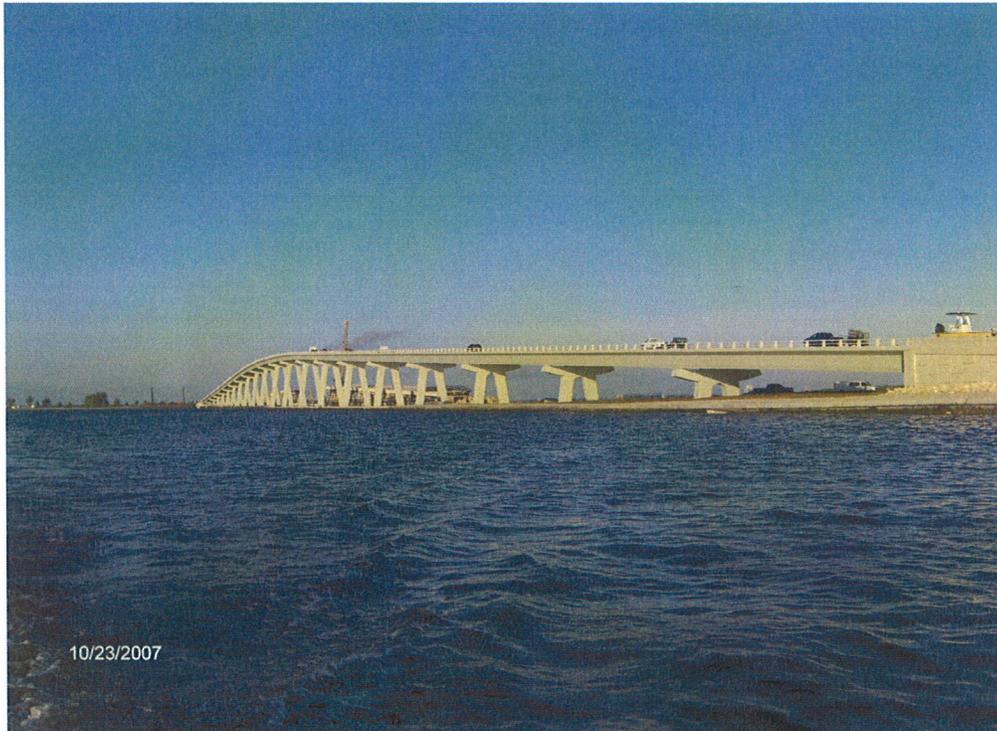


# EXHIBIT G

# BRIDGE RECORD



BRIDGE NUMBER: 124116  
BRIDGE NAME: STRUCTURE A SANIBEL CAUSEWAY

## BRIDGE RECORD CONTENTS

- I. Inspection Reports - This section contains periodic bridge inspection reports, bridge repair work orders, and accident reports.
- II. Inventory - contained in this section is the following bridge information: photographs, location map, detailed data, history, load carrying capacity, inspection preparation, and drawings.
- III. Communications - Correspondence such as letters, memorandums, and notices directly related to this bridge are contained in this section.

SECTION I  
BRIDGE INSPECTION REPORTS





# BRIDGE INSPECTION REPORT

PREPARED FOR:  
FLORIDA DEPT. OF TRANSPORTATION  
OWNER: LEE COUNTY

**VOLKERT**  
& ASSOCIATES, INC.

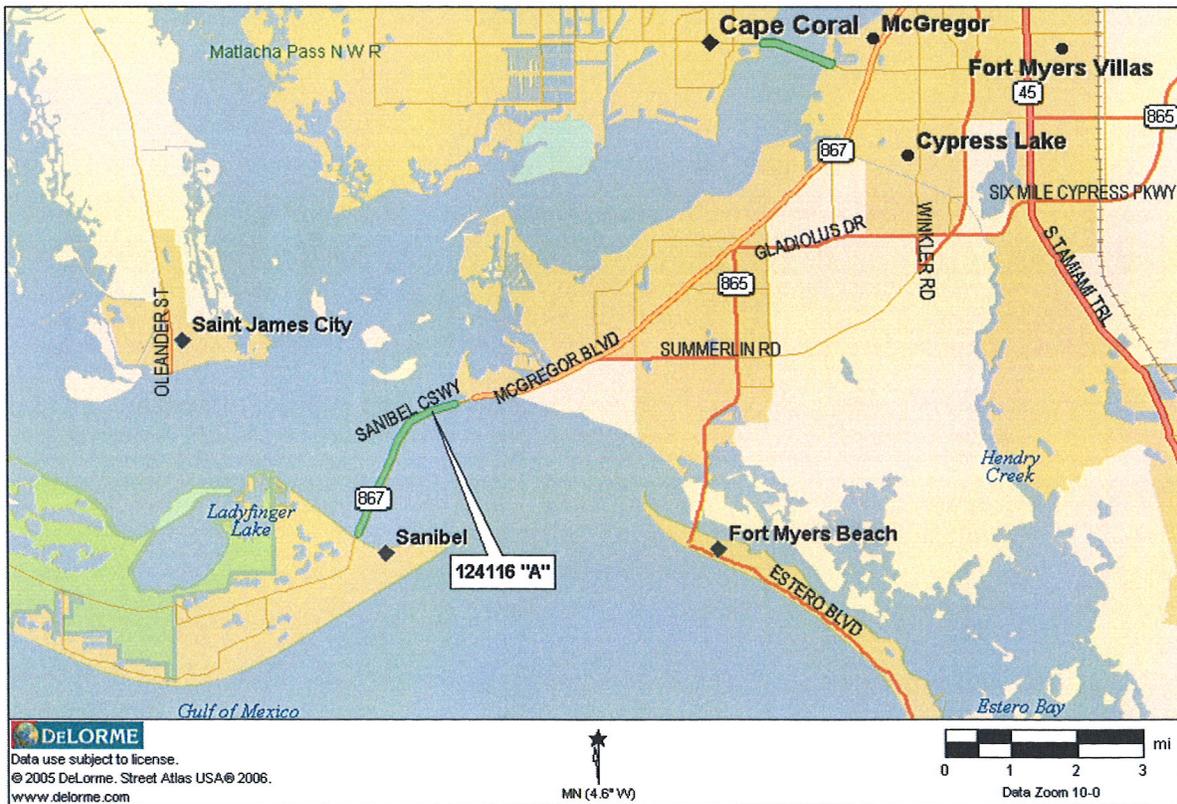
BRIDGE NO. 124116

INSPECTION DATE: 11/15/07



10/23/2007

## STRUCTURE A SANIBEL CAUSEWAY



FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM

Inspection Report  
(INITIAL INSPECTION)

BRIDGE ID: 124116  
DISTRICT: 01 Bartow

PAGE: 1 OF 10  
INSPECTION DATE: 11/15/2007 GPFO

BY: Volkert & Associates  
OWNER: 2 County Hwy Agency  
MAINTAINED BY: 2 County Hwy Agency  
STRUCTURE TYPE: 6 P/S Conc Continuous 02 Stringer/Girder  
LOCATION: 1ST STRCT S/O TOLL PLAZA  
SERVICE TYPE ON: 1 Highway  
SERV TYPE UND: 5 Waterway

BRIDGE NAME: STRUCTURE A SANIBEL CAUSEW/  
YEAR BUILT: 2007  
SECTION NO.: 12 000 000  
MP: 0  
ROUTE: 00867  
FACILITY CARRIED: CR 867  
FEATURE INTERSECTED: SAN CARLOS BAY

- THIS BRIDGE CONTAINS FRACTURE CRITICAL COMPONENTS
- THIS BRIDGE IS SCOUR CRITICAL
- THIS REPORT IDENTIFIES DEFICIENCIES WHICH REQUIRE PROMPT CORRECTIVE ACTION
- FUNCTIONALLY OBSOLETE
- STRUCTURALLY DEFICIENT

TYPE OF INSPECTION: Regular NBI

DATE FIELD INSPECTION WAS COMPLETED: ABOVE WATER: 11/15/2007 UNDERWATER: 10/02/2007

SMART FLAGS:  
None

OVERALL NBI RATINGS:

DECK: 8 Very Good  
SUPERSTRUCTURE: 6 Satisfactory  
SUBSTRUCTURE: 5 Fair  
CHANNEL: 8 Protected  
CULVERT: N N/A (NBI)

SUFFICIENCY RATING: 68.0  
HEALTH INDEX: 99.82

FIELD PERSONNEL / TITLE / NUMBER

INITIALS

Wolfe, Wade - Bridge Inspector (CBI #00382) (lead)  
Morris, Stephen - Certified Bridge Inspector (CBI #00441)  
Brewer, James - Technician

W

Hoogland, Keith - Bridge Inspection (CBI#00341)  
Schmidt, Kyle - Diver  
Brewer, James - Diver  
McCranie, Orion - Diver

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

REVIEWING BRIDGE INSPECTION SUPERVISOR:

Rucks, Edward - CBI (#00273)

E

CONFIRMING REGISTERED PROFESSIONAL ENGINEER:

Harrigan, Robert - Professional Engineer (PE #45236)  
Volkert & Associates  
3409 W. Lemon Street  
CERTIFICATE OF AUTHORIZATION #4641  
Tampa, FL 33609

SIGNATURE: Robert J. Harrigan, Jr.

DATE: DEC 20 2007

**FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM**

**Inspection Report  
(INITIAL INSPECTION)**

BRIDGE ID: 124116  
DISTRICT: 01 Bartow

PAGE: 2 OF 10  
INSPECTION DATE: 11/15/2007 GPFO

**All Elements**

**UNIT: Structure Unit 1 DECKS**

**ELEMENT/ENV: 12/4 Bare Concrete Deck      129408 sf.      ELEM CATEGORY: Decks/Slabs**

CONDITION STATE (5)	DESCRIPTION	QUANTITY
1	The surface of the deck has no repaired areas, there are no spalls/delaminations in the deck surface or underside and the only cracking is superficial.	129408 sf.

**ELEMENT/ENV: 300/4 Strip Seal Exp Joint      345 lf.      ELEM CATEGORY: Joints**

CONDITION STATE (3)	DESCRIPTION	QUANTITY
1	The element shows minimal deterioration. There is no leakage at any point along the joint. Gland is secure and has no defects. Debris in joint is not causing any problems. The adjacent deck and/or header is sound.	345 lf.

ELEMENT INSPECTION NOTES:

NOTE: This element quantifies joints 1, 4, 7, 10, 13, 16, 19 and 22.

**ELEMENT/ENV: 334/4 Metal Rail Coated      6005 lf.      ELEM CATEGORY: Railing**

CONDITION STATE (5)	DESCRIPTION	QUANTITY
1	There is no evidence of active corrosion. Protective coating is sound and functioning as intended to protect the element.	6005 lf.

ELEMENT INSPECTION NOTES:

NOTE: Barriers meet NCHRP TL4 criteria and meet SIA Item 36 standards.

CS1: There are several tire marks on the barriers.

**ELEMENT/ENV: 109/4 P/S Conc Open Girder      12010 lf.      ELEM CATEGORY: Superstructure**

CONDITION STATE (4)	DESCRIPTION	QUANTITY
1	The element shows little or no deterioration. There may be discoloration, efflorescence, and/or superficial cracking but without effect on strength and/or serviceability.	11998 lf.

**FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM**

**Inspection Report  
(INITIAL INSPECTION)**

BRIDGE ID: 124116  
DISTRICT: 01 Bartow

PAGE: 3 OF 10  
INSPECTION DATE: 11/15/2007 GPFO

**All Elements**

**UNIT: Structure Unit 1 SUPERSTRUCTURE**

**ELEMENT/ENV: 109/4 P/S Conc Open Girder 12010 lf. ELEM CATEGORY: Superstructure**

CONDITION STATE (4)	DESCRIPTION	QUANTITY
<b>2</b>	Minor cracks and spalls may be present, and there may be exposed reinforcing with no evidence of corrosion. There is no exposure of the prestress system.	12 lf.

**ELEMENT INSPECTION NOTES:**

CS1: The beams have between 3 and 5 diagonal web cracks up to 4ft long x less than 1/64in wide, within 5ft of the bearings.

The east face of beam 14-4 has a 10in x 1/64in vertical bottom flange crack, 3in from the bearing.

The left top flange of beam 17-4 has wide spread longitudinal hairline cracking with efflorescence and some cracks up to 1/64in wide near pier 18.

CS2: There are beam end /closure pour delaminations and spalls at pier 11 as follows:

- 10/11-1, east and west faces, delamination, 10in x 5in;
- 10/11-2, west face, spall with no exposed steel, delamination, 24in x 4in x 2in;
- 10/11-3, west face, spall with no exposed steel, 10in x 10in x 1/2in;
- 10/11-4, west face, delamination, 6in x 5in;
- 10/11-4, east face, spall with exposed steel, 42in x 12in x 5in. Refer to Photo 1. REPAIR ALL

There are minor bottom flange spalls with no exposed steel as follows:

- Beam 15-1, east face near pier 16, 6in x 2in x 1/2in;
- Beam 15-3, east face at 7/8pt, 4in x 4in x 1in;
- Beam 15-4, west face at 1/2pt, 16in x 4in x 1in.

**ELEMENT/ENV: 397/4 Drain. Syst Metal 20 ea. ELEM CATEGORY: Superstructure**

CONDITION STATE (5)	DESCRIPTION	QUANTITY
<b>1</b>	There is no evidence of active corrosion and the paint system is sound and functioning as intended to protect the metal surface. Drainage system is functioning as intended.	20 ea.

**ELEMENT INSPECTION NOTES:**

CS1: Most scupper down spouts are not properly shimmed or anchored to the beams. Refer to Photo 2. REPAIR

**ELEMENT/ENV: 310/4 Elastomeric Bearing 168 ea. ELEM CATEGORY: Bearings**

CONDITION STATE (3)	DESCRIPTION	QUANTITY
<b>1</b>	The element shows little or no deterioration. Shear deformations are correct for existing temperatures.	168 ea.

**FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM**

**Inspection Report  
(INITIAL INSPECTION)**

BRIDGE ID: 124116  
DISTRICT: 01 Bartow

PAGE: 4 OF 10  
INSPECTION DATE: 11/15/2007 GPFO

**All Elements**

**UNIT: Structure Unit 1 SUPERSTRUCTURE**

**ELEMENT/ENV: 563/4 Acc Ladd & Plat                      16 ea.                      ELEM CATEGORY: Movable**

CONDITION STATE (5)	DESCRIPTION	QUANTITY
<b>1</b>	There is no evidence of active corrosion, and the paint system is sound and functioning as intended to protect the metal surface.	16 ea.

ELEMENT INSPECTION NOTES:

NOTE: Quantity includes eight ladders and eight platforms including two fender access walkways.

**ELEMENT/ENV: 580/4 Navigational Lights                      1 ea.                      ELEM CATEGORY: Movable**

CONDITION STATE (3)	DESCRIPTION	QUANTITY
<b>1</b>	Lights are operational, lenses are clean and not broken, there is no evidence of corrosion.	1 ea.

ELEMENT INSPECTION NOTES:

NOTE: Element includes six fender lights, two clearance gauge lights and two swing lights. Only temporary lighting was in place at time of inspection.

**ELEMENT/ENV: 205/4 R/Conc Column                      40 ea.                      ELEM CATEGORY: Substructure**

CONDITION STATE (4)	DESCRIPTION	QUANTITY
<b>1</b>	The element shows little or no deterioration. There may be discoloration, efflorescence, and/or superficial cracking but without effect on strength and/or serviceability.	40 ea.

**ELEMENT/ENV: 207/4 P/S Conc Holl Pile                      224 ea.                      ELEM CATEGORY: Substructure**

CONDITION STATE (4)	DESCRIPTION	QUANTITY
<b>1</b>	The element shows little or no deterioration. There may be discoloration, efflorescence, and/or superficial cracking but without affect on strength and/or serviceability.	220 ea.
<b>2</b>	Minor cracks, spalls and scaling may be present and there may be exposed reinforcing with no evidence of corrosion. There is no exposure of the prestress system.	2 ea.

**FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM**

**Inspection Report  
(INITIAL INSPECTION)**

BRIDGE ID: 124116  
DISTRICT: 01 Bartow

PAGE: 5 OF 10  
INSPECTION DATE: 11/15/2007 GPFO

**All Elements**

**UNIT: Structure Unit 1 SUBSTRUCTURE**

**ELEMENT/ENV: 207/4 P/S Conc Holl Pile                      224 ea.                      ELEM CATEGORY: Substructure**

CONDITION STATE (4)	DESCRIPTION	QUANTITY
4	Severe cracks, spalls, scaling, delaminations, and corrosion of non-prestressed reinforcement are prevalent. There may also be exposure and deterioration of the prestress system (manifested by loss of bond, broken strands or wire, failed anchorages, etc)	2 ea.

ELEMENT INSPECTION NOTES:

CS2: Pile 11-1 has two spalls with no exposed steel up to 6in x 6in x 1-1/2in.

Pile 17-10 has an intermittent 13ft x 12in x 3in spall with no exposed steel on the NE corner beginning 2ft below the footer.

CS4: The upper 7ft of piles 11-8 and 11-15 are fractured and all prestress strands are exposed. Refer to Sketch 1. REPAIR

**ELEMENT/ENV: 215/4 R/Conc Abutment                      70 lf.                      ELEM CATEGORY: Substructure**

CONDITION STATE (4)	DESCRIPTION	QUANTITY
1	The element shows little or no deterioration. There may be discoloration, efflorescence, and/or superficial cracking but without effect on strength and/or serviceability.	70 lf.

**ELEMENT/ENV: 220/4 R/C Sub Pile Cap/Ftg                      20 ea.                      ELEM CATEGORY: Substructure**

CONDITION STATE (4)	DESCRIPTION	QUANTITY
1	The element shows little or no deterioration. There may be discoloration, efflorescence, and/or superficial cracking but without effect on strength and/or serviceability.	19 ea.
2	Minor cracks and spalls may be present, but there is no exposed reinforcing or surface evidence of rebar corrosion.	1 ea.

ELEMENT INSPECTION NOTES:

CS2: Footer 17 has two spalls with no exposed steel up to 12in x 12in x 2in on the northeast and southeast corners.

**FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM**

**Inspection Report  
(INITIAL INSPECTION)**

**BRIDGE ID: 124116  
DISTRICT: 01 Bartow**

**PAGE: 6 OF 10  
INSPECTION DATE: 11/15/2007 GPFO**

**All Elements**

**UNIT: Structure Unit 1 SUBSTRUCTURE**

**ELEMENT/ENV: 234/4 R/Conc Cap                      862 lf.                      ELEM CATEGORY: Substructure**

CONDITION STATE (4)	DESCRIPTION	QUANTITY
<b>1</b>	The element shows little or no deterioration. There may be discoloration, efflorescence, and/or superficial cracking but without effect on strength and/or serviceability.	862 lf.

**ELEMENT INSPECTION NOTES:**

CS1: Both shear blocks in span 10 at pier 10 and the right block in span 11 at pier 12 are fractured. Refer to Photo 3. REPAIR

**ELEMENT/ENV: 387/4 P/S Fender/Dolphin                      588 lf.                      ELEM CATEGORY: Substructure**

CONDITION STATE (4)	DESCRIPTION	QUANTITY
<b>1</b>	The element shows little or no deterioration. There may be discoloration, efflorescence, and/or superficial cracking but without affect on strength and/or serviceability.	588 lf.

**ELEMENT INSPECTION NOTES:**

NOTE: Quantity includes dolphins. Fenders and dolphins incomplete at time of inspection.

**ELEMENT/ENV: 396/4 Other Abut Slope Pro                      2500 sf.                      ELEM CATEGORY: Substructure**

CONDITION STATE (4)	DESCRIPTION	QUANTITY
<b>1</b>	There is little or no deterioration. Surface defects only are in evidence. Random open joints may exist.	2500 sf.

**ELEMENT INSPECTION NOTES:**

NOTE: Element includes rock rubble rip rap and articulating concrete block mats. Under construction at time of inspection.

**ELEMENT/ENV: 321/4 R/Conc Approach Slab                      2 ea.                      ELEM CATEGORY: Other Elements**

CONDITION STATE (4)	DESCRIPTION	QUANTITY
<b>1</b>	The slab has not settled and shows no sign of deterioration other than superficial surface cracks.	2 ea.

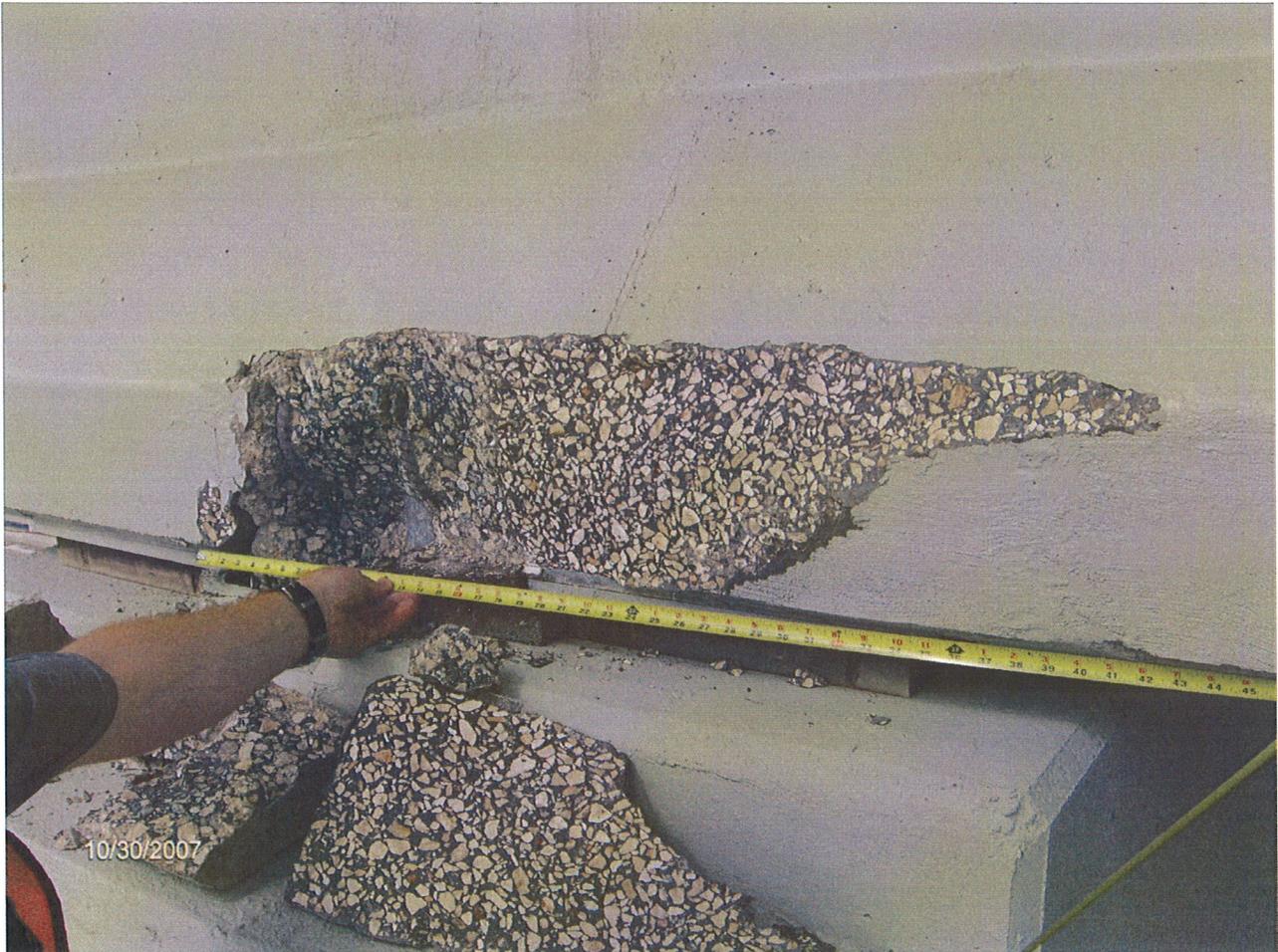


FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM

Inspection Report  
(INITIAL INSPECTION)

BRIDGE ID: 124116  
DISTRICT: 01 Bartow

PAGE: 8 OF 10  
INSPECTION DATE: 11/15/2007 GPFO



**PHOTO 1: 109/4 P/S CONC OPEN GIRDER**

Spall with exposed closure pour /diaphragm steel, beam 10/11-4 east face at pier 11.

**REPAIR RECOMMENDATION:**

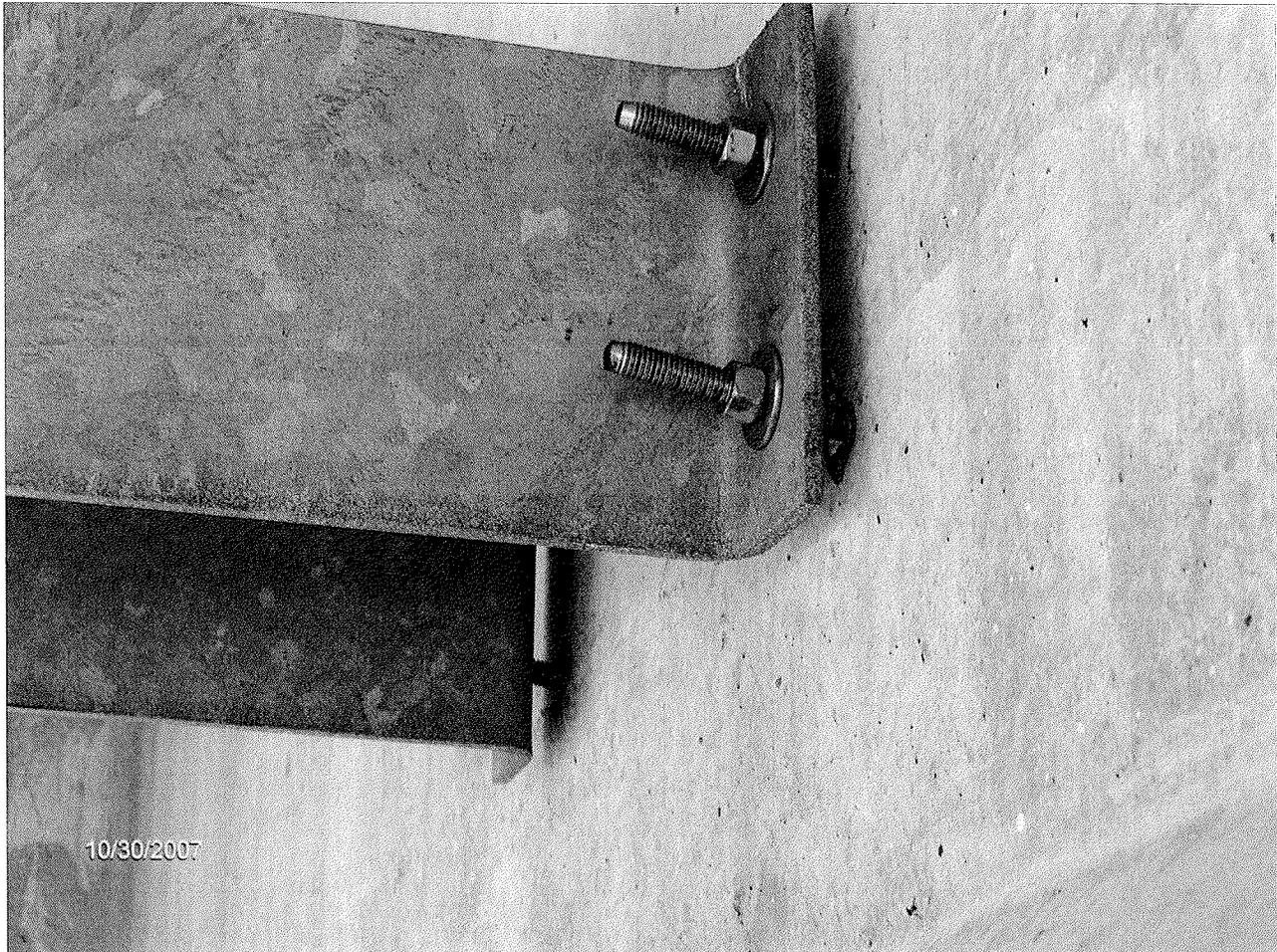
Repair spalls and delaminations on all beams over pier 11. Suggest in depth inspection on blast damaged beams. 0.25CY 20MH

FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM

Inspection Report  
(INITIAL INSPECTION)

BRIDGE ID: 124116  
DISTRICT: 01 Bartow

PAGE: 9 OF 10  
INSPECTION DATE: 11/15/2007 GPFO



**PHOTO 2: 397/4 DRAIN SYST METAL**

Drain system down spout improperly anchored to beam, bay 4-1 near pier 4 - typical.

REPAIR RECOMMENDATION:

Properly shim and anchor all drain system downspouts. 100MH

FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM

Inspection Report  
(INITIAL INSPECTION)

BRIDGE ID: 124116  
DISTRICT: 01 Bartow

PAGE: 10 OF 10  
INSPECTION DATE: 11/15/2007 GPFO



**PHOTO 3: 234/4 R/CONC CAP**

Fractured left shear key span 10, pier 10 - typical.

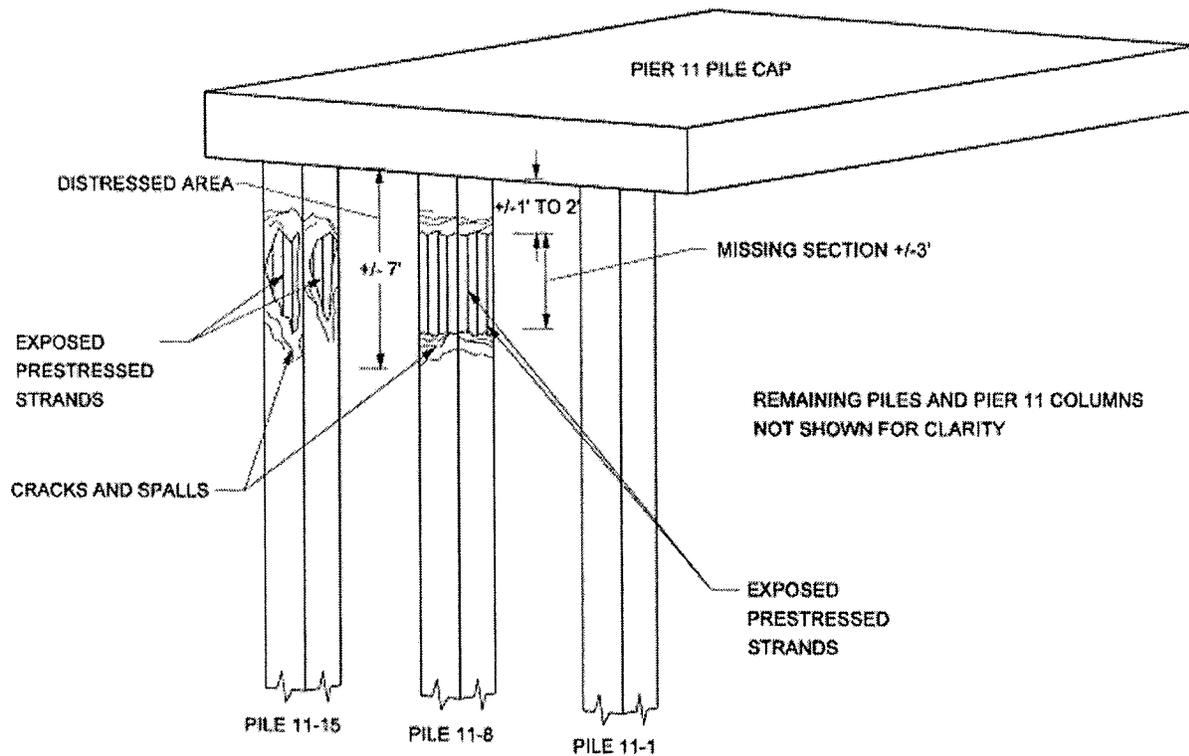
**REPAIR RECOMMENDATION:**

Replace both shear keys span 1- pier 10 and right block span 11 at pier 12. Consider in depth inspection of areas possibly affected by blast. 100M-

FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM  
BRIDGE INSPECTION REPORT ADDENDUM

BRIDGE ID: 124116  
DISTRICT: 01 BARTOW

PAGE: A1 OF A5  
INSPECTION DATE: 11/15/07



SKETCH 1: 207/4 P/S CONC HALL PILE

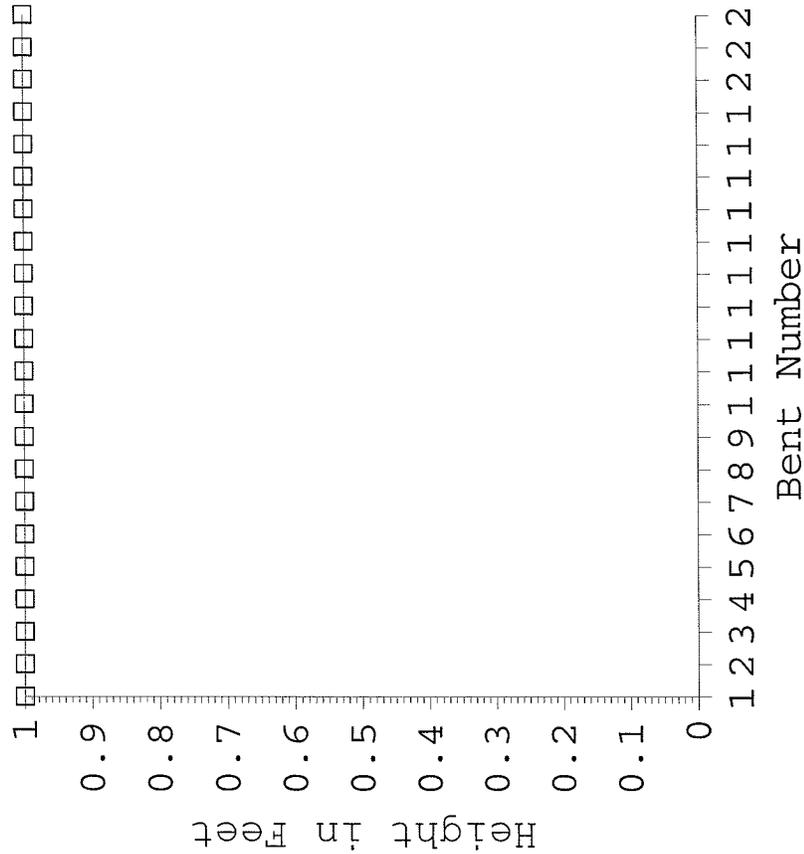
Fractured pile 11-8 with missing section and all prestressed strands exposed – typical.

WORK ORDER RECOMMENDATION:

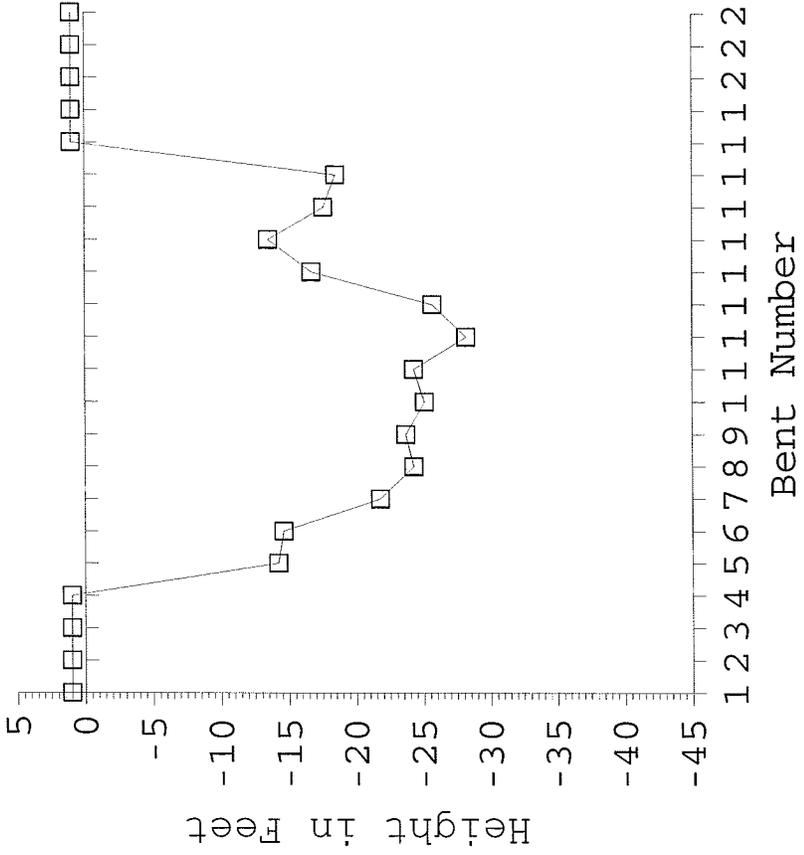
Repair or replace pile 11-8 and 11-15. Consider performing in depth inspection of all substructure elements possibly affected by the demolition blast. 400MH

REPORT ID: INVT016  
 Structure #: 124116  
 DATE PRINTED: 12/13/2007  
 Page 1 of 2

Left Profile By Inspection



Right Profile By Inspection



FLORIDA DEPARTMENT OF TRANSPORTATION BRIDGE MANAGEMENT SYSTEM  
 Bridge Profile Report

REPORT ID: INVT016  
 Structure #: 124116

DATE PRINTED: 12/13/2007  
 Page 2 of 2

Profile Data - Numerical Summary

Inspection Date and Key:	Bent #	Left Height	Right Height	(All Heights Are In Feet)
11/15/2007 GPFO	1	-1	-1	-1
	2	-1	-1	-1
	3	-1	-1	-1
	4	-1	-1	-1
	5	-1	14.2	14.2
	6	-1	14.6	14.6
	7	-1	21.8	21.8
	8	-1	24.3	24.3
	9	-1	23.7	23.7
	10	-1	25.1	25.1
	11	-1	24.3	24.3
	12	-1	28.2	28.2
	13	-1	25.7	25.7
	14	-1	16.7	16.7
	15	-1	13.5	13.5
	16	-1	17.6	17.6
	17	-1	18.5	18.5
	18	-1	-1	-1
	19	-1	-1	-1
	20	-1	-1	-1
	21	-1	-1	-1
	22	-1	-1	-1

**Air Temp:**

**Profile Notes:**

Measurements referenced to top of pier 4 footer.  
 Waterline: 3.0ft

No left side measurements taken due to ongoing demolition.  
 Bents 1 - 4 and 18 - 22 are on dryland.



**Initial Underwater Bridge Inspection Report  
for  
Volkert & Associates, Inc.**

Bridge ID: 124116 Underwater Date (93): 10/02/07  
 Location (9): First Structure from the east Toll Booth  
 Featured Intersected (6): Sanibel Causeway " Structure A"  
 Special Crew Hours: 28.0 Max. Depth: 28ft.  
 District: 01 South Lee County

**FIELD PERSONNEL/TITLE/NUMBER**

Hoogland, Keith S. – Diver / Inspector (CBI#00341) (lead)	DIVE	<u>KSH</u>
Schmidt, Kyle A. – Diver / Inspector	DIVE	_____
Brewer, James D. – Diver / Inspector	DIVE	_____
McCranie, Orion P. – Diver / Inspector	TEND/BOAT	_____

**PILING/COLUMNS**

**ELEMENT: 207 HLW CORE** 224: ea.  
 NCR: 7

**Recommended Feasible Action:**  
**Do Nothing**

Footer 17, Pile 10: NE corner 24in. below footer, intermittent SPL, no steel, 13ft. x 12in. x 3in. *New.*

NOTE: Piles 5-6, 5-7, 5-13, 5-14, 5-20, 5-21, 6-4, 6-5, 6-13, 6-14, 6-20, 6-21, 7-6, 7-7, 7-13, 7-20, 7-21, 8-1, 8-2, 8-3, 8-4, 8-5, 8-6, 8-7, 8-12, 8-13, 8-14, 8-19, 8-20, 8-21, 9-1, 9-2, 9-8, 9-9, 9-16 and all deficiencies were cleaned.

**SUBMERGED FOOTER**

**ELEMENT: 220 R/CONCRETE** 14: ea.  
 NCR: 7

**Recommended Feasible Action:**  
**Do Nothing**

There are random minor spalls. *New.*  
 The footers have concrete formed sides that have vertical cracks with no CBO up to 1/16in. wide x full height. Several cracks have efflorescence. *New.*

NOTE: No cleaning was done due to forms still being in place.

**CHANNEL**

**ELEMENT: 290** 1: ea.  
 NCR: 7

**Recommended Feasible Action:**  
**Do Nothing**

The seawalls were in a construction area and not inspected due to safety concerns.  
 There is scattered timber debris from the previous fender system along the new fender system.  
 On Bents 14 through 17, the groundline slopes upward going away from the piling up to 4ft. high on one or more sides.  
 Several piling had minimal marine growth on the bottom 4in. to 6in. *New.*

**BOLT UNDERWATER SERVICES, INC.**

Bridge ID: 124116  
District: 01 South

Inspection Date: 10/02/07

---

**FENDER SYSTEM**

**ELEMENT: 387 P/S CONCRETE**                      256ft.

**Recommended Feasible Action:**  
**Do Nothing**

The fender system is not complete due to removal of old structure.

---

**INSPECTION NOTES: Boat & Motor**

**STRUCTURE NOTES: Divers inspected two hundred twenty-four 30in. piling in Bents 4 through 17.**

PHOTO LOG – None

SECTION II  
INVENTORY

## II. INVENTORY

<b><u>Inventory Topics</u></b>	<b><u>Page</u></b>
A. Photo Inventory.....	A1 – A5
B. Location Map .....	B1
C. Condensed Inspection Data Report (SI&A).....	C1
D. Load Capacity Information.....	D1
E. Bridge History .....	E1
F. Field Preparation.....	F1
1. Tools and Equipment	
2. Services	
3. Scheduling	
4. Site Conditions	
G. Bridge Description and Drawings .....	G1 – G17
*H. Identification of Fracture Critical Components	
I. Channel and Scour Information .....	I1 – I3
1. Channel Profile	
*2. Scour Screening and In-Depth Scour Evaluation	

\*Not included in this report.

TOPIC A

PHOTO INVENTORY

FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM  
BRIDGE INSPECTION REPORT

Bridge No.: 124116  
Inspection Date: 11/15/07

South Approach Looking North



South Approach Looking South



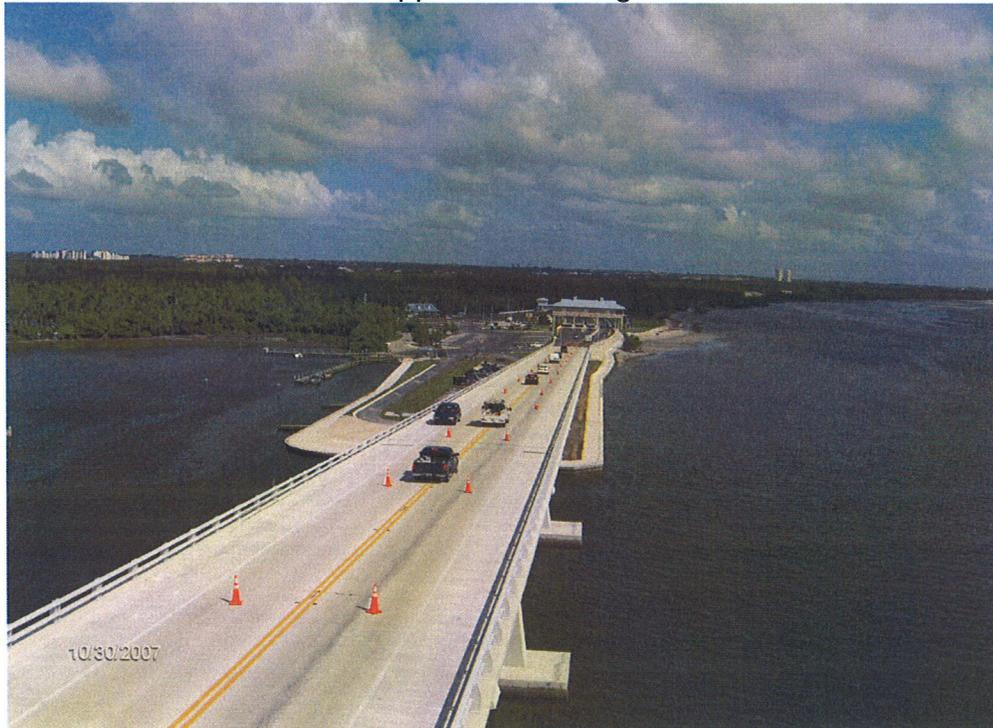
FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM  
BRIDGE INSPECTION REPORT

Bridge No.: 124116  
Inspection Date: 11/15/07

North Approach Looking South



North Approach Looking North



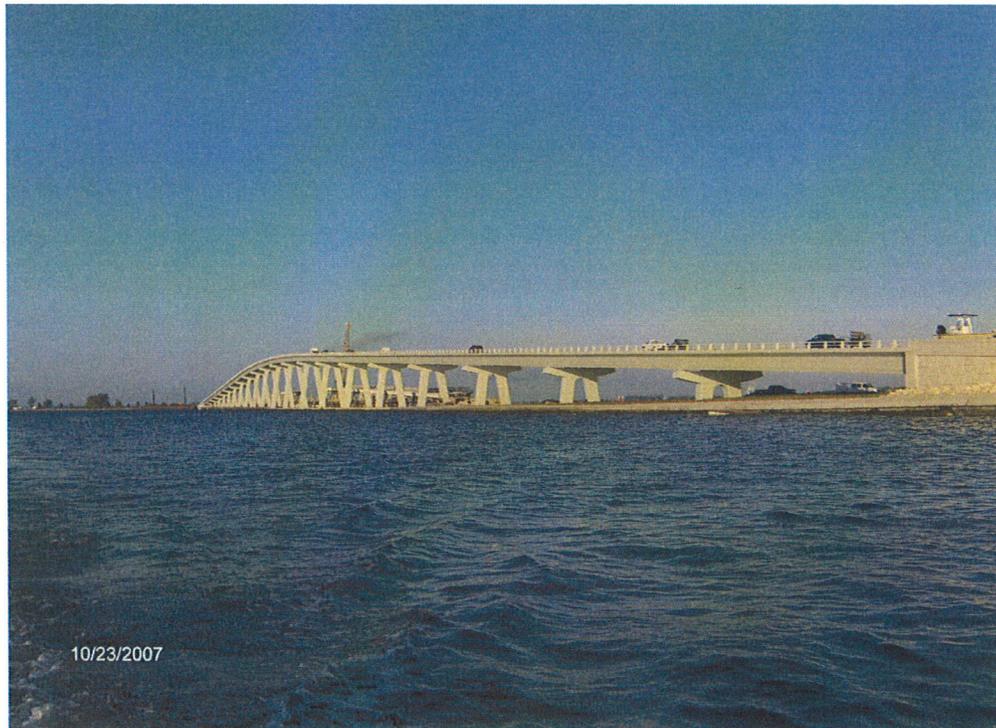
FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM  
BRIDGE INSPECTION REPORT

Bridge No.: 124116  
Inspection Date: 11/15/07

West Elevation



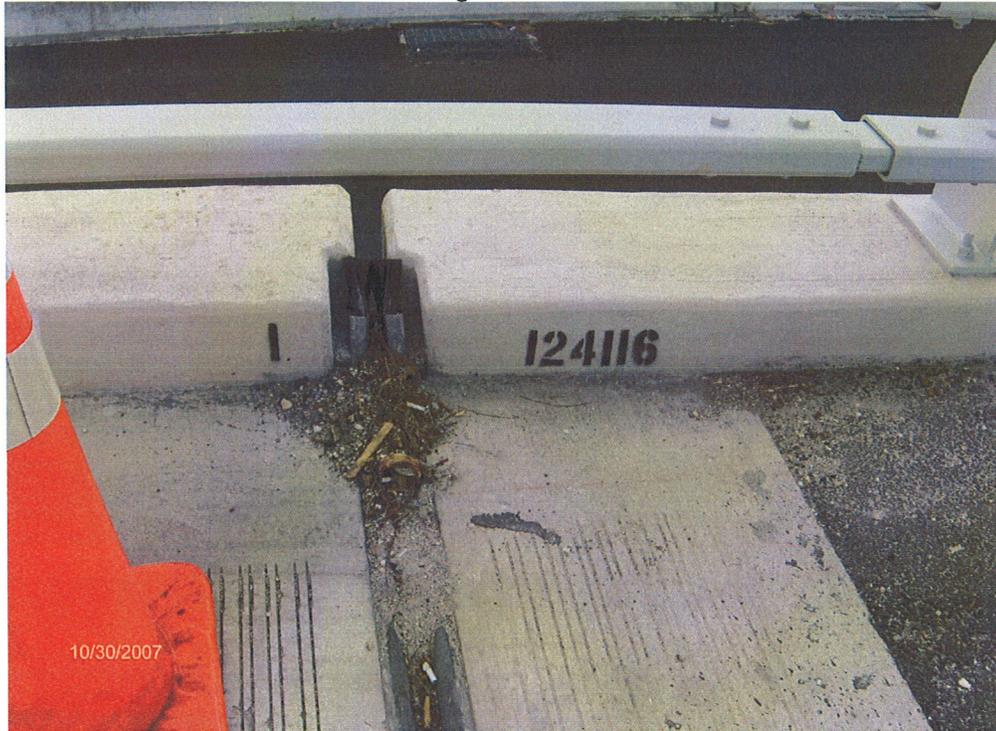
East Elevation



FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM  
BRIDGE INSPECTION REPORT

Bridge No.: 124116  
Inspection Date: 11/15/07

Bridge Number



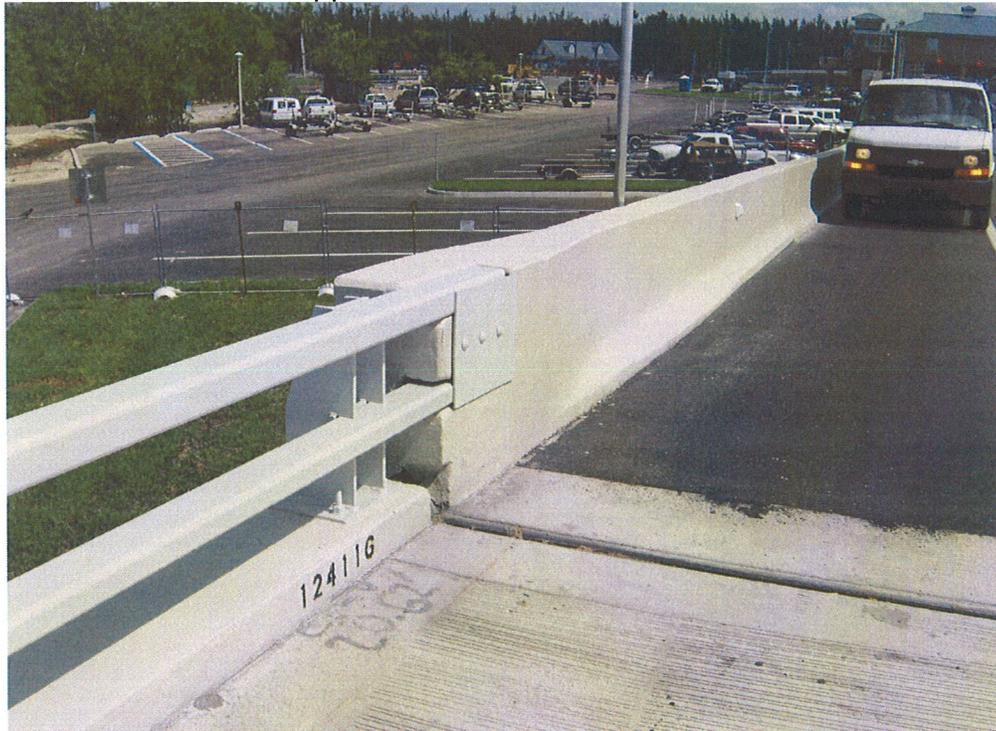
Bridge Rail



FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM  
BRIDGE INSPECTION REPORT

Bridge No.: 124116  
Inspection Date: 11/15/07

Approach Guardrail Transition



Underside



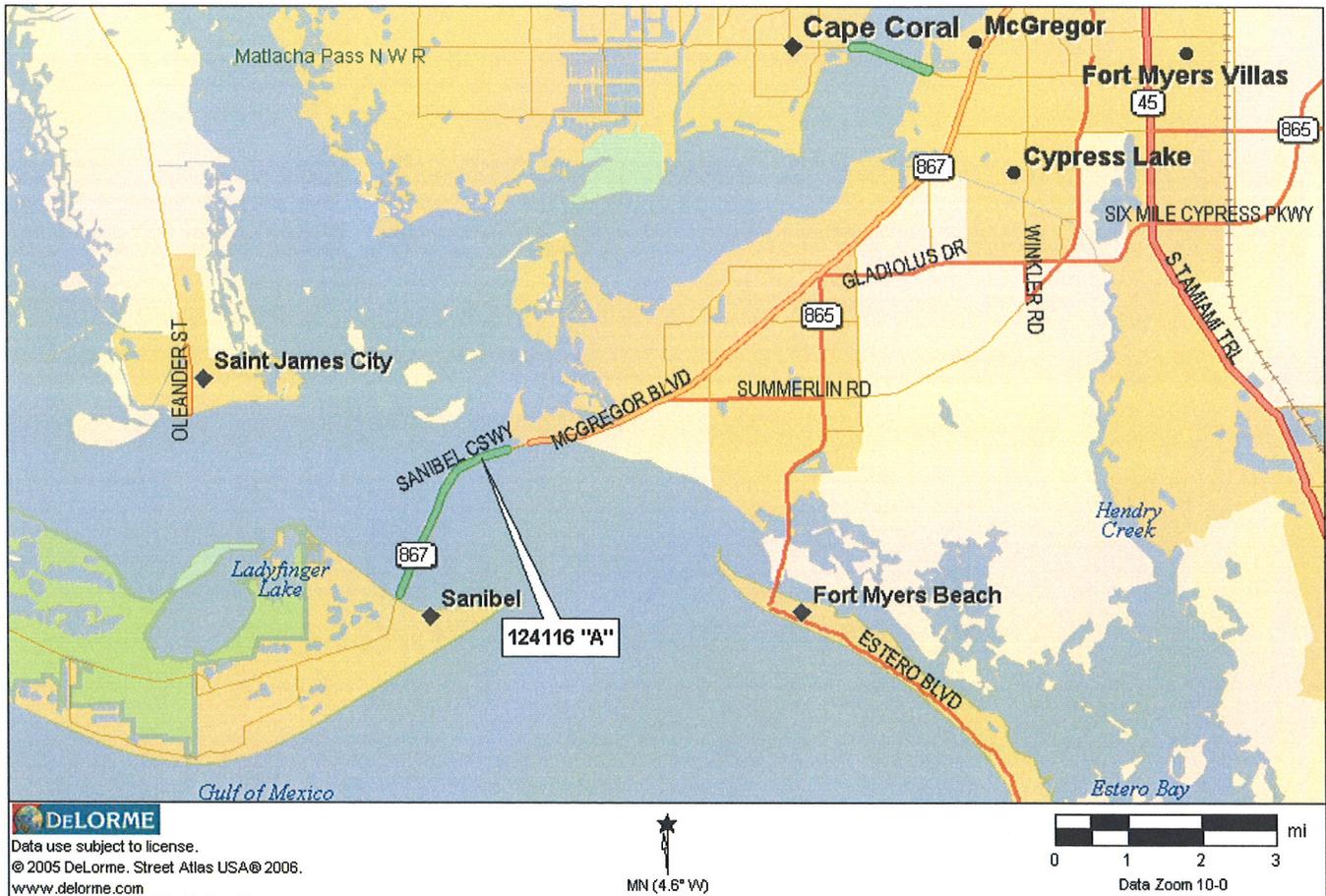
TOPIC B

BRIDGE LOCATION MAP

FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM  
BRIDGE INSPECTION REPORT

Bridge No.: 124116  
Inspection Date: 11/15/07

LOCATION MAP



**\*No Detour Route**

TOPIC C

DATA FILES AND REPORTS

FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM  
Comprehensive Inventory Data Report  
COMPREHENSIVE

REPORT ID: INVT001A  
Structure ID: 124116

Page 1 of 6  
DATE PRINTED: 12/14/2007

**4 Description**

**Structure Unit Identification**

Bridge/Unit Key: 124116 1  
Structure Name: STRUCTURE A SANIBEL CAUSEWAY  
Description:  
Type: M Main

**Roadway Identification:**

NBI Structure No (8) 124116  
Position/Prefix (5) Route On Structure  
Kind Hwy (Rte Prefix) 4 County Hwy  
Design Level of Service 1 Mainline  
Route Number/Suffix 00867/ 0 N/A (NBI)  
Feature Intersect (6) SAN CARLOS BAY  
Critical Facility Not Defense-crit  
Facility Carried (7) CR 867  
Mile Point (11) 0  
Latitude (16) 026d28'56" Long (17) 082d01'03"

**Roadway Classification**

Nat. Hwy Sys (104) 0 Not on NHS  
National base Net (12) Not on Base Network  
LRS Inventory Rte (13a) 12 000 000 Sub Rte (13b) 00  
Functional Class (26) 16 Urban Minor Arterial  
On Federal Aid System Y  
Defense Hwy (100) 0 Not a STRAHNET hwy  
Direction of Traffic (102) 2 2-way traffic  
Emergency

**Roadway Traffic and Accidents**

Lanes (28) 2 Medians 0 Speed 35 mph  
ADT Class ADT Class 4  
Recent ADT (29) 19000 Year (30) 2007  
Future ADT (114) 22900 Year (115) 2027  
Truck % ADT (109) 7  
Detour Length (19) 99.0 mi  
Detour Speed -1 mph  
Accident Count -1 Rate -1

**Roadway Clearances**

Vertical (10) 99.99 ft Appr. Road (32) 40 ft  
Horiz. (47) 40 ft Roadway (51) 40 ft  
Truck Network (110) 0 Not part of natl netwo  
Toll Facility (20) 2 On toll road  
Fed. Lands Hwy (105) 0 N/A (NBI)  
School Bus Route   
Transit Route

VOLKERT & ASSOCIATES  
3409 W. LEMON STREET STE 1  
TAMPA, FL 33609  
CERT. OF AUTHORIZATION NUMBER 4641  
ROBERT J. HARRIGAN  
PE# 45236

*Robert J. Harrigan, P.E.*  
DEC 20 2007

**FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM  
Comprehensive Inventory Data Report  
COMPREHENSIVE**

REPORT ID: INVT001A  
Structure ID: 124116

Page 2 of 6  
12/14/2007

DATE PRINTED:

**Structure Identification**

Admin Area Lee County  
District (2) D1 - Bartow  
County (3) (12)Lee  
Place Code (4) Sanibel  
Location (9) 1ST STRCT S/O TOLL PLAZA  
Border Br St/Reg (98) Not Applicable (P) Share 0 %  
Border Struct No (99)  
FIPS State/Region (1) 12 Florida Region 4-Atlanta  
NBIS Bridge Len (112) Meets NBI Length  
Parallel Structure (101) No || bridge exists  
Temp. Structure (103) Not Applicable (P)  
Maint. Resp. (21) 2 County Hwy Agency  
Owner (22) 2 County Hwy Agency  
Historic Signif. (37) 5 Not eligible for NRHP

**Geometrics**

Spans in Main Unit (45) 21  
Approach Spans (46) 0  
Length of Max Span (48) 144.2 ft  
Structure Length (49) 3002.5 ft  
Deck Area 129408 sqft  
Structure Flared (35) 0 No flare

**Age and Service**

Year Built (27) 2007  
Year Reconstructed (106)  
Type of Service On (42a) 1 Highway  
Under (42b) 5 Waterway  
Fracture Critical Details Not Applicable

**Structure Type and Material**

Curb/Sidewalk (50): Left 0 ft Right 0 ft  
Bridge Median (33): 0 No median  
Main Span Material (43A): 6 P/S Conc Continuous  
Appr Span Material (44A): Not Applicable (P)  
Main Span Design (43B): 02 Stringer/Girder  
Appr Span Design (44B): Not Applicable (P)

**Deck Type and Material**

Deck Width (52): 43.1  
Skew (34): 0  
Deck Type (107): 1 Concrete-Cast-in-Place  
Surface (108): 0 None  
Membrane: 0 None  
Deck Protection: None

**3 Appraisal**

**Structure Appraisal**

Open/Posted/Closed (41) A Open, no restriction  
Deck Geometry (68) 5 Above Tolerable  
Underclearances (69) N Not applicable (NBI)  
Approach Alignment (72) 9-No Speed Red No Curve  
Bridge Railings (36a) 1 Meets Standards  
Transitions (36b) 1 Meets Standards  
Approach Guardrail (36c) 1 Meets Standards  
Approach Guardrail ends (36d) 1 Meets Standards  
Scour Critical (113) T Tidal, Low Risk

**Navigation Data**

Navigation Control (38) Permit Required  
Nav Vertical Clr (39) 70 ft  
Nav Horizontal Clr (40) 111.2 ft  
Min Vert Lift Clr (116) 0 ft  
Pier Protection (111) 2 In-Place, Functioning

**NBI Condition Rating**

Sufficiency Rating 68  
Health Index 99.82  
Structural Eval (67) 5 Above Min Tolerable  
Deficiency Not Deficient

**Minimum Vertical Clearance**

Over Structure (53) 99.99 ft  
Under (reference) (54a) N Feature not hwy or RR  
Under (54b) 0 ft

**Minimum Lateral Underclearance**

Reference (55a) N Feature not hwy or RR  
Right Side (55b) 0 ft  
Left Side (56) 0 ft

**Load Rating**

Design Load (31) HL 93  
Rating Date 8/1/2007 Initials RS  
Posting (70) 5 At/Above Legal Loads

Operating Type (63) 3 LRFR Load & Res. Fact  
Operating rating (64) 60.9 tons Alternate -1  
Inventory Type (65) 3 LRFR Load & Res. Fact  
Inventory Rating (66) 47.7 tons Alternate -1  
Alt Meth -1

**6 Schedule**

**Current Inspection**

Inspection Date: 11/15/2007  
Inspector: KN738WW-P - Wade Wolfe  
Bridge Group: BD523  
Primary Type: Regular NBI  
Review Required:

**Next Inspection Date Scheduled**

NBI: 11/15/2009  
Element: 11/15/2009  
Fracture Critical:  
Underwater: 11/15/2009  
Other/Special:

**FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM  
Comprehensive Inventory Data Report  
COMPREHENSIVE**

REPORT ID: INVT001A  
Structure ID: 124116

Page 3 of 6  
DATE PRINTED: 12/14/2007

**6 Schedule Cont.**

**Inspection Types  
Performed**

NBI  Element  Fracture Critical  Underwater  Other Special

**Inspection Intervals      Required (92)      Frequency (92)      Last Date (93)      Inspection Resources**

Fracture Critical	<input type="checkbox"/>	mos		Crew Hours 40
Underwater	<input checked="" type="checkbox"/>	24 mos	10/02/2007	Flagger Hours 0
Other Special	<input type="checkbox"/>	mos		Helper Hours 0
NBI		24 mos (91)	11/15/2007 (90)	Snooper Hours 6
				Special Crew Hours 32
				Special Equip Hours 12

**5 Custom**

**General Bridge Information**

Parallel Bridge Seq 0000	Bridge Rail 1 Steel barrier
Channel Depth 25.2 ft	Bridge Rail 2 Not applicable-No rail
Radio Frequency -1	Electrical Devices Navigation lights only
Phone Number (000) 000-0000	Culvert Type Not applicable
Exception Date	Maintenance Yard 0
Exception Type Unknown	FIHS ON / OFF No Routes on FIHS
Accepted By Maint 00/00/0000	Previous Structure 124043
Warranty Expiration 00/00/0000	

**Bridge Load Rating Information**

HS20 Govr. Span Length 144 ft	Single Unit Truck 2 Axles -1 tons
L-Rating Origination Design Plans	Single Unit Truck 3 Axles -1 tons
Load Rating Date 08/01/2007	Single Unit Truck 4 Axles -1 tons
Method Calculation AASHTO formula	Combination Unit Truck 3 Axles -1 tons
Load Dist. Factor 0.982	Combination Unit Truck 4 Axles -1 tons
Impact Factor 1	Combination Unit Truck 5 Axles -1 tons
Design Method LRFD (Load & Res Factor)	Truck Trailer 5 Axles -1 tons
Design Measure English	Posting Weight 99 tons
Recommend SU Posting 99 tons	Actual SU Posting 99 tons
Recommend C Posting 99 tons	Actual C Posting 99 tons
Recommend T Posting 99 tons	Actual T Posting 99 tons
Gov FB Span 0 ft	FL 120 Long Gov Span 110 tons
Gov FB Spacing 0 ft	FL 120 Trans -1 tons
FB HS20 Rating 0	Single Axle Trans -1 tons
FB SU4 Rating 0 tons	Tandem Axle Trans -1 tons
FB Present N	Wing Span -1 ft
FB INV Rating Factor 0	Web to Web Span -1 ft
FB OPR Rating Factor 0	HS20 OPR Rating Max Span -1 tons
FB FL 120 0 tons	FL120 Long Max Span 110 tons

**Bridge Scour and Storm Information**

Pile Driving Record All pile driving records	Scour Recommended I No recommendation
Foundation Type Foundation details	Scour Recommended II No recommendation
Mode of Flow Tidal	Scour Recommended III No recommendation
Rating Scour Eval Low Risk - High	Scour Elevation 999
Highest Scour Eval No phase completed	Action Elevation 999
	Storm Frequency 100

**1 Condition**

**NBI Rating**

Channel (61) 8 Protected	Culvert (62) N N/A (NBI)
Deck (58) 8 Very Good	Waterway (71) 8 Equal Desirable
Superstructure (59) 6 Satisfactory	Unrepaired Spalls -1
Substructure (60) 5 Fair	Review Required <input checked="" type="checkbox"/>

**FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM  
Comprehensive Inventory Data Report  
COMPREHENSIVE**

REPORT ID: INVT001A  
Structure ID: 124116

Page 4 of 6  
DATE PRINTED: 12/14/2007

Elements

Inspection Date: 11/15/2007 GPFO

Span Id	Elem/En	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	Qty5	%5	T Qty
Structure 1	12/4	Bare Concrete Deck	129408	100.	0		0		0		0		129408 sf.

Notes

Structure 1	300/4	Strip Seal Exp Joint	345	100.	0		0		0		0		345 lf.
-------------	-------	----------------------	-----	------	---	--	---	--	---	--	---	--	---------

Notes NOTE: This element quantifies joints 1, 4, 7, 10, 13, 16, 19 and 22.

Structure 1	334/4	Metal Rail Coated	6005	100.	0		0		0		0		6005 lf.
-------------	-------	-------------------	------	------	---	--	---	--	---	--	---	--	----------

Notes NOTE: Barriers meet NCHRP TL4 criteria and meet SIA Item 36 standards.

CS1: There are several tire marks on the barriers.

Structure 1	109/4	P/S Conc Open Girder	11998	99.9	12	.1	0		0		0		12010 lf.
-------------	-------	----------------------	-------	------	----	----	---	--	---	--	---	--	-----------

Notes CS1: The beams have between 3 and 5 diagonal web cracks up to 4ft long x less than 1/64in wide, within 5ft of the bearings.

The east face of beam 14-4 has a 10in x 1/64in vertical bottom flange crack, 3in from the bearing.

The left top flange of beam 17-4 has wide spread longitudinal hairline cracking with efflorescence and some cracks up to 1/64in wide near pier 18.

CS2: There are beam end /closure pour delaminations and spalls at pier 11 as follows:

- 10/11-1, east and west faces, delamination, 10in x 5in;
- 10/11-2, west face, spall with no exposed steel, delamination, 24in x 4in x 2in;
- 10/11-3, west face, spall with no exposed steel, 10in x 10in x 1/2in;
- 10/11-4, west face, delamination, 6in x 5in;
- 10/11-4, east face, spall with exposed steel, 42in x 12in x 5in. Refer to Photo 1. REPAIR ALL

There are minor bottom flange spalls with no exposed steel as follows:

- Beam 15-1, east face near pier 16, 6in x 2in x 1/2in;
- Beam 15-3, east face at 7/8pt, 4in x 4in x 1in;
- Beam 15-4, west face at 1/2pt, 16in x 4in x 1in.

Structure 1	397/4	Drain. Syst Metal	20	100.	0		0		0		0		20 ea.
-------------	-------	-------------------	----	------	---	--	---	--	---	--	---	--	--------

Notes CS1: Most scupper down spouts are not properly shimmed or anchored to the beams. Refer to Photo 2. REPAIR

Structure 1	310/4	Elastomeric Bearing	168	100.	0		0		0		0		168 ea.
-------------	-------	---------------------	-----	------	---	--	---	--	---	--	---	--	---------

Notes

Structure 1	563/4	Acc Ladd & Plat	16	100.	0		0		0		0		16 ea.
-------------	-------	-----------------	----	------	---	--	---	--	---	--	---	--	--------

Notes NOTE: Quantity includes eight ladders and eight platforms including two fender access walkways.

Structure 1	580/4	Navigational Lights	1	100.	0		0		0		0		1 ea.
-------------	-------	---------------------	---	------	---	--	---	--	---	--	---	--	-------

Notes NOTE: Element includes six fender lights, two clearance gauge lights and two swing lights. Only temporary lighting was in place at time of inspection.

Structure 1	205/4	R/Conc Column	40	100.	0		0		0		0		40 ea.
-------------	-------	---------------	----	------	---	--	---	--	---	--	---	--	--------

Notes

**FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM  
Comprehensive Inventory Data Report  
COMPREHENSIVE**

REPORT ID: INVT001A  
Structure ID: 124116

Page 5 of 6  
DATE PRINTED: 12/14/2007

**Elements**

Inspection Date: 11/15/2007 GPFO

Span Id	Elem/En	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	Qty5	%5	T Qty
207/4	P/S	Conc Holl Pile	220	98.21	2	.89	0	.	2	.89	0	.	224 ea.

**Notes** CS2: Pile 11-1 has two spalls with no exposed steel up to 6in x 6in x 1-1/2in.

Pile 17-10 has an intermittent 13ft x 12in x 3in spall with no exposed steel on the NE corner beginning 2ft below the footer.

CS4: The upper 7ft of piles 11-8 and 11-15 are fractured and all prestress strands are exposed. Refer to Sketch 1. REPAIR

215/4	R/Conc	Abutment	70	100.	0	.	0	.	0	.	0	.	70 lf.
-------	--------	----------	----	------	---	---	---	---	---	---	---	---	--------

**Notes**

220/4	R/C	Sub Pile Cap/Ftg	19	95.	1	5.	0	.	0	.	0	.	20 ea.
-------	-----	------------------	----	-----	---	----	---	---	---	---	---	---	--------

**Notes** CS2: Footer 17 has two spalls with no exposed steel up to 12in x 12in x 2in on the northeast and southeast corners.

234/4	R/Conc	Cap	862	100.	0	.	0	.	0	.	0	.	862 lf.
-------	--------	-----	-----	------	---	---	---	---	---	---	---	---	---------

**Notes** CS1: Both shear blocks in span 10 at pier 10 and the right block in span 11 at pier 12 are fractured. Refer to Photo 3. REPAIR

387/4	P/S	Fender/Dolphin	588	100.	0	.	0	.	0	.	0	.	588 lf.
-------	-----	----------------	-----	------	---	---	---	---	---	---	---	---	---------

**Notes** NOTE: Quantity includes dolphins. Fenders and dolphins incomplete at time of inspection.

396/4	Other	Abut Slope Pro	2500	100.	0	.	0	.	0	.	0	.	2500 sf.
-------	-------	----------------	------	------	---	---	---	---	---	---	---	---	----------

**Notes** NOTE: Element includes rock rubble rip rap and articulating concrete block mats. Under construction at time of inspection.

290/4	Channel		1	100.	0	.	0	.	0	.	0	.	1 ea.
-------	---------	--	---	------	---	---	---	---	---	---	---	---	-------

**Notes**

321/4	R/Conc	Approach Slab	2	100.	0	.	0	.	0	.	0	.	2 ea.
-------	--------	---------------	---	------	---	---	---	---	---	---	---	---	-------

**Notes**

478/4	MSE	Walls	120	100.	0	.	0	.	0	.	0	.	120 lf.
-------	-----	-------	-----	------	---	---	---	---	---	---	---	---	---------

**Notes** NOTE: Quantity refers to 30LF at each corner.

**Total Number of Elements: 18**

FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM  
Comprehensive Inventory Data Report  
COMPREHENSIVE

REPORT ID: INVT001A  
Structure ID: 124116

Page 6 of 6  
DATE PRINTED: 12/14/2007

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**Inspection Information**

**Inspection Date:** 11.15.2007

**Type:** Regular NBI

**Inspector:** KN738WW-P - Wade Wolfe

**Inspection Notes:** Sufficiency Rating Calculation Accepted by KNVOLCW-P at 2007-12-13 11:47:06  
Sufficiency Rating Calculation Accepted by KNVOLCW-P at 2007-12-04 11:53:05

**LOAD CAPACITY EVALUATION:**

The load rating dated 8/1/07 applies to the current condition of this bridge.

Construction of fenders, dolphins, slope protection and navigation lighting still in progress. Demolition of replaced structure ongoing. Left side groundline measurements not taken due to demolition.

Structure sustained damage due to demolition of replaced structure. Refer to Elements 109 P/S Conc Open Girder, 207 P/S Conc Holl Pile and 234 R/Conc Cap.

**Structure Notes**

OWNER: LEE COUNTY

**TRAFFIC RESTRICTION:** Based on the load rating analysis dated 8/1/07, the structure does not require posting. The structure is not posted.

Structure inventoried from south to north on a west to east leg of a south to north roadway. Direction of stationing is used to describe deficiency locations. (Left is West).

This structure replaces a bascule bridge 124043. The nearest structures are also on the causeway and are numbered 124114 and 124115.

Lane shift required for underbridge inspection vehicle. Power boat with fathometer used for groundline measurements.

TOPIC D

LOAD CAPACITY INFORMATION

**BRIDGE LOAD RATING SUMMARY FORM**

**BRIDGE DATA**

Bridge Number: 124116  
 Struct. Type Main [Item 43] @: 602  
 Struct. Type Appr. [Item 44] @: 602

**POSTING DATA**

Current Restrictions  
 Item 41 @: Open, No Restrictions  
 Is Posting Needed: No  
 Proposed Restrictions  
 Item 70 @: All/Above Legal Loads

**PROGRAM USED**

ComSpan

**BASIS FOR ANALYSIS**

Design Drawings: Yes  
 As-Built Drawings: No  
 Shop Drawings: No  
 Field Measurements: No  
 Coupon Testing: No  
 Other: No

**LIVE LOAD DISTRIBUTION**

AAASHTO LFD: X  
 AAASHTO LRFD: X  
 SALOD:  
 BRUFEM:  
 Finite Element on Grillage:

**LONGITUDINAL GOVERNING COMPONENT**

Main/Approach Span: Approach  
 Description: Multi-Beam  
 Material: Prestressed Conc  
 Simple/Continuous Span: Continuous  
 Span Length: 144'-0"  
 Flexure, Shear or Principal Tension: Flexure

**OTHER SPAN OF INTEREST**  
(If Applicable)

**TRANSVERSE GOVERNING COMPONENT**

Main/Approach Span: Approach  
 Description: Slab  
 Material: Concrete  
 Deck, Box or Substructure: Deck  
 Flexure, Shear or Principal Tension: Flexure

**OTHER SPAN OF INTEREST**  
(If Applicable)

PONTIS APPRAISAL TAB		PONTIS DATABASE INPUT		PONTIS LOAD RATING TAB		PONTIS LOAD RATING TAB	
Description (NBIS Code)	Value	Description (NBIS Code)	Value	Description (NBIS Code)	Value	Description (NBIS Code)	Value
Design Load (31) @	HL93	HS 20/HL 93 Governing Span Length	144'	FL 120 Longitudinal Governing Span Rating	110.0		
HL93, N9 (H10), M13.5 (H15), M13.5 (H15), M18 (H20), M18 (H20), M18 (H20)+Mod Pedestrian, Railroad, MS22.5 (HS25), Unknown (NB1), Unknown (P), Not Applicable (P)		Load Rating Origin	Design Plans				
Operating Type (63) @	Load & Resistance Factor	Load Rating Date	01-Aug-07				
Unknown, Load Factor, Allowable Stress, Load & Resistance Factor, Load Test, No Rating, Unknown (NB1), Not Applicable (P)		Method Calculation	AAASHTO Formula				
Operating Rating (64)* @ ( )	47.7 Tons	Unknown, AAASHTO Formula, SALOD, BRUFEM, Other					
Inventory Type (65) @	Load & Resistance Factor	Load Distribution Factor	0.9820				
Unknown, Load Factor, Allowable Stress, Load & Resistance Factor, Load Test, No Rating, Unknown (NB1), Not Applicable (P)		Impact Factor	1.33				
Inventory Rating (66)* @ ( )	60.9 Tons	Design Method	LRFD				
		Unknown, Working Stress, Load Factor, LRFD, Other					
		Design Measure	English				
		Unknown, English, System International					
<b>TRUCK OPERATING RATINGS</b>							
SU 2**	Enter Contr. Mem. ( )	-1.0	Tons				
SU 3**	Enter Contr. Mem. ( )	-1.0	Tons				
SU 4**	Enter Contr. Mem. ( )	-1.0	Tons				
C 3**	Enter Contr. Mem. ( )	-1.0	Tons				
C 4**	Enter Contr. Mem. ( )	-1.0	Tons				
C 5**	Enter Contr. Mem. ( )	-1.0	Tons				
ST 5**	Enter Contr. Mem. ( )	-1.0	Tons				
Recommended SU Posting ##	99						
Recommended C Posting ##	99						
Recommended ST Posting ##	99						
<b>LEGEND</b>							
* If rating is provided as a factor from an LRFR analysis, multiply the rating factor by 36 tons							
** If not calculated, enter "-1"							
# LRFR Rating Only							
## If Posting is not required, enter "99"							
@ BMS Coding Manual available on the FDOT Office of Maintenance website							
() List Controlling Member & (M)=moment, V=shear, pt=posting (tensioning) for this Rating							



Responsible Engineer: Ronald Sanchez  
 FL P.E. #: 58923  
 Date: 01-Aug-07  
 Address: 1000 Sawgrass Corporate Pkwy  
 Sunrise, FL 33322

COMMENTS BY ENGINEER	
Performed By:	Ronald Sanchez
Checked By:	Jose R. Vazquez
Reviewed By:	Steve Hedge
Date:	10-Oct-03
Date:	20-Oct-03
Date:	08-Aug-07

TOPIC E

BRIDGE HISTORY

FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM  
BRIDGE INSPECTION REPORT

Bridge No.: 124116  
Inspection Date: 11/15/07

BRIDGE HISTORY

This structure was built in 2007 for Lee County.

The structure was completed under Lee County Project No. 5807, Lee County Contract No. 2318.

The structure was designed by Hardesty & Hanover; the contractor was Boh Brothers Construction Co.

TOPIC F

FIELD PREPARATION

FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM  
BRIDGE INSPECTION REPORT

Bridge No.: 124116  
Inspection Date: 11/15/07

FIELD PREPARATION

1. Tools and Equipment:  
Normal Bridge Inspection Tools
2. Services:  
N/A
3. Scheduling:  
Daytime Hours
4. Site Conditions:  
Traffic – Estimated A.D.T. 19,000                      Estimated % of Truck Traffic: 7  
Stream Flows: Moderate  
Vegetation Conditions: None  
Waterway: Good  
Embankment Conditions: Good
5. Traffic Control Requirements:  
Lane Shift for Underbridge Inspection
6. Underwater Inspection Requirements:  
Scuba
7. Special Access Requirements:  
Underbridge Snooper, Power boat
8. Manhours:  
Travel to and from site: 3 hours x 2 people = 6  
Inspection hours:                      20 hours x 2 people = 40
9. Plans Available:  
Yes

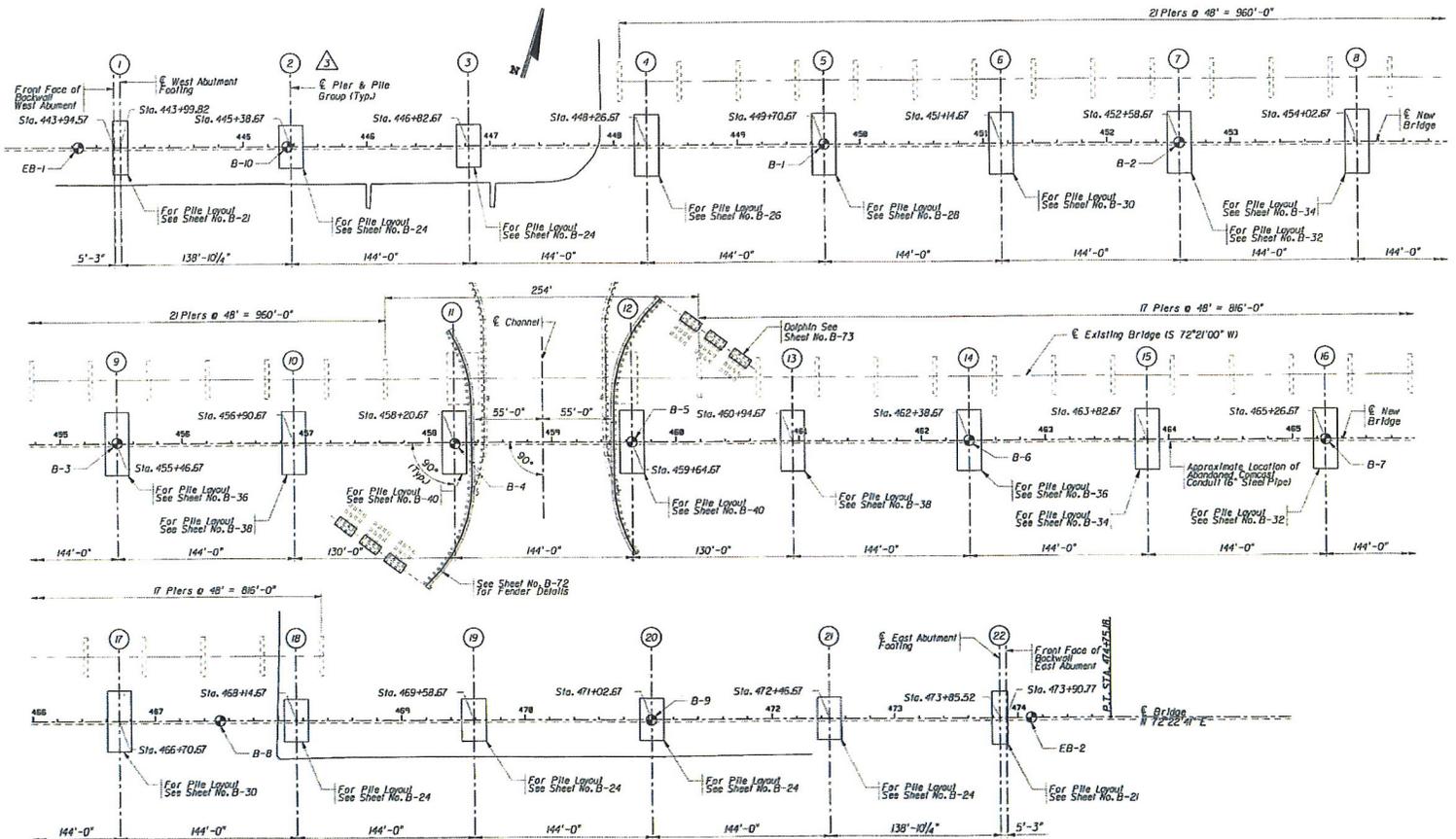
## TOPIC G

### BRIDGE DESCRIPTION AND DRAWINGS



# FLORIDA DEPARTMENT OF TRANSPORTATION BRIDGE MANAGEMENT SYSTEM BRIDGE INSPECTION REPORT

Bridge No.: 124116  
Inspection Date: 11/15/07



FOUNDATION LAYOUT

# FLORIDA DEPARTMENT OF TRANSPORTATION BRIDGE MANAGEMENT SYSTEM BRIDGE INSPECTION REPORT

Bridge No.: 124116  
Inspection Date: 11/15/07

**GENERAL STRUCTURAL NOTES:**

**A. DESIGN LOADS**

1. DEAD LOADS:
  - A. UNIT WEIGHT OF REINFORCED CONCRETE 150 PCF
  - B. UNIT WEIGHT FOR UTILITIES IS 50 PLF PER BEAM
  - C. UNIT WEIGHT OF STRUCTURAL STEEL IS 490 PCF.
2. LIVE LOADS: DESIGN LIVE LOAD IS HL-93 AS PER AASHTO.

LIVE LOAD DISTRIBUTION FACTORS		
	MOMENT	SHEAR
EXTERIOR BEAM	1.006	1.006
INTERIOR BEAM	0.830	1.047

3. WIND LOADS: WIND LOADS HAVE BEEN COMPUTED WITH THE AASHTO LRFD SPECIFICATION USING A 100 MPH BASE DESIGN WIND VELOCITY AND "OPEN COUNTRY" CLASSIFICATION.
4. EARTHQUAKE: THE BRIDGE HAS BEEN DESIGNED TO MEET THE MINIMUM BEARING SUPPORT LENGTH DIMENSION DEFINED BY SECTION 4.7.4.4. OF THE AASHTO LRFD SPECIFICATIONS.
5. THERMAL FORCES:
  - A. SEASONAL VARIATION:
    1. TEMPERATURE RANGE FOR DESIGN OF STRUCTURE:
      - TEMPERATURE RISE = 30 F
      - TEMPERATURE FALL = 40 F
    2. SIZING BEARING AND JOINTS:
      - TEMPERATURE RISE = 25 F
      - TEMPERATURE FALL = 25 F
  - B. MEAN TEMPERATURE = 70 F
  - C. THERMAL COEFFICIENT = 0.00006 PER DEGREE F

**6. CREEP AND SHRINKAGE:**

STRAINS ARE AS PER AASHTO AND THE FOOT LRFD STRUCTURES DESIGN GUIDELINES.  
ULTIMATE CONCRETE SHRINKAGE COEFFICIENT = 0.0004 IN/IN

7. SHIP VESSEL IMPACT: VESSEL IMPACT FORCES BASED ON AASHTO LRFD METHOD II AND PAST POINT 21. FORCES ARE APPLIED TO PIERS AND FENDER SYSTEM PARALLEL TO TIDAL FLOW.

PIER	IMPACT FORCE
11.12	1200 KIPS
8.9.10.13.14.15	1000 KIPS
5.6.7.16.17	800 KIPS
4	500 KIPS

**8. FOUNDATION ELEMENT:**

30" SQUARE, PRECAST PRESTRESSED VOIDED DRIVEN PILES. PILE DATA CAN BE FOUND ON SHEET NO. B-16

**9. ENVIRONMENT:**

SUPERSTRUCTURE: CORROSIVE (EXTREMELY AGGRESSIVE)  
SUBSTRUCTURE: CORROSIVE (EXTREMELY AGGRESSIVE)  
LOCATION: COASTAL SALTWATER

10. STAY-IN-PLACE FORMS ARE NOT PERMITTED DUE TO EXTREMELY AGGRESSIVE ENVIRONMENT.

11. SCOUR HAS BEEN CONSIDERED IN THE DESIGN OF THE PILES AND ARE BASED ON THE FLOOD DATA SHOWN ON THE BRIDGE HYDRAULIC RECOMMENDATION SHEET (SHEET NO. G-1).

**B. ALLOWABLE STRESSES/LOADS:**

1. REINFORCED CONCRETE: AS PER AASHTO.
2. PRESTRESSED CONCRETE:
  - CONCRETE STRENGTH AT TRANSFER,  $f'_{ci} = 0.8f'_c = 6.8$  KSI
  - CONCRETE STRENGTH AT 28 DAYS,  $f'_c = 8.5$  KSI

**TEMPORARY STRESSES BEFORE LOSSES:**

COMPRESSION =  $0.60f'_{ci}$   
TENSION (WITHOUT BONDED REINFORCEMENT) = 0.200 KSI  
TENSION (WITH BONDED REINFORCEMENT) = 0.625 KSI

**SERVICE LIMIT STATES AFTER LOSSES, FULLY PRESTRESSED:**

DUE TO EFFECTIVE PRESTRESS AND PERMANENT LOADS =  $0.45f'_c$  (3.82 KSI)  
DUE TO LL AND 1/2 THE SUM OF EFFECTIVE PREST. AND PERMANENT LOADS =  $0.40f'_c$  (3.40 KSI)  
DUE TO PRESTRESS, PERMANENT AND TRANSIENT/LIVE LOAD =  $0.6f'_c$  (5.10 KSI)  
TENSION (UNLESS OTHERWISE NOTED) =  $3\sqrt{f'_c}$  (0.28 KSI)  
OUTER 15% @ TOP OF BEAM =  $6\sqrt{f'_c}$  (10.56 KSI)

**C. MATERIALS:**

1. CONCRETE: (28 DAY CYLINDER STRENGTH AS NOTED):
  - A. PRESTRESSED CONCRETE BEAMS (FLORIDA TEE-BEAMS) CLASS VI 8,500 PSI
  - B. CAST IN PLACE SUPERSTRUCTURE (BRIDGE DECK, DIAPHRAGMS, SHEAR BLOCKS, SEAWALL CAPS AND BARRIERS): CLASS IV 5,500 PSI
  - C. CAST IN PLACE SUPERSTRUCTURE (APPROACH SLABS): CLASS II (BRIDGE DECK) 4,500 PSI
  - D. CAST IN PLACE SUBSTRUCTURE (ABUTMENTS, FOOTINGS, PIERS INCLUDING COLUMNS, CAPS, PEDESTALS AND SHEAR BLOCKS): CLASS IV 5,500 PSI
  - E. PRESTRESSED CONCRETE PILES, CONCRETE SHEET PILES, AND SEAWALL CAP: CLASS V SPECIAL 6,000 PSI
  - F. MAXIMUM AGGREGATE SIZE FOR PRECAST MEMBERS = 1/2"
  - G. CORROSION PROTECTION REQUIREMENTS:
    - MICROSILICA IS REQUIRED IN THE CONCRETE AT THE FOLLOWING LOCATIONS: ALL PIERS ABOVE PILE CAP, SEAWALL CAP AND PRECAST CONCRETE SHEET PILES.

- H. PROVIDE 3/4" CHAMFERS ON ALL EXPOSED EDGES, UNLESS OTHERWISE NOTED.

- I. CONSTRUCTION JOINTS WILL BE PROVIDED ONLY AT LOCATIONS INDICATED IN THE PLANS. ADDITIONAL CONSTRUCTION JOINTS OR ALTERATIONS TO THOSE SHOWN SHALL REQUIRE WRITTEN APPROVAL OF THE ENGINEER.

**2. REINFORCING STEEL:**

- A. ASTM A 615, GRADE 60, UNLESS OTHERWISE NOTED.
- B. CONCRETE COVERS SHALL BE AS FOLLOWS (UNLESS OTHERWISE NOTED):

SUPERSTRUCTURE (PRECAST):  
PRESTRESSED BEAMS: 2"  
PRESTRESSED BEAMS - TOP OF TOP FLANGE: 1"  
TOP DECK SURFACE: 2 1/2"  
ALL OTHER SURFACES: 2"

SUBSTRUCTURE:  
EXTERNAL SURFACES AGAINST EARTH AND WATER: 4 1/2"  
EXTERNAL SURFACE FORMED: 4"  
TOP OF BEAM PEDESTALS: 2"  
SEAWALL CAPS: 4"  
PRESTRESSED PILES & CONCRETE SHEET PILES: 3"

CONCRETE COVER SHOWN IN THE PLANS DO NOT INCLUDE REINFORCEMENT PLACEMENT AND FABRICATION TOLERANCES UNLESS SHOWN AS "MINIMUM COVER". SEE SPECIFICATIONS FOR ALLOWABLE REINFORCEMENT PLACEMENT TOLERANCES.

- C. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.

**3. PRESTRESSING STEEL: (PRESTRESSED CONCRETE BEAMS ONLY)**

STRAND ASTM A 416 GRADE 270, LOW RELAXATION  
PRESTRESSING PARAMETERS (STRAND):

APPARENT MODULUS: 28,000 KSI  
MAXIMUM JACKING STRESS: 216 KSI (80% ULTIMATE)  
MAXIMUM ANCHORING STRESS AT ANCHOR: 202 KSI (75% ULTIMATE) FOR PRETENSIONING  
STRAND DIAMETER 0.60"

**GENERAL NOTES:**

1. GENERAL SPECIFICATIONS:
  - FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2004 EDITION, INCLUDING ALL SUPPLEMENTAL AND SPECIAL PROVISIONS THERETO.
2. DESIGN SPECIFICATIONS
  - A. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) LRFD BRIDGE SPECIFICATIONS (SECOND EDITION, 1998) AND APPLICABLE INTERIMS THROUGH 2003.
  - B. FOOT ROADWAY AND TRAFFIC DESIGN STANDARDS, JANUARY 2004 EDITION.
  - C. FOOT STRUCTURES DESIGN GUIDELINES FOR LOAD AND RESISTANCE FACTOR DESIGN, JANUARY 1, 2003.
  - D. FOOT STRUCTURES DETAILING MANUAL, JANUARY 1, 1999.

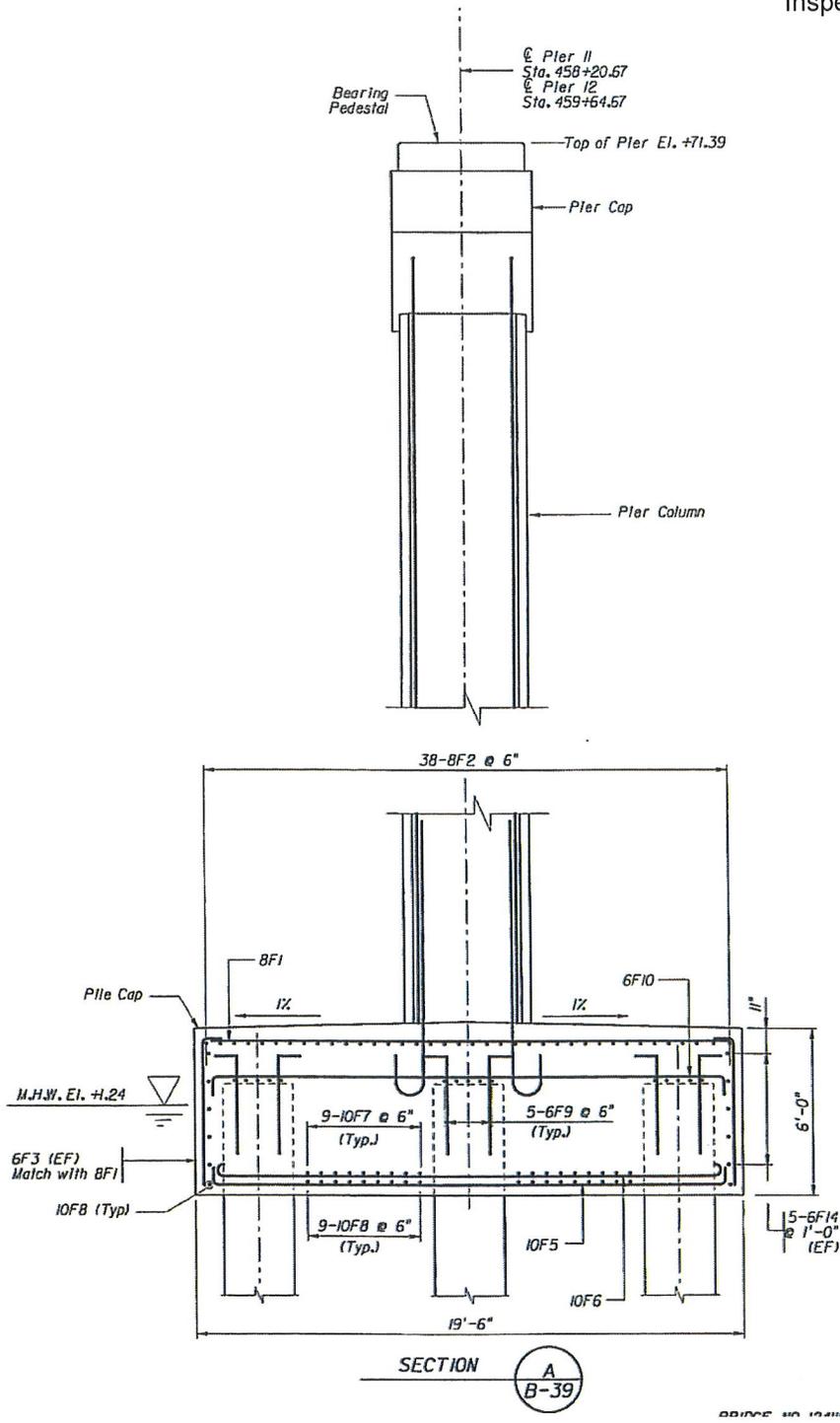
## GENERAL NOTES





# FLORIDA DEPARTMENT OF TRANSPORTATION BRIDGE MANAGEMENT SYSTEM BRIDGE INSPECTION REPORT

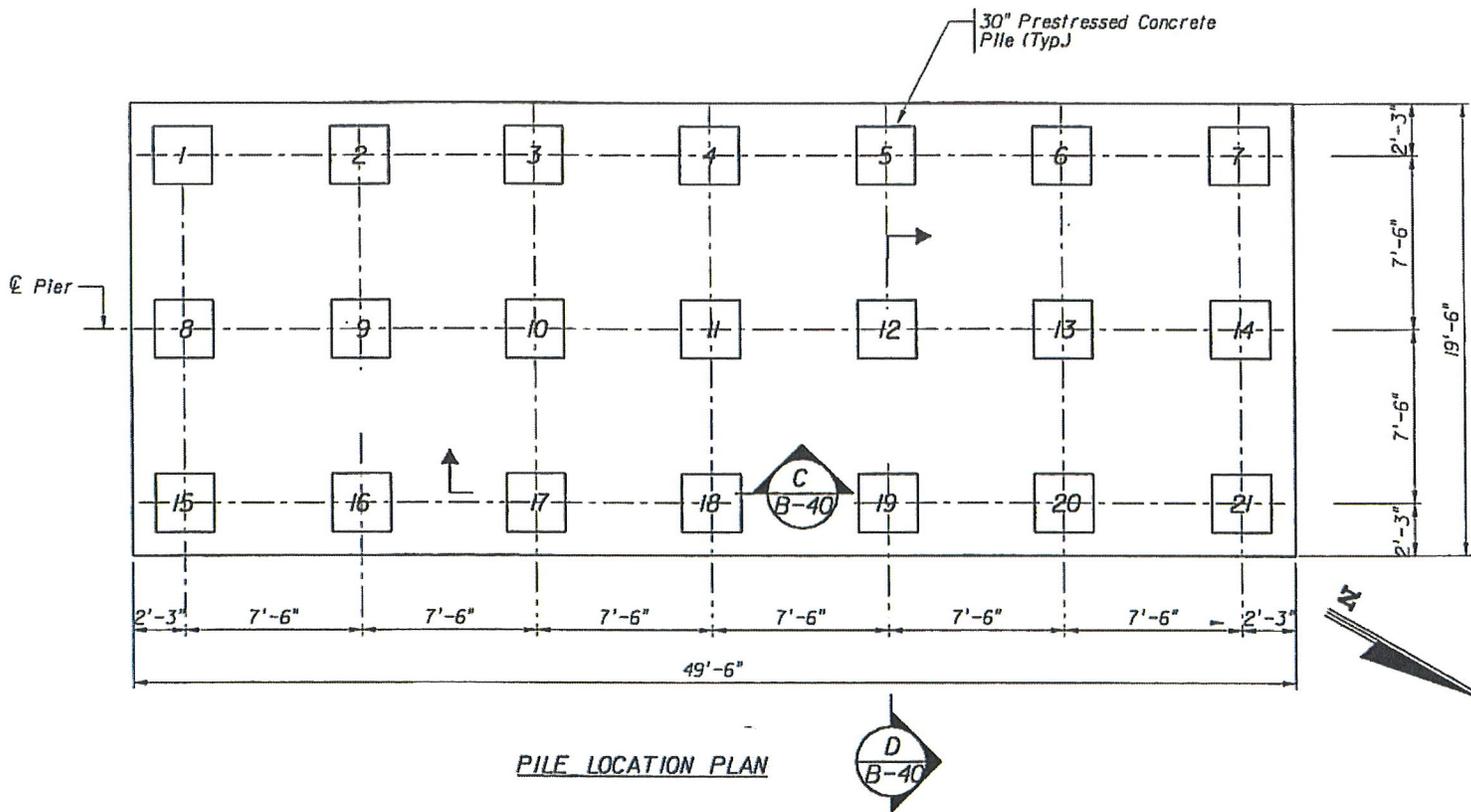
Bridge No.: 124116  
Inspection Date: 11/15/07



TYPICAL INTERMEDIATE PIER SECTION

FLORIDA DEPARTMENT OF TRANSPORTATION  
 BRIDGE MANAGEMENT SYSTEM  
 BRIDGE INSPECTION REPORT

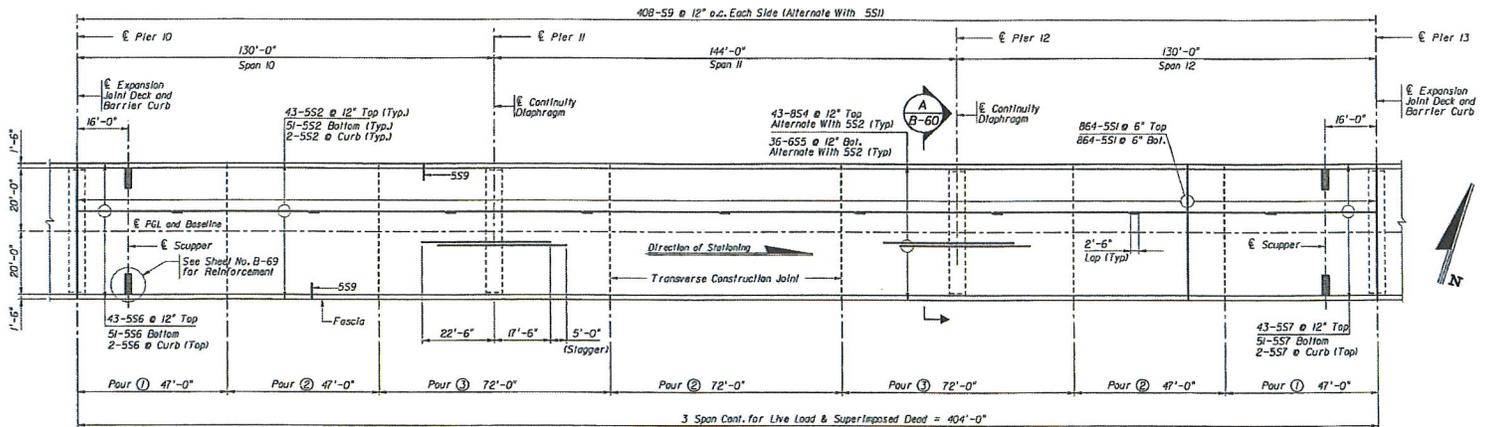
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 Inspection Date: 11/15/07



TYPICAL INTERMEDIATE PIER PILE LOCATION PLAN

# FLORIDA DEPARTMENT OF TRANSPORTATION BRIDGE MANAGEMENT SYSTEM BRIDGE INSPECTION REPORT

Bridge No.: 124116  
Inspection Date: 11/15/07

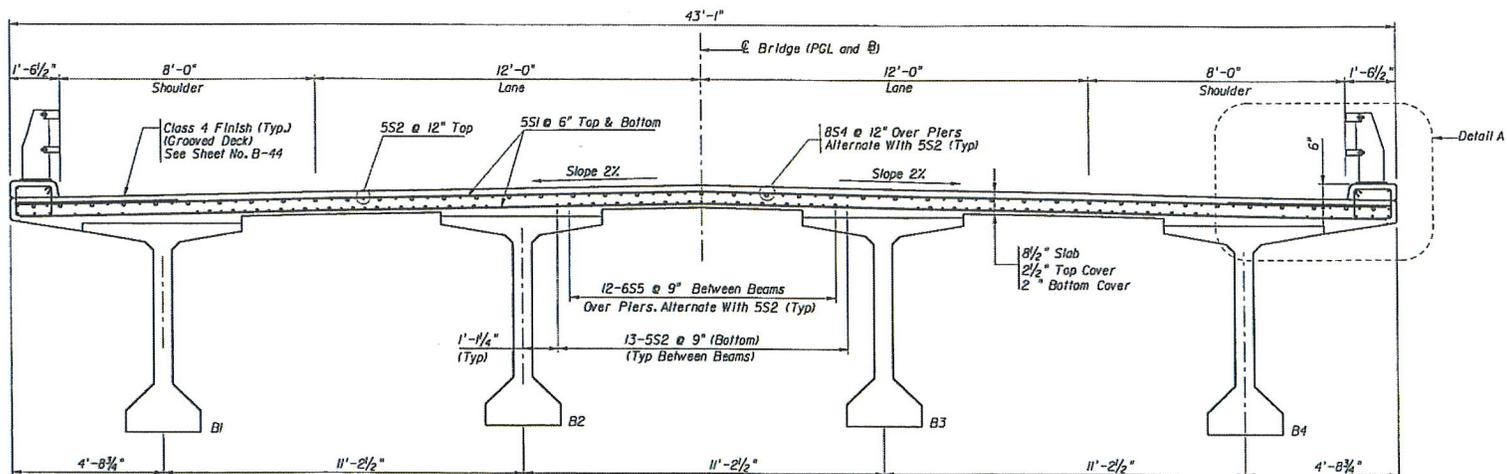


DECK PLAN - CENTER UNIT (1 UNIT REQUIRED)

SUPERSTRUCTURE PLAN

# FLORIDA DEPARTMENT OF TRANSPORTATION BRIDGE MANAGEMENT SYSTEM BRIDGE INSPECTION REPORT

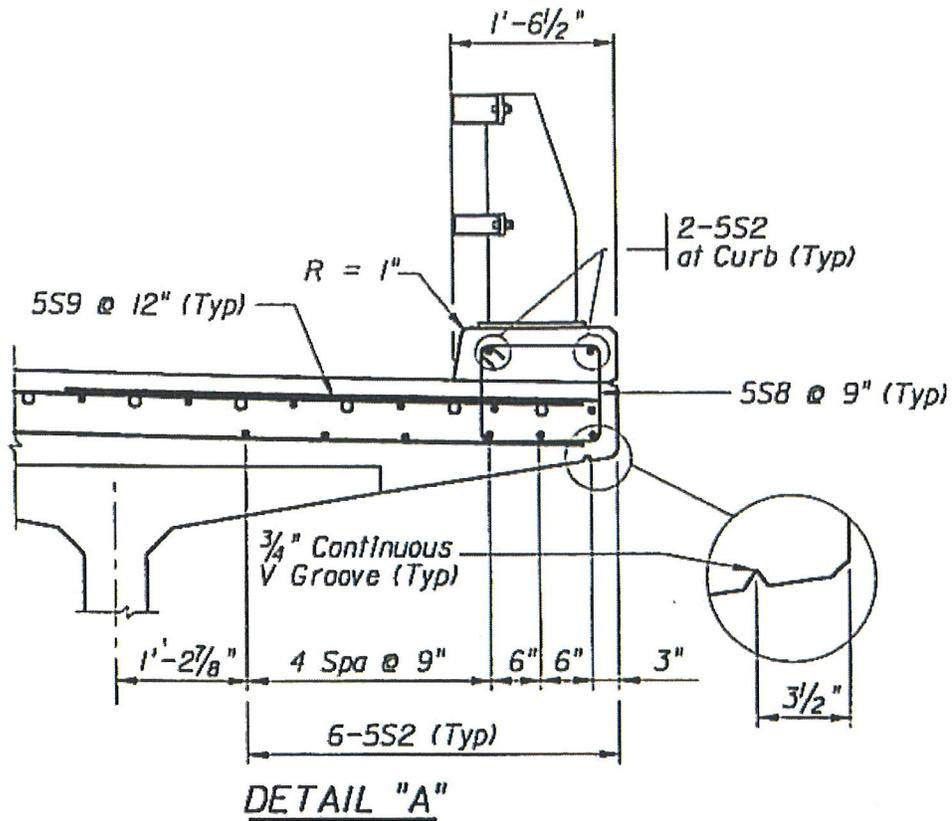
Bridge No.: 124116  
Inspection Date: 11/15/07



SUPERSTRUCTURE SECTION

FLORIDA DEPARTMENT OF TRANSPORTATION  
 BRIDGE MANAGEMENT SYSTEM  
 BRIDGE INSPECTION REPORT

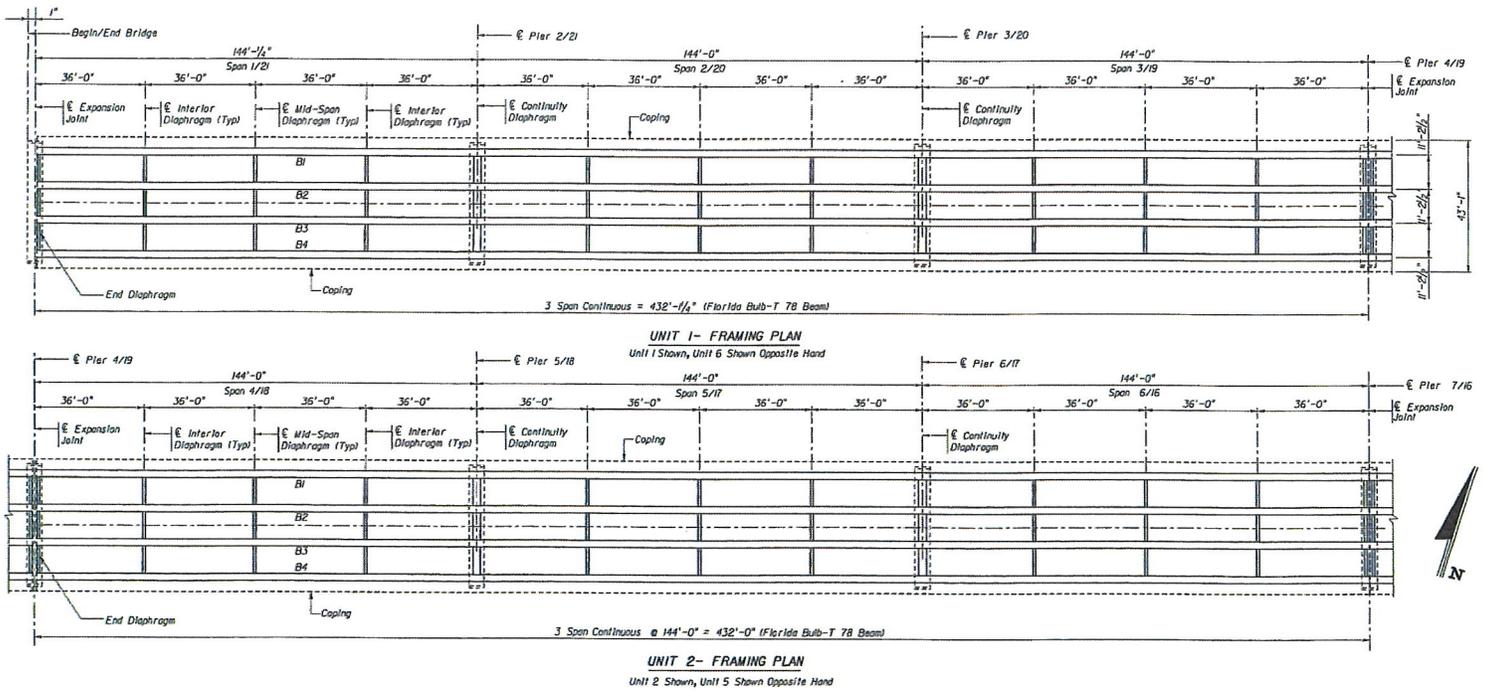
Bridge No.: 124116  
 Inspection Date: 11/15/07



SUPERSTRUCTURE DETAILS

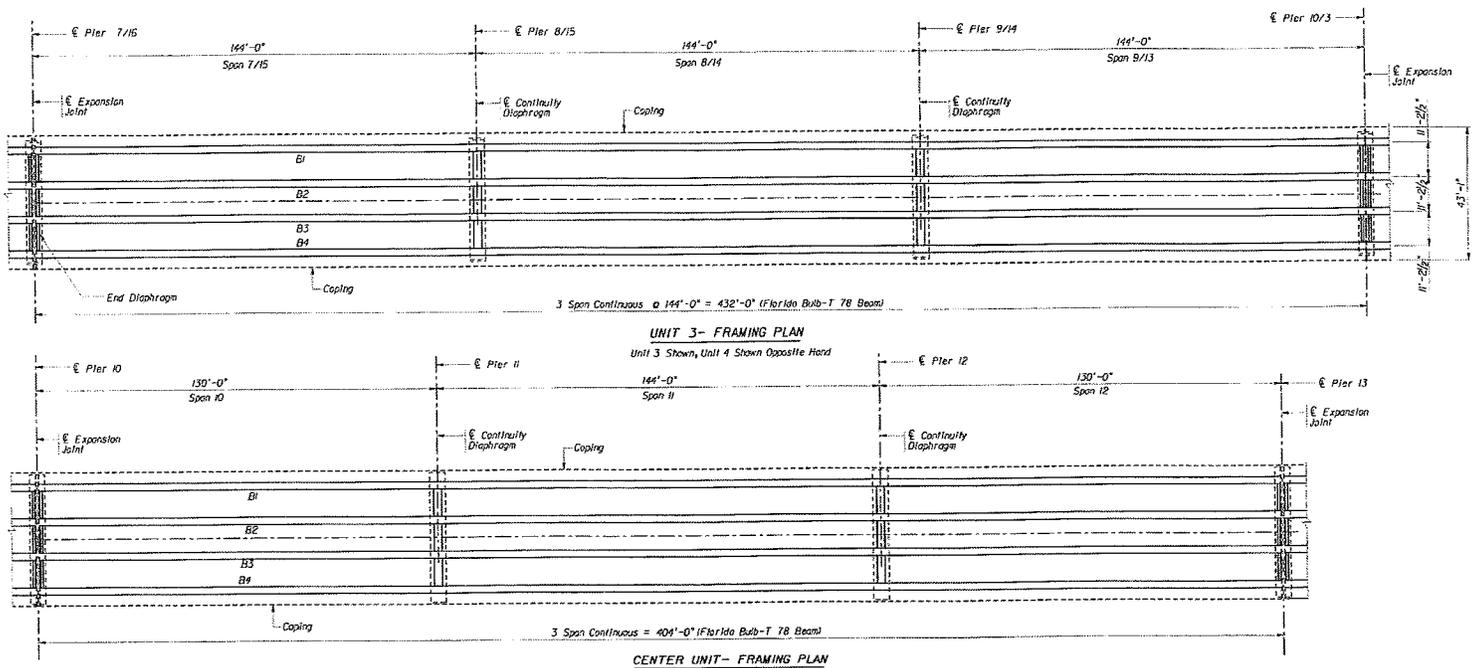
# FLORIDA DEPARTMENT OF TRANSPORTATION BRIDGE MANAGEMENT SYSTEM BRIDGE INSPECTION REPORT

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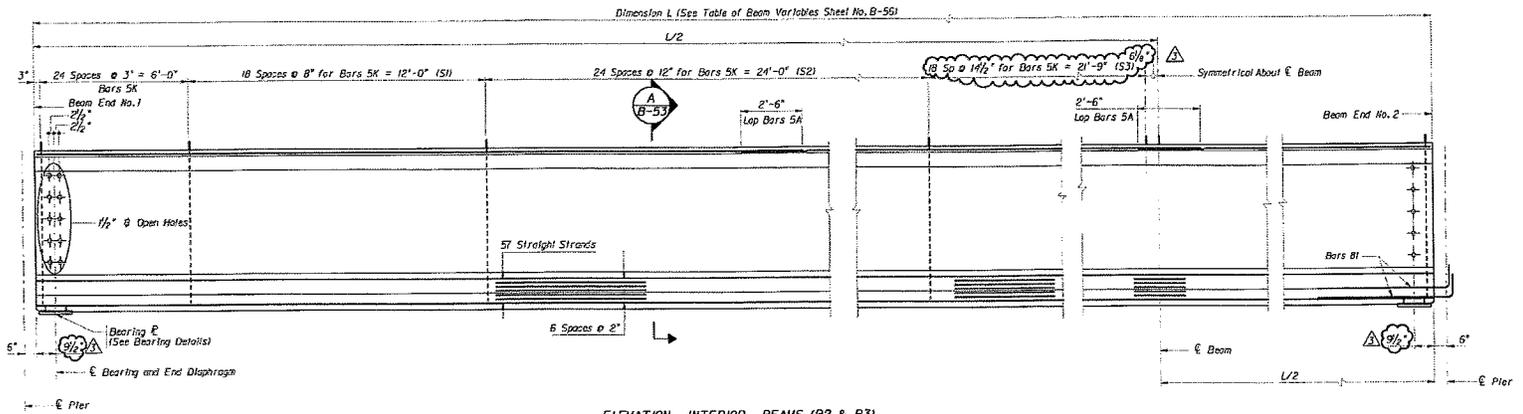
# FLORIDA DEPARTMENT OF TRANSPORTATION BRIDGE MANAGEMENT SYSTEM BRIDGE INSPECTION REPORT

Bridge No.: 124116  
Inspection Date: 11/15/07



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Inspection Date: 11/15/07

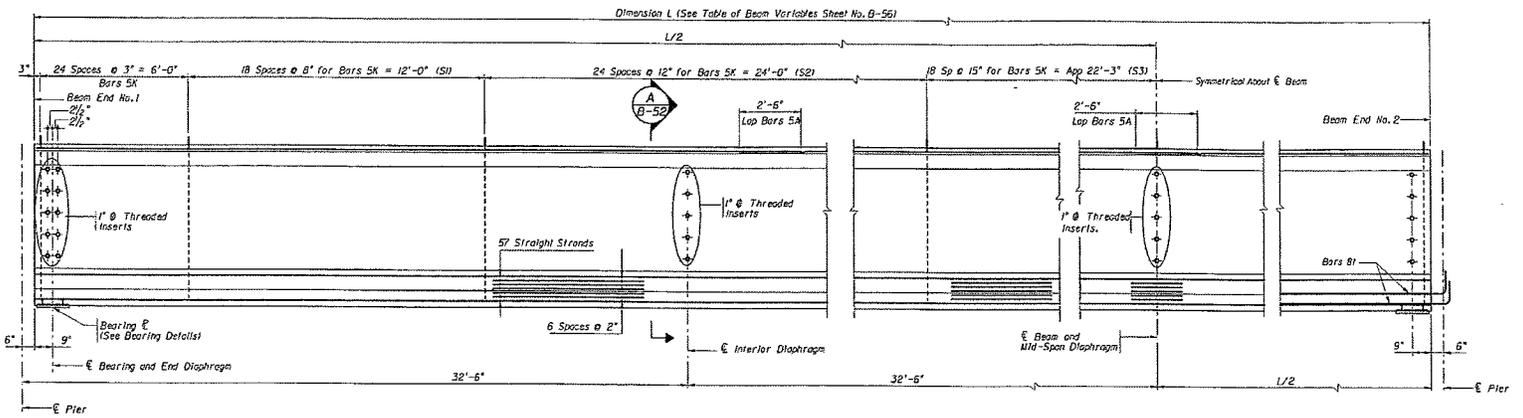


**ELEVATION - INTERIOR BEAMS (B2 & B3)**  
CENTER UNIT, 130 FT SPANS  
See Sheet Nos B-48 and B-49 for Additional Beam Reinforcing and Beam End Conditions

TYPICAL INTERIOR BEAM ELEVATION

# FLORIDA DEPARTMENT OF TRANSPORTATION BRIDGE MANAGEMENT SYSTEM BRIDGE INSPECTION REPORT

Bridge No.: 124116  
Inspection Date: 11/15/07

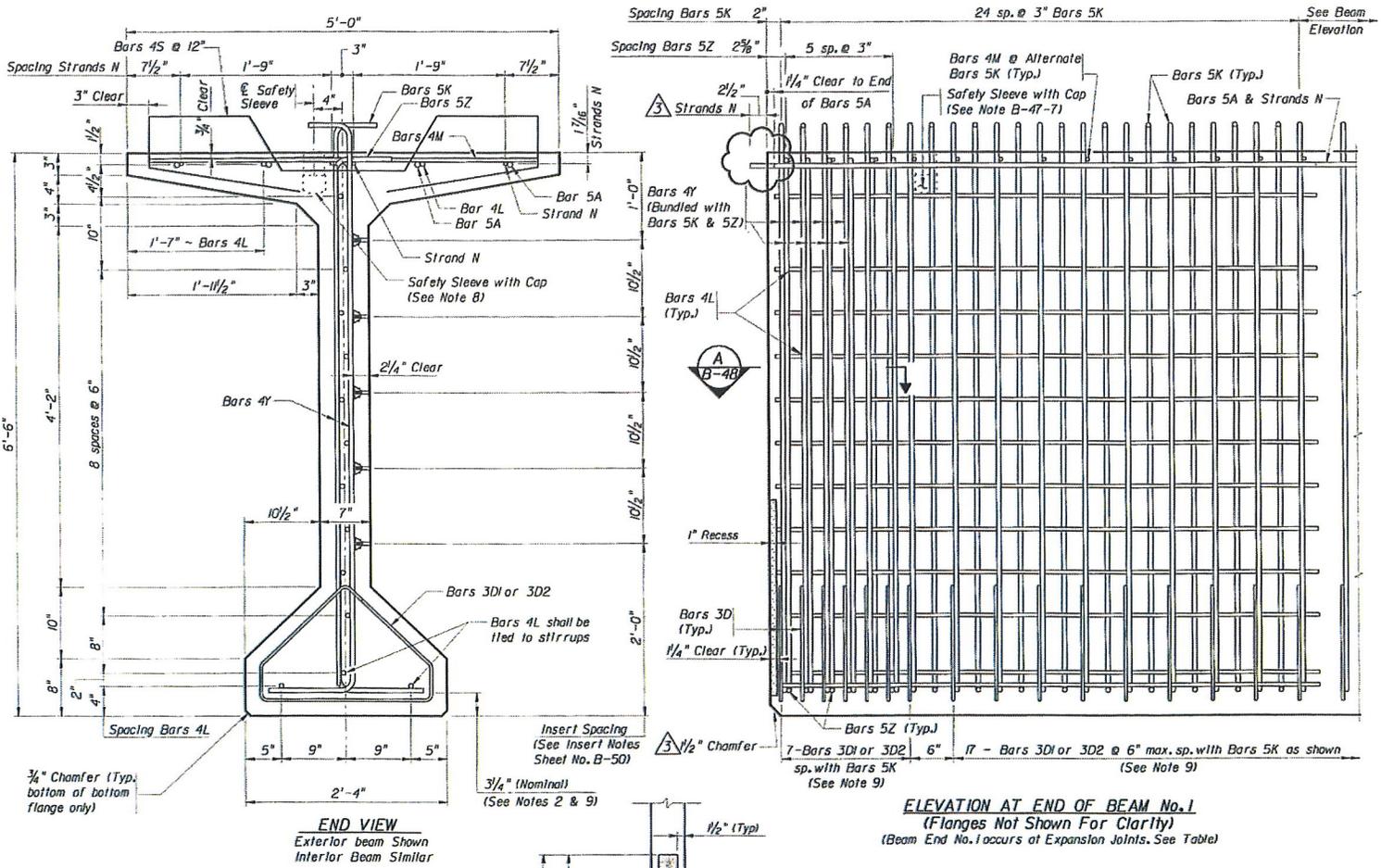


**ELEVATION - EXTERIOR BEAMS (B1 & B4)**  
CENTER UNIT, 130 FT SPANS  
See Sheet Nos B-48 and B-49 for Additional Beam  
Reinforcing and Beam End Condition

TYPICAL EXTERIOR BEAM ELEVATION

# FLORIDA DEPARTMENT OF TRANSPORTATION BRIDGE MANAGEMENT SYSTEM BRIDGE INSPECTION REPORT

Bridge No.: 124116  
Inspection Date: 11/15/07

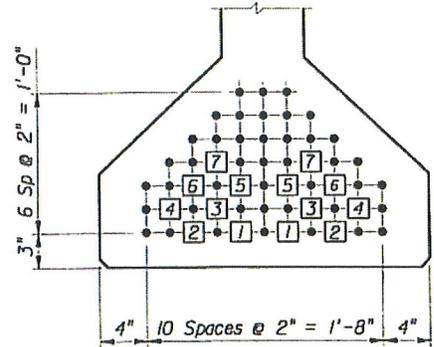
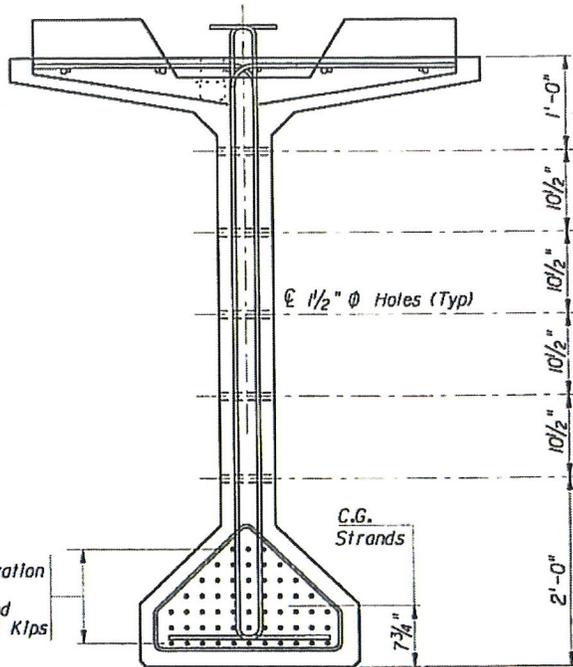


**NOTES:**  
Work this sheet with the following drawings:  
Sheet No. B-47 to B-57 typical beam details and notes  
See Table of Beam Variables, Sheet No. B-56.  
See notes on Sheet No. B-47.

GROUTED RECESS FOR STRANDS AT BEAM ENDS

FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM  
BRIDGE INSPECTION REPORT

Bridge No.: 124116  
Inspection Date: 11/15/07



STRAND PATTERN

- No Debonding
- ① Debonded from End of Beam to 45'-0"
- ② Debonded from End of Beam to 30'-0"
- ③ Debonded from End of Beam to 25'-0"
- ④ Debonded from End of Beam to 20'-0"
- ⑤ Debonded from End of Beam to 15'-0"
- ⑥ Debonded from End of Beam to 10'-0"
- ⑦ Debonded from End of Beam to 5'-0"

SECTION



FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM  
BRIDGE INSPECTION REPORT

Bridge No.: 124116  
Inspection Date: 11/15/07

*BEAM NOTES*

1. *All bar dimensions are out-to-out.*
2. *Place one (1) Bar 5K or 4Z at each location as detailed alternating the direction of the ends for each bar (see "ELEVATION AT END OF BEAM").*
3. *Bars 4L shall be bent prior to the beam leaving the prestressing yard. Bars 4L shall be bent parallel to the ends of the beams.*
4. *Caution should be used with Bars 4L in the ends of exterior beams to assure the bent portion of the bar is properly oriented so that the bar will be embedded in the diaphragm concrete.*
5. *Strands N shall be either ASTM A416, Grade 270, seven-wire strands  $\frac{3}{8}$ "  $\Phi$  or larger, stressed to 10,000 lbs. each.*
6. *Unless otherwise noted, the minimum concrete cover for reinforcing steel shall be 2".*
7. *Install Safety Sleeves 1'-10" from ends of beam and spaced on 8'-0" (Max.) centers. Shift Bars 5K locally to allow placement. Safety Sleeves shall be 2 $\frac{1}{2}$ " NPS x 5" Sch. 40 PVC Pipe with Cap. Holes shall be free of debris and water prior to casting deck.*
8. *Placement of Bars 3D1, 3D2, 4M1 and 4M2 correspond to END 1 and END 2 respectively, as shown in the beam "ELEVATION". Placement for bars 3D3 and 4M3 corresponds to center of span. For Bars 3D1 and 3D2, Dimension B and the overall length shall be adjusted to fit the width of the bottom flange measured parallel to the skew. Fan Bars 4M1 and 4M2 as needed to maintain minimum clearance (1 $\frac{1}{2}$ " ) between the bars at the transition to Bars 4M3 and field cut to length to maintain minimum cover.*
9. *Bars 5K and 5Z shall be placed and tied to the fully bonded strands in the bottom row (See Beam elevations for bars 5K spacing).*
10. *See Sheet Nos. B-48 Thru B-57 for additional beam details.*

BEAM NOTES

G17

TOPIC I

CHANNEL AND SCOUR INFORMATION

FLORIDA DEPARTMENT OF TRANSPORTATION  
BRIDGE MANAGEMENT SYSTEM  
BRIDGE INSPECTION REPORT

Bridge No.: 124116  
Inspection Date: 11/15/07

Channel Looking West

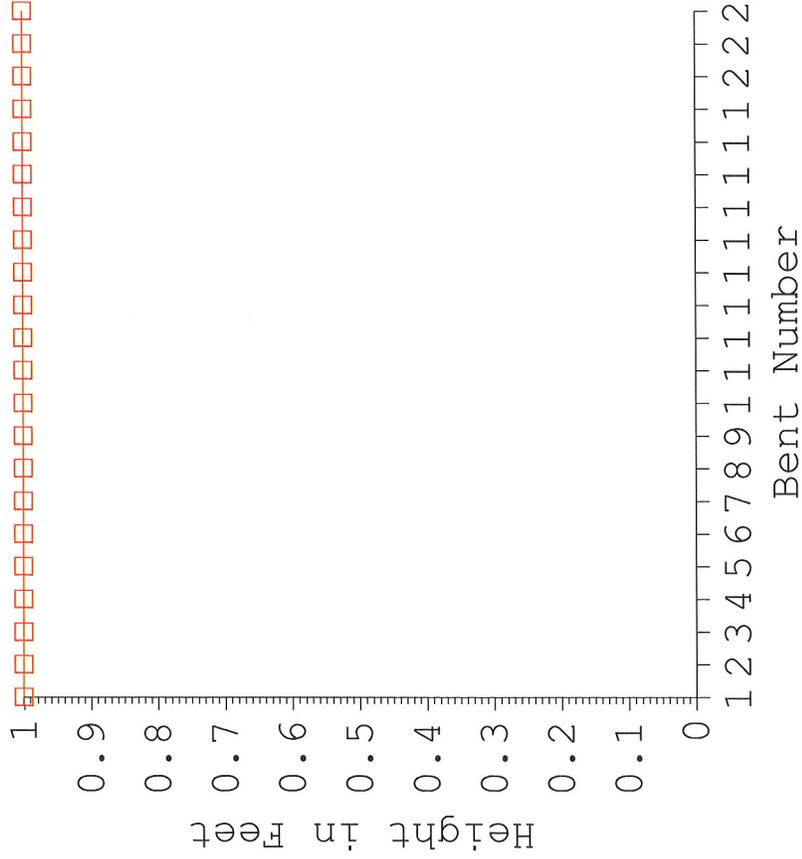


Channel Looking East

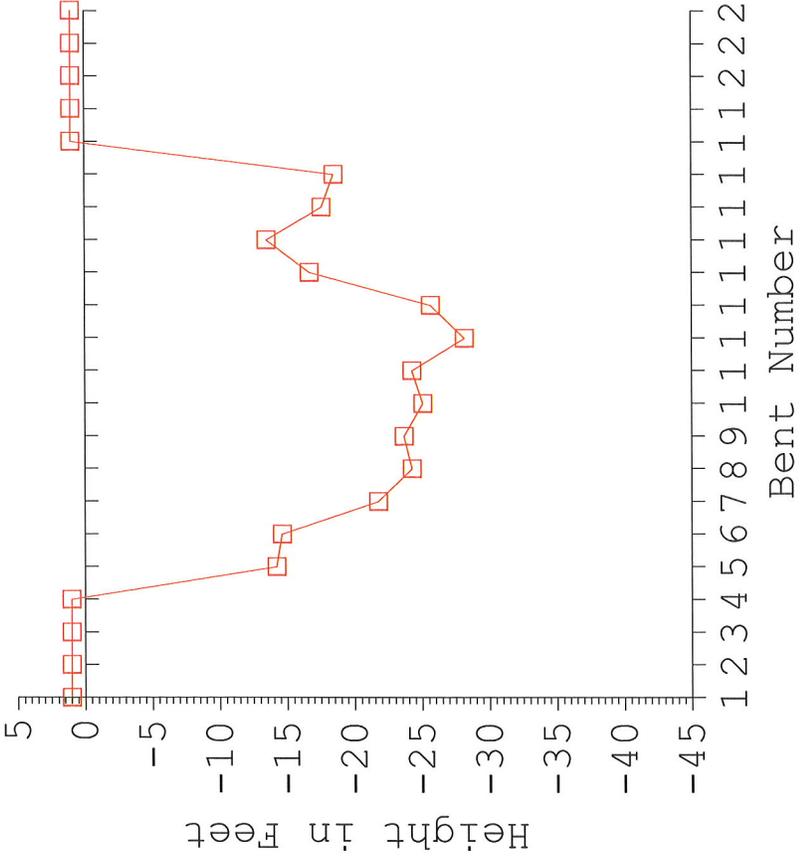


REPORT ID: INVT016  
 Structure #: 124116  
 DATE PRINTED: 12/14/2007  
 Page 1 of 2

Left Profile By Inspection



Right Profile By Inspection



FLORIDA DEPARTMENT OF TRANSPORTATION BRIDGE MANAGEMENT SYSTEM  
 Bridge Profile Report

REPORT ID: INVT016  
 Structure #: 124116

DATE PRINTED: 12/14/2007  
 Page 2 of 2

Profile Data - Numerical Summary

Bent #	Left Height	Right Height	(All Heights Are In Feet)
1	-1	-1	-1
2	-1	-1	-1
3	-1	-1	-1
4	-1	-1	-1
5	-1	14.2	14.2
6	-1	14.6	14.6
7	-1	21.8	21.8
8	-1	24.3	24.3
9	-1	23.7	23.7
10	-1	25.1	25.1
11	-1	24.3	24.3
12	-1	28.2	28.2
13	-1	25.7	25.7
14	-1	16.7	16.7
15	-1	13.5	13.5
16	-1	17.6	17.6
17	-1	18.5	18.5
18	-1	-1	-1
19	-1	-1	-1
20	-1	-1	-1
21	-1	-1	-1
22	-1	-1	-1

Inspection Date and Key: 11/15/2007 GPFO

**Air Temp:**  
**Profile Notes:**  
 Measurements referenced to top of pier 4 footer.  
 Waterline: 3.0ft  
 No left side measurements taken due to ongoing demolition.  
 Bents 1 - 4 and 18 - 22 are on dryland.

SECTION III  
COMMUNICATIONS

