

MINIMUM CRITERIA DETERMINATION CHECKLIST

TIP Project No.: B-5813

State Project No.:45767.1.1

Project Location: Bridge No. 132 over Dutch Buffalo Creek on NC 73 in Mount Pleasant, Cabarrus County.

Project Description: The North Carolina Department of Transportation (NCDOT), plans to replace Cabarrus County Bridge No. 132 on NC 73 over Dutch Buffalo Creek (refer to Figure 1). The existing bridge has two 12-foot lanes and is approximately 190 feet long with a reinforced concrete deck girder superstructure. The bridge was built in 1920, and was rehabilitated in 1952.

The proposed project, B-5813, is state funded. The proposed cross section is a two 12-foot lane with a center 12-foot left turning lane with eight foot shoulders. A minimum of 11 feet of vertical clearance has been provided. The project is scheduled for right of way acquisition in February 2019 and let in February 2020. The project would require a realignment of NC 73, with a project length of approximately 1,800 feet. Traffic will be maintained on the existing roadway while constructing the new alignment. Minor ROW acquisition will be required (refer to Appendix A).

Purpose and Need: NCDOT Bridge Management Unit records indicate Bridge No. 132 has a sufficiency rating of 7.68 out of a possible 100 for a new structure. The bridge is considered structurally deficient due to superstructure condition appraisal of 4 out of 9, a substructure condition appraisal of 4 out of 9, and a deck condition of 4 out of 9 according to Federal Highway Administration (FHWA) standards, and is approaching the end of its useful life. The bridge also meets the criteria for functionally obsolete due to a deck geometry appraisal of 2 out of 9.

Bridge No. 132 carries 8,200 vehicles per day with 10,800 vehicles per day projected for the future. Components of both the concrete superstructure and substructure have experienced an increasing degree of deterioration that can no longer be addressed by maintenance activities. The bridge is approaching the end of its useful life. Replacement of the bridge will result in safer traffic operations by providing a left turn lane to SR 2604 (Dutch Rd).

Anticipated Permit or Consultation Requirements: The proposed project has been designated as a Minimum Criteria Determination Checklist for the purposes of State Environmental Policy Act (SEPA) documentation. It is anticipated that a Nationwide or Regional General Permit along with its corresponding Water Quality Certification (WQC), will be applicable for this project. A Nationwide Permit (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 U.S. Army Corps of Engineers (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 WQC from the North Carolina Division of Water Resources (NCDWR) will be needed.

Special Project Information:

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

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

Utility	\$	180,900	(NCDOT)
R/W	\$	201,000	(NCDOT)
Const.	\$	4,470,000	(STV Engineers Inc.)
Total	\$	4,851,900	

Estimated Traffic:

Current 2016	8,200 vpd
Year 2040	10,800 vpd
TTST	1%
Dual	4%

Accidents: A crash analysis provided by NCDOT (Date: 2/14/17) on NC 73 (Franklin St) from 500 feet west of Bridge 132 to 500 feet east 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. Eleven crashes occurred within the vicinity of the project. The crash analysis found the Total Crash Rate for crashes per 100 million vehicle miles to be 343.06 which is higher than the comparable state average of 181.73.

In January 2018, a capacity analysis was completed that analyzed the intersection of NC 73 and SR 2604 (Dutch Rd). The analysis found the intersection warranted a left turn lane of 75 feet of storage. However, due to the close proximity of Bridge No. 132 to the nearby intersection, it was recommended that the turn lane be extend to the west across the bridge (approximately 550 feet) prior to tapering back to the two-lane cross-section of NC 73.

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

Pedestrian and Bicycle Accommodations: An existing bicycle route, Cabarrus County Bicycle Route No. 2-Northern Route, utilizes NC 73 at this bridge location. The North Carolina Division of Bicycle and Pedestrian Transportation requested four foot minimum paved shoulder (five foot preferred), as well as bicycle safe railing. These requested accommodations were included in the projects designs.

The adopted Carolina Thread Trail Master Plan for Cabarrus County (August 2009) indicates a planned greenway, the Dutch Buffalo Creek Greenway, traveling under the bridge. The Cabarrus County Active Living and Parks Department Director confirmed on June 18, 2018, that the proposed greenway is not funded. On July 6, 2018, Cabarrus County confirmed that none of the parcels surrounding Bridge No. 132 are owned by the County, Parks and Recreation Department, or have publicly owned easements on them.

Alternative Analysis:

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

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

New Alignment with Onsite Detour (Preferred Alternative) – A new alignment for NC 73 is preferred because it will allow the addition of a left turn lane on Cabarrus Bridge 132 on NC 73. An onsite detour will be utilized to maintain traffic on the existing roadway.

Offsite Detour – An approximate six-mile offsite detour was evaluated but was not feasible due to concerns regarding the number of school busses using the bridge, EMS response time, and concerns raised by the Mount Pleasant Town Planner regarding the road conditions. Comments from the Mount Pleasant Town Planner noted the offsite detour utilizes very narrow, rough, and rural roads that do not have the capacity to handle the traffic volumes in the event of bridge closure for a significant period of time.

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

Input forms were sent to the Mount Pleasant Fire Department Fire Chief, Town of Mount Pleasant Planner, and the Cabarrus County Schools Transportation Technical Planner in May of 2016. Comments were received back in May of 2016. The Mount Pleasant Fire Department Fire Chief, Town of Mount Pleasant Planner, and the Cabarrus County Schools Transportation Technical Planner all expressed concern regarding the potential high level of impact if the bridge was closed for up to a year.

Floodplain: Dutch Buffalo Creek, which crosses under Bridge No. 132, is located in a FEMA Zone AE Floodplain. 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).

Public Involvement: 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.

Enhanced Voluntary Agricultural District Property: The project includes one parcel, located in the northwest bridge quadrant, totaling 86 acres that is part of a Cabarrus County EVAD. The project would require approximately .88 acres of new right of way from the EVAD parcel. If the EVAD property holder refuses settlement, prior to pursuing condemnation, the right of way Branch must contact Project Development to coordinate with the Cabarrus County VAD Board to schedule a public meeting. The Cabarrus County VAD ordinance provides that no state or local public agency or governmental unit may formally initiate any action to condemn any interest in qualifying farmland within a Cabarrus County VAD until such agency or unit has requested the advisory board to hold a public hearing on the proposed condemnation. Appropriate commitments are located in the greensheet.

PART A: MINIMUM CRITERIA

- | | YES | NO |
|--|-------------------------------------|--------------------------|
| 1. Is the proposed project listed as a type and class of activity allowed under the Minimum Criteria Rule in which environmental documentation is <u>not</u> required? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

If the answer to number 1 is “no”, then the project does not qualify as a minimum criteria project. A state environmental assessment is required.

If yes, under which category? **Category #8**
 (Highway or railway modernization by means of the following activities, which involve less than a total of 10 cumulative acres of ground surface previously undisturbed by highway or railway construction, limited to a single project, noncontiguous to any other project making use of this provision:
 a) resurfacing, restoration, or reconstruction;)

If either category #8, #12(i) or #15 is used complete Part D of this checklist.

PART B: MINIMUM CRITERIA EXCEPTIONS

- | | YES | NO |
|---|--------------------------|-------------------------------------|
| 2. Could the proposed activity cause significant changes in land use concentrations that would be expected to create adverse air quality impacts? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Will the proposed activity have secondary impacts or cumulative | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

impacts that may result in a significant adverse impact to human health or the environment?

- 4. Is the proposed activity of such an unusual nature or does the proposed activity have such widespread implications, that an uncommon concern for its environmental effects has been expressed to the Department?
- 5. Does the proposed activity have a significant adverse effect on wetlands; surface waters such as rivers, streams, and estuaries; parklands; prime or unique agricultural lands; or areas of recognized scenic, recreational, archaeological, or historical value?
- 6. Will the proposed activity endanger the existence of a species on the Department of Interior's threatened and endangered species list?
- 7. Could the proposed activity cause significant changes in land use concentrations that would be expected to create adverse water quality or ground water impacts?
- 8. Is the proposed activity expected to have a significant adverse effect on long-term recreational benefits or shellfish, finfish, wildlife, or their natural habitats?

PART C: COMPLIANCE WITH STATE AND FEDERAL REGULATIONS

- | | YES | NO |
|--|-------------------------------------|-------------------------------------|
| 9. Is a federally protected threatened or endangered species, or its habitat, likely to be impacted by the proposed action? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 10. Does the action require the placement of temporary or permanent fill in waters of the United States? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 11. Does the project require the placement of a significant amount of fill in high quality or relatively rare wetland ecosystems, such as mountain bogs or pine savannahs? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 12. Is the proposed action located in an Area of Environmental Concern, as defined in the coastal Area Management Act? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 13. Does the project require stream relocation or channel changes? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Cultural Resources

- | | | |
|---|--------------------------|-------------------------------------|
| 14. Will the project have an "effect" on a property or site listed on the National Register of Historic Places? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|-------------------------------------|

15. Will the proposed action require acquisition of additional right of way from publicly owned parkland or recreational areas?

Response to Question 9:

Habitat for the Carolina Heelsplitter (*Lasmigona decorata*) exists within the project study area. A review of the NC Natural Heritage Program (NCNHP) records, last accessed on April 23, 2018, indicated no element occurrence (EO) for the Carolina Heelsplitter located within a 5-mile buffer of the project bridge. The closest occurrence (EO ID 21454) is located in Goose Creek, approximately 17 stream miles downstream from the project location. This occurrence was first observed on August 26, 1987, and last observed on September 29, 2015. On September 22, 2016, a mussel survey was conducted for these species. A total of 3.5 person-hours of survey time was spent in the survey location with two species of freshwater mussels found [Eastern Elliptio (*Elliptio complanate*) and Carolina Creekshell (*Villosa vaughaniana*)]. The results indicate that the study area supports a sparse freshwater mussel fauna of common species. Carolina Heelsplitter individuals were not found during the survey. Previous surveys in the vicinity of the subject bridge have resulted in no discovery of Carolina Heelsplitter within a 10-mile radius of the study location. Based on the presence of degraded habitat, distance to known Carolina Heelsplitter records, and these survey results, completion of the proposed project will not affect this species. Therefore, a biological conclusion of “No Effect” was reached for both the Carolina Heelsplitter.

Suitable habitat for Schweinitz's sunflower (*Helianthus schweinitzii*) is present in the study area along roadside shoulders. A review of the July 2016 NCNHP database on August 12, 2016, indicates no known occurrences within 1.0 mile of the study area. A survey of the study area was conducted on August 23, 2016 during the flowering survey window. No plants or stems were found during the survey.

The Natural Resources Technical Report (NRTR) also disclosed an unresolved Biological Conclusion for the Northern long eared bat (NLEB). Since this project is state funded, the USACE will act as the lead federal agency for issues related to the NLEB. The USACE has developed a Standard Local Operations Procedure for Endangered Species (SLOPES) to address NLEB when they are the lead agency, which NCDOT will follow for this project. This procedure applies to projects in NCDOT Divisions 9-14. The requirements of the SLOPES for the NLEB will be completed prior to Let and will be submitted to the USACE. A Biological Conclusion is not required.

Response to Question 10:

Build bridge on new alignment upstream of existing bridge while using existing bridge will require a Nationwide Permit #14 – Linear Development. Potential permanent fill impacts from a new northwest bridge abutment may occur to the tributary stream to Dutch Buffalo Creek, but will be avoided if possible and minimized if necessary. Temporary impacts from debris may result from the demolition of the existing bridge which will occur after traffic has been routed to the new alignment.

PART D : (To be completed when either category #8, 12(i) or #15 of the rules are used.)

- 16. Project length: 1,800 feet
- 17. Right of Way width: Existing ROW: 60 feet
Proposed ROW: 80 feet
- 18. Project completion date: ROW Date: February 2019
LET Date: February 2020
- 19. Total acres of newly disturbed ground surface: 2.7 acres
- 20. Total acres of wetland impacts: 0
- 21. Total linear feet of stream impacts: Approximately 270 feet of temporary impacts
- 22. Project purpose: Replace Bridge No. 132 on NC 73 over Dutch Buffalo Creek

Reviewed by: DocuSigned by:
Elizabeth Scott
E97A4285A92248A Date: 11/7/2018
Elizabeth Scott, EI, STV Engineers Inc.

DocuSigned by:
Garland Haywood
568D887B80E4404 Date: 11/8/2018
Garland Haywood, PE, NCDOT Division
Bridge Program Manager

DocuSigned by:
Kevin Fischer
ED40A18D08EC406 Date: 11/26/2018
Kevin Fischer, PE, NCDOT Structures
Management Unit

PROJECT COMMITMENTS

Bridge No. 132 over Dutch Buffalo Creek on NC 73 in Cabarrus County WBS No. 45767.1.1 STIP B-5813

Structure 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.

Enhanced Voluntary Agricultural District (EVAD)

The project includes one parcel totaling 86 acres that is part of a Cabarrus County EVAD. The project would require approximately .88 acres of new right of way from the EVAD parcel. If the VAD property holder refuses settlement, prior to pursuing condemnation, the right of way Branch must contact Project Development to coordinate with the Cabarrus County VAD Board to schedule a public meeting. The Cabarrus County VAD ordinance provides that no state or local public agency or governmental unit may formally initiate any action to condemn any interest in qualifying farmland within a Cabarrus County VAD until such agency or unit has requested the advisory board to hold a public hearing on the proposed condemnation.

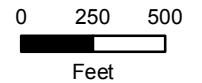
Division Ten, Division Bridge Program Manager

Northern-Long Eared Bat (NLEB)

The USACE has developed a Standard Local Operations Procedure for Endangered Species (SLOPES) to address NLEB when they are the lead agency, which NCDOT will follow for this project. This procedure applies to projects in NCDOT Divisions 9-14. The requirements of the SLOPES for the NLEB will be completed prior to Let and will be submitted to the USACE. A Biological Conclusion is not required.



**FIGURE 1-
LOCATION MAP**



LEGEND

- Bridge Location
- Project Study Area
- Floodplain
- Parcel
- EVAD Parcel
- Stream
- Church
- Historic Site

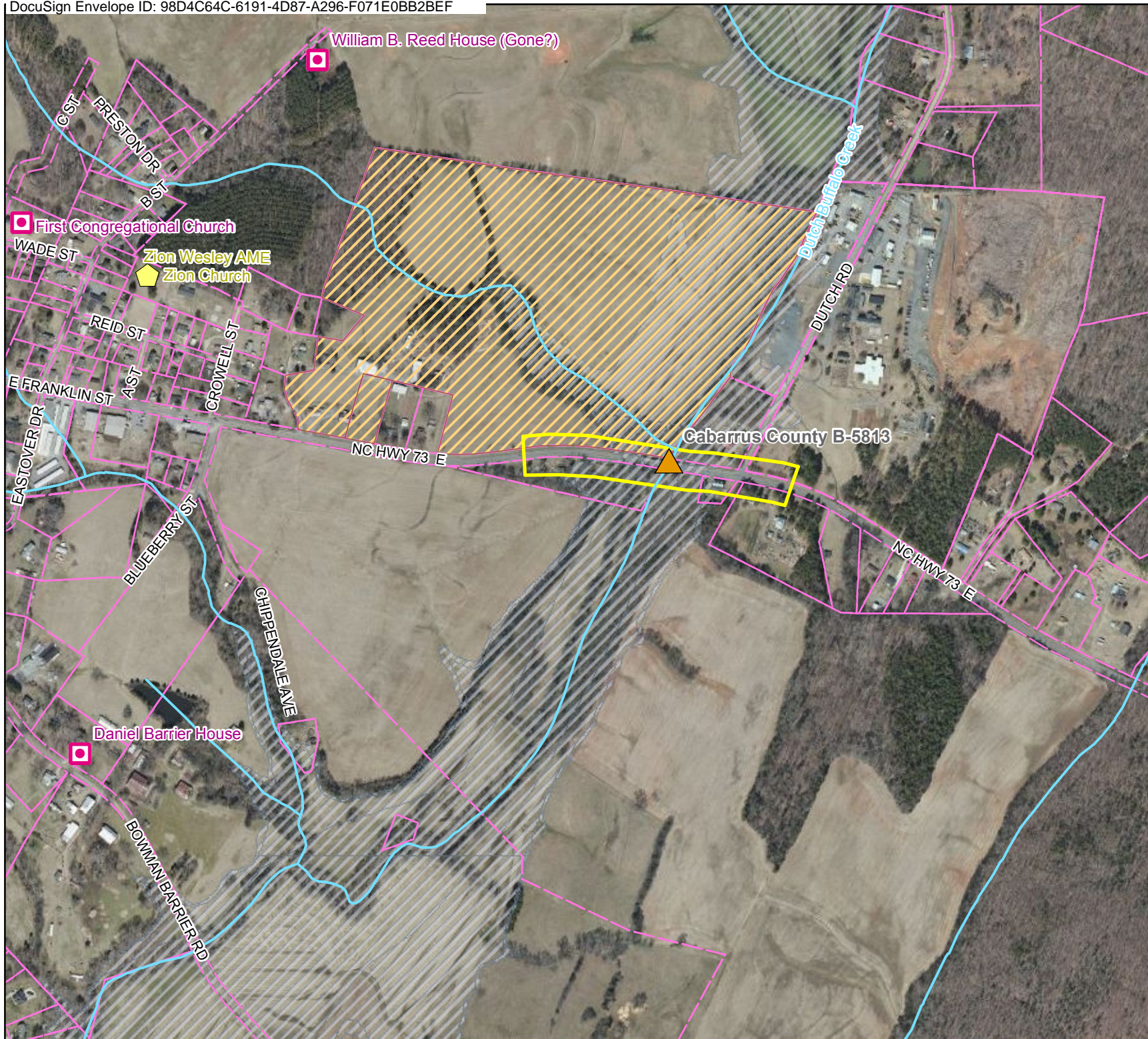


Source: USDA Geospatial Gateway; NCOneMap; USFWS

TIP Project B-5813

**Bridge Replacement
Bridge No.132
over Dutch Buffalo Creek
on NC 73
Cabarrus County**

October 2018



Appendix A

8/17/99

DESIGN DATA	
DESIGN STANDARDS	= REGIONAL
DESIGN SPEED	= 60 MPH
ADT 2016	= 8,200
ADT 2040	= 10,800
T	= 7%
MIN. RADIUS	= 1330'
MAX. GRADE	= 6%
FUNC. CLASS	= MAJOR COLLECTOR
TERRAIN	= ROLLING
DESIGN EXCEPTION	= NONE

BRIDGE LENGTH	= 260'
BRIDGE SKEW	= 90°
BRIDGE TYPE	= GIRDER BRIDGE

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

PROJECT REFERENCE NO.	B-5813
SHEET NO.	1
RW SHEET NO.	

CONCEPT DATED
9/27/2018
 CONCEPT PLANS
 SUBJECT TO CHANGE WITHOUT NOTICE

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED



CABARRUS COUNTY

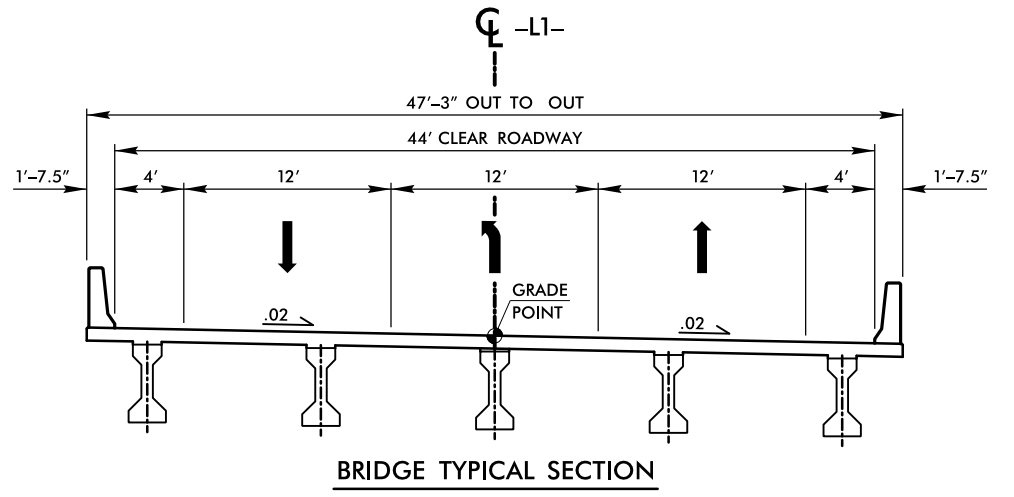
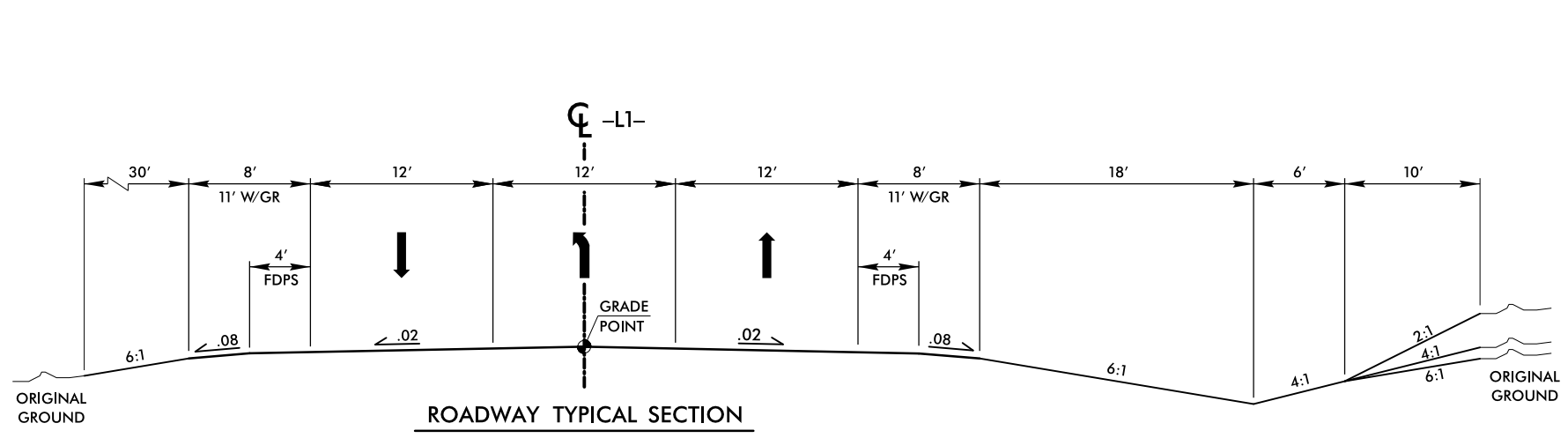
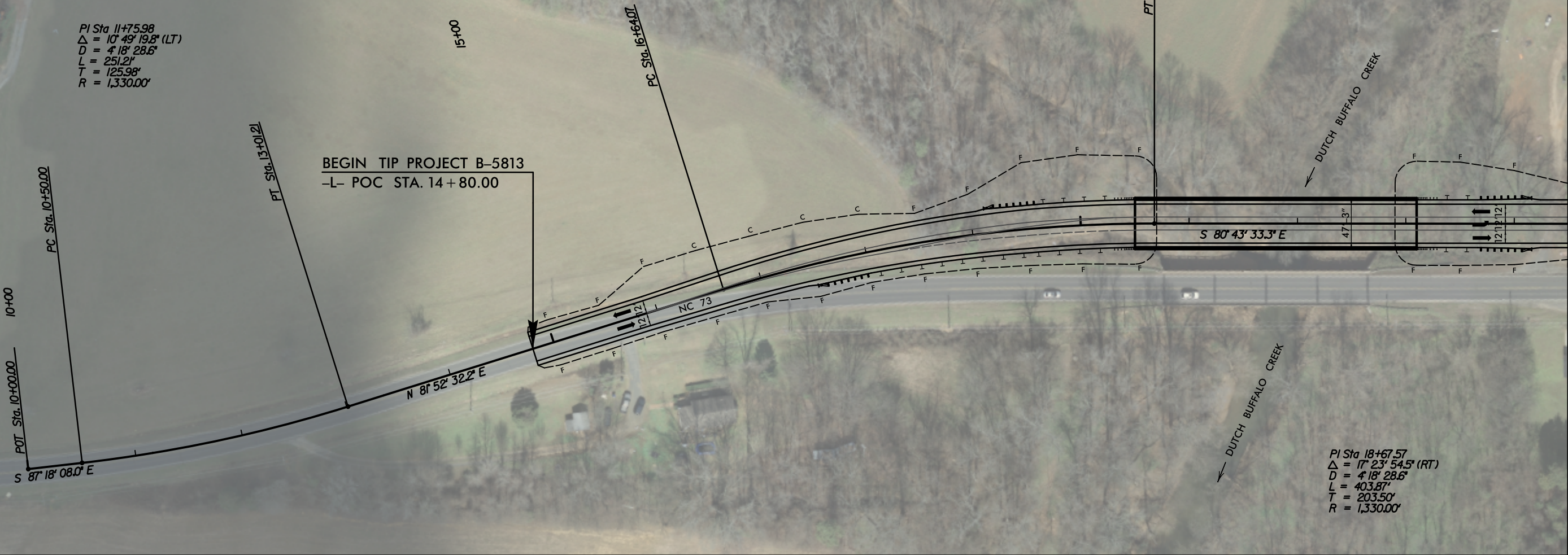
B-5813

PREFERRED CONCEPT

NEW ALIGNMENT

MAINTAIN TRAFFIC ON

EXISTING ROADWAY



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MATCHLINE -L1- STA 24+50 (SHEET 5)

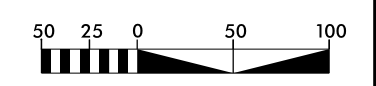
8/17/99

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

PROJECT REFERENCE NO.	SHEET NO.
B-5813	2
RW SHEET NO.	

CONCEPT DATED
9/27/2018
 CONCEPT PLANS
 SUBJECT TO CHANGE WITHOUT NOTICE

DOCUMENT NOT CONSIDERED FINAL
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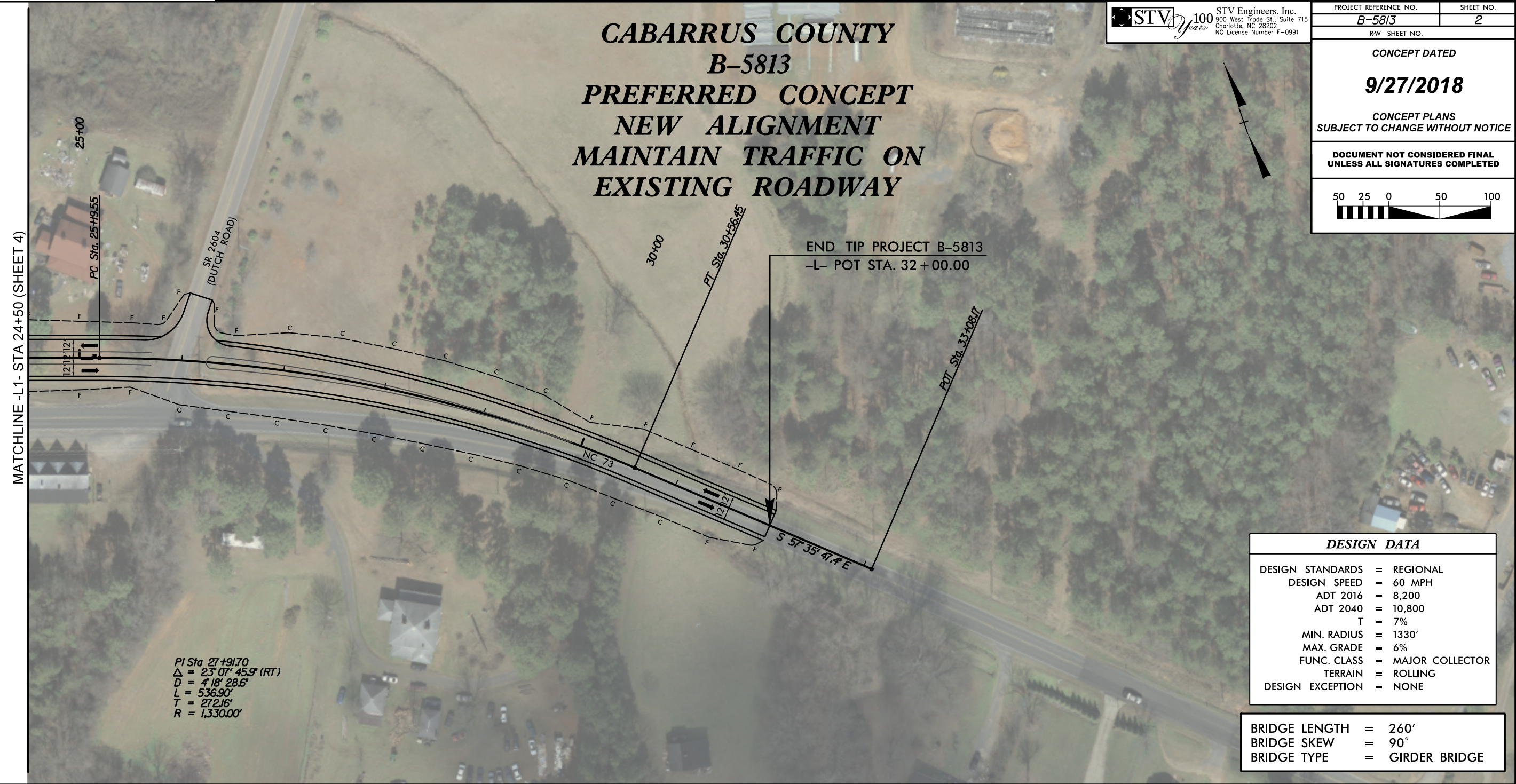


CABARRUS COUNTY

B-5813

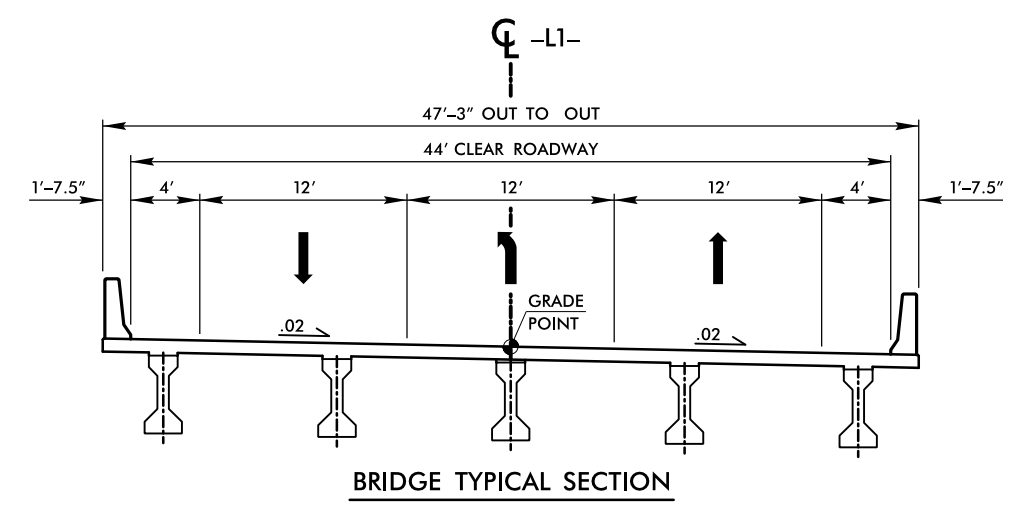
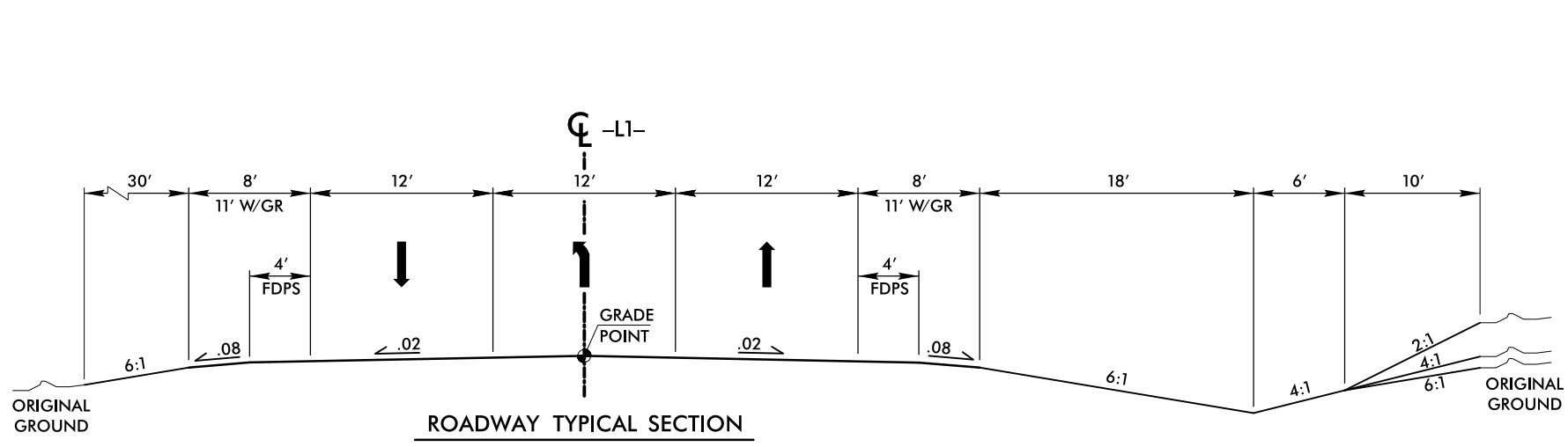
PREFERRED CONCEPT NEW ALIGNMENT MAINTAIN TRAFFIC ON EXISTING ROADWAY

MATCHLINE -L1- STA 24+50 (SHEET 4)



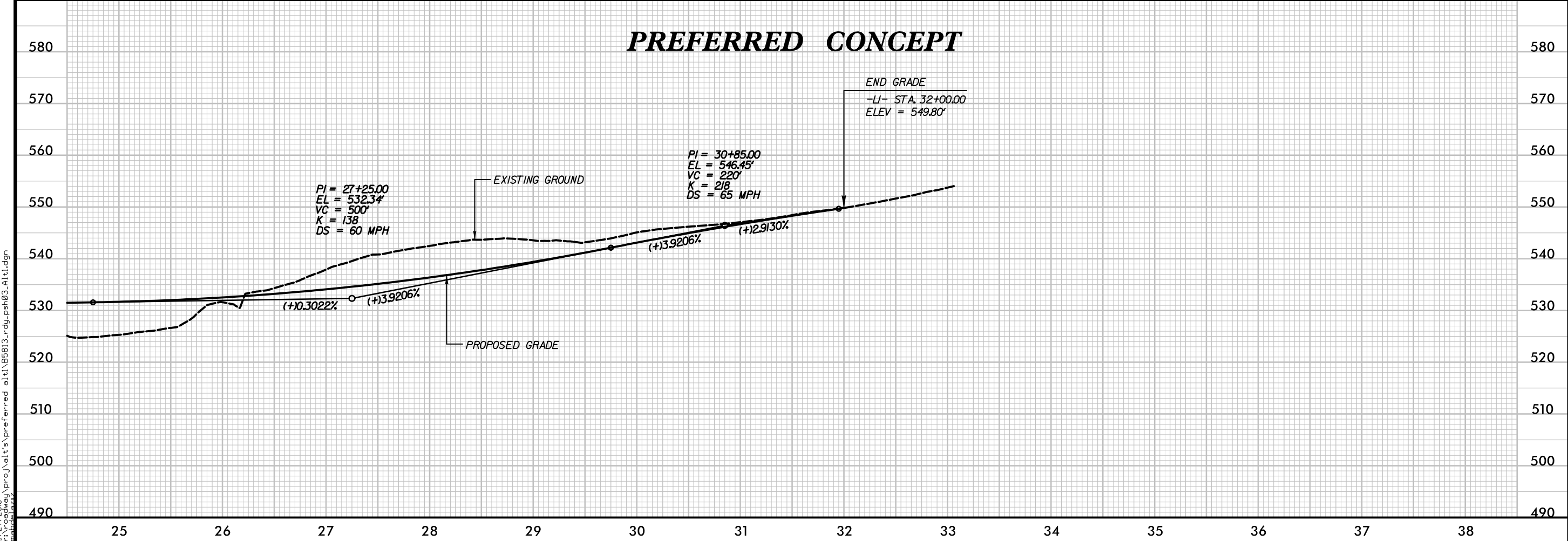
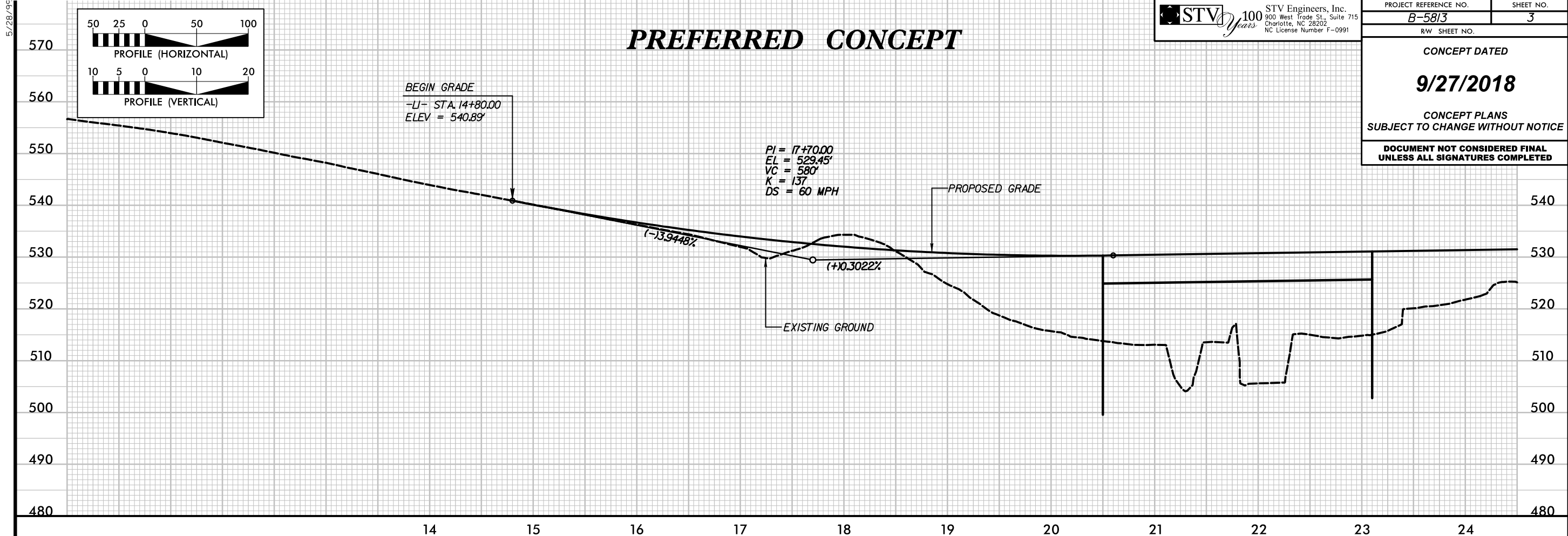
DESIGN DATA	
DESIGN STANDARDS	= REGIONAL
DESIGN SPEED	= 60 MPH
ADT 2016	= 8,200
ADT 2040	= 10,800
T	= 7%
MIN. RADIUS	= 1330'
MAX. GRADE	= 6%
FUNC. CLASS	= MAJOR COLLECTOR
TERRAIN	= ROLLING
DESIGN EXCEPTION	= NONE

BRIDGE LENGTH	= 260'
BRIDGE SKEW	= 90°
BRIDGE TYPE	= GIRDER BRIDGE



9/27/2018 \\proj\alt\preferred\alt\B5813_rdy_psh02.alt.dgn

PROJECT REFERENCE NO.	SHEET NO.
B-5813	3
RW SHEET NO.	
CONCEPT DATED	
9/27/2018	
CONCEPT PLANS SUBJECT TO CHANGE WITHOUT NOTICE	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



9/27/2018
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TIP No. **B-5813**
 Route
 From
 Typical Section

Func

County: **Cabarrus**

CONSTR. COST
\$4,470,000

Prepared By: G. McCauley
 Requested By:

Date 9/27/2018
 Date

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			Clearing and Grubbing	1.0	Acre	\$ 20,000.00	\$ 20,000.00
			Earthwork	9,050	CY	\$ 50.00	\$ 452,500.00
			Drainage New Location	0.01	Miles	\$ 200,000.00	\$ 2,000.00
			Fine Grading	5,490	SY	\$ 10.00	\$ 54,900.00
			Pavement Widening		SY		\$ -
			New Pavement	5,490	SY	\$ 75.00	\$ 411,750.00
			Pavement Resurfacing	1,177	SY	\$ 20.00	\$ 23,540.00
			Subgrade Stabilization	2,692	SY	\$ 5.00	\$ 13,460.00
			Erosion Control	1.2	Acres	\$ 50,000.00	\$ 60,000.00
			Traffic Control	1.000	LS	\$ 30,000.00	\$ 30,000.00
			Thermo and Markers	0.300	Miles	\$ 30,000.00	\$ 9,000.00
			Structures				
			ML / Creek 47'3"Wx260'L	12,285.00	SF	\$ 150.00	\$ 1,842,750.00
			RC Box Culverts				
					LF		
			Utility Construction				
			Relocate Existing Water Line	200	LF	\$ 500.00	\$ 100,000.00
			Relocate Existing Sewer Line	150	LF	\$ 500.00	\$ 75,000.00
			Misc. & Mob (15% Strs&Util)				\$ 302,662.50
			Misc. & Mob (45% Functional)				\$ 484,717.50

Lgth 0.33 Miles

Contract Cost \$ 3,882,280.00
E. & C. 15% \$ 582,342.00
Construction Cost **\$ 4,464,622.00**