F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(14-1)I	CHAMPAIGN	22	11
CONTRACT NO. 70622				

Sheet No. 20
of 35 Sheets

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 74	(14-VB) BR	CHAMPAIGN	140	103

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

UNIT 1

INTERIOR GIRDER MOMENT TABLE	0.4 Sp. 1	Pier	0.5 Sp. 2
Is (in.)	144,781	255,326	132,807
Ic (in)	—	—	—
Ss (in)	2955	5094	2717
Sc (in)	—	—	—
Z (in)	—	—	—
ℓ (K/1)	1.115	1.115	1.115
Mℓ ('K)	2490.5	5059.4	1848.6
Sℓ (K/1)	0.225	0.225	0.225
Msℓ ('K)	499.4	1045.0	390.8
ML ('K)	1852.7	2687.2	1796.3
M (Imp) ('K)	300.1	409.8	251.2
5/3 (ML + I) ('K)	3588.0	5161.7	3349.8
Ms ('K)	8499.5	14643.2	7261.1
Mu ('K)	—	—	—
fsℓ non-comp (K.S.I.)	10.0	11.9	8.2
fsℓ (comp) (K.S.I.)	2.0	2.5	1.7
fs 5/3 (L+I) (K.S.I.)	14.6	12.2	14.8
fs (Overload) (K.S.I.)	26.5	26.5	24.7
fs (Total) (K.S.I.)	34.5	34.5	32.1
VR (K)	79.4	—	84.7

UNIT 1

INTERIOR GIRDER REACTION TABLE	Abut./P.3	Pier 1, Pier 2
Rℓ (K)	88.7	309.6
RL (K)	56.1	123.5
Imℓ (K)	9.1	18.8
R (Total) (K)	154.1	451.4

UNIT 2

INTERIOR GIRDER MOMENT TABLE	0.5 Sp. 1
Is (in)	124,595
Ic (in)	—
Ss (in)	2549
Sc (in)	—
Z (in)	—
ℓ (K/1)	1.074
Mℓ ('K)	2064.2
Sℓ (K/1)	0.225
Msℓ ('K)	482.4
ML ('K)	1257.4
M (Imp) ('K)	251.5
5/3 (ML + I) ('K)	2514.8
Ms ('K)	6514.8
Mu ('K)	—
fsℓ non-comp (K.S.I.)	9.7
fsℓ (comp) (K.S.I.)	2.0
fs 5/3 (L+I) (K.S.I.)	11.8
fs (Overload) (K.S.I.)	23.6
fs (Total) (K.S.I.)	30.7
VR (K)	58.7

UNIT 2

INTERIOR GIRDER REACTION TABLE	Pier 3/E. Abut.
Rℓ (K)	80.5
RL (K)	48.9
Imℓ (K)	9.8
R (Total) (K)	139.2

IS AND SS ARE THE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL SECTION USED IN COMPUTING fs (TOTAL AND OVERLOAD).

IC AND SC ARE THE MOMENT OF INERTIA AND SECTION MODULUS OF THE COMPOSITE SECTION USED IN COMPUTING fs (TOTAL AND OVERLOAD).

VR IS THE MAXIMUM L + IMPACT SHEAR RANGE IN SPAN.

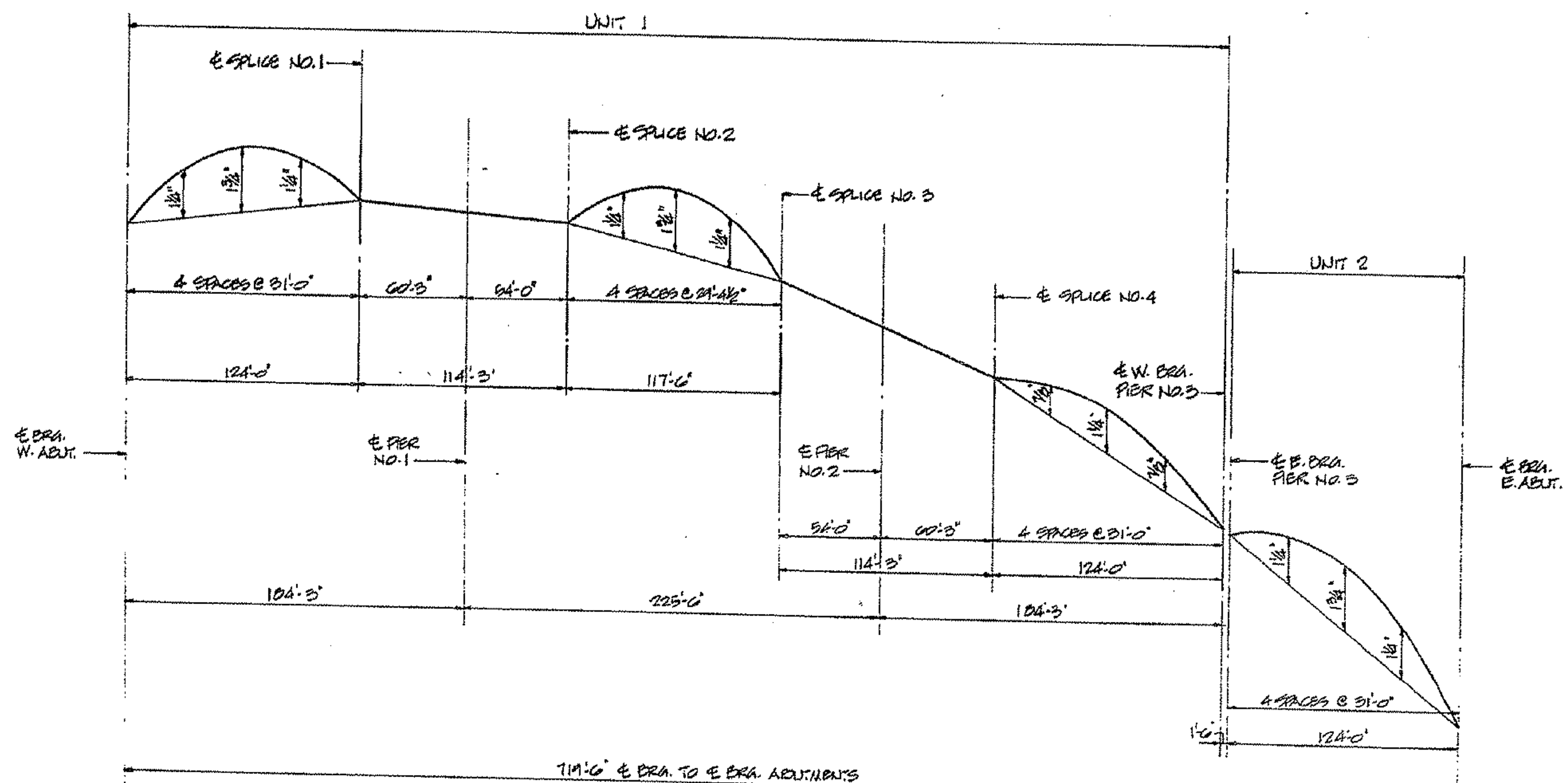
Z IS THE PLASTIC SECTION MODULUS USED TO DETERMINE THE FULLY PLASTIC MOMENTS IN THE NON-COMPOSITE AREAS.

MS (APPLIED MOMENT) = 1.3[Mℓ + MSℓ + 5/3 (ML + I)].

MU IS THE FULL PLASTIC MOMENT CAPACITY FOR COMPACT, BRACED SECTION.

fs (OVERLOAD) IS THE SUM OF THE STRESSES DUE TO Mℓ + MSℓ + 5/3 (ML + I).

fs (TOTAL) IS THE SUM OF THE STRESSES DUE TO 1.3 [Mℓ + MSℓ + 5/3 (ML + I)].



CAMBER DIAGRAM

TOP OF WEB ELEVATIONS – UNIT 1 (FOR FABRICATION ONLY)

LOCATION / GIRDER	G-1	G-2	G-3	G-4	G-17	G-18	G-19	G-20
℄ BRG. W. ABUT.	770.23	770.37	770.47	770.57	770.41	770.29	770.15	769.99
℄ SPLICE NO. 1	770.61	770.75	770.81	770.98	770.94	770.83	770.71	770.55
℄ BRG. PIER NO. 1	770.50	770.65	770.77	770.88	770.91	770.80	770.68	770.53
℄ SPLICE NO. 2	770.39	770.55	770.68	770.80	770.88	770.77	770.66	770.52
℄ SPLICE NO. 3	769.66	769.83	769.97	770.10	770.28	770.19	770.09	769.96
℄ BRG. PIER NO. 2	769.08	769.26	769.40	769.54	769.78	769.69	769.59	769.47
℄ SPLICE NO. 4	768.44	768.62	768.77	768.91	769.21	769.13	769.04	768.92
℄ W. BRG. PIER NO. 3	766.51	766.70	766.86	767.02	767.46	767.37	767.29	767.18

TOP OF WEB ELEVATIONS – UNIT 2 (FOR FABRICATION ONLY)

LOCATION / GIRDER	G-1	G-2	G-3	G-4	G-17	G-18	G-19	G-20
℄ E. BRG. PIER NO. 3	766.50	766.69	766.85	767.00	767.43	767.36	767.28	767.17
℄ BRG. E. ABUT.	763.93	764.14	764.31	764.47	765.02	764.96	764.89	764.80

WORK THIS SHEET WITH SHEETS 18, 19, 21, 22 AND 23

STRUCTURAL STEEL DETAILS

REVISIONS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

F.A.I. 74
S.N. 010-002
SEC.(14-VB)BR
STA. 1219+00.14
CHAMPAIGN COUNTY

HOMER L. CHASTAIN & ASSOCIATES
CONSULTING ENGINEERS

DRAWN BY: J.D.
CHECKED BY: J.K. DATE: 3.87

PROJECT NO. 3400-5