STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

JAMES B. HUNT JR.
GOVERNOR

DAVID MCCOY
SECRETARY

September 12, 2000

MEMORANDUM TO: Mr. Dalton D. Ruffin, Member, Board of Transportation
Mr. S. Pat Ivey, P.E., Division Engineer, Division 9
Mr. David D. King
Mr. C. W. Leggett, P.E.
Mr. J. M. Lynch, P.E. (3) Attention: Jim Dunlop, P.E.
Mr. J. B. Williamson
Mr. Bill Gilmore, P.E. (2)
Ms. D. M. Barbour, P.E.
Mr. J. E. Alford, P.E.
Mr. Blake Norwood, P.E.
Mr. A. L. Avant (2)
Mr. J. D. Lane
Mr. T. A. Peoples, P.E.
Mr. David Smith, P.E.

FROM: Mr. H. Franklin Vick, P.E. H. F. Vick
Feasibility Studies Unit Head

SUBJECT: Feasibility Study # FS-9909E, Liberty Drive (SR 2055) / Turner Street (SR 2165) from Cloniger Street (NC 62) to National Highway (SR 2123), Davidson County.

Our staff has completed a feasibility study for the subject proposed project. This brief analysis suggests improvements that would be logical if the project were to be funded. A copy of our report is attached for your information.

HFV/ks

Attachment

cc: Mr. R. L. Hill, P.E.
Mr. L. A. Sanderson, P.E.

FEASIBILITY STUDY

Thomasville

SR 2055 (Liberty Drive)/SR 2165 (Turner Street)
from NC 62 (Cloniger Street)
to SR 2123 (National Highway)

Davidson County

Division 9

FS-9909E

Prepared by
Programming and TIP Branch
Division of Highways
N. C. Department of Transportation

Kim L. So, PE
Feasibility Study Engineer

H. Franklin Vick, PE
Head of Feasibility Studies

9/12/00
Date

FEASIBILITY STUDY

SR 2055 (Liberty Drive)/SR 2165 (Turner Street)
from NC 62 (Cloniger Street)
to SR 2123 (National Highway)
in Thomasville

Davidson County

FS-9909E

I. GENERAL DESCRIPTION

This feasibility study evaluates the potential for the widening of Liberty Drive/Turner Street from Cloniger Street to National Highway. See Figure 1 for the location of the project. The project is approximately 2.4 miles in length.

The studied typical section is a five-lane, 64-foot wide face-to-face, curb and gutter with 10-foot berms on 100-foot wide right-of-way with no control of access. The existing at-grade rail crossing with Norfolk Southern Railroad would be grade separated. Alternate 1 proposes an overpass at the crossing, and Alternate 2 involves an underpass. Alternate 2 is preferred by the City of Thomasville. Below is the brief summary of the estimated projects costs and right-of-way relocations for the two alternates:

	Alternate 1	Alternate 2
Right-of-Way	$ 19,200,000	$ 20,100,000
Construction	$ 13,900,000	$ 16,600,000
Total Costs	$ 33,100,000	$ 36,700,000
Residential Relocations	129	134
Business Relocations	7	8

This study is not a detailed planning/environmental investigation. A feasibility study presents studied cross-sections for improvements, general corridors of improvements, and estimated costs of construction and right-of-way. This study attempts to identify any potential environmental, permitting, or other observed issues that deserve consideration in the planning and construction stages.

II. NEED FOR PROJECT

This project was requested by the City of Thomasville and High Point Urban Area Transportation Advisory Committee. The proposed improvement would provide adequate capacity for future traffic on this roadway and relieve some of the congestion on the adjacent north/south facilities, namely, Randolph Street and Julian Avenue.

Liberty Drive/Turner Street is classified as a Minor Arterial on the Statewide Functional Classification System. On the High Point Urban Area Thoroughfare Plan, it is classified as a Major Thoroughfare.

The project corridor is composed of two streets - Liberty Drive and Turner Street. Liberty Drive ends at Blair Street on the north. The section of roadway from Blair Street to National Highway is named Turner Street. Liberty Drive is mostly a 2-lane, 20-foot wide roadway with narrow shoulders. Turner Street is generally a 2-lane curb and gutter facility with a width of 36 feet (face-to-face of curb). The roadway has a left-turn lane at Cloniger Street, Trinity Street, Blair Street, and National Highway intersections. Currently the intersections at Cloniger Street, Holly Hill Road, Sunrise Avenue, Trinity Street, Blair Street, Unity Street, and National Highway are signalized. The posted speed limit on both Liberty Drive and Turner Street is 35 mph.

The development along Liberty Drive is primarily residential with an elementary school to the east between Sunrise Avenue and Georgia Avenue. Several apartment complexes are located along Liberty Drive. The development along Turner Street is a mostly residential with some businesses.

Estimated 2000 average daily traffic (ADT) on Liberty Drive/Turner Street varies from 5,800 to 9,300 vehicles per day (vpd). In the design year 2025, the traffic volume is estimated to be between 11,600 and 17,200 vpd. The existing Liberty Drive/Turner Street is operating at a level of service (LOS) between B and C, and is anticipated to operate at a LOS F in the design year 2025. If widened to multi-lanes along with the recommended intersection improvements, this facility would operate at a LOS B; in the design year 2025, it would operate at LOS between B and C.

During the period from August, 1995, through July, 1998, there were 128 accidents reported along Liberty Drive/Turner Street within the project limits. This resulted in an accident rate of 718 accidents per 100 million vehicle miles (acc/100mvm) compared to a statewide average of 317 acc/100mvm for this type of facility. 1 fatality and 108 injuries were reported during this period. The rear-end slow or stop type of accidents accounted for one-fourth of all the accidents. If widened to multi-lanes, the accident rate on Liberty Drive/Turner Street is expected to reduce.

Currently Norfolk Southern Railway has 3 tracks (2 mainline and 1 switching) crossing Turner Street. The railroad is part of the designated Piedmont High Speed Rail Corridor. The tracks carry approximately 34 trains per day with speed up to 79 mph.

III. STUDIED IMPROVEMENTS

It is proposed to widen Liberty Drive/Turner Street from Cloniger Street to National Highway in Thomasville (see Figure 1). The project is approximately 2.4 miles in length.

The studied typical section is a five-lane, 64-foot wide face-to-face, curb and gutter with 10-foot berms on 100-foot wide right-of-way with no control of access. This study evaluates symmetrical widening along the existing roadway. It is recommended that the approaches of side streets at all the signalized intersections be widened to include a left-turn lane. The sidewalk in front of Liberty Drive Elementary would be replaced. The existing rail crossing with Norfolk Southern Railroad would be grade separated. Alternate 1 proposes an overpass at the crossing, and Alternate 2 involves an underpass.

Alternate 1

The proposed structure will carry Liberty Drive/Turner Street over the railroad as well as Blair Street and South Street due to their proximity to the railroad. The structure will have a roadway width of 64 feet with 5-foot wide sidewalk on one side, and a minimum lateral clearance of 23.5 feet over the railroad. Ramps connecting Blair Street to Liberty Drive/Turner Street were considered in order to provide direct access between the streets. However, the proposed ramps would be too close to Trinity Road to provide safe and efficient traffic operation in the southbound direction. The existing street network, primarily Trinity Road, will provide the link between these two streets. In view of the large volume of traffic traveling between Blair Street and Liberty Drive, the City of Thomasville preferred to retain the intersection, which would be accomplished in Alternate 2.

It is anticipated that 7 businesses and 129 residences will be relocated. The estimated cost of the project is $33,100,000 ($ 19,200,000 for right-of-way and $13,900,000 for construction).

Alternate 2 (Preferred)

Alternate 2 proposes an underpass at the existing railroad crossing. A temporary railroad detour will be needed prior to the construction of the railroad structure. Coordination with Norfolk Southern Railway should be established at early stage during the planning and design phase. A fairly large amount of undercutting would be required to provide adequate vertical clearance (15.5 feet minimum) under the proposed railroad structure. A section of Blair Street and

E. Main Street in the project vicinity will also have to be lowered in order to retain the intersections with Liberty Drive/ Turner Street. South Street would be terminated with a cul-de-sac.

It is anticipated Alternate 2 will result in the relocations of 8 businesses and 134 residences. The estimated cost of the project is $36,700,000 ($20,100,000 for right-of-way and $16,600,000 for construction).

IV. OTHER COMMENTS AND CONCERNS

The roadway may be widened asymmetrically to reduce the number of relocatees and/or project costs. The City of Thomasville requested that a 4-lane urban (undivided) cross-section be considered in the feasibility study. However, NCDOT Traffic Engineering Branch discouraged the design of 4-lane roadways due to safety reasons.

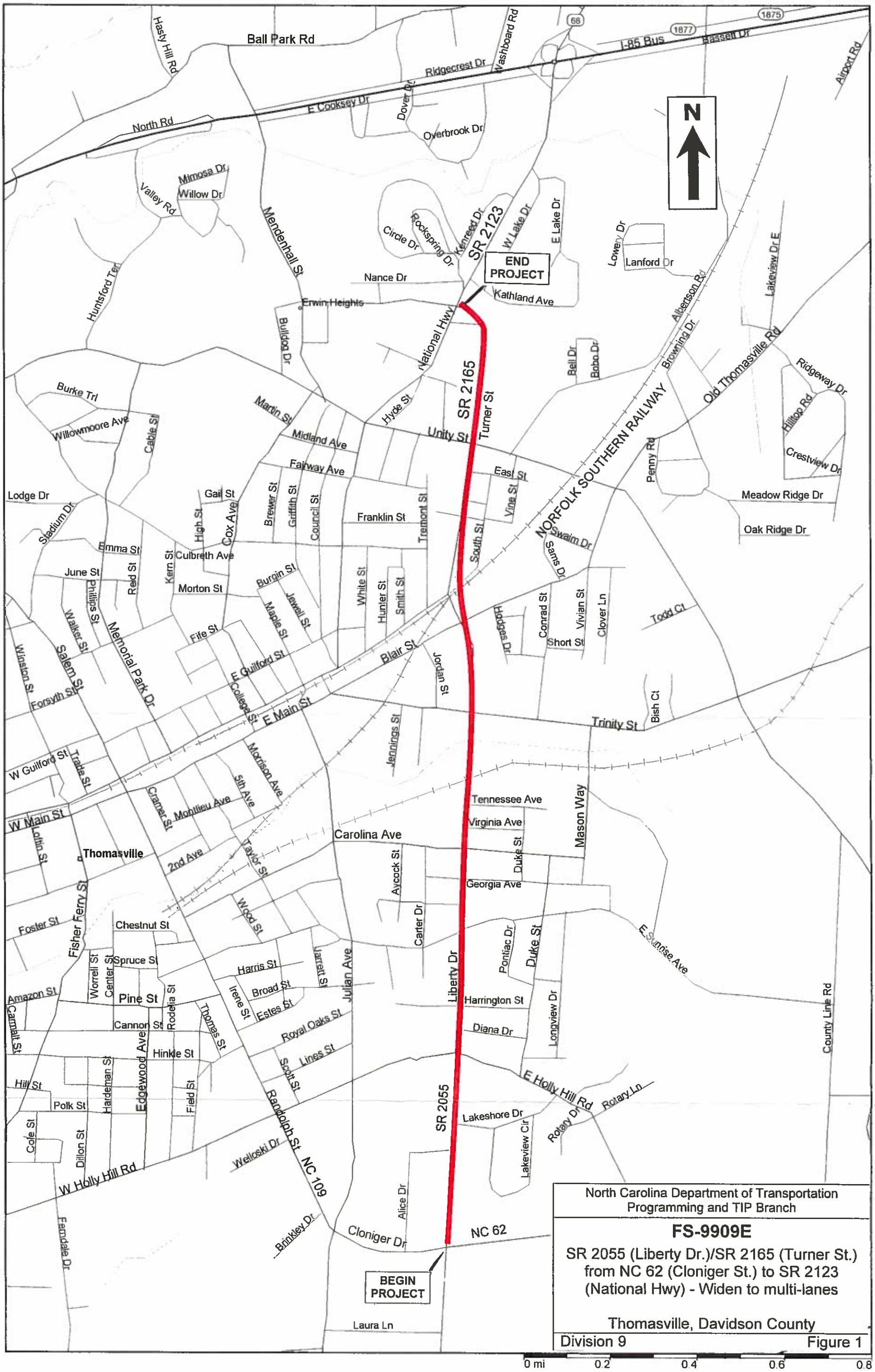
NCDOT Division 9 Office recommended Alternate 2. It also recommended that East Main Street be cul-de-saced and Elwood Street be extended to Tremont Street. This would eliminate an intersection on the thoroughfare. It is suggested that these recommendations be evaluated during the planning phase.

No historical or architecturally significant sites have been identified in the project corridor.

Based on maps available at the Department of Environment, Health, and Natural Resources - Natural Heritage Section, no threatened or endangered species were identified in the project corridor.

The NCDOT Division of Bicycle and Pedestrian Transportation confirmed that the project corridor is not a designated bicycle route.

A transportation benefit analysis was also completed for this project. For the period between 2000 and design year 2025, it is estimated that the total transportation benefits for the project are $58,000,000 with an average of $2,320,000 per year. The total benefits include accident cost savings, time cost savings, and operating cost savings.



North Carolina Department of Transportation
Programming and TIP Branch

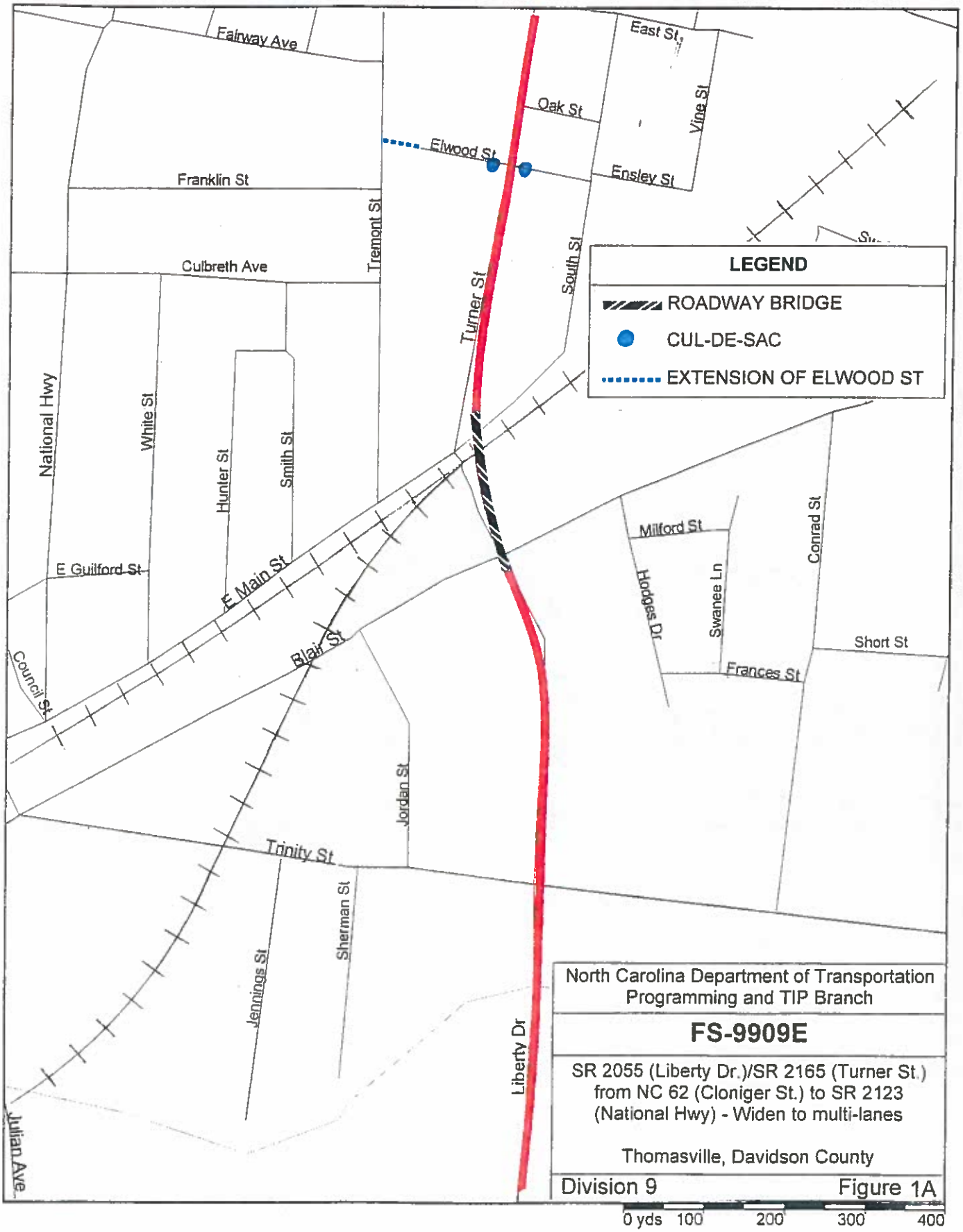
FS-9909E

SR 2055 (Liberty Dr.)/SR 2165 (Turner St.) from NC 62 (Cloniger St.) to SR 2123 (National Hwy) - Widen to multi-lanes

Thomasville, Davidson County

Division 9 Figure 1

ALTERNATE 1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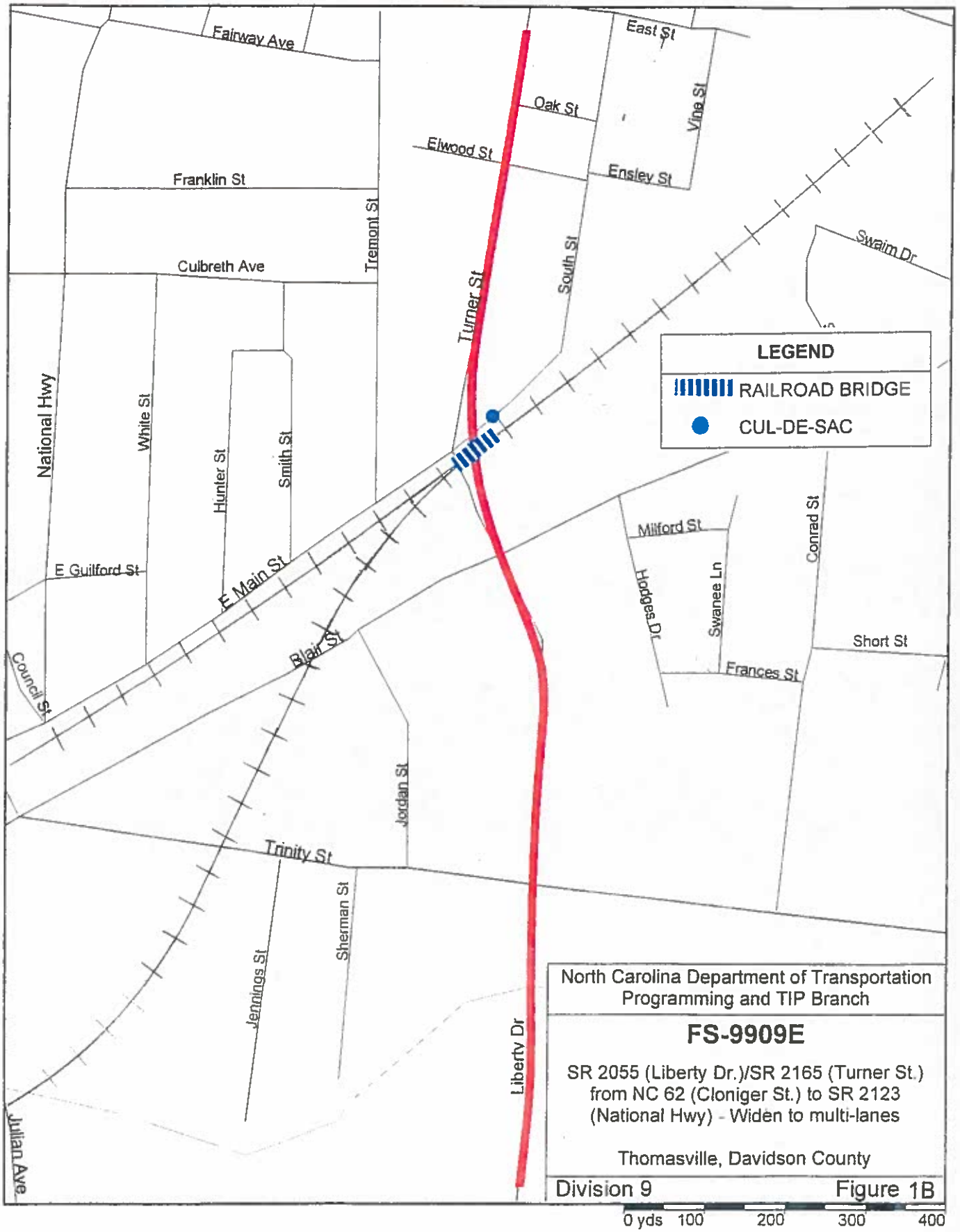
East St
Oak St
Vine St
Elwood St
Ensley St
Franklin St
Tremont St
Culbreth Ave
Turner St
South St
LEGEND
ROADWAY BRIDGE
CUL-DE-SAC
EXTENSION OF ELWOOD ST
National Hwy
White St
Hunter St
Smith St
E Guilford St
E Main St
Blair St
Council St
Milford St
Hodges Dr
Swanee Ln
Conrad St
Short St
Frances St
Jordan St
Trinity St
Sherman St
Jennings St
Liberty Dr
Julian Ave
North Carolina Department of Transportation
Programming and TIP Branch
FS-9909E
SR 2055 (Liberty Dr.)/SR 2165 (Turner St.)
from NC 62 (Cloniger St.) to SR 2123
(National Hwy) - Widen to multi-lanes
Thomasville, Davidson County
Division 9
Figure 1A
0 yds 100 200 300 400

ALTERNATE 2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Ensley St
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RAILROAD BRIDGE
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Figure 1B
0 yds 100 200 300 400