

CATEGORICAL EXCLUSION ACTION CLASSIFICATION FORM

TIP Project No.	<u>I-5338B</u>
WBS Project No.	<u>46157.3</u>
Federal Project No.	<u>NHPP-0404 (155) 294</u>

- A. Project Description: (Include project scope and location and refer to the attached project location map.)

The proposed project, TIP Number I-5338B, is located within the project limits of TIP Number I-5338 (pavement rehabilitation of travel lanes, shoulders and ramps) on I-40/US 64 from west of the SR 1319 (Jones Franklin Road) Overpass to east of Exit 297 (Lake Wheeler Road Interchange) for approximately 4.5 miles, see Figure 1. The proposed project consist of the following:

Conversion of 24 foot outside paved shoulder (12 foot stripped out) on I-40/US 64 to a 12 foot outside paved shoulder and a 12 foot auxiliary lane, between interchanges, as noted below:

- **From east of the US 1/64 (Exit 293) to SR 1571 (Gorman Street Interchange) (Exit 295) both the east and westbound directions , and;**
- **From SR 1571 (Gorman Street Interchange) (Exit 295) to SR 1371 (Lake Wheeler Road Interchange) (EXIT 297) eastbound direction.**

- B. Purpose and Need:

The purpose of the project is to improve the function and reduce conflicts at merge/weave/diverge locations between the US 1/64 (Exit 293), SR 1571 (Gorman Street Interchange) (Exit 295), and SR 1371 (Lake Wheeler Road Interchange) (EXIT 297) interchanges.

The need for the project is to extend the distance (by providing auxiliary lanes) in which merge/weave/diverge will occur between the following interchanges:

- **From east of the US 1/64 (Exit 293) to SR 1571 (Gorman Street Interchange) (Exit 295) both the east and westbound directions , and;**
- **From SR 1571 (Gorman Street Interchange) (Exit 295) to SR 1371 (Lake Wheeler Road Interchange) (EXIT 297) eastbound direction.**

- C. Proposed Improvements:

Circle one or more of the following Type II improvements which apply to the project:

- 1.** Modernization of a highway by resurfacing, restoration, rehabilitation, reconstruction, adding shoulders, or adding auxiliary lanes (e.g., parking, weaving, turning, climbing).
 - a. Restoring, Resurfacing, Rehabilitating, and Reconstructing pavement (3R and 4R improvements)
 - b. Widening roadway and shoulders without adding through lanes

- c. Modernizing gore treatments
 - d.** Constructing lane improvements (merge, auxiliary, and turn lanes)
 - e. Adding shoulder drains
 - f. Replacing and rehabilitating culverts, inlets, and drainage pipes, including safety treatments
 - g. Providing driveway pipes
 - h. Performing minor bridge widening (less than one through lane)
 - i. Slide Stabilization
 - j. Structural BMP's for water quality improvement
2. Highway safety or traffic operations improvement projects including the installation of ramp metering control devices and lighting.
 - a. Installing ramp metering devices
 - b. Installing lights
 - c. Adding or upgrading guardrail
 - d. Installing safety barriers including Jersey type barriers and pier protection
 - e. Installing or replacing impact attenuators
 - f. Upgrading medians including adding or upgrading median barriers
 - g. Improving intersections including relocation and/or realignment
 - h. Making minor roadway realignment
 - i. Channelizing traffic
 - j. Performing clear zone safety improvements including removing hazards and flattening slopes
 - k. Implementing traffic aid systems, signals, and motorist aid
 - l. Installing bridge safety hardware including bridge rail retrofit
 3. Bridge rehabilitation, reconstruction, or replacement or the construction of grade separation to replace existing at-grade railroad crossings.
 - a. Rehabilitating, reconstructing, or replacing bridge approach slabs
 - b. Rehabilitating or replacing bridge decks
 - c. Rehabilitating bridges including painting (no red lead paint), scour repair, fender systems, and minor structural improvements
 - d. Replacing a bridge (structure and/or fill)
 4. Transportation corridor fringe parking facilities.
 5. Construction of new truck weigh stations or rest areas.
 6. Approvals for disposal of excess right-of-way or for joint or limited use of right-of-way, where the proposed use does not have significant adverse impacts.
 7. Approvals for changes in access control.
 8. Construction of new bus storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and located on or near a street with adequate capacity to handle anticipated bus and support vehicle traffic.

9. Rehabilitation or reconstruction of existing rail and bus buildings and ancillary facilities where only minor amounts of additional land are required and there is not a substantial increase in the number of users.
 10. Construction of bus transfer facilities (an open area consisting of passenger shelters, boarding areas, kiosks and related street improvements) when located in a commercial area or other high activity center in which there is adequate street capacity for projected bus traffic.
 11. Construction of rail storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and where there is no significant noise impact on the surrounding community.
 12. Acquisition of land for hardship or protective purposes, advance land acquisition loans under section 3(b) of the UMT Act. Hardship and protective buying will be permitted only for a particular parcel or a limited number of parcels. These types of land acquisition qualify for a CE only where the acquisition will not limit the evaluation of alternatives, including shifts in alignment for planned construction projects, which may be required in the NEPA process. No project development on such land may proceed until the NEPA process has been completed.
 13. Acquisition and construction of wetland, stream and endangered species mitigation sites.
 14. Remedial activities involving the removal, treatment or monitoring of soil or groundwater contamination pursuant to state or federal remediation guidelines.
- D. Special Project Information: (Include Environmental Commitments and Permits Required.)

Traffic Capacity

An analysis was performed, utilizing Highway Capacity Manual (HCM) 2010 procedures, to evaluate existing conditions, existing conditions with 2035 design year volumes, and the effect of providing auxiliary lanes along I-40/US 64 as part of STIP I-5338 B in the 2035 design year. The project limits are I-40 from west of the Jones Franklin Road overpass to the I-40/US 64/Lake Wheeler Road interchange. The proposed conditions are as follows:

- I-40/US 64 eastbound
 - West of Jones Franklin Road Overpass to the Gorman Street interchange, provide three (3) through lanes and one (1) auxiliary lane;
 - Gorman Street interchange to the Lake Wheeler road interchange, provide three (3) through lanes and one (1) auxiliary lane.
- I-40/US 64 eastbound
 - West of Jones Franklin Road Overpass to the Gorman Street interchange, provide three (3) through lanes and one (1) auxiliary lane.

All other locations have the same geometry as existing conditions.

The analyses evaluated the existing (2011) and design year (2035) AM and PM peak hour volumes which are provide in Figures 2a and 2b, respectively. The volumes for the 2035 Build and No Build scenarios are identical. To provide a true comparison of the effect of the auxiliary lanes, no additional study area improvements were included in the evaluation. The Existing and Design Year No Build analyses were based upon existing laneage as shown in Figures 3 and 4. The Build analysis was based on the proposed addition of auxiliary lanes described previously and shown by Figures 5 and 6. The purpose of this information is to present the Existing (2011) conditions as well as compare the No Build (2035) conditions to the Build (2035) conditions.

I-440/US 1/US 64 and Gorman Street

As shown in Figure 5, eastbound and westbound auxiliary lanes were added between the I-440/US 1/US 64 and Gorman Street interchanges. These auxiliary lanes begin at the ramp merges onto I-40/US 64 and drop at the adjacent ramp diverges to the respective cross streets.

Gorman Street and Lake Wheeler Road

As shown in Figures 5 and 6, an eastbound auxiliary lane was added between the Gorman Street and Lake Wheeler Road interchange. This auxiliary lane begins at the Gorman Street ramp merge onto I-40/US 64 eastbound and drops at the adjacent ramp diverge to Lake Wheeler Road.

Analysis Results

The Highway Capacity Software analysis results are provided in Table 1. In the eastbound direction, the weave length exceeds the maximum weave distance and was therefore broken down into merge, basic freeway, and diverge segments. In cases where the auxiliary lane exceeds the maximum weaving distance, the operations of the auxiliary lanes are expected to be similar to merge, basic freeway, and diverge segments. Given that, the operations will be similar to the No Build conditions at the ramp gore areas. This is due to the fact the additional auxiliary lane is not taken into account in the merge/diverge analyses; however, the auxiliary lane does provide additional distance for vehicles to perform their desired maneuver. Between the ramp gore areas, the additional auxiliary lane is expected to improve operations and the analysis result show operational improvement in the eastbound direction between the merge and diverge segments. This is the case for both the eastbound auxiliary lanes between I-440/US 1/US 64 and Gorman Street and Gorman Street and Lake Wheeler Road as shown in Table 1.

With the provision of the westbound auxiliary lane, the weave between Gorman Street and I-440/US 1/US 64 is expected to operate at **LOS F** due to the fact the volumes exceed the weaving segment capacity. Without the auxiliary lane, I-40/US 64 westbound at the Gorman Street merge, between Gorman Street and I-440/US 1/US 64, and at the I-440/US 1/US 64 diverge are also expected to operate at **LOS**

F as volumes exceed the capacity of the freeway in these areas..

Table 1. 2035 No Build and Build Level of Service/Density (pc/mi/ln)

Segment	Segment Type	2035 No Build		2035 Build	
		AM	PM	AM	PM
I-40/US 64 EB Merge of I-440/US 1/US 64 CD	Merge (NB) Lane Add (B)	F ² 39.7	F ² 48.9	F ^{1,2} 41.2	F ^{1,2} 50.3
I-40/US 64 EB East of I-440/US 1/US 64 CD Merge	Freeway	F 47.6	F 93.5	D ¹ 28.3	E ¹ 39.5
I-40/US 64 EB Diverge to Gorman Street	Diverge (NB) Lane Drop (B)	F ² 41.2	F ² 55.3	F ^{1,2} 40.9	F ^{1,2} 55.0
I-40/US 64 EB between Gorman Street Ramps	Freeway	E 37.2	F 59.4	E 37.2	F 59.4
I-40/US 64 EB Merge from Gorman Street	Merge (NB) Lane Add (B)	F ² 34.8	F ² 46.2	F ^{1,2} 36.6	F ^{1,2} 48.6
I-40/US 64 EB East of Gorman Street Merge	Freeway	F 46.6	F 89.1	D ¹ 27.9	E ¹ 38.7
I-40/US 64 EB Diverge to Lake Wheeler Road	Diverge (NB) Lane Drop (B)	F ² 40.4	F ² 54.4	F ^{1,2} 40.3	F ^{1,2} 54.2
I-40/US 64 WB Merge from Lake Wheeler Road	Merge	C 27.7	C 22.2	C 27.7	C 22.2
I-40/US 64 WB West of Lake Wheeler Merge	Freeway	E 38.7	D 27.9	E 38.7	D 27.9
I-40/US 64 WB 4-3 Lane Merge West of Lake Wheeler Road	Merge	F ² 44.8	F ² 33.2	F ² 44.8	F ² 33.2
I-40/US 64 WB East of Gorman Street Diverge	Freeway	F 89.1	F 46.6	F 89.1	F 46.6
I-40/US 64 WB Diverge to Gorman Street	Diverge	F ² 54.9	F ² 41.0	F ² 54.9	F ² 41.0
I-40/US 64 WB between Gorman Street Ramps	Freeway	F 59.4	E 37.2	F 59.4	E 37.2
I-40/US 64 WB Gorman Street Merge	Merge	F ² 46.6	F ² 36.3	NA	NA
I-40/US 64 WB East of I-440/US 1/US 64 CD	Freeway	F 93.5	F 47.6	NA	NA
I-40/US 64 WB Diverge to I-440/US 1/US 64 CD	Diverge	F ² 48.4	F ² 35.9	NA	NA
I-40/US 64 WB Gorman Street to I-440/US 1/US 64 CD	Weave	NA	NA	F ² *	F ² *

¹ Is a weave in the Build but weave length exceeds maximum weave distance; therefore this was analyzed as merge/freeway/diverge based on 2010 HCM methodologies and defaults

² Volume exceeds capacity; therefore, operations are LOS F

* HCM methodologies unable to estimate density

Based on this information, the provision of additional auxiliary laneage is anticipated to result in improved operations in the locations in the eastbound

direction as well as provide additional distance for vehicles to perform their desired maneuvers in congested areas. Since LOS F conditions still exist as in the I-40/US 64 westbound weave between Gorman Street and I-440/US 1/US 64, or at the ramp gore areas, to fully understand the effect of the additional auxiliary laneage more detailed analysis such as FREEVAL or microsimulation are required.

PROPOSED IMPROVEMENTS

The project study area lies within the existing Right-of-Way for the referenced section of I-40/US 64.

Roadway Alignment and Cross-section

The proposed lane configuration of I-40/US 64 from west of the Jones Franklin Road Overpass to west of Exit 297 (Lake Wheeler Road Interchange) is as follows:

- Section 1 - West of the SR 1319 (Jones Franklin Road) Overpass to Exit 295 (Gorman Street Interchange) three (3) through lanes with one (1) auxiliary lane between interchanges in both east and west bound directions, and;
- Section 2 - East of Exit 295 (Gorman Street Interchange) to west of Exit 297 (Lake Wheeler Road Interchange) three (3) through lanes with one (1) auxiliary lane east bound and a four (4)/three (3) through lane configuration west bound [the fourth west bound lane drops half way between Exit 295 and Exit 297 at which point I-40/US 64 has three (3) west bound lanes].

Cross-section will vary for the proposed improvements, See Figure 7

HUMAN ENVIRONMENT EFFECTS OF PROPOSED ACTION

National Register of Historic Places

TIP Number I-5338 was surveyed for National Register of Historic Places with the following results:

NCDOT – Human Environment Unit, under the provisions of a Programmatic Agreement with FHWA, NCDOT, HPO, OSA and the Advisory Council on Historic Preservation (effective July 1, 2009), reviewed the proposed project and determined that there were no historic properties present or affected by the project, see form Appendix A (PA # 11-07-0003) - dated May 27, 2011, see attached.

All work regarding this project is contained within TIP Number I-5338 project limits, thus there are no historic properties present or that will be affected by this project.

Archaeological

TIP Number I-5338 was surveyed for archaeological site(s) with the following results:

NCDOT – Human Environment Unit, under the provisions of a Programmatic Agreement with FHWA, NCDOT, HPO, OSA and the Advisory Council on Historic Preservation (effective July 1, 2009), reviewed the proposed project and determined that there are no archaeological sites present or affected by the project, see form Appendix A (PA # 11-07-0003) - dated June 19, 2012, see attached.

All work regarding this project is contained within TIP Number I-5338 project limits, thus there are no archaeological sites present or that will be affected by this project.

Section 4(f) and Section 6(f) Resources

TIP Number I-5338 was surveyed for Section 4(f) and Section 6(f) Resources with the following results:

There are no Section 4(f)/6(f) Resources within the project study area.

All work regarding this project is contained within TIP Number I-5338 project limits, thus there are no Section 4(f)/6(f) Resources present or that will be affected by this project.

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E. Threshold Criteria

The following evaluation of threshold criteria must be completed for Type II actions

<u>ECOLOGICAL</u>	<u>YES</u>	<u>NO</u>
(1) Will the project have a substantial impact on any unique or important natural resource?	<input type="checkbox"/>	<u> X </u>
(2) Does the project involve habitat where federally listed endangered or threatened species may occur?	<input checked="" type="checkbox"/>	<u> </u>
(3) Will the project affect anadromous fish?	<input type="checkbox"/>	<u> X </u>
(4) If the project involves wetlands, is the amount of permanent and/or temporary wetland taking less than one-tenth (1/10) of an acre and have all practicable measures to avoid and minimize wetland takings been evaluated?	<u> X </u>	<input type="checkbox"/>
(5) Will the project require the use of U. S. Forest Service lands?	<input type="checkbox"/>	<u> X </u>
(6) Will the quality of adjacent water resources be adversely impacted by proposed construction activities?	<input type="checkbox"/>	<u> X </u>
(7) Does the project involve waters classified as Outstanding Water Resources (OWR) and/or High Quality Waters (HQW)?	<input type="checkbox"/>	<u> X </u>
(8) Will the project require fill in waters of the United States in any of the designated mountain trout counties?	<input type="checkbox"/>	<u> X </u>
(9) Does the project involve any known underground storage tanks (UST's) or hazardous materials sites?	<input type="checkbox"/>	<u> X </u>
 <u>PERMITS AND COORDINATION</u>		
(10) If the project is located within a CAMA county, will the project significantly affect the coastal zone and/or any "Area of Environmental Concern" (AEC)?	<input type="checkbox"/>	<u> X </u>
(11) Does the project involve Coastal Barrier Resources Act resources?	<input type="checkbox"/>	<u> X </u>
(12) Will a U. S. Coast Guard permit be required?	<input type="checkbox"/>	<u> X </u>
(13) Will the project result in the modification of any existing regulatory floodway?	<input type="checkbox"/>	<u> X </u>

(14)	Will the project require any stream relocations or channel changes?	<input type="checkbox"/>	<u> X </u>
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SOCIAL, ECONOMIC, AND CULTURAL RESOURCES

		<u> YES </u>	<u> NO </u>
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(15)	Will the project induce substantial impacts to planned growth or land use for the area?	<input type="checkbox"/>	<u> X </u>
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(16)	Will the project require the relocation of any family or business?	<input type="checkbox"/>	<u> X </u>
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(17)	Will the project have a disproportionately high and adverse human health and environmental effect on any minority or low-income population?	<input type="checkbox"/>	<u> X </u>
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(18)	If the project involves the acquisition of right of way, is the amount of right of way acquisition considered minor?	<u> X </u>	<input type="checkbox"/>
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(19)	Will the project involve any changes in access control?	<input type="checkbox"/>	<u> X </u>
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(20)	Will the project substantially alter the usefulness and/or land use of adjacent property?	<input type="checkbox"/>	<u> X </u>
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(21)	Will the project have an adverse effect on permanent local traffic patterns or community cohesiveness?	<input type="checkbox"/>	<u> X </u>
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(22)	Is the project included in an approved thoroughfare plan and/or Transportation Improvement Program (and is, therefore, in conformance with the Clean Air Act of 1990)?	<u> X </u>	<input type="checkbox"/>
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(23)	Is the project anticipated to cause an increase in traffic volumes?	<input type="checkbox"/>	<u> X </u>
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(24)	Will traffic be maintained during construction using existing roads, staged construction, or on-site detours?	<u> X </u>	<input type="checkbox"/>
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(25)	If the project is a bridge replacement project, will the bridge be replaced at its existing location (along the existing facility) and will all construction proposed in association with the bridge replacement project be contained on the existing facility?	<u> N/A </u>	<input type="checkbox"/>
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(26)	Is there substantial controversy on social, economic, or environmental grounds concerning the project?	<input type="checkbox"/>	<u> X </u>
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(27)	Is the project consistent with all Federal, State, and local laws relating to the environmental aspects of the project?	<u> X </u>	<input type="checkbox"/>
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(28)	Will the project have an "effect" on structures/properties eligible for or listed on the National Register of Historic Places?	<input type="checkbox"/>	<u> X </u>
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- (29) Will the project affect any archaeological remains which are important to history or pre-history? X
- (30) Will the project require the use of Section 4(f) resources (public parks, recreation lands, wildlife and waterfowl refuges, historic sites, or historic bridges, as defined in Section 4(f) of the U. S. Department of Transportation Act of 1966)? X
- (31) Will the project result in any conversion of assisted public recreation sites or facilities to non-recreation uses, as defined by Section 6(f) of the Land and Water Conservation Act of 1965, as amended? X
- (32) Will the project involve construction in, across, or adjacent to a river designated as a component of or proposed for inclusion in the National System of Wild and Scenic Rivers? X

F. Additional Documentation Required for Unfavorable Responses in Part E
(Discussion regarding all unfavorable responses in Part E should be provided below. Additional supporting documentation may be attached, as necessary.)

(2) Endangered Species Act Protected Species

The federally protected species for Wake County were surveyed for TIP Number I-5338 with the following results:

As of January 22, 2014, the U.S. Fish and Wildlife Service (USFWS) lists four federally protected species for Wake County, Table 2. A brief description of each species' habitat requirements follows, along with its Biological Conclusion rendered based on survey results in the study area. Habitat requirements for this species are based on the current best available information from referenced literature and/or USFWS correspondence.

Table 2. Federally protected species listed for Wake County

Common Name	Scientific Name	Federal Status	Habitat Present	Biological Conclusion
Dwarf wedgemussel	<i>Alasmidonta heterodon</i>	E*	No	No Effect
Red-cockaded woodpecker	<i>Picoides borealis</i>	E	No	No Effect
Michaux's sumac	<i>Rhus michauxii</i>	E	Yes	No Effect
Northern long-eared bat	<i>Myotis septentrionalis</i>	P**	As noted below	As noted below

* E – Endangered

** P - Proposed

Michaux's sumac

USFWS Optimal Survey Window: May – October

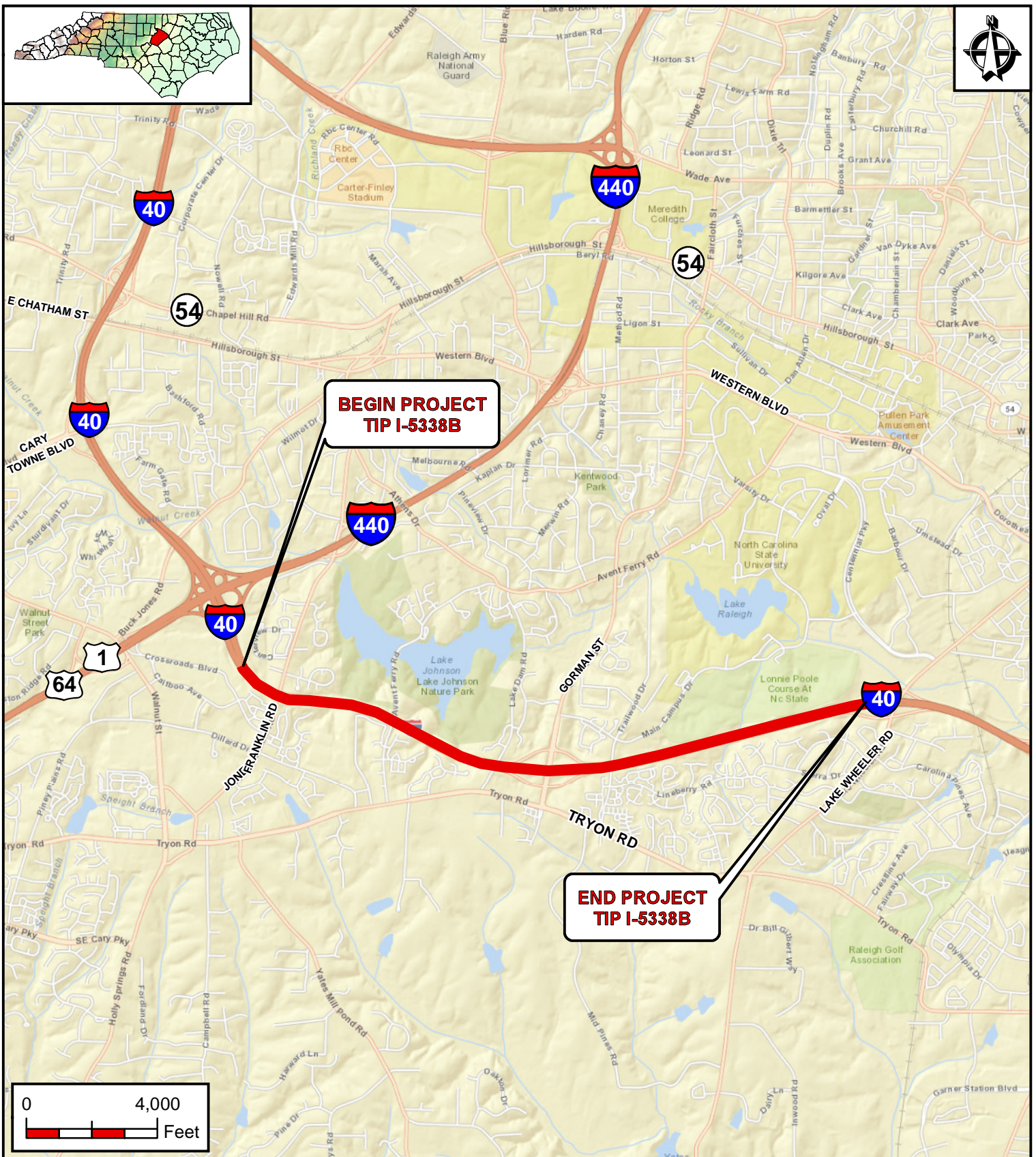
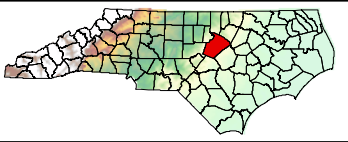
Habitat Description: Michaux's sumac, endemic to the inner Coastal Plain and lower Piedmont, grows in sandy or rocky, open, upland woods on acidic or circumneutral, well-drained sands or sandy loam soils with low cation exchange capacities. The species is also found on sandy or submesic loamy swales and depressions in the fall line Sandhills region, as well as in openings along the rim of Carolina bays; maintained railroad, roadside, power line, and utility ROWs; areas where forest canopies have been opened up by blowdowns and/or storm damage; small wildlife food plots; abandoned building sites; under sparse to moderately dense pine or pine/hardwood canopies; and in and along edges of other artificially maintained clearings undergoing natural succession. In the central Piedmont, it occurs on clayey soils derived from mafic rocks. The plant is shade intolerant and, therefore, grows best where disturbance (*e.g.*, mowing, clearing, grazing, periodic fire) maintains its open habitat.

Biological Conclusion: **No Effect**

A re-survey for Michaux's sumac was performed within the study area on September 9, 2013. Suitable habitat was present within the study area within the areas beyond the maintained roadside, edges of wooded areas, and utility ROWs. Both smooth sumac and winged sumac were observed; however, no individuals of Michaux's sumac were identified during the survey. A review of the NCNHP database revealed no known occurrences of this species within 1.0 mile of the study area (reviewed September 9, 2013). Due to the lack of individuals and occurrences, a biological conclusion of "No Effect" has been rendered for this species.

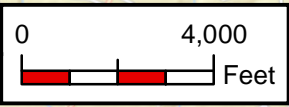
All work regarding this project is contained within TIP Number I-5338 project limits, thus a "No Effect" determination is applicable.

A US Fish and Wildlife Service proposal for listing the Northern Long-eared Bat (*Myotis septentrionalis*) as an Endangered species was published in the Federal Register in October 2013. The listing may become effective as soon as October 2014. Furthermore, this species is included in USFWS's current list of protected species for Wake County. NCDOT is working closely with the USFWS to understand how this proposed listing may impact NCDOT projects. NCDOT will continue to coordinate appropriately with USFWS to determine if this project will incur potential effects to the Northern long-eared bat, and how to address these potential effects, if necessary.



**BEGIN PROJECT
TIP I-5338B**

**END PROJECT
TIP I-5338B**



**PURPOSED PROJECT ENHANCEMENTS MAP
I-40 / US 64 FROM WEST OF
SR 1319 (JONES FRANKLIN ROAD)
OVERPASSTO EAST OF SR 1371
(LAKE WHEELER ROAD)
WAKE COUNTY
TIP PROJECTS I-5338B**



**NORTH CAROLINA DEPARTMENT
OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND
ENVIRONMENTAL ANALYSIS UNIT**

County:	WAKE
Div:	5
TIP#:	I-5338B
WBS:	46157.3.FS5
Date:	November 2013

**Figure
1**



Gorman St.

Lake Wheeler Rd.



3244
(2654)

1988 (1626)

5232
(4280)

537 (439)

4695
(3841)

458 (374)

5153
(4215)

396 (324)

4757
(3891)

554 (454)

5311
(4345)



2654
(3244)

1626 (1988)

4280
(5232)

439 (537)

3841
(4695)

374 (458)

4215
(5153)

324 (396)

3891
(4757)

454 (554)

4345
(5311)



Gorman St.

Lake Wheeler Rd.

Legend

XX (XX) 2011 AM (PM) Peak Hour Volumes



Gorman St.

Lake Wheeler Rd.

Gorman St.

Lake Wheeler Rd.

5218
(4269)

4269
(5218)

2438 (1995)

1995 (2438)

7656
(6264)

6264
(7656)

854 (698)

698 (854)

6802
(5566)

5566
(6802)

779 (637)

637 (779)

7581
(6203)

6203
(7581)

510 (418)

418 (510)

7071
(5785)

5785
(7071)

889 (727)

727 (889)

7960
(6512)

6512
(7960)



Legend

XX (XX) 2035 AM (PM) Peak Hour Volumes

PREPARED BY:



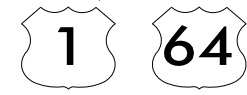
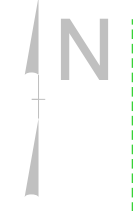
Hatch Mott
MacDonald

I-5338B
2035 Peak Hour Volumes

DATE:
JANUARY 2014

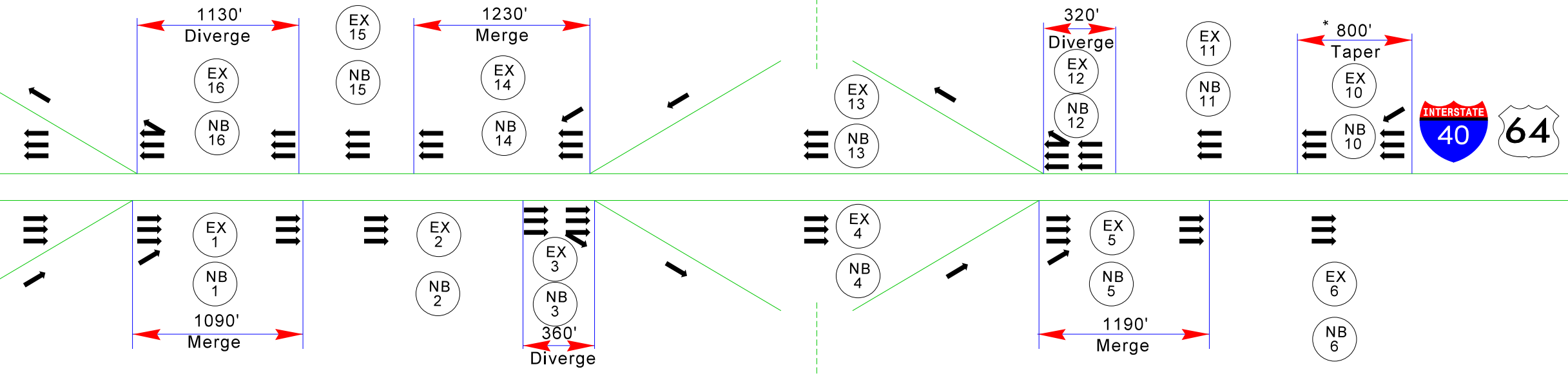
SCALE:
NOT TO SCALE

FIGURE 2b



Gorman St.

Gorman St.



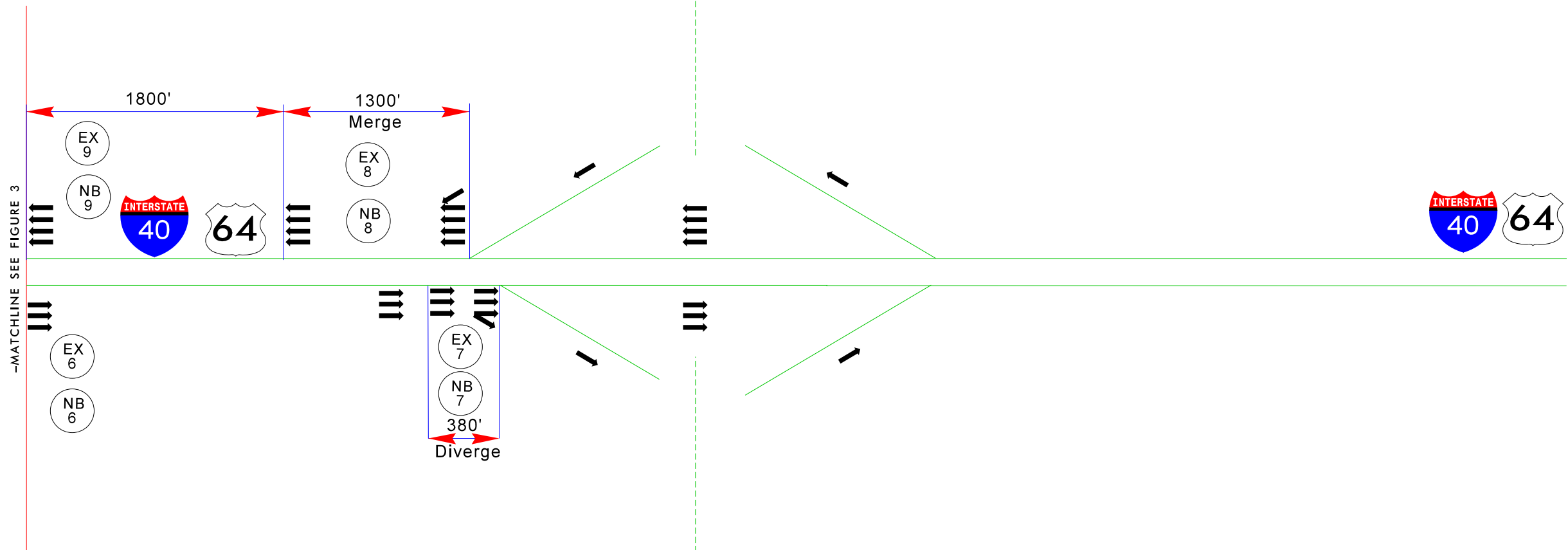
Legend
 → # of Lanes
 (EX X) Node number for Existing
 (NB X) Node number for No Build
 xxx' Weave, Merge & Diverge Distances

* Analyzed distance for merge is 1600' beginning at the first lane merge arrow to the end of the taper.

-MATCHLINE SEE FIGURE 4





Lake Wheeler Rd.




Lake Wheeler Rd.

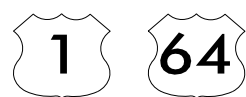
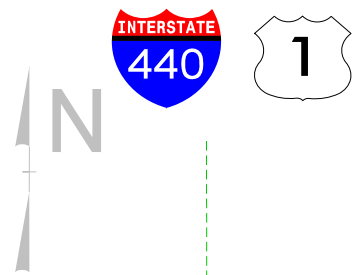
Legend

 # of Lanes

 Node number for Existing

 Node number for No Build

xxx' Weave, Merge & Diverge Distances

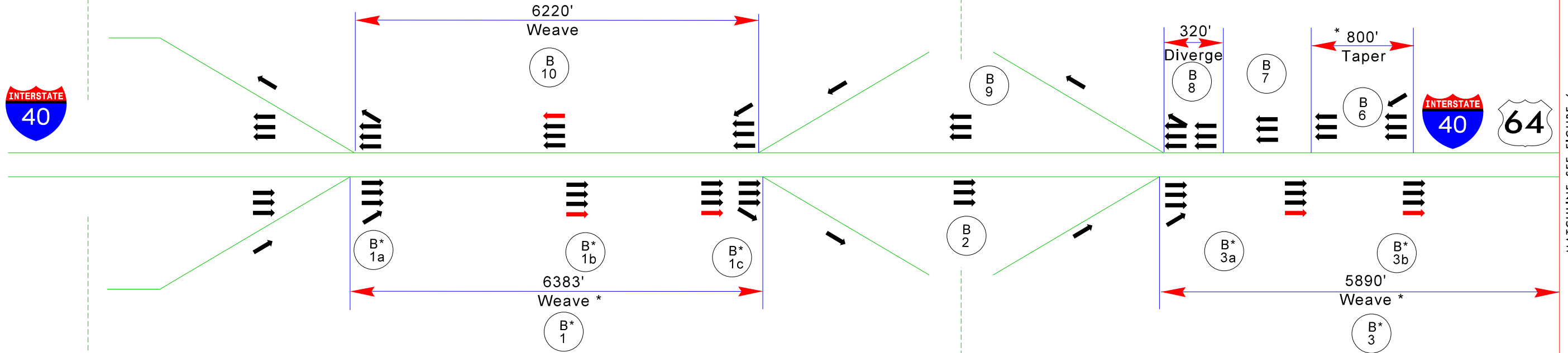


Gorman St.

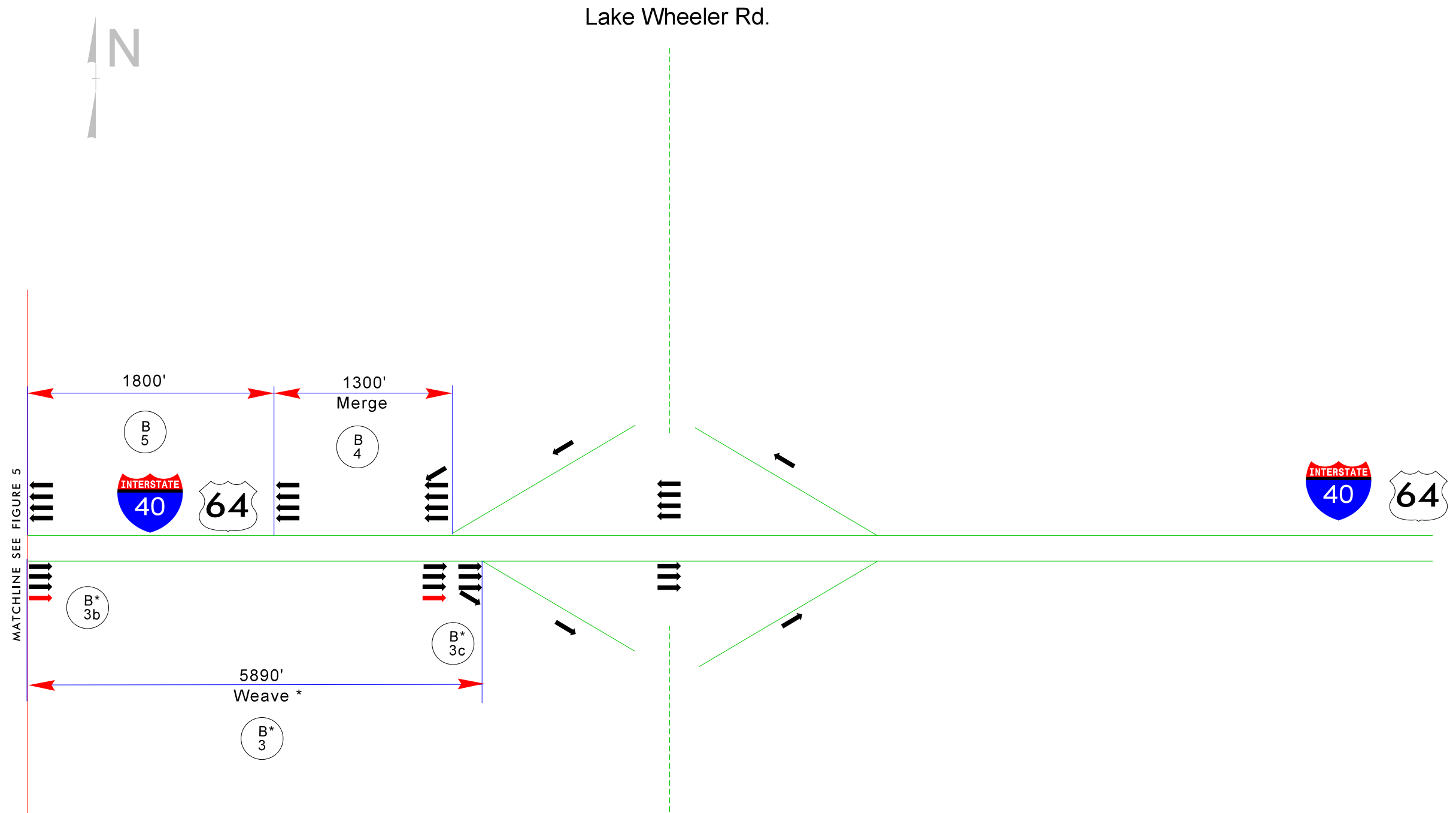
Gorman St.

Legend
 → Auxiliary Lane Addition
 (B/X) Node number for Build
 xxx' Weave, Merge & Diverge Distances

* Based on the HCM 2010, analyzed the weave as merge/diverge/freeway since the distance was over the maximum allowed for a weave. Used the HCM defaults for the acceleration and deceleration lanes.



MATCHLINE SEE FIGURE 6



* Based on the HCM 2010, analyzed the weave as merge/diverge/freeway since the distance was over the maximum allowed for a weave. Used the HCM defaults for the acceleration and deceleration lanes.

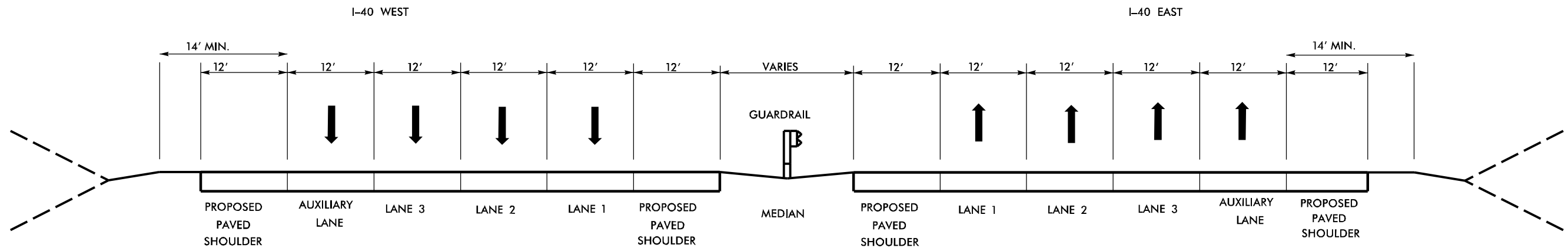
Legend

Auxiliary Lane Addition

Node number for Build

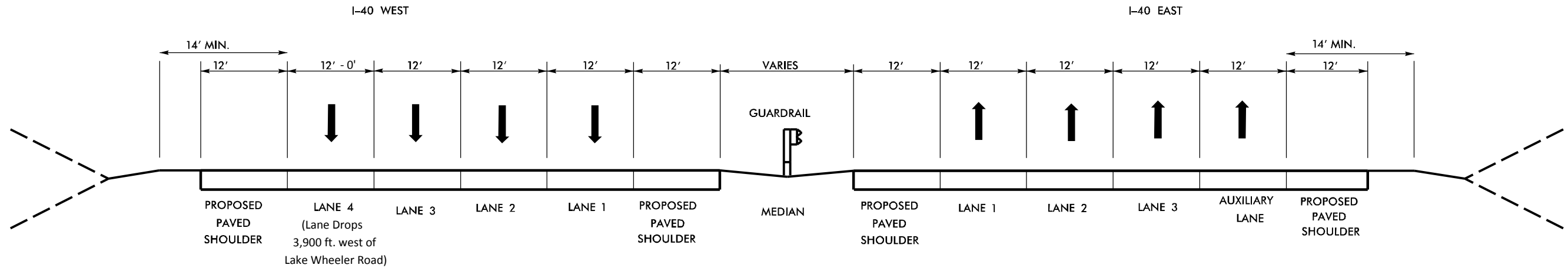
xxx' Weave, Merge & Diverge Distances

Lake Wheeler Rd.



TYPICAL SECTION No. 1


WEST OF THE SR 1319 (JONES FRANKLIN ROAD) OVERPASS TO
EXIT 295 (GORMAN STREET INTERCHANGE)



TYPICAL SECTION No. 2

EAST OF EXIT 295 (GORMAN STREET INTERCHANGE) TO
WEST OF EXIT 297 (LAKE WHEELER ROAD INTERCHANGE)

NOT TO SCALE

	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH
	PROPOSED TYPICAL SECTIONS I-40 OPERATIONAL IMPROVEMENTS FROM WEST OF JONES FRANKLIN ROAD TO EAST OF I-40/I-440/US 64 INTERCHANGE WAKE COUNTY TIP PROJECT I-5338
JUNE 2012	FIGURE 7

11-07-0003

NO SURVEY REQUIRED FORM**PROJECT INFORMATION**

Project No: I-5338 County: Wake
 WBS No: 46157.1.1 Document: CE
 F.A. No: IMS-040-4(147)298 Funding: State Federal

Federal (USACE) Permit Required? Yes No Permit Type:

Project Description:

Pavement rehabilitation on I-40 and ramps from west of SR 1319 to east of I-40/I-440/US 64 interchange.

SUMMARY OF CULTURAL RESOURCES REVIEW*Brief description of review activities, results of review, and conclusions:*

Review of HPO quad maps, relevant background reports, historic designations roster, and indexes was undertaken on July 18, 2011. Based on this review, there were no existing NR, SL, LD, DE, or SS properties in the Area of Potential Effects. USGS topographic mapping and aerial photography revealed no structures exists within the APE. There is one Study-Listed property near the project (WA 4581 Rochester Heights) but the boundaries for this district are not within the APE of the project. See attached maps.

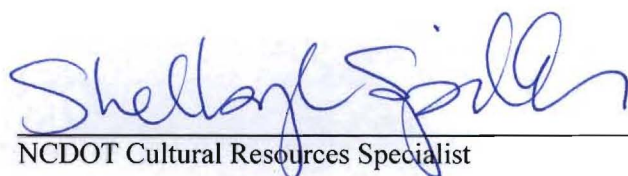
Brief Explanation of why the available information provides a reliable basis for reasonably predicting that there are no unidentified historic properties in the APE:

This is a very limited project. All of the work will take place within the existing right-of-way. The project will remove and replace existing concrete pavement on mainline and shoulders.

SUPPORT DOCUMENTATION

See attached: Maps

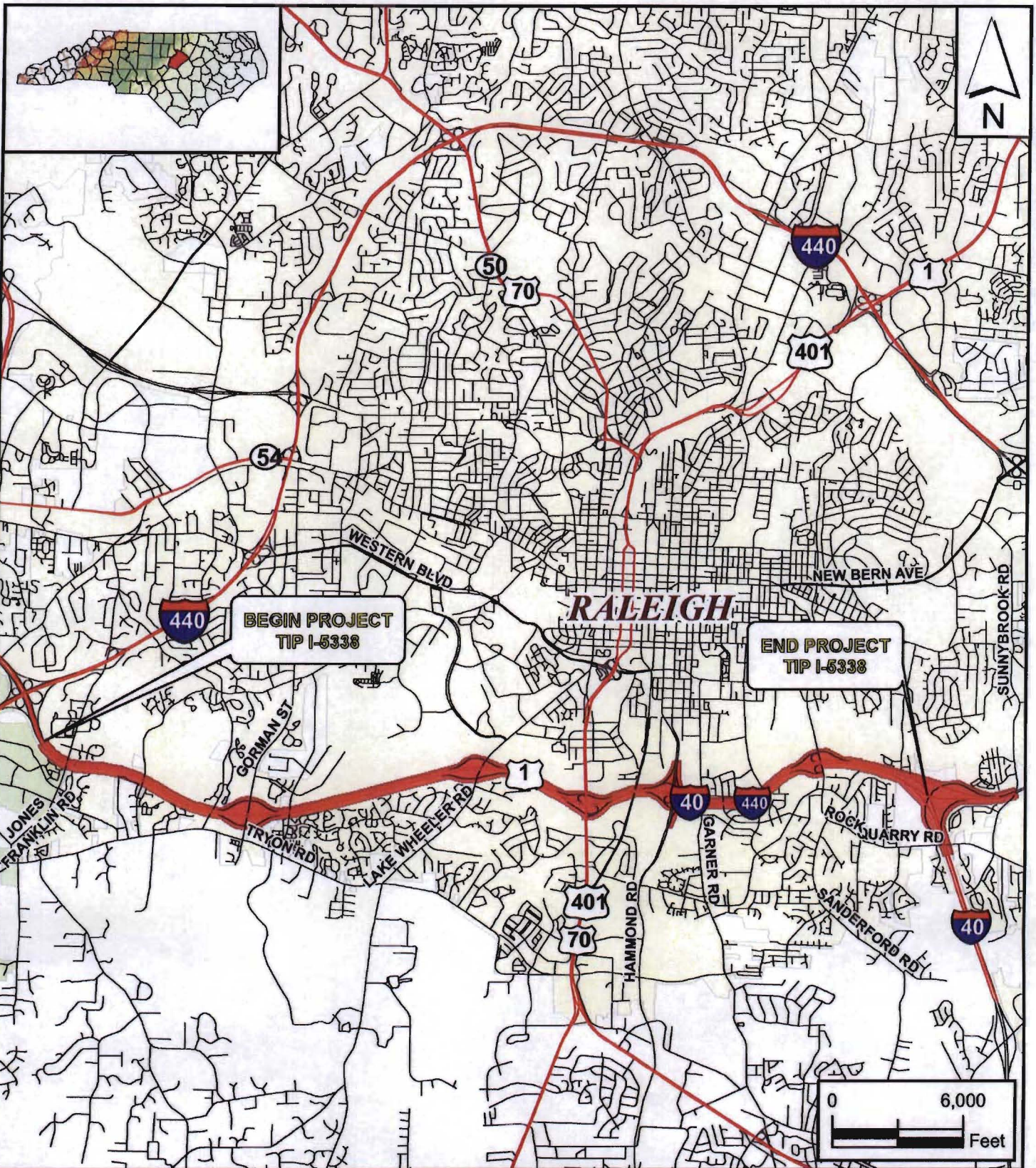
FINDING BY NCDOT CULTURAL RESOURCES PROFESSIONAL**NO SURVEY REQUIRED**



NCDOT Cultural Resources Specialist



Date



VICINITY MAP
 I-40 / US 64 FROM 1,500 ft.
 WEST OF SR 1319 (JONES
 FRANKLIN ROAD) TO EAST
 OF I-40 / US 64 (EXIT 301)
 WAKE COUNTY
 TIP PROJECT I-5338

County:	WAKE
Div:	5
TIP#	I-5338
WBS:	46157.1.1
Date:	JUNE 2011

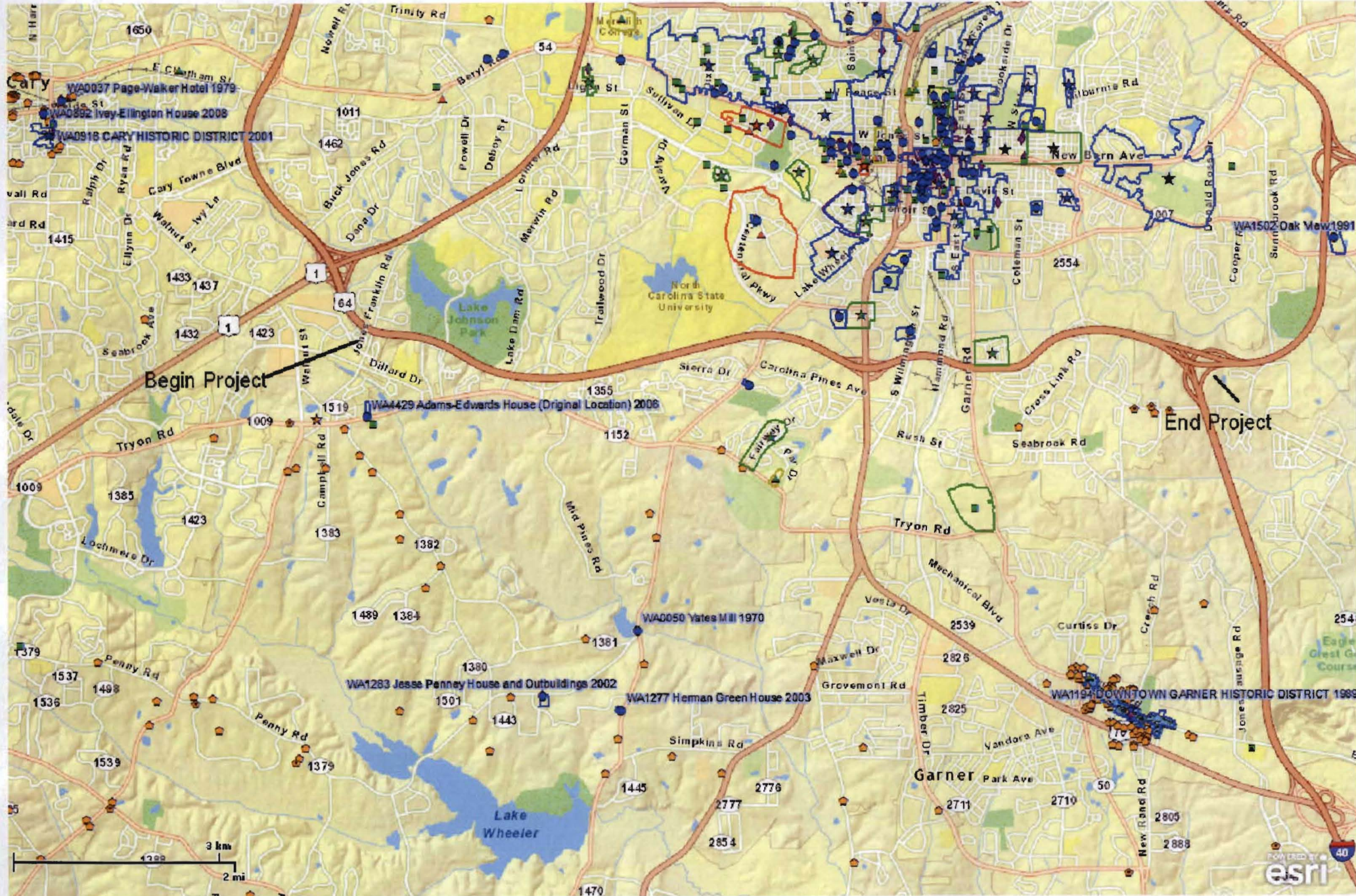
Figure
1



**NORTH CAROLINA DEPARTMENT
 OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 PROJECT DEVELOPMENT AND
 ENVIRONMENTAL ANALYSIS BRANCH**

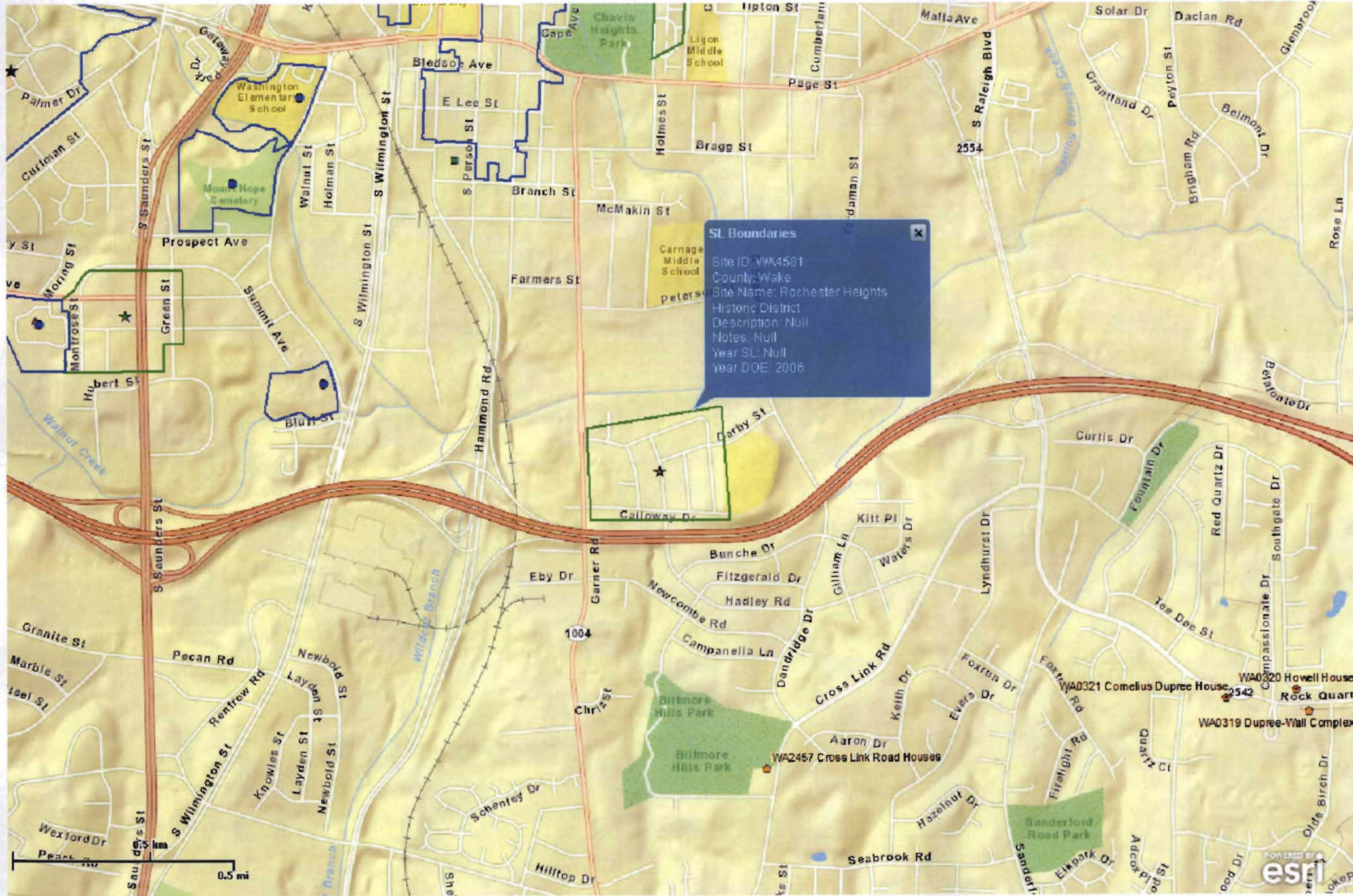
HPOGIS

Wake County



HPOGIS

Wake County



11-07-0003

NO SURVEY REQUIRED FORM**PROJECT INFORMATION**

Project No: I-5338 County: Wake
 WBS No: 46157.1.1 Document: CE
 F.A. No: IMS-040-4(147)298 Funding: State Federal
 Federal (USACE) Permit Required? Yes No Permit Type: unknown

Project Description:

NCDOT intends to remove and replace the pavement from the travel lanes, ramps, and shoulders on I-40 from west of SR 1319 (Jones Franklin Road) to east of the I-40/I-440/US 64 interchange. The total proposed project length is 8.81 miles (14.178 kilometers). The proposed project includes a 500-foot (152.4-meter) wide study area, but no additional ROW is anticipated. Federal permits are anticipated but the exact type was not specified on the review request.

SUMMARY OF CULTURAL RESOURCES REVIEW*Brief description of review activities, results of review, and conclusions:*

A review of the site maps and files archived at the North Carolina Office of State Archaeology was conducted on August 5, 2011. A "windshield" archaeological reconnaissance was conducted on August 3, 2011. No previously identified archaeological sites are recorded within the project area and few adjacent the study corridor. However, a handful of sites (31WA559-560, 31WA565, and 31WA569) have been recorded immediately to the north of I-40 between SR 1348 (Trailwood Drive) and SR 1009 (Lake Wheeler Road). No further archaeological investigation is required for the project as currently proposed. If additional ROW is required, temporary construction easements or staging areas outside existing ROW, or any earth-disturbing activities are proposed outside existing ROW, further consultation will be required.

Brief Explanation of why the available information provides a reliable basis for reasonably predicting that there are no unidentified historic properties in the APE:

As noted above the only previously recorded archaeological sites near the project area were sites 31WA559-560, 31WA565, and 31WA569. These sites are now located within the areas developed for Centennial Campus and the Lonnie Pool Golf Course. According to the project description, activities should be limited to the paved portions of the ROW. As long as earth-disturbing activities remain within ROW and are focused on existing pavement, no NRHP-eligible sites should be impacted.

SUPPORT DOCUMENTATION


See attached: Project vicinity map; detail of the Raleigh, West, NC (1968) and Raleigh, West, NC (1968) 7.5-minute topographic maps.

FINDING BY NCDOT CULTURAL RESOURCES PROFESSIONAL NO SURVEY REQUIRED

ARCHAEOLOGY

HISTORIC ARCHITECTURE

(CIRCLE ONE)


 NCDOT Cultural Resources Specialist
08-08-11
Date



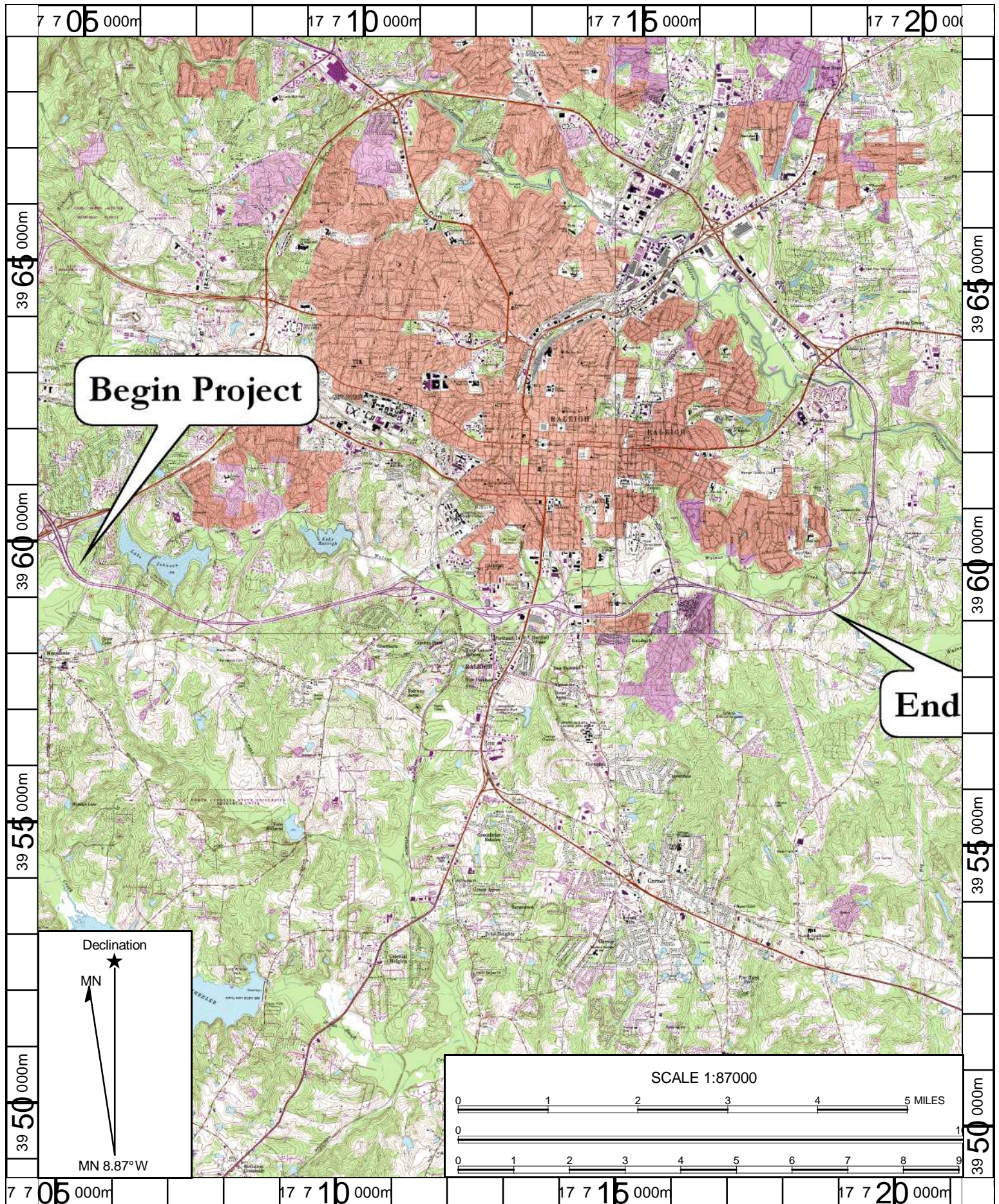
VICINITY MAP
I-40 / US 64 FROM 1,500 ft.
WEST OF SR 1319 (JONES
FRANKLIN ROAD) TO EAST
OF I-40 / US 64 (EXIT 301)
WAKE COUNTY
TIP PROJECT I-5338

County:	WAKE
Div: 5	TIP# I-5338
WBS:	46157.1.1
Date:	JUNE 2011

Figure
1

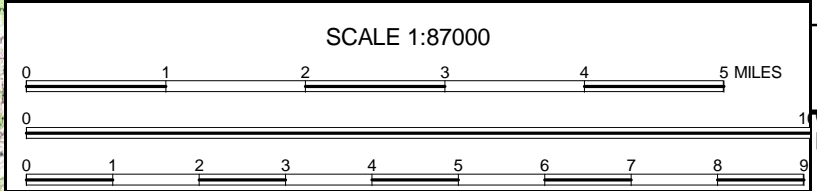
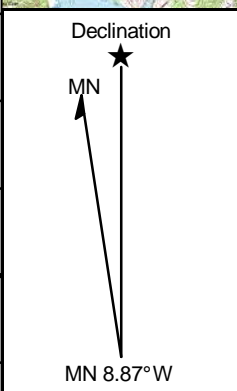


NORTH CAROLINA DEPARTMENT
OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND
ENVIRONMENTAL ANALYSIS BRANCH



Begin Project

End



Name: Raleigh East and Raleigh West
 Date: 1968
 Scale: 1 inch = 7,250 ft.

Location: 17 0712680 E 3959037 N