

TIP PROJECT: 17BP.1.R.76

CONTRACT: DA00399

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GATES COUNTY

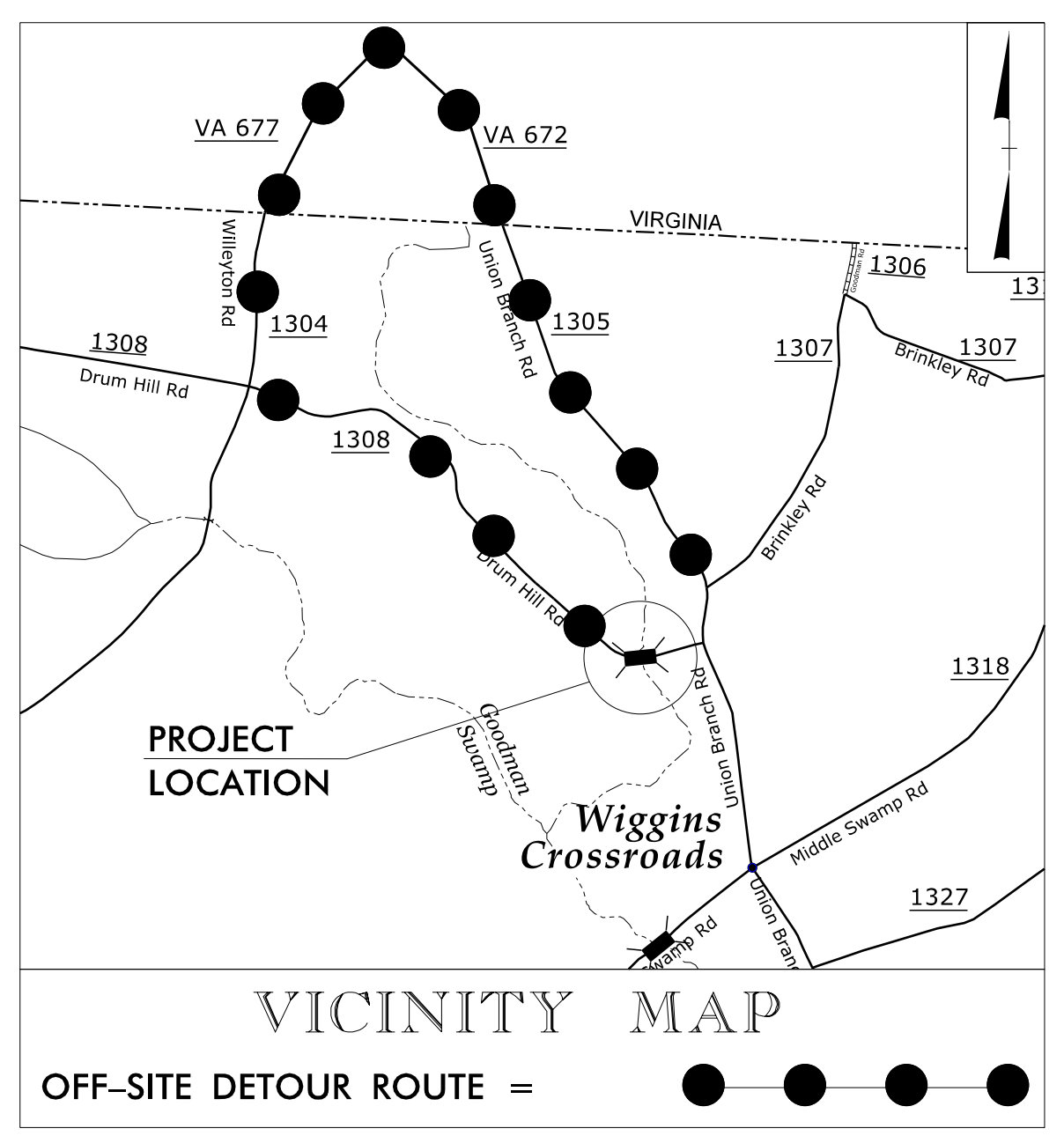
**LOCATION: BRIDGE NO. 20 OVER GOODMAN SWAMP ON SR 1308
(DRUM HILL ROAD)**

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

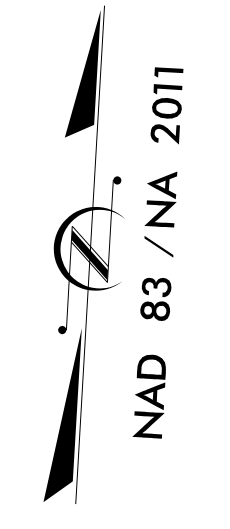
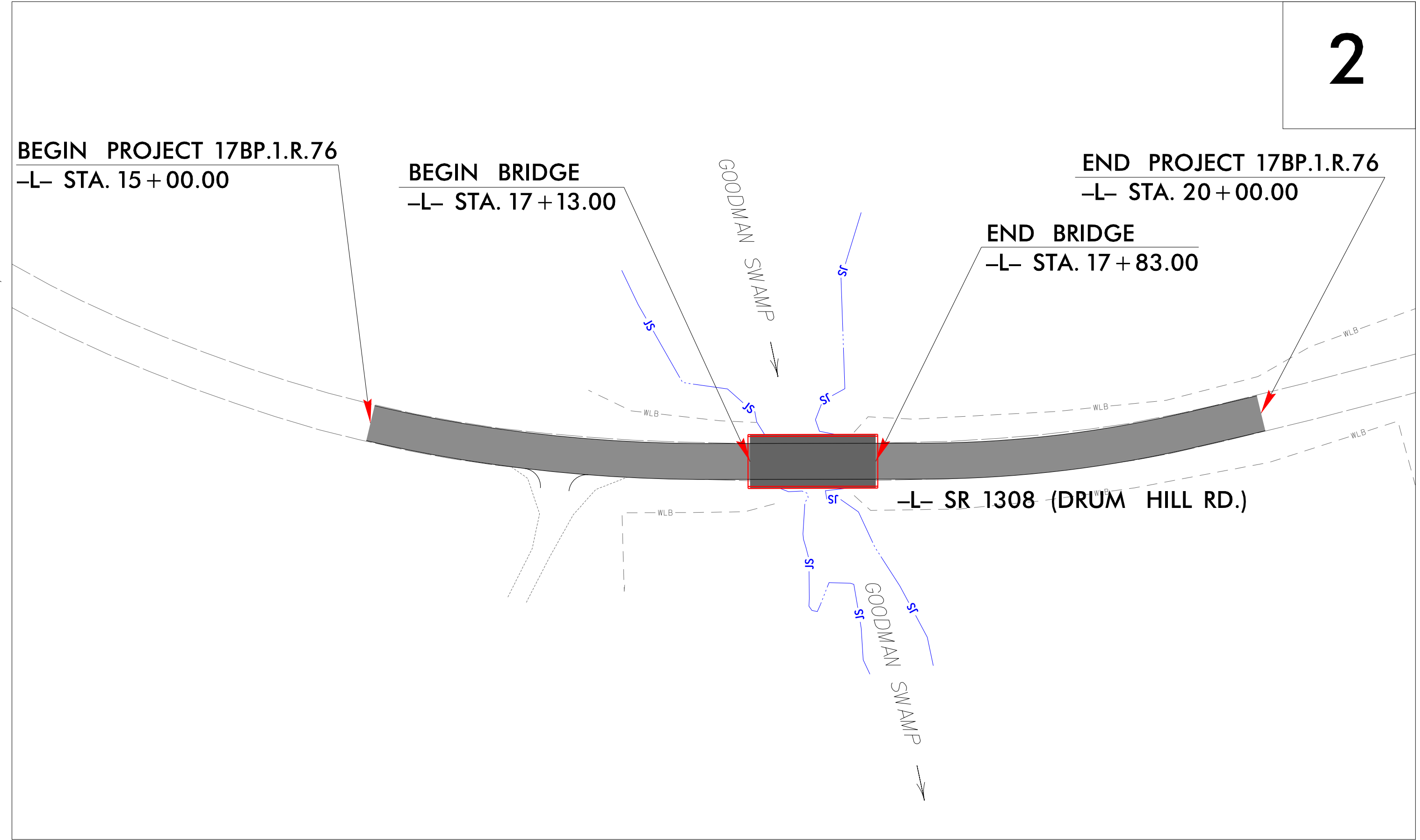
WETLAND AND SURFACE WATER IMPACTS PERMIT

| | | | |
|-----------------|-----------------------------|-------------|--------------|
| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
| N.C. | 17BP.1.R.76 | 1 | |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 17BP.1.R.76 | | PE | |
| | | | |
| | | | |
| | | | |
| | | | |

**PERMIT DRAWING
SHEET 1 OF 5**

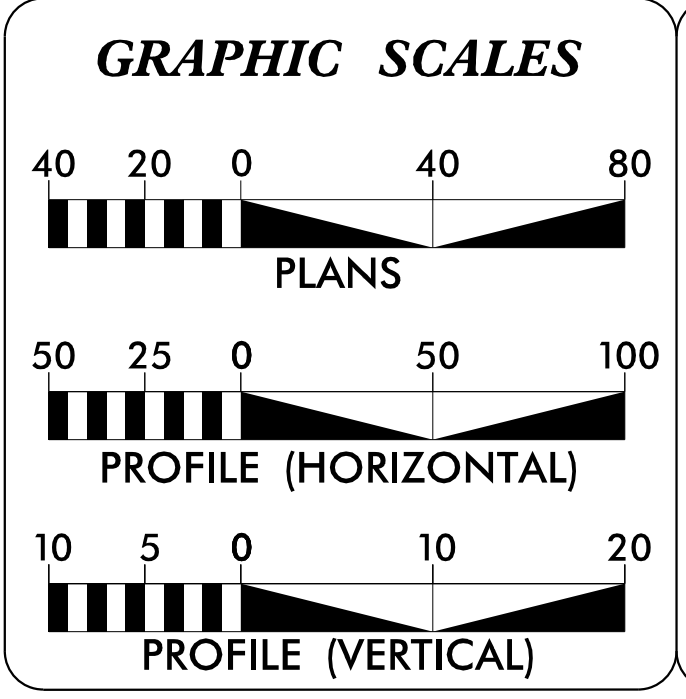


25% PLANS



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

**INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



DESIGN DATA

| | |
|--------------------|--------|
| ADT 2016 = | 410 |
| ADT = | |
| K = | % |
| D = | % |
| T = | % * |
| V = | 55 MPH |
| * TTST = | DUAL |
| FUNC CLASS = | LOCAL |
| "SUBREGIONAL TIER" | |

PROJECT LENGTH

| | |
|---|-------------|
| LENGTH OF ROADWAY PROJECT 17BP.1.R.76 = | 0.082 MILES |
| LENGTH OF STRUCTURE PROJECT 17BP.1.R.76 = | 0.013 MILES |
| TOTAL LENGTH OF PROJECT 17BP.1.R.76 = | 0.095 MILES |

V&M Vaughn & Melton
Consulting Engineers
1318-F Patton Ave. Asheville, NC 28806

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: _____

LETTING DATE:
FEBRUARY 21, 2018

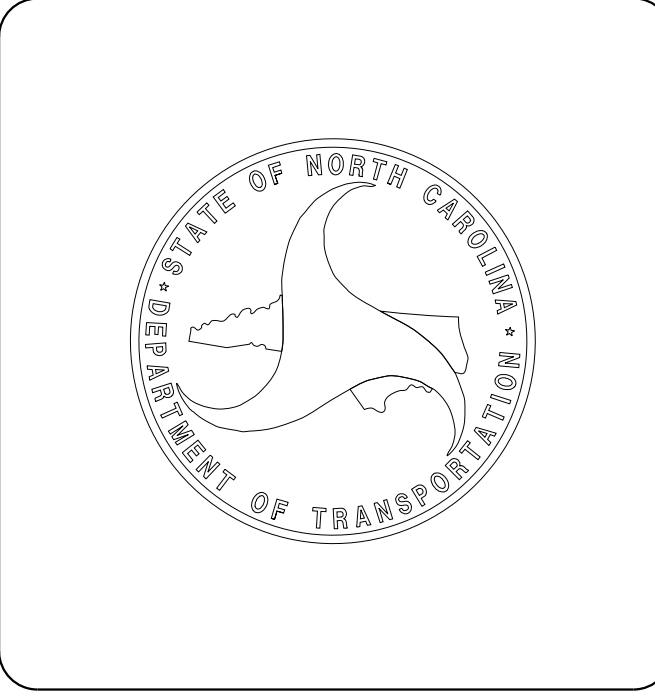
| |
|---|
| DANIEL W. GARDNER, JR., PE PROJECT ENGINEER |
| PAUL GARRETT, PE PROJECT DESIGN ENGINEER |
| JOHN S. ABEL, JR. NCDOT CONTACT |

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

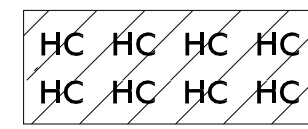
SIGNATURE: _____ P.E.



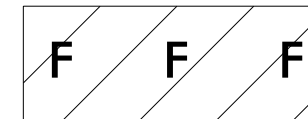
PERMIT DRAWING
SHEET 2 OF 5

DOCUMENT NOT CONSIDERED FINAL
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WETLAND AND SURFACE WATER IMPACTS

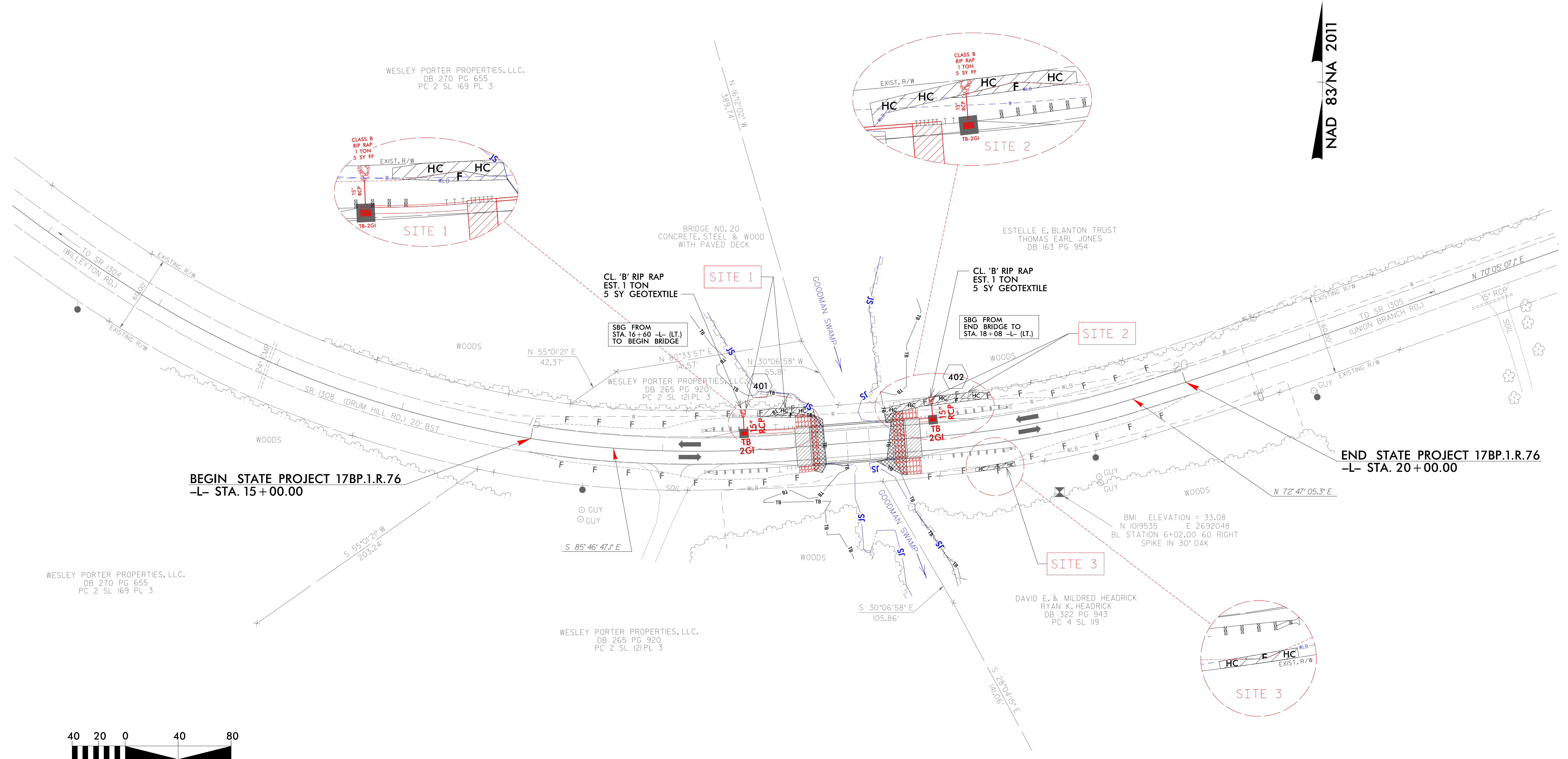


DENOTES HAND CLEARING
IN WETLAND - TEMPORARY IMPACTS



DENOTES PERMANENT FILL
IN WETLANDS

REVISIONS



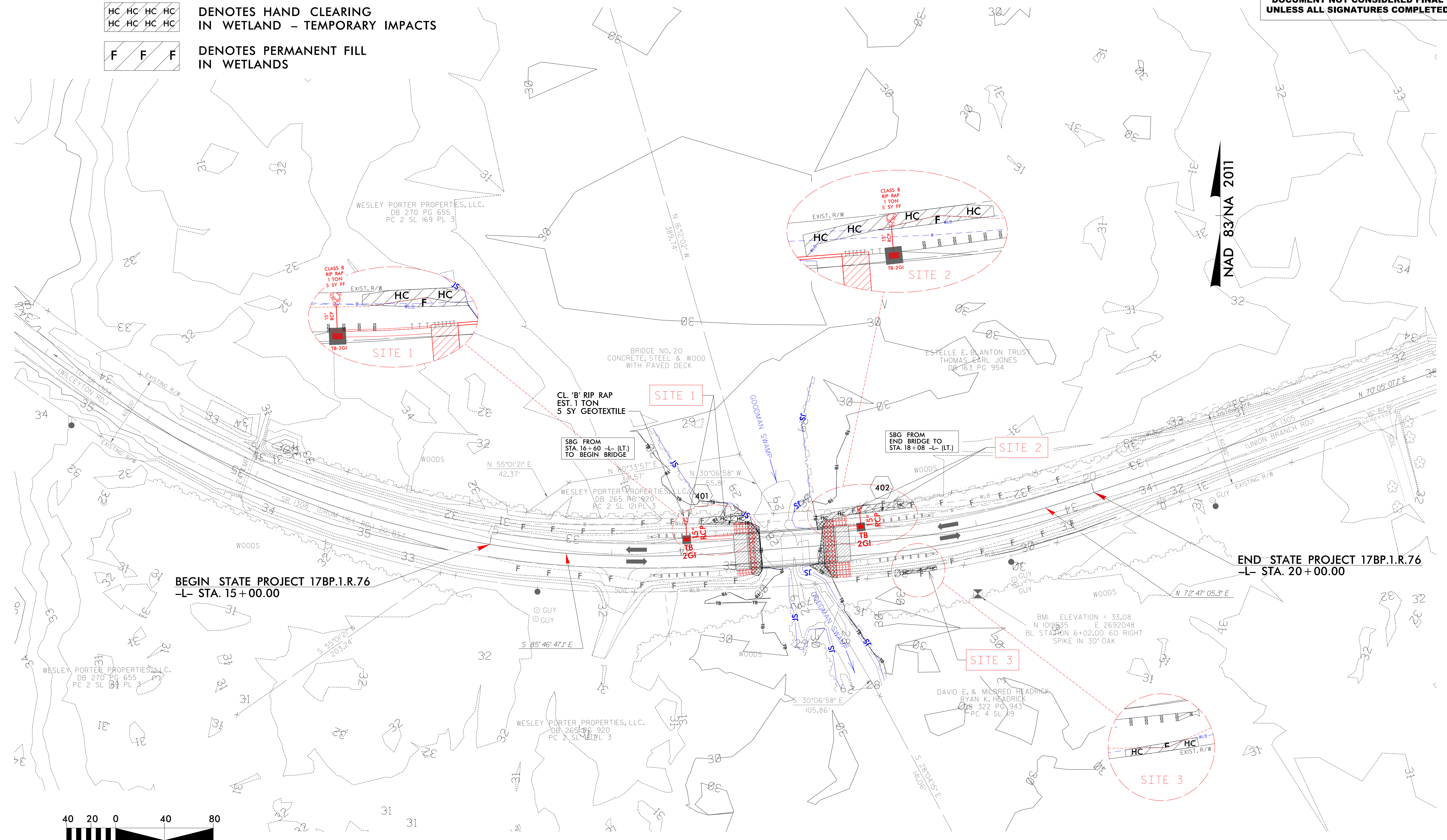
SEE SHEET 4 FOR -L- PROFILE

PERMIT DRAWING SHEET 3 OF 5

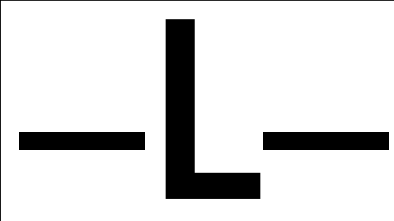
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

WETLAND AND SURFACE WATER IMPACTS

 DENOTES HAND CLEARING
 IN WETLAND - TEMPORARY IMPACTS
 DENOTES PERMANENT FILL
 IN WETLANDS



REVISIONS



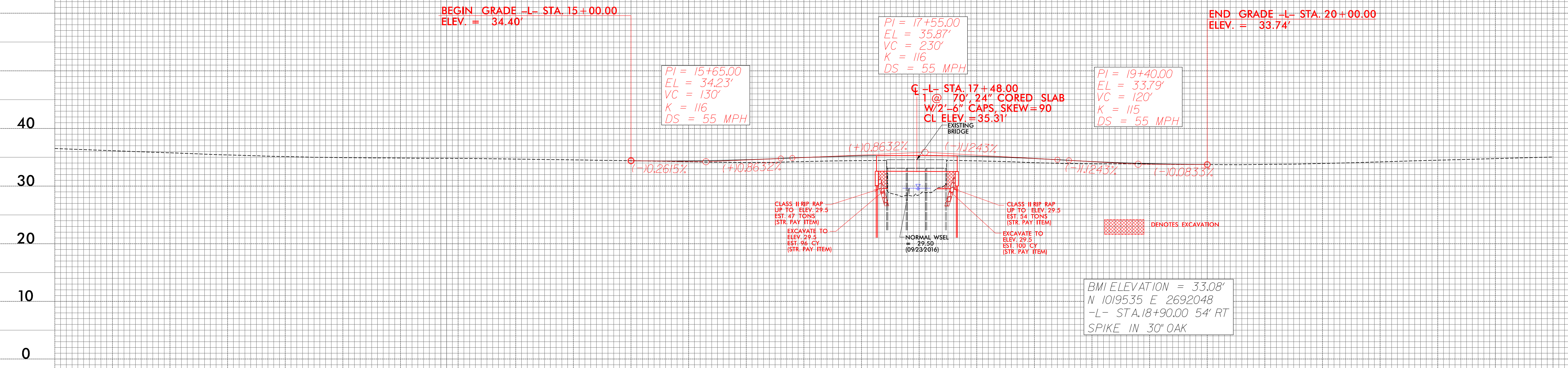
PERMIT DRAWING
SHEET 4 OF 5

DOCUMENT NOT CONSIDERED FINAL
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BRIDGE HYDRAULIC DATA

| | | |
|---------------------------------|--------------|-----|
| DESIGN DISCHARGE | = 650 | CFS |
| DESIGN FREQUENCY | = 25 | YRS |
| DESIGN HW ELEVATION | = 32.7 | FT |
| BASE DISCHARGE | = 990 | CFS |
| BASE FREQUENCY | = 100 | YRS |
| BASE HW ELEVATION | = 33.7 | FT |
| OVERTOPPING DISCHARGE | = 1400 | CFS |
| OVERTOPPING FREQUENCY | = 500 +/- | YRS |
| OVERTOPPING ELEVATION | = 34.1 | FT |
| | | |
| DATE OF SURVEY | = 09/23/2016 | |
| W.S.ELEVATION AT DATE OF SURVEY | = 29.50 | FT |

**OVERTOPPING OCCURS AT SAG POINT AT STA.20+00



**PERMIT DRAWING
SHEET 5 OF 5**

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

| WETLAND PERMIT IMPACT SUMMARY | | | | | | | | | | | | | | | | | | |
|--------------------------------------|----------|----------------------------|-----------------------|---------------------------------|------------------------------------|-----------------------------|--------------------------------|-----------------------------|--------------------------------|--------------------------------------|--------------------------------|---------------------------|------------------------------|-----------------------|--------------------------|---|-------------------------------------|----------------------------|
| Sheet No. | Site No. | Station (From/To) | Structure Size / Type | WETLAND IMPACTS | | | | | | | | SURFACE WATER IMPACTS | | | | | | |
| | | | | Permanent Fill In Wetlands (ac) | Permanent Fill In Wetlands (sq ft) | Temp. Fill In Wetlands (ac) | Temp. Fill In Wetlands (sq ft) | Excavation in Wetlands (ac) | Excavation in Wetlands (sq ft) | Mechanized Clearing in Wetlands (ac) | Hand Clearing in Wetlands (ac) | Permanent SW impacts (ac) | Permanent SW impacts (sq ft) | Temp. SW impacts (ac) | Temp. SW impacts (sq ft) | Existing Channel Impacts Permanent (ft) | Existing Channel Impacts Temp. (ft) | Natural Stream Design (ft) |
| 5 | | -L- 17+07 to 17+84 CL | 1 @ 70', 24" CSU | | | | | | | | | | | | | | | |
| | 1 | -L- 16+73 to 17+17 CL (LT) | Wetland Fill | 0.0018 | 78.30 | | | | | | | | | | | | | |
| | | | Rip Rap @ Pipe Outlet | 0.0010 | 45.00 | | | | | | | | | | | | | |
| | | | Hand Clearing | | | | | | | | 0.005 | | | | | | | |
| | 2 | -L- 17+70 to 18+49 CL (LT) | Wetland Fill | 0.0017 | 74.06 | | | | | | | | | | | | | |
| | | | Rip Rap @ Pipe Outlet | 0.0010 | 45.00 | | | | | | | | | | | | | |
| | | | Hand Clearing | | | | | | | | 0.009 | | | | | | | |
| | 3 | -L- 18+33 to 18+62 CL (RT) | Wetland Fill | 0.0005 | 19.75 | | | | | | | | | | | | | |
| | | | Hand Clearing | | | | | | | | 0.002 | | | | | | | |
| SHEET TOTAL: | | | | 0.006 | 262.11 | | | | | | 0.016 | | | | | | | |