



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

June 21, 2007

N.C. Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557

ATTENTION: Mr. Stephen Lane
NCDOT Coordinator

Dear Sir:

Subject: **CAMA General Permit Application** for the Replacement of Bridge No. 19 over Stones Creek on NC 210, Onslow County. Federal Aid Project No. BRSTP-0210(3), State Project No. 8.1262101, TIP Project No. B-4215. Debit \$100 from WBS Element 33561.1.1.

Please find enclosed the CAMA General permit application, permit drawings, utility drawings, landowner receipts, and a copy of the State Stormwater Permit (Permit No. SW8 050917) for the above-mentioned project. A CAMA General Development Permit was approved for this project in March 2006. Due to delays in the project the previous permit has expired prior to construction of the project. Therefore, NCDOT is applying for a new General Permit for the subject project, which will be replaced in the existing location utilizing an off-site detour. The proposed replacement structure is a bridge 130 feet in length, with two 12-foot travel lanes, and one 8-foot, 10-inch shoulder and one 12-foot shoulder. The approach roadway will consist of two 12-foot travel lanes with 8-foot shoulders, of which 4 feet of the shoulders will be paved.

Impacts to Waters of the United States

General Description: Stones Creek is located in the 03030001 CU of the White Oak River Basin. The Division of Water Quality (DWQ) has assigned Stones Creek a Stream Index Number of 19-30-3. DWQ has assigned a best usage classification of **SA HQW**.

Permanent Impacts: Proposed impacts include 0.003 acre of fill in 404 jurisdictional wetlands. There will be 0.003 acre of surface water impacts due to the placement of a single bridge bent.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1548 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-733-3141
FAX: 919-733-9794

WEBSITE: WWW.NCDOT.ORG

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

Temporary Impacts: No temporary impacts to jurisdictional resources will be necessary for the construction of this project.

Hand Clearing: There is 0.043 acre of proposed hand-clearing in 404 jurisdictional wetlands.

Utility Impacts: There will be 1.82 square feet of permanent surface water impacts from the installation of two piers for an aerial sewer line. There will be 0.028 acre of temporary impacts to the adjacent CAMA buffer due to equipment staging for the pier installations.

Bridge Demolition

Bridge No. 19 is a two-lane structure, 90 feet in length with a 26-foot clear roadway width. The deck and railings of the superstructure are composed of reinforced concrete slab. The substructure is composed of reinforced concrete abutments and reinforced concrete caps on timber piles. The railings will be removed without dropping them in to Waters of the U.S. As stated in the Categorical Exclusion (CE), dropping any portion of the structure in to Waters of the U.S. will be avoided unless there is no other practical method of removal. Best Management Practices for Bridge Demolition and Removal will be implemented.

Essential Fish Habitat

During the preparation of the Categorical Exclusion document for this project, it was determined that an Essential Fish Habitat (EFH) assessment was not warranted for this project. Ron Sechler with the National Marine Fisheries Service (NMFS) was contacted prior to submittal of this application regarding EFH. Mr. Sechler stated that due to the project's design for avoidance/minimization of impacts (e.g. replacing bridge on same location, reducing the number of bents in the water, using an off-site detour, etc.), NMFS does not require an EFH assessment.

Federally Protected Species

As of May 10, 2007, the US Fish and Wildlife Service (USFWS) lists 16 federally protected species for Onslow County, as listed in Table 1. The biological conclusions of No Effect contained in the CE remain valid, although three species have been added to the list for Onslow County since the CE was completed. Fritz Rhode, of the NC Department of Marine Fisheries, informed NCDOT on January 18, 2005 that Shortnose sturgeon are not found in Stones Creek. The biological conclusions for Shortnose sturgeon, West Indian manatee, and Pondberry are added below.

Table 1. Federally Protected Species for Onslow County.

Common Name	Scientific Name	Status	Habitat Present	Biological Conclusion
American alligator	<i>Alligator mississippiensis</i>	T(S/A) ¹	Yes	N/A
Bald eagle	<i>Haliaeetus leucocephalus</i>	T ¹	No	No Effect
Eastern cougar	<i>Felis concolor cougar</i>	E	No	No Effect
Green sea turtle	<i>Chelonia mydas</i>	T	No	No Effect

Common Name	Scientific Name	Status	Habitat Present	Biological Conclusion
Leatherback sea turtle	<i>Dermochelys coriacea</i>	E	No	No Effect
Loggerhead sea turtle	<i>Caretta caretta</i>	T	No	No Effect
Piping plover	<i>Charadrius melodus</i>	T	No	No Effect
Red-cockaded woodpecker	<i>Picoides borealis</i>	E	No	No Effect
Shortnose sturgeon	<i>Acipenser brevirostrum</i>	E	Yes	No Effect
West Indian manatee	<i>Trichechus manatus</i>	E	No	No Effect
Cooley's meadowrue	<i>Thalictrum colleyi</i>	E	No	No Effect
Golden sedge	<i>Carex lutea</i>	E	No	No Effect
Pondberry	<i>Lindera melissifolia</i>	E	Yes	No Effect
Rough-leaved loosestrife	<i>Lysimachia asperulaefolia</i>	E	No	No Effect
Seabeach amaranth	<i>Amaranthus pumilus</i>	T	No	No Effect

T(S/A) = Threatened due to similar appearance

¹ Proposed for delisting

T = Threatened

E = Endangered

Avoidance and Minimization

Due to the location of this project and that of the adjacent wetlands and surface waters, total avoidance of impacts during the construction of this project is not feasible. NCDOT has taken the following steps to avoid/minimize impacts to the resources:

- NCDOT will be replacing Bridge No. 19 in its existing location, and an off-site detour will be utilized for re-routing traffic during construction.
- The existing 90-foot long bridge will be replaced with a 130-foot long bridge, increasing the floodplain under the bridge.
- The existing bridge has two (2) bents in the water. The proposed bridge will have a single bent in the water.
- Minimum widths for the approaches and structure have been utilized. In order to allow for the capture of water on the bridge to prevent direct discharge to Stones Creek, the bridge needs to be wide enough to alleviate hydraulic concerns for safety regarding the spread of water on the bridge. As such, the proposed bridge has a 12-foot wide shoulder on the south side, and an 8-foot, 10- inch wide shoulder on the north side.
- Fill slopes in the wetlands will be 2:1, utilizing rock plating (riprap) to avoid major erosion and slope failure due to the loose alluvial sandy soils of coastal areas.
- Two (2) preformed scour holes, located on the north side of the bridge on either side of Stones Creek, will be constructed to filter stormwater runoff.
- *Design Standards for Sensitive Watersheds* will be implemented throughout project construction.

The CE included a project commitment for an in-water construction moratorium due to the potential for anadromous fish to occur in the project area. A commitment for the implementation of *Stream Crossing Guidelines for Anadromous Fish Passage* was also included in the CE. The North Carolina Wildlife Resource Commission (NCWRC) requested both of these commitments. It was later determined that the project is not located within the

jurisdiction of the NCWRC, but rather, within the jurisdiction of the North Carolina Division of Marine Fisheries (NCDMF). These commitments and the proper jurisdiction issue were discussed with Travis Wilson of the NCWRC, and Mr. Wilson subsequently rescinded the request for the in-water construction moratorium and the request for the implementation of the *Stream Crossing Guidelines for Anadromous Fish Passage*. Fritz Rhode with NCDMF informed NCDOT that based on his personal knowledge and the NCDMF's sampling of Stones Creek, there will be no anadromous fish using the creek. NCDMF did not request any moratoria for this project or any other project conditions.

Mitigation

Due to the minimal impacts, compensatory mitigation is not proposed.

Project Schedule

The project is scheduled to let on August 21, 2007 with a review date of July 3, 2007.

Regulatory Approvals

CAMA: NCDOT requests that the proposed work be authorized under a Coastal Area Management Act General Permit. The landowner receipts are attached. Authorization to debit the \$100 General Permit Application Fee from WBS Element 33561.1.1 is hereby given.

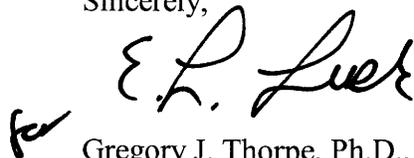
Section 404 Permit: NCDOT has received a United States Army Corps of Engineers (USACE) Section 404 permit.

Section 401 Permit: NCDOT has received a North Carolina Division of Water Quality (NCDWQ) Section 401 Water Quality Certification under a separate cover.

Copies of the Section 404 and 401 permits and this permit application are posted on the NCDOT website at: <http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html>

If you have any questions or need additional information please contact Veronica Barnes at (919) 715-7232 or vabarnes@dot.state.nc.us.

Sincerely,



Gregory J. Thorpe, Ph.D., Environmental Management Director
Project Development and Environmental Analysis

w/attachment

- Mr. John Hennessy, NCDWQ (2 Copies)
- Mr. Travis Wilson, NCWRC
- Mr. Gary Jordan, USFWS

Mr. Ron Sechler, NMFS
Mr. Michael Street, NCDMF
Mr. Steve Sollod, NCDCM
Dr. David Chang, P.E., Hydraulics
Mr. Mark Staley, Roadside Environmental
Mr. Greg Perfetti, P.E., Structure Design
Mr. Victor Barbour, P.E., Project Services Unit
Mr. H. Allen Pope, P.E., Division Engineer
Mr. Mason Herndon, Division Environmental Officer

w/out attachment

Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Scott McLendon, USACE, Wilmington
Mr. Ted Devens, PDEA

BRIDGES and CULVERTS

Attach this form to Joint Application for CAMA Major Permit, Form DCM MP-1. Be sure to complete all other sections of the Joint Application that relate to this proposed project. Please include all supplemental information.

1. BRIDGES This section not applicable

a. Is the proposed bridge:
 Commercial Public/Government Private/Community

b. Water body to be crossed by bridge:
Stones Creek

c. Type of bridge (construction material):
concrete box girder

d. Water depth at the proposed crossing at NLW or NWL:
3.5 ft at NWL

e. (i) Will proposed bridge replace an existing bridge? Yes No
If yes,
(ii) Length of existing bridge: 90 ft.
(iii) Width of existing bridge: 25.6 ft.
(iv) Navigation clearance underneath existing bridge: 15.5 ft.
(v) Will all, or a part of, the existing bridge be removed?
(Explain) all of the existing bridge will be removed

f. (i) Will proposed bridge replace an existing culvert? Yes No
If yes,
(ii) Length of existing culvert:
(iii) Width of existing culvert:
(iv) Height of the top of the existing culvert above the NHW or NWL:
(v) Will all, or a part of, the existing culvert be removed?
(Explain)

g. Length of proposed bridge: 130 ft

h. Width of proposed bridge: 45 ft.

i. Will the proposed bridge affect existing water flow? Yes No
If yes, explain:

j. Will the proposed bridge affect navigation by reducing or increasing the existing navigable opening? Yes No
If yes, explain: the proposed bridge will increase the navigable opening by having one bent in the water, instead of the existing three and by increasing the navigable clearance underneath the bridge.

k. Navigation clearance underneath proposed bridge: 17.2ft.

l. Have you contacted the U.S. Coast Guard concerning their approval? Yes No
If yes, explain: The proposed bidge will not require a Coast Guard Individual Permit because it meets the criteria for advanced approval under Title 33 of the Code of Federal Regulations, Section 115.70.

m. Will the proposed bridge cross wetlands containing no navigable waters? Yes No
If yes, explain: The bridge will cross a small amount of wetlands on both the north and south ends of the bridge.

n. Height of proposed bridge above wetlands: 11.5 ft.

2. CULVERTS This section not applicable

a. Number of culverts proposed:

b. Water body in which the culvert is to be placed:

< Form continues on back >

c. Type of culvert (construction material):

d. (i) Will proposed culvert replace an existing bridge? Yes No

- If yes,
 (ii) Length of existing bridge:
 (iii) Width of existing bridge:
 (iv) Navigation clearance underneath existing bridge:
 (v) Will all, or a part of, the existing bridge be removed?
 (Explain)

e. (i) Will proposed culvert replace an existing culvert? Yes No

- If yes,
 (ii) Length of existing culvert(s):
 (iii) Width of existing culvert(s):
 (iv) Height of the top of the existing culvert above the NHW or
 NWL:
 (v) Will all, or a part of, the existing culvert be removed?
 (Explain)

f. Length of proposed culvert:
 h. Height of the top of the proposed culvert above the NHW or NWL.

g. Width of proposed culvert:
 i. Depth of culvert to be buried below existing bottom contour.

j. Will the proposed culvert affect navigation by reducing or
 increasing the existing navigable opening? Yes No

If yes, explain:

k. Will the proposed culvert affect existing water flow? Yes No

If yes, explain:

3. EXCAVATION and FILL This section not applicable

a. (i) Will the placement of the proposed bridge or culvert require any
 excavation below the NHW or NWL? Yes No

- If yes,
 (ii) Avg. length of area to be excavated:
 (iii) Avg. width of area to be excavated:
 (iv) Avg. depth of area to be excavated:
 (v) Amount of material to be excavated in cubic yards:

b. (i) Will the placement of the proposed bridge or culvert require any
 excavation within coastal wetlands/marsh (CW), submerged
 aquatic vegetation (SAV), shell bottom (SB), or other wetlands
 (WL)? If any boxes are checked, provide the number of square
 feet affected.

CW _____ SAV _____ SB
 WL _____ None

(ii) Describe the purpose of the excavation in these areas:

c. (i) Will the placement of the proposed bridge or culvert require any
 high-ground excavation? Yes No

- If yes,
 (ii) Avg. length of area to be excavated: 172 ft.
 (iii) Avg. width of area to be excavated: 18ft.
 (iv) Avg. depth of area to be excavated: 12 ft.
 (v) Amount of material to be excavated in cubic yards: 1370
cu. yds.

- d. If the placement of the bridge or culvert involves any excavation, please complete the following:
- (i) Location of the spoil disposal area: An upland area to be determined by the contractor and approved by NCDOT
 - (ii) Dimensions of the spoil disposal area: to be determined by contractor
 - (iii) Do you claim title to the disposal area? Yes No (If no, attach a letter granting permission from the owner.)
 - (iv) Will the disposal area be available for future maintenance? Yes No
 - (v) Does the disposal area include any coastal wetlands/marsh (CW), submerged aquatic vegetation (SAVs), other wetlands (WL), or shell bottom (SB)?
 CW SAV WL SB None
 If any boxes are checked, give dimensions if different from (ii) above.
 - (vi) Does the disposal area include any area below the NHW or NWL? Yes No
 If yes, give dimensions if different from (ii) above.

- e. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item d above) to be placed below NHW or NWL? Yes No
 If yes,
 (ii) Avg. length of area to be filled:
 (iii) Avg. width of area to be filled:
 (iv) Purpose of fill:

- f. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item d above) to be placed within coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.
 CW _____ SAV _____ SB
 WL _____ None
 (ii) Describe the purpose of the excavation in these areas:
roadway fill/ riprap

- g. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item d above) to be placed on high-ground? Yes No
 If yes,
 (ii) Avg. length of area to be filled: 30 ft
 (iii) Avg. width of area to be filled: 5 ft
 (iv) Purpose of fill: fill in roadway and shoulder

4. GENERAL

- a. Will the proposed project require the relocation of any existing utility lines? Yes No
 If yes, explain: forcemain and telephone lines to be relocated

- b. Will the proposed project require the construction of any temporary detour structures? Yes No
 If yes, explain:

If this portion of the proposed project has already received approval from local authorities, please attach a copy of the approval or certification.

< Form continues on back >

- c. Will the proposed project require any work channels? Yes No
 If yes, complete Form DCM-MP-2.
- d. How will excavated or fill material be kept on site and erosion controlled?
NCDOT Design Standards in Sensitive Watersheds will be adhered to.



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

June 21, 2007

Edward J. Collins
312 NC Highway 210
Holly Ridge, NC 28445

Dear Mr. Collins:

The Natural Environment Unit of the North Carolina Department of Transportation has recently been made aware of your request for a full set of plans for the replacement of bridge number 19 on NC 210 over Stones Creek. Therefore, please find enclosed an additional copy of the vicinity map and permit drawings for the project, as well as a complete set of Roadway Design plans.

The enclosed form is submitted to insure that you have an opportunity to comment further on the proposal. If you have **no** further objections to the proposal, please return the form with your response within 10 days to this office. If you **do** have further objections to the project, please forward your comments to:

Mr. Steven Lane
N.C. Division of Coastal Management
400 Commerce Ave.
Morehead City, NC 28557

We apologize for any inconvenience and appreciate your cooperation. If you have any additional questions, please feel free to contact Veronica Barnes at (919) 715-7232.

Sincerely,

Gregory J. Thorpe

Gregory J. Thorpe, Ph.D.,
Environmental Management Director, PDEA

Enclosures

cc: Steven Lane, NCDCM
Ted Devens, NCDOT PDEA
File B-4215

e. What type of construction equipment will be used (for example, dragline, backhoe, or hydraulic dredge)?

Heavy highway construction equipment

f. Will wetlands be crossed in transporting equipment to project site?

Yes No

If yes, explain steps that will be taken to avoid or minimize environmental impacts.

g. Will the placement of the proposed bridge or culvert require any shoreline stabilization? Yes No

If yes, complete form MP-2, Section 3 for Shoreline Stabilization only.

June 21, 2007

Date

B-4215

Project Name

Elizabeth C. Lusk

Ap

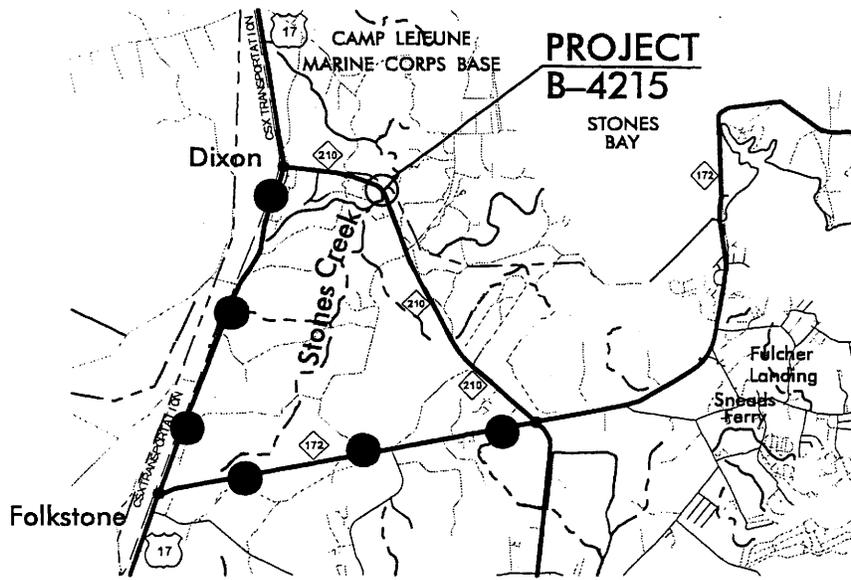
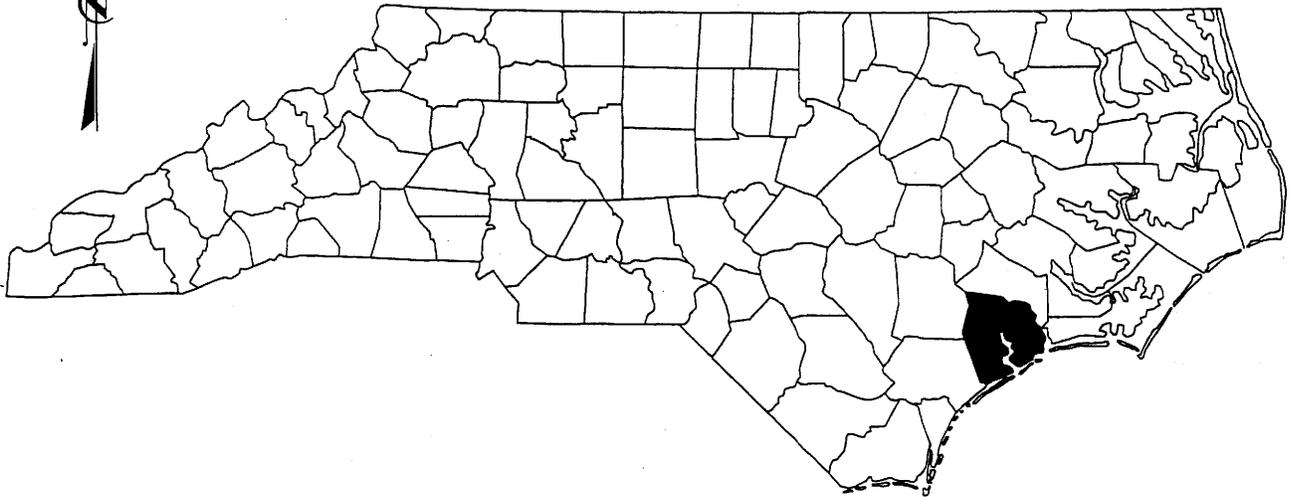
Applicant Name

E. P. Lusk

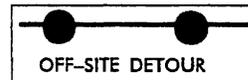
Ap

Applicant Signature

NORTH CAROLINA



(NOT TO SCALE)



VICINITY MAPS

NCDOT

DIVISION OF HIGHWAYS

ONLSOW COUNTY

PROJECT: 3356L1.1 (B-4215)

BRIDGE NO. 19 OVER

STONES CREEK

AND APPROACHES ON NC 210

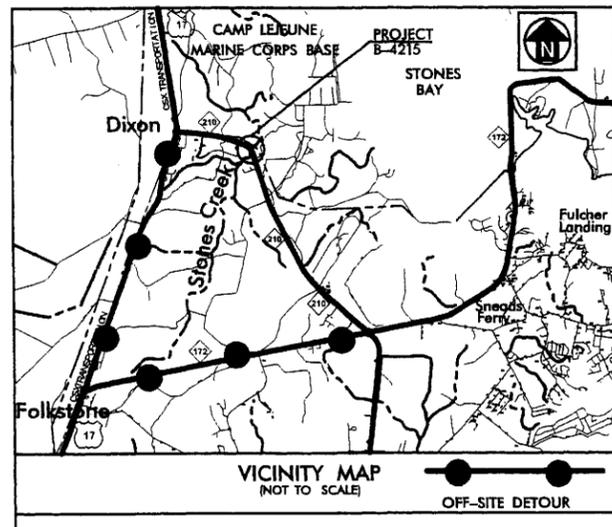
CAMA PERMIT DRAWING

SHEET 1 OF 10

1/7/05

CONTRACT: TIP PROJECT: B-4215

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



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

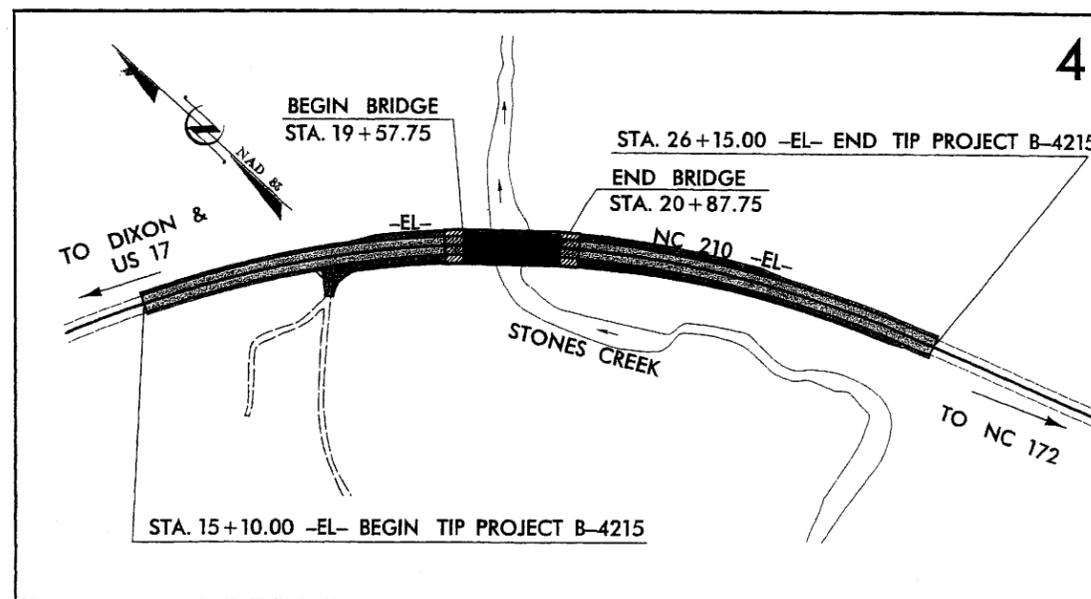
ONSLOW COUNTY

LOCATION: BRIDGE NO. 19 OVER STONES CREEK AND APPROACHES ON NC 210

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4215	1	
WBS NO.	P.A. PROJ. NO.	DESCRIPTION	
33561.1.1	BRSTP-0210(3)	P.E.	
33561.2.1	BRSTP-0210(3)	R /W,UTL	
CAMA Permit Drawing Sheet 2 of 10			

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



MULKEY
ENGINEERS & CONSULTANTS

PO Box 33127
RALEIGH, N.C. 27636
(919) 851-1912
(919) 851-1918 (FAX)
WWW.MULKEYINC.COM

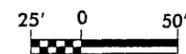
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

CLEARING ON THIS PROJECT SHOULD BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

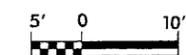
GRAPHIC SCALE



PLANS



PROFILE (HORIZONTAL)



PROFILE (VERTICAL)

DESIGN DATA

ADT 2006 = 9400
ADT 2026 = 17,300
DHV = 10%
D = 60%
* T = 7%
** V = 55 mph

Func Class = Maj Coll - Rural
* (Duals = 4% + TTST = 3%)
** Design Exception -
Sight Distance

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4215 = 0.184 MILE
LENGTH STRUCTURE TIP PROJECT B-4215 = 0.025 MILE
TOTAL LENGTH TIP PROJECT B-4215 = 0.209 MILE

Prepared in the Office of:
Mulkey Engineers & Consultants
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
FEBRUARY 18, 2005

LETTING DATE:
FEBRUARY 21, 2006

NGDOT CONTACT: CATHY S. HOUSER, P.E.
ROADWAY DESIGN - PROJECT ENGINEER

PAM WILLIAMS
MULKEY E & C
PROJECT MANAGER

JONATHAN SCARCE, PE
MULKEY E & C
HYDRAULICS ENGINEER

HYDRAULICS ENGINEER

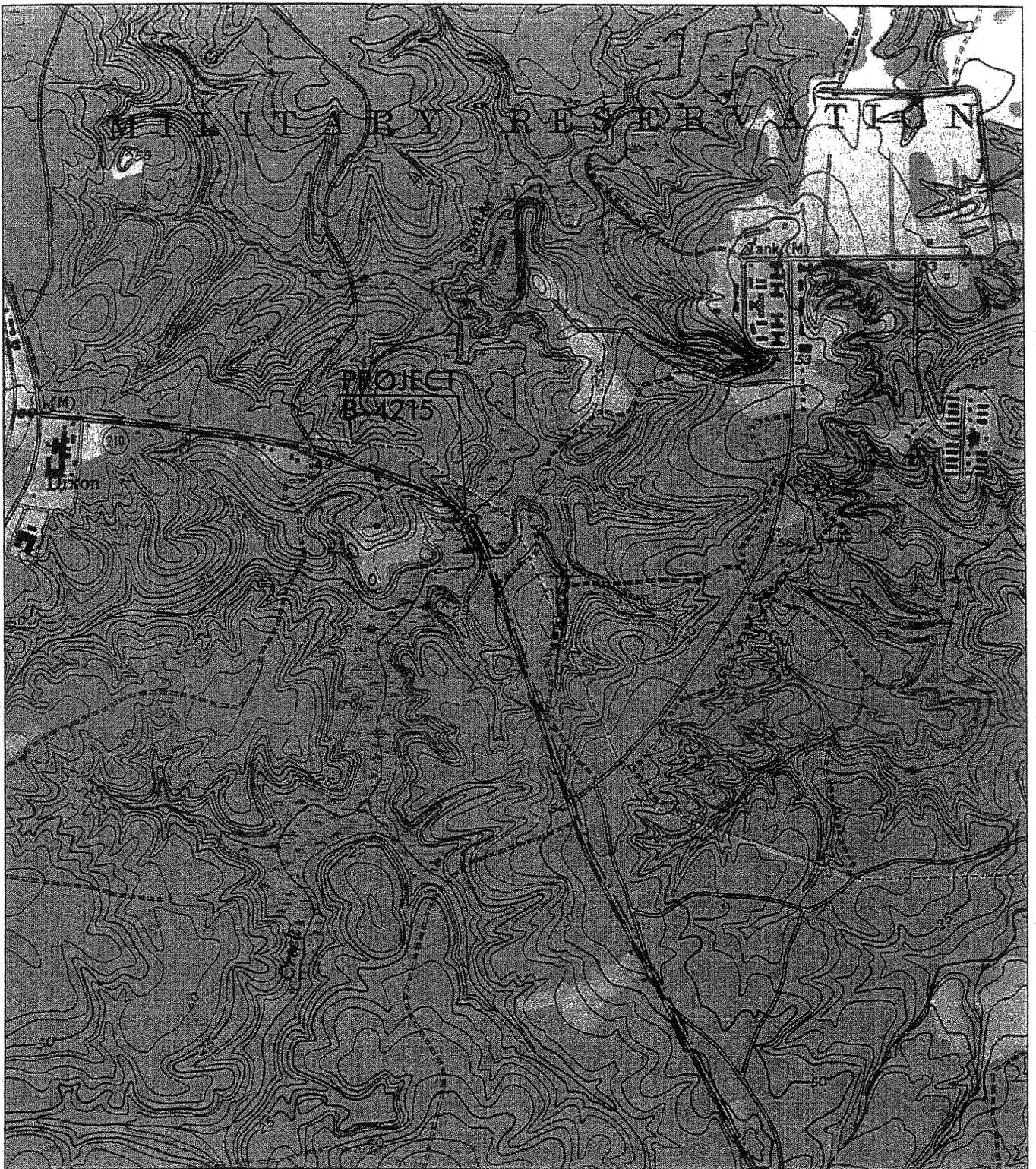
SIGNATURE: _____ PE
ROADWAY DESIGN

SIGNATURE: _____ PE

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY ENGINEER - DESIGN
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED FOR



TOPO MAP

SCALE: 1" : 2000'

NCDOT

DIVISION OF HIGHWAYS

ONLSOW COUNTY

PROJECT: 33561.11 (B-4215)

BRIDGE NO.19 OVER

STONES CREEK

AND APPROACHES ON NC 210

CAMA PERMIT DRAWING

SHEET 3 OF 10

1/7/05

PROPERTY OWNERS

NAMES AND ADDRESSES

REFERENCE NO.	NAMES	ADDRESSES
1	United States Marine Corps Military Reservation	PSC Box 20004 Camp Lejeune, NC 28542-0004
2	Edward J. Collins	312 NC Highway 210 Holly Ridge, NC 28445
3	George V. Yopp	1120 Old Folkstone Road Sneads Ferry, NC 28460

NCDOT

DIVISION OF HIGHWAYS

ONLSOW COUNTY

PROJECT: 3356L11 (B-4215)

BRIDGE NO. 19 OVER

STONES CREEK

AND APPROACHES ON NC 210

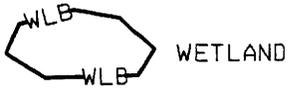
CAMA PERMIT DRAWING

SHEET 4 OF 10

1/7/05

LEGEND

— WLB — WETLAND BOUNDARY



WETLAND



DENOTES FILL IN WETLAND



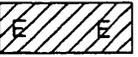
DENOTES FILL IN SURFACE WATER



DENOTES FILL IN SURFACE WATER (POND)



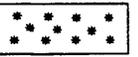
DENOTES TEMPORARY FILL IN WETLAND



DENOTES EXCAVATION IN WETLAND



DENOTES TEMPORARY FILL IN SURFACE WATER



DENOTES MECHANIZED CLEARING

→ → FLOW DIRECTION

TB
TOP OF BANK

WE
EDGE OF WATER

C
PROP. LIMIT OF CUT

F
PROP. LIMIT OF FILL

▲
PROP. RIGHT OF WAY

— NG — NATURAL GROUND

— PL — PROPERTY LINE

— TDE — TEMP. DRAINAGE EASEMENT

— PDE — PERMANENT DRAINAGE EASEMENT

— EAB — EXIST. ENDANGERED ANIMAL BOUNDARY

— EPB — EXIST. ENDANGERED PLANT BOUNDARY

— ▽ — WATER SURFACE



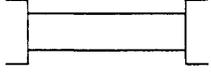
LIVE STAKES



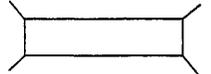
BOULDER

— — CORE FIBER ROLLS

■ DENOTES AREA TO BE EXCAVATED



PROPOSED BRIDGE



PROPOSED BOX CULVERT



PROPOSED PIPE CULVERT

(DASHED LINES DENOTE EXISTING STRUCTURES)

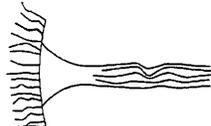
12'-48' PIPES
54' PIPES & ABOVE



SINGLE TREE



WOODS LINE



DRAINAGE INLET

ROOTWAD



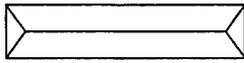
RIP RAP



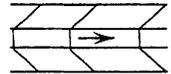
ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE



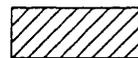
PREFORMED SCOUR HOLE



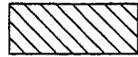
LEVEL SPREADER (LS)



DITCH / GRASS SWALE



DENOTES IMPACTS TO BUFFER ZONE 1



DENOTES IMPACTS TO BUFFER ZONE 2

NCDOT

DIVISION OF HIGHWAYS

ONLSOW COUNTY

PROJECT: 3356L1.1 (B-4215)

BRIDGE NO. 19 OVER

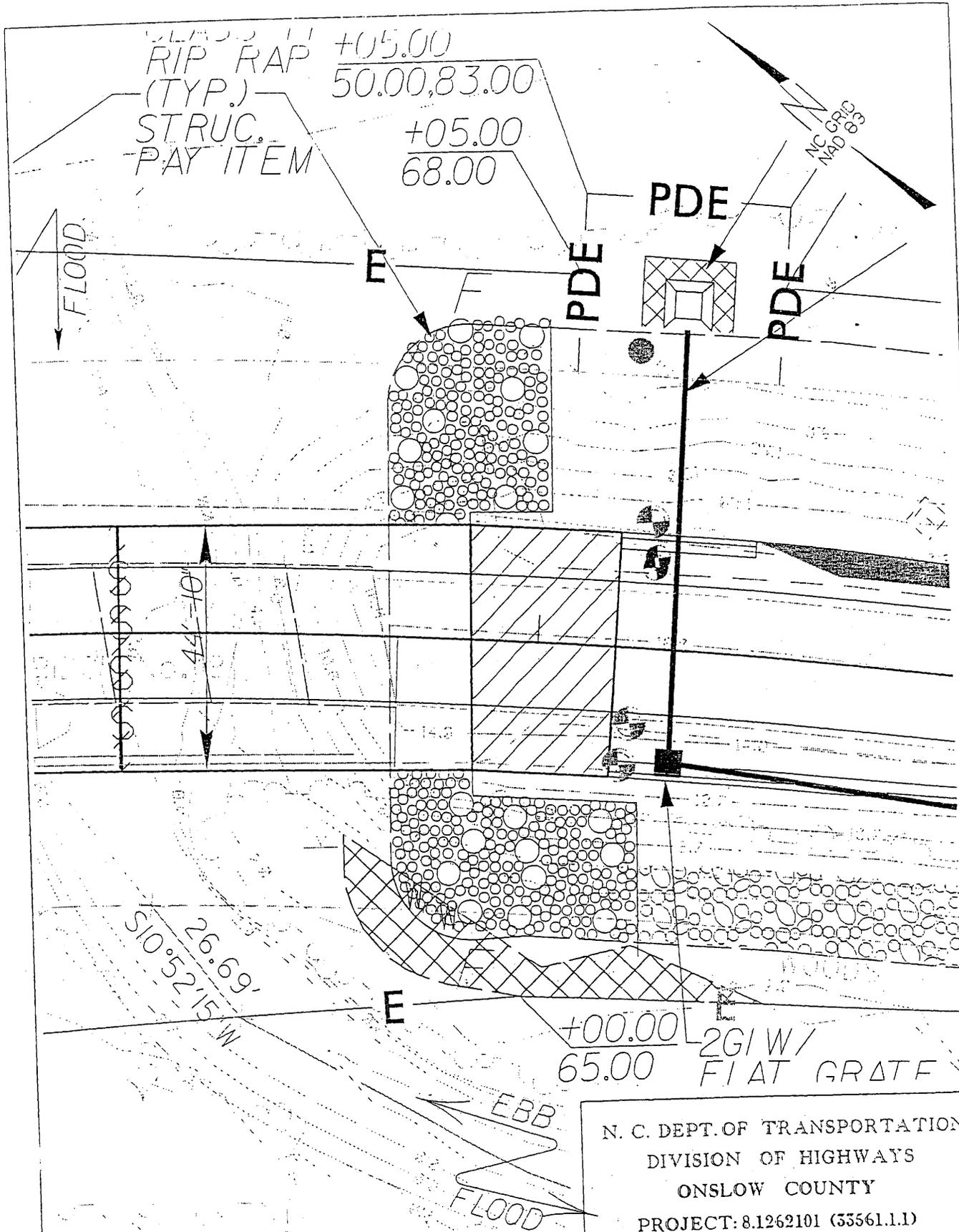
STONES CREEK

AND APPROACHES ON NC 210

CAMA PERMIT DRAWING

SHEET 5 OF 10

1/7/05



CLASS 1
 RIP RAP +05.00
 (TYP.) 50.00, 83.00
 STRUC. PAY ITEM +05.00
 68.00

NC GRID
 MAD 83

FLOOD

PDE

PDE

PDE

44'-10"

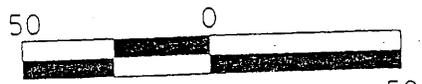
S10°52'15" W
 26.69'

+00.00
 65.00 2GI W/
 FIAT GRATE

EBB

FLOOD

BLOW UP OF ROADWAY FILL AREA



SCALE: 1" = 50' HORIZ.

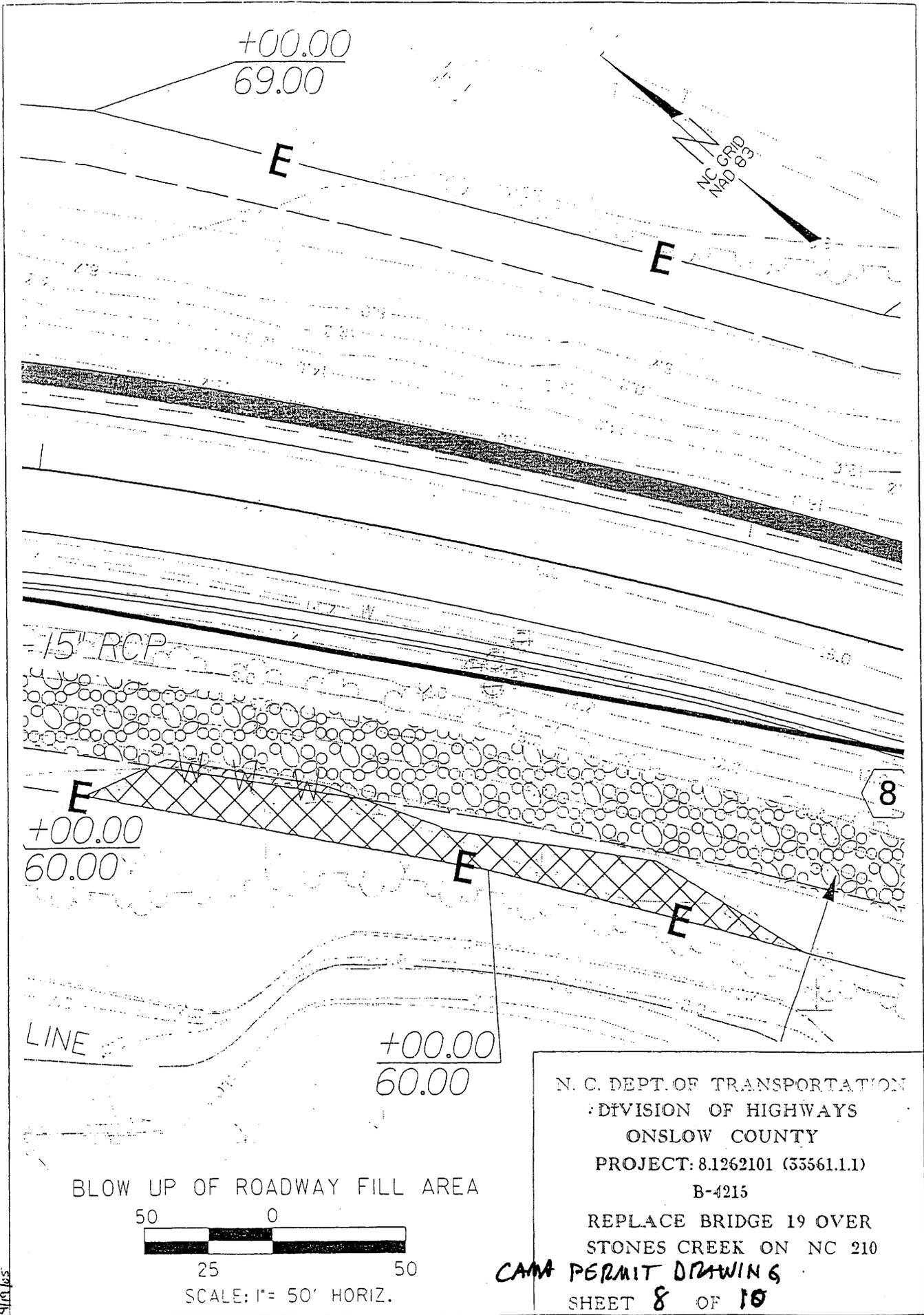
N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 ONSLOW COUNTY

PROJECT: 8.1262101 (535361.1.1)
 B-4215

REPLACE BRIDGE 19 OVER
 STONES CREEK ON NC 210

CAMA PERMIT DRAWING
 SHEET 7 OF 10

4/19/05



N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 ONSLOW COUNTY

PROJECT: 8.1262101 (53561.1.1)

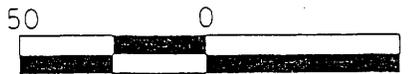
B-4215

REPLACE BRIDGE 19 OVER
 STONES CREEK ON NC 210

CAMA PERMIT DRAWING

SHEET 8 OF 10

BLOW UP OF ROADWAY FILL AREA

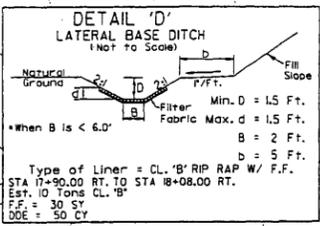


25 50
 SCALE: 1" = 50' HORIZ.

4/10/85

B/17/99

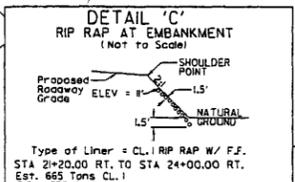
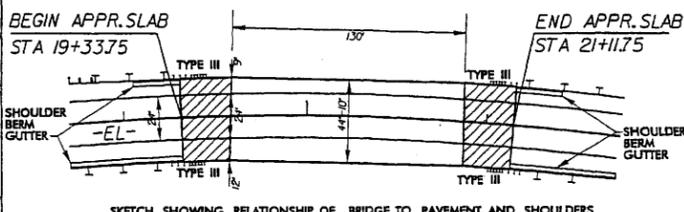
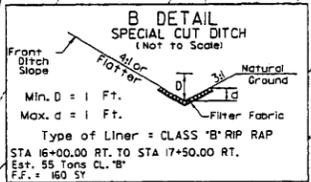
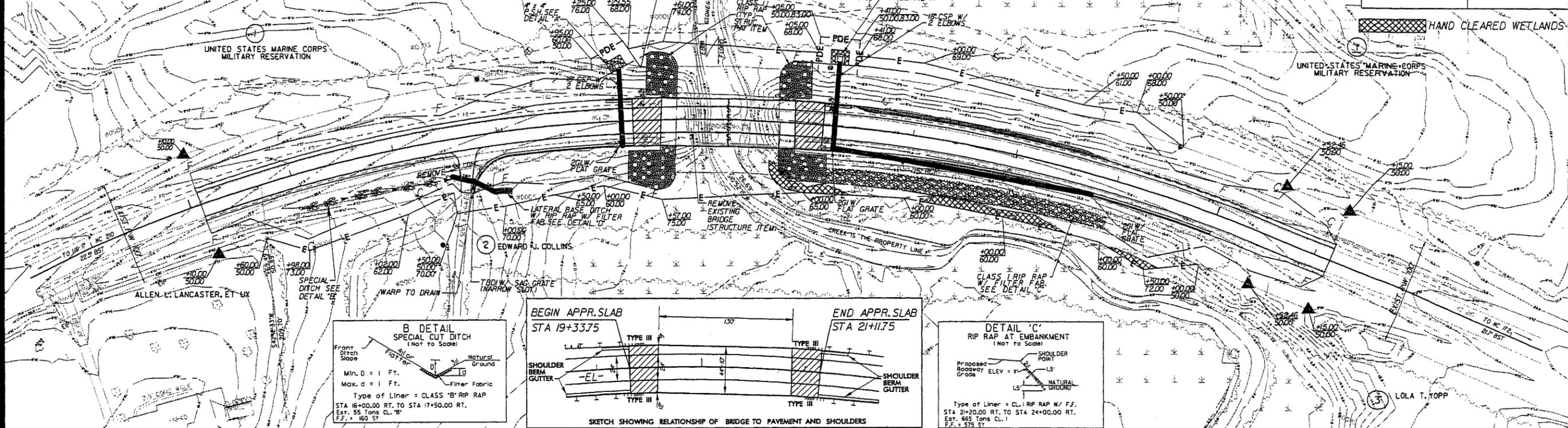
DIAGONAL HATCHING DENOTES FILL IN WETLAND
SOLID HATCHING DENOTES FILL IN SURFACE WATER



MULKEY
ENGINEERS & CONSULTANTS
1000 W. 21ST ST.
RALEIGH, N.C. 27608
TEL: 919-871-1912 FAX: 919-871-1913
WWW.MULKEYENGINEERS.COM

PROJECT REFERENCE NO.	B-4215	SHEET NO.	4
R/W SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER			
ONSLAW COUNTY/NC BRIDGE 19 ON NC 210 OVER STONES CREEK 32805			
PERMIT DRAWING SHEET 10 of 15			
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

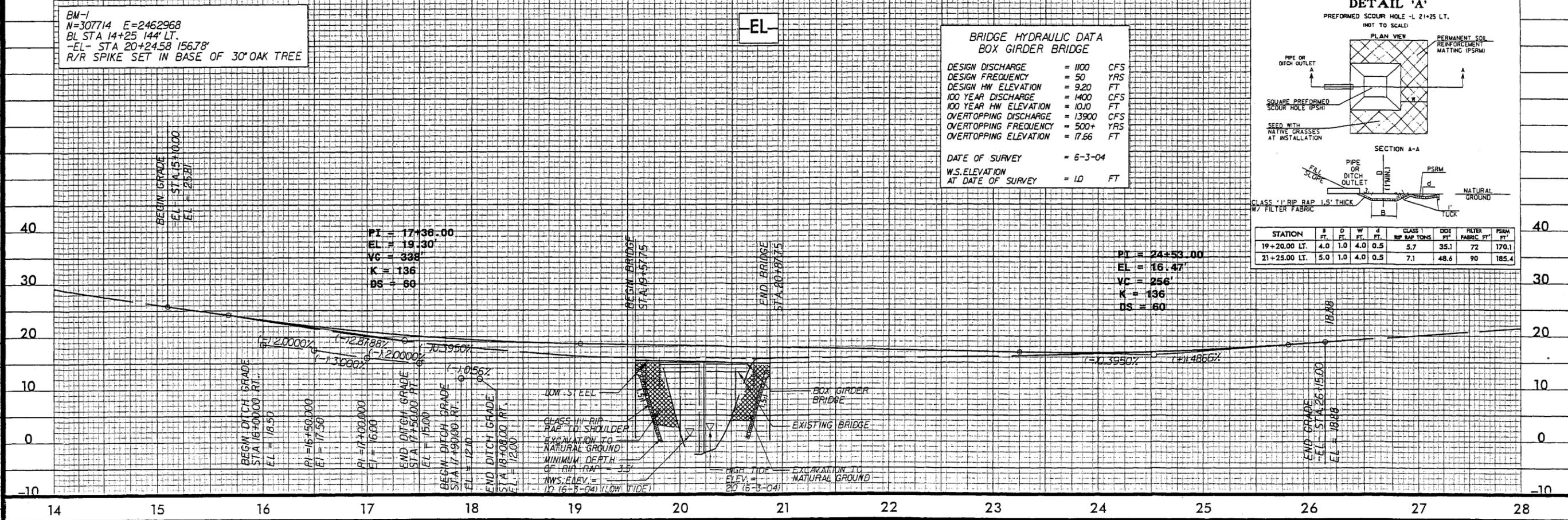
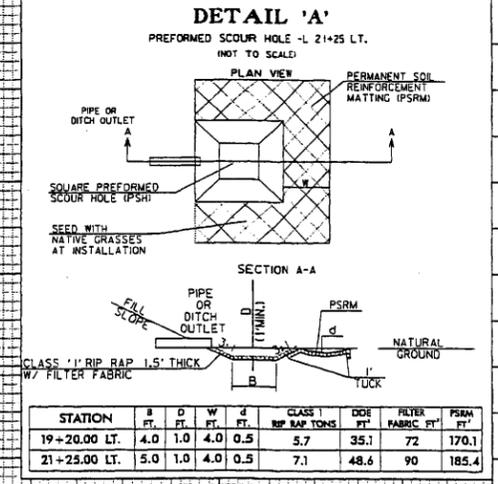
ENGLISH
HAND CLEARED WETLANDS



BM-1
N=307714 E=2462968
BL STA 14+25 144' LT.
-EL- STA 20+24.58 156.78'
R/R SPIKE SET IN BASE OF 30" OAK TREE

**BRIDGE HYDRAULIC DATA
BOX GIRDER BRIDGE**

DESIGN DISCHARGE	= 1100	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 9.20	FT
100 YEAR DISCHARGE	= 1400	CFS
100 YEAR HW ELEVATION	= 10.10	FT
OVERTOPPING DISCHARGE	= 13900	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 17.66	FT
DATE OF SURVEY	= 6-3-04	
W.S. ELEVATION AT DATE OF SURVEY	= 1.0	FT

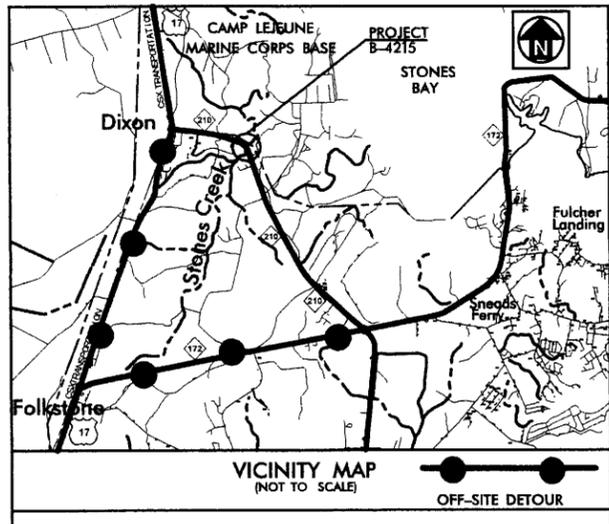


REVISIONS

1/19/2005
M:\Projects\2005\17-99\Drawings\021310-425-04.dwg
1/19/2005

CONTRACT: TIP PROJECT: B-4215

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



RIGHT OF WAY PLANS SENT

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

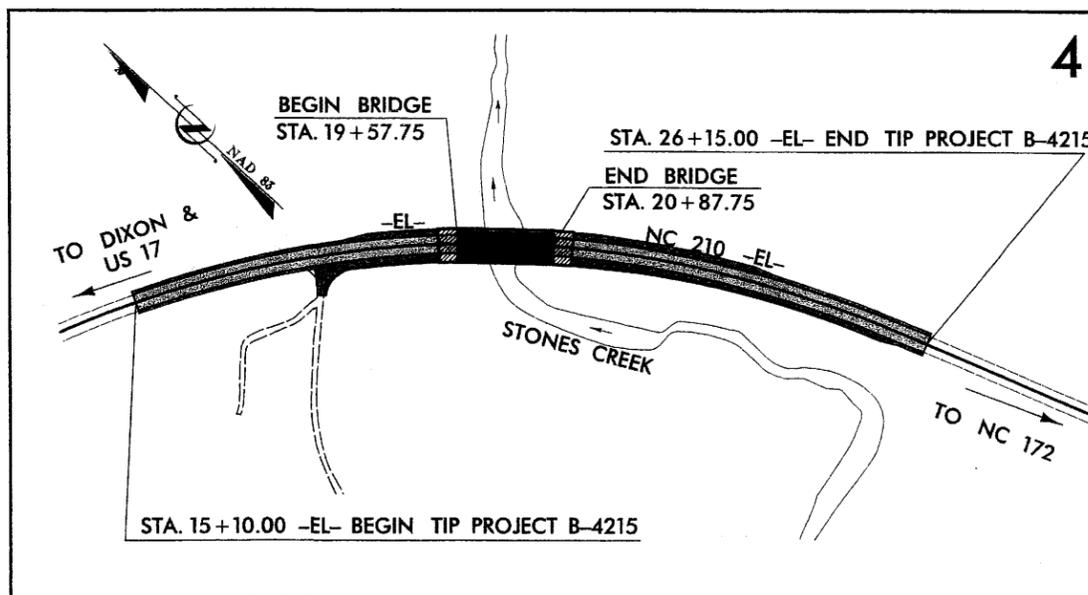
ONSLOW COUNTY

LOCATION: BRIDGE NO. 19 OVER STONES CREEK AND APPROACHES ON NC 210

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4215	1	
WBS NO.	F.A. PROJ. NO.	DESCRIPTION	
33561.1.1	BRSTP-0210(3)	P.E.	
33561.2.1	BRSTP-0210(3)	R /W,UTL	

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



MULKEY
ENGINEERS & CONSULTANTS
PO Box 33127
RALEIGH, N.C. 27636
(919) 851-1912
(919) 851-1918 (FAX)
WWW.MULKEYINC.COM

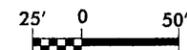
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

CLEARING ON THIS PROJECT SHOULD BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

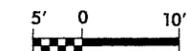
GRAPHIC SCALE



PLANS



PROFILE (HORIZONTAL)



PROFILE (VERTICAL)

DESIGN DATA

ADT 2006 = 9400
ADT 2026 = 17,300
DHV = 10%
D = 60%
* T = 7%
** V = 55 mph

Func Class = Maj Coll - Rural
* (Duals = 4% + TTST = 3%)
** Design Exception - Sight Distance

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4215 = 0.184 MILE
LENGTH STRUCTURE TIP PROJECT B-4215 = 0.025 MILE
TOTAL LENGTH TIP PROJECT B-4215 = 0.209 MILE

Prepared in the Office of:
Mulkey Engineers & Consultants
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
FEBRUARY 18, 2005

LETTING DATE:
FEBRUARY 21, 2006

NCDOT CONTACT: CATHY S. HOUSER, P.E.
ROADWAY DESIGN - PROJECT ENGINEER

PAM WILLIAMS
MULKEY E & C
PROJECT MANAGER

JONATHAN SCARCE, PE
MULKEY E & C
HYDRAULICS ENGINEER

HYDRAULICS ENGINEER

PE
SIGNATURE: _____
ROADWAY DESIGN

PE
SIGNATURE: _____

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PE
STATE HIGHWAY ENGINEER - DESIGN
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED FOR
DIVISION ADMINISTRATOR DATE

PROJECT REFERENCE NO. B-4215	SHEET NO. 1B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

*S.U.E = SUBSURFACE UTILITY ENGINEER

CONVENTIONAL SYMBOLS

ROADS & RELATED ITEMS

Edge of Pavement	—
Curb	—
Prop. Slope Stakes Cut	C
Prop. Slope Stakes Fill	F
Prop. Woven Wire Fence	—○—○—
Prop. Chain Link Fence	—□—□—
Prop. Barbed Wire Fence	—◇—◇—
Prop. Wheelchair Ramp	WCP
Curb Cut for Future Wheelchair Ramp	CCFR
Exist. Guardrail	—+—+—
Prop. Guardrail	—+—+—
Exist. Cable Guiderail	—+—+—
Prop. Cable Guiderail	—+—+—
Equality Symbol	⊕
Pavement Removal	⊗

RIGHT OF WAY

Baseline Control Point	◆
Existing Right of Way Marker	△
Exist. Right of Way Line w/Marker	—△—
Prop. Right of Way Line with Proposed	—▲—
R/W Marker (Iron Pin & Cap)	▲
Prop. Right of Way Line with Proposed	—▲—
(Concrete or Granite) R/W Marker	⊙
Exist. Control of Access Line	⊙
Prop. Control of Access Line	⊙
Exist. Easement Line	—E—
Prop. Temp. Construction Easement Line	—E—
Prop. Temp. Drainage Easement Line	—TDE—
Prop. Perm. Drainage Easement Line	—PDE—

HYDROLOGY

Stream or Body of Water	—
Flow Arrow	→
Disappearing Stream	—
Spring	—
Swamp Marsh	—
Shoreline	—
Falls, Rapids	—
Prop Lateral, Tail, Head Ditches	—

STRUCTURES

MAJOR	
Bridge, Tunnel, or Box Culvert	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC WW

MINOR

Head & End Wall	CONC HW
Pipe Culvert	—
Footbridge	—
Drainage Boxes	CB
Paved Ditch Gutter	—

UTILITIES

Exist. Pole	•
Exist. Power Pole	•
Prop. Power Pole	•
Exist. Telephone Pole	•
Prop. Telephone Pole	•
Exist. Joint Use Pole	•
Prop. Joint Use Pole	•
Telephone Pedestal	⊕
Cable TV Pedestal	⊕
Hydrant	⊕
Satellite Dish	⊕
Exist. Water Valve	⊕
Sewer Clean Out	⊕
Power Manhole	⊕
Telephone Booth	⊕
Water Manhole	⊕
Light Pole	⊕
H-Frame Pole	⊕
Power Line Tower	⊕
Pole with Base	⊕
Gas Valve	⊕
Gas Meter	⊕
Telephone Manhole	⊕
Power Transformer	⊕
Sanitary Sewer Manhole	⊕
Storm Sewer Manhole	⊕
Tank; Water, Gas, Oil	⊕
Water Tank With Legs	⊕
Traffic Signal Junction Box	⊕
Fiber Optic Splice Box	⊕
Television or Radio Tower	⊕
Utility Power Line Connects to Traffic Signal Lines Cut Into the Pavement	—TS—TS—

Recorded Water Line	—W—W—
Designated Water Line (S.U.E.*)	—W—W—
Sanitary Sewer	—SS—SS—
Recorded Sanitary Sewer Force Main	—FSS—FSS—
Designated Sanitary Sewer Force Main(S.U.E.*)	—FSS—FSS—
Recorded Gas Line	—G—G—
Designated Gas Line (S.U.E.*)	—G—G—
Storm Sewer	—S—S—
Recorded Power Line	—P—P—
Designated Power Line (S.U.E.*)	—P—P—
Recorded Telephone Cable	—T—T—
Designated Telephone Cable (S.U.E.*)	—T—T—
Recorded U/G Telephone Conduit	—TC—TC—
Designated U/G Telephone Conduit (S.U.E.*)	—TC—TC—
Unknown Utility (S.U.E.*)	—UTL—UTL—
Recorded Television Cable	—TV—TV—
Designated Television Cable (S.U.E.*)	—TV—TV—
Recorded Fiber Optics Cable	—FO—FO—
Designated Fiber Optics Cable (S.U.E.*)	—FO—FO—
Exist. Water Meter	⊕
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to U/G Record	ATTUR
End of Information	E.O.I.

BOUNDARIES & PROPERTIES

State Line	—
County Line	—
Township Line	—
City Line	—
Reservation Line	—
Property Line	—
Property Line Symbol	PL
Exist. Iron Pin	⊕
Property Corner	⊕
Property Monument	⊕
Property Number	123
Parcel Number	6
Fence Line	—X—X—X—
Existing Wetland Boundaries	—WLB—
Proposed Wetland Boundaries	—WLB—
Existing Endangered Animal Boundaries	—EAB—
Existing Endangered Plant Boundaries	—EPB—

BUILDINGS & OTHER CULTURE

Buildings	—
Foundations	—
Area Outline	—
Gate	—
Gas Pump Vent or U/G Tank Cap	—
Church	—
School	—
Park	—
Cemetery	—
Dam	—
Sign	—
Well	—
Small Mine	—
Swimming Pool	—

TOPOGRAPHY

Loose Surface	—
Hard Surface	—
Change in Road Surface	—
Curb	—
Right of Way Symbol	R/W
Guard Post	⊕ GP
Paved Walk	—
Bridge	—
Box Culvert or Tunnel	—
Ferry	—
Culvert	—
Footbridge	—
Trail, Footpath	—
Light House	—

VEGETATION

Single Tree	—
Single Shrub	—
Hedge	—
Woods Line	—
Orchard	—
Vineyard	—

RAILROADS

Standard Gauge	—
RR Signal Milepost	—
Switch	—

6/2/04

SURVEY CONTROL SHEET B-4215

PROJECT REFERENCE NO. B-4215	SHEET NO. 1C
Location and Surveys	

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "ATTACK" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 308571.027(E) EASTING: 2460596.838(F) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99996500 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "ATTACK" TO -L- STATION 10+00 IS S 72 ° 05' 02.50" E 1453.10' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS MVD 29

CONTROL DATA

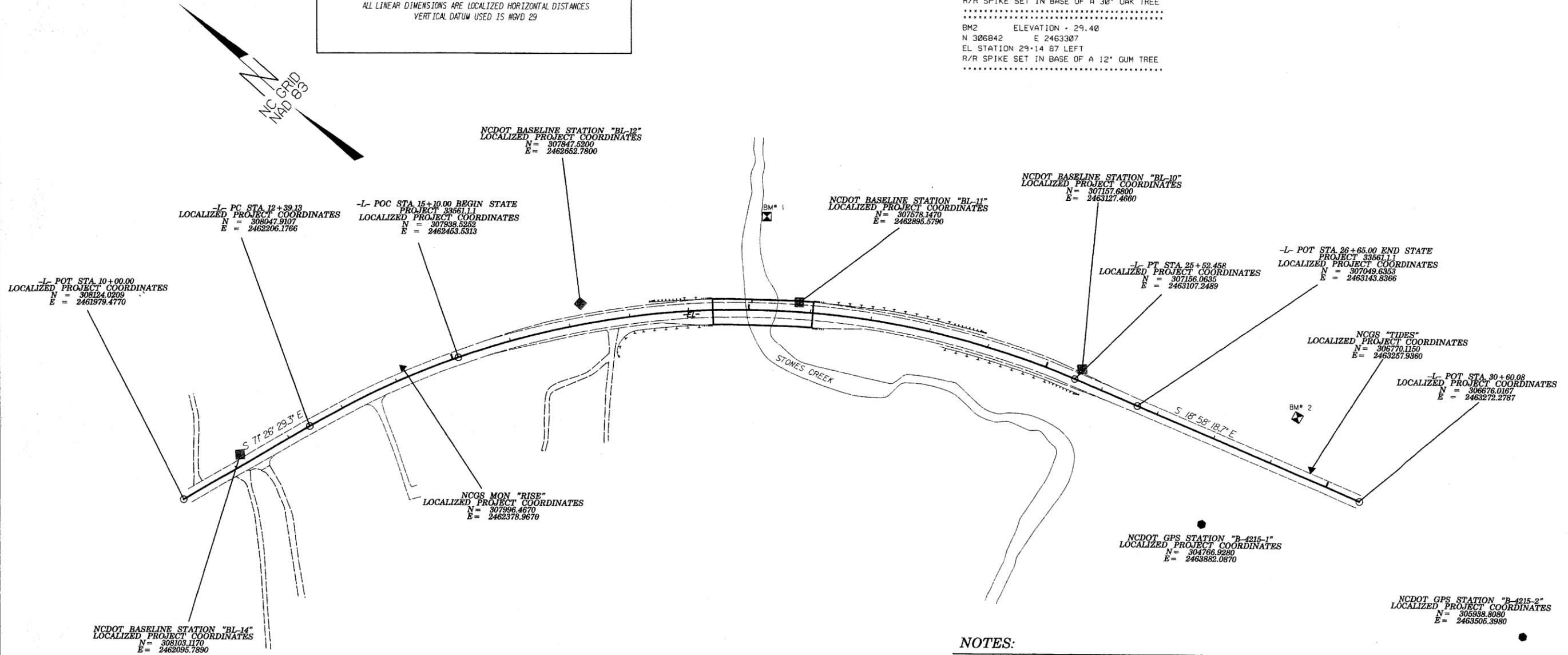
-BL- POINT	DESC.	NORTH	EAST	ELEVATION	EL STATION	OFFSET
14	-BL-14	308103.1170	2462095.7890	36.16	11+16.92	17.20 LT
13	NCGS RISE	307996.4670	2462378.9670	29.38	14+17.66	17.09 LT
12	-BL-12	307847.5200	2462652.7800	18.85	17+23.98	34.38 LT
11	-BL-11	307578.1470	2462895.5790	16.52	20+80.89	15.26 LT
10	-BL-10	307157.6800	2463127.4660	17.93	25+57.50	19.64 LT
9	NCGS TIDES	306770.1150	2463257.9360	22.73	29+66.43	17.03 LT

BENCHMARK DATA

.....

BM1 ELEVATION = 5.30
 N 307714 E 2462968
 EL STATION 20+25 157 LEFT
 R/R SPIKE SET IN BASE OF A 30' OAK TREE

BM2 ELEVATION = 29.40
 N 306842 E 2463307
 EL STATION 29+14 87 LEFT
 R/R SPIKE SET IN BASE OF A 12' GUM TREE



NOTES:

THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project)
 FILE NAME: B4215_LS_CONTROL_041210.DGN

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT.
 IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

© INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
 NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTS NAD 83/95

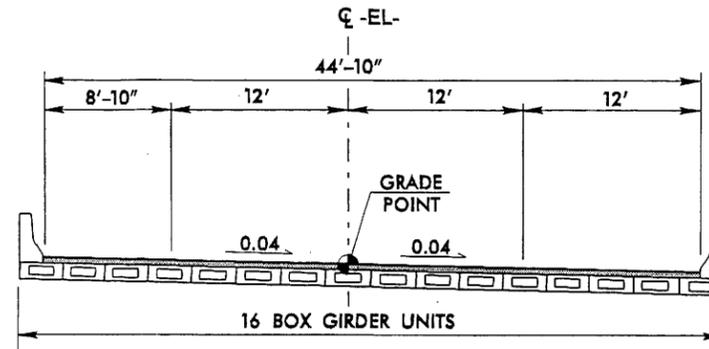
NOTE: DRAWING NOT TO SCALE

L:\GIS\PROJECTS\B4215\B4215_LS_CONTROL_041210.DGN

PAVEMENT SCHEDULE

C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.
D1	PROP. APPROX. 2 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E	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.
R	SHOULDER BERM GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	WEDGING (SEE WEDGING DETAIL)

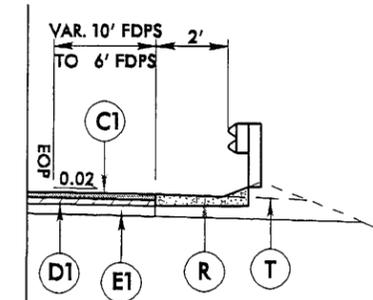
NOTE: ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE SHOWN.



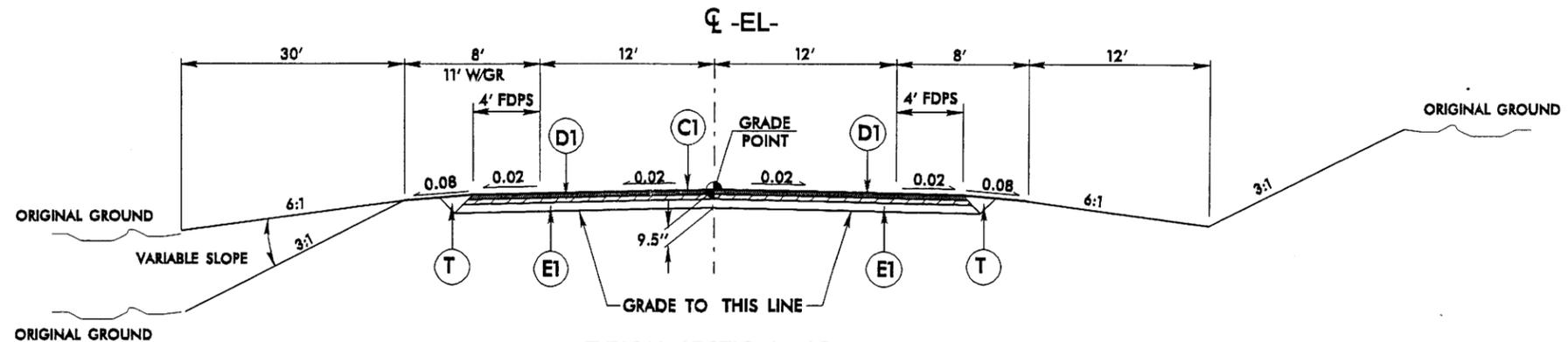
PROPOSED PRECAST BOX GIRDER BRIDGE
SEE STRUCTURE PLANS

TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
AT THE FOLLOWING LOCATION:
-EL- STA 19+57.75 (BEGIN BRIDGE) TO STA 20+87.75 (END BRIDGE)



USE IN CONJUNCTION WITH TYPICAL SECTION NO. 1
-EL- STA 18+10.37 TO STA 19+31.21 RT. (APPROACH SLAB)
-EL- STA 21+14.29 (APPROACH SLAB) TO STA 25+00 RT.

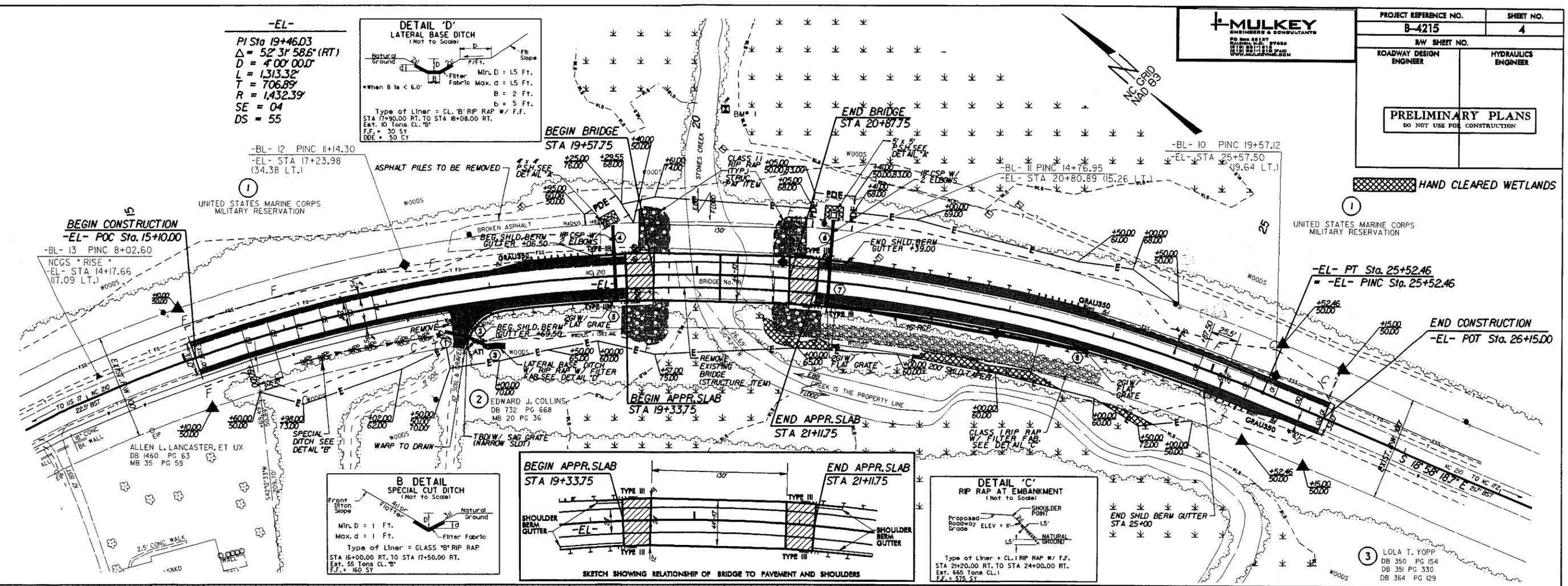
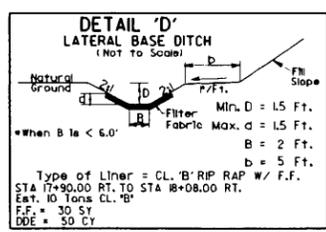


TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
AT THE FOLLOWING LOCATION:
-EL- STA 15+10.00 TO STA 19+57.75 (BEGIN BRIDGE)
-EL- STA 20+87.75 (END BRIDGE) TO STA 26+15.00



-EL-
 PI Sta 19+46.03
 $\Delta = 52.31' 58.6" (RT)$
 $D = 400' 0.00"$
 $L = 1,313.32'$
 $T = 706.89'$
 $R = 1,432.39'$
 $SE = 04$
 $DS = 55$



BEGIN CONSTRUCTION
 -EL- POC Sta. 15+10.00

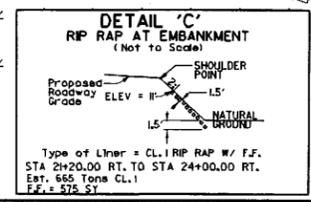
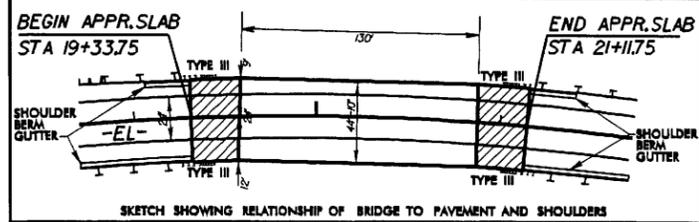
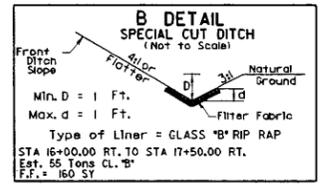
BEGIN BRIDGE
 STA 19+57.75

END BRIDGE
 STA 20+87.75

-BL- 10 PINC 19+57.12
 -EL- STA 25+57.50 (9.64 LT.)

-EL- PT Sta. 25+52.46
 -EL- PINC Sta. 25+52.46

END CONSTRUCTION
 -EL- POT Sta. 26+15.00

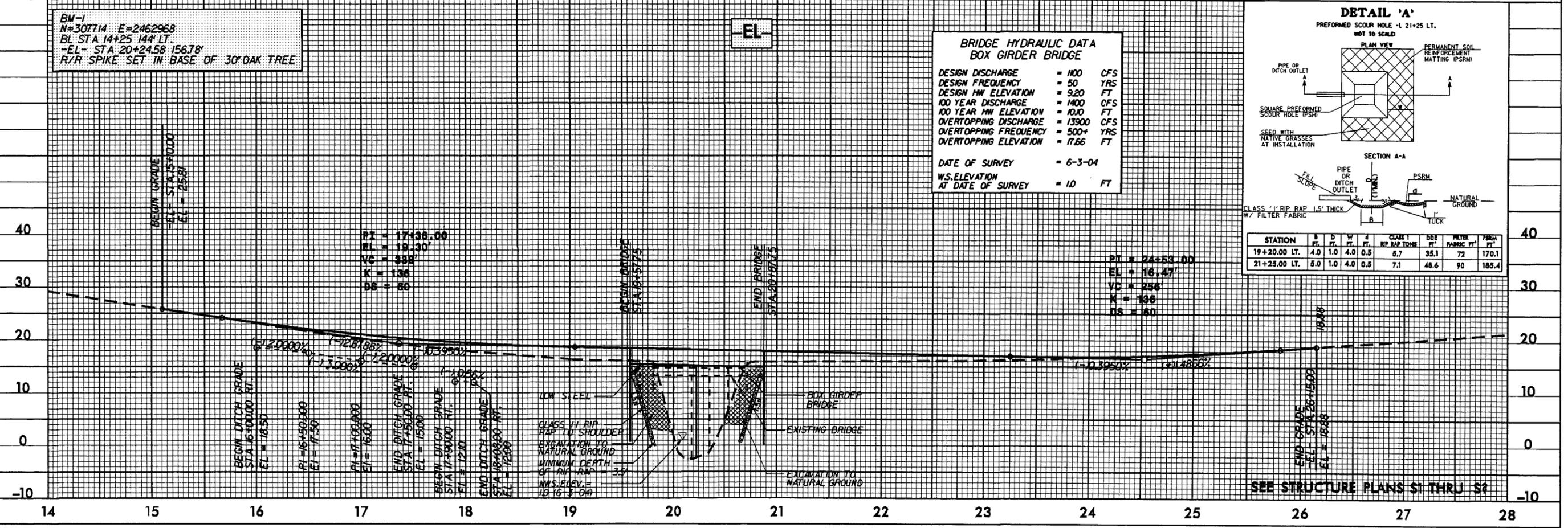
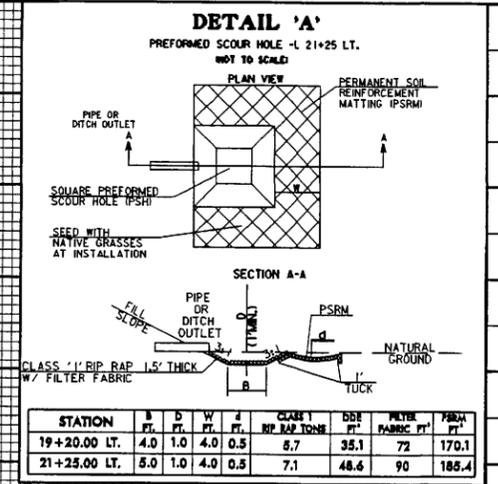


BM-1
 N=307714 E=2462968
 BL STA. 14+25 144' LT.
 -EL- STA 20+24.58 156.78'
 R/R SPIKE SET IN BASE OF 30' OAK TREE

BRIDGE HYDRAULIC DATA
 BOX GIRDER BRIDGE

DESIGN DISCHARGE	= 100	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 9.20	FT
100 YEAR DISCHARGE	= 1400	CFS
100 YEAR HW ELEVATION	= 10.0	FT
OVERTOPPING DISCHARGE	= 13900	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 17.66	FT

DATE OF SURVEY = 6-3-04
 W.S. ELEVATION AT DATE OF SURVEY = 10 FT



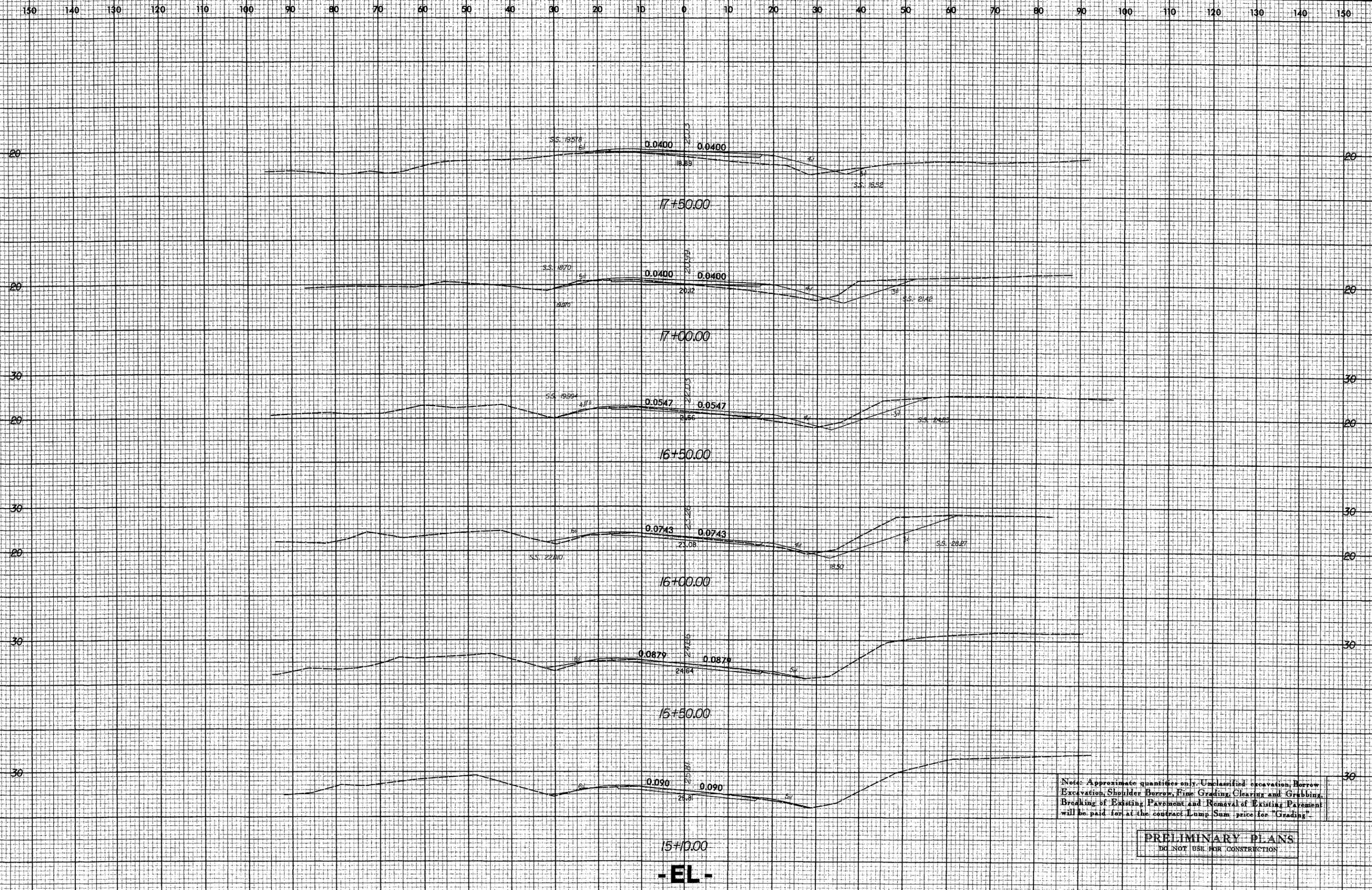
PI = 17+38.00
 EL = 19.30
 VC = 338
 K = 136
 DS = 60

PI = 24+53.00
 EL = 16.47
 VC = 256
 K = 136
 DS = 60

STATION	B	D	W	F	CLASS 1 RIP RAP TONS	DGE FT	WATER PAVING FT	PSRM FT
19+20.00 LT.	4.0	1.0	4.0	0.5	6.7	35.1	72	170.1
21+25.00 LT.	5.0	1.0	4.0	0.5	7.1	48.6	90	185.4

SEE STRUCTURE PLANS S1 THRU S4

8/23/99



SS. 18578
6"
0.0400
18.89
4"
SS. 1652
0.0400
17+50.00

SS. 1870
5"
0.0400
18.70
4"
SS. 2142
0.0400
17+00.00

SS. 18554
4"
0.0547
21.56
4"
SS. 2400
0.0547
16+50.00

SS. 22000
6"
0.0743
23.08
4"
SS. 2427
0.0743
16+00.00

SS. 2464
6"
0.0879
24.64
5"
0.0879
15+50.00

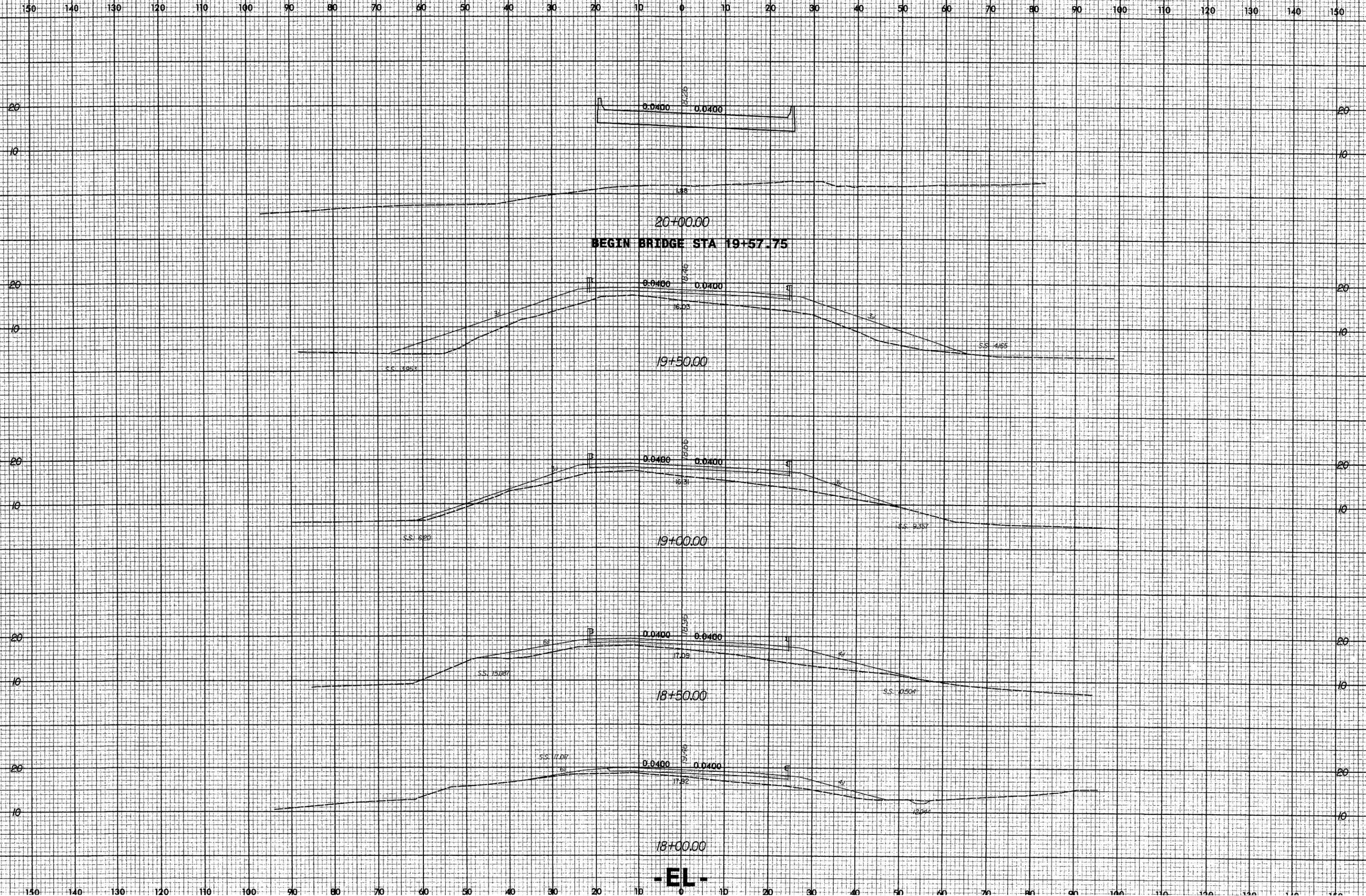
SS. 25.81
6"
0.090
25.81
5"
0.090
15+00.00

Note: Approximate quantities only. Unclassified excavation, Borrow Excavation, Shoulder Borrow, Fine Grading, Clearing and Grabbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract Lump Sum price for "Grading".

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-EL-

2/4/2005 2:50:55 PM
F:\Roadway\Proj\B4215-F01_xp.dgn



-EL-

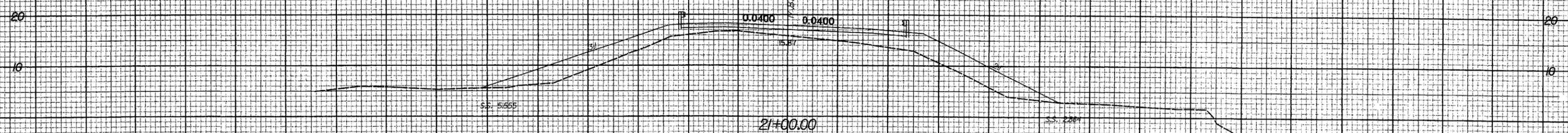
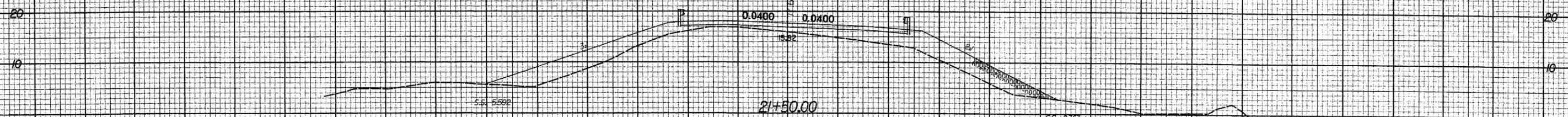
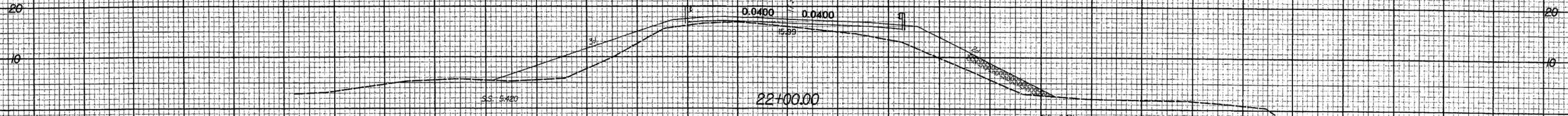
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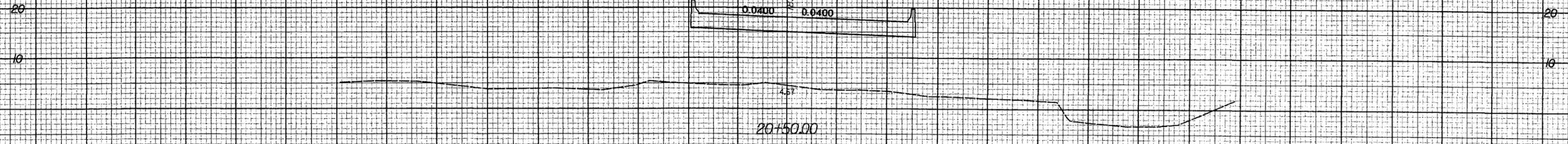
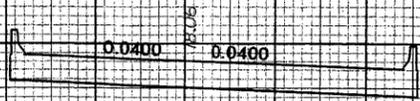
PROJ. REFERENCE NO.
B-4215

SHEET NO.
X-3

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END BRIDGE STA 20+87.75



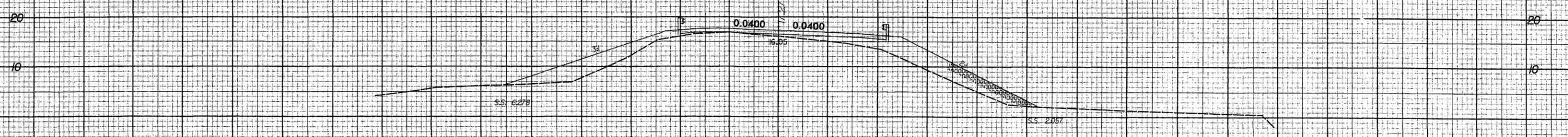
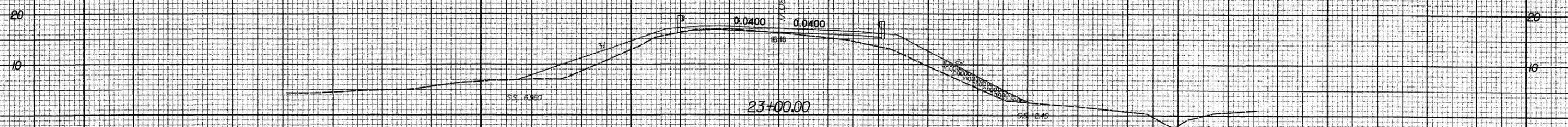
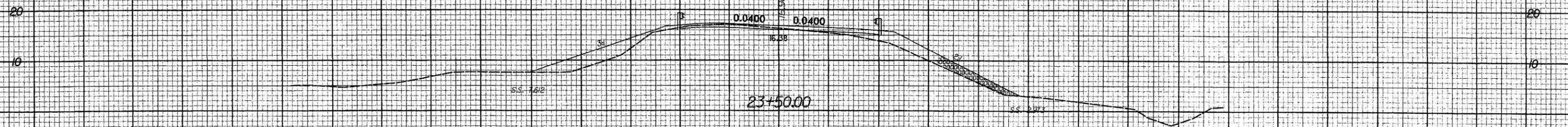
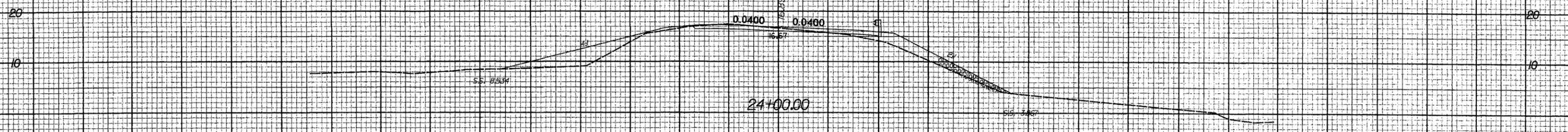
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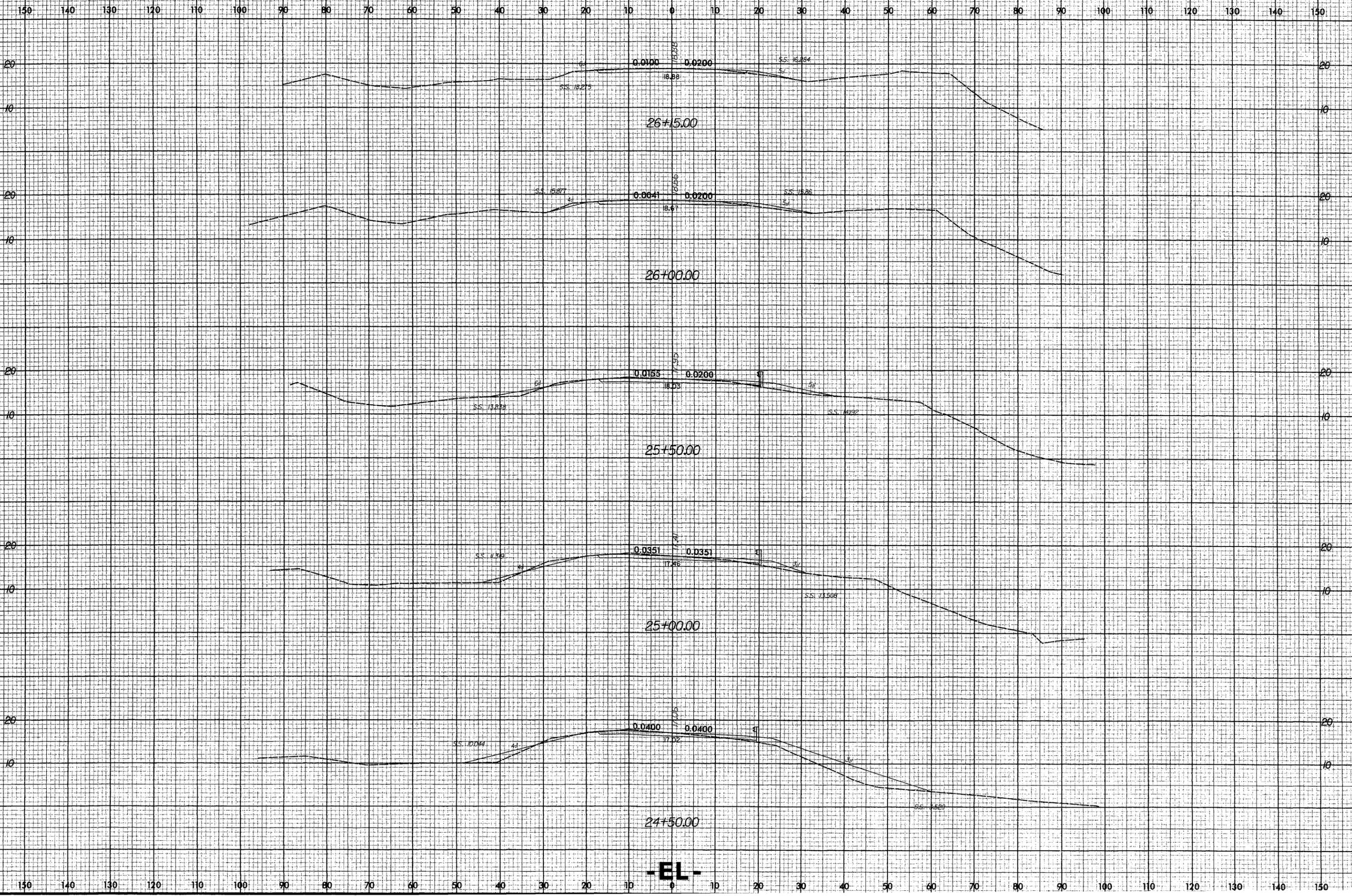
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-EL-

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8/23/95

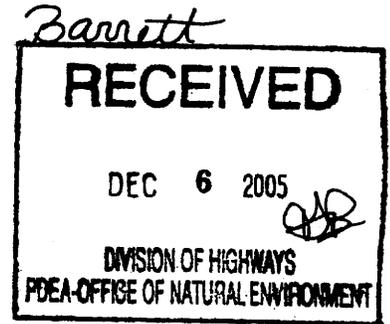


2/4/2005 2:51:32 PM
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-EL-



December 1, 2005



Mr. Philip S. Harris, Unit Head
NCDOT Project Development & Environmental Analysis Branch
1598 Mail Service Center
RAleigh, NC 27699-1598

**Subject: Permit No. SW8 050917
8.1262101 B-4215 Replace Bridge #19 and approaches
Other Stormwater Permit
Linear Public Road / Bridge Project
Onslow County**

Dear Mr. Harris:

The Wilmington Regional Office received a complete Stormwater Management Permit Application for 8.1262101 B-4215 Replace Bridge #19 and approaches on September 19, 2005. Staff review of the plans and specifications has determined that the project, as proposed, will comply with the Stormwater Regulations set forth in Title 15A NCAC 2H .1000. We are forwarding Permit No. SW8 050917 dated December 1, 2005, for the construction of the subject project.

This permit shall be effective from the date of issuance until rescinded and shall be subject to the conditions and limitations as specified therein.

If any parts, requirements, or limitations contained in this permit are unacceptable, you have the right to request an adjudicatory hearing upon written request within thirty (30) days following receipt of this permit. This request must be in the form of a written petition, conforming to Chapter 150B of the North Carolina General Statutes, and filed with the Office of Administrative Hearings, P.O. Drawer 27447, Raleigh, NC 27611-7447. Unless such demands are made this permit shall be final and binding.

If you have any questions, or need additional information concerning this matter, please contact either me or Rhonda Hall at (910) 796-7215.

Sincerely,

Ed Beck
Regional Supervisor
Surface Water Protection Section

ENB/rbh: S:\WQS\STORMWAT\PERMIT\050917.dec05
cc: Onslow County Building Inspections
Rhonda Hall
Wilmington Regional Office
Central Files

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WATER QUALITY
STATE STORMWATER MANAGEMENT PERMIT
OTHER PERMIT

In accordance with the provisions of Article 21 of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Rules and Regulations

PERMISSION IS HEREBY GRANTED TO
NCDOT Project Development & Environmental Analysis Branch
8.1262101 B-4215 Replace Bridge #19 and approaches
Onslow County
FOR THE

construction of a public road / bridge in compliance with the provisions of 15A NCAC 2H .1000 (hereafter referred to as the "stormwater rules") and the approved stormwater management plans and specifications, and other supporting data as attached and on file with and approved by the Division of Water Quality and considered a part of this permit.

The Permit shall be effective from the date of issuance until rescinded and shall be subject to the following specific conditions and limitations:

I. DESIGN STANDARDS

1. The runoff from the impervious surfaces has been directed away from surface waters as much as possible.
2. The amount of built-upon area has been minimized as much as possible.
3. Best Management Practices are employed which minimize water quality impacts.
4. Approved plans and specifications for projects covered by this permit are incorporated by reference and are enforceable parts of the permit.
5. Vegetated roadside ditches are 3:1 slopes or flatter.

II. SCHEDULE OF COMPLIANCE

1. The permittee shall at all times provide adequate erosion control measures in conformance with the approved Erosion Control Plan.
2. The Director may notify the permittee when the permitted site does not meet one or more of the minimum requirements of the permit. Within the time frame specified in the notice, the permittee shall submit a written time schedule to the Director for modifying the site to meet minimum requirements. The permittee shall provide copies of revised plans and certification in writing to the Director that the changes have been made.
3. The permittee shall submit all information requested by the Director or his representative within the time frame specified in the written information request.

4. The permittee shall submit to the Director and shall have received approval for revised plans, specifications, and calculations prior to construction for the following items:
 - a. Major revisions to the approved plans, such as road realignment, deletion of any proposed BMP, changes to the drainage area or scope of the project, etc.
 - b. Project name change.
 - c. Redesign of, addition to, or deletion of the approved amount of built-upon area, regardless of size.
 - d. Alteration of the proposed drainage.
5. The Director may determine that other revisions to the project should require a modification to the permit.

III. GENERAL CONDITIONS

1. Failure to abide by the conditions and limitations contained in this permit may subject the Permittee to an enforcement action by the Division of Water Quality, in accordance with North Carolina General Statutes 143-215.6A to 143-215.6C.
2. The permit issued shall continue in force and effect until revoked or terminated.
3. The permit may be modified, revoked and reissued or terminated for cause. The filing of a request for a permit modification, revocation and reissuance, or termination does not stay any permit condition.
4. The issuance of this permit does not prohibit the Director from reopening and modifying the permit, revoking and reissuing the permit, or terminating the permit as allowed by the laws, rules, and regulations contained in Title 15A of the North Carolina Administrative Code, Subchapter 2H.1000; and North Carolina General Statute 143-215.1 et. al.
5. The permit is not transferable to any person except after notice to and approval by the Director. The Director may require modification or revocation and reissuance of the permit to change the name and incorporate such other requirements as may be necessary. A formal permit request must be submitted to the Division of Water Quality accompanied by the appropriate fee, documentation from both parties involved, and other supporting materials as may be appropriate. The approval of this request will be considered on its merits, and may or may not be approved. The permittee is responsible for compliance with the terms and conditions of this permit until such time as the Director approves the transfer.
6. The issuance of this permit does not preclude the Permittee from complying with any and all statutes, rules, regulations, or ordinances which may be imposed by other government agencies (local, state and federal) which have jurisdiction.
7. The permittee shall notify the Division of any name, ownership or mailing address changes within 30 days.

Permit issued this, the 1st day of December, 2005

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION



for Alan W. Klimek, P.E., Director
Division of Water Quality

By Authority of the Environmental Management Commission

III. OPERATION AND MAINTENANCE AGREEMENT

I acknowledge and agree by my initials below that the North Carolina Department of Transportation is responsible for the implementation of the four maintenance items listed. I agree to notify DWQ of any operational problems with the BMP's that would impact water quality or prior to making any changes to the system or responsible party.

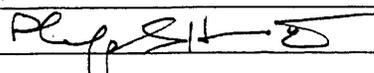
Maintenance Engineer's Initials

- DT a. BMP's shall be inspected and maintained in good working order.
- DT b. Eroded areas shall be repaired and reseeded as needed.
- DT c. Stormwater collection systems, including piping, inlets, and outlets, shall be maintained to insure proper functioning.

Maintenance Engineer's Name: DAVID L. THOMAS, P.E.
Title: DIVISION MAINTENANCE ENGINEER

IV. APPLICATION CERTIFICATION

I, (print or type name) Philip S. Harris III of PDEA Branch, certify that the information included on this permit application form is, to the best of my knowledge, correct and that the project will be constructed in conformance with the approved plans and that the proposed project complies with the requirements of 15A NCAC 2H .1000.

Title: PDEA - NATURAL ENVIRONMENT UNIT HEAD
Address: RALEIGH
Signature:  Date: 9/13/05

V. SUPPLEMENT FORMS

The applicable state stormwater management permit supplement form(s) listed below must be submitted for each BMP specified for this project. Contact the Stormwater and General Permits Unit at (919) 733-5083 for the status and availability of these forms.

- Form SWU-102 Wet Detention Basin Supplement
- Form SWU-103 Infiltration Basin Supplement
- Form SWU-104 Low Density Supplement
- Form SWU-105 Curb Outlet System Supplement
- Form SWU-106 Off-Site System Supplement
- Form SWU-107 Underground Infiltration Trench Supplement
- Form SWU-108 Neuse River Basin Supplement
- Form SWU-109 Innovative Best Management Practice Supplement
- Form SWU-110 Extended Dry Detention Basin Supplement

OFFICE USE ONLY		
Date Received	Fee Paid	Permit Number
9-19-2005	\$420 ⁰⁰ (ETransfer)	JWR050917

State of North Carolina
Department of Environment and Natural Resources
Division of Water Quality

STORMWATER MANAGEMENT PERMIT APPLICATION FORM

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
LINEAR ROADWAY PROJECT

This form may be photocopied for use as an original.

DWO Stormwater Management Plan Review:

A complete stormwater management plan submittal includes this application form, a supplement form for each BMP proposed (see Section V), design calculations, and plans and specifications showing all road and BMP details.

I. PROJECT INFORMATION

NCDOT Project Number: 33561.1.1 (B-4215) County: Onslow

Project Name: Replace Bridge #19 and approaches

Project Location: On NC 210 over Stones Creek

Contact Person: Marshall W. Clawson, PE Phone: 919-250-4100 Fax: 919-250-4108

Receiving Stream Name: Stones Creek River Basin: White Oak Class: SA; HOW

Proposed linear feet of project: 1104 ft.

Proposed Structural BMP and Road Station *(attach a list of station and BMP type if more room is needed)*:

Preformed Scour Hole located at -L- Sta. 19+20.00 Lt. & -L- Sta. 21+25.00 Lt.

Type of proposed project: *(check all that apply)*:

New
 Widening
 2 lane*
 4 lane*
 Curb and Gutter
 Bridge Replacement

Other *(Describe)* _____

**2 lane and 4 lane imply that roadside ditches are used unless Curb and Gutter is also checked.*

II. REQUIRED ITEMS CHECKLIST

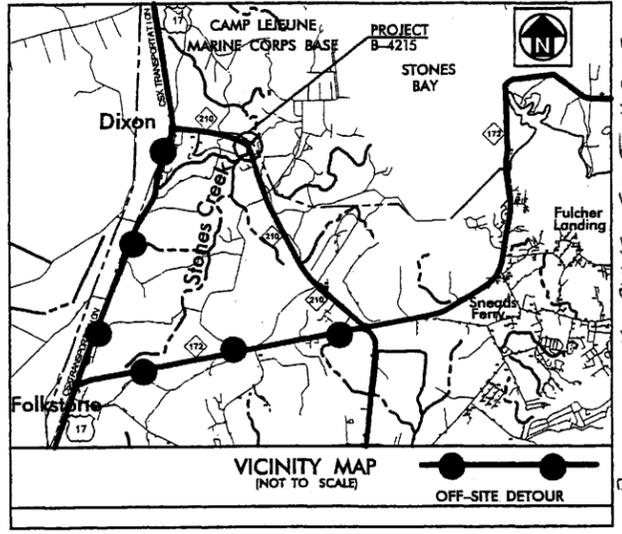
Initial in the space provided below to indicate the following design requirements have been met and supporting documentation is attached. Supporting documentation shall, at a minimum, consist of a brief narrative description including (1) the scope of the project, (2) how the items below are met, (3) how the proposed best management practices minimize water quality impacts, and (4) any significant constraints and/or justification for not meeting a, b, c and d to the maximum extent practicable.

Designer's Initials

- QKS a. The amount of impervious surface has been minimized as much as possible.
- QKS b. The runoff from the impervious areas has been diverted away from surface waters as much as possible.
- QKS c. Best Management Practices are employed which minimize water quality impacts.
- n/A d. Vegetated roadside ditches are 3:1 slope or flatter.

CONTRACT: TIP PROJECT: B-4215

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



RIGHT OF WAY PLANS SECT 4-8-05

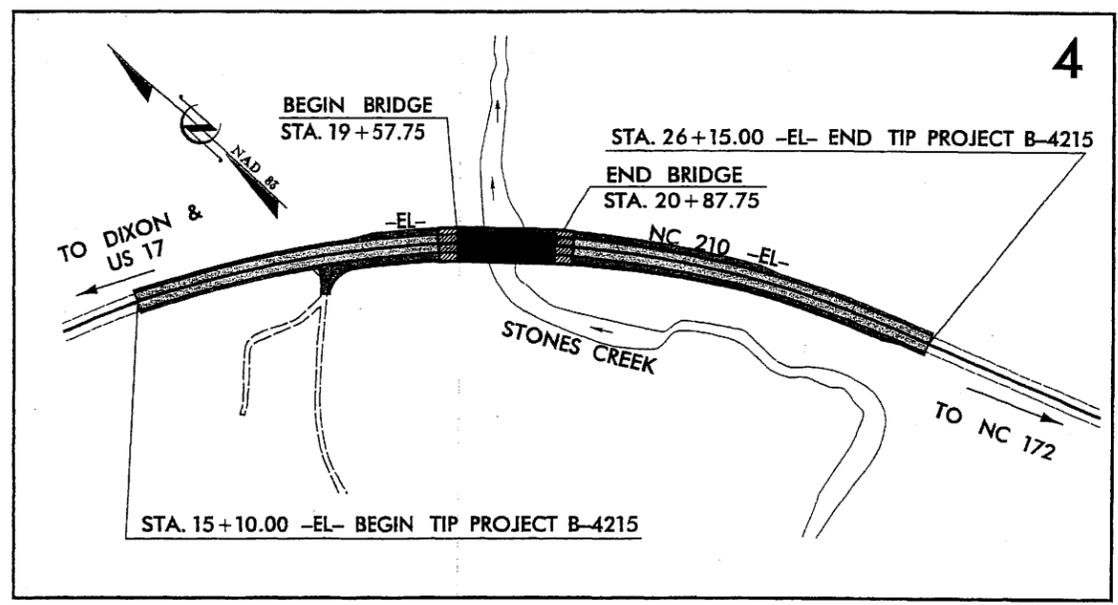
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ONSLOW COUNTY

LOCATION: BRIDGE NO. 19 OVER STONES CREEK AND APPROACHES ON NC 210
TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4215	1	
WS NO.	P.A. PROJ. NO.	DESCRIPTION	
33561.1.1	BRSTP-0210(3)	P.E.	
33561.2.1	BRSTP-0210(3)	R /W,UTL	

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

RECEIVED
SEP 19 2005
BY: _____

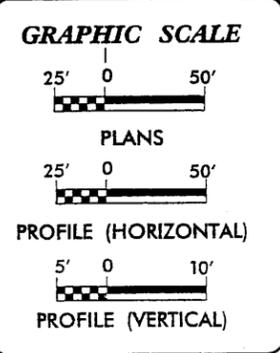


APPROVED
NORTH CAROLINA ENVIRONMENTAL
MANAGEMENT COMMISSION
DIVISION OF WATER QUALITY

RBA
12-1-05
SWP 050917

MULKEY
ENGINEERS & CONSULTANTS
PO Box 33127
RALEIGH, N.C. 27636
(919) 851-1912
(919) 851-1918 (FAX)
WWW.MULKEYINC.COM

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



DESIGN DATA

ADT 2006 =	9400
ADT 2026 =	17,300
DHV =	10%
D =	60%
* T =	7%
** V =	55 mph

Func Class = Maj Coll - Rural
* (Duals = 4% + TTST = 3%)
** Design Exception - Sight Distance

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4215 =	0.184 MILE
LENGTH STRUCTURE TIP PROJECT B-4215 =	0.025 MILE
TOTAL LENGTH TIP PROJECT B-4215 =	0.209 MILE

Prepared in the Office of:
Mulkey Engineers & Consultants
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
FEBRUARY 18, 2005

LETTING DATE:
FEBRUARY 21, 2006

NCDOT CONTACT: CATHY S. HOUSER, P.E.
ROADWAY DESIGN - PROJECT ENGINEER

PAM WILLIAMS
MULKEY E & C
PROJECT MANAGER

JONATHAN SCARCE, PE
MULKEY E & C
HYDRAULICS ENGINEER

HYDRAULICS ENGINEER

PE

ROADWAY DESIGN

PE

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PE
STATE HIGHWAY ENGINEER - DESIGN

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED FOR
DIVISION ADMINISTRATOR

DATE _____

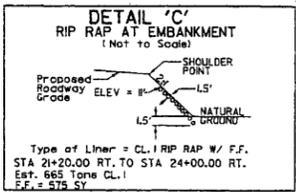
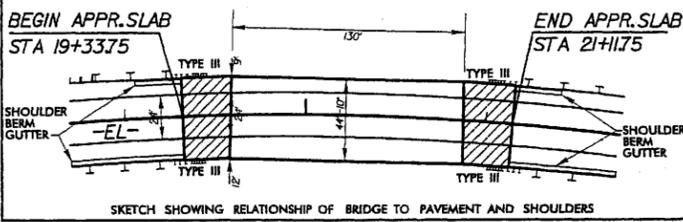
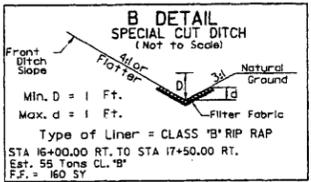
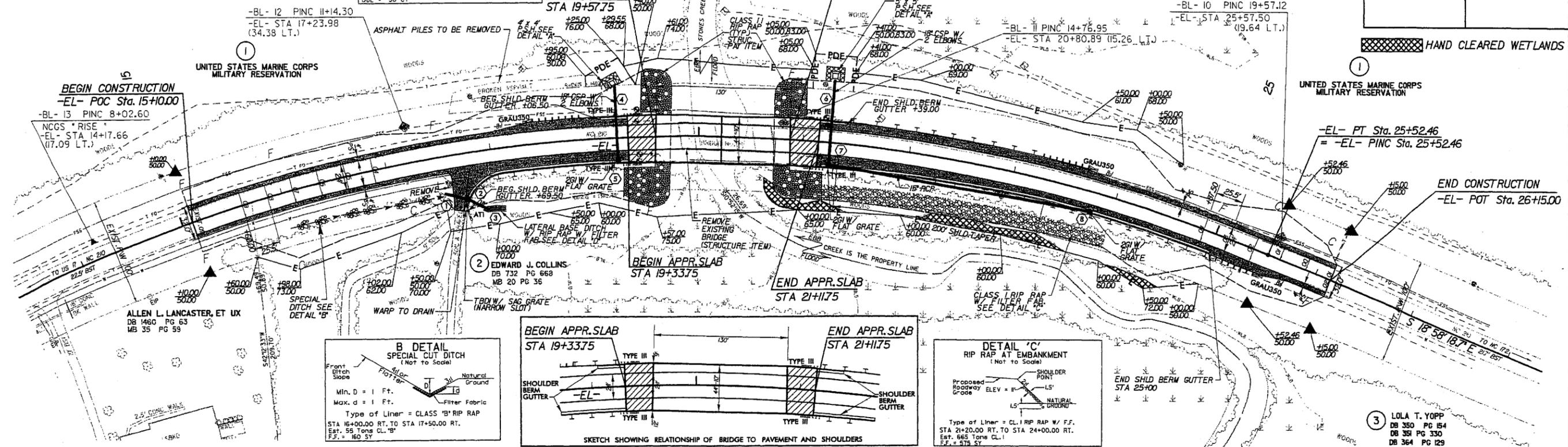
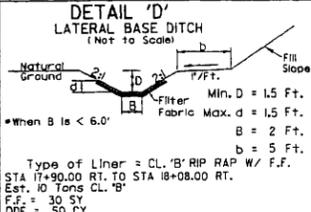
8/17/99



PROJECT REFERENCE NO. B-4215	SHEET NO. 4
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-EL-
PI Sta 19+46.03
 $\Delta = 52' 31" 58.6" (RT)$
 $D = 4' 00" 00.0"$
 $L = 1,313.32'$
 $T = 706.89'$
 $R = 1,432.39'$
 $SE = 04$
 $DS = 55$



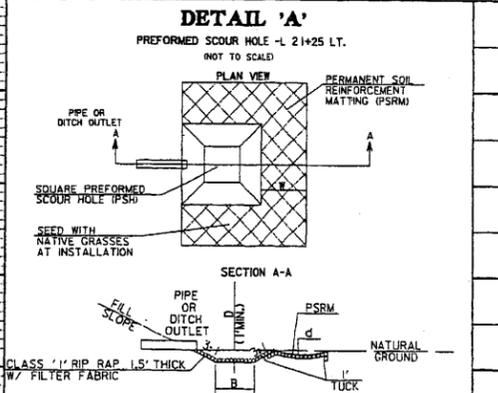
REVISIONS
Right of Way Revision - 4/12/05 - Revised Pipe Nos. 4 and 6 From 15" CSP to 14" CSP

BM-1
N=307714 E=2462968
BL STA 14+25 144' LT.
-EL- STA 20+24.58 156.78'
R/R SPIKE SET IN BASE OF 30' OAK TREE

BRIDGE HYDRAULIC DATA
BOX GIRDER BRIDGE

DESIGN DISCHARGE	= 100 CFS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 9.20 FT
100 YEAR DISCHARGE	= 1400 CFS
100 YEAR HW ELEVATION	= 10.00 FT
OVERTOPPING DISCHARGE	= 13900 CFS
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING ELEVATION	= 17.66 FT

DATE OF SURVEY = 6-3-04
W.S. ELEVATION AT DATE OF SURVEY = 1.0 FT



STATION	B FT.	D FT.	W FT.	d FT.	CLASS I RIP RAP TONS	DDE FT.	FILTER FABRIC FT.	PSMA FT.
19+20.00 LT.	4.0	1.0	4.0	0.5	5.7	35.1	72	170.1
21+25.00 LT.	5.0	1.0	4.0	0.5	7.1	48.6	90	185.4

