

**10-145-08.1**

**Cavalier County**



**South pier crossframe – bottom strut fractured**



**South pier cross-frame bottom strut fractured**

10-145-08.1

Cavalier County



**All 4 exterior channels on approach spans bent.**







#17

10-145-08.1

BRIDGE NUMBER 10-145-08.1

DATE OF PHOTO 1-14-87

DIRECTION \_\_\_\_\_

COMMENTS SHOWING BOLTS

ON TRUSS



31 01 44 5 2



#18 10-145-08.1



REF 10-145-08.1

DATE 1-14-87

DIRECTION FACING NORTH

COMMENTS SIDE VIEW

91 01 0000 00



#16 10-145-081

BRIDGE NUMBER 10-145-08.1

DATE OF PHOTO 1-14-87

DIRECTION FACING WEST

COMMENTS APPROACH VIEW



4-2













ITEM		10-145-08.1
02 HIGHWAY DISTRICT		GRAND FORKS
03 COUNTY		CAVALIER
04 INV. ROUTE	CNTY HIWAY	0 MAINLINE ON
05 FEATURES INTERSECTED		PEMBINA RIVER
08 STRUCTURE NO.		145-08.1
09 LOCATION		5 EAST OF VANG
19 BYPASS DETOUR LENGTH		4 MILES
22 OWNERSHIP		COUNTY AGENCY
26 FUNCTIONAL		LOCAL
27 YEAR BUILT	BUILT 1919; NO RECONST	
28 LANES ON STRUCTURE		2
29 ADT		20
30 YEAR OF ADT		1987
31 DESIGN LOAD		UNKNOWN
32 APPROACH ROADWAY WIDTH		12 FEET
34 SKEW		0 DEG
36 TRAFFIC SAFETY FEATURES		0111
41 STRUCTURE OPEN, CLOSED OR POSTED		POSTED
42 TYPE OF SERVICE		HIGHWAY OVER WATERWAY
43 MAIN STRUC. TYPE		STEEL THRU TRUSS
45 NO. SPANS IN MAIN UNIT		1
46 NO. APPROACH SPANS		2
47 TOTAL HORIZ. CLEARANCE		15.8 FEET
48 LENGTH OF MAX SPAN		100 FEET
49 STRUCTURE LENGTH		130 FEET
50 SIDEWALK WIDTHS		NONE
51 BRIDGE RDWY. WIDTH - CURB TO CURB		15.8 FEET
52 DECK WIDTH		17.8 FEET
53 MIN. VERT. CLEARANCE OVER BRIDGE RDWY		14'06"
54 MIN. VERT. CLEARANCE UNDER BRIDGE RDWY		NOT APPLICABLE
55 MIN. LATERAL UNDERCLEARANCE-RT		NOT APPLICABLE
56 MIN. LATERAL UNDERCLEARANCE-LT		99.9 FEET
57 WEARING SURFACE		WOOD PLANKING
58 DECK	4 MARGINAL COND.--MAJOR REHABILITATION	
59 SUPERSTRUCTURE	3 POOR COND.--REPAIR REQUIRED IMMEDIATELY	
60 SUBSTRUCTURE	4 MARGINAL COND.--MAJOR REHABILITATION	
61 CHAN. & CHAN. PROT	7 GENERALLY GOOD COND.--MINOR MAINTENANCE	
62 EST. REMAINING LIFE		10 YEARS
64 OPER. RATING		H-07
65 APP. RDWY. ALIGNMENT	3 POOR COND.--REPAIR REQUIRED IMMEDIATELY	
66 INV. RATING		H-05
67 STRUCTURAL CONDITION	1 IMMED. REPAIR TO PUT BACK IN SERV.	
68 DECK GEOMETRY	2 INTOLERABLE--HI REPLCMNT PRIORITY	
70 SAFE LOAD CAPACITY	2 INTOLERABLE--HI REPLCMNT PRIORITY	
71 WATERWAY ADEQUACY	7 COND. BETTER THAN PRES. MIN. STAND.	
72 APP. RDWY. ALIGNMENT	3 INTOLERABLE--HI PRIORITY OF REPAIR	
90 DATE OF LAST INSPECTION		05/89
105 DELAYED INSPECTION -		
91 CULVERT		
92 DESCRIPTION		
89 STRUCTURE TYPE		COUNTY-OFF
95 STATUS		STRUCTURALLY DEFICIENT
94 SUFFICIENCY RATING		24.4
INSPECTORS NAME	WILSON & FLOM	

## 96 ADDITIONAL REMARKS

NO CURB. NO BRIDGE END MARKERS. RUSTY STRINGERS.  
 VEHICLE DAMAGE TO BOTH RAILS, BOTH APPROACH SPANS.  
 3 TRUSS BOLTING SEVERLY RUSTED. SOUTHWEST ABUTMENT WING  
 BADLY CRACKED AND LEANING INWARD. OUTSIDE STRINGERS BOTH  
 APPROACH SPANS LEANING OUT DUE TO RAIL DAMAGE. ROTTED DECK  
 PLANKS. \* POOR VERTICAL AND HORIZONTAL ROADWAY ALIGNMENT.  
 POSTED NARROW BRIDGE-WEIGHT LIMIT 5 TONS.  
 BUMP AT SOUTH END OF STRUCTURE

WIDTH &lt; 18' ∴ RATE FOR 1 LANE

CONT. STRINGERS

STRINGER:  $\frac{1}{2} = 16.7'$  SPACING = 24" I-BEAM 6\* 12.25 S = 7.3 in<sup>3</sup>  
 3" TIMBER DECK

RATE 4 PTDEAD LOAD

$$\text{DECK: } \frac{3}{12} \left( \frac{24}{12} \right) (50) = 25$$

$$\text{MISC} = \frac{2.75}{40 \text{ \#/FT}} = 0.06875$$

$$\text{DECK: } \frac{3}{12} \left( \frac{24}{12} \right) (50) = 25$$

$$\text{MISC} = \frac{2.75}{40 \text{ \#/FT}} = 0.06875$$

$$40 \text{ \#/FT}$$

$$\text{DF} = \frac{24/12}{4} = 0.5$$

$$\text{ANGERS COEF} = .07$$

$$\text{DLM} = .07(40)(16.7)^2 = 781 \text{ FT-LBS}$$

LIVE LOAD I = 30% ANGLERS COEF = 0.1980

$$\text{INU: } .198(112,000)(16.7)(1.3)(.5) = 25,791 \text{ FT-LBS}$$

$$\text{OPR: } \text{ " " " " } = 25,791 \text{ FT-LBS}$$

CAPACITY

$$\text{INU: } 16,000(7.3)/12 = 9,733 \text{ FT-LBS}$$

$$\text{OPR: } 22,500(7.3)/12 = 13,688 \text{ FT-LBS}$$

RATING

$$\text{INU: } \frac{9,733 - 781}{25,791} (15) = \text{HS } 5.2$$

$$\text{OPR: } \frac{13,688 - 781}{25,791} (15) = \text{HS } 7.5$$

RATE 10 PT

$$DF = 0.5$$

$$DL \text{ COEF (DANGER)} = 0.125$$

$$LLM \text{ COEF ("')} = 0.1912$$

$$DLM = 0.125(40)(16.7)^2 = 1,394 \text{ FT-LBS}$$

LIVE LOAD  $I = 30\%$ 

$$INU: 0.1912(12,000)(1.3)(16.7)(.5) = 24,906 \text{ FT-LBS}$$

$$OPR: \quad \quad \quad \quad \quad \quad \quad \quad = 24,906 \text{ FT-LBS}$$

CAPACITY

$$INU = 9,733 \text{ FT-LBS}$$

$$OPR. = 13,688 \text{ FT-LBS}$$

RATING

$$INU: \frac{9733 - 1394}{24,906} (15) = HS \ 5.0 \quad (209)$$

$$OPR: \frac{13,688 - 1394}{24,906} (15) = HS \ 7.4 \quad (213)$$

$$ITEM \ 70: \frac{36 - 13}{36} (100) = 63.9\% \text{ CODE } O$$

POST R12-4-13

22-141 50 SHEETS  
22-142 100 SHEETS  
22-144 200 SHEETS



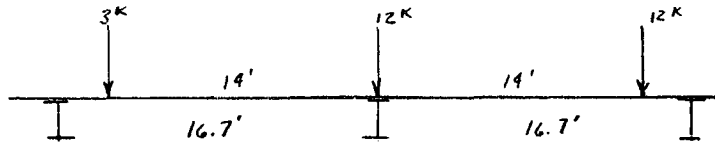
FLOOR BEAM

BEAM: L = 16.5' I-BEAM 15\*39 S = 53.8 in<sup>3</sup>

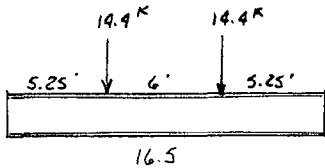
DEAD LOAD

BEAM: = 39 #/FT  
 FROM STRINGERS: 40(16.7)(10)/16.5 = 405 #/FT  
 MISC: = 6  
 450 #/FT  
 DLM = 450(16.5)<sup>2</sup>/8 = 15,314 FT-LBS

LIVE LOAD



$\frac{2.7}{16.7}(3) = 0.5$   
 $12 = 12$   
 $\frac{2.7}{16.7}(12) = \frac{1.9}{14.4}$



MAX. MOM. = 14.4(5.25) = 75.6 K-FT

LLM = 75,600(1.3) = 98,280 FT-LBS

CAPACITY

INU: 16,000(53.8)/12 = 71,733 FT-LBS

OPR: 22,500(53.8)/12 = 100,875 FT-LBS

RATING

INU:  $\frac{71,733 - 15,314}{98,280}(15) = HS 8.6$

OPR:  $\frac{100,875 - 15,314}{98,280}(15) = HS 13.1$

22-141 50 SHEETS  
 22-142 100 SHEETS  
 22-144 200 SHEETS







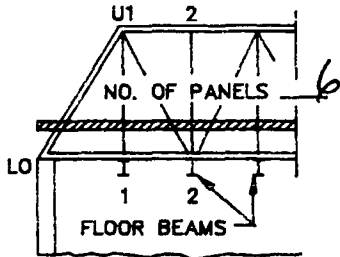
# STEEL OR TIMBER TRUSS BRIDGE REPORT

State Highway Department, Bridge  
SFN 2807 (Rev. 8-89)

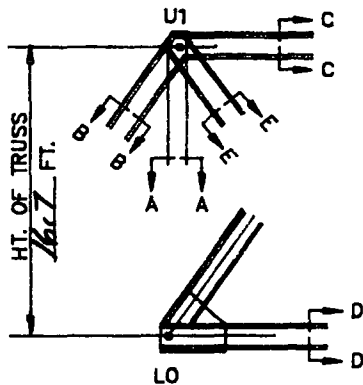
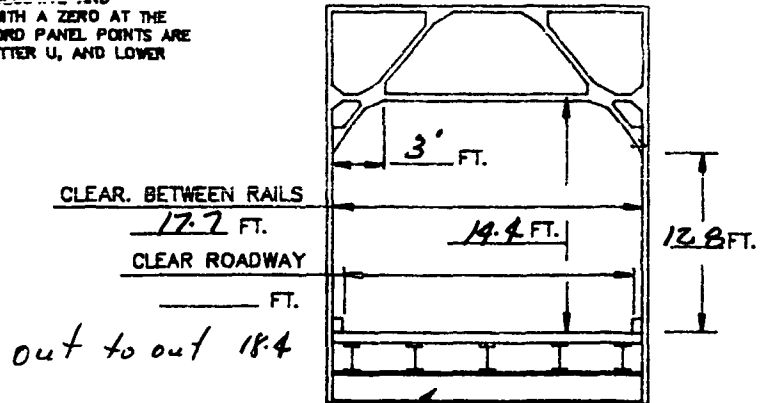
INSPECTOR W. Isow & Flom DATE 6-19-90 BRIDGE NO. 10-145-08.1

THROUGH TRUSS  PONY TRUSS  LENGTH = 130' BACK TO BACK OF ABUTMENTS  
NO. OF SPANS 1 Span 99.3 + Approach Spans 13.6 + 13.6

NOTE: THE STANDARD PANEL NUMBERING FOR TRUSS BRIDGES IS CONSECUTIVE AND NUMERICAL BEGINNING WITH A ZERO AT THE TRUSS-END. UPPER CHORD PANEL POINTS ARE NUMBERED WITH THE LETTER U, AND LOWER CHORD POINTS WITH L.



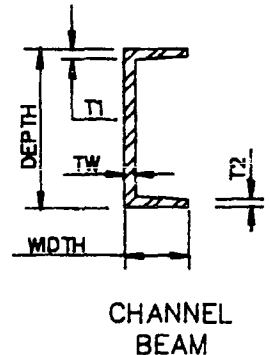
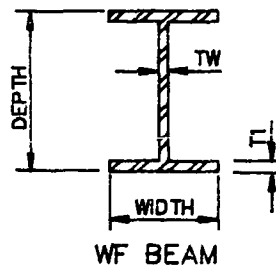
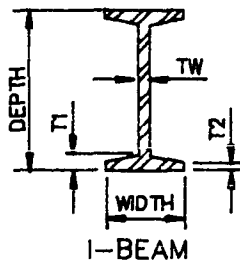
VERT. AND HORIZ. CLEARANCES



DRAW SECTIONS OF TRUSS MEMBERS WITH DIMENSIONS AS SHOWN AT A-A, B-B, C-C & D-D ON REVERSE SIDE.  
DRAW JOINT CONNECTIONS ON REVERSE SIDE.

See Attached Sheets

TYPES OF BEAMS - FLOOR/STRINGER



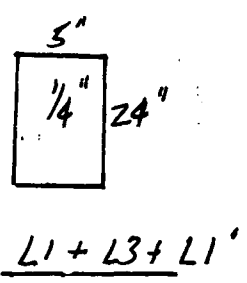
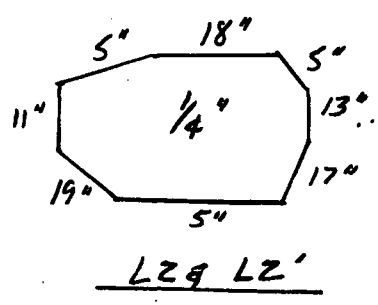
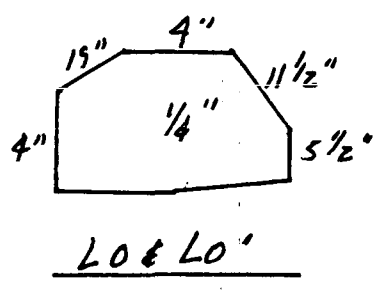
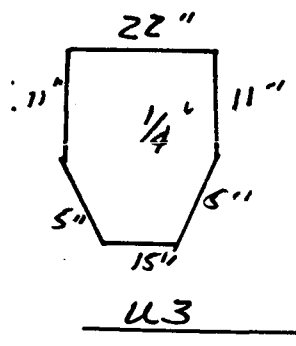
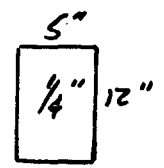
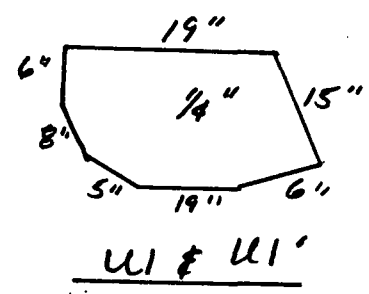
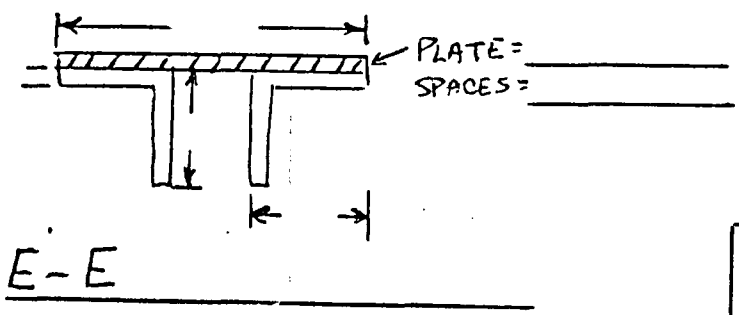
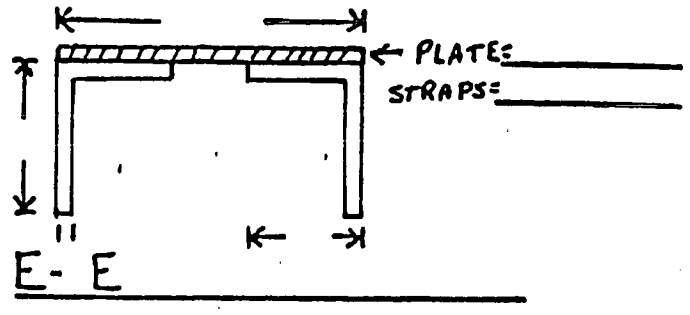
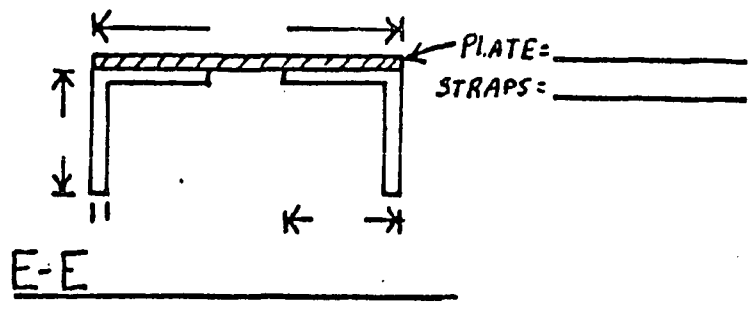
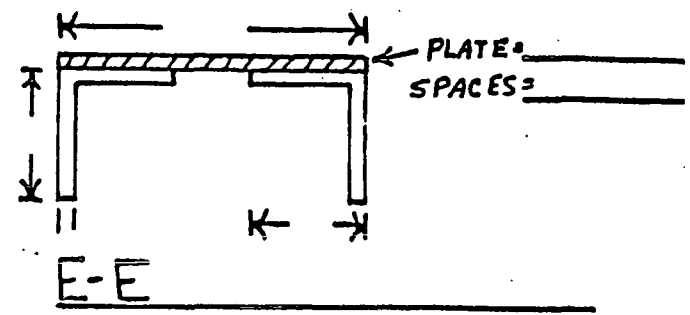
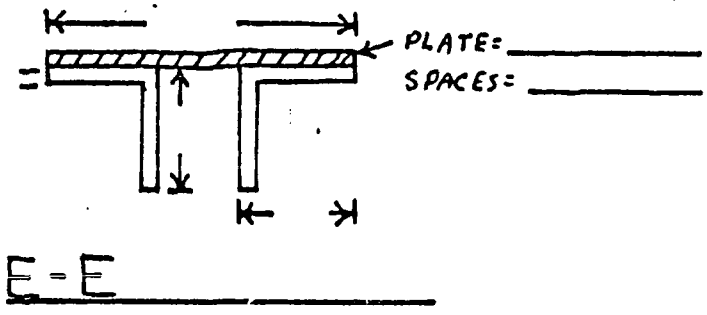
CHANNEL BEAM

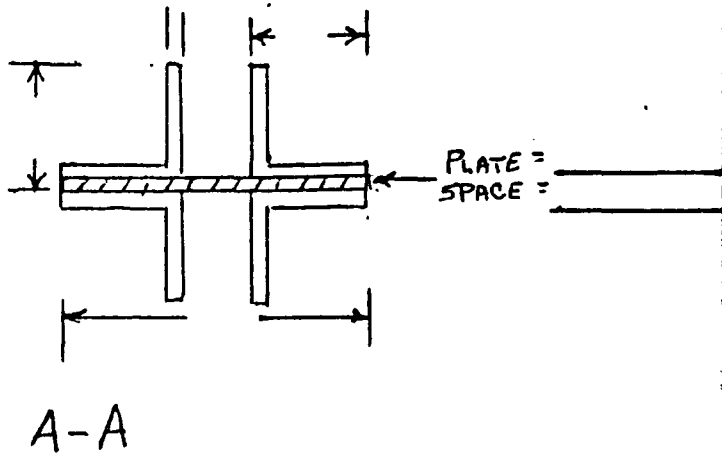
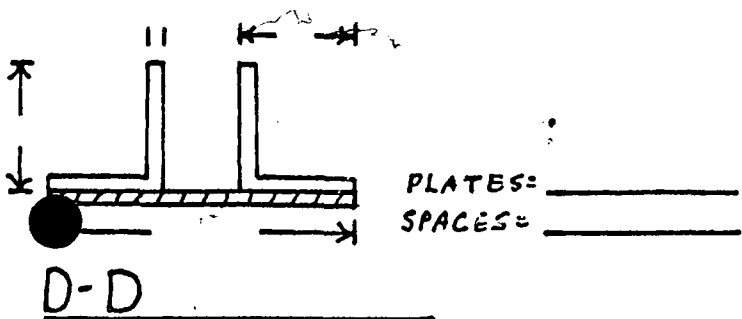
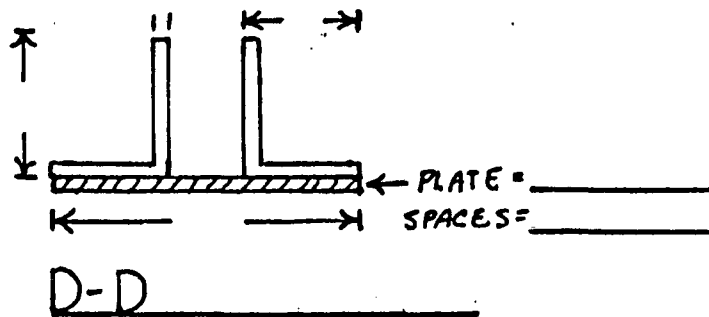
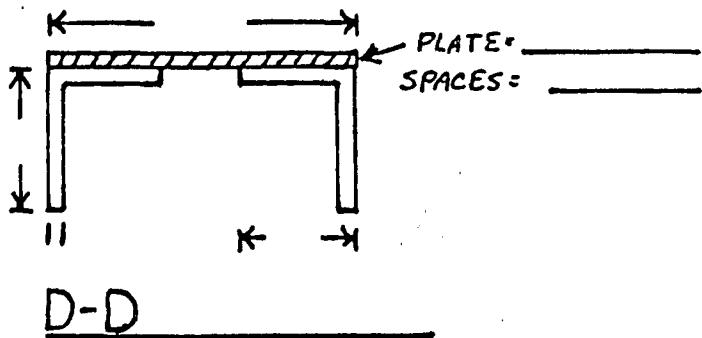
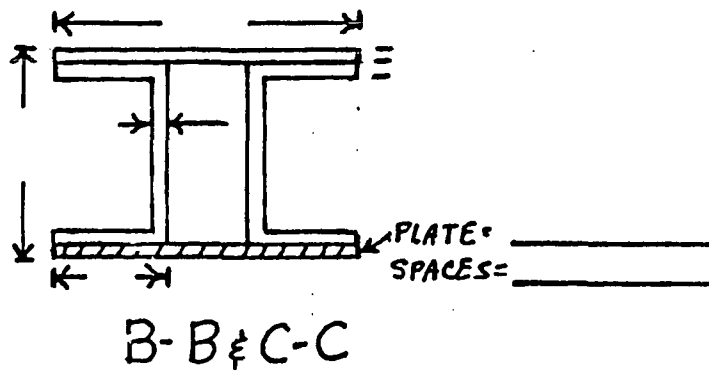
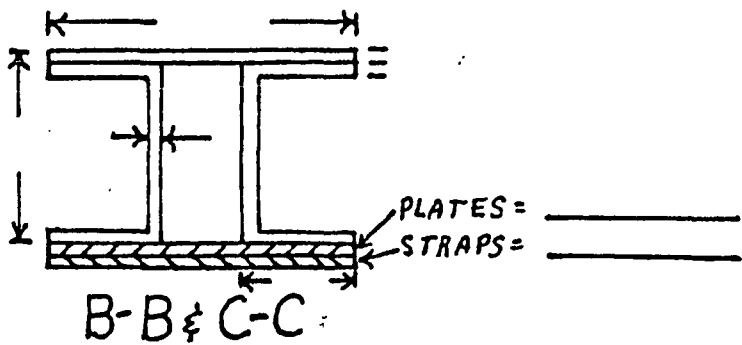
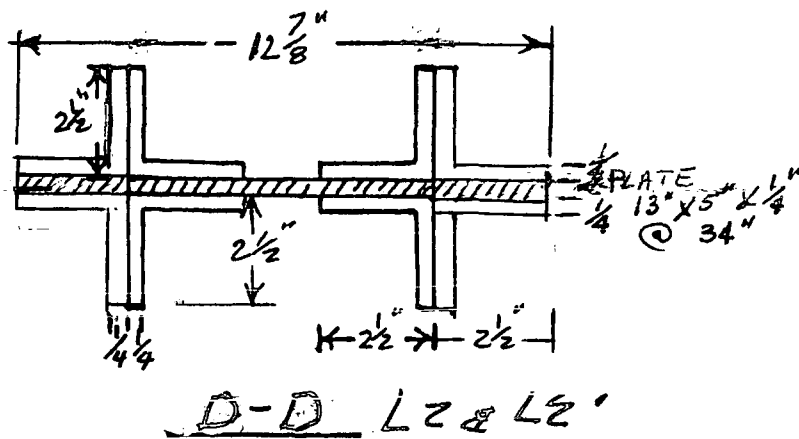
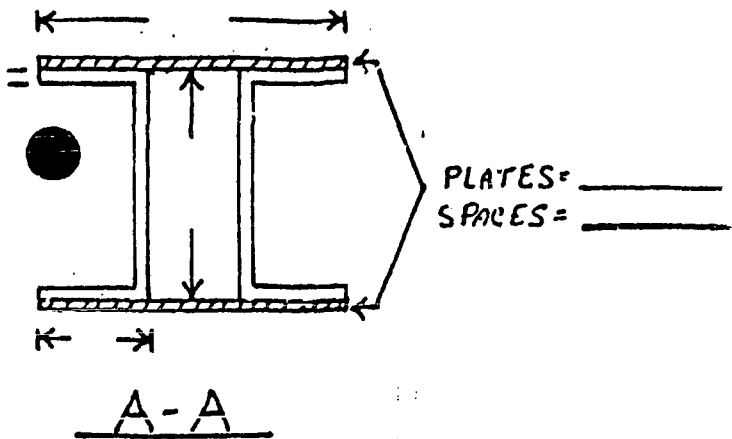
TYPE OF FLOOR:	CONCRETE	<u>TIMBER</u>	(UNDERLINE ONE)	THICKNESS	<u>3" x 12" T. Timber</u>			
TYPE OF CURB:	CONCRETE	TIMBER	(UNDERLINE ONE)	SIZE	<u>NONE</u>			
TYPE OF RAIL	<u>3 - Angle Iron @ 12" Apart</u>			SIZE	<u>2" x 2"</u>			
FLOOR BEAMS: NUMBER	<u>5</u>			SPACING	<u>16.7</u>	LENGTH	<u>19.6</u>	
TYPE	<u>I-Beam</u>	DEPTH	<u>15"</u>	WIDTH	<u>5 1/2</u>	TW	<u>3/8</u>	
						T1	<u>7/8</u>	
						T2	<u>3/8</u>	
FLOOR BEAMS: NUMBER	<u>10</u>			SPACING	<u>24"</u>	LENGTH	<u>13.6 + 33.4 + 33.4 + 13.6</u>	
EXTERIOR:	TYPE	<u>C-Beam</u>	DEPTH	<u>6"</u>	WIDTH	<u>1 7/8"</u>	TW	<u>1/4"</u>
						T1	<u>1/2"</u>	
						T2	<u>1/4"</u>	
INTERIOR:	TYPE	<u>I-Beam</u>	DEPTH	<u>6"</u>	WIDTH	<u>3 1/4"</u>	TW	<u>1/4"</u>
						T1	<u>1/2"</u>	
						T2	<u>1/4"</u>	
STRINGERS CONTINUOUS OVER	NO. <u>1</u>			FLOORBEAMS				
DESCRIBE TYPE OF ABUTMENTS:	<u>concrete</u>							

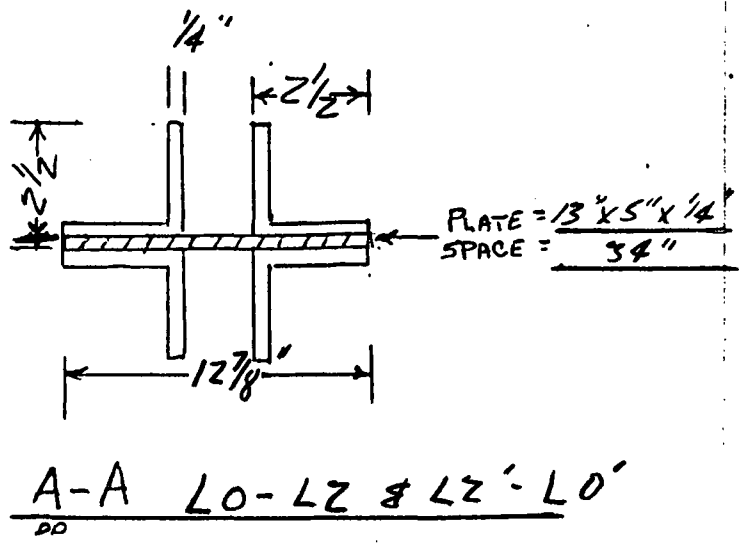
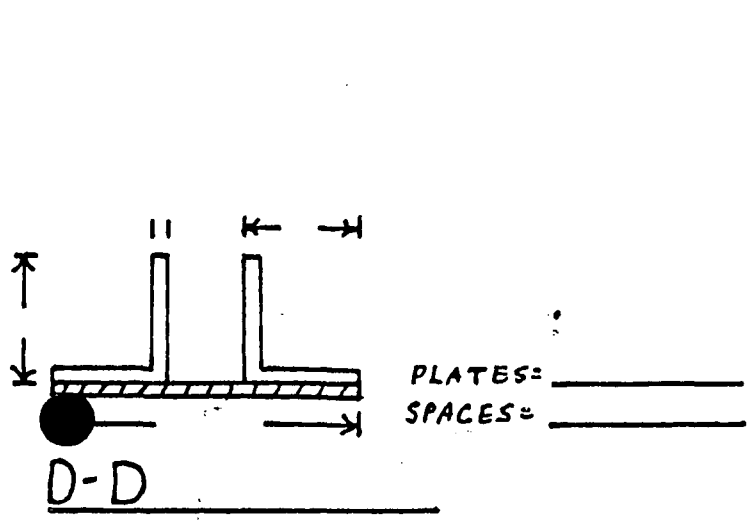
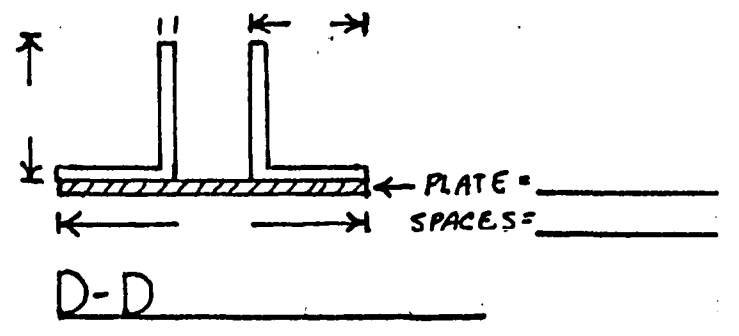
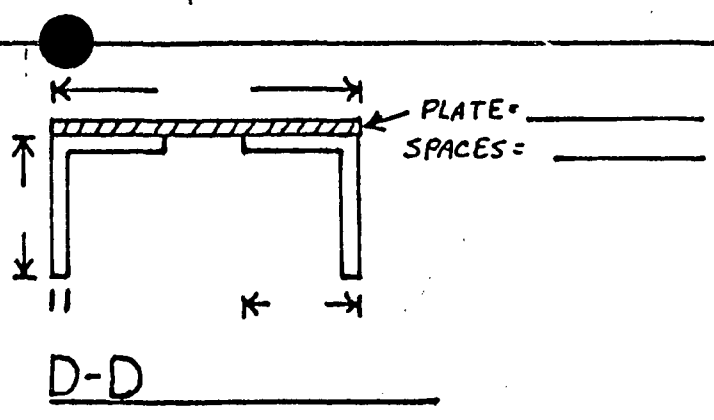
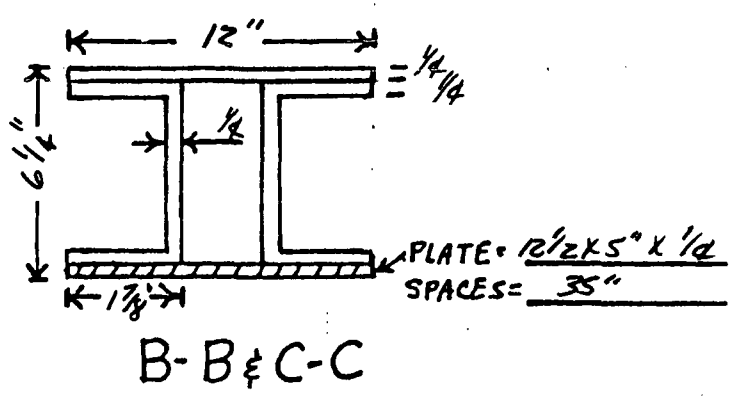
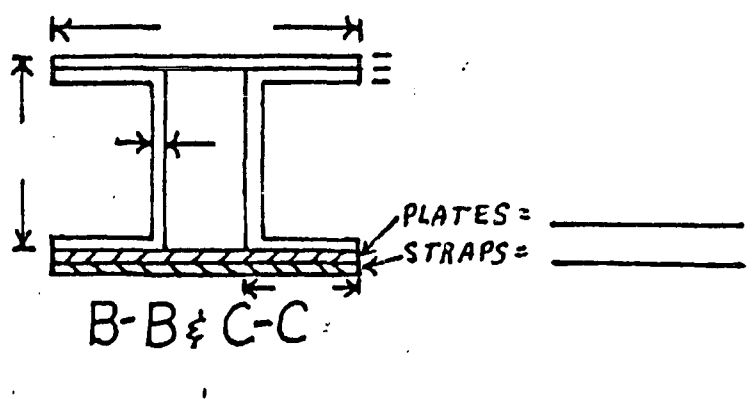
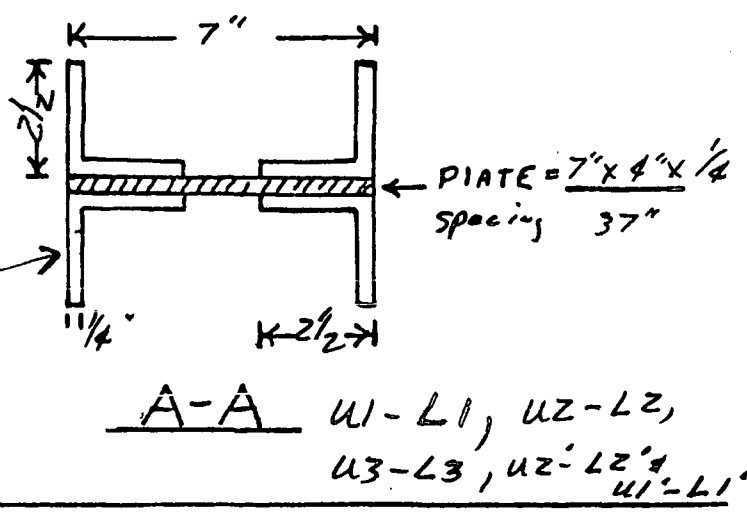
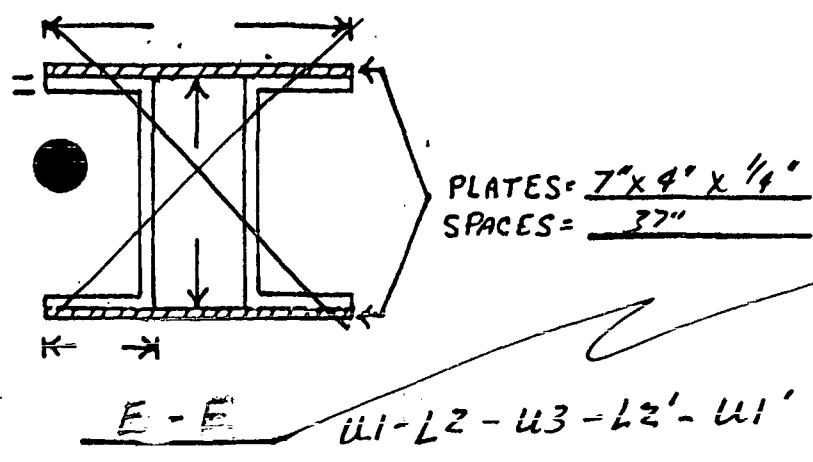
DESCRIBE TYPE OF PIERS: Steel Barrolls with I-Beam Diaphragm

DESCRIBE TYPE OF APPROACH SPANS: Steel stringer

COMMENTS ON ITEMS AFFECTING STRENGTH: \_\_\_\_\_

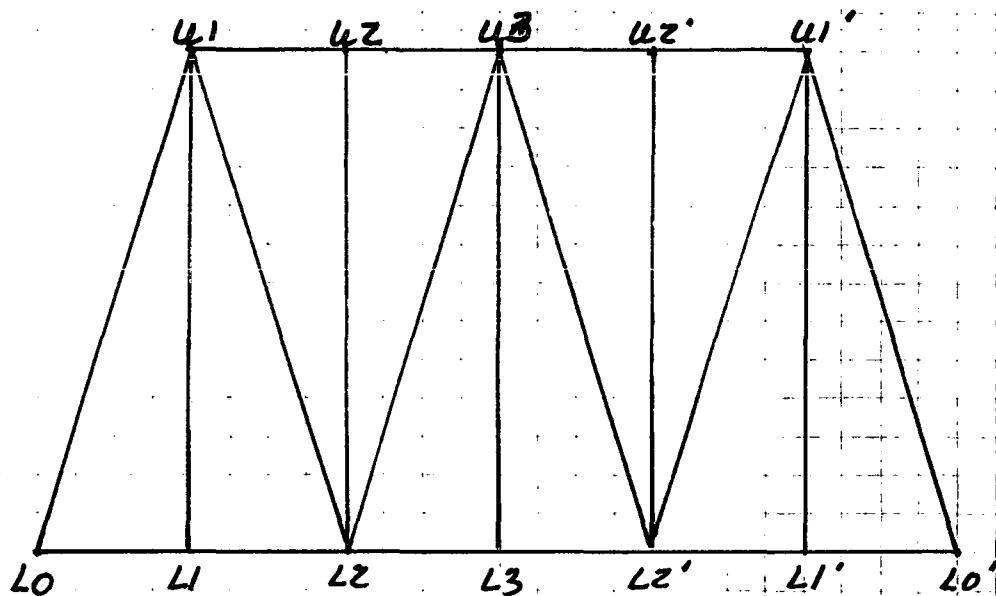








10-145-08.1



**BRIDGE INSPECTION REPORT**

BRIDGE NO. 145-8.1 DISTRICT OR COUNTY CAVALIER  
 INSPECTOR LS RYAN DATE AUG 13 '76

**BRIDGE DECK PROFILE**

Taken from N to S W to E

	Abut 1	Span 1	Pier 2	Span 2	Pier 3	Span 3	Abut 4
N W side	5.16	5.15	5.16	4.85	4.82	4.80	4.75
S E side	5.16	5.15	5.15	4.84	4.81	4.80	4.80

Bench Mark { Paint spot on top of NW CAISSON  
 (Other) ELEVS TO DECK } Elev. 6.10

**STREAM PROFILE (Downstream side)**

Taken N to S W to E on N W S/E side of bridge.

Taken on top of the curb \_\_\_\_\_ rail \_\_\_\_\_ floor  other \_\_\_\_\_

Taken at \_\_\_\_\_ at 16' spaces. Water Elev. 14.3'

6.3' - 9.4' - 15.7' - 16.9' - 17.0' - 17.9' - 15.0' - 10.0' - 7.7'

**COMMENTS:**

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

A-A Double-Double Angle Iron  
 L<sub>1</sub>-U<sub>1</sub>; L<sub>2</sub>-U<sub>2</sub>; L<sub>3</sub>-U<sub>3</sub>; L<sub>4</sub>-U<sub>4</sub>; L<sub>5</sub>-U<sub>5</sub>  
 size 2 1/2 x 2 1/2 x 1/4

Connected by plate 7 x 7 x 1/4  
 spaced 36"  $\phi$  to  $\phi$ .

B-B Double Channel Beam  
 L<sub>0</sub>-U<sub>1</sub>; U<sub>5</sub>-L<sub>6</sub>

Plate size 6 x 2 x 1/4 Flanges 1/4 1/2  
 Connected by a plate 12" x 1/4  
 running complete length

C-C Double Channel Beam  
 U<sub>1</sub>-U<sub>5</sub>  
 Same as B-B

D-D Double-Double Angle Iron  
 L<sub>0</sub>-L<sub>6</sub>  
 size 2 1/2 x 2 1/2 x 1/4

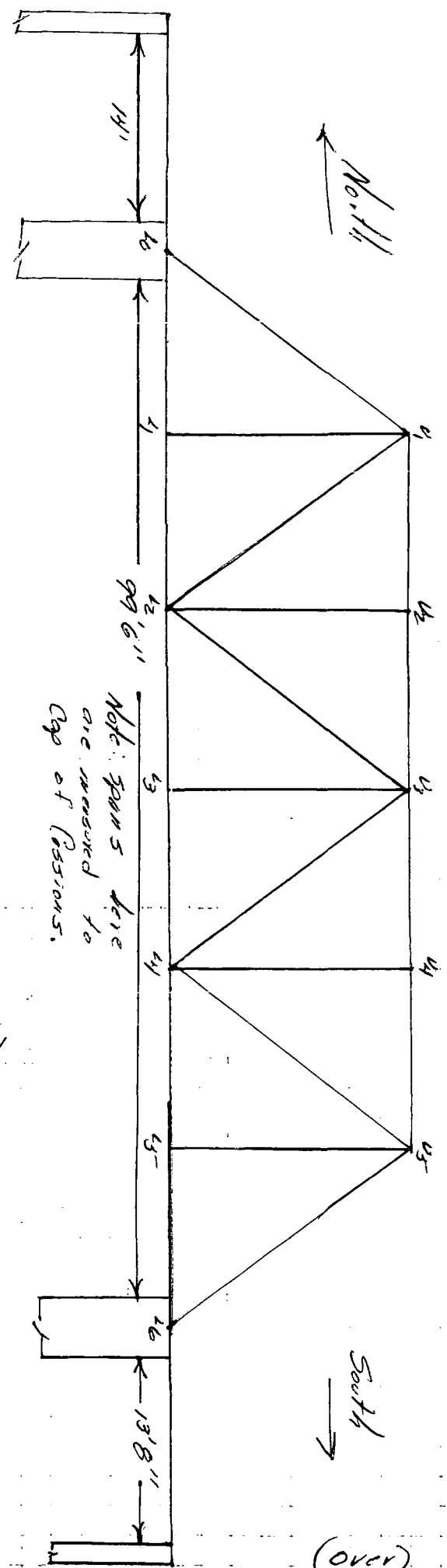
Connected by plates 12 x 5 x 1/4  
 spaced 24"  $\phi$  to  $\phi$ .

E-E Double-Double Angle Iron  
 L<sub>2</sub>-U<sub>1</sub>; L<sub>4</sub>-U<sub>5</sub>  
 size 2 1/2 x 2 1/2 x 1/4

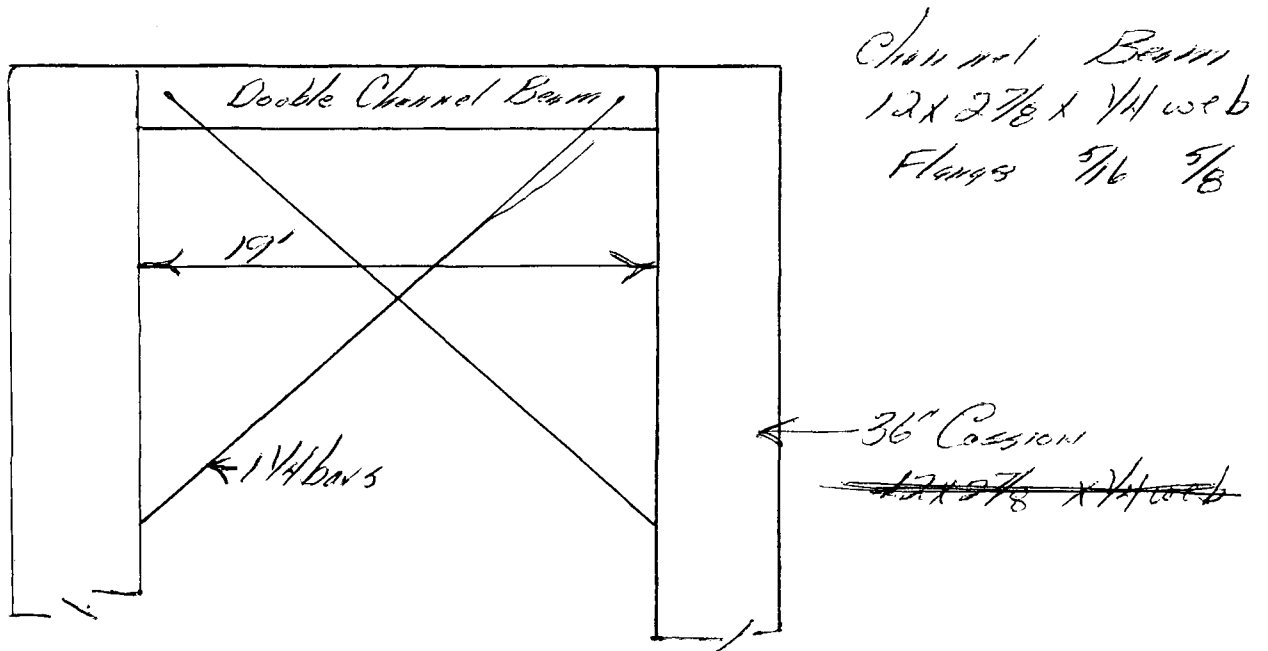
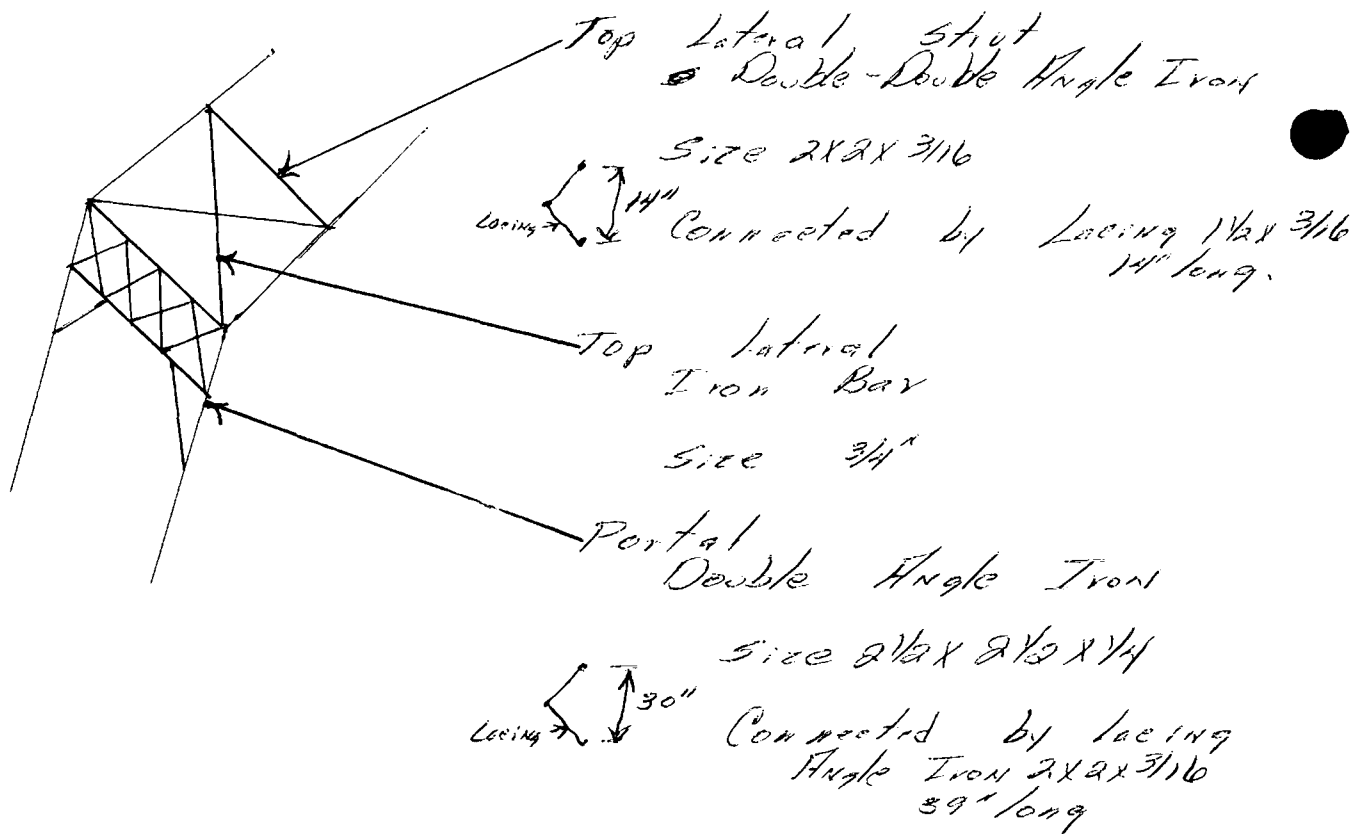
Connected by plates 7 x 1/4 x 1/4  
 spaced 36"  $\phi$  to  $\phi$ .

Double-Double Angle Iron  
 L<sub>2</sub>-U<sub>3</sub>; U<sub>3</sub>-L<sub>4</sub>  
 size 3" x 2 1/2 x 1/4

Connected by plates  
 7 x 1/4 x 1/4 spaced  
 spaced 36"  $\phi$  to  $\phi$



Note: Spans here  
 are measured to  
 top of girders.



Bridge Profile

Taken from W to S W to E

*940 to Deck*

	Abut. 1	Span 1	Pier 2	Span 2	Pier 3	Span 3	Abut 4
N <u>W</u> side	5.30	5.25	5.23	4.93	4.92	4.92	4.91
S <u>E</u> side	5.28	5.26	5.19	4.95	4.95	4.93	4.95

B.M. Paint spot on top of Concrete Abut. 1 W. Corner Elev. 4.95

Stream Profile

Taken N to S W to E on N W S E side of bridge.

Taken on top of the curb \_\_\_\_\_ rail \_\_\_\_\_ floor ✓

Taken at Abuts, Piers, Flow Beams at \_\_\_\_\_ spaces. Water Elev. 14.4'

(1) 6.3 (2) 7.9 (3) 16.3' (4) 19.2

(5.) 17.0' (6.) 18.3' (7.) 13.8' (8.) 11.2 (9.) 8.8

**NORTH DAKOTA STATE HIGHWAY DEPARTMENT**  
**Secondary Roads Division**  
**COUNTY BRIDGE SITE EVALUATION**

Bridge No. 145-8.1

PURPOSE: To gather pertinent data concerning the approach roadways at bridge sites on local roads.

**A. ROADWAY GEOMETRICS:**

1. Degree of Curve in each direction North 40° South 30°
2. Tangent Length from Bridge 10' 6'
3. Roadway width and Side Slopes 12' 10:1 Slopes
4. Surface type Gravel

**B. CONTROL DEVICES:**

- |                                     |                                                                     |                                           |           |          |                      |
|-------------------------------------|---------------------------------------------------------------------|-------------------------------------------|-----------|----------|----------------------|
| 1. CURVE Sign                       | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                                           |           |          |                      |
|                                     | In Place                                                            | Size                                      | Condition | Color    | Location from Bridge |
| 2. SINGLE LANE Signing              | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                                           |           |          |                      |
|                                     | In Place                                                            | Size                                      | Condition | Color    | Location from Bridge |
| 3. NARROW BRIDGE Sign               | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                                           |           |          |                      |
|                                     | In Place                                                            | Size                                      | Condition | Color    | Location from Bridge |
| 4. LOW CLEARANCE                    | <input type="checkbox"/> Yes <input type="checkbox"/> No            |                                           |           |          |                      |
|                                     | In Place                                                            | Size                                      | Condition | Color    | Location of Sign     |
| 5. WEIGHT LIMIT                     | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                                           |           |          |                      |
|                                     | Tons                                                                | Size                                      | Condition | Color    | Location of Sign     |
| 6. Advance Warning for Weight limit | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                                           |           |          |                      |
|                                     | In Place                                                            | Size                                      | Condition | Color    | Location of Sign     |
| 7. Speed Limit                      | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                                           |           |          |                      |
|                                     | MPH.                                                                | Size                                      | Condition | Color    | Location of Signs    |
| 8. Bridge End Markers               | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                                           |           |          |                      |
|                                     | In Place                                                            | Size                                      | Condition | Color    | Location of Markers  |
| 9. Shoulder Delineation             | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                                           |           |          |                      |
|                                     | In Place                                                            | Size & Condition                          | Color     | Location |                      |
| 10. Centerline                      | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                                           |           |          |                      |
|                                     | In Place                                                            | State Condition (Poor) (Good) (Excellent) |           |          |                      |
| 11. Edge Line                       | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                                           |           |          |                      |
|                                     | In Place                                                            | State Condition (Poor) (Good) (Excellent) |           |          |                      |
| 12. Guard Rail (Type)               | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                                           |           |          |                      |
|                                     | In Place                                                            | State Type (Cable) (Steel Rail) (Other)   |           |          |                      |

**C. ACCESS ON APPROACH:** Comments regarding sight distance and proximity of access points.

Fair

**D. ACCIDENT EXPERIENCE:** (To be completed in Central Office of North Dakota State Highway Department)

# TRUSS BRIDGE REPORT

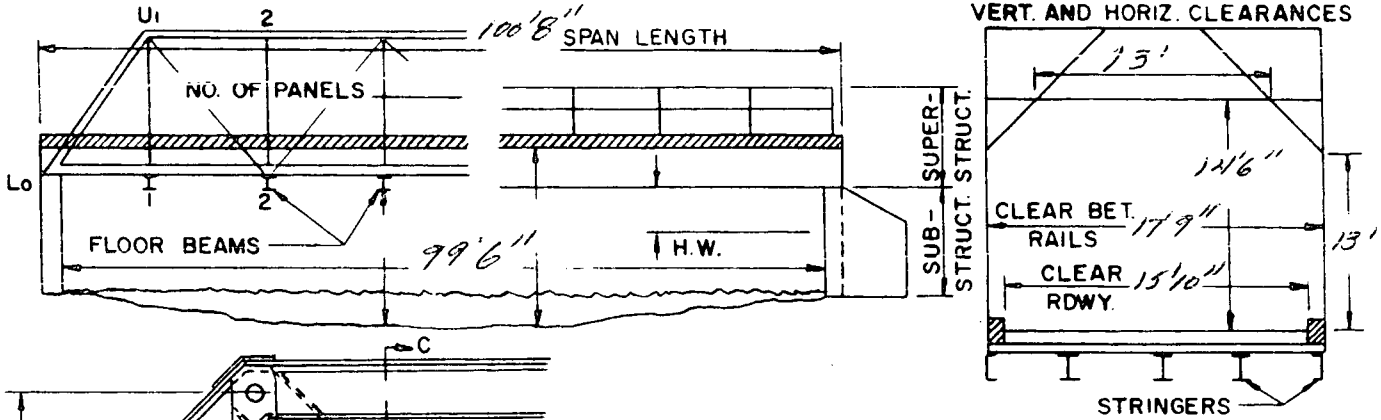
CO. BRIDGE NO. 145-8.1

COUNTY Cavalier LOCATION North Star Township BRIDGE NO. \_\_\_\_\_

FEATURE CROSSED Pembina River YEAR BUILT \_\_\_\_\_ DATE INSPECTED 23 Aug 72

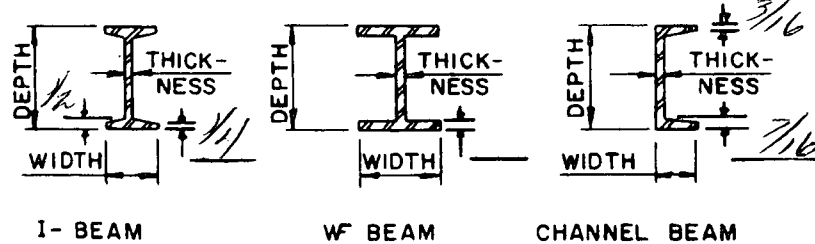
THROUGH TRUSS  PONY TRUSS  L = 130' 5" BACK TO BACK OF ABUTMENTS

DIRECTION OF INVENTORY N S E W (UNDERLINE ONE) NO. OF SPANS Three



DRAW SECTIONS OF TRUSS MEMBERS WITH DIMENSIONS AS SHOWN AT A-A, B-B, C-C & D-D ON REVERSE SIDE.

### TYPES OF BEAMS



TYPE OF FLOOR: PCC TIMBER (UNDERLINE ONE) THICKNESS 3"  
 TYPE OF CURB: PCC TIMBER ( " " ) SIZE 3" high x 12" wide  
 TYPE OF RAIL Angle Iron SIZE 2x2x3/16

FLOOR BEAMS: NUMBER Five SPACING 16' 8" Flanges 7/16" 1/16"  
 TYPE \_\_\_\_\_ DEPTH 15 WIDTH 5 1/2 THICKNESS 7/16

STRINGERS: NUMBER 10 SPACING 24"  
 EXTERIOR: TYPE Channel Beam DEPTH 6 WIDTH 1 7/8 THICKNESS 3/16  
 INTERIOR: TYPE I-Beam DEPTH 6 WIDTH 3 1/4 THICKNESS 1/4

DESCRIBE TYPE OF ABUTMENTS Concrete - Good Condition

DESCRIBE TYPE OF PIERS Cession - Good Condition

DESCRIBE TYPE OF APPROACH SPANS I-Beam - Same as truss  
span - Good Condition

HEAD DIAMETER OR SIZE OF RIVETS 1/8" head Dia.

(DRAW SKETCHES ON REVERSE SIDE)





10-145-08.1 Broken Planks on Bridge Deck

Structure Number: 10-145-08.1

200 System Designation	3 - County Off	<b>Classification</b>	
201 Status	Structurally Deficient	12 Base Highway Network	Not on Base Network
202 Sufficiency Rating	30.80	20 Toll	3 On free road
<b>Identification</b>		21 Maint Responsibility	02 County Hwy Agency
02 Highway District	Devils Lake District	22 Owner	02 County Hwy Agency
03 County	Cavalier	26 Functional	Rural, Local
04 City	FREMONT TOWNSHIP	37 Historical Significance	2 Br eligible for NRHP
05 Inventory Route	Route On Structure	100 Defense Highway Designation	0 Not a STRAHNET hwy
4 County Hwy 1 Mainline	00000 0 N/A (NBI)	101 Parallel Structure Designation	No    bridge exists
06 Feats Intersect	PEMBINA RIVER	102 Direction of Traffic	3 1-lane Br for 2-way
09 Location	5 EAST OF VANG	103 Temporary Structure Designation	Not Applicable (P)
11 Milepoint	0.000	104 Highway System of Inventory Rte	0 Not on NHS
13 LRS Inv Route. Subroute	-1 -1	105 Federal Lands Highways	Not applicable
16 Latitude	48d 54' 02.00"	110 Designated National Network	0 Not part of natl netwo
17 Longitude	98d 01' 06.00"	112 NBIS Bridge Length	
GPS Coordinates XY	571954.1 5416850.7	226 Functional Under	
98 Border Bridge	Unknown (P) -2.00 %	<b>Condition</b>	
99 Border Bridge Struct No.	-	58 Deck	6 Satisfactory
<b>Structure Type and Material</b>		59 Superstructure	4 Poor
43 Main Struct Type	Steel	60 Substructure	5 Fair
Truss - Thru		61 Chan. & Chan. Protection	7 Minor Damage
44 Approach Struct Type	3 Steel	62 Culvert and Retaining Walls	N N/A (NBI)
		<b>Load Rating and Posting</b>	
45 No. Spans in Main Unit	1	31 Design Load	
46 No. Approach Spans	2		Unknown
107 Deck Struct Type	8 Wood or Timber	41 Structure Open, Closed or Posted	B Posting Recommended
108 Wearing Surface	7 Wood or Timber	63 Operating Rating Method	2 AS Allowable Stress
Membrane	0 None	64 Oper. Rating HS 7	12 Tons
Dk Protect	None	65 Inventory Rating Method	2 AS Allowable Stress
208 Dk Overburden 1	None	66 Inv. Rating HS 4	9 Tons
<b>Age and Service</b>		70 Bridge Posting	0 >39.9% below
27 Yr Built 1919	106 Yr Reconstructed -1	209 Posted in "Tons"	00 Tons
42 Type of Service	1 Highway - On	<b>Appraisal</b>	
	5 Waterway - Under	67 Structural Condition	2 Intolerable - Replace
28 Lanes on Structure	2	68 Deck Geometry	2 Intolerable - Replace
29 ADT 20	30 Year of ADT 2014	69 Underclear. Vert & Horiz	N Not applicable (NBI)
109 Average Daily Truck Traffic	-1.00	71 Waterway Adequacy	7 Above Minimum
19 Bypass, Detour Length	20 Miles	72 App. Rdwy. Alignment	3 Intolerable - Correct
<b>Geometric Data</b>		36 Traffic Safety Features	0 0 0 0
10 Min Vert Clearance	14 Ft. 5 In.	113 Scour Critical	U Unknown Scour
32 Approach Roadway Width	16 Feet	<b>Inspections</b>	
33 Bridge Median	0 No median	90 Date of Last Inspection	September 16, 2014
34 Skew	0.00	91 Designated Inspection Frequency	24 Months
35 Structure Flared	0 No flare	92 Critical Feature Inspected / 93 Critical Feature Last Inpsection Dt	
47 Total Horizontal Clearance	17.4 Feet	Fracture Critical Y 24	07/30/2012
48 Length of Max Span	99 Feet	Underwater N	
49 Structure Length	129.92 Feet	Other Special N	
50 Curb/Sidewalk Widths	0.0 Ft Rt-Side	218 Channel Profile Y 48	10/08/2014
	0.0 Ft Lt-Side	207 Transporter Erector Routes and Sites	-1
51 Bridge Rdwy Width - Curb to Curb	17.7 Feet	212 Structure Load Rated	01/01/1901
52 Deck Width	18.4 Feet	213 Federal Aid Project Number	
53 Min Vert Clear. Over Bridge	12 Ft. 10 In.	214 Delayed Inspection	Not Applicable
54 Min Vert Underclearance	0 Ft. 0 In.	216 Inspector	Horn, Ebensteiner
	N Feature not hwy or RR	<b>Navigation Data</b>	
55 Min Lateral UnderClear. - Rt	327.8 Feet	38 Navigation Control	Permit Not Required
	N Feature not hwy or RR	39 Navigation Vertical Clearance	0 Feet
56 Min Lateral UnderClear. - Lt	0.0 Feet	40 Navigation Horizontal Clearance	0 Feet
210 Culvert / 211 Description		111 Pier or Abutment Protection	Unknown (NBI)
		116 Minimum Navigation Vertical Clearance	-1 Feet

Structure Number: 10-145-08.1

Elm/Env	Description	Units	Total Qty	% in 1	1-Qtv St	% in 2	2-Qtv St	% in 3	3-Qtv St	% in 4	4-Qtv St	% in 5	5-Qtv St
31 / 1	Timber Deck	(SF)	2,390	0%	0	100%	2,390	0%	0	0%	0	0%	0
107 / 2	Paint Stl Opn Girder	(LF)	1,289	0%	0	0%	0	20%	258	80%	1,031	0%	0
121 / 2	P/Stl Thru Truss/Bot	(LF)	197	0%	0	0%	0	0%	0	100%	197	0%	0
126 / 2	P/Stl Thru Truss/Top	(LF)	197	0%	0	0%	0	0%	0	100%	197	0%	0
152 / 2	Paint Stl Floor Beam	(LF)	98	0%	0	0%	0	0%	0	100%	98	0%	0
202 / 2	Paint Stl Column	(EA)	4	0%	0	0%	0	100%	4	0%	0	0%	0
215 / 2	R/Conc Abutment	(LF)	36	0%	0	100%	36	0%	0	0%	0	0%	0
231 / 2	Paint Stl Cap	(LF)	36	0%	0	0%	0	0%	0	100%	36	0%	0
330 / 1	Metal Rail Uncoated	(LF)	259	0%	0	0%	0	95%	245	5%	14	0%	0
401 / 2	Wings	(EA)	4	75%	3	0%	0	25%	1	0%	0	0%	0

**Remarks:** Date 11/17/2004 - New planks for 300 ft. at various locations.

NBI Remarks: No curb or bridge end markers. Rusty girders. Vehicle damage to railings both sides. Poor horizontal roadway alignment. Posted narrow bridge. Some new deck planks added. Transverse brace between columns on pier 3 is broke. Oct. 12, 2007 no visible cracks on fracture critical members. One bolt missing & one bolt loose on u3 west side northwest approach rail missing. 140 ft. of broken planks at various locations.

9/16/14 - 300 ft of new bridge planks at various locations.

**Alert Code 2:** Southwest abutment wing badly cracked and leaning inward. Outside stringers both approach spans leaning out due to rail damage.

ITEM		25-106-40.0
02 HIGHWAY DISTRICT		MINOT
03 COUNTY		MCHENRY
05 INV. ROUTE	CNTY HIWAY 0	MAINLINE ON
07 FEATURES INTERSECTED	SOURIS RIVER	
08 STRUCTURE NO.		106-40.0
09 LOCATION	BRIDGE TO PARK IN VELVA	
19 BYPASS DETOUR LENGTH		3 MILES
22 OWNERSHIP		COUNTY AGENCY
26 FUNCTIONAL		LOCAL
27 YEAR BUILT	BUILT 1921; RECONST 1968	
28 LANES ON STRUCTURE		2
29 ADT		85
30 YEAR OF ADT		1987
31 DESIGN LOAD		UNKNOWN
32 APPROACH ROADWAY WIDTH		36 FEET
34 SKEW		0 DEG
36 TRAFFIC SAFETY FEATURES		0000
41 STRUCTURE OPEN, CLOSED OR POSTED		POSTED
42 TYPE OF SERVICE	HIGHWAY OVER WATERWAY	
43 MAIN STRUC. TYPE	STEEL THRU TRUSS	
45 NO. SPANS IN MAIN UNIT		1
46 NO. APPROACH SPANS		0
47 TOTAL HORIZ. CLEARANCE		20.0 FEET
48 LENGTH OF MAX SPAN		99 FEET
49 STRUCTURE LENGTH		102 FEET
50 SIDEWALK WIDTHS		NONE
51 BRIDGE RDWY. WIDTH - CURB TO CURB		18.7 FEET
52 DECK WIDTH		20.0 FEET
53 MIN. VERT. CLEARANCE OVER BRIDGE RDWY		14'09"
54 MIN. VERT. CLEARANCE UNDER BRIDGE RDWY		NOT APPLICABLE
55 MIN. LATERAL UNDERCLEARANCE-RT		NOT APPLICABLE
56 MIN. LATERAL UNDERCLEARANCE-LT		NOT APPLICABLE
57 WEARING SURFACE		WOOD PLANKING
58 DECK	8 GOOD COND. - NO REPAIRS NEEDED	
59 SUPERSTRUCTURE	7 GENERALLY GOOD COND.-MINOR MAINTENANCE	
60 SUBSTRUCTURE	7 GENERALLY GOOD COND.-MINOR MAINTENANCE	
61 CHAN. & CHAN. PROT	7 GENERALLY GOOD COND.-MINOR MAINTENANCE	
62 EST. REMAINING LIFE		29 YEARS
63 PER. RATING		H-18
65 APP. RDWY. ALIGNMENT	7 GENERALLY GOOD COND.-MINOR MAINTENANCE	
66 INV. RATING		H-13
67 STRUCTURAL CONDITION	4 MEETING MIN. ADEQUACY	
68 DECK GEOMETRY	3 INTOLERABLE--HI PRIORITY OF REPAIR	
70 SAFE LOAD CAPACITY	5 BETTER THAN MIN. ADEQUACY	
71 WATERWAY ADEQUACY	6 COND. EQUAL TO PRES. MIN. STAND.	
72 APP. RDWY. ALIGNMENT	6 COND. EQUAL TO PRES. MIN. STAND.	
90 DATE OF LAST INSPECTION		01/89
105 DELAYED INSPECTION -		
91 CULVERT		
92 DESCRIPTION		
89 STRUCTURE TYPE		COUNTY-OFF
95 STATUS		FUNCTIONALLY OBSOLETE
94 SUFFICIENCY RATING		63.7

INSPECTORS NAME

STAMBAUGH &amp; HENRICHS

96 ADDITIONAL REMARKS

NO END MARKERS. LAMINATED TIMBER DECK OVERLAYED WITH 2" OF ASPHALT. STEEL FLOOR BEAMS AND STRINGERS 40% RUSTED. 1 PART OF LOWER CHORD AND TRUSS END COVERED WITH DIRT AT THE S.E. CORNER.\* FOOTING FOR EAST ABUTMENT EXPOSED. PLANKS FOR SIDEWALK SHOW MODERATE DECAY. EAST BANK OF RIVER SEVERELY ERODED.

WIDTH 718' : RATE 2 LANE

STRINGERS (CONT)

$\frac{L}{2} = 16.67'$  SPACING = 30" I-BEAM 10\*25.4 S = 24.4 IN<sup>3</sup>  
 3" TIMBER DECK 1" ASPHALT

RATE 4 PT

DEAD LOAD

BEAM:	= 24.4		DF <sub>INU</sub> = $\frac{30/12}{3.75} = 0.6667$
DECK: $\frac{3}{12} (30/12) (50)$	= 31.		DF <sub>OPR</sub> = $\frac{30/12}{4} = 0.625$
ASPHALT: $\frac{1}{12} (30/12) (150)$	= 31		
MISC	= <u>3.6</u>		DL <sub>COEL</sub> (ANGEL) = .07
	90 #/FT		

DLM = .07(90)(16.67)<sup>2</sup> = 1751 FT-LBS

LIVE LOAD I = 30% ANGERS = .1977

INU: .1977(12,000)(16.67)(1.3)(.6667) = 34,277 FT-LBS

OPR: .1977(12,000)(16.67)(1.3)(.625) = 32,133 FT-LBS

CAPACITY

INU: 16,000(24.4)/12 = 32,533 FT-LBS

OPR: 22,500(24.4)/12 = 45,750 FT-LBS

RATING

INU:  $\frac{32,533 - 1751}{34,277} (15) = HS 13.5$

OPR:  $\frac{45,750 - 1751}{32,133} (15) = HS 20.5$   
 (237)

22-141 50 SHEETS  
 22-142 100 SHEETS  
 22-144 200 SHEETS



RATE 10 PT

$$DF_{INU} = 0.6667 \quad DF_{OPR} = 0.625$$

$$DL_{COEF} (\Delta MGT) = 0.125$$

$$LLM_{COEF} (") = 0.1911$$

$$DEM = .125(90)(16.67)^2 = 3,126 \text{ FT-LBS}$$

$$\underline{\text{LIVE LOAD}} \quad I = 3090$$

$$INU: .1911(12,000)(1.3)(16.67)(.6667) = 33,132 \text{ FT-LBS}$$

$$OPR: .1911(12,000)(1.3)(16.67)(.625) = 31,060 \text{ FT-LBS}$$

CAPACITY

$$INU = 32,533 \text{ FT-LBS}$$

$$OPR = 45,750 \text{ FT-LBS}$$

RATING

$$INU: \frac{32,533 - 3,126}{33,132} (15) = HS \ 13.3 \quad (224)$$

$$OPR: \frac{45,750 - 3,126}{31,060} (15) = HS \ 20.6$$

FLOORBEAM

$$L = 20' \quad \text{T-BEAM } 24 \times 85 \quad S = 180 \text{ in}^3$$

DEAD LOAD

$$\begin{aligned} \text{BEAM:} &= 85 \\ \text{FROM STRINGERS: } &90(16.67)(9)/20 = 675 \\ \text{MISC:} &= \frac{10}{770 \#/\text{FT}} \end{aligned} \quad \text{DLM} = \frac{770(20)^2}{8} = 38,500 \text{ FT-LBS}$$

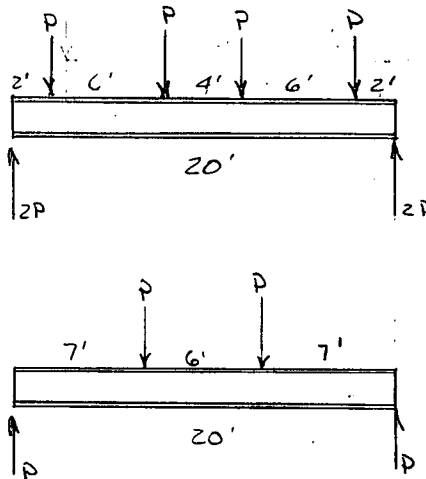
LIVE LOAD 24 K/LANE

$$P = 24,000(1.3)(\frac{1}{2}) = 15,600 \text{ LBS.}$$

$$\text{LLM} = 2P(10) - 8P - 2P$$

$$\text{LLM}_{\text{MU}} = 20P - 10P = 10P = 156,000 \text{ FT-LBS}$$

$$\text{LLM}_{\text{OPR}} = 10P - 3P = 7P = 109,200 \text{ FT-LBS}$$

CAPACITY

$$\text{INU: } 16,000(180)/12 = 240,000 \text{ FT-LBS}$$

$$\text{OPR: } 22,500(180)/12 = 337,500 \text{ FT-LBS}$$

RATING

$$\text{INU: } \frac{240,000 - 38,500}{156,000} (15) = \text{HS } 19.4$$

$$\text{OPR: } \frac{337,500 - 38,500}{109,200} (15) = \text{HS } 41.1$$





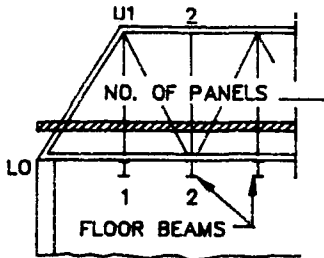
# STEEL OR TIMBER TRUSS BRIDGE REPORT

State Highway Department, Bridge  
SFN 2807 (Rev. 8-89)

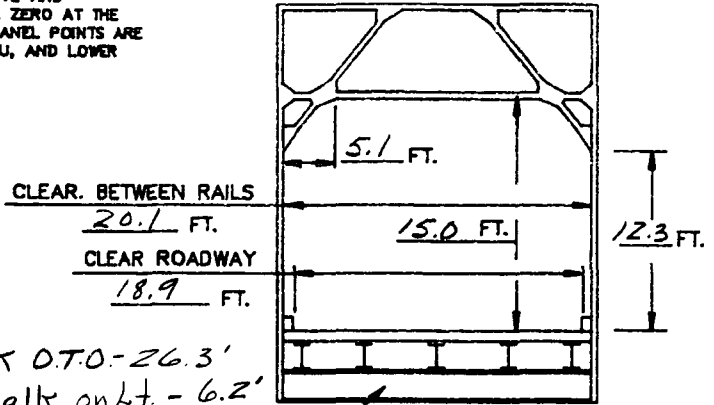
INSPECTOR Stambaugh-Henrichs DATE 11/29/90 BRIDGE NO. 25-106-20.0

THROUGH TRUSS  PONY TRUSS  LENGTH = 91.5' BACK TO BACK OF ABUTMENTS  
NO. OF SPANS 1 102' 1/2" 1/2" of truss

NOTE: THE STANDARD PANEL NUMBERING FOR TRUSS BRIDGES IS CONSECUTIVE AND NUMERICAL BEGINNING WITH A ZERO AT THE TRUSS-END. UPPER CHORD PANEL POINTS ARE NUMBERED WITH THE LETTER U, AND LOWER CHORD POINTS WITH L.



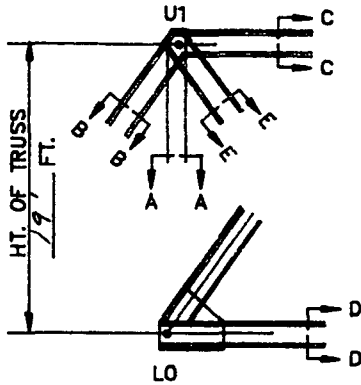
VERT. AND HORIZ. CLEARANCES



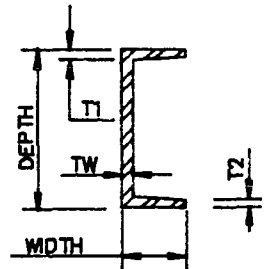
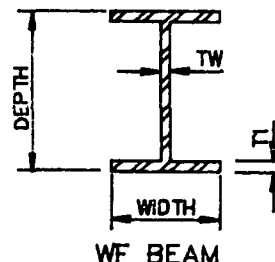
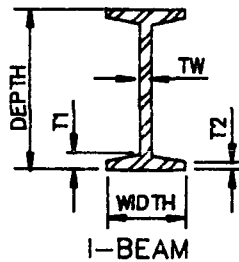
Deck O.T.O. - 26.3'  
Sidewalk on Lt. - 6.2'

FLOORBEAMS

DRAW SECTIONS OF TRUSS MEMBERS WITH DIMENSIONS AS SHOWN AT A-A, B-B, C-C & D-D ON REVERSE SIDE.  
DRAW JOINT CONNECTIONS ON REVERSE SIDE.



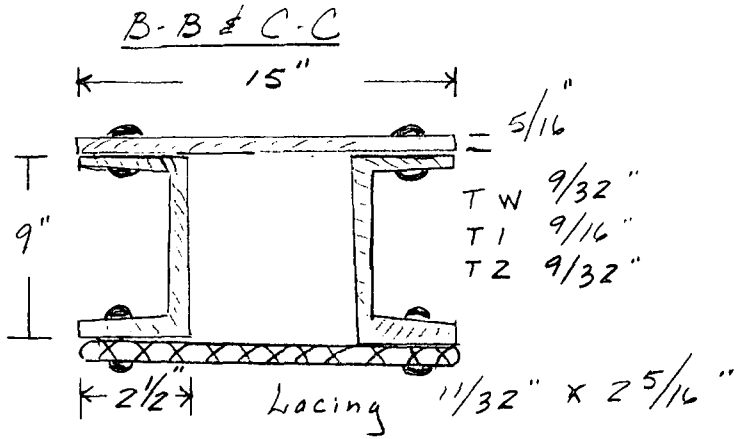
TYPES OF BEAMS - FLOOR/STRINGER



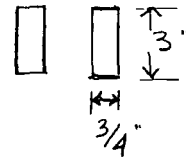
CHANNEL BEAM

TYPE OF FLOOR: CONCRETE TIMBER (UNDERLINE ONE) THICKNESS 3" X 12"  
 TYPE OF CURB: CONCRETE TIMBER (UNDERLINE ONE) SIZE 8" X 8"  
 TYPE OF RAIL Angle Iron SIZE 2" X 2" 2" X 3" rail posts  
 FLOOR BEAMS: NUMBER 5 SPACING 16' 8" LENGTH 21' 6"  
 TYPE I-Beam DEPTH 24" WIDTH 7" TW 1/2" T1 1 1/8" T2 1 1/16" .6875  
 FLOOR BEAMS: NUMBER 9 SPACING 30" LENGTH 33.3' or 16.7'  
 EXTERIOR: TYPE Channel DEPTH 10" WIDTH 2 1/2" TW 1/4" T1 9/16" T2 9/32"  
 INTERIOR: TYPE I-Beam DEPTH 10" WIDTH 4 1/2" TW 1/4" T1 5/8" T2 11/32"  
 STRINGERS CONTINUOUS OVER NO. 4, 11, 3, 4, 4 FLOORBEAMS  
 DESCRIBE TYPE OF ABUTMENTS: Concrete for east abutment, 3" X 12" timber plank for west abutment  
 DESCRIBE TYPE OF PIERS: None  
 DESCRIBE TYPE OF APPROACH SPANS: None

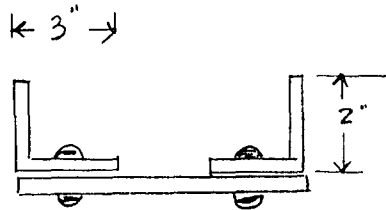
COMMENTS ON ITEMS AFFECTING STRENGTH: Truss doesn't bear on east abutment but on timber beam. Truss is several feet longer than clear span between abutments.



E-E

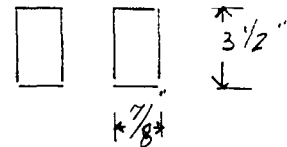


A-A (L1 & L1)

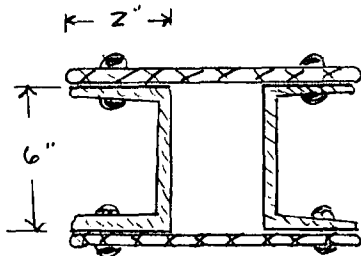


Batten Plate  
 $\frac{5}{4}$ " x 5" @ 3' spacing

D-D



A-A (L2, L3 & L2)



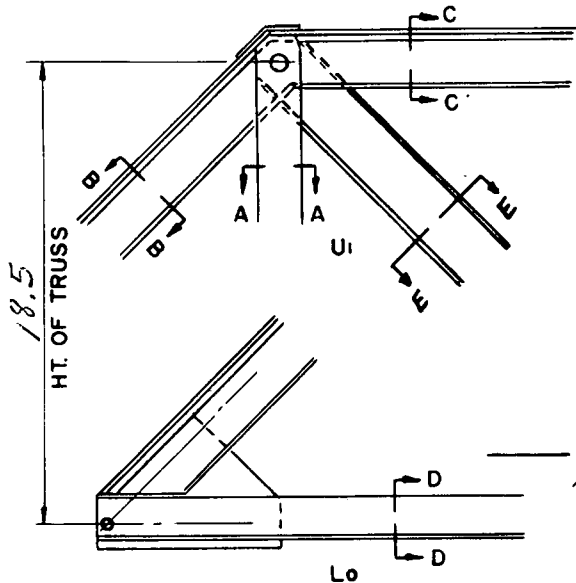
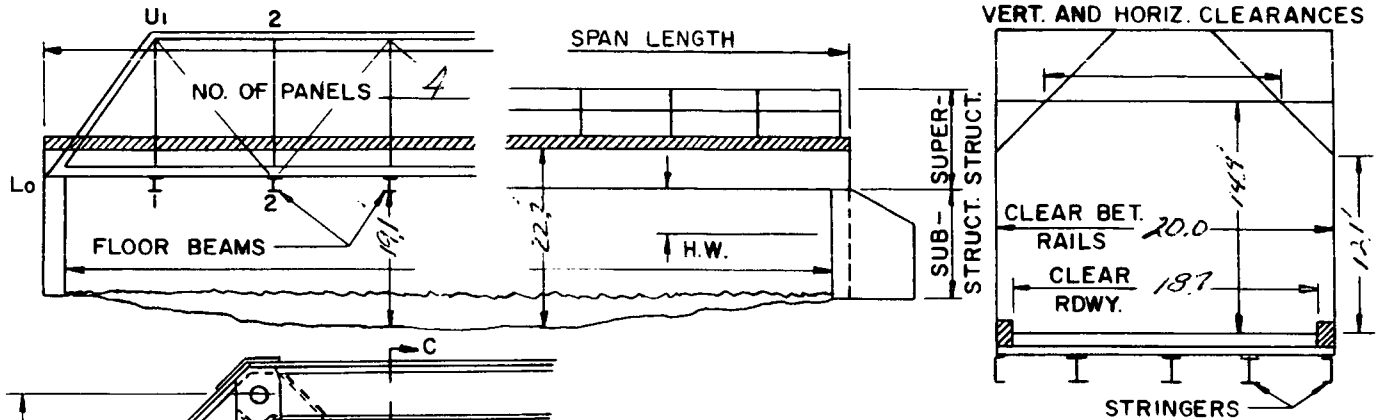
Lacing  $1\frac{3}{4}$ " x  $\frac{5}{16}$ "

# TRUSS BRIDGE REPORT

CO. BRIDGE NO. \_\_\_\_\_

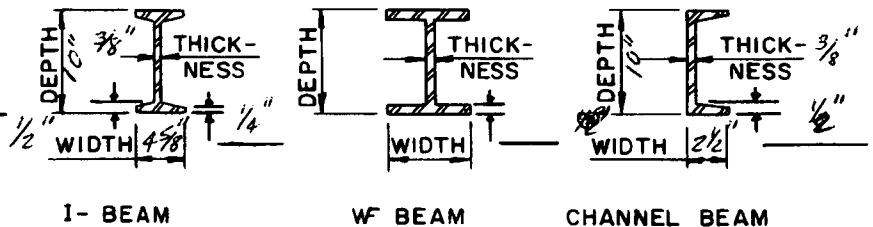
COUNTY Mc Henry LOCATION Velva Park BRIDGE NO. 106-40  
 FEATURE CROSSED Souris River YEAR BUILT \_\_\_\_\_ DATE INSPECTED 12-6-72

THROUGH TRUSS  PONY TRUSS  L = 102' BACK TO BACK OF ABUTMENTS  
 DIRECTION OF INVENTORY N S E W (UNDERLINE ONE) NO. OF SPANS 1



DRAW SECTIONS OF TRUSS MEMBERS WITH DIMENSIONS AS SHOWN AT A-A, B-B, C-C & D-D ON REVERSE SIDE.

### Floor Beams TYPES OF BEAMS



TYPE OF FLOOR: PCC TIMBER (UNDERLINE ONE) 3"x4" tr. timber THICKNESS 4"  
 TYPE OF CURB: PCC TIMBER ( " " ) SIZE 8"x9"  
 TYPE OF RAIL street SIZE 2"x2"

FLOOR BEAMS: NUMBER 5 SPACING 16.5' 1/2 x 3/4  
 TYPE I Beam DEPTH 24 WIDTH 6 3/4 THICKNESS 5/8

STRINGERS: NUMBER 2 SPACING \_\_\_\_\_  
 EXTERIOR: TYPE Channel DEPTH 10 WIDTH 2 1/2 THICKNESS 3/8"  
 INTERIOR: TYPE I Beam DEPTH 10 WIDTH 4 3/8 THICKNESS 3/8"

DESCRIBE TYPE OF ABUTMENTS Concrete (east end) Treated Timber (west)

DESCRIBE TYPE OF PIERS None

DESCRIBE TYPE OF APPROACH SPANS None

HEAD DIAMETER OR SIZE OF RIVETS on truss 1/4"

(DRAW SKETCHES ON REVERSE SIDE)

**NORTH DAKOTA STATE HIGHWAY DEPARTMENT**  
**Secondary Roads Division**  
**COUNTY BRIDGE SITE EVALUATION**

Bridge No. 106-40

PURPOSE: To gather pertinent data concerning the approach roadways at bridge sites on local roads.

**A. ROADWAY GEOMETRICS:**

1. Degree of Curve in each direction Bridge is skewed about 15° from street & curve
2. Tangent Length from Bridge is about 50' long
3. Roadway width and Side Slopes 36' street - No ditches city streets
4. Surface type Pavement

**B. CONTROL DEVICES:**

Bridge & park closed in the winter

- |                                     |                                                                                |                                           |             |                       |                        |
|-------------------------------------|--------------------------------------------------------------------------------|-------------------------------------------|-------------|-----------------------|------------------------|
| 1. CURVE Sign                       | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No            |                                           |             |                       |                        |
|                                     | In Place                                                                       | Size                                      | Condition   | Color                 | Location from Bridge   |
| 2. SINGLE LANE Signing              | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No            |                                           |             |                       |                        |
|                                     | In Place                                                                       | Size                                      | Condition   | Color                 | Location from Bridge   |
| 3. NARROW BRIDGE Sign               | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No            |                                           |             |                       |                        |
|                                     | In Place                                                                       | Size                                      | Condition   | Color                 | Location from Bridge   |
| 4. LOW CLEARANCE                    | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No            |                                           |             |                       |                        |
|                                     | In Place                                                                       | Size                                      | Condition   | Color                 | Location of Sign       |
| 5. WEIGHT LIMIT                     | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No            |                                           |             |                       |                        |
|                                     | Tons                                                                           | Size                                      | Condition   | Color                 | Location of Sign       |
| 6. Advance Warning for Weight limit | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No            |                                           |             |                       |                        |
|                                     | In Place                                                                       | Size                                      | Condition   | Color                 | Location of Sign       |
| 7. <sup>slow</sup> Speed Limit      | <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No | <u>24" x 24'</u>                          | <u>good</u> | <u>Back on yellow</u> | <u>80' from bridge</u> |
|                                     | MPH.                                                                           | Size                                      | Condition   | Color                 | Location of Signs      |
| 8. Bridge End Markers               | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No            |                                           |             |                       |                        |
|                                     | In Place                                                                       | Size                                      | Condition   | Color                 | Location of Markers    |
| 9. Shoulder Delineation             | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No            |                                           |             |                       |                        |
|                                     | In Place                                                                       | Size & Condition                          |             | Color                 | Location               |
| 10. Centerline                      | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No            |                                           |             |                       |                        |
|                                     | In Place                                                                       | State Condition (Poor) (Good) (Excellent) |             |                       |                        |
| 11. Edge Line                       | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No            |                                           |             |                       |                        |
|                                     | In Place                                                                       | State Condition (Poor) (Good) (Excellent) |             |                       |                        |
| 12. Guard Rail (Type)               | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No            |                                           |             |                       |                        |
|                                     | In Place                                                                       | State Type (Cable) (Steel Rail) (Other)   |             |                       |                        |

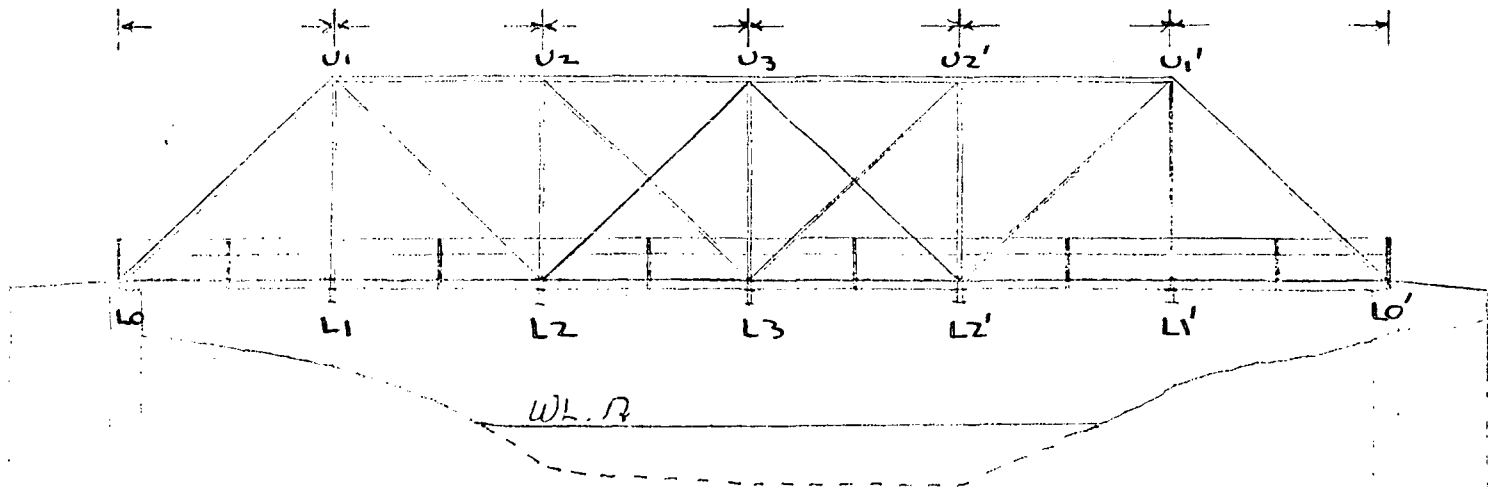
**C. ACCESS ON APPROACH:** Comments regarding sight distance and proximity of access points.

Both good

**D. ACCIDENT EXPERIENCE:** (To be completed in Central Office of North Dakota State Highway Department)

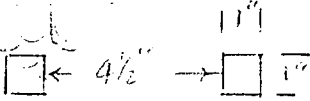
25-106-40.0

106-10



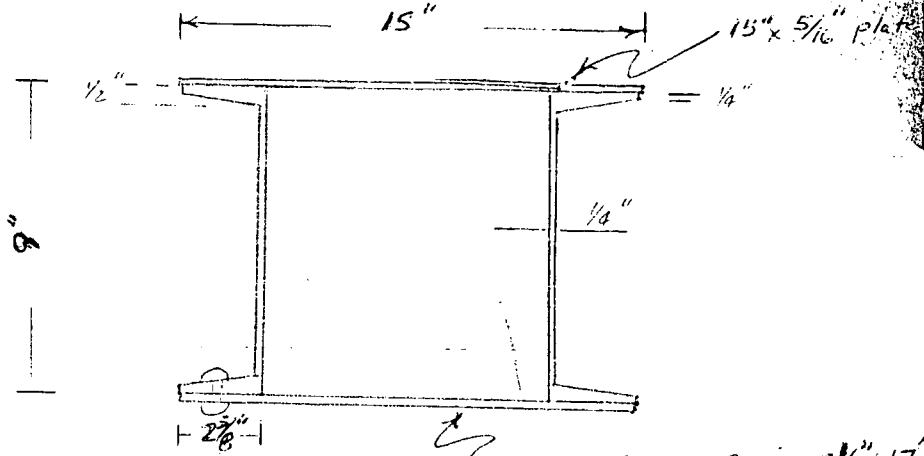
Elevation

A-A



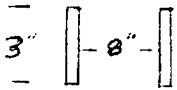
square rods

B-B & C-C the same



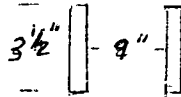
E-E

3/4"



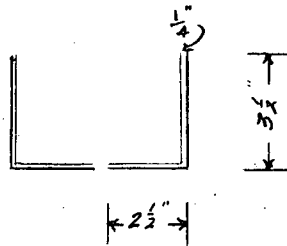
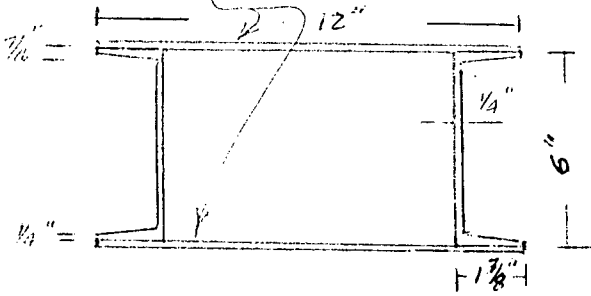
D-D

7/8"



intermediate posts - 3 each side

Wobbling or Zig Zag bracing  
1 1/2" x 15" x 5/16"



A-A

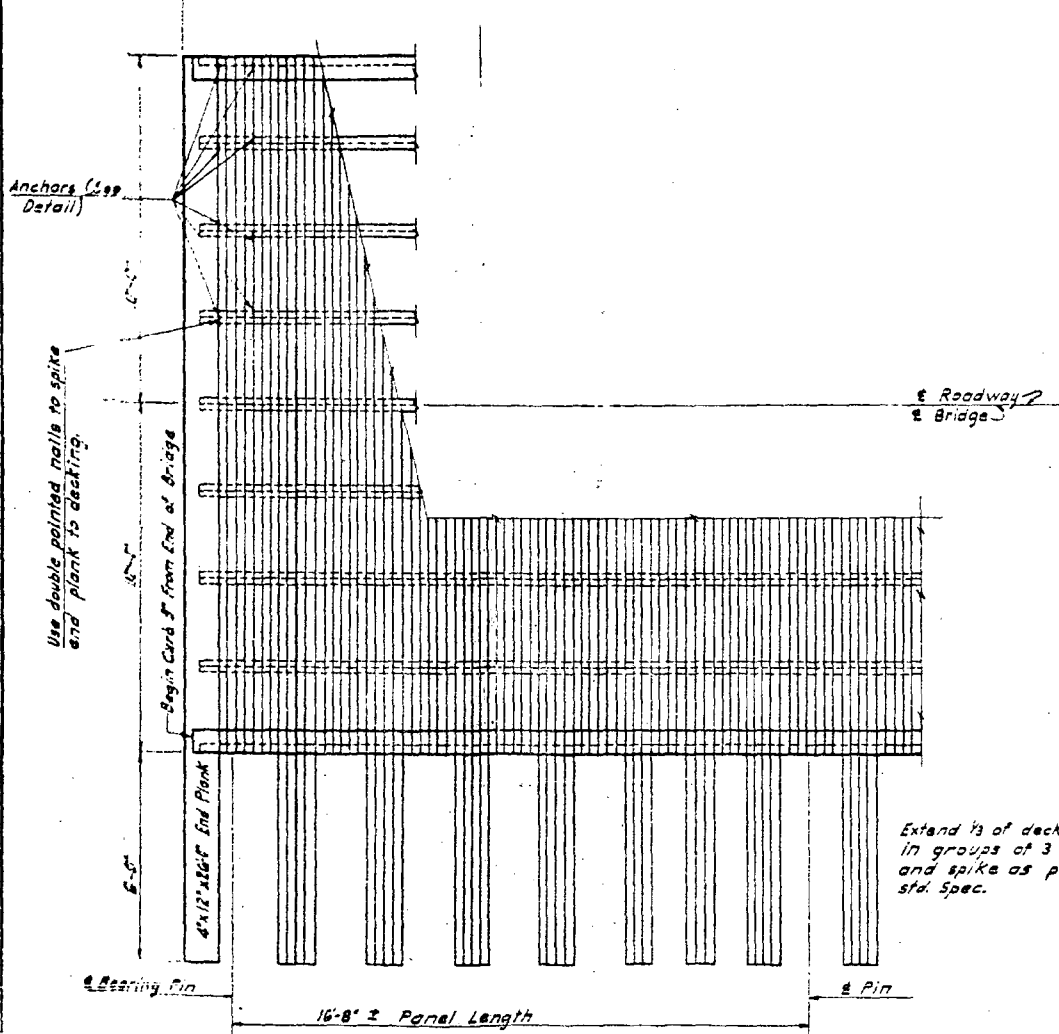
106-40

2'x8"	3'x8"x22'-0"	8'x8"x22'-0"	8'x8"x22'-0"	8'x8"x22'-0"	8'x8"x22'-0"	8'x8"x22'-0"	8'x8"x22'-0"	8'x8"x22'-0"	8'x8"x22'-0"	8'x8"x22'-0"	8'x8"x22'-0"	8'x8"x22'-0"	8'x8"x22'-0"	8'x8"x22'-0"
Begin Curb	12'-0"	4'-0"	5'-0"	6'-0"	6'-0"	6'-0"	6'-0"	4'-0"	6'-0"	6'-0"	6'-0"	4'-0"	10'-0"	
												12' Spacing	Open	

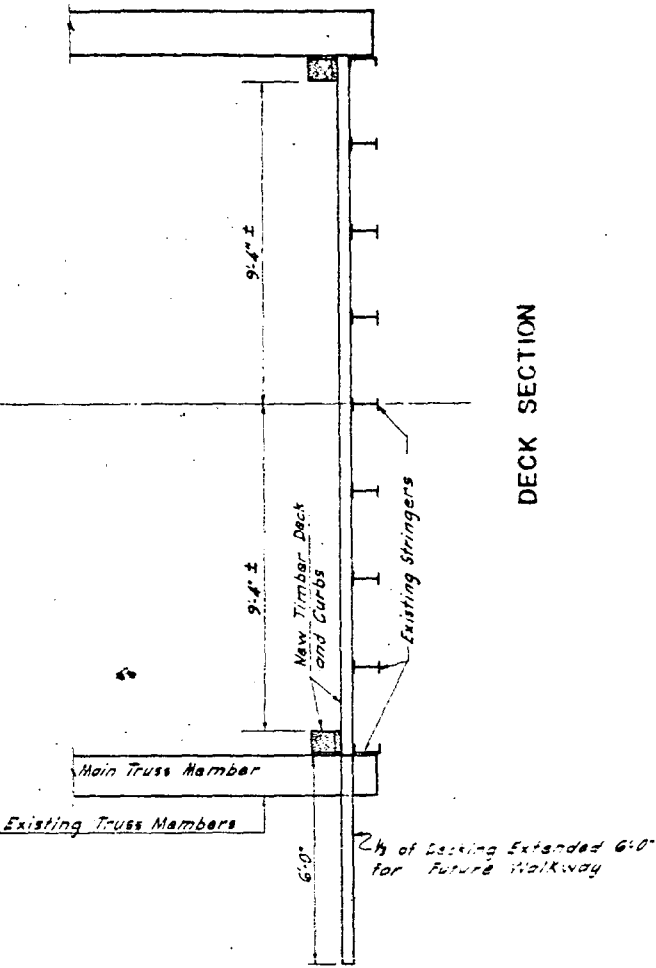
**CURB LAYOUT**  
Not to Scale

*106-40*

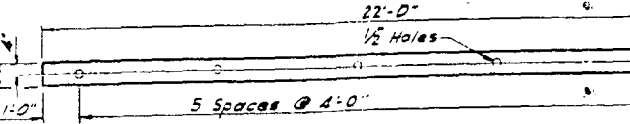
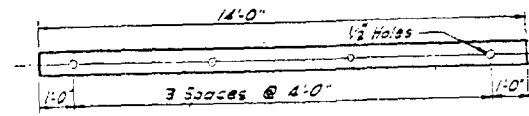
102'-6" Overall Length



**PARTIAL DECK PLAN (TYP)**



**DECK SECTION**

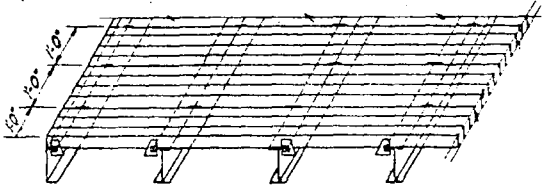
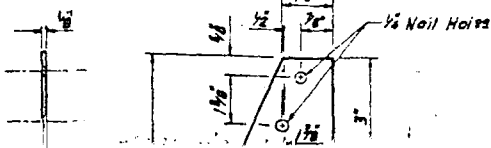


**CURB BLOCK DETAIL**

All framing to be done before treatment.

Extend 1/3 of decking in groups of 3 or 4 and spike as per std. spec.

2 1/4 of Decking Extended 6'-0" for Future Walkway



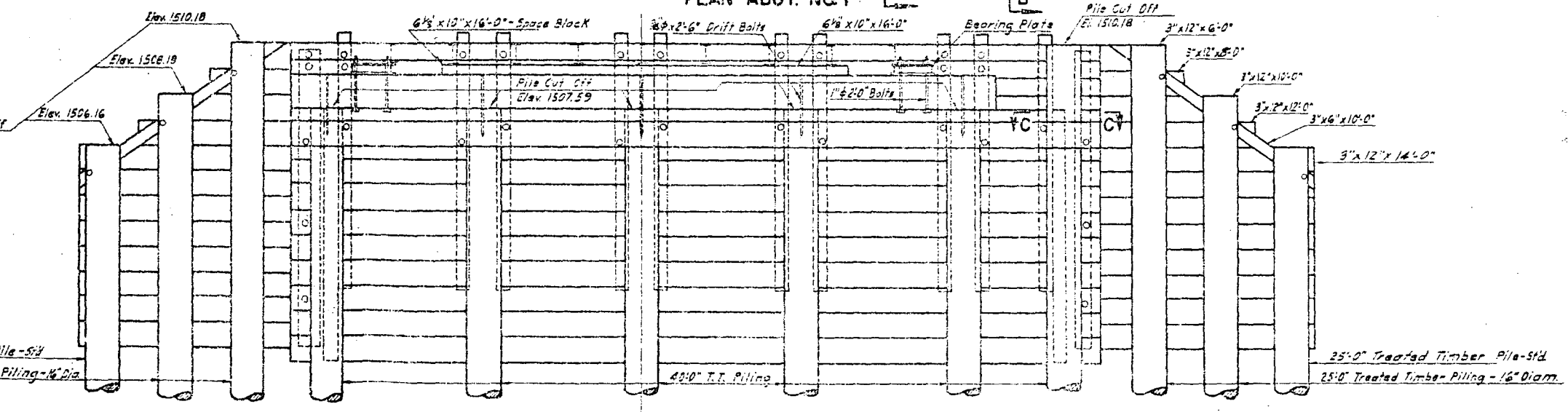
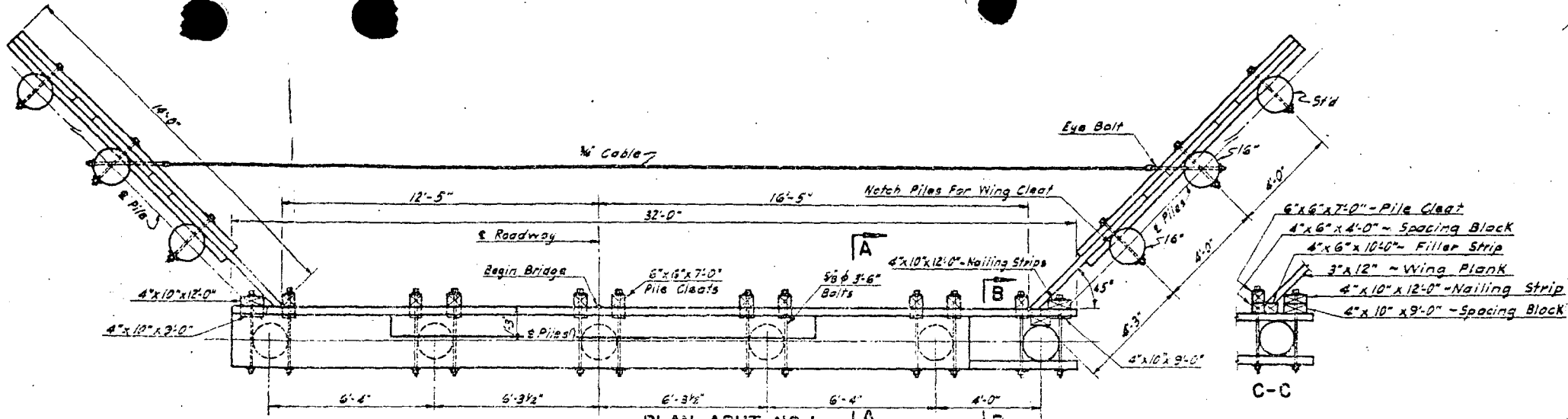
Channel anchors shall be placed at 1'-0" spacing

Existing Railing to be salvaged & reused

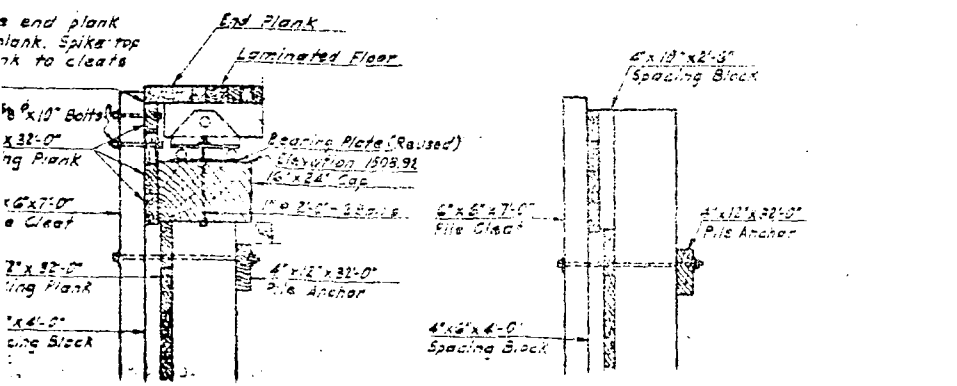
4'-0" OC

2'-0"





ELEVATION ABUT. NO. 1



ABUTMENT #1		QUANTITIES FOR TWO ABUTMENTS				ABUTMENT #2			
DESCRIPTION	NO.	SIZE	LENGTH	F.B.M.	DESCRIPTION	NO.	SIZE	LENGTH	F.B.M.
TREATED TIMBER-FULL SAWN ROUGH					HARDWARE (GALVANIZED)				
PILE ANCHOR	1	4x12	32'-0"	178	DRIFT BOLTS	10	3x2	3'-0"	CAP TO PILE ABUT. #2
BACKING PLANK	4	3x8	32'-0"	256	TIMBER BOLTS	4	1"	2'-0"	BEARING PLATE TO CAP ABUT. #1
BACKING PLANK	10	3x12	32'-0"	360		2	7"	7'-10"	BEARING PLATE TO CAP ABUT. #2
WING FLANK	16	3x12	14'-0"	672					PILE CAP
"	2	3x12	12'-0"	72					WING CLEAT TO PILING ABUT. #1
"	2	3x12	12'-0"	60					CLEATS TO PILE ANCHOR ABUT. #1 & #2
									SPACING BLOCK
									WING CLEAT BEAMS











BRIDGE NUMBER 25-106-40.0

DATE OF PHOTO 4-13-87

DIRECTION East Approach

COMMENTS \_\_\_\_\_

\_\_\_\_\_



07 01 40





BRIDGE NUMBER 25-106-40.0

DATE OF PHOTO 4-13-87

DIRECTION North E. Elev.

COMMENTS \_\_\_\_\_

\_\_\_\_\_



07 01 44





1921  
BUILT BY  
FARCO  
BRIDGE & IRON CO.  
FARCO  
N.D.

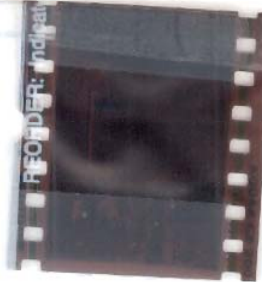
BRIDGE NUMBER 25-106-40.0

DATE OF PHOTO 1/4/89

DIRECTION \_\_\_\_\_

COMMENTS Manufacturer's plate

tuss bridge





BRIDGE NUMBER 25-106-40.0

DATE OF PHOTO 11/29/90

DIRECTION NW Truss End

COMMENTS Rusted plate holding  
lateral brace



Structure Number: 25-106-40.0

200 System Designation	3 - County Off	<b>Classification</b>	
201 Status	Functionally Obsolete	12 Base Highway Network	Not on Base Network
202 Sufficiency Rating	63.40	20 Toll	3 On free road
<b>Identification</b>		21 Maint Responsibility	02 County Hwy Agency
02 Highway District	Minot District	22 Owner	02 County Hwy Agency
03 County	McHenry	26 Functional	Rural, Local
04 City	VELVA CITY	37 Historical Significance	2 Br eligible for NRHP
05 Inventory Route	Route On Structure	100 Defense Highway Designation	0 Not a STRAHNET hwy
5 City Street 1 Mainline	00000 0 N/A (NBI)	101 Parallel Structure Designation	No    bridge exists
06 Feats Intersect	MOUSE RIVER	102 Direction of Traffic	2 2-way traffic
09 Location	IN VELVA	103 Temporary Structure Designation	Not Applicable (P)
11 Milepoint	0.000	104 Highway System of Inventory Rte	0 Not on NHS
13 LRS Inv Route. Subroute	-1 -1	105 Federal Lands Highways	Not applicable
16 Latitude	48d 03' 35.00"	110 Designated National Network	0 Not part of natl netwo
17 Longitude	100d 56' 10.00"	112 NBIS Bridge Length	
GPS Coordinates XY	355739.7 5324744.9	226 Functional Under	
98 Border Bridge	Unknown (P) -2.00 %	<b>Condition</b>	
99 Border Bridge Struct No.	-	58 Deck	7 Good
<b>Structure Type and Material</b>		59 Superstructure	6 Satisfactory
43 Main Struct Type	Steel	60 Substructure	6 Satisfactory
Truss - Thru		61 Chan. & Chan. Protection	7 Minor Damage
44 Approach Struct Type	Unknown (NBI) Unknown (P)	62 Culvert and Retaining Walls	N N/A (NBI)
		<b>Load Rating and Posting</b>	
45 No. Spans in Main Unit	1	31 Design Load	
46 No. Approach Spans	0		Unknown
107 Deck Struct Type	8 Wood or Timber	41 Structure Open, Closed or Posted	P Posted for load
108 Wearing Surface	6 Bituminous	63 Operating Rating Method	2 AS Allowable Stress
Membrane	0 None	64 Oper. Rating HS 20	36 Tons
Dk Protect	None	65 Inventory Rating Method	2 AS Allowable Stress
208 Dk Overburden 301	Asphalt	66 Inv. Rating HS 13	24 Tons
<b>Age and Service</b>		70 Bridge Posting	5 At/Above Legal Loads
27 Yr Built 1921	106 Yr Reconstructed 1968	209 Posted in "Tons"	04 Tons
42 Type of Service	1 Highway - On 5 Waterway - Under	<b>Appraisal</b>	
28 Lanes on Structure	2	67 Structural Condition	6 Equal Min Criteria
29 ADT 85	30 Year of ADT 2014	68 Deck Geometry	2 Intolerable - Replace
109 Average Daily Truck Traffic	-1.00	69 Underclear. Vert & Horiz	N Not applicable (NBI)
19 Bypass, Detour Length	124 Miles	71 Waterway Adequacy	6 Equal Minimum
<b>Geometric Data</b>		72 App. Rdwy. Alignment	6 Equal Min Criteria
10 Min Vert Clearance	14 Ft. 12 In.	36 Traffic Safety Features	0 0 0 0
32 Approach Roadway Width	23 Feet	113 Scour Critical	U Unknown Scour
33 Bridge Median	0 No median	<b>Inspections</b>	
34 Skew	0.00	90 Date of Last Inspection	April 11, 2014
35 Structure Flared	0 No flare	91 Designated Inspection Frequency	24 Months
47 Total Horizontal Clearance	18.7 Feet	92 Critical Feature Inspected / 93 Critical Feature Last Inpsection Dt	
48 Length of Max Span	91 Feet	Fracture Critical Y 24	02/05/2013
49 Structure Length	102.03 Feet	Underwater N	
50 Curb/Sidewalk Widths	0.0 Ft Rt-Side 6.2 Ft Lt-Side	Other Special N	
51 Bridge Rdwy Width - Curb to Curb	19.0 Feet	218 Channel Profile Y 48	08/07/2012
52 Deck Width	26.2 Feet	207 Transporter Erector Routes and Sites	-1
53 Min Vert Clear. Over Bridge	12 Ft. 3 In.	212 Structure Load Rated	01/01/1901
54 Min Vert Underclearance	0 Ft. 0 In.	213 Federal Aid Project Number	
N Feature not hwy or RR		214 Delayed Inspection	Not Applicable
55 Min Lateral UnderClear. - Rt	327.8 Feet	216 Inspector	Olson, Beavers, Medler
N Feature not hwy or RR		<b>Navigation Data</b>	
56 Min Lateral UnderClear. - Lt	0.0 Feet	38 Navigation Control	Permit Not Required
210 Culvert / 211 Description		39 Navigation Vertical Clearance	0 Feet
		40 Navigation Horizontal Clearance	0 Feet
		111 Pier or Abutment Protection	Unknown (NBI)
		116 Minimum Navigation Vertical Clearance	-1 Feet

Structure Number: 25-106-40.0

Elm/Env	Description	Units	Total Qty	% in 1	1-Qtv St	% in 2	2-Qtv St	% in 3	3-Qtv St	% in 4	4-Qtv St	% in 5	5-Qtv St
32 / 1	Timber Deck/AC Ovly	(SF)	1,927	100%	1,927	0%	0	0%	0	0%	0	0%	0
113 / 1	Paint Stl Stringer	(LF)	715	0%	0	0%	0	0%	0	100%	715	0%	0
121 / 1	P/Stl Thru Truss/Bot	(LF)	203	0%	0	0%	0	0%	0	100%	203	0%	0
126 / 1	P/Stl Thru Truss/Top	(LF)	203	0%	0	0%	0	100%	203	0%	0	0%	0
152 / 1	Paint Stl Floor Beam	(LF)	112	0%	0	0%	0	0%	0	100%	112	0%	0
206 / 1	Timber Column	(EA)	6	0%	0	100%	6	0%	0	0%	0	0%	0
215 / 1	R/Conc Abutment	(LF)	26	0%	0	100%	26	0%	0	0%	0	0%	0
216 / 1	Timber Abutment	(LF)	26	0%	0	100%	26	0%	0	0%	0	0%	0
235 / 1	Timber Cap	(LF)	26	0%	0	100%	26	0%	0	0%	0	0%	0
330 / 1	Metal Rail Uncoated	(LF)	203	0%	0	0%	0	100%	203	0%	0	0%	0
332 / 1	Timb Bridge Railing	(LF)	203	0%	0	100%	203	0%	0	0%	0	0%	0
401 / 1	Wings	(EA)	4	100%	4	0%	0	0%	0	0%	0	0%	0

**Remarks:** Paint system failure.

NBI Remarks: Angle iron bridge rails have minor to moderate damage. Top lateral strut between end posts, at west end, bent downward 2". Roller bearings, under west end of truss, are fixed by rust. Outside chord from L0 to L1 Rt, is bent upward 1.5". Nut, for lateral brace, is cracked on left end of second floor beam (west side). Turnbuckle on counter between U3 and L2 prime left, is cracked. A few lateral braces, between floor beams are bent. Some diagonals are loose. East abutment has several hairline and well defined random cracks. Footing is partially exposed. Lower chords, along north side, heavily rusted.

**Alert Code 1:** Retainer plate, over the top of lateral brace and its connecting pin, is severely delaminated by rust (NW corner of truss). Eye, at end of lower lateral brace that attaches to SW truss end post, has lost half its section from corrosion. West abutment cap twisting and rotating back bearing only on the back of piling leaving a 1" gap between cap and piling on west end. Cap also has a 3' horizontal crack. East bearing is buried in the dirt.