

**NV5**  
 NV5 ENGINEERS & CONSULTANTS, INC.  
 8730 TRYON ROAD  
 CARY, NC 27518  
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 www.NV5.com

PROJECT REFERENCE NO. **R-5014** SHEET NO. **15**

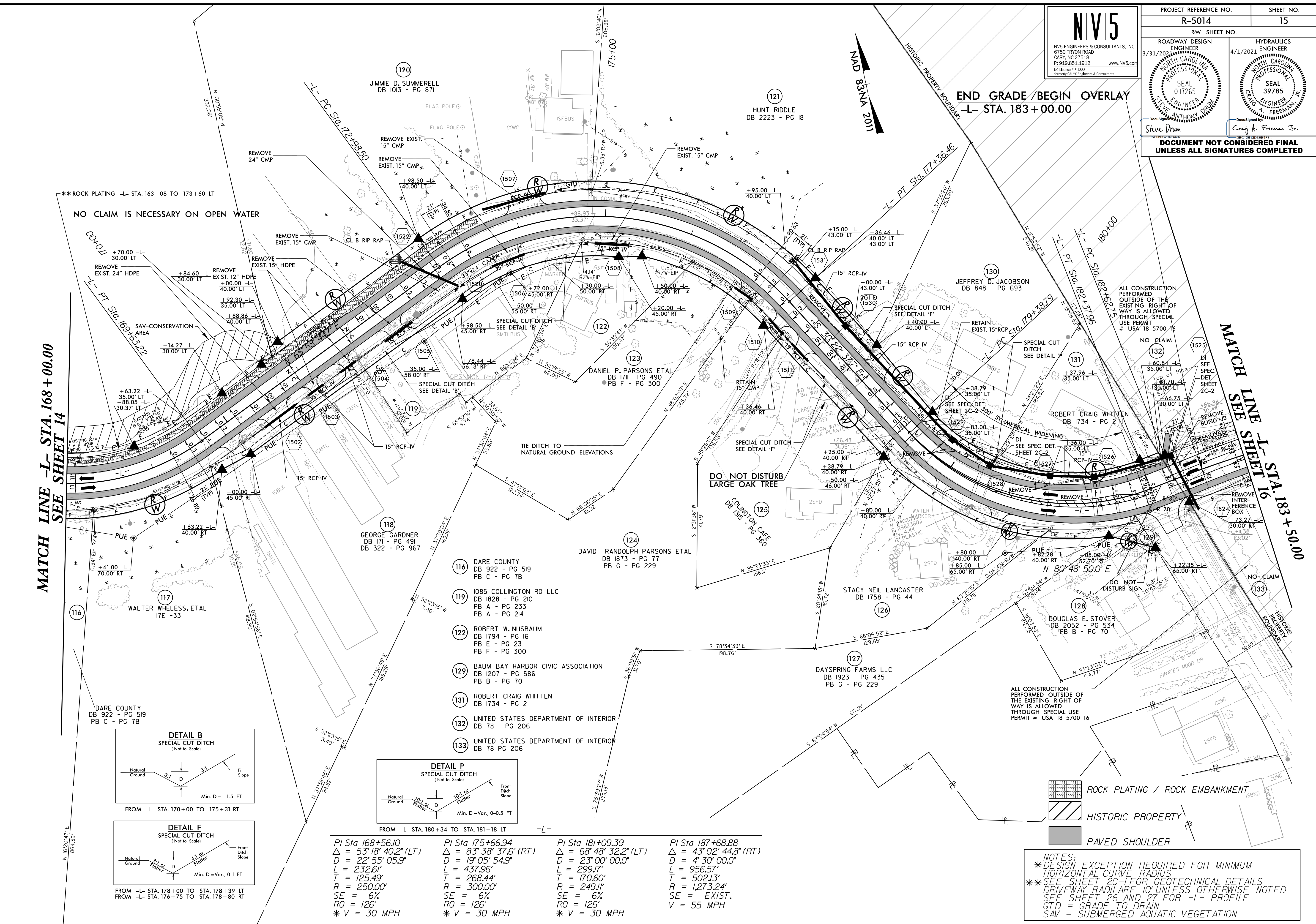
R/W SHEET NO. **ENGINEER** HYDRAULICS ENGINEER  
 3/31/2021 4/1/2021

ROADWAY DESIGN SEAL 017265  
 PROFESSIONAL ENGINEER  
 STATE OF NORTH CAROLINA

SEAL 39785  
 PROFESSIONAL ENGINEER  
 STATE OF NORTH CAROLINA

Steve Drum  
 Douglass J. Freeman Jr.

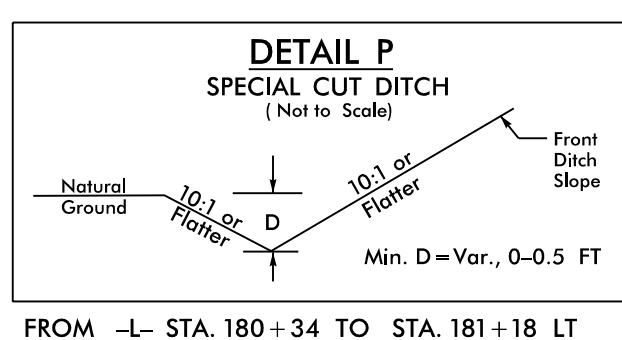
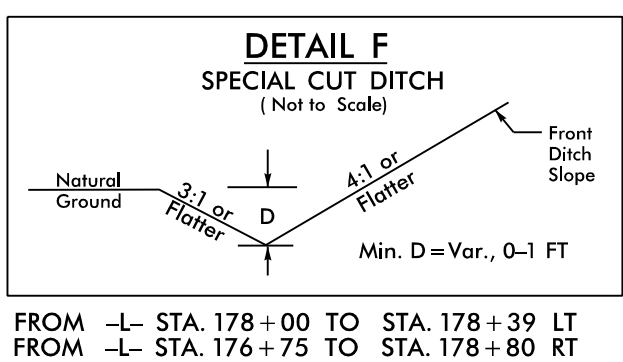
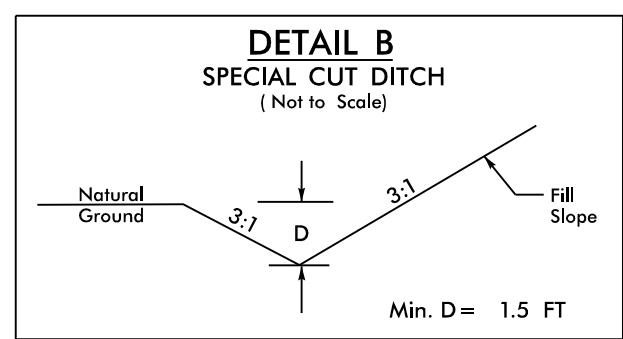
**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**



MATCH LINE -L- STA. 168 + 00.00  
SEE SHEET 14

MATCH LINE -L- STA. 183 + 50.00  
SEE SHEET 16

\*\*ROCK PLATING -L- STA. 163+08 TO 173+60 LT  
NO CLAIM IS NECESSARY ON OPEN WATER



PI Sta 168+56.10 $\Delta = 53^{\circ} 18' 40.2''$ (LT) $D = 22^{\circ} 55' 05.9''$ $L = 232.61'$ $T = 125.49'$ $R = 250.00'$ $SE = 6\%$ $RO = 126'$ $* V = 30$ MPH	PI Sta 175+66.94 $\Delta = 83^{\circ} 38' 37.6''$ (RT) $D = 19^{\circ} 05' 54.9''$ $L = 437.96'$ $T = 268.44'$ $R = 300.00'$ $SE = 6\%$ $RO = 126'$ $* V = 30$ MPH	PI Sta 181+09.39 $\Delta = 68^{\circ} 48' 32.2''$ (LT) $D = 23^{\circ} 00' 00.0''$ $L = 299.17'$ $T = 170.60'$ $R = 249.11'$ $SE = 6\%$ $RO = 126'$ $* V = 30$ MPH	PI Sta 187+68.88 $\Delta = 43^{\circ} 02' 44.8''$ (RT) $D = 4^{\circ} 30' 00.0''$ $L = 956.57'$ $T = 502.13'$ $R = 1,273.24'$ $SE = EXIST.$ $V = 55$ MPH
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- ROCK PLATING / ROCK EMBANKMENT
- HISTORIC PROPERTY
- PAVED SHOULDER

**NOTES:**  
 \* DESIGN EXCEPTION REQUIRED FOR MINIMUM HORIZONTAL CURVE RADIUS  
 \*\* SEE SHEET 26-1 FOR GEOTECHNICAL DETAILS  
 DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED  
 SEE SHEET 26 AND 27 FOR -L- PROFILE  
 GTD = GRADE TO DRAIN  
 SAV = SUBMERGED AQUATIC VEGETATION

8/17/19 3/31/2021