

**Davidson County**  
**Bridge No. 27 on NC 8 (Winston Road)**  
**over US 29/US 64/US 70/I-85 Business Loop**  
**Federal Aid Project No. STPNHS-0052(31)**  
**W.B.S. No. 38331.1.1**  
**T.I.P. No. B-3159**

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

6/12/14  
DATE

*Richard W. Hancock*  
\_\_\_\_\_  
Gov. Richard W. Hancock, P.E.  
Manager, Project Development & Environmental Analysis Unit

6/13/14  
DATE

*John F. Sullivan, III*  
\_\_\_\_\_  
For John F. Sullivan, III, Division Administrator  
Federal Highway Administration

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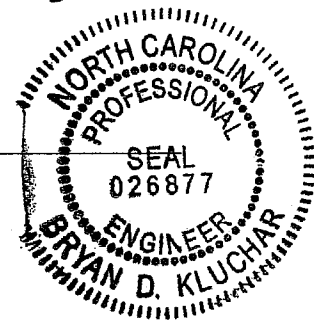
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## PROJECT COMMITMENTS:

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All standard procedures and measures, including NCDOT's Best Management Practices for Protection of Surface Waters, Guidelines for Best Management Practices for Bridge Demolition and Removal, will be implemented, as applicable, to avoid or minimize environmental impacts. The following special commitments have been agreed to by NCDOT:

### ***Division 9 Construction:***

In order to allow Emergency Management Services (EMS) time to prepare for possible travel delays due to road construction, the NCDOT Resident Engineer will notify the Director of the Davidson County EMS at (336) 242-2270 of the bridge removal 30 days prior to road closure.

In order to allow Davidson County Schools time to prepare for possible travel delays, due to road construction, the NCDOT Resident Engineer will notify the Transportation Director at (336) 479-0084(City Schools) / (336) 242-5569 (County Schools) of the bridge removal 30 days prior to road closure.

### ***Roadway Design Unit, Structures Management Unit, and Division 9 Construction:***

B-3159 is a pilot project for the NCDOT Enhancement Program. Coordination with the City of Lexington must be maintained as the guidelines and cost participation are currently still being developed.

### ***Human Environment Section (Traffic Noise & Air Quality Group) and Roadway Design Unit:***

Further evaluations for noise barriers must be completed prior to final design.

### ***Human Environment Section (Archaeology Group):***

Due to the expansion of the right-of-way into areas that are potentially less disturbed by modern urban development, archaeological surveys will be required. Surveys will be completed prior to let.

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**INTRODUCTION:** Bridge No. 27 is included in the latest approved North Carolina Department of Transportation (NCDOT) Transportation Improvement Program. The location is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal “Categorical Exclusion”.

**I. PURPOSE AND NEED STATEMENT**

NCDOT Bridge Management Unit records indicate Bridge No. 27 has a sufficiency rating of 35.45 out of a possible 100 for a new structure. The bridge is considered structurally deficient due to the deck, superstructure, and substructure conditions all being 4 out of 9 according to Federal Highway Administration (FHWA) standards. The structure is also considered to be functionally obsolete due to the underclearance appraisal of 3 out of 9 and a deck geometry appraisal of 2 out of 9.

With heavy highway traffic underneath, a minimum vertical underclearance of only 13 feet 9 inches and an aging structure (64 years old), the bridge is approaching the end of its useful life and is in need of replacement. Components of both the concrete superstructure and substructure have experienced an increasing degree of deterioration that can no longer be addressed by maintenance activities. Bridge No. 27 is at the center of the interchange formed by NC 8 (Winston Road) and the US 29-64-70/I-85 Business Loop. The ramps of the existing interchange have substandard geometrics with a short weaving section between the on and off ramps of westbound US 29-64-70/I-85 Business Loop. Replacement of the bridge and reconfiguring the ramps to meet current standards will result in safer traffic operations.

**II. EXISTING CONDITIONS**

The project is located within the city limits of Lexington in Davidson County, at the interchange of NC 8 (Winston Road) with US 29-64-70/I-85 Business Loop (see Figure 1). Development in the area is business and residential in nature.

NC 8 is classified as a principal arterial in the Statewide Functional Classification System and it is a MAP-21 National Highway System Route.

In the vicinity of the bridge, NC 8 has varying pavement widths between 36 and 48 feet with varying grass shoulder widths (see Figures 4 A and 4B). The roadway grade is relatively flat

through the project area. The existing bridge is on a tangent. NC 8 splits into two one-way streets (West 5<sup>th</sup> Street and West 6<sup>th</sup> Street) approximately 300 feet south of the bridge.

Bridge No. 27 is a four-span structure that consists of a reinforced concrete deck on I-beams with an asphalt-wearing surface. The end bents consist of reinforced concrete caps on timber piles. The interior bents consist of reinforced concrete posts and beams with pile footings. The existing bridge (see Figure 4A & 4B) was constructed in 1950. The overall length of the structure is 176 feet. The clear roadway width is 37 feet. The posted weight limit on this bridge is 34 tons for single vehicles and 38 tons for TTST's.

There are no utilities attached to the existing structure, but overhead power, telephone, and cable lines are located on the west side of NC 8. There are also underground gas lines along with water and sewer lines throughout the project area. Utility impacts are anticipated to be high.

The current traffic volume of 24,800 vehicles per day (VPD) is expected to increase to 28,600 VPD by the year 2035. The projected volume includes two percent truck-tractor semi-trailer (TTST) and three percent dual-tired vehicles (DT). The posted speed limit is 35 miles per hour in the project area. Twenty school buses cross the bridge daily on their morning and afternoon routes.

There were forty-seven accidents reported in the vicinity of Bridge No. 27 during a recent five-year period. None of these accidents account for the several times the structure was impacted from below by trucks due to the low vertical clearance over US-29-64-70/I-85 Business Loop.

This section of NC 8 is not part of a designated bicycle route; however, is recommended to incorporate bicycle accommodations due to the high bicycle usage in the area. Four-foot bicycle lanes will be added to both the east and west sides of NC 8. Sidewalks currently exist on both of the sides existing bridge but not along the approaches. Worn pedestrian foot paths, lead to and away from the existing structure on both sides, which indicates heavy foot traffic. NCDOT will include 5-foot 6-inch sidewalks on the new structure and 5-foot sidewalks on both sides of NC 8 throughout the project area. During construction, bicycle and pedestrian access will be maintained along NC 8. Also as a part of this T.I.P project, the pedestrian bridge east of Bridge No. 27 will be removed.

### **III. ALTERNATIVES**

#### **A. Project Description**

The replacement structure will consist of a bridge approximately 150-foot long. The bridge length is based on preliminary design information. The bridge will be of sufficient width to provide for two 12-foot lanes in each direction with a 15-foot center turn lane. The directional flow will be separated by a 4-foot concrete median. The project will also provide 4-foot bike lanes and 5-foot 6-inch sidewalks will be provided on both sides as well. There will be a 2-

foot offset between the bike lane and the sidewalk on the west side of the bridge. The roadway approaches will utilize 2-foot 6-inch curb and gutter and a 10-foot wide berm to minimize impacts to the adjacent property owners. The roadway grade of the new structure will be raised to meet current design standards.

The existing roadway will be widened to provide two 12-foot thru lanes in each direction; a 12-foot turn lane for vehicles exiting on to US 29-64-70/I-85 Business Loop in either direction will be provided. A 10-foot berm (14-foot where guardrail is required) will be provided on each side; 4-foot bike lanes and 5-foot 6-inch sidewalks on both sides will continue throughout the project area. This project has full control of access in the area of the interchange. A service road will be provided at the interchange to provide access to the development in the northwest quadrant of the interchange. See Figures 3A thru 3D for typical sections and dimensions.

Below the new structure, US 29-64-70/I-85 Business Loop will be resurfaced approximately 1170 feet west and 890 feet east of the center of the bridge. There will be 67 feet of pavement in each direction to include two 12-foot thru lanes, a 12-foot auxiliary lane, 12-foot 6-inch interior shoulder, and 19-foot 6-inch exterior shoulder to accommodate future lanes. There will be a minimum vertical clearance of 16-feet 6-inches.

## **B. Reasonable and Feasible Alternatives**

Two alternatives for replacing Bridge No. 27 that were studied in detail are described below.

### Alternate 1: Tight Diamond Interchange

Alternate 1 involves replacement of the structure along the existing roadway alignment using a tight diamond interchange (TDI) design. Improvements to the approach roadways will be required for a distance of approximately 675 feet to the south and 710 feet to the north of the new structure. The existing ramp configuration will be changed in all quadrants. The northwest quadrant will be redesigned to eliminate the connection with 7<sup>th</sup> Street at the ramp due to safety concerns. Seventh Street will terminate at the Norlex Shopping Center. In the northwest and southeast quadrants the ramps will be designed as exit ramps to US 29-64-70/I-85 Bus. In the northeast and southwest quadrants the ramps will be on-ramps to NC 8 (Winston Road).

This design has been eliminated due to deficient acceleration/deceleration lane lengths in addition to difficulty of maintaining traffic during construction. Also with this design, delivery truck traffic into the Norlex Shopping Center will not be possible due to the loss of the connection with 7<sup>th</sup> Street. The historic property (Erlanger Mill Village) along the corner of 9<sup>th</sup> Street and NC 8, as well as the turning radius at 9<sup>th</sup> Street impedes truck traffic from using this as an entrance to the Norlex Shopping Center.

## Alternate 2: Partial Cloverleaf Interchange (Preferred)

Alternate 2 involves replacement of the structure along the existing roadway alignment using the partial cloverleaf interchange. Improvements to the approach roadways will be required for a distance of approximately 490 feet to the south and 880 feet to the north of the structure. This alternate will be designed using Statewide Tier guidelines with a design speed of 40 miles per hour. Traffic will be maintained onsite by phased construction during the construction period. See Figure 3F in Appendix A.

In the northeast and southwest quadrants, there will be both an on-ramp to NC 8 and an exit ramp to US 29-64-70/I-85 Bus. The ramps in the northwest and southeast quadrants will be removed. Service Road (SR 1895) in the southeast quadrant that runs parallel with US 29-64-70/I-85 Bus will be removed as well. A service road, in the northwest quadrant of the interchange, will be provided to allow access to NC 8 from 7th Street. This access is needed to maintain a delivery truck route to the Norlex Shopping Center. See Appendix A for the design and typical sections of the roadway and new bridge.

### **C. Alternatives Eliminated From Further Consideration**

The “do-nothing” alternative will eventually necessitate closure of the bridge. This is not acceptable due to the traffic service provided by NC 8.

“Rehabilitation” of the old bridge is not practical due to its age and deteriorated condition. Substandard vertical clearance, with along deteriorating concrete and steel elements of the existing structure, have made it impractical and too costly for repair and rehabilitation.

### **D. Preferred Alternative**

Bridge No. 27 will be replaced at the existing location as shown by Alternative 2 in Figure 2. NCDOT Division 9 concurs with the selection of Alternative 2 as the preferred alternative.

## **IV. ESTIMATED COSTS**

**Table 1:**

	Alternative 1	Alternative 2 (Preferred)
Structure, Approach Slabs, & MSE Walls	\$ 2,698,000	\$ 2,380,000
Roadway Approaches & Ramps	\$ 1,223,000	\$ 5,751,000
Structure Removal & Pedestrian Bridge	\$ 149,000	\$ 114,000
Misc. & Mob.	\$ 1,574,000	\$ 1,730,000
Eng. & Contingencies	\$ 1,134,000	\$ 1,720,000
Total Construction Cost	\$ 6,778,000	\$ 11,695,000
Right-of-way Costs	\$ 4,340,000	\$ 6,525,000
Utility Costs	\$ 1,514,000	\$ 3,271,000
Total Project Cost	\$ 12,623,000	\$ 21,491,000

## **V. NATURAL ENVIRONMENT**

### **PHYSICAL CHARACTERISTICS**

#### **Water Resources**

Water resources in the study area are part of the Yadkin-Pee Dee River Basin (U.S. Geological Survey [USGS] Hydrologic Unit 03040103). No streams were identified in the study area. A ditch is present within the interchange loop with marginal hydrologic indicators, but was not considered a jurisdictional feature by the USACE in a JD letter dated November 16, 2009. A site visit was not made by the USACE.

The study area drains primarily to the west to tributaries of Michael Branch. This stream and its tributaries are rated Class C and have no special watershed restrictions.

There are no designated anadromous fish waters or Primary Nursery Areas present in the study area. There are no designated High Quality Waters (HQW), Outstanding Resource Waters (ORW), water supply watersheds (WS-I or WS-II), or 303(d) listed streams within 1.0 mile downstream of the study area.

No benthic or fish monitoring data are available for streams within the study area or within 1.0 mile downstream of the study area.

### **BIOTIC RESOURCES**

#### **Terrestrial Communities**

The project study area is primarily maintained/disturbed. Beyond the interchange, there are forested patches and trees within residential neighborhoods scattered throughout the urban landscape.

#### **Terrestrial Wildlife**

The limited diversity of terrestrial communities in the study area will not likely support significant wildlife populations. Vegetated areas are extremely small in size and isolated within an urban interchange or by adjacent commercial development. Transient species may occur, such as birds that commonly use urban habitats including the barn swallow, chimney swifts, house finch, house sparrow, mockingbird, rock dove, rough winged sparrow, starling, and white-throated sparrow. No significant populations of mammals or reptiles are anticipated in the study area. No wildlife was observed within the study area during field activities.

#### **Aquatic Communities**

No aquatic communities are present within the study area.



## JURISDICTIONAL TOPICS

### Surface Waters and Wetlands

No jurisdictional streams or wetlands were identified in the study area. A stormwater outfall and associated ditch exhibited marginal stream indicators (primarily hydrology) but was determined not to be jurisdictional. Confirmation of this determination was received from the USACE on November 16, 2009.

### Clean Water Act Permits

No Clean Water Act 404/401 approvals will be required for this project.

### Coastal Area Management Act Areas of Environmental Concern

Davidson County is not under the jurisdiction of CAMA.

### Construction Moratoria

No construction moratoria apply to this study area. According to a letter received from the North Carolina Wildlife Resources Commission on November 6, 2009, no special recommendations apply.

### N.C. River Basin Buffer Rules

No North Carolina riparian buffer rules apply to this watershed.

### Rivers and Harbors Act Section 10 Navigable Waters

Section 10 waters are not present in the study area.

## PROTECTED SPECIES

### Federally Protected Species

As of September 22, 2010, the USFWS lists two federally protected species for Davidson County (Table 2). A brief description of each species' habitat requirements follows, along with the Biological Conclusion rendered based on survey results in the study area. Habitat requirements for each species are based on the current best available information as per referenced literature and USFWS correspondence.

**Table 2: Federally protected species listed for Davidson County**

Scientific Name	Common Name	Federal Status	Habitat Present	Biological Conclusion
<i>Clemmys muhlenbergii</i>	Bog turtle	T(S/A)	No	Not Required
<i>Helianthus schweinitzii</i>	Schweinitz's sunflower	E	No	No Effect

### Bog turtle

USFWS optimal survey window: April 1 – October 1 (visual surveys); April 1-June 15 (optimal for breeding/nesting); May 1-June 30 (trapping surveys)

**Habitat Description:** Bog turtle habitat consists of open, groundwater supplied (springfed), graminoid dominated wetlands along riparian corridors or on seepage slopes. These habitats are designated as mountain bogs by the N.C. Natural Heritage Program (NCNHP), but they are technically poor, moderate, or rich fens that may be associated with wet pastures and old drainage ditches that have saturated muddy substrates with open canopies. Plants found in bog turtle habitat include sedges, rushes, marsh ferns, herbs, shrubs (tag alder, hardhack, blueberry, etc.), and wetland tree species (red maple and silky willow). These habitats often support sphagnum moss and may contain carnivorous plants (sundews and pitcherplants) and rare orchids. Potential habitats may be found in western Piedmont and Mountain counties from 700 to 4500 feet elevation in North Carolina. Soil types (poorly drained silt loams) from which bog turtle habitats have been found include Arkaqua, Chewacla, Dellwood, Codorus complex, Hatboro, Nikwasi, Potomac – Iotla complex, Reddies, Rosman, Tate – Cullowhee complex, Toxaway, Tuckasegee – Cullasaja complex, Tusquitee, Watauga, and Wehadkee.

**Biological Conclusion:** Not Required.

Species listed as threatened due to similarity of appearance do not require Section 7 consultation with the USFWS. This project is not expected to affect the bog turtle; because, no suitable habitat is present within the study area. No wetlands are present within the study area. A review of NCNHP records, updated April 2014, indicates no known bog turtle occurrence within 1.0 mile of the study area.

#### **Schweinitz's sunflower**

USFWS optimal survey window: late August-October

**Habitat Description:** Schweinitz's sunflower is endemic to the Piedmont of North and South Carolina. The few sites where this rhizomatous perennial herb occurs in relatively natural vegetation are found in Xeric Hardpan Forests. The species is also found along roadside rights-of-way, maintained power lines and other utility rights-of-way, edges of thickets and old pastures, clearings and edges of upland oak-pine-hickory woods, Piedmont longleaf pine forests, and other sunny or semi-sunny habitats where disturbances (e.g., mowing, clearing, grazing, blow downs, storms, frequent fire) help create open or partially open areas for sunlight. It is intolerant of full shade and excessive competition from other vegetation. Schweinitz's sunflower occurs in a variety of soil series, including Badin, Cecil, Cid, Enon, Gaston, Georgeville, Iredell, Mecklenburg, Misenheimer, Secrest, Tatum, Uwharrie, and Zion, among others. It is generally found growing on shallow sandy soils with high gravel content; shallow, poor, clayey hardpans; or shallow rocky soils, especially those derived from mafic rocks.

**Biological Conclusion:** No Effect.

In a survey done by NCDOT biologists on September 1, 2011, it was determined that no habitat was present in the original study area because it was severely maintained/disturbed. The interchange and roadsides are regularly mowed and otherwise maintained all the way to the wood line (where applicable) and consist primarily of planted grasses and ornamental species. No individuals of Schweinitz's sunflower were observed in the study area. A review of NCNHP element occurrence records, updated April 2014, indicates no known occurrences within 1.0 mile of the study area.

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 Davidson 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.

### **Bald Eagle and Golden Eagle Protection Act**

Habitat for the bald eagle primarily consists of mature forest in proximity to large bodies of open water for foraging. Large, dominant trees are utilized for nesting sites, typically within 1.0 mile of open water.

No suitable foraging and nesting habitat for bald eagle exists in the study area. The nearest open water is an approximate 13 acre pond over 1 mile to the northeast of the study area. The intervening land use is predominantly urban with few large trees and little open water.

## **VI. HUMAN ENVIRONMENT**

### **Section 106 Compliance Guidelines**

This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and implemented by the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified at Title 36 CFR Part 800. Section 106 requires Federal agencies to take into account the effect of their undertakings (federally funded, licensed, or permitted) on properties included in or eligible for inclusion in the National Register of Historic Places and afford the Advisory Council a reasonable opportunity to comment on such undertakings.

### **Historic Architecture**

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 no surveys are required (see form dated September 23, 2010).

### **Archaeology**

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 no surveys are required, originally (see forms dated May 11, 2010). Due to the expanded project limits into some less disturbed areas, it has been determined that surveys are now warranted (see form dated April 23, 2014).

### **Title VI and Environmental Justice**

Federal programs, under the statutes of Title VI of the Civil Rights Act of 1964, have requirements to protect individuals from discrimination on the basis of race, color, national origin, age, sex, disability, and religion. Furthermore, Executive Order 12898 “directs that programs, policies, and activities not have a disproportionately high and adverse human health and environmental effect on minority and low-income populations”. According to the relocation report (Appendix B), the proposed action does relocate minority residences. The relocation report also shows that potential relocatees have income levels less than \$15,000 or greater than \$50,000 per year. Therefore, this assessment finds no evidence or indication of benefit, harm, or disproportionate impact to any social group.

### **Relocation Impacts**

According to the relocation report located in the Appendix B, the proposed project displaces residences and businesses. Table 3 shows a summary of the relocation impacts associated with the project. The project is expected to displace nine (9) residences and two (2) businesses. All of the residential and one business displacements are associated with the reconstruction of Ramp A. The relocation report indicates there is more than adequate temporary housing available, either for sale or for rent, for all potential residential displacements.

**Table 3:**

<b>Relocation Impact Summary</b>		
<b>Residences</b>	<b>Owners</b>	5
	<b>Tenants</b>	4
	<b>Total</b>	9
	<b>Minority</b>	5
<b>Businesses</b>	<b>Owners</b>	2
	<b>Tenants</b>	0
	<b>Total</b>	2
	<b>Minority</b>	0
<b>Farms</b>		0
<b>Non-Profit Organizations</b>		0

The relocation program for the proposed action will be conducted in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Public Law 91-646), and/or the North Carolina Relocation Assistance Act (GS-133-5 through 133-18). The program is designed to provide assistance to displaced persons in relocating to a replacement site in which to live or do business. At least one relocation agent is assigned to each highway project for this purpose.

The relocation agent will determine the needs of displaced families, individuals, businesses, non-profit organizations, and farm operations for relocation assistance advisory services without regard to race, color, religion, sex or national origin. The NCDOT will schedule its work to allow ample time, prior to displacement, for negotiations and possession of replacement housing which meets decent, safe, and sanitary standards.

The project is not in conflict with any plan, existing land use, or zoning regulation. No change in land use is expected to result from the construction of the project.

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impact to prime farmland of all land acquisition and construction projects. There are soils classified as prime, unique, or having state or local importance in the area of the temporary detour bridge to the south of the existing structure. However, the project will not involve the direct conversion of farmland acreage within these classifications.

## **AIR QUALITY**

For the preferred alternative in this CE, the amount of Mobile Source Air Toxics (MSAT) emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for the alternative. VMTs estimated for the No Build alternative are lower than the Build alternative, higher levels of MSAT are expected from the Build Alternative compared to the No Build.

The operational and safety improvements to US 52/N.C. 8 and I-85 Business/US/29/64/70 travel lanes contemplated as part of the project alternative will have the effect of moving some traffic closer to nearby homes, and businesses; therefore, there may be localized areas where ambient concentrations of MSAT could be higher under the Build Alternative than the No Build Alternative. The localized increases in MSAT concentrations would likely be most pronounced along the sections of roadway where proposed widening moves the traffic closer to existing residences and businesses. However, the magnitude and the duration of these potential increases compared to the No-Build alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts. In summary, when a highway is widened, the localized level of MSAT emissions for any of the Build Alternatives could be higher relative to the No Build Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSAT will be lower in other locations when traffic shifts away from them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

In summary, under the Build Alternative in the design year it is expected there would be reduced MSAT emissions in the immediate area of the project due to EPA's MSAT reduction programs.

Vehicles are a major contributor to decreased air quality because they emit a variety of pollutants into the air. Changing traffic patterns are a primary concern when determining the impact of a new highway facility or the improvement of an existing highway facility. New highways or the widening of existing highways increase localized levels of vehicle emissions, but these increases could be offset due to increases in speeds from reductions in congestion and because vehicle emissions will decrease in areas where traffic shifts to the new roadway. Significant progress has been made in reducing criteria pollutant emissions from motor vehicles and improving air quality, even as vehicle travel has increased rapidly.

The project is located in Davidson County, which complies with the National Ambient Air Quality Standards. This project will not add substantial new capacity or create a facility that is likely to meaningfully increase emissions. Therefore, it is not anticipated to create any adverse effects on the air quality of this attainment area.

A quantitative PM 2.5 hot-spot analysis is not required for this project since it is not an air quality concern. The Clean Air Act and 40 CFR 93.116 requirements were met without a hot-spot analysis, since this project has been found not to be of air quality concern under 40 CFR 93.123(b)(1). This project meets the statutory transportation conformity requirements without a hotspot analysis.

## **TRAFFIC NOISE**

In accordance with Title 23 Code of Federal Regulations Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise (Title 23 CFR 772) and the North Carolina Department of Transportation Traffic Noise Abatement Policy, each Type I highway project must be analyzed for predicted traffic noise impacts. In general, Type I projects are proposed State or Federal highway projects for construction of a highway or interchange on new location, improvements of an existing highway which substantially changes the horizontal or vertical alignment or increases the vehicle capacity, or projects that involve new construction or substantial alteration of transportation facilities such as weigh stations, rest stops, ride-share lots or toll plazas.

Traffic noise impacts are determined through implementing the current Traffic Noise Model (TNM) approved by the Federal Highway Administration (FHWA) and following procedures detailed in Title 23 CFR 772, the NCDOT Traffic Noise Abatement Policy and the NCDOT Traffic Noise Analysis and Abatement Manual. When traffic noise impacts are predicted, examination and evaluation of alternative noise abatement measures must be considered for reducing or eliminating these impacts. Temporary and localized noise impacts will likely occur as a result of project construction activities. Construction noise control measures will be incorporated into the project plans and specifications.

A copy of the unabridged version of the full technical report entitled Proposed NC 8 (Winston Road) Bridge No. 27 Replacement over US 29-64-70/Business I-85 Traffic Noise Analysis can be viewed in the Project Development & Environmental Analysis Unit, Century Center Building A, 1000 Birch Ridge Drive, Raleigh.

### **Traffic Noise Impacts and Noise Contours**

The maximum number of receptors in each project alternative predicted to become impacted by future traffic noise is shown in the table below. The table includes those receptors expected to experience traffic noise impacts by either approaching or exceeding the FHWA Noise Abatement Criteria or by a substantial increase in exterior noise levels.

The maximum extent of the 71- and 66- dB(A) noise level contours measured from the center of the proposed roadway along NC 8 is 45 feet and 100 feet, respectively. The maximum

extent of the 71- and 66- dB(A) noise level contours measured from the center of the proposed roadway along I-85 Business is 135 feet and 240 feet, respectively.

**Table 4: Predicted Traffic Noise Impacts by Alternative\***

Noise Study Area (NSA)	Traffic Noise Impacts			
	Residential (NAC B)	Places of Worship/Schools, Parks, etc. (NAC C & D)	Businesses (NAC E)	Total
A	0	0	0	0
B	5	0	0	5
C	1	0	0	1
D	9	0	0	9

\*Per TNM 2.5 and in accordance with 23 CFR Part 772

### Traffic Noise Abatement Measures

Measures for reducing or eliminating the traffic noise impacts were considered for all impacted receptors in each alternative. The primary noise abatement measures evaluated for highway projects include highway alignment changes, traffic system management measures, establishment of buffer zones, noise barriers and noise insulation (NAC D only). For each of these measures, benefits versus costs (reasonableness), engineering feasibility, effectiveness and practicability and other factors were included in the noise abatement considerations.

Substantially changing the highway alignment to minimize noise impacts is not considered to be a viable option for this project due to engineering and/or environmental factors. Traffic system management measures are not considered viable for noise abatement due to the negative impact they would have on the capacity and level of service of the proposed roadway. Costs to acquire buffer zones for impacted receptors will exceed the NCDOT base dollar value of \$37,500 plus an incremental increase of \$525 (as defined in the NCDOT Policy) per benefited receptor, causing this abatement measure to be unreasonable.

### Noise Barriers

Noise barriers include two basic types: earthen berms and noise walls. These structures act to diffract, absorb and reflect highway traffic noise. For this project, earthen berms are not found to be a viable abatement measure because the additional right of way, materials and construction costs are estimated to exceed the NCDOT maximum allowable base quantity of 7,000 cubic yards, plus an incremental increase of 100 cubic yards per benefited receptor, as defined in the NCDOT Policy.

A noise barrier evaluation was conducted for this project utilizing the Traffic Noise Model (TNM 2.5) software developed by the FHWA. The following table summarizes the results of the evaluation. The first potential barrier location evaluated with TNM is adjacent to I-85 Business westbound, from the end of the I-85 Business WB on ramp to approximately 1,320 feet west along I-85 Business in Noise Study Area (NSA) D. Based upon criteria defined in

the NCDOT Traffic Noise Abatement Policy, this barrier is preliminarily justified and recommended for construction, contingent upon completion of the project design and the public involvement process.

The second potential barrier location evaluated with TNM is adjacent to I-85 Business eastbound, from the end of Temple Street to west of Fair Street in NSA B. Based upon criteria defined in the NCDOT Traffic Noise Abatement Policy, this barrier is preliminarily justified and recommended for construction, contingent upon completion of the project design and the public involvement process. See Figure 2 for potential noise barrier locations.

**Table 5: Preliminary Noise Barrier Evaluation Results**

NSA (Noise Barrier Location)	Length / Height (feet)	Square Footage	Number of Benefited Receptors	Square Feet per Benefited Receptor / Allowable Square Feet per Benefited Receptor	Preliminarily Recommended for Construction <sup>1</sup>
Noise Study Area D (I-85 Bus. WB, End of I-85 Bus. WB on ramp to 1,320 ft. west)	1,320 / 14	18,480	23	803 / 2,500	Yes
Noise Study Area B (I-85 Bus. EB, from Temple St to west of Fair St)	1,030 / 14	14,420	8	1,803 / 2,500	Yes

<sup>1</sup>The recommendation for barrier construction is preliminary and subject to change, pending completion of final design and the public involvement process.

### Traffic Noise Summary

A preliminary noise evaluation was performed and a more detailed review will be completed during project final design. Noise barriers found to be feasible and reasonable during the preliminary noise analysis may not be found to be feasible and reasonable during the final design noise analysis due to changes in proposed project alignment and other design considerations, surrounding land use development, or utility conflicts, among other factors. Conversely, noise barriers that were not considered feasible and reasonable may meet the established criteria and be recommended for construction. This evaluation completes the highway traffic noise requirements of Title 23 CFR Part 772.

In accordance with NCDOT Traffic Noise Abatement Policy, the Federal/State governments are not responsible for providing noise abatement measures for new development for which building permits are issued after the Date of Public Knowledge. The Date of Public Knowledge of the proposed highway project will be the approval date of the Categorical



Exclusion (CE). For development occurring after this date, local governing bodies are responsible to insure that noise compatible designs are utilized along the proposed facility.

Noise levels may increase during project construction; however, these impacts are not expected to be substantial considering the relatively short-term nature of construction noise and the limitation of construction to daytime hours. The transmission loss characteristics of nearby natural elements and man-made structures are believed to be sufficient to moderate the effects of intrusive construction noise.

## **VII. GENERAL ENVIRONMENTAL EFFECTS**

The project is expected to have an overall positive impact. Replacement of an inadequate bridge will result in safer traffic operations.

The proposed project will not require right-of-way acquisition or easement from any land protected under Section 4(f) of the Department of Transportation Act of 1966.

An examination of local, state, and federal regulatory records by the Geotechnical Environmental Section revealed one site with an underground petroleum storage tanks (UTS) within the project limits. It is the Erlanger Exxon located at 601 Winston Road, Lexington, NC. It is located in the southeast quadrant of US 29/US 64/US 70/ I-85 Business; NC 8, and SR 2205 (West Sixth St.). The tank bed is located approximately 90 feet from the corner of the NC 8 median. The diesel tank and dispenser are located at the corner of the property, approximately 53 feet from the NC 8 median. The site is expected to present low geoenvironmental impacts to the project.

The Federal Highways Administration has determined that a U.S. Coast Guard Permit is not required for this project.

## **VIII. COORDINATION & AGENCY COMMENTS**

NCDOT has sought input from the following agencies as a part of the project development: U.S. Army Corps of Engineers, NC Department of Environmental and Natural Resources, U.S. Fish & Wildlife Service, N.C Wildlife Resource Commission, U.S. Forest Service, N.C. Division of Parks & Recreation, Piedmont Triad Rural Planning Organization, Davidson County Planning Department and the City of Lexington.

The City of Lexington, in a letter date September 30, 2013, noted that NCDOT will be removing the pedestrian bridge which is located just east of NC 8. The pedestrian bridge provides access for students that walk to school. The City requests new sidewalks across the US 29/64/70 and along NC 8.

**Response:** NCDOT will provide sidewalks and bicycle lanes on the new structure and along NC 8 throughout the project limits.

No other agencies had special concerns for this project.

## **IX. PUBLIC INVOLVEMENT**

Based on the urban setting of this project, a Citizen's Informational Workshop was determined necessary.

A Public Meeting was held on January 30, 2014 from 4 p.m. to 7 p.m. at Lexington Senior High School. Sixty-seven (67) citizens were in attendance. NCDOT's staff was there to explain the details of the project, as well as to answer questions and concerns. The project was met with mixed reviews. Overall, there were favorable responses to the proposed project design.

## **X. CONCLUSION**

On the basis of the above discussion, it is concluded that no substantial adverse environmental impacts will result from implementation of the project. The project is therefore considered to be a federal "Categorical Exclusion" due to its limited scope and lack of substantial environmental consequences.

# Appendix A

Figures



**Figure 1: Vicinity Map of Project**

# B-3159 Project Area

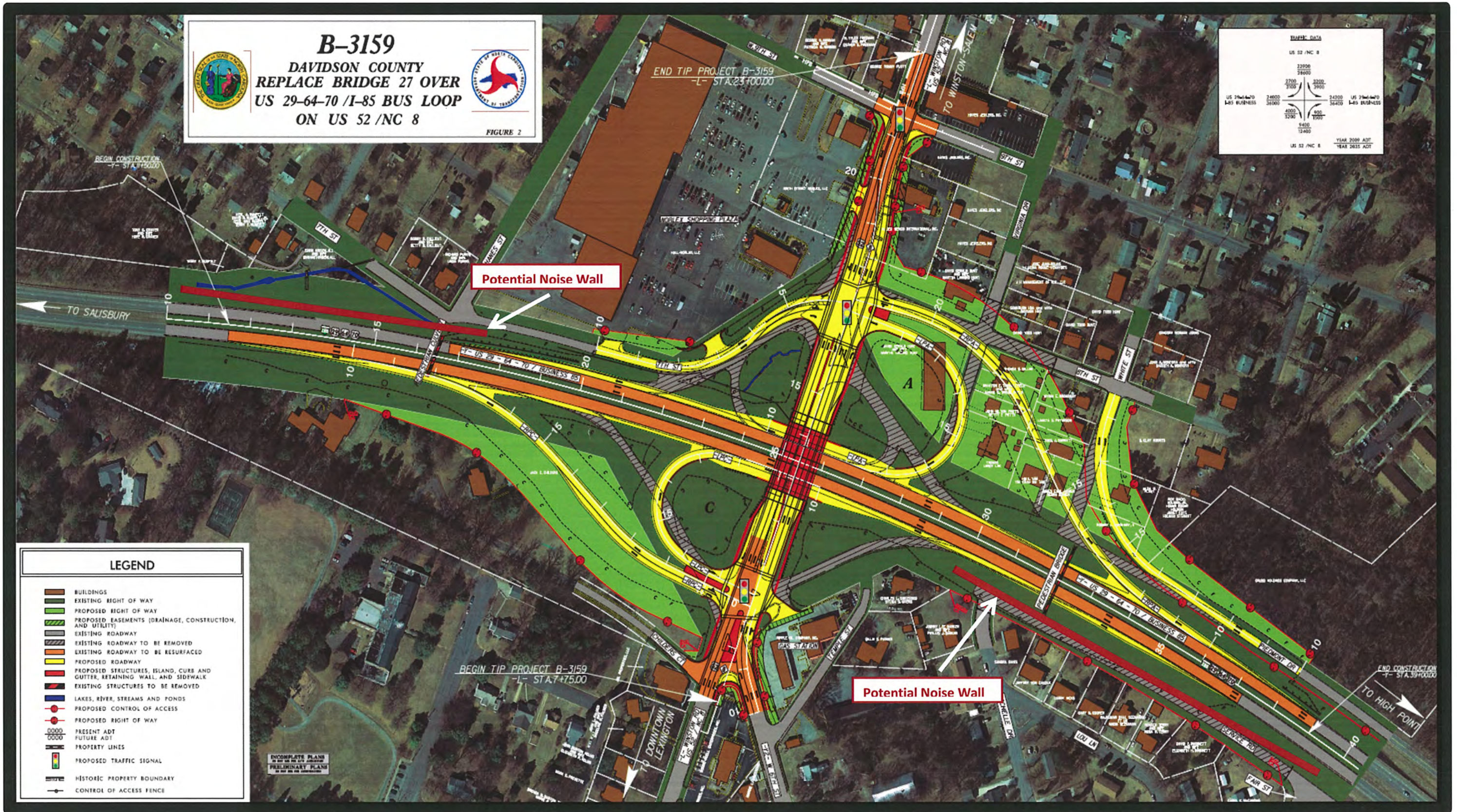
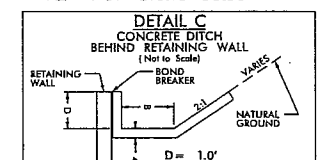
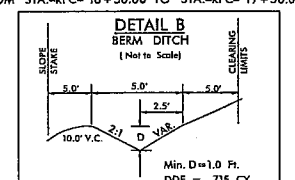
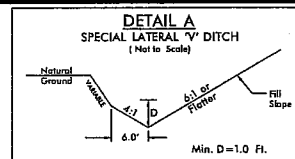
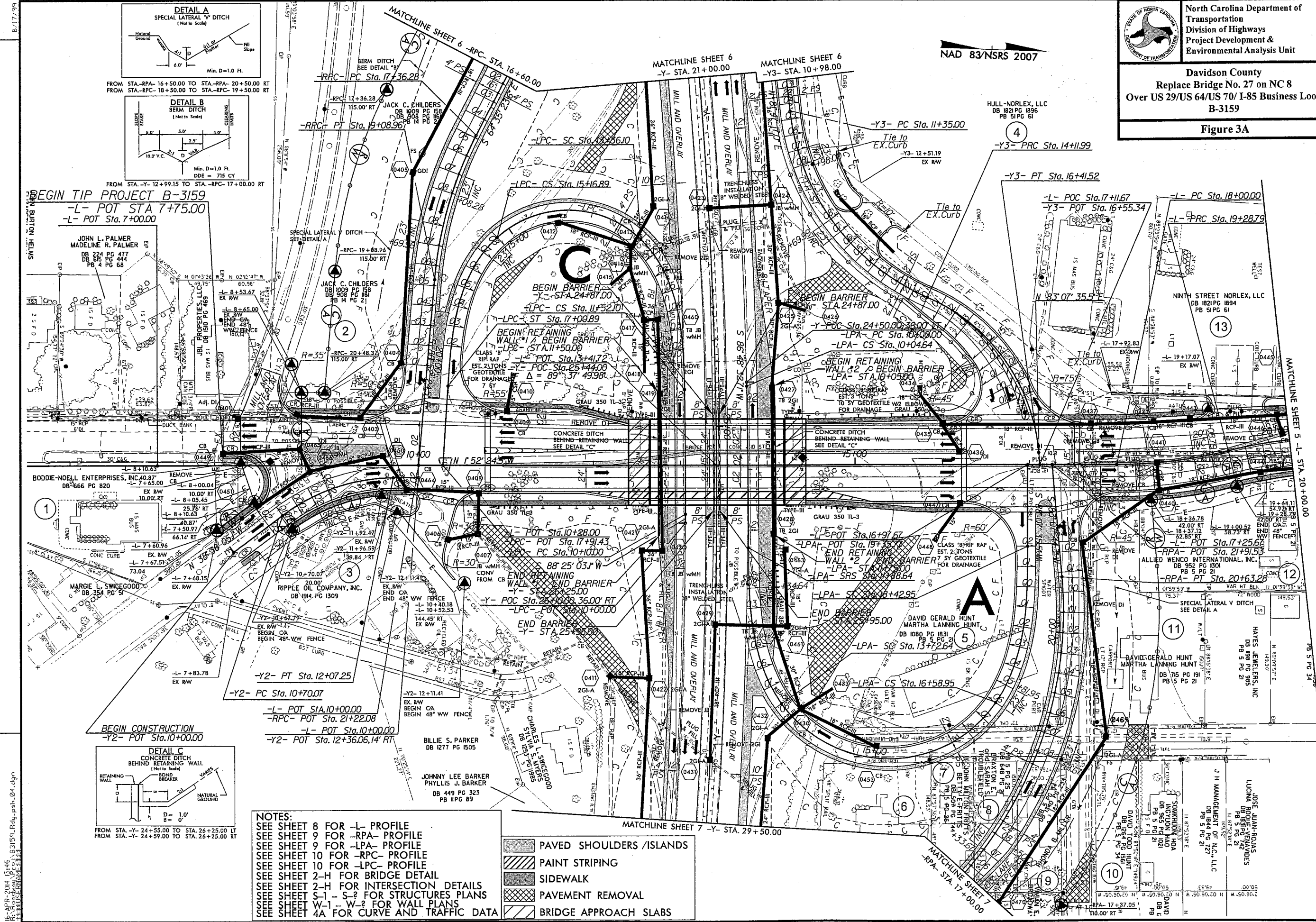


Figure 2

Davidson County  
 Replace Bridge No. 27 on NC 8  
 Over US 29/US 64/US 70/ I-85 Business Loop  
 B-3159

Figure 3A

NAD 83/NSRS 2007



**NOTES:**  
 SEE SHEET 8 FOR -L- PROFILE  
 SEE SHEET 9 FOR -RPA- PROFILE  
 SEE SHEET 9 FOR -LPA- PROFILE  
 SEE SHEET 10 FOR -RPC- PROFILE  
 SEE SHEET 10 FOR -LPC- PROFILE  
 SEE SHEET 2-H FOR BRIDGE DETAIL  
 SEE SHEET 2-H FOR INTERSECTION DETAILS  
 SEE SHEET S-1 - S-2 FOR STRUCTURES PLANS  
 SEE SHEET W-1 - W-2 FOR WALL PLANS  
 SEE SHEET 4A FOR CURVE AND TRAFFIC DATA

- PAVED SHOULDERS / ISLANDS
- PAINT STRIPING
- SIDEWALK
- PAVEMENT REMOVAL
- BRIDGE APPROACH SLABS

REVISIONS

112003 (AEV) DESIGN REVISION - REMOVED RETAINING WALL #3 FROM ALONG -Y-

15-APR-2014 10:46 AM B3159\_01\_Rdy\_psh\_04.dgn

8-17-09

15-APR-2011 10:46 AM 813159\_P041.mxd 05.dgn

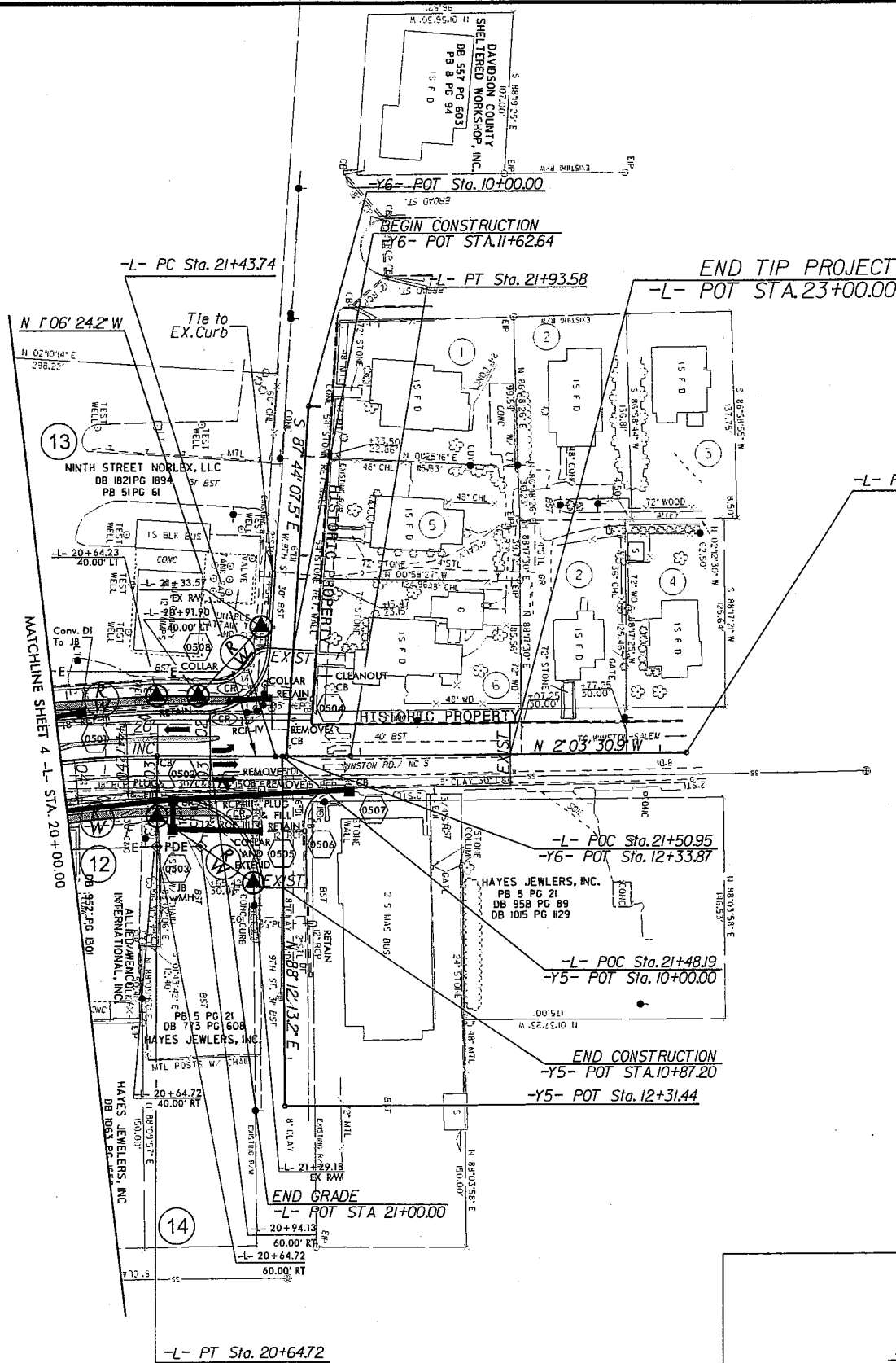


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Division of Highways  
Project Development & Environmental Analysis Unit

Davidson County  
Replace Bridge No. 27 on NC 8  
Over US 29/US 64/US 70/ I-85 Business Loop B-3159

Figure 3B

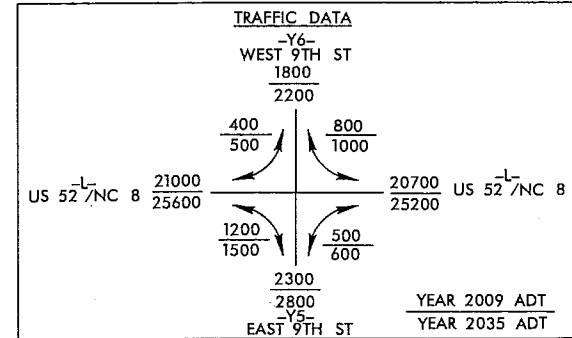
NAD 83/NSRS 2007



- 1 PB 8 PG 94  
GEORGE V. HANNAH  
AND WIFE  
PATRICIA W. HANNAH  
DB 579 PG 81
- 2 DRY CREEK PROPERTIES, INC.  
DB 1375 PG 1278
- 3 BOBBY B. CALLICUTT  
AND WIFE  
BETTY B. CALLICUTT  
DB 627 PG 842  
DB 639 PG 223
- 4 THOMAS P. MAUNEY  
DB 877 PG 101
- 5 R. TYLER FREEMAN  
AND WIFE  
ESTHER S. FREEMAN  
DB 497 PG 184
- 6 GEORGE TOMMY PLOTT  
DB 1253 PG 1981

-L-

PI Sta 19+97.13	PI Sta 21+68.66
$\Delta = 14' 36' 42.4''$ (RT)	$\Delta = 0' 57' 06.7''$ (LT)
$D = 10' 44' 58.8''$	$D = 1' 54' 35.5''$
$L = 135.93'$	$L = 49.84'$
$T = 68.33'$	$T = 24.92'$
$R = 533.00'$	$R = 3,000.00'$
SE = SEE PLANS	SE = SEE PLANS

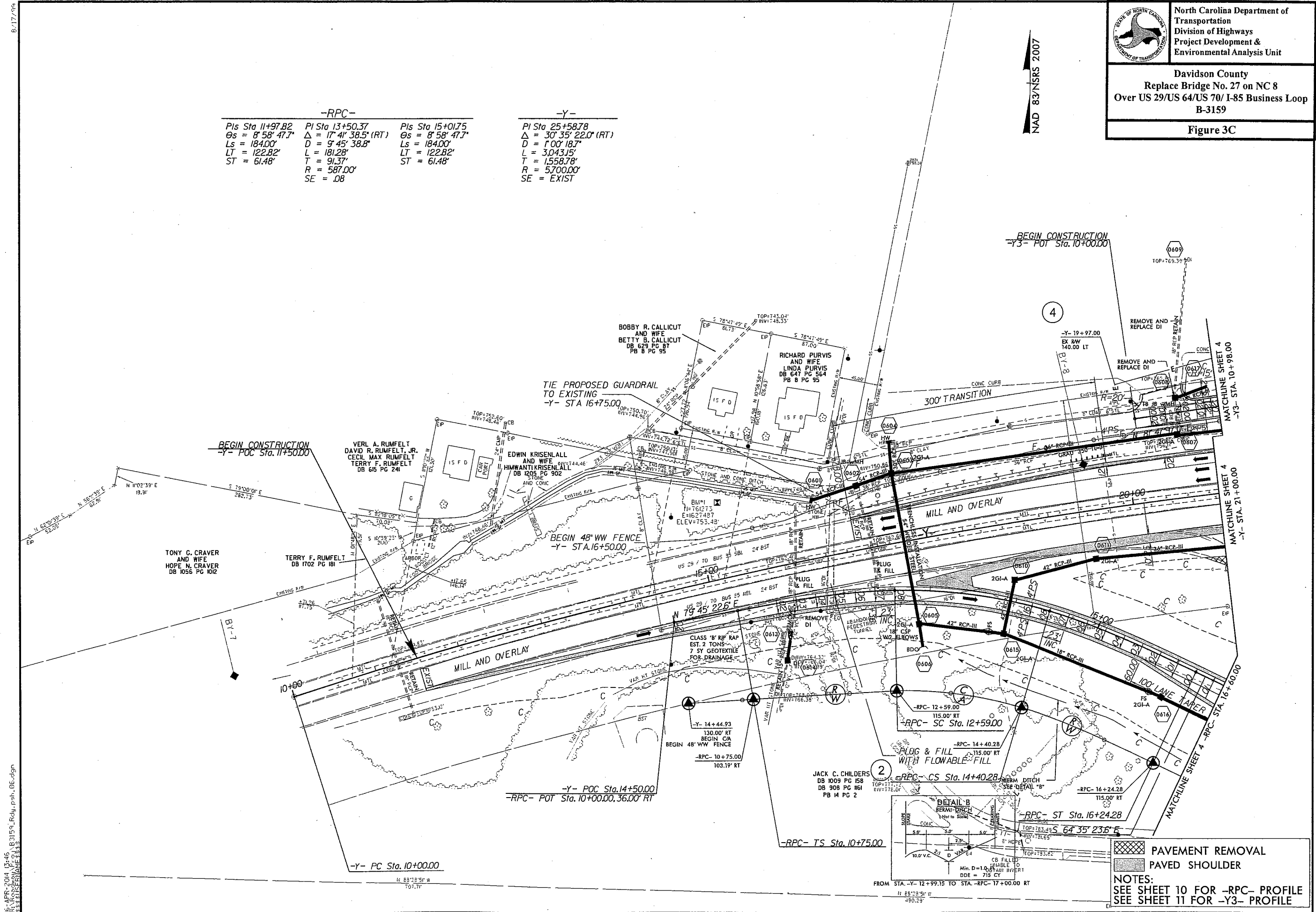


ISLANDS  
SIDEWALK

NOTES:  
SEE SHEET 8 FOR -L- PROFILE  
SEE SHEET 2-H FOR INTERSECTION DETAIL

Figure 3C

-RPC-			-Y-		
PIs Sta 11+97.82	PI Sta 13+50.37	PIs Sta 15+01.75	PI Sta 25+58.78		
$\theta_s = 8^\circ 58' 47.7''$	$\Delta = 17^\circ 41' 38.5''$ (RT)	$\theta_s = 8^\circ 58' 47.7''$	$\Delta = 30^\circ 35' 22.0''$ (RT)		
Ls = 184.00'	D = 9' 45" 38.8"	Ls = 184.00'	D = 1' 00" 18.7"		
LT = 122.82'	L = 181.28'	LT = 122.82'	L = 3,043.15'		
ST = 61.48'	T = 91.37'	ST = 61.48'	T = 1,558.78'		
	R = 587.00'		R = 5,700.00'		
	SE = .08		SE = EXIST		



PAVEMENT REMOVAL  
 PAVED SHOULDER  
**NOTES:**  
 SEE SHEET 10 FOR -RPC- PROFILE  
 SEE SHEET 11 FOR -Y3- PROFILE

B-17/99  
 APR-2014 13:45  
 B-3159\_1\_Rdwy\_psh\_06.dgn  
 490.29'





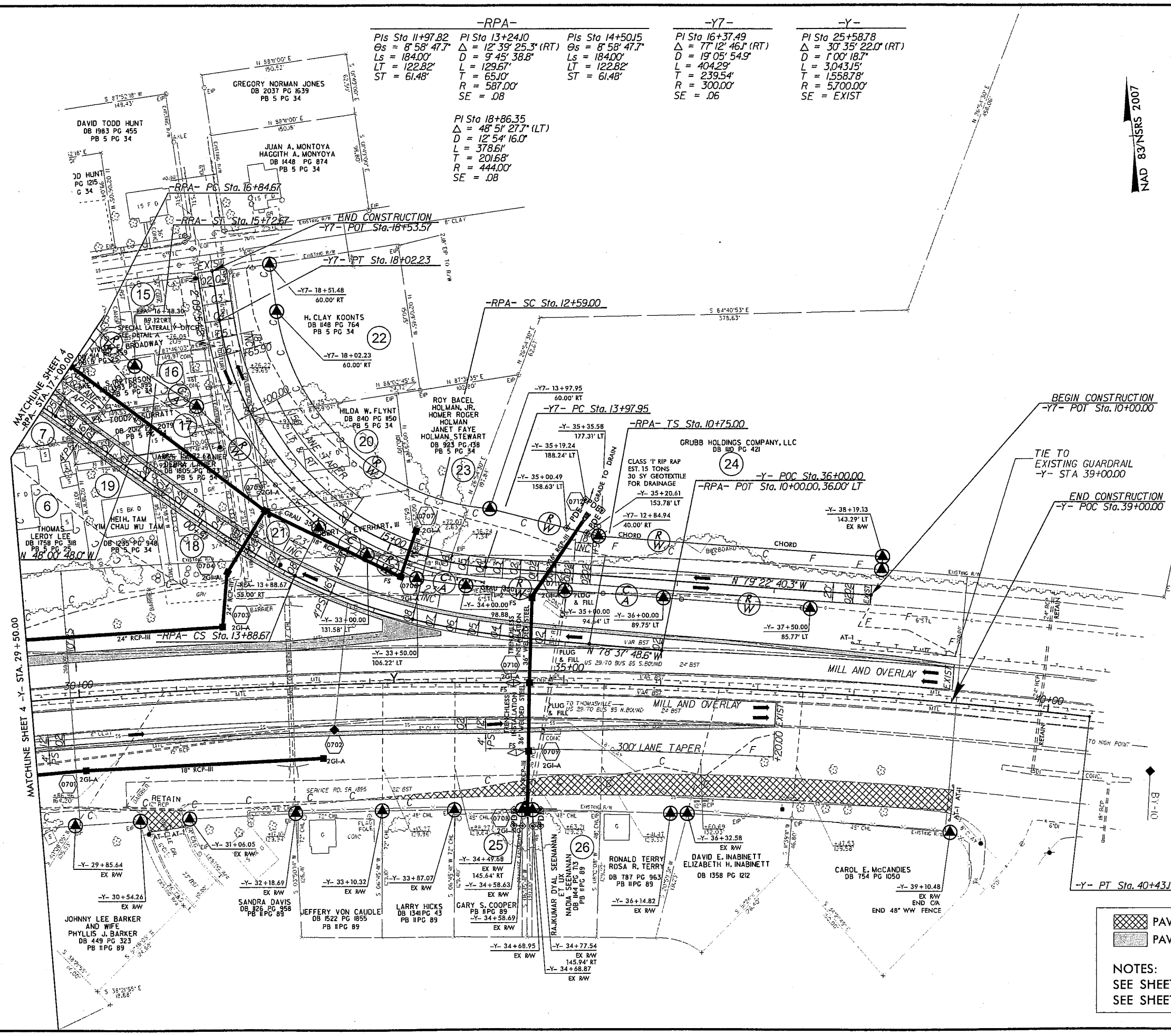
North Carolina Department of  
Transportation  
Division of Highways  
Project Development &  
Environmental Analysis Unit

Davidson County  
Replace Bridge No. 27 on NC 8  
Over US 29/US 64/US 70/ I-85 Business Loop  
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Figure 3D



NAD 83/NSRS 2007

-RPA-			-Y7-		-Y-	
PI Sta 11+97.82	PI Sta 13+24.10	PI Sta 14+50.15	PI Sta 16+37.49	PI Sta 25+58.78		
Os = 8' 58' 47.7"	Os = 12' 39' 25.3" (RT)	Os = 8' 58' 47.7"	Os = 77' 12' 46.1" (RT)	Os = 30' 35' 22.0" (RT)		
Ls = 184.00'	D = 9' 45' 38.8"	Ls = 184.00'	D = 19' 05' 54.9"	D = 1' 00' 18.7"		
LT = 122.82'	L = 129.67'	LT = 122.82'	L = 404.29'	L = 3,043.15'		
ST = 61.48'	T = 65.10'	ST = 61.48'	T = 239.54'	T = 1,558.78'		
	R = 587.00'		R = 300.00'	R = 5,700.00'		
	SE = .08		SE = .06	SE = EXIST		
PI Sta 18+86.35						
Δ = 48' 51' 27.7" (LT)						
D = 12' 54' 16.0"						
L = 378.61'						
T = 201.68'						
R = 444.00'						
SE = .08						



REVISIONS  
1/2013 (REV) DESIGN REVISION - REMOVED RETAINING WALL #3 FROM ALONG -Y-

8-17-06  
15-APR-2014 11:46 AM B:\31591\_Rdy\_psh\_07.dgn

 PAVEMENT REMOVAL  
 PAVED SHOULDER  
**NOTES:**  
 SEE SHEET 9 FOR -RPA- PROFILE.  
 SEE SHEET 11 FOR -Y7- PROFILE.

BM#2  
N=761286  
E=1630122  
ELEV=781.59

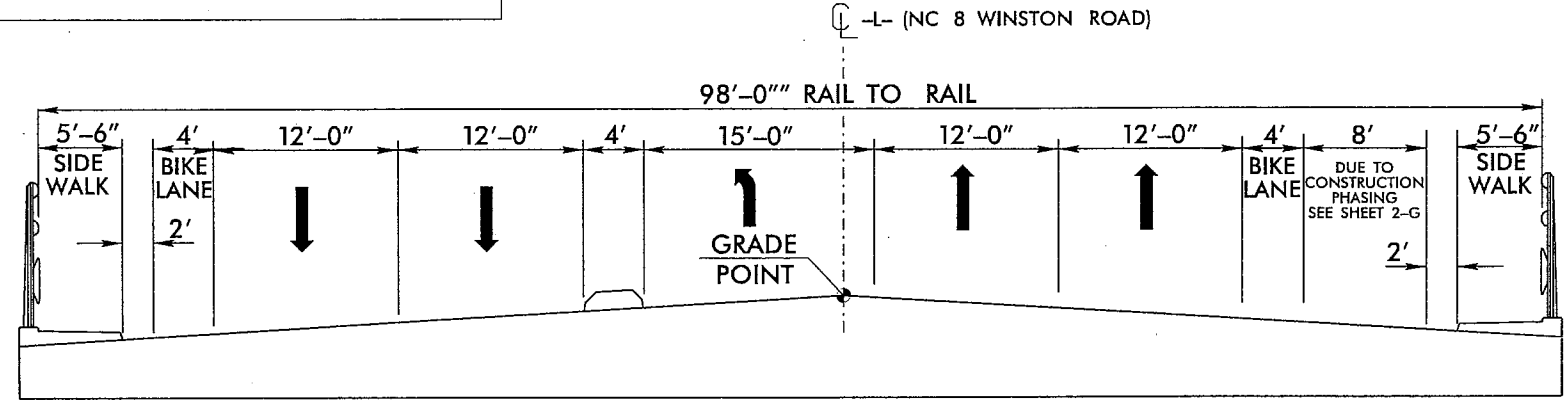
8/17/98

DESIGN DATA	-L-	-Y-
2009 ADT	23,900	24,200
2035 ADT	28,600	36,400
DHV (%)	10	10
D (%)	60	60
DUAL (%)	3	6
TTST (%)	2	7
V (MPH)	40	60
FUNC CLASS	ARTERIAL	FREEWAY

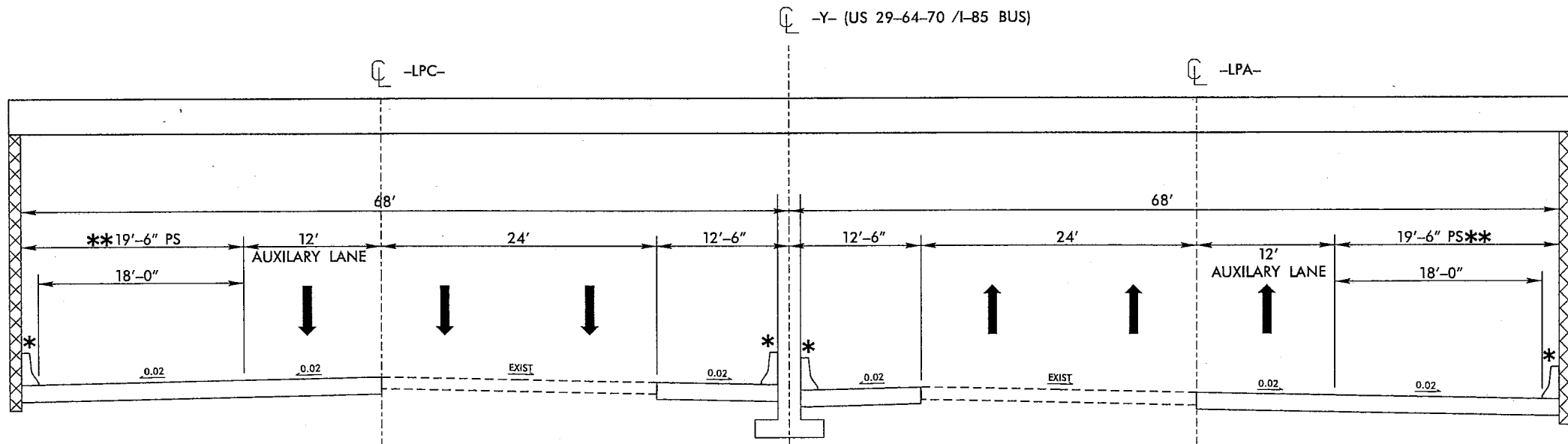
MINIMUM VERTICAL CLEARANCE = 16'-6"  
 SKEW ANGLE = 89° 37' 49.98"  
 \* SINGLE FACED PRECAST CONCRETE BARRIER (SEE STD. 857.01)  
 \*\* TO ACCOMMODATE FUTURE LANE  
 ☒ VERTICAL ABUTMENT WALL DETERMINED BY GEOTECHNICAL ENGINEERING UNIT

# STRUCTURE RECOMMENDATIONS

Figure 3E



-L- (NC 8) STRUCTURE OVER -Y- (US 29-64-70 / I-85 BUS)  
 -L- STA. 12+64.00 +/- TO -L- STA. 14+20.00 +/-



DETAIL OF ROADWAY UNDER PROPOSED STRUCTURE

NOTES:  
 SEE SHEET 4 FOR PLAN VIEW  
 SEE SHEET 2-B FOR -L- TYPICAL SECTION  
 SEE SHEET 2-C FOR -Y- TYPICAL SECTION

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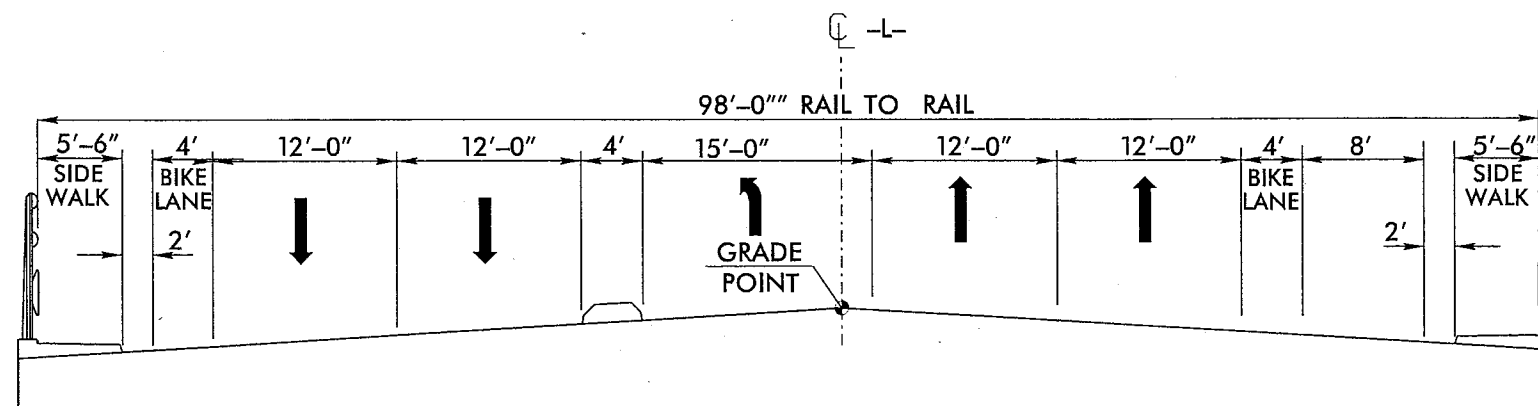
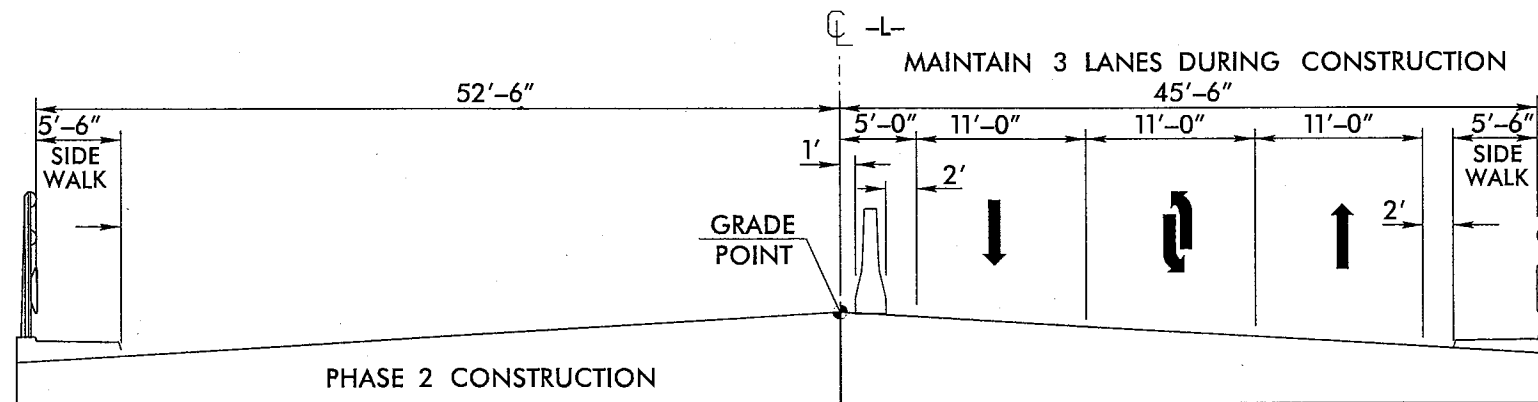
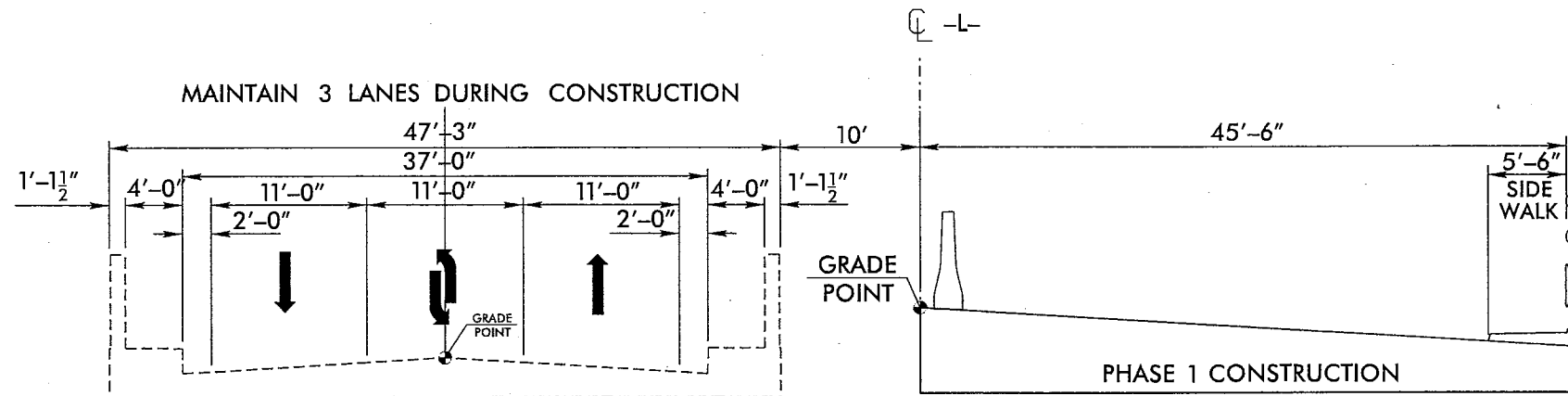
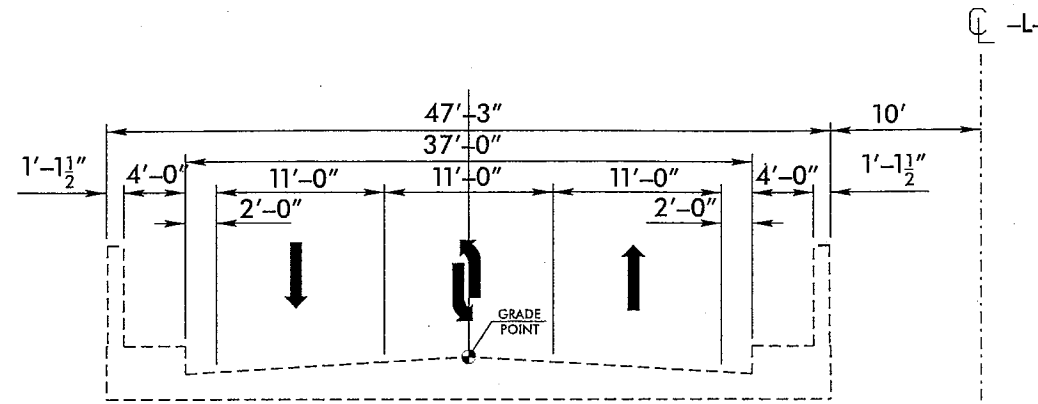


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Davidson County  
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Figure 3F

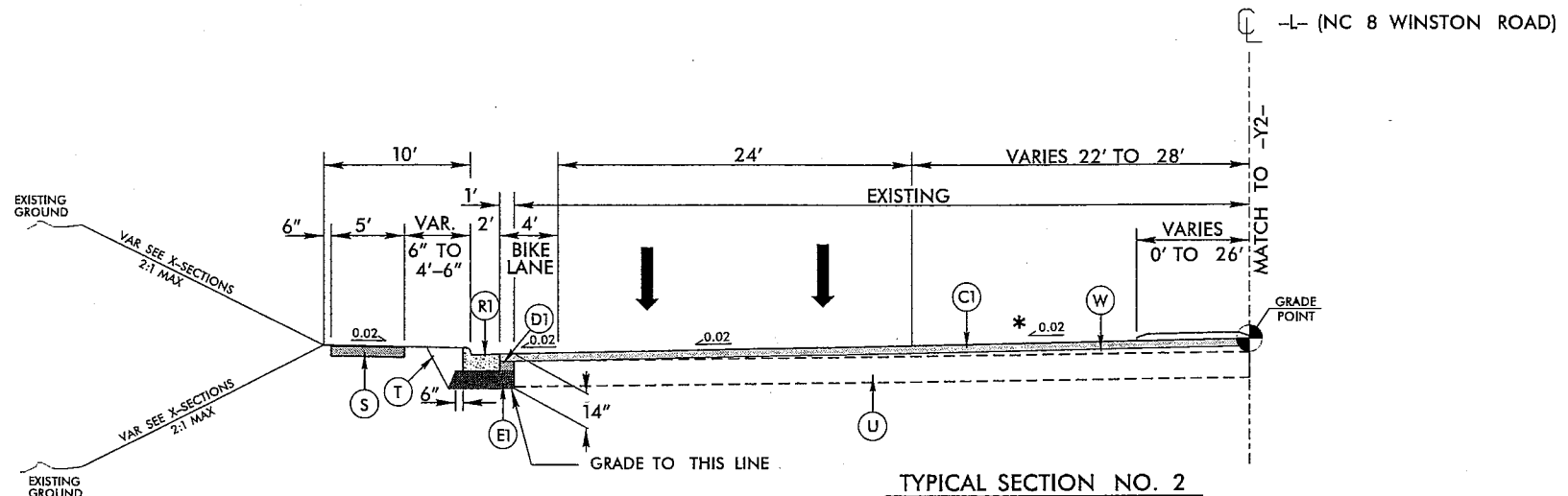
# PHASE CONSTRUCTION FOR BRIDGE



8/17/99

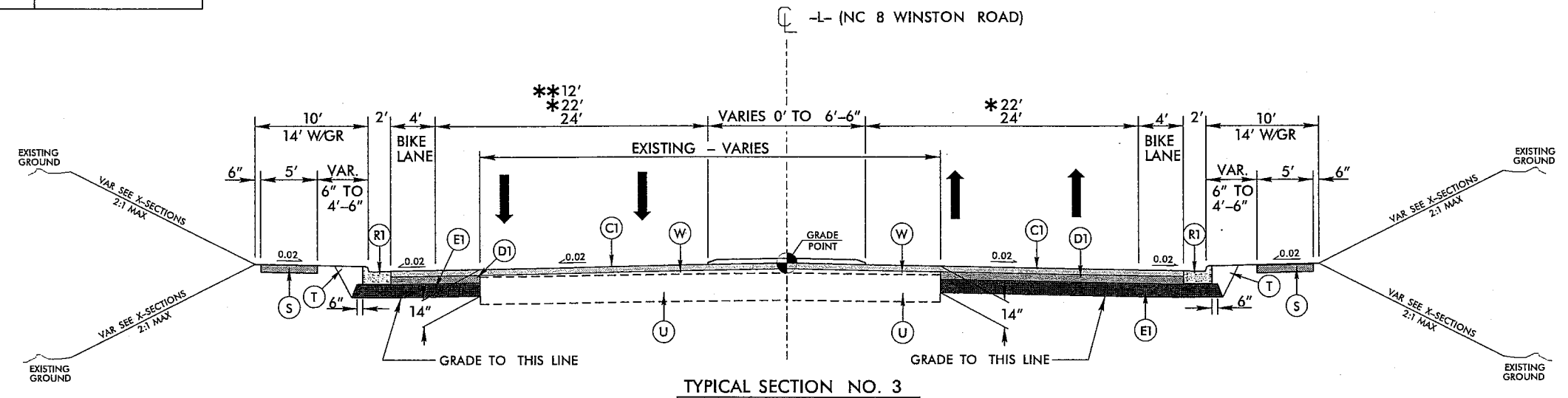
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C:\Roadway\B3159\Roadway\pdx\typ\02.gdgn  
11:11:59 AM

C1	3" S9.5B
C2	VAR. S9.5B
D1	4" I19.0B
D2	VAR. I19.0B
E1	7" B25.0B
E2	5" B25.0B
E2	VAR. B25.0B
J	10" ABC
P	PRIME COAT
R1	2'-6" C & G
R2	1'-6" C & G
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXISTING PVMNT
W	WEDGING



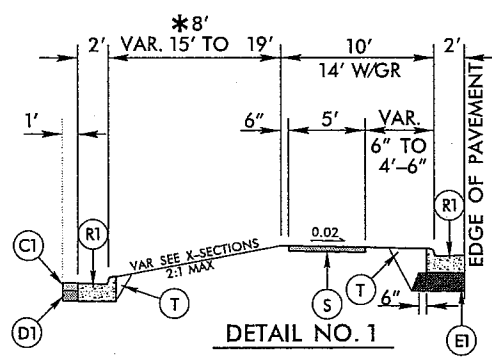
USE TYPICAL SECTION NO. 2  
 -L- STA. 8+00.00 TO 10+00.00

NOTES:  
 SEE PLANS FOR TURN LANES AND TAPERS.  
 \* MAY NEED TO WARP FOR PROPER TIE TO -Y2-.



USE TYPICAL SECTION NO. 3  
 -L- STA. 10+00.00 TO 11+50.00  
 -L- STA. 18+50.00 TO 21+00.00

NOTES:  
 SEE PLANS FOR TURN LANES AND TAPERS.  
 \* -L- STA. 19+64.72 TO 20+64.72  
 REDUCE 12' LANES TO 11' LANES LEFT AND RIGHT.  
 \*\* -L- STA. 20+10.00 TO 21+00.00



USE DETAIL NO. 1 WITH  
 TYPICAL SECTION NO. 3  
 LT: -L- STA. 18+50.00 TO STA. 19+20.00  
 \*LT: -L- STA. 19+78.00 TO STA. 21+00.00

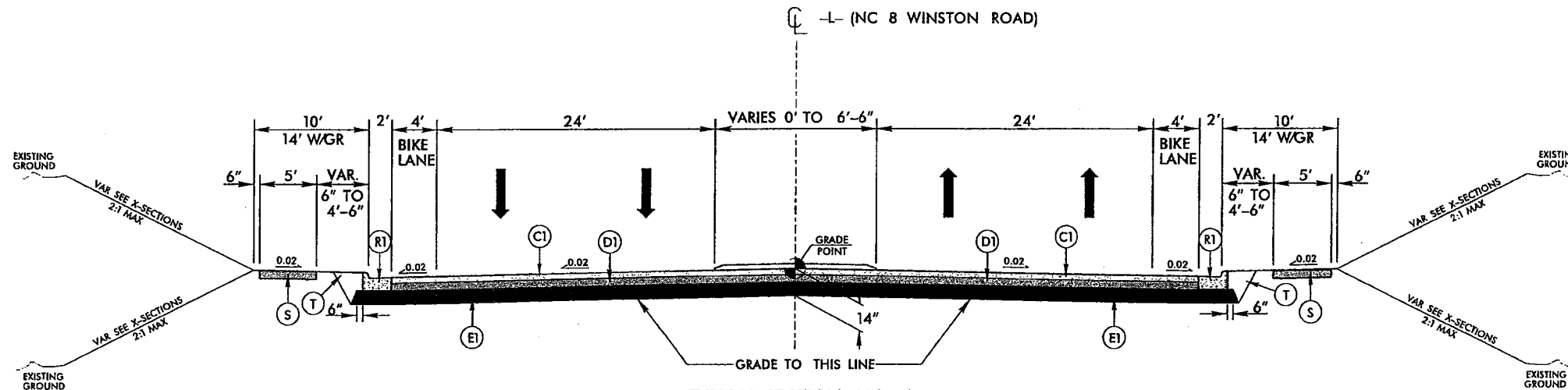
8/17/99  
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North Carolina Department of Transportation  
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B-3159

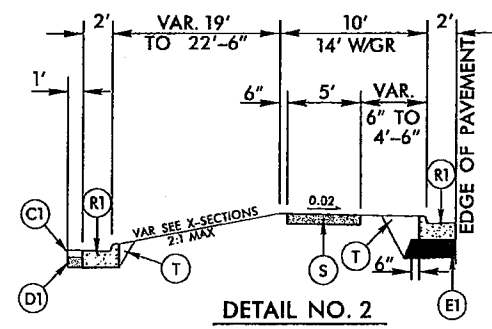
Figure 3H



TYPICAL SECTION NO. 4

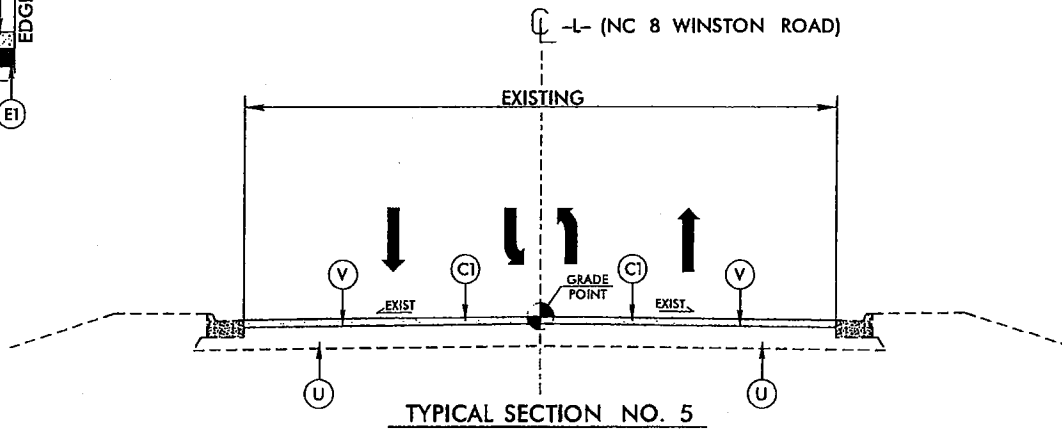
USE TYPICAL SECTION NO. 4  
-L- STA. 11+50.00 TO 12+64.00 (BEGIN BRIDGE)  
-L- STA. 14+20.00 (END BRIDGE) TO 18+50.00

NOTES:  
SEE PLANS FOR TURN LANES AND TAPERS.



DETAIL NO. 2

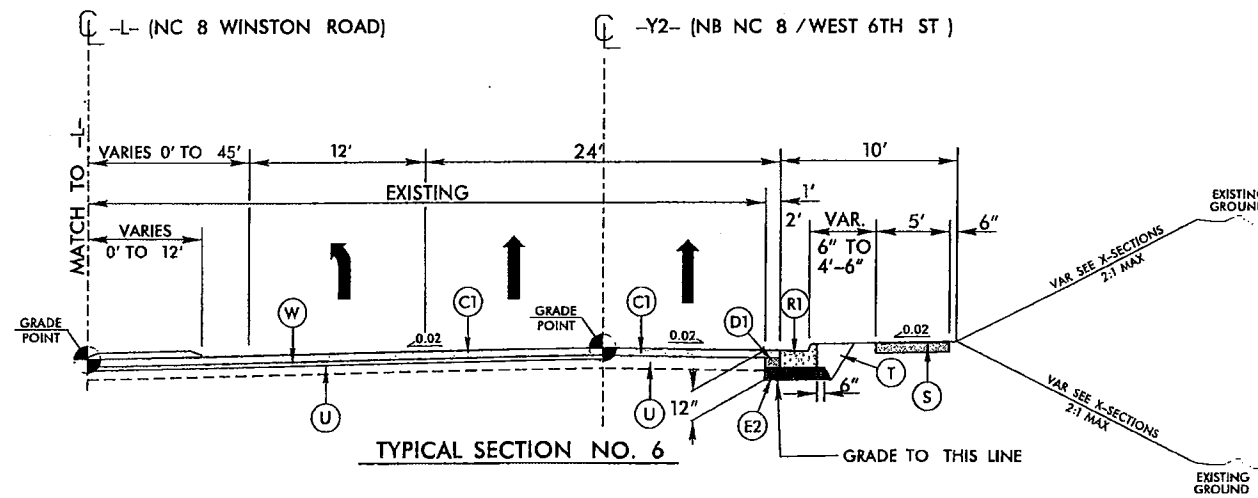
USE DETAIL NO. 2 WITH  
TYPICAL SECTION NO. 4  
LT: -L- STA. 18+00.00 TO 18+50.00



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5  
-L- STA. 21+00.00 TO 23+00.00

NOTE:  
MILL AND OVERLAY AS NEEDED TO ACHIEVE PROPER TIE IN WITH EXISTING CURB & GUTTER AND EXISTING LANE CONFIGURATION.



TYPICAL SECTION NO. 6

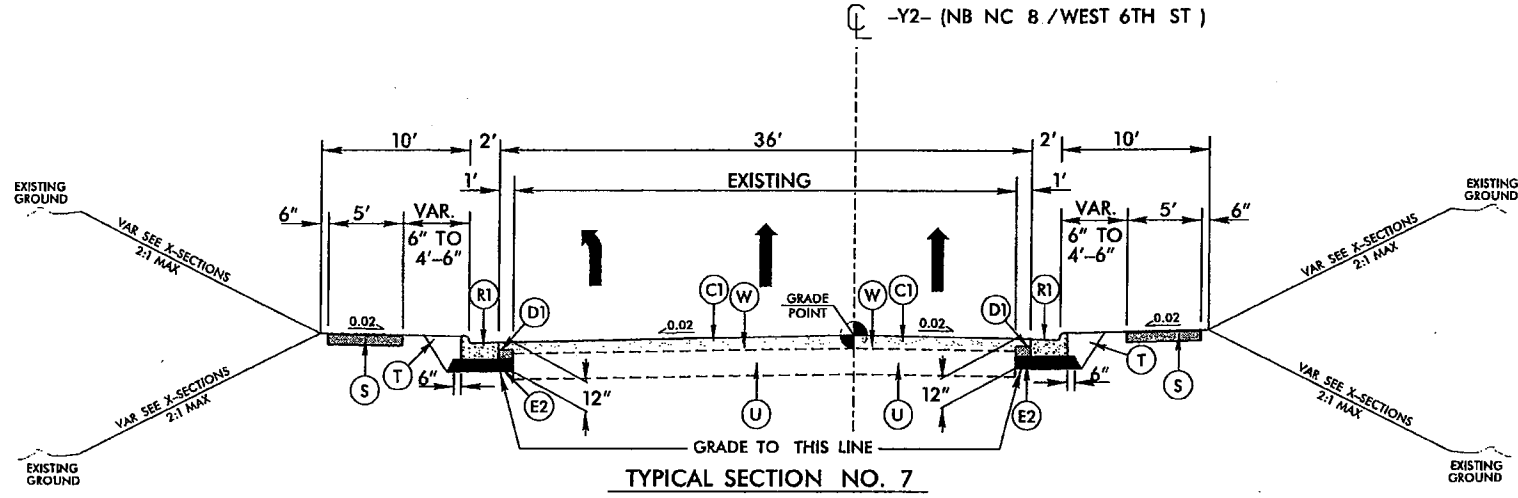
USE TYPICAL SECTION NO. 6  
-Y2- STA. 10+53.13 TO 12+36.14

NOTES:  
SEE PLANS FOR TURN LANES AND TAPERS.  
SUPERELEVATIONS FLOAT IN VARIABLE WIDTH LOCATIONS TO TIE -Y2- GRADE TO -L- GRADE.  
MILL AS NEEDED.

C1	3" S9.5B
C2	VAR. S9.5B
D1	4" I19.0B
D2	VAR. I19.0B
E1	7" B25.0B
E2	5" B25.0B
E2	VAR. B25.0B
J	10" ABC
P	PRIME COAT
R1	2'-6" C & G
R2	1'-6" C & G
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXISTING PVMNT
W	WEDGING

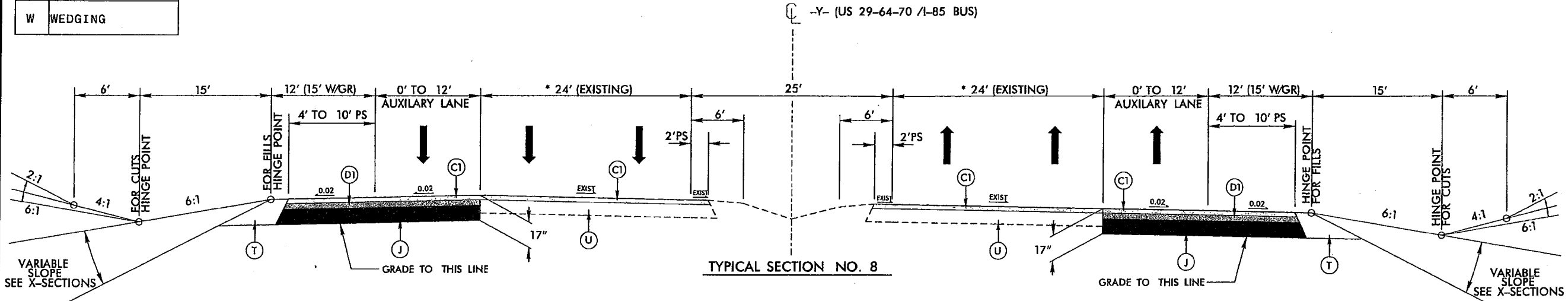
8-17-94  
 NC-APR-2004 (SAC)  
 H. H. HARRIS, JR.  
 H. HARRIS, JR.

C1	3" S9.5B
C2	VAR. S9.5B
D1	4" I19.0B
D2	VAR. I19.0B
E1	7" B25.0B
E2	5" B25.0B
E2	VAR. B25.0B
J	10" ABC
P	PRIME COAT
R1	2'-6" C & G
R2	1'-6" C & G
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXISTING PVMNT
W	WEDGING



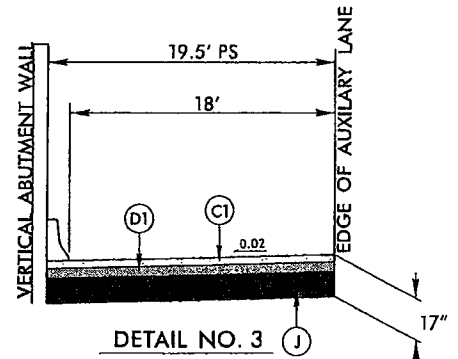
USE TYPICAL SECTION NO. 7  
 -Y2- STA. 10+00.00 TO 10+53.13

NOTES:  
 MILL AS NEEDED.

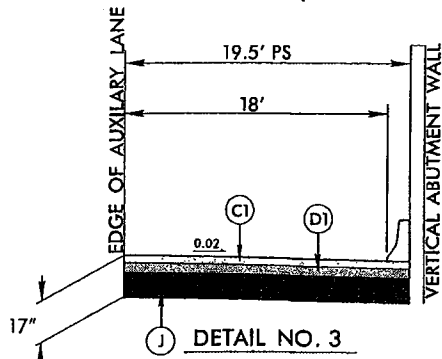


USE TYPICAL SECTION NO. 8  
 -Y- STA. 11+50.00 TO STA. 39+00.00

\*MILL AND REPLACE AT SAME DEPTH  
 NOTES:  
 FROM -Y- STA. 34+20.00 TO 37+20.00 RT  
 TAPER IN SHOULDER AND DITCH WIDTH TO  
 TIE TO EXISTING (SEE X-SECTIONS).



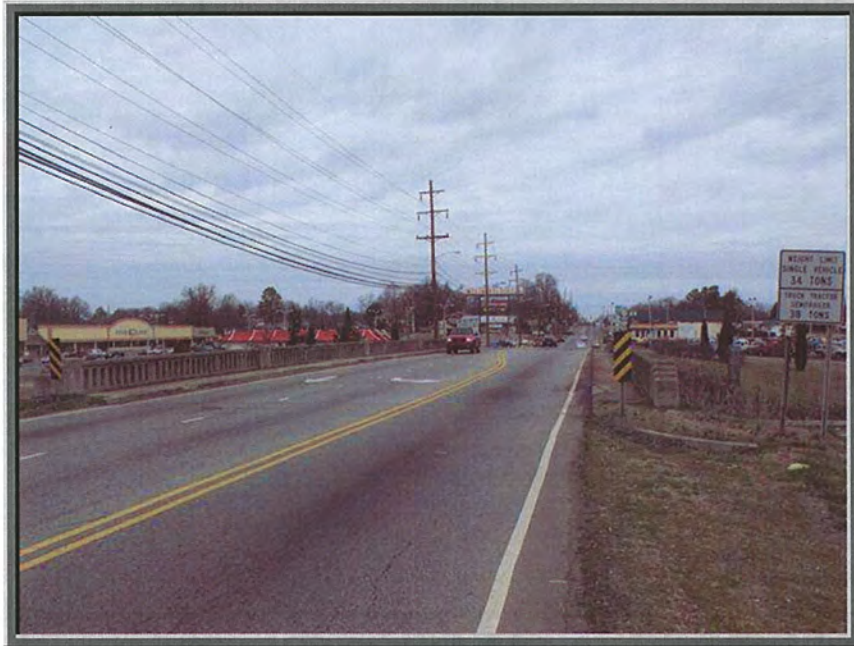
USE DETAIL NO. 3 WITH  
 TYPICAL SECTION NO. 8  
 LT: -Y- STA. 24+55.00 +/- TO 26+24.00 +/-  
 RT: -Y- STA. 24+59.00 +/- TO 26+25.00 +/-



8-17-99  
 BY: APP-7004, JF, JL  
 EC: R. ROSS, JR., B. RIFKIN, R. B. B. 02-20-00  
 DATE: 02-20-00



**Southbound Approach  
Bridge No. 27**



**Northbound Approach  
Bridge No. 27**



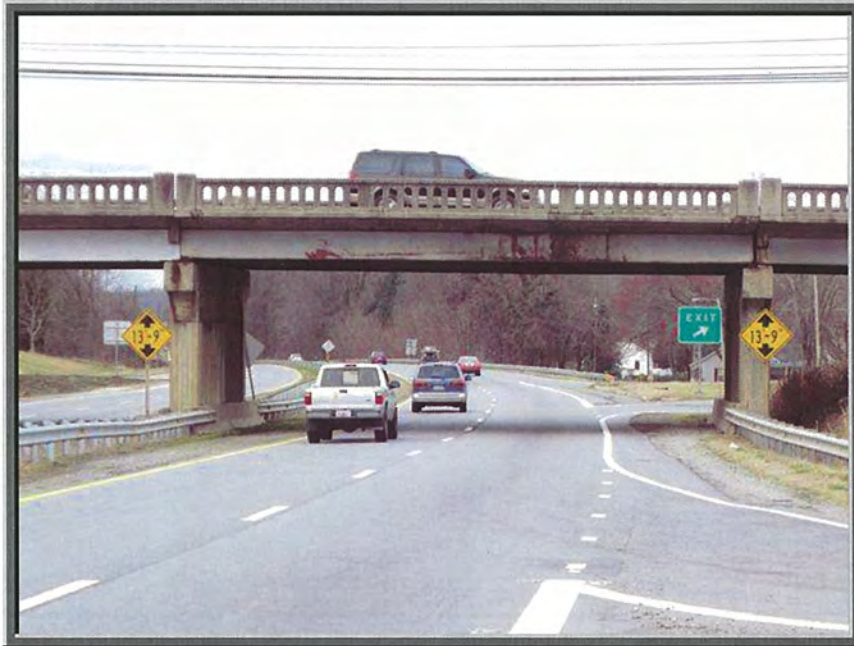
North Carolina Department of  
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Project Development & Environmental  
Analysis Unit

**Davidson County  
Replace Bridge No. 27 on NC 8  
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Figure 4A



**West Face of  
Bridge No. 27**



**East Face of  
Bridge No. 27**



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**Figure 4B**



# Appendix B

Reference Letters

THE CITY OF  
NORTH



LEXINGTON  
CAROLINA

"GROWING WITH THE PIEDMONT"

OFFICE OF THE  
CITY MANAGER

RECEIVED

OCT 02 2013

Div. 9 Engineers Office

September 30, 2013

S. Patrick Ivey, P.E., Division Engineer  
NCDOT Division Nine  
375 Silas Creek Parkway  
Winston-Salem, NC 27127

Subject: B-3159 (Replace Bridge #27 on NC 8 over US 29/70 in Lexington), request for additional sidewalks

Dear Mr. Ivey:

The preliminary plans for this project indicate the existing pedestrian bridge (located just north of the North Carolina Highway 8 bridge) will have to be removed. Since this pedestrian bridge provides safe access for students to our senior and middle schools, the City of Lexington requests that new sidewalks, which provide pedestrian access across US 29/70 and along NC Highway 8 to these schools, be included in the plans.

We appreciate your consideration of this request.

Sincerely,

J. Alan Carson  
City Manager

Cc: City Council  
Terra Greene  
Rick Comer

## NO PREHISTORIC OR HISTORIC PROPERTIES PRESENT/AFFECTED FORM

### PROJECT INFORMATION

Project No: B-3159 County: Davidson  
 WBS No: 38331.1.1 Document: CE/PCE  
 F.A. No: STPNHS-0052(31) Funding:  State  Federal  
 Federal (USACE) Permit Required?  Yes  No Permit Type:

Project Description: Replace Bridge No. 27 over US 29-64-70/I-85 Business Loop on US 52/NC 8.

### SUMMARY OF FINDINGS

The North Carolina Department of Transportation (NCDOT) reviewed the subject project and determined:

#### Historic Architecture/Landscapes

- There are no National Register-listed or Study Listed properties within the project's area of potential effects.
- There are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's area of potential effects.
- There are no properties within the project's area of potential effects.
- There are properties over fifty years old within the area of potential effects, but they do not meet the criteria for listing on the National Register.
- All properties greater than 50 years of age located in the APE have been considered and all compliance for historic architecture with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.
- There are no historic properties present or affected by this project. (Attach any notes or documents as needed)

#### Archaeology

- There are no National Register-listed or Study Listed properties within the project's area of potential effects.
- No subsurface archaeological investigations are required for this project.
- Subsurface investigations did not reveal the presence of any archaeological resources.
- Subsurface investigations did not reveal the presence of any archaeological resources considered eligible for the National Register.
- All identified Archaeological sites located within the APE have been considered and all compliance for archaeological resources with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.
- There are no historic properties present or affected by this project. (Attach any notes or documents as needed)

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

Review of HPO quad maps, historic designations roster, and indexes was undertaken on 16 April 2010. According to the NCDOT Historic Bridge Inventory Report, Davidson County Bridge No. 27 is part of the Lexington By-Pass Historic District (DOE). This approximately three-mile long section of I-85 Business from the US 52 merge to the US 64 breakout section of interstate highway forms the district and includes the right-of-way inclusive of ramps and frontage roads.

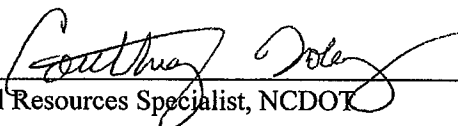
Bridge No. 27 is a 4 span, 176-foot long steel stringer bridge with a concrete deck that was constructed in 1950. It is finished with standard design concrete balustrades. The bridge is not individually distinguished by its technology. Its significance is as a component of the state's oldest cloverleaf-shaped interchange.

NCDOT architectural historians made a site visit to the project area and confirmed that the inner ramps of the southeast and southwest quadrants have been removed, resulting in a loss of historic integrity. Since the cloverleaf no longer qualifies as a contributing resource to the historic district, the replacement of Bridge No. 27 will not change the fact that the cloverleaf has lost integrity.

**SUPPORT DOCUMENTATION**

See attached: Project Vicinity Map; Aerial Photograph of project site showing removed portions of cloverleaf

Signed:

  
\_\_\_\_\_  
Cultural Resources Specialist, NCDOT

23 SEPT. 2010  
\_\_\_\_\_  
Date

10-03-0178

**NO SURVEY REQUIRED FORM****PROJECT INFORMATION**

Project No: B-3159 County: Davidson  
 WBS No: 38331.1.1 Document: CF/PCE  
 E.A. No: STPNHS-0052(31) Funding:  State  Federal  
 Federal (US/ACE) Permit Required?  Yes  No Permit Type: na

*Project Description:* NCDOT intends to replace Bridge No. 27 on US 52/NC 8 over the US 29-64-70/ I-85 Business Loop. It is unclear whether or not an on-site detour will be required and no preliminary plans were available at the time of the archaeology review. The delineated study area is estimated at nearly 8.1 acres (roughly 3.3 hectares) and is considered the project APE for the purposes of this review.

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

A review of the maps and sites file at OSA was conducted on April 13, 2010, and revealed no previously recorded archaeological sites within the project study area. Additionally, a review of the soil maps for Davidson County reveal that nearly the entire study area is mapped as disturbed Urban soils. No known NR, SL, LD, or LD properties are located within the proposed APE. No significant archaeological resources are anticipated within the APE as defined above, however, should earth-disturbing activities be undertaken outside that area, further archaeological review would be necessary. The project as currently proposed should be considered NCGS 121-12a and Section 106 compliant.

*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 no archaeological sites are located in the project study area and soil maps as well as the aerial photos of the location of Bridge No. 27 reveal significant disturbances related to the construction of the existing US 52/NC 8 and US 29-64-70/ I-85 Business Loop intersection. The likelihood of intact NRHP-eligible archaeological sites in the project study corridor is considered to be extremely remote. Nevertheless, if the project limits should change (extending beyond the current study corridor) further review will be required.

**SUPPORT DOCUMENTATION**

See attached: Location map; detail of the Lexington, West, N.C. (1950), 7.5-minute quadrangle topographic map; aerial photo; USDA soil survey information for Davidson County (from [HTTP://WEBSOILSURVEY.NRCS.USDA.GOV/APP/](http://websoilsurvey.nrcs.usda.gov/app/)).

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

  
 NCDOT Cultural Resources Specialist

05-11-10

Date

10-03-0178



## ARCHAEOLOGICAL SURVEY REQUIRED FORM

This form only pertains to ARCHAEOLOGICAL RESOURCES for this project. It is not valid for Historic Architecture and Landscapes. You must consult separately with the Historic Architecture and Landscapes Group.



### PROJECT INFORMATION

Project No: **B-3159** County: **Davidson**  
 WBS No: **38331.1.1** Document: **CE**  
 F.A. No: **STPNHS-0052(31)** Funding:  State  Federal  
 Federal Permit Required?  Yes  No Permit Type: **na**

**Project Description:** NCDOT intends to replace Bridge No. 27 on US 52/NC 8 over the US 29-64-70/ I-85 Business Loop. The delineated study area is estimated at roughly 37 acres (nearly 15 hectares) and generally includes a 3000-foot (914.4-meter) long segment of I-85 and a 1300-foot (396.24-meter) long segment of US 52/NC 8 loosely centered on Bridge No. 27. This study area includes the addition of new roadway within existing and new right of way (ROW). For the purposes of this updated archaeological review, the study area will be considered the archaeological APE.

### SUMMARY OF ARCHAEOLOGICAL RESOURCES REVIEW: *SURVEY REQUIRED*

**Brief description of review activities, results of review, and conclusions:**

This project was originally reviewed on May 11, 2010 and included an examination of the maps and files archived at the North Carolina Office of State Archaeology (conducted on April 13, 2010). At the time of the first review, the project APE was delineated as nearly 8.1 acres centered on Bridge No. 27, an area that fell largely within severely disturbed urban soils. No further archaeological investigations were recommended at that time. The expanded APE, however, pushes the project area into or immediately adjacent properties designated as historic districts, specifically the Erlanger Mill Village Historic District and the Lexington Residential Historic District (including the National Register-listed Grimes School). With the expansion of ROW and new roadway into areas that are potentially less disturbed by modern urban development and the proximity of National Register listed districts and resources, further archaeological investigation (likely including survey) will be required.

### SUPPORT DOCUMENTATION

See attached:  Map(s)  Previous Survey Info  Photos  Correspondence  
 Other: NRCS web soil survey information (<http://websoilsurvey.nrcs.usda.gov/app/>); preliminary plans

### FINDING BY NCDOT ARCHAEOLOGIST – *SURVEY REQUIRED*

**Shane C. Petersen**

**April 23, 2014**

**NCDOT ARCHAEOLOGIST**

**Date**

Proposed fieldwork completion date

# EIS RELOCATION REPORT

North Carolina Department of Transportation

E.I.S.       CORRIDOR       DESIGN

WBS:	38331.1.1	COUNTY	Davidson	Section	1	of	1	Sections
I.D. NO.:	B-3159	F.A. PROJECT						
DESCRIPTION OF PROJECT:	Replace Bridge No. 27 on NC 8 over US 29/64/70/I-85 Business							

ESTIMATED DISPLACEDS					INCOME LEVEL							
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP			
Residential	5	4	9	5	1	1	4	2	1			
Businesses	2	0	2	0	VALUE OF DWELLING			DSS DWELLING AVAILABLE				
Farms	0	0	0	0	Owners		Tenants		For Sale      For Rent			
Non-Profit	0	0	0	0	0-20M	0	\$ 0-150	0	0-20M	3	\$ 0-150	0
					20-40M	1	150-250	0	20-40M	4	150-250	3
					40-70M	3	250-400	1	40-70M	5	250-400	6
					70-100M	1	400-600	2	70-100M	6	400-600	2
					100 UP	0	600 UP	1	100 UP	13	600 UP	6
					<b>TOTAL</b>	<b>5</b>		<b>4</b>		<b>31</b>		<b>17</b>

ANSWER ALL QUESTIONS		
Yes	No	Explain all "YES" answers.
	x	1. Will special relocation services be necessary?
	x	2. Will schools or churches be affected by displacement?
x		3. Will business services still be available after project?
x		4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
	x	5. Will relocation cause a housing shortage?
	x	6. Source for available housing (list).
	x	7. Will additional housing programs be needed?
x		8. Should Last Resort Housing be considered?
	x	9. Are there large, disabled, elderly, etc. families?
x		10. Will public housing be needed for project?
x		11. Is public housing available?
x		12. Is it felt there will be adequate DSS housing available during relocation period?
	x	13. Will there be a problem of housing within financial means?
x		14. Are suitable business sites available (list source).
		15. Number months estimated to complete

REMARKS (Respond by Number)							
#3. Business services will be available after the project							
#4. <b>ER Langer Express</b> ; Convenience store w/ tanks; plus a 3 bay Garage: 2000 sf, 3 F/T 1 P/T employees; Bldg. not in R/W However the <b>gas tanks are in the easement</b> <b>Jerry Hunt Auto &amp; Truck Sales &amp; Repair</b> ; 3 Bldgs. involved 10+- employees							
#6. Local realtors and newspapers							
#8. As mandated by law							
#10. Some rental properties may be section 8							
#11. Public housing is available in surrounding counties							
#12. DSS housing is available or can be built if necessary							
#14. Local realtors and newspapers							

Kris Barr Right of Way Agent	Date 5-15-14	Relocation Coordinator	Date 5/16/14
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