

ALLOWABLE STRESSES		
TYPE OF STEEL	INVENTORY LEVEL (0.55F <sub>y</sub> ) PSI	OPERATING LEVEL (0.75F <sub>y</sub> ) PSI
CARBON STEEL (all except truss members, tension)	16,500	22,500
SILICON STEEL (truss members, tension)	24,750	33,750

EXISTING STRUCTURAL MEMBER RATINGS - CONCRETE FLOOR ALTERNATE									
MEMBER	SECTION CAPACITY (K-FI)		DEAD LOAD MOMENT (K-FI)	LIVE LOAD + IMPACT MOMENT (K-FI)		DEAD LOAD + LIVE LOAD + IMPACT MOMENT (K-FI)		HS RATING	
	AT INVENTORY STRESS	AT OPERATING STRESS		HS 15	HS 20	HS 15	HS 20	INVENTORY	OPERATING
APPROACH GIRDERS	878.5	1,231.5	* 313.3	369.7	492.9	683.0	806.2	HS 20	HS 20
INTERIOR TRUSS STRINGERS	404.6	580.6	* 104.1	166.2	221.6	270.3	325.7	HS 20	HS 20
INTERIOR FLOOR BEAMS	639.3	871.7	302.0	335.9	448.1	637.9	750.1	HS 15	HS 20

\* Composite & Non-Composite Dead Load Moment

EXISTING STRUCTURAL MEMBER RATINGS - STEEL GRID FLOOR ALTERNATE									
MEMBER	SECTION CAPACITY (K-FI)		DEAD LOAD MOMENT (K-FI)	LIVE LOAD + IMPACT MOMENT (K-FI)		DEAD LOAD + LIVE LOAD + IMPACT MOMENT (K-FI)		HS RATING	
	AT INVENTORY STRESS	AT OPERATING STRESS		HS 15	HS 20	HS 15	HS 20	INVENTORY	OPERATING
APPROACH GIRDERS	714.8	974.8	236.4	338.9	451.8	575.3	688.2	HS 20	HS 20
INTERIOR TRUSS STRINGERS	250.2	341.2	68.2	152.4	203.1	220.6	271.3	HS 15	HS 20
INTERIOR FLOOR BEAMS	639.3	871.7	191.7	335.9	448.1	527.6	639.8	HS 20	HS 20

**GENERAL NOTES:**

The bridge shall be closed to traffic during bridge repair.

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

All new structural steel shall conform to AASHTO M-183, except as noted.

Estimated weight of existing structural steel to be painted = 12,530,000 Lbs. [See Spans = 1,006,000 Lbs.  
Truss Spans = 11,524,000 Lbs.]

All new replacement stringers and all main structural members used for the repair of the bottom flanges and webs of the existing plate girders and stringers and top and bottom flanges and webs of the existing floor beams shall conform to the supplemental requirements for Notch Toughness, Zone 2.

Expansion bolts shall consist of approved expansion anchors, providing certified min. proof load = 4,080 lbs., and 3/4" x 12" hooked bolts.

Field welding of construction accessories will not be permitted to the bottom flanges of stringers and plate girders and top and bottom flanges of the floor beams. Field welding of construction accessories in other areas will be permitted only when approved by the Engineer.

All construction operations in or over the river shall conform to the requirements of the Special Provision for PROTECTION TO NAVIGATION.

The basic lead Silica Chromate Paint System shall be used for shop and field painting of all new and existing Structural Steel, including curb plates, floor drains and Filled Steel Grid Floor as specified.

Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-53 Grade 60.

Loosen the utilities on the bridge and move them so that sand blasting and painting can be performed properly.

The U.S.G.S. Bench Marks described on Sheet 6 are to be destroyed and reset by I.D.O.T. District Forces.

Any reference to a Standard in these plans shall be interpreted to mean the edition as indicated by the sub-number listed in the Index of Sheets or the copy of the Standard included in these plans.

Existing Name Plates shall be salvaged, cleaned and placed below new name plates.

The Grid Units including Curb Plates shall be AASHTO M-183. A 12" x 12" specimen shall be submitted for approval prior to mass fabrication of the grid units. (See Special Provision)

Shop drawing will not be required except for Steel Grid Floor & Slip Stringer Spans. Fasteners shall be High Strength Bolts, Bolts 5/8" Ø, Open Holes 1 1/8" Ø, unless otherwise noted.

All Existing Structural Steel in Truss Spans shall be cleaned by Method I (±10 feet above the deck to low steel), by Method II for the remaining truss members (±10 feet above) and painted.

All existing Structural Steel in approach spans shall be cleaned by Method I and painted.

Existing Structural Steel to be cleaned by Method I shall be given three full coats of paint.

Existing Structural Steel to be cleaned by Method II shall be spot painted and given two full coats of paint.

The exposed underside of the Filled Steel Grid Floor below the form pans, and all curb plates, riser beams, riser tubes and shims, and railing support brackets shall be painted as specified above, except shop coats may be applied in the field to avoid interference with welding.

BEAM MOMENT TABLE - HS 15 LIVE LOAD						
CONCRETE FLOOR ALTERNATE			MAXIMUM AT E OF SPAN	STEEL GRID FLOOR ALTERNATE		
APPROACHES	MAIN TRUSS			APPROACHES	MAIN TRUSS	
INTERIOR GIRDER (COMPOSITE)	INTERIOR STRINGER (COMPOSITE)	FLOOR BEAM (NON COMPOSITE)	INTERIOR GIRDER (NON COMPOSITE)	INTERIOR STRINGER (NON COMPOSITE)	FLOOR BEAM (NON COMPOSITE)	
11,400	2,180	9,150	I <sub>s</sub> (in. <sup>4</sup> )	11,400	2,180	9,150
26,486	9,049	—	I <sub>c</sub> (in. <sup>4</sup> )	—	—	—
520	182	465	S <sub>s</sub> (in. <sup>3</sup> )	520	182	465
706	352	—	S <sub>c</sub> (in. <sup>3</sup> )	—	—	—
0.697	0.663	4.412	Q (K/ft)	0.639	0.533	2.801
257.8	84.9	302.0	M <sub>Q</sub> (IK)	236.4	68.2	191.7
5.95	5.60	—	f <sub>s</sub> -non-comp. (ksi)	—	—	—
0.150	0.150	—	S <sub>Q</sub> (K/ft)	—	—	—
55.5	19.2	—	M <sub>SQ</sub> (IK)	—	—	—
289.1	127.9	258.4	M <sub>L</sub> (IK)	265.0	117.2	258.4
80.6	38.3	77.5	M <sub>IMP</sub> (IK)	73.9	35.2	77.5
425.2	185.4	637.9	TOTAL (IK)	575.3	220.6	527.6
7.22	6.32	—	f <sub>s</sub> -comp. (ksi)	—	—	—
13.17	11.92	16.46	f <sub>s</sub> TOTAL (ksi)	13.28	14.55	13.62
31.3	27.2	—	VR (K)	—	—	—

BEAM MOMENT TABLE - HS 20 LIVE LOAD						
CONCRETE FLOOR ALTERNATE			MAXIMUM AT E OF SPAN	STEEL GRID FLOOR ALTERNATE		
APPROACHES	MAIN TRUSS			APPROACHES	MAIN TRUSS	
INTERIOR GIRDER (COMPOSITE)	INTERIOR STRINGER (COMPOSITE)	FLOOR BEAM (NON COMPOSITE)	INTERIOR GIRDER (NON COMPOSITE)	INTERIOR STRINGER (NON COMPOSITE)	FLOOR BEAM (NON COMPOSITE)	
11,400	2,180	9,150	I <sub>s</sub> (in. <sup>4</sup> )	11,400	2,180	9,150
26,486	9,049	—	I <sub>c</sub> (in. <sup>4</sup> )	—	—	—
520	182	465	S <sub>s</sub> (in. <sup>3</sup> )	520	182	465
706	352	—	S <sub>c</sub> (in. <sup>3</sup> )	—	—	—
0.697	0.663	4.412	Q (K/ft)	0.639	0.533	2.801
257.8	84.9	302.0	M <sub>Q</sub> (IK)	236.4	68.2	191.7
5.95	5.60	—	f <sub>s</sub> -non-comp. (ksi)	—	—	—
0.150	0.150	—	S <sub>Q</sub> (K/ft)	—	—	—
55.5	19.2	—	M <sub>SQ</sub> (IK)	—	—	—
385.4	170.5	344.7	M <sub>L</sub> (IK)	353.3	156.2	344.7
107.5	51.1	103.4	M <sub>IMP</sub> (IK)	98.5	46.9	103.4
548.4	240.8	750.1	TOTAL (IK)	688.2	271.3	639.8
9.32	8.20	—	f <sub>s</sub> -comp. (ksi)	—	—	—
15.27	13.80	19.36	f <sub>s</sub> TOTAL (ksi)	15.88	17.89	16.51
41.7	36.2	—	VR (K)	—	—	—

I<sub>s</sub> and S<sub>s</sub> are the moment of inertia and section modulus of the steel section used in computing f<sub>s</sub> TOTAL.  
I<sub>c</sub> and S<sub>c</sub> are the moment of inertia and section modulus of the composite section used in computing f<sub>s</sub> TOTAL.  
VR is the maximum 1/4 + impact shear range in span.

DESIGNED <i>(Signature)</i>
CHECKED R.F.C.
DRAWN A.B.
CHECKED R.F.C./F.S.

STATION 28+13.08  
REBUILT 198  
BY STATES OF  
ILLINOIS AND MISSOURI  
F.A.U.S. RTE. 9811 SEC. 138D-BR  
PROJ. BHM - BHS-5006(7)  
LOADING HS  
STRUCTURE NO. 002-0005

BRIDGE NAME PLATE  
SEE STANDARD 2113

BRIDGE NO. 1  
STRUCTURE 002-0005  
FOR INFORMATION ONLY

GENERAL NOTES  
F.A.U.S. Rte. 9811 (U.S. 60 & 62)  
S.B.I. 150 SECTION 138D-BR  
ALEXANDER CO., IL. MISSISSIPPI CO., MO.  
STATION 28+13.08