DocuSign Envelope ID: 45729A70-6A5A-487B-B770-E44AA7E89DBD

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.167	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER 12/6/2021 — NORTH CAROLINA PROFESSIONAL SEAL 33290 ENGINEER RONYELL A. THIEPEN — Docu Sign Envelope ID: 9C2B17A2DB3E4AF...

HYDRAULICS ENGINEER 12/6/2021 — NORTH CAROLINA PROFESSIONAL SEAL 043232 ENGINEER VIDYA MOHANDAS — Docu Sign Envelope ID: 5D7B5B5E2B4B4...

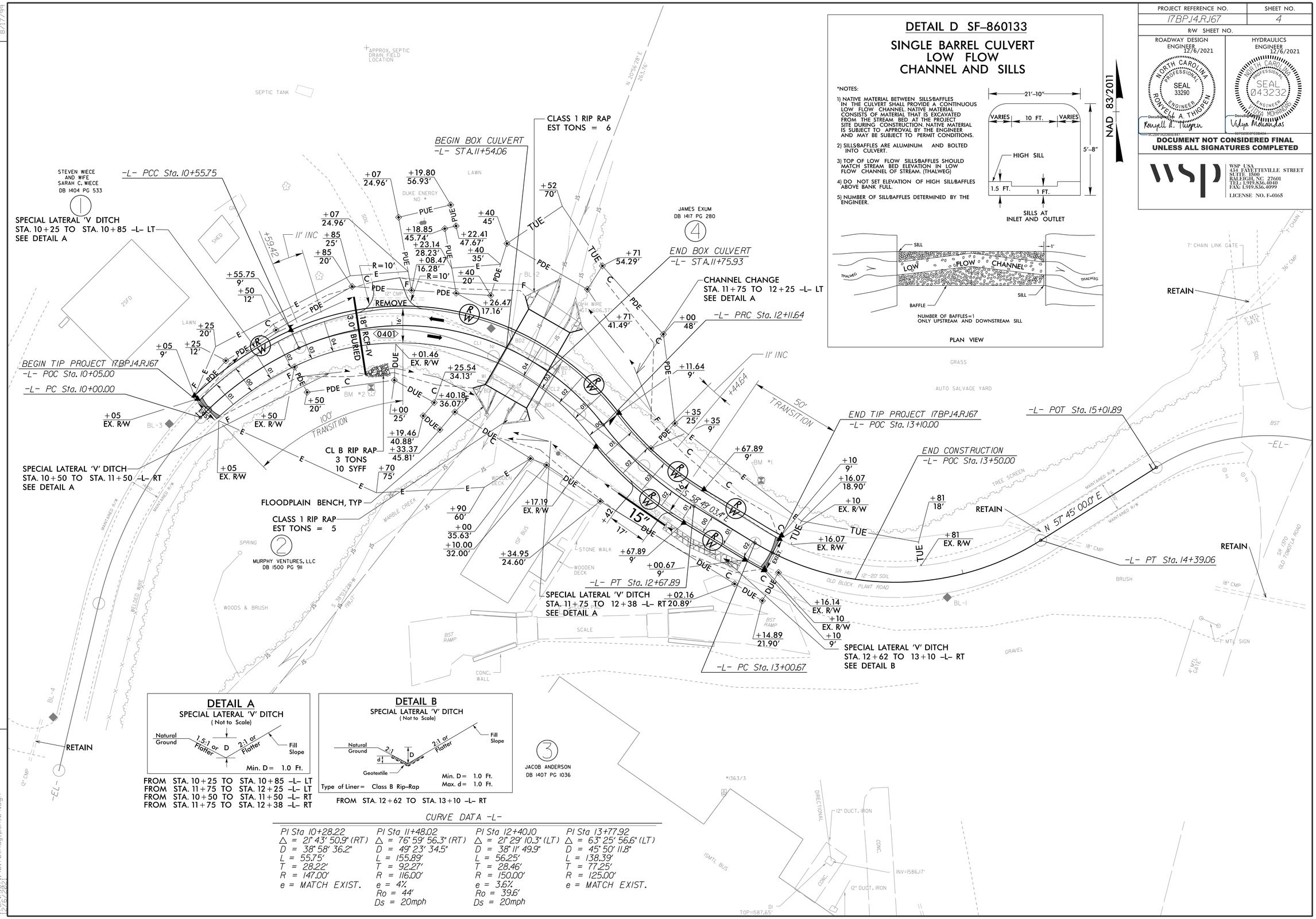
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

REVISIONS

8/17/99

NAD 83/2011



DETAIL D SF-860133

SINGLE BARREL CULVERT LOW FLOW CHANNEL AND SILLS

*NOTES:

1) NATIVE MATERIAL BETWEEN SILLS/BAFFLES IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL. NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED AT THE PROJECT SITE DURING CONSTRUCTION. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

2) SILLS/BAFFLES ARE ALUMINUM AND BOLTED INTO CULVERT.

3) TOP OF LOW FLOW SILLS/BAFFLES SHOULD MATCH STREAM BED ELEVATION IN LOW FLOW CHANNEL OF STREAM. (THALWEG)

4) DO NOT SET ELEVATION OF HIGH SILL/BAFFLES ABOVE BANK FULL.

5) NUMBER OF SILL/BAFFLES DETERMINED BY THE ENGINEER.

SILLS AT INLET AND OUTLET

NUMBER OF BAFFLES=1 ONLY UPSTREAM AND DOWNSTREAM SILL

PLAN VIEW

DETAIL A

SPECIAL LATERAL 'V' DITCH
(Not to Scale)

Min. D = 1.0 Ft.

FROM STA. 10+25 TO STA. 10+85 -L- LT
FROM STA. 11+75 TO STA. 12+25 -L- LT
FROM STA. 10+50 TO STA. 11+50 -L- RT
FROM STA. 11+75 TO STA. 12+38 -L- RT

DETAIL B

SPECIAL LATERAL 'V' DITCH
(Not to Scale)

Type of Liner = Class B Rip-Rap
Min. D = 1.0 Ft.
Max. d = 1.0 Ft.

FROM STA. 12+62 TO STA. 13+10 -L- RT

JACOB ANDERSON DB 1407 PG 1036

CURVE DATA -L-

PI Sta 10+28.22	PI Sta 11+48.02	PI Sta 12+40.10	PI Sta 13+77.92
Δ = 21° 43' 50.9" (RT)	Δ = 76° 59' 56.3" (RT)	Δ = 21° 29' 10.3" (LT)	Δ = 63° 25' 56.6" (LT)
D = 38° 58' 36.2"	D = 49° 23' 34.5"	D = 38° 11' 49.9"	D = 45° 50' 11.8"
L = 55.75'	L = 155.89'	L = 56.25'	L = 138.39'
T = 28.22'	T = 92.27'	T = 28.46'	T = 77.25'
R = 147.00'	R = 116.00'	R = 150.00'	R = 125.00'
e = MATCH EXIST.	e = 4%	e = 3.6%	e = MATCH EXIST.
	Ro = 44'	Ro = 39.6'	
	Ds = 20mph	Ds = 20mph	

10:37:01 AM
17BP.14.R.167_190170_Rdy_psh_04.dgn
12/6/2021