

## 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](mailto:jecarr@ncdot.gov)." No comments have been received to date.

#### F. Project Impact Criteria Checklists:

<u>Type I &amp; 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 Approval**

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

**Prepared By:**

11/7/2018

Date

DocuSigned by:  


Elizabeth Scott, EI, STV Engineers Inc.

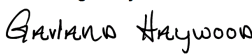
**Prepared For:**

North Carolina Department of Transportation

**Reviewed By:**

11/8/2018

Date

DocuSigned by:  


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.

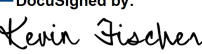


**Certified**

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

11/26/2018

Date

DocuSigned by:  


Kevin Fischer, PE, Structures Management Unit  
North Carolina Department of Transportation

**FHWA Approved:**

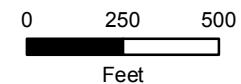
For Projects Certified by NCDOT (above), FHWA signature required.

Date

John 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

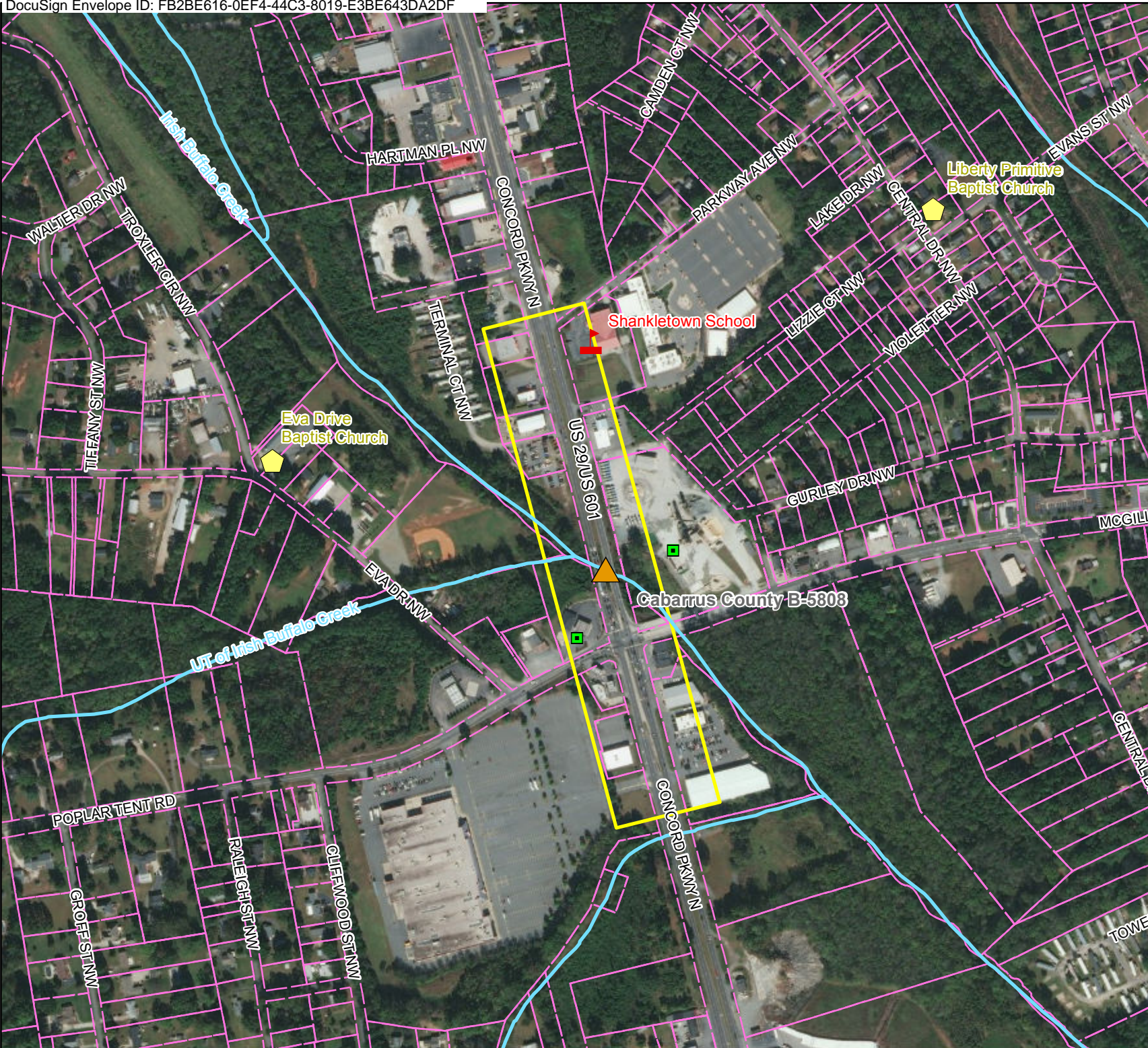


Source: USDA Geospatial Gateway; NCOneMap; USFWS

**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

**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-5808	1
RW SHEET NO.	

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

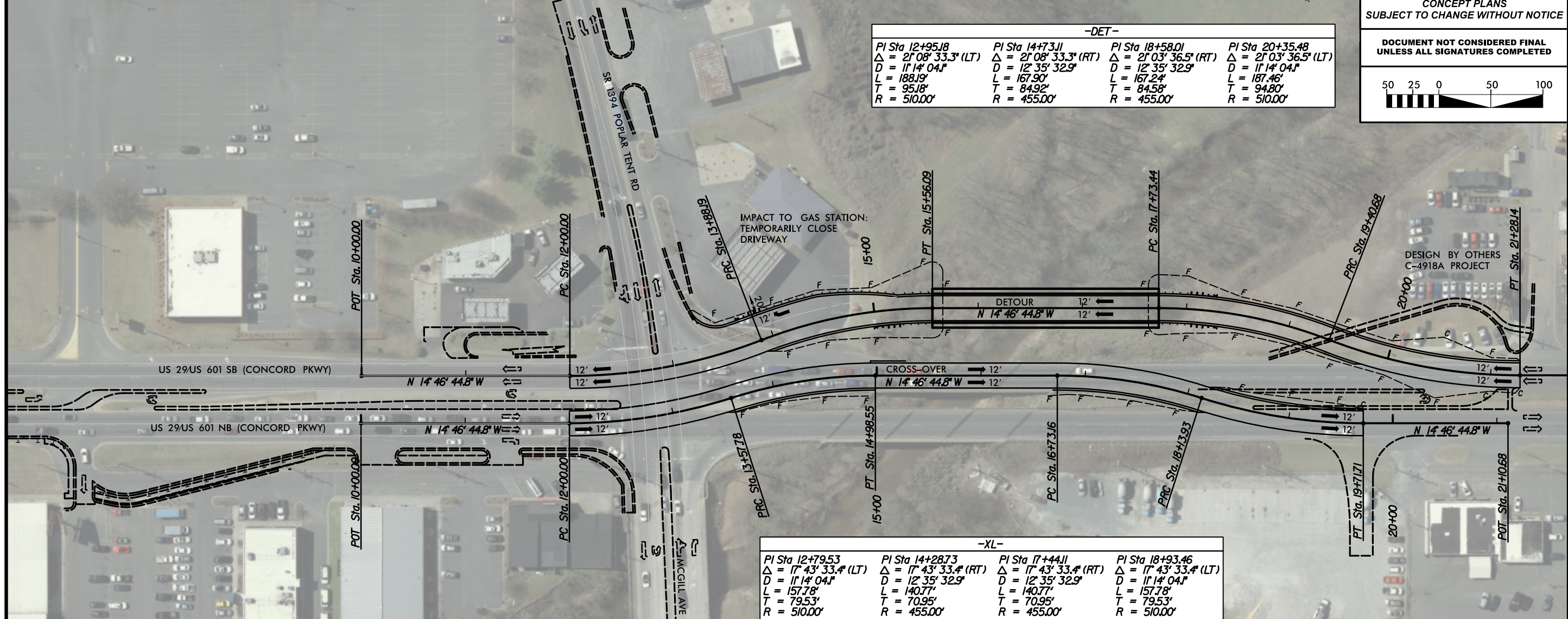
**CABARRUS COUNTY**  
**B-5808**  
**PREFERRED CONCEPT - PHASE 1**  
**(DESIGN OPTION - INCLUDE RIGHT TURN LANE)**  
**REPLACE IN PLACE**  
**WITH ON-SITE DETOUR**

-DET-

PI Sta 12+95.18 Δ = 21°08'33.3" (LT) D = 11'14"04.1" L = 188.19' T = 95.18' R = 510.00'	PI Sta 14+73.11 Δ = 21°08'33.3" (RT) D = 12'35"32.9" L = 167.90' T = 84.92' R = 455.00'	PI Sta 18+58.01 Δ = 21°03'36.5" (RT) D = 12'35"32.9" L = 167.24' T = 84.58' R = 455.00'	PI Sta 20+35.48 Δ = 21°03'36.5" (LT) D = 11'14"04.1" L = 187.46' T = 94.80' R = 510.00'
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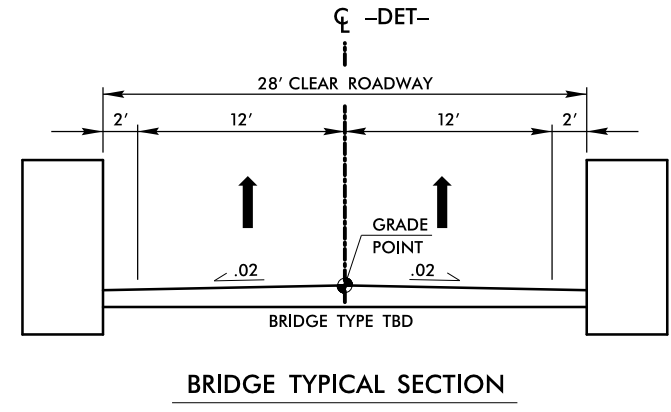
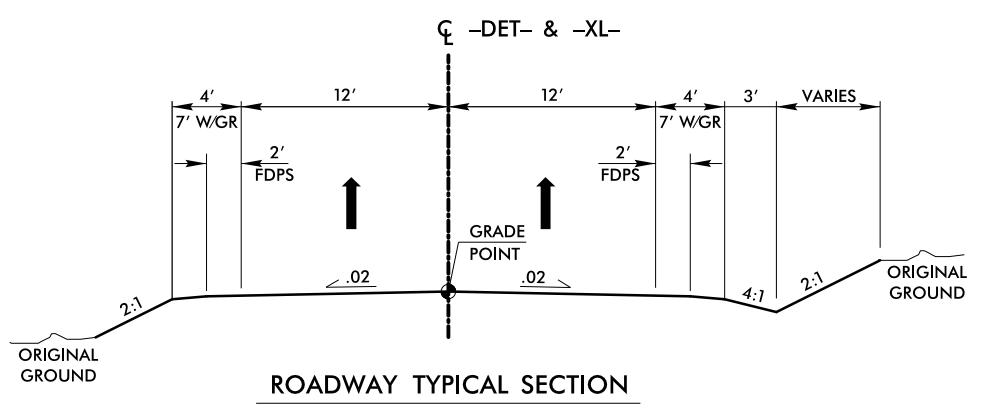
CONCEPT DATED  
**9/27/2018**  
 CONCEPT PLANS  
 SUBJECT TO CHANGE WITHOUT NOTICE

DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED



-XL-

PI Sta 12+79.53 Δ = 17°43'33.4" (LT) D = 11'14"04.1" L = 157.78' T = 79.53' R = 510.00'	PI Sta 14+28.73 Δ = 17°43'33.4" (RT) D = 12'35"32.9" L = 140.77' T = 70.95' R = 455.00'	PI Sta 17+44.11 Δ = 17°43'33.4" (RT) D = 12'35"32.9" L = 140.77' T = 70.95' R = 455.00'	PI Sta 18+93.46 Δ = 17°43'33.4" (LT) D = 11'14"04.1" L = 157.78' T = 79.53' R = 510.00'
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**TEMPORARY DETOUR DESIGN DATA**

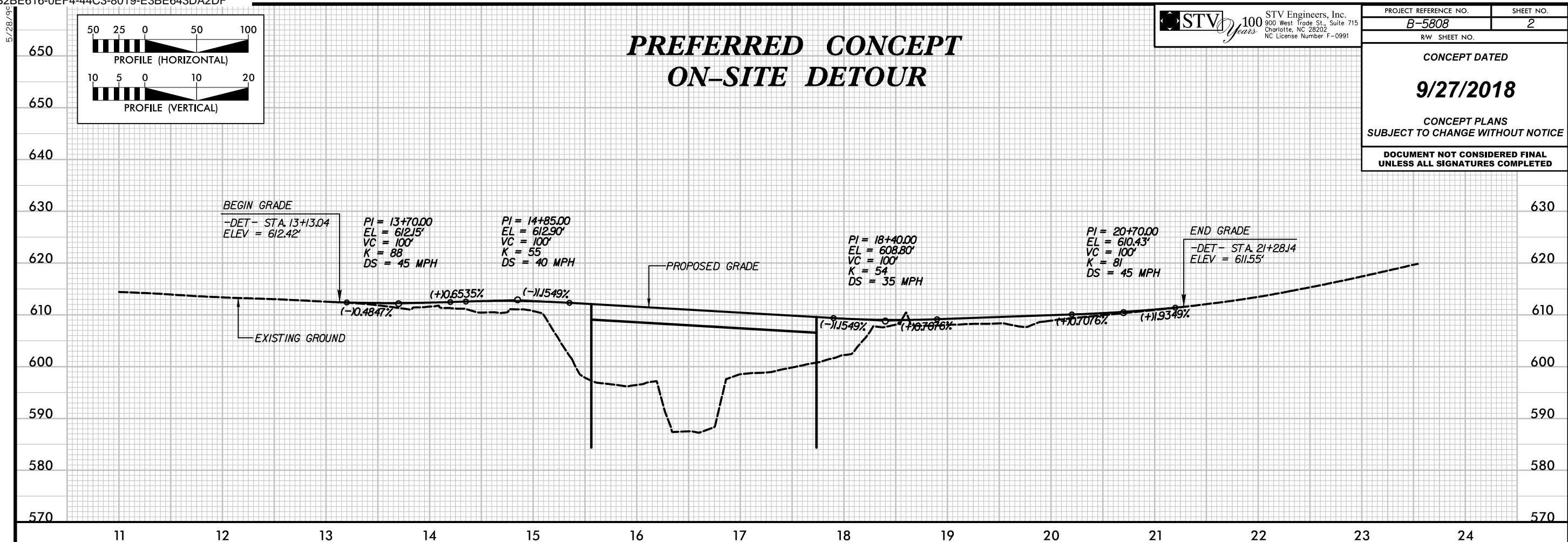
DESIGN STANDARDS	= REGIONAL
DESIGN SPEED	= 35 MPH
ADT 2016	= 32,000
ADT 2040	= 51,400
T	= 12%
* MIN. RADIUS	= 272'
MAX. GRADE	= 7%
FUNC. CLASS	= URBAN ARTERIAL
TERRAIN	= ROLLING
DESIGN EXCEPTION	= NONE
* LOW-SPEED URBAN STREETS TABLE	

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

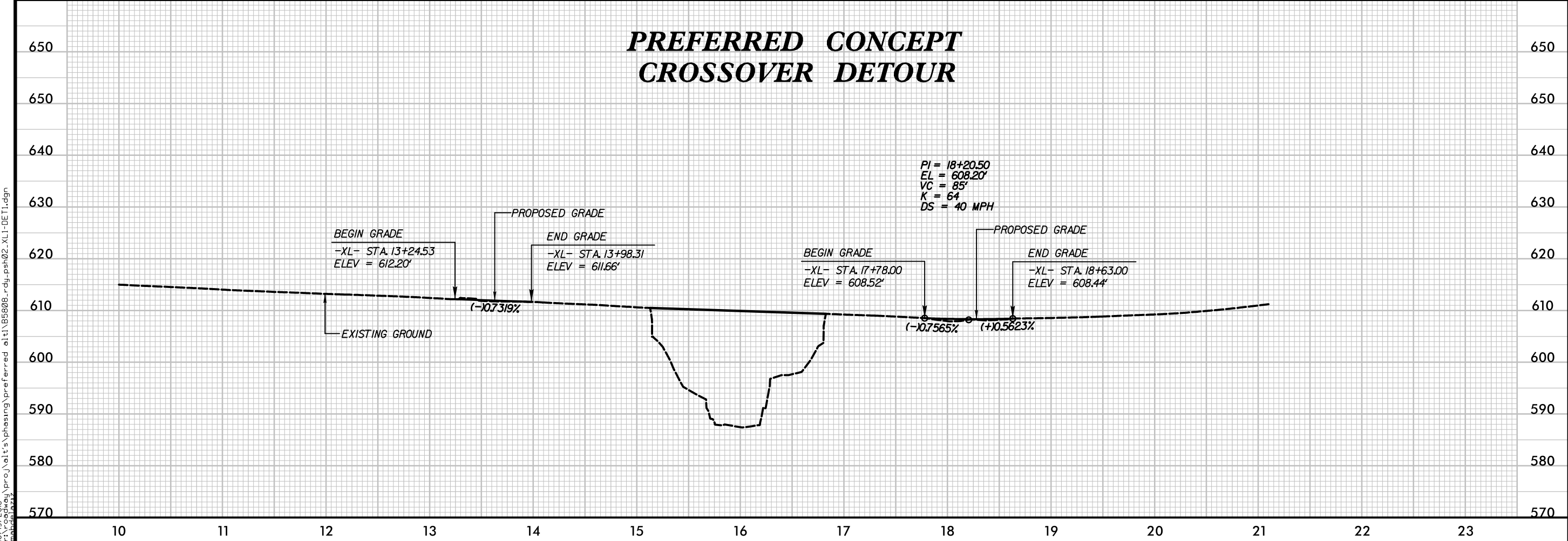
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 maddalena

PROJECT REFERENCE NO. <b>B-5808</b>	SHEET NO. <b>2</b>
RW SHEET NO.	
CONCEPT DATED <b>9/27/2018</b>	
CONCEPT PLANS SUBJECT TO CHANGE WITHOUT NOTICE	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

## PREFERRED CONCEPT ON-SITE DETOUR



## PREFERRED CONCEPT CROSSOVER DETOUR



10/19/2018 10:15:00 AM \\pro\al\ts\phasing\preferred\al\1\B5808\_r.dwg-psh02-XL1-DET1.dgn

8/17/19

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

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

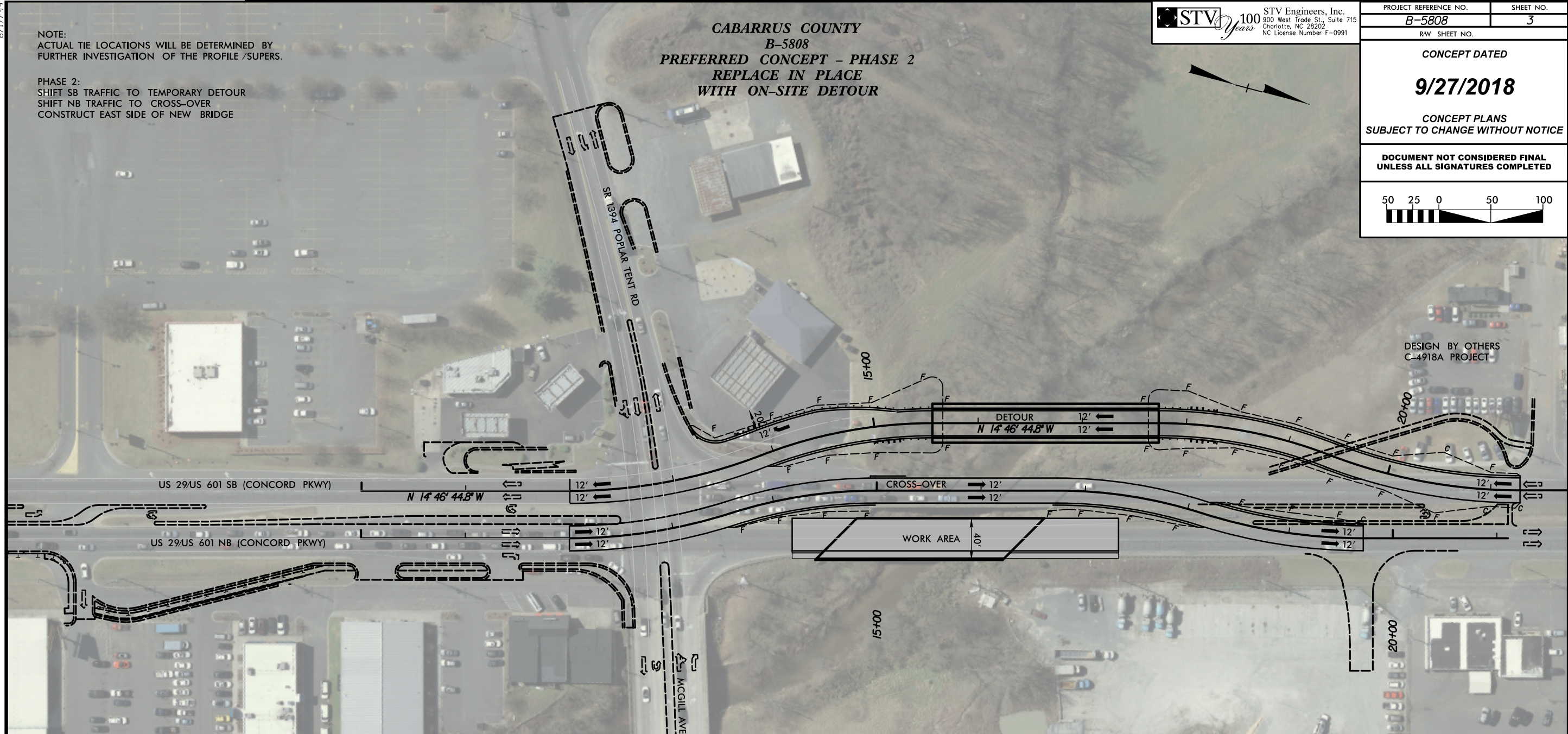
**CABARRUS COUNTY**  
**B-5808**  
**PREFERRED CONCEPT - PHASE 2**  
**REPLACE IN PLACE**  
**WITH ON-SITE DETOUR**

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

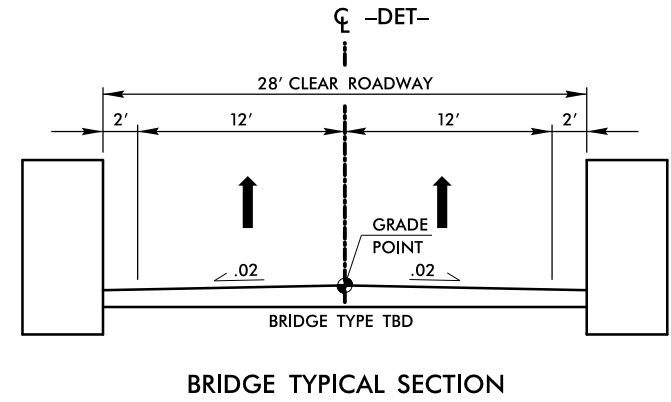
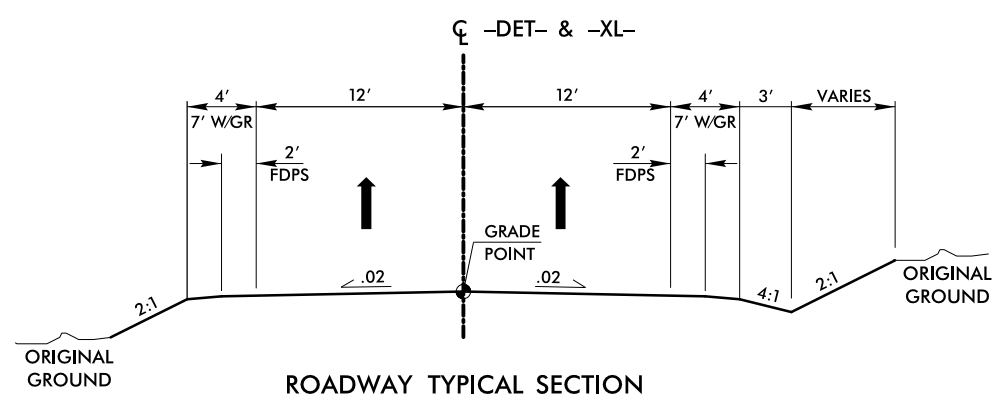
PROJECT REFERENCE NO.	SHEET NO.
B-5808	3
RW SHEET NO.	

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

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



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

10/19/2018 10:19:11 AM \\proj\alt's\phasing\preferred\alt\B5808.rdy\_psh03.dgn

8/17/19

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

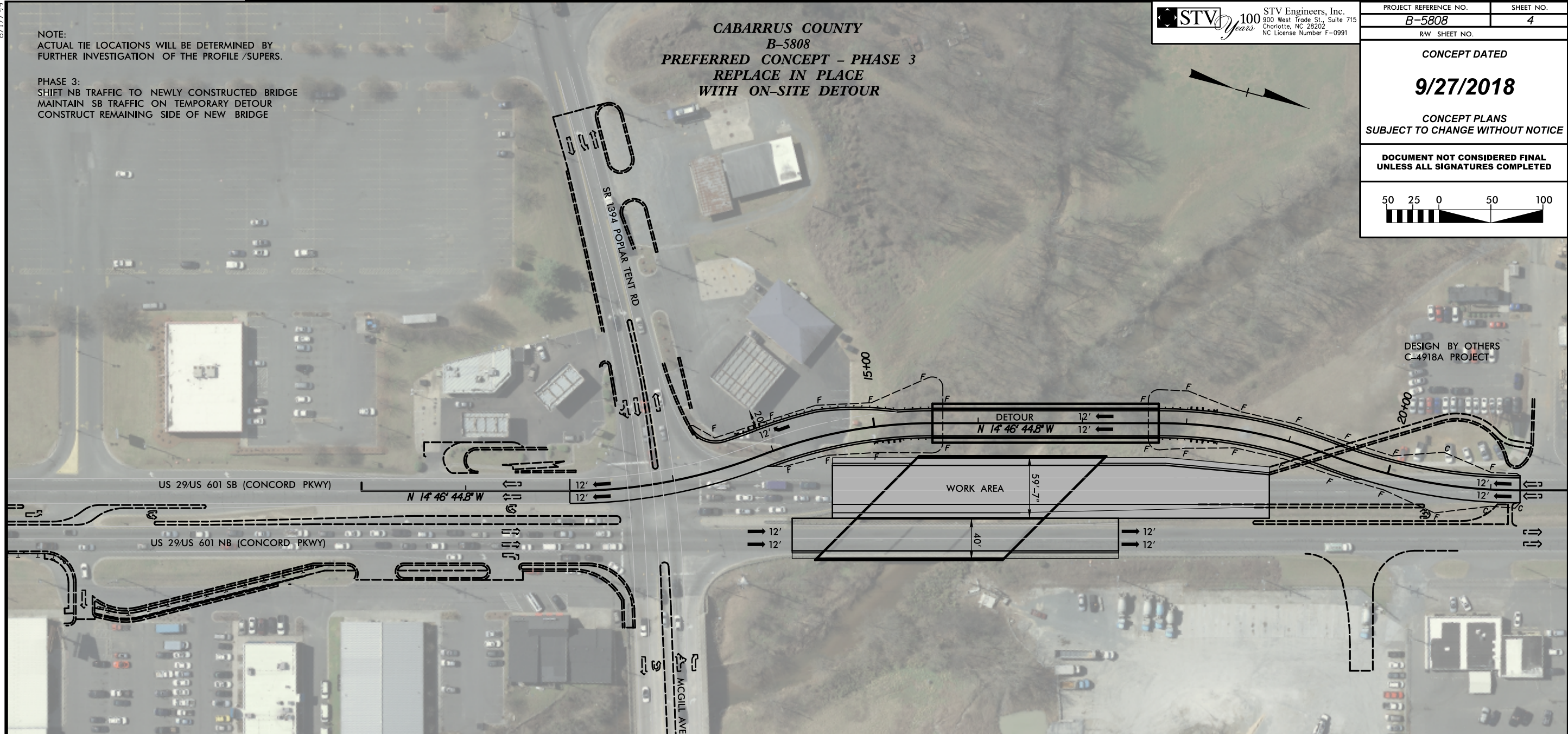
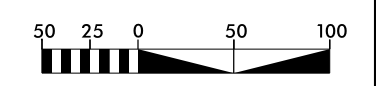
**CABARRUS COUNTY**  
**B-5808**  
**PREFERRED CONCEPT - PHASE 3**  
**REPLACE IN PLACE**  
**WITH ON-SITE DETOUR**

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

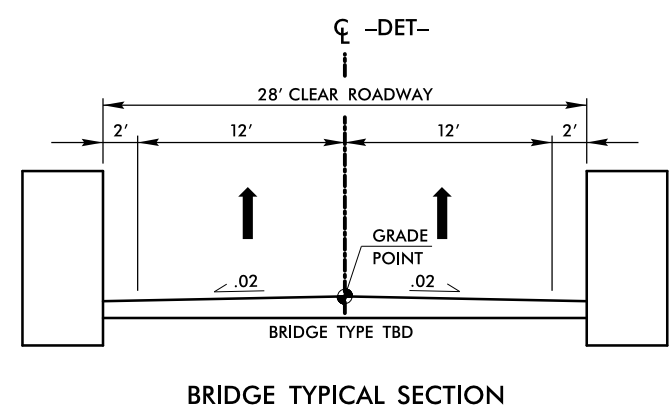
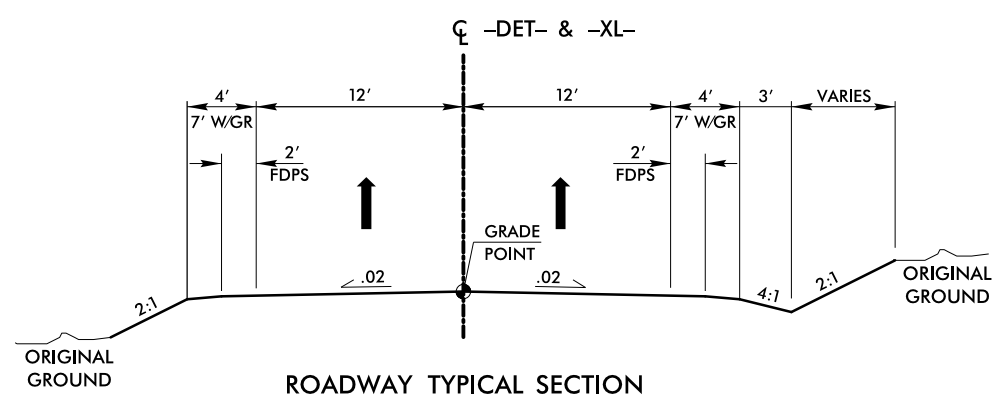
PROJECT REFERENCE NO.	SHEET NO.
B-5808	4
RW SHEET NO.	

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

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



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

10/19/2018 \\proj\alt's\phasing\preferred\alt\B5808.rdy\_psh04.dgn

8/17/19

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

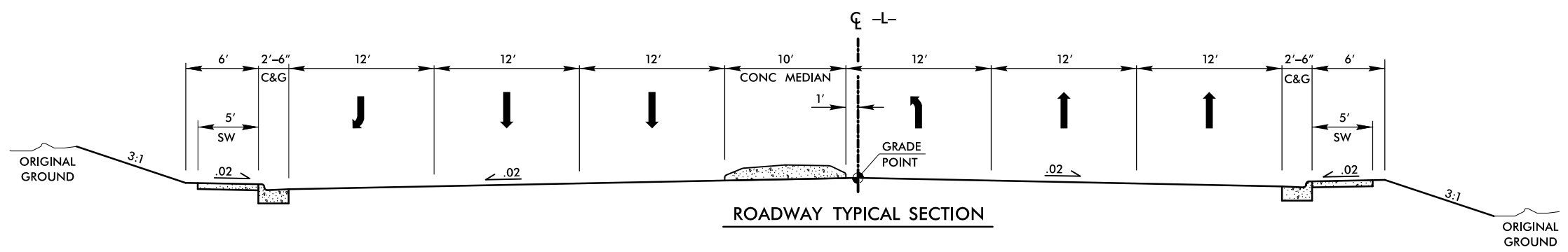
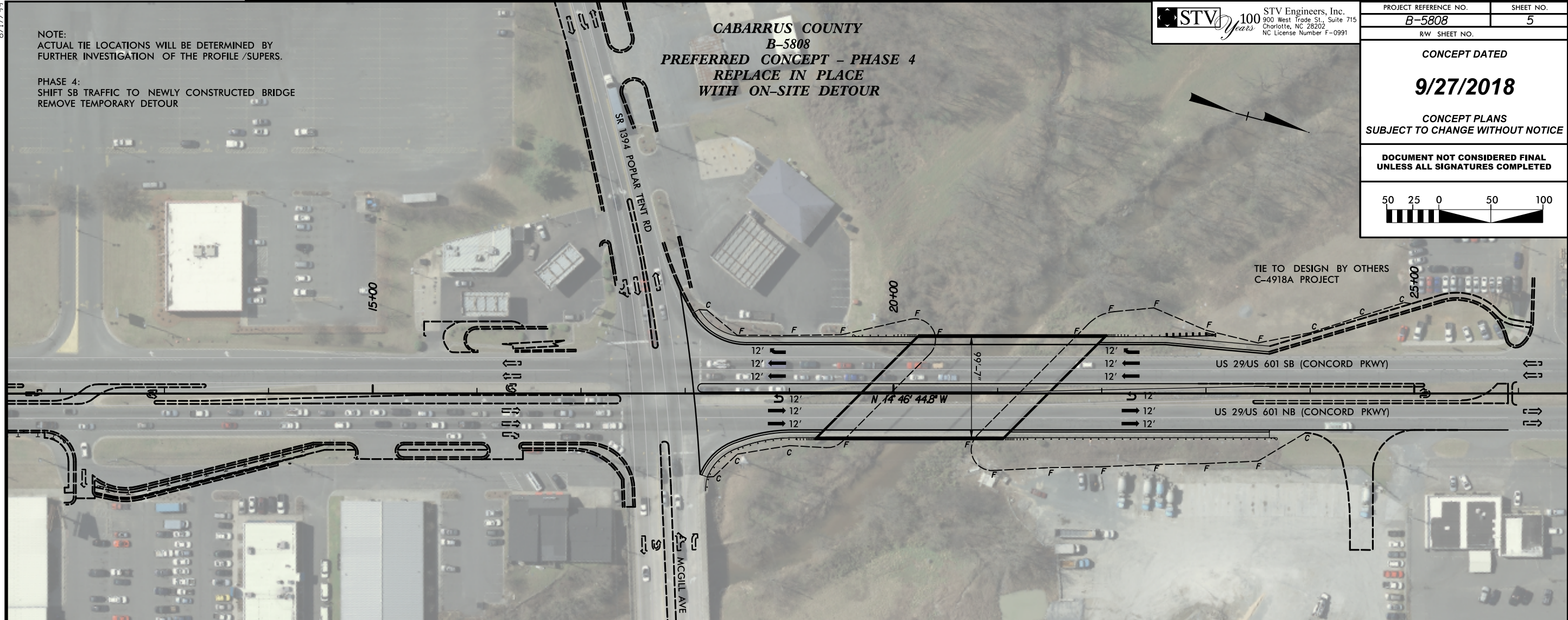
**CABARRUS COUNTY**  
**B-5808**  
**PREFERRED CONCEPT - PHASE 4**  
**REPLACE IN PLACE**  
**WITH ON-SITE DETOUR**

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

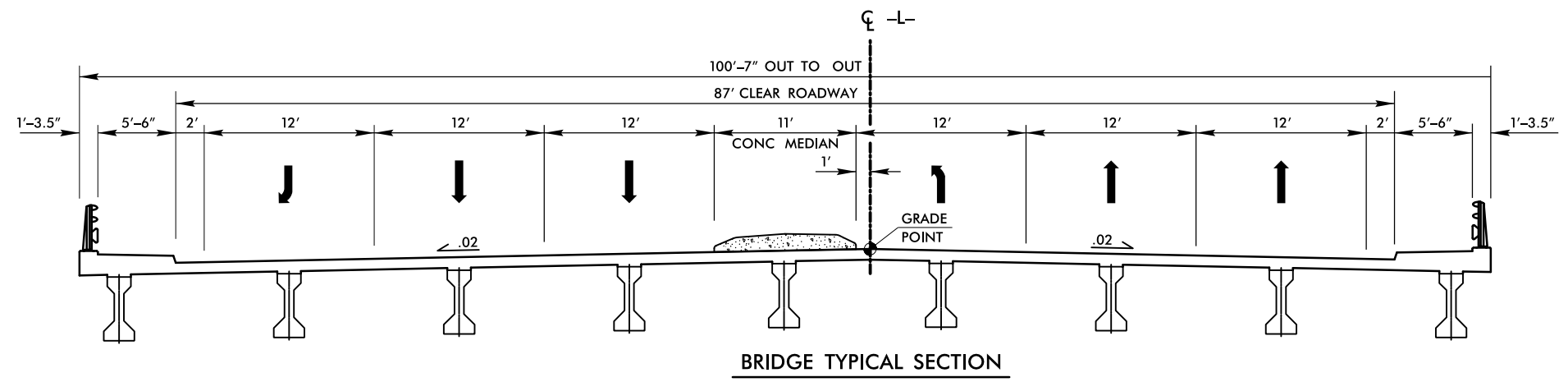
PROJECT REFERENCE NO.	SHEET NO.
B-5808	5
RW SHEET NO.	

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

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UNLESS ALL SIGNATURES COMPLETED



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

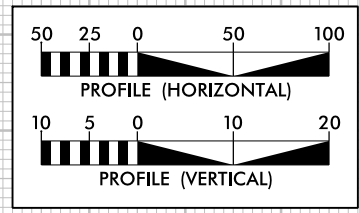


BRIDGE LENGTH	= 180'
BRIDGE SKEW	= 135°
BRIDGE TYPE	= GIRDER BRIDGE

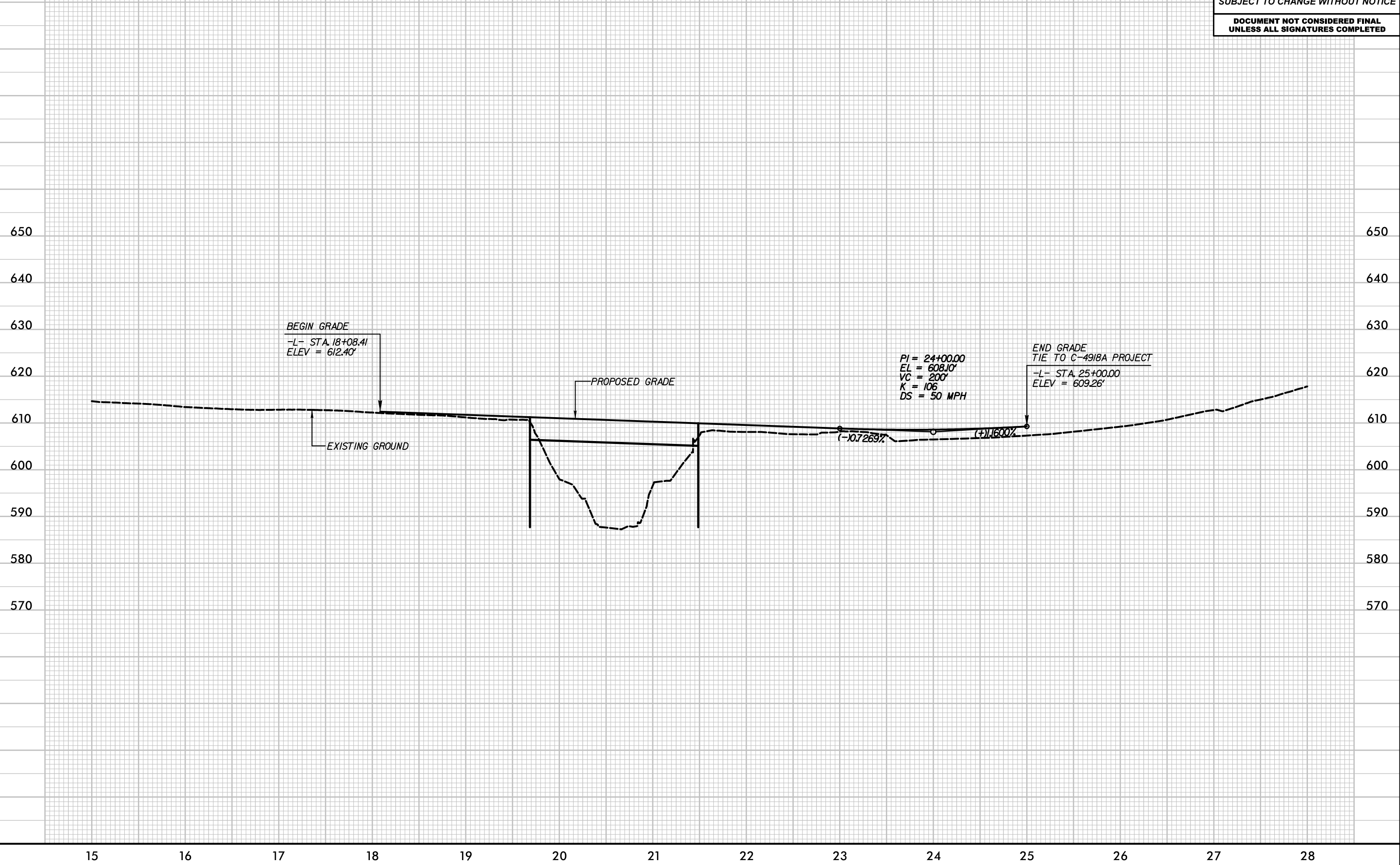
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CONCEPT DATED  
**9/27/2018**  
 CONCEPT PLANS  
 SUBJECT TO CHANGE WITHOUT NOTICE  
 DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED



# PREFERRED CONCEPT



10/19/2018  
 mabala  
 10/19/2018  
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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
			<b>Structures</b>				
			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
			<b>Utility Construction</b>				
			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

<b>Lgth 0.2 Miles</b>	<b>Contract Cost</b> .....	\$ 7,608,770.00
	<b>E. &amp; C. 15%</b> .....	\$ 1,141,315.50
	<b>Construction Cost</b> .....	\$ <b>8,750,085.50</b>