

Type III Categorical Exclusion Action Classification Form

STIP Project No.	HL-0006
WBS Element	49365.1.1
Federal Project No.	N/A

A. Project Description:

State Transportation Improvement Project (STIP) HL-0006 proposes to reconfigure multiple intersections along US 401 (N Main Street) into reduced conflict intersections (RCI) in the Town of Fuquay-Varina, Wake County. These intersections include SR 1393/SR 2752/SR 2751 (Hilltop-Needmore Road/Air Park Road/Hilltop Road), SR 1375 (Lake Wheeler Road), and SR 2753 (Dwight Rowland Road). The project also plans to realign SR 2571 (Hilltop Road) on new location away from the existing intersection with SR 1393 (Hilltop Needmore Road) and align the roadway across from SR 1375 (Lake Wheeler Road) at US 401 (N Main Street). Study Area Map is attached.

B. Description of Need and Purpose:

The HL-0006 project is needed because the facilities are currently operating with significant delays and operational deficiencies. The purpose of the HL-0006 project will help reduce congestion and improve mobility along US 401 and the surrounding area.

The existing signalized intersection of US 401 (N Main Street) and SR 1393 (Hilltop Needmore Road) / SR 2751 (Hilltop Road)/ SR 2752 (Air Park Road) is operating at LOS E during the AM peak hour. Stop controlled SR 1375 (Lake Wheeler Road) at US 401 (N Main Street) operates at LOS F during the PM peak hour and stop-controlled SR 2753 (Dwight Rowland Road) at US 401 (N Main Street) operates at LOS F during both peak hours. According to the forecasted AADT, traffic volumes are increasing (see Table 1 below).

Table 1. Forecasted AADT Data

Roadway	Location	Base Year (2020) No-Build	Design Year (2045) No-Build		Design Year (2045) Build	
			Without Bypass	With Bypass	Without Bypass	With Bypass
US 401 (N Main St)	N of SR 1393	27,900	46,600	37,800	46,900	37,900
US 401 (N Main St)	N of SR 1375	22,800	42,100	34,800	46,300	35,600
US 401 (N Main St)	S of SR 1375	27,900	53,100	45,500	53,100	45,400
SR 1393 (Hilltop Needmore Rd)	W of US 401	9,600	12,900	12,600	10,400	10,300
SR 1393 (Hilltop Needmore Rd)	W of SR 1375	11,200	17,900	18,000	17,900	18,100
SR 1375 (Lake Wheeler Rd)	N of SR 1393	4,500	8,600	8,100	8,700	8,200
SR 1375 (Lake Wheeler Rd)	S of SR 1393	5,500	11,800	11,500	14,600	14,800
SR 2751 (Hilltop Rd)	E of US 401	5,100	7,400	6,000	9,000	7,000
SR 2752 (Air Park Rd)	E of US 401	2,600	4,400	4,400	4,400	4,400

The traffic operations analysis completed for this project indicates that without improvement, future intersection delays and queueing are well beyond acceptable levels.

C. Categorical Exclusion Action Classification:

Type III

D. Proposed Improvements:

This project includes an alternative intersection design where U.S. 401 meets Hilltop Needmore Road and Airpark Road / Hilltop Road and a realignment of Hilltop Road to intersect with U.S. 401 at Lake Wheeler Road with a new RCI. The proposed design also includes:

- 10-foot-wide multi-use path on the east side of U.S. 401 (see **Figure 1**);
- 5-foot-wide sidewalk on the west side of U.S. 401 (see **Figure 1**);
- Leftover access to Dwight Rowland Road (see **Figure 2**);
- RCI where U.S. 401 meets Lake Wheeler Road / Hilltop Road Extension (see **Figure 3**);
- Cul-de-sac the existing Hilltop Road at Air Park Road; and construct new roadway connection from the existing Hilltop Road to U.S. 401 aligned across from Lake Wheeler Road (Hilltop Road Extension).

Figure 1. U.S. 401 Proposed Cross Section

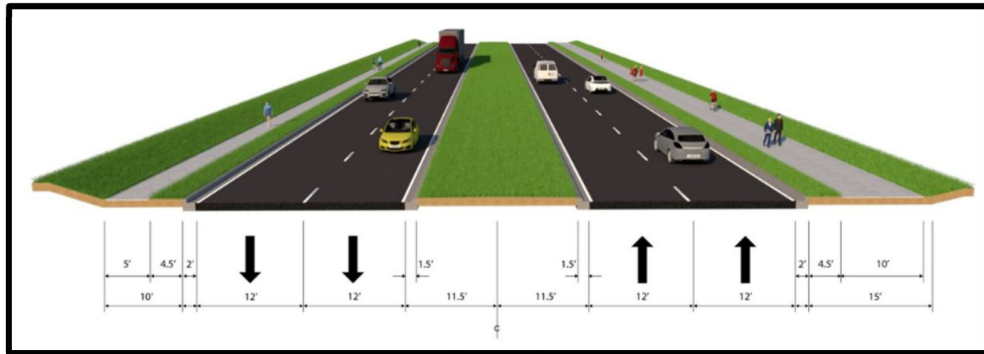


Figure 2. Dwight Roland Road Proposed Cross Section

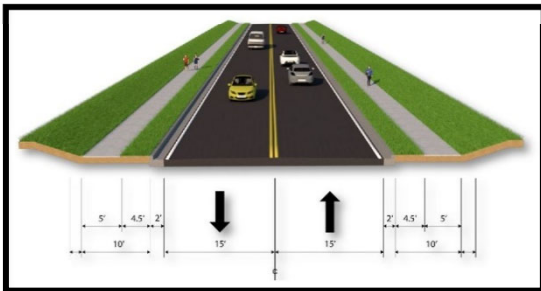
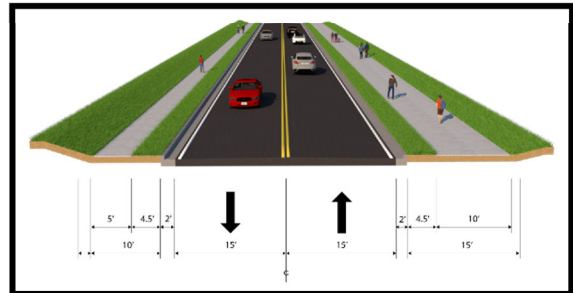


Figure 3. Lake Wheeler Road and Hilltop Road Extension Cross Section



E. Special Project Information:

Alternatives

Two alternatives were analyzed with an option for each alternative to have either a traditional or reverse reduced conflict intersection (RCI) at the intersection of U.S. 401 and Hilltop-Needmore Road/Airpark Road. Alternative 1 had graded shoulders, a depressed median, and 60 mph design speed. Alternative 2 had curb and gutter, a raised median, and 55 mph design speed.

Public Involvement

Both alternatives were presented at a public meeting on August 9, 2022, where 53 individuals attended. A total of 37 comments and 41 survey responses were received during the comment period (August 9th – September 9th 2022). The preferred alternative, based on the public comment period, is curb and gutter (Alternative 2) with a reverse RCI at the intersection of U.S. 401 and Hilltop-Needmore Road/Airpark Road. The preferred alternative is also supported by staff from Town of Fuquay Varina, Capital Area Metropolitan Planning Organization (CAMPO), Wake County, and NCDOT.

Integrated Mobility Division

NCDOT's Integrated Mobility Division reviewed the proposed design and recommended including multimodal accommodations with this project. Even though U.S. 401 is currently a high speed and high-volume corridor, local and regional plans have identified this area as needing multimodal connections. The proposed improvements include curb and gutter with bike and pedestrian accommodations comply with the PDN's Initial Complete Streets Review (11M1) findings/recommendations from October 1, 2021.

Archaeology and Historic Architecture

A survey required determination was made based on initial Historic Architecture and Archaeological Resources Review, dated August 2021. An archaeological survey, conducted between December 2021 and February 2022, indicated no archaeological resources eligible for the National Register present within the Area of Potential Effects (APE) (see attached). One potential Historic Architecture resource within the project's APE warranted a National Register eligibility evaluation, the Daniel Farm (WA1118). The Daniel Farm was previously recommended to the State Study List as part of a Wake County survey update in 2015 as a potentially eligible representation of a twentieth-century tobacco-related landscape. This property was determined not eligible for the National Register of Historic Places because the house has undergone numerous and significant alterations, and the farm no longer retains its association with agriculture. A concurrence letter from North Carolina State Historic Preservation Office, dated May 19, 2022, agreed with these findings (see attached).

Tribal Coordination

Correspondence was sent to Dr. Wenonah G. Haire, Executive Director of the Catawba Indian Nation Tribal Historic Preservation Office on August 9, 2021. A response was received on October 17, 2021, "The Catawba have no immediate concerns with regard to traditional cultural properties, sacred sites or Native American archaeological sites within the boundaries of the proposed project areas."

Streams and Wetlands

Anticipated impacts to streams and wetlands from the preferred alternative were quantified by offsetting the slope stake line by twenty-five feet along the entirety of the project limits. The total wetland impacts are 0.66 acres and total stream impacts are 3,067 linear feet (0.35 acres). Neuse River riparian buffers are present and impacts were assumed for the entirety of Zone 1 and Zone 2 along impacted streams. The majority of the estimated impact is anticipated along the new location of Hilltop Road. Detailed information about site streams and wetlands can be found in the October 2021 NRTR.

Hydraulics

A Hydraulic Preliminary Report (approved 12/01/21) evaluated the existing major hydraulic structures and any necessary new hydraulic structures needed for the new location part of the project. Below is a summary of the preliminary findings (Table 2). As final design progresses, the sizes and extensions may be refined further with coordination with the Division and Hydraulics Unit.

Table 2. Hydraulic Structures

Stream	Drainage Area (sq. mi.)	Q50 (cfs)	Q100 (cfs)	Existing Structure	Recommended Structure
UT to Terrible Creek at US 401	0.27	260	290	1@7'x5' RCBC	Retain & Extend 1 @ 7' x 5' RCBC
UT to Terrible Creek	0.18	190	210	None	1 @ 7' x 6' RCBC buried 1'
Terrible Creek at US 401	7.85	2600	3500	3@10'x8' RCBC	Retain & Supplement w/1 @ 10' x 8' RCBC

Wake County is a participant in the FEMA's National Flood Insurance Program. Based on the current information available from the NC Floodplain Mapping Program (FMP), the project corridor crosses the designated flood hazard zone of Terrible Creek. No adverse impacts to the flood zone are anticipated.

F. Project Impact Criteria Checklists:

F3. Type III Actions				
Proposed improvement(s) that fit Type III Actions (NCDOT-FHWA CE Programmatic Agreement, Appendix C) answer questions below.				
<ul style="list-style-type: none"> • <i>NCDOT will certify the Categorical Exclusion for FHWA approval.</i> • <i>If any questions are marked "Yes" then additional information will be required for those questions in Section G.</i> 				
p			Yes	No
1	Does the project involve potential effects to Threatened or Endangered species listed by the US Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS)?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Does the project result in impacts subject to the conditions of the Bald and Golden Eagle Protection Act (BGEPA)?		<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Does the project generate substantial controversy or public opposition, for any reason, following appropriate public involvement?		<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Does the project cause disproportionately high and adverse impacts relative to low-income and/or minority populations?		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Does the project involve substantial residential or commercial displacements or right of way acquisition?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	Does the project include a determination under Section 4(f)?		<input type="checkbox"/>	<input checked="" type="checkbox"/>
7	Is a project-level analysis for direct, indirect, or cumulative effects required based on the NCDOT community studies screening tool?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
8	Does the project impact anadromous fish spawning waters?		<input type="checkbox"/>	<input checked="" type="checkbox"/>
9	Does the project impact waters classified as Outstanding Resource Waters (ORW), High Quality Waters (HQW), Water Supply Watershed Critical Areas, 303(d)-listed impaired water bodies, buffer rules, or submerged aquatic vegetation (SAV)?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
10	Does the project impact Waters of the United States in any of the designated mountain trout streams?		<input type="checkbox"/>	<input checked="" type="checkbox"/>
11	Does the project require a US Army Corps of Engineers (USACE) Individual Section 404 Permit?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
12	Will the project require an easement from a Federal Energy Regulatory Commission (FERC) licensed facility?		<input type="checkbox"/>	<input checked="" type="checkbox"/>

13	Does the project include Section 106 of the National Historic Preservation Act (NHPA) effects determination other than a No Effect, including archaeological remains?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14	Does the project involve GeoEnvironmental Sites of Concerns such as gas stations, dry cleaners, landfills, etc.?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
15	Does the project require work encroaching and adversely effecting a regulatory floodway or work affecting the base floodplain (100-year flood) elevations of a water course or lake, pursuant to Executive Order 11988 and 23 CFR 650 subpart A?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
16	Is the project in a Coastal Area Management Act (CAMA) county and substantially affects the coastal zone and/or any Areas of Environmental Concern (AEC)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>Type III Actions (continued)</u>		Yes	No
17	Does the project require a US Coast Guard (USCG) permit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18	Does the project involve construction activities in, across, or adjacent to a designated Wild and Scenic River present within the project area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
19	Does the project involve Coastal Barrier Resource Act (CBRA) resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
20	Does the project impact federal lands (e.g. US Forest Service (USFS), US Fish and Wildlife Service (USFWS), etc.) or Tribal (Trust) Lands?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
21	Does the project involve any changes in access control or the modification or construction of an interchange on an interstate?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
22	Does the project have a permanent adverse effect on local traffic patterns or community cohesiveness?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
23	Will maintenance of traffic cause substantial disruption?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
24	Is the project inconsistent with the STIP, and where applicable, the Metropolitan Planning Organization's (MPO's) Transportation Improvement Program (TIP)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
25	Does the project require the acquisition of lands under the protection of Section 6(f) of the Land and Water Conservation Act, the Federal Aid in Fish Restoration Act, the Federal Aid in Wildlife Restoration Act, TVA, Tribal Lands, or other unique areas or special lands that were acquired in fee or easement with public-use money and have deed restrictions or covenants on the property?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
26	Does the project involve Federal Emergency Management Act (FEMA) buyout properties under the Hazard Mitigation Grant Program (HMGP)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
27	Is the project considered a Type I under the NCDOT's Noise Policy?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
28	Is there prime or important farmland soil impacted by this project as defined by the Farmland Protection Policy Act (FPPA)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
29	Is the project in an Air Quality non-attainment or maintenance area for a National Ambient Air Quality Standard (NAAQS)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
30	Are there other issues that arose during the project development process that affected the project decision?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

F. Additional Documentation as Required from Section F (ONLY for questions marked 'Yes'):**Checklist Item 1: Protected Species**

The USFWS lists the following federally protected species under the Endangered Species Act (ESA). For each species, a discussion of the presence or absence of habitat is included below along with the Biological Conclusion rendered based on survey results. The federally protected species were evaluated in the NRTR, dated October 2021. However, the species list on IPaC has been updated, and an aquatics report was received after the NRTR was finalized, see Table 3 below.

Table 3. ESA Federally Protected Species Listed¹ for Wake County

Scientific Name	Common Name	Federal Status ²	Habitat Present	Biological Conclusion
<i>Notropis mekistocholas</i>	Cape Fear shiner	E	No	No Effect
<i>Noturus furiosus</i>	Carolina madtom	E	Marginal	MA-NLAA
<i>Necturus lewisi</i>	Neuse River waterdog	T	Marginal	MA-NLAA
<i>Fusconaia masoni</i>	Atlantic pigtoe	T	Marginal	MA-NLAA
<i>Alasmidonta heterodon</i>	dwarf wedgemussel	E	Marginal	MA-NLAA
<i>Parvaspina steinstansana</i>	Tar River spiny mussel	E	No	No Effect
<i>Elliptio lanceolata</i>	yellow lance	T	Marginal	MA-NLAA
<i>Rhus michauxii</i>	Michaux's sumac	E	Yes	No Effect
<i>Perimyotis subflavus</i>	tricolored bat ³	PE	Yes	Not required
<i>Myotis septentrionalis</i>	Northern long-eared bat ⁴	E	Not Applicable	MA-LAA

¹ IPaC accessed on 1/24/23,

² E – Endangered, T – Threatened, PE – Proposed Endangered, MA-NLAA – May affect, not likely to adversely affect.

³ This was added as proposed endangered after the NRTR was completed. NCDOT will resolve Section 7 prior to project letting.

⁴ Northern long-eared bat is not listed in IPaC.

Based on an Aquatic Species Survey Report dated June 9, 2022, Atlantic pigtoe, yellow lance, dwarf wedgemussel, Neuse River waterdog, and Carolina madtom received a “may affect, not likely to adversely affect” designation. Biological conclusions of May Affect Not Likely to Adversely Affect will require informal consultation with the USFWS.

The USFWS has revised the previous programmatic biological opinion (PBO) in conjunction with the Federal Highway Administration (FHWA), the US Army Corps of Engineers (USACE), and NCDOT for the northern long-eared bat (NLEB) (*Myotis septentrionalis*) in eastern North Carolina (December 15, 2022). The Revised PBO covers the entire NCDOT program in Divisions 1-8, including all NCDOT projects and activities. Although this programmatic covers Divisions 1-8, NLEBs are currently only known to occur in 27 counties but may potentially occur in 3 additional counties within Divisions 1-8 (note: Division 5 is not located within any of these 30 counties). NCDOT, FHWA, and USACE have agreed to two Conservation Measures which will avoid/minimize mortality of NLEBs. These Conservation Measures only apply to the 30 current known/potential counties shown on Figure 2 of the Revised PBO and do not include any parts of Division 5. NCDOT, FHWA, and USACE have agreed to three Monitoring and Reporting Requirements to monitor the impacts of incidental take. All projects in Division 5 where planning has commenced after May 5, 2023 must adhere only to Monitoring and Reporting Requirement 3.

NCDOT staff and/or consultants must follow the NCDOT Bat Habitat Assessment SOP by filling out Bat Habitat Assessment Forms for projects that affect bridges and culverts. These forms will be submitted to NCDOT Biological Surveys Group (BSG) using the Survey 123 application or emailed to clknepp@ncdot.gov. BSG staff will enter the forms into its database even if no bat presence is detected. If NLEBs are detected at a bridge or culvert, the Service will be notified.

The programmatic determination for NLEB for the NCDOT program is May Affect, Likely to Adversely Affect. The PBO provides incidental take coverage for NLEB and will ensure compliance with Section 7 of the Endangered Species Act for ten years for all NCDOT projects with a federal nexus in Divisions 1-8. This level of incidental take is authorized from the effective date of a final listing determination through December 31, 2030.

Checklist Item 5: Residential or Commerical Displacements

The proposed project would result in partial impacts to 71 properties and 2 full property acquisitions. Most of the partial impacts are along US 401 for additional right-of-way necessary for the proposed improvements. The two full property acquisitions are both residential and located at:

- 5656 Cardinal Street
- 5726 Hilltop Road

Checklist Item 7: ICE

This project proposes intersection improvements of US 401 at SR 1393 Hilltop Needmore Road)/SR 2752 (Airpark Road), at SR 1375 (Lake Wheeler Road), and at SR 2573 (Dwight Rowland Road). In addition, a realignment of SR 2571 (Hilltop Road) on new location to intersect opposite SR 1375 (Lake Wheeler Road) is proposed. The ICE analysis rated several of the criteria as medium-high to low for potential indirect effects, with a total score of 12, indicating *Land Use Scenario Assessment Not Likely*.

At the time of this report, the proposed project is not anticipated to have notable indirect effects on development populations and patterns. These findings are based primarily on the low employment growth (0.6 percent), existing policies that manage anticipated growth, and the unlikeliness to adversely affect notable environmental features present in the FLUSA. Because few indirect impacts are anticipated, the contribution of this project to cumulative impacts resulting from past, present, and future actions is expected to be minimal.

Checklist Item 9: Water Resources

Streamside riparian zones within the study area are protected under provisions of the Neuse River Buffer Rules administered by the North Carolina Division of Water Resources (NCDWR). A summary of streams within the study area and buffer status are shown in Table 4.

Table 4. Status of Ponds and Streams in the Study Area

Map ID	Figure Number	Length (ft.) [^]	Classification	River Basin Buffer
Terrible Creek	3B/3D	1,424	Perennial	Subject
SA	3B/3E	2,240	Intermittent	Subject
SB	3C	126	Intermittent	Not Subject
SC	3C	533	Intermittent	Subject
SC	3C	1,067	Perennial	Subject
SD	3C	295	Intermittent	Not Subject
SE	3D	370	Perennial	Subject
SF	3D	110	Intermittent	Not Subject
SG	3D	93	Intermittent	Subject
SH	3D	113	Intermittent	Subject
SH	3D	1,654	Perennial	Subject
SI	3D	67	Intermittent	Not Subject
PA	3B			Subject
PB	3D			Subject
PC	3D			Not Subject
	Total	8,092	[^] Linear footage is approximate, not based on survey.	

Checklist Item 11: Waters of the US

This project will require an US Army Corps of Engineers (USACE) Individual Section 404 Permit based on initial wetland and stream impacts estimated at 0.88 acres, greater than the 0.5-acre threshold for Nationwide Permit 14-Linear Transportation. See tables 5 and 6 below for estimated wetland and stream impacts, all impact calculations are based on the preferred alternative and quantified by offsetting the slope stakes twenty-five feet.

Table 5. Estimated Stream Impacts

Map ID	NCSAM Rating	Estimated Impact (Acres)
Terrible Creek	High	0.064
SA	High	0.002
SB	High	0
SC	Low	0
SC	High	0.086
SD	High	0.023
SE	High	0.007
SF	Low	0.002
SG	Low	0
SH	High	0
SH	High	0.090
SI	Low	0.007

Table 6. Estimated Wetland Impacts

Map ID	NCWAM Classification	NCWAM Rating	Estimated Impact (Acres)
WA	Headwater Forest	Low	0
WB	Headwater Forest	Medium	0.036
WC	Bottomland Hardwood Forest	High	0
WD	Bottomland Hardwood Forest	Low	0.124
WE	Bottomland Hardwood Forest	Low	0
WF	Bottomland Hardwood Forest	Low	0
WG	Bottomland Hardwood Forest	High	0.244
WH	Bottomland Hardwood Forest	High	0.163
WI	Headwater Forest	Low	0
WJ	Headwater Forest	Low	0.011
WK	Bottomland Hardwood Forest	Low	0.048
WL	Bottomland Hardwood Forest	Low	0
WM	Bottomland Hardwood Forest	High	0
WN	Headwater Forest	Low	0.003
WO	Bottomland Hardwood Forest	High	0
WP	Bottomland Hardwood Forest	High	0.016
WQ	Headwater Forest	Medium	0
WR	Headwater Forest	Low	0.010
WS	Bottomland Hardwood Forest	High	0

Checklist Item 14: GeoEnvironmental Sites of Concern

A field investigation was performed on November 11, 2021, to identify geoenvironmental sites of concern. Seven (7) sites of concern were identified within the proposed Study Area. The results of this investigation anticipate low monetary and scheduling impacts resulting from these sites.

- Site #1, 401 Inspections & Alignment, is located at 10125 Fayetteville Road (U.S. 401)
- Site #2, Hilltop Citgo Gas Station, is located at 3400 N Main Street (U.S. 401)
- Site #3, Crossroads Ford, is located at 3127 N Main Street (U.S. 401)
- Site #4, Walter Residence LUST Site, is located at 3201 N Main Street (U.S. 401)
- Site #5, Heister Chevrolet, is located at 3100 N Main Street (U.S. 401)
- Site #6, Caliber Collision, is located at 3100 N Main Street (U.S. 401)
- Site #7, Inline Auto Sale, is located at 2900 N Main Street (U.S. 401)

Checklist Item 27: Noise

The source of this traffic noise information is *HL-0006 Traffic Noise Report, Improvements of US 401 at SR 1393/SR 2752, at SR 1375, and at SR 2573* (VHB, April 2023).

Traffic Noise Impacts

The maximum number of receptors in each project alternative predicted to become impacted by future traffic noise is shown in the table below. Table 7 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 as defined in the NCDOT Traffic Noise Policy.

Table 7. Predicted Traffic Noise Impacts by Alternative*

Traffic Noise Impacts				
Alternative	Residential (NAC B)	Places of Worship/Schools, Parks, etc. (NAC C & D)	Businesses (NAC E)	Total
Build 1	32	0	0	32

*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, including noise barriers, were considered for all impacted receptors in each alternative. Noise barriers include two basic types: earthen berms and noise walls. These structures act to diffract, absorb, and reflect highway traffic noise.

Noise Barriers

A noise barrier evaluation was conducted for this project utilizing the Traffic Noise Model (TNM 2.5) software developed by the FHWA. Table 8 summarizes the results of the evaluation.

Table 8. Preliminary Noise Barrier Evaluation Results

NSA	Noise Barrier Location	Length / Height ¹ (feet)	Square Footage	Number of Benefited Receptors	Square Feet per Benefited Receptor / Allowable Square Feet per Benefited Receptor	Preliminarily Feasible and Reasonable ("Likely") for Construction ²
NSA 5	NW 1 - Adjacent to US 401 southbound lanes, between 3101 N Main St and Lake Wheeler Drive.	699/8	5,943	4	1,486 / 1,500	Yes
NSA 9	NW 2 – Adjacent to US 401 southbound lanes, between Lake Wheeler Drive and 3201 N Main St	673/14	9,431	3	3,144 / 1,500	No ³

¹Average wall height. Actual wall height at any given location may be higher or lower.

²The likelihood of a barrier's construction is preliminary and subject to change, pending completion of final design and the public involvement process.

³Barrier is not reasonable due to the quantity per benefited receptor exceeding the allowable quantity per benefited receptor.

A traffic noise evaluation was performed that identified one (1) noise barrier that preliminarily meets feasibility and reasonableness criteria found in the NCDOT Traffic Noise Policy. A more detailed analysis will be completed during project final design. Noise barriers preliminarily 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 preliminarily were not considered feasible and reasonable may meet the established criteria and be recommended for construction. This evaluation was conducted in accordance with the highway traffic noise requirements of Title 23 CFR Part 772.

In accordance with NCDOT Traffic Noise 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). NCDOT strongly advocates the planning, design and construction of noise-compatible development and encourages its practice among planners, building officials, developers and others.

Checklist Item 28: Farmland

A preliminary screening of farmland conversion impacts in the project area has been completed (NRCS Form CPA-106, Part VI only) and a total score of 45 out of 160 points was calculated for the corridor project site. Since the total site assessment score does not exceed the 60-point threshold established by NRCS, farmland conversion impacts may be anticipated, but are not considered notable.

Checklist Item 29: NAAQS

According to EPA's Green Book data, Wake County is fully in attainment and/or maintenance for all particulates. CAMPO confirmed HL-0006 is included in the adopted MTP as projects A664 and A664a. A664 is the relocation of Hilltop Road and included in the MPO's adopted Travel Demand Model (TRMG2) as a first decade project. The A664a project represents the RCI treatments along US 401. CAMPO considers the RCI improvements as operational improvements and as such are not required to be part of CAMPO's model or AQ process.

G. Project Commitments (attach as Green Sheet to CE Form).

NCDOT PROJECT COMMITMENTS

STIP Project No.

HL-0006

HL-0006 proposes to reconfigure multiple intersections into a reduced conflict intersection (RCI) design along US 401 (N Main Street) in Fuquay Varina. The project also plans to realign SR 2571 (Hilltop Road) away from the existing intersection to across from SR 1375 (Lake Wheeler Road).

Wake County

Federal Aid Project No. N/A

WBS Element 49365.1.1

NCDOT Geotechnical Engineering Unit

The sites of concern identified in the GeoEnvironmental Phase I Report, dated December 24, 2021, should be reviewed by the GeoEnvironmental Section of the Geotechnical Engineering Unit once the Final Right of Way (ROW) plans are complete to determine if Phase II Investigations and ROW Recommendations are necessary prior to ROW being acquired.

NCDOT Division 5

NCDOT has agreed to include an automated gate for the cul-de-sac on Hilltop Road for Emergency Vehicle access only.

NCDOT has agreed to include depressed, mountable islands at the intersections of Hilltop Needmore/US 401/Air Park Rd. and Hilltop Ext./US 401/Lake Wheeler Rd intersections.

NCDOT Division 5 will coordinate with the Traffic Noise and Air Quality Group during the final design phase on any major alignment revisions.

NCDOT Division 5 will resolve Section 7 for tricolored bat prior to project letting.

Categorical Exclusion Approval:

STIP Project No.	<u>HL-0006</u>
WBS Element	<u>49365.1.1</u>
Federal Project No.	<u>N/A</u>

Prepared By:

5/16/2023

Date

DocuSigned by:

Jessica Luther

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Jessica Luther, EI Transportation Analyst
VHB

Prepared For:

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Reviewed By:

5/16/2023

Date

DocuSigned by:

Zahid Baloch

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Zahid Baloch, PE, Division 5 Senior Project Engineer
North Carolina Department of Transportation

Approved

Certified

- If classified as Type III Categorical Exclusion.

5/16/2023

Date

DocuSigned by:

Beth Quinn

47287EAE639A432...

Beth Quinn, Ph.D., PE, Division 5 Team Lead
North Carolina Department of Transportation

FHWA Approved: For Projects Certified by NCDOT (above), FHWA signature required.

5/18/2023

Date

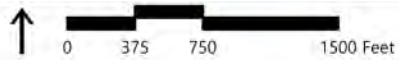
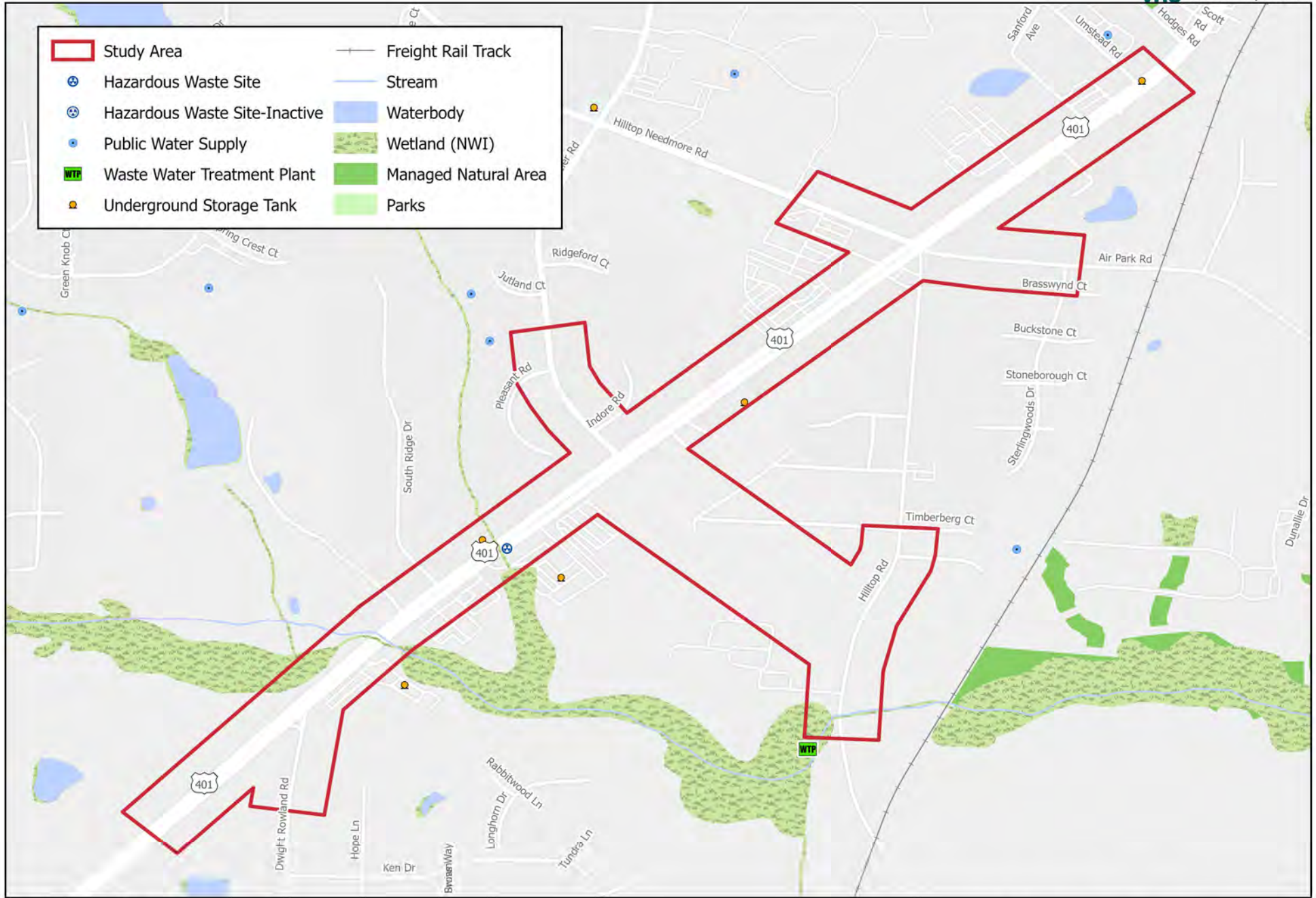
DocuSigned by:

Joseph P. Geigle

24DC2BFCA6934B0...

for John F. Sullivan, III, PE, Division Administrator
Federal Highway Administration

Note: Prior to ROW or Construction authorization, a consultation may be required (please see Section VII of the NCDOT-FHWA CE Programmatic Agreement for more details).



Environmental Features Map | Wake County, NC



HL-0006
NCDOT Division 5
 ESRI Aerial Basemap

PI Sta 48+25.78
 $\Delta = 4' 46" 22.0" (RT)$
 $D = 1' 08" 45.3"$
 $L = 416.50'$
 $T = 208.37'$
 $R = 5,000.00'$
 $SE = PC$
 $RO = SEE PLANS$

PI Sta 11+3.04
 $\Delta = 4' 29" 00.0" (RT)$
 $D = 2' 05" 05.4"$
 $L = 199.11'$
 $T = 104.41'$
 $R = 275.00'$
 $SE = SEE PLANS$
 $RO = SEE PLANS$

CULVERT #1
THREE BARRELS

	NORTH	EAST	ELEV.
CUL1	679301.14	2078609.08	269.92
CUL2	679294.37	2078602.55	270.01
CUL3	679293.76	2078601.95	270.11
CUL4	679286.90	2078595.90	270.52
CUL5	679286.25	2078594.81	270.44
CUL6	679279.01	2078588.05	270.26
CE1	679289.72	2078598.15	278.00
HW1	679290.14	2078598.20	279.80
CUL7	679233.31	2078680.76	269.83
CUL8	679226.35	2078674.06	269.73
CUL9	679225.60	2078673.48	270.06
CUL10	679218.67	2078666.76	269.92
CUL11	679217.96	2078666.11	269.75
CUL12	679210.85	2078659.45	269.75
CE2	679222.07	2078669.93	277.83
HW2	679222.98	2078670.86	279.88

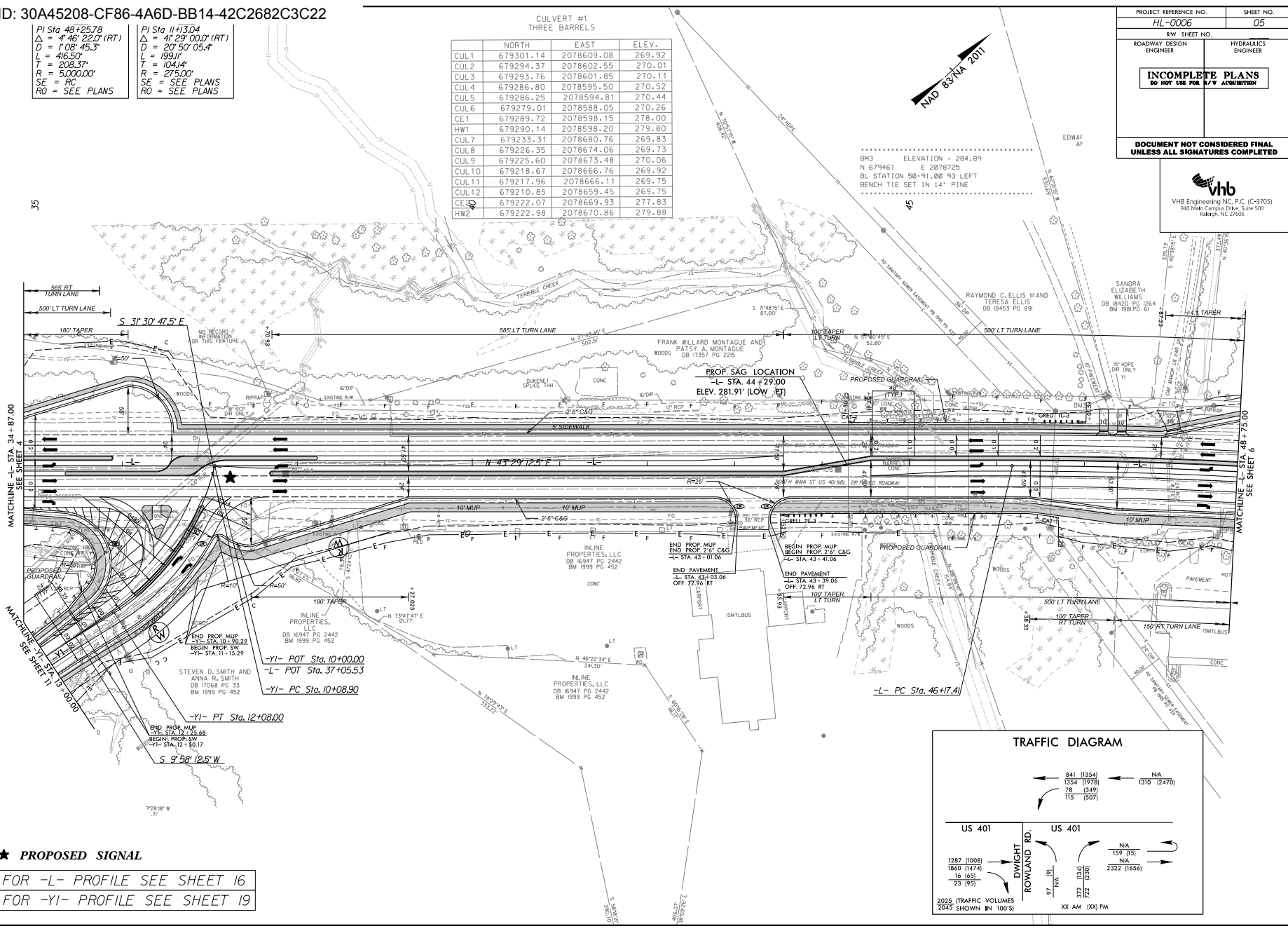
PROJECT REFERENCE NO. HL-0006	SHEET NO. 05
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

INCOMPLETE PLANS
DO NOT USE FOR A/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

vhb
VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

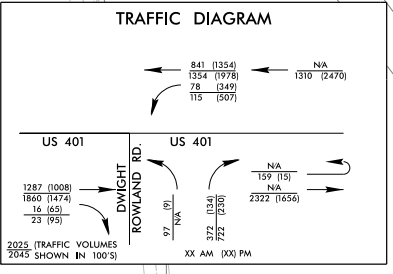
REVISIONS
 B.A.T.
 10/20/23
 H:\2023\dl_psh_05.dgn



PROP SAG LOCATION
-L- STA. 44+29.00
ELEV. 281.91' (LOW PT)

-YI- POT Sta. 10+00.00
 -L- POT Sta. 37+05.53
 -YI- PC Sta. 10+08.90

-YI- PT Sta. 12+08.00



★ PROPOSED SIGNAL
 FOR -L- PROFILE SEE SHEET 16
 FOR -YI- PROFILE SEE SHEET 19

PROJECT REFERENCE NO. HL-0006	SHEET NO. 07
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

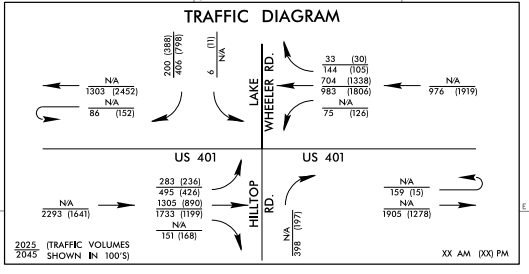
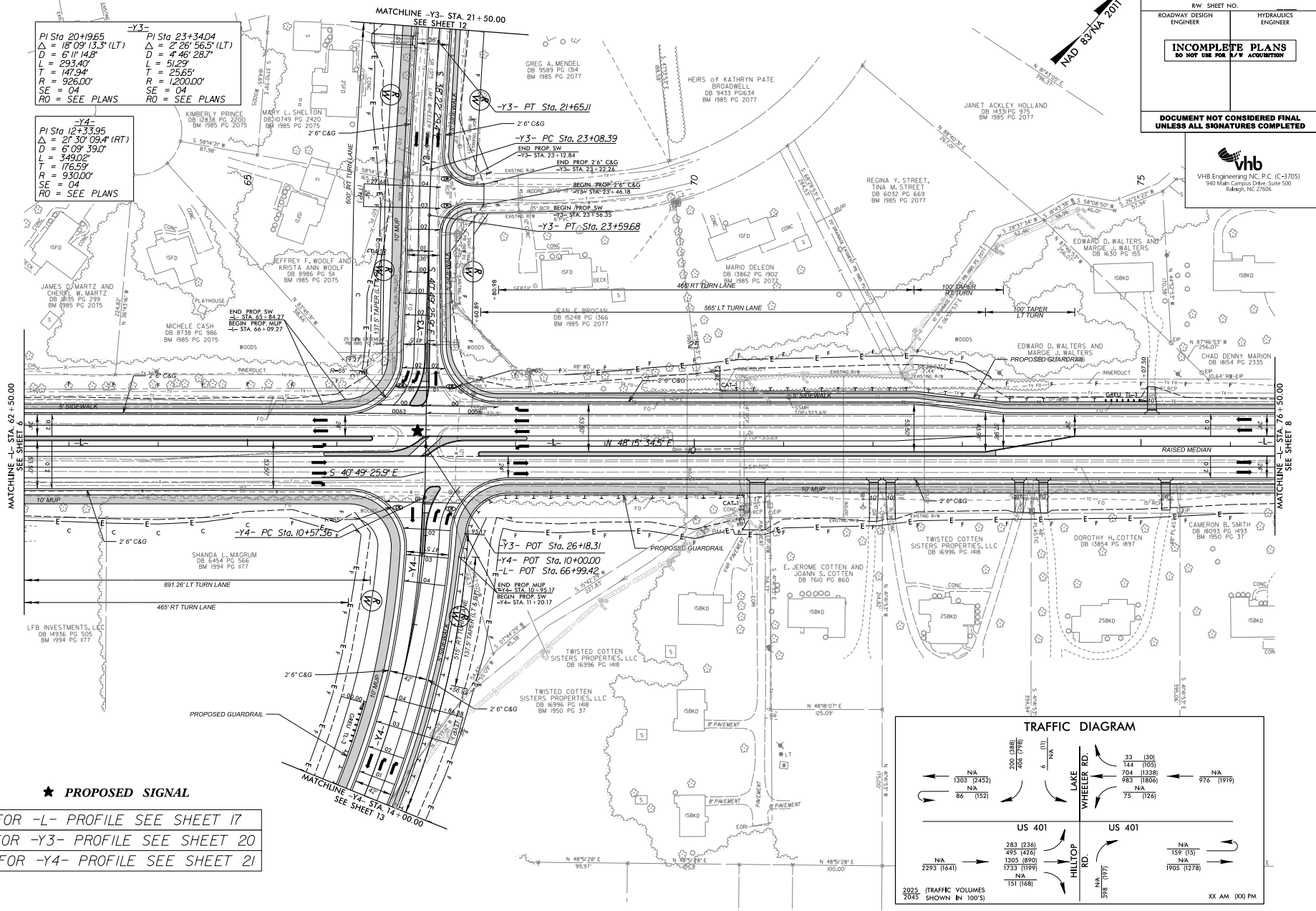


-Y3-

PI Sta 20+96.5	PI Sta 23+34.04
$\Delta = 18^{\circ}09'13.3"$ (LT)	$\Delta = 2^{\circ}26'56.5"$ (LT)
D = 611' 14.8"	D = 4' 46" 28.7"
L = 293.40'	L = 51.29'
T = 147.94'	T = 25.65'
R = 926.00'	R = 120000'
SE = 04	SE = 04
RO = SEE PLANS	RO = SEE PLANS

-Y4-

PI Sta 12+33.95
$\Delta = 21^{\circ}30'09.4"$ (RT)
D = 619' 39.0"
L = 349.02'
T = 176.59'
R = 930.00'
SE = 04
RO = SEE PLANS



★ PROPOSED SIGNAL

FOR -L- PROFILE SEE SHEET 17
 FOR -Y3- PROFILE SEE SHEET 20
 FOR -Y4- PROFILE SEE SHEET 21

REVISIONS

19-0003
19-0006-dsh.pah-07.dgn

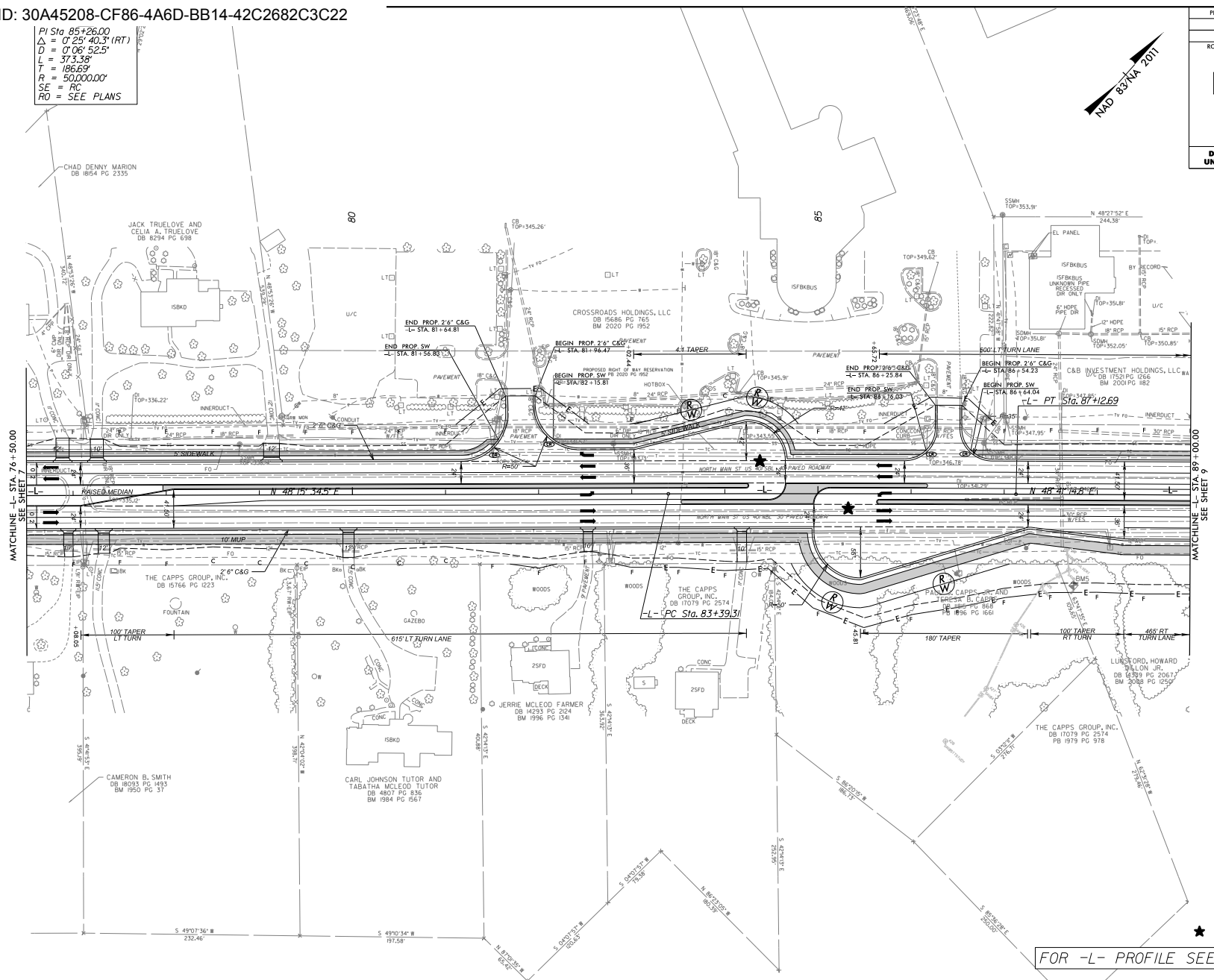
PROJECT REFERENCE NO. HL-0006	SHEET NO. 08
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR B/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



$PI Sta. 85+26.00$
 $\Delta = 0'25'40.3" (RT)$
 $D = 0'06'52.5"$
 $L = 373.38'$
 $T = 186.69'$
 $R = 50,000.00'$
 $SE = RC$
 $RO = SEE PLANS$



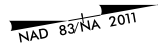
REVISIONS
 B.A.T.



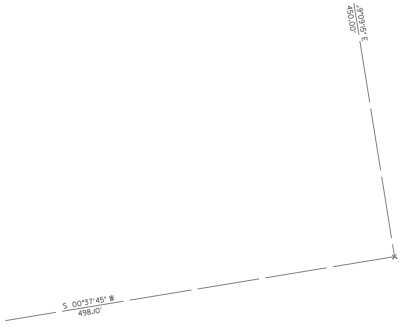
10/2023
 H:\2023\dl.psh_08.dgn

★ PROPOSED SIGNAL
 FOR -L- PROFILE SEE SHEET 17 & 18

PROJECT REFERENCE NO. HL-0006	SHEET NO. 11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

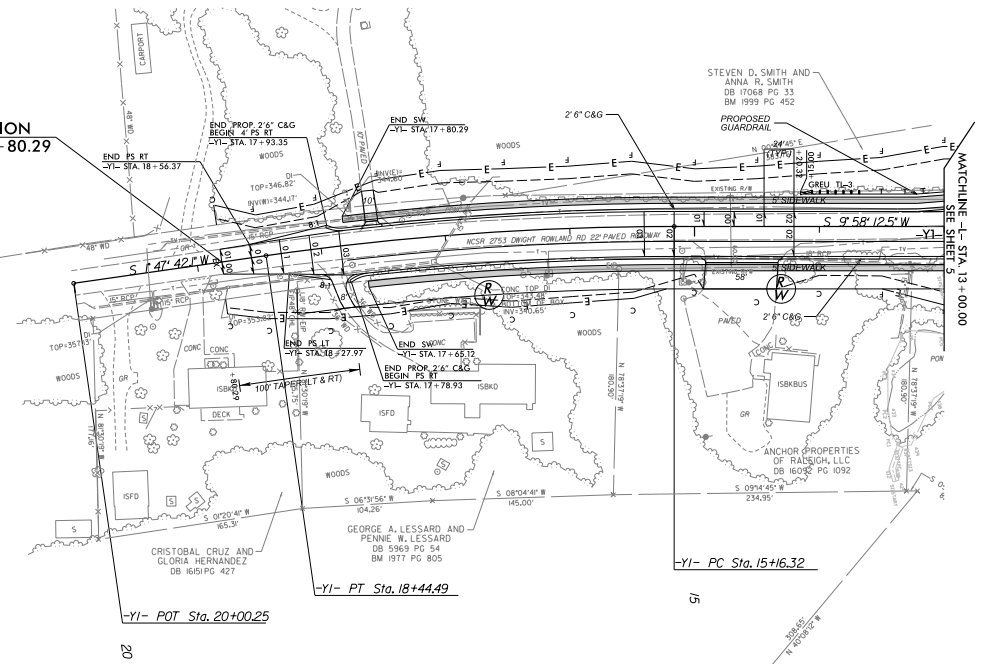


REVISIONS



S 00°31'45" W
498.00'

END CONSTRUCTION
-YI- POT STA. 18+80.29



20

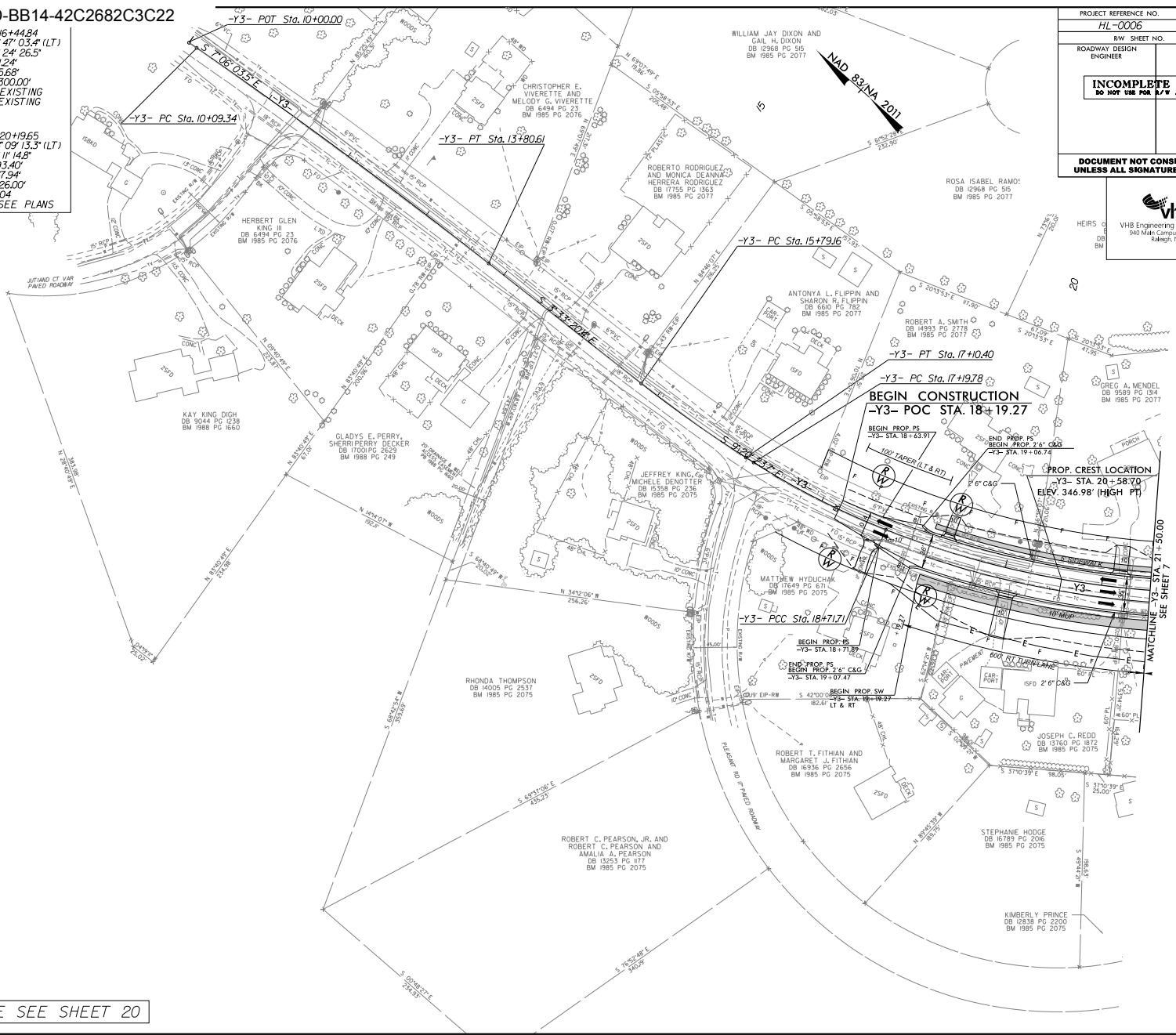
-YI-
 PI Sta. 16+80.68
 $\Delta = 3' 10'' 30.4''$ (LT)
 $D = 2' 29'' 28.0''$
 $L = 328.17'$
 $T = 164.36'$
 $R = 2,300.00'$
 SEE PLANS PROFILE SEE SHEET 19

19-2023
HL-0006-djy.psh-11.dgn
11/15/2023

PROJECT NUMBER NO.	SHEET NO.
HL-0006	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

vhb
VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PI Sta 11+95.03 Δ = 3' 32" 43.1" (RT) D = 0' 57" 17.7" L = 371.26' T = 185.69' R = 6,000.00' SE = EXISTING RO = EXISTING	PI Sta 16+44.84 Δ = 5' 47" 03.4" (LT) D = 4' 24" 26.5" L = 131.24' T = 65.28' R = 1,300.00' SE = EXISTING RO = EXISTING
PI Sta 17+95.98 Δ = 10' 52" 52.9" (LT) D = 7' 09" 43.1" L = 151.93' T = 76.20' R = 800.00' SE = EXISTING RO = EXISTING	PI Sta 20+19.65 Δ = 8' 09" 13.3" (LT) D = 6' 11" 14.8" L = 293.40' T = 147.94' R = 926.00' SE = 04 RO = SEE PLANS



REVISIONS

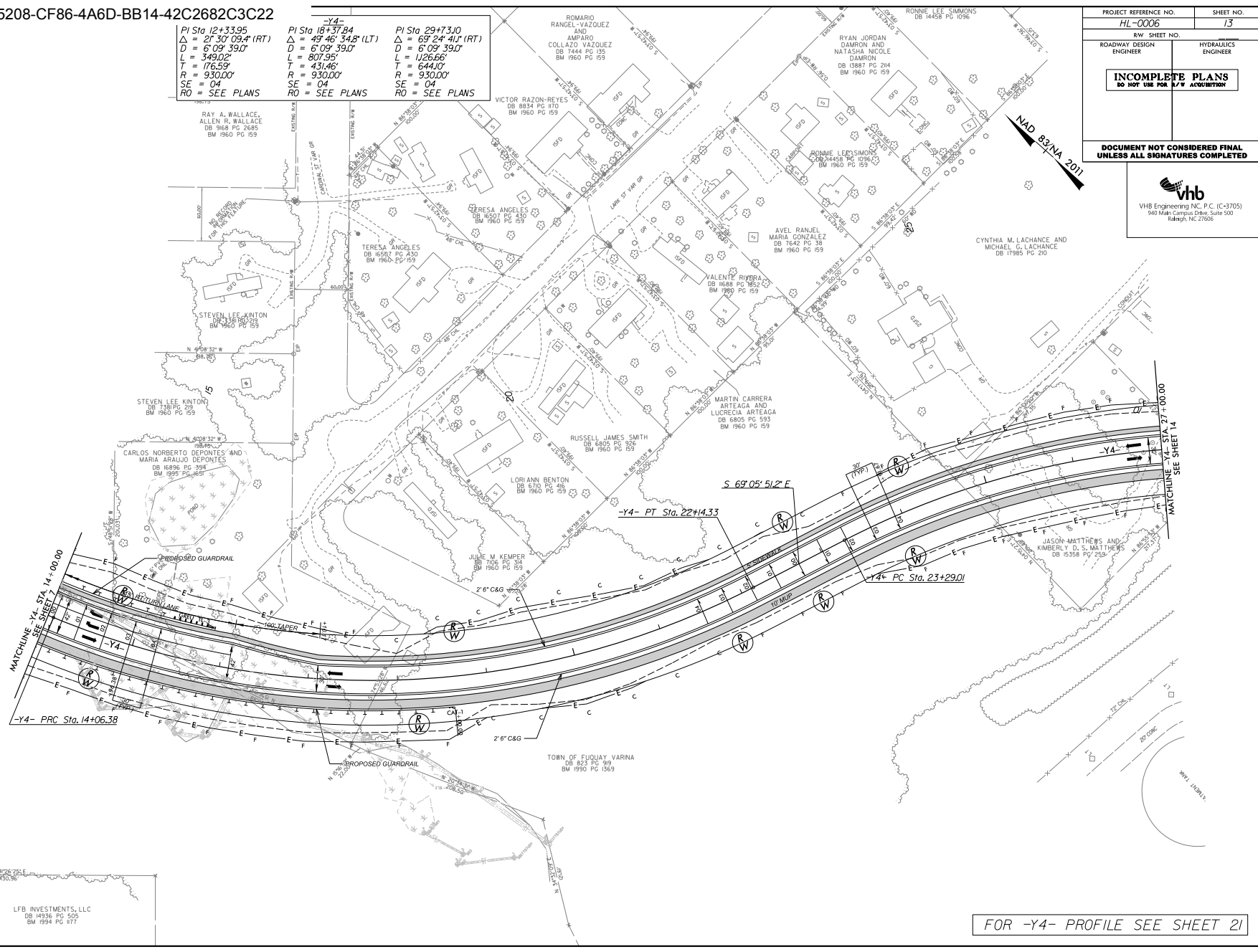
FOR -Y3- PROFILE SEE SHEET 20

10/20/23
HL-0006-rdy.psh-12.dgn
12/20/23

PROJECT REFERENCE NO. HL-0006	SHEET NO. 13
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

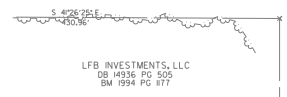


-Y4-		
PI Sta 12+33.95 Δ = 21° 30' 09.4" (RT) D = 6' 09" 39.0" L = 349.00' T = 176.59' R = 930.00' SE = 04 RO = SEE PLANS	PI Sta 18+37.84 Δ = 49° 46' 34.8" (LT) D = 6' 09" 39.0" L = 807.95' T = 431.46' R = 930.00' SE = 04 RO = SEE PLANS	PI Sta 29+73.10 Δ = 69° 24' 41" (RT) D = 6' 09" 39.0" L = 1,126.66' T = 644.10' R = 930.00' SE = 04 RO = SEE PLANS



REVISIONS

1/9/2023
HL-0006-rdy_psh_13.dgn
13



LFB INVESTMENTS, LLC
DB 14936 PG 505
BM 1994 PG 177

FOR -Y4- PROFILE SEE SHEET 21

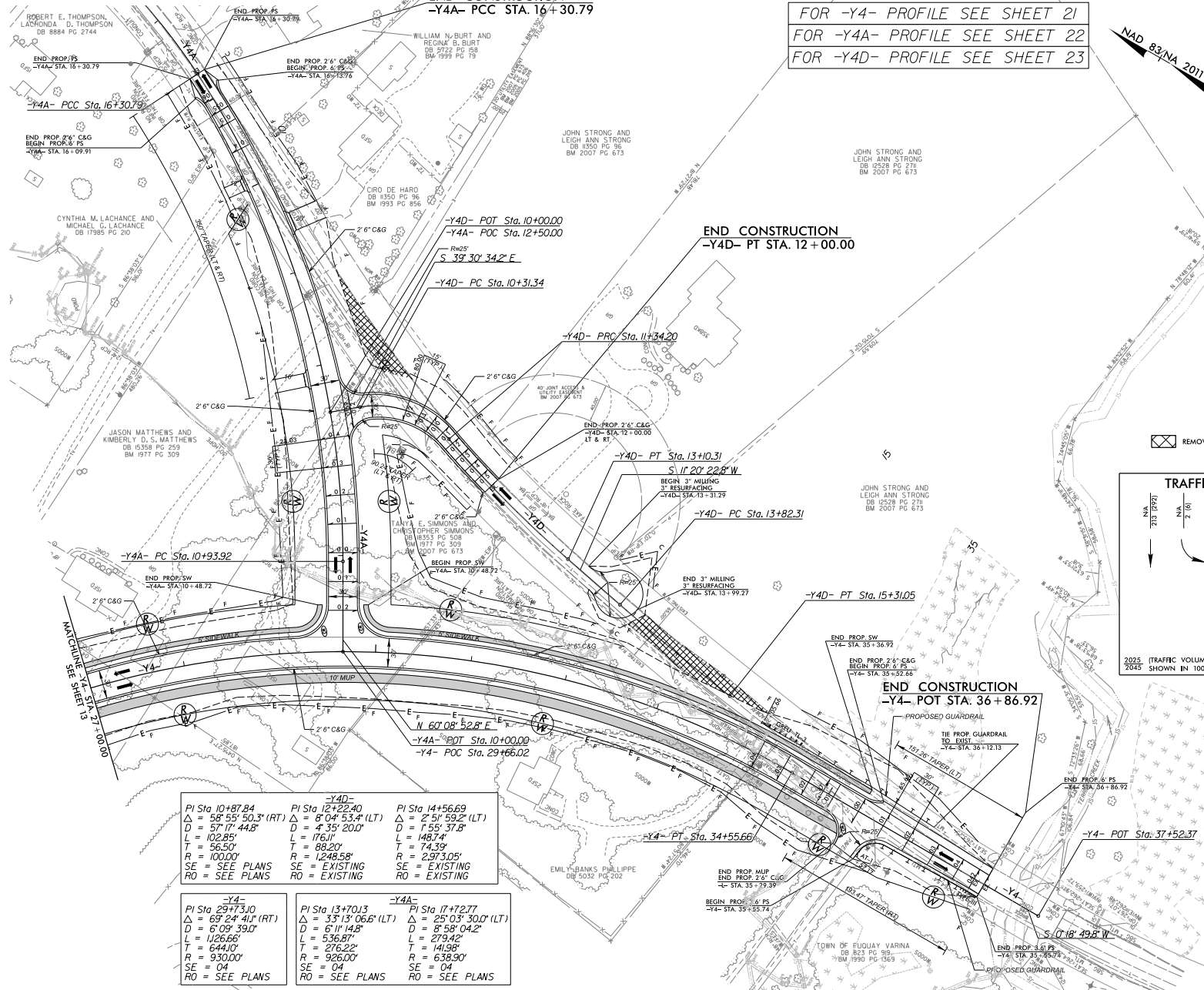
END CONSTRUCTION
-Y4A- PCC STA. 16+30.79

FOR -Y4- PROFILE SEE SHEET 21
FOR -Y4A- PROFILE SEE SHEET 22
FOR -Y4D- PROFILE SEE SHEET 23

PROJECT REFERENCE NO. HL-0006	SHEET NO. 14
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

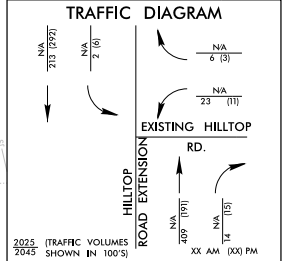


NAD 83/NA 2011



END CONSTRUCTION
-Y4D- PT STA. 12+00.00

REMOVAL OF EXISTING PAVEMENT



-Y4D-		
PI Sta 10+87.84	PI Sta 12+22.40	PI Sta 14+56.69
$\Delta = 58^{\circ}55'50.3"$ (RT)	$\Delta = 8^{\circ}04'53.4"$ (LT)	$\Delta = 2^{\circ}51'59.2"$ (LT)
D = 57'17.448'	D = 4'35'20.0'	D = 1'55'37.8'
T = 102.85'	L = 176.1'	L = 148.74'
R = 56.50'	R = 88.20'	R = 74.39'
SE = 100.00'	SE = 1248.58'	SE = 237.305'
RO = SEE PLANS	RO = EXISTING	RO = EXISTING

-Y4-		
PI Sta 29+73.0	PI Sta 13+70.13	PI Sta 17+72.77
$\Delta = 63^{\circ}24'41.1"$ (RT)	$\Delta = 13^{\circ}13'06.6"$ (LT)	$\Delta = 25^{\circ}03'30.0"$ (LT)
D = 6'05'39.0'	D = 6'11'14.8'	D = 8'58'04.2'
L = 1126.66'	L = 536.87'	L = 279.42'
T = 644.10'	T = 276.22'	T = 141.98'
R = 930.00'	R = 926.00'	R = 638.90'
SE = 04'	SE = 04'	SE = 04'
RO = SEE PLANS	RO = SEE PLANS	RO = SEE PLANS

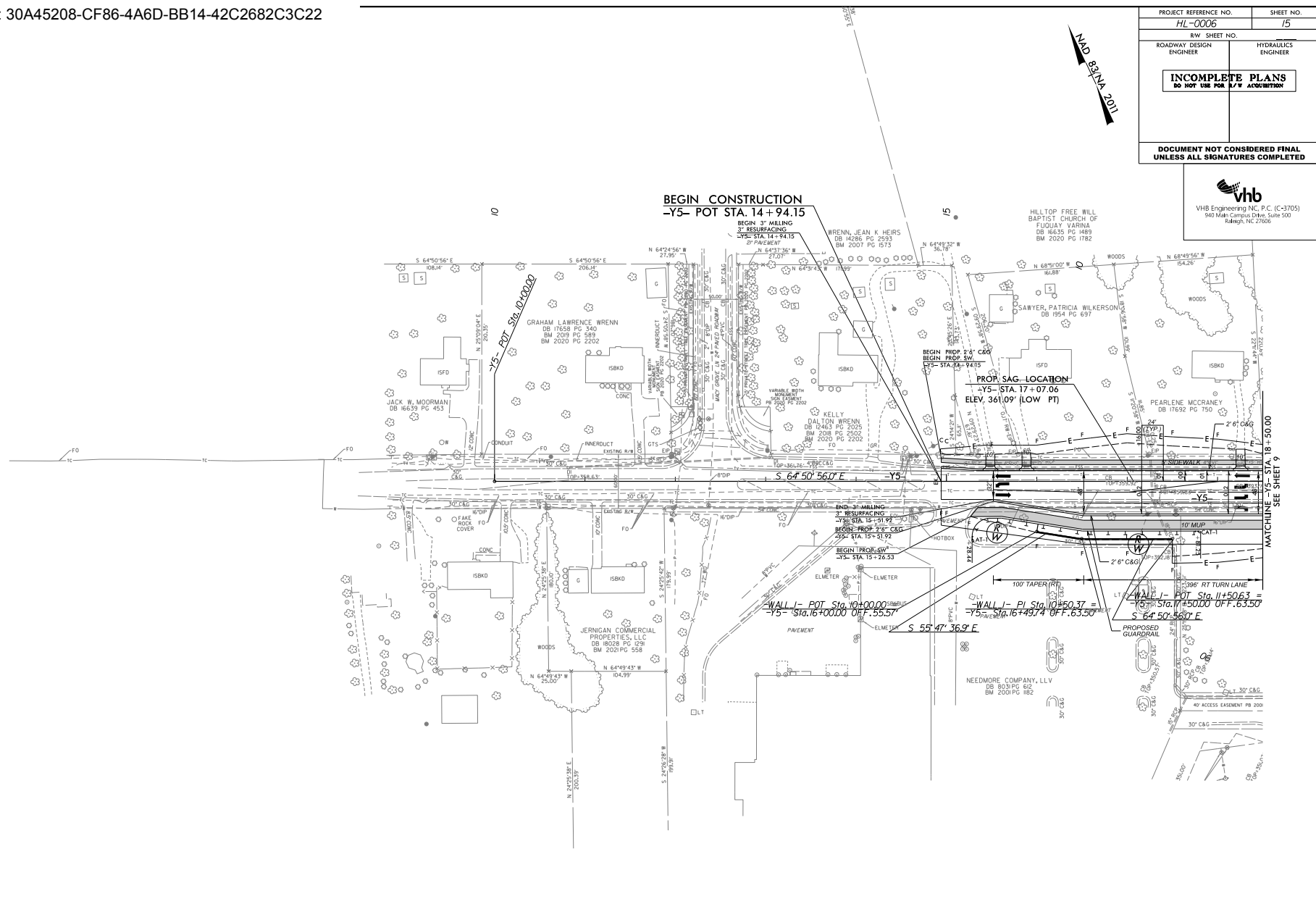
REVISIONS

10/20/23
HL-0006-dy.psh-14.dgn
14/08/2023

PROJECT REFERENCE NO.	SHEET NO.
HL-0006	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



REVISIONS



10/2023
HL-0006-rdy_psh_15.dgn
15/06/2023

FOR -Y5- PROFILE SEE SHEET 24



**NO NATIONAL REGISTER OF HISTORIC PLACES
ELIGIBLE OR LISTED ARCHAEOLOGICAL SITES
PRESENT 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 Team.

PROJECT INFORMATION

Project No: **HL-0006** *County:* Wake
WBS No: 49365.1.1 *Document:* Federal CE
F.A. No: n/a *Funding:* State Federal

Federal Permit Required? Yes No *Permit Type:* COE

Project Description: This North Carolina Department of Transportation (NCDOT) Division 5 project consists of improvements to intersections along US 401 at SR 1393 (Hilltop Needmore Road) and SR 2751 (Hilltop Road) at SR 2752 (Air Park Road) and SR 1375 (Lake Wheeler Road) in Fuquay Varina, Wake County, North Carolina. The NCDOT has established an archaeological Area of Potential Effects (APE) that encompasses approximately 200 acres, inclusive of existing roadways and development.

SUMMARY OF ARCHAEOLOGICAL FINDINGS

An archaeological survey and evaluation APE for the proposed transportation improvements was conducted between December 2021 and February 2022 by Melissa McKay, Terri Russ, Becky Sponseller, Kristin Doshier, and Connor Seaton of Terracon Consultants, Inc. (Terracon). During the course of the survey, three new archaeological sites, 31WA2450–2452, were recorded and one previously recorded archaeological site, 31WA955, was revisited within the APE. None of the sites are recommended Eligible for the *National Register of Historic Places* (NRHP). A portion of previously recorded site 31WA950 is mapped within the APE; this site was not relocated during the current investigation. It is recommended that the proposed project be allowed to proceed without concern for impacts to significant cultural resources.

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

- There are no National Register listed ARCHAEOLOGICAL SITES within the project's area of potential effects. (Attach any notes or documents as needed.)
- No subsurface archaeological investigations were 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.

21-08-0003

SUPPORT DOCUMENTATION

See attached: Map(s) Previous Survey Info Photos Correspondence

Other:

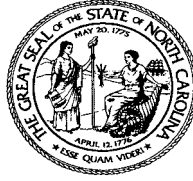
Signed:

Scott Halvorsen

2/28/2022

NCDOT ARCHAEOLOGIST

Date



**North Carolina Department of Natural and Cultural Resources
State Historic Preservation Office**

Ramona M. Bartos, Administrator

Governor Roy Cooper
Secretary D. Reid Wilson

Office of Archives and History
Deputy Secretary, Darin J. Waters, Ph.D.

May 19, 2022

MEMORANDUM

TO: Shelby Reap, Architectural Historian
NCDOT/EAU/Historic Architecture Group

sreap@ncdot.gov

FROM: Ramona M. Bartos, Deputy
State Historic Preservation Officer

RMB for Ramona M. Bartos

SUBJECT: Historic Structure Survey Report, HL-0006, Intersection improvements for U.S. 401 and SR2752, SR 1375, SR 1393, and SR 2752, Wake County, ER 22-1386

Thank you for your May 9, 2022, letter transmitting the above-referenced report. Having reviewed the report, we concur that the Daniel Farm (WA1118) is not eligible for the National Register of Historic Places for the reasons cited in the report. The house has undergone numerous and significant alterations, and the farm no longer retains its association with agriculture.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your continued cooperation and consideration. If you have questions concerning the above comments, please contact Renee Gledhill-Earley, environmental review coordinator, at 919-814-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above-referenced tracking number.

cc: Mary Pope Furr, NCDOT

mpfurr@ncdot.gov

21-08-0003



HISTORIC ARCHITECTURE AND LANDSCAPES NO HISTORIC PROPERTIES PRESENT FORM

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

PROJECT INFORMATION

Project No:	HL-0006	County:	Wake
WBS No.:	49365.1.1	Document Type:	FCE
Fed. Aid No:	HSIP-1002(056)	Funding:	<input type="checkbox"/> State <input checked="" type="checkbox"/> Federal
Federal Permit(s):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Permit Type(s):	n/a
<u>Project Description:</u> US 401 at SR 1393 (Hilltop-Needmore Rd)/SR 2751 (Hilltop Rd)/SR 2752 (Airpark Rd) intersection and SR 1375 (Lake Wheeler Rd) intersection in Fuquay-Varina. Convert to reduced conflict intersections and realign SR 2751 to intersect opposite of SR 1375.			

Description of review activities, field surveys, results, and conclusions:

On August 18, 2021 the Area of Potential Effects (APE) for this project was screened using HPOGIS Web resulting in a Survey Required. On May 9, 2022, a Comprehensive Eligibility Report was submitted to NCHPO. The report recommended that the Daniel Farm (WA1118) is not eligible for National Register listing. In a letter dated May 19, 2022, NCHPO concurred with that recommendation. No historic properties are present in the APE of this project.

SUPPORT DOCUMENTATION

Map(s) Previous Survey Info. Photos Correspondence Design Plans

FINDING BY NCDOT ARCHITECTURAL HISTORIAN

Historic Architecture and Landscapes – NO HISTORIC PROPERTIES PRESENT

Shelby Reap

May 19, 202

NCDOT Architectural Historian

Date