New York State Department of Transportation
General Bridge Inspection Report

Inspection Date: May 11, 2016

Structure Information

BIN: **5510130**
Feature Carried: 90IX
Feature Crossed: BEAR TRAP CREEK
Orientation: 3 - EAST

Region: 03 - SYRACUSE
County: ONONDAGA
Political Unit: Town of SALINA
Approximate Year Built: 1946

Primary Owner: 2L - NYS Thruway Authority
Primary Maintenance Responsibility: 2L - NYS Thruway Authority
General Type Main Span: 1 - Concrete, 19 - Culvert
This Bridge is not a Ramp
Number of Spans: 2

Postings

Posted Vertical Clearance On: Not Posted
Posted Vertical Clearance Under: Not Posted
Bridge Load Posting: Not Posted

Number of Flags Issued

Red PIA: 0
Red: 0
Yellow: 0
Safety PIA: 0

New York State Inspection Overview

General Recommendation: 4

Federal NBI Ratings

NBI Deck Condition: N
NBI Superstructure Condition: N
NBI Substructure Condition: N
NBI Channel Condition: 6
NBI Culvert Condition: 4

Action Items

Non-Structural Condition Observations noted: YES
Vulnerability Reviews Recommended: NO
Diving Inspection Requested: NO
Further Investigation Requested: NO

Inspector & Reviewer Signature Information

Inspection Signature: Douglas Hilleges, P.E. 63759
Date: May 17, 2016
Review Signature: Mike Sullivan, P.E. 72693
Date: July 06, 2016

Report Printed: January 25, 2017 2:28:25

Special Emphasis Inspection

Special Emphasis Detail	"Other" Special Emphasis Detail Description	Hands-On Insp Performed	Hands-On Inspection Note
Other (Unique & unusual features)	Untreated Timber Piles	Yes	No settlement or deficiencies found related to untreated timber piles.

Additional Information

Overloads Observed

No overload vehicles observed during this inspection.

Notes to Next Inspector

None

Improvements Observed

None

Pedestrian Fence Height

None

Snow Fence

None

Element Quantities

Element Assessment Summary Table							
Element	**Total Quantity**	**Unit**	**CS-1**	**CS-2**	**CS-3**	**CS-4**	**CS-5**
228 - Timber Pile	180	each	0	0	0	0	180
241 - Reinforced Concrete Culvert	336	ft	0	224	112	0	0
330 - Metal Bridge Railing	90	ft	60	30	0	0	0
515 - Steel Protective Coating	198	ft^2	0	198	0	0	0
800 - Scour	100	ft	100	0	0	0	0
801 - Stream Hydraulics	1	each	0	1	0	0	0
853 - Wingwall	78	ft	70	1	7	0	0
860 - Culvert Headwall	64	ft	0	0	64	0	0
870 - Culvert Apron/Cut-off Wall	4	each	0	0	0	0	4

Element Assessment by Span*							
Element**	**Total Quantity**	**Unit**	**CS-1**	**CS-2**	**CS-3**	**CS-4**	**CS-5**
Span Number : 1							
228 - Timber Pile	135	each	0	0	0	0	135
241 - Reinforced Concrete Culvert	168	ft	0	114	54	0	0
330 - Metal Bridge Railing	45	ft	30	15	0	0	0
515 - Steel Protective Coating	99	ft^2	0	99	0	0	0
800 - Scour	50	ft	50	0	0	0	0
801 - Stream Hydraulics	1	each	0	1	0	0	0
853 - Wingwall	39	ft	39	0	0	0	0
860 - Culvert Headwall	32	ft	0	0	32	0	0
870 - Culvert Apron/Cut-off Wall	2	each	0	0	0	0	2
Span Number : 2							
228 - Timber Pile	45	each	0	0	0	0	45
241 - Reinforced Concrete Culvert	168	ft	0	110	58	0	0
330 - Metal Bridge Railing	45	ft	30	15	0	0	0
515 - Steel Protective Coating	99	ft^2	0	99	0	0	0
800 - Scour	50	ft	50	0	0	0	0
853 - Wingwall	39	ft	31	1	7	0	0
860 - Culvert Headwall	32	ft	0	0	32	0	0
870 - Culvert Apron/Cut-off Wall	2	each	0	0	0	0	2

*For structures with 3 or less spans, all elements of all spans are shown.
For structures with 4 or more spans, elements (parent/child) with Condition State values of 3, 4, or 5 are shown.

** Elements with a prefix designate the locations of BA-Begin Abutment, BW-Begin Wingwall, EA-End Abutment, EW-End Wingwall, CO-Culvert Outlet, and PR-Pier. No prefix generally indicates the element is part of the superstructure.

Inspection Notes

General Comments

Box culvert has concrete aprons and 1' - 2 1/2" cutoff walls in place. Medium stone protection, 2' - 6" deep, was installed in outlet channel under TAS 98-22B. Inlet and outlet stream bed elevation is at or above elevation of stone protection and concrete apron as 6" to 16" of mucky silt is accumulated. No scour present, no channel readings taken.

Element Condition Notes

Span 1: 228 - Timber Pile **Condition State 5 Note**
Span 2: 228 - Timber Pile

Referenced Photo(s): None

Referenced Sketch(es): None

Element not visible.

Span 1: 241 - Reinforced Concrete Culvert **Condition State 3 Note**
Span 2: 241 - Reinforced Concrete Culvert

Referenced Photo(s): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13

Referenced Sketch(es): None

Underside of culvert slab in both spans is damp, cracked, delaminated, leaching efflorescence and spalled 2” to 5” deep for 2’ wide at each side “fascia” and 2’ to 13’ wide each side of all longitudinal construction joints exposing rusted, delaminated, and broken reinforcing bars.
More specifically:
Span 1: 2’ wide at left side (fascia), 2’ left and 8’ right of joint 1, 8’ left and 4’ right of joint 2, 5’ left and 4’ right of joint 3, 13’ left and 5’ right of joint 4, and 2’ wide at right side (fascia);
Span 2: 3’ wide at left side (fascia), 4’ left and 8’ right of joint 1, 6’ left and 5’ right of joint 2, 5’ left and 5’ right of joint 3, 12’ left and 3’ right of joint 4, and 2’ wide at right side (fascia).
Overall, 30% to 35% of the total culvert slab area has severe deterioration.
Remainder of culvert slab has large areas of damp pattern cracking with smaller areas that are starting to leach efflorescence.
Culvert stem walls have random full height vertical cracks that are starting to leach efflorescence. 1' to 4' wide adjacent to all vertical construction joints is damp, discolored, and delaminated. Two feet wide, full height at right side of end stem is also hollow and spalling to 2" deep. Note: These areas of deterioration coincide with deteriorated areas of culvert slab.
Additional area of CS-3 stem wall is at end stem beneath drainage pipe at centerline where concrete is hollow and spalling to 4" deep for 5' width.
At pier stem: Concrete at both ends is delaminated full height for up to 3' wide on both faces. Left (upstream) nose is worst with spalling to 4" deep full height on nose. 2' to 12' wide adjacent to each side of all vertical construction joints is damp, hollow, cracking with efflorescence, and spalling to 4" deep, area at joint 4 is worst. Note: These areas of deterioration coincide with deteriorated areas of culvert slab.
Footings (floor of culvert) are not visible as they are beneath 16" of murky water and 6" to 16" of mucky silt. No settlement or displacement issues are evident.

Span 1: 330 - Metal Bridge Railing **Condition State 2 Note**
Span 2: 330 - Metal Bridge Railing

Referenced Photo(s): None

Referenced Sketch(es): None

Median corrugated rail is leaning approximately 15 degrees toward WB lanes. Railing remains functional.

Span 1: 800 - Scour **Condition State 1 Note**
Span 2: 800 - Scour

Referenced Photo(s): None

Referenced Sketch(es): None

Box culvert has concrete aprons with 1' - 2 1/2" cutoff walls in place. Medium stone protection, 2' - 6" deep, was installed in outlet channel under TAS 98-22B. Inlet and outlet stream bed elevation is at or above elevation of concrete apron as 6" to 16" of mucky silt is accumulated. No scour present, no channel readings taken. No significant bank erosion in vicinity of structure.

Span 1: 801 - Stream Hydraulics **Condition State 2 Note**

Referenced Photo(s): 14, 15

Referenced Sketch(es): None

Channel and both spans of culvert have 6" to 16" of mucky silt deposited throughout. Stone protection in downstream channel is mostly silted over but remains in place. Opening remains adequate. 100' +/- downstream (right) of outlet, deadfall lies across channel collecting deadfall and sediment creating a daming effect and restricting flow to a 10' width along end right channel bank. No erosion or serious backwater conditions are evident. Upstream channel has narrowed over the years to a 15' +/- width but flow remains adequate, minor brush overhangs channel.

Span 1: 860 - Culvert Headwall **Condition State 3 Note**
Span 2: 860 - Culvert Headwall

Referenced Photo(s): 12, 17

Referenced Sketch(es): None

2" to 3" deep lower edge slab/fascia spalling extends up to 1' high into headwall area for full length of both headwalls.
Upper 8” of span 1 right fascia is cracked, hollow, and spalling to 6" deep for 6' near begin of span.
End 7' of span 2 right fascia is cracked, hollow and spalled to 4" deep full height.
Span 1, left fascia is spalled to 1" deep, full height, for a 3' length near 3/4 span.
Remainder of both fascias have tight cracking with efflorescence for 20% area.

Span 1: 870 - Culvert Apron/Cut-off Wall **Condition State 5 Note**
Span 2: 870 - Culvert Apron/Cut-off Wall

Referenced Photo(s): None

Referenced Sketch(es): None

Element not visible.

Span 2: 853 - Wingwall **Condition State 3 Note**

Referenced Photo(s): 16

Referenced Sketch(es): None

End right wingwall for 6’ wide adjacent to stem is cracked and delaminated full height and is spalled to 8" deep with reinforcing exposed for upper 5’. Remainder of end right wingwall is good. End left wingwall is good having a hairline vertical crack at mid-wall and minor 3" deep x 3" wide spalling adjacent to stem (1LF CS-3; 1LF CS-2).

Non-Structural Condition Observations

Category: ATTACHMENTS - Bridge Related Signs Quantity: NONE Unit: NONE

Referenced Element(s): NONE

Referenced Photo(s): NONE
Referenced Sketch(es): NONE

Flood elevation signs: Only 1 sign in good condition is in place at left (upstream) side of begin stem. Sign at left side of end abutment is missing.

Field Notes

Staff Present During Inspection		
Name	**Title**	**Organization**
Douglas Hilleges	TL	NYSTA
Michael Jauch	ATL	NYSTA

General Equipment Required for Inspection*
Access Type
13 - Walking

*** For span specific equipment requirements refer to the Active Inventory's "Access Needs" tab in BDIS.**

Detailed Time & Weather Conditions				
Field Date	**Arrival**	**Departure**	**Temp (F)**	**Weather Conditions**
05/11/2016	10:45 AM	01:00 PM	66	Sunny

Inspection Times (hours)	
Time required for travel, inspection and report preparation	6
Lane closure usage	
Railroad flagging time	

Inspection Photographs

Attachment Description: 282-62 Sp1 Slab at Jt1 - Slab cracked, delaminated and spalled at joint.	Photo Number: **1** Photo Filename: **282-62 Sp1 Slab at Jt1.JPG** 

Attachment Description: 282-62 Sp1 Slab at Jt2 - Slab cracked, delaminated and spalled at joint.	Photo Number: **2** Photo Filename: **282-62 Sp1 Slab at Jt2.JPG** 

Attachment Description: 282-62 Sp1 Slab at Jt3 - Slab cracked, delaminated and spalled at joint.	Photo Number: **3** Photo Filename: **282-62 Sp1 Slab at Jt3.JPG** 

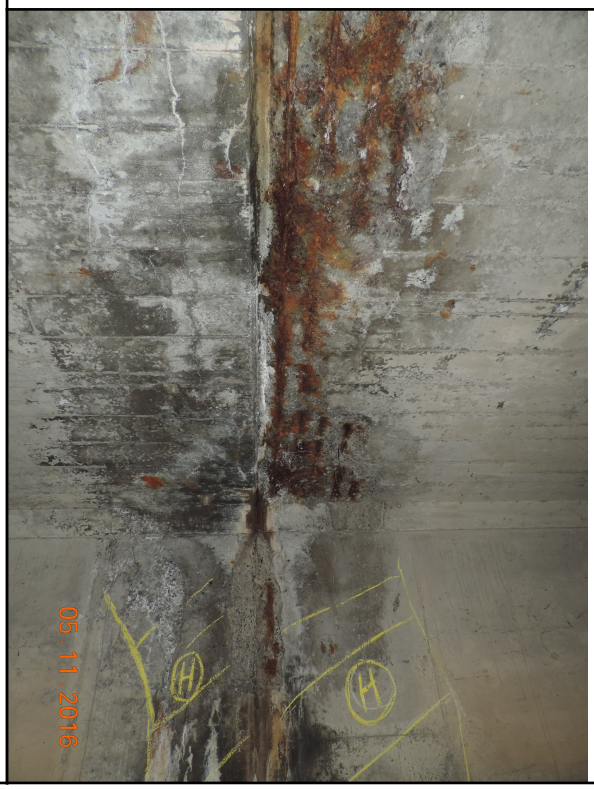
Attachment Description: 282-62 Sp1 Slab at Jt4 - Slab cracked, delaminated and spalled at joint.	Photo Number: **4** Photo Filename: **282-62 Sp1 Slab at Jt4.JPG** 

Attachment Description: 282-62 Sp2 Slab at Jt1 - Slab cracked, delaminated and spalled at joint.	Photo Number: **5** Photo Filename: **282-62 Sp2 Slab at Jt1.JPG** 

Attachment Description: 282-62 Sp2 Slab at Jt2 - Slab cracked, delaminated and spalled at joint.	Photo Number: **6** Photo Filename: **282-62 Sp2 Slab at Jt2.JPG** 

Attachment Description:
282-62 Sp2 Slab at Jt3 - Slab cracked, delaminated and spalled at joint.

Photo Number: **7** Photo Filename: **282-62 Sp2 Slab at Jt3.JPG**



Attachment Description:
282-62 Sp2 Slab at Jt4 - Slab cracked, delaminated and spalled at joint.

Photo Number: **8** Photo Filename: **282-62 Sp2 Slab at Jt4.JPG**

Attachment Description:
282-62 End Abut - Cntr - stem wall delaminated, spalled beneath pipe.

Photo Number: **9** Photo Filename: **282-62 End Abut - Cntr.JPG**

Attachment Description:
282-62 Pr1 Begin at Jt4 - Pier wall delaminated adjacent to joint.

Photo Number: **10** Photo Filename: **282-62 Pr1 Begin at Jt4.JPG**

Attachment Description:
282-62 Pr1 Begin at Lt Side - Nose of pier wall delaminated and spalled.

Photo Number: **11** Photo Filename: **282-62 Pr1 Begin at Lt Side.JPG**

Attachment Description:
282-62 Lt Headwall and Slab Underside - Spalled

Photo Number: **12** Photo Filename: **282-62 Lt Headwall - Slab.JPG**

Attachment Description:
282-62 Sp2 Slab near Lt side - Typical damp pattern cracking with light efflorescence.

Photo Number: **13** Photo Filename: **282-62 Sp2 Slab near Lt side.JPG**

Attachment Description:
282-62 Downstream - Deadfall across downstream channel.

Photo Number: **14** Photo Filename: **282-62 Downstream.JPG**

Attachment Description: 282-62 Upstrm - Sedimentation along banks constricting flow slightly.	Photo Number: **15** Photo Filename: **282-62 Upstrm.JPG** 

Attachment Description: 282-62 End Rt WW - Upper 5' spalled.	Photo Number: **16** Photo Filename: **282-62 End Rt WW.JPG** 

Attachment Description: 282-62 Rt Headwall - Spalled along lower edge and full height at end.	Photo Number: **17** Photo Filename: **282-62 Rt Headwall.JPG** 

Inspection Sketches

Sketch Number: **1** Sketch Filename: **Load Rating Verification.jpg**

NEW YORK STATE THRUWAY AUTHORITY

BRIDGE INSPECTION FIELD VERIFICATION OF LOAD RATING DATA

Date: 5/11/16

MP/BIN: 282.62 / 5510130

Feature Carried / Crossed: 90IX / BEAR TRAP CREEK

Dead Load:

WS Thickness & Material Shown on Plans - Unratedable Box Culvert - Typical TWY X-section

Changes Noted in Field: None

Railing Type Shown on Plans - Box Beam & W-section

Changes Noted in Field: None

Other DL Contributions (e.g. utilities) on Plans -

Changes Noted in Field: None

Section Loss:

Existing Documentation (sketches, etc.) ? - None

Location of Documentation (previous report, blue folder, etc.)? -

New Section Loss noted? - None

Brief Description (attach sketches if helpful) -

Additional Notes: None

Attachments: *yes* ***no*** *(please circle)*

Team Leader: **DOUGLAS R. HILLEGES, P.E.**

Signature: Douglas R. Hilleges Date: 5/11/16

Sketch Description: Load Rating Verification

Sketch Number: **2** Sketch Filename: **Level 2 - Virtis.jpg**

LEVEL 2 LOAD RATING (VIRTIS)

MILEPOST: 282.62 BIN: 5510130

REGION: 3 COUNTY: ONONDAGA

FEATURE CARRIED: 90IX

FEATURE CROSSED: BEAR TRAP CREEK

LEVEL 2 LOAD RATING REVIEW

Dayle A Hills 5/11/16

VIRTIS RUN DATE: 6/17/2014

CHANGES TO INPUT DATA: UNRATABLE BOX CULVERT

LOADING	INVENTORY RATING (TONS)	OPERATING RATING (TONS)
HS-20		
H-20		

CONTROLLING MEMBER FOR RATING

SPAN :

COMPONENT:

FAILURE TYPE:

EFFECTIVE SPAN LENGTH:

H EQUIVALENT OF LEGAL LOAD:

PRIMARY MEMBER RATING:

SAFE LOAD CAPACITY:

SLC COMPUTATION USED (IN BOLD)				
0.60 HOR	0.70 HOR	0.80 HOR	0.85 HOR	HOR

ACTION TAKEN:

NONE REQUIRED	
RECOMMEND LEVEL 1	
UNRATABLE	X

COMPLETED BY

Michael Gaskill

MICHAEL GASKILL
PE # 092560
LOAD RATING ENGINEER

REVIEWED BY

GARRET HOFFMANN
PE # 070686
QUALITY CONTROL ENGINEER

Sketch Description: Level 2 - Virtis

Sketch Number: **3** Sketch Filename: **Photo Location Map.jpg**

BD 186 (4/95)

BIN: 5510130

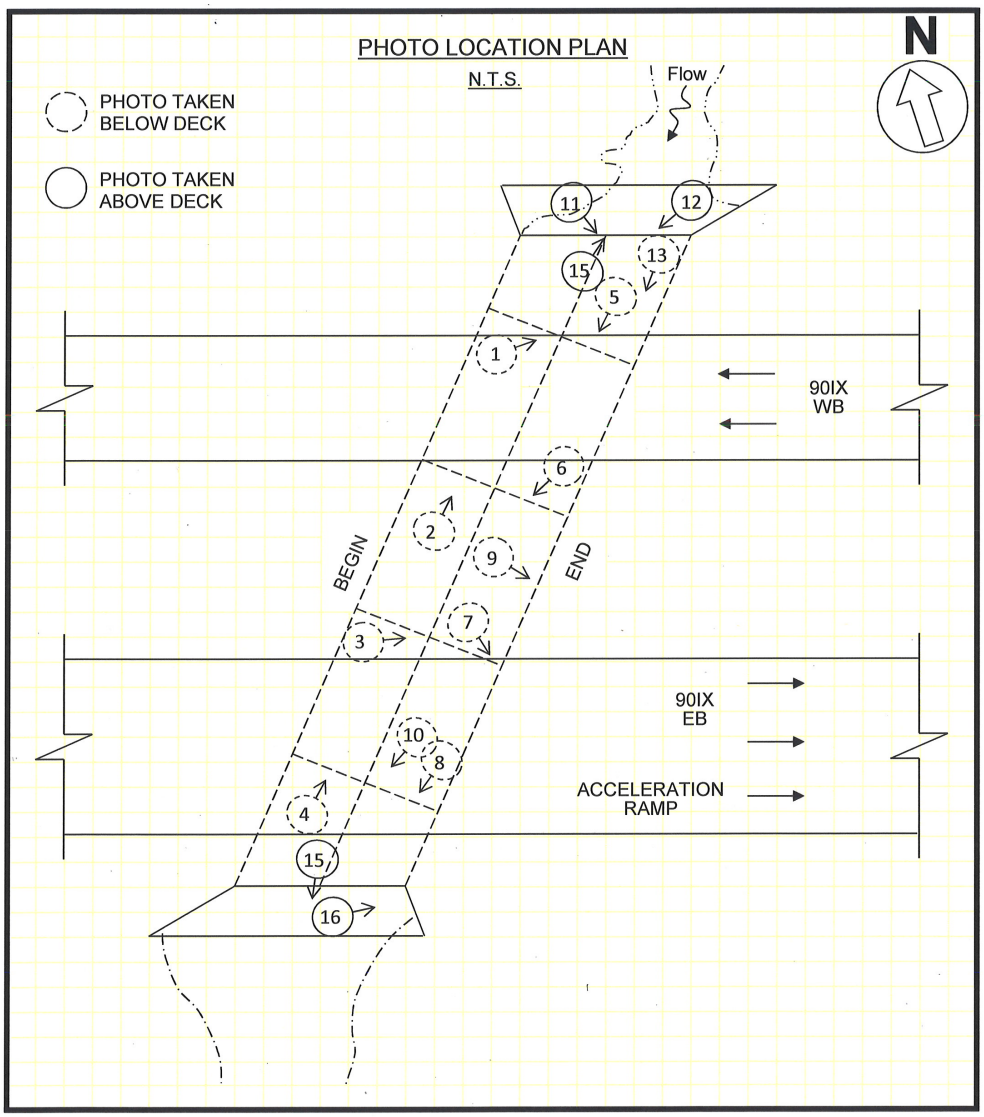
M.P.: 282.62

NYS THRUWAY AUTHORITY
BRIDGE INSPECTION REPORT
SHEET 1 **OF**

TEAM LEADER: Douglas R. Hilleges, P.E. **ASST. TEAM LEADER:** Michael Jauch, P.E. **DATE:** 05/11/2016

Feature Carried: 90IX

Feature Crossed: BEAR TRAP CREEK



Sketch Description: Photo Location Map

Standard Photographs

282.62-STD-99-00-04_____.jpg

282.62-STD-99-00-14BgApEB.JPG

282.62-STD-99-00-14BgApWB.JPG

282.62-STD-99-00-14EnApEB.JPG

282.62-STD-99-00-14EnApWB.JPG

282.62-STD-99-00-14EnLtWW.JPG

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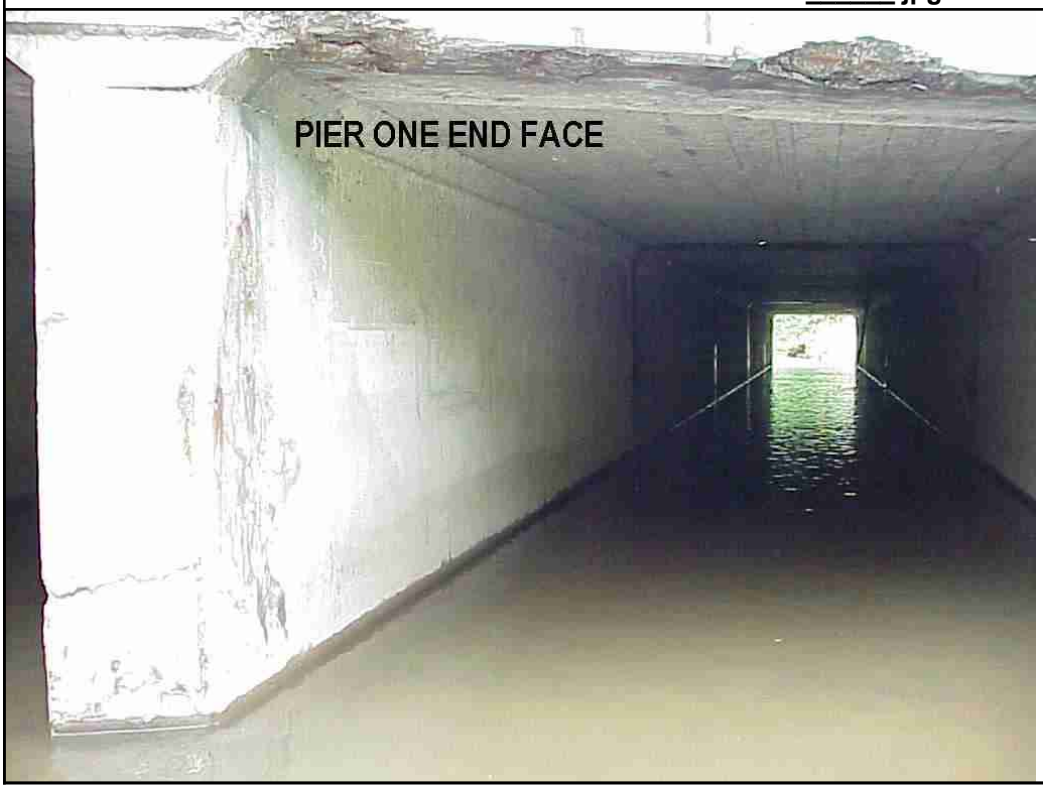

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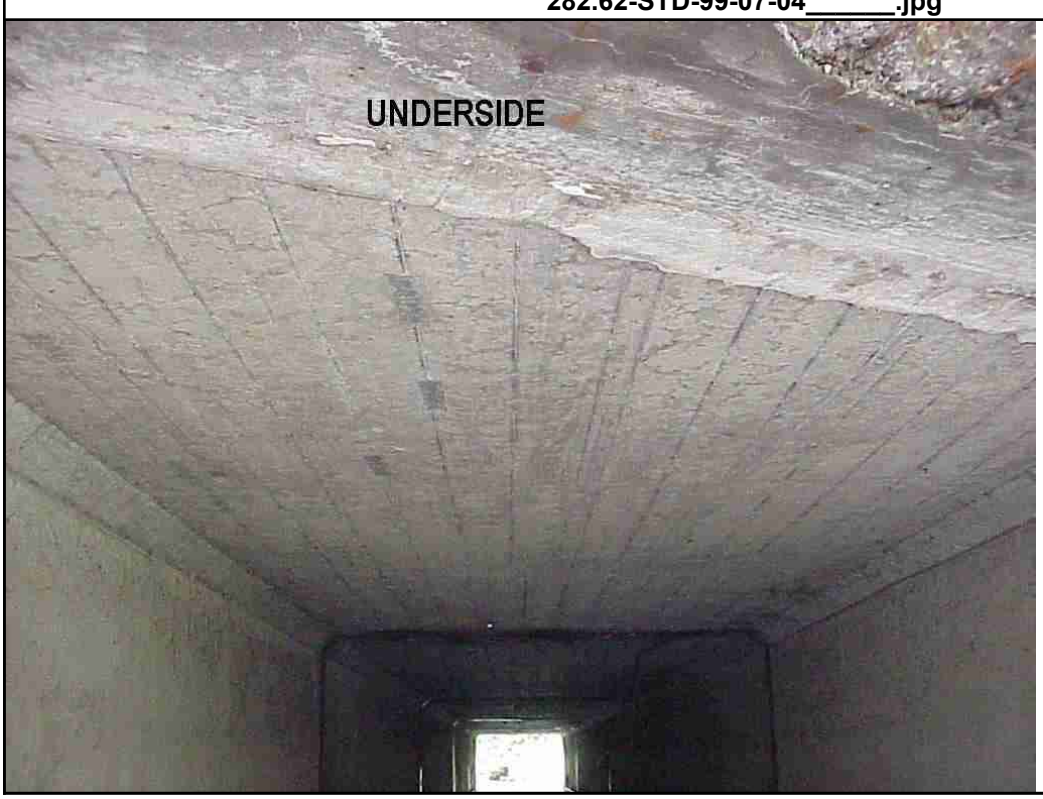

282.62-STD-99-08-04_____.jpg

Location Map.jpg