

MINIMUM CRITERIA DETERMINATION CHECKLIST

Project No. B-5388
W.B.S. Project No. 46103.1.1

Project Location: Bridge No. 21 over Little River on NC 18 in Alleghany County.

Project Description: The proposed project will replace Bridge No. 21 on NC 18 over Little River in Alleghany County, southwest of Ennice. See Figure 1 for project location. Right of way acquisition and construction are scheduled for state fiscal years 2018 and 2019, respectively.

The replacement structure will be a bridge approximately 330 feet long providing a minimum 32-foot clear roadway width. The bridge will include two twelve-foot lanes and four-foot offsets. Additionally, 54-inch bicycle safe bridge railings to ensure the safety of bicyclists crossing the bridge are included in the design. The bridge length is based on preliminary design information and is set by hydraulic requirements. The roadway grade of the new structure will be approximately the same as the existing structure.

Project construction will extend approximately 210 feet from the southwest end of the new bridge and 364 feet from the northeast end of the new bridge. The approaches will be widened to two twelve-foot lanes and eight-foot shoulders (four-foot paved). The roadway will be designed as a Major Rural Collector with a 50-mile per hour design speed.

Several alternatives were evaluated; however, the current design with an on-site detour to the north of the existing structure was determined the best option for the proposed project. During construction of the new bridge, the roadway will be open to traffic using the on-site detour.

Purpose and Need:

The purpose of the proposed project is to replace a deficient bridge.

NCDOT Bridge Management Unit records indicate Bridge No. 21 has a sufficiency rating of 8.57 out of a possible 100 for a new structure.

Bridge No. 21 was built in 1948. The bridge is 316 feet long with an approximately 24-foot clear roadway width.

Bridge No. 21 is a seven span structure that consists of a reinforced concrete floor on I-beams. The interior bents are reinforced concrete post and beams. 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 existing bridge is considered structurally deficient due to deck, superstructure and substructure condition ratings of 4 or less out of a possible 9 points. The bridge is also considered functionally obsolete due to a structural appraisal of 4 out of a possible 9 points. The bridge is approaching the end of its useful life. Replacement of the bridge will result in safer traffic operations.

Bridge No. 21 is expected to carry 1,650 vehicles per day (2018) with 2,000 vehicles per day projected for the future (2040). The substandard deck width, bridge railing and approach guardrail is becoming increasingly unacceptable and replacement of the bridge will result in safer traffic operations.

The posted weight limit on this bridge is 32 tons for single vehicles and 36 tons for truck-tractor semi-trailers.

Anticipated Permit or Consultation Requirements:

A Nationwide Permit (NWP) 3 (maintenance) and NC Water Quality Certification No. 4085 will likely be required for impacts resulting from this project. Other permits that may apply include a NWP No. 6 (survey activities), NWP No. 33, and NC Certification 4094 (due to temporary construction activities). If a Section 404 permit is required, then a Section 401 Water Quality Certification from the NC Division of Water Resources will also be required. Pre-construction notification should be provided to the US Army Corps of Engineers and NC Division of Water Resources. The United States Army Corps of Engineers holds the final discretion as to what permit will be required to authorize project construction.

Special Project Information:

Environmental Commitments: The list of project commitments is located at the end of the checklist.

Estimated Costs:

The estimated costs, based on 2017 prices, are as follows:

Utility:	\$ 19,648.00
R/W:	\$ 47,200.00
Const:	\$ 4,400,000.00
Total:	\$ 4,466,848.00

Accidents: During a recent ten-year period (January 1, 2005, through December 31, 2014) thirteen accidents occurred in the vicinity of the project. There were no Fatal Crashes; six Non-Fatal Injury Crashes, and seven Property Damage Only Crashes. None were associated with the geometry of the bridge or its approach roadways, but instead with the curve east of the bridge.

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

Pedestrian and Bicycle Accommodations: Bridge No. 21 is located on a proposed reroute of State Bicycle Route NC-4 (North Line Trace). Therefore, four-foot offsets and a minimum handrail height of 54 inches will be included in the design. No temporary bicycle or pedestrian accommodations are required for this project.

Bridge Demolition: Bridge No. 21 is constructed entirely of concrete and steel. Several of the existing piers are located within the stream and during removal standard demolition practices will be in place to limit any debris within the water.

No Build – The no-build alternative would result in eventually closing the bridge as its condition continues to deteriorate.

Rehabilitation – The bridge was constructed in 1948, and 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.

Onsite Detour – Bridge No. 21 will be replaced on the existing alignment. A temporary bridge will be built to the north of the existing bridge to maintain traffic during the construction period.

Staged Construction – Staged construction was considered; however, it was determined not feasible due to the longer construction schedule, multiple shifts to traffic patterns, increased travel times, and traffic safety concerns. The on-site detour would allow for maintenance of two-way traffic during construction and has comparable construction costs and environmental impacts.

New Alignment – Given that any new alignment alternatives would require either a design exception or considerable right of way and construction costs along NC 18 to meet the current design speeds, a new alignment was not considered as an alternative.

Offsite Detour – An offsite detour was considered; the detour is approximately 7.1 miles long and would use SR 1453 (Little Pine Road/Fox Ridge Road to SR 1433 (Ridge Glen Road/Hooker Road). Due to concerns about the effects of the offsite detour on emergency services response times and school transportation, the offsite detour alternative was dropped from consideration.

Other Agency Comments:

A start of study letter was sent to federal, state, and local agencies on January 23, 2016. No substantive comments were received regarding the project.

Public Involvement:

A letter was sent to affected owners informing them of the proposed project. A Public Meeting was determined unnecessary.

PART A: MINIMUM CRITERIA

- | | YES | NO |
|--|-------------------------------------|-------------------------------------|
| 1. Will the proposed project involve land disturbing activity of more than ten acres that will result in substantial, permanent changes in the natural cover or topography of those lands? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Will the proposed project require the expenditure of more than ten million dollars in public funds? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Is the proposed project listed as a type and class of activity which would qualify as a Non-Major Action under the Minimum Criteria rules? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
- If “yes”, under which category? Category # 9
(Note: If either Category #8 or #15 is used, complete Part D of this checklist.)

If “yes” is selected for either Question 1 or 2 and “no” is selected for Question 3, then the project does not qualify as a Non-Major Action. A state environmental impact statement (SEIS) or state environmental assessment (SEA) will be required.

PART B: MINIMUM CRITERIA EXCEPTIONS

- | | YES | NO |
|--|--------------------------|-------------------------------------|
| 4. 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? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Will the proposed activity endanger the existence of a species on the Department of Interior’s threatened and endangered species list? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6. Would 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"/> |
| 7. Would the proposed activity cause significant changes in land use concentrations that would be expected to create adverse water quality or groundwater impacts? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 8. Is the proposed activity expected to have a significant adverse effect on long-term recreational benefits? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 9. Is the proposed activity expected to have a significant adverse effect on shellfish, finfish, wildlife, or their natural habitats? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 10. Will the proposed activity have secondary impacts or cumulative impacts that may result in a significant adverse impact to human health or the environment? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 11. 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 NCDOT? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Note: If any of Questions 4 through 11 in part B are answered “YES”, the proposed project does not qualify as a Non-Major Action. A SEIS or SEA will be required.

PART C: COMPLIANCE WITH STATE AND FEDERAL REGULATIONS

	YES	NO
<u>Ecological Impacts</u>		
12. 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"/>
13. Does the action require the placement of fill in waters of the United States?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
14. 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"/>
15. Does the project require stream relocation or channel changes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
16. 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"/>
<u>Cultural Resources</u>		
17. 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"/>
18. Will the proposed action require acquisition of additional right of way from publicly owned parkland or recreational areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Question 12: While there is potential habitat present for the northern long-eared bat (NLEB), this species is exempt due to consistency with the 4(d) rule. Prior to construction, NCDOT will coordinate with the USFWS or the USACE to satisfy Section 7 of the Endangered Species Act for the NLEB.

Question 13: Temporary impacts to Little River would be required to remove the existing concrete pier within the stream. In addition, permanent fill would be anticipated to accommodate new piers for the proposed three-span bridge.

PART D: N/A

Reviewed by:

9/1/2017
Date

DocuSigned by:
Angela Sanderson
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Angela Sanderson
Project Planning Engineer
Project Development & Environmental Analysis Unit

9/1/2017 | 10:24 AM EDT
Date

DocuSigned by:
James McInnis, Jr.
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James McInnis, Jr., PE
Project Engineer
Project Development & Environmental Analysis Unit

9/1/2017 | 9:55 AM EDT
Date

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David J. Clodgo
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David Clodgo, PE
Consultant Project Manager

PROJECT COMMITMENTS

Alleghany County Bridge No. 21 on NC 18 over Little River W.B.S. Project No. 46103.1.1 Project No. B-5388

Division Eleven Construction

In order to have time to adequately re-route school buses, Alleghany County Schools will be contacted at (336) 372-4345 at least one month prior to road closure.

Alleghany County Emergency Services will be contacted at (336) 372-5676 at least one month prior to road closure to make the necessary temporary reassignments to primary response units.

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 the drainage structure(s) and roadway embankment located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

Hydraulics Unit

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).

Environmental Analysis Unit

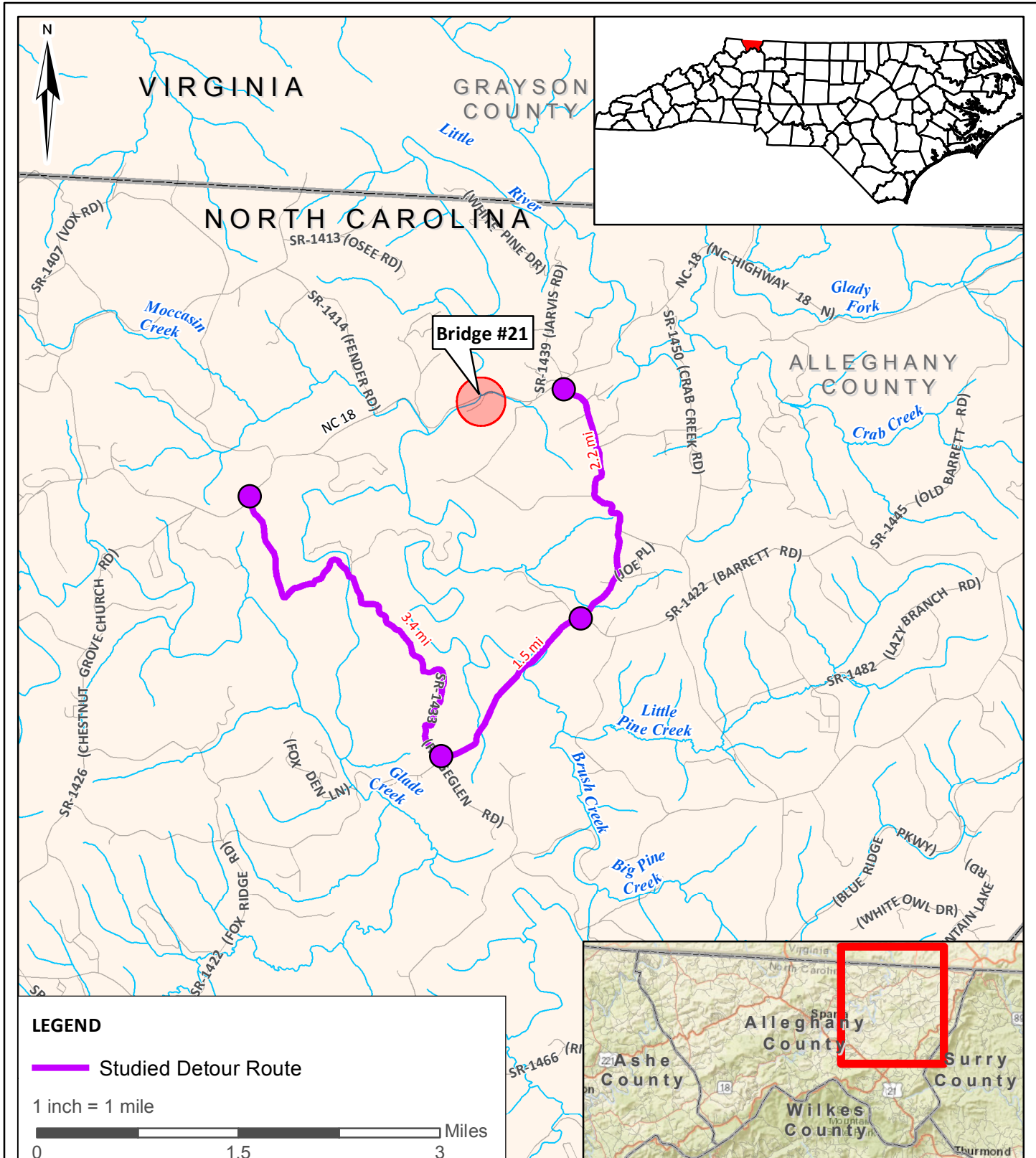
Prior to construction, NCDOT will coordinate with the USFWS or the USACE to satisfy Section 7 of the Endangered Species Act for the NLEB.

Right of Way Unit/Public Involvement Section

This project is located within a Voluntary Agricultural District (VAD). If any property owners refuse settlement, before pursuing condemnation, the Right of Way Unit must contact the Public Involvement Section in order to schedule a public meeting with the VAD. This does not mean that the Department cannot condemn but is a procedural requirement prior to condemnation.

Roadside Environmental Unit/Division Eleven Construction

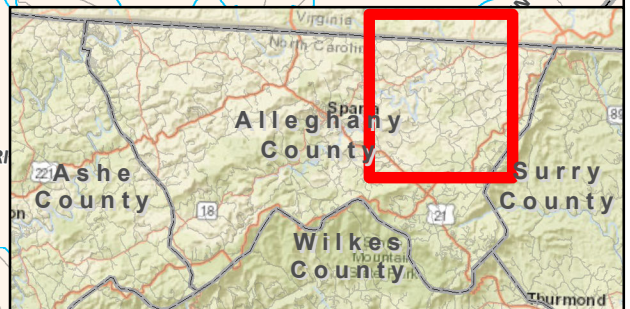
Little River is designated high quality waters. Design standards in sensitive watersheds will be followed for the project.



LEGEND

 Studied Detour Route

1 inch = 1 mile



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION



DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS UNIT

VICINITY MAP

B-5388
Replace Bridge #21
on NC 18 Over
Little River

County: ALLEGHANY

Div: 11 B-5388

WBS: 46103.1.1

MAY 2017

Figure 1

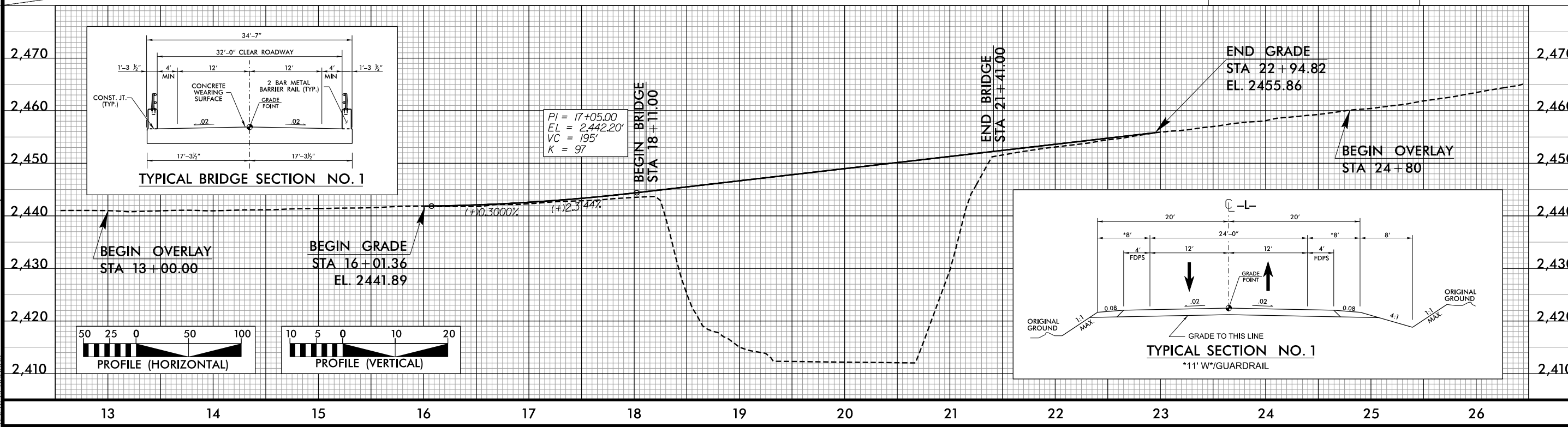
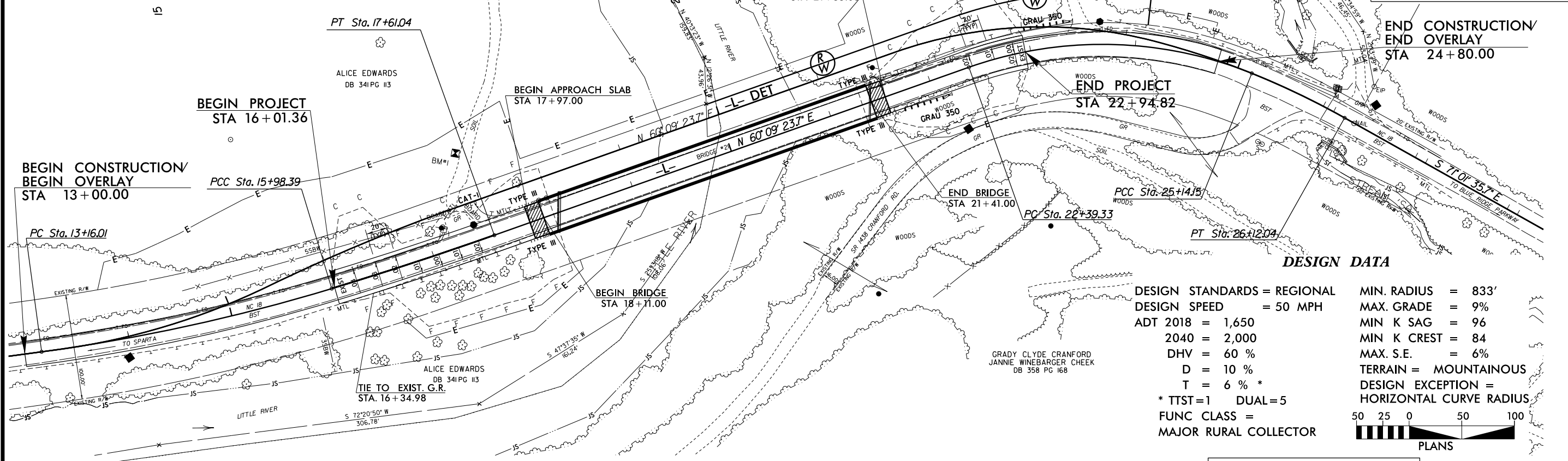
8/17/99

B-5388, BRIDGE NO. 21 ALLEGHANY COUNTY REPLACE IN PLACE ON SITE DETOUR - ALT 1

PI Sta 14+57.50 Δ = 9° 08' 26.8" (LT) D = 3' 14' 13.4" L = 282.38' T = 141.49' R = 1,770.00'	PI Sta 16+79.73 Δ = 2° 37' 56.8" (LT) D = 1' 37' 06.7" L = 162.65' T = 81.34' R = 3,540.00'	PI Sta 23+83.06 Δ = 41° 26' 12.8" (RT) D = 15' 04' 40.2" L = 274.82' T = 143.73' R = 380.00'	PI Sta 25+63.16 Δ = 7° 22' 47.8" (RT) D = 7' 32' 20.1" L = 97.89' T = 49.01' R = 760.00'
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* DESIGN EXCEPTION REQUIRED FOR HORIZONTAL CURVE RADIUS

PROJECT REFERENCE NO. B-5388	SHEET NO. 4
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR F/W ACQUISITION	
CDM Smith 4400 Glenwood Avenue Suite 400 Raleigh, NC 27612-2228 NC CDA No. F-2612	ME Engineering, PLLC 101 S. Graham Drive Suite 100 Raleigh, NC 27606 NC CDA No.
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



REVISIONS

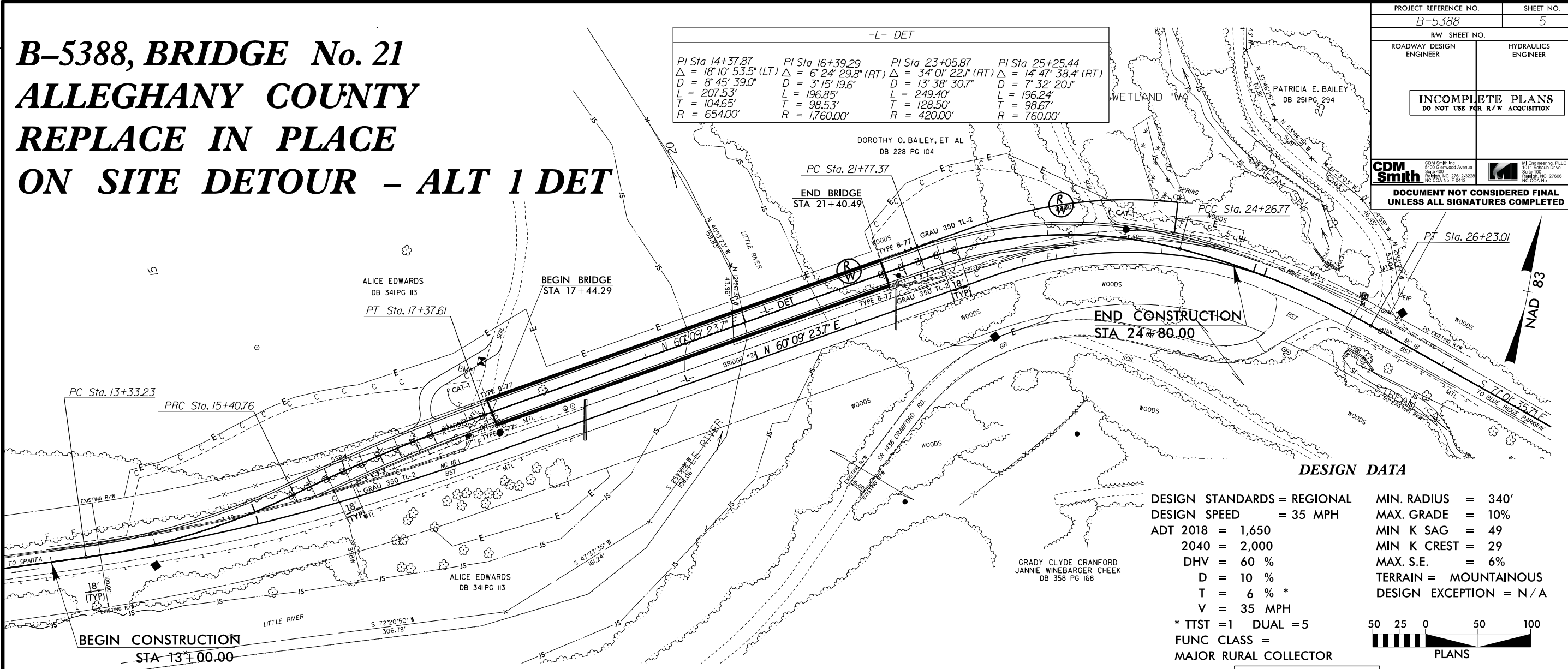
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8/17/99

B-5388, BRIDGE No. 21 ALLEGHANY COUNTY REPLACE IN PLACE ON SITE DETOUR - ALT 1 DET

PROJECT REFERENCE NO. B-5388	SHEET NO. 5
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
CDM Smith Inc. 6400 Glenwood Avenue Suite 400 Raleigh, NC 27612-2228 NC CDA No. F-2612	ME Engineering, PLLC 1011 S. Graham Drive Suite 100 Raleigh, NC 27606 NC CDA No.
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

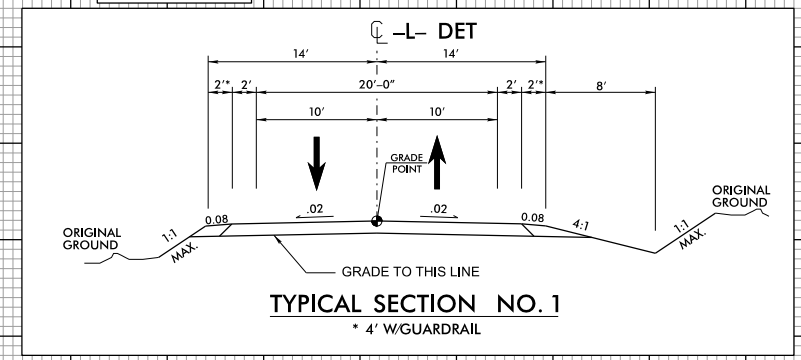
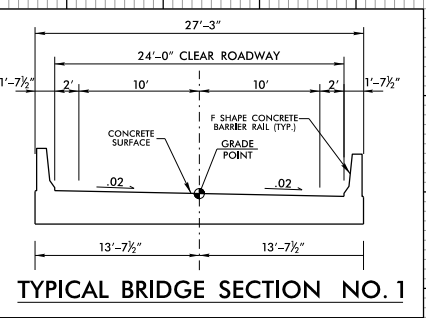
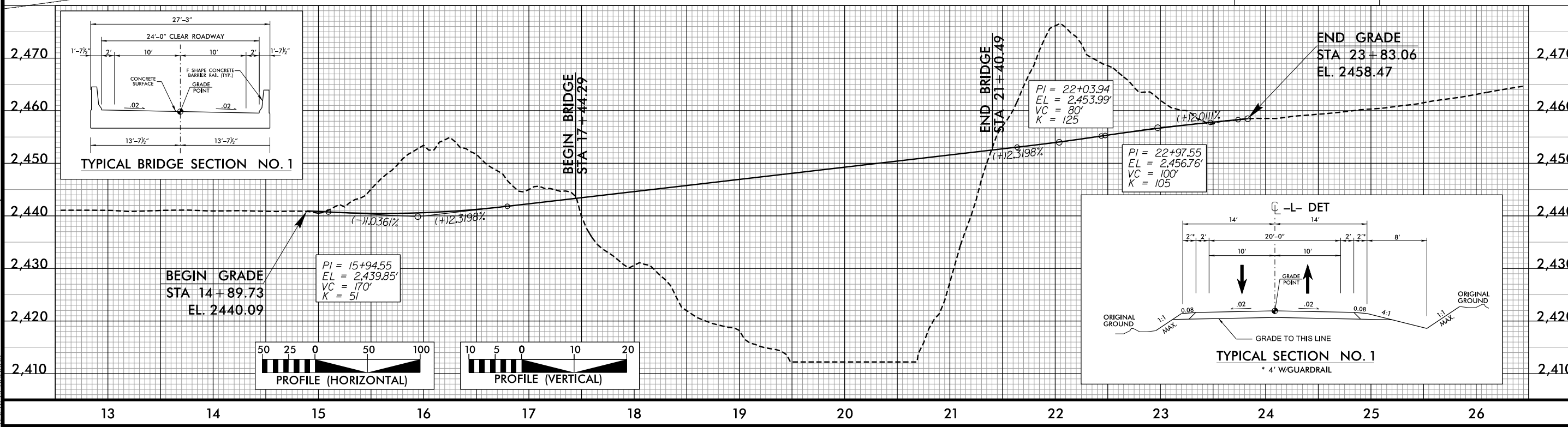
-L- DET			
PI Sta 14+37.87 Δ = 18° 10' 53.5" (LT) D = 8' 45' 39.0" L = 207.53' T = 104.65' R = 654.00'	PI Sta 16+39.29 Δ = 6° 24' 29.8" (RT) D = 3' 15' 19.6" L = 196.85' T = 98.53' R = 1,760.00'	PI Sta 23+05.87 Δ = 34° 01' 22.1" (RT) D = 13' 38' 30.7" L = 249.40' T = 128.50' R = 420.00'	PI Sta 25+25.44 Δ = 14° 47' 38.4" (RT) D = 7' 32' 20.1" L = 196.24' T = 98.67' R = 760.00'



DESIGN DATA

DESIGN STANDARDS = REGIONAL	MIN. RADIUS = 340'
DESIGN SPEED = 35 MPH	MAX. GRADE = 10%
ADT 2018 = 1,650	MIN K SAG = 49
2040 = 2,000	MIN K CREST = 29
DHV = 60 %	MAX. S.E. = 6%
D = 10 %	TERRAIN = MOUNTAINOUS
T = 6 % *	DESIGN EXCEPTION = N/A
V = 35 MPH	
* TTST = 1 DUAL = 5	
FUNC CLASS =	
MAJOR RURAL COLLECTOR	

SEE SHEET 4 FOR -L-



REVISIONS

Invalid expression
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