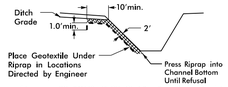
Docusign Envelope ID: FA11E346-CDE0-483F-A050-F10E9DFDD4BB

8/17/99

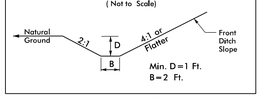
## DETAIL 1
RIP RAP AT EMBANKMENT
( Not to Scale)




Type of Liner= 39 TONS, 41 SY, CL I Rip-Rap, Keyed-In (-L- 11+93)
Type of Liner= 5 TONS, 5 SY, CL I Rip-Rap, Keyed-In (-L- 12+45)
Type of Liner= 43 TONS, 45 SY, CL I Rip-Rap, Keyed-In (-L- 13+25)
Type of Liner= 11 TONS, 11 SY, CL I Rip-Rap, Keyed-In (-L- 14+22)
Type of Liner= 10 TONS,10 SY, CL I Rip-Rap, Keyed-In (-DR1- 11+41)

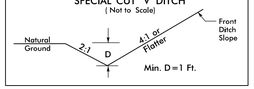
STA. 11+93 -L- RT
STA. 13+25 -L- LT
STA. 14+22 -L- LT
STA. 11+41 -DR1- RT

## DETAIL 3
SPECIAL LATERAL BASE DITCH
( Not to Scale)



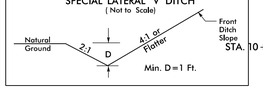

FROM 14+50 TO 15+00 -L- RT

## DETAIL 2
SPECIAL CUT 'V' DITCH
( Not to Scale)



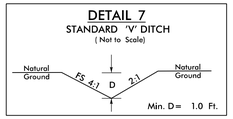

FROM STA. 12+15 TO STA. 12+50 -L- LT
FROM STA. 13+25 TO STA. 14+55 -L- LT

## DETAIL 4
SPECIAL LATERAL 'V' DITCH
( Not to Scale)




FROM STA. 10+73 TO STA. 12+00 -DR1- LT
FROM STA. 12+85 TO 13+09 -L- RT

## DETAIL 7
STANDARD 'V' DITCH
( Not to Scale)

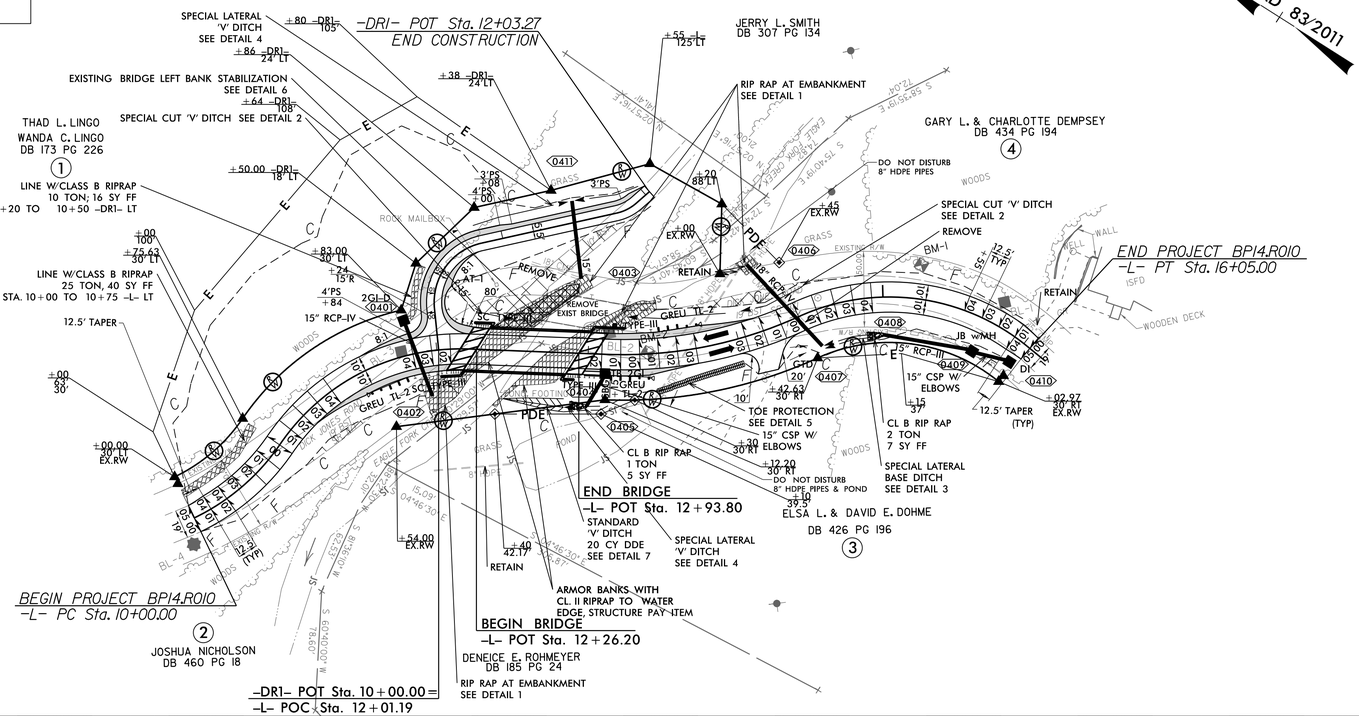



FROM STA. 12+45 TO STA. 12+85 -L- RT

GPS-101

PAVED SHLD.
PAVEMENT REMOVAL

NOTE: SEE SHEET 2B-1 FOR HORIZONTAL ALIGNMENT LAYOUT
NOTE: SEE S-1 THRU S-17 FOR STRUCTURE PLANS




| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| BP14-R010 | 4 |
| R/W SHEET NO. | |

ROADWAY DESIGN ENGINEER 7/22/2024
SEAL 043225 ENGINEER SEAN MELVILLE
Sean Melville
DocuSigned by: Sean Melville

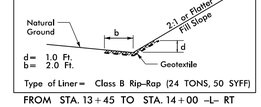
HYDRAULICS ENGINEER 7/22/2024
SEAL 043232 ENGINEER VIDYA MOHANDAS
Vidya Mohandas
DocuSigned by: Vidya Mohandas

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

PLANS PREPARED BY:

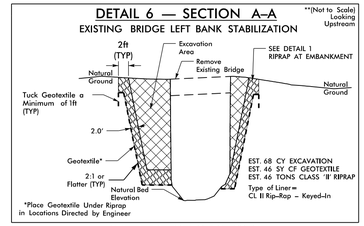
WSP USA
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
TEL: 1.919.836.4040
FAX: 1.919.836.4099
LICENSE NO. F-0165

## DETAIL 5
TOE PROTECTION
( Not to Scale)




Type of Liner= Class B Rip-Rap (24 TONS, 50 SYFF)
FROM STA. 13+45 TO STA. 14+00 -L- RT

## DETAIL 6 — SECTION A-A
EXISTING BRIDGE LEFT BANK STABILIZATION
**(Not to Scale) Looking Upstream




STA. -L- 12+60 TO 12+80 CL

## BRIDGE HYDRAULIC DATA

| | | |
|---|---|---|
| DESIGN DISCHARGE | = 1200 | CFS |
| DESIGN FREQUENCY | = 10** | YRS |
| DESIGN HW ELEVATION | = 2133.4 | FT |
| BASE DISCHARGE | = 2522 | CFS |
| BASE FREQUENCY | = 100 | YRS |
| BASE HW ELEVATION | = 2138.4 | FT |
| OVERTOPPING DISCHARGE | = 1620 +/- | CFS |
| OVERTOPPING FREQUENCY | = 25+/- | YRS |
| OVERTOPPING ELEVATION | = 2136.0 | FT |

**MAINTAINS EXISTING LEVEL OF SERVICE

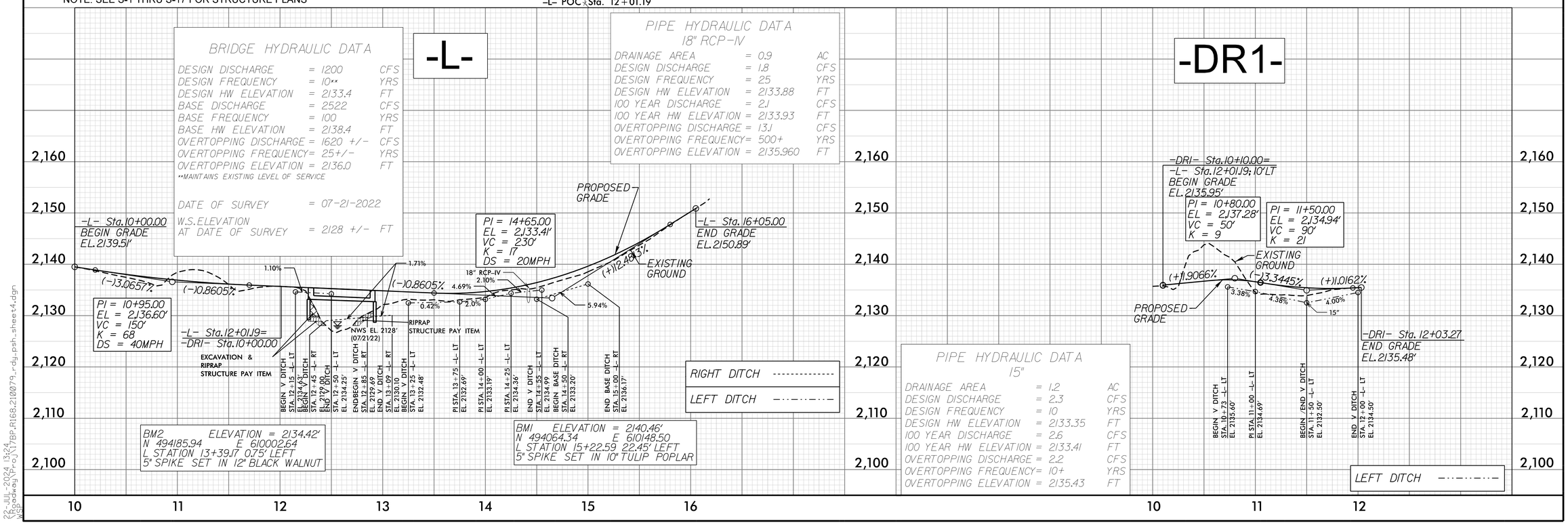
DATE OF SURVEY = 07-21-2022
W.S.ELEVATION AT DATE OF SURVEY = 2128 +/- FT

## PIPE HYDRAULIC DATA
18" RCP-IV

| | | |
|---|---|---|
| DRAINAGE AREA | = 0.9 | AC |
| DESIGN DISCHARGE | = 1.8 | CFS |
| DESIGN FREQUENCY | = 25 | YRS |
| DESIGN HW ELEVATION | = 2133.88 | FT |
| 100 YEAR DISCHARGE | = 2.1 | CFS |
| 100 YEAR HW ELEVATION | = 2133.93 | FT |
| OVERTOPPING DISCHARGE | = 13.1 | CFS |
| OVERTOPPING FREQUENCY | = 500+ | YRS |
| OVERTOPPING ELEVATION | = 2135.960 | FT |

## PIPE HYDRAULIC DATA
15"

| | | |
|---|---|---|
| DRAINAGE AREA | = 1.2 | AC |
| DESIGN DISCHARGE | = 2.3 | CFS |
| DESIGN FREQUENCY | = 10 | YRS |
| DESIGN HW ELEVATION | = 2133.35 | FT |
| 100 YEAR DISCHARGE | = 2.6 | CFS |
| 100 YEAR HW ELEVATION | = 2133.41 | FT |
| OVERTOPPING DISCHARGE | = 2.2 | CFS |
| OVERTOPPING FREQUENCY | = 10+ | YRS |
| OVERTOPPING ELEVATION | = 2135.43 | FT |




22-JUL-2024 13:24
Roadway\Proj\17BP.R168.210079-rdy-psh-sheet4.dgn
USER: