




STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

February 5, 2008

MEMORANDUM TO: Mr. Richard E. Greene, Jr., PE
Division Four Engineer

FROM: Philip S. Harris, III, P.E., Unit Head 
Natural Environment Unit
Project Development and Environmental Analysis Branch

SUBJECT: Nash County, Replace Bridge No.17 on SR 1131 over
Turkey Creek; T.I.P. Number B-4209; Federal Aid Project
No. BRZ-1131(6); State Project No. 8.2322401

Attached is the Riparian Buffer Authorization for the above referenced project. All environmental permits have been received for the construction of this project.

PSH/gyb

Attachment

Cc:

Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Jay Bennett, P.E., Roadway Design
Dr. David Chang, P.E., Hydraulics
Mr. Randy Garris, P.E. State Contract Officer
Mr. Art McMillan, P.E., Highway Design
Mr. Greg Perfetti, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. John F. Sullivan, FHWA
Ms. Beth Harmon, EEP
Mr. Rob Hanson, P.E., PDEA Eastern Region Unit Head
Mr. Jamie Guerrero, Division Environmental Officer

PROJECT COMMITMENTS:

**Nash County
Bridge No. 17 on SR 1131
Over Turkey Creek
Federal Aid Project No. BRZ-1131 (6)
State Project No. 8.2322401
W.B.S. No. 33555.1.1
T.I.P. No. B-4209**

In addition to the NCDOT's Guidelines for Best Management Practices for Bridge Demolition and Removal, Design Standards in Sensitive Watersheds, NCDOT's Best Management Practices for Protection of Surface Waters the following special commitments have been agreed to by NCDOT:

Commitments Developed through Project Development

NEU/Hydraulic Design Unit

This project is subject to the Neuse River Basin Buffer Rules.
Incorporated into the plan.

Bridge Demolition

Bridge No. 17 should be possible to remove with no resulting debris based on standard demolition practices.
Standard practice.

Roadway Design Unit, Structure Design Unit, Roadside Environmental Unit, Hydraulic Design Unit, Division Four Construction Unit, Project Development and Environmental Analysis Branch

The U. S. Fish and Wildlife Service (USFWS) was consulted in regard to the effect of project construction on the Tar Spynymussel and the Dwarf Wedgemussel. The USFWS recommends that NCDOT delay requesting concurrence until the planning and design process has advanced to the point of allowing for the development of sufficient conservation measures. In the meantime, the Service recommends that NCDOT consider the following possible conservation measures and incorporate them into the design of the project, if possible. NCDOT will continue coordination with USFWS regarding conservation measures and concurrence:

1. Utilize an off-site detour
2. Completely span the channel
3. Avoid in-stream work
4. Cut off timber bents flush with the "mudline"
5. Use BMPs for Protection of Surface Waters
6. Use BMPs for Construction and Maintenance Activities to include Special Sediment Control Fence
7. Avoid clearing and grubbing within 50 feet of the stream banks during the non-growing season
8. If project is not constructed prior to July 2006, conduct another mussel survey

This commitment is no longer valid.

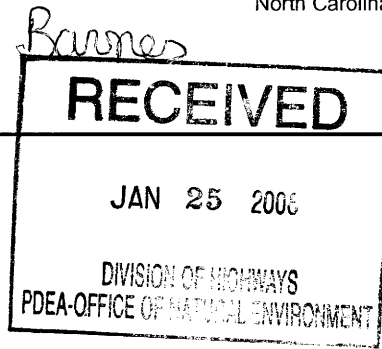
NEU – Tar spynymussel and Dwarf wedgemussel

A survey was conducted in July 2004 for the Tar spynymussel and the Dwarf wedgemussel. If sufficient conservation measures are implemented, "May Effect, Not Likely to Adversely Effect," will be listed for these two species.

USFWS concurred to the biological conclusion of May Effect Not Likely to Adversely Effect.

Commitments Developed through Permitting

There are no additional special commitments for this project.



January 23, 2007
Nash County
DWQ Project No. 20080147
Bridge 17 on SR 1131
TIP No. B-4209

APPROVAL of NEUSE BUFFER AUTHORIZATION with ADDITIONAL CONDITIONS

Dr. Gregory J. Thorpe, Ph.D., Environmental Management Director
NCDOT PDEA
1598 Mail Service Center
Raleigh, NC 27699

Dear Dr. Thorpe:

You have our approval, in accordance with the conditions listed below, for the following impacts for the purpose of replacing Bridge 17 in Nash County:

Neuse Riparian Buffer Impacts

Site	Zone 1 Impact (sq ft)	minus Wetlands in Zone 1 (sq ft)	= Zone 1 Buffers (not wetlands) (sq ft)	Zone 1 Buffer Mitigation Required (using 3:1 ratio)	Zone 2 Impact (sq ft)	minus Wetlands in Zone 2 (sq ft)	= Zone 2 Buffers (not wetlands) (sq ft)	Zone 2 Buffer Mitigation Required (using 1.5:1 ratio)
1	4050	0	4050	N/A	1713	0	1713	N/A
Totals	4050	0	4050	0	1713	0	1713	0

* n/a = Total for Site is less than 1/3 acre and 150 linear feet of impact, no mitigation required

Total Buffer Impact for Project: 5,763 square feet.

The project shall be constructed in accordance with your application dated received January 18, 2008. This approval is valid for the Neuse Riparian Buffer Rules (15A NCAC 2B.0233). In addition, you should acquire any other federal, state or local permits before you proceed with your project including (but not limited to) Sediment and Erosion Control, Non-Discharge and Water Supply Watershed regulations.

This approval is valid solely for the purpose and design described in your application (unless modified below). Should your project change, you must notify the DWQ and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If total wetland fills for this project (now or in the future) exceed one acre, or of total impacts to streams (now or in the future) exceed 150 linear feet, compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you must adhere to the conditions listed below.

Conditions of Certification:

1. The post-construction removal of any temporary bridge structures must return the project site to its preconstruction contours and elevations. The impacted areas shall be revegetated with appropriate native species.
2. Strict adherence to the most recent version of NCDOT's Best Management Practices For Bridge Demolition and Removal approved by the US Army Corps of Engineers is a condition of the 401 Water Quality Certification.



3. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to the most current version of *Stormwater Best Management Practices*.
4. All riparian buffers impacted by the placement of temporary fill or clearing activities shall be restored to the preconstruction contours and revegetated. Maintained buffers shall be permanently revegetated with non-woody species by the end of the growing season following completion of construction. For the purpose of this condition, maintained buffer areas are defined as areas within the transportation corridor that will be subject to regular DOT maintenance activities including mowing. The area with non-maintained buffers shall be permanently revegetated, with native woody species before the next growing season following completion of construction.
5. Pursuant to NCAC15A 2B.0233(6), sediment and erosion control devices shall not be placed in Zone 1 of any Neuse Buffer without prior approval by the NCDWQ. At this time, the NCDWQ has approved no sediment and erosion control devices in Zone 1, outside of the approved project impacts, anywhere on this project. Moreover, sediment and erosion control devices shall be allowed in Zone 2 of the buffers provided that Zone 1 is not compromised and that discharge is released as diffuse flow.
6. All stormwater runoff shall be directed as sheetflow through stream buffers at nonerosive velocities, unless otherwise approved by this certification.
7. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.
8. During the construction of the project, no staging of equipment of any kind is permitted in waters of the U.S., or protected riparian buffers.
9. The dimension, pattern and profile of the stream above and below the crossing shall not be modified. Disturbed floodplains and streams shall be restored to natural geomorphic conditions.
10. The use of rip-rap above the Normal High Water Mark shall be minimized. Any rip-rap placed for stream stabilization shall be placed in stream channels in such a manner that it does not impede aquatic life passage.
11. The Permittee shall ensure that the final design drawings adhere to the permit and to the permit drawings submitted for approval.
12. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water.
13. Heavy equipment shall be operated from the banks rather than in the stream channel in order to minimize sedimentation and reduce the introduction of other pollutants into the stream.
14. All mechanized equipment operated near surface waters must be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials.
15. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification.
16. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited.



17. A copy of this Water Quality Certification shall be maintained on site at the construction site at all times. In addition, the Water Quality Certification and all subsequent modifications, if any, shall be maintained with the Division Engineer and the on-site project manager.
18. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification.
19. The issuance of this certification does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (i.e. local, state, and federal) having jurisdiction, including but not limited to applicable buffer rules, stormwater management rules, soil erosion and sedimentation control requirements, etc.
20. The Permittee shall report any violations of this certification to the Division of Water Quality within 24 hours of discovery.
21. Upon completion of the project (including any impacts at associated borrow or waste site), the NCDOT Division Engineer shall complete and return the enclosed "Certification of Completion Form" to notify DWQ when all work included in the 401 Certification has been completed.
22. Native riparian vegetation must be reestablished within the construction limits of the project by the end of the growing season following completion of construction.
23. There shall be no excavation from, or waste disposal into, jurisdictional wetlands or waters associated with this permit without appropriate modification. Should waste or borrow sites, or access roads to waste or borrow sites, be located in wetlands or streams, compensatory mitigation will be required since that is a direct impact from road construction activities.
24. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to protect surface waters standards:
 - a. The erosion and sediment control measures for the project must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*.
 - b. The design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.
 - c. For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*.
 - d. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.
25. Sediment and erosion control measures shall not be placed in wetlands or waters unless otherwise approved by this Certification.



Michael F. Easley, Governor
William G. Ross Jr., Secretary
North Carolina Department of Environment and Natural Resources

Coleen Sullins, Director
Division of Water Quality

If you do not accept any of the conditions of this certification, you may ask for an adjudicatory hearing. You must act within 60 days of the date that you receive this letter. To ask for a hearing, send a written petition that conforms to Chapter 150B of the North Carolina General Statutes to the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, N.C. 27699. This certification and its conditions are final and binding unless you ask for a hearing. This letter completes the review of the Division of Water Quality under Section 401 of the Clean Water Act. If you have any questions, please contact Rob Ridings at (919) 733-9817

Sincerely,

A handwritten signature in black ink, appearing to read "C. Sullins", written over a horizontal line.

Coleen Sullins
Director

Attachment (Certificate of Completion form)

cc: Chad Coggins, Division 4 Environmental Officer
William Wescott, US Army Corps of Engineers, Washginton Field Office
Travis Wilson, NC Wildlife Resources Commission
Gary Jordan, US Fish and Wildlife Service
Veronica Barnes, NCDOT PDEA
File Copy



DWQ Project No.: _____ County: _____

Applicant: _____

Project Name: _____

Date of Issuance of 401 Water Quality Certification: _____

Certificate of Completion

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401 Transportation Permitting Unit, North Carolina Division of Water Quality, 1650 Mail Service Center, Raleigh, NC, 27699-1650. This form may be returned to DWQ by the applicant, the applicant's authorized agent, or the project engineer. It is not necessary to send certificates from all of these.

Applicant's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Agent's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

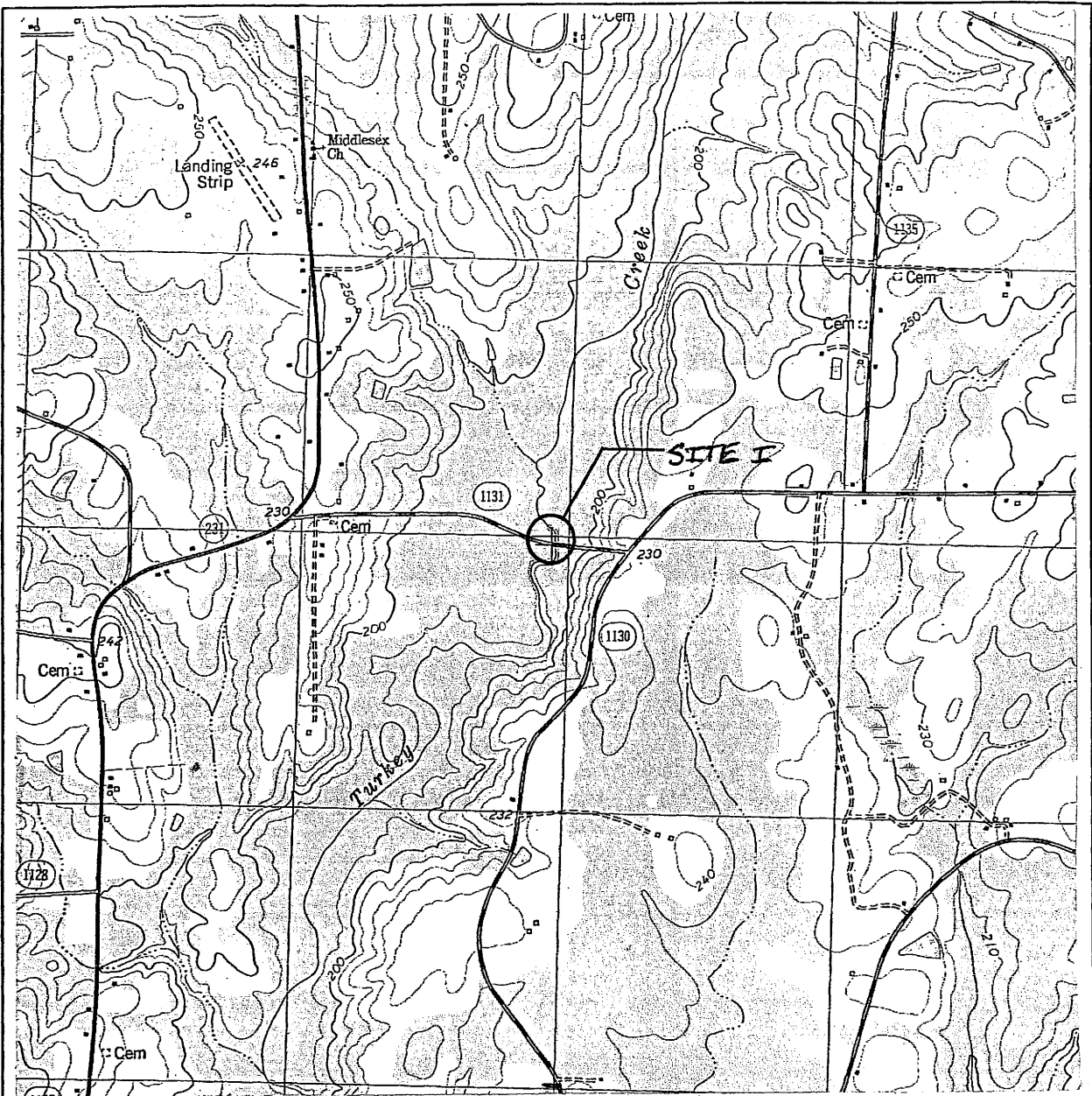
Engineer's Certification

_____ Partial _____ Final

I, _____, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project, for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature _____ Registration No. _____

Date _____



VICINITY
MAP

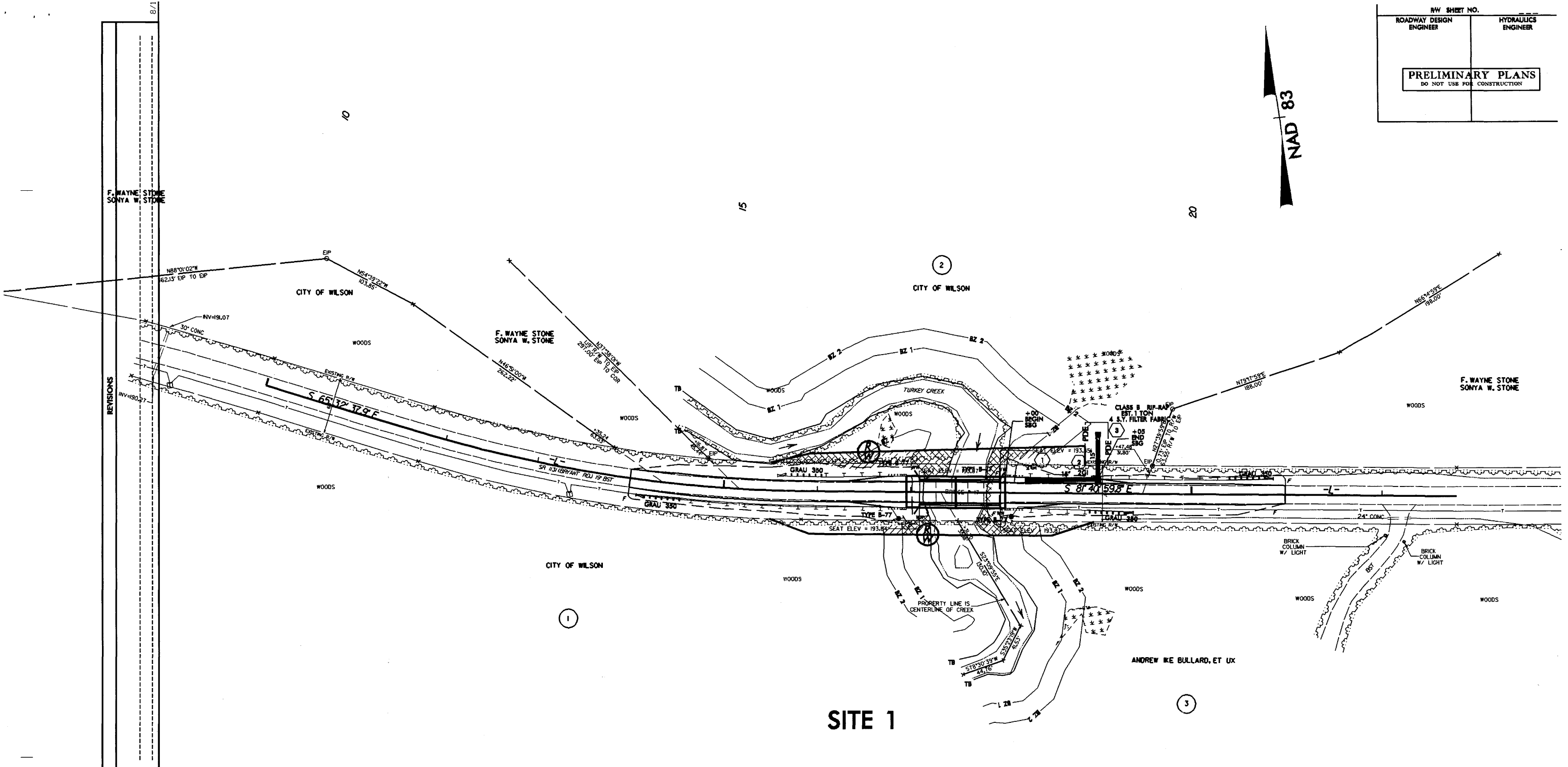
NCDOT
 DIVISION OF HIGHWAYS
 NASH COUNTY
 PROJECT: 33555.1.1 (B-4209)
 BRIDGE NO.17 OVER
 TURKEY CREEK ON
 SR 1131

SHEET OF 9/19/07

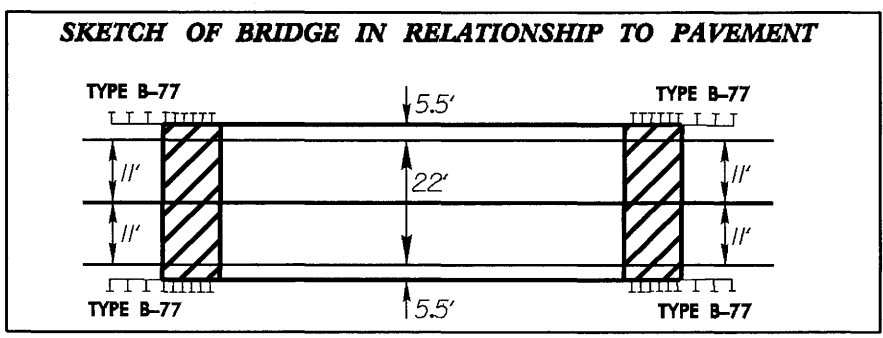


F. WAYNE STONE
SONYA W. STONE

REVISIONS



SITE 1



- ALLOWABLE IMPACTS ZONE 1
- ALLOWABLE IMPACTS ZONE 2

-L-
 PI Sta 13+82.13
 $\Delta = 16^{\circ} 08' 21.9" (LT)$
 $D = 3^{\circ} 49' 11.1"$
 $L = 422.53'$
 $T = 212.67'$
 $R = 1,500.00'$
 $RO = 200'$
 $SE = .08$

SBG: SHOULDER BERM GUTTER

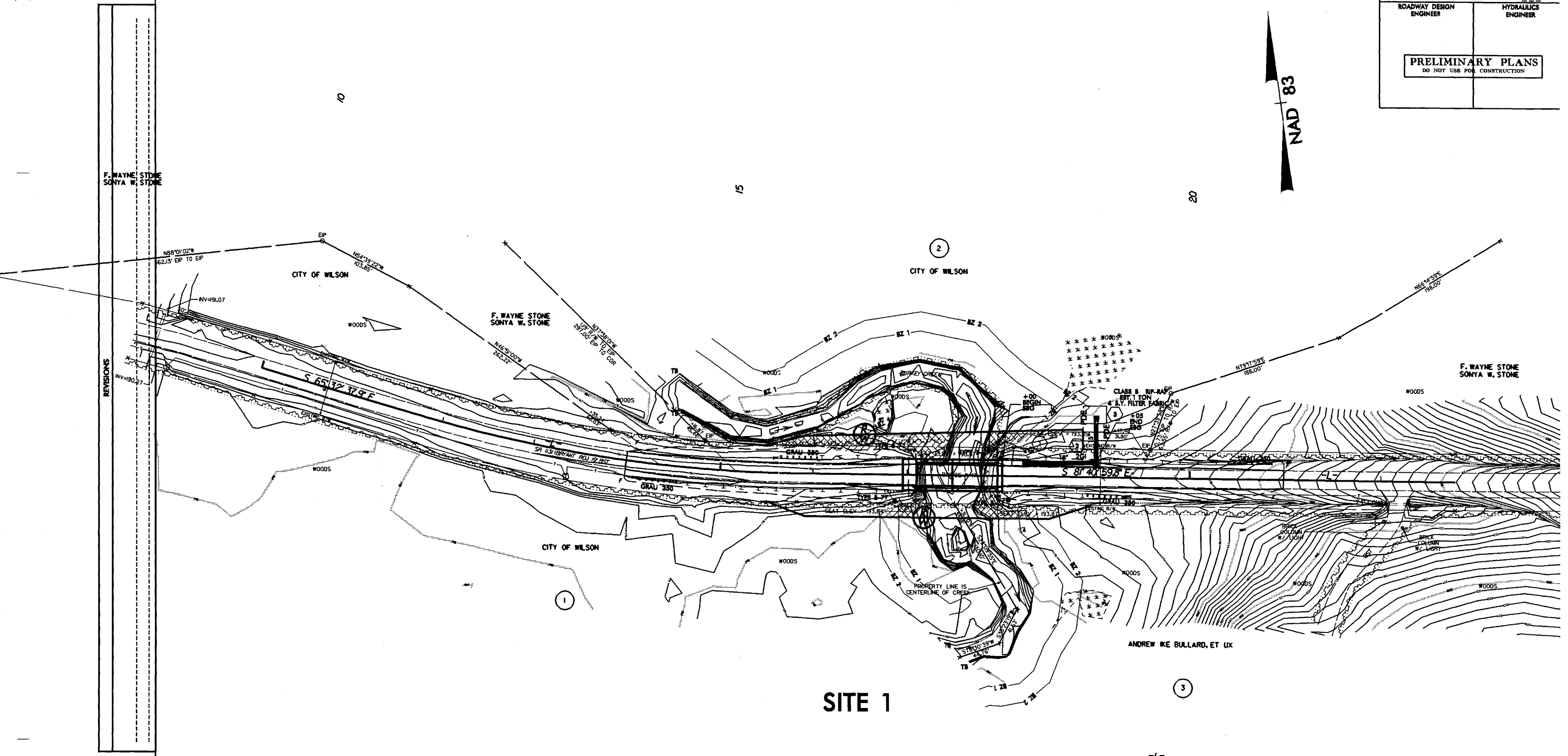
FOR -L- PROFILE SEE SHEET 5
 FOR STRUCTURE SEE SHEETS S1-SX

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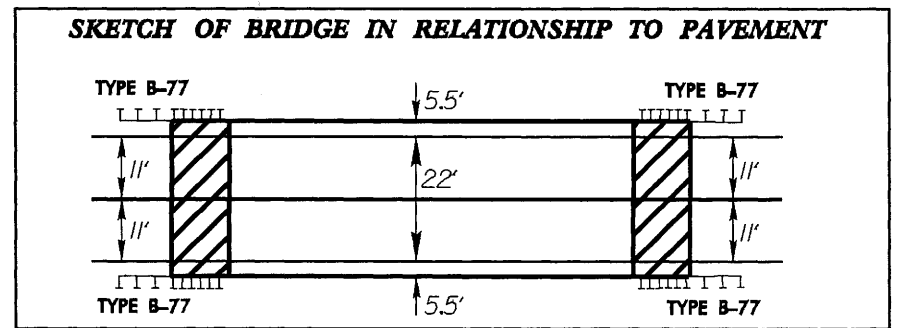


F. WAYNE STONE
 SONYA W. STONE

REVISIONS



SITE 1



- ALLOWABLE IMPACTS ZONE 1
- ALLOWABLE IMPACTS ZONE 2

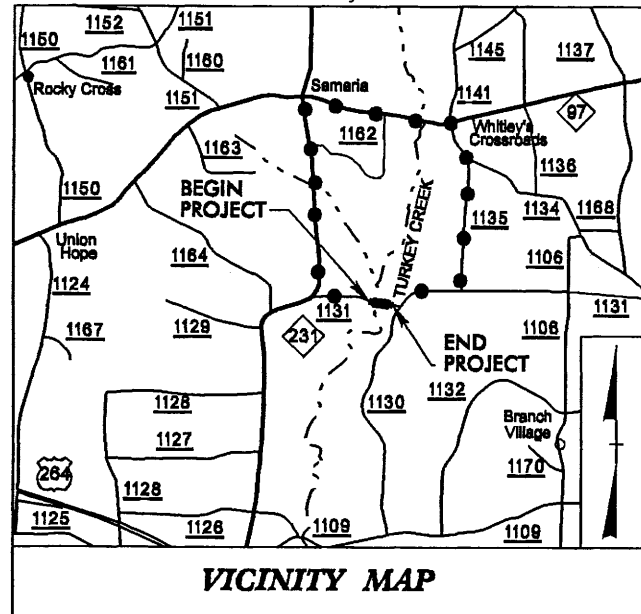
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 $R = 1,500.00'$
 $RO = 200'$
 $SE = .08$

SBG: SHOULDER BERM GUTTER

FOR -L- PROFILE SEE SHEET 5
 FOR STRUCTURE SEE SHEETS S1-SX

21-SEP-2007 08:24
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 mshobn AT HY 2338

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



VICINITY MAP

●●●●● OFFSITE DETOUR

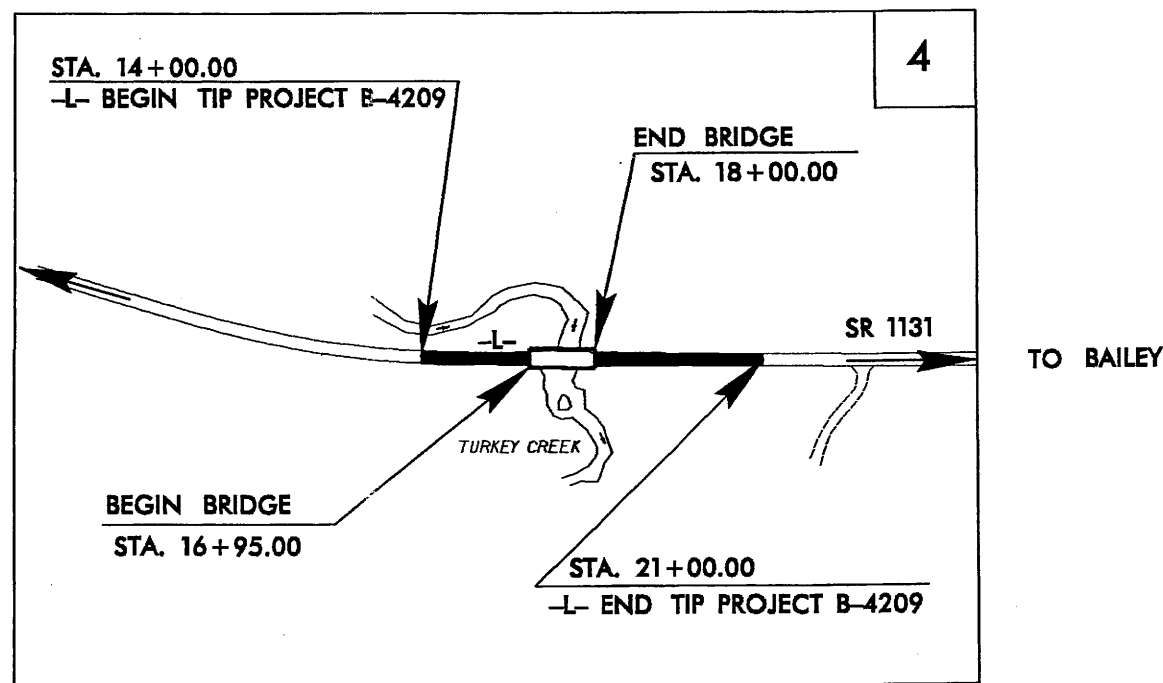
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NASH COUNTY

LOCATION: BRIDGE NO. 17 OVER TURKEY CREEK ON SR 1131

TYPE OF WORK: GRADING, PAVING, DRAINAGE, STRUCTURE,
AND GUARDRAIL

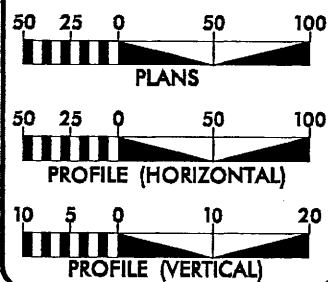
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4209	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33555.1.1	BRZ-1131(6)	P.E.	
33555.2.1	BRZ-1131(6)	ROW, UTIL	



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES



DESIGN DATA

ADT 2008 = 430
ADT 2028 = 750
DHV = 10 %
D = 60 %
T = 3 % *
V = 60 MPH
* TTST 1% + DUAL 2%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4209 = 0.113 MI
LENGTH STRUCTURE TIP PROJECT B-4209 = 0.020 MI
TOTAL LENGTH TIP PROJECT B-4209 = 0.133 MI

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JUNE 15, 2007

LETTING DATE:
JUNE 17, 2008

BRENDA MOORE, P.E.
PROJECT ENGINEER

THAD F. DUNCAN, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA



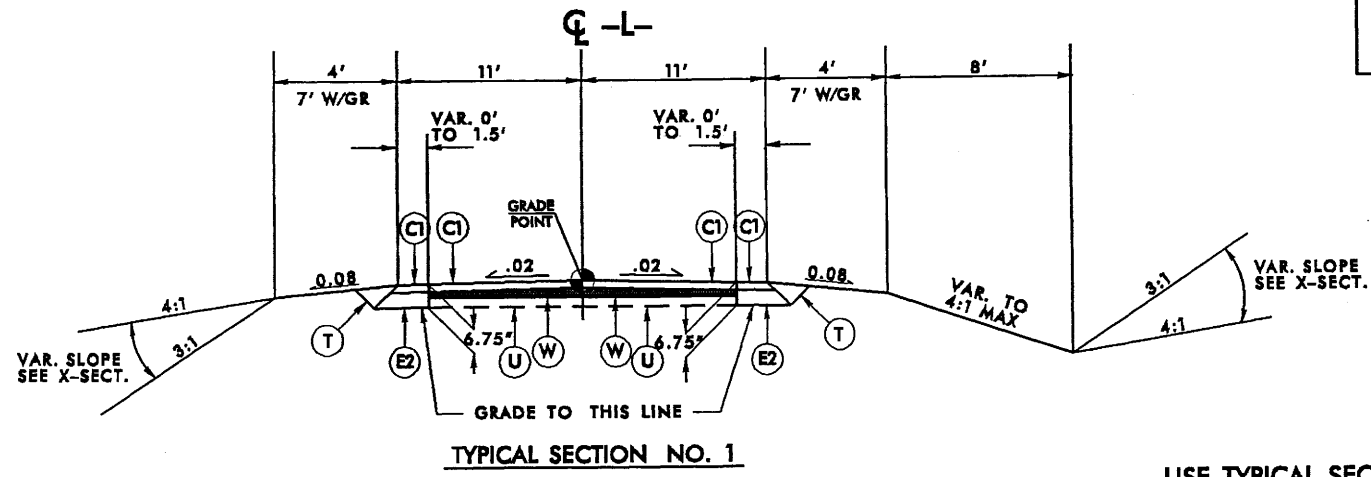
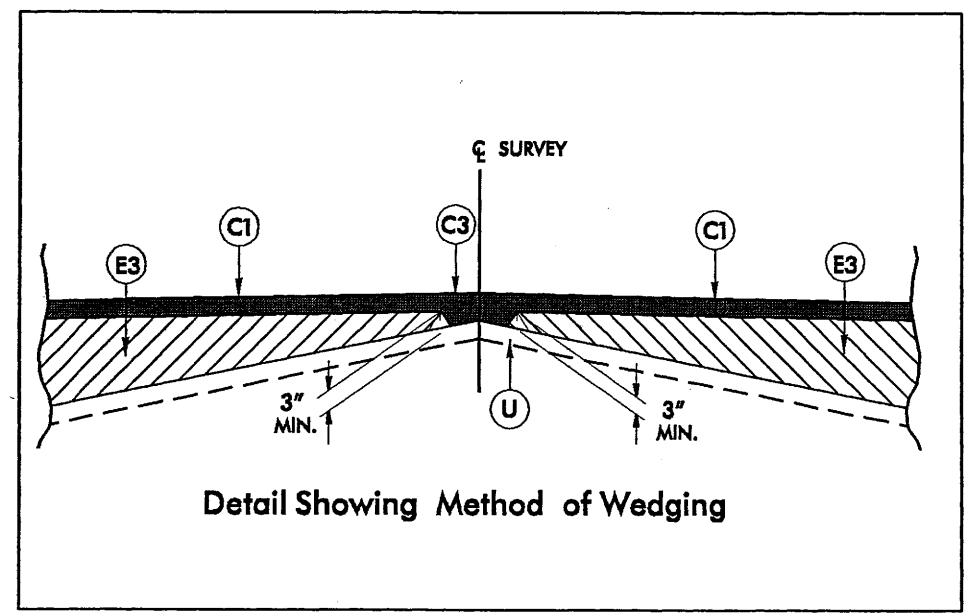
STATE HIGHWAY DESIGN ENGINEER P.E.

TIP PROJECT: B-4209

CONTRACT: C201853

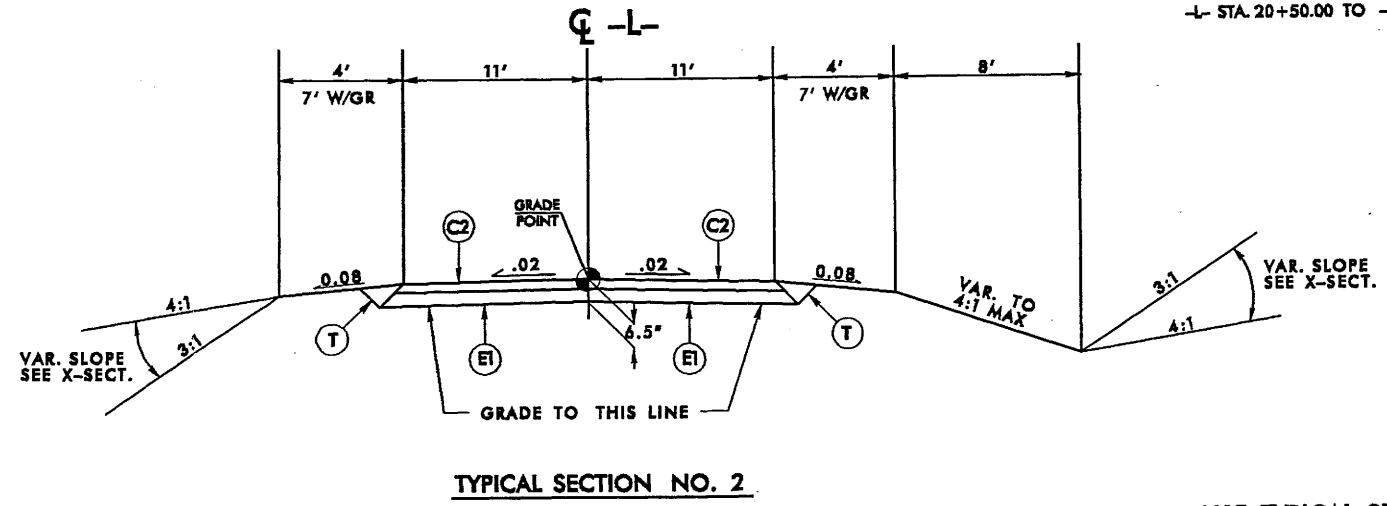
PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C2	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 5 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
U	EXISTING PAVEMENT.
T	EARTH MATERIAL.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL THIS SHEET.)

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



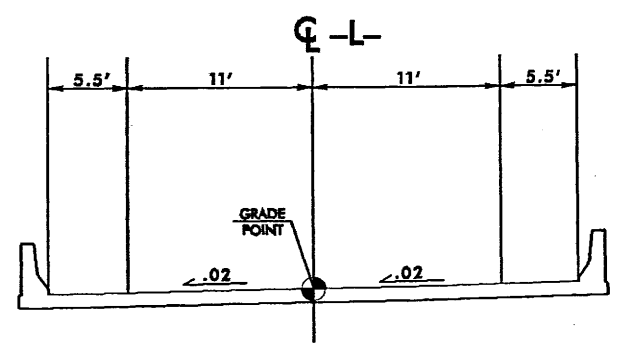
USE TYPICAL SECTION NO. 1

- L- STA. 14+00.00 TO -L- STA. 14+50.00 TAPER FROM EXIST.
- L- STA. 14+50.00 TO -L- STA. 16+50.00
- L- STA. 18+50.00 TO -L- STA. 20+50.00
- L- STA. 20+50.00 TO -L- STA. 21+00.00 TAPER TO EXIST.



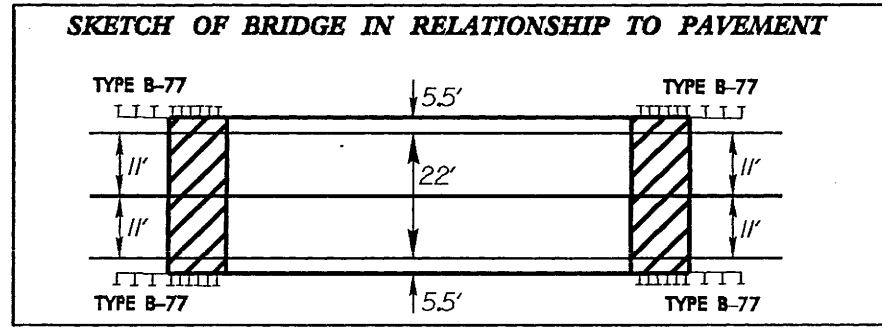
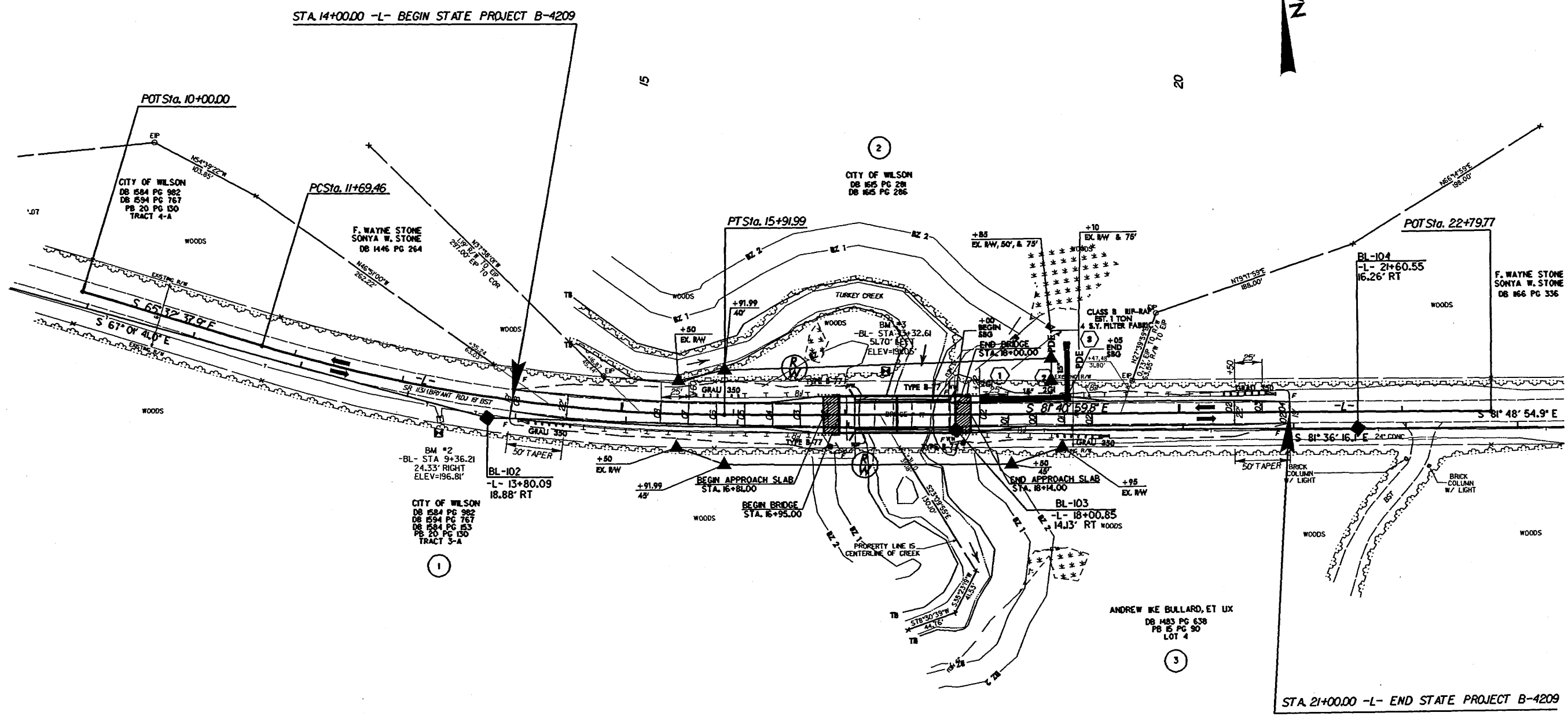
USE TYPICAL SECTION NO. 2

- L- STA. 16+50.00 TO -L- STA. 16+95.00 (BEG. BRIDGE)
- L- STA. 18+00.00 (END BRIDGE) TO -L- STA. 18+50.00



-L- STA. 16+95.00 TO STA. 18+00.00

PROJECT REFERENCE NO. B-4209	SHEET NO. 4
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



-L-
 PI Sta 13+82.13
 $\Delta = 16^{\circ} 08' 21.9''$ (LT)
 $D = 3^{\circ} 49' 11.0''$
 $L = 422.53'$
 $T = 212.67'$
 $R = 1500.00'$
 $RO = 200'$
 $SE = .08$

SRG: SHOULDER BERM GUTTER

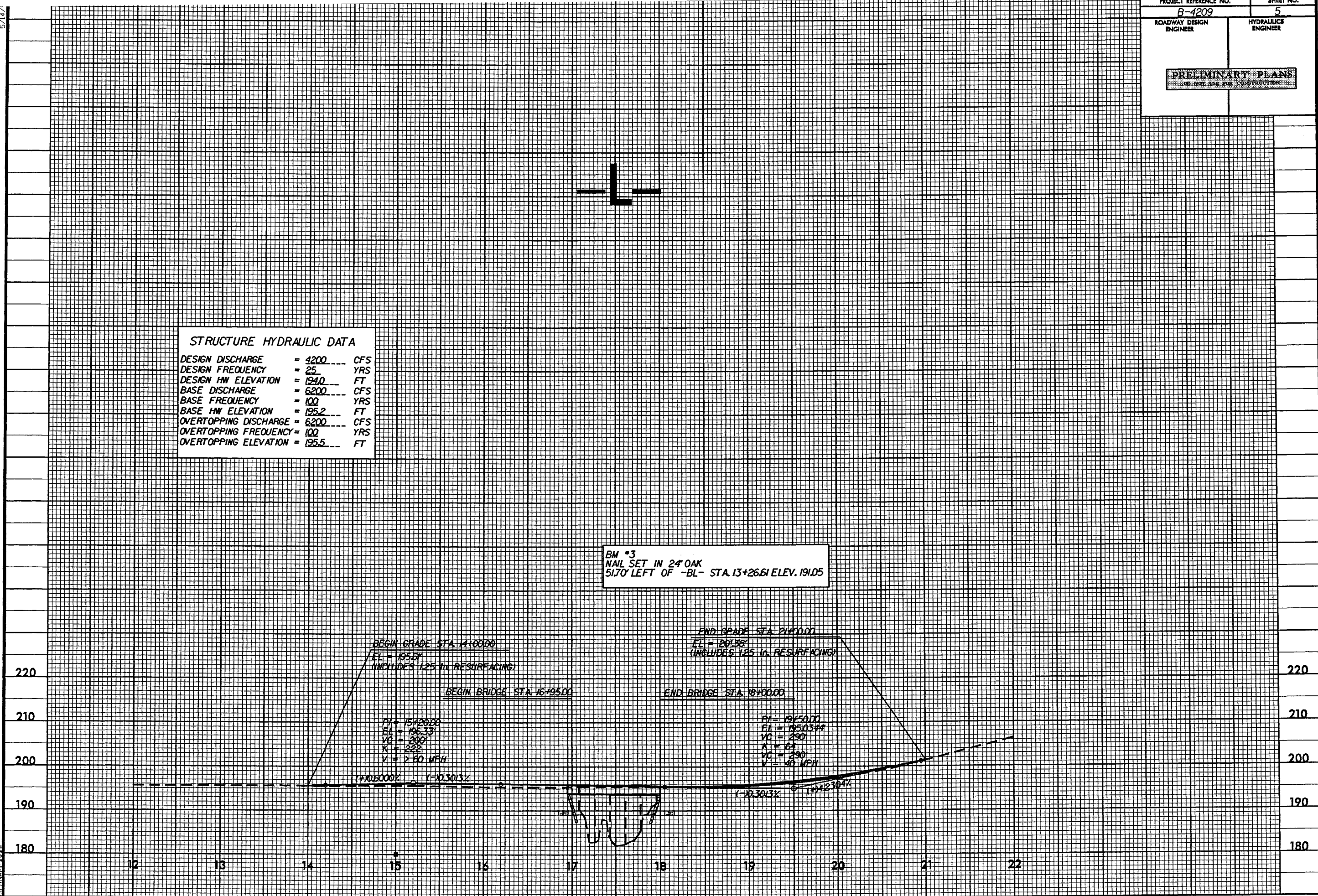
FOR -L- PROFILE SEE SHEET 5
 FOR STRUCTURE SEE SHEETS S1-SX

8/17
 REVISIONS
 21-SEP-2007 07:52
 F:\Projects\B-4209\Drawings\psh.dgn

STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 4200	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 194.0	FT
BASE DISCHARGE	= 6200	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 195.2	FT
OVERTOPPING DISCHARGE	= 6200	CFS
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING ELEVATION	= 195.5	FT

BM #3
NAIL SET IN 2" OAK
5.70' LEFT OF -BL- STA. 13+26.61 ELEV. 191.05



21-SEP-2007 07:52
C:\p000001\proj\B4209_rdy_pf1.dgn
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