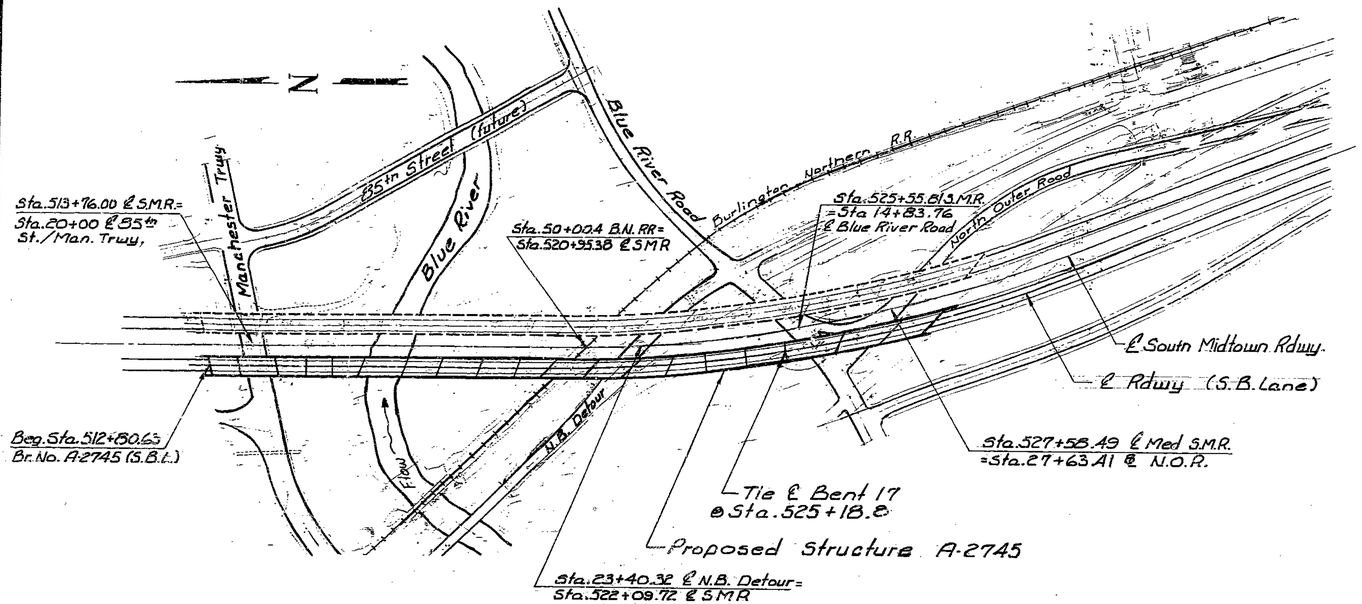
MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ NO	SHEET NO
MO		56
SEC / SUR 22	TWP 48	RGE 33



LOCATION SKETCH

BRIDGE NO. A-2745
OVER
MANCHESTER TRAFFICWAY, BLUE RIVER,
BURLINGTON NORTHERN RR,
N.B. DETOUR, BLUE RIVER ROAD
& NORTH OUTER ROAD

SUBSTRUCTURE CONTRACT

INDEX OF DRAWINGS

Note: For Hydrologic Data Table see sheet No. 9.
For Curve Data see sheet No. 13.

B.M. TBM-1 Elevation 780.85 S.W. cor. signal base at S.W. cor. 87th St. and Hickman Mills Dr.

STATE ROAD: "SOUTH MIDTOWN ROADWAY"
IN KANSAS CITY
PROJECT NO. DE-0081(805) STA. 512+80.63
JOB NO. 4-U-71-2D RTE. 71 S.B.L.

JACKSON COUNTY
DATE 9/14/88

STD. 706.35
STD. 811.60
A-2745

DESIGNED Mar. 1988
DETAILED July 1988
CHECKED August 1988

Note: This drawing is not to scale. Follow dimensions.

SEE FINAL PLANS

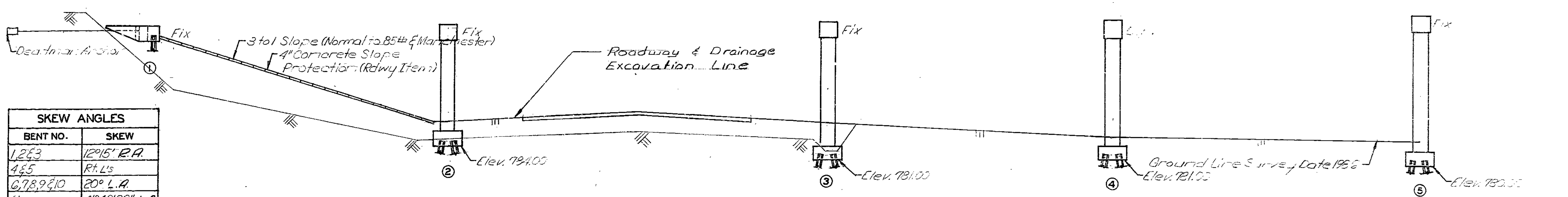
Sheet No. 1 of 55

197 311

STATE	PROJ NO	SHEET NO
MO		57

Note: ... roadway section and ... the bottom of the ... 25' in back of the ... before piles are driven for any bents falling within the embankment section.

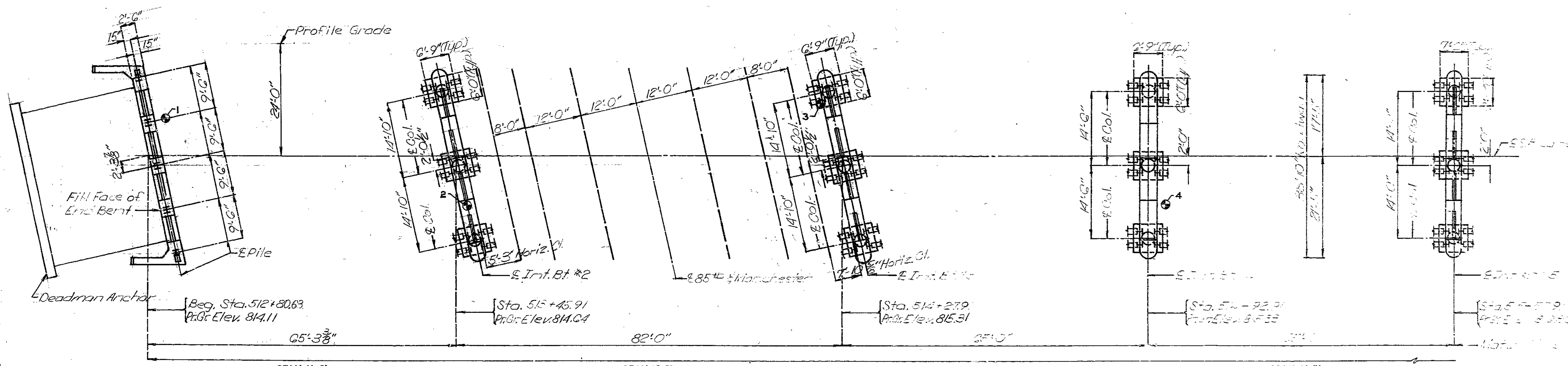
(64'-82'-65')(65'-65'-82'-82'-82')(82'-67'-90'-90')(79'-79'-85'-85') PRESTRESSED CONCRETE I-GIRDER SPANS
(123'-123'-93') CONT. COMP. PL GIRDER SPANS



PART GENERAL ELEVATION

SKEW ANGLES	
BENT NO.	SKEW
1,2 & 3	12°15' R.A.
4 & 5	Rt. L's
6,7,8,9 & 10	20° L.A.
11	41°46'20" L.A.
12	42°47'38" L.A. (To Radial Line)
13	44°34'00" L.A. (To Radial Line)
14	26°18'44" L.A. (To Radial Line)
15,16 & 17	Radial (To Radial Line)
18	38°09'11" L.A. (To Radial Line)
19	57°25'06" L.A. (To Radial Line)
20	59°17'55" L.A. (To Radial Line)

Note: Skew angles are measured at ℄ S.B.L.



PART PLAN

Note: For Boring Data see sheet No. 10 & 11.
"⊕" Indicates location of borings.

DETAILED JULY 1988
CHECKED Aug. 1988

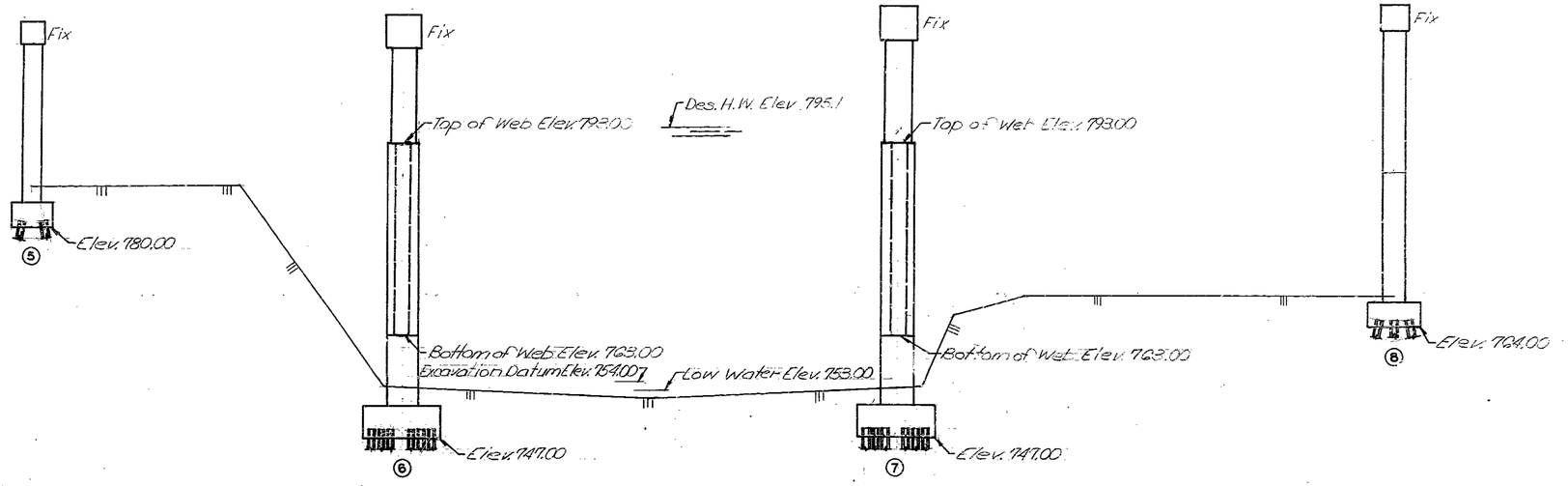
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 2 of 53

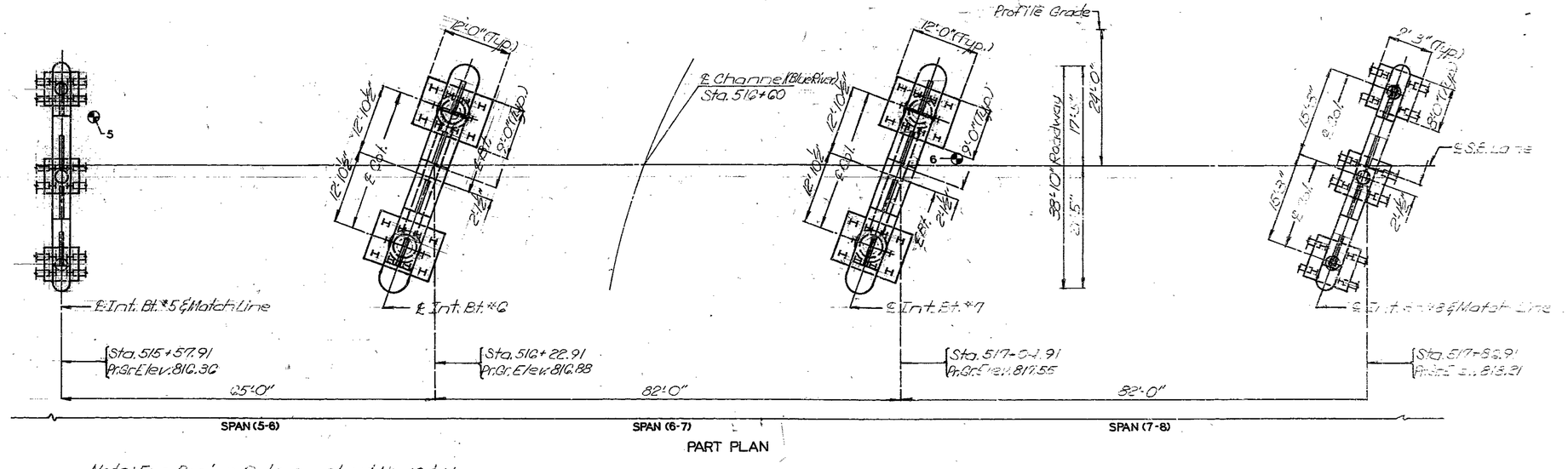
JACKSON COUNTY

A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		58



PART GENERAL ELEVATION



PART PLAN

Note: For Boring Data see Sheet No. 10 & 11.
"⊕" Indicates location of borings.

729 313

DETAILED JULY 1988
CHECKED Aug. 1988

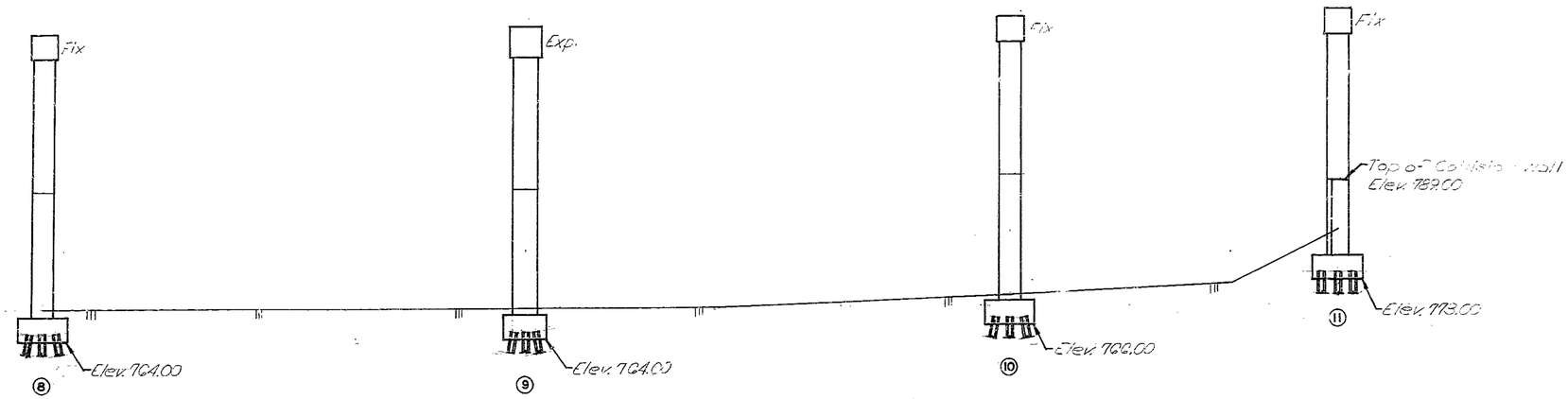
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 8 of 55

JACKSON COUNTY

A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		59



PART GENERAL ELEVATION

PART PLAN

Note: For Boring Data see sheet No. 10 & 11.
⊕ Indicates location of borings.

288 31K

DETAILED JULY 1988
CHECKED Aug. 1988

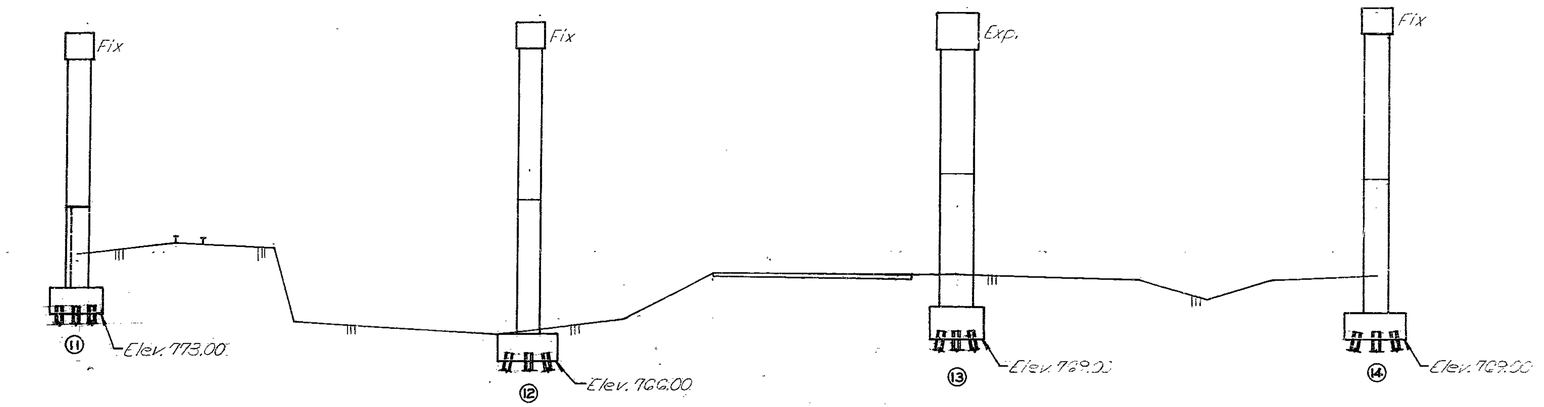
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 4 of 35

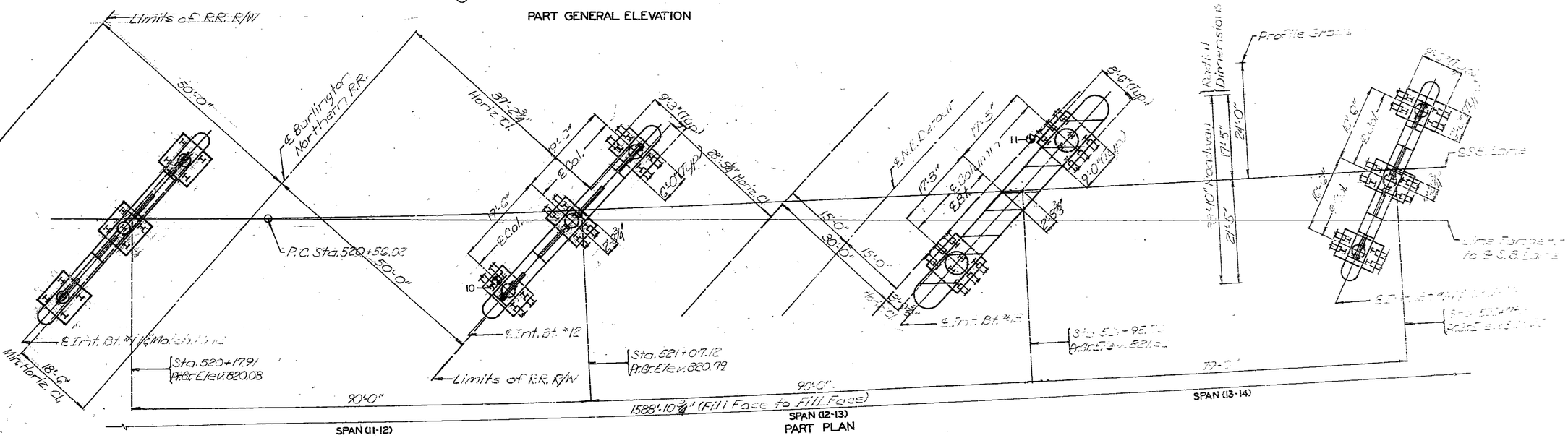
JACKSON COUNTY

A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		60



PART GENERAL ELEVATION



PART PLAN

Note: For Boring Data see sheet No. 10 & 11
⊕ Indicates location of borings.

DETAILED JULY 1988
CHECKED Aug. 1988

Note: This drawing is not to scale. Follow dimensions.

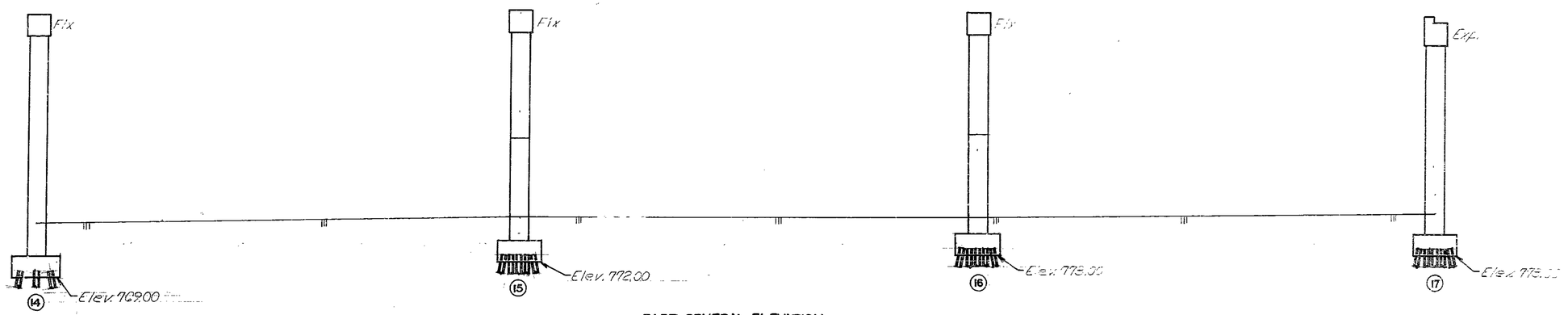
SEE FINAL PLANS
Sheet No. 5 of 55.

JACKSON COUNTY

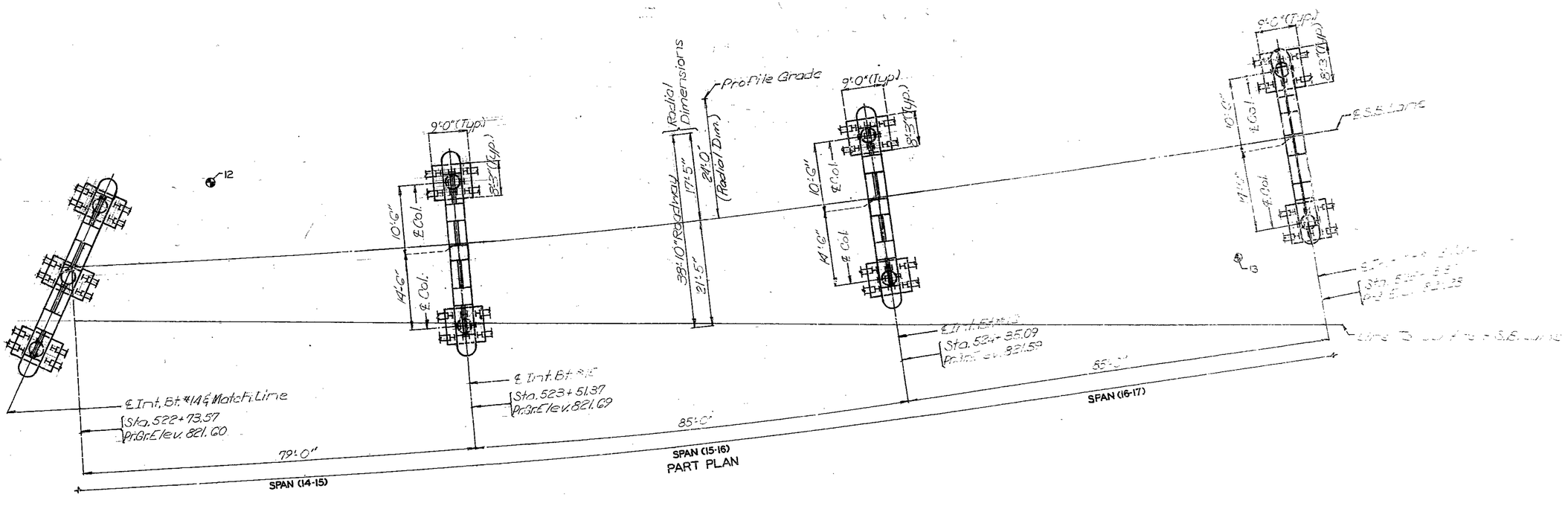
A-2745

Box 315

STATE	PROJ. NO.	SHEET NO.
MO.		61



PART GENERAL ELEVATION



PART PLAN

Note: For Boring Data see Sheet No. 10 & 11.
"⊕" Indicates location of borings.

DETAILED JULY 1988
CHECKED Aug. 1988

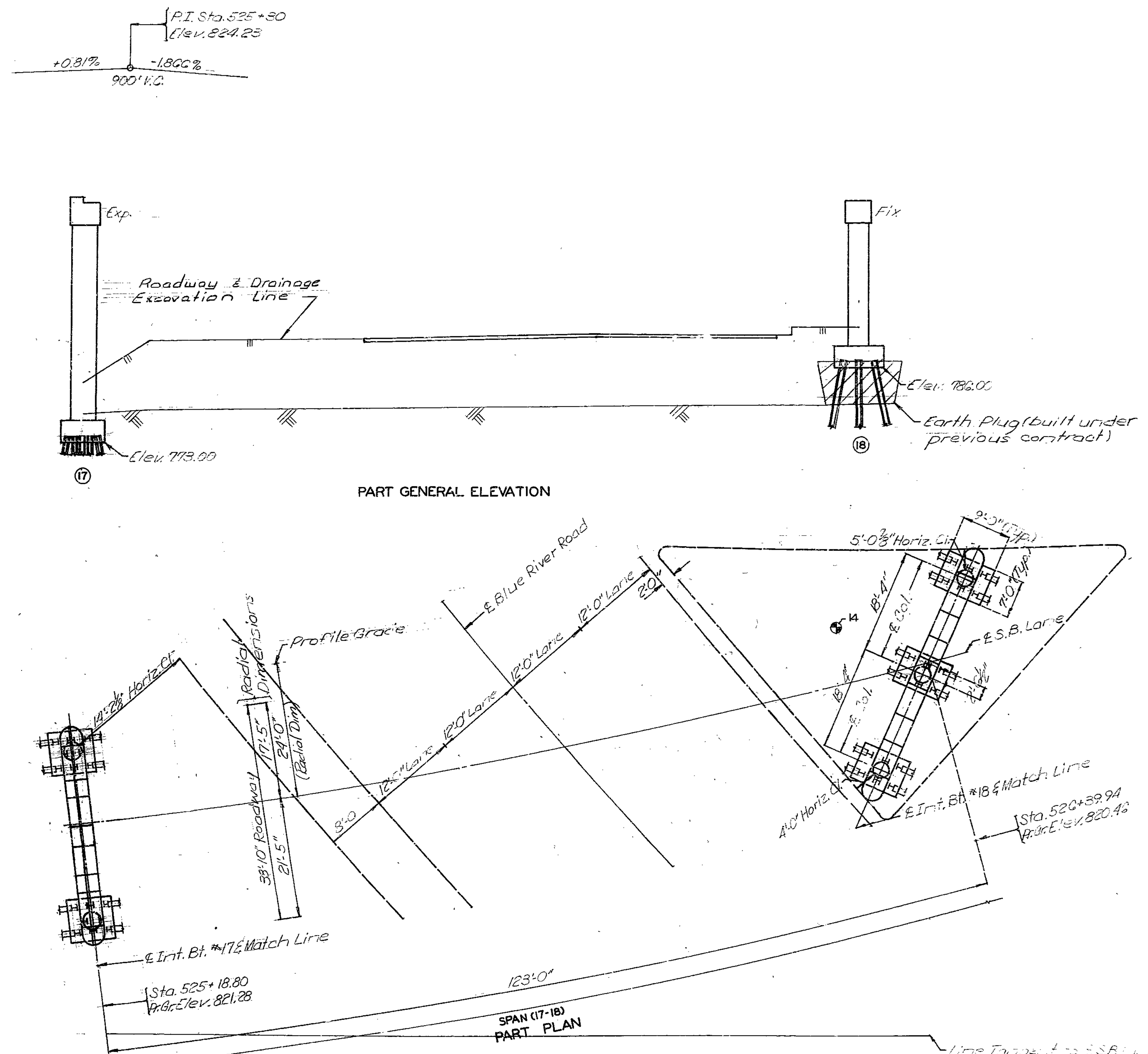
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 6 of 56.

JACKSON COUNTY

A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		62



Note: For Boring Data see sheet No. 10 & 11.
"⊕" Indicates location of borings.

203 317

DETAILED JULY 1988
CHECKED Aug. 1988

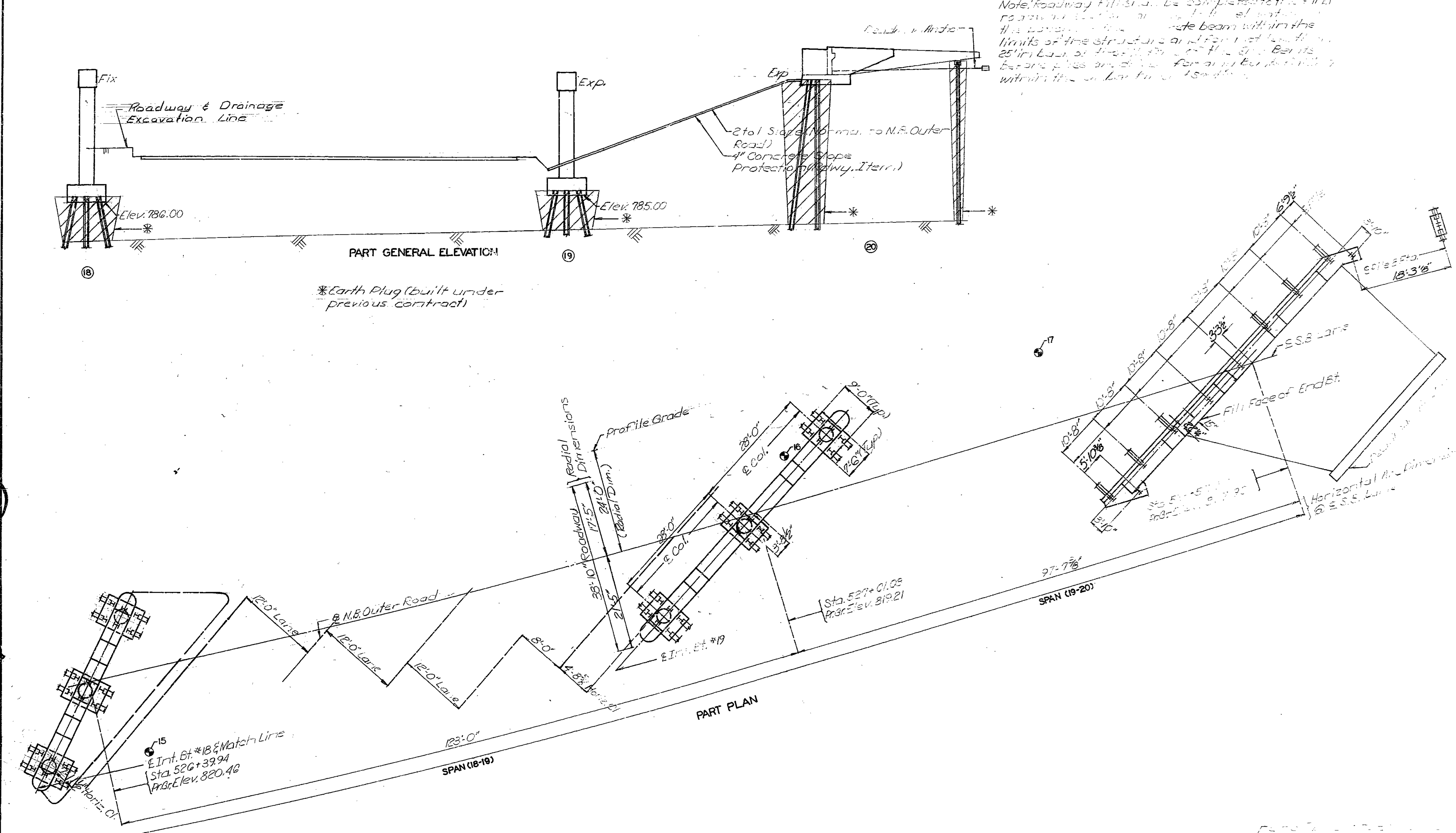
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 7 of 55.

JACKSON COUNTY

A-2745

STATE	PROJ NO.	SHEET NO.
MO.		63



Note: Roadway Fill shall be completed to the final roadway ... elevation ... beam within the limits of the structure and for at least ... 25' in back of ... before piles ... within the ...

DETAILED JULY 1988 Note: For Boring Data see sheet 10 & 11.

CHECKED Aug. 1988 ⊕ Indicates location of Borings.

Note: This drawing is not to scale. Follow dimensions.

JACKSON COUNTY

A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		64

ESTIMATED QUANTITIES		
ITEM		
Class 1 Excavation	Cu. Yd.	815
Class 2 Excavation	Cu. Yd.	186
Structural Steel Piles (10")	Lin. Ft.	1,954
Structural Steel Piles (12")	Lin. Ft.	8,651
Pre-Bore for Piling	Lin. Ft.	384
Class B Concrete	Cu. Yd.	1,730.0
Reinforcing Steel	Lb.	257,160
Reinforcing Steel (epoxy coated)	Lb.	1,910
Deadman Anchor Assembly	Each	2

HYDROLOGIC DATA
Drainage Area = 199.7 Sq.Mi.
Design Discharge = 57,500 c.f.s. (100 Years)
Design H.W. Elevation = 795.1
Backwater is negligible
BASIC FLOOD DATA

GENERAL NOTES:

Design Specifications :
A.A.S.H.T.O. - 1983 and Interims 1984, 1985, 1986 & 1987
Load Factor Design

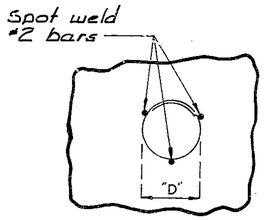
Design Loading :
H520-44 35# Future Wearing Surface
Modified 24,000 # Tandem Axle
Earth 120#/cu.ft., Equivalent Fluid Pressure 45 #/cu.ft.

Design Unit Stresses :
Class B concrete (Substructure) fc = 3,000 psi
Reinforcing Steel (Grade 60) fy = 60,000 psi
Steel Pile fb = 9,000 psi

Note : All reinforcing bars in tops of substructure beams or caps shall be spaced to clear anchor bolts for bearings by at least ½".

Reinforcing Steel :
Minimum clearance to reinforcing steel shall be 1½", unless otherwise shown.

Construction Clearance:
Manch. Trwy. a minimum vert. clearance of 14'-6" from crown of existing lanes and a minimum lateral clearance of 52'-0" centered on existing lanes shall be maintained during construction.
Burlington Northern R.R. minimum lateral clearance of 12'-0" from ℄ Tracks, shall be in accordance w/ the B.N. contract.
N. B. Rte. 71 Detour a min. vert. clearance of 14'-6" from crown of existing lanes and a min. lateral clearance of 34'-0" centered on lanes.
Blue River Rd. a min. vert. clearance of 14'-6" from crown of existing lanes and a min. lateral clearance 52'-0" centered on lanes.
North Outer Road a min. vert. clearance of 14'-6" from crown of existing lanes and a min. lateral clearance of 2'-0" from Pav't. edge (each side).

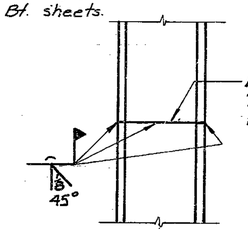


PLAN

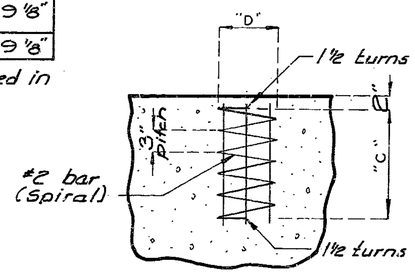
LOCATION	ANCHOR BOLT SIZE	C	D
⚠ ** BT. NO. 4, 9 & 13	2" ϕ *	15"	9⅛"
BT. NO. 17 SPAN (16-17)	1½" ϕ *		
END BENT NO. 20	⚠ 1½" ϕ *		
BT. NO. 17 SPAN (17-18) BENT NO 19	2" ϕ *	18"	9⅛"
BENT NO. 18	2½" ϕ *	25"	9⅛"

** Bts. No. 4, 9, 13 & Bt. No. 17 Span (16-17) Use 2" ϕ Anchor Bolts. However use the spiral reinforcement (W-Bars) as detailed on Int. Bt. sheets.

* Anchor Bolts are included in future construction.



DETAIL OF STEEL PILE SPLICE



SECTION

DETAILS OF ANCHOR BOLT SPIRALS

PILE DATA																						
BENT NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
PILE TYPE AND SIZE	HP12x53	HP12x53	HP12x53	HP10x42	HP12x53	HP12x53	HP12x53	HP12x53	HP12x53	HP12x53	HP12x53	HP12x53	HP12x53	HP12x53	HP12x53	HP12x53	HP10x42	HP12x53	HP12x53	HP10 x 42	
NUMBER	5	12	12	12	12	20	20	15	12	15	15	18	16	15	16	16	16	18	18	10	2
APPROXIMATE LENGTH FT.	71	49	46	46	44	11	11	30	27	29	36	31	33	31	34	34	34	50	50	71	74
DESIGN BEARING TONS	67	61	61	53	57	69	69	61	63	59	67	64	69	70	59	59	55	68	60	53	5
HAMMER ENERGY REQUIRED FT.-LBS.	14900	14300	14300	12400	13400	15400	15400	14300	14800	13800	14900	15000	16200	16500	13800	13800	12900	16000	14100	13100	9300

Note : Minimum energy requirement of hammer is based on plan length and design bearing value of piles.
All piles shall be driven to practical refusal.
Prebore for piles at Bents 1 and 20 to elevation 785.00.

795 319

DETAILED JUNE 1988
CHECKED Aug. 1988

Note: This drawing is not to scale. Follow dimensions.

⚠ Revised 3/8/89

Sheet No. 9 of 66

JACKSON COUNTY

A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		65

Elev. 783.8

Brown silty clay at 3.0' water table, soft grades to gray silty clay.

Elev. 749.1

Sand, some gravel from 45.0' to 47.2'

Elev. 736.6

Shale, Bottomed at 48.0'

Elev. 735.8

①

Standard Penetration Test

Depth	Blows/6"	P.P. TSF
51.6	100	9.0

Elev. 788.3

Brown silty clay, soft.

Elev. 761.3

Gray silty clay, soft.

Elev. 740.8

sand and gravel.

Elev. 737.1

Shale, gray, cut with rock bit.

Elev. 736.2

Shale gray silty. Bottomed at 62.1'.

Elev. 726.2

②
(CORE)

Elev. 788.4

Brown silty clay, P.A.W.T., at 32.0' saturated, from 32.0' grades into gray silty clay, soft.

Elev. 748.1

Sand from 45.0' scattered gravel beds.

Elev. 735.8

Shale. Bottomed at 53.0'

Elev. 735.4

③

Standard Penetration Test

Depth	Blows/3"	P.P. TSF
49.5'	100	9.0+

Elev 785.4

Brown silty clay, soft.

Elev. 757.4

Gray silty clay, soft.

Elev. 741.1

Gravel.

Elev. 736.8

Shale, gray. Bottomed at 49.5'

Elev. 735.9

④

Elev. 787.0

Brown silty clay, P.A.W.T. at 30.0' water table, grades into gray silty clay, soft.

Elev. 742.0

Sand, gravel lens from 47.0'

Elev. 738.0

Shale, Bottomed at 49.6' shale.

Elev. 737.4

⑤

Standard Penetration Test

Depth	Blows/4"	P.P. TSF
29.6	100	9.0+

Elev. 764.6

Brown silty clay, soft.

Elev. 748.3

Gray silty clay, soft.

Elev. 744.4

Sand and gravel, cherty.

Elev. 736.6

Shale, gray, cut with rock bit.

Elev. 734.8

Shale, gray. Bottomed at 38.8.

Elev. 735.1

⑥
(CORE)

Elev. 767.3

Brown silty clay, soft, at 13.0' saturated. P.A.W.T.

Elev. 745.3

Sand with little gravel.

Elev. 737.3

Shale, Bottomed at 31.0'

Elev. 736.3

⑦

Standard Penetration Test

Depth	Blows/6"	P.P. TSF
29.4	100	9.0+

Elev. 767.7

Brown silty clay, soft.

Elev 746.7

Gravel

Elev. 738.8

Shale

Bottomed at 29.9'

Elev. 737.8

⑧

Elev. 767.5

Dark brown silty clay P.A.W.T., at 18.0' saturated, soft.

Elev. 747.5

sand with some gravel.

Elev. 738.5

Shale, hard, bottomed at 30.0'

Elev. 737.5

⑨

Note: For location of borings see sheet No. 2 thru 8.

BORING DATA

DETAILED MAR. 1988
CHECKED August 1988

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 10 of 65 Sheets.

JACKSON COUNTY

A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		66

Standard Penetration Test

Depth	Blows/15"	P.P. TSF
32.5'	100	9.0

Elev. 767.9 — Brown silty clay, soft.
Elev. 751.9 — Gray silty clay, very soft to soft.
Elev. 743.9 — Gravel, sand and weathered shale.
Elev. 736.9 — Gray shale, sandy medium hard.
Elev. 725.9

(10) (CORE)

Elev. 775.0 — Brown silty clay. P.A.W.T.
Elev. 741.0 — Sand
Elev. 738.1 — Shale. Bottomed at 38.3'
Elev. 736.7

(11)

Standard Penetration Test

Depth	Blows/4"	P.P. TSF
37.5'	100	9.0

Elev. 776.9 — Brown silty clay, soft.
Elev. 748.4 — Gray silty clay, soft.
Elev. 743.6 — Gravel
Elev. 740.6 — Shale, gray. Bottom at 37.9'
Elev. 739.0

(12)

Standard Penetration Test

Depth	Blows/4"	P.P. TSF
40.5'	100	9.0+

Elev. 780.3 — Brown silty clay, soft
Elev. 751.8 — Gray silty clay, soft.
Elev. 743.3 — Gravel and weathered shale.
Elev. 740.3 — Gray shale, sandy, medium hard.
Elev. 729.5

(13) (CORE)

Elev. 781.1 — Brown silty clay, P.A.W.T. at 33.3' saturated.
Elev. 743.1 — Sand, some gravel at 39.3'.
Elev. 736.8 — Shale
Elev. 735.1

(14)

Standard Penetration Test

Depth	Blows/6"	P.P. TSF
5.0'	4/3/4	1.5
10.0'	3/3/6	1.0
15.0'	2/2/3	0.8
20.0'	2/2/3	0.75
25.0'	1/2/2	0.75
30.0'	1/3/4	1.1
35.0'	2/2/6	0.6
45.6'	100	8.0

Elev. 783.9 — Brown silty clay, very soft to soft.
Elev. 751.9 — Gray silty clay, very soft to soft.
Elev. 746.1 — Gravel, sand, weathered shale.
Elev. 738.7 — Gray shale, sand, medium hard.
Elev. 737.7

(15)

Elev. 784.65 — Tan brown, soft, silty clay, P.A.W.T. with ease.
Elev. 775.95 — Tan brown, stiff to very stiff, silty clay, could not P.A.W.T.
Elev. 774.15 — Tan brown, soft, silty clay, P.A.W.T. with ease.
Elev. 760.75 — Gray, stiff, clayey silt, could not P.A.W.T.
Elev. 756.45 — Gray, medium, clayey silt. P.A.W.T. with moderate difficulty.
Elev. 743.95 — Gravel and sand
Elev. 737.75 — Shale, firm
Elev. 732.25 — Bottom in shale

(16)

Standard Penetration Test

Depth	Blows/6"	P.P. TSF
5.0'	6-8-8	2.75
10.0'	4-5-5	0.75
15.0'	3-3-5	0.75-1.00
20.0	2-3-4	0.50-0.75
25.0	2-3-3	0.40-1.00
30.0	3-2-3	0.40-0.60
35.0	4-4-6	0.40
40.0	7-15-14	
45.0	10-13-13	
46.5	80-100 in 3"	6.0
51.5	100 in 5"	6.8-7.4

Elev. 785.2 — Tan brown, silty clay, medium to very stiff, contains iron and limonite stains.
Elev. 762.2 — Dark gray, clayey silt, soft to stiff. mixed with medium to coarse grained sand 36'-39'.
Elev. 746.2 — Chert gravel and sand mixed with tan, silty clay.
Elev. 743.2 — Medium to coarse grained sand with scattered layers of chert gravel.
Elev. 738.7 — Gray, firm, silty shale.
Elev. 728.7 — Bottom in shale.

(17)

R07 321

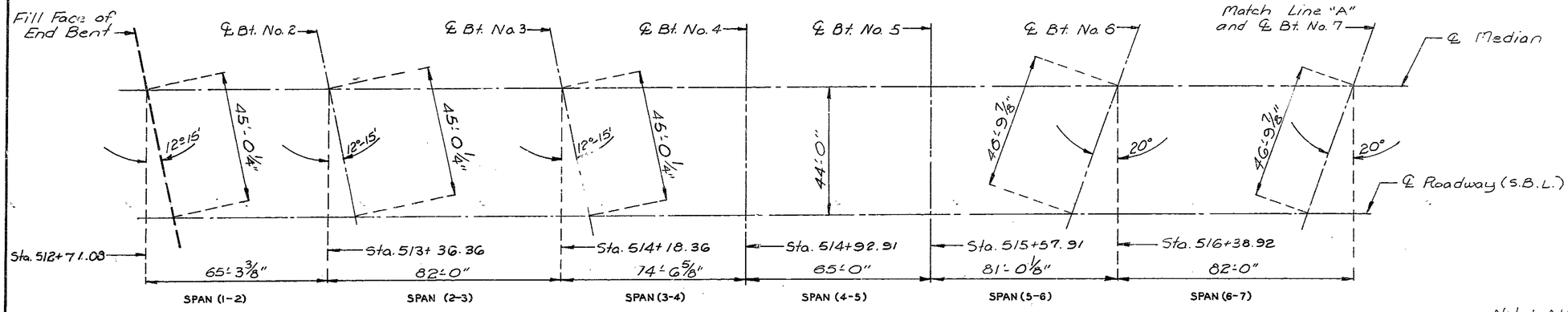
BORING DATA

Note: For location of borings see sheet No. 2 thru 5.

DETAILED MAR. 1988
CHECKED August 1988

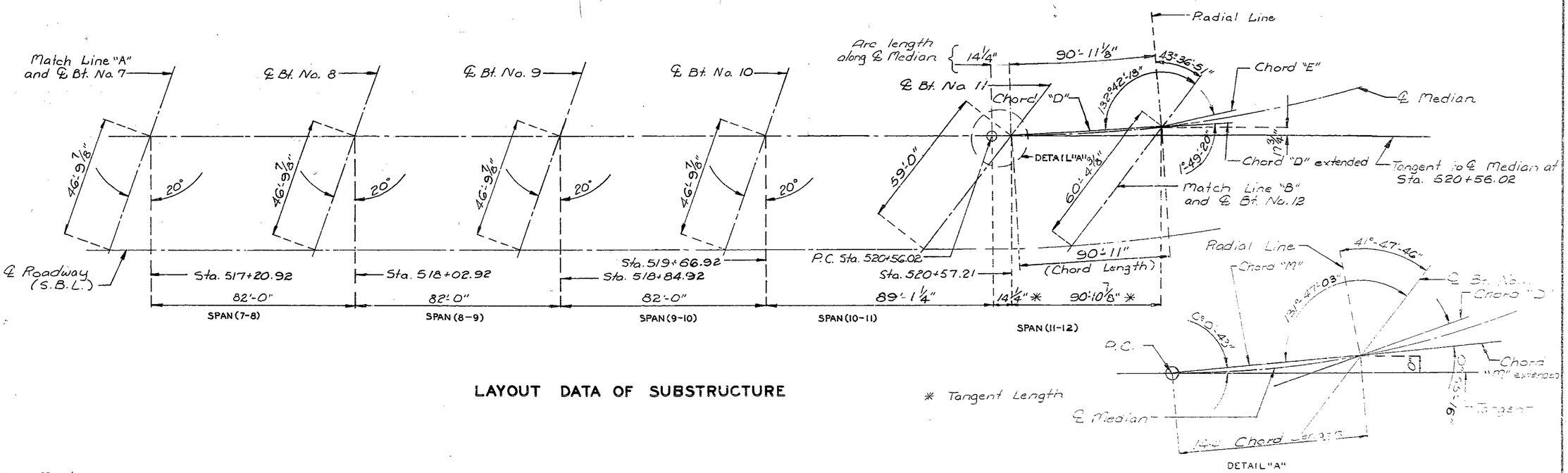
Note: This drawing is not to scale. Follow dimensions.

STATE	PROJ. NO.	SHEET NO.
MO		67



Note: All dimensions are horizontal.

Note: Bents cannot be accurately located from the reference point on the tangent by conventional survey methods based on 100' chords.



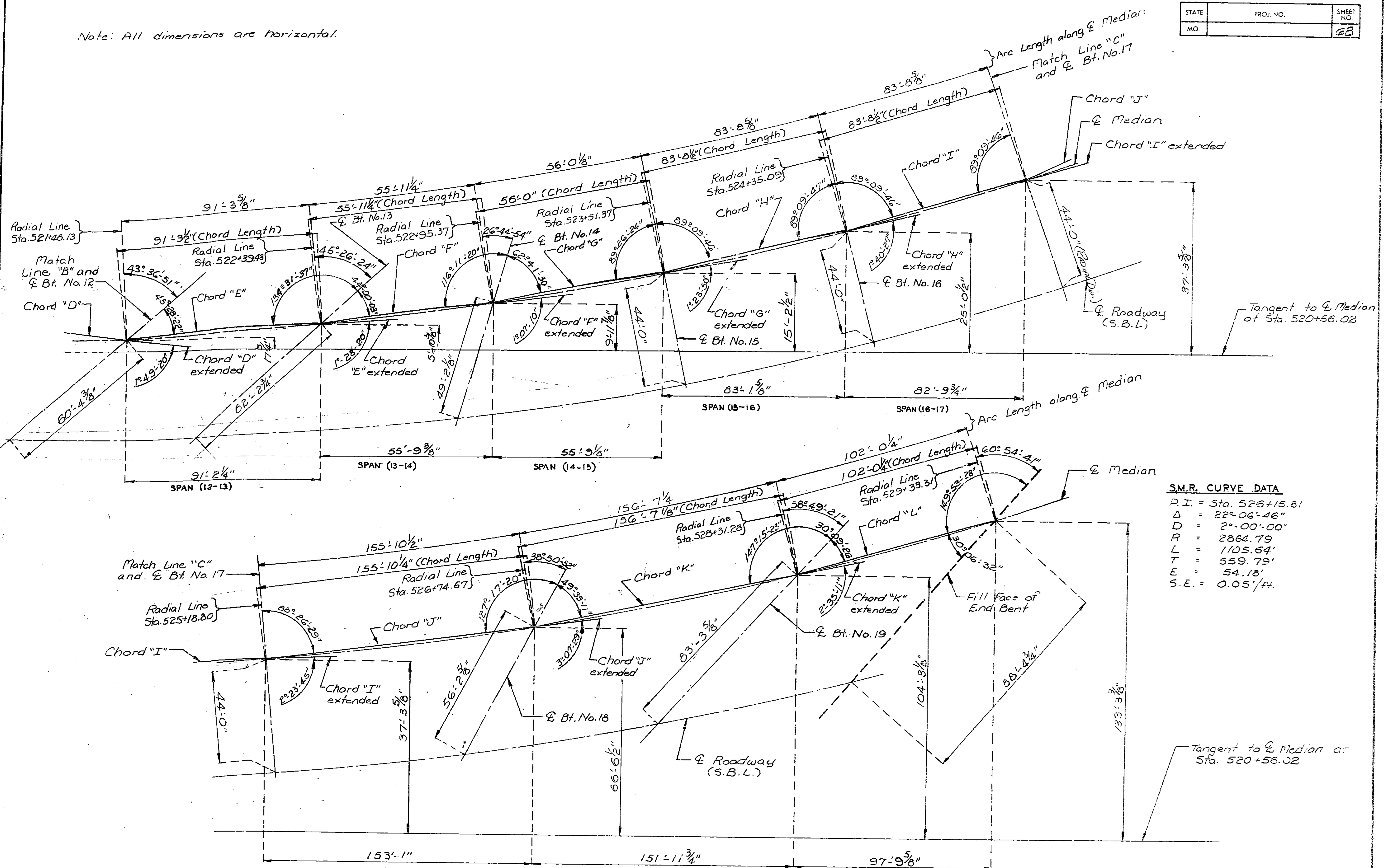
LAYOUT DATA OF SUBSTRUCTURE

DETAILED March 1988
CHECKED Aug. 1988

Note: This drawing is not to scale. Follow dimensions.

STATE	PROJ. NO.	SHEET NO.
MO.		68

Note: All dimensions are horizontal.



S.M.R. CURVE DATA

P.I. = Sta. 526+15.81
Δ = 22°-06'-46"
D = 2°-00'-00"
R = 2864.79
L = 1105.64'
T = 559.79'
E = 54.18'
S.E. = 0.05'/ft.

LAYOUT DATA OF SUBSTRUCTURE

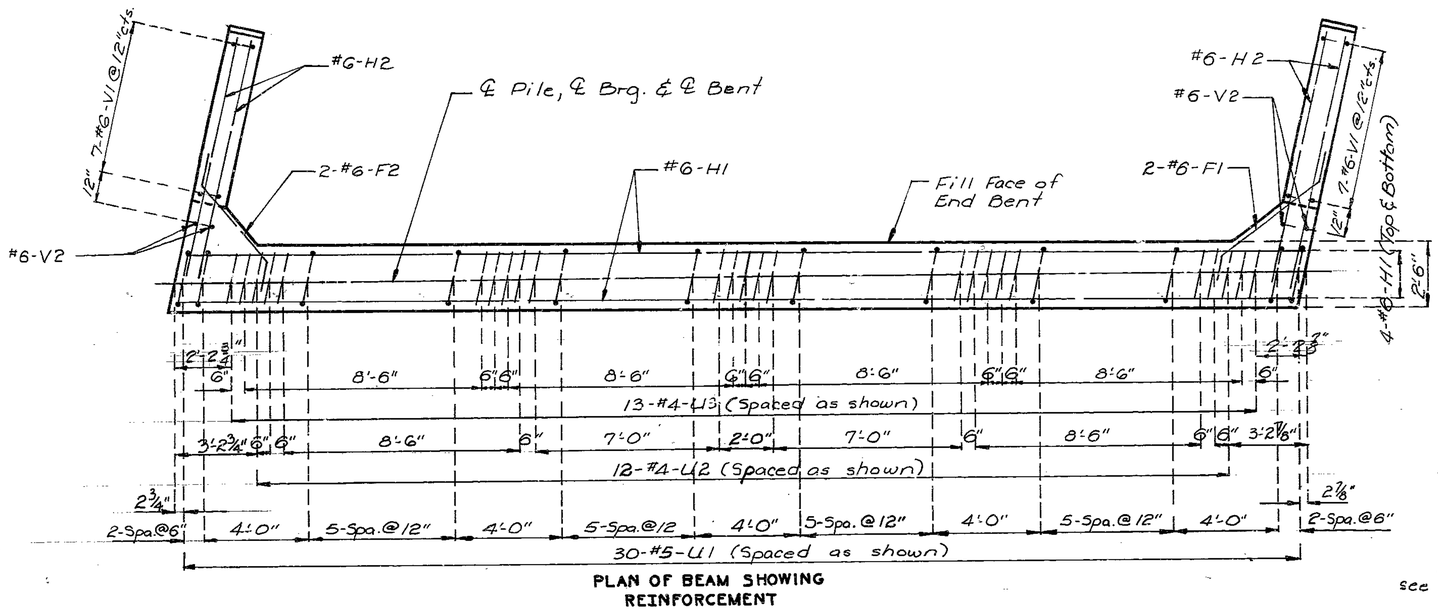
DETAILED March 1988
CHECKED Aug. 1988

Note: This drawing is not to scale. Follow dimensions.

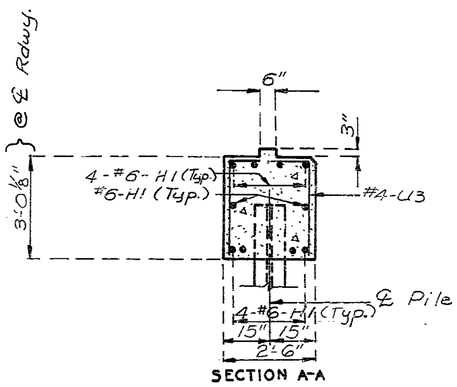
JACKSON COUNTY A-2745

209 323

STATE	PROJ. NO.	SHEET NO.
MO.		69



PLAN OF BEAM SHOWING REINFORCEMENT

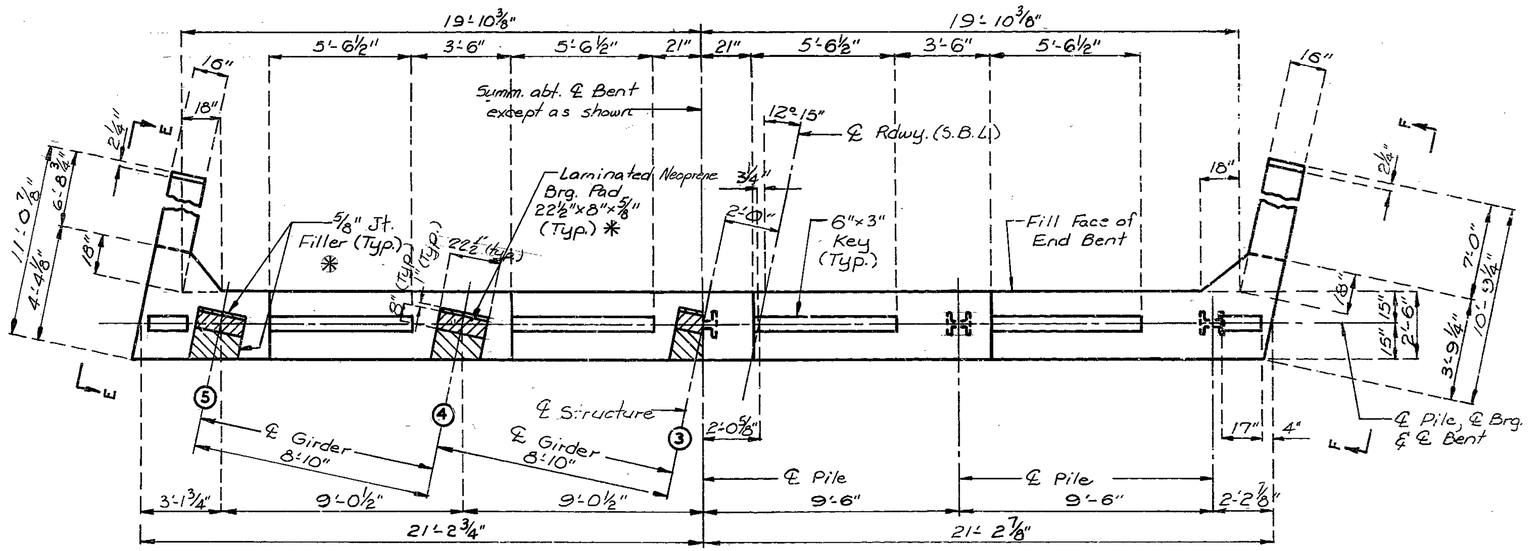


SECTION A-A

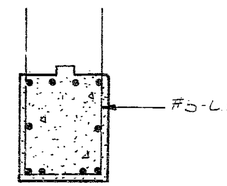
Note: For location of Sections A-A, B-B and C-C, see sheet No. 15.

Note: For Elev. E-E & F-F see sheet No. 15.

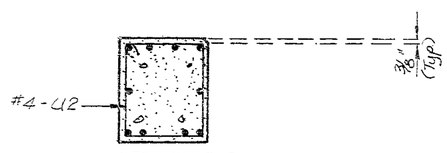
*Jt. Filler & Bearings are in Future Construction.



PLAN OF BEAM (BELOW LOWER CONST. JT.)



SECTION B-B



SECTION C-C

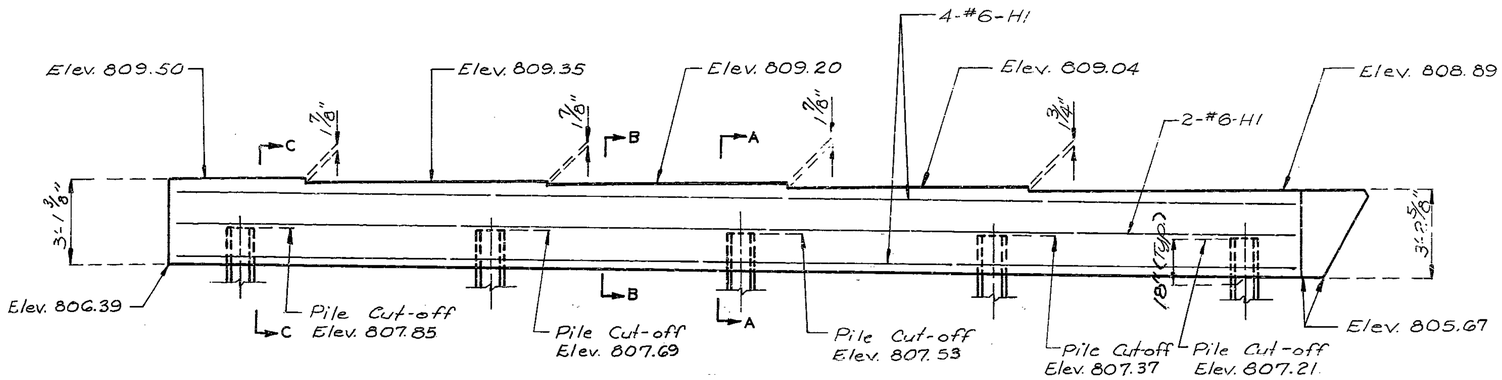
DETAILS OF END BENT NO.1

DETAILED March 1988
CHECKED Aug. 1988

Note: This drawing is not to scale. Follow dimensions.

240 334

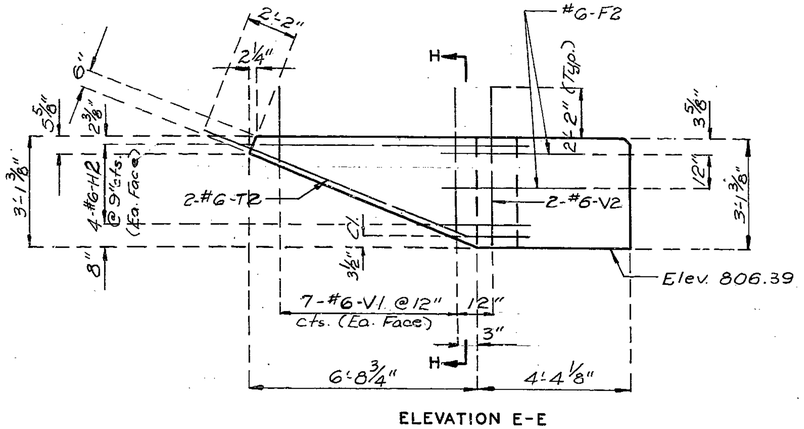
STATE	PROJ NO	SHEET NO
MO		7D



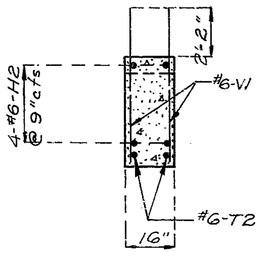
SECTION NEAR END BENT NO.1

Note: For details of pile splice see sheet No. 9.

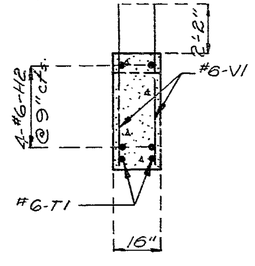
Note: For Sections A-A, B-B & C-C, see sheet No. 14.



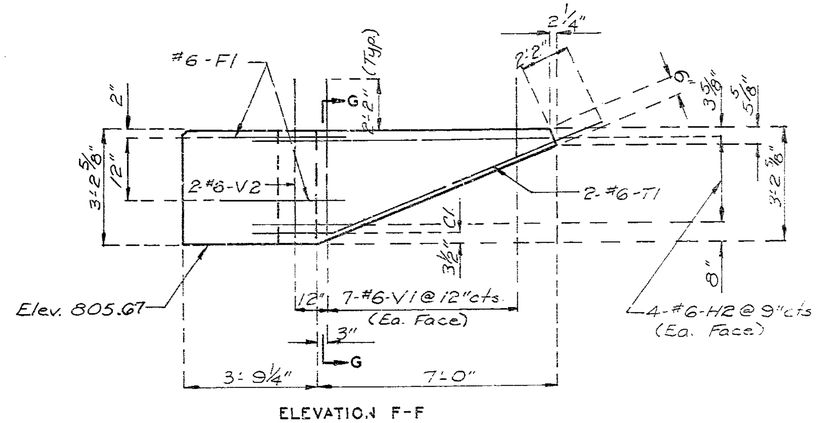
ELEVATION E-E



SECTION H-H



SECTION G-G



ELEVATION F-F

DETAILS OF END BENT NO. 1

Note: For location of Elev. E-E & F-F see sheet No. 4.

DETAILED Aug. 1988
CHECKED Aug. 1988

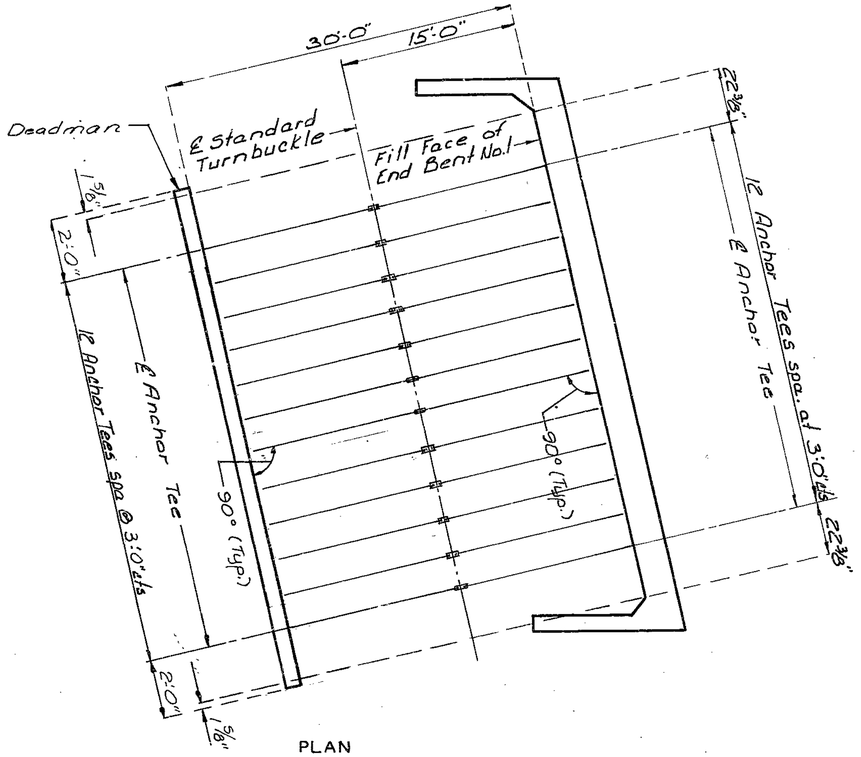
Note: This drawing is not to scale. Follow dimensions.

JACKSON COUNTY

A-2745

BY 325

STATE	PROJ. NO.	SHEET NO.
MO.		71



PLAN

NOTES:

CONSTRUCTION SEQUENCE:

CONSTRUCT END BENT WITH ANCHOR TEES IN PLACE.

MACHINE COMPACT FILL UP TO ELEVATION OF 7/8"ø ROD AND TURNBUCKLE.

CONSTRUCT DEADMAN WITH ANCHOR TEES IN PLACE.

INSTALL 7/8"ø ROD, CLEVIS AND TURNBUCKLE ASSEMBLY.

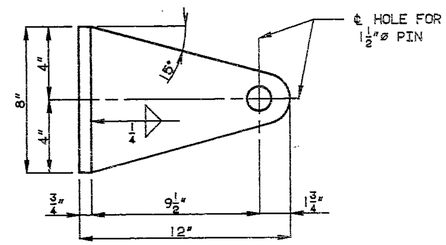
TIGHTEN TURNBUCKLE UNTIL SNUG.

HAND COMPACT FILL FOR 12" (MIN.) OVER 7/8"ø ROD AND TURNBUCKLE.

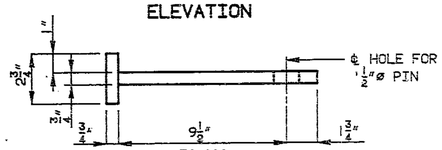
MACHINE COMPACT REMAINING FILL.

BILL OF REINFORCING STEEL FOR 1 DEADMAN

NUMBER	SIZE & MARK	LENGTH
6	#4-H3	36'-9"
148	#4-V3	21"

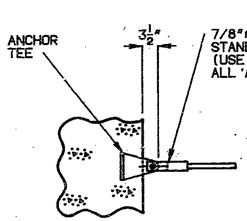


ELEVATION

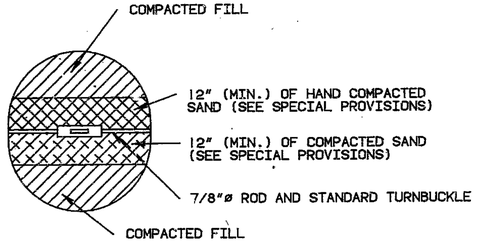


PLAN

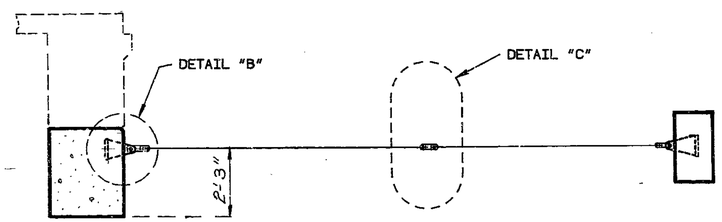
DETAIL OF ANCHOR TEE



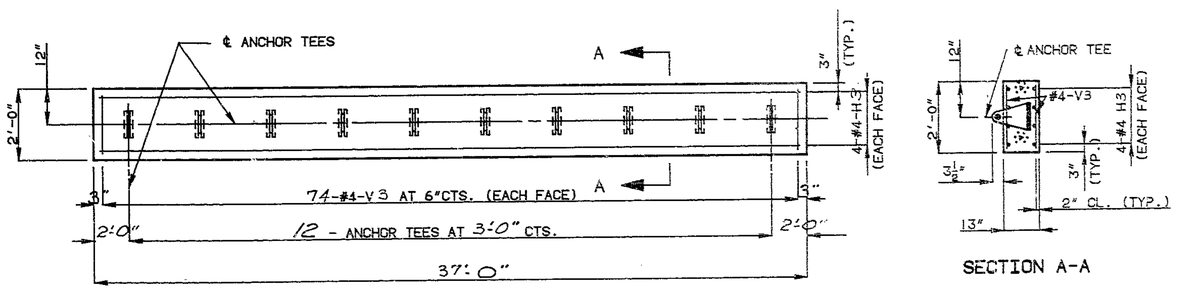
DETAIL "B"



DETAIL "C"



LOCATION OF ANCHOR TEE



ELEVATION OF DEADMAN

SECTION A-A

STD. D.M.A.	JULY 1984
REVISED	JULY 1988

A27326

DETAILS OF DEAD MAN ANCHORAGE SYSTEM AT BENT NO. 1

DETAILED AUG. 1988
CHECKED Aug. 1988

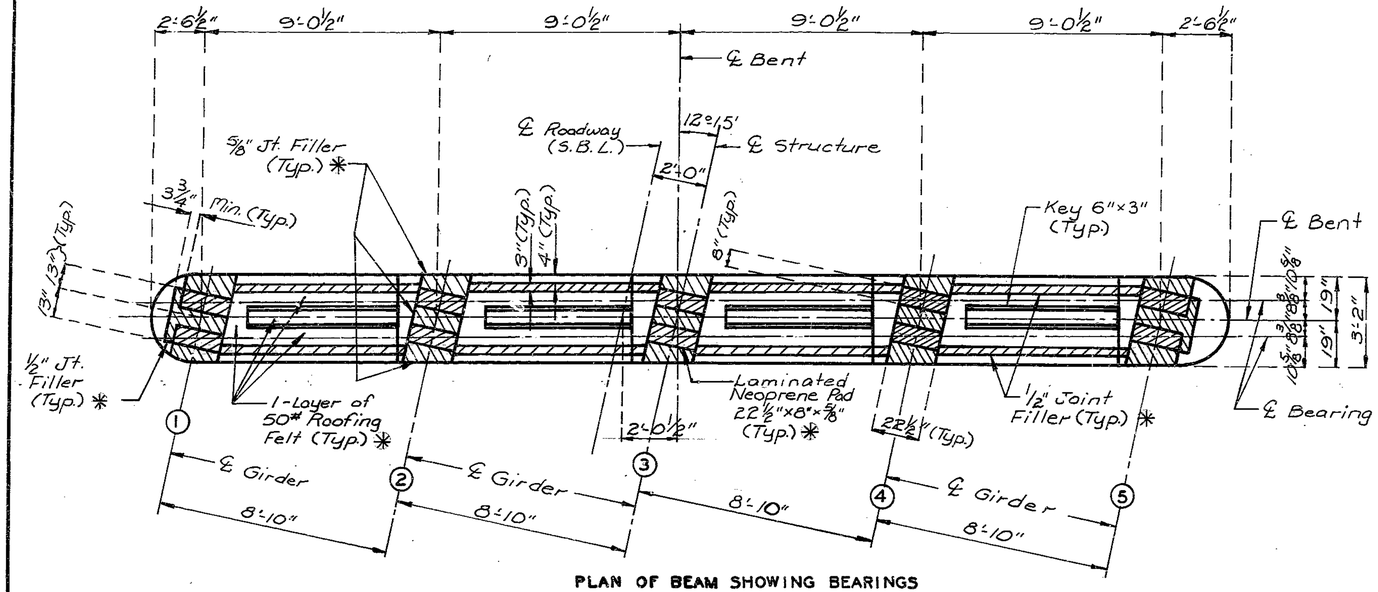
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 16 of 25

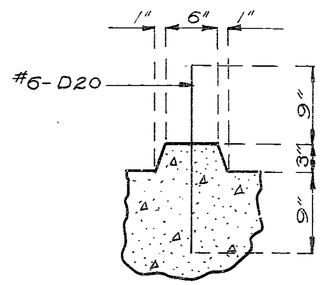
JACKSON COUNTY

A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		72



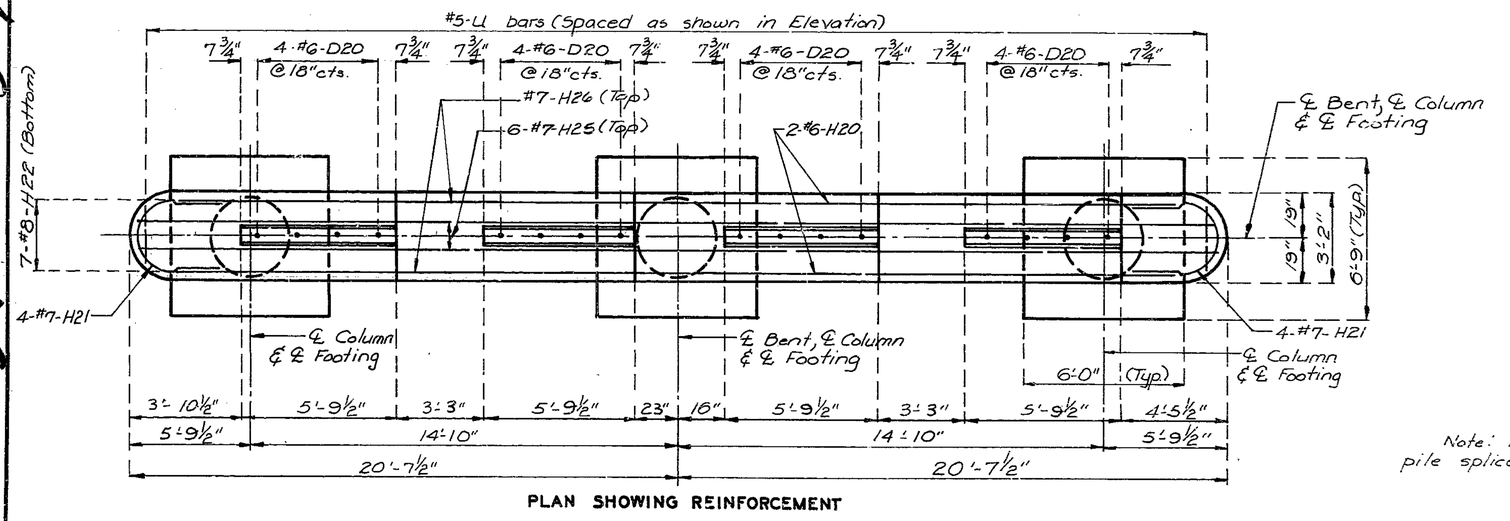
PLAN OF BEAM SHOWING BEARINGS
(FUTURE CONSTRUCTION)



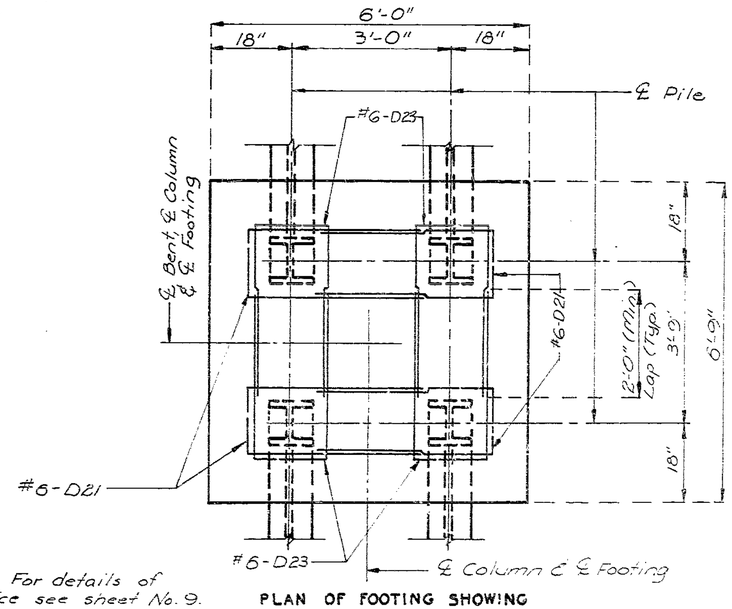
DETAIL OF KEY

* Jt. Filler, Bearings & Roofing Felt are in Future Construction.

Note: For details of Int. Bents No. 2&3 not shown, see sheet No. 18.



PLAN SHOWING REINFORCEMENT



Note: For details of pile splice see sheet No. 9.

PLAN OF FOOTING SHOWING REINFORCEMENT

DETAILS OF INTERMEDIATE BENT NO. 2 & 3

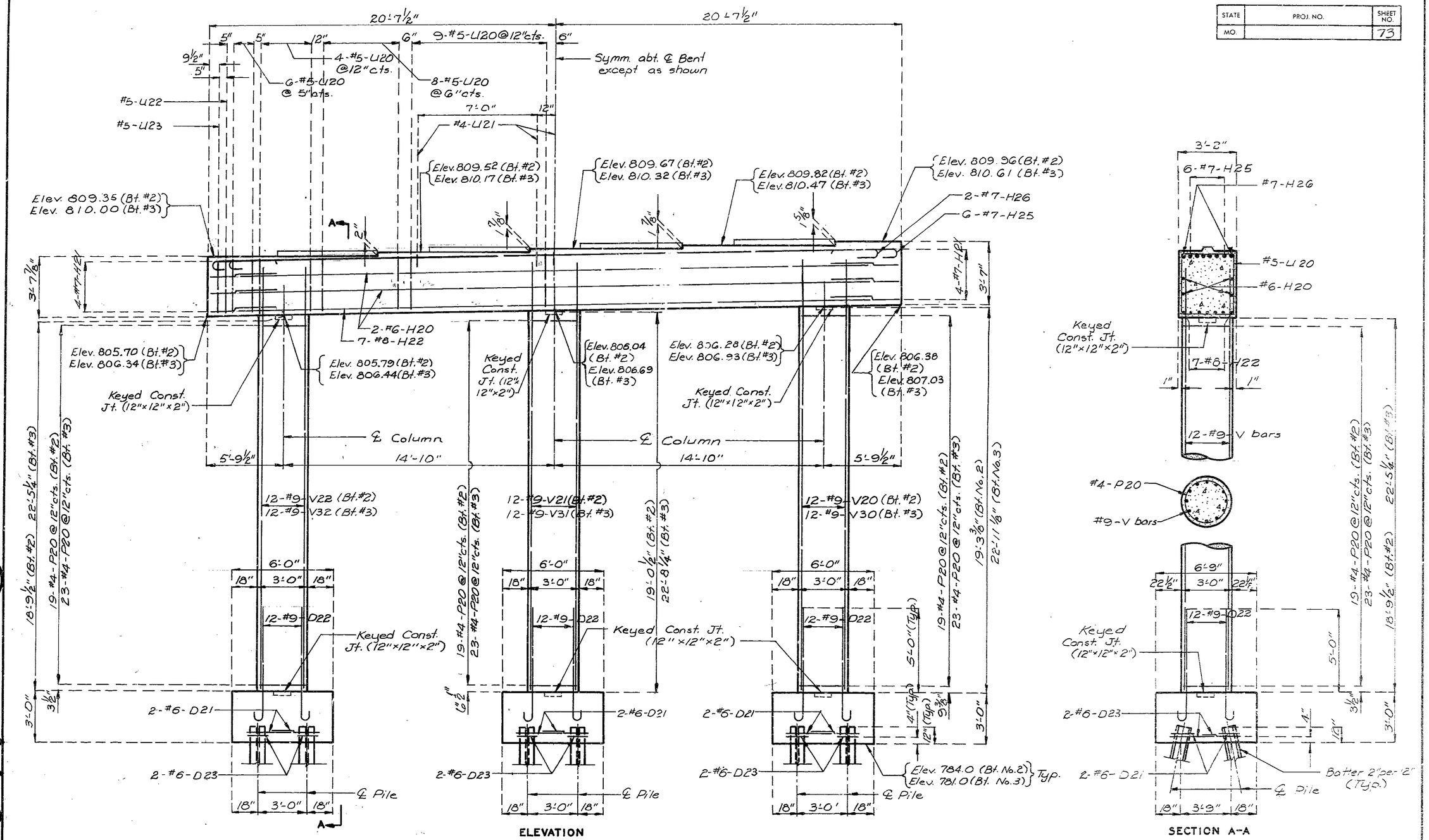
DETAILED MARCH 1988
CHECKED July 1988

Note: This drawing is not to scale. Follow dimensions.

JACKSON COUNTY A-2745

A13 37

STATE	PROJ. NO.	SHEET NO.
MO.		73



Note: For details of Int. Bent No. 2 & 3 not shown, see sheet No. 7.

DETAILS OF INTERMEDIATE BENT NO. 2 & 3

DETAILED MARCH 1988
CHECKED July 1988

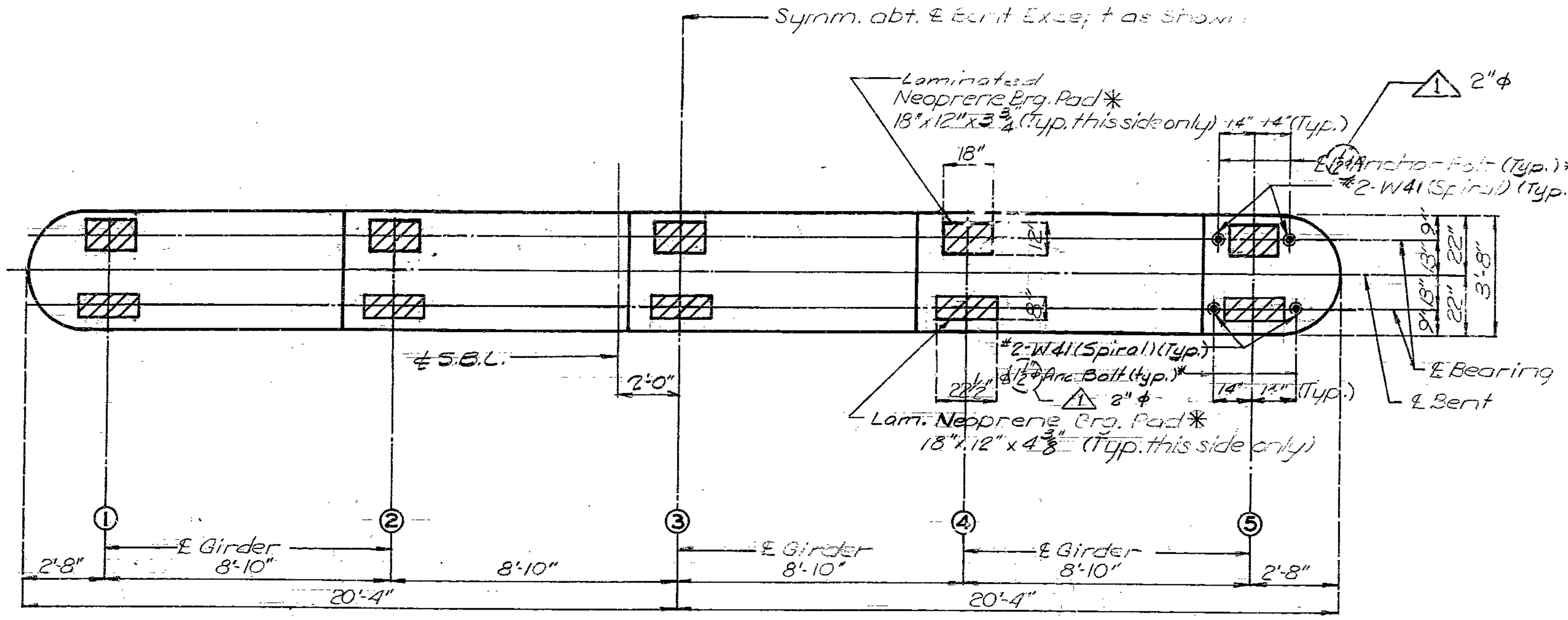
Note: This drawing is not to scale. Follow dimensions.

274 338

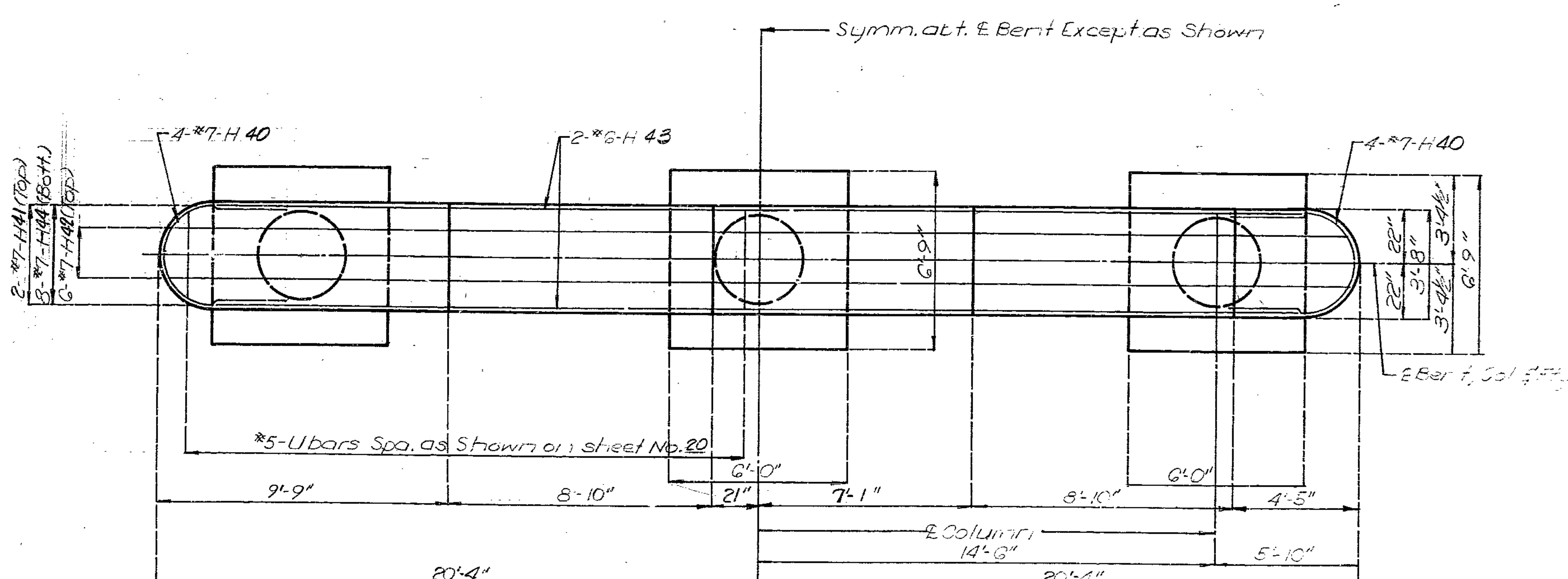
STATE	PROJ. NO	SHEET NO.
MO.		74

Note: For Details of Intermediate Bent No. 4 not shown see Sheet No. 20.
For detail of anchor bolt spirals see sheet No. 9

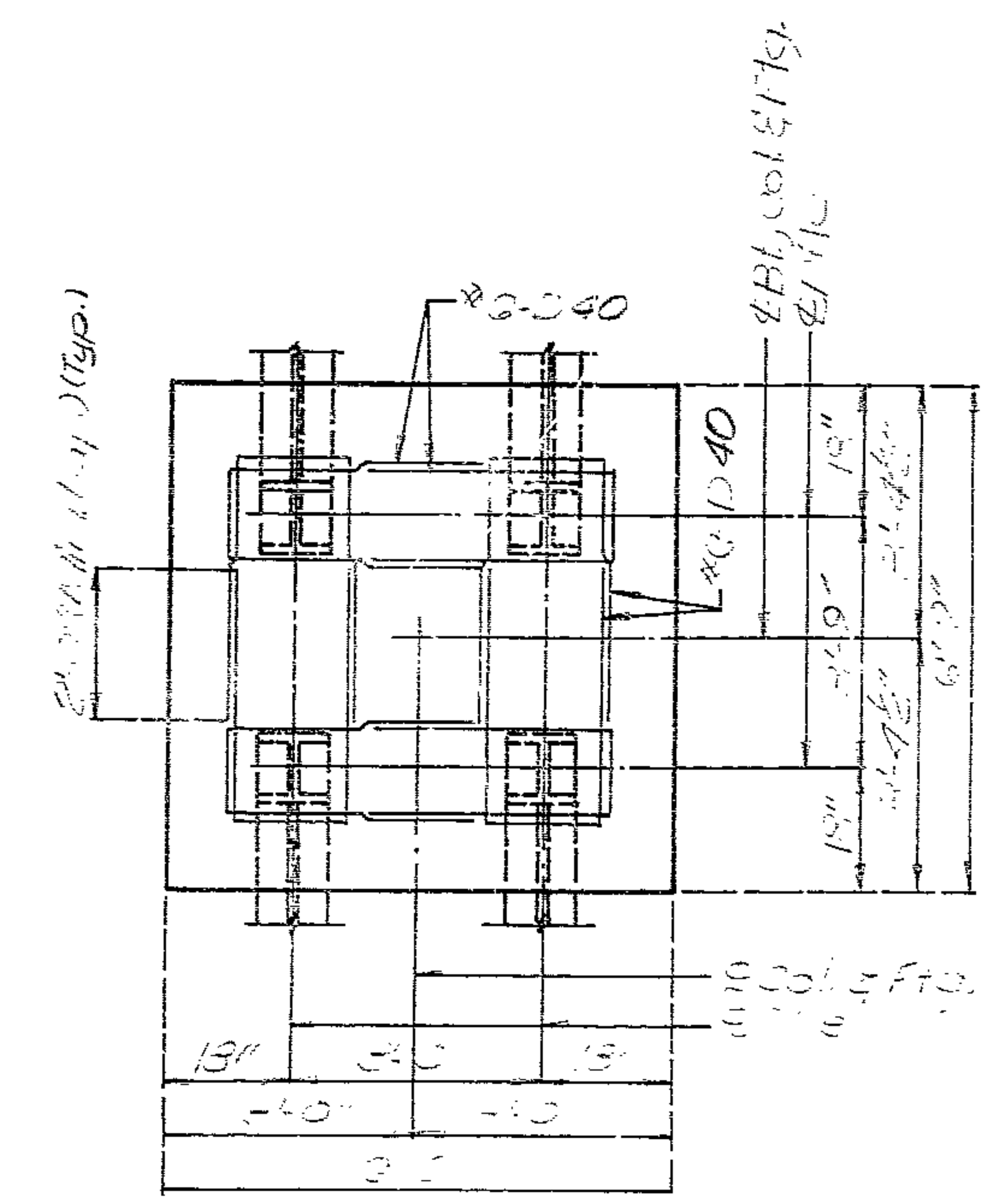
* Bearings & Anchor Bolts are in future construction.



PLAN OF BEAM SHOWING BEARINGS



PLAN SHOWING REINFORCEMENT



PLAN OF FOOTING SHOWING REINFORCEMENT

DETAILS OF INTERMEDIATE BENT NO. 4

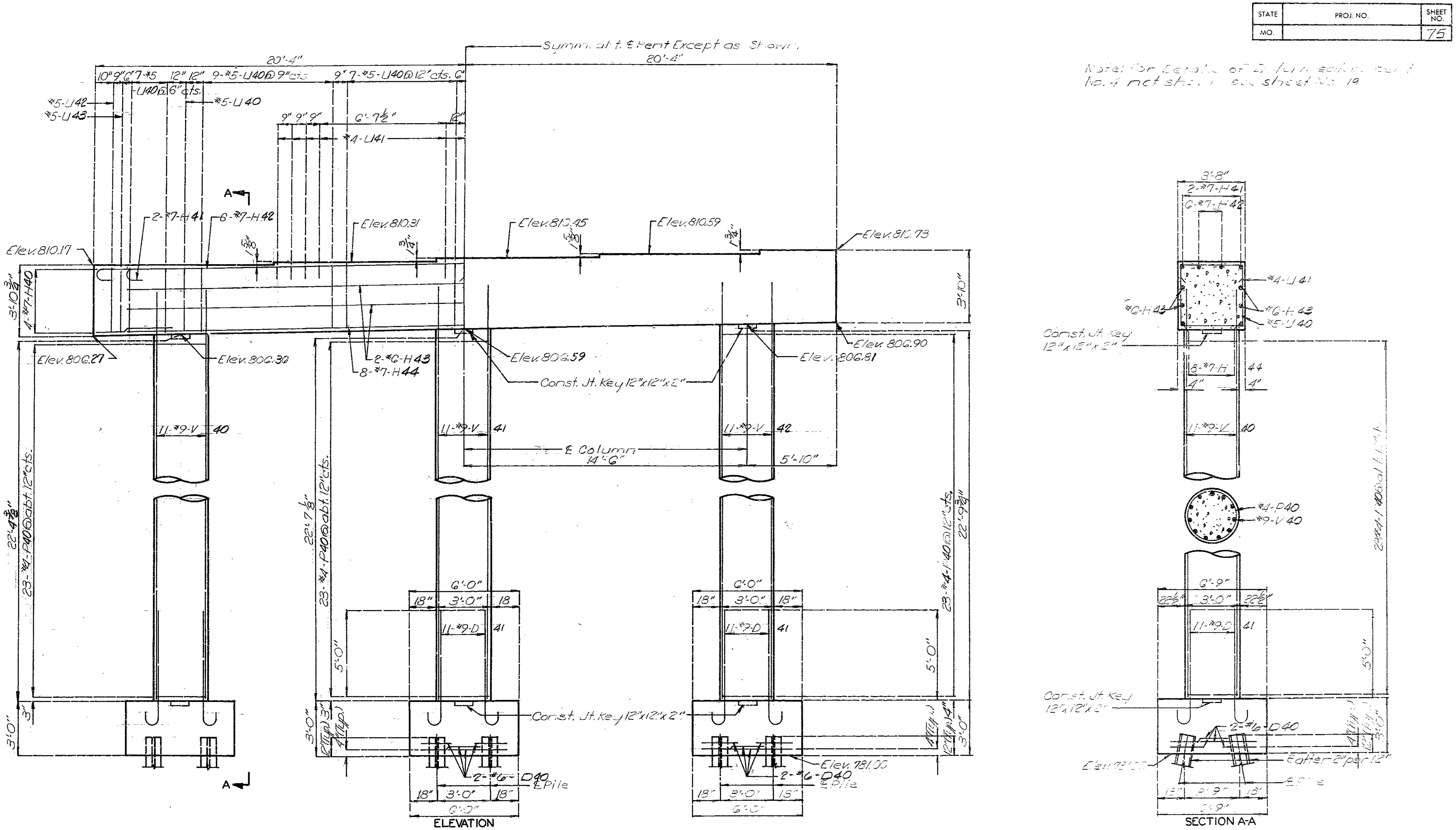
DETAILED APR. 1988
CHECKED AUG. 1988

Note: This drawing is not to scale. Follow dimensions.

⚠1 Revised 3/8/89

JACKSON COUNTY

A-2745



DETAILS OF INTERMEDIATE BENT NO. 4

DETAILED APR. 1988
CHECKED AUG 1988

Note: This drawing is not to scale. Follow dimensions.

JACKSON COUNTY

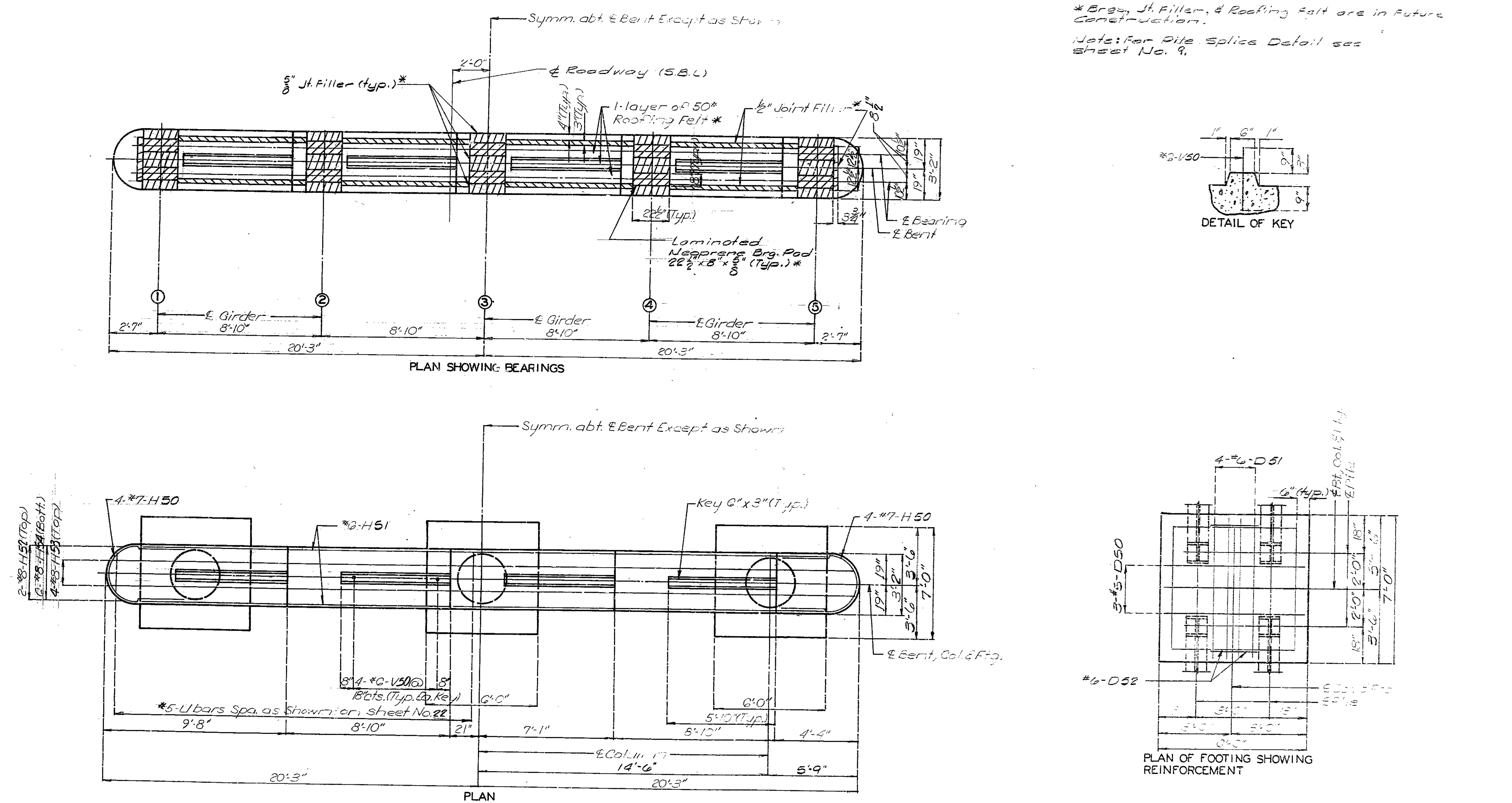
A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		76

Note: For Details of Intermediate Bent No. 5 not shown see Sheet No. 22.

* Brgs., Jt. Filler, & Roofing Felt are in Future Construction.

Note: For Pile Splice Detail see Sheet No. 9.



DETAILS OF INTERMEDIATE BENT NO. 5

DETAILED APR. 1988
CHECKED AUG 1988

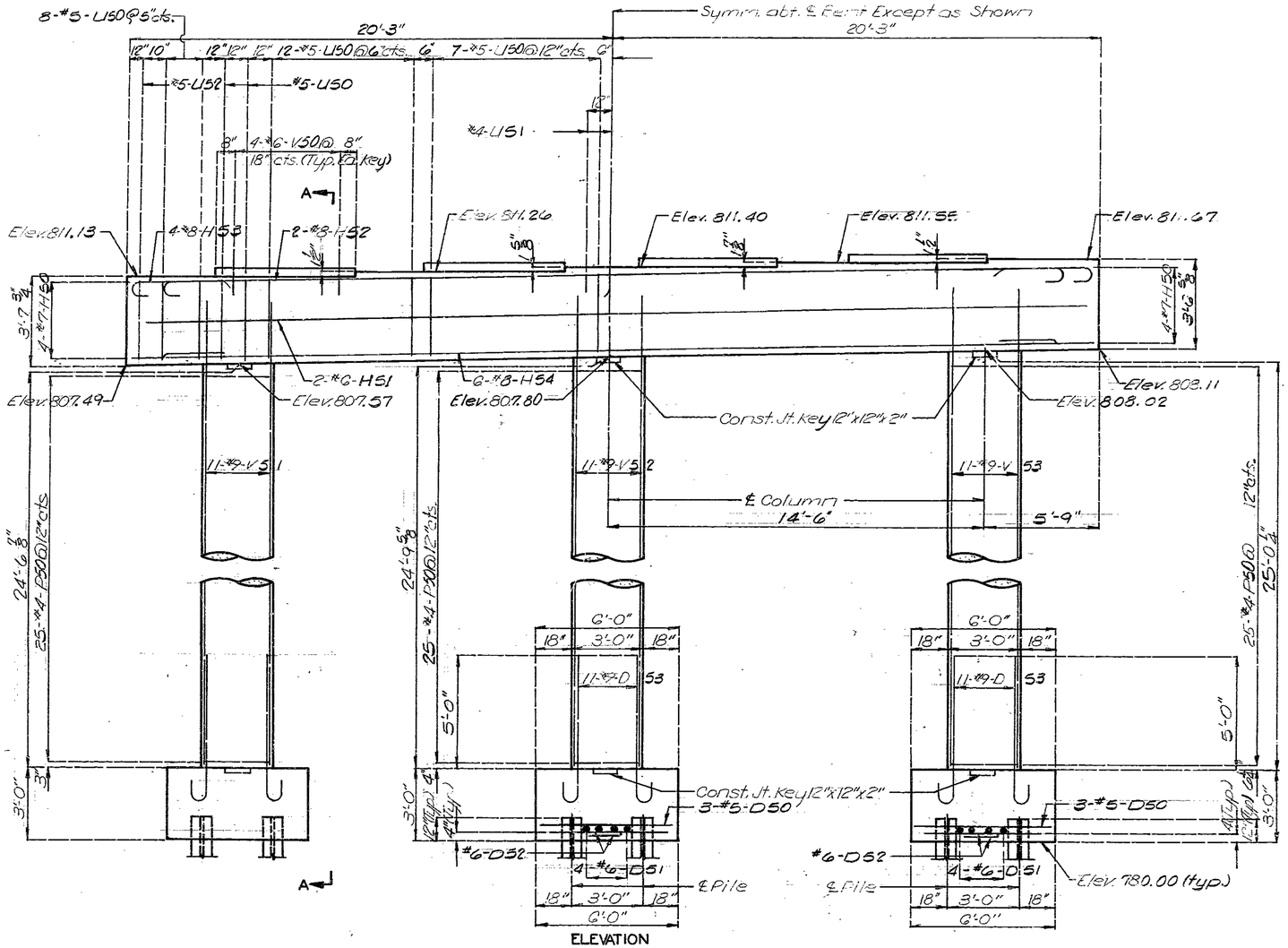
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 21 of 55.

JACKSON COUNTY A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		77

Note: For Details of Intermediate Bent No. 21



DETAILS OF INTERMEDIATE BENT NO. 5

DETAILED APR. 1988
CHECKED AUG. 1988

Note: This drawing is not to scale. Follow dimensions.

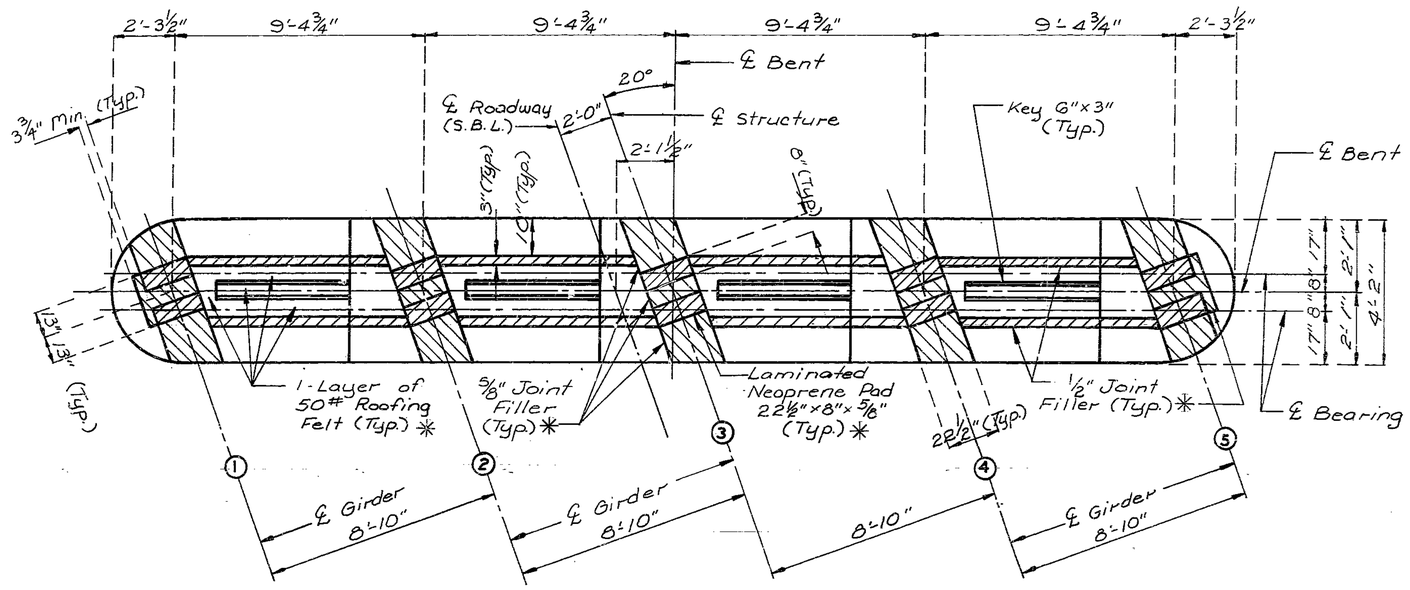
Sheet No. 22 of 55

JACKSON COUNTY

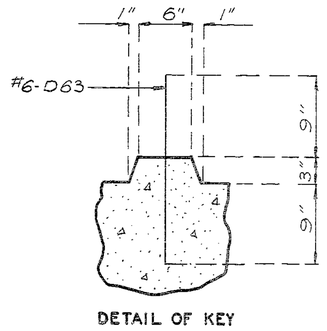
A-2745

278 332

STATE	PROJ. NO.	SHEET NO.
MO.		78



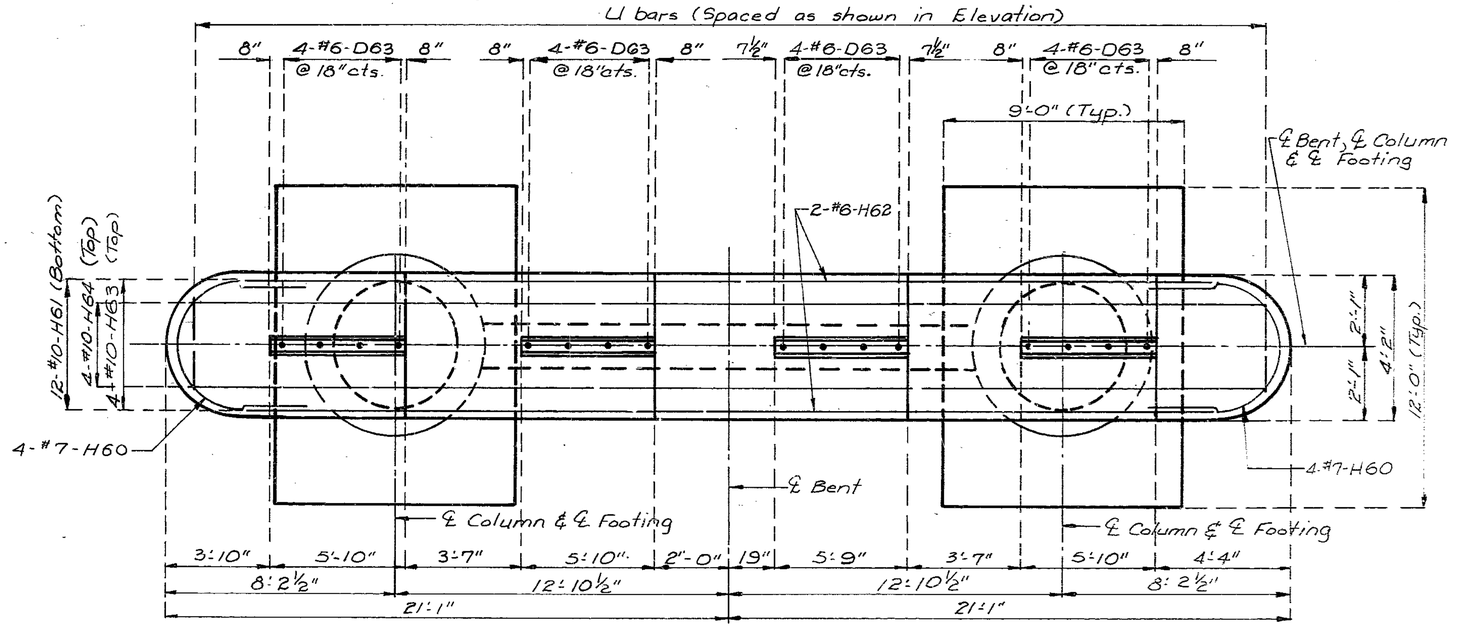
PLAN OF BEAM



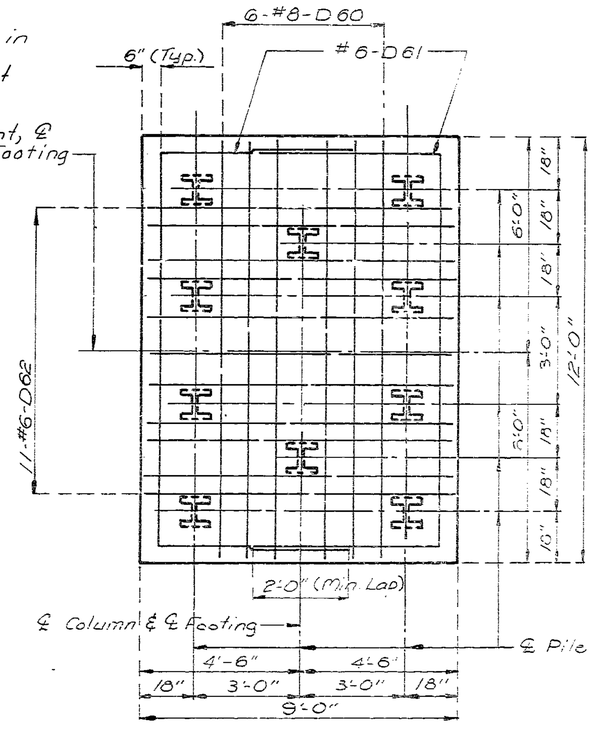
DETAIL OF KEY

* Bearings, Jt. Filler & Roofing Felt are in Future Construction

Note: For details of Bt. No. 6 & 7 not shown see sheet No. 24.



PLAN SHOWING REINFORCEMENT



PLAN OF FOOTING SHOWING REINFORCEMENT

Note: For detail of pile splice see sheet No. 9.

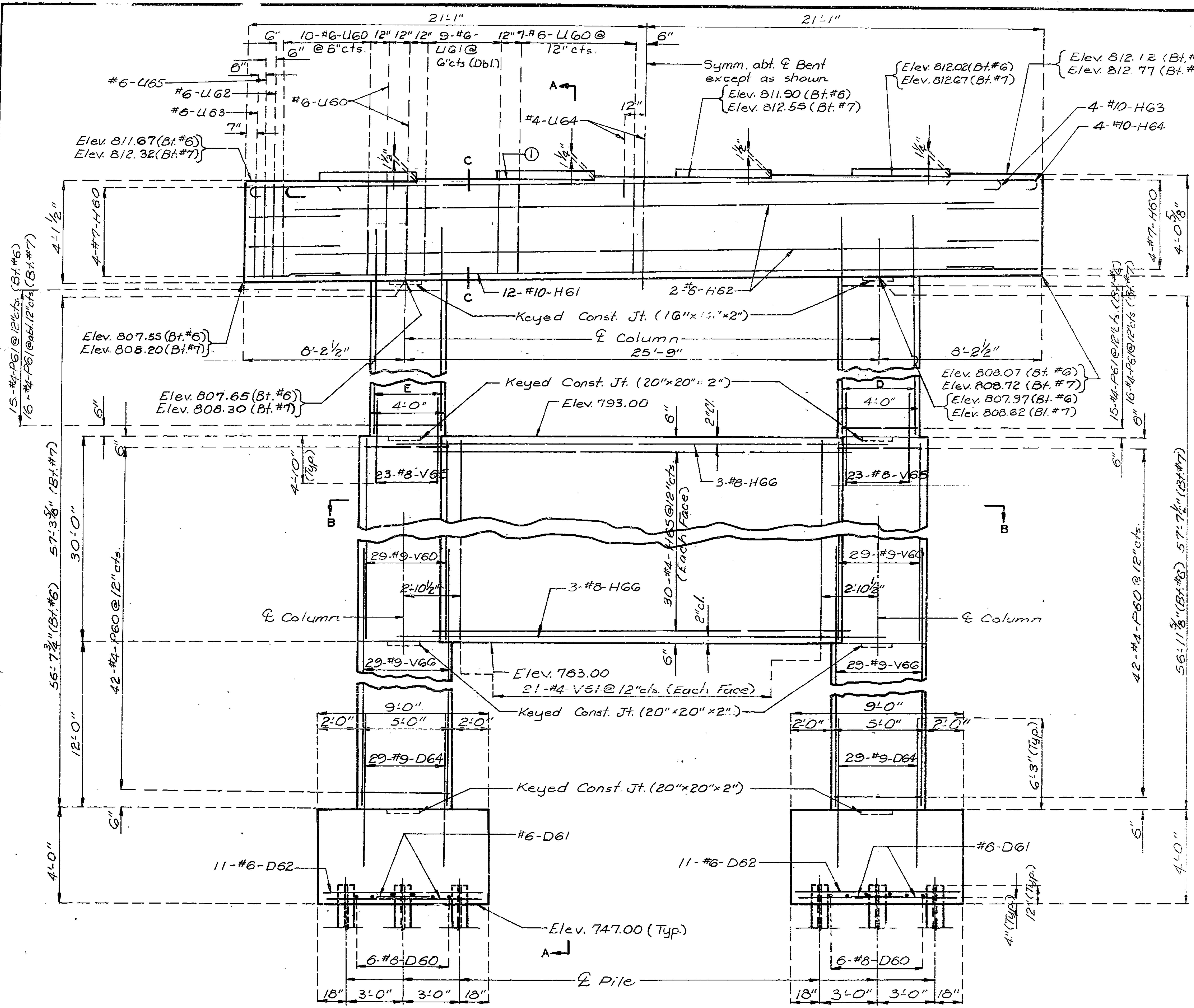
DETAILS OF INTERMEDIATE BENT NO. 6 & 7

DETAILED APRIL 1988
CHECKED Aug. 1988

Note: This drawing is not to scale. Follow dimensions.

818 333

STATE	PROJ. NO.	SHEET NO.
MO.		79



ELEVATION

1 Elev. 811.80 (Bt.#6)
Elev. 812.45 (Bt.#7)

Note: For details of Section A-A, B-B & C-C see sheet No. 25.
For details of Bt. No. 6 & 7 not shown see sheet No. 23.

D { 23-#8-V63 (Bt.#6)
23-#8-V64 (Bt.#7)

E { 23-#8-V62 (Bt.#6)
23-#8-V67 (Bt.#7)

330 334

DETAILS OF INTERMEDIATE BENT NO. 6&7

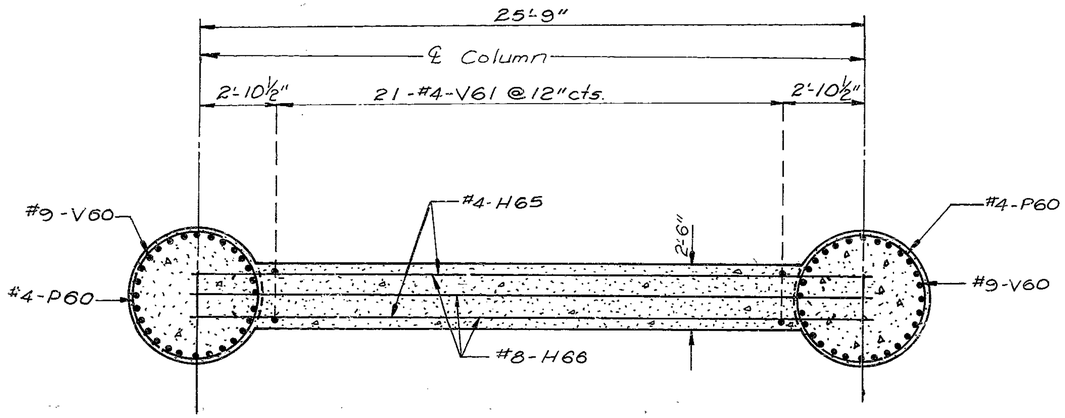
DETAILED MAY 1988
CHECKED Aug. 1988

Note: This drawing is not to scale. Follow dimensions.

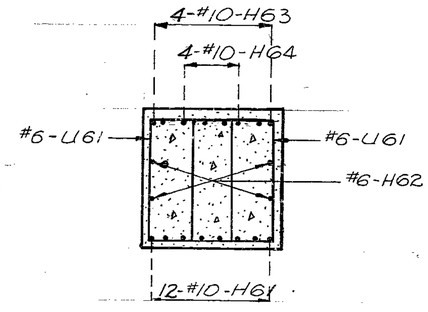
Sheet No. 24 of 55

JACKSON COUNTY A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		80



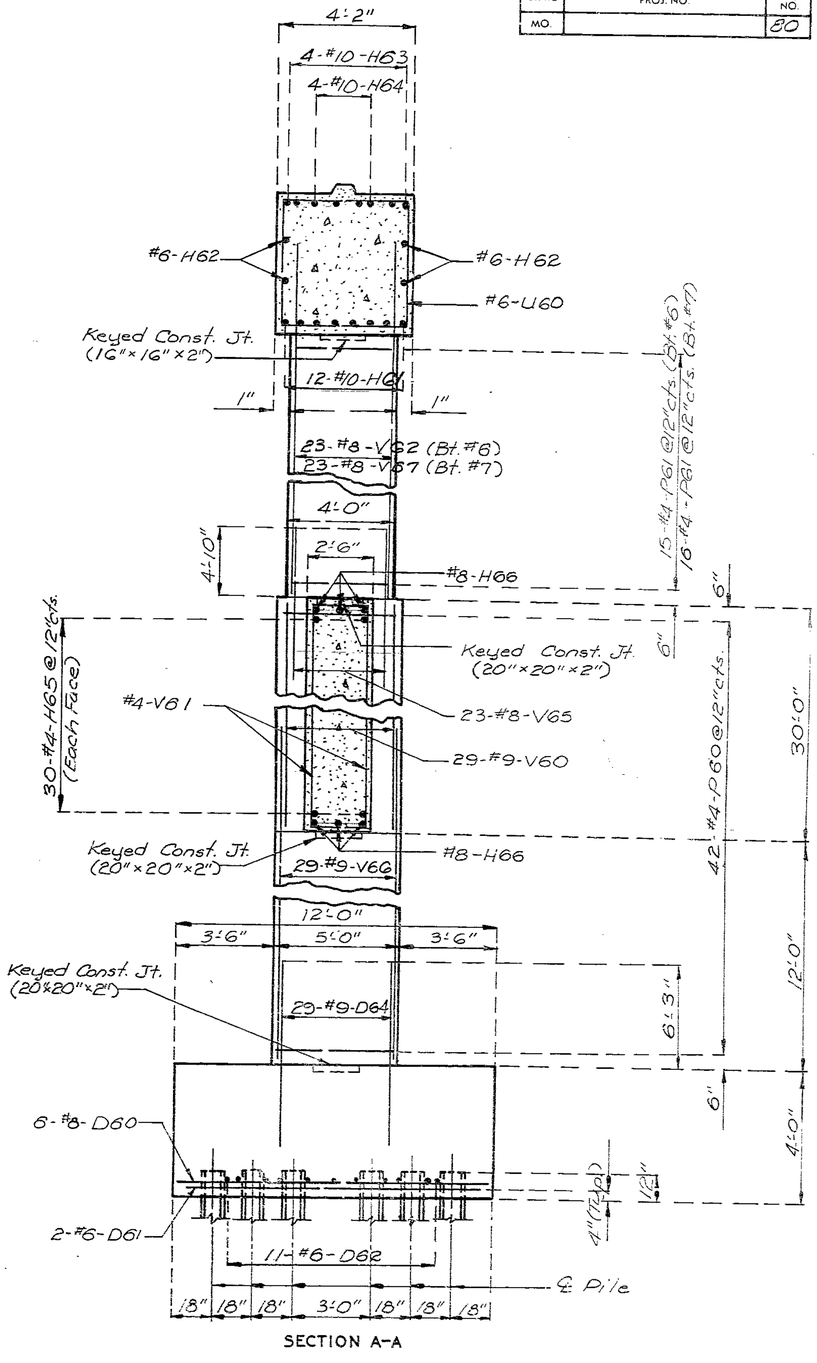
SECTION B-B



SECTION C-C

Note: For location of Section A-A, B-B & C-C see sheet No. 24.

Note: For detail of pile splice see sheet No. 9.



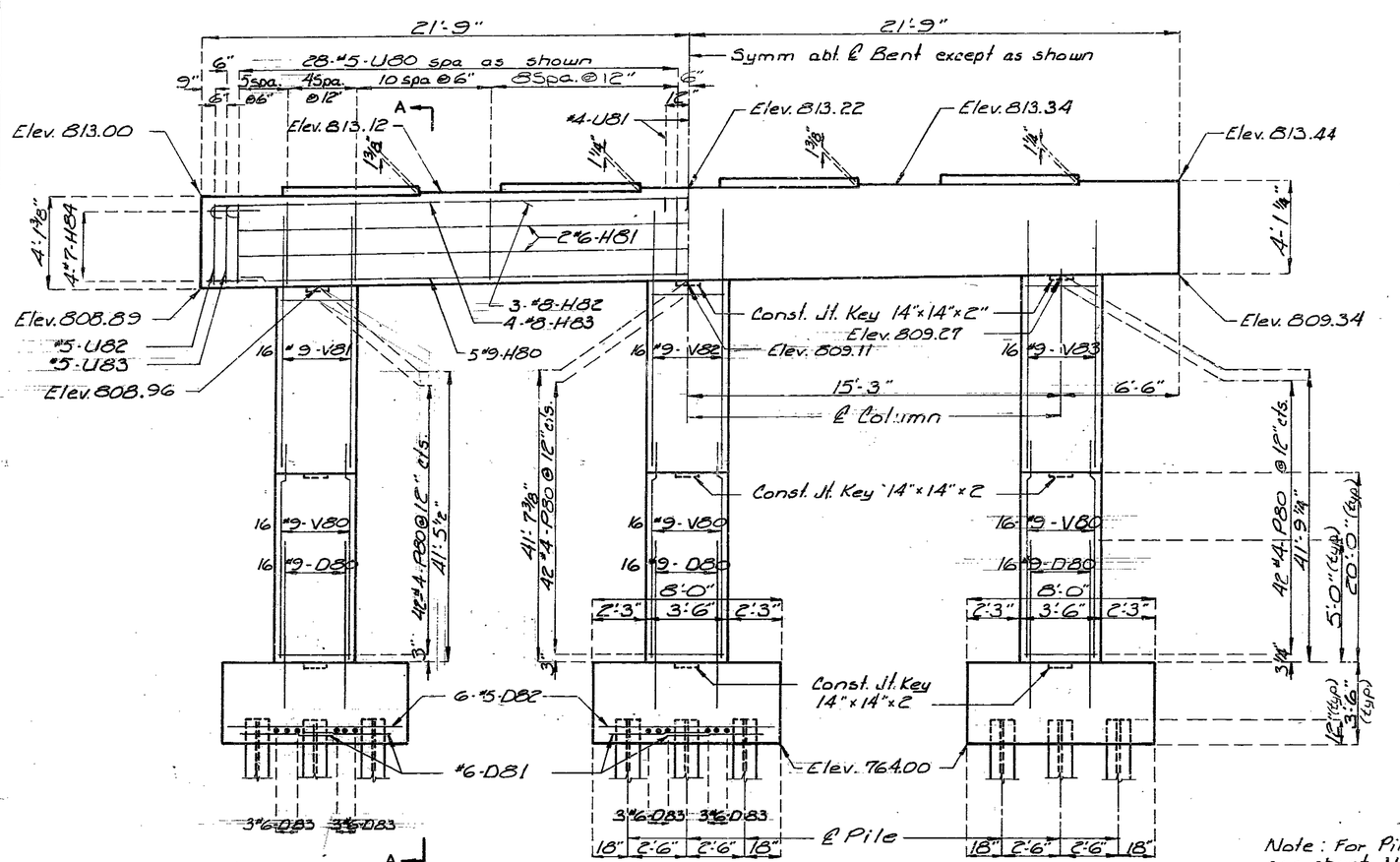
SECTION A-A

DETAILS OF INTERMEDIATE BENT NO. 6&7

DETAILED MAY 1988
CHECKED Aug. 1988

Note: This drawing is not to scale. Follow dimensions.

STATE	PROJ. NO.	SHEET NO.
MO.		81



DETAILS OF INTERMEDIATE BENT NO. 8

DETAILED APRIL 1988
CHECKED August 1988

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 36 of 55

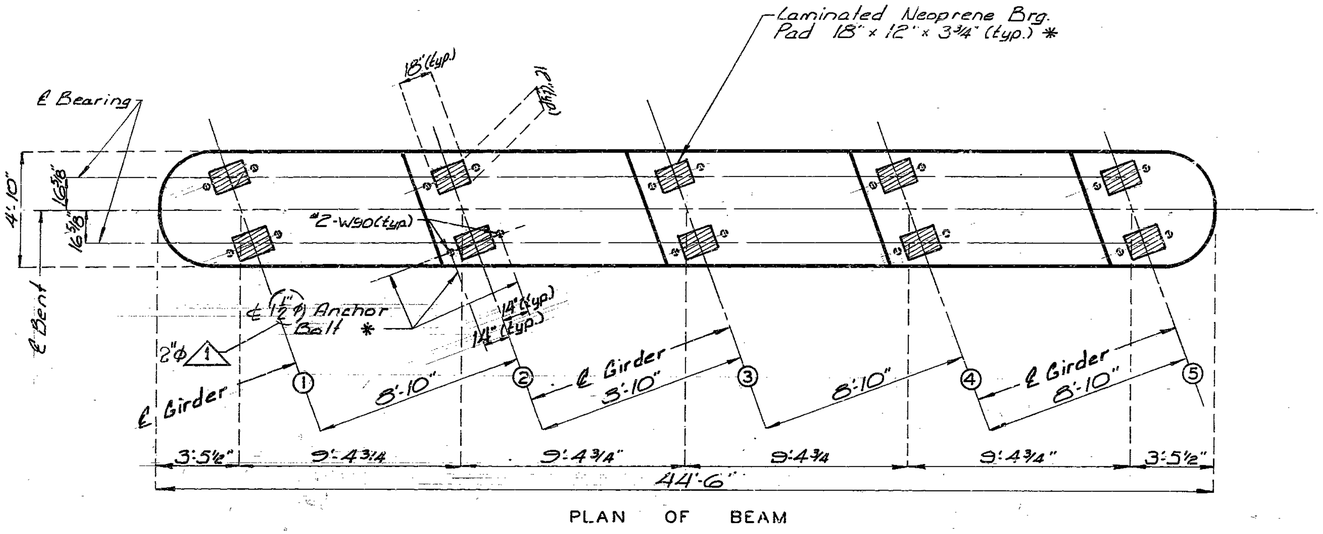
JACKSON COUNTY

A-2745

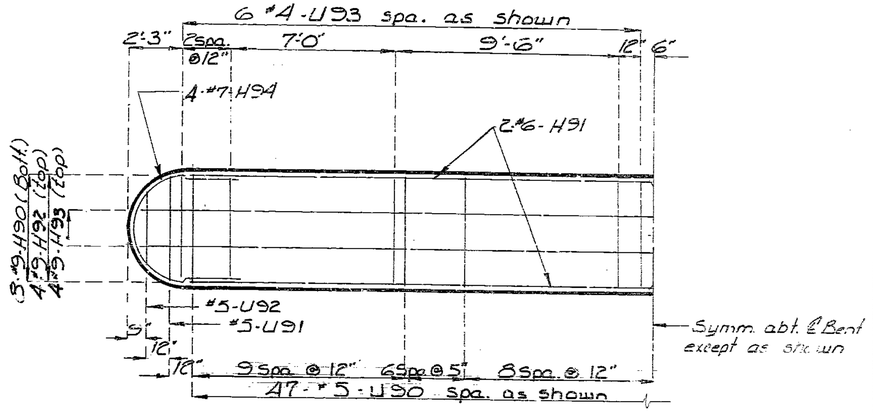
337 336

STATE	PROJ. NO.	SHEET NO.
MO.		82

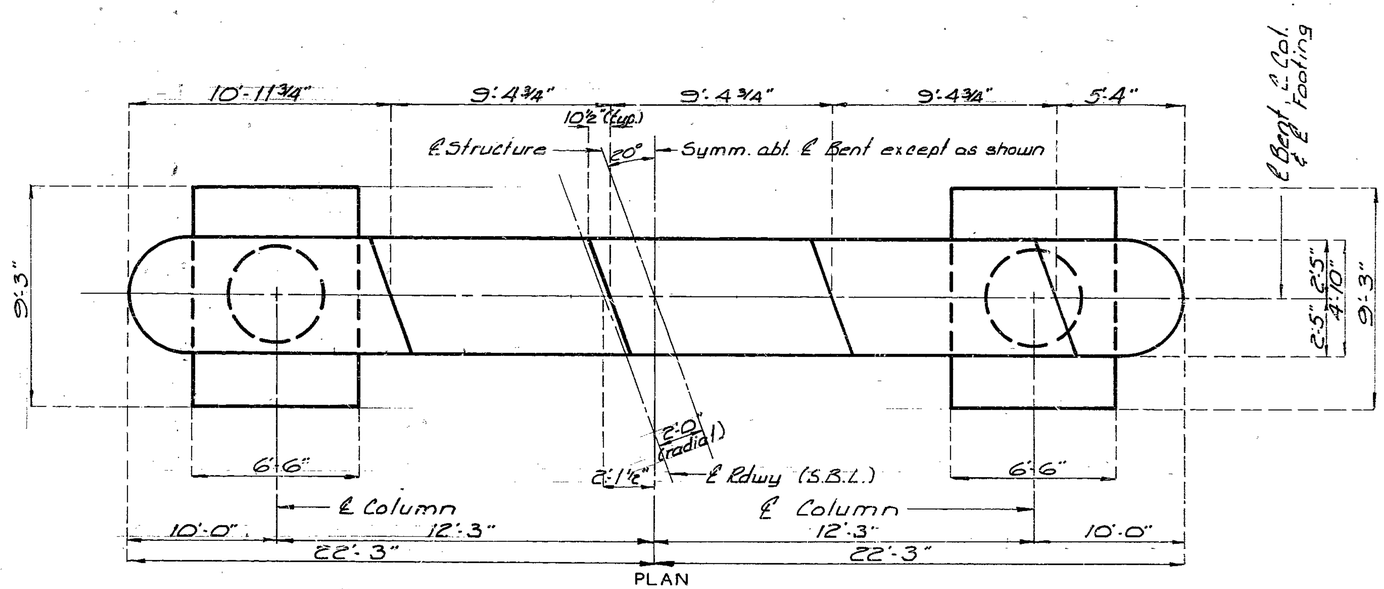
Note : For details of Bt. No9 not shown see sheet No. 28 .
For Details of Anchor Bolt Spirals see sheet No. 9.
* Bearings and Anchor Bolts are included in future construction.



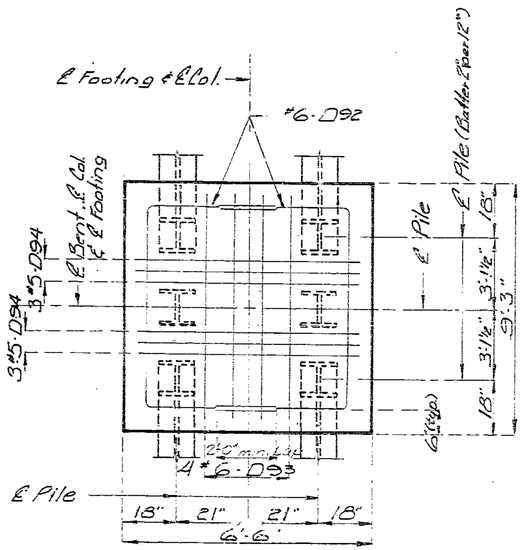
PLAN OF BEAM



HALF PLAN OF BEAM SHOWING REINFORCEMENT



PLAN



PLAN OF FOOTING SHOWING REINFORCEMENT

DETAILS OF INTERMEDIATE BENT NO. 9

DETAILED MAY 1988
CHECKED August 1988

Note: This drawing is not to scale. Follow dimensions.

1 Revised 3/8/89

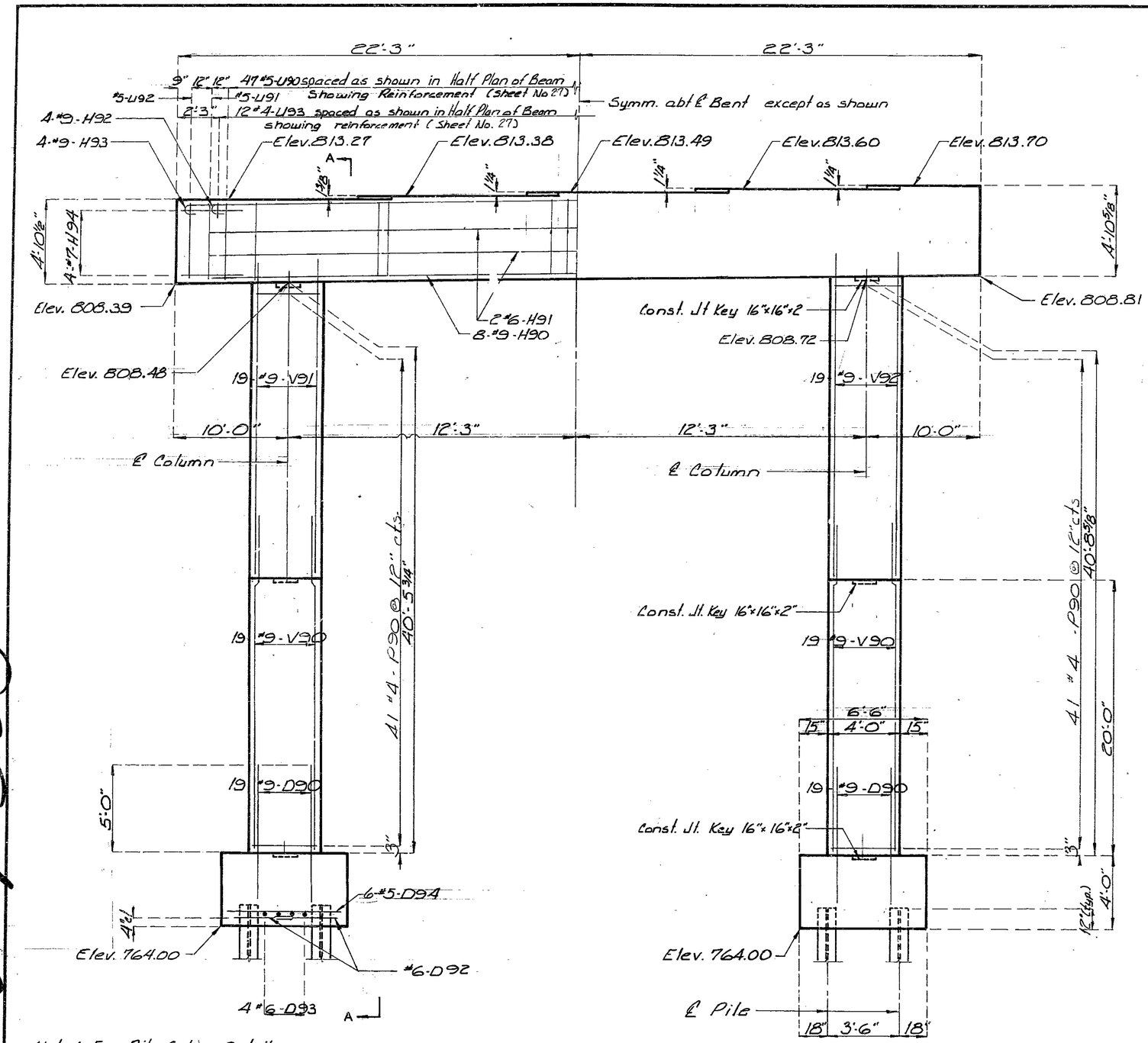
Sheet No. 27 of 52

JACKSON COUNTY

A-2745

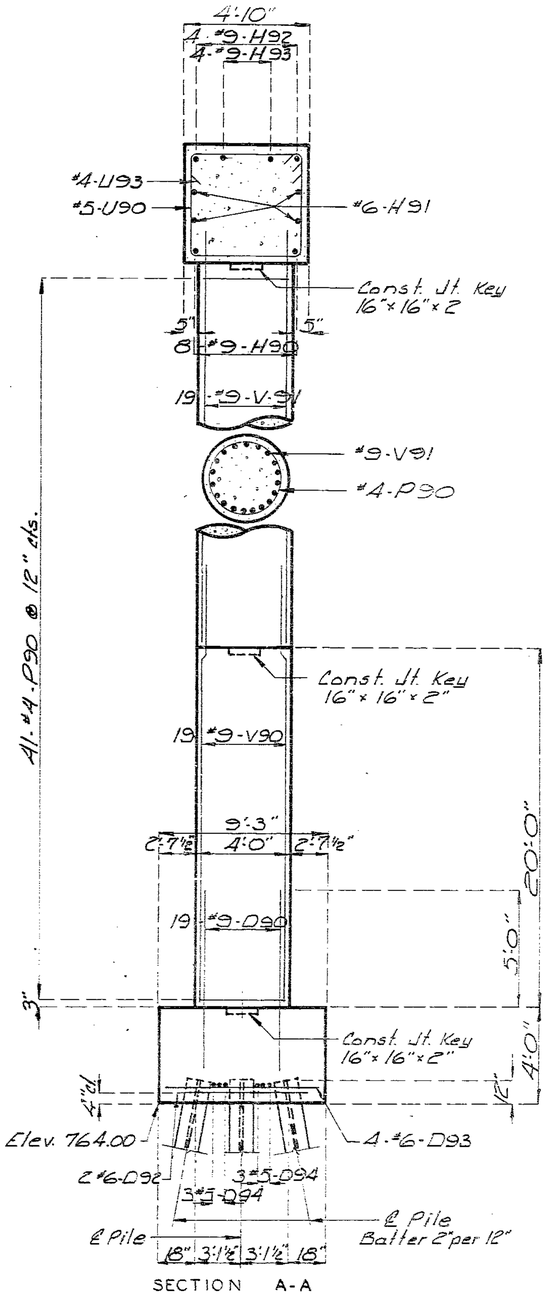
823 337

STATE	PROJ. NO.	SHEET NO.
MO.		83



ELEVATION

Note: For Pile Splice Detail see sheet No. 9
For details of Int. Bent No. 9 not shown see sheet No. 27



SECTION A-A

DETAILED MAY 1988
CHECKED August 1988

DETAILS OF INTERMEDIATE BENT NO. 9

Note: This drawing is not to scale. Follow dimensions.

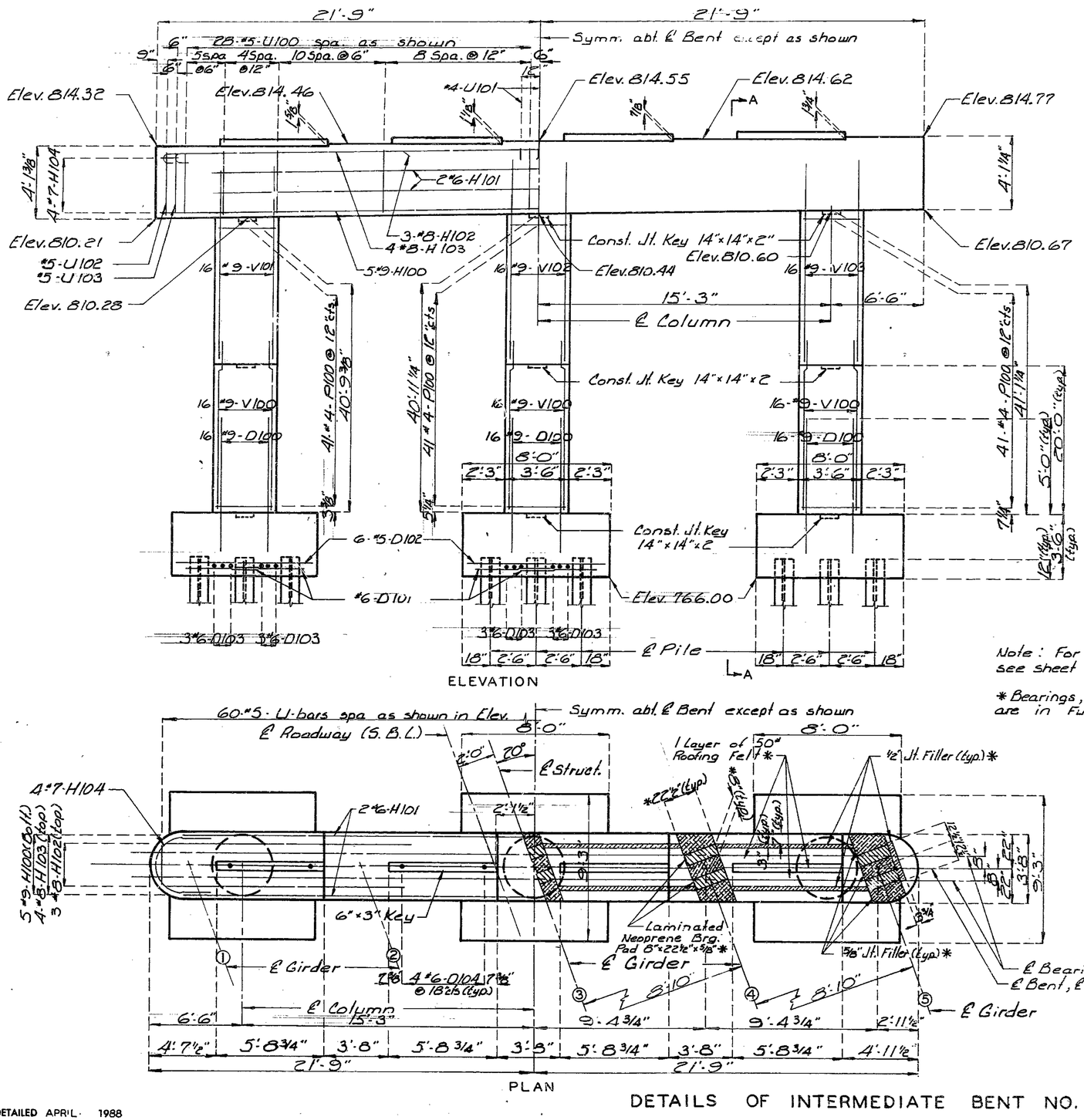
Sheet No. 28 of 66

JACKSON COUNTY

A-2745

B34 38

STATE	PROJ. NO.	SHEET NO.
MO.		84



DETAILED APRIL 1988
CHECKED August 1988

DETAILS OF INTERMEDIATE BENT NO. 10

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 24 of 55

JACKSON COUNTY

A-2745

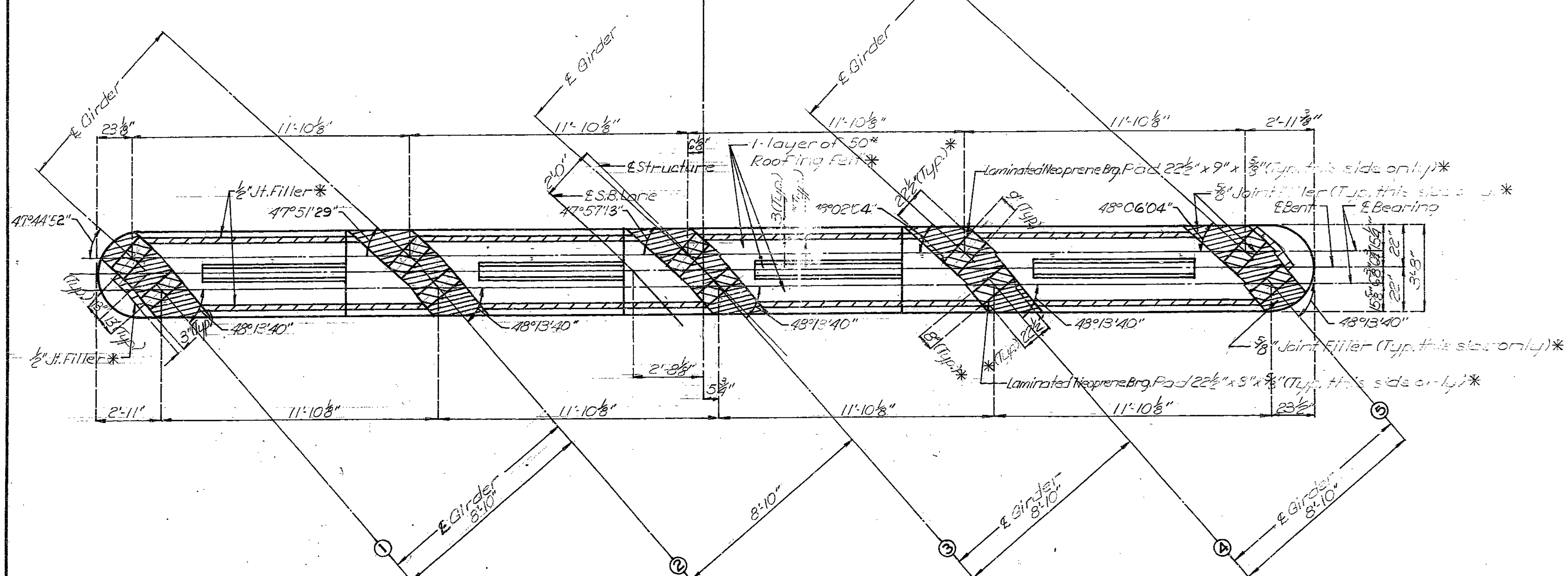
35-39

FOR INFORMATION ONLY

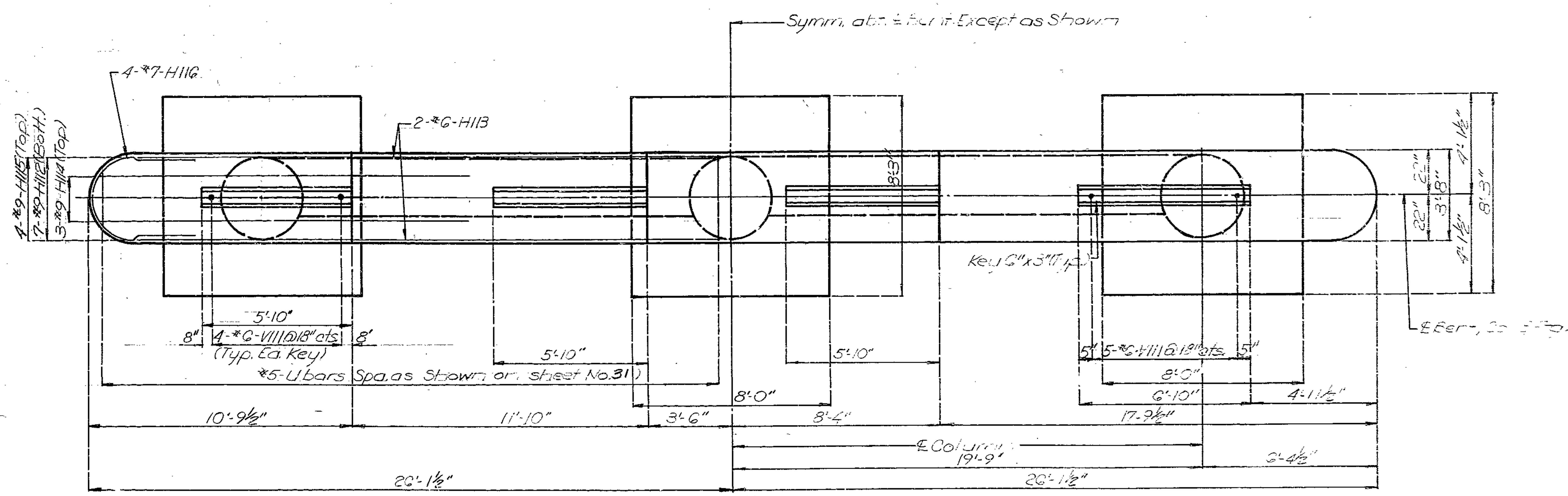
A27452, Sht. 42

STATE	PROJ. NO.	SHEET NO.
MO.		85

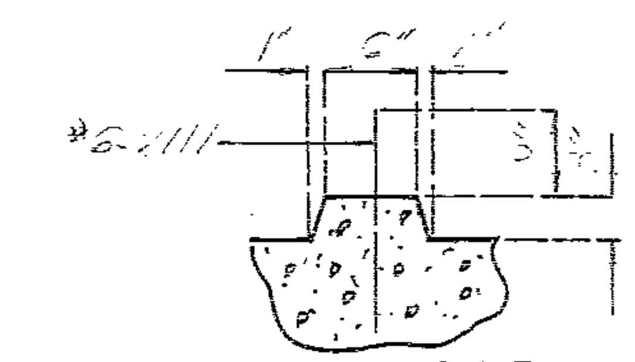
Note: For Details of Intermediate Bent No. 11 not shown, see sheet No. 31.
*Brgs., Jt. Filler & Roofing Felt are in Future Construction.
For details of pile splice see sheet No. 9



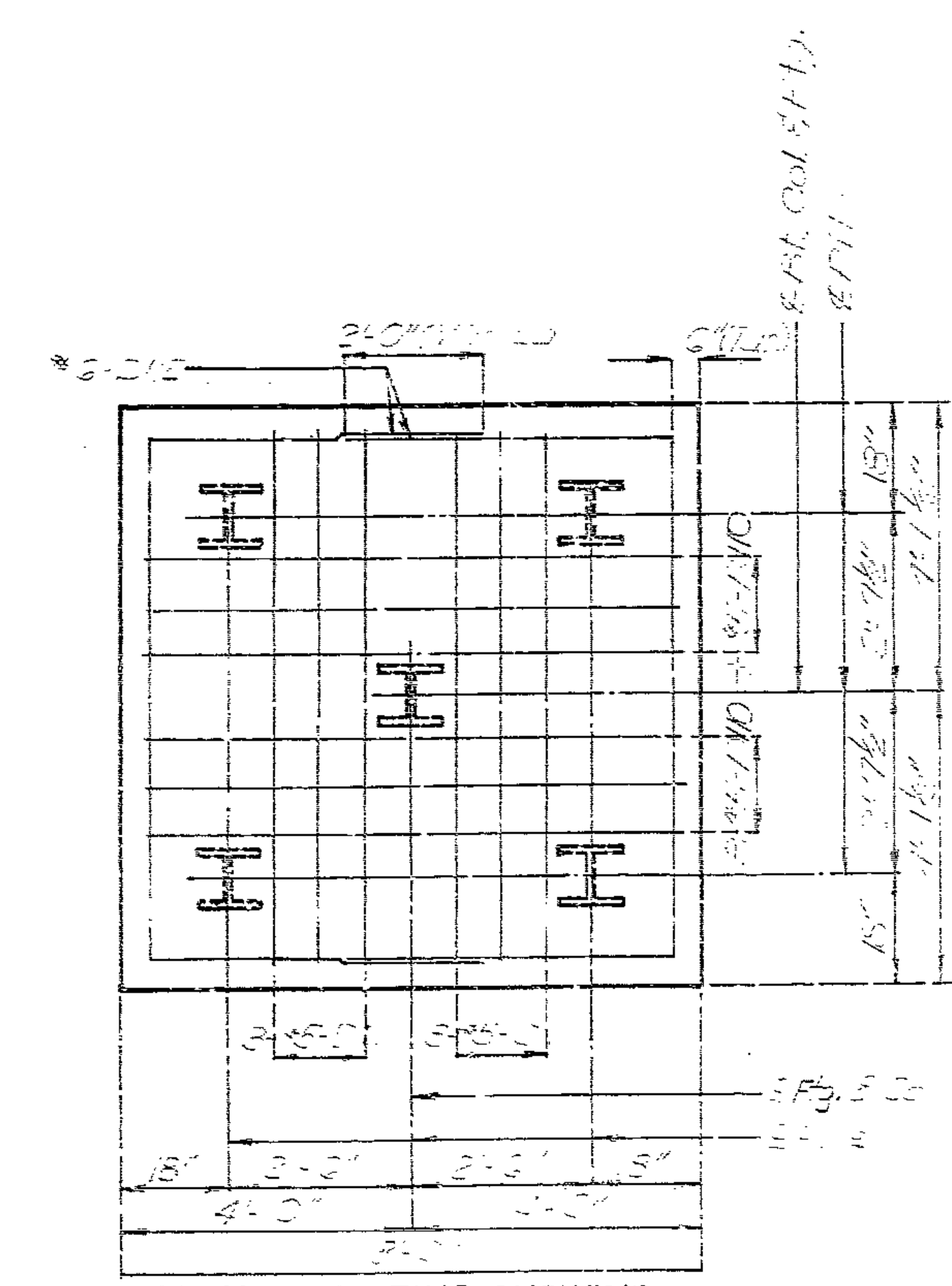
PLAN SHOWING BEARINGS



PLAN



DETAIL OF KEY



PLAN OF FOOTING SHOWING REINFORCEMENT

DETAILS OF INTERMEDIATE BENT NO. 11

DETAILED MAY 1988
CHECKED Aug. 1988

Note: This drawing is not to scale. Follow dimensions.

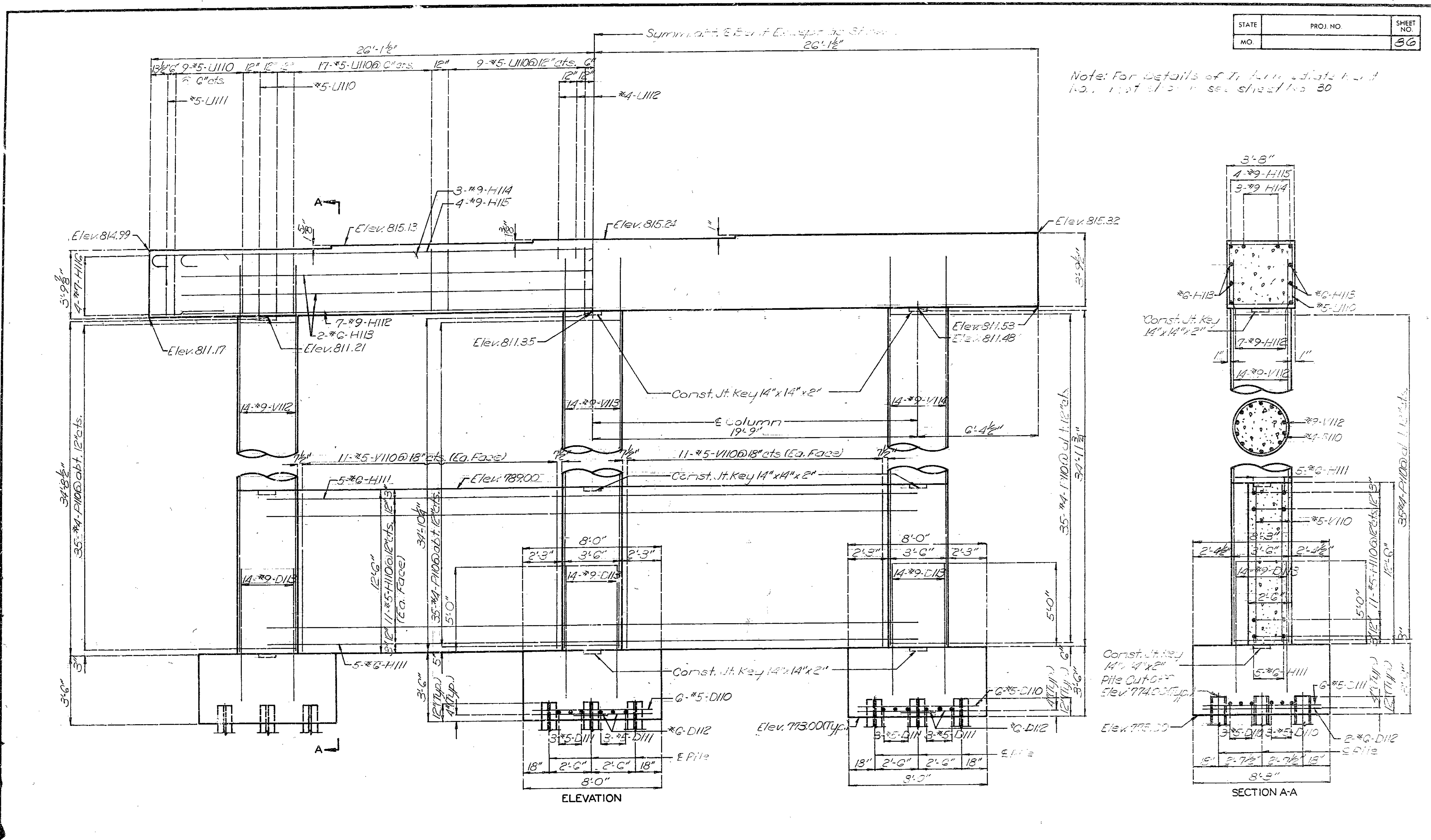
JACKSON COUNTY

A-2745

RE 340

FOR INFORMATION ONLY

A27452, Sht. 43



DETAILS OF INTERMEDIATE BENT NO. 11

DETAILED MAY 1988
CHECKED Aug 1988

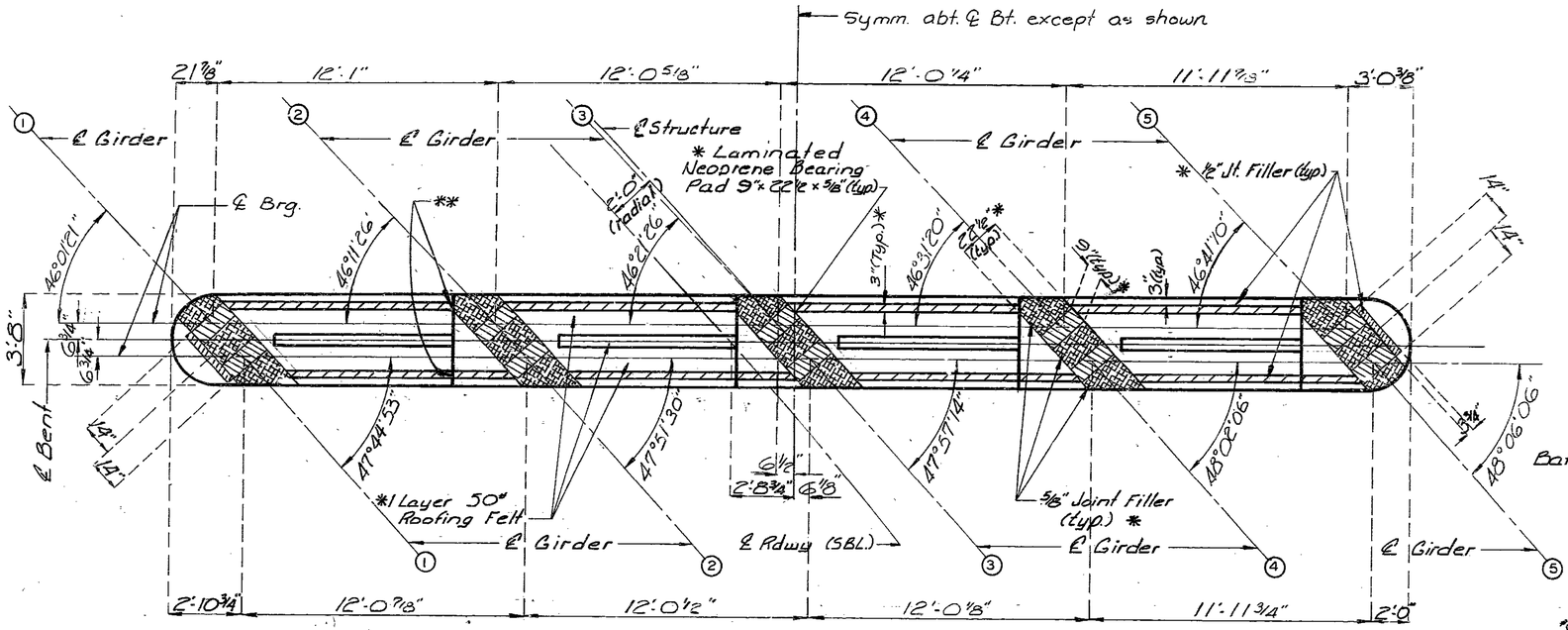
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 31 of 55

JACKSON COUNTY

A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		87

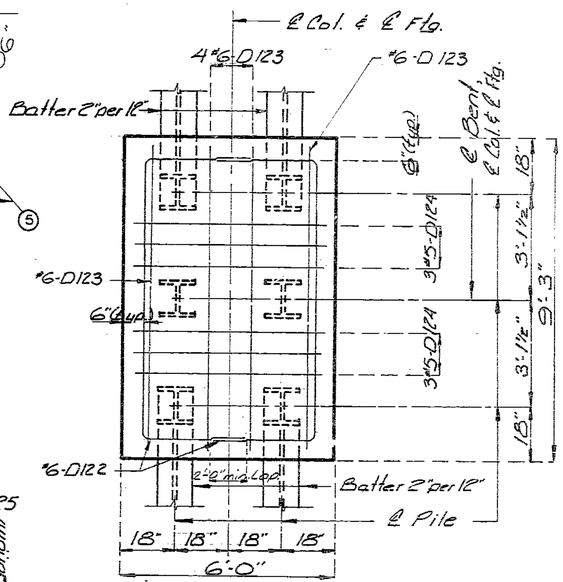


PLAN OF BEAM

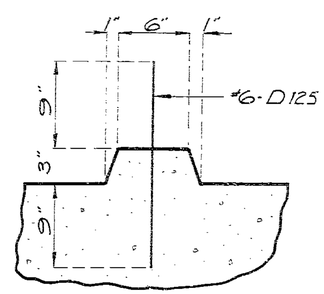
* Bearings, Jt Filler, & Roofing Felt are in Future Construction.

Note: For details of Int. Bent No 12 not shown see sheet No. 33

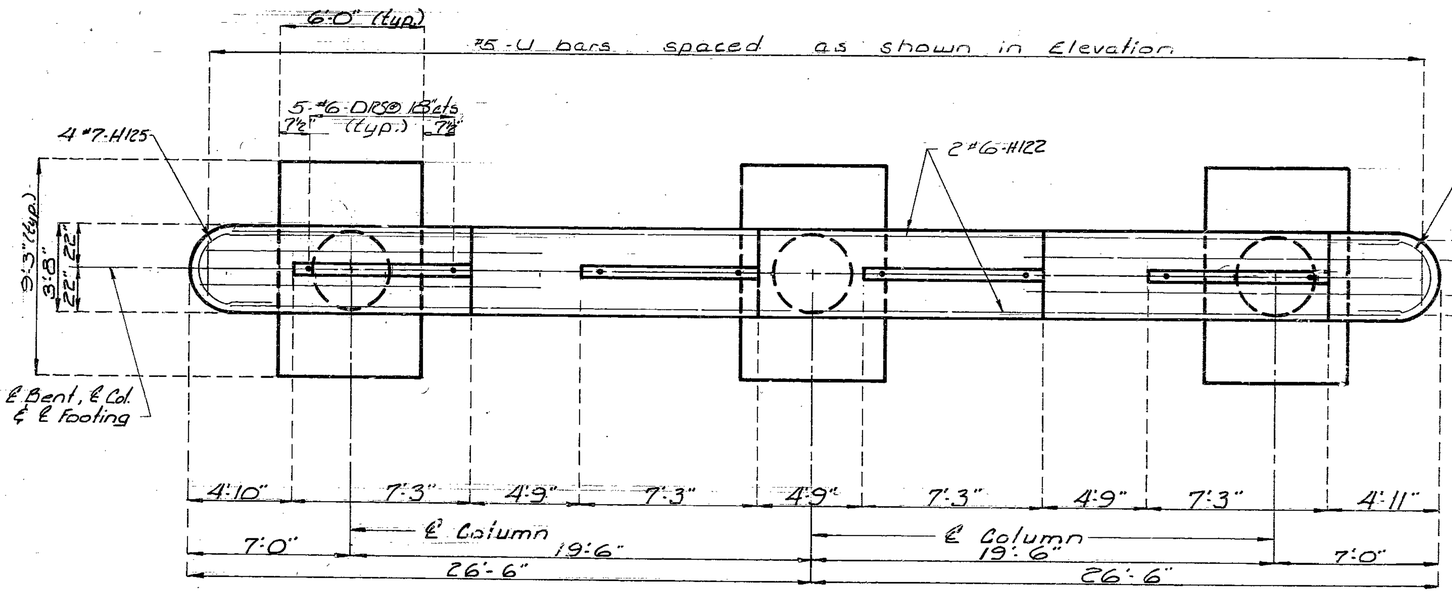
** 1/2" Jt. Filler on vertical face of steps over 2" high.*



PLAN OF FOOTING SHOWING REINFORCEMENT



DETAIL OF KEY



PLAN

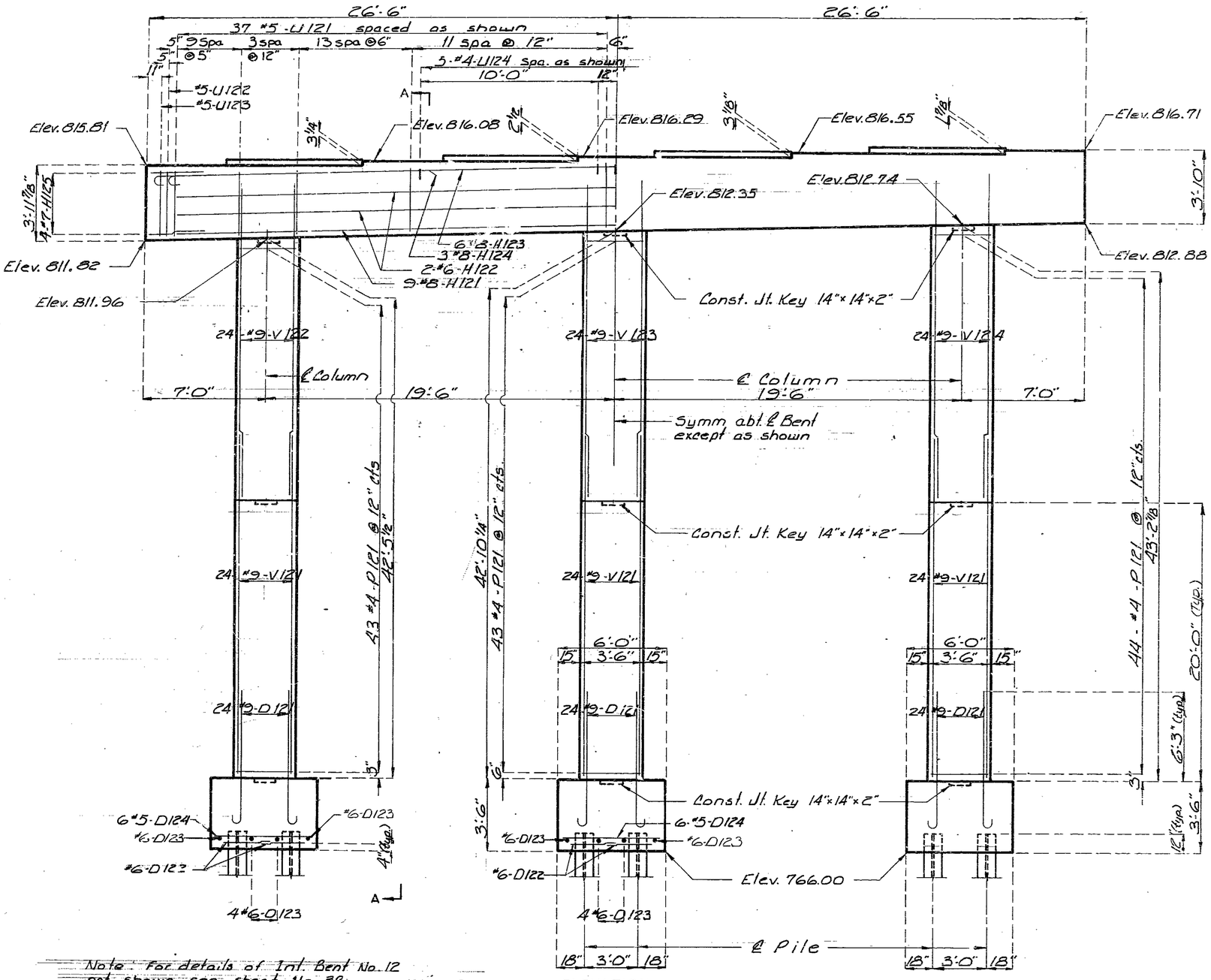
DETAILED MAY 1988
CHECKED August 1988

DETAILS OF INTERMEDIATE BENT NO. 12

Note: This drawing is not to scale. Follow dimensions.

230 342

STATE	PROJ. NO.	SHEET NO.
MO.		33



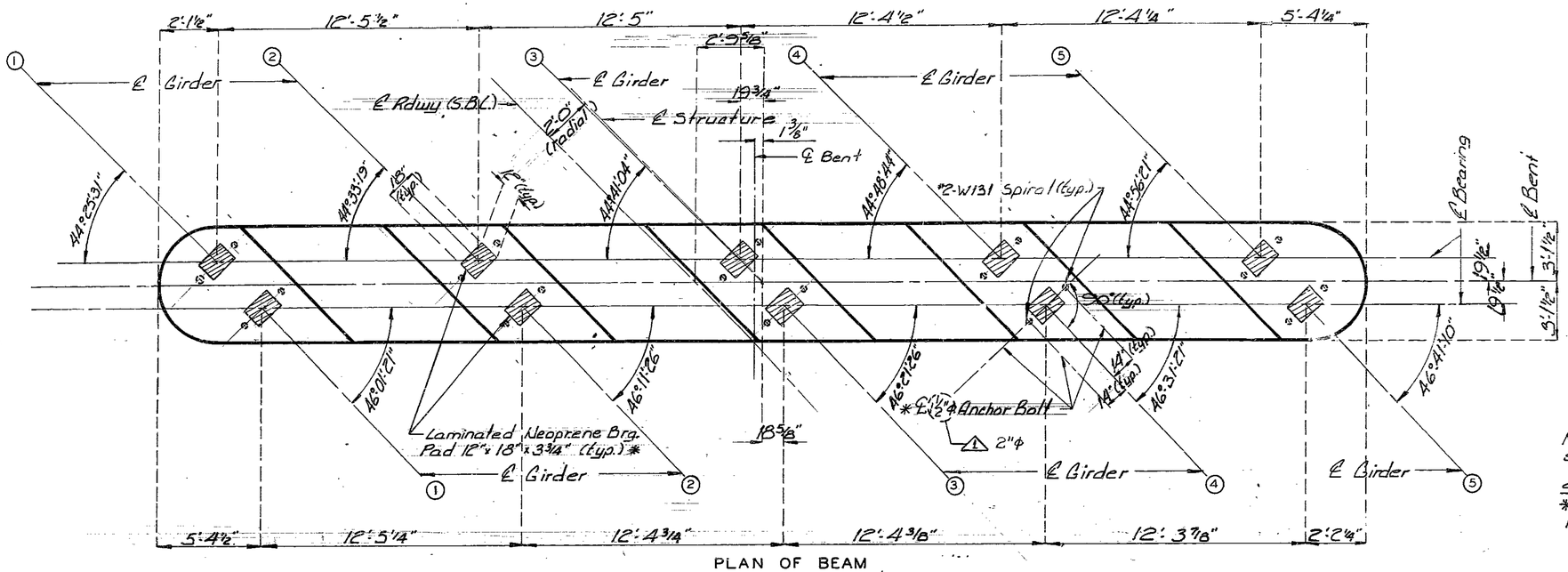
Note. For details of Int. Bent No. 12 not shown see sheet No. 32. For Pile Splice Detail see sheet No. 9.

DETAILED MAY 1988
CHECKED August 1988

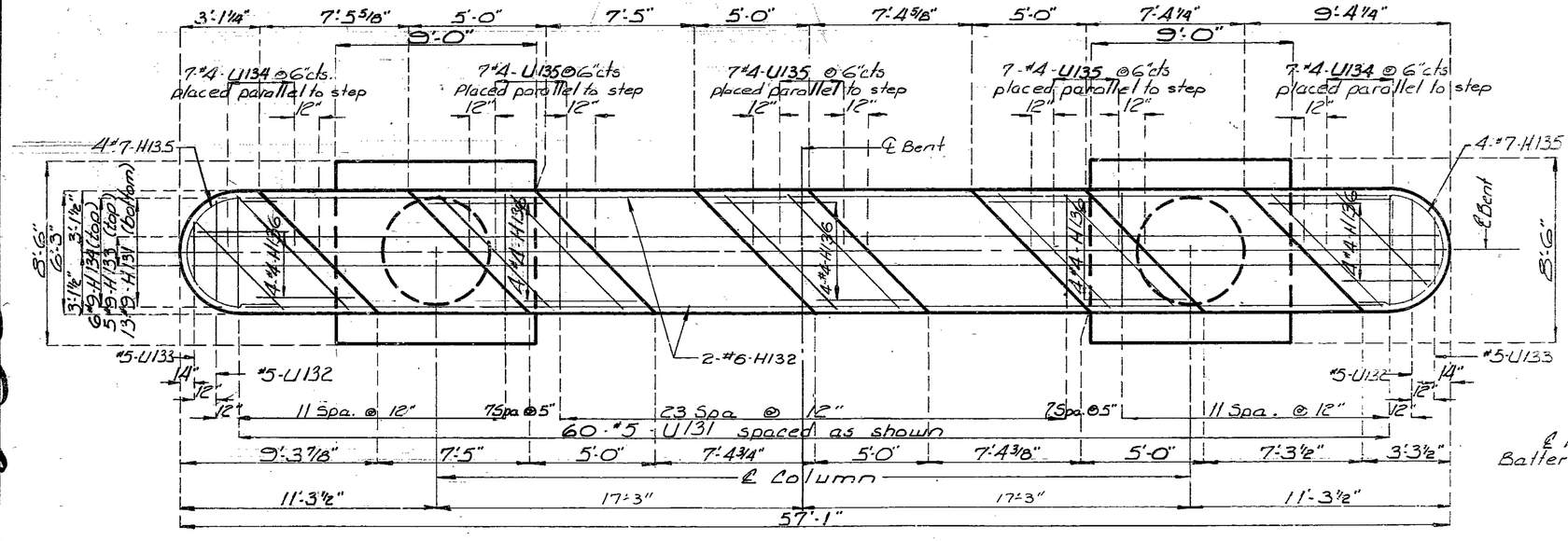
DETAILS OF INTERMEDIATE BENT NO. 12

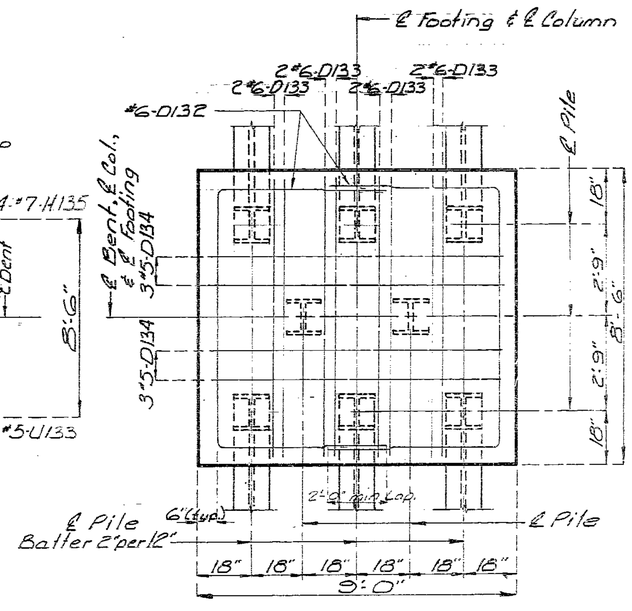
Note: This drawing is not to scale. Follow dimensions.

STATE	PROJ. NO.	SHEET NO.
MO.		89



Note: For details of Bl. No.13 not shown see sheet No. 35.
For Details of Anchor Bolt Spiral see sheet No. 9.
* Bearings and Anchor Bolts are included in Future Construction.





DETAILED MAY 1988
CHECKED August 1988

Note: This drawing is not to scale. Follow dimensions.

DETAILS OF INTERMEDIATE BENT NO. 13

Sheet No. 34 of 58

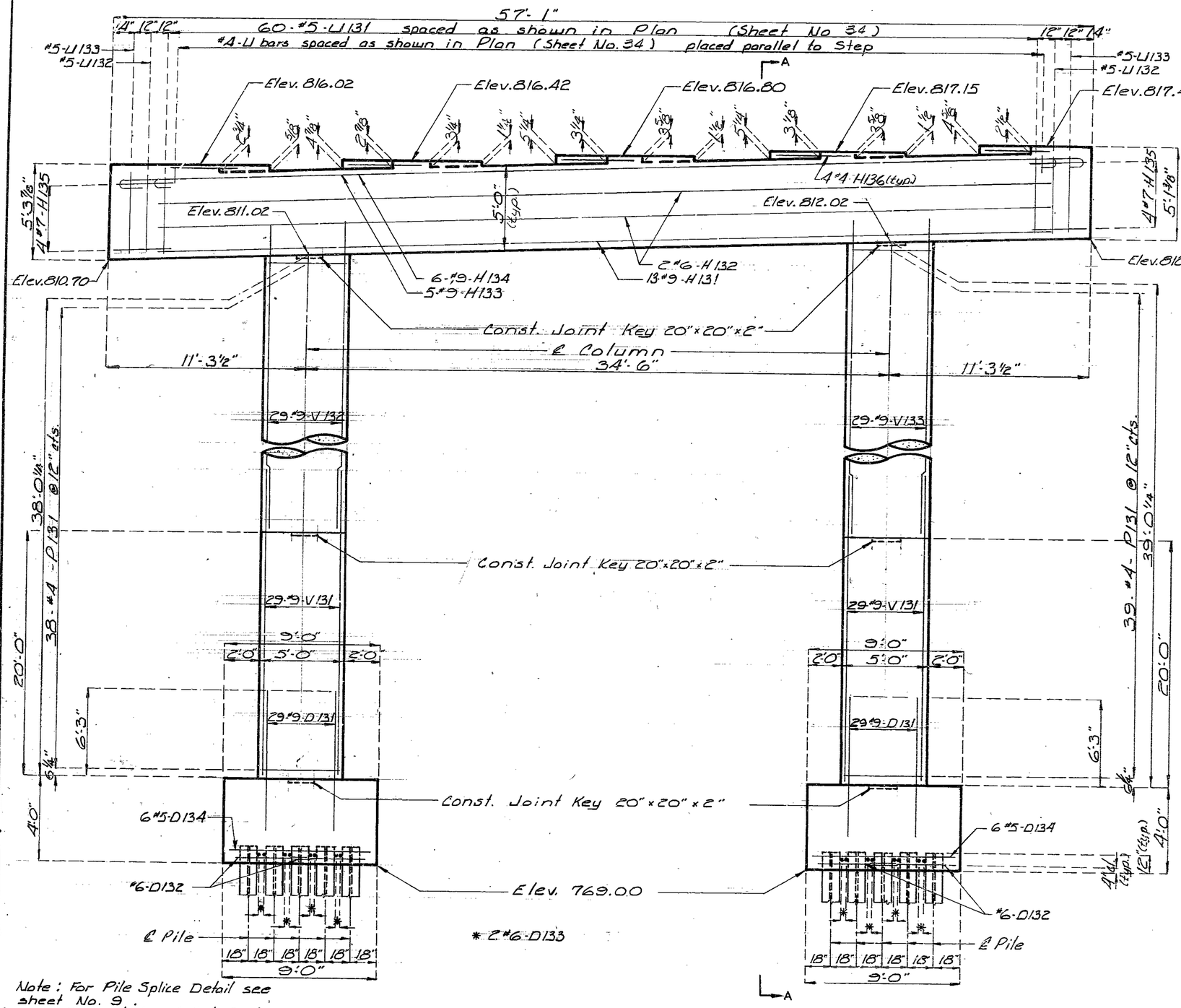
⚠ Revised 3/8/89

JACKSON COUNTY

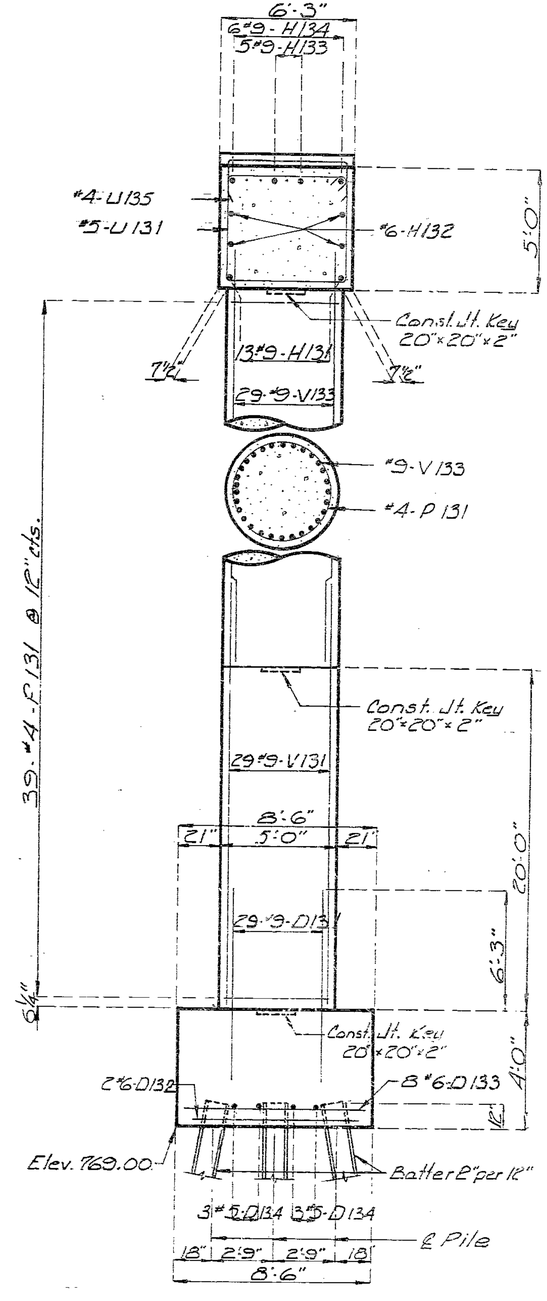
A-2745

A30 344

STATE	PROJ. NO.	SHEET NO.
MO.		90



ELEVATION



SECTION A-A

Note: For Pile Splice Detail see sheet No. 9.
For details of Int. Bent No. 13 not shown see sheet No. 34.

DETAILED MAY 1988
CHECKED August 1988

DETAILS OF INTERMEDIATE BENT NO. 13

Note: This drawing is not to scale. Follow dimensions.

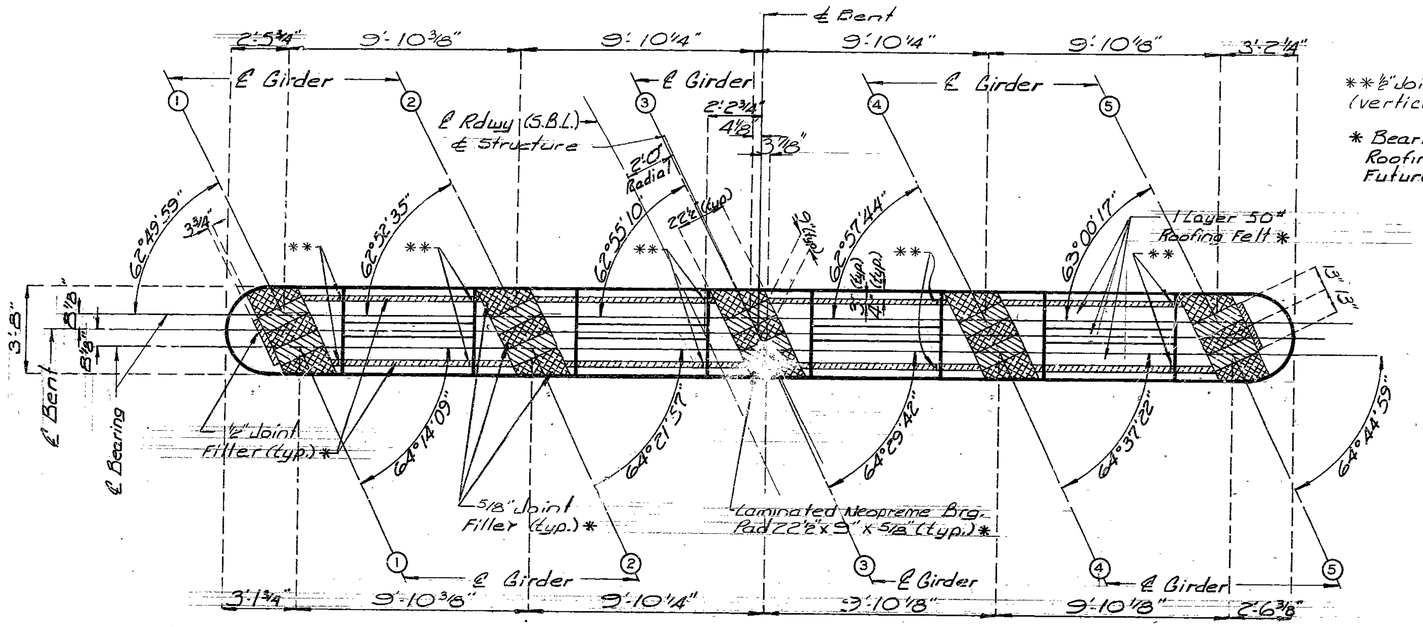
Sheet No. 35 of 35

JACKSON COUNTY

A-2745

B3L 345

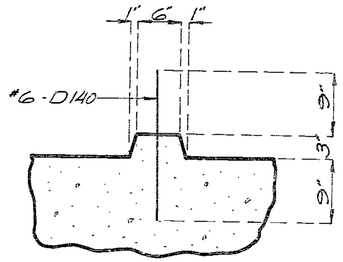
STATE	PROJ. NO.	SHEET NO.
MO.		91



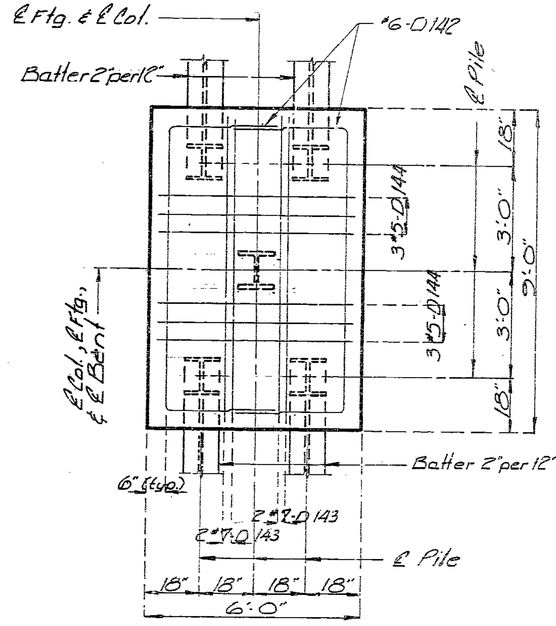
PLAN OF BEAM

** ½" Joint Filler (vertical Face) *

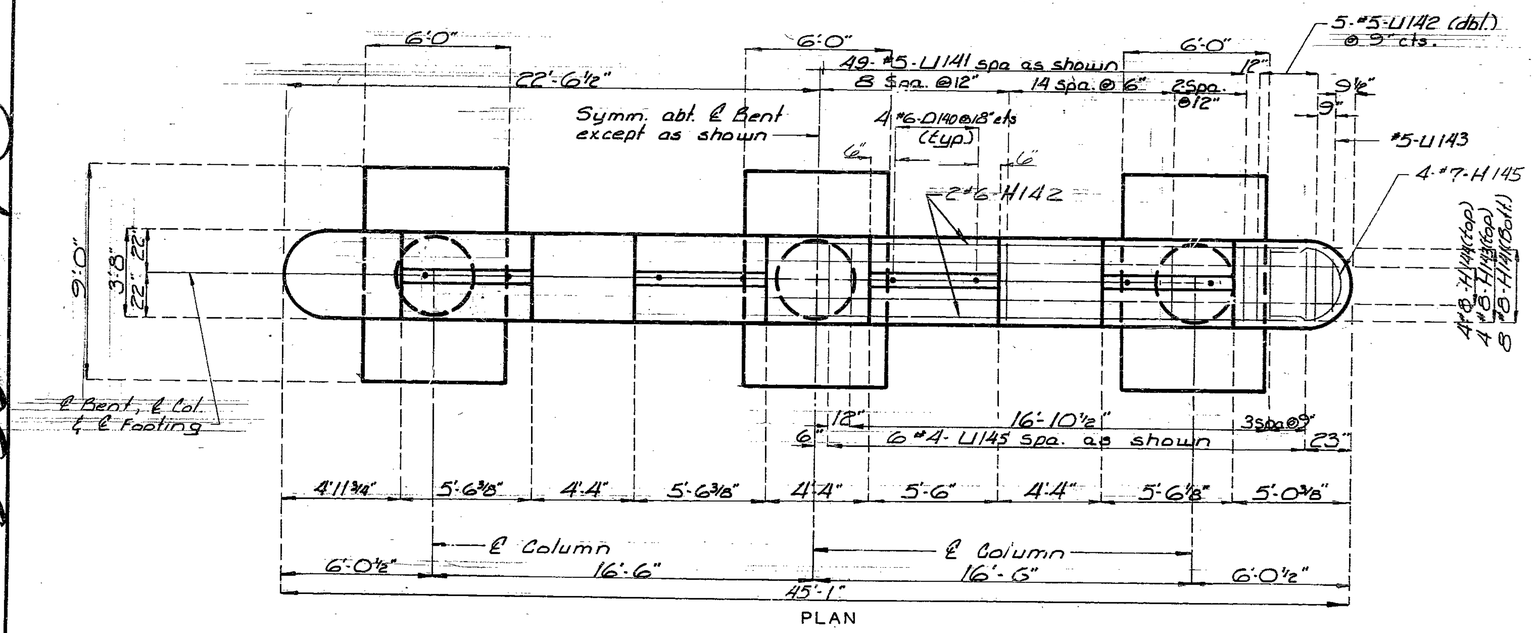
* Bearings, J.I. Filler, and Roofing Felt are in Future Construction.



DETAIL OF KEY



PLAN OF FOOTING



PLAN

Note: For details of Bent No. 14 not shown see sheet No. 37.

DETAILS OF INTERMEDIATE BENT NO. 14

DETAILED JUNE 1988
CHECKED August 1988

Note: This drawing is not to scale. Follow dimensions.

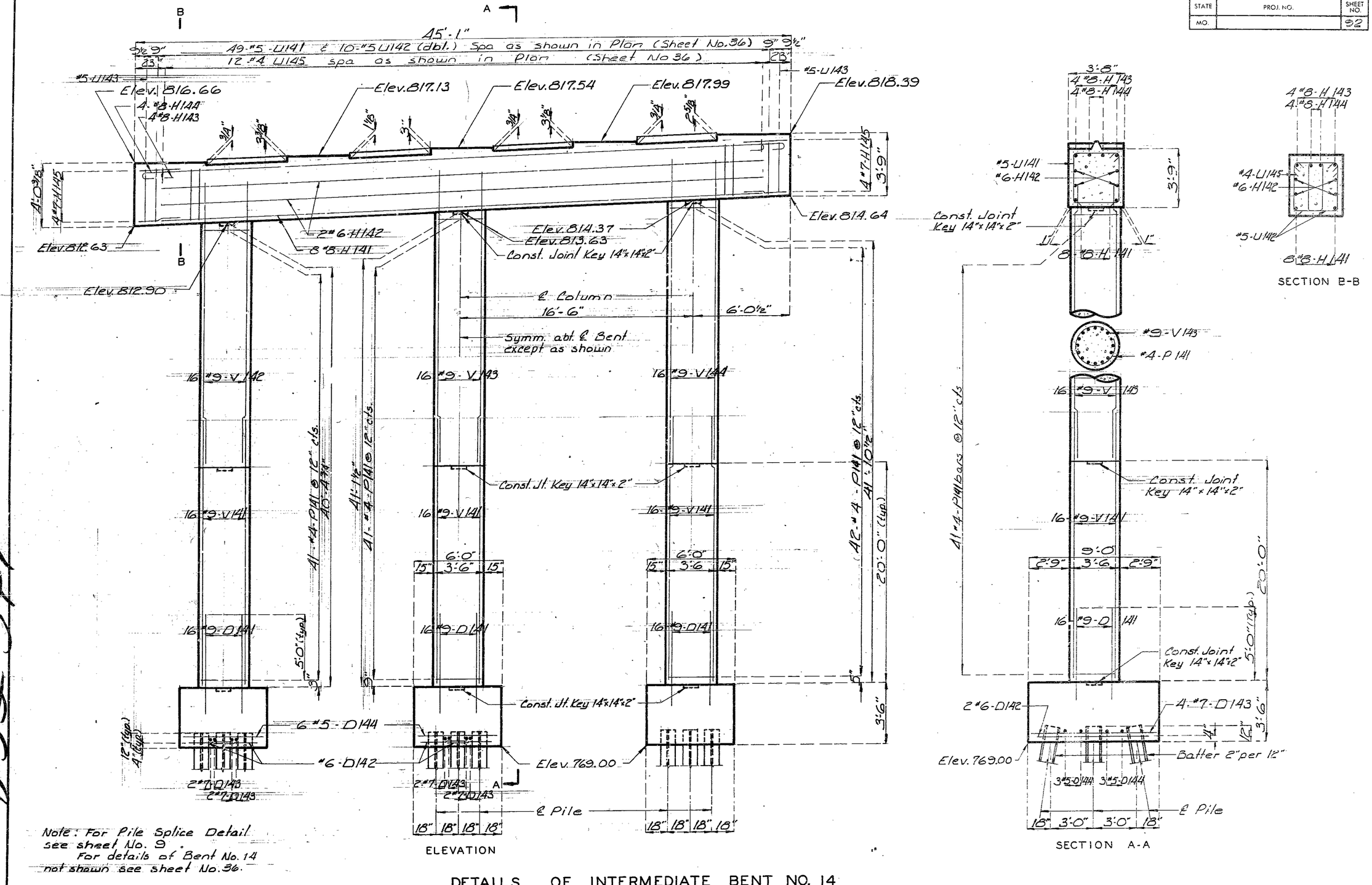
Sheet No. 36 of 55

JACKSON COUNTY

A-2745

237 346

STATE	PROJ. NO.	SHEET NO.
MO.		92



DETAILS OF INTERMEDIATE BENT NO. 14

DETAILED JUNE 1988
CHECKED August 1988

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 27 of 55

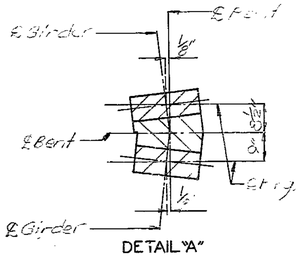
JACKSON COUNTY

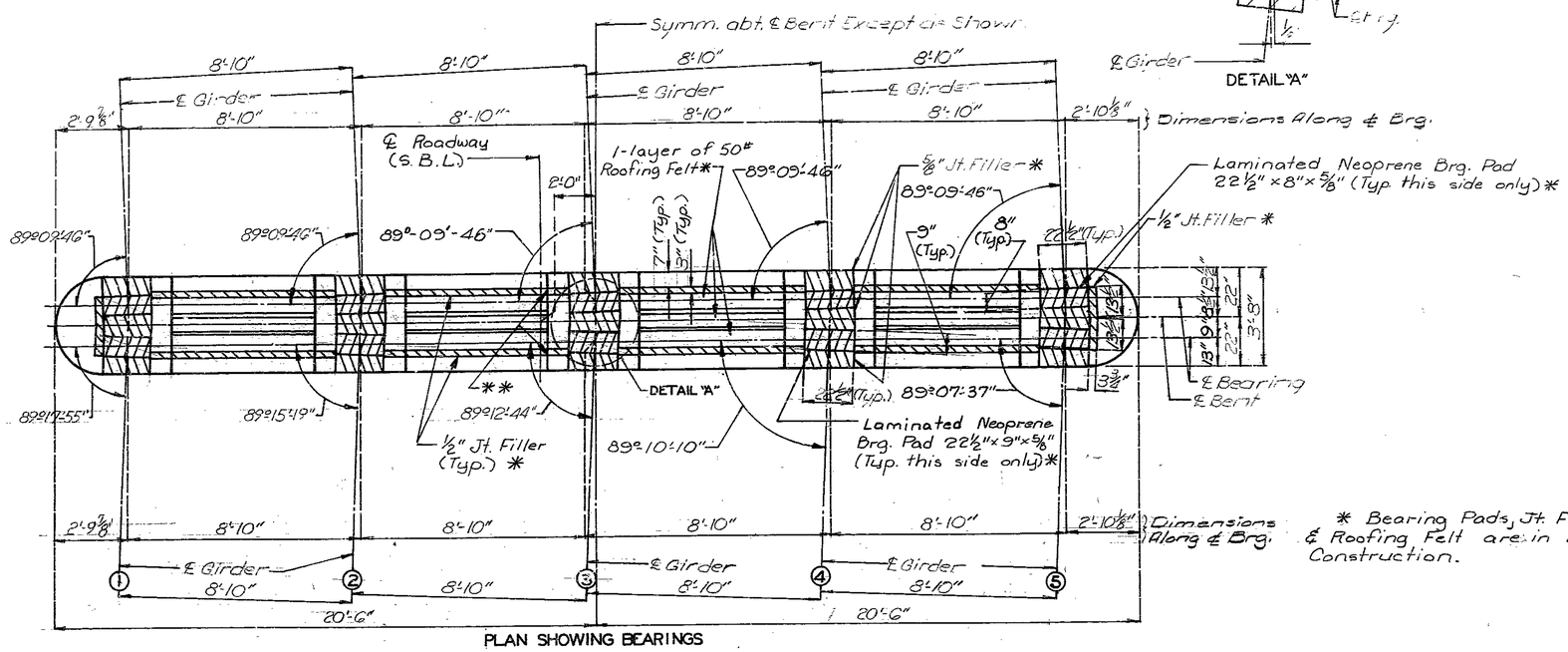
A-2745

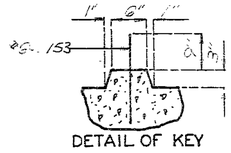
933 347

STATE	PROJ. NO.	SHEET NO.
MO.		93

Note: For Details of Expansion Joints at Bent 1 see Sht. No. 39.

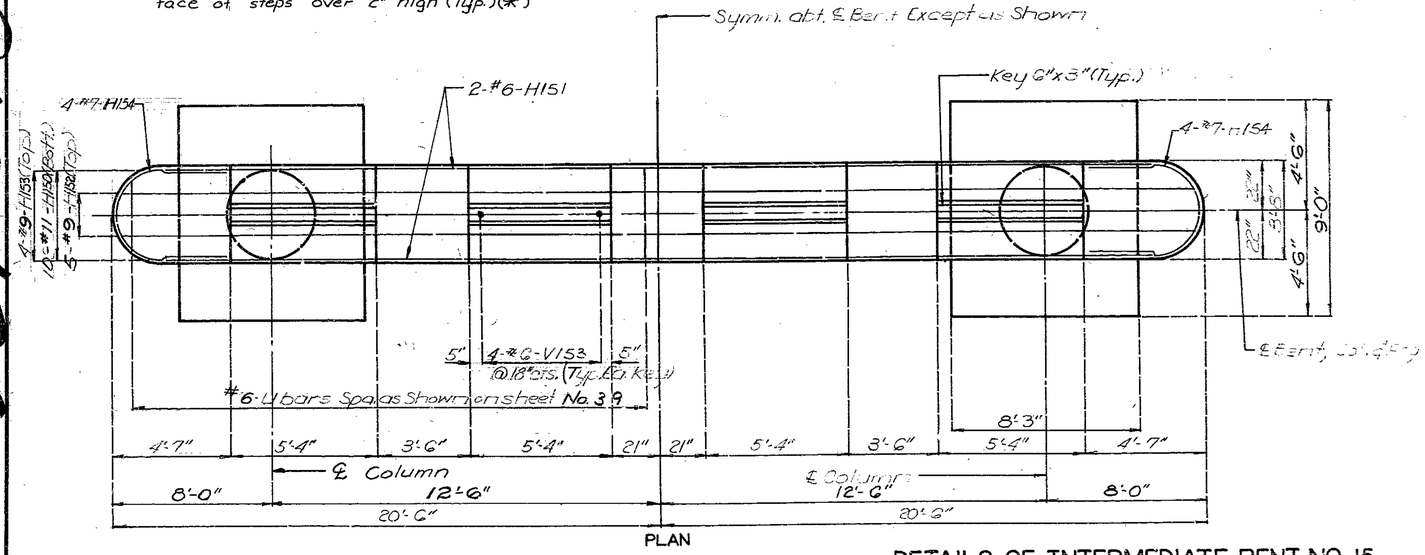




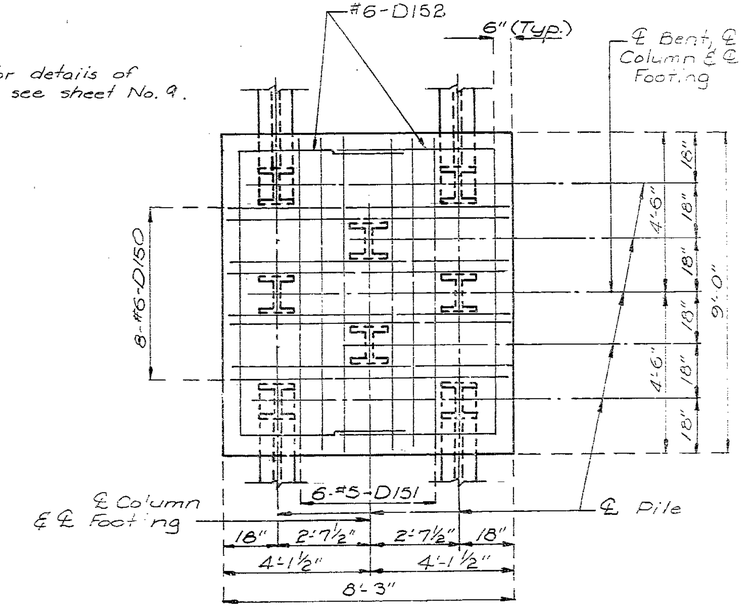


* Bearing Pads, Jt. Filler & Roofing Felt are in Future Construction.

** ½" Jt. Filler on vertical face of steps over 2" high (Typ.)(*)



Note: For details of pile splice see sheet No. 9.



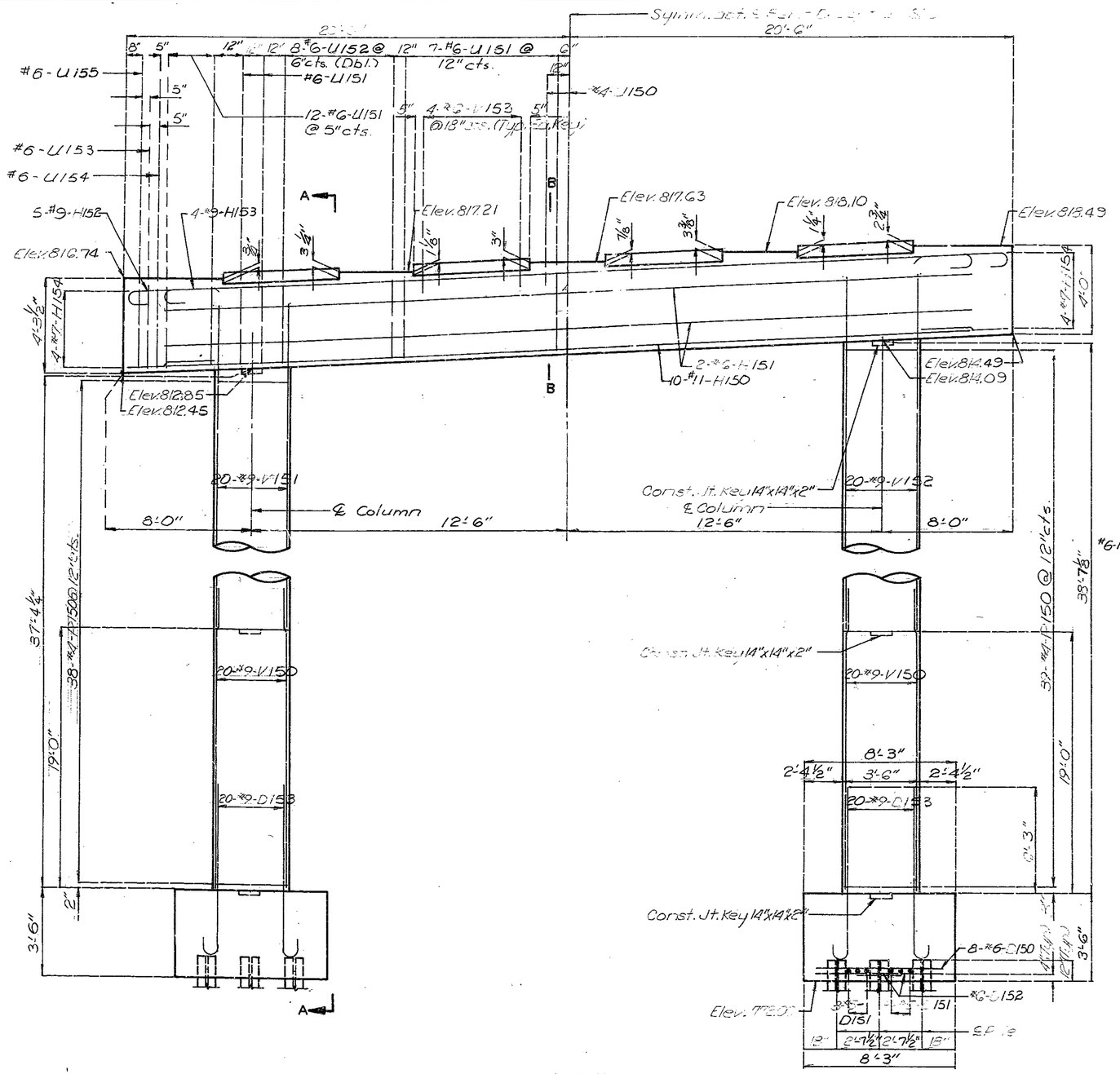
DETAILS OF INTERMEDIATE BENT NO. 15

B4 348

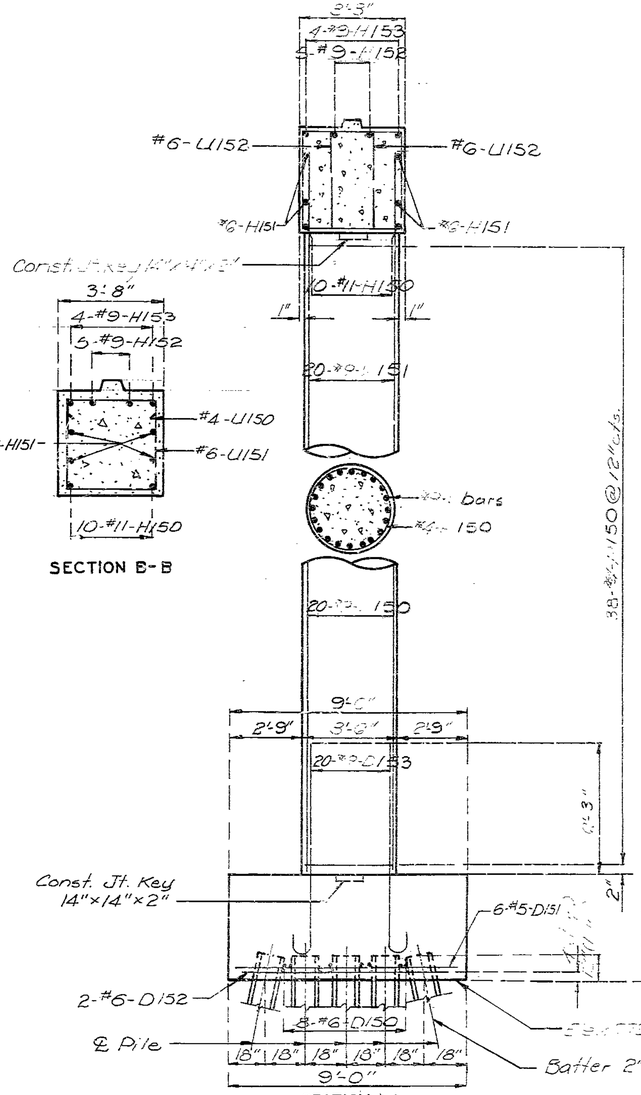
DETAILED MAY 1988
CHECKED Aug. 1988

Note: This drawing is not to scale. Follow dimensions.

STATE	PROJ. NO.	SHEET NO.
MO.		34



ELEVATION



SECTION B-B

SECTION A-A

DETAILS OF INTERMEDIATE BENT NO. 15

DETAILED MAY 1988
CHECKED Rug. 1988

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 34 of 55

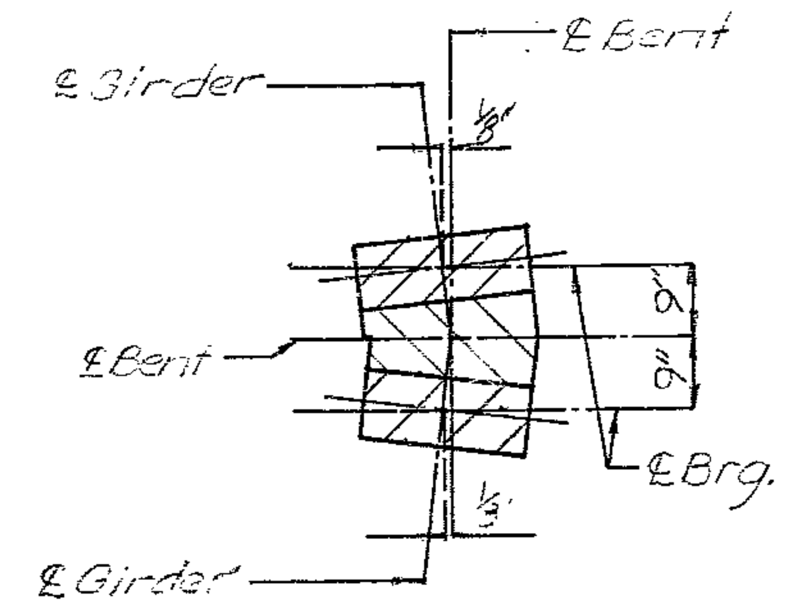
JACKSON COUNTY

A-2745

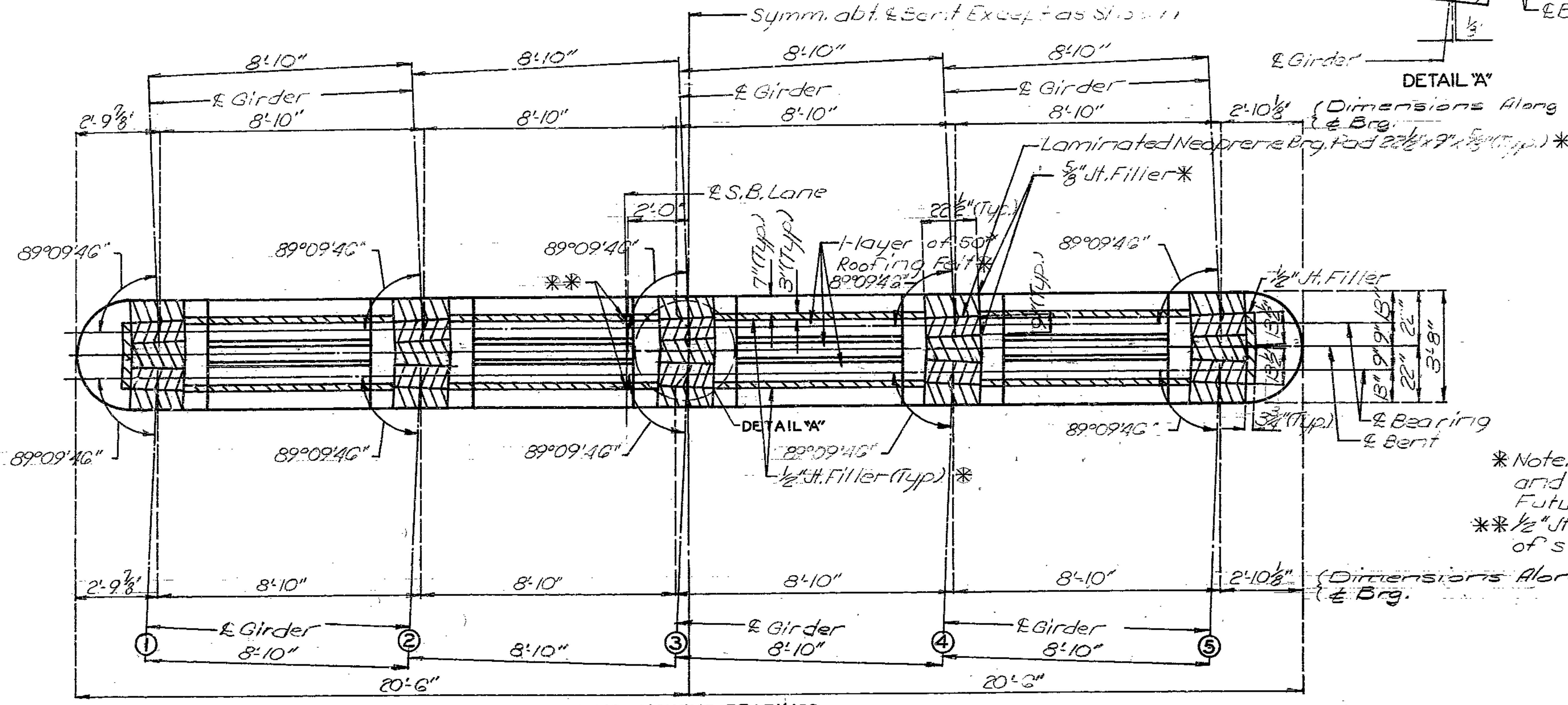
235 349

STATE	PROJ. NO.	SHEET NO.
MO.		95

Note: For details of ... see ... No. ...
For detail of pile splice see sheet No. 9

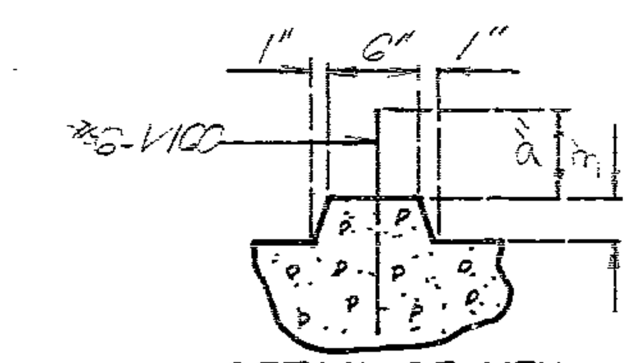


DETAIL "A"



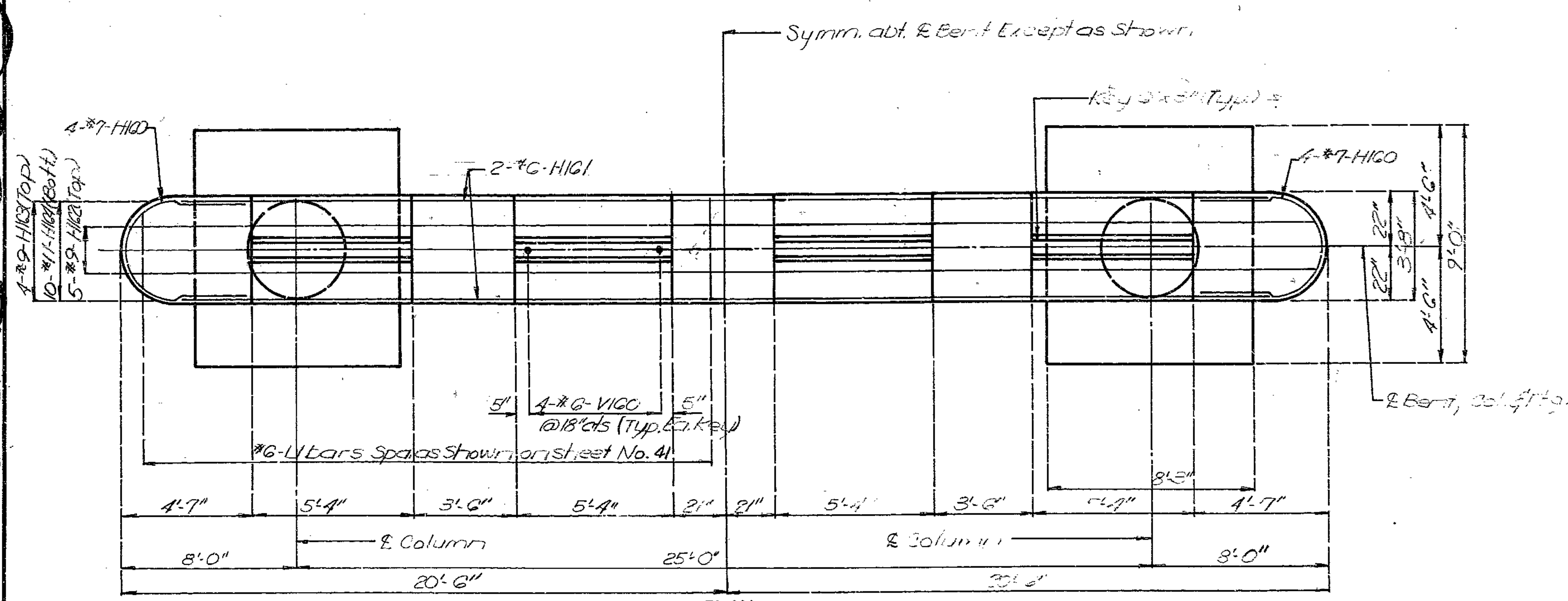
PLAN SHOWING BEARINGS

* Note: Bearing Pads, Jt. Filler and Roofing Felt are in Future Const.
** 1/2" Jt. Filler on vertical face of steps over 2" high (Typ.) *

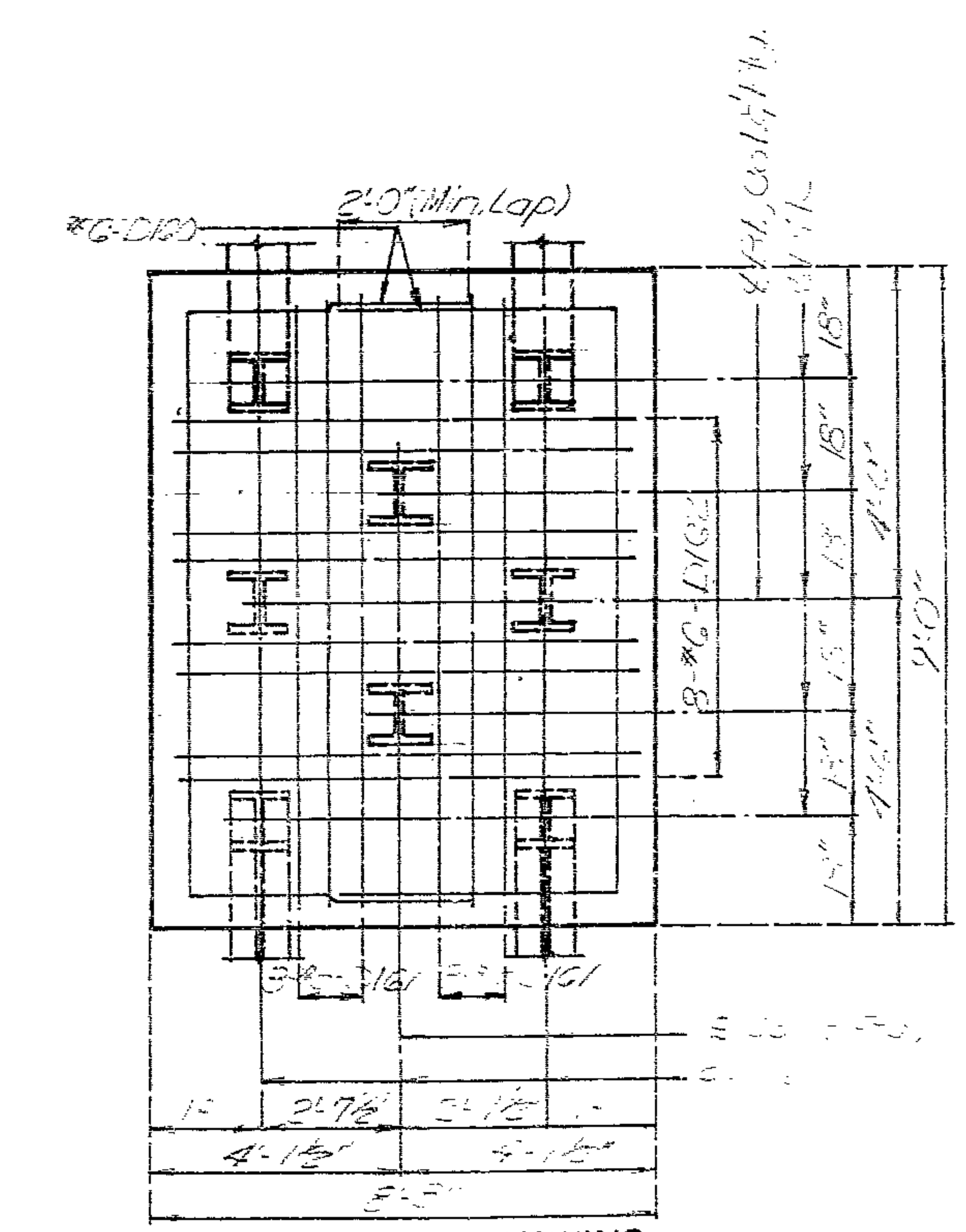


DETAIL OF KEY

336 350



PLAN



PLAN OF FOOTING SHOWING REINFORCEMENT

DETAILS OF INTERMEDIATE BENT NO. 16

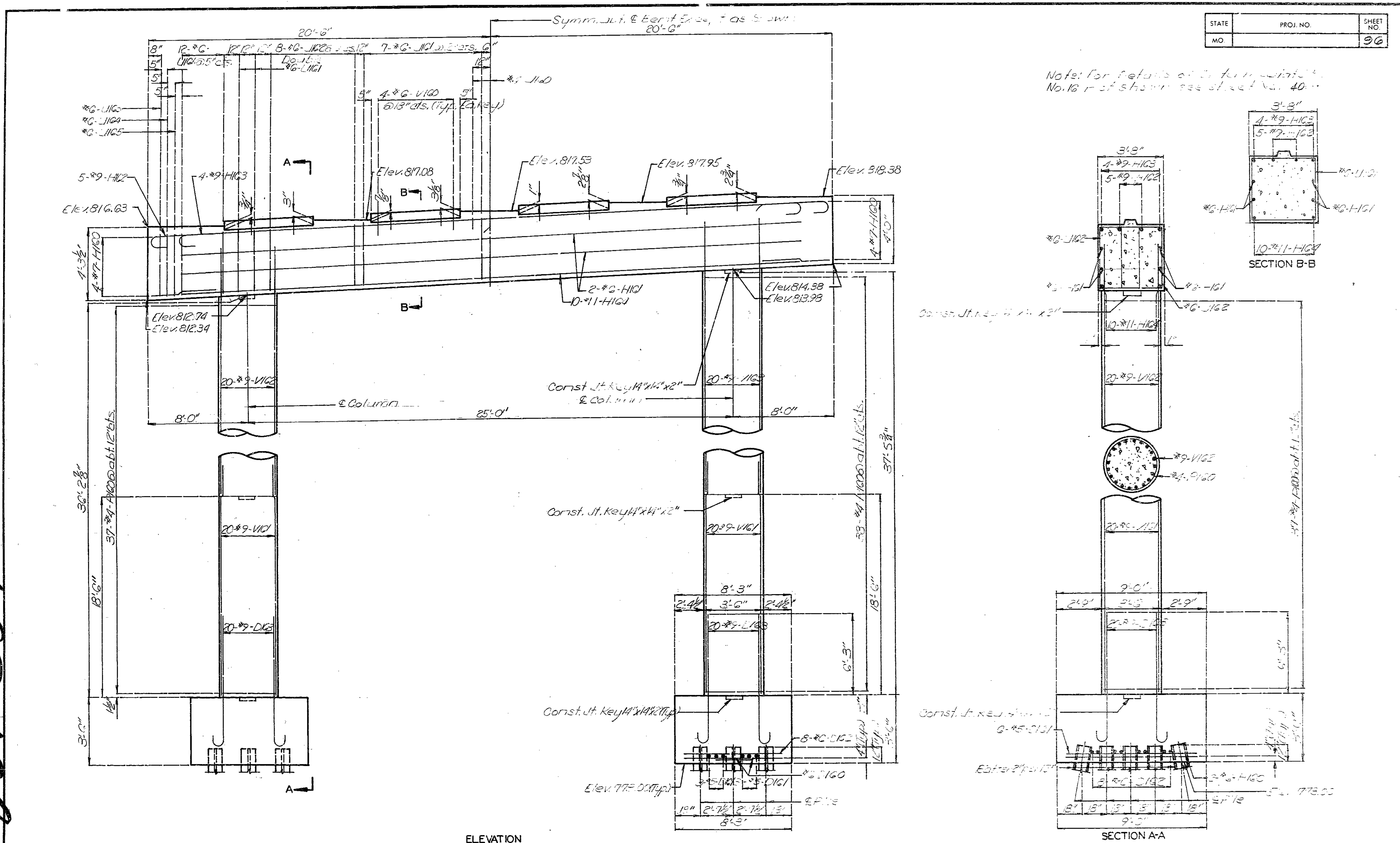
DETAILED AUG. 19 88
CHECKED AUG. 19 88

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 40 of 55

JACKSON COUNTY

A-2745



DETAILS OF INTERMEDIATE BENT NO. 16

DETAILED MAY 1988
CHECKED AUG 1988

Note: This drawing is not to scale. Follow dimensions.

JACKSON COUNTY

A-2745

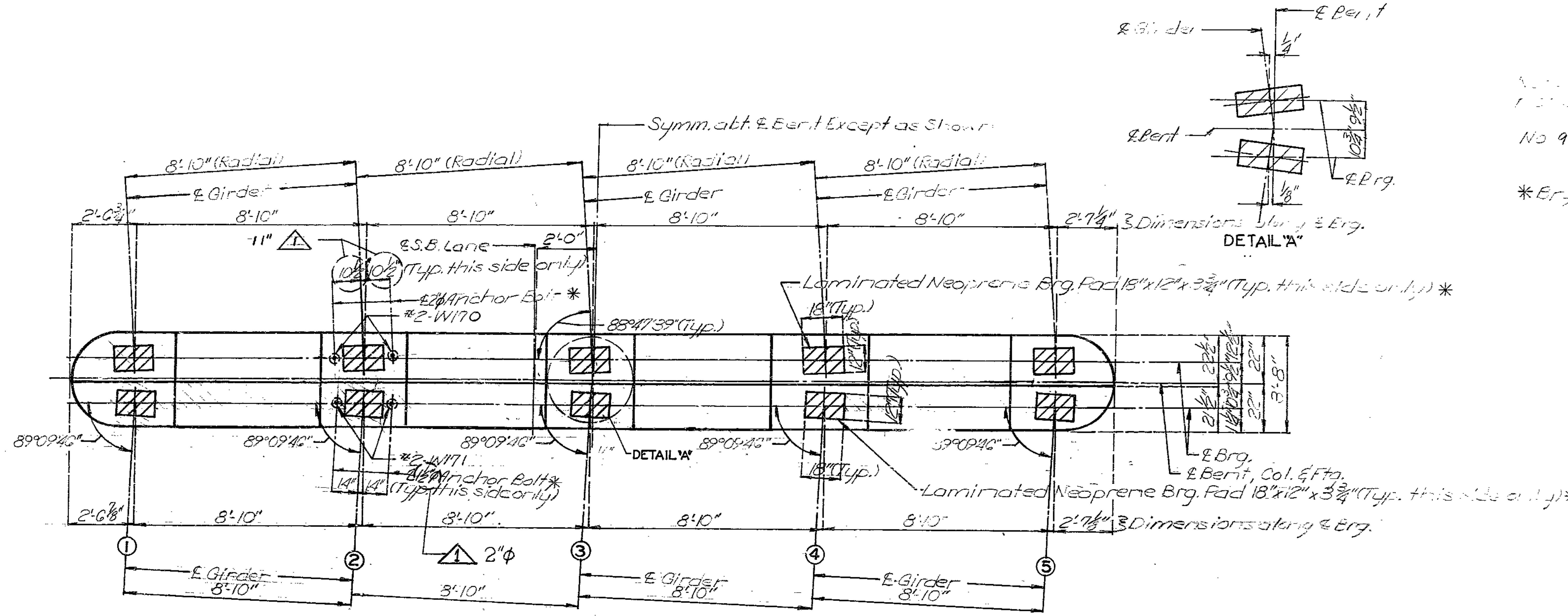
STATE	PROJ. NO.	SHEET NO
MO.		97

Note: For Details of Intermediate Bent No. [illegible] see sheet No. 43

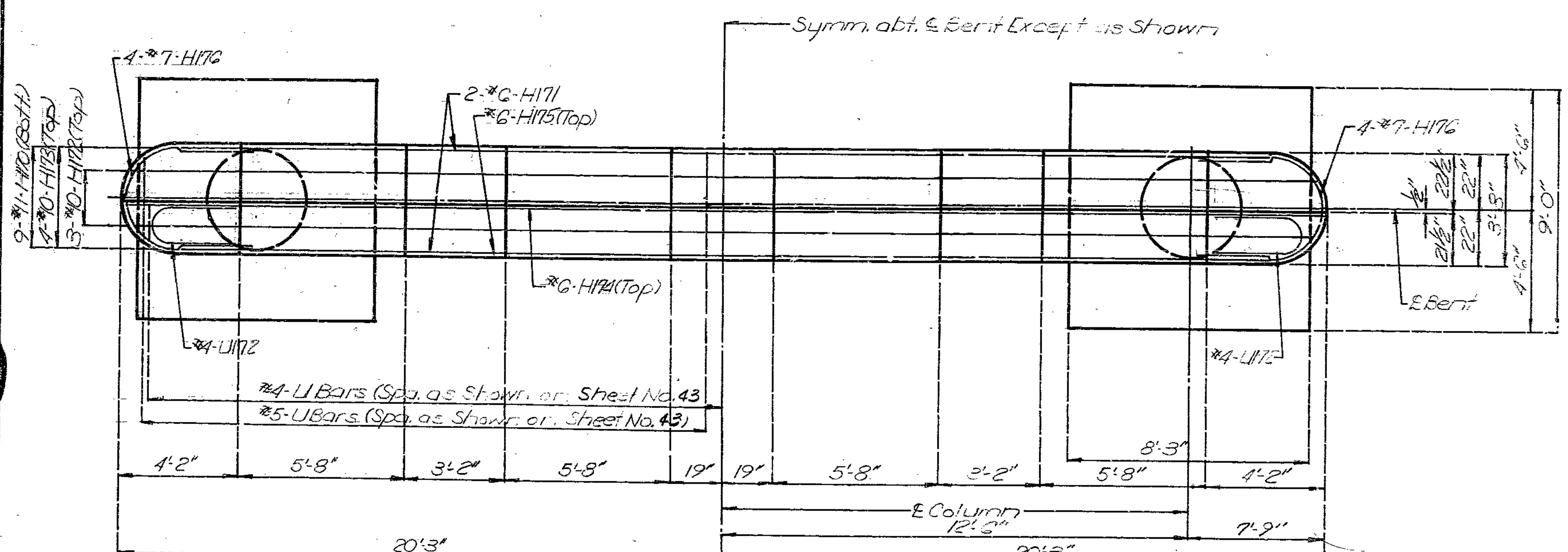
For Anchor Bolt Spirals [illegible] No. 9

For Pile Splice detail see sheet No. 9

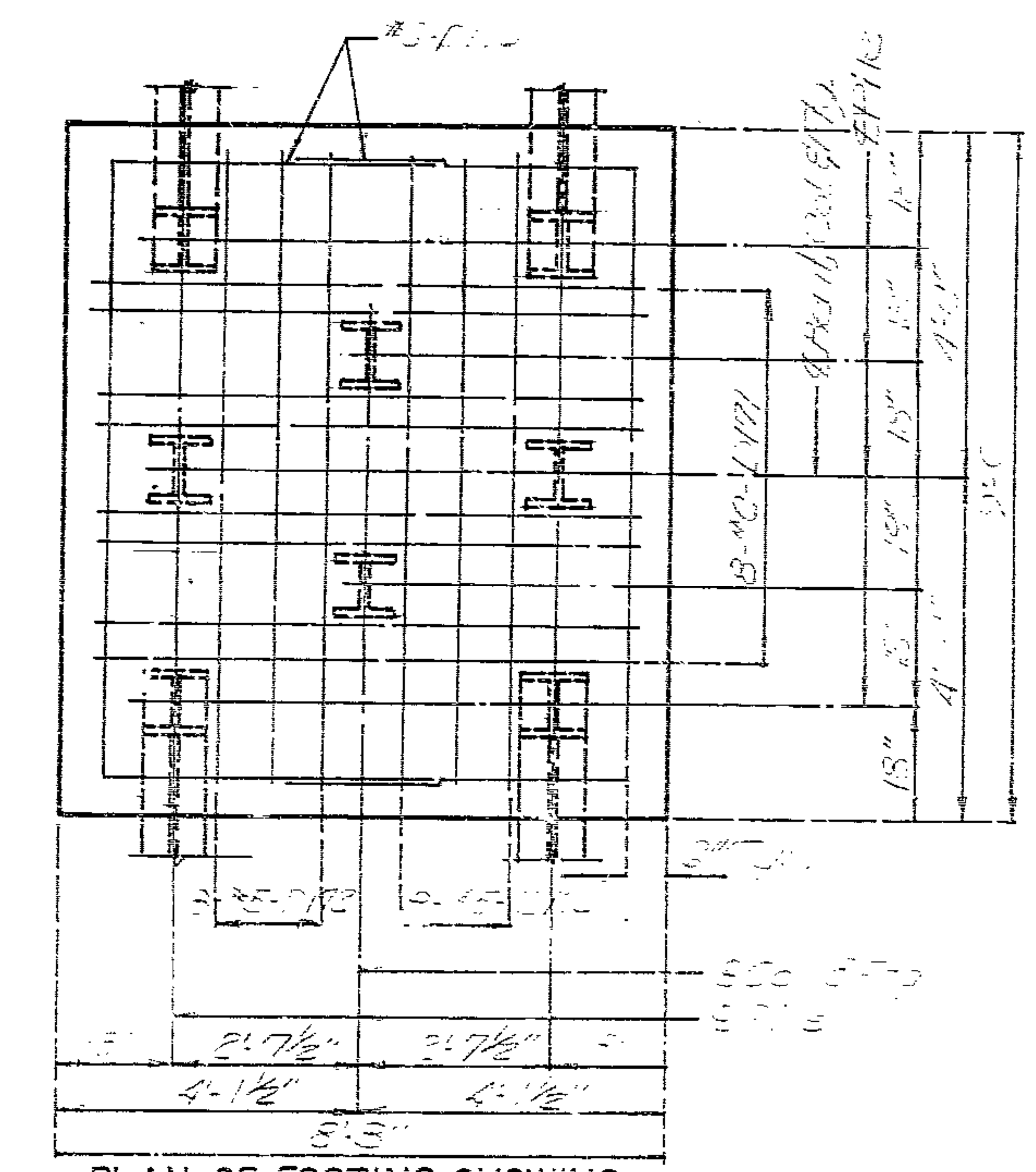
* Brgs & Anchor Bolts are in future construction.



PLAN SHOWING BEARINGS



PLAN



PLAN OF FOOTING SHOWING REINFORCEMENT

DETAILS OF INTERMEDIATE BENT NO.17

338 352

DETAILED JUN 1988
CHECKED AUG 1988

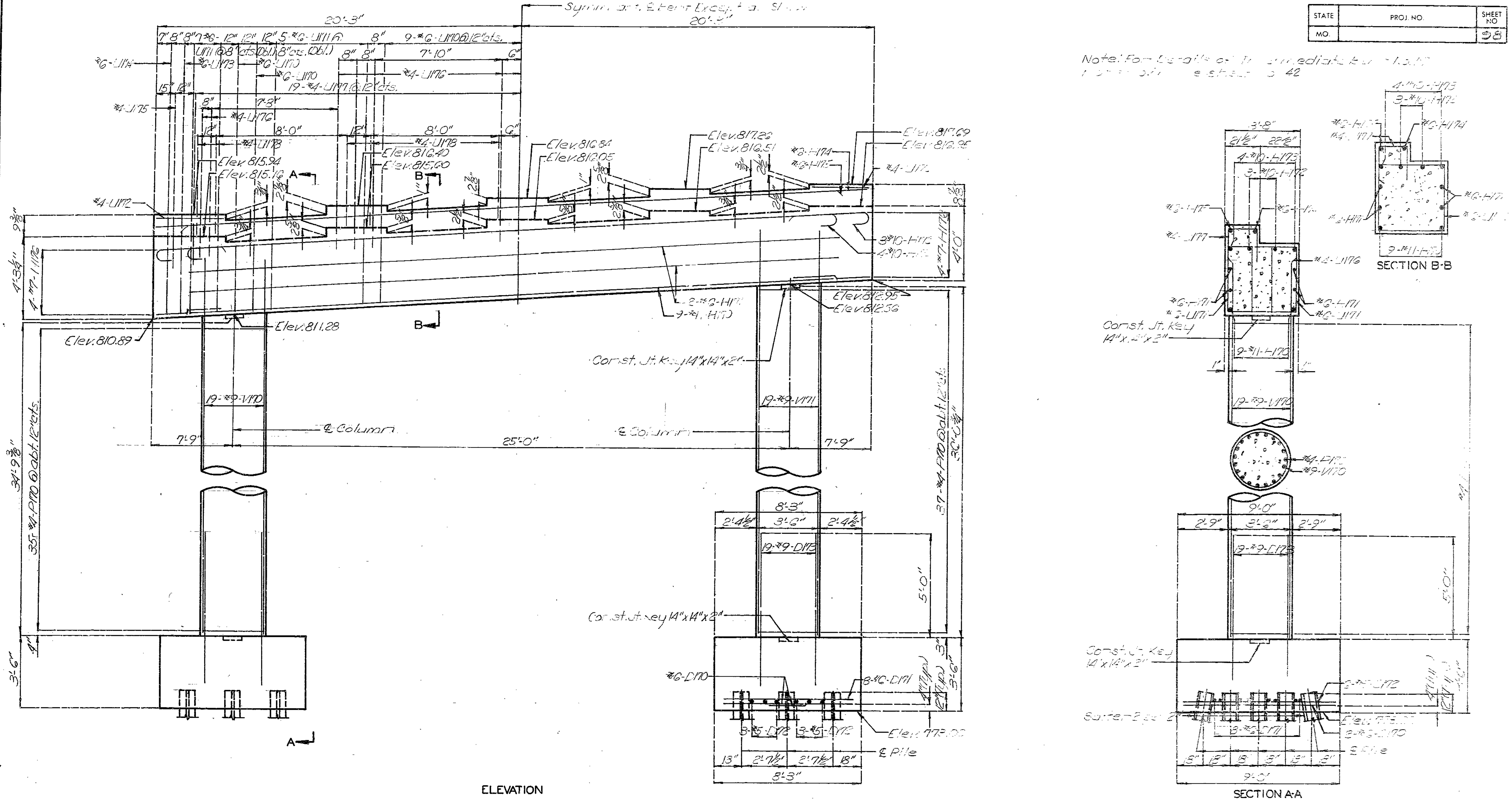
Note: This drawing is not to scale. Follow dimensions.

⚠1 Revised 3/8/89

JACKSON COUNTY

A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		98



DETAILS OF INTERMEDIATE BENT NO. 17

DETAILED JUN 1988
CHECKED AUG 1988

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 43 of 88

JACKSON COUNTY

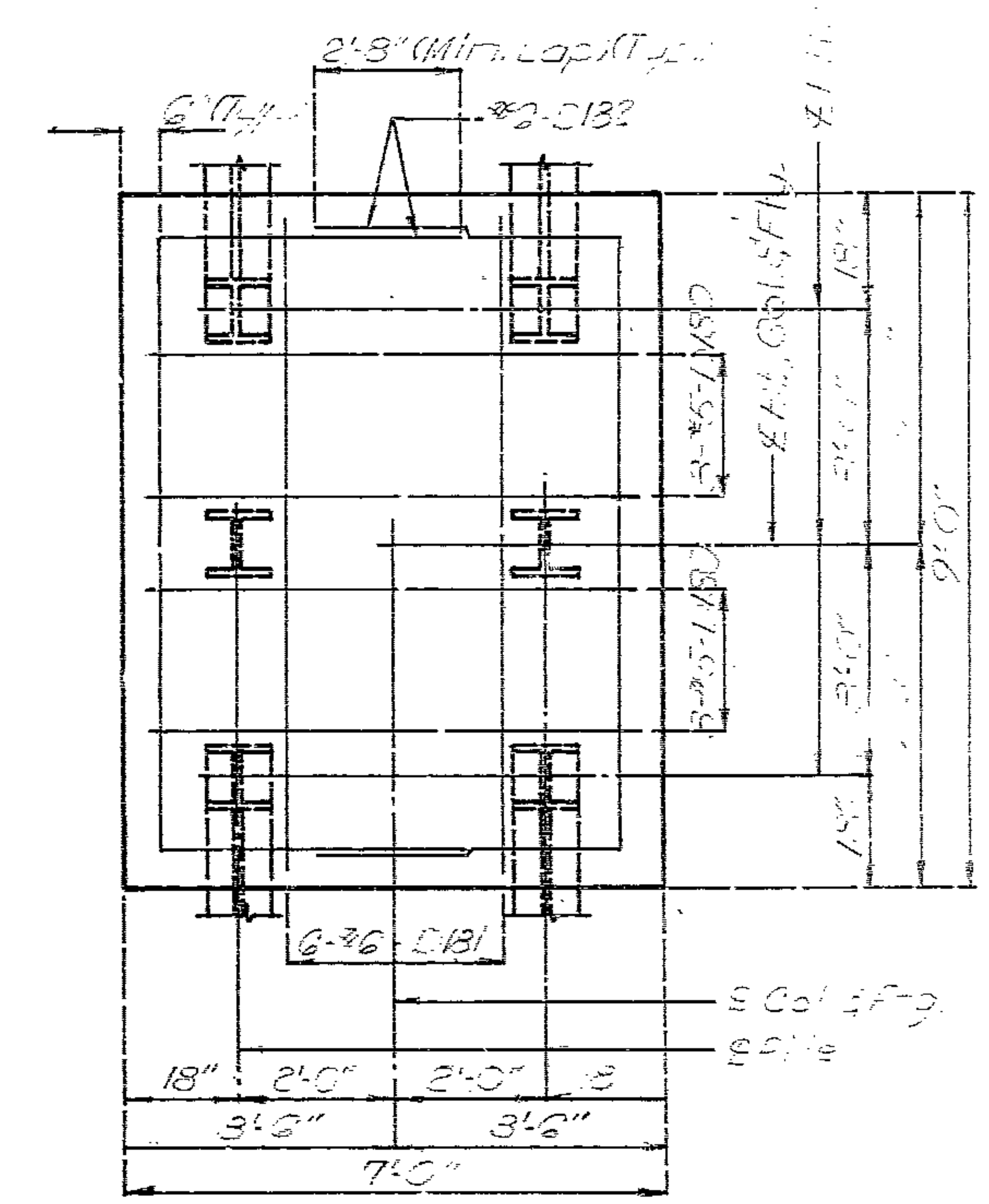
A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		99

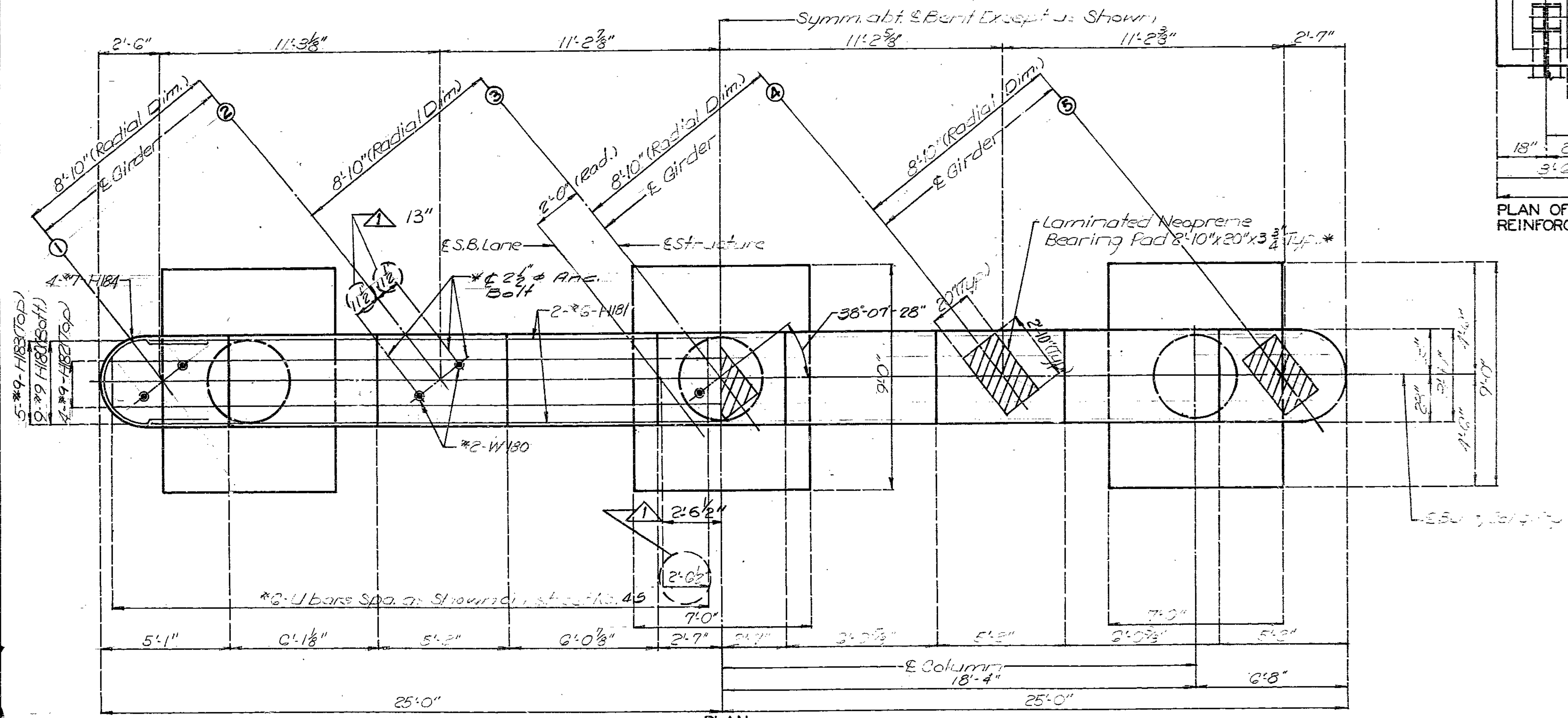
Note: For details of Intermediate Bent No. 18 not shown, see sheet No. 45
For details of anchor bolt spirals see sheet No. 9

Note: For details of pile splice see sheet No. 9

* Brgs. & Anchor bolts are in Future Construction.



PLAN OF FOOTING SHOWING REINFORCEMENT



DETAILS OF INTERMEDIATE BENT NO. 18

BR# 354

DETAILED JUNE 1988
CHECKED AUG 1988

Note: This drawing is not to scale. Follow dimensions.

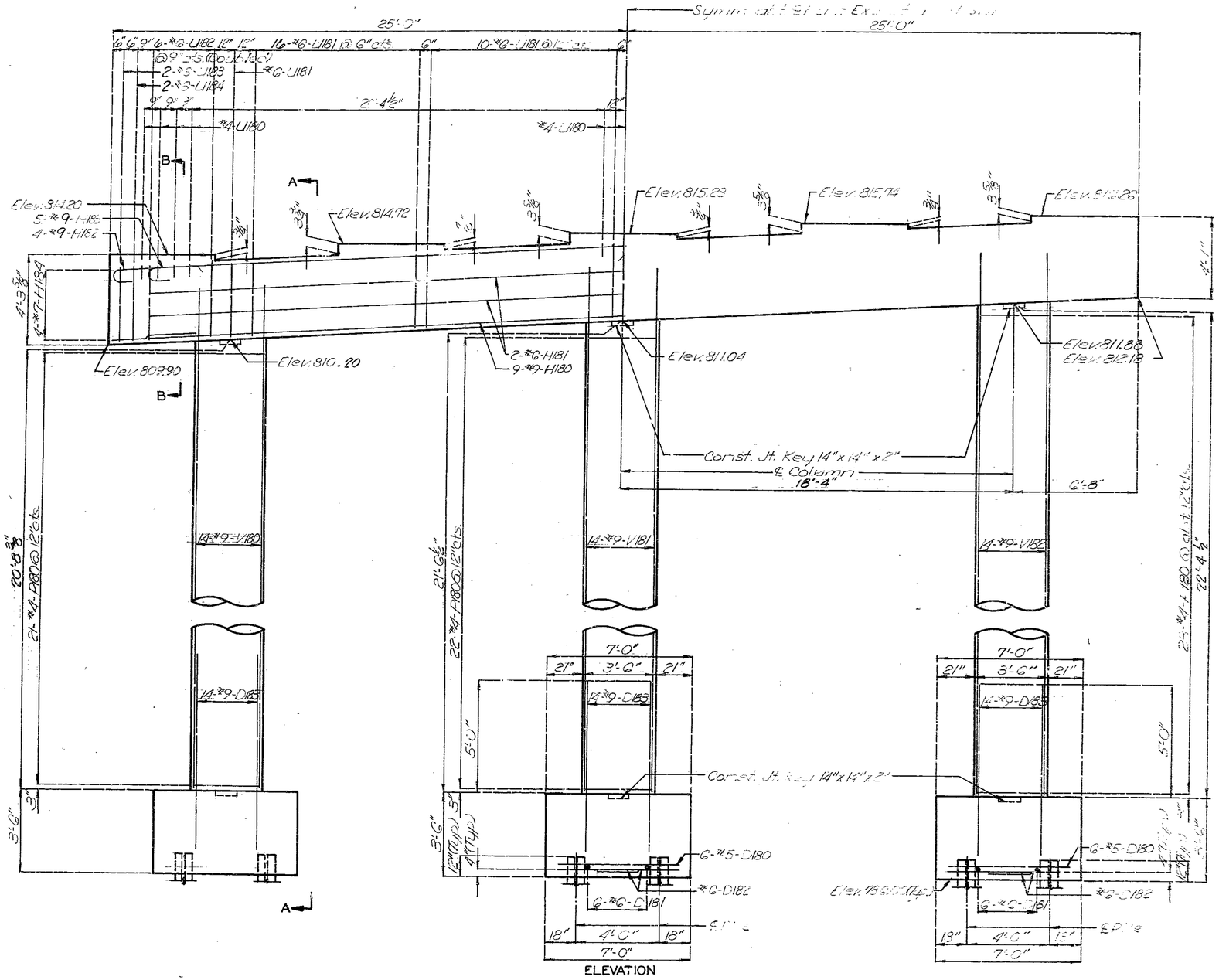
⚠1 Revised 3/8/89

JACKSON COUNTY

A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		100

Note: For detailing of Intermediate Bent No. 18 see Sheet No. 44



DETAILS OF INTERMEDIATE BENT NO. 18

DETAILED JUNE 1988
CHECKED AUG 1988

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 45 of 55

JACKSON COUNTY

A-2745

344 355

STATE	PROJ. NO.	SHEET NO.
MO.		101

ELEVATION

SECTION A-A

DETAIL OF ANCHOR BOLT & BEARING ORIENTATION (TYPICAL)

PLAN

PLAN OF FOOTING SHOWING REINFORCING

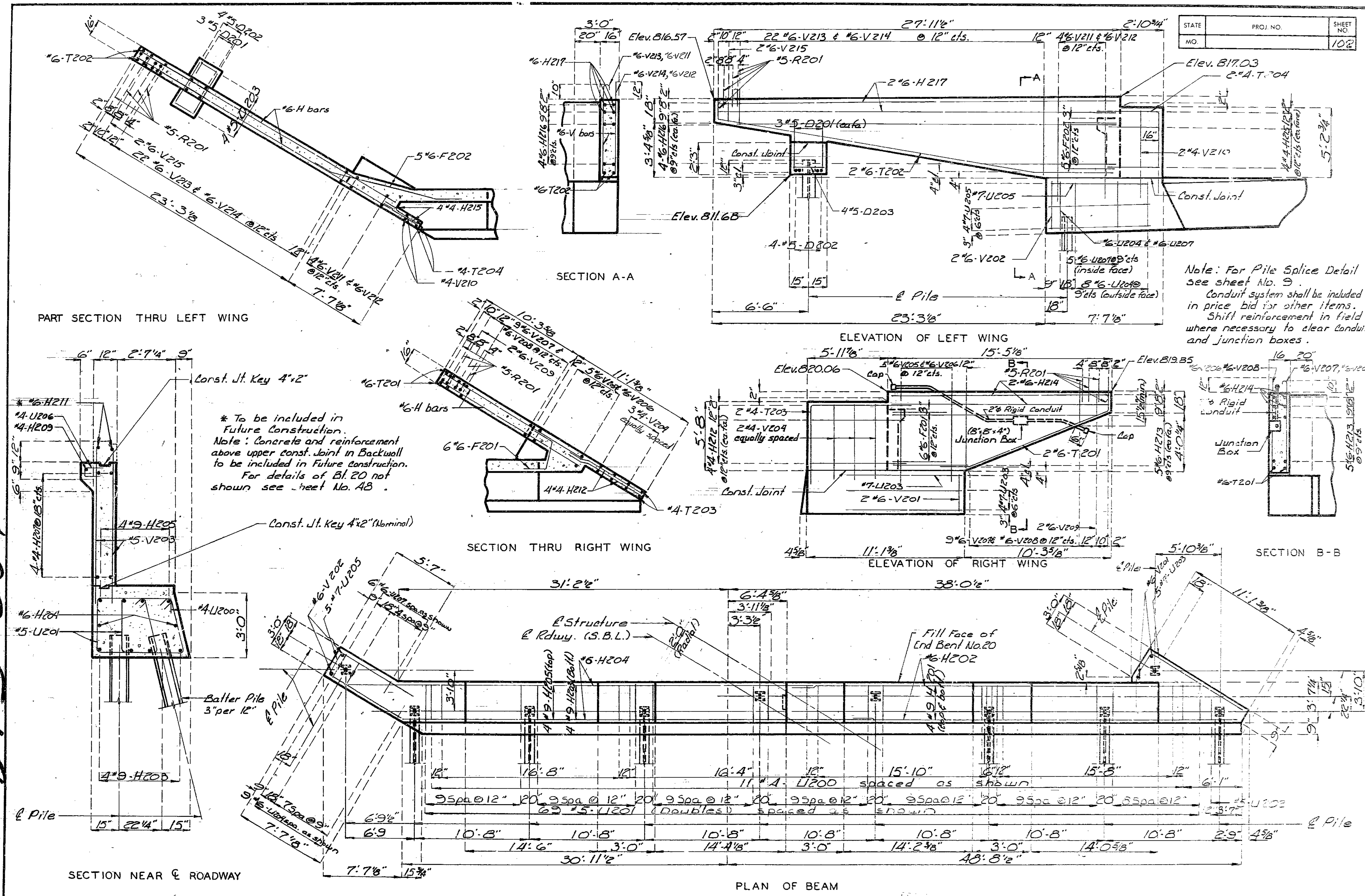
DETAILS OF INTERMEDIATE BENT NO. 19

DETAILED June 1980
CHECKED AdG. 1938

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 46 of 53 ⚠1 Revised 3/5/39 JACKSON COUNTY A-2745

942 356


PART SECTION THRU LEFT WING
SECTION A-A
ELEVATION OF LEFT WING
SECTION NEAR ℄ ROADWAY
SECTION THRU RIGHT WING
ELEVATION OF RIGHT WING
SECTION B-B
PLAN OF BEAM
* To be included in Future Construction.
Note: Concrete and reinforcement above upper const. joint in Backwall to be included in Future Construction. For details of Bt. 20 not shown see sheet No. A8.
Note: For Pile Splice Detail see sheet No. 9. Conduit system shall be included in price bid for other items. Shift reinforcement in field where necessary to clear conduit and junction boxes.

DETAILED JUNE 1988
CHECKED August 1988

Note: This drawing is not to scale. Follow dimensions.

DETAILS OF END BENT NO. 20

Sheet No. 47 of 55

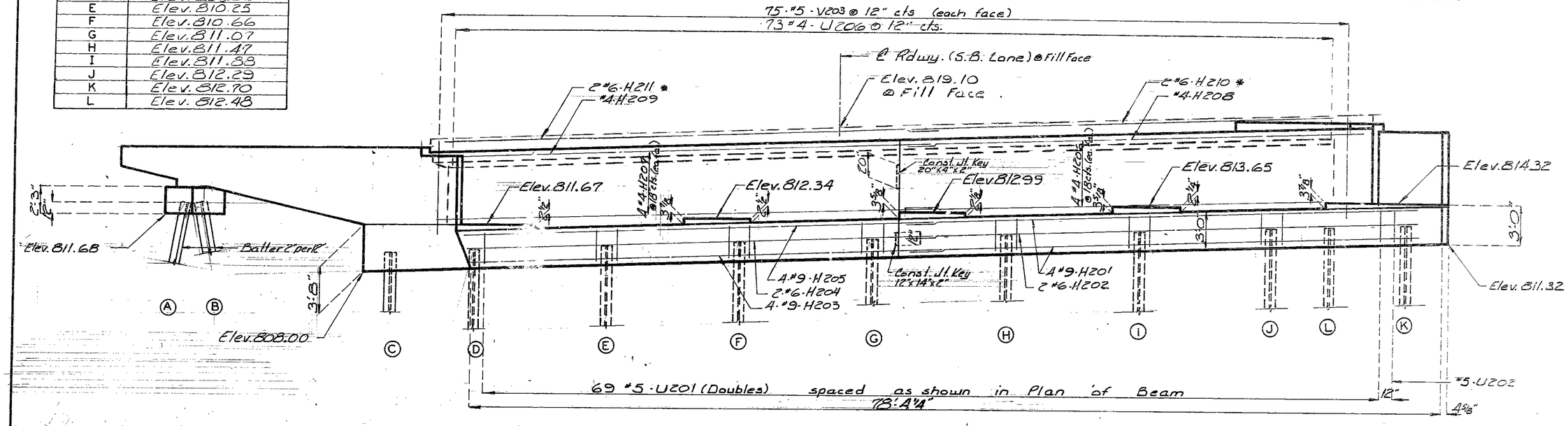
JACKSON COUNTY

A-2745

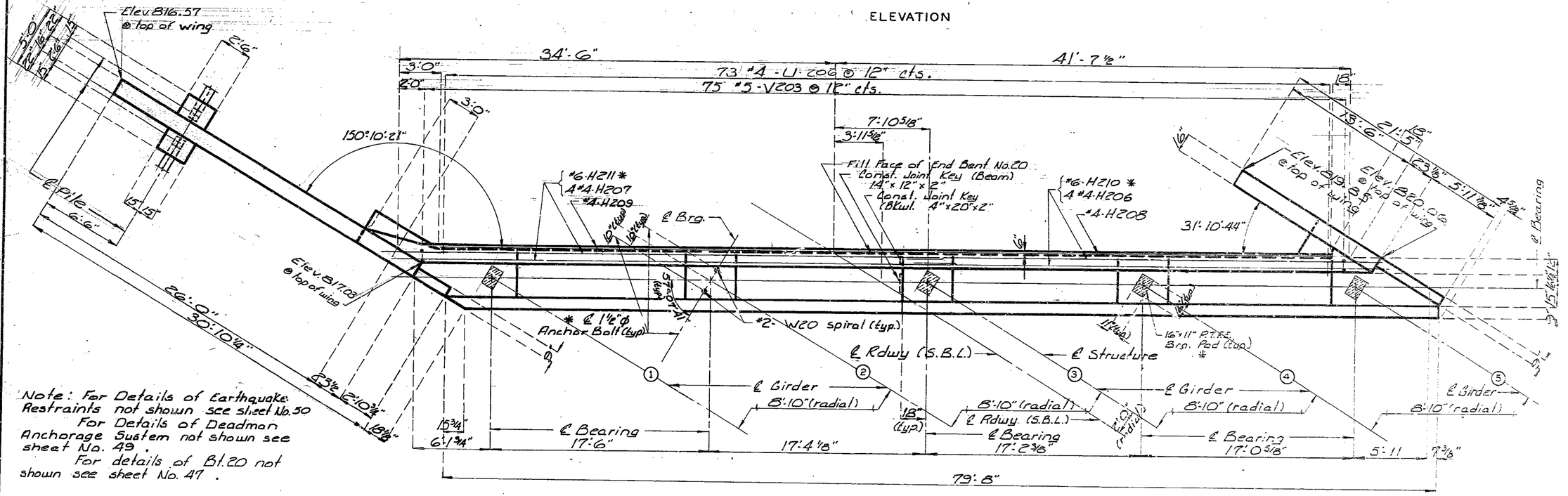
STATE	PROJ. NO.	SHT. NO.
MO.		105

PILE NO.	PILE CUT-OFF ELEV.
A	Elev. 812.68
B	Elev. 812.68
C	Elev. 809.58
D	Elev. 809.84
E	Elev. 810.25
F	Elev. 810.66
G	Elev. 811.07
H	Elev. 811.47
I	Elev. 811.88
J	Elev. 812.29
K	Elev. 812.70
L	Elev. 812.48

* "6-H210, "6-H211, Brgs., & Anchor Bolts are in Future Construction.



ELEVATION



PLAN

Note: For Details of Earthquake Restraints not shown see sheet No. 50
For Details of Deadman Anchorage System not shown see sheet No. 49.
For details of Bt. 20 not shown see sheet No. 47.

~~374-358~~

DETAILED JUNE 1988
CHECKED August 1988

Note: This drawing is not to scale. Follow dimensions.

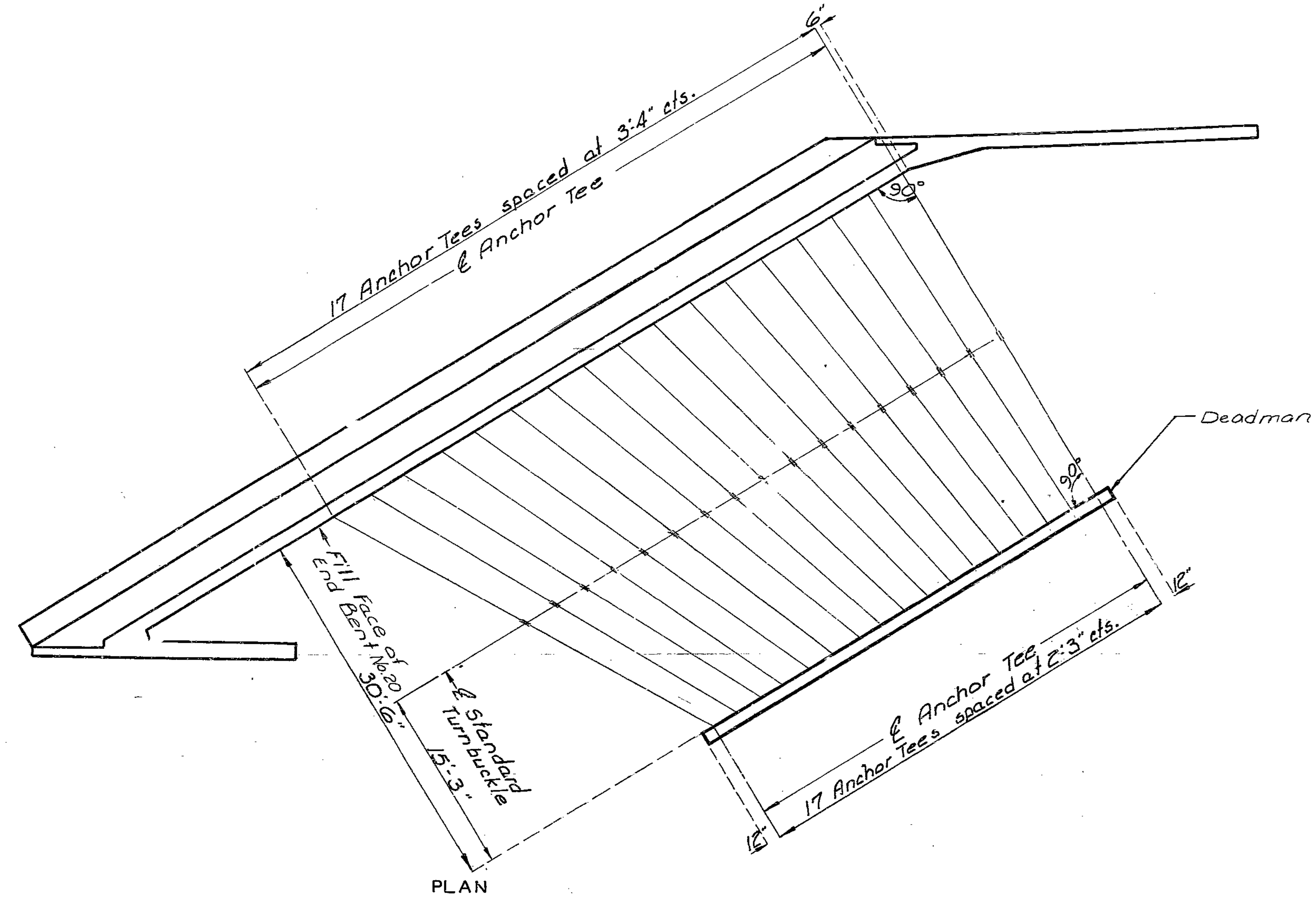
DETAILS OF END BENT NO. 20

Sheet No. 48 of 55

JACKSON COUNTY

A-2745

STATE	PROJ NO	SHEET NO
MO		104



PLAN

NOTES:

CONSTRUCTION SEQUENCE:

Construct End Bent with Anchor Tees in place.

Machine compact fill up to elevation of 1"ø Rod and Turnbuckle.

Construct Dead Man with Anchor Tees in place.

Install 1"ø Rod, Clevis and Turnbuckle assembly.

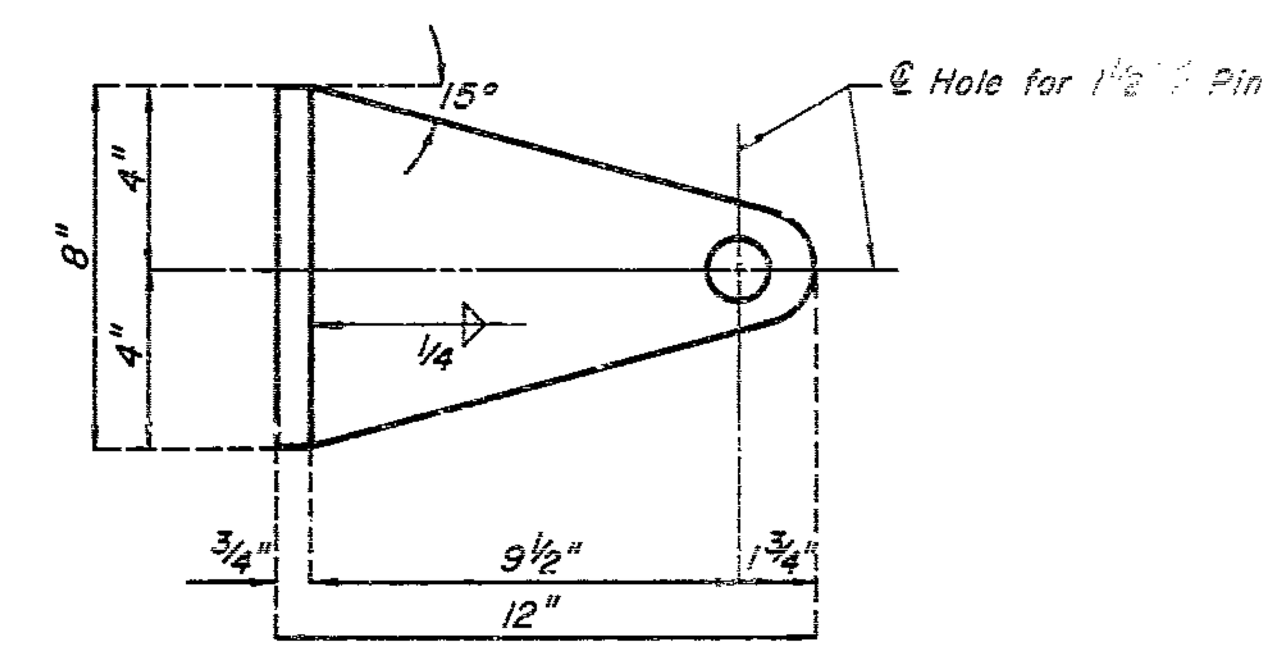
Tighten Turnbuckle until snug.

Hand compact fill for 12"(min.) over 1"ø Rod and Turnbuckle.

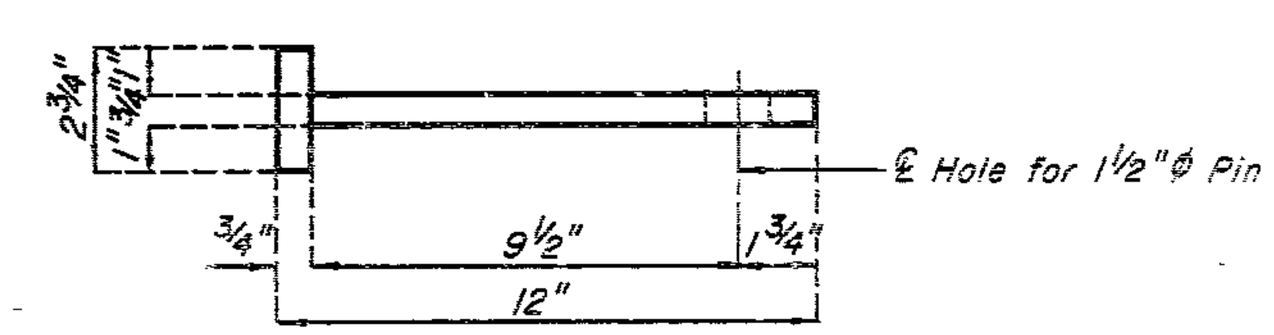
Machine compact remaining fill.

BILL OF REINFORCING STEEL EACH DEAD MAN

NUMBER	SIZE & MARK	LENGTH
8	#4-H4	37'-9"
152	#4-V4	21"

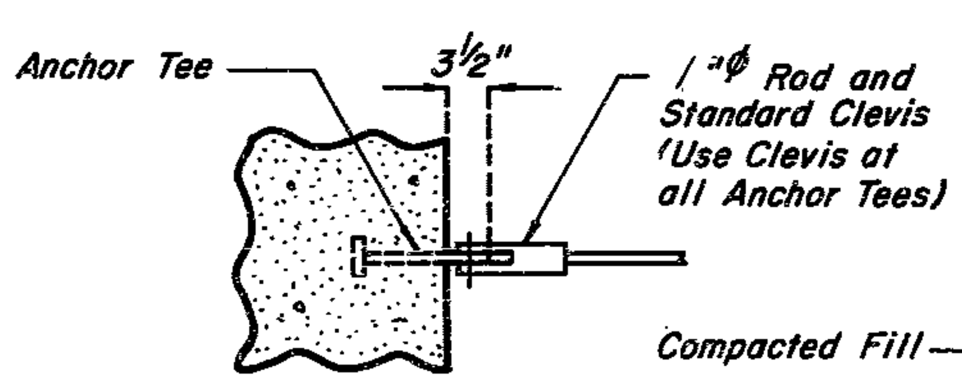


PLAN

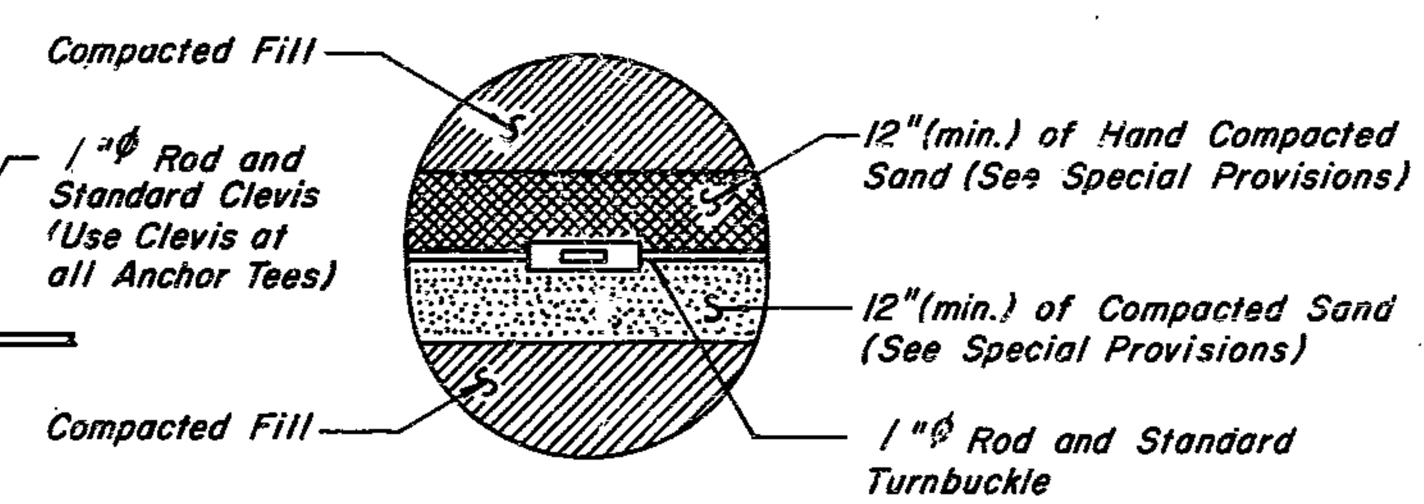


ELEVATION

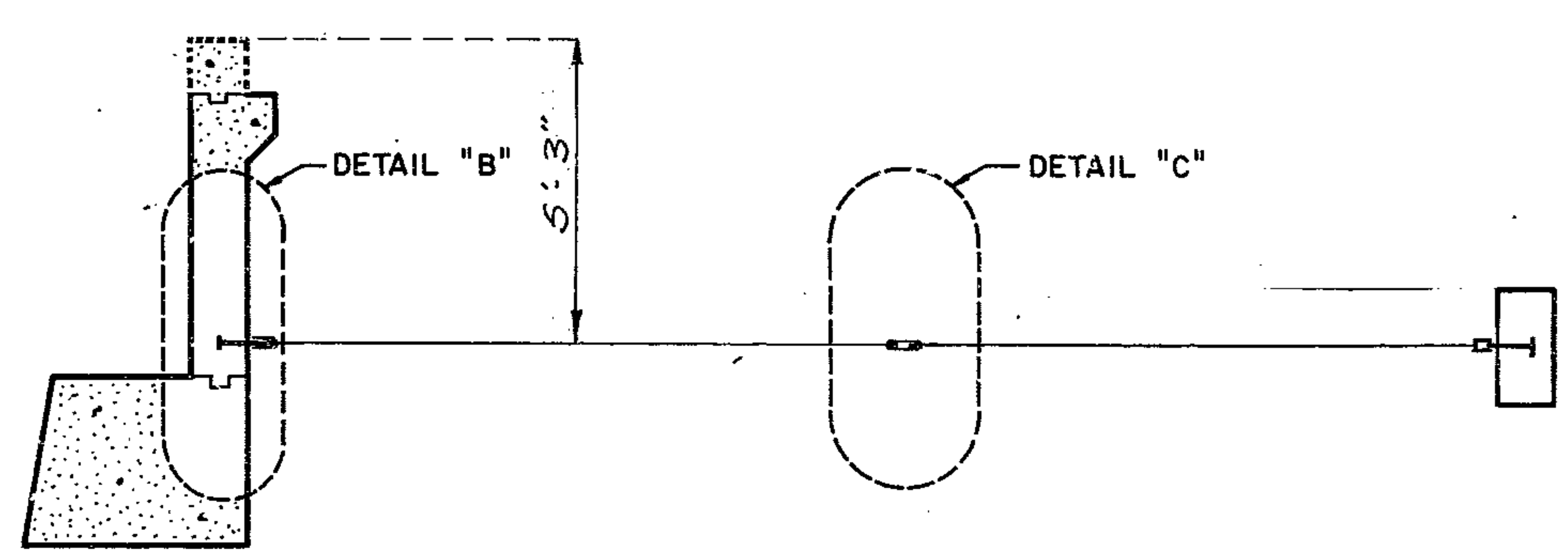
DETAIL OF ANCHOR TEE



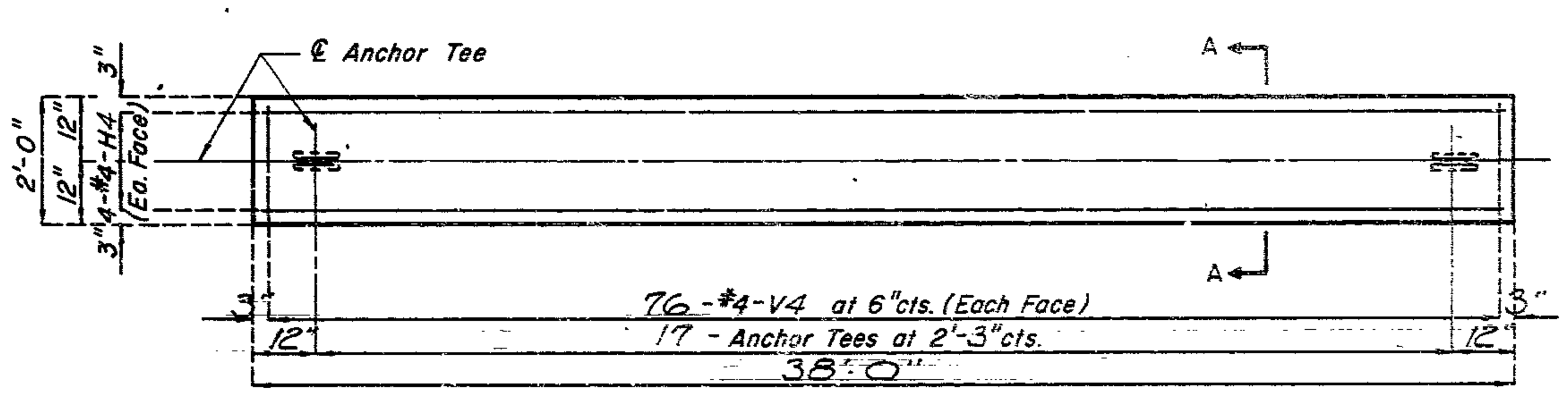
DETAIL "B"



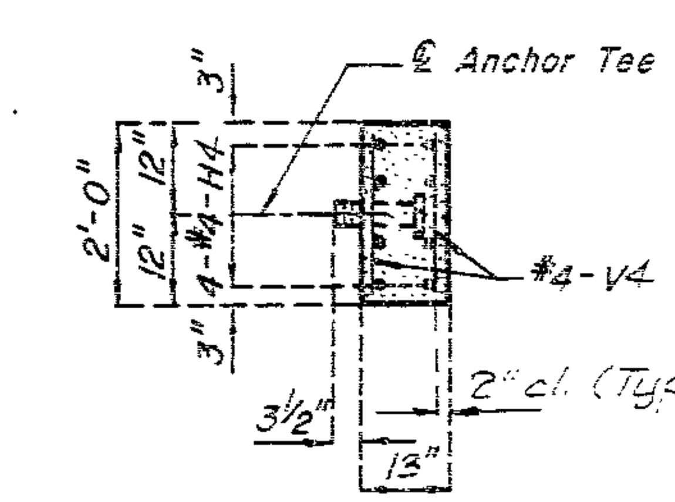
DETAIL "C"



LOCATION OF ANCHOR TEE



ELEVATION OF DEAD MAN



SECTION A-A

DETAILS OF DEAD MAN ANCHORAGE SYSTEM AT BENT NO. 20

STD. D.M.A. JULY 1984 REVISED

DETAILED JUNE 1988

CHECKED Aug. 1988

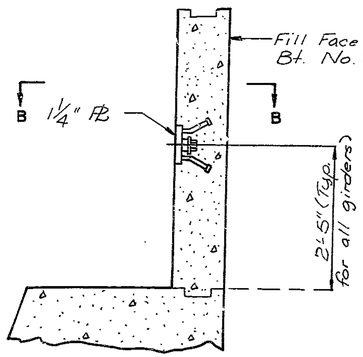
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 49 of 55

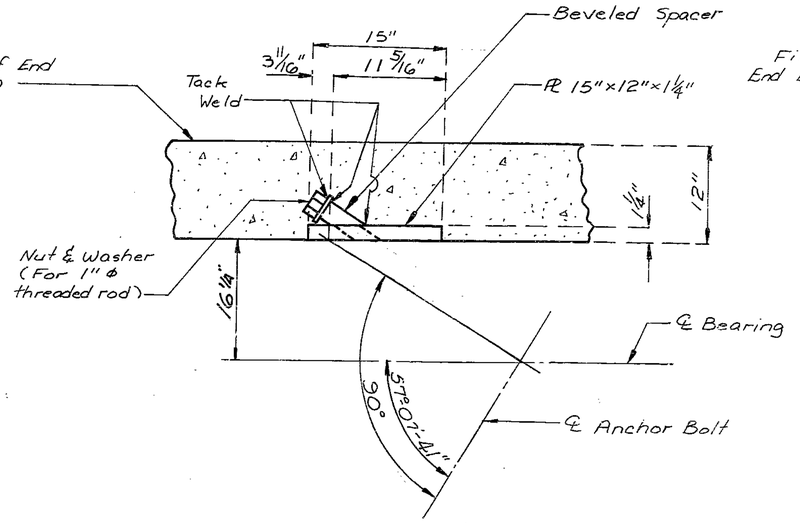
JACKSON COUNTY

A-2745

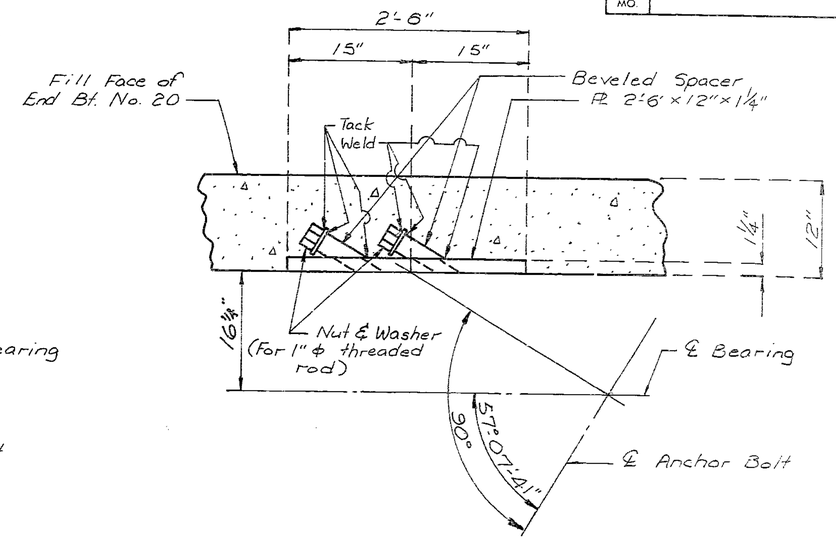
STATE	PROJ. NO.	SHEET NO.
MO.		105



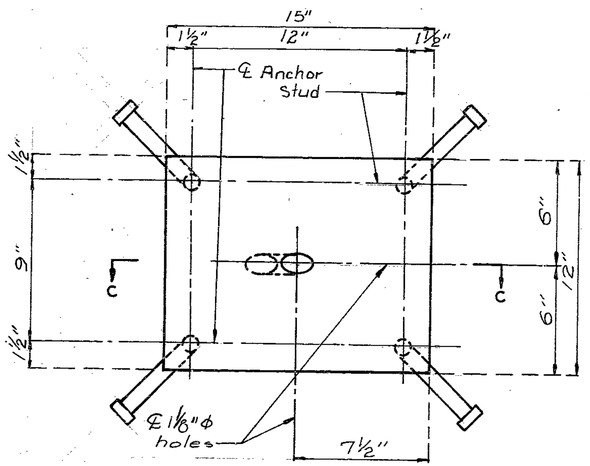
PART SECTION AT END BENT NO. 20



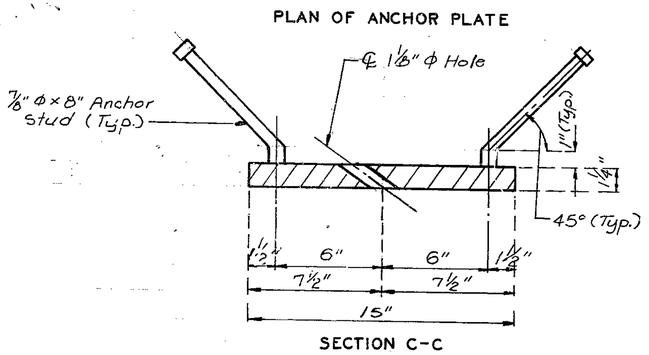
SECTION B-B (GDRS. NO. 1 & 5)



SECTION B-B (GDRS. NO. 2, 3 & 4)



PLAN OF ANCHOR PLATE



SECTION C-C

Notes:

All plates shall be A36 steel.

All nuts & washers shall be A-307 steel.

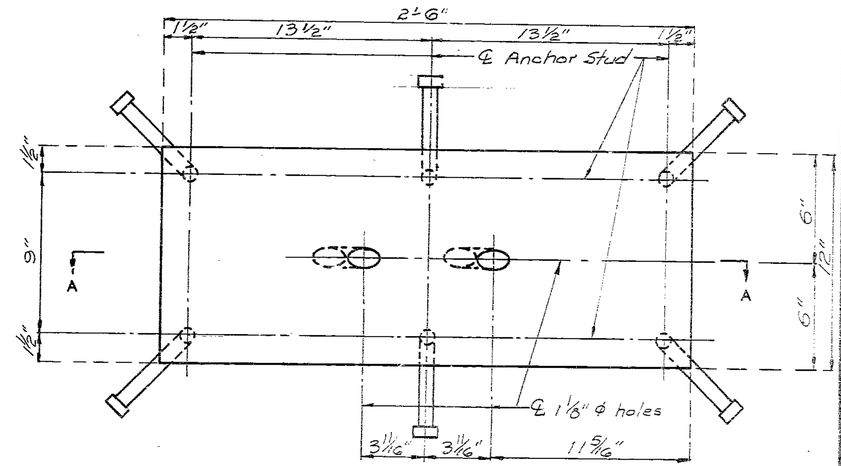
Anchor studs shall be in accordance with Sec. 1037.

Restrainer on girder No. 1 & 5 to be located on inside face of girder.

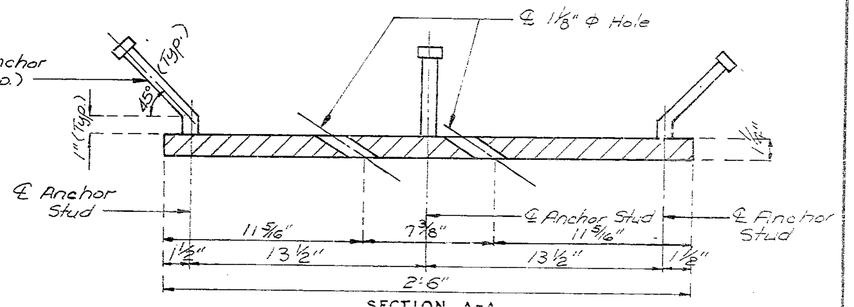
Cost of furnishing and installing Earthquake Restraints is included in price bid for concrete.

A temporary threaded plug shall be inserted into each embedded hex nut in the backwall before concrete is poured. Plugs shall extend ⅛" into backwall concrete. This temporary plug shall remain in place until installation of threaded rods by future contract.

The earthquake restraint assemblies shall be galvanized after fabrication in accordance with ASTM A123. The threads shall be protected during galvanizing.



PLAN OF ANCHOR PLATE



SECTION A-A

DETAILED Aug. 1988
CHECKED Aug. 1988

DETAILS OF EARTHQUAKE RESTRAINTS AT BT. NO. 20

Note: This drawing is not to scale. Follow dimensions.

346 360

FOR INFORMATION ONLY

A27452, Sht. 63

COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO. SIZE	MARK NO. MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
	#		END BENT NO.1																									
2		6F1			23		X			14	0.000	4	11.875	14	0.000	8	0.750	10	0.875	8	0.750	10	0.875	7	4	7	3	22
2		6F2			23		X			14	0.000	4	0.750	14	0.000	10	0.875	8	0.750	10	0.875	8	0.750	6	5	6	4	19
10		6H1	BEAM		20		X			42	2.000													42	2	42	2	633
16		6H2	WING		20		X	V	4	4	4.000													4	4	4	4	
			INCR = 23.000 IN							10	1.000													10	1	10	1	173
2		6T1	WING		23		X			9	3.750	3	5.000									3	5.000	8	8.000	12	9	12	9	38
2		6T2	WING		23		X			9	0.625	3	5.000									3	5.000	8	5.000	12	6	12	5	37
30		5U1	BEAM		10	S	X					4	8.000	2	3.625											11	8	11	5	357
12		4U2	BEAM		13	S	X			2	3.625	2	9.000	2	3.625	2	9.000									10	10	10	7	85
13		4U3	BEAM		10	S	X					2	9.000	2	3.625											7	10	7	8	67
28		6V1	WING		20		X	V	4	5	2.000															5	2	5	2	
			INCR = 4.625 IN							2	10.000															2	10	2	10	168
4		6V2	WING		20		X			5	3.000															5	3	5	3	32
			INT. BENT NO.2																											
16		6D20	BEAM		20		X			21	0.000															21		21		42
12		6D21	FOOTING		10		X					3	3.000	16	0.000											7	10	7	6	135
36		9D22	FOOTING & COLUMN		17		X			6	5.000															7	8	7	8	938
12		6D23	FOOTING		10		X					3	8.000	16	0.000											8	8	8	4	150
4		6H20	BEAM		20		X			38	10.000															38	10	38	10	233
8		7H21	BEAM		7		X			4	0.000	2	9.750													9	6	9	6	155
7		8H22	BEAM		20		X			38	10.000															38	10	38	10	726
6		7H25	BEAM		18		X			40	2.000															41	10	41	10	513
2		7H26	BEAM		18		X			38	10.000															40	6	40	6	166
57		4P20	COLUMNS		16		X			2	9.000															9	6	9	6	362
54		5U20	BEAM		13	S	X			2	11.000	3	3.000	2	11.000	3	3.000									13	3	12	11	727
5		4U21	BEAM		10	S	X					6	0.000	2	11.000											3	11	3	9	12
2		5U22	BEAM		13	S	X			2	10.000	3	3.000	2	10.000	3	3.000									13	1	12	9	27
2		5U23	BEAM		13	S	X			2	5.000	3	3.000	2	5.000	3	3.000									12	3	11	11	25
12		9V20	COLUMN		20		X			22	2.000															22	2	22	2	904
12		9V21	COLUMN		20		X			21	11.000															21	11	21	11	894
12		9V22	COLUMN		20		X			21	8.000															21	8	21	8	884
			INT. BENT NO.3																											
16		6D20	BEAM		20		X			21	0.000															21		21		42
12		6D21	FOOTING		10		X					3	3.000	16	0.000											7	10	7	6	135
36		9D22	FOOTING & COLUMN		17		X			6	5.000															7	8	7	8	938
12		6D23	FOOTING		10		X					3	8.000	16	0.000											8	8	8	4	150
4		6H20	BEAM		20		X			38	10.000															38	10	38	10	233
8		7H21	BEAM		7		X			4	0.000	2	9.750													9	6	9	6	155
7		8H22	BEAM		20		X			38	10.000															38	10	38	10	726
6		7H25	BEAM		18		X			40	2.000															41	10	41	10	513
2		7H26	BEAM		18		X			38	10.000															40	6	40	6	166

COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO. SIZE	MARK NO. MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
69		4P20	COLUMNS		16		X			2	9.000															9	6	9	6	438
54		5U20	BEAM		13	S	X			2	11.000	3	3.000	2	11.000	3	3.000									13	3	12	11	727
5		4U21	BEAM		10	S	X					6	0.000	2	11.000											3	11	3	9	12
2		5U22	BEAM		13	S	X			2	10.000	3	3.000	2	10.000	3	3.000									13	1	12	9	27
2		5U23	BEAM		13	S	X			2	5.000	3	3.000	2	5.000	3	3.000									12	3	11	11	25
12		9V30	COLUMN		20		X			25	10.000															25	10	25	10	1054
12		9V31	COLUMN		20		X			25	7.000															25	7	25	7	1044
12		9V32	COLUMN		20		X			25	4.000															25	4	25	4	1034
			BENT NO. 4																											
24		6D40	FOOTING		10		X					3	7.000	16	0.000											8	6	8	2	294
33		9D41	FTG. AND COL.		17		X			6	5.000															7	8	7	8	860
8		7H40	BEAM		16		X			4	3.000	3	3.750													14	10	14	10	243
2		7H41	BEAM		18		X			37	8.000															39	4	39	4	161
6		7H42	BEAM		18		X			39	4.000															41	0	41	0	503
4		6H43	BEAM		20		X			37	8.000															37	8	37	8	226
8		7H44	BEAM		20		X			37	8.000															37	8	37	8	616
69		4P40	COLUMN		16		X			2	9.000															9	6	9	6	438
48		5U40	BEAM		13	S	X			3	5.000	3	6.000	3	5.000	3	6.000									14	9	14	9	722
11		4U41	BEAM		10	S	X					6	0.000	3	5.000											4	5	4	3	31
2		5U42	BEAM		13	S	X			2	9.000	3	6.000	2	9.000	3	6.000									13	5	13	1	27
2		5U43	BEAM		13	S	X			3	4.500	3	6.000	3	4.500	3	6.000									14	8	14	4	30
11		9V40	COLUMN		20		X			25	5.000															25	5	25	5	951
11		9V41	COLUMN		20		X			25	7.000															25	7	25	7	957
11		9V42	COLUMN		20		X			25	10.000															25	10	25	10	966
20		2H41	BEAM		22		X				15.000		9.125													23	0	23	0	76
			BENT NO. 5																											
9		5D50	FOOTING		20		X			5	9.000															5	9	5	9	54
12		6D51	FOOTING		20		X			6	9.000															6	9	6	9	122
6		6D52	FOOTING		10		X					3	6.000	6	0.000											13	0	12	6	114
33		9D53	FTG. AND COL.		17		X			6	5.000															7	8	7	8	860
8		7H50	BEAM		7		X			4	0.000	2	9.750													9	6	9	6	155
2		6H51	BEAM		20		X			38	0.000															38	0	38	0	114
2		8H52	BEAM		18		X			38	0.000															39	10	39	10	213
4		8H53	BEAM		18		X			39	9.000															41	7	41	7	444
6		8H54	BEAM		20		X			38	0.000															38	0	38	0	609
73		4P50	COLUMN		16		X			2	9.000															9	6	9	6	476
58		5U50	BEAM		13	S	X			2	11.000	3	2.000	2	11.000	3	2.000									13	1	12	9	771
3		4U51	BEAM		10	S	X					6	0.000	2	11.000											3	11	3	9	8
2		5U52	BEAM		13	S	X			2	8.000	3	2.000	2	8.000	3	2.000									12	7	12	3	26
16		6V50	BEAM		20		X				21.000															21		21		42

STATE MO | PROJ NO | SHEET NO. 106

SHAPE 6 SHAPE 7 SHAPE 8 SHAPE 9

SHAPE 10 SHAPE 11 SHAPE 12 SHAPE 13

SHAPE 14 SHAPE 15

SHAPE 16 SHAPE 17 SHAPE 18 SHAPE 20 SHAPE 19

SHAPE 21 SHAPE 22 SHAPE 23

SHAPE 24 SHAPE 25 SHAPE 26

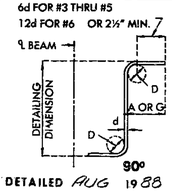
SHAPE 27 SHAPE 28 SHAPE 29

SHAPE 30 SHAPE 31 SHAPE 32

SHAPE 33

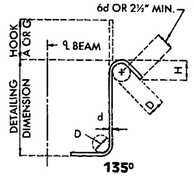
BENDING DIAGRAMS

6d FOR #3 THRU #5
12d FOR #6 OR 2½" MIN.



90°

6d OR 2½" MIN.



135°

DETAILED AUG 1988
CHECKED AUG 1988

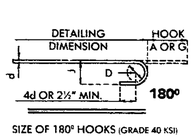
STD. 90.8	REVISED
MAY 1974	JUNE 1986

STIRRUP HOOK DIMENSIONS

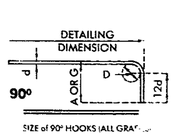
GRADES 40-50-60 KSI				
BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#3	1½"	4"	4"	2½"
#4	2"	4½"	4½"	3"
#5	2½"	6"	5½"	3¾"
#6	4½"	12"	7¾"	4½"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

Note: This drawing is not to scale. Follow dimensions.



SIZE OF 180° HOOKS (GRADE 40 KSI)
D = 5d FOR #3 THRU #11
D = 10d FOR #14 AND #18



SIZE of 90° HOOKS (ALL GRADES) AND 180° HOOKS (GRADE 60 KSI)
D = 6d FOR #3 THRU #8
D = 8d FOR #9, #10 AND #11
D 10d FOR #14 AND #18

END HOOK DIMENSIONS

BAR SIZE	D (IN.)	180° HOOKS ALL GRADES A OR G	180° HOOKS ALL GRADES J	90° HOOKS ALL GRADES A OR G
#3	2½"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3¾"	7"	5"	10"
#6	4½"	8"	6"	12"
#7	5¼"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9½"	15"	11¾"	19"
#10	10¾"	17"	13¼"	22"
#11	12"	19"	14¾"	2'-0"
#14	18½"	2'-3"	21¾"	2'-7"

NOTES:

ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E - EPOXY COATED REINFORCEMENT.
S - STIRRUP
X - BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V - BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. - NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS - ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH
ACTUAL LENGTHS - ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.

Sheet No. 57 of 58 Sheets

JACKSON COUNTY

A-2745

FOR INFORMATION ONLY

A27452, Sht. 64

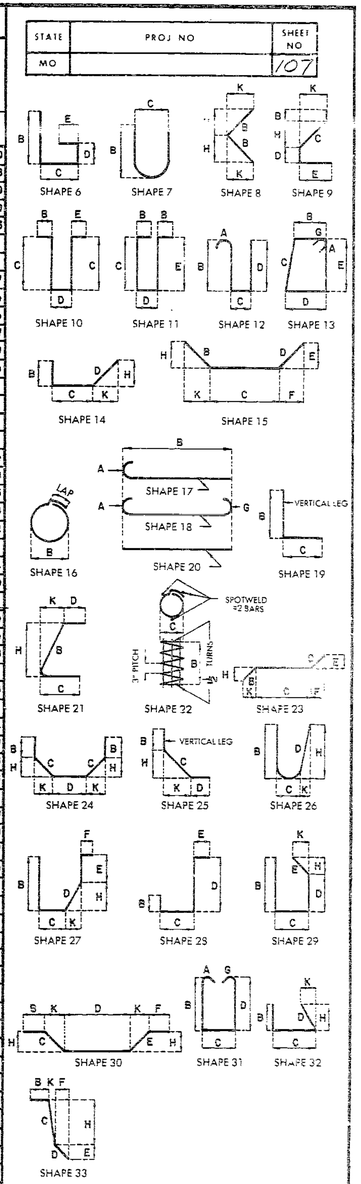
COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO. SIZE	MARK NO. MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
11	9	V51	COLUMN		20		X			27	6.000													27	6	27	6	1029
11	9	V52	COLUMN		20		X			27	9.000													27	9	27	9	1038
11	9	V53	COLUMN		20		X			27	11.000													27	11	27	11	1044
			INT. BENT NO. 6																									
12	8	D60	FOOTING		20		X			11	9.000													11	9	11	9	376
4	6	D61	FOOTING		10	S	X					5	0.000	11	6.000									21	6	21	2	127
22	6	D62	FOOTING		20		X			8	9.000													8	9	8	9	289
16	6	D63	BEAM		20		X				21.000														21		21	42
58	9	D64	FOOTING		20		X			9	11.000													9	11	9	11	1956
8	7	H60	BEAM		7		X			4	5.500	3	9.500											11	0	11	0	180
12	10	H61	BEAM		20		X			38	6.000													38	6	38	6	1988
4	6	H62	BEAM		20		X			38	6.000													38	6	38	6	231
4	10	H63	BEAM		18		X			36	6.000													41	4	41	4	711
4	10	H64	BEAM		18		X			41	5.000													44	3	44	3	762
60	4	H65	TIE BEAM		20		X			22	9.000													22	9	22	9	912
6	8	H66	TIE BEAM		20		X			25	5.000													25	5	25	5	407
36	6	U60	BEAM		13	S	X			3	11.000	3	9.000	3	11.000	3	9.000							16	8	16	2	923
36	6	U61	BEAM		13	S	X			2	7.000	3	9.000	2	7.000	3	9.000							14	0	13	6	730
2	6	U62	BEAM		13	S	X			3	9.000	3	9.000	3	9.000	3	9.000							16	4	15	10	48
2	6	U63	BEAM		13	S	X			2	6.000	3	9.000	2	6.000	3	9.000							13	10	13	4	40
3	4	U64	BEAM		10	S	X						6.000	3	11.000									4	11	4	9	10
2	6	U65	BEAM		13	S	X			3	4.000	3	9.000	3	4.000	3	9.000							15	6	15	0	45
58	9	V60	COLUMN		20		X			29	9.000													29	9	29	9	5867
42	4	V61	TIE BEAM		10	S	X					20	0.000	29	9.000									33	1	32	11	924
23	8	V62	COLUMN		20		X			17	6.000													17	6	17	6	1075
23	8	V63	COLUMN		20		X			17	10.000													17	10	17	10	1095
46	8	V65	COLUMN		20		X			9	8.000													9	8	9	8	1187
58	9	V66	COLUMN		20		X			18	3.000													18	3	18	3	3599
84	4	P60	COLUMN		16		X			4	9.000													15	9	15	9	884
30	4	P61	COLUMN		16		X			3	9.000													12	8	12	8	254
			INT. BENT NO. 7																									
12	8	D60	FOOTING		20		X			11	9.000													11	9	11	9	376
4	6	D61	FOOTING		10	S	X					5	0.000	11	6.000									21	6	21	2	127
22	6	D62	FOOTING		20		X			8	9.000													8	9	8	9	289
16	6	D63	BEAM		20		X				21.000														21		21	42
58	9	D64	FOOTING		20		X			9	11.000													9	11	9	11	1956
8	7	H60	BEAM		7		X			4	5.500	3	9.500											11	0	11	0	180
12	10	H61	BEAM		20		X			38	6.000													38	6	38	6	1988
4	6	H62	BEAM		20		X			38	6.000													38	6	38	6	231
4	10	H63	BEAM		18		X			38	6.000													41	4	41	4	711
4	10	H64	BEAM		18		X			41	5.000													44	3	44	3	762
60	4	H65	TIE BEAM		20		X			22	9.000													22	9	22	9	912
6	8	H66	TIE BEAM		20		X			25	5.000													25	5	25	5	407
84	4	P60	COLUMN		16		X			4	9.000													15	9	15	9	884
32	4	P61	COLUMN		16		X			3	9.000													12	8	12	8	271
38	6	U50	BEAM		13	S	X			3	11.000	3	9.000	3	11.000	3	9.000							16	8	16	2	923

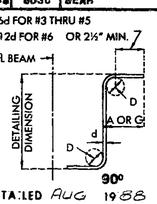
COMPLETE BILL OF REINFORCING STEEL

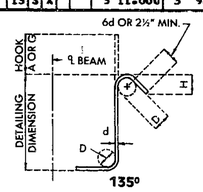
NO. REQD.	MARK NO. SIZE	MARK NO. MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
36	6	U61	BEAM		13	S	X			2	7.000	3	9.000	2	7.000	3	9.000							14	0	13	6	730
2	6	U62	BEAM		13	S	X			3	9.000	3	9.000	3	9.000	3	9.000							16	4	15	10	48
2	6	U63	BEAM		13	S	X			2	6.000	3	9.000	2	6.000	3	9.000							13	10	13	4	40
3	4	U64	BEAM		10	S	X						6.000	3	11.000									4	11	4	9	10
2	6	U65	BEAM		13	S	X			3	4.000	3	9.000	3	4.000	3	9.000							15	6	15	0	45
58	9	V60	COLUMN		20		X			29	9.000													29	9	29	9	5867
42	4	V61	TIE BEAM		10	S	X					20	0.000	29	9.000									33	1	32	11	924
23	8	V64	COLUMN		20		X			18	6.000													18	6	18	6	1136
46	8	V65	COLUMN		20		X			9	8.000													9	8	9	8	1187
58	9	V66	COLUMN		20		X			18	3.000													18	3	18	3	3599
23	8	V67	COLUMN		20		X			18	2.000													18	2	18	2	1116
			BENT NO. 8																									
48	9	D80	COLUMN & FOOTING		20		X			8	0.000													8	0	8	0	1304
6	6	D81	FOOTINGS		10		X					4	10.000	8	3.000									17	11	17	7	158
18	5	D82	FOOTINGS		20		X			7	9.000													7	9	7	9	145
18	6	D83	FOOTINGS		20		X			9	0.000													9	0	9	0	243
16	6	D84	BEAM		20		X				21.000														21		21	42
5	9	H80	BEAM		20		X			40	8.000													40	8	40	8	691
4	6	H81	BEAM		20		X			40	8.000													40	8	40	8	244
6	8	H82	BEAM		17		X			13	8.000													14	7	14	7	234
4	8	H83	BEAM		18		X			40	8.000													42	6	42	6	454
8	7	H84	BEAM		7		X			4	3.000	3	3.750											10	3	10	3	168
126	4	P80	COLUMNS		16		X			3	3.000													11	1	11	1	933
56	5	U80	BEAM		13	S	X			3	5.000	3	9.000	3	5.000	3	9.000							15	3	14	11	871
3	4	U81	BEAM		10	S	X						6.000	3	5.000									4	5	4	3	9
2	5	U82	BEAM		13	S	X			2	7.750	3	9.000	2	7.750	3	9.000							13	9	13	5	28
2	5	U83	BEAM		13	S	X			3	2.500	3	9.000	3	2.500	3	9.000							14	10	14	6	30
48	9	V80	COLUMN		20		X			25	0.000													25	0	25	0	4080
16	9	V81	COLUMN		20		X			24	5.000													24	5	24	5	1328
16	9	V82	COLUMN		20		X			24	7.000													24	7	24	7	1337
16	9	V83	COLUMN		20		X			24	9.000													24	9	24	9	1346
			INT. BT. NO. 9																									
38	9	D90	COLUMN & FOOTING		20		X			8	0.000													8	0	8	0	1034
4	6	D92	FOOTING		10		X					3	9.000	8	3.000									15	9	15	5	93
8	6	D93	FOOTING		20		X			8	3.000													8	3	8	3	99
12	5	D94	FOOTING		20		X			6	3.000													6	3	6	3	78
8	9	H90	BEAM		20		X			40	6.000													40	6	40	6	1102
4	6	H91	BEAM		20		X			40	6.000													40	6	40	6	243
4	9	H92	BEAM		18		X			40	6.000													43	0	43	0	585
4	9	H93	BEAM		18		X			42	10.000													45	4	45	4	617
8	7	H94	BEAM		7		X			4	11.000	4	5.750											12	3	12	3	200
82	4	P90	COLUMNS		16		X			3	9.000													12	8	12	8	594
47	5	U90	BEAM		13	S	X			4	7.000	4	7.000	4	7.000	4	7.000							19	3	18	11	927
2	5	U91	BEAM		13	S	X			4	4.000	4	7.000	4	4.000	4	7.000							18	9	18	5	38
2	5	U92	BEAM		13	S	X			3	1.000	4	7.000	3	1.000	4	7.000							16	3	15	11	33

STATE MO | PROJ NO | SHEET NO. 107



BENDING DIAGRAMS





DETAILED AUG 1988
CHECKED AUG 1988

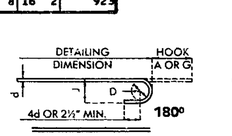
STD. 90.8	MAY 1974	REVISED	JUNE 1986

STIRRUP HOOK DIMENSIONS

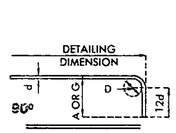
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#3	1½"	4"	4"	2½"
#4	2"	4½"	4½"	3"
#5	2½"	6"	5½"	3½"
#6	4½"	12"	7¾"	4½"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.



SIZE OF 180° HOOKS (GRADE 40 KSI)
D 5d FOR #3 THRU #11
D 10d FOR #14 AND #18



SIZE of 90° HOOKS (ALL GRADES) AND 180° HOOKS (GRADE 60 KSI)
D 6d FOR #3 THRU #8
D 8d FOR #9, #10 AND #11
D 10d FOR #14 AND #18

END HOOK DIMENSIONS

BAR SIZE	D (IN.)	180° HOOKS ALL GRADES A OR G	180° HOOKS ALL GRADES J	90° HOOKS ALL GRADES A OR G
#3	2¼"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3¾"	7"	5"	10"
#6	4½"	8"	6"	12"
#7	5¼"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9½"	15"	11¾"	19"
#10	10¾"	17"	13¼"	22"
#11	12"	19"	14¾"	2'-0"
#14	18¼"	2'-3"	21¾"	2'-7"

NOTES:

ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E - EPOXY COATED REINFORCEMENT.
S - STIRRUP
X - BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V - BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. - NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS - ARE BASED ON OUT TO CUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE (NEAREST INCH)
ACTUAL LENGTHS - ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 52 of 55

JACKSON COUNTY A-2745

FOR INFORMATION ONLY

A27452, Sht. 65

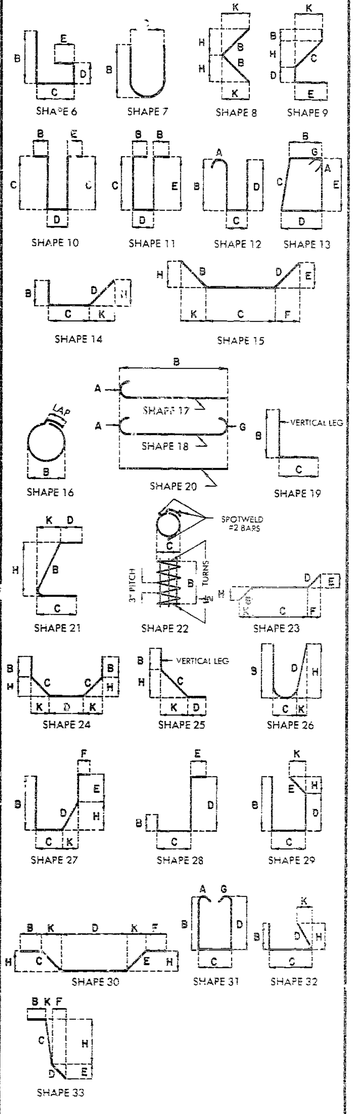
COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO. SIZE	MARK NO. MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
12	4U93		BEAM		30	S	X					6.000		4	7.000									5	7	5	5	43
38	9V90		COLUMNS		20		X			25	0.000													25	0	25	0	3230
19	9V91		COLUMN		20		X			23	3.000													23	3	23	5	1513
19	9V92		COLUMN		20		X			23	8.000													23	8	23	8	1525
20	2W90		A.B. WELLS		22		X			15.000		9.125												23	0	23	0	76
			BENT NO. 10																									
48	9D100		COLUMN & FOOTING		20		X			8	0.000													8	0	8	0	1308
6	6D101		FOOTINGS		10		X					4	10.000	8	3.000									17	11	17	7	156
18	5D102		FOOTINGS		20		X			7	9.000													7	9	7	9	145
18	6D103		FOOTINGS		20		X			9	0.000													9	0	9	0	243
16	6D106		BEAM		20		X			21.000														21		21		42
5	9H100		BEAM		20		X			40	8.000													40	8	40	8	691
4	6H101		BEAM		20		X			40	8.000													40	8	40	8	244
6	8H102		BEAM		17		X			13	8.000													14	7	14	7	234
4	8H103		BEAM		18		X			40	8.000													42	6	42	6	454
8	7H104		BEAM		7		X			4	3.000	3	3.750											10	3	10	3	168
123	4P100		COLUMNS		16		X			3	3.000													11	1	11	1	911
56	5U100		BEAM		13	S	X			3	5.000	3	9.000	3	5.000	3	9.000							15	3	14	11	871
3	4U101		BEAM		10	S	X					6.000		3	9.000									4	5	4	3	9
2	5U102		BEAM		13	S	X			2	7.750	3	9.000	2	7.750	3	9.000							13	9	13	5	28
2	5U103		BEAM		13	S	X			3	2.500	3	9.000	3	2.500	3	9.000							14	10	14	6	30
48	9V100		COLUMN		20		X			25	0.000													25	0	25	0	4080
16	9V101		COLUMN		20		X			23	8.000													23	8	23	8	1287
16	9V102		COLUMN		20		X			23	10.000													23	10	23	10	1297
16	9V103		COLUMN		20		X			24	0.000													24	0	24	0	1306
			INT BENT NO 11																									
18	5D110		FOOTING		20		X			7	9.000													7	9	7	9	145
18	5D111		FOOTING		20		X			8	0.000													8	0	8	0	150
6	5D112		FOOTING		10	S	X					4	6.000	7	3.000									16	3	16	1	101
42	9D113		FOOTING		20		X			7	11.000													7	11	7	11	1130
22	5H110		WALL		20		X			38	0.000													38	0	38	0	872
10	6H111		WALL		20		X			39	2.000													39	2	39	2	588
7	9H112		BEAM		20		X			49	1.000													49	1	49	1	1168
4	6H113		BEAM		20		X			49	1.000													49	1	49	1	295
8	9H114		BEAM		17		X			14	7.000													15	10	15	10	431
3	9H115		BEAM		18		X			49	1.000													51	7	51	7	526
8	7H116		BEAM		7		X			4	2.500	3	3.000											10	2	10	2	166
105	4P110		COL		16		X			3	3.000													11	1	11	1	777
74	5U110		BEAM		13	S	X			3	5.000	3	6.000	3	5.000	3	6.000							14	9	14	5	1113
2	5U111		BEAM		13	S	X			2	11.750	3	6.000	2	11.750	3	6.000							13	11	13	7	28
5	5U112		BEAM		10	S	X					6.000		3	5.000									4	5	4	3	22
44	5V110		WALL		20		X			12	3.000													12	3	12	3	562
17	6V111		BEAM		20		X				21.000														21		21	45
14	9V112		COLUMN		20		X			37	7.000													37	7	37	7	1789
14	9V113		COLUMN		20		X			37	10.000													37	10	37	10	1801
16	9V114		COLUMN		20		X			38	0.000													38	0	38	0	1809

COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO. SIZE	MARK NO. MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
			INT. BT. NO.12																									
72	9D121		FOOTING & COLUMN	17			X			8	1.000													9	4	9	4	2285
6	6D122		FOOTINGS	10			X					3	6.000	8	3.000									15	3	14	11	134
18	6D123		FOOTINGS	20			X			9	0.000													9	0	9	0	243
18	5D124		FOOTINGS	20			X			5	9.000													5	9	5	9	108
20	6D125		BEAM	20			X			21.000														21		21		53
9	8H121		BEAM	20			X			50	2.000													50	2	50	2	1206
4	6H122		BEAM	20			X			50	2.000													50	2	50	2	301
6	8H123		BEAM	18			X			50	2.000													52	0	52	0	833
6	8H124		BEAM	17			X			15	5.000													16	4	16	4	262
8	7H125		BEAM	7			X			4	3.000	3	3.750											10	3	10	3	168
130	4P121		COLUMNS	16			X			3	3.000													11	1	11	1	962
74	5U121		BEAM	13	S	X				3	5.000	3	6.000	3	5.000	3	6.000							14	9	14	5	1113
2	5U122		BEAM	13	S	X				3	3.000	3	6.000	3	3.000	3	6.000							14	5	14	1	29
2	5U123		BEAM	13	S	X				2	10.000	3	6.000	2	10.000	3	6.000							13	7	13	3	28
5	4U124		BEAM	10	S	X						6.000		3	5.000									4	5	4	3	14
72	9V121		COLUMNS	20			X			25	0.000													25	0	25	0	6120
24	9V122		COLUMN	20			X			25	4.000													25	4	25	4	2067
24	9V123		COLUMN	20			X			25	9.000													25	9	25	9	2101
24	9V123		COLUMN	20			X			26	2.000													26	2	26	2	2135
			INT. BENT NO 13																									
58	9D131		FTG AND COL.	20			X			9	11.000													9	11	9	11	1956
4	6D132		FOOTING	10			X					5	0.000	7	6.000									17	6	17	2	103
16	6D133		FOOTING	20			X			8	3.000													8	3	8	3	198
12	5D134		FOOTING	20			X			8	9.000													8	9	8	9	110
13	9H131		BEAM	20			X			52	4.000													52	4	52	4	2313
4	6H132		BEAM	20			X			52	4.000													52	4	52	4	314
5	9H133		BEAM	18			X			56	1.000													58	7	58	7	996
6	9H134		BEAM	18			X			52	4.000													54	10	54	10	1119
8	7H135		BEAM	7			X			5	6.000	5	10.750											14	3	14	3	233
20	4H136		BEAM	20			X			4	9.000													4	9	4	9	63
77	4P131		COLUMN	16			X			4	9.000													15	9	15	9	810
60	5U131		BEAM	13	S	X				6	0.000	4	9.000	6	0.000	4	9.000							22	5	22	1	1382
2	5U132		BEAM	13	S	X				5	8.000	4	9.000	5	8.000	4	9.000							21	9	21	5	45
2	5U133		BEAM	13	S	X				4	6.000	4	9.000	4	6.000	4	9.000							19	5	19	1	40
14	4U134		BEAM	10	S	X	V	1				6.000		5	6.000									6	6	6	4	
			INCR = 2.500 IN									6.000		8	3.000									9	3	9	1	72
21	4U135		BEAM	10	S	X						6.000		8	3.000									9	3	9	1	127
58	9V131		COLUMN	20			X			26	3.000													26	3	26	3	5177
29	9V132		COLUMN AND FTG.	20			X			21	9.000													21	9	21	9	2149
29	9V133		COLUMN AND FTG.	20			X			22	9.000													22	9	22	9	2243
20	2W131		ANC BOLT WELL	22			X				15.000		9.125											23	0	23	0	77

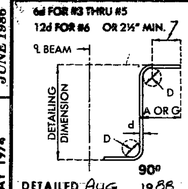
STATE	PROJ NO	SHEET NO
MO		108



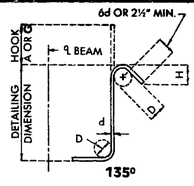
BENDING DIAGRAMS

REVISED	JUNE 1986
STD. 90.8	MAY 1974

6d FOR #3 THRU #5
12d FOR #6 OR 2½" MIN.



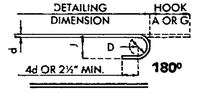
6d OR 2½" MIN.



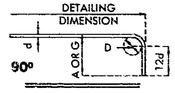
DETAILED AUG 1988
CHECKED AUG 1988

STIRRUP HOOK DIMENSIONS				
GRADES 40-50-60 KSI				
BAR SIZE	D (IN.)	90° HOOK	135° HOOK	
		HOOK A OR G	HOOK A OR G	APPROX. H
#3	1½"	4"	4"	2½"
#4	2"	4½"	4½"	3"
#5	2½"	6"	5½"	3¾"
#6	4½"	12"	7¾"	4½"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.



SIZE OF 180° HOOKS (GRADE 40 KSI)
D - 5d FOR #3 THRU #11
D 10d FOR #14 AND #18



SIZE OF 90° HOOKS (ALL GRADES) AND 180° HOOKS (GRADE 60 KSI)
D - 6d FOR #3 THRU #8
D - 8d FOR #9, #10 AND #11
D - 10d FOR #14 AND #18

END HOOK DIMENSIONS				
BAR SIZE	D (IN.)	180° HOOKS ALL GRADES		90° HOOKS ALL GRADES
		A OR G	J	A OR G
#3	2¼"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3¾"	7"	5"	10"
#6	4½"	8"	6"	12"
#7	5¼"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9½"	15"	11¾"	19"
#10	10¾""	17"	13¼"	22"
#11	12"	19"	14¾"	2'-0"
#14	18¼"	2'-3"	21¾"	2'-7"

NOTES:

ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E - EPOXY COATED REINFORCEMENT.
S - STIRRUP
X - BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V - BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. - NUMBER OF BARS OF EACH LENGTH
NOMINAL LENGTHS - ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE (NEAREST INCH)
ACTUAL LENGTHS - ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 55 of 55

JACKSON COUNTY A-2745

849 363

FOR INFORMATION ONLY

A27452, Sht. 66

COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
			INT. BT. NO.14																									
16	6D140	BEAM		20		X			8	0.000															21		21	42
48	9D141	COLUMNS		20		X			8	0.000														8	0	8	0	1306
6	6D142	FOOTINGS		10		X					3	6.000	8	0.000										15	0	14	8	132
12	7D143	FOOTINGS		20		X			8	9.000														8	9	8	9	215
18	5D144	FOOTINGS		20		X			5	9.000														5	9	5	9	108
8	8H141	BEAM		20		X			42	3.000														42	3	42	3	902
4	6H142	BEAM		20		X			42	3.000														42	3	42	3	254
4	8H143	BEAM		18		X			42	3.000														44	1	44	1	471
4	8H144	BEAM		18		X			44	5.000														46	3	46	3	494
8	7H145	BEAM		7		X			4	4.000	3	3.750												10	5	10	5	170
124	4P141	COLUMNS		16		X			3	3.000														11	1	11	1	918
49	5U141	BEAM		13	S	X			3	5.000	3	6.000	3	5.000	3	6.000								14	9	14	5	757
20	5U142	BEAM		13	S	X			2	3.000	3	6.000	2	3.000	3	6.000								12	5	12	1	252
2	5U143	BEAM		13	S	X			2	8.000	3	6.000	2	8.000	3	6.000								13	3	12	11	27
12	4U145	BEAM		10	S	X						6.000	3	5.000										4	5	4	3	34
48	9V141	COLUMNS		20		X			25	0.000														25	0	25	0	4080
16	9V142	COLUMNS		20		X			23	4.000														23	4	23	4	1269
16	9V143	COLUMNS		20		X			24	1.000														24	1	24	1	1310
16	9V144	COLUMNS		20		X			25	10.000														25	10	25	10	1405
			INT. BT. NO. 15																									
16	6D150	FOOTINGS		20		X			8	0.000														8	0	8	0	192
12	5D151	FOOTINGS		20		X			8	9.000														8	9	8	9	110
8	6D152	FOOTINGS		10		X					4	8.000	8	0.000										17	4	17	0	102
40	9D153	FOOTING & COL.		17		X			8	1.000														9	4	9	4	1269
10	11H150	BEAM		20		X			38	2.000														38	2	38	2	2026
4	6H151	BEAM		20		X			38	2.000														38	2	38	2	229
5	9H152	BEAM		18		X			40	3.000														42	9	42	9	727
4	9H153	BEAM		18		X			38	2.000														40	8	40	8	553
8	7H154	BEAM		7		X			4	4.000	3	3.500												10	5	10	5	170
77	4P150	COLUMNS		16		X			3	3.000														11	1	11	1	570
3	4U150	BEAM		10	S	X						6.000	3	5.000										4	5	4	3	9
42	6U151	BEAM		13	S	X			3	5.000	3	9.000	3	5.000	3	9.000								15	8	15	2	957
32	6U152	BEAM		13	S	X			2	3.000	3	9.000	2	3.000	3	9.000								13	4	12	10	617
2	6U153	BEAM		13	S	X			3	0.875	3	9.000	3	0.875	3	9.000								14	11	14	6	44
2	6U154	BEAM		13	S	X			3	4.250	3	9.000	3	4.250	3	9.000								15	6	15	0	45
2	6U155	BEAM		13	S	X			2	6.000	3	9.000	2	6.000	3	9.000								13	10	13	4	40
40	9V150	COLUMNS		20		X			25	3.500														25	3	25	3	3434
20	9V151	COLUMN		20		X			22	0.000														22	0	22	0	1496
20	9V152	COLUMN		20		X			23	3.000														23	3	23	3	1581
16	6V153	BEAM		20		X				21.000														21		21		42
			INT BENT NO 16																									
4	6D160	FOOTING		10		X					4	0.000	8	0.000										16	0	15	8	94
12	5D161	FOOTINGS		20		X			8	9.000														8	9	8	9	110
16	6D162	FOOTING		20		X			6	9.000														6	9	6	9	162
40	9D163	FOOTING & COL.		17		X			8	1.000														9	4	9	4	1269
8	7H160	BEAM		7		X			4	4.000	3	3.500												10	5	10	5	170

COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS
4	6H161	BEAM			20		X		38	0.000														38	0	38	0	228
5	9H162	BEAM			18		X		40	3.000														42	9	42	9	727
4	9H163	BEAM			18		X		38	0.000														40	6	40	6	551
10	11H164	BEAM			20		X		38	0.000														38	0	38	0	2019
65	4P160	COLUMN			16		X		3	3.000														11	1	11	1	481
3	4U160	BEAM			10	S	X					6.000	3	5.000										4	5	4	3	9
42	6U161	BEAM			13	S	X		3	5.000	3	9.000	3	5.000	3	9.000								15	8	15	2	957
32	6U162	BEAM			13	S	X		2	3.000	3	9.000	2	3.000	3	9.000								13	4	12	10	617
2	6U163	BEAM			13	S	X		3	4.250	3	9.000	3	4.250	3	9.000								15	6	15	0	45
2	6U164	BEAM			13	S	X		3	0.875	3	9.000	3	0.875	3	9.000								14	11	14	6	44
2	6U165	BEAM			13	S	X		2	6.000	3	9.000	2	6.000	3	9.000								13	10	13	4	40
16	6V160	BEAM			20		X			21.000														21		21		42
40	9V161	COLUMN			20		X		24	9.000														24	9	24	9	3366
20	9V162	COLUMN			20		X		21	5.000														21	5	21	5	1456
20	9V163	COLUMN			20		X		22	2.000														22	2	22	2	1507
			INT. BENT NO.17																									
4	6D170	FOOTING			10		X					4	7.500	8	0.000									17	3	16	11	102
16	6D171	FOOTING			20		X		8	0.000														8	0	8	0	192
12	5D172	FOOTING			20		X		8	9.000														8	9	8	9	110
38	9D173	FTG. AND COLUMN			20		X		8	0.000														8	0	8	0	1034
9	11H170	BEAM			20		X		37	6.000														37	6	37	6	1793
4	6H171	BEAM			20		X		37	6.000														37	6	37	6	225
3	10H172	BEAM			18		X		39	6.000														42	4	42	4	546
4	10H173	BEAM			18		X		37	6.000														40	4	40	4	694
1	6H174	BEAM			20		X		39	6.000														39	6	39	6	59
1	6H175	BEAM			20		X		37	6.000														37	6	37	6	56
8	7H176	BEAM			7		X		4	4.000	3	3.500												10	5	10	5	170
72	4P170	COLUMN			16		X		3	3.000														11	1	11	1	533
21	6U170	BEAM			13	S	X		3	5.000	3	9.000	3	5.000	3	9.000								15	3	15	2	478
44	6U171	BEAM			13	S	X		2	3.000	3	9.000	2	3.000	3	9.000								13	4	12	10	848
2	4U172	BEAM			7		X		3	8.000		18.000												8	1	8	1	11
2	6U173	BEAM			13	S	X		3	2.500	3	9.000	3	2.500	3	9.000								15	3	14	9	44
2	6U174	BEAM			13	S	X		2	4.000	3	9.000	2	4.000	3	9.000								13	6	13	0	39
2	4U175	BEAM			10	S	X					12.000		17.250										3	5	3	3	4
13	4U176	BEAM			10	S	X					6.000	3	5.000										4	5	4	3	37
37	4U177	BEAM			10	S	X					12.000		18.500										3	7	3	5	84
10	4U178	BEAM			10	S	X					6.000		18.500										2	7	2	5	16
19	9V170	COLUMN			20		X		37	9.000														37	9	37	9	2439
19	9V171	COLUMN			20		X		39	0.000														39	0	39	0	2519
10	2W171	ANC BOL			22		X			15.600		9.125												22	0	22	0	38
10	2W170	ANC BOLT WELL			22		X			18.000		9.125												26	1	26	1	44
			INT. BT. NO.18																									
18	5D180	FOOTING			20		X		6	9.000														6	9	6	9	127
18	6D181	FOOTING			20		X		8	9.000														8	9	8	9	237
6	6D182	FOOTING			10		X				4	4.000	8	6.000										17	2	16	10	152
42	9D183	FOOTING			20		X		8	0.000														8	0	8	0	1142
9	9H180	BEAM			20		X		47	0.000														47	0	47	0	1438
4	6H181	BEAM			20		X		47	0.000														47	0	47	0	282

STATE	PROJ NO	SHT NO
MO		10.3

SHAPE 6 SHAPE 7 SHAPE 8 SHAPE 9

SHAPE 10 SHAPE 11 SHAPE 12 SHAPE 13

SHAPE 14 SHAPE 15

SHAPE 16 SHAPE 17 SHAPE 18 SHAPE 20 SHAPE 19

SHAPE 21 SHAPE 22 SHAPE 23

SHAPE 24 SHAPE 25 SHAPE 26

SHAPE 27 SHAPE 28 SHAPE 29

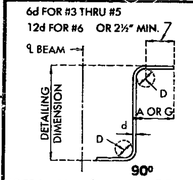
SHAPE 30 SHAPE 31 SHAPE 32

SHAPE 33

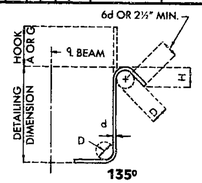
BENDING DIAGRAMS

STD. 90.8	REVISED
MAY 1974	JUNE 1986

6d FOR #3 THRU #5
12d FOR #6 OR 2½" MIN.



6d OR 2½" MIN.



DETAILED AUG 19 88
CHECKED AUG 19 88

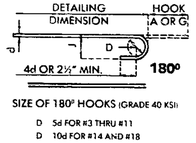
STIRRUP HOOK DIMENSIONS

GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#3	1½"	4"	4"	2½"
#4	2"	4½"	4½"	3"
#5	2½"	6"	5½"	3¾"
#6	4½"	12"	7¾"	4½"

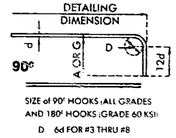
NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

Note: This drawing is not to scale. Follow dimensions.



SIZE OF 180° HOOKS (GRADE 40 KSI)

D 5d FOR #3 THRU #11
D 10d FOR #14 AND #18



SIZE OF 90° HOOKS (ALL GRADES AND 180° HOOKS (GRADE 60 KSI)

D 6d FOR #3 THRU #8
D 8d FOR #9, #10 AND #11
D 10d FOR #14 AND #18

END HOOK DIMENSIONS

BAR SIZE	D (IN.)	180° HOOKS ALL GRADES A OR G	180° HOOKS ALL GRADES J	90° HOOKS ALL GRADES A OR G
#3	2¼"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3¾"	7"	5"	10"
#6	4½"	8"	6"	12"
#7	5¼"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9½"	15"	11¾"	19"
#10	10¾""	17"	13¼"	22"
#11	12"	19"	14¾"	2'-0"
#14	18½"	2'-3"	21¾"	2'-7"

NOTES:

ALL STANDARD HOOKS AN. BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E - EPOXY COATED REINFORCEMENT
S - STIRRUP
X - BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V - BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. - NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS - ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE (NEAREST INCH)
ACTUAL LENGTHS - ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON CTUAL LENGTHS.

Sheet No. 54 of 55

JACKSON COUNTY A-2745

FOR INFORMATION ONLY

A27452, Sht. 67

COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
4	9H102	BEAM		18	X			48	6.000							51 0	51 0	694
5	9H103	BEAM		18	X			47	0.000							49 6	49 6	842
8	7H104	BEAM		7	X			4	5.000	3	5.500					10 8	10 8	174
66	4P190	COLUMNS		16	X			3	3.000							11 1	11 1	489
11	4U180	BEAM		10	S	X					6.000	3	7.000			4 7	4 5	32
54	6U184	BEAM		13	S	X			3	7.000	3	9.000	3	7.000	3	9.000	16 0	15 6	1257
24	6U182	BEAM		13	S	X			2	5.000	3	9.000	2	5.000	3	9.000	13 8	13 2	475
4	6U183	BEAM		13	S	X			2	2.375	3	9.000	2	2.375	3	9.000	13 2	12 9	77
4	6U184	BEAM		13	S	X			3	1.000	3	9.000	3	1.000	3	9.000	15 0	14 6	87
14	9V180	COLUMN		20	X			23	7.000							23 7	23 7	1123
14	9V181	COLUMN		20	X			24	5.000							24 5	24 5	1162
14	9V182	COLUMN		20	X			25	3.000							25 3	25 3	1202
10	2W180	A.B. WELLS		22	X			2	1.000		9.125					33 2	33 2	55
		INT. BENT NO.19																
12	9D190	FOOTINGS		20	X			8	9.000							8 9	8 9	215
18	9D191	FOOTINGS		20	X			7	3.000							7 3	7 3	136
6	9D192	FOOTINGS		20	X					4	3.000	8	0.000			16 6	16 2	146
42	9D193	COLUMNS		20	X			7	11.000							7 11	7 11	1130
9	10H190	BEAM		20	X			48	3.000							48 3	48 3	1869
4	6H191	BEAM		20	X			43	6.000							45 6	45 6	261
8	11H192	BEAM		17	X			17	4.000							19 1	19 1	811
5	9H193	BEAM		17	X			26	5.000							26 5	26 5	355
6	9H194	BEAM		20	X			21	6.000							21 6	21 6	230
8	7H195	BEAM		7	X			4	3.000	3	3.000					10 3	10 3	168
4	6H196	BEAM		20	X			26	5.000							26 5	26 5	155
9	10H197	BEAM		20	X			26	5.000							26 5	26 5	1023
5	9H198	BEAM		17	X			47	0.000							47 11	47 11	640
66	4P190	COLUMNS		16	X			3	3.000							11 1	11 1	489
83	4U190	BEAM		13	S	X			3	5.000	3	9.000	3	5.000	3	9.000	15 8	15 2	1891
2	6U191	BEAM		13	S	X			2	10.000	3	9.000	2	10.000	3	9.000	14 6	14 0	42
8	4U192	BEAM		10	S	X					6.000	3	9.000			4 5	4 3	23
2	6U193	BEAM		13	S	X			3	3.000	3	9.000	3	3.000	3	9.000	15 4	14 10	45
14	9V190	COLUMN		20	X			23	3.000							23 3	23 3	1107
14	9V191	COLUMN		20	X			24	3.000							24 3	24 3	1154
14	9V192	COLUMN		20	X			25	3.000							25 3	25 3	1202
10	2W190	A.B. WELLS		22	X			2	1.000		9.125					26 1	26 1	43
		END BENT NO 20																
6	5D201	FOOTING		20	X			3	8.000							3 8	3 8	23
4	5D202	FOOTING		20	X			4	9.000							4 9	4 9	20
4	5D203	FOOTING		20	X			2	3.000							2 3	2 3	9
6	6F201	WING		15	S	X			14.125	2	9.500	14.125	13.500	4.000	13.500	4.000	5 2	5 0	45
5	6F202	WING		15	S	X			14.250	12	2.000	14.250	3.750	13.750	3.750	13.750	14 7	14 6	109
8	9H201	BEAM		20	X			37	1.000							37 1	37 1	1001
2	6H202	BEAM		20	X			37	1.000							37 1	37 1	111

COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
4	9H203	BEAM		20	S	X			48	0.000							48 0	48 0	653
2	6H204	BEAM		20	S	X			48	0.000							48 0	48 0	144
4	9H205	BEAM		20	S	X			50	8.000							50 8	50 8	689
8	4H206	BACKWALL		20		X			37	1.000							37 1	37 1	198
8	4H207	BACKWALL		20		X			45	8.000							45 8	45 8	244
1	4H208	BACKWALL		20		X			37	1.000							37 1	37 1	25
1	4H209	BACKWALL		20		X			45	8.000							45 8	45 8	31
8	4H212	WING		20		X			6	11.000							6 11	6 11	57
12	6H213	WING		20		X	V	2	14	9.000							14 9	14 9	
		INCR = 17.625 IN							7	5.000							7 5	7 5	200
4	4H214	WING		20		X			15	2.000							15 2	15 2	91
8	4H215	WING		20		X			3	10.000							3 10	3 10	20
10	6H216	WING		20		X	V	2	26	0.000							26 0	26 0	
		INCR = 57.000 IN							7	0.000							7 0	7 0	248
4	6H217	WING		20		X			27	9.000							27 9	27 9	167
8	5R201	WING	E	10	S	X				2	1.000	6.000					4 8	4 6	38
2	6T201	WING		25	S	X			16.000	10	3.000	2	0.000		3	9.000	9 6.500	13 7	13 6	41
2	6T202	WING		25	S	X			15.000	22	2.625	3	0.000		3	1.500	22 0.000	24 6	24 4	79
2	4T203	WING		19	S	X			7	1.000	7	5.000						14 6	14 5	19
2	4T204	WING		19	S	X			6	8.000	4	4.000						11 0	10 11	14
11	4U200	BEAM		10	S	X					6.000	3	3.000					4 3	4 1	30
154	5U201	BEAM		13	S	X			2	2.000	2	9.500	2	8.000	2	9.000		11 4	11 0	1583
1	5U202	BEAM		13	S	X			2	9.000	2	10.250	3	4.000	2	9.000		12 9	12 5	13
5	7U203	BEAM		14		X			6	8.500	2	9.000	2	0.125			12.000	21.000	11 6	11 3	115
9	6U204	BEAM		10	S	X	V	1			2	0.000	3	3.000					7 3	6 11	
		INCR = 0.375 IN									2	0.000	3	0.000					7 0	6 8	92
5	7U205	BEAM		10		X					7	9.000	2	9.000					17 5	17 1	175
73	6U206	BEAM		10	S	X						15.000		6.000					3 0	2 10	138
6	6U207	BEAM		10	S	X	V	1			2	0.000	3	3.000					7 3	6 11	
		INCR = 0.375 IN									2	0.000	3	0.500					7 1	6 9	62
12	6V201	BEAM		20		X			2	9.000									2 9	2 9	8
2	6V202	BEAM		20		X			3	4.000									3 4	3 4	10
152	5V203	BEAM	E	20		X			7	8.000									7 8	7 8	1225
6	4V204	BEAM		20		X			6	8.000									6 8	6 8	27
5	7V205	WING	E	17		X			7	10.000									8 6	8 6	64
7	6V206	WING	E	20		X			8	0.000									8 0	8 0	84
9	6V207	WING	E	17		X	V	1	6	2.000									6 10	6 10	
		INCR = 4.625 IN							3	0.500									3 9	3 9	72
9	6V208	WING	E	20		X	V	1	6	4.000									6 4	6 4	
		INCR = 4.625 IN							3	2.500									3 3	3 3	65
																				21	21	5
2	6V209	WING		20		X				21.000									6 5	6 5	9
2	4V210	WING		20		X			6	5.000									6 1	6 1	49
	6V211	WING	E	17		X			7	5.000									7 7	7 7	46
4	6V212	WING	E	20		X			7	7.000											
																			6 7	6 7	
22	6V213	WING	E	17		X	V	1	5	11.000									3 3	3 3	162
		INCR = 1.875 IN							2	7.000									6 1	6 1	
22	6V214	WING	E	20		X	V	1	6	1.000									2 9	2 9	146
		INCR = 1.875 IN							2	9.000									17	17	4
2	6V215	WING		20		X				17.000											
10	2W20	A B WELLS		22		X				15.000		9.125							23 0	23 0	38
		END OF BAR LIST																			

Note: 9 additional #6-V206 & #5-V203 have been added to bar list for testing purposes.

STATE	PROJ NO	SHEET NO
MO		110

SHAPE 6 · SHAPE 7 · SHAPE 8 · SHAPE 9

SHAPE 10 · SHAPE 11 · SHAPE 12 · SHAPE 13

SHAPE 14 · SHAPE 15

SHAPE 16 · SHAPE 17 · SHAPE 18 · SHAPE 20 · SHAPE 19

SHAPE 21 · SHAPE 22 · SHAPE 23

SHAPE 24 · SHAPE 25 · SHAPE 26

SHAPE 27 · SHAPE 28 · SHAPE 29

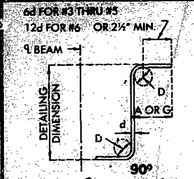
SHAPE 30 · SHAPE 31 · SHAPE 32

SHAPE 33

BENDING DIAGRAMS

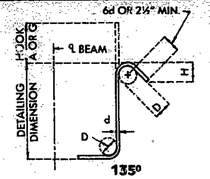
STD. 90.8	REVISED	JUNE 1986
MAY 1974		

6d FOR #3 THRU #5
12d FOR #6 OR 2½" MIN.



90°

6d OR 2½" MIN.

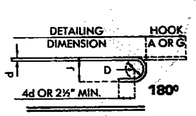


135°

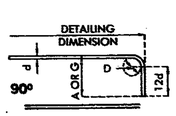
DETAILED AUG 1988
CHECKED AUG 1988

STIRRUP HOOK DIMENSIONS				
		GRADES 40-50-60 KSI		
BAR SIZE	D (IN.)	90° HOOK	135° HOOK	
		HOOK A OR G	HOOK A OR G	APPROX. H
#3	1½"	4"	4"	2½"
#4	2"	4½"	4½"	3"
#5	2½"	6"	5½"	3¾"
#6	4½"	12"	7¾"	4½"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.



SIZE OF 180° HOOKS (GRADE 40 KSI)
D = 3d FOR #3 THRU #11
D = 10d FOR #14 AND #18



SIZE of 90° HOOKS (ALL GRADES) AND 180° HOOKS (GRADE 60 KSI)
D = 4d FOR #3 THRU #8
D = 8d FOR #9, #10 AND #11
D = 10d FOR #14 AND #18

END HOOK DIMENSIONS					
BAR SIZE	D (IN.)	180° HOOKS ALL GRADES		90° HOOKS ALL GRADES	
		A OR G	J	A OR G	
#3	2¼"	5"	3"	6"	
#4	3"	6"	4"	8"	
#5	3¾"	7"	5"	10"	
#6	4½"	8"	6"	12"	
#7	5¼"	10	7"	14"	
#8	6"	11'	8"	16"	
#9	9½"	15"	11¾"	19"	
#10	10¾""	17"	13¼"	22"	
#11	12"	19"	14¾"	2'-0"	
#14	18¼"	2'-3"	21¾"	2'-7"	

NOTES:
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E - EPOXY COATED REINFORCEMENT.
S - STIRRUP
X - BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V - BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. - NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS - ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS - ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.

Note: This drawing is not to scale. Follow dimensions.

JACKSON COUNTY

A-2745

Sheet No. 55 of 55

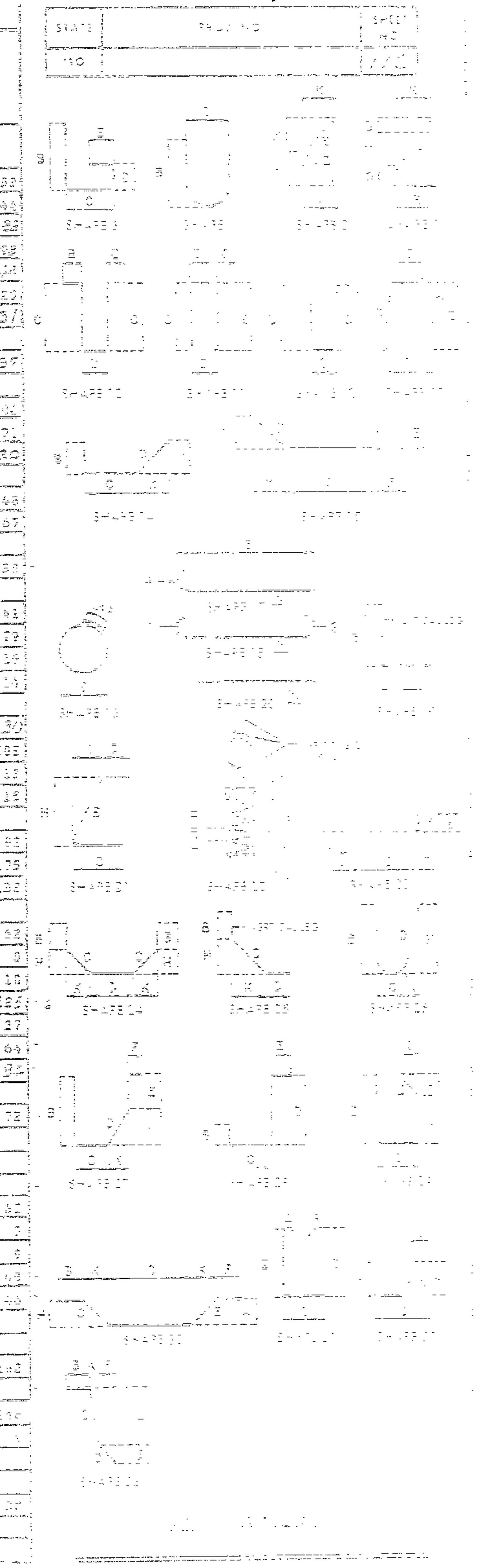
COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO. (SIZE MARK)	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	B (FT. IN.)	C (FT. IN.)	D (FT. IN.)	E (FT. IN.)	F (FT. IN.)	H (FT. IN.)	K (FT. IN.)	NOMINAL LENGTH (FT. IN.)	ACTUAL LENGTH (FT. IN.)	WEIGHT (LBS.)
4	9H182	BEAM		18		X			46 6.000							51 0	51 0	694
5	9H183	BEAM		18		X			47 0.000							49 6	49 6	842
8	7H184	BEAM		7		X			4 5.000	3 5.500						10 8	10 8	174
66	4P1[illegible]	COLUMNS		16		X			3 3.000							11 1	11 1	489
11	4U181	BEAM		10	S	X				6.000	3 7.000					4 7	4 5	32
54	6U181	BEAM		13	S	X			3 7.000	3 9.000	3 7.000	3 9.000				16 0	15 6	1257
24	6U182	BEAM		13	S	X			2 5.000	3 9.000	2 5.000	3 9.000				13 8	13 2	475
4	6U183	BEAM		13	S	X			2 2.375	3 9.000	2 2.375	3 9.000				13 2	12 9	77
4	6U184	BEAM		13	S	X			3 1.000	3 9.000	3 1.000	3 9.000				15 0	14 6	87
14	9V180	COLUMN		20		X			23 7.000							23 7	23 7	1123
14	9V181	COLUMN		20		X			24 5.000							24 5	24 5	1162
14	9V182	COLUMN		20		X			25 3.000							25 3	25 3	1202
10	2W180	A.B. WELLS		22		X			2 1.000	9.125						33 2	33 2	55
		INT. BENT NO.19																
12	7D190	FOOTINGS		20		X			8 9.000							8 9	8 9	215
18	5D191	FOOTINGS		20		X			7 3.000							7 3	7 3	136
6	6D192	FOOTINGS		10		X				4 3.000	8 0.000					16 6	16 2	146
42	9D193	COLUMNS		20		X			7 11.000							7 11	7 11	1130
9	10H190	BEAM		20		X			48 3.000							48 3	48 3	1869
4	6H191	BEAM		20		X			43 6.000							43 6	43 6	261
8	11H192	BEAM		17		X			17 6.000							19 1	19 1	811
5	8H193	BEAM		17		X			26 5.000							26 5	26 5	353
4	8H194	BEAM		20		X			21 6.000							21 6	21 6	230
8	7H195	BEAM		7		X			4 3.000	3 3.000						10 3	10 3	168
4	6H196	BEAM		20		X			26 5.000							26 5	26 5	159
9	10H197	BEAM		20		X			26 5.000							26 5	26 5	1023
5	8H198	BEAM		17		X			47 0.000							47 11	47 11	640
66	4P190	COLUMNS		16		X			3 3.000							11 1	11 1	489
83	4U190	BEAM		13	S	X			3 5.000	3 9.000	3 5.000	3 9.000				15 8	15 2	1891
2	[illegible]U191	BEAM		13	S	X			2 10.000	3 9.000	2 10.000	3 9.000				14 6	14 0	42
8	4U192	BEAM		10	S	X				6.000	3 5.000					4 5	4 3	23
2	6U193	BEAM		13	S	X			3 3.000	3 9.000	3 3.000	3 9.000				15 4	14 10	45
14	9V190	COLUMN		20		X			23 3.000							23 3	23 3	1107
14	9V191	COLUMN		20		X			24 3.000							24 3	24 3	1154
14	9V192	COLUMN		20		X			25 3.000							25 3	25 3	1202
10	2W190	A.B. WELLS		22		X			18.000	9.125						26 1	26 1	43
		END BENT NO 20																
6	5D201	FOOTING		20		X			3 8.000							3 8	3 8	23
4	5D202	FOOTING		20		X			4 9.000							4 9	4 9	20
4	5D203	FOOTING		20		X			2 3.000							2 3	2 3	9
6	6F201	WING		15	S	X			14.125	2 9.500	14.125	13.500	4.000	13.500	4.000	5 2	5 0	45
5	6F202	WING		15	S	X			14.250	12 2.000	14.250	3.750	13.750	3.750	13.750	14 7	14 6	109
8	9H201	BEAM		20		X			37 1.000							37 1	37 1	1009
2	6H202	BEAM		20		X			37 1.000							37 1	37 1	111

COMPLETE BILL OF REINFORCING STEEL

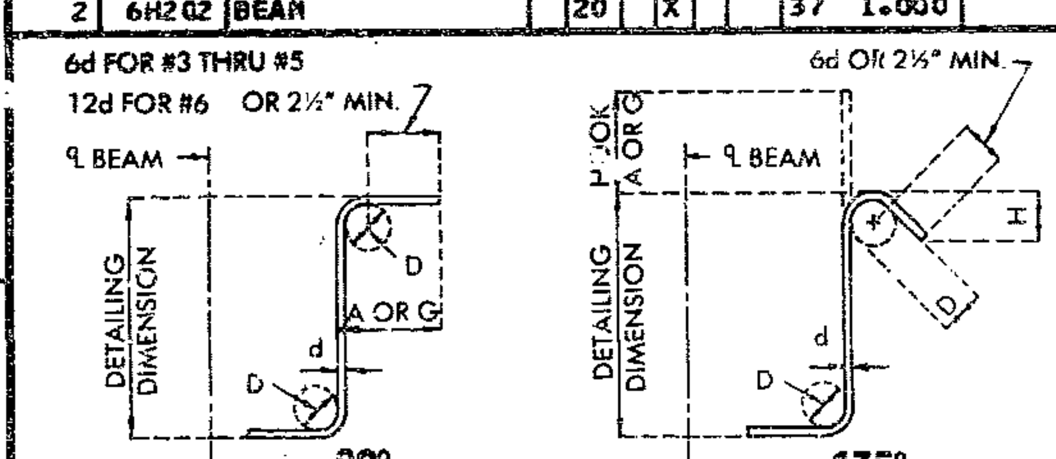
NO. REQD.	MARK NO. (SIZE MARK)	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	B (FT. IN.)	C (FT. IN.)	D (FT. IN.)	E (FT. IN.)	F (FT. IN.)	H (FT. IN.)	K (FT. IN.)	NOMINAL LENGTH (FT. IN.)	ACTUAL LENGTH (FT. IN.)	WEIGHT (LBS.)
4	9H203	BEAM		20		X			48 0.000							48 0	48 0	[illegible]
2	6H204	BEAM		20		X			48 0.000							48 0	48 0	144
4	9H205	BEAM		20		X			50 8.000							50 8	50 8	[illegible]
8	4H206	BACKWALL		20		X			37 1.000							37 1	37 1	[illegible]
8	4H207	BACKWALL		20		X			45 8.000							45 8	45 8	[illegible]
1	4H208	BACKWALL		20		X			37 1.000							37 1	37 1	[illegible]
1	4H209	BACKWALL		20		X			45 8.000							45 8	45 8	31
8	4H212	WING		20		X			6 11.000							6 11	6 11	37
12	6H213	WING		20		X	V	2	14 9.000							14 9	14 9	
		INCR = 17.625 IN							7 [illegible]							[illegible]	[illegible]	[illegible]
4	6H214	WING		20		X			15 2.000							15 2	15 2	[illegible]
8	4H215	WING		20		X			3 10.000							3 10	3 10	20
10	6H216	WING		20		X	V	2	26 0.000							26 0	26 0	
		INCR = 57.000 IN							7 0.000							7 0	7 0	[illegible]
4	6H217	WING		20		X			27 9.000							27 9	27 9	167
8	5R201	WING	E	10	S	X				2 1.000	6.000					[illegible]	[illegible]	[illegible]
2	6T201	WING		25	S	X			16.000	10 3.000	2 0.000			3 9.000	9 6.500	13 7	13 6	51
2	6T202	WING		25	S	X			15.000	22 2.625	3 0.000			3 1.500	22 0.000	26 6	25 4	79
2	4T203	WING		19	S	X			7 1.000	7 5.000						14 6	14 5	[illegible]
2	4T204	WING		19	S	X			6 8.000	4 4.000						11 0	10 11	[illegible]
11	4U200	BEAM		10	S	X				6.000	3 3.000					4 3	4 1	30
138	5U201	BEAM		13	S	X			2 2.000	2 9.500	2 8.000	2 9.000				11 4	11 0	[illegible]
1	5U202	BEAM		13	S	X			2 9.000	2 10.250	3 6.000	2 9.000				12 9	12 5	[illegible]
5	7U203	BEAM		14		X			6 8.500	2 9.000	2 0.125			12.000	21.000	11 6	11 3	[illegible]
9	6U204	BEAM		10	S	X	V	1		2 0.000	3 3.000					7 2	6 11	
		INCR = 0.375 IN								2 0.000	3 0.000					7 0	6 8	[illegible]
5	7U205	BEAM		10		X				7 4.000	2 9.000					17 9	17 1	175
73	4U206	BKWL		10	S	X				15.000	6.000					3 0	2 10	[illegible]
6	6U207	BEAM		10	S	X	V	1		2 0.000	3 3.000					7 3	6 11	
		INCR = 0.375 IN								2 0.000	3 0.500					7 1	6 9	[illegible]
2	6V201	BEAM		20		X			2 9.000							2 9	2 9	[illegible]
2	6V202	BEAM		20		X			3 4.000							3 4	3 4	10
152	5V203	BEAM	E	20		X			7 8.000							7 8	7 8	[illegible]
6	4V204	BEAM		20		X			6 8.000							6 8	6 8	27
5	6V205	WING	E	17		X			7 10.000							[illegible]	[illegible]	[illegible]
7	6V206	WING	E	20		X			8 0.000							8 0	8 0	[illegible]
9	6V207	WING	E	17		X	V	1	6 2.000							6 10	6 10	
		INCR = 4.625 IN							3 0.500							3 9	3 9	72
9	6V208	WING	E	20		X	V	1	6 6.000							[illegible]	[illegible]	
		INCR = 4.625 IN							3 2.500							[illegible]	[illegible]	[illegible]
2	6V209	WING		20		X			21.000							21	21	[illegible]
2	4V210	WING		20		X			6 5.000							6 5	6 5	[illegible]
[illegible]	6V211	WING	E	17		X			7 5.000							[illegible]	[illegible]	[illegible]
4	6V212	WING	E	20		X			7 7.000							[illegible]	[illegible]	[illegible]
22	6V213	WING	E	17		X	V	1	5 11.000							[illegible]	[illegible]	
		INCR = 1.875 IN							2 7.000							[illegible]	[illegible]	[illegible]
22	6V214	WING	E	20		X	V	1	6 1.000							[illegible]	[illegible]	
		INCR = 1.875 IN							2 9.000							[illegible]	[illegible]	[illegible]
2	6V215	WING		20		X			17.000							[illegible]	[illegible]	[illegible]
10	2W20	A B WELLS		22		X			15.000	9.125						[illegible]	[illegible]	[illegible]
		END OF BAR LIST																

Note: 2 additional #6-V306 & #5-V208 have been added to bar list for testing purposes



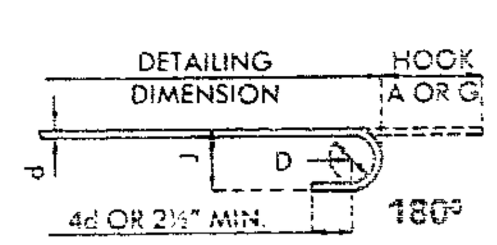
BAR SIZE	D (IN.)	180° HOOKS ALL GRADES A OR G	180° HOOKS ALL GRADES J	90° HOOKS ALL GRADES A OR G
#3	[illegible]	5"	[illegible]	[illegible]
#4	3"	6"	[illegible]	8"
#5	[illegible]	7"	[illegible]	[illegible]
#6	[illegible]	8"	[illegible]	[illegible]
#7	[illegible]	[illegible]	[illegible]	[illegible]
#8	[illegible]	[illegible]	[illegible]	[illegible]
#9	[illegible]	15"	[illegible]	[illegible]
#10	[illegible]	[illegible]	[illegible]	[illegible]
#11	[illegible]	19"	[illegible]	[illegible]
#14	[illegible]	2'-3"	[illegible]	[illegible]

END HOOK DIMENSIONS



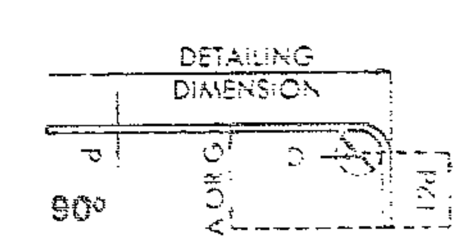
STIRRUP HOOK DIMENSIONS				
GRADES 40-50-60 KSI				
BAR SIZE	D (IN.)	90° HOOK: HOOK A OR G	135° HOOK: HOOK A OR G	135° HOOK: APPROX. H
#3	1½"	4"	4"	2½"
#4	2"	4½"	4½"	3"
#5	2½"	6"	5½"	3¾"
#6	4½"	12"	7¾"	4½"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.



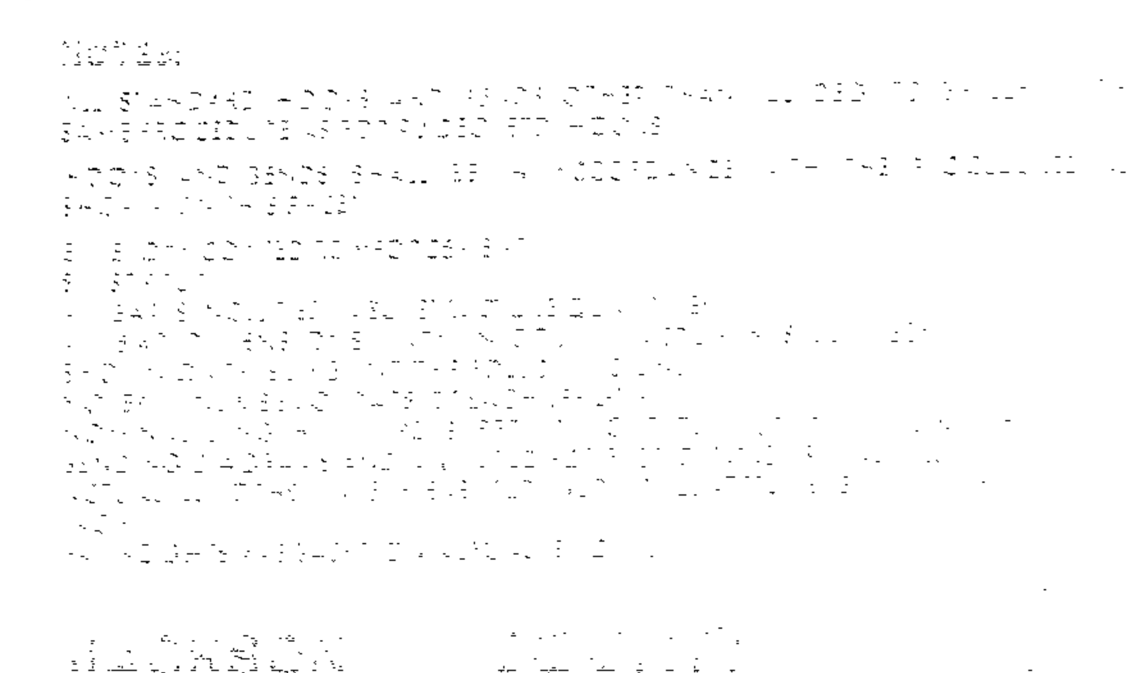
SIZE OF 180° HOOKS (GRADE 40 KSI)

D 6d FOR #3 THRU #11
D 10d FOR #14 AND #18



Note: This drawing is not to scale. Follow dimensions.

NOTES:



STD. 90.8 MAY 1974 REVISED JUNE 1988

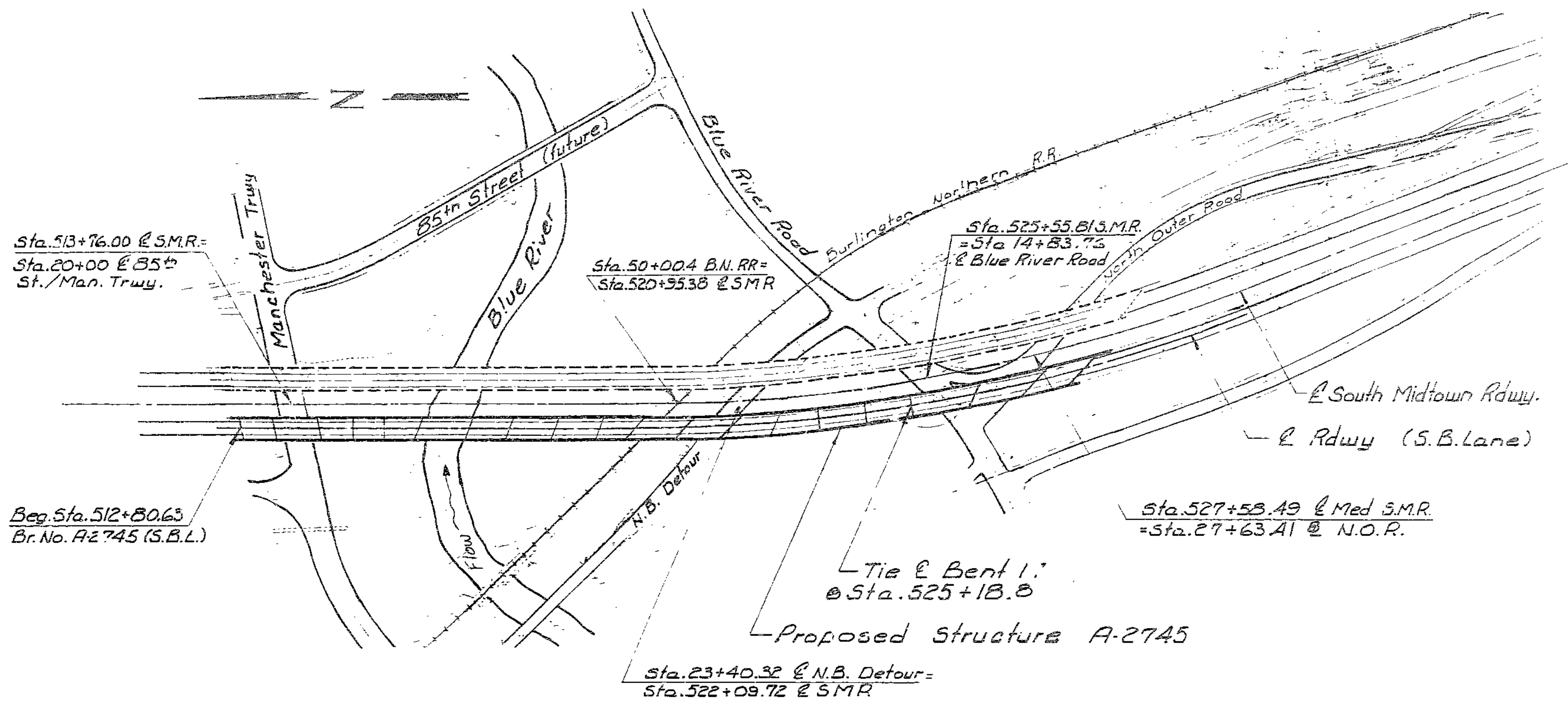
DETAILED AUG 1988

CHECKED AUG 1988

Sheet No. [illegible] of [illegible]

FOR INFORMATION ONLY **A27452, Sht. 69**

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION



LOCATION SKETCH

BRIDGE NO. A-2745
OVER
MANCHESTER TRAFFICWAY, BLUE RIVER, BURLINGTON NORTHERN RR, N.B. DETOUR, BLUE RIVER ROAD & NORTH OUTER ROAD

SUBSTRUCTURE CONTRACT

INDEX OF DRAWINGS

Note: For Hydrologic Data Table see sheet ... For Curve Data see sheet No. ...

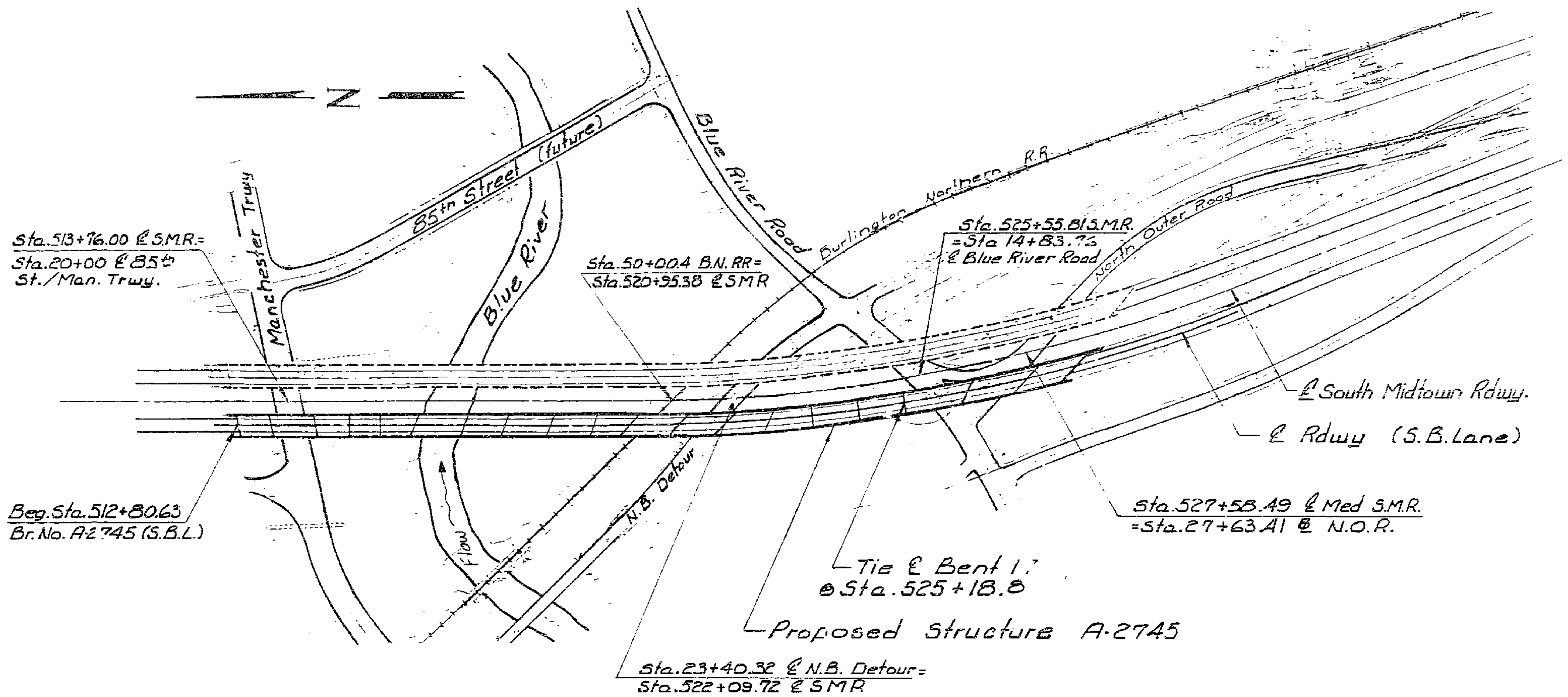
DESIGNED *Mar. 1988*
DETAILED *July 1988*
CHECKED *August 1988*

Note: This drawing is not to scale. Follow dimensions.

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ NO	SHEET NO
MO	DE-00?1(505)	16
SEC/SUR 22	TWP 48	RGE 33

Job No 4-U-7-20



LOCATION SKETCH

BRIDGE NO. A-2745
OVER
MANCHESTER TRAFFICWAY, BLUE RIVER, BURLINGTON NORTHERN RR, N.B. DETOUR, BLUE RIVER ROAD & NORTH OUTER ROAD

SUBSTRUCTURE CONTRACT

Note: For Hydrologic Data Table see sheet No 8.
For Curve Data see sheet No. 12.

INDEX OF DRAWINGS

B.M. TBM-1 elevation 780.65 S.W. cor. signal base at S.W. cor. 87th St. and Hickman Mills Dr.

STATE ROAD: "SOUTH MIDTOWN ROADWAY"

IN KANSAS CITY

PROJECT NO. DE-00?1(505) STA. 512+80.63

JOB NO 4-U-7-20 RTE. 71 S.B.L.

JACKSON COUNTY

DATE 9/14/88

DESIGNED Mar. 1988
DETAILED July 1988
CHECKED August 1988

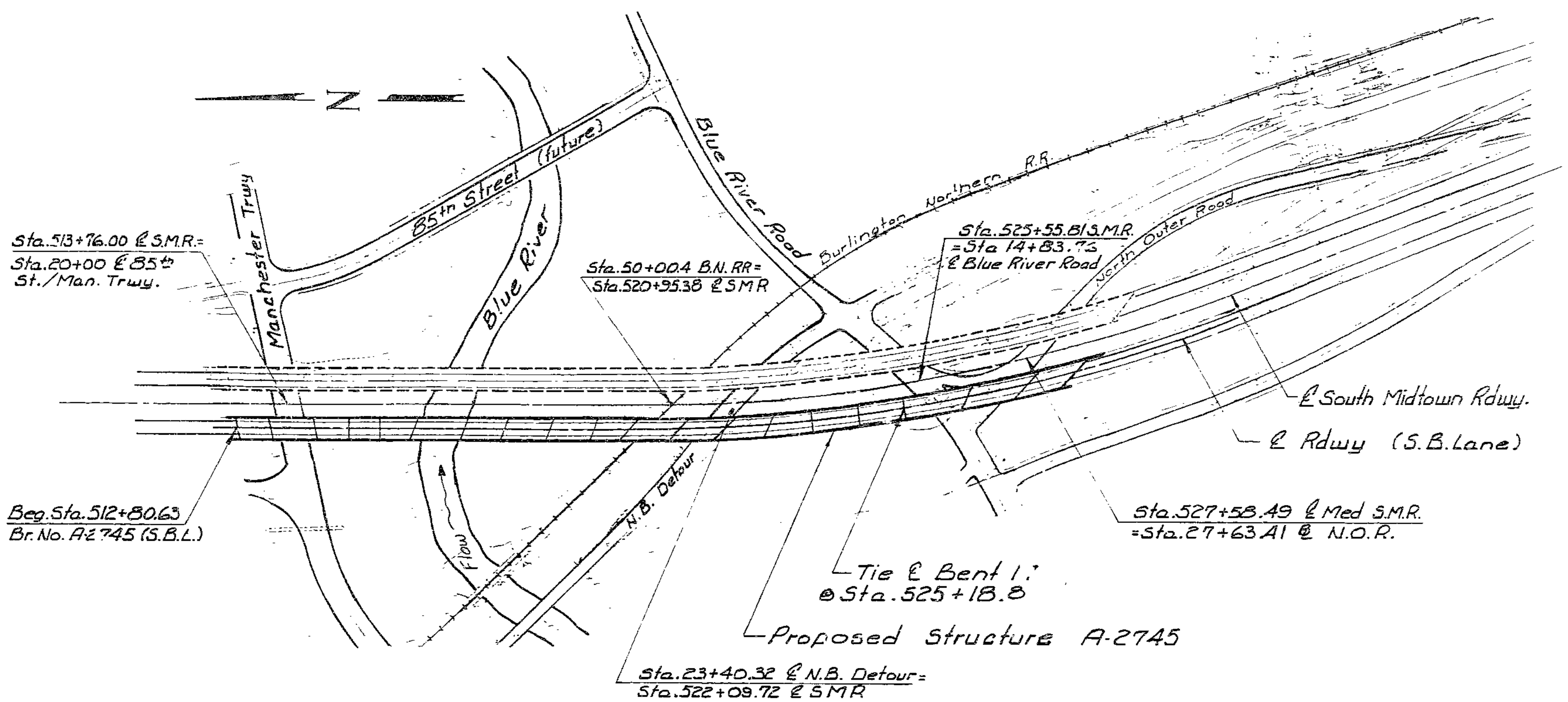
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 1 of 55

197 366

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ NO	SHEET NO
MO	DE-00-1 (303)	16
SEC/SUR 22	TWP 48	RGE 33



LOCATION SKETCH

BRIDGE NO. A-2745
OVER
MANCHESTER TRAFFICWAY, BLUE RIVER, BURLINGTON NORTHERN RR, N.B. DETOUR, BLUE RIVER ROAD & NORTH OUTER ROAD

SUBSTRUCTURE CONTRACT

INDEX OF DRAWINGS

Note: For Hydrologic Data Table see sheet No. 9. For Curve Data see sheet No. 13.

B.M. 75M-1 Elevation 780.85 S.W. cor. signal base at S.W. cor. 87th St. and Hickman Mills Dr.

STATE ROAD: "SOUTH MIDTOWN ROADWAY"
IN KANSAS CITY
PROJECT NO DE-003 (303) STA. 512+80.63
JOB NO 4-U-71-2D RTE. 71 S.B.L.
JACKSON COUNTY

DESIGNED Mar. 1988
DETAILED July 1988
CHECKED August 1988

Note: This drawing is not to scale. Follow dimensions

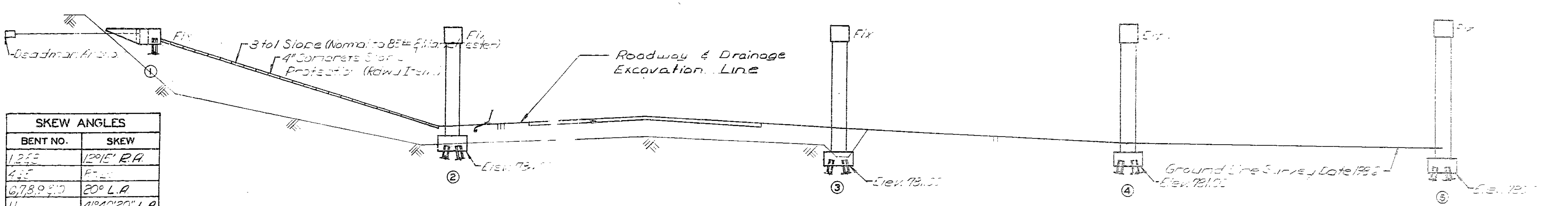
A7 366

FOR INFORMATION ONLY **A27452, Sht. 72**

STATE	PROJ NO	SHEET NO
MO	[illegible]	[illegible]

Note: Roadway fill shall be completed to the roadway section and up to the elevation of the bottom of the concrete beam within the limits of the structure and for a distance 25' in back of the fill face of the end bents before piles are driven for any bents falling within the embankment section.

(64'-82'-65')(65'-65'-82'-82'-82')(82'-67'-90'-90')(79'-79'-85'-85') PRESTRESSED CONCRETE I-GIRDER SPANS
(123'-123'-93') CONT. COMP. PL GIRDER SPANS

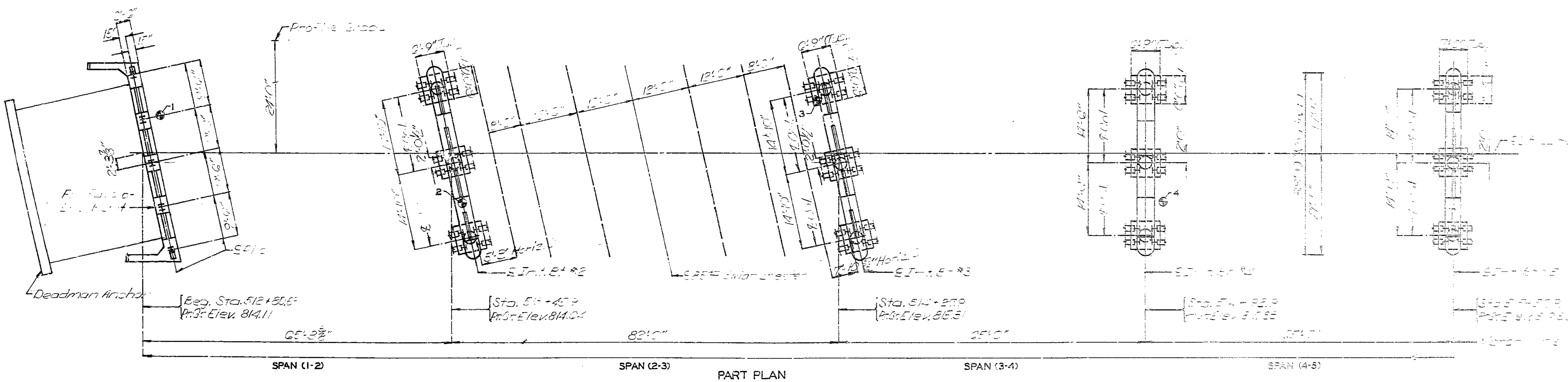


PART GENERAL ELEVATION

SKEW ANGLES	
BENT NO.	SKEW
1,2 & 3	12°15' R.A.
4 & 5	[illegible]
6,7,8,9 & 10	20° L.A.
11	41°40'20" L.A.
12	42°47'33" L.A.
[illegible]	44°34'[illegible]" L.A.
[illegible]	2[illegible]°13'[illegible]" L.A.
15,16 & [illegible]	Radial
[illegible]	3[illegible]°C[illegible]' L.A.
[illegible]	57°25'03" L.A.
2[illegible]	59°17'5[illegible]" L.A.

To Radial Line

Note: Skew angles are measured at ℄ S.B.L.



PART PLAN

Note: For boring data see sheet Nos. 10 & 11.
"⊕" Indicates location of boring

DETAILED JULY 1988
CHECKED Aug 1988

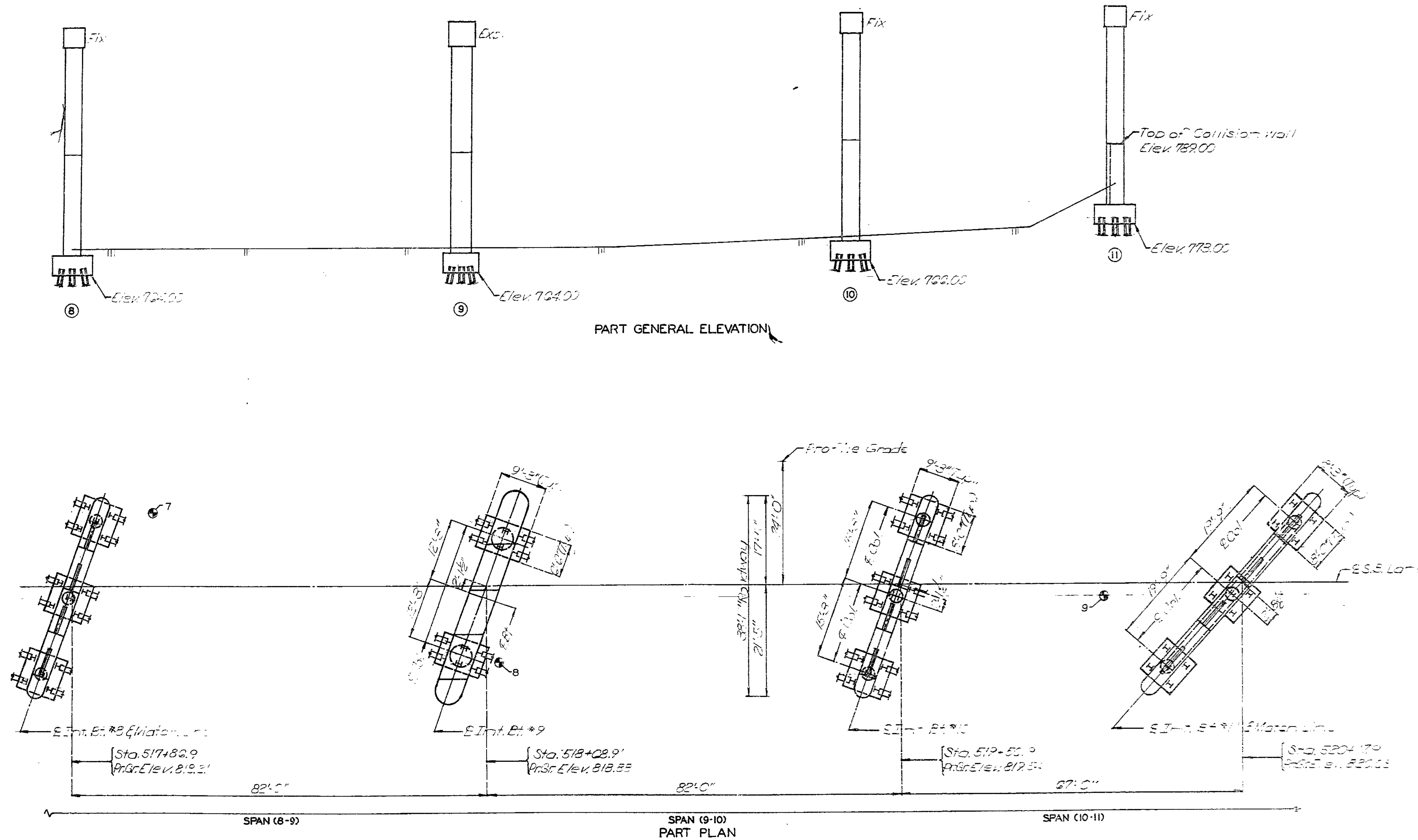
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 2 of 88

JACKSON COUNTY


STATE
PROJ NO
SHEET NO
MO
Fix
Des. H.W. Elev. 795
Top of Web Elev. 793.00
Elev. 780.00
Bottom of Web Elev. 763.00
Excavation Datum Elev. 754.00
Low Water Elev. 753.00
Elev. 747.00
Elev. 784.00
PART GENERAL ELEVATION
Profile Grade
℄ Channel (Blue River)
S.S. & Lorry
℄ Int. Bt. #5 & Mason Line
℄ Int. Bt. #6
Sta. 515+57.9
Pr. Gr. Elev. 810.30
Sta. 516+22.9
Pr. Gr. Elev. 810.88
65'-0"
82'-0"
SPAN (5-6)
SPAN (6-7)
SPAN (7-8)
PART PLAN
Note: For Boring Data see sht. No. 10 & 11.
"⊕" Indicates location of boring.
DETAILED JULY 1988
CHECKED Aug. 1988
Note: This drawing is not to scale. Follow dimensions.
JACKSON COUNTY

STATE	PROJ. NO	SHEET NO
MO	DE-0031 (303)	19



Note: For Boring Data see sheets No. 10 & 11.
"⊕" Indicates location of borings.

DETAILED JULY 1988
CHECKED Aug. 1988

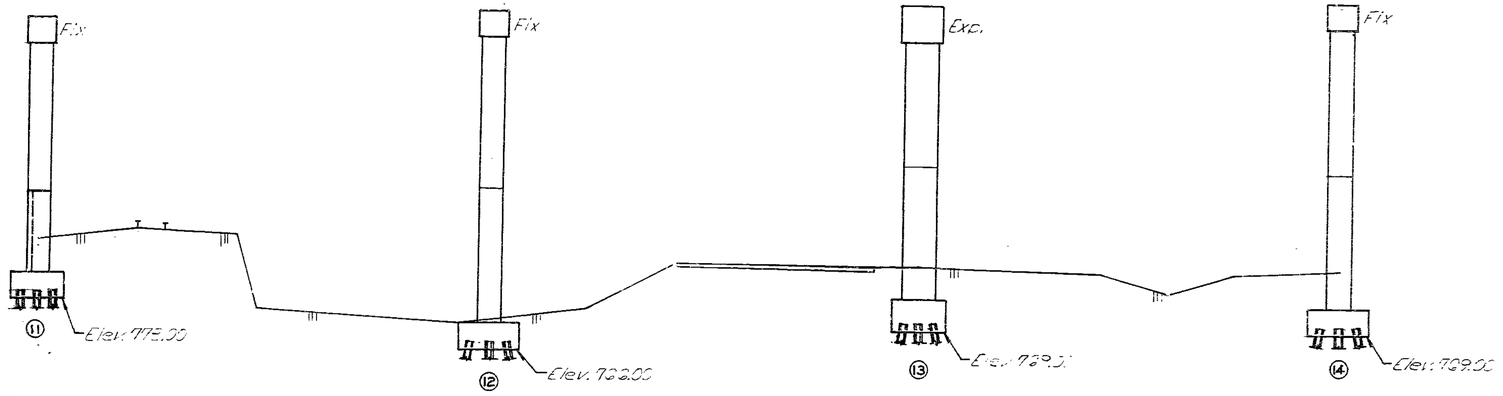
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 4A of 55

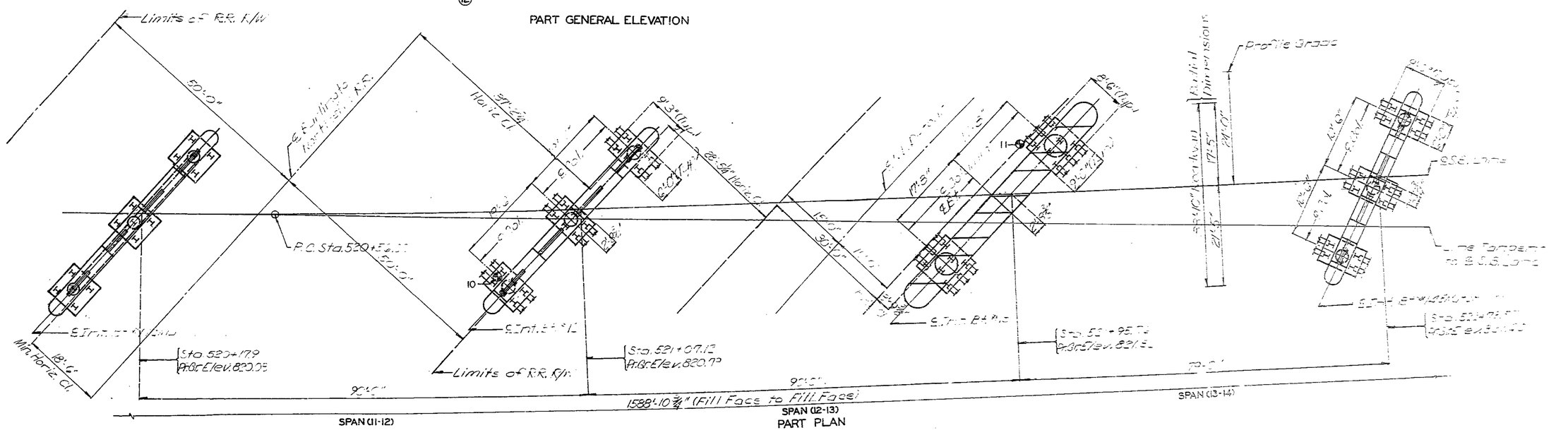
JACKSON COUNTY A-2745

STATE	PROJ. NO.	SHEET NO.
MO	DE-0031(803)	20

Job No. 4-41-71-3D



PART GENERAL ELEVATION



Note: For boring Data see sheet No. 10 & 11
* Indicates location of borings

DETAILED JULY 1988
CHECKED Aug. 1988

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 5A of 55

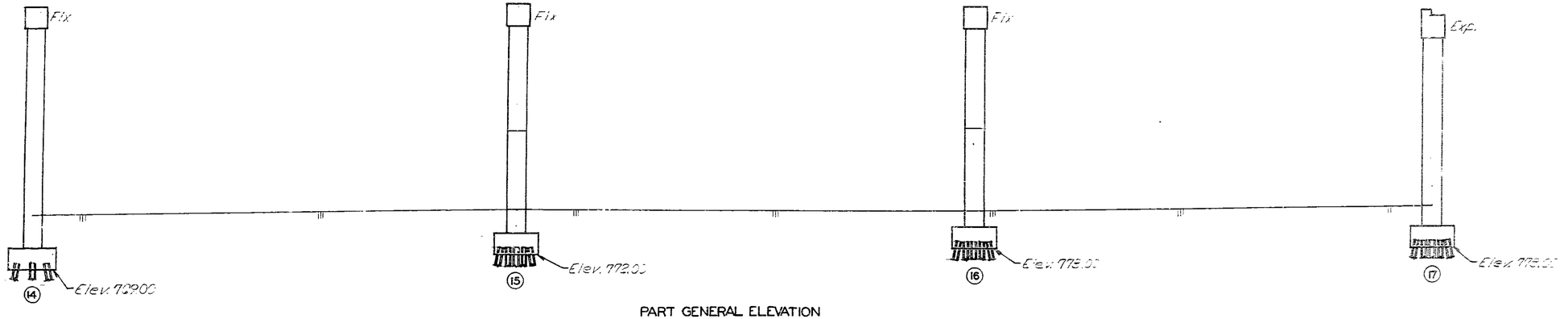
JACKSON COUNTY

A-2745

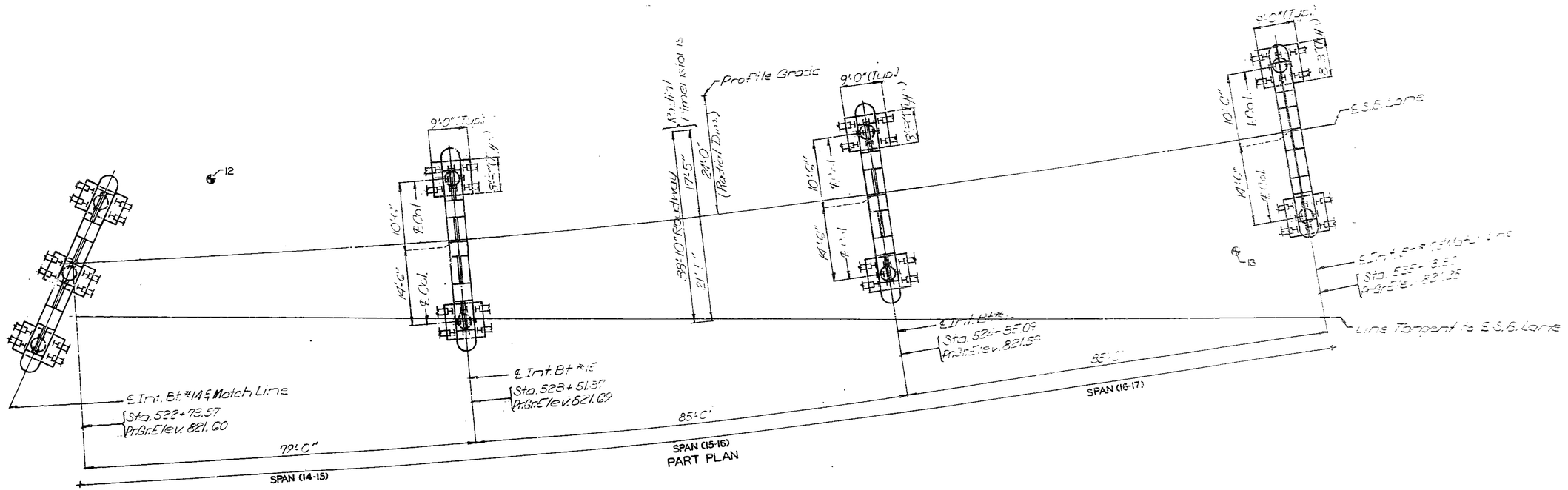
BK 370

STATE	PROJ. NO.	SHEET NO.
MO.	DE-0021 (820)	27

Job No. 4-41-11-20



PART GENERAL ELEVATION



PART PLAN

Note: For Boring Data see sheet No. 10 & 11.
*Indicates location of borings.

DETAILED JULY 1988
CHECKED Aug 1988

Note: This drawing is not to scale. Follow dimensions.

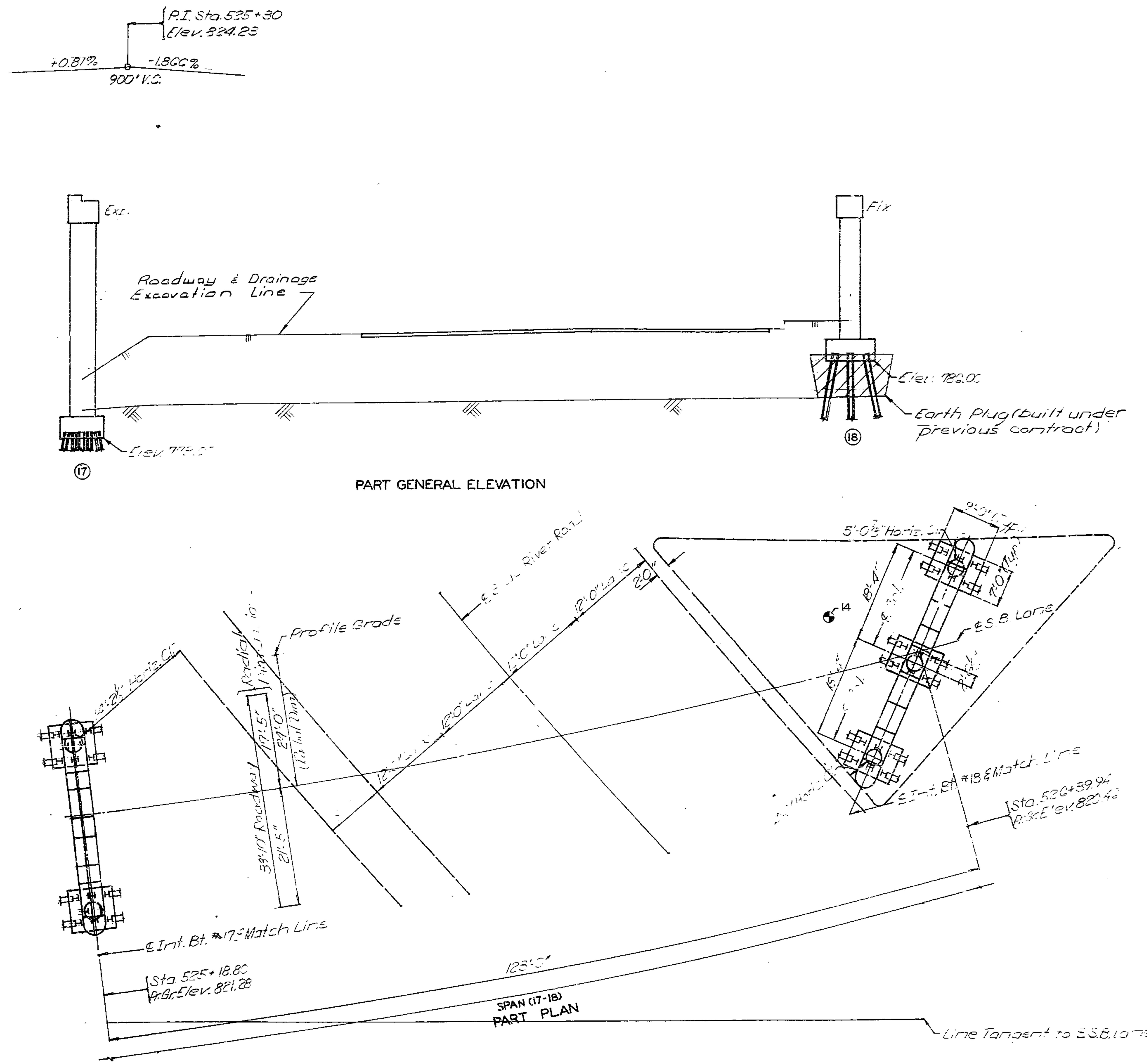
Sheet No. 6A of 55.

JACKSON COUNTY A-2745

8083 371

STATE	PROJ. NO.	SHEET NO.
MO.	DE-0031(305)	22

Job No 4-U-1120



Note: For Boring Data see sheet No. 10 & 11.
"●" Indicates location of borings.

DETAILED JULY	1988
CHECKED Aug.	1988

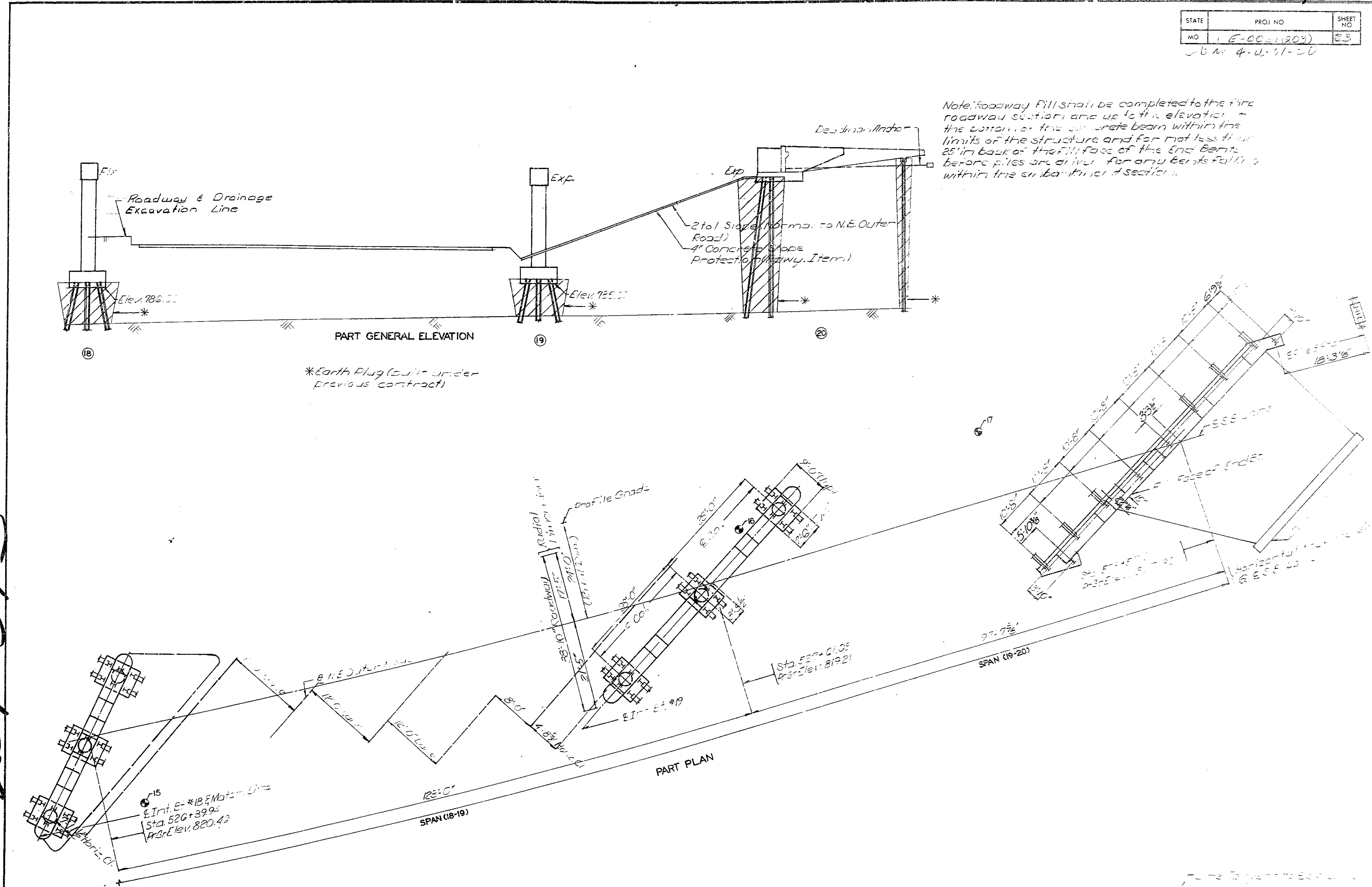
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 7A of 55.

JACKSON COUNTY

A-2745

203 37a



DETAILED JULY 1988 Note: For boring data see sheets Nos. 10 & 11.

CHECKED Aug. 1939 ● Indicates location of boring.

Note: This drawing is not to scale. Follow dimensions

Sheet No. 8A of 88

JACKSON COUNTY

A-2745

STATE	PROJ. NO.	SHEET NO.
MO	DE-0031(803)	24

Job No. 4-U-71-8D

~~ESTIMATED~~ FINAL QUANTITIES		
ITEM		
Class 1 Excavation	Cu. Yd.	1144.5
Class 2 Excavation	Cu. Yd.	186.5
Structural Steel Piles (10")	Lin. Ft.	2008
Structural Steel Piles (12")	Lin. Ft.	8963
Pre-Bore for Piling	Lin. Ft.	306
Class B Concrete	Cu. Yd.	1769.1
Reinforcing Steel	Lb.	257,160
Reinforcing Steel (epoxy coated)	Lb.	1,950
Deadman Anchor Assembly	Each	2

HYDROLOGIC DATA
~~Drainage Area = 199.7 Sq. Mi.~~
Design Discharge = 57,500 c.f.s. (100 Years)
Design H.W. Elevation = 795.1
Backwater is negligible
BASIC FLOOD DATA

GENERAL NOTES:

Design Specifications :
A.A.S.H.T.O. - 1983 and Interims 1984, 1985, 1986 & 1987
Load Factor Design

Design Loading :
HS20-44 — 35# Future Wearing Surface
Modified 24,000 # Tandem Axle
Earth 120#/cu.ft., Equivalent Fluid Pressure 45#/cu.ft.

Design Unit Stresses :
Class B concrete (Substructure) f'c = 3,000 psi

Reinforcing Steel (Grade 60) fy = 60,000 psi
Steel Pile fb = 9,000 psi

Note : All reinforcing bars in tops of substructure beams or caps were spaced to clear anchor bolts for bearings by at least 1/2".

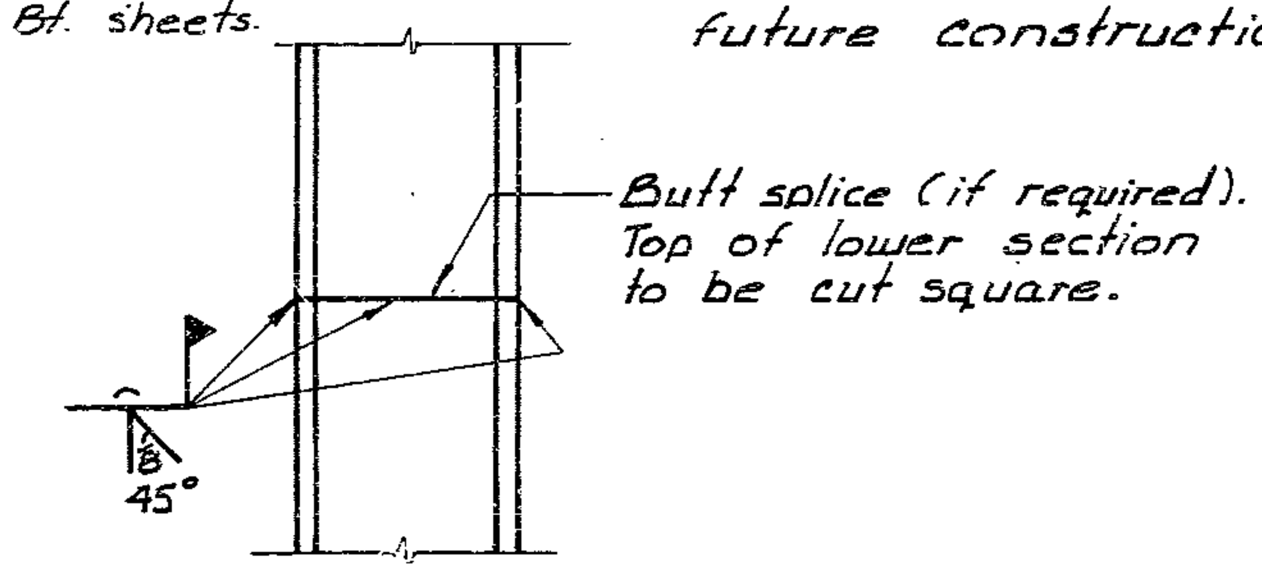
Reinforcing Steel :
Minimum clearance to reinforcing steel is 1 1/2", unless otherwise shown.

Construction Clearance:
Manch. Trway. a minimum vert. clearance of 14'-6" from crown of existing lanes and a minimum lateral clearance of 52'-0" centered on existing lanes was maintained during construction.
Burlington Northern R.R. minimum lateral clearance of 12'-0" from ℄ Tracks. was in accordance w/ the R.R. contract.
N.B. Rte. 71 Detour a min. vert. clearance of 14'-6" from crown of existing lanes and a min. lateral clearance of 34'-0" centered on lanes.
Blue River Rd. a min. vert. clearance of 14'-6" from crown of existing lanes and a min. lateral clearance 52'-0" centered on lanes.
North Outer Road a min. vert. clearance of 14'-6" from crown of existing lanes and a min. lateral clearance of 2'-0" from Pav't. edge (each side).

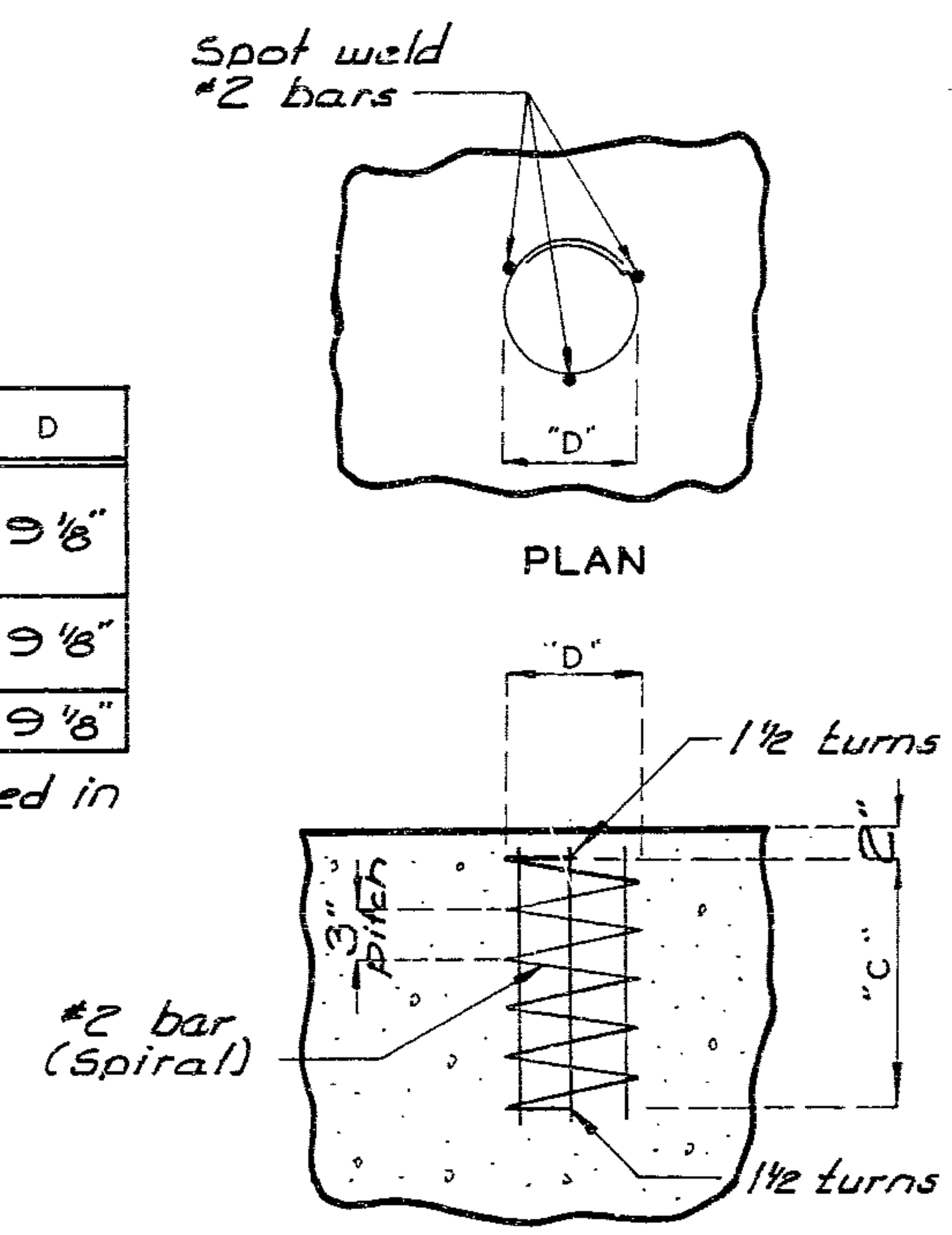
LOCATION	ANCHOR BOLT SIZE	C	D
⚠1 ** BT. NO. 4, 9 & 13 BT. NO. 17 SPAN (16-17) END BENT NO. 20	2"φ * 1 1/2"φ * ⚠1 1 1/2"φ *	15"	9 1/8"
BT. NO. 17 SPAN (17-18) BENT NO 19	2"φ *	18"	9 1/8"
BENT NO. 18	2 1/2"φ *	25"	9 1/8"

** Bts. No. 4, 9, 13 & Bt. No. 17 Span (16-17) Use 2"φ Anchor Bolts. However use the spiral reinforcement (W-Bars) as detailed on Int. Bt. sheets.

* Anchor Bolts are included in future construction.



DETAIL OF STEEL PILE SPLICE



DETAILS OF ANCHOR BOLT SPIRALS

PILE DATA																					
BENT NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
PILE TYPE AND SIZE	HP12x53	HP12x53	HP12x53	HP10x42	HP12x53	HP12x53	HP12x53	HP12x53	HP12x53	HP12x53	HP12x53	HP12x53	HP12x53	HP12x53	HP12x53	HP12x53	HP10x42	HP12x53	HP12x53	HP10x42	
NUMBER	5	12	12	12	12	20	20	15	12	15	15	18	16	15	16	16	16	18	18	10	2
APPROXIMATE LENGTH FT.	71	50	46	46	46	14	14	29	30	31	38	31	33	33	36	36	37	51	49	75	59
DESIGN BEARING TONS	67	61	61	53	57	69	69	61	63	59	67	64	69	70	59	59	55	68	60	53	5
HAMMER ENERGY REQUIRED FT.-LBS.	14900	14300	14300	12400	13400	15400	15400	14300	14800	13800	14900	15000	16200	16500	13800	13800	12900	16000	14100	13100	9300

Note : Minimum energy requirement of hammer is based on plan length and design bearing value of piles.
All piles shall be driven to practical refusal.
Prebored for piles at Bent 20 to elevation 785.00.

805 374

DETAILED JUNE 1988
CHECKED Aug. 1988

Note: This drawing is not to scale. Follow dimensions.

⚠1 Revised 3/8/89

Sheet No. 9 of 55

JACKSON COUNTY

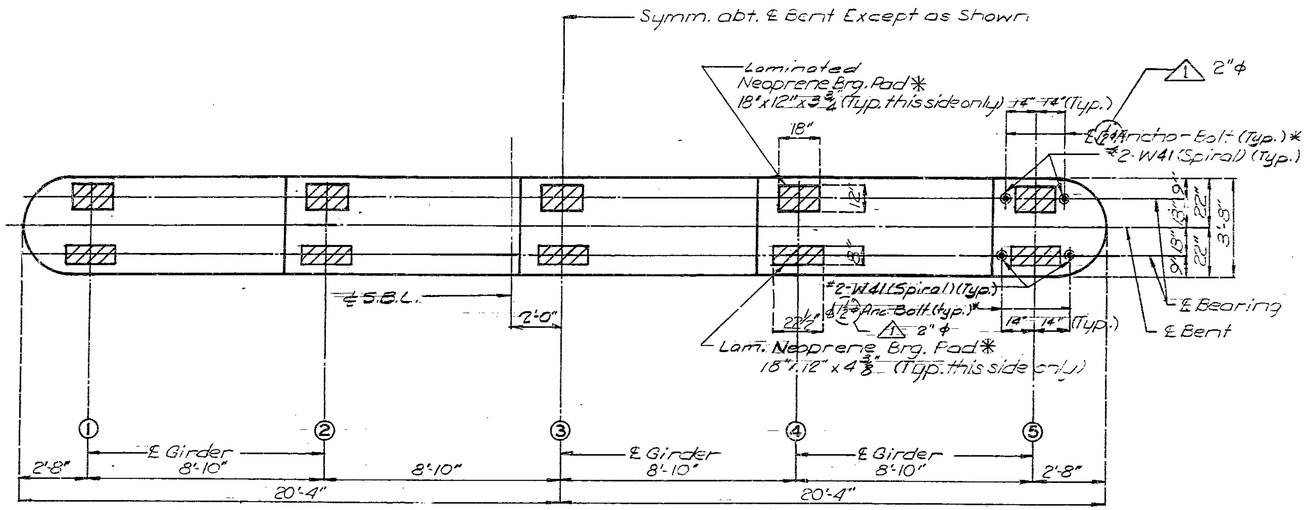
A-2745

STATE	PROJ. NO.	SHEET NO.
MO.	DE C021(803)	24

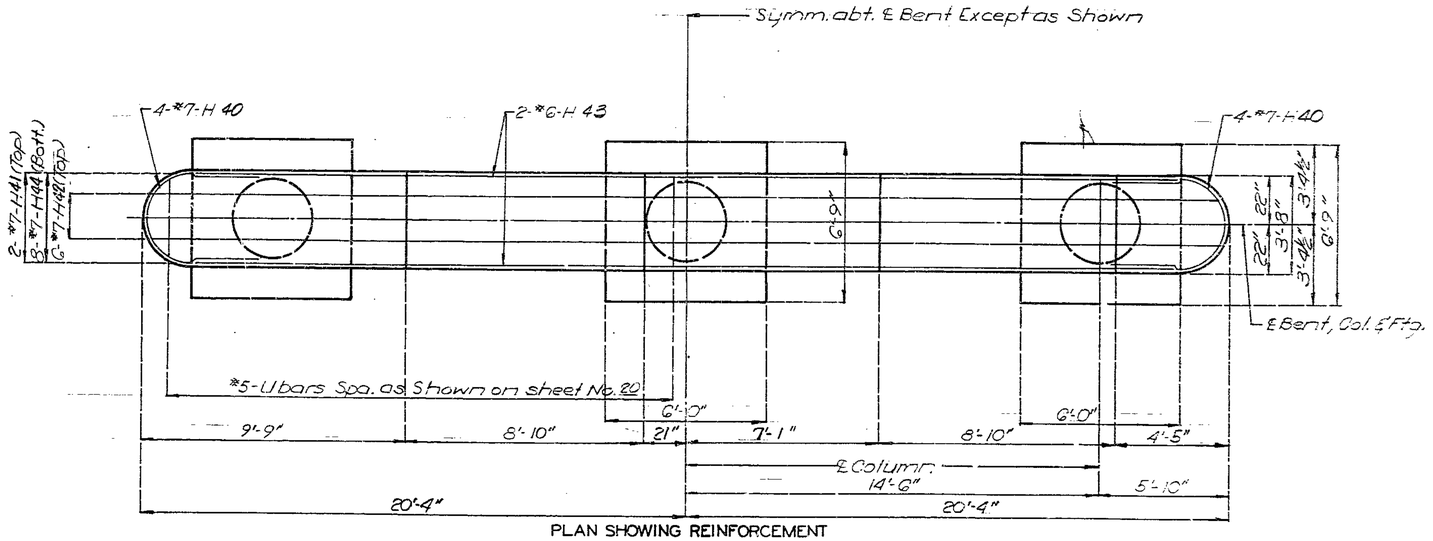
Job No. 4-44-71-20

Note: For Details of Intermediate Bent No. 4 not shown see sheet No. 20.
For detail of anchor bolt spirals see sheet No. 9

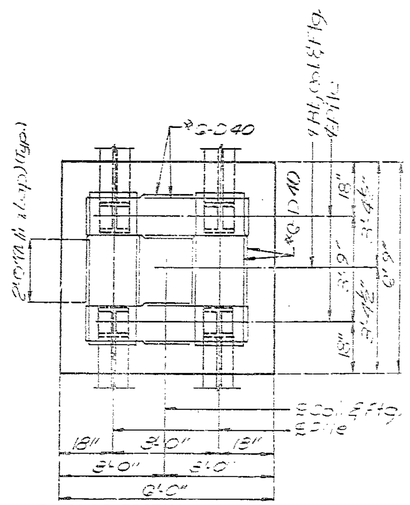
* Bearings & Anchor Bolts are in future construction.



PLAN OF BEAM SHOWING BEARINGS



PLAN SHOWING REINFORCEMENT



PLAN OF FOOTING SHOWING REINFORCEMENT

DETAILS OF INTERMEDIATE BENT NO. 4

DETAILED APR. 1988
CHECKED AUG. 1988

Note: This drawing is not to scale. Follow dimensions.

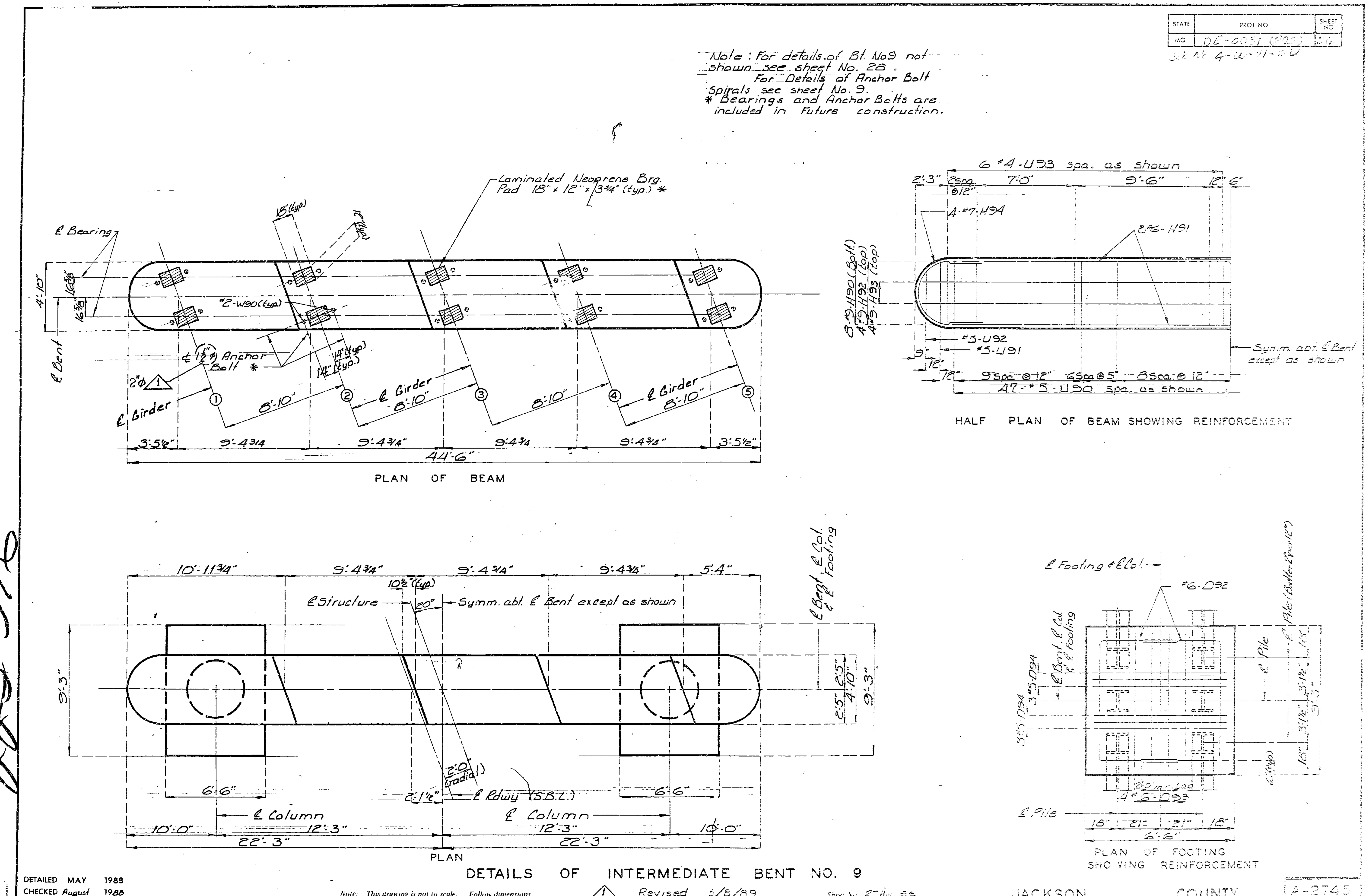
1 Revised 3/8/89

Sheet No. 19A of 55

JACKSON COUNTY

A-2745

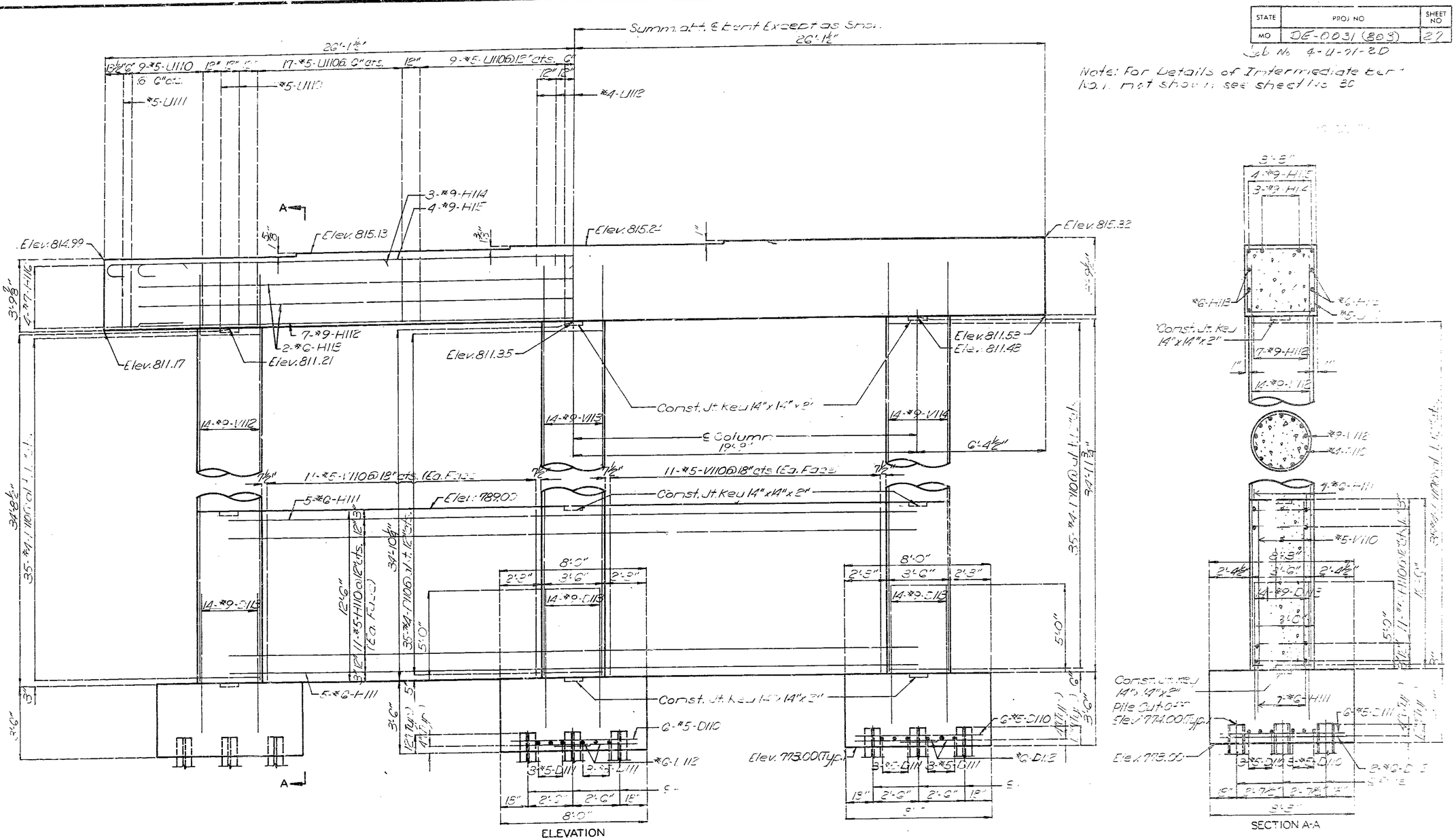
A46 375


STATE
PROJ NO
SHEET NO
MO.
DE-0031 (805)
Note: For details of Bt. No9 not shown see sheet No. 28.
For Details of Anchor Bolt Spirals see sheet No. 9.
* Bearings and Anchor Bolts are included in Future construction.
Laminated Neoprene Brg. Pad 18" x 12" x 3¾" (typ.) *
℄ Bearing
℄ Bent
℄ Girder
"2-W90(typ)
℄ 1½"φ Anchor Bolt *
14"(typ.)
18"(typ.)
8'-10"
9'-4¾"
3'-5½"
44'-6"
PLAN OF BEAM
6 #4-U93 spa. as shown
2'-3"
7'-0"
9'-6"
12"
6"
4-#7-H94
2-#6-H91
#5-U92
#5-U91
9 Spa. @ 12"
6 Spa @ 5"
8 Spa. @ 12"
47-#5-U90 Spa. as shown
Symm. abt. ℄ Bent except as shown
HALF PLAN OF BEAM SHOWING REINFORCEMENT
10'-11¾"
9'-4¾"
5'-4"
10½"(typ)
℄ Structure
20°
Symm. abt. ℄ Bent except as shown
℄ Bent, ℄ Col. ℄ ℄ Footing
9'-3"
4'-10"
2'-5"
6'-6"
2'-0" (radial)
2'-1½"
℄ Rdwy (S.B.L.)
℄ Column
10'-0"
12'-3"
22'-3"
PLAN
℄ Footing & ℄ Col.
#6-D92
℄ Pile
3 #5-D94
4 #6-D93
18"
21"
6'-6"
PLAN OF FOOTING SHOWING REINFORCEMENT
DETAILS OF INTERMEDIATE BENT NO. 9
DETAILED MAY 1988
CHECKED August 1988
Note: This drawing is not to scale. Follow dimensions.
Revised 3/8/89
JACKSON COUNTY
A-2743

STATE	PROJ NO	SHEET NO
MO	DE-0031(803)	27

Job No. 4-4-71-20

Note: For details of Intermediate ber
No.1 not shown, see sheet No. 30



DETAILS OF INTERMEDIATE BENT NO. 11

377

DETAILED MAY 1988
CHECKED Aug 19[illegible]

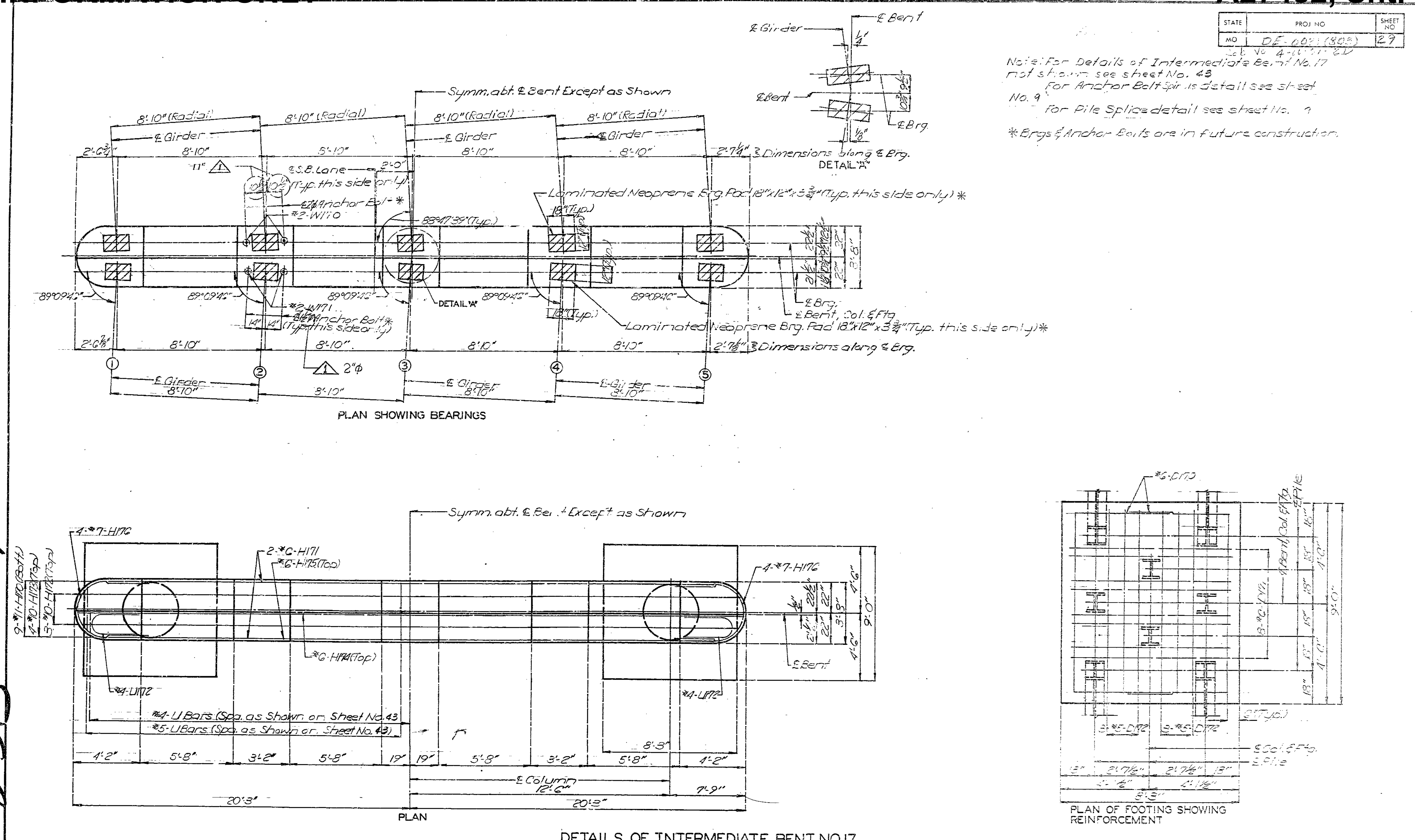
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 31A of 58

JACKSON COUNTY

A-2745

STATE MO
PROJ NO DE-06
SHEET NO 22
Job No 4-U-41-6D
PLAN OF BEAM
Laminated Neoprene Brg. Pad 12" x 18" x 3¾" (typ.) *
℄ Girder
℄ Rdwy (S.B.)
℄ Structure
℄ Bent
℄ Bearing
#2-W131 Spiral (typ.)
30° (typ.)
* 1 1/2" φ Anchor Bolt
2" φ
Note: For details of Bt. No. 13 not shown see sheet No. 35.
For Details of Anchor Bolt Spiral see sheet No. 9.
* Bearings and Anchor Bolts are included in Future Construction.
PLAN
7-#4-U134 @ 6" cts placed parallel to step
7-#4-U135 @ 6" cts placed parallel to step
4-#7-H135
2-#6-H132
#5-U132
#5-U133
60-#5-U131 spaced as shown
℄ Column
℄ Footing & ℄ Column
#6-D132
2-#6-D133
3-#5-D134
℄ Pile
℄ Pile Batter 2" per 12"
PLAN OF FOOTING SHOWING REINFORCEMENT
DETAILED MAY 1988
CHECKED August 1988
Note: This drawing is not to scale. Follow dimensions.
DETAILS OF INTERMEDIATE BENT NO. 13
Revised 3/8/89
JACKSON COUNTY
A-2745



DETAILS OF INTERMEDIATE BENT NO. 17

DETAILED JUN 1988
CHECKED AUG 1988

Note: This drawing is not to scale. Follow dimensions.

Revised 3/8/89

Sheet No. 42A of 55

JACKSON COUNTY

A-2746

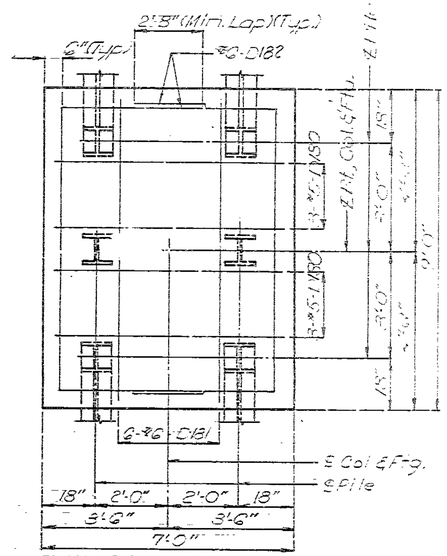
338 379

STATE	PROJ NO	SHEET NO
MO	DE-00?-1(80)	30

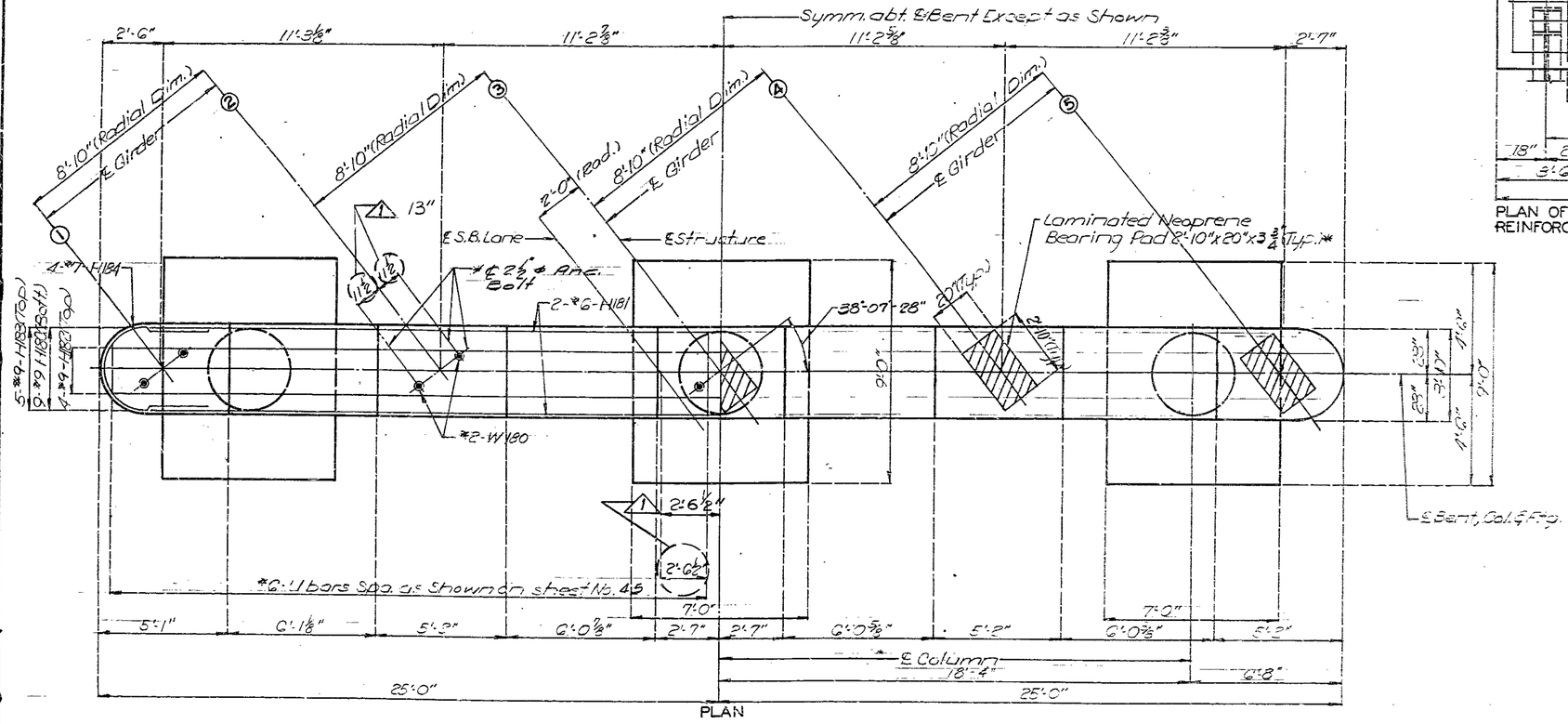
Note: For details of Intermediate Bent No. 18 not shown see sheet No. 45
for detail of anchor bolt spirals see sheet No. 9

Note: For details of pile splice see sheet No. 9

* Brgs. & Anchor bolts are in Future Construction.



PLAN OF FOOTING SHOWING REINFORCEMENT



PLAN

DETAILS OF INTERMEDIATE BENT NO. 18

DETAILED JUNE 1988
CHECKED Aug 1988

Note: This drawing is not to scale. Follow dimensions

1 Revised 3/3/89

Sheet No. 45 of 85

JACKSON COUNTY

A-2745

248 380

STATE	PROJ. NO.	SHEET NO.
MO.	DE-0031 (802)	31
	Sub No 4-U-111-20	

ELEVATION

SECTION A-A

DETAIL OF ANCHOR BOLT & BEARING ORIENTATION (TYPICAL)

PLAN

PLAN OF FOOTING SHOWING REINFORCING

DETAILS OF INTERMEDIATE BENT NO. 19

DETAILED June 1988
CHECKED AUG. 1988

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 4 of 35 sheets

1 Revised 5/3/89 JACKSON COUNTY

A-27452

2452 381

STATE	PROJ. NO	SHEET NO.
MO	DE-0031(803)	32

Job No. 4-U-71-20

PART SECTION THRU LEFT WING

SECTION A-A

ELEVATION OF LEFT WING

Note: For Pile Splice Detail see sheet No. 9

* To be included in Future Construction. Note: Concrete and reinforcement above upper const. Joint in Backwall to be included in Future Construction. For details of Bl. 20 not shown see sheet No. A8.

SECTION THRU RIGHT WING

ELEVATION OF RIGHT WING

SECTION B-B

SECTION NEAR ℄ ROADWAY

PLAN OF BEAM

DETAILED JUNE 1988
CHECKED August 1988

Note: This drawing is not to scale; Follow dimensions

DETAILS OF END BENT NO. 20

Sheet No. 47A of 55

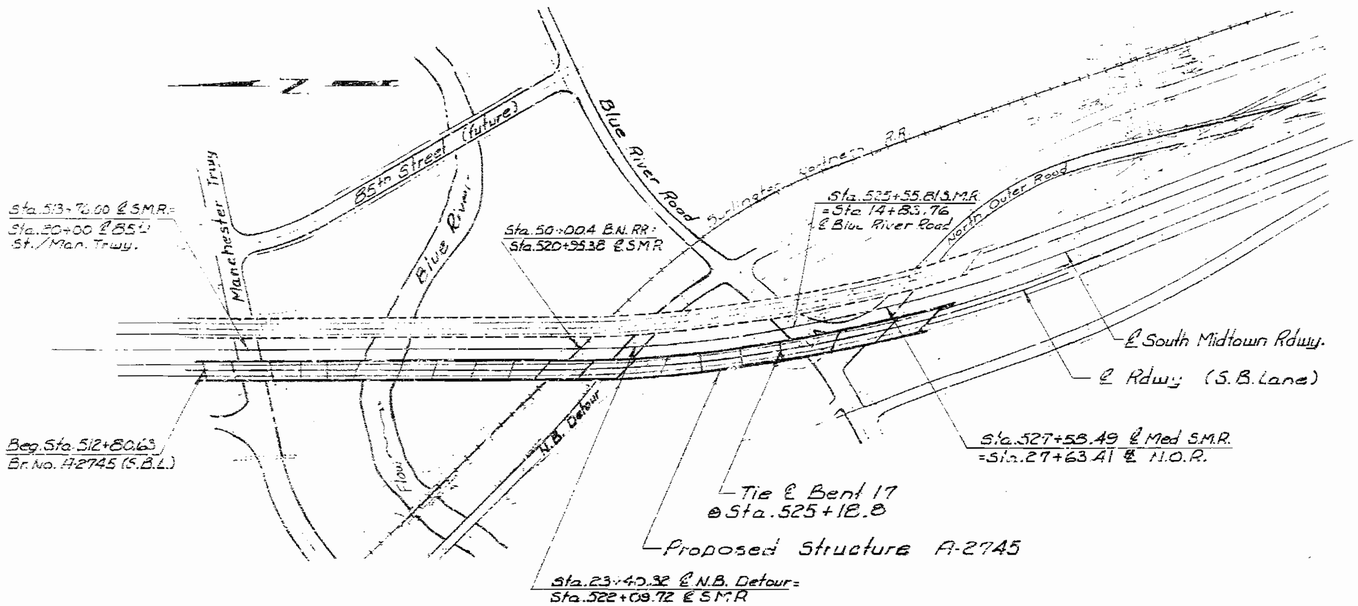
JACKSON COUNTY

A-2745

943 387

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ. NO.	SHEET NO.
MO.		27
SEC. SUB 22	TWP 48	RGE 33



LOCATION SKETCH

BRIDGE NO. A-2745
OVER
MANCHESTER TRAFFICWAY, BLUE RIVER,
BURLINGTON NORTHERN RR,
N.B. DETOUR, BLUE RIVER ROAD
& NORTH OUTER ROAD

SUPERSTRUCTURE CONTRACT

INDEX OF DRAWINGS

B.M. TBM-1 Elevation 730.85 S.W. cor. signal base at S.W. cor. 87th St. and Hickman Mills Dr.

STATE ROAD: "SOUTH MIDTOWN ROADWAY"
IN KANSAS CITY
PROJECT NO. STA. 512+80.63
JOB NO. 4-U-71-2E RTE. 71 S.B.L.

JACKSON COUNTY
DATE 8/29/89

STD. 706.35
STD.
A-2745

DESIGNED March 1988
DETAILED March 1989
CHECKED April 1988

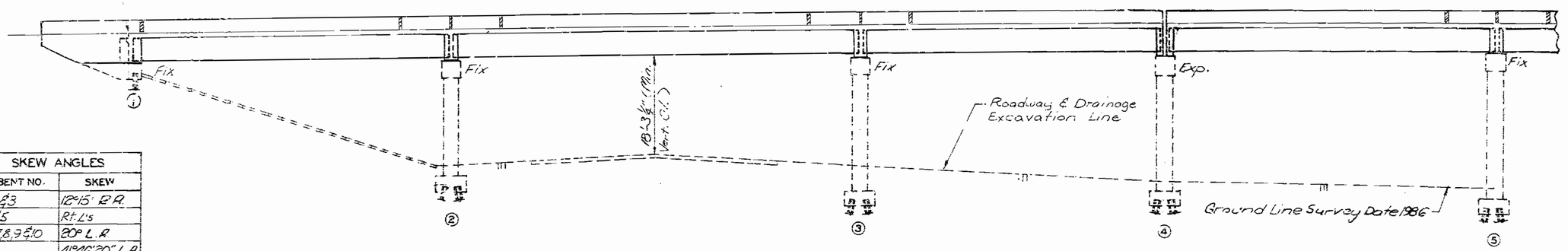
SEE FINAL PLANS

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 1 of 98

STATE	PROJ. NO.	SHEET NO.
MO		82

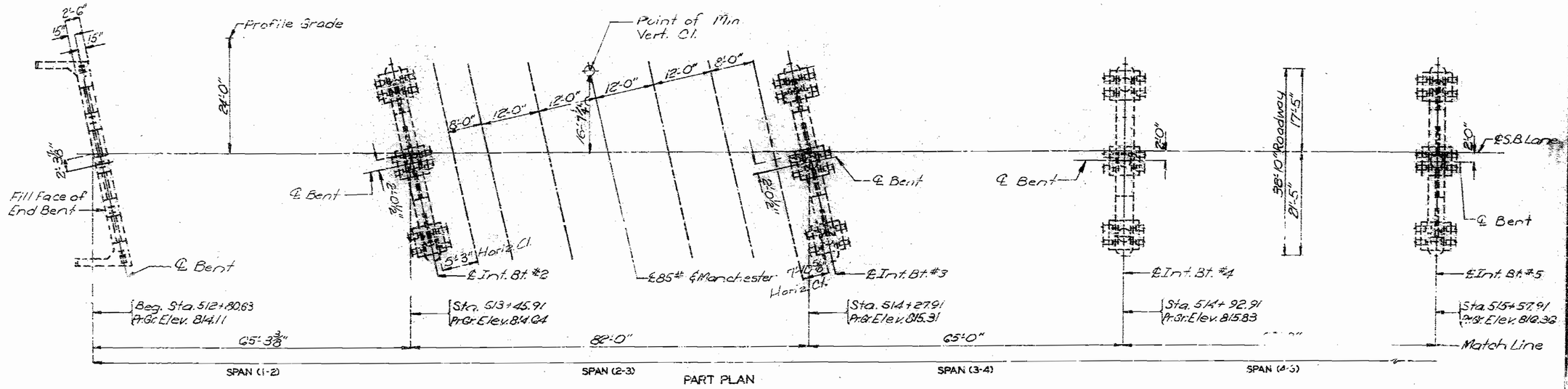
(64'-82'-65')(65'-65'-82'-82'-82')(82'-67'-90'-90')(79'-79'-85'-85') PRESTRESSED CONCRETE I-GIRDER SPANS
(123'-123'-93') CONT. COMP. PR. GIRDER SPANS



PART GENERAL ELEVATION

SKEW ANGLES		
BENT NO.	SKEW	
1,2 & 3	12°15' R.A.	
4 & 5	Rt. L's	
6,7,8,9 & 10	20° L.A.	
11	41°46'20" L.A.	
12	42°47'38" L.A.	
13	44°34'00" L.A.	
14	26°16'44" L.A.	
15,16 & 17	Radial	
18	38°09'11" L.A.	To Radial Line
19	57°25'06" L.A.	
20	59°17'55" L.A.	

Note: Skew angles are measured at ℄ S.B.L.



PART PLAN

Note: Deadman Anchor not shown for clarity.

DETAILED Sept. 1988
CHECKED March 1989

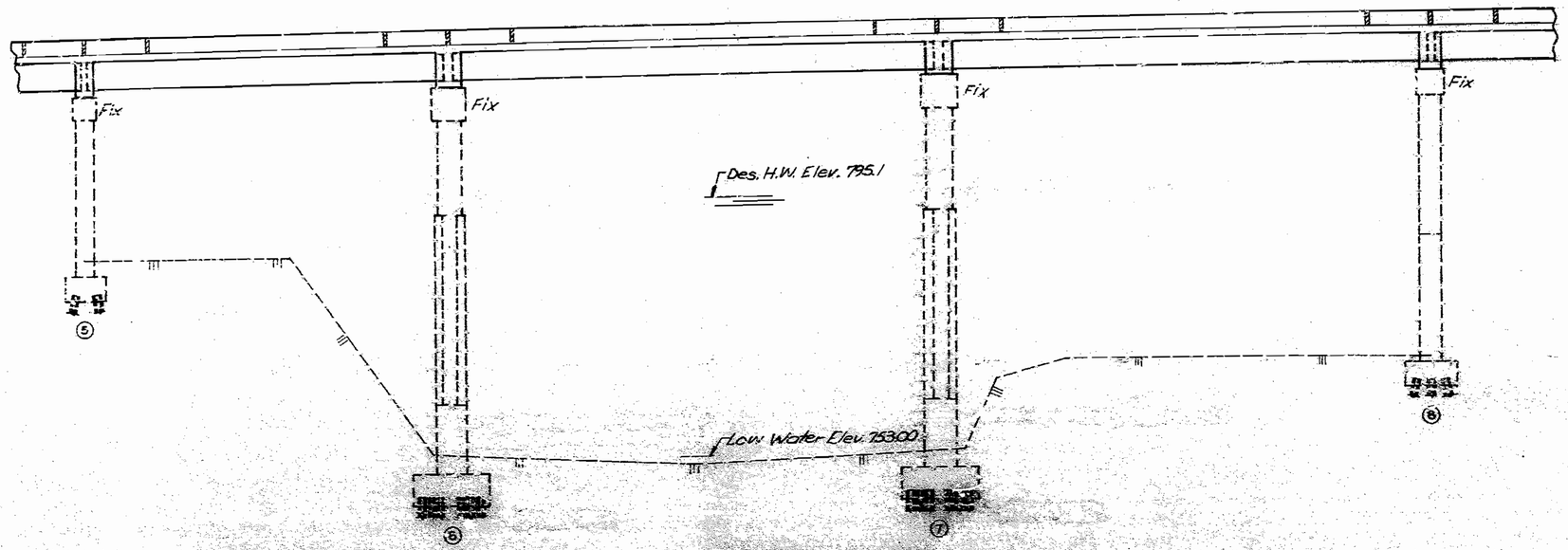
Note: This drawing is not to scale. Follow dimensions.

SEE FINAL PLANS
Sheet No. 2 of 98

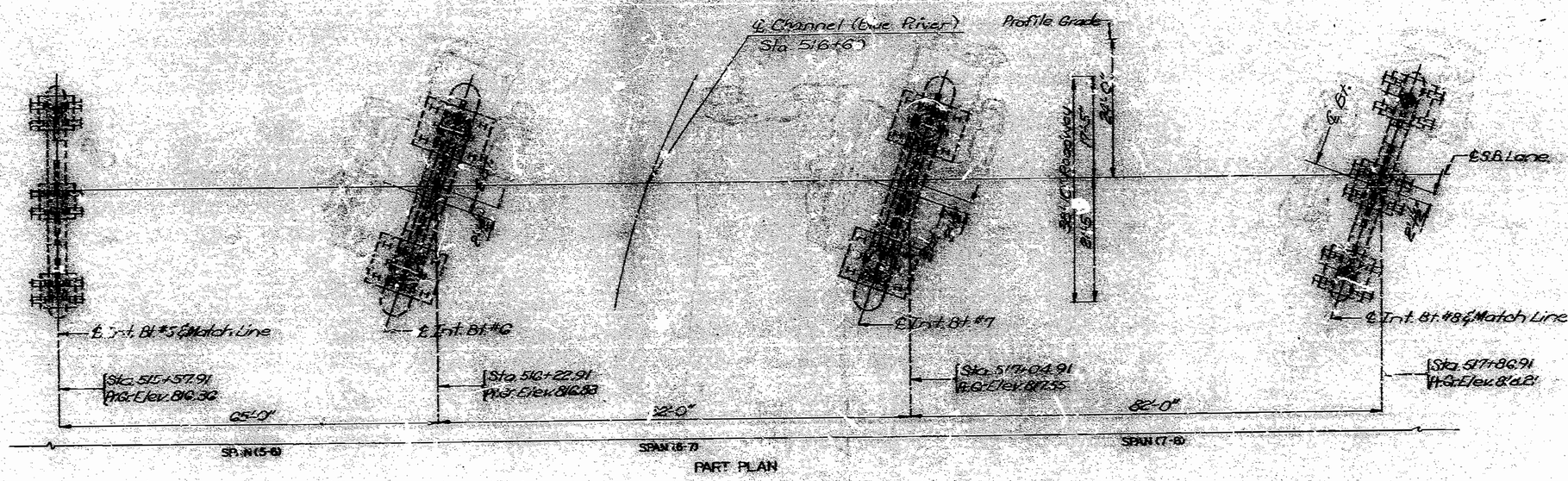
JACKSON COUNTY

A-2745

STATE	FROJ. NO.	SHEET NO.
MO.		85



PART GENERAL ELEVATION



PART PLAN

DETAILED Sept. 1988
CHECKED March 1989

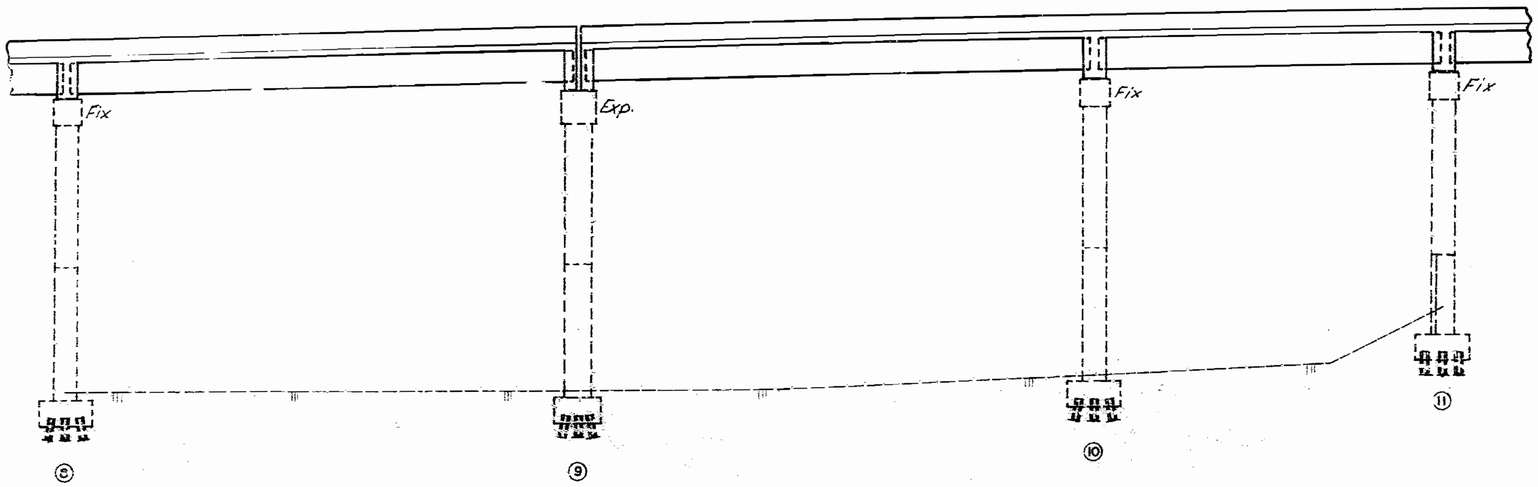
Note: This drawing is not to scale. Follow dimensions.

SEE FINAL PLANS
Sheet No. 15 of 98

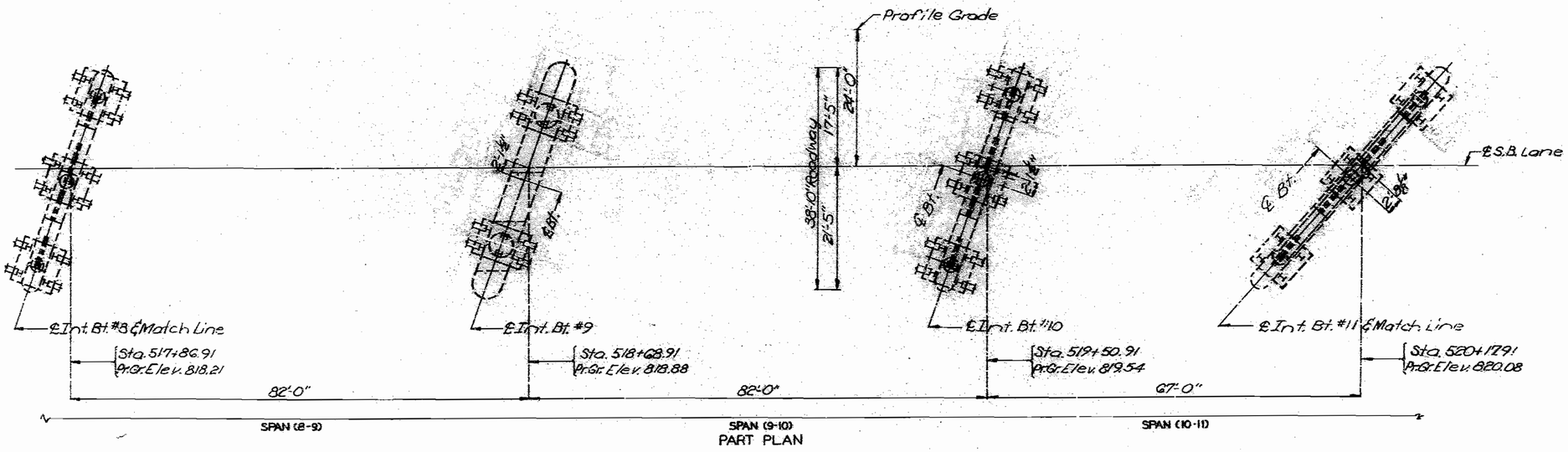
JACKSON COUNTY

A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		84



PART GENERAL ELEVATION



PART PLAN

DETAILED Sept. 1988
CHECKED March 1989

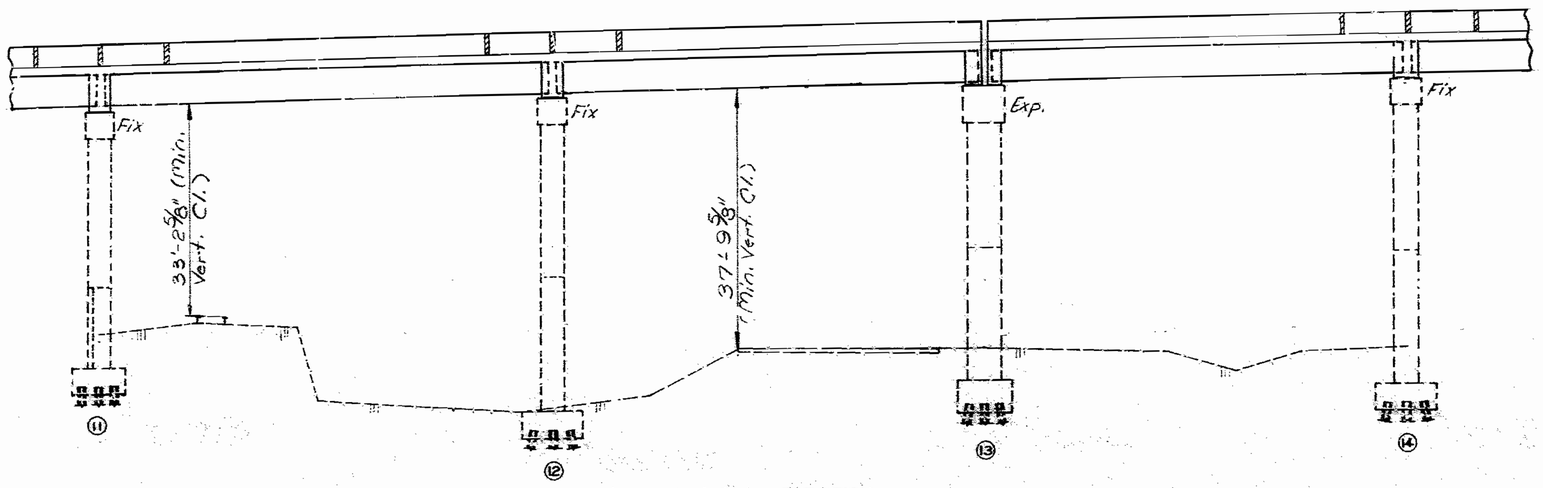
Note: This drawing is not to scale. Follow dimensions.

SEE FINAL PLANS
Sheet No. 4 of 98

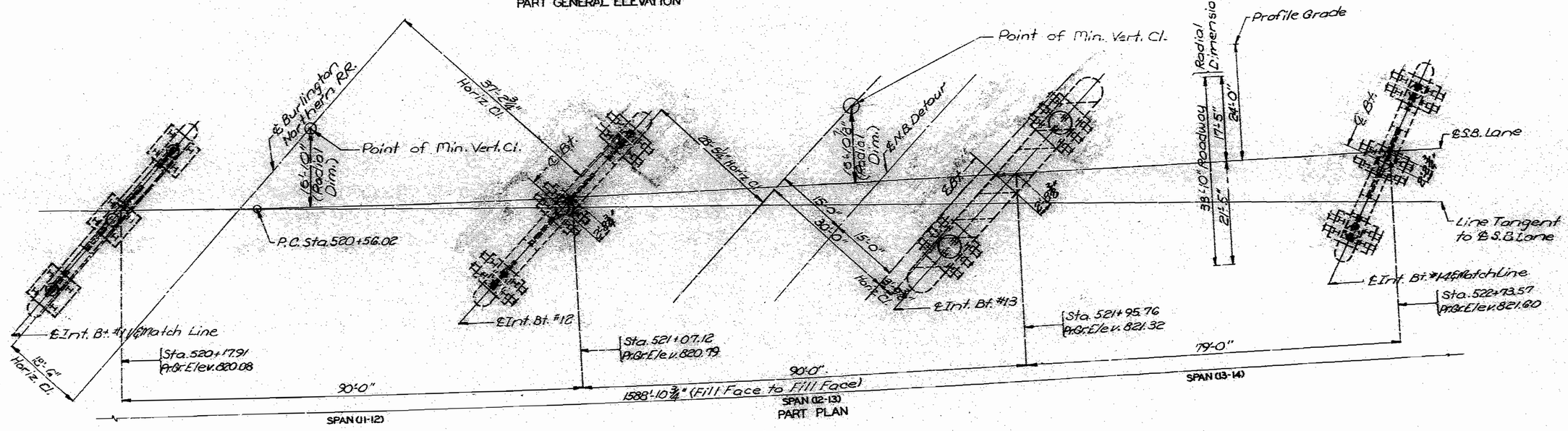
JACKSON **COUNTY**

A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		85



PART GENERAL ELEVATION



PART PLAN

18 100

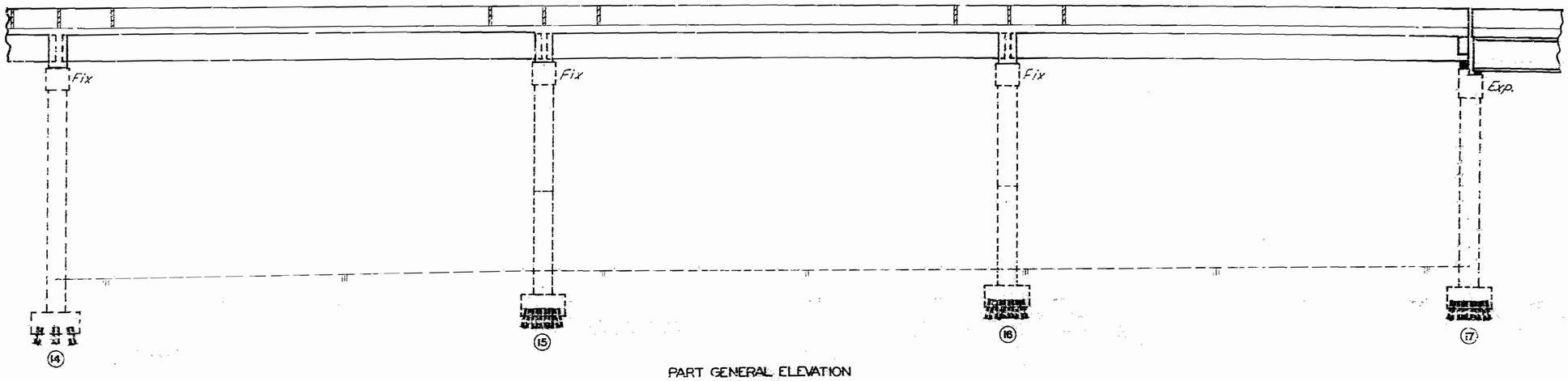
DETAILED Sept. 1988
CHECKED March 1989

Note: This drawing is not to scale. Follow dimensions.

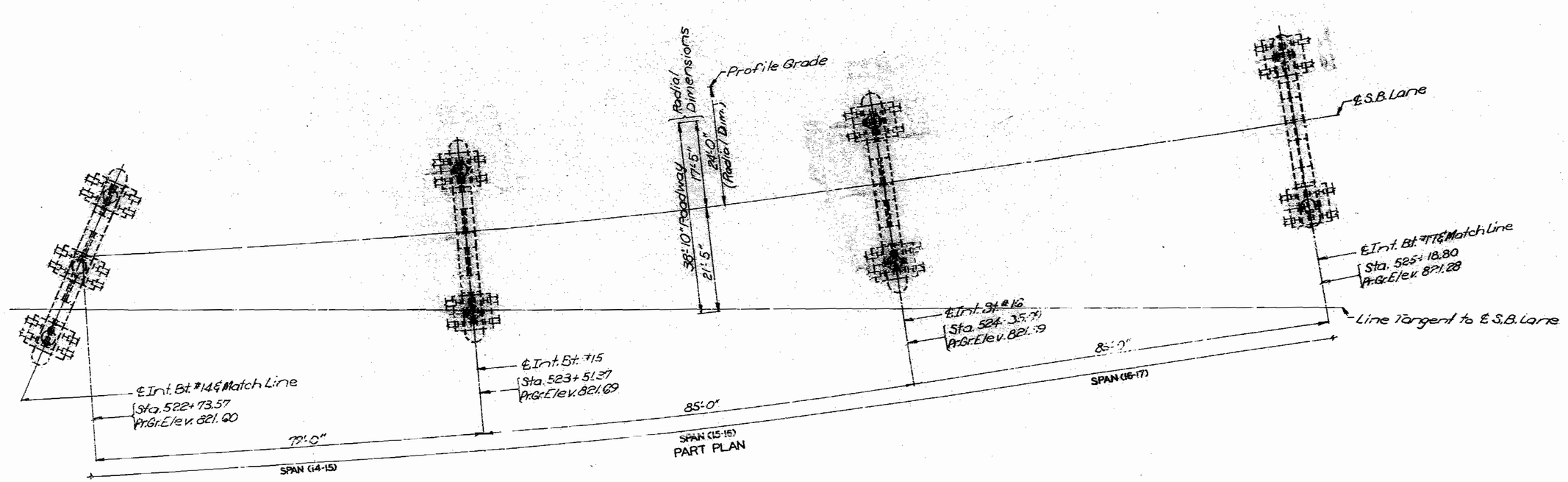
SEE FINAL PLANS
Sheet No. 5 of 53

JACKSON COUNTY A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		36



PART GENERAL ELEVATION



PART PLAN

18 101

DETAILED Oct. 1986
CHECKED March 1989

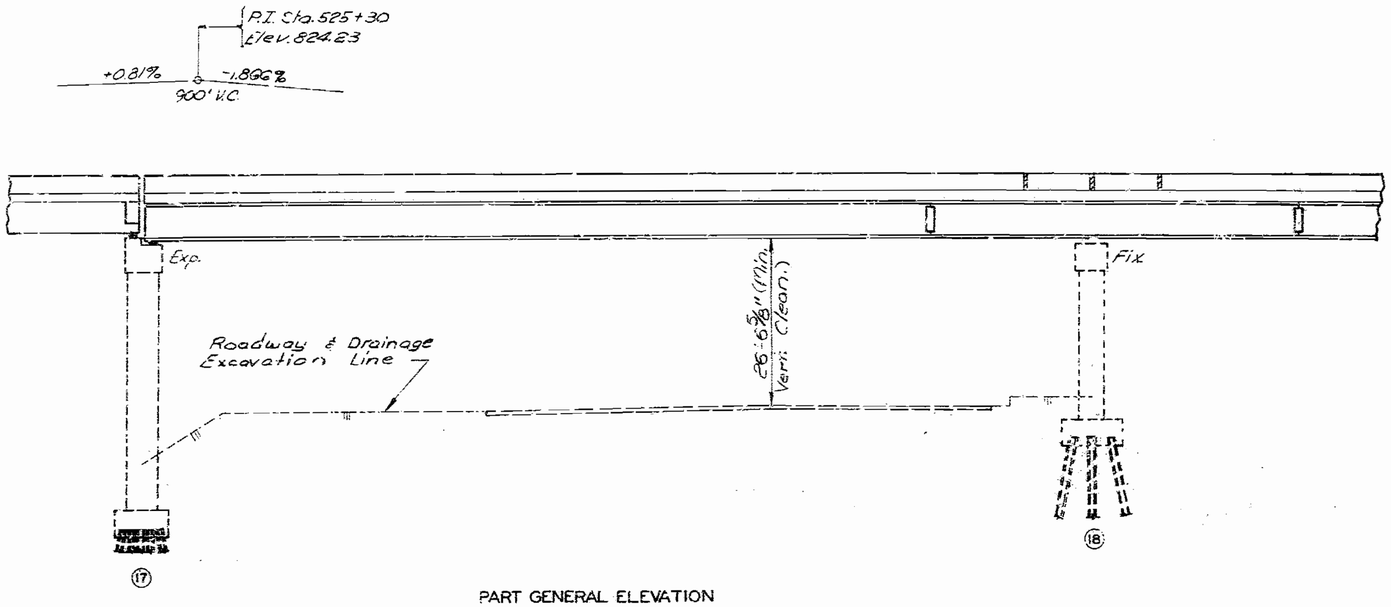
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 6 of 23

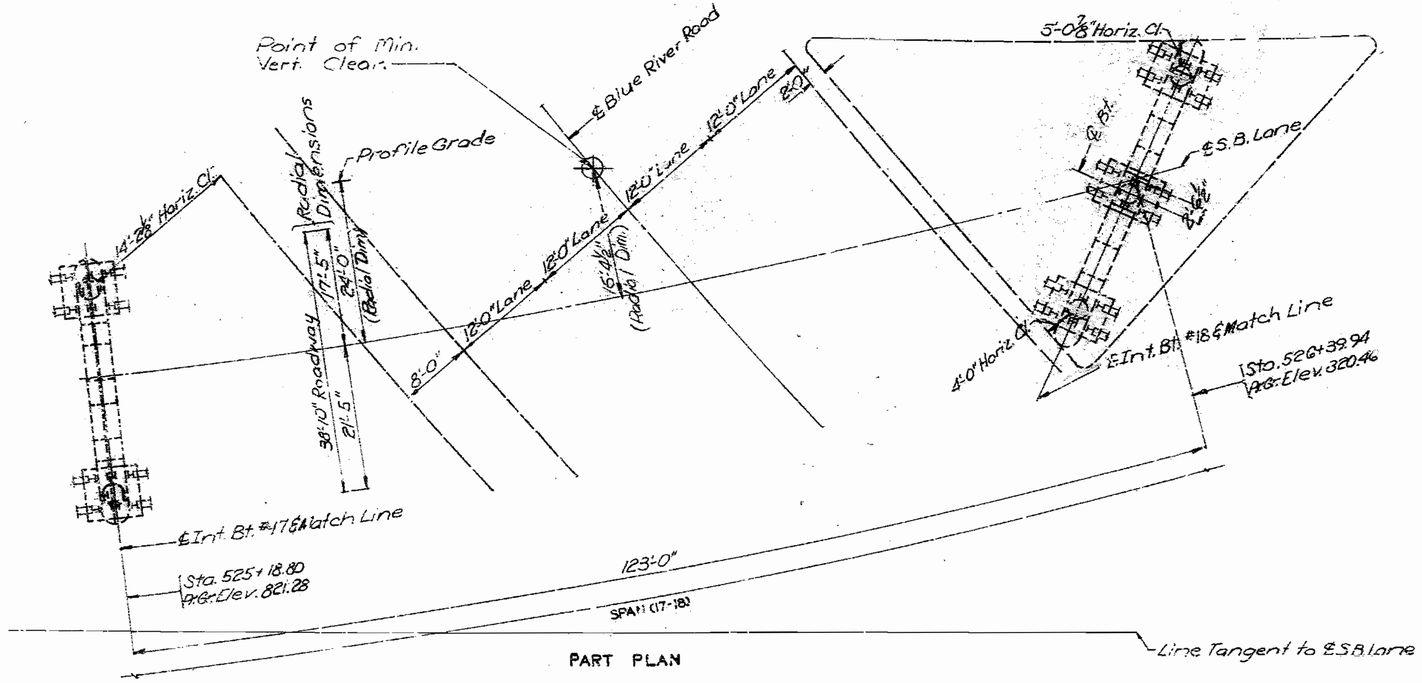
JACKSON **COUNTY**

A-2745

STATE	PROJ. NO.	SHEET NO
MO.		97



PART GENERAL ELEVATION



PART PLAN

SEE FINAL PLANS

DETAILED Oct. 1988
CHECKED March 1989

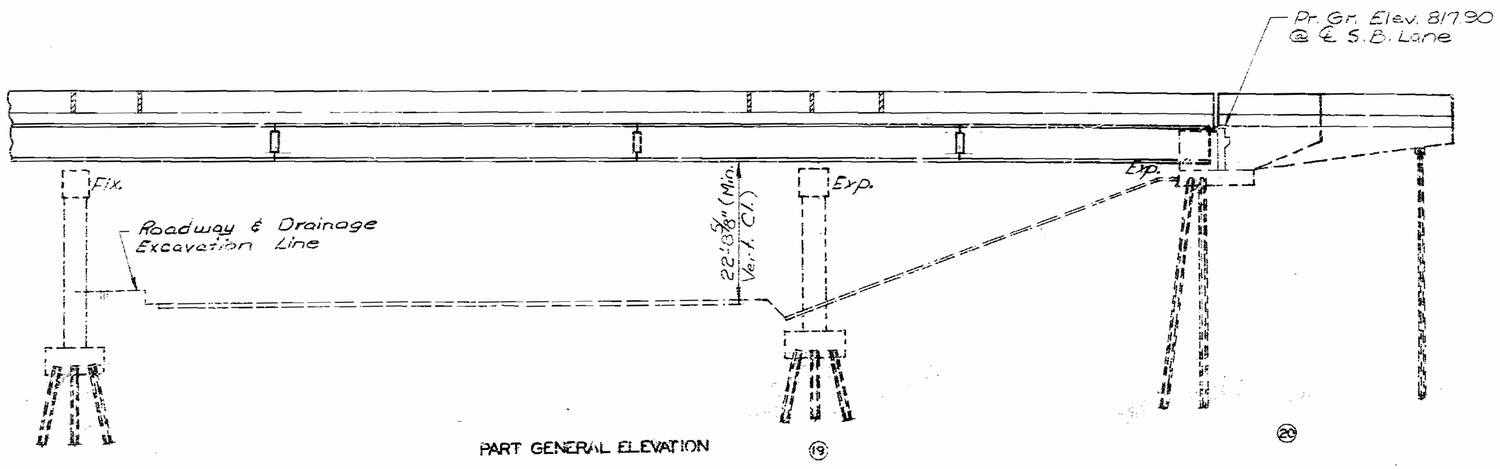
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 7 of 98

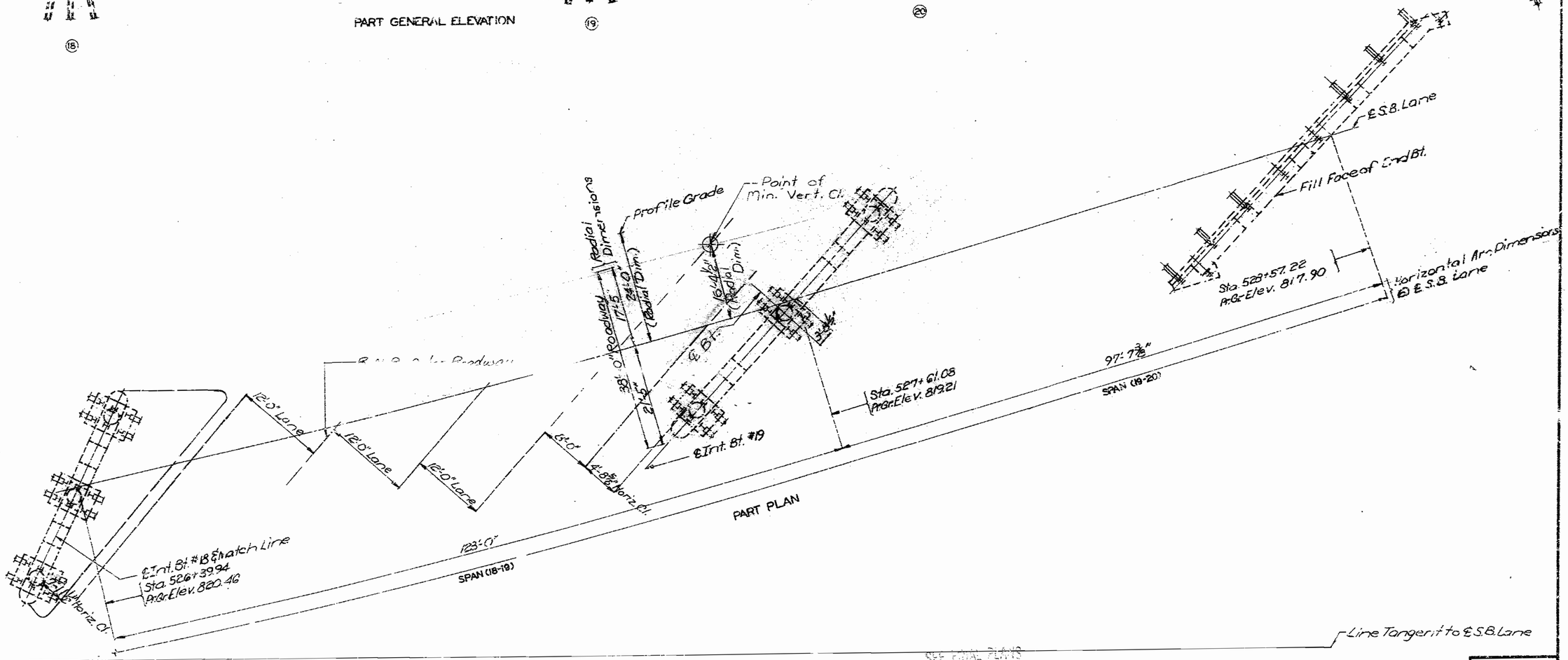
JACKSON COUNTY

A-2745

STATE	PROJ. NO	SHEET NO
MO		33



PART GENERAL ELEVATION



PART PLAN

138.03

SEE FINAL PLANS

DETAILED Sept 1988
CHECKED March 1989

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 33 of 53

JACKSON COUNTY A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		96

ESTIMATED QUANTITIES

ITEM		SUPERSTR.	TOTAL
( ) SLAB ON STEEL, SEE SPECIAL PROVISIONS	SQ. YD.	1559	1559
( ) SLAB ON CONCRETE I-GIRDER, SEE SPECIAL PROVISIONS	SQ. YD.	5741	5741
SAFETY BARRIER CURB	LIN. FT.	3243	3243
LAMINATED NEOPRENE BEARING PADS	EACH	160	160
LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURE)	EACH	15	15
TYPE N PTFE BEARINGS	EACH	5	5
ELASTOMERIC NEOPRENE EXPANSION JOINT SEAL (3.0 IN.)	LIN. FT.	93	93
ELASTOMERIC NEOPRENE EXPANSION JOINT SEAL (4.0 IN.)	LIN. FT.	156	156
PRESTRESSED CONCRETE I-GIRDER,64 FT SPAN	EACH	5	5
PRESTRESSED CONCRETE I-GIRDER,82 FT SPAN	EACH	25	25
PRESTRESSED CONCRETE I-GIRDER,65 FT SPAN	EACH	15	15
PRESTRESSED CONCRETE I-GIRDER,67 FT SPAN	EACH	5	5
PRESTRESSED CONCRETE I-GIRDER,90 FT SPAN	EACH	10	10
PRESTRESSED CONCRETE I-GIRDER,79 FT SPAN	EACH	10	10
PRESTRESSED CONCRETE I-GIRDER,85 FT SPAN	EACH	10	10
FABRICATED STRUCTURAL CARBON STEEL (PLATE GIRDERS)	POUND	296,960	296,960
FABRICATED STRUCTURAL LOW ALLOY STEEL (PLATE GIRDERS) A-572	POUND	133,780	133,780
SLAB DRAINS	EACH	95	95
VERTICAL DRAIN AT END BENTS	EACH	2	2
PAINTING (SYSTEM C) GREEN	TON	212.3	212.3

NOTE: THE COST OF FURNISHING, FABRICATING AND INSTALLING NEOPRENE BEARING PADS, COMPLETE-IN-PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR LAMINATED NEOPRENE BEARING PADS PER EACH.

NOTE: THE PRESTRESSED PANEL QUANTITIES ARE NOT INCLUDED IN THE TABLE OF ESTIMATED QUANTITIES FOR ALTERNATE SLABS.

ESTIMATED QUANTITIES FOR ALTERNATE SLABS

TYPE OF SLABS	SLAB ON STEEL		SLAB ON CONC. I-GDR.		
	REINF. (LBS.) EPOXY	CONC. (CU. YD.)	REINF.(LBS.) PLAIN	REINF.(LBS.) EPOXY	CONC. (CU. YD.)
CAST-IN-PLACE CONVENTIONAL FORMS	100,130	391.7	10,460	356,790	1,689.0
PRECAST PANEL FORMS	—	—	10,460	290,490	*** 1,363.0
STAY-IN-PLACE FORMS	100,130	• 395.0	—	—	—

NOTE: THE TABLE OF ESTIMATED QUANTITIES FOR ALTERNATE SLABS REPRESENTS THE QUANTITIES USED BY THE STATE IN PREPARING THE COST ESTIMATE FOR CONCRETE SLABS. VARIATIONS MAY BE ENCOUNTERED IN THESE ESTIMATED QUANTITIES BUT THESE VARIATIONS CANNOT BE USED FOR AN ADJUSTMENT IN THE CONTRACT UNIT PRICE PER SQUARE YARD OF ALTERNATE SLAB USED.

SEE SPECIAL PROVISIONS FOR ALTERNATE METHODS OF FORMING SLABS.

PRECAST PANEL QUANTITIES ARE BASED ON SKEWED END PANELS.

• DOES NOT INCLUDE CONCRETE REQUIRED TO FILL CORRUGATIONS OF S.I.P. FORMS.

*** BASED ON MINIMUM TOP FLANGE THICKNESS AND MINIMUM JOINT FILLER THICKNESS.

NOTE: CONCRETE AND REINFORCEMENT IN ESTIMATED QUANTITIES FOR "SLAB ON STEEL" INCLUDES CONCRETE AND REINFORCING IN BACKWALL,ABOVE UPPER CONST. JOINT,AT END BENT NO.20.

GENERAL NOTES:

DESIGN SPECIFICATIONS: A.A.S.H.T.O.-1983 AND INTERIMS THRU 1988
LOAD FACTOR DESIGN

DESIGN LOADING: HS20-44
35#/SQ. FT. FUTURE WEARING SURFACE
MODIFIED 24,000# TANDEM AXLE
EARTH 120#/CU. FT., EQUIVALENT FLUID PRESSURE 45#/CU. FT.
FATIGUE STRESS - CASE II (SPAN 17 THRU 19)

DESIGN UNIT STRESSES:

CLASS B2 CONCRETE (SUPERSTRUCTURE, EXCEPT PRESTRESSED GDRS. AND SAFETY BARRIER CURB)	F'C=4,000 PSI
CLASS B1 CONCRETE (SAFETY BARRIER CURB)	F'C=4,000 PSI
REINFORCING STEEL (GRADE 60)	FY=60,000 PSI
STRUCTURAL CARBON STEEL	FY=36,000 PSI
STRUCTURAL STEEL (A.S.T.M. A572) GRADE 50	FY=50,000 PSI

FABRICATED STEEL CONNECTIONS:
FIELD CONNECTIONS, HIGH STRENGTH BOLTS 3/4"Ø, HOLES 13/16"Ø, EXCEPT AS NOTED.

JOINT FILLER:
ALL JOINT FILLER SHALL MEET THE REQUIREMENTS OF STD. SPEC. 1057.2.4, EXCEPT AS NOTED.

REINFORCING STEEL:
MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1-1/2", UNLESS OTHERWISE SHOWN.

PAINT:
SYSTEM C BY CONTRACTOR IN ACCORDANCE WITH STD. SPEC. 712.12. (COLOR OF THE FINAL FIELD COAT SHALL BE GREEN.)

PRESTRESSED GIRDER STRESSES:
FOR PRESTRESSED GIRDER STRESSES, SEE SHEET NO.27 THRU 54.

CONSTRUCTION CLEARANCE:
MANCH. TRWAY.: A MINIMUM VERT. CLEARANCE OF 14'-6" FROM CROWN OF EXISTING LANES AND A MINIMUM LATERAL CLEARANCE OF 52'-0" CENTERED ON EXISTING LANES SHALL BE MAINTAINED DURING CONSTRUCTION.

N.B. RTE. 71 DETOUR: A MINIMUM VERT. CLEARANCE OF 14'-6" FROM CROWN OF EXISTING LANES AND A MINIMUM LATERAL CLEARANCE OF 34'-0" CENTERED ON LANES.

BLUE RIVER RD.: A MINIMUM VERT. CLEARANCE OF 14'-6" FROM CROWN OF EXISTING LANES AND A MINIMUM LATERAL CLEARANCE OF 52'-0" CENTERED ON LANES.

NORTH OUTER ROAD: A MINIMUM VERT. CLEARANCE OF 14'-6" FROM CROWN OF EXISTING LANES AND A MINIMUM LATERAL CLEARANCE OF 2'-0" FROM PAVT. EDGE (EACH SIDE).

BURLINGTON NORTHERN R.R.MINIMUM LATERAL CLEARANCE OF 12'-0" FROM ℄ TRACKS,SHALL BE IN ACCORDANCE WITH THE R.R. CONTRACT.

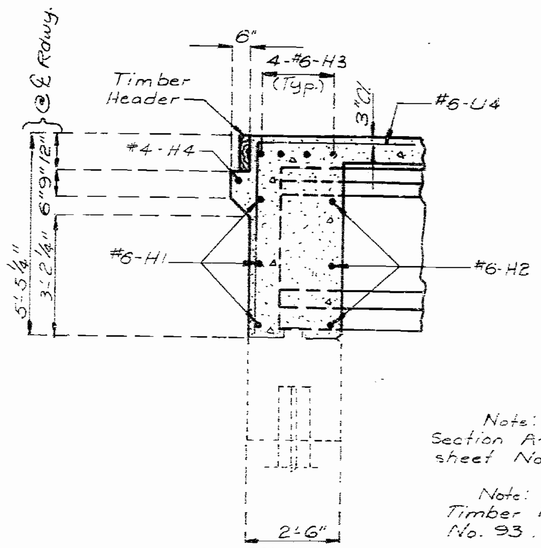
NEOPRENE PADS:

LAMINATED NEOPRENE BEARINGS SHALL BE 60 DUROMETER NEOPRENE PADS.

NOTE:
OUTLINE OF OLD WORK IS INDICATED BY LIGHT DASHED LINES.
HEAVY LINES INDICATE NEW WORK.

137 104

STATE	PROJ NO	SHEET NO
MO		90

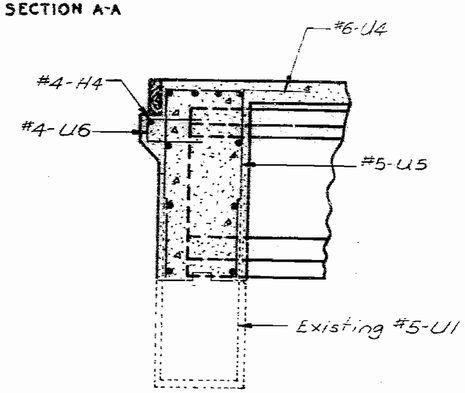


SECTION A-A

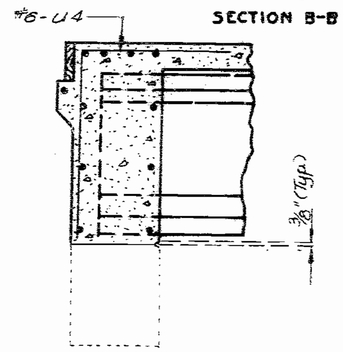
Note: For details of Laminated Neoprene Brg. Pad, see sheet No. 17.

Note: For location of Section A-A, B-B & C-C see sheet No. 11.

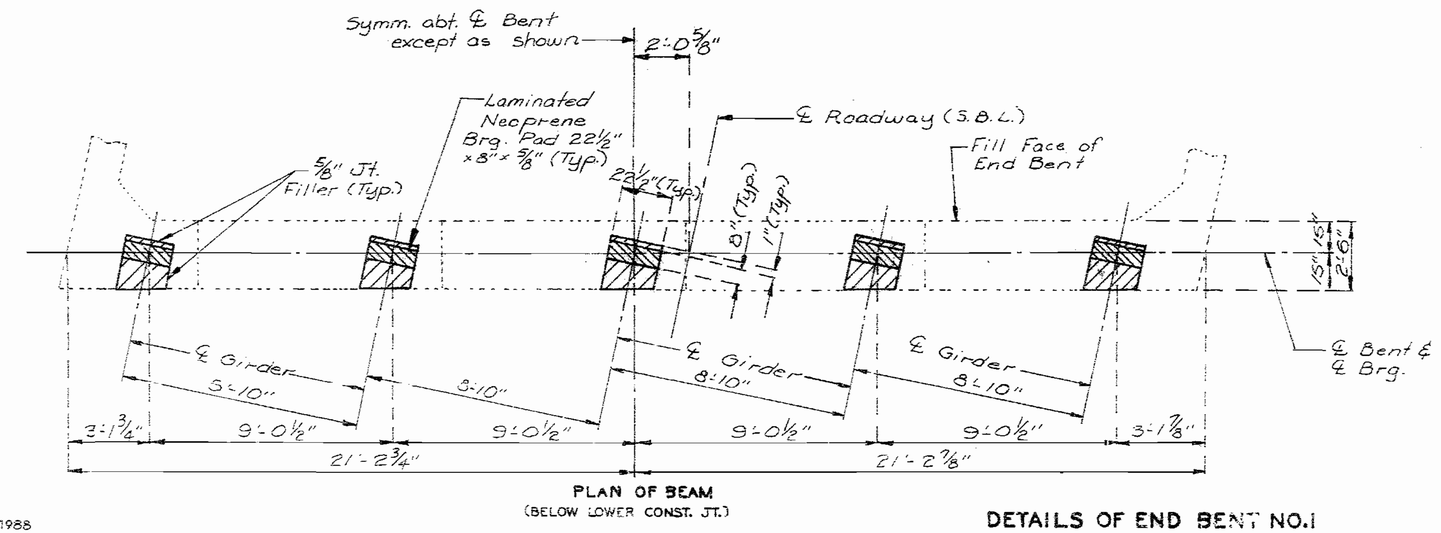
Note: For detail of Timber Header see sheet No. 93.



SECTION B-B



SECTION C-C



PLAN OF BEAM
(BELOW LOWER CONST. JT.)

Note: This drawing is not to scale. Follow dimensions.

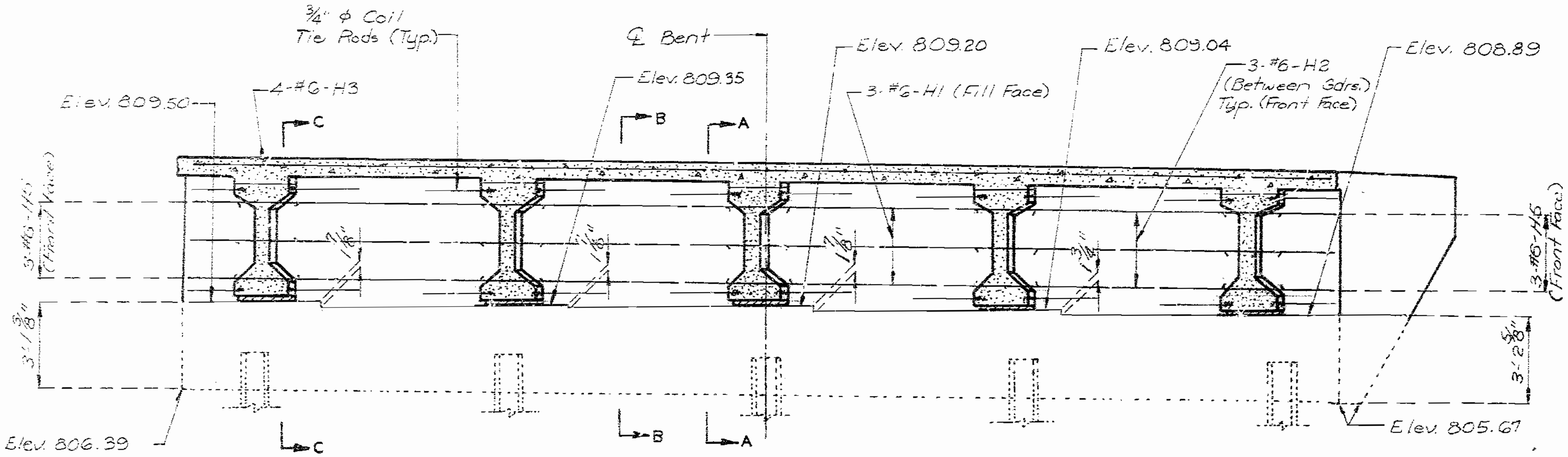
DETAILS OF END BENT NO.1

DETAILED March 1988
CHECKED Feb. 1989

Sheet No. 10 of 98

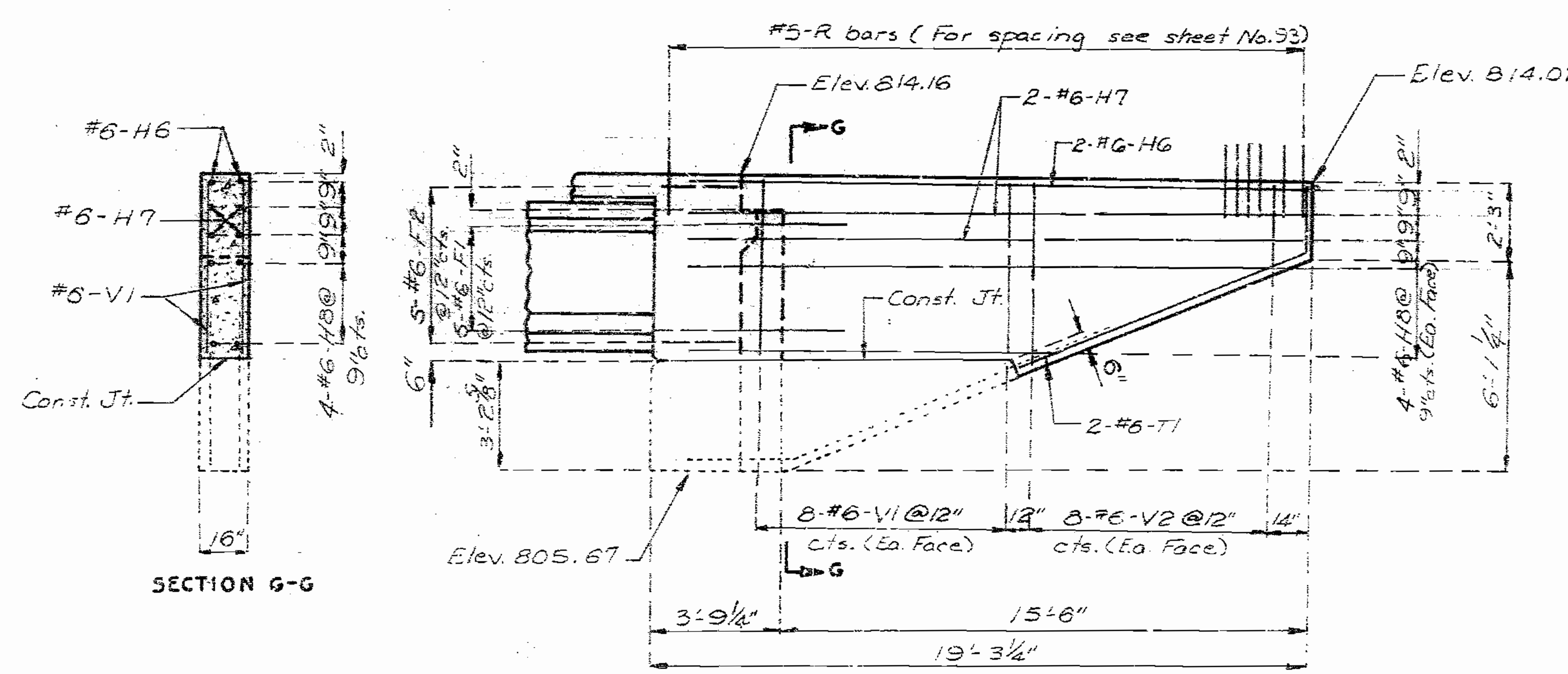
JACKSON COUNTY A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		91



ELEVATION

Note: For details of Section A-A, B-B & C-C, see sheet No. 10. For location of Elevation F-F, see sheet No. 12.



SECTION G-G

ELEVATION F-F

DETAILS OF END BENT NO. 1

DETAILED Sept 1988
CHECKED Feb. 1989

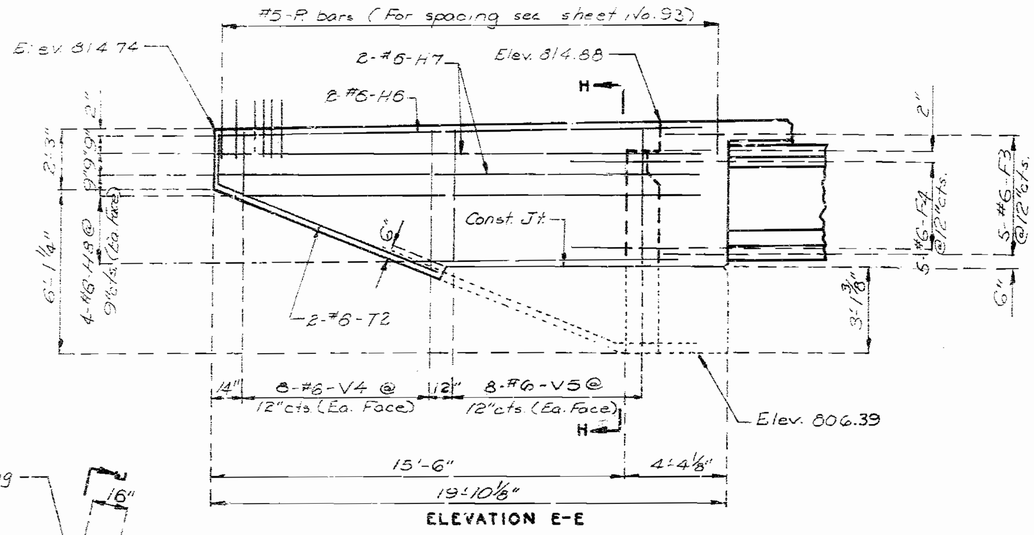
Note: This drawing is not to scale. Follow dimensions.

JACKSON COUNTY

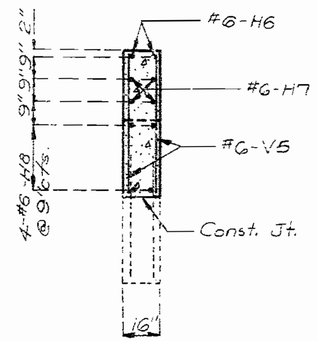
A-2745

BB 106

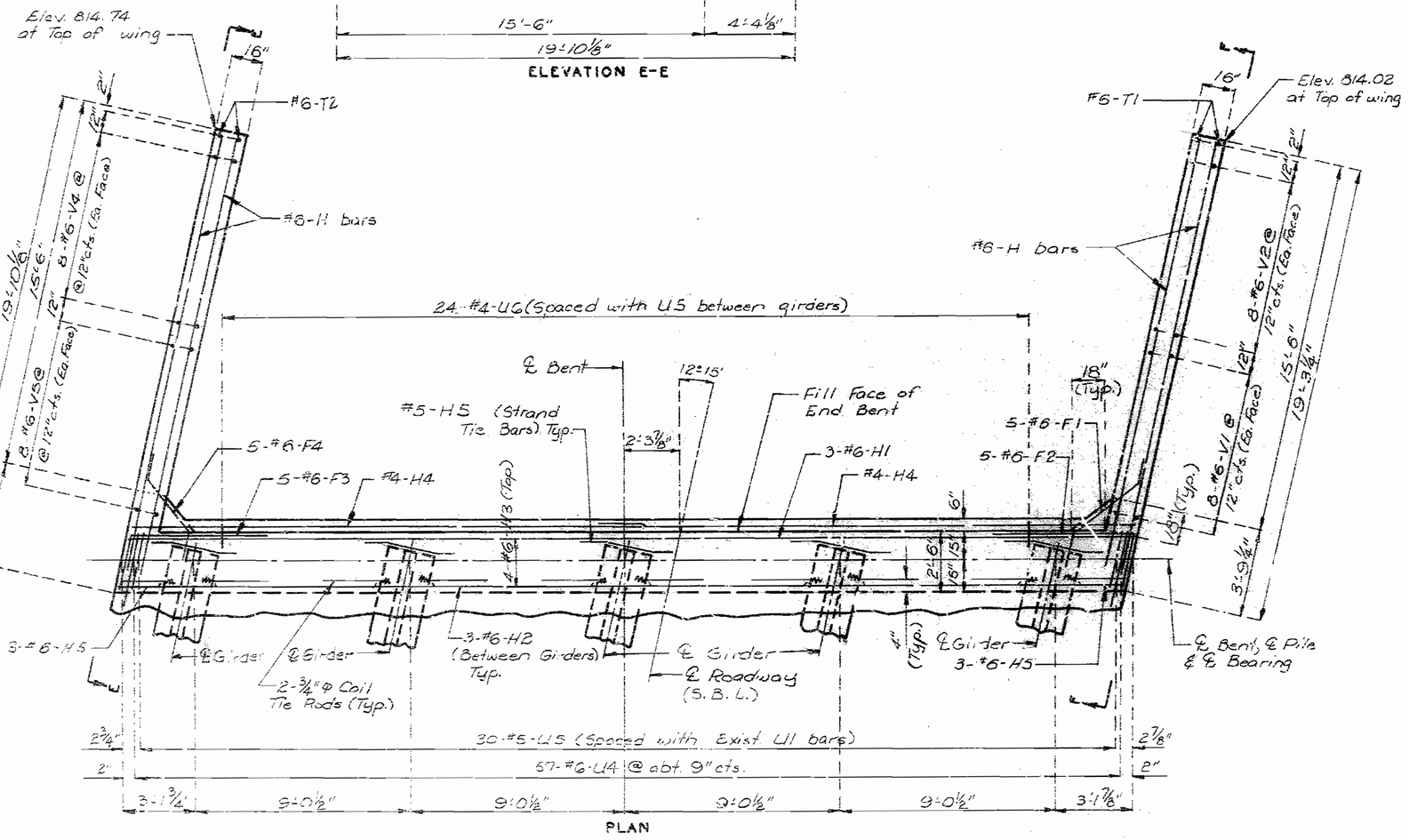
STATE	PROJ. NO	SHEET NO.
MO		99



ELEVATION E-E



SECTION H-H



PLAN

#6-T1
Elev. 814.02 at Top of wing
16"
12"
8-#6-V2 @ 12"cts. (Ea. Face)
8-#6-V1 @ 12"cts. (Ea. Face)
15'-6"
19'-1¾"
3'-9¾"
6" (Typ.)

Note: Bend F1 & F4 bars in field to clear girders.

For details of Safety Barrier Curb see sheet No. 23.

All concrete in the End Bent above top of beam and below top of slab shall be Class B2.

Strands at end of girders shall be field bent on if necessary, cut in field to maintain 1½" minimum clearance to Fill Face of End Bent.

Field bending shall be required for F1 & F4 bars when necessary to conform to slope of wing.

DETAILED Sept 1988
CHECKED FBD 1989

Note: This drawing is not to scale. Follow dimensions.

DETAILS OF END BENT NO.1

Sheet No. 12 of 98

JACKSON COUNTY

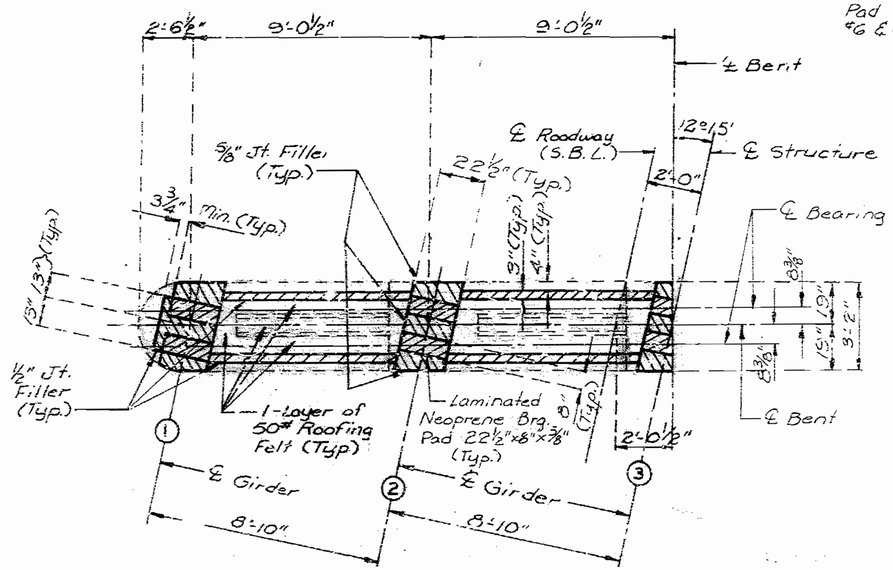
A-2745

134 107

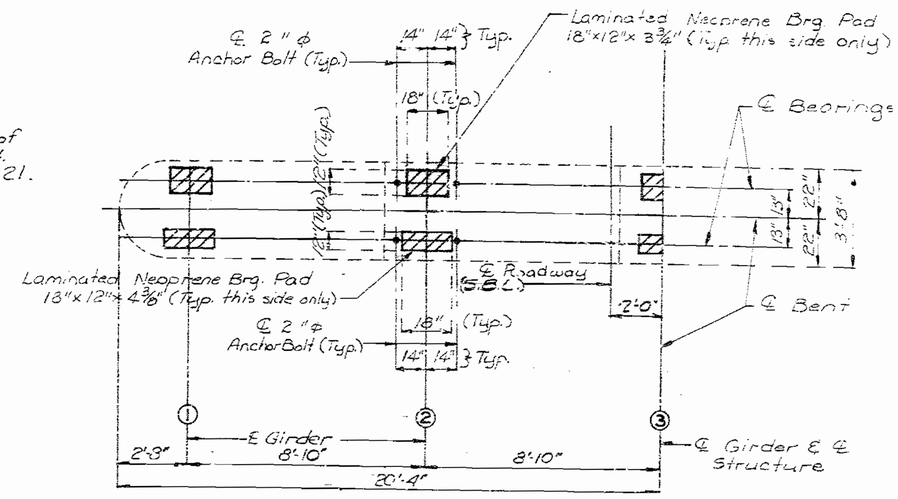
STATE	PROJ NO.	SHEET NO.
MO		33

Note: For typical section thru Laminated Neoprene Brg. Pad at Int. Bts. #2, #3, #5, #6 & #7, see sheet No. 17 .

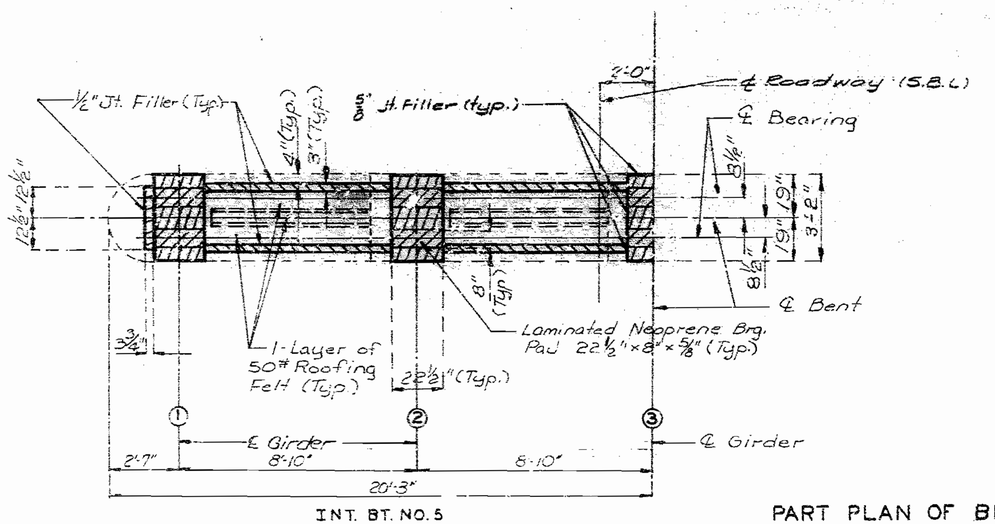
Note: For details of Bearings at Int. Bt. #4, see sheet No. 21.



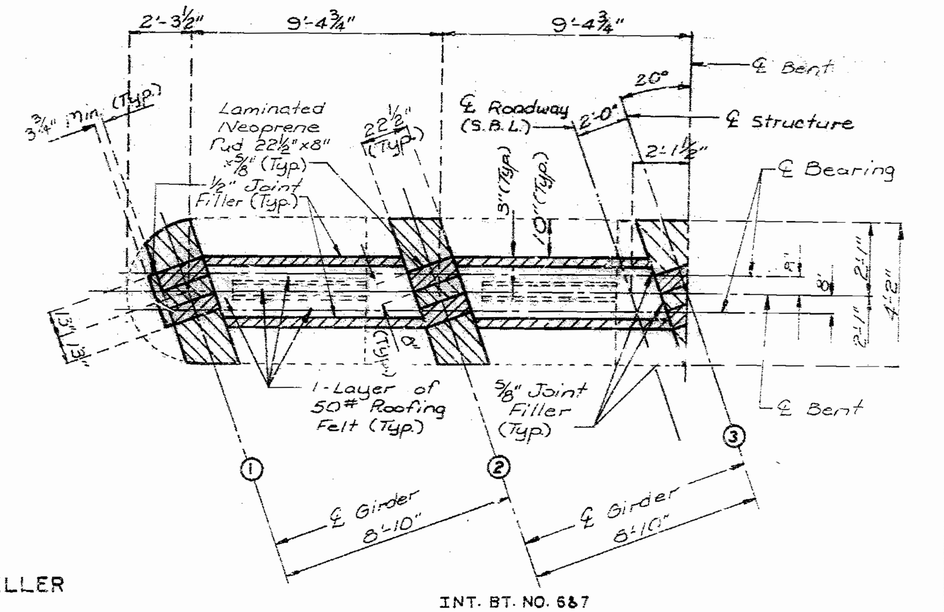
INT. BT. NO. 283



INT. BT. NO. 4



INT. BT. NO. 5



INT. BT. NO. 687

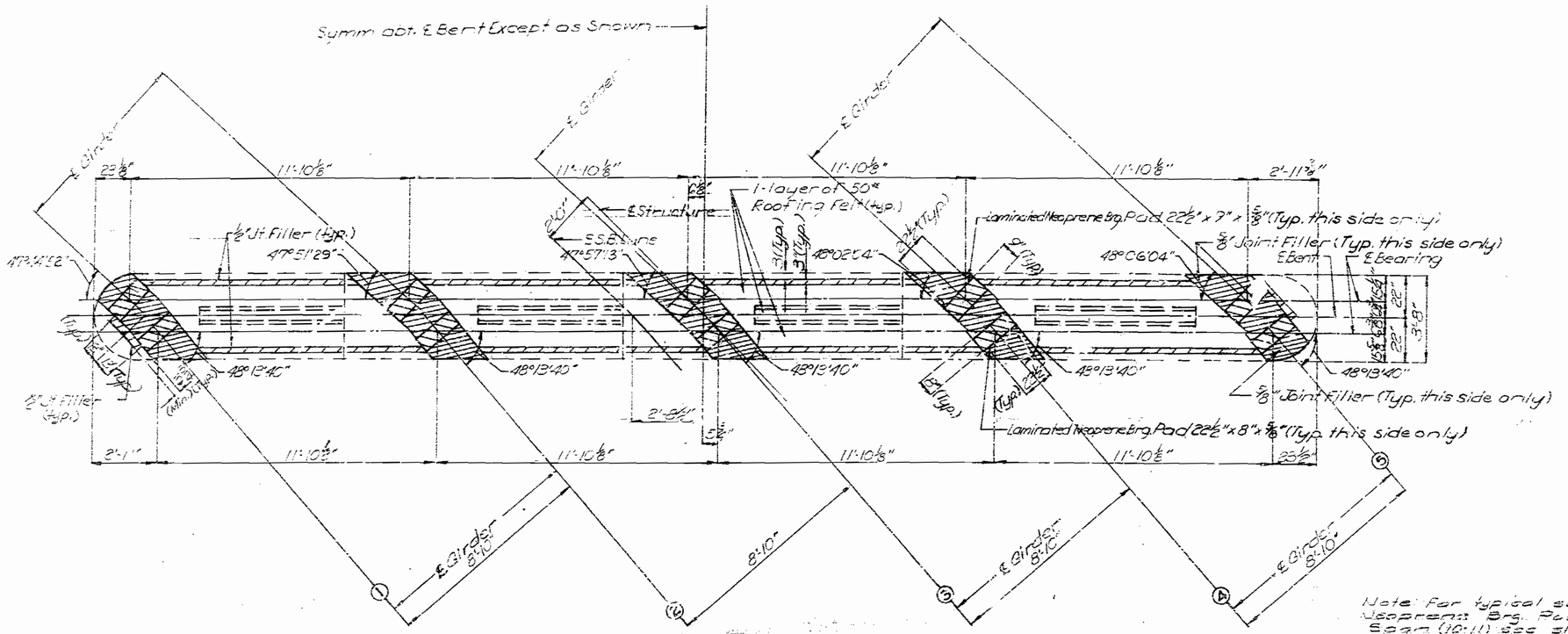
PART PLAN OF BEAM SHOWING BEARINGS, ROOFING FELT & JT. FILLER

B3 108

DETAILED Sept. 1988
CHECKED March 1989

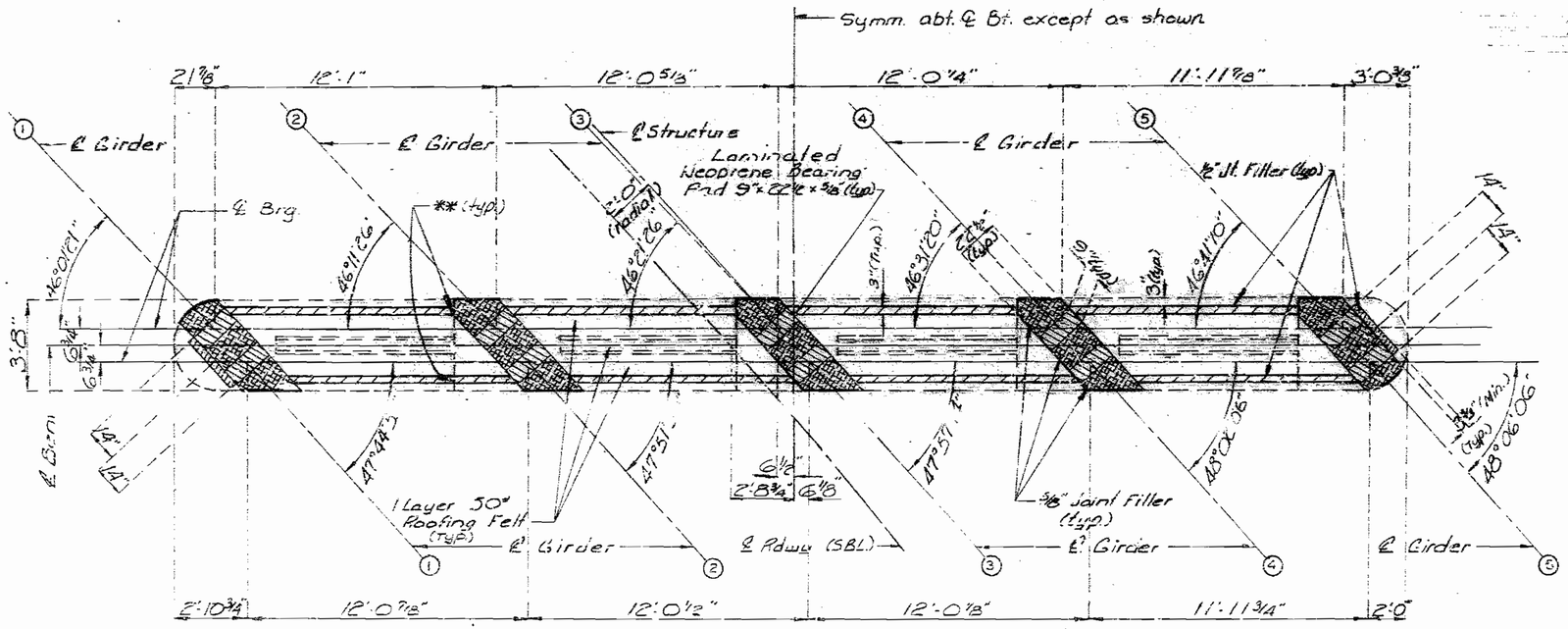
Note: This drawing is not to scale. Follow dimensions.

STATE	PROJ. NO	SHEET NO.
MO		34



INT. BT. NO. 11

Note: For typical section thru Lam. Neoprene Brg. Pad at Int. Bt. No. 11 Span (10-11) see sheet No. 17.



INT. BT. NO. 12

Note: For typical section thru Lam. Neoprene Brg. Pad at Int. Bt. #11 Span (11-12) and Int. Bt. #12 see sheet No. 16.

PART PLAN OF BEAM SHOWING BEARINGS, ROOFING FELT & JT. FILLER

** ½" Jt. Filler on vertical face of steps over 2" high.

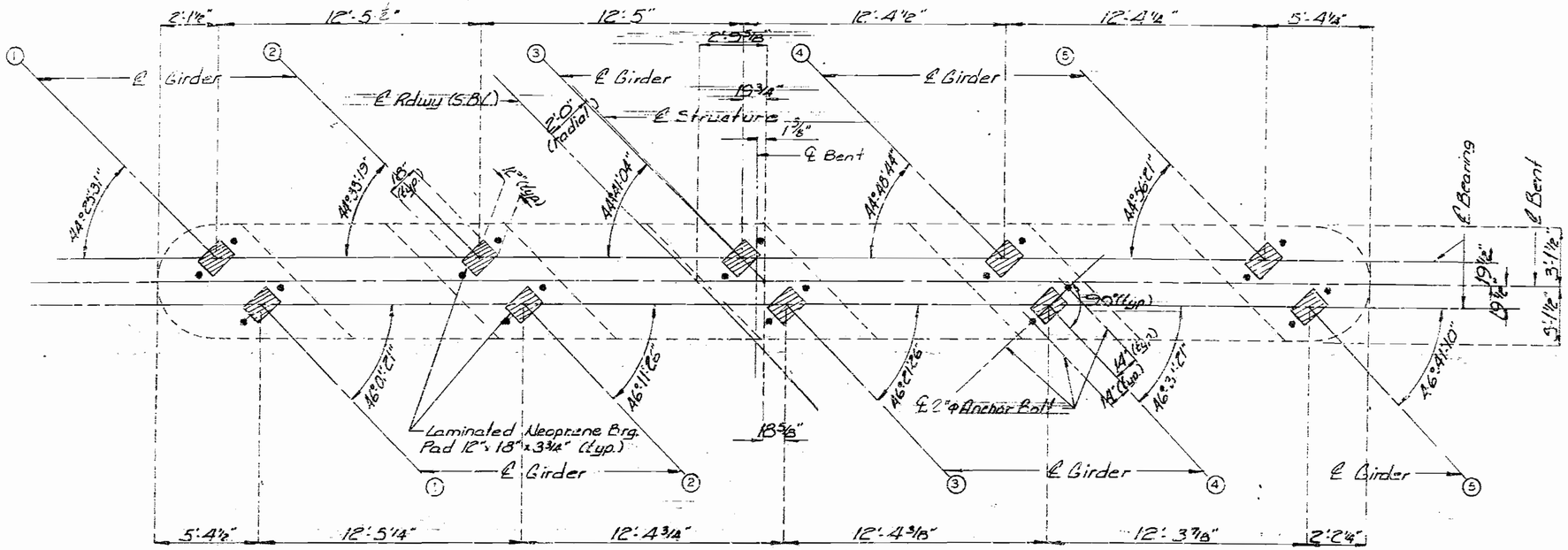
DETAILED Sept 1988
CHECKED MARCH 1989

Note: This drawing is not to scale. Follow dimensions

Sheet No. 14 of 98

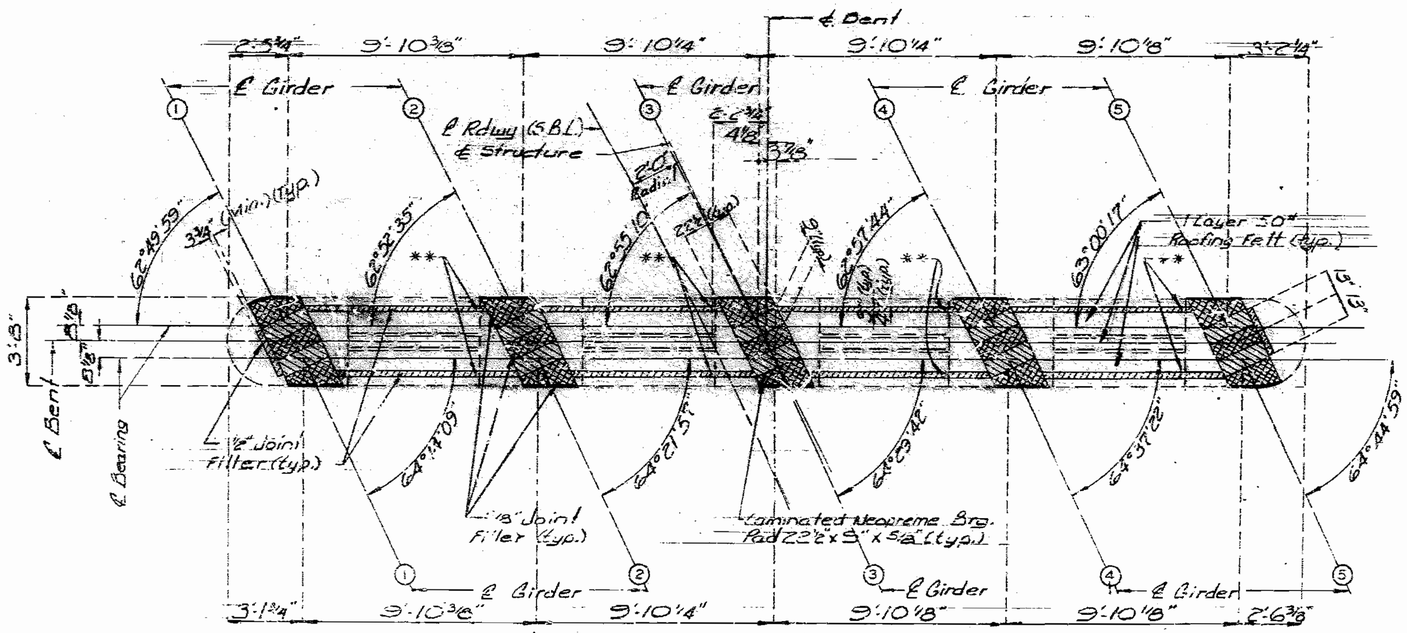
JACKSON COUNTY A-2745

STATE	PROJ NO	SHEET NO
MO		95



INT. BT. NO. 13

Note: For details of Bearings @ Int. Bt. No. 13 see sheet No. 21.



INT. BT. NO. 14

Note: For typical section thru Lam. Neoprene Brg. Pad at Int. Bt. #14 see sheet No. 14.

PART PLAN OF BEAM SHOWING BEARINGS, ROOFING FELT & JOINT FILLER

** ½" Joint Filler on vertical face of steps.

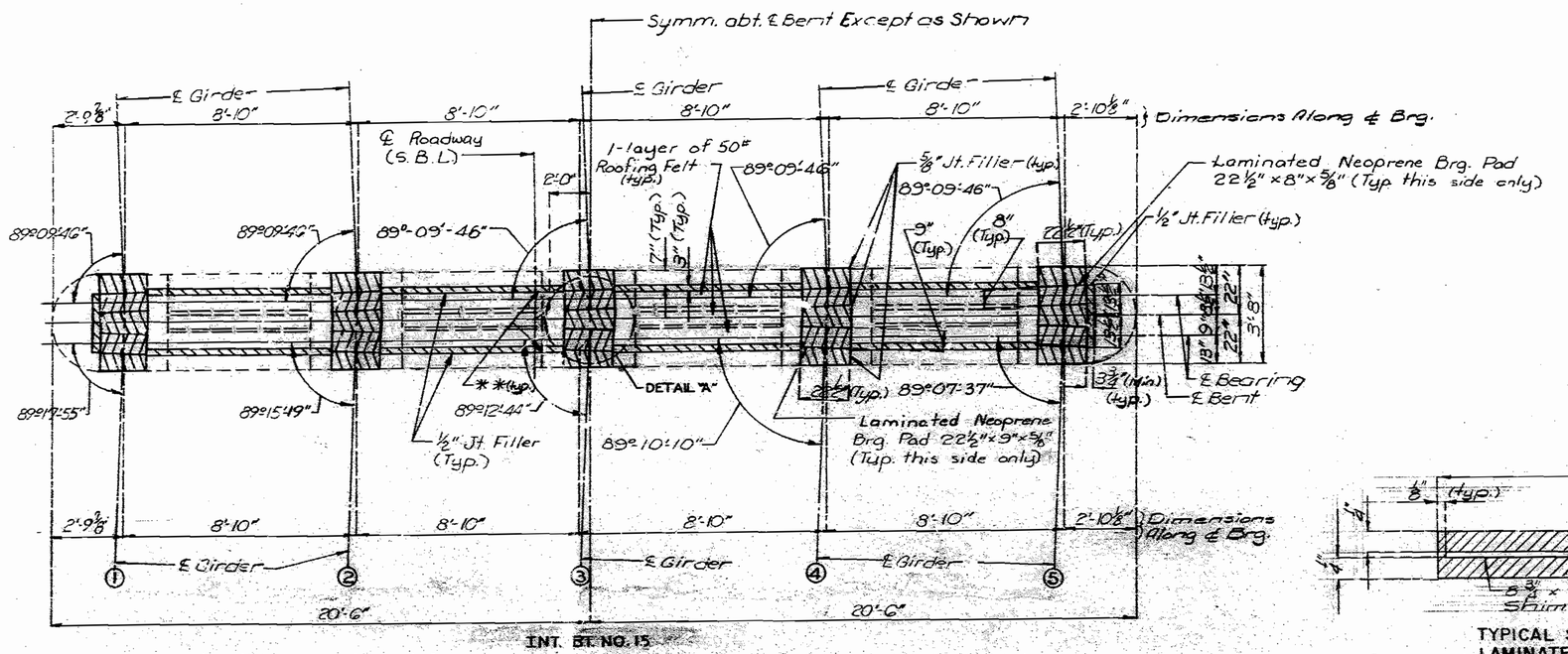
A27452

DETAILED Sept. 1988
CHECKED MARCH 1989

Note: This drawing is not to scale. Follow dimensions.

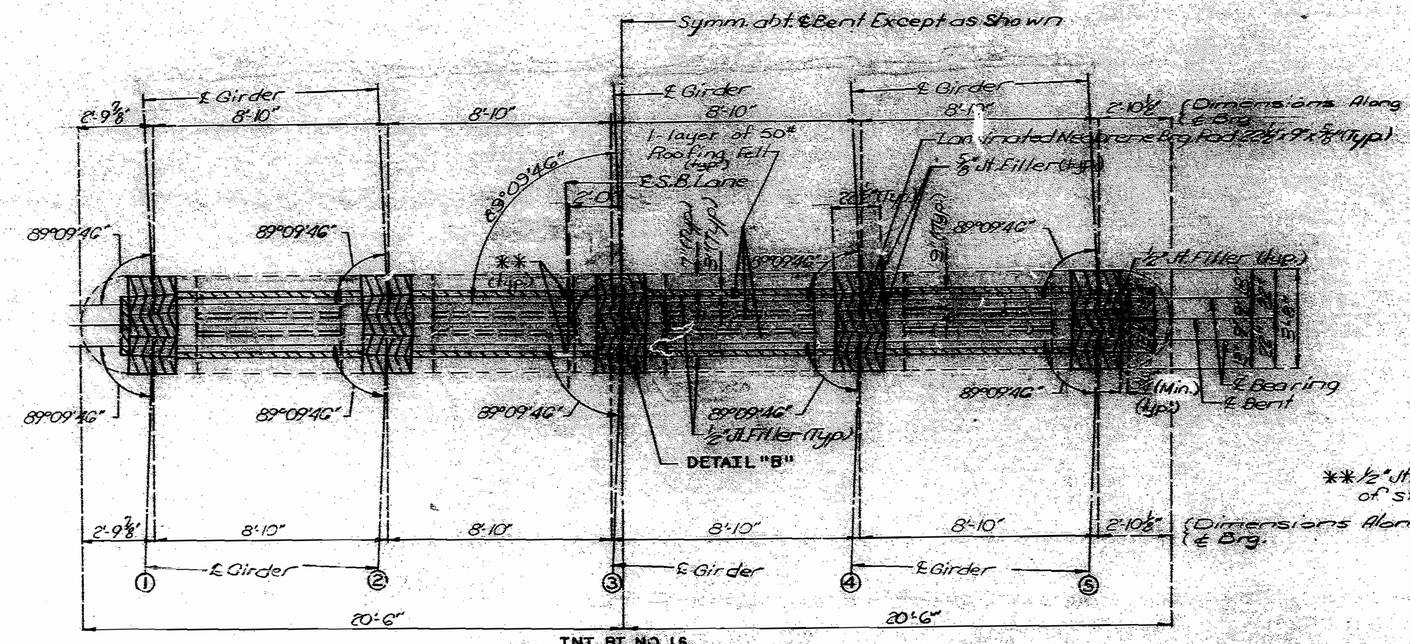
JACKSON COUNTY A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		96



TYPICAL SECTION THRU LAMINATED NEOPRENE BRG. PAD $9" \times 22\frac{1}{2}" \times \frac{9}{8}"$ (INT. BT. NO. 14, 12 & 16)
(INT. BT. NO. 15) SPAN (14-15)
(INT. BT. NO. 11) SPAN (11-12)

Note: For typical section thru Lam. Neoprene Brg. Pad at Int Bt. No. 15 Span (15-16) see sheet No. 17.



**½" Jt. Filler on vertical face of steps over 2" high (Typ.)

PART PLAN OF BEAM SHOWING BEARINGS, ROOFING FELT & JOINT FILLER

DETAILED Sept. 1988
CHECKED MARCH 1989

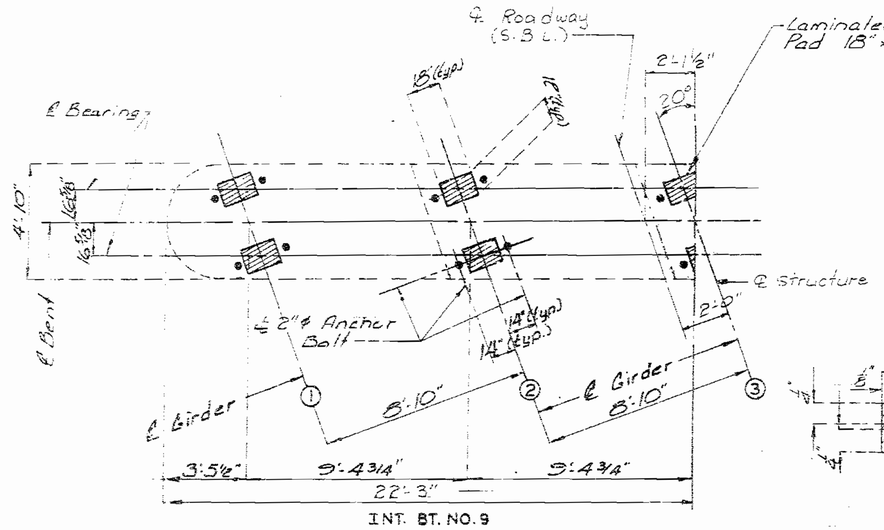
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 16 of 98

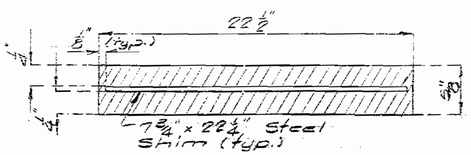
JACKSON COUNTY

A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		97



INT. BT. NO. 9



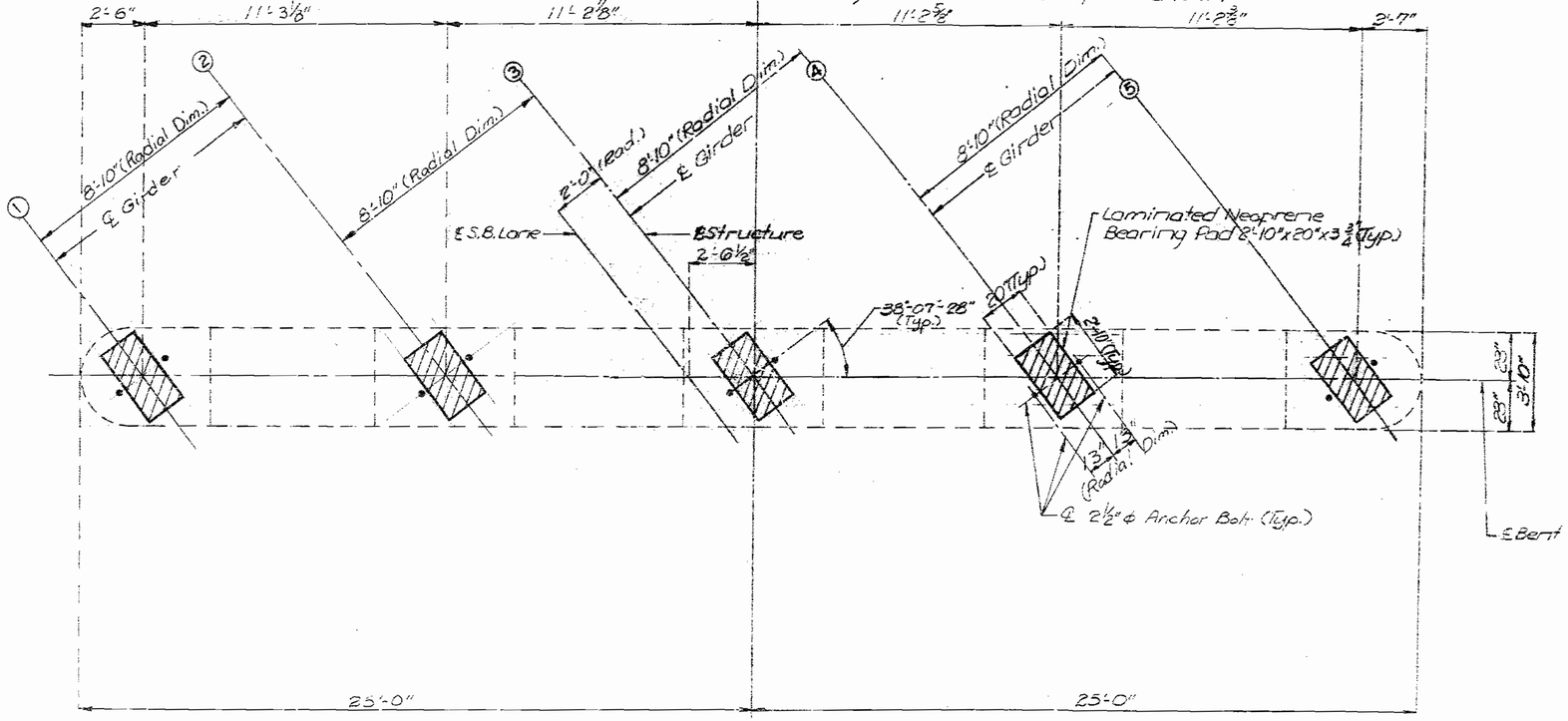
TYPICAL SECTION THRU LAMINATED NEOPRENE BRG. PAD 8" x 22½" x ⅝" (BT. NO. 1,2,3,5,6,7, 8 & 10),(INT. BT. NO. 15) SPAN (15-16), (INT. BT. NO. 11) SPAN (10-11)

INT. BT. NO. 8 & 10

Note: For details of Bearings @ Int. Bt. No. 9 see sheet No. 21.

PART PLAN OF BEAM SHOWING BEARINGS ROOFING FELT & JT. FILLER

Note: For details of Bearings @ Int. Bt. No. 18 see sheet No. 22



INT. BT. NO. 18

DETAILED Sept 1988
CHECKED March 1989

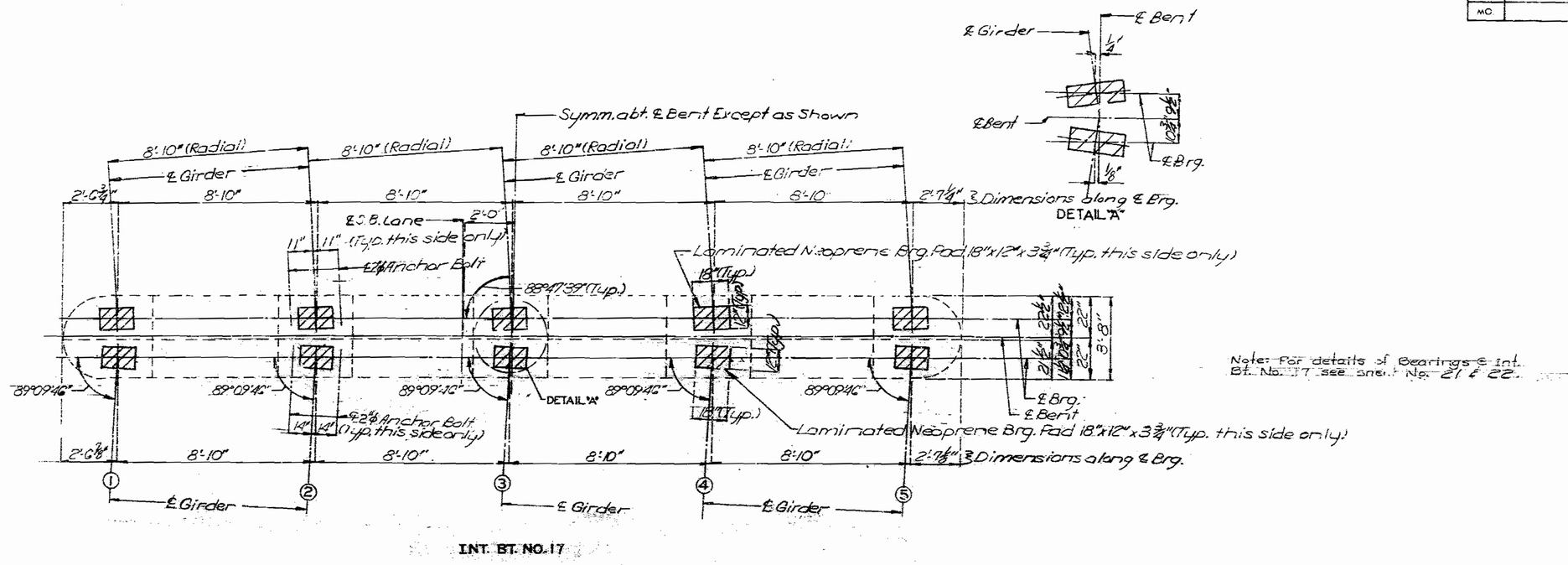
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 17 of 38

JACKSON COUNTY

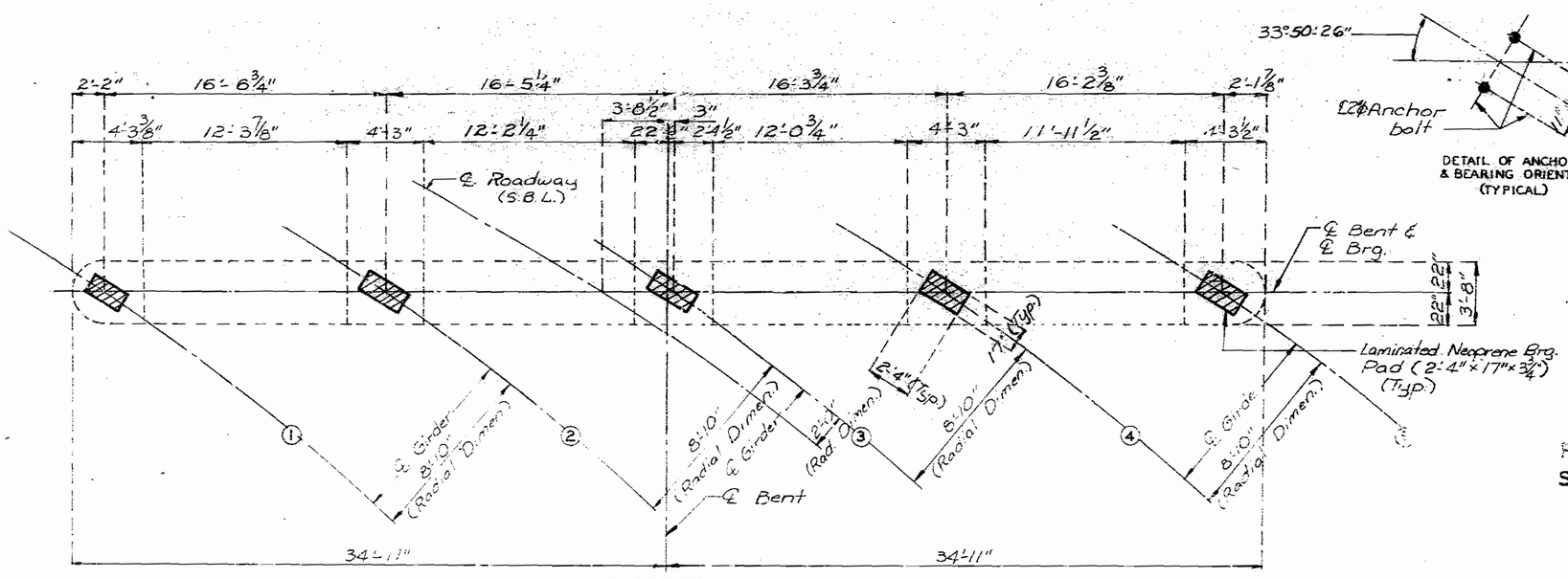
A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		38



INT. BT. NO. 17

Note: For details of Bearings ℄ Int. Bt. No. 17 see Sheet No. 21 & 22.



INT. BT. NO. 19

DETAIL OF ANCHOR BOLT & BEARING ORIENTATION (TYPICAL)

Note: For details of Bearings ℄ Int. Bt. No. 19 see Sheet No. 22.

PART PLAN OF BEAM SHOWING BEARINGS

DETAILED Sept. 1988
CHECKED March 1989

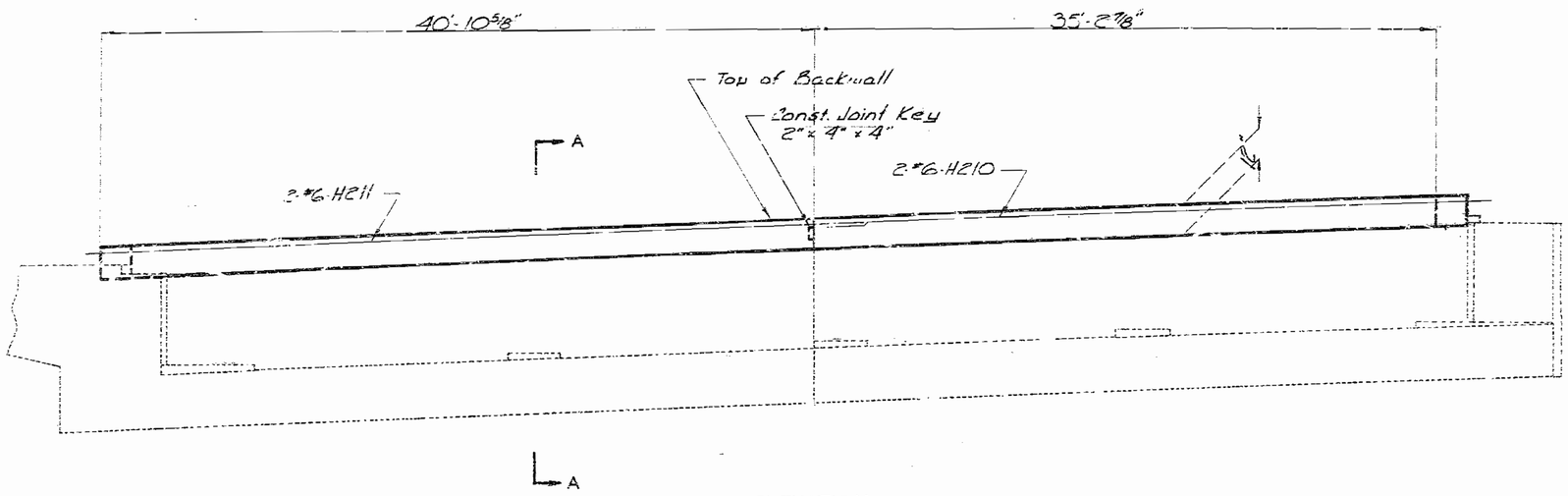
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 38 of 98.

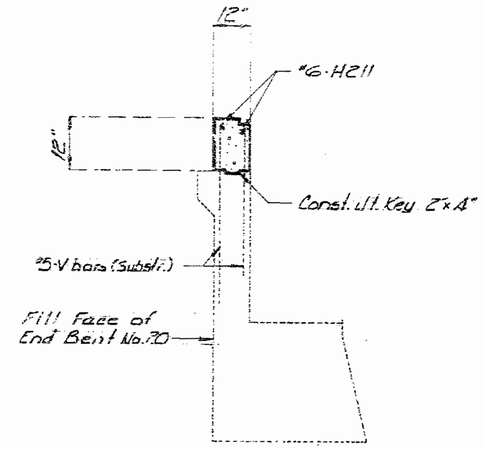
JACKSON COUNTY

A-2745

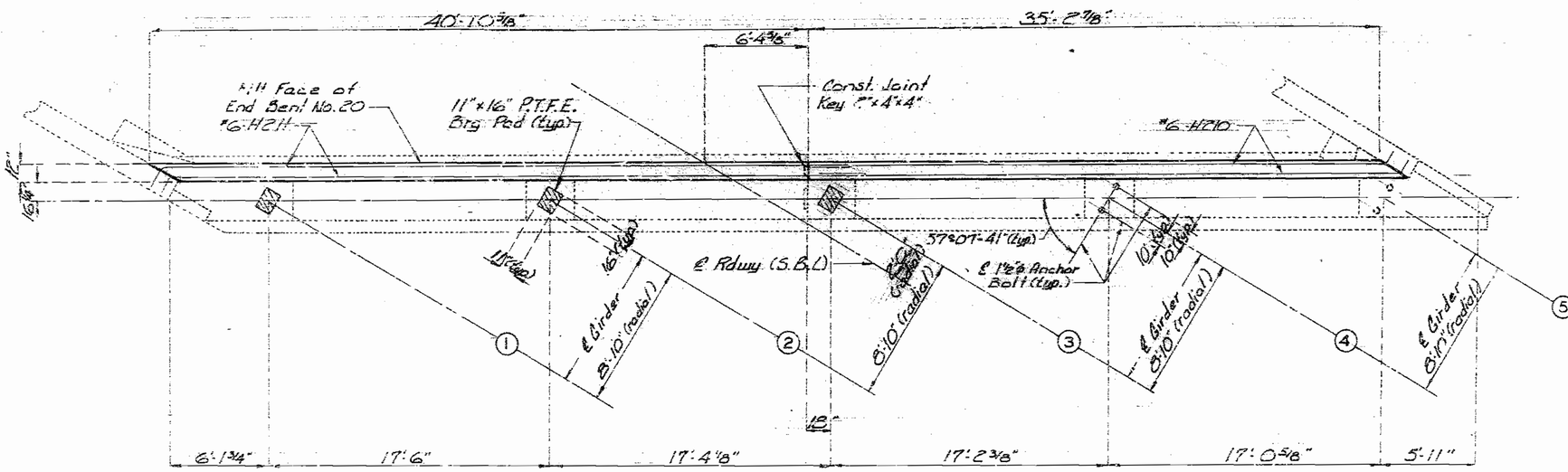
STATE	PROJ. NO.	SHEET NO.
MO.		99



ELEVATION



SECTION A-A



PLAN OF BEAM AND BACKWALL

Note: Top of backwall and expansion device for End Bent No. 20 shall conform to the crown of roadway slab. Backwall above upper construction joint shall not be poured until the superstructure slab has been poured in the adjacent span.

All concrete shown shall be Class BZ, included in Estimated Quantities for Alternate Slabs.

Field bending shall be required at wings for H210 & H211 bars in backwall.

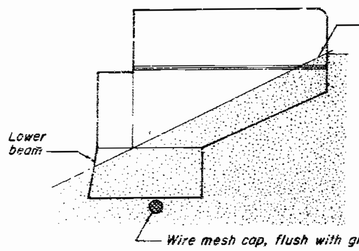
For details of Bearings at End Bent No. 20 see sheet No. 23.

DETAILS OF END BENT NO. 20

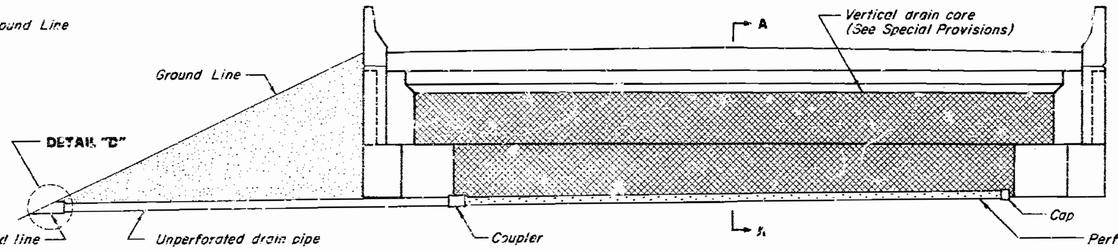
DETAILED OCT. 1988
CHECKED Nov. 1988

Note: This drawing is not to scale. Follow dimensions.

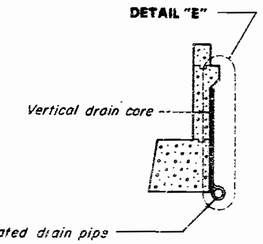
STATE	PROJ. NO	SHEET NO.
MO		100



ELEVATION OF WING



ELEVATION AT END BENT NO. 2
(NON-INTEGRAL END BENT)



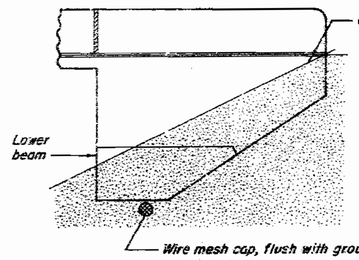
SECTION A-A

GENERAL NOTES:

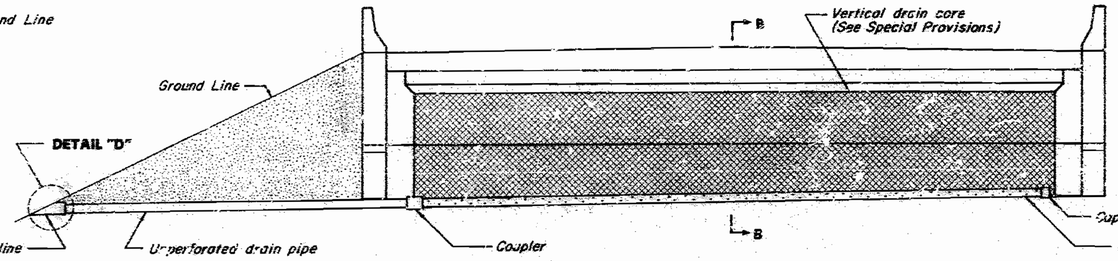
DRAIN PIPE MAY BE EITHER 6" DIAMETER CORRUGATED METALLIC-COATED STEEL PIPE UNDERDRAIN, 4" DIAMETER CORRUGATED POLY VINYL CHLORIDE (PVC) DRAIN PIPE OR 4" DIAMETER CORRUGATED POLYETHYLENE (PE) DRAIN PIPE

PLACE DRAIN PIPE AT FILL FACE OF END BENT AND SLOPE TO LOWEST GRADE OF GROUND LINE, ALSO MISSING THE LOWER BEAM OF END BENT BY 1½". (SEE ELEVATION AT END BENT)

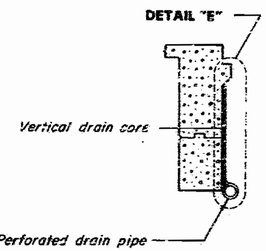
PERFORATED PIPE SHALL BE PLACED AT FILL FACE SIDE AT THE BOTTOM OF END BENT AND PLAIN PIPE SHALL BE USED WHERE THE VERTICAL DRAIN ENDS TO THE EXIT AT GROUND LINE.



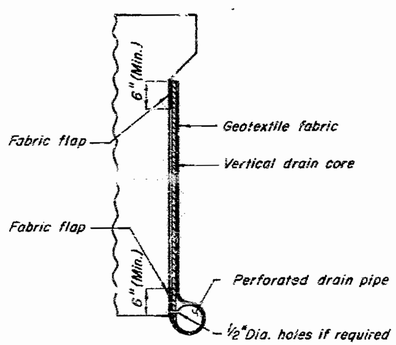
ELEVATION OF WING



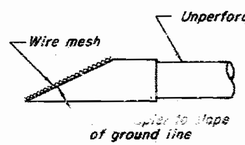
ELEVATION AT END BENT NO. 1
(INTEGRAL END BENT)



SECTION B-B



DETAIL "E"



DETAIL "D"

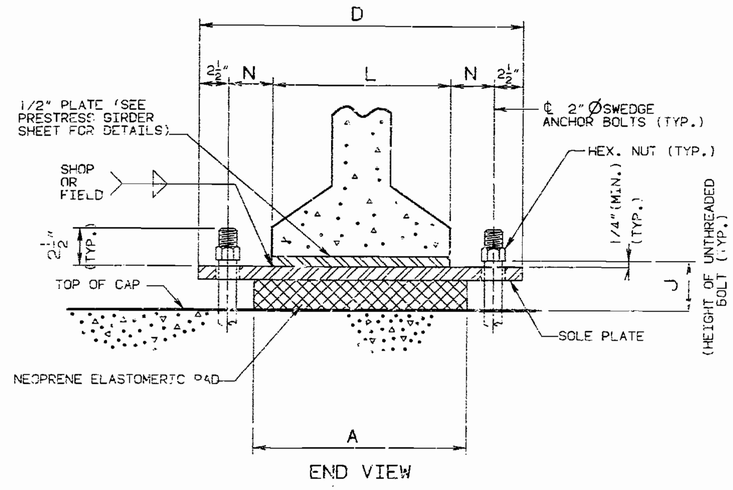
VERTICAL DRAIN AT END BENTS

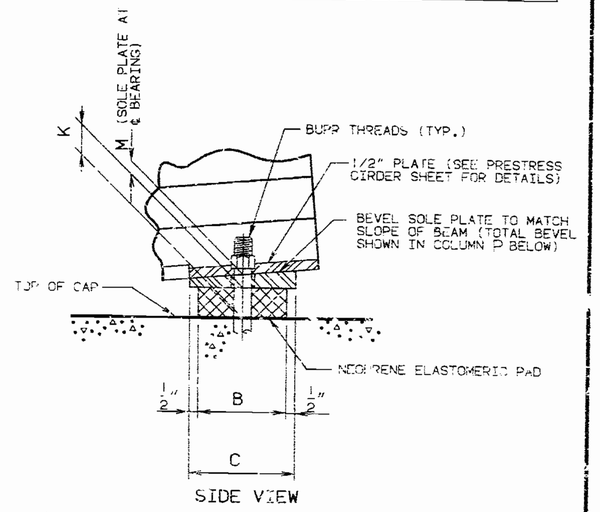
Vert. Drain MARCH 1983 | Revised MAR. 1987

DETAILED March 1988
CHECKED Feb. 1989

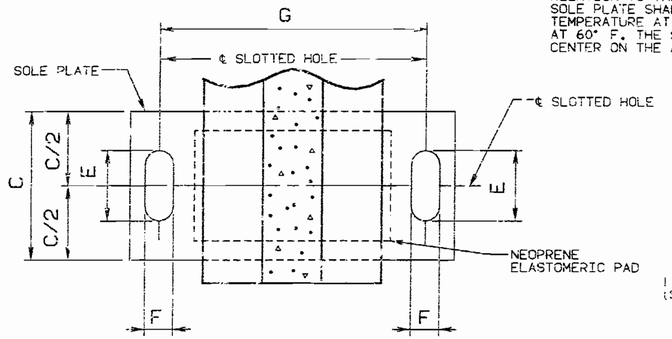
Note: This drawing is not to scale. ...llow dimensions.

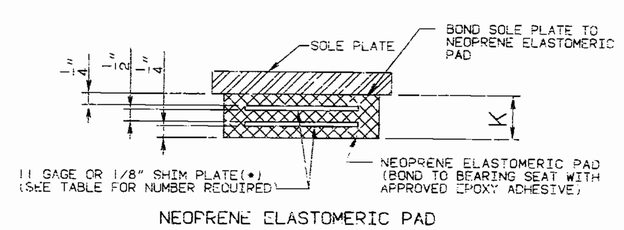
STATE	PROJ. NO.	SHEET NO.
MO.		101





NOTE: THE LOCATION OF ANCHOR BOLTS IN RELATION TO THE SLOTTED HOLES IN THE SOLE PLATE SHALL CORRESPOND WITH THE TEMPERATURE AT THE TIME OF ERECTION. AT 60° F. THE SLOTTED HOLES SHOULD CENTER ON THE ANCHOR BOLTS.





NEOPRENE ELASTOMERIC PAD

GENERAL NOTES:

ANCHOR BOLTS SHALL BE 2" Ø A588 STEEL SWEDGED BOLTS AND SHALL EXTEND 18" INTO THE CONCRETE WITH A194-2, 2H OR A563-C, C3, D, DH, DH3 HEAVY HEXAGON NUTS. ACTUAL MANUFACTURER'S CERTIFIED MILL TEST REPORTS (CHEMICAL AND MECHANICAL) SHALL BE PROVIDED. (SWEDGING SHALL BE 1" LESS THAN THE EXTENSION INTO THE CONCRETE.)

ALL STRUCTURAL STEEL FOR THE SOLE PLATE, ANCHOR BOLTS AND THE HEAVY HEXAGON NUTS SHALL BE PAINTED WITH 2 COATS (5 MILS MIN.) OF INORGANIC ZINC. WELD AREAS TO BE TOUCHED UP AFTER ASSEMBLY.

THE NEOPRENE ELASTOMERIC PADS SHALL BE 60 DUROMETER.

THE SOLE PLATE SHALL BE FURNISHED WITH THE BEARING AND FIELD OR SHOP WELDED TO THE GIRDERS.

STRUCTURAL STREEL FOR THE SOLE PLATE SHALL BE A-36.

PAYMENT FOR THE SOLE PLATE WILL BE INCLUDED IN THE COST OF THE BEARING ASSEMBLY, SEE SPECIAL PROVISIONS.

THE ACCEPTED QUANTITY OF THE ELASTOMERIC BEARING ASSEMBLIES, COMPLETE-IN-PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR LAMINATED NEOPRENE BEARING PADS, EACH.

WEIGHT OF THE ANCHOR BOLTS AND HEAVY HEXAGON NUTS FOR BEARINGS SHALL BE INCLUDED IN THE WEIGHT OF FABRICATED STRUCTURAL STEEL.

EXPANSION BEARINGS

	BENT NO.	A	B	C	D	E	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES(•)	NUMBER REQUIRED
SPAN (3-4)	4	18"	12"	13"	33"	5 1/4"	2 1/8"	28"	6 1/8"	4 3/8"	24"	1 1/2"	2"	-	7	5
SPAN (4-5)	4	18"	12"	13"	33"	5"	2 1/8"	28"	5 1/2"	3 3/4"	24"	1 1/2"	2"	-	6	5
	9	18"	12"	13"	33"	5"	2 1/8"	28"	5 1/2"	3 3/4"	24"	1 1/2"	2"	-	6	10
	13	18"	12"	13"	33"	5"	2 1/8"	28"	5 1/2"	3 3/4"	24"	1 1/2"	2"	-	6	10
SPAN (16-17)	17	18"	12"	13"	33"	5"	2 1/8"	28"	5 1/2"	3 3/4"	24"	1 1/2"	2"	-	6	5
															TOTAL BEARINGS	35

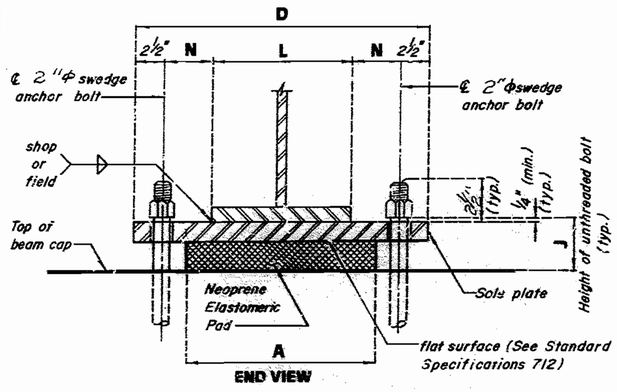
(•) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN EQUAL LAYERS OF ELASTOMERIC AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

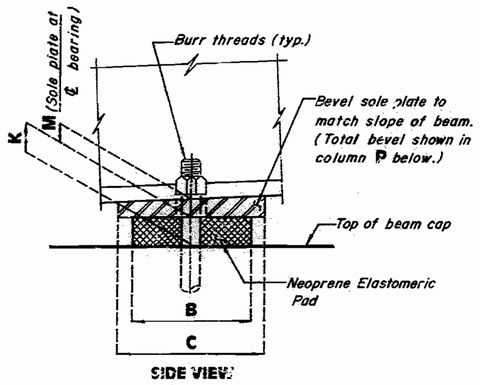
DETAIL OF LAMINATED NEOPRENE BEARINGS FOR PRESTRESS GIRDERS

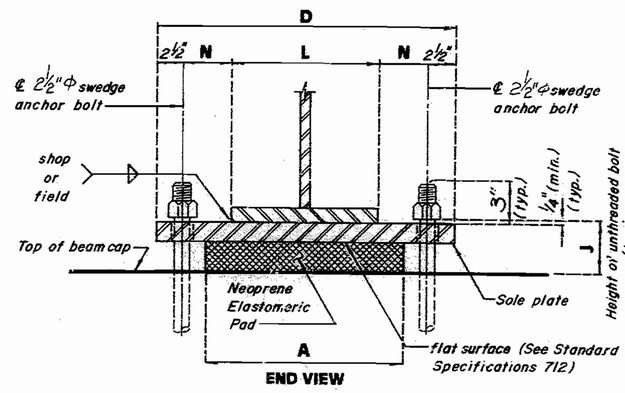
DETAILED AUG. 1988
CHECKED MARCH 1989

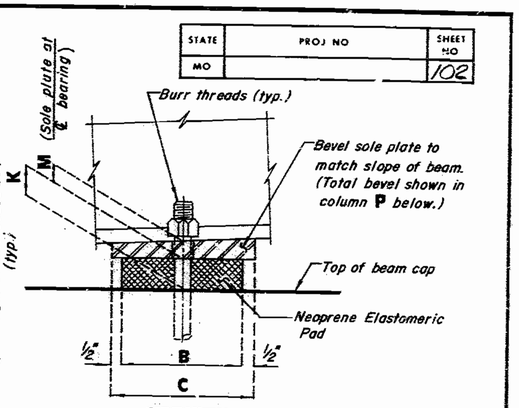
NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

STATE	PROJ NO	SHEET NO
MO		102

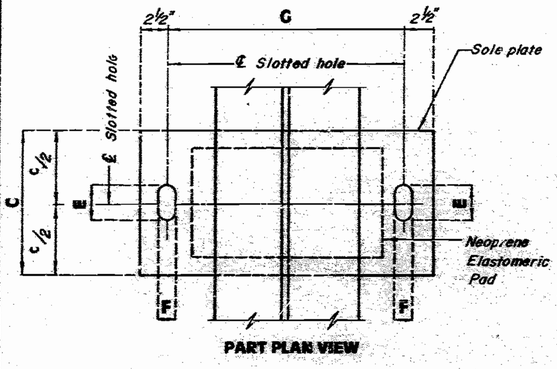


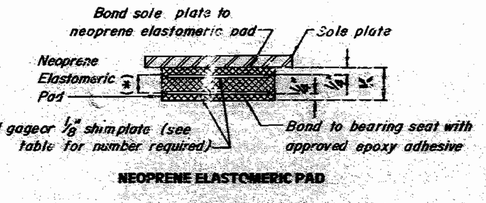




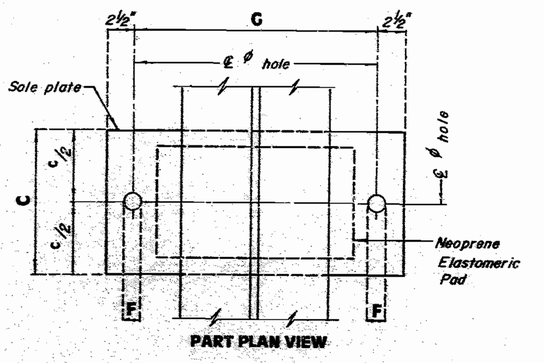


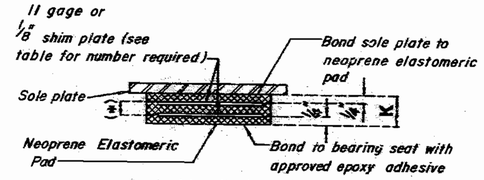
Note: The location of anchor bolts in relation to the slotted holes in the sole plate shall correspond with the temperature at the time of erection. At 60° F. the slotted holes should center on the anchor bolts.





(*) Layers of ½" elastomer alternating with 11 gage or ⅛" steel shim plate.





(*) Layers of ½" elastomer alternating with 11 gage or ⅛" steel shim plate.

EXPANSION BEARINGS

NUMBER REQUIRED = 5 @ Bent No. 17 (Span 17-18)
5 @ Bent No. 19

** 18" @ Bts. No. 17 & 19
25" @ Bt. No. 18

*** 2" Φ @ Bts. No. 17 & 19
2½" Φ @ Bt. No. 18

⑤ Girders No. 1, 2 & 3 = 17"
Girder No. 4 = 16"
Girder No. 5 = 14"

⑥ Girders No. 1, 2 & 3 = 2½"
Girder No. 4 = 3"
Girder No. 5 = 4"

EXPANSION BEARINGS															
BENT NO.	A	B	C	D	E	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (*)
19	17"	28"	29"	27"	5"	2⅛"	22"	1 11/16"	3¾"	③	1 11/16"	④	⅜"	6
*** 17	18"	12"	13"	27"	5"	2⅛"	22"	5½	3¾"	⑤	1½"	⑥	–	6

(*) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

*** Span (17-18)

④ Girder No. 1 = 2½"
Girder No. 2 = 3"
Girders No. 3, 4 & 5 = 3½"

1½" Gdr. #1, #2, & #3
1⅞" Gdr. #4 & #5

③ Girder No. 1 = 17"
Girder No. 2 = 16"
Girders No. 3, 4 & 5 = 15"

FIXED BEARINGS

NUMBER REQUIRED = 5 @ Bent No. 18

FIXED BEARINGS														
BENT NO.	A	B	C	D	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (*)
18	20"	34"	35"	31"	2⅞"	26"	5⅞"	3¾"	①	1⅝"	②	¼"	6

(*) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

① Girders No. 1 & 2 = 20"
Girders No. 3, 4 & 5 = 19"

② Girders No. 1 & 2 = 3"
Girders No. 3, 4 & 5 = 3½"

GENERAL NOTES:

ANCHOR BOLTS SHALL BE *** A588 STEEL SWEDGED BOLTS AND SHALL EXTEND ** INTO THE CONCRETE WITH A194 - 2, 2H OR A563 - C, C3, D, DH, DH3 HEAVY HEXAGON NUTS. ACTUAL MANUFACTURER'S CERTIFIED MILL TEST REPORTS (CHEMICAL AND MECHANICAL) SHALL BE SUBMITTED FOR ALL ANCHOR BOLTS (SWEDGING SHALL BE 1" LESS THAN EXTENSION INTO THE CONCRETE.)

ALL STRUCTURAL STEEL FOR THE SOLE PLATE, ANCHOR BOLTS AND HEAVY HEXAGON NUTS SHALL BE PAINTED WITH 2 COATS (5 MILS MIN.) OF INORGANIC ZINC. WELD AREAS TO BE TOUCHED UP AFTER ASSEMBLY.

WEIGHT OF ANCHOR BOLTS AND HEAVY HEXAGON NUTS FOR BEARINGS SHALL BE INCLUDED IN WEIGHT OF THE FABRICATED STRUCTURAL STEEL.

NEOPRENE ELASTOMERIC PADS SHALL BE 60 DUROMETER.

THE SOLE PLATE SHALL BE FURNISHED WITH THE BEARING AND FIELD OR SHOP WELDED TO THE STRINGERS OR GIRDERS.

STRUCTURAL STEEL FOR SOLE PLATE SHALL BE A-36.

PAYMENT FOR THE SOLE PLATE WILL BE INCLUDED IN THE COST OF THE BEARING ASSEMBLY. SEE SPECIAL PROVISIONS.

THE ACCEPTED QUANTITY OF ELASTOMERIC BEARING ASSEMBLIES, COMPLETE-IN-PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURES), EACH.

DETAILS OF LAMINATED NEOPRENE BEARINGS (STEEL STRUCTURES)

LAM. NEOP. BRGS. REVISED OCT. 1987
MARCH 1979

DETAILED June 1988
CHECKED Feb 1989

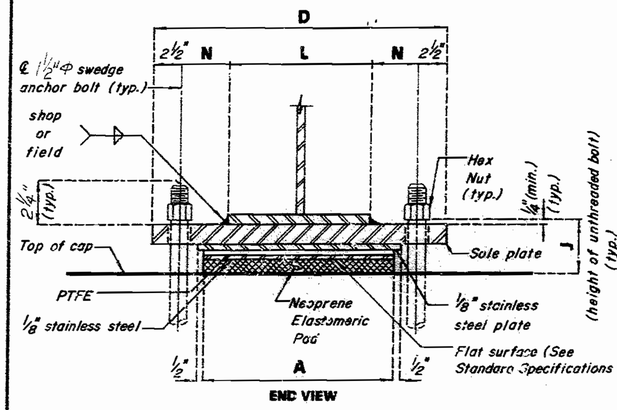
Note: This drawing is not to scale. Follow dimensions. ⚠ Revised 12-1-89

SEE Final Plans
Sheet No. 22 of 38

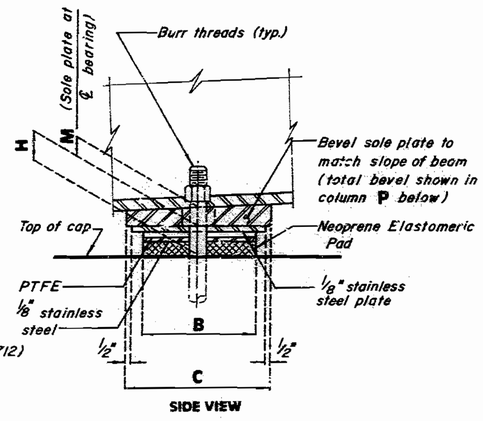
JACKSON COUNTY

A-2745

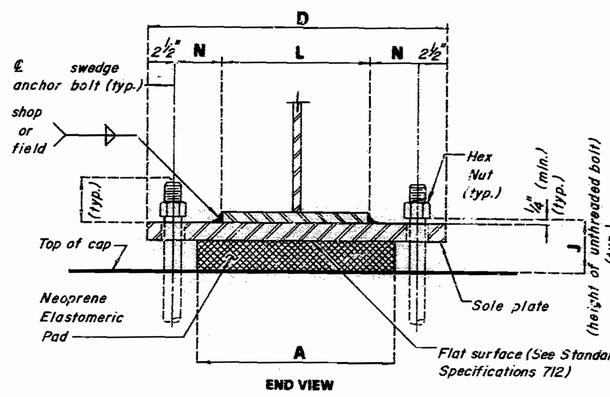
STATE	PROJ NO	SHEET NO
MO		103



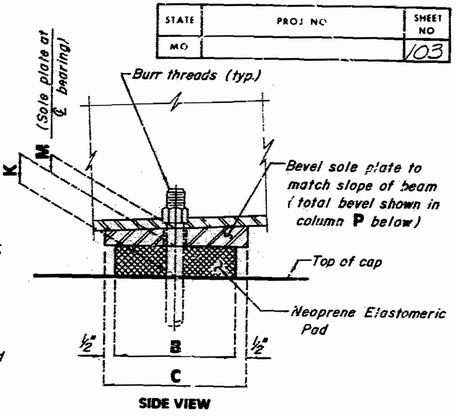
END VIEW



SIDE VIEW

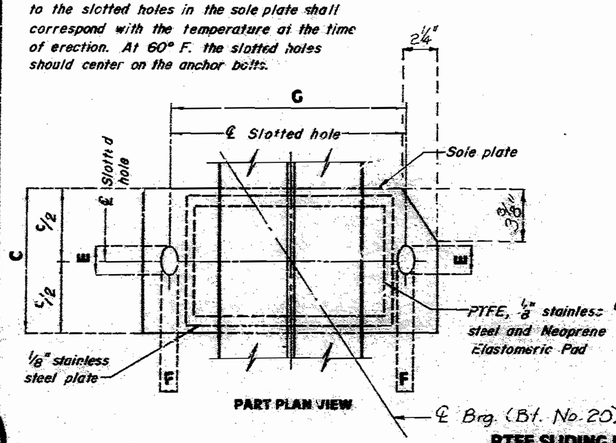


END VIEW

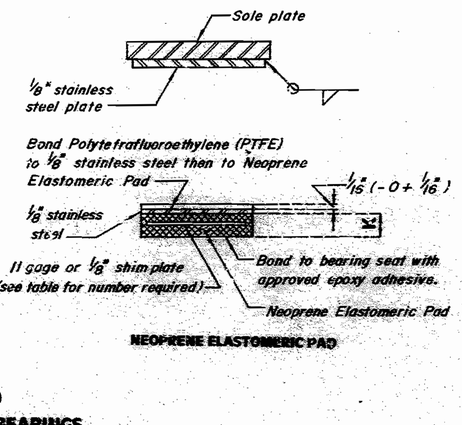


SIDE VIEW

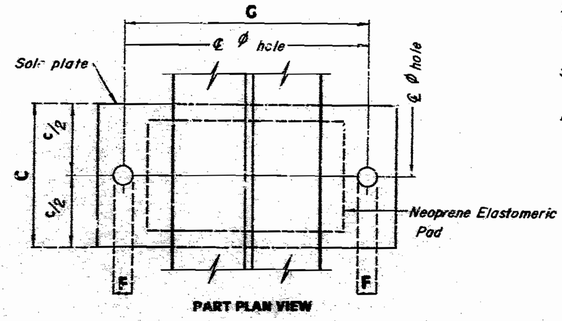
Note: The location of anchor bolts in relation to the slotted holes in the sole plate shall correspond with the temperature at the time of erection. At 60° F. the slotted holes should center on the anchor bolts.



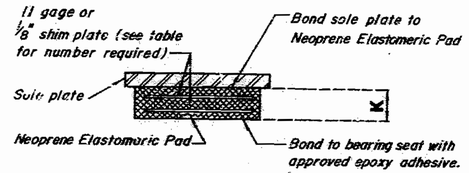
PART PLAN VIEW



NEOPRENE ELASTOMERIC PAD



PART PLAN VIEW



NEOPRENE ELASTOMERIC PAD

PTFE SLIDING BEARINGS

NUMBER REQUIRED = 5 at Bent No. 20

FIXED BEARINGS

NUMBER REQUIRED =

△ 1½" Gdr. #3
1⅝" Gdr. #1, #2, & #4
1⅜" Gdr. #5

PTFE SLIDING BEARINGS

BENT NO.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	NUMBER OF SHIM PLATES (*)
20	16"	11"	16½"	25"	6½"	1⅝"	20"	1⅞"	3⅝"	1⅛"	***	1⅞"	**	¼"	1

(*) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN EQUAL LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

** Girders No. 1, 2 & 5 = 3"
Girders No. 3 & 4 = 2½"

*** Girders No. 1, 2 & 5 = 14"
Girders No. 3 & 4 = 15"

GENERAL NOTES:

ANCHOR BOLTS SHALL BE 1½" Φ A36 STEEL SWEDGED BOLTS AND SHALL EXTEND 15" INTO THE CONCRETE WITH A194 - 2, 2H OR A563 - C, C3, D, DH, DH3 HEAVY HEXAGON NUTS. ACTUAL MANUFACTURERS CERTIFIED MILL TEST REPORTS (CHEMICAL AND MECHANICAL) SHALL BE PROVIDED. (SWEDGING SHALL BE 1" LESS THAN EXTENSION INTO THE CONCRETE.)

ALL STRUCTURAL STEEL FOR THE SOLE PLATE, ANCHOR BOLTS AND HEAVY HEXAGON NUTS SHALL BE PAINTED WITH 2 COATS (5 MILS MIN.) OF INORGANIC ZINC. WELD AREAS TO BE TOUCHED UP AFTER ASSEMBLY.

WEIGHT OF THE ANCHOR BOLTS AND HEAVY HEXAGON NUTS FOR BEARINGS SHALL BE INCLUDED IN THE WEIGHT OF FABRICATED STRUCTURAL STEEL.

NEOPRENE ELASTOMERIC PADS SHALL BE 70 DUROMETER.

THE SOLE PLATE SHALL BE FURNISHED WITH THE BEARING AND FIELD OR SHOP WELDED TO THE STRINGER, OR GIRDERS.

STRUCTURAL STEEL FOR SOLE PLATE SHALL BE A-36

PAYMENT FOR THE SOLE PLATE WILL BE INCLUDED IN THE COST OF THE BEARING ASSEMBLY. SEE SPECIAL PROVISIONS.

THE ACCEPTED QUANTITY OF ELASTOMERIC BEARING ASSEMBLIES, COMPLETE-IN-PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR TYPE "N" PTFE BEARINGS, EACH.

FIXED BEARINGS

BENT NO.	A	B	C	D	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (*)

(*) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN EQUAL LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

STEEL
TYPE 'N' BRGS.
JANUARY 1980

REVISED
OCT. 1987

DETAILED June 1988
CHECKED March 1989

DETAILS OF TYPE 'N' PTFE BEARINGS

SEE FINAL PLANS

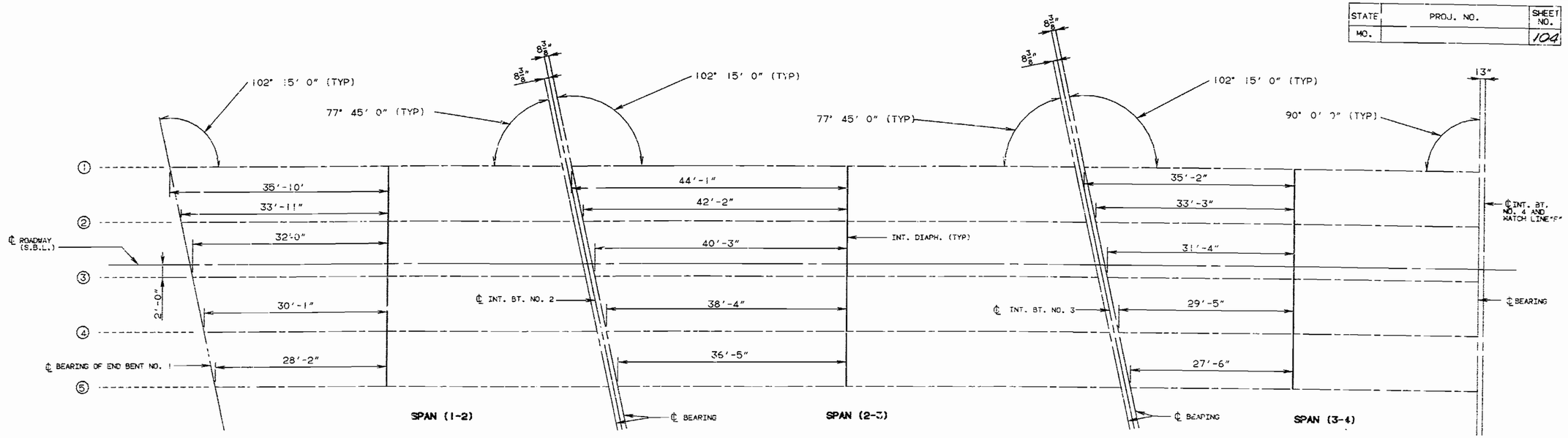
Note: This drawing is not to scale. Follow dimensions. △ Revised 12-1-89

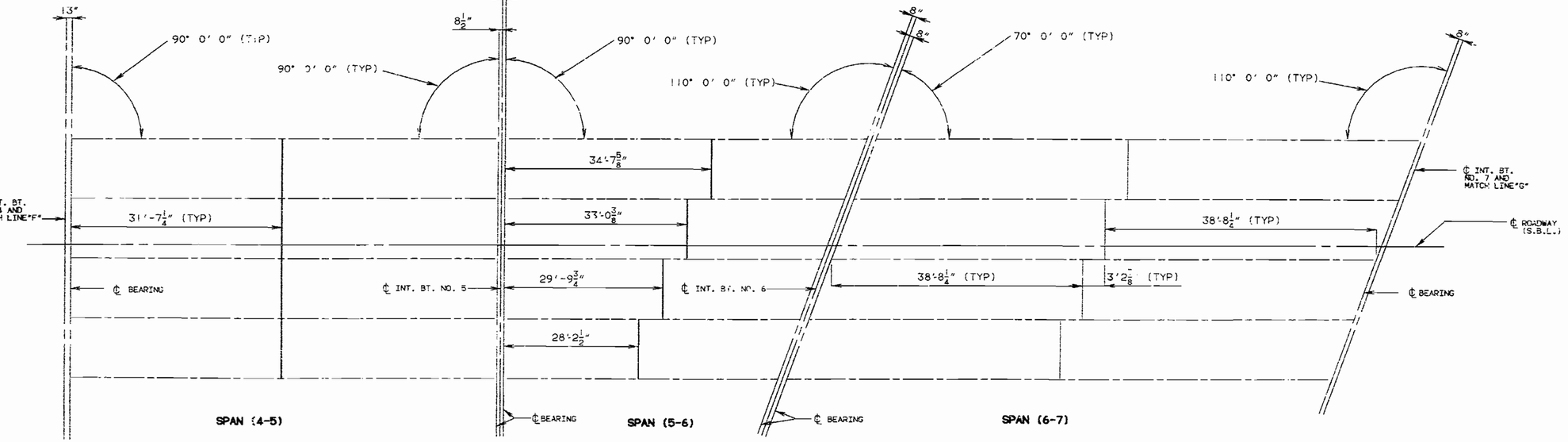
Sheet No. 23 of 38.

JACKSON COUNTY

A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		104





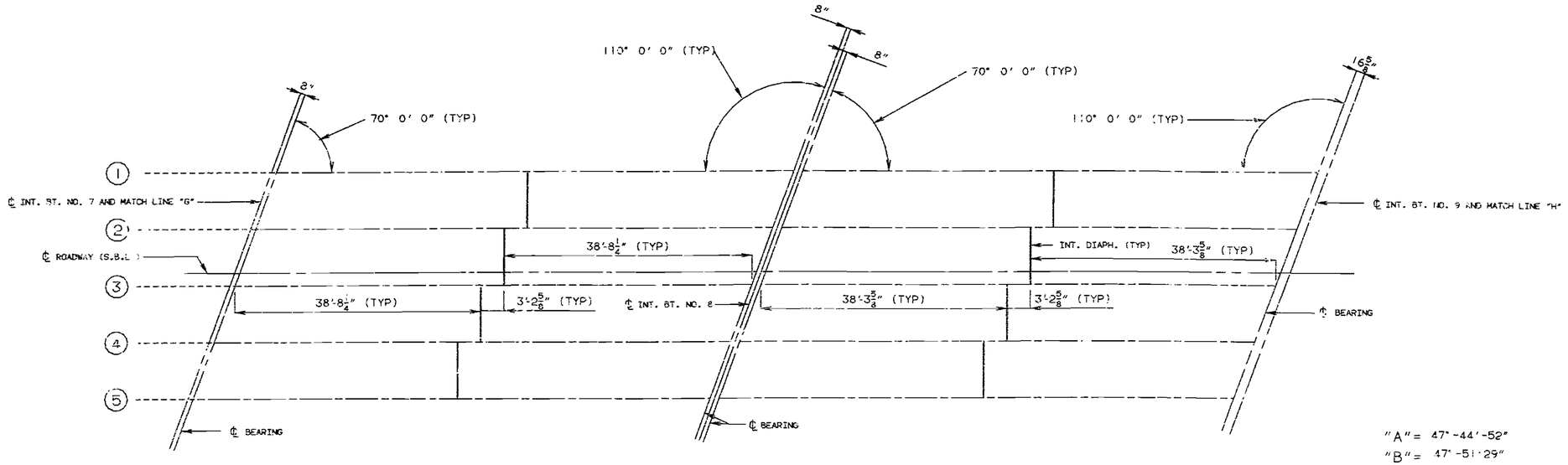
NOTE: ALL DIMENSIONS SHOWN ARE HORIZONTAL.

PART PLAN SHOWING PRESTRESSED GIRDER LAYOUT AND LOCATION OF INT DIAPHRAGMS

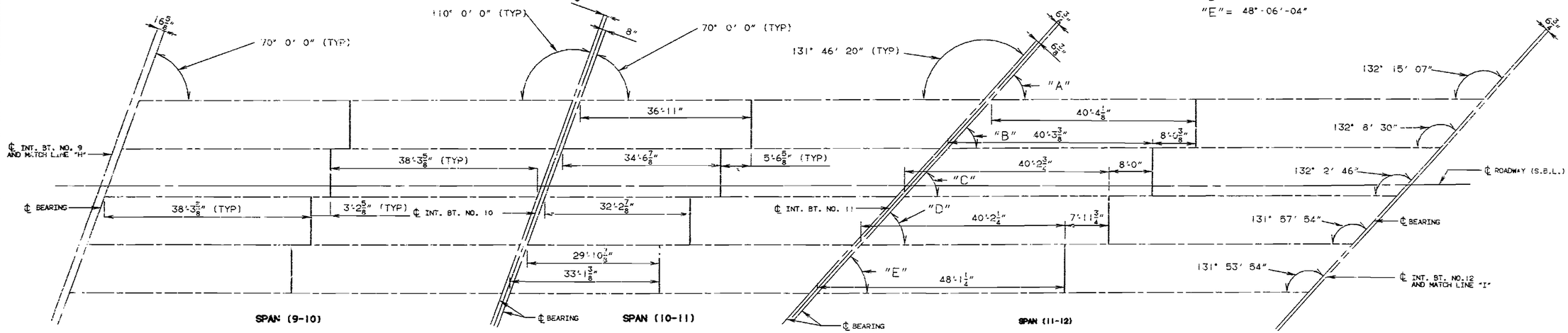
DETAILED JULY 1988
CHECKED FEB. 1989

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

STATE	PROJ. NO.	SHEET NO.
MO.		105



"A" = 47°-44'-52"
"B" = 47°-51'29"
"C" = 47°-57'13"
"D" = 48°-02'-04"
"E" = 48°-06'-04"



PART PLAN SHOWING PRESTRESSED GIRDER LAYOUT AND LOCATION OF INT. DIAPHRAGMS

NOTE: ALL DIMENSIONS SHOWN ARE HORIZONTAL AND TAKEN FROM ℄ BEARING.

DETAILED JULY 1988
CHECKED FEB. 1989

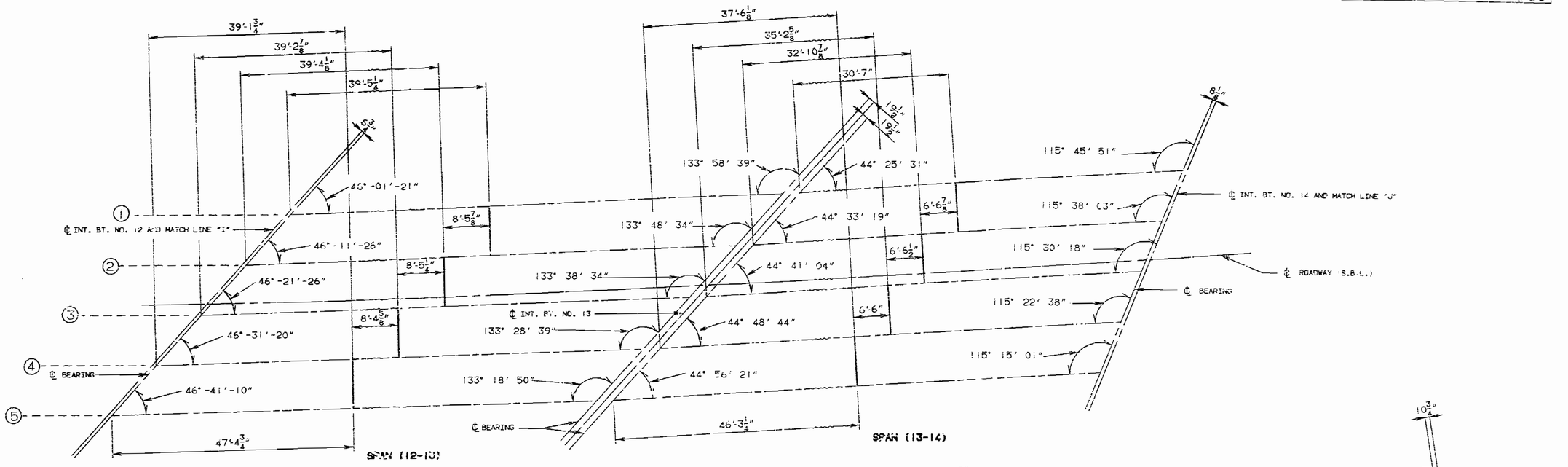
NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

SHEET NO. 25 OF 98.

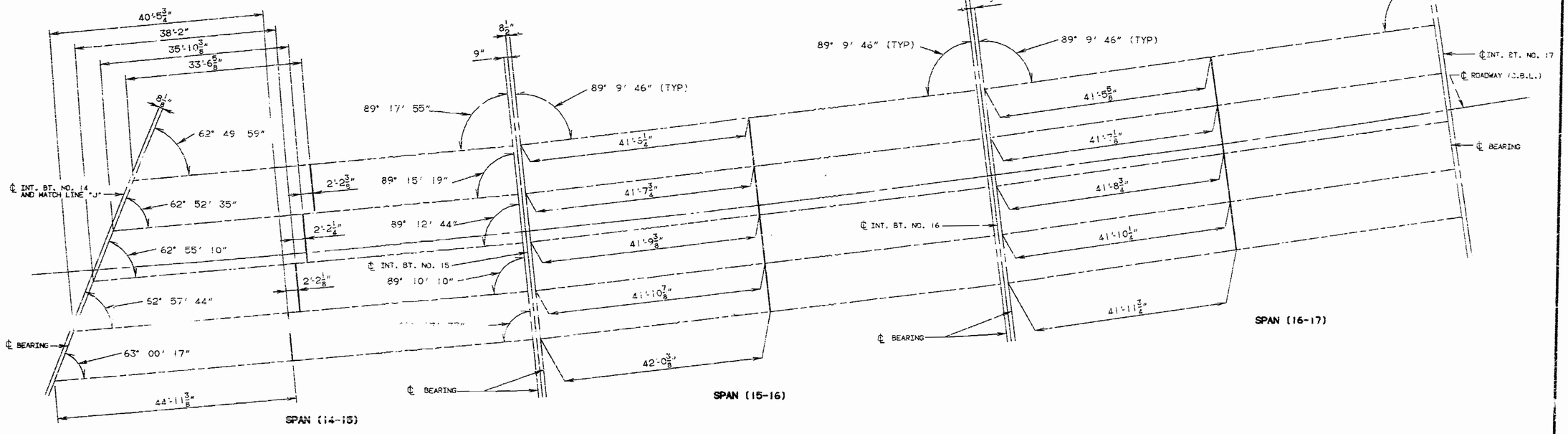
JACKSON COUNTY

A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		106



NOTE: ALL DIMENSIONS SHOWN ARE HORIZONTAL AND TAKEN FROM ℄ BEARING.



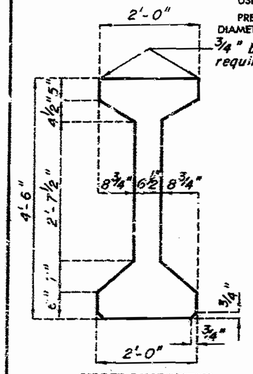
PART PLAN SHOWING PRESTRESSED GIRDER LAYOUT AND LOCATION OF INT. DIAPHRAGMS

DETAILED JULY 1988
CHECKED FEB. 1989

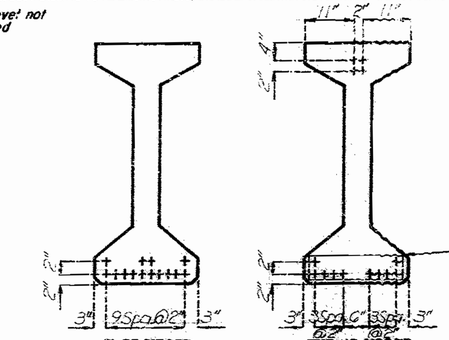
NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

STATE	PROJ NO	SHEET NO
MO		107

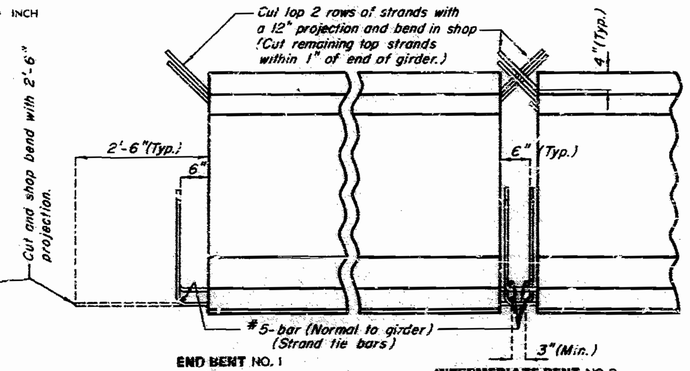
NOTE:
CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'_c = 5,000 PSI.
(*) INDICATES PRESTRESSED STRAND.
USE 14 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 434 KIPS.
PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS. - ½ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M-203, GRADE 270. SEE MO. STD. SPECIFICATIONS 703.4.8.



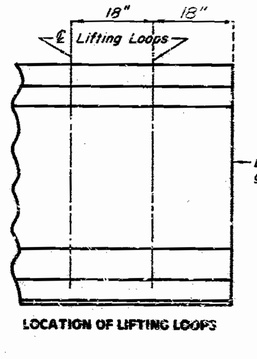
GIRDER DIMENSIONS
CAST-IN-PLACE FORMS



CL OF GIRDER END OF GIRDER
STRAND ARRANGEMENTS



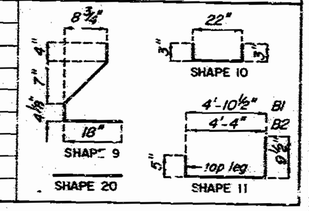
END BENT NO. 1 INTERMEDIATE BENT NO.2
STRAND DETAILS AT GIRDER ENDS



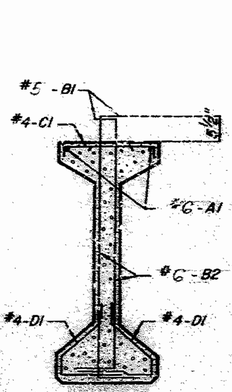
LOCATION OF LIFTING LOOPS

BILL OF REINFORCING STEEL - EACH GIRDER

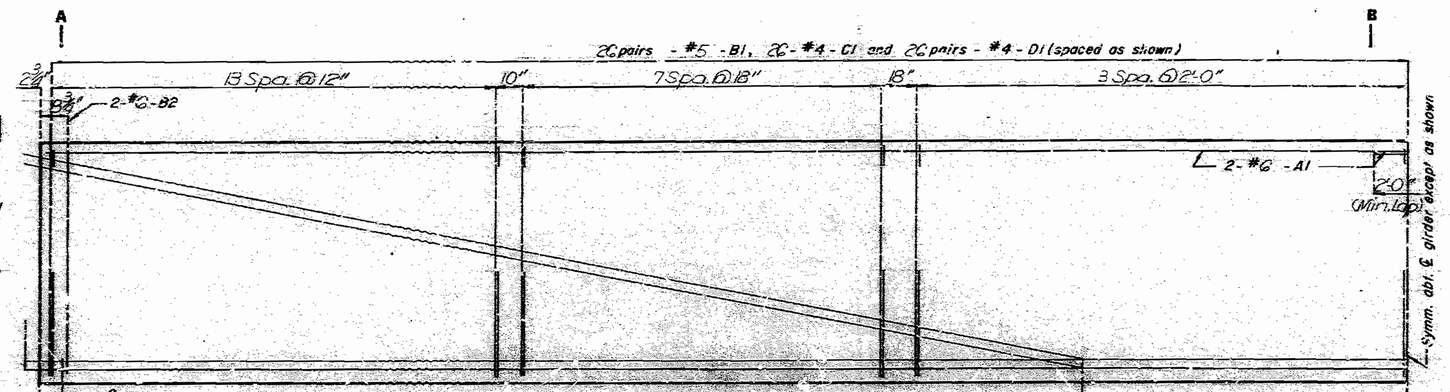
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	G A1	33'-0"	20	
102	5 B1	5'-11"	11	
4	G B2	5'-4"	11	
51	4 C1	2'-2"	10	
102	4 D1	3'-0"	9	



NOTE:
ALL DIMENSIONS IN BENDING DIAGRAMS ARE OUT TO OUT.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".
ALL REINFORCEMENT SHALL BE GRADE 60.
THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.

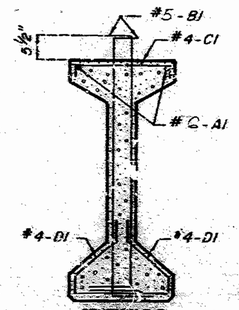


SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)

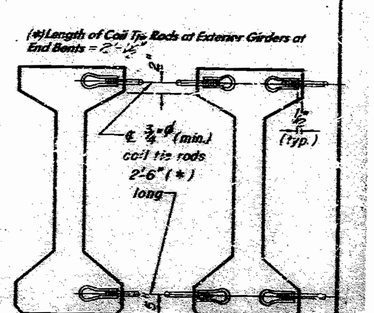


PART ELEVATION OF GIRDER SPANS (1-2) (ALL GDRS.)
(NOTE: EXTERIOR AND INTERIOR GIRDERS ARE THE SAME EXCEPT FOR COIL TIES)

Note: For details of Int. Dt. Diaph., see sheet No. 63
For location of Int. Diaph. and general girder placement, see sheet No. 24
For Girder Camber and haunching see sheet No. 69



SECTION B-B
(STRANDS NOT SHOWN FOR CLARITY)

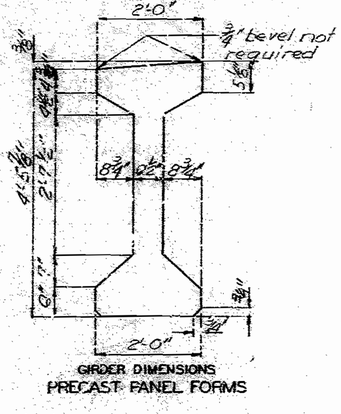


EXTERIOR GIRDERS AT INT. BENTS
EXTERIOR GIRDERS AT END BENTS INTERIOR GIRDERS AT ALL BENTS

DETAILS OF COIL TIES

NOTE:
COST OF 3/4"ø COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.
COIL TIES SHALL BE FIELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

NOTE:
The 1½"ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.



GIRDER DIMENSIONS
PRECAST PANEL FORMS

SPS 55.6 6½	REVISED
FEB. 1974	JUNE 1987

DETAILED FEB. 1988
CHECKED OCT. 1988

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 27 of 38

JACKSON COUNTY

A-2745

STATE	PROJ NO	SHEET NO
MO		108

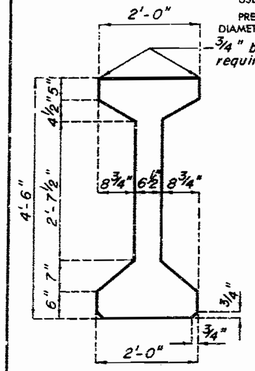
NOTE:

CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'c = 5,000 PSI.

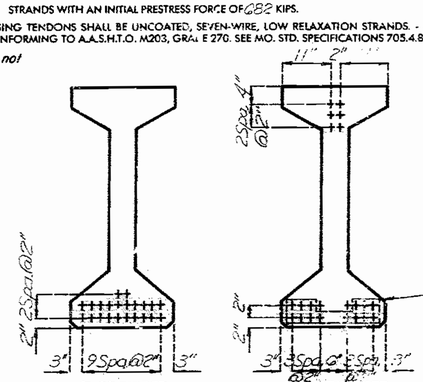
(+) INDICATES PRESTRESSED STRAND.

USE 22 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 682 KIPS.

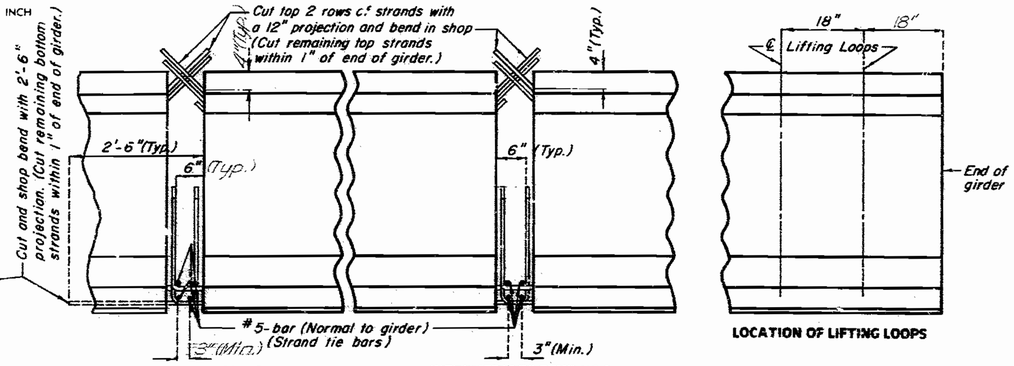
PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS. - ½ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO. STD. SPECIFICATIONS 705.4.8.



GIRDER DIMENSIONS
CAST-IN-PLACE FORMS



CL OF GIRDER **END OF GIRDER**
STRAND ARRANGEMENTS

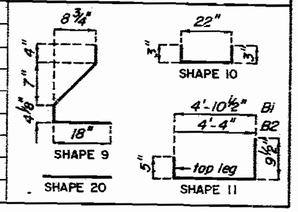


INTERMEDIATE BENT NO. 2 **INTERMEDIATE BENT NO. 3**
STRAND DETAILS AT GIRDER ENDS

LOCATION OF LIFTING LOOPS

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	GA1	41'-7"	20	
138	5 B1	5'-11"	11	
8	GB2	5'-4"	11	
69	4 C1	2'-2"	10	
138	4 D1	3'-0"	9	



NOTE:

ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.

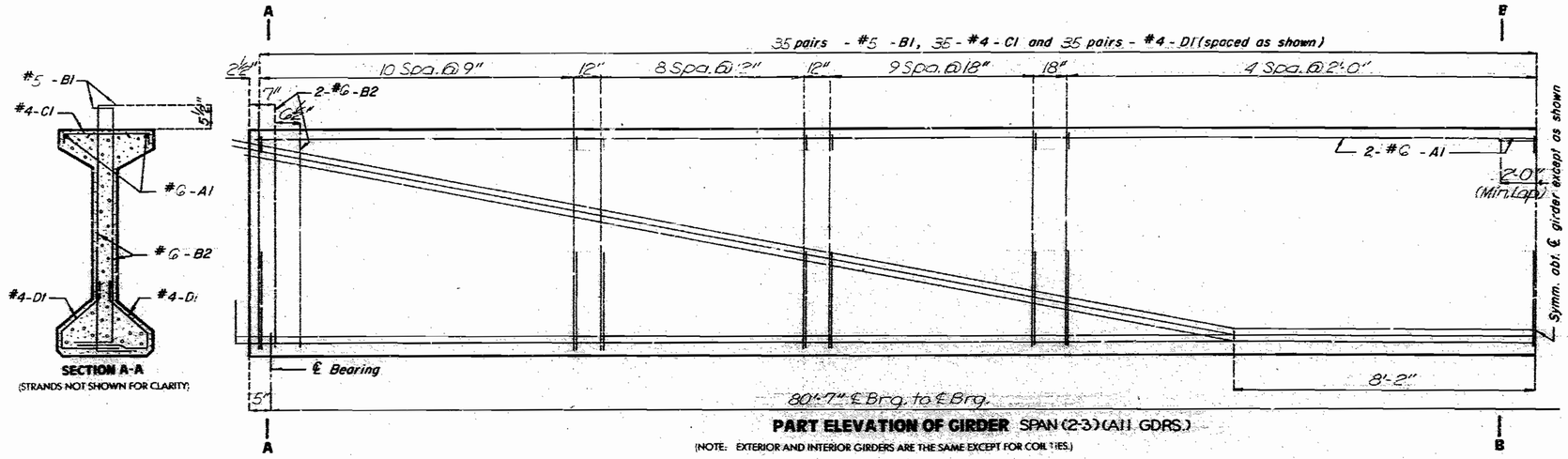
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".

ALL REINFORCEMENT SHALL BE GRADE 60.

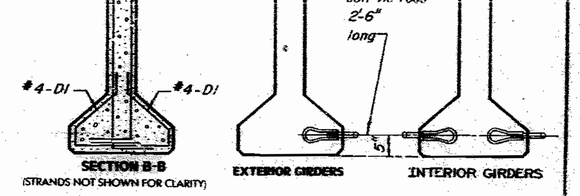
THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION



SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)

PART ELEVATION OF GIRDER SPAN (2-3) (ALL GDRS.)
(NOTE: EXTERIOR AND INTERIOR GIRDERS ARE THE SAME EXCEPT FOR COIL TIES.)

Note: For details of Int. Bt. Diaph., see sheet No. 63
For location of Int. Diaph. and general girder placement, see sheet No. 24
For Girder camber and haunching see sheet No. 69



SECTION B-B
(STRANDS NOT SHOWN FOR CLARITY)

EXTERIOR GIRDERS INTERIOR GIRDERS

DETAILS OF COIL TIES

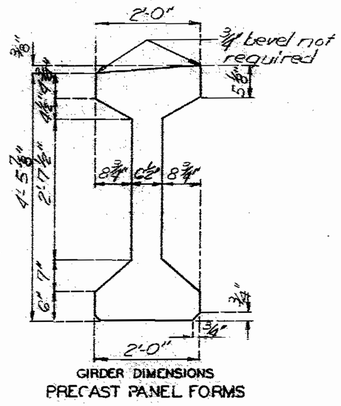
NOTE:

COST OF 3/4"ø COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

NOTE:

The 1½"ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.



GIRDER DIMENSIONS
PRECAST PANEL FORMS

SPS 55.6.6½ | REVISED | JUNE 1987
FEB. 1974 |

DETAILED FEB. 1988
CHECKED OCT. 1988

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 28 of 98

JACKSON COUNTY A-2745

STATE	PROJ NO	SHEET NO
MO		109

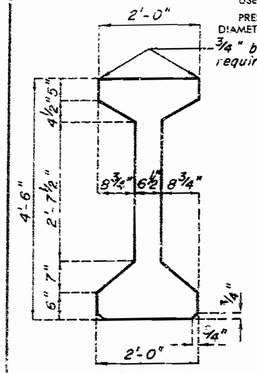
NOTE:

CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'c = 5,000 PSI.

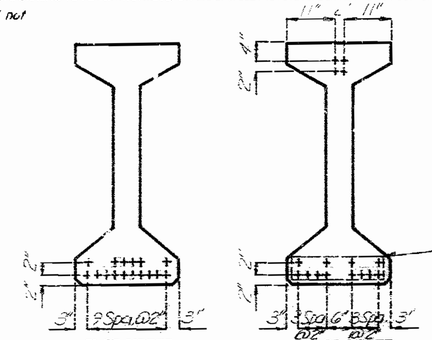
(+) INDICATES PRESTRESSED STRAND.

USE 16 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 495 KIPS.

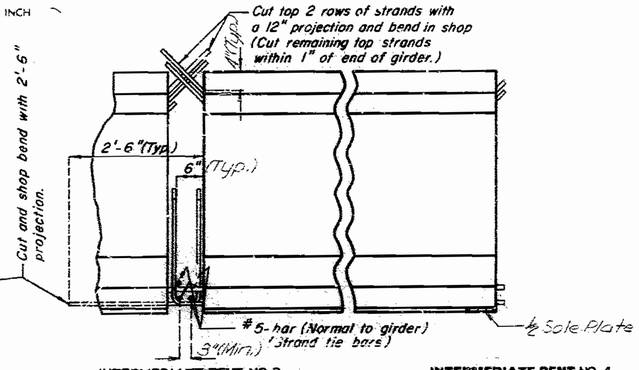
PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS. - ½ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO. STD. SPECIFICATIONS 705.4.8.



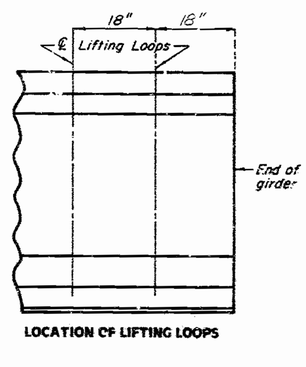
GIRDER DIMENSIONS
CAST-IN-PLACE FORMS



CL OF GIRDER | END OF GIRDER
STRAND ARRANGEMENTS



INTERMEDIATE BENT NO. 3 | INTERMEDIATE BENT NO. 4
STRAND DETAILS AT GIRDER ENDS



LOCATION OF LIFTING LOOPS

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	GA1	①	20	
122	5B1	5'-11"	11	
8	5B2	5'-4"	11	
61	4C1	?'-2"	10	
122	4D1	3'-0"	9	

SHAPE 20 | SHAPE 9 | SHAPE 10 | SHAPE 11

NOTE:

ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

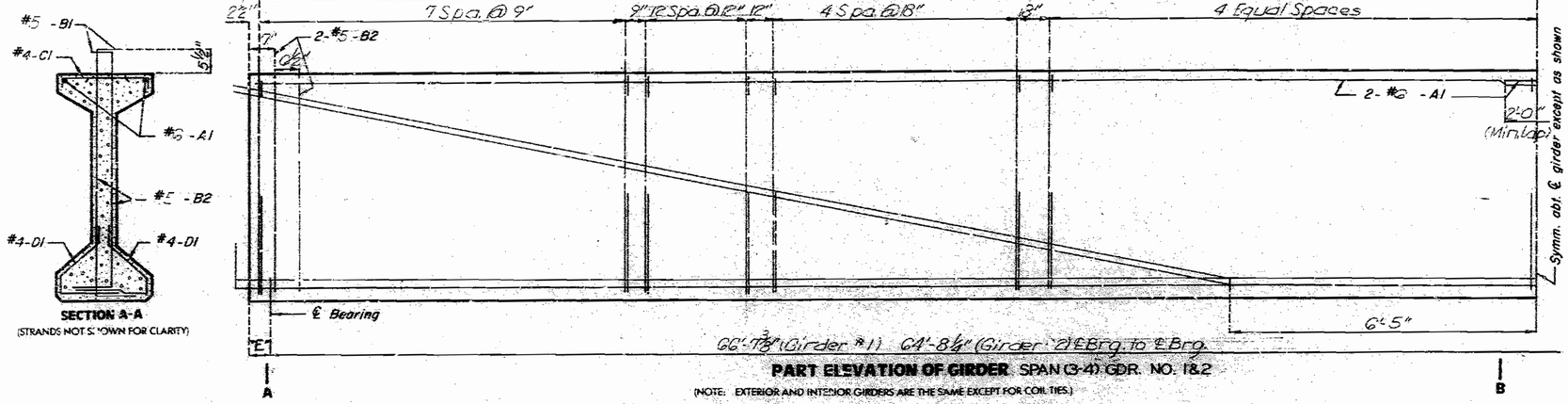
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".

ALL REINFORCEMENT SHALL BE GRADE 60.

THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.

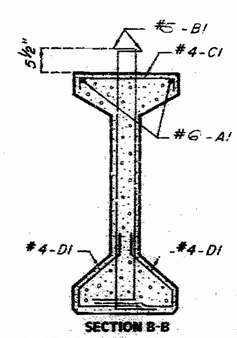
Note: Prestressing strands at Intermediate Bent No. 4 shall be trimmed to within ½ inch of concrete if exposed, or 1 inch of concrete if encased. Exposed ends of girders shall be given 2 coats of an asphalt paint. Ends of girders which will be encased in concrete diaphragms shall not be painted.
31 pairs - #5 - B1, 31 - #4 - C1 and 31 pairs - #4 - D1 (spaced as shown)



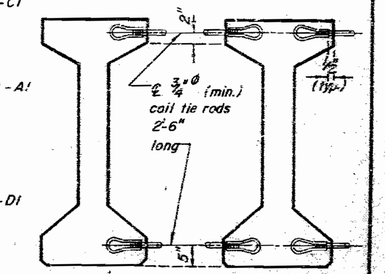
SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)

66'-7⅜" (Girder #1) 64'-8½" (Girder #2) ℄ Brg. to ℄ Brg.

PART ELEVATION OF GIRDER SPAN (3-4) GDR. NO. 1&2
(NOTE: EXTERIOR AND INTERIOR GIRDERS ARE THE SAME EXCEPT FOR COIL TIES.)



SECTION B-B
(STRANDS NOT SHOWN FOR CLARITY)



EXTERIOR GIRDER | INTERIOR GIRDER

DETAILS OF COIL TIES
AT INT. BENT NO. 3

NOTE:

COST OF 3/4"Ø COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

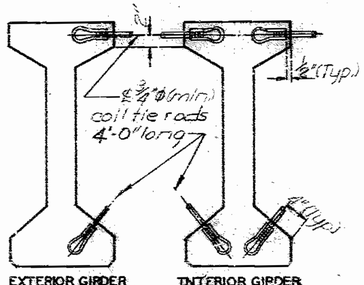
COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

NOTE:

The 1½"Ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.

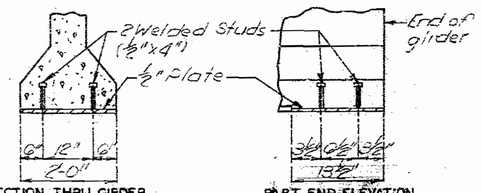
Note: For details of slotted wells to be cast in top of girder (at Int. Bt. #4 end only) see sheet No. 84
For details of Int. Bt. Diaph. see sheet No. 63.
For location of Int. Diaph. and general girder placement see sheet No. 24.
For Girder Camber and haunching see sheet No. 69

"E" = 5" (Gdr. #1 ℄ to ℄ #2) At Bt. #3
7" (Gdr. #1 ℄ to ℄ #2) At Bt. #4



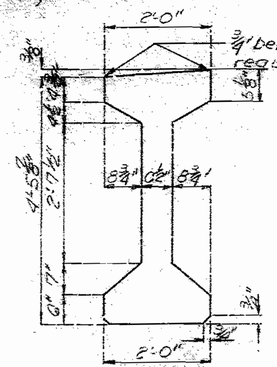
EXTERIOR GIRDER | INTERIOR GIRDER
DETAILS OF COIL TIES
AT INT. BENT NO. 4

Note: Cost of furnishing and installing ½" plates and welded studs in girders shall be included in price bid for Prestressed Concrete I-Girders per each.
See Special Provisions for painting.



SECTION THRU GIRDER | PART END ELEVATION
SOLE PLATE DETAILS AT BENT NO. 4

Note: Sole Plate to be placed at Bent No. 4 end of girder only.



① 34'-9" (Girder #1)
33'-9" (Girder #2)

GIRDER DIMENSIONS
PRECAST PANEL FORMS

SPS 55.6.6½	REVISED JUNE 1987
FEB. 1974	

DETAILED FEB. 1988
CHECKED OCT. 1988

Note: This drawing is not to scale. Follow dimensions.

STATE	PROJ NO	SHEET NO
MO		110

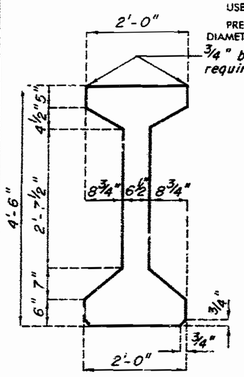
NOTE:

CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'c = 5,000 PSI.

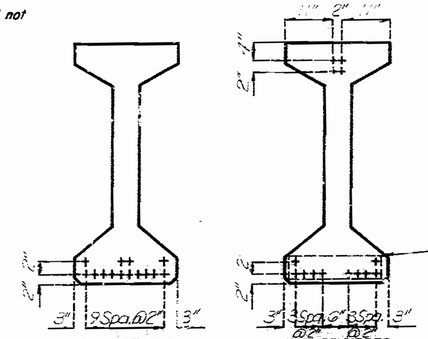
(+) INDICATES PRESTRESSED STRAND.

USE 4 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 43# KIPS.

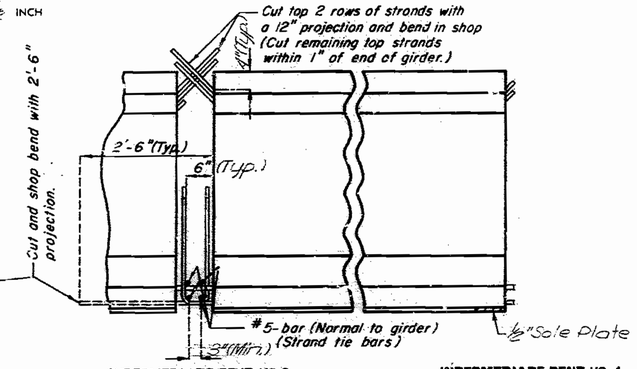
PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS. - ½ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO. STD. SPECIFICATIONS 705.4.8.



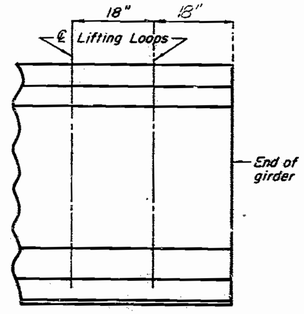
GIRDER DIMENSIONS
CAST-IN-PLACE FORMS



CL OF GIRDER | END OF GIRDER
STRAND ARRANGEMENTS



INTERMEDIATE BENT NO.3 | INTERMEDIATE BENT NO. 4
STRAND DETAILS AT GIRDER ENDS



LOCATION OF LIFTING LOOPS

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	C A1	①	20	
114	S B1	5'-11"	11	
4	G B2	5'-4"	11	
57	4 C1	2'-2"	10	
114	4 D1	3'-0"	9	

SHAPE 10 · SHAPE 9 · SHAPE 20 · SHAPE 11

NOTE:

ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

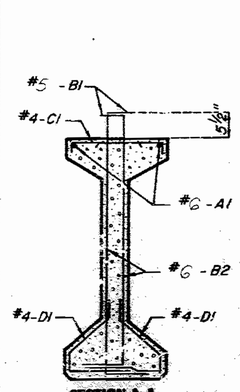
MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".

ALL REINFORCEMENT SHALL BE GRADE 60.

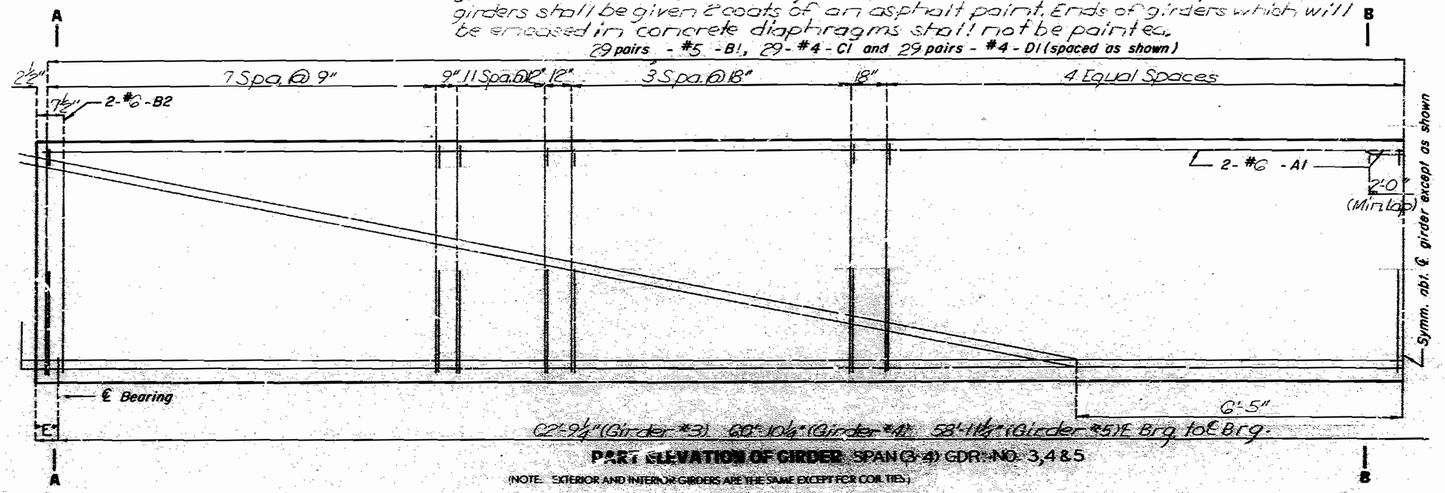
THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.

Note: Prestressing strands at Intermediate Bent No. 4 shall be trimmed to within ½ inch of concrete if exposed, or 1 inch of concrete if encased. Exposed ends of girders shall be given 2 coats of an asphalt paint. Ends of girders which will be encased in concrete diaphragms shall not be painted.

29 pairs - #5 - B1, 29 - #4 - C1 and 29 pairs - #4 - D1 (spaced as shown)



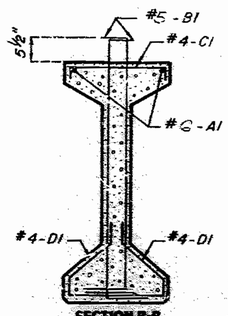
SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)



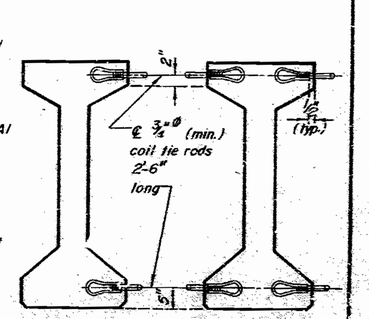
C2'-9¼" (Girder #3) 60'-10¼" (Girder #4) 58'-11⅞" (Girder #5) E. Brg. to E. Brg.

PART ELEVATION OF GIRDER SPAN (3-4) GDR. NO. 3,4 & 5

(NOTE. EXTERIOR AND INTERIOR GIRDERS ARE THE SAME EXCEPT FOR COIL TIES.)



SECTION B-B
(STRANDS NOT SHOWN FOR CLARITY)



EXTERIOR GIRDERS | INTERIOR GIRDERS

DETAILS OF COIL TIES AT INT. BENT NO. 3

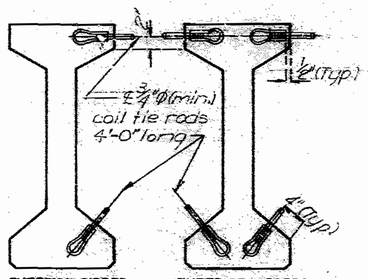
NOTE:

COST OF ¾"Ø COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

NOTE:

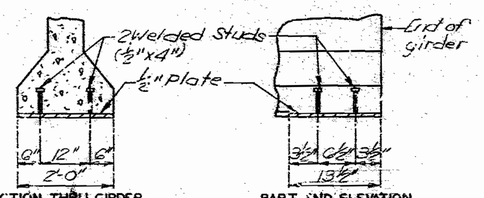
The 1½"Ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.



EXTERIOR GIRDER | INTERIOR GIRDERS
DETAILS OF COIL TIES AT INT. BENT NO. 4

Note: Cost of furnishing and installing ½" plates and welded studs in girders shall be included in price bid for Prestressed Concrete I-Girders per each. See Special Provisions for painting.

Note: For details of slotted wells to be cast in top of girder (at Int. Bt. # end only) see sheet No. 84.
For details of Int. Bt. Diaph. see sheet No. 63
For location of Int. Diaph. and general girder placement see sheet No. 24
For Girder camber and haunching see sheet No. 69

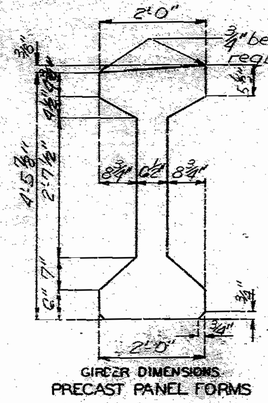


SECTION THRU GIRDER | PART END ELEVATION
SOLE PLATE DETAILS AT BENT NO. 4

Note: Sole Plate to be placed at Bent No. 4 end of girder only.

"E" = 5" (Gdr. #3, #4, #5) At Bt. # 3
7" (Gdr. #3, #4, #5) At Bt. #4

① 32'-10" (Girder #3)
31'-10" (Girder #4)
30'-10" (Girder #5)



GIRDER DIMENSIONS
PRECAST PANEL FORMS

REVISED	JUNE 1987
SPS 55.6.6½	FEB. 1974

DETAILED FEB. 1988
CHECKED OCT. 1988

Note: This drawing is not to scale. Follow dimensions.

JACKSON COUNTY

A-2745

NOTE:

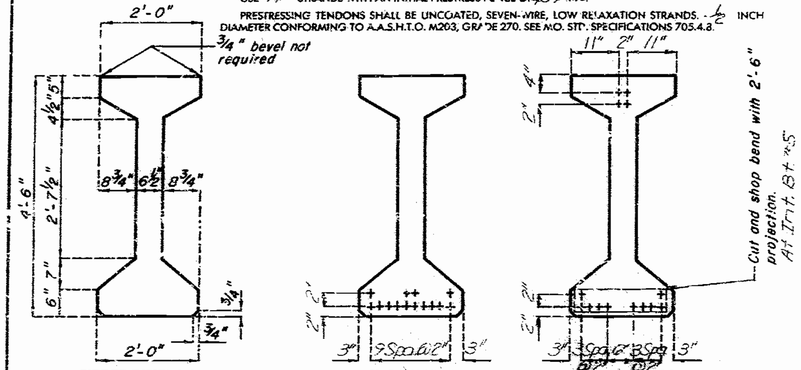
CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'_c = 5,000 PSI.

(+) INDICATES PRESTRESSED STRAND.

USE 14 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 434 KIPS.

PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS. - ½ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO. STD. SPECIFICATIONS 705.4.8.

STATE	PROJ NO	SHEET NO
MO		111

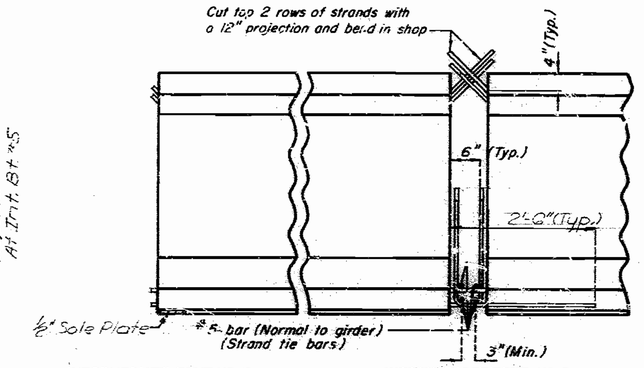


GIRDER DIMENSIONS
CAST-IN-PLACE FORMS

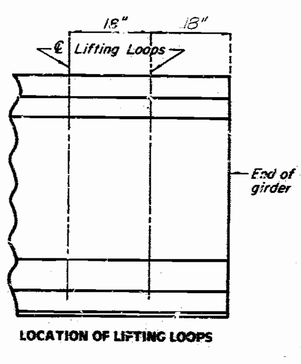
CL OF GIRDER

END OF GIRDER

STRAND ARRANGEMENTS



INTERMEDIATE BENT NO. 4



INTERMEDIATE BENT NO. 5

LOCATION OF LIFTING LOOPS

STRAND DETAILS AT GIRDER ENDS

Note: Prestressing strands at Intermediate Bent No. 4 shall be trimmed to within ⅛ inch of concrete if exposed, or 1 inch of concrete if encased. Exposed ends of girders shall be given 2 coats of an asphalt paint. Ends of girders which will be encased in concrete diaphragms shall not be painted.

25 pairs - #5 - B1, 25 - #4 - C1 and 25 pairs - #4 - D1 (spaced as shown)

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	GA1	33'-0"	20	
98	531	5'-11"	11	
4	GG2	5'-4"	11	
49	4C1	2'-2"	10	
98	4D1	3'-0"	9	

SHAPE 10 · SHAPE 9 · SHAPE 20 · SHAPE 11

NOTE:

ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.

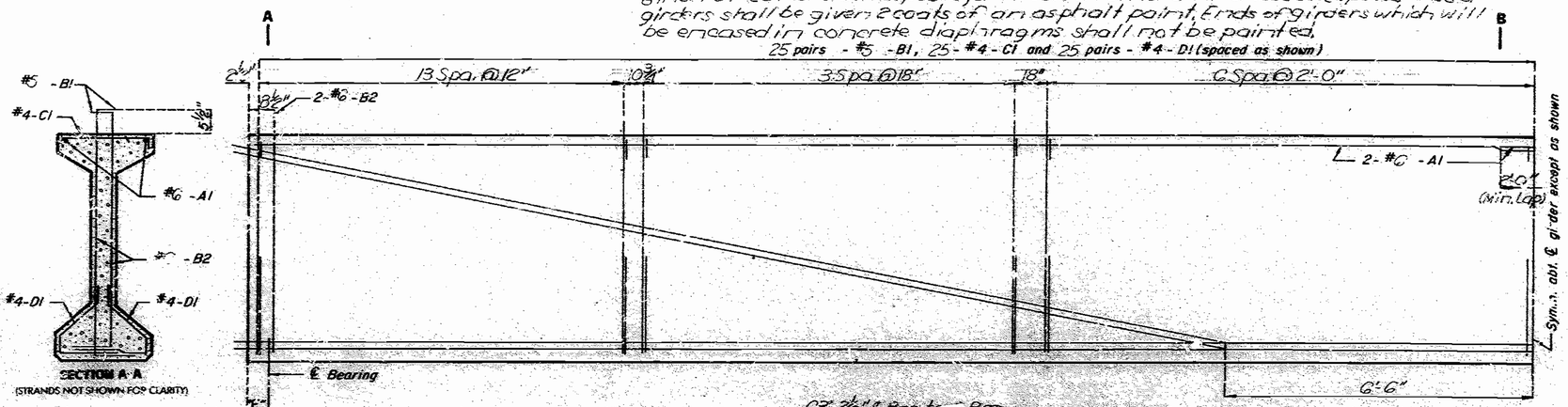
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".

ALL REINFORCEMENT SHALL BE GRADE 50.

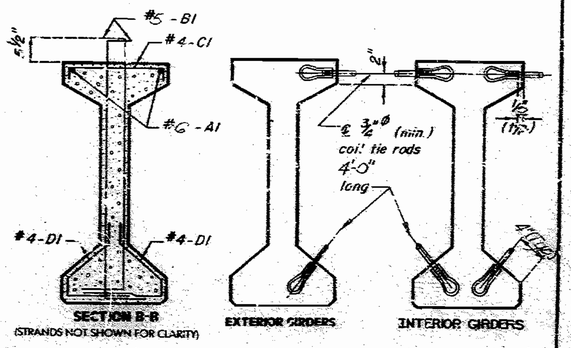
THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.



SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)

PART ELEVATION OF GIRDER SPANS (4 SPANS ALL GIRDERS)

(NOTE: EXTERIOR AND INTERIOR GIRDERS ARE THE SAME EXCEPT FOR COIL TIES.)



SECTION B-B
(STRANDS NOT SHOWN FOR CLARITY)

DETAILS OF COIL TIES AT INT. BENT NO. 4

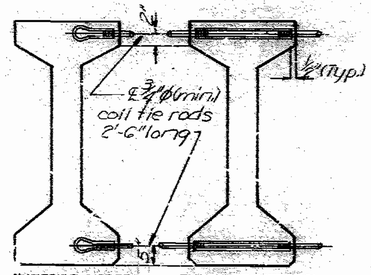
NOTE:

COST OF ¾"℄ COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

NOTE:

The 1½"ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.

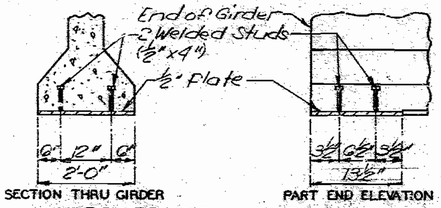


EXTERIOR GIRDERS INTERIOR GIRDERS

DETAILS OF COIL TIES AT INT. BENT NO. 5

Note: Cost of furnishing and installing ½" plates and welded studs in girders shall be included in price bid for Prestressed Concrete I-Girders per each. See Special Provisions for painting.

Note: For details of slotted wells to be cast in top of girder (at Int. Bt. #4 end only) see sheet No. 84.
For details of Int. Bt. Diaph. see sheet No. 63.
For location of Int. Diaph. and general girder placement see sheet No. 24.
For Girder camber and haunching see sheet No. 69

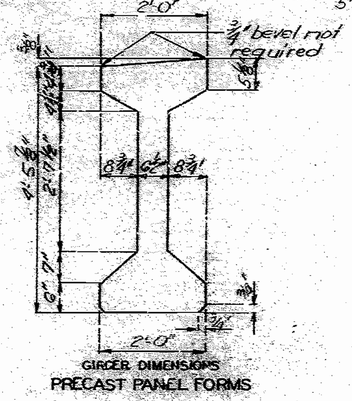


SECTION THRU GIRDER PART END ELEVATION

SOLE PLATE DETAILS AT BENT NO. 4

Note: Sole Plate to be placed at Bent No. 4 end of girder only.

"E" = 7" At Bt. #4
5" At Bt. #5



GIRDER DIMENSIONS
PRECAST PANEL FORMS

SPS 55.6.6½	REVISED JUNE 1987
FEB. 1974	
DETAILED FEB.	1988
CHECKED OCT.	1988

Note: This drawing is not to scale. Follow dimensions.

STATE	PROJ NO	SHEET NO
MO		112

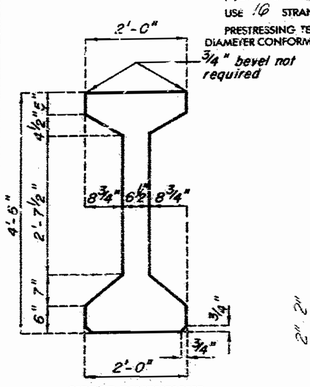
NOTE:

CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'_c = 5,000 PSI.

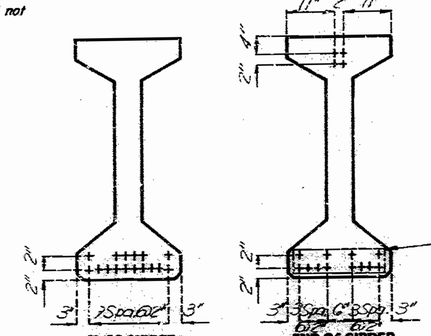
(+) INDICATES PRESTRESSED STRAND.

USE 16 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 496 KIPS.

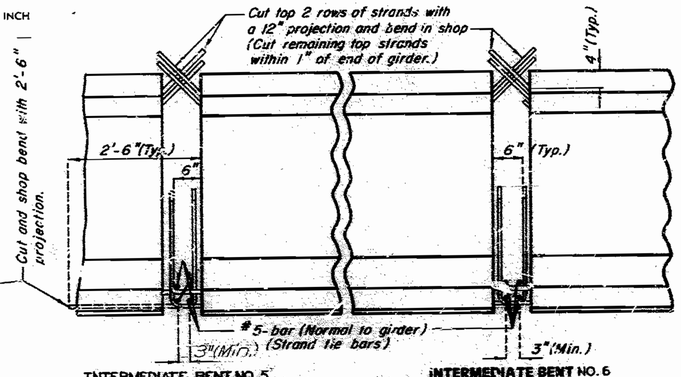
PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS. - ½ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO. STD. SPECIFICATIONS 705.4.8.



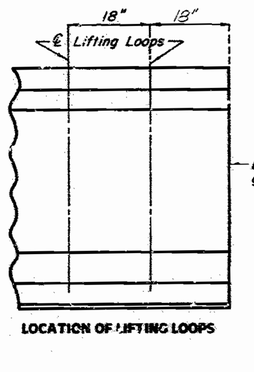
GIRDER DIMENSIONS
CAST-IN-PLACE FORMS



CL OF GIRDER — END OF GIRDER
STRAND ARRANGEMENTS



INTERMEDIATE BENT NO. 5 — INTERMEDIATE BENT NO. 6
STRAND DETAILS AT GIRDER ENDS



LOCATION OF LIFTING LOOPS

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	6 A1	30'-0"	20	
106	5 B1	5'-11"	11	
8	5 B2	5'-4"	11	
53	4 C1	2'-2"	10	
102	4 D1	3'-0"	9	

SHAPE 10 (8¾", 22", 3")
SHAPE 9 (4", 7", 4⅛", 18")
SHAPE 20 (4'-10½" B1, 4'-4" B2, 5", top leg, 9½")
SHAPE 11

NOTE:

ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.

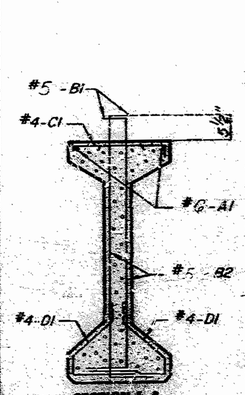
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

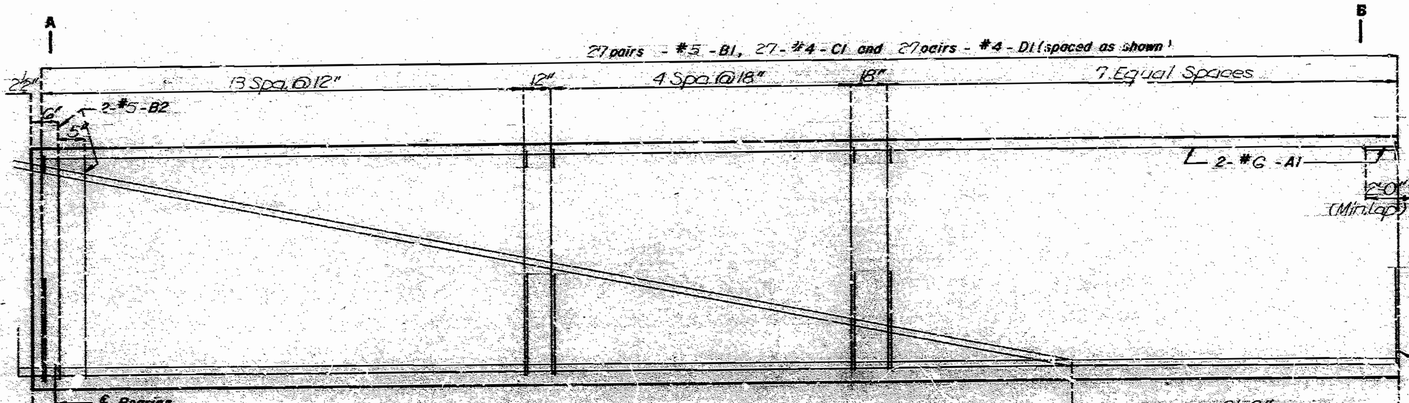
MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".

ALL REINFORCEMENT SHALL BE GRADE 60.

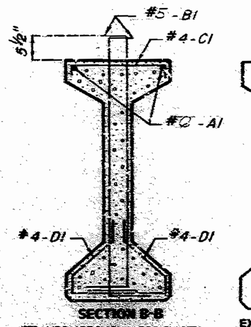
THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.



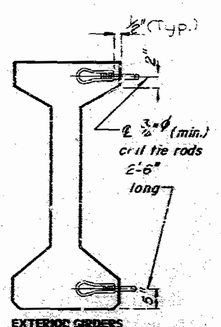
SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)



PART ELEVATION OF GIRDER SPAN (3-6) GDR. NO. 1
(NOTE: EXTERIOR AND INTERIOR GIRDERS ARE THE SAME EXCEPT FOR COIL TIES.)



SECTION B-B
(STRANDS NOT SHOWN FOR CLARITY)



EXTERIOR GIRDERS

DETAILS OF COIL TIES
AT INT. BENT NO. 5

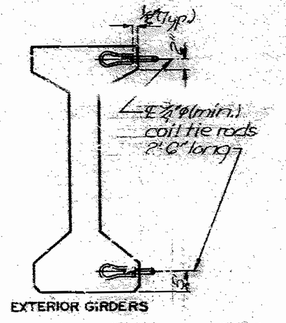
NOTE:

COST OF ¾"ϕ COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

NOTE:

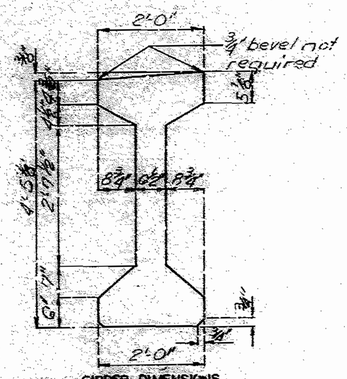
The 1½"ϕ holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.



EXTERIOR GIRDERS

DETAILS OF COIL TIES
AT INT. BENT NO. 6

Note: For details of Int. Bt. Diaph. see sheet No. 63 & No. 64.
For location of Int. Diaph. and general girder placement see sheet No. 24
For Girder camber and haunching see sheet No. 69



GIRDER DIMENSIONS
PRECAST PANEL FORMS

SPS 5.5.6.6½ FEB. 1974	REVISED JUNE 1987

DETAILED FEB. 1988
CHECKED OCT. 1988

Note: This drawing is not to scale. Follow dimensions.

STATE	PROJ. NO	SHEET NO
MO		113

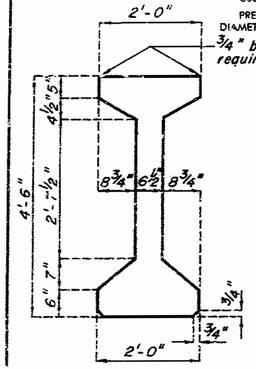
NOTE:

CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'_c = 5,000 PSI.

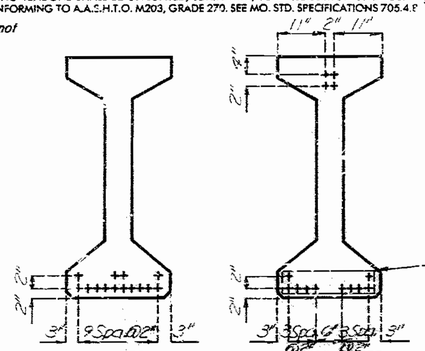
(+) INDICATES PRESTRESSED STRAND.

USE 36 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 429 KIPS.

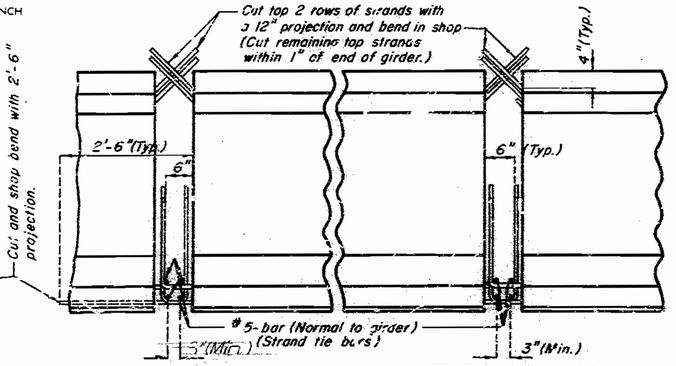
PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS. - ½ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO. STD. SPECIFICATIONS 705.4.8



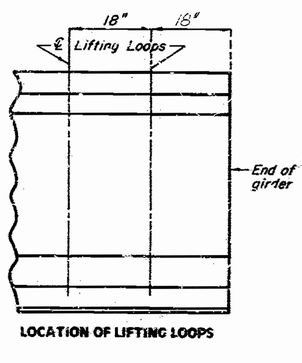
GIRDER DIMENSIONS
CAST-IN-PLACE FORMS



CL OF GIRDER END OF GIRDER
STRAND ARRANGEMENTS



INTERMEDIATE BENT NO. 5 INTERMEDIATE BENT NO. 6
STRAND DETAILS AT GIRDER ENDS



LOCATION OF LIFTING LOOPS

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	GA1	①	20	
102	5B1	5'-11"	11	
4	GB2	5'-4"	11	
51	4C1	2'-2"	10	
102	4D1	3'-0"	9	

SHAPE 9 SHAPE 10 SHAPE 11 SHAPE 20

NOTE.

ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.

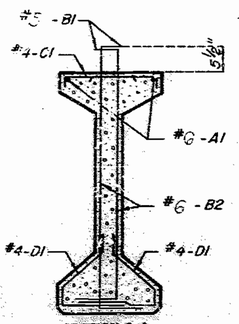
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

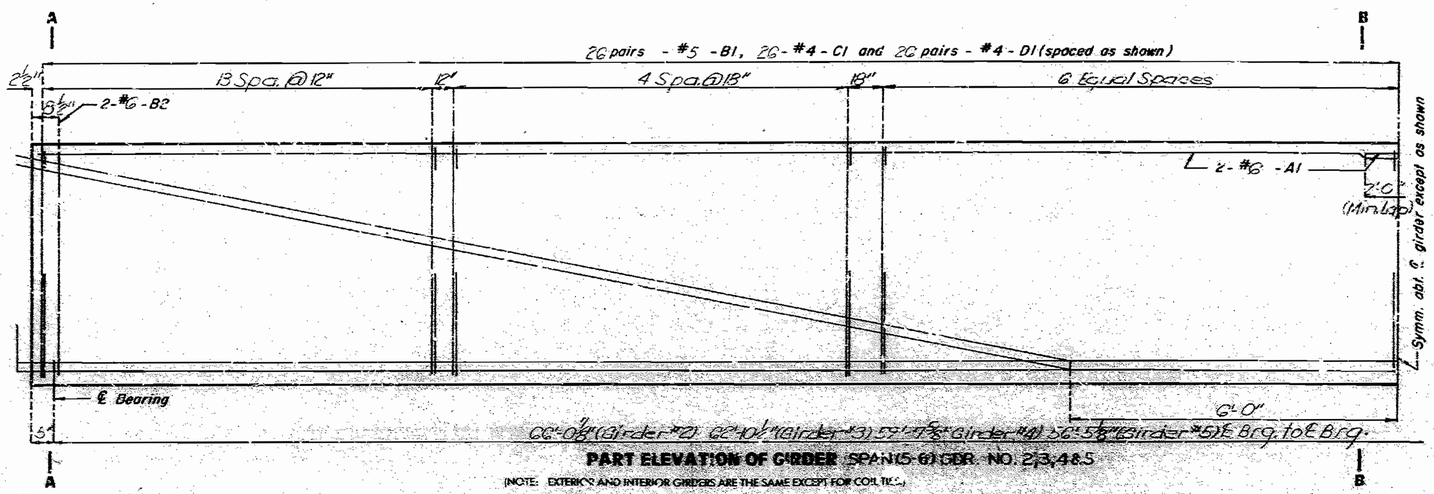
MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".

ALL REINFORCEMENT SHALL BE GRADE 60.

THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.

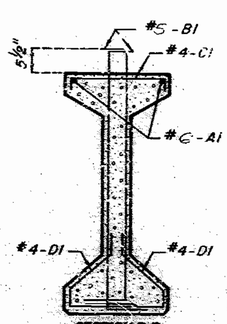


SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)

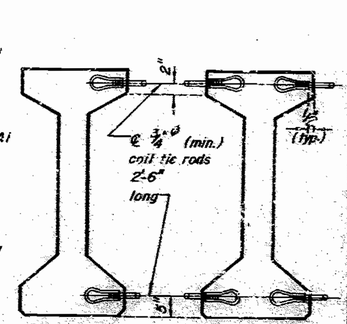


PART ELEVATION OF GIRDER SPANS 5-6 GIRDER NO. 2, 3, 4 & 5

(NOTE: EXTERIOR AND INTERIOR GIRDERS ARE THE SAME EXCEPT FOR COIL TIES.)



SECTION B-B
(STRANDS NOT SHOWN FOR CLARITY)



EXTERIOR GIRDERS INTERIOR GIRDERS

DETAILS OF COIL TIES
AT INT. BENT NO. 6

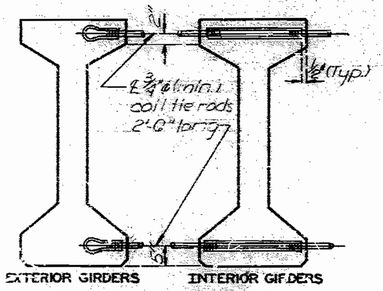
NOTE.

COST OF 3/4"ø COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING STUDS PROJECTING THROUGH FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

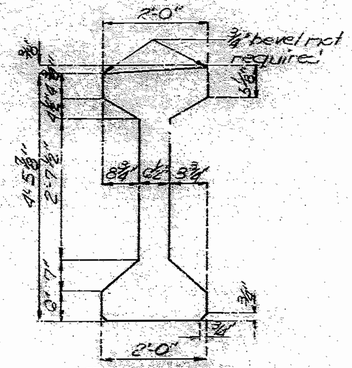
NOTE:

The 1½"ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.



EXTERIOR GIRDERS INTERIOR GIRDERS
DETAILS OF COIL TIES
AT INT. BENT NO. 5

Note: For details of Int. Bt. Diaph. see sheet No. 63 & No. 64.
For location of Int. Diaph. and general girder placement, see sheet No. 24
For Girder camber and haunching see sheet No. 69



GIRDER DIMENSIONS
PRECAST PANEL FORMS

① 31'-4" (Girder #2)
32'-8" (Girder #3)
31'-5" (Girder #4)
29'-6" (Girder #5)

SPS 55.6.6½ | FEB. 1974 | REVISED | JUNE 1987

DETAILED FEB. 1988
CHECKED OCT. 1988

Note: This drawing is not to scale. Follow dimensions.

STATE	PROJ NO	SHEET NO
MO		114

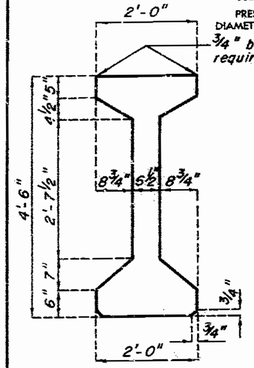
NOTE:

CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'c = 5,000 PSI.

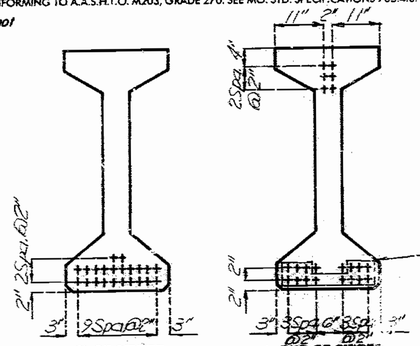
(+) INDICATES PRESTRESSED STRAND.

USE 22 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 282 KIPS.

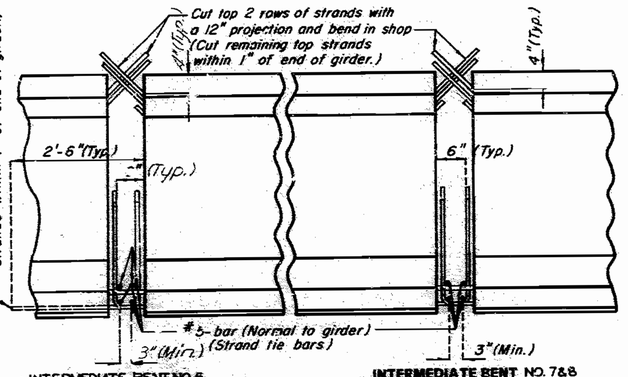
PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS. - ½ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO. STD. SPECIFICATIONS 705.4.8.



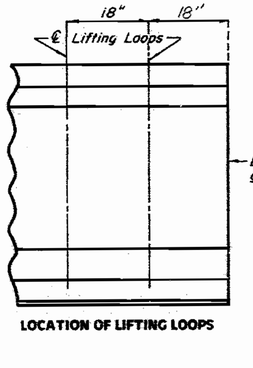
GIRDER DIMENSIONS
CAST-IN-PLACE FORMS



CL OF GIRDER
END OF GIRDER
STRAND ARRANGEMENTS



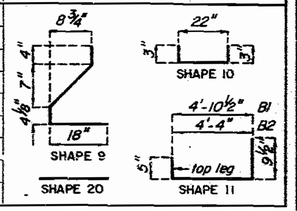
INTERMEDIATE BENT NO. 6
INTERMEDIATE BENT NO. 7&8
STRAND DETAILS AT GIRDER ENDS



LOCATION OF LIFTING LOADS

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	6A1	41'-7"	20	
134	5B1	5'-11"	11	
8	6B2	5'-4"	11	
67	4C1	2'-2"	10	
134	4D1	3'-0"	9	



NOTE:

ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.

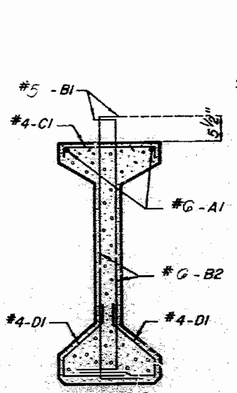
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

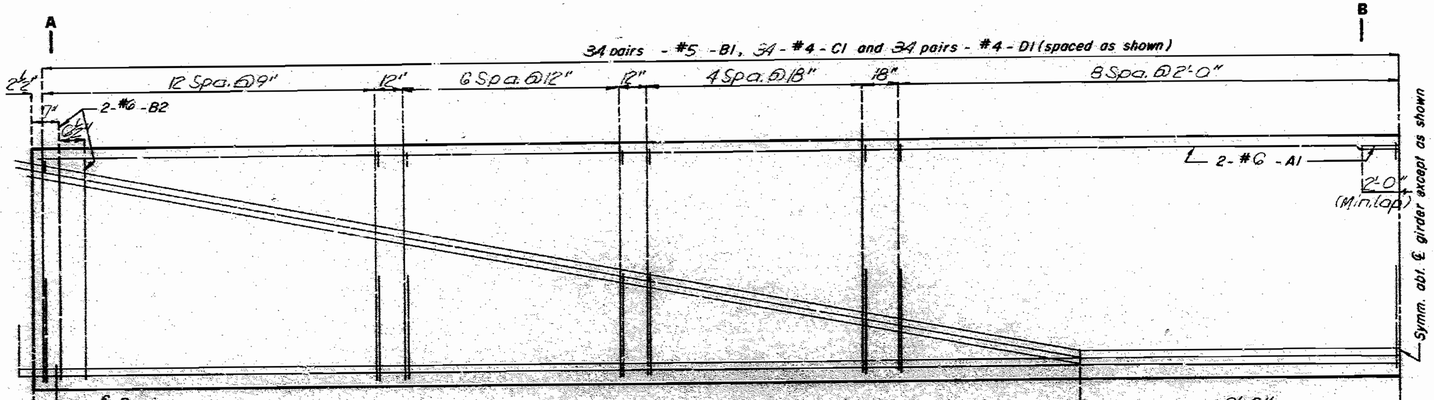
MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".

ALL REINFORCEMENT SHALL BE GRADE 60.

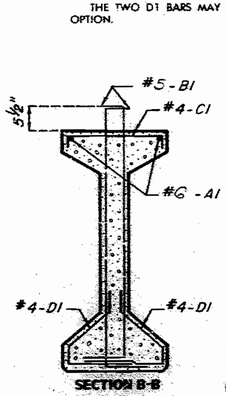
THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.



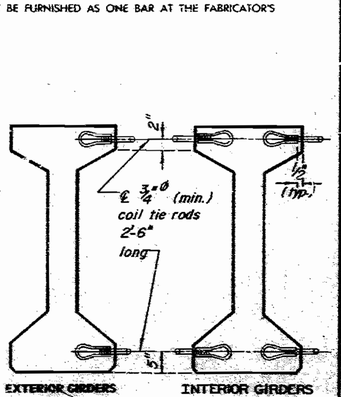
SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)



PART ELEVATION OF GIRDER SPANS 6-7 & 7-8 ALL GDRS.
(NOTE: EXTERIOR AND INTERIOR GIRDERS ARE THE SAME EXCEPT FOR COIL TIES.)



SECTION B-B
(STRANDS NOT SHOWN FOR CLARITY)



DETAILS OF COIL TIES

NOTE:

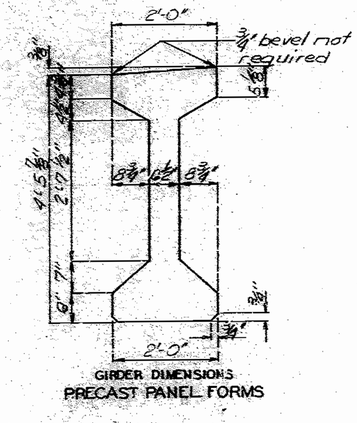
COST OF 3/4"ø COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

NOTE:

The 1½"ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.

Note: For details of Int. Bt. Diaph. see sheet No. 64.
For location of Int. Diaph. and general girder placement see sheet No. 24 & No. 25.
For Girder camber and haunching see sheet No. 69



GIRDER DIMENSIONS
PRECAST PANEL FORMS

SPS 55.6.6½ REVISED JUNE 1987
FEB. 1974

DETAILED FEB. 1988
CHECKED OCT. 1988

Note: This drawing is not to scale. Follow dimensions.

JACKSON COUNTY A-2745

STATE	PROJ. NO.	SHEET NO.
MO		115

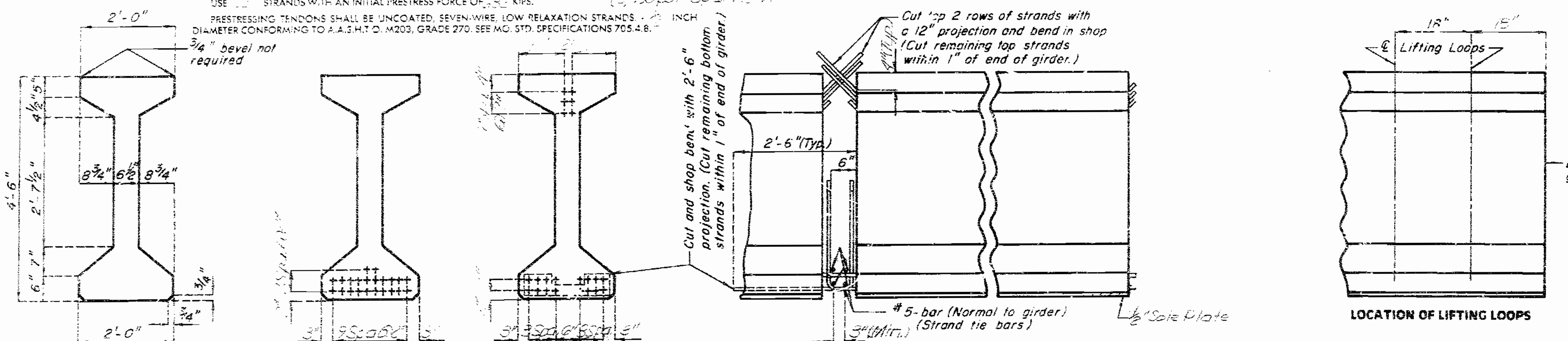
NOTE:

CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'c = **

+ INDICATES PRESTRESSED STRAND.

USE __ STRANDS WITH AN INITIAL PRESTRESS FORCE OF __ KIPS.

PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS. __ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO. STD. SPECIFICATIONS 705.4.8.



BILL OF REINFORCING STEEL - EACH GIRDER				
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	6A1	41'-3"	20	
138	5B1	5'-11"	11	
8	6B2	5'-4"	11	
69	4C1	2'-2"	10	
138	4D1	3'-0"	9	

NOTE:

ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.

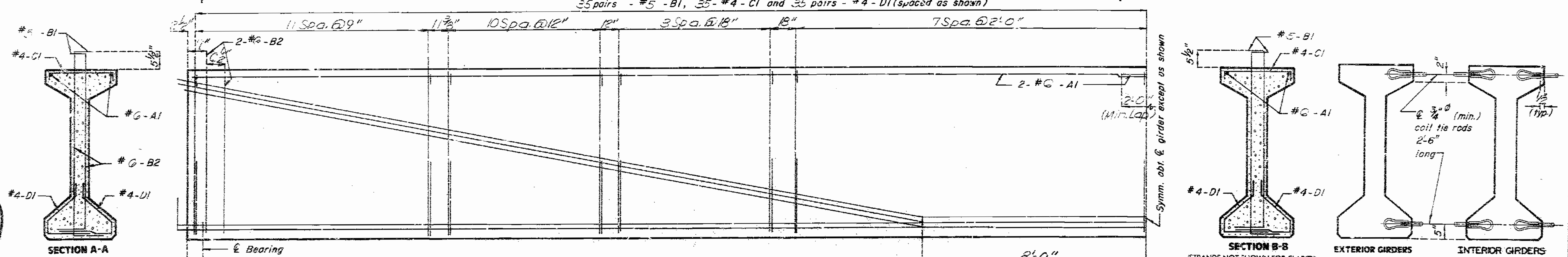
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

MINIMUM CLEARANCE TO REINFORCING SHALL BE 1"

ALL REINFORCEMENT SHALL BE GRADE 60

THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.



PART ELEVATION OF GIRDER SPAN (8-9)(9-10)(ALL GDRS.)

(NOTE: EXTERIOR AND INTERIOR GIRDERS ARE THE SAME EXCEPT FOR COIL TIES.)

*E" = 5" At Bt. #8 & #10, 7" At Bt. #9

DETAILS OF COIL TIES
AT INT. BENT NO. 8 & 10

NOTE:

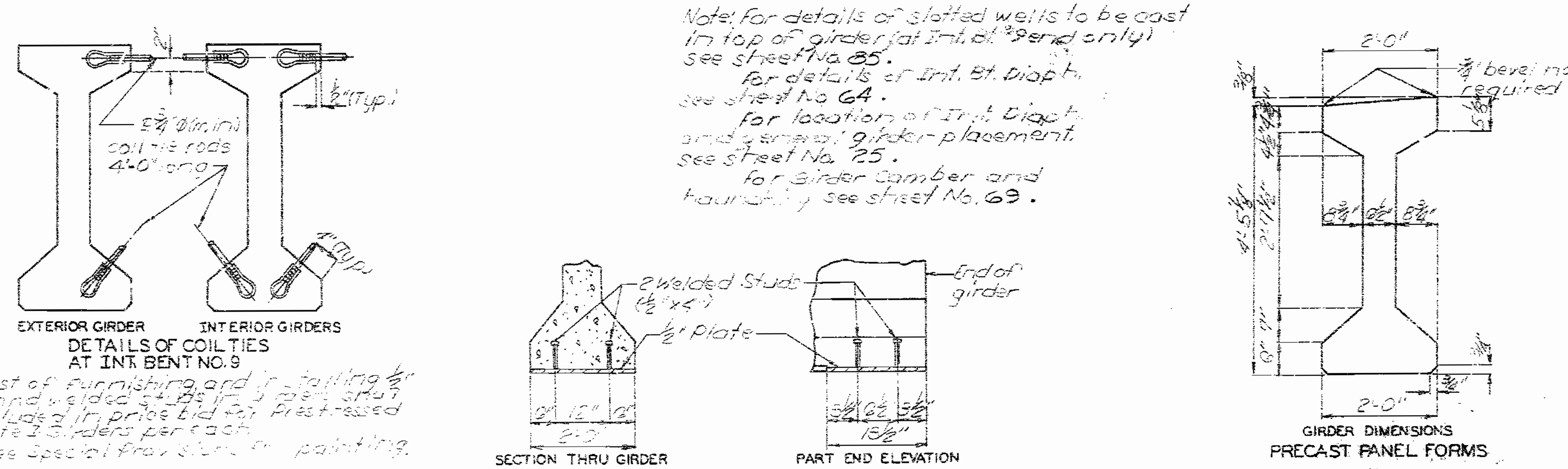
COST OF 3/4"⌀ COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

NOTE:

The 1 1/2"⌀ holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.

Note: For details of slotted wells to be cast in top of girder (at Int. Bt. #9 end only) see sheet No. 85. For details of Int. Bt. Diaph. see sheet No. 64. For location of Int. Diaph. and general girder placement, see sheet No. 25. For girder camber and haunching see sheet No. 69.



Note: Cost of furnishing and installing 1/2" plates and welded studs shall be included in price bid for Prestressed Concrete I-Girders per each. See Special Prov. ... for painting.

157/130

REVISED	
SPS 55.6.6½	FEB 1974
	JUNE 1987

DETAILED MAR. 1988
CHECKED OCT. 1988

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 35 of 98

JACKSON COUNTY

A-2745

STATE	PROJ NO	SHEET NO
MO		116

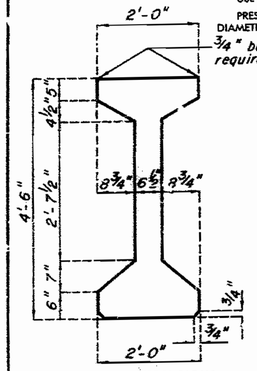
NOTE:

CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH Pc = 6,000 PSI.

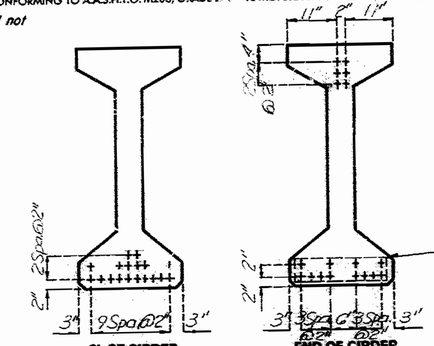
(+) INDICATES PRESTRESSED STRAND.

USE 18 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 51.3 KIPS.

PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS, ½ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 2[illegible] MO. STD. SPECIFICATIONS 705 4.8.

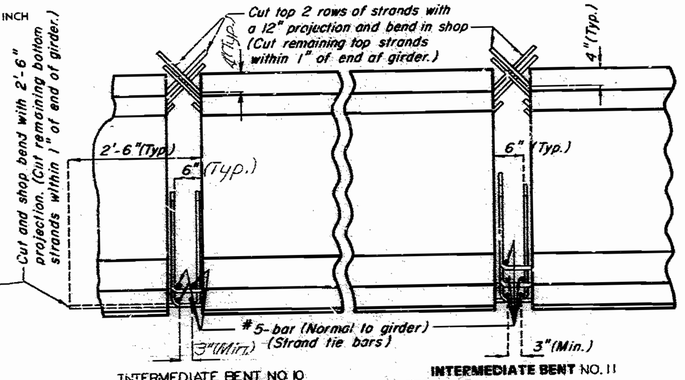


GIRDER DIMENSIONS
CAST-IN-PLACE FORMS

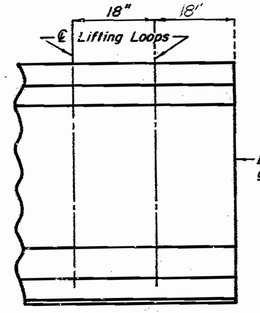


CL OF GIRDER
STRAND ARRANGEMENTS
END OF GIRDER

Note; Strand release for 9,000psi concrete = 4500psi.



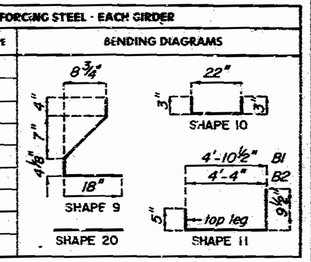
INTERMEDIATE BENT NO. 10 — INTERMEDIATE BENT NO. 11
STRAND DETAILS AT GIRDER ENDS



LOCATION OF LIFTING LOOPS

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	6A1	38'-2"	20	
120	5B1	5'-11"	11	
8	5B2	5'-4"	11	
63	4C1	2'-2"	10	
120	4D1	3'-0"	9	



NOTE:

ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.

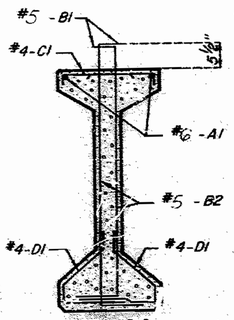
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

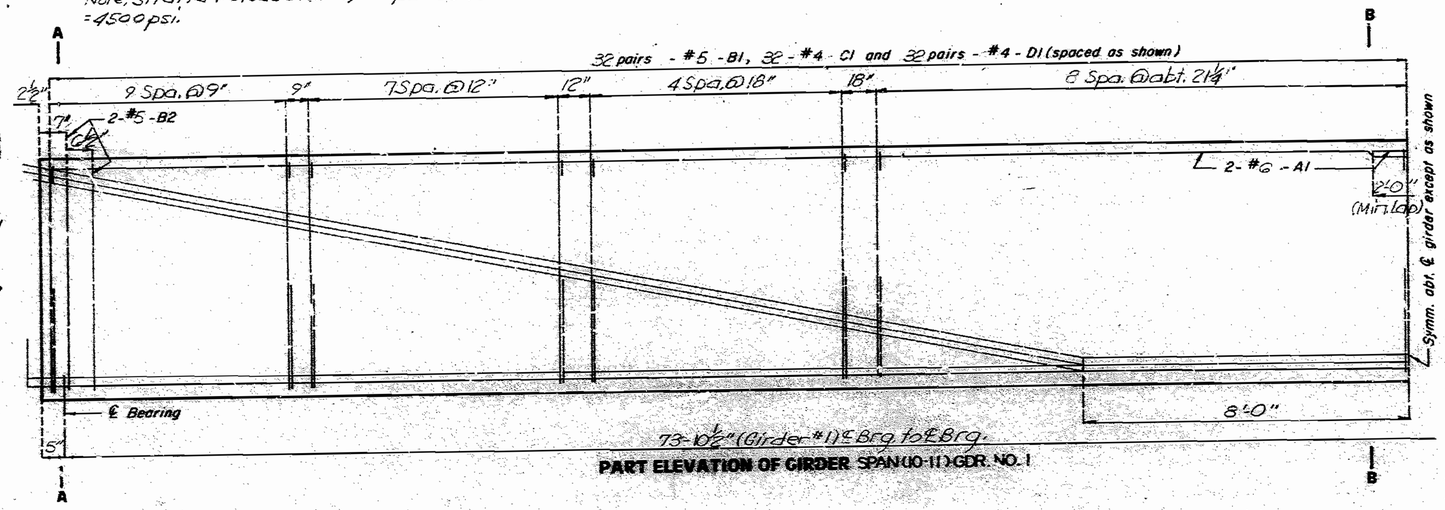
MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".

ALL REINFORCEMENT SHALL BE GRADE 60.

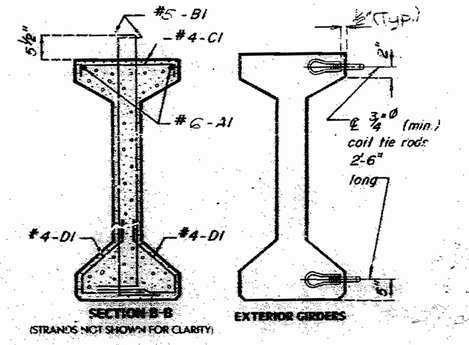
THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.



SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)



PART ELEVATION OF GIRDER SPAN 10-11 GDR. NO. 1



SECTION B-B
(STRANDS NOT SHOWN FOR CLARITY)
EXTERIOR GIRDERS

DETAILS OF COIL TIES

NOTE:

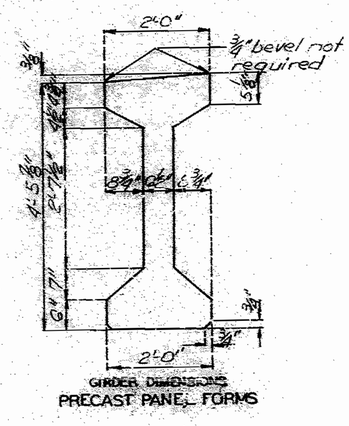
COST OF 3/4"Ø COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

NOTE:

The 1½"Ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.

Note: for details of Int. Bt. Diaph. see sheet No. 64 & No 65.
for location of Int. Diaph. and general girder placement see sheet No. 25.
for Girder Camber and haunching see sheet No. 69



GIRDER DIMENSIONS
PRECAST PANEL FORMS

SPS 55.6.84 REVISED JUNE 1987
FEB. 1974

DETAILED MAR. 1988
CHECKED OCT. 1988

Note: This drawing is not to scale. Follow dimensions.

JACKSON COUNTY A-2445

STATE	PROJ NO	SHEET NO
MO		117

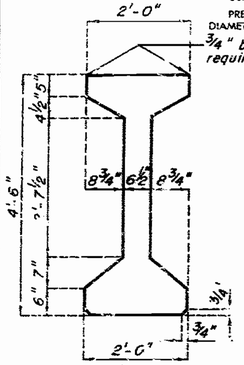
NOTE:

CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'c = 6,000 PSI.

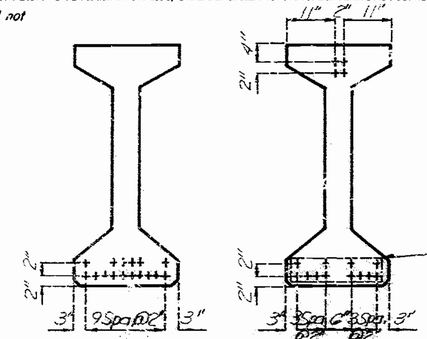
(+) INDICATES PRESTRESSED STRAND.

USE 16 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 495 KIPS.

PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS. - ½ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO. STD. SPECIFICATIONS 705.4.8

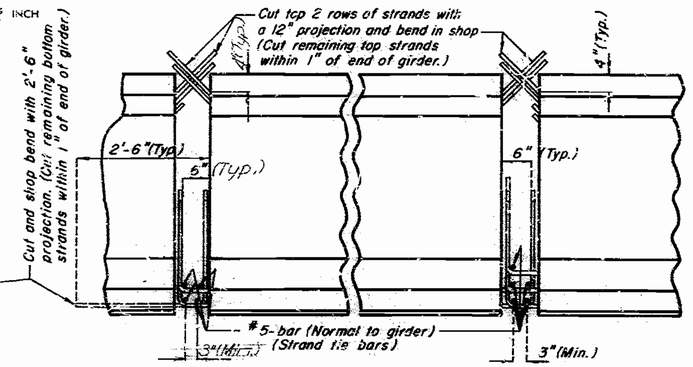


GIRDER DIMENSIONS
CAST-IN-PLACE FORMS

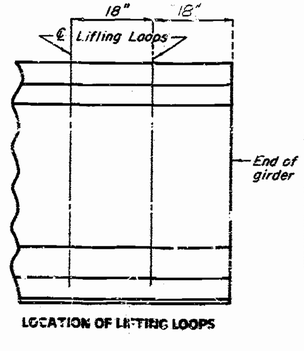


CL OF GIRDER END OF GIRDER
STRAND ARRANGEMENTS

Note: Strand release for 9,000 psi concrete = 4500 psi.



INTERMEDIATE BENT NO. 10 INTERMEDIATE BENT NO. 11
STRAND DETAILS AT GIRDER ENDS



LOCATION OF LIFTING LOOPS

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	6 A1	35'-10"	20	
118	5 B1	5'-11"	11	
8	5 B2	5'-4"	11	
59	4 C1	3'-2"	10	
118	4 D1	3'-0"	9	

SHAPE 9 SHAPE 20 SHAPE 10 SHAPE 11

NOTE:

ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.

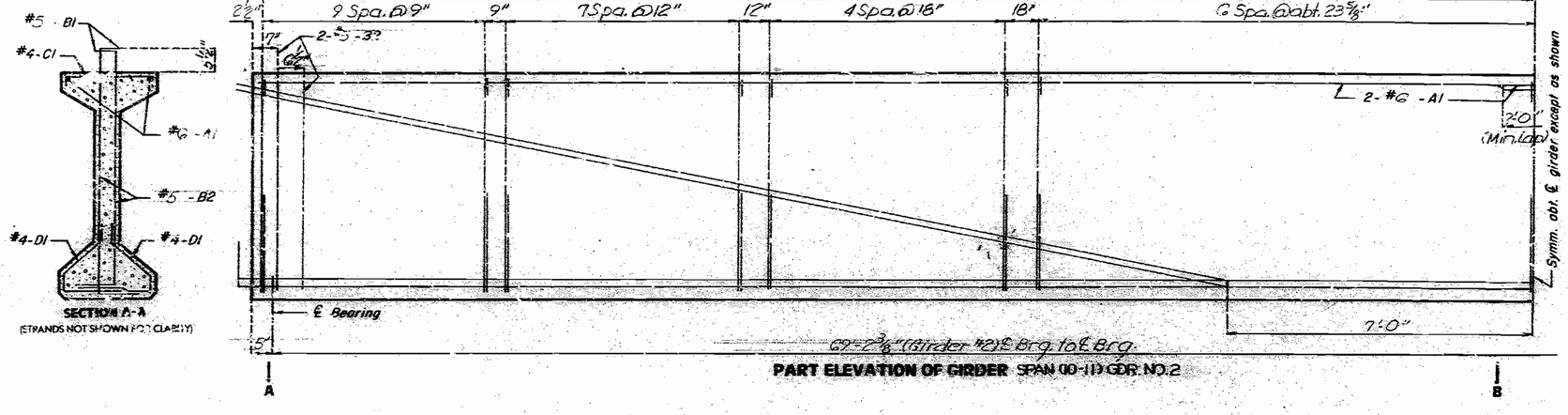
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".

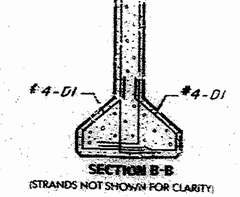
ALL REINFORCEMENT SHALL BE GRADE 60.

THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.

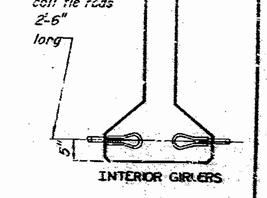


SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)

PART ELEVATION OF GIRDER SPAN 00-11 GDR NO. 2



SECTION B-B
(STRANDS NOT SHOWN FOR CLARITY)



INTERIOR GIRDERS

DETAILS OF COIL TIES

NOTE:

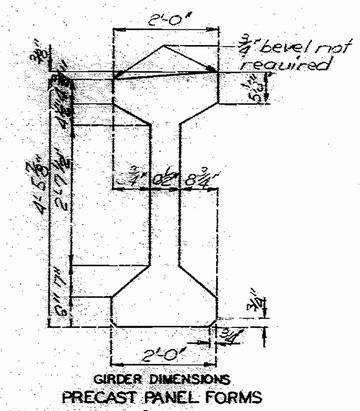
COST OF ¾"ø COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

NOTE:

The 1½"ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.

Note: for details of Int. Bt. Diaph. see sheet No. 64 & No 65.
for location of Int. Diaph. and general girder placement see sheet No. 25.
For Girder Camber and haunching see sheet No. 69



GIRDER DIMENSIONS
PRECAST PANEL FORMS

SPS 55'-6½" FEB. 1974 REVISED JUNE 1987

DETAILED MAR. 1988
CHECKED OCT. 1988

Note: This drawing is not to scale. Follow dimensions.

STATE	PROJ NO	SHEET NO
MO		118

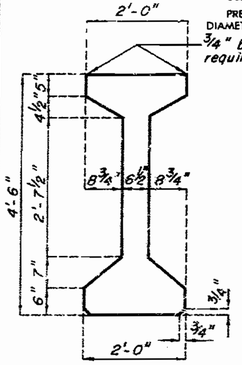
NOTE:

CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'c = 6,000 PSI

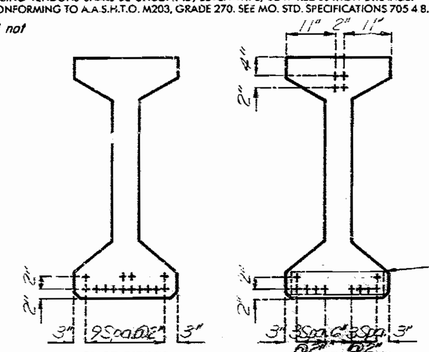
(+) INDICATES PRESTRESSED STRAND.

USE 14 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 434 KIPS.

PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS. - ½ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO. STD. SPECIFICATIONS 705 4 8.

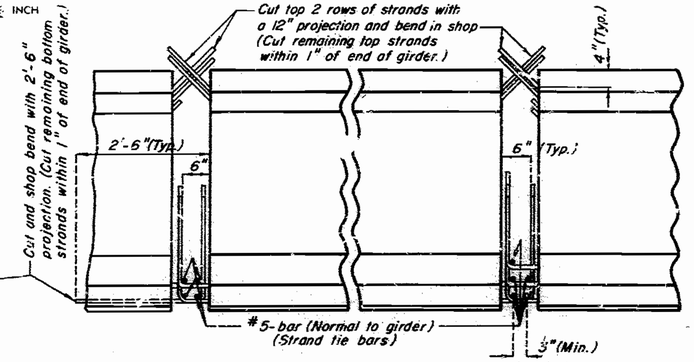


GIRDER DIMENSIONS
CAST-IN-PLACE FORMS

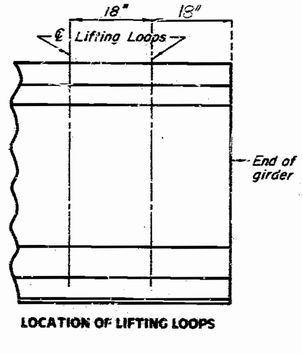


CL OF GIRDER END OF GIRDER
STRAND ARRANGEMENTS

Note, Strand release for 6,000 psi concrete = 4500 psi.



INTERMEDIATE BENT NO. 10 INTERMEDIATE BENT NO. 11
STRAND DETAILS AT GIRDER ENDS



LOCATION OF LIFTING LOOPS

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	GA1	①	20	
114	SB1	5'-11"	11	
4	GB2	5'-4"	11	
57	4C1	2'-2"	10	
114	4D1	3'-0"	9	

SHAPE 10 · SHAPE 9 · SHAPE 20 · SHAPE 11

NOTE:

ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.

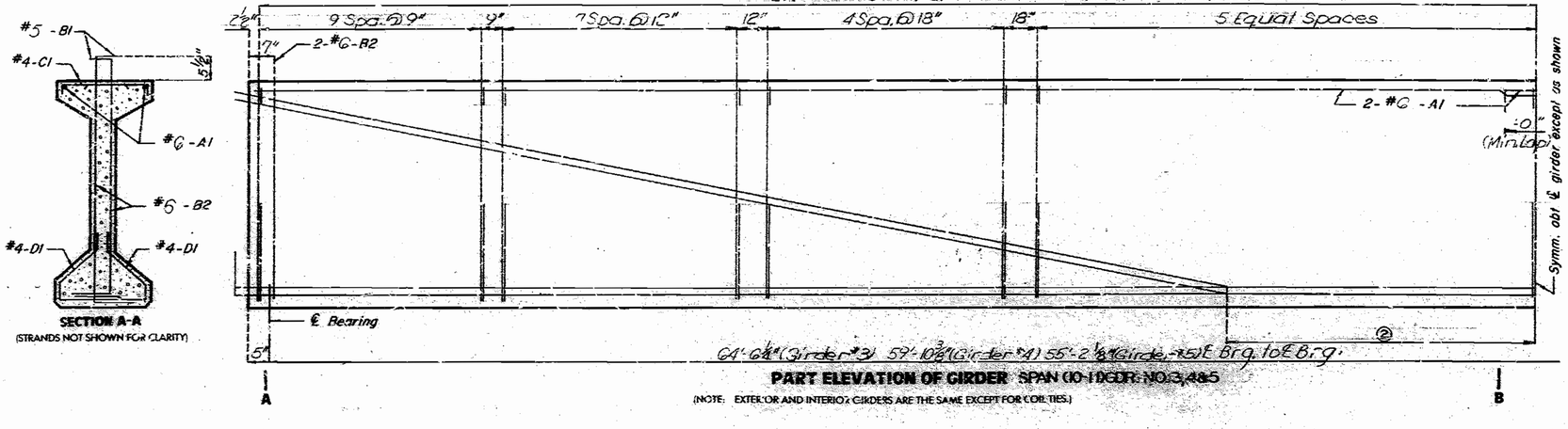
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".

ALL REINFORCEMENT SHALL BE GRADE 60.

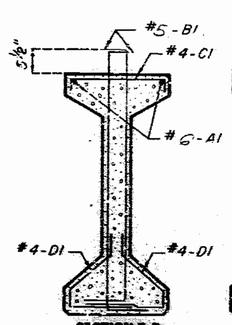
THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.



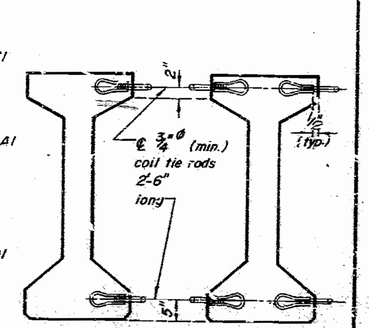
PART ELEVATION OF GIRDER SPAN (10-1 DGR. NO. 3, 4 & 5

(NOTE: EXTERIOR AND INTERIOR GIRDERS ARE THE SAME EXCEPT FOR COIL TIES.)

SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)



SECTION B-B
(STRANDS NOT SHOWN FOR CLARITY)



EXTERIOR GIRDERS INTERIOR GIRDERS

DETAILS OF COIL TIES

NOTE:

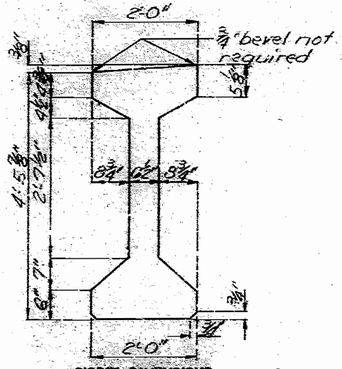
COST OF 3/4"Ø COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

NOTE:

The 1½"Ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.

Note: For details of Int. Diaph. see sheet No. 64 & No. 65.
For location of Int. Diaph. and general girder placement. see sheet No. 25.
For Girder Camber and haunching see sheet No. 69



GIRDER DIMENSIONS
PRECAST PANEL FORMS

① 33'-6" (Girder #3)
31'-2" (Girder #4)
28'-10" (Girder #5)

② 6'-6" (Girder #3)
6'-0" (Girder #4 & #5)

SPS 55.6.6½	REVISED
FEB. 1974	JUNE 1987

DETAILED MAR. 1988
CHECKED OCT. 1988

Note: This drawing is not to scale. Follow dimensions.

JACKSON COUNTY A-2745

STATE	PROJ NO	SHEET NO
MO		119

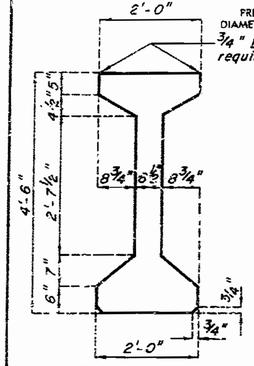
NOTE:

CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'c = 6,000 PSI.

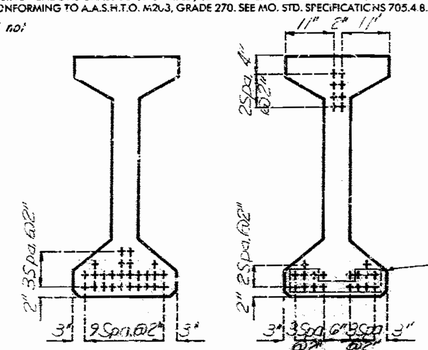
(+) INDICATES PRESTRESSED STRAND.

USE 26 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 806 KIPS.

PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS, ½ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO. STD. SPECIFICATIONS 705.4.8.

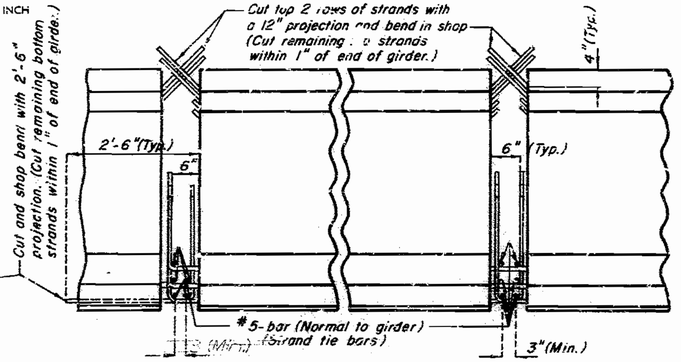


GIRDER DIMENSIONS
CAST-IN-PLACE FORMS

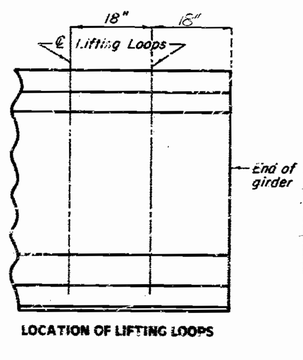


CL OF GIRDER END OF GIRDER
STRAND ARRANGEMENTS

Note: Strand release for 6,000 psi concrete = 4500 psi.



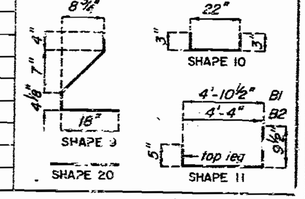
INTERMEDIATE NO. 11 INTERMEDIATE BENT NO. 12
STRAND DETAILS AT GIRDER ENDS



LOCATION OF LIFTING LOOPS

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	6 A1	①	20	
158	5 B1	5'-11"	11	
8	6 B2	5'-4"	11	
72	4 C1	2'-2"	10	
158	4 D1	3'-0"	9	



NOTE:

ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.

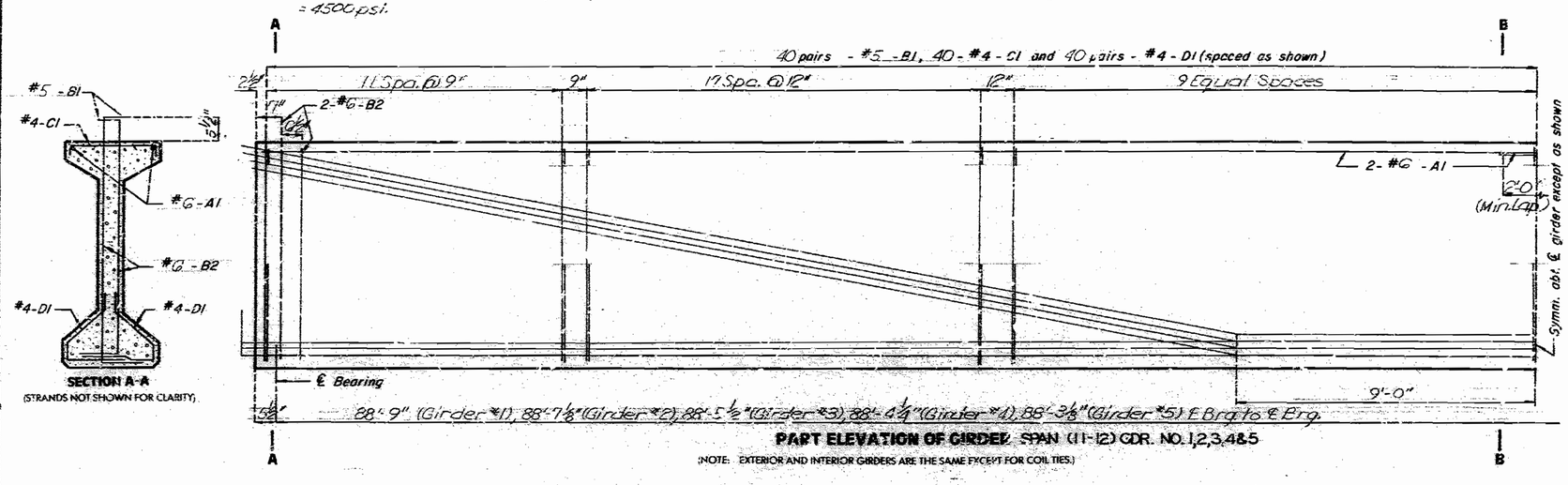
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".

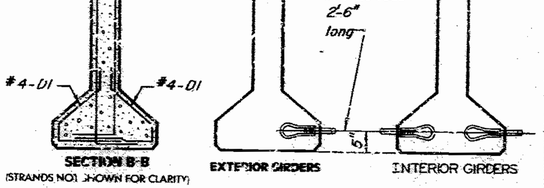
ALL REINFORCEMENT SHALL BE GRADE 60.

THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.



PART ELEVATION OF GIRDER SPAN (11-12) GDR. NO. 1,2,3,4&5

(NOTE: EXTERIOR AND INTERIOR GIRDERS ARE THE SAME EXCEPT FOR COIL TIES.)



DETAILS OF COIL TIES

NOTE:

COST OF ¾"Ø COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

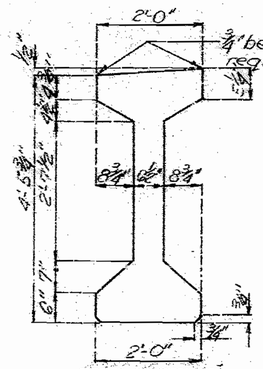
COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

NOTE:

The 1½"Ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.

Note: For details of Int. Bt. Diaph. see sheet No. 65.
For location of Int. Diaph. and general girder placement see sheet No. 25.
For Girder camber and haunching see sheet No. 69.

①45'-8" (Girder #1)
45'-7" (Girder #2)
45'-6" (Girder #3 & #4)
45'-5" (Girder #5)



GIRDER DIMENSIONS
PRECAST PANEL FORMS

SHS 55.6.6½	REVISED	JUNE 1987
	FEB. 1974	

DETAILED MAR. 1988
CHECKED OCT. 1988

Note: This drawing is not to scale. Follow dimensions.

STATE	PROJ NO	SHEET NO
MO		120

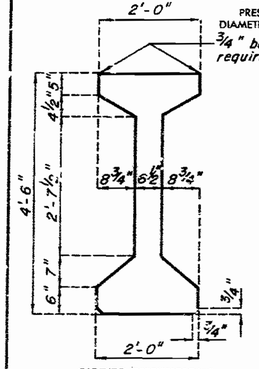
NOTE:

CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'c = 6,000 PSI.

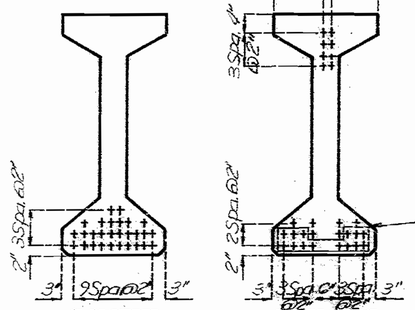
(+) INDICATES PRESTRESSED STRAND.

USE 23 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 868 KIPS.

PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS. - ½ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO. STD. SPECIFICATIONS 705.4.8.



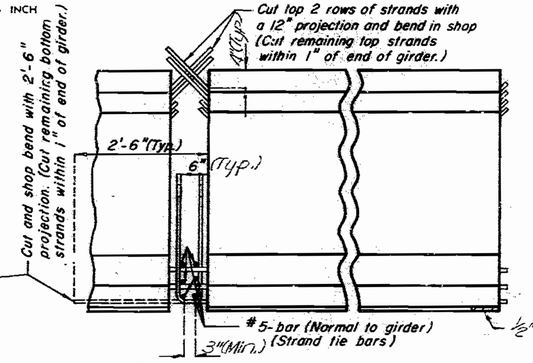
GIRDER DIMENSIONS
CAST-IN-PLACE FORMS



CL OF GIRDER — END OF GIRDER

STRAND ARRANGEMENTS

Note: Strand release for 6,000 psi concrete = 4,500 psi.

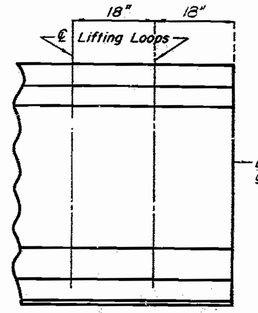


INTERMEDIATE BENT NO. 12 — INTERMEDIATE BENT NO. 13

STRAND DETAILS AT GIRDER ENDS

Note: Prestressing strands at Intermediate Bent No. 13 shall be trimmed to within ½ inch of concrete if exposed, or 1 inch of concrete if encased. Exposed ends of girders shall be given 2 coats of an asphalt paint. Ends of girders which will be encased in concrete diaphragms shall not be painted.

40 pairs - #5 - B1, 40 - #4 - C1 and 40 pairs - #4 - D1 (spaced as shown)



LOCATION OF LIFTING LOOPS

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	G A1	①	20	
158	5 B1	5'-11"	11	
8	6 B2	5'-4"	11	
79	4 C1	2'-2"	10	
158	4 D1	3'-0"	9	

BENDING DIAGRAMS: 8¾", 4", 7", 4½", 18" — SHAPE 9; 22", 3", 3" — SHAPE 10; 4'-10½" B1, 4'-4" B2, 9½", 5", top leg — SHAPE 11; SHAPE 20

NOTE:

ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.

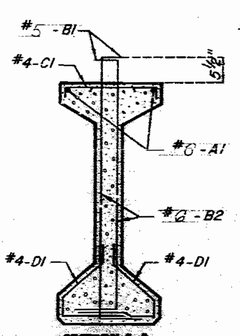
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

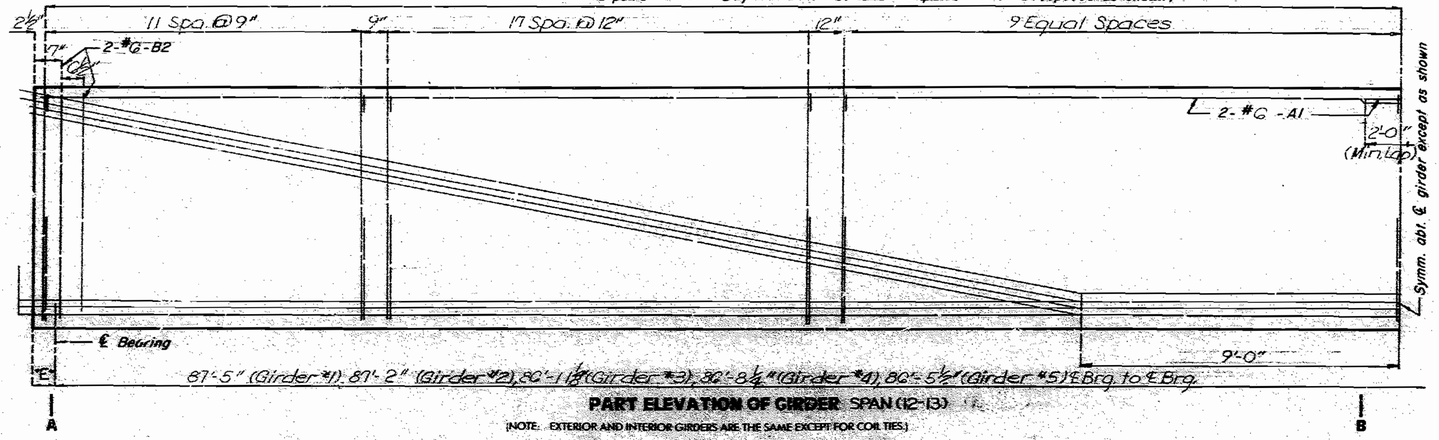
MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".

ALL REINFORCEMENT SHALL BE GRADE 60.

THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.

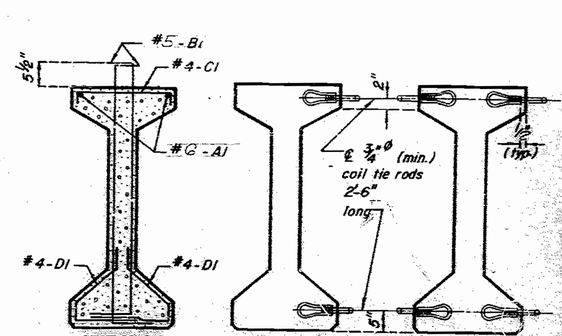


SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)



PART ELEVATION OF GIRDER SPAN (12-13)

(NOTE: EXTERIOR AND INTERIOR GIRDERS ARE THE SAME EXCEPT FOR COIL TIES.)



SECTION B-B
(STRANDS NOT SHOWN FOR CLARITY)

EXTERIOR GIRDERS — INTERIOR GIRDERS

DETAILS OF COIL TIES
AT INT. BENT NO. 12

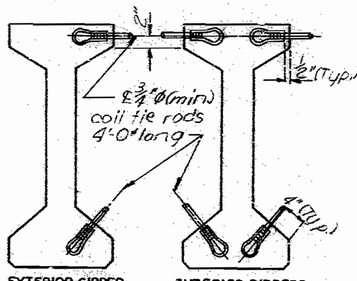
NOTE:

COST OF 3/4"ø COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

NOTE:

The 1½"ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.



EXTERIOR GIRDER — INTERIOR GIRDERS

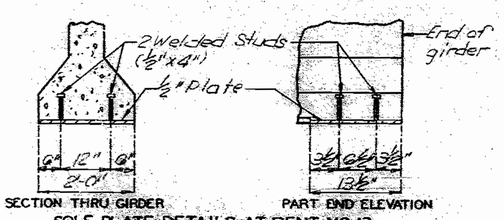
DETAILS OF COIL TIES
AT INT. BENT NO. 13

Note: Cost of furnishing and installing ½" plate and welded studs in girders shall be included in price bid for Prestressed Concrete I-Girders per each.
See Special Provisions for painting.

Note: For details of slotted wells to be cast in top of girder at Int. Bt. *6 end only) see sheet No. 65.
For details of Int. Bt. Diaph. see sheet No. 65 & No. 66.
For location of Int. Diaph. and general girder placement. see sheet No. 26.
For Girder camber and haunching see sheet No. 69.

"E" 5½" (All girders @ Bt. *12)
7" (All girders @ Bt. *13)

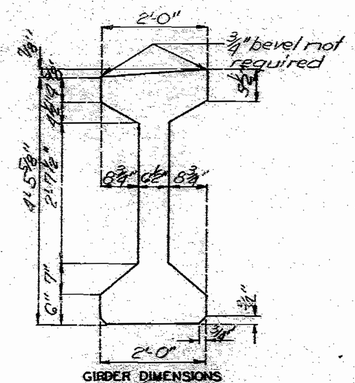
① 45'-2" (Girder *1)
45'-0" (Girder *2)
44'-11" (Girder *3)
44'-9" (Girder *4)
44'-8" (Girder *5)



SECTION THRU GIRDER — PART END ELEVATION

SOLE PLATE DETAILS AT BENT NO. 13

Note: Sole Plate to be placed at Bent No. 13 end of girder only.



GIRDER DIMENSIONS
PRECAST PANEL FORMS

SPS 65.6.6½	REVISED
FEB. 1974	JUNE 1987

DETAILED MAR. 1988
CHECKED OCT. 1988

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 40 of 98

JACKSON COUNTY

A-2745

162 135

STATE	PROJ. NO	SHEET NO
MO		121

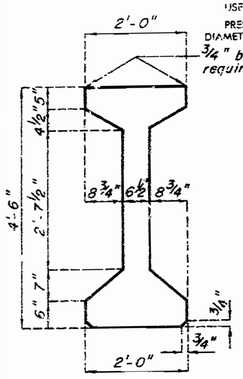
NOTE:

CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'c = 6,000 PSI.

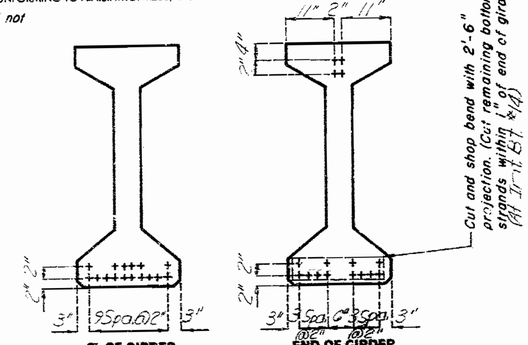
(+) INDICATES PRESTRESSED STRAND.

USE 16 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 496 KIPS.

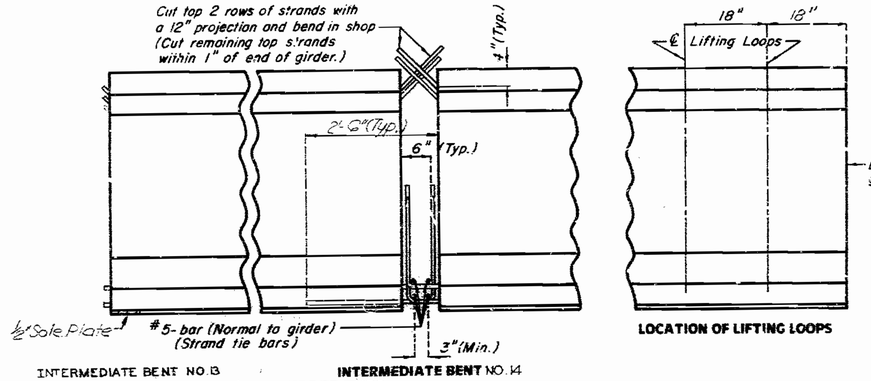
PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS. ½ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO. STD. SPECIFICATIONS 705.4.8.



GIRDER DIMENSIONS
CAST-IN-PLACE FORMS



CL OF GIRDER
END OF GIRDER
STRAND ARRANGEMENTS

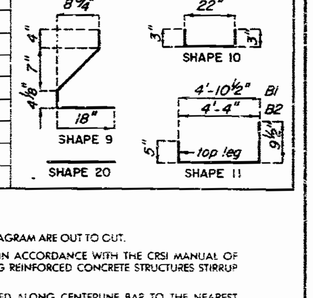


INTERMEDIATE BENT NO. 13
INTERMEDIATE BENT NO. 14
STRAND DETAILS AT GIRDER ENDS

LOCATION OF LIFTING LOADS

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	6 A1	35'-4"	20	
122	5 B1	5'-11"	11	
8	5 B2	5'-4"	11	
61	4 C1	2'-2"	10	
122	4 D1	3'-0"	9	



NOTE:

ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO CUT.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".

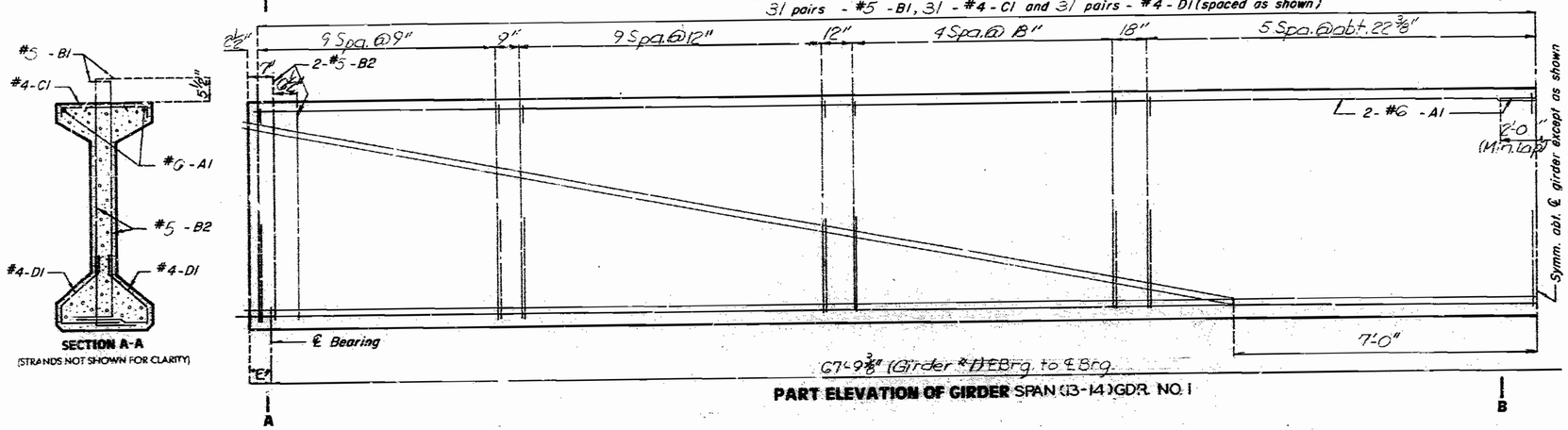
ALL REINFORCEMENT SHALL BE GRADE 60.

THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.

Note: Strand release for 6000psi concrete = 4500psi.

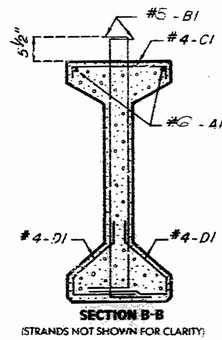
Note: Prestressing strands at Intermediate Bent No. 13 shall be trimmed to within ⅛ inch of concrete if exposed, or 1 inch of concrete if encased. Exposed ends of girders shall be given 2 coats of an asphalt paint. Ends of girders which will be encased in concrete diaphragms shall not be painted.

31 pairs - #5 - B1, 31 - #4 - C1 and 31 pairs - #4 - D1 (spaced as shown)

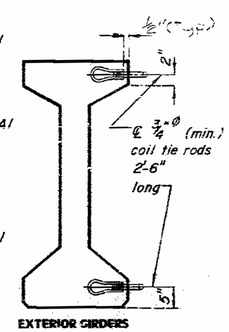


PART ELEVATION OF GIRDER SPAN (13-14) GDR. NO. 1

SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)



SECTION B-B
(STRANDS NOT SHOWN FOR CLARITY)



EXTERIOR GIRDERS

DETAILS OF COIL TIES AT INT. BENT NO. 14

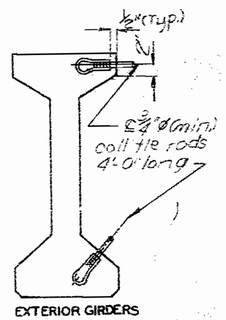
NOTE:

COST OF 3/4"Ø COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

NOTE:

The 1½"Ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.

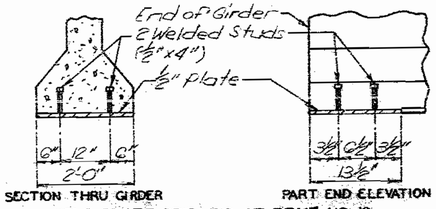


EXTERIOR GIRDERS

DETAILS OF COIL TIES AT INT. BENT NO. 13

Note: Cost of furnishing and installing ½" plates and welded studs in girders shall be included in price bid for Prestressed Concrete I-Girders per each.
See Special Provisions for painting.

Note: For details of slotted wells to be cast in top of girder (at Int. Bt. *Bend only) see sheet No. 85.
For details of Int. Bt. Diaph. see sheet No. 66.
For location of Int. Diaph. and general girder placement see sheet No. 26
For Girder camber and haunching see sheet No. 69.

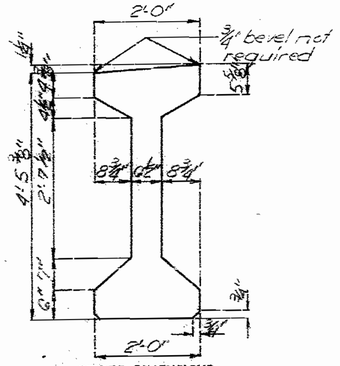


SECTION THRU GIRDER
PART END ELEVATION

SOLE PLATE DETAILS AT BENT NO. 13

Note: Sole Plate to be placed at Bent No. 13 end of girder only.

"E" 7" (At Bt. *12)
5½" (At Bt. *14)



GIRDER DIMENSIONS
PRECAST PANEL FORMS

SPS 55.66	REVISED	JUNE 1987
FEB. 1974		

DETAILED MAR. 1988
CHECKED OCT. 1988

Note: This drawing is not to scale. Follow dimensions.

JACKSON COUNTY

A-2745

STATE	PROJ. NO.	SHEET NO.
MO		122

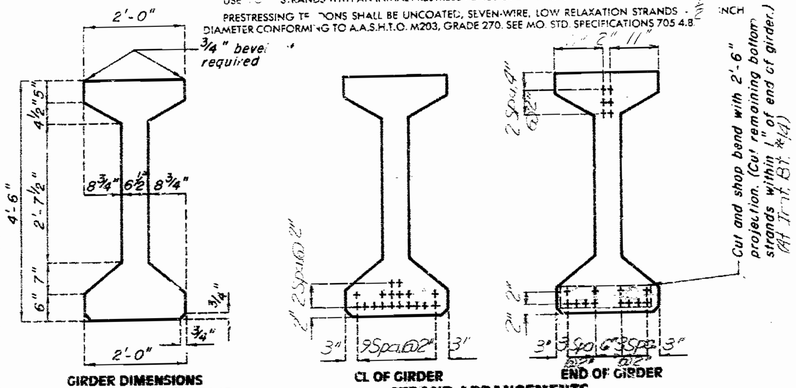
NOTE:

CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'_c = 6000 PSI.

(+) INDICATES PRESTRESSED STRAND.

USE 18 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 543 KIPS

PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS - ½ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO. STD. SPECIFICATIONS 705 4.8



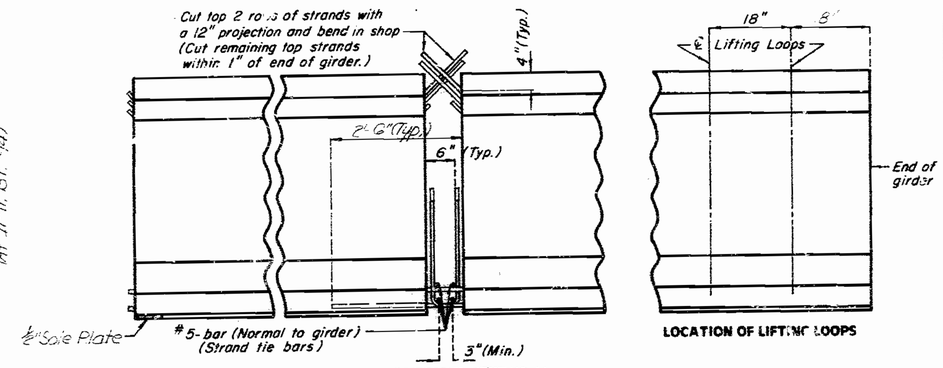
GIRDER DIMENSIONS
CAST-IN-PLACE FORMS

CL OF GIRDER

END OF GIRDER

STRAND ARRANGEMENTS

Note: Strand release for 6,000psi concrete =4500 psi.



INTERMEDIATE BENT NO. 13

INTERMEDIATE BENT NO. 14

STRAND DETAILS AT GIRDER ENDS

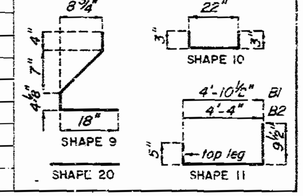
Note: Prestressing strands at Intermediate Bent No. 13 shall be trimmed to within ¼ inch of concrete if exposed or 1 inch of concrete if encased. Exposed ends of girders shall be given 2 coats of an asphalt paint. Ends of girders which will be encased in concrete diaphragms shall not be painted.

33 pairs - #5 - B1, 33 - #4 - C1 and 33 pairs - #4 - D1 (spaced as shown)

LOCATION OF LIFTING LOOPS

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	6 A1	37'-7"	20	
130	5 B1	5'-11"	11	
8	5 B2	5'-4"	11	
65	4 C1	2'-2"	10	
180	4 D1	3'-0"	9	



NOTE:

ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.

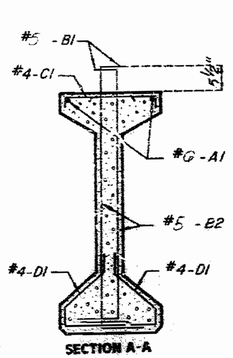
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

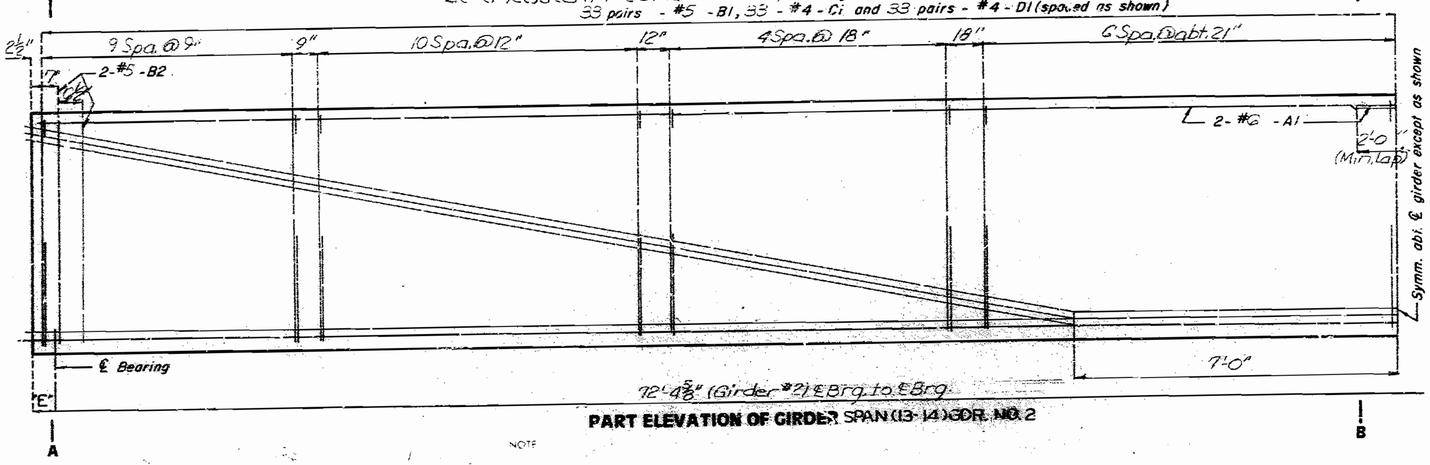
MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".

ALL REINFORCEMENT SHALL BE GRADE 60.

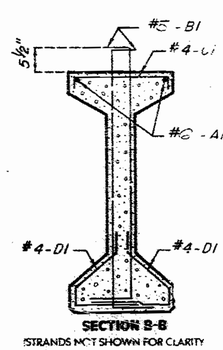
THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.



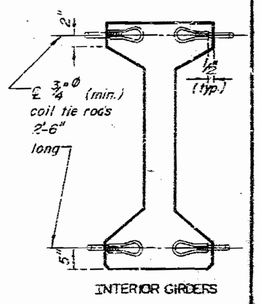
SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)



PART ELEVATION OF GIRDER SPAN (13-14) GDR. NO. 2



SECTION B-B
(STRANDS NOT SHOWN FOR CLARITY)



INTERIOR GIRDERS

DETAILS OF COIL TIES
AT INT. BENT NO. 14

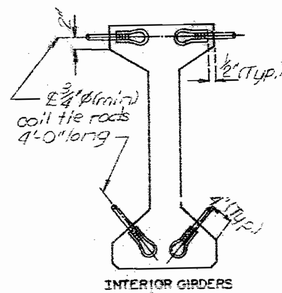
NOTE:

COST OF 3/4"Ø COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

NOTE:

The 1½"Ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.

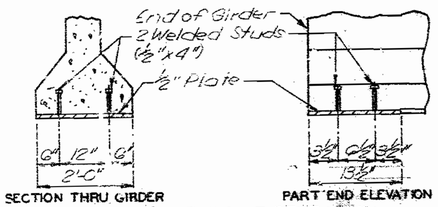


INTERIOR GIRDERS

DETAILS OF COIL TIES
AT INT. BENT NO. 13

Note: For details of slotted wells to be cast in top of girder at Int. Bt. #13 Bent only) see sheet No. 85.
for details of Int. Bt. Diaph. see sheet No. 66.
for location of Int. Diaph. and general girder placement see sheet No. 26
for girder camber and haunching see sheet No. 69.

Note: Cost of furnishing and installing ½" plates and welded studs in girders shall be included in price bid for Prestressed Concrete I Girders, per each.
See Special Provisions for painting.

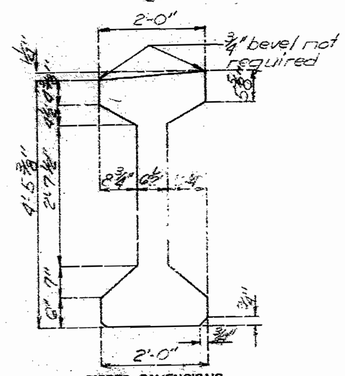


SECTION THRU GIRDER

PART END ELEVATION

SOLE PLATE DETAILS AT BENT NO. 13

Note: Sole Plate to be placed at Bent No. 13 end of girder only.



GIRDER DIMENSIONS
PRECAST PANEL FORMS

SPS 55.6.6½	REVISED	JUNE 1987
FEB. 1974		

DETAILED MAR. 1988

CHECKED OCT. 1988

Note: This drawing is not to scale. Follow dimensions.

JACKSON COUNTY A-2745

NOTE:

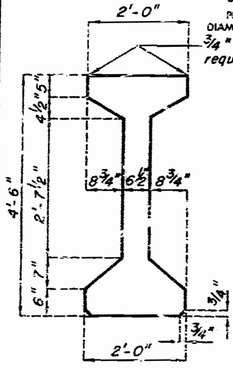
CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'_c = 6,000 PSI.

(+) INDICATES PRESTRESSED STRAND.

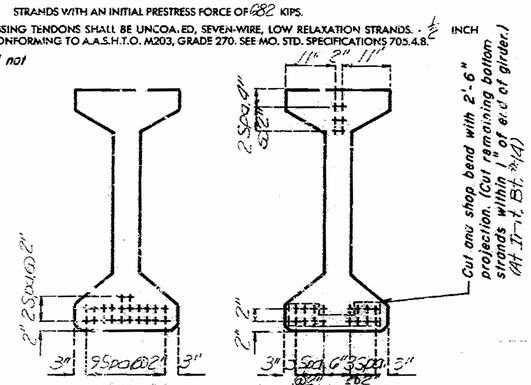
USE 22 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 282 KIPS.

PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS. ½ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO. STD. SPECIFICATIONS 703.4.8.

STATE	PROJ. NO.	SHEET NO.
MO		123



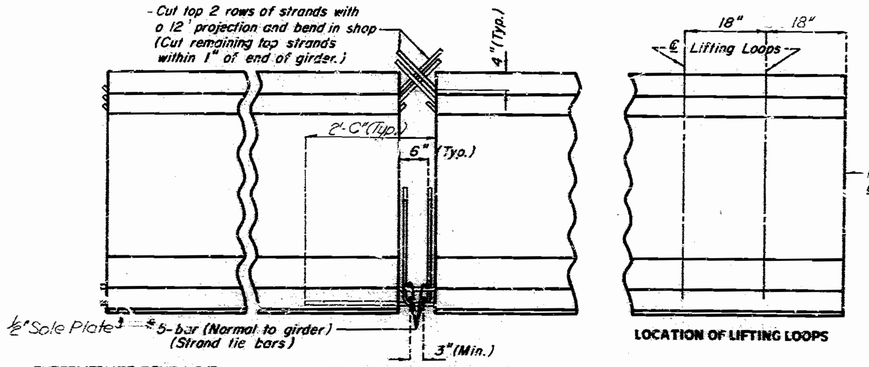
GIRDER DIMENSIONS
CAST-IN-PLACE FORMS



CL OF GIRDER — END OF GIRDER

STRAND ARRANGEMENTS

Note: Strand release for 2000psi concrete = 4500 psi.



INTERMEDIATE BENT NO. 13 — INTERMEDIATE BENT NO. 14

STRAND DETAILS AT GIRDER ENDS

Note: Prestressing strands at Intermediate Bent No. 13 shall be trimmed to within ⅛ inch of concrete if exposed, or 1 inch of concrete if encased. Exposed ends of girders shall be given 2 coats of an asphalt paint. Ends of girders which will be encased in concrete diaphragms shall not be painted.

35 pairs - #5 - B1, 35 - #4 - C1 and 35 pairs - #4 - D1 (spaced as shown)

LOCATION OF LIFTING LOOPS

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	6 A1	39'-11"	20	
123	5 B1	5'-11"	11	
8	6 B2	5'-4"	11	
69	4 C1	2'-2"	10	
138	4 D1	3'-0"	9	

SHAPE 9 — SHAPE 20 — SHAPE 10 — SHAPE 11

NOTE:

ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.

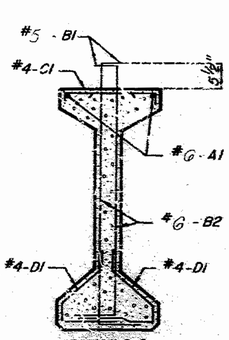
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

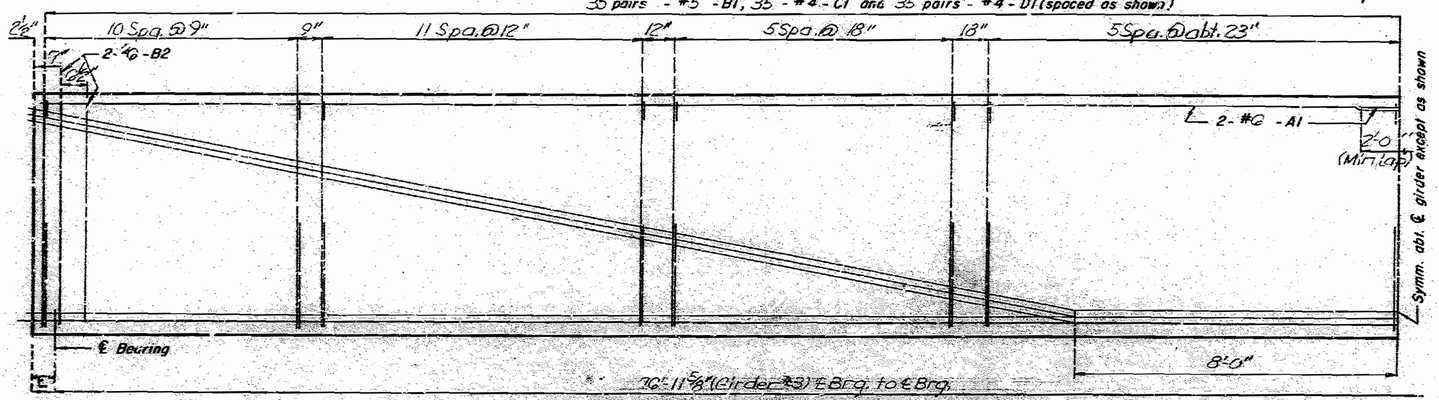
MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".

ALL REINFORCEMENT SHALL BE GRADE 60.

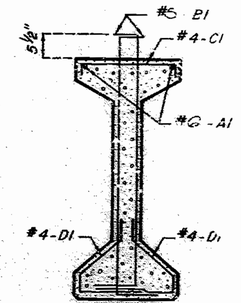
THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.



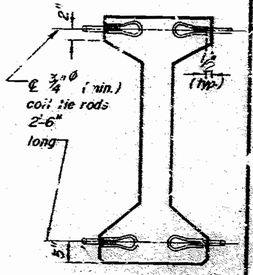
SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)



PART ELEVATION OF GIRDER SPAN (13-14) GDR. NO. 3



SECTION B-B
(STRANDS NOT SHOWN FOR CLARITY



INTERIOR GIRDERS

DETAILS OF COIL TIES
AT INT. BENT NO. 14

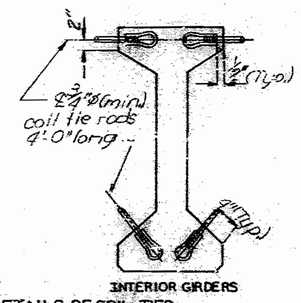
NOTE:

COST OF ¾"ø COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

NOTE:

The 1½"ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.

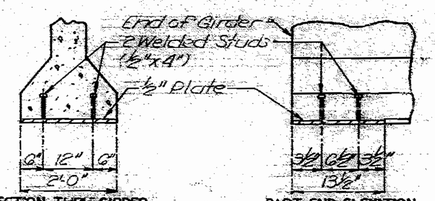


INTERIOR GIRDERS

DETAILS OF COIL TIES
AT INT. BENT NO. 13

Note: Cost of furnishing and installing ½" plates and welded studs in girders shall be included in price bid for Prestressed Concrete I Girders, per each. See Special Provisions for painting.

Note: for details of slotted wells to be cast in top of girder at Int. Bt. #13 (End only) See sheet No. 85.
for details of Int. Bt. Diaph. see sheet No. 66.
for location of Int. Diaph. and general girder placement see sheet No. 26
for Girder Camber and haunching see sheet No. 69.

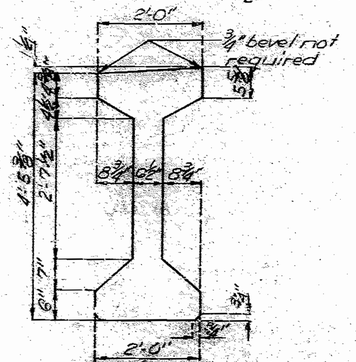


SECTION THRU GIRDER — PART END ELEVATION

SOLE PLATE DETAILS AT BENT NO. 13

Note: Sole Plate to be placed at Bent No. 13 end of girder only.

"E" 7" (At Bt. #13)
5½" (At Bt. #14)



GIRDER DIMENSIONS
PRECAST PANEL FORMS

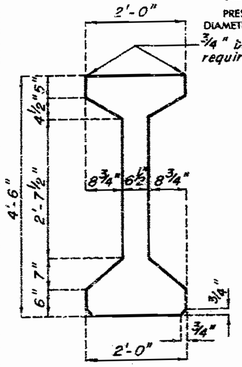
DETAILED	MAR. 1988
CHECKED	OCT. 1988

SPS 55.6.6½ REVISED JUNE 1987
FEB. 1974

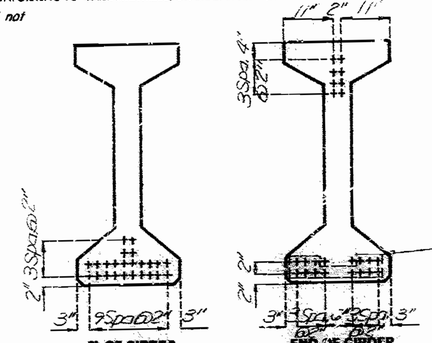
Note: This drawing is not to scale. Follow dimensions.

STATE	PROJ NO	SHEET NO
MO		124

NOTE:
CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'_c = 6,000 PSI.
(+) INDICATES PRESTRESSED STRAND.
USE 24 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 744 KIPS.
PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS. ½ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO. STD. SPECIFICATIONS 705.4.8.

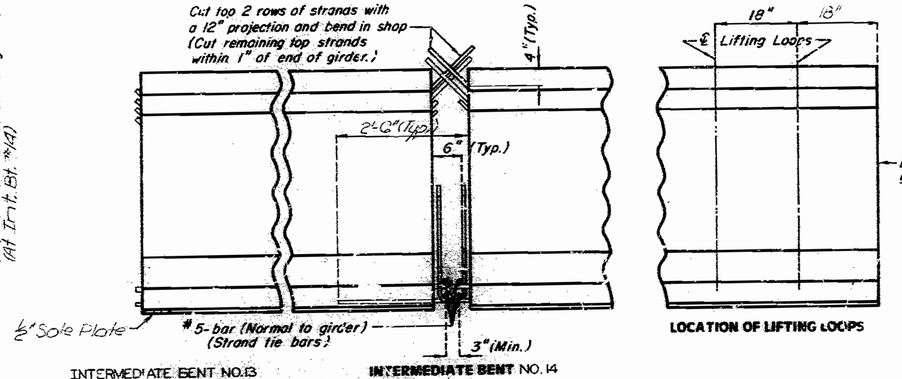


GIRDER DIMENSIONS
CAST-IN-PLACE FORMS



CL OF GIRDER
END OF GIRDER
STRAND ARRANGEMENTS

Note: Strand release for 6000psi concrete = 4500 psi.



INTERMEDIATE BENT NO. 13
INTERMEDIATE BENT NO. 14
STRAND DETAILS AT GIRDER ENDS

Note: Prestressing strands at Intermediate Bent No. 13 shall be trimmed to within ¾ inch of concrete if exposed or 1 inch of concrete if encased. Exposed ends of girders shall be given 2 coats of an asphalt paint. Ends of girders which will be encased in concrete diaphragms shall not be painted.

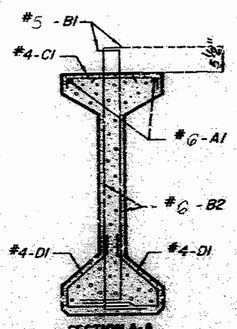
LOCATION OF LIFTING LOOPS

BILL OF REINFORCING STEEL - EACH GIRDER

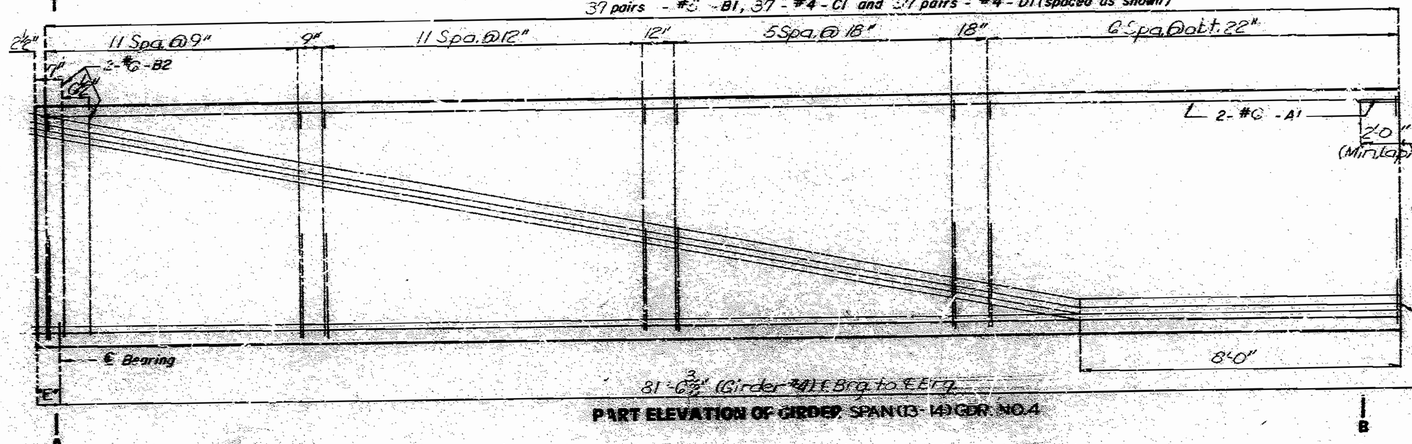
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	6 A1	42'-2"	20	
146	5 B1	5'-11"	11	
8	6 B2	5'-4"	11	
73	4 C1	2'-2"	10	
140	4 D1	3'-0"	9	

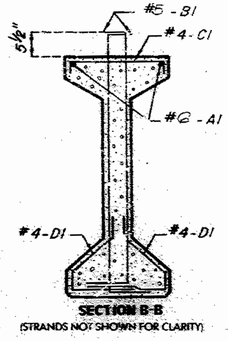
SHAPE 10 · SHAPE 9 · SHAPE 20 · SHAPE 11

NOTE:
ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".
ALL REINFORCEMENT SHALL BE GRADE 60.
THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.

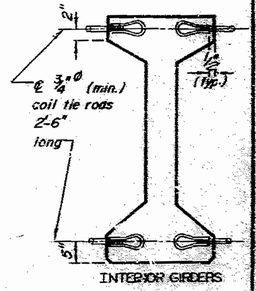


SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)





SECTION B-B
(STRANDS NOT SHOWN FOR CLARITY)



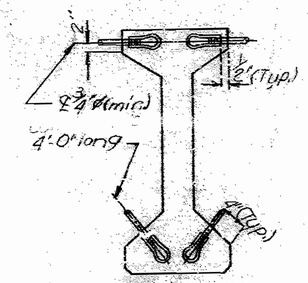
INTERIOR GIRDERS

DETAILS OF COIL TIES
AT INT. BENT NO. 14

NOTE:
COST OF ¾"Ø COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.
COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

The 1½"Ø holes shall be cored in the web for steel intermediate diaphragms. Drilling is not allowed.

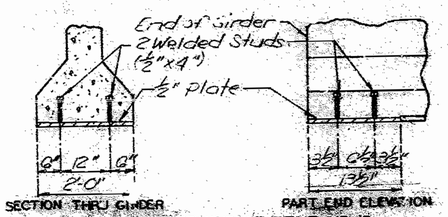
Note: For details of slotted wells to be cast in top of girder at Int. Bt. #3 end only) See sheet No. 85.
for details of Int. Bt. Diaph. see sheet No. 66
for location of Int. Diaph. and general girder placement, see sheet No. 20.
For girder camber and haunching see sheet No. 65.



INTERIOR GIRDERS

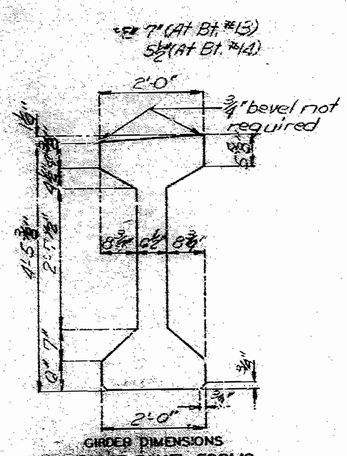
DETAILS OF COIL TIES
AT INT. BENT NO. 13

Note: Cost of furnishing and installing ½" plates and welded studs in girders shall be included in price bid for prestressed concrete I-girders per each. See special provisions for painting.



SOLE PLATE DETAILS AT BENT NO. 13

Note: Sole Plate to be placed at Bent No. 13 end of girder only.



GIRDER DIMENSIONS
PRECAST PANEL FORMS

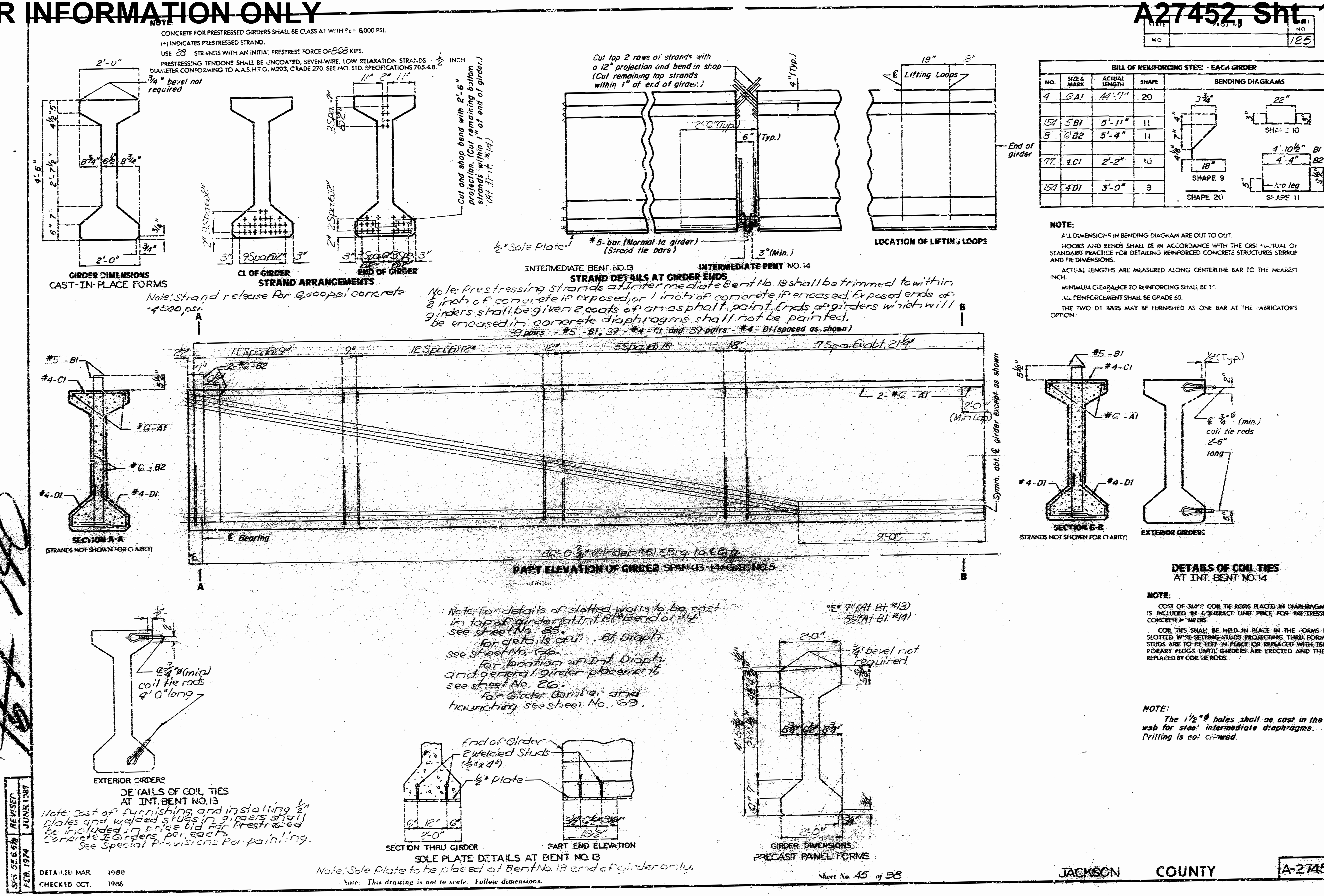
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 44 of 98

DETAILED MAR. 1988
CHECKED OCT. 1988

SPS 55.6.6½ REVISED JUNE 1987
FEB. 1979

JACKSON COUNTY A-2745



BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE
4	6 A1	44'-7"	20
154	5 B1	5'-11"	11
8	6 B2	5'-4"	11
77	4 C1	2'-2"	10
154	4 D1	3'-0"	9

NOTE:

ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".

ALL REINFORCEMENT SHALL BE GRADE 60.

THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.

STATE	PROJ. NO.	SHEET NO.
MO.		126

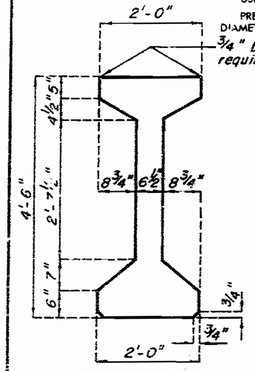
NOTE:

CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'c = 6,000 PSI.

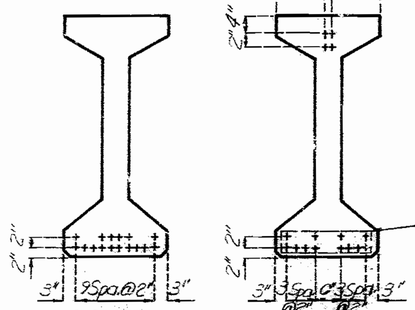
(+) INDICATES PRESTRESSED STRAND.

USE 15 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 496 KIPS.

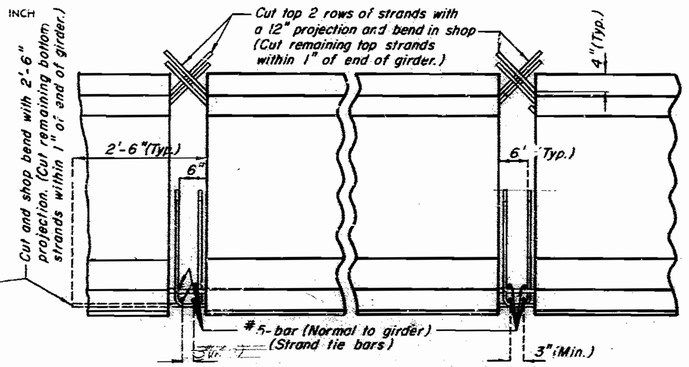
PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS. - ½ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO. STD. SPECIFICATIONS 705.4.8.



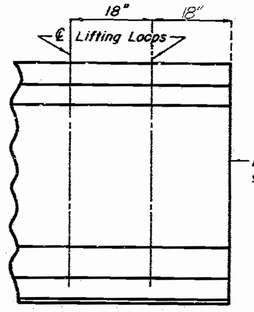
GIRDER DIMENSIONS
CAST-IN-PLACE FORMS



CL OF GIRDER **END OF GIRDER**
STRAND ARRANGEMENTS



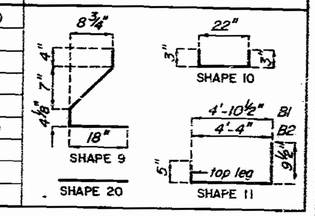
INTERMEDIATE BENT NO. 14 — **INTERMEDIATE BENT** NO. 15
STRAND DETAILS AT GIRDER ENDS



LOCATION OF LIFTING LOOPS

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	G A1	35'-11"	20	
122	5 B1	5'-11"	11	
8	5 B2	5'-4"	11	
61	4 C1	2'-2"	10	
122	4 D1	3'-0"	9	



NOTE:

ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

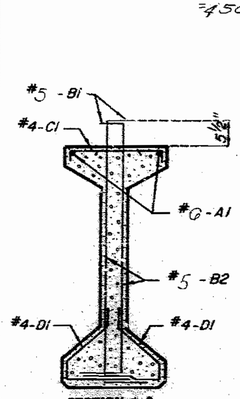
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".

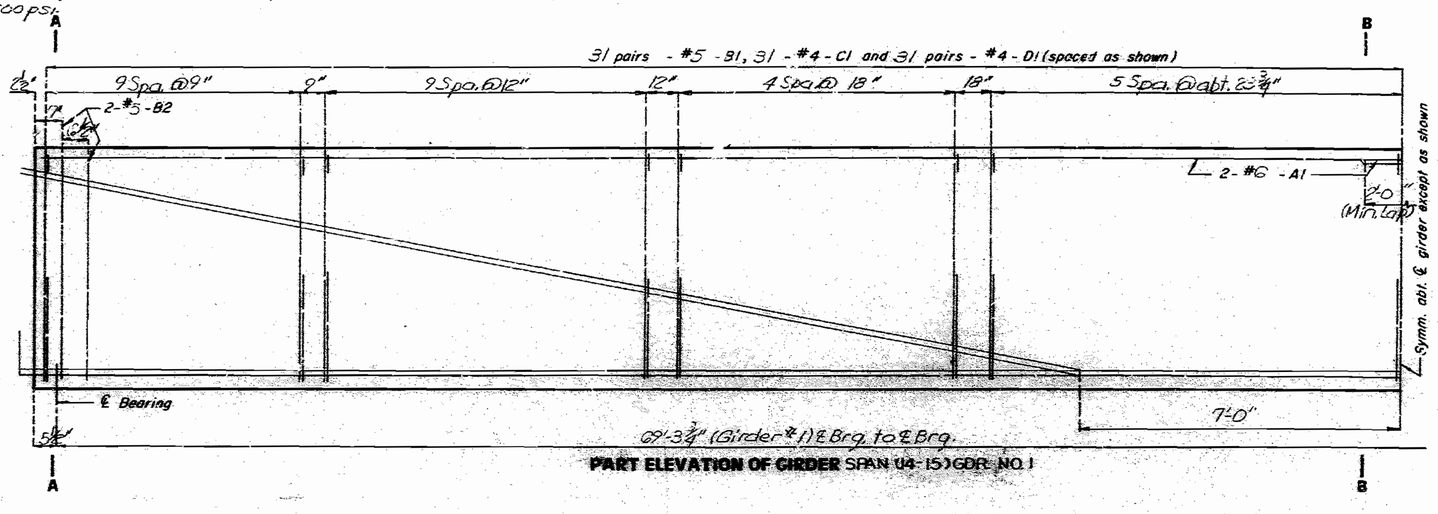
ALL REINFORCEMENT SHALL BE GRADE 60.

THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.

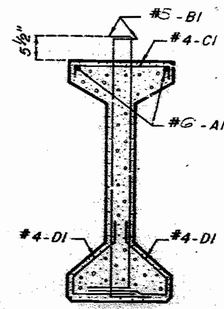
Note: Strand release for 6,000psi concrete = 4500psi.



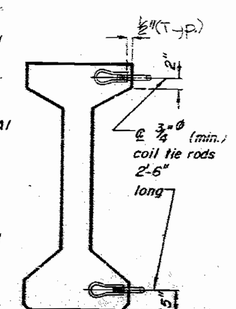
SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)



PART ELEVATION OF GIRDER SPAN 14-15 GDR. NO. 1

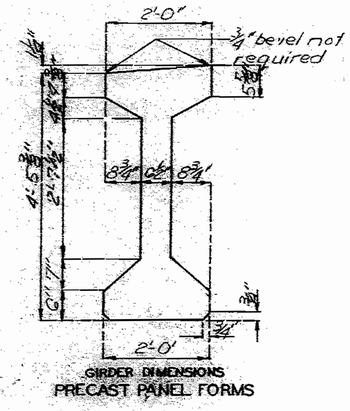


SECTION B-B
(STRANDS NOT SHOWN FOR CLARITY)



EXTERIOR GIRDERS

Note: For details of Int. Bt. Diaph. see sheet No. 66 & 66T.
For location of Int. Diaph. and general girder placement see sheet No. 26.
For Girder camber and haunching see sheet No. 69.



GIRDER DIMENSIONS
PRECAST PANEL FORMS

DETAILS OF COIL TIES

NOTE:

COST OF ¾"ø COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

NOTE:

The 1½"ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.

SYS 55.6.6½ | FEB. 1974 | REVISED JUNE 1987

DETAILED APR. 1988
CHECKED OCT. 1988

STATE	PROJ NO	SHEET NO
MO		127

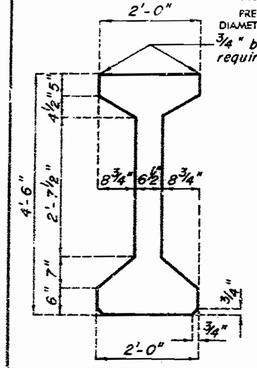
NOTE:

CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'c = 6,000 PSI.

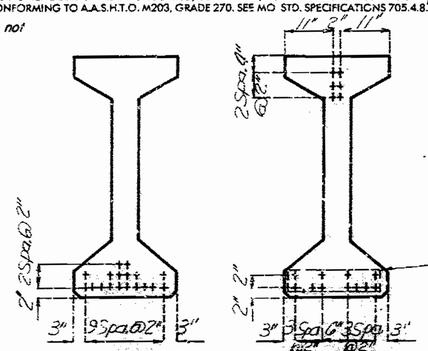
(+) INDICATES PRESTRESSED STRAND.

USE 18 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 558 KIPS.

PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS. - ½ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO STD. SPECIFICATIONS 705.4.8.

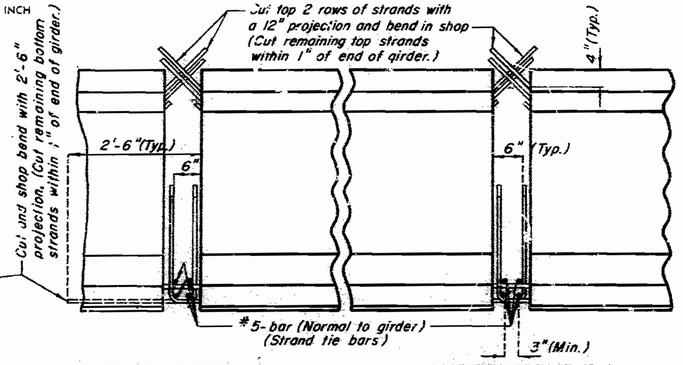


GIRDER DIMENSIONS
CAST-IN-PLACE FORMS

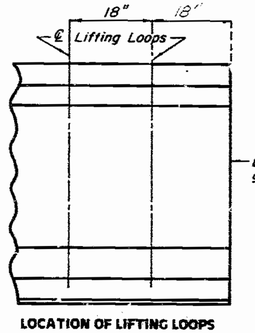


CL OF GIRDER — END OF GIRDER
STRAND ARRANGEMENTS

Note, Strand release for 6000psi concrete = 4500 psi.



INTERMEDIATE BENT NO. 14 — INTERMEDIATE BENT NO. 15
STRAND DETAILS AT GIRDER ENDS



LOCATION OF LIFTING LOOPS

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	6 A1	38'-3"	20	
130	5 B1	5'-11"	11	
8	5 B2	5'-4"	11	
25	4 C1	2'-2"	10	
30	4 D1	3'-0"	9	

BENDING DIAGRAMS: 8¾", 4", 7", 4⅛", 18" — SHAPE 9; 22", 3", 3" — SHAPE 10; 4'-10½", B1, 4'-4", B2, 9½", 5", top leg — SHAPE 11; SHAPE 20

NOTE:

ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.

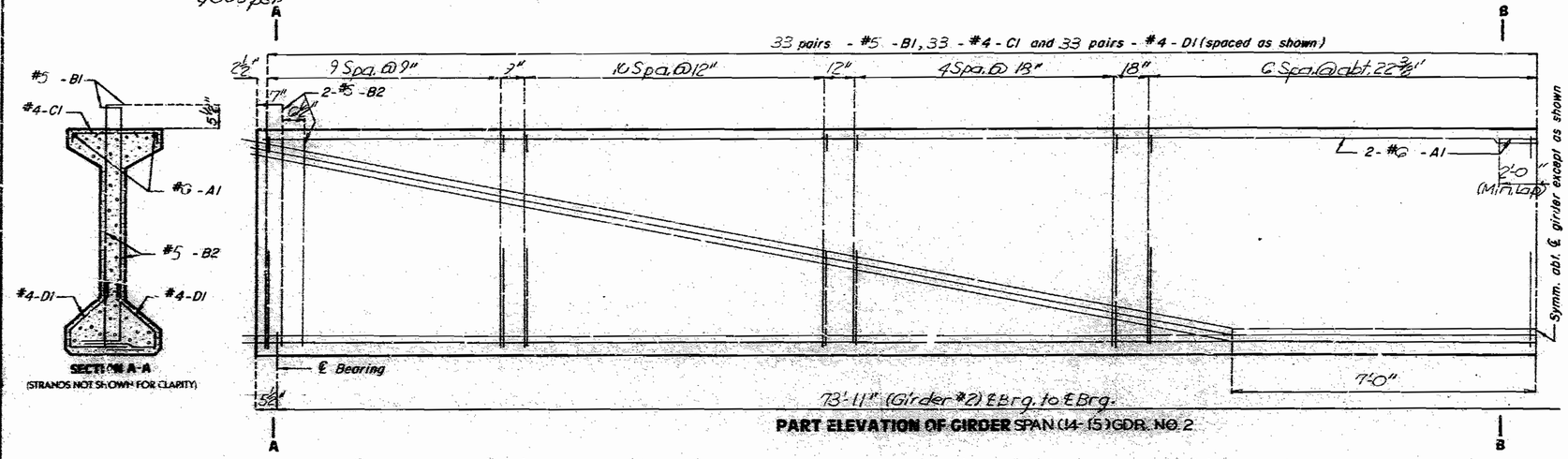
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".

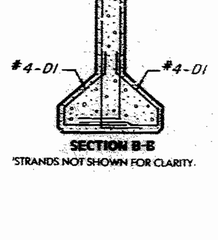
ALL REINFORCEMENT SHALL BE GRADE 60.

THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.

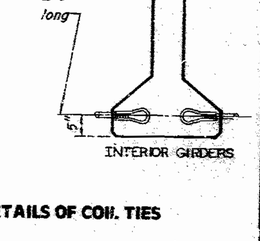


SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)

PART ELEVATION OF GIRDER SPAN (14-15) GDR. NO. 2



SECTION B-B
*STRANDS NOT SHOWN FOR CLARITY.



INTERIOR GIRDERS

DETAILS OF COIL TIES

NOTE:

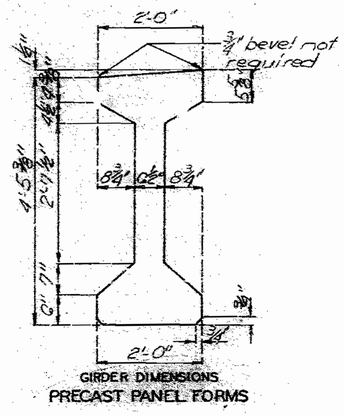
COST OF 3/4" ϕ COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

NOTE:

The 1½"ϕ holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.

Note: For details of Int. Bt. Diaph. see sheet No. 66 & No. 67; for location of Int. Diaph. and general girder placement see sheet No. 26. For Girder camber and haunching see sheet No. 69.



GIRDER DIMENSIONS
PRECAST PANEL FORMS

SPS 55.6.6½ | REVISED | JUNE 1987
FEB. 1974 |

DETAILED APR. 1988
CHECKED OCT. 1988

Note: This drawing is not to scale. Follow dimensions.

STATE	PROJ NO	SHEET NO
MO		128

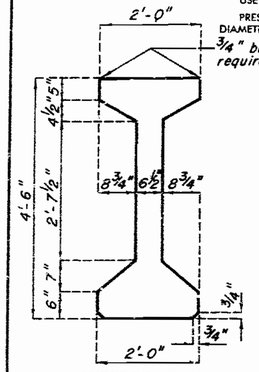
NOTE:

CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'c = 6,000 PSI.

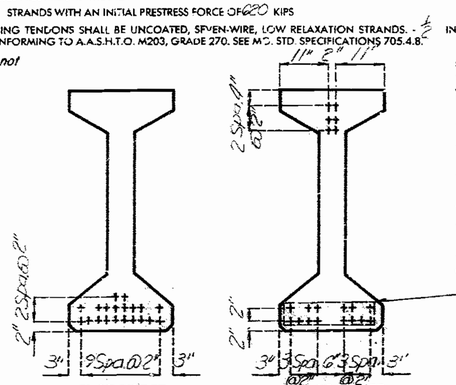
(+) INDICATES PRESTRESSED STRAND.

USE 20 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 620 KIPS

PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS. - ½ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO. STD. SPECIFICATIONS 705.4.8.

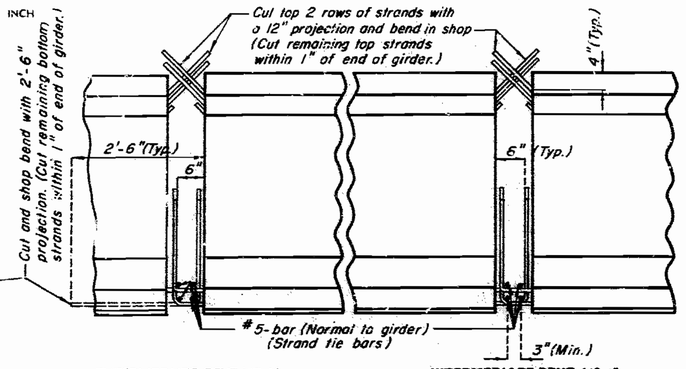


GIRDER DIMENSIONS
CAST-IN-PLACE FORMS

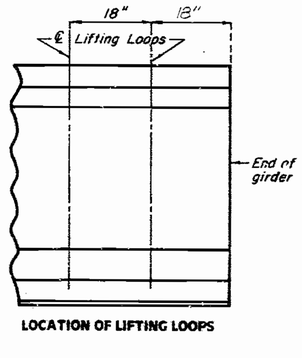


CL OF GIRDER **END OF GIRDER**
STRAND ARRANGEMENTS

Note: Strand release for 6000 psi concrete = 4500 psi.



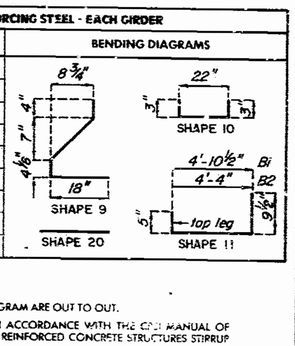
INTERMEDIATE BENT NO. 14 — INTERMEDIATE BENT NO. 15
STRAND DETAILS AT GIRDER ENDS



LOCATION OF LIFTING LOOPS

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	6 A1	40'-8"	20	
138	5 B1	5'-11"	11	
8	6 B2	5'-4"	11	
69	4 C1	2'-2"	10	
138	4 D1	3'-0"	9	



NOTE:

ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.

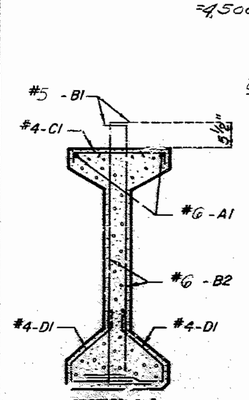
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

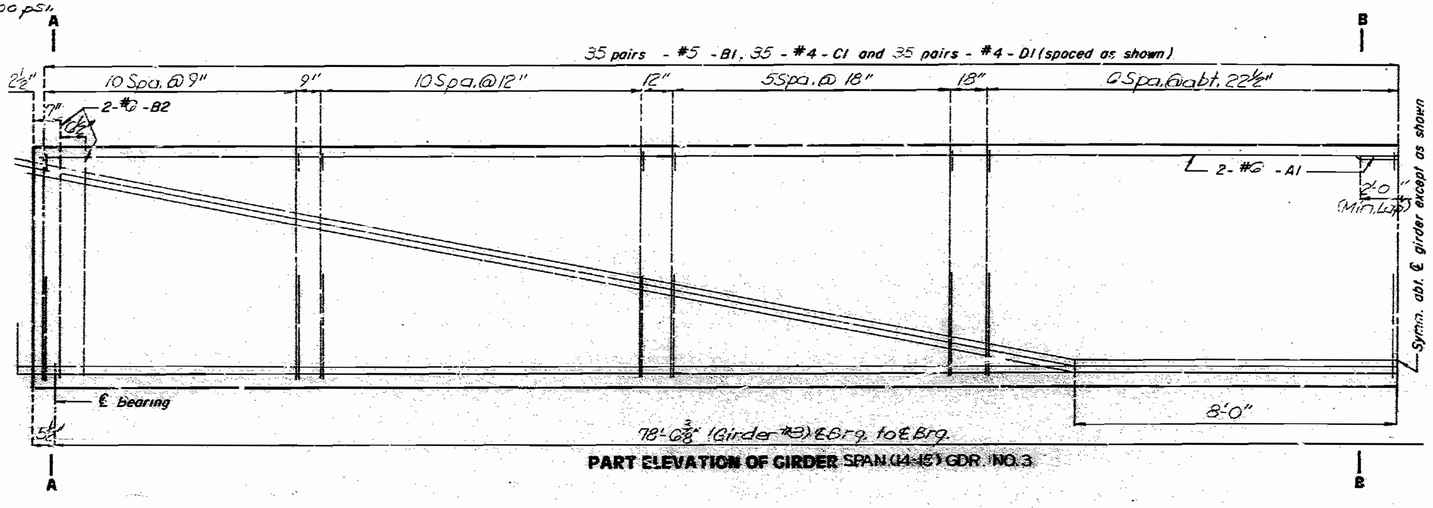
MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".

ALL REINFORCEMENT SHALL BE GRADE 60.

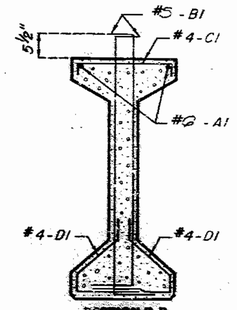
THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.



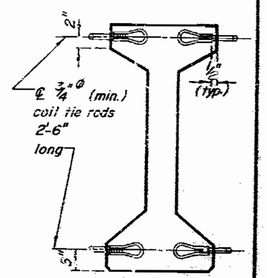
SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)



PART ELEVATION OF GIRDER SPAN (14-15) GDR. NO. 3



SECTION B-B
(STRANDS NOT SHOWN FOR CLARITY)



INTERIOR GIRDERS

DETAILS OF COIL TIES

NOTE:

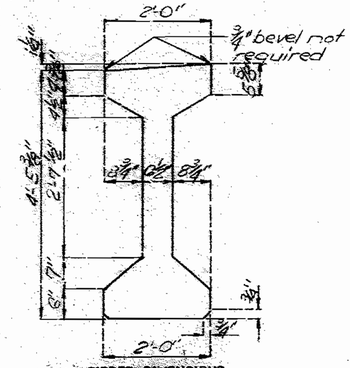
COST OF 3/4" ∅ COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

NOTE:

The 1½"∅ holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.

Note: For details of Int. Bt. Diaph. see sheet No. 66 & No. 67.
For location of Int. Diaph. and general girder placement see sheet No. 26.
For Girder Camber and haunching see sheet No. 69.



GIRDER DIMENSIONS
PRECAST PANEL FORMS

SPS 55.6½ FEB. 1974 | REVISED JUNE 1987

DETAILED APR. 1988
CHECKED OCT. 1988

Note: This drawing is not to scale. Follow dimensions.

STATE	PROJ. NO	SHEET NO
MO		129

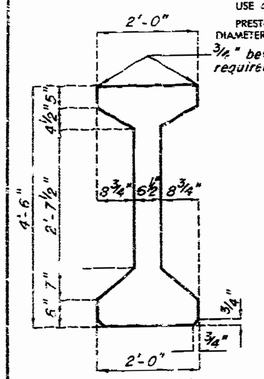
NOTE:

CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'_c = 6,000 PSI.

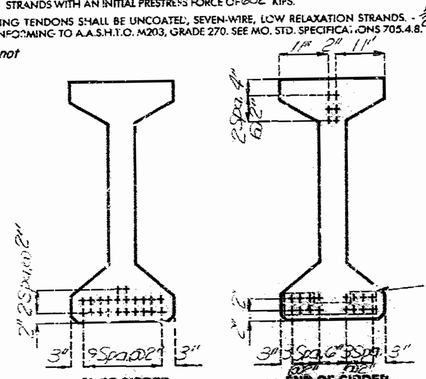
(+) INDICATES PRESTRESSED STRAND.

USE 22 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 682 KIPS.

PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS. - ½ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO. STD. SPECIFICATIONS 705.4.8.



GIRDER DIMENSIONS
CAST-IN-PLACE FORMS

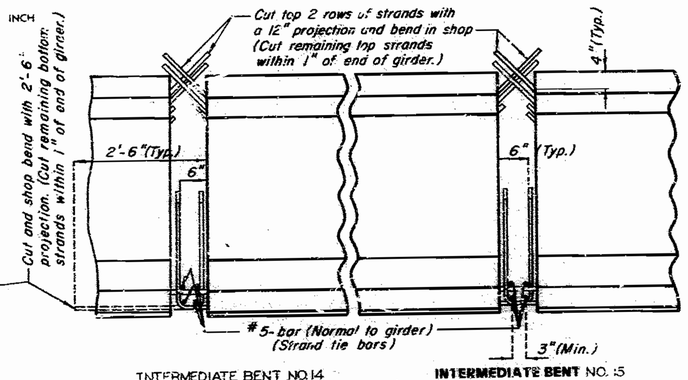


CL OF GIRDER

END OF GIRDER

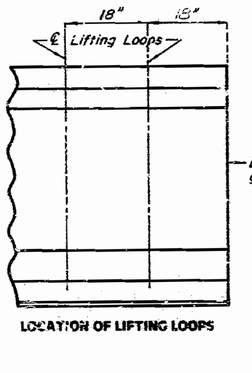
STRAND ARRANGEMENTS

Note: Strand release for 6000psi concrete =4500psi.



INTERMEDIATE BENT NO.14 — INTERMEDIATE BENT NO. 15

STRAND DETAILS AT GIRDER ENDS



LOCATION OF LIFTING LOOPS

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	6A1	42'-11"	20	
416	5B1	5'-11"	11	
8	6B2	5'-4"	11	
73	4C1	2'-2"	10	
416	4D1	3'-0"	9	

BENDING DIAGRAMS: 8¾" 4" 7" 4⅛" 18" SHAPE 9; 22" 3" 3" SHAPE 10; 4'-10½" B1 4'-4" B2 9½" 5" top leg SHAPE 11; SHAPE 20

NOTE:

ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.

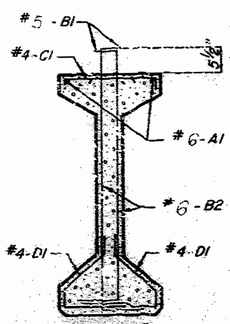
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

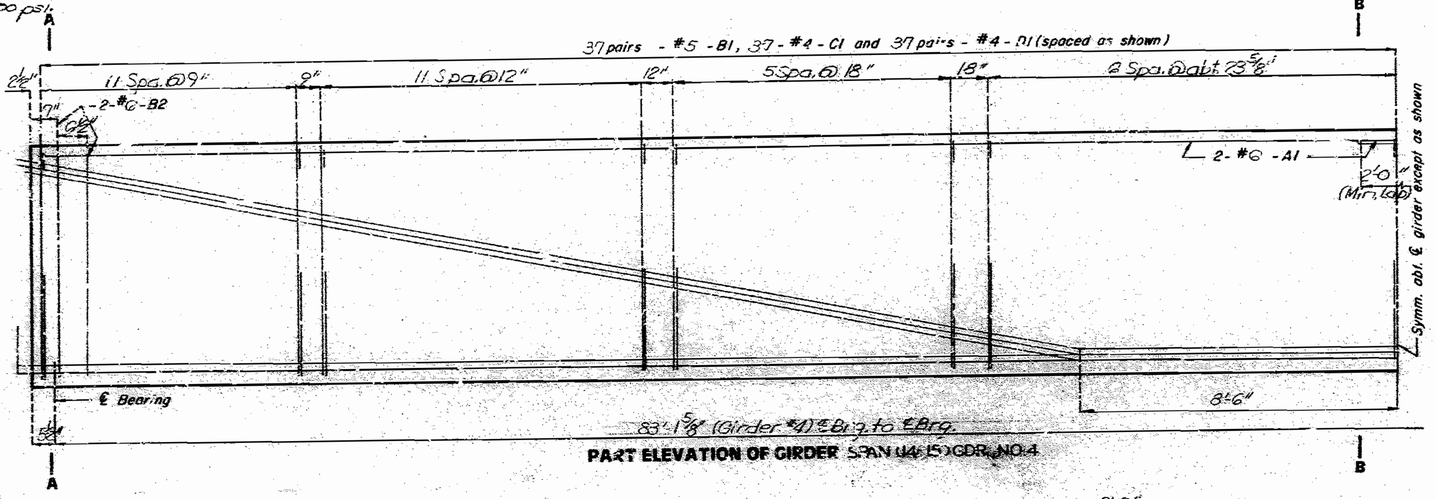
MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".

ALL REINFORCEMENT SHALL BE GRADE 60.

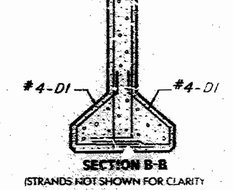
THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.



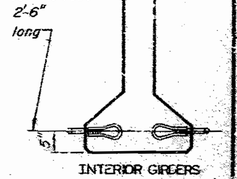
SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)



PART ELEVATION OF GIRDER SPAN (4) (5) GDR. NO. 4



SECTION B-B
(STRANDS NOT SHOWN FOR CLARITY)



INTERIOR GIRDERS

DETAILS OF COIL TIES

NOTE:

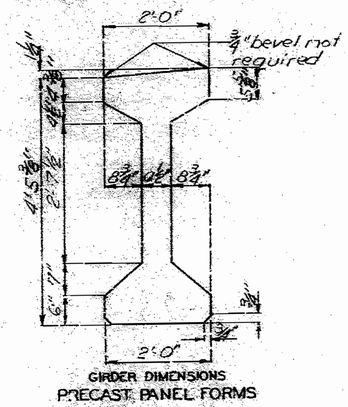
COST OF 3/4"Ø COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

NOTE:

The 1½"Ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.

Note: For details of Int. Bt. Diaph. see sheet No. 66 & No. 67.
For location of Int. Diaph. and general girder placement see sheet No. 26.
For Girder camber and haunching see sheet No. 69



GIRDER DIMENSIONS
PRECAST PANEL FORMS

SPS 55.6.64 FEB. 1974 | REVISED JUNE 1987

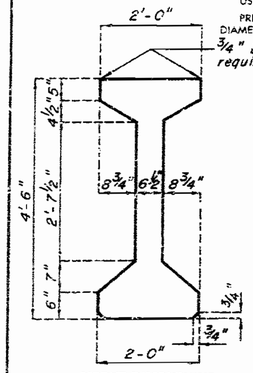
DETAILED APR. 1988
CHECKED OCT. 1988

Note: This drawing is not to scale. Follow dimensions.

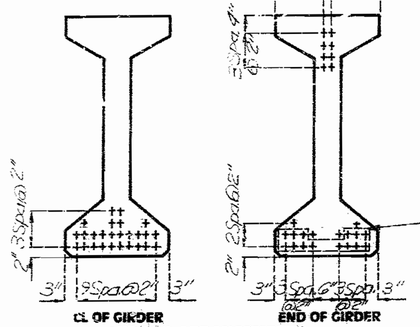
JACKSON COUNTY A-2745

STATE	PROJ. NO.	SHEET NO.
MO		130

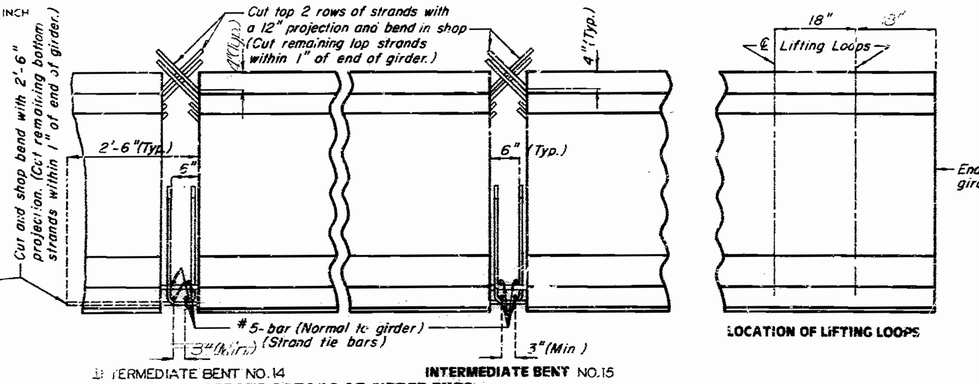
NOTE:
CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'c = 6,000 PSI.
(+) INDICATES PRESTRESSED STRAND.
USE 26 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 806 KIPS.
PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS, ½ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO. STD. SPECIFICATIONS 705.4.8.



GIRDER DIMENSIONS
CAST-IN-PLACE FORMS



STRAND ARRANGEMENTS



STRAND DETAILS AT GIRDER ENDS

LOCATION OF LIFTING LOADS

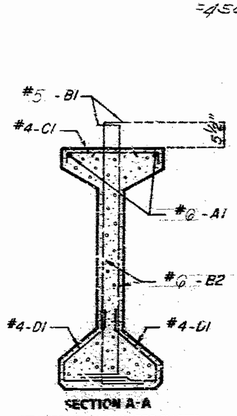
BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	6 A1	45'-2"	20	
152	5 B1	5'-11"	11	
8	6 B2	5'-4"	11	
79	4 C1	2'-2"	10	
158	4 D1	3'-0"	9	

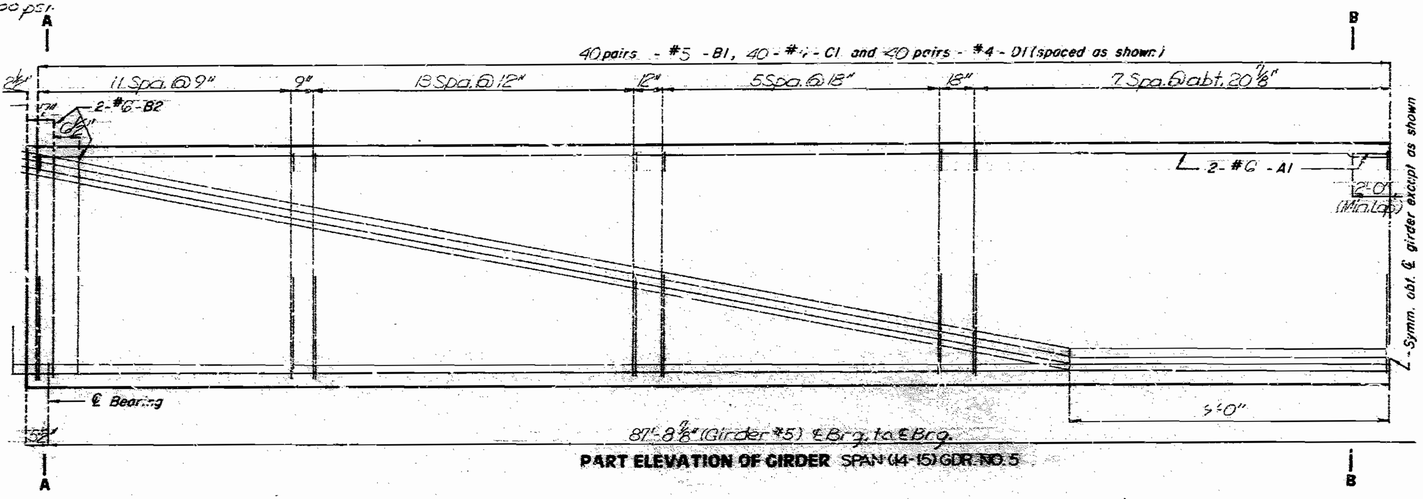
BENDING DIAGRAMS: 8¾", 4", 7", 4⅛", 18", SHAPE 9; 22", 3", SHAPE 10; SHAPE 20; 4'-10½", B1, B2, 4'-4", 9½", 5", top leg, SHAPE 11

NOTE:
ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".
ALL REINFORCEMENT SHALL BE GRADE 60.
THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.

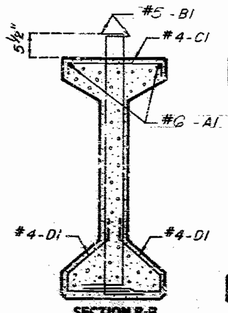
Note: strand release for 6000psi concrete =4500psi.



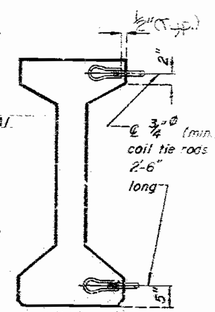
SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)



PART ELEVATION OF GIRDER SPAN (4-15) GDR. NO. 5



SECTION B-B
(STRANDS NOT SHOWN FOR CLARITY)



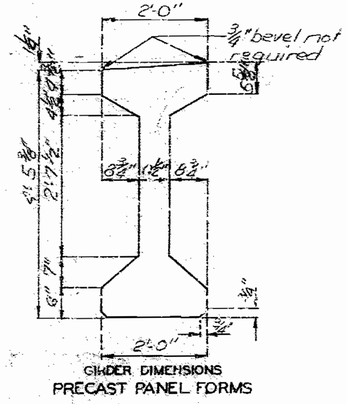
EXTERIOR GIRDERS

DETAILS OF COIL TIES

NOTE:
COST OF ¾"ø COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.
COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

NOTE:
The 1½ [illegible] be [illegible] the web for steel intermediate diaphragms. Drilling is not allowed.

Note: for details of Int. Bt. Diaph. see sheet No. 66 & No. 67.
For location of Int. Diaph. and general girder placement see sheet No. 68.
For girder camber and haunching see sheet No. 69



GIRDER DIMENSIONS
PRECAST PANEL FORMS

137

	REVISED
SPS 05.6.6½	JUNE 1987
FEB. 1974	

DETAILED MAR. 1988
CHECKED OCT. 1988

Note: This drawing is not to scale. Follow dimensions.

JACKSON COUNTY A-2745

STATE	PROJ NO	SHEET NO
MO		131

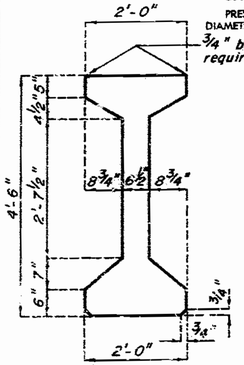
NOTE

CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'c = 6,000 PSI.

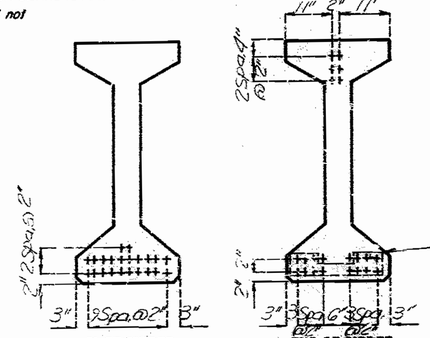
(+) INDICATES PRESTRESSED STRAND.

USE 22 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 232 KIPS.

PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS, ½ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO. STD. SPECIFICATIONS 705.4.8.

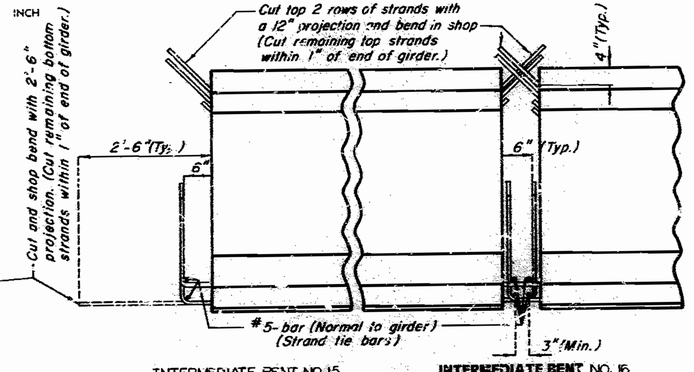


GIRDER DIMENSIONS
CAST-IN-PLACE FORMS

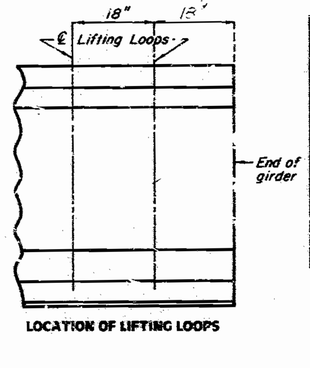


STRAND ARRANGEMENTS

Note: Strand release for 6000psi concrete = 4500 psi.



STRAND DETAILS AT GIRDER ENDS



LOCATION OF LIFTING LOOPS

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	G A1	①	20	
142	5 B1	5'-11"	11	
8	G B2	5'-4"	11	
71	4 C1	2'-2"	10	
142	4 D1	3'-0"	9	

SHAPE 9 — SHAPE 20 — SHAPE 10 — SHAPE 11 (top leg)

NOTE:

ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.

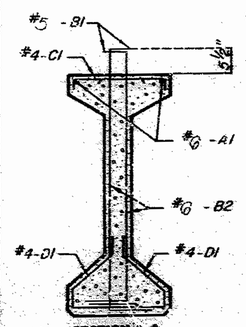
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

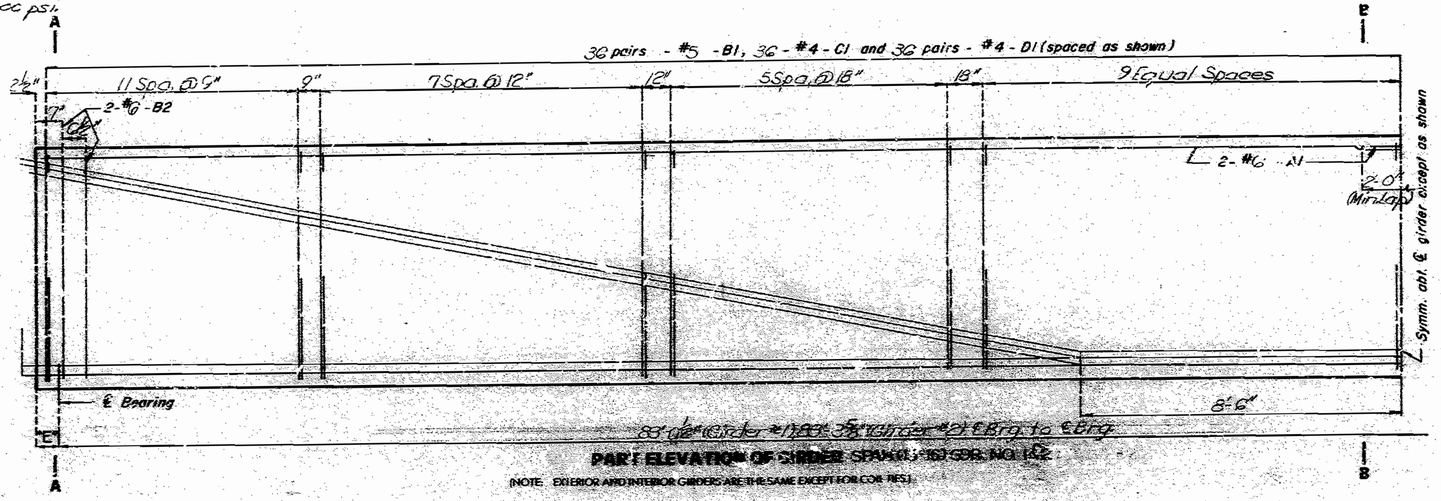
MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".

ALL REINFORCEMENT SHALL BE GRADE 60.

THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.

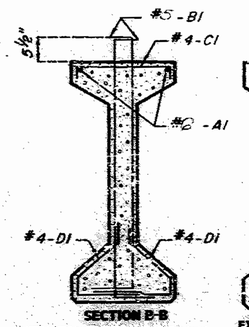


SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)

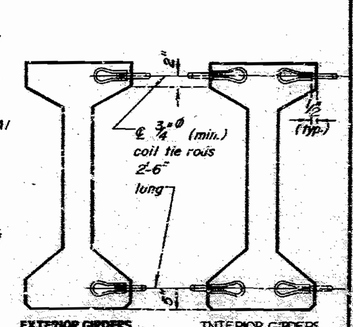


PART ELEVATION OF GIRDER SPANNING BETWEEN BENT NOS. 15 & 16

(NOTE: EXTERIOR AND INTERIOR GIRDERS ARE THE SAME EXCEPT FOR COIL TIES)



SECTION B-B
(STRANDS NOT SHOWN FOR CLARITY)



EXTERIOR GIRDERS — INTERIOR GIRDERS

DETAILS OF COIL TIES

NOTE:

COST OF ¾"ø COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SEATING-STRIPS PROJECTING 7" INTO FORMS. STRIPS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

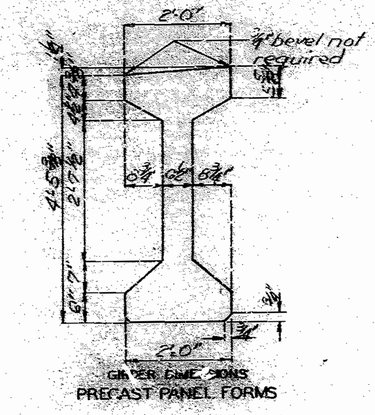
NOTE:

The 1½"ø holes shall be cast in the web for steel intermediate diaphragms. Drilling not allowed.

Note for details of Int Bt Diaph. see sheet No. 67.
for location of Int Diaph. and general girder placement see sheet No. 70.
for Girder Camber and haunching see sheet No. 69.

① 42'-10" (Girder #1)
43'-0" (Girder #2)

"E" 5" (At Bt. #15)
5½" (At Bt. #16)



GIRDER DIMENSIONS
PRECAST PANEL FORMS

SPS 553.6.6½	REVISED
FEB. 1974	JUNE 1977

DETAILED APR. 1988
CHECKED GC 1988

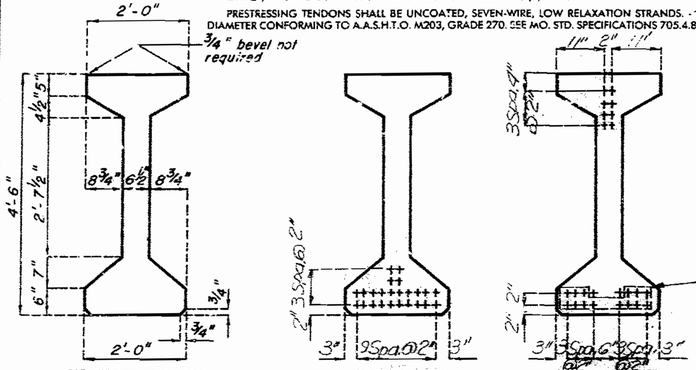
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 51 of 98.

JACKSON COUNTY A-2745

STATE	PROJ NO	SHEET NO
MO		132

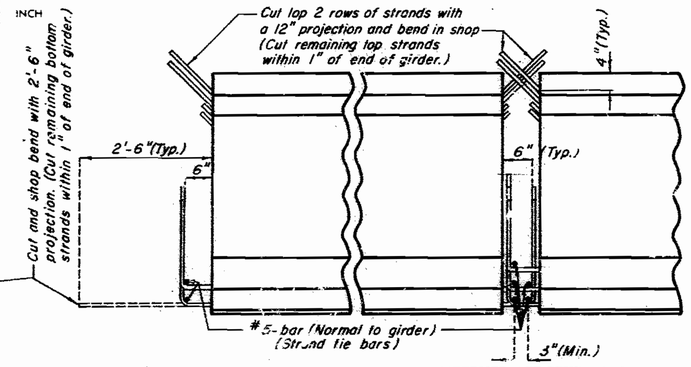
NOTE:
CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'c = 6,000 PSI.
(+) INDICATES PRESTRESSED STRAND.
USE 24 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 744 KIPS.
PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS. 1/2 INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO. STD. SPECIFICATIONS 705.4.8.



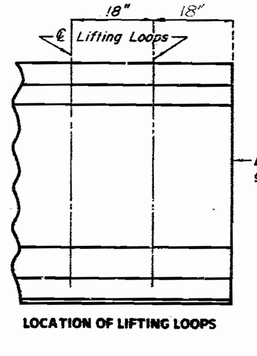
GIRDER DIMENSIONS
CAST-IN-PLACE FORMS

CL OF GIRDER
END OF GIRDER
STRAND ARRANGEMENTS

Note: Strand release for 6,000 psi concrete = 4500 psi.



INTERMEDIATE BENT NO. 15 — INTERMEDIATE BENT NO. 16
STRAND DETAILS AT GIRDER ENDS



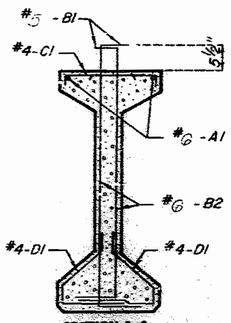
LOCATION OF LIFTING LOOPS

BILL OF REINFORCING STEEL - EACH GIRDER

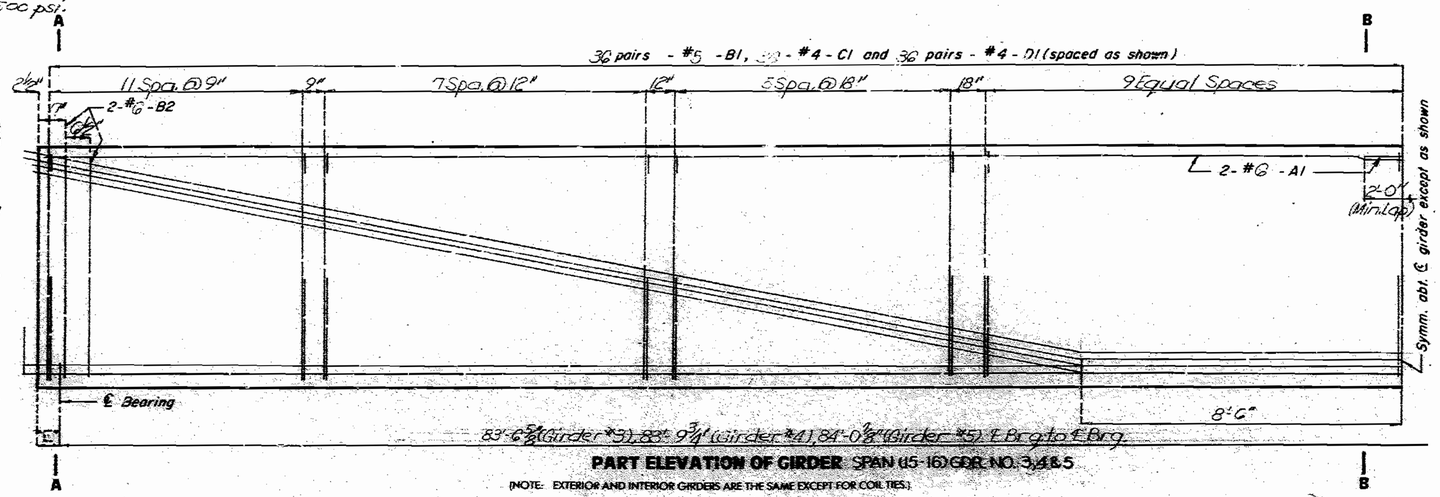
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	G A1	①	20	
142	5 B1	5'-11"	11	
8	G B2	5'-4"	11	
71	4 C1	2'-2"	10	
142	4 D1	3'-0"	9	

SHAPE 10 · SHAPE 9 · SHAPE 20 · SHAPE 11 (B1, B2, top leg)

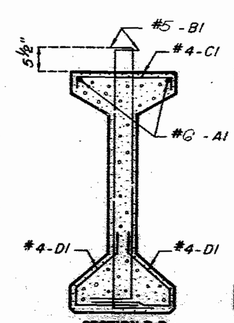
NOTE:
ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".
ALL REINFORCEMENT SHALL BE GRADE 60.
THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.



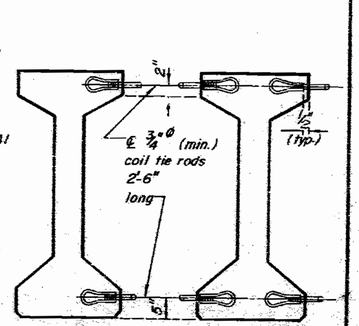
SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)



PART ELEVATION OF GIRDER SPAN (15-16) GDR. NO. 3,4 & 5
(NOTE: EXTERIOR AND INTERIOR GIRDERS ARE THE SAME EXCEPT FOR COIL TIES.)



SECTION B-B
(STRANDS NOT SHOWN FOR CLARITY)



EXTERIOR GIRDERS — INTERIOR GIRDERS

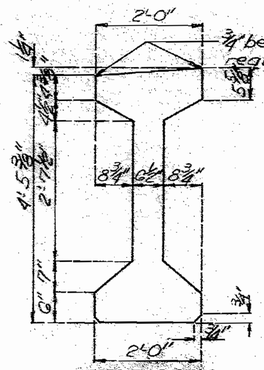
DETAILS OF COIL TIES

NOTE:
COST OF 3/4"ϕ COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.
COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

NOTE:
The 1½"ϕ holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.

Note: for details of Int. Bt. Diaph. See sheet No. 67.
for location of Int. Diaph. and general girder placement, see sheet No. 26.
for Girder Camber and haunching see sheet No. 69.

① 43'-1" (Girder #3)
43'-3" (Girder #4)
43'-4" (Girder #5)



GIRDER DIMENSIONS
PRECAST PANEL FORMS

Note: This drawing is not to scale. Follow dimensions.

JACKSON COUNTY A-2745

SPS 55.6.6½ | REVISED JUNE 1987
FEB. 1974

DETAILED APR. 1988
CHECKED OCT. 1988

STATE	PROJ NO	SHEET NO
MO		133

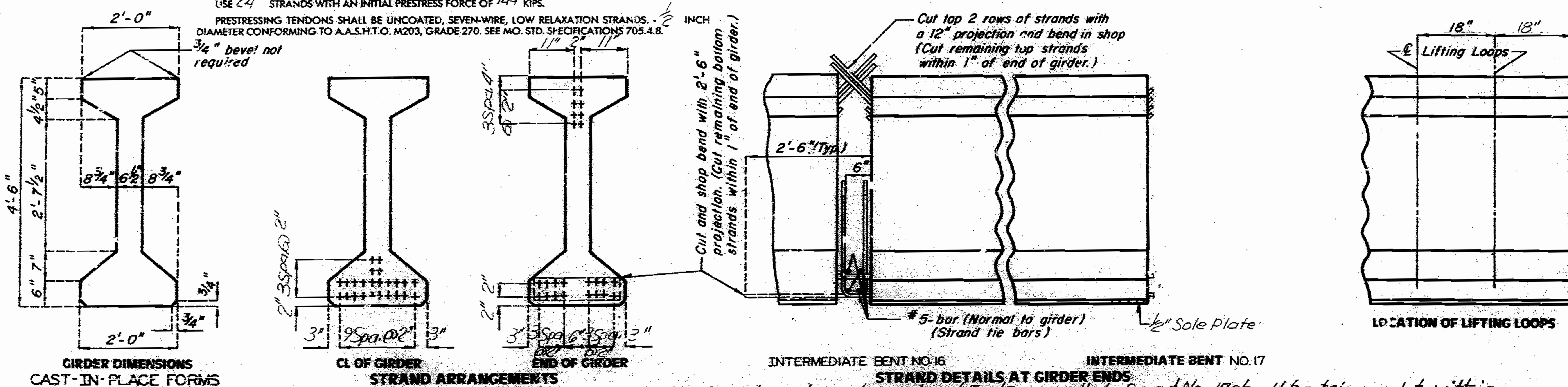
NOTE:

CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'c = 6,000 PSI.

(+) INDICATES PRESTRESSED STRAND.

USE 24 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 744 KIPS.

PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS. - 1/2 INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO. STD. SPECIFICATIONS 705.4.8.

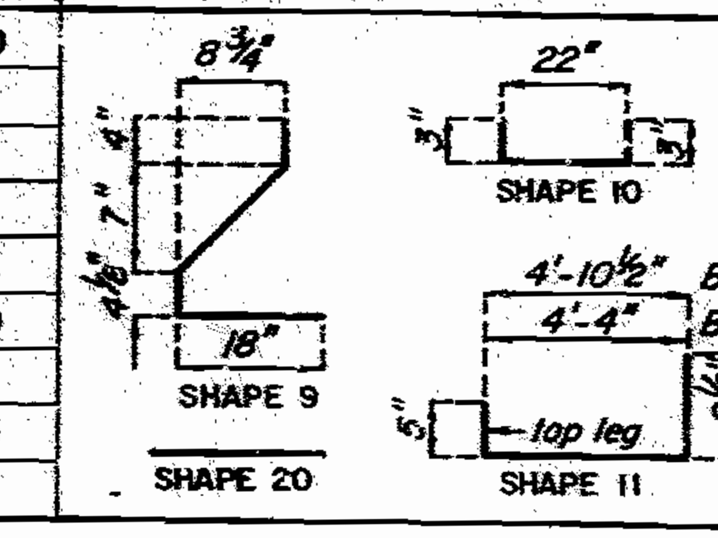


Note: strand release for 6000 psi concrete = 4500 psi.

Note: Prestressing strands at Intermediate Bent No. 17 shall be trimmed to within 1/8 inch of concrete if exposed, or 1 inch of concrete if encased. Exposed ends of girders shall be given 2 coats of an asphalt paint. Ends of girders which will be encased in concrete diaphragms shall not be painted.

38 pairs - #5 - B1, 38 - #4 - C1 and 38 pairs - #4 - D1 (spaced as shown)

BILL OF REINFORCING STEEL - EACH GIRDER				
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
4	6 A1	①	20	
150	5 B1	5'-11"	11	
8	6 B2	5'-4"	11	
75	4 C1	2'-2"	10	
150	4 D1	3'-0"	9	



NOTE:

ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.

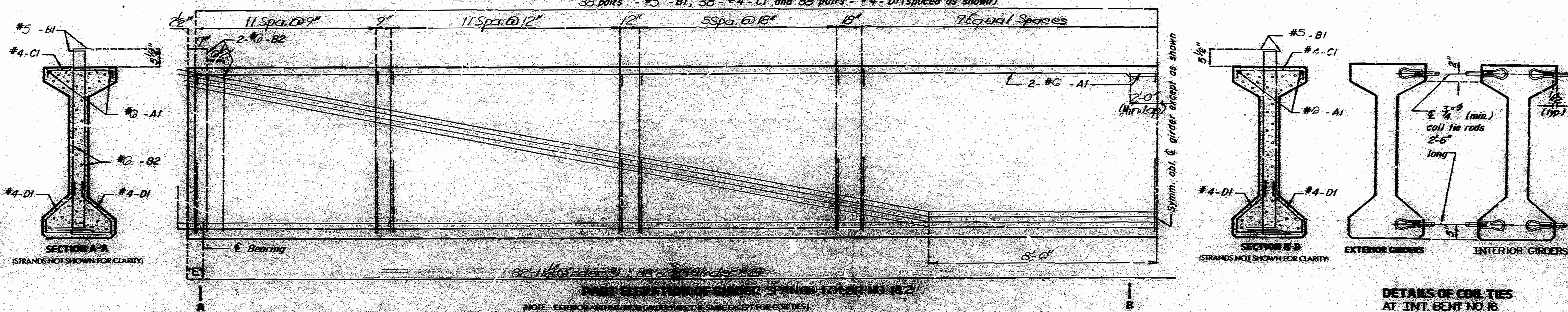
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".

ALL REINFORCEMENT SHALL BE GRADE 60.

THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.



DETAILS OF COIL TIES
AT INT. BENT NO. 16

NOTE:

COST OF 3/4"Ø COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

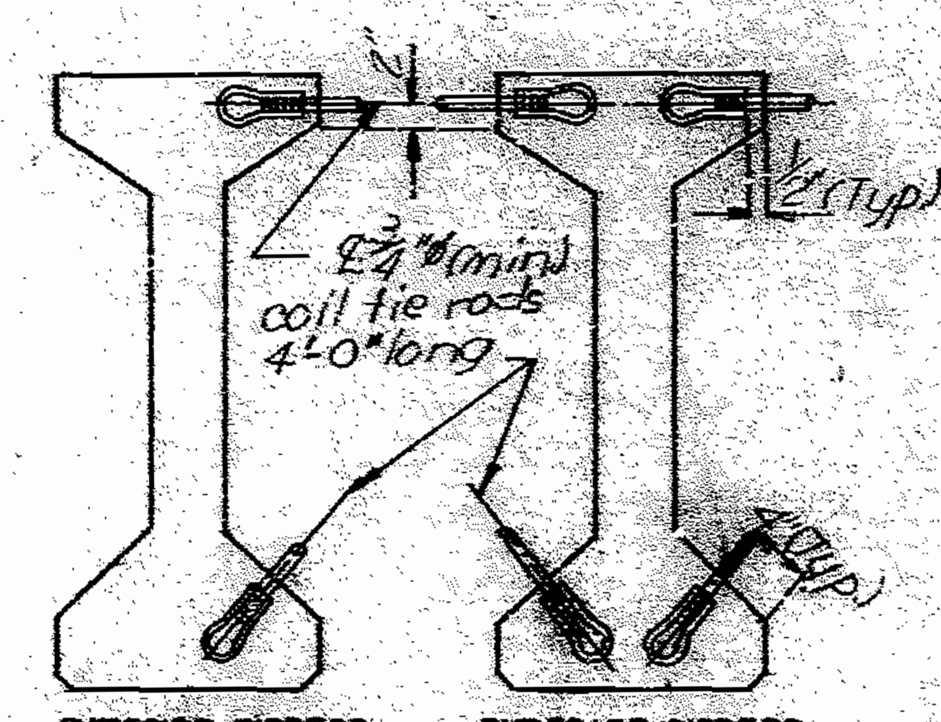
NOTE:

The 1 1/2"Ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.

Note: For details of slotted wells to be cast in top of girder at Int. Bt. 17 end only, see sheet No. 86.
For details of Int. Bt. Diaph. see sheet No. 67.
For location of Int. Diaph. and general girder placement, see sheet No. 69.
For Girder camber and haunching see sheet No. 69

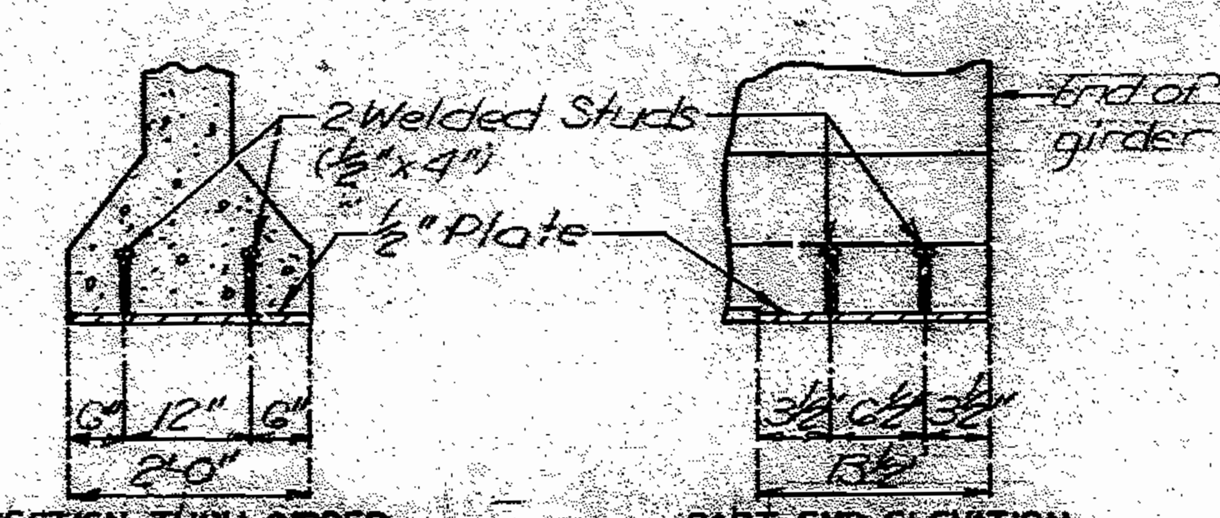
*E: 52'-1/4" (Girder #1 & #2) At Bt. #16
*F (Girder #1 & #2) At Bt. #17

① 82'-11" (Girder #1)
43'-0" (Girder #2)



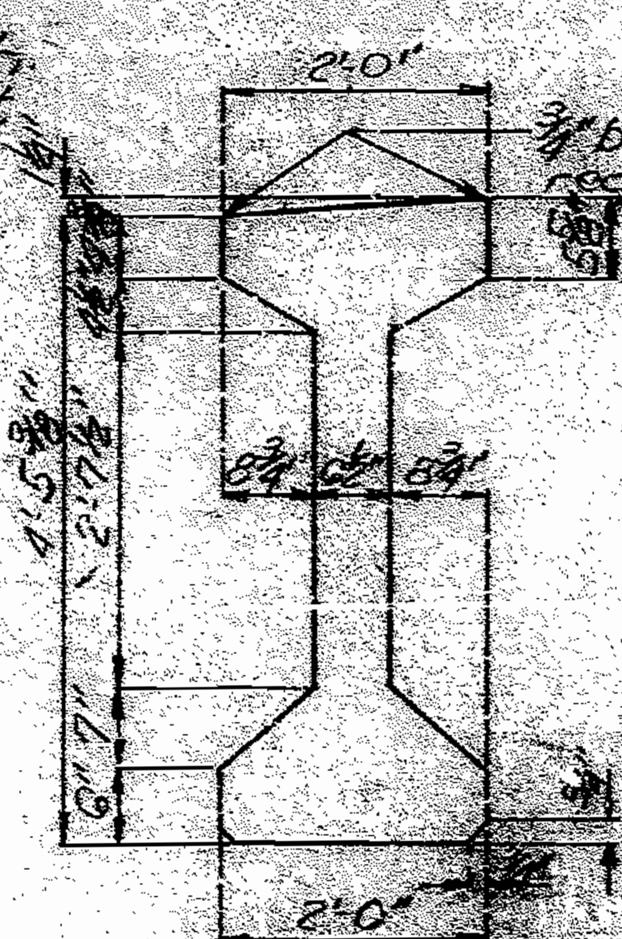
DETAILS OF COIL TIES
AT INT. BENT NO. 17

Note: Cost of furnishing and installing 1/2" plates and welded studs in girders shall be included in price bid for Prestressed Concrete I-Girders, per each.
See Special Provisions for painting.



SOLE PLATE DETAILS AT BENT NO. 17

Note: Sole Plate to be placed at Bent No. 17 end of girder only.



GIRDER DIMENSIONS
PRECAST PANEL FORMS

175 142

SPS 55.6.6 1/2 FEB. 1974	REVISED JUNE 11/87

DETAILED APR. 1988
CHECKED OCT. 1988

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 53 of 98

JACKSON COUNTY A-2745

STATE	PROJ. NO.	SHEET NO.
MO		134

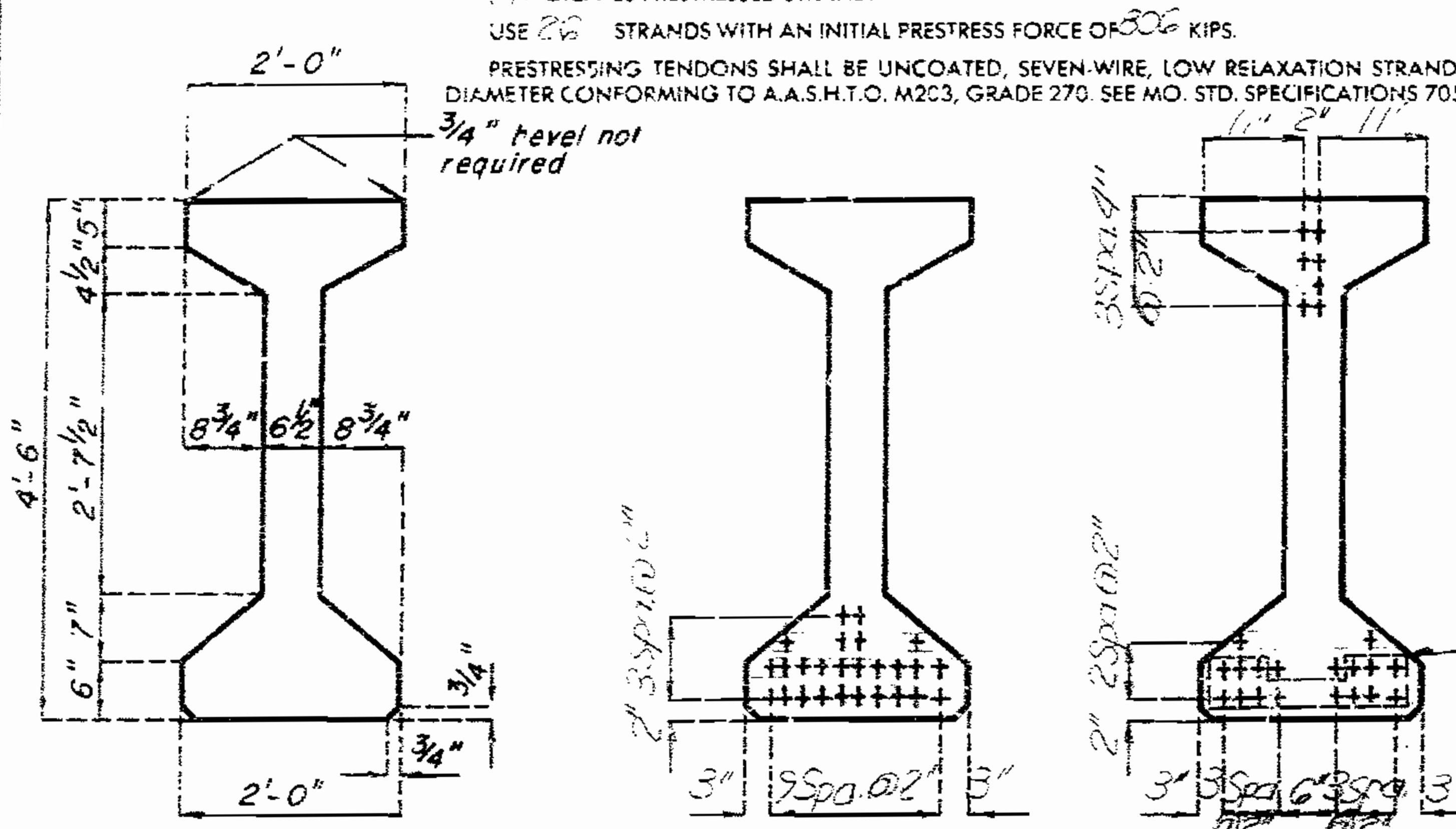
NOTE:

CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'c = 6,000 PSI.

(+) INDICATES PRESTRESSED STRAND.

USE 26 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 806 KIPS.

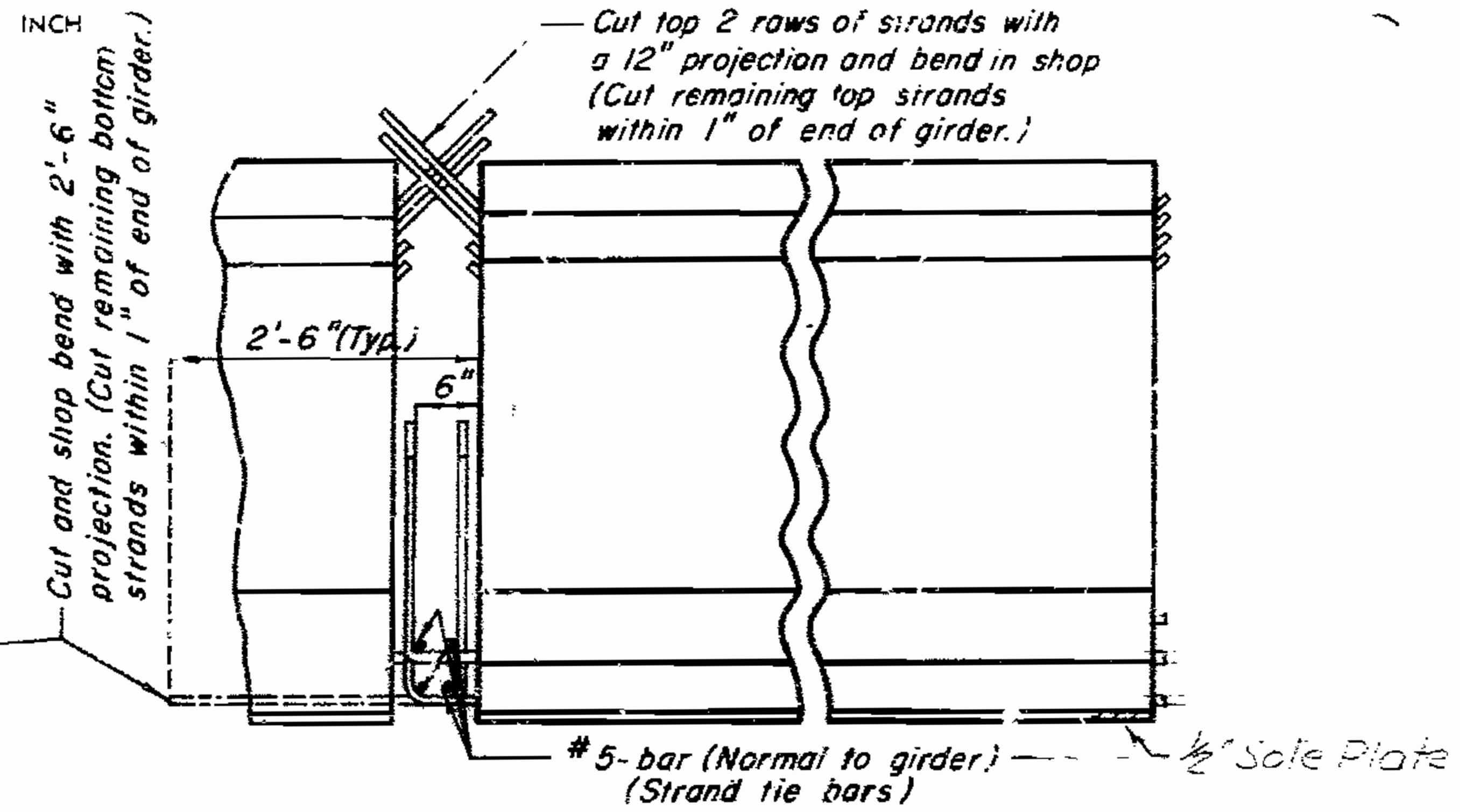
PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS. 1/2 INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. SEE MO. STD. SPECIFICATIONS 705.4.8.



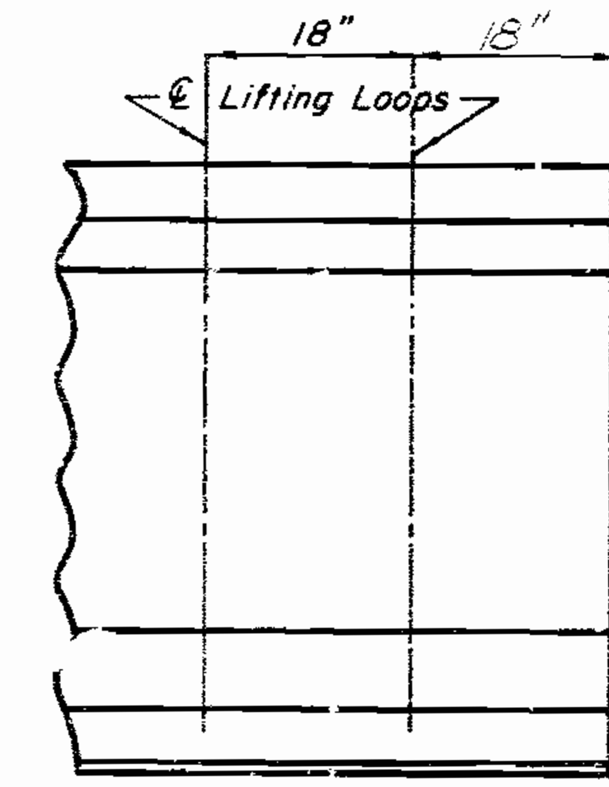
GIRDER DIMENSIONS
CAST-IN-PLACE FORMS

CL OF GIRDER — END OF GIRDER
STRAND ARRANGEMENTS

Note: Strand release for 6000 psi concrete = 4500 psi.



INTERMEDIATE BENT NO.16 — INTERMEDIATE BENT NO. 17
STRAND DETAILS AT GIRDER ENDS



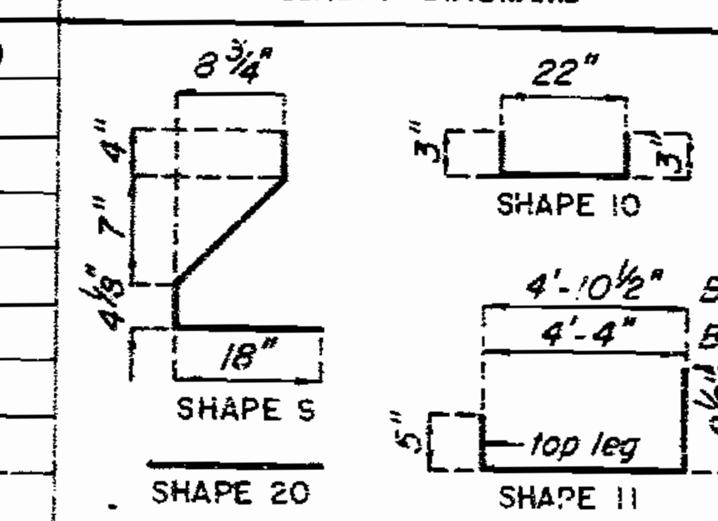
LOCATION OF LIFTING LOOPS

Note: Prestressing strands at Intermediate Bent No. 17 shall be trimmed to within 1 inch of concrete if exposed, or 1 inch of concrete if encased. Exposed ends of girders shall be given 2 coats of an asphalt paint. Ends of girders which will be encased in concrete diaphragms shall not be painted.

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE
4	6 A1	①	20
150	5 B1	5'-11"	11
8	6 B2	5'-4"	11
75	4 C1	2'-2"	10
150	4 D1	3'-0"	9

BENDING DIAGRAMS



NOTE:

ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.

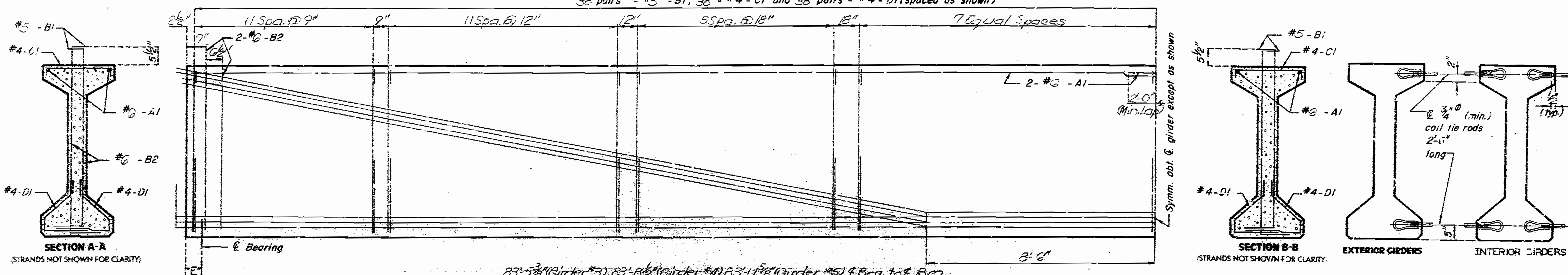
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".

ALL REINFORCEMENT SHALL BE GRADE 60.

THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.



SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)

PART ELEVATION OF GIRDER SPAN (16-17) GDR. NO. 3, 4 & 5
(NOTE: EXTERIOR AND INTERIOR GIRDERS ARE THE SAME EXCEPT FOR COIL TIES.)

SECTION B-B
(STRANDS NOT SHOWN FOR CLARITY)

EXTERIOR GIRDERS — INTERIOR GIRDERS

DETAILS OF COIL TIES
AT INT. BENT NO. 16

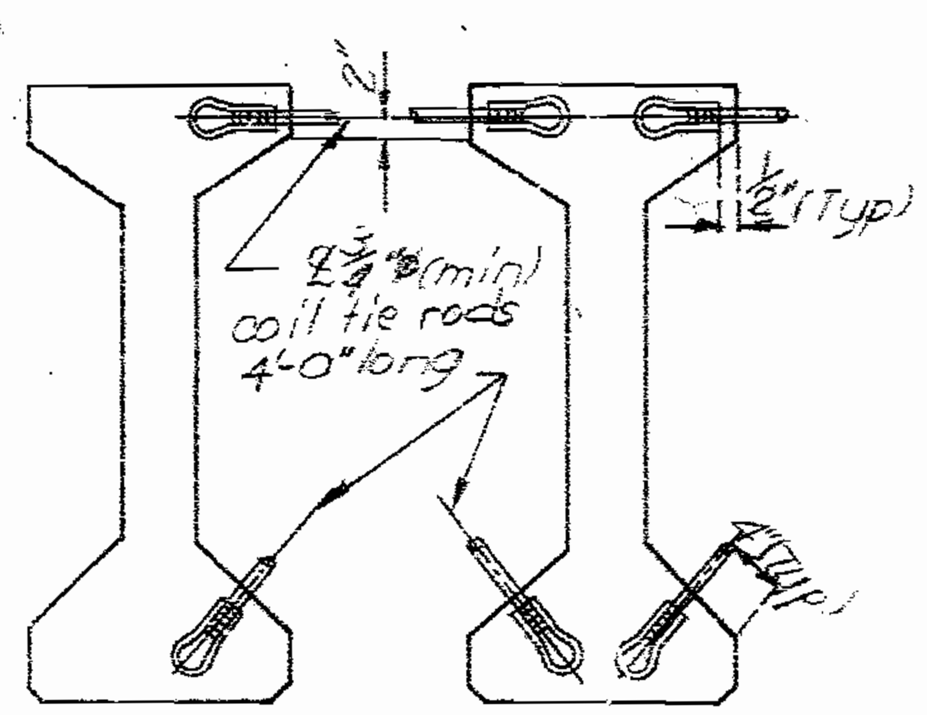
NOTE:

COST OF 3/4"⌀ COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

NOTE:

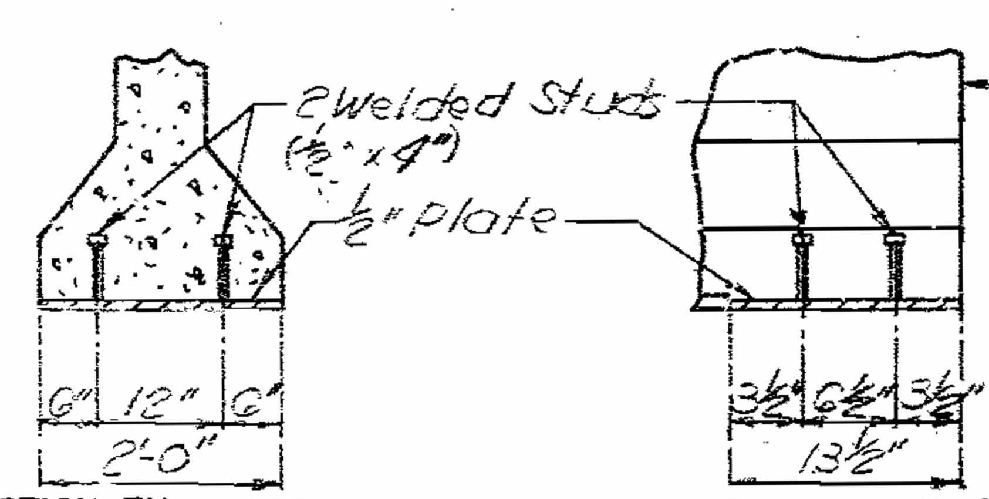
The 1 1/2"⌀ holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed.



EXTERIOR GIRDERS — INTERIOR GIRDERS
DETAILS OF COIL TIES
AT INT. BENT NO. 17

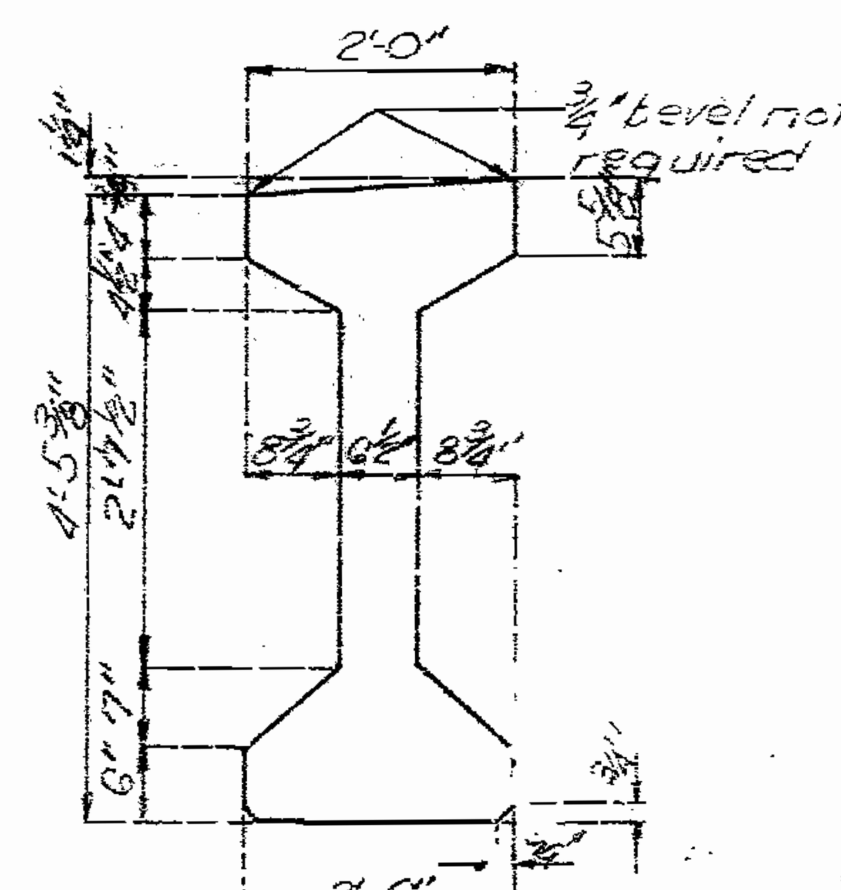
Note: Cost of furnishing and installing 1/2" plates and welded studs in girders shall be included in price bid for Prestressed Concrete I-Girders, per each. See special provisions for painting.

Note: For details of slotted wells to be cast in top of girder (at Int. Bt. #17 end only) see sheet No. 86.
For details of Int. Bt. Diaph. see sheet No. 67.
For location of Int. Diaph. and general girder placement, see sheet No. 26.
For Girder Camber and haunching see sheet No. 69.



SECTION THRU GIRDER — PART END ELEVATION
SOLE PLATE DETAILS AT BENT NO. 17

Note: Sole Plate to be placed at Bent No. 17 end of girder only.



GIRDER DIMENSIONS
PRECAST PANEL FORMS

E 2" (Gdr. #3, 4 & 5) At Bt. #16
7" (Gdr. #3, 4 & 5) At Bt. #17

① 43'-2" (Girder #3)
43'-3" (Girder #4)
43'-5" (Girder #5)

176/142

SPS 55.6.6 1/2	REVISED
FEB. 1974	JUNE 1987

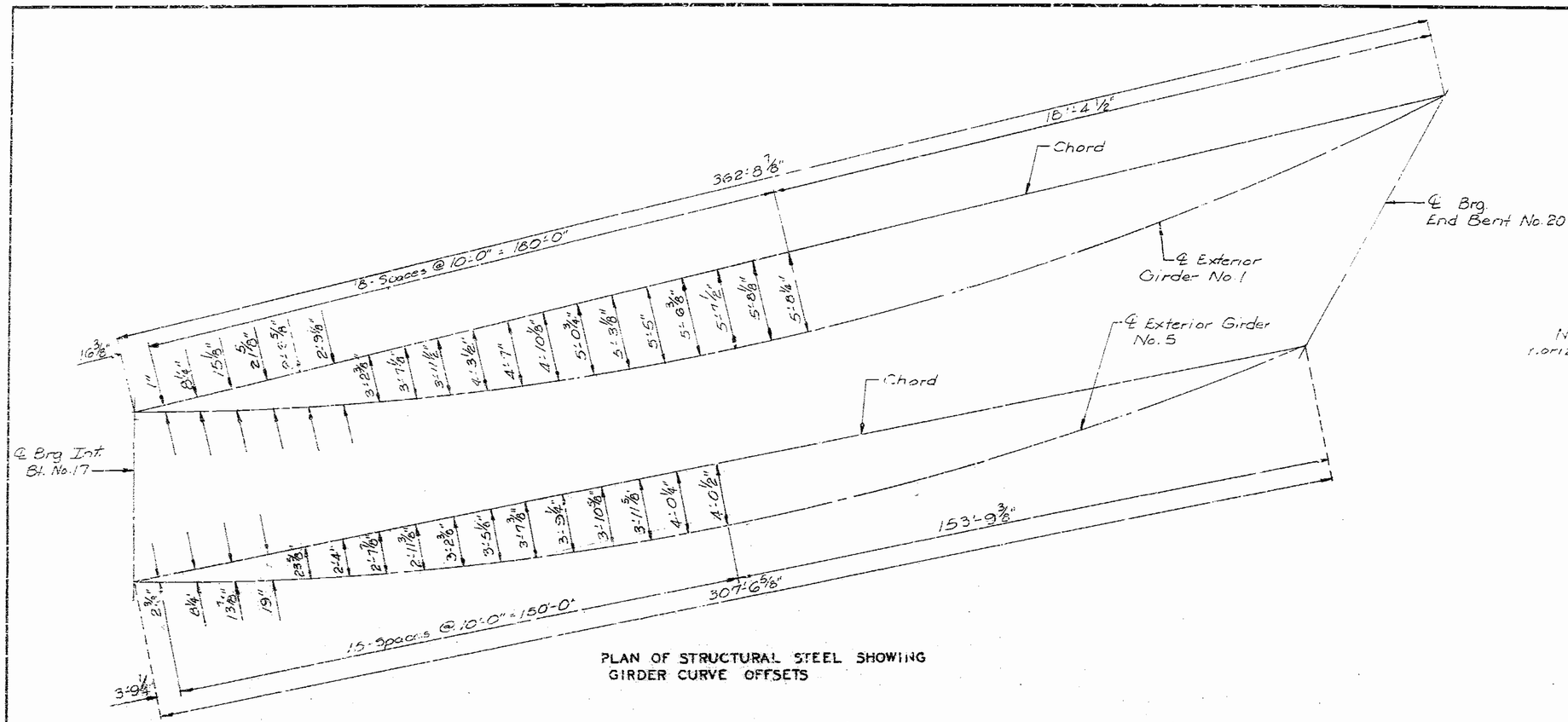
DETAILED APR. 1988
CHECKED OCT. 1988

Note: This drawing is not to scale. Follow dimensions.

JACKSON COUNTY

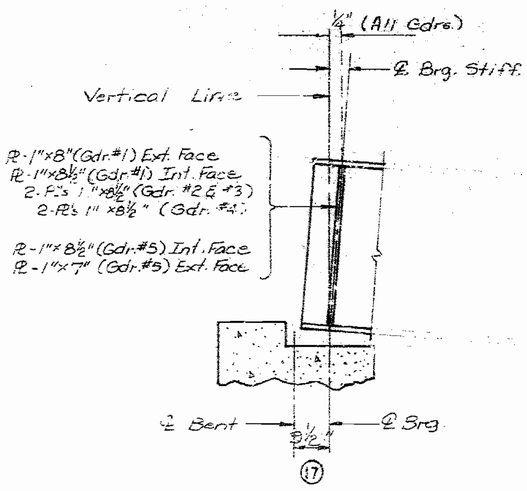
A-2745

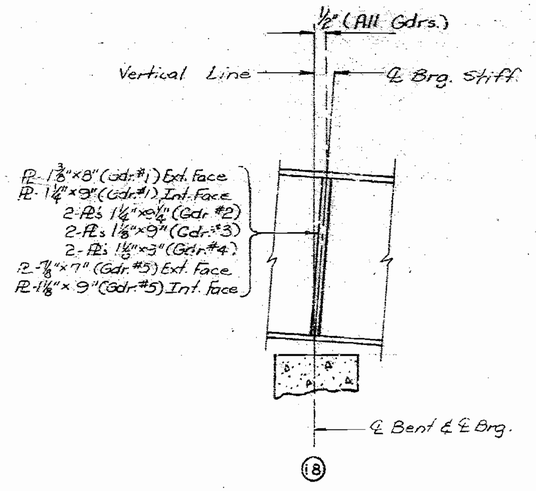
STATE	PROJ NO	SHT NO
MO		155

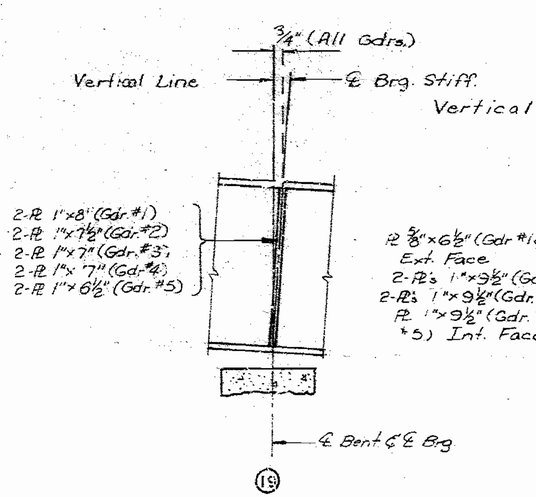


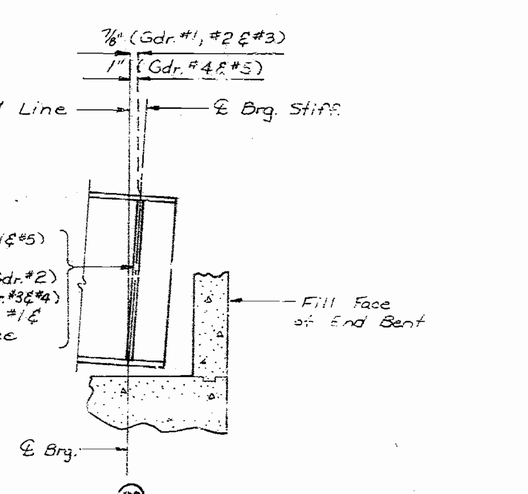
PLAN OF STRUCTURAL STEEL SHOWING GIRDER CURVE OFFSETS

Note: Dimensions shown are horizontal.









PART LONGITUDINAL SECTION

DETAILED July 1988
CHECKED Feb. 1989

Note: This drawing is not to scale. Follow dimensions.

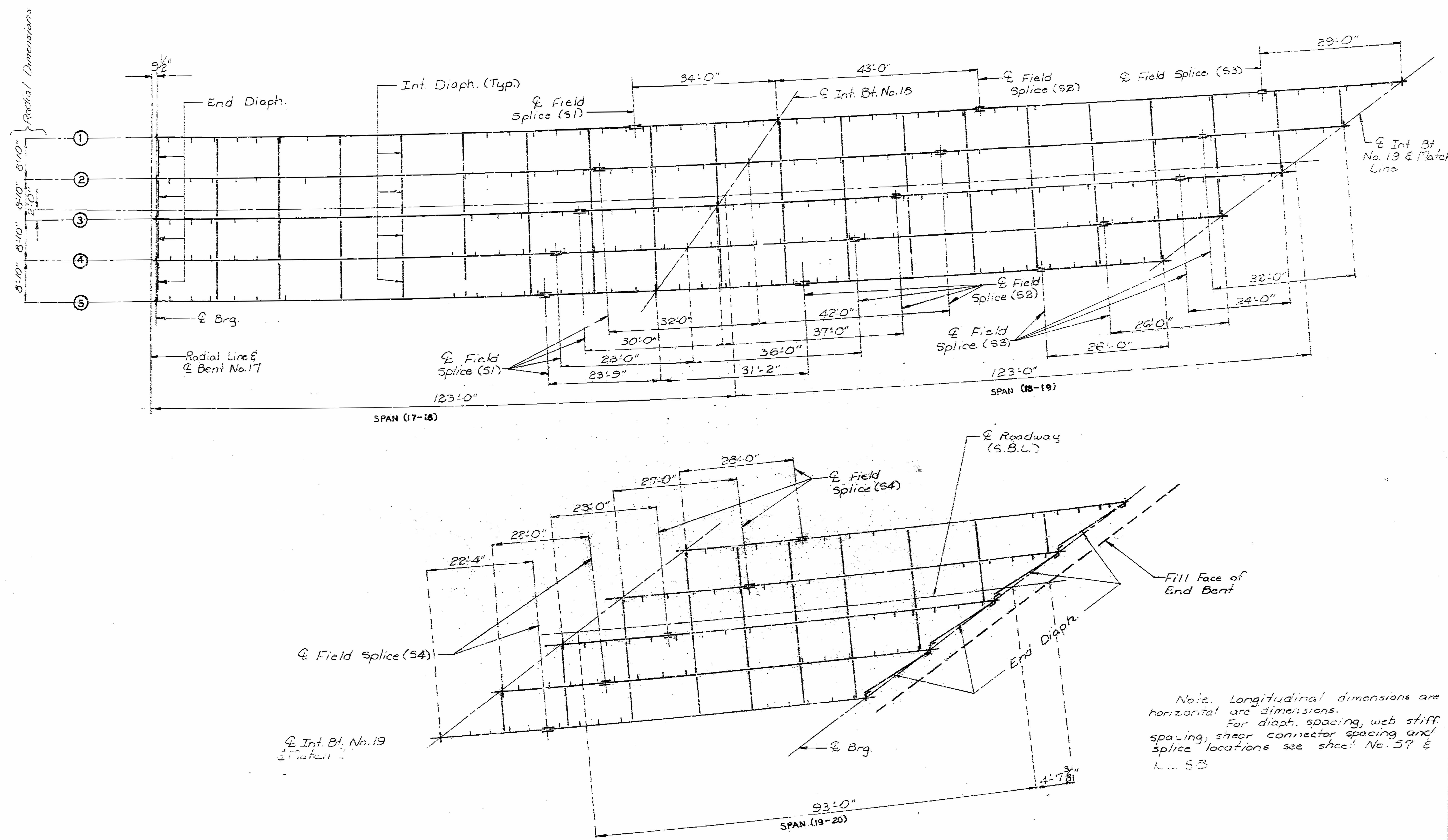
Sheet No. 55 of 98

JACKSON COUNTY

A-2745

A27452

STATE	PROJ. NO.	SHEET NO.
MO.		136



Note. Longitudinal dimensions are horizontal arc dimensions. For diaph. spacing, web stiff. spacing, shear connector spacing and splice locations see sheet No. 57 & No. 58

PLAN OF STRUCTURAL STEEL

DETAILED July 1988
CHECKED Feb. 1989

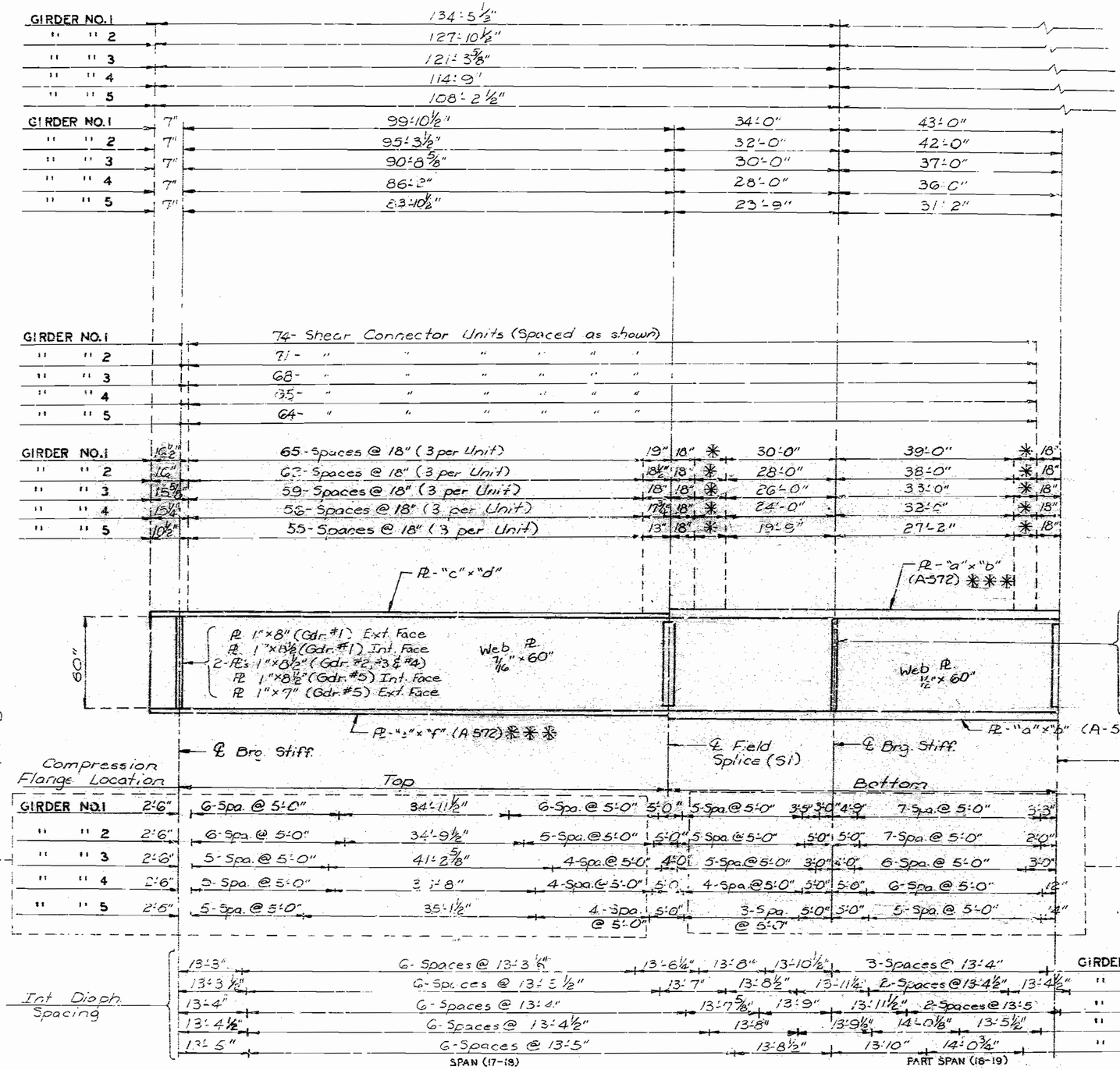
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 56 of 98

JACKSON COUNTY A-2745

178/157

STATE	PROJ. NO.	SHEET NO.
MO		137



PART ELEVATION OF GIRDER

LOCATION	"a"	"b"
Girder No. 5	19"	1"
Girder No. 4	19"	1 1/4"
Girder No. 3	19"	1 3/8"
Girder No. 2	20"	1 5/8"
Girder No. 1	20"	1 3/4"
	"c"	"d"
Girder No. 4&5	10"	3/4"
Girder No. 3	12"	3/4"
Girder No. 2	11"	1"
Girder No. 1	12"	1"
	"e"	"f"
Girder No. 5	14"	1 5/8"
Girder No. 4	16"	1 7/8"
Girder No. 3	17"	1 1/4"
Girder No. 1&2	17"	1 1/8"

Notes:

Plate girders shall be fabricated to conform with Camber Diagram shown on sheet No. 69.

Transverse web stiffeners shall be oriented as shown in plan of structural steel.

Intermediate web stiffener plate and diaphragm spacings may vary from plan dimensions by a maximum of 3" for diaphragm to connect to intermediate web stiffener plate.

Fabricated structural steel shall be A36 except as noted.

Longitudinal dimensions are horizontal arc dimensions along centerline of girder.

*** Indicates Flange Plate subject to notch toughness requirements.

For details of earthquake restrainers, see sheet No. 61 & No. 62.

All web plates shall be subject to notch toughness requirements.

Heat curving of girders in spans (17-18) will not be allowed while in a horizontal position.

* 3-Spaces @ 10" (3 per Unit)

137 152

DETAILED July 1988
CHECKED Feb 1989

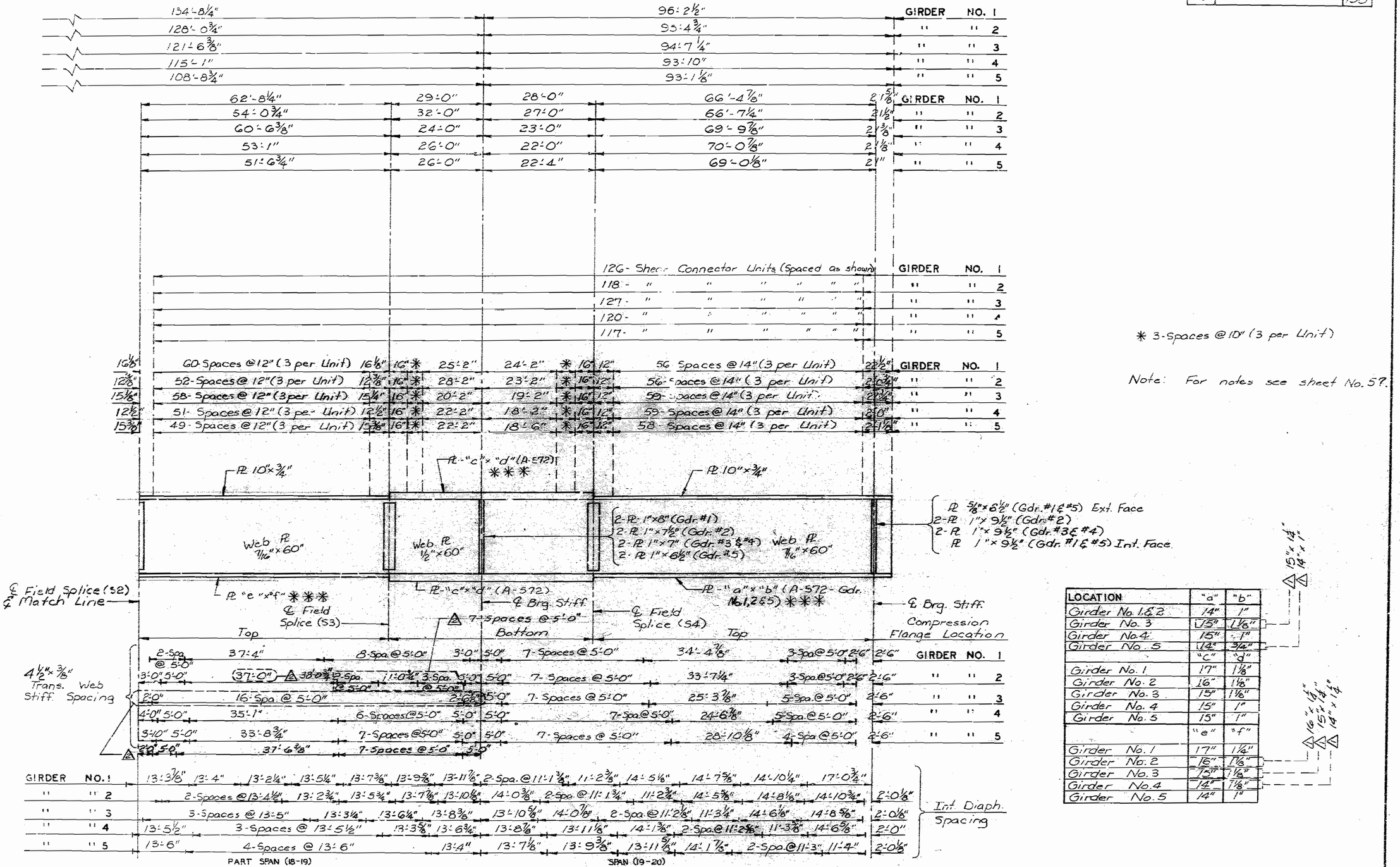
Note: This drawing is not to scale. Follow dimensions. △ Revised 12-1-89

SEE FINAL PLANS
Sheet No. 57 of 98

JACKSON COUNTY

A-2745

STATE	PROJ NO	SHEET NO.
MO		133



PART ELEVATION OF GIRDER

* 3-Spaces @10" (3 per Unit)

Note: For notes see sheet No. 57.

LOCATION	"a"	"b"
Girder No. 1 & 2	14"	1"
Girder No. 3	15"	1⅛"
Girder No. 4	15"	1"
Girder No. 5	14"	¾"
	"c"	"d"
Girder No. 1	17"	1⅛"
Girder No. 2	16"	1⅛"
Girder No. 3	15"	1⅛"
Girder No. 4	15"	1"
Girder No. 5	15"	1"
	"e"	"f"
Girder No. 1	17"	1¼"
Girder No. 2	16"	1⅛"
Girder No. 3	15"	1⅛"
Girder No. 4	14"	1⅛"
Girder No. 5	14"	1"

DETAILED July 1988
CHECKED Feb. 1989

Note: This drawing is not to scale. Follow dimensions. Revised 12-1-89

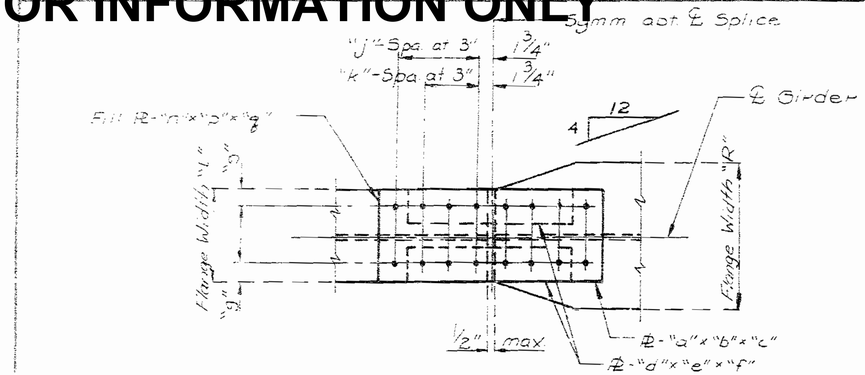
Revised 1-24-90

Sheet No. 58 of 98

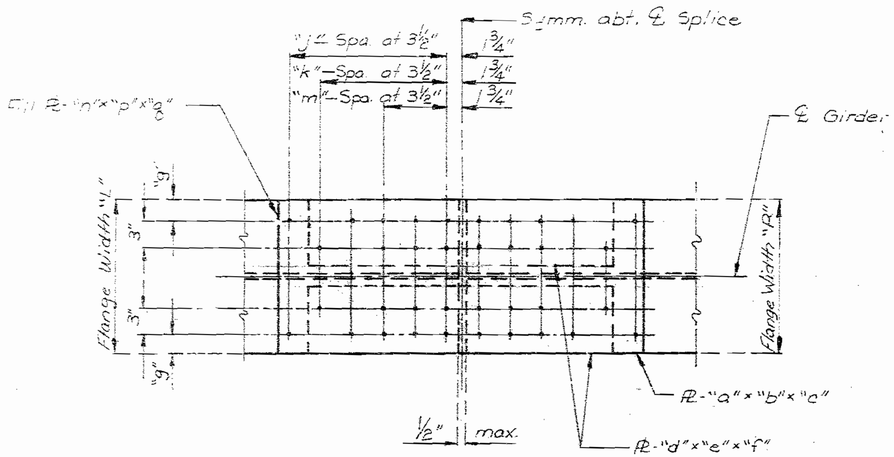
JACKSON COUNTY

A-2745

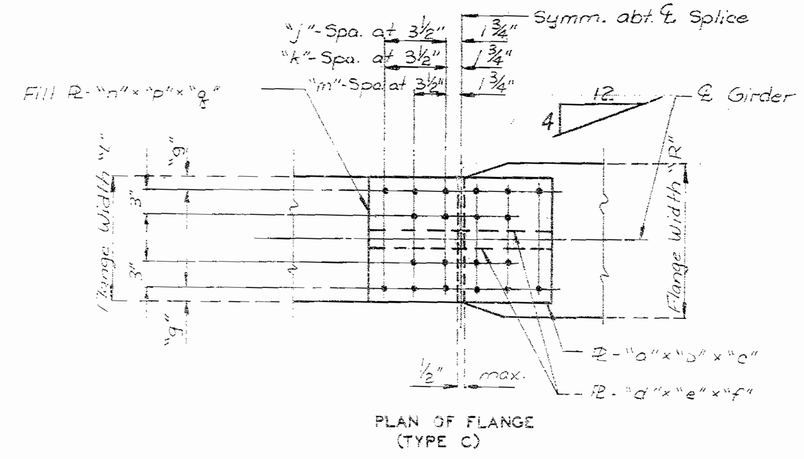
STATE	PROJ. NO.	SHEET NO.
MO.		129



PLAN OF FLANGE
(TYPE A)



PLAN OF FLANGE
(TYPE B)



PLAN OF FLANGE
(TYPE C)

TABLE OF DIMENSIONS (TYPE A SPLICE)

Splice No.	Girder No.	Location	"a"	"b"	"c"	"d"	"e"	"f"	"g"	"j"	"k"	"n"	"p"	"q"	Flange Width "L"	Flange Width "R"
S1&S2	5	Top	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	1/4"	9"	10"	19"
S3&S4	4	Top	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	1/4"	9"	10"	15"
S3&S4	5	Top	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	1/4"	9"	10"	15"
S1&S2	4	Top	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	1/8"	9"	10"	19"
S2	3	Top	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	5/8"	9"	10"	19"
S3&S4	3	Top	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	3/8"	9"	10"	15"
S2	2	Top	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	3/4"	9"	10"	20"
S3&S4	2	Top	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	3/8"	9"	10"	16"
S2	1	Top	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	1"	9"	10"	20"
S3&S4	1	Top	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	3/8"	9"	10"	17"
S1	2	Top	11"	5/8"	2'-0 1/2"	4 1/2"	5/8"	2'-0 1/2"	2 1/4"	3	3	11"	1/2"	12"	11"	20"
S1	1	Top	12"	1/2"	2'-6 1/2"	5"	5/8"	2'-0 1/2"	2 1/2"	4	3	12"	3/4"	15"	12"	20"
S1	3	Top	11"	3/8"	18 1/2"	4 1/2"	1/2"	18 1/2"	2 1/4"	2	2	11"	5/8"	9"	11"	19"

TABLE OF DIMENSIONS

Splice No.	Girder No.	Location	"a"	"b"	"c"	"d"	"e"	"f"	"g"	"j"	"k"	"m"	"n"	"p"	"q"	Flange Width "L"	Flange Width "R"	Type Splice
S2	5	Bott.	14"	5/8"	20 1/2"	6"	3/4"	20 1/2"	1 1/2"	2	2	1	—	—	—	14"	19"	C
S3	5	Bott.	14"	5/8"	20 1/2"	6"	3/4"	20 1/2"	1 1/2"	2	2	1	—	—	—	14"	15"	B
S4	5	Bott.	14"	1/2"	20 1/2"	6"	1/2"	20 1/2"	1 1/2"	2	2	1	14"	1/4"	10"	14"	15"	B
S1	5	Bott.	14"	1"	2'-10 1/2"	6"	1 1/8"	2'-3 1/2"	1 1/2"	4	3	2	14"	1/8"	17"	14"	19"	C
S1	4	Bott.	16"	1"	3'-5 1/2"	7"	1"	3'-10 1/2"	2"	5	4	3	16"	1/8"	20 1/2"	16"	19"	C
S2	4	Bott.	14"	3/4"	2'-3 1/2"	6"	3/4"	20 1/2"	1 1/2"	3	2	1	14"	1/8"	13 1/2"	14"	19"	C
S3	4	Bott.	14"	3/4"	2'-3 1/2"	6"	3/4"	20 1/2"	1 1/2"	3	2	1	14"	1/8"	13 1/2"	14"	15"	B
S4	4	Bott.	15"	5/8"	2'-3 1/2"	6 1/2"	3/4"	2'-3 1/2"	1 3/4"	3	3	1	-	—	—	15"	15"	B
S1	3	Bott.	17"	1"	4'-0 1/2"	7 1/2"	1 1/8"	3'-5 1/2"	2 1/2"	6	5	3	17"	1/8"	20"	17"	19"	B
S2	3	Bott.	15"	3/4"	2'-3 1/2"	6 1/2"	3/4"	2'-3 1/2"	1 3/4"	3	3	2	15"	1/4"	13 1/2"	15"	19"	C
S3&S4	3	Bott.	15"	3/4"	2'-3 1/2"	6 1/2"	3/4"	2'-3 1/2"	1 3/4"	3	3	2	—	—	—	15"	15"	B
S1	2	Bott.	17"	1 1/8"	4'-0 1/2"	7 1/2"	1 1/4"	3'-5 1/2"	2 1/2"	6	5	4	17"	1/8"	20"	17"	20"	C
S2	2	Bott.	16"	3/4"	2'-3 1/2"	7"	3/4"	2'-3 1/2"	2"	3	3	2	16"	3/8"	13 1/2"	16"	20"	C
S3	2	Bott.	16"	3/4"	2'-3 1/2"	7"	3/4"	2'-3 1/2"	2"	3	3	2	—	—	—	16"	16"	B
S4	2	Bott.	14"	5/8"	20 1/2"	6"	3/4"	20 1/2"	1 1/2"	2	2	1	14"	1/8"	10"	14"	16"	B
S1	1	Bott.	17"	1 1/8"	4'-0 1/2"	7 1/2"	1 1/4"	3'-5 1/2"	2 1/2"	6	5	4	17"	3/8"	20"	17"	20"	C
S2	1	Bott.	17"	3/4"	2'-10 1/2"	7 1/2"	7/8"	2'-10 1/2"	2 1/2"	4	4	2	17"	1/2"	17"	17"	20"	C
S3	1	Bott.	17"	3/4"	2'-10 1/2"	7 1/2"	3/4"	2'-3 1/2"	2 1/2"	4	3	2	17"	1/8"	17"	17"	17"	B
S4	1	Bott.	14"	7/8"	2'-10 1/2"	6"	1"	2'-5 1/2"	1 1/2"	4	3	2	14"	1/8"	17"	14"	17"	C

⚠ See Sheet #59A For Revised Splices

DETAILED June 1988
CHECKED Feb. 1989

DETAILS OF FIELD FLANGE SPLICES

SEE FINAL PLANS

Note: This Drawing is not to scale. Follow dimensions. ⚠ Revised 12-1-89

Sheet No. 59 of 98

JACKSON COUNTY

A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		

TABLE OF DIMENSIONS (TYPE A SPLICES)

SPLICE NO.	GIRDER NO.	LOCATION	"a"	"b"	"c"	"d"	"e"	"f"	"g"	"j"	"k"	"n"	"p"	"q"	FLANGE WIDTH "L"	FLANGE WIDTH "R"
S1	1	TOP	12"	1/2"	2'-6 1/2"	5"	5/8"	2'-0 1/2"	2 1/2"	4	3	12"	3/4"	15'	12"	20"
S1	2	TOP	11"	5/8"	2'-0 1/2"	4 1/2"	5/8"	2'-0 1/2"	2 1/4"	3	3	11"	1/2"	12"	11"	20"
S1	3	TOP	11"	5/8"	2'-0 1/2"	4 1/2"	5/8"	2'-0 1/2"	2 1/4"	3	3	11"	3/8"	12"	11"	19"
S1	4	TOP	10"	5/8"	2'-0 1/2"	4"	1/2"	18 1/2"	2"	4	3	10"	1/4"	12"	10"	19"
S1	5	TOP	10"	5/8"	2'-0 1/2"	4"	1/2"	18 1/2"	2"	4	3	—	—	—	10"	19"
S2	1	TOP	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	1"	9"	10"	20"
S2	2	TOP	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	3/4"	9"	10"	20"
S2	3	TOP	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	3/8"	9"	10"	19"
S2	4	TOP	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	1/2"	9"	10"	19"
S2	5	TOP	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	1/4"	9"	10"	19"
S3 & S4	1	TOP	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	3/4"	9"	10"	17"
S3 & S4	2	TOP	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	3/8"	9"	10"	16"
S3 & S4	3	TOP	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	3/8"	9"	10"	15"
S3 & S4	4	TOP	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	1/4"	9"	10"	15"
S3 & S4	5	TOP	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	1/4"	9"	10"	15"

TABLE OF DIMENSIONS

SPLICE NO.	GIRDER NO.	LOCATION	"a"	"b"	"c"	"d"	"e"	"f"	"g"	"j"	"k"	"m"	"n"	"p"	"q"	FLANGE WIDTH "L"	FLANGE WIDTH "R"	TYPE SPLICE
S1	1	BOTT.	17"	1 1/8"	4'-0 1/2"	7 1/2"	1 1/4"	3'-5 1/2"	2 1/4"	6	5	4	17"	3/8"	2'-0"	17"	20"	C
S1	2	BOTT.	17"	1 1/8"	4'-0 1/2"	7 1/2"	1 1/4"	3'-5 1/2"	2 1/4"	6	5	4	17"	1/8"	2'-0"	17"	20"	C
S1	3	BOTT.	17"	1"	4'-0 1/2"	7 1/2"	1 1/8"	3'-5 1/2"	2 1/4"	6	5	3	17"	1/8"	2'-0"	17"	19"	B
S1	4	BOTT.	16"	1 1/8"	4'-0 1/2"	7"	1 1/8"	3'-5 1/2"	2"	6	5	3	—	—	—	16"	19"	C
S1	5	BOTT.	14"	1 1/8"	3'-5 1/2"	6"	1 1/8"	2'-10 1/2"	1 1/2"	5	4	2	14"	1/4"	20 1/2"	14"	19"	C
S2	1	BOTT.	17"	3/4"	2'-10 1/2"	7 1/2"	7/8"	2'-10 1/2"	2 1/4"	4	4	2	17"	1/2"	17"	17"	20"	C
S2	2	BOTT.	16"	3/4"	2'-10 1/2"	7"	7/8"	2'-3 1/2"	2"	4	3	2	16"	1/4"	17"	16"	20"	C
S2	3	BOTT.	15"	7/8"	2'-10 1/2"	6 1/2"	7/8"	2'-3 1/2"	1 3/4"	4	3	2	15"	1/8"	17"	15"	19"	C
S2	4	BOTT.	14"	7/8"	2'-3 1/2"	6"	7/8"	2'-3 1/2"	1 1/2"	3	3	2	—	—	—	14"	19"	C
S2	5	BOTT.	14"	5/8"	20 1/2"	6'	3/4"	20 1/2"	1 1/2"	2	2	1	—	—	—	14"	19"	C
S3	1	BOTT.	17"	3/4"	2'-10 1/2"	7 1/2"	3/4"	2'-3 1/2"	2 1/4"	4	3	2	17"	1/8"	17"	17"	17"	B
S3	2	BOTT.	16"	3/4"	2'-10 1/2"	7"	7/8"	2'-3 1/2"	2"	4	3	2	16"	1/8"	17"	16"	16"	B
S3 & S4	3	BOTT.	15"	7/8"	2'-10 1/2"	6 1/2"	7/8"	2'-3 1/2"	1 3/4"	4	3	2	15"	1/8"	17"	15"	15"	B
S3	4	BOTT.	14"	7/8"	2'-3 1/2"	6"	7/8"	2'-3 1/2"	1 1/2"	3	3	2	14"	1/4"	13 1/2"	14"	15"	B
S3	5	BOTT.	14"	5/8"	20 1/2"	6"	3/4"	20 1/2"	1 1/2"	2	2	1	—	—	—	14"	15"	B
S4	1	BOTT.	14"	7/8"	2'-10 1/2"	6"	1"	2'-3 1/2"	1 1/2"	4	3	2	14"	1/8"	17"	14"	17"	C
S4	2	BOTT.	14"	5/8"	20 1/2"	6"	3/4"	20 1/2"	1 1/2"	2	2	1	14"	1/8"	10"	14"	16"	B
S4	4	BOTT.	15"	5/8"	2'-3 1/2"	6 1/2"	3/4"	2'-3 1/2"	1 3/4"	3	3	1	—	—	—	15"	15"	B
S4	5	BOTT.	14"	7/8"	2'-10 1/2"	6"	1"	2'-3 1/2"	1 1/2"	4	3	2	—	—	—	14"	15"	B

DETAILED DEC 19 89
CHECKED DEC 19 89

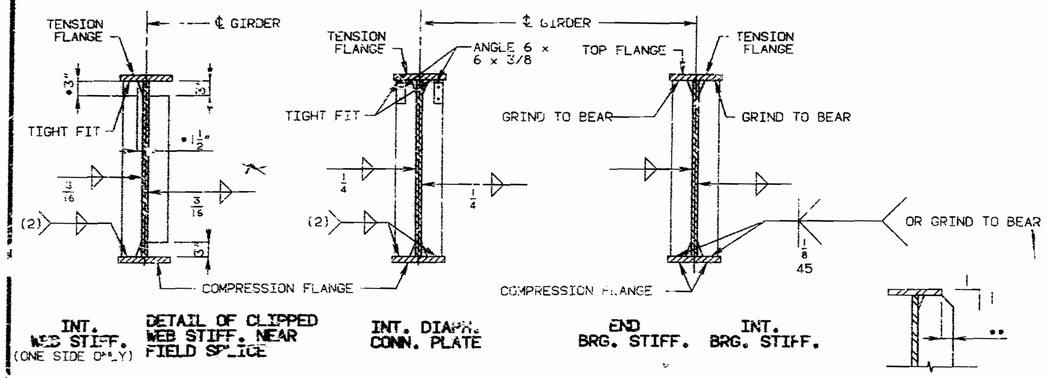
NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS. ⚠ ADD 12/1/89

SEE FINAL PLANS
SHEET NO. 59A OF 89

JACKSON COUNTY

A-2745

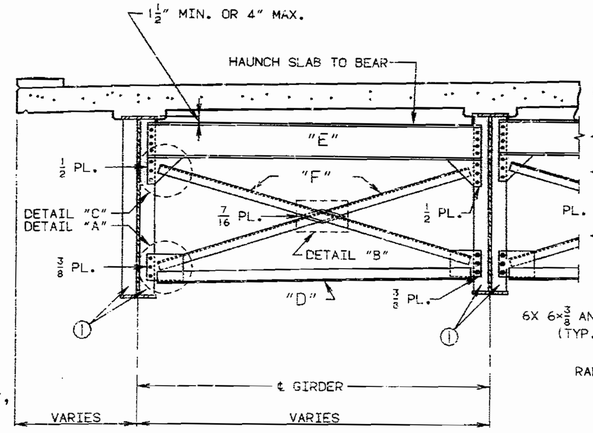
STATE	PROJ. NO.	SHEET NO.
MO.		140



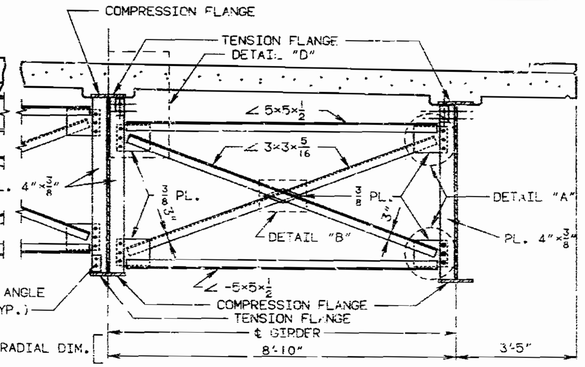
(2) WELD TO COMPRESSION FLANGE AS LOCATED ON ELEVATION OF GIRDER.

* 1-1/2" x 3" TYPICAL FOR ALL INT. WEB STIFF., INT. DIAPH. CONN. PL. AND BRG. STIFF..

** WHEN DIMENSION EXCEEDS 1\2", BEVEL STIFF. PLATE.



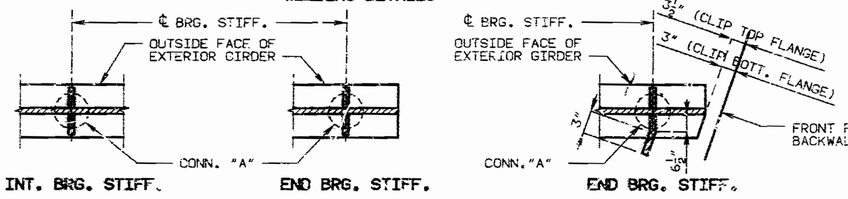
TYPICAL PART SECTION SHOWING END DIAPHRAGMS



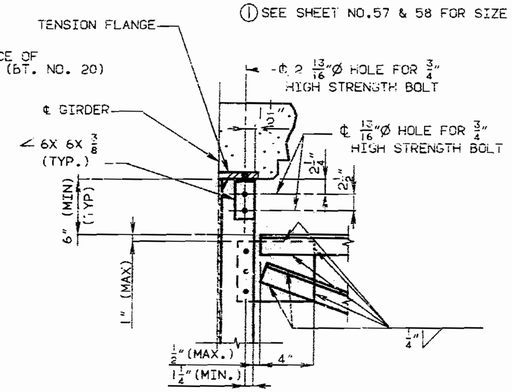
TYPICAL PART SECTION SHOWING INTERMEDIATE DIAPHRAGMS

NOTE: WEIGHT OF 2140 LBS. OF SHEAR CONNECTORS IS INCLUDED IN THE WEIGHT OF FABRICATED STRUCTURAL CARBON STEEL.

WELDING DETAILS



TYPICAL LOCATION DETAILS

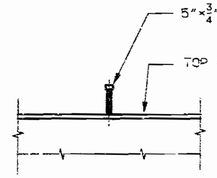


DETAIL "D"

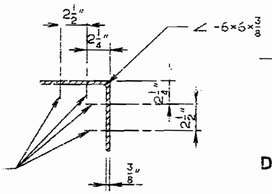
"D" = WT 7x21.5 (BT. NO. 20)
∠ 5x5x½ (BT. NO. 20)

"E" = W16x36 (BT. NO. 20)
C12x20.7 (BT. NO. 17)

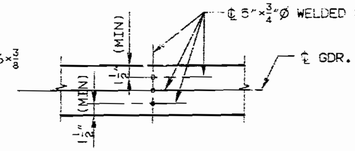
"F" = ∠ 5x5x½ (BT. NO. 20)
∠ 3x3x5/16 (BT. NO. 17)



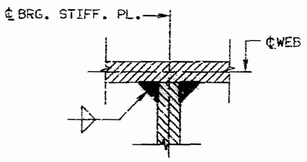
ELEVATION



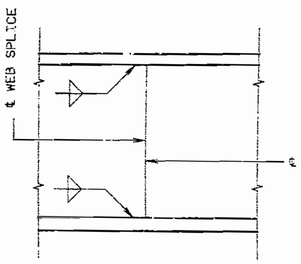
SECTION THRU ANGLE 6x6x⅜



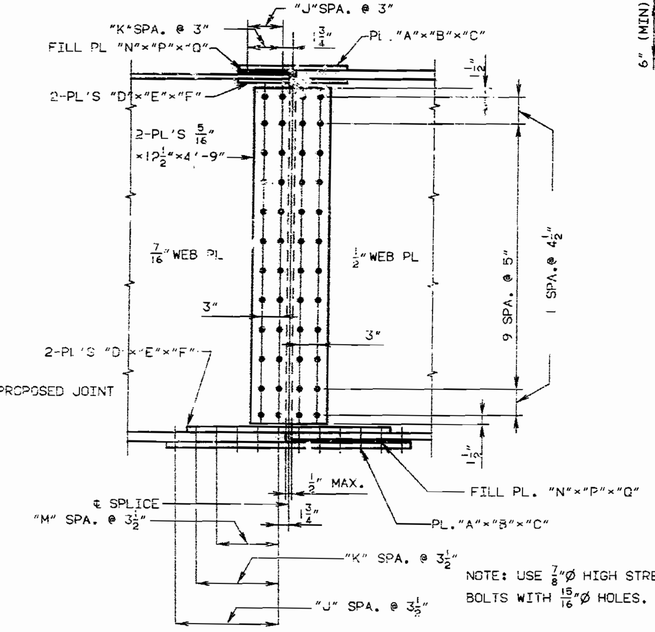
PLAN OF STUD CONN.
DETAILS OF SHEAR CONNECTORS



CONN. "A" WELDING DETAILS



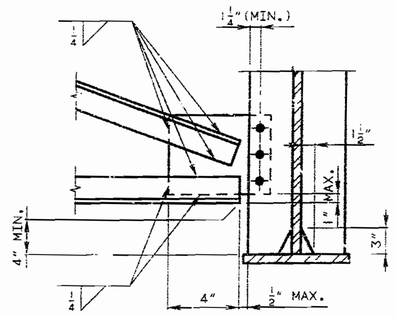
SHOP WEB SPLICE



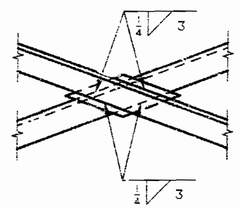
NOTE: USE ⅞"Ø HIGH STRENGTH BOLTS WITH 15/16"Ø HOLES.

BOLTED FIELD SPLICE

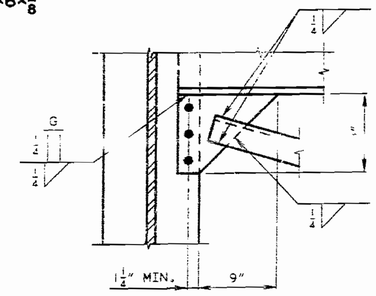
NOTE: FOR DETAILS OF BOLTED FIELD SPLICE, SEE SHEET NO. 59.



DETAIL "A"



DETAIL "B"

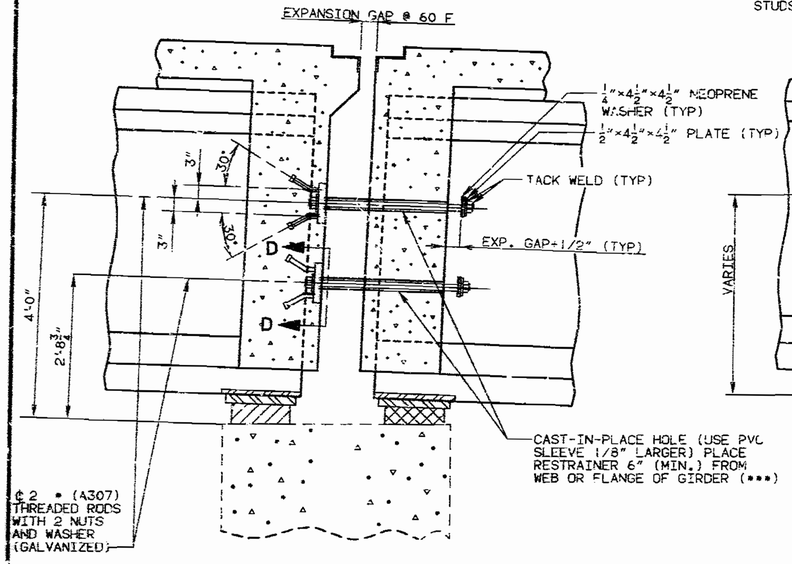


DETAIL "C"

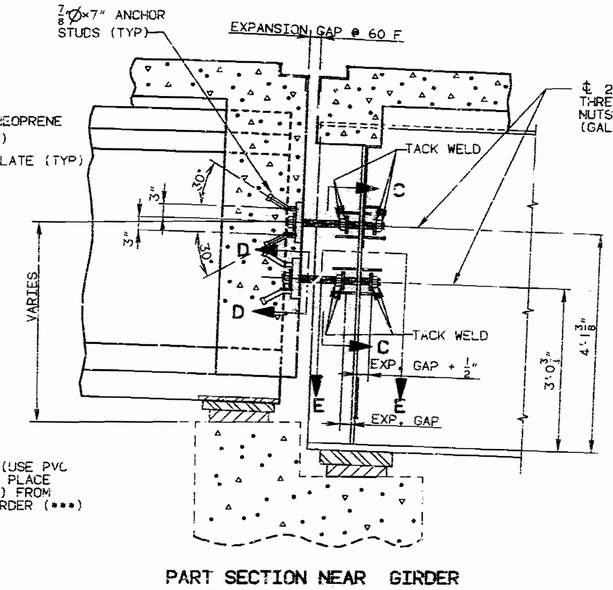
DETAILED FEB. 1989
CHECKED FEB. 1989

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

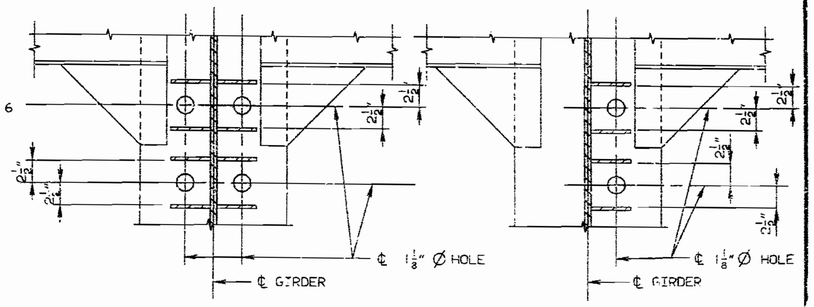
STATE	PROJ. NO.	SHEET NO.
MO.		147



PART SECTION NEAR ℄ GIRDER
AT INT. BENT NO. 4,9 & 13.

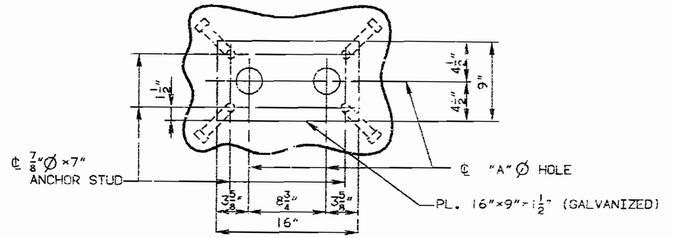


PART SECTION NEAR GIRDER
AT INT. BENT NO. 17



SECTION C-C (INT. GIRDERS)

SECTION C-C (EXT. GIRDERS)

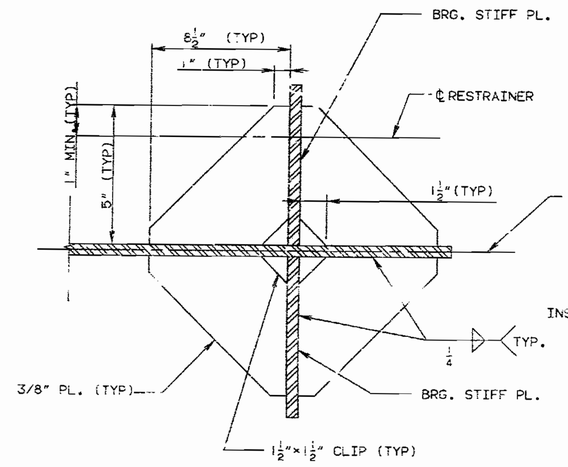


SECTION D-D (INT. GIRDERS)

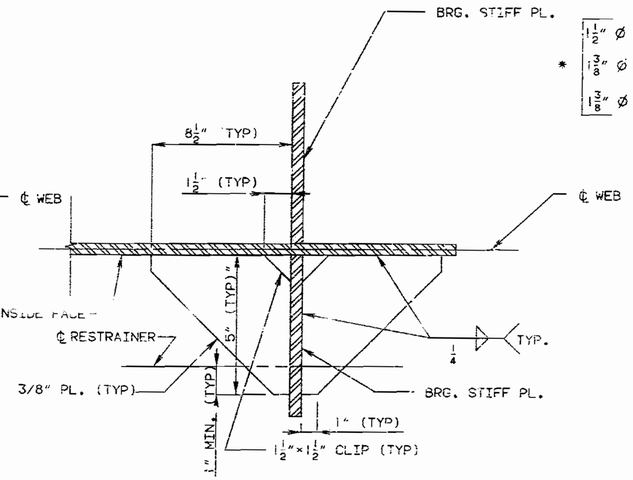
"A" — BT.#4=1⅝" / BT.#9 & #13=1½" / BT.#19=1⅞"

* 1½" Ø BENT NO.4
1⅜" Ø BENT NO.9
1⅞" Ø BENT NO.13

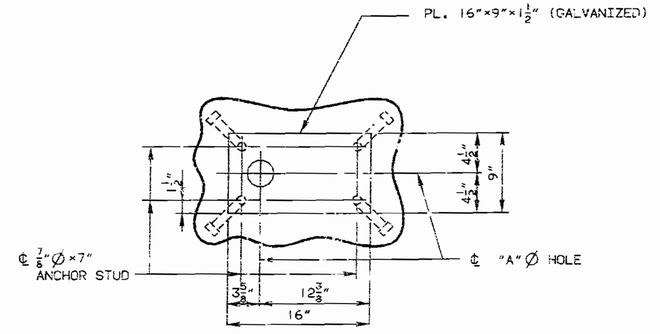
NOTE: WEIGHT OF THREADED RODS, NUTS, WASHERS AND PLATES IS INCLUDED IN FABRICATED STRUCTURAL CARBON STEEL (PLATE GIRDER)
GALVANIZING TO BE DONE IN ACCORDANCE TO ASTM A123.



SECTION E-E (INT. GIRDERS)



SECTION E-E (EXT. GIRDERS)



SECTION D-D (EXT. GIRDERS)

DETAILS OF EARTHQUAKE RESTRAINERS AT BENTS NO. 4,9,13 & 17

DETAILED AUG. 1988
CHECKED FEB 1989

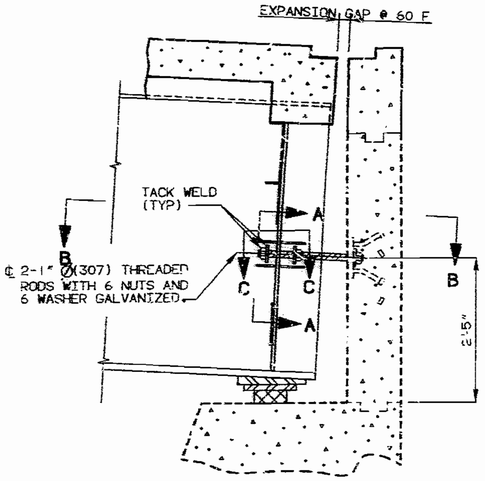
NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

SHEET NO. 61F OF 98. SEE FINAL PLANS

JACKSON COUNTY

A-2745

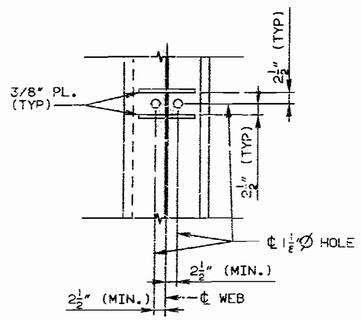
STATE	PROJ. NO.	SHEET NO.
MO.		62



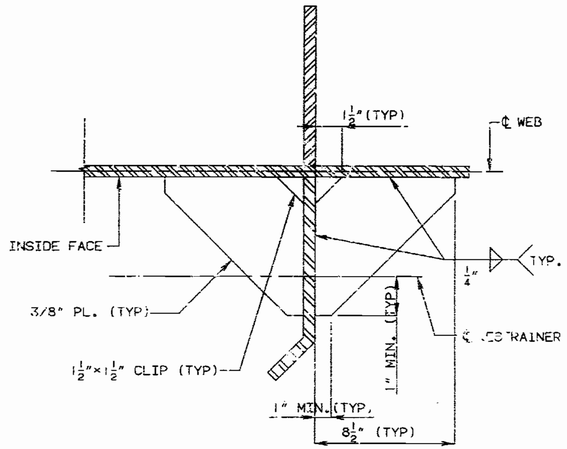
PART SECTION AT END BENT NO. 20

① EXPANSION GAP AT 60° F.

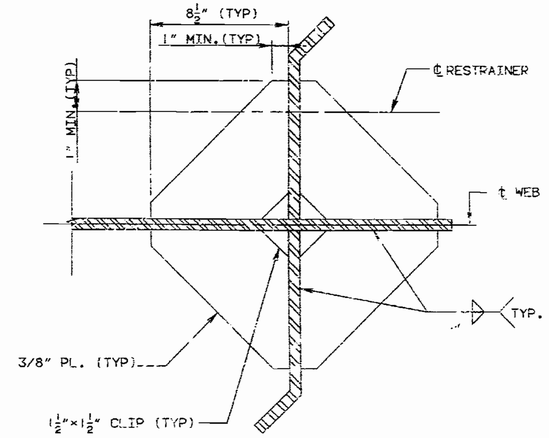
② EXPANSION GAP AT 60° F. + $\frac{1}{2}$"



PART SECTION A-A (INT. GIRDERS)

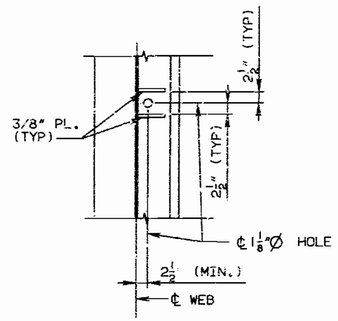


SECTION C-C (EXT. GIRDERS)

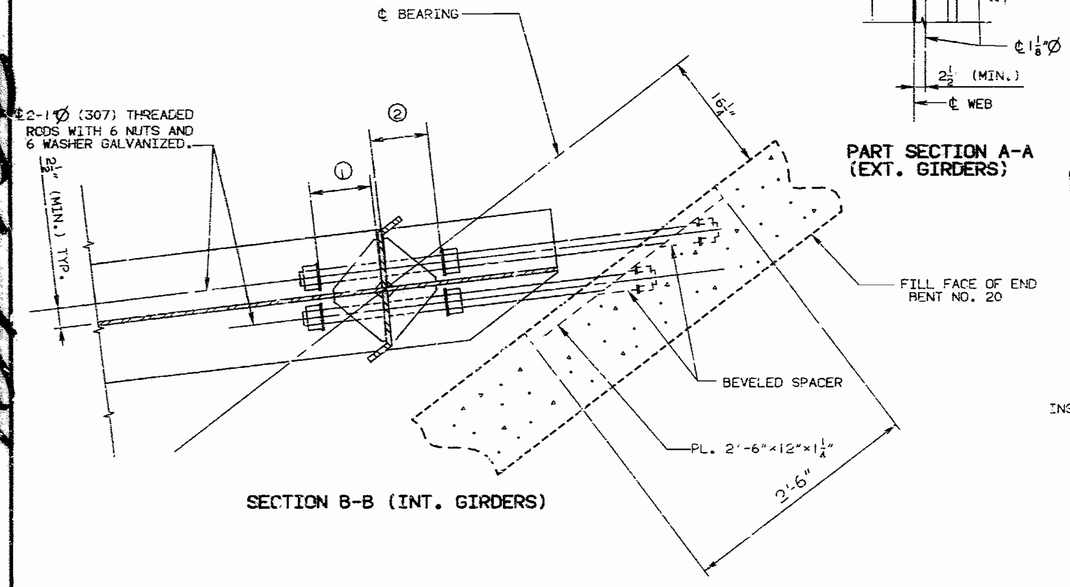


SECTION C-C (INT. GIRDERS)

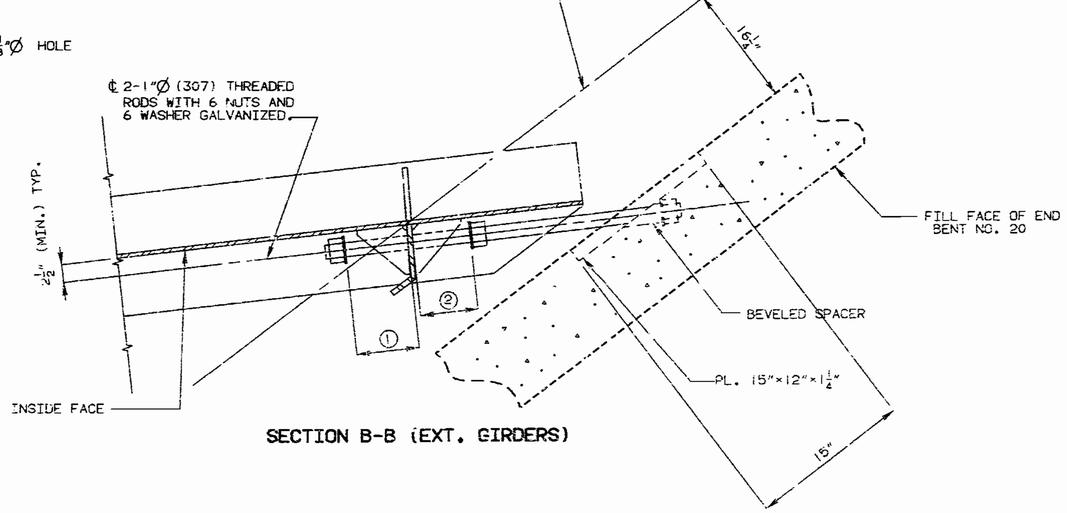
NOTE: WEIGHT OF THREADED RODS, NUTS, WASHERS AND PLATES IS INCLUDED IN FABRICATED STRUCTURAL CARBON STEEL (PLATE GIRDER)
GALVANIZING TO BE DONE IN ACCORDANCE TO ASTM A123.



PART SECTION A-A (EXT. GIRDERS)



SECTION B-B (INT. GIRDERS)



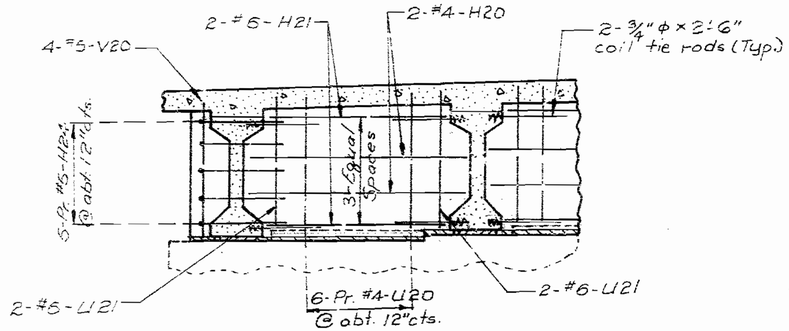
SECTION B-B (EXT. GIRDERS)

DETAILS OF EARTHQUAKE RESTRAINERS AT BENT NO. 20

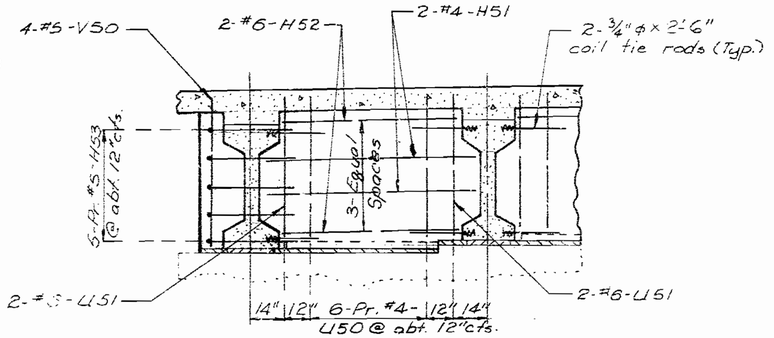
DETAILED JULY 1988
CHECKED FEB. 1989

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

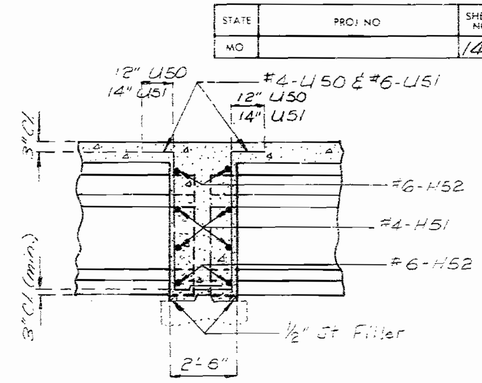
STATE	PROJ NO	SHEET NO
MO		143



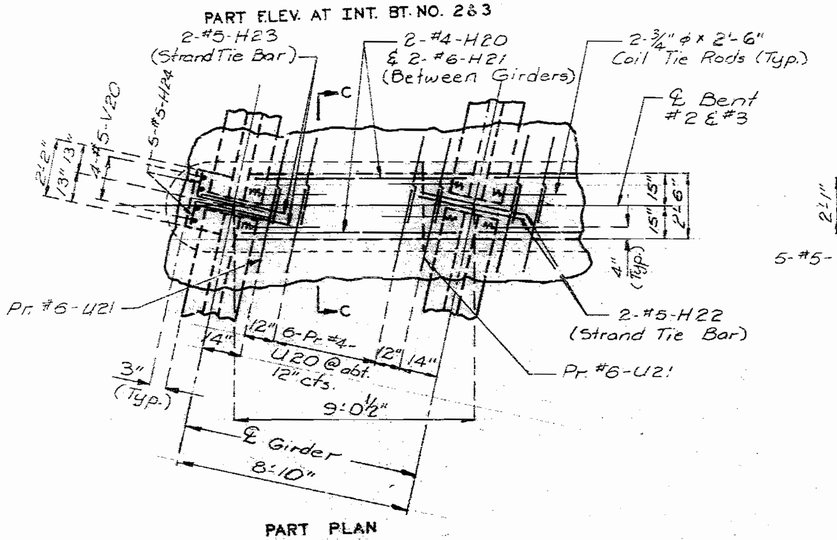
PART ELEV. AT INT. BT. NO. 2&3



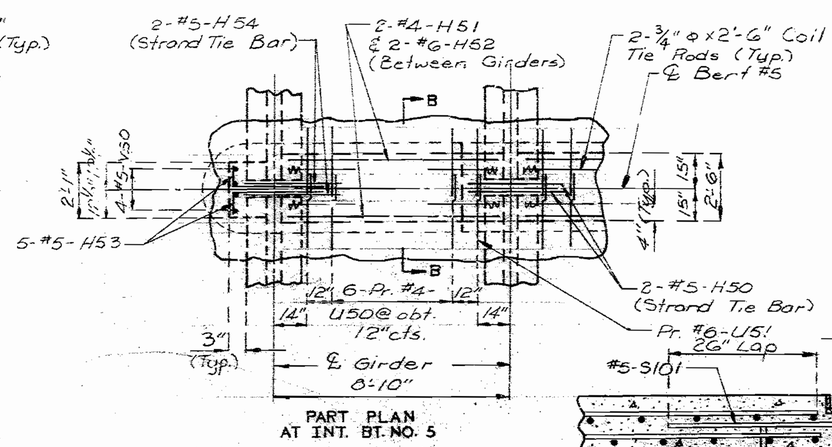
ART ELEV. AT INT. BT. NO. 5



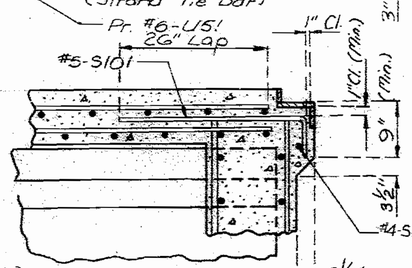
SECTION B-B



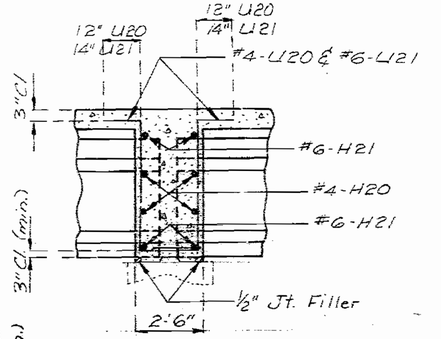
PART PLAN AT INT. BT. NO. 2&3



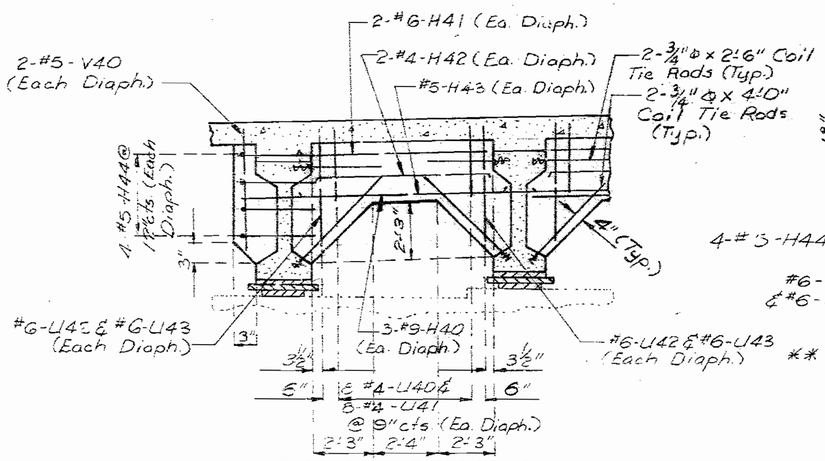
PART PLAN AT INT. BT. NO. 5



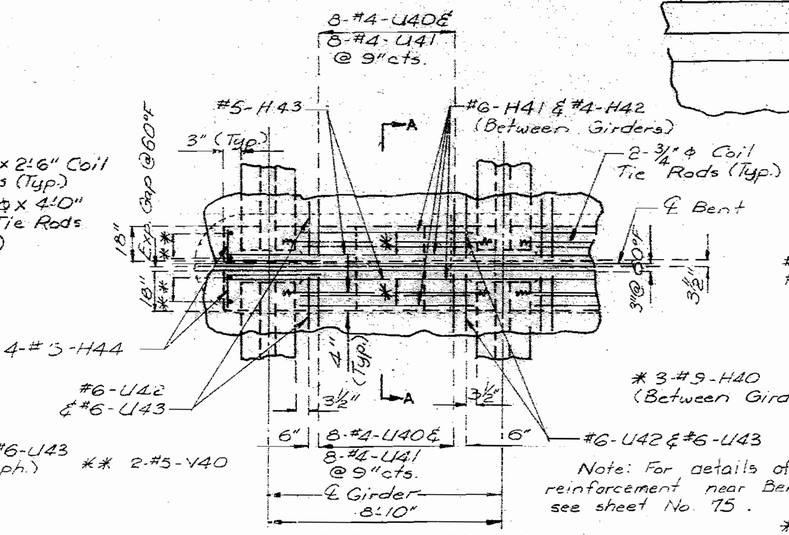
DETAIL "A"



SECTION C-C



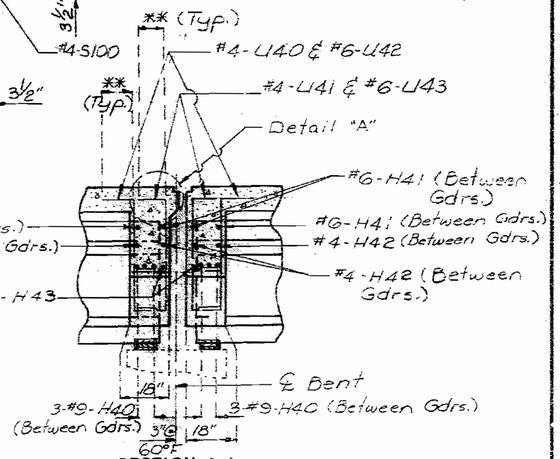
PART ELEV. AT INT. BT. NO. 4



PART PLAN AT INT. BT. NO. 4

Note: For details of slab reinforcement near Bent No.4, see sheet No. 75.

** 12" U40 & U41
14" U42 & U43



SECTION A-A

DETAILED Sept 1988
CHECKED Feb. 1989

Note: This drawing is not to scale. Follow dimensions.

DETAILS OF INTERMEDIATE BENT DIAPHRAGMS

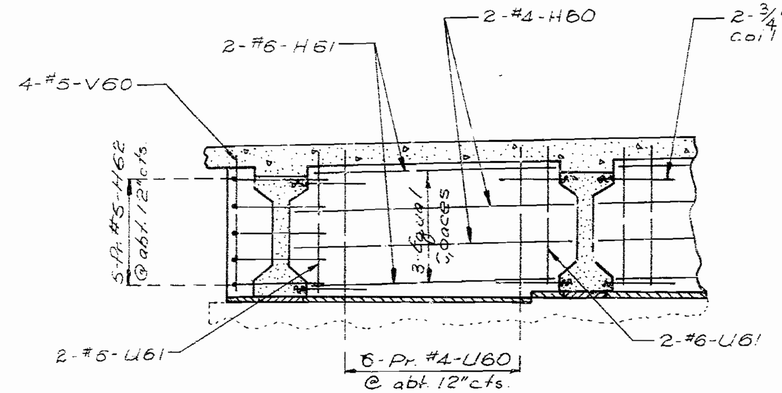
Sheet No. 63 of 98

JACKSON COUNTY

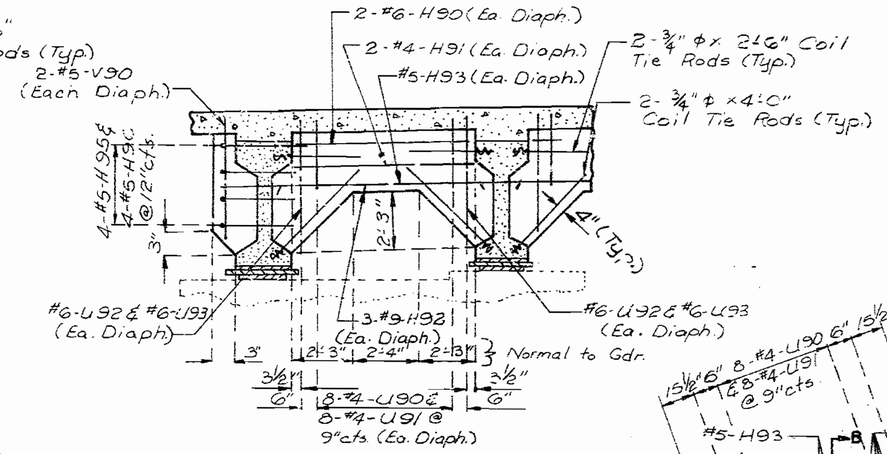
A-2745

151

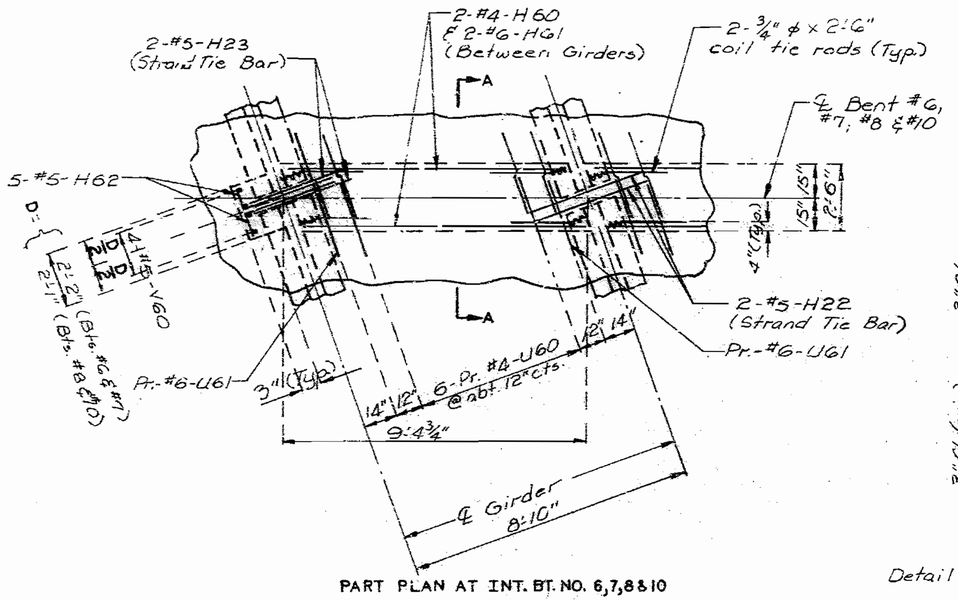
STATE	PROJ. NO.	SHEET NO.
MO		144



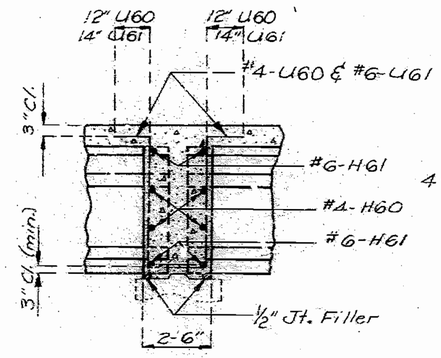
PART ELEV. AT INT. BT. NO. 6,7,8&10



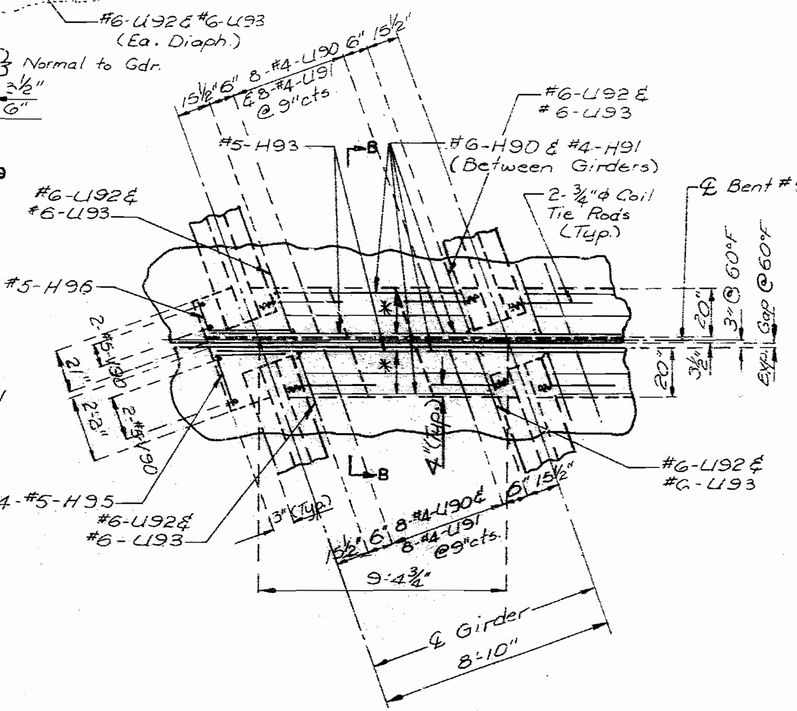
PART ELEV. AT INT. BT. NO. 9



PART PLAN AT INT. BT. NO. 6,7,8&10

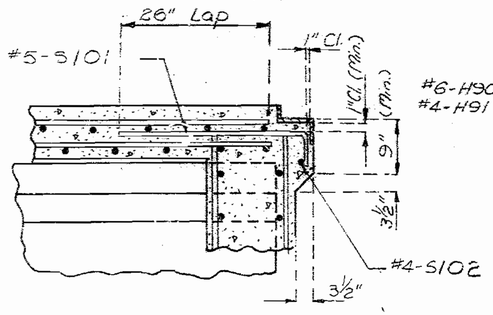


SECTION A-A

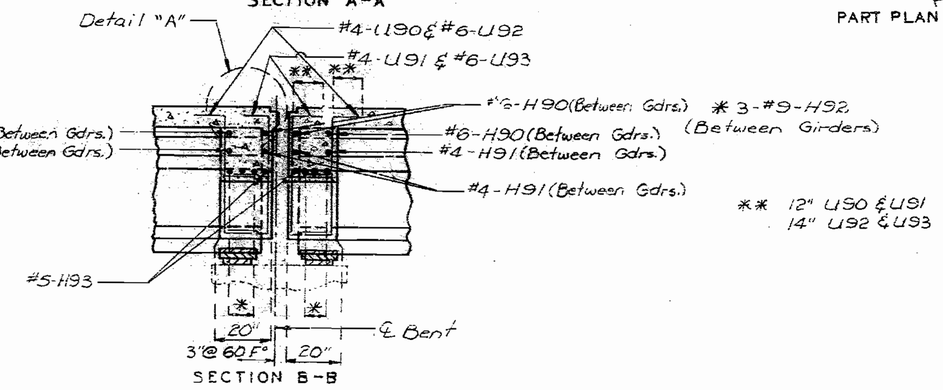


PART PLAN AT INT. BT. NO. 9

Note: For details of slab near Bent No. 9, see sheet No. 75 & No. 76.



DETAIL "A"



SECTION B-B

** 12" U90 & U91
14" U92 & U93

DETAILED Sept. 1988
CHECKED Feb. 1989

DETAILS OF INTERMEDIATE BENT DIAPHRAGMS

Note: This drawing is not to scale. Follow dimensions.

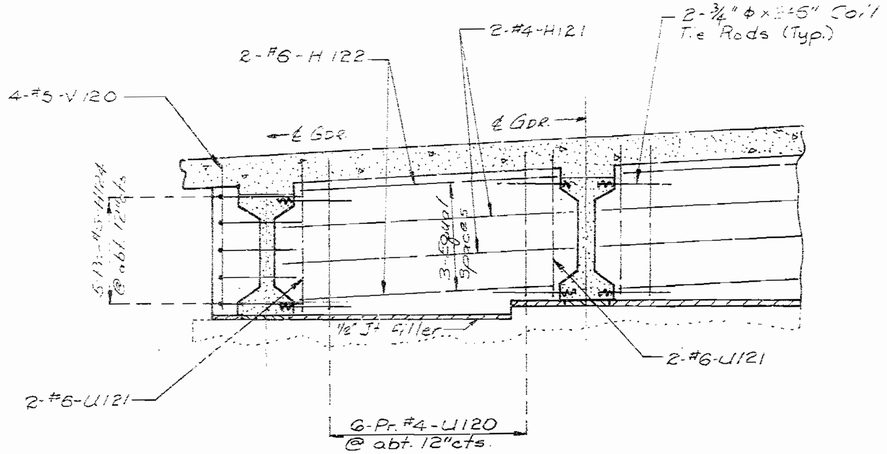
Sheet No. 64 of 98

JACKSON COUNTY

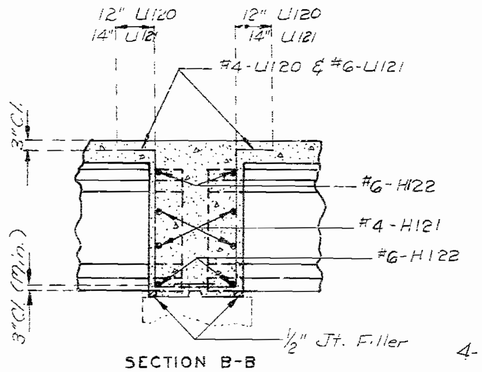
A-2745

1986 160

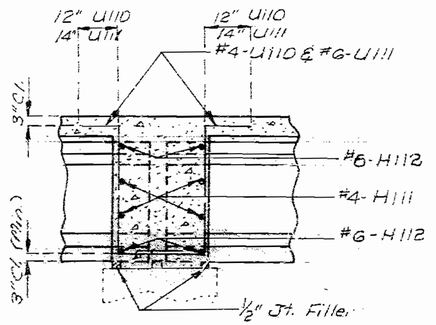
STATE	PROJ. NO.	SHEET NO.
NO.		145



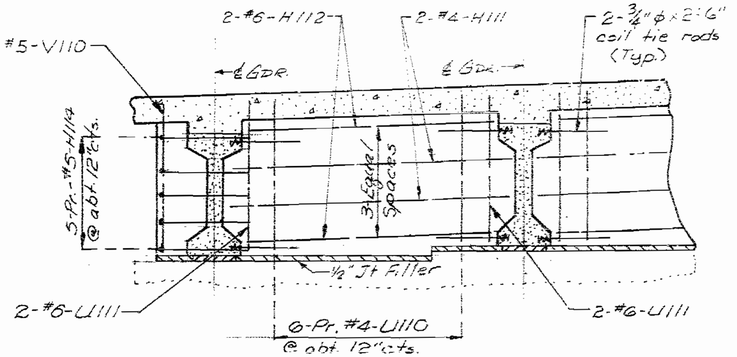
PART ELEV. AT INT. BT. NO. 12



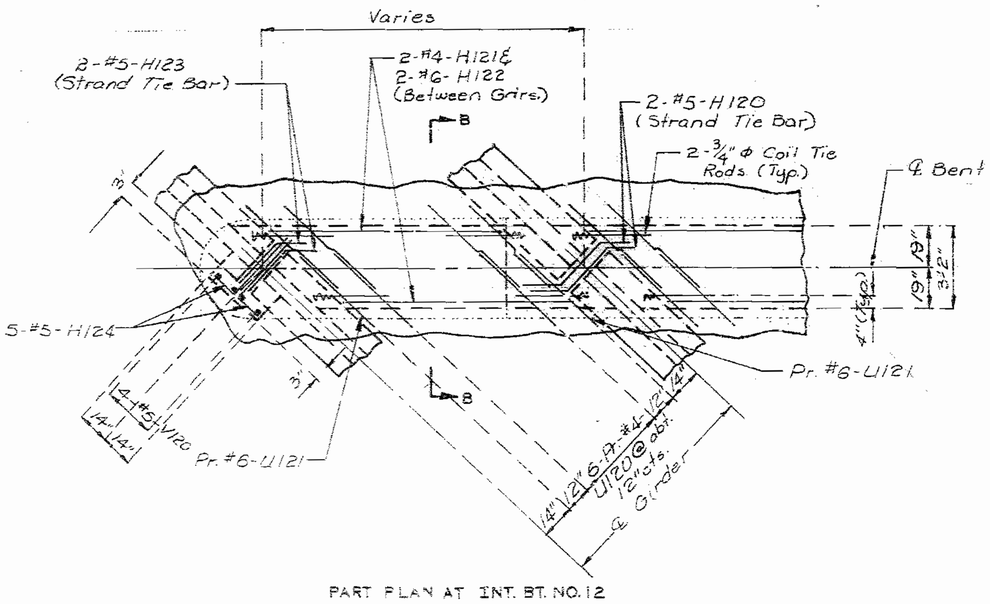
SECTION B-B



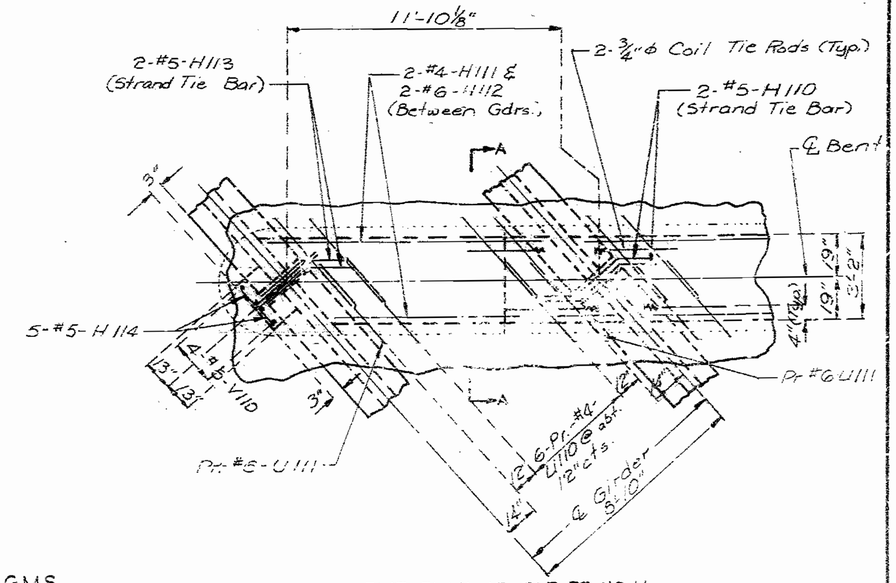
SECTION A-A



PART ELEV. AT INT. BT. NO. 11



PART PLAN AT INT. BT. NO. 12



PART PLAN AT INT. BT. NO. 11

DETAILS OF INTERMEDIATE BENT DIAPHRAGMS

DETAILED Sept 1988
CHECKED Feb 1989

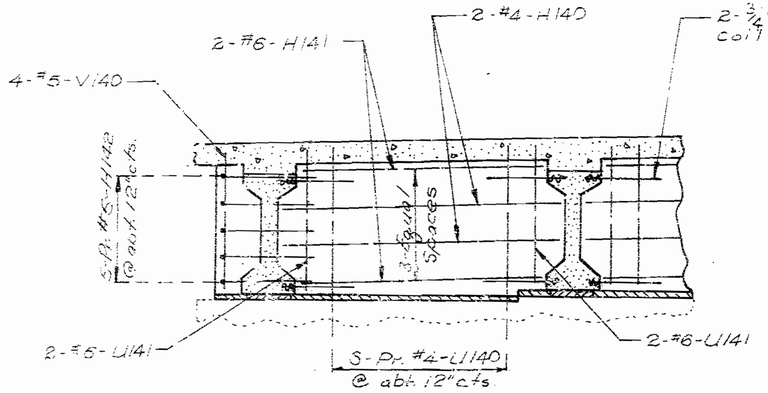
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 65 of 98

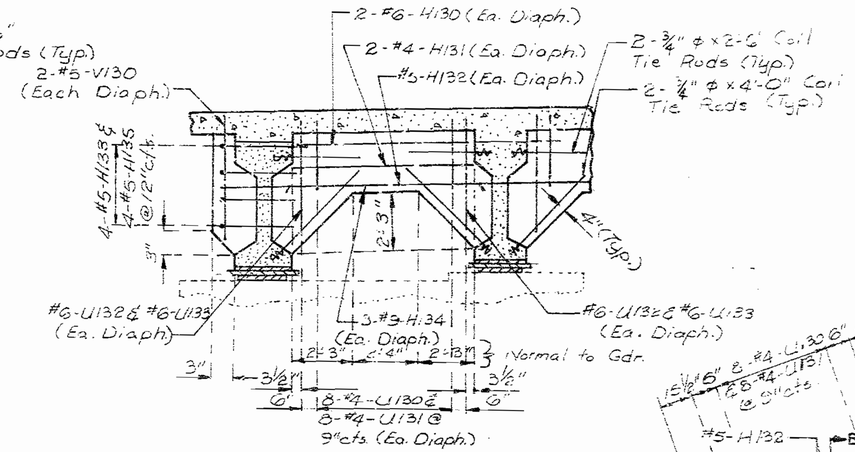
JACKSON COUNTY

A-2745

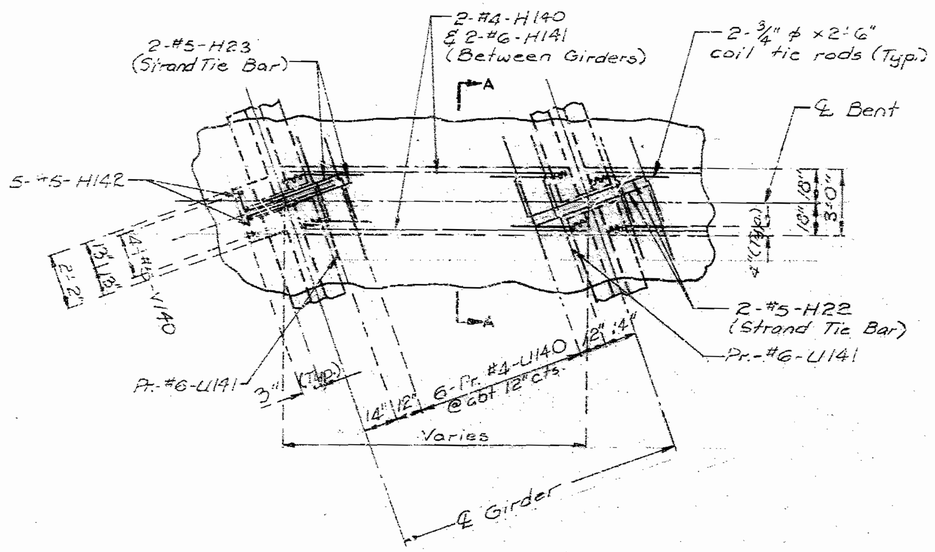
STATE	PROJ. NO.	SHEET NO.
MO.		146



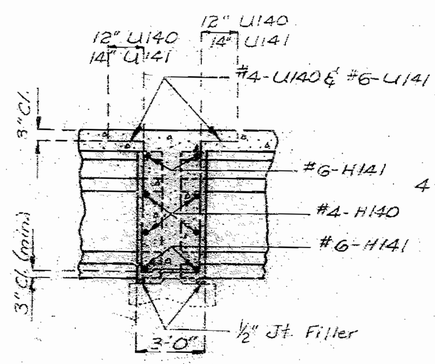
PART ELEV. AT INT. BT. NO. 14



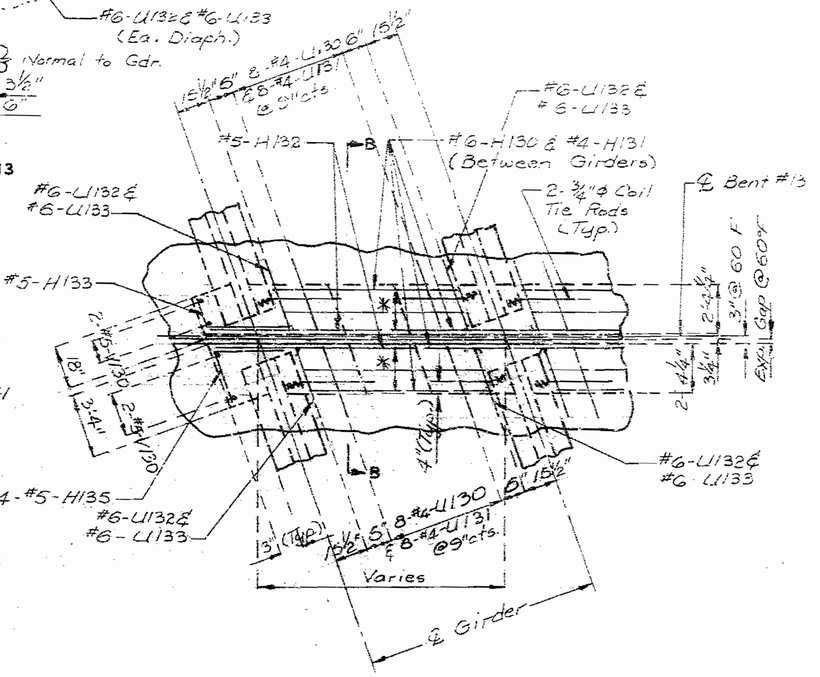
PART ELEV. AT INT. BT. NO. 13



PART PLAN AT INT. BT. NO. 14

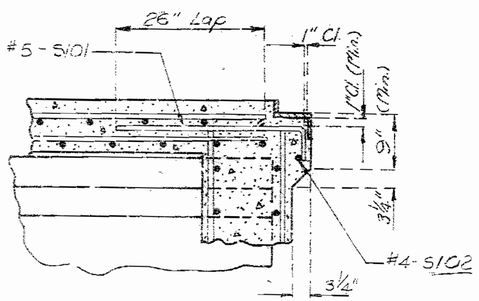


SECTION A-A

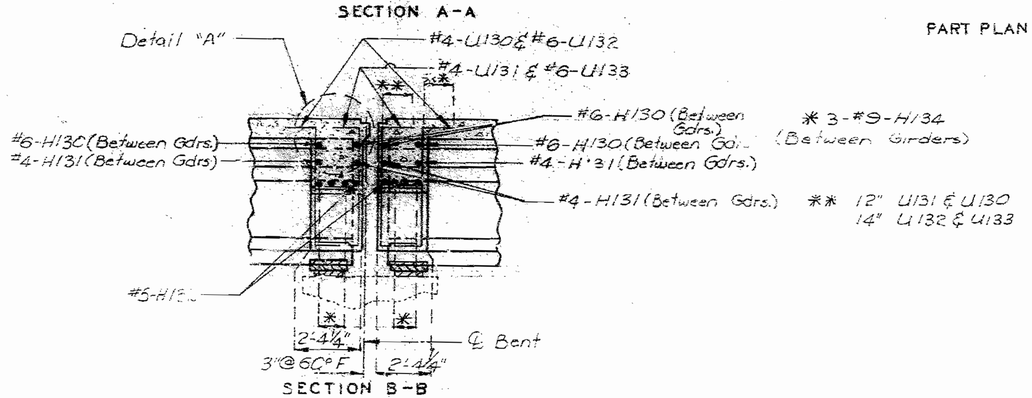


PART PLAN AT INT. BT. NO. 13

Note: For details of slab reinforcement near Bent No.13, see sheet No. 77 & No. 78.



DETAIL "A"



* 3-#9-H134 (Between Girders)

** 12" U131 & U130
14" U132 & U133

SECTION B-B

DETAILED Sept. 1988
CHECKED Feb. 1989

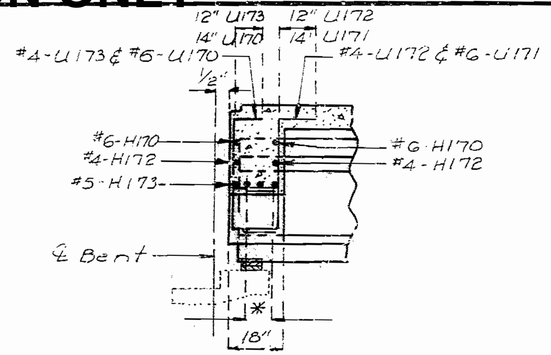
DETAILS OF INTERMEDIATE BENT DIAPHRAGMS

Note: This drawing is not to scale. Follow dimensions.

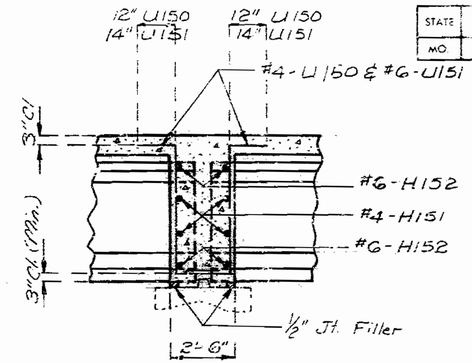
JACKSON COUNTY

A-2745

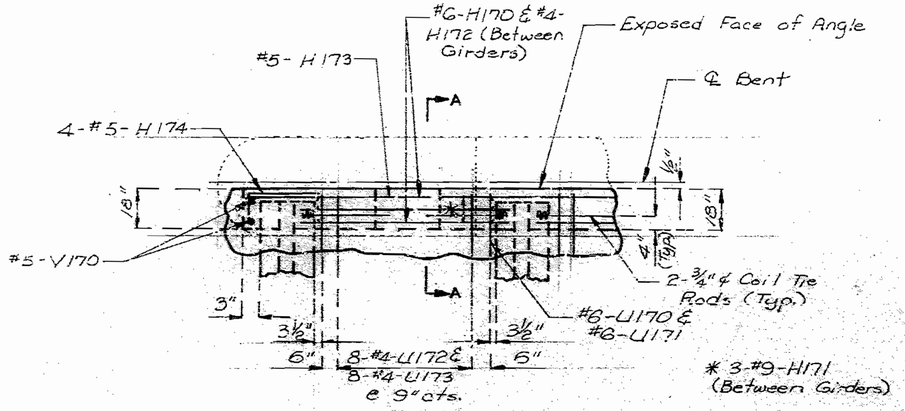
STATE	PROJ NO.	SHEET NO.
MO.		1/2



SECTION A-A

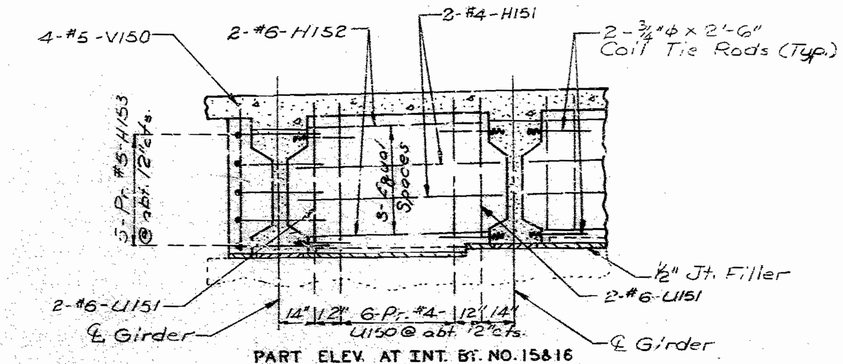


SECTION B-B

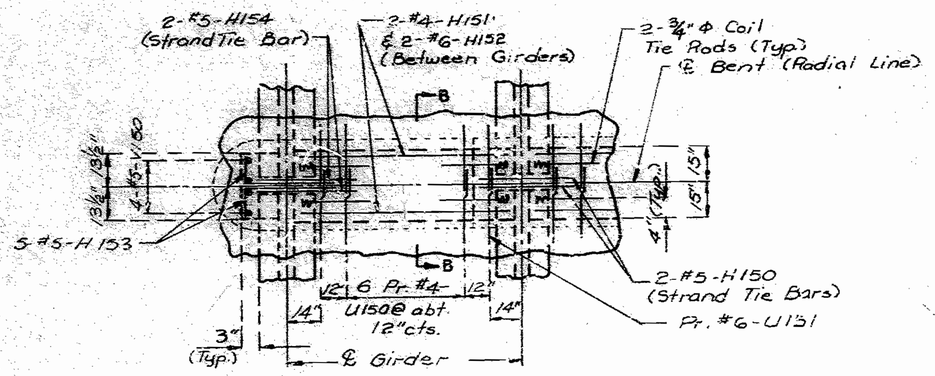


PART PLAN AT INT. BT. NO. 17
(SPAN 16-17)

PART ELEV. AT INT. BT. NO. 17
(SPAN 16-17)



PART ELEV. AT INT. BT. NO. 15&16



PART PLAN AT INT. BT. NO. 15&16

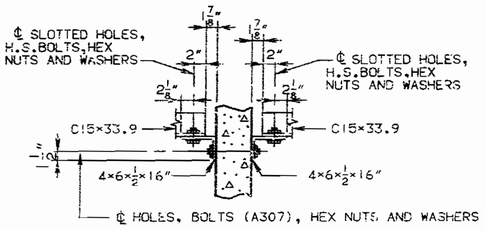
DETAILS OF INTERMEDIATE BENT DIAPHRAGMS

DETAILED Sept. 1988
CHECKED Feb. 1989

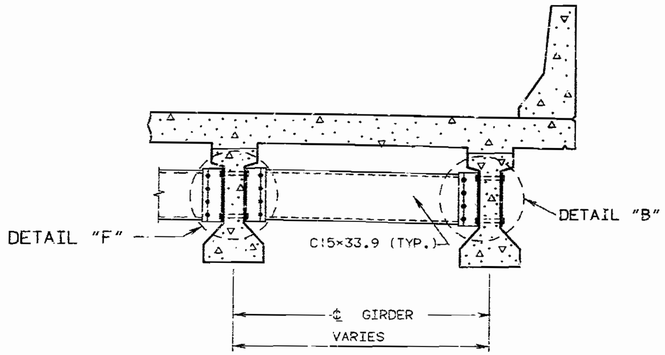
Note: This drawing is not to scale. Follow dimensions

13-16-3

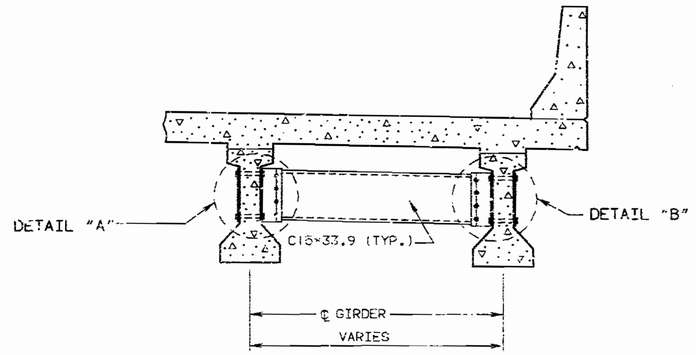
STATE	PROJ. NO.	SHEET NO.
MO.		148



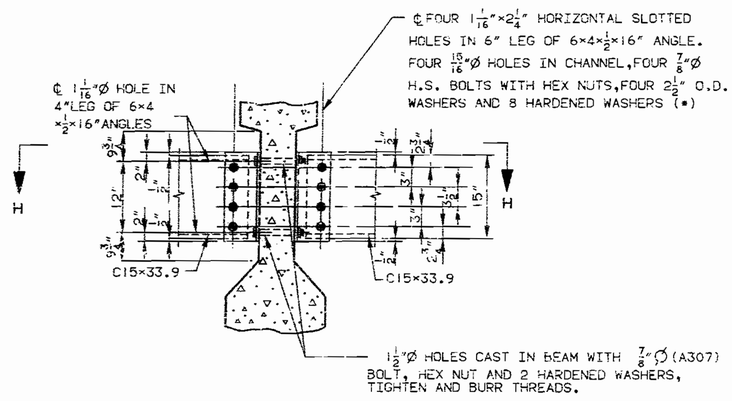
SECTION H-H



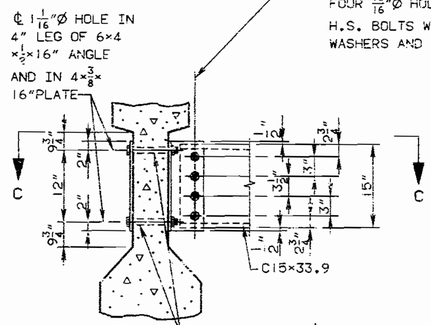
PART SECTION SHOWING
INTERMEDIATE DIAPHRAGMS



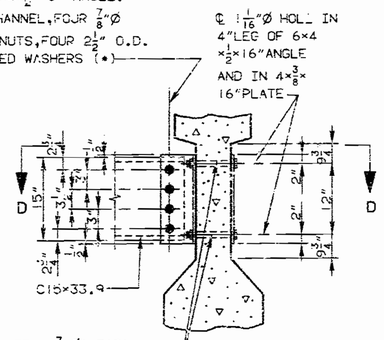
PART SECTION SHOWING
INTERMEDIATE DIAPHRAGMS



DETAIL "F"



DETAIL "A"



DETAIL "B"

STEEL DIAPHRAGM NOTES:

(•) IN LIEU OF 2½" O.D. WASHERS, CONTRACTOR MAY SUBSTITUTE A 3/16" (MIN. THICHNESS) PLATE WITH FOUR 15/16"Ø HOLES AND 1 HARDENED WASHER PER BOLT.

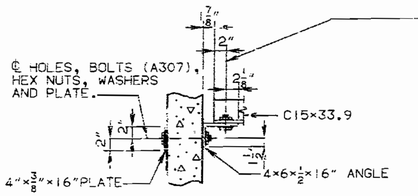
ALL H.S. BOLTS MAY BE TENSIONED / TURN-OF-NUT-METHOD.

ALL DIAPHRAGMS MATERIALS INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED.

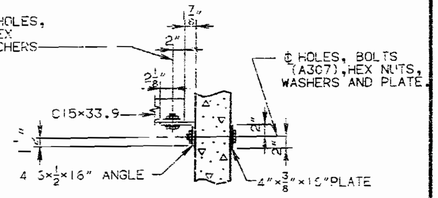
FABRICATED STRUCTURAL STEEL SHALL BE A36 EXCEPT AS NOTED.

PAYMENT FOR FURNISHING AND INSTALLING STEEL INTERMEDIATE DIAPHRAGMS SHALL BE INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE I-GIRDERS.

SHOP DRAWINGS WILL BE REQUIRED FOR STEEL INTERMEDIATE DIAPHRAGMS AND ANGLE CONNECTIONS.



SECTION C-C



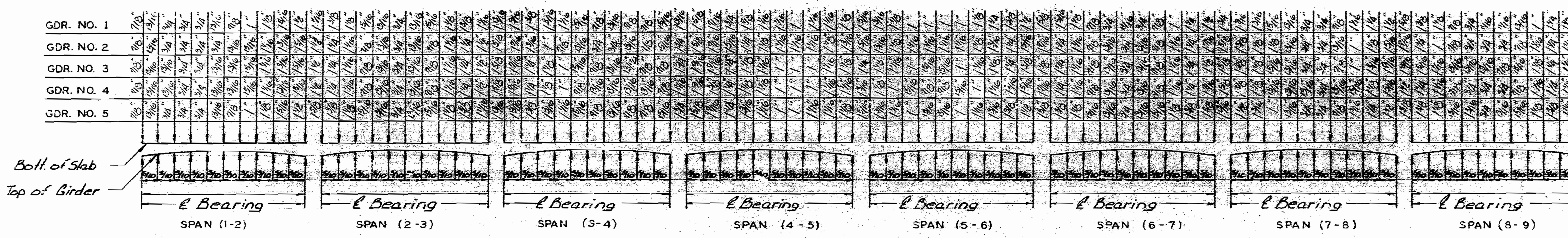
SECTION D-D

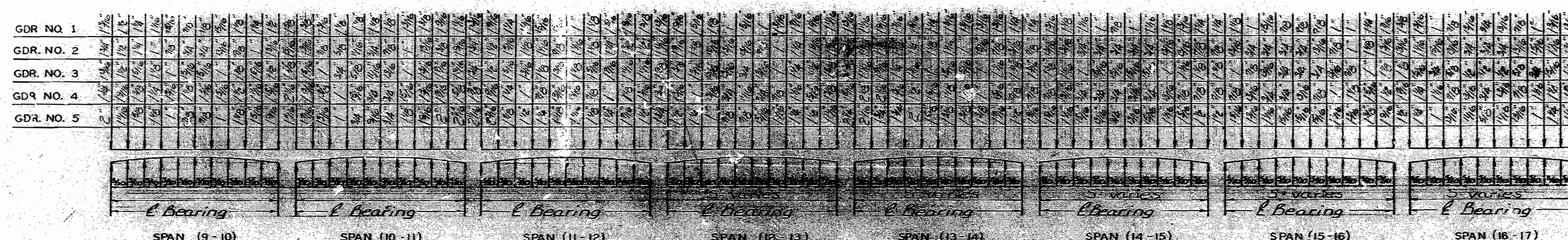
DETAILED JULY 1988
CHECKED FEB 1989

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

168/154

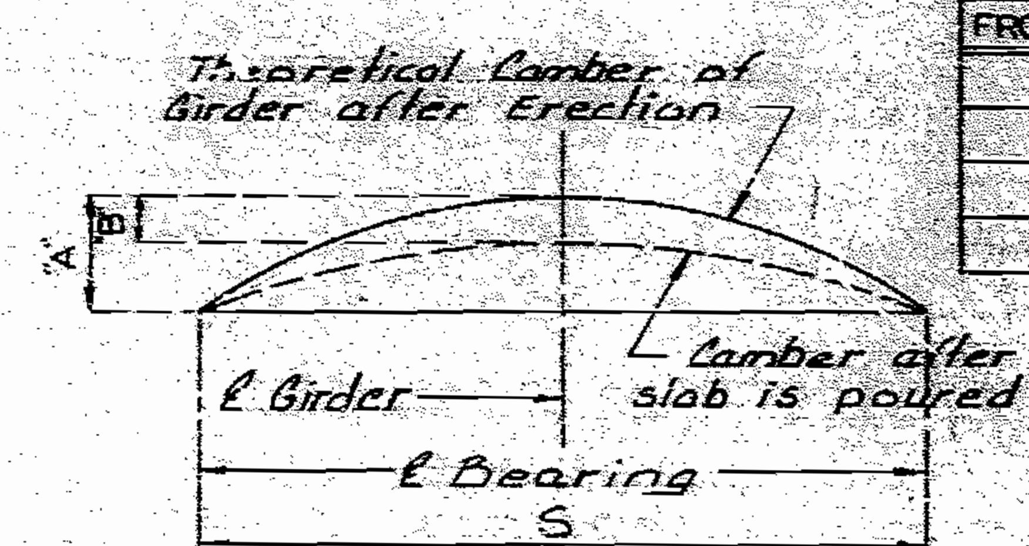
STATE	PROJ. NO.	SHEET NO.
MO.		149





THEORETICAL SLAB HAUNCHING DIAGRAM
P/S CONC. I-GIRDER

CONVERSION FACTOR FOR GIRDER CAMBER	
FROM ℄ BRG.	CAMBER
.1	0.344 X A OR B
.2	0.593 X A OR B
.3	0.813 X A OR B
.4	0.952 X A OR B



P/S CONC. I-GDR. CAMBER DIAGRAM

Notes for P/S:

If girder camber is different from that shown in the Camber Diagram, it shall be necessary to adjust the slab haunches, increase the slab thickness, or to raise the grade uniformly throughout the structure. No payment will be made for additional labor or materials required for variation in haunching, slab thickness or grade adjustment.

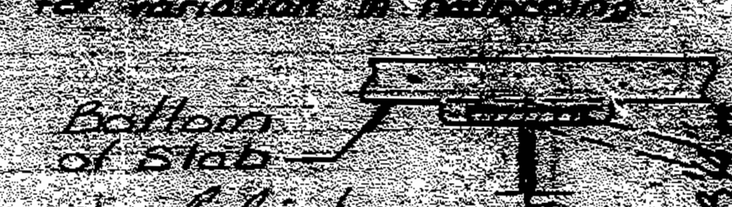
Concrete in the slab haunches is included in the Estimated Quantities for All Slabs.

Notes for Plate Girder:

Camber includes allowances for vertical curve, superelevation transition and dead load deflection due to concrete slab, curb, and structural steel.

16% of dead load deflection is due to the weight of structural steel.

"A" dimension may vary if the girder camber after erection differs from plan camber by more than the % of D.L. deflection due to the weight of structural steel. No payment will be made for additional forming or concrete reqd. for variation in haunching.



℄ GDR. THEORETICAL SLAB HAUNCH

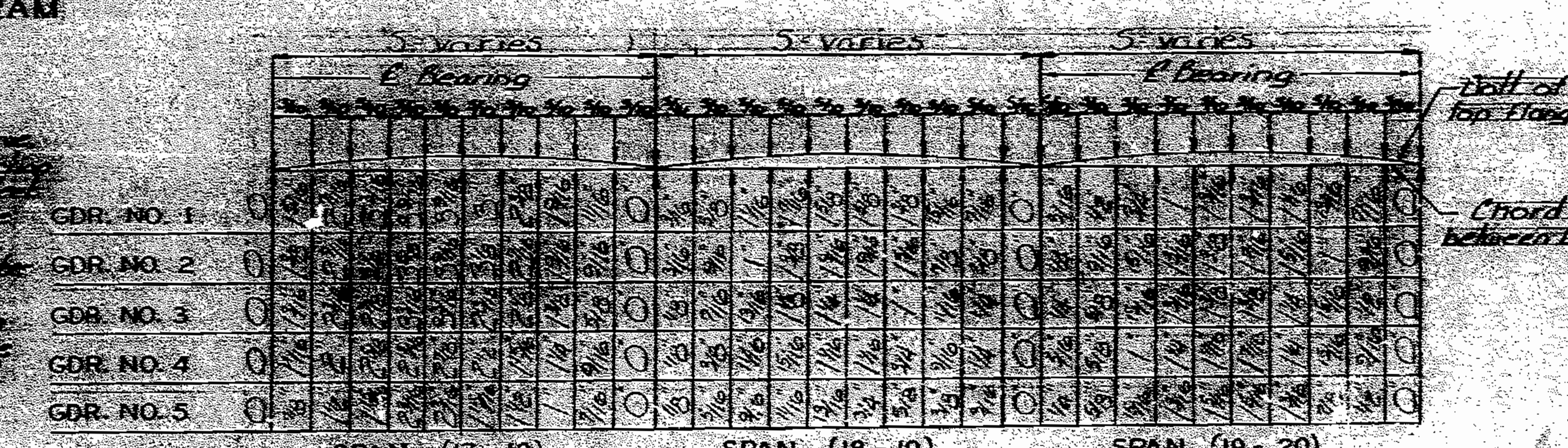


PLATE GIRDER CAMBER DIAGRAM

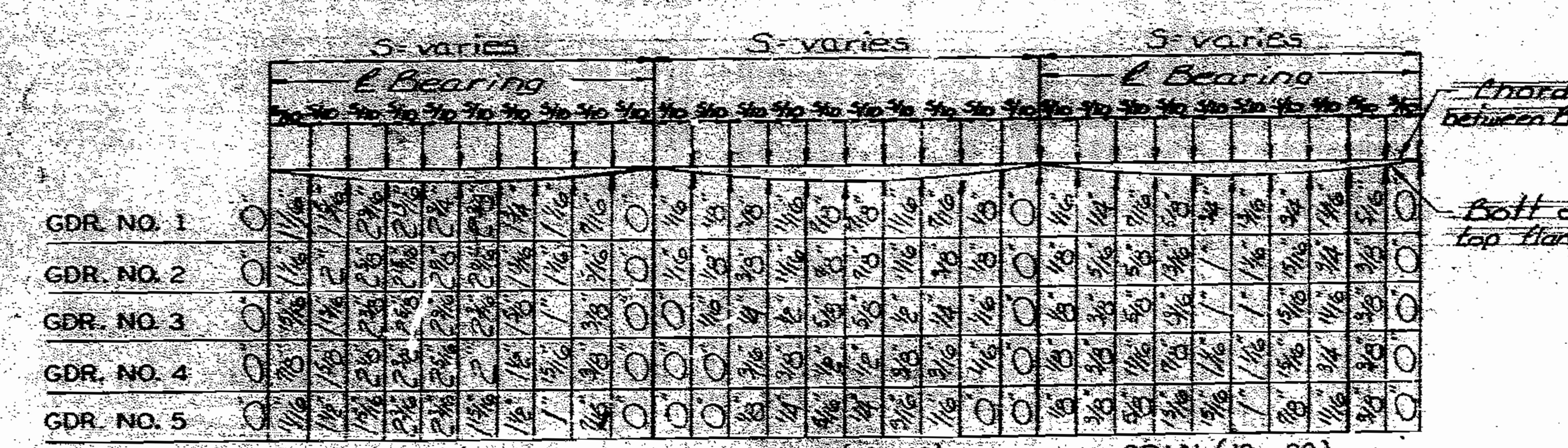


PLATE GIRDER DEAD LOAD DEFLECTION

TABLE OF GIRDER CAMBER AT ℄ GIRDER FOR PRESTRESSED CONCRETE I-GIRDERS

SPAN NO.	1-2		2-3		3-4		4-5		5-6		6-7		7-8		8-9	
	"A"	"B"	"A"	"B"	"A"	"B"	"A"	"B"	"A"	"B"	"A"	"B"	"A"	"B"	"A"	"B"
GDR. NO. 1	11/16"	5/16"	1 5/8"	15/16"	7/8"	9/16"	11/16"	3/8"	15/16"	1/2"	1 5/8"	7/8"	1 5/8"	7/8"	1 5/8"	15/16"
GDR. NO. 2	11/16"	5/16"	1 5/8"	3/4"	7/8"	1/2"	11/16"	5/16"	11/16"	1/4"	1 5/8"	11/16"	1 5/8"	11/16"	1 5/8"	3/4"
GDR. NO. 3	11/16"	5/16"	1 5/8"	3/4"	11/16"	5/16"	11/16"	3/8"	11/16"	3/8"	1 5/8"	3/4"	1 5/8"	3/4"	1 5/8"	9/16"
GDR. NO. 4	11/16"	5/16"	1 5/8"	3/4"	11/16"	3/8"	11/16"	5/16"	5/8"	3/8"	1 5/8"	11/16"	1 5/8"	11/16"	1 5/8"	3/4"
GDR. NO. 5	11/16"	5/16"	1 5/8"	15/16"	5/8"	7/16"	11/16"	3/8"	5/8"	9/16"	1 5/8"	7/8"	1 5/8"	7/8"	1 5/8"	15/16"

SPAN NO.	9-10		10-11		11-12		12-13		13-14		14-15		15-16		16-17	
	"A"	"B"	"A"	"B"	"A"	"B"	"A"	"B"	"A"	"B"	"A"	"B"	"A"	"B"	"A"	"B"
GDR. NO. 1	1 1/2"	7/8"	1"	1/2"	1 9/16"	1 1/16"	2 1/4"	1 5/16"	7/8"	1/2"	7/8"	1/2"	1 3/8"	9/16"	1 3/4"	15/16"
GDR. NO. 2	1 1/2"	11/16"	15/16"	9/16"	1 15/16"	3/4"	2 1/4"	1 1/16"	1"	7/16"	1"	3/8"	1 5/8"	9/16"	1 5/8"	11/16"
GDR. NO. 3	1 1/2"	11/16"	5/8"	3/8"	1 15/16"	3/4"	2 1/4"	1 1/16"	1 9/16"	13/16"	1 5/16"	1/2"	1 3/4"	11/16"	1 5/8"	11/16"
GDR. NO. 4	1 1/2"	11/16"	5/8"	3/8"	1 15/16"	3/4"	2 1/4"	[illegible]	1 5/8"	3/4"	1 1/2"	9/16"	1 5/8"	11/16"	1 3/4"	15/16"
GDR. NO. 5	1 1/2"	7/8"	9/16"	7/16"	1 15/16"	1 1/16"	2 1/4"	1 5/16"	2 3/16"	1 5/16"	1 1/2"	1"	1 3/8"	7/8"	1 5/8"	1 5/8"

DETAILED OCT. 1988
CHECKED Apr. 1989

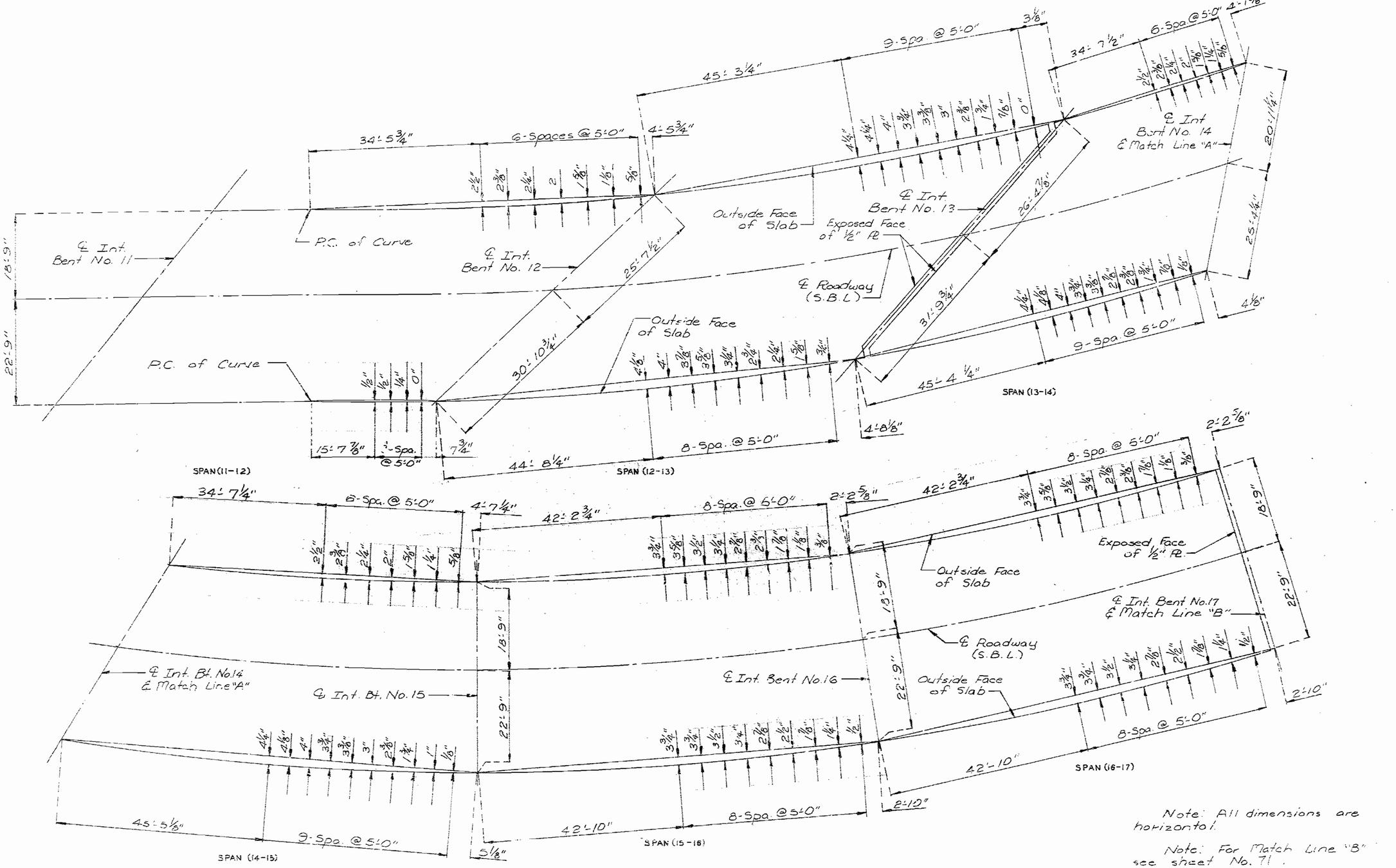
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 69 of 98

JACKSON COUNTY

A-2745

STATE	PROJ. NO.	SHEET NO.
MO		150



Note: All dimensions are horizontal.

Note: For Match Line "B" see sheet No. 71.

PART PLAN OF SLAB SHOWING CURVE ORDINATES

DETAILED JULY 1988
CHECKED Feb. 1989

Note: This drawing is not to scale. Follow dimensions.

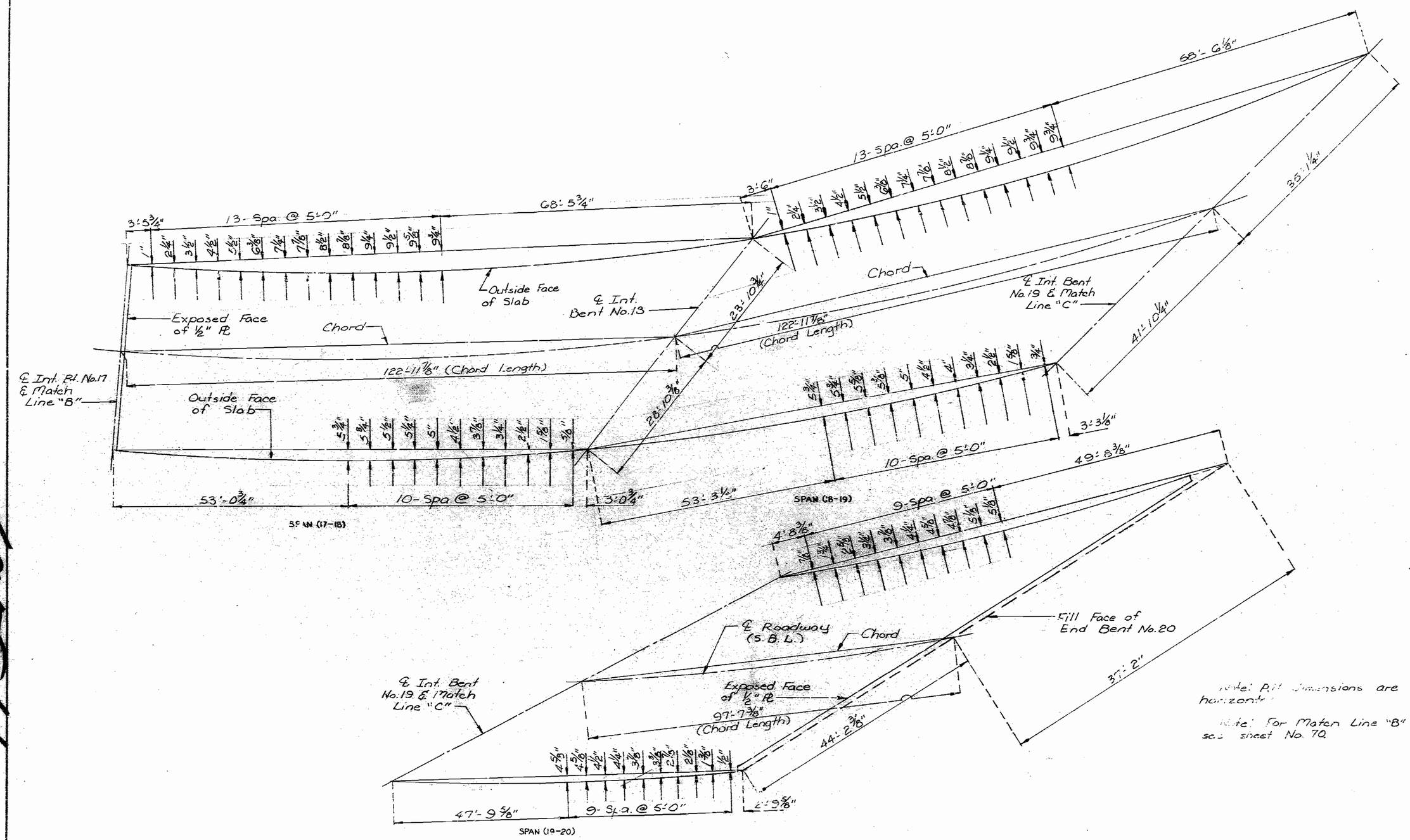
Sheet No. 70 of 98

JACKSON COUNTY

A-2745

127 166

STATE	PROJ. NO.	SHEET NO.
MO.		151



Note: All dimensions are horizontal.

Note: For Match Line "B" see sheet No. 70

DETAILED JULY 1988
CHECKED Feb. 1989

PART PLAN OF SLAB SHOWING CURVE ORDINATES

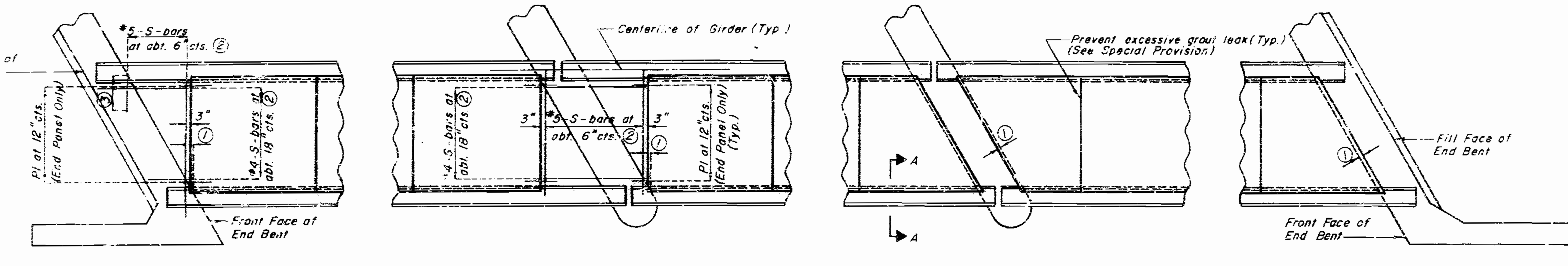
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 71 of 98

JACKSON COUNTY

A-2745

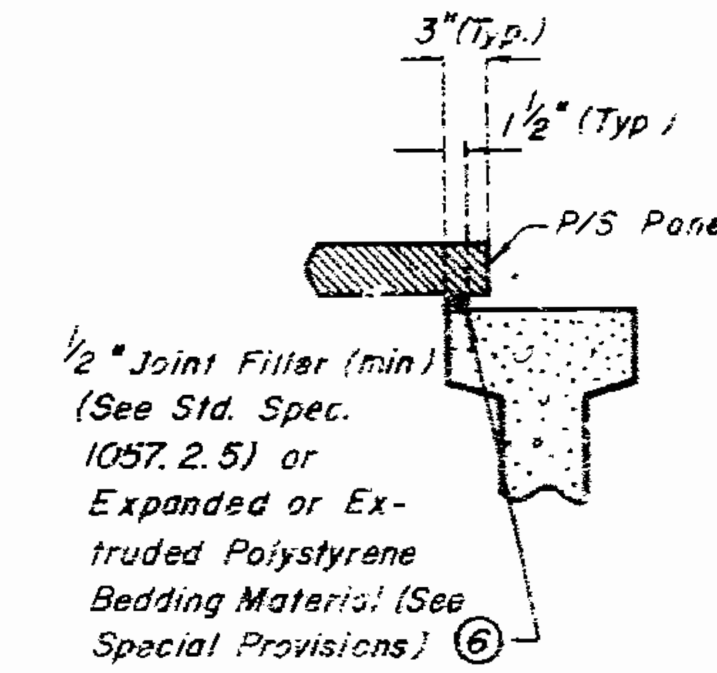
STATE	PROJ NO	SHEET NO
MO		152



PANELS - SQUARED ENDS

PANELS - SKEWED ENDS

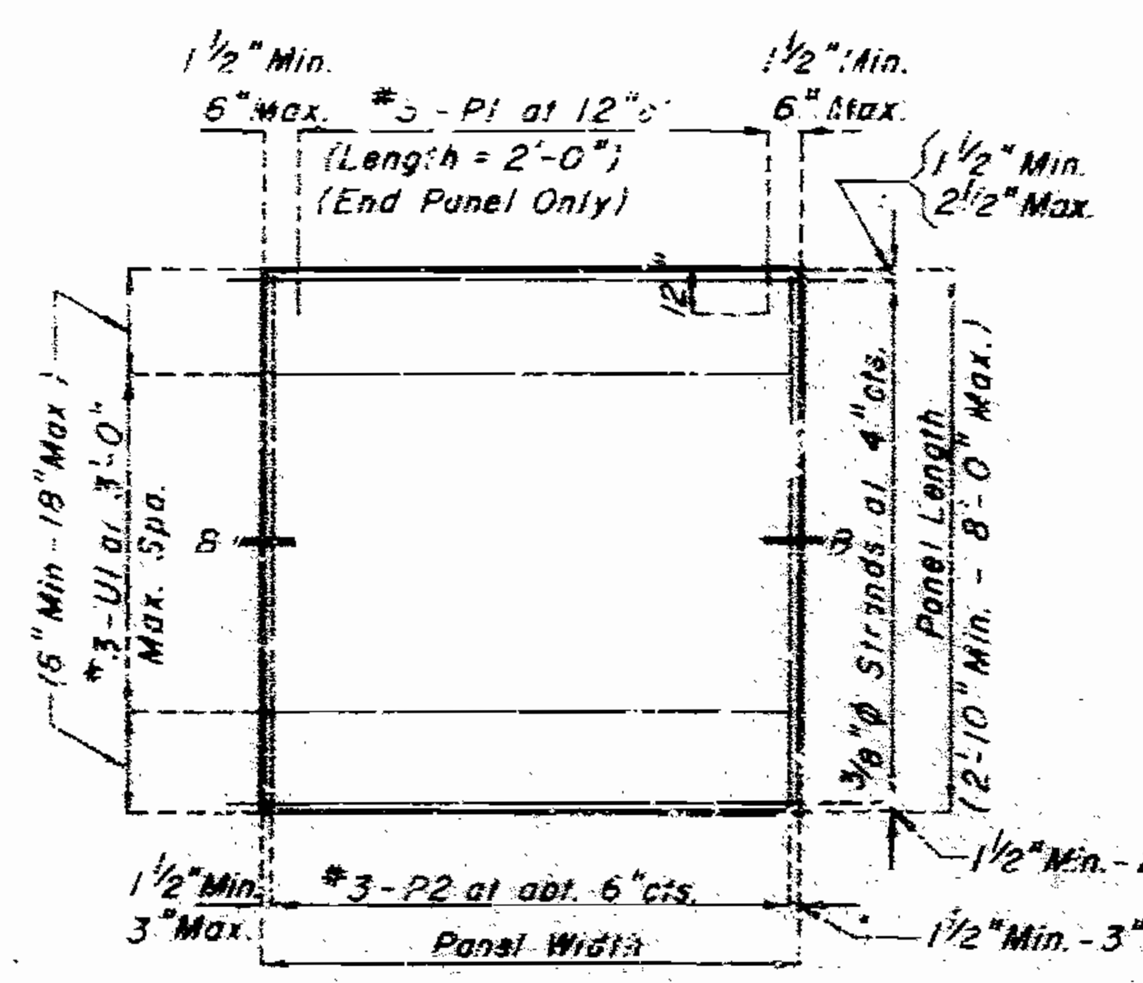
PLAN OF PRECAST PRESTRESSED PANELS PLACEMENT



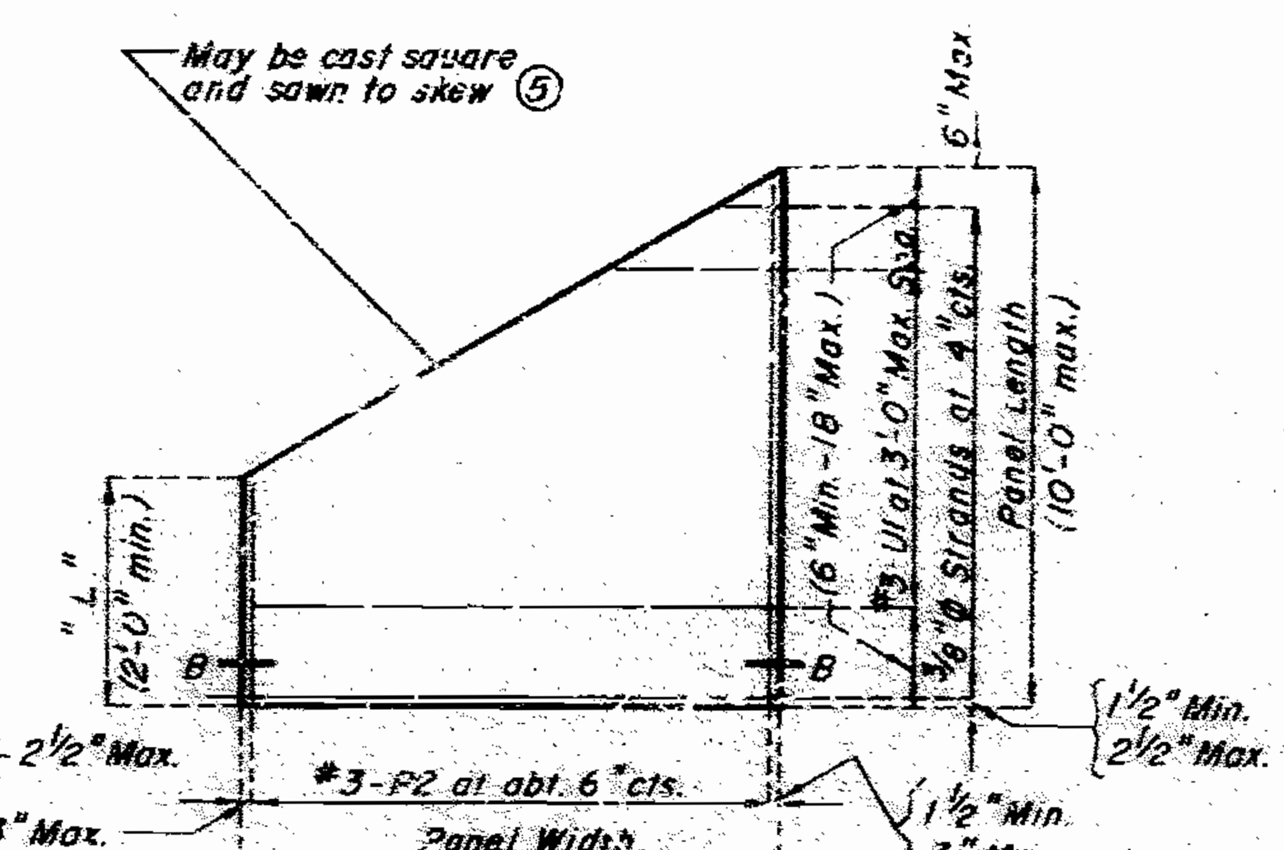
SECTION A-A

NOTE:

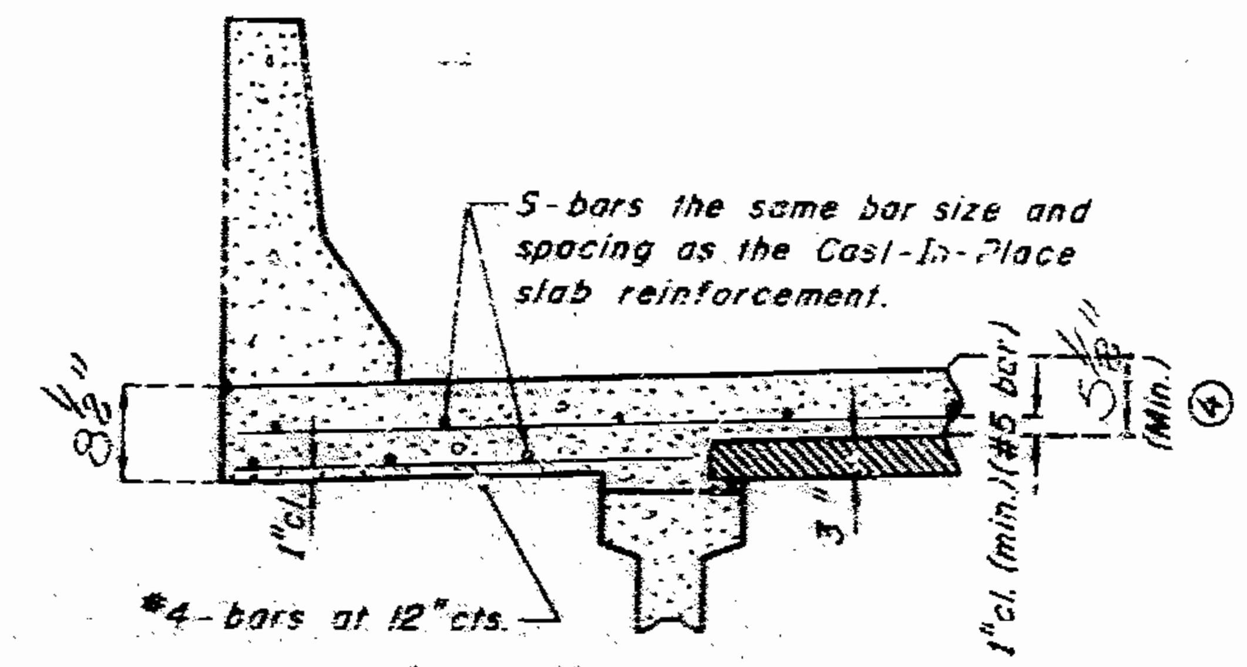
USE SLAB HAUNCHING DIAGRAM ON SHEET NO. 69 FOR DETERMINING THICKNESS OF JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL WITHIN THE LIMITS NOTED BELOW.



PLAN OF PRECAST PRESTRESSED PANEL



PLAN OF PRECAST PRESTRESSED PANEL (SKEWED END-OPTIONAL)



SECTION THRU CANTILEVER

GENERAL NOTES:

PRESTRESSED PANELS:

CONCRETE FOR PRESTRESSED PANELS SHALL BE CLASS A1 WITH F'c = 5,000 PSI, F'ci = 3,500 PSI.

THE TOP SURFACE OF ALL PANELS SHALL RECEIVE A SCORED FINISH WITH A DEPTH OF SCORING OF 1/8 INCH PERPENDICULAR TO THE PRESTRESSING STRANDS IN THE PANELS (SEE SPECIAL PROVISIONS).

PRESTRESSING TENDONS SHALL BE HIGH-TENSILE STRENGTH UNCOATED SEVEN-WIRE (7), LOW RELAXATION STRANDS FOR PRESTRESSED CONCRETE CONFORMING TO AASHTO M203, EXCEPT THAT NOMINAL DIAMETER OF STRAND = 3/8 INCH AND NOMINAL AREA = 0.085 SQ. IN. AND MINIMUM ULTIMATE STRENGTH = 23,000 LBS. (270 KSI). LARGER STRANDS MAY BE USED WITH THE SAME SPACING AND INITIAL TENSION.

INITIAL PRESTRESSING FORCE = 14.9 KIPS/STRAND.

THE METHOD AND SEQUENCE OF RELEASING THE STRANDS SHALL BE SHOWN ON THE SHOP DRAWINGS.

SUITABLE ANCHORAGE DEVICES FOR LIFTING PANELS MAY BE CAST IN PANELS, PROVIDED THEY ARE SHOWN ON THE SHOP DRAWINGS AND APPROVED BY THE ENGINEER. PANEL LENGTHS SHALL BE DETERMINED BY THE CONTRACTOR AND SHOWN ON THE SHOP DRAWINGS.

WHEN SQUARE END PANELS ARE USED AT SKEWED BENTS, IT IS REQUIRED THAT THE SKEWED PORTION BE CAST FULL DEPTH. NO SEPARATE PAYMENT WILL BE MADE FOR THE ADDITIONAL CONCRETE AND REINFORCING REQUIRED.

MINIMUM JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL THICKNESS SHALL BE 1/2 INCH. THICKER JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL MAY BE USED ON ONE OR BOTH SIDES OF THE GIRDER TO REDUCE CAST-IN-PLACE CONCRETE THICKNESS, WITHIN TOLERANCES. NO MORE THAN 2 INCHES TOTAL THICKNESS OF JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL SHALL BE USED.

THE SAME THICKNESS OF JOINT FILLER MATERIAL SHALL BE USED UNDER ANY ONE EDGE OF ANY PANEL AND THE MAXIMUM CHANGE IN THICKNESS BETWEEN ADJACENT PANELS SHALL BE 1/4 INCH. THE POLYSTYRENE BEDDING MATERIAL MAY BE CUT TO MATCH HAUNCH HEIGHT ABOVE TOP OF FLANGE.

AT THE CONTRACTORS OPTION THE VARIATION IN SLAB THICKNESS OVER PRESTRESSED PANELS MAY BE ELIMINATED OR REDUCED BY INCREASING AND VARYING THE GIRDER TOP FLANGE THICKNESS. DIMENSIONS SHALL BE SHOWN ON THE SHOP DRAWINGS.

NOTE:

① END PANELS TO BE DIMENSIONED 1 1/2 INCHES FROM THE INSIDE FACE OF DIAPHRAGM.

② S-BARS SHOWN ARE BOTTOM STEEL IN SLAB BETWEEN PANELS AND USED WITH SQUARED END PANELS ONLY.

COST OF S-BARS SHALL BE INCLUDED IN THE PRICE BID FOR SLAB PER SQ. YD.

S-BARS ARE NOT LISTED IN BILL OF REINFORCING.

SUPPORT FROM DIAPHRAGM FORMS IS REQUIRED UNDER THE OPTIONAL SKEWED END UNTIL CAST-IN-PLACE CONCRETE HAS REACHED 3,000 PSI. COMPRESSIVE STRENGTH.

③ EXTEND S-BARS 18 INCHES BEYOND THE FRONT FACE OF END BENT ONLY.

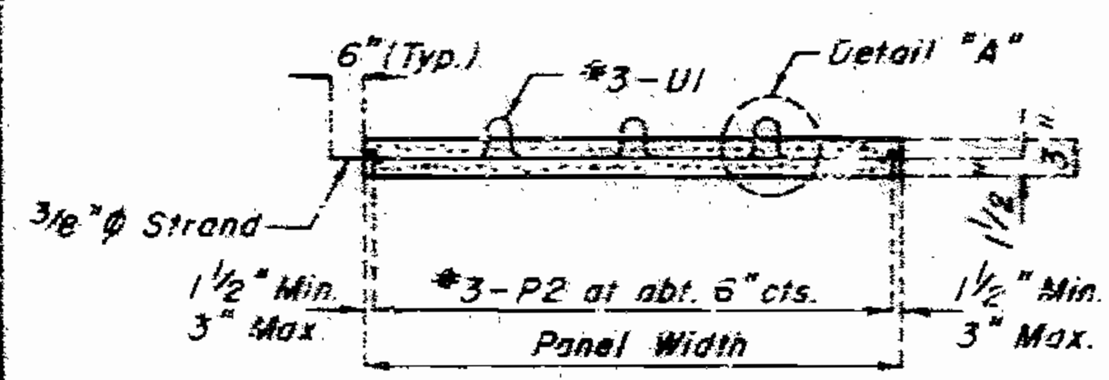
SLAB EXTERIOR GIRDER HAUNCH SHALL BE THE SAME AS CAST-IN-PLACE.

SLAB THICKNESS OVER PRESTRESSED PANELS VARIES DUE TO GIRDER CAMBER.

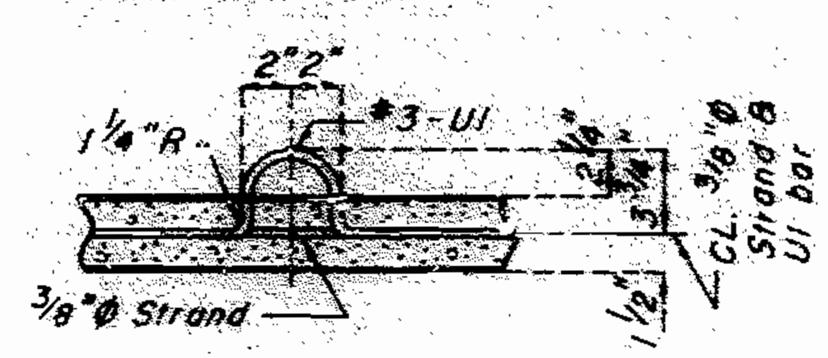
④ IN ORDER TO MAINTAIN MINIMUM SLAB THICKNESS IT MAY BE NECESSARY TO RAISE THE GRADE UNIFORMLY THROUGHOUT THE STRUCTURE. NO PAYMENT WILL BE MADE FOR ADDITIONAL LABOR OR MATERIALS REQUIRED FOR NECESSARY GRADE ADJUSTMENT.

⑤ ANY STRAND 2'-0" OR SHORTER SHALL HAVE A #4 REINFORCING BAR ON EACH SIDE OF IT, CENTERED BETWEEN STRANDS. STRANDS 2'-0" OR SHORTER MAY THEN BE DEBONDED AT THE FABRICATORS OPTION.

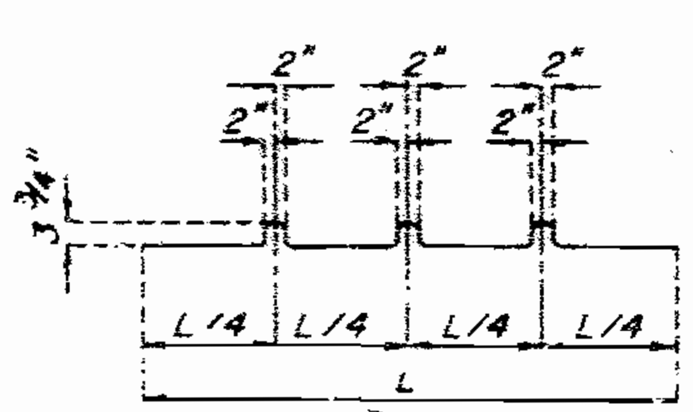
⑥ ALL PANEL SUPPORT PADS SHALL BE GLUED TO THE GIRDER. WHEN SUPPORT THICKNESS EXCEEDS 1 1/2 INCHES, THE PADS SHALL BE GLUED TOP AND BOTTOM. THE GLUE USED SHALL BE THE TYPE RECOMMENDED BY THE PANEL SUPPORT PADS MANUFACTURER.



SECTION B-B

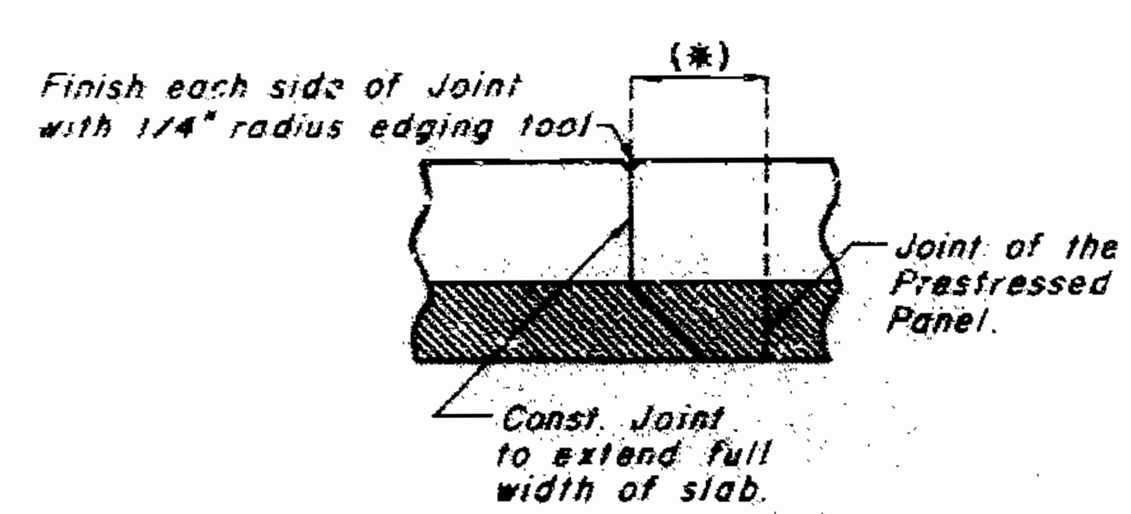


DETAIL "A"



BENDING DIAGRAM FOR U1 BAR

#3-U1 BARS MAY BE ORIENTED AT RIGHT ANGLES TO LOCATION AND SPACING SHOWN. U1 BARS SHALL BE PLACED BETWEEN P1 BARS.



PERMISSIBLE CONST. JOINT

(*) ADJUST THE PERMISSIBLE CONST. JOINT TO A CLEARANCE OF 6 INCHES MIN FROM THE JOINTS OF THE PRESTRESSED PANELS.

REINFORCING STEEL:

ALL DIMENSIONS ARE OUT TO OUT.

MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1 1/2 INCH UNLESS OTHERWISE SHOWN.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE C.R.S.I. MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE OF BAR TO THE NEAREST INCH.

THE PRESTRESSED PANEL QUANTITIES ARE NOT INCLUDED IN THE TABLE OF ESTIMATED QUANTITIES FOR ALTERNATE SLABS.

IF U1 BARS INTERFERE WITH PLACEMENT OF SLAB STEEL, U1 LOOPS MAY BE BENT OVER, AS NECESSARY, TO CLEAR SLAB STEEL.

WELDED WIRE FABRIC OR WELDED DEFORMED BAR MATS PROVIDING A MINIMUM AREA OF REINFORCING PERPENDICULAR TO STRANDS OF 0.22 SQ. IN./FT. WITH SPACING PARALLEL TO STRANDS SUFFICIENT TO INSURE PROPER HANDLING, MAY BE USED IN LIEU OF THE #3-P2 BARS SHOWN. WIRE OR BAR DIAMETER SHALL NOT BE LARGER THAN 0.375 INCHES.

PRESTRESS	REVISED
P/C-P/S PANEL (3")	
AUG. 1984	JAN. 1989

DETAILED July 1989
CHECKED July 1989

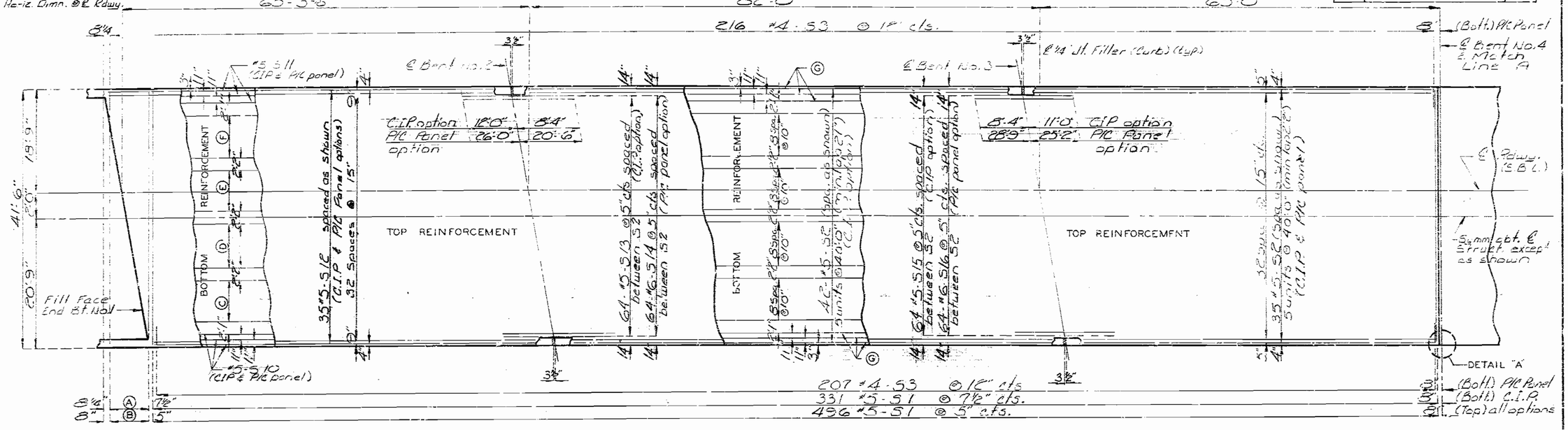
DETAILS OF PRECAST PRESTRESSED PANELS

Note: This drawing is not to scale. Follow dimensions.

JACKSON COUNTY

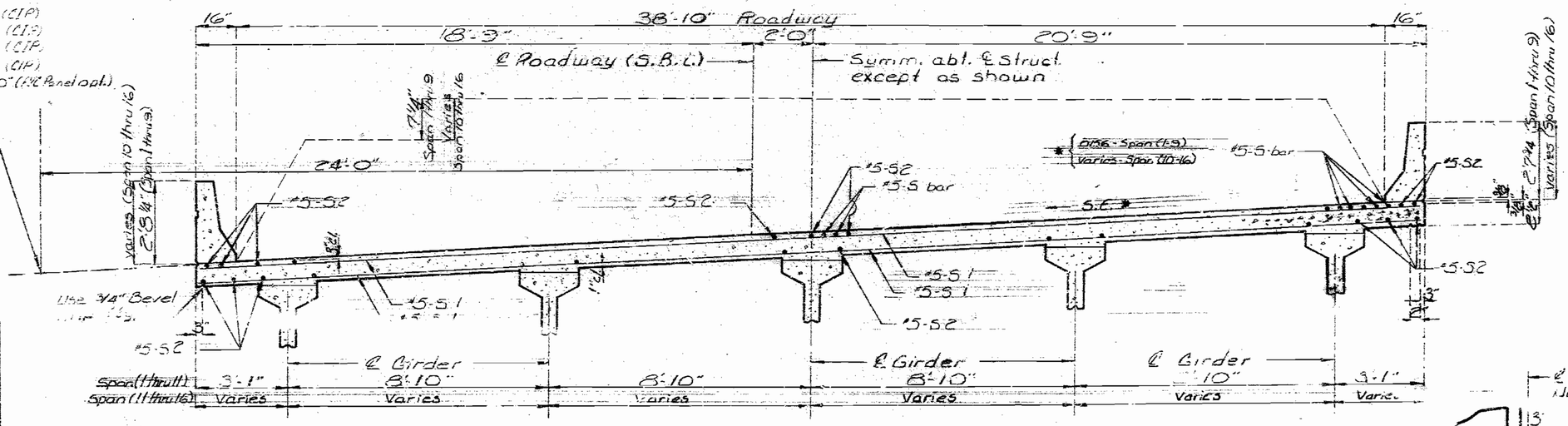
A-2745

STATE	PROJ. NO	SHEET NO.
MO.		153



PART PLAN OF SLAB SHOWING REINFORCEMENT (UNIT NO. 1)

Ⓐ 14 #5-S4 @ 7½" c/s.
Ⓑ 2 #5-S5 @ 5" c/s.
Ⓒ 9 #5-S6 @ 10" c/s. (CIP)
Ⓓ 9 #5-S7 @ 10" c/s. (CIP)
Ⓔ 9 #5-S8 @ 10" c/s. (CIP)
Ⓕ 9 #5-S9 @ 10" c/s. (CIP)
Ⓖ #5-S2 5 units @ 40'0" (P/C Panel opt.)

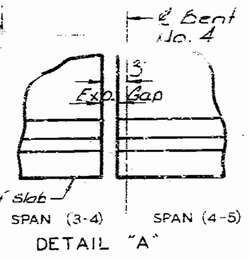


SKEW ANGLES	
BENT NO.	SKEW
1, 2 & 3	12°15' RA
4 & 5	Rt. ∠
6, 7, 8, 9 & 10	20° LA
11	41°46'20" LA
12	42°47'38" LA
13	44°34'06" LA
14	26°18'44" LA
15, 16, & 17	Radial
18	36°09'11" LA
19	57°25'06" LA
20	59°17'55" LA

To Radial Line

Note: Skew angles are measured at ℄ Roadway (S.B.L.)

SECTION THRU SLAB SPAN ① THRU 16
Cast-in-Place option shown



DETAIL "A"

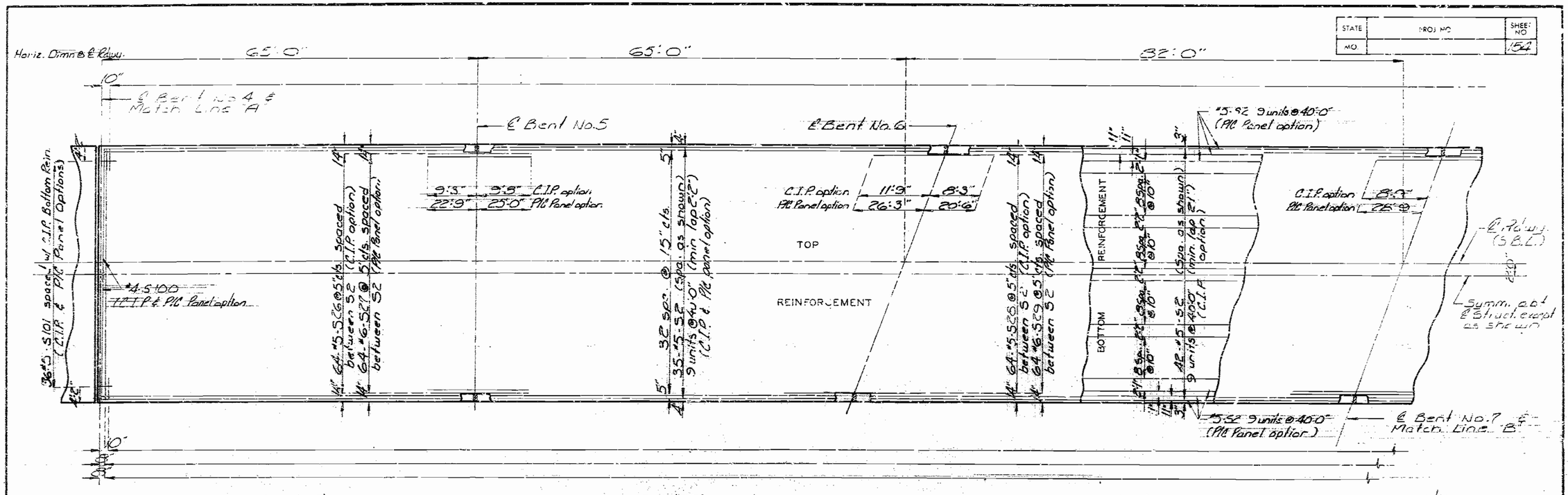
DETAILED FEB. 1988
CHECKED March 1989

Note: This drawing is not to scale. Follow dimensions.

JACKSON COUNTY A-2745

161

STATE	PROJ. NO.	SHEET NO.
MO.		15A2



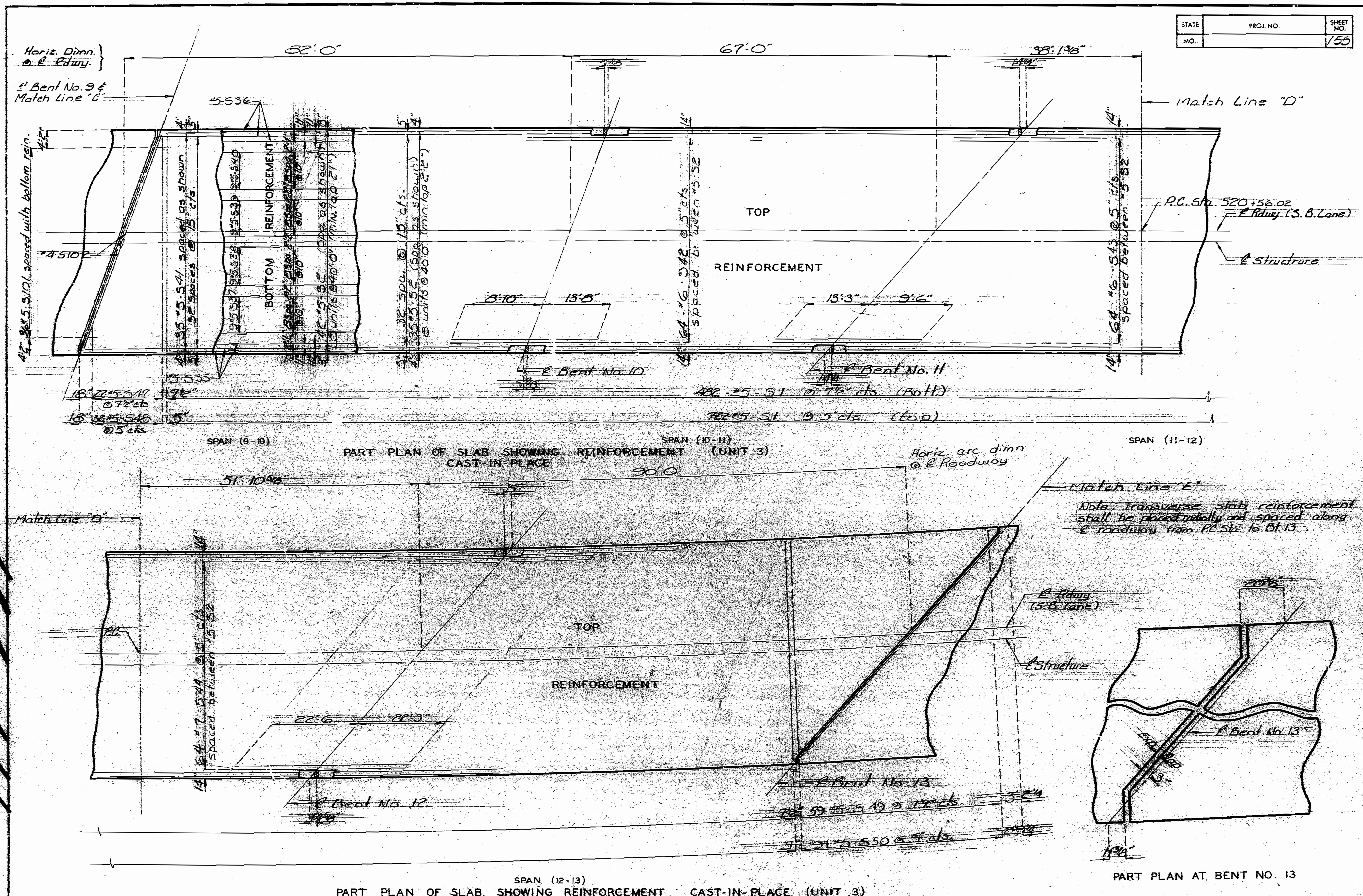
186 120

DETAILED FEB. 1988
CHECKED Marsh 1989

Note. This drawing is not to scale. Follow dimensions.

Sheet No. 74 of 98

JACKSON COUNTY A-2745



DETAILED MAR. 1988
CHECKED Oct. 1988

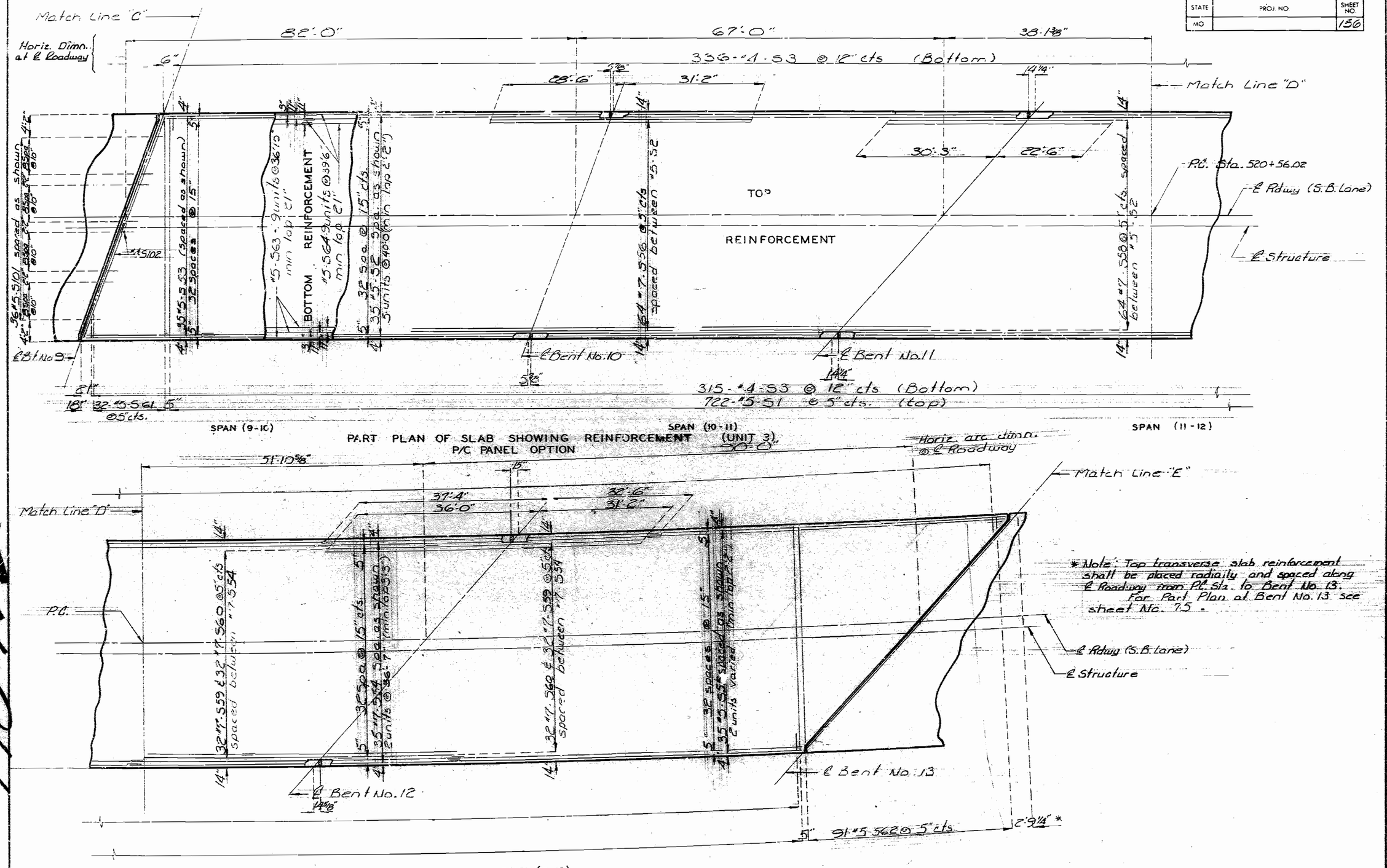
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 75 of 98

JACKSON COUNTY

A-2745

STATE	PROJ. NO.	SHEET NO.
MO		156



PART PLAN OF SLAB SHOWING REINFORCEMENT (UNIT 3)
P/C PANEL OPTION

PART PLAN OF SLAB SHOWING REINFORCEMENT P/C PANEL OPTION (UNIT 3)

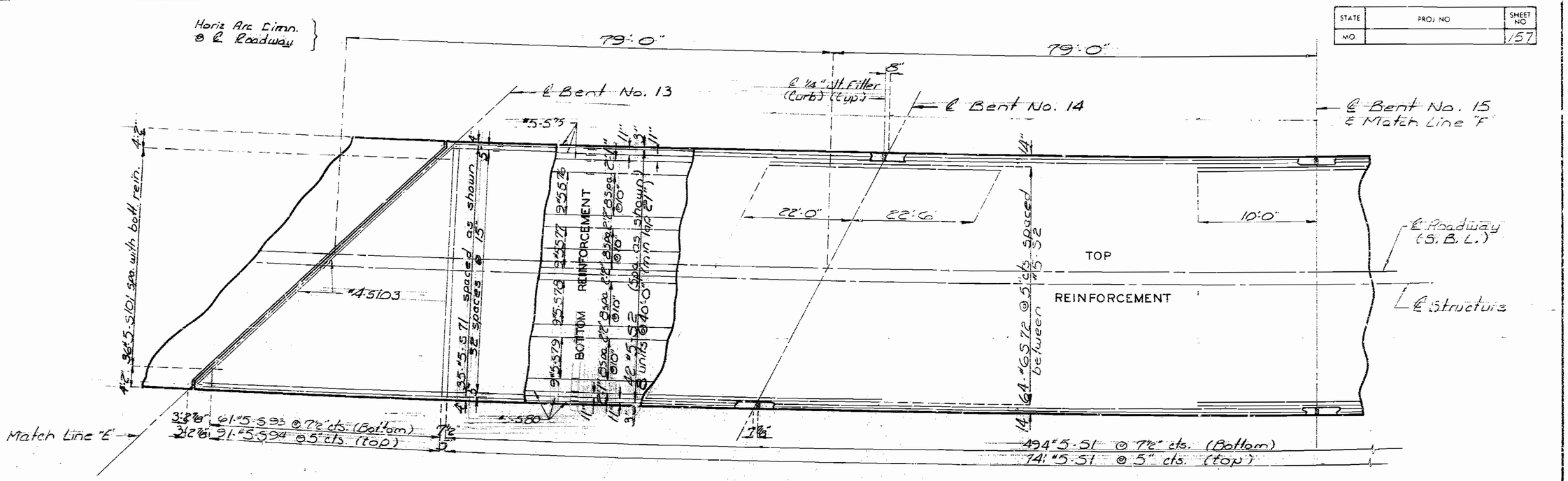
DETAILED MAR. 1988
CHECKED March 1988

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 76 of 98

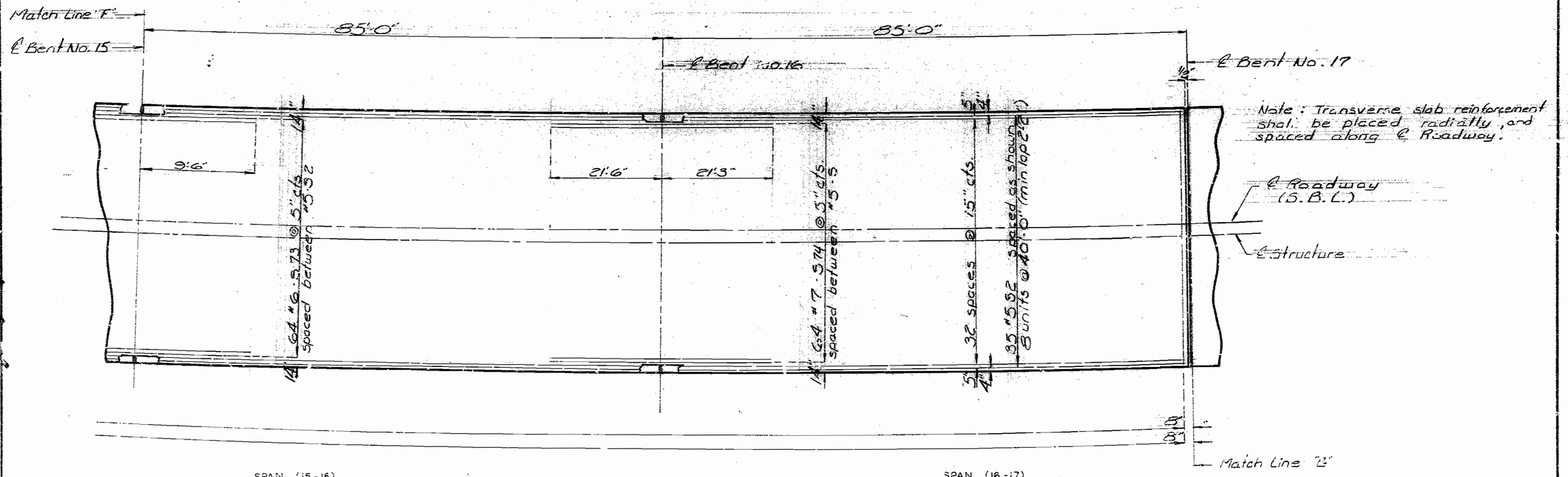
JACKSON COUNTY A-2745

STATE	PROJ NO	SHEET NO
MO		157



SPAN (13 - 14) SPAN (14 - 15)

PART PLAN OF SLAB SHOWING REINFORCEMENT CAST - IN - PLACE (UNIT 4)



SPAN (15 - 16) SPAN (16 - 17)

PART PLAN OF SLAB SHOWING REINFORCEMENT CAST - IN - PLACE (UNIT 4)

DETAILED MAR 1988
CHECKED Oct 1988

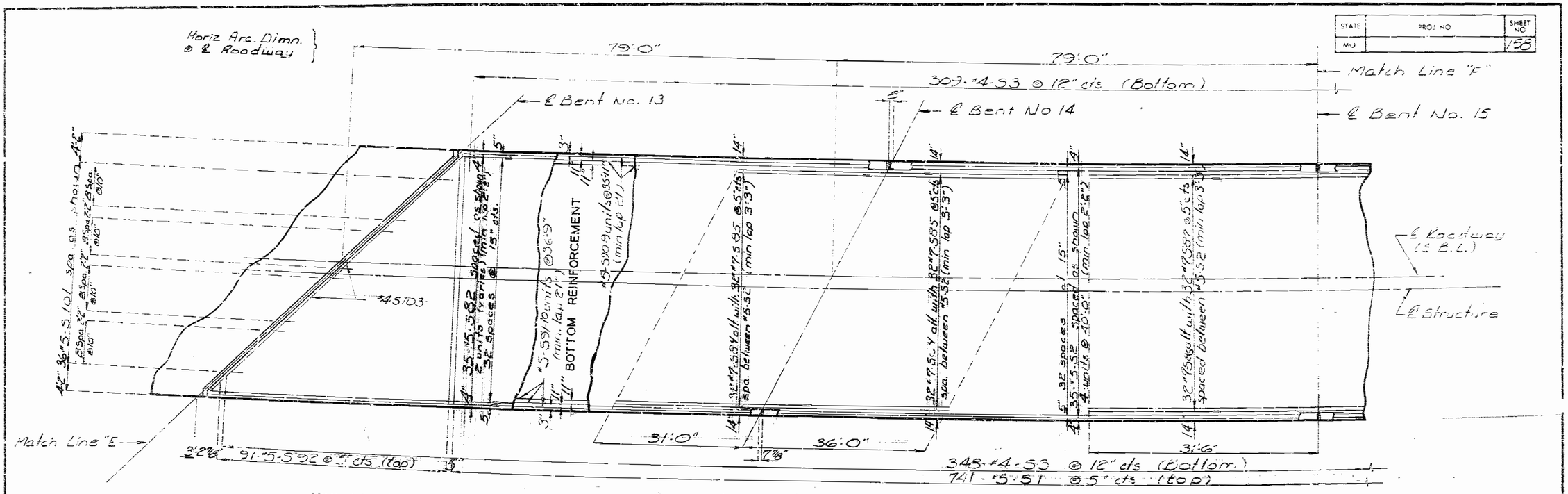
Note: This drawing is not to scale. Follow dimensions

Sheet No. 77 of 98

JACKSON COUNTY

A-2745

STATE	PROJ NO	SHEET NO
MO		158



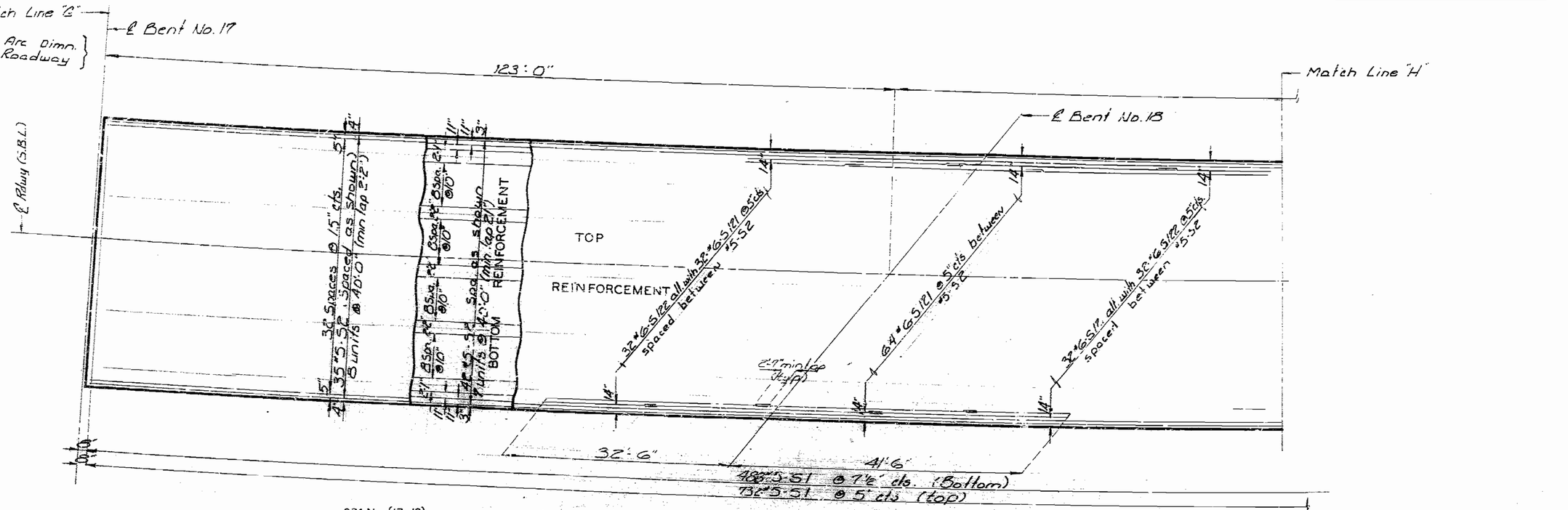
DETAILED MAR. 1988
CHECKED Oct 19

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 78 of 98

JACKSON COUNTY A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		159



Note : Transverse slab reinforcement shall be placed radially and spaced along ℄ Roadway.

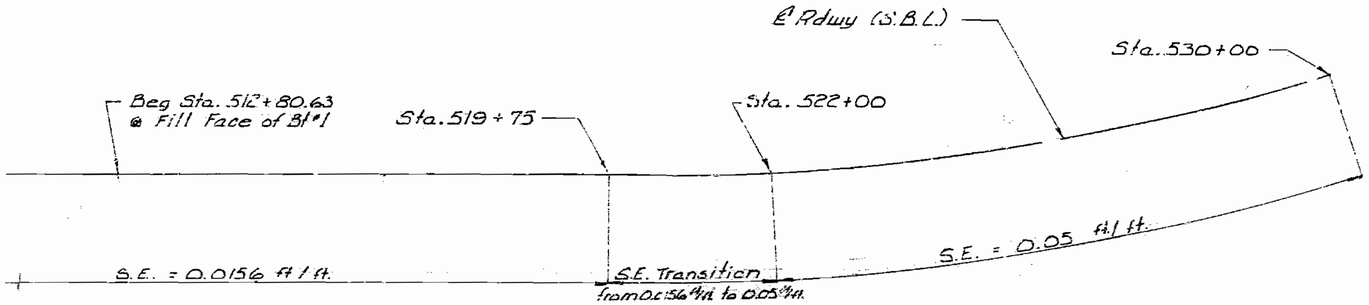
DETAILED JULY 1988
CHECKED July 1989

Note: This drawing is not to scale. Follow dimensions.

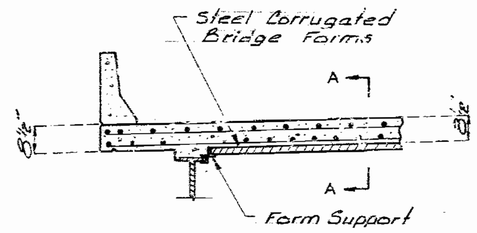
Sheet No. 73 of 98

JACKSON COUNTY A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		V60

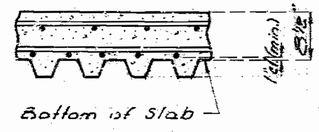


SUPERELEVATION TRANSITION

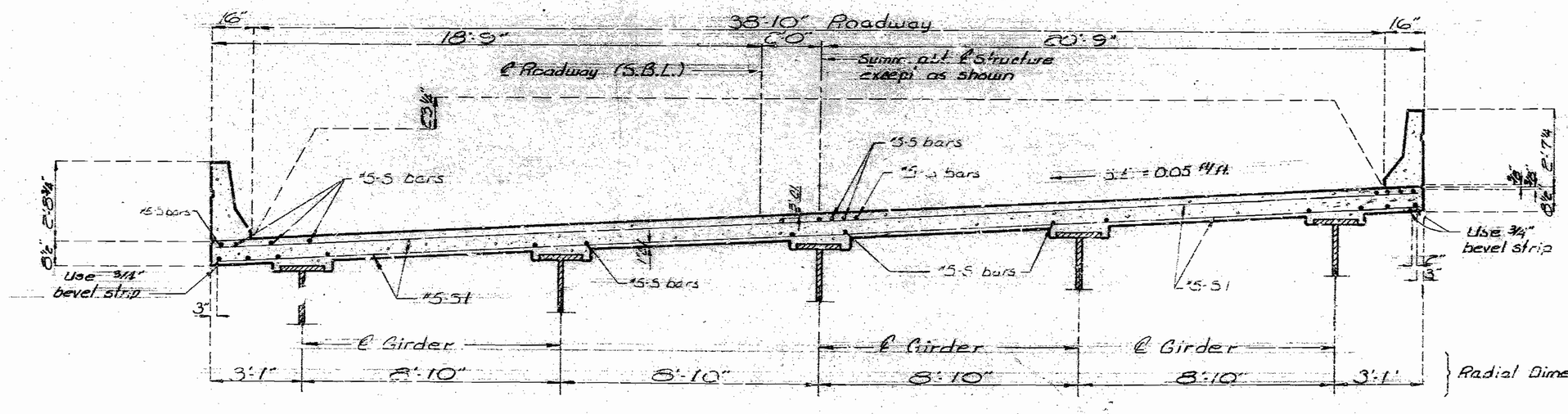


STAY-IN-PLACE FORMS

Stay-in-Place Forms
Note: To determine the haunch for the stay-in-place alternate, add ½" to the haunch for the cast-in-place alternate.



SECTION A-A



HALF SECTION NEAR ℄ SPAN

HALF SECTION NEAR INT. BENT

SECTION THRU SLAB SPANS (17-18), (18-19) & (19-20)

Cast-in-Place option shown

DETAILED MAR. 1988
CHECKED Nov. 1988

Note: This drawing is not to scale. Follow dimensions.

JACKSON COUNTY

A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		161

UNIT NO. 3&4	SEQUENCE OF POURS							MINIMUM RATE OF POUR (CUBIC YARDS PER HOUR)
	DIRECTION							WITH RETARDER
BASIC SEQUENCE	1	2	3	4	5	6	7	25
	EITHER DIRECTION							
ALTERNATE POURS TO THE BASIC SKIP SEQUENCE ARE SUBJECT TO THE APPROVAL OF THE ENGINEER IN ACCORDANCE WITH SECTION 703.3.12.4 OF MISSOURI STANDARD SPECIFICATIONS.								
ALTERNATE "A" POURS	1	7 + 2		6 + 3		5 + 4		30
	END TO 7	1 TO 6		2 TO 5		3 TO END		
ALTERNATE "B" POURS	1 + 7 + 2		6 + 3		5 + 4			30
	END TO 6		2 TO 5		3 TO END			
ALTERNATE "C" POURS	1 + 7 + 2			6 + 3 + 5 + 4				30
	END TO 6			2 TO END				
ALTERNATE "D" POURS	1 + 7 + 2 + 6 + 3 + 5 - 4							30
	END TO END							

THE CONTRACTOR SHALL FURNISH AN APPROVED RETARDER TO RETARD THE SET OF THE CONCRETE TO 2.5 HOURS AND SHALL POUR AND SATIFACTORILY FINISH THE SLAB POURS AT THE RATE GIVEN ABOVE.

THE CONCRETE DIAPHRAGM AT THE INTERMEDIATE BENT AND INTEGRAL END BENTS SHALL BE POURED A MINIMUM OF 30 MINUTES AND A MAXIMUM OF 2 HOURS BEFORE THE SLAB IS POURED.

END DIAPHRAGMS AT EXPANSION DEVICES MAY BE POURED WITH A CONSTRUCTION JOINT BETWEEN THE DIAPHRAGM AND,SLAB OR MONOLITHIC WITH THE SLAB.

IF THE PRECAST PRESPRESSED PANEL OPTION IS USED, THE VALUES SHOWN FOR THE MINIMUM RATE OF POUR MAY BE REDUCED BY 25%. HOWEVER, IN NO CASE SHALL THE MINIMUM RATE OF POUR BE LESS THAN 25 CU. YD. PER HOUR.

UNIT NO. 5	SEQUENCE OF POURS					MINIMUM RATE OF POUR (CUBIC YARDS PER HOUR)	
	DIRECTION					NO RETARDER	WITH RETARDER
BASIC SEQUENCE	1	2	3	4	5	25	
	EITHER DIRECTION						
ALTERNATE POURS TO THE BASIC SKIP SEQUENCE ARE SUBJECT TO THE APPROVAL OF THE ENGINEER IN ACCORDANCE WITH SECTION 703.3.12.4 OF MISSOURI STANDARD SPECIFICATIONS.							
ALTERNATE "A" POURS	1 + 5 + 2			4 + 3			40
	END TO 4			2 TO END			
ALTERNATE "B" POURS	1 + 5 + 2 + 4 +3						40
	END TO END						

THE CONTRACTOR SHALL POUR AND SATISFACTORILY FINISH THE SLAB POURS AT THE RATE GIVEN. RETARDER, IF USED, SHALL BE AN APPROVED TYPE AND RETARD THE SET OF CONCRETE TO 2.5 HOURS.

FOR UNIT 5 POUR, IF THE BASIC SEQUENCE IS USED A LONGITUDINAL CONST. JT. SHALL BE USED FOR POURS (1),(2) & (5) AND THE ROADWAY SLAB FINISHED ALONG THE SKEW FOR POURS (1),(2) & (5).

FOR UNIT 5 POUR, IF ALTERNATE POURS A OR B ARE USED THE LONGITUDINAL CONST. JT. SHALL BE ELIMINATED AND THE ROADWAY SLAB FINISHED RADIALLY.

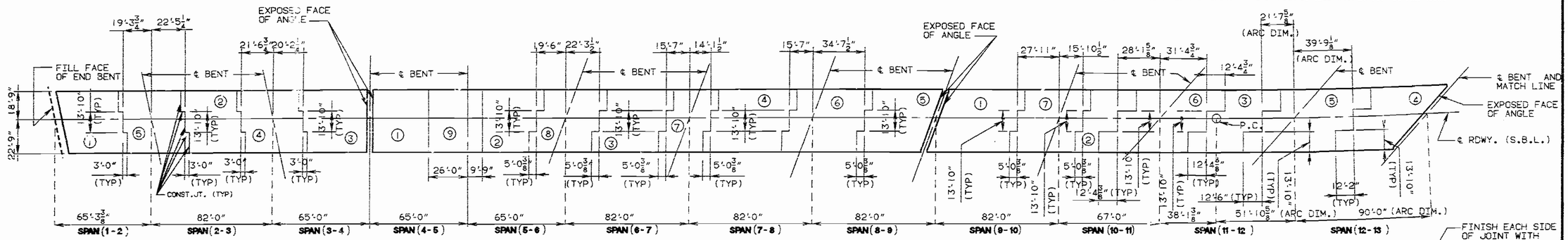
UNIT NO. 2	SEQUENCE OF POURS									MINIMUM RATE OF POUR (CUBIC YARDS PER HOUR)
	DIRECTION									WITH RETARDER
BASIC SEQUENCE	1	2	3	4	5	6	7	8	9	25
	EITHER DIRECTION									
ALTERNATE POURS TO THE BASIC SKIP SEQUENCE ARE SUBJECT TO THE APPROVAL OF THE ENGINEER IN ACCORDANCE WITH SECTION 703.3.12.4 OF MISSOURI STANDARD SPECIFICATIONS.										
ALTERNATE "A" POURS	1	9 + 2		8 + 3		7 + 4		6 + 5		27
	EITHER DIR.	1 TO 8		2 TO 7		3 TO 6		4 TO END		
ALTERNATE "B" POURS	1 + 9 + 2			8 + 3			7 + 4 + 6 + 5			27
	END TO 8			2 TO 7			3 TO END			
ALTERNATE "C" POURS	1 + 9 + 2 + 8 + 3					7 + 4 + 6 + 5				27
	END TO 7					3 TO END				
ALTERNATE "D" POURS	1 + 9 + 2 + 8 + 3 + 7 + 4 + 6 + 5									27
	END TO END									

THE CONTRACTOR SHALL FURNISH AN APPROVED RETARDER TO RETARD THE SET OF THE CONCRETE TO 2.5 HOURS AND SHALL POUR AND SATIFACTORILY FINISH THE SLAB POURS AT THE RATE GIVEN ABOVE.

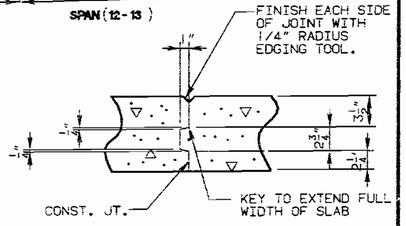
THE CONCRETE DIAPHRAGM AT THE INTERMEDIATE BENT AND INTEGRAL END BENTS SHALL BE POURED A MINIMUM OF 30 MINUTES AND A MAXIMUM OF 2 HOURS BEFORE THE SLAB IS POURED.

END DIAPHRAGMS AT EXPANSION DEVICES MAY BE POURED WITH A CONSTRUCTION JOINT BETWEEN THE DIAPHRAGM AND,SLAB OR MONOLITHIC WITH THE SLAB.

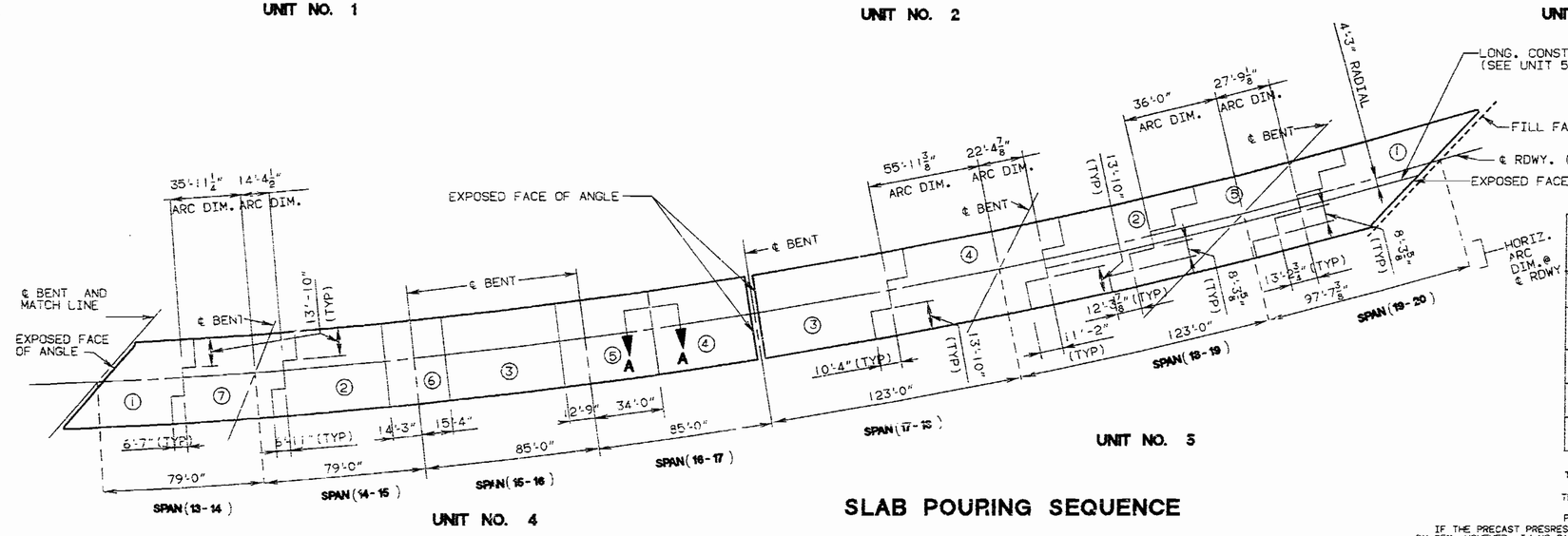
IF THE PRECAST PRESPRESSED PANEL OPTION IS USED, THE VALUES SHOWN FOR THE MINIMUM RATE OF POUR MAY BE REDUCED BY 25%. HOWEVER, IN NO CASE SHALL THE MINIMUM RATE OF POUR BE LESS THAN 25 CU. YD. PER HOUR.



UNIT NO. 1 UNIT NO. 2 UNIT NO. 3



SECTION A-A



UNIT NO. 4 UNIT NO. 5

SLAB POURING SEQUENCE

UNIT NO. 1	SEQUENCE OF POURS					MINIMUM RATE OF POUR (CUBIC YARDS PER HOUR)
	DIRECTION					WITH RETARDER
BASIC SEQUENCE	1	2	3	4	5	25
	EITHER DIRECTION					
ALTERNATE POURS TO THE BASIC SKIP SEQUENCE ARE SUBJECT TO THE APPROVAL OF THE ENGINEER IN ACCORDANCE WITH SECTION 703.3.12.4 OF MISSOURI STANDARD SPECIFICATIONS.						
ALTERNATE "A" POURS	1	5 + 2		4 + 3		27
	END TO 5	1 TO 4		2 TO END		
ALTERNATE "B" POURS	1 + 5 + 2			4 + 3		27
	END TO 4			2 TO END		
ALTERNATE "C" POURS	1 + 5 + 2 + 4 +3					27
	END TO END					

THE CONTRACTOR SHALL FURNISH AN APPROVED RETARDER TO RETARD THE SET OF THE CONCRETE TO 2.5 HOURS AND SHALL POUR AND SATIFACTORILY FINISH THE SLAB POURS AT THE RATE GIVEN ABOVE.

END DIAPHRAGMS AT EXPANSION DEVICES MAY BE POURED WITH A CONSTRUCTION JOINT BETWEEN THE DIAPHRAGM AND,SLAB OR MONOLITHIC WITH THE SLAB.

THE CONCRETE DIAPHRAGM AT THE INTERMEDIATE BENT AND INTEGRAL END BENTS SHALL BE POURED A MINIMUM OF 30 MINUTES AND A MAXIMUM OF 2 HOURS BEFORE THE SLAB IS POURED.

IF THE PRECAST PRESPRESSED PANEL OPTION IS USED, THE VALUES SHOWN FOR THE MINIMUM RATE OF POUR MAY BE REDUCED BY 25%. HOWEVER, IN NO CASE SHALL THE MINIMUM RATE OF POUR BE LESS THAN 25 CU. YD. PER HOUR.

DETAILED SEPT. 1988
CHECKED FEB. 1989

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

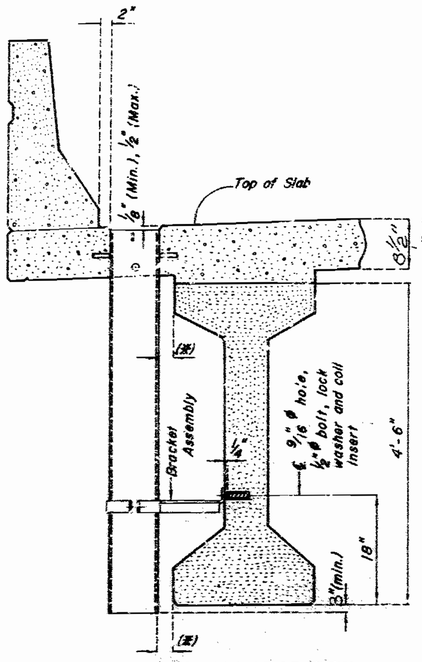
SHEET NO. 81 OF 98.

JACKSON COUNTY

A-2745

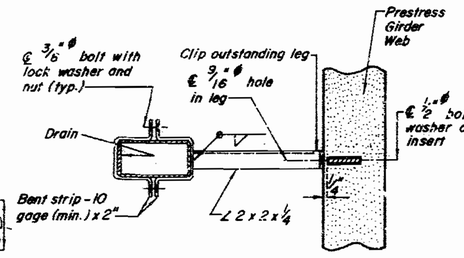
2883 17

STATE	PROJ. NO.	SHEET NO.
MO		168

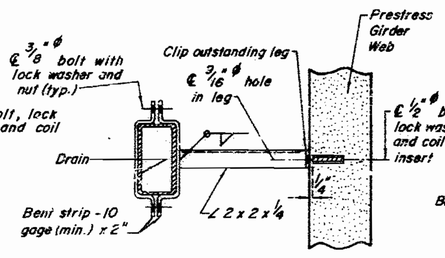


PART ELEVATION OF SLAB AT DRAIN

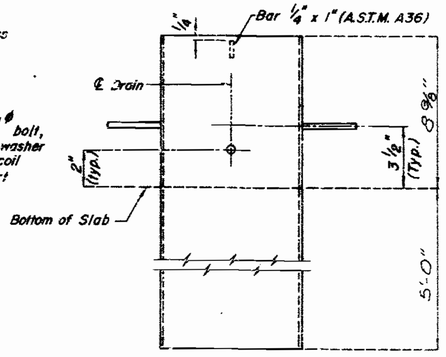
(E) If dimension is less than 1", drains shall be placed parallel to roadway, otherwise place drains transverse to roadway.



PART SECTION SHOWING BRACKET ASSEMBLY



PART SECTION SHOWING BRACKET ASSEMBLY



ELEVATION OF DRAIN

GENERAL NOTES:

SLAB DRAINS MAY BE FABRICATED OF EITHER ¼" WELDED SHEETS OF A.S.T.M. A36 STEEL OR FROM ¼" STRUCTURAL STEEL TUBING A.S.T.M. A500 OR A501.

OUTSIDE DIMENSIONS OF DRAINS ARE 8" x 4".

LOCATE DRAINS IN THE SLAB BY DIMENSIONS SHOWN IN THE PART ELEVATION.

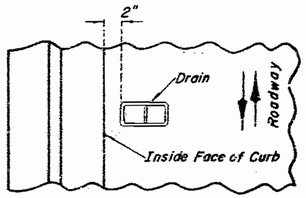
SHIFT REINFORCING IN FIELD WHERE NECESSARY TO CLEAR DRAINS.

THE DRAINS AND BRACKET ASSEMBLY SHALL BE GALVANIZED IN ACCORDANCE WITH A.S.T.M. A123.

ALL BOLTS, LOCK WASHERS AND NUTS SHALL BE GALVANIZED IN ACCORDANCE WITH A.S.T.M. A153.

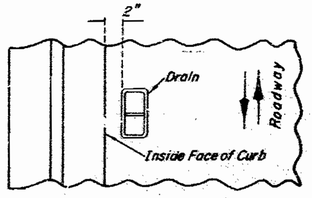
SHOP DRAWINGS WILL NOT BE REQUIRED FOR SLAB DRAINS AND THE BRACKET ASSEMBLY.

COIL INSERTS SHALL HAVE A CONCRETE PULL-OUT STRENGTH (ULTIMATE LOAD) OF AT LEAST 2,500 POUNDS IN 5,000 PSI CONCRETE.



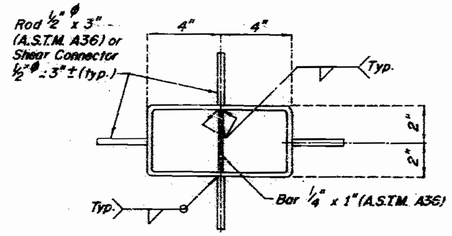
PART PLAN OF SLAB AT DRAIN

DETAILS OF DRAINS TRANSVERSE TO ROADWAY



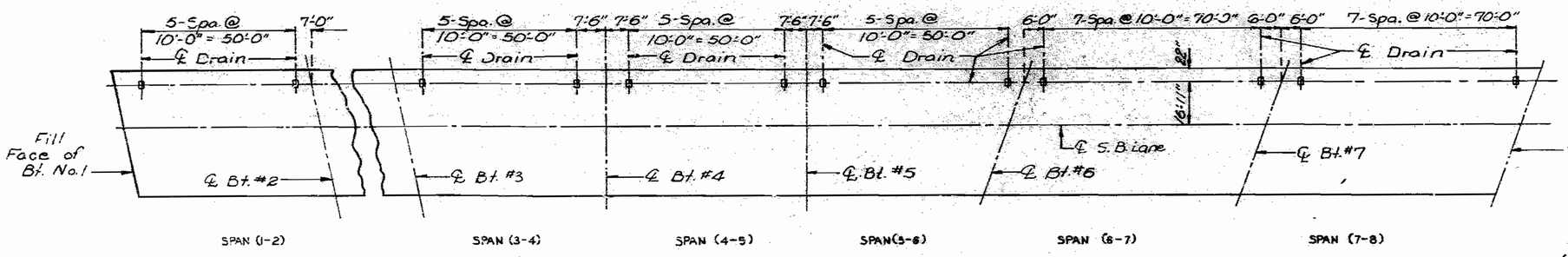
PART PLAN OF SLAB AT DRAIN

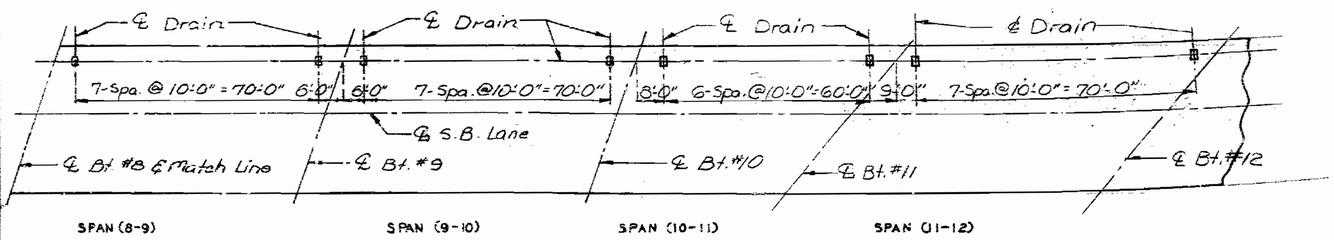
DETAILS OF DRAINS PARALLEL TO ROADWAY

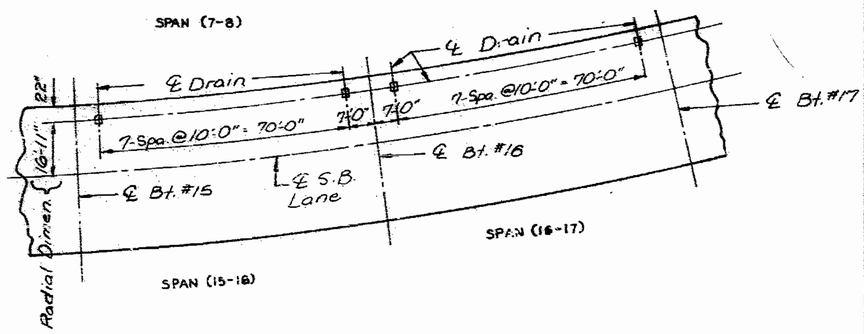


PLAN OF DRAIN

SLAB DRAIN DETAILS







PART PLAN OF SLAB SHOWING DRAINS

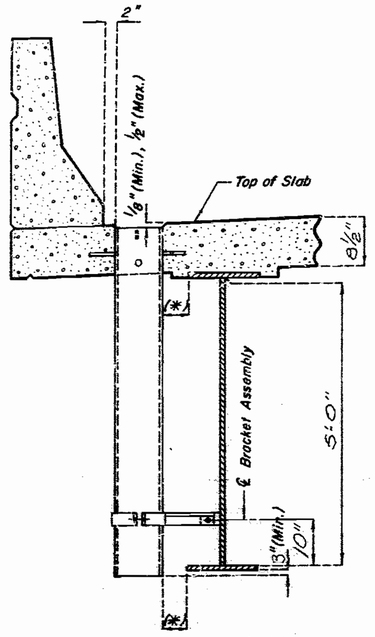
DETAILED July 1959
CHECKED July 1959

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 82 of 98

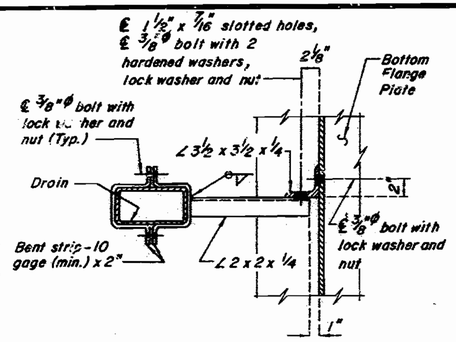
JACKSON COUNTY

A-2745

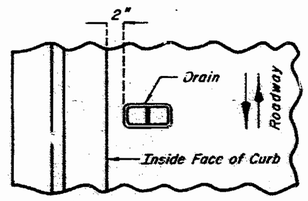


PART ELEVATION OF SLAB AT DRAIN

(*) If dimension is less than 1", drains shall be placed parallel to roadway, otherwise place drains transverse to roadway.

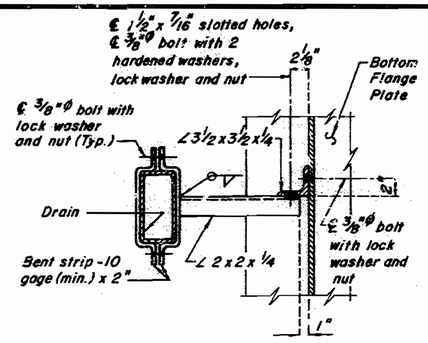


PART SECTION SHOWING BRACKET ASSEMBLY

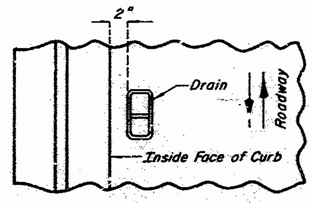


PART PLAN OF SLAB AT DRAIN

DETAILS OF DRAINS TRANSVERSE TO ROADWAY

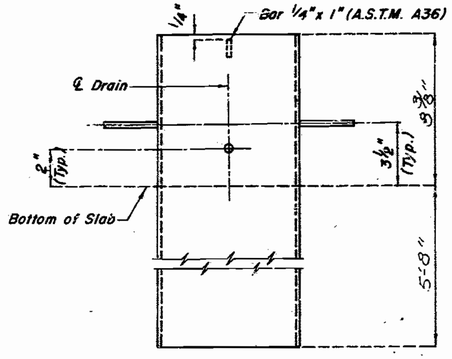


PART SECTION SHOWING BRACKET ASSEMBLY

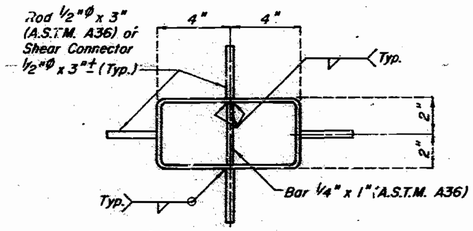


PART PLAN OF SLAB AT DRAIN

DETAILS OF DRAINS PARALLEL TO ROADWAY



ELEVATION OF DRAIN



PLAN OF DRAIN

STATE	PROJ. NO.	SHEET NO.
MO.		163

GENERAL NOTES:

SLAB DRAINS MAY BE FABRICATED OF EITHER ¼" WELDED SHEETS OF A.S.T.M. A36 STEEL OR FROM ¼" STRUCTURAL STEEL TUBING A.S.T.M. A500 OR A501.

OUTSIDE DIMENSIONS OF DRAINS ARE 8" x 4".

LOCATE DRAINS IN THE SLAB BY DIMENSIONS SHOWN IN THE PART ELEVATION.

SHIFT REINFORCING IN FIELD WHERE NECESSARY TO CLEAR DRAINS.

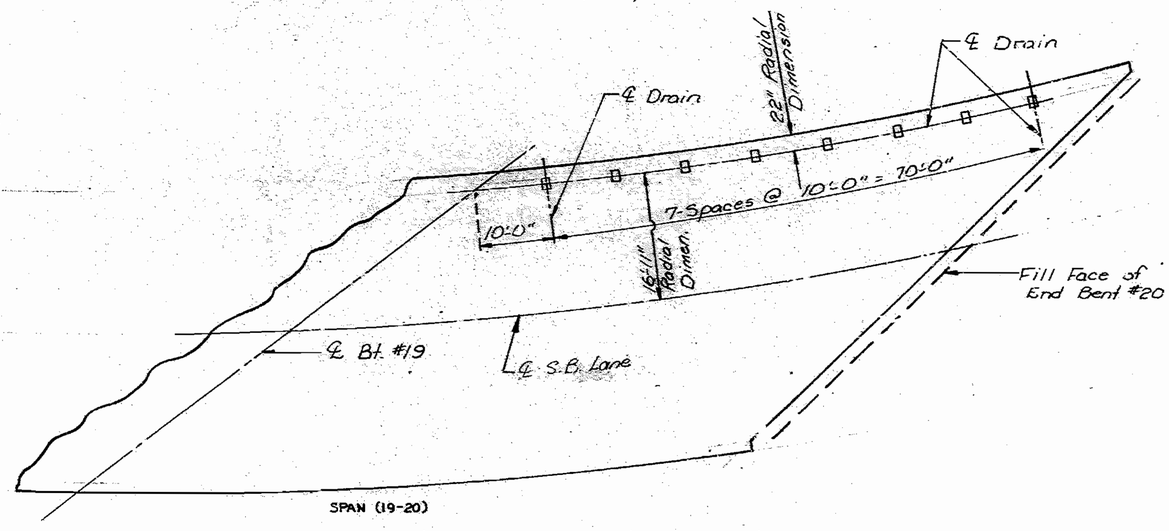
THE DRAINS AND BRACKET ASSEMBLY SHALL BE GALVANIZED IN ACCORDANCE WITH A.S.T.M. A123.

ALL BOLTS, HARDENED WASHERS, LOCK WASHERS AND NUTS SHALL BE GALVANIZED IN ACCORDANCE WITH A.S.T.M. A153.

THE BOLT HOLE FOR THE BRACKET ASSEMBLY ATTACHMENT SHALL BE LOCATED ON THE PLATE GIRDER SHOP DRAWINGS.

SHOP DRAWINGS WILL NOT BE REQUIRED FOR SLAB DRAINS AND BRACKET ASSEMBLY.

SLAB DRAIN DETAILS



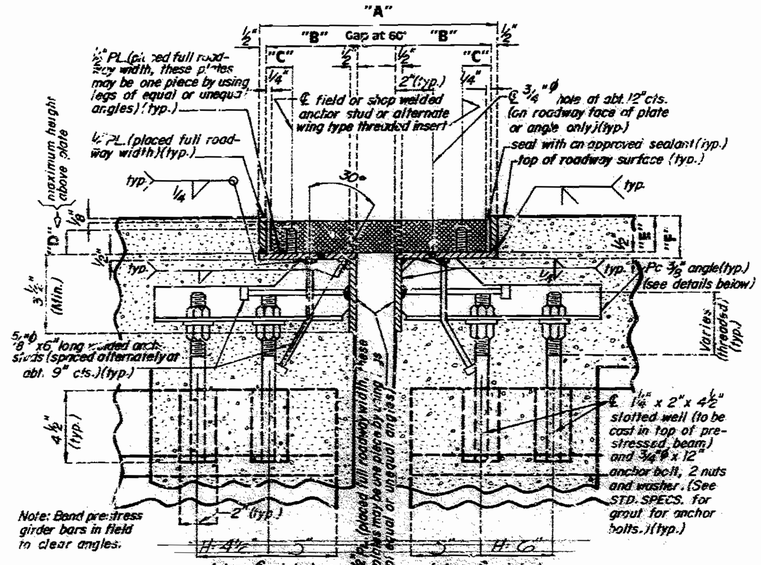
PART PLAN OF SLAB SHOWING DRAINS

STEEL		
Str. Depth 48" and Over	REVISED	FEB 1988
SPR-S.O.(N.W.S.)		
EFF. 1975		

DETAILED JULY 1938
CHECKED Feb. 1988

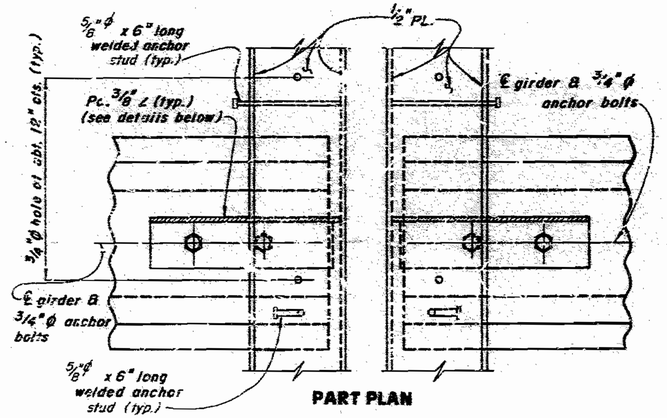
Note: This drawing is not to scale. Follow dimensions.

STATE	PROJ. NO	SHEET NO
MO		164

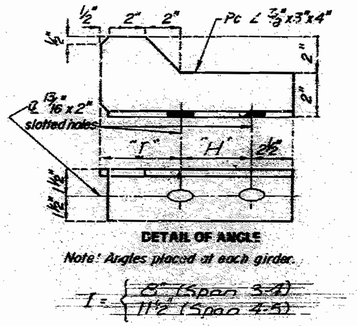


PART SECTION THRU ARMORED JOINT

SPAN (3-4) SPAN (4-5)



PART PLAN



DETAIL OF ANGLES

Note: Angles placed at each girder.

I = 8" (Span 3-4) / 11½ (Span 4-5)

TABLE OF DIMENSIONS

LOCATION	ACCEPTABLE ALTERNATE TYPES	EXP. GAP AT 60°	"A" AT 60°	"B"	"C"	"D"	"E"	"F"	ANCHOR STUDS SIZE	ANCHOR STUDS SPA.	ANCHOR STUDS "G"
BENT NO. 4	ONI-Flex 45	2¼"	11¾"	4¼"	1⅝"	1½"	2¾"	3¼"	⅝"	12"	65
	WABO BENDOFLEX 450	2½"	12"	4¼"	1⅝"	1¼"	2¾"	3¼"	½"	12"	50
	FEL-SPAN T40A C5	2¼"	12½"	4½"	1⅝"	1½"	2¼"	2¾"	½"	12"	50
	ACME TROJAN TR400	2½	12"	4¼"	1¾"	1⅛"	1¾"	2¼"	½"	12"	40
	DELASTIFLEX LM400	2½	12 11/16"	4 11/16	2 9/16"	1⅛"	2"	2½"	½"	9"	45
	GEN-STRIP CCL4"	2½"	12"	4¼"	1¾"	1⅛"	1¾"	2¼"	⅝"	12"	65

NOTE: ALL DIMENSIONS ARE AT RIGHT ANGLES.
EXPANSION GAP AND DIMENSION "A" SHALL BE INCREASED 5/16" FOR EACH 10° FALL IN TEMPERATURE AND DECREASED 5/16" FOR EACH 10° RISE IN TEMPERATURE.

GENERAL NOTES:

THE CERTIFIED NUTS AND BOLTS FOR THE ANCHOR STUDS OR WING TYPE THREADED INSERTS SHALL BE TIGHTENED TO THE FOOT POUNDS "G" SPECIFIED IN THE TABLE OF DIMENSIONS. RETIGHTEN TO "G" FOOT POUNDS A MINIMUM OF 30 MINUTES AFTER INITIAL TIGHTENING. THE WELDED ANCHOR STUDS SHALL BE THE REDUCED BASE TYPE

MATERIAL FOR THE ARMORED JOINT SHALL BE A36 STRUCTURAL GRADE STEEL. ANCHORS FOR THE ARMORED JOINT SHALL BE APPROVED STUD WELDED ANCHORS (C1010 THRU C1020).

SEE SPECIAL PROVISIONS FOR PAINTING.

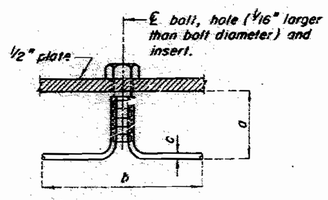
ANCHOR BOLTS IN THE BARRIER CURB SHALL BE CAST-IN-PLACE, GROUTED OR CONE-EXPANSION TYPE. HOLES IN THE BARRIER CURB FOR ANCHORS SHALL NOT BE DRILLED UNTIL THE CONCRETE IS AT LEAST 7 DAYS OLD

PLAN DIMENSIONS ARE BASED ON INSTALLATION AT 60°F. THE EXPANSION GAP AND OTHER DIMENSIONS SHALL BE ADJUSTED DURING INSTALLATION FOR COMPLIANCE WITH ANY TEMPERATURE CHANGE.

CONTACT SURFACE OF STEEL TO ALUMINUM SHALL BE INSULATED WITH THE MATERIAL SPECIFIED ON THE SHOP DRAWINGS.

FURNISHING, PAINTING AND INSTALLING THE STRUCTURAL STEEL ARMORED JOINT AND CURB PLATES SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR ELASTOMERIC EXPANSION JOINT SEAL.

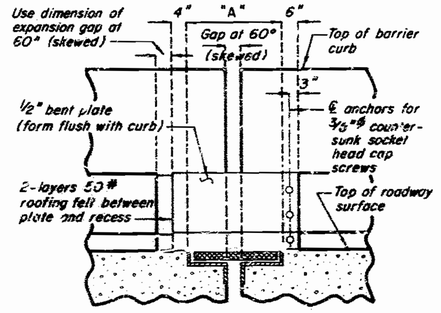
BOLT CAVITIES TO BE FILLED WITH APPROVED SEALANT IN COMPLIANCE WITH MANUFACTURER'S CERTIFICATION.



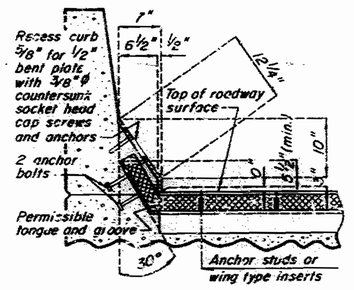
BOLT DIAMETER	SAFE LOAD TENSION (LBS.) (MIN.)	APPROX. ULT. CAP. TENSION (LBS.) (MIN.)	DIMENSIONS a (MIN.)	b	c
1/2"	600	8,000	1-5/8"	5"	.218"
5/8"	1,300	9,200	1-5/8"	5"	.218"
3/4"	1,800	13,200	2-1/4"	6"	.262"
7/8"	2,000	16,200	2-1/2"	6-1/2"	.306"
1"	2,000	16,200	2-1/2"	6-1/2"	.306"

DETAILS OF ALTERNATE WING TYPE THREADED INSERT

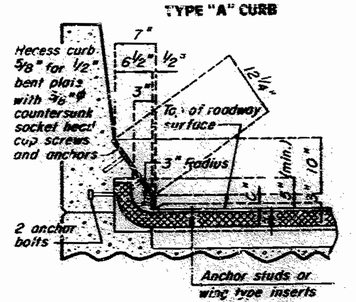
(MACHINE BOLTS NEED ONLY BE USED TO SECURE THE WING TYPE THREADED INSERTS TO THE STEEL PLATE UNTIL THE CONCRETE HAS ATTAINED 3,000 p.s.i.)



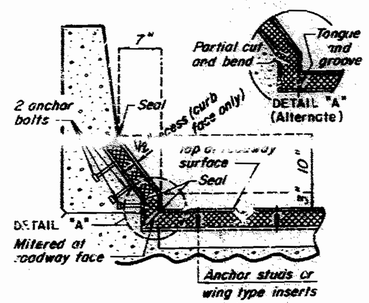
PART ELEVATION OF BARRIER CURB



TYPE "A" CURB



TYPE "B" CURB



TYPE "C" CURB

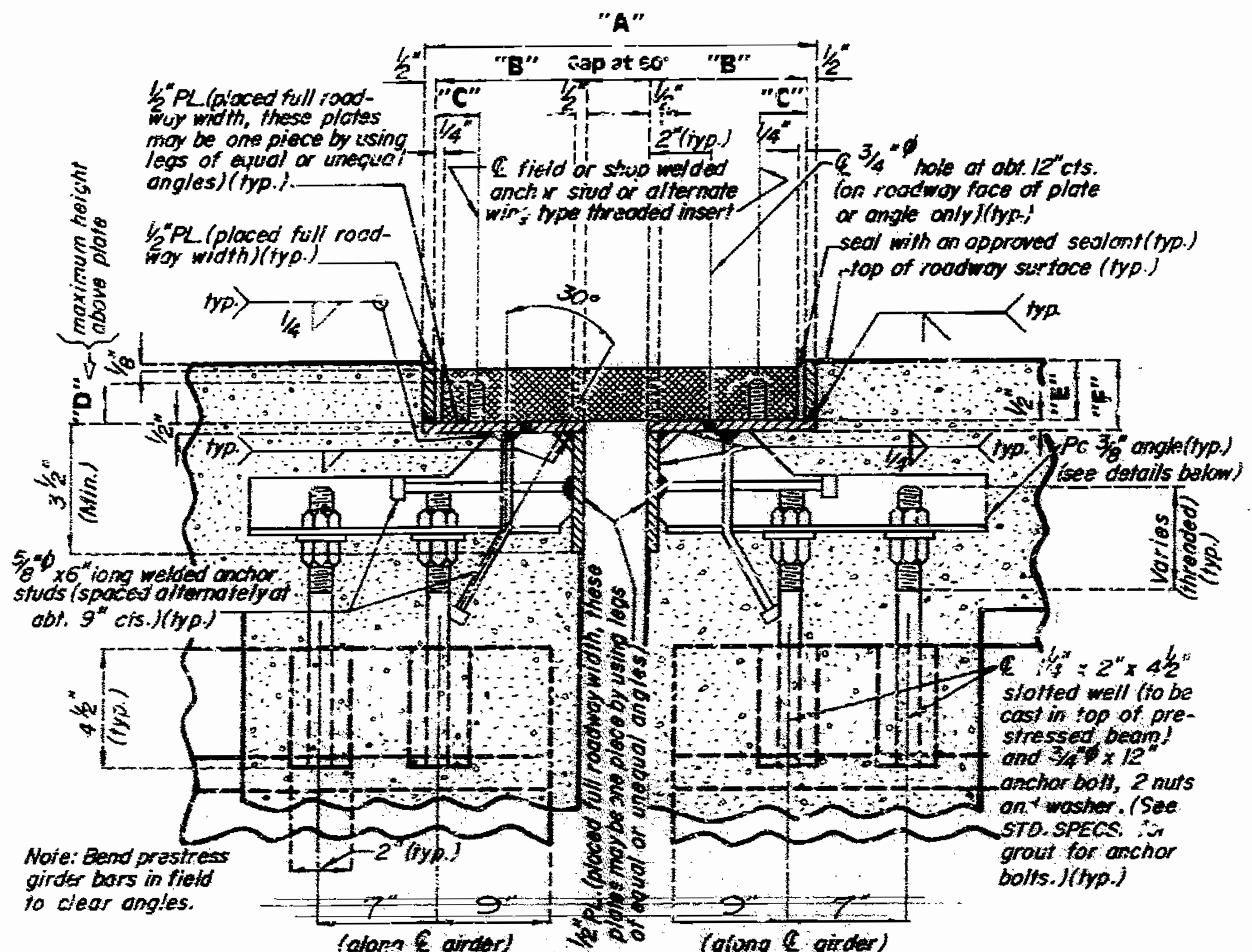
ALTERNATE CURB TREATMENTS

DETAILS OF ELASTOMERIC EXPANSION JOINT SEAL AT BENT NO. 4

Elastomeric Expansion Jt. Seal	
SPS-INT. BT.	REVISED
FEB. 1978	MAY 1987

DETAILED MAY 1988
CHECKED NOV. 1988

Note: This drawing is not to scale. Follow dimensions.



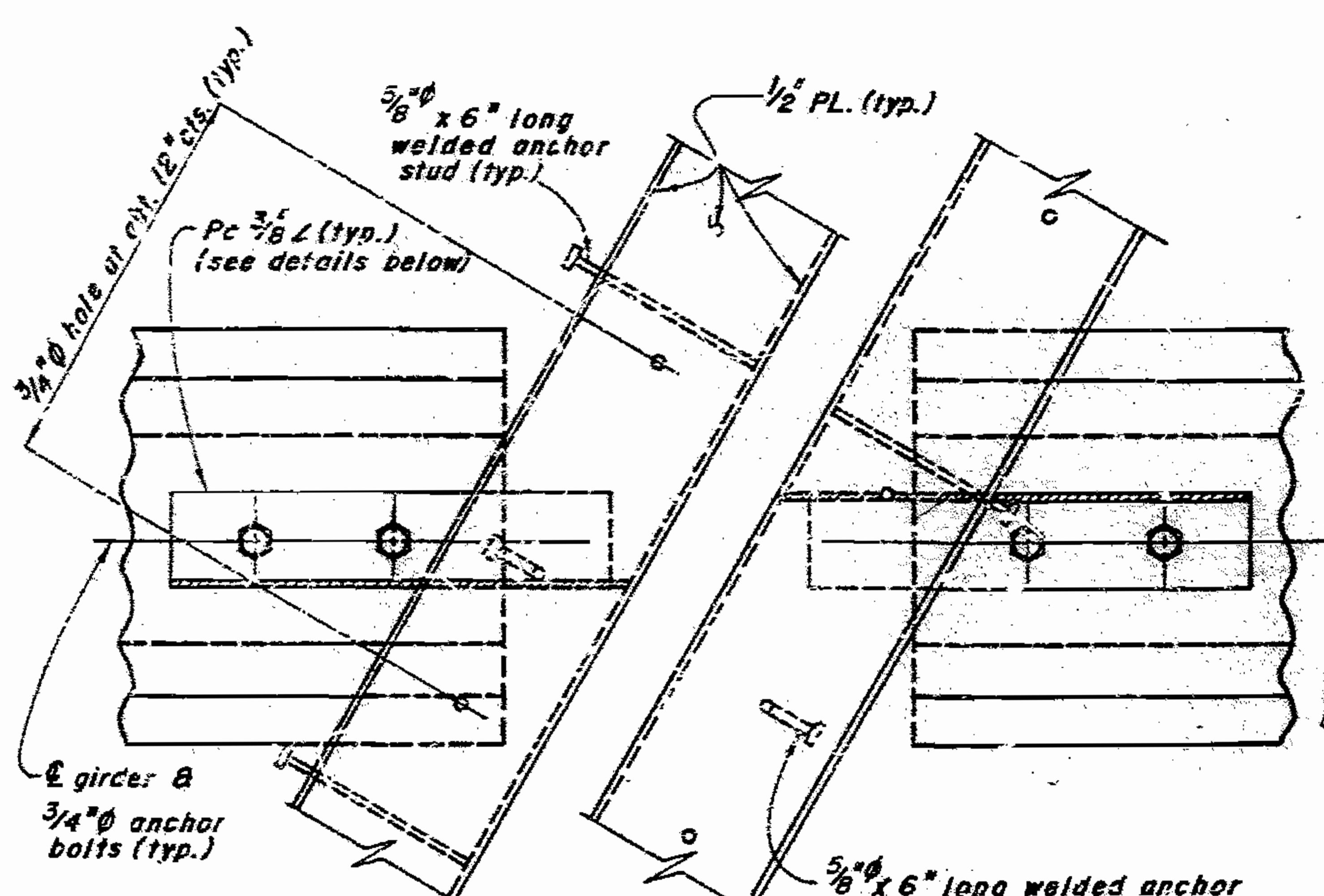


TABLE OF DIMENSIONS

LOCATION	ACCEPTABLE ALTERNATE TYPES	EXP. GAP AT 60°	"A" AT 60°	"B"	"C"	"D"	"E"	"F"	ANCHOR STUDS SIZE	ANCHOR STUDS SPA.	ANCHOR STUDS "G"
BENT NO. 9	ON-Flex 45	2¼"	11¾"	4¼"	1⅝"	1½"	2¾"	3¼"	⅝	12"	65
	WABO BENDOFLEX 450	2½"	12"	4¼"	1⅝"	1¼"	2¾"	3¼"	½"	12"	50
	FEL-SPAN T40A CS	2¼"	12¼"	4½"	1⅝"	1½"	2¼"	2¾"	½	12"	50
	ACME TROJAN TR400	2½"	12"	4¼"	1¾"	1⅛"	1¾"	2¼"	½"	12"	40
	DELASTIFLEX LM400	2½"	12⅞"	4 11/16"	2 9/16"	⅞"	2"	2½"	½"	9"	45
	GEN-STRIP CCL 4"	2½"	12"	4¼"	1¾"	1⅛"	1¾"	2¼"	⅝	12"	65
BENT NO. 13	DELASTIFLEX LM300	2"	12⅜"	4 11/16"	2 9/16"	⅞"	2"	2½"	½"	9"	45
	GEN-STRIP CCL 3"	2¼"	11¾"	4¼"	1¾"	1⅛"	1¾"	2¼"	⅝"	12"	65
	ON-FLEX 35	2"	11½"	4¼"	1⅜"	1¼"	2⅜"	2⅞"	⅝"	12"	65
	WABO BENDOFLEX 450	2"	11½"	4¼"	1⅝"	1¼"	2¾"	3¼"	½"	12"	50
	FEL-SPAN T40A CS	2"	12"	4½"	1⅝"	1½"	2¼"	2¾"	½"	12"	50
	ACME TROJAN TR400	2½"	12"	4¼"	1¾"	1⅛"	1¾"	2¼"	½"	12"	40

NOTE: ALL DIMENSIONS ARE AT RIGHT ANGLES. EXPANSION GAP AND DIMENSION "A" SHALL BE INCREASED * FOR EACH 10° FALL IN TEMPERATURE AND DECREASED * FOR EACH 10° RISE IN TEMPERATURE.

* ¼" (Bent No. 9)
  3/16" (Bent No. 13)

GENERAL NOTES:

THE CERTIFIED NUTS AND BOLTS FOR THE ANCHOR STUDS OR WING TYPE THREADED INSERTS SHALL BE TIGHTENED TO THE FOOT POUNDS "G" SPECIFIED IN THE TABLE OF DIMENSIONS. RETIGHTEN TO "G" FOOT POUNDS A MINIMUM OF 30 MINUTES AFTER INITIAL TIGHTENING. THE WELDED ANCHOR STUDS SHALL BE THE REDUCED BASE TYPE

MATERIAL FOR THE ARMORED JOINT SHALL BE -36 STRUCTURAL GRADE STEEL. ANCHORS FOR THE ARMORED JOINT SHALL BE APPROVED STUD WELDED ANCHORS (C1010 THRU C1020)

SEE SPECIAL PROVISIONS FOR PAINTING.

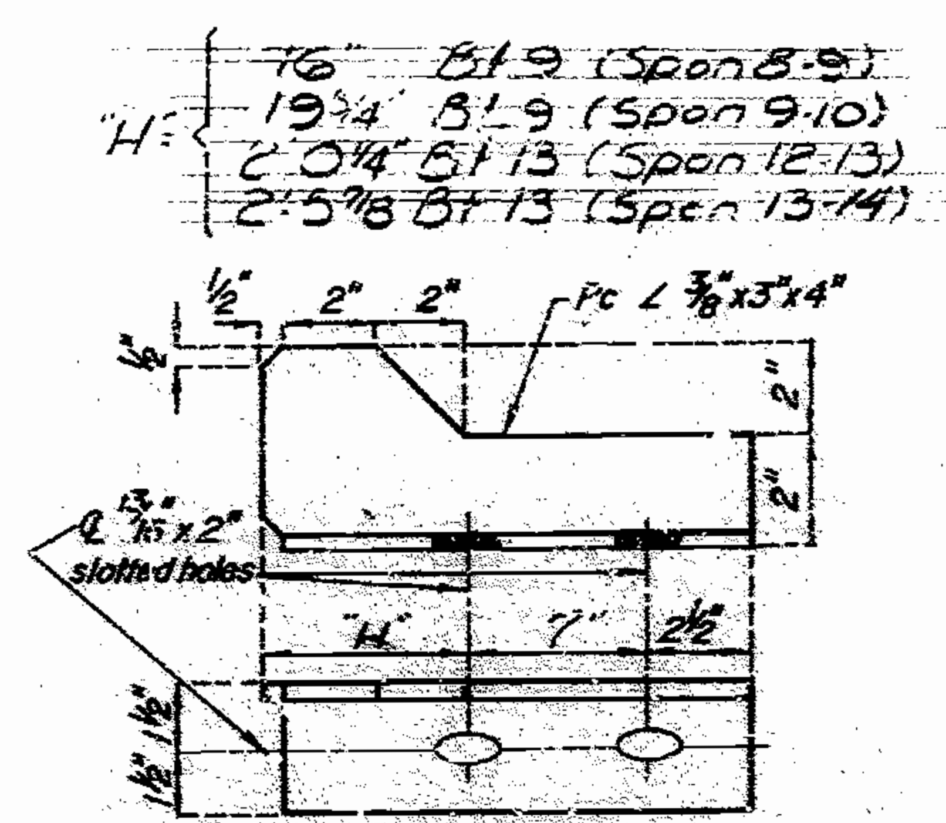
ANCHOR BOLTS IN THE BARRIER CURB SHALL BE CAST-IN-PLACE, GROUTED OR CONE-EXPANSION TYPE. HOLES IN THE BARRIER CURB FOR ANCHORS SHALL NOT BE DRILLED UNTIL THE CONCRETE IS AT LEAST 7 DAYS OLD

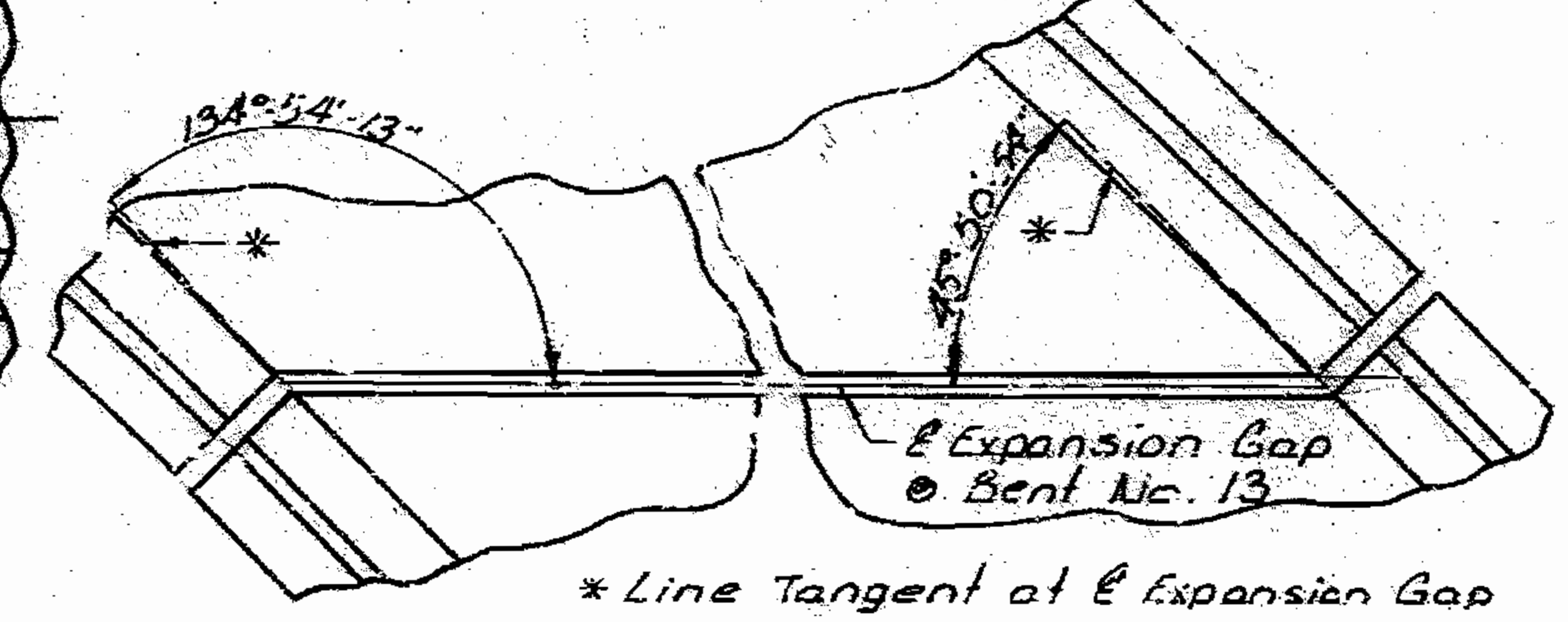
PLAN DIMENSIONS ARE BASED ON INSTALLATION AT 60°F. THE EXPANSION GAP AND OTHER DIMENSIONS SHALL BE ADJUSTED DURING INSTALLATION FOR COMPLIANCE WITH ANY TEMPERATURE CHANGE.

CONTACT SURFACE OF STEEL TO ALUMINUM SHALL BE INSULATED WITH THE MATERIAL SPECIFIED ON THE SHOP DRAWINGS.

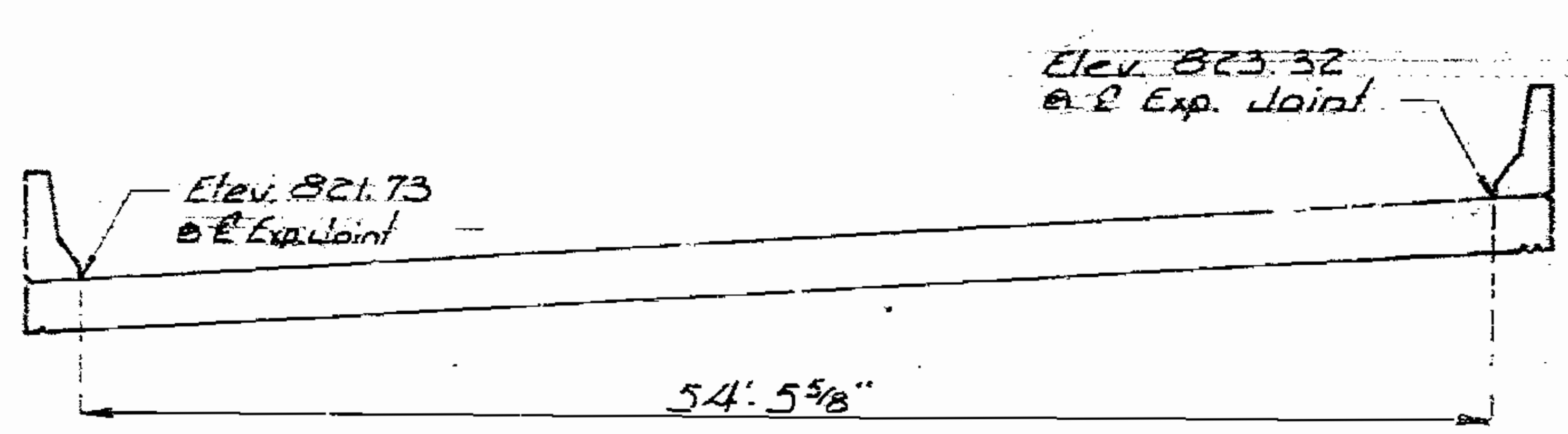
FURNISHING, PAINTING AND INSTALLING THE STRUCTURAL STEEL ARMORED JOINT AND CURB PLATES SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR ELASTOMERIC EXPANSION JOINT SEAL

BOLT CAVITIES TO BE FILLED WITH APPROVED SEALANT IN COMPLIANCE WITH MANUFACTURER'S CERTIFICATION.

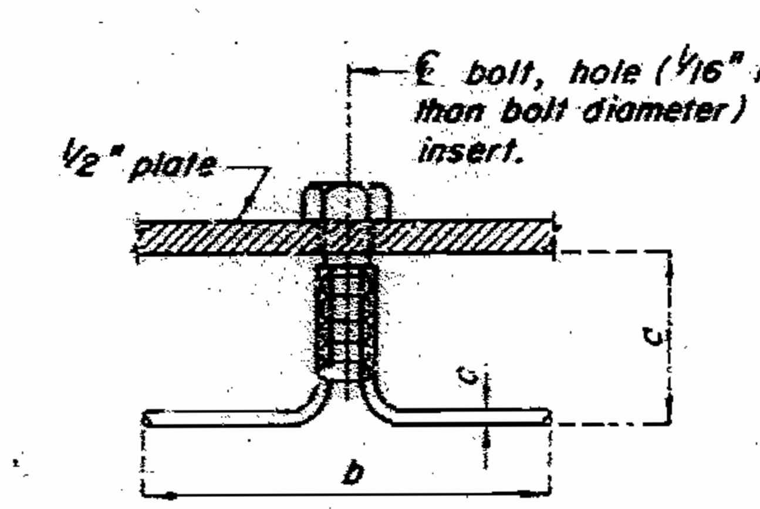




PART PLAN



SECTION THRU ℄ EXPANSION GAP AT BENT NO. 13

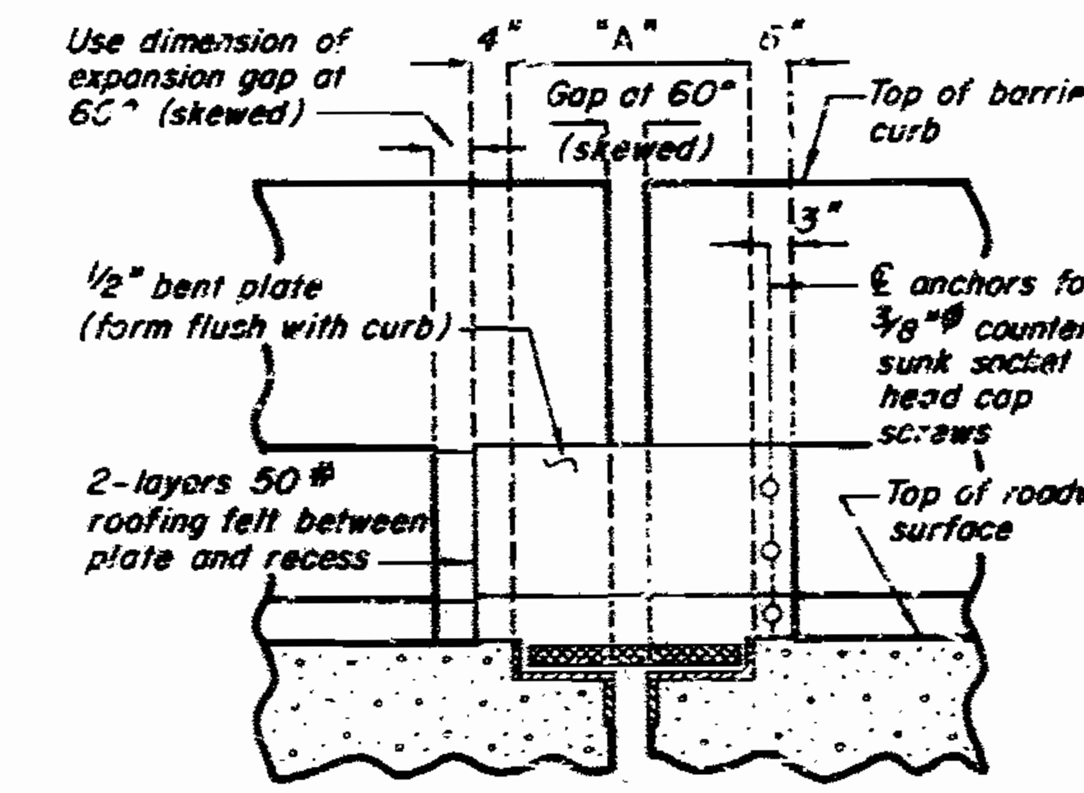


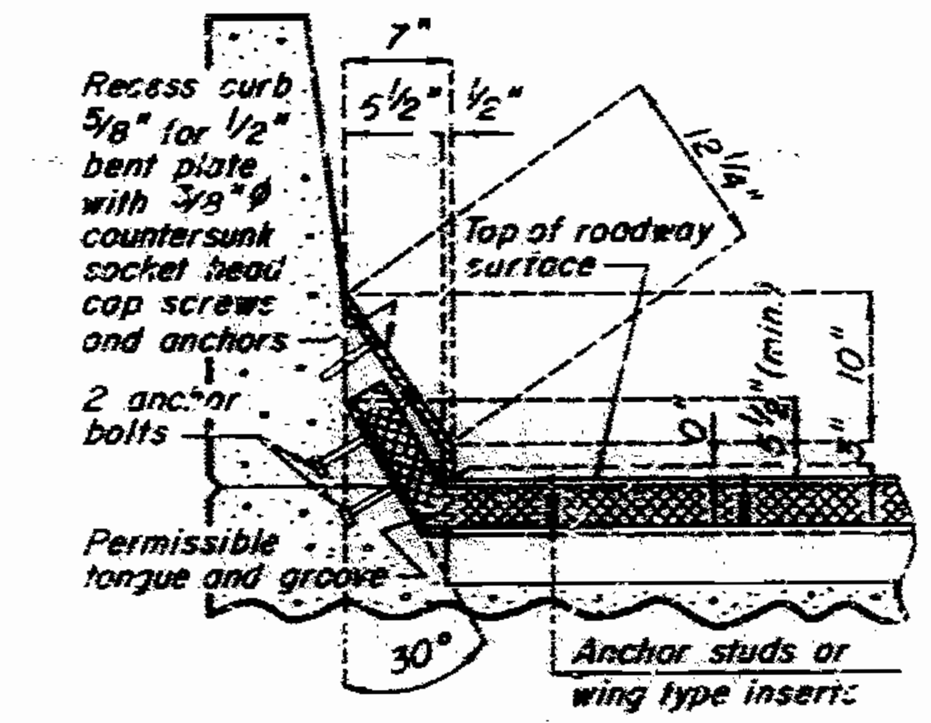
BOLT DIAMETER	SAFE LOAD TENSION (LBS.) (MAX.)	APPROX. ULT. CAP. TENSION (LBS.) (MIN.)	DIMENSIONS a (MIN.)	b	c
1/2"	800	8,000	1-5/8"	5"	.218"
5/8"	1,300	9,200	1-5/8"	5"	.218"
3/4"	1,800	13,200	2-1/4"	6"	.262"
7/8"	2,000	16,200	2-1/2"	6-1/2"	.306"
1"	2,000	16,200	2-1/2"	6-1/2"	.306"

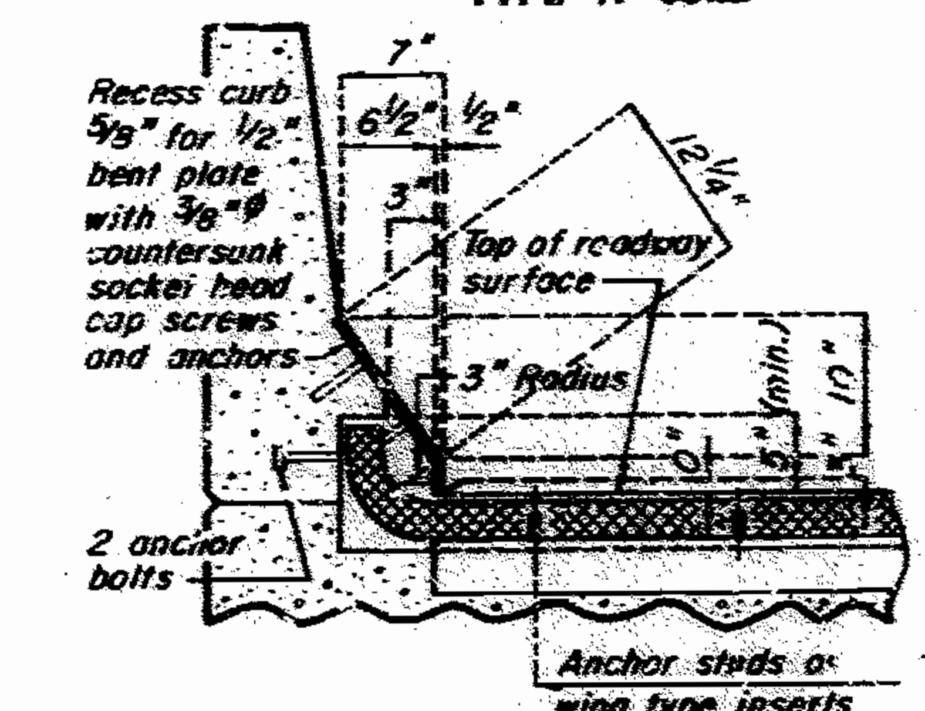
DETAILS OF ALTERNATE WING TYPE THREADED INSERT

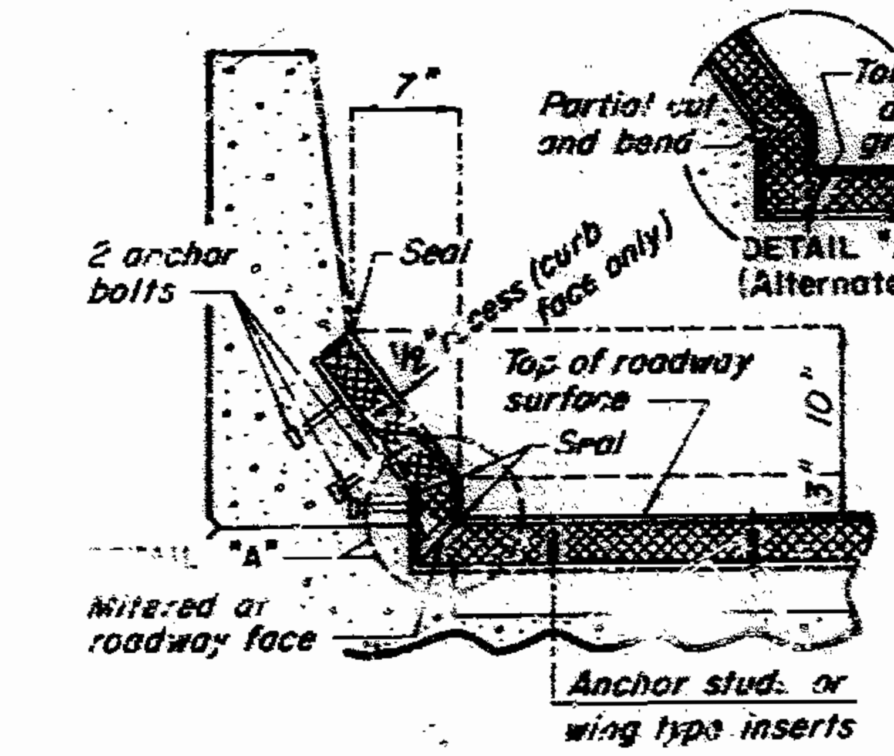
(MACHINE BOLTS NEED ONLY BE USED TO SECURE THE WING TYPE THREADED INSERTS TO THE STEEL PLATE UNTIL THE CONCRETE HAS ATTAINED 3,000 p.s.i.)

STATE	PROJ. NO.	SHEET NO.
MO		165









ALTERNATE CURB TREATMENTS

DETAILS OF ELASTOMERIC EXPANSION JOINT SEAL AT BENT NO. 9 & NO. 13

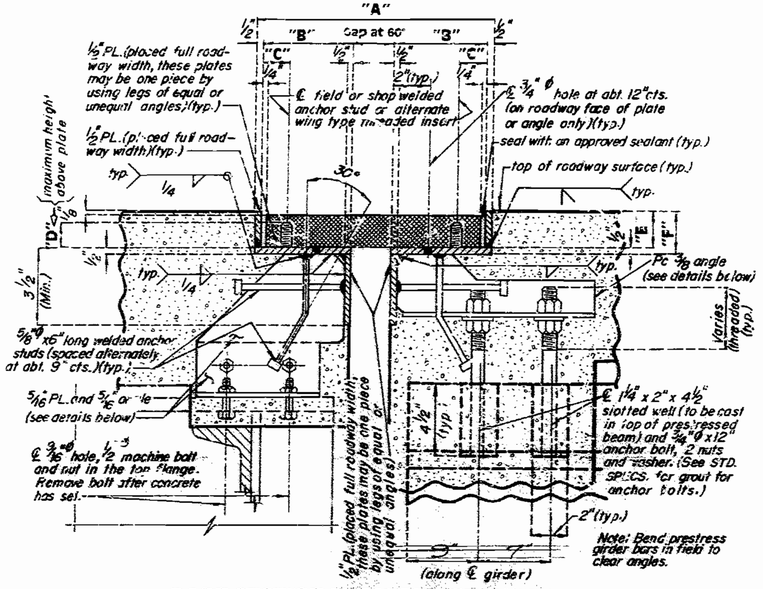
Elastomeric Expansion Jt. Seal | SPS-INT. BT. | REVISED | FEB. 1978 | MAY 1987

DETAILED MAR. 1988
CHECKED Nov. 1985

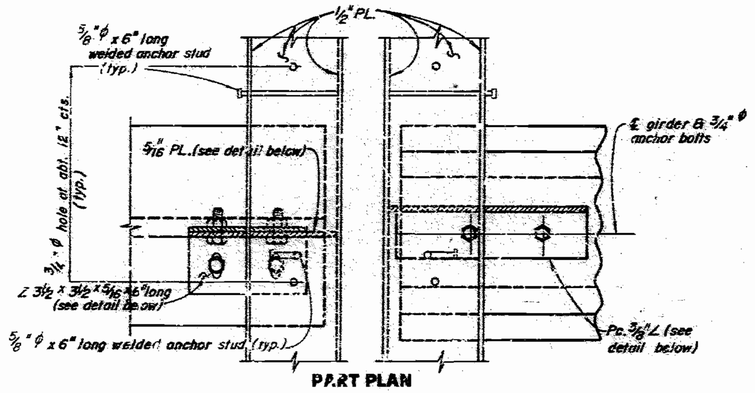
Note: This drawing is not to scale. Follow dimensions

JACKSON COUNTY

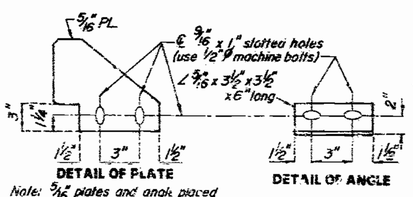
A-2745



PART SECTION THRU ARMORED JOINT

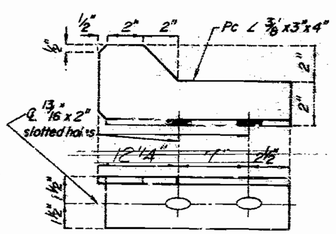


PART PLAN



DETAIL OF PLATE

Note: 5/16" plates and angle placed at each girder at stringer.



DETAIL OF ANGLE

Note: Angles placed at each girder.

DETAIL OF ANGLE

TABLE OF DIMENSIONS										
LOCATION	ACCEPTABLE ALTERNATE TYPES	ENG. GAP AT 60°	"A" AT 60°	"B"	"C"	"D"	"E"	"F"	ANCHOR STUDS SIZE	SPA.	"G"
BENT NO. 17	DELASTIFLEX LM300	2"	12 3/8"	4 9/16"	2 9/16"	7/8"	2"	2 1/2"	1/2"	9"	45
	GEN-STRIP COL 3"	2 1/4"	13 3/4"	4 1/4"	1 3/4"	1 1/8"	1 3/4"	2 1/4"	5/8"	12"	65
	ONJ-FLEX 3.5	2"	11 1/2"	4 1/4"	1 5/8"	1 1/8"	2 3/8"	2 7/8"	5/8"	12"	65
	W.R.D. BEMDOFLEX 450	2"	11 1/2"	4 1/4"	1 5/8"	1 1/8"	2 3/4"	3 1/2"	1/2"	12"	50
	FEL-SPAN T40AC5	2"	12"	4 1/2"	1 3/8"	1 1/2"	2 3/4"	3 1/8"	1/2"	12"	50
	ACME TROJAN TR400	2 1/2"	12"	4 1/4"	1 3/4"	1 1/8"	1 3/4"	2 1/4"	1/2"	12"	40

NOTE: ALL DIMENSIONS ARE AT RIGHT ANGLES.
EXPANSION GAP AND DIMENSION "A" SHALL BE INCREASED 3/16" FOR EACH 10° FALL IN TEMPERATURE AND DECREASED 3/16" FOR EACH 10° RISE IN TEMPERATURE.

GENERAL NOTES:

THE CERTIFIED NUTS AND BOLTS FOR THE ANCHOR STUDS OR WING TYPE THREADED INSERTS SHALL BE TIGHTENED TO THE FOOT POUNDS "G" SPECIFIED IN THE TABLE OF DIMENSIONS. RETIGHTEN TO "G" FOOT POUNDS A MINIMUM OF 30 MINUTES AFTER INITIAL TIGHTENING. THE WELDED ANCHOR STUDS SHALL BE THE REDUCED BASE TYPE

MATERIAL FOR THE ARMORED JOINT SHALL BE A36 STRUCTURAL GRADE STEEL ANCHORS FOR THE ARMORED JOINT SHALL BE APPROVED STUD WELDED ANCHORS (C1010 THRU C1020).

SEE SPECIAL PROVISIONS FOR PAINTING.

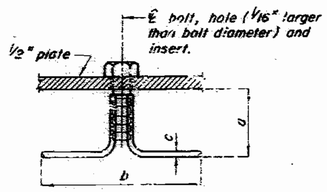
ANCHOR BOLTS IN THE BARRIER CURB SHALL BE CAST-IN-PLACE, GROUTED OR ZONE-EXPANSION TYPE. HOLES IN THE BARRIER CURB FOR ANCHORS SHALL NOT BE DRILLED UNTIL THE CONCRETE IS AT LEAST 7 DAYS OLD

PLAN DIMENSIONS ARE BASED ON INSTALLATION AT 60°F. THE EXPANSION GAP AND OTHER DIMENSIONS SHALL BE ADJUSTED DURING INSTALLATION FOR COMPLIANCE WITH ANY TEMPERATURE CHANGE.

CONTACT SURFACE OF STEEL TO ALUMINUM SHALL BE INSULATED WITH THE MATERIAL SPECIFIED ON THE SHOP DRAWINGS.

FURNISHING, PAINTING AND INSTALLING THE STRUCTURAL STEEL ARMORED JOINT AND CURB PLATES SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR ELASTOMERIC EXPANSION JOINT SEAL.

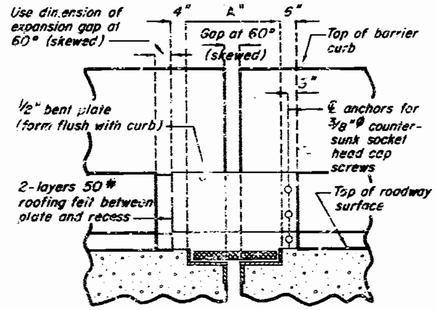
BOLT CAVITIES TO BE FILLED WITH APPROVED SEALANT IN COMPLIANCE WITH MANUFACTURER'S CERTIFICATION.



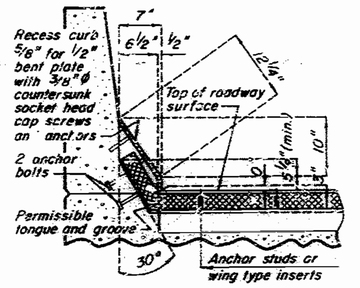
BOLT DIAMETER	SAFE LOAD TENSION (LBS.) (MIN.)	APPROX. ULT. CAP. TENSION (LBS.) (MIN.)	DIMENSIONS a (MIN.)	b	c
1/2"	803	8,000	1-5/8"	5"	.218"
5/8"	1,300	9,200	1-5/8"	5"	.218"
3/4"	1,800	13,700	2-1/4"	5"	.262"
7/8"	2,000	16,200	2-1/2"	6-1/2"	.306"
1"	2,000	16,200	2-1/2"	6-1/2"	.306"

DETAILS OF ALTERNATE WING TYPE THREADED INSERT

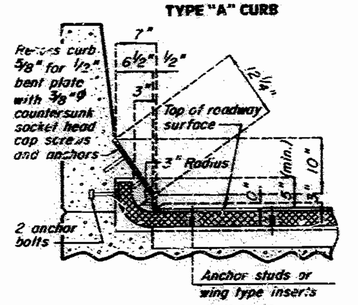
(MACHINE BOLTS NEED ONLY BE USED TO SECURE THE WING TYPE THREADED INSERTS TO THE STEEL PLATE UNTIL THE CONCRETE HAS ATTAINED 3,000 p.s.i.)



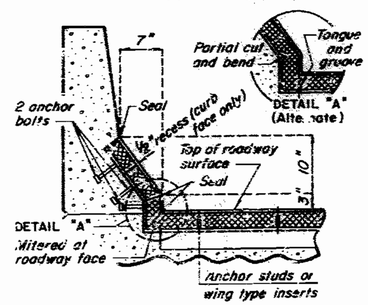
PART ELEVATION OF BARRIER CURB



TYPE "A" CURB



TYPE "B" CURB



TYPE "C" CURB

ALTERNATE CURB TREATMENTS

DETAILS OF ELASTOMERIC EXPANSION JOINT SEAL AT BENT NO. 17

Elastomeric Expansion Jt. Seal	
SPS - INT. BT.	REVISED
FEB. 1972	MAY 1987

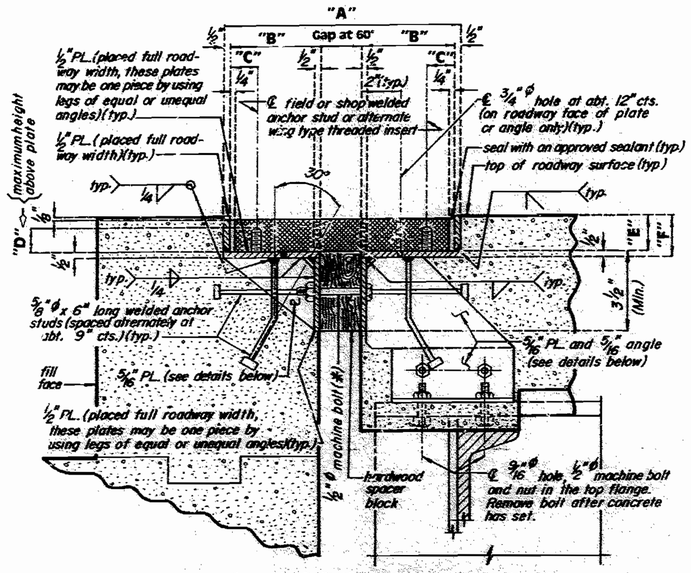
DETAILED MAR. 1986
CHECKED Nov. 1988

Note: This drawing is not to scale. Follow dimensions.

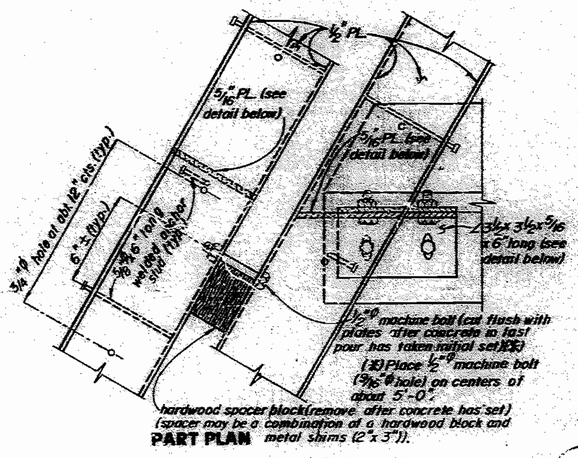
JACKSON COUNTY

A-2745

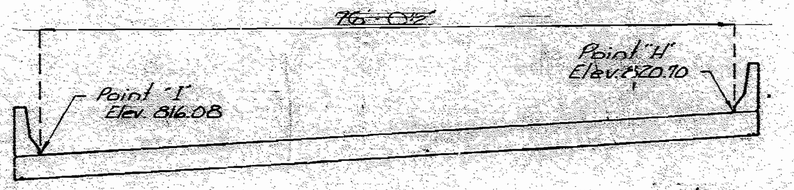
STATE	PROJ NO	SHEET NO
MO		167



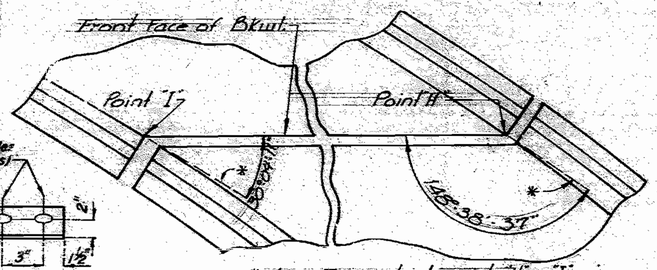
PART SECTION THRU ARMORED JOINT



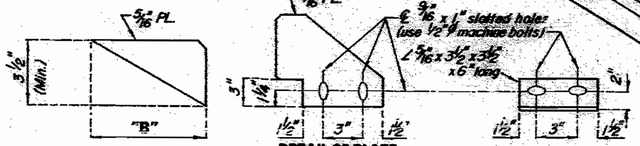
PART PLAN

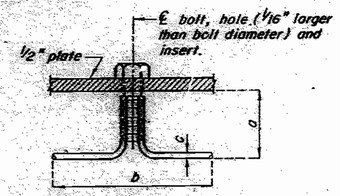


SECTION THRU ℄ OF EXPANSION GAP



PART PLAN





BOLT DIAMETER	SAFE LOAD TENSION (LBS.) (kNM.)	APPROX. ULT. CAP. TENSION (LBS.) (kNM.)	DIMENSIONS a (MM.)	b	c
1/2"	800	8,000	1-5/8"	5"	.218"
5/8"	1,300	9,200	1-5/8"	5"	.218"
3/4"	1,800	13,200	2-1/4"	6"	.362"
7/8"	2,000	16,200	2-1/2"	6-1/2"	.506"
1"	2,000	19,200	2-1/2"	6-1/2"	.506"

DETAILS OF ALTERNATE WING TYPE THREADED INSERT

(MACHINE BOLTS NEED ONLY BE USED TO SECURE THE WING TYPE THREADED INSERTS TO THE STEEL PLATE UNTIL THE CONCRETE HAS ATTAINED 3,000 ;)

LOCATION	ACCEPTABLE ALTERNATE TYPES	EXP. GAP AT 60°	"A" AT 60°	"B"	"C"	"D"	"E"	"F"	ANCHOR STUDS SIZE	SPA.	"G"
BENT NO. 20	ON-FLEX 45	2¼"	11¾"	4¼"	1⅝"	1½"	2¾"	3¼"	⅝	12"	65
	WABO BENDOFLEX 450	2½"	12"	4¼"	1⅝"	1¼"	2¾"	3¼"	½"	12"	50
	FEL-SPAN TAOA CS	2¼"	12¼"	4½"	1⅝"	1½"	2¼"	2⅜"	½"	12"	50

NOTE: ALL DIMENSIONS ARE AT RIGHT ANGLES. EXPANSION GAP AND DIMENSION "A" SHALL BE INCREASED 1/8" FOR EACH 10° FALL IN TEMPERATURE AND DECREASED 1/8" FOR EACH 10° RISE IN TEMPERATURE.

GENERAL NOTES:

THE CERTIFIED NUTS AND BOLTS FOR THE ANCHOR STUDS OR WING TYPE THREADED INSERTS SHALL BE TIGHTENED TO THE FOOT POUNDS "G" SPECIFIED IN THE TABLE OF DIMENSIONS. RETIGHTEN TO "G" FOOT POUNDS A MINIMUM OF 30 MINUTES AFTER INITIAL TIGHTENING. THE WELDED ANCHOR STUDS SHALL BE THE REDUCED BASE TYPE.

MATERIAL: FOR THE ARMORED JOINT SHALL BE A36 STRUCTURAL GRADE STEEL. ANCHORS FOR THE ARMORED JOINT SHALL BE APPROVED STUD WELDED ANCHORS (C1010 THRU C1020).

SEE SPECIAL PROVISIONS FOR PAINTING.

ANCHOR BOLTS IN THE BARRIER CURB SHALL BE CAST-IN-PLACE, GROUTED OR CONE-EXPANSION TYPE. HOLES IN THE BARRIER CURB FOR ANCHORS SHALL NOT BE DRILLED UNTIL THE CONCRETE IS AT LEAST 7 DAYS OLD.

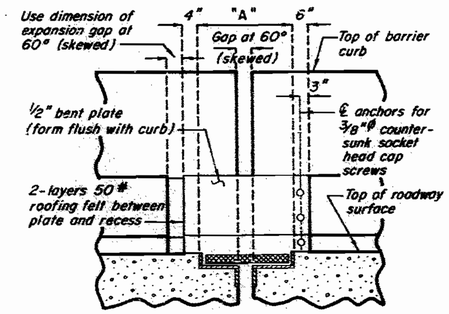
PLAN DIMENSIONS ARE BASED ON INSTALLATION AT 60°F. THE EXPANSION GAP AND OTHER DIMENSIONS SHALL BE ADJUSTED DURING INSTALLATION FOR COMPLIANCE WITH ANY TEMPERATURE CHANGE.

CONTACT SURFACE OF STEEL TO ALUMINUM SHALL BE INSULATED WITH THE MATERIAL SPECIFIED ON THE SHOP DRAWINGS.

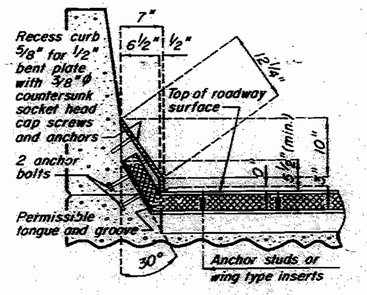
FURNISHING, PAINTING AND INSTALLING THE STRUCTURAL STEEL ARMORED JOINT AND CURB PLATES SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR ELASTOMERIC EXPANSION JOINT SEAL.

BOLT CAVITIES TO BE FILLED WITH APPROVED SEALANT IN COMPLIANCE WITH MANUFACTURER'S CERTIFICATION.

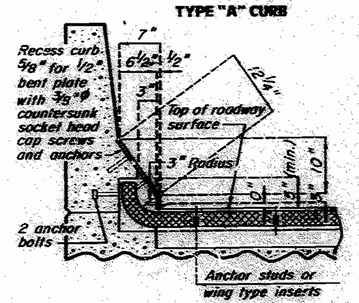
PLATES SHALL BE FIELD ADJUSTED BY ADDING OR REMOVING METAL SHIMS (2" x 3"), AS REQUIRED FOR TEMPERATURE CORRECTION. THE EXPANSION GAP SHALL BE ADJUSTED FOR ANY TEMPERATURE CORRECTION PRIOR TO POURING TOP OF END BENT BACKWALL.



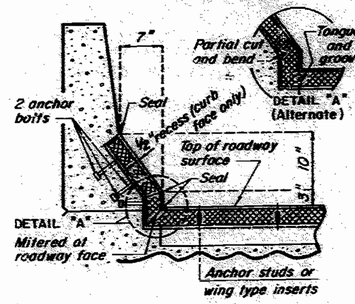
PART ELEVATION OF BARRIER CURB



TYPE "A" CURB



TYPE "B" CURB



TYPE "C" CURB

ALTERNATE CURB TREATMENTS

DETAILS OF ELASTOMERIC EXPANSION JOINT SEAL AT BENT NO. 20

Elastomeric Expansion Jt. Seal	
SPS - END BT.	REVISED
FEB. 1979	MAY 1987

DETAILED MAR. 1988
CHECKED Nov. 1988

Note: This drawing is not to scale. Follow dimensions.

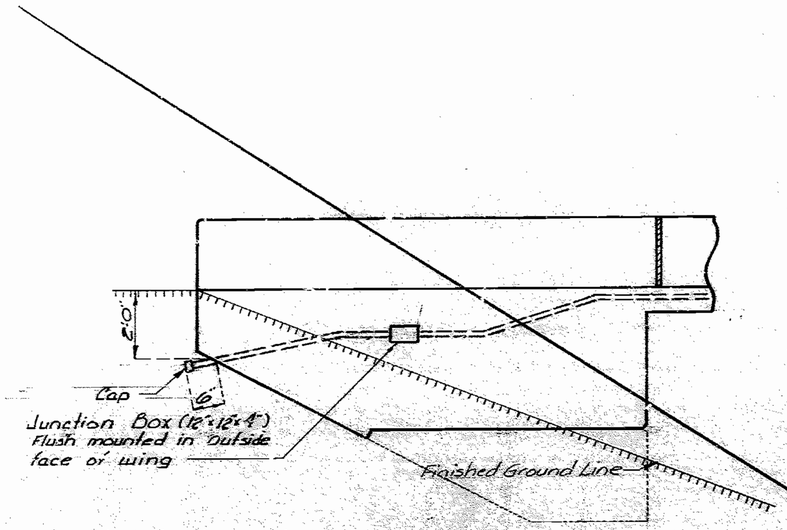
Sheet No. 87 of 98.

JACKSON COUNTY

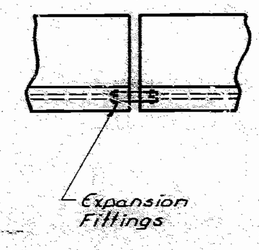
A-2745

2018 183

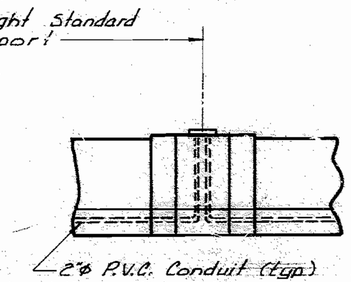
STATE	PROJ. NO.	SHEET NO.
MO.		168



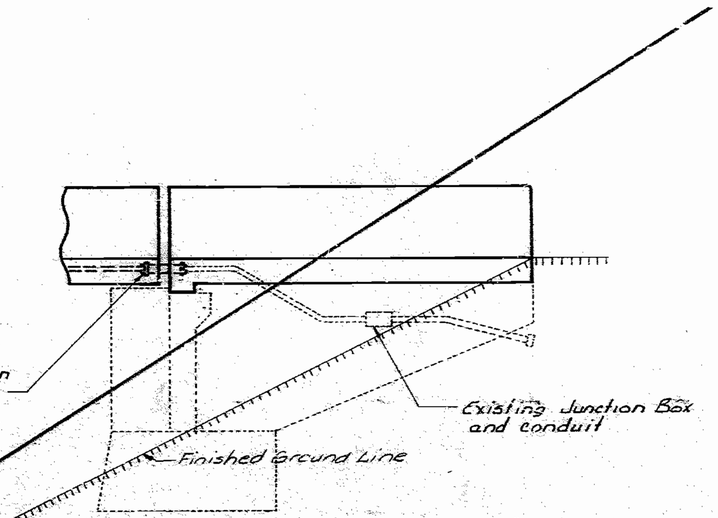
PART ELEVATION OF RIGHT WING AT END BT. NO. 1



PART ELEVATION AT EXPANSION FITTING (BTS. NO. 4, 9, 13, & 17)

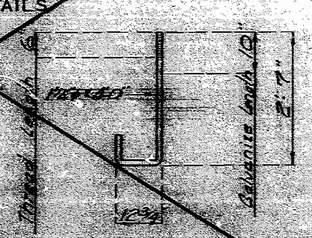


PART ELEVATION AT LIGHT STANDARD SUPPORT

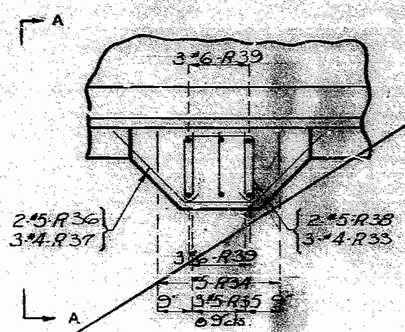


PART ELEVATION OF RIGHT WING AT END BT. NO. 20

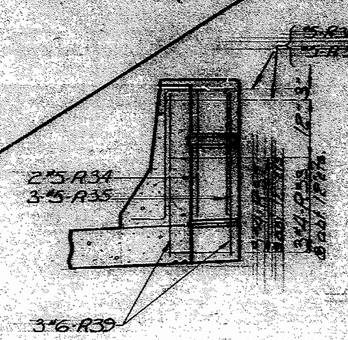
CONDUIT DETAILS



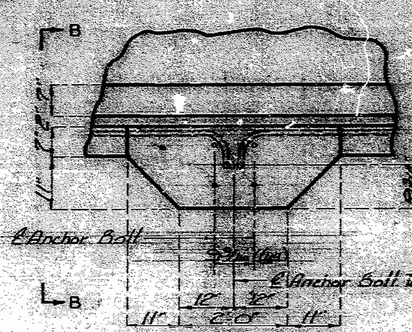
ANCHOR BOLT DETAIL



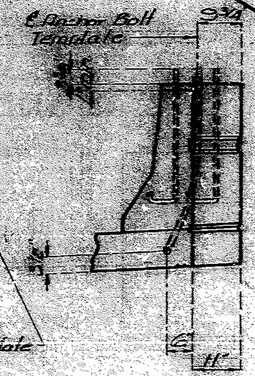
PLAN SHOWING REINFORCEMENT



SECTION A-A



PLAN OF ANCHOR BOLTS



SECTION B-B

DETAILS OF LIGHT STANDARD SUPPORT

Notes:

See Elevation of Right Barrier Curb for location of Expansion Fittings and Light Standard Support.

Cost of furnishing and placing anchor bolts for light standard shall be included in the Contract Unit Price for other items.

All conduit shall be rigid non-metalic Schedule 40 heavy wall PVC (Polyvinyl Chloride Plastic) with 3" maximum cover in concrete. Each section of conduit shall bear the Underwriters Laboratories Inc. (UL) label.

Shift reinforcing steel in field where necessary to clear conduit and junction boxes.

Light Standards, wiring and fixtures shall be furnished and installed by others.

Top of light standard supports shall be made horizontal; anchor bolts shall be placed vertically.

For details of Light Standards and wiring see Electrical Plans.

Expansion fittings shall provide a minimum movement in either direction of 4" at open joints. Expansion fittings shall be equal to Carlon Electrical Construction Products or Triangle Conduit and Cable Company, Inc.

All end bell junction boxes shall be PVC molded flush surface mounted and equal to Carlon Electrical Construction Products or Triangle Conduit and Cable Co. Inc. The conduit terminations be permanent or separable. The terminations and covers shall be of watertight construction.

Weepholes shall be provided at appropriate locations to drain any moisture in the conduit lines.

VOID

VOID

DETAILED September 1988
CHECKED Oct. 1988

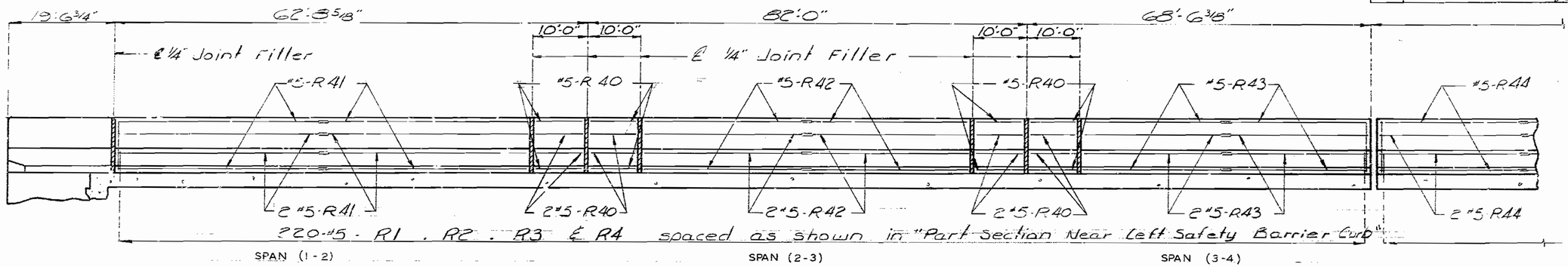
Note: This drawing is not to scale. Follow dimensions.

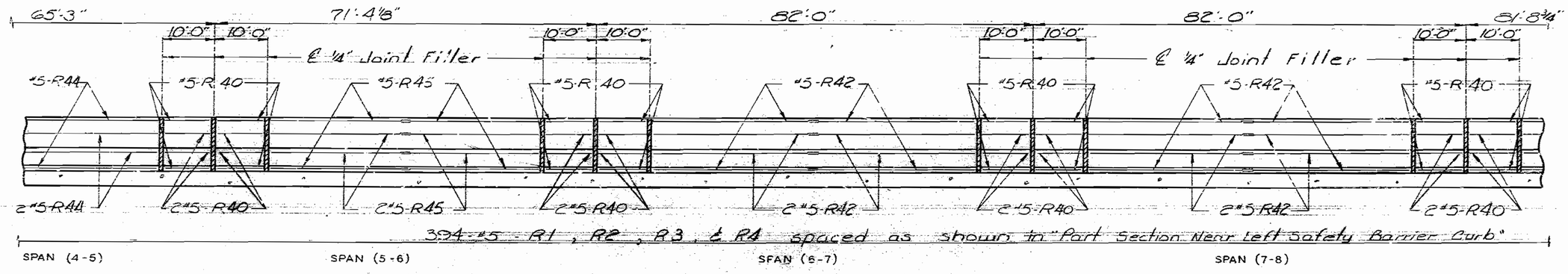
Sheet No. 38 of 38

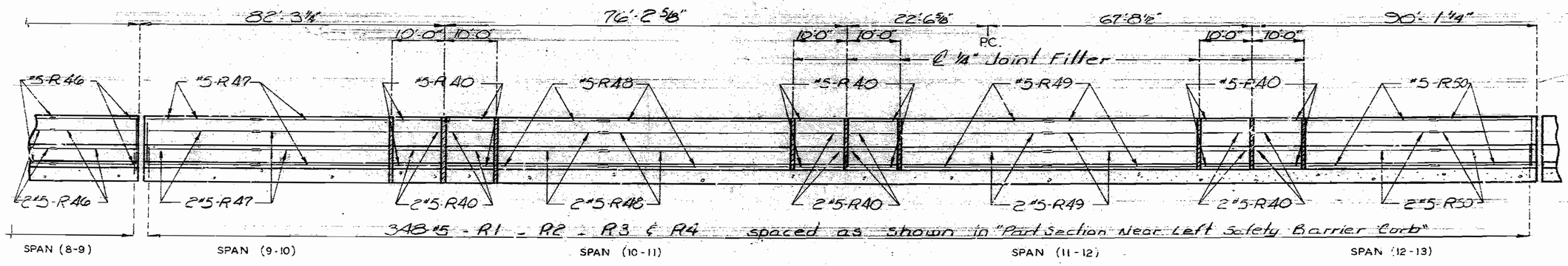
JACKSON COUNTY

A-2745

STATE	PROJ. NO	SHEET NO
MO		169







SECTION NEAR LEFT BARRIER CURB

Note : For "Part Section near Left Safety Barrier Curb" see sheet NO. 93 .

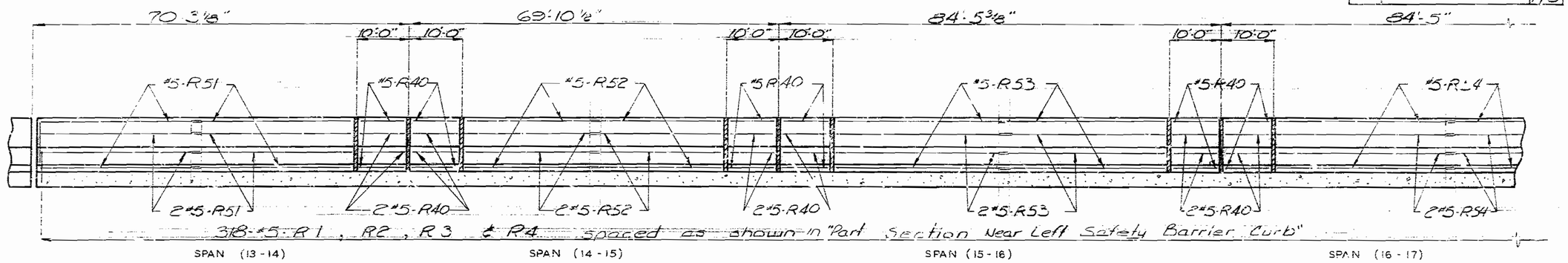
Note : Longitudinal dimensions are horizontal dimensions measured at top outside edge of slab (Span 1-2 , Part Span 10-11 and Part Span 11-12)
Longitudinal dimensions are horizontal arc dimensions measured at top edge of slab (Part Span 11-12 and Span 12-13)
Rustication not shown for clarity.

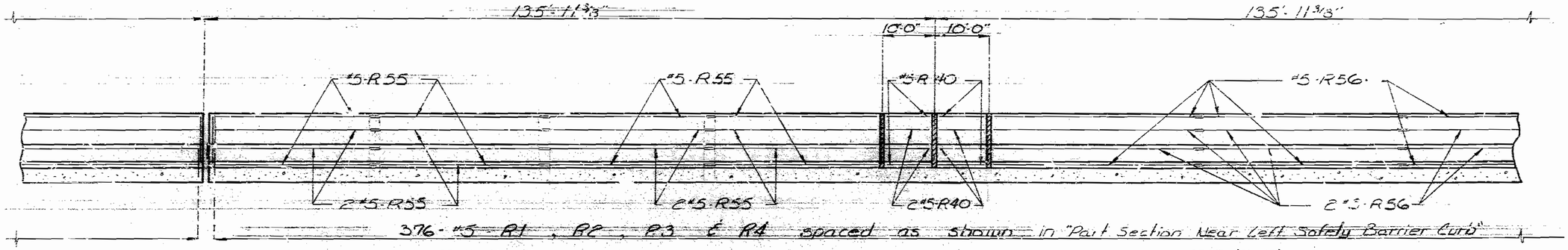
#4185

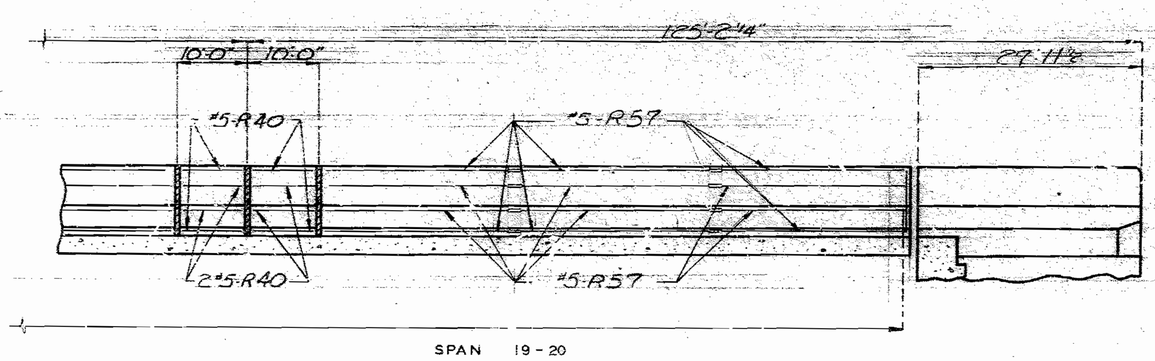
DETAILED APRIL 1988
CHECKED Oct. 1988

Note: This drawing is not to scale. Follow dimensions.

STATE	PROJ NO	SHEET NO
MO		170







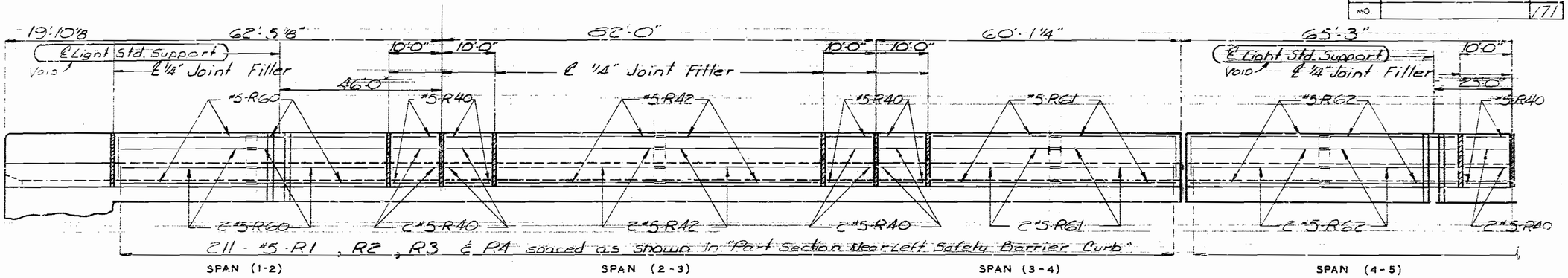
SECTION NEAR LEFT BARRIER CURB

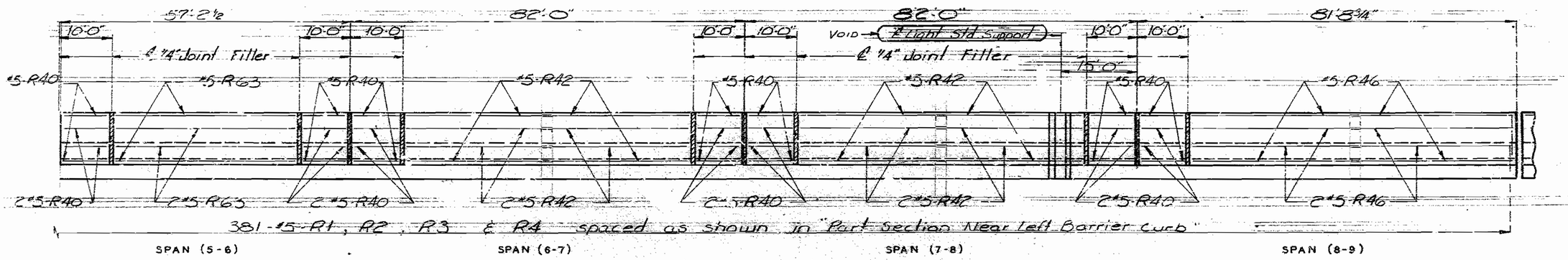
Note: Longitudinal dimensions are horizontal arc dimensions measured at top outside edge of slab.
Position not shown for clarity.
For "Part Section near Left Safety Barrier Curb" see sheet No. 93

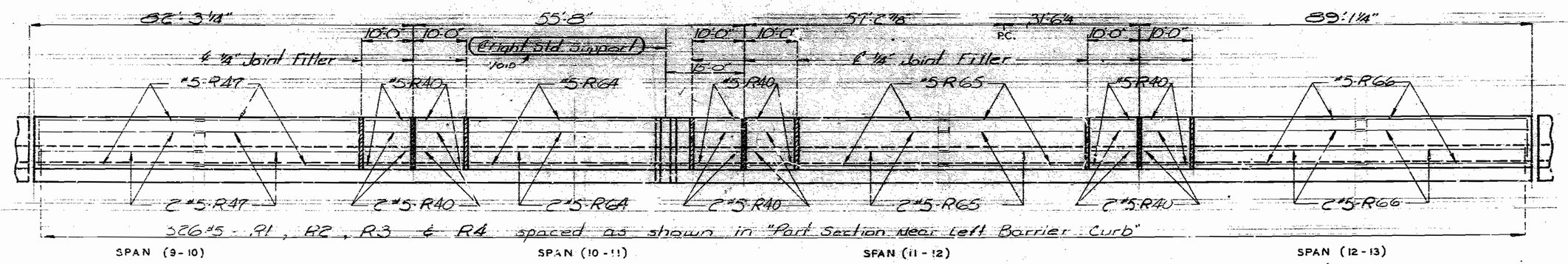
DETAILED APRIL 1988
CHECKED Oct 1988

Note: This drawing is not to scale. Follow dimensions.

STATE	PROJ NO.	SHEET NO.
NO.		171







ELEVATION NEAR RIGHT BARRIER CURB

Note: Longitudinal dimensions are horizontal dimensions measured at top outside edge of slab (Span 1-2 11'-11 10-11 and Part Span 11-12).
Longitudinal dimensions are horizontal are dimensions at top outside edge of slab (Part Span 11-12 and Span 12-13).
Rustication nos. show clarity.
For "Part Section Near Left Safe Barrier Curb" see sheet No. 93

DETAILED APRIL 1988
CHECKED Oct. 1988

Note: This drawing is not to scale. Follow dimensions.

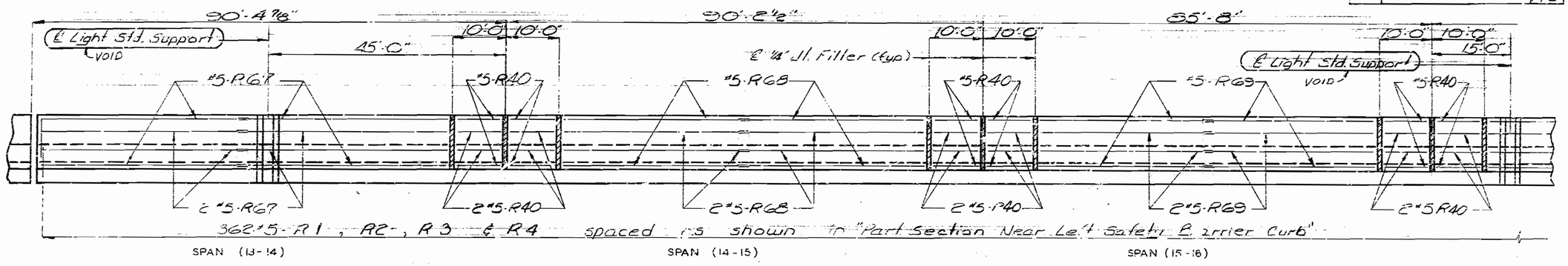
Sheet No. 91 of 98

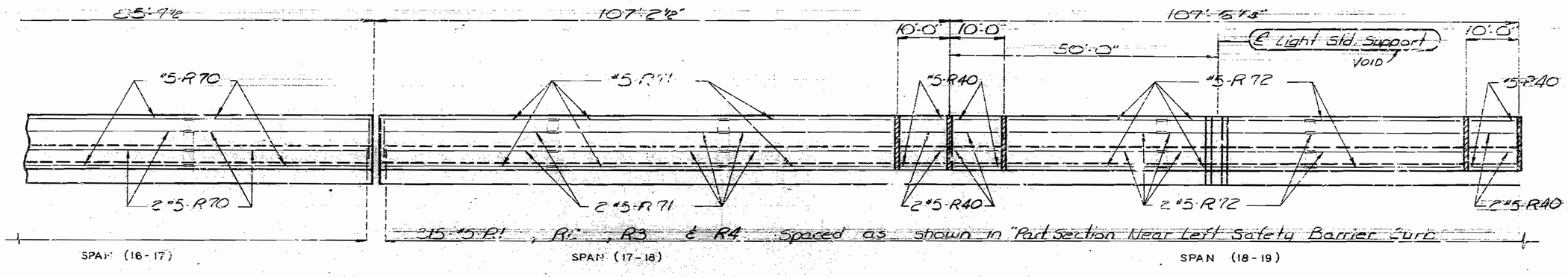
JACKSON COUNTY

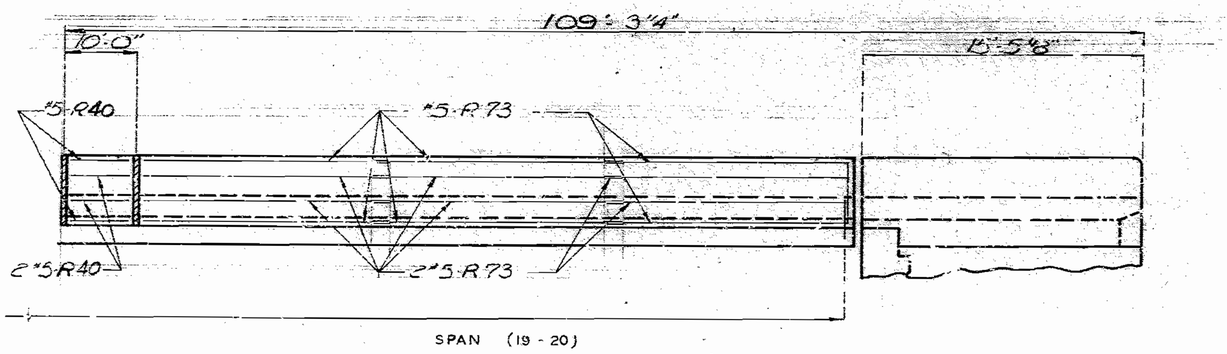
A-2745

A27452 179

STATE	PROJ. NO	SHEET NO
MO		172







Note: Longitudinal dimensions are horizontal arc dimensions measured at top outside edge of slab. Justification not shown for clarity. For "Part Section Near Left Safety Barrier Curb" see sheet No. 93

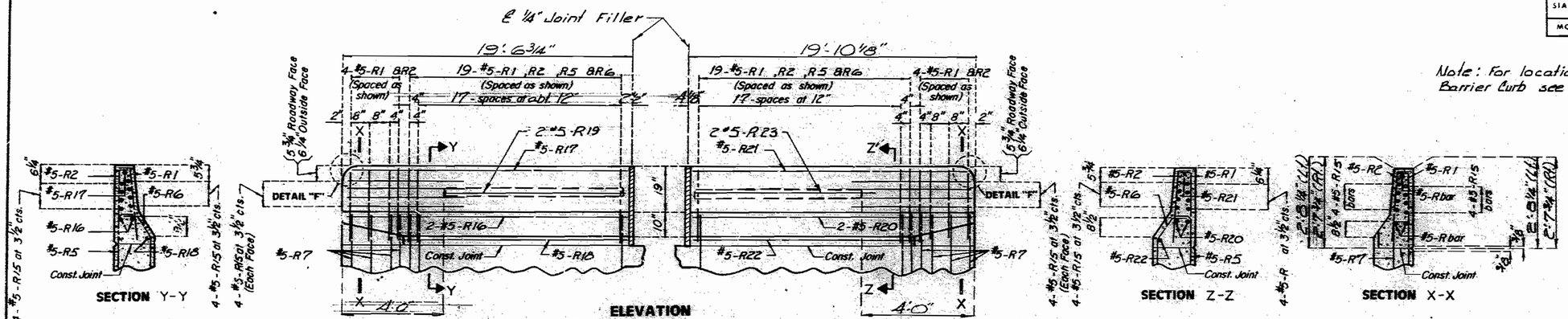
ELEVATION NEAR RIGHT BARRIER CURB

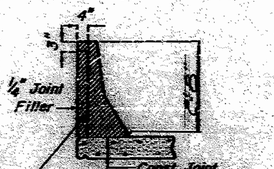
DETAILED APRIL 1988
CHECKED Oct. 1988

Note: This drawing is not to scale. Follow dimensions.

STATE	PROJ NO	SHEET NO
MO		173

Note: For location of conduit in Safety Barrier Curb see sheet No. 88.

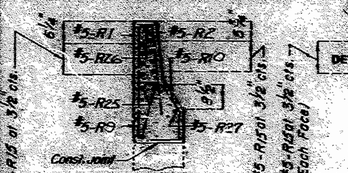


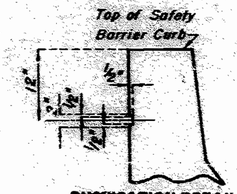


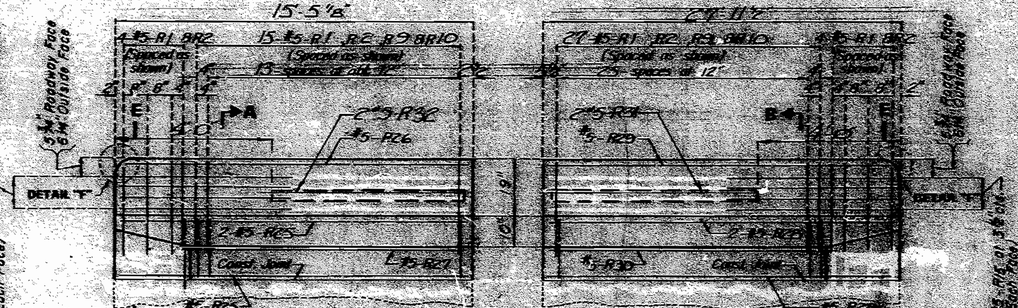
NOTE: PLASTIC WATERSTOP SHALL BE PLACED IN ALL SAFETY BARRIER CURB EXPANSION JOINTS (EXCEPT STRUCTURAL EXPANSION JOINTS) AS SHOWN ON SHEETS 195 ON ALL LOWER SAFETY BARRIER CURB JOINTS (SHT. 202).

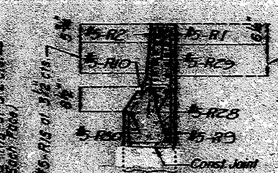
COST OF PLASTIC WATERSTOP COMPLETE IN PLACE TO BE INCLUDED IN CONTRACT UNIT PRICE FOR SAFETY BARRIER CURB.

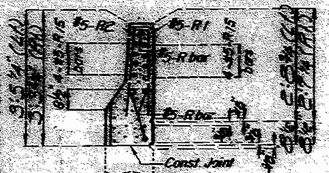
DETAILS OF PLASTIC WATERSTOP

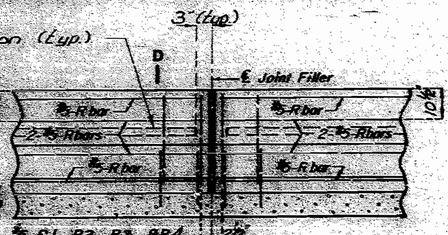


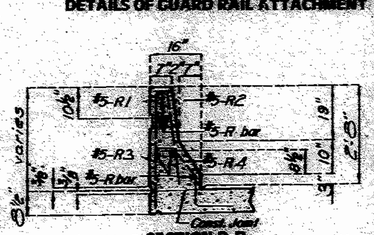




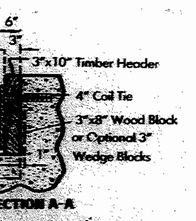






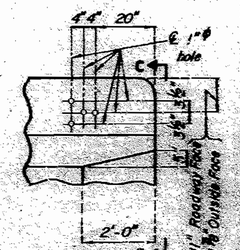


Note: Use a minimum lap of 17" for #5 horizontal safety barrier curb bars.



NOTE: Cost of timber Headers complete in place to be included in contract unit price for concrete.

DETAILS OF TIMBER HEADER AT END BENTS



DETAILS OF GUARD RAIL ATTACHMENT

NOTE:

TOP OF SAFETY BARRIER CURB SHALL BE BUILT PARALLEL TO GRADE WITH SAFETY BARRIER CURB JOINTS (EXCEPT AT END BENTS) NORMAL TO GRADE.

ALL EXPOSED EDGES OF SAFETY BARRIER CURB SHALL HAVE EITHER A 1/2" RADIUS OR A 3/8" BEVEL UNLESS OTHERWISE NOTED.

WHEN THE SAFETY BARRIER CURB IS BID BY LINEAR FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL CONCRETE AND REINFORCEMENT, COMPLETE IN PLACE.

CONCRETE FOR THE SAFETY BARRIER CURB SHALL BE CLASS B1.

MEASUREMENT OF SAFETY BARRIER CURB IS TO THE NEAREST LINEAL FOOT FOR EACH STRUCTURE, MEASURED ALONG THE OUTSIDE TOP OF SLAB FROM END OF WING TO END OF WING.

DETAILS OF SAFETY BARRIER CURB AT END BENTS

SPS 127(11)	REVISED
AUG. 1978	MAY 1987

DETAILED AUG. 1988
CHECKED Oct. 1988

Note: This drawing is not to scale. Follow dimensions.

JACKSON COUNTY

A-2745

FOR INFORMATION ONLY

A27452, Sht. 182

COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
			END BENT NO.1																							
5	6	F1	DIAPH. & WING		23					14.	000	5	3.000	14.000		8.750		10.875		8.750		10.675		7 7	7 6	56
5	6	F2	DIAPH.		21					2	3.625	5	0.000							2	3.000	5.875		7 [illegible]	7 1	53
5	6	F3	DIAPH.		23					2	3.625	4	8.000							2	3.000	5.875		7 0	6 10	51
5	6	F4	DIAPH. & WING		23					14.	000	4	3.000	14.000		10.875		8.750		10.875		8.750		6 7	6 6	49
3	6	H1	DIAPH.		20					42	3.000													42 3	42 3	190
12	6	H2	DIAPH.		20					6	10.000													6 10	6 10	123
4	6	H3	DIAPH.	E	20					42	3.000													42 3	42 3	254
2	6	H4	APPROACH MAURICH		20					22	0.000													22 0	22 0	29
5	5	H5	STRAND TIE BAR		23						15.000	2	0.000	15.000		3.125		14.625		3.125		14.625		4 6	4 6	23
6	6	H6	WING *	E	20					18	5.000													18 5	18 5	166
8	6	H7	WING		20					18	5.000													18 5	18 5	221
16	6	H8	WING		20		V	4		17	9.000													17 9	17 9	
			INCR = 23.000 IN							12	0.000													12 0	12 0	357
4	6	J1	WING		23					9	1.625	2	1.000							8	6.000	3	4.000	11 3	11 2	67
57	6	[illegible]	DIAPH.	E	19					5	0.000	3	8.000											8 8	8 6	728
30	5	H9	DIAPH.	E	18	S						5	0.000	2	3.500									12 4	12 1	378
24	4	H6	APPROACH MAURICH		20	S							17.500		6.000									3 5	3 3	52
16	6	V1	WING		20					4	11.000													4 11	4 [illegible]	118
16	6	V7	WING		20		V	2	2	3.	000													2 3	2 3	
			INCR = 4.875 IN							5	1.000													5 1	5 1	88
16	6	V5	WING		20		V	2	2	5.	000													2 5	2 5	
			INCR = 4.875 IN							5	3.000													5 3	5 3	92
16	6	V5	WING		20					5	1.000													5 1	5 1	122
			END BENT NO. 2																							
2	4	H20	DIAPHRAM	E	20					36	5.000													36 5	36 5	93
2	4	H21	BACKWALL	E	20					45	0.000													45 6	45 0	60
			INT. BT. NO.2																							
16	4	H20	DIAPH.		20					7	3.000													7 3	7 3	77
16	6	H21	DIAPH.		20					6	7.000													6 7	6 7	158
12	5	H22	STRAND TIE BAR		20					4	6.000													4 6	4 6	56
8	5	H23	STRAND TIE BAR		20					3	3.000													3 3	3 3	27
20	5	H24	DIAPH.		19	S					10.000	2	8.000											3 6	3 5	71
3	6	H1	DIAPH.		20					42	3.000													42 3	42 3	190
12	6	H2	DIAPH.		20					6	10.000													6 10	6 10	123
4	6	H3	DIAPH.	E	20					42	3.000													42 3	42 3	254
2	4	H4	APPROACH MAURICH		20					22	0.000													22 0	22 0	29
5	5	H5	STRAND TIE BAR		23						15.000	2	0.000	15.000		3.125		14.625		3.125		14.625		4 6	4 6	23
6	6	H6	WING *	E	20					18	5.000													18 5	18 5	166
8	6	H7	WING		20					18	5.000													18 5	18 5	221
16	6	H8	WING		20		V	4		17	9.000													17 9	17 9	
			INCR = 23.000 IN							12	0.000													12 0	12 0	357
4	6	J1	WING		23					9	1.625	2	1.000							8	6.000	3	4.000	11 3	11 2	67
57	6	[illegible]	DIAPH.	E	19					5	0.000	3	8.000											8 8	8 6	728
30	5	H9	DIAPH.	E	18	S						5	0.000	2	3.500									12 4	12 1	378
24	4	H6	APPROACH MAURICH		20	S							17.500		6.000									3 5	3 3	52
16	6	V1	WING		20					4	11.000													4 11	4 [illegible]	118
16	6	V7	WING		20		V	2	2	3.	000													2 3	2 3	
			INCR = 4.875 IN							5	1.000													5 1	5 1	88
16	6	V5	WING		20		V	2	2	5.	000													2 5	2 5	
			INCR = 4.875 IN							5	3.000													5 3	5 3	92
16	6	V5	WING		20					5	1.000													5 1	5 1	122
			END BENT NO. 2																							
2	4	H20	DIAPHRAM	E	20					36	5.000													36 5	36 5	93
2	4	H21	BACKWALL	E	20					45	0.000													45 6	45 0	60
			INT. BT. NO.2																							
16	4	H20	DIAPH.		20					7	3.000													7 3	7 3	77
16	6	H21	DIAPH.		20					6	7.000													6 7	6 7	158
12	5	H22	STRAND TIE BAR		20					4	6.000													4 6	4 6	56
8	5	H23	STRAND TIE BAR		20					3	3.000													3 3	3 3	27
20	5	H24	DIAPH.		19	S					10.000	2	8.000											3 6	3 5	71
48	4	H20	DIAPH.	E	20	S						20.	000	4	8.000	12.000								7 4	7 2	230
16	4	H21	DIAPH.	E	20	S						20.	000	4	8.000	14.000								7 6	7 2	172
8	5	H20	DIAPH.	E	20					4	11.000													4 11	4 11	41

* Two (2) additional #6-H6 are included in bar bill for testing.

COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
			INT. BT. NO.3																							
16	4	H20	DIAPH.		20					7	3.000													7 3	7 3	77
16	6	H21	DIAPH.		20					6	7.000													6 7	6 7	158
12	5	H22	STRAND TIE BAR		20					4	6.000													4 6	4 6	56
8	5	H23	STRAND TIE BAR		20					3	3.000													3 3	3 3	27
20	5	H24	DIAPH.		19	S					10.000	2	8.000											3 6	3 5	71
48	4	H20	DIAPH.	E	28	S						20.	000	4	8.000	12.000								7 4	7 2	230
16	4	H21	DIAPH.	E	28	S						20.	000	4	8.000	14.000								7 6	7 2	172
			INT. BT. NO.4																							
24	9	H60	DIAPH.		20					7	3.000													7 3	7 3	592
16	4	H61	DIAPH.		20					6	7.000													6 7	6 2	158
16	4	H62	DIAPH.		20					6	7.000													6 7	6 7	70
2	5	H63	DIAPH.		20					37	7.000													37 7	37 7	78
16	5	H64	DIAPH.		19	S					15.000	2	2.000											3 5	3 4	56
64	4	H60	DIAPH.	E	28	S						15.	000	2	2.000	12.000								4 5	4 3	182
64	4	H64	DIAPH.	E	11	S						15.	000	2	2.000	12.000								4 5	4 3	182
16	4	H62	DIAPH.	E	28	S						15.	000	4	1.000	14.000								6 6	6 2	148
16	4	H63	DIAPH.	E	11	S						15.	000	4	1.000	14.000								6 6	6 2	148
8	5	H60	DIAPH.	E	20					4	1.000													4 1	4 1	34
			INT. BT. NO.5																							
12	5	H50	STRAND TIE BAR		20					4	6.000													4 6	4 6	56
16	4	H51	DIAPH.		20					7	3.000													7 3	7 3	77
16	4	H52	DIAPH.		20					6	7.000													6 7	6 7	158
20	5	H53	DIAPH.		19	S					10.000	2	8.000											3 6	3 5	71
8	5	H53	STRAND TIE BAR		20					3	3.000													3 3	3 3	27
48	4	H50	DIAPH.	E	28	S						20.	000	4	9.000	12.000								7 5	7 3	252
16	4	H51	DIAPH.	E	28	S						20.	000	4	9.000	14.000								7 7	7 3	174
8	5	H50	DIAPH.	E	20					4	11.000													4 11	4 11	83
			INT. BT. NO.6																							
12	5	H22	STRAND TIE BAR		20					4	6.000													4 6	4 6	56
8	5	H23	STRAND TIE BAR		20					3	3.000													3 3	3 3	27
16	4	H60	DIAPH.		20					7	10.000													7 10	7 10	99
16	4	H61	DIAPH.		20					7	9.000													7 9	7 9	168
20	5	H62	DIAPH.		19	S					10.000	2	8.000											3 6	3 5	71
48	4	H60	DIAPH.	E	28	S						20.	000	4	8.000	12.000								7 4	7 2	230
16	4	H61	DIAPH.	E	28	S						20.	000	4	8.000	14.000								7 6	7 2	172
8	5	H50	DIAPH.	E	20					4	11.000													4 11	4 11	83

STATE	PROJ NO	SHEET NO
MO		174

SHAPE 6 · SHAPE 7 · SHAPE 8 · SHAPE 9

SHAPE 10 · SHAPE 11 · SHAPE 12 · SHAPE 13

SHAPE 14 · SHAPE 15

SHAPE 16 · SHAPE 17 · SHAPE 18 · SHAPE 19 · SHAPE 20

SHAPE 21 · SHAPE 22 · SHAPE 23

SHAPE 24 · SHAPE 25 · SHAPE 26

SHAPE 27 · SHAPE 28 · SHAPE 29

SHAPE 30 · SHAPE 31 · SHAPE 32

SHAPE 33

BENDING DIAGRAMS

6d FOR #3 THRU #5 · 12d FOR #6 OR 2½" MIN. · 9 BEAM · DETAILING DIMENSION · HOOK A OR G · 90°

6d OR 2½" MIN. · 9 BEAM · DETAILING DIMENSION · HOOK A OR G · 135°

DETAILED April 1989

CHECKED April 1989

REVISED	JUNE 1998
STD. 90.8	MAY 1974

STIRRUP HOOK DIMENSIONS

BAR SIZE	D (IN.)	GRADES 40-50-60 KSI: 90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#3	1½"	4"	4"	2½"
#4	2"	4½"	4½"	3"
#5	2½"	6"	5½"	3¾"
#6	4½"	12"	7¾"	4½"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

Note: This drawing is not to scale. Follow dimensions.

DETAILING DIMENSION · HOOK A OR G · 4d OR 2½" MIN. · 180°

SIZE OF 180° HOOKS (GRADE 40 KSI:
D 5d FOR #3 THRU #11
D 10d FOR #14 AND #18

DETAILING DIMENSION · 90° · A OR G · 12d

SIZE of 90° HOOKS (ALL GRADES) AND 180° HOOKS (GRADE 60 KSI:
D 6d FOR #3 THRU #6
D 8d FOR #9, #10 AND #11
D 10d FOR #14 AND #18

END HOOK DIMENSIONS

BAR SIZE	D (IN.)	180° HOOKS ALL GRADES A OR G	180° HOOKS ALL GRADES J	90° HOOKS ALL GRADES A OR G
#3	2¼"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3¾"	7"	5"	10"
#6	4½"	8"	6"	12"
#7	5¼"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9½"	15"	11¾"	19"
#10	10¾""	17"	13¼"	22"
#11	12"	19"	14¾"	2'-0"
#14	18¼"	2'-3"	21¼"	2'-7"

NOTES:

ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E - EPOXY COATED REINFORCEMENT.
S - STIRRUP
X - BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V - BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. - NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS - ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS - ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.

JACKSON COUNTY

A-2745

FOR INFORMATION ONLY

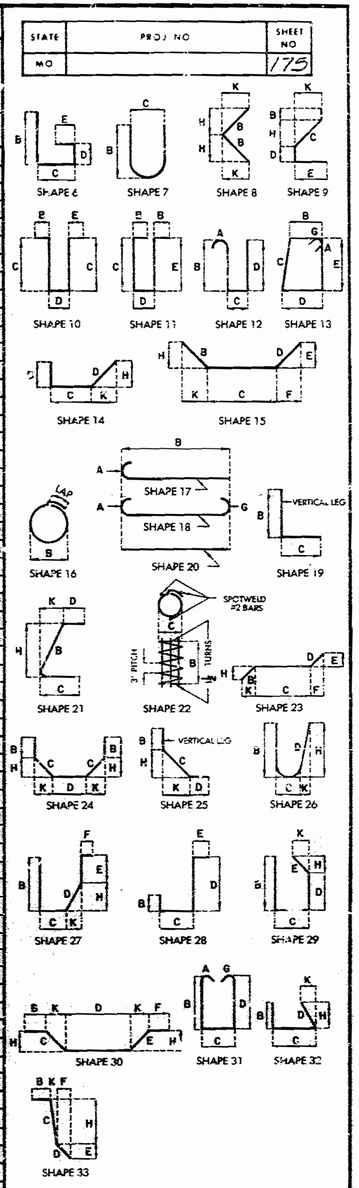
A27452, Sht. 183

COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO. SIZE	MARK NO. MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
			INT. BT. NO.7																									
12	5H22		STRAND TIE BAR		20					4	6.000													4	6	4	6	56
8	5H23		STRAND TIE BAR		20					3	3.000													3	3	3	3	27
16	4H68		DIAPH.		20					7	10.000													7	10	7	10	84
16	6H61		DIAPH.		20					7	0.000													7	0	7	0	168
20	5H62		DIAPH.		19	S				10.000		2	8.000											3	6	3	5	71
48	4U60		DIAPH.	E	28	S						20.000		4	8.000	12.000								7	4	7	2	230
16	6U61		DIAPH.	E	28	S						20.000		4	8.000	14.000								7	6	7	2	172
8	5V60			E	20					4	11.000													4	11	4	11	41
			INT. BT. NO.8																									
12	5H22		STRAND TIE BAR		20					4	6.000													4	6	4	6	56
8	5H23		STRAND TIE BAR		20					3	3.000													3	3	3	3	27
16	4H68		DIAPH.		20					7	10.000													7	10	7	10	84
16	6H61		DIAPH.		20					7	0.000													7	0	7	0	168
20	5H62		DIAPH.		19	S				10.000		2	8.000											3	6	3	5	71
48	4U60		DIAPH.	E	28	S						20.000		4	8.000	12.000								7	4	7	2	230
16	6U61		DIAPH.	E	28	S						20.000		4	8.000	14.000								7	6	7	2	172
8	5V60			E	20					4	11.000													4	11	4	11	41
			INT. BT. NO.9																									
16	6H96		DIAPH.		20					7	0.000													7	0	7	0	168
16	4H91		DIAPH.		20					7	2.000													7	2	7	2	77
24	9H92		DIAPH.		20					7	10.000													7	10	7	10	639
2	1H93		DIAPH.		20					40	0.000													40	0	40	0	81
8	5H93		DIAPH.		21	S				22.000		2	10.000					20.625		7.500				4	8	4	6	38
8	5H96		DIAPH.		21	S				14.500		2	10.000					13.625		5.000				4	1	4	0	33
64	4U90		DIAPH.	E	28	S						15.000		2	2.000	12.000								4	5	4	3	182
64	4U91		DIAPH.	E	11	S						15.000		2	2.000	12.000								4	5	4	3	182
16	6U92		DIAPH.	E	28	S						15.000		4	1.000	14.000								6	6	6	2	168
16	6U93		DIAPH.	E	11	S						15.000		4	1.000	14.000								6	6	6	2	168
8	5V90		DIAPH.	E	20					4	1.000													4	1	4	1	34
			INT. BT. NO.10																									
12	5H22		STRAND TIE BAR		20					4	6.000													4	6	4	6	56
8	5H23		STRAND TIE BAR		20					3	3.000													3	3	3	3	27
16	4H68		DIAPH.		20					7	10.000													7	10	7	10	84
16	6H61		DIAPH.		20					7	0.000													7	0	7	0	168
20	5H62		DIAPH.		19	S				10.000		2	8.000											3	6	3	5	71
48	4U60		DIAPH.	E	28	S						20.000		4	8.000	12.000								7	4	7	2	230
16	6U61		DIAPH.	E	28	S						20.000		4	8.000	14.000								7	6	7	2	172
8	5V60			E	20					4	11.000													4	11	4	11	41

COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO. SIZE	MARK NO. MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
			INT. BT. NO. 11																									
12	5H110		STRAND TIE BAR		23	S				15.000		2	0.000	15.000		10.000		11.250		10.000		11.250		4	4	4	5	55
16	4H111		DIAPH.		20					9	9.000													9	9	9	9	104
16	6H112		DIAPH.		20					8	10.000													8	10	8	10	212
8	5H113		STRAND TIE BAR		23	S				15.000		2	0.000							10.000		11.250		3	3	3	3	27
20	5H12?		DIAPH.		19	S				10.000		2	8.000											3	6	3	5	71
48	4U110		DIAPH.	E	28	S						2	6.000	4	8.000	12.000								8	2	8	0	257
16	6U111		DIAPH.	E	28	S						2	6.000	4	8.000	14.000								8	4	8	0	192
8	5V110		DIAPH.	E	20					4	11.000													4	11	4	11	41
			INT. BT. NO. 12																									
12	5H120		STRAND TIE BAR		23	S				15.000		2	0.000	15.000		10.125		11.000		10.125		11.000		4	6	4	5	55
16	4H121		DIAPH.		20					10	0.000													10	0	10	0	107
16	6H122		DIAPH.		20					9	0.000													9	0	9	0	216
8	5H123		STRAND TIE BAR		23	S				15.000		2	0.000							10.125		11.000		3	3	3	3	27
20	5H126		DIAPH.		19	S				11.000		2	8.000											3	7	3	6	73
48	4U120		DIAPH.	E	28	S						2	6.000	4	8.000	12.000								8	2	8	0	257
16	6U121		DIAPH.	E	28	S						2	6.000	4	8.000	14.000								8	4	8	0	192
8	5V120		DIAPH.	E	20					4	11.000													4	11	4	11	41
			INT. BT. NO. 13																									
16	4H131		DIAPH.		20					9	4.000													9	4	9	4	224
16	6H132		DIAPH.		20					9	4.000													9	4	9	4	100
2	5H132		DIAPH.		20					52	9.000													52	9	52	9	110
8	5H133		DIAPH.		23	S				10	7.250	3	8.000							7.500		7.625		4	7	4	6	38
20	5H134		DIAPH.		20					10	3.000													10	3	10	3	836
8	5H135		DIAPH.		21	S				2	11.750	3	9.000							2	1.000	2	1.500	6	9	6	3	52
64	4U130		DIAPH.	E	28	S						2	1.000	2	2.000	12.000								5	3	5	1	217
64	6U131		DIAPH.	E	11	S						2	1.000	2	2.000	12.000								5	3	5	1	217
16	6U132		DIAPH.	E	28	S						2	1.000	4	1.000	14.000								7	4	7	0	168
16	6U133		DIAPH.	E	11	S						2	1.000	4	1.000	14.000								7	4	7	0	168
8	5V130		DIAPH.	E	20					4	1.000													4	1	4	1	34
			INT. BT. NO. 14																									
12	5H22		STRAND TIE BAR		20					4	6.000													4	6	4	6	56
8	5H23		STRAND TIE BAR		20					3	3.000													3	3	3	3	27
16	4H68		DIAPH.		20					8	3.000													8	3	8	3	88
16	6H141		DIAPH.		20					7	4.000													7	4	7	4	176
20	5H142		DIAPH.		19	S				10.000		2	8.000											3	6	3	5	71



BENDING DIAGRAMS

STATE	PROJ. NO.	SHEET NO.
MO		175

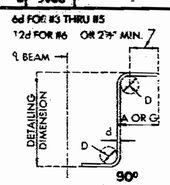
STIRRUP HOOK DIMENSIONS

GRADES 40-50-60 KSI

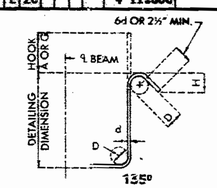
BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#3	1½"	4"	4"	2½"
#4	2"	4½"	4½"	3"
#5	2½"	6"	5½"	3¾"
#6	4½"	12"	7½"	4½"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

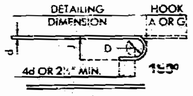
6d FOR #3 THRU #5
12d FOR #6 OR 2½" MIN.



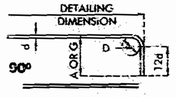
6d OR 2½" MIN.



DETAILED April 1989
CHECKED April 1989



SIZE OF 180° HOOKS (GRADE 40 KSI)
D - 5d FOR #3 THRU #11
D - 10d FOR #14 AND #18



SIZE of 90° HOOKS (ALL GRADES) AND 180° HOOKS (GRADE 60 KSI)
D - 6d FOR #3 THRU #8
D - 8d FOR #9, #10 AND #11
D - 10d FOR #14 AND #18

END HOOK DIMENSIONS

BAR SIZE	D (IN.)	180° HOOKS ALL GRADES A OR G	180° HOOKS ALL GRADES J	90° HOOKS ALL GRADES A OR G
#3	2½"	5"	3"	5"
#4	3"	6"	4"	6"
#5	3¾"	7"	5"	10"
#6	4½"	8"	6"	12"
#7	5¼"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9½"	15"	11¾"	19"
#10	10¾"	17"	13¼"	22"
#11	12"	19"	14¾"	2'-0"
#14	18¼"	2'-3"	21¾"	2'-7"

NOTES:

ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E - EPOXY COATED REINFORCEMENT.
S - STIRRUP
X - BARS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V - BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. - NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS - ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS - ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.

STD. 90.8 REVISED JUNE 1988
MAY 1974

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 95 of 98

JACKSON COUNTY

A-2745

FOR INFORMATION ONLY

A27452, Sht. 184

COMPLETE BILL OF REINFORCING STEEL

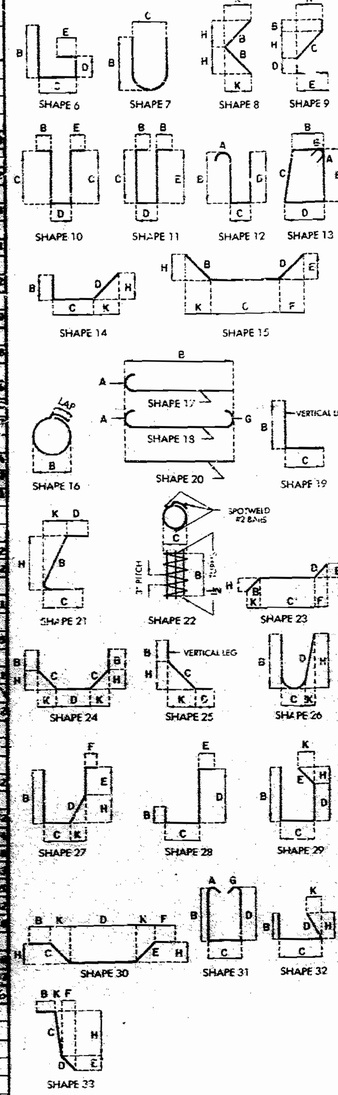
NO. REQD.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (V)	VARIES (V)	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
48	4	4U140	DIAPH.	E	28	S						2	0.000	4	8.000	12.000								7	8	7	6	240
16	4	4U141	DIAPH.	E	28	S						2	0.000	4	8.000	14.000								7	10	7	6	180
8	5	5V140	DIAPH.	E	20					4	11.000													4	11	4	11	41
			INT. ST. NO. 15																									
12	5	5H150	STRAND TIE BAR		20					4	6.000													4	6	4	6	54
16	4	4H151	DIAPH.		20					7	3.000													7	3	7	3	71
16	4	4H152	DIAPH.		20					6	7.000													6	7	6	7	156
20	5	5H153	DIAPH.		19	S					10.000	2	8.000											3	6	3	5	75
8	5	5H154	STRAND TIE BAR		20					3	3.000													3	3	3	3	27
48	4	4U150	DIAPH.	E	28	S						20	0.000	4	8.000	12.000								7	4	7	2	236
16	4	4U151	DIAPH.	E	28	S						20	0.000	4	8.000	14.000								7	6	7	2	172
8	5	5V150	DIAPH.	E	20					4	11.000													4	11	4	11	41
			INT. ST. NO. 16																									
12	5	5H150	STRAND TIE BAR		20					4	6.000													4	6	4	6	54
16	4	4H151	DIAPH.		20					7	3.000													7	3	7	3	71
16	4	4H152	DIAPH.		20					6	7.000													6	7	6	7	156
20	5	5H153	DIAPH.		19	S					10.000	2	8.000											3	6	3	5	75
8	5	5H154	STRAND TIE BAR		20					3	3.000													3	3	3	3	27
48	4	4U150	DIAPH.	E	28	S						20	0.000	4	8.000	12.000								7	4	7	2	236
16	4	4U151	DIAPH.	E	28	S						20	0.000	4	8.000	14.000								7	6	7	2	172
8	5	5V150	DIAPH.	E	20					4	11.000													4	11	4	11	41
			INT. ST. NO. 17																									
8	4	4U170	DIAPH.	E	28	S						15	0.000	4	8.000	10.000								6	6	6	2	78
8	4	4U171	DIAPH.	E	28	S						15	0.000	4	8.000	14.000								6	6	6	2	94
32	4	4U172	DIAPH.	E	28	S						15	0.000	2	2.000	12.000								4	5	4	3	318
32	4	4U173	DIAPH.	E	13	S						15	0.000	2	2.000	12.000								4	5	4	3	318
4	5	5V170	DIAPH.	E	20					4	1.000													4	1	4	1	32

COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (V)	VARIES (V)	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
			SLAB CIP UNIT 1																									
827	5	5S1	SLAB TOP & BOTT.	E	20					41	3.000													41	3	41	3	82869
305	5	5S2	SLAB TOP & BOTT.	E	20					40	0.000													40	0	40	0	31062
14	5	5S4	SLAB BOTT ST. 2	E	20		V	1	2	5.000														2	5	2	5	
			INCR = 34.500 IN							35	10.000													35	10	35	10	308
21	5	5S5	SLAB TOP ST.1	E	20		V	1	2	4.000														2	4	2	4	
			INCR = 23.000 IN							40	8.000													40	8	40	8	472
5	5	5S6	SLAB BOTT.ST.1	E	20		V	1	16	6.000														16	6	16	6	
			INCR = 2.125 IN							17	11.000													17	11	17	11	162
9	5	5S7	SLAB BOTT ST.1	E	20		V	1	18	5.000														18	5	18	5	
			INCR = 2.125 IN							19	10.000													19	10	19	10	180
9	5	5S8	SLAB BOTT ST.1	E	20		V	1	20	4.000														20	4	20	4	
			INCR = 2.125 IN							21	9.000													21	9	21	9	396
9	5	5S9	SLAB BOTT ST.1	E	20		V	1	22	4.000														22	4	22	4	
			INCR = 2.125 IN							23	9.000													23	9	23	9	214
3	5	5S10	SLAB BOTT.ST.1	E	20					16	1.000													16	1	16	1	50
3	5	5S11	SLAB BOTT.ST.1	E	20					24	7.000													24	7	24	7	77
35	5	5S12	SLAB TOP	E	20		V	1	12	8.000														12	8	17	8	
			INCR = 3.250 IN							26	11.000													26	11	24	11	384
64	5	5S13	SLAB TOP ST.2	E	20					20	4.000													20	4	20	4	1357
64	5	5S15	SLAB TOP ST.3	E	20					19	4.000													19	4	19	4	1291
			SLAB CIP UNIT 2																									
1	5	5S1	SLAB TOP & BOTT.	E	20					41	3.000													41	3	41	3	43262
688	5	5S2	SLAB TOP & BOTT.	E	20					40	0.000													40	0	40	0	23812
22	5	5S14	SLAB BOTT.	E	20		V	1	2	11.000														2	11	2	11	
			INCR = 28.625 IN							39	6.000													39	6	39	6	481
34	5	5S16	SLAB TOP	E	20		V	1	2	5.000														2	5	2	5	
			INCR = 1.250 IN							40	2.000													40	2	40	2	750
4	5	5S17	SLAB BOTT.	E	20		V	1	24	4.000														24	4	24	4	
			INCR = 2.000 IN							26	10.000													26	10	26	11	261
9	5	5S18	SLAB BOTT.	E	20		V	1	27	5.000														27	5	27	5	
			INCR = 2.625 IN							30	2.000													30	2	30	2	276
																								30	11	30	11	
																								33	4	33	6	382
																								34	2	34	2	
																								36	1	36	1	352
																								23	6	23	6	74
																								37	10	37	10	116
																								38	11	38	11	120
																								26	6	26	8	139
																								17	6	17	6	166
																								28	1	28	1	294
																								27	7	27	7	
																								43	5	43	5	1258
																								23	6	23	6	32
																								3	2	3	2	116

*Two (2) additional #4 - S100 are included in bar bill for testing.

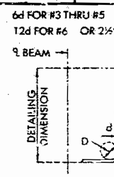
STATE	PROJ NO	SHEET NO
MO		176



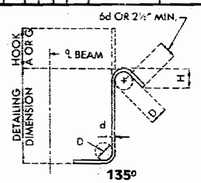
BENDING DIAGRAMS

REVISED	STD. 9.8
JUNE 1988	MAY 1974

6d FOR #3 THRU #5
12d FOR #6 OR 2½" MIN.



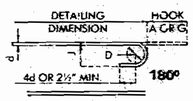
6d OR 2½" MIN.



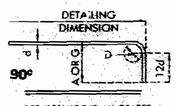
DETAILED April 1989
CHECKED April 1989

STIRRUP HOOK DIMENSIONS					
		GRADES 40-50-60 KSI			
BAR SIZE	D (IN.)	90° HOOK	135° HOOK		
		HOOK A OR G	HOOK A OR G	APPROX. H	
#3	1½"	4"	4"	2½"	
#4	2"	4½"	4½"	3"	
#5	2½"	6"	5½"	3¾"	
#6	4½"	12"	7¾"	4½"	

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.



SIZE OF 180° HOOKS (GRADE 40 KSI)
D 5d FOR #3 THRU #11
D 10d FOR #14 AND #18



SIZE of 90° HOOKS (ALL GRADES) AND 180° HOOKS (GRADE 60 KSI)
D 6d FOR #3 THRU #8
D 8d FOR #9, #10 AND #11
D 10d FOR #14 AND #18

BAR SIZE	D (IN.)	END HOOK DIMENSIONS 180° HOOKS ALL GRADES A OR G	180° HOOKS ALL GRADES J	90° HOOKS ALL GRADES A OR G
#3	2½"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3¾"	7"	5"	10"
#6	4½"	8"	6"	12"
#7	5¼"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9½"	15"	11¾"	19"
#10	10½"	17"	13¾"	22"
#11	12"	19"	14¾"	2'-0"
#14	18¼"	2'-3"	21¾"	2'-7"

ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS.

HOOKS AND ENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E - EPOXY COATED REINFORCEMENT.
S - STIRRUP
X - BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V - BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. - NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS - ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE (NEAREST INCH)
ACTUAL LENGTHS - ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.

JACKSON COUNTY

A-2745

Sheet No. 96 of 98

COMPLETE BILL OF REINFORCING STEEL

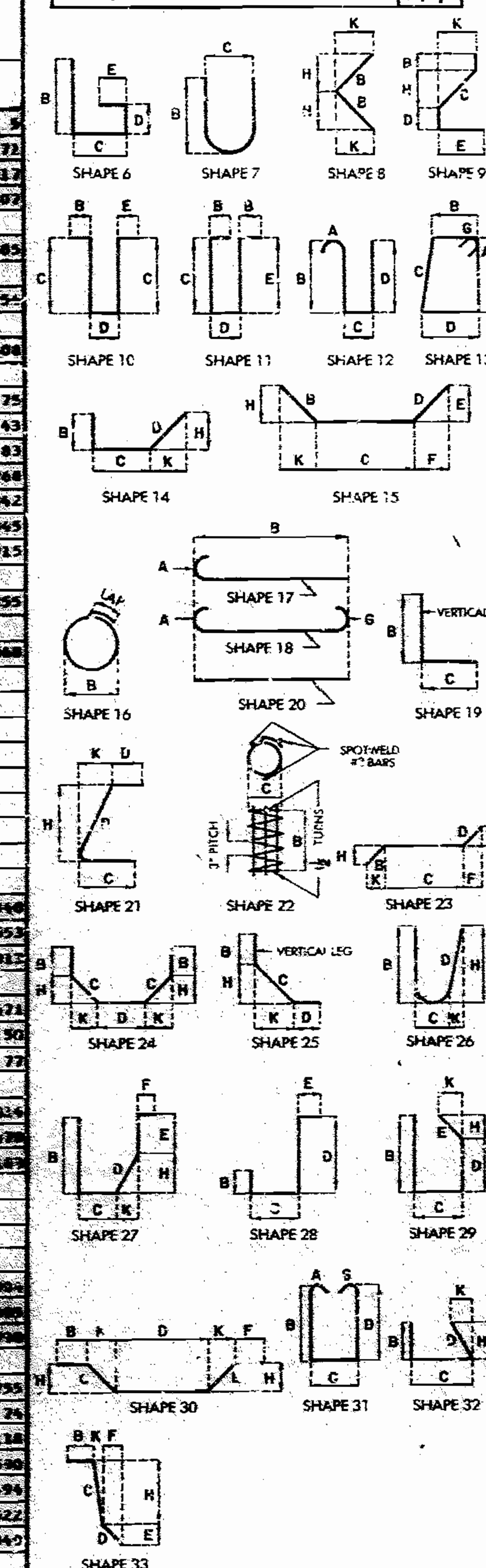
No. Reqd.	Mark No. (Size Mark)	Location	Epoxy	Shape No.	Stirrup	Substr.	Varies	No. Each	B (Ft. In.)	C (Ft. In.)	D (Ft. In.)	E (Ft. In.)	F (Ft. In.)	H (Ft. In.)	K (Ft. In.)	Nominal Length (Ft. In.)	Actual Length (Ft. In.)	Weight (Lbs.)
		SLAB CIP UNIT 3																
1204	5S1	SLAB-TOP & BOTT.	E	20					41 3.000							41 3	41 3	51801
616	5S2	SLAB-TOP & BOTT.	E	20					40 0.000							40 0	40 0	25706
9	5S37	SLAB-BOTT BT.-9	E	20			V	1	11 9.000							11 9	11 9	
		INCR = 5.375 IN							15 4.000							15 4	15 4	122
9	5S38	SLAB-BOTT.BT.-9	E	20			V	1	16 5.000							16 5	16 5	
		INCR = 5.375 IN							20 0.000							20 0	20 0	171
9	5S39	SLAB-BOTT.BT.-9	E	20			V	1	21 3.000							21 3	21 3	
		INCR = 5.625 IN							25 0.000							25 0	25 0	212
9	5S40	SLAB-BOTT BT.-9	E	20			V	1	26 3.000							26 3	26 3	
		INCR = 4.875 IN							29 6.000							29 6	29 6	262
35	5S41	SLAB-TOP BT.-9	E	20			V	1	13 1.000							13 1	13 1	
		INCR = 6.125 IN							36 0.000							36 0	36 0	896
64	6S62	SLAB-TOP BT.-10	E	20					22 6.000							22 6	22 6	2163
64	6S63	SLAB-TOP BT.-11	E	20					22 9.000							22 9	22 9	2187
64	7S64	SLAB-TOP BT.-12	E	20					44 9.000							44 9	44 9	585[illegible]
22	5S67	SLAB-BOTT BT.-9	E	20			V	1	3 9.000							3 9	3 9	
		INCR = 20.625 IN							39 10.000							39 10	39 10	500
32	5S68	SLAB-TOP BT.-9	E	20			V	1	3 9.000							3 9	3 9	
		INCR = 13.750 IN							39 3.000							39 3	39 3	71[illegible]
3	5S35	SLAB BOTT BT.-9	E	20					10 8.000							10 [illegible]	10 [illegible]	33
3	5S36	SLAB BOTT BT.-9	E	20					32 2.000							32 2	32 2	101
2	4S[illegible]	SLAB BT.-9	E	20					22 9.000							22 9	22 9	3[illegible]
36	5S1[illegible]	SLAB BT.-9	E	19					6.000	2 6.000						3 2	3 1	116
		SLAB CIP UNIT 4																
1235	5S1	SLAB TOP & BOTT.	E	20					41 3.000							41 3	41 3	5313[illegible]
615	5S2	SLAB TOP & BOTT.	E	20					40 0.000							40 0	40 0	2570[illegible]
35	5S71	SLAB TOP BT.-13	E	20			V	1	5 10.000							5 10	5 10	
		INCR = 15.375 IN							50 10.000							50 10	50 10	1034
64	6S72	SLAB TOP BT.-14	E	20					44 6.000							44 6	44 6	[illegible]
44	6S73	SLAB TOP BT.-15	E	20					19 6.000							19 6	19 6	[illegible]
66	7S74	SLAB TOP BT.-16 *	E	20					42 9.000							42 9	42 9	[illegible]
3	5S75	SLAB BOTT.-BT.-13	E	20					3 7.000							3 7	3 7	1[illegible]
9	5S76	SLAB BOTT.-BT.-13	E	20			V	1	5 11.000							5 11	5 11	
		INCR = 11.000 IN							13 3.000							13 3	13 3	90
9	5S77	SLAB BOTT.-BT.-13	E	20			V	1	15 8.000							15 8	15 8	
		INCR = [illegible] IN							23 0.000							23 0	23 0	181
9	5S78	SLAB BOTT.-BT.-13	E	20			V	1	25 6.000							25 6	25 6	
		INCR = 11.125 IN							32 9.000							32 9	32 9	27[illegible]
9	5S79	SLAB BOTT.-BT.-13	E	20			V	1	35 2.000							35 2	35 2	
		INCR = 11.000 IN							42 6.000							42 6	42 6	36[illegible]
3	5S80	SLAB BOTT.-BT.-13	E	20					45 9.000							45 9	45 9	14[illegible]
61	5S93	SLAB BOTT.-BT.-13	E	20			V	1	40 11.000							40 11	40 11	
		INCR = 7.500 IN							3 2.000							3 2	3 2	1402
91	5S94	SLAB TOP BT.-13	E	2[illegible]			V	2	40 11.000							40 11	40 11	
		INCR = 5.000 IN							3 2.000							3 2	3 2	209[illegible]
36	5S1[illegible]	SLAB BT.-13	E	1[illegible]					1.000	2 6.000						3 2	3 1	116
2	4S1[illegible]	SLAB BT.-13	E	20					29 0.000							29 0	29 0	39
		SLAB CIP & SIP UNIT 5																
1220	5S1	SLAB TOP & BOTT.	E	20					41 3.000							41 3	41 3	52489
5[illegible]4	5S2	SLAB TOP & BOTT.	E	20					40 0.000							40 0	40 0	23967
66	5S110	SLAB TOP	E	2[illegible]			V	2	5 0.000							5 0	5 0	
		INCR = 10.500 IN							34 0.000							34 0	34 0	1342

COMPLETE BILL OF REINFORCING STEEL

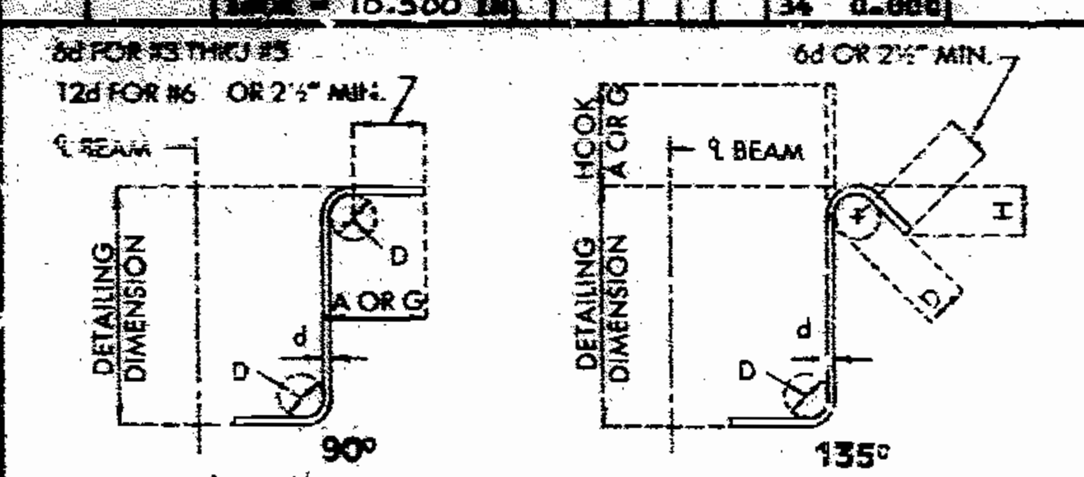
No. Reqd.	Mark No. (Size Mark)	Location	Epoxy	Shape No.	Stirrup	Substr.	Varies	No. Each	B (Ft. In.)	C (Ft. In.)	D (Ft. In.)	E (Ft. In.)	F (Ft. In.)	H (Ft. In.)	K (Ft. In.)	Nominal Length (Ft. In.)	Actual Length (Ft. In.)	Weight (Lbs.)
1	5S111	SLAB TOP	E	20					5 0.000							5 0	5 0	5
2	5S112	SLAB TOP	E	20					33 10.000							33 10	33 10	71
6	5S113	SLAB BOTT.	E	20					34 9.000							34 9	34 9	217
3	5S114	SLAB BOTT.	E	20					34 3.000							34 3	34 3	107
27	5S115	SLAB BOTT.	E	20			V	3	33 2.000							33 2	33 2	
		INCR = 5.250 IN							29 8.000							29 8	29 8	885
27	5S116	SLAB BOTT.	E	20			V	3	28 6.000							28 6	28 6	
		INCR = 5.125 IN							25 1.000							25 1	25 1	754
18	5S117	SLAB BOTT.	E	20			V	2	35 0.000							35 0	35 0	
		INCR = 7.875 IN							29 9.000							29 9	29 9	608
18	5S118	SLAB BOTT.	E	20			V	2	28 1.000							28 1	28 1	
		INCR = 8.375 IN							22 6.000							22 6	22 6	475
1	5S119	SLAB BOTT.	E	20					41 0.000							41 0	41 0	43
2	5S120	SLAB BOTT.	E	20					40 0.000							40 0	40 0	83
128	6S121	SLAB TOP BT.-18	E	20					30 0.000							30 0	30 0	5768
64	6S122	SLAB TOP BT.-18	E	20					19 2.000							19 2	19 2	1842
64	6S123	SLAB TOP BT.-19	E	20					40 0.000							40 0	40 0	3845
64	6S124	SLAB TOP BT.-19	E	[illegible]					19 11.000							19 11	19 11	1915
106	5S125	SLAB BOTT	E	20			V	1	20.000							20	20	
		INCR = 4.500 IN							39 11.000							39 11	39 11	2255
155	5S126	SLAB TOP	E	20			V	1	21.000							21	21	
		INCR = 3.000 IN							39 11.000							39 11	39 11	3368
		SLAB P/C UNIT 1																
[illegible]	5S1	SLAB-TOP	E	20					41 3.000							41 3	41 3	21340
[illegible]	5S2	SLAB-TOP & BOTT.	E	20					40 0.000							40 0	40 0	[illegible]
423	4S3	SLAB-BOTT.	E	20					3 7.000							3 7	3 7	[illegible]
21	5S5	SLAB-TOP	E	20			V	1	2 4.000							2 4	2 4	
		INCR = 23.000 IN							40 8.000							40 8	40 8	471
3	5S10	SLAB-BOTT.	E	20					16 1.000							16 1	16 1	50
3	5S11	SLAB-BOTT.	E	20					24 6.000							24 6	24 6	77
35	5S12	SLAB-TOP	E	20			V	1	17 8.000							17 8	17 8	
		INCR = 3.250 IN							26 11.000							26 11	26 11	324
64	4S14	SLAB-TOP BT.-2	E	20					46 6.000							46 6	46 6	[illegible]
64	6S14	SLAB-TOP BT.-3	E	20					53 11.000							53 11	53 11	[illegible]
		SLAB P/C UNIT 2																
381	5S1	SLAB - TOP	E	20					41 3.000							41 3	41 3	[illegible]
[illegible]	5S2	SLAB-TOP & BOTT.	E	20					40 0.000							40 0	40 0	[illegible]
[illegible]	4S3	SLAB - BOTT.	E	20					3 7.000							3 7	3 7	[illegible]
36	5S19	SLAB - TOP	E	20			V	1	2 5.000							2 5	2 5	
		INCR = 13.250 IN							40 2.000							40 2	40 2	755
3	5S24	SLAB - BOTT.	E	20					23 8.000							23 8	23 8	74
3	5S25	SLAB - BOTT.	E	20					37 10.000							37 10	37 10	118
64	6S27	SLAB-TOP-BT.-5	E	20					47 [illegible]							47 [illegible]	47 [illegible]	4590
64	6S29	SLAB-TOP-BT.-6	E	20					46 9.000							46 9	46 9	4494
64	7S32	SLAB-TOP-BT.-7	E	20					57 6.000							57 6	57 6	2522
64	7S33	SLAB-TOP-BT.-8	E	20					60 0.000							60 0	60 0	[illegible]
35	5S35	SLAB-TOP	E	20			V	1	27 2.000							27 2	27 2	
		INCR = 5.125 IN							41 9.000							41 9	41 9	1258
4	4S100	SLAB BT.-4 *	E	20					21 6.000							21 6	21 6	57
36	5S101	SLAB BT.-9	E	19					6.000	2 6.000						3 2	3 1	116

* Two (2) additional #4-S100 & #7-S74 are included in bar bill for testing.

STATE	PROJ. NO.	SHEET NO.
MO		177



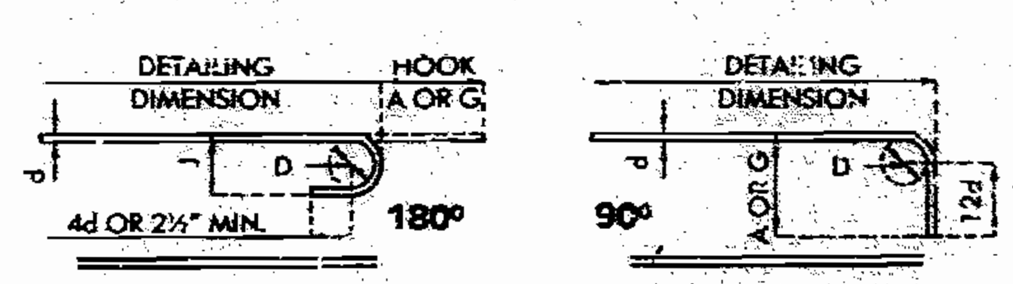
BENDING DIAGRAMS



STIRRUP HOOK DIMENSIONS				
GRADES 40-50-60 KSI				
BAR SIZE	D (IN.)	90° HOOK: HOOK A OR G	135° HOOK: HOOK A OR G	135° HOOK: APPROX. H
#3	1½"	4"	4"	2½"
#4	2"	4½"	4½"	3"
#5	2½"	6"	5½"	3¾"
#6	4½"	12"	7¾"	4½"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

Note: This drawing is not to scale. Follow dimensions.



SIZE OF 180° HOOKS (GRADE 40 KSI)
D - 5d FOR #3 THRU #11
D - 10d FOR #14 AND #18

SIZE of 90° HOOKS (ALL GRADES) AND 180° HOOKS (GRADE 60 KSI)
D = 6d FOR #3 THRU #8
D = 8d FOR #9, #10 AND #11
D = 10d FOR #14 AND #18

END HOOK DIMENSIONS				
BAR SIZE	D (IN.)	180° HOOKS ALL GRADES: A OR G	180° HOOKS ALL GRADES	90° HOOKS ALL GRADES: A OR G
#3	2¼"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3¾"	7"	5"	10"
#6	4½"	8"	6"	12"
#7	5¼"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9½"	15"	11¾"	19"
#10	10¾"	17"	13¾"	22"
#11	12"	19"	14¾"	2'-0"
#14	18¼"	2'-3"	21¾"	2'-7"

NOTES:

ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E - EPOXY COATED REINFORCEMENT.
S - STIRRUP
X - BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V - BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. - NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS - ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS - ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.

STD. 90.8 MAY 1974 — REVISED JUNE 1988

DETAILED April 1989
CHECKED April 1989

Sheet No. 97 of 98

JACKSON COUNTY

A-2745

FOR INFORMATION ONLY

A27452, Sht. 186

COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
			SLAB P/C UNIT 3																									
722	951		SLAB-TOP & BOTT.	E	20				41	3	.000															41	3	42	3	31063
175	952		SLAB-TOP & BOTT.	E	20				40	0	.000															40	0	40	0	7301
651	953		SLAB-BOTTOM	E	20				3	7	.000															3	7	3	7	2439
35	5953		SLAB-TOP BT.9	E	20			V	2	3	1	.000														3	1	3	1	
			INCR = 7.625 IN							24	8	.000														24	8	24	8	507
70	7554		SLAB-TOP BT.12	E	20					36	7	.000														36	7	36	7	5234
70	5555		SLAB-TOP BT.13	E	20			V	2	30	11	.000														30	11	30	11	
			INCR = 0.125 IN							31	2	.000														31	2	31	2	2264
64	7556		SLAB TOP BT.10	E	20					59	8	.000														59	8	59	8	7805
64	7558		SLAB TOP BT.11	E	20					52	9	.000														52	9	52	9	6901
64	7559		SLAB TOP BT.12	E	20					40	0	.000														40	0	40	0	5233
64	7560		SLAB TOP BT.12	E	20					30	5	.000														30	5	30	5	179
32	5561		SLAB TOP BT.9	E	20			V	1	39	3	.000														39	3	39	3	
			INCR = 13.750 IN							3	9	.000														3	9	3	9	718
91	5562		SLAB TOP BT.13	E	20			V	1	2	1	.000														2	1	2	1	
			INCR = 5.000 IN							40	0	.000														40	0	40	0	4997
27	5563		SLAB-BOTTOM	E	20					36	10	.000														36	10	36	10	1037
27	5564		SLAB-BOTTOM	E	20					39	6	.000														39	6	39	6	1112
56	5566		SLAB BT.19	E	19							6.000	2	8.000												3	2	3	1	116
2	45102		SLAB BT.19	E	20					22	9	.000														22	9	22	9	88
			SLAB P/C UNIT 4																									
742	551		SLAB TOP	E	20					41	3	.000														41	3	41	3	3886
148	552		SLAB TOP	E	20					40	0	.000														40	0	40	0	5041
657	553		SLAB BOTTOM	E	20					3	7	.000														3	7	3	7	2439
70	5581		SLAB TOP BT.16	E	20					35	6	.000														35	6	35	6	3732
70	5582		SLAB TOP BT.13	E	20			V	2	20	4	.000														20	4	20	4	
			INCR = 7.500 IN							41	8	.000														41	8	41	8	2263
70	5583		SLAB TOP BT.17	E	20					28	11	.000														28	11	28	11	2113
64	7584		SLAB TOP BT.14	E	20					48	0	.000														48	0	48	0	5230
64	7585		SLAB TOP BT.15	E	20					30	3	.000														30	3	30	3	3292
64	7586		SLAB TOP BT.15	E	20					40	0	.000														40	0	40	0	5230
64	7587		SLAB TOP	E	20					25	6	.000														25	6	25	6	3420
64	7588		SLAB TOP BT.16	E	20					40	0	.000														40	0	40	0	5230
64	7589		SLAB TOP BT.16	E	20					23	3	.000														23	3	23	3	3066
27	7590		SLAB-BOTTOM	E	27					35	11	.000														35	11	35	11	1011
30	5591		SLAB-BOTTOM	E	20					36	9	.000														36	9	36	9	1150
91	5592		SLAB TOP BT.13	E	20			V	1	3	2	.000														3	2	3	2	
			INCR = 5.125 IN							41	3	.000														41	3	41	3	2886
36	5593		SLAB BT.13	E	20							6.000	2	8.000												3	2	3	1	116
2	45103		SLAB BT.13	E	20					29	0	.000														29	0	29	0	393
			SAFETY BARRIER CURB																									
2367	581		CURB	E	19	S			2	5	.000		3.500												2	9	2	3	907
3947	582		CURB	E	19	S			2	5	.729		3.500												2	9	2	8	9309
3251	583		CURB	E	19	S				17	.000		6.938													23	22	6216
3251	584		CURB	E	27	S							4.000	11	.125	7	.000	12	.000	9	.125	6	.375	3	0	2	10	9607
38	585		CURB	E	19	S			2	0	.000		4.000												2	6	2	5	966
38	586		CURB	E	27	S							4.000	11	.125	15	.000			9	.125	6	.375	2	6	2	3	102

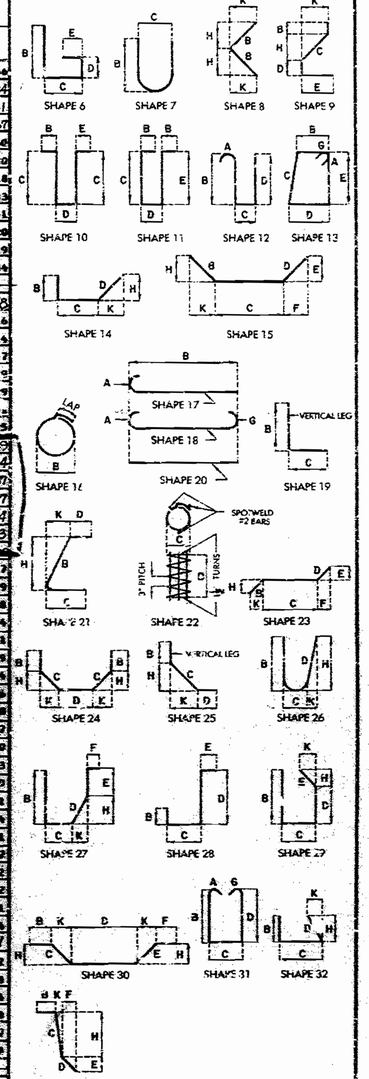
COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
8	587		CURB	E	10	S						2	0.000	6.000										4	6	4	4	34
42	589		CURB	E	19	S						18.000		6.000										2	0	2	0	84
42	5810		CURB	E	23	S						12.000		9.000		11.125		6.000				6.375		9.125	3	2	3	0	131
32	5815		CURB	E	20					5	0	.000														5	0	5	0	167
2	5816		CURB	E	20					19	3	.000														19	3	19	3	46
1	5817		CURB	E	20					19	1	.000														19	1	19	1	20
1	5818		CURB	E	20					17	5	.000														17	5	17	5	18
2	5819		CURB	E	20					15	11	.000														15	11	15	11	33
2	5820		CURB	E	20					19	7	.000														19	7	19	7	41
1	5821		CURB	E	20					19	4	.000														19	4	19	4	20
1	5822		CURB	E	20					17	9	.000														17	9	17	9	19
2	5823		CURB	E	20					16	3	.000														16	3	16	3	34
3	5825		CURB	E	20					15	2	.000														15	2	15	2	48
1	5826		CURB	E	20					14	11	.000														14	11	14	11	16
1	5827		CURB	E	20					13	4	.000														13	4	13	4	14
3	5828		CURB	E	20					27	8	.000														27	8	27	8	27
1	5829		CURB	E	20					27	6	.000														27	6	27	6	29
1	5830		CURB	E	20					27	10	.000														27	10	27	10	29
2	5831		CURB	E	20					24	3	.000														24	3	24	3	52
2	5832		CURB	E	20					11	9	.000														11	9	11	9	25
21	5833		CURB (Light Support)	E	31	S						14.500		22.500		14.500										5	1	5	1	69
14	5834		CURB (Light Support)	E	19	S						6.500	2	5.500		7.250										6	0	6	0	84
21	5835		CURB (Light Support)	E	18	S						6.000	2	5.500		14.000										6	7	6	3	137
12	5836		CURB (Light Support)	E	15	S						20.500		22.500		20.500		14.500		14.500		14.500		14.500		5	4	5	3	77
21	5837		CURB (Light Support)	E	19	S						20.500		22.500		20.500		14.500		14.500		14.500		14.500		5	4	5	3	74
14	5838		CURB (Light Support)	E	31	S						14.500		22.500		14.500										5	3	5	6	73
42	5839		CURB (Light Support)	E	20					3	2	.000														3	2	3	2	28
28	5840		CURB	E	20					9	9	.000														9	9	9	9	3227
12	5841		CURB	E	20					27	1	.000														27	1	27	1	339
22	5842		CURB	E	20					31	8	.000														31	8	31	8	2378
12	5843		CURB	E	20					29	11	.000														29	11	29	11	374
12	5844		CURB	E	20					28	1	.000														28	1	28	1	351
12	5845		CURB	E	20					26	3	.000														26	3	26	3	329
25	5846		CURB	E	20					36	6	.000														36	6	36	6	2114
24	5847		CURB	E	20					36	7	.000														36	7	36	7	4524
12	5848		CURB	E	20					28	9	.000														28	9	28	9	360
22	5849		CURB	E	20					35	9	.000														35	9	35	9	4417
12	5850		CURB	E	20					40	9	.000														40	9	40	9	520
12	5851		CURB	E	20					30	7	.000														30	7	30	7	383
12	5852		CURB	E	20					25	6	.000														25	6	25	6	319
12	5853		CURB	E	20					32	10	.000														32	10	32	10	411
12	5854		CURB	E	20					32	10	.000														32	10	32	10	414
25	5855		CURB	E	20					32	5	.000														32	5	32	5	811
18	5856		CURB	E	20					39	6	.000														39	6	39	6	342
18	5857		CURB	E	20					29	11	.000														29	11	29	11	562
12	5858		CURB	E	20					22	6	.000														22	6	22	6	342
12	5859		CURB	E	20					25	8	.000														25	8	25	8	321
12	5860		CURB	E	20					28	3	.000														28	3	28	3	396
6	5861		CURB	E	20					36	11	.000														36	11	36	11	237
6	5862		CURB	E	20					35	5	.000														35	5	35	5	222
12	5863		CURB	E	20					35	0	.000														35	0	35	0	438
12	5864		CURB	E	20					40	3	.000														40	3	40	3	504
12	5865		CURB	E	20					40	8	.000														40	8	40	8	509
12	5866		CURB	E	20					35	9	.000														35	9	35	9	442
12	5869		CURB	E	20					33	5	.000														33	5	33	5	438
12	5870		CURB	E	20					38	5	.000														38	5	38	5	481
18	5871		CURB	E	20					33	3	.000														33	3	33	3	624
10	5872		CURB	E	20					30	1	.000														30	1	30	1	565
18	5873		CURB	E	20					28	9	.000														28	9	28	9	540

VOID

* Two (2) additional #7-S87 & #5-R40 are included in bar bill for testing.

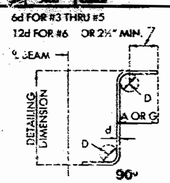
STATE	PROJ NO	SHEET NO
MO		179



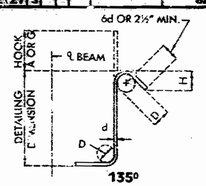
BENDING DIAGRAMS

REVISED JUNE 1988
STD. 90.8 MAY 1974

6d FOR #3 THRU #5
12d FOR #6 OR 2½" MIN.



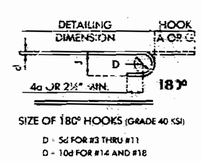
6d OR 2½" MIN.



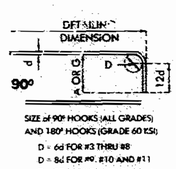
DETAILED April 1989
CHECKED April 1989

STIRRUP HOOK DIMENSIONS					
		GRADES 40-50-60 KSI			
		90° HOOK		135° HOOK	
BAR SIZE	D (IN.)	HOOK A OR G		HOOK A OR G	APPROX. H
#3	1½"	4"		4"	2½"
#4	2"	4½"		4½"	3"
#5	2½"	6"		5½"	3½"
#6	4½"	12"		7½"	4½"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.



SIZE OF 180° HOOKS (GRADE 40 KSI)
D = 5d FOR #3 THRU #11
D = 10d FOR #14 AND #18



SIZE of 90° HOOKS (ALL GRADES) AND 180° HOOKS (GRADE 60 KSI)
D = 6d FOR #3 THRU #8
D = 8d FOR #9, #10 AND #11
D = 10d FOR #14 AND #18

END HOOK DIMENSIONS					
		180° HOOKS		90° HOOKS	
		ALL GRADES		ALL GRADES	
BAR SIZE	D (IN.)	A OR G	J	A OR G	
#3	2½"	5"	3"	6"	
#4	[illegible]	6"	4"	8"	
#5	3¾"	7"	5"	10"	
#6	4 [illegible]	8"	6"	12"	
#7	5¼"	10"	7"	14"	
#8	6"	11"	8"	16"	
#9	9½"	15"	11¾"	19"	
#10	10¾"*	17"	13¾"	22"	
#11	12"	19"	14¾"	2[illegible]"	
#14	18¼"	2'-3"	21¾"	2'-[illegible]"	

Note: This drawing is not to scale. Follow dimensions.

NOTES:

ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E - EPOXY COATED REINFORCEMENT.
S - STIRRUP
X - BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V - BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. - NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS - ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS - ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.

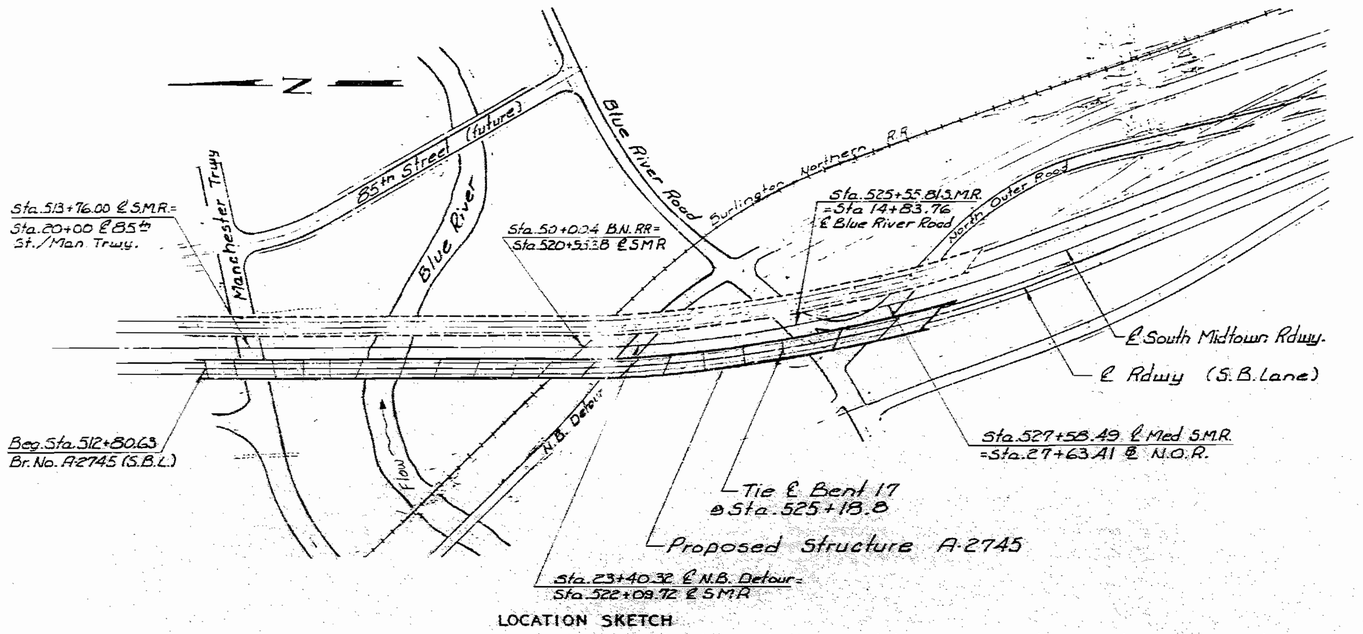
Sheet No. 98 of 98

JACKSON COUNTY A-2745

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ NO	SHEET NO
MO	4-U-71-2E	81
SEC / SUR 22	TWP 48	RGE 33

FINAL PLANS



LOCATION SKETCH

BRIDGE NO. A-2745
OVER
MANCHESTER TRAFFICWAY, BLUE RIVER,
BURLINGTON NORTHERN RR,
N.B. DETOUR, BLUE RIVER ROAD
& NORTH OUTER ROAD

SUPERSTRUCTURE CONTRACT

INDEX OF DRAWINGS

B.M.

STATE ROAD: "SOUTH MIDTOWN ROADWAY"
IN KANSAS CITY
PROJECT NO. STA. 512+80.63
JOB NO. 4-U-71-2E RTE. 71 S.B.L.

JACKSON COUNTY
DATE 8/18/89

STD. 706.35
STD.
A-2745

18.195

DESIGNED March 1988
DETAILED March 1989
CHECKED April 1989

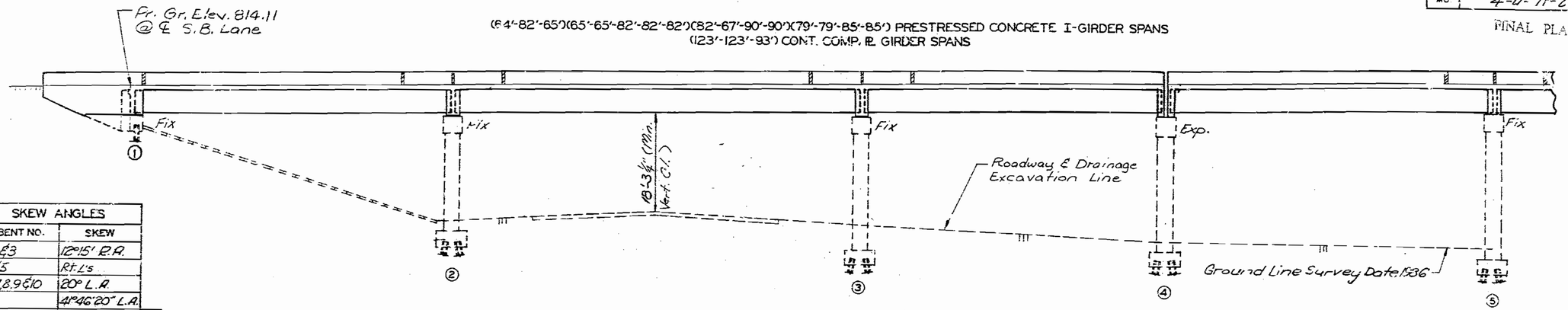
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 1A of 98

STATE	PROJ. NO	SHEET NO
MO	J-U-71-2E	82

FINAL PLANS

(64'-82'-65')(65'-65'-82'-82'-82')(82'-67'-90'-90')(79'-79'-85'-85') PRESTRESSED CONCRETE I-GIRDER SPANS
(123'-123'-93') CONT. COMP. R. GIRDER SPANS

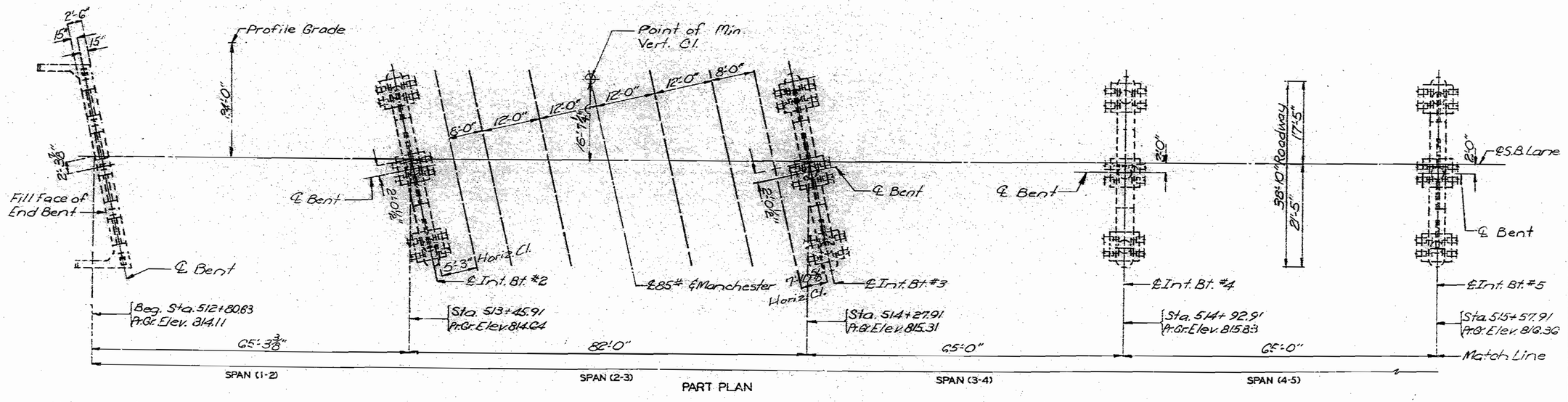


PART GENERAL ELEVATION

SKEW ANGLES	
BENT NO.	SKEW
1,2&3	12°15' R.A.
4&5	Rt. ∠'s
6,7,8,9&10	20° L.A.
11	41°46'20" L.A.
12	42°47'38" L.A.
13	41°34'00" L.A.
14	26°18'44" L.A.
15,16&17	Radial
18	38°09'1/ L.A.
19	57°25'06" L.A.
20	59°17'55" L.A.

To Radial Line

Note: Skew angles are measured at ℄ S.B.L.



PART PLAN

Note: Deadman Anchor not shown for clarity.

DETAILED Sept. 1988
CHECKED March 1989

Note: This drawing is not to scale. Follow dimensions.

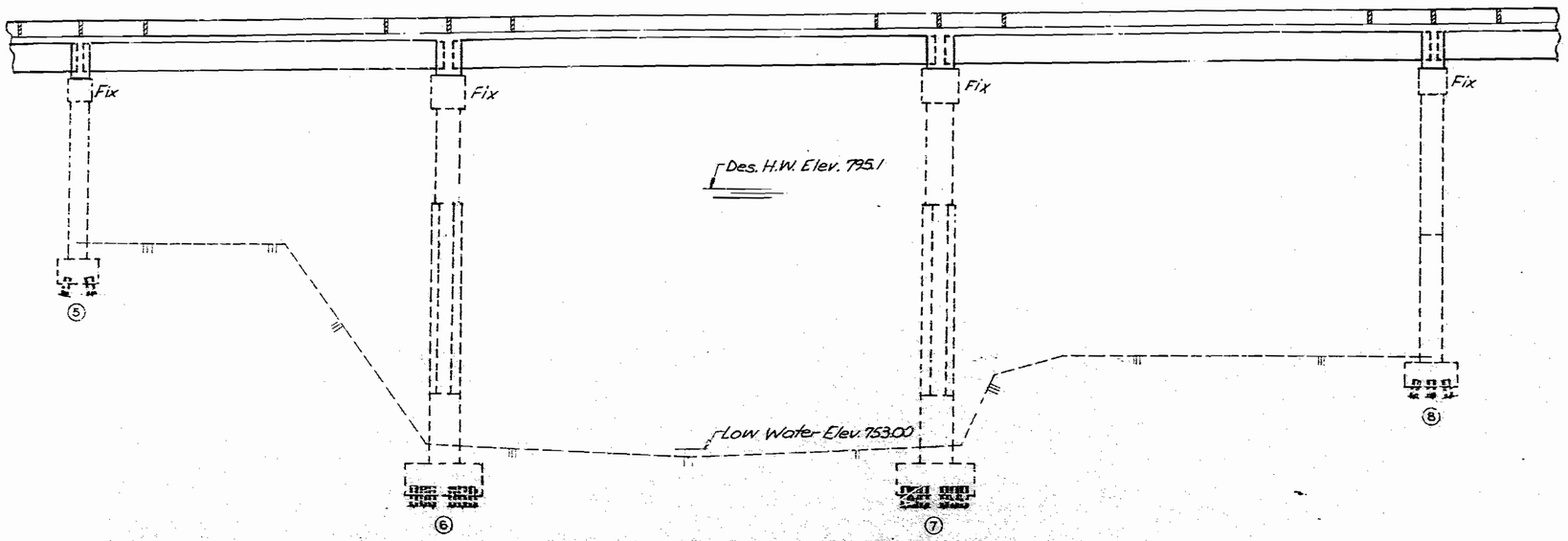
Sheet No. 2A of 98

JACKSON COUNTY

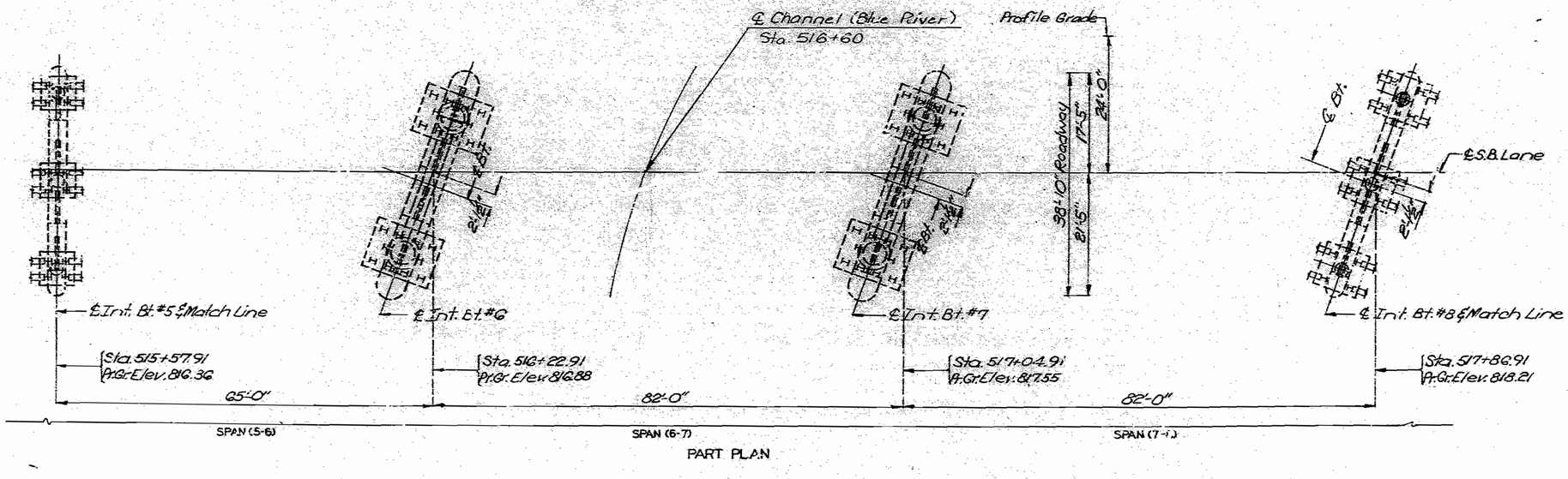
A-2745

STATE	PROJ. NO.	SHEET NO.
MO	A-U-71-2E	83

FINAL PLANS



PART GENERAL ELEVATION



PART PLAN

DETAILED Sept. 1988
CHECKED March 1989

Note: This drawing is not to scale. Follow dimensions.

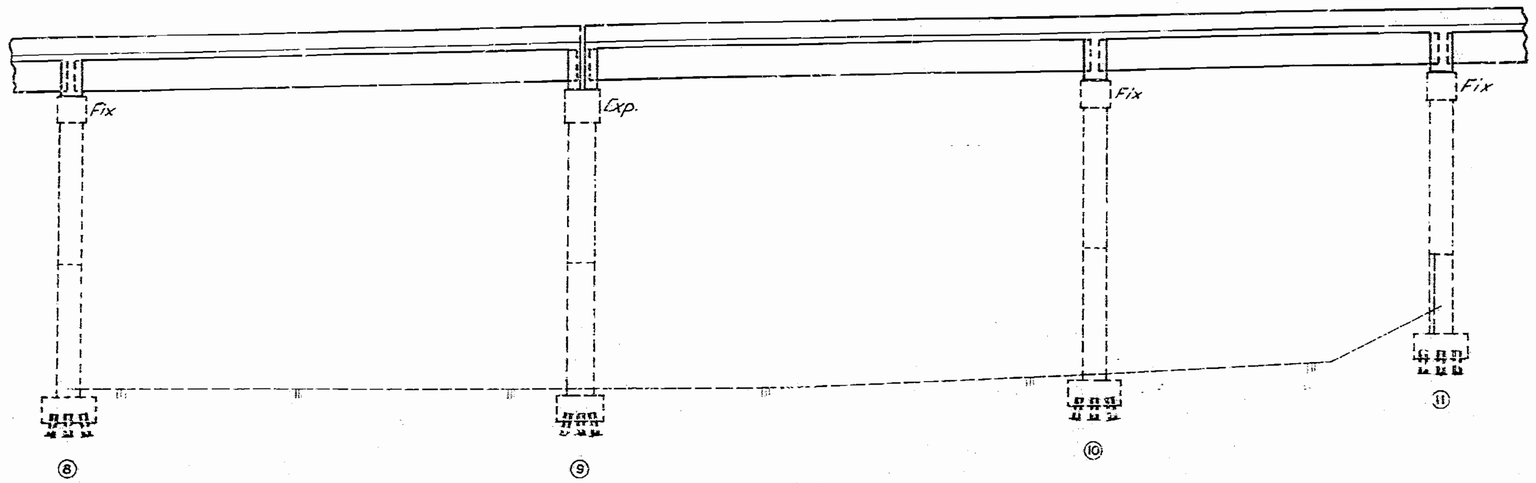
Sheet No. 34 of 98

JACKSON COUNTY

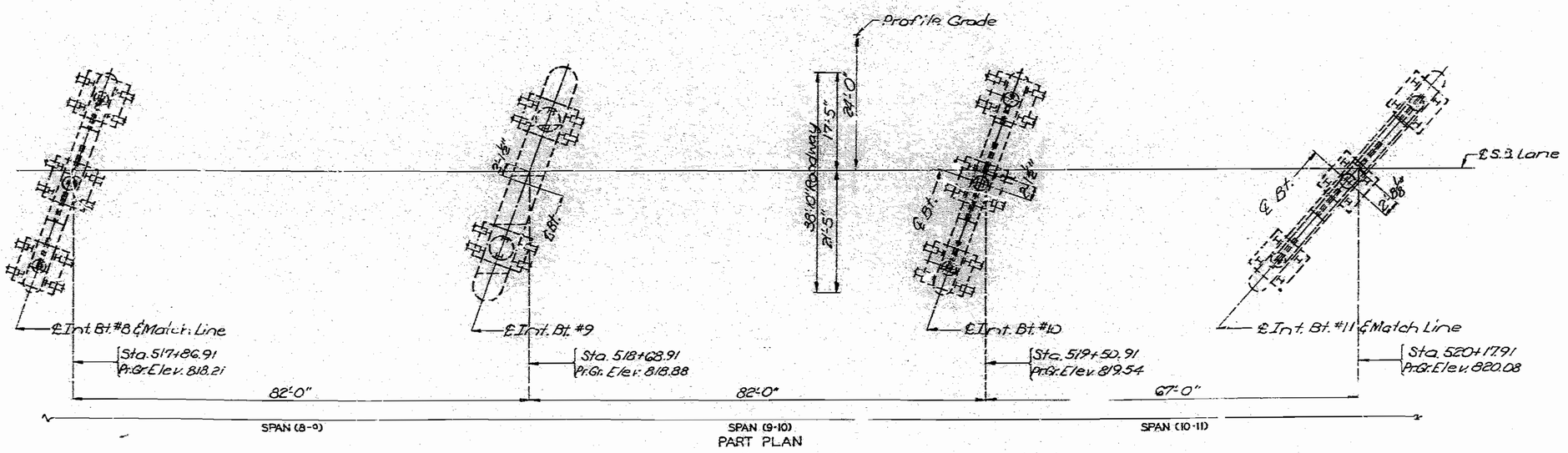
A-2745

STATE	PROJ NO.	SHEET NO.
MO.	4-11-71-2E	3A

FINAL PLANS



PART GENERAL ELEVATION



PART PLAN

98 198

DETAILED Sept. 1988
CHECKED March 1989

Note: This drawing is not to scale. Follow dimensions.

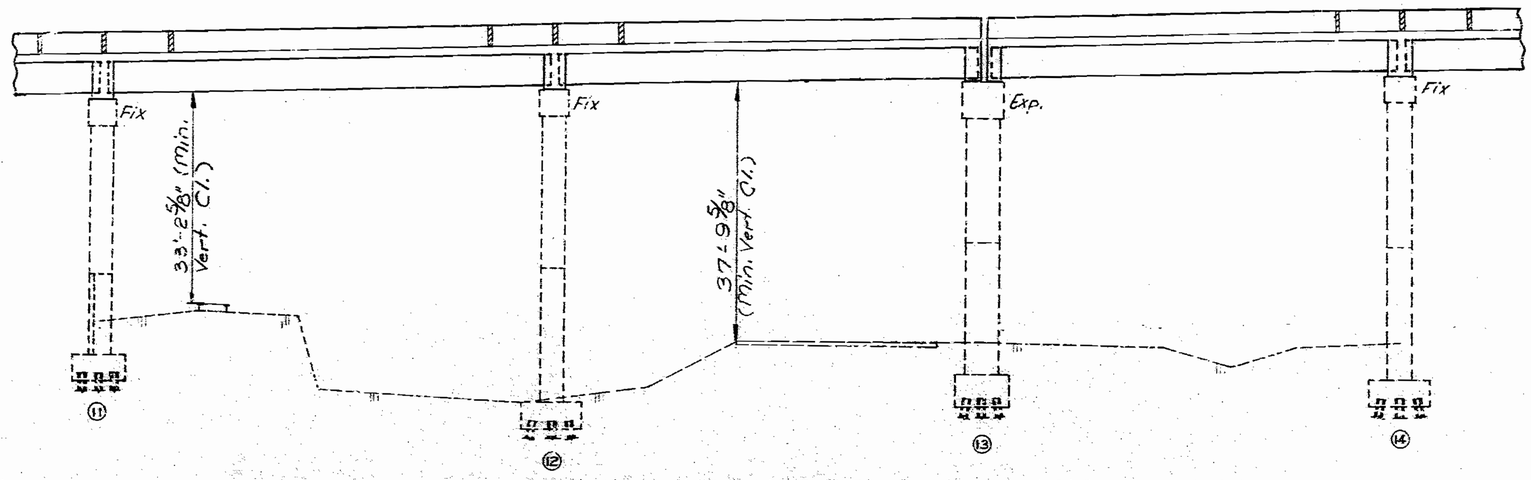
Sheet No. 4A of 98

JACKSON COUNTY

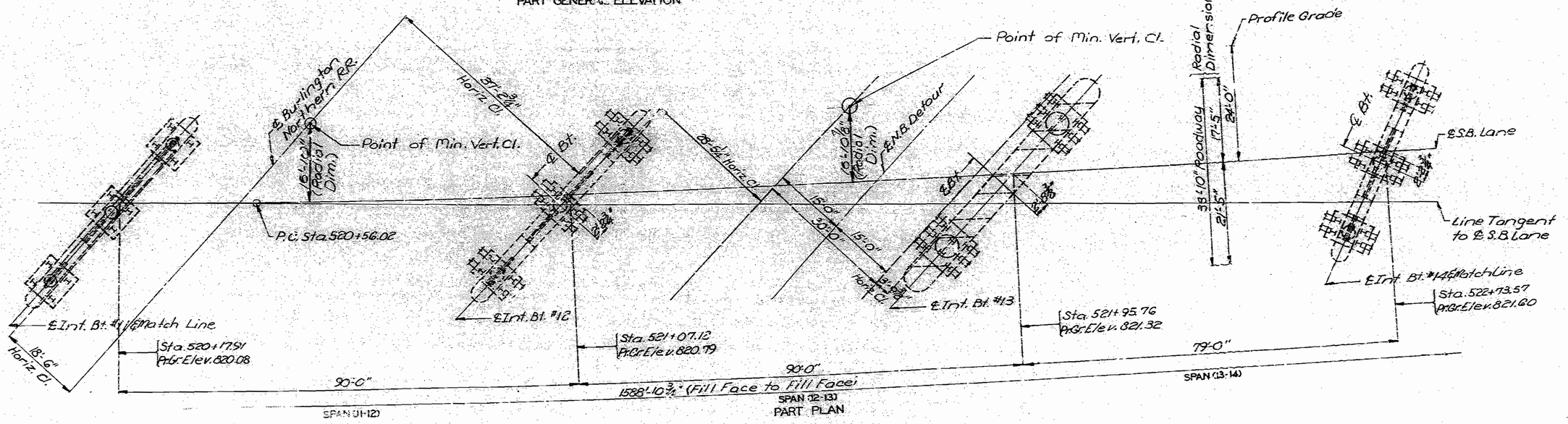
A-2745

STATE	PROJ. NO.	SHEET NO.
ORE.	4-11-71-2E	85

FINAL PLANS



PART GENERAL ELEVATION



PART PLAN

DETAILED Sept. 1988
CHECKED March 1989

Note: This drawing is not to scale. Follow dimensions.

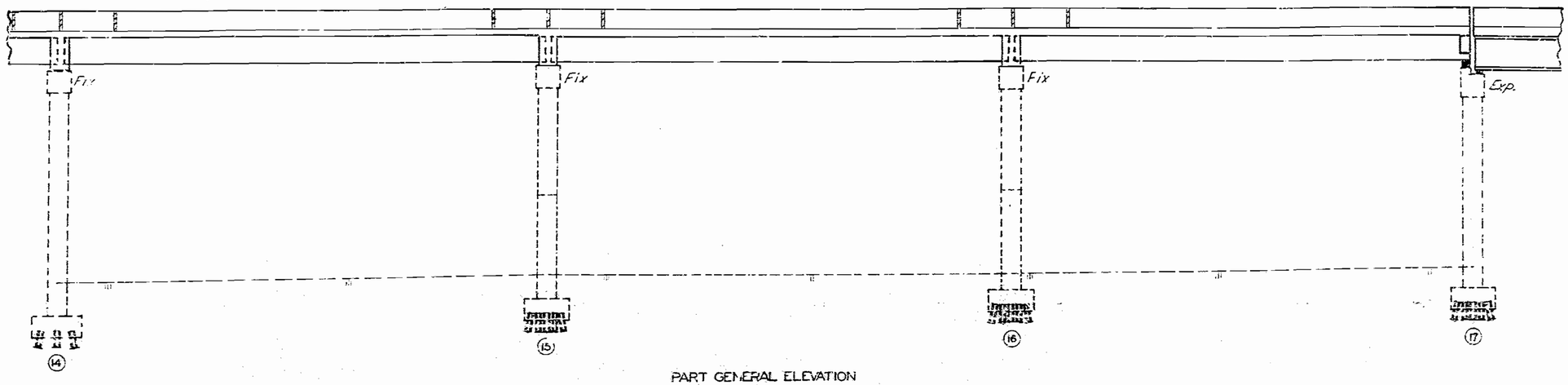
Sheet No. 5A of 98

JACKSON COUNTY

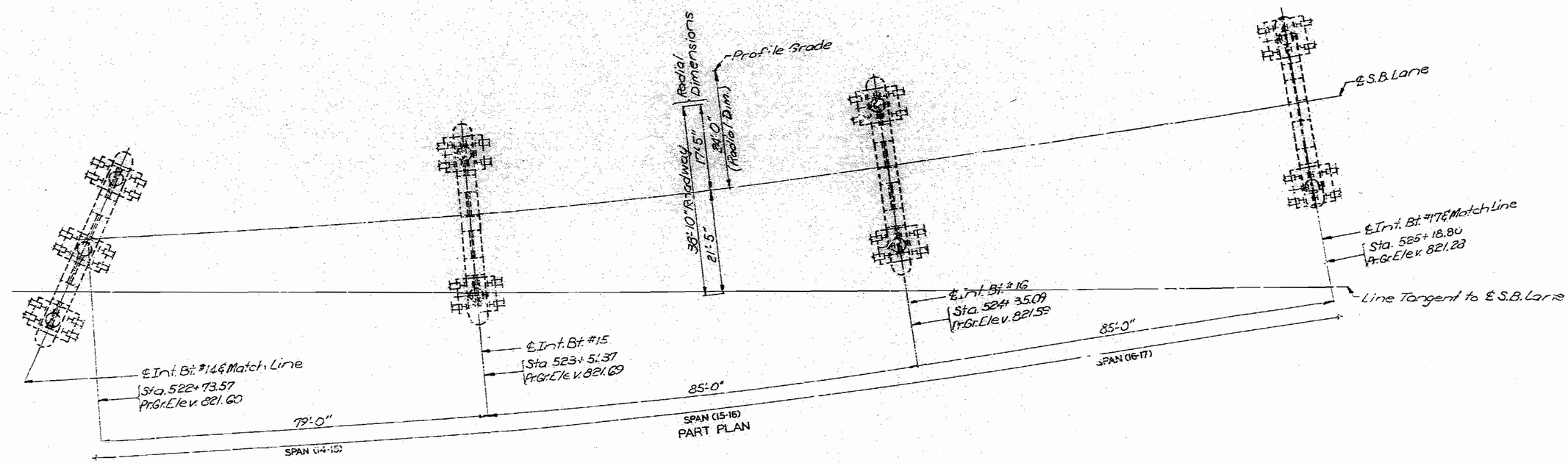
A-2745

STATE	PROJ. NO.	SHEET NO.
MO	4-U-71-2E	26

FINAL PLANS



PART GENERAL ELEVATION



PART PLAN

DETAILED Oct. 1988
CHECKED March 1989

Note: This drawing is not to scale. Follow dimensions.

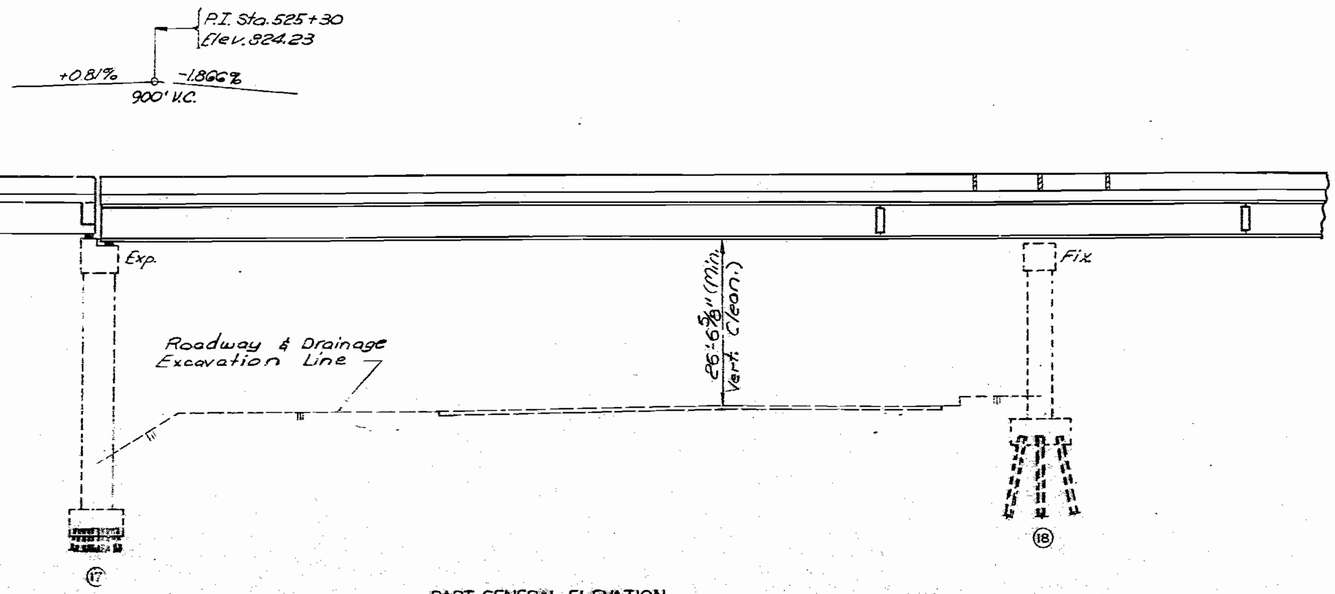
Sheet No. 6A of 98

JACKSON COUNTY

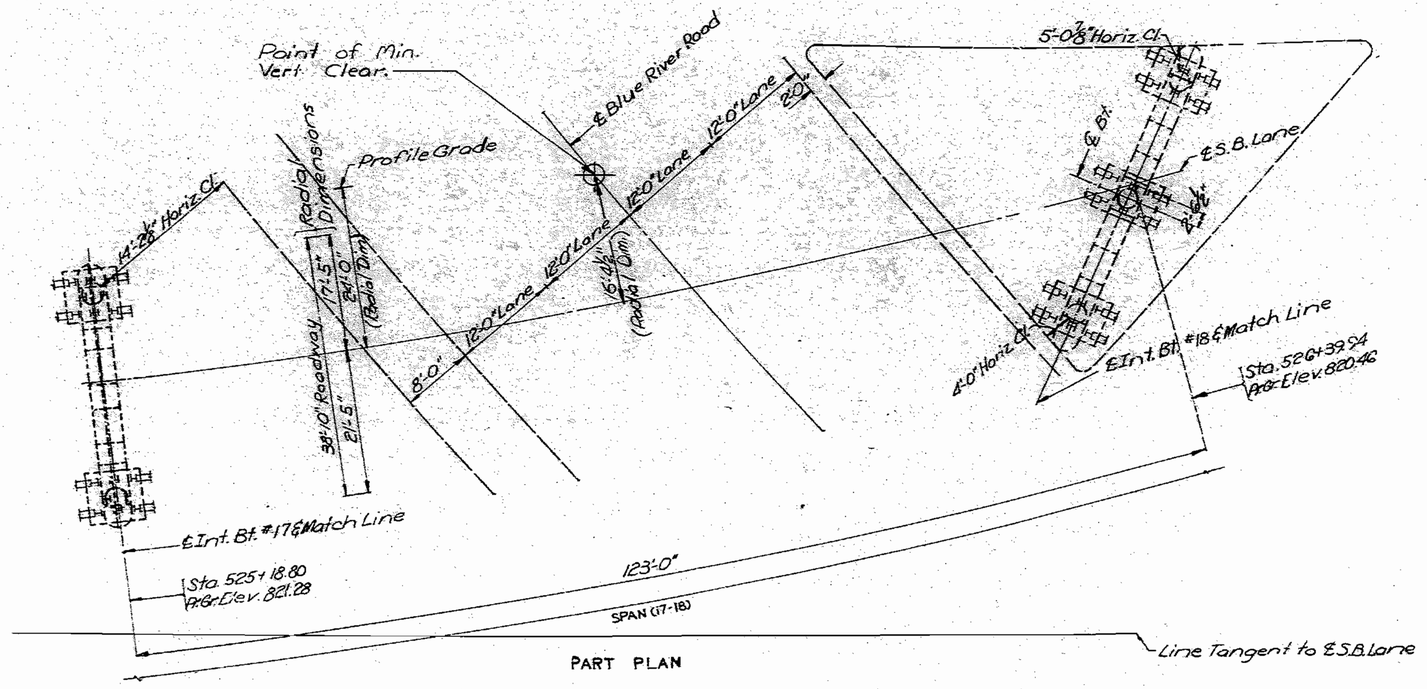
A-2745

STATE	PROJ. NO	SHEET NO.
MO	4-U-71-2E	87

FINAL PLANS



PART GENERAL ELEVATION



PART PLAN

DETAILED Oct. 1988
CHECKED March 1989

Note: This drawing is not to scale. Follow dimensions.

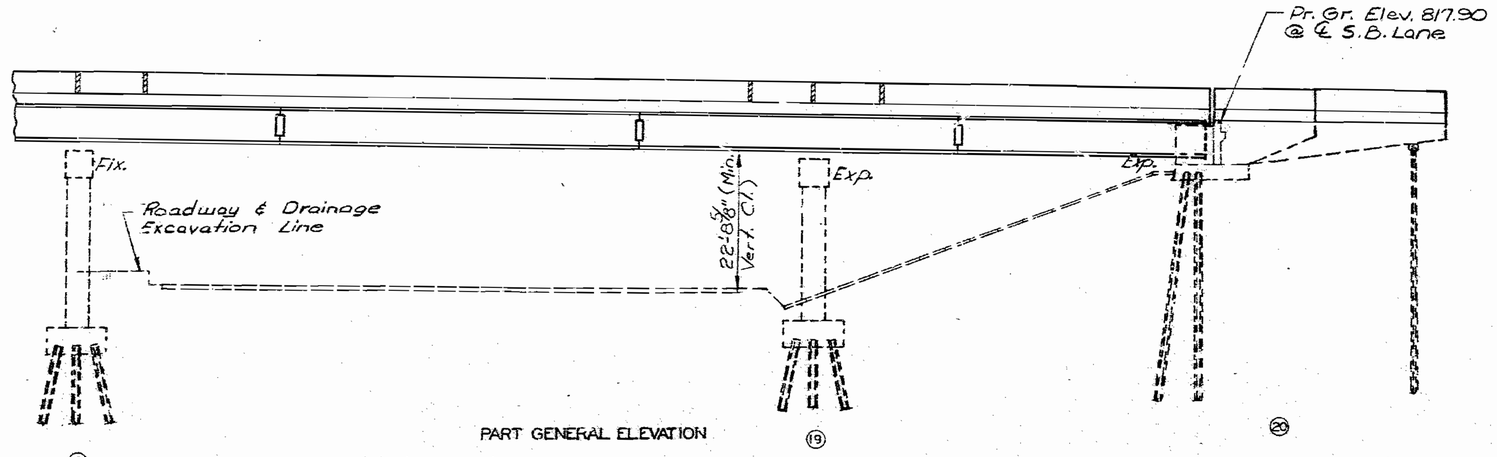
Sheet No. 7A of 98

JACKSON COUNTY

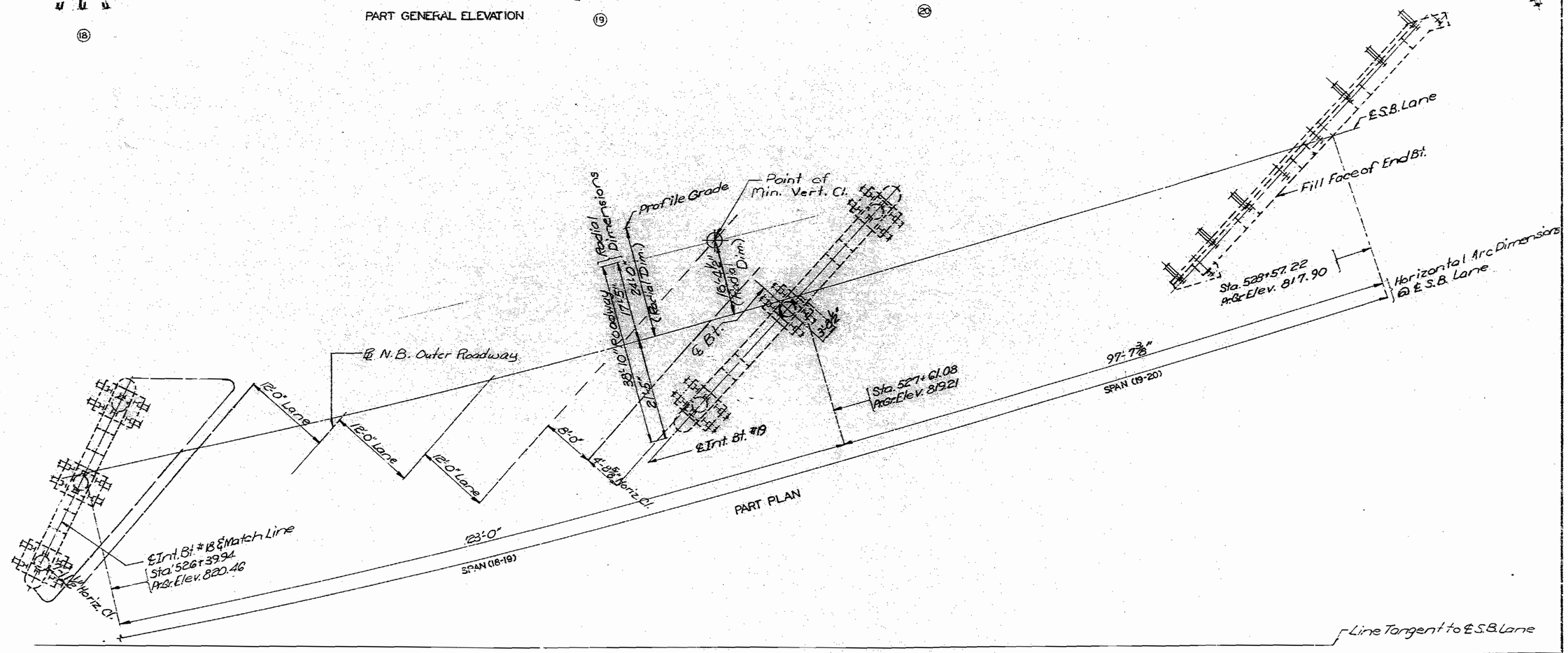
A-2745

STATE	PROJ. NO.	SHEET NO.
MO	4-U-91-2E	88

FINAL PLANS



PART GENERAL ELEVATION



PART PLAN

DETAILED Sept 1988
CHECKED March 1989

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 8A of 138

JACKSON COUNTY

A-2745

STATE	PROJ. NO.	SHEET NO.
MO.	4-4-71-ZE	89

FINAL PLANS

ESTIMATED QUANTITIES

ITEM		SUPERSTR.	TOTAL
(S.I.P.) SLAB ON STEEL, SEE SPECIAL PROVISIONS	SQ. YD.	1559	1559
(Precast) SLAB ON CONCRETE I-GIRDER, SEE SPECIAL PROVISIONS	SQ. YD.	5741	5741
SAFETY BARRIER CURB	LIN. FT.	163	163
LAMINATED NEOPRENE BEARING PADS	EACH	160	160
LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURE)	EACH	15	15
TYPE N PTFE BEARINGS	EACH	5	5
ELASTOMERIC NEOPRENE EXPANSION JOINT SEAL (3.0 IN.)	LIN. FT.	93	93
ELASTOMERIC NEOPRENE EXPANSION JOINT SEAL (4.0 IN.)	LIN. FT.	156	156
PRESTRESSED CONCRETE I-GIRDER,64 FT SPAN	EACH	5	5
PRESTRESSED CONCRETE I-GIRDER,82 FT SPAN	EACH	25	25
PRESTRESSED CONCRETE I-GIRDER,65 FT SPAN	EACH	15	15
PRESTRESSED CONCRETE I-GIRDER,67 FT SPAN	EACH	5	5
PRESTRESSED CONCRETE I-GIRDER,90 FT SPAN	EACH	10	10
PRESTRESSED CONCRETE I-GIRDER,79 FT SPAN	EACH	10	10
PRESTRESSED CONCRETE I-GIRDER,85 FT SPAN	EACH	10	10
FABRICATED STRUCTURAL CARBON STEEL (PLATE GIRDERS)	POUND	296,960	296,960
FABRICATED STRUCTURAL LOW ALLOY STEEL (PLATE GIRDERS) A-572	POUND	133,780	133,780
SLAB DRAINS	EACH	95	95
VERTICAL DRAIN AT END BENTS	EACH	2	2
PAINTING (SYSTEM C) GREEN	TON	212.3	212.3
CONTINGENT ITEMS			
Slip Form Barrier Curb	Lin. Ft.	3080	3080
Modify Earthquake Restraint	L.S.	1	1

NOTE: THE COST OF FURNISHING, FABRICATING AND INSTALLING NEOPRENE BEARING PADS, COMPLETE-IN-PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR LAMINATED NEOPRENE BEARING PADS PER EACH.

NOTE: THE PRESTRESSED PANEL QUANTITIES ARE NOT INCLUDED IN THE TABLE OF ESTIMATED QUANTITIES FOR ALTERNATE SLABS.

ESTIMATED QUANTITIES FOR ALTERNATE SLABS

TYPE OF SLABS	SLAB ON STEEL		SLAB ON CONC. I-GDR.		
	REINF. (LBS.) EPOXY	CONC. (CU. YD.)	REINF.(LBS.) PLAIN	REINF.(LBS.) EPOXY	CONC. (CU. YD.)
CAST-IN-PLACE CONVENTIONAL FORMS	100,130	391.7	10,460	356,790	1,689.0
PRECAST PANEL FORMS	—	—	10,460	290,490	*** 1,363.0
STAY-IN-PLACE FORMS	100,130	* 395.0	—	—	—

NOTE: THE TABLE OF ESTIMATED QUANTITIES FOR ALTERNATE SLABS REPRESENTS THE QUANTITIES USED BY THE STATE IN PREPARING THE COST ESTIMATE FOR CONCRETE SLABS. VARIATIONS MAY BE ENCOUNTERED IN THESE ESTIMATED QUANTITIES BUT THESE VARIATIONS CANNOT BE USED FOR AN ADJUSTMENT IN THE CONTRACT UNIT PRICE PER SQUARE YARD OF ALTERNATE SLAB USED.

SEE SPECIAL PROVISIONS FOR ALTERNATE METHODS OF FORMING SLABS.

PRECAST PANEL QUANTITIES ARE BASED ON SKEWED END PANELS.

* DOES NOT INCLUDE CONCRETE REQUIRED TO FILL CORRUGATIONS OF S.I.P. FORMS.

*** BASED ON MINIMUM TOP FLANGE THICKNESS AND MINIMUM JOINT FILLER THICKNESS.

NOTE: CONCRETE AND REINFORCEMENT IN ESTIMATED QUANTITIES FOR "SLAB ON STEEL" INCLUDES CONCRETE AND REINFORCING IN BACKWALL ABOVE UPPER CONST. JOINT, AT END BENT NO.20.

GENERAL NOTES:

DESIGN SPECIFICATIONS: .A.A.S.H.T.O.-1983 AND INTERIMS THRU 1988
LOAD FACTOR DESIGN

DESIGN LOADING: HS20-44
35#/SQ. FT. FUTURE WEARING SURFACE
MODIFIED 24,000# TANDEM AXLE
EARTH 120#/CU. FT., EQUIVALENT FLUID PRESSURE 45#/CU. FT.
FATIGUE STRESS - CASE II (SPAN 17 THRU 19)

DESIGN UNIT STRESSES:

CLASS B2 CONCRETE (SUPERSTRUCTURE, EXCEPT PRESTRESSED GDRS. AND SAFETY BARRIER CURB)	F'C=4,000 PSI
CLASS B1 CONCRETE (SAFETY BARRIER CURB)	F'C=4,000 PSI
REINFORCING STEEL (GRADE 60)	FY=60,000 PSI
STRUCTURAL CARBON STEEL	FY=36,000 PSI
STRUCTURAL STEEL (A.S.T.M. A572) GRADE 50	FY=50,000 PSI

FABRICATED STEEL CONNECTIONS:
FIELD CONNECTIONS, HIGH STRENGTH BOLTS 3/4"Ø, HOLES 13/16"Ø, EXCEPT AS NOTED.

JOINT FILLER:
ALL JOINT FILLER SHALL MEET THE REQUIREMENTS OF STD. SPEC. 1057.2.4, EXCEPT AS NOTED.

REINFORCING STEEL:
MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1-1/2", UNLESS OTHERWISE SHOWN.

PAINT:
SYSTEM C BY CONTRACTOR IN ACCORDANCE WITH STD. SPEC. 712.12. (COLOR OF THE FINAL FIELD COAT SHALL BE GREEN.)

PRESTRESSED GIRDER STRESSES:
FOR PRESTRESSED GIRDER STRESSES SEE SHEET NO.27 THRU 54.

CONSTRUCTION CLEARANCE:

MANCH. THWAY.: A MINIMUM VERT. CLEARANCE OF 14'-6" FROM CROWN OF EXISTING LANES AND A MINIMUM LATERAL CLEARANCE OF 52'-0" CENTERED ON EXISTING LANES SHALL BE MAINTAINED DURING CONSTRUCTION.

N.B. RTE. 71 DETOUR: A MINIMUM VERT. CLEARANCE OF 14'-6" FROM CROWN OF EXISTING LANES AND A MINIMUM LATERAL CLEARANCE OF 34'-0" CENTERED ON LANES.

BLUE RIVER RD.: A MINIMUM VERT. CLEARANCE OF 14'-6" FROM CROWN OF EXISTING LANES AND A MINIMUM LATERAL CLEARANCE OF 52'-0" CENTERED ON LANES.

NORTH OUTER ROAD: A MINIMUM VERT. CLEARANCE OF 14'-6" FROM CROWN OF EXISTING LANES AND A MINIMUM LATERAL CLEARANCE OF 2'-0" FROM PAVT. EDGE (EACH SIDE).

BURLINGTON NORTHERN R.R. MINIMUM LATERAL CLEARANCE OF 12'-0" FROM ℄ TRACKS, SHALL BE IN ACCORDANCE WITH THE R.R. CONTRACT.

NEOPRENE PADS:
LAMINATED NEOPRENE BEARINGS SHALL BE 60 DUROMETER NEOPRENE PADS.

NOTE:
OUTLINE OF OLD WORK IS INDICATED BY LIGHT DASHED LINES.
HEAVY LINES INDICATE NEW WORK.

K-1803

DETAILED OCT. 1988
CHECKED MARCH 1989

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

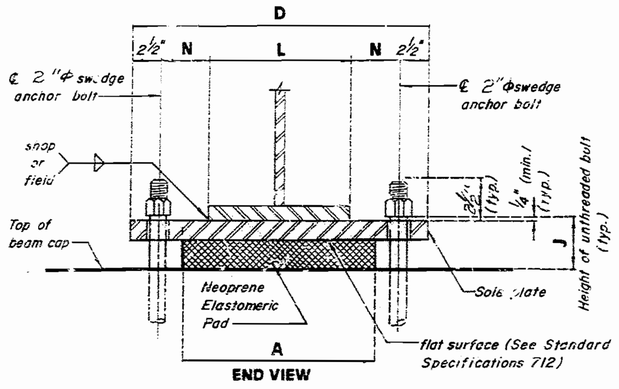
SHEET NO. 9A OF 98.

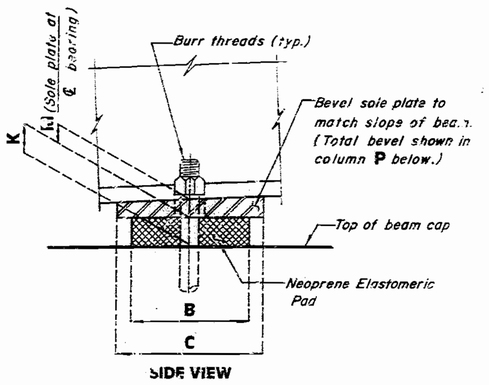
JACKSON COUNTY

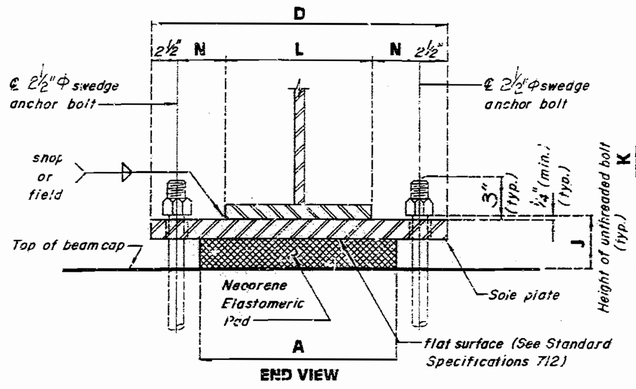
A-2745

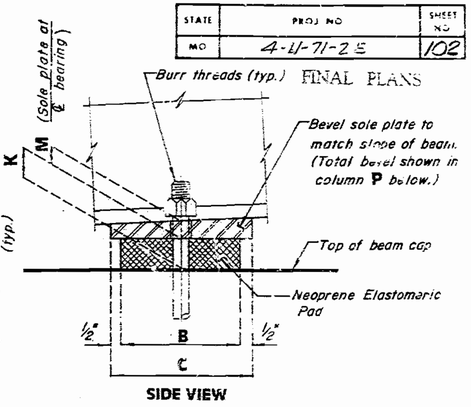
STATE	PROJ NO	SHEET NO
MO	4-U-71-25	102

FINAL PLANS

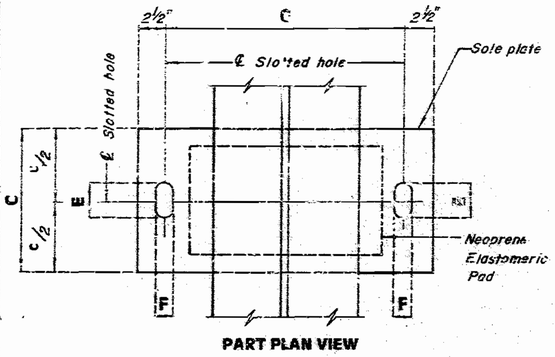


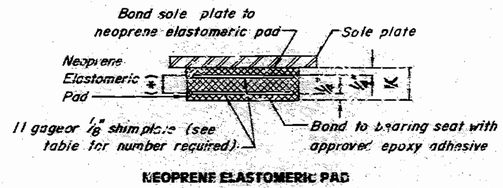






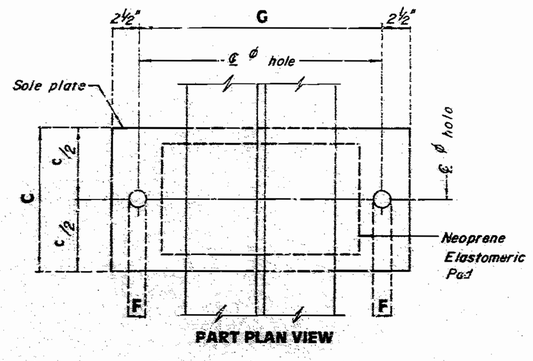
Note: The location of anchor bolts in relation to the slotted holes in the sole plate shall correspond with the temperature at the time of erection. At 60° F. the slotted holes should center on the anchor bolts.

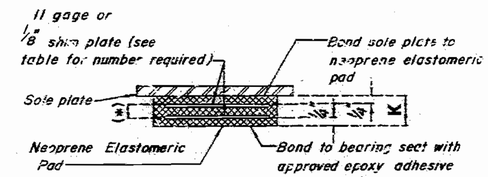




NEOPRENE ELASTOMERIC PAD

(*) Layers of ½" elastomer alternating with 11 gage or ⅛" steel shim plate.





NEOPRENE ELASTOMERIC PAD

(*) Layers of ½" elastomer alternating with 11 gage or ⅛" steel shim plate.

EXPANSION BEARINGS

NUMBER REQUIRED = 5@ Bent No. 17 (Span 17-18)
5@ Bent No. 19

** 18" @ Bts. No. 17 & 19
25" @ Bt. No. 18

*** 2" ϕ @ Bts. No. 17 & 19
2½" ϕ @ Bt. No. 18

⑤ Girders No. 1, 2 & 3 = 17"
Girder No. 4 = 16"
Girder No. 5 = 14"

⑥ Girders No. 1, 2 & 3 = 2½"
Girder No. 4 = 3"
Girder No. 5 = 1"

EXPANSION BEARINGS															
BENT NO.	A	B	C	D	E	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (*)
19	17"	28"	23"	27"	5"	2⅛"	22"	5 11/16"	3¾"	③	1 11/16"	④	¾"	6
*** 17	18"	12"	13"	27"	5"	2⅛"	22"	5½	3¾"	⑤	1½"	⑥	-	5

(*) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

*** Span (17-18)

1½" Gdr. #1, #2, & #3
1⅞" Gdr. #4 & #5

④ Girder No. 1 = 2½"
Girder No. 2 = 3"
Girders No. 3, 4 & 5 = 3½"

③ Girder No. 1 = 17"
Girder No. 2 = 16"
Girders No. 3, 4 & 5 = 15"

GENERAL NOTES:

ANCHOR BOLTS SHALL BE *** A588 STEEL SWEDGED BOLTS AND SHALL EXTEND ** INTO THE CONCRETE WITH A194 - 2, 2H OR A563 - C, C3, D, DH, DH3 HEAVY HEXAGON NUTS. ACTUAL MANUFACTURER'S CERTIFIED MILL TEST REPORTS (CHEMICAL AND MECHANICAL) SHALL BE PROVIDED. (SWEDGING SHALL BE 3" LESS THAN EXTENSION INTO THE CONCRETE.)

ALL STRUCTURAL STEEL FOR THE SOLE PLATE, ANCHOR BOLTS AND HEAVY HEXAGON NUTS SHALL BE PAINTED WITH 2 COATS (5 MILS MIN.) OF INORGANIC ZINC. WELD AREAS TO BE TOUCHED UP AFTER ASSEMBLY.

WEIGHT OF ANCHOR BOLTS AND HEAVY HEXAGON NUTS FOR BEARINGS SHALL BE INCLUDED IN WEIGHT OF THE FABRICATED STRUCTURAL STEEL.

NEOPRENE ELASTOMERIC PADS SHALL BE 60 DUROMETER.

THE SOLE PLATE SHALL BE FURNISHED WITH THE BEARING AND FIELD OR SHOP WELDED TO THE STRINGERS OR GIRDERS.

STRUCTURAL STEEL FOR SOLE PLATE SHALL BE A-36.

PAYMENT FOR THE SOLE PLATE WILL BE INCLUDED IN THE COST OF THE BEARING ASSEMBLY. SEE SPECIAL PROVISIONS.

THE ACCEPTED QUANTITY OF ELASTOMERIC BEARING ASSEMBLIES, COMPLETE-IN-PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURES), EACH.

FIXED BEARINGS

NUMBER REQUIRED = 5 @ Bent No. 18

FIXED BEARINGS														
BENT NO.	A	B	C	D	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (*)
18	20"	34"	35"	31"	2⅜"	20"	5⅜"	3¾"	①	1⅝"	②	¼"	6

(*) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

① Girders No. 1 & 2 = 20"
Girders No. 3, 4 & 5 = 19"

② Girders No. 1 & 2 = 3"
Girders No. 3, 4 & 5 = 3½"

DETAILS OF LAMINATED NEOPRENE BEARINGS (STEEL STRUCTURES)

LAM. NEOP. BRGS.	REVISED
MARCH 1979	OCT. 1987

DETAILED June 1988
CHECKED Feb. 1989

Note: This drawing is not to scale. Follow dimensions. △ Revised 12-7-89

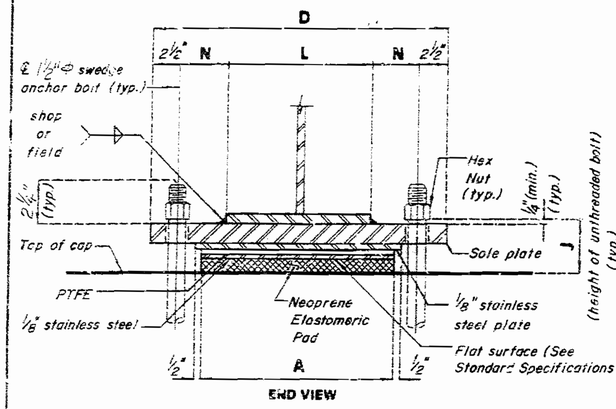
Sheet No. 22 May 98

JACKSON COUNTY

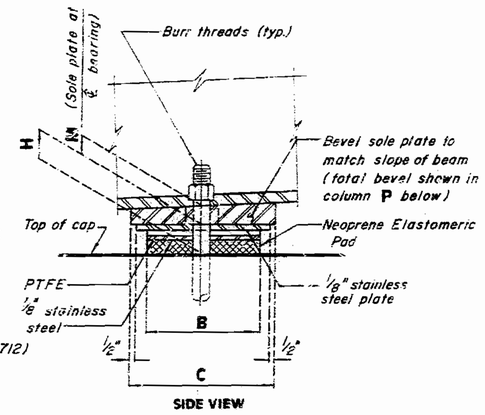
A-2745

STATE	PROJ NO	SHEET NO
NO.	4-4-71-2E	103

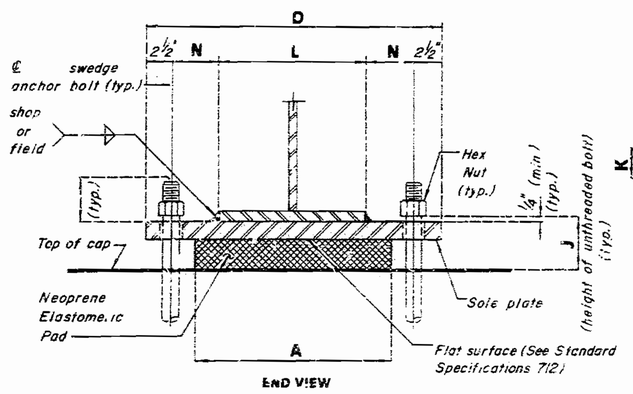
FINAL PLANS



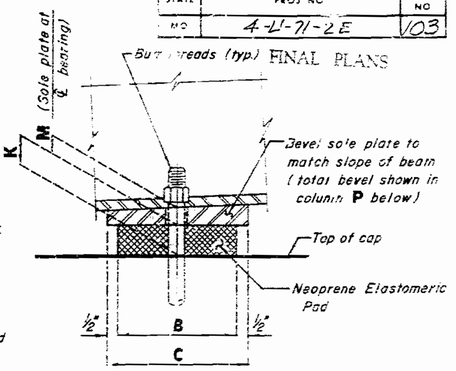
END VIEW



SIDE VIEW

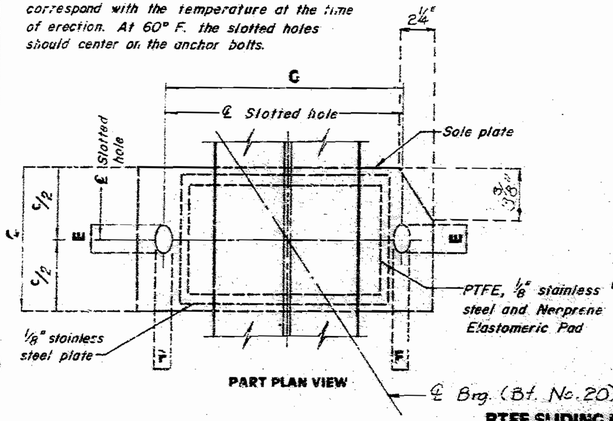


END VIEW

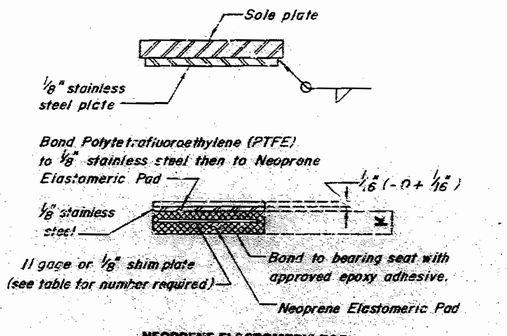


SIDE VIEW

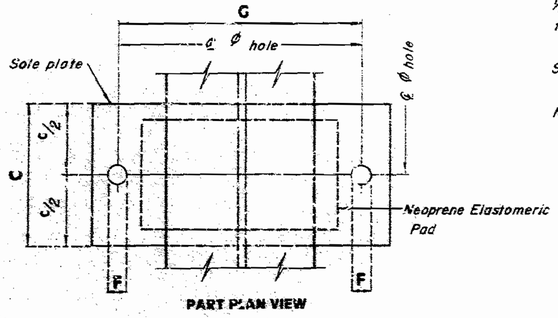
Note: The location of anchor bolts in relation to the slotted holes in the sole plate shall correspond with the temperature at the time of erection. At 60° F. the slotted holes should center on the anchor bolts.



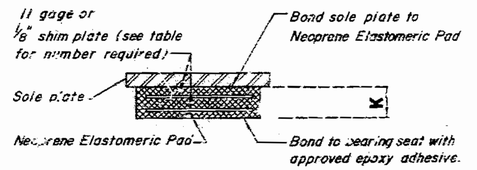
PART PLAN VIEW



NEOPRENE ELASTOMERIC PAD



PART PLAN VIEW



NEOPRENE ELASTOMERIC PAD

PTFE SLIDING BEARINGS

NUMBER REQUIRED = 5 at Bent No.20

FIXED BEARINGS

NUMBER REQUIRED =

△ 1½" GDR. #3
1⅜" GDR. #1, #2, & #4
1⅝" GDR. #5

PTFE SLIDING BEARINGS

BENT NO.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	NUMBER OF SHIM PLATES (*)
20	16"	11"	16½"	25"	6½"	1⅝"	20"	1⅞"	3⅝"	1⅛"	***	1⅝"	**	¼"	1

(*) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN EQUAL LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

** Girders No. 1, 2 & 5 = 3"
Girders No. 3 & 4 = 2½"

*** Girders No. 1, 2 & 5 = 1⅝"
Girders No. 3 & 4 = 1⅝"

GENERAL NOTES:

ANCHOR BOLTS SHALL BE 1½" Φ A588 STEEL SWEDGED BOLTS AND SHALL EXTEND 15" INTO THE CONCRETE WITH A194 - 2, 2H OR A563 - C, C3, D, DH, DH3 HEAVY HEXAGON NUTS. ACTUAL MANUFACTURER'S CERTIFIED MILL TEST REPORTS (CHEMICAL AND MECHANICAL) SHALL BE PROVIDED. SWEDGING SHALL BE 1" LESS THAN EXTENSION INTO THE CONCRETE.

ALL STRUCTURAL STEEL FOR THE SOLE PLATE, ANCHOR BOLTS AND HEAVY HEXAGON NUTS SHALL BE HOT DIP GALVANIZED. ZINC WELD AREAS TO BE TOUCHED UP AFTER ASSEMBLY.

WEIGHT OF THE ANCHOR BOLTS AND HEAVY HEXAGON NUTS FOR BEARINGS SHALL BE INCLUDED IN THE WEIGHT OF FABRICATED STRUCTURAL STEEL.

NEOPRENE ELASTOMERIC PADS SHALL BE 70 DUROMETER.

THE SOLE PLATE SHALL BE FURNISHED WITH THE BEARING AND FIELD OR SHOP WELDED TO THE STRINGERS OR GIRDERS.

STRUCTURAL STEEL FOR SOLE PLATE SHALL BE A-36.

PAYMENT FOR THE SOLE PLATE WILL BE INCLUDED IN THE COST OF THE BEARING ASSEMBLY. SEE SPECIAL PROVISIONS.

THE ACCEPTED QUANTITY OF ELASTOMERIC BEARING ASSEMBLIES, COMPLETE-IN-PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR TYPE "N" PTFE BEARINGS, EACH.

FIXED BEARINGS

BENT NO.	A	B	C	D	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (*)

(*) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN EQUAL LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

STEEL
TYPE 'N' BRGS.
JANUARY 1980
REVISED
OCT. 1987

DETAILED June 1988
CHECKED March 1989

DETAILS OF TYPE 'N' PTFE BEARINGS

Note: This drawing is not to scale. Follow dimensions. Revised 12-1-89

Sheet No. 23A of 98

JACKSON COUNTY

A-2745

STATE	PROJ. NO.	SHEET NO.
MO	4-U-71-2E	137

FINAL PLANS

Notes:

Plate girders shall be fabricated to conform with Camber Diagram shown on sheet No. G5.

Transverse web stiffeners shall be oriented as shown in plan of structural steel.

Intermediate web stiffener plate and diaphragm spacings may vary from plan dimensions by a maximum of 3" for diaphragm to connect to intermediate web stiffener plate.

Fabricated structural steel shall be A36 except as noted.

Longitudinal dimensions are horizontal arc dimensions along centerline of girder.

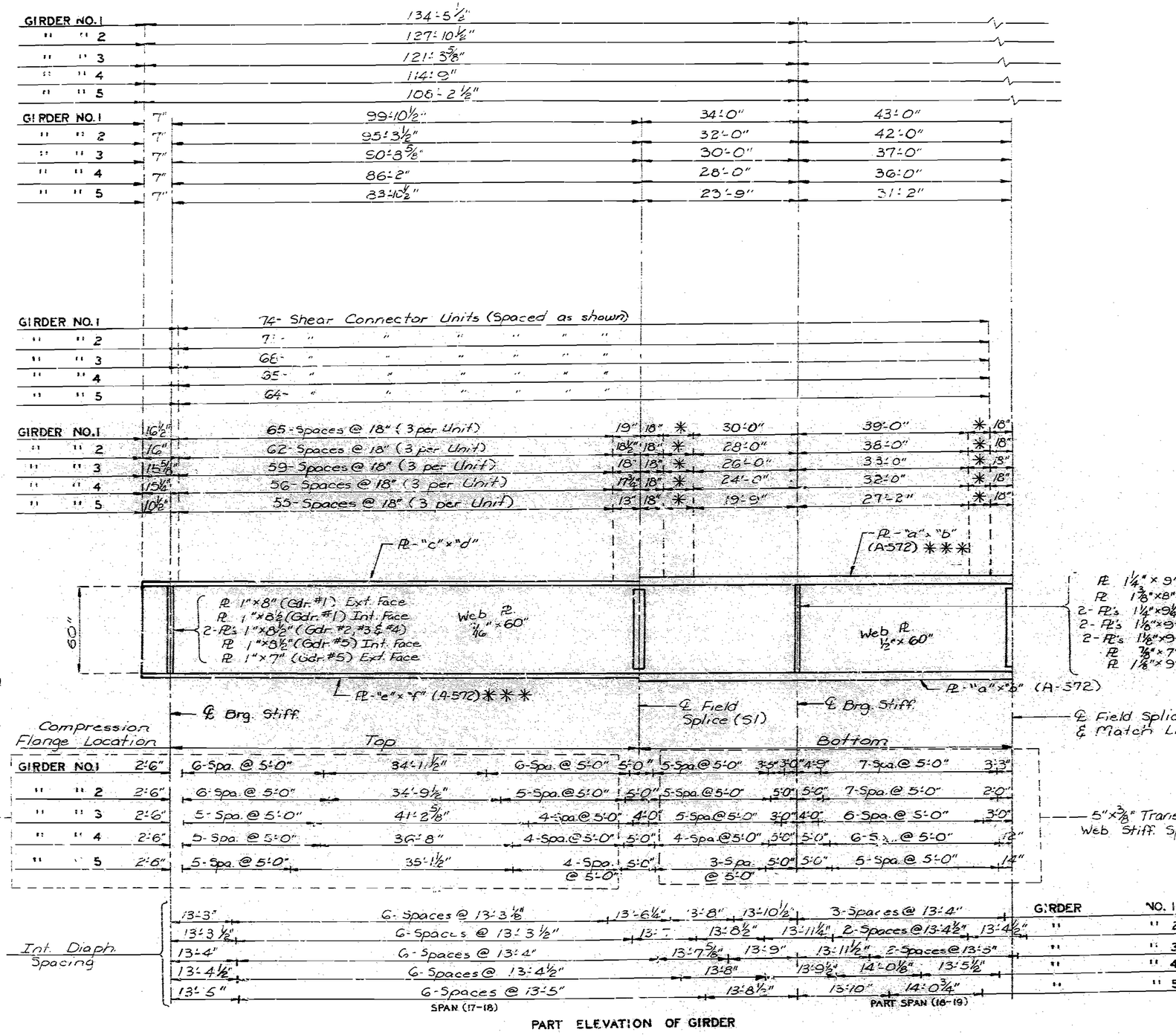
*** Indicates Flange Plate subject to notch toughness requirements.

For details of earthquake restrainers, see sheet No. G1 & No. G2.

All web plates shall be subject to notch toughness requirements.

Heat curving of girders in spans (17-18) will not be allowed while in a horizontal position.

* 3-Spaces @ 10" (3 per Unit)



LOCATION	"a"	"b"
Girder No. 5	19"	1"
Girder No. 4	19"	1¼"
Girder No. 3	19"	1⅜"
Girder No. 2	20"	1½"
Girder No. 1	20"	1¾"
	"c"	"d"
Girder No. 5	10"	¾"
Girder No. 3	11"	¾"
Girder No. 2	11"	1"
Girder No. 1	12"	1"
	"e"	"f"
Girder No. 5	14"	1⅛"
Girder No. 4	16"	1⅜"
Girder No. 3	17"	1¼"
Girder No. 1&2	17"	1⅜"

△ 10"×1"
△ 11"×1"
△ 16"×1"
△ 14½"×1"

PART ELEVATION OF GIRDER

DETAILED July 1988
CHECKED Feb. 1989

Note: This drawing is not to scale. Follow dimensions. △ Revised 12-1-89

Sheet No. 57A of 98

JACKSON COUNTY

A-2745

17-206

STATE	PROJ. NO	SHEET NO
MO	4-U-71-2E	155

FINAL PLANS

134'-8¼"			96'-2½"		GIRDER	NO. 1
128'-0¾"			95'-4¾"		"	" 2
121'-6⅞"			94'-7¼"		"	" 3
115'-1"			93'-10"		"	" 4
108'-8¾"			93'-1⅛"		"	" 5

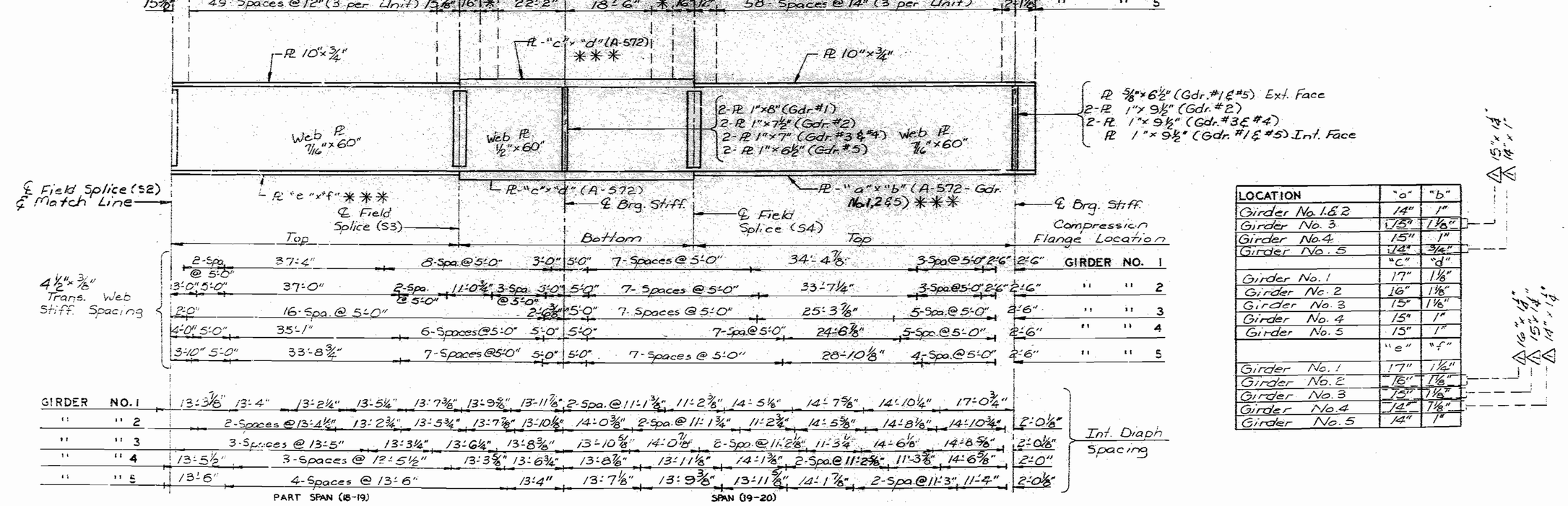
62'-8¼"	29'-0"	28'-0"	66'-4⅞"	2 1⅝"	GIRDER	NO. 1
54'-0¾"	32'-0"	27'-0"	66'-7¼"	2 1½"	"	" 2
60'-6⅜"	24'-0"	23'-0"	69'-9⅞"	2 ⅜"	"	" 3
53'-1"	26'-0"	22'-0"	70'-0⅞"	2 ⅛"	"	" 4
51'-6¾"	26'-0"	22'-4"	69'-0⅛"	2"	"	" 5

			126- Shear Connector Units (Spaced as shown)		GIRDER	NO. 1
			118- " " " " " "		"	" 2
			127- " " " " " "		"	" 3
			120- " " " " " "		"	" 4
			117- " " " " " "		"	" 5

16⅛"	60 Spaces @12" (3 per Unit)	16⅛"	16" *	25'-2"	24'-2"	* 16"	12"	56- Spaces @14" (3 per Unit)	22½"	GIRDER NO. 1
12⅜"	52-Spaces @ 12" (3 per Unit)	12⅜"	16" *	28'-2"	23'-2"	* 16"	12"	56-Spaces @14" (3 per Unit)	2 0¾"	" " 2
15⅛"	58- Spaces @ 12" (3per Unit)	15¼"	16" *	20'-2"	19'-2"	* 16"	12"	59- Spaces @14" (3 per Unit)	2 ¼"	" " 3
12½"	51- Spaces @ 12" (3 per Unit)	12½"	16" *	22'-2"	18'-2"	* 16"	12"	59- Spaces @ 14" (3 per Unit)	2'0"	" " 4
15⅜"	49- Spaces @ 12" (3 per Unit)	15⅜"	16" *	22'-2"	18'-6"	* 16"	12"	58- Spaces @ 14" (3 per Unit)	2 1⅛"	" " 5

* 3-Spaces @10" (3 per Unit)

Note: For notes see sheet No. 57.



PART ELEVATION OF GIRDER

LOCATION	"a"	"b"
Girder No. 1 & 2	14"	1"
Girder No. 3	15"	1⅛"
Girder No. 4	15"	1"
Girder No. 5	14"	¾"
	"c"	"d"
Girder No. 1	17"	1⅛"
Girder No. 2	16"	1⅛"
Girder No. 3	15"	1⅛"
Girder No. 4	15"	1"
Girder No. 5	15"	1"
	"e"	"f"
Girder No. 1	17"	1¼"
Girder No. 2	16"	1⅛"
Girder No. 3	15"	1⅛"
Girder No. 4	14"	7⅛"
Girder No. 5	14"	1"

DETAILED July 1988
CHECKED Feb. 1989

Note: This drawing is not to scale. Follow dimensions. ⚠ Revised 12-1-89

Sheet No. 58 of 98

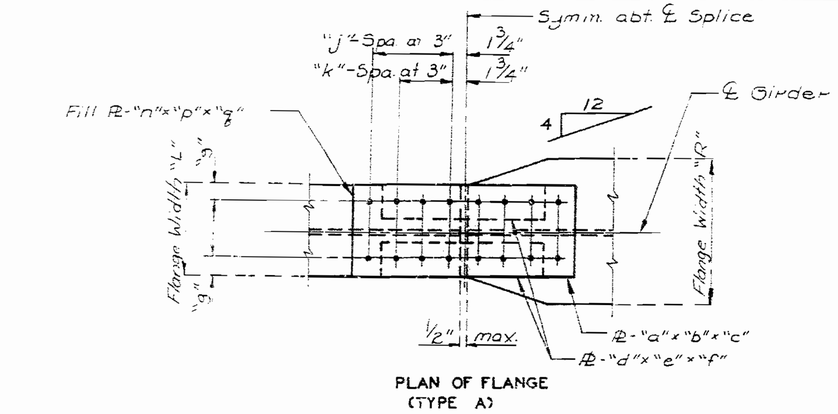
JACKSON COUNTY

A-2745

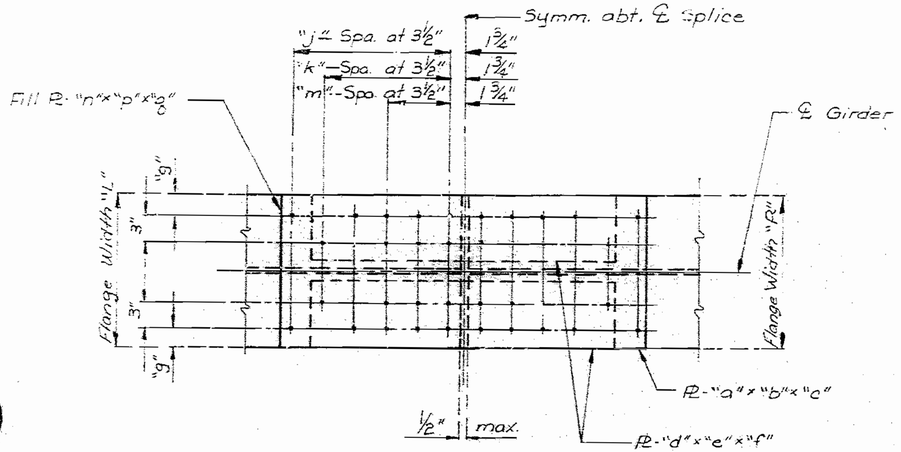
188 207

STATE	PROJ. NO.	SHEET NO.
NO.	4-U-71-2E	139

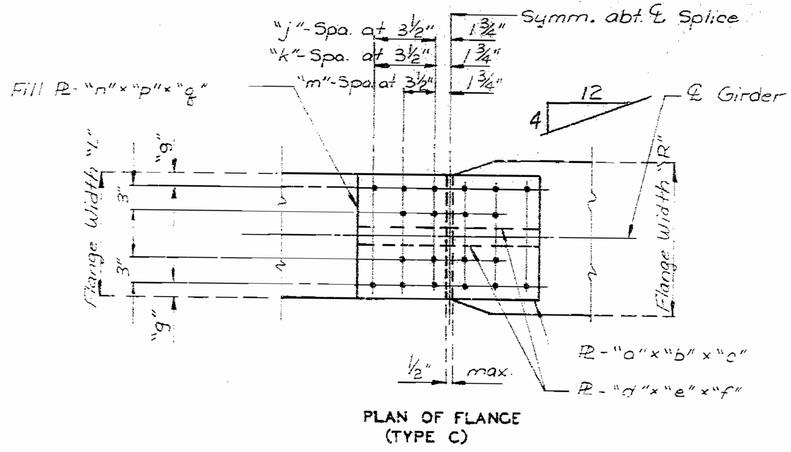
FINAL PLANS



PLAN OF FLANGE
(TYPE A)



PLAN OF FLANGE
(TYPE B)



PLAN OF FLANGE
(TYPE C)

TABLE OF DIMENSIONS (TYPE A SPLICE)

Splice No.	Girder No.	Location	"a"	"b"	"c"	"d"	"e"	"f"	"g"	"j"	"k"	"n"	"p"	"q"	Flange Width "L"	Flange Width "R"
S1&S2	5	Top	10"	3/8"	18½"	4"	½"	18½"	2"	2	2	10"	¼"	9"	10"	19"
S3&S4	4	Top	10"	3/8"	18½"	4"	½"	18½"	2"	2	2	10"	¼"	9"	10"	15"
S3&S4	5	Top	10"	3/8"	18½"	4"	½"	18½"	2"	2	2	10"	¼"	9"	10"	15"
S1&S2	4	Top	10"	3/8"	18½"	4"	½"	18½"	2"	2	2	10"	½"	9"	10"	19"
S2	3	Top	10"	3/8"	18½"	4"	½"	18½"	2"	2	2	10"	5/8"	9"	10"	19"
S3&S4	3	Top	10"	3/8"	18½"	4"	½"	18½"	2"	2	2	10"	3/8"	9"	10"	15"
S2	2	Top	10"	3/8"	18½"	4"	½"	18½"	2"	2	2	10"	¾"	9"	10"	20"
S3&S4	2	Top	10"	3/8"	18½"	4"	½"	18½"	2"	2	2	10"	3/8"	9"	10"	16"
S2	1	Top	10"	3/8"	18½"	4"	½"	18½"	2"	2	2	10"	1"	9"	10"	20"
S3&S4	1	Top	10"	3/8"	18½"	4"	½"	18½"	2"	2	2	10"	3/8"	9"	10"	17"
S1	2	Top	11"	5/8"	2'-0½"	4½"	5/8"	2'-0½"	2¼"	3	3	11"	½"	12"	11"	20"
S1	1	Top	12"	½"	2'-6½"	5"	5/8"	2'-0½"	2½"	4	3	12"	¾"	15"	12"	20"
S1	3	Top	11"	3/8"	18½"	4½"	½"	18½"	2¼"	2	2	11"	5/8"	9"	11"	19"

TABLE OF DIMENSIONS

Splice No.	Girder No.	Location	"a"	"b"	"c"	"d"	"e"	"f"	"g"	"j"	"k"	"m"	"n"	"p"	"q"	Flange Width "L"	Flange Width "R"	Type Splice
S2	5	Bott.	14"	5/8"	20½"	6"	¾"	20½"	1½"	2	2	1	—	—	—	14"	19"	C
S3	5	Bott.	14"	5/8"	20½"	6"	¾"	20½"	1½"	2	2	1	—	—	—	14"	15"	B
S4	5	Bott.	14"	½"	20½"	6"	½"	20½"	1½"	2	2	1	14"	¼"	10"	14"	15"	B
S1	5	Bott.	14"	1"	2'-10½"	6"	1⅛"	2'-3½"	1½"	4	3	2	14"	⅛"	17"	14"	19"	C
S1	4	Bott.	16"	1"	3'-5½"	7"	1"	2'-10½"	2"	5	4	3	16"	⅛"	20½"	16"	19"	C
S2	4	Bott.	14"	¾"	2'-3½"	6"	¾"	20½"	1½"	3	2	1	14"	⅛"	13½"	14"	19"	C
S3	4	Bott.	14"	¾"	2'-3½"	6"	¾"	20½"	1½"	3	2	1	14"	⅛"	13½"	14"	15"	B
S4	4	Bott.	15"	5/8"	2'-3½"	6½"	¾"	2'-3½"	1¾"	3	3	1	—	—	—	15"	15"	B
S1	3	Bott.	17"	1"	4'-0½"	7½"	1⅛"	3'-5½"	2¼"	6	5	3	17"	⅛"	20"	17"	19"	B
S2	3	Bott.	15"	¾"	2'-3½"	6½"	¾"	2'-3½"	1¾"	3	3	2	15"	¼"	13½"	15"	19"	C
S3&S4	3	Bott.	15"	¾"	2'-3½"	6½"	¾"	2'-3½"	1¾"	3	3	2	—	—	—	15"	15"	B
S1	2	Bott.	17"	1⅛"	4'-0½"	7½"	1¼"	3'-5½"	2¼"	6	5	4	17"	⅛"	2'-0"	17"	20"	C
S2	2	Bott.	16"	¾"	2'-3½"	7"	¾"	2'-3½"	2"	3	3	2	16"	⅜"	13½"	16"	20"	C
S3	2	Bott.	16"	¾"	2'-3½"	7"	¾"	2'-3½"	2"	3	3	2	—	—	—	16"	16"	B
S4	2	Bott.	14"	5/8"	20½"	6"	¾"	20½"	1½"	2	2	1	14"	⅛"	10"	14"	16"	B
S1	1	Bott.	17"	1⅛"	4'-0½"	7½"	1¼"	3'-5½"	2¼"	6	5	4	17"	⅜"	2'-0"	17"	20"	C
S2	1	Bott.	17"	¾"	2'-10½"	7½"	⅞"	2'-10½"	2¼"	4	4	2	17"	½"	17"	17"	20"	C
S3	1	Bott.	17"	¾"	2'-10½"	7½"	¾"	2'-3½"	2½"	4	3	2	17"	⅛"	17"	17"	17"	B
S4	1	Bott.	14"	⅞"	2'-10½"	6"	1"	2'-3½"	1½"	4	3	2	14"	⅛"	17"	14"	17"	C

⚠ See Sheet #59A For Revised Splices

184 809

DETAILED June 1988
CHECKED Feb. 1989

DETAILS OF FIELD FLANGE SPLICES

Note: This drawing is not to scale. Follow dimensions. ⚠ Revised 12-1-89

Sheet No. 59A of 98

JACKSON COUNTY

A-2745

STATE	PROJ. NO.	SHEET NO.
MO.	4-U-71-2E	140

FINAL PLANS

TABLE OF DIMENSIONS (TYPE A SPLICES)

SPLICE NO.	GIRDER NO.	LOCATION	"a"	"b"	"c"	"d"	"e"	"f"	"g"	"j"	"k"	"n"	"p"	"c"	FLANGE WIDTH "L"	FLANGE WIDTH "R"
S1	1	TOP	12"	1/2"	2'-6 1/2"	5"	5/8"	2'-0 1/2"	2 1/2"	4	3	12"	3/8"	15"	12"	20"
S1	2	TOP	11"	5/8"	2'-0 1/2"	4 1/2"	5/8"	2'-0 1/2"	2 1/4"	3	3	11"	1/2"	12"	11"	20"
S1	3	TOP	11"	5/8"	2'-0 1/2"	4 1/2"	5/8"	2'-0 1/2"	2 1/4"	3	3	11"	3/8"	12"	11"	19"
S1	4	TOP	10"	5/8"	2'-0 1/2"	4"	1/2"	18 1/2"	2"	4	3	10"	1/4"	12"	10"	19"
S1	5	TOP	10"	5/8"	2'-0 1/2"	4"	1/2"	18 1/2"	2"	4	3	—	—	—	10"	19"
S2	1	TOP	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	1"	9"	10"	20"
S2	2	TOP	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	3/4"	9"	10"	20"
S2	3	TOP	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	5/8"	9"	10"	19"
S2	4	TOP	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	1/2"	9"	10"	19"
S2	5	TOP	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	1/4"	9"	10"	19"
S3 & S4	1	TOP	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	3/8"	9"	10"	17"
S3 & S4	2	TOP	10"	1/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	3/8"	9"	10"	16"
S3 & S4	3	TOP	10"	1/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	3/8"	9"	10"	15"
S3 & S4	4	TOP	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	1/4"	9"	10"	15"
S3 & S4	5	TOP	10"	3/8"	18 1/2"	4"	1/2"	18 1/2"	2"	2	2	10"	1/4"	9"	10"	15"

TABLE OF DIMENSIONS

SPLICE NO.	GIRDER NO.	LOCATION	"a"	"b"	"c"	"d"	"e"	"f"	"g"	"j"	"k"	"m"	"n"	"p"	"q"	FLANGE WIDTH "L"	FLANGE WIDTH "R"	TYPE SPLICE
S1	1	BOTT.	17"	1 1/8"	4'-0 1/2"	7 1/2"	1 1/4"	3'-5 1/2"	2 1/4"	6	5	4	17"	3/8"	2'-0"	17"	20"	C
S1	2	BOTT.	17"	1 1/8"	4'-0 1/2"	7 1/2"	1 1/4"	3'-5 1/2"	2 1/4"	6	5	4	17"	1/8"	2'-0"	17"	20"	C
S1	3	BOTT.	17"	1"	4'-0 1/2"	7 1/2"	1 1/8"	3'-5 1/2"	2 1/4"	6	5	3	17"	1/8"	2'-0"	17"	19"	B
S1	4	BOTT.	16"	1/8"	4'-0 1/2"	7"	1 1/8"	3'-5 1/2"	2"	6	5	3	—	—	—	16"	19"	C
S1	5	BOTT.	14"	1 1/8"	3'-5 1/2"	6"	1 1/8"	2'-10 1/2"	1 1/2"	5	4	2	14"	1/4"	20 1/2"	14"	19"	C
S2	1	BOTT.	17"	3/4"	2'-10 1/2"	7 1/2"	7/8"	2'-10 1/2"	2 1/4"	4	4	2	17"	1/2"	17"	17"	20"	C
S2	2	BOTT.	16"	3/4"	2'-10 1/2"	7"	7/8"	2'-3 1/2"	2"	4	3	2	16"	1/4"	17"	16"	20"	C
S2	3	BOTT.	15"	7/8"	2'-10 1/2"	6 1/2"	7/8"	2'-3 1/2"	1 3/4"	4	3	2	15"	1/8"	17"	15"	19"	C
S2	4	BOTT.	14"	7/8"	2'-3 1/2"	6"	7/8"	2'-3 1/2"	1 1/2"	3	3	2	—	—	—	14"	19"	C
S2	5	BOTT.	14"	5/8"	20 1/2"	6"	3/4"	20 1/2"	1 1/2"	2	2	1	—	—	—	14"	19"	C
S3	1	BOTT.	17"	3/4"	2'-10 1/2"	7 1/2"	3/4"	2'-3 1/2"	2 1/4"	4	3	2	17"	1/8"	17"	17"	17"	B
S3	2	BOTT.	16"	3/4"	2'-10 1/2"	7"	7/8"	2'-3 1/2"	2"	4	3	2	16"	1/8"	17"	16"	16"	B
S3 & S4	3	BOTT.	15"	7/8"	2'-10 1/2"	6 1/2"	7/8"	2'-3 1/2"	1 3/4"	4	3	2	15"	1/8"	17"	15"	15"	B
S3	4	BOTT.	14"	7/8"	2'-3 1/2"	6"	7/8"	2'-3 1/2"	1 1/2"	3	3	2	14"	1/4"	13 1/2"	14"	15"	B
S3	5	BOTT.	14"	5/8"	20 1/2"	6"	3/4"	20 1/2"	1 1/2"	2	2	1	—	—	—	14"	15"	B
S4	1	BOTT.	14"	7/8"	2'-10 1/2"	6"	1"	2'-3 1/2"	1 1/2"	4	3	2	14"	1/8"	17"	14"	17"	C
S4	2	BOTT.	14"	5/8"	20 1/2"	5"	3/4"	20 1/2"	1 1/2"	2	2	1	14"	1/8"	10"	14"	16"	B
S4	4	BOTT.	15"	5/8"	2'-3 1/2"	6 1/2"	3/4"	2'-3 1/2"	1 3/4"	3	3	1	—	—	—	15"	15"	B
S4	5	BOTT.	14"	7/8"	2'-10 1/2"	6"	1"	2'-3 1/2"	1 1/2"	4	3	2	—	—	—	14"	15"	B

89

DETAILED DEC 19 89
CHECKED DEC 19 89

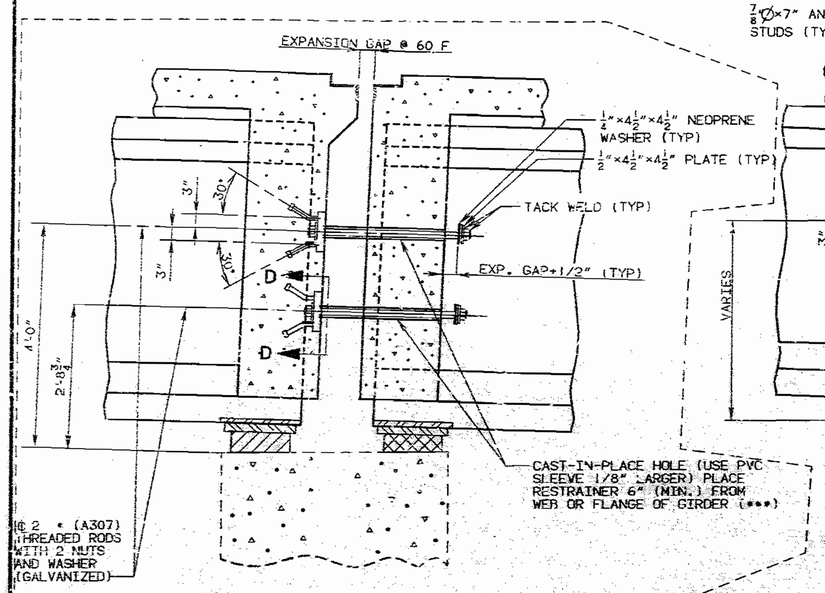
NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS. ⚠ ADD 12/1 89

59A-A of 89
SHEET NO. 59A OF 89
Final Plans

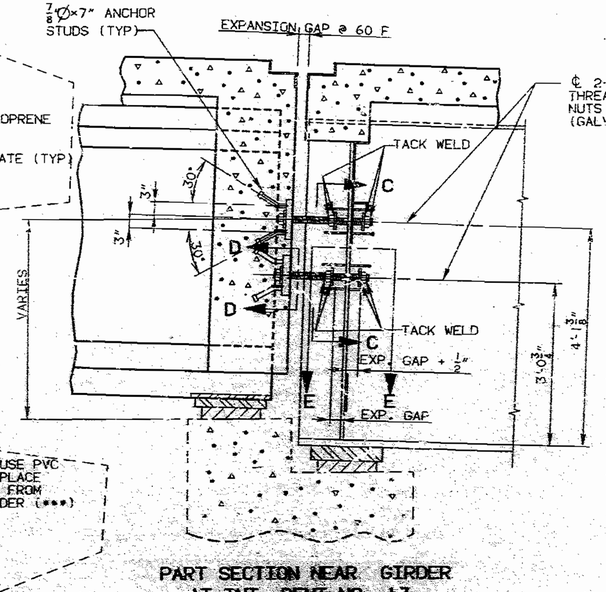
JACKSON COUNTY A-2745

FINAL PLANS

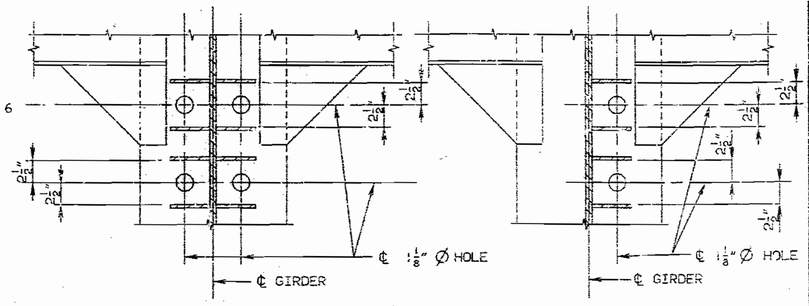
STATE	PROJ. NO.	SHEET NO.
MO.		142



PART SECTION NEAR ℄ GIRDER
AT INT. BENT NO. 4,9 & 13

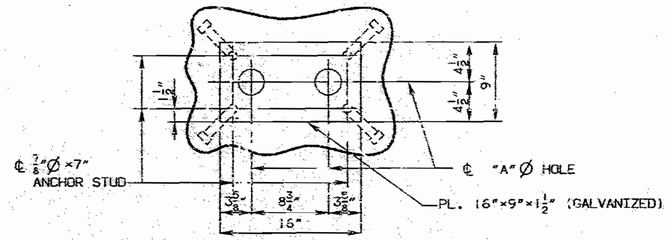


PART SECTION NEAR GIRDER
AT INT. BENT NO. 17

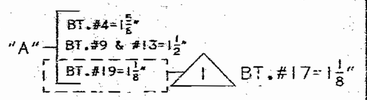


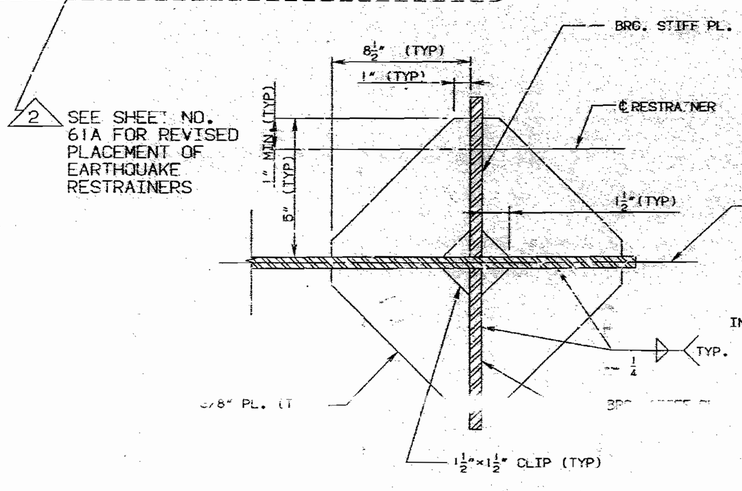
SECTION C-C (INT. GIRDERS)

SECTION C-C
(EXT. GIRDERS)

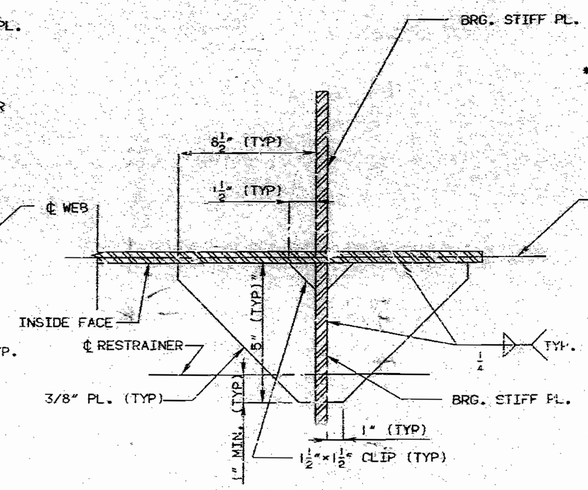


SECTION D-D (INT. GIRDERS)





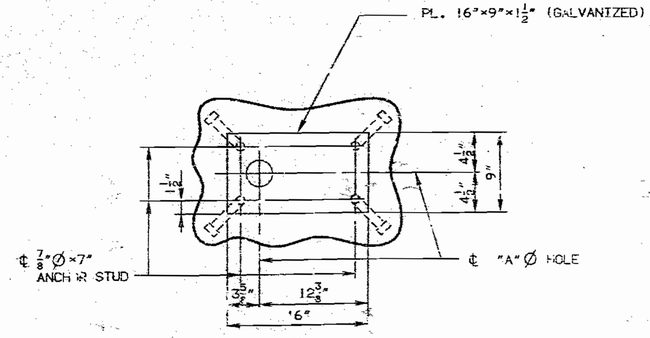
SECTION E-E (INT. GIRDERS)



SECTION E-E (EXT. GIRDERS)

1 1/2" Ø BENT NO.4
* 1 3/8" Ø BENT NO.9
1 3/8" Ø BENT NO.13

NOTE: WEIGHT OF THREADED RODS, NUTS, WASHERS AND PLATES IS INCLUDED IN FABRICATED STRUCTURAL CARBON STEEL (PLATE GIRDER)
GALVANIZING TO BE DONE IN ACCORDANCE TO ASTM A123.



SECTION D-D (EXT. GIRDERS)

DETAILS OF EARTHQUAKE RESTRAINERS AT BENTS NO. 4,9,13 & 17

DETAILED AUG. 1988
CHECKED FEB 1989

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

SHEET NO. 61 OF 98.

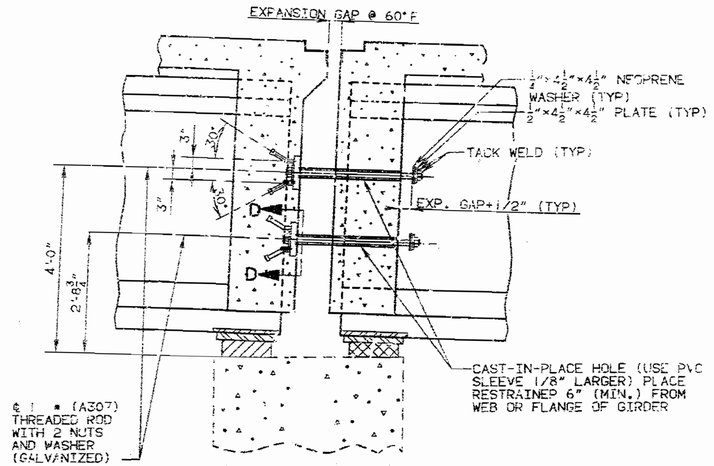
2 REVISED 5/31/90
1 REVISED 4/10/90

JACKSON COUNTY

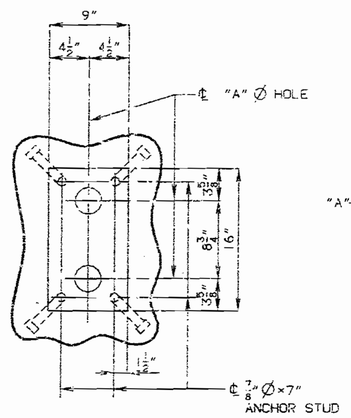
A-2745

STATE	PROJ. NO.	SHEET NO.
MO.		143

FINAL PLANS

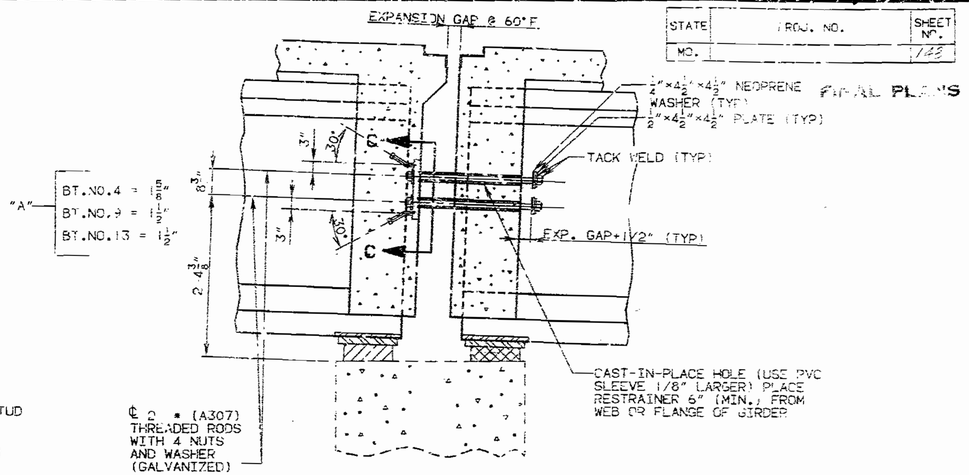


PART SECTION A-A
AT INT. BENT NO. 4,9 & 13



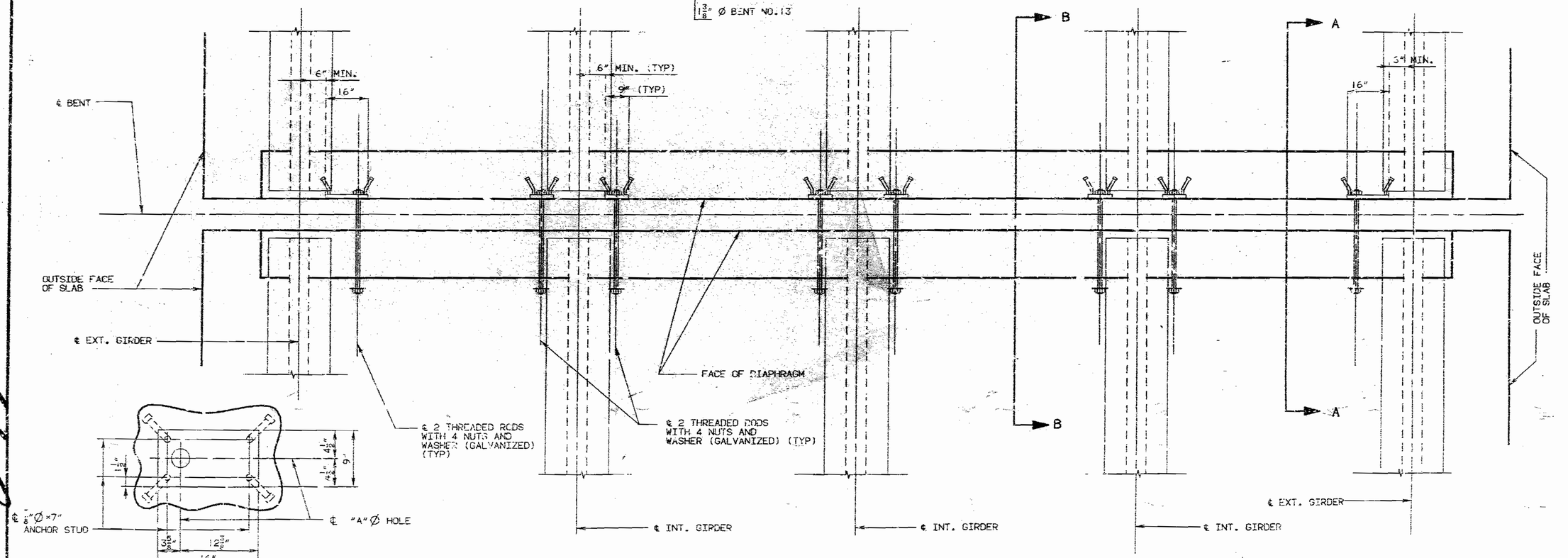
SECTION C-C (INT. GIRDERS)

"A" BT.NO.4 = 1 31/32"
BT.NO.9 = 2 1/32"
BT.NO.13 = 2 1/32"



PART SECTION B-B
AT INT. BENT NO. 4,9 & 13

* 1⅛" Ø BENT NO.4
1 3/16" Ø BENT NO.9
1 3/16" Ø BENT NO.13



SECTION D-D (EXT. GIRDERS)

TYPICAL PLAN OF RESTRAINER PLACEMENT AT BT. NO. 4,9 & 13

DETAILED MAY 1990
CHECKED MAY 1990

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

61A-A of 98
SHEET NO. 61A OF 98

JACKSON COUNTY A-2745

Final Plans