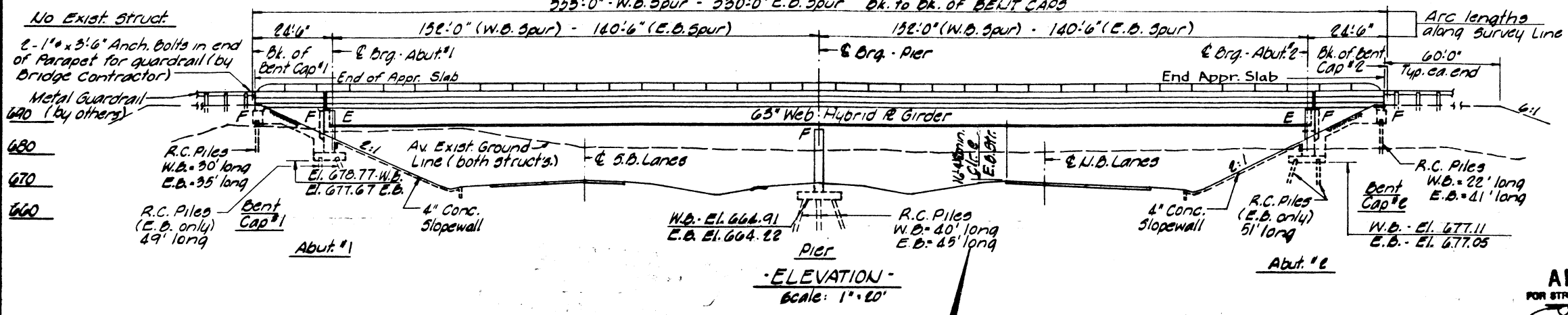


ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-72	58-62	MACON	65	15
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

Bench Mark: B.M. #7F R.R. Spike
in South side 30° Oak tree 144' ft
Sta. 590+23 (E.B. Spur) El. 677.22



DESIGN LOADING
Live Load HS 20-44 AASHTO 1973 &
Interim Specifications. Dead load includes
2.5 lbs./sq. ft. of roadway for future wearing
surface.

DESIGN STRESSES

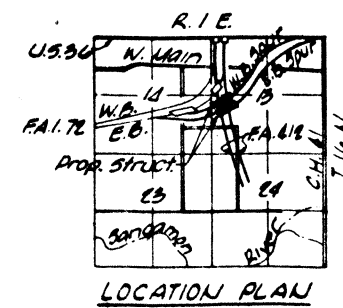
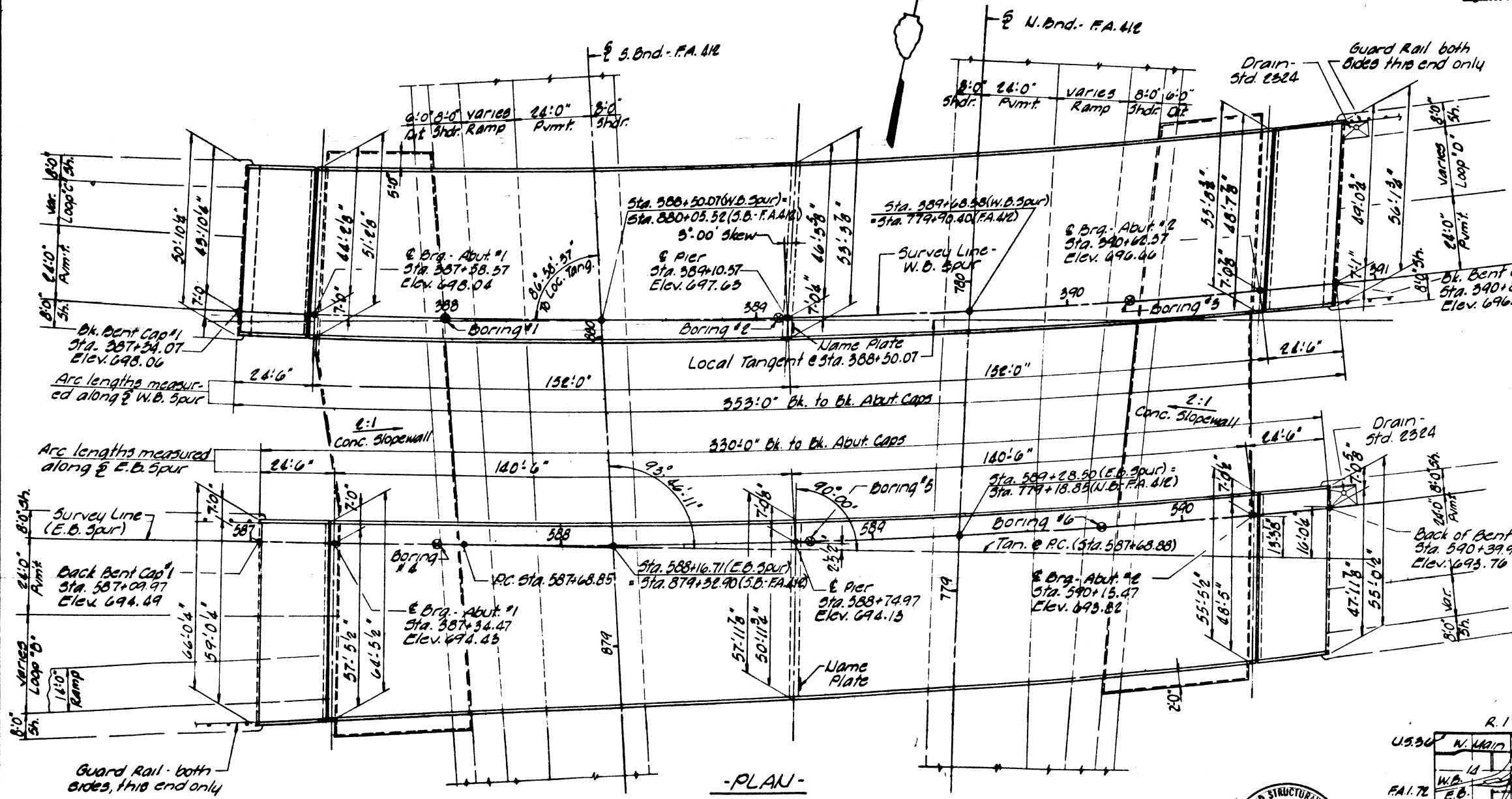
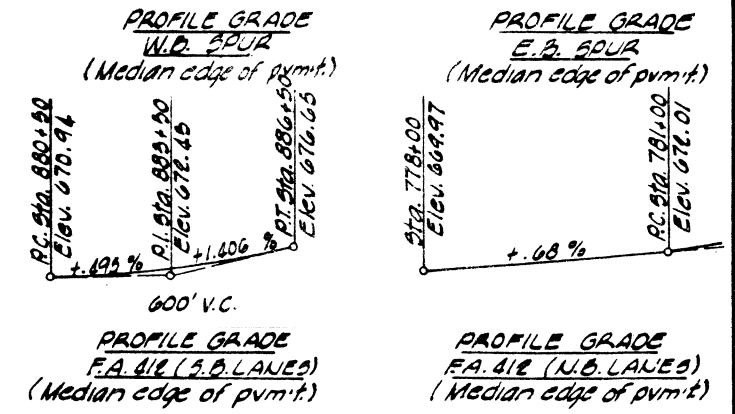
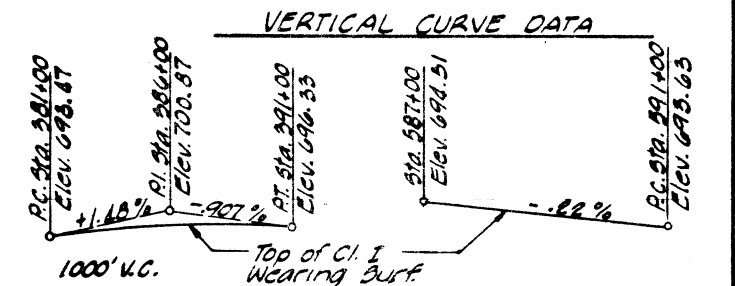
$f_c = 1400$ p.s.i.	Substructure, Curb & Parapet
$f_c = 1200$ p.s.i.	Superstructure Slab
$f_c = 75$ p.s.i.	Footings
$f_s = 20,000$ p.s.i.	Reinforcing Steel
$f_s = 20,000$ p.s.i.	Structural Steel (Hybrid)
$n = 10$	

LIVE LOAD DEFLECTION
L/1200 for Composite Construction

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
[Signature]
Engineer of Bridge & Traffic Structures

HORIZONTAL CURVE DATA

WEST BND. SPUR R = 2291.85; Dc = 2° 20' 00" S.E. = .056' / ft.	EAST BND. SPUR R = 2291.85; Dc = 2° 20' 00" S.E. = .056' / ft.
FA. 412 (S.B. LANES) NONE - ON TANGENT	FA. 412 (N.B. LANES) R = 5729.58; Dc = 1° 00' 00" S.E. = .035' / ft.

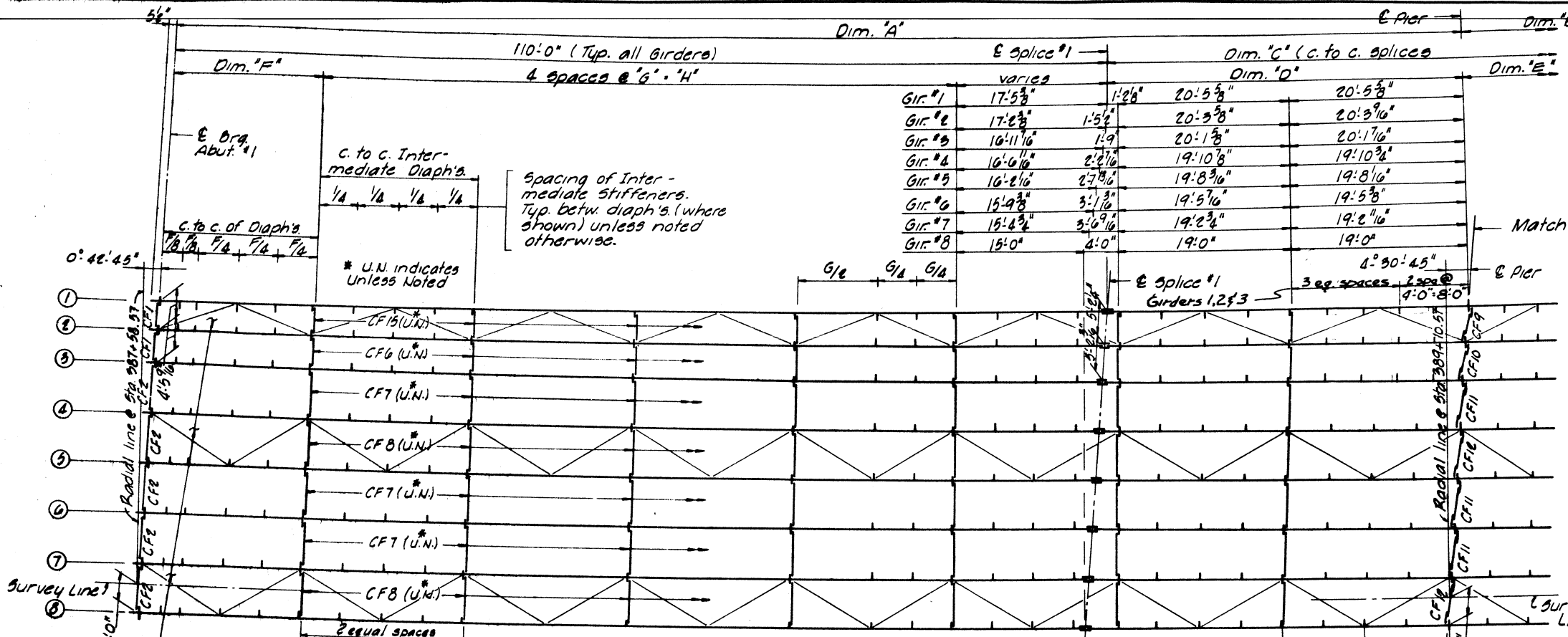


REGISTERED STRUCTURAL ENGINEER
JOHN W. CLARK
81-3859
STATE OF ILLINOIS

REVISIONS			DRAWN BY DATE	
1	DATE	INITIALS	223	8-73
2			CHECKED BY DATE	55H 12-73
3			BOOK NUMBER	
4			PROJECT NO.	2469-3
5			SHEET NO.	15

GENERAL PLAN AND ELEVATION
STATE OF ILLINOIS
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
E.B. SPUR & W.B. SPUR OVER FA. 412
FAI-72, SEC. 58, T. 24 N., R. 23 E., MACON CO.
STA. 587+23 TO 590+23 (E.B. SPUR) MACON CO.

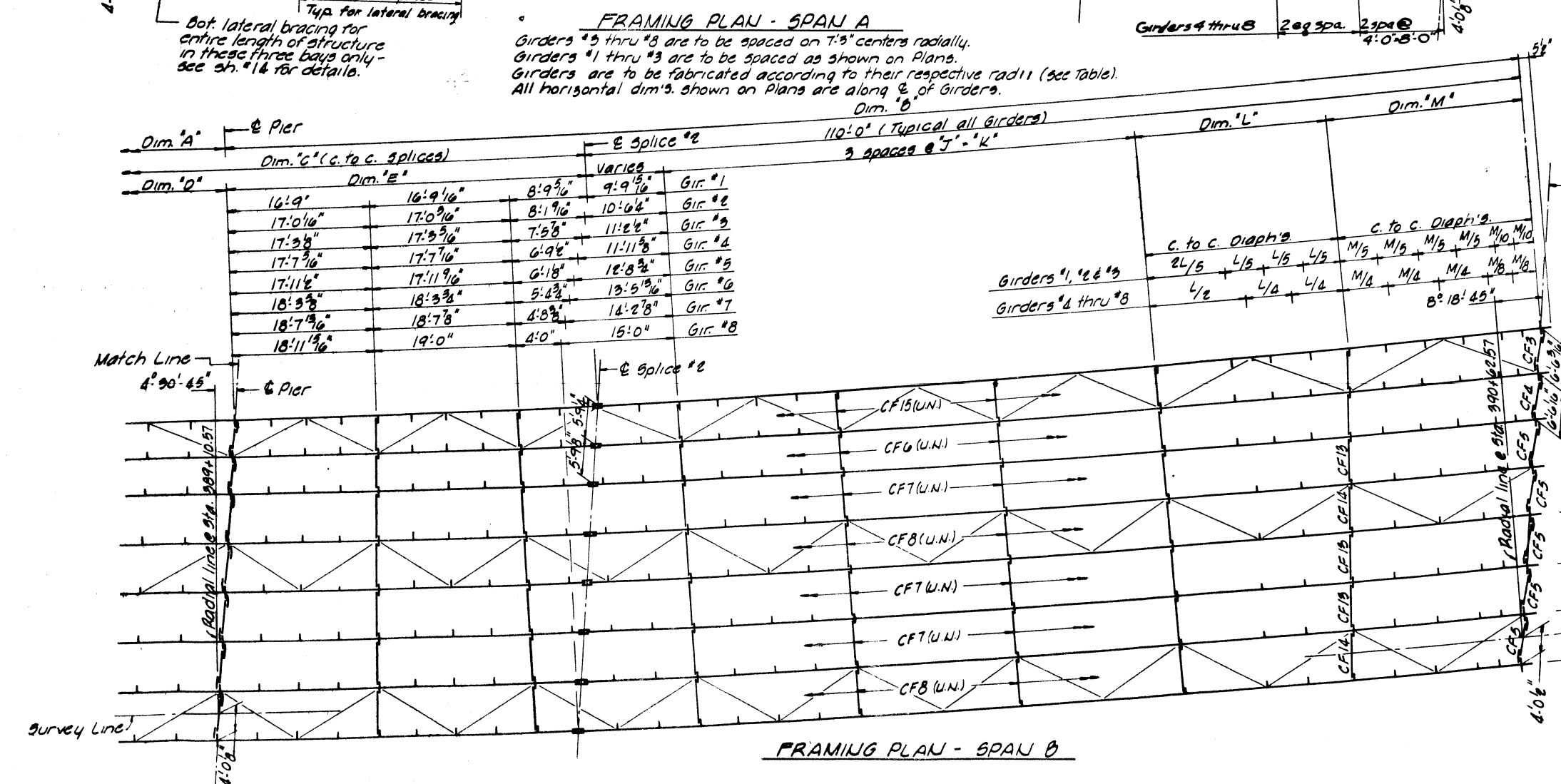
HOMER L. CHASTAIN & ASSOCIATES
CONSULTING ENGINEERS
DECATUR, ILLINOIS



Girder	1	2	3	4	5	6	7	8
Gir. #1	17'-5 3/8"	1'-2 1/8"	20'-5 3/8"	20'-5 3/8"				
Gir. #2	17'-2 3/8"	1'-5 1/8"	20'-3 3/8"	20'-3 3/8"				
Gir. #3	16'-11 1/8"	1'-9"	20'-1 3/8"	20'-1 3/8"				
Gir. #4	16'-0 1/8"	2'-2 1/8"	19'-10 3/8"	19'-10 3/8"				
Gir. #5	16'-2 1/8"	2'-7 1/8"	19'-8 3/8"	19'-8 3/8"				
Gir. #6	15'-9 3/8"	3'-1 3/8"	19'-5 1/8"	19'-5 1/8"				
Gir. #7	15'-4 3/8"	3'-6 1/8"	19'-2 3/8"	19'-2 3/8"				
Gir. #8	15'-0"	4'-0"	19'-0"	19'-0"				

TABLE OF DIMENSIONS

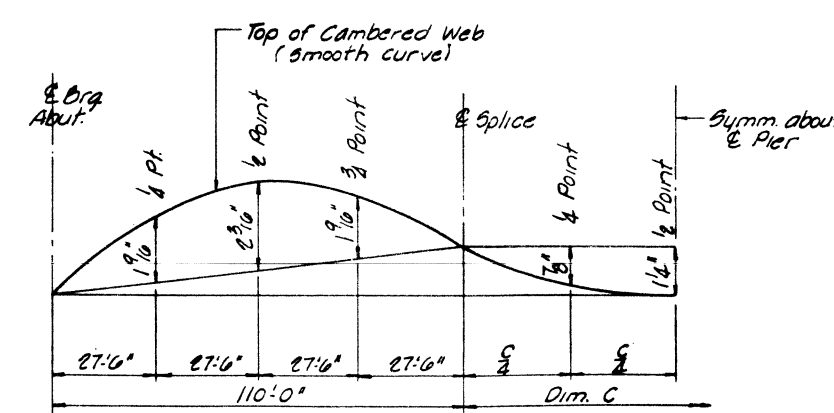
Girder Dimension	#1	#2	#3	#4	#5	#6	#7	#8
Radius (to Gir.)	2250.19'	2254.91'	2259.58'	2264.25'	2274.08'	2281.33'	2288.58'	2295.83'
Overall Length	305'-3 3/4"	305'-1 1/2"	304'-11 3/8"	304'-11 1/8"	304'-11 1/4"	304'-11 1/8"	304'-11 1/16"	304'-10 15/16"
A	152'-1 3/8"	152'-0 1/4"	152'-0 1/8"	152'-0 1/8"	152'-0 1/8"	152'-0"	152'-0"	152'-0"
B	152'-3 3/8"	152'-1 1/8"	152'-0 7/8"	152'-0 4"	152'-0 3/8"	152'-0 8"	152'-0 1/8"	151'-11 15/16"
C	84'-4 3/8"	84'-2 1/2"	84'-0 3/8"	84'-0 5/8"	84'-0 8"	84'-0 8"	84'-0 1/8"	83'-11 15/16"
D	42'-1 3/8"	42'-0 1/8"	42'-0 1/8"	42'-0 1/8"	42'-0 1/8"	42'-0"	42'-0"	42'-0"
E	42'-5 3/8"	42'-1 1/8"	42'-0 5/8"	42'-0 4"	42'-0 1/8"	42'-0 8"	42'-0 1/8"	41'-11 15/16"
F	18'-0 7/8"	18'-1 7/8"	18'-3 1/8"	18'-4 13/16"	18'-6 1/16"	18'-8 3/8"	18'-10 1/4"	19'-0"
G	18'-7 1/8"	18'-7 1/8"	18'-8 3/8"	18'-9 8"	18'-9 1/8"	18'-10 1/8"	18'-11 1/4"	19'-0"
H	74'-3 3/8"	74'-7 3/8"	74'-9 1/2"	75'-0 1/2"	75'-3 1/4"	75'-6 1/4"	75'-9"	76'-0"
J	18'-7 1/4"	18'-7 1/8"	18'-8 3/8"	18'-9 8"	18'-9 13/16"	18'-10 1/8"	18'-11 1/4"	19'-0"
K	55'-9 3/4"	55'-11 1/8"	56'-1 1/8"	56'-3 3/8"	56'-5 1/8"	56'-7 1/8"	56'-9 3/8"	57'-0"
L	22'-2 1/2"	21'-9 1/8"	21'-4 3/8"	20'-10 5/8"	20'-5"	19'-11 5/16"	19'-5 3/4"	19'-0"
M	22'-2 1/2"	21'-9 1/8"	21'-4"	20'-10 3/8"	20'-4 1/8"	19'-11 1/16"	19'-5 5/8"	19'-0"



FRAMING PLAN - SPAN A
 Girders #5 thru #8 are to be spaced on 7'-0" centers radially.
 Girders #1 thru #3 are to be spaced as shown on Plans.
 Girders are to be fabricated according to their respective radii (see Table).
 All horizontal dim's shown on Plans are along C of Girders.

TOP OF WEB ELEVATIONS (For fabrication only)

Girder Location	#1	#2	#3	#4	#5	#6	#7	#8
E Brg. Abut. #1	694.84	695.09	695.34	695.75	696.15	696.56	696.96	697.37
E Splice #1	694.48	694.77	695.08	695.49	695.89	696.30	696.70	697.11
E Brg. Pier	694.15	694.46	694.77	695.18	695.58	695.99	696.40	696.81
E Splice #2	694.02	694.35	694.69	695.10	695.50	695.91	696.31	696.72
E Brg. Abut. #2	693.18	693.55	693.92	694.33	694.73	695.14	695.54	695.95



NO LOAD CAMBER DIAGRAM

W. BND. SPUR

STRUCTURAL STEEL

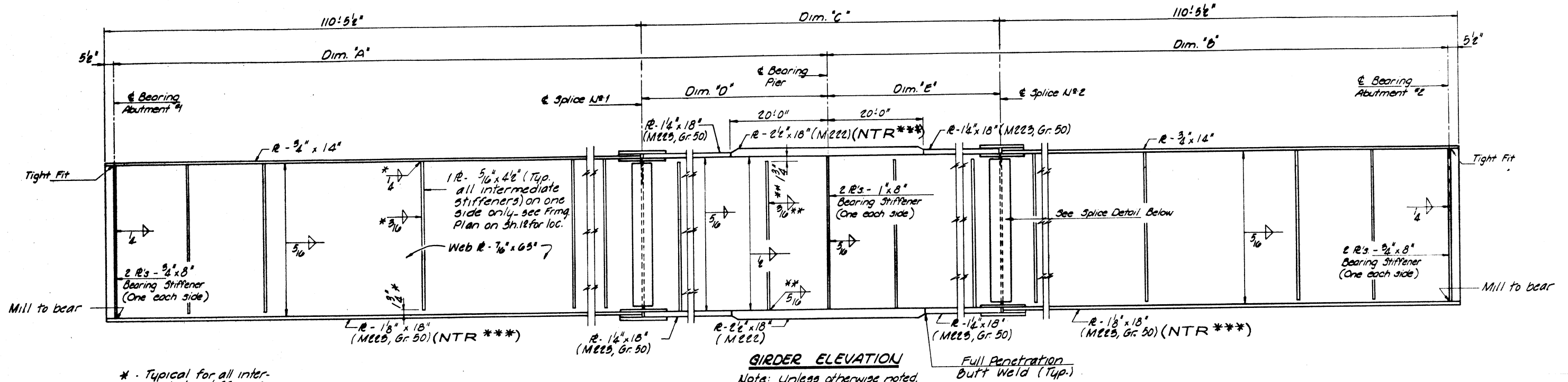
REVISIONS	NO.	DATE	INITIALS	DESCRIPTION
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

DRAWN BY: RCB 10-74
 CHECKED BY: JWC 1-75
 BOOK NUMBER: 2469-3
 SHEET NO.: 26

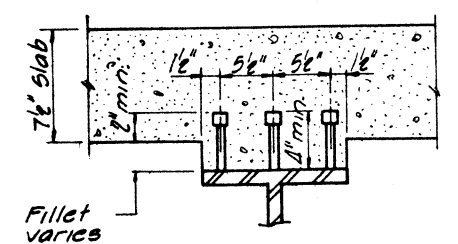
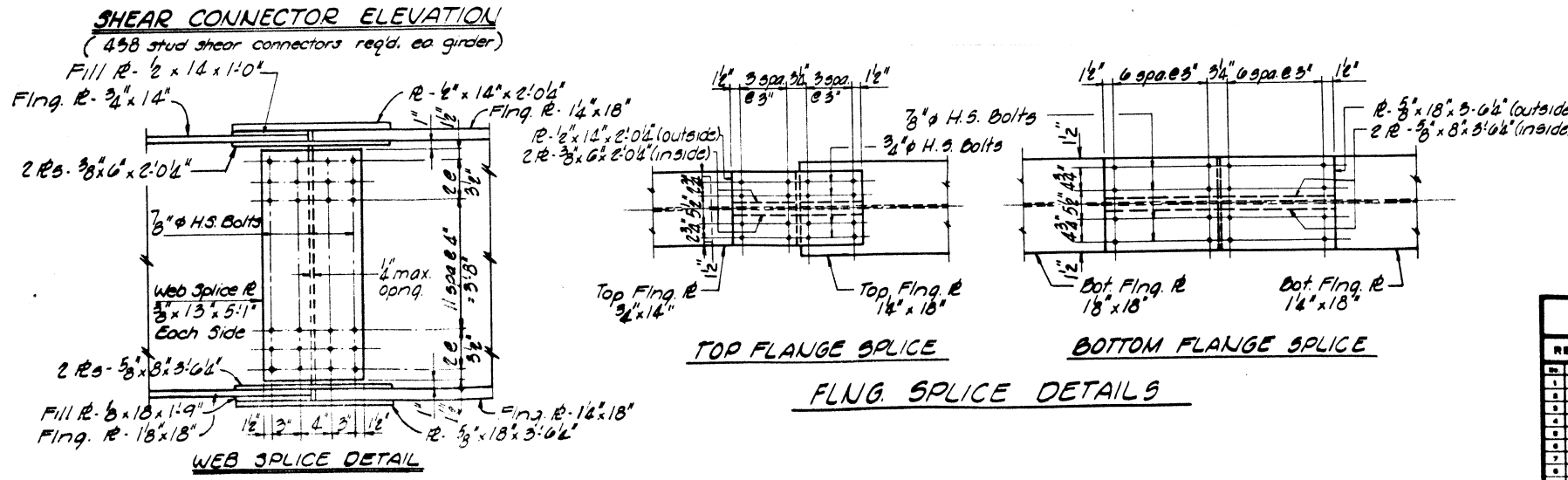
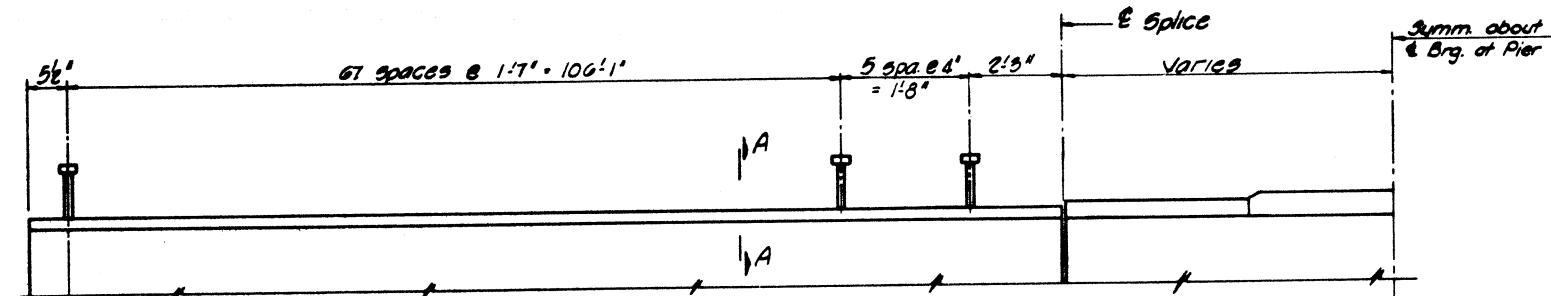
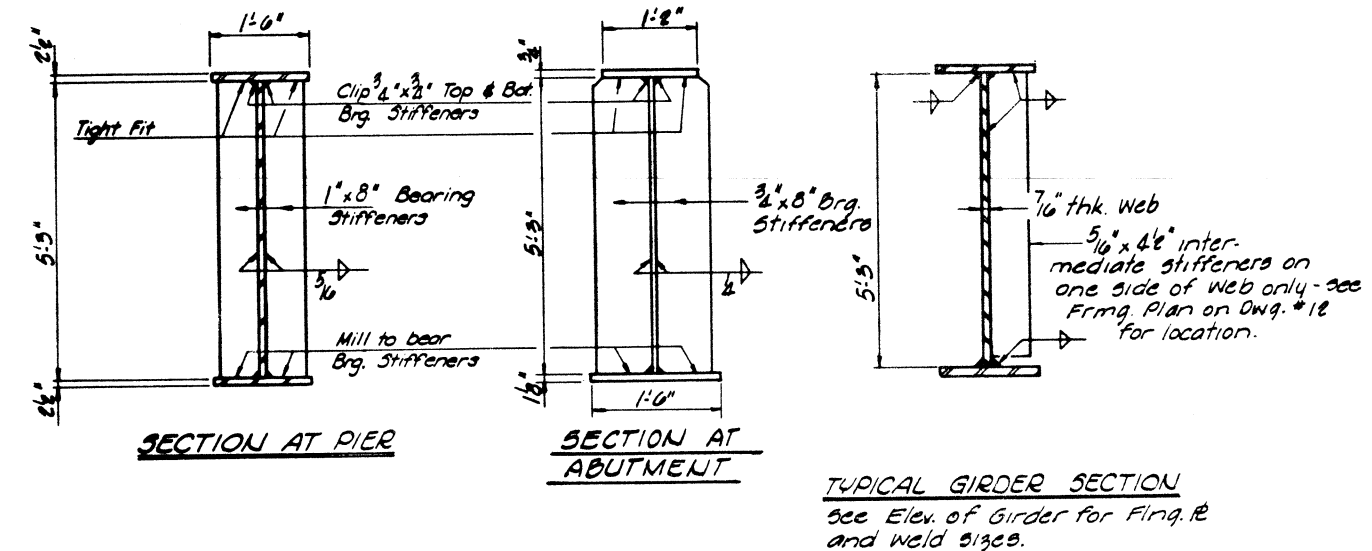
E.B. SPUR & W.B. SPUR OVER FA 412
 FAI. 72 SEC. 58-62 HB-2 PROJ.
 STA. 589+88.50 (E.B. SPUR) MACON CO.

HOMER L. CHASTAIN & ASSOCIATES
 CONSULTING ENGINEERS
 DECATUR, ILLINOIS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-72	58-62	MACON	65	27
RD. ROAD DIST. NO.	CLINCH	PROJECT		

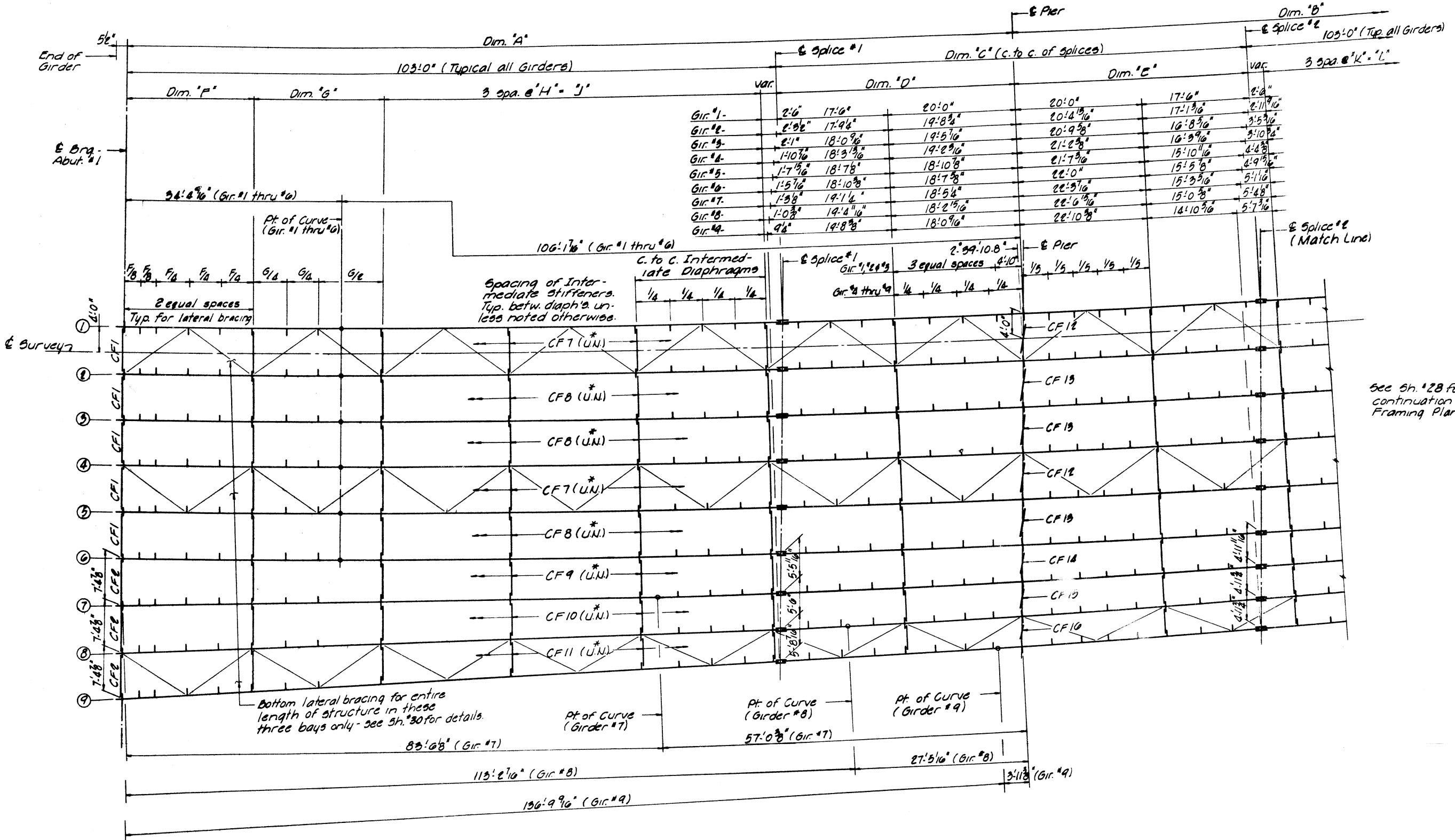


- * - Typical for all intermediate stiffeners between end brg. & splice.
- ** - Typical for all intermediate stiffeners between splices.
- *** - Notch Toughness Requirement



REVISIONS			DRAWN BY DATE
1			RES 10-74
2			JWC 1-75
3			
4			
5			
6			
7			
8			
9			
10			

E.B. SPUR & W.B. SPUR OVER FA 212		PROJECT NO.
FAI 72 DEC. 58-62 H.B. 2 PROJ.		2469.3
STA 589+28.50 (E.B. SPUR) MACON CO.		SHEET NO.
HOMER L. CHASTAIN & ASSOCIATES		27
CONSULTING ENGINEERS		
DECATUR, ILLINOIS		



See Sh. #28 for continuation of Framing Plan.

FRAMING PLAN
 Girders #1 thru #6 are to be spaced on 7'-5" cts. radially.
 Girders #7, #8 & #9 are to be spaced as shown on Plans.
 Girders are to be fabricated according to their respective radii (see Table on Sh. #28).
 All longitudinal dim's shown on Plans are along C of Girders.

* U.N. indicates Unless Noted

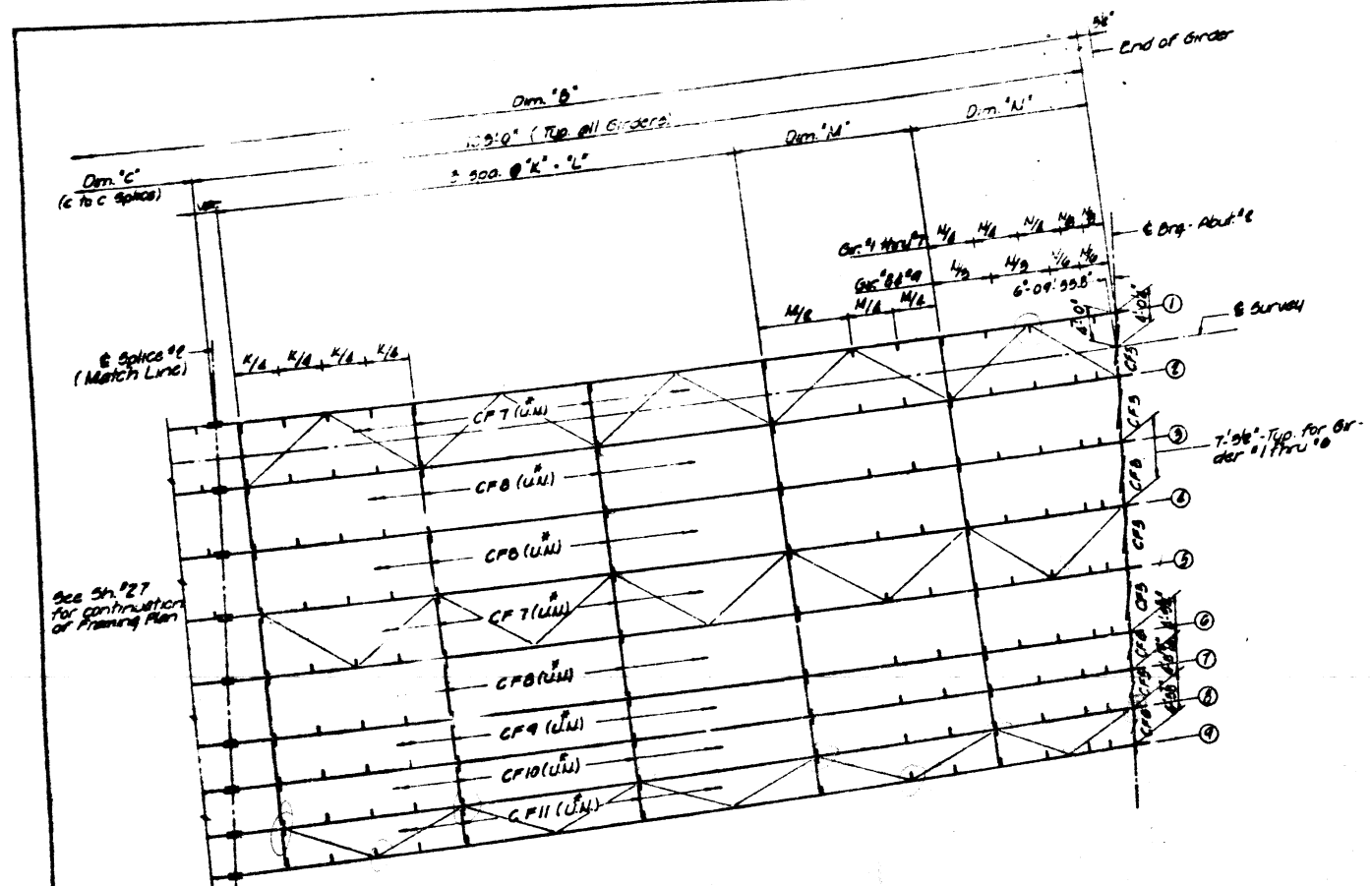
E. BND SPUR

REVISIONS			DRAWN BY DATE
1			REG 12-74
2			J.W.C. 1-75
3			
4			
5			
6			
7			
8			
9			
10			

STRUCTURAL STEEL		PROJECT NUMBER
E.B. SPUR & W.B. SPUR OVER FA 416 FA 1.76 SEC. 58 & 4B & PROJ. Sta 589+28.50 (E.B. SPUR) MACON CO.		2169.3
HOMER L. CHASTAIN & ASSOCIATES CONSULTING ENGINEERS DECATUR, ILLINOIS		41

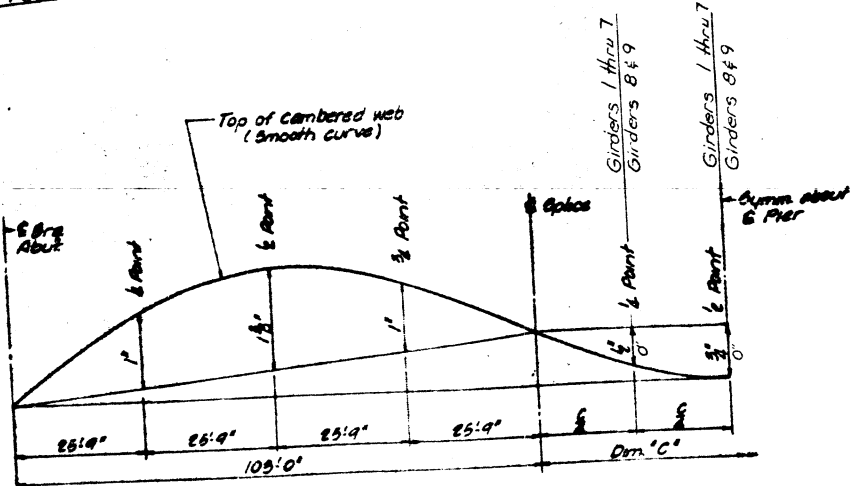
Sheet No. 28 of 35 Sheets

DATE	28-28	DESIGNER	ADSON	NO.	424
PROJECT	NO. 2	CHECKER			



PART FRAMING PLAN

* U.N. indicates unless noted



NO LOAD CAMBER DIAGRAM

TABLE OF DIMENSIONS

Girder Dimension	#1	#2	#3	#4	#5	#6	#7	#8	#9
Radius (G.G.)	287.05'	2245.08'	2902.98'	2904.28'	2916.25'	2922.08'	2922.98'	2940.60'	2948.78'
Overall Length	281.11'	281.11'	281.07'	281.107'	281.108'	281.108'	281.108'	281.108'	281.108'
A	180'-6"	180'-6"	180'-6"	180'-6"	180'-6"	180'-6"	180'-6"	180'-6"	180'-6"
B	180'-6"	180'-6"	180'-6"	180'-6"	180'-6"	180'-6"	180'-6"	180'-6"	180'-6"
C	75'-0"	75'-0"	74'-11 1/2"	74'-11 1/2"	74'-11 1/2"	74'-11 1/2"	74'-11 1/2"	74'-11 1/2"	74'-11 1/2"
D	97'-6"	97'-6"	97'-6"	97'-6"	97'-6"	97'-6"	97'-6"	97'-6"	97'-6"
E	97'-6"	97'-6"	97'-6"	97'-6"	97'-6"	97'-6"	97'-6"	97'-6"	97'-6"
F	20'-9"	20'-9"	20'-9"	20'-9"	20'-9"	20'-9"	20'-9"	20'-9"	20'-9"
G	20'-9"	20'-9"	20'-9"	20'-9"	20'-9"	20'-9"	20'-9"	20'-9"	20'-9"
H	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
J	60'-0"	60'-0"	60'-0"	60'-0"	60'-0"	60'-0"	60'-0"	60'-0"	60'-0"
K	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
L	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
M	20'-9"	20'-9"	20'-9"	20'-9"	20'-9"	20'-9"	20'-9"	20'-9"	20'-9"
N	20'-9"	19'-6 1/2"	18'-9 1/2"	18'-9 1/2"	17'-6 1/2"	16'-9 1/2"	16'-9 1/2"	15'-9 1/2"	15'-6 1/2"

TOP OF WEB ELEVATIONS (For Fabrication Only)

Girder Location	#1	#2	#3	#4	#5	#6	#7	#8	#9
6 Dr. Abut. #1	643.61	643.64	643.68	643.73	643.79	643.88	643.98	644.07	644.17
6 Splice #1	643.03	643.45	643.88	644.27	644.65	645.03	645.31	645.52	645.81
6 Dr. Pier	642.90	643.31	643.71	644.12	644.53	644.93	645.33	645.58	645.81
6 Splice #2	642.88	643.28	643.70	644.10	644.51	644.91	645.31	645.52	645.81
6 Dr. Abut. #2	642.57	643.00	643.41	643.81	644.22	644.63	645.07	645.11	645.88

P. B. D. SPUR
STRUCTURAL STEEL

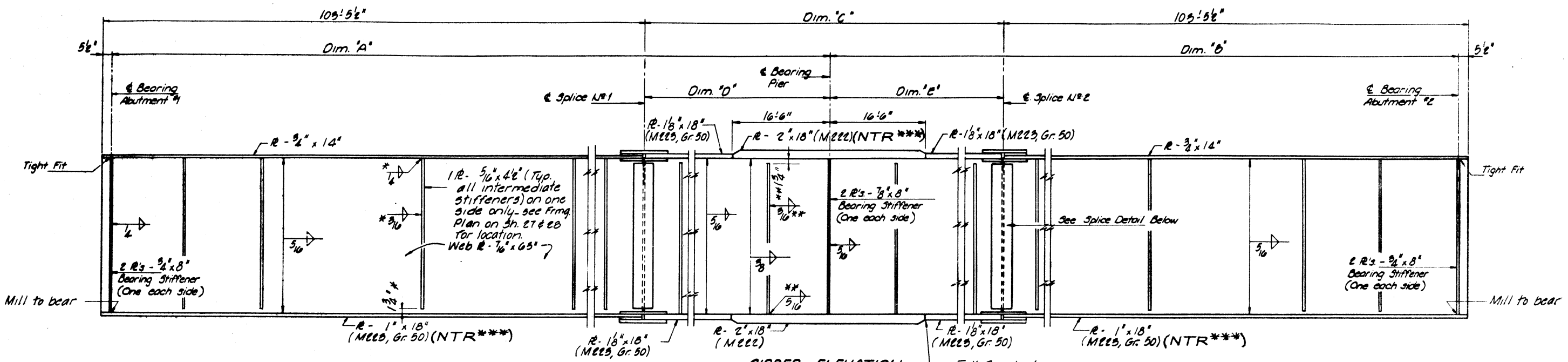
REVISIONS	DATE	BY	CHKD BY

ED. SPUR & ASSOCIATES
P. B. D. SPUR PROJECT
P.O. BOX 1000, CHICAGO, ILL. 60601
POWER L. SPUR & ASSOCIATES
CONSULTING ENGINEERS
CHICAGO, ILL. 60601

AS REVISED

Approved 9-11-75 L.W.

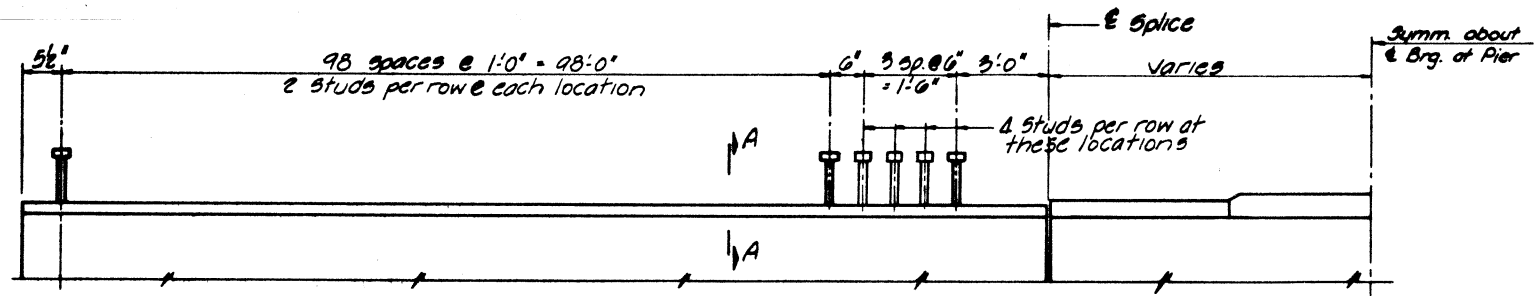
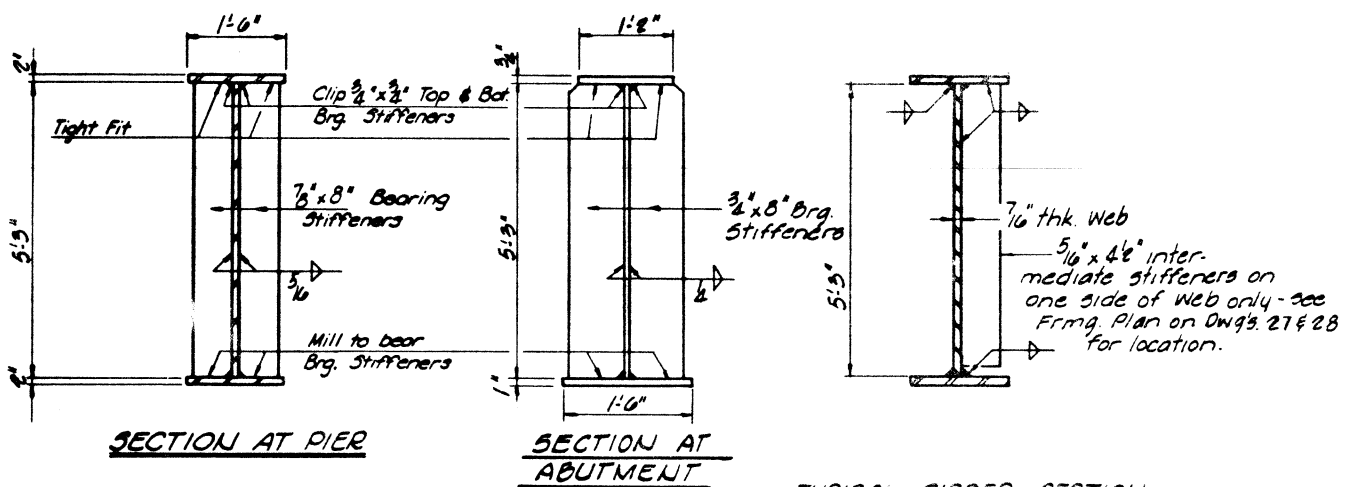
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-72	SB-62	MACON	65	43
FILE NO.	PROJECT			



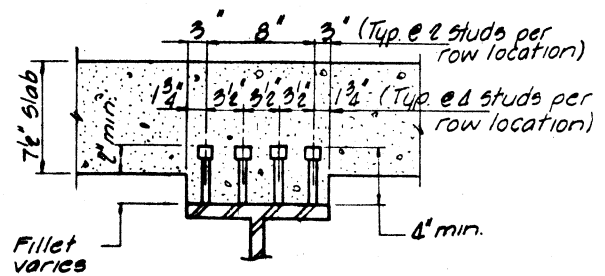
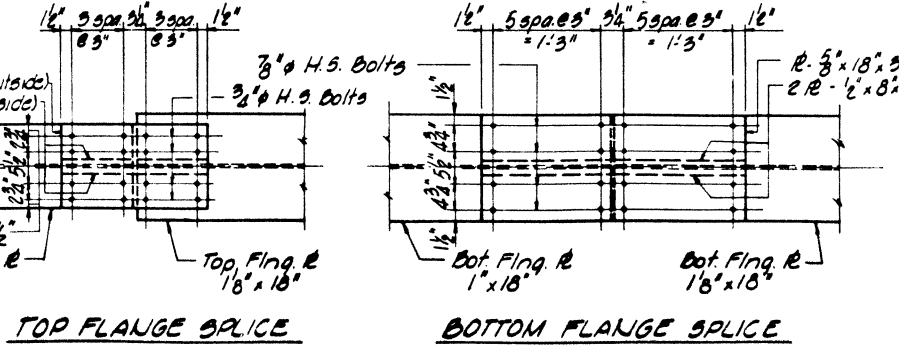
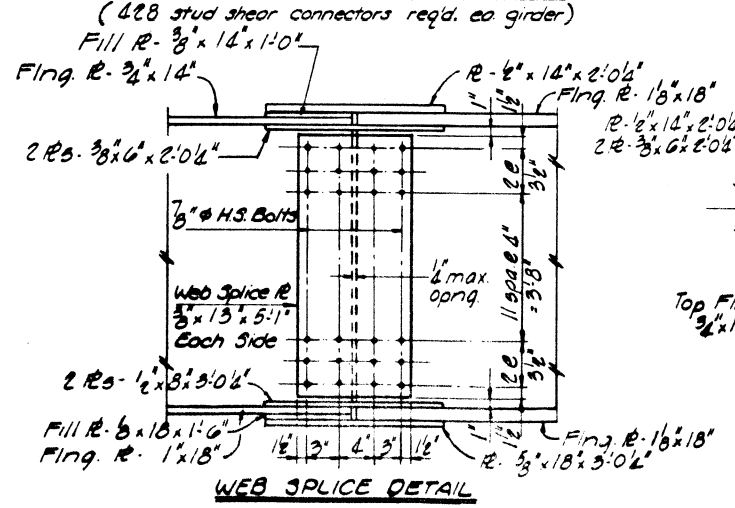
GIRDER ELEVATION

Note: Unless otherwise noted, all structural steel shall be AASHTO M183.

- * - Typical for all intermediate stiffeners between end brg. & splice.
- ** - Typical for all intermediate stiffeners between splices.
- *** - Notch Toughness Requirement



WEB SPICE DETAIL



SECTION A-A

3/8" CR 1020 steel, granular or solid, flux-filled, headed studs. Automatically end welded. 385 studs required.

TYPICAL GIRDER SECTION
See Elev. of Girder for Flng. R and Weld Sizes.

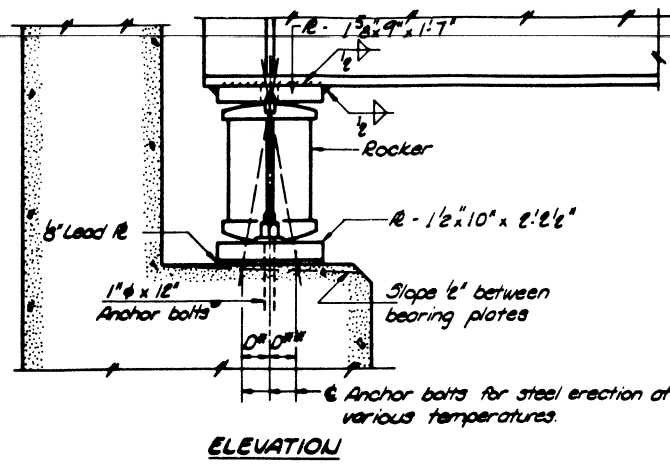
REVISIONS			DRAWN BY DATE
1	DATE	INITIALS	RES 12-74
2			CHECKED BY DATE
3			JWC 1-75
4			BOOK NUMBER
5			PROJECT NO.
6			2469.3
7			SHEET NO.
8			43

E. END SPUR
STRUCTURAL STEEL

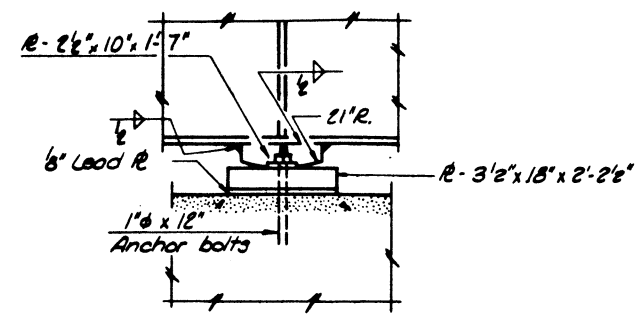
EB SPUR & WB SPUR OVER FA 116
FAI. 72 SEC. 58-6240-2 PROJ.
STA 589+20.50 (E.B. SPUR) MACON CO.

HOMER L. CHASTAIN & ASSOCIATES
CONSULTING ENGINEERS
DECATUR, ILLINOIS

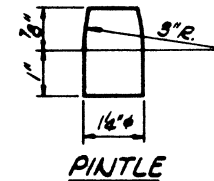
ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
FAI-72	38-62	MACON	65	30
FED ROAD DIST NO	ILLINOIS	PROJECT		



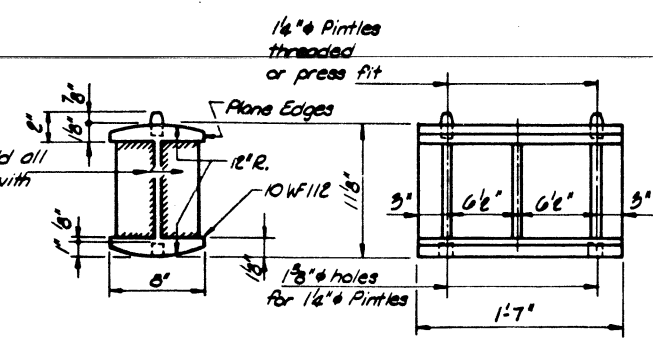
ELEVATION



ELEVATION



PINTLE

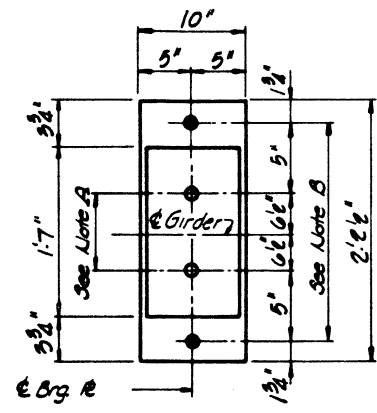


ROCKER

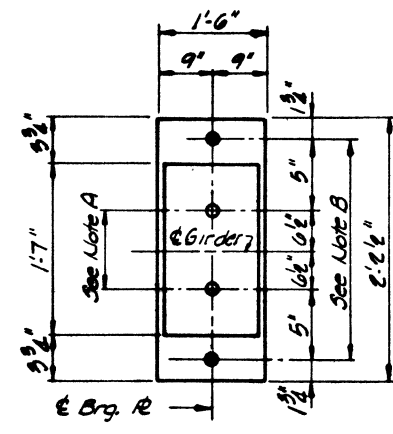
NOTE: BEARING SEAT ADJUSTMENT
Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $\pm 3/8$ ". Adjustment shall be made either by grinding the surface or by shimming the bearing. Two 3/8" adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims.

NOTE A
1/8" holes - 1" deep in top R for pintles. Thread or press fit pintles into bottom R.

NOTE B
1/2" holes for 1" anchor bolts. 2 1/2 x 2 1/2 x 5/16" R washers under nut.



PLAN AT ABUTMENT



PLAN AT PIER

NOTES ON SETTING OF ANCHOR BOLTS AT EXPANSION BEARINGS

- a) D^* (Side of brg. away from fixed brg.)
 $D^* = 3/8$ " per each 100' of expansion for every 15° below the normal temperature of 50°F.
- D^{**} (Side of brg. toward fixed brg.)
 $D^{**} = 3/8$ " per each 100' of expansion for every 15° above the normal temperature of 50°F.
- b) After beams have been erected and dimensions D^* or D^{**} determined, holes shall be drilled and anchor bolts shall be grouted in place. All fixed anchor bolts may be built into the masonry.

MOMENT TABLE - 5 span Composite 2 span
(Composite in Positive Moment areas only)

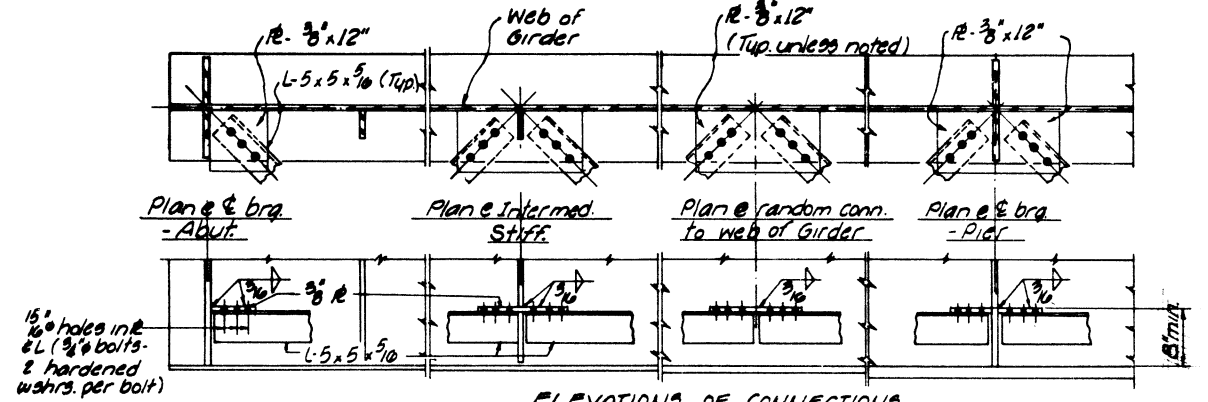
INTERIOR GIRDER MOMENT TABLE		
	0.6 span 1	PIER
I_s (in ⁴)	37,178	85,166
I_c (in ⁴)	89,553	
I_{cn} (in ⁴)	64,339	
S_a (in ³)	1319	2542
S_b (in ³)	1772	
S_{bn} (in ³)	1616	
Q (k/i)	0.95	0.95
M_Q (k)	1127.4	2846.4
$f_3 @ (k/s)$	10.3	13.4
S_Q (k/i)	0.33	0.33
$M_{g@C}$ (k)	555.3	968.9
$f_3 @ (k/s)$	4.1	4.6
M_E (k)	1230.5	1266.7
M_{imp} (k)	231.3	238.2
TOTAL (k)	1461.8	1504.9
$f_3 @ (k/s)$	9.9	7.1
R TOTAL (k)	24.3	25.1
VR (k)	55.8	

REACTION TABLE

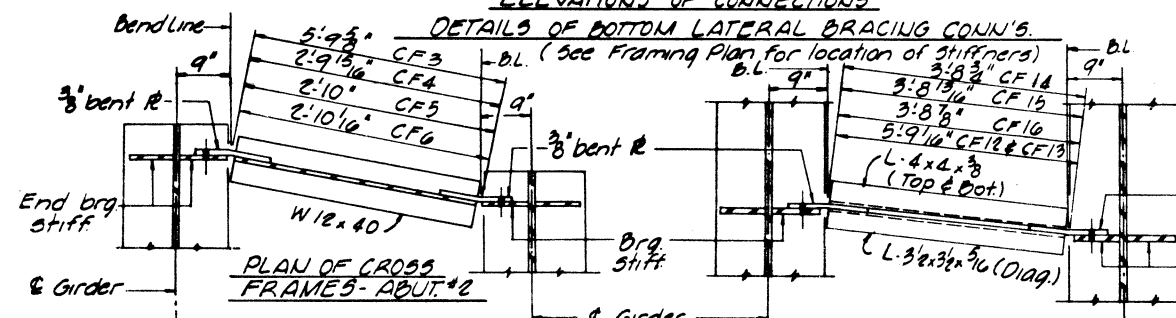
INTERIOR GIRDER REACTION TABLE		
	ABUTMENT	PIER
R_E (k)	46.7	180.6
R_{E+3E} (k)	69.0	161.7
Imp. (k)	9.1	17.7
R TOTAL (k)	124.8	360.0

NOTE:
The additional moments and reactions due to the effect of curvature of beams are not included in these Tables.

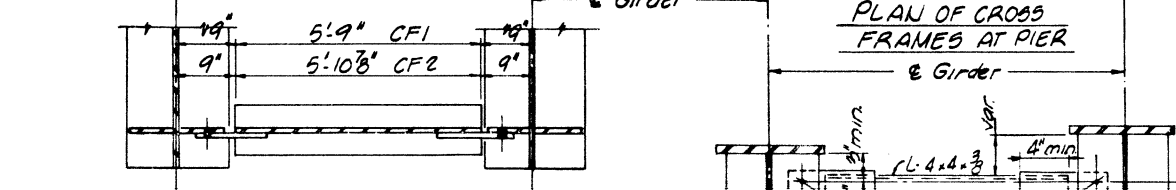
I_s and S_a are the moment of inertia and section modulus of the steel section.
 I_c and S_c are the moment of inertia and section modulus of the composite section used in computing f_3 .
VR is the maximum \pm impact shear range.
 I_{cn} & S_{bn} are the moment of inertia and section modulus of the composite section used in computing f_3 for $n=30$



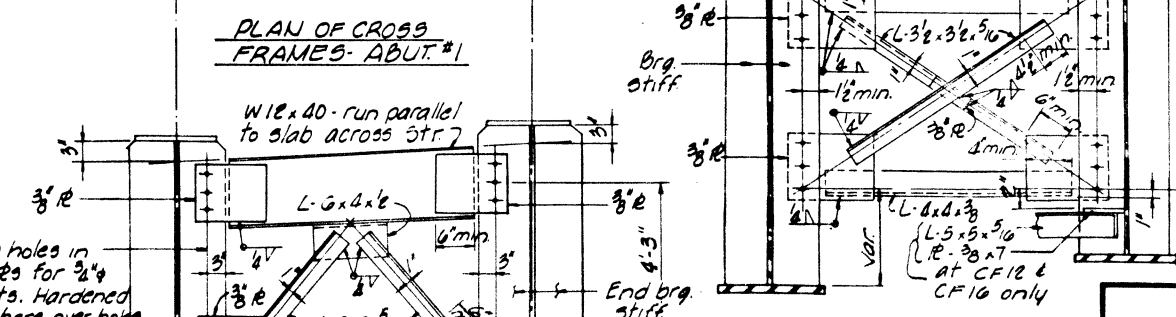
ELEVATIONS OF CONNECTIONS



PLAN OF CROSS FRAMES - ABUT. #2



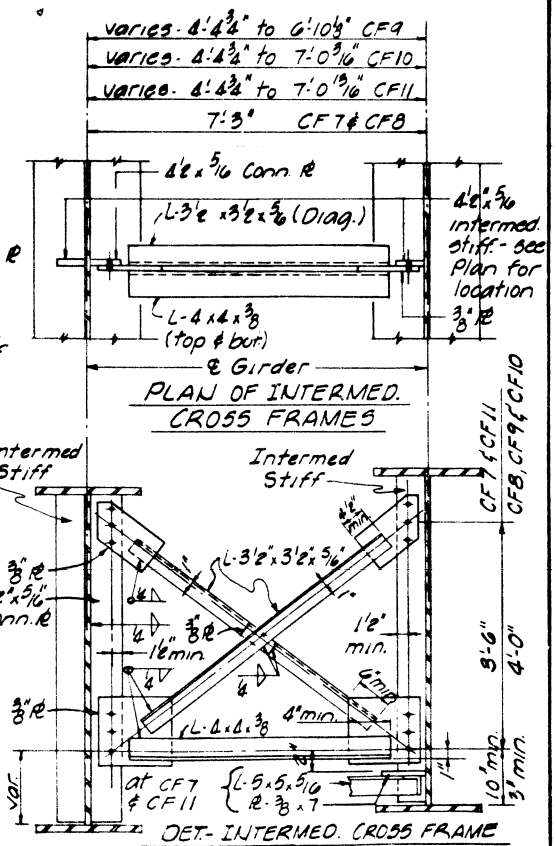
PLAN OF CROSS FRAMES - ABUT. #1



ELEVATION DETAIL OF END CROSS FRAMES

DETAIL - CROSS FRAME AT PIER

E. END SPUR



BEARING DETAILS

REVISIONS		DATE	INITIALS
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

DRAWN BY	DATE	22011874
CHECKED BY	DATE	JWC 7-75
BOOK NUMBER		
PROJECT NO		2869-3
SHEET NO		30

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