



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

February 16, 2022

U. S. Army Corps of Engineers
Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, NC 27587

ATTN: Mr. Eric Alsmeyer
NCDOT Coordinator

Subject: **Application for Section 404 Regional General Permit 50 and 401 Certification**
for the Replacement of Bridges 57 and 59 on US 29/601 (Concord Parkway) over
Irish Buffalo Creek in Cabarrus County, Division 10,
TIP B-5808. Debit \$570 from WBS 45762.1.1.

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes to replace bridge numbers 57 and 59 on US 29/601 with a new bridge on existing alignment. Traffic will be staged/phased on the existing and new bridges during construction.

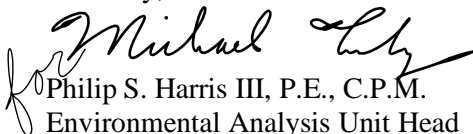
As a result of replacing the existing bridges, there will be 265 linear feet of permanent impact from stream bank stabilization, and 275 linear feet (0.05 acre) of impervious dikes for dewatering for the installation of streambank stabilization. Note that 265 linear feet of the above 275 linear feet of temporary impact is within the permanent stream bank stabilization impact.

Please see enclosed copies of the Pre-Construction Notification (PCN), which includes the following attachments: pre-filing meeting request form, 4(d) memo, sunflower survey memo, no archaeological survey required form, no historic architecture required form, Catawba response letter, Stormwater Management Plan, and Permit Drawings.

This project calls for a letting date of September 20, 2022, and a review date of August 2, 2022.

A copy of this permit application and its distribution list will be posted on the NCDOT Website at: <http://connect.ncdot.gov/resources/Environmental>. If you have any questions or need additional information, please contact Erin Cheely at ekcheely@ncdot.gov.

Sincerely,


Philip S. Harris III, P.E., C.P.M.
Environmental Analysis Unit Head

ec: NCDOT Permit Application Standard Distribution List

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ANALYSIS UNIT
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

Telephone: (919) 707-6000
Customer Service: 1-877-368-4968
Website: www.ncdot.gov

Location:
1000 BIRCH RIDGE DRIVE
RALEIGH NC 27610



Pre-Construction Notification (PCN) Form

For Nationwide Permits and Regional General Permits
(along with corresponding Water Quality Certifications)

December 6, 2021 Ver 4.2

Please note: fields marked with a red asterisk * below are required. You will not be able to submit the form until all mandatory questions are answered.

Also, if at any point you wish to print a copy of the E-PCN, all you need to do is right-click on the document and you can print a copy of the form.

Below is a link to the online help file.

<https://edocs.deq.nc.gov/WaterResources/0/edoc/624704/PCN%20Help%20File%202018-1-30.pdf>

A. Processing Information



County (or Counties) where the project is located: *

Cabarrus

Is this a NCDMS Project *

☐ Yes ☒ No

Click Yes, only if NCDMS is the applicant or co-applicant.

Is this project a public transportation project? *

☒ Yes ☐ No

This is any publicly funded by municipal, state or federal funds road, rail, airport transportation project.

Is this a NCDOT Project? *

☒ Yes ☐ No

(NCDOT only) T.I.P. or state project number:

B-5808

WBS # *

45762.1.1

(for NCDOT use only)

1a. Type(s) of approval sought from the Corps: *

- ☒ Section 404 Permit (wetlands, streams and waters, Clean Water Act)
☐ Section 10 Permit (navigable waters, tidal waters, Rivers and Harbors Act)

Has this PCN previously been submitted? *

☐ Yes
☒ No

1b. What type(s) of permit(s) do you wish to seek authorization? *

- ☐ Nationwide Permit (NWP)
☒ Regional General Permit (RGP)
☐ Standard (IP)

1c. Has the NWP or GP number been verified by the Corps? *

☐ Yes ☒ No

Regional General Permit (RGP) Number:

201902350 - Work associated with bridge construction, widening, replacement, and interchanges

RGP Numbers (for multiple RGPs):

List all RGP numbers you are applying for not on the drop down list.

1d. Type(s) of approval sought from the DWR: *

check all that apply

- | | |
|---|--|
| <input checked="" type="checkbox"/> 401 Water Quality Certification - Regular | <input type="checkbox"/> 401 Water Quality Certification - Express |
| <input type="checkbox"/> Non-404 Jurisdictional General Permit | <input type="checkbox"/> Riparian Buffer Authorization |
| <input type="checkbox"/> Individual 401 Water Quality Certification | |

1e. Is this notification solely for the record because written approval is not required?

*

For the record only for DWR 401 Certification:

☐ Yes ☒ No

For the record only for Corps Permit:

☐ Yes ☒ No

1f. Is this an after-the-fact permit application? *

☐ Yes ☒ No

1g. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts?

If so, attach the acceptance letter from mitigation bank or in-lieu fee program.

☐ Yes ☒ No

Acceptance Letter Attachment

Click the upload button or drag and drop files here to attach document

FILE TYPE MUST BE PDF

1h. Is the project located in any of NC's twenty coastal counties? *

☐ Yes ☒ No

1j. Is the project located in a designated trout watershed? *

☐ Yes ☒ No

Link to trout information: <http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/Trout.aspx>

B. Applicant Information



1a. Who is the Primary Contact? *

NCDOT

1b. Primary Contact Email: *

ekcheely@ncdot.gov

1c. Primary Contact Phone: *

(xxx)xxx-xxxx

(919)707-6108

1d. Who is applying for the permit? *

☒ Owner
(Check all that apply)

☐ Applicant (other than owner)

1e. Is there an Agent/Consultant for this project? *

☐ Yes ☒ No

2. Owner Information

2a. Name(s) on recorded deed: *

NC Department of Transportation

2b. Deed book and page no.:

2c. Contact Person:

(for Corporations)

2d. Address *

Street Address

1598 Mail Service Center

Address Line 2

City

Raleigh

Postal / Zip Code

27699

State / Province / Region

NC

Country

USA

2e. Telephone Number: *

(xxx)xxx-xxxx

(919)707-6108

2f. Fax Number:

(xxx)xxx-xxxx

2g. Email Address: *

pharris@ncdot.gov

C. Project Information and Prior Project History



1. Project Information



1a. Name of project: *

B-5808 - Replacement of Bridges 57 and 59 on US 29/601 (Concord Parkway) over Irish Buffalo Creek

1b. Subdivision name:

(if appropriate)

1c. Nearest municipality / town: *

Concord

2. Project Identification

2a. Property Identification Number:

(tax PIN or parcel ID)

2b. Property size:

(in acres)

2c. Project Address

Street Address

Address Line 2

City

State / Province / Region

Postal / Zip Code

Country

2d. Site coordinates in decimal degrees

Please collect site coordinates in decimal degrees. Use between 4-6 digits (unless you are using a survey-grade GPS device) after the decimal place as appropriate, based on how the location was determined. (For example, most mobile phones with GPS provide locational precision in decimal degrees to map coordinates to 5 or 6 digits after the decimal place.)

Latitude: *

35.415111

ex: 34.208504

Longitude: *

-80.613390

-77.796371

3. Surface Waters

3a. Name of the nearest body of water to proposed project: *

Irish Buffalo Creek

3b. Water Resources Classification of nearest receiving water: *

C

[Surface Water Lookup](#)

3c. What river basin(s) is your project located in? *

Yadkin-PeeDee

3d. Please provide the 12-digit HUC in which the project is located. *

030401050203

[River Basin Lookup](#)

4. Project Description and History

4a. Describe the existing conditions on the site and the general land use in the vicinity of the project at the time of this application: *

Surrounding land use is primarily commercial and residential with small amounts of patchy forested areas.

4b. Have Corps permits or DWR certifications been obtained for this project (including all prior phases) in the past? *

☐ Yes ☒ No ☐ Unknown

4f. List the total estimated acreage of all existing wetlands on the property:

0

4g. List the total estimated linear feet of all existing streams on the property:

(intermittent and perennial)

916

4h. Explain the purpose of the proposed project: *

The purpose of this project is to replace two structurally deficient and functionally obsolete bridges. NCDOT Bridge Management Unit records indicate Bridge No. 57 and Bridge No. 59 have sufficiency ratings of 48.27 and 49.73 out of a possible 100 for a new structure (respectively). Bridge No. 57 and Bridge No. 59 are considered structurally deficient due to a substructure condition appraisal of 4 out of 9 according to Federal Highway Administration (FHWA) standards. The two bridges also meet the criteria for functionally obsolete due to a deck geometry appraisal of 2 out of 9. Both bridges are approaching the end of their useful lives.

4i. Describe the overall project in detail, including indirect impacts and the type of equipment to be used: *

The proposed project will replace the two existing 172 foot-long three-span bridges with a single 190' long three-span bridge on the same alignment. Traffic will be staged/phased on the existing bridge and new bridge during construction.

5. Jurisdictional Determinations

5a. Have the wetlands or streams been delineated on the property or proposed impact areas? *

☒ Yes ☐ No ☐ Unknown

Comments:

Only impacts are to Irish Buffalo Creek. (Only perennial streams were identified within the project study area.)

5b. If the Corps made a jurisdictional determination, what type of determination was made? *

☐ Preliminary ☐ Approved ☒ Not Verified ☐ Unknown ☐ N/A

Corps AID Number:
Example: SAW-2017-99999

5c. If 5a is yes, who delineated the jurisdictional areas?

Name (if known): Chris Sheats and Nathan Howell
Agency/Consultant Company: Three Oaks Engineering
Other:

6. Future Project Plans

6a. Is this a phased project? *
☐ Yes ☒ No

Are any other NWP(s), regional general permit(s), or individual permits(s) used, or intended to be used, to authorize any part of the proposed project or related activity? This includes other separate and distant crossing for linear projects that require Department of the Army authorization but don't require pre-construction notification.
No.

D. Proposed Impacts Inventory

1. Impacts Summary

1a. Where are the impacts associated with your project? (check all that apply):
☐ Wetlands ☒ Streams-tributaries ☐ Buffers
☐ Open Waters ☐ Pond Construction

3. Stream Impacts

If there are perennial or intermittent stream impacts (including temporary impacts) proposed on the site, then complete this question for all stream sites impacted.
"S." will be used in the table below to represent the word "stream".

	3a. Reason for impact* (?)	3b.Impact type*	3c. Type of impact*	3d. S. name*	3e. Stream Type* (?)	3f. Type of Jurisdiction*	3g. S. width* Average (feet)	3h. Impact length* (linear feet)
S1	Site 1 - Bank Stabilization	Permanent	Bank Stabilization	Irish Buffalo Creek	Perennial	Both	35	265
S2	Site 1 - Impervious Dikes	Temporary	Dewatering	Irish Buffalo Creek	Perennial	Both	35	10

** All Perennial or Intermittent streams must be verified by DWR or delegated local government.

3i. Total jurisdictional ditch impact in square feet:
0

3i. Total permanent stream impacts:
265

3i. Total temporary stream impacts:
10

3i. Total stream and ditch impacts:
275

3j. Comments:
Note - Temporary impacts total 275 linear feet (0.05 acre), but 265 linear feet overlap with the bank stabilization impacts.

E. Impact Justification and Mitigation

1. Avoidance and Minimization

1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing the project: *
The existing drainage patterns are being maintained in the proposed condition. The majority of the bridge drainage will flow into a rip-rap energy dissipator basin. However, during high flow events, in order to keep water out of the travel lanes, 8 deck drains will help supplement drainage. Water discharging from these drains will flow into Class II rip-rap. The nearest drain is approximately 20 feet from Irish Buffalo Creek.
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques: *
NCDOT will adhere to Best Management Practices for Construction and Maintenance Activities. The existing bridge will be used during construction while the new bridge is being built in phases, eliminating the need to construct an on-site temporary detour bridge. Impervious dikes and dewatering operation will be performed during the installation of streambank installation.

2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State

2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?

☐ Yes ☒ No

2b. If this project DOES NOT require Compensatory Mitigation, explain why:

The NCDOT does not propose mitigation for the temporary and bank stabilization impacts related to this project. These impacts do not require permanent fill in the stream bed, therefore, under Section 404 of the Clean Water Act, do not constitute Loss of Waters of the U.S., and are not subject to compensatory mitigation.

NC Stream Temperature Classification Maps can be found under the Mitigation Concepts tab on the Wilmington District's [RIBITS](#) website.

F. Stormwater Management and Diffuse Flow Plan (required by DWR)

*** Recent changes to the stormwater rules have required updates to this section .***

1. Diffuse Flow Plan

1a. Does the project include or is it adjacent to protected riparian buffers identified within one of the NC Riparian Buffer Protection Rules?

☐ Yes ☒ No

For a list of options to meet the diffuse flow requirements, click [here](#).

If no, explain why:

No buffered resources within project area.

2. Stormwater Management Plan

2a. Is this a NCDOT project subject to compliance with NCDOT's Individual NPDES permit NCS000250? *

☒ Yes ☐ No

Comments:

G. Supplementary Information

1. Environmental Documentation

1a. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land? *

☒ Yes ☐ No

1b. If you answered "yes" to the above, does the project require preparation of an environmental document pursuant to the requirements of the National or State (North Carolina) Environmental Policy Act (NEPA/SEPA)? *

☒ Yes ☐ No

1c. If you answered "yes" to the above, has the document review been finalized by the State Clearing House? (If so, attach a copy of the NEPA or SEPA final approval letter.) *

☒ Yes ☐ No

2. Violations (DWR Requirement)

2a. Is the site in violation of DWR Water Quality Certification Rules (15A NCAC 2H .0500), Isolated Wetland Rules (15A NCAC 2H .1300), or DWR Surface Water or Wetland Standards or Riparian Buffer Rules (15A NCAC 2B .0200)? *

☐ Yes ☒ No

3. Cumulative Impacts (DWR Requirement)

3a. Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality? *

☐ Yes ☒ No

3b. If you answered "no," provide a short narrative description.

Due to the minimal transportation impact resulting from this bridge replacement, this project will neither influence nearby land uses nor stimulate growth. Therefore, a detailed indirect or cumulative effects study will not be necessary.

4. Sewage Disposal (DWR Requirement)

4a. Is sewage disposal required by DWR for this project? *

☐ Yes ☐ No ☒ N/A

5. Endangered Species and Designated Critical Habitat (Corps Requirement)

5a. Will this project occur in or near an area with federally protected species or habitat? *

☒ Yes ☐ No

5b. Have you checked with the USFWS concerning Endangered Species Act impacts? *

☐ Yes ☒ No

5d. Is another Federal agency involved? *

☐ Yes ☒ No ☐ Unknown

5e. Is this a DOT project located within Division's 1-8? *

☐ Yes ☒ No

5f. Will you cut any trees in order to conduct the work in waters of the U.S.? *

☒ Yes ☐ No

5g. Does this project involve bridge maintenance or removal? *

☒ Yes ☐ No

5g(1). If yes, have you inspected the bridge for signs of bat use such as staining, guano, bats, etc.? Representative photos of signs of bat use can be found in the NLEB SLOPES, Appendix F, pages 3-7.

☐ Yes ☒ No

Link to the NLEB SLOPES document: http://saw-reg.usace.army.mil/NLEB/1-30-17-signed_NLEB-SLOPES&apps.pdf

If you answered "Yes" to 5g(1), did you discover any signs of bat use? *

☐ Yes ☐ No ☐ Unknown

*** If yes, please show the location of the bridge on the permit drawings/project plans.

5h. Does this project involve the construction/installation of a wind turbine(s)? *

☐ Yes ☒ No

5i. Does this project involve (1) blasting, and/or (2) other percussive activities that will be conducted by machines, such as jackhammers, mechanized pile drivers, etc.? *

☒ Yes ☐ No

5j. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? *

As of 2/7/2022, the USFWS identifies three species within the project area.

NLEB is consistent with 4(d) (see attached NLEB memo which was sent to USFWS 1/26/22 and response received 2/1/22).

Surveys for Carolina heelsplitter were conducted on 10/13/16 and 9/22/20. No individuals of this species were found during either survey. Per USFWS guidance from March 2021, since the project is outside of Goose, Waxhaw, Duck or 6-mile Creek drainages, no further surveys are required and the biological conclusion is No Effect for this species.

Surveys for Schweinitz's sunflower were performed in August 2016, October 2019, and October 2021 (most recent survey memo attached). No individuals of this species, genus, or associated species were identified during any of these surveys. The biological conclusion for Schweinitz's sunflower remains No Effect.

6. Essential Fish Habitat (Corps Requirement)

6a. Will this project occur in or near an area designated as an Essential Fish Habitat? *

☐ Yes ☒ No

6b. What data sources did you use to determine whether your site would impact an Essential Fish Habitat? *

NMFS County Index

7. Historic or Prehistoric Cultural Resources (Corps Requirement)

Link to the State Historic Preservation Office Historic Properties Map (does not include archaeological data: <http://gis.ncdcr.gov/hpweb/>)

7a. Will this project occur in or near an area that the state, federal or tribal governments have designated as having historic or cultural preservation status (e.g., National Historic Trust designation or properties significant in North Carolina history and archaeology)? *

☐ Yes ☒ No

7b. What data sources did you use to determine whether your site would impact historic or archeological resources? *

NEPA documentation, Historic Architecture and Archaeology memos, and Tribal Coordination.

8. Flood Zone Designation (Corps Requirement)

Link to the FEMA Floodplain Maps: <https://msc.fema.gov/portal/search>

8a. Will this project occur in a FEMA-designated 100-year floodplain? *

☐ Yes ☒ No

8c. What source(s) did you use to make the floodplain determination? *

FEMA Maps

Miscellaneous



Comments

Please use the space below to attach all required documentation or any additional information you feel is helpful for application review. Documents should be combined into one file when possible, with a Cover Letter, Table of Contents, and a Cover Sheet for each Section preferred.

Click the upload button or drag and drop files here to attach document

B-5808 Pre-Filing Meeting Request.pdf	53.05KB
B-5808 NLEB 4d Memo.pdf	265.02KB
B-5808 2021-10-18 Sunflower Survey.pdf	470.94KB
B-5808 2018-05-11 No Archaeological Survey Required.pdf	941.53KB
B-5808 2016-02-17 No Architecture Survey Required.pdf	542.87KB
B-5808 2020-11-16 Catawba Response.pdf	497.76KB
B-5808 2021-11-04 Permit Drawings.pdf	3.45MB
B-5808 CE Document_signed.pdf	5.16MB
B-5808 Cover Letter.pdf	297.41KB

File must be PDF or KMZ

Signature



*

☒ By checking the box and signing below, I certify that:

- The project proponent hereby certifies that all information contained herein is true, accurate, and complete to the best of my knowledge and belief; and
- The project proponent hereby requests that the certifying authority review and take action on this CWA 401 certification request within the applicable reasonable period of time.
- I have given true, accurate, and complete information on this form;
- I agree that submission of this PCN form is a "transaction" subject to Chapter 66, Article 40 of the NC General Statutes (the "Uniform Electronic Transactions Act");
- I agree to conduct this transaction by electronic means pursuant to Chapter 66, Article 40 of the NC General Statutes (the "Uniform Electronic Transactions Act");
- I understand that an electronic signature has the same legal effect and can be enforced in the same way as a written signature; AND
- I intend to electronically sign and submit the PCN form.

Full Name: *

Michael Turchy

Signature *

Date

2/15/2022



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR NCDOT PROJECTS

(Version 3.00; Released August 2021)

WBS Element: 45762.1.1 TIP/Proj No: B-5808 County(ies): Cabarrus Page 1 of 3

General Project Information

WBS Element:		45762.1.1		TIP Number:	B-5808		Project Type:	Bridge Replacement		Date:	8/27/2021	
NCDOT Contact:		David Stutts				Contractor / Designer:		STV Engineers, Inc. / Edward Vance				
	Address:	1020 Birch Ridge Drive Raleigh, NC 27610					Address:	900 West Trade Street, Ste. 715 Charlotte, NC 28202				
	Phone:	(919) 707-6442					Phone:	(704) 816-2556				
	Email:	dstutts@ncdot.gov					Email:	Edward.Vance@stvinc.com				
City/Town:		Concord				County(ies):		Cabarrus				
River Basin(s):		Yadkin-Pee Dee				CAMA County?		No				
Wetlands within Project Limits?		No										

Project Description

Project Length (lin. miles or feet):	0.178 miles	Surrounding Land Use:	Commercial and Industrial				
Proposed Project				Existing Site			
Project Built-Upon Area (ac.)	2.7	ac.			2.6	ac.	
Typical Cross Section Description:	Bridge: Six 12' lanes with 9' concrete median, 2'-6" curb and gutter with 5' sidewalks on both sides, and 15.75' shoulder on the LT side Approach: Six 12' lanes with variable 9.5' to 5.5' concrete median, 2'-6" curb and gutter, and 10' shoulders with 5' sidewalks			Bridge: Two 12' lanes with 1'-6" curb and gutter at both ends of the travel lanes (dual bridges with same dimensions) Approach: Two 12' lanes with 8' unpaved shoulders			
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	53,020	Year:	2042	Existing:	36,820	Year: 2022

General Project Narrative:
(Description of Minimization of Water
Quality Impacts)

The existing 172', 3-span bridge over Irish Buffalo Creek on US 29/US 601 is being replaced with a 3-span, bridge with a span arrangement of 1@56'-6", 1@77', 1@56'-6" (36" Girder). The bridge will have 4' end bent caps with 1.5:1 sloping abutments and be skewed at 135 degrees. The bridge will be normal crown at 2% with 12' travel lanes, 15'-9" shoulder on the western side, with 2'-6" curb and gutter, 5' sidewalks, and bridge railings on both the sides of the travel lanes. This gives the bridge a 106'-9" clear roadway width and a 114'-10" out-to-out width. This existing dual bridges will be removed, and the proposed bridge will be placed on top of the existing bridge alignment, keeping the existing bridge during construction as a detour bridge. The existing drainage patterns are being maintained in the proposed condition. A proposed ditch will convey water in place of the existing channel (per directions from NCDOT) with a 9' base and 3:1 side slopes. All proposed ditches and the channel change will flow towards and into Irish Buffalo Creek. 6" vertical PVC pipe slots at 10' centers line both ends of the bridge to convey runoff and meet the requirement of no spread in the travel lane on the western side and 6' allowable spread on the eastern side. These deck drains will not discharge directly above the stream. At the beginning and end of the bridge, catch basins are placed in the curb and gutter on both sides of the road to convey the bridge runoff into a proposed pipe system. The abutments of the bridge are protected by CL-II riprap to prevent future erosion and stream migration. Impervious dikes and dewatering operation will be performed during the installation of streambank stabilization (riprap). A rip rap energy dissipator basin will be utilized at the outfall for a 42" pipe on the begin bridge, upstream side.



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR NCDOT PROJECTS

(Version 3.00; Released August 2021)

WBS Element: 45762.1.1 TIP/Proj No.: B-5808 County(ies): Cabarrus Page 2 of 3

General Project Information

Waterbody Information

Surface Water Body (1):	Irish Buffalo Creek		NCDWR Stream Index No.:	13-17-9-(2)	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		None		
Other Stream Classification:	None				
Impairments:	None				
Aquatic T&E Species?	No	Comments:			
NRTR Stream ID:	Irish Buffalo Creek		Buffer Rules in Effect:	N/A	
Project Includes Bridge Spanning Water Body?	Yes	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	No
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					
Surface Water Body (2):			NCDWR Stream Index No.:		
NCDWR Surface Water Classification for Water Body	Primary Classification:				
	Supplemental Classification:				
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?		Comments:			
NRTR Stream ID:			Buffer Rules in Effect:		
Project Includes Bridge Spanning Water Body?		Deck Drains Discharge Over Buffer?		Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					
Surface Water Body (3):			NCDWR Stream Index No.:		
NCDWR Surface Water Classification for Water Body	Primary Classification:				
	Supplemental Classification:				
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?		Comments:			
NRTR Stream ID:			Buffer Rules in Effect:		
Project Includes Bridge Spanning Water Body?		Deck Drains Discharge Over Buffer?		Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					



(Version 3.00; Released August 2021)

WBS Element:

TIP/Proj No.: B-5808

County(ies): Cabarrus

Page 3 of 3

Preformed Scour Holes and Energy Dissipators

[illegible]

Additional Comments

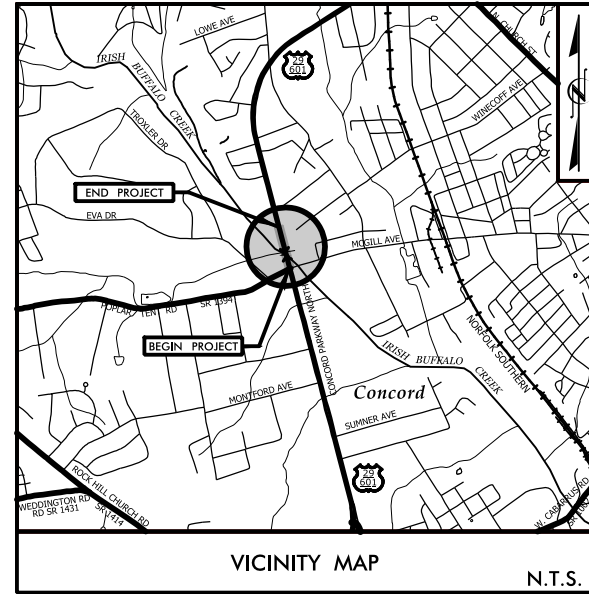
* Refer to the NCDOT Best Management Practices Toolbox (2014), NCDOT Standards, the Federal Highway Administration (FHWA) Hydraulic Engineering Circular No. 14 (HEC-14), Third Edition, Hydraulic Design of Energy Dissipators for Culverts and Channels (July 2006), as applicable, for design guidance and criteria.

I:\Projects\409794\409794_000\50_Deliverables & Submittals\B-5808\Hydraulics\PERMITS_Environmental\Drawings\Prm SHT\B5808_hyd_prm_psh01_tsh.dgn
10/21/2021
bawayad

TIP PROJECT: B-5808

CONTRACT:

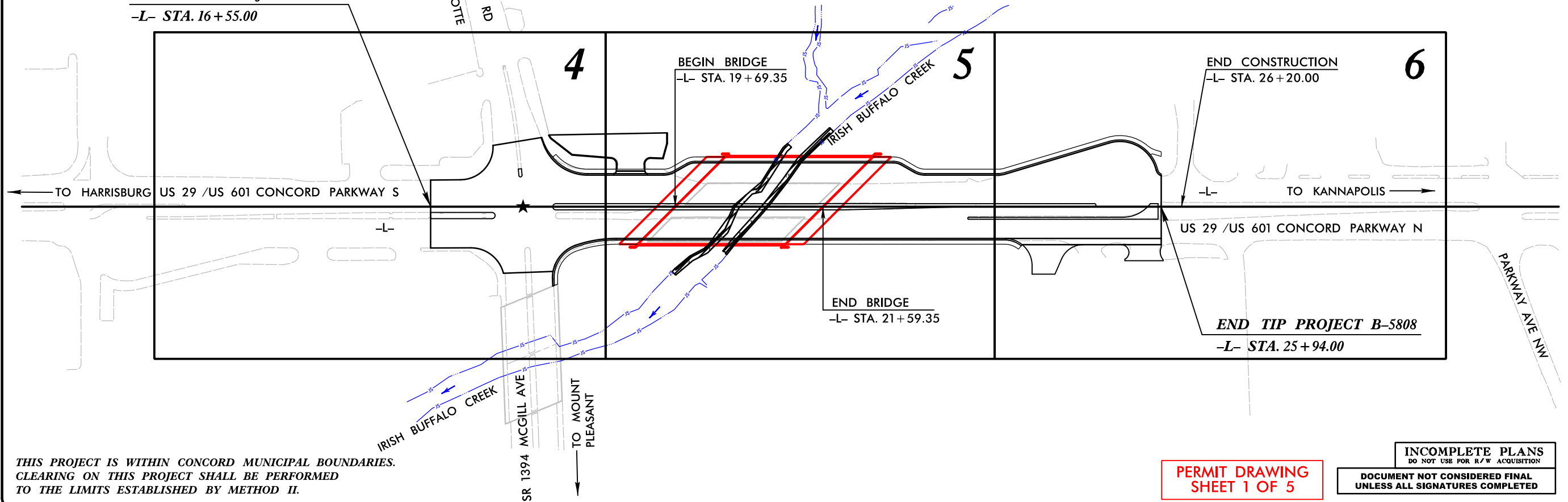
See Sheet 1A For Index of Sheets
See Sheet 1B For Standard Symbology Sheet



75% PLANS

SR 1394 POPLAR TENT RD
TO CHARLOTTE

BEGIN TIP PROJECT B-5808
-L- STA. 16 + 55.00

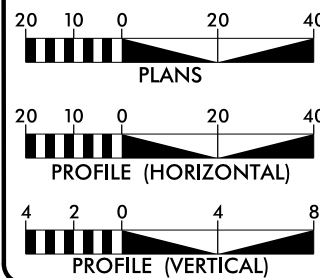


THIS PROJECT IS WITHIN CONCORD MUNICIPAL BOUNDARIES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED
TO THE LIMITS ESTABLISHED BY METHOD II.

PERMIT DRAWING
SHEET 1 OF 5

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2022 = 36,820
ADT 2042 = 53,020
K = 10%
D = 55%
T = 4%*
V = 50 MPH
FUNC. CLASSIFICATION:
URBAN ARTERIAL
* (TTST 1% + DUALS 3%)
REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-5808 = 0.142 MILES
LENGTH OF STRUCTURE TIP PROJECT B-5808 = 0.036 MILES
TOTAL LENGTH OF TIP PROJECT B-5808 = 0.178 MILES

NCDOT CONTACT: KEITH PASCHAL, PE
Structure Management Unit

PLANS PREPARED FOR THE NCDOT BY:

STV 100 Years STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 13, 2021

LETTING DATE:
MAY 17, 2022

NIKKI T. HONEYCUTT, PE
PROJECT ENGINEER

MAAMOON K. ABDELAZIZ
PROJECT DESIGNER

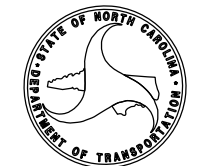
HYDRAULICS
ENGINEER

SIGNATURE:
ROADWAY
DESIGN
ENGINEER

SIGNATURE:

P.E.

P.E.

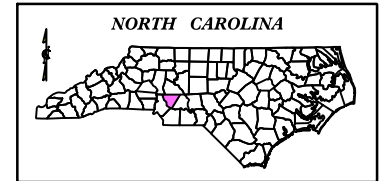


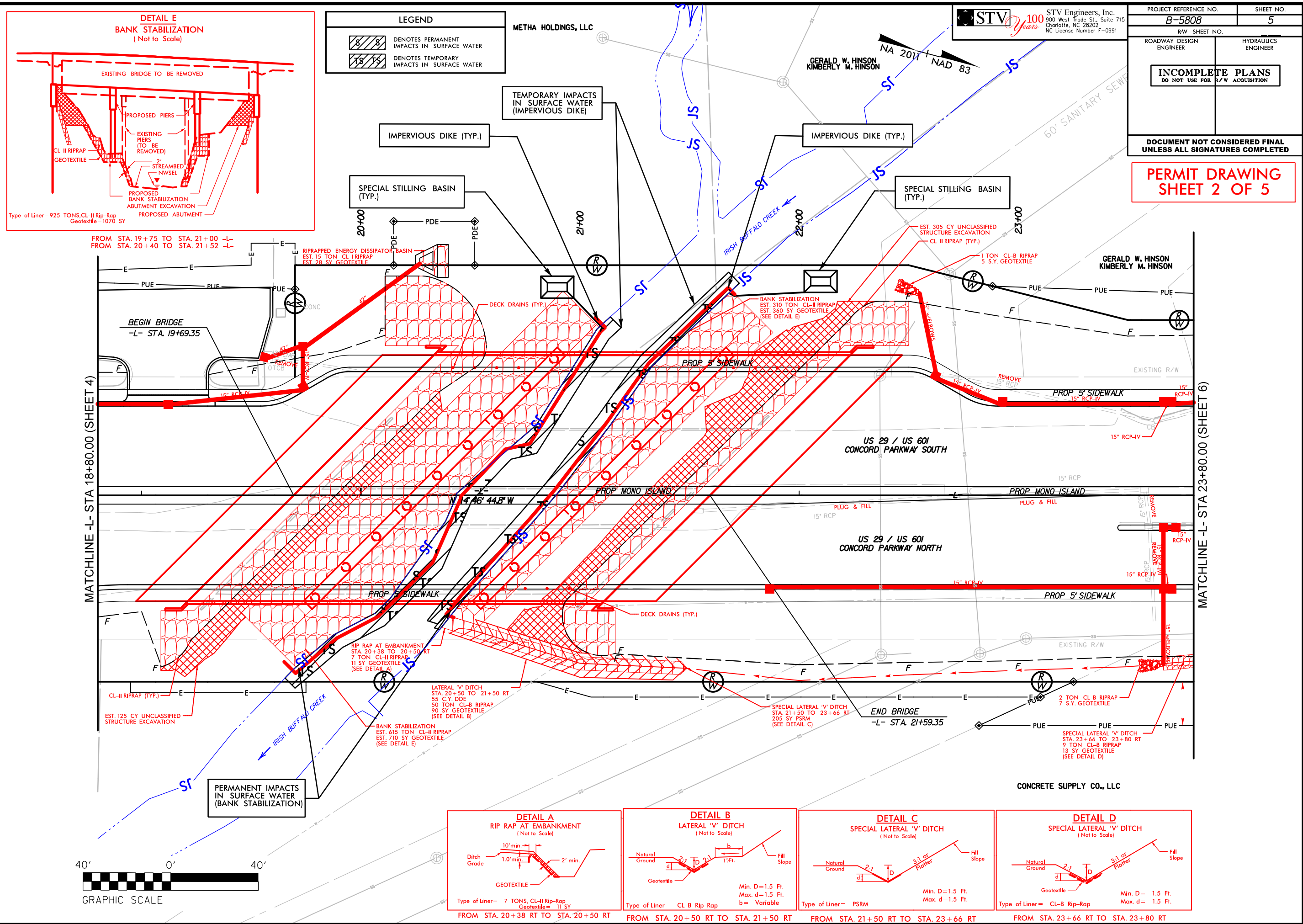
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
CABARRUS COUNTY

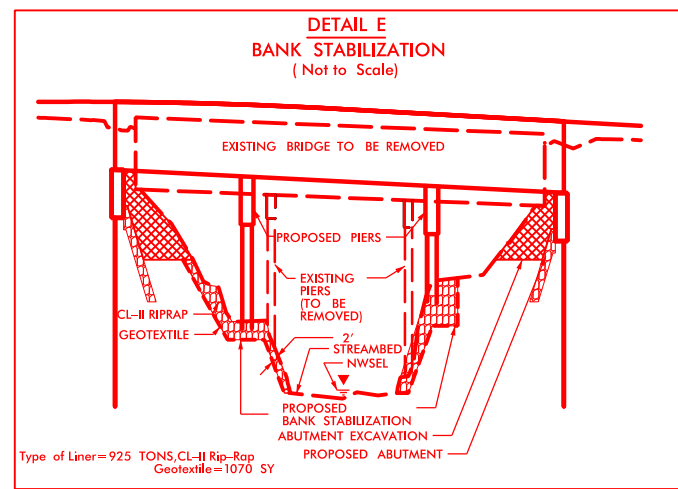
LOCATION: BRIDGES #057 & #059 OVER IRISH BUFFALO CREEK
ON US 29 /US 601
TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURE & SIGNALS

WETLAND AND SURFACE WATER IMPACTS PERMIT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5808	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45762.1.1	NHP-0029(062)	P.E.	
45762.2.1	NHP-0029(062)	R/W & UTIL.	

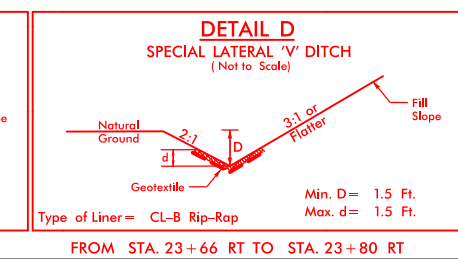
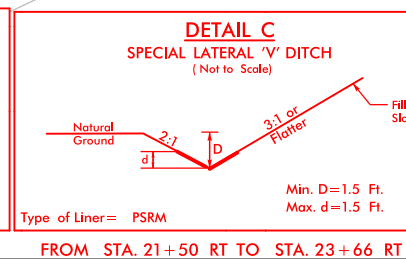
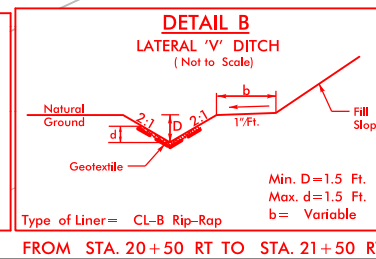
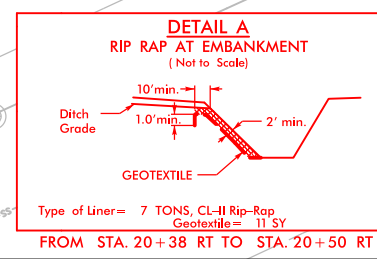
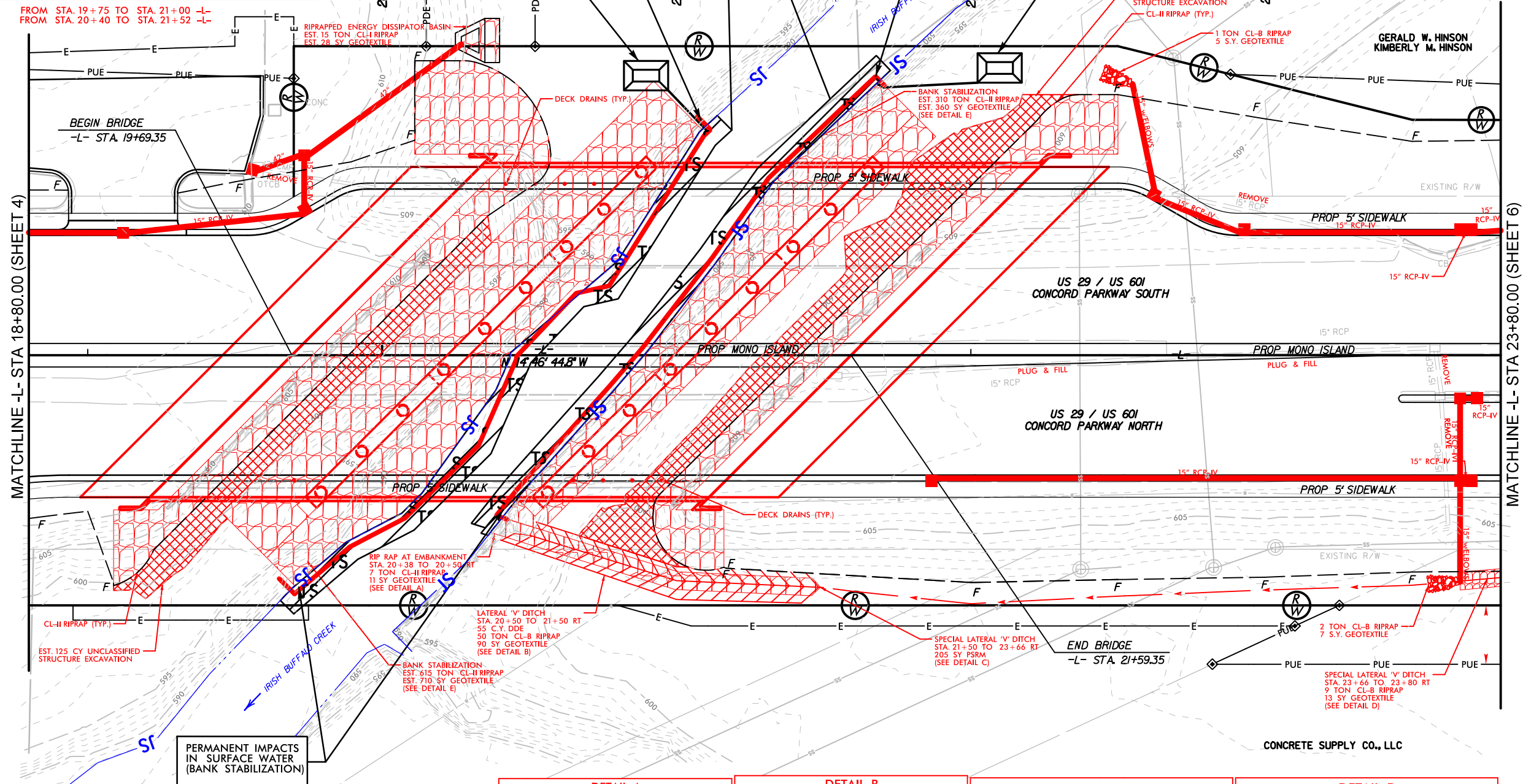






Type of Liner=925 TONS,CL-II Rip-Rap
Geotextile=1070 SY

FROM STA. 19+75 TO STA. 21+00 -L-
FROM STA. 20+40 TO STA. 21+52 -L-



PROJECT REFERENCE NO.	SHEET NO.
<i>B-5808</i>	<i>5</i>
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<div style="border: 2px solid black; padding: 10px; margin: 0 auto; width: 80%;"> <p style="font-size: 1.5em; margin: 0;">INCOMPLETE PLANS</p> <p style="margin: 0;">DO NOT USE FOR R/W ACQUISITION</p> </div>	
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	

PERMIT DRAWING
SHEET 3 OF 5

5/14/99
I:\Projects\4019794\4019794_0001\50_Deliverables & Submittals\B-5808\Hydraulics\PERMITS\Environmental\Drawings\Prm SH\B5808_hyd.prm_psh04_pfl.dgn
10/21/2021
I:\Projects\4019794\4019794_0001\50_Deliverables & Submittals\B-5808\Hydraulics\PERMITS\Environmental\Drawings\Prm SH\B5808_hyd.prm_psh04_pfl.dgn

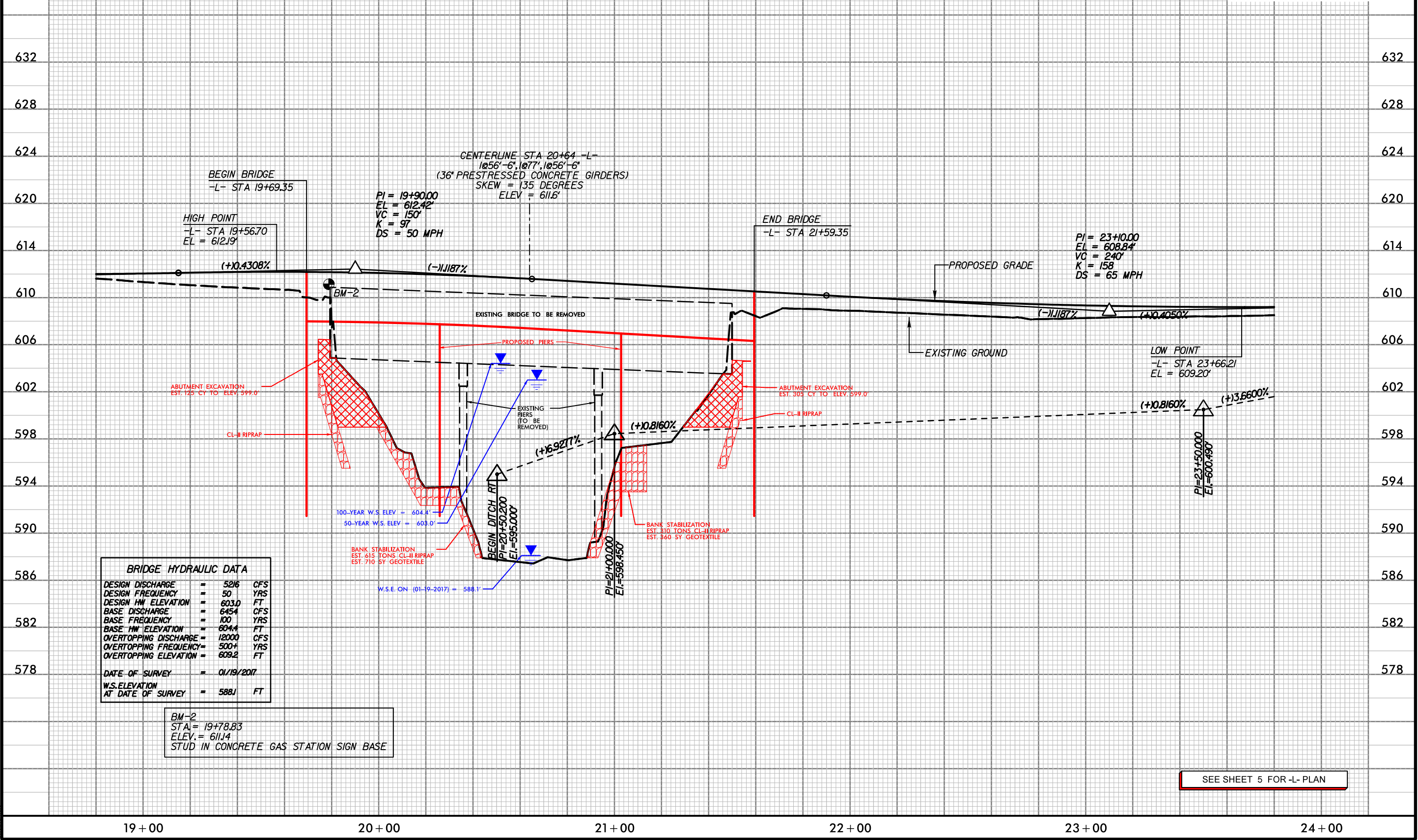


STV
100 Years

STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO. <i>B-5808</i>		SHEET NO. <i>8</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
<div>INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION</div>		

PERMIT DRAWING
SHEET 4 OF 5



BRIDGE HYDRAULIC DATA			
DESIGN DISCHARGE	=	5216	CFS
DESIGN FREQUENCY	=	50	YRS
DESIGN HW ELEVATION	=	603.0	FT
BASE DISCHARGE	=	6454	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	604.4	FT
OVERTOPPING DISCHARGE	=	12000	CFS
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING ELEVATION	=	609.2	FT
DATE OF SURVEY	=	01/19/2017	
W.S. ELEVATION AT DATE OF SURVEY	=	588.1	FT

BM-2
STA = 19+78.83
ELEV = 611.4
STUD IN CONCRETE GAS STATION SIGN BASE

SEE SHEET 5 FOR -L- PLAN

WETLAND PERMIT IMPACT SUMMARY												
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	19+68.87 / 21+69.05	Bank Stabilization						0.02		265		
1	19+65.41 / 21+72.68	Impervious Dikes							0.05		10	
TOTALS:								0.02	0.05	265	10	

Notes: Temporary impacts total 275 feet, 265 feet are accounted for within the length of permanent impacts.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BRIDGES #057 & #059 OVER IRISH BUFFALO CREEK
ON US 29 / US 601
CABARRUS COUNTY
B-5808
SHEET 5 of 5
9/1/2021




PAT McCrory
Governor

NICHOLAS J. TENNYSON
Secretary

June 15, 2016

TO: Jeff Hemphill, Senior Environmental Specialist
Environmental Coordination & Permitting Group Western, NES - PDEA

CC: Angela Sanderson, Project Development Engineer
Project Development Group - Western Region, PDEA

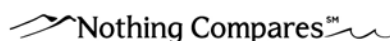
FROM: Cheryl Gregory, Environmental Program Consultant 
Biological Surveys Group, NES - PDEA

SUBJECT: *Streamline Section 7 Consultation for the Northern Long-Eared Bat* associated with the replacement of Bridge Nos. 57 & 59 over Irish Buffalo Creek on US 29-US 601 in Cabarrus County, **TIP No. B-5808.**

The North Carolina Department of Transportation (NCDOT, Division 10) proposes to replace Bridge Nos. 57 & 59 over Irish Buffalo Creek on US 29-US 601 in Cabarrus County, TIP No. B-5808.

The project to replace Bridge Nos. 57 & 59 has been reviewed for effects on the northern long-eared bat (NLEB). As of May 4, 2015, NLEB is listed by the U.S. Fish and Wildlife Service (USFWS) as "Threatened" under the Endangered Species Act of 1973. As of April 11, 2016, NLEB is listed by USFWS as "probable/potential in Cabarrus County (http://www.fws.gov/raleigh/species/cntylist/nc_counties.html). USFWS also established a final rule under the authority of section 4(d) of the Endangered Species Act that provides measures for the conservation of NLEB. The USFWS has tailored the final 4(d) rule to prohibit the take of NLEB from certain activities within areas where they are in decline. This incidental take protection applies only to known NLEB occupied maternity roost trees and known NLEB hibernacula. Effective February 16, 2016, incidental take resulting from tree removal is prohibited if it 1) occurs within a ¼ mile radius of known NLEB hibernacula; or 2) cuts or destroys known occupied maternity roost trees, or any other trees within a 150-foot radius from the known maternity tree during the pup season (June 1-July 31).

According to the North Carolina Natural Heritage Program (NHP) Biotics Database, most recently updated January 2016, **the nearest NLEB hibernacula record is 82 miles northwest of the project (EO ID 34299) and no known NLEB roost trees occur within 150 feet of the project area.** EO 34299 represents three cave sites (Wind, Psuedosaltpeter, Limkiln) with multiple observations from 2001 to 2009.



NCDOT has also reviewed the USFWS Asheville Field office website (http://www.fws.gov/asheville/htmls/project_review/NLEB_in_WNC.html) for consistency with NHP records. This project is located entirely outside of the red highlighted areas (12 digit HUC) that the USFWS Asheville Field Office has determined to be representative of an area that may require consultation.

For the proposed action, NCDOT has committed to the conservation measures listed below:

- 1) No alterations of a known hibernaculum's entrance or interior environment if it impairs an essential behavioral pattern, including sheltering northern long-eared bats (January 1 through December 31);
- 2) No tree removal within a 0.25 mile radius of a known hibernacula (January 1 through December 31); and
- 3) No cutting or destroying a known, occupied maternity roost tree, or any other trees within a 150-foot radius from the known, occupied maternity tree during the period from June 1 through and including July 31.

NCDOT has determined that the proposed action does not require separate consultation on the grounds that the proposed action is consistent with the final Section 4(d) rule, codified at 50 C.F.R. § 17.40(o) and effective February 16, 2016. NCDOT may presume its determination is informed by best available information and consider Section 7 responsibilities fulfilled for NLEB.

If you need any additional information, please contact Cheryl Knepp at 919-707-6102.



Three Oaks Engineering, Inc.
324 Blackwell Street, Suite 1200
Durham, NC 27701
(919) 732-1300

November 30, 2021

North Carolina Department of Transportation
ATTN: Michael Turchy
ECAP Western Regional Team Lead

Mailing Address:
1598 Mail Service Center
Raleigh, NC 27699-1598

Physical Address:
Century Center, Building A
1000 Birch Ridge Drive
Raleigh, NC 27610

SUBJECT: Schweinitz's' sunflower (*Helianthus schweinitzii*) Survey Report for STIP No. B-5808 in Concord, Cabarrus County, North Carolina

Mr. Turchy:

Below is the Schweinitz's' sunflower (*Helianthus schweinitzii*) species survey report for STIP No. B-5808 in Concord, Cabarrus County, North Carolina.

Project Description and Survey Methodology

The North Carolina Department of Transportation (NCDOT) is proposing to replace Bridge Nos. 57 and 59 on US 29 / US 601 over Irish Buffalo Creek in Concord, Cabarrus County, North Carolina. Three Oaks Engineering, Inc. (Three Oaks) was contracted by NCDOT to perform protected species surveys for Schweinitz's sunflower in suitable habitat within the approximately 18.3-acre project site (Figure 1). The purpose of these surveys was to update previously completed surveys and the following survey report will be used to support environmental documentation for the project and environmental permitting, if the latter is required.



Species Morphology and Habitat Description

Schweinitz's' sunflower

U.S. Fish and Wildlife Service (USFWS) Optimal Survey Window: late August – October (or first ground-level frost)

Schweinitz's' sunflower is a tall (6.5-foot) perennial plant that is found along the edges of open woodlands and prairie habitats. It is found in maintained utility corridors and in road rights-of-way (ROW) in the Piedmont regions of North and South Carolina. Schweinitz's sunflower is a composite flower that produces yellow rays and blooms from late August until frost. Distinguishing characteristics include a thick tuberous root, a purple stem, opposite leaves on the lower stem with alternate leaves on the upper stem, thick leaves with recurved edges, and stiff hairs along the leaf margins with soft hairs underneath.

Survey Results

On October 18, 2021, Three Oaks staff members Wade Biltoft and Caitlan Bell conducted a plant-by-plant survey for Schweinitz's' sunflower within the project site. Marginally suitable habitat for Schweinitz's' sunflower was present within the project site in areas with moderate disturbance regimes and little-to-no canopy cover. However, no individuals were present. Additionally, no typical associate species were identified. A review of the North Carolina Natural Heritage Program (NCNHP) October 2021 dataset revealed no known Schweinitz's' sunflower occurrences within the study area or within one mile of the project site. Due to the negative survey results of this survey and the lack of known occurrences within one mile, the Biological Conclusion rendered for the species is “**No Effect**”.

Please let me know if you have any questions or require any additional information.

Sincerely,

James
Mason

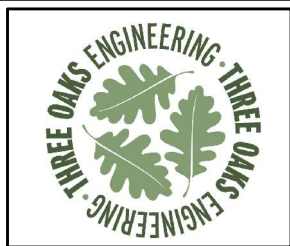
Digitally signed by James
Mason
Date: 2021.11.30
11:38:06 -05'00'

James Mason
Senior Environmental Scientist
Three Oaks Engineering, Inc.
james.mason@threeoaksengineering.com
Office: (919) 732-1300
Mobile: (704) 604-8358



Appendix A

Figure



Prepared For:



Replacement of Bridge Nos. 57 and 59
on US 29/601
over Irish Buffalo Creek
STIP No. B-5808
Project Study Area Map/Habitat Map
Cabarrus County, North Carolina

Date: November 2021

Scale: 0 90 180 360 Feet

Job No.: 21-625 Sunflower Surveys

Drawn By: BL

Checked By: JM

Figure

1



November 15, 2021

Memorandum To: Michael Turchy, ECAP Western Regional Team Lead

From: Pete Stafford, PWS, CMS-UAS, RK&K Senior Manager

Subject: Bald and Golden Eagle Protection Act update, November 2021

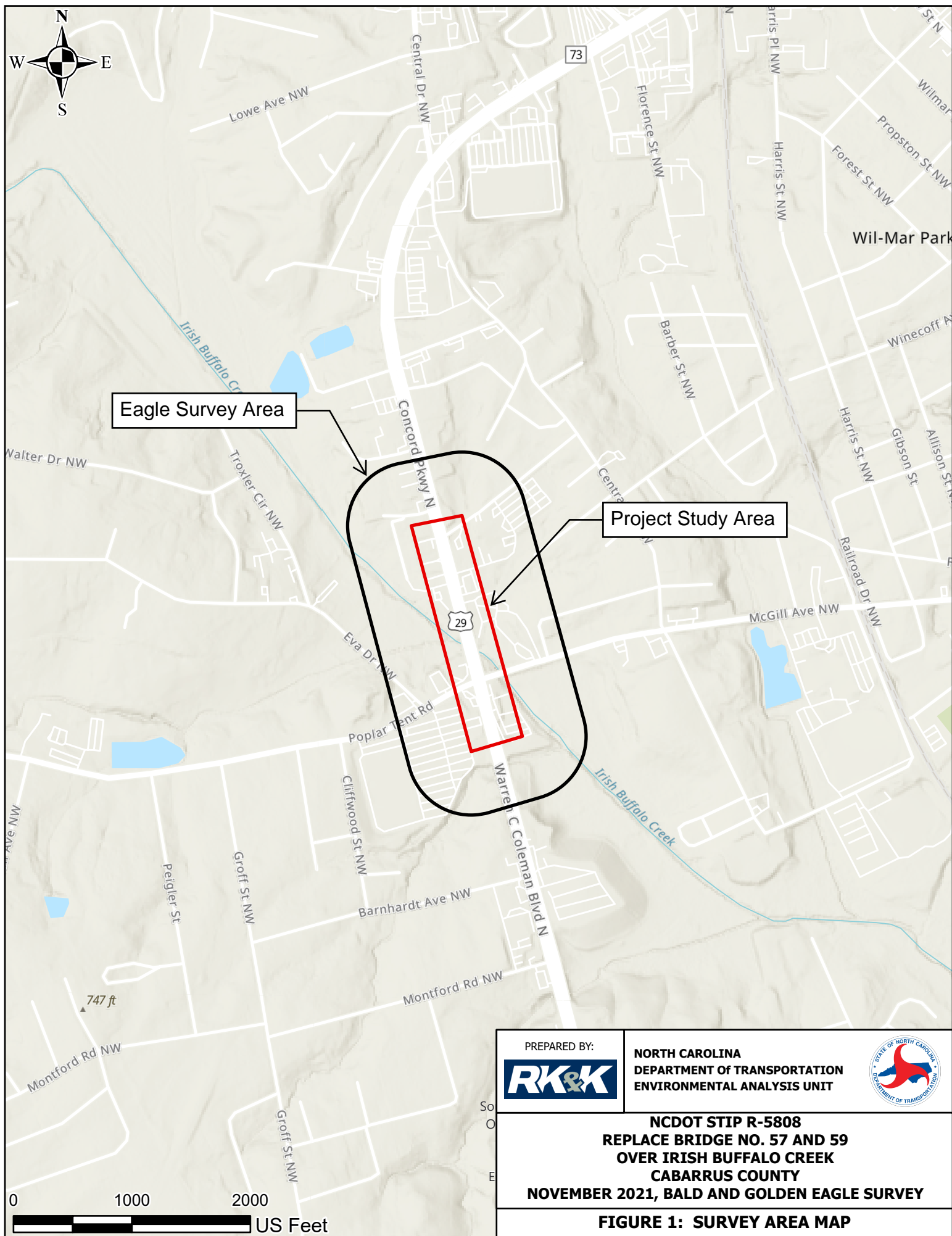
RK&K has been tasked to perform an eagle nest survey for the North Carolina Department of Transportation (NCDOT) STIP B-5808 project (Figure 1). The following memo has been prepared to summarize findings of the field survey.

All work was conducted in accordance with the NCDOT Environmental Coordination and Permitting's Preparing Natural Resources Technical Reports Procedure and the NRTR Template dated September 2021. Field work was conducted on November 9, 2021. No eagle nests were observed.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act is enforced by the USFWS. Golden eagles do not nest in North Carolina. Habitat for the bald eagle primarily consists of mature forests 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.

A desktop-GIS assessment of the project study area, as well as the area within a 1.0-mile radius of the project limits, was performed on November 8, 2021 using 2017 color aerials. Two water bodies large enough to be considered potential feeding sources were identified. A survey of the project study area and the area within 660 feet of the project limits was conducted on November 9, 2021. No eagle nests were identified. Additionally, a review of the NHP database on November 8, 2021 revealed no known occurrences of this species within 1.0 mile of the project study area. Due to the lack of nests, known occurrences, and minimal impact anticipated for this project, it has been determined that this project will not affect this species.



16-01-00073



NO 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: **Br. Nos. 57 & 59** County: **Cabarrus**
 WBS No: **45762.1.1** Document: **CE Or MCC**
 F.A. No: **NHP-0029(062)** Funding: ☐ State ☒ Federal

Federal Permit Required? ☒ Yes ☐ No Permit Type: **usage**

Project Description: NCDOT proposes to replace Bridge Nos. 57 and 59 on US 29 / US 601 over Irish Buffalo Creek west of Concord in Cabarrus County. Conceptual design plans suggest the two bridges would be replaced in-place with a single wider bridge using a phased on-site detour and cross-over during construction. The project length is about 1200 feet (0.23 miles) with a construction width expanding to the north about 100 feet beyond the existing western ROW for the on site detour fill and construction. For purposes of this archaeological review, an earlier study area will be used as the Area of Potential Effects allowing for a range of design options should they later change. The APE is about 2000 feet (0.38) in length and 350 feet wide, centered in between the existing structures.

This is a federally funded and permitted undertaking and therefore falls under Section 106 of the National Historic Preservation Act for archaeological review.

SUMMARY OF CULTURAL RESOURCES REVIEW

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

The bridges to be replaced are located along US 29 / US 601 at an urbanized crossroads west of Concord. Gas stations, shopping centers, commercial and industrial lots are adjacent to the APE, including a likely concrete mixing plant. Driveways and underground utilities, including installed sewage main lines, are present. The majority of the APE is considered altered, lessening the archaeological integrity of any resources that might otherwise be present.

USGS mapping (Concord) and aerial photography was studied (see Figures 1 and 2). Google and Bing street view tools were used and confirm the developed and altered nature of the APE. Note that a NC Highway Historic Marker Program sign (L 44), commemorating Red Hill some 1.5 miles west, is posted within the APE beside of a utility pole.

According to USGS mapping and GIS resources (data layer created by NCDOT archaeologist Paul J. Mohler), no cemetery is present at the APE.

Historic maps were examined to determine if any late historic structures, roads or other notations were present to help establish the a context of the recent past, especially farms, industry, land and transportation features which might offer hints to the presence of archaeological sites. The 1910 Soils Map of Cabarrus County (MC.016.1910a) depicts only an earlier version of SR 1394 (Poplar Tent Road / McGill Avenue), but the equivalent of US 29/US 601 had not been constructed. No other notable features were noted near the project area on historic mapping with the exception of two buildings assumed to be businesses on 1950 USGS mapping when US 29/US 601 first appears. The bridges were reportedly constructed in 1951.

The Office of State Archaeology was visited to review archaeological mapping and to reference any known archaeological surveys and sites. This helps establish an archaeological context for comparison. One environmental review, ER 04-0087, appears to be a sewage easement following Irish Buffalo Creek, though no archaeological sites were associated with this portion of the review. A short distance west, about 1000

16-01-00073

feet from the bridges, is site 31Ca308, though it will not be impacted being some distance outside of the APE. Several other surveys are present in the nearby, even overlapping area, though, if surveyed, no archaeological sites were identified and recorded.

For this undertaking, a double highway bridge replacement with an on-site detour, the project footprint will expand. The increase in the construction footprint is likely to occur west of the existing bridges, overlapping a developed (gas station) lot and sewage easement. The remaining APE has been also modified through grading, utilities, development and the road construction.

Expectations are low that an intact, significant archaeological site would be affected during the bridge construction in the APE where soils disturbances area notable. No archaeological survey is recommended for this undertaking as currently proposed. For archaeological review, the two bridge replacements should be considered compliant with Section 106.

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

The bridge replacements and on-site detour are located at a developed urban intersection. Most of the adjacent lots are developed or otherwise considered disturbed. It is unlikely that archaeological remains are present, especially in the wet soils, and if so, that they would be intact and significant. For archaeological review, this federally funded and permitted undertaking should be considered compliant with Section 106.

SUPPORT DOCUMENTATION

See attached: ☒ Map(s) ☐ Previous Survey Info ☒ Photos ☐ Correspondence
☐ Photocopy of County Survey Notes Other:

FINDING BY NCDOT ARCHAEOLOGIST

NO ARCHAEOLOGY SURVEY REQUIRED



NCDOT ARCHAEOLOGIST

5/11/2018

Date

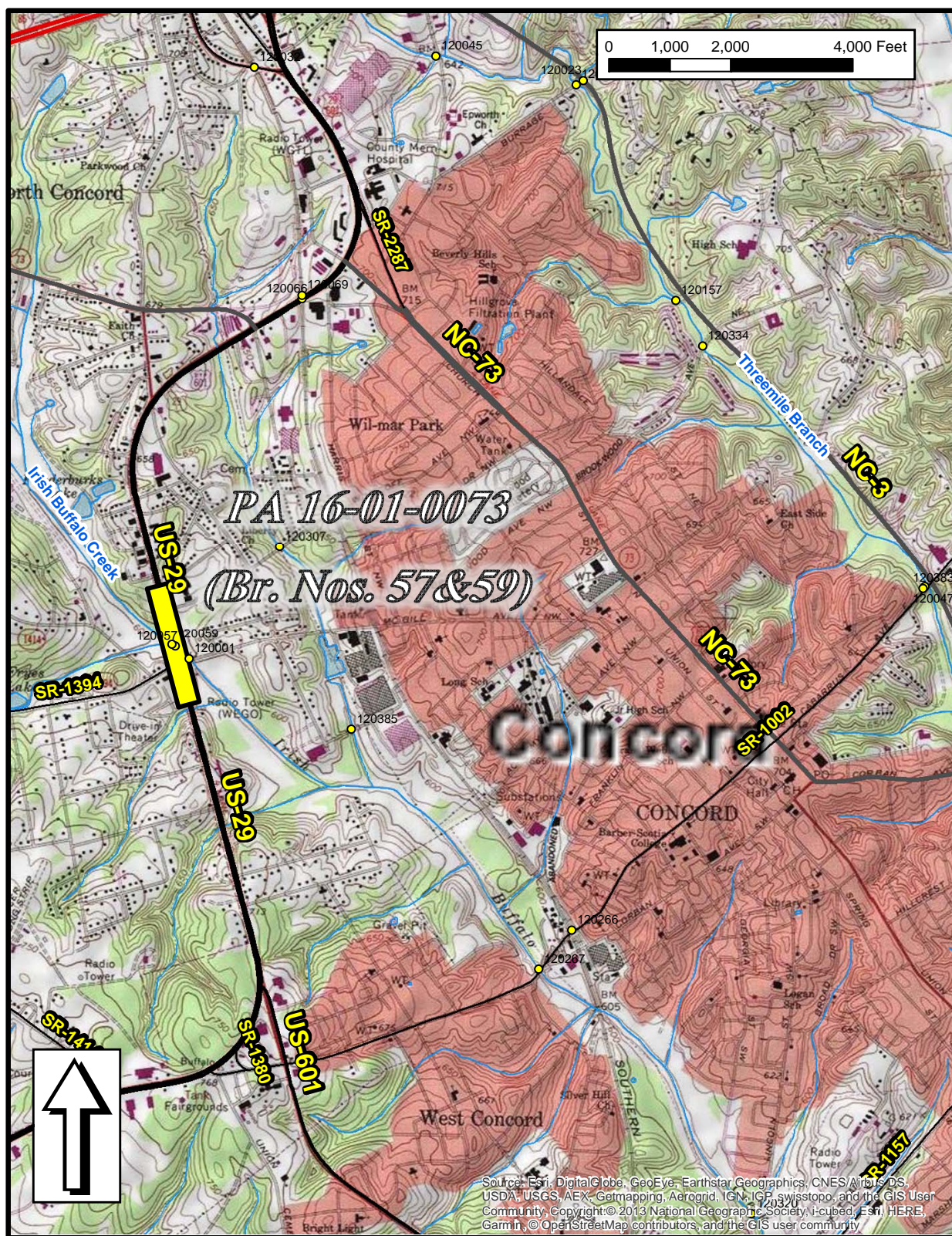


Figure 1. Vicinity of TIP # B-5808, PA 16-01-0073, the proposed replacement of Br. Nos. 57 & 59 on US 29/US 601 over Irish Buffalo Creek west of Concord.

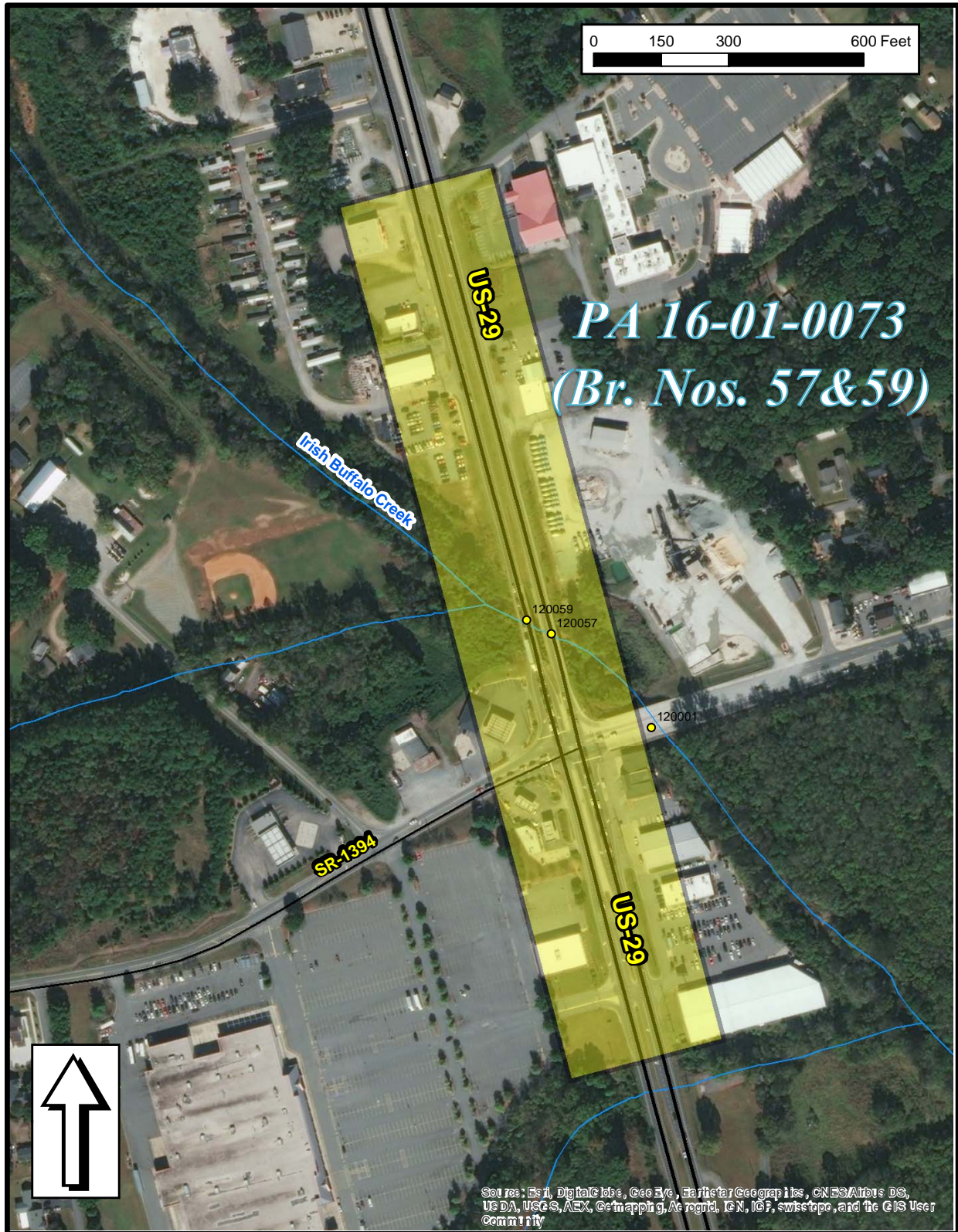


Figure 2. Aerial map of TIP # B-5808, PA 16-01-0073, the proposed replacement of Br. Nos. 57 & 59 on US 29/US 601 over Irish Buffalo Creek west of Concord. The approximate, generous APE is shown in yellow. Note the developed properties.

16-01-0073



HISTORIC ARCHITECTURE AND LANDSCAPES NO SURVEY REQUIRED 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:	B-5808	County:	Cabarrus
WBS No.:	45762.1.1	Document Type:	
Fed. Aid No:		Funding:	State <input checked="" type="checkbox"/> Federal
Federal Permit(s):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Permit Type(s):	NWP
Project Description: Replace Bridge Numbers 57 (NBL) and 59 (SBL) on US 29 and US 601 Irish Buffalo Creek (no off-site detour planned).			

SUMMARY OF HISTORIC ARCHITECTURE AND LANDSCAPES REVIEW

Description of review activities, results, and conclusions: HPOWeb reviewed on 16 February 2016 and yielded no NR, SL, LD, DE, or SS properties in the Area of Potential Effects (APE). Cabarrus County current GIS mapping, aerial photography, and tax information indicated a developed APE with commercial resources and one school dating from the mid-twentieth century to the 2000s (viewed 16 February 2016). The several pre-1965 resources are unexceptional, altered examples of their types. North Carolina Highway Historical Marker L-84 ("Red Hill") is located just southeast of Bridge No. 57 at the SR 1394 (Poplar Tent Road)/ US 29-US 601 intersection and references a site outside the APE. Bridge Numbers 57 (1951) and 59 (1938) are not eligible for the National Register according to the NCDOT Historic Bridge Survey as they are not representative of any distinctive engineering or aesthetic type. Google Maps "Street View" confirmed the absence of critical historic structures and landscapes in the APE (viewed 16 February 2016).

No architectural survey is required for the project as currently defined.

Why the available information provides a reliable basis for reasonably predicting that there are no unidentified significant historic architectural or landscape resources in the project area: APE extends 1000 feet from either end of the existing bridge (N-S) and 200 feet to either side of the US 29-US 601 centerline (E-W) to encompass proposed construction activities. The comprehensive county architectural survey (1981) and later investigations recorded no properties in the APE (Peter R. Kaplan, *The Historic Architecture of Cabarrus County, North Carolina* (Concord, NC: Historic Cabarrus, 1981; 2004)). County GIS/tax materials and other visuals clearly illustrate the absence of significant architectural resources. No National Register-listed properties are located within the APE.

Should the design of the project change, please notify NCDOT Historic Architecture as additional review may be necessary.

SUPPORT DOCUMENTATION

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

FINDING BY NCDOT ARCHITECTURAL HISTORIAN

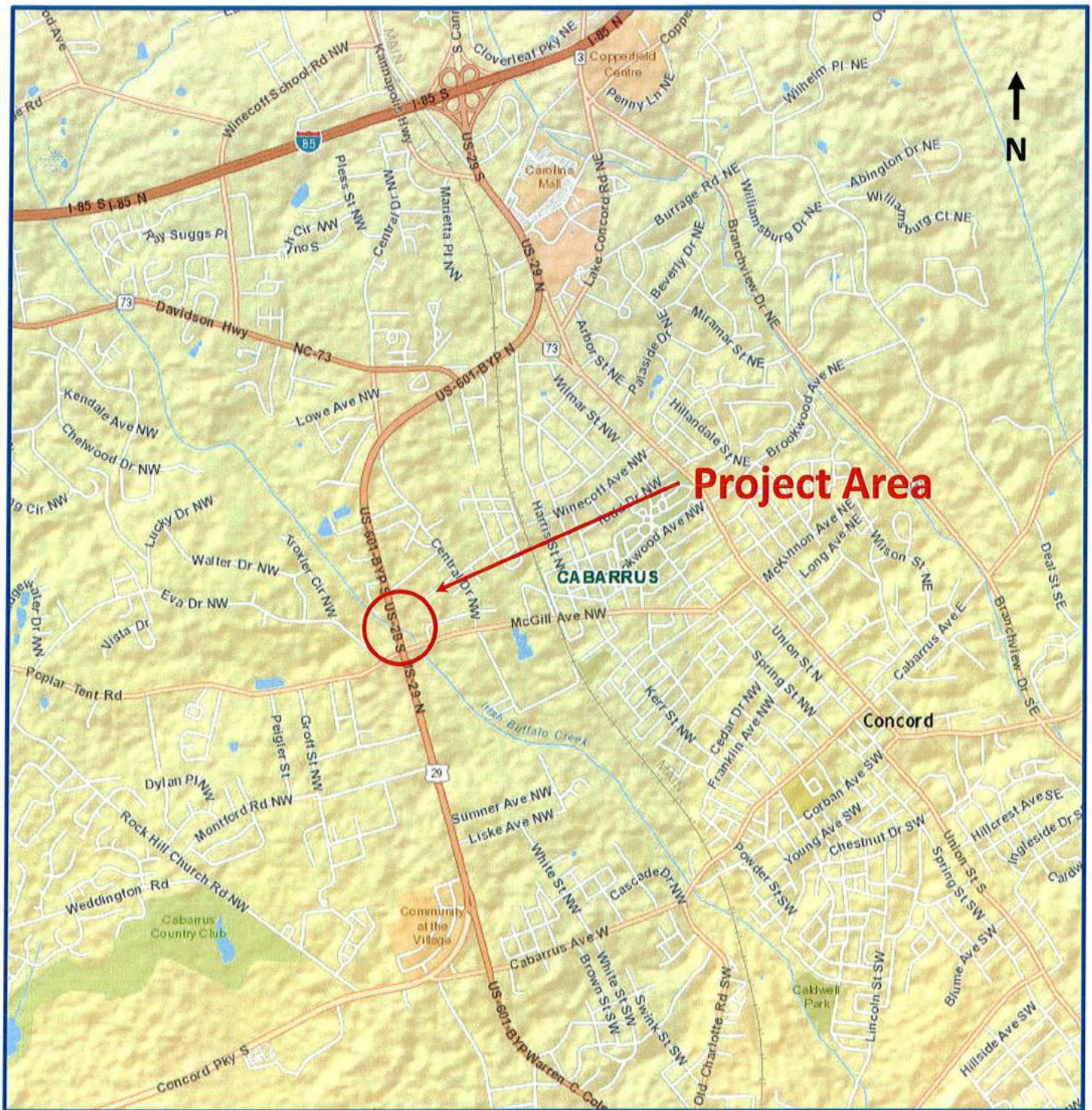
Historic Architecture and Landscapes -- NO SURVEY REQUIRED

Vanessa E. Patrick

17 February 2016

NCDOT Architectural Historian

Date



B-5808

Bridge Numbers 57 and 59 Replacements

Cabarrus County

WBS No. 45762.1.1

Base map: HPOWeb, nts

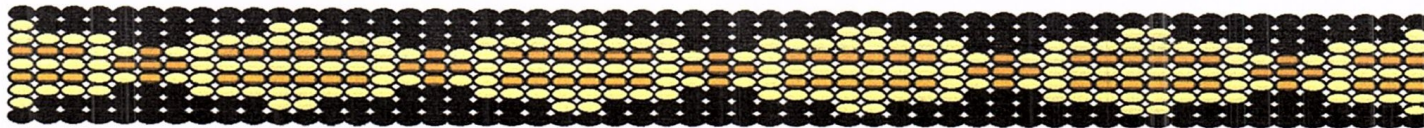
NCDOT – Historic Architecture

February 2016

Tracking No. 16-01-0073

Catawba Indian Nation
Tribal Historic Preservation Office
1536 Tom Steven Road
Rock Hill, South Carolina 29730

Office 803-328-2427
Fax 803-328-5791



January 16, 2020

Attention: David Stutts
NC Department of Transportation
1581 Mail Service Center
Raleigh, NC 27699

Re. THPO #	Project #	Project Description
2020-193-85	B-5808	Replacement of Bridge Nos. 57 and 59 on US 29/US 601 over Irish Buffalo Creek

Dear Mr. Stutts,

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. **However, the Catawba are to be notified if Native American artifacts and / or human remains are located during the ground disturbance phase of this project.**

If you have questions please contact Caitlin Rogers at 803-328-2427 ext. 226, or e-mail caitlinh@ccppcrafts.com.

Sincerely,

Wenonah G. Haire
Tribal Historic Preservation Officer

Type I and II Ground Disturbing Categorical Exclusion Action Classification Form

STIP Project No.	B-5808
WBS Element	45762.1.1
Federal Project No.	NHP-0029(062)

A. Project Description:

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 57 and Bridge No. 59 on Concord Parkway (US 29/US 601) over Irish Buffalo Creek in Cabarrus County (Refer to Figure 1). Built in 1951, Bridge No. 57 (Northbound) and Bridge No. 59 (Southbound), built in 1938, have two 12-foot lanes each, approximately 170 feet in length, with reinforced concrete deck and girder construction. The project is scheduled for Right of Way in August 2019 and Let in August 2020. Minor ROW acquisition will be required.

Proposed improvements include adding 5-foot sidewalks, an additional northbound 12-foot left turn lane, and a southbound 12-foot right turn lane. The proposed bridge would be 180 feet in length, and the bridge replacement would be constructed in place through the use of an on-site detour, crossovers, and phased construction (Refer to Appendix A).

B. Description of Need and Purpose:

NCDOT Bridge Management Unit records indicate Bridge No. 57 and Bridge No. 59 have sufficiency ratings of 48.27 and 49.73 out of a possible 100 for a new structure (respectively). Bridge No. 57 and Bridge No. 59 are considered structurally deficient due to a substructure condition appraisal of 4 out of 9 according to Federal Highway Administration (FHWA) standards. The two bridges also meet the criteria for functionally obsolete due to a deck geometry appraisal of 2 out of 9. Both bridges are approaching the end of their useful lives.

C. Categorical Exclusion Action Classification:

- ☒ TYPE I A
- ☐ TYPE I B
- ☐ TYPE II A
- ☐ TYPE II B

D. Proposed Improvements:

28. Bridge rehabilitation, reconstruction, or replacement or the construction of grade separation to replace existing at-grade railroad crossings, if the actions meet the constraints in 23 CFR 771.117(e)(1-6).

E. Special Project Information:

Capacity Analysis:

In March 2018, a capacity analysis was completed that analyzed the intersection of US 29/601 and Poplar Tent Rd/McGill Ave. The 2016 Base Year No-Build found an overall LOS E during AM and PM peak hour with Poplar Tent Rd.

A 2025 construction year analysis was conducted to understand the impacts of construction phasing at the intersection of US 29/601 and Poplar Tent Rd/McGill Ave. The following three options were analyzed:

- Option 1 – Michigan Left as proposed in C-4918A (a locally administered congestion mitigation air quality (CMAQ) project that will provide intersection improvements and additional turn lanes for Poplar Tent Rd at US 29/US 601).
- Option 2 – Divided US 29/601 to restrict east/west through movements along Poplar Tent Road/McGill Ave.
- Option 3 – Divided US 29/601 along with the detour of McGill Ave Traffic Poplar Tent Rd being restricted to right turns only.

After analyzing all three construction phasing options, it is predicted that option 1 will achieve acceptable overall LOS at the intersection of US 29/601 and Poplar Tent Rd/McGill Ave.

Phasing:

During Phase I, a temporary detour bridge will be constructed while a temporary crossover for northbound traffic is constructed. Existing traffic patterns will not be altered. Southbound traffic will be rerouted to the temporary detour bridge and northbound traffic will shift via the crossover to the existing southbound lane during Phase II. In this phase, the east side of the new bridge will be constructed. Phase III shifts northbound traffic to the newly constructed bridge while maintaining southbound traffic on the temporary detour bridge. The remaining side of the new bridge is constructed in this phase. In the final phase, Phase IV, southbound traffic will be shifted to the newly constructed bridge and the temporary detour bridge will be removed.

Anticipated Permit or Consultation Requirements: The proposed project has been designated as a CE for the purposes of National Environmental Policy Act (NEPA) documentation. As a result, a Nationwide Permit (NWP) 23 will likely be applicable. A NWP 33 may also apply for temporary construction activities such as stream dewatering, work bridges, or temporary causeways that are often used during bridge construction or rehabilitation. The USACE holds the final discretion as to what permit will be required to authorize project construction. If a Section 404 permit is required, then a Section 401 Water Quality Certification (WQC) from NCDWR will be needed. Irish Buffalo Creek, which is part of the Yadkin-PeeDee River basin, crosses under Bridge No. 57 and 59 and is listed on the North Carolina 2016 Final 303(d) list of impaired waters but not for sedimentation.

Environmental Commitments: Greensheet commitments are located at the end of the checklist.

Estimated Costs (Pending): The estimated costs, FY 2018, are as follows:

Utility	\$	1,417,100	(NCDOT)
R/W	\$	309,200	(NCDOT)
Const.	\$	8,760,000	(STV Engineers Inc.)
Total	\$	10,486,300	

Estimated Traffic: A traffic forecast was conducted in September 2016, and a capacity analysis completed in March 2018. The SYNCHRO analysis determined the need for a six (6) lane section of the bridge in 2040 to provide additional storage for vehicles traveling north/south on US 29/601.

Current 2016	32,000 vpd
Year 2040	51,400 vpd
TTST	1%
Dual	3%

Crash Analysis: A crash analysis was completed on February 15, 2017 by NCDOT on this section of US 29 and US 601 (Concord Parkway) from 500 feet south of Bridge No. 57 to 500 feet north of the bridge. The crash analysis was performed using NCDOT's TEAAS system with a study period of five years, from January 1, 2012 to December 31, 2016. 111 crashes were found occurring in the vicinity of the project. The crash analysis found the Total Crash Rate for crashes per 100 million vehicle miles to be 943.70 which is higher than the comparable state average of 321.99.

Design Exceptions: There are no anticipated design exceptions for this project.

Pedestrian and Bicycle Accommodations: There are no existing bike and pedestrian facilities along Concord Parkway (US 29/US 601). The City of Concord requested incorporating sidewalks on both bridges as well as 14-ft outside wide lanes to accommodate bicycles. B-5808 proposes 5-foot sidewalks along Concord Parkway.

Irish Buffalo Creek is the future site of the Irish Buffalo Creek Greenway, which is an adopted segment of the Carolina Thread Trail connecting Concord to Kannapolis. This segment is noted in the adopted Carolina Thread Trail Master Plan for Cabarrus County (August 2009). The NC Division of Bicycle and Pedestrian Transportation recommended working with the City of Concord to discuss accommodations underneath the replaced bridge. B-5808 proposes vertical clearance ranging from 8 feet to 18 feet underneath the bridge.

The City of Concord confirmed on May 22, 2018 that the proposed greenway is not funded and the trail is planned to be a paved path along Irish Buffalo Creek. On July 2, 2018, the City of Concord confirmed that none of the parcels surrounding Bridge Nos. 57 & 59 are owned by the City of Concord, Cabarrus County, or have publicly owned easements on them.

Alternative Analysis:

No Build – The no build alternative would not replace deficient bridges, and thus is not a viable option.

Rehabilitation – Rehabilitation would only provide a temporary solution to the structural deficiency of the bridge.

Staged Construction with Onsite Detour (Preferred Alternative) – Staged construction is the current and preferred alternative since it utilizes an onsite detour bridge. Phased construction will be utilized. Southbound traffic will be moved to a temporary detour bridge and northbound traffic will be shifted to the existing southbound lanes. In addition, due to concerns regarding the number of school buses using the bridge and the high level of impact on emergency response services, an offsite detour was not feasible.

New Alignment – A new alignment option for US 29/US 601 (Concord Parkway North) is not feasible.

Offsite Detour – The closest available detour route is approximately 7 miles long and follows Concord Parkway North, NC 73 (Church Street North), and SR 1002 (Cabarrus Avenue West). Given the potential for a high level of impact on emergency response services and school transportation, an alternative that utilizes a temporary on-site detour is preferred.

Agency Comments: Start of Study letters were sent to the City of Concord, Cabarrus County, Cabarrus-Rowan MPO, NC Department of Parks and Recreation, NC DEQ, NC Division of Bicycle and Pedestrian Transportation, and the US Army Corps of Engineers in December of 2015.

In 2016, The City of Concord's Transportation Director noted C-4918A, a locally administered congestion mitigation air quality (CMAQ) project, which modifies the current US 29 Poplar Tent/McGill intersection to a superstreet, is located in the study area. Due to an unpermitted left turn from US 29 south to McGill Ave, it is requested that width be provided on the northbound lane to provide future storage for the U-turn north of the intersection.

Input forms were sent to the Concord Fire Chief, Town of Concord Planner, and the Cabarrus County Schools Transportation Technical Planner in April and May of 2016. Comments were received back from the Concord Fire Chief and the Cabarrus County Schools Transportation Technical Planner in April and May of 2016. The Cabarrus County School Transportation Technical Planner expressed concern regarding the potential impact of this project on school transportation services and high impacts for regular traffic if the bridge was closed for up to a year. The Concord Fire Chief expressed concern regarding the potential high level of impact this project would have on EMS services if the bridge was closed for up to a year.

Public Involvement: Census data indicates a Spanish language-speaking population which exceeds the US Department of Justice Limited English Proficiency Safe Harbor threshold within the DCIA. Census data also indicates an Asian/Pacific language speaking populations within the area. A landowner notification letter was sent on February 16, 2016 to all property owners affected directly by this project to inform them of representatives being present on their property. The letter indicated the following, "Please note that if the U.S. Army Corps of Engineers has already issued a Jurisdictional Determination on your property confirming the presence of streams and/or wetlands, or if you have general questions or comments about the project, contact the NCDOT Planning Engineer Jonathan Carr by phone (919) 707-6014, or via email at jecarr@ncdot.gov." No comments have been received to date.

F. Project Impact Criteria Checklists:

<u>Type I & II - Ground Disturbing Actions</u>			
<u>FHWA APPROVAL ACTIVITIES THRESHOLD CRITERIA</u>			
If any of questions 1-7 are marked "yes" then the CE will require FHWA approval.		Yes	No
1	Does the project require formal consultation with U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Does the project result in impacts subject to the conditions of the Bald and Golden Eagle Protection Act (BGPA)?	<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 a residential or commercial displacement, or a substantial amount of right of way acquisition?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	Does the project require an Individual Section 4(f) approval?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7	Does the project include adverse effects that cannot be resolved with a Memorandum of Agreement (MOA) under Section 106 of the National Historic Preservation Act (NHPA) or have an adverse effect on a National Historic Landmark (NHL)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If any of questions 8 through 31 are marked "yes" then additional information will be required for those questions in Section G.			
<u>Other Considerations</u>		Yes	No
8	Does the project result in a finding of "may affect not likely to adversely affect" for listed species, or designated critical habitat under Section 7 of the Endangered Species Act (ESA)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

9	Is the project located in anadromous fish spawning waters?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10	Does the project impact waters classified as Outstanding Resource Water (ORW), High Quality Water (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"/>
11	Does the project impact waters of the United States in any of the designated mountain trout streams?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12	Does the project require a U.S. Army Corps of Engineers (USACE) Individual Section 404 Permit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13	Will the project require an easement from a Federal Energy Regulatory Commission (FERC) licensed facility?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14	Does the project include a Section 106 of the NHPA effects determination other than a no effect, including archaeological remains?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>Other Considerations (continued)</u>		Yes	No
15	Does the project involve hazardous materials and/or landfills?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
16	Does the project require work encroaching and adversely affecting 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 checked="" type="checkbox"/>	<input type="checkbox"/>
17	Is the project in a Coastal Area Management Act (CAMA) county and substantially affects the coastal zone and/or any Area of Environmental Concern (AEC)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18	Does the project require a U.S. Coast Guard (USCG) permit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
19	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"/>
20	Does the project involve Coastal Barrier Resources Act (CBRA) resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
21	Does the project impact federal lands (e.g. U.S. Forest Service (USFS), USFWS, etc.) or Tribal Lands?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
22	Does the project involve any changes in access control?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
23	Does the project have a permanent adverse effect on local traffic patterns or community cohesiveness?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
24	Will maintenance of traffic cause substantial disruption?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
25	Is the project inconsistent with the STIP or the Metropolitan Planning Organization's (MPO's) Transportation Improvement Program (TIP) (where applicable)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
26	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, Tennessee Valley Authority (TVA), 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"/>

27	Does the project involve Federal Emergency Management Agency (FEMA) buyout properties under the Hazard Mitigation Grant Program (HMGP)?	<input type="checkbox"/>	<input type="checkbox"/>
28	Does the project include a <i>de minimis</i> or programmatic Section 4(f)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
29	Is the project considered a Type I under the NCDOT's Noise Policy?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
30	Is there prime or important farmland soil impacted by this project as defined by the Farmland Protection Policy Act (FPPA)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
31	Are there other issues that arose during the project development process that affected the project decision?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

G. Additional Documentation as Required from Section F

Response to Question 10- 303(d) Impaired Water Bodies: Irish Buffalo Creek is listed on the North Carolina 2014 and 2016 Final 303(d) list of impaired waters in the study area. Impacts to water quality resulting from the design and construction of the proposed improvements will be minimized or avoided through the use of the NCDOT *Stormwater Best Management Practices Toolbox*.

Response to Question 15 – Hazardous Materials: A GeoEnvironmental Report completed on August 12, 2016 identified nine petroleum Underground Storage Tank (UST) facilities within the project limits (Refer to Figure 1). There will be ROW acquisition on two parcels that have identified UST's. An active gas station is located on the western quadrant of the Concord Parkway (US 29/US 601) and Poplar Tent Rd intersection. A cement plant is in the northeastern quadrant of the intersection with two UST's and one above ground storage tank (AST). All nine UST facility sites are anticipated to present low geoenvironmental impacts to this project. Soil and ground water assessment will be conducted at each of the affected sites prior to right of way acquisition.

Response to Question 16 – Floodplain: This project involves construction activities on or adjacent to FEMA-regulated stream(s). Therefore, the Division shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structure(s) and roadway embankment that are located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP), to determine status of project with regard to applicability of NCDOT'S Memorandum of Agreement, or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

H. Project Commitments

**Cabarrus County
Bridge No. 57 and No. 59 over Irish Buffalo
Federal Project No. NHP-0029(062)
WBS No. 45762.1.1
STIP No. B-5808**

**Structures Management Unit, Project Manager
FEMA Coordination**

The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP), to determine status of project with regard to applicability of NCDOT'S Memorandum of Agreement, or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

This project involves construction activities on or adjacent to FEMA-regulated stream(s). Therefore, the Division shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structure(s) and roadway embankment that are located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

**Division Ten, Division Bridge Program Manager
Sidewalks**

Proposed sidewalks are included on both sides throughout the project. This should be included in the municipal agreement between NCDOT and the City of Concord.

**Division Ten, Division Bridge Program Manager, GeoEnvironmental
Hazardous Materials**

If further design indicates potential impacts to Hazardous Materials, soil and groundwater assessments will be conducted at each of the affected sites prior to right of way acquisition by NCDOT GeoEnvironmental.

I. Categorical Exclusion ApprovalSTIP Project No. B-5808WBS Element 45762.1.1Federal Project No. NHP-0029(062)**Prepared By:**11/7/2018

Date

DocuSigned by:

*Elizabeth Scott*Elizabeth Scott, EI, STV Engineers Inc.**Prepared For:**North Carolina Department of Transportation**Reviewed By:**11/8/2018

Date

DocuSigned by:

*Garland Haywood*Garland Haywood, PE, Division Bridge Program Manager
North Carolina Department of Transportation**Approved**

If all of the threshold questions (1 through 7) of Section F are answered "no," NCDOT approves this Categorical Exclusion.

**Certified**

If any of the threshold questions (1 through 7) of Section F are answered "yes," NCDOT certifies this Categorical Exclusion.

11/26/2018

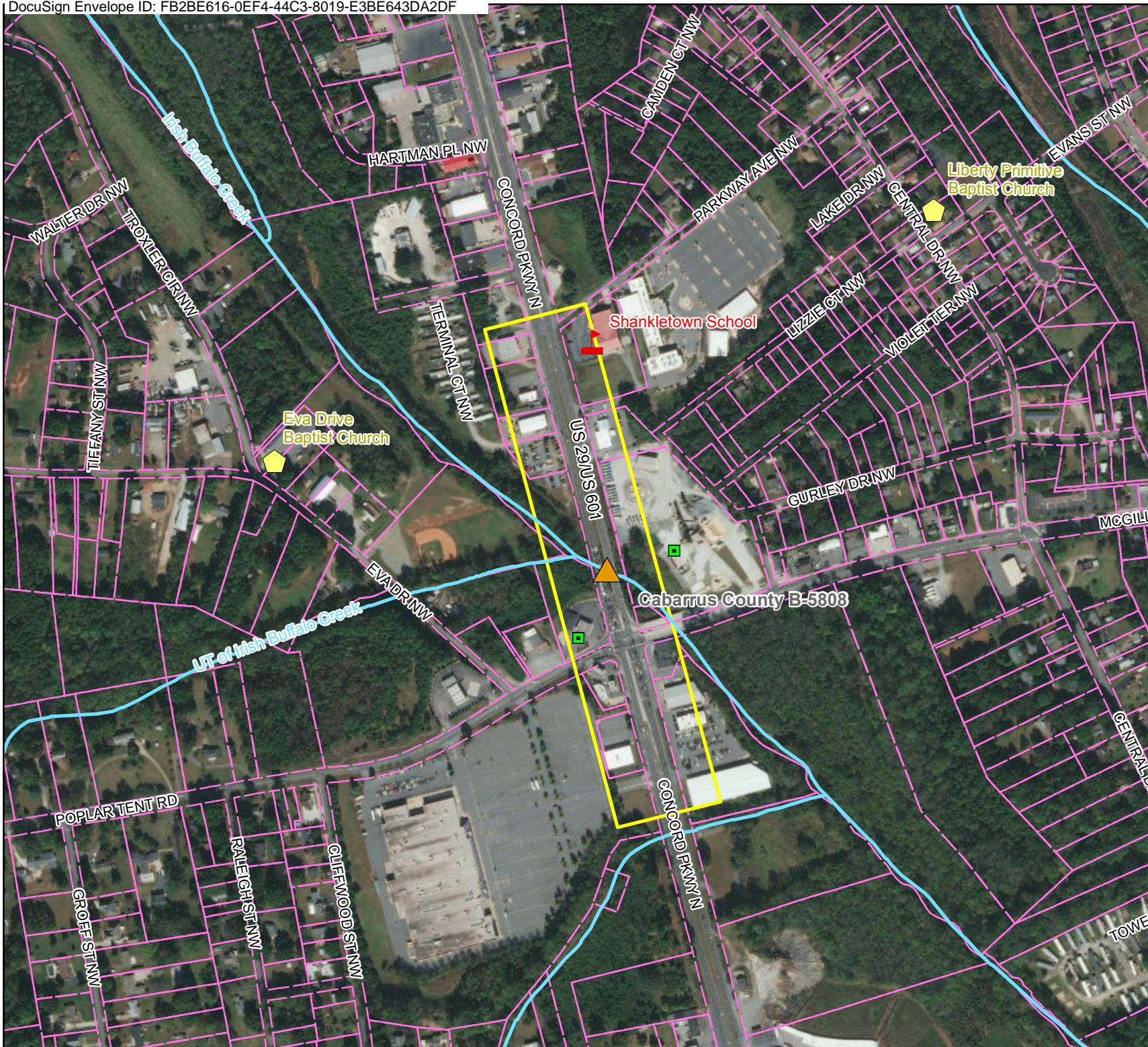
Date

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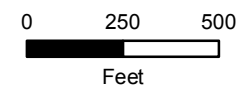
*Kevin Fischer*Kevin Fischer, PE, Structures Management Unit
North Carolina Department of Transportation**FHWA Approved:**

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

DateJohn F. Sullivan, III, PE, Division Administrator
Federal Highway Administration



**FIGURE 1-
LOCATION MAP**



LEGEND

- Bridge Location
- Project Study Area
- Floodplain
- NWI Wetland
- Parcel
- Church
- School
- Underground Storage Tank
- Stream



Source: USDA Geospatial Gateway; NCOneMap; USFWS

TIP Project B-5808

**Bridge Replacements
Bridge Nos. 57/59
over Irish Buffalo Creek
on US 29/US 601
Cabarrus County**

September 2018

Appendix A

8/17/19

NOTE:
ACTUAL TIE LOCATIONS WILL BE DETERMINED BY
FURTHER INVESTIGATION OF THE PROFILE /SUPERS.

PHASE 1:
CONSTRUCT TEMPORARY DETOUR FOR SB TRAFFIC
CONSTRUCT TEMPORARY CROSS-OVER FOR NB TRAFFIC

LOS - 2025 CONSTRUCTION YEAR (WITH SOUTHBOUND RIGHT-TURN)	
AM PEAK	PM PEAK
D	D

CABARRUS COUNTY
B-5808
PREFERRED CONCEPT - PHASE 1
(DESIGN OPTION - INCLUDE RIGHT TURN LANE)
REPLACE IN PLACE
WITH ON-SITE DETOUR

STV100years

STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO.
B-5808

SHEET NO.
1

R/W SHEET NO.

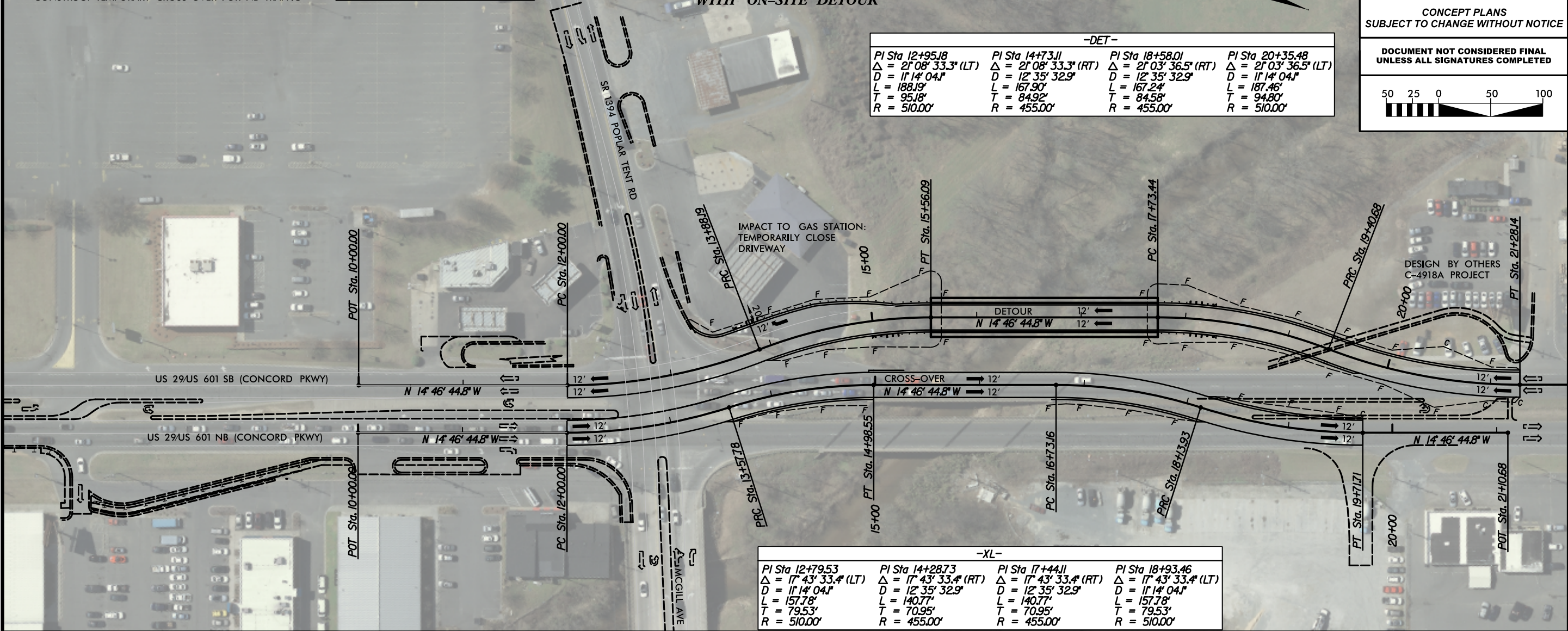
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9/27/2018

CONCEPT PLANS
SUBJECT TO CHANGE WITHOUT NOTICE

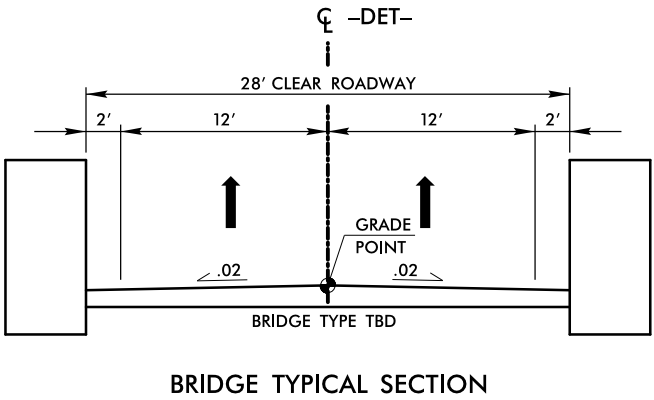
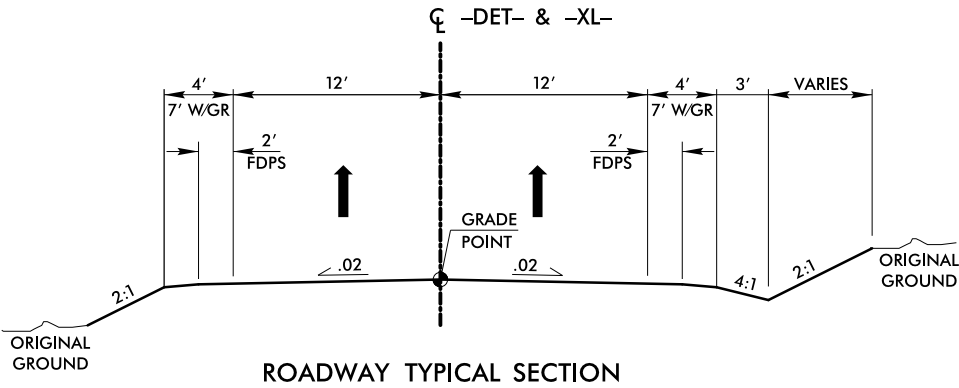
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UNLESS ALL SIGNATURES COMPLETED

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-DET-			
PI Sta 12+95.18 $\Delta = 21^{\circ}08'33.3"$ (LT) D = 11'14"04.1" L = 188.19' T = 95.18' R = 510.00'	PI Sta 14+73.11 $\Delta = 21^{\circ}08'33.3"$ (RT) D = 12'35'32.9" L = 167.90' T = 84.92' R = 455.00'	PI Sta 18+58.01 $\Delta = 21^{\circ}03'36.5"$ (RT) D = 12'35'32.9" L = 167.24' T = 84.58' R = 455.00'	PI Sta 20+35.48 $\Delta = 21^{\circ}03'36.5"$ (LT) D = 11'14"04.1" L = 187.46' T = 94.80' R = 510.00'



-XL-			
PI Sta 12+79.53 $\Delta = 17^{\circ}43'33.4"$ (LT) D = 11'14"04.1" L = 157.78' T = 79.53' R = 510.00'	PI Sta 14+28.73 $\Delta = 17^{\circ}43'33.4"$ (RT) D = 12'35'32.9" L = 140.77' T = 70.95' R = 455.00'	PI Sta 17+44.11 $\Delta = 17^{\circ}43'33.4"$ (RT) D = 12'35'32.9" L = 140.77' T = 70.95' R = 455.00'	PI Sta 18+93.46 $\Delta = 17^{\circ}43'33.4"$ (LT) D = 11'14"04.1" L = 157.78' T = 79.53' R = 510.00'



TEMPORARY DETOUR DESIGN DATA

DESIGN STANDARDS	=	REGIONAL
DESIGN SPEED	=	35 MPH
ADT 2016	=	32,000
ADT 2040	=	51,400
T	=	12%
* MIN. RADIUS	=	272'
MAX. GRADE	=	7%
FUNC. CLASS	=	URBAN ARTERIAL
TERRAIN	=	ROLLING
DESIGN EXCEPTION	=	NONE
* LOW-SPEED URBAN STREETS TABLE		

BRIDGE LENGTH	=	220'
BRIDGE SKEW	=	90°
BRIDGE TYPE	=	GIRDER BRIDGE

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maddalena



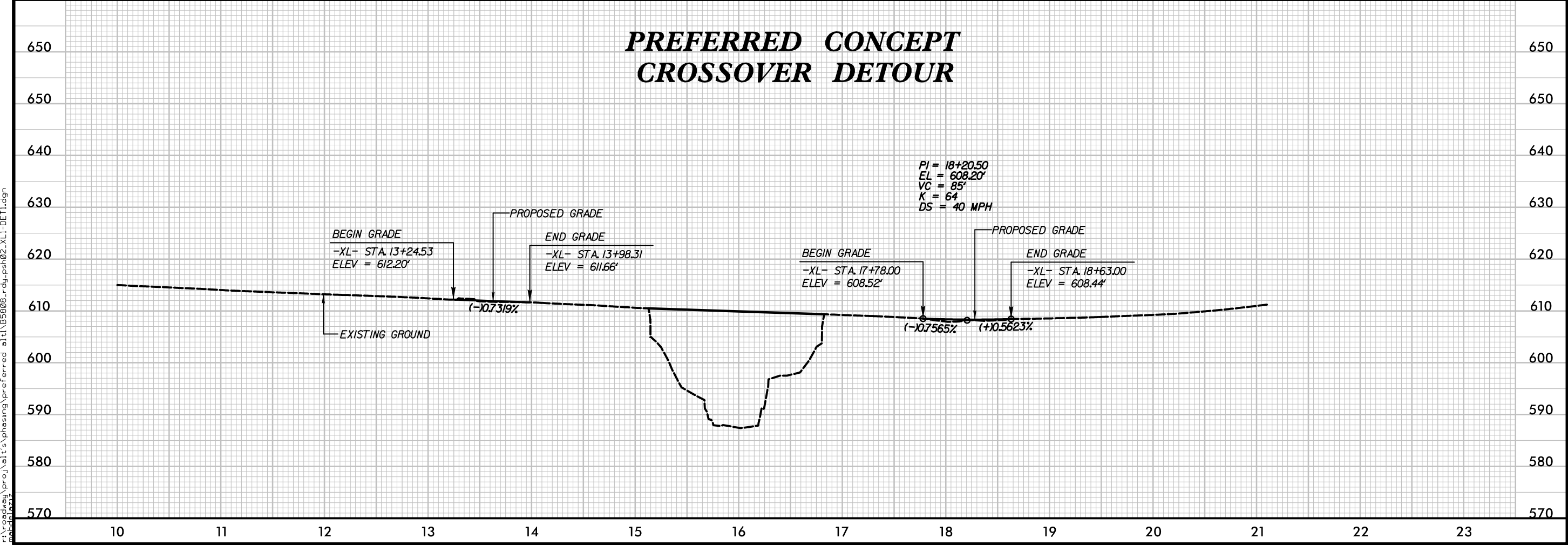
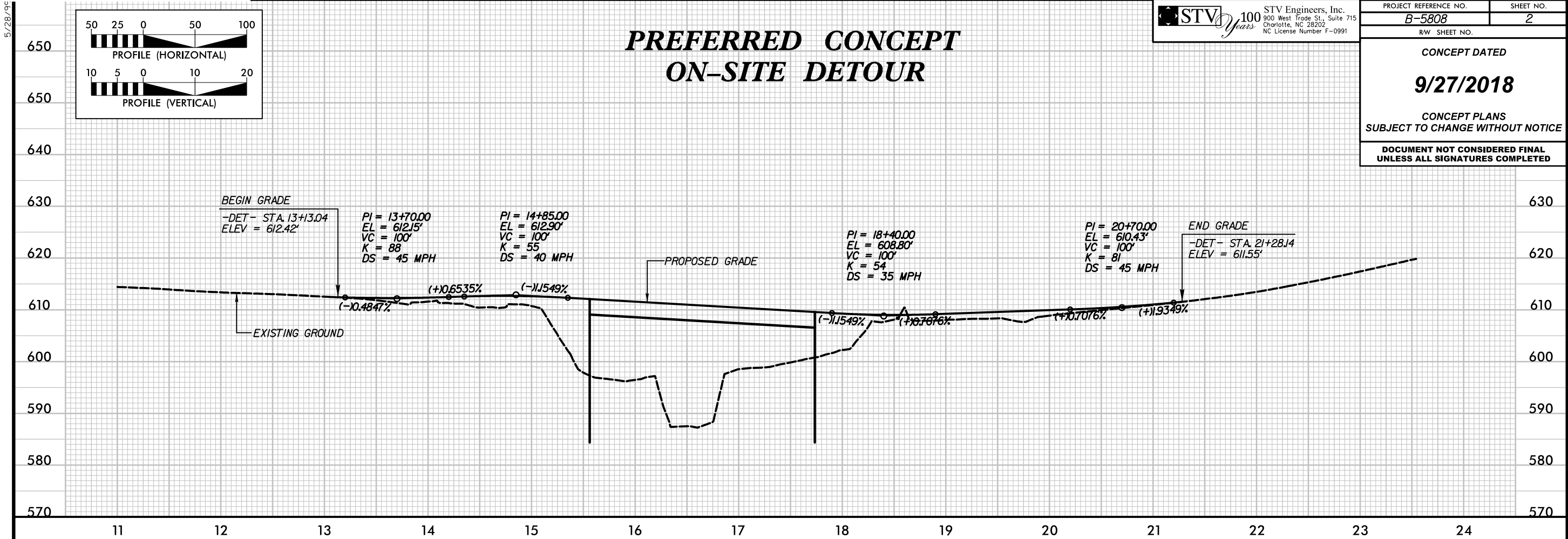
STV Engineers, Inc.

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Charlotte, NC 28202

NC License Number F-0991

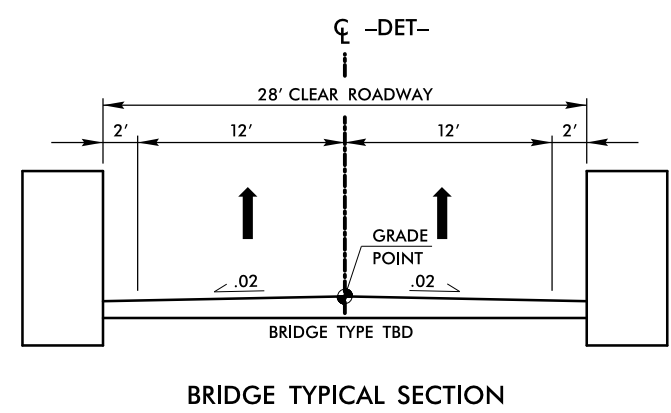
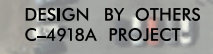
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B-5808	2
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CONCEPT DATED	
9/27/2018	
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UNLESS ALL SIGNATURES COMPLETED	



10/19/2018
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PHASE 2:
SHIFT SB TRAFFIC TO TEMPORARY DETOUR
SHIFT NB TRAFFIC TO CROSS-OVER
CONSTRUCT EAST SIDE OF NEW BRIDGE

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



BRIDGE LENGTH	=	220'
BRIDGE SKEW	=	90°
BRIDGE TYPE	=	GIRDER BRIDGE

8/17/99

NOTE:
ACTUAL TIE LOCATIONS WILL BE DETERMINED BY
FURTHER INVESTIGATION OF THE PROFILE /SUPERS.

PHASE 3:
SHIFT NB TRAFFIC TO NEWLY CONSTRUCTED BRIDGE
MAINTAIN SB TRAFFIC ON TEMPORARY DETOUR
CONSTRUCT REMAINING SIDE OF NEW BRIDGE

CABARRUS COUNTY
B-5808
PREFERRED CONCEPT - PHASE 3
REPLACE IN PLACE
WITH ON-SITE DETOUR



STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO.
B-5808

SHEET NO.
4

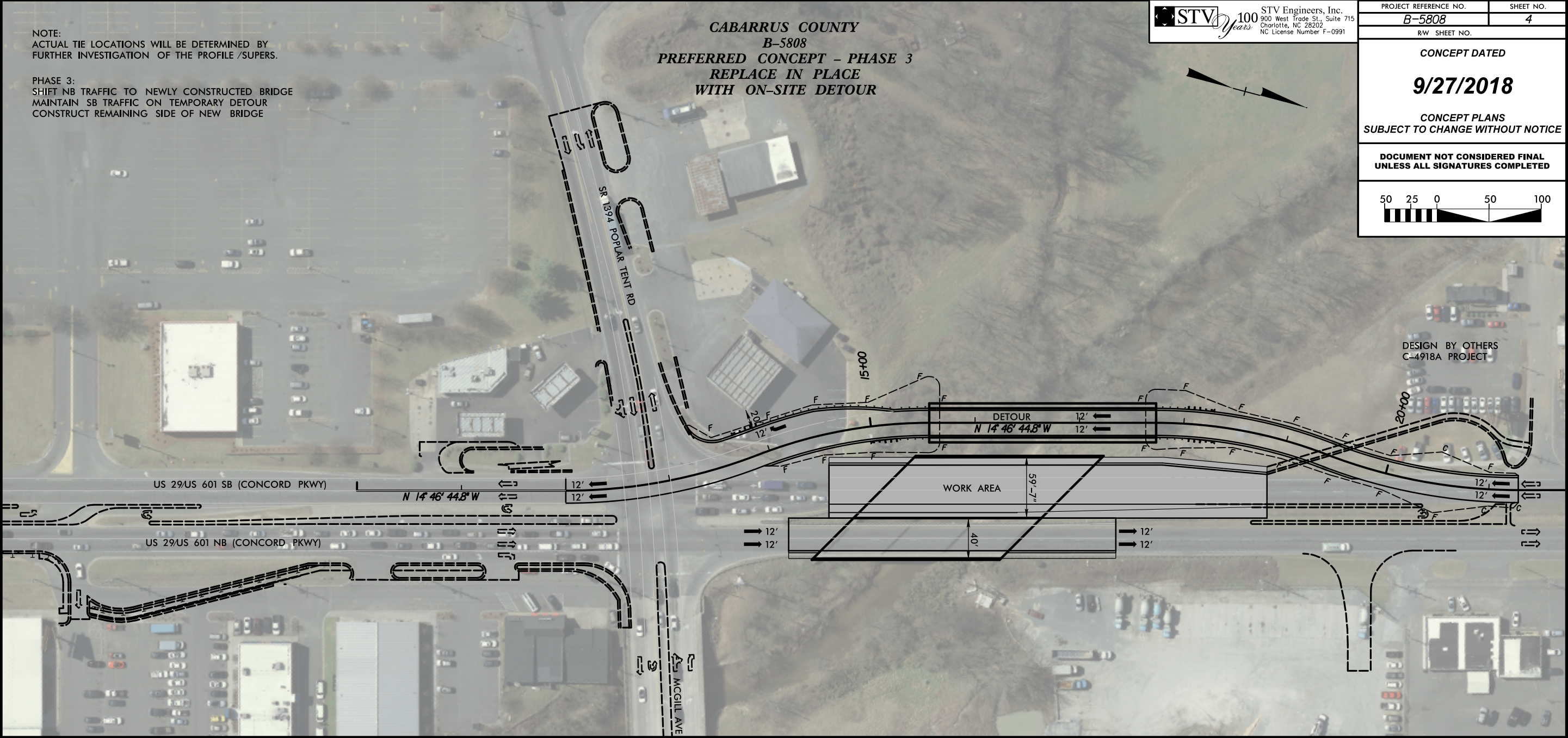
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CONCEPT DATED
9/27/2018

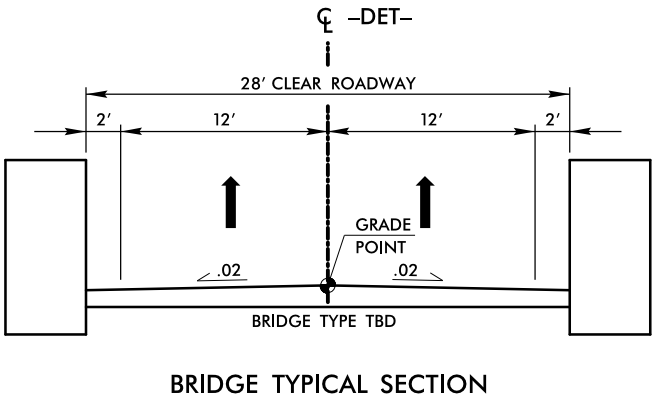
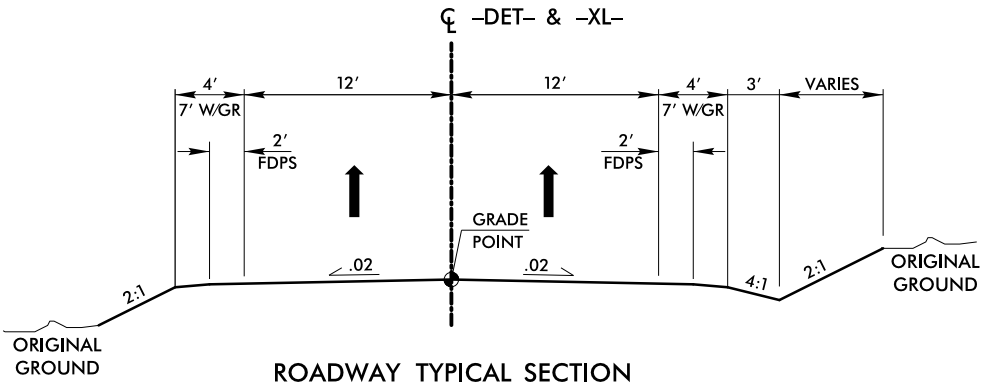
CONCEPT PLANS
SUBJECT TO CHANGE WITHOUT NOTICE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

50250100



DESIGN BY OTHERS
C-4918A PROJECT



TEMPORARY DETOUR DESIGN DATA

- DESIGN STANDARDS = REGIONAL
- DESIGN SPEED = 35 MPH
- ADT 2016 = 32,000
- ADT 2040 = 51,400
- T = 12%
- * MIN. RADIUS = 272'
- MAX. GRADE = 7%
- FUNC. CLASS = URBAN ARTERIAL
- TERRAIN = ROLLING
- DESIGN EXCEPTION = NONE
- * LOW-SPEED URBAN STREETS TABLE

- BRIDGE LENGTH = 220'
- BRIDGE SKEW = 90°
- BRIDGE TYPE = GIRDER BRIDGE

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8/17/99

NOTE:
ACTUAL TIE LOCATIONS WILL BE DETERMINED BY
FURTHER INVESTIGATION OF THE PROFILE /SUPERS.

PHASE 4:
SHIFT SB TRAFFIC TO NEWLY CONSTRUCTED BRIDGE
REMOVE TEMPORARY DETOUR

CABARRUS COUNTY
B-5808
PREFERRED CONCEPT - PHASE 4
REPLACE IN PLACE
WITH ON-SITE DETOUR



STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO.
B-5808

SHEET NO.
5

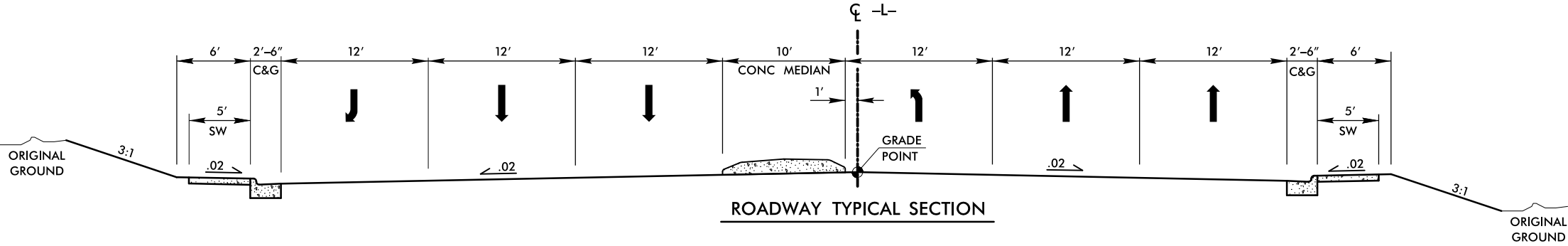
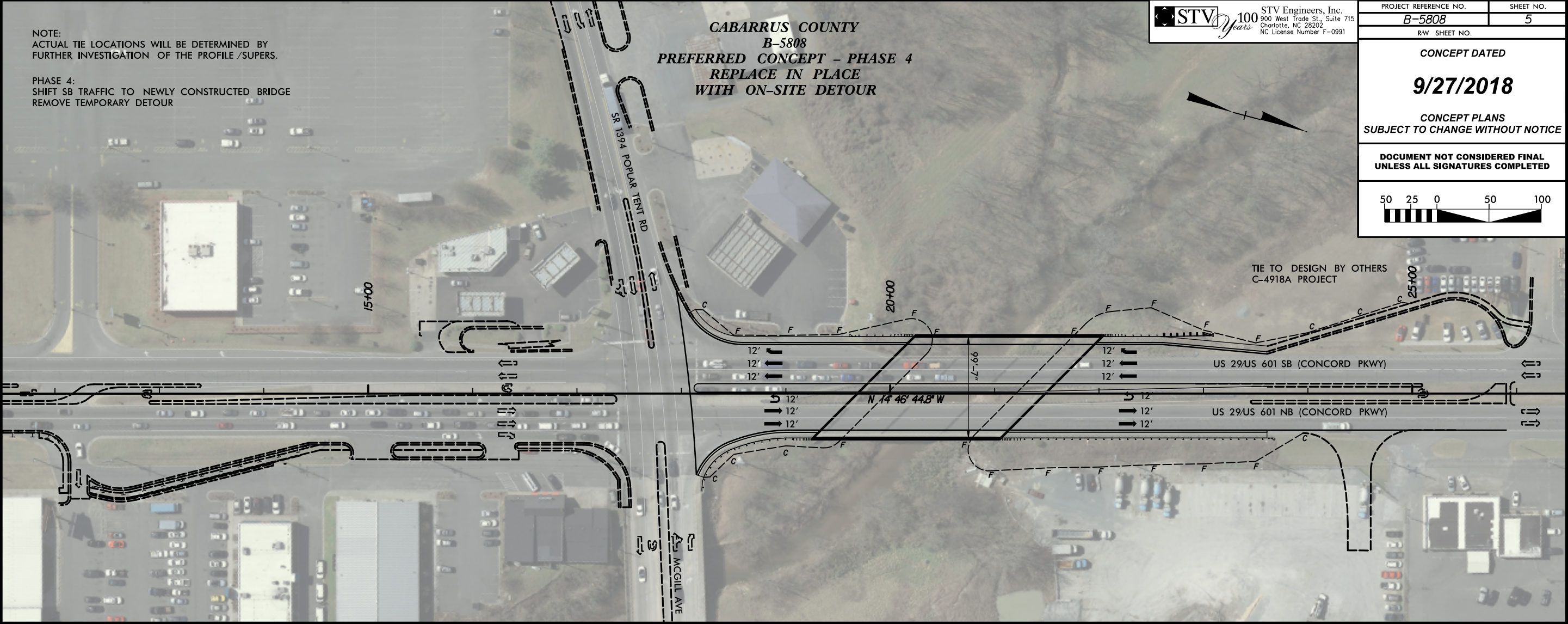
R/W SHEET NO.

CONCEPT DATED
9/27/2018

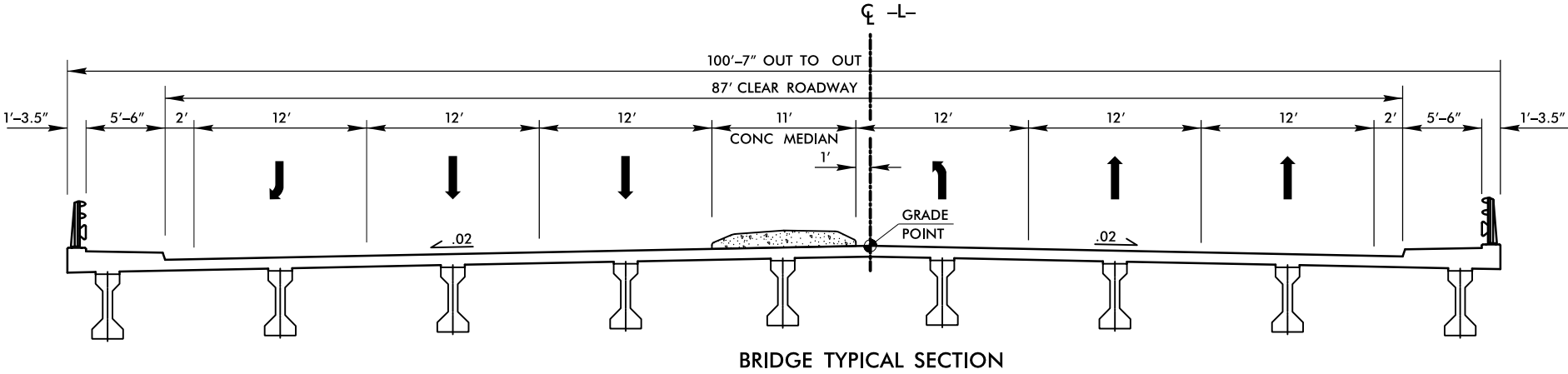
CONCEPT PLANS
SUBJECT TO CHANGE WITHOUT NOTICE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

50 25 0 50 100

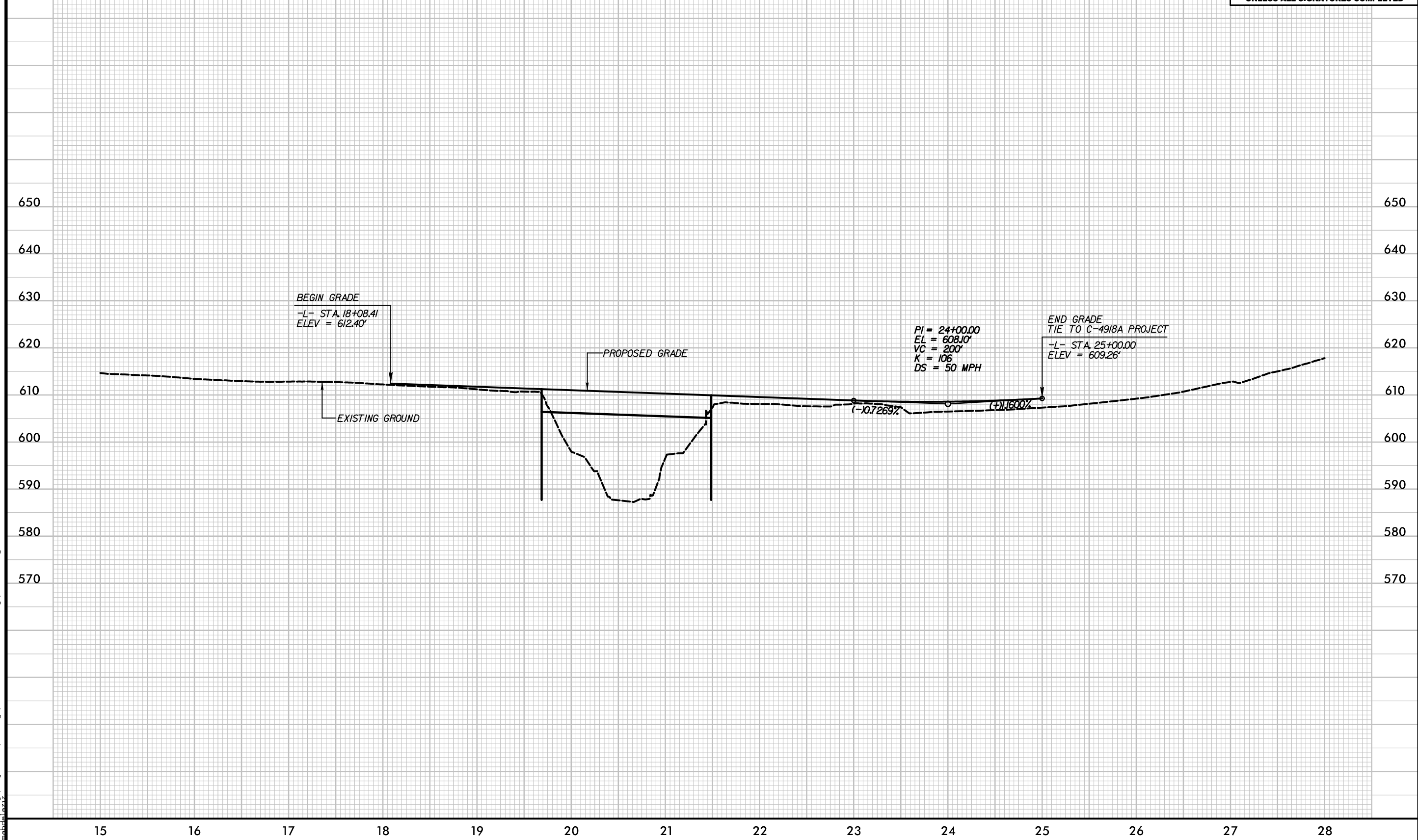


DESIGN DATA	
DESIGN STANDARDS	= REGIONAL
DESIGN SPEED	= 50 MPH
ADT 2016	= 32,000
ADT 2040	= 51,400
T	= 12%
MIN. RADIUS	= 833'
MAX. GRADE	= 7%
FUNC. CLASS	= URBAN ARTERIAL
TERRAIN	= ROLLING
DESIGN EXCEPTION	= NONE



BRIDGE LENGTH	= 180'
BRIDGE SKEW	= 135°
BRIDGE TYPE	= GIRDER BRIDGE

10/19/2018
10:19:20
\\proj\alt\phasing\preferred\alt\B5808_rdy_psh05.dgn
modeling



North Carolina Department of Transportation
Preliminary Estimate

TIP No. B-5808
Route US 28 (Concord Parkway)
From SR 1394 (Poplar Tent Road)
Typical Section

Func

County: **Cabarrus**

CONSTR. COST
\$8,760,000

Prepared By: G. McCauley
Requested By:

Date 9/27/2018
Date

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			Grading	1	LS	\$ 800,000.00	\$ 800,000.00
			Drainage Existing Location	0.20	Miles	\$ 950,000.00	\$ 190,000.00
			Fine Grading	2,430	SY	\$ 10.00	\$ 24,300.00
			New Pavement	2,430	SY	\$ 75.00	\$ 182,250.00
			Pavement Resurfacing	6,565	SY	\$ 20.00	\$ 131,300.00
			1'-6" Concrete Curb and Gutter		LF		\$ -
			2'-6" Concrete Curb and Gutter	770	LF	\$ 25.00	\$ 19,250.00
			4" Concrete Sidewalk	470	SY	\$ 50.00	\$ 23,500.00
			5" Monolithic Islands	420	SY	\$ 100.00	\$ 42,000.00
			Erosion Control	4.0	Acres	\$ 50,000.00	\$ 200,000.00
					Each		
			Upgrade Traffic Signal	1	Each	\$ 75,000.00	\$ 75,000.00
			Traffic Signal (New)	1	Each	\$ 125,000.00	\$ 125,000.00
			Traffic Control	1.0	LS	\$ 300,000.00	\$ 300,000.00
			Thermo and Markers	0.2	Miles	\$ 50,000.00	\$ 10,000.00
			Structures				
			Temporary Bridge (Monthly Rental)	30.00	Month	\$ 20,000.00	\$ 600,000.00
			Stage Constructed Bridge	18,000.00	SF	\$ 170.00	\$ 3,060,000.00
			Utility Construction				
			Relocate Existing Water Line	260	LF	\$ 500.00	\$ 130,000.00
			Relocate Existing Sewer Line	300	LF	\$ 500.00	\$ 150,000.00
			Misc. & Mob (15% Strs&Util)				\$ 591,000.00
			Misc. & Mob (45% Functional)				\$ 955,170.00

Lgth 0.2 Miles

Contract Cost	\$ 7,608,770.00
E. & C, 15%	\$ 1,141,315.50
Construction Cost	\$ 8,750,085.50