Table 4.2. Summary of Tidal Hydraulics at Upstream Face of Proposed SC 73 Bridge Over Withers Swash.

Horry Co.

Return Period	=	50 years (approximate incipient overtopping event)
Riverine Hydrology Data		
Effective Drained Area	=	2.2 mi^2
50-Year Discharge	=	1,654 cfs
Tidal Event Hydrology		
50-Year Maximum Discharge	=	1,275 cfs
50-Year WSEL	=	9.38 ft-NAVD
50-Year Average Velocity in Bridge Opening	=	2.55 ft/sec
Simulation Time Period	=	121.75
Tidal Event and Riverine Events Combined		
50-Year Peak Discharge	=	2,228 cfs
50-Year WSEL at Peak Discharge	=	10.5 ft-NAVD
50-Year Channel Velocity in Bridge Opening	=	4.4 ft/sec
Simulation Time Period	=	124 hrs

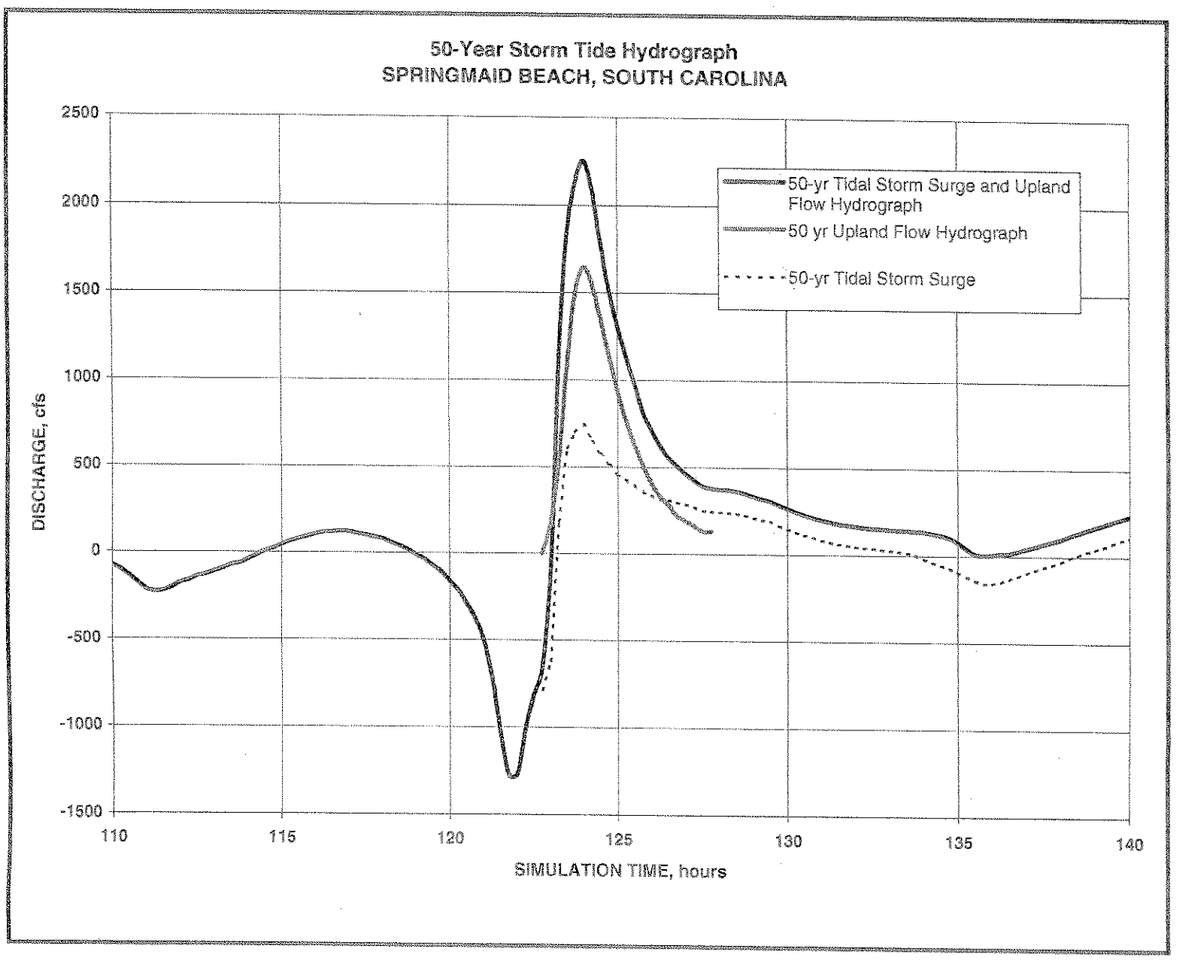
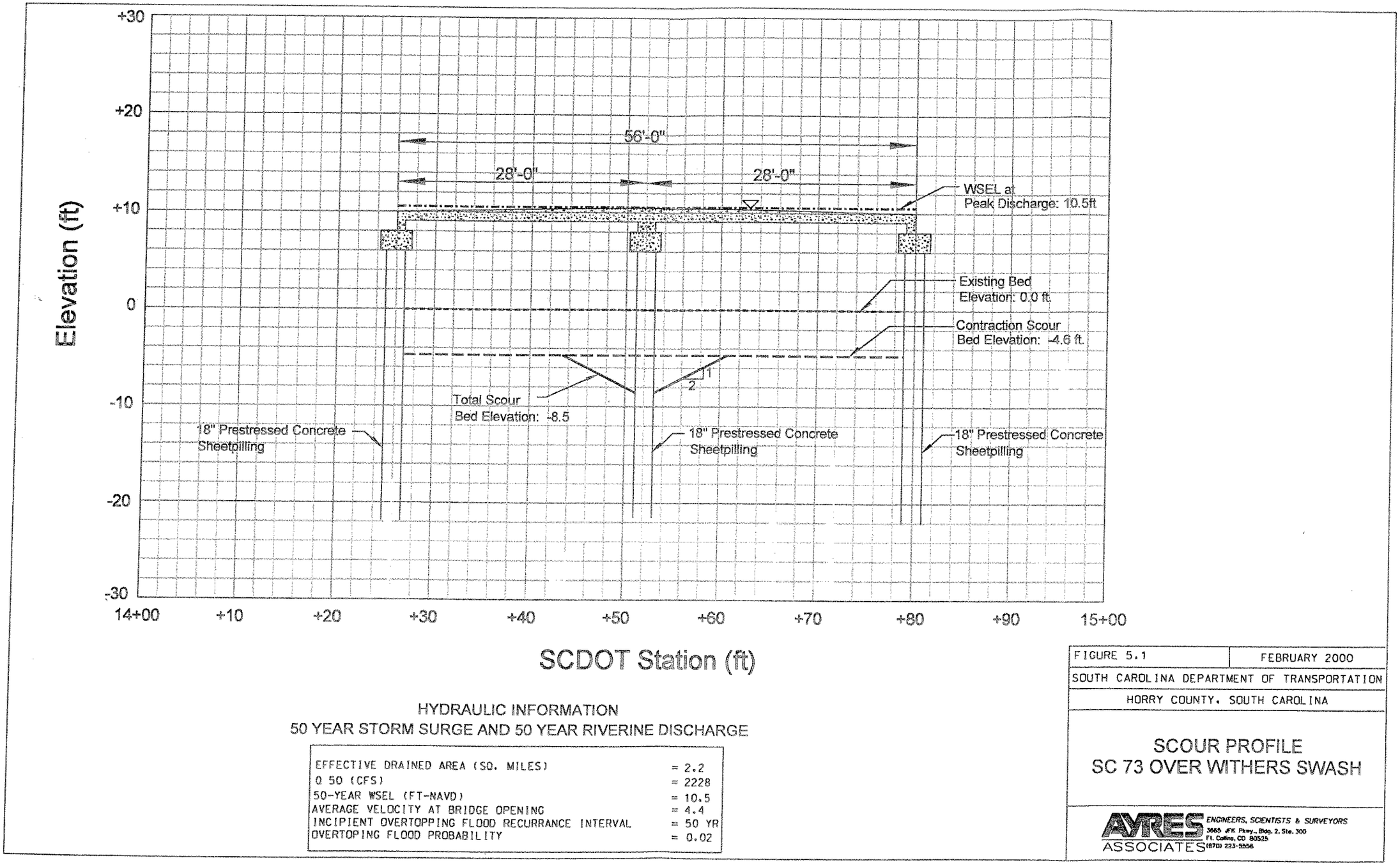


Figure 4.2. Tidal surge and upland flow hydrographs.



HYDRAULIC INFORMATION
50 YEAR STORM SURGE AND 50 YEAR RIVERINE DISCHARGE

EFFECTIVE DRAINED AREA (SQ. MILES)	= 2.2
Q 50 (CFS)	= 2228
50-YEAR WSEL (FT-NAVD)	= 10.5
AVERAGE VELOCITY AT BRIDGE OPENING	= 4.4
INCIPIENT OVERTOPPING FLOOD RECURRANCE INTERVAL	= 50 YR
OVERTOPING FLOOD PROBABILITY	= 0.02

FIGURE 5.1	FEBRUARY 2000
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION	
HORRY COUNTY, SOUTH CAROLINA	
SCOUR PROFILE SC 73 OVER WITHERS SWASH	
AYRES ASSOCIATES ENGINEERS, SCIENTISTS & SURVEYORS 3665 JFK Pkwy., Bldg. 2, Ste. 300 Ft. Collins, CO 80525 (970) 223-5556	

Figure 5.1. Scour profile.

B235688P.DGN

SHEET NO.	TOTAL SHEETS
6	20

Wing "A"

Existing Timber Bulkhead

Existing Precast Concrete Sheet Pile Retaining Wall

Wing "C"

Ebb Tide To Atlantic Ocean

6'-7" Sidewalk

1'-2"

Remove Existing 48' x 61.3' Reinforced Concrete Bridge and Precast Concrete Sheet Pile Retaining Walls and portions of Existing Timber Bulkheads in accordance with Sect. 202.03 of the Standard Specifications.

Note: For locations of utilities and structures near the bridge, see Road Plans.

Existing Precast Concrete Sheet Pile Retaining Wall

Sidewalk

Sidewalk

N

Approach Slab

6" Dia. Drains

90°-00" Typ.

Deflection Joint

To 3rd Ave. South

13'-00

14'-00

℄ Survey S.C. 73 & ℄ Bridge

22'-11"

45'-10" Roadway

22'-11"

Deflection Joint

15'-00

16'-00

S 65° 01' 00" W

P.T. Sta. 14+22.26 (for Horiz. Curve)

℄ Bent 2

Approach Slab

End Bridge & ℄ Bridge Abutment 3

Beg. Bridge & ℄ Bridge Abutment 1

To 6th Ave. South

*Drain Spacing 7'-6" 13'-0" 7'-6" 7'-6" Drain Spacing

Sidewalk

Sidewalk

End Railing Wall 3'-0" before End of Bridge on Right Side of bridge only. See shs. 16 and 18A for details.

*Drain spacing may be adjusted to avoid slab reinforcing steel. See shs. 16 - 18 for location of reinforcing steel.

Existing Precast Concrete Sheet Pile Retaining Wall

Wing "B"

6'-7" Sidewalk

1'-2"

Wing "D"

Withers Swash

Existing planter above existing sheet pile wall and existing timber bulkhead. Planter to be moved by the Contractor (See Road Plans).

Outside ends of Wings shall be tied into Existing Timber Bulkheads.

Existing Timber Bulkhead

▲Approximate location of function between existing sheet pile retaining wall and existing timber bulkhead.

PLAN

HORIZONTAL CURVE DATA

P.I. = 11+77.90
Δ = 12° 15' 54" (Rt.)
D = 2° 30' 00"
R = 246.24'
L = 490.60'
E = 13.19'
D.S. = 35 m.p.h.
S.E. = N.C.

VERTICAL CURVE DATA

Vertical Curve #1
P.I. Sta. = 13+25.00
P.I. El. = 8.630
V.C. = 50'
(-) 1.32% A (+) 0.22%

Vertical Curve #2
P.I. Sta. = 14+50.00
P.I. El. = 11.400
V.C. = 190'
(-) 0.22% A (-) 1.82%

Vertical Curve #3
P.I. Sta. = 15+75.00
P.I. El. = 9.120
V.C. = 50'
(-) 1.82% A (-) 12%

20'-0" Approach Slab | 28'-0" | 56'-0" | 28'-0" | 20'-0" Approach Slab

Beg. Approach Slab Sta. 14+24.00 E.O. El. 10.024

Beg. Bridge & ℄ Bridge Abutment 1 Sta. 14+24.00 F.G. El. 10.337

Approx. Exist. Ground Line 30' Lt. of ℄

℄ Bent 2 Sta. 14+68.00 F.G. El. 10.224

Approx. Exist. Ground Line ℄

End Bridge & ℄ Bridge Abutment 3 Sta. 14+80.00 F.G. El. 10.405

End Approach Slab Sta. 15+04.00 E.O. El. 10.025

Finished Grade

Hatched areas indicate existing fill to be removed after installation of sheet piling. (See Road Plans)

50 Year Scour

Approx. Exist. Ground Line 30' Rt. of ℄

18" Prestressed Concrete Sheet Piling

18" Sq. Prestressed Concrete Piling

18" Prestressed Concrete Sheet Piling

ABUTMENT OR BENT NO. 1 2 3

SECTION ALONG ℄ SURVEY S.C. 73

HYDROLOGY DATA

50 Year Storm Surge and 50 Year Riverine Discharge

Effective Drained Area (Sq. Miles) = 22
Q50 (CFS) = 2229
50 Year WSEL (Ft. NGVD 29) = 10.5
Average Velocity at Bridge Opening (Ft./S) = 4.4
Incipient Overtopping Flood Recurrance Interval (Years) = 50
Overtopping Flood Probability = 0.02

BM #1 Pk. Nail and Cap on ℄ at Sta. 14+22.26 El. 9.94'

Notes: "F" Denotes Fixed Bearing.

Water elevations will vary due to tidal conditions. Water elevations may also be affected by weather conditions and seasonal fluctuations.

The following Water Elevations are based on NGVD 29 and were recorded on gage located at Springmaid Pier between the years 1978 and 1986.

1. Mean High Water Elevation 2.80
2. Mean Higher High Water Elevation 3.17
3. High Water Elevation 7.07 (recorded on 11-1-87)

REV.			
REV.			
REV.			
REVIEWED			
QUAN.			
DR.	TBK	BWB	11-99
DES.			
	BY	CHK.	DATE

SOUTH CAROLINA
DEPARTMENT OF TRANSPARTATION
BRIDGE DESIGN COLUMBIA, S.C.

PLAN & PROFILE REPLACE BRIDGE OVER WITHERS SWASH

FILE NO.	ROUTE	COUNTY	DRAWING NO.
26.105A	S.C. 73	HORRY	