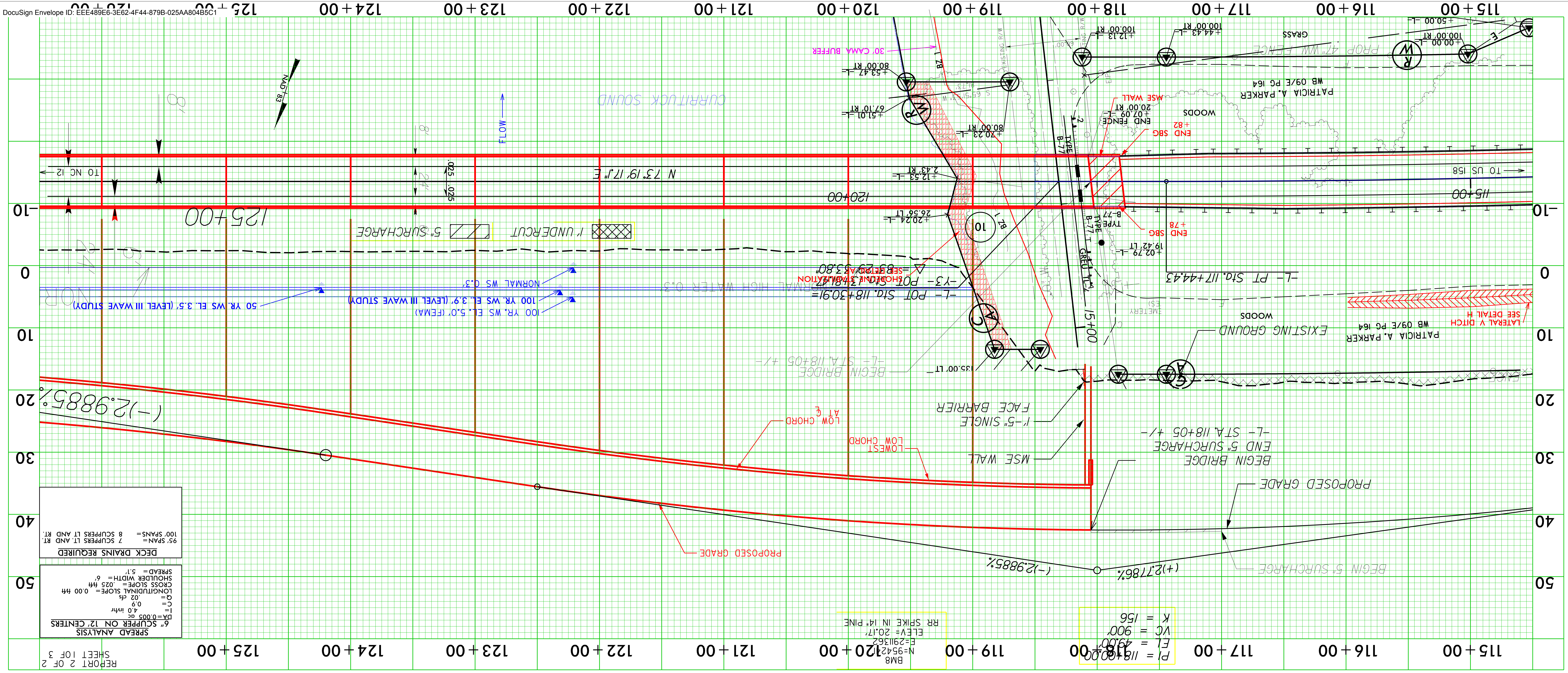

INFORMATION TO BE SHOWN ON PLANS

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Design: Discharge N/A c.f.s. Frequency 50 yr. yr. Elev. 3.5 ft.

Base Flood: Discharge N/A c.f.s. Frequency 100 yr. Elev. 3.9 ft.

Overtopping: Discharge N/A c.f.s. Frequency 500+ yr. Elev. 13.68 ft.
Sag sta 367+12.94 L2

ADDITIONAL INFORMATION AND COMPUTATIONS

SCOUR CALCULATIONS PROVIDED BY Moffatt & Nichol

LOCATION	TOTAL SCOUR (FEET)		FLOW VELOCITIES (FT/SEC)	
	100 yr.	500 yr.	100yr.	500yr.
SECTION 1 STA 119–169	10.1	11.2	6.0	7.5
SECTION 2 STA 170–173	13.4	14.3	7.5	8.5
SECTION 3 STA 174–248	11.0	11.7	7.5	8.5
SECTION 4 STA 249–363	8.2	9.1	4.0	5.0
SECTION 5 EAST 2 BENTS	9.3	10.4	4.0	5.0

LEVEL III WAVE STUDY DATA FOR COASTAL BRIDGE
BRIDGE # (NEW)MID-CURRITUCK
COUNTY CURRITUCK

LOCATION (AT THALWEG) CONVERSION FOR
LAT 36.34248 MSL TO NAVD DELTA
LONG -75.86605 SUBTRACT 0.32 FT

HYDRAULIC DATA	UNITS	100 YR	50 YR	10 YR
DEPTH-AVE. CURRENT SPEED	FT/SEC	3.8	3.2	2.2
WIND SPEED	MI/HR			
WATER SURFACE ELEVATION	FT MSL	4.2	3.9	2.8
	FT NAVD	3.9	3.5	2.5
WAVE CREST ELEVATION	FT MSL	8.1	7.3	5.0
	FT NAVD	7.7	7.0	4.7
SIGNIFICANT WAVE HEIGHT	FT	3.4	3.2	2.5

The nearest benchmark is up Albemarle Sound at Frog Island and it states:

This station has been determined to be Non-tidal for tidal datum purposes. There is either no measureable periodic rise and fall of the tide at this location, or it may be present but inconsistent, or the periodic tide is present and consistent, however the Mean Range of Tide (MN) is negligible, that is below the established tidal/non-tidal threshold of 0.03m (0.10ft). Only the datum of local Mean Sea Level (MSL) is published at these stations. For Nautical Charting Datum applications, a non-tidal Low Water Datum (LWD) is established as 0.50ft (0.15m) below MSL.

SITE DATA

Drainage Area N/A (INDETERMINATE - SOUND) Source N/A

River Basin PASQUOTANK Character RURAL COASTAL PLAINS

Stream Classification (Such as Trout, High Quality Water, etc.) SC

Data on Existing Structure N/A (NEW LOCATION)

Total Waterway Opening N/A s.f.
Waterway Opening Below 100yr. WS EL. N/A s.f.

Debris Potential: Low X Moderate .... High ......

Data on Structures Up and Down Stream N/A

Design Control Elev. N/A ft.

Gage Station No. N/A Period of Records N/A yrs.

Max. Discharge N/A c.f.s. Date N/A Frequency N/A

Historical Flood Information:

Date .... Elev. .... ft. Est. Freq. .... yr. Source .... Period of Knowledge .... yrs.

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Historical Scour Info. : General .... ft. Contraction .... ft. Local .... ft.

Channel Slope N/A ft/ft Source N/A Normal Water Surface Elev. 0.3 ft.

Manning's n: Left O.B. .... Channel .... Right O.B. .... Source ....

Flood Study /Status FEMA ZONE AE (EL 5) COASTAL STORM SURGE Floodway Established? N/A

Flood Study 100yr. Discharge N/A c.f.s. WS Elev.: With Floodway N/A ft. Without Floodway N/A ft.
@ River Station ?

DESIGN DATA

Hydrological Method LEVEL III WAVE STUDY DATA FOR COASTAL BRIDGE

Hydraulic Design Method LEVEL III WAVE STUDY DATA FOR COASTAL BRIDGE

Floods Evaluated:

@ River Station ?	Freq. (yr.)	Q (c.f.s)	Elev. (ft.)	Backwater (ft.)	Bridge Opening Velocity (f.p.s.)
	10	N/A	2.5	N/A	N/A
	50	N/A	3.5	N/A	N/A
	100	N/A	3.9	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A

Waterway Opening Provided Below: Design W.S. Elev. 54,335 s.f., 100yr W.S. Elev. 68,123 s.f., Total 2,968,376 s.f.,

Average Channel Velocity (Design) 3.2 f.p.s. Average Overbank Velocity (Design) NA f.p.s.

Computed Scour : General SEE BACK COVER ft. Contraction SEE BACK COVER ft. Local SEE BACK COVER ft.

Is a Floodway Revision Required? NO

REPORT 2 OF 2
SHEET 1OF 3

BRIDGE SURVEY & HYDRAULIC DESIGN REPORT

N. C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
HYDRAULICS UNIT
RALEIGH, N. C.

Stream CURRITUCK SOUND Struc. Inv. No. .... I.D. No. R-2576 Project No. 34470.1.TA1 PDF File R-2576_Currituck Sound_1OF 3.pdf

I.D. No. R-2576 Project No. 34470.1.TA1 Proj. Station 241+37.5 -L-

County CURRITUCK Bridge Over CURRITUCK SOUND Bridge Inv. No. ....

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Recommended Structure 1 @ 95' 72" MBT, 244 @ 100' 72" MBT, 2 @ 85' 54" MBT
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Latitude 36.34248 Longitude -75.86605

Statewide Tier ☒ Regional Tier ☐ Sub–Regional Tier ☐

Bench Mark is BM 8 RR SPIKE IN 14" PINE LOCATED 422' RIGHT OF STATION 119+10 -L-
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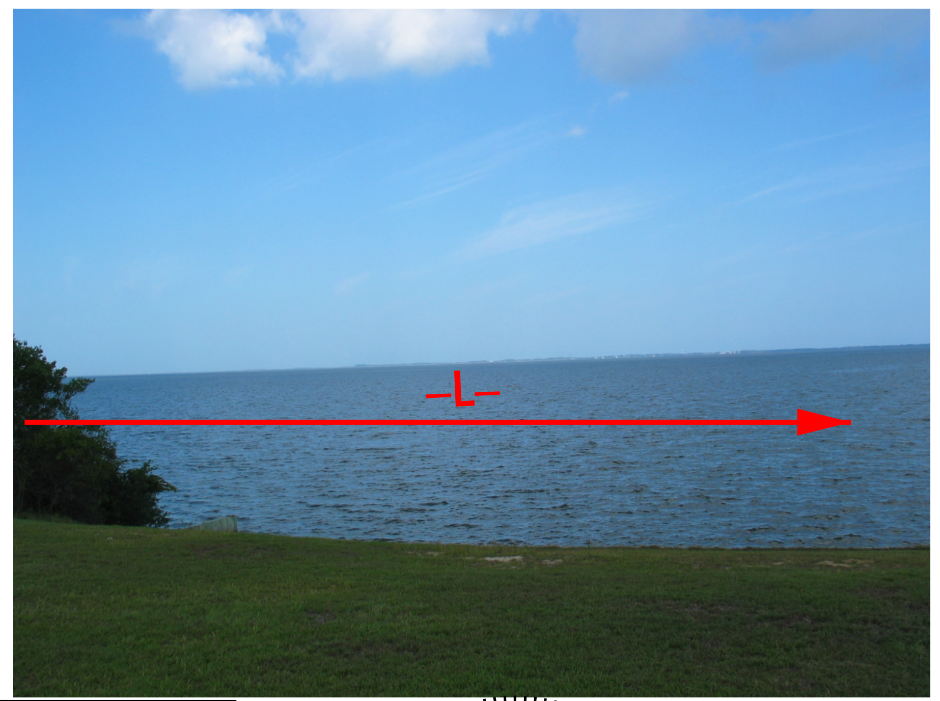

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

Designed by: M.S. PRICE, P.E.

Assisted by: ....

Project Engineer : J. L. LINDSEY, P.E.

Reviewed by: DocuSigned by: Ray D. Lovinggood 045BBB7F58224FE... 08/22/2023

SEAL 15470 JEFFREY G. SHELDEN
DocuSigned by: Jeffrey G. Shelden 8ABF006BBB6B4AB... 8/21/2023
MODELING AND SCOUR COMPS

SEAL 15833 JERRY L. LINDSEY
DocuSigned by: Jerry L. Lindsey 4A517106929444A... 8/21/2023
DRAFT & DECK DRAINAGE ONLY

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8/21/2023

KEVIN B. ALFORD
SEAL 31977

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DocuSigned by:
K. B. Alford
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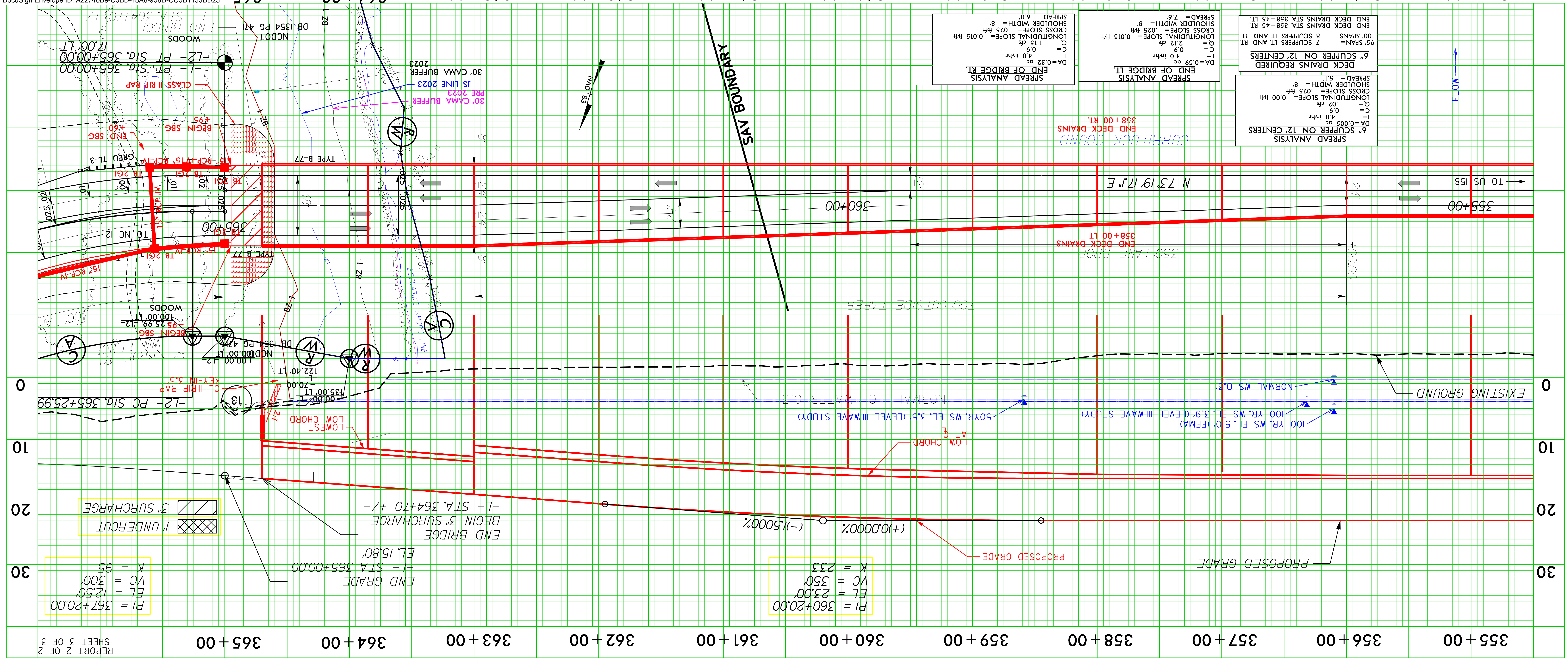

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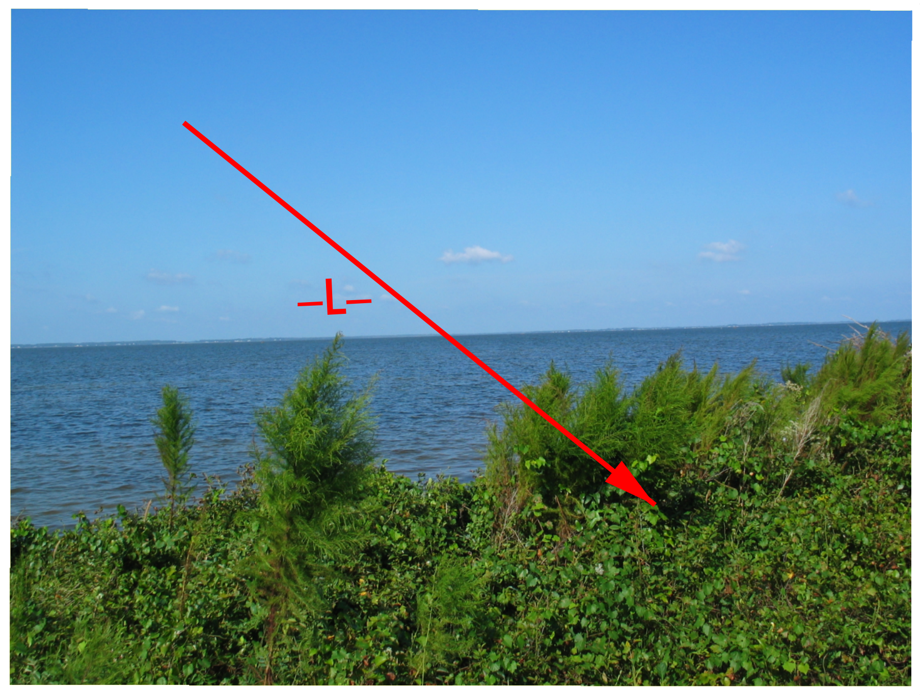

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