Contract No. 85427

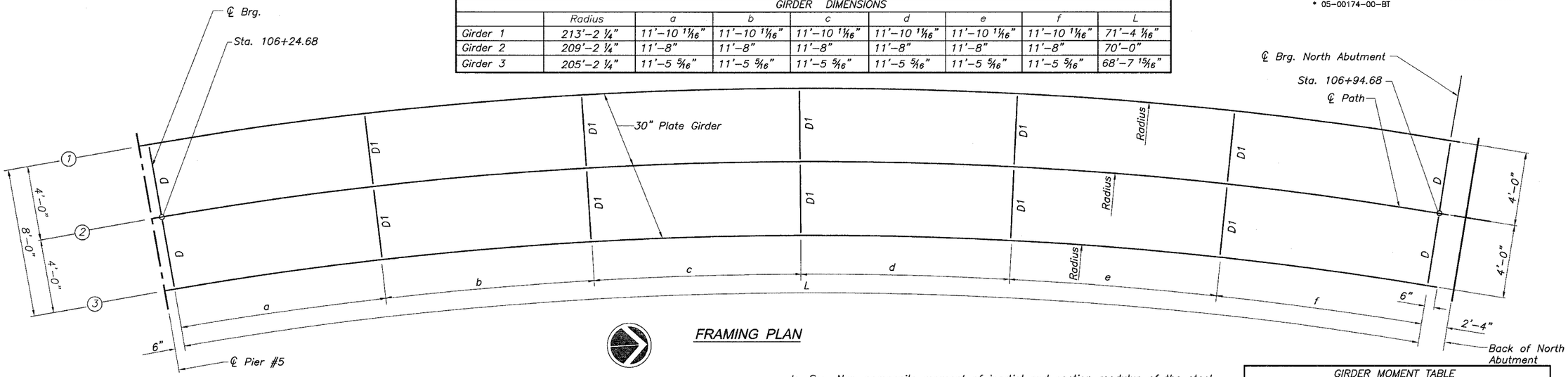
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	*	ROCK ISLAND	112	59
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 6
19 SHEETS

* 05-00174-00-BT

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

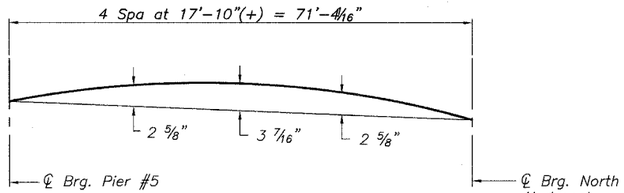
GIRDER DIMENSIONS								
	Radius	a	b	c	d	e	f	L
Girder 1	213'-2 1/4"	11'-10 1/16"	11'-10 1/16"	11'-10 1/16"	11'-10 1/16"	11'-10 1/16"	11'-10 1/16"	71'-4 1/16"
Girder 2	209'-2 1/4"	11'-8"	11'-8"	11'-8"	11'-8"	11'-8"	11'-8"	70'-0"
Girder 3	205'-2 1/4"	11'-5 5/16"	11'-5 5/16"	11'-5 5/16"	11'-5 5/16"	11'-5 5/16"	11'-5 5/16"	68'-7 15/16"



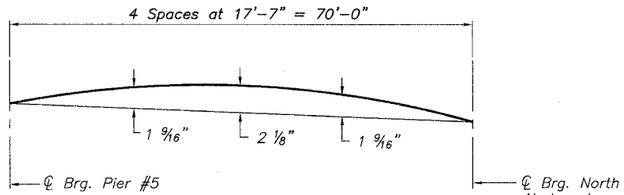
FRAMING PLAN

TOP OF WEB ELEVATION		
	℄ Brg. Pier #5	℄ Brg. N Abut.
Girder 1	660.167	656.667
Girder 2	660.167	656.667
Girder 3	660.167	656.667

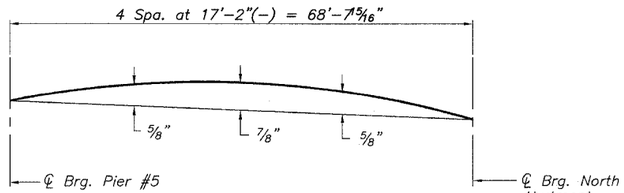
Note:
The calculated deflections of the primary girders/beams under steel self-weight shall be used to detail the diaphragm, cross frame and lateral bracing connections, and to erect the structural steel such that the girders/beams will be plumb within a tolerance of ±3/8" per vertical ft. throughout when supporting their own weight.



CAMBER DIAGRAM GIRDER 1



CAMBER DIAGRAM GIRDER 2



CAMBER DIAGRAM GIRDER 3

DESIGNED	LRT
CHECKED	JBF
DRAWN	RAP
CHECKED	JBF

Is. Ss: Non-composite moment of inertial and section modulus of the steel section used for computing fs (Total and Overload) due to non-composite dead loads (in.^{4} and in.^{3}).

Ic(n). Sc(n) Composite moment of inertial and section modulus of the steel and deck base upon the modular ratio, "n", used for computing fs (Total and Overload) due to short-term composite live loads (in.^{4} and in.^{3}).

Ic(3n), Sc(3n): Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", use for computing fs (Total and Overload) due to long-term composite (superimposed) dead loads (in.^{4} and in.^{3}).

S_l: Section modulus of one flange plate for lateral flange bending (in.^{3}).

D_ℓ: Un-factored non-composite dead load (kips/ft.).

M_{D_ℓ}: Un-factored moment due to non-composite dead load (kip-ft.)

S_{D_ℓ}: Un-factored long-term composite (superimposed) dead load (kip-ft).

M_{SD_ℓ}: Un-factored moment due to long-term composite (superimposed) dead load (kips/ft.).

M_{L_ℓ}: Un-factored live load moment (kip-ft.).

M_{Imp}: Un-factored moment due to impact (kip-ft.)

M_a: Factored design moment (kip-ft.)
$1.3\ [M_{D_\ell} = M_{S_{D_\ell}} + 5/3\ (M_{L_\ell} + M_{Imp})]$

M_{bl}: Factored lateral bending moment for flange plate (kip-ft.)

f_l: Factored calculated normal stress at the edge of flange due to lateral bending (ksi)

f_s(Overload): Sum of stresses as computed from the moments below (ksi)
$[M_{D_\ell} + M_{S_{D_\ell}} + 5/3\ (M_{L_\ell} + M_{Imp})]$

f_s(Total): Sum of stresses as computed from the moments below (ksi)
$1.3\ [M_{D_\ell} + M_{S_{D_\ell}} + 5/3\ (M_{L_\ell} + M_{Imp})]$

f_{cr}(Overload): Critical average flange stress at overload computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway bridges Section 9.5 (ksi).

f_{cr}: Critical average flange stress (smaller of F_{cr1} or F_{cr2} for partially breaded flanges and F_Y for continuously brades flanges) computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges (Sections 5.2, 5.3 and 5.4) (ksi).

VR: Maximum L_ℓ + impact horizontal shear range within span for stud shear connector design (kips)

Note:
M_{L_ℓ} and R_{L_ℓ} include the effects of centrifugal force and superelevation.

GIRDER MOMENT TABLE				
		GIRDER 1	GIRDER 2	GIRDER 3
Is	(in^4)	7437	7437	7437
Ic (n)	(in^4)	15936	16404	15936
Ic (3n)	(in^4)	11469	11791	11469
Ss	(in^3)	550	612	550
Sc (n)	(in^3)	690	694	690
Sc (3n)	(in^3)	634	639	634
S_l	(in^3)	40.8	40.8	40.8
D_ℓ	(k/ft.)	1.03	.56	.03
M_{D_ℓ}	('k)	655	342	16
S_{D_ℓ}	(k/ft.)	.017	.010	.003
M_{SD_ℓ}	('k)	10.5	6.4	1.8
M_{L_ℓ}	('k)	321	216	96
M (Imp)	('k)	0	0	0
5/3 [M_{L_ℓ} +M(Imp)]	('k)	535	360	160
Ma	('k)	1560	920	242
M_{bl}	('k)	35	20	5
fs_{D_ℓ} non-comp	(k.s.i.)	14.3	7.2	.31
fs_{D_ℓ} (comp)	(k.s.i.)	0.2	0.11	0.04
5/3fs[M_{L_ℓ} +M(Imp)]	('k)	9.3	6.2	3.1
f_l	(k.s.i.)	10.1	5.8	1.2
fs (Overload)	(k.s.i.)	23.8	13.5	3.5
fs (Total)	(k.s.i.)	30.9	17.6	4.5
fcr (Overload)	(k.s.i.)	47.5	47.5	47.5
VR	(k)	13.2	9.0	5.8
fcr	(k.s.i.)	46.8	47.2	47.6

GIRDER REACTION TABLE				
		GIRDER 1	GIRDER 2	GIRDER 3
R_{D_ℓ}	(k)	46.5	27.2	7.2
R_{L_ℓ}	(k)	48.0	24.9	10.4
Imp	(k)	0	0	0
R (Total)	(k)	94.5	52.1	17.6

STRUCTURAL STEEL FRAMING

AUGUSTANA COLLEGE PEDESTRIAN BRIDGE
SECTION 05-00174-00-BT
PROJECT NO. HPP-4113-(001)
CITY OF ROCK ISLAND
ROCK ISLAND COUNTY