Scour Summary Sheet for Span Bridges

Form 2605
(Rev. 03/24)

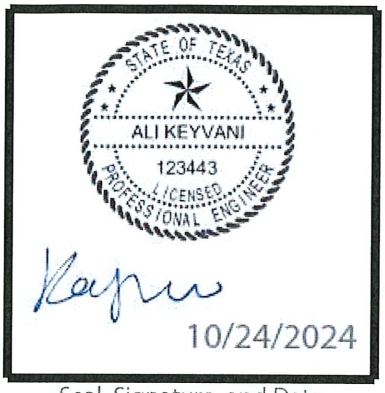
DISTRICT: 12 - HOU - HOUSTON
COUNTY: 085 - GALVESTON
NBI#: 12-085-0-E000-12-001

FEATURE CARRIED: W BAY AREA BLVD SB
FEATURE CROSSED: MAGNOLIA CREEK
CSJ: 8401-12-002

Recommended Scour Coding(s)

NBI CODINGS		
Item	Description	Coding
Item 113	Scour Critical Bridges	3
Item 113.1	Scour Plans of Action	
Item 113.2	Unknown Foundations	

SNBI CODINGS		
Item	Description	Coding
B.C.11	Scour Condition (Observed Scour Only)	5
B.AP.03	Scour Vulnerability	D
B.AP.04	Scour Plan of Action	N
B.AP.03.1	Unknown Foundations	



Seal, Signature, and Date

Engineer of Record for the Recommended Scour Coding(s): Ali Keyvani

Date of Recommendation: Oct 24, 2024

SCOUR EVALUATION DETAILS

Date of Scour Evaluation: Oct 24, 2024

Engineer of Record for Scour Evaluation: Ali Keyvani

Scour Evaluation Method

- ☐ Detailed Hydraulic Analysis (indicate method below)
- ☑ Scour Vulnerability Assessment (Form 537)
- ☐ Scour Vulnerability Screening (Form 538)
- ☐ Other: Scour Analysis was not used to evaluate item 113 as there is enough inspection history to use SVA.

FOUNDATION DETAILS

☐ The foundation is protected by a non-erodible stratum. (Describe below.)

Refer to Chapter 7 of the TxDOT Scour Evaluation Guide.

List any foundation assumption below:

UNKNOWN FOUNDATION DETAILS

List any foundation assumption below:

Refer to Chapter 6 of the TxDOT Scour Evaluation Guide.

Plan of Action for Unknown Foundation:

Estimated Time of Completion:

INSPECTION DETAILS

Date of Most Recent Inspection: Dec 13, 2023

B.C.10 Channel Protection Rating: 6. Satisfactory

Scour Countermeasure Condition (select one): Designed and functioning countermeasure installed

Riprap is installed on bridge abutments as part of the original design

SCOUR DEPTHS

☑ Scour depths are measured from the as-built channel profile.

☐ Scour depths are measured from:

Abutment or Bent #	Abut #1	2	Abut #3		
yab ☑ or yar ☐	27.50′	30.00′	27.50′		
yal	45.00′	90.00′	45.00′		
Max Allowable Scour Depth1, ya	27.50′	30.00′	27.50′		
Max Possible Scour Depth2					
Calculated Contraction Scour	N/A	2.80'	N/A		
Calculated Pier Scour	N/A	7.10'	N/A		
Total Calculated Scour Depth	N/A	9.90'	N/A		
Observed Scour Depth	0.00′	1.30′	1.50′		

Notes: (1) Min (yar or yab, or yal). (2) ONLY applicable if a non-erodible stratum is present.

Abutment Protection Condition: (Describe below) None or Minor ☐ Moderate ☒ Major ☐

B.C.09 Channel Condition Rating: 5. Fair

Refer to Fig. 8-2 of the TxDOT Scour Evaluation Guide.

Based on a site visit, riprap toe wall on Abutment 3 has been exposed up to 1.50 ft with undermining extending up to 12.00 ft from face of exposed toe wall.

TRIGGER ELEVATION & FUTURE ACTION

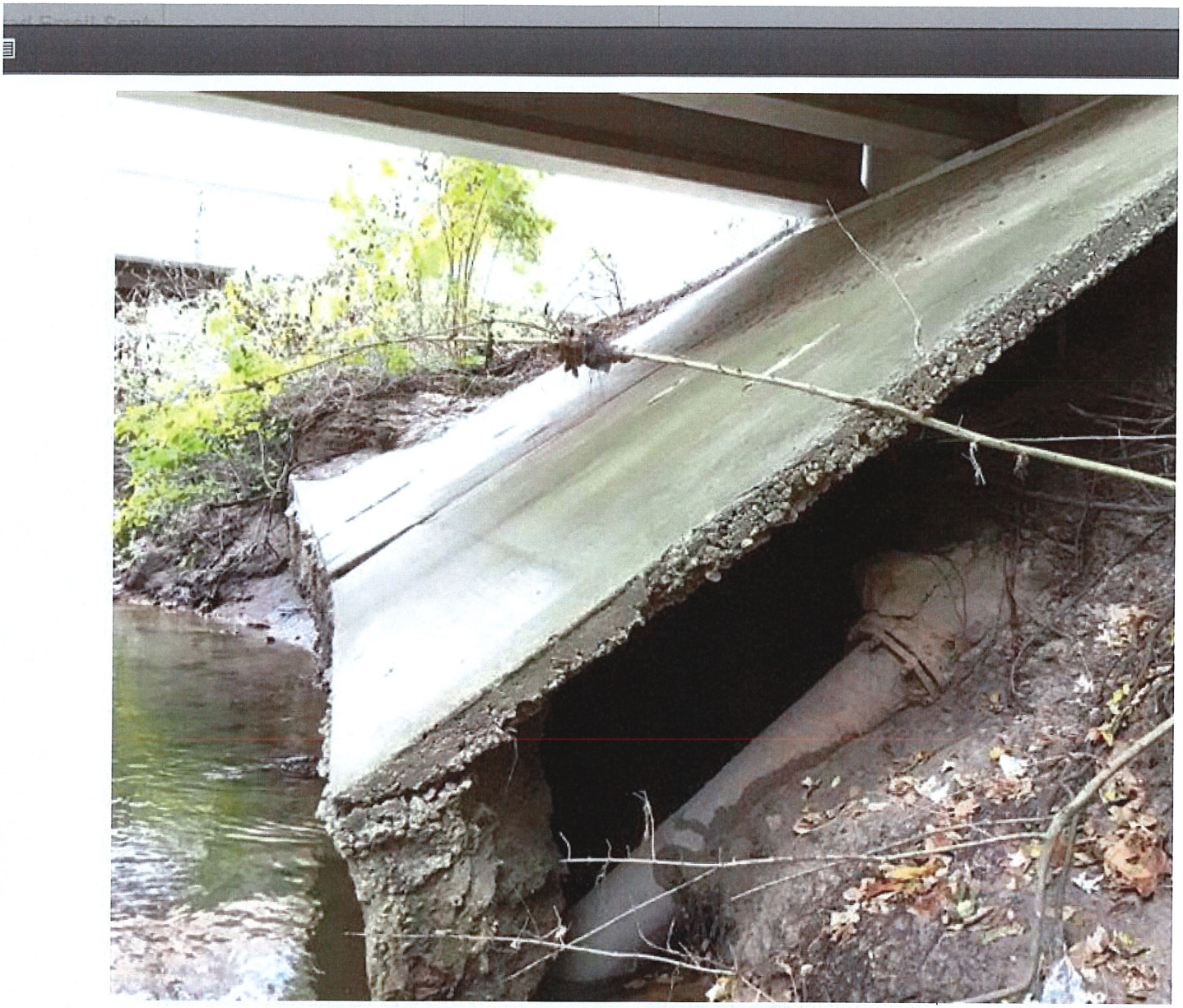
Refer to Chapter 10 of the Scour Evaluation Guide.

Item 113 was evaluated based on the SVA. Trigger elevation for Abutment 3 is set at 16.00 ft (bottom of pile cap). According to basis of item 113 coding table (Table 8-5 of the TxDOT Bridge Scour Guide), item 113 is 3. Plan of action is required. We recommend an updated scour analysis based on 2023 TxDOT scour guidelines.

FUA 541754 describes the scour issues at abutment 3 riprap. See photo below

Please let me know if you have any additional questions or would like to set up a good time to discuss this long email. I apologize.

Have a great weekend.



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