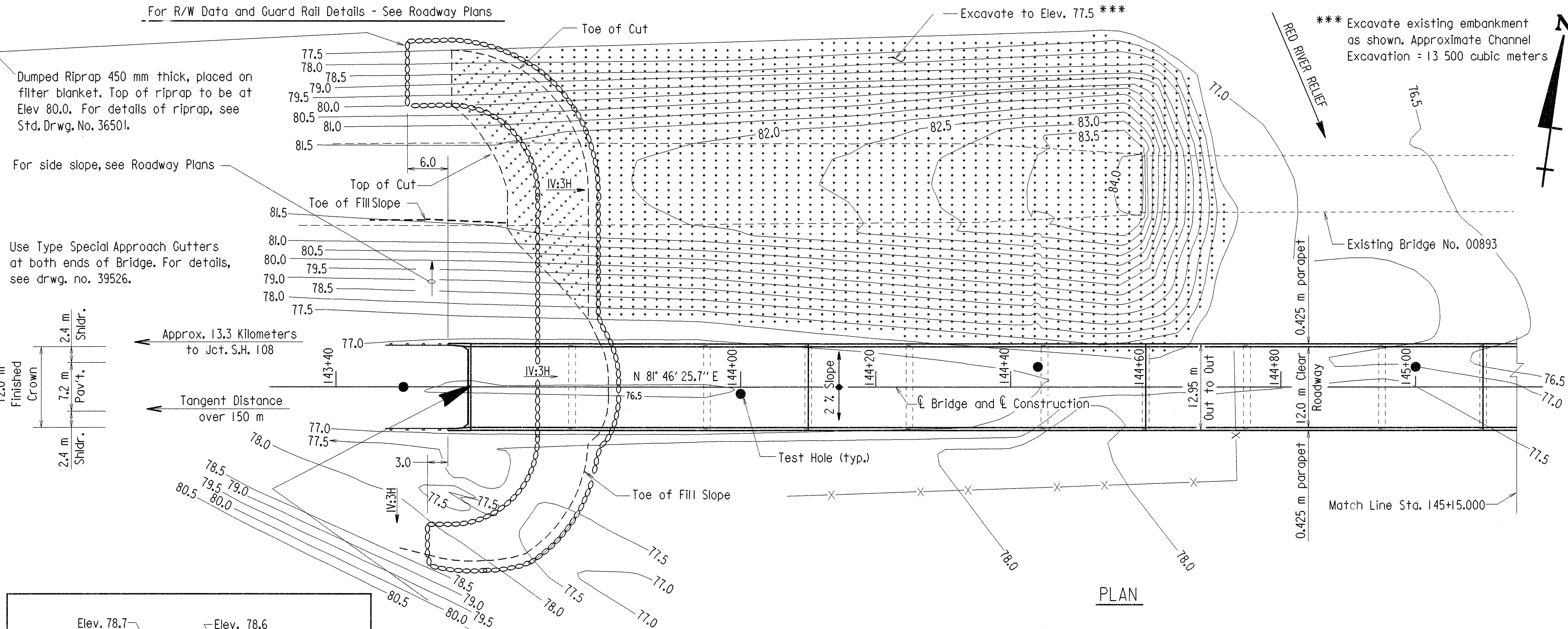
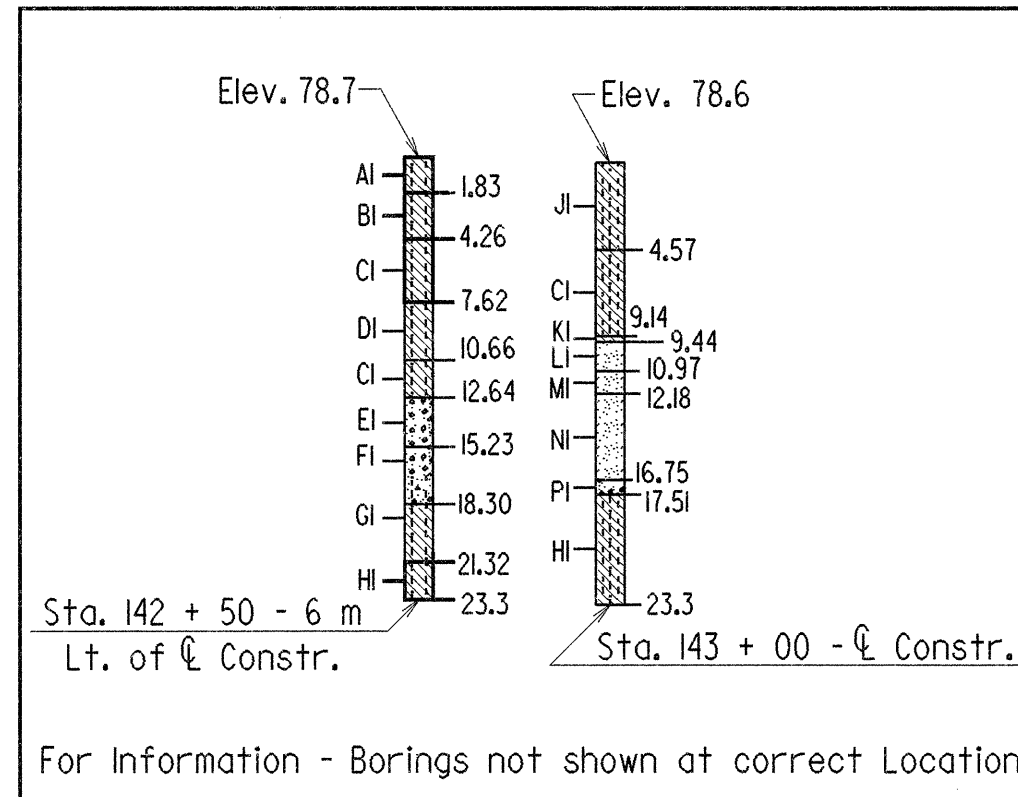


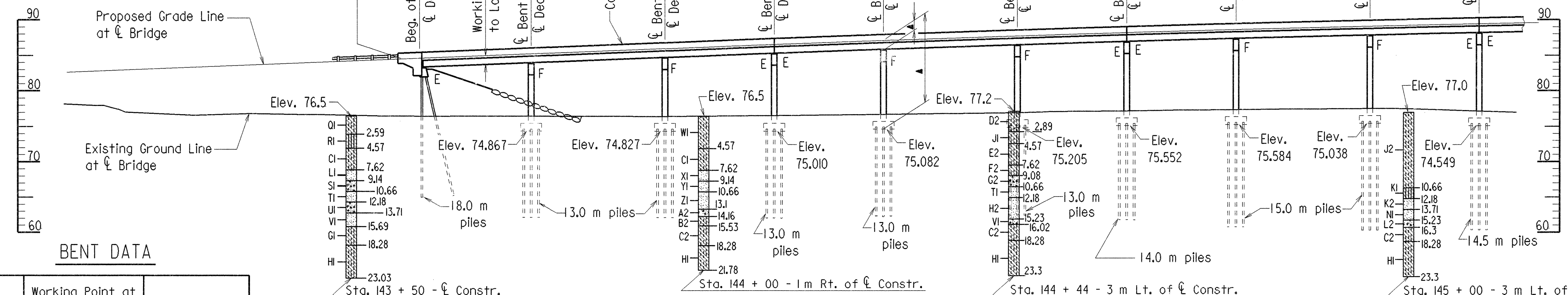
For R/W Data and Guard Rail Details - See Roadway Plans



PLAN



For Information - Borings not shown at correct Location



ELEVATION

Note:  
For Hydraulic Data, See Sheet 3 of 4.

| BENT DATA   |   |             |
|-------------|---|-------------|
| Bent Number | Working Point at C. Bridge to Low Side Top of Cap | Bent Height |
| 2           | 1.173   | 9.2         |
| 3           | 1.173   | 10.0        |
| 4           | 1.189   | 10.4        |
| 5           | 1.173   | 10.9        |
| 6           | 1.173   | 11.4        |
| 7           | 1.187   | 11.5        |
| 8           | 1.173   | 11.9        |
| 9           | 1.173   | 12.9        |
| 10          | 1.185   | 13.7        |

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE  | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|--------|--------------------|-----------|--------------|
|              |             |              |             | 6                   | ARK.   |                    |           |              |
|              |             |              |             | JOB NO.             |        | 030104             | 42        | 164          |
|              |             |              |             | 06751               | LAYOUT |                    |           | 39490        |

GENERAL NOTES

All dimensions are in meters unless otherwise noted.  
BENCH MARK: E-65 set in 1967 brass Cap, 58 m Rt. of C. Constr. Sta. 145+46, Elev. 81.344.  
CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (1996 Edition), with applicable supplemental specifications and special provisions. Unless otherwise noted in the plans, Section and Subsection refer to the Standard Construction Specifications.  
DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Highway Bridges (1996 Edition), with current interim specifications.  
LIVE LOADING: MS 18 METHOD OF DESIGN: Load Factor  
SEISMIC PERFORMANCE CATEGORY: A  
MATERIALS AND STRENGTHS:  
Class S(AE) Concrete (superstructure) f'c = 28.0 MPa  
Class S Concrete (substructure) f'c = 24.0 MPa  
Reinforcing Steel (ASTM A615/A615M-96a) fy = 420 MPa  
Structural Steel (AASHTO M 270, Grade 345W) Fy = 345 MPa  
Structural Steel (AASHTO M 270, Grade 250) Fy = 250 MPa  
BORING LOGS: Boring logs may be obtained from the Programs and Contracts Division.  
CONCRETE PILING: Piling for Bent Nos. 1 thru 13 and 16 thru 28 shall be 405 mm square precast concrete and shall be driven to a minimum ultimate bearing capacity of 1230 kN per pile. Piling in Bent Nos. 14 and 15 shall be 455 mm square precast concrete and shall be driven to a minimum ultimate bearing capacity of 1350 kN per pile. All piling shall be driven with an approved air, steam, or diesel hammer. Piling in End Bent Nos. 1 and 28 shall be driven to a minimum penetration of 3 meters below natural ground and shall be driven after embankment to bottom of cap is in place. Piling in Intermediate Bent Nos. 2 thru 27 shall be driven to a minimum penetration of 6 meters below the bottom of the excavated footing. Lengths of piling shown are assumed for estimating quantities only. Actual lengths shall be determined in the field. Drive one 15.2 m test pile in Bent No. 2, one 15.2 m test pile in Bent No. 5, one 16.7 m test pile in Bent No. 8, one 16.7 m test pile in Bent No. 11, one 15.2 m test pile in Bent No. 14, one 13.7 m test pile in Bent No. 18, one 15.2 m test pile in Bent No. 21, one 16.7 m test pile in Bent No. 24, and one 18.2 m test pile in Bent No. 28.  
DRIVING SYSTEM: The driving system approval and ultimate bearing capacity determination for piling shall be based on the requirements of Section 805.09(b) "METHOD B - WAVE EQUATION ANALYSIS (WEAP)" of the Standard Specifications. It is estimated that a minimum rated hammer energy of 26,000 Joules per blow will be required to obtain the ultimate bearing capacity of the 405 mm piles at bent nos. 1 thru 13 and 16 thru 28 and the 455 mm piles at bent nos. 14 and 15.  
FOOTINGS: The top of the footings in Bent Nos. 2 thru 27 shall be set a minimum of 0.8 m below natural ground or cut elevation, whichever is lower. Foundations for footings shall be prepared in accordance with Section 801.04 of Standard Specifications.  
BRIDGE DECK: The concrete bridge deck shall be given a fine finish as specified for final finishing in subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.  
DETAIL DRAWINGS:  
DRAWING NO.  
End Bents 39495, 39496, 39505 & 39506  
Intermediate Bents 39497 - 39504  
50 m Continuous W-Beam Unit Nos. 1, 2, 3, & 4 39507 - 39512  
119 m Continuous Plate Girder Unit No. 5 39512 & 39514 - 39520  
50 m Continuous W-Beam Unit Nos. 6, 7, 8 & 9 39512 & 39521 - 39525  
Elastomeric Bearings 39513  
Concrete Piling 36506  
EXISTING BRIDGE: Existing Bridge No. 00893 (log mile 16.69) is 9.1 m wide and 373.7 m long. It consists of 32 R.C. Deck Girder approach spans and a 23.44 m Plate Girder Span over the railroad. Concrete piers support the superstructure.  
REMOVAL AND SALVAGE: After the new bridge is opened to traffic, existing Bridge No. 00893 shall be removed in accordance with Section 205 of the Standard Specifications and Special Provision "Special Safety Requirements For Bridge No. 06751." All materials from the existing bridge shall become the property of the Contractor except as noted on drwg. no. 39489.

SHEET 1 OF 4

LAYOUT OF BRIDGE OVER  
U.P. R.R. & RED RIVER RELIEF  
SWAN CR., U.P. & RED RIVER RELIEF  
STRS. & APPRS. (S)  
MILLER COUNTY  
ROUTE 67 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 07/27/98 FILENAME: BR030104.L11  
CHECKED BY: CES DATE: 3-22-99 SCALE: 1:400  
DESIGNED BY: AMS DATE: 4-23-98  
BRIDGE NO. 06751 DRAWING NO. 39490



BRIDGE ENGINEER

MICROFILMED  
JUN 25 1999



Left Gutter

Right Gutter

12.0 m Clear Roadway

2.4 m

3.6 m

7.6 % Super-elevation  
Sta. 147+06.0

2 %

2 %

2 %

2 %

Normal Crown  
Sta. 145+96.0

Rotate about C Bridge  
Sta. 145+96.0 to Sta. 146+29.951

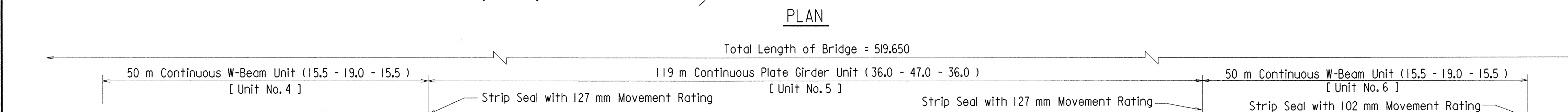
Rotate about point 3.6 m left of C Bridge  
Sta. 146+29.951 to End of Bridge

### METHOD OF SUPERELEVATION TRANSITION

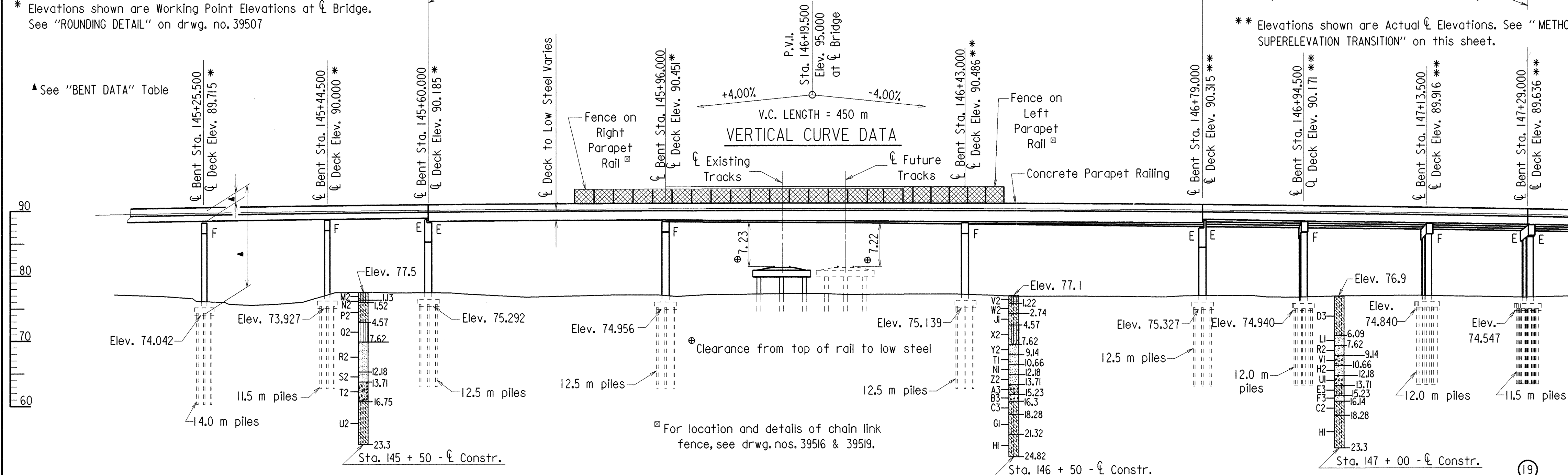
**Note:**

For elevation at C Bridge rotation point, See "VERTICAL CURVE DATA" detail.

For elevation of rotation point 3.6 m left of C, Use C Elevation from "VERTICAL CURVE DATA", minus 0.072 m.



Note: All dimensions are in meters unless otherwise noted.



LAYOUT OF BRIDGE OVER  
U.P. R.R. & RED RIVER RELIEF  
SWAN CR., U.P. & RED RIVER RELIEF  
STRS. & APPRS. (S)  
MILLER COUNTY  
ROUTE 67 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 07/27/98 FILENAME: BR030104.LII  
 CHECKED BY: CES DATE: 3-15-99 SCALE: 1: 400  
 DESIGNED BY: AMS DATE: 4-23-98  
 BRIDGE NO. 06751 DRAWING NO. 39491

STATE OF  
**ARKANSAS**  
*Edward T. Fain*  
**REGISTERED  
 PROFESSIONAL  
 ENGINEER**  
 \*\*\*  
 No. 3915  
 3-19-99  
**EDWARD T. FAIN**  
 BRIDGE ENGINEER

HORIZONTAL CURVE DATA  
PI = STA. 148+57.127  
DELTA = 38° 30' 52.3"  
R = 510.000 m  
T = 178.173 m  
L = 342.825 m  
PC = STA. 146+78.954  
PT = STA. 150+21.779

\*\*\* Excavate existing embankment  
as shown. Approximate Channel  
Excavation = 6500 cubic meters

For R/W Data and Guard Rail Details - See Roadway Plans

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|-----------|--------------|
|              |             |              |             | 6                   | ARK.  |                    |           |              |
|              |             |              |             |                     |       | JOB NO. 030104     | 44        | 164          |
|              |             |              |             |                     |       | 06751 LAYOUT       |           | 39492        |

Note: All dimensions are in meters unless otherwise noted.

#### BENT DATA

| Bent Number | ℄ Deck at ℄ Bridge to Low Side Top of Cap | Bent Height |
|-------------|---|-------------|
| 20          | 1.477                                     | 13.0        |
| 21          | 1.476                                     | 11.8        |
| 22          | 1.490                                     | 11.8        |
| 23          | 1.476                                     | 11.5        |
| 24          | 1.476                                     | 10.9        |
| 25          | 1.492                                     | 10.0        |
| 26          | 1.477                                     | 9.4         |
| 27          | 1.477                                     | 8.5         |

#### HYDRAULIC DATA

| FLOOD DESCRIPTION | FREQUENCY | DISCHARGE | NATURAL WATER SURFACE ELEVATION | WATER SURFACE ELEVATION WITH BACKWATER |
|-------------------|-----------|-----------|---------------------------------|--|
|                   | YEARS     | CMS       | METERS                          | METERS                                 |
| DESIGN            | 50        | 1118      | 78.45                           | 78.86                                  |
| BASE              | 100       | 1852      | 79.28                           | 79.78                                  |
| OVERTOPPING       | 250       | 3111      | 80.66                           | 81.07                                  |

Flow through this bridge; combined discharge through this bridge and (Main Red River ) Bridge No. 5823 =  
5947 CMS for Q<sub>50</sub> Discharge  
7363 CMS for Q<sub>100</sub> Discharge  
9700 CMS for Overtopping Discharge

Unconstricted Water Surface without Structures or Roadway Approaches

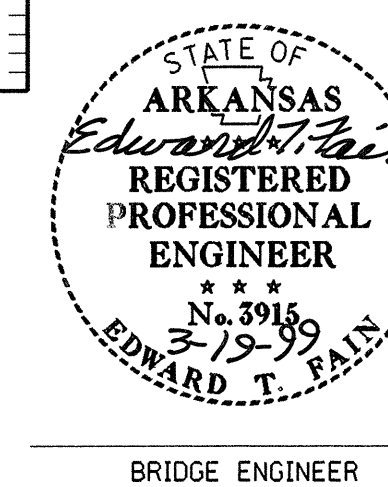
Combined Drainage Area for this bridge and Bridge No. 5823 =  
135,664 Square Kilometers

HISTORICAL H.W. ELEVATION = 79.26 (WEST BOUND SIDE OF I-30 )

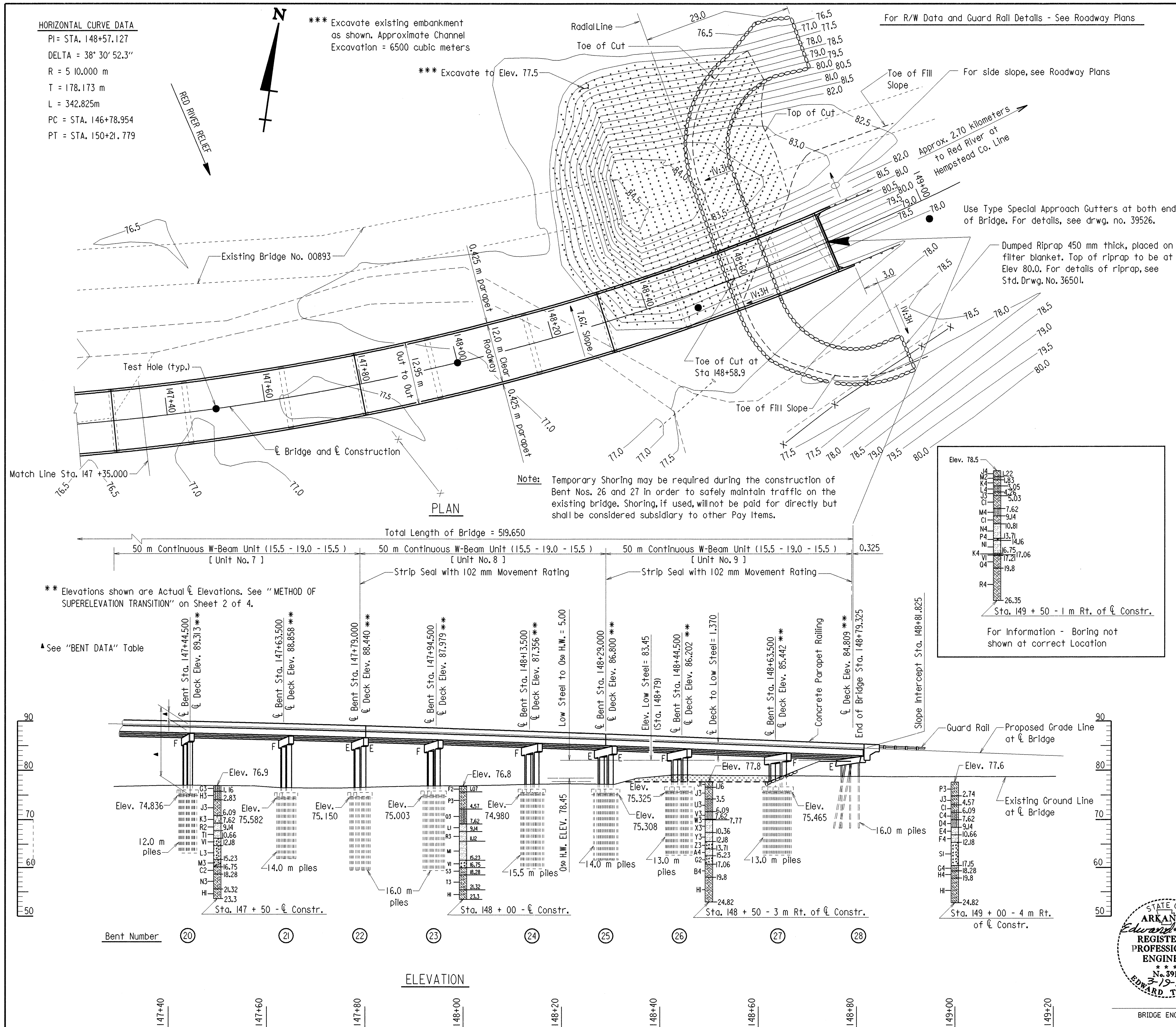
#### SHEET 3 OF 4

LAYOUT OF BRIDGE OVER  
U.P. R.R. & RED RIVER RELIEF  
SWAN CR., U.P. & RED RIVER RELIEF  
STRS. & APPRS. (S)  
MILLER COUNTY  
ROUTE 67 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 07/27/98 FILENAME: BR030104.L11  
CHECKED BY: CES DATE: 3-15-99 SCALE: 1:400  
DESIGNED BY: AMS DATE: 4-23-98  
BRIDGE NO. 06751 DRAWING NO. 39492



BRIDGE ENGINEER



MICROFILMED  
JUN 25 1999

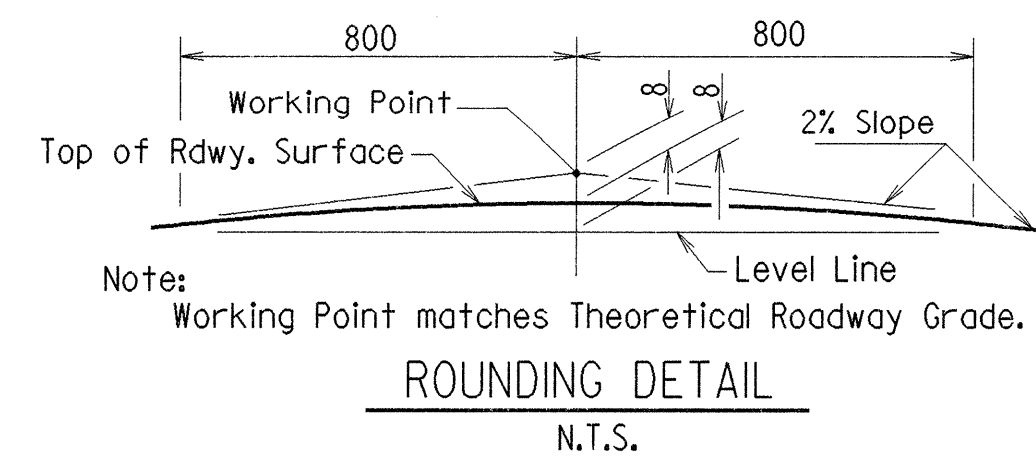
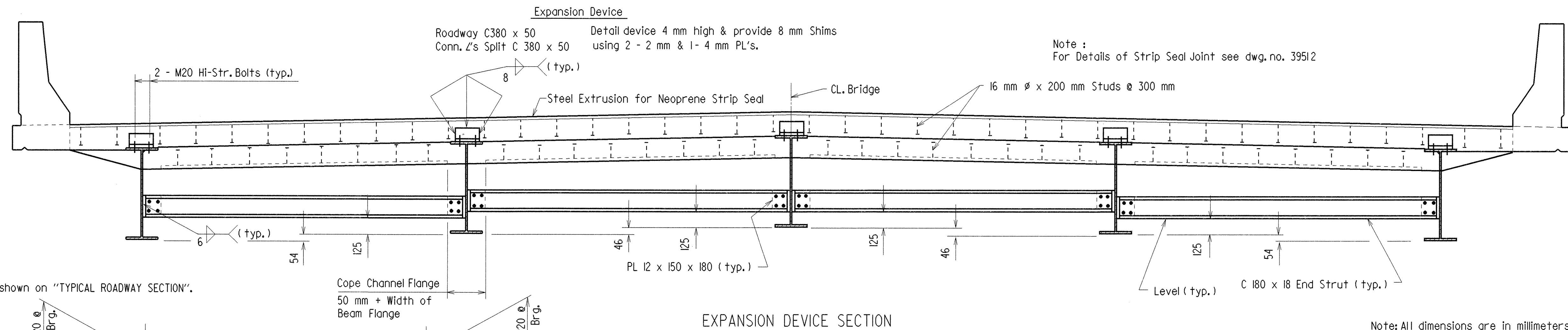
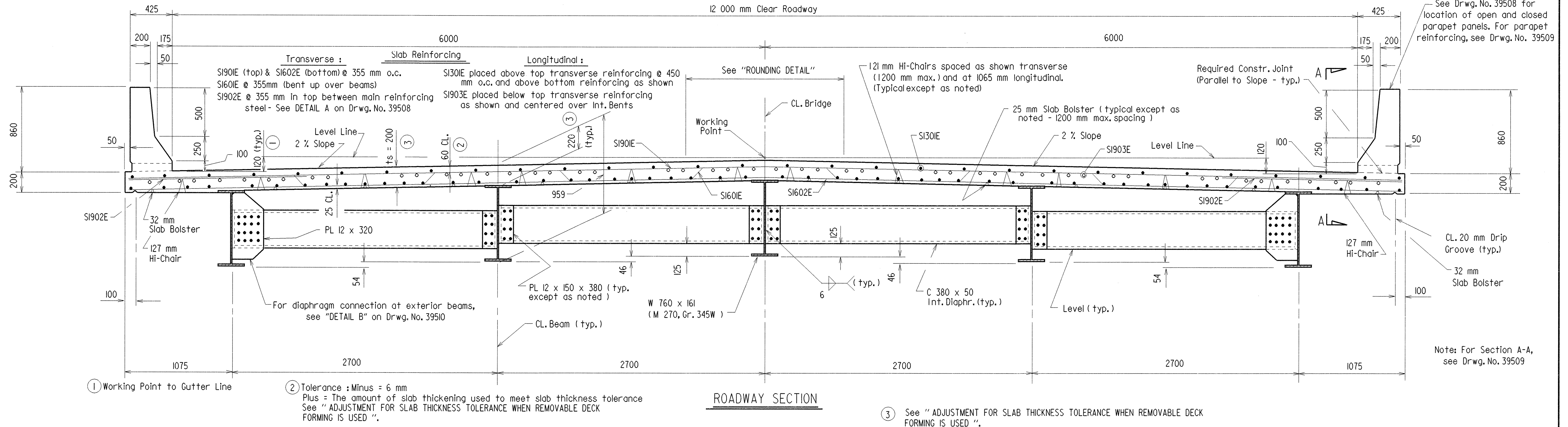


Note : At Contractor's Option, in lieu of providing bar SI601E, one # 16 bar top and bottom may be substituted. Payment for Reinforcing will be based on the weight of bar SI601E. Bars in top and bottom mat shall be Epoxy coated.

Note : Class I Protective Surface Treatment shall be applied to the Roadway Surface and the Face and Top of the Concrete Parapet Rail.

Note : All Bars designated with an "E" suffix are to be Epoxy Coated.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|-----------|--------------|
|              |             |              |             | 6                   | ARK.  |                    |           |              |
|              |             |              |             | JOB NO.             |       | 030104             | 59        | 164          |
|              |             |              |             | 06751               |       | SPAN DETAILS       |           | 39507        |



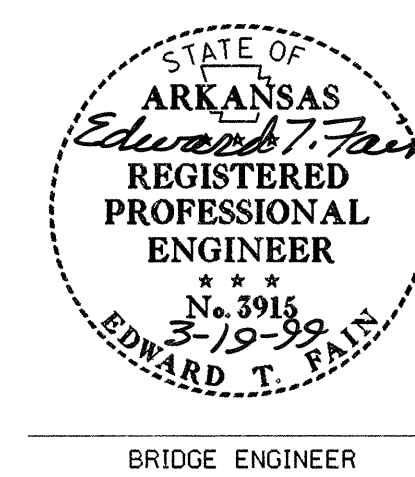
Note: All dimensions are in millimeters (mm) unless otherwise noted.

(SHEET 1 OF 5)  
DETAILS OF  
50 METER CONTINUOUS  
W-BEAM UNITS 1, 2, 3 & 4  
U.P.R.R. & RED RIVER RELIEF

ROUTE 67 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: J.P.S. DATE: 8-13-98 FILENAME: B030104XLSII  
CHECKED BY: CES DATE: 3-8-99 SCALE: 1:20 OF  
DESIGNED BY: AMS DATE: 7-6-98 AS NOTED  
BRIDGE NO. 06751 DRAWING NO. 39507



BRIDGE ENGINEER



MICROFILMED  
JUN 25 1999

\*\* Tolerance when removable deck forming is used is +12 mm, -6 mm. Haunch forming is required and shall be adjusted to maintain slab thickness tolerance. Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: Minimum - occurs when top flange contacts bottom reinforcing steel; Maximum - top flange thickness plus 45 mm. No increase in concrete and structural steel quantities will be made to maintain tolerances. Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 36515 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED  
N.T.S.

BORING LEGEND

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE  | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|--------|--------------------|-----------|--------------|
|              |             |              |             | 6                   | ARK.   |                    |           |              |
|              |             |              |             | JOB NO.             |        | 030104             | 45        | 164          |
|              |             |              |             | 06751               | LAYOUT |                    | 39493     |              |

AI - Moist, Medium Stiff, Brown to Brown and Gray Silty Clay with some Organic Matter  
BI - Moist, Medium Stiff, Brown Silty Clay with some Organic Matter and Calcareous Nodules  
CI - Wet, Soft, Brown Silty Clay  
DI - Wet, Very Soft, Brown Silty Clay  
EI - Wet, Dense, Brown to Gray Sand and Gravel  
FI - Wet, Medium Dense to Dense, Gray Sand and Gravel  
GI - Moist, Hard, Gray Calcareous Silty Clay with Shells  
HI - Moist, Very Hard, Gray Calcareous Silty Clay with Shells  
JI - Moist, Medium Stiff, Brown Silty Clay with some Organic Matter  
KI - Wet, Medium Stiff, Brown Silty Clay  
LI - Wet, Loose, Brown Sand  
MI - Wet, Loose, Gray Sand  
NI - Wet, Medium Dense, Gray Sand with some Gravel  
PI - Wet, Very Dense, Gray Sand and Gravel  
OI - Moist, Soft to Medium Stiff, Brown Silty Clay with some Organic Matter and Calcareous Nodules  
RI - Wet, Loose, Brown Clayey Silt  
SI - Wet, Medium Dense, Gray and Brown Sand and Gravel  
TI - Wet, Medium Dense, Gray Sand  
UI - Wet, Loose, Gray Sand and Gravel  
VI - Wet, Medium Dense, Gray Sand and Gravel  
WI - Moist, Medium Stiff, Reddish Brown to Brown Silty Clay with some Organic Matter  
XI - Wet, Very Loose, Brown and Gray Sand with some Clay Seams and Gravel  
YI - Wet, Loose, Brown and Gray Sand  
ZI - Wet, Medium Dense, Brown to Gray and Brown Sand  
A2 - Wet, Medium Dense, Brown and Gray Sand and Gravel  
B2 - Moist, Very Stiff, Brown and Gray Silty Clay  
C2 - Moist, Hard, Gray Calcareous Silty Clay  
D2 - Moist, Stiff, Brown Silty Clay with some Organic Matter  
E2 - Moist, Stiff to Medium Stiff, Brown and Gray Silty Clay

F2 - Moist, Medium Stiff, Brown and Gray Silty Clay with some Organic Matter  
G2 - Wet, Medium Dense, Brown Sand and Gravel  
H2 - Wet, Loose, Gray Sand with some Gravel  
J2 - Moist, Medium Stiff, Brown to Brown and Gray Silty Clay with some Organic Matter  
K2 - Wet, Medium Dense, Gray Sand with some Gravel and Clay Seams  
L2 - Wet, Loose, Gray and Brown Sand and Gravel with some Clay Seams  
M2 - Moist, Medium Dense, Brown Clayey Silt  
N2 - Moist, Loose, Brown Silt  
P2 - Moist, Medium Stiff, Brown to Brown and Gray Silty Clay  
Q2 - Wet, Very Loose, Brown Silt  
R2 - Wet, Medium Dense, Brown Sand  
S2 - Wet, Medium Dense, Brown Sand with Traces of Clay Seams  
T2 - Wet, Medium Dense, Brown and Gray to Gray Sand with Clay Seams and Gravel  
U2 - Moist, Very Hard, Gray Calcareous Silty Clay with Shells •  
V2 - Moist, Loose, Brown and Gray Sandy, Clayey Silt  
W2 - Moist, Soft, Brown Clay with Silt Seams  
X2 - Wet, Very Loose, Brown Sandy Silt  
Y2 - Wet, Medium Dense, Gray Sand with Traces of Clay Seams  
Z2 - Wet, Medium Dense, Brown Sand with Traces of Gravel and Clay Seams  
A3 - Wet, Stiff, Brown and Gray Sandy Clay with Gravel  
B3 - Wet, Medium Dense, Brown and Gray Sand and Gravel with Traces of Clay Seams  
C3 - Moist, Very Stiff, Gray Calcareous Silty Clay with Fall-in Gravel •  
D3 - Alternating Layers of Moist, Medium Stiff, Brown Silty Clay with Moist, Soft, Brown Silty Clay  
E3 - Wet, Medium Stiff, Gray Sandy, Silty Clay  
F3 - Wet, Medium Dense, Gray Sand with Traces of Clay  
G3 - Moist, Medium Dense, Brown and Gray Sandy, Clayey Silt  
H3 - Moist, Loose, Brown Clayey Silt  
J3 - Moist, Soft, Brown Silty Clay  
K3 - Wet, Loose, Brown Silty Sand

L3 - Wet, Loose to Medium Dense, Gray Sand and Gravel  
M3 - Wet, Loose, Gray Sand and Gravel with Clay Seams  
N3 - Moist, Very Hard, Gray Calcareous Silty Clay  
P3 - Moist, Soft, Brown Silty Clay with some Organic Matter  
O3 - Wet, Very Loose, Brown Sandy, Clayey Silt  
R3 - Wet, Loose, Brown to Brown and Gray Sand with some Gravel  
S3 - Moist, Very Hard, Gray Silty Clay  
T3 - Moist, Hard to Very Hard, Gray Calcareous Silty Clay  
U3 - Moist to Wet, Very Loose, Brown Clayey Silt  
V3 - Wet, Loose, Brown Sandy Silt  
W3 - Wet, Very Soft, Brown Sandy Clay  
X3 - Wet, Loose to Medium Dense, Brown Sand  
Y3 - Wet, Medium Dense, Brown Sand with some Gravel  
Z3 - Wet, Loose, Brown and Gray Sand and Gravel  
A4 - Wet, Dense, Brown and Gray Sand  
B4 - Moist, Very Stiff to Hard, Gray Calcareous Silty Clay with Shells  
C4 - Wet, Very Loose, Brown Clayey Silt  
D4 - Wet, Medium Dense, Brown Sandy Silt  
E4 - Wet, Dense, Brown Sand  
F4 - Wet, Medium Dense, Gray and Brown Sand with some Gravel  
G4 - Wet, Very Stiff, Gray Silty Clay with some Gravel  
H4 - Moist, Very Hard, Gray Calcareous Silty Clay with some Gravel and Shells  
J4 - Moist, Stiff, Brown Sandy, Silty Clay with some Organic Matter  
K4 - Moist, Medium Stiff, Brown Silty Clay  
L4 - Moist, Very Loose, Brown Clayey Silt  
M4 - Moist, Very Loose, Brown Sandy Silt  
N4 - Wet, Medium Dense, Gray and Brown Sand  
P4 - Wet, Medium Stiff, Gray Sandy, Silty Clay with Gravel  
Q4 - Moist, Very Stiff, Gray Calcareous Silty Clay with Traces of Shells  
R4 - Moist, Very Hard, Gray Calcareous Silty Clay with Traces of Shells

“N” VALUES

Sta. 142 + 50 - 6 m Left of C Construction

0.76 - 1.06, N = 8  
1.98 - 2.28, N = 8  
3.20 - 3.50, N = 7  
4.41 - 4.71, N = 4  
5.63 - 5.93, N = 2  
7.77 - 8.07, N = 0  
9.29 - 9.59, N = 1  
10.81 - 11.11, N = 2  
12.33 - 12.63, N = 2  
13.86 - 14.16, N = 42  
15.38 - 15.68, N = 18  
16.90 - 17.20, N = 40  
18.43 - 18.73, N = 53  
19.95 - 20.25, N = 53  
21.47 - 21.77, N = 69  
23.00 - 23.30, N = 92

Sta. 144 + 00 - 1 m Right of C Construction

1.37 - 1.67, N = 7  
2.89 - 3.19, N = 5  
4.72 - 5.02, N = 3  
6.24 - 6.54, N = 2  
7.77 - 8.07, N = 2  
9.29 - 9.59, N = 8  
10.81 - 11.11, N = 18  
12.33 - 12.63, N = 19  
13.86 - 14.16, N = 15  
15.38 - 15.68, N = 34  
16.90 - 17.20, N = 54  
18.43 - 18.73, N = 68  
19.95 - 20.25, N = 67  
21.47 - 21.77, N = 63

Sta. 145 + 50 - C Construction

1.28 - 1.58, N = 9  
2.80 - 3.10, N = 6  
4.72 - 5.02, N = 4  
6.24 - 6.54, N = 2  
7.77 - 8.07, N = 21  
9.29 - 9.59, N = 14  
10.81 - 11.11, N = 17  
12.33 - 12.63, N = 15  
13.86 - 14.16, N = 17  
15.38 - 15.68, N = 11  
16.90 - 17.20, N = 76  
18.43 - 18.65, N = 87 (.06)  
19.95 - 20.25, N = 76  
21.47 - 21.77, N = 72  
23.00 - 23.30, N = 93

Sta. 147 + 50 - C Construction

1.31 - 1.61, N = 8  
2.83 - 3.13, N = 4  
4.72 - 5.02, N = 4  
6.24 - 6.54, N = 6  
7.77 - 8.07, N = 14  
9.29 - 9.59, N = 24  
10.81 - 11.11, N = 16  
12.33 - 12.63, N = 5  
13.86 - 14.16, N = 14  
15.38 - 15.68, N = 10  
16.90 - 17.20, N = 33  
18.43 - 18.55, N = 60 (.12)  
19.95 - 20.25, N = 68  
21.47 - 21.77, N = 75  
23.00 - 23.30, N = 92

Sta. 149+00 - 4 m Right of C Construction

1.37 - 1.67, N = 3  
2.89 - 3.19, N = 3  
4.72 - 5.02, N = 2  
6.24 - 6.54, N = 2  
7.77 - 8.07, N = 13  
9.29 - 9.59, N = 44  
10.81 - 11.11, N = 21  
12.33 - 12.63, N = 12  
13.86 - 14.16, N = 22  
15.38 - 15.68, N = 12  
16.90 - 17.20, N = 22  
18.43 - 18.73, N = 66  
19.95 - 20.17, N = 87 (.06)  
21.47 - 21.77, N = 87  
23.00 - 23.30, N = 74  
24.52 - 24.82, N = 73

Sta. 143 + 00 - C Construction

1.06 - 1.36, N = 8  
2.59 - 2.89, N = 6  
4.72 - 5.02, N = 2  
6.24 - 6.54, N = 2  
7.77 - 8.07, N = 3  
9.29 - 9.59, N = 12  
10.81 - 11.11, N = 9  
12.33 - 12.63, N = 19  
13.86 - 14.16, N = 20  
15.38 - 15.68, N = 15  
16.90 - 17.20, N = 56  
18.43 - 18.73, N = 65  
19.95 - 20.25, N = 67  
21.47 - 21.77, N = 69  
23.00 - 23.30, N = 76

Sta. 144 + 44 - 3 m Left of C Construction

1.52 - 1.82, N = 9  
3.04 - 3.34, N = 6  
4.72 - 5.02, N = 9  
6.24 - 6.54, N = 5  
7.77 - 8.07, N = 6  
9.29 - 9.59, N = 18  
10.81 - 11.11, N = 11  
12.33 - 12.63, N = 8  
13.86 - 14.16, N = 9  
15.38 - 15.68, N = 13  
16.90 - 17.20, N = 33  
18.43 - 18.73, N = 74  
19.95 - 20.25, N = 75  
21.47 - 21.77, N = 71  
23.00 - 23.30, N = 72

Sta. 146 + 50 - C Construction

1.37 - 1.67, N = 4  
2.89 - 3.19, N = 5  
4.72 - 5.02, N = 2  
6.24 - 6.54, N = 2  
7.77 - 8.07, N = 12  
9.29 - 9.59, N = 19  
10.81 - 11.11, N = 12  
12.33 - 12.63, N = 11  
13.86 - 14.16, N = 12  
15.38 - 15.68, N = 23  
16.90 - 17.20, N = 28  
18.43 - 18.73, N = 35  
19.95 - 20.25, N = 53  
21.47 - 21.75, N = 115 (.12)  
23.00 - 23.30, N = 91  
24.52 - 24.82, N = 100

Sta. 148 + 00 - C Construction

1.22 - 1.52, N = 3  
2.74 - 3.04, N = 4  
4.72 - 5.02, N = 1  
6.24 - 6.54, N = 4  
7.77 - 8.07, N = 9  
9.29 - 9.59, N = 9  
10.81 - 11.11, N = 18  
12.33 - 12.63, N = 7  
13.86 - 14.16, N = 9  
15.38 - 15.68, N = 15  
16.90 - 17.20, N = 70  
18.43 - 18.73, N = 32  
19.95 - 20.25, N = 69  
21.47 - 21.77, N = 65  
23.00 - 23.30, N = 82

Sta. 149 + 50 - 1 m Right of C Construction

0.76 - 1.06, N = 10  
1.98 - 2.28, N = 5  
3.20 - 3.50, N = 4  
5.02 - 5.32, N = 3  
6.24 - 6.54, N = 4  
7.77 - 8.07, N = 3  
9.29 - 9.59, N = 3  
10.81 - 11.11, N = 12  
12.33 - 12.63, N = 18  
13.86 - 14.16, N = 6  
15.38 - 15.68, N = 26  
16.90 - 17.20, N = 18  
18.43 - 18.73, N = 24  
19.95 - 20.25, N = 78  
21.47 - 21.77, N = 75  
23.00 - 23.30, N = 64  
24.52 - 24.82, N = 78  
26.04 - 26.34, N = 84  
26.04 - 26.34, N = 84

Sta. 143 + 50 - C Construction

1.22 - 1.52, N = 5  
2.74 - 3.04, N = 5  
4.72 - 5.02, N = 2  
6.24 - 6.54, N = 2  
7.77 - 8.07, N = 7  
9.29 - 9.59, N = 14  
10.81 - 11.11, N = 22  
12.33 - 12.63, N = 8  
13.86 - 14.16, N = 19  
15.38 - 15.68, N = 25  
16.90 - 17.20, N = 51  
18.43 - 18.73, N = 62  
19.95 - 20.25, N = 62  
21.47 - 21.77, N = 74  
23.00 - 23.03, N = 60 (.03)

Sta. 145 + 00 - 3 m Left of C Construction

1.22 - 1.52, N = 6  
2.74 - 3.04, N = 7  
4.72 - 5.02, N = 8  
6.24 - 6.54, N = 5  
7.77 - 8.07, N = 6  
9.29 - 9.59, N = 6  
10.81 - 11.11, N = 5  
12.33 - 12.63, N = 12  
13.86 - 14.16, N = 13  
15.38 - 15.68, N = 7  
16.90 - 17.20, N = 54  
18.43 - 18.73, N = 73  
19.95 - 20.25, N = 62  
21.47 - 21.77, N = 73  
23.00 - 23.30, N = 91

Sta. 147 + 00 - C Construction

1.46 - 1.76, N = 4  
2.98 - 3.28, N = 6  
4.72 - 5.02, N = 4  
6.24 - 6.54, N = 7  
7.77 - 8.07, N = 14  
9.29 - 9.59, N = 12  
10.81 - 11.11, N = 6  
12.33 - 12.63, N = 10  
13.86 - 14.16, N = 5  
15.38 - 15.68, N = 20  
16.90 - 17.20, N = 33  
18.43 - 18.73, N = 90  
19.95 - 20.17, N = 91 (.06)  
21.47 - 21.75, N = 102 (.12)  
23.00 - 23.30, N = 80

Sta. 148 + 50 - 3 m Right of C Construction

0.85 - 1.15, N = 7  
2.37 - 2.67, N = 3  
3.20 - 3.50, N = 3  
4.72 - 5.02, N = 2  
6.24 - 6.54, N = 6  
7.77 - 8.07, N = 6  
9.29 - 9.59, N = 19  
10.81 - 11.11, N = 16  
12.33 - 12.63, N = 8  
13.86 - 14.16, N = 35  
15.38 - 15.68, N = 17  
16.90 - 17.20, N = 19  
18.43 - 18.73, N = 56  
19.95 - 20.25, N = 62  
21.47 - 21.77, N = 82  
23.00 - 23.30, N = 67  
24.52 - 24.82, N = 66



BRIDGE ENGINEER

SHEET 4 OF 4

LAYOUT OF BRIDGE OVER  
U.P. R.R. & RED RIVER RELIEF  
SWAN CR., U.P. & RED RIVER RELIEF  
STRS. & APPRS. (S)  
MILLER COUNTY

ROUTE 67 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 07/27/98 FILENAME: br030104.bor  
CHECKED BY: CES DATE: 3-15-99 SCALE: None  
DESIGNED BY: AMS DATE: 4-23-98  
BRIDGE NO. 06751 DRAWING NO. 39493



MICROFILMED  
JUN 25 1999







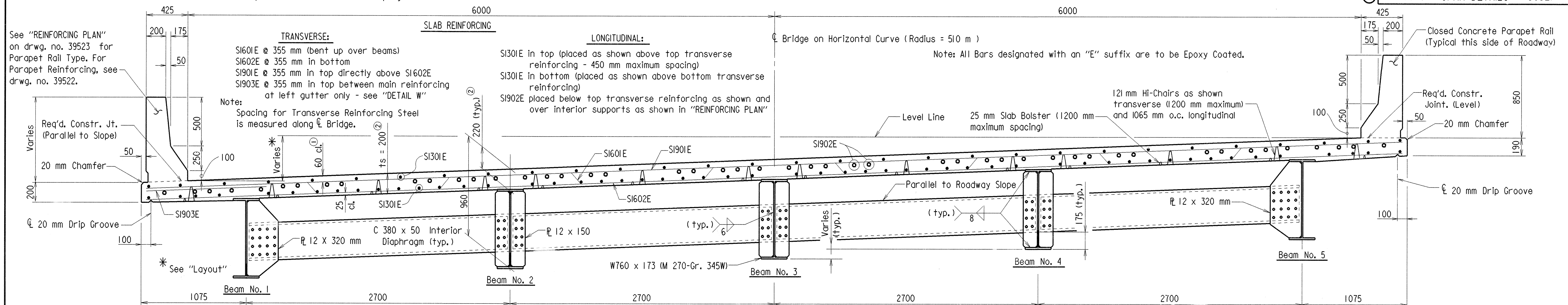
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE        | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|--------------|--------------------|-----------|--------------|
|              |             |              |             | 6                   | ARK.         |                    |           |              |
|              |             |              |             | JOB NO.             |              | 030104             | 73        | 164          |
|              |             |              |             | 06751               | SPAN DETAILS |                    | 39521     |              |

Note:

One #16 bar in the top and one #16 bar in the bottom may be substituted for each bar SI601E. Payment for reinforcing will be based on the weight of bar SI601E. Bars in top and bottom mat shall be Epoxy coated.

Note:

Class I Protective Surface Treatment shall be applied to the Roadway Surface and the Face and Top of the Concrete Parapet Rail.



Note:

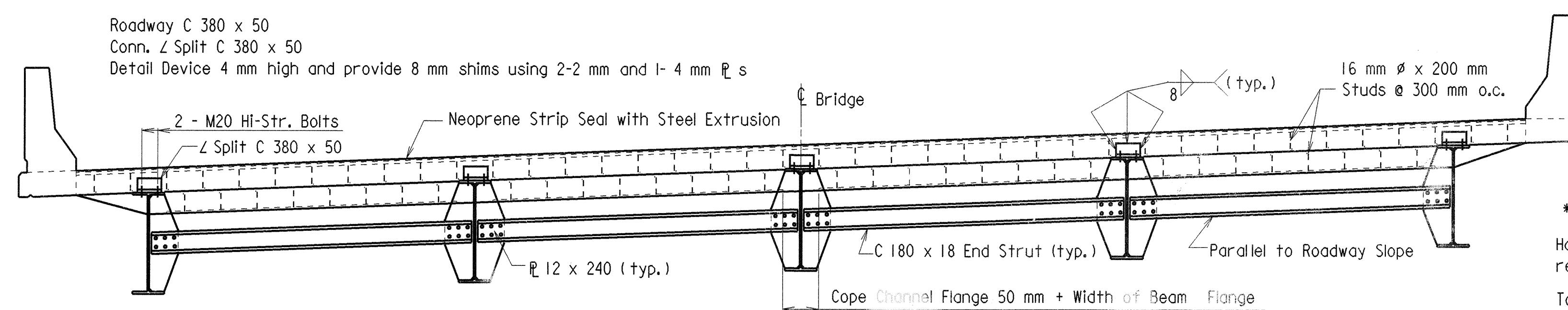
Bolts in Diaphragm Connections shall be properly installed and tightened in accordance with Subsection 807.71 of the Standard Specifications.

① Tolerance: Minus = 6 mm

Plus = The amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

②

Refer to "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED"

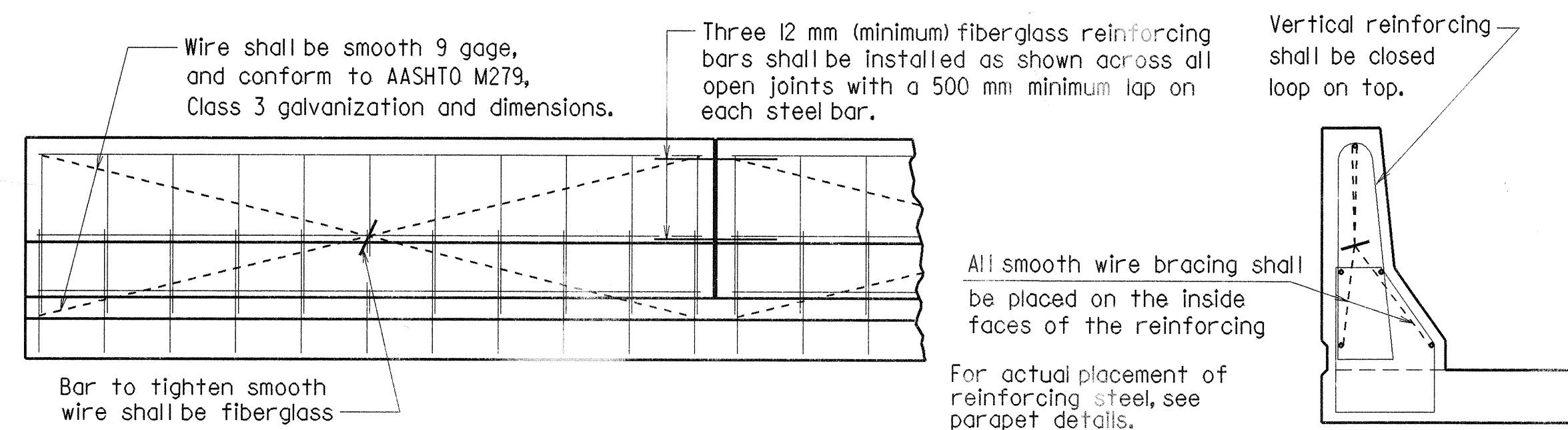


ROADWAY SECTION AT END OF UNIT  
1:30

\*\*Tolerance when removable deck forming is used is +12 mm, -6 mm. Haunch forming is required and shall be adjusted to maintain slab thickness tolerance. Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: Minimum - occurs when top flange contacts bottom reinforcing steel; Maximum - top flange thickness plus 45 mm. No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Drwg. No. 36515 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED

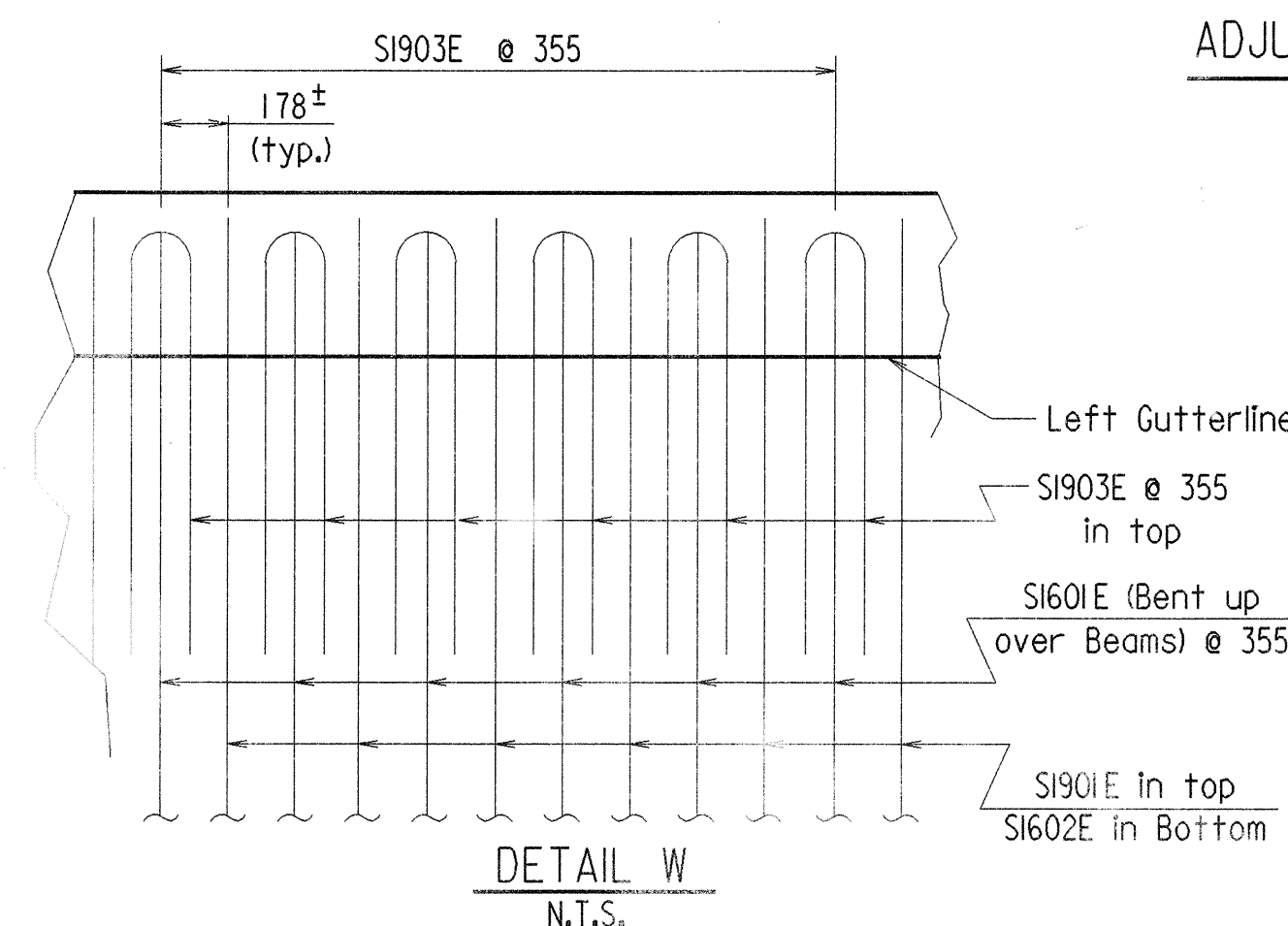


All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 6 mm. To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Exposed surfaces may be given a light brush finish or a Class 3, Textured Coating Finish, in place of Class 2, Rubbed Finish.

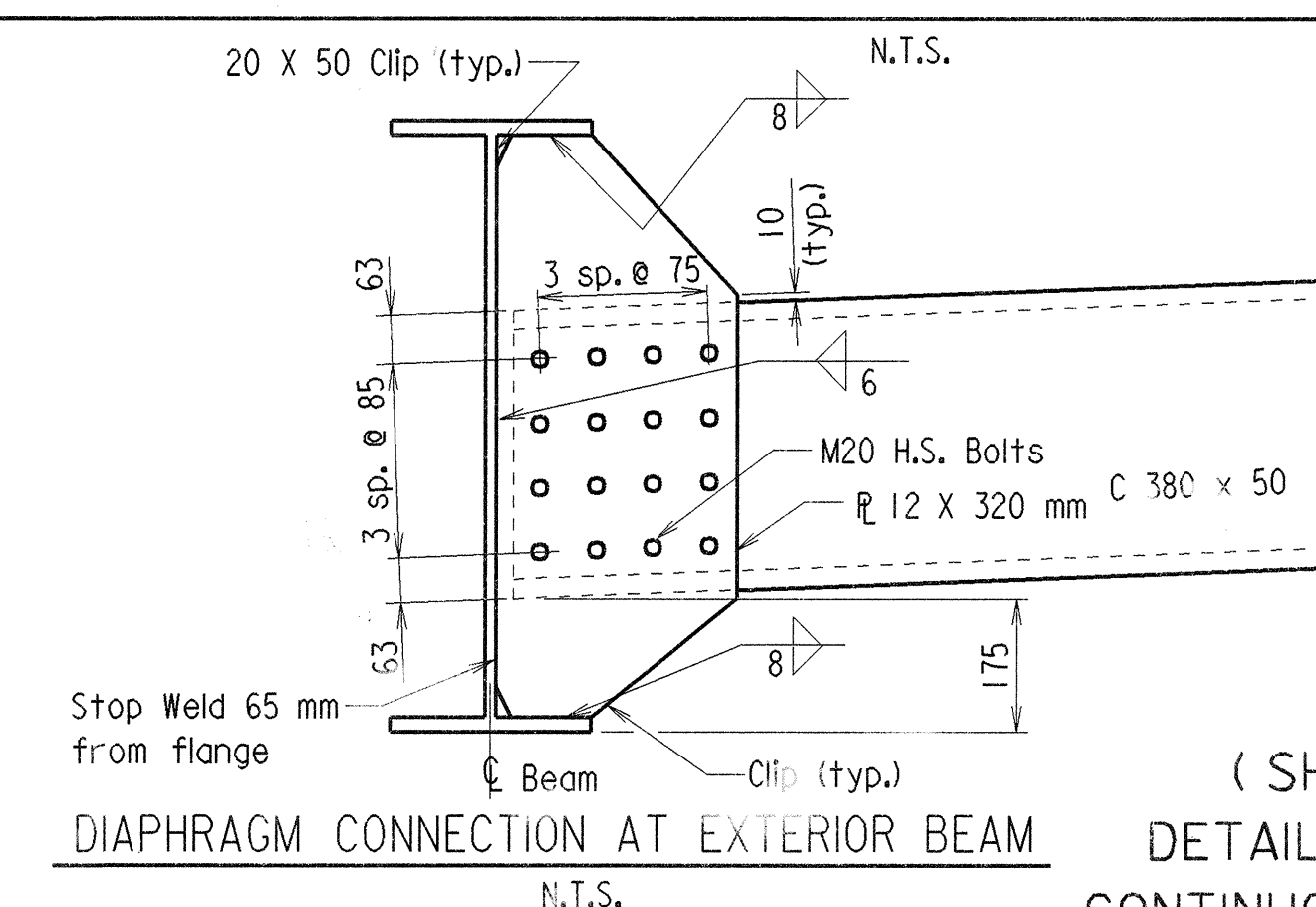
DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

N.T.S.



Note:

For placement of SI903E, see "LEFT PARAPET ARRANGEMENT - UNIT NO. 9" and "REINFORCING PLAN - UNIT NOS. 6, 7, and 8" on drwg. no. 39523. Spacing shown is measured along  $\ell$  Bridge.

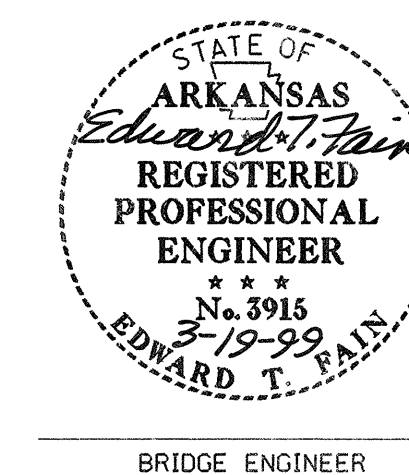


Note:  
All dimensions are in millimeters (mm) unless otherwise noted.

(SHEET 1 OF 5)  
DETAILS OF 50 METER  
CONTINUOUS W-BEAM UNITS  
6, 7, 8, AND 9  
U.P. R.R. & RED RIVER RELIEF

ROUTE 67 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION

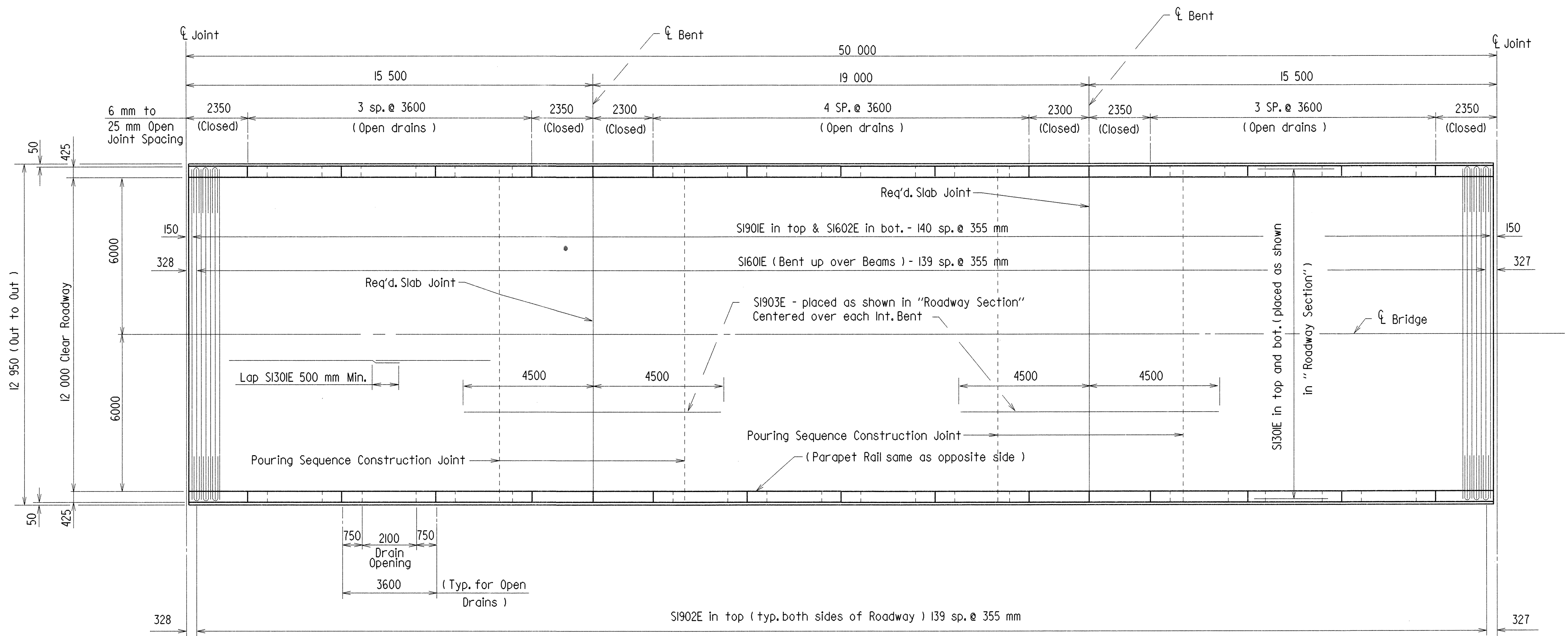
LITTLE ROCK, ARK. FILENAME: BR030104XLS11  
DRAWN BY: TEB DATE: 10/12/98  
CHECKED BY: CES DATE: 1-28-99  
DESIGNED BY: AMS DATE: 8-5-98  
BRIDGE NO. 06751 DRAWING NO. 39521



BRIDGE ENGINEER

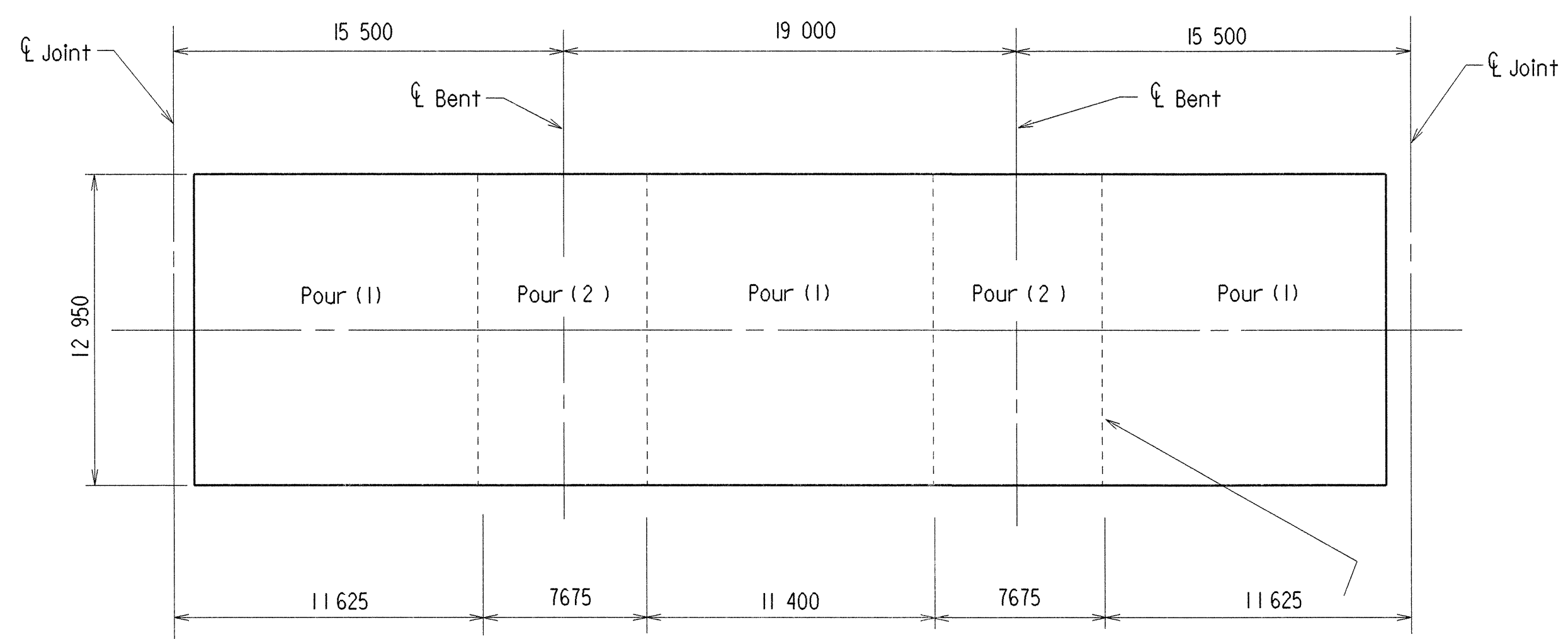
MICROFILMED  
JUN 25 1999

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|-----------|--------------|
|              |             |              |             | 6                   | ARK.  |                    |           |              |
|              |             |              |             | JOB NO.             |       | 030104             | 60        | 164          |
|              |             |              |             | 06751               |       | SPAN DETAILS       |           | 39508        |



REINFORCING PLAN - UNITS 2, 3, & 4

Note :  
For details of SI902E  
- see Detail A.



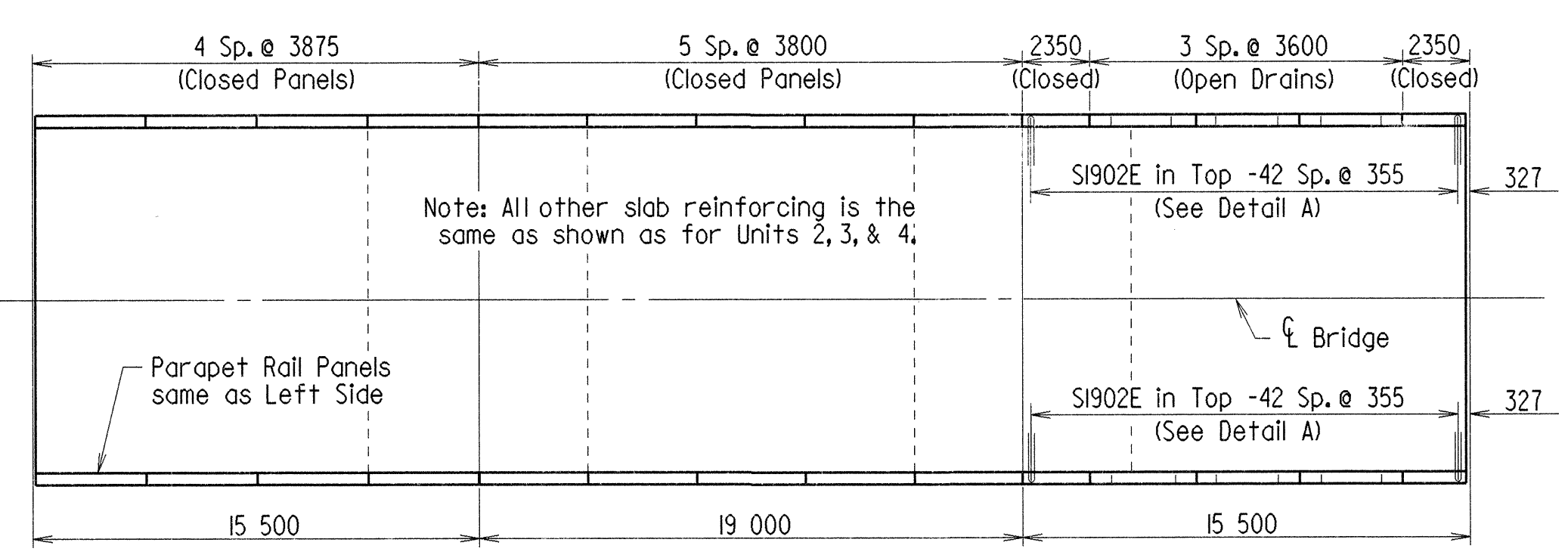
POURING SEQUENCE  
No Scale

NOTE: Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pours (2) can be placed. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. Any railing pours made before the entire slab unit has been placed must be approved by the Bridge Engineer.

Concrete in bridge Superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

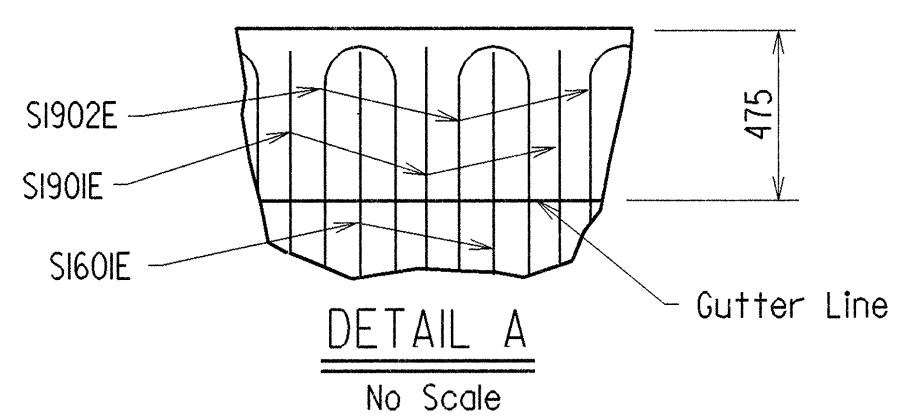
The contractor must obtain approval from the Bridge engineer for any deviations from the pouring sequence.

Pouring Sequence Const. Jt. shall coincide with Slab Joint (Typ.)

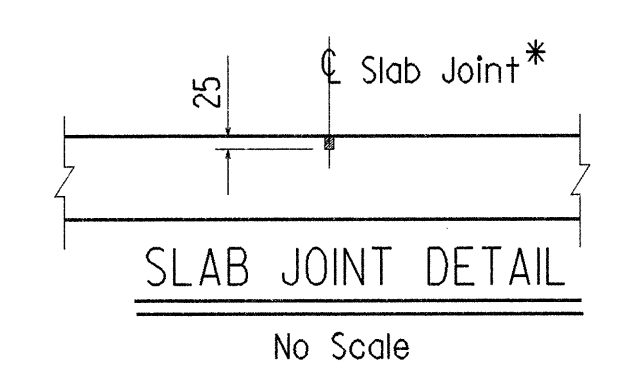


PARAPET PANEL ARRANGEMENT - UNIT NO. 1  
No Scale

Note: All other slab reinforcing is the same as shown as for Units 2, 3, & 4.



\* 12 mm x 25 mm Type 6 Joint Sealer. See Sections 501.02 (h) and 501.05 (j) of the Standard Specifications. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed before any vehicular traffic is allowed on the unit. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations.

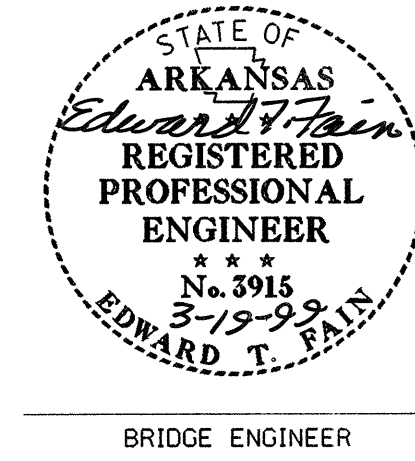


(SHEET 2 OF 5)

DETAILS OF  
50 METER CONTINUOUS  
W-BEAM UNITS 1, 2, 3 & 4  
U.P. R.R. & RED RIVER RELIEF

ROUTE 67 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: J.P.S. DATE: 8-20-98 FILENAME: B030104X1.S12  
CHECKED BY: CES DATE: 2-18-99 SCALE: Scale 1:100 or  
DESIGNED BY: AMS DATE: 7-6-98 AS NOTED  
BRIDGE NO. 06751 DRAWING NO. 39508



BRIDGE ENGINEER



MICROFILMED  
JUN 25 1999



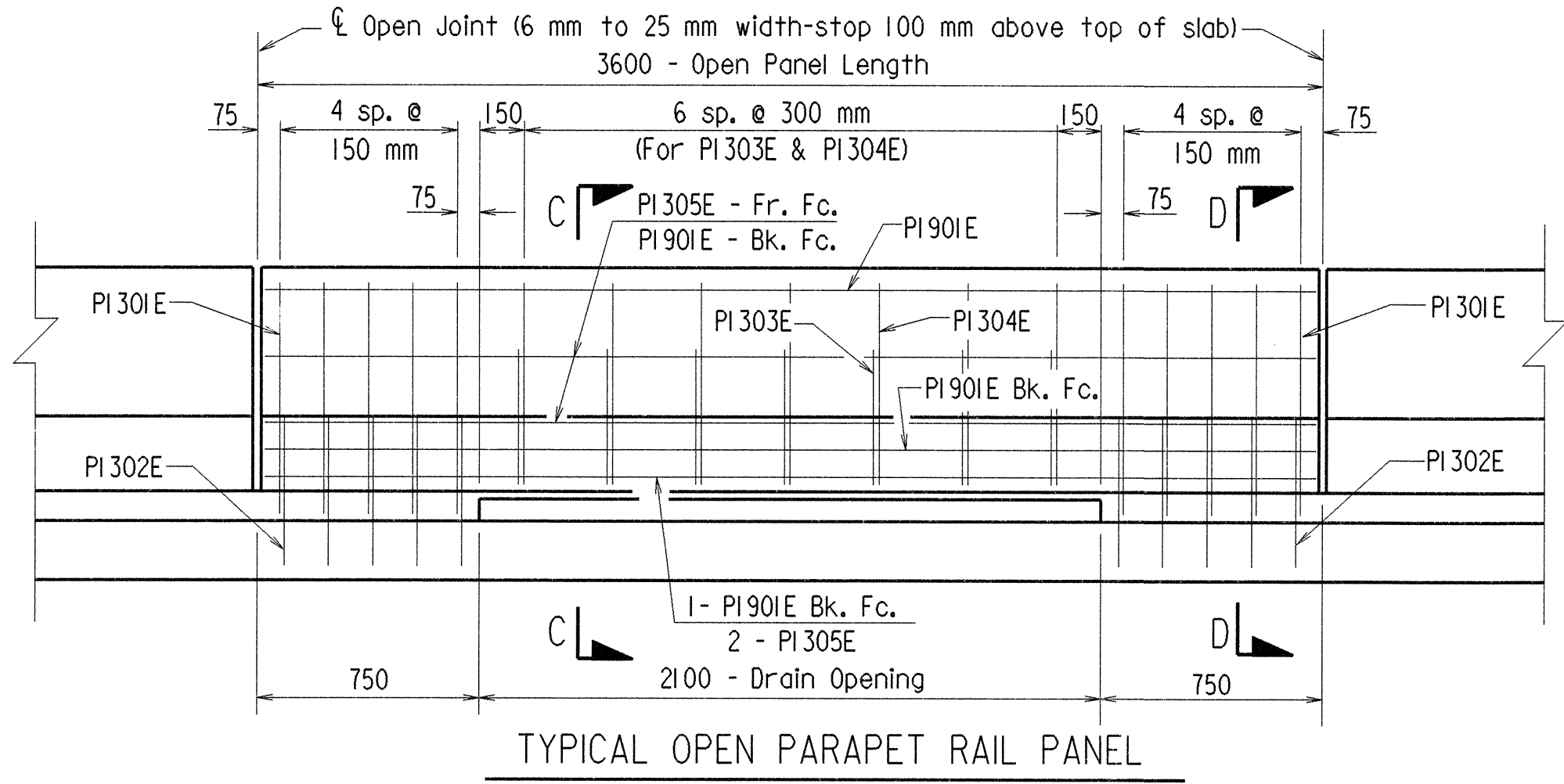
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|-----------|--------------|
|              |             |              |             | 6                   | ARK.  |                    |           |              |
|              |             |              |             | JOB NO.             |       | 030104             | 71        | 167          |
|              |             |              |             |                     |       | 06751 SPAN DETAILS | 39522     |              |

Note:  
All Bars designated with an "E" suffix are to be Epoxy Coated.

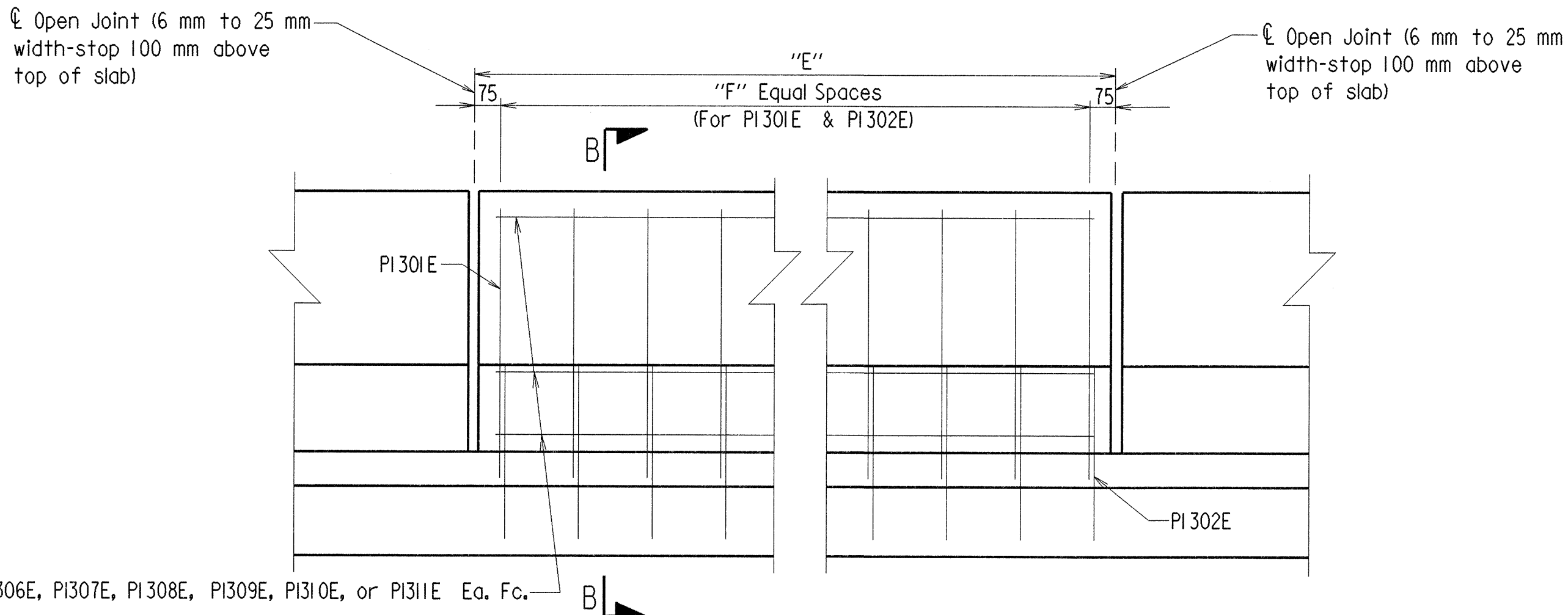
BAR LIST - PER UNIT

| MARK   | NUMBER REQUIRED |        | LENGTH | PIN. DIA. | BENDING DIAGRAMS |
|--------|-----------------|--------|--------|-----------|------------------|
|        | UNITS 6, 7, & 8 | UNIT 9 |        |           |                  |
| PI301E | 325             | 340    | 1 950  | 50        |                  |
| PI302E | 325             | 340    | 1 700  | 50        |                  |
| PI303E | 70              | 21     | 950    | 50        |                  |
| PI304E | 70              | 21     | 1 800  | 50        |                  |
| PI305E | 40              | 12     | 3500   | Str.      |                  |
| PI306E | 24              | 12     | 2160   | Str.      |                  |
| PI307E | 12              | —      | 2090   | Str.      |                  |
| PI308E | 48              | 48     | 3820   | Str.      |                  |
| PI309E | 30              | 30     | 3750   | Str.      |                  |
| PI310E | —               | 30     | 3660   | Str.      |                  |
| PI311E | —               | 24     | 3730   | Str.      |                  |
| PI901E | 50              | 15     | 3500   | Str.      |                  |
| SI301E | 410             | 410    | 10 500 | Str.      |                  |
| SI601E | 140             | 140    | 13 090 | 76        |                  |
| SI602E | 141             | 141    | 12 850 | Str.      |                  |
| SI901E | 141             | 141    | 12 850 | Str.      |                  |
| SI902E | 96              | 96     | 9000   | Str.      |                  |
| SI903E | 140             | 43     | 3530   | 162       |                  |

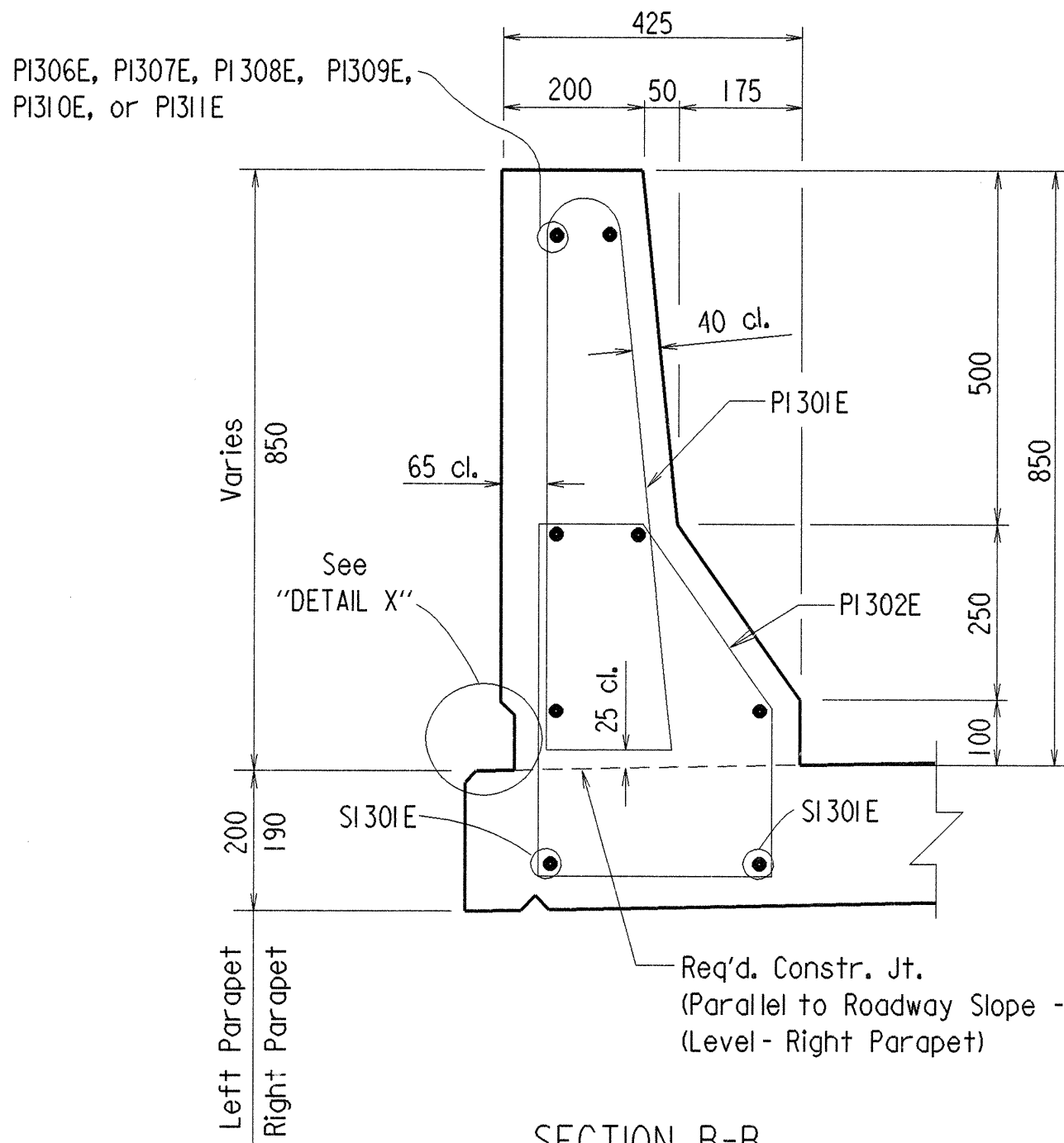
Dimensions are out to out of bars.



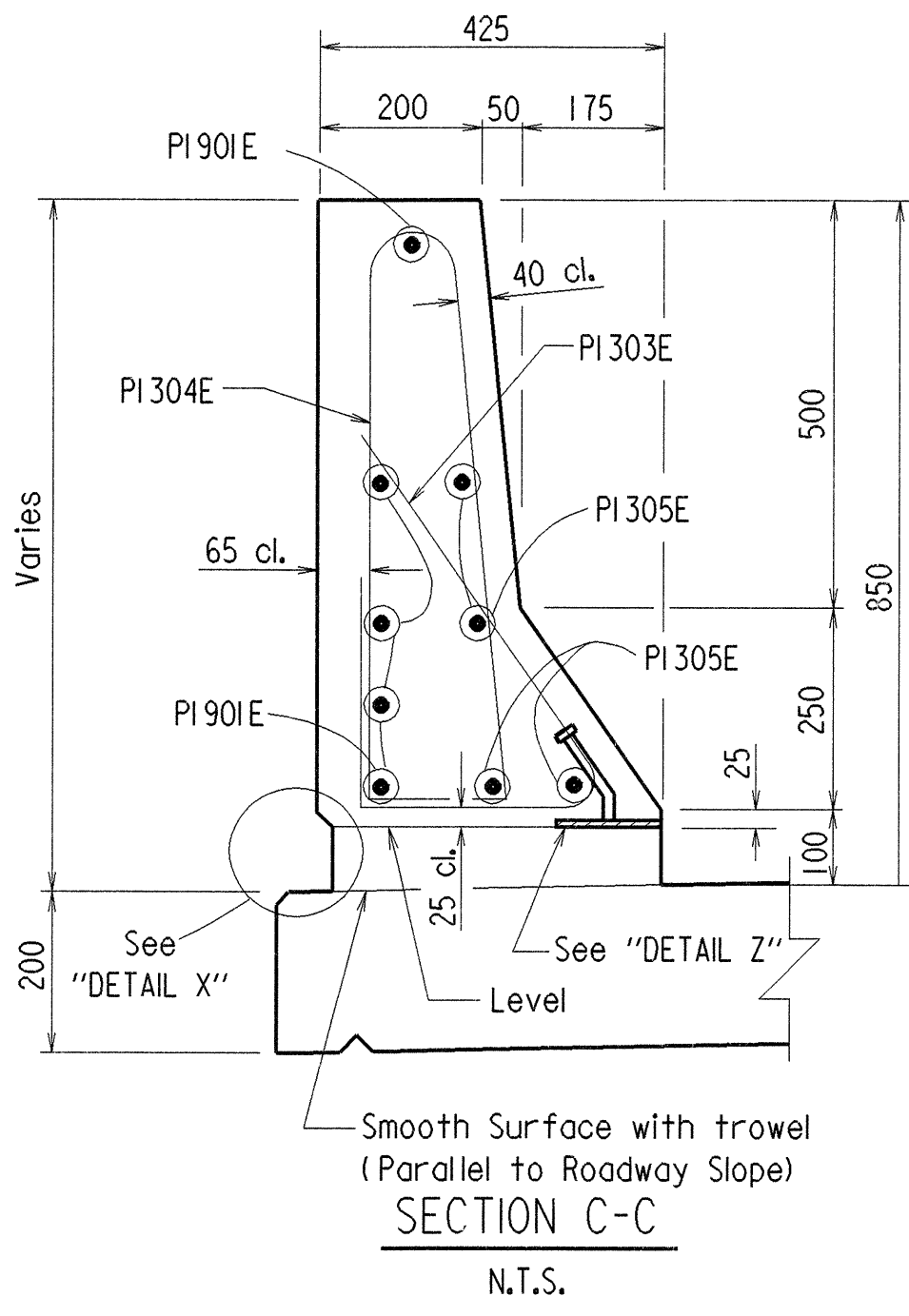
TYPICAL OPEN PARAPET RAIL PANEL



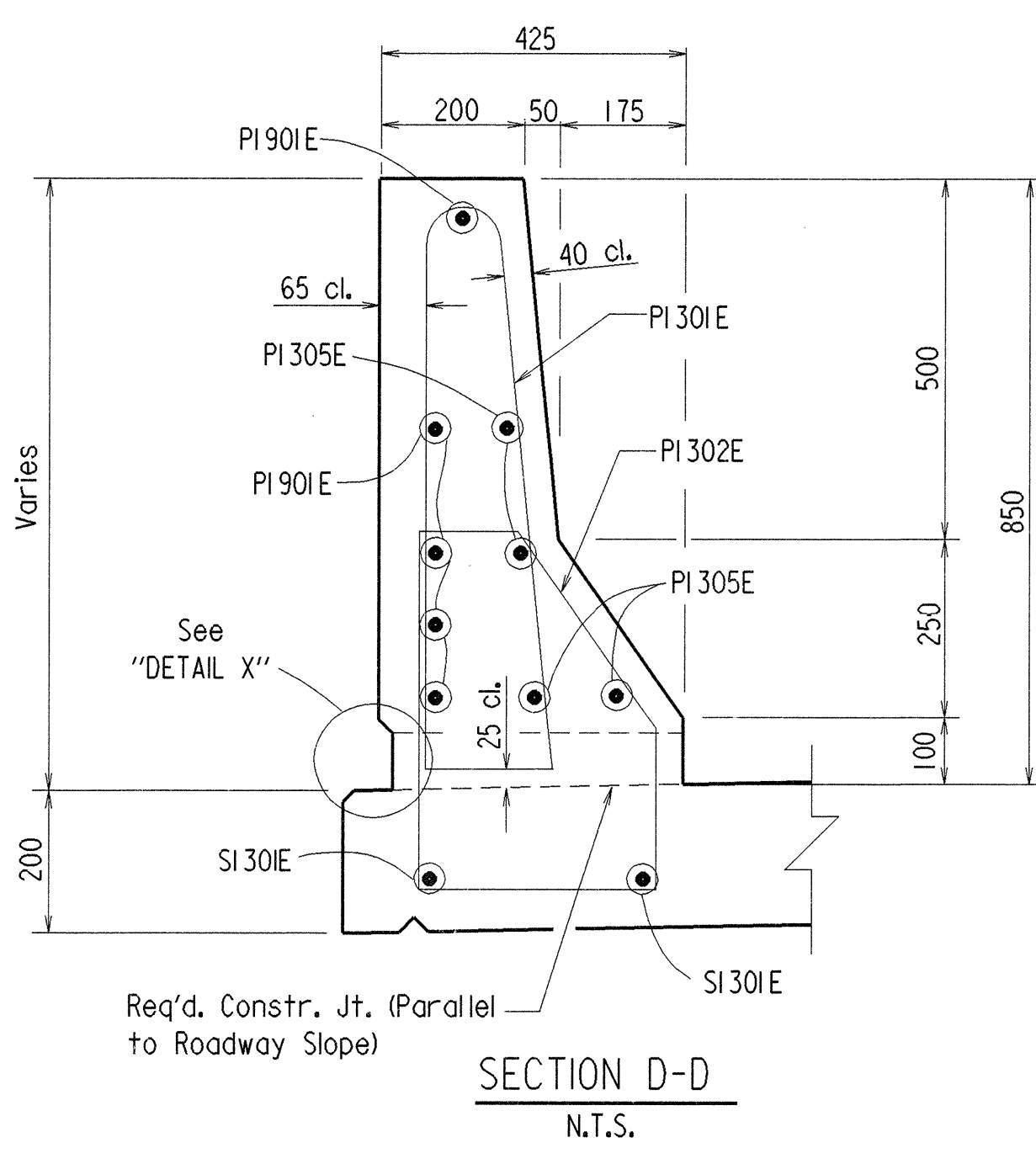
TYPICAL CLOSED PARAPET RAIL PANEL



SECTION B-B  
N.T.S.



SECTION C-C  
N.T.S.



SECTION D-D  
N.T.S.

TABLE OF CLOSED PARAPET VARIABLES

| PANEL LENGTH "E" | "F" | LONGITUDINAL REINFORCING |
|------------------|-----|--------------------------|
| 2259             | 7   | PI306E                   |
| 2188             | 7   | PI307E                   |
| 3921             | 13  | PI308E                   |
| 3845             | 12  | PI309E                   |
| 3755             | 12  | PI310E                   |
| 3830             | 12  | PI311E                   |



BRIDGE ENGINEER

( SHEET 2 OF 5 )  
DETAILS OF 50 METER  
CONTINUOUS W-BEAM UNITS  
6, 7, 8, AND 9  
U.P. R.R. & RED RIVER RELIEF

ROUTE 67 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION

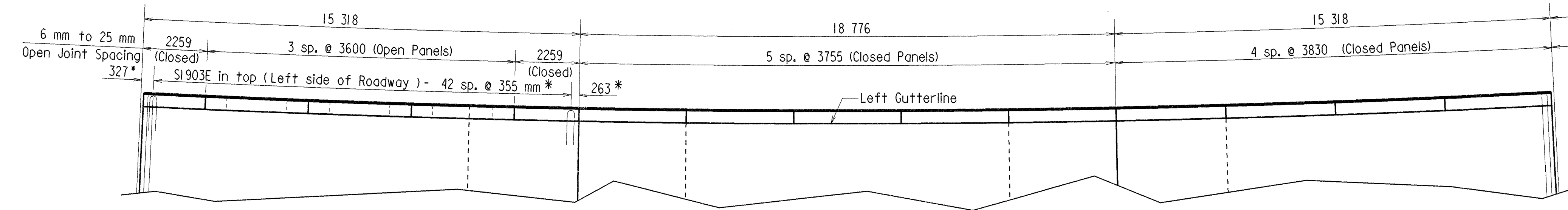
LITTLE ROCK, ARK. FILENAME: BR030104XL512

DRAWN BY: TEB DATE: 10/12/98  
CHECKED BY: CES DATE: 1-26-99  
DESIGNED BY: AMS DATE: 8-5-98  
BRIDGE NO. 06751 DRAWING NO. 39522



MICROFILMED  
JUN 25 1999

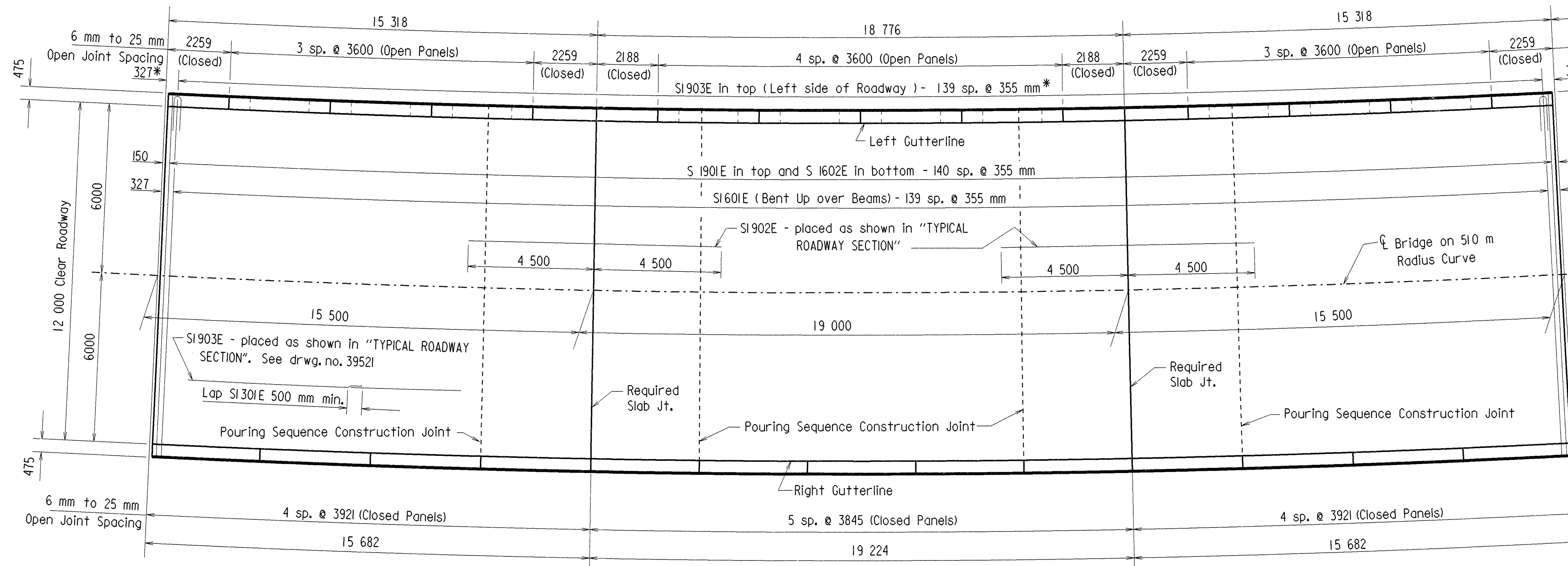
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO.    | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|--------------|--------------|
|              |             |              |             | 6                   | ARK.  |                    |              |              |
|              |             |              |             | JOB NO.             |       | 030104             | 75           | 164          |
|              |             |              |             |                     |       | 06751              | SPAN DETAILS | 39523        |



LEFT PARAPET ARRANGEMENT - UNIT NO. 9

NOTE: The parapet arrangement at the right gutterline and all slab reinforcing, except for placement of the SI903E bars, is the same as for Units 6 - 8

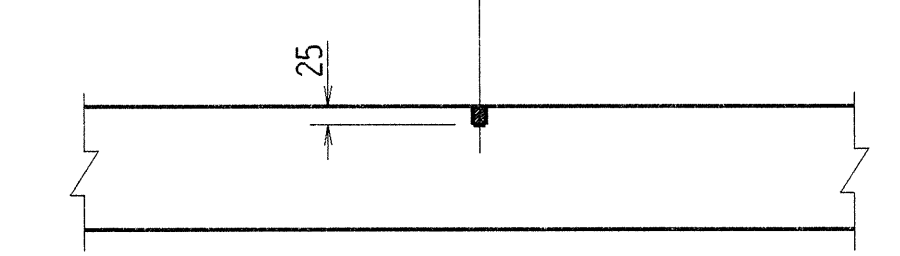
\* NOTE: Spacing for SI903E bars is measured along  $\bar{C}$  Bridge. See Detail "W" on drwg. no. 39521



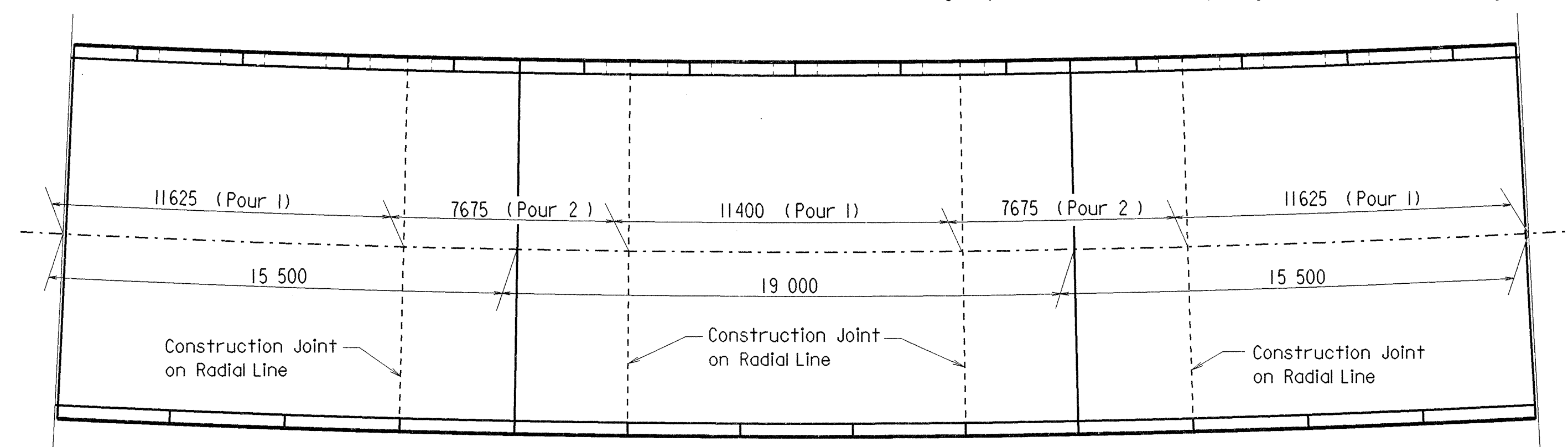
REINFORCING PLAN - UNITS 6, 7 & 8

Note: Longitudinal deck reinforcing is concentric to a 510 m radius curve along  $\bar{C}$  Bridge. Transverse slab reinforcing is placed on radial lines; spacing shown is measured along  $\bar{C}$  Bridge.

12 mm x 25 mm Type 6 Joint Sealer. See Sections 501.02 (h) and 501.05 (j) of the Standard Specifications. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed before any vehicular traffic is allowed on the unit. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations.



SLAB JOINT DETAIL  
N.T.S.



POURING SEQUENCE

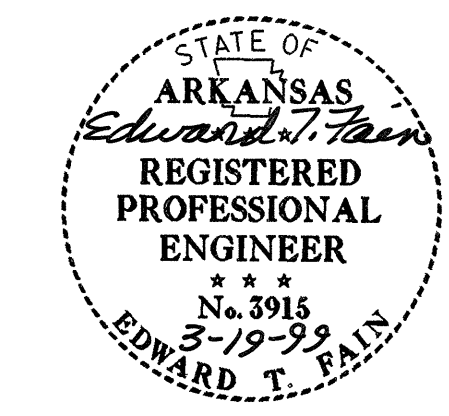
Note: Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pours (2) can be placed. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. Any railing pours made before the entire slab unit has been placed must be approved by the Bridge Engineer.

Concrete in the bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The Contractor must obtain approval from the Bridge Engineer for any deviations from the pouring sequence shown.

NOTE: LONGITUDINAL STRIKE-OFFS SHALL NOT BE USED ON CURVED UNITS

Note: All dimensions are in millimeters (mm) unless otherwise noted.



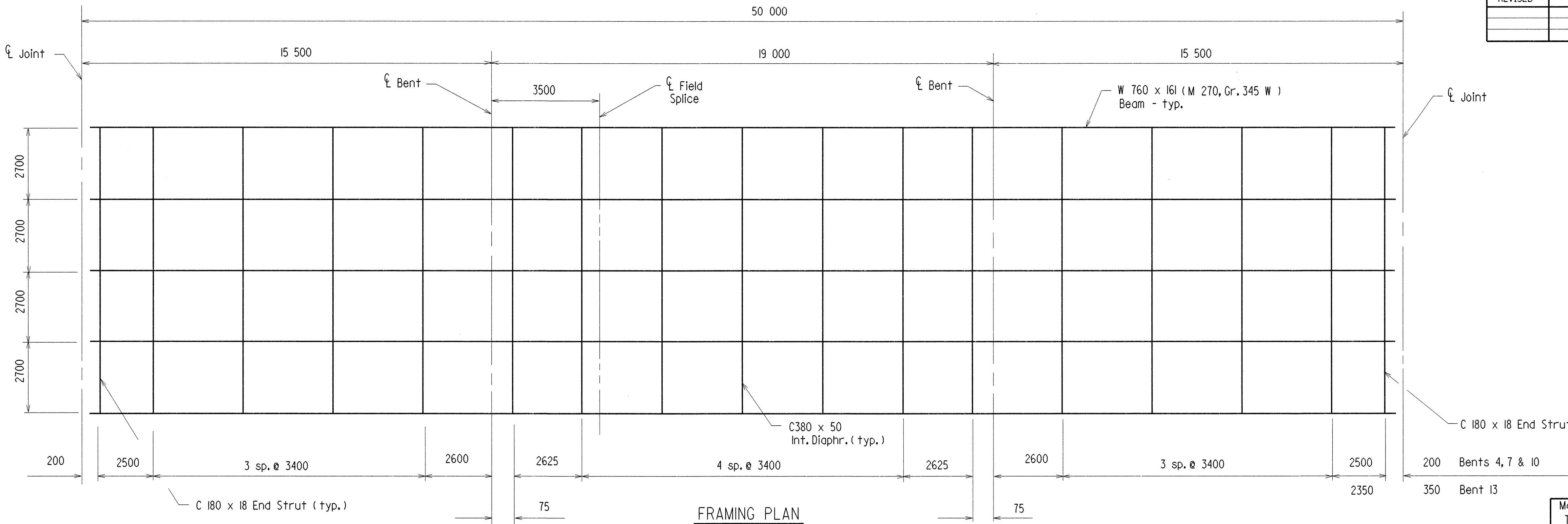
BRIDGE ENGINEER

( SHEET 3 OF 5 )  
DETAILS OF 50 METER  
CONTINUOUS W-BEAM UNITS  
6, 7, 8 AND 9  
U.P. R.R. & RED RIVER RELIEF  
ROUTE 67 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: TEB DATE: 10/12/98 FILENAME: BR030104XLS13  
CHECKED BY: CES DATE: 3-8-99 SCALE: NOT TO SCALE  
DESIGNED BY: AMS DATE: 8-5-98  
BRIDGE NO. 06751 DRAWING NO. 39523

MICROFILMED  
JUN 25 1999



| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO.    | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|--------------|--------------|
|              |             |              |             | 6                   | ARK.  |                    |              |              |
|              |             |              |             | JOB NO.             |       | 030104             | 62           | 164          |
|              |             |              |             |                     |       | 06751              | SPAN DETAILS | 39510        |



Stud Shear Connectors shown shall be 22 mm  $\phi$  x 100 mm long, granular flux filled, solid fluxed or equal, and automatically end welded to the beam flange in accordance with the recommendations of the Manufacturer. 20 mm  $\phi$  studs may be used in place of the 22 mm  $\phi$  studs shown, at the ratio of 1.361 - 20 mm  $\phi$  studs in place of one 22 mm  $\phi$  stud. 22 mm  $\phi$  studs will be used as basis for measurement of structural steel in shear connectors. Maximum stud spacing = 600 mm.

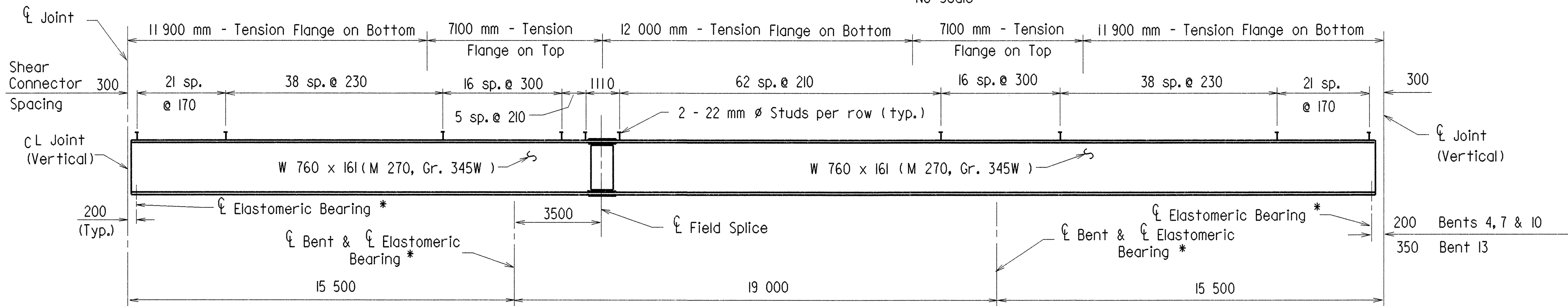
#### SHEAR CONNECTOR DETAIL

No Scale

#### TABLE FOR WELD

| Material Thickness of Thicker Part Joined | Minimum Size of Fillet Weld | Single Pass Weld Must Be Used |
|---|-----------------------------|-------------------------------|
| To 20 mm Inclusive                        | 6 mm                        |                               |
| Over 20 mm                                | 8 mm                        |                               |

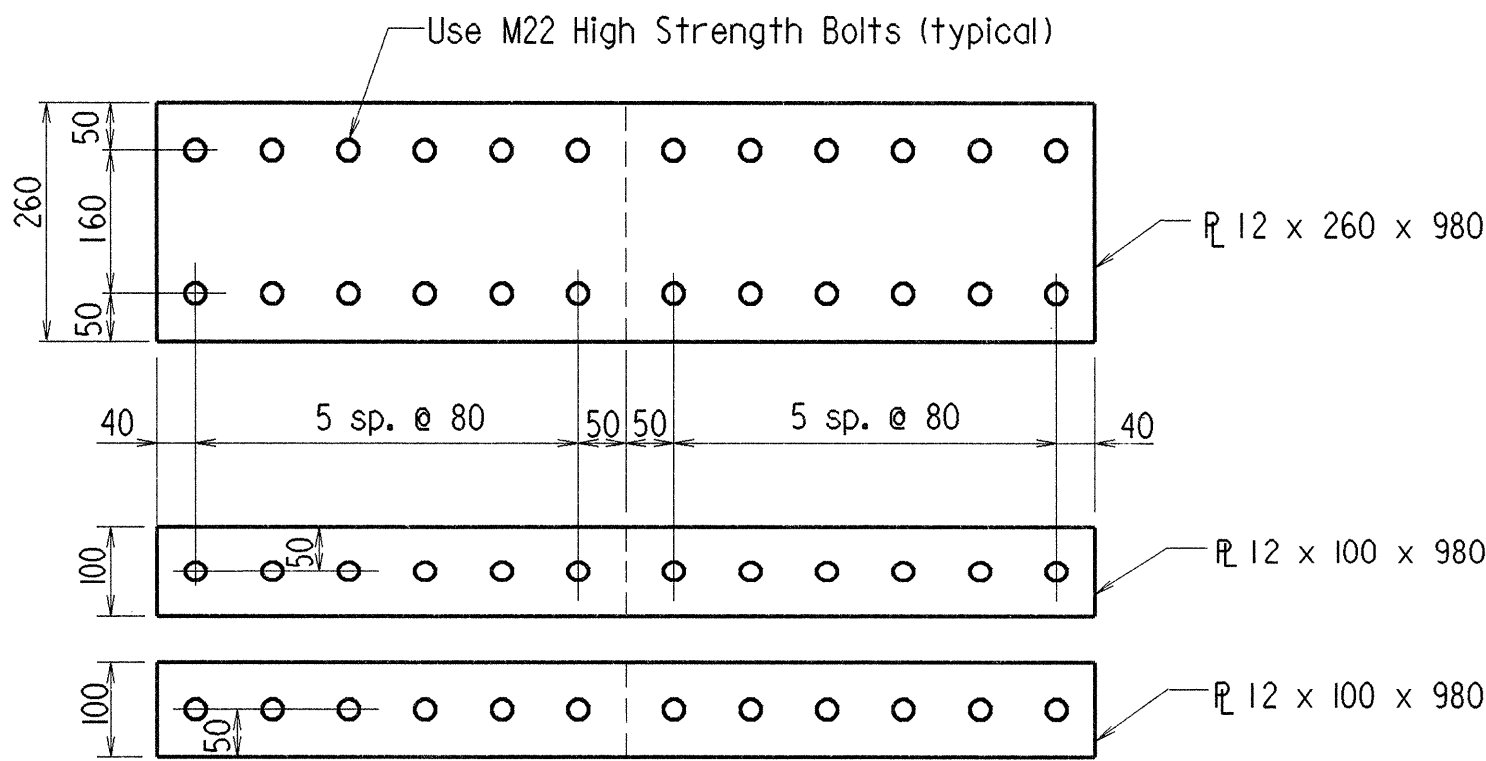
Note: When a fillet weld size, as shown on the Plans, is larger than the minimum, the First Pass shall be that specified for minimum size of fillet weld.



#### TYPICAL CONTINUOUS W-BEAM ELEVATION

No Scale

\* For details of Elastomeric Bearings, see Dwg. No. 39513.

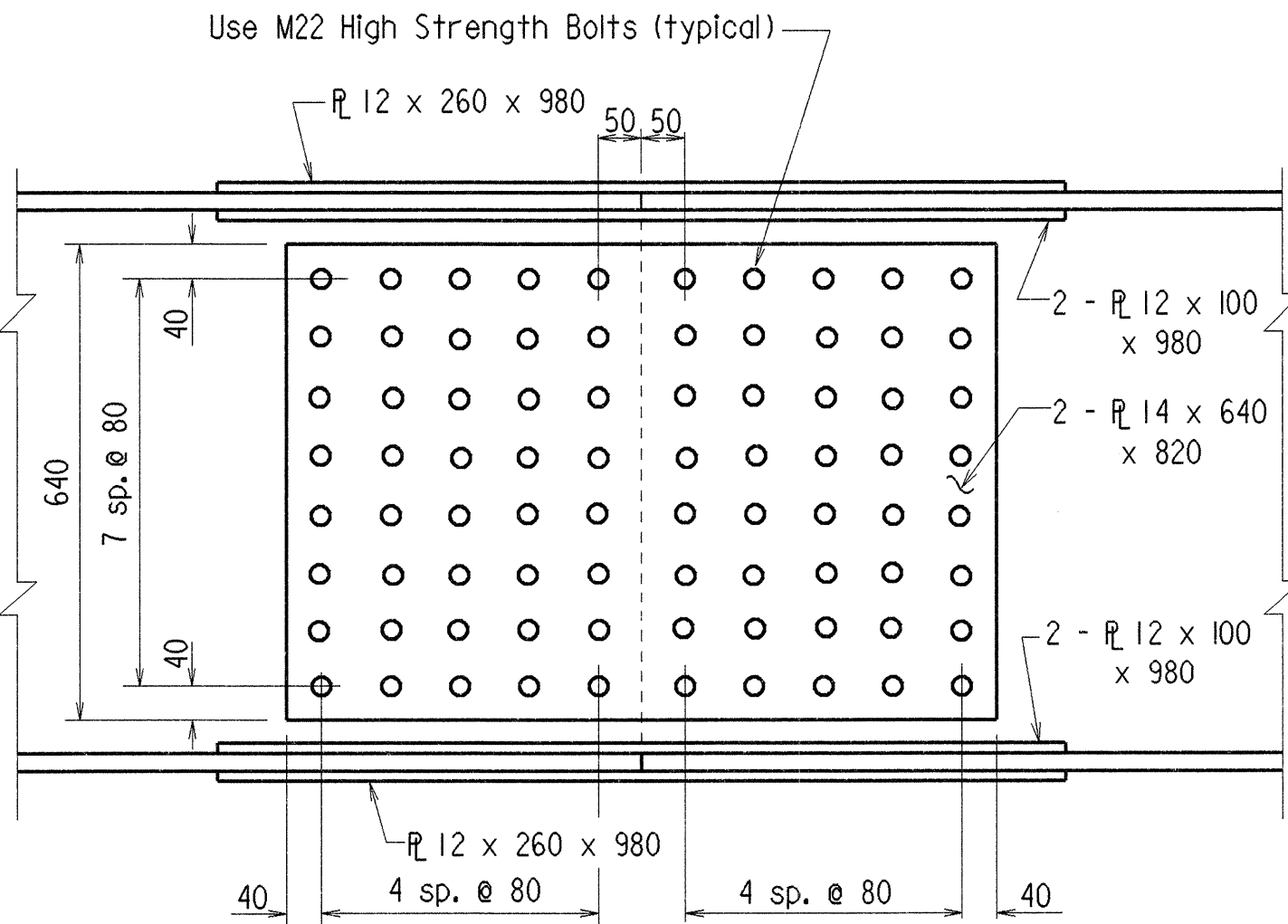


#### FLANGE SPICE PLATES

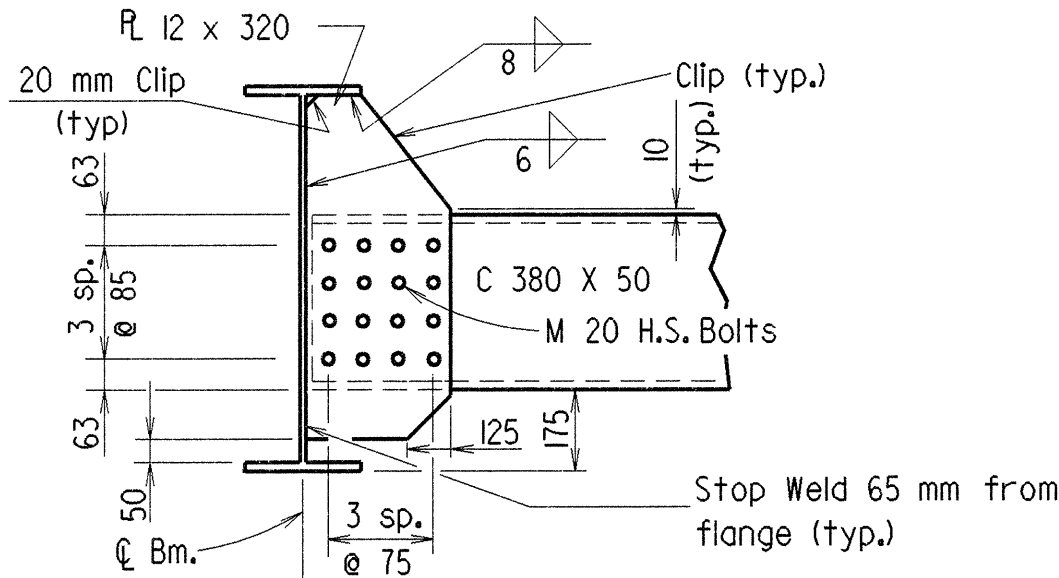
Note: All Splice Plates to be AASHTO M 270, Gr. 345W.

#### TYPICAL FIELD SPICE

No Scale

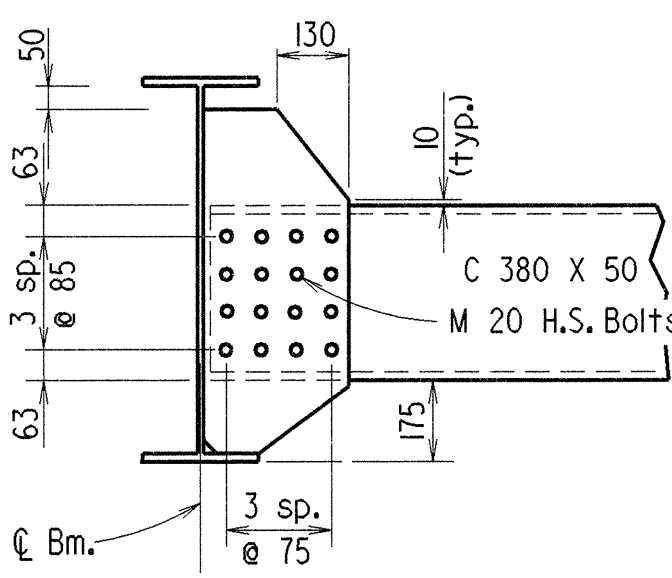


#### WEB SPICE PLATES



#### TENSION FLANGE ON BOTTOM

Note: Bolts in Diaphragm Connections shall be properly installed and tightened in accordance with Subsection 807.71 of the Standard Specifications.



#### TENSION FLANGE ON TOP

#### DETAIL B

No Scale

(SHEET 4 OF 5)

DETAILS OF  
50 METER CONTINUOUS  
W-BEAM UNITS 1, 2, 3 & 4

U.P.R.R. & RED RIVER RELIEF

ROUTE 67 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: J.P.S. DATE: 8-26-98 FILENAME: B030104XLS14

CHECKED BY: CES DATE: 8-8-99 SCALE: As Noted

DESIGNED BY: AMS DATE: 7-6-98

BRIDGE NO. 06751

DRAWING NO. 39510

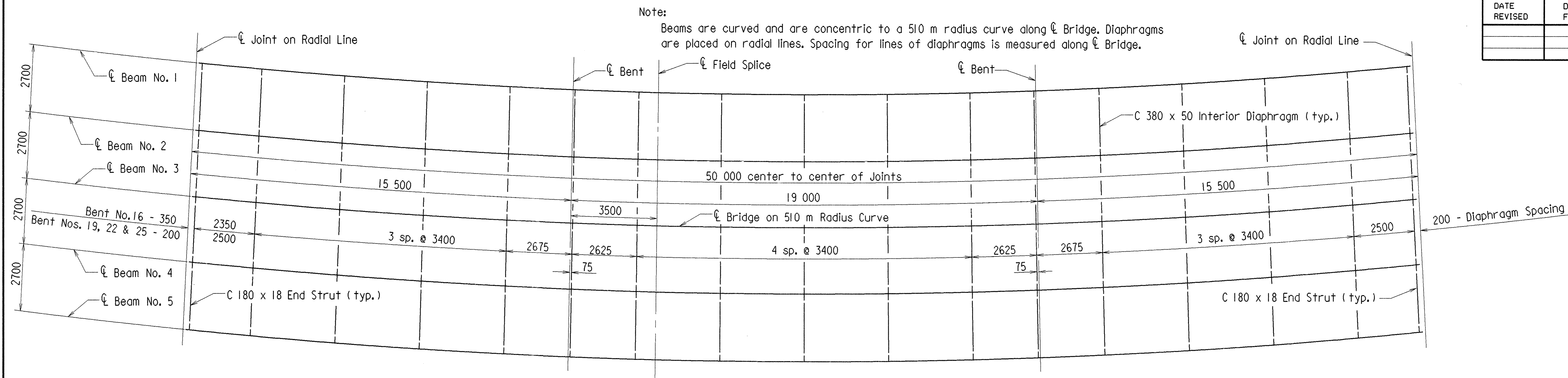


BRIDGE ENGINEER

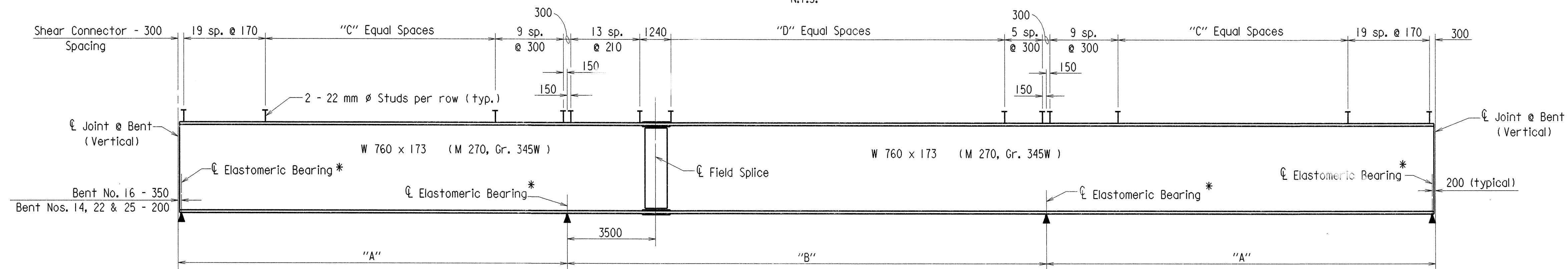


MICROFILMED  
JUN 25 1999

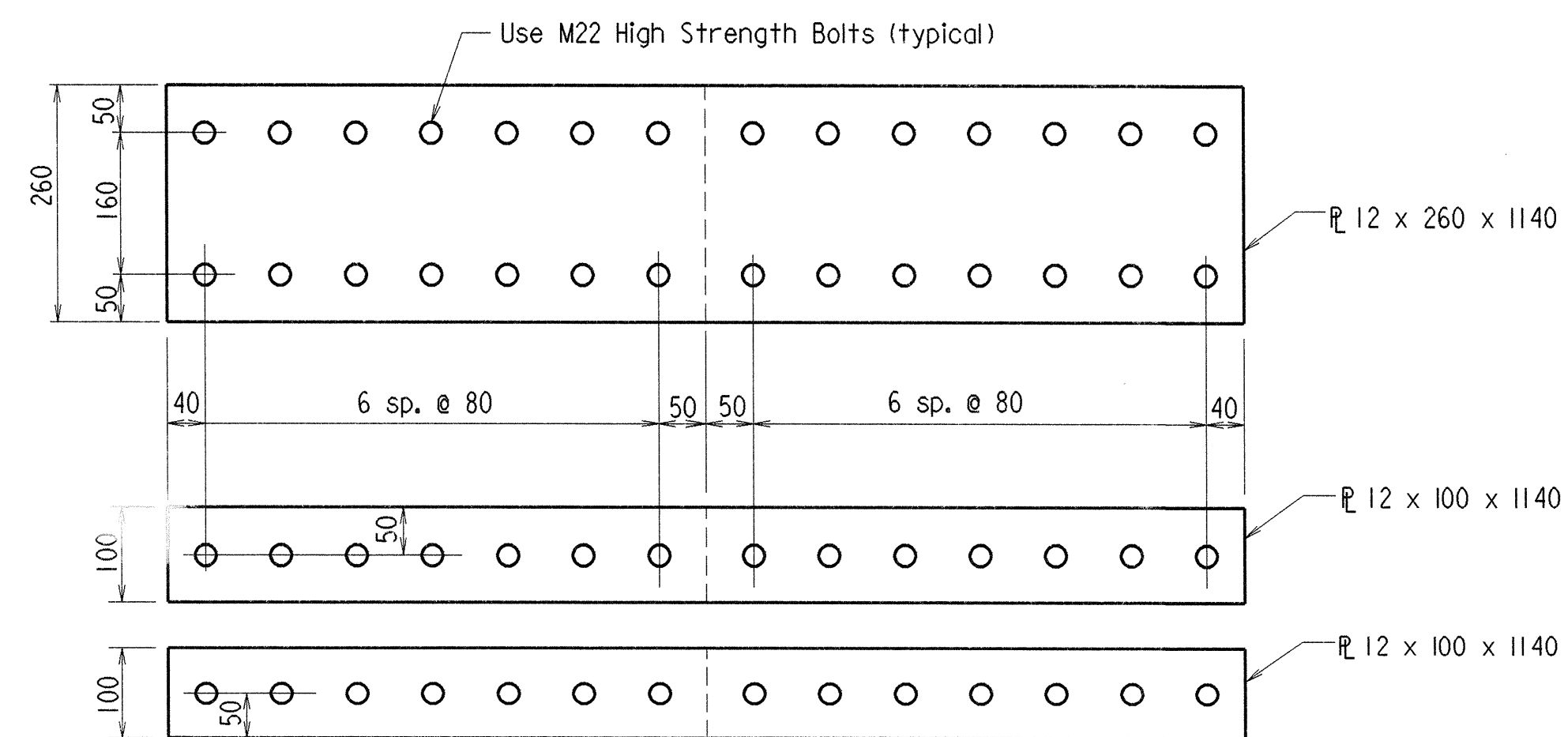
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|-----------|--------------|
|              |             |              |             | 6                   | ARK.  |                    |           |              |
|              |             |              |             | JOB NO.             |       | 030104             | 76        | 164          |
|              |             |              |             | 06751               |       | SPAN DETAILS       | 39524     |              |



FRAMING PLAN  
N.T.S.



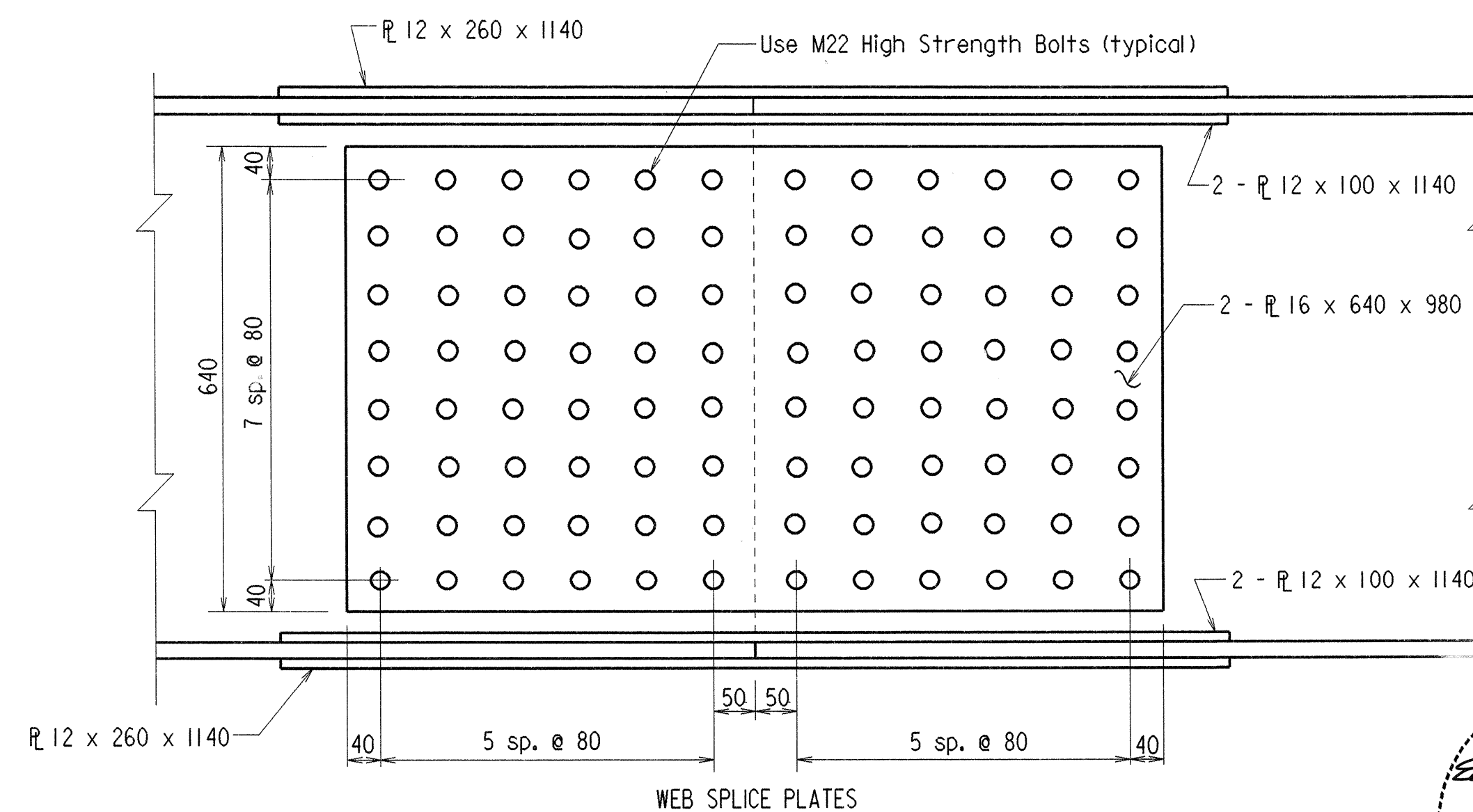
\* Note:  
For details of Elastomeric Bearings, see drwg. no. 39513.  
TYPICAL CONTINUOUS W - BEAM ELEVATION  
N.T.S.



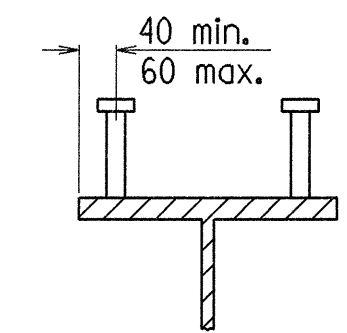
FLANGE SPICE PLATES

Note:  
All Splice Plates to be AASHTO M 270, Gr. 345W.

TYPICAL FIELD SPICE  
N.T.S.



WEB SPICE PLATES



Stud Shear Connectors shown shall be 22 mm  $\phi$  x 100 mm long, granular flux filled, solid fluxed or equal, and automatically end welded to the beam flange in accordance with the recommendations of the Manufacturer. 20 mm  $\phi$  studs may be used in place of the 22 mm  $\phi$  studs shown, at the ratio of 1.361 - 20 mm  $\phi$  studs in place of one 22 mm  $\phi$  stud. 22 mm  $\phi$  studs will be used as basis for measurement of structural steel in shear connectors. Maximum stud spacing = 600 mm.

SHEAR CONNECTOR DETAIL  
N.T.S.

TABLE FOR WELD

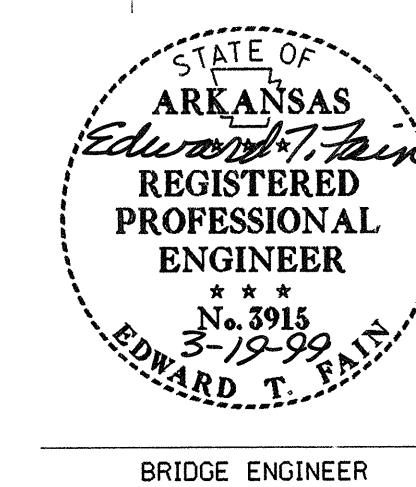
| Material Thickness of Thicker Part Jointed | Minimum Size of Fillet Weld | Single Pass Weld Must Be Used |
|--|-----------------------------|-------------------------------|
| To 20 mm Inclusive                         | 6 mm                        |                               |
| Over 20 mm                                 | 8 mm                        |                               |

Note:  
When a fillet weld size, as shown on the Plans, is larger than the minimum, the First Pass shall be that specified for minimum size of fillet weld.

TABLE OF BEAM VARIABLES

| BEAM NO. | "A"    | "B"    | "C" | "D" |
|----------|--------|--------|-----|-----|
| 1        | 15 336 | 18 799 | 43  | 66  |
| 2        | 15 418 | 18 900 | 44  | 66  |
| 3        | 15 500 | 19 000 | 44  | 67  |
| 4        | 15 582 | 19 101 | 44  | 67  |
| 5        | 15 664 | 19 201 | 45  | 68  |

( SHEET 4 OF 5 )  
DETAILS OF 50 METER  
CONTINUOUS W-BEAM UNITS  
6, 7, 8, AND 9  
U.P. R.R. & RED RIVER RELIEF  
ROUTE 67 SEC. I  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: TEB DATE: 10/12/98  
CHECKED BY: CES DATE: 2-19-99  
DESIGNED BY: AMS DATE: 8-5-98  
BRIDGE NO. 06751  
DRAWING NO. 39524  
FILENAME: BR030104X1.S14  
SCALE: N.T.S.



BRIDGE ENGINEER

MICROFILMED  
JUN 25 1999





| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|-----------|--------------|
|              |             |              |             | 6                   | ARK.  |                    |           |              |
|              |             |              |             | JOB NO.             |       | 030104             | 39        | 164          |
|              |             |              |             | 06751               |       | SPAN DETAILS       |           | 39511        |

GENERAL NOTES

All dimensions are in millimeters (mm) unless otherwise noted.

CONCRETE:

All concrete shall be Class S(AE) with a minimum 28 day compressive strength of 28.0 MPa and shall be poured in the dry. All exposed corners shall be chamfered 20 mm unless otherwise noted. Concrete shall be placed and consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent. Sufficient concrete must be placed ahead of the strike-off to fully load the beams. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection caused by the railing. Movement of the finishing machine across the new concrete shall be on planks placed on the surface and is prohibited for 72 hours after finishing the pour. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing. The bridge deck shall be given a fine finish as specified for final finishing in subsection 802.19 for a Class 5 Tined Bridge Roadway Surface Finish.

The superstructure details shown are for when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete. See Standard Drawing No. 36515 for allowable modifications and for tolerance when permanent steel bridge deck forms are used.

REINFORCING STEEL:

The reinforcing steel shall be accurately located in the forms and firmly held in place by steel wire supports sufficient in size and number to prevent displacement during the course of construction. The wire supports will not be paid for directly but will be considered subsidiary to the item "REINFORCING STEEL-BRIDGE".

STRUCTURAL STEEL:

All structural steel shall be AASHTO M 270, Grade 345W unless otherwise noted and shall be paid for at the unit price per kilogram bid for "Structural Steel in Beam Spans (M 270, Gr. 345W)". Grade 345W steel shall not be painted. All exposed surfaces to be cleaned in accordance with subsection 807.84(e) of the Standard Specifications. Structural steel completely embedded in concrete may be AASHTO M 270, Gr. 250.

Beams are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Section 807.05. The Charpy V-Notch Test will not be required on field splice plates.

All Beams shall be blocked in their true position in the shop with the webs horizontal. See Section 807.54 (b)(II) of the Standard Specifications. The camber, length of sections, distance between bearings, and openings of joints shall be measured with the Beams in their true position and this information shall become a part of the permanent records of this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diaphragm. All Beam dimensions are based on a temperature 16°C. A tolerance of  $\pm 6$  mm is allowed for camber.

Flange field splice plates shall be cut and fabricated so the primary direction of rolling is parallel to the main tensile and/or compressive stress.

Steel Diaphragms and End Struts shall be installed as beams are erected and shall be completely bolted prior to pouring of the concrete deck.

Field connections shall be bolted with high strength bolts and shall be M20 bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior beam webs and on bottom of beam flanges. Holes for M20 high strength bolts in expansion device, diaphragms, and end struts may be 24 mm  $\varnothing$  if a washer is supplied for use under both the nut and the head of the bolt.

All welding that is to be done during fabrication of structural steel, including temporary welds shall be detailed on the shop drawings and submitted for approval. If the contractor or erector should want to make additional welds, whether temporary or permanent, he shall submit detailed drawings with a formal request to the Bridge Engineer of the Arkansas State Highway and Transportation Department for approval. All welding shall conform to subsection 807.26 of the Standard Specifications.

Bearings shall be seated in accordance with subsection 808.08 of the Standard Specifications. This work and material are to be considered as subsidiary to the item "ELASTOMERIC BEARINGS" and will not be paid for directly.

Structural shapes of equal or greater strength may be substituted for shapes shown if approval is obtained from the Bridge Engineer. Payment will be made on the basis of shapes shown.

Drawings show general features of design only. Shop drawings shall be made in accordance with the specifications, submitted, and approval secured before fabrication is begun.

**Construction Specifications:** Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (1996 Edition) with applicable supplemental specifications and special provisions.

**Design Specifications:** AASHTO Standard Specifications for Highway Bridges (1996 edition) with current interim specifications.

Materials and Strengths:

Class S(AE) concrete (N = 8)  $f'_c$  = 28.0 MPa  
Reinforcing Steel (ASTM A615/A615M - 96a)  $f_y$  = 420 MPa  
Structural Steel AASHTO M 270 (Gr. 250)  $F_y$  = 250 MPa  
Structural Steel AASHTO M 270 (Gr. 345W)  $F_y$  = 345 MPa

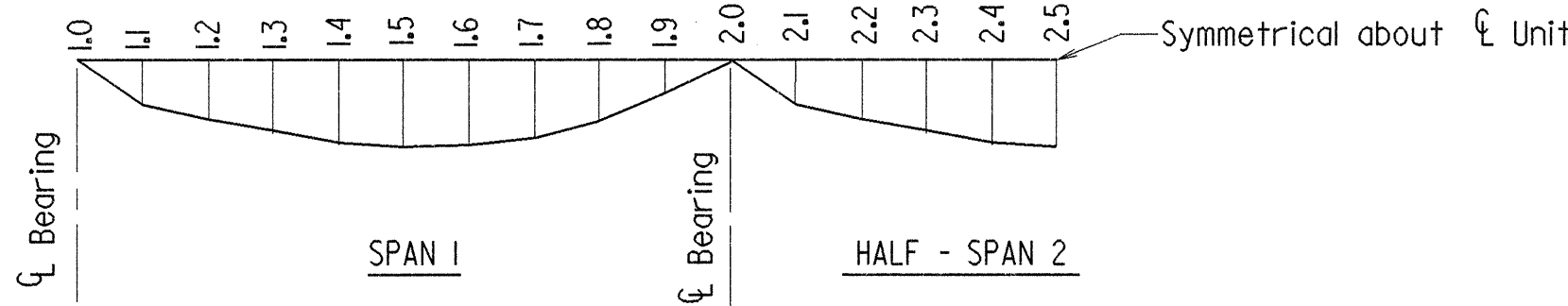
Live Loading : MS18

Method of Design : Load Factor

Loads to Beams:

|                                | Interior Beam                          | Exterior Beam                          |
|--------------------------------|--|--|
| Dead Load to W- Beam           | 12.72 kN/m +<br>1.3 (Wt./m<br>of W-Bm) | 11.62 kN/m +<br>1.3 (Wt./m<br>of W-Bm) |
| Dead Load to<br>Composite Beam | 4.86 kN/m *                            | 4.86 kN/m *                            |
| Live Load to<br>Composite Beam | 1.611 Wheels<br>+ Impact               | 1.425 Wheels<br>+ Impact               |

\* Includes 2.83 kN/m Future Wearing Surface



DEAD LOAD DEFLECTION DIAGRAM

No Scale

Note:  
Camber for Dead Load Deflection + Vertical Curve  $\pm 6$  mm tolerance. Deflections shown are from a chord from Centerline Bearing to Centerline Bearing.

DEAD LOAD DEFLECTIONS (mm)

| Beam Nos. | Span Point                      | 1.0 | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 | 2.0 | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 |
|-----------|---------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| All       | Beam & Diaphragm                | 0   | 1   | 1   | 1   | 2   | 2   | 1   | 1   | 0   | 0   | 0   | 0   | 1   | 1   | 2   | 2   |
|           | Beam, Diaphragm, & Slab         | 0   | 4   | 8   | 10  | 11  | 11  | 9   | 7   | 4   | 1   | 0   | 2   | 6   | 10  | 13  | 14  |
|           | Beam, Diaphragm, Slab & Parapet | 0   | 5   | 9   | 11  | 12  | 12  | 10  | 7   | 4   | 1   | 0   | 2   | 6   | 11  | 14  | 15  |

(SHEET 5 OF 5)

DETAILS OF  
50 METER CONTINUOUS  
W-BEAM UNITS 1, 2, 3 & 4

U.P. R.R. & RED RIVER RELIEF

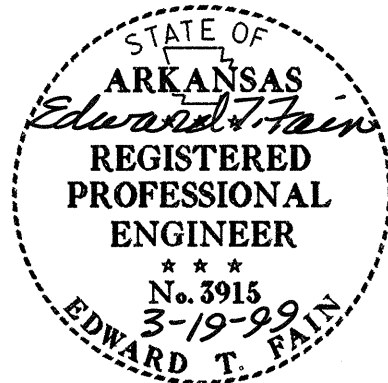
ROUTE 67 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: J.P.S. DATE: 8-28-98 FILENAME: B030104XLS15

CHECKED BY: CES DATE: 1-28-99 SCALE: As Noted

DESIGNED BY: AMS DATE: 7-6-98

BRIDGE NO. 06751 DRAWING NO. 39511



BRIDGE ENGINEER



MICROFILMED  
JUN 25 1999

GENERAL NOTES

All dimensions are in millimeters (mm) unless otherwise noted.

CONCRETE:

All concrete shall be Class (S/AE) with a minimum 28 day compressive strength of 28.0 MPa and shall be poured in the dry. All exposed corners shall be chamfered 20 mm unless otherwise noted. Concrete shall be placed and consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent. Sufficient concrete must be placed ahead of the strike-off to fully load the beams. Movement of the finishing machine across the new concrete shall be on planks placed on the surface and is prohibited for 72 hours after finishing the pour. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing. The bridge deck shall be given a fine finish as specified for final finishing in subsection 802.19 for a Class 5 Tined Bridge Roadway Surface Finish.

The superstructure details shown are for when removable deck forming is used and are the basis for measurement of Class (S/AE) Concrete. See Standard Drawing No. 36515 for allowable modifications and for tolerance when permanent steel bridge deck forms are used.

REINFORCING STEEL:

The reinforcing steel shall be accurately located in the forms and firmly held in place by steel wire supports sufficient in size and number to prevent displacement during the course of construction. The wire supports will not be paid for directly but will be considered subsidiary to the item "REINFORCING STEEL-BRIDGE".

STRUCTURAL STEEL:

All structural steel shall be AASHTO M 270, Grade 345W unless otherwise noted and shall be paid for at the unit price per kilogram bid for "Structural Steel in Beam Spans (M 270, Gr. 345W)". Grade 345W steel shall not be painted. All exposed surfaces to be cleaned in accordance with subsection 807.84(e) of the Standard Specifications. Structural steel completely embedded in concrete may be AASHTO M 270, Gr. 250.

Beams are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Section 807.05. The Charpy V-Notch Test will be required on field splice plates.

All Beams shall be blocked in their true position in the shop. See Section 807.54 (b)(1) of the Standard Specifications. The camber, length of sections, distance between bearings, and openings of joints shall be measured with the Beams in their true position and this information shall become a part of the permanent records of this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diaphragm. All Beam dimensions are based on a temperature of 16°C. A tolerance of  $\pm 6$  mm is allowed for camber.

Flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the main tensile and/or compressive stress.

Steel Diaphragms and End Struts shall be installed as beams are erected and shall be completely bolted prior to pouring of the concrete deck.

Field connections shall be bolted with high strength bolts and shall be M20 bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior beam webs and on bottom of beam flanges. Holes for M20 high strength bolts in expansion device, diaphragms, and end struts may be 24 mm  $\phi$  if a washer is supplied for use under both the nut and the head of the bolt.

All welding that is to be done during fabrication of structural steel, including temporary welds shall be detailed on the shop drawings and submitted for approval. If the contractor or erector should want to make additional welds, whether temporary or permanent, he shall submit detailed drawings with a formal request to the Bridge Engineer of the Arkansas State Highway and Transportation Department for approval. All welding shall conform to subsection 807.26 of the Standard Specifications.

Bearings shall be seated in accordance with subsection 808.08 of the Standard Specifications. This work and material are to be considered as subsidiary to the item "ELASTOMERIC BEARINGS" and will not be paid for directly.

Structural shapes of equal or greater strength may be substituted for shapes shown if approval is obtained from the Bridge Engineer. Payment will be made on the basis of shapes shown.

Drawings show general features of design only. Shop drawings shall be made in accordance with the specifications, submitted, and approval secured before fabrication is begun.

Construction Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (1996 Edition) with applicable supplemental specifications and special provisions.

Design Specifications: AASHTO Standard Specifications for Highway Bridges (1996 Edition) with current interim specifications.

Materials and Strengths:

Class (S/AE) concrete (N = 8)  $f'c = 28.0$  MPa  
Reinforcing Steel (ASTM A615/A615M - 96a)  $f_y = 420$  MPa  
Structural Steel AASHTO M 270 (Gr. 250)  $F_y = 250$  MPa  
Structural Steel AASHTO M 270 (Gr. 345W)  $F_y = 345$  MPa

Live Loading: MS18

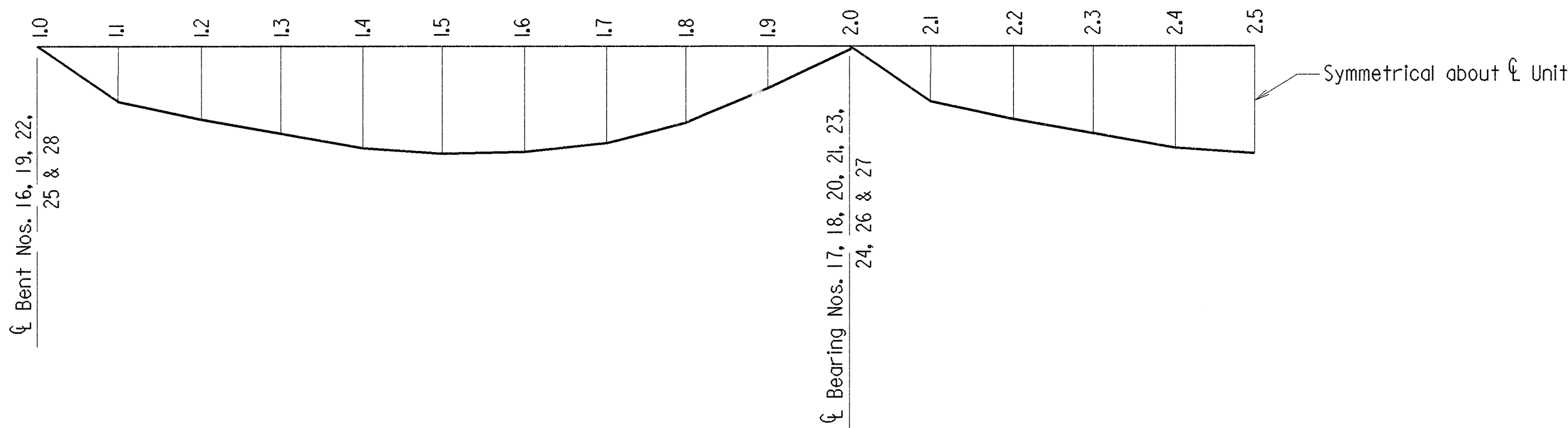
Method of Design : Load Factor

|                    | BEAM NUMBER                            |  |  |
|--------------------|--|--|--|
|                    | 1                                      | 2 thru 4                               | 5                                      |
| <u>Dead Load:</u>  |  |  |  |
| To W-Beam:         | 11.53 kN/m +<br>1.3 (Wt./m<br>of W-Bm) | 12.71 kN/m +<br>1.3 (Wt./m<br>of W-Bm) | 11.84 kN/m +<br>1.3 (Wt./m<br>of W-Bm) |
| To Composite Beam: | 4.94 kN/m *                            | 4.94 kN/m *                            | 4.94 kN/m *                            |
| <u>Live Load:</u>  |  |  |  |
| To Composite Beam: | 1.425<br>Wheels<br>+ Impact            | 1.611<br>Wheels<br>+ Impact            | 1.425<br>Wheels<br>+ Impact            |

\* Includes 2.83 k/N Future Wearing Surface

DEAD LOAD DEFLECTIONS (mm)

| Beam Nos. | Span Point                      | 1.0 | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 | 2.0 | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 |
|-----------|---------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| All       | Beam & Diaphragm                | 0   | 0   | 1   | 1   | 2   | 1   | 1   | 1   | 0   | 0   | 0   | 0   | 1   | 1   | 2   | 2   |
|           | Beam, Diaphragm, & Slab         | 0   | 4   | 7   | 10  | 11  | 10  | 9   | 6   | 3   | 1   | 0   | 2   | 5   | 9   | 12  | 13  |
|           | Beam, Diaphragm, Slab & Parapet | 0   | 4   | 8   | 10  | 12  | 11  | 9   | 7   | 4   | 1   | 0   | 2   | 6   | 10  | 13  | 14  |



DEAD LOAD DEFLECTION DIAGRAM

Note:

Camber for Dead Load Deflection plus Vertical Curve and Superelevation Transition  $\pm 6$  mm Tolerance.  
Deflections shown are from a chord from Centerline Bearing to Centerline Bearing.

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JUN 25 1999



BRIDGE ENGINEER

( SHEET 5 OF 5 )  
DETAILS OF 50 METER  
CONTINUOUS W-BEAM UNITS  
6, 7, 8, AND 9  
U.P. R.R. & RED RIVER RELIEF  
ROUTE 67 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: TEB DATE: 10/12/98 FILENAME: BR030104XL.S15  
CHECKED BY: CES DATE: 1-28-99 SCALE: As Noted  
DESIGNED BY: AMS DATE: 8-5-98  
BRIDGE NO. 06751 DRAWING NO. 39525







KANSAS STATE HIGHWAY COMMISSION

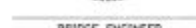
LITTLE ROCK, ARK.

DATE: 09-23-98 FR

CHECKED BY: PLH DATE: 2-2-99 SCALE: 1:50 OR  
DESIGNED BY: AMS DATE: 8-17-98 AS NOTED

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## BAR LIST

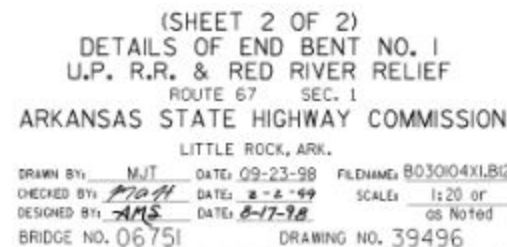
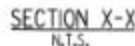


**Bending Diagrams**  
(Dimensions are out to out of bars.)

The diagrams illustrate the following structural members and their details:

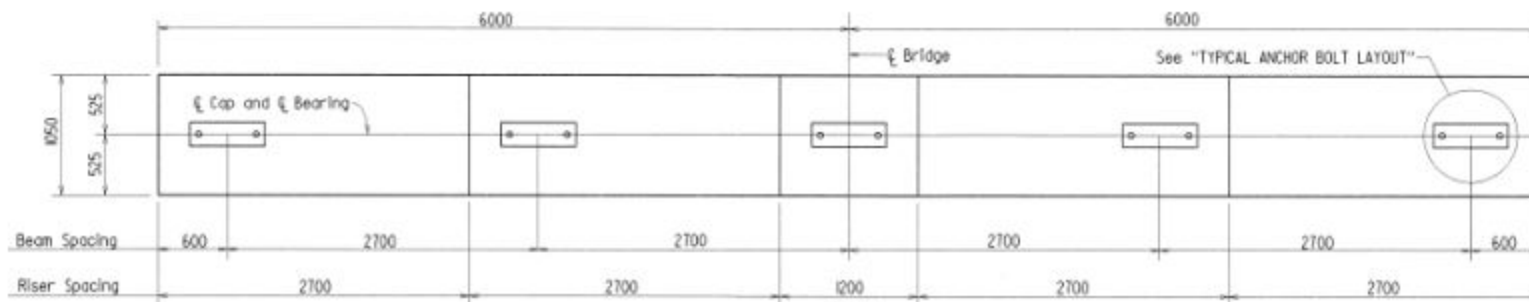
- Column (Left):** Dimensions 650 (height) x 880 (width). Reinforcement: 4 bars (2 top, 2 bottom), 12 mm diameter. Slant height 583 mm, vertical distance 3 mm.
- Column (Middle):** Dimensions 650 (height) x 880 (width). Reinforcement: 4 bars (2 top, 2 bottom), 12 mm diameter. Slant height 583 mm, vertical distance 3 mm.
- Column (Right):** Dimensions 350 (width) x 230 (height). Reinforcement: 4 bars (2 top, 2 bottom), 12 mm diameter. Slant height 230 mm, vertical distance 3 mm.
- Beam (Top Left):** Dimensions 12500 (length) x 160 (width). Reinforcement: 4 bars (2 top, 2 bottom), 12 mm diameter. Slant height 583 mm, vertical distance 3 mm.
- Beam (Top Right):** Dimensions 145 (width) x 130 (height). Reinforcement: 4 bars (2 top, 2 bottom), 12 mm diameter. Slant height 583 mm, vertical distance 3 mm.
- Beam (Middle Left):** Dimensions 1620 (length) x 160 (width). Reinforcement: 4 bars (2 top, 2 bottom), 12 mm diameter. Slant height 583 mm, vertical distance 3 mm.
- Beam (Middle Right):** Dimensions 175 (width) x 300 (height). Reinforcement: 4 bars (2 top, 2 bottom), 12 mm diameter. Slant height 583 mm, vertical distance 3 mm.
- Beam (Bottom Left):** Dimensions 2060 (length) x 160 (width). Reinforcement: 4 bars (2 top, 2 bottom), 12 mm diameter. Slant height 583 mm, vertical distance 3 mm.
- Beam (Bottom Right):** Dimensions 1650 (length) x 160 (width). Reinforcement: 4 bars (2 top, 2 bottom), 12 mm diameter. Slant height 583 mm, vertical distance 3 mm.

For additional information see layout.

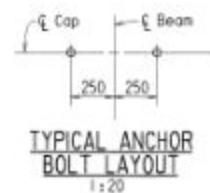


DRAWN BY: MJT DATE: 09-23-98 FILENAME: 8030104X1.B1  
 CHECKED BY: MAH DATE: 8-6-99 SCALE: 1:20 OR  
 DESIGNED BY: AMS DATE: 8-17-98 as Noted  
 BRIDGE NO. 06751 DRAWING NO. 39496





Notes: For details of Elastomeric Bearings, see Dwg. No. 39513.



| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. AID PROJ. NO. | SHEET NO.  | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|------------|--------------|
|              |             |              |             | 03004              | 49         | 164          |
|              |             |              |             | 06751              | INT. BENTS | 39497        |

### BAR LIST-PER BENT

| MARK  | NO. | REQ'D. | LENGTH | "A"  | "B"  | P.D. | BENDING DIAGRAMS |
|-------|-----|--------|--------|------|------|------|------------------|
| B1301 | 31  | 440    | 950    | 1200 | 50   |      |                  |
| B1302 | 8   | 3300   | 950    | 1200 | 50   |      |                  |
| B1303 | 20  | 3830   | 660    | 1200 | 50   |      |                  |
| B1304 | 10  | 11 900 | -      | -    | Str. |      |                  |
| B2901 | 10  | 11 900 | -      | -    | Str. |      |                  |
| B2902 | 3   | 5800   | -      | -    | Str. |      |                  |
| C1301 | 2   | 11 900 | 920    | 920  | 76   |      |                  |
| C2501 | 48  | "0"    | -      | -    | Str. |      |                  |
| F1901 | 50  | 2280   | 1850   | 160  | 114  |      |                  |
| F1902 | 32  | 3380   | 2950   | 160  | 114  |      |                  |
| F1903 | 8   | 1450   | 750    | 750  | 114  |      |                  |
| F2501 | 48  | 2510   | 260    | 40   | 152  |      |                  |

### TABLE OF VARIABLES

| Bent No. | Elevation "A" | Elevation "B" | "A"    | "B"    | "C" | "D"    |
|----------|---------------|---------------|--------|--------|-----|--------|
| 2        | 84.067        | 74.867        | 9200   | 6800   | 22  | 7900   |
| 3        | 84.827        | 74.827        | 10 000 | 7600   | 25  | 8700   |
| 5        | 85.982        | 75.082        | 10 900 | 8500   | 28  | 9600   |
| 6        | 86.605        | 75.205        | 11 400 | 9000   | 29  | 10 100 |
| 8        | 87.484        | 75.584        | 11 900 | 9500   | 31  | 10 600 |
| 9        | 87.938        | 75.038        | 12 900 | 10 500 | 34  | 11 600 |
| 11       | 88.542        | 74.042        | 14 500 | 12 100 | 40  | 13 200 |
| 12       | 88.827        | 73.927        | 14 900 | 12 500 | 41  | 13 600 |

### GENERAL NOTES

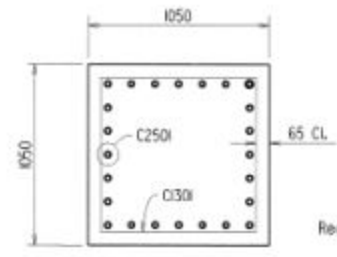
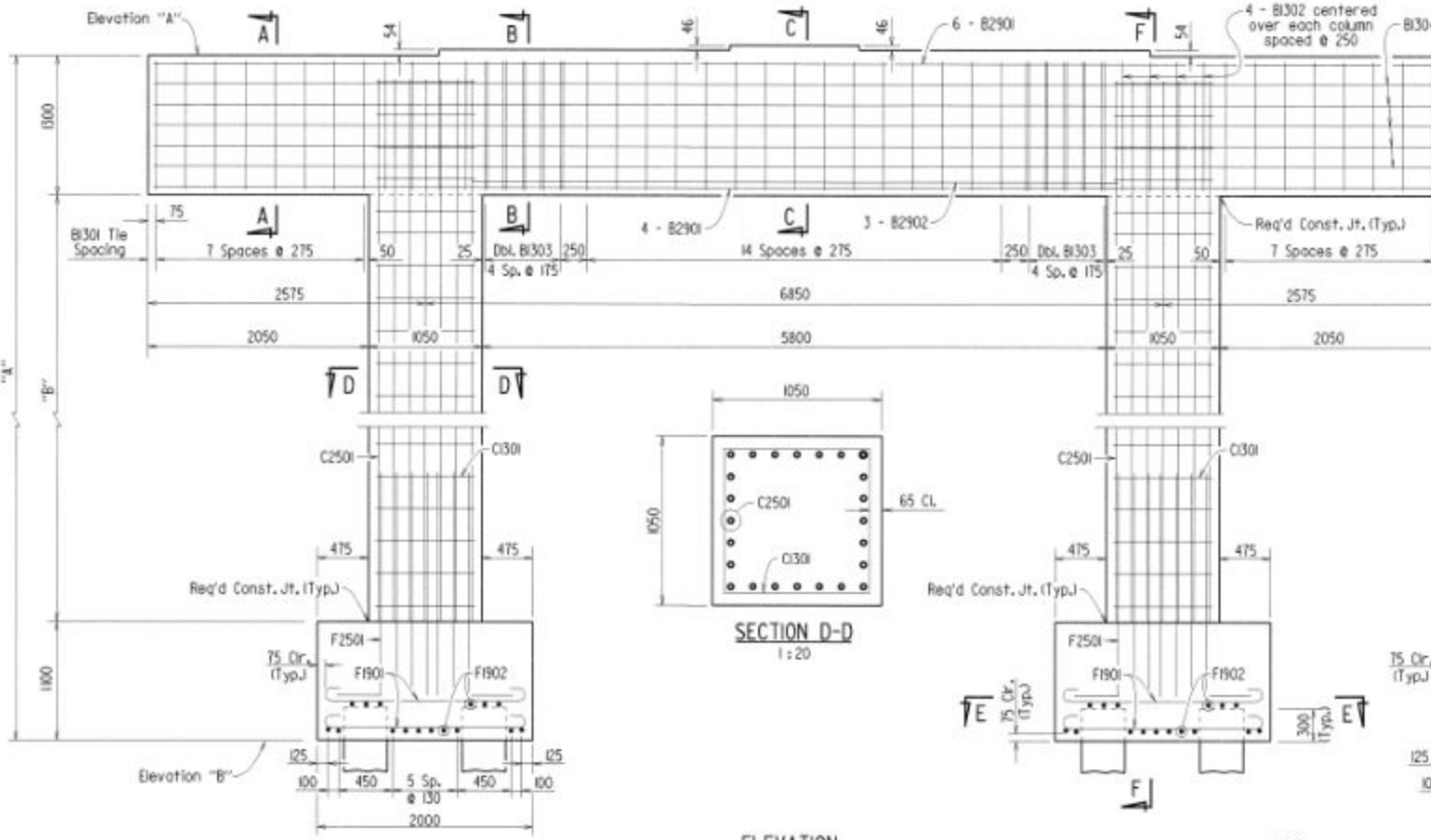
Stations and elevations are in meters. All other dimensions are in millimeters unless otherwise noted.

All Concrete shall be Class "S" and shall be poured in the dry. All exposed corners to be chamfered 20 mm unless otherwise noted.

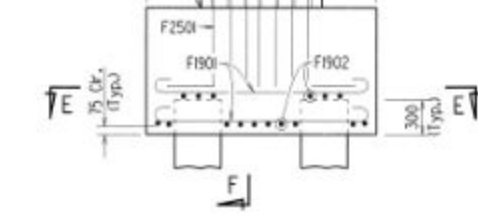
All Reinforcing Steel shall conform to ASTM A 615/A 615M-96a, Grade 420 iffy = 420 MPa.

If Anchor Bolts are drilled into Cap, top reinforcing bars shall be properly placed to avoid damage.

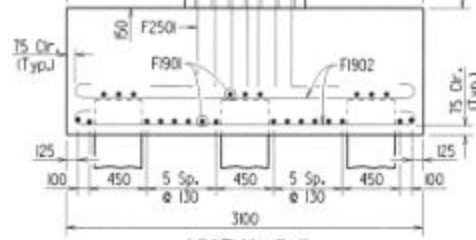
For additional information, see Layout.



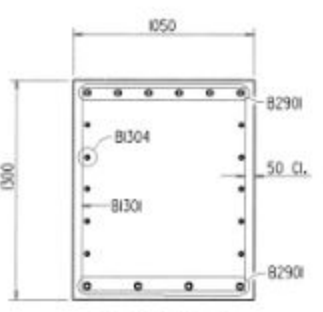
SECTION D-D  
1:20



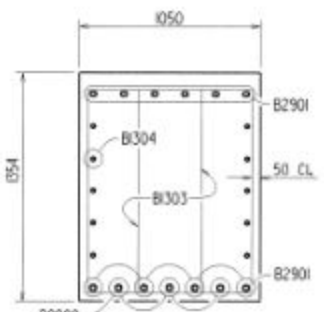
SECTION E-E  
1:30



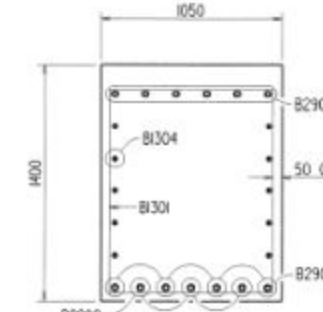
SECTION F-F  
1:30



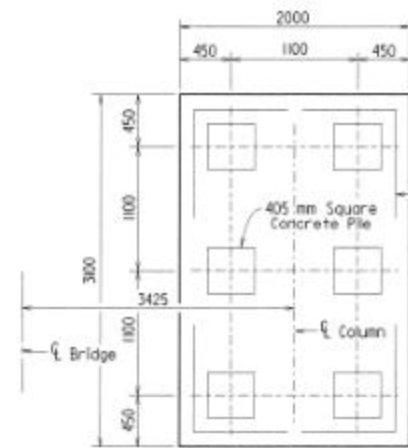
SECTION A-A  
1:20



SECTION B-B  
1:20



SECTION C-C  
1:20

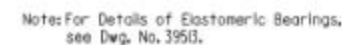


SECTION E-E  
1:30

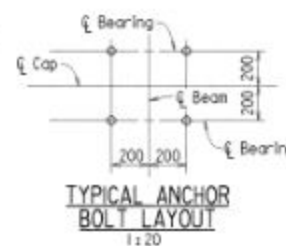


DETAILS OF INT. BENT NOS. 2, 3, 5, 6, 8, 9, 11 & 12  
U.P. R.R. & RED RIVER RELIEF  
ROUTE 67 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 08-13-98 FILENAME: B030104XLB15  
CHECKED BY: MAF DATE: 2-2-99 SCALE: AS NOTED  
DESIGNED BY: AMS DATE: 8-10-98  
BRIDGE NO. 06751 DRAWING NO. 39497



| DATE<br>REVISED | DATE<br>FILMED | DATE<br>REVISED | DATE<br>FILMED | FED. ROAD<br>DIST. NO. | STATE      | FED. AID PROJ. NO. | SHEET<br>NO. | TOTAL<br>SHEETS |
|-----------------|----------------|-----------------|----------------|------------------------|------------|--------------------|--------------|-----------------|
|                 |                |                 |                | 6                      | ARK.       |                    |              |                 |
|                 |                |                 |                | JOB NO.                |            | 030104             | 50           | 164             |
|                 |                |                 |                | 06751                  | INT. BENTS |                    | 39498        |                 |



TYPICAL ANCHOR  
BOLT LAYOUT  
1:20

BAR LIST-PER BENT

| MARK  | NO. REQ'D.  | LENGTH | 'A'  | 'B'  | P.O. |
|-------|-------------|--------|------|------|------|
| B301  | 31          | 440    | 950  | 1200 | 50   |
| B302  | 8           | 3300   | 950  | 1200 | 50   |
| B303  | 20          | 3830   | 660  | 1200 | 50   |
| B304  | 10          | 11 900 | -    | -    | Str. |
| B2901 | 10          | 11 900 | -    | -    | Str. |
| B2902 | 3           | 5800   | -    | -    | Str. |
| C1301 | 2 X "C"+ 10 | 3850   | 920  | 920  | 76   |
| C2501 | 48          | "0"    | -    | -    | Str. |
| F1901 | 50          | 2280   | 1850 | 160  | 114  |
| F1902 | 32          | 3380   | 2950 | 160  | 114  |
| F1903 | 8           | 1450   | 750  | 750  | 114  |
| F2501 | 48          | 2510   | 2160 | 410  | 152  |

### BENDING DIAGRAMS

Dimensions are out to out of bars.

TABLE OF VARIABLES

| Bent No. | Elevation "A" | Elevation "B" | "A"    | "B"    | "C" | "D"    |
|----------|---------------|---------------|--------|--------|-----|--------|
| 4        | 85.40         | 75.00         | 10 400 | 8000   | 26  | 900    |
| 7        | 87.052        | 75.552        | 11 500 | 9600   | 30  | 10 200 |
| 10       | 88.249        | 74.549        | 13 700 | 11 300 | 37  | 12 400 |

## GENERAL NOTES:

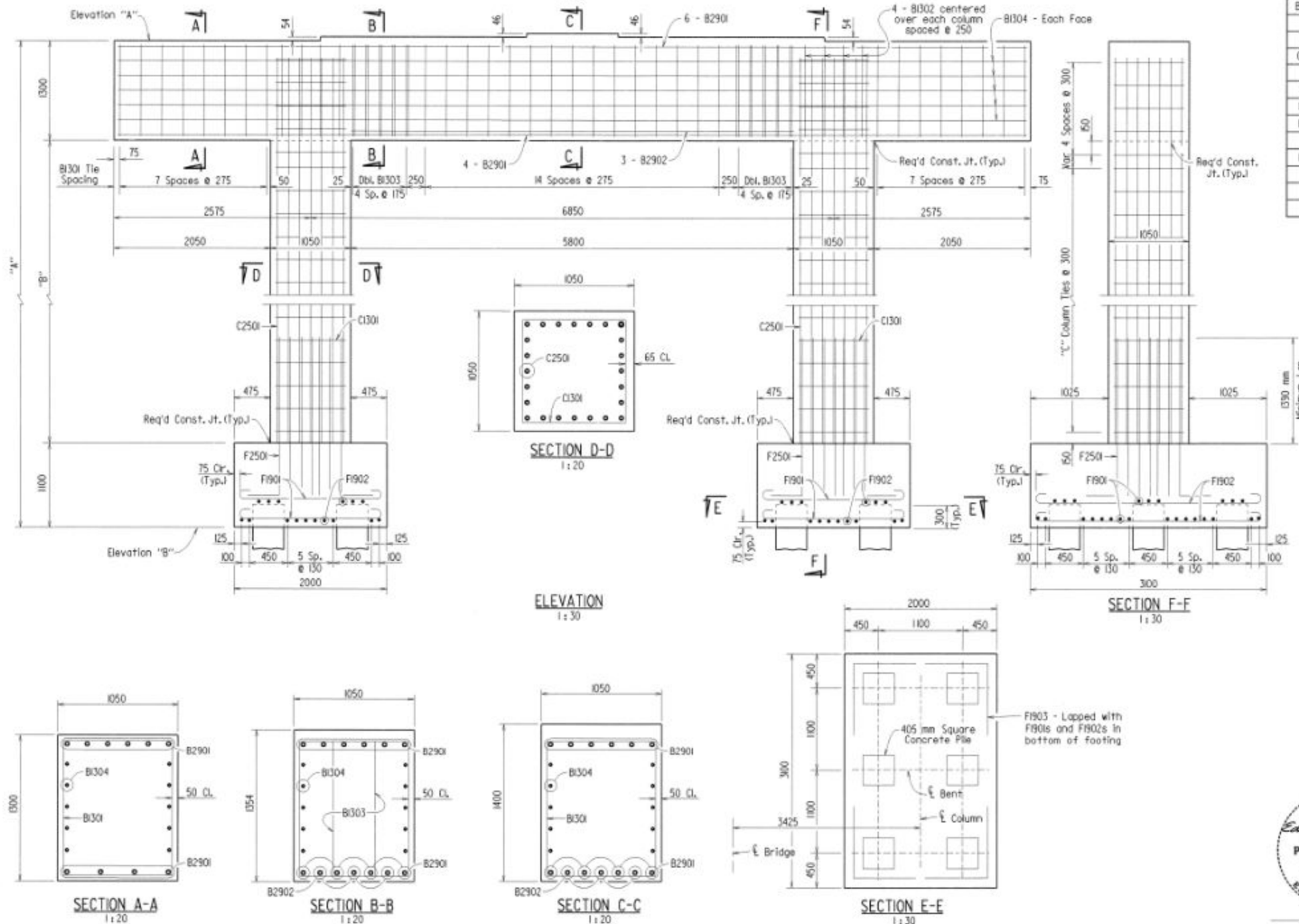
Stations and elevations are in meters. All other dimensions are in millimeters unless otherwise noted.

All Concrete shall be Class "S" and shall be poured in the dry. All exposed corners to be chamfered 20 mm unless otherwise noted.

All Reinforcing Steel shall conform to ASTM A 615/A 615M-96a, Grade 420 (fy = 420 MPa).

If Anchor Bolts are drilled into Cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see Layout.

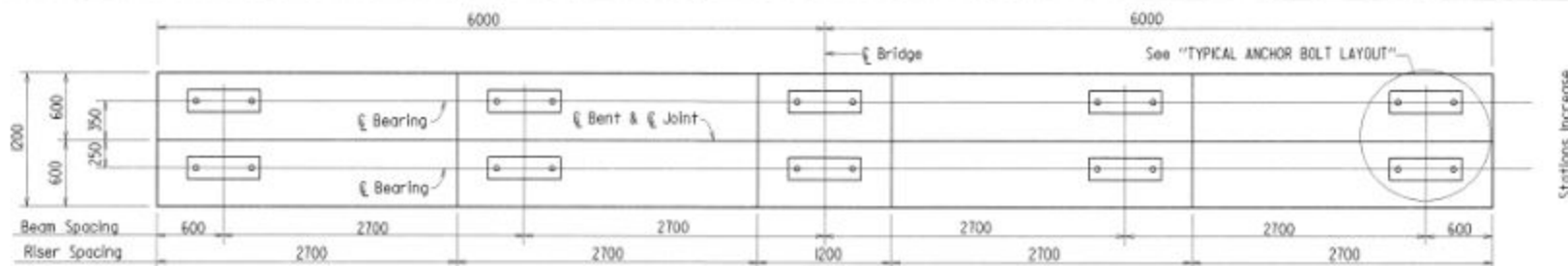


DETAILS OF INT. BENT NOS. 4, 7 & 10  
U.P. R.R. & RED RIVER RELIEF  
ROUTE 67 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 08-13-98 FILENAME: B030104XLBI6  
 CHECKED BY: PAH DATE: 2-2-99 SCALE: AS NOTED  
 DESIGNED BY: AMS DATE: 8-10-98  
 BRIDGE NO. 06751 DRAWING NO. 39498





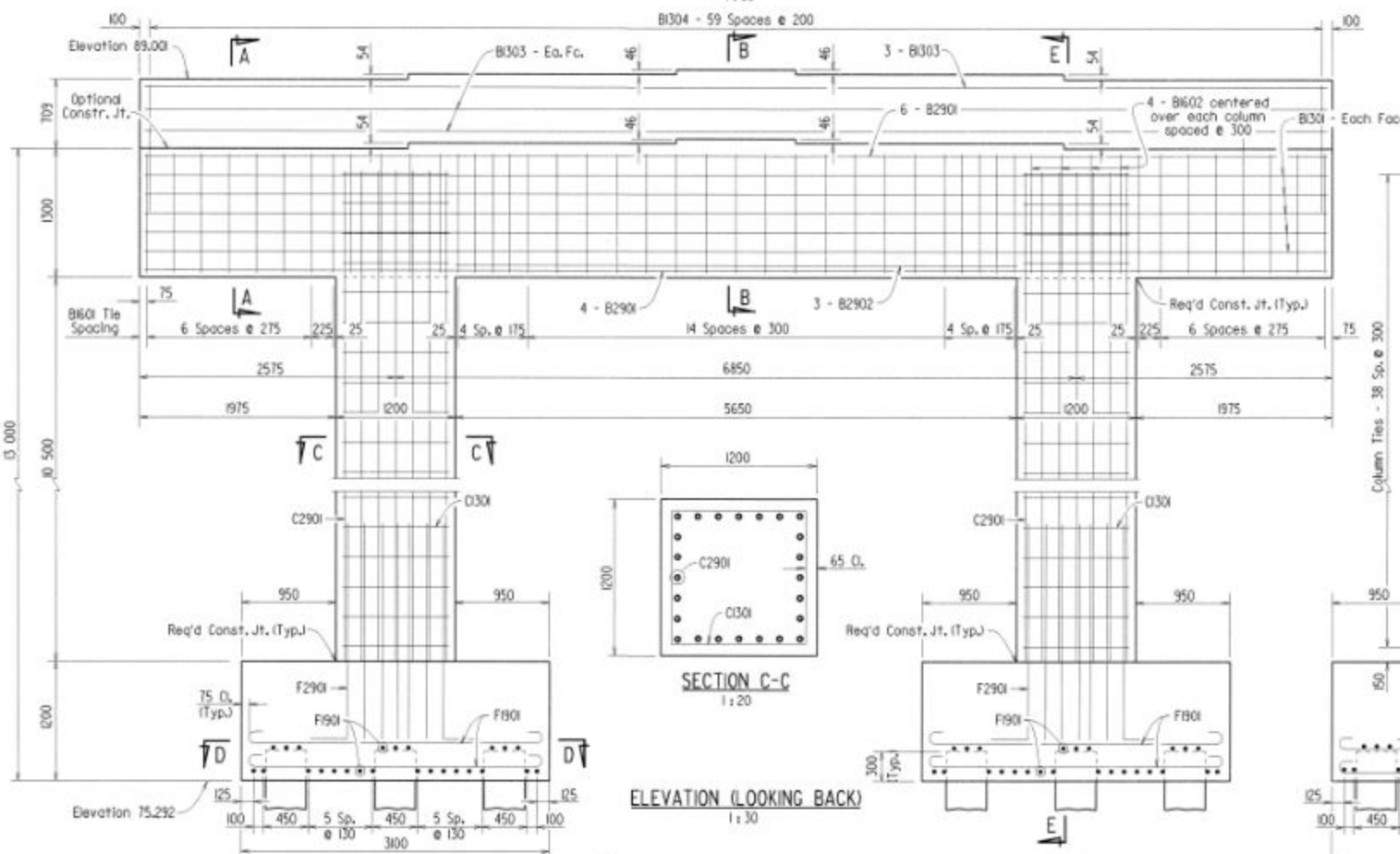


Note: For details of Elastomeric Bearings, see Dwg. No. 3993.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE     | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-----------|--------------------|-----------|--------------|
|              |             |              |             | 6                   | ARK.      |                    |           |              |
|              |             |              |             | JOB NO.             |           | 030104             | 51        | 124          |
|              |             |              |             | 06751               | NT. BENTS |                    | 39499     |              |

### BAR LIST-PER BENT

| MARK  | NO. REQ'D. | LENGTH | 'A'  | 'B'  | P.D. | BENDING DIAGRAMS |
|-------|------------|--------|------|------|------|------------------|
| B1601 | 39         | 4760   | 1100 | 1200 | 63   |                  |
| B1602 | 8          | 3430   | 1100 | 1200 | 63   |                  |
| B1301 | 10         | 11 900 | -    | -    | Str. |                  |
| B1302 | 60         | 2370   | 500  | 960  | 50   |                  |
| B1303 | 7          | 11 900 | -    | -    | Str. |                  |
| B2901 | 10         | 11 900 | -    | -    | Str. |                  |
| B2902 | 3          | 5650   | -    | -    | Str. |                  |
| C1301 | 78         | 4450   | 1070 | 1070 | 76   |                  |
| C2901 | 48         | 11 600 | -    | -    | Str. |                  |
| F1901 | 100        | 3380   | 2950 | 160  | 114  |                  |
| F1902 | 8          | 1450   | 750  | 750  | 114  |                  |
| F2901 | 48         | 3010   | 2630 | 460  | 228  |                  |



### TYPICAL ANCHOR BOLT LAYOUT

1:20

### GENERAL NOTES

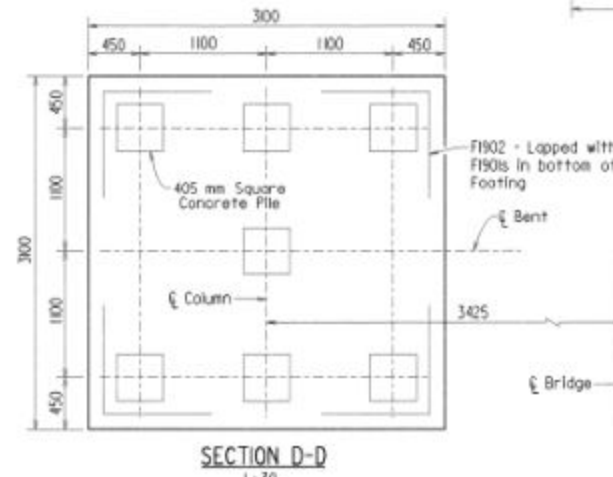
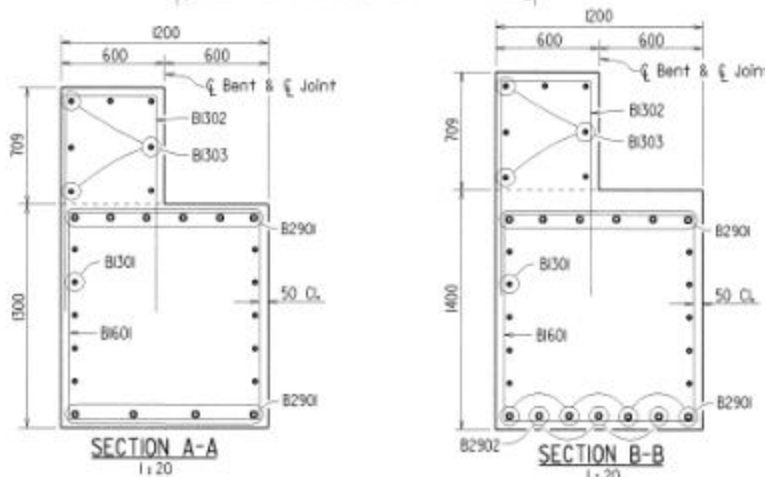
Stations and elevations are in meters. All other dimensions are in millimeters unless otherwise noted.

All Concrete shall be Class "S" and shall be poured in the dry. All exposed corners to be chamfered 20 mm unless otherwise noted.

All Reinforcing Steel shall conform to ASTM A 65/A 65M-96a, Grade 420 (fy = 420 MPa).

If Anchor Bolts are drilled into Cap, top reinforcing bars shall be properly placed to avoid damage.

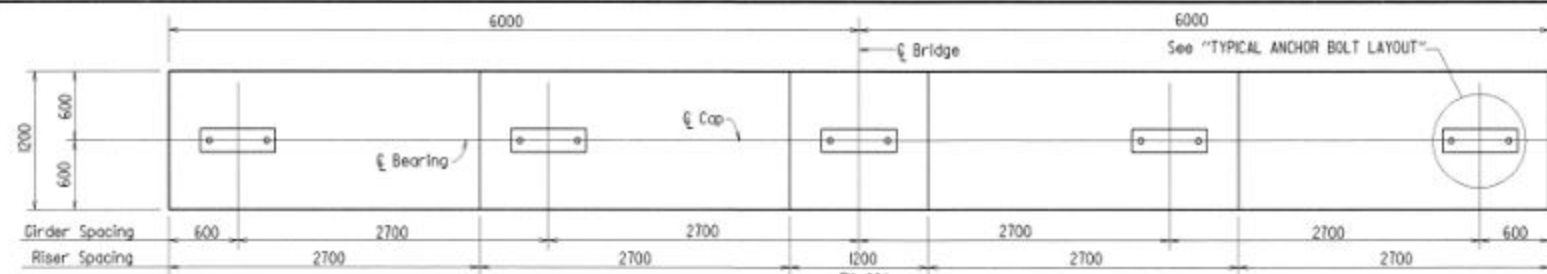
For additional information, see Layout.



DETAILS OF INT. BENT NO. 13  
U.P. R.R. & RED RIVER RELIEF  
ROUTE 67 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 10-15-98 FILENAME: B030104XLB19  
CHECKED BY: HWT DATE: 2-2-99 SCALE: AS NOTED  
DESIGNED BY: AMS DATE: 10-1-98  
BRIDGE NO. 06751 DRAWING NO. 39499



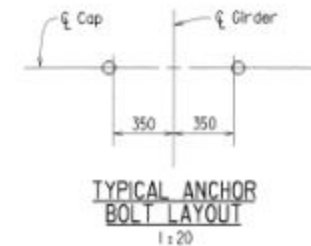
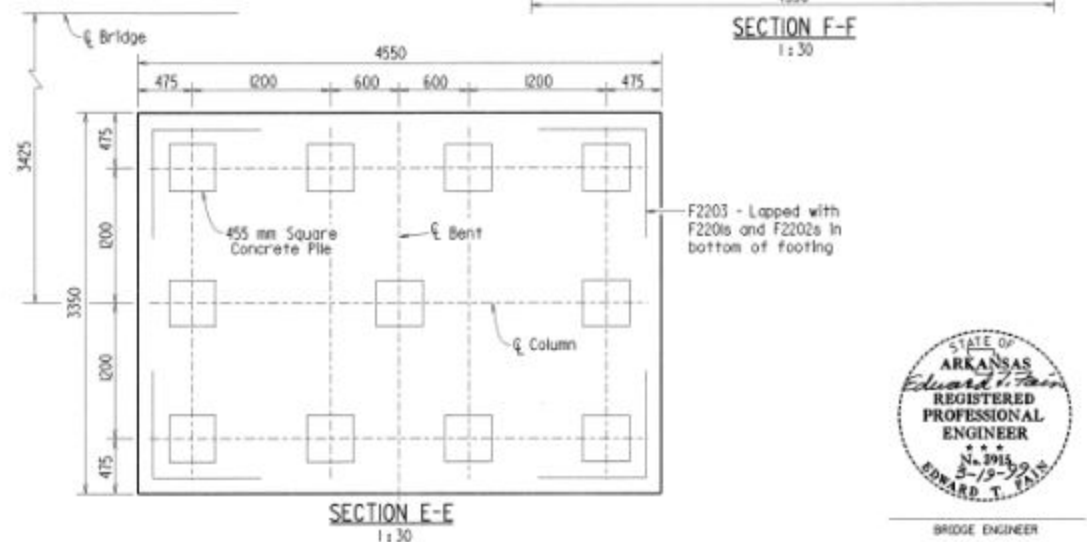
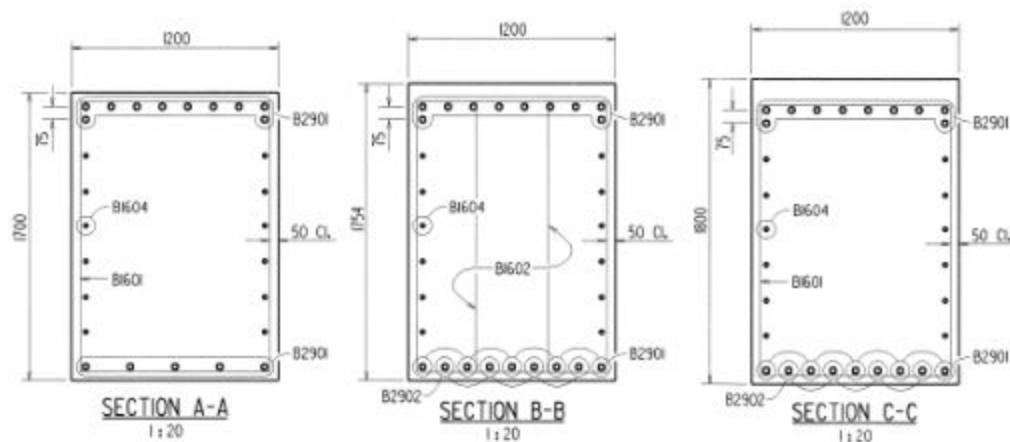
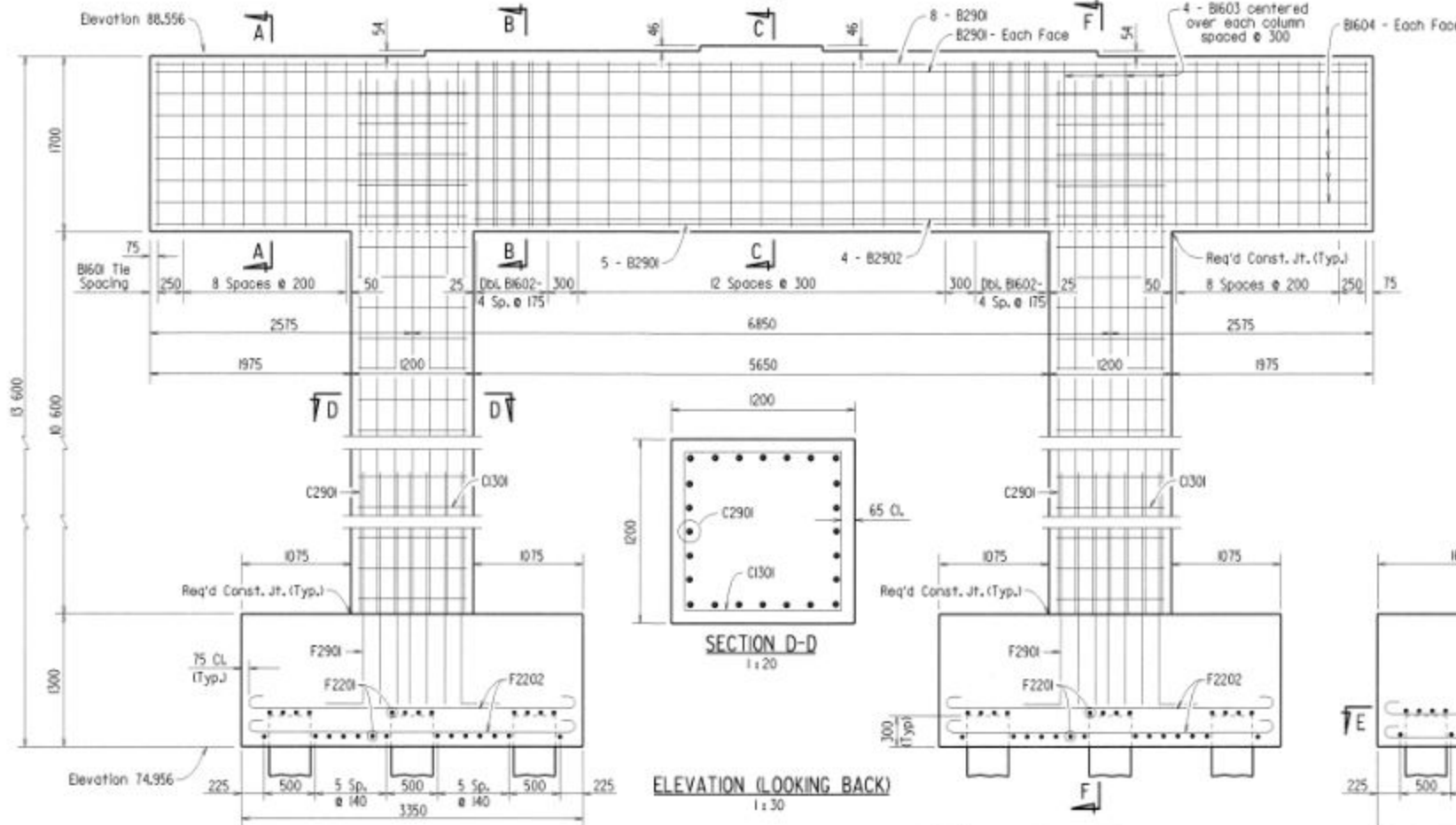


Note: For details of Elastomeric Bearings, see Dwg. No. 39513.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO.  | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|------------|--------------|
|              |             |              |             | 6                   | ARK.  | 030104             | 52         | 164          |
|              |             |              |             | JOB NO.             |       | 06751              | INT. BENTS | 39500        |

### BAR LIST-PER BENT

| MARK  | NO. | REQ'D. | LENGTH | 'A'  | 'B'  | P.D. | BENDING DIAGRAMS |
|-------|-----|--------|--------|------|------|------|------------------|
| B1601 | 33  | 5560   | 1100   | 1600 | 63   |      |                  |
| B1602 | 20  | 4920   | 780    | 1600 | 63   |      |                  |
| B1603 | 8   | 4230   | 1100   | 1600 | 63   |      |                  |
| B1604 | 12  | 11 900 | -      | -    | Str. |      |                  |
| B2901 | 15  | 11 900 | -      | -    | Str. |      |                  |
| B2902 | 4   | 5650   | -      | -    | Str. |      |                  |
| C1301 | 82  | 4450   | 1070   | 1070 | 76   |      |                  |
| C2901 | 48  | 12 100 | -      | -    | Str. |      |                  |
| F2201 | 52  | 4890   | 4400   | 180  | 133  |      |                  |
| F2202 | 72  | 3690   | 3200   | 180  | 133  |      |                  |
| F2203 | 8   | 820    | 940    | 940  | 133  |      |                  |
| F2901 | 48  | 3090   | 270    | 460  | 228  |      |                  |



### GENERAL NOTES

Stations and elevations are in meters. All other dimensions are in millimeters unless otherwise noted.

All Concrete shall be Class "S" and shall be poured in the dry. All exposed corners to be chamfered 20 mm unless otherwise noted.

All Reinforcing Steel shall conform to ASTM A 615/A 615M-96a, Grade 420 (fy = 420 MPa).

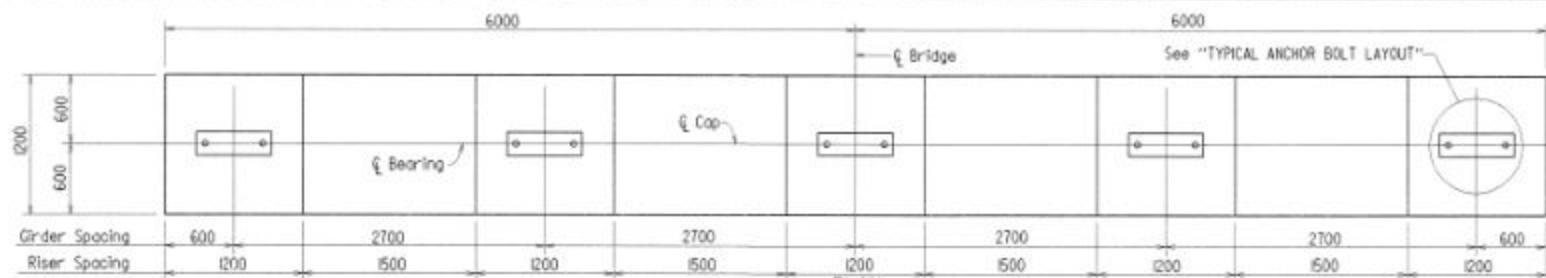
If Anchor Bolts are drilled into Cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see Layout.



DETAILS OF INT. BENT NO. 14  
U.P. R.R. & RED RIVER RELIEF  
ROUTE 67 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: MJT DATE: 10-20-98 FILENAME: B030104X1.B21  
CHECKED BY: [Signature] DATE: 2-2-99 SCALE: AS NOTED  
DESIGNED BY: AMS DATE: 10-6-98  
BRIDGE NO. 06751 DRAWING NO. 39500





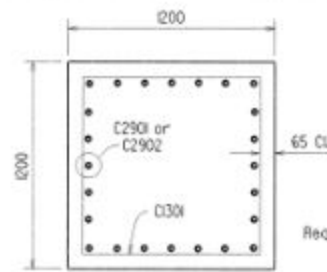
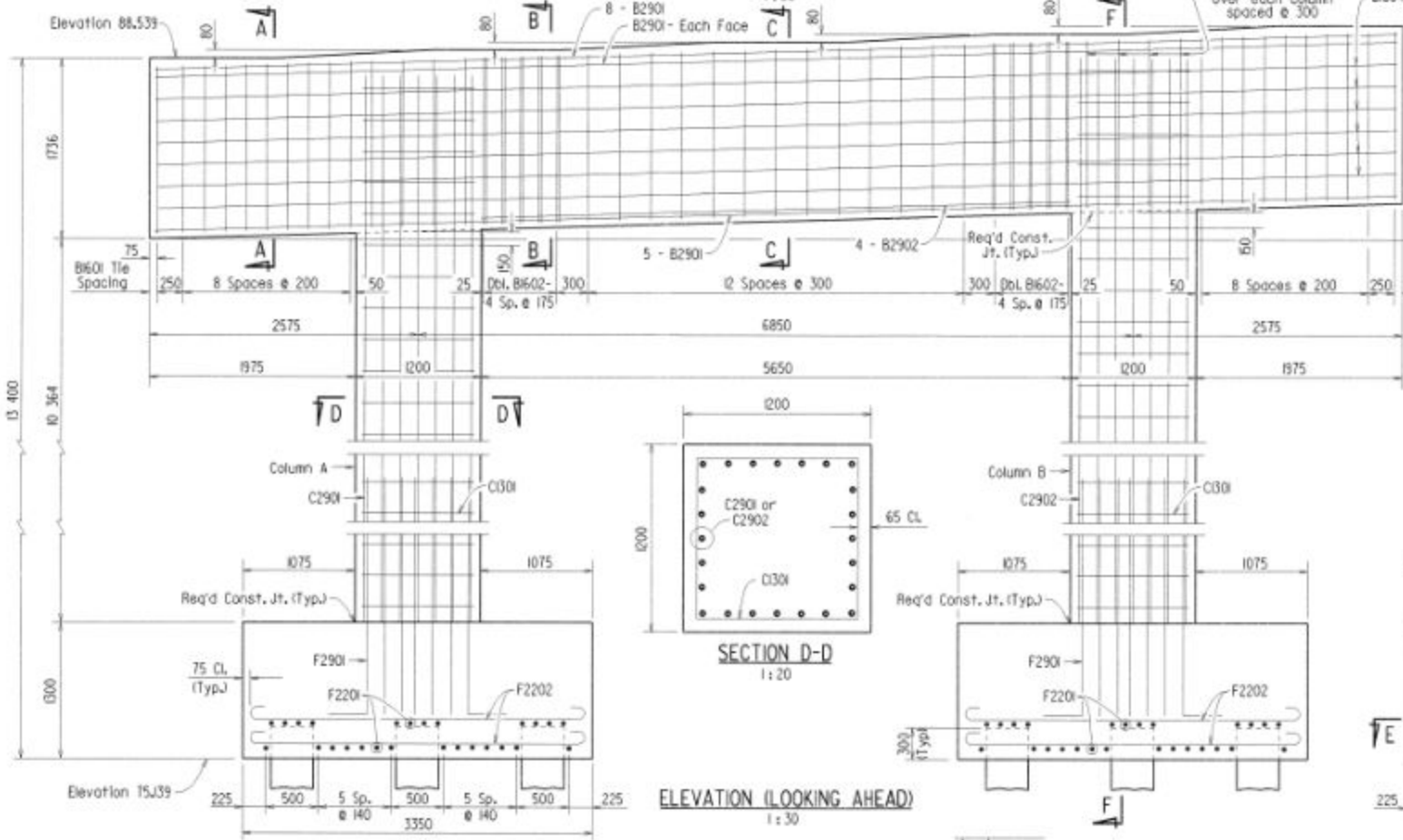
Note: For details of Elastomeric Bearings, see Dwg. 3953.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO.  | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|------------|--------------|
|              |             |              |             | 6                   | ARK.  | 03004              | 15         | 164          |
|              |             |              |             | JOB NO.             |       | 06751              | INT. BENTS | 39501        |

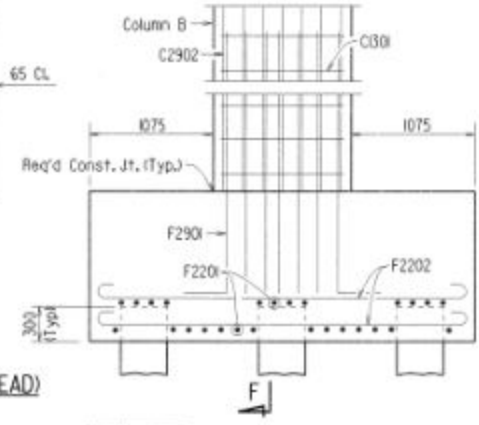
### BAR LIST-PER BENT

| MARK  | NO. | REQ'D. | LENGTH | 'A'  | 'B'  | P.D. | BENDING DIAGRAMS |
|-------|-----|--------|--------|------|------|------|------------------|
| B601  | 33  | 5560   | 1000   | 1600 | 63   |      |                  |
| B602  | 20  | 4920   | 780    | 1600 | 63   |      |                  |
| B603  | 8   | 4230   | 1100   | 1600 | 63   |      |                  |
| B604  | 12  | 11 900 | -      | -    | Str. |      |                  |
| B2901 | 15  | 11 900 | -      | -    | Str. |      |                  |
| B2902 | 4   | 5650   | -      | -    | Str. |      |                  |
| C301  | 81  | 4450   | 1070   | 1070 | 76   |      |                  |
| C2901 | 24  | 11 950 | -      | -    | Str. |      |                  |
| C2902 | 24  | 12 150 | -      | -    | Str. |      |                  |
| F2201 | 52  | 4890   | 4400   | 180  | 133  |      |                  |
| F2202 | 72  | 3690   | 3200   | 180  | 133  |      |                  |
| F2203 | 8   | 1820   | 940    | 940  | 133  |      |                  |
| F2901 | 48  | 3090   | 2710   | 460  | 228  |      |                  |
|       |     |        |        |      |      |      |                  |
|       |     |        |        |      |      |      |                  |
|       |     |        |        |      |      |      |                  |

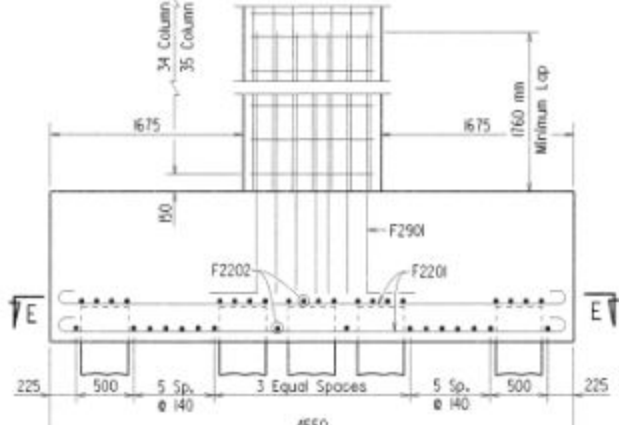
\* 40 in Column A, 41 in Column B



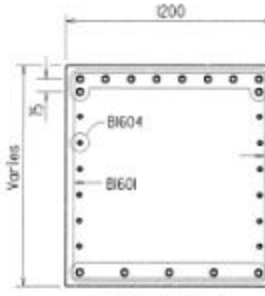
SECTION D-D  
1:20



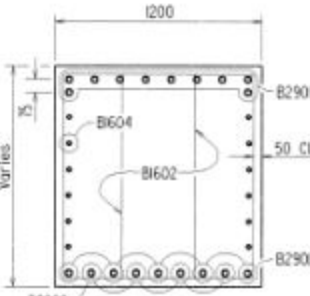
SECTION E-E  
1:30



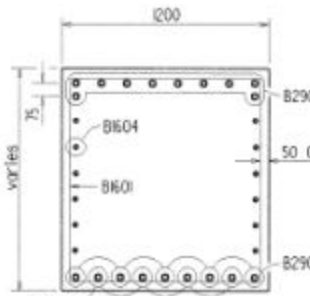
SECTION F-F  
1:30



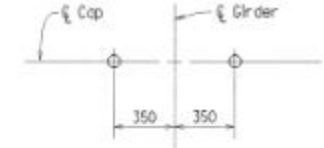
SECTION A-A  
1:20



SECTION B-B  
1:20



SECTION C-C  
1:20



TYPICAL ANCHOR  
BOLT LAYOUT  
1:20

### GENERAL NOTES

Stations and elevations are in meters. All other dimensions are in millimeters unless otherwise noted.

All Concrete shall be Class "S" and shall be poured in the dry. All exposed corners to be chamfered 20 mm unless otherwise noted.

All Reinforcing Steel shall conform to ASTM A 615/A 65M-96a, Grade 420 (fy = 420 MPa).

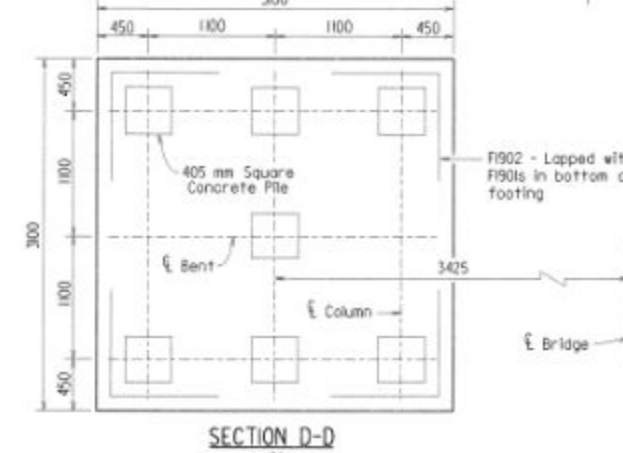
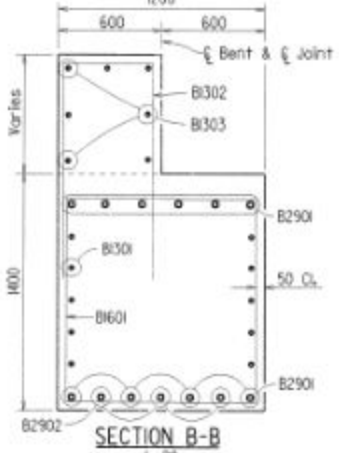
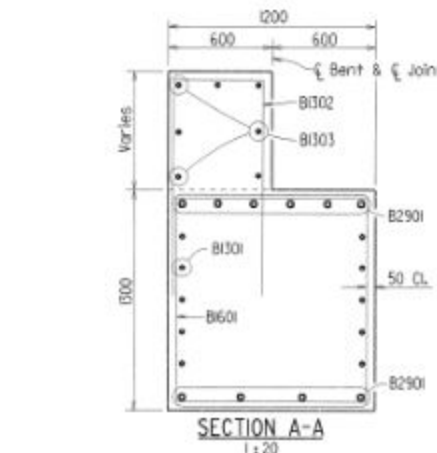
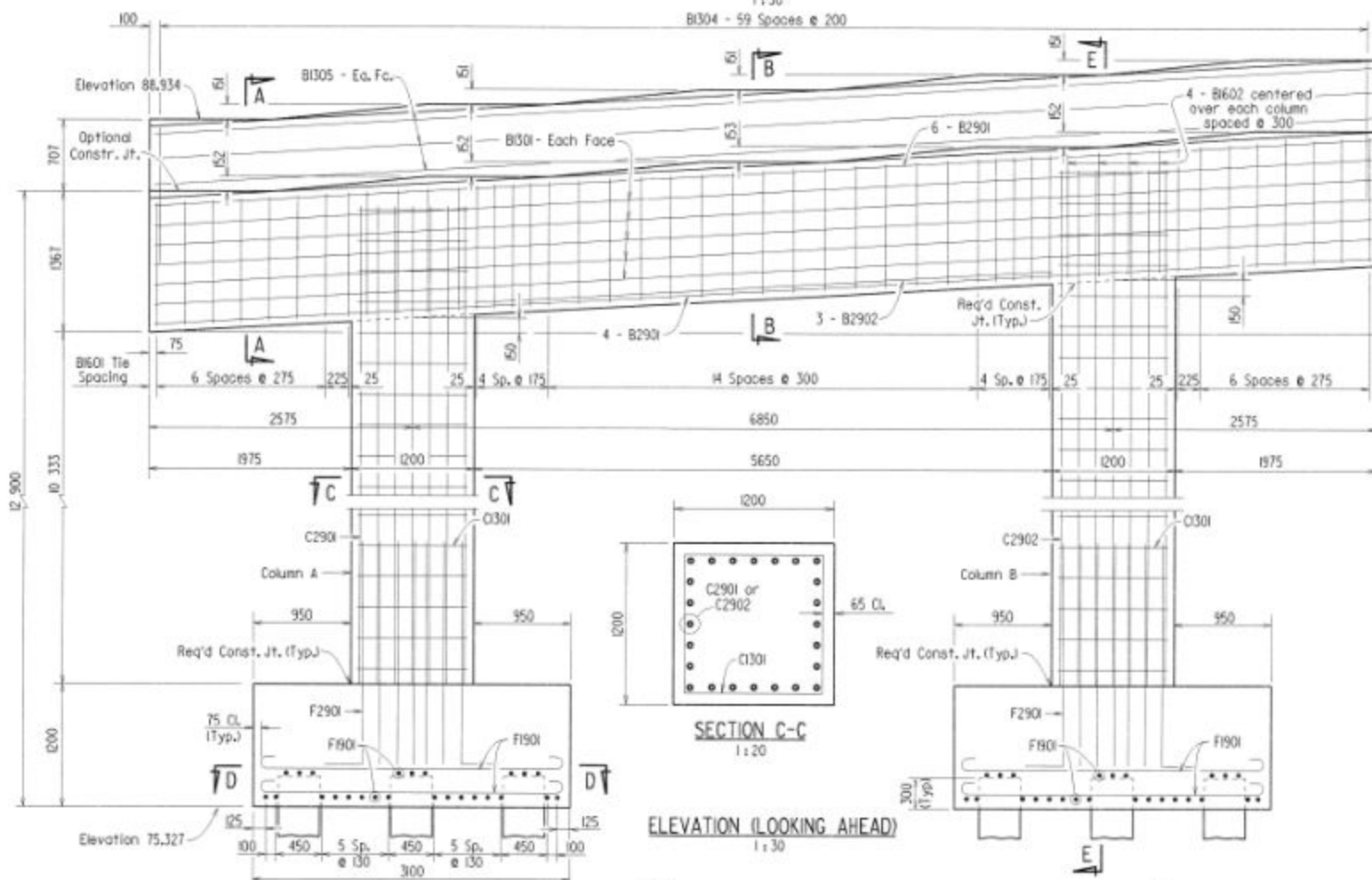
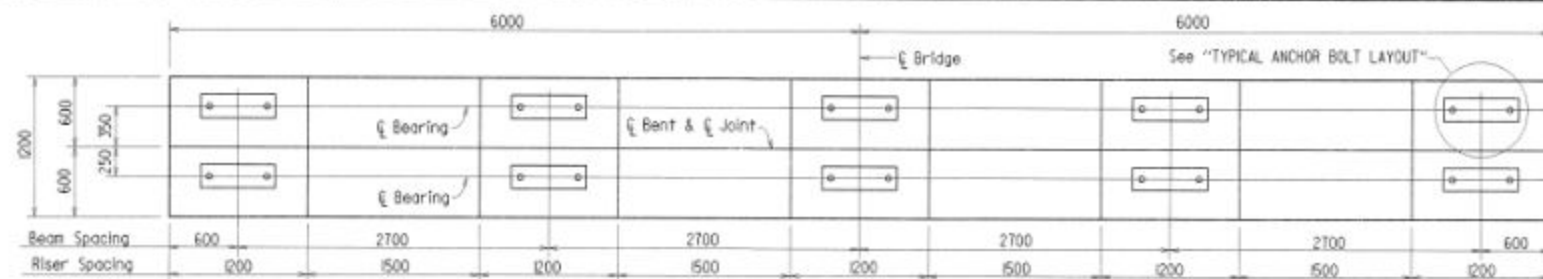
If Anchor Bolts are drilled into Cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see Layout.



DETAILS OF INT. BENT NO. 15  
U.P. R.R. & RED RIVER RELIEF  
ROUTE 67 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 10-21-98 FILENAME: B030104XLB22  
CHECKED BY: JMG DATE: 2-2-99 SCALE: AS NOTED  
DESIGNED BY: AMS DATE: 10-6-98  
BRIDGE NO. 06751 DRAWING NO. 39501



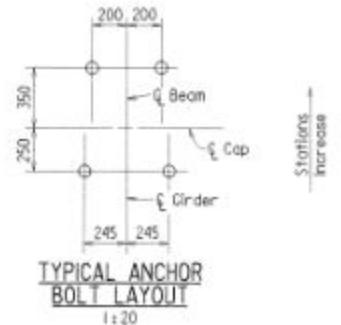
Note: For Details of Elastomeric Bearings, see Dwg. No. 39513.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|-----------|--------------|
|              |             |              |             | 6                   | ARK.  |                    |           |              |
|              |             |              |             | JOB NO.             |       | 030104             | 95        | 146          |
|              |             |              |             | 06751               |       | INT. BENTS         |           | 39502        |

# BAR LIST-PER BENT

| MARK  | NO. | REQ'D. | LENGTH | 'A'  | 'B'  | P.D. | BENDING DIAGRAMS |
|-------|-----|--------|--------|------|------|------|------------------|
| B601  | 39  | 4760   | 1100   | 1200 | 63   |      |                  |
| B602  | 8   | 3430   | 1100   | 1200 | 63   |      |                  |
| B301  | 10  | 11 920 | -      | -    | Str. |      |                  |
| B302  | 60  | 2370   | 500    | 960  | 50   |      |                  |
| B303  | 7   | 11 920 | -      | -    | Str. |      |                  |
| B2901 | 10  | 11 920 | -      | -    | Str. |      |                  |
| B2902 | 3   | 5650   | -      | -    | Str. |      |                  |
| C301  | 80  | 4450   | 1070   | 1070 | 76   |      |                  |
| C2901 | 24  | 11 580 | -      | -    | Str. |      |                  |
| C2902 | 24  | 11 960 | -      | -    | Str. |      |                  |
| F1901 | 100 | 3380   | 2950   | 460  | 114  |      |                  |
| F1902 | 8   | 1450   | 750    | 750  | 114  |      |                  |
| F2901 | 48  | 3010   | 2630   | 460  | 152  |      |                  |

\* 39 in Col. A, 4 in Col. B



## GENERAL NOTES

Stations and elevations are in meters. All other dimensions are in millimeters unless otherwise noted.

All Concrete shall be Class "S" and shall be poured in the dry. All exposed corners to be chamfered 20 mm unless otherwise noted.

All Reinforcing Steel shall conform to ASTM A 615/A 65M-96a, Grade 420 (fy = 420 MPa).

If Anchor Bolts are drilled into Cap, top reinforcing bars shall be properly placed to avoid damage.

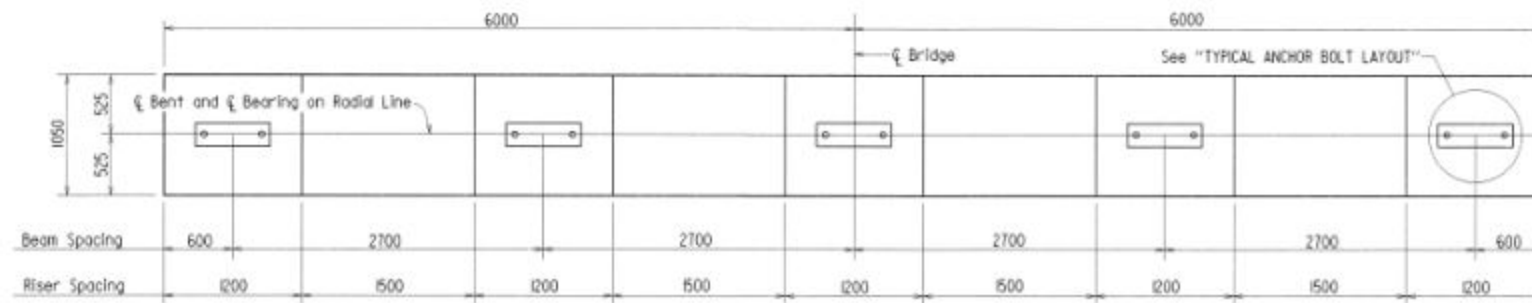
For additional information, see Layout.



DETAILS OF INT. BENT NO. 16  
U.P. R.R. & RED RIVER RELIEF  
ROUTE 67 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

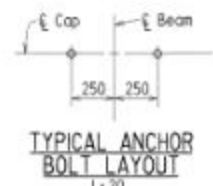
DRAWN BY: MJT DATE: 10-16-98 FILENAME: B030104X1.B20  
CHECKED BY: JMT DATE: 2-2-99 SCALE: AS NOTED  
DESIGNED BY: AMS DATE: 9-30-98  
BRIDGE NO. 06751 DRAWING NO. 39502





PLAN  
1:30

Note: For Details of Elastomeric Bearings, see Dwg. No. 39503.



| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE      | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|------------|--------------------|-----------|--------------|
|              |             |              |             | 6                   | ARK.       |                    |           |              |
|              |             |              |             | JOB NO.             |            | 030004             | 355       | 104          |
|              |             |              |             | 06751               | INT. BENTS |                    | 39503     |              |

BAR LIST-PER BENT

| MARK  | NO. REQ'D. | LENGTH | "A"  | "B"  | P.D. | BENDING DIAGRAMS                   |
|-------|------------|--------|------|------|------|------------------------------------|
| B301  | 31         | 440    | 950  | 1200 | 50   | Dimensions are out to out of bars. |
| B302  | 8          | 3300   | 950  | 1200 | 50   |                                    |
| B303  | 20         | 3830   | 660  | 1200 | 50   | B301, B303                         |
| B304  | 10         | 11 930 | -    | -    | Str. |                                    |
| B2901 | 10         | 11 930 | -    | -    | Str. | B302                               |
| B2902 | 3          | 5820   | -    | -    | Str. |                                    |
| C301  | "C"        | 3850   | 920  | 920  | 76   | C301                               |
| C2501 | 24         | "D"    | -    | -    | Str. |                                    |
| C2502 | 24         | "D"    | -    | -    | Str. | F1901, F1902                       |
| F1901 | 108        | 3580   | 350  | 160  | 114  |                                    |
| F1902 | 8          | 1450   | 750  | 750  | 114  | F1902, F2501                       |
| F2501 | 48         | 2510   | 2160 | 410  | 152  |                                    |

\* Column A only.  
\*\* Column B only.

TABLE OF VARIABLES

| Bent No. | Elev. "A" | Elev. "B" | "A"    | "B"    | "C" | "D"    |        | "E" | "F"  | "G" |
|----------|-----------|-----------|--------|--------|-----|--------|--------|-----|------|-----|
|          |           |           |        |        |     | Col. A | Col. B |     |      |     |
| 17       | 88.740    | 74.940    | 13 800 | 11 319 | 88  | 12 600 | 13 100 | 182 | 1381 | 809 |
| 18       | 88.440    | 74.840    | 13 600 | 11 109 | 86  | 12 400 | 12 900 | 205 | 1391 | 912 |
| 20       | 87.836    | 74.836    | 13 000 | 10 509 | 82  | 11 800 | 12 300 | 205 | 1391 | 912 |
| 21       | 87.382    | 75.582    | 11 800 | 9309   | 74  | 10 600 | 11 100 | 205 | 1391 | 912 |
| 23       | 86.503    | 75.003    | 11 500 | 9009   | 73  | 10 300 | 10 800 | 205 | 1391 | 912 |
| 24       | 85.880    | 74.980    | 10 900 | 8409   | 68  | 9700   | 10 200 | 205 | 1391 | 912 |
| 26       | 84.725    | 75.325    | 9400   | 6909   | 58  | 8200   | 8700   | 205 | 1391 | 912 |
| 27       | 83.965    | 75.465    | 8500   | 6009   | 52  | 7300   | 7800   | 205 | 1391 | 912 |

GENERAL NOTES

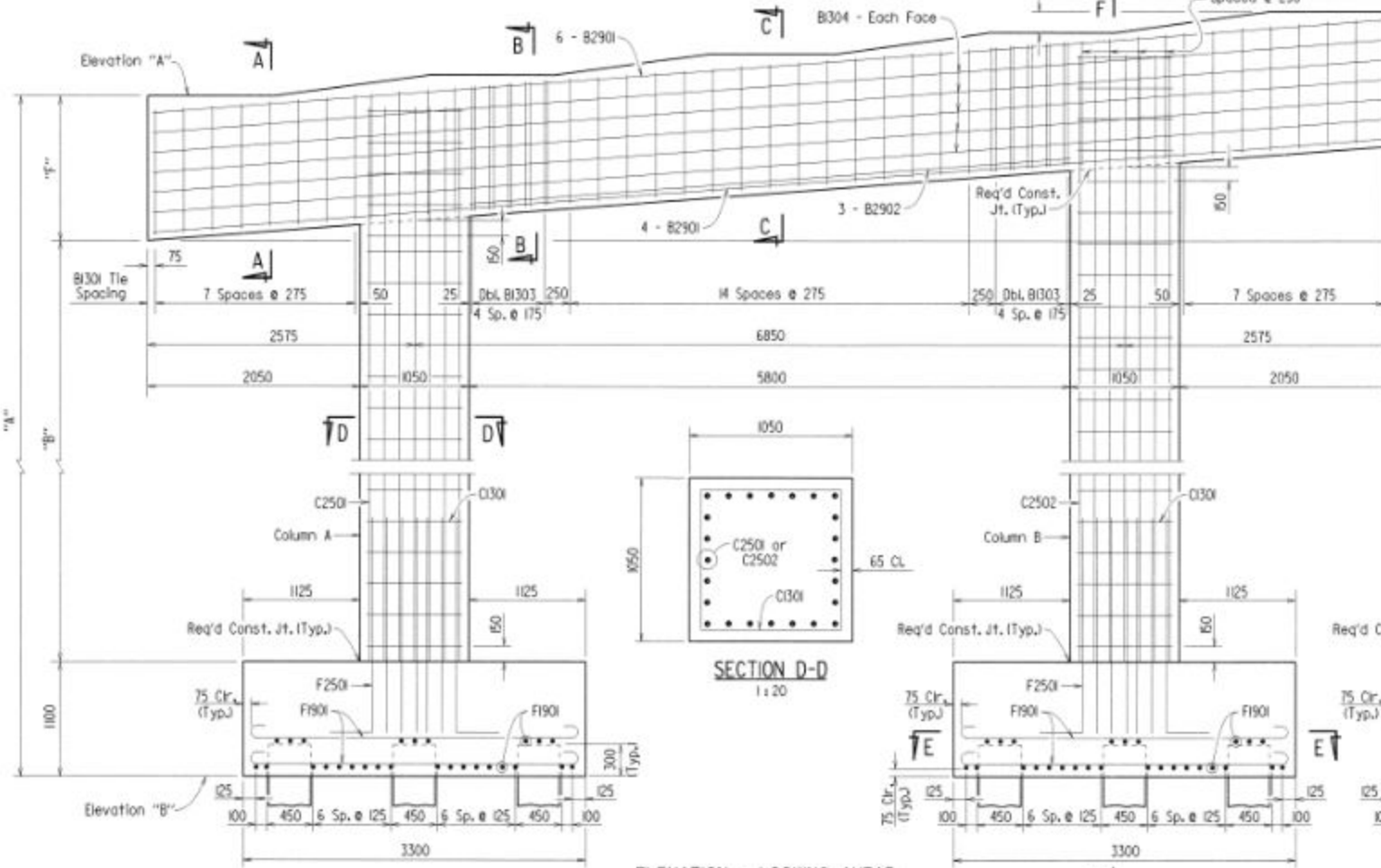
Stations and elevations are in meters. All other dimensions are in millimeters unless otherwise noted.

All Concrete shall be Class "S" and shall be poured in the dry. All exposed corners to be chamfered 20 mm unless otherwise noted.

All Reinforcing Steel shall conform to ASTM A 615/A 615M-96a, Grade 420 (fy = 420 MPa).

If Anchor Bolts are drilled into Cap, top reinforcing bars shall be properly placed to avoid damage.

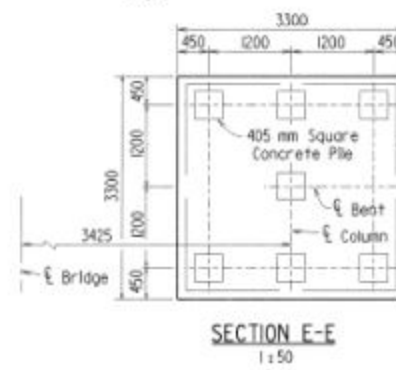
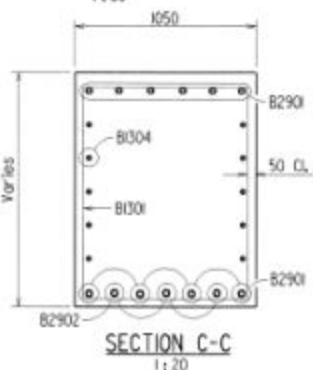
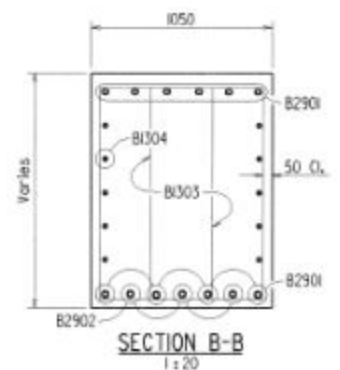
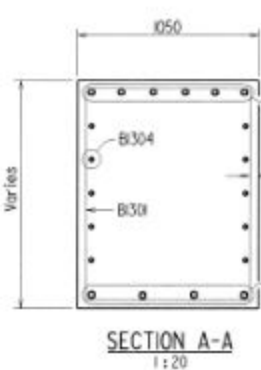
For additional information, see Layout.



SECTION D-D  
1:20

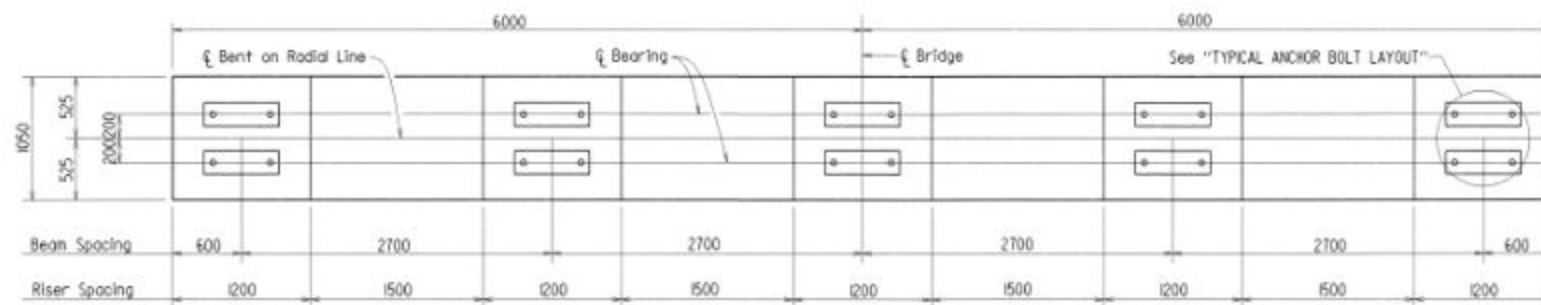
SECTION E-E  
1:50

SECTION F-F  
1:30



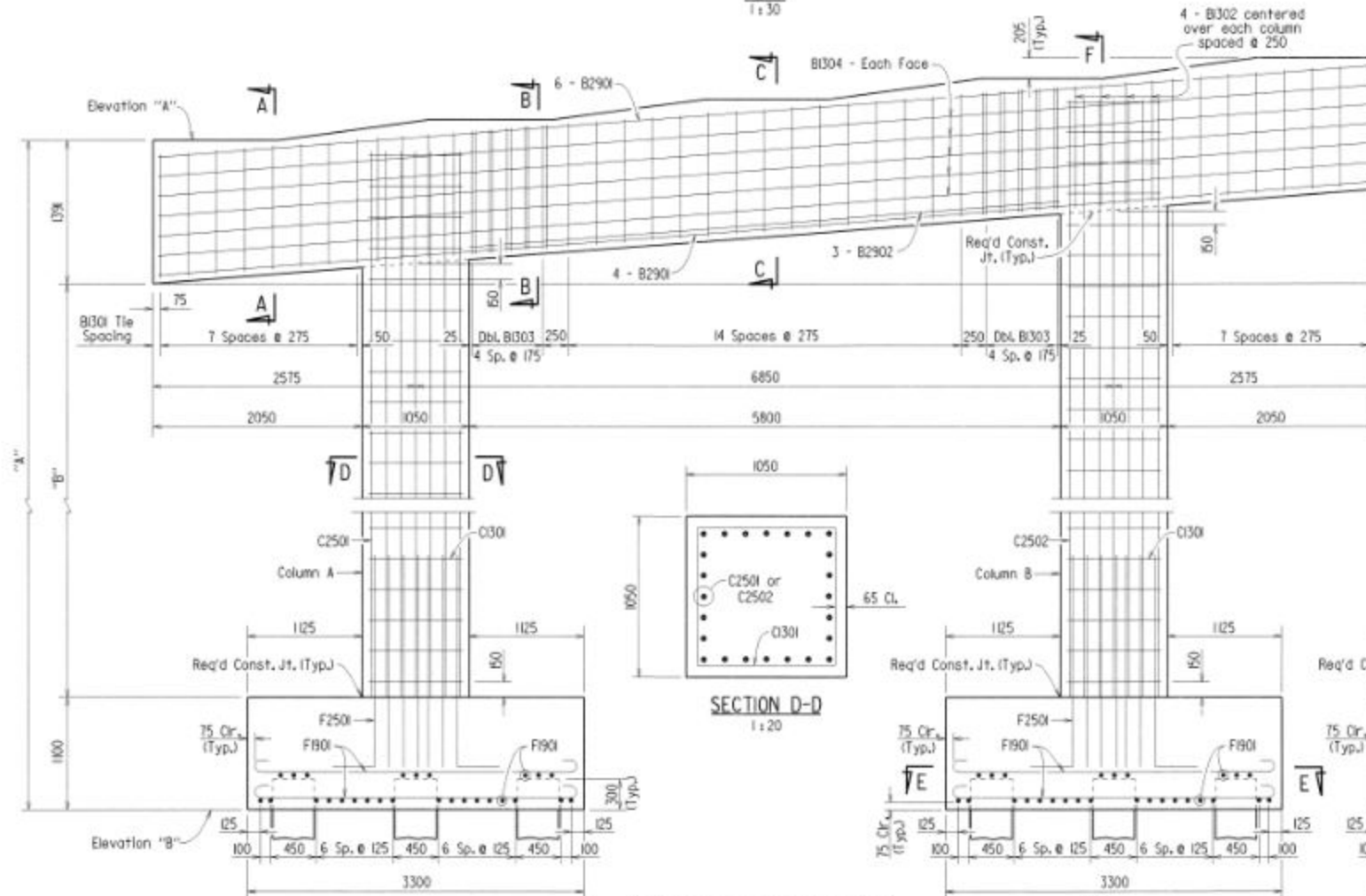
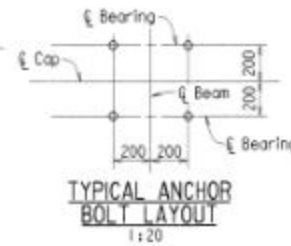
DETAILS OF INT. BENT NOS.  
17, 18, 20, 21, 23, 24, 26 & 27  
U.P. R.R. & RED RIVER RELIEF  
ROUTE 67 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 08-13-98 FILENAME: B030104X1.BIT  
CHECKED BY: [Signature] DATE: 8-2-99 SCALE: AS NOTED  
DESIGNED BY: [Signature] DATE: 8-11-98  
BRIDGE NO. 06751 DRAWING NO. 39503

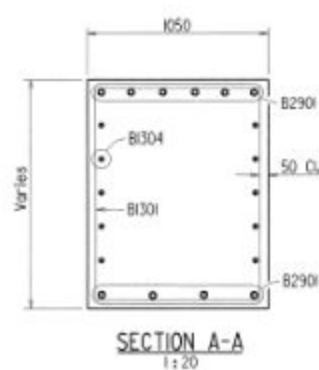


PLAN  
1:30

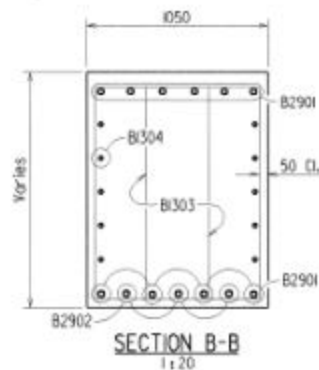
Note: For details of Elastomeric Bearings, see Dwg. No. 3953.



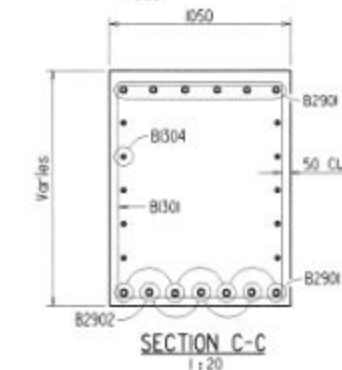
ELEVATION - LOOKING AHEAD  
1:30



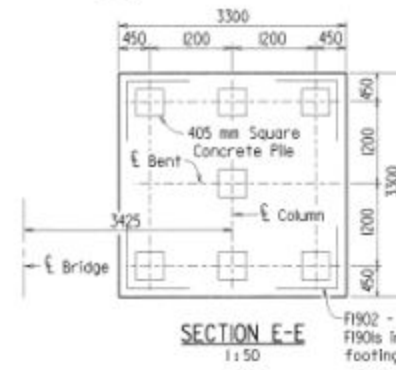
SECTION A-A  
1:20



SECTION B-B  
1:20



SECTION C-C  
1:20



SECTION D-D  
1:20



SECTION E-E  
1:50



DETAILS OF INT. BENT NOS. 19, 22 & 25  
U.P. R.R. & RED RIVER RELIEF  
ROUTE 67 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: MJT DATE: 08-13-98 FILENAME: B030104X1.B18  
CHECKED BY: MMT DATE: 2-2-99 SCALE: AS NOTED  
DESIGNED BY: AMS DATE: 8-11-98  
BRIDGE NO. 06751 DRAWING NO. 39504

| MARK  | NO. | REQ'D. | LENGTH | 'A'  | 'B'  | P.D. | BENDING DIAGRAMS                   |
|-------|-----|--------|--------|------|------|------|------------------------------------|
| B1301 | 31  | 440    | 950    | 1200 | 50   |      | Dimensions are out to out of bars. |
| B1302 | 8   | 3300   | 950    | 1200 | 50   |      |                                    |
| B1303 | 20  | 3830   | 660    | 1200 | 50   |      |                                    |
| B1304 | 10  | 11 930 | -      | -    | Str. |      |                                    |
| B2901 | 10  | 11 930 | -      | -    | Str. |      |                                    |
| B2902 | 3   | 5820   | -      | -    | Str. |      |                                    |
| C1301 | "C" | 3850   | 920    | 920  | 76   |      |                                    |
| C2501 | 24  | "D"    | -      | -    | Str. |      |                                    |
| C2502 | 24  | "D"    | -      | -    | Str. |      |                                    |
| F1901 | 108 | 3580   | 350    | 160  | 114  |      |                                    |
| F1902 | 8   | 1450   | 750    | 750  | 114  |      |                                    |
| F2501 | 48  | 250    | 2160   | 410  | 152  |      |                                    |

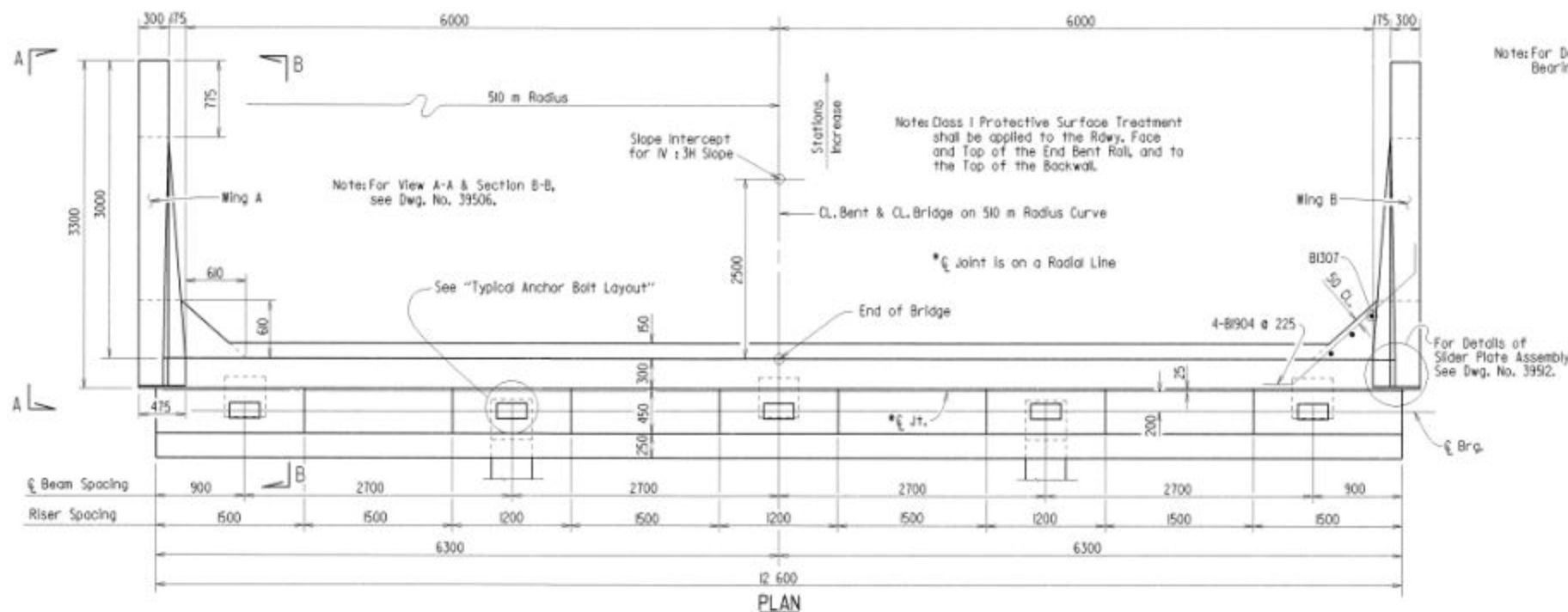
\* Column A only.  
\*\* Column B only.

| Bent No. | Elev. "A" | Elev. "B" | "A"    | "B"   | "C" | "D"           |
|----------|-----------|-----------|--------|-------|-----|---------------|
| 19       | 88.47     | 74.547    | 13 600 | 11109 | 86  | Col. A Col. B |
| 22       | 86.950    | 75.150    | 11 800 | 9309  | 74  | 12 400 12 900 |
| 25       | 85.308    | 75.308    | 10 000 | 7509  | 62  | 8900 9300     |

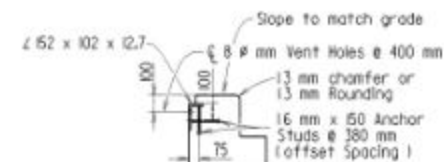
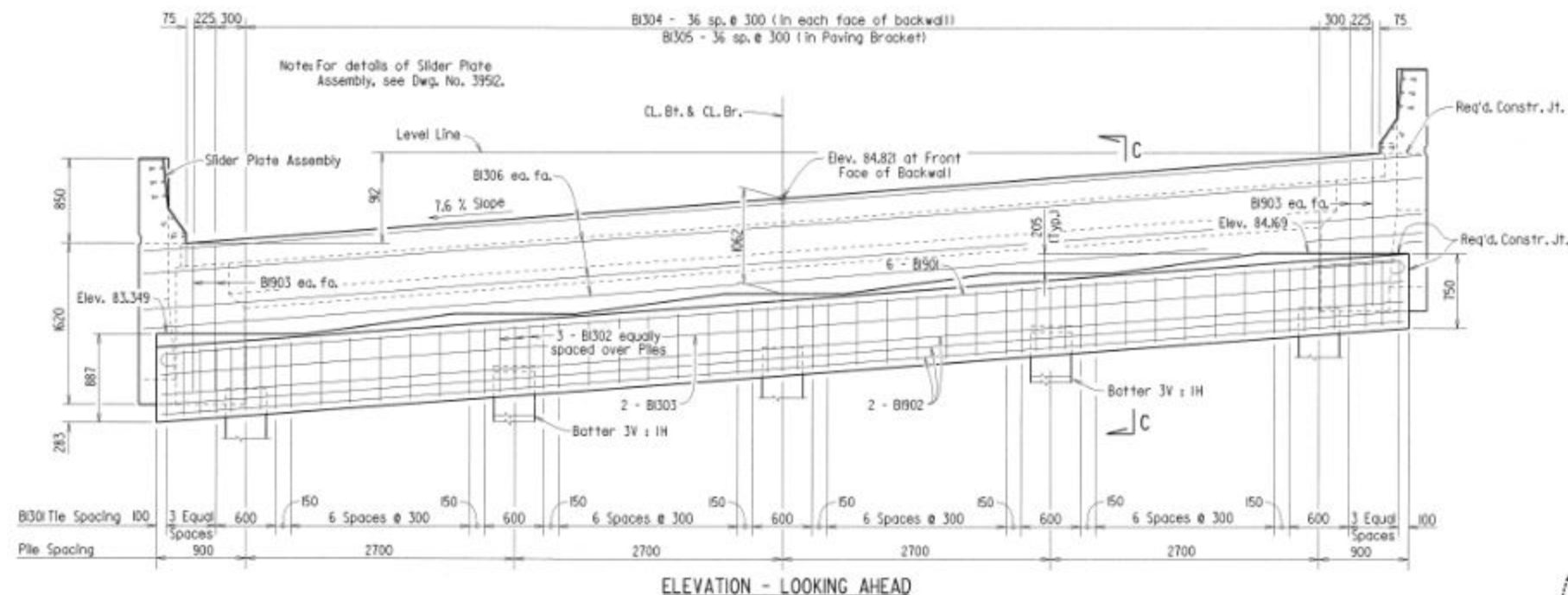
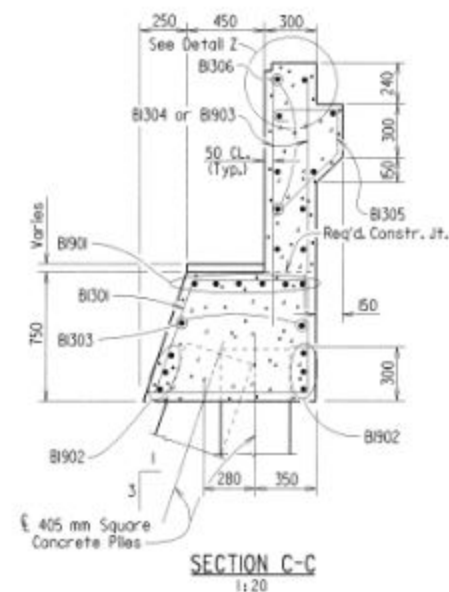
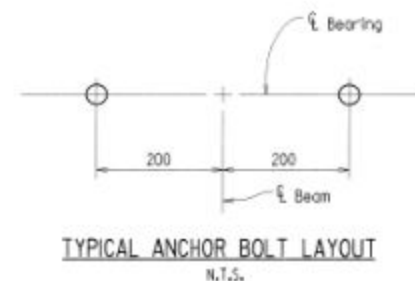
GENERAL NOTES  
Stations and elevations are in meters. All other dimensions are in millimeters unless otherwise noted.  
All Concrete shall be Class "S" and shall be poured in the dry. All exposed corners to be chamfered 20 mm unless otherwise noted.  
All Reinforcing Steel shall conform to ASTM A 65/A 65M-96a, Grade 420 (fy = 420 MPa).  
If Anchor Bolts are drilled into Cap, top reinforcing bars shall be properly placed to avoid damage.  
For additional information, see Layout.



|                 |                |                 |                |                        |                  |                    |              |                 |
|-----------------|----------------|-----------------|----------------|------------------------|------------------|--------------------|--------------|-----------------|
| DATE<br>REVISED | DATE<br>FILMED | DATE<br>REVISED | DATE<br>FILMED | FED. ROAD<br>DIST. NO. | STATE            | FED. AID PROJ. NO. | SHEET<br>NO. | TOTAL<br>SHEETS |
|                 |                |                 |                | 6                      | ARK.             |                    |              |                 |
|                 |                |                 |                | JOB NO.                |                  | 03004              | 57           | 114             |
|                 |                |                 |                | 06751                  | End Bent Details |                    |              | 39505           |



Note: For Details of Elastomeric Bearings, see Dwg. No. 39513.



Note : For Joint details  
See dwg. no. 39502.

DETAIL Z  
1:20

(SHEET 1 OF 2)  
DETAILS OF END BENT NO. 28  
U.P. R.R. & RED RIVER RELIEF  
ROUTE 67 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

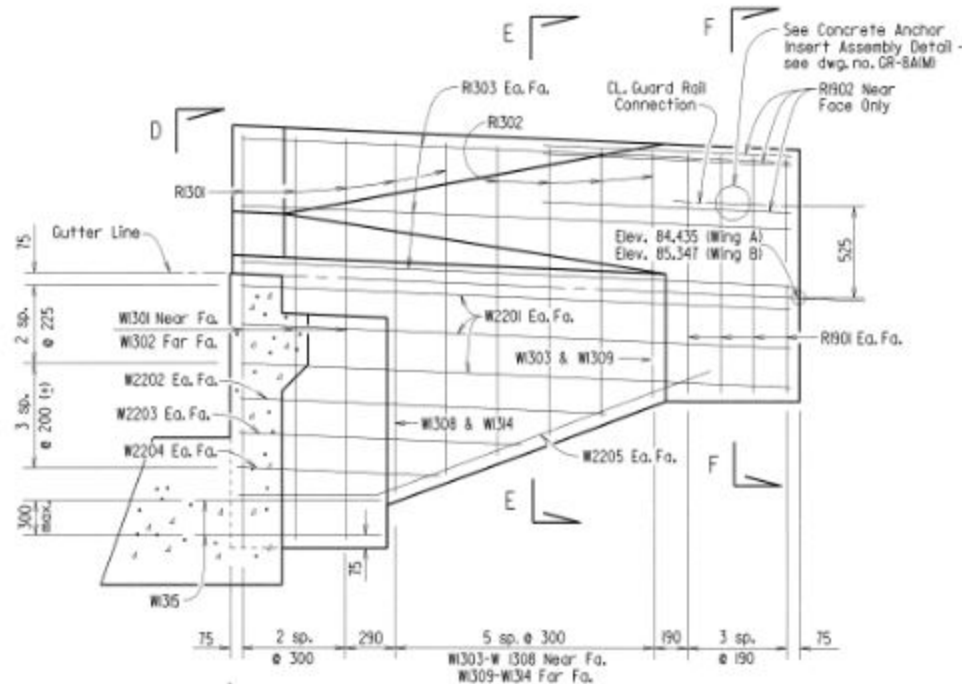
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 DESIGNED BY: AMS DATE: 8-17-98 as Noted  
 BRIDGE NO. 06751 DRAWING NO. 39505



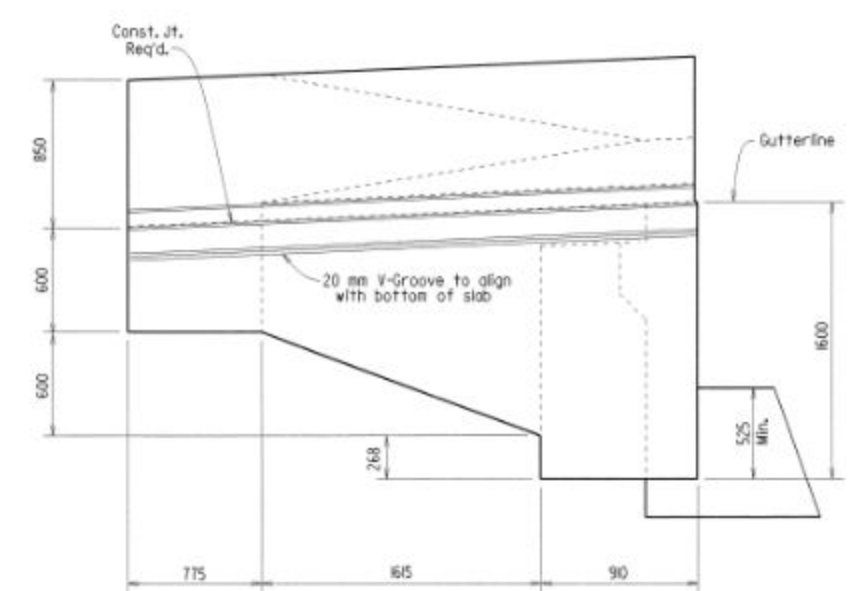
BRIDGE ENGINEER



| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO.        | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|------------------|--------------|
|              |             |              |             | 6                   | ARK.  |                    |                  |              |
|              |             |              |             | JOB NO.             |       | 03004              | 58               | 164          |
|              |             |              |             |                     |       | 06751              | End Bent Details | 39506        |



SECTION B-B



VIEW A-A

### BAR LIST

| Mark           | No. Req'd. | Length       | Pin Dia. | Bending Diagrams<br>(Dimensions are out to out of bars.) |
|----------------|------------|--------------|----------|--|
| B1301          | 44         | 2990         | 50       |  |
| B1302          | 15         | 1940         | 50       |  |
| B1303          | 4          | 6530         | Str.     |  |
| B1304          | 74         | 1200         | Str.     |  |
| B1305          | 37         | 1190         | 50       |  |
| B1306          | 20         | 6700         | Str.     |  |
| B1307          | 6          | 1260         | Str.     |  |
| B1901          | 6          | 12 970       | 114      |  |
| B1902          | 6          | 12 530       | Str.     |  |
| B1903          | 8          | 1400         | Str.     |  |
| B1904          | 8          | 2200         | 114      |  |
| R1301          | 10         | 1170         | 50       |  |
| R1302          | 8          | 1190         | 50       |  |
| R1303          | 12         | 3200         | Str.     |  |
| R1901          | 16         | 1350         | Str.     |  |
| R1902          | 6          | 140          | Str.     |  |
| W1301          | 6          | 1950         | 76       |  |
| W1302          | 6          | 2320         | Str.     |  |
| W1303 to W1308 | 2 Ea.      | 1030 to 1690 | 76       |  |
| W1309 to W1314 | 2 Ea.      | 140 to 2030  | Str.     |  |
| W135           | 4          | 2470         | 50       |  |
| W2201          | 12         | 3200         | Str.     |  |
| W2202          | 4          | 2090         | Str.     |  |
| W2203          | 4          | 1660         | Str.     |  |
| W2204          | 4          | 1230         | Str.     |  |
| W2205          | 4          | 2870         | 133      |  |

### END BENT NOTES

Stations and elevations are in meters. All other dimensions are in millimeters unless otherwise noted.

All concrete shall be Class "S" with a minimum 28 day compressive strength  $f'_c = 24.0$  MPa. Concrete shall be poured in the dry and all exposed corners to be chamfered 20 mm unless otherwise noted.

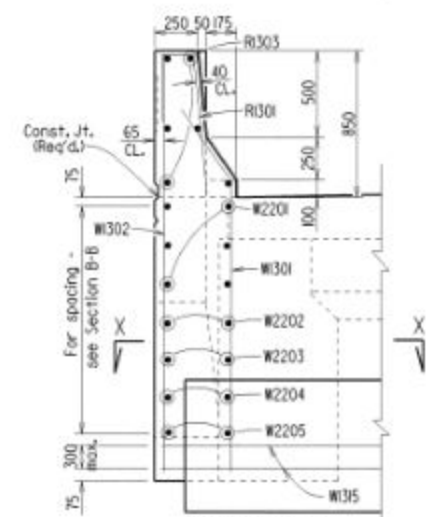
All reinforcing steel shall conform to ASTM A 615/A 65M-96a, Grade 420 (yield strength = 420 MPa).

Backwall shall not be poured before beams are in place and concrete span pours have been made.

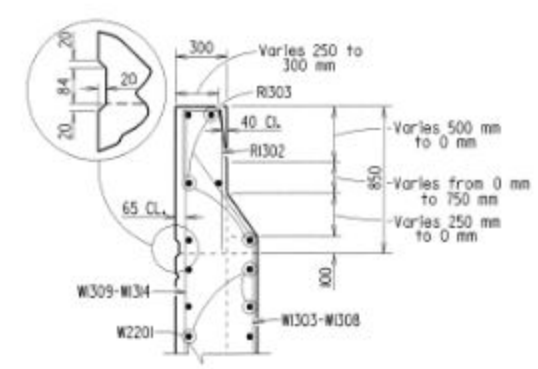
Structural steel in end bents shall be AASHTO M270, Gr. 345W and shall be paid for as "Structural Steel in Beam Spans (AASHTO M270, Gr. 345W)".

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

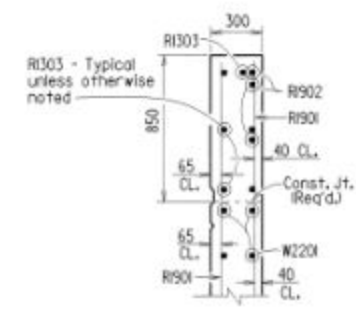
For additional information see layout.



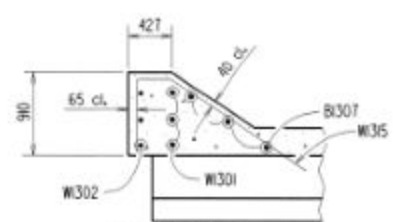
SECTION D-D  
1:20



SECTION E-E  
1:20



SECTION F-F  
1:20



SECTION X-X  
N.T.S.



(SHEET 2 OF 2)  
 DETAILS OF END BENT NO. 28  
 U.P. R.R. & RED RIVER RELIEF  
 ROUTE 67 SEC. 1  
 ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 09-24-98 FILENAME: B030104X1.B14  
 CHECKED BY: HAH DATE: 2-2-99 SCALE: 1:20 or as noted  
 DESIGNED BY: AMS DATE: 8-17-98  
 BRIDGE NO. 06751 DRAWING NO. 39506