



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR NCDOT PROJECTS



(Version 2.07; Released October 2016)

WBS Element: 33724.1.1 TIP No.: B-4487 County(ies): Craven Page 1 of 1

General Project Information

| | | | | | | | |
|---------------------------------|---|-------------|------------------------|---|--------------------|-------|-----------|
| WBS Element: | 33724.1.1 | TIP Number: | B-4487 | Project Type: | Bridge Replacement | Date: | 1/15/2018 |
| NCDOT Contact: | Craig A. Freeman Jr., PE | | Contractor / Designer: | Richard Bollinger, PE | | | |
| Address: | 1020 Birch Ridge Drive Raleigh, NC 27610 | | Address: | 8521 Six Forks Rd. Suite 400 Raleigh, NC 27615 | | | |
| Phone: | (919) 707-6721 | | Phone: | (919) 926-4105 | | | |
| Email: | cafreeman2@ncdot.gov | | Email: | Richard.Bollinger@rsandh.com | | | |
| City/Town: | Havelock | | County(ies): | Craven | | | |
| River Basin(s): | Neuse | | CAMA County? | Yes | | | |
| Wetlands within Project Limits? | Yes | | | | | | |

Project Description

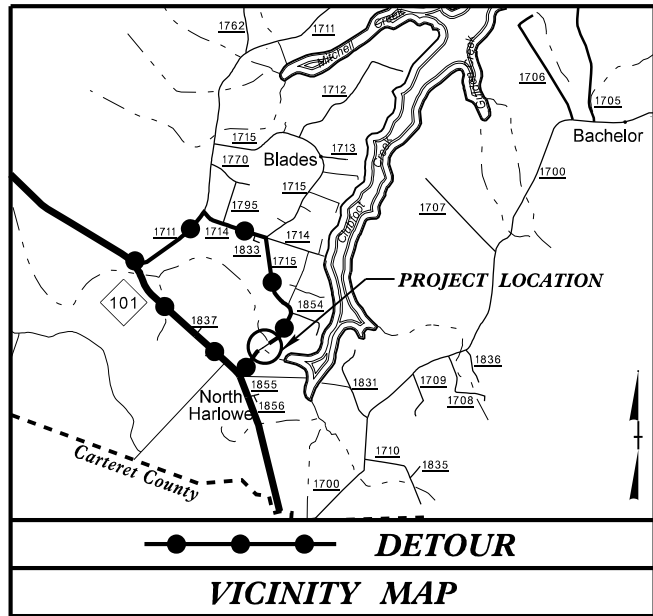
| | | | | | | | | |
|--|--|-----------------------|-----------------------------|---------------------------------------|-----------|------|-------|------|
| Project Length (lin. miles or feet): | 0.080 mile | Surrounding Land Use: | Woods / Residential / Marsh | | | | | |
| | Proposed Project | | | Existing Site | | | | |
| Project Built-Upon Area (ac.) | 0.3 ac. | | 0.2 ac. | | | | | |
| Typical Cross Section Description: | Two 11' lanes with 7.5' total shoulder width; the width of paved shoulder varies to face of guardrail. | | | Two 10' lanes with 4' to 6' shoulders | | | | |
| Annual Avg Daily Traffic (veh/hr/day): | Design/Future: | 1468 | Year: | 2038 | Existing: | 1014 | Year: | 2018 |
| General Project Narrative: (Description of Minimization of Water Quality Impacts) | <p>This is a bridge replacement project. Existing bridge 002 is a 97'-2" long, 5 span girder bridge. Proposed bridge 002 is a 150' long, 3 span, 21" cored slab bridge. The proposed bridge location and length will provide a setback from the banks and remove bents from the stream (2 proposed, 4 existing). The water from the bridge is being piped down the road to minimize wetland impacts, and keep it out of the buffer zones.</p> <p>NCDOT will attempt to avoid and minimize impacts to streams to the greatest extent practicable during project design.</p> | | | | | | | |

Waterbody Information

| | | | | | | | |
|---|--|--|-------------------------|--|-------|--|--|
| Surface Water Body (1): | Mortons Mill Pond | | NCDWR Stream Index No.: | 27-123-2 | | | |
| NCDWR Surface Water Classification for Water Body | Primary Classification: | Class SA | | | | | |
| | Supplemental Classification: | High Quality Waters (HQW) | | (NSW) | | | |
| Other Stream Classification: | None | | | | | | |
| Impairments: | None | | | | | | |
| Aquatic T&E Species? | No | Comments: | | | | | |
| NRTR Stream ID: | N/A (no NRTR for this project) | | | Buffer Rules in Effect: | Neuse | | |
| Project Includes Bridge Spanning Water Body? | Yes | Deck Drains Discharge Over Buffer? | No | Dissipator Pads Provided in Buffer? | N/A | | |
| Deck Drains Discharge Over Water Body? | No | (If yes, provide justification in the General Project Narrative) | | (If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative) | | | |
| | (If yes, provide justification in the General Project Narrative) | | | | | | |

09.08/99

TIP PROJECT: B-4487



PERMIT DRAWINGS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CRAVEN COUNTY

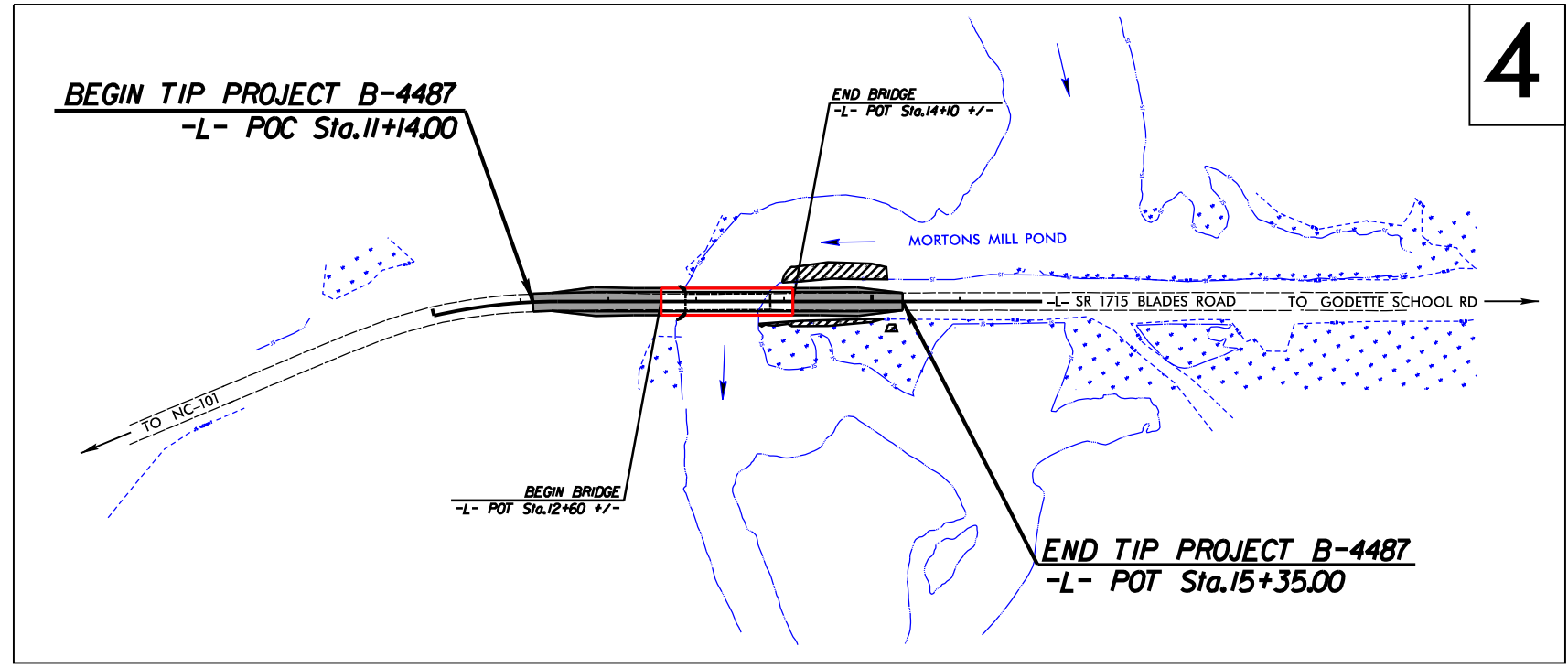
**LOCATION: REPLACE BRIDGE NO. 2 OVER MORTONS MILL POND
ON SR 1715 (BLADES ROAD)**

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

WETLAND AND SURFACE WATER IMPACTS PERMIT

| | | | |
|-----------------|-----------------------------|---------------|--------------|
| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
| N.C. | B-4487 | 1 | |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 33724.1.2 | N/A | PE, ROW, UTL. | |
| | | | |
| | | | |
| | | | |
| | | | |

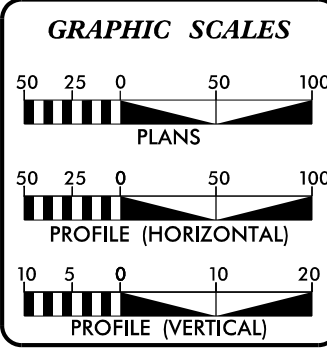
**PERMIT DRAWING
SHEET 1 OF 6**



THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

CONTRACT:



DESIGN DATA

| | |
|----------------------|--------|
| ADT 2018 = | 1,014 |
| ADT 2038 = | 1,468 |
| K = | 11 % |
| D = | 60 % |
| T = | 3 % * |
| V = | 60 MPH |
| *(TTST=1% + DUAL=2%) | |
| FUNC CLASS = | LOCAL |
| SUB-REGIONAL TIER | |

PROJECT LENGTH

| | | |
|-------------------------------------|---|----------------|
| LENGTH ROADWAY TIP PROJECT B-4487 | = | 0.052 MILE |
| LENGTH STRUCTURE TIP PROJECT B-4487 | = | 0.028 MILE +/- |
| TOTAL LENGTH TIP PROJECT B-4487 | = | 0.080 MILE +/- |

PLANS PREPARED BY:

RS&H 1520 SOUTH BLVD, SUITE 200
CHARLOTTE, NC 28203
704-752-0610

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: 2017

LETTING DATE: JUNE 28, 2018

JENNIFER FARINO, PE
PROJECT ENGINEER

DREW MORROW, PE
PROJECT DESIGN ENGINEER

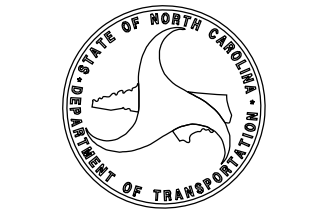
HEATHER LANE, PE
NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



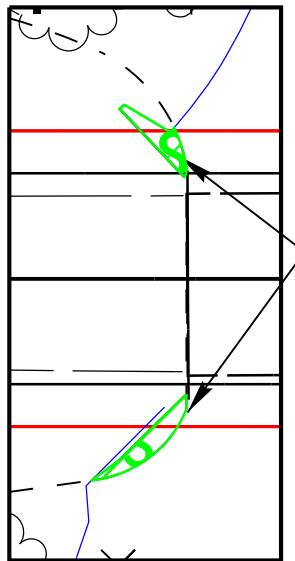
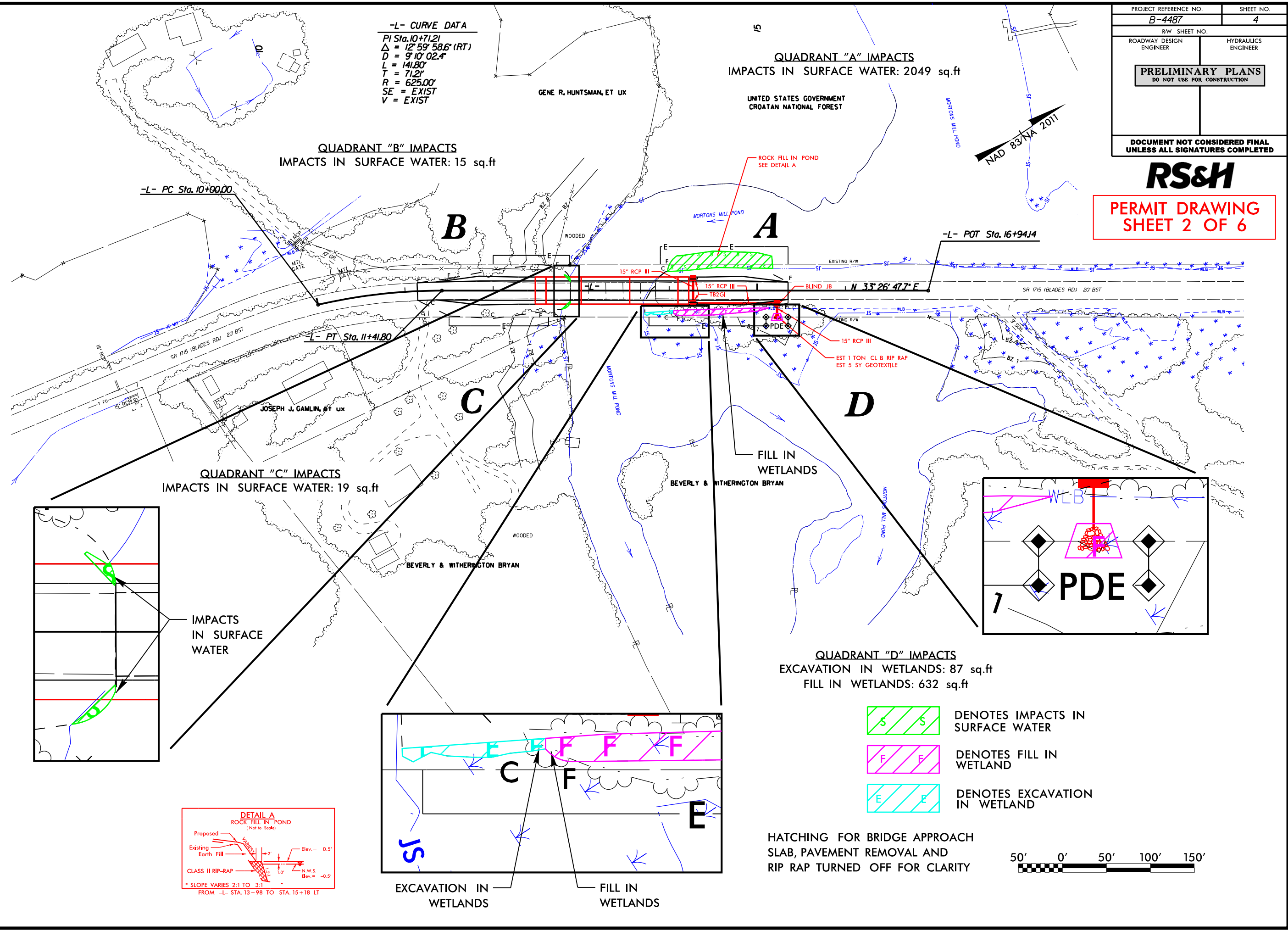
12-JAN-2018 15:37
 R:\Hydraulics\PERMITS_Environmental\Drawings\B-4487_hyd.prm.L.tsh.dgn

23-MAR-2016 15:17 PERMITS_Environmental_Drawings\B-4487_hyd_prm_2_pos.dgn
 R:\Hyd\PERMITS_Environmental_Drawings\B-4487_hyd_prm_2_pos.dgn

-L- CURVE DATA
 PI Sta. 10+71.21
 $\Delta = 12^{\circ} 59' 58.6"$ (RT)
 $D = 9^{\circ} 10' 02.4"$
 $L = 141.80'$
 $T = 71.21'$
 $R = 625.00'$
 SE = EXIST
 V = EXIST

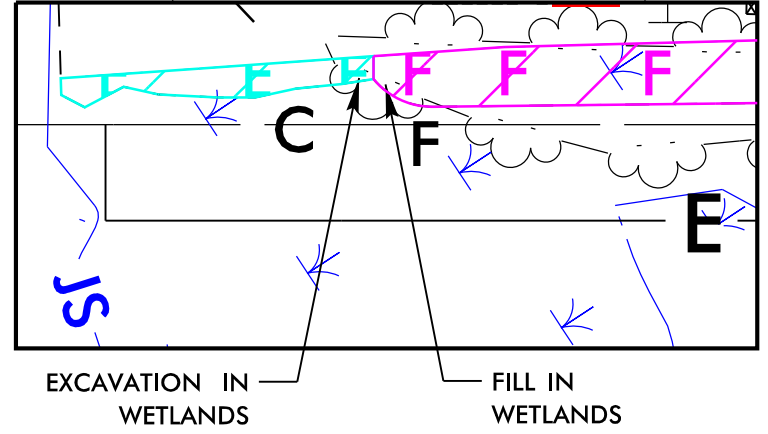
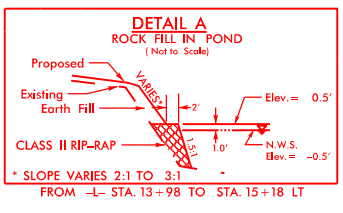
| | |
|---|---------------------|
| PROJECT REFERENCE NO. | SHEET NO. |
| B-4487 | 4 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |

RS&H
PERMIT DRAWING
SHEET 2 OF 6



QUADRANT "C" IMPACTS
 IMPACTS IN SURFACE WATER: 19 sq.ft

IMPACTS IN SURFACE WATER

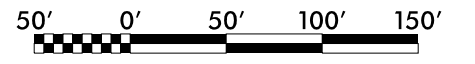


EXCAVATION IN WETLANDS FILL IN WETLANDS

QUADRANT "D" IMPACTS
 EXCAVATION IN WETLANDS: 87 sq.ft
 FILL IN WETLANDS: 632 sq.ft

- DENOTES IMPACTS IN SURFACE WATER
- DENOTES FILL IN WETLAND
- DENOTES EXCAVATION IN WETLAND

HATCHING FOR BRIDGE APPROACH SLAB, PAVEMENT REMOVAL AND RIP RAP TURNED OFF FOR CLARITY



| | |
|---|-----------------------|
| PROJECT REFERENCE NO. B-4487 | SHEET NO. 4 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |

RS&H

PERMIT DRAWING
SHEET 3 OF 6

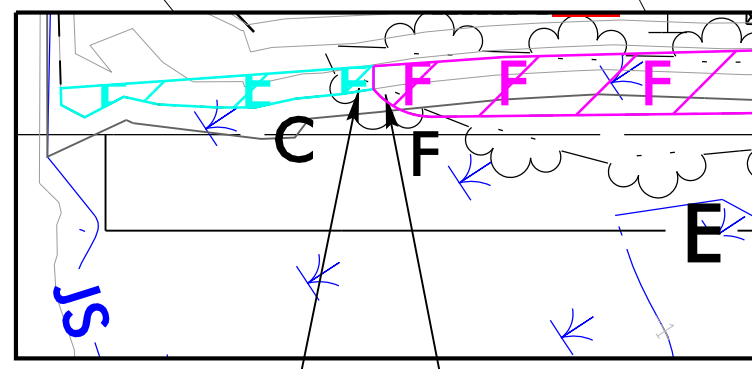
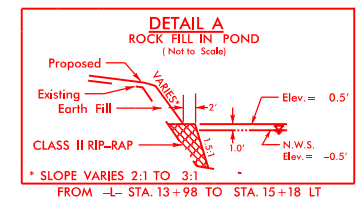
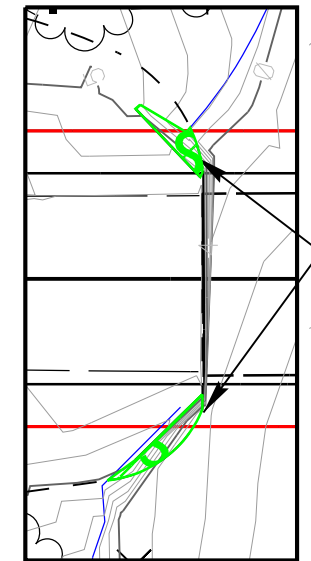
-L- CURVE DATA
 PI Sta. 10+71.21
 $\Delta = 12^{\circ} 59' 58.6"$ (RT)
 $D = 9^{\circ} 10' 02.4"$
 $L = 141.80'$
 $T = 71.21'$
 $R = 625.00'$
 SE = EXIST
 V = EXIST

QUADRANT "A" IMPACTS
 IMPACTS IN SURFACE WATER: 2049 sq.ft

QUADRANT "B" IMPACTS
 IMPACTS IN SURFACE WATER: 15 sq.ft

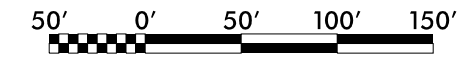
QUADRANT "C" IMPACTS
 IMPACTS IN SURFACE WATER: 19 sq.ft

QUADRANT "D" IMPACTS
 EXCAVATION IN WETLANDS: 87 sq.ft
 FILL IN WETLANDS: 632 sq.ft



- DENOTES IMPACTS IN SURFACE WATER
- DENOTES FILL IN WETLAND
- DENOTES EXCAVATION IN WETLAND

HATCHING FOR BRIDGE APPROACH SLAB, PAVEMENT REMOVAL AND RIP RAP TURNED OFF FOR CLARITY



8/17/99
 27-MAR-2016 15:56 PERMITS_Environmental\Drawings\B-4487_hyd_prrm_3_psh_con.dgn
 R:\Hyd\PERMITS_Environmental\Drawings\B-4487_hyd_prrm_3_psh_con.dgn

5/14/99

| | |
|---|---------------------|
| PROJECT REFERENCE NO. B-4487 | SHEET NO. 5 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



PERMIT DRAWING
SHEET 4 OF 6

| STRUCTURE HYDRAULIC DATA | | |
|--------------------------|--------|---------|
| DRAINAGE AREA | = 6.44 | SQ. MI. |
| DESIGN DISCHARGE | = 750 | CFS |
| DESIGN FREQUENCY | = 25 | YRS |
| DESIGN HW ELEVATION | = N/A | FT |
| BASE DISCHARGE | = 1100 | CFS |
| BASE FREQUENCY | = 100 | YRS |
| BASE HW ELEVATION | = N/A | FT |
| OVERTOPPING DISCHARGE | = 5500 | CFS |
| OVERTOPPING FREQUENCY | = 500+ | YRS |
| OVERTOPPING ELEVATION | = 6J | FT |

PI = 12+45.00
EL = 7.54'
VC = 220'
K = 242
V = 80 MPH

BEGIN PROPOSED GRADE
-L- STA. 11+14.00
ELEV. = 9.23'

PI = 11+35.00
EL = 8.98'

BEGIN BRIDGE
-L- STA. 12+60 +/-

END BRIDGE
-L- STA. 14+10 +/-

END PROPOSED GRADE
-L- STA. 15+35.00
ELEV. = 6.26'

NWS EL = -0.5' +/-
BASED ON SURVEY DATED
4/22/2017

BM-1
RAILROAD SPIKE IN 24" PINE
-L- STA. 13+02.31, 145' LEFT
ELEV. = 8.11'

EXCAVATE TO ELEV. 3'
REMOVE EXISTING ABUTMENT
AND LAY BACK BANK @ 3:1

20
10
0
-10

20
10
0
-10

10 11 12 13 14 15 16

F:\AN-2018_09\8
R:\Hydro\cs\PERMITS_Environmental\Drawings\B-4487_hyd_prm_4.plt.dgn

6/23/16



PROJ. REFERENCE NO.
B-4487

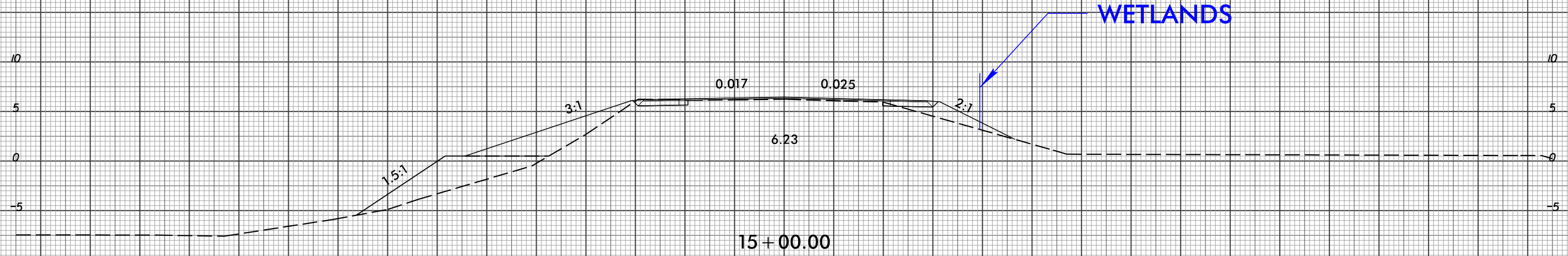
SHEET NO.
X-1

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

WETLAND IMPACTS



PERMIT DRAWING
SHEET 5 OF 6



75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

I:\4\2018
11:41:33 PM
I:\4\2018\Drawings\B-4487_hyd-prm-5_xsc.dgn

WETLAND AND SURFACE WATER IMPACTS SUMMARY

| Site No. | Station (From/To) | Structure Size / Type | WETLAND IMPACTS | | | | | SURFACE WATER IMPACTS | | | | | |
|-----------------|-----------------------|-------------------------|---------------------------------|-----------------------------|-----------------------------|--------------------------------------|--------------------------------|---------------------------|-----------------------|---|-------------------------------------|----------------------------|---|
| | | | Permanent Fill In Wetlands (ac) | Temp. Fill In Wetlands (ac) | Excavation in Wetlands (ac) | Mechanized Clearing in Wetlands (ac) | Hand Clearing in Wetlands (ac) | Permanent SW impacts (ac) | Temp. SW impacts (ac) | Existing Channel Impacts Permanent (ft) | Existing Channel Impacts Temp. (ft) | Natural Stream Design (ft) | |
| 1 | -L- 12+85 RT & LT | Rip Rap Embankment | | | | | | | < 0.01 | | | | |
| 1 | -L- 13+72 to 14+05 RT | Excavation under Bridge | | | < 0.01 | | | | | | | | |
| 1 | -L- 14+05 to 15+13 RT | Roadway Fill Slope | 0.01 | | | | | | | | | | |
| 1 | -L- 13+98 to 15+18 LT | Rock Fill in Pond | | | | | | | 0.05 | | | | |
| 1 | -L- 15+23 RT | Rip Rap Pipe Outlet | < 0.01 | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| TOTALS*: | | | 0.01 | | < 0.01 | | | | 0.05 | | 0 | 0 | 0 |

*Rounded totals are sum of actual impacts

NOTES:
 Proposed Bent Area = 230 sq.ft.
 Total Permanent Fill in Wetlands = 632 sq.ft. (Roadway Fill Slope = 552 sq.ft. / Rip Rap Pipe Outlet = 80 sq.ft.)
 Total Excavation in Wetlands: 87 sq.ft.
 SW Impacts from Rip Rap at Embankment = 34 sq.ft.

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 2/2/2018
 Craven County
 B-4487
 33724.1.2
 SHEET 6 OF 6