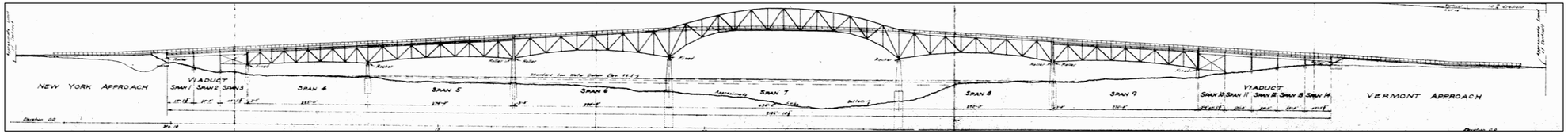
LAKE CHAMPLAIN BRIDGE

1929 - 2009

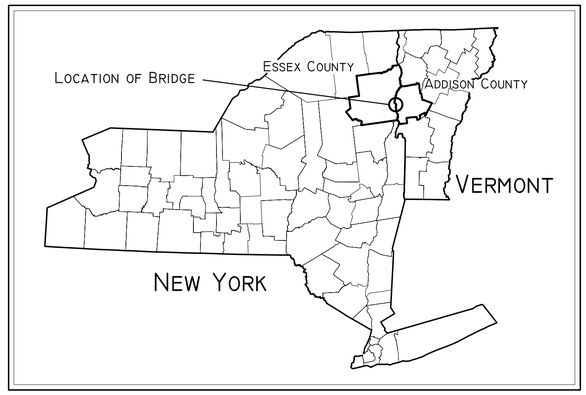


SOURCES:

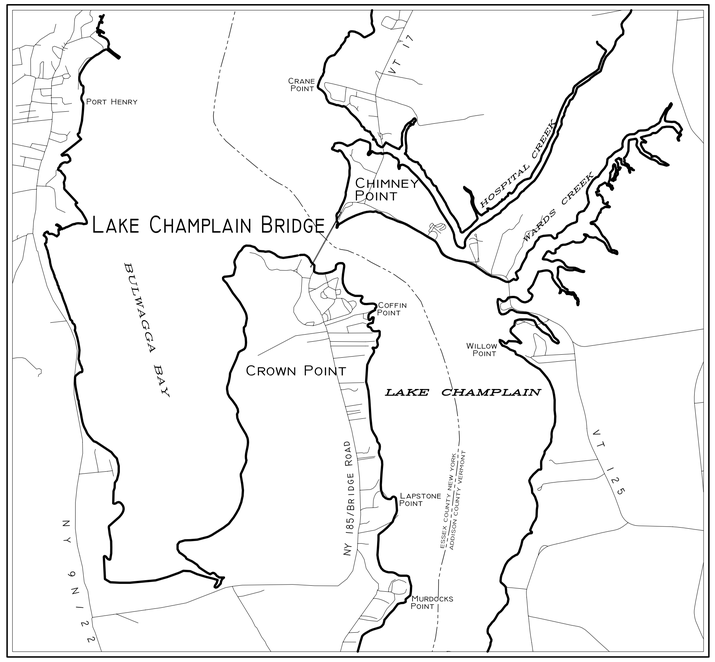
NEW YORK DATA-2009 2' DIGITAL 4 BAND ORTHOPHOTOS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION 1:24,000 DIGITAL RASTER QUADRANGLES, UNITED STATES CENSUS BUREAU 2009 TIGER/LINE SHAPEFILE .
VERMONT DATA-2003 2' COLOR INFRARED ORTHOPHOTOS, 2009 2' DIGITAL 4 BAND ORTHOPHOTOS, AND UNITED STATES CENSUS BUREAU 2009 TIGER/LINE SHAPEFILE.
PROFILE AND PLAN-1928 CONTRACT DRAWINGS (FAY, SPOFFORD AND THORNDIKE, ENGINEERS, BOSTON, MASSACHUSETTS)

MEASURED DRAWINGS IN THIS MAP SET ARE BASED ON 1928 CONTRACT DRAWINGS AND 1989 NEW YORK DEPARTMENT OF TRANSPORTATION OFFICE OF ENGINEERING RECORD PLANS.

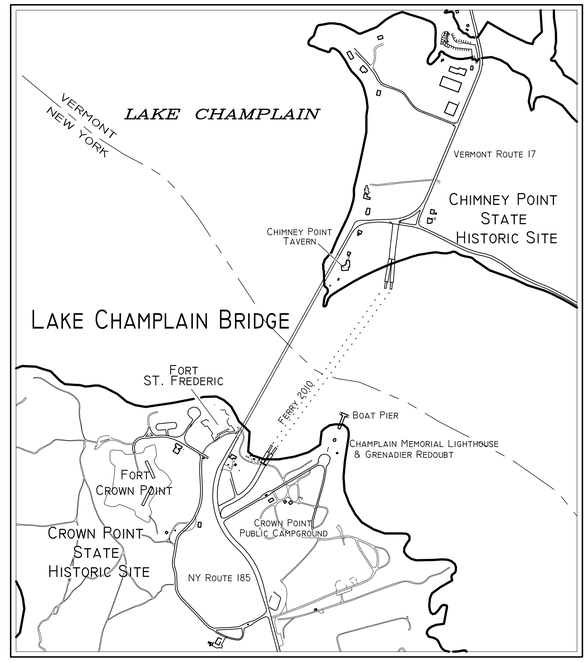
NORTH



SCALE IN KILOMETERS 0 50 100
SCALE IN MILES 0 35 70



SCALE IN METERS 0 500 1000
SCALE IN FEET 0 1250 2500



SCALE IN METERS 0 100 200
SCALE IN FEET 0 375 750

The Lake Champlain Bridge was a landmark, continuous through and deck truss span, crossing Lake Champlain between Crown Point, New York, and Chimney Point, Vermont. The 14-span riveted steel bridge was 2186 feet in length, consisting of a 1,014-foot continuous through and deck truss channel span (spans 6-8), three connecting deck truss spans, and girder viaducts at either end. Investigations for the bridge began in 1923, and in 1927, the Lake Champlain Bridge Commission was created to oversee the bridge construction and future operation. The Crown Point-Chimney Point site was chosen among six sites in southern Lake Champlain, both for its favorable geology, and for its historical significance as a strategic military crossing. Engineers Fay, Spofford and Thorndike, of Boston, designed an innovative continuous truss bridge, distinguished by a cantilevered center arch, to fit the physical constraints of the site and to complement the panoramic setting. The bridge was built over a 15-month period by the Merritt-Chapman and Scott Corporation of Boston, and the American Bridge Company of New York, opening on August 26, 1929.

The Lake Champlain Bridge operated as a toll bridge from 1929 until 1987, when the Lake Champlain Bridge Commission was dissolved, and operation of the bridge was relinquished to the New York State Department of Transportation. In 2007, the Department of Transportation weighed a replacement or rehabilitation option for the bridge due to its advancing deterioration. On October 16, 2009, following an emergency repair to the floor system and a partial closure, the bridge was closed to all traffic due to the potential failure of one of the piers. A final structural inspection determined that due to extensive deterioration of the substructure, and the possibility of a catastrophic failure, the bridge was unsafe for rehabilitation and would not reopen. On November 9, 2009, Governor David A. Paterson of New York officially announced that the bridge would be removed. The bridge was demolished by a controlled explosion on December 28, 2009.

The Lake Champlain Bridge was listed in the National Register of Historic Places, in February 2009, and was nominated as a National Historic Landmark in October 2009. The bridge was a nationally significant engineering structure that pioneered the use of a continuous truss to achieve an attractive, arching transition between deck and through truss spans, in locations where aesthetics were important. The bridge provided the first modern highway across Lake Champlain, greatly improving travel between the Adirondack Mountains of New York and the Green Mountains of Vermont.

The bridge was documented under the guidelines of the Historic American Engineering Record, a long-range program of the National Park Service designed to document nationally significant engineering and industrial structures. Fieldwork was completed in November and December, 2009, under the direction of Mark S. LoRusso, Architectural Historian, New York State Museum Cultural Resources Survey Program (CRSP), and Dr. Christina Reith, Program Director, CRSP.

The recording team consisted of Thaddeus Beblowski, Photographer, and Mark S. LoRusso. Due to the emergency closure of the bridge, large format photography of the through truss and deck was not possible. Supplementary digital photographs of these elements were provided by the New York State Department of Transportation. Measured drawings were prepared by Jessie Pellerin, Cartographer, CRSP. The drawings were based on existing bridge plans, verified by inspection photographs and spot measurements by the Department of Transportation. Field Measurements were not possible due to the emergency closure and removal of the bridge. An illustration of the builder's plaque was drawn by Katie Balloni and Nick Rogacki, under the direction of Jessie Pellerin.

The historical report was prepared with assistance from Christopher Marston, HAER Architect, National Park Service. Sections of the report are excerpted from the National Historic Landmark Nomination of the Lake Champlain Bridge, with the permission of the author, Dr. Robert McCullough, Historic Preservation Program, University of Vermont.

Drawn By: Jessie Pellerin 2011

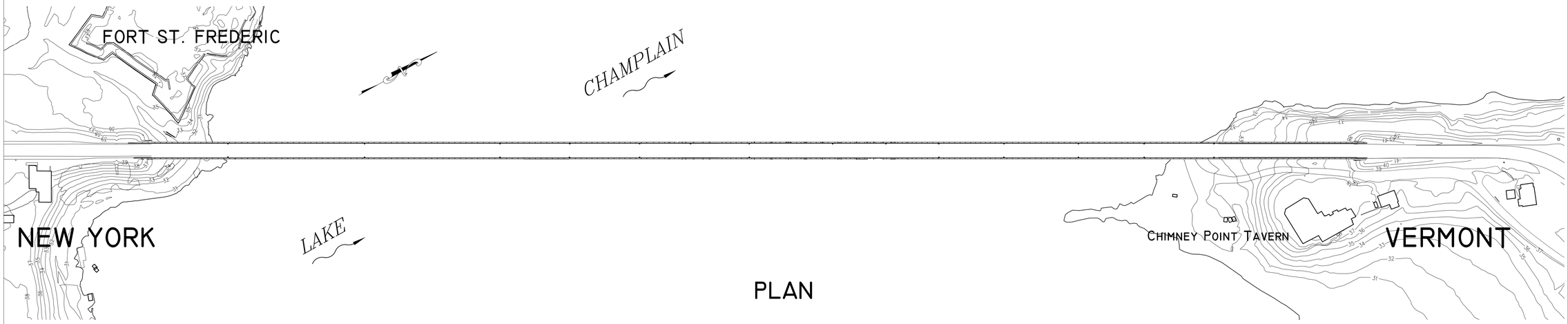
Lake Champlain Bridge
Recording Project
National Park Service
United States Department of the Interior

LAKE CHAMPLAIN BRIDGE
NEW YORK ROUTE 185/VERMONT ROUTE 17 SPANNING LAKE CHAMPLAIN
CROWN POINT, ESSEX COUNTY, NEW YORK
ADDISON, ADDISON COUNTY, VERMONT

SHEET 1 OF 13

HISTORIC AMERICAN ENGINEERING RECORD NY-541

LIBRARY OF CONGRESS INDEX NUMBER



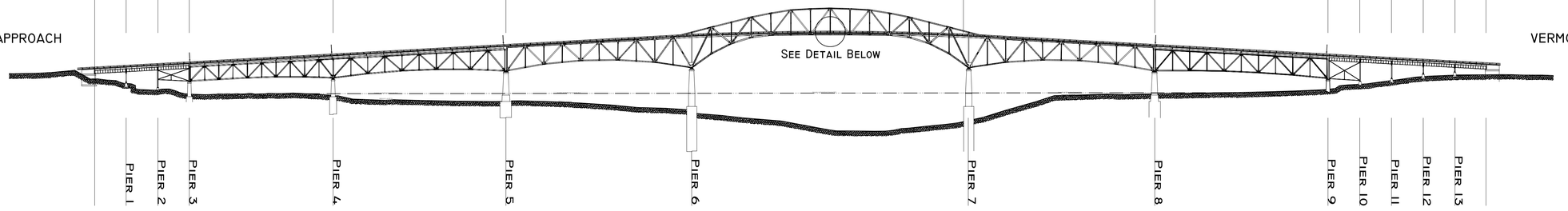
PLAN

SCALE IN METERS 0 10 20 50
SCALE IN FEET 0 18 90 180
1"=90'

LENGTH OF BRIDGE 2186'-10 1/2"

VIADUCT SPANS			CONTINUOUS DECK TRUSS SPANS		CONTINUOUS CANTILEVER SPANS			DECK TRUSS SPAN	VIADUCT SPANS				
S 1	S 2	S 3	SPAN 4	SPAN 5	SPAN 6	SPAN 7	SPAN 8	SPAN 9	S 10	S 11	S 12	S 13	S 14
49'-5 5/8"	50'-0"	49'-5 5/8"	225'-0"	270'-0"	290'-0"	434'-0"	290'-0"	270'-0"	49'-5 5/8"	50'-0"	50'-0"	50'-0"	49'-5 5/8"

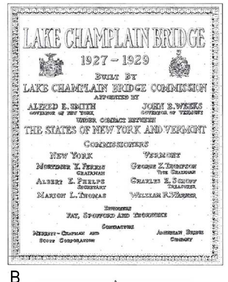
NEW YORK APPROACH



VERMONT APPROACH

ELEVATION

NEW YORK
A

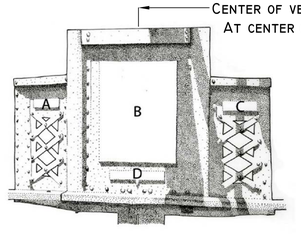


B

VERMONT
C

D

DIMENSIONS:
A 14¼"x3⅞"
B 30"x38½"
C 14¼"x3⅞"
D 21⅜"x3⅞"



BUILDER'S PLAQUE

NOTE:BASED ON 1928 AND 1989 BRIDGE PLANS. NOT FIELD VERIFIED.

LIBRARY OF CONGRESS INDEX NUMBER

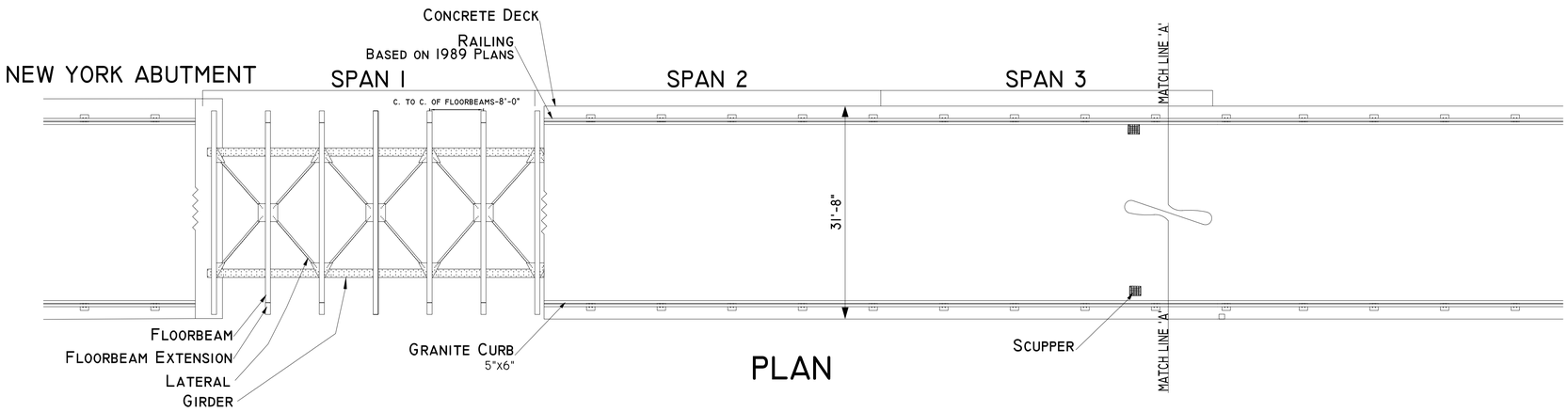
HISTORIC AMERICAN ENGINEERING RECORD NY-541

SHEET 2 OF 13

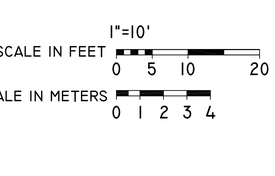
LAKE CHAMPLAIN BRIDGE
ADDISON, ADDISON COUNTY, VERMONT
NEW YORK ROUTE 185/VERMONT ROUTE 17 SPANNING LAKE CHAMPLAIN
CROWN POINT, ESSEX COUNTY, NEW YORK

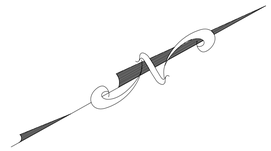
DRAWN BY: JESSIE PELLERIN, KATIE BALLONI AND NICK ROGACKI, 2011.
LAKE CHAMPLAIN BRIDGE
RECORDING PROJECT
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

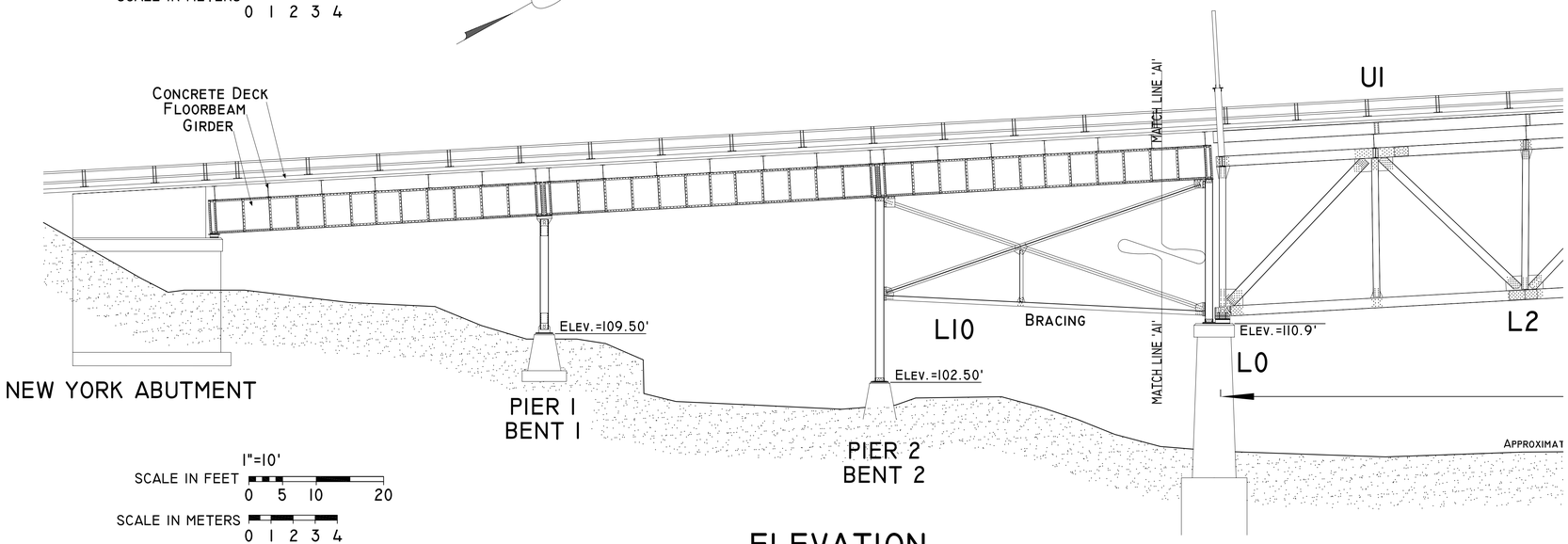
NEW YORK VIADUCT-SPANS 1-3



PLAN







ELEVATION

NOTE:BASED ON 1928 AND 1989 BRIDGE PLANS. NOT FIELD VERIFIED.

VIADUCT MEMBER DETAILS

FLOORBEAM-I-BEAM 24CB70
FLOORBEAM EXTENSION (1991 MODIFICATION)-W18X35X1'-8¾"

BRACING:
STRUT- (2) ANGLES 8"X8"X5/8"X47'-93/4"
DIAGONAL-(2) ANGLES 6"X4"X3/8"X50'-45/8"
DIAGONAL-(2) ANGLES 6"X4"X3/8"X50'-41/2"
VERTICAL-(1) ANGLE 6"X4"X3/8"X7'-91/4"

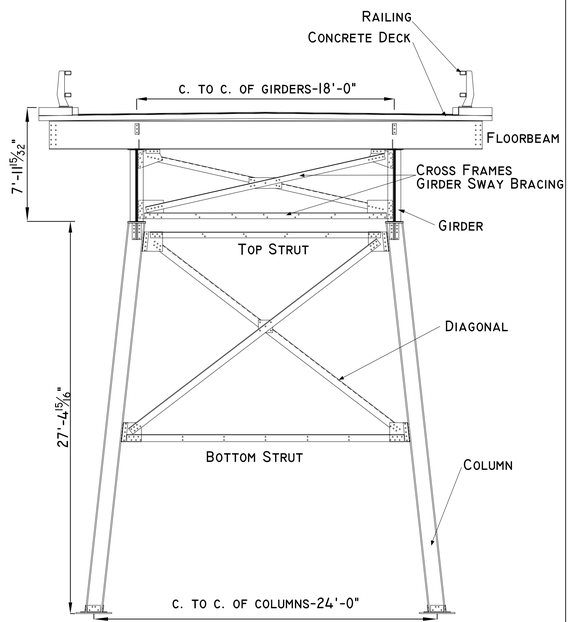
LATERAL-(1) ANGLE 5"X3½"X5/16"X10'-2½"
GIRDER-(4) ANGLES 7"X3½"X⅝"X50'-0"
(1) WEB 60"X⅜"X50'-0"
(1) COVER 15"X½"X50'-0"
(1) COVER 15"X½"X30'-0"
(5) ANGLES 5"X3½"X½"X4'-11¼"
(8) FILS 3½"X⅜"X4'-5¼"
(2) ANGLES 5"X3½"X ½"X4'-11¼"

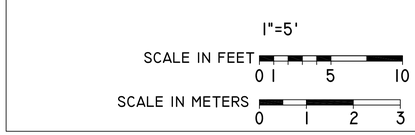
BENT 2 SECTION DETAILS

FLOORBEAM-I-BEAM 24CB70X30'-3"
CROSS FRAME-(1) ANGLE 5"X3½"X5/16"X16'-10⅞"
GIRDER-(4) ANGLES 7"X3½"X⅝"X50'-0"
(1) WEB 60"X⅜"X50'-0"
COLUMN- I-BEAM 14CB125X27'-3⅜"
DIAGONAL-(1) ANGLE 6"X4"X½"X21'-9¾"
STRUTS-
TOP-(2) ANGLES 5"X3½"X⅜"X16'-1"
BOTTOM-(2) ANGLES 6"X4"X½"X19'-4½"

BENT 2-SECTION

FACING NORTH





LIBRARY OF CONGRESS INDEX NUMBER

HISTORIC AMERICAN ENGINEERING RECORD NY-541

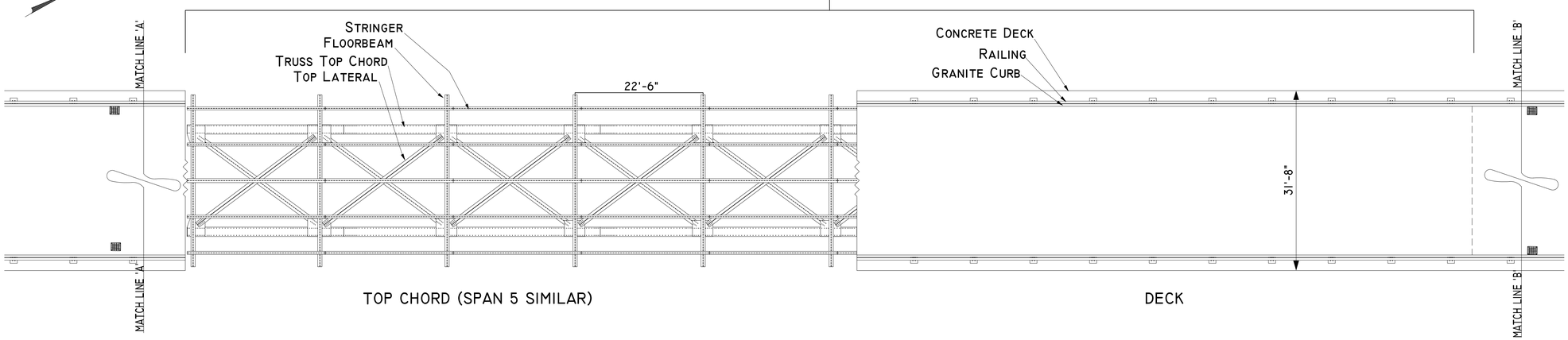
SHEET 3 OF 13

LAKE CHAMPLAIN BRIDGE
ADDISON, ADDISON COUNTY, VERMONT
NEW YORK ROUTE 185/VERMONT ROUTE 17 SPANNING LAKE CHAMPLAIN
CROWN POINT, ESSEX COUNTY, NEW YORK

DRAWN BY: JESSIE PELLERIN, 2011
LAKE CHAMPLAIN BRIDGE
RECORDING PROJECT
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

SPAN 4

CONTINUOUS DECK TRUSS SPAN



TOP CHORD (SPAN 5 SIMILAR)

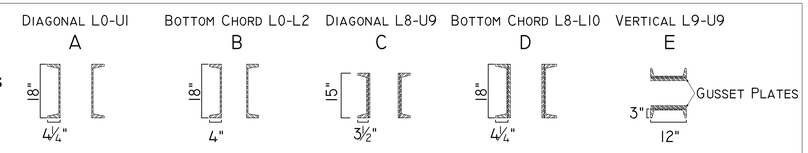
DECK

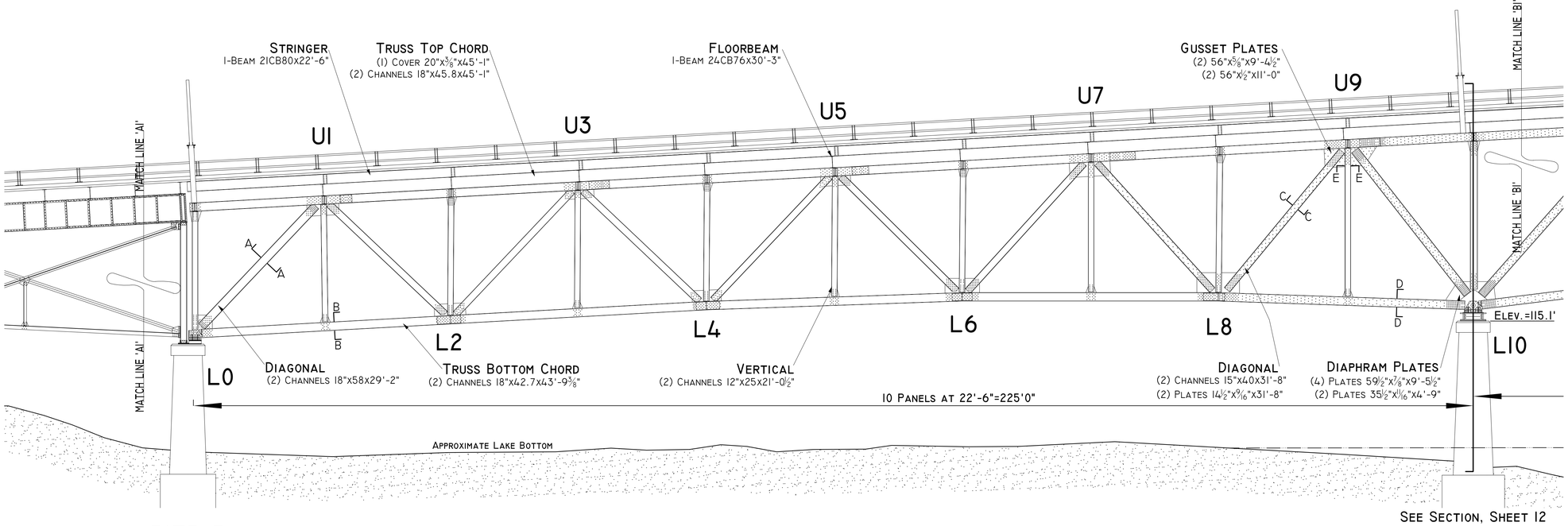
PLAN

SCALE IN FEET 1"=10'
0 5 10 20

SCALE IN METERS
0 1 2 3 4

SECTIONS
½"=1'





ELEVATION

NOTE:BASED ON 1928 AND 1989 BRIDGE PLANS. NOT FIELD VERIFIED.

DRAWN BY: JESSIE PELLERIN, 2011

LAKE CHAMPLAIN BRIDGE
ACROSS POULTNEY BAY
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

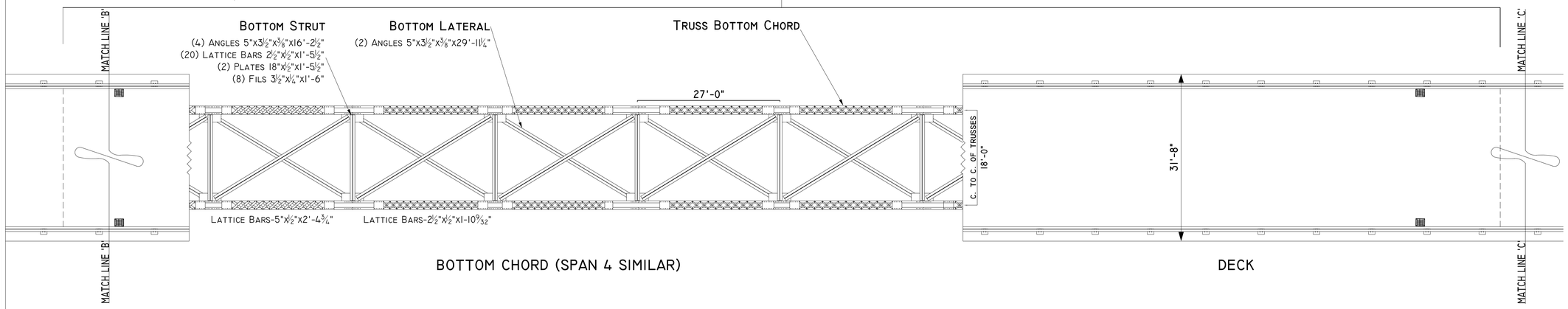
LAKE CHAMPLAIN BRIDGE
NEW YORK ROUTE 185/VERMONT ROUTE 17 SPANNING LAKE CHAMPLAIN
CROWN POINT, ESSEX COUNTY, NEW YORK
ADDISON, ADDISON COUNTY, VERMONT

SHEET 4 OF 13

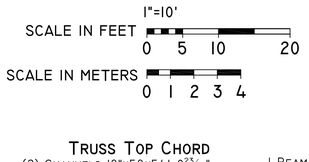
HISTORIC AMERICAN ENGINEERING RECORD NY-541

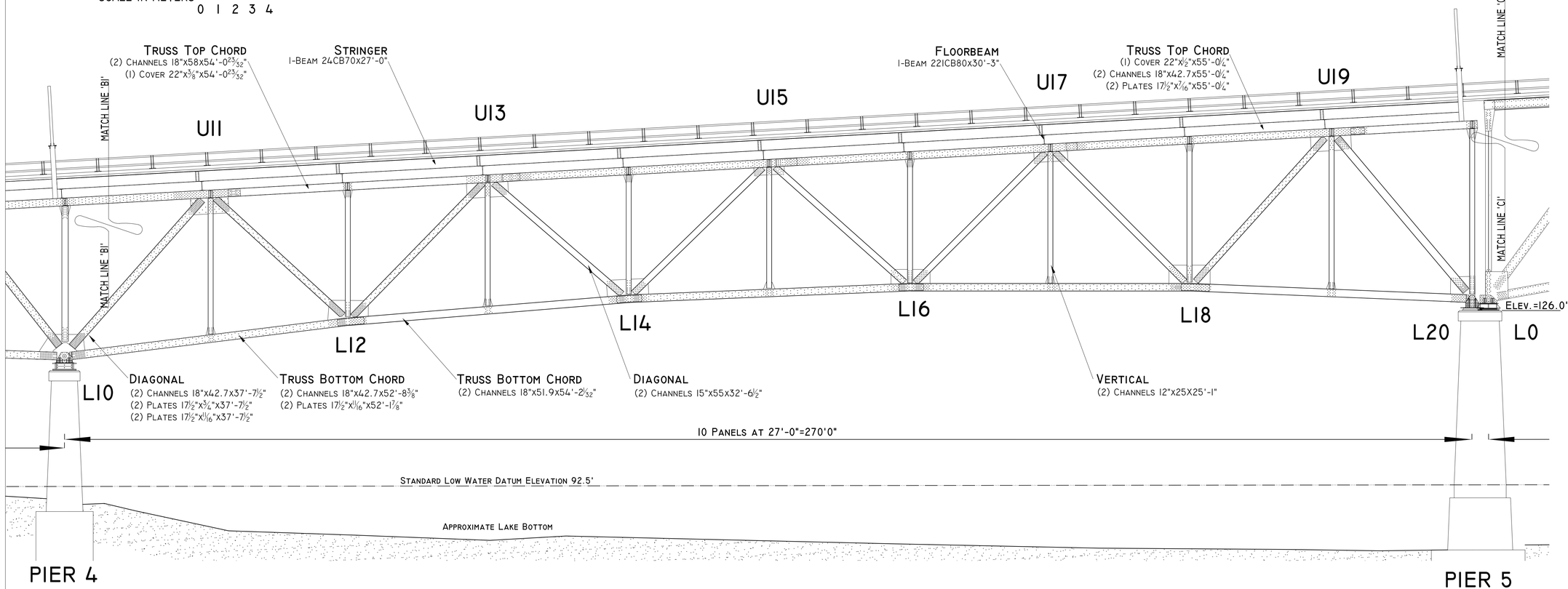
LIBRARY OF CONGRESS INDEX NUMBER

SPAN 5
CONTINUOUS DECK TRUSS SPAN



PLAN





ELEVATION

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LAKE CHAMPLAIN BRIDGE
NEW YORK ROUTE 185/VERMONT ROUTE 17 SPANNING LAKE CHAMPLAIN
CROWN POINT, ESSEX COUNTY, NEW YORK
ADDISON, ADDISON COUNTY, VERMONT

HISTORIC AMERICAN ENGINEERING RECORD NY-541
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LIBRARY OF CONGRESS INDEX NUMBER

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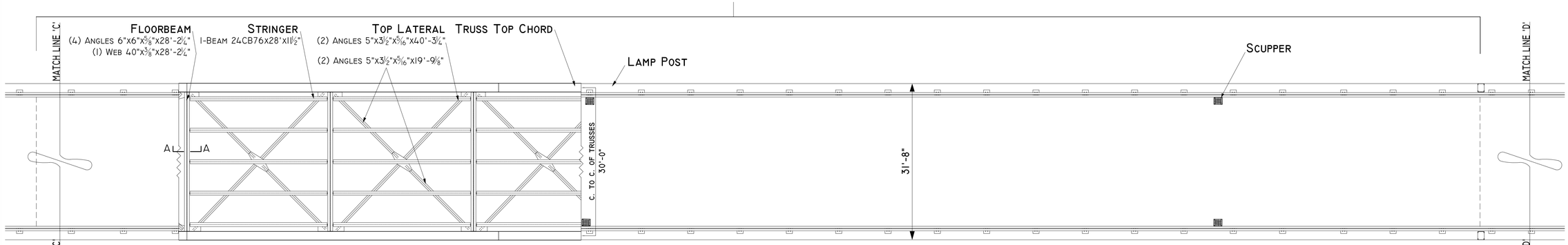
LAKE CHAMPLAIN BRIDGE HAER VT-NY-6 PROJECT
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

SPAN 6

CONTINUOUS CANTILEVER SPAN



TOP CHORD (SPAN 8 SIMILAR)

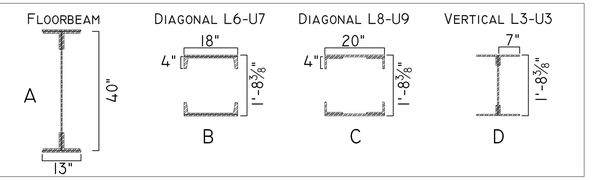
DECK

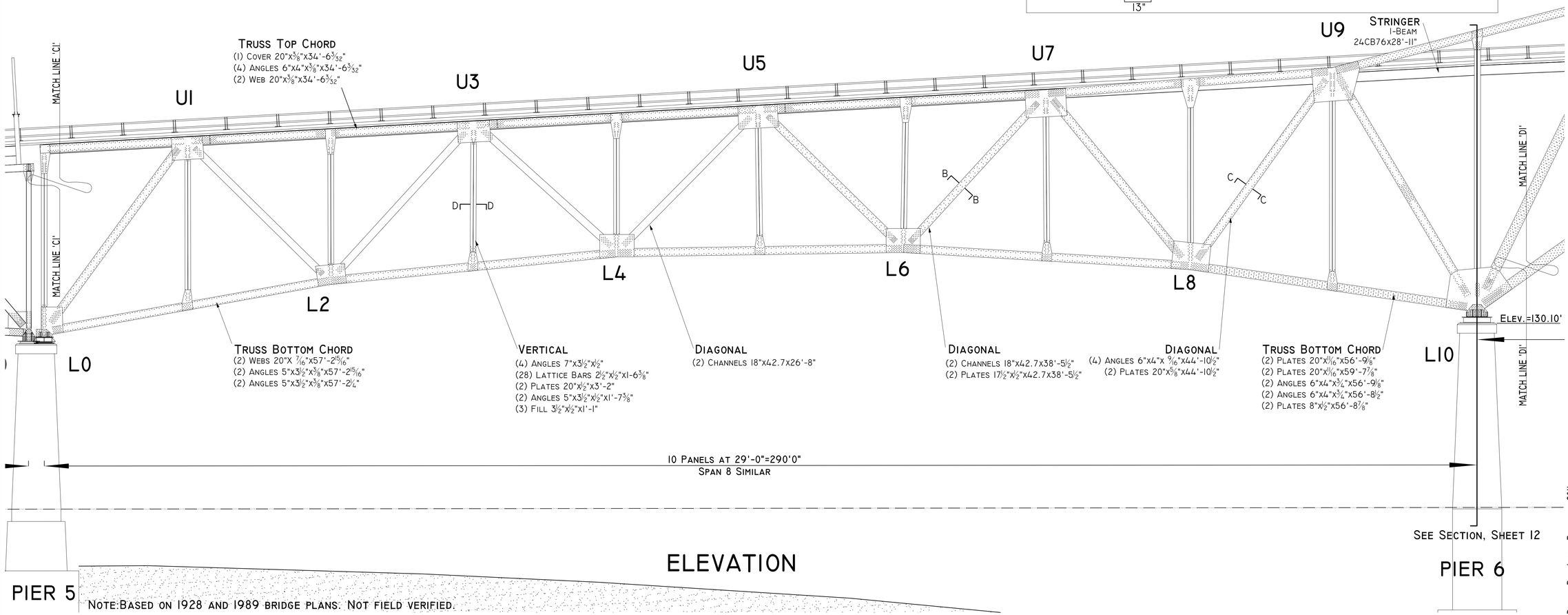
SCALE IN FEET 1"=10'
0 5 10 20

SCALE IN METERS
0 1 2 3 4

PLAN

SECTIONS
½"=1'





ELEVATION

NOTE:BASED ON 1928 AND 1989 BRIDGE PLANS. NOT FIELD VERIFIED.

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LAKE CHAMPLAIN BRIDGE
HAER NO. VT-37
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

LAKE CHAMPLAIN BRIDGE

NEW YORK ROUTE 185/VERMONT ROUTE 17 SPANNING LAKE CHAMPLAIN
CROWN POINT, ESSEX COUNTY, NEW YORK
ADDISON, ADDISON COUNTY, VERMONT

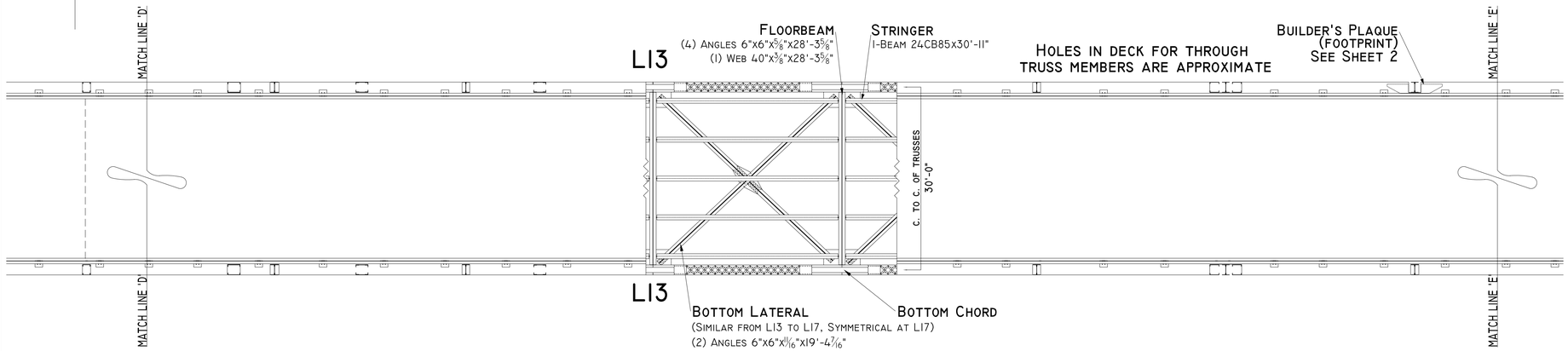
SHEET 6 OF 13

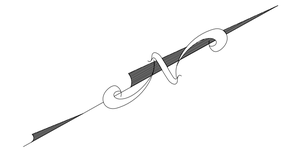
HISTORIC AMERICAN ENGINEERING RECORD
NY-541

LIBRARY OF CONGRESS INDEX NUMBER

SPAN 7

CONTINUOUS CANTILEVER SPAN



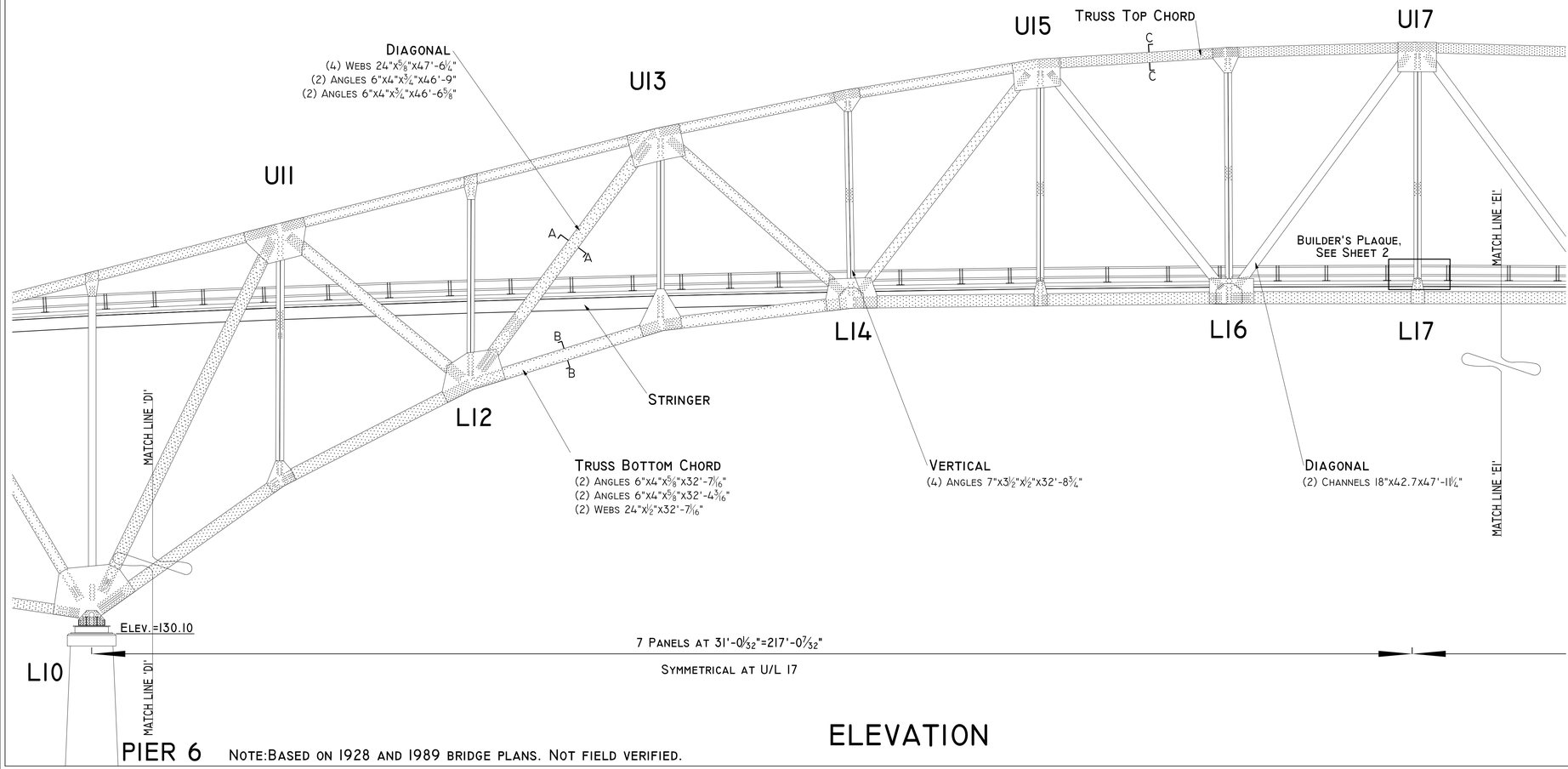


1"=10'

SCALE IN FEET 0 5 10 20

SCALE IN METERS 0 1 2 3 4

DECK PLAN



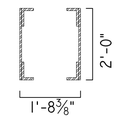
NOTE:BASED ON 1928 AND 1989 BRIDGE PLANS. NOT FIELD VERIFIED.

ELEVATION

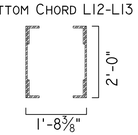
SECTIONS

1/2"=1'

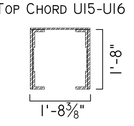
A
DIAGONAL L12-U13



B
BOTTOM CHORD L12-L13



C
TOP CHORD U15-U16



(1) COVER 20"X1/2"X31'-1 31/32"
(2) WEB 20"X3/4"X31'-1 31/32"
(2) ANGLES 6"X4"X3/4"X 31'-1 31/32" TOP
(2) ANGLES 6"X4"X3/4"X31'-1 1/8" BOTTOM
(2) PLATES 8"X3/8"X31'-1 5/8"

DRAWN BY: JESSIE PELLERIN, 2011.

LAKE CHAMPLAIN BRIDGE
ACCESS ROAD PROJECT
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

LAKE CHAMPLAIN BRIDGE

NEW YORK ROUTE 185/VERMONT ROUTE 17 SPANNING LAKE CHAMPLAIN

CROWN POINT, ESSEX COUNTY, NEW YORK

ADDISON, ADDISON COUNTY, VERMONT

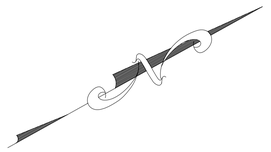
SHEET 7 OF 13

HISTORIC AMERICAN ENGINEERING RECORD NY-541

LIBRARY OF CONGRESS INDEX NUMBER

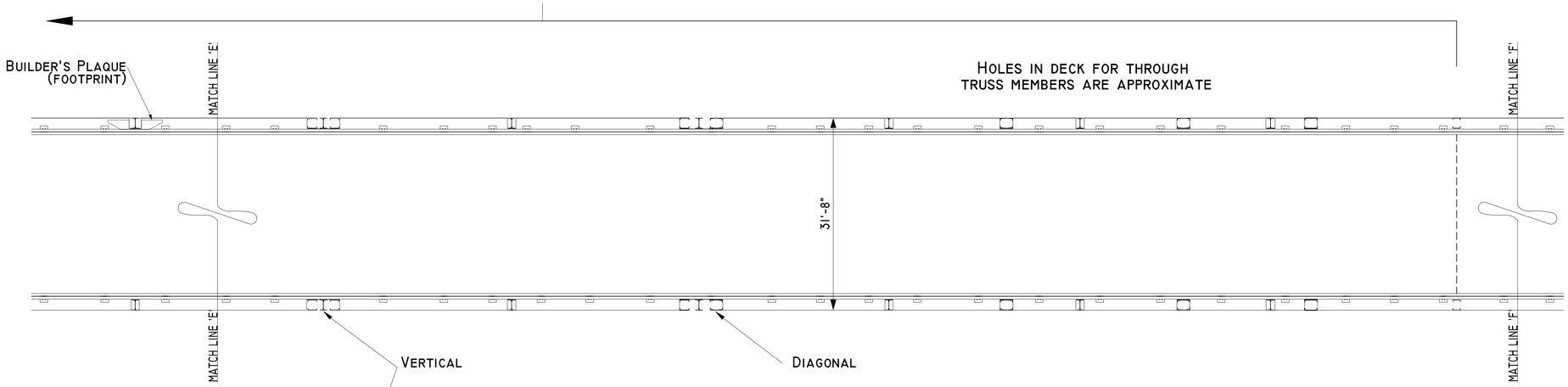
SPAN 7 CONTINUED

CONTINUOUS CANTILEVER SPAN

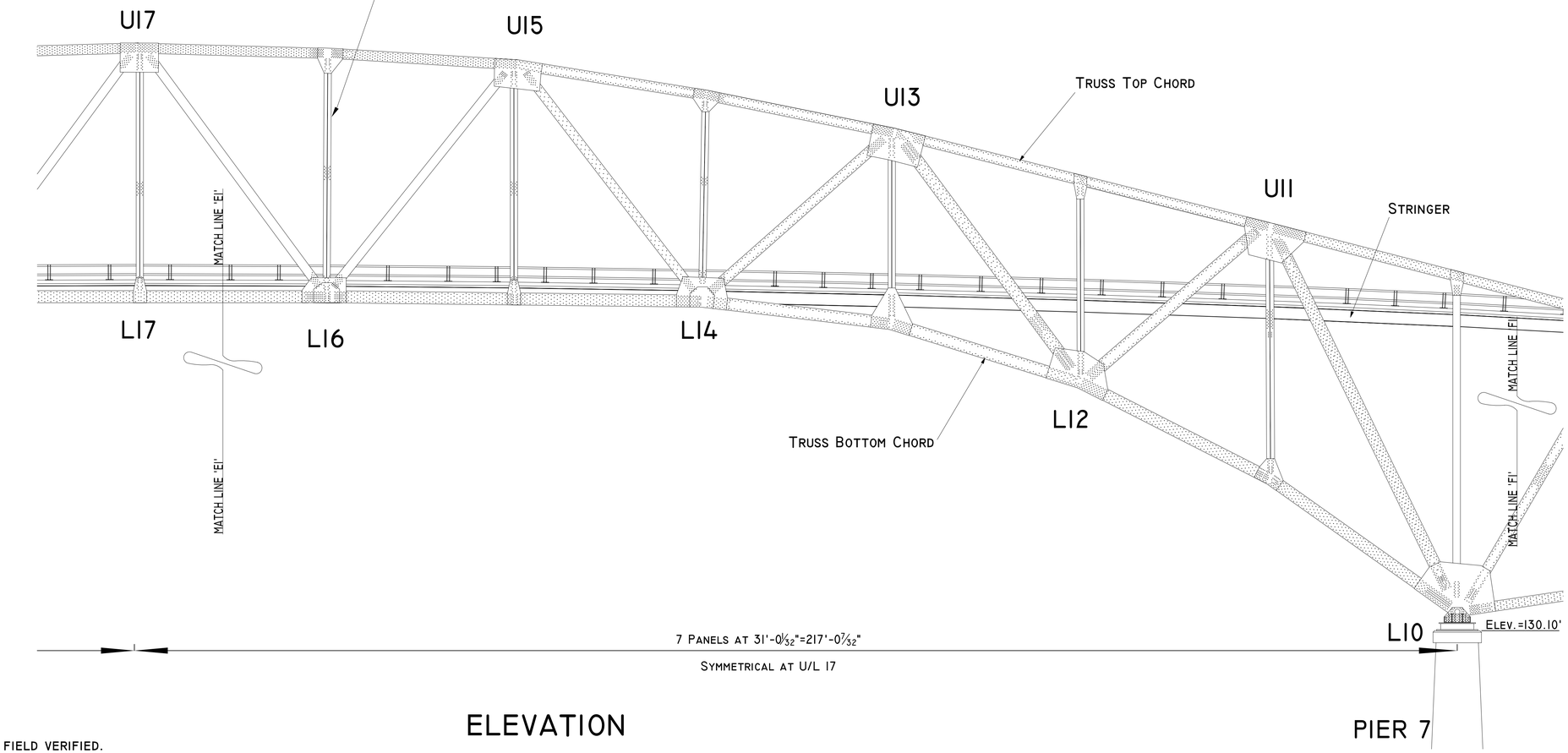


SCALE IN FEET 1"=10' 0 5 10 20

SCALE IN METERS 0 1 2 3 4



PLAN



ELEVATION

NOTE:BASED ON 1928 AND 1989 BRIDGE PLANS. NOT FIELD VERIFIED.

LIBRARY OF CONGRESS INDEX NUMBER

HISTORIC AMERICAN ENGINEERING RECORD NY-541

SHEET 8 OF 13

LAKE CHAMPLAIN BRIDGE

NEW YORK ROUTE 185/VERMONT ROUTE 17 SPANNING LAKE CHAMPLAIN

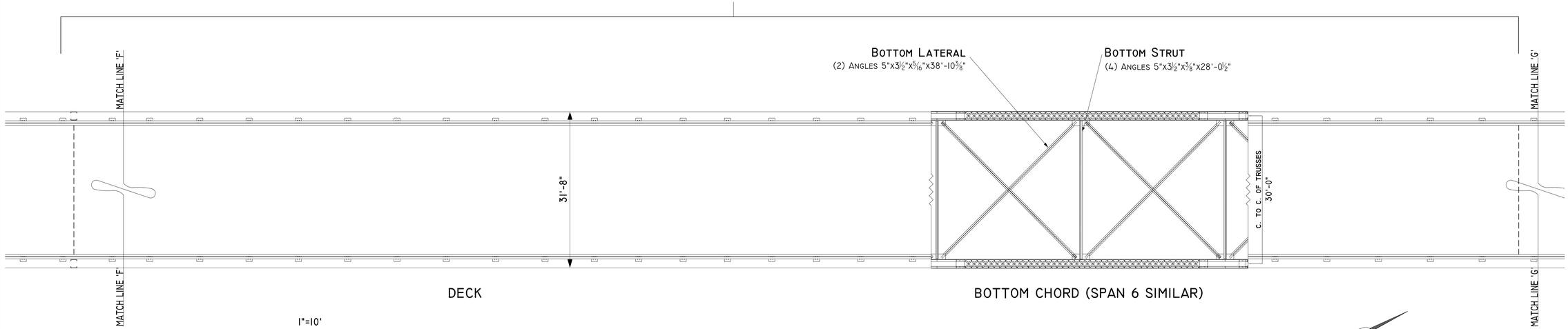
CROWN POINT, ESSEX COUNTY, NEW YORK

ADDISON, ADDISON COUNTY, VERMONT

DRAWN BY: JESSIE PELLERIN, 2011.

LAKE CHAMPLAIN BRIDGE
HISTORIC AMERICAN ENGINEERING RECORD
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

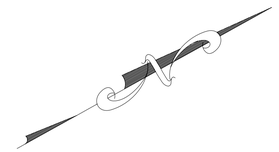
SPAN 8
CONTINUOUS CANTILEVER SPAN

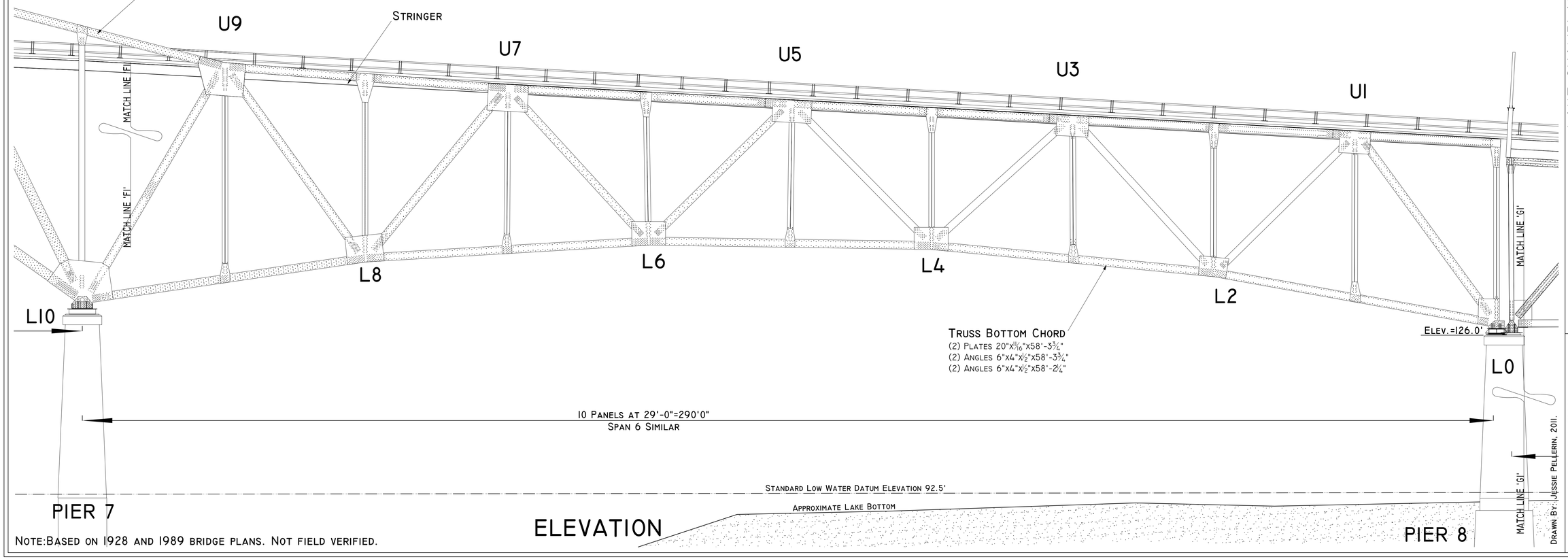


SCALE IN FEET 1"=10' 0 5 10 20

SCALE IN METERS 0 1 2 3 4

PLAN





NOTE: BASED ON 1928 AND 1989 BRIDGE PLANS. NOT FIELD VERIFIED.

ELEVATION

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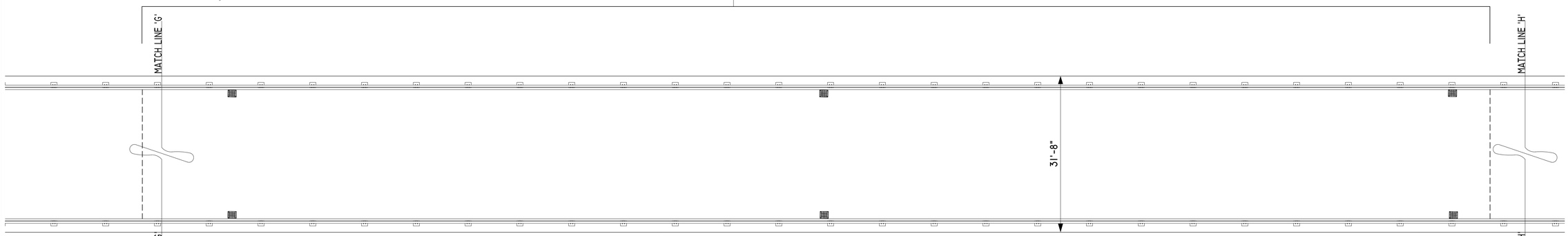
SHEET 9 OF 13

LAKE CHAMPLAIN BRIDGE
ADDISON, ADDISON COUNTY, VERMONT
NEW YORK ROUTE 185/VERMONT ROUTE 17 SPANNING LAKE CHAMPLAIN
CROWN POINT, ESSEX COUNTY, NEW YORK

LAKE CHAMPLAIN BRIDGE
RECORDING PROJECT
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

DRAWN BY: JESSIE PELLERIN, 2011.

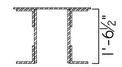
SPAN 9
DECK TRUSS SPAN



SIMILAR TO SPAN 4 AND SPAN 5

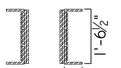
PLAN

SECTIONS
½"=1'

TOP CHORD U1-U3
A


TOP CHORD U5-U7
B


BOTTOM CHORD L2-L4
C


BOTTOM CHORD L4-L6
D


TRUSS TOP CHORD
(4) ANGLES 6"X6"X⅝"X54'-2¼"
(2) WEBS 18"X¾"X54'-2¼"
(1) COVER 26"X½"X54'-2¼"

TRUSS TOP CHORD
(4) ANGLES 8"X6"X¾"X53'-7¼"
(1) COVER 26"X⅝"X53'-7¼"
(2) WEBS 18"X¾"X53'-7¼"
(2) WEBS 18"X1 1/16"X53'-7¼"

U1 U3 U5 U7 U9

L0 L2 L4 L6 L8 L10

TRUSS BOTTOM CHORD
(2) ANGLES 6"X6"X1 1/16"X53'-11 19/32"
(2) ANGLES 6"X6"X1 1/16"X53'-11 3/32"
(2) WEBS 18"X¾"X53'-11⅝"
(2) WEBS 18"X¾"X54'-6 19/32"

TRUSS BOTTOM CHORD
(2) ANGLES 6"X6"X1 1/16"X54'-0 3/32"
(2) ANGLES 6"X6"X1 1/16"X53'-11 19/32"
(2) WEB 18"X¾"X54'-0 1/32"
(2) WEB 18"X¾"X53'-11⅝"
(2) WEB 16"X7/16"X51'-1 27/32"
(2) FILLER PLATES 5"X1 1/16"X53'-11 29/32"

DIAGONAL
(4) ANGLES 6"X6"X¾"X38'-0½"
(4) PLATES 18"X½"X38'-0½"

MATCH LINE 'G'
MATCH LINE 'H'
ELEV.=115.0'
10 PANELS AT 27'-0"=270'0"
PIER 8
PIER 9

1"=10'
SCALE IN FEET 0 5 10 20
SCALE IN METERS 0 1 2 3 4

ELEVATION

NOTE:BASED ON 1928 AND 1989 BRIDGE PLANS. NOT FIELD VERIFIED.

DRAWN BY: JESSIE PELLERIN, 2011.
LAKE CHAMPLAIN BRIDGE
HAER CONVERSION PROJECT
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

LAKE CHAMPLAIN BRIDGE
NEW YORK ROUTE 185/VERMONT ROUTE 17 SPANNING LAKE CHAMPLAIN
CROWN POINT, ESSEX COUNTY, NEW YORK
ADDISON, ADDISON COUNTY, VERMONT

SHEET 10 OF 13

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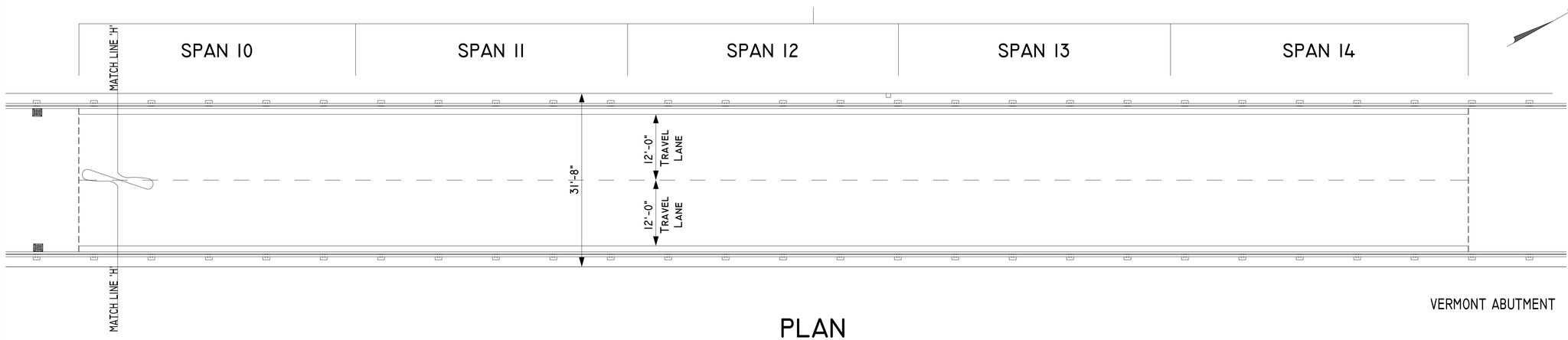
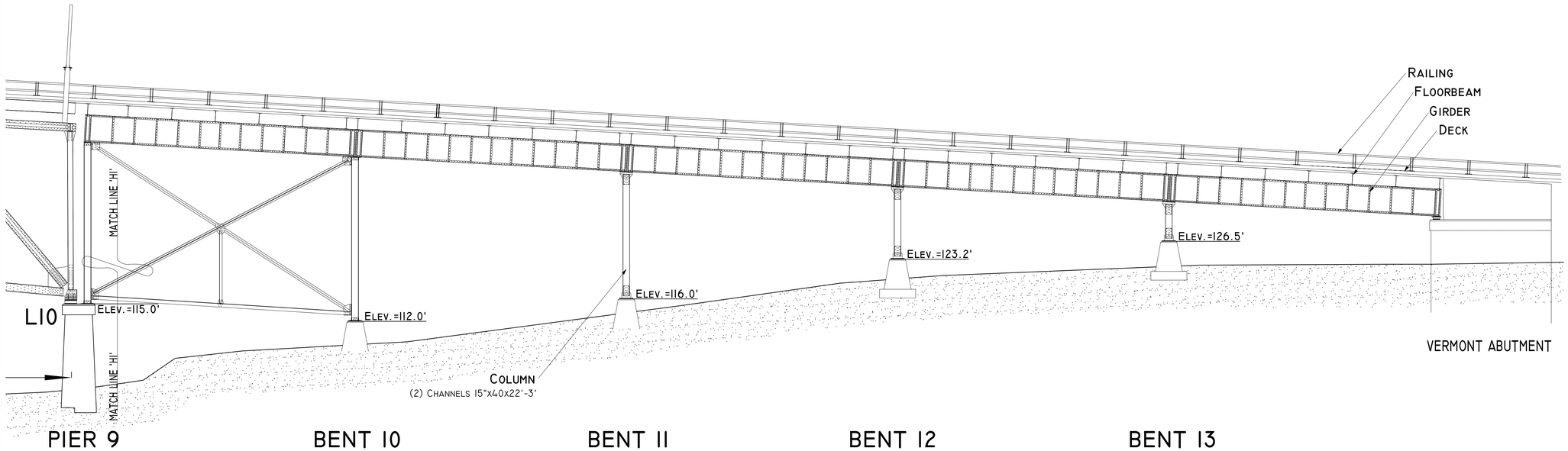
VERMONT VIADUCT SPANS 10-14



PLAN

1"=10'
SCALE IN FEET 0 5 10 20
SCALE IN METERS 0 1 2 3 4



ELEVATION

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LAKE CHAMPLAIN BRIDGE

NEW YORK ROUTE 185/VERMONT ROUTE 17 SPANNING LAKE CHAMPLAIN

CROWN POINT, ESSEX COUNTY, NEW YORK

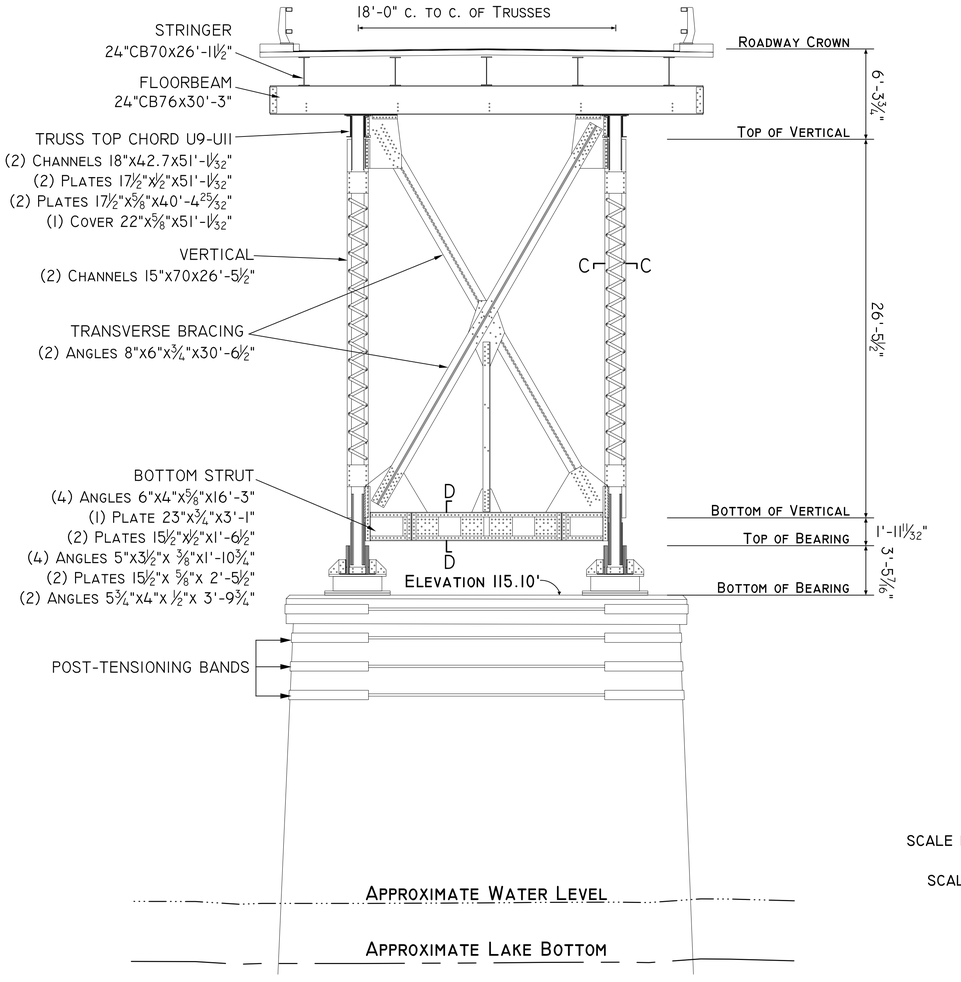
ADDISON, ADDISON COUNTY, VERMONT

DRAWN BY: JESSIE PELLERIN, 2011

LAKE CHAMPLAIN BRIDGE
HAER NO. NY-541
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

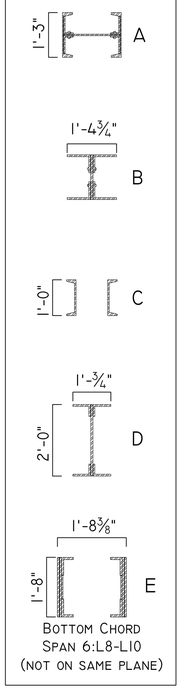
PIER 4 CROSS SECTION

LOOKING NORTH



DETAILS

1"=2'



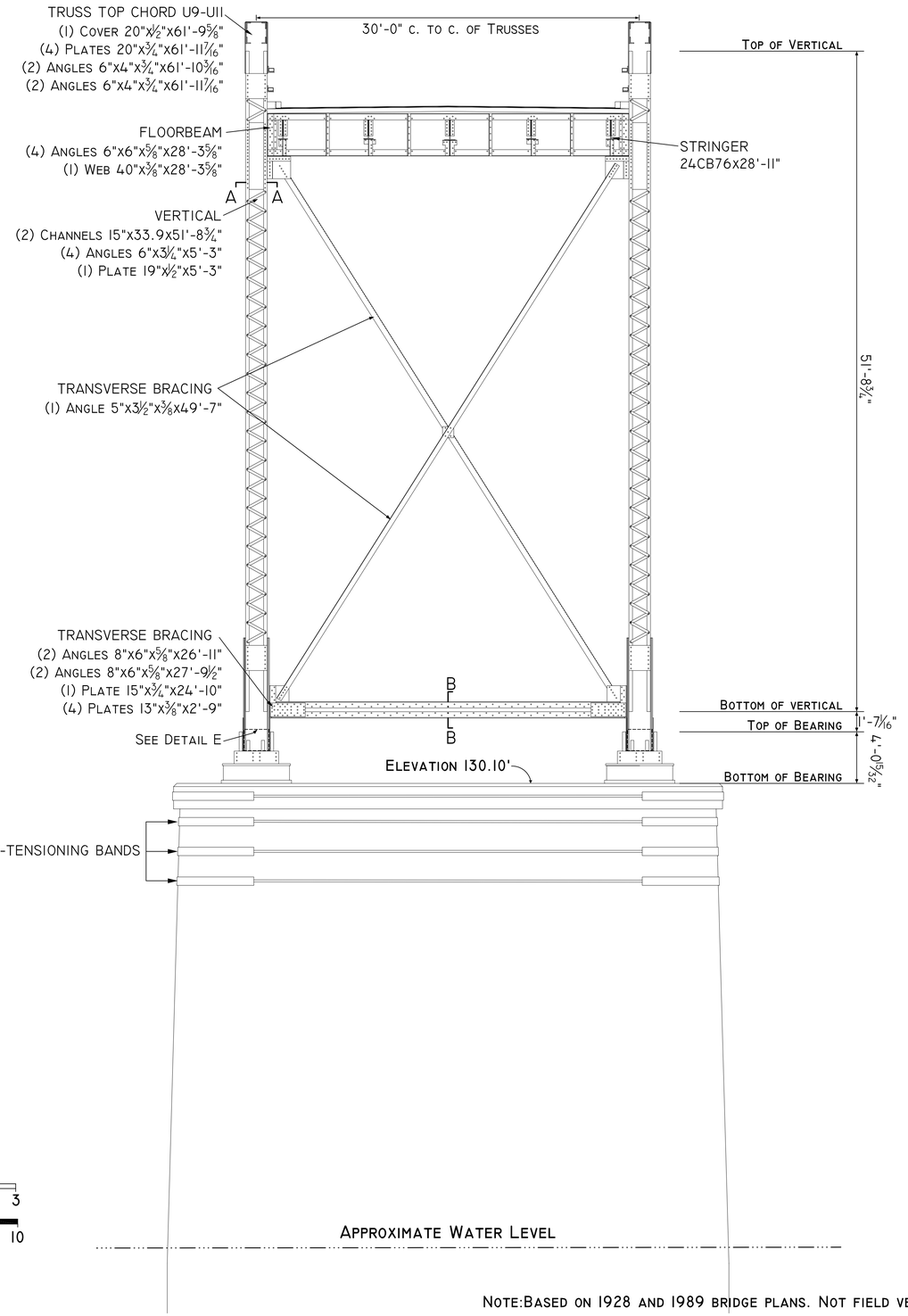
SCALE IN METERS
0 1 2 3

SCALE IN FEET
0 1 5 10

1"=5'

PIER 6 CROSS SECTION

LOOKING NORTH



NOTE:BASED ON 1928 AND 1989 BRIDGE PLANS. NOT FIELD VERIFIED.

DRAWN BY: JESSIE PELLERIN, 2011

LAKE CHAMPLAIN BRIDGE PROJECTS
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

LAKE CHAMPLAIN BRIDGE

NEW YORK ROUTE 185/VERMONT ROUTE 17 SPANNING LAKE CHAMPLAIN
ADDISON, ADDISON COUNTY, VERMONT
CROWN POINT, ESSEX COUNTY, NEW YORK

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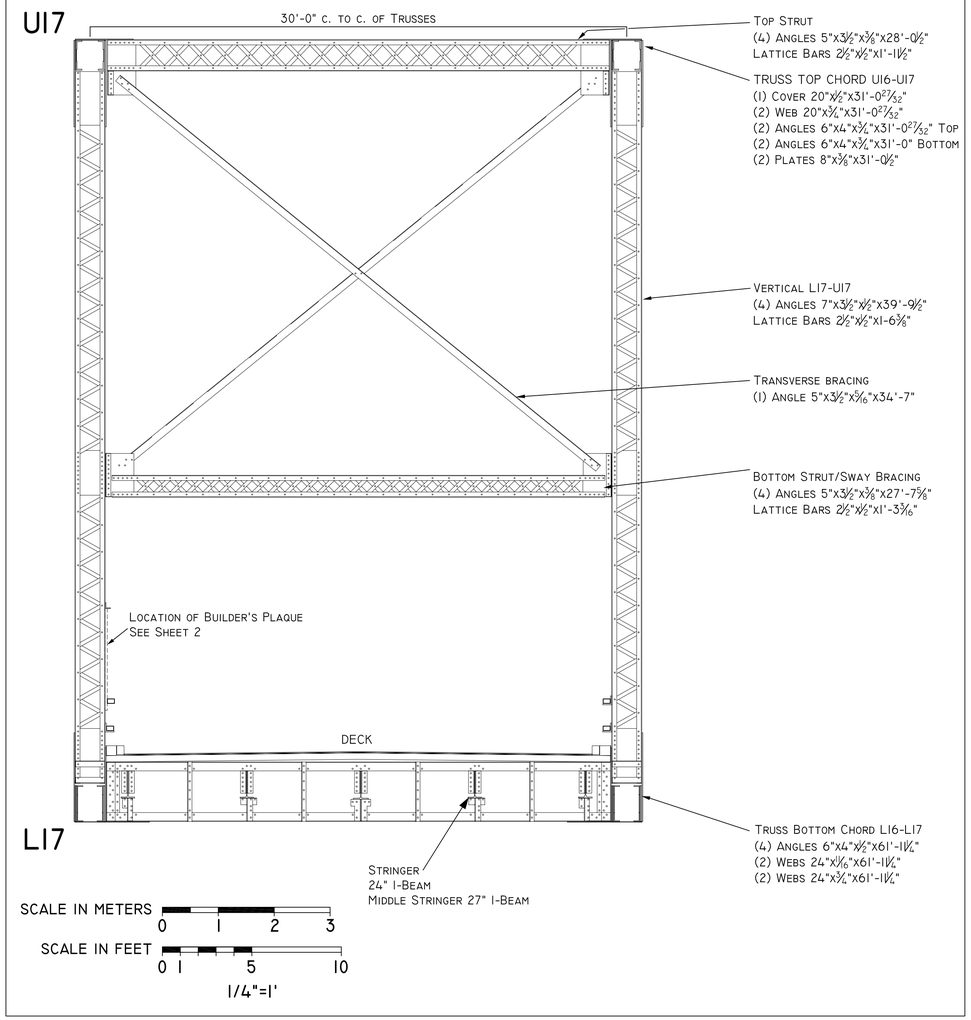
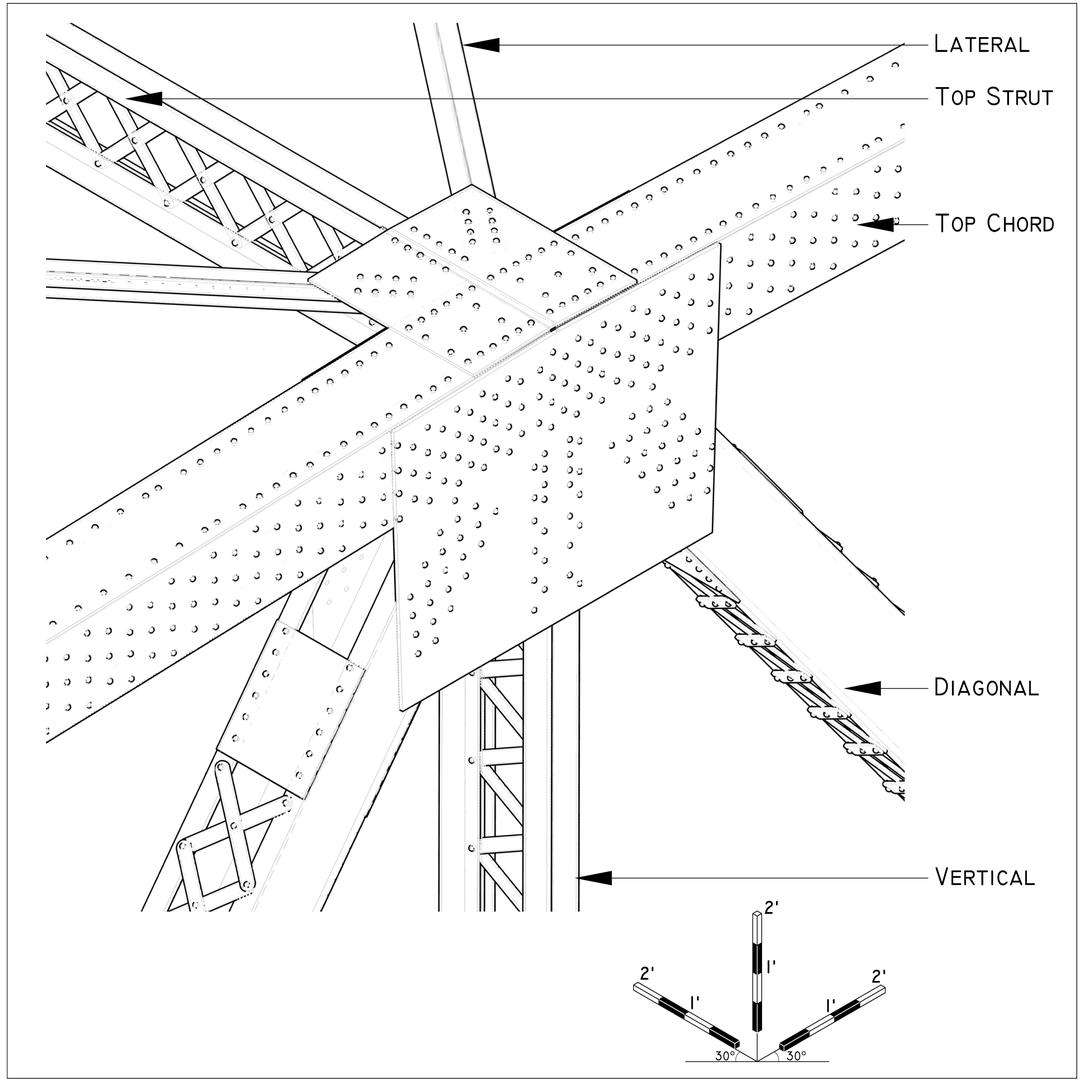
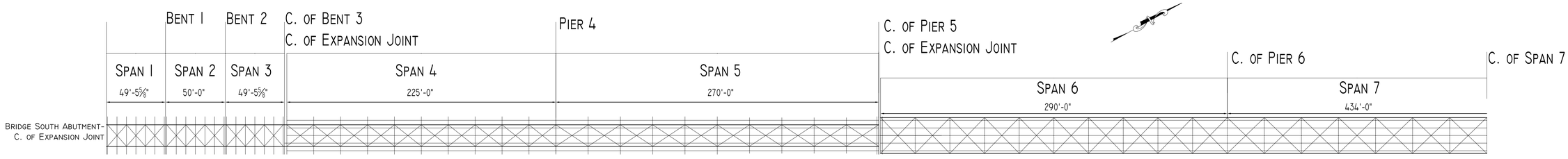
Section-Span 7 at U/LI7
Looking North



Span 7 at UI7-Top Truss Detail





Partial Framing Plan

Note:Based on 1928 and 1989 bridge plans. Not field verified.

Drawn By: Jessie Pellerin, 2011.

Lake Champlain Bridge
Addison, Addison County, Vermont
National Park Service
United States Department of the Interior

Lake Champlain Bridge
New York Route 185/Vermont Route 17 Spanning Lake Champlain
Crown Point, Essex County, New York

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