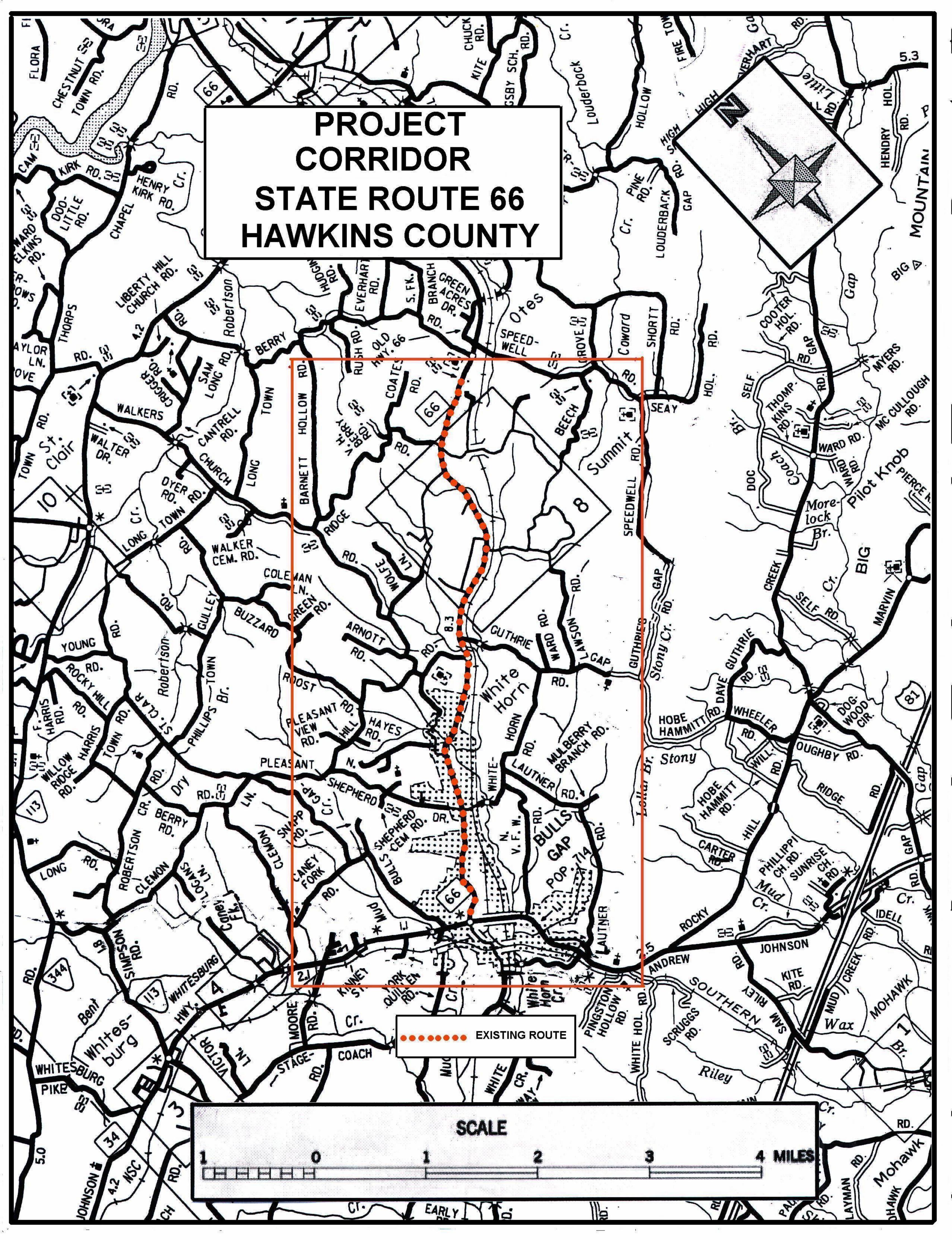
PREPARED BY TENNESSEE DEPARTMENT OF TRANSPORTATION PROJECT PLANNING DIVISION

Recommended by:	Signature	DATE
CHIEF OF ENVIRONMENT AND PLANNING	EdCole	10/25/06
TRANSPORTATION DIRECTOR PROJECT PLANNING DIVISION	Stem alm	10-25-06
TRANSPORTATION MANAGER 2 PROJECT PLANNING DIVISION	Bier Hant	19/24/06

PROJECT VICINITY







PURPOSE AND NEED

The purpose of this Transportation Planning Report is to analyze existing and projected data and determine the feasibility of improving State Route 66 from State Route 34 (U.S. 11E) at Bulls Gap to the improved two-lane section in the Otes Community. The proposal would involve upgrading the existing two-lane roadway to an improved two-lane segment comparable with the remaining portion of the existing route to Rogersville. The entire route from Bulls Gap to Rogersville (County Seat of Hawkins Co.) is approximately 12 miles in length. Between the Otes Community and Rogersville (approximately 7 miles) the route has two 12' lanes with 8' to 12' shoulders. The segment identified for this report from Bulls Gap to Otes (5.3 miles) has two 10' lanes and negligible shoulders. This segment is also deficient in both horizontal and vertical alignment. An improvement to the project segment would provide continuity of width, upgrade the deficient alignment, and, in conjunction with the proposed State Route 34 (U.S. 11E) project, will provide the county seat of Rogersville a link to Interstate 81 with a route that meets highway design and safety standards.

This project is included in TDOT's new three-year (2007-2009) Multi-modal Work Program which recognizes substandard rural highways and provides initial funding to begin the planning, environmental, and preliminary engineering processes. In addition to geometric and safety deficiencies, the report will analyze the base year (2011) and design year (2031) "Level of Service" (LOS) for the study segment. The proficiency of roads are described by their LOS. The criteria are defined as shown in the "Level of Service" section of this report and reflect the ability of roads to accommodate motor vehicle traffic and subsequent physical and psychological comfort levels of drivers. The LOS analysis incorporates several factors including traffic volumes, number and width of lanes, terrain, percent no passing zones, directional split, heavy vehicles, and shoulder widths. The results of the LOS calculations, as explained later in this report, indicate the capacity of the route is deficient in both the base and design years.

In addition to the LOS analysis, projected traffic volumes for the base and design years are included in this report and are depicted in the Project Data Table and on the traffic schematic. The base year (2011) average daily traffic (ADT) between State Route 34 and Pleasant Hill Road (2.57 miles) is projected to be 4,750 with 7 percent trucks. The base year ADT between Pleasant Hill Road and the end of the project in the Otes Community (2.73 miles) is projected to be 4,200 with 8 percent trucks. These ADT projections increase to 7,130 and 5,880 respectively in the design year 2031.

Utilizing the average daily traffic acquired from TDOT's Tennessee Roadway Information Management System (TRIMS) database for years 2003 through 2005 and the calculated vehicle miles of travel, a crash rate (crashes per one million vehicle miles) was calculated by TDOT's

Safety Planning Unit of the Mapping and Statistics Office for the existing route. The calculated crash rate encompassing the entire project was calculated to be 3.08. This can be compared to the statewide average rate for these years of 1.70 for a two-lane rural highway. The critical rate was calculated to be 2.37. The critical rate is a quality control measure that defines statistically how the actual rate differs significantly from the statewide average accident rate. The ratio of the actual rate to the critical rate indicates the severity of the problem. A ratio of over 1.0 suggests a likely safety deficiency problem. In this case the calculated ratio is 1.30. As the amount of traffic increases, this ratio will grow to reflect the dangerous safety deficiencies without significant improvements to the route.

COMMUNITY PROFILE

As depicted on the Project Vicinity Map, Hawkins County is located in northeast Tennessee, extending down from the Virginia state line. The county is divided into two almost equal sections by the Holston River, which traverses the county's entire length. One of the largest counties in the state, the 480 square miles of Hawkins County ranges from relatively flat valleys dotted with farms and pasture land to the high mountain ridges of the Appalachians. The county seat is Rogersville, which was founded by Joseph Rogers who settled on the site in 1786. Hawkins County was the second fastest growing county in northeast Tennessee between 1990 and 2000, with a 20% growth rate and is a part of the Johnson City/Kingsport/Bristol Metropolitan Statistical Area. The 2003 population of Hawkins County was 55,037. Hawkins County is accessible via four-lane U.S. 11W (S.R. 1) and connects with U.S. 25E (S.R. 32), fifteen miles southwest of Rogersville. Nearby, Interstate 81 parallels U.S. 11W in adjacent Greene County. Hawkins County's airport, located in Surgoinsville, has a modern 3,500' paved runway. Bulls Gap, located at the southern end of Hawkins County, was settled in 1794. The town was named for the famous gunsmith, John Bull, who made his home in the gap of the mountains. Today, the town is governed by a Board of Mayor and Aldermen and is located at the intersection of U.S. 11E (S.R. 34) and State Route 66.

LEVEL OF SERVICE

The "Level of Service" (LOS) is a qualitative measure that describes traffic conditions related to speed and travel time, freedom to maneuver, traffic interruptions, etc. There are six levels ranging from "A" to "F" with "F" being the worst. Each level represents a range of operating conditions. General descriptions of operating conditions for each of the levels of service are as follows:

LOS Traffic Flow Conditions

- <u>A</u> Free flow operations. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream. The general level of physical and psychological comfort provided to the driver is high.
- <u>B</u> Reasonably free flow operations. The ability to maneuver within the traffic stream is only slightly restricted and the general level of physical and psychological comfort provided to the driver is still high.
- <u>C</u> Flow with speeds at or near free flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted and lane changes require more vigilance on the part of the driver. The driver notices an increase in tension because of the additional vigilance required for safe operation.
- Speeds decline with increasing traffic. Freedom to maneuver within the traffic stream is more noticeably limited. The driver experiences reduced physical and psychological comfort levels.
- At lower boundary, the facility is at capacity. Operations are volatile because there are virtually no gaps in the traffic stream. There is little room to maneuver. The driver experiences poor levels of physical and psychological comfort.
- E Breakdowns in traffic flow. The number of vehicles entering the highway section exceed the capacity or ability of the highway to accommodate that number of vehicles. There is little or no room to maneuver. The driver experiences poor levels of physical and psychological comfort.

The LOS analysis completed for this route utilized the projected base year (2011) ADT and design year (2031) ADT on the existing route (the No-Build Option) as well as on the three proposed optional improvements (A, B, and C). The results can be compared on the Project Data Table and are discussed later in this report..

PROPOSED IMPROVEMENT

There are four separate optional improvements proposed for this project. This includes a No-Build Option, which, as the name implies, denotes that only minor improvements (such as safety improvements and normal maintenance) would be made to the existing road and/or intersection areas. As depicted on the Project Corridor Topography map and the aerial photograph, the three build options labeled Option A, Option B, and Option C are represented as corridor alignments. This connotes each option is recommended to be aligned within the corridor limits that are illustrated on the aerial photograph. These corridors are 1000 to 2000 feet in width

depending on the option and vicinity of the option within the project limits. The build options were all aligned within a reasonably wide enough study area to encompass each of these options and still provide for connectivity to the Bulls Gap Community. A brief description of the corridor alignments of the three build options is as follows:

Option A - It is proposed to improve the highway generally along its existing corridor, shifting from side to side in some areas and possibly aligning on new location for short segments to minimize impacts to homes, businesses, and/or environmental resources. From State Route 34 (U.S. 11E) to approximately Goan Drive, a 1000' corridor width is recommended due to the concentration of homes and businesses along the existing route throughout this segment. From approximately Goan Drive to the terminus of the project in the Otes Community, the corridor alignment is increased to 2000' to allow more flexibility in planning an acceptable roadway placement. This option may result in some displacements, in particular near the southern end of the route, as it proceeds through a residential section of Bulls Gap.

Option B – This option has a 2000' corridor width throughout its entire length. The corridor shares the same alignment of Option A from near Goan Drive to the Otes Community. From near Goan Drive south to State Route 34 (U.S. 11E), the corridor is aligned on new location west of Bulls Gap to avoid negative impacts to both residential and commercial properties in Bulls Gap. The 2000' corridor should provide the needed area to encompass a feasible roadway placement which will meet the purpose and need of the project with the concurrence of the community.

Option C – This option was also developed to provide an alternative to Option B and avoid the negative impacts to widening the existing roadway through Bulls Gap. Option C also has a 2000' corridor width recommended throughout its entire length. From near Sheperd Drive just south of U.S. Fence, Inc. to State Route 34 (U.S. 11E), the corridor is aligned on new location east of Bulls Gap in the Whitehorn Creek Valley area. The corridor shares the same alignment of Option A from near Sheperd Drive to the Otes Community. The segment on new location will require a crossing of the Norfolk Southern Railroad tracks.

All three build options incorporate 2 @ 12' traffic lanes and 12' shoulders. The 12' shoulders will provide for bicycle use and pedestrians. If Option A is constructed, the project will incorporate curbs and gutters through the residential area of Bulls Gap to minimize the amount needed for right-of-way and consequent impact to homes. In addition, sidewalks are recommended for the curb and gutter section of Option A. The necessary right-of-way to build the project will vary depending on the terrain, land use, and environmental considerations.

All three build options will increase the sight distance throughout the route by improving the deficient horizontal and vertical alignments. The improved roadway will also enhance access to Interstate 81 from the Rogersville area and provide enhanced access to commercial and

industrial sites along the route. Besides providing for improved local and regional accessibility, other primary beneficial effects of the build options include: (1) improved safety and operating conditions along the project corridor; (2) increased traffic capacity; and (3) enhancement of future planned growth by local and/or regional land use planning agencies.

As depicted on the Project Data Table, both the base year (2011) "Level of Service" and the design year (2031) LOS were calculated as "C" for all three build options. The comparable LOS for the no-build option in both the base year and design year was calculated to be "E". In addition, the disadvantages of the No-Build Option include continued inadequate operating conditions and safety concerns inherent with increased traffic volumes, inadequate roadway geometrics and poor alignments.

The primary adverse effects of the three proposed build options include: (1) the loss of land for right-of-way; (2) the possible displacement of residences and businesses; (3) temporary construction impacts (dust, siltation, equipment noise, etc.) during the construction period; and (4) impacts to the environment to be determined in detail during the environmental phase of the project.

Some advantages of the No-Build Option include less disruption of the existing land use patterns and no disruption of the area due to construction. Also, mitigation measures to moderate environmental impacts would not be necessary.

If either Option B or Option C is selected, the State Route 66 designation would be shifted to the alignment on new location. The portion of the existing route which not utilized for the improvement may lose its state route designation and the responsibility for its maintenance could be assigned to Hawkins County.

After reviewing the pros and cons of all four options, it is recommended one of the build options (A, B, or C) be implemented. The roadway placement within one of the three options will be decided at a later date with the concurrence the community and upon further review of environmental and design data.

PRELIMINARY ENVIRONMENTAL ANALYSES

A preliminary investigation into this project's possible environment impacts within the "Area of Potential Effects" (APE) is reflected on the attached "Preliminary Environmental Evaluation" checklist. The APE is the geographic area in which an undertaking may directly or indirectly impact the environment. In addition, a "Project Area Enviro-Map" is attached which was generated from the Environmental Protection Agency's Web-based mapping tool for viewing environmental information. Flood maps obtained from the Federal Emergency Management Agency's (FEMA) website are also attached to this report. A more comprehensive analysis of the

impacts will be completed at a later date to comply with the National Environmental Policy Act (NEPA).

In assessing the historic/architectural resources existing along the SR 66 corridor in Hawkins County, TDOT historians have thus far consulted our own maps and the survey maps maintained by the Tennessee State Historic Preservation Office (TN-SHPO). These maps indicate two National Register listed or eligible resources in the general project vicinity; Bulls Gap Historic District and the Moore Farm. The Bulls Gap Historic District is located immediately southwest of existing State Route 34 (U.S. 11E) and includes approximately forty-eight contributing commercial and railroad related resources along South Main, Church, McGregor, Price, and Mill Streets in the old town center. As the subject project begins at the junction of U.S. 11E and S.R. 66 just northeast of the Bulls Gap Historic District, the district may fall outside the project area of potential effect. However, this determination will not be definitive until plans are available and the field survey has been conducted. The Moore Farm is located to the east and south of existing State Route 66 and includes twenty-nine contributing resources and three hundred fifty-one acres of associated farmland. As the Moore Farm property is separated from SR 66 corridor by the railroad tracks paralleling that roadway, it will likely fall outside the project area of potential effect. This determination is tentative pending the field survey and examination of plans. TDOT and TN-SHPO maps indicate no additional National Register listed, eligible, or previously surveyed resources within the project corridor. However, the field survey may identify additional resources.

Hazardous Materials spills on highways are a potential source of water quality degradation and a possible public health hazard. The Tennessee Emergency Management Agency (TEMA) has the responsibility and authority for coordination of all state and local agencies during accidents involving hazardous materials. The TEMA has demonstrated its ability to effectively manage such incidents. The project will be evaluated when preliminary right-of-way plans are completed to determine the impacts on any possible underground storage tank (UST) sites. TDOT has demonstrated its ability to deal with UST sites to minimize impacts on the environment. In the event hazardous substances/wastes are encountered within the proposed right-of-way, their disposition shall be subject to the applicable sections of the Federal Resource Conservation and Recovery Act, as amended; and the Comprehensive Environmental Response, Compensation, and Liability Act, as amended; and the Tennessee Hazardous Waste Management Act of 1983.

Alterations to streams or other aquatic sites designated as waters of the State or waters of the United States require either individual or general Aquatic Resource Alteration Permits (ARAP) from the State of Tennessee, individual or Nationwide 404 U.S. Army Corps of Engineers permits, and, where applicable, a TVA 26a permit or letter of no objection. Construction projects disturbing one or more acres of land require storm water control permits issued by the State of Tennessee

pursuant to the National Pollutant Discharge Elimination System. For any project that affects water flowing into a sinkhole or cave, or for any impact that may affect the ground water via a sinkhole, a Class B Injection Well permit may be required. This process involves obtaining a permit before the project is let if sinkholes are known to exist. If other sinkholes are encountered after construction has begun, the appropriate TDOT offices will be notified and the appropriate steps taken to comply with laws, regulations, and permits. These or any other permit requirements identified in the project development process will be complied with.

All wetland impacts require confirmation by, and coordination with, permitting agencies. All require either general or individual Aquatic Resource Alteration Permits (ARAP) from the State of Tennessee. Almost all require either nationwide or individual permits from the U.S. Army Corps of Engineers pursuant to Section 404 of the Clean water Act. Other agencies such as the U.S. Fish and Wildlife Service and the Environmental Protection Agency (EPA) may be involved in the permitting process. Wetland impacts which are subject to either State or Federal jurisdiction, and which do not meet criteria for either general or nationwide permits require individual permits; these typically require compensatory mitigation for impacts. In general, isolated wetlands with less than 0.25 acre impacts may come under the guidelines of a general permit issued by the State of Tennessee; no mitigation is required. This permit cannot be used, however, for a cumulative series of small impacts. Some wetland impacts of less than 0.5 acres qualify for Corps of Engineers nationwide permits. TDOT should carry out further coordination with the regulatory agencies before preparing mitigation plans and submitting permit applications. Permit requirements and mitigation plans will be based on these discussions.

A preliminary geotechnical review did not reveal anything that would affect the construction of any of the three build options on a geological basis. It was noted the project alignment should avoid Leading Ridge which runs parallel to the project to the east.

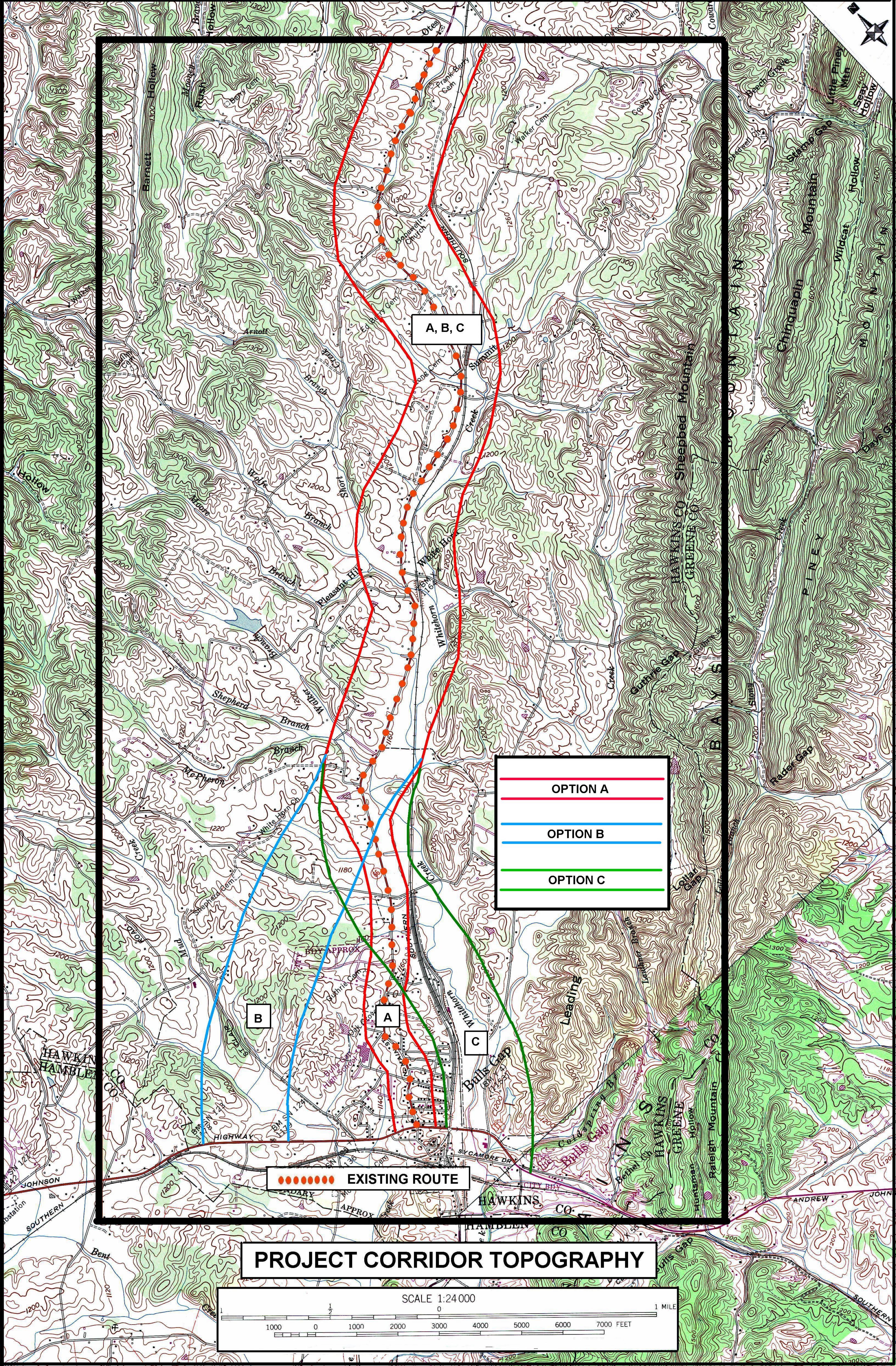
PRELIMINARY ENVIRONMENTAL EVALUATION

If preliminary field reviews indicate the presence of any of the following facilities and/or Economic, Social, and Environmental categories (ESE), place an "X" in the blank opposite the item. Where more than one option is to be considered, place its letter designation in the blank. A more comprehensive analysis of the impacts will be completed at a later date to comply with the National Environmental Policy Act (NEPA).

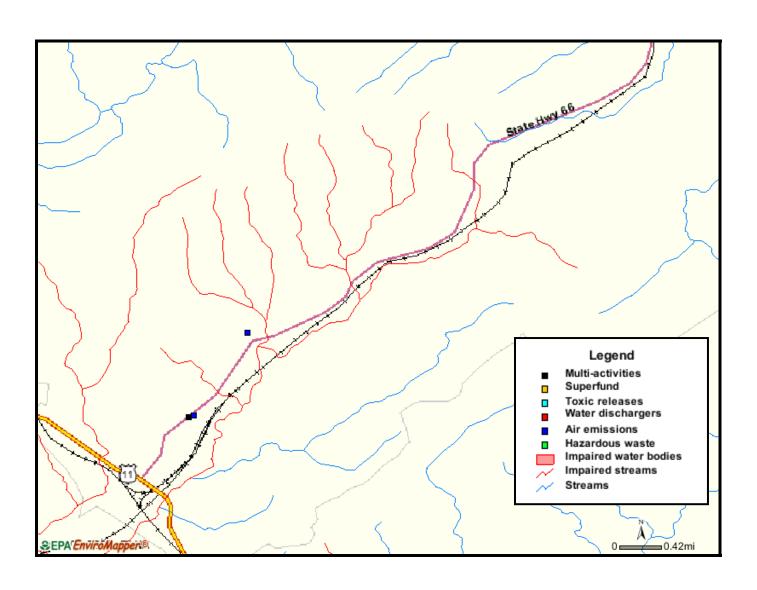
1.)	Hazardous Material Site or Underground Storage Tanks	
2.)	Floodplains	A, C
3.)	Historical, archaeological, cultural or natural landmarks, or cemeteries	A, B, C
4.)	Airport	
5.)	Residential establishment	A, B, C
6.)	Urban area, city, town, or community(Bulls Gap, Pop. 714)	A
7.)	Commercial area, shopping center	A, B, C
8.)	Institutional usages: a. School or other educational institution	
	b. Hospital or other medical facility	A, B, C
9.)	Agricultural land usage	A, B, C
10.)	Forested land	A, B, C
11.)	Industrial park, factory	A, C
12.)	Recreational usages: a. Park or recreational area, State Natural Area b. Wildlife refuge or wildlife management area	
13.)	Waterway: a. Lake b. Pond c. River	
	d. Streame. Spring	A, B, C
14.)		
15.)		
16.)	Other	A, B, C

PROJECT DATA TABLE STATE ROUTE 66

PROPOSED OPTIONS	OPTION A	OPTION B	OPTION C	NO-BUILD
<u>ITEM</u>				
APPROXIMATE LENGTH (MILES)	5.3	5.4	5.4	5.3
2011 AVERAGE DAILY TRAFFIC	4,480	4,480	4,480	4,480
2031 AVERAGE DAILY TRAFFIC	6,510	6,510	6,510	6,510
PERCENT TRUCKS	8	8	8	8
2011 LEVEL OF SERVICE	С	С	С	E
2031 LEVEL OF SERVICE	С	С	С	E
ESTIMATED COSTS				
RIGHT-OF-WAY	\$4,300,000	\$2,850,000	\$3,290,000	N/A
PRELIMINARY ENGINEERING	\$1,065,000	\$1,060,000	\$1,150,000	N/A
CONSTRUCTION	\$15,560,000	\$14,475,000	\$16,805,000	N/A
UTILITY RELOCATION	\$1,613,000	\$1,151,000	\$1,511,000	N/A
TOTAL COST	\$22,538,000	\$19,536,000	\$22,756,000	N/A



PROJECT AREA EPA ENVIRO-MAP



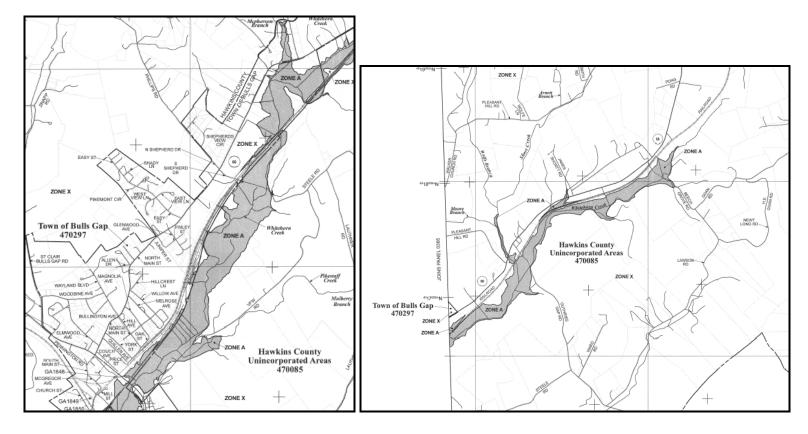
^{*}Impaired streams are among the waters that do not meet EPA quality standards. These waterbodies are designated under Section 303(d) of the Clean Water Act.

^{**}EnviroMapper is a Web-based interactive mapping tool for viewing and querying environmental information. Enviromapper generates maps of your geographic area that contain environmental information stored in EPA's Envirofacts Warehouse. The type of environmental information includes: Superfund sites, drinking water, toxic and air releases, hazardous waste, and water discharge permits.

PROJECT AREA FEMA FLOOD MAPS

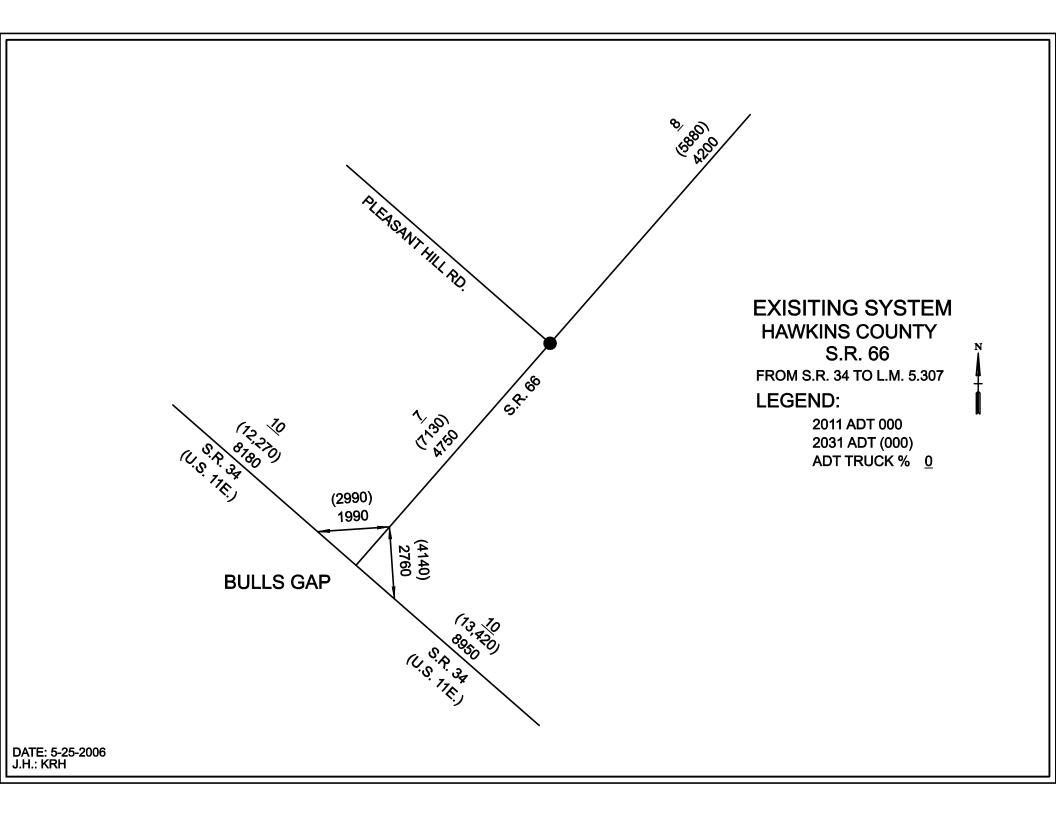
SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.



ZONE A No Base Flood Elevation determined.

ZONE X Areas of 0.2% flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.



TENNESSEE D.O.T.
DESIGN DIVISION

SHEET NO.

Index Of Sheets

DESCRIPTION 1 TITLE SHEET
3-18 PRESENT & PROPOSED LAYOUTS
19 GENERAL LOCATION MAP

STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION BUREAU OF ENGINEERING

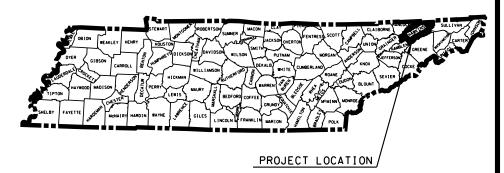
HAWKINS COUNTY

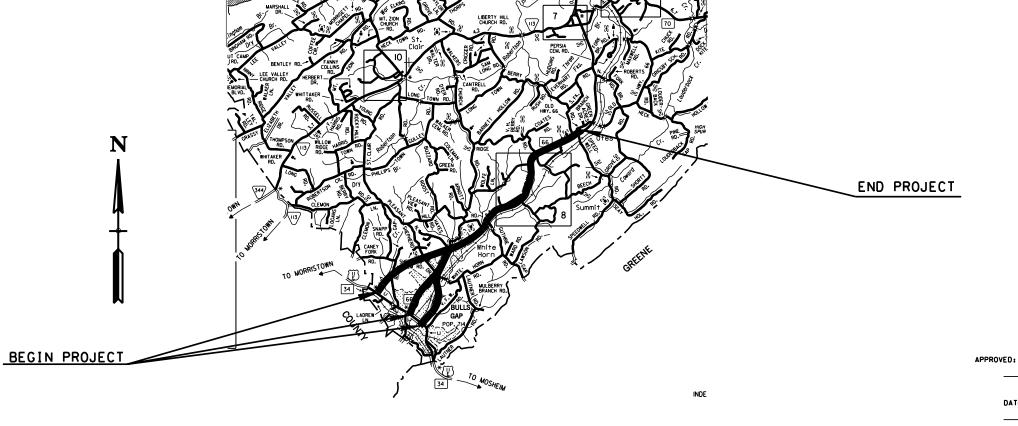
STATE ROUTE 66

FROM STATE ROUTE 34 (U.S. 11 E) TO EXISTING TWO-LANE SECTION IN OTES COMMUNITY

STATE HIGHWAY NO. 66 F.A.H.S. NO.







SPECIAL NOTES

PROPOSALS MAY BE REJECTED BY THE COMMISSIONER IF ANY OF THE UNIT PRICES CONTAINED THEREIN ARE OBVIOUSLY UNBALANCED, EITHER EXCESSIVE OR BELOW THE REASONABLE COST ANALYSIS VALUE.

THIS PROJECT TO BE CONSTRUCTED UNDER THE STANDARD SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION DATED MARCH 1, 1995 AND ADDITIONAL SPECIFICATIONS AND SPECIAL PROVISIONS CONTAINED IN THE PLANS AND IN THE PROPOSAL CONTRACT

TRANSPORTATION MANAGER 1 _____DUDLEY DANIEL

DESIGNER <u>STEVE HYLTON</u> DRAFTSMAN FRANK FULGHAM

SCALE: 1"= 1 MILE

CHIEF ENGINEER

DATE:

COMMISSIONER

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR

DATE



OPTION A

STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION

HAWKINS COUNTY
STATE ROUTE 66



4

OPTION A

0 200

STATE OF TENNESSEE

HAWKINS COUNTY

STATE ROUTE 66



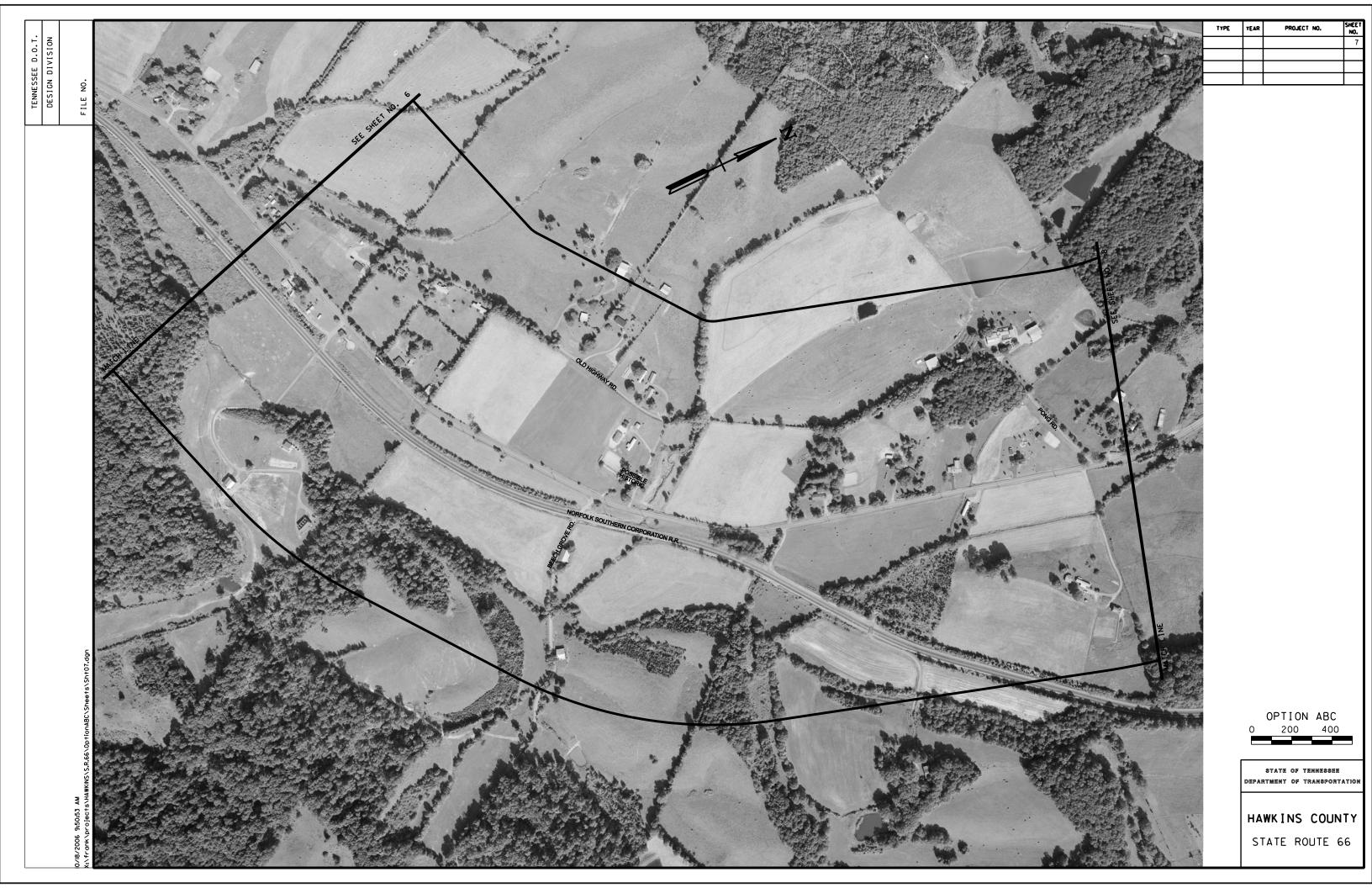


OPTION ABC

STATE OF TENNESSEE

HAWKINS COUNTY

STATE ROUTE 66





OPTION ABC

STATE OF TENNESSEE

HAWKINS COUNTY
STATE ROUTE 66



OPTION ABC

STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION

HAWKINS COUNTY
STATE ROUTE 66

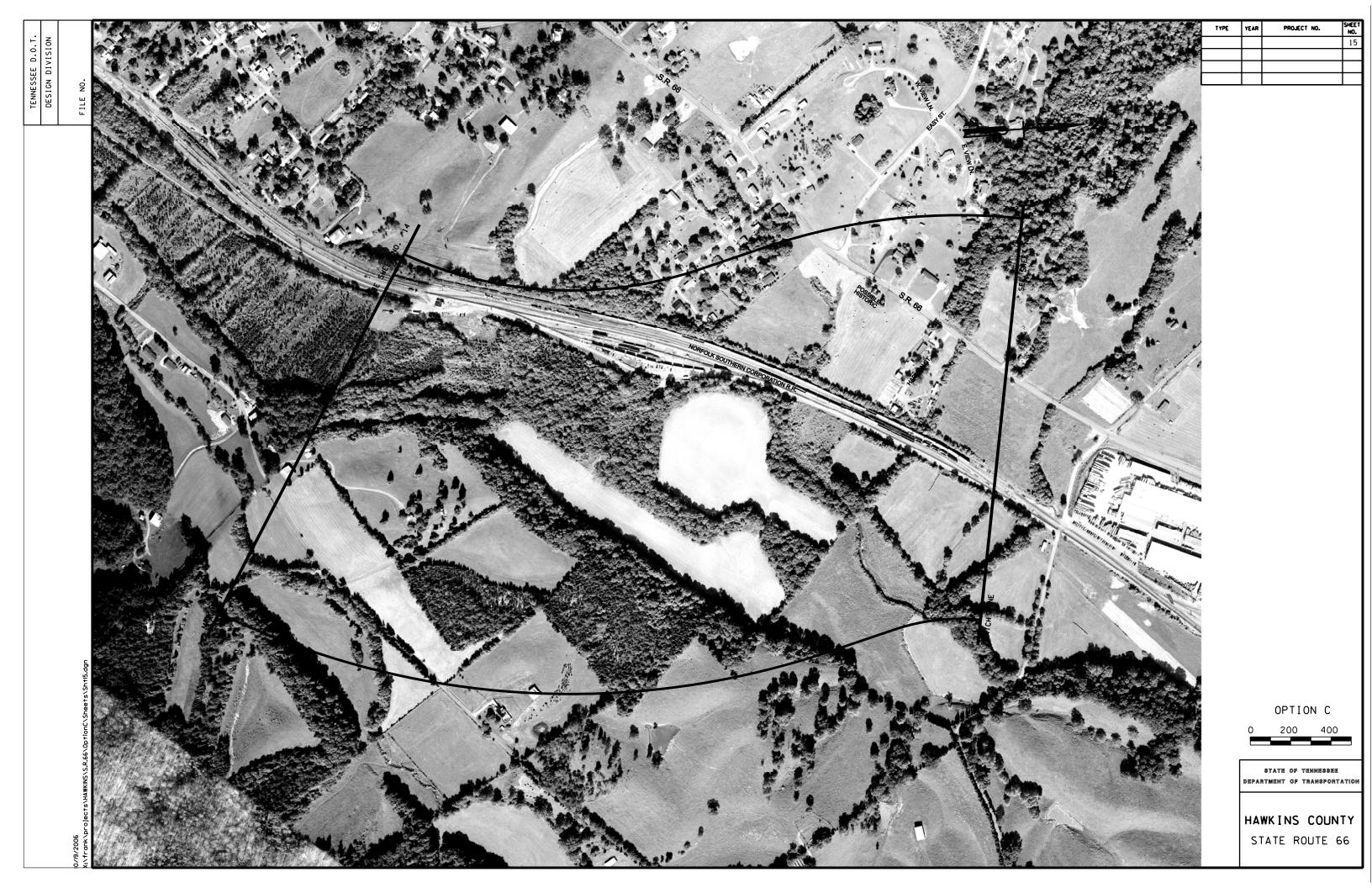


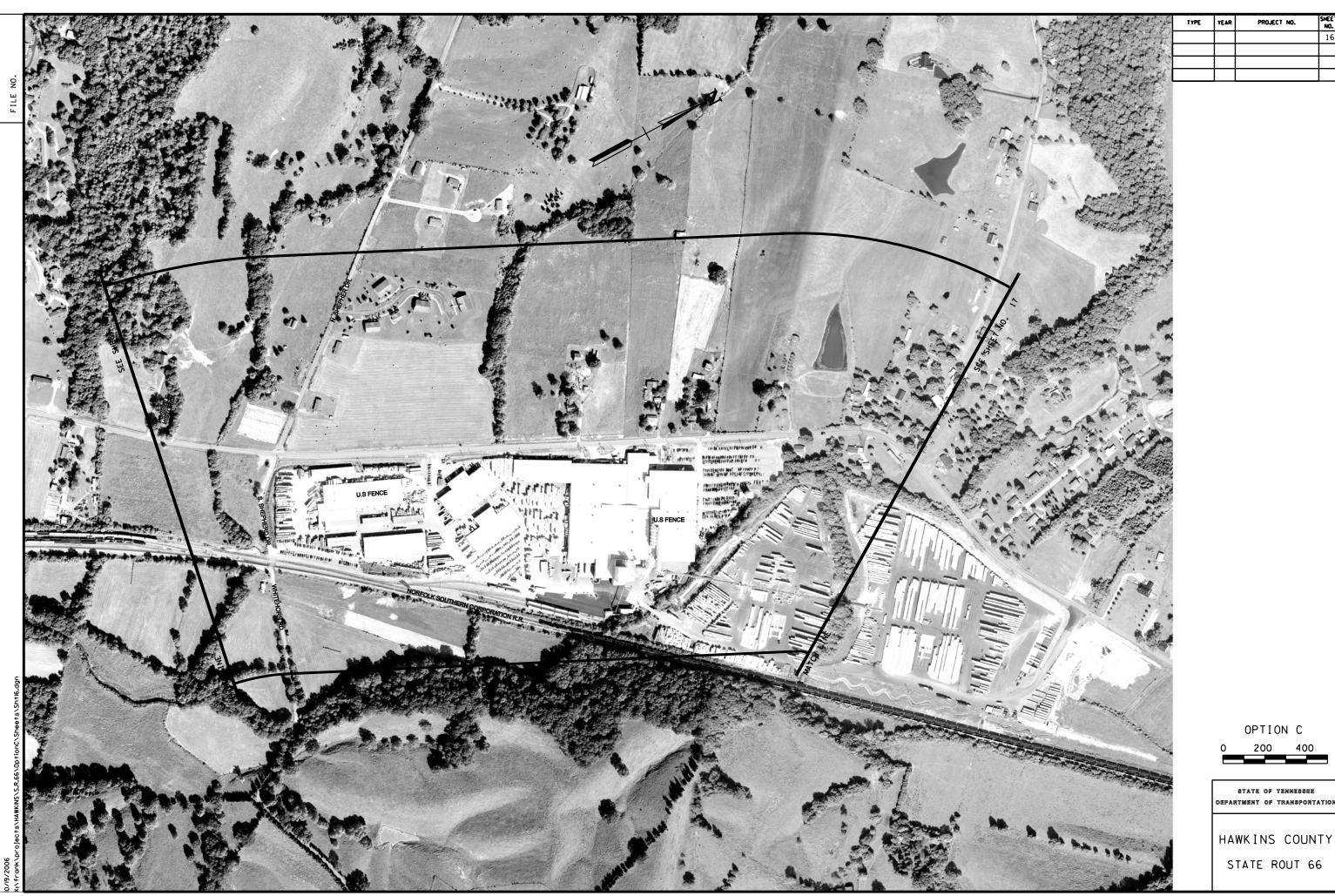












PROJECT NO.

OPTION C

STATE OF TENNESSEE

HAWKINS COUNTY

STATE ROUT 66





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OPTION ABC

STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATIO

HAWKINS COUNTY
STATE ROUTE 66

