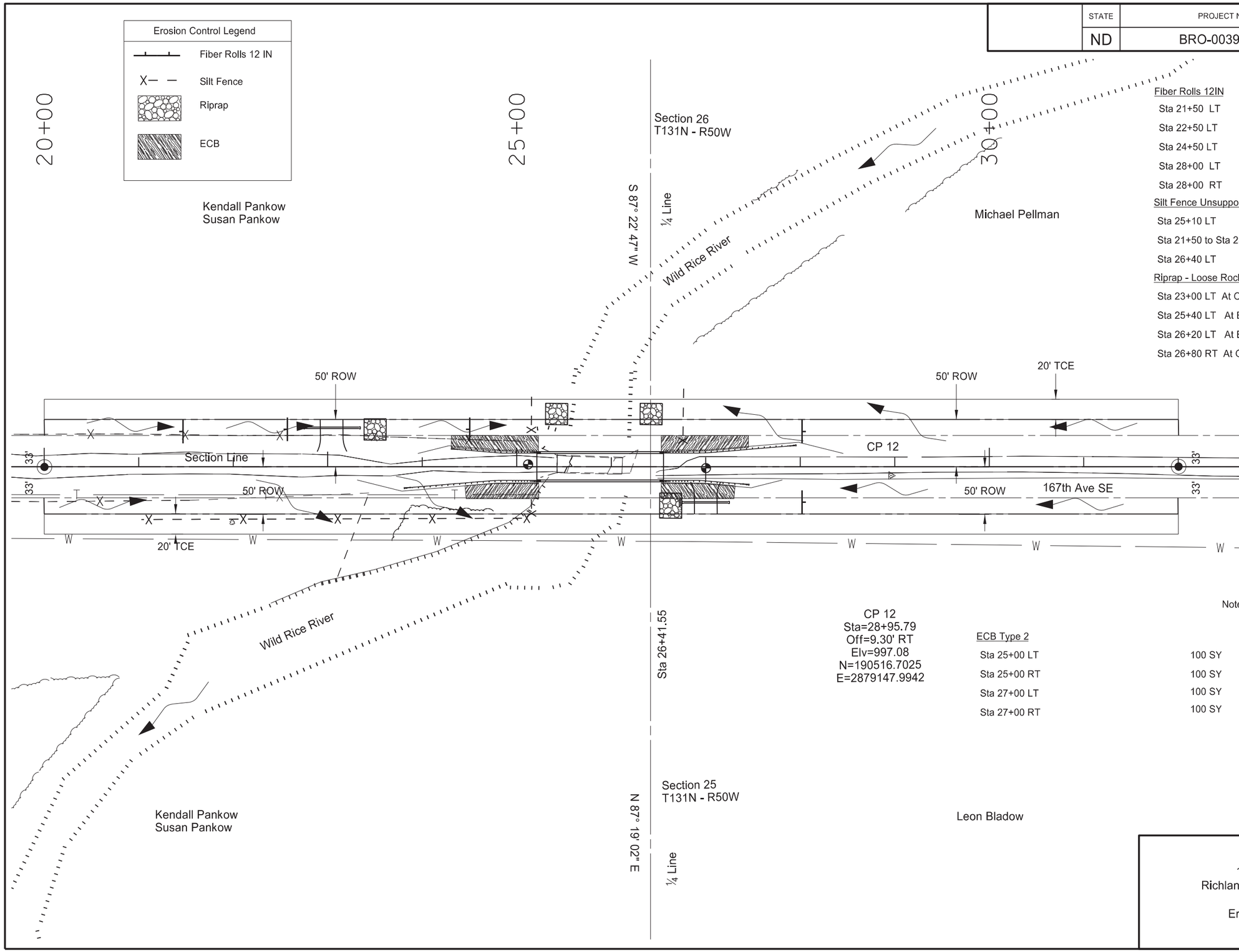
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	BRO-0039(039)	75	1



CP 12
Sta=28+95.79
Off=9.30' RT
Elv=997.08
N=190516.7025
E=2879147.9942

Fiber Rolls 12IN	
Sta 21+50 LT	20 LF
Sta 22+50 LT	20 LF
Sta 24+50 LT	20 LF
Sta 28+00 LT	20 LF
Sta 28+00 RT	20 LF
Silt Fence Unsupported	
Sta 25+10 LT	50 LF
Sta 21+50 to Sta 25+21 RT	425 LF
Sta 26+40 LT	40 LF
Riprap - Loose Rock	
Sta 23+00 LT At Outlet	8 CY
Sta 25+40 LT At Bank	8 CY
Sta 26+20 LT At Bank	12 CY
Sta 26+80 RT At Outlet	12 CY

ECB Type 2	
Sta 25+00 LT	100 SY
Sta 25+00 RT	100 SY
Sta 27+00 LT	100 SY
Sta 27+00 RT	100 SY

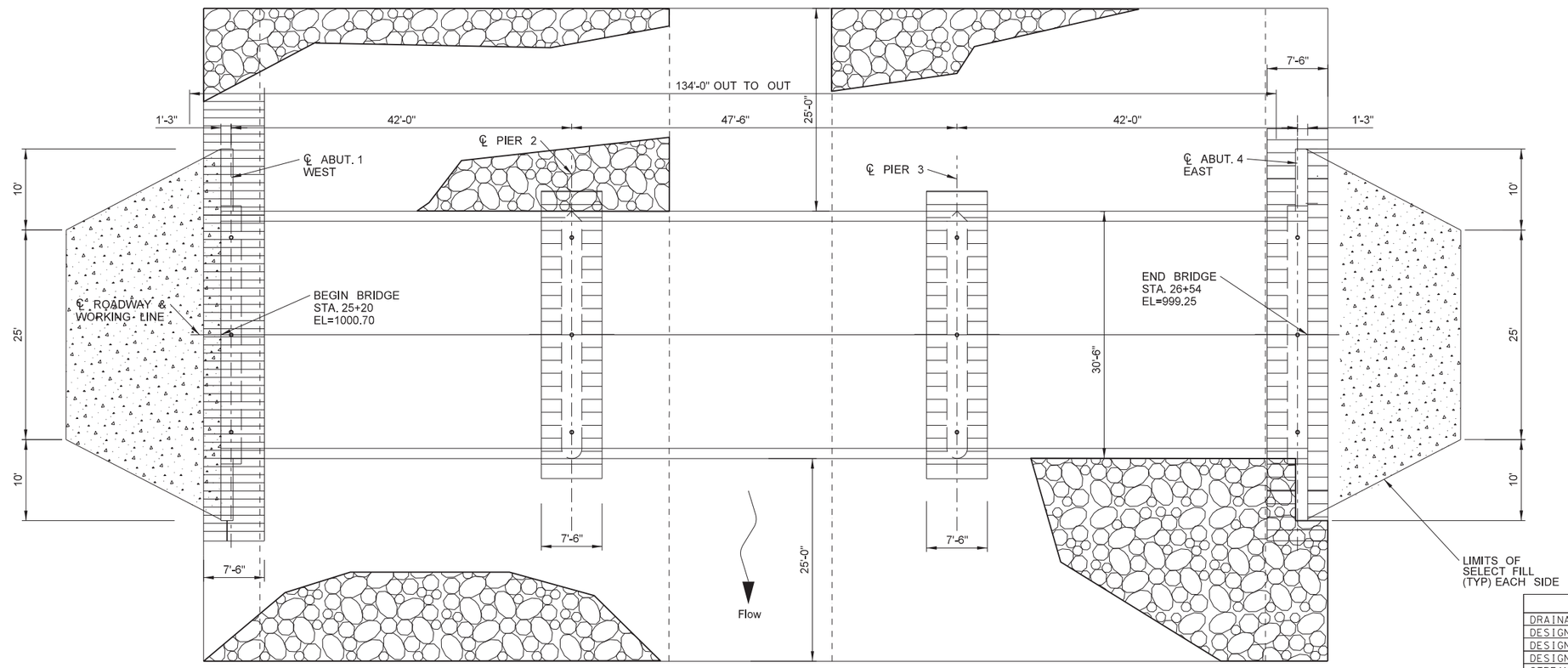
Note: Utility Locations are Approximate and Based on Owners Record Drawings. Telephone Line Closest to the Road is Expected to be Abandonded in 2012 as soon as a new line is installed east of the R/W.

This document was originally issued and sealed by Michael L. Bassingthwaite, Registration Number PE- 4788, on 4/6/2012 and the original document is stored at the Richland County Courthouse Wahpeton, ND

Wild Rice River
167th Avenue SE
Richland County, North Dakota

Erosion Control Plan

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	BRO-0039(039)	170	1



CLASS 1 EXCAVATION

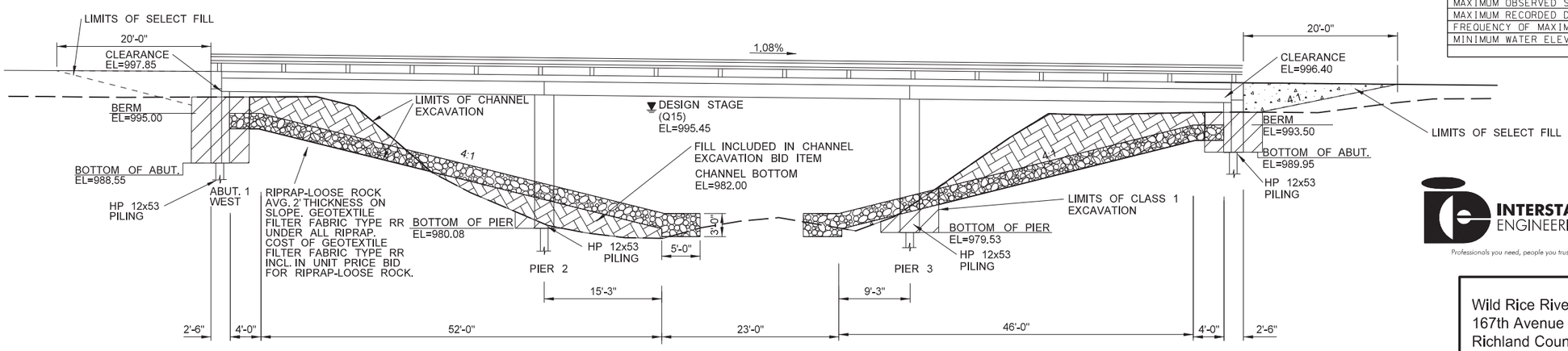
CHANNEL EXCAVATION

SELECT FILL

RIP RAP

PLAN

HYDRAULIC DESIGN DATA	
DRAINAGE AREA	1360 SQ MILES
DESIGN FREQUENCY	15 YEARS
DESIGN DISCHARGE	1386 CFS
DESIGN STAGE	995.45
STREAM GRADIENT	0.00015 FT/FT
WATERWAY PROVIDED BELOW DESIGN STAGE	119 FT
AVG. VELOCITY OF FLOW IN NATURAL CHANNEL	1.67 FPS
DEPTH OF FLOW	13.45 FT
VELOCITY OF FLOW UNDER BRIDGE	1.42 FPS
FREEBOARD PROVIDED	0.95 FT (MIN.)
100 YEAR FREQUENCY DISCHARGE	3128 CFS
100 YEAR FREQUENCY STAGE	997.21
MAXIMUM OBSERVED STAGE (1997)	UNKNOWN
MAXIMUM RECORDED DISCHARGE	UNKNOWN
FREQUENCY OF MAXIMUM FLOOD	UNKNOWN
MINIMUM WATER ELEVATION	±2 FT



ELEVATION

INTERSTATE ENGINEERING
Professionals you need, people you trust

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Wild Rice River
167th Avenue SE
Richland County, North Dakota

Bridge Excavation Limits/
Hydraulic Design Data