



North Carolina Department of Transportation

Highway Stormwater Program  
**STORMWATER MANAGEMENT PLAN**  
 FOR NCDOT PROJECTS



(Version 2.07; Released October 2016)

WBS Element: 17BP.2.R.80      TIP No.:      County(ies): Lenoir      Page 1 of 3

**General Project Information**

|                                 |  |  |                        |   |  |       |            |
|---------------------------------|--|--|------------------------|---|--|-------|------------|
| WBS Element:                    | 17BP.2.R.80                                      | TIP Number:  |                        | Project Type:   | Bridge Replacement                                       | Date: | 10/11/2017 |
| NCDOT Contact:                  | Robert T. Turnbull, Environmental Services, Inc. |  | Contractor / Designer: | HNTB North Carolina, P.C. / John F. Watson, PE          |  |       |            |
| Address:                        | 4901 Trademark Dr.<br>Raleigh, NC 27610          |  | Address:               | 343 E. Six Forks Road<br>Suite 200<br>Raleigh, NC 27609 |  |       |            |
|                                 | Phone:   | (919) 212-1760   |                        | Phone:  | (919) 424-0444   |       |            |
|                                 | Email:   | <a href="mailto:rturnbull@esinc.cc">rturnbull@esinc.cc</a> |                        | Email:  | <a href="mailto:jfwatson@hntb.com">jfwatson@hntb.com</a> |       |            |
| City/Town:                      | Kinston  |  | County(ies):           | Lenoir  |  |       |            |
| River Basin(s):                 | Neuse  |  | CAMA County?           | No  |  |       |            |
| Wetlands within Project Limits? | Yes  |  |                        |   |  |       |            |

**Project Description**

|  |   |                       |                      |   |           |     |       |      |
|--|---|-----------------------|----------------------|---|-----------|-----|-------|------|
| Project Length (lin. miles or feet):   | 0.09  | Surrounding Land Use: | Rural / Agricultural |   |           |     |       |      |
|  | <b>Proposed Project</b>   |                       |                      | <b>Existing Site</b>  |           |     |       |      |
| Project Built-Upon Area (ac.)  | 0.7   | ac.                   | 0.7                  | ac.   |           |     |       |      |
| Typical Cross Section Description:   | 2 - 11' asphalt paved lanes with 2' to 5' paved shoulders, 3' grass shoulders. Ditches on the west side of the roadway will be replaced with a 'V' ditch on the south side of the bridge and a 3' base ditch on the north side.   |                       |                      | 2 - 10' asphalt paved lanes with grass shoulders. Wetlands are present in the northeast quadrant but not impacted. Roadside ditches are present in all four quadrants and discharge directly into Joshua Creek. |           |     |       |      |
| Annual Avg Daily Traffic (veh/hr/day):   | Design/Future:  | 960                   | Year:                | 2032  | Existing: | 480 | Year: | 2012 |
| General Project Narrative:<br>(Description of Minimization of Water Quality Impacts) | <p>State project 17BP.2.R.80 involves the replacement of Bridge #530143 on SR 1922 (Vine Swamp Rd) over Joshua Creek in Lenoir County. The existing bridge #530143 consists of 1 @ 15'-6", 1 @ 15'-3", 1 @ 15'-9" reinforced concrete floor on timber joists, caps, and piles. It is to be replaced with a 1 @ 60'-0", 21" cored slab (33' total width) at the same location. The project also includes 0.03 mi of roadway improvements to the northeast and 0.04 mi of roadway improvements to the southwest.</p> <p>The proposed bridge does not contain deck drains. Storm water from the bridge and approach slabs will be collected by a storm drainage system and discharged into a Rip-Rap Pad at -L- 23+86 RT, outside of the buffers. Storm water will discharge into the existing drainage ditch in the northeast quadrant, where it will follow existing drainage patterns.</p> <p>The roadside ditches in the northwest and southwest quadrants will be impacted. The redesigned ditches will tie into Joshua Creek to match the existing drainage patterns, with 3:1 front and back slopes. Rip Rap at embankment is proposed on the southwest ditch to prevent head cutting while minimizing depth. The northwest ditch ties to the toe of bank, again to match existing drainage patterns. The roadside ditches in the northeast and southeast quadrants will not be impacted, so the existing drainage patterns will be retained.</p> |                       |                      |   |           |     |       |      |

**Waterbody Information**

|  |                              |  |                         |  |       |  |  |
|--|------------------------------|--|-------------------------|--|-------|--|--|
| Surface Water Body (1):  | Joshua Creek                 |  | NCDWR Stream Index No.: | 27-101-4   |       |  |  |
| NCDWR Surface Water Classification for Water Body                | Primary Classification:      | Class C  |                         |  |       |  |  |
|  | Supplemental Classification: | Swamp Waters (Sw)  |                         | (NSW)  |       |  |  |
| Other Stream Classification:                                     |                              |  |                         |  |       |  |  |
| Impairments:   |                              |  |                         |  |       |  |  |
| Aquatic T&E Species?   | Comments:                    |  |                         |  |       |  |  |
| NRTR Stream ID:  |                              |  |                         | Buffer Rules in Effect:  | Neuse |  |  |
| Project Includes Bridge Spanning Water Body?                     | Yes                          | Deck Drains Discharge Over Buffer?                               | No                      | Dissipator Pads Provided in Buffer?  | No    |  |  |
| 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) |                              |  |                         |  |       |  |  |





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 Highway Stormwater Program  
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WBS Element:                      TIP No.:                      County(ies): Lenoir                      Page **3** of **3**

**Preformed Scour Holes and Energy Dissipators**

| Sheet No. | Station & Coordinates<br>(Road and Non Road Projects) | Surface Water Body | Energy Dissipator Type         | Riprap Type | Drainage Area (ac) | Conveyance Structure | Pipe/Structure Dimensions (in) | Q10 (cfs) | V10 (fps) | BMP Associated w/ Buffer Rules? |
|-----------|---|--------------------|--------------------------------|-------------|--------------------|----------------------|--------------------------------|-----------|-----------|---------------------------------|
| 4         | -L- 23+86 RT<br>35.126049 / -77.583233                | (1)Joshua Creek    | Riprap Energy Dissipator Basin | Class I     | 0.1                | Pipe                 | 18                             | 0.2       | 0.6       | N/A                             |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |
|           |   |                    |                                |             |                    |                      |                                |           |           |                                 |

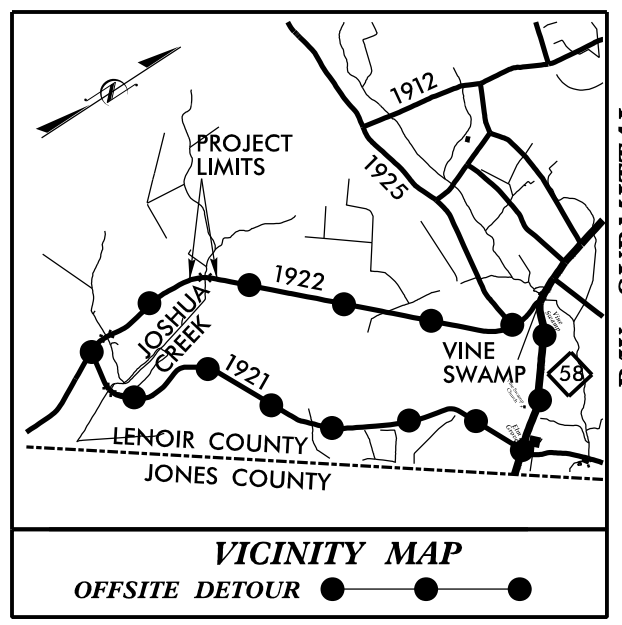
Additional Comments

\* Refer to the NCDOT Best Management Practices Toolbox (2014), NCDOT Standards, the Federal Highway Administration (FHWA) Hydraulic Engineering Circular No. 14 (HEC-14), Third Edition, Hydraulic Design of Energy Dissipators for Culverts and Channels (July 2006), as applicable, for design guidance and criteria.

09.08/99

**CONTRACT: TIP PROJECT: 17BP.2.R.80**

See Sheet 1A For Index of Sheets



**R/W SUBMITTAL**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**LENOIR COUNTY**

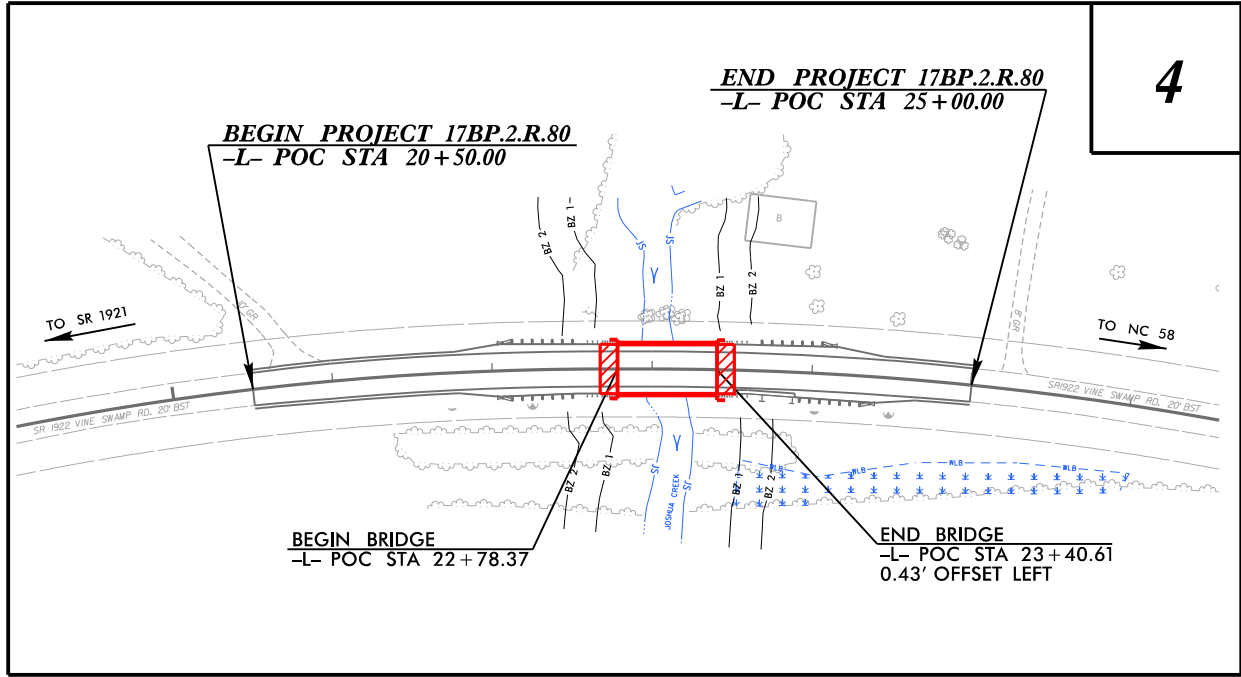
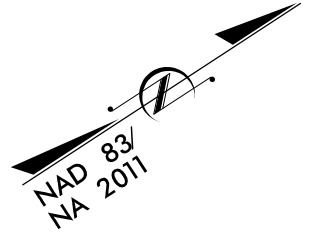
**LOCATION: REPLACE BRIDGE NO. 143 OVER JOSHUA CREEK  
ON SR 1922 (VINE SWAMP ROAD)**

**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.            | 17BP.2.R.80                 | 1           |              |
| STATE PROJ. NO. | F.A. PROJ. NO.              | DESCRIPTION |              |
| 17BP.2.R.80     |                             | P.E.        |              |
| 17BP.2.R.80     |                             | ROWUTIL     |              |
|                 |                             |             |              |
|                 |                             |             |              |
|                 |                             |             |              |

**PERMIT DRAWING  
SHEET 1 OF 7**

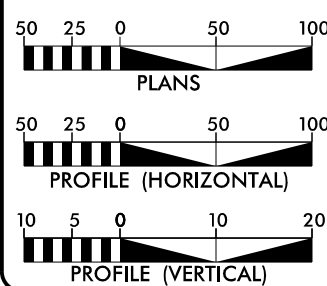


**NOTES:**

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

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

**GRAPHIC SCALES**



**DESIGN DATA**

ADT 2012 = 480  
ADT 2032 = 960  
K = 10 %  
D = 60 %  
T = 6 % \*  
V = 60 MPH  
\* TTST = 2% DUAL 4%  
FUNC CLASS =  
MINOR COLLECTOR  
SUBREGIONAL TIER

**PROJECT LENGTH**

LENGTH OF ROADWAY PROJECT 17BP.2.R.80 = 0.073 MILES  
LENGTH OF STRUCTURE PROJECT 17BP.2.R.80 = 0.012 MILES  
TOTAL LENGTH OF PROJECT 17BP.2.R.80 = 0.085 MILES

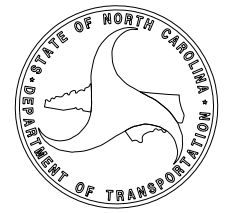
Prepared In the Office of:  
**HNTB**  
HNTB NORTH CAROLINA, P.C.  
343 E. Six Forks Road, Suite 200  
Raleigh, North Carolina 27609  
NC License No: C-1554

2012 STANDARD SPECIFICATIONS  
**RIGHT OF WAY DATE:**  
OCTOBER 11, 2017  
**LETTING DATE:**  
APRIL 18, 2018

**DOUGLAS M. WHEATLEY, PE**  
PROJECT ENGINEER  
**MONICA J. DUVAL**  
PROJECT DESIGN ENGINEER  
**HEATHER C. LANE, PE**  
NCDOT CONTACT

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.  
**ROADWAY DESIGN ENGINEER**  
SIGNATURE: \_\_\_\_\_ P.E.



10/18/2017  
17BP.2.R.80\_hyd\_permits\_tsh.dgn  
HNTB

# WETLAND & STREAM IMPACTS



HNTB NORTH CAROLINA, P.C.  
343 E. Six Forks Road, Suite 200  
Raleigh, North Carolina 27609  
NC License No: C-1554

|   |                       |
|---|-----------------------|
| PROJECT REFERENCE NO.<br><b>17BP.2.R.80</b>                             | SHEET NO.<br><b>4</b> |
| ROADWAY DESIGN ENGINEER   | HYDRAULICS ENGINEER   |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR A/W ACQUISITION               |                       |
| <b>DOCUMENT NOT CONSIDERED FINAL</b><br>UNLESS ALL SIGNATURES COMPLETED |                       |

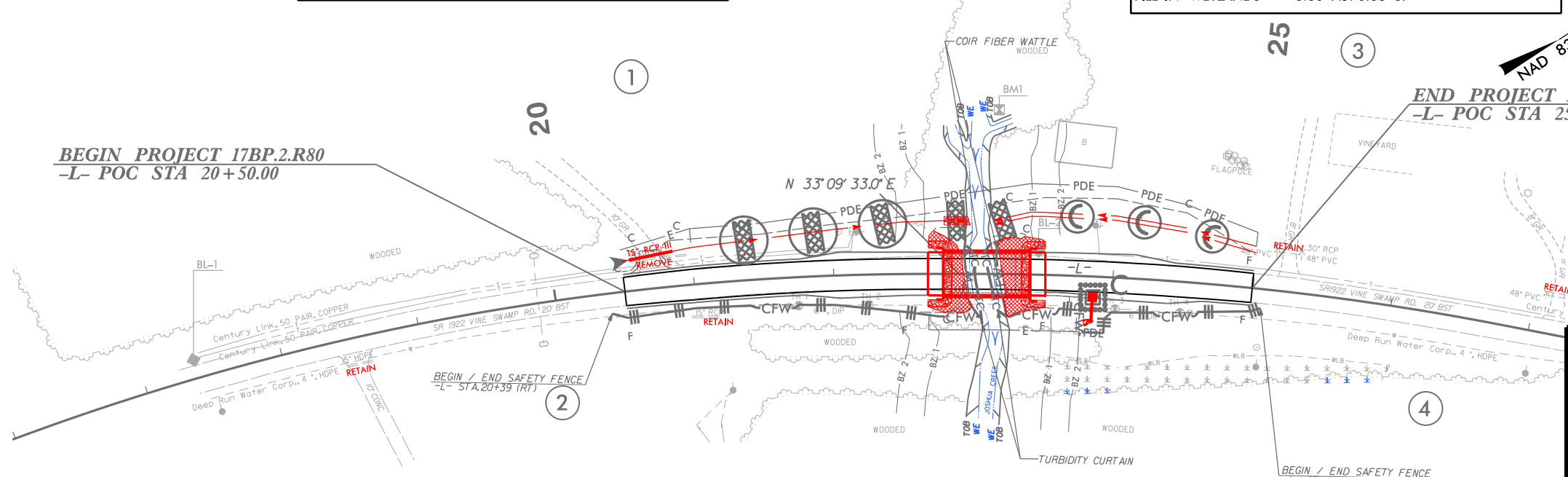
**W1**  
HAND CLEARING IN WETLANDS = <0.01 Ac/0.00 SF  
FILL IN WETLANDS = 0.00 Ac/0.00 SF

**W3**  
HAND CLEARING IN WETLANDS = 0.00 Ac/0.00 SF  
FILL IN WETLANDS = 0.00 Ac/0.00 SF

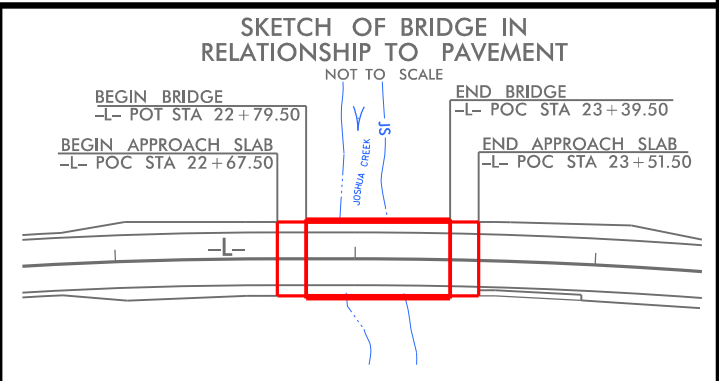
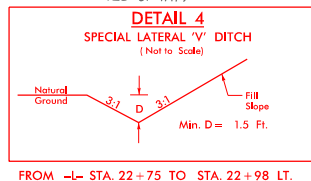
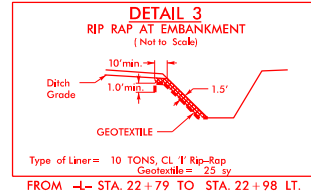
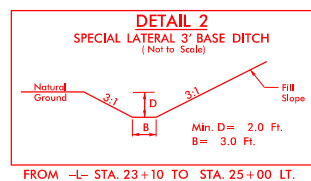
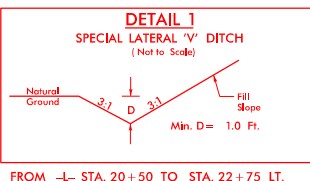
**W4**  
HAND CLEARING IN WETLANDS = 0.00 Ac/0.00 SF  
FILL IN WETLANDS = 0.00 Ac/0.00 SF

**BEGIN PROJECT 17BP.2.R80**  
-L- POC STA 20+50.00

**END PROJECT 17BP.2.R.80**  
-L- POC STA 25+00.00

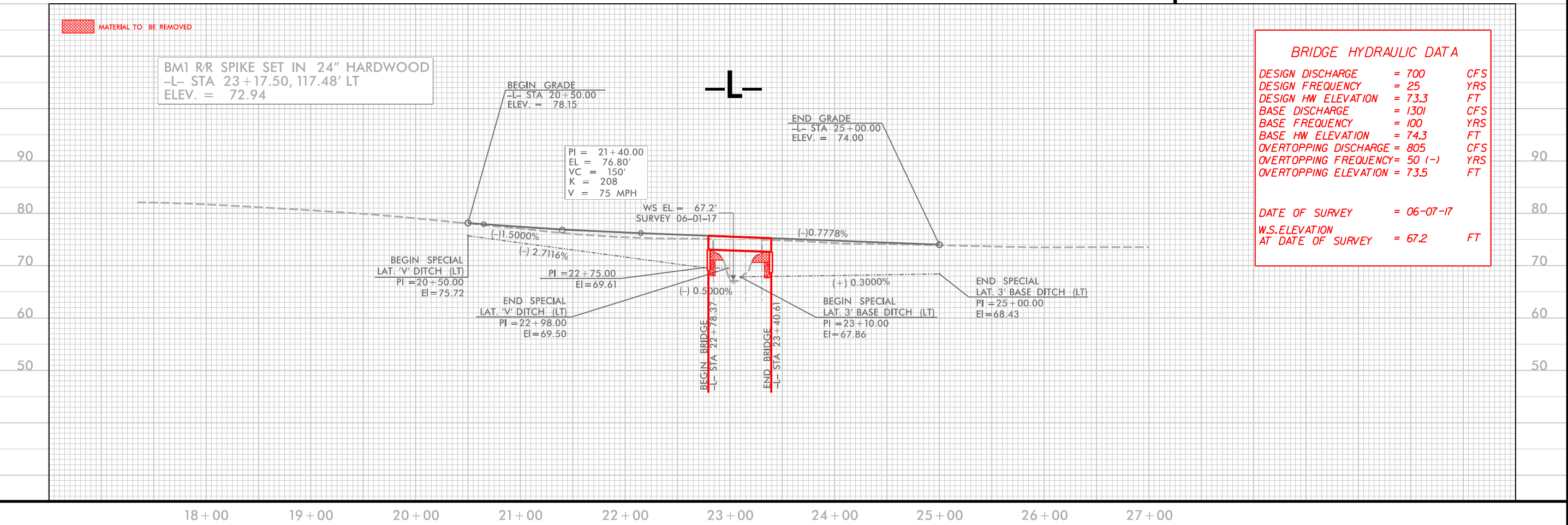


**W2**  
HAND CLEARING IN WETLANDS = 0.00 Ac/0.00 SF  
FILL IN WETLANDS = 0.00 Ac/0 SF



MATERIAL TO BE REMOVED

**BMI R/R SPIKE SET IN 24" HARDWOOD**  
-L- STA 23+17.50, 117.48' LT  
ELEV. = 72.94



**BRIDGE HYDRAULIC DATA**

|                       |          |     |
|-----------------------|----------|-----|
| DESIGN DISCHARGE      | = 700    | CFS |
| DESIGN FREQUENCY      | = 25     | YRS |
| DESIGN HW ELEVATION   | = 73.3   | FT  |
| BASE DISCHARGE        | = 1301   | CFS |
| BASE FREQUENCY        | = 100    | YRS |
| BASE HW ELEVATION     | = 74.3   | FT  |
| OVERTOPPING DISCHARGE | = 805    | CFS |
| OVERTOPPING FREQUENCY | = 50 (-) | YRS |
| OVERTOPPING ELEVATION | = 73.5   | FT  |

DATE OF SURVEY = 06-07-17  
W.S.ELEVATION AT DATE OF SURVEY = 67.2 FT

10/18/2017 17BP.2.R.80\_hyd\_permits.psh4.dgn

8/17/09

# WETLAND & STREAM IMPACTS

**HNTB** HNTB NORTH CAROLINA, P.C.  
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|   |                       |
|---|-----------------------|
| PROJECT REFERENCE NO.<br><b>17BP.2.R.80</b>                             | SHEET NO.<br><b>4</b> |
| ROADWAY DESIGN ENGINEER   | HYDRAULICS ENGINEER   |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR A/W ACQUISITION               |                       |
| <b>DOCUMENT NOT CONSIDERED FINAL</b><br>UNLESS ALL SIGNATURES COMPLETED |                       |

**W1**  
HAND CLEARING IN WETLANDS = <0.01 Ac/0.00 SF  
FILL IN WETLANDS = 0.00 Ac/0.00 SF

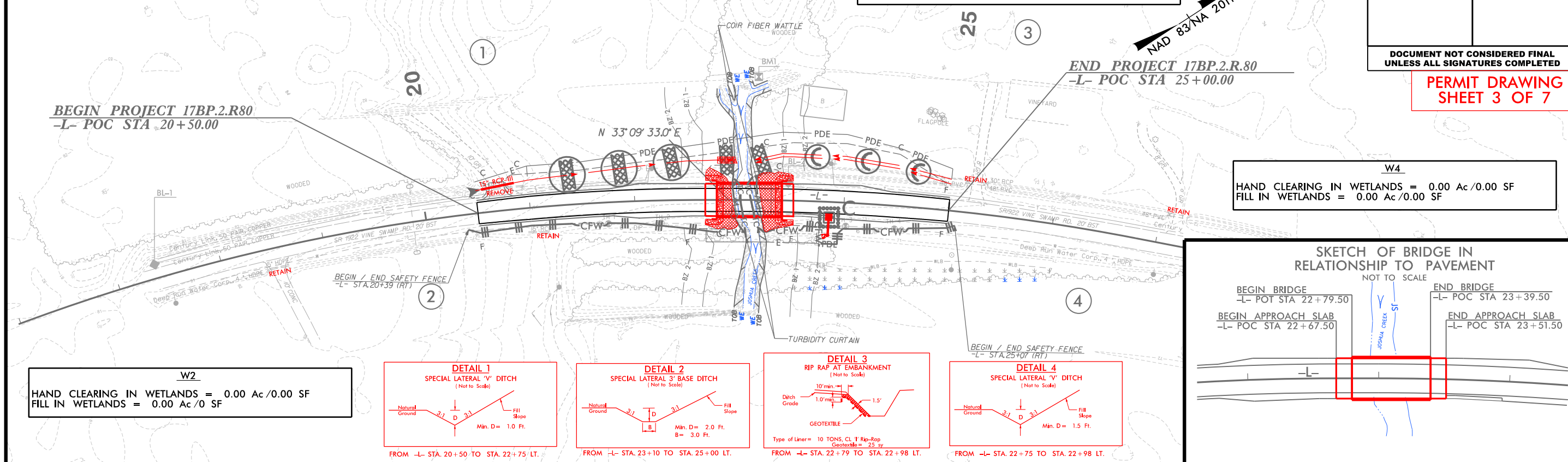
**W3**  
HAND CLEARING IN WETLANDS = 0.00 Ac/0.00 SF  
FILL IN WETLANDS = 0.00 Ac/0.00 SF

**W4**  
HAND CLEARING IN WETLANDS = 0.00 Ac/0.00 SF  
FILL IN WETLANDS = 0.00 Ac/0.00 SF

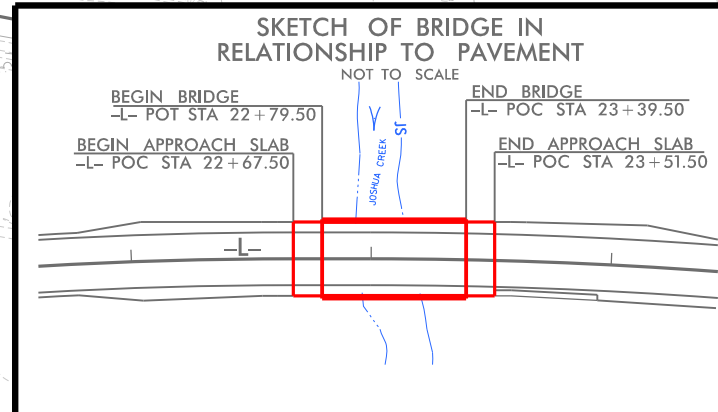
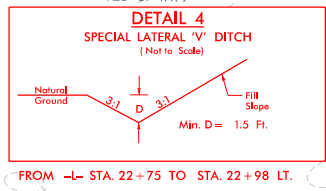
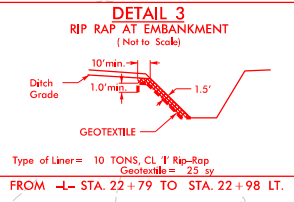
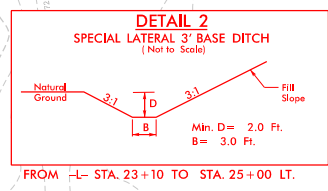
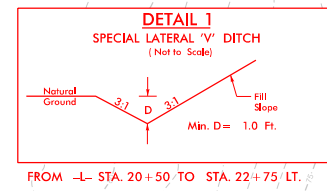
**BEGIN PROJECT 17BP.2.R80**  
-L- POC STA 20+50.00

**END PROJECT 17BP.2.R.80**  
-L- POC STA 25+00.00

**PERMIT DRAWING**  
SHEET 3 OF 7

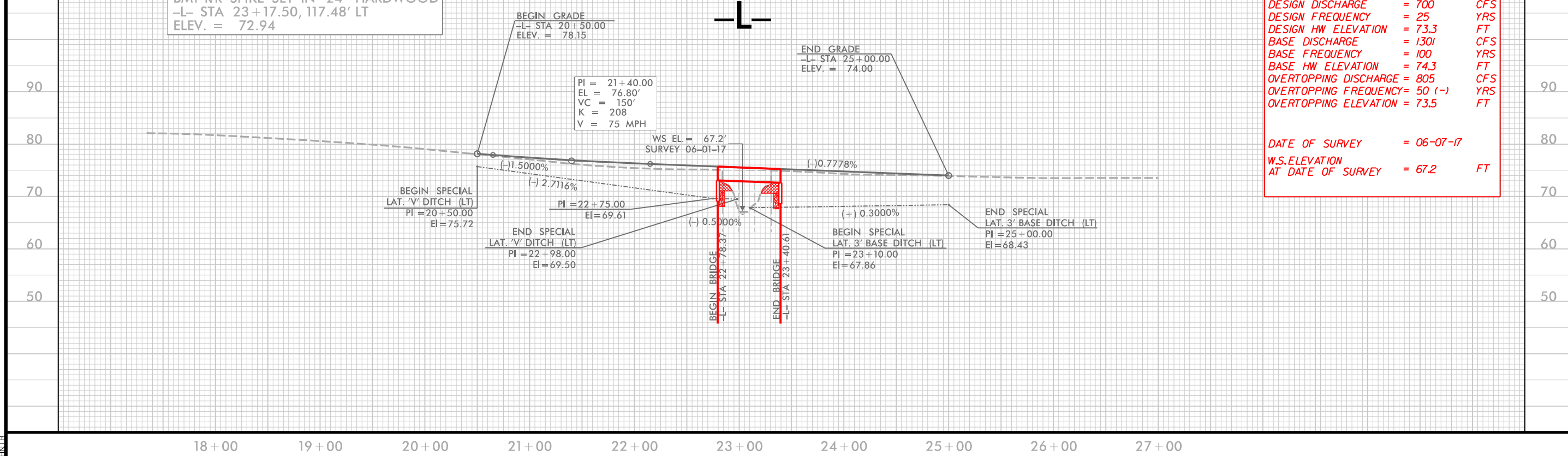


**W2**  
HAND CLEARING IN WETLANDS = 0.00 Ac/0.00 SF  
FILL IN WETLANDS = 0.00 Ac/0 SF



MATERIAL TO BE REMOVED

**BMI R/R SPIKE SET IN 24" HARDWOOD**  
-L- STA 23+17.50, 117.48' LT  
ELEV. = 72.94



**BRIDGE HYDRAULIC DATA**

|                       |          |     |
|-----------------------|----------|-----|
| DESIGN DISCHARGE      | = 700    | CFS |
| DESIGN FREQUENCY      | = 25     | YRS |
| DESIGN HW ELEVATION   | = 73.3   | FT  |
| BASE DISCHARGE        | = 1301   | CFS |
| BASE FREQUENCY        | = 100    | YRS |
| BASE HW ELEVATION     | = 74.3   | FT  |
| OVERTOPPING DISCHARGE | = 805    | CFS |
| OVERTOPPING FREQUENCY | = 50 (-) | YRS |
| OVERTOPPING ELEVATION | = 73.5   | FT  |

DATE OF SURVEY = 06-07-17  
W.S.ELEVATION AT DATE OF SURVEY = 67.2 FT

10/18/2017 17BP.2.R.80\_hyd\_permits.psh4.dgn



# BUFFER IMPACTS



HNTB NORTH CAROLINA, P.C.  
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|   |                       |
|---|-----------------------|
| PROJECT REFERENCE NO.<br><b>17BP.2.R.80</b>                             | SHEET NO.<br><b>4</b> |
| ROADWAY DESIGN ENGINEER   | HYDRAULICS ENGINEER   |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR A/W ACQUISITION               |                       |
| <b>DOCUMENT NOT CONSIDERED FINAL</b><br>UNLESS ALL SIGNATURES COMPLETED |                       |

**LEGEND**

|  |                          |
|--|--------------------------|
|  | ALLOWABLE IMPACTS ZONE 1 |
|  | ALLOWABLE IMPACTS ZONE 2 |

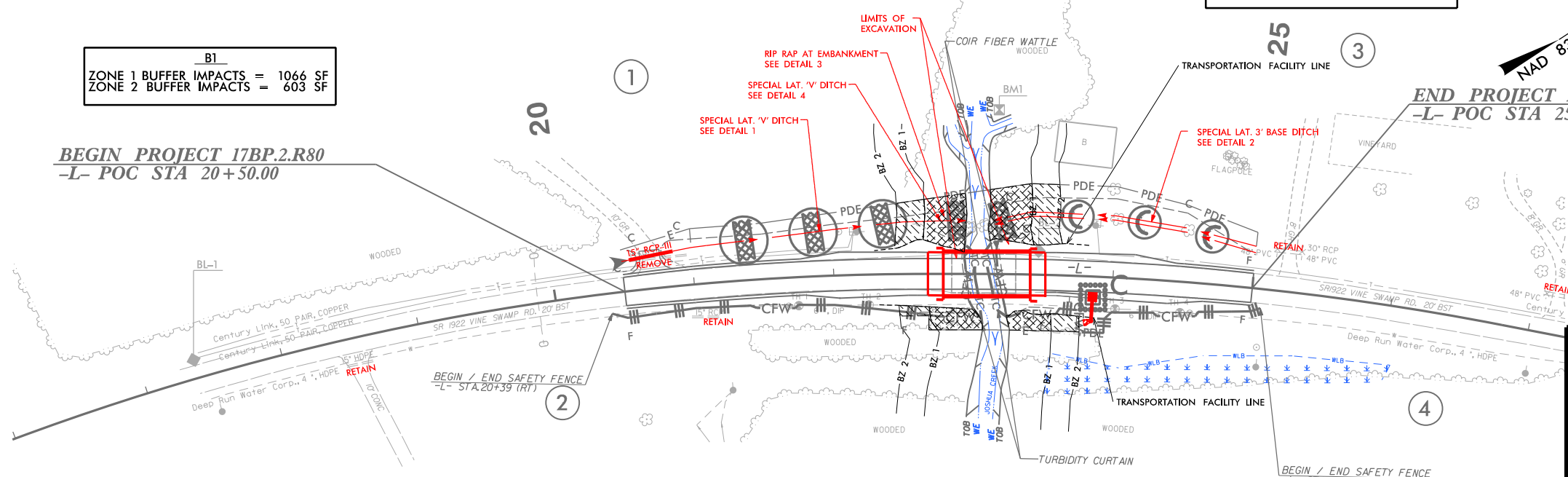
**B1**  
ZONE 1 BUFFER IMPACTS = 1066 SF  
ZONE 2 BUFFER IMPACTS = 603 SF

**B3**  
ZONE 1 BUFFER IMPACTS = 1186 SF  
ZONE 2 BUFFER IMPACTS = 872 SF

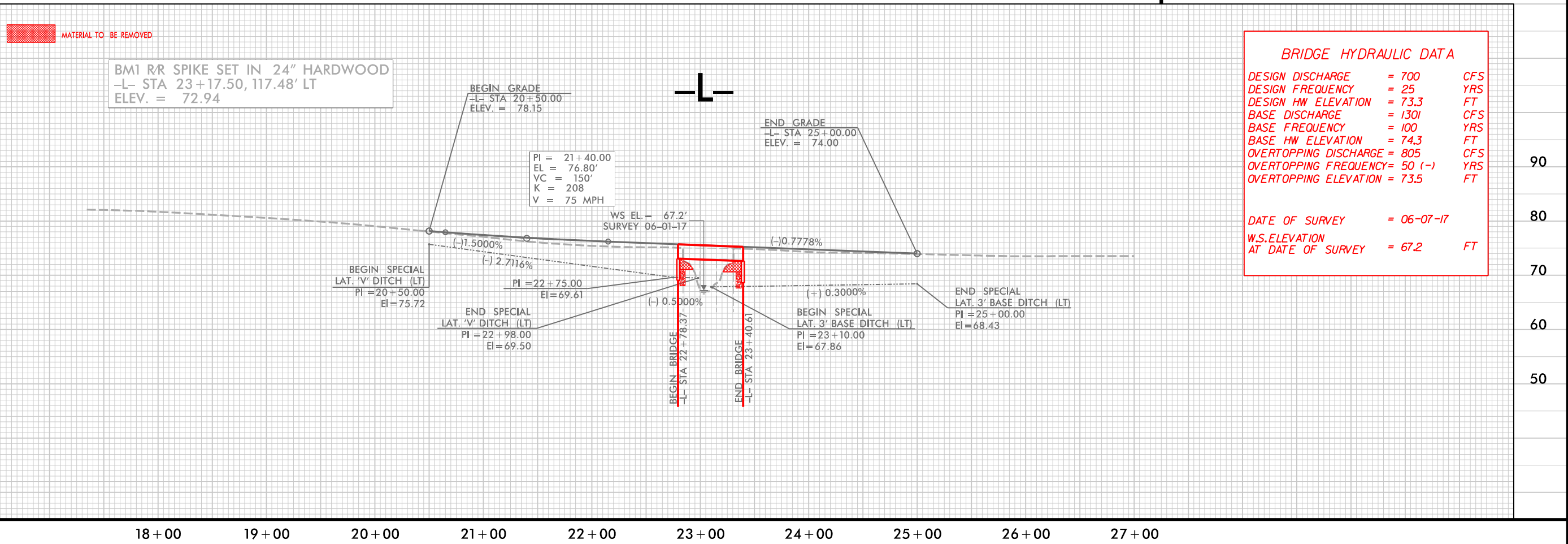
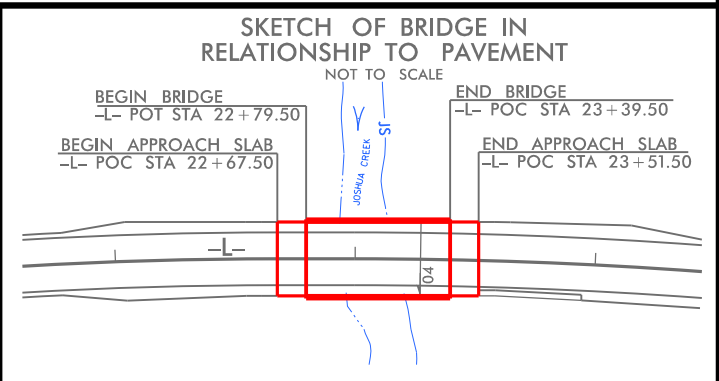
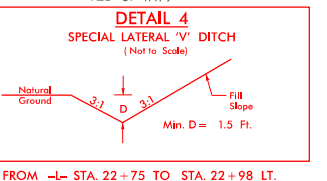
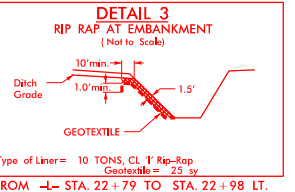
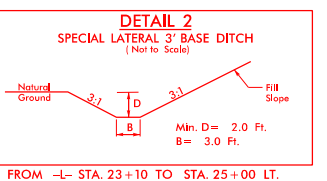
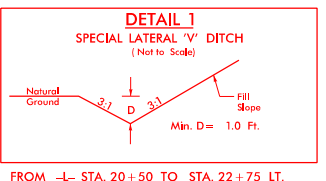
**B4**  
ZONE 1 BUFFER IMPACTS = 385 SF  
ZONE 2 BUFFER IMPACTS = 238 SF

**BEGIN PROJECT 17BP.2.R80**  
-L- POC STA 20+50.00

**END PROJECT 17BP.2.R.80**  
-L- POC STA 25+00.00



**B2**  
ZONE 1 BUFFER IMPACTS = 535 SF  
ZONE 2 BUFFER IMPACTS = 181 SF



10/18/2017 17BP.2.R.80\_hyd\_buf.pah4.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) |   |
|   |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |   |                                     |                            |   |
|   |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |   |                                     |                            |   |
|   |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |   |                                     |                            |   |
|   |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |   |                                     |                            |   |
|   |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |   |                                     |                            |   |
|   |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |   |                                     |                            |   |
|   |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |   |                                     |                            |   |
|   |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |   |                                     |                            |   |
|   |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |   |                                     |                            |   |
|   |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |   |                                     |                            |   |
|   |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |   |                                     |                            |   |
|   |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |   |                                     |                            |   |
|   |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |   |                                     |                            |   |
|   |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |   |                                     |                            |   |
|   |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |   |                                     |                            |   |
|   |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |   |                                     |                            |   |
|   |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |   |                                     |                            |   |
|   |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |   |                                     |                            |   |
|   |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |   |                                     |                            |   |
| TOTALS*:                                  |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |   | 0                                   | 0                          | 0 |

\*Rounded totals are sum of actual impacts

NOTES:  
 Permanent SW impacts: 0 SF  
 Temporary SW impacts: 0 SF

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## RIPARIAN BUFFER IMPACTS SUMMARY

|               |                       |                    | IMPACT        |        |                 |                           |                           |                          |                           |                           |                          | BUFFER REPLACEMENT        |                           |
|---------------|-----------------------|--------------------|---------------|--------|-----------------|---------------------------|---------------------------|--------------------------|---------------------------|---------------------------|--------------------------|---------------------------|---------------------------|
| SITE NO.      | STRUCTURE SIZE / TYPE | STATION (FROM/TO)  | TYPE          |        |                 | ALLOWABLE                 |                           |                          | MITIGABLE                 |                           |                          | ZONE 1 (ft <sup>2</sup> ) | ZONE 2 (ft <sup>2</sup> ) |
|               |                       |                    | ROAD CROSSING | BRIDGE | PARALLEL IMPACT | ZONE 1 (ft <sup>2</sup> ) | ZONE 2 (ft <sup>2</sup> ) | TOTAL (ft <sup>2</sup> ) | ZONE 1 (ft <sup>2</sup> ) | ZONE 2 (ft <sup>2</sup> ) | TOTAL (ft <sup>2</sup> ) |                           |                           |
| 1             | 24"CORED SLAB BRIDGE  | -L- 22+44 TO 23+77 |               | X      |                 | 3173                      | 1894                      | 5067                     |                           |                           |                          |                           |                           |
|               |                       |                    |               |        |                 |                           |                           |                          |                           |                           |                          |                           |                           |
|               |                       |                    |               |        |                 |                           |                           |                          |                           |                           |                          |                           |                           |
|               |                       |                    |               |        |                 |                           |                           |                          |                           |                           |                          |                           |                           |
|               |                       |                    |               |        |                 |                           |                           |                          |                           |                           |                          |                           |                           |
|               |                       |                    |               |        |                 |                           |                           |                          |                           |                           |                          |                           |                           |
|               |                       |                    |               |        |                 |                           |                           |                          |                           |                           |                          |                           |                           |
|               |                       |                    |               |        |                 |                           |                           |                          |                           |                           |                          |                           |                           |
|               |                       |                    |               |        |                 |                           |                           |                          |                           |                           |                          |                           |                           |
|               |                       |                    |               |        |                 |                           |                           |                          |                           |                           |                          |                           |                           |
|               |                       |                    |               |        |                 |                           |                           |                          |                           |                           |                          |                           |                           |
|               |                       |                    |               |        |                 |                           |                           |                          |                           |                           |                          |                           |                           |
|               |                       |                    |               |        |                 |                           |                           |                          |                           |                           |                          |                           |                           |
|               |                       |                    |               |        |                 |                           |                           |                          |                           |                           |                          |                           |                           |
|               |                       |                    |               |        |                 |                           |                           |                          |                           |                           |                          |                           |                           |
|               |                       |                    |               |        |                 |                           |                           |                          |                           |                           |                          |                           |                           |
|               |                       |                    |               |        |                 |                           |                           |                          |                           |                           |                          |                           |                           |
|               |                       |                    |               |        |                 |                           |                           |                          |                           |                           |                          |                           |                           |
|               |                       |                    |               |        |                 |                           |                           |                          |                           |                           |                          |                           |                           |
| <b>TOTAL:</b> |                       |                    |               |        |                 | 3173                      | 1894                      | 5067                     | 0                         | 0                         | 0                        | 0                         | 0                         |

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## WETLANDS IN BUFFER IMPACTS SUMMARY

| SITE NO.      | STATION (FROM/TO) |  | WETLANDS IN BUFFERS       |                           |
|---------------|-------------------|--|---------------------------|---------------------------|
|               |                   |  | ZONE 1 (ft <sup>2</sup> ) | ZONE 2 (ft <sup>2</sup> ) |
|               |                   |  | 0                         | 0                         |
|               |                   |  |                           |                           |
|               |                   |  |                           |                           |
|               |                   |  |                           |                           |
|               |                   |  |                           |                           |
|               |                   |  |                           |                           |
|               |                   |  |                           |                           |
|               |                   |  |                           |                           |
|               |                   |  |                           |                           |
|               |                   |  |                           |                           |
|               |                   |  |                           |                           |
|               |                   |  |                           |                           |
|               |                   |  |                           |                           |
|               |                   |  |                           |                           |
|               |                   |  |                           |                           |
|               |                   |  |                           |                           |
|               |                   |  |                           |                           |
|               |                   |  |                           |                           |
|               |                   |  |                           |                           |
|               |                   |  |                           |                           |
| <b>TOTAL:</b> |                   |  | 0                         | 0                         |

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