

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING POLICY
OFFICE OF STRUCTURAL ENGINEERING

BRIDGE ANALYSIS AND RATING REPORT
STRUCTURE IDENTIFICATION DATA

"BARS" FILE Number	3 0 0 1 2 0						Year Built	1 9 6 5				
Bridge Number	GUE		70		0943		1518		A			
	County		Route No.		SLM		SLK		Special Designation			
Structure Type	Steel Beam Continuous											
Feature Crossed	Wills Creek and Township Road 35											
O/A Structure Length	309		Ft.		94183.5		mm.		No. of Spans		03	
Inspection Agency	ODOT						Maintenance Agency			ODOT		
Date of Analysis	August 7, 2002						Data Submitted by			CO		
Method of Analysis	Load Factor						Analysis Program			Bars		

RATING SUMMARY for HS and State Route Legal Vehicles

<u>English</u>				<u>Metric</u>			
Inventory HS	<u>20.0</u>	<u>36</u>	Tons	Inventory MS	<u>18.1</u>	<u>32.6</u>	metric tons
Operating HS	<u>25.0</u>	<u>45</u>	Tons	Operating MS	<u>22.7</u>	<u>40.9</u>	metric tons
Legal	<u>150</u>	% <u>60</u>	Tons	Legal	<u>150</u>	% <u>54.4</u>	metric tons
2 F 1	<u>60.2</u>		Tons	2 F 1	<u>54.6</u>		metric tons
3 F 1	<u>61.9</u>		Tons	3 F 1	<u>56.2</u>		metric tons
4 F 1	<u>63.4</u>		Tons	4 F 1	<u>57.5</u>		metric tons
5 C 1	<u>89.4</u>		Tons	5 C 1	<u>81.1</u>		metric tons

Ratings and recommendations shown on this form reflect the judgement of this office as to the proper safe load carrying capacities for this structure based on the results obtained by using the latest version of the Bridge Analysis and Rating System (BARS) or Bridge Rating & Analysis of Structural System (Brass) or computer program. Since these ratings and recommendations are substantially dependent upon the data submitted by the originator of the analysis, this office accepts no responsibility for the accuracy thereof.

Date August 7, 2002

Rater's Initials

SAH

SFN 3001202 Bridge No. GUE-70-0943 A

RECORD										REC.NO.
	080602TRANSFER	HS20HS20	2F1	3F1	4F1	*LFS	POST			
01										100
03	1 2F10210.0	10	20.0							200
03	1 3F10312.0	10	17.0	4	17.0					300
03	1 4F10412.0	10	14.0	4	14.0	4	14.0			400
03	1SPEC0512.0	12	17.0	4	17.0	31	17.0	4		500
03	2SPEC 17.0									600
02300120	RCI CO			322	65X	030882		002700	03	100
05300120	0943 A EGUE	40	8.95	P2	335787	GUE-13		020806LFEDERAL	IR 70	200
063001201	SPN 3001202	GUE-70-0943A	OVER	WILLS	CREEK	AND	TR 35	LOADING	CF2000(57)	300
063001202	SUPER. DECK	8.75"	THICK	4	BUILT	UP	MEMBERS	SPACING	VARIES	400
063001203	PROJ. 312(63);	1.75"	SUPERPLASTICIZED	DENSE	CONC.	WS;	UPDATED	BY		500
063001204	SAHCO 8-02-2002									600
08300120S01	03 X 009306	0117		SS33000	1.682			XX		700
10300120S01	01	W1490.		9306						800
10300120S01	02	W1490.		117						900
10300120S01	03	W1490.		9306						1000
11300120S01	0101	7806	01							1100
11300120S01	0102	15	02							1200
11300120S01X0201		12	02							1300
11300120S01X0202		4606	01							1400
12300120S01			01	070.250	116.00P01.125	69.688				1500
12300120S01			01		020.375	68.000	35.125			1600
12300120S01			01		0316.00	01.125	0.5625			1700
12300120S01			02	71.125	0116.00P1.562	570.344				1800
12300120S01			02		020.375	68.000	35.562			1900
12300120S01			02		0316.00	1.562	50.7812			2000
16300120S01	01T01	009306	C							2100
16300120S01	01B01	000300	SPSP		000300					2200
16300120S01	01B02	002600	SPSP02	001300	000309					2300
16300120S01	01B03	002600	SPSP02	001300	000500					2400
16300120S01	01B04	001300	SPSP		000309					2500
16300120S01	01B05	000600	SPSP		000300					2600
16300120S01	01B06	001200	SPSP		000300					2700
16300120S01	01B07	000706	SPNS		000207					2800
16300120S01	02T01	011700	C							2900
16300120S01	02B07	001500	SPSP		000309					3000
16300120S01	02B08	001200	SPSP		000309					3100
16300120S01	02B09	001006	SPNS		000207					3200
16300120S01	02B01	000406	NSSP		000207					3300
16300120S01	02B02	001200	SPSP		000207					3400
16300120S01	02B03	001200	SPSP		000300					3500
16300120S01	02B04	000600	SPSP		000300					3600
16300120S01	02B05	001500	SPSP		000309					3700
16300120S01	02B06	003000	SPSP		000500					3800
16300120S01	03T01	009306	C							3900
16300120S01	03B04	001300	SPSP		000309					4000
16300120S01	03B05	002600	SPSP02	001300	000500					4100
16300120S01	03B06	002600	SPSP02	001300	000309					4200
16300120S01	03B07	000800	SPSP		000300					4300

				RECORD		REC.NO.
16300120S01	03B01	000206	NSSP		000206	4400
16300120S01	03B02	001200	SPSP		000300	4500
16300120S01	03B03	000600	SPSP		000300	4600

STRUCTURE I.D. = 300-120

* STRUCTURE HEADER AND DESCRIPTION *

100-- 2 RCI CO EA/I/O/P = FILE REQUESTS AND OUTPUT DATA EXCEPTIONS
TYPE = 322 YEAR = 65 LEN = 308.82 FT. WIDTH = 27.00 FT. 3 SPANS SP.LOAD =
INV.LL.TRK.= OP.LL.TRK.=

* STRUCTURE LOCATION AND PERMANENT IDENTIFICATION FACTORS *

200-- 5 BRIDGE= 0943 A DIST./CO.= E GUE CONST. ROUTE = 40 CONST. SECT.= 8.95 P2 CONST. STA.= 33+57.87
MICROFILM REEL NO. DESIGN PLANS= GUE-13 COMPUTATIONS= CORRESPONDENCE=020806L
ROUTE I.D.= FEDERAL MARKED ROUTE = IR 70

* COMMENTS *

300-- 6 1 SFN 3001202 GUE-70-0943A OVER WILLS CREEK AND TR 35 LOADING CF2000(57)
400-- 6 2 SUPER. DECK 8.75" THICK 4 BUILT UP MEMBERS SPACING VARIES
500-- 6 3 PROJ. 312(63); 1.75" SUPERPLASTICIZED DENSE CONC. WS; UPDATED BY
600-- 6 4 SAHCO 8-02-2002

* MEMBER SPECIFICATIONS AND REQUIRED ANALYSIS-GIRDER, STRINGER AND FLOOR BEAM *

MEMBER ID	SPANS	STIFF. SYMM CODE	SPAN 1 (SPAN 4)	SPAN 2 (SPAN 5)	SPAN 3 (SPAN 6)	MATL CODE	ALLOWABLE STRESS FY	LL DIST. FB	END THRU FC*	MAX INV. FACTOR	IMPACT OP.	FACTOR POST	INFLUENCE SPEC
700-- 8	S 1	3 X XX	93.500	117.000	0.000	SS	33000.00	0.00	1.682	.00	.00	.00	.00

* SUPERIMPOSED DEAD LOADS-GIRDERS, STRINGERS AND FLOOR BEAMS *

MEMBER ID	SYMM	SPAN NO.	DISTANCE FR. LEFT SUPP.	LOAD TYPE	LOAD P OR W(L)	LOAD W(R)	LENGTH
800--10	S 1	1	0.000FT.	W	1490.0	0.0	93.500FT.
900--10	S 1	2	0.000FT.	W	1490.0	0.0	117.000FT.
1000--10	S 1	3	0.000FT.	W	1490.0	0.0	93.500FT.

SECTION RANGE SPECIFICATIONS													
MEMBER ID	SYMM	SPAN NO.	RANGE NO.	RANGE LENGTH	SECTION NO. LEFT RIGHT	SEC. VAR.	HINGE CODE	HINGE 1 DIST.	HINGE 2 DIST.	CODE	HYBRID FY	GIRDER CODE	FY
1100--11	S 1	1	1	78.500FT.	1 0			0.000FT.	0.000FT.		0.		0.
1200--11	S 1	1	2	15.000FT.	2 0			0.000FT.	0.000FT.		0.		0.
1300--11	S 1	X 2	1	12.000FT.	2 0			0.000FT.	0.000FT.		0.		0.
1400--11	S 1	X 2	2	46.500FT.	1 0			0.000FT.	0.000FT.		0.		0.

SECTION PROPERTIES (STEEL OR TIMBER) - GIRDERS STRINGERS, FLOOR BEAMS

MEMBER ID	SEC.	A	I	S	CODE	SAME	ADR	H	ELE	A	IX	DY	DX
1500--12	S 1	0	0.00	0.0	0.0	1	0	70.25	1	16.00P	1.1	69.7	0.0
1600--12	S 1	0	0.00	0.0	0.0	1	0	0.00	2	0.38	68.0	35.1	0.0
1700--12	S 1	0	0.00	0.0	0.0	1	0	0.00	3	16.00	1.1	0.6	0.0
1800--12	S 1	0	0.00	0.0	0.0	2	0	71.13	1	16.00P	1.6	70.3	0.0
1900--12	S 1	0	0.00	0.0	0.0	2	0	0.00	2	0.38	68.0	35.6	0.0
2000--12	S 1	0	0.00	0.0	0.0	2	0	0.00	3	16.00	1.6	0.8	0.0

BRACING LENGTH SPECIFICATIONS - LOAD FACTOR ANALYSIS

MEMBER ID	SPAN SYMM	RANGE T/B	RANGE LENGTH	SUPPORT LEFT	COND. RIGHT	SPACES	SPACING DISTANCE	STIFF SPACING
2100--16	S 1	1 T 1	93.500FT.C			0	0.000FT.	0.000IN.
2200--16	S 1	1 B 1	3.000FT.SP	SP		0	0.000FT.	36.000IN.
2300--16	S 1	1 B 2	26.000FT.SP	SP		2	13.000FT.	45.000IN.
2400--16	S 1	1 B 3	26.000FT.SP	SP		2	13.000FT.	60.000IN.
2500--16	S 1	1 B 4	13.000FT.SP	SP		0	0.000FT.	45.000IN.
2600--16	S 1	1 B 5	6.000FT.SP	SP		0	0.000FT.	36.000IN.
2700--16	S 1	1 B 6	12.000FT.SP	SP		0	0.000FT.	36.000IN.
2800--16	S 1	1 B 7	7.500FT.SP	NS		0	0.000FT.	31.000IN.
2900--16	S 1	2 T 1	117.000FT.C			0	0.000FT.	0.000IN.
3300--16	S 1	2 B 1	4.500FT.NS	SP		0	0.000FT.	31.000IN.
3400--16	S 1	2 B 2	12.000FT.SP	SP		0	0.000FT.	31.000IN.
3500--16	S 1	2 B 3	12.000FT.SP	SP		0	0.000FT.	36.000IN.
3600--16	S 1	2 B 4	6.000FT.SP	SP		0	0.000FT.	36.000IN.
3700--16	S 1	2 B 5	15.000FT.SP	SP		0	0.000FT.	45.000IN.
3800--16	S 1	2 B 6	30.000FT.SP	SP		0	0.000FT.	60.000IN.
3000--16	S 1	2 B 7	15.000FT.SP	SP		0	0.000FT.	45.000IN.
3100--16	S 1	2 B 8	12.000FT.SP	SP		0	0.000FT.	45.000IN.
3200--16	S 1	2 B 9	10.500FT.SP	NS		0	0.000FT.	31.000IN.
3900--16	S 1	3 T 1	93.500FT.C			0	0.000FT.	0.000IN.
4400--16	S 1	3 B 1	2.500FT.NS	SP		0	0.000FT.	30.000IN.
4500--16	S 1	3 B 2	12.000FT.SP	SP		0	0.000FT.	36.000IN.
4600--16	S 1	3 B 3	6.000FT.SP	SP		0	0.000FT.	36.000IN.
4000--16	S 1	3 B 4	13.000FT.SP	SP		0	0.000FT.	45.000IN.
4100--16	S 1	3 B 5	26.000FT.SP	SP		2	13.000FT.	60.000IN.
4200--16	S 1	3 B 6	26.000FT.SP	SP		2	13.000FT.	45.000IN.
4300--16	S 1	3 B 7	8.000FT.SP	SP		0	0.000FT.	36.000IN.

SUMMARY OF RATING CALCULATIONS-----STRUCTURE MEMBER S 1 BARS RELEASE 5.5
INVENTORY AND/OR OPERATING ANALYSIS

INPUT CODING -- STRUCTURE 0943 A D/P STR. I.D.-- 300-120

DATE 8/ 6/ 2

BY RCI CO

INVENTORY		OPERATING	
LIVE LOAD	RATING	LIVE LOAD	RATING
HS20	HS 20.64	HS20	HS 34.40

STRUCTURE DESCRIPTION --		LOCATION --		MICROFILM REEL NUMBERS --	
IDENTIFICATION	0943 A	DISTRICT	E	DESIGN PLANS	GUE-13
TYPE	322	COUNTY	GUE	COMPUTATIONS	
YEAR OF CONSTR.	1965	CONSTR. RTE.	40	CORRESPONDENCE	020806L
LENGTH	308.82 FEET	CONSTR. SEC.	8.95 P2		
ROADWAY WIDTH	27.00 FEET	CONSTR. STA.	33+57.87		
NUMBER OF SPANS	3	KEY RTE.	FEDERAL		
		MARKED RTE.	IR 70		

ANALYST REMARKS --

SFN 3001202 GUE-70-0943A OVER WILLS CREEK AND TR 35 LOADING CF2000(57)
SUPER. DECK 8.75" THICK 4 BUILT UP MEMBERS SPACING VARIES
PROJ. 312(63); 1.75" SUPERPLASTICIZED DENSE CONC. WS; UPDATED BY
SAHCO 8-02-2002

INVENTORY RATING SUMMARY --

MEMBER ID. S 1
SPAN 3
CRITICAL C.P. DIST. 0.0 FEET
LIVE LOAD DESIGNATION HS20

SHEAR
(KIPS)

OPERATING RATING SUMMARY --

MEMBER ID. S 1
SPAN 3
CRITICAL C.P. DIST. 0.0 FEET
LIVE LOAD DESIGNATION HS20

SHEAR

MEMBER CAPACITY	2509.8
DL EFFECT	-2007.4
CAPACITY FOR (LL+I)	-1305.4
ACTUAL (LL+I)	-1264.8
INVENTORY RATING	HS 20.64

(KIPS)

MEMBER CAPACITY	4183.1
DL EFFECT	-2007.4
CAPACITY FOR (LL+I)	-2175.7
ACTUAL (LL+I)	-1264.8
OPERATING RATING	HS 34.40

SUMMARY OF RATING CALCULATIONS-----STRUCTURE MEMBER S 1 BARS RELEASE 5.5
 POSTING ANALYSIS

INPUT CODING -- STRUCTURE 0943 A D/P STR. I.D.-- 300-120

DATE 8/ 6/ 2

INVENTORY

OPERATING

POSTING

BY RCI CO

LIVE LOAD	RATING	LIVE LOAD	RATING	TRUCK TYPE	GROSS TONS
HS20	HS 20.64	HS20	HS 34.40	VEH. 2F1	60.21
				VEH. 3F1	61.87
				VEH. 4F1	63.39

STRUCTURE DESCRIPTION --

LOCATION --

MICROFILM REEL NUMBERS --

IDENTIFICATION 0943 A
 TYPE 322
 YEAR OF CONSTR. 1965
 LENGTH 308.82 FEET
 ROADWAY WIDTH 27.00 FEET
 NUMBER OF SPANS 3

DISTRICT E
 COUNTY GUE
 CONSTR. RTE. 40
 CONSTR. SEC. 8.95 P2
 CONSTR. STA. 33+57.87
 KEY RTE. FEDERAL
 MARKED RTE. IR 70

DESIGN PLANS GUE-13
 COMPUTATIONS
 CORRESPONDENCE 020806L

ANALYST REMARKS --

SFN 3001202 GUE-70-0943A OVER WILLS CREEK AND TR 35 LOADING CF2000(57)
 SUPER. DECK 8.75" THICK 4 BUILT UP MEMBERS SPACING VARIES
 PROJ. 312(63); 1.75" SUPERPLASTICIZED DENSE CONC. WS; UPDATED BY
 SAHCO 8-02-2002

TRUCK TYPE VEH. 2F1

TRUCK TYPE VEH. 3F1

TRUCK TYPE VEH. 4F1

MEMBER ID. S 1

MEMBER ID. S 1

MEMBER ID. S 1

SPAN 1

SPAN 1

SPAN 1

CRITICAL C.P. DIST. 37.4 FEET

CRITICAL C.P. DIST. 37.4 FEET

CRITICAL C.P. DIST. 37.4 FEET

	SHEAR
	(KIPS)
MEMBER CAPACITY	3181.9
DL EFFECT	982.3
CAPACITY FOR (LL+I)	2199.6
ACTUAL (LL+I)	548.0
POSTING GROSS TONNAGE	60.2

	SHEAR
	(KIPS)
MEMBER CAPACITY	3181.9
DL EFFECT	982.3
CAPACITY FOR (LL+I)	2199.6
ACTUAL (LL+I)	817.7
POSTING GROSS TONNAGE	61.9

	SHEAR
	(KIPS)
MEMBER CAPACITY	3181.9
DL EFFECT	982.3
CAPACITY FOR (LL+I)	2199.6
ACTUAL (LL+I)	936.9
POSTING GROSS TONNAGE	63.4

SUMMARY OF RATING CALCULATIONS-----STRUCTURE MEMBER S 1
SPECIAL LOAD ANALYSIS

BARS RELEASE 5.5

INPUT CODING --

STRUCTURE 0943 A

D/P STR. I.D.-- 300-120

DATE 8/ 6/ 2

INVENTORY

OPERATING

SPECIAL LOAD

BY RCI CO

LIVE LOAD

RATING

LIVE LOAD

RATING

TRUCK TYPE GROSS TONS

HS20

HS 20.64

HS20

HS 34.40

VEH.SPEC

89.41

STRUCTURE DESCRIPTION --

LOCATION --

MICROFILM REEL NUMBERS --

IDENTIFICATION 0943 A
TYPE 322
YEAR OF CONSTR. 1965
LENGTH 308.82 FEET
ROADWAY WIDTH 27.00 FEET
NUMBER OF SPANS 3

DISTRICT E
COUNTY GUE
CONSTR. RTE. 40
CONSTR. SEC. 8.95 P2
CONSTR. STA. 33+57.87
KEY RTE. FEDERAL
MARKED RTE. IR 70

DESIGN PLANS GUE-13
COMPUTATIONS
CORRESPONDENCE 020806L

ANALYST REMARKS --

SFN 3001202 GUE-70-0943A OVER WILLS CREEK AND TR 35 LOADING CF2000(57)
SUPER. DECK 8.75" THICK 4 BUILT UP MEMBERS SPACING VARIES
PROJ. 312(63); 1.75" SUPERPLASTICIZED DENSE CONC. WS; UPDATED BY
SAHCO 8-02-2002

TRUCK TYPE VEH. SPEC

MEMBER ID. S 1

SPAN 1

CRITICAL C.P. DIST. 37.4 FEET

SHEAR

(KIPS)

MEMBER CAPACITY 3181.9

DL EFFECT	982.3
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CAPACITY FOR (LL+I)	2199.6
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ACTUAL (LL+I)	984.1
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POSTING GROSS TONNAGE	89.4
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*** FINAL SUMMARY OF RATING RESULTS FOR --- STRUCTURE ID. 300-120
INVENTORY AND/OR OPERATING ANALYSIS

BARS RELEASE 5.5

INPUT CODING--

STRUCTURE 0943 A

D/P STR. ID-- 300-120

DATE 8/ 6/ 2

INVENTORY

OPERATING

LIVE LOAD RATING

LIVE LOAD RATING

HS20 HS 20.6

HS20 HS 34.4

BY RCI CO

STRUCTURE DESCRIPTION--

IDENTIFICATION 0943 A
TYPE 322
YEAR OF CONSTR. 1965
LENGTH 308.82 FEET
ROADWAY WIDTH 27.00 FEET
NUMBER OF SPANS 3

LOCATION--

DISTRICT E
COUNTY GUE
CONSTR. RTE. 40
CONSTR. SEC. 8.95 P2
CONSTR. STA. 33+57.87
KEY RTE. FEDERAL
MARKED RTE. IR 70

MICROFILM REEL NUMBERS--

DESIGN PLANS GUE-13
COMPUTATIONS
CORRESPONDENCE 020806L

ANALYST REMARKS--

SFN 3001202 GUE-70-0943A OVER WILLS CREEK AND TR 35 LOADING CF2000(57)
SUPER. DECK 8.75" THICK 4 BUILT UP MEMBERS SPACING VARIES
PROJ. 312(63); 1.75" SUPERPLASTICIZED DENSE CONC. WS; UPDATED BY
SAHCO 8-02-2002

INVENTORY RATING SUMMARY

MEMBER I.D. S 1
SPAN 3
CRITICAL C.P. DIST. 0.0 FEET
LIVE LOAD DESIGNATION HS20

SHEAR

(KIPS)

OPERATING RATING SUMMARY

MEMBER I.D. S 1
SPAN 3
CRITICAL C.P. DIST. 0.0 FEET
LIVE LOAD DESIGNATION HS20

SHEAR

*** FINAL SUMMARY OF RATING RESULTS FOR --- STRUCTURE ID. 300-120
POSTING ANALYSIS

BARS RELEASE 5.5

INPUT CODING--

STRUCTURE 0943 A

D/P STR. ID-- 300-120

INVENTORY		OPERATING		POSTING	
DATE	8/ 6/ 2	LIVE LOAD	RATING	LIVE LOAD	RATING
BY	RCI CO			TRUCK TYPE	GROSS TONS
		HS20	HS 20.64		
				HS20	HS 34.40
				VEH. 2F1	60.2
				VEH. 3F1	61.9
				VEH. 4F1	63.4

STRUCTURE DESCRIPTION--

LOCATION--

MICROFILM REEL NUMBERS--

IDENTIFICATION 0943 A
TYPE 322
YEAR OF CONSTR. 1965
LENGTH 308.82 FEET
ROADWAY WIDTH 27.00 FEET
NUMBER OF SPANS 3

DISTRICT E
COUNTY GUE
CONSTR. RTE. 40
CONSTR. SEC. 8.95 P2
CONSTR. STA. 33+57.87
KEY RTE. FEDERAL
MARKED RTE. IR 70

DESIGN PLANS GUE-13
COMPUTATIONS
CORRESPONDENCE 020806L

ANALYST REMARKS--

SFN 3001202 GUE-70-0943A OVER WILLS CREEK AND TR 35 LOADING CF2000(57)
SUPER. DECK 8.75" THICK 4 BUILT UP MEMBERS SPACING VARIES
PROJ. 312(63); 1.75" SUPERPLASTICIZED DENSE CONC. WS; UPDATED BY
SAHCO 8-02-2002

POSTING RATING SUMMARY

TRUCK TYPE	VEH. 2F1	TRUCK TYPE	VEH. 3F1	TRUCK TYPE	VEH. 4F1
MEMBER I.D.	S 1	MEMBER I.D.	S 1	MEMBER I.D.	S 1
SPAN	1	SPAN	1	SPAN	1
CRITICAL C.P. DIST.	37.4 FEET	CRITICAL C.P. DIST.	37.4 FEET	CRITICAL C.P. DIST.	37.4 FEET

MEMBER CAPACITY 2509.8

DL EFFECT -2007.4

CAPACITY FOR (LL+I) -1305.4

ACTUAL (LL+I) -1264.8

INVENTORY RATING HS 20.64

(KIPS)

MEMBER CAPACITY 4183.1

DL EFFECT -2007.4

CAPACITY FOR (LL+I) -2175.7

ACTUAL (LL+I) -1264.8

OPERATING RATING HS 34.40

*** FINAL SUMMARY OF RATING RESULTS FOR --- STRUCTURE ID. 300-120
SPECIAL LOAD ANALYSIS

BARS RELEASE 5.5

INPUT CODING--

STRUCTURE 0943 A

D/P STR. ID-- 300-120

INVENTORY

OPERATING

SPECIAL LOAD

DATE 8/ 6/ 2

LIVE LOAD RATING

LIVE LOAD RATING

TRUCK TYPE GROSS TONS

BY RCI CO

HS20 HS 20.64

HS20 HS 34.40

VEH.SPEC 89.4

STRUCTURE DESCRIPTION--

LOCATION--

MICROFILM REEL NUMBERS--

IDENTIFICATION 0943 A
TYPE 322
YEAR OF CONSTR. 1965
LENGTH 308.82 FEET
ROADWAY WIDTH 27.00 FEET
NUMBER OF SPANS 3

DISTRICT E
COUNTY GUE
CONSTR. RTE. 40
CONSTR. SEC. 8.95 P2
CONSTR. STA. 33+57.87
KEY RTE. FEDERAL
MARKED RTE. IR 70

DESIGN PLANS GUE-13
COMPUTATIONS
CORRESPONDENCE 020806L

ANALYST REMARKS--

SFN 3001202 GUE-70-0943A OVER WILLS CREEK AND TR 35 LOADING CF2000(57)
SUPER. DECK 8.75" THICK 4 BUILT UP MEMBERS SPACING VARIES
PROJ. 312(63); 1.75" SUPERPLASTICIZED DENSE CONC. WS; UPDATED BY
SAHCO 8-02-2002

SPECIAL LOAD SUMMARY

TRUCK TYPE VEH.SPEC
MEMBER I.D. S 1
SPAN 1
CRITICAL C.P. DIST. 37.4 FEET

SHEAR

(KIPS)

MEMBER CAPACITY 3181.9

DL EFFECT 982.3

CAPACITY FOR (LL+I) 2199.6

	SHEAR
	(KIPS)
MEMBER CAPACITY	3181.9
DL EFFECT	982.3
CAPACITY FOR (LL+I)	2199.6
ACTUAL (LL+I)	548.0
POSTING GROSS TONNAGE	60.2

	SHEAR
	(KIPS)
MEMBER CAPACITY	3181.9
DL EFFECT	982.3
CAPACITY FOR (LL+I)	2199.6
ACTUAL (LL+I)	817.7
POSTING GROSS TONNAGE	61.9

	SHEAR
	(KIPS)
MEMBER CAPACITY	3181.9
DL EFFECT	982.3
CAPACITY FOR (LL+I)	2199.6
ACTUAL (LL+I)	936.9
POSTING GROSS TONNAGE	63.4

ACTUAL (LL+I)	984.1
---------------	-------

POSTING GROSS TONNAGE	89.4
-----------------------	------

DETAIL DATA FOR FLEXURAL MEMBER

DATE 08/06/02

NO. SPANS = 3
SYMMETRICAL

D/P STRUCTURE I.D. 300-120

MEMBER I.D.--S01

MATERIAL--SS

LL DIST. FACT. = 1.682

SUPERIMPOSED CONCENTRATED DL(S)

DIST. FROM LT SUPPORT****

SPAN		LENGTH	RNG.	LENGTH	SEC.NO.		VAR		DL DUE TO		SUPERIMPOSED DISTRIBUTED DL(S)				SUPERIMPOSED CONCENTRATED DL(S)						
NO.	FT.	NO.	FT.	LT	RT	T	T	S	MEM. WEIGHT	W(LT)	W(RT)	NO.	LBS/FT	LBS/FT	FT.	FT.	TRANS.	LONG.	NO.	KIPS	FT.
1	93.500	1	78.500	01	01				209.3	209.3		1	1490.0	1490.0	0.000	93.500	T	L			
		2	15.000	02	02				256.9	256.9		2	1490.0	1490.0	93.500	117.000					
2	117.000	1	12.000	02	02				256.9	256.9		3	1490.0	1490.0	210.500	93.500					
		2	46.500	01	01				209.3	209.3											
		3	46.500	01	01				209.3	209.3											
		4	12.000	02	02				256.9	256.9											

CHECK POINTS RATED--

SPAN DIS FRM		FUNC		SPAN DIS FRM		FUNC	
NO.	LT SPRT	M	VL VR	NO.	LT SPRT	M	VL VR
	FT.				FT.		
1	0.000	X	X				
1	37.400	X	X X				
2	0.000	X	X X				
2	58.500	X	X X				

DATE 08/06/02

DETAIL DATA AT MOMENT CHECK POINT FOR
STRUCTURAL STEEL FLEXURAL MEMBER

BARS RELEASE 5.5

D/P STRUCTURE I.D. 300-120
MEMBER I.D.---S01
C.P. LOCATION 1.00***** SECTION PROPERTIES IN RANGE 1 OF SPAN 1
---NET AREA---

H IN.	GROSS AREA SQ.IN.	+ BEND SQ.IN.	- BEND SQ.IN.	IX + BEND IN**4	IX - BEND IN**4	C (BOT) IN.	SECTION TOP + BEND IN**3	SECTION TOP - BEND IN**3	MODULUS BOTTOM + BEND IN**3	MODULUS BOTTOM - BEND IN**3
70.25	61.50	61.50	61.50	52834.8	52834.8	35.13	1504.2	1504.2	1504.2	1504.2

***** ALLOWABLE
STRESS

MOMENT CAPACITY

***** ORDINATES OF AND AREAS UNDER INFLUENCE LINE (CONTINUOUS SPAN)

	SPAN 1	SPAN 2	SPAN 3	SPAN 4	SPAN 5	SPAN 6
T 0	0.000	0.000	0.000	0.000	0.000	0.000
E 1	0.000	0.000	0.000	0.000	0.000	0.000
N 2	0.000	0.000	0.000	0.000	0.000	0.000
T 3	0.000	0.000	0.000	0.000	0.000	0.000
H 4	0.000	0.000	0.000	0.000	0.000	0.000
5	0.000	0.000	0.000	0.000	0.000	0.000
P 6	0.000	0.000	0.000	0.000	0.000	0.000
O 7	0.000	0.000	0.000	0.000	0.000	0.000
I 8	0.000	0.000	0.000	0.000	0.000	0.000
N 9	0.000	0.000	0.000	0.000	0.000	0.000
T 0	0.000	0.000	0.000	0.000	0.000	0.000

POS AREA	0.0	0.0	0.0	0.0	0.0	0.0
NEG AREA	0.0	0.0	0.0	0.0	0.0	0.0

INVENTORY	PSI
OPERATING	0.0
POST VEH1	0.0
POST VEH2	0.0
POST VEH3	0.0
POST SPEC	0.0

***** TOTAL DL
MOMENT EFFECTFT-KIPS
0.0

***** AVAIL. CAPAC. FOR LL+IMPACT

	TOP +BEND F-KPS	TOP -BEND F-KPS	BOT +BEND F-KPS	BOT -BEND F-KPS
INVENTORY	1909.2	1909.2	1909.2	1909.2
OPERATING	3182.0	3182.0	3181.9	3181.9
VEH. 1	3182.0	3182.0	3181.9	3181.9
VEH. 2	3182.0	3182.0	3181.9	3181.9
VEH. 3	3182.0	3182.0	3181.9	3181.9
SPECIAL	3182.0	3182.0	3181.9	3181.9

***** LIVE LOAD AND RATING CALCULATIONS (IMPACT FACTOR = 0.229 FOR +BEND AND = 0.229 FOR -BEND)

LIVE LOAD	TRUCK LOAD				LANE LOAD				LOC. CONC LOAD 2 FT.	RATING FACT.	SAFE LOAD CAPACITY TONS	RATING VALUE
	LL+IMP	LL	LOC. NO. 1 WHEEL FT.	DIR	AXLE SPACE FT.	LL+IMP	LL	LOC. CONC LOAD 1 FT.				
INV HS20 +BEND	0.0	0.0	0.000	L	0.0	0.0	0.000	0.000	0.000	2.821	101.6	HS 56.4
INV HS20 -BEND	0.0	0.0	0.000	L	0.0	0.0	0.000	0.000	0.000			
OPER HS20 +BEND	0.0	0.0	210.500	L	0.0	0.0	0.000	0.000	0.000	4.702	169.3	HS 94.0
OPER HS20 -BEND	0.0	0.0	0.000	L	0.0	0.0	0.000	0.000	0.000			
POST 2F1 +BEND	0.0	0.0	210.500	L	0.0	0.0	0.000	0.000	0.000	10.340	155.1	
POST 2F1 -BEND	0.0	0.0	0.000	L	0.0	0.0	0.000	0.000	0.000			
POST 3F1 +BEND	0.0	0.0	210.500	L	0.0	0.0	0.000	0.000	0.000	6.918	159.1	
POST 3F1 -BEND	0.0	0.0	0.000	L	0.0	0.0	0.000	0.000	0.000			
POST 4F1 +BEND	0.0	0.0	210.500	L	0.0	0.0	0.000	0.000	0.000	6.066	163.8	
POST 4F1 -BEND	0.0	0.0	0.000	L	0.0	0.0	0.000	0.000	0.000			
POST SPEC +BEND	0.0	0.0	210.500	L	0.0	0.0	0.000	0.000	0.000	5.393	215.7	
POST SPEC -BEND	0.0	0.0	0.000	L	0.0	0.0	0.000	0.000	0.000			

DETAIL DATA AT MOMENT CHECK POINT FOR
STRUCTURAL STEEL FLEXURAL MEMBER

BARS RELEASE 5.5

DATE 08/06/02

D/P STRUCTURE I.D. 300-120
MEMBER I.D.--S01
C.P. LOCATION 1.40

***** SECTION PROPERTIES IN RANGE 1 OF SPAN 1

		---NET AREA---						-----SECTION-----		MODULUS-----	
H	GROSS	+	-	IX	IX	C		TOP	TOP	BOTTOM	BOTTOM
IN.	AREA	BEND	BEND	+ BEND	- BEND	(BOT)		+ BEND	- BEND	+ BEND	- BEND
	SQ.IN.	SQ.IN.	SQ.IN.	IN**4	IN**4	IN.		IN**3	IN**3	IN**3	IN**3
70.25	61.50	61.50	61.50	52834.8	52834.8	35.13		1504.2	1504.2	1504.2	1504.2

***** ALLOWABLE STRESS

***** MOMENT CAPACITY

***** ORDINATES OF AND AREAS UNDER INFLUENCE LINE (CONTINUOUS SPAN)

	SPAN 1	SPAN 2	SPAN 3	SPAN 4	SPAN 5	SPAN 6
T 0	0.000	0.000	0.000	0.000	0.000	0.000
E 1	4.632	-2.092	0.474	0.000	0.000	0.000
N 2	9.325	-3.513	0.824	0.000	0.000	0.000
T 3	14.138	-4.238	1.039	0.000	0.000	0.000
H 4	19.133	-4.386	1.127	0.000	0.000	0.000
5	15.020	-4.078	1.105	0.000	0.000	0.000
P 6	11.210	-3.440	0.993	0.000	0.000	0.000
O 7	7.762	-2.593	0.809	0.000	0.000	0.000
I 8	4.738	-1.661	0.569	0.000	0.000	0.000
N 9	2.163	-0.767	0.294	0.000	0.000	0.000
T 0	0.000	0.000	0.000	0.000	0.000	0.000

INVENTORY	0.0
OPERATING	0.0
POST VEH1	0.0
POST VEH2	0.0
POST VEH3	0.0
POST SPEC	0.0

TOP	TOP	BOTTOM	BOTTOM
+ BEND	- BEND	+ BEND	- BEND
FT-KIPS	FT-KIPS	FT-KIPS	FT-KIPS
1909.2	1909.2	1909.2	1909.2
3182.0	3182.0	3181.9	3181.9
3182.0	3182.0	3181.9	3181.9
3182.0	3182.0	3181.9	3181.9
3182.0	3182.0	3181.9	3181.9
3182.0	3182.0	3181.9	3181.9

***** TOTAL DL MOMENT EFFECT

***** AVAIL. CAPAC. FOR LL+IMPACT

FT-KIPS
982.3

TOP	TOP	BOT	BOT
+BEND	-BEND	+BEND	-BEND
F-KPS	F-KPS	F-KPS	F-KPS
INVENTORY	1319.8	2498.6	1319.8
OPERATING	2199.6	4164.3	2199.6
VEH. 1	2199.6	4164.3	2199.6
VEH. 2	2199.6	4164.3	2199.6
VEH. 3	2199.6	4164.3	2199.6
SPECIAL	2199.6	4164.3	2199.6

POS AREA	823.9	0.0	67.6	0.0	0.0	0.0	891.6
NEG AREA	0.0	313.2	0.0	0.0	0.0	0.0	313.2

AREA
TOTALS

***** LIVE LOAD AND RATING CALCULATIONS (IMPACT FACTOR = 0.229 FOR +BEND AND = 0.207 FOR -BEND)

-----TRUCK LOAD-----										-----LANE LOAD-----		
LIVE	LL+IMP	LL	LOC.NO.	DIR	AXLE	LL+IMP	LL	LOC.CONC	LOC.CONC	RATING	SAFE LOAD	RATING
LOAD	FT-KIPS	FT-KIPS	1 WHEEL		SPACE	FT-KIPS	FT-KIPS	LOAD	LOAD 2	FACT.	CAPACITY	VALUE
			FT.		FT.			FT.	FT.		TONS	
INV HS20 +BEND	1163.9	947.2	23.400	L	0.0	944.6	768.7	37.400		1.134	40.8	HS 22.7
-BEND	309.2	256.2	156.601	R	0.0	285.5	236.6	140.300	0.000			
OPER HS20 +BEND	1163.9	947.2	23.400	L	0.0	944.6	768.7	37.400		1.890	68.0	HS 37.8
-BEND	309.2	256.2	156.601	R	0.0	285.5	236.6	140.300	0.000			
POST 2F1 +BEND	548.0	445.9	47.400	R						4.014	60.2	
-BEND	132.2	109.6	130.300	L								
POST 3F1 +BEND	817.7	665.4	47.403	R						2.690	61.9	
-BEND	201.5	167.0	128.603	L								
POST 4F1 +BEND	936.9	762.4	51.400	R						2.348	63.4	
-BEND	235.0	194.8	128.600	L								
POST SPEC +BEND	984.1	800.8	21.403	L						2.235	89.4	
-BEND	303.3	251.4	116.600	L								

D/P STRUCTURE I.D. 300-120
MEMBER I.D.--S01
C.P. LOCATION 3.00

		---NET AREA---					-----SECTION MODULUS-----			
H	GROSS	+	-	IX	IX	C	TOP	TOP	BOTTOM	BOTTOM
IN.	AREA	BEND	BEND	+ BEND	- BEND	(BOT)	+ BEND	- BEND	+ BEND	- BEND
	SQ. IN.	SQ. IN.	SQ. IN.	IN**4	IN**4	IN.	IN**3	IN**3	IN**3	IN**3
71.13	75.50	75.50	75.50	70323.4	70323.4	35.56	1977.5	1977.5	1977.5	1977.5

FT-KIPS FT-KIPS FT-KIPS FT-KIPS

2509.8	2509.8	2509.9	2509.9
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```

4183.1 4183.1 4183.1 4183.1
4183.1 4183.1 4183.1 4183.1
4183.1 4183.1 4183.1 4183.1
4183.1 4183.1 4183.1 4183.1
4183.1 4183.1 4183.1 4183.1

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INVENTORY	3714.3	1305.4	3714.3	1305.4
OPERATING	6190.5	2175.7	6190.5	2175.7
VEH. 1	6190.5	2175.7	6190.5	2175.7
VEH. 2	6190.5	2175.7	6190.5	2175.7
VEH. 3	6190.5	2175.7	6190.5	2175.7
SPECIAL	6190.5	2175.7	6190.5	2175.7

-----TRUCK LOAD-----LANE LOAD-----

		LIVE LOAD	LL+IMP	LL	LOC.NO. 1 WHEEL FT.	DIR	AXLE SPACE FT.	LL+IMP	LL	LOC.CONC LOAD FT.	LOC.CONC LOAD 2 FT.		RATING FACT.	SAFE LOAD CAPACITY TONS	RATING VALUE
INV	HS20	+BEND	199.5	162.4	32.752	L	0.0	165.3	134.5	56.100					
		-BEND	779.6	640.5	147.399	L	0.0	1264.8	1039.2	163.700	247.900	1.032	37.2	HS 20.6	
OPER	HS20	+BEND	199.5	162.4	32.752	L	0.0	165.3	134.5	56.100					
		-BEND	779.6	640.5	147.399	L	0.0	1264.8	1039.2	163.700	247.900	1.720	61.9	HS 34.4	
POST	2F1	+BEND	86.6	70.4	46.100	L									
		-BEND	333.5	274.0	173.700	R						6.525	97.9		
POST	3F1	+BEND	131.3	106.9	46.099	L									
		-BEND	508.2	417.5	175.395	R						4.281	98.5		
POST	4F1	+BEND	153.3	124.8	64.752	R									
		-BEND	592.6	486.9	175.404	R						3.671	99.1		
POST	SPEC	+BEND	186.7	151.9	77.445	R									
		-BEND	765.0	628.5	187.399	R						2.844	113.8		

DATE 08/06/02

SUMMARY OF SHEAR ANALYSIS

D/P STRUCTURE I.D. 300-120

MEMB. ID	SPAN MATL	DIS NO.	FRM LT	L SPRT	R	DL SHEAR KIPS	SDL SHEAR KIPS	---INVENTORY---		---OPERATING---		--VEH. 1 --		--VEH. 2 --		--VEH. 3 --		--SPECIAL--					
								LL+I MAX.V KIPS	T L MIN.V KIPS	LL+I MAX.V KIPS	T L MIN.V KIPS	LL+I MAX.V KIPS	LL+I MIN.V KIPS	LL+I MAX.V KIPS	LL+I MIN.V KIPS	LL+I MAX.V KIPS	LL+I MIN.V KIPS	LL+I MAX.V KIPS	LL+I MIN.V KIPS				
S01	SS	1	0.000	L		7.1	50.9	65.1	T	8.7	L	65.1	T	8.7	L	29.6	3.6	44.3	5.5	50.5	6.4	56.8	8.3
		1	37.400	L		0.7	4.8	32.0	T	29.1	T	32.0	T	29.1	T	15.5	14.7	22.7	21.3	25.4	23.5	23.4	18.0
		2	0.000	L		12.9	87.2	75.0	L	7.4	T	75.0	L	7.4	T	30.4	3.2	46.0	4.9	53.3	5.7	67.0	6.9
		2	58.500	L		0.0	0.0	31.3	T	31.3	T	31.3	T	31.3	T	15.0	15.0	22.0	22.0	24.7	24.7	23.4	23.4
		3	0.000	L		13.2	88.4	71.2	L	2.1	T	71.2	L	2.1	T	30.4	0.9	46.0	1.4	53.2	1.6	66.2	2.0

DEPARTMENT OF TRANSPORTATION

(REV. 2-15-87)

BRIDGE ANALYSIS AND RATING SYSTEM INPUT DATA FORM

CARD TYPE 02, 05 AND 06

[illegible][illegible]

CARD TYPE	STRUCTURE		COMMENTS (DESIGN LOADING, WEARING SURFACE, MEMBER I.D.'S, STD. DRWG. REF. NOS., SPECIAL REMARKS ETC.)																																																																												
	GROUP ID	NO.	DIS	ANALYST REMARKS TO BE DUPLICATED IN FORM AND CONTENT ON SUMMARY OF RATING CALCULATIONS																																																																											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
0.6		3.00			1	2	0	1	SFN 3001202 GUE-70-0943A OVER MILLS CREEK AND TR 35 LOADING CF2000(S7)																																																																						
0.6								2	SUPER DECK 8.75" THICK 4 BUILT UP MEMBERS SPACING VARIES																																																																						
0.6								3	PR 02. 312(63); 1.75" SUPERPLASTICIZED DENSE CONC. W/S; UPDATED BY																																																																						
0.6								4	SAHCU 8-02-2002																																																																						
0.6								5																																																																							
0.6								6																																																																							

$$s \approx 9' - 3''$$
$$s = 9.25'$$

(REV. 6 - 1 - 83)

BRIDGE ANALYSIS AND RATING SYSTEM INPUT DATA FORM

CARD TYPE 08

$$\begin{aligned} \text{LLDF} &= 5 \\ &5.5 \\ &= 9.25 \\ &\underline{\quad 5.5 \quad} \\ &= 1.682 \end{aligned}$$

conc Port & WS $\frac{10.5'}{12} \times 9.25' \times 150 = 1214.06 \text{ lbs/cf}$

crossframes $(30.74' \times 6.1') / 13.0' = 14.52 \text{ lbs/cf}$

conc. Parapets $2(3.0 \times 150) / 4 = 225.00 \text{ lbs/cf}$

stiffeners $2\left(\frac{\pi}{12} \times \frac{0.3123' \times 6.6'}{12}\right) \frac{990}{3.75'} = 16.07 \text{ lbs/cf}$

conc. fill $\frac{1967.68}{11.00} = 178.88 \text{ lbs/cf}$

91/21 126

10.5' x 9.25' x 150'

" 01-1' 911

" 91/20 8 - 911
 10.5' x 9.25' x 150'

" 01-1' 226

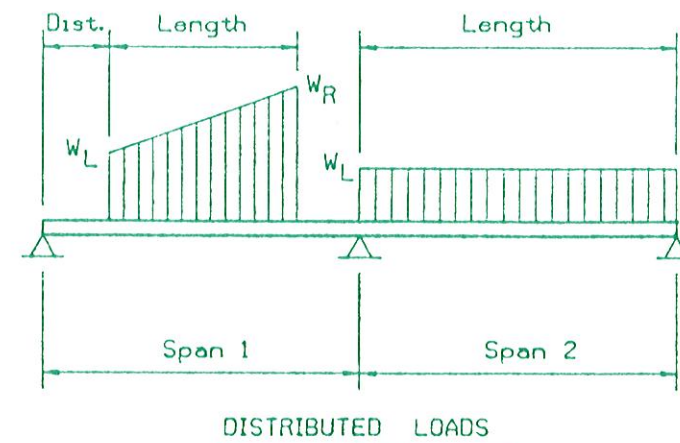
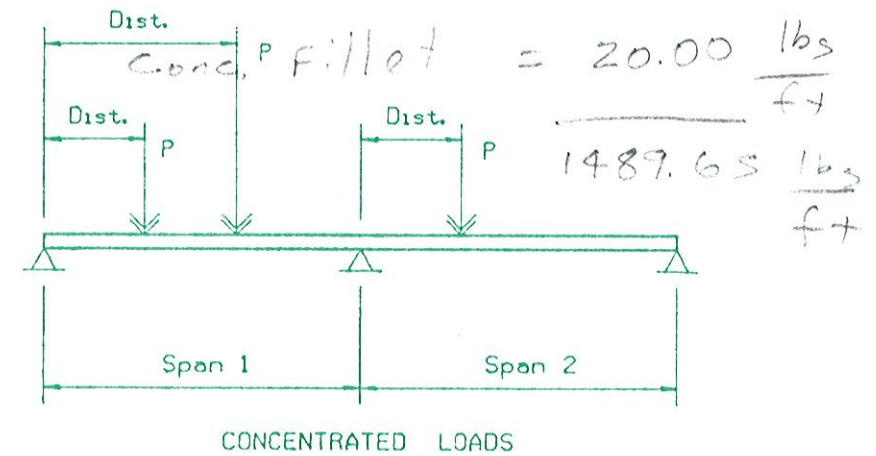
" 91/21 2 - 126
 10.5' x 9.25' x 150'

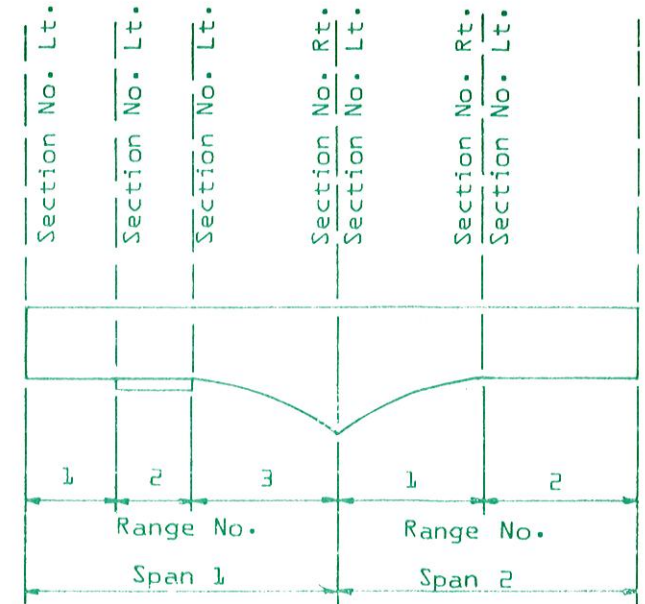
Conc. Deck & WS $\frac{10.5}{12} \times 9.25 \times 150 = 1214.06 \frac{\text{lbs}}{\text{ft}}$
 STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 CONC. CROSS FRAMES $(30.94' \times 6.1') / 13.01 = 14.52 \frac{\text{lbs}}{\text{ft}}$
 Conc. Parapet $2(3.0 \times 150) / 4 = 225.00 \frac{\text{lbs}}{\text{ft}}$
 BRIDGE SYSTEM INPUT DATA FORM CARD TYPE 10

(REV. 6 - 1 - 83)

BRIDGE ANALYSIS AND RATING SYSTEM INPUT DATA FORM

CARD TYPE 10

$$2 \left(\frac{5''}{12} \times \frac{0.3125''}{12} + \frac{68''}{12} \right) \frac{490}{3.75} = 16.07 \frac{\text{lb}_s}{\text{ft}}$$


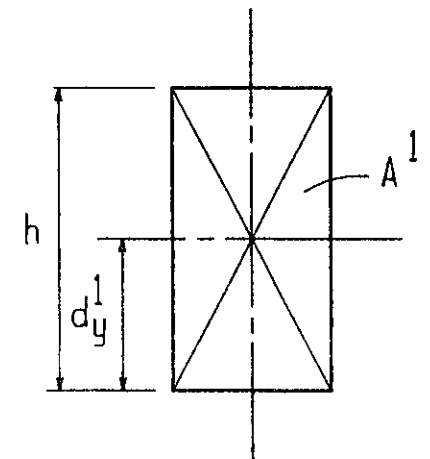
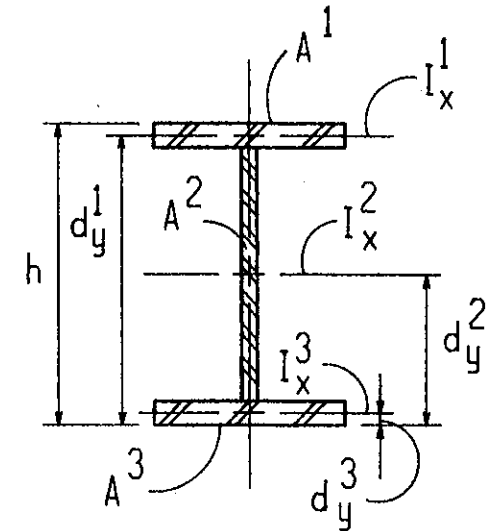
[illegible]

The diagram shows a continuous beam with three spans. The first span is labeled 'Span 1' and has a length of 'Dist.'. The second span is labeled 'Span 2' and has a length of 'Dist.'. The third span is labeled 'Span 3' and has a length of 'Span 3'. The beam is supported by three vertical supports. The first support is at the left end of Span 1. The second support is at the junction between Span 1 and Span 2. The third support is at the right end of Span 3. The beam is continuous over all three spans. The text 'INTERMEDIATE HINGES' is written below the beam, indicating the location of the hinges at the supports.

(REV. 6 - 1 - 83)

BRIDGE ANALYSIS AND RATING SYSTEM INPUT DATA FORM

CARD TYPE 12

[illegible]

DETAILED DESCRIPTION

$\frac{1}{2}$

6 - 1 - 83

CARD TYPE 16

DOT - 2878

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

BR - 101X

6 - 1 - 83

BRIDGE ANALYSIS AND RATING SYSTEM INPUT DATA FORM

CARD TYPE 16

[illegible]