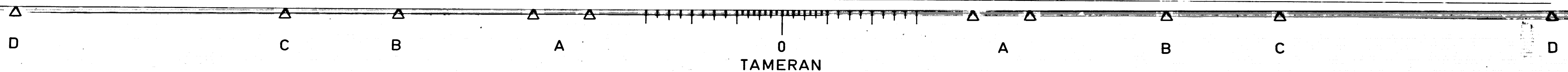


MICROFILMED
AUG 3 1 1998



BORING LEGEND

A1-Moist, Medium Dense, Brown Silt with Traces of Clay
 B1-Moist, Loose, Brown Silt with Traces of Clay
 C1-Moist, Medium Dense, Brown Clayey Silt
 D1-Moist, Stiff, Gray and Brown Sandy Clay
 E1-Wet, Medium Dense, Gray and Brown Sand with some Pea Gravel
 F1-Wet, Dense, Brown and Gray Sand with Clay Seams and Gravel
 G1-Hard, Dark Gray Calcareous, Fractured Shale with some Limestone Seams
 H1-Moist, Stiff, Brown and Gray Sandy, Silty Clay
 J1-Hard, Dark Gray Calcareous, Fractured Shale with some Gray Limestone Seams
 K1-Moist, Stiff, Gray and Brown Sandy, Silty Clay
 L1-Wet, Dense, Brown and Gray Sand and Gravel with some Clay Seams
 M1-Moist, Very Stiff, Gray Clay
 N1-Wet, Soft, Gray and Brown Sandy Clay
 P1-Soft to Medium Hard, Dark Gray Weathered Shale
 Q1-Medium Hard, Dark Gray Highly Weathered Shale
 R1-Wet, Soft to Medium Stiff, Gray and Brown Sandy, Silty Clay with some Gravel
 S1-Wet, Loose, Brown and Gray Sand with Clay Seams and Gravel
 T1-Wet, Very Loose, Gray and Brown Sand and Gravel
 U1-Wet, Soft, Gray Sandy Clay with Organic Matter
 V1-Hard, Dark Gray Calcareous, Fractured Shale with Quartz and some Gray Limestone Seams
 W1-Wet, Soft to Medium Stiff, Gray and Brown Sandy, Silty Clay
 X1-Wet, Soft, Gray Sandy Clay
 Y1-Wet, Dense, Gray and Brown Sand and Gravel
 Z1-Wet, Very Soft, Brown to Brown and Gray Sandy Clay
 A2-Wet, Very Soft, Gray Silty Clay
 B2-Wet, Medium Dense, Gray Sand and Gravel
 C2-Medium Hard, Dark Gray Weathered Shale
 D2-Hard, Dark Gray Calcareous, Fractured Shale with some Quartz Seams
 E2-Moist, Stiff, Gray Calcareous Clay
 F2-Hard, Dark Gray Calcareous, Fractured Shale with some Quartz and Limestone Seams
 G2-Moist, Stiff, Brown and Gray Silty Clay
 H2-Moist to Wet, Stiff, Brown Sandy, Silty Clay
 J2-Wet, Soft, Gray Sandy, Silty Clay with Organic Matter (Wood)
 K2-Wet, Medium Dense, Gray and Brown Sand and Gravel
 L2-Hard, Dark Gray Calcareous, Fractured Shale with some Gray Limestone and Weathered Shale Seams
 M2-Hard, Dark Gray Calcareous, Fractured Shale with some Gray Limestone and Quartz Seams
 N2-Moist, Medium Stiff, Brown Silty Clay
 P2-Wet, Soft, Brown and Gray Sandy Clay
 Q2-Wet, Soft, Gray Silty Clay
 R2-Hard, Dark Gray Calcareous, Fractured Shale with some Limestone and Quartz Seams
 S2-Moist, Medium Stiff, Brown to Brown and Gray Silty Clay
 T2-Wet, Loose, Brown Sand and Gravel
 U2-Wet, Dense, Brown Sand and Gravel
 V2-Hard, Dark Gray Weathered Shale
 W2-Moist, Medium Stiff, Brown Silty Clay with Traces of Pea Gravel
 X2-Wet, Soft, Brown Sandy Clay
 Y2-Wet, Soft, Gray Sandy, Silty Clay
 Z2-Hard, Dark Gray Calcareous, Fractured Shale with Quartz and some Limestone Seams
 A3-Moist, Medium Stiff, Brown Sandy Clay with some Organic Matter
 B3-Wet, Loose, Brown and Gray to Gray Sand and Gravel
 C3-Moist to Wet, Loose, Brown Sand with Clay Seams and Gravel
 D3-Wet, Medium Dense, Brown and Gray Sand and Gravel
 E3-Moist, Soft, Brown Sandy Clay
 F3-Wet, Medium Stiff, Gray and Brown Sandy, Silty Clay with some Organic Matter
 G3-Wet, Loose, Brown Sand and Gravel with some Clay Seams
 H3-Alternating Layers of Hard, Dark Gray Calcareous, Fractured Shale and Hard, Gray Limestone
 J3-Alternating Layers of Hard, Dark Gray Calcareous, Fractured Shale with Quartz Seams and Hard, Gray Limestone
 K3-Moist, Loose to Medium Dense, Brown Clayey Silt
 L3-Wet, Medium Dense, Brown Sand and Gravel with some Clay Seams
 M3-Wet, Loose, Brown Sand and Gravel with some Shale Fragments
 N3-Moist, Medium Stiff, Brown Sandy, Silty Clay with some Gravel
 P3-Moist, Medium Stiff, Brown and Gray Sandy, Silty Clay with Gravel
 Q3-Moist, Medium Dense, Brown Sand and Gravel
 R3-Moist, Dense, Brown Sand and Gravel

"N" VALUES

Sta. 17+03.45 - 10.7 m Left of Center Line

1.09- 1.39, N+11
 2.62- 2.92, N+9
 4.14- 4.44, N+27
 5.66- 5.96, N+14
 7.19- 7.49, N+34

Sta. 17+39.5 - 22.5 m Left of Center Line

1.67- 1.97, N+11
 3.20- 3.50, N+33
 6.40- 6.46, N+601.06

Sta. 17+55.45 - 23 m Left of Center Line

1.67- 1.97, N+13
 3.20- 3.50, N+32

Sta. 17+74.45 - 22.5 m Left of Center Line

1.67- 1.97, N+15
 3.20- 3.50, N+11
 4.72- 5.02, N+31

Sta. 17+94.45 - 8 m Left of Center Line

1.67- 1.97, N+3
 3.20- 3.50, N+8
 4.72- 5.02, N+2

Sta. 18+13.45 - 7.5 m Left of Center Line

1.67- 1.97, N+4
 3.20- 3.50, N+5
 4.72- 5.02, N+2
 6.24- 6.46, N+1071.21

Sta. 18+32.45 - 22 m Left of Center Line

1.67- 1.97, N+0
 3.20- 3.50, N+1
 4.72- 5.02, N+0
 6.24- 6.54, N+33

Sta. 18+51.45 - 8.4 m Left of Center Line

1.67- 1.97, N+10
 3.20- 3.50, N+10
 4.72- 5.02, N+3
 6.24- 6.54, N+15

Sta. 18+71.45 - 21.5 m Left of Center Line

1.31- 1.61, N+7
 2.83- 3.13, N+3
 4.35- 4.65, N+2
 5.88- 6.18, N+24

Sta. 18+90.45 - 8.3 m Left of Center Line

1.67- 1.97, N+6
 3.20- 3.50, N+8
 4.72- 5.02, N+6
 6.09- 6.28, N+1201.181

Sta. 19+04.45 - 21.5 m Left of Center Line

1.31- 1.61, N+8
 2.83- 3.13, N+4
 4.35- 4.65, N+3
 5.88- 6.18, N+16

Sta. 19+23.45 - 9 m Left of Center Line

1.22- 1.52, N+6
 2.74- 3.04, N+11
 4.26- 4.56, N+6
 5.79- 6.09, N+6

Sta. 19+49.45 - 22.7 m Left of Center Line

1.22- 1.52, N+6
 2.65- 2.95, N+8
 4.17- 4.47, N+6
 5.69- 5.99, N+14

Sta. 19+68.45 - 7.5 m Left of Center Line

1.28- 1.58, N+3
 2.80- 3.10, N+4
 4.32- 4.62, N+6
 5.85- 6.15, N+8
 7.37- 7.67, N+12

Sta. 19+89.45 - 22.9 m Left of Center Line

1.22- 1.52, N+9
 2.74- 3.04, N+14
 4.26- 4.56, N+12
 5.79- 6.09, N+9
 7.31- 7.61, N+7

Sta. 20+96.45 - 9.3 m Left of Center Line

1.22- 1.52, N+8
 2.74- 3.04, N+6
 4.26- 4.56, N+11
 5.79- 6.09, N+50
 7.31- 7.34, N+601.031

| 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. | | 060779 | 39 | 119 |
| | | | | | | 06715 LAYOUT | | 39039 |

GENERAL NOTES

All dimensions are in meters unless otherwise noted.

BENCH MARK: Cotton Picker Spike in Telephone Pole, 24.99 m Lt. of Sta. 19+95.09, Elev. 86.069

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.

LIVE LOADING: MS18 METHOD OF DESIGN: Load Factor
SEISMIC PERFORMANCE CATEGORY: A

MATERIALS AND STRENGTHS:

Class (SAC) 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.

STEEL PILING: All piling shall be HP 250x62 and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 490 kN and into the material designated as hard shale on the boring legend. Lengths shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with the Standard Specifications. Piles in end bents to be driven after embankment to bottom of cap is in place. On all piles the contractor shall use approved steel H-Pile driving points. Minimum penetration for all piles shall be 3.0 m below bottom of cap or footing.

FOOTINGS: Footings in Bent Nos. 2, 3, 4, 18 and 19 shall be set a minimum of 0.5 m into material designated as hard, fractured shale on the boring legend. The top of the footings of Bent Nos. 18 and 19 shall be set a minimum of 0.75 m below the channel bottom. Rock excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in the footings shall be poured directly against excavated surfaces of rock. The top of the footings for Bent Nos. 5 through 17 shall be set a minimum of 0.8 m below Natural ground. Foundations for footings shall be prepared in accordance with Section 801.04 of the Standard Specifications.

BRIDGE DECK: The concrete bridge deck shall be given a fine finish as specified for final finishing in subsection 802.09 for Class 5 Tined Bridge Roadway Surface Finish.

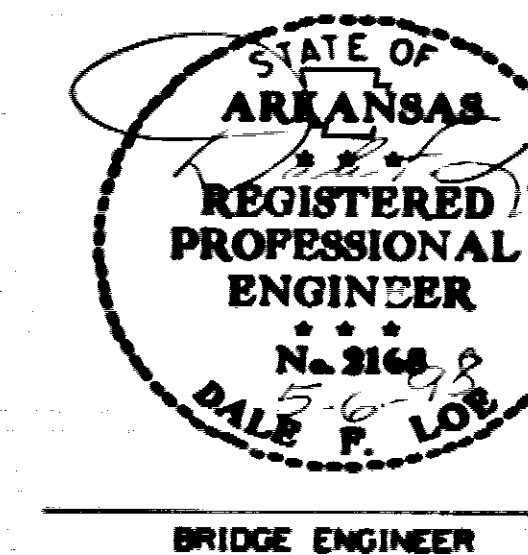
DETAIL DRAWINGS:

DRAWING NO.

End Bents 39040 & 39047
 Intermediate Bents 39041-39046
 68 m Continuous W-Beam Unit 39048-39050, 39057-39059
 102 m Continuous Plate Girder Unit 39051-39056
 Steel Piling 39053-39059
 Type Special Approach Gutters 39060

EXISTING BRIDGE: Existing Bridge No. 00414 (log mile 0.37) is 7.0 m wide and 37.2 m long. It consists of 25 R.C. Deck Girder approach spans and two 32.5 m R.C. Deck Girder Arch spans over the main channel. Concrete pile bents and concrete piers support the superstructure. Plans of the existing bridge will be made available to the Contractor upon request. Original bridge plans are shown on drawing Nos. 923-929, 100, and 109. Modifications have been made to some of the original bridge substructure units. These modifications are not shown on the above original bridge drawings, but include the following: 1) four 40 mm x 40 mm concrete columns with a concrete cap are attached to Bent No. 10 & 22; 2) a 40 mm x 40 mm steel pile sitting on a 1 m x 1 m concrete slab are added to Bent No. 18; 3) three 30 mm steel piles, each sitting on a 5 m x 2 m concrete slab, and four 40 mm x 40 mm concrete columns with a concrete cap have been installed approximately 1 m ahead of Bent No. 24.

REMOVAL AND SALVAGE: After the new bridge is opened to traffic, existing Bridge No. 00414 shall be removed in accordance with Section 205 of the Standard Specifications. This includes any modifications added subsequent to original construction, and any original components which are in the flood plain but are no longer a functional part of the existing structure. All material from the existing bridge shall become the property of the Contractor.

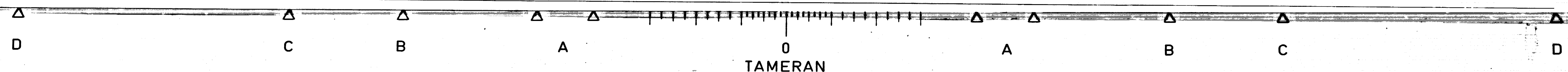


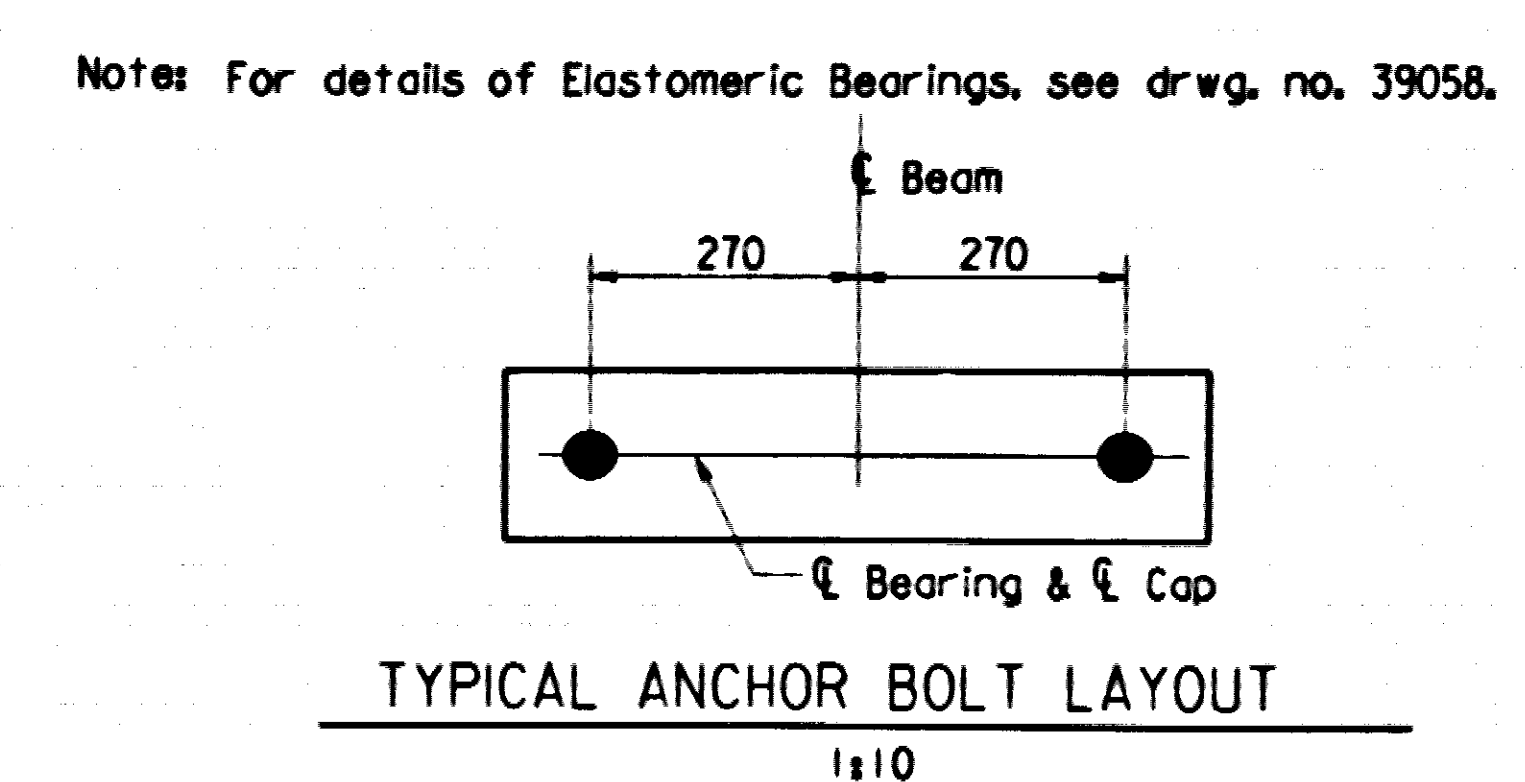
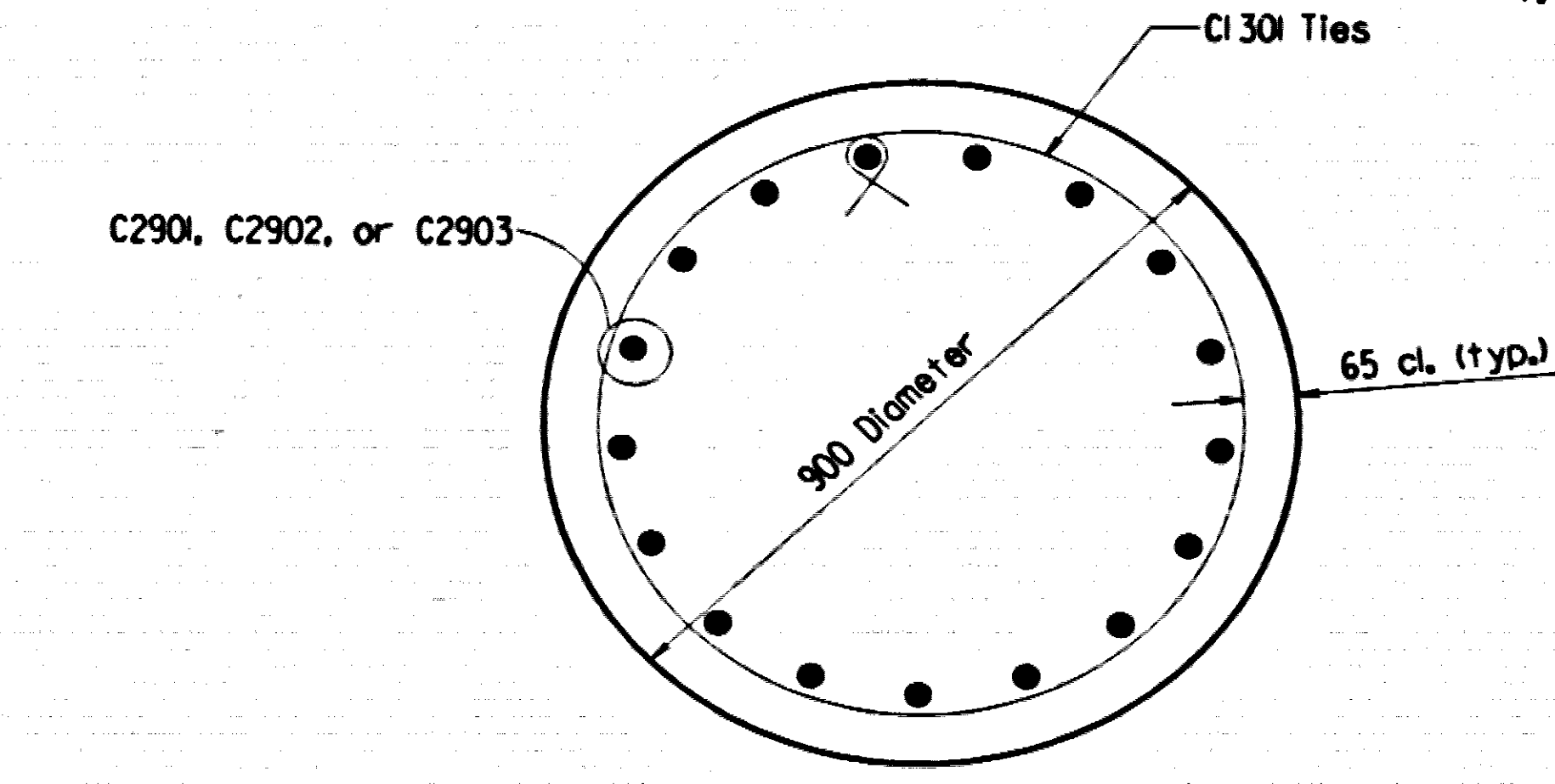
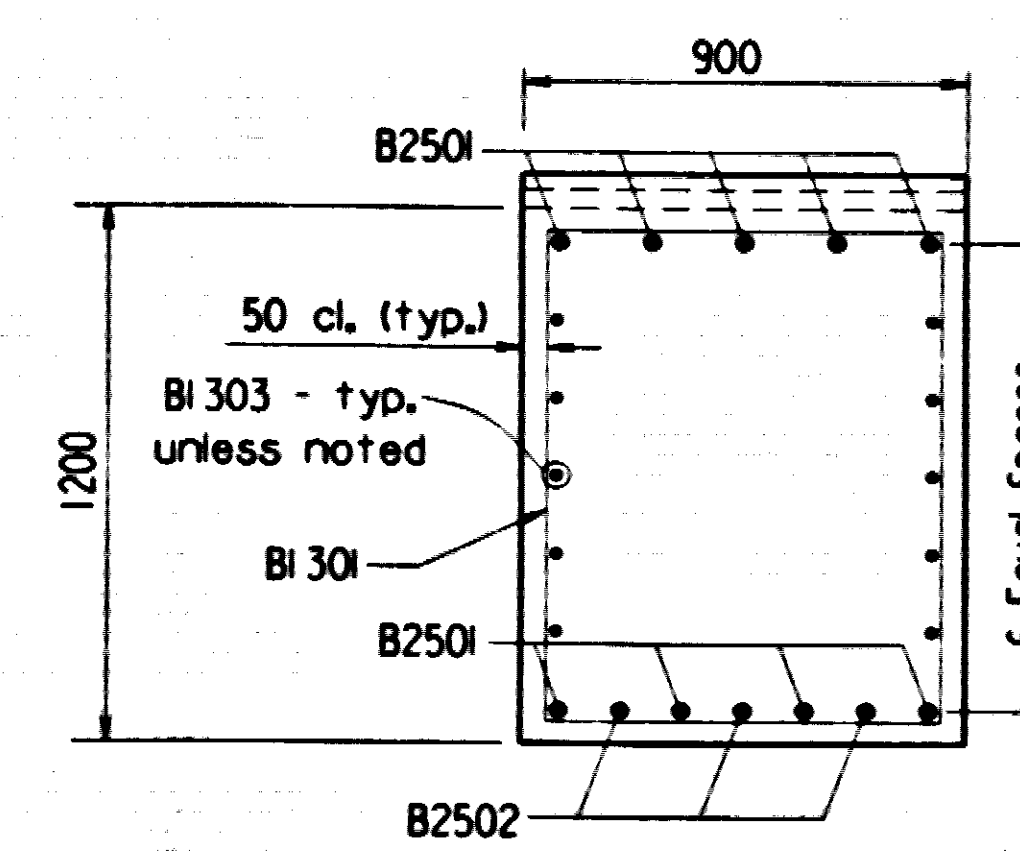
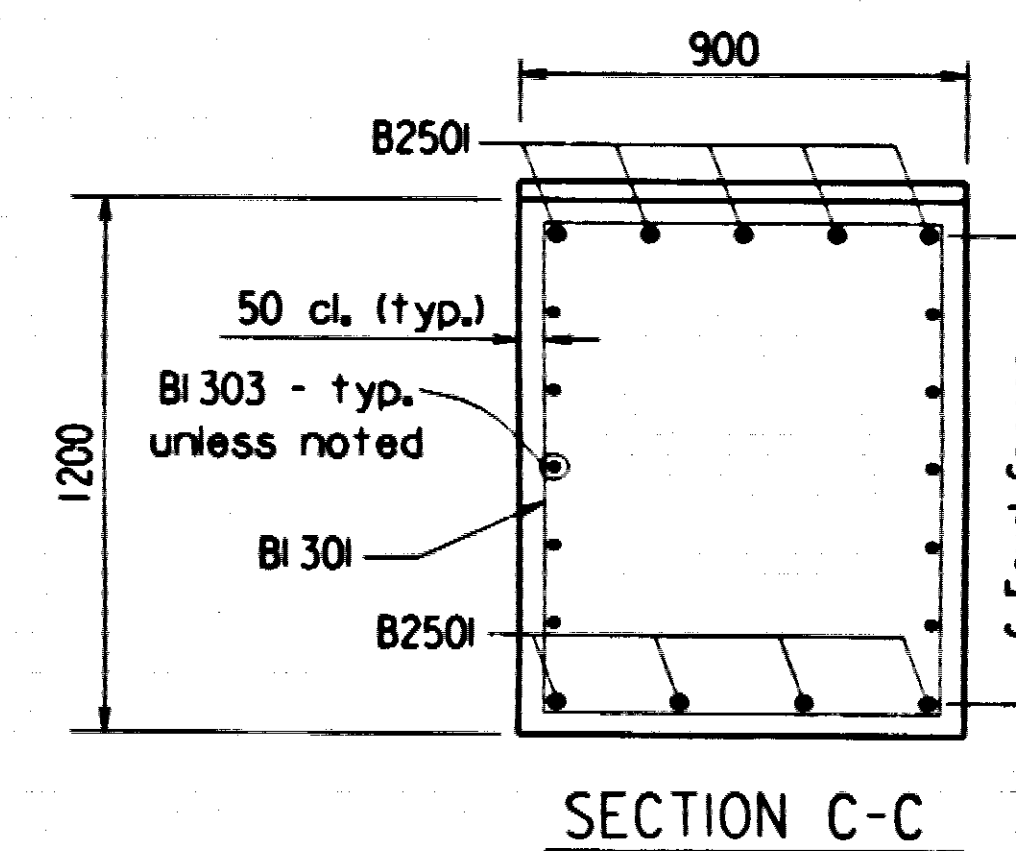
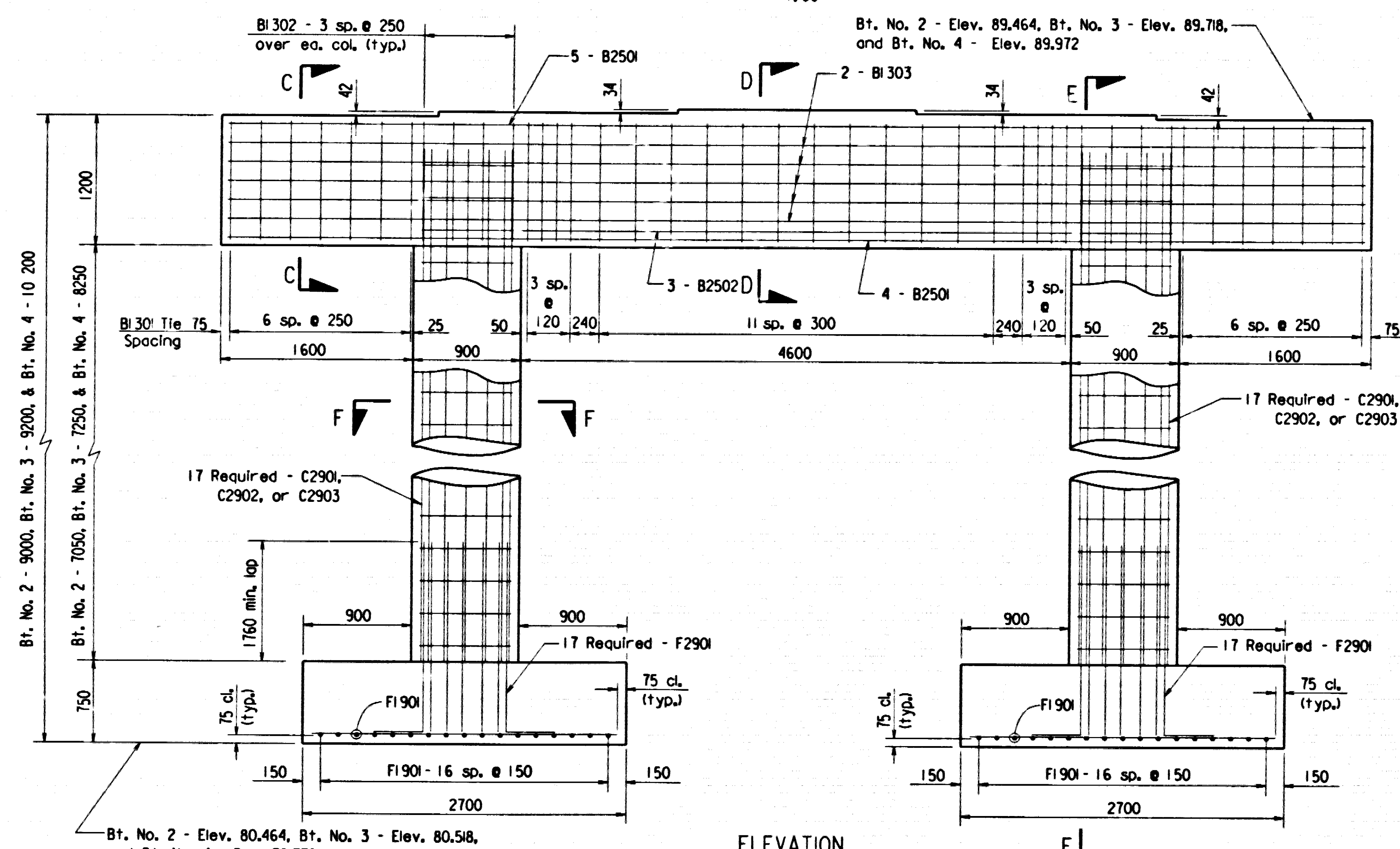
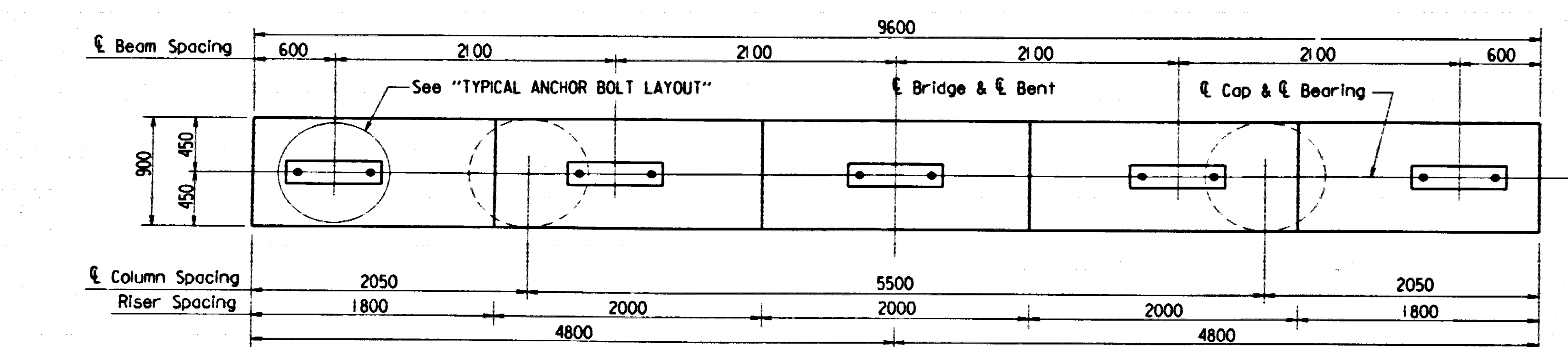
ALTERNATE NO. 1
 (SHEET 3 OF 3)
 LAYOUT OF BRIDGE OVER SALINE RIVER
 SALINE RIVER & SALT CREEK STRS. & APPRS. (S)
 ROUTE 229 SEC. 5
 ARKANSAS STATE HIGHWAY COMMISSION

DRAWN BY: MJT DATE: 09-19-96
 CHECKED BY: JMS DATE: 4-12-97
 DESIGNED BY: CES DATE: 2-96
 BRIDGE NO. 06715 DRAWING NO. 39039



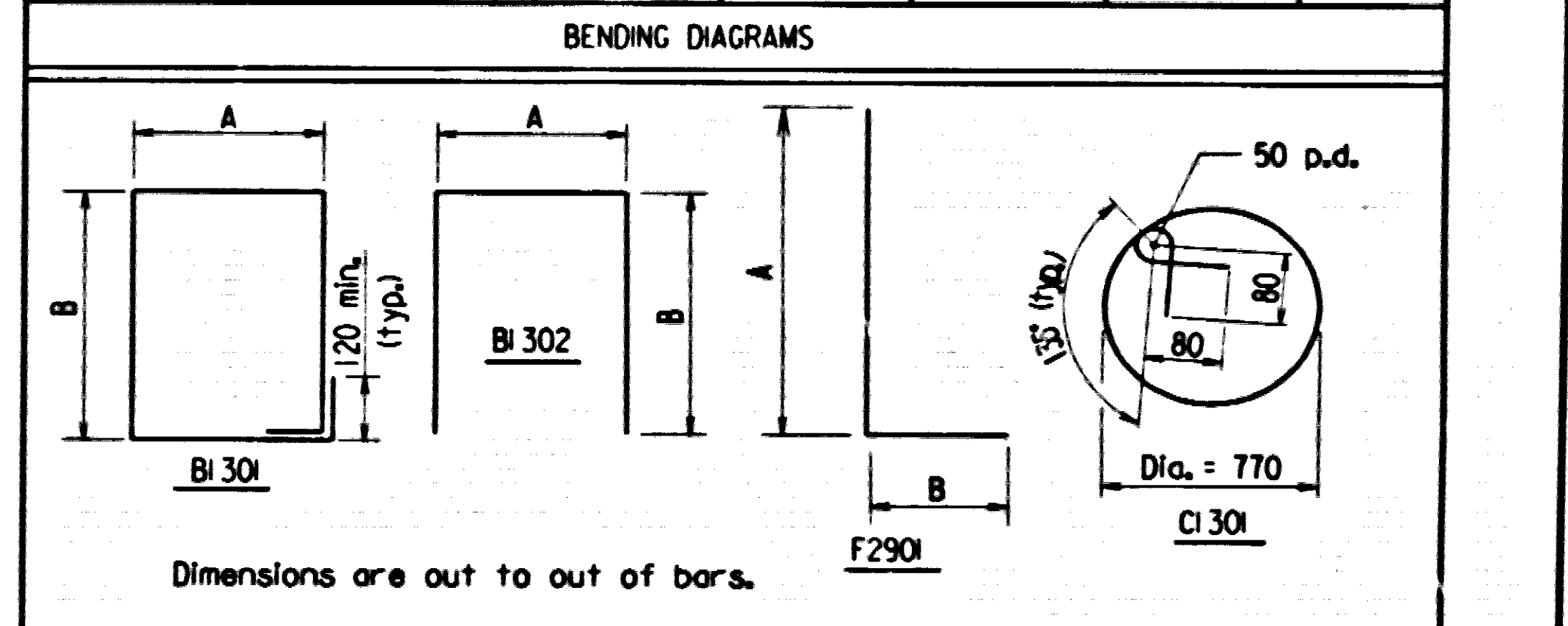
MICROFILMED
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| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|----------------|-----------------|----------------|------------------------|--------------|--------------------|--------------|-----------------|
| | | | | 6 | ARK. | | | |
| | | | | | | | | |
| | | | | JOB NO. | | 060779 | 41 | 119 |
| | | | | 06715 | BENT DETAILS | | 39041 | |

| MARK | NUMBER REQUIRED | | | LENGTH | A | B | PIN DIA. |
|--------|-----------------|-----------|-----------|--------|------|------|----------|
| | BT. NO. 2 | BT. NO. 3 | BT. NO. 4 | | | | |
| BI 30I | 34 | 34 | 34 | 39.0 | 800 | 1100 | 50 |
| BI 302 | 8 | 8 | 8 | 2950 | 800 | 1100 | 50 |
| BI 303 | 10 | 10 | 10 | 9500 | — | — | Str. |
| B250I | 9 | 9 | 9 | 9500 | — | — | Str. |
| B2502 | 3 | 3 | 3 | 4600 | — | — | Str. |
| CI 30I | 54 | 56 | 62 | 2690 | — | — | 50 |
| C290I | 34 | — | — | 8070 | — | — | Str. |
| C2902 | — | 34 | — | 8270 | — | — | Str. |
| C2903 | — | — | 34 | 9270 | — | — | Str. |
| F190I | 68 | 68 | 68 | 2550 | — | — | Str. |
| F290I | 34 | 34 | 34 | 310 | 2700 | 490 | 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.

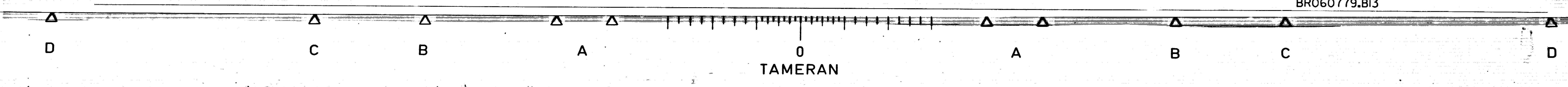
All Reinforcing Steel shall conform to ASTM A615/A615M-96a,
Grade 420 ($f_y = 420$ MPa)

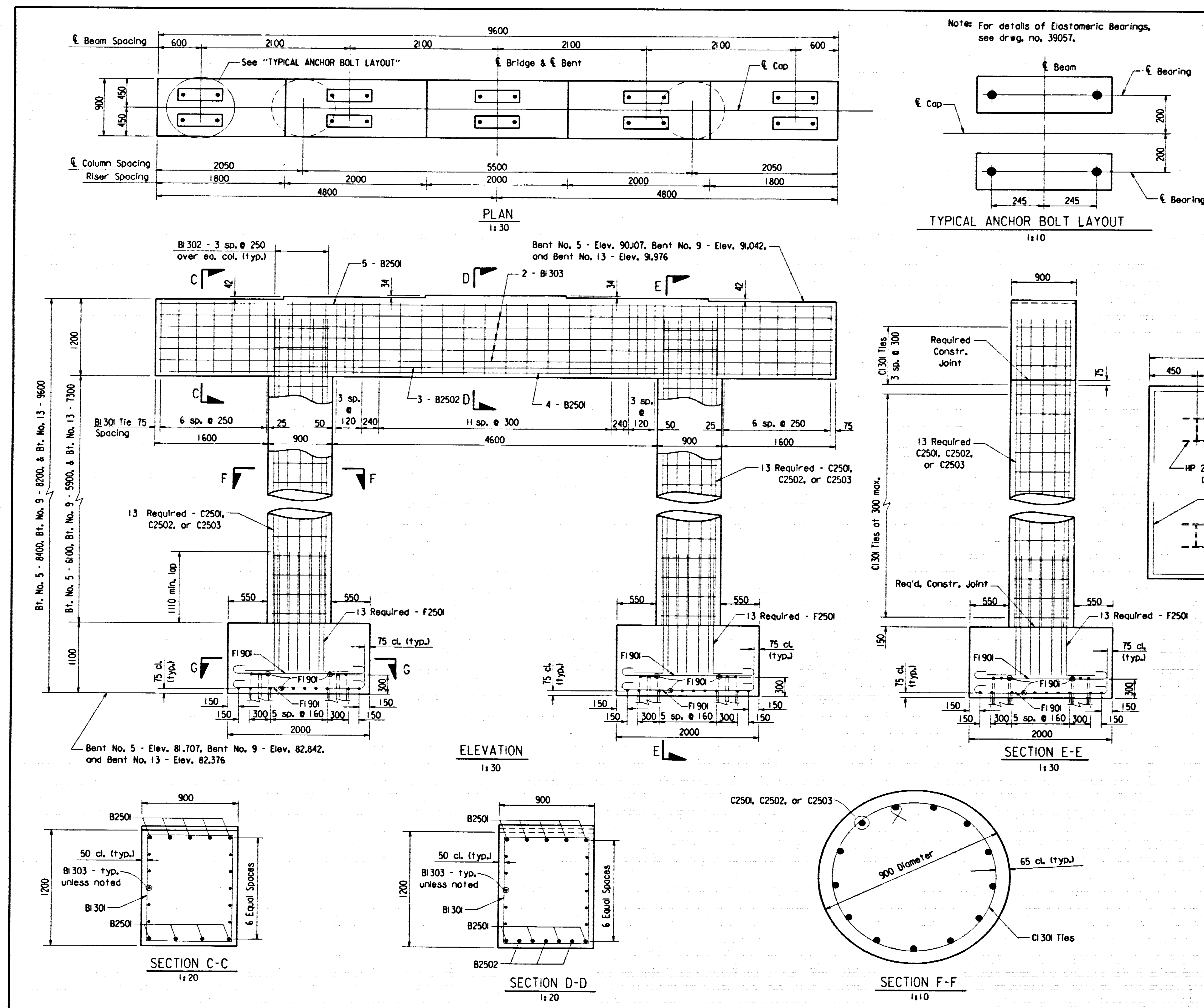
If Anchor Bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see Layout.

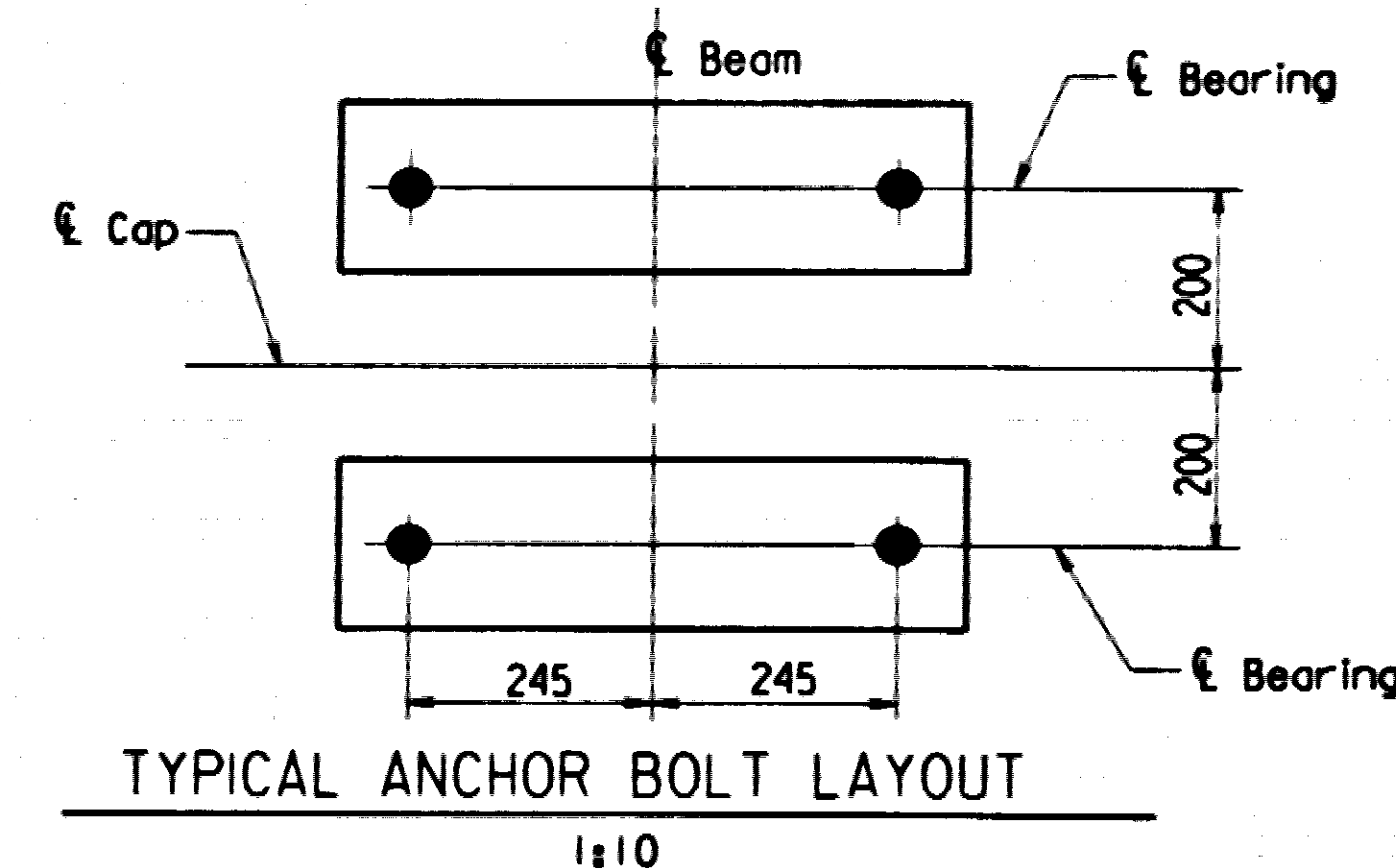
ALTERNATE NO. 1
DETAILS OF INTERMEDIATE
BENT NOS. 2 THROUGH 4
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: TEB DATES: 05/05/97
CHECKED BY: *ALW* DATES: *04/15/98* SCALES: As Noted
DESIGNED BY: *ALW* DATES: *2/4/97*
BRIDGE NO. 06715 DRAWING NO. 39041

BRO60779.B13





Notes: For details of Elastomeric Bearings, see drawing no. 39057.

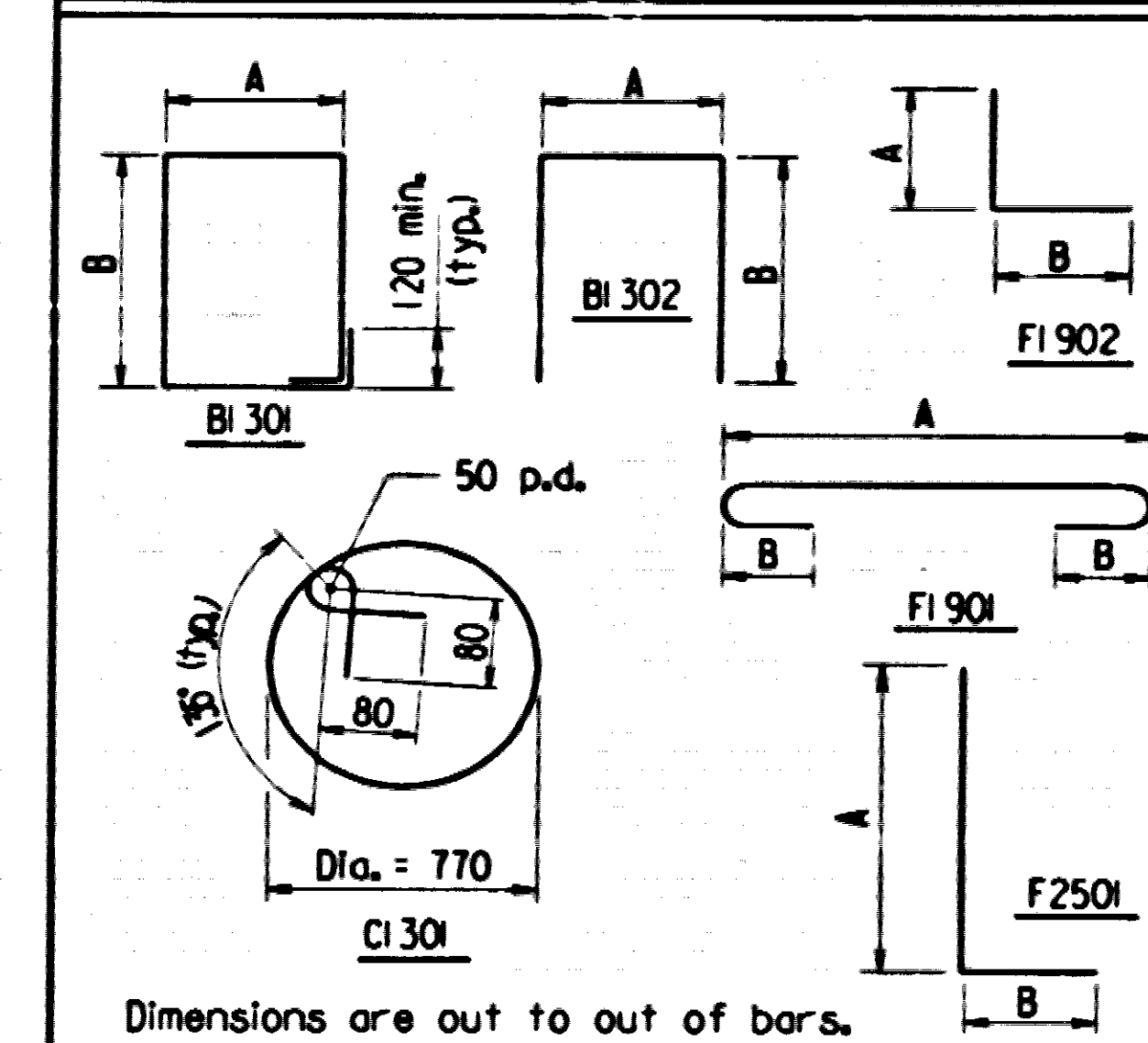


| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|-----------|--------------|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 060779 | 42 | 119 |

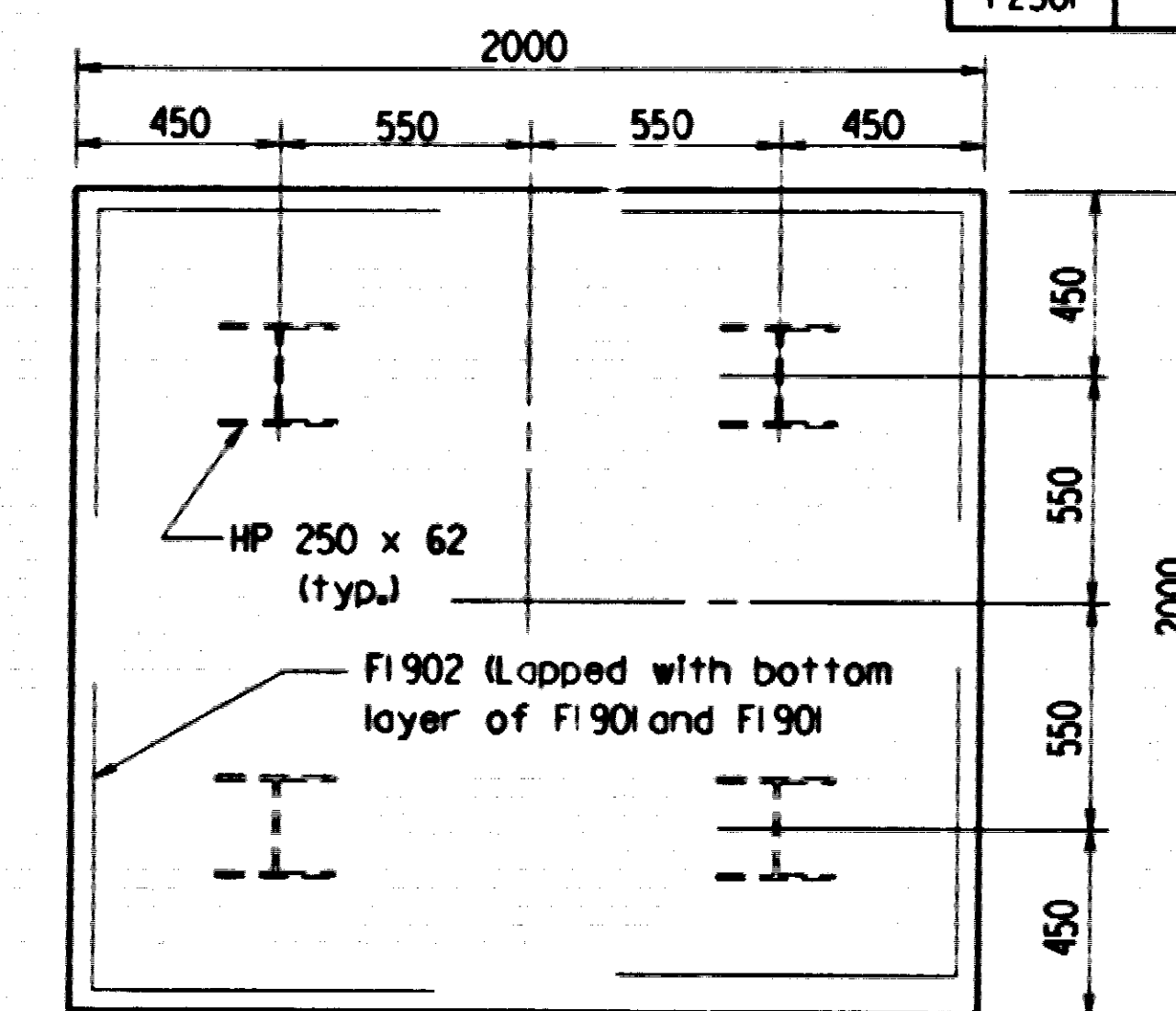
BAR LIST

| MARK | NUMBER REQUIRED | | | LENGTH | A | B | PIN DIA. |
|--------|-----------------|-----------|------------|--------|------|------|----------|
| | BT. NO. 5 | BT. NO. 9 | BT. NO. 13 | | | | |
| BI 301 | 34 | 34 | 34 | 3910 | 800 | 1100 | 50 |
| BI 302 | 8 | 8 | 8 | 2950 | 800 | 1100 | 50 |
| BI 303 | 10 | 10 | 10 | 9500 | | | Str. |
| B2501 | 9 | 9 | 9 | 9500 | | | Str. |
| B2502 | 3 | 3 | 3 | 4600 | | | Str. |
| CI 301 | 48 | 46 | 56 | 2690 | | | 50 |
| C2501 | 26 | | | 7120 | | | Str. |
| C2502 | | 26 | | 6920 | | | Str. |
| C2503 | | | 26 | 8320 | | | Str. |
| FI 901 | 64 | 64 | 64 | 2280 | 1850 | 160 | 114 |
| FI 902 | 8 | 8 | 8 | 1830 | 940 | 940 | 114 |
| F2501 | 26 | 26 | 26 | 2520 | 2170 | 410 | 152 |

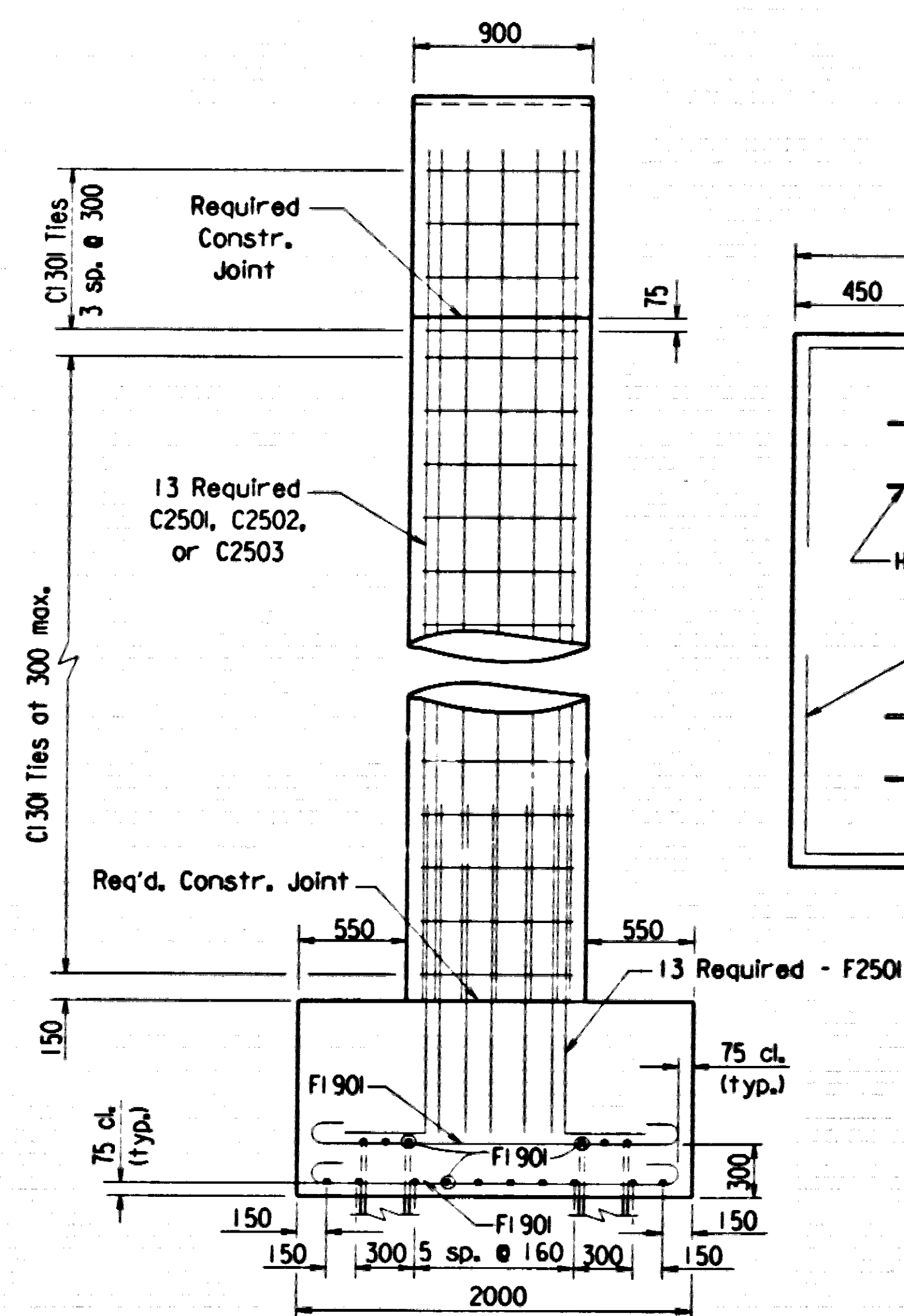
BENDING DIAGRAMS



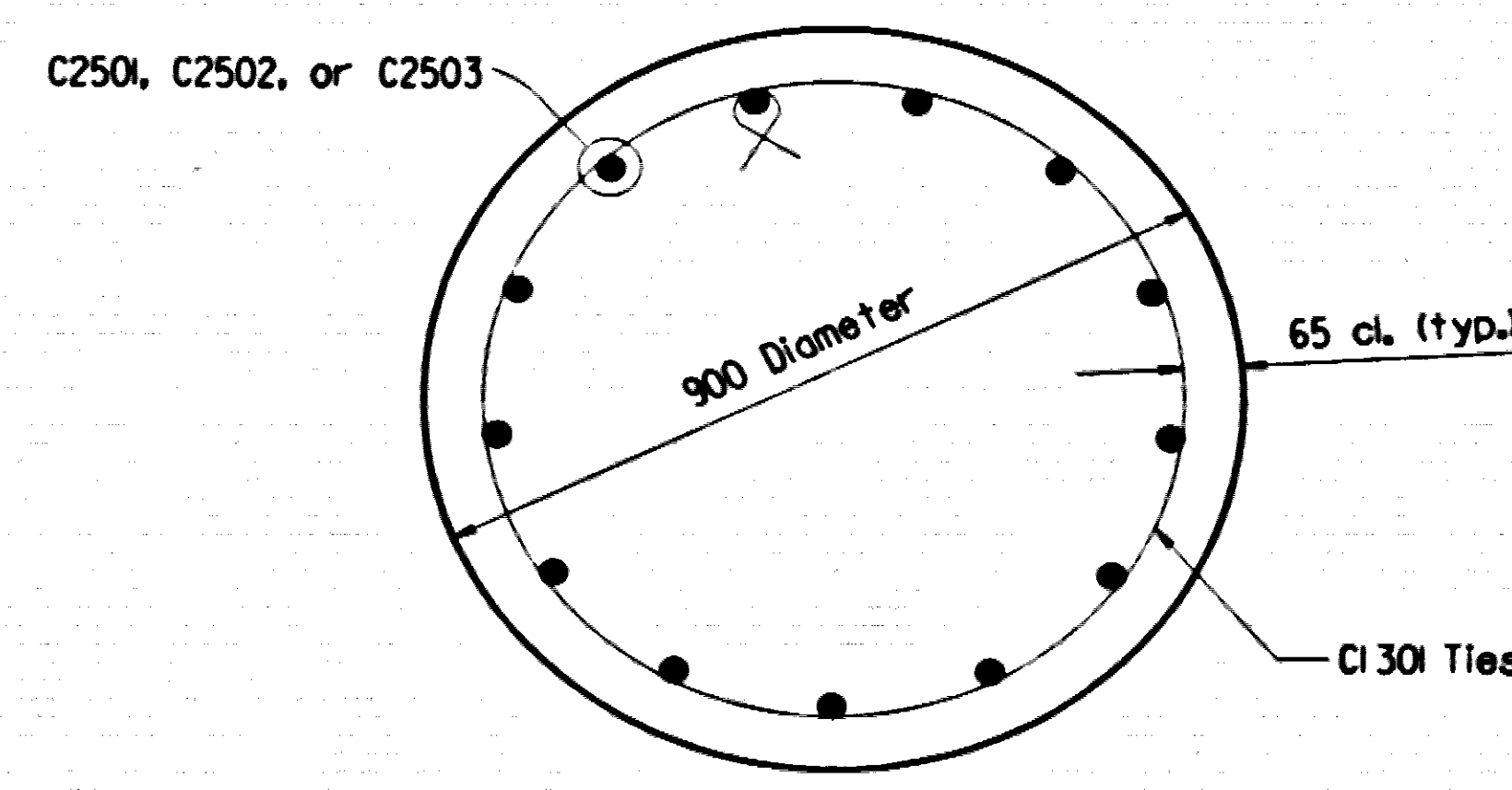
SECTION G-G



SECTION E-E



SECTION F-F



GENERAL NOTES

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

All piling shall be HP 250 x 62 and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 490 kN per pile.

All Concrete shall be Class "S" and shall be poured in the dry.

All exposed corners to be chamfered 20 mm unless otherwise noted.

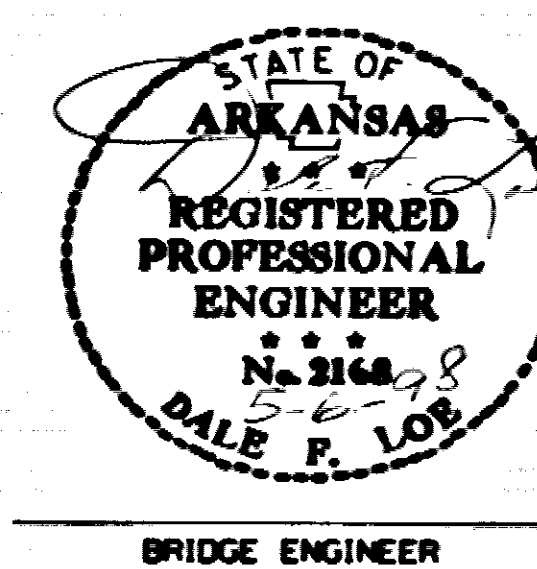
All Reinforcing Steel shall conform to ASTM A615/A615M-96a Grade 420 ($f_y = 420$ MPa).

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

For additional information, see Layout.

ALTERNATE NO. 1
DETAILS OF INTERMEDIATE
BENT NOS. 5, 9, AND 13
SALINE RIVER

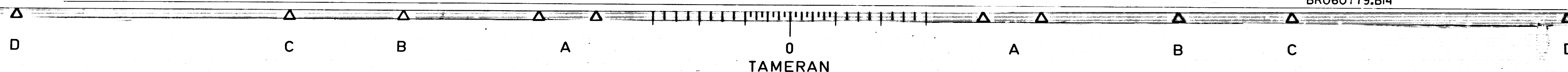
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.



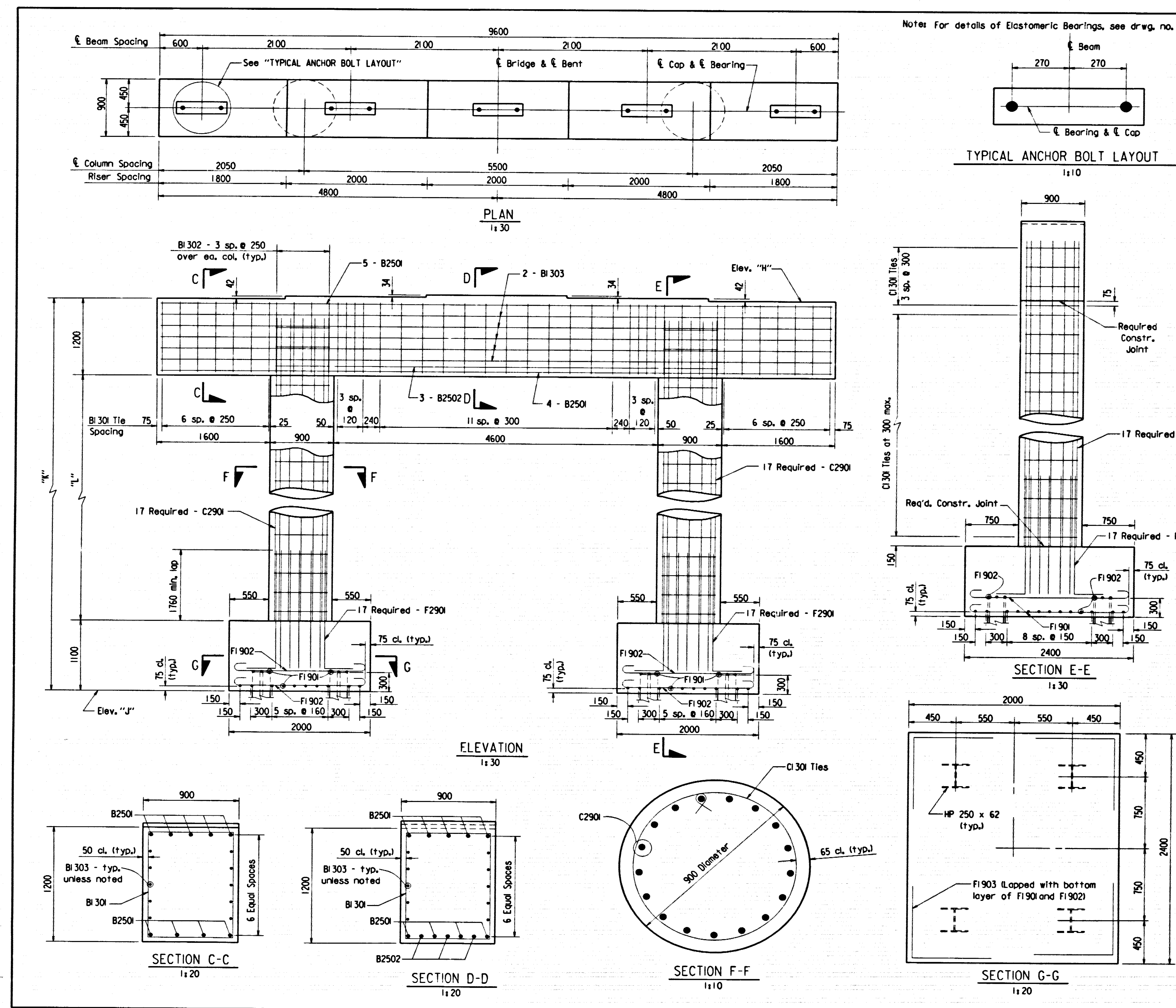
DRAWN BY: TEB DATE: 05/05/97
CHECKED BY: R/W DATE: 04/14/98
DESIGNED BY: A/LS DATE: 2/7/97
BRIDGE NO. 06715 DRAWING NO. 39042

BR060779.B14

MICROFILMED
AUG 31 1998



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AUG 31 1998



Notes: For details of Elastomeric Bearings, see drwg. no. 39058.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|-----------|--------------|
| | | | | 6 | ARK. | | 43 | 119 |
| | | | | JOB NO. | | 060779 | | |
| | | | | | | 06715 BENT DETAILS | | 39043 |

BAR LIST - PER BENT

| MARK | NO. REQ'D. | LENGTH | A | B | PIN. DIA. |
|--------|------------|--------|------|------|-----------|
| BI 301 | 34 | 3910 | 800 | 1100 | 50 |
| BI 302 | 8 | 2950 | 800 | 1100 | 50 |
| BI 303 | 10 | 9500 | | | Str. |
| B2501 | 9 | 9500 | | | Str. |
| B2502 | 3 | 4600 | | | Str. |
| CI 301 | "M" | 2690 | | | 50 |
| C2901 | 34 | "N" | | | Str. |
| FI 901 | 32 | 2680 | 2250 | 160 | 114 |
| FI 902 | 38 | 2280 | 1850 | 160 | 114 |
| FI 903 | 8 | 1830 | 940 | 940 | 114 |
| F2901 | 34 | 3230 | 2820 | 490 | 228 |

BENDING DIAGRAMS

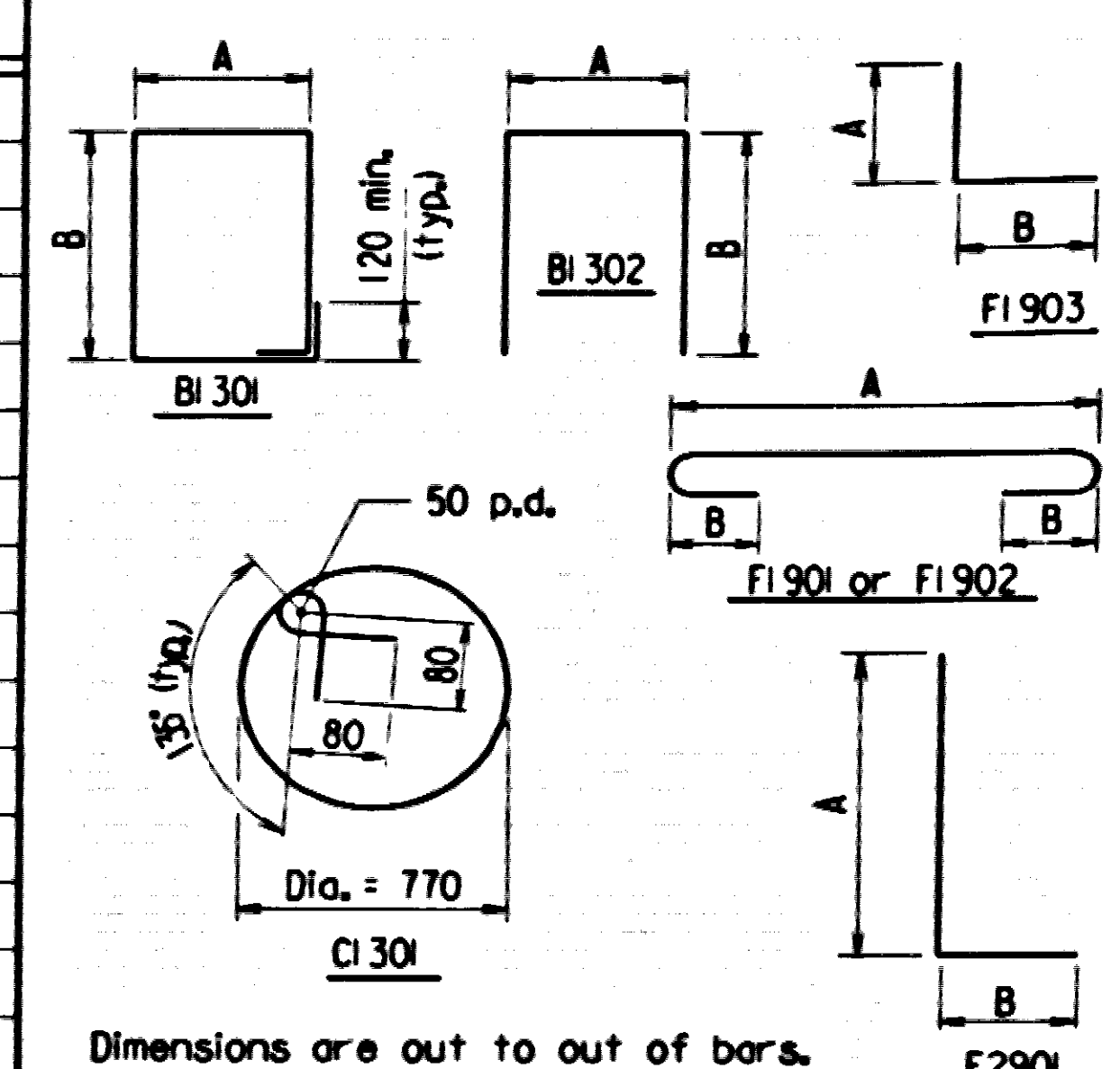
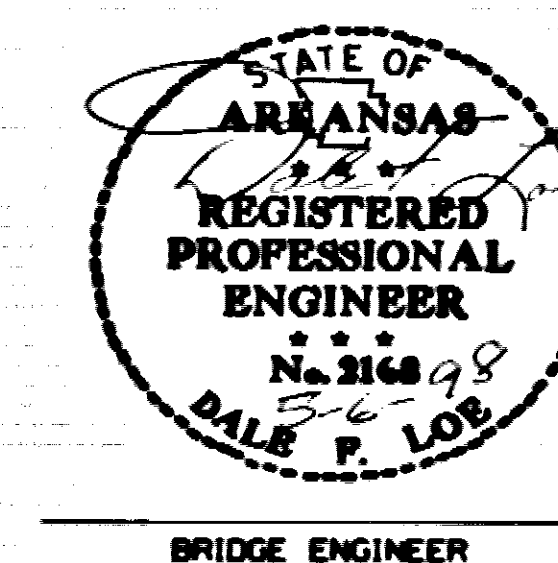


TABLE OF VARIABLES

| BENT NO. | Elev. "H" | Elev. "J" | "K" | "L" | "M" | "N" |
|----------|-----------|-----------|--------|------|-----|------|
| 6 | 90.398 | 83.098 | 7300 | 5000 | 40 | 6020 |
| 7 | 90.652 | 82.852 | 7800 | 5500 | 44 | 6520 |
| 8 | 90.907 | 82.907 | 8000 | 5700 | 46 | 6720 |
| 10 | 91.333 | 82.933 | 8400 | 6100 | 48 | 7120 |
| 11 | 91.587 | 82.587 | 9000 | 6700 | 52 | 7720 |
| 12 | 91.841 | 82.441 | 9400 | 7100 | 54 | 8120 |
| 14 | 92.267 | 82.467 | 9800 | 7500 | 58 | 8520 |
| 15 | 92.521 | 82.521 | 10 000 | 7700 | 58 | 8720 |
| 16 | 92.775 | 83.775 | 9600 | 7300 | 56 | 8320 |

GENERAL NOTES

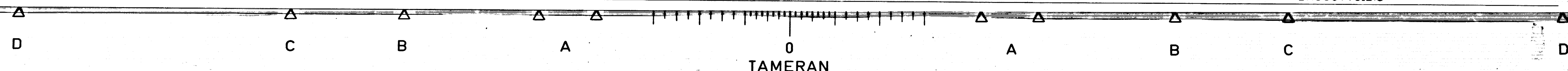
- Stations and elevations are in meters. All other dimensions are in millimeters unless otherwise noted.
- All piling shall be HP 250 x 62 and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 490 kN per pile.
- All Concrete shall be Class "S" and shall be poured in the dry.
- All exposed corners to be chamfered 20 mm unless otherwise noted.
- All Reinforcing Steel shall conform to ASTM A615/A615M-96a Grade 420 ($f_y = 420$ MPa).
- If Anchor Bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.
- For additional information, see Layout.

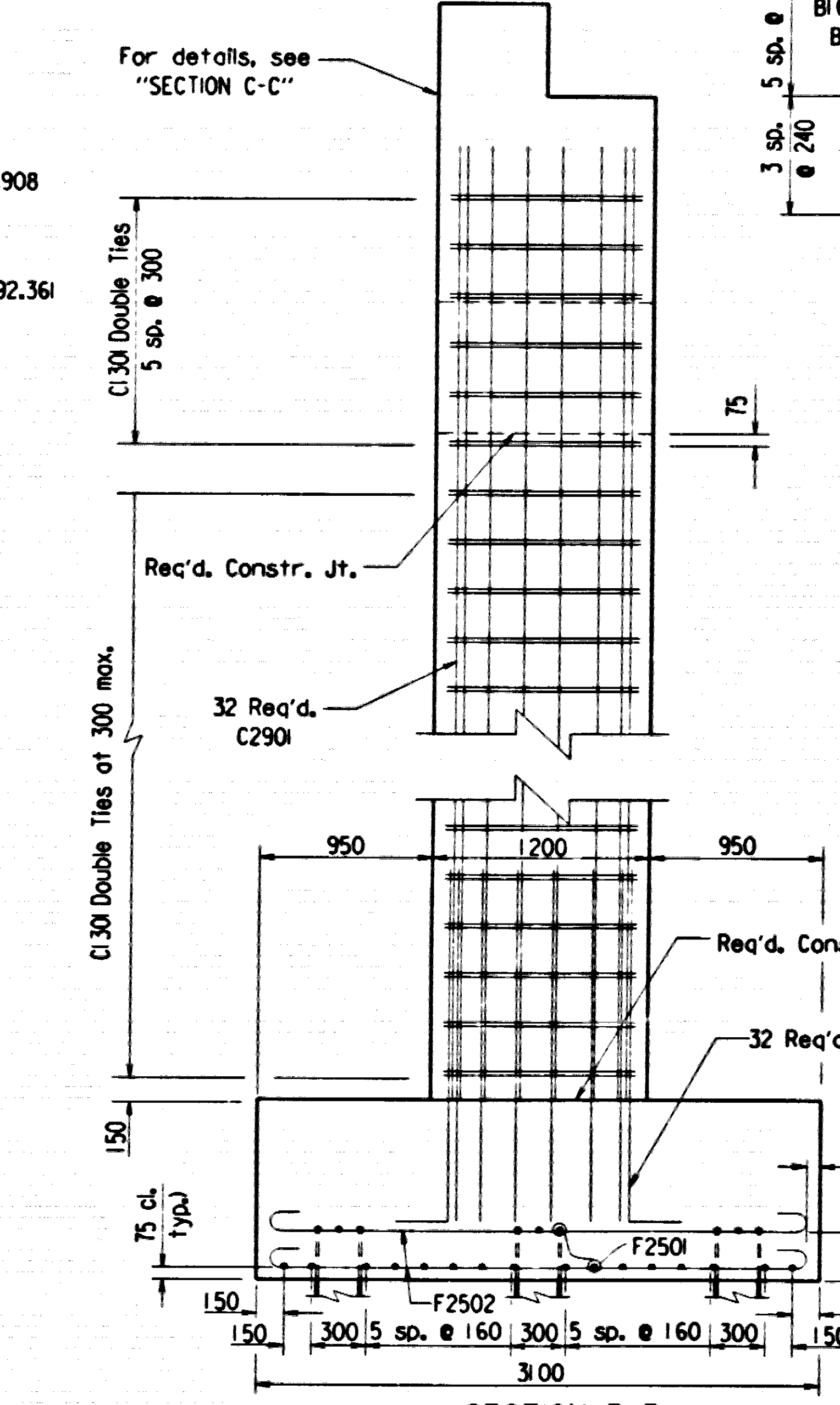
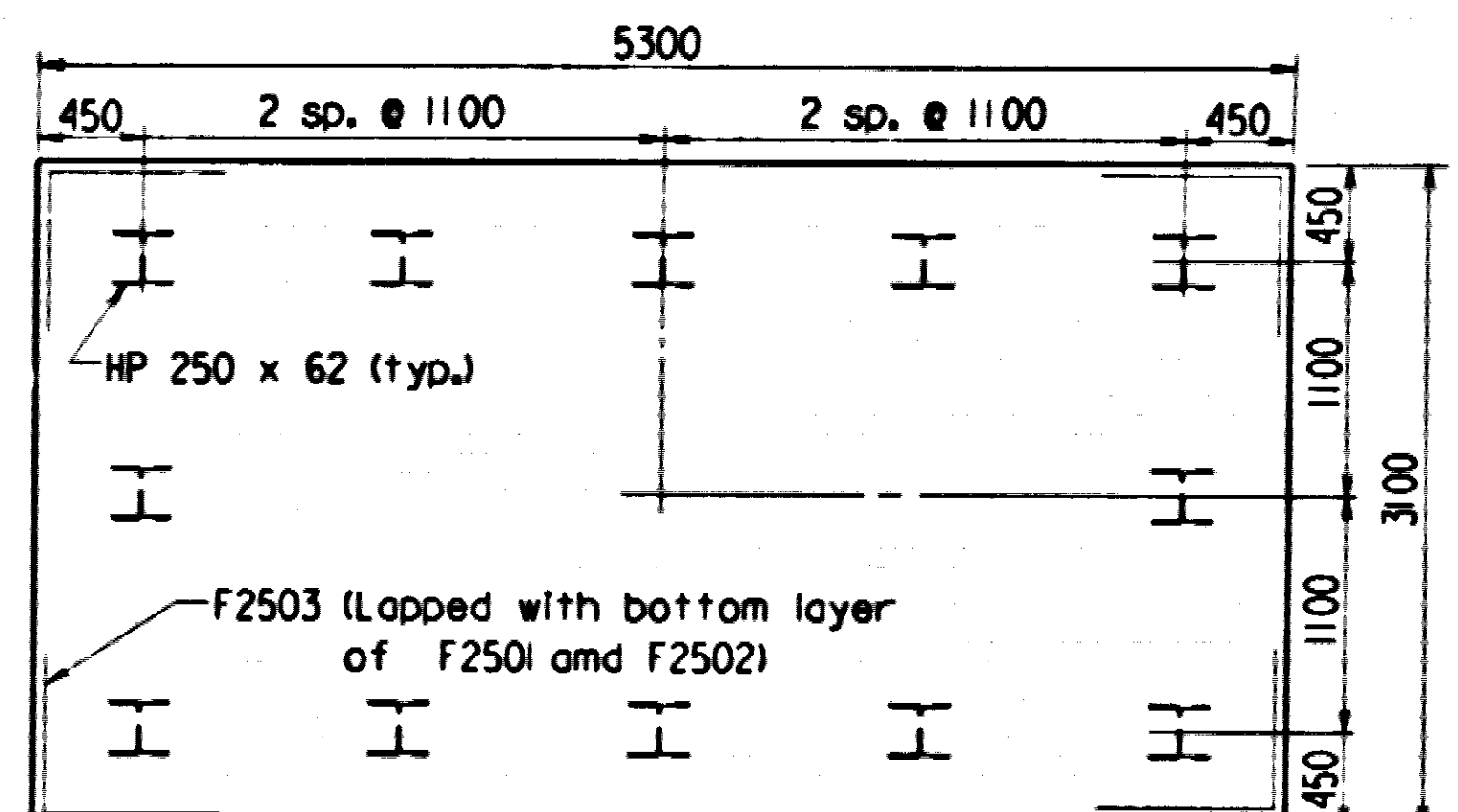
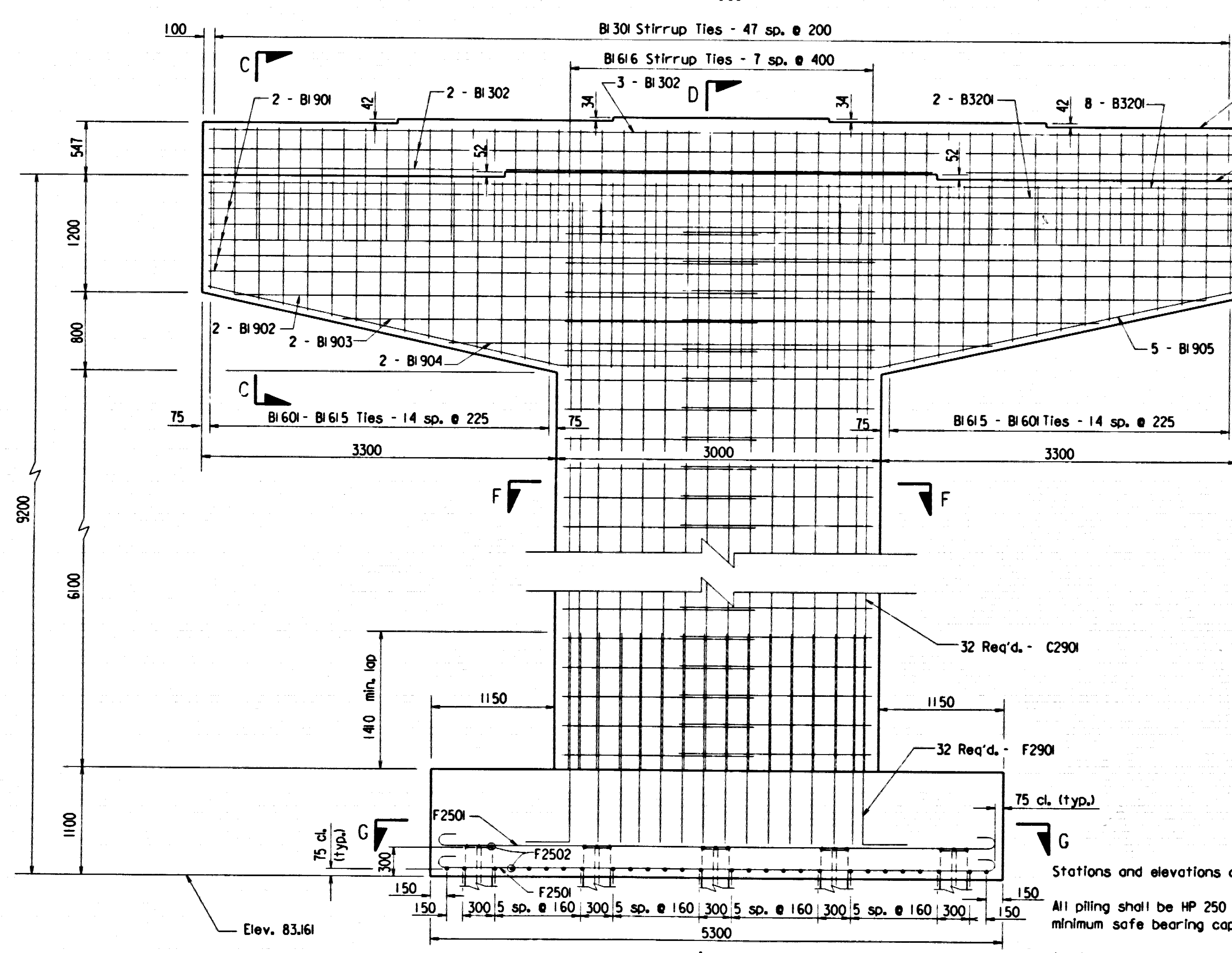
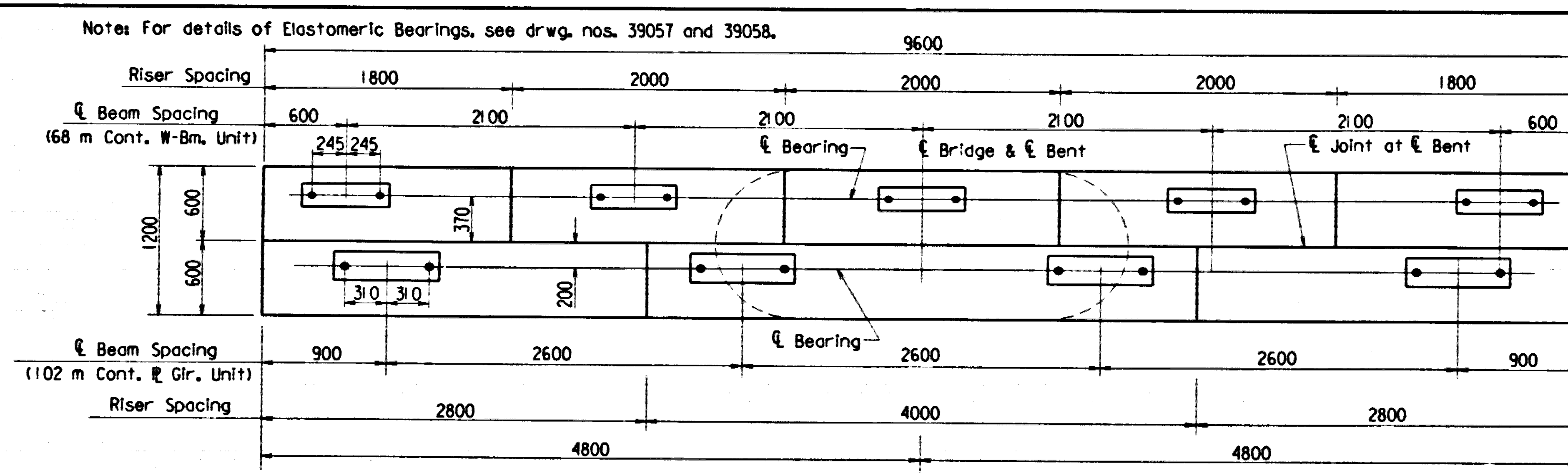


ALTERNATE NO. 1
DETAILS OF INTERMEDIATE
BENT NOS. 6, 7, 8, 10, 11,
12, 14, 15, AND 16
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 05/05/97
CHECKED BY: R/W DATE: 05/10/98
DESIGNED BY: AMS DATE: 2/7/97
BRIDGE NO. 06715 DRAWING NO. 39043

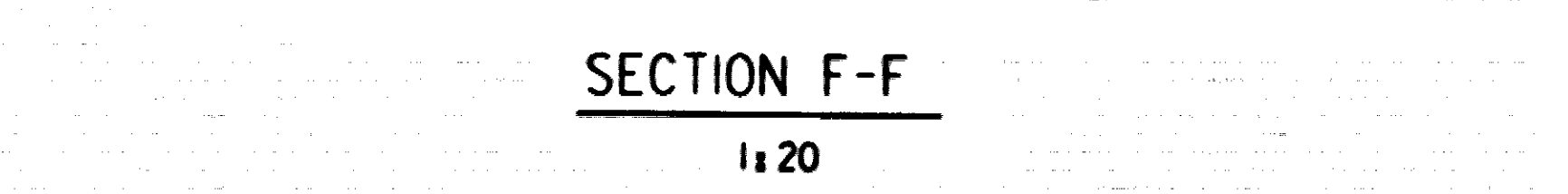
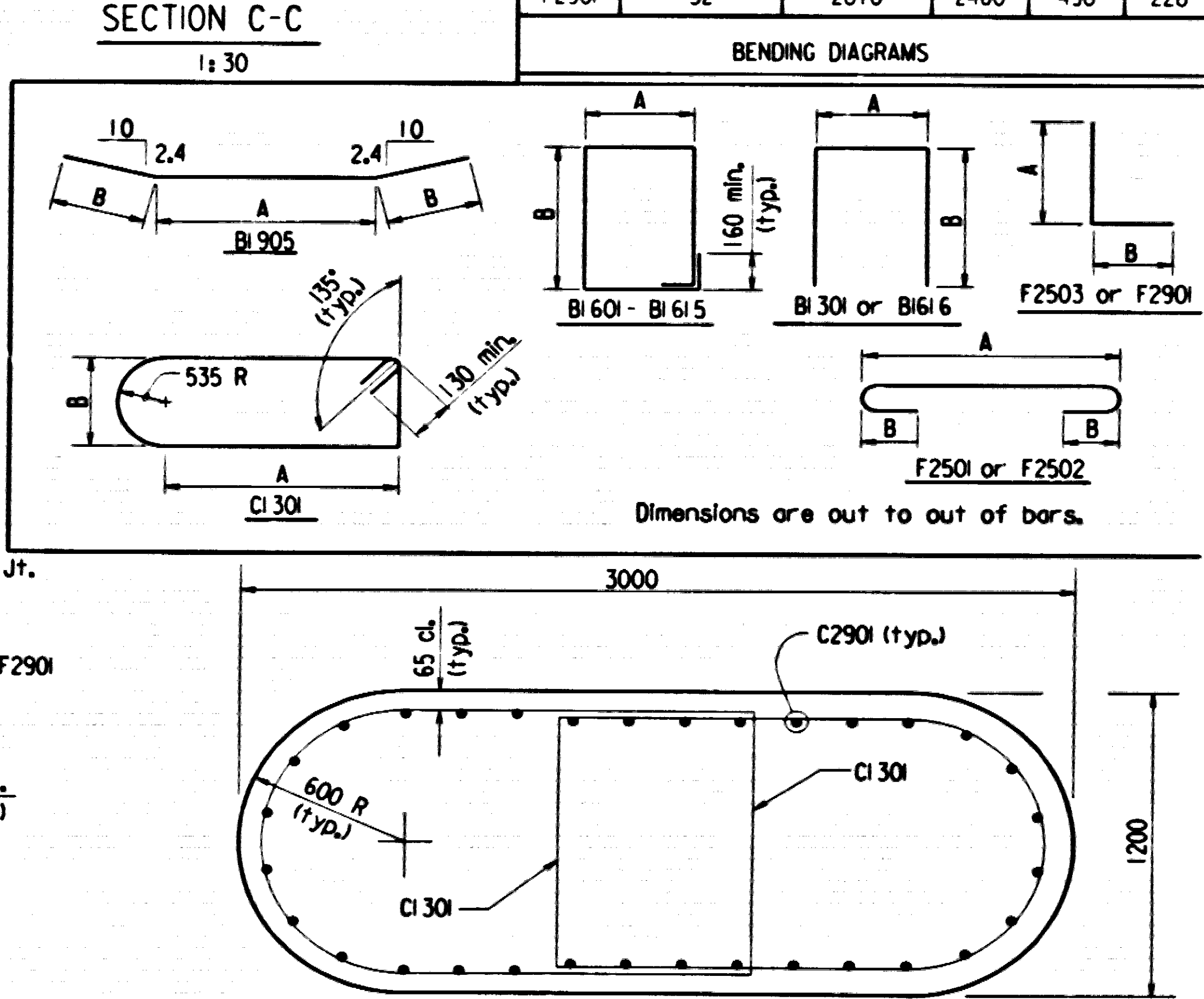
BR060779.B15





| 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. | | 060779 | 44 | 119 |
| | | | | | | 06715 BENT DETAILS | | 39044 |

| BAR LIST | | | | | |
|----------|------------|--------|------|------|-----------|
| MARK | NO. REQ'D. | LENGTH | A | B | PNL. DIA. |
| B1301 | 48 | 2730 | 500 | 1140 | 50 |
| B1302 | 7 | 9500 | | | Str. |
| B1601 | 2 | 4590 | 1100 | 1120 | 63 |
| B1615 | 2 | 6110 | | 1880 | |
| B1616 | 8 | 4830 | 1100 | 1900 | 63 |
| B1901 | 10 | 9500 | | | Str. |
| B1902 | 2 | 9170 | | | Str. |
| B1903 | 2 | 7190 | | | Str. |
| B1904 | 2 | 5210 | | | Str. |
| B1905 | 5 | 9680 | 3220 | 3230 | 114 |
| B3201 | 10 | 9500 | | | Str. |
| C1301 | 52 | 5460 | 1250 | 1070 | 76 |
| C2901 | 32 | 7800 | | | Str. |
| F2501 | 25 | 5720 | 5150 | 210 | 152 |
| F2502 | 43 | 3520 | 2950 | 210 | 152 |
| F2503 | 4 | 2600 | 1330 | 1330 | 152 |
| F2901 | 32 | 2870 | 2460 | 490 | 228 |



GENERAL NOTES

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

All piling shall be HP 250 x 62 and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 490 kN per pile.

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 A615/A615M-96a Grade 420 (fy = 420 MPa).

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

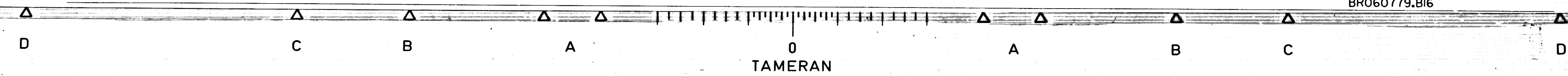
For additional information, see Layout.

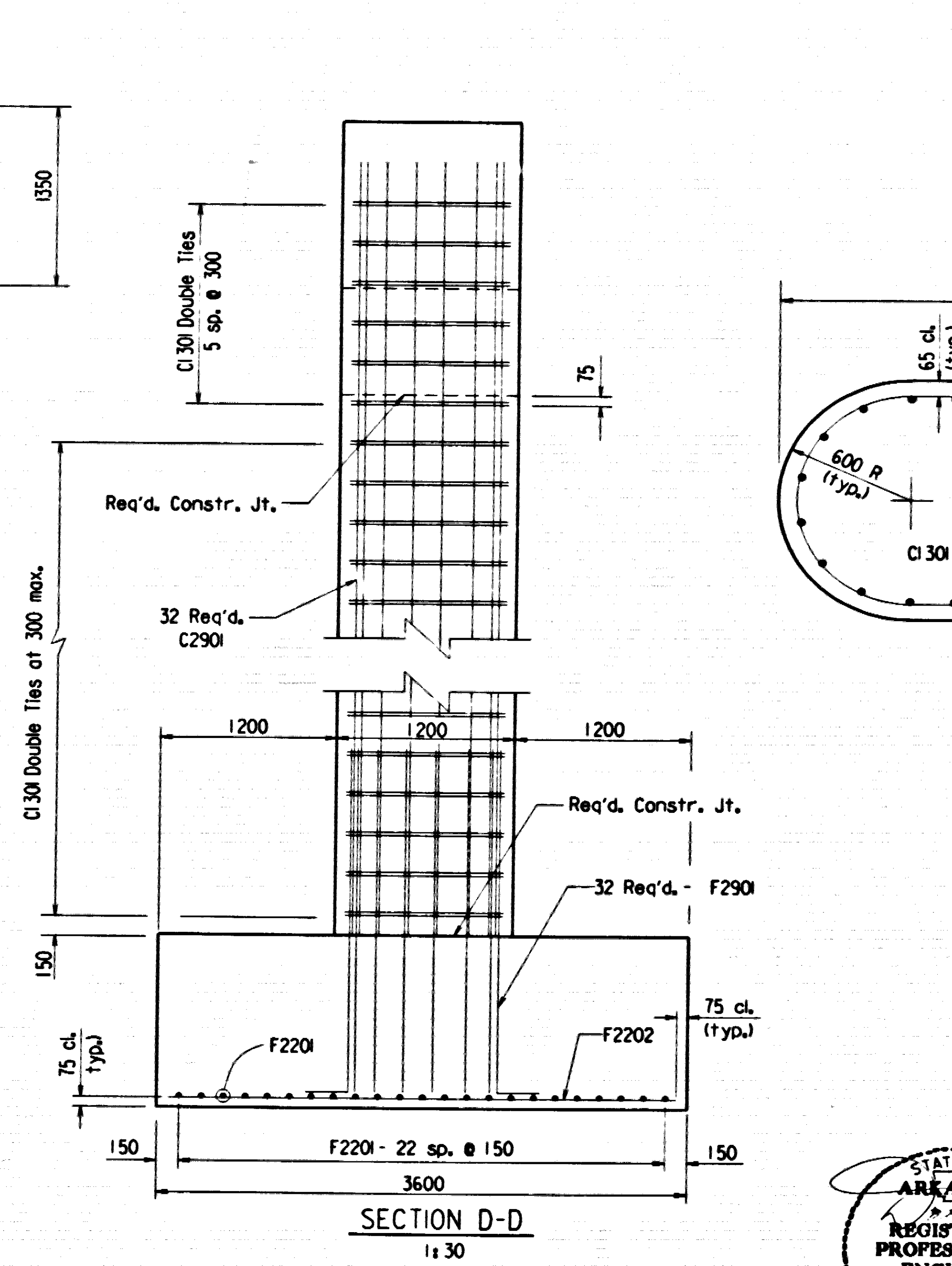
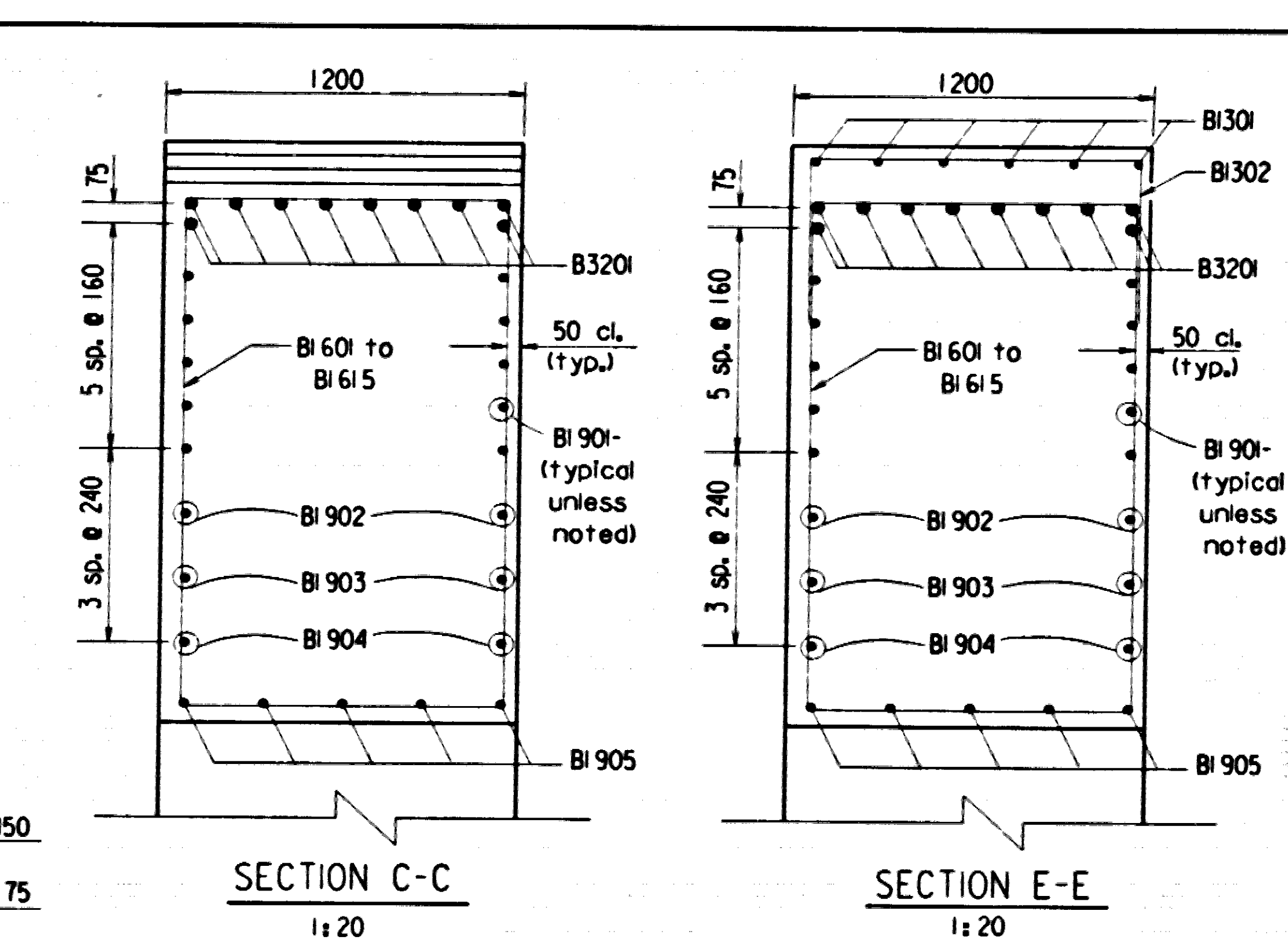
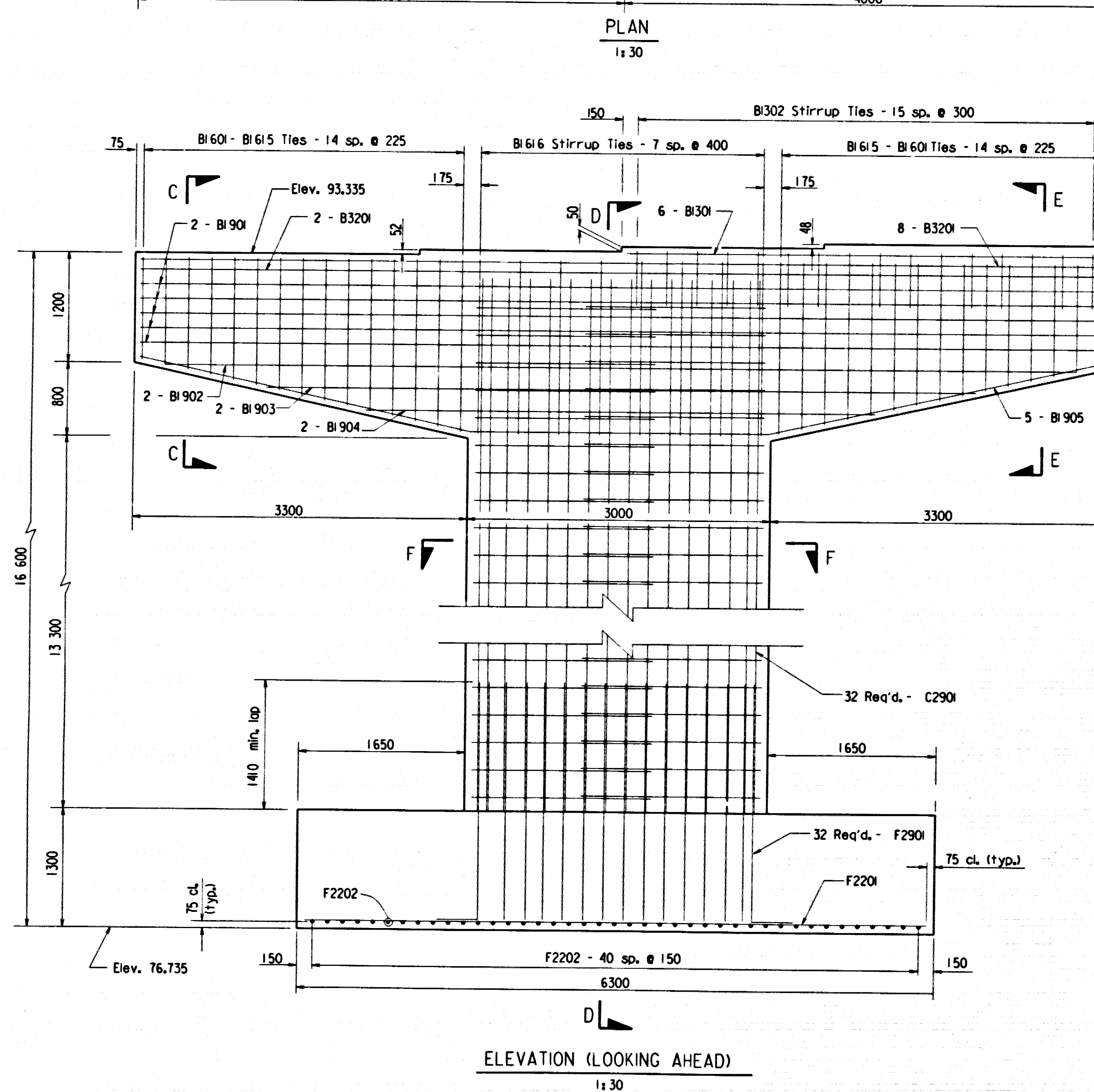
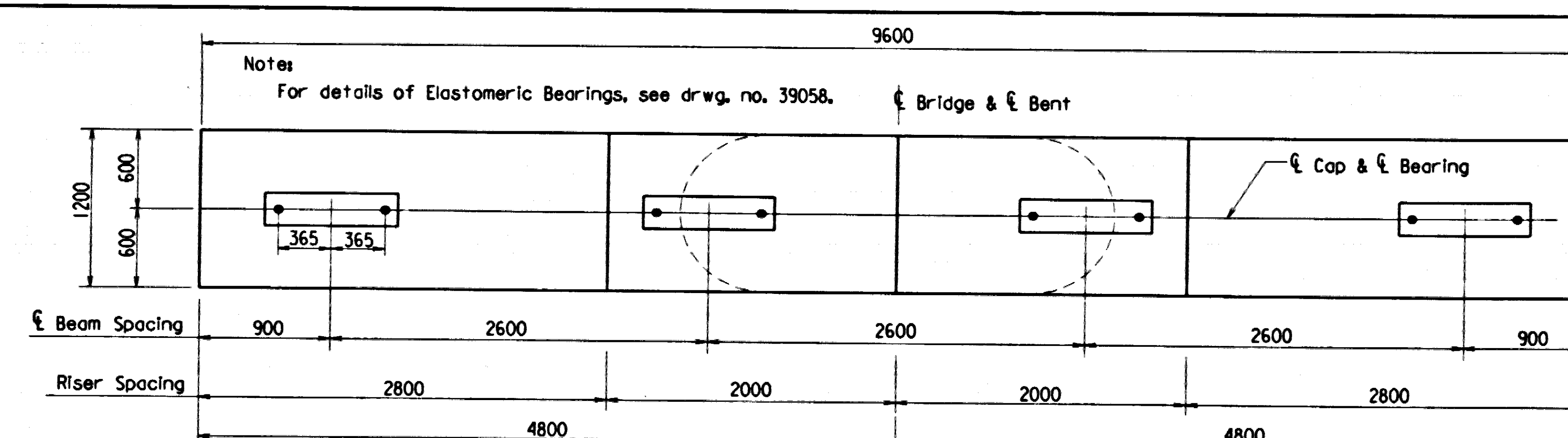


ALTERNATE NO. 1
DETAILS OF INTERMEDIATE
BENT NO. 17
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: TEB
CHECKED BY: RJS
DESIGNED BY: ALG
BRIDGE NO. 06715
DATE: 05/22/97
DATE: 07/16/98
DATE: 2/6/99
SCALE: As Noted
DRAWING NO. 39044

MICROFILMED
AUG 31 1998





| DATE REVISION | DATE FILMED | DATE REVISION | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---------------|-------------|---------------|-------------|---------------------|-------|--------------------|-----------|--------------|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 060779 | 42 | 119 |
| | | | | | | 06715 BENT DETAILS | | 39046 |

| BAR LIST | | | | | | | |
|------------------|------------|--------|------|--------------|----------|------------------|--|
| MARK | NO. REQ'D. | LENGTH | A | B | PIN DIA. | BENDING DIAGRAMS | |
| BI 301 | 6 | 4700 | — | — | Str. | | |
| BI 302 | 16 | 2250 | 1100 | 600 | 50 | | |
| BI 601 to BI 615 | 2 | 4590 | 1100 | 1120 to 1880 | 63 | | |
| BI 616 | 8 | 4830 | 1100 | 1900 | 63 | | |
| BI 901 | 10 | 9500 | — | — | Str. | | |
| BI 902 | 2 | 9170 | — | — | Str. | | |
| BI 903 | 2 | 7190 | — | — | Str. | | |
| BI 904 | 2 | 5210 | — | — | Str. | | |
| BI 905 | 5 | 9680 | 3220 | 3230 | 114 | | |
| B3201 | 10 | 9500 | — | — | Str. | | |
| CI 301 | 100 | 5460 | 1250 | 1070 | 76 | | |
| C2901 | 32 | 15 050 | — | — | Str. | | |
| F2201 | 23 | 6150 | — | — | Str. | | |
| F2202 | 41 | 3450 | — | — | Str. | | |
| F2901 | 32 | 3300 | 2890 | 490 | 228 | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Dimensions are out to out of bars.

SECTION F-F
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 A615/A615M-96a, Grade 420 (fy = 420 MPa).

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

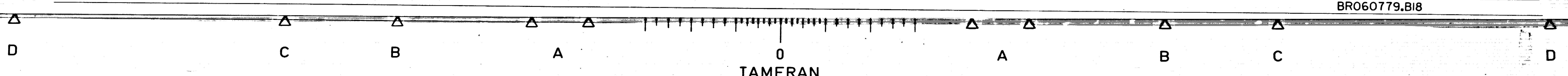
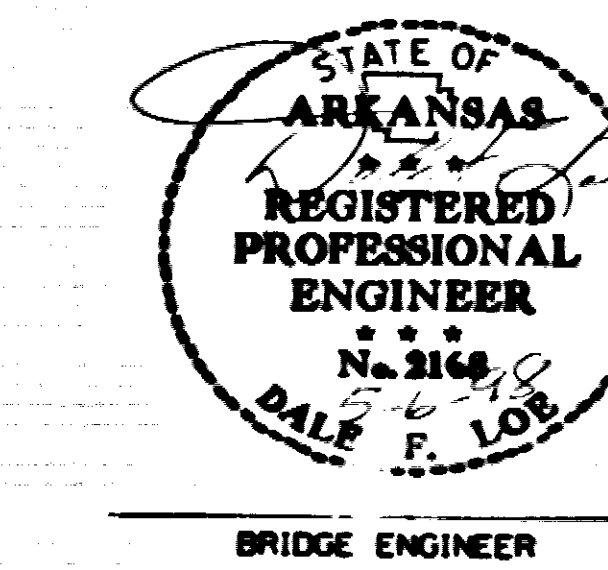
For additional information, see Layout.

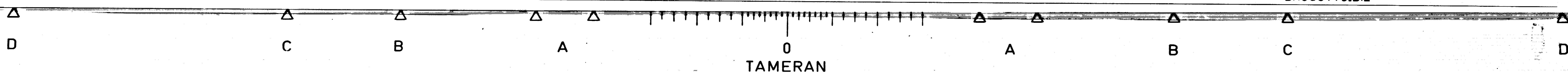
ALTERNATE NOS. 1 & 2
DETAILS OF INTERMEDIATE
BENT NO. 19
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 05/22/97
CHECKED BY: R/L DATE: 07/14/98
DESIGNED BY: A/S DATE: 2/28/97
BRIDGE NO. 06715 DRAWING NO. 39046

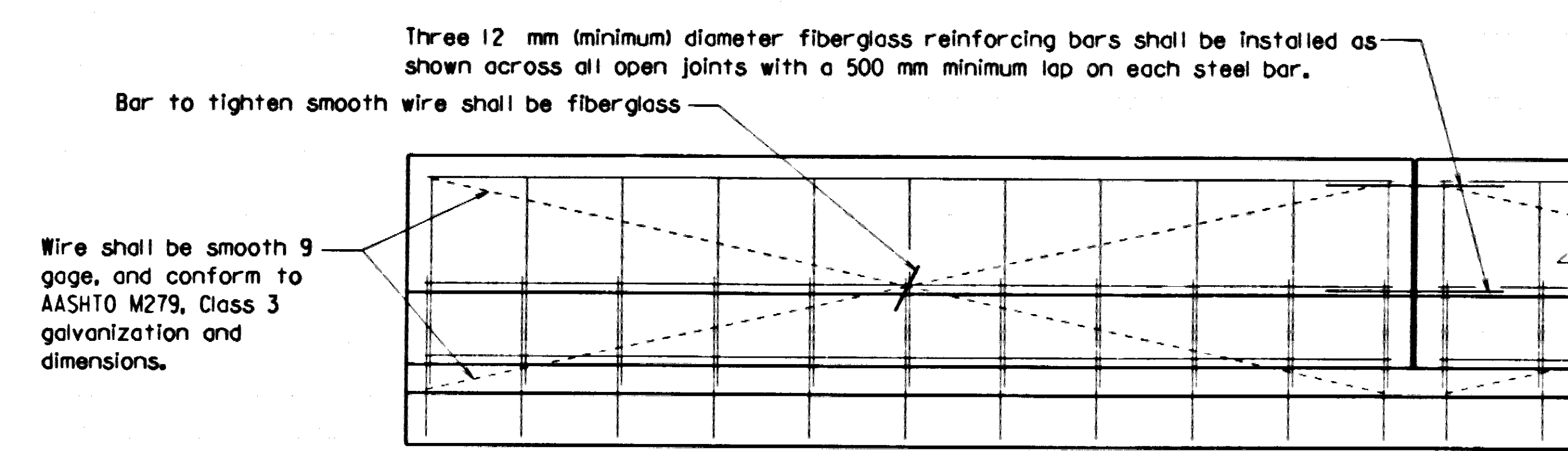
BR060779.B18

MICROFILMED
AUG 3 1 1998





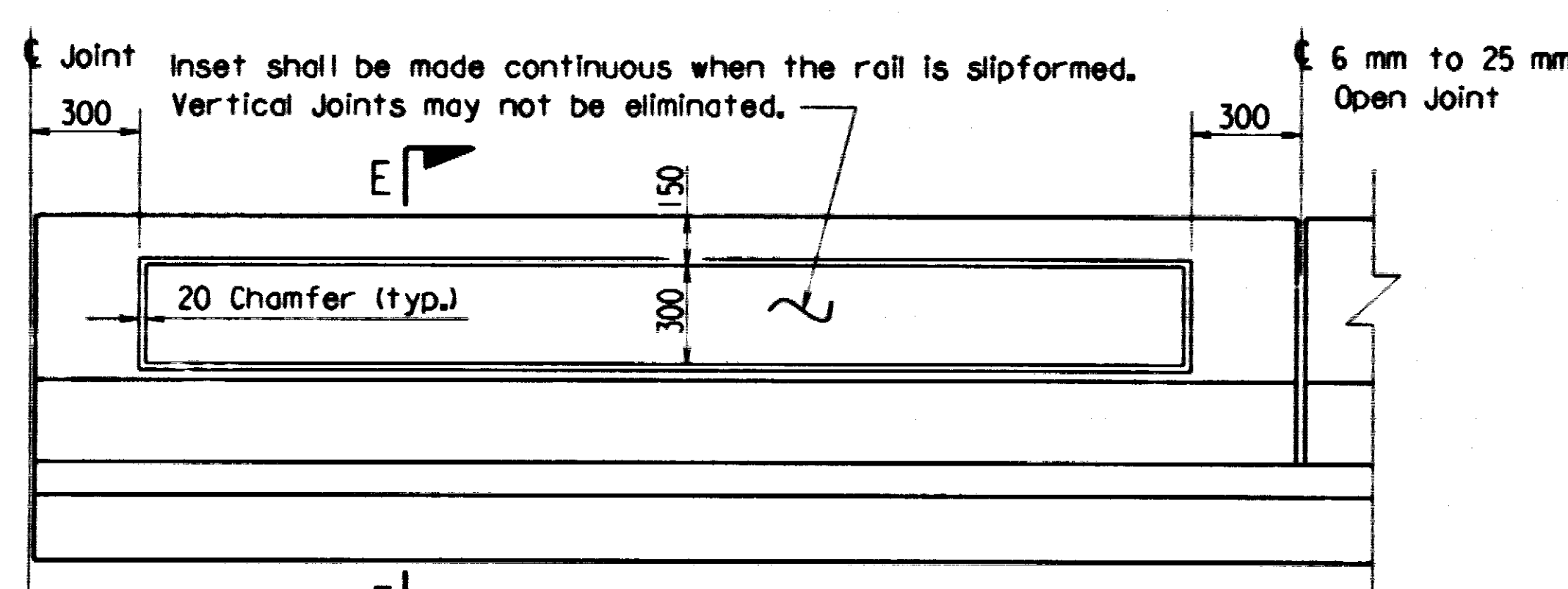
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|--------------|--------------|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 060779 | 43 | 119 |
| | | | | | | 06715 | SPAN DETAILS | 39049 |



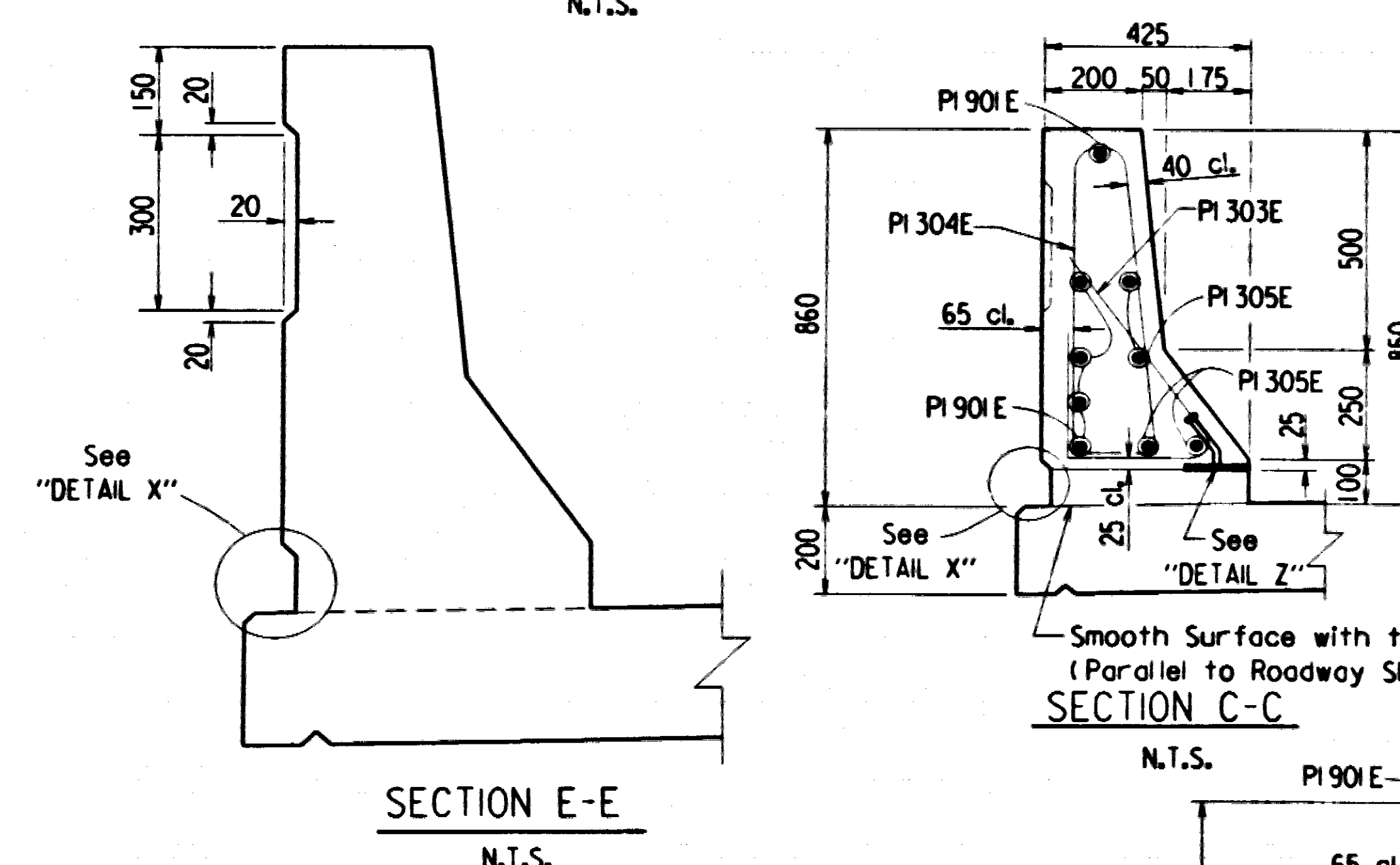
All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 6 mm. To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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

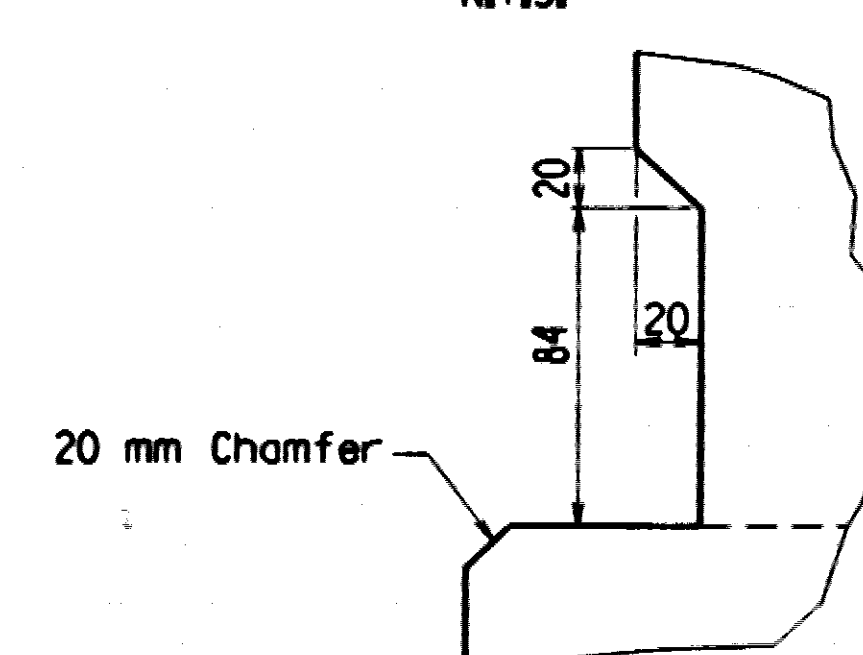


DETAILS OF PARAPET ENHANCEMENT



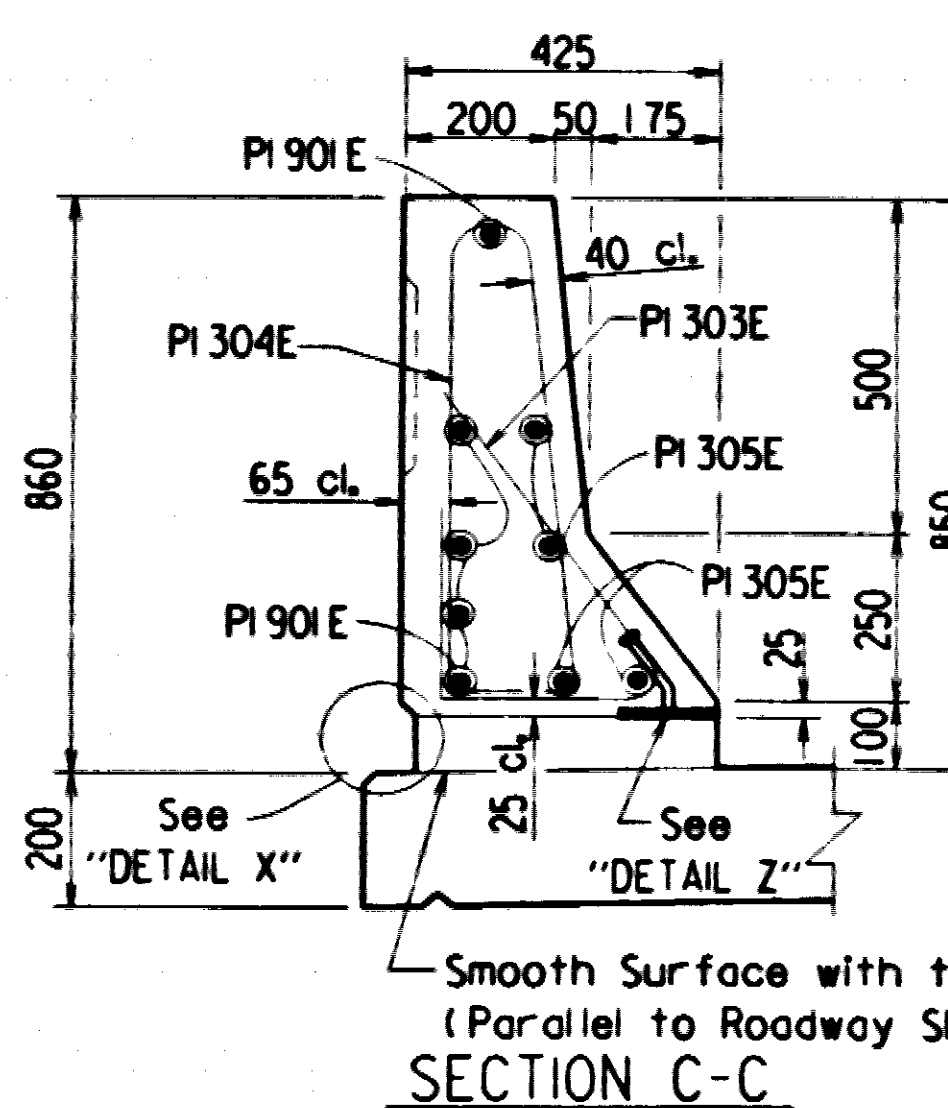
SECTION E-E

N.T.S.



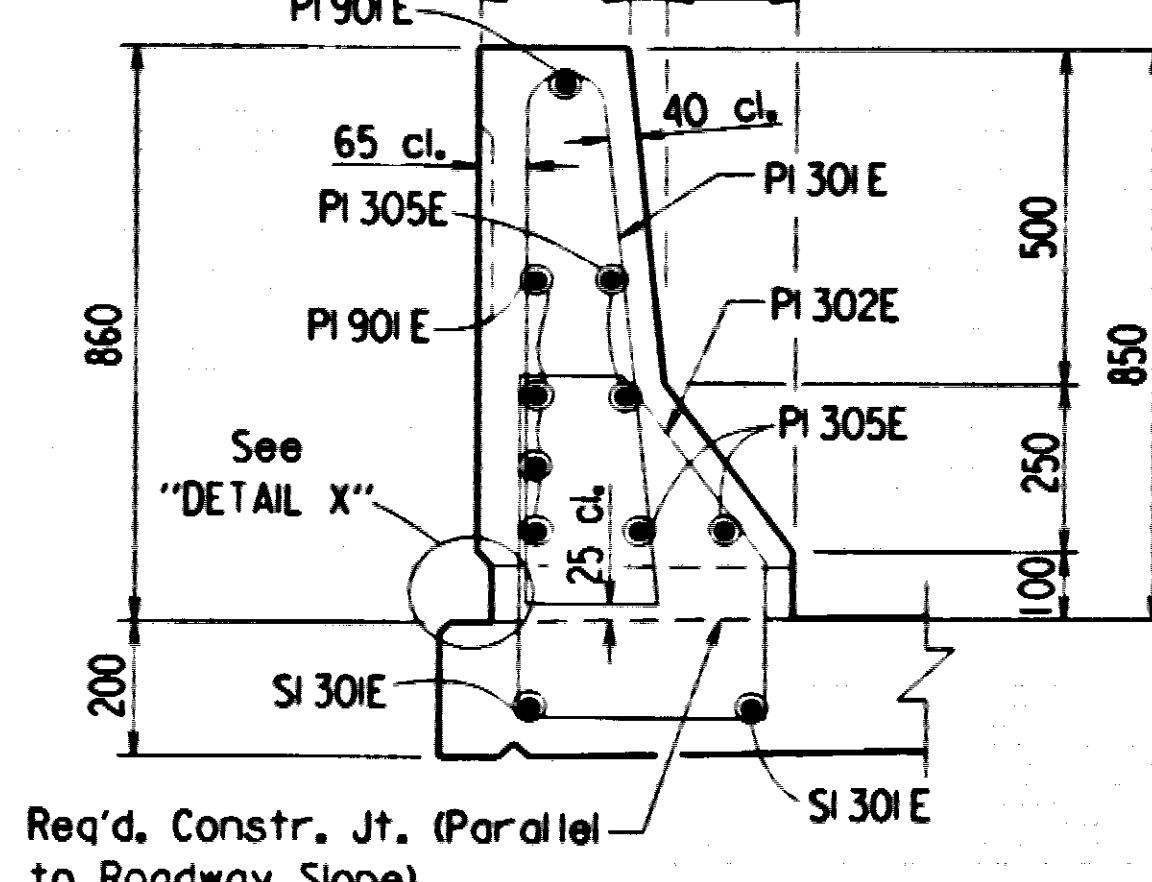
DETAIL X

N.T.S.



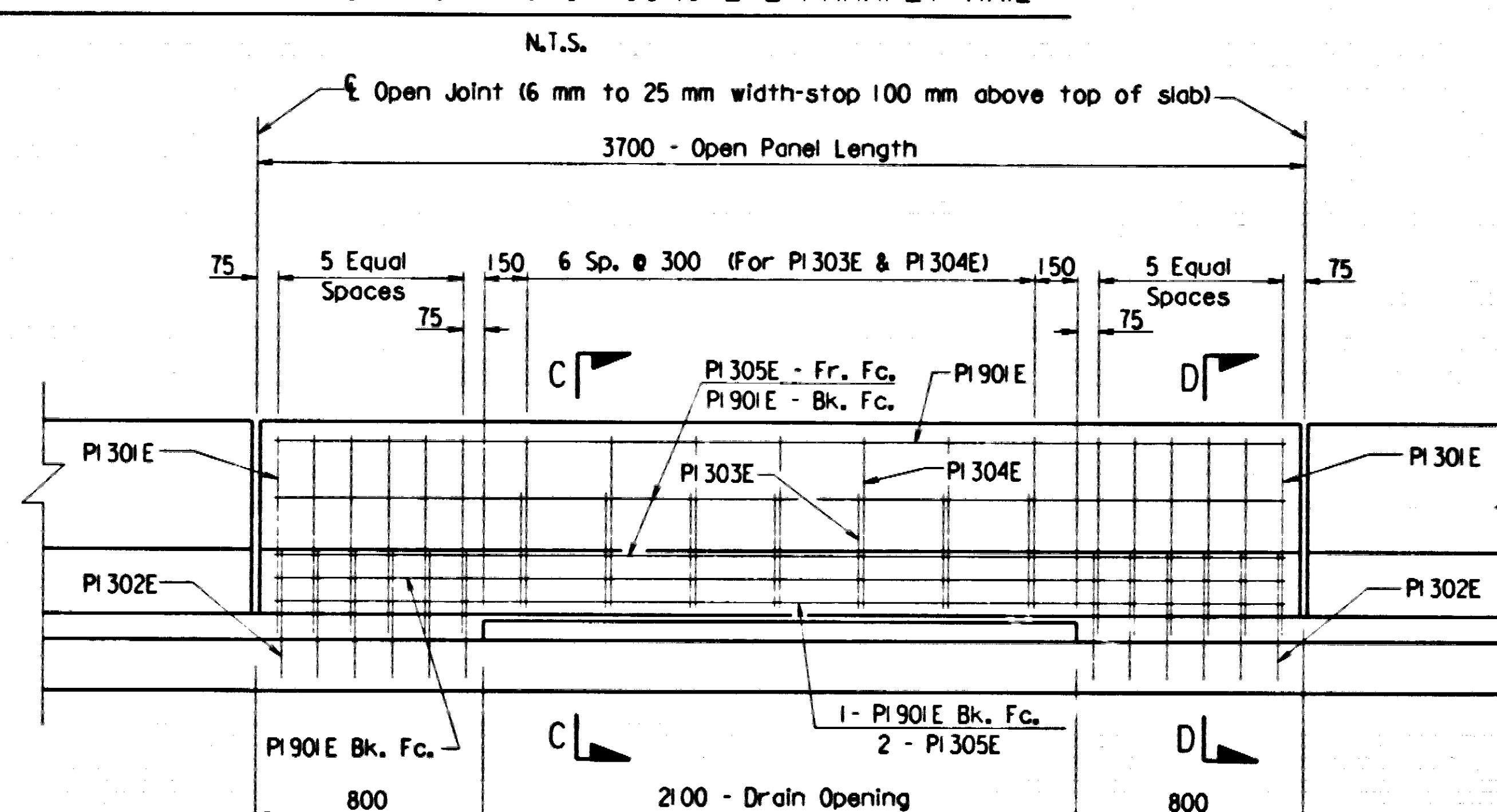
SECTION C-C

N.T.S.

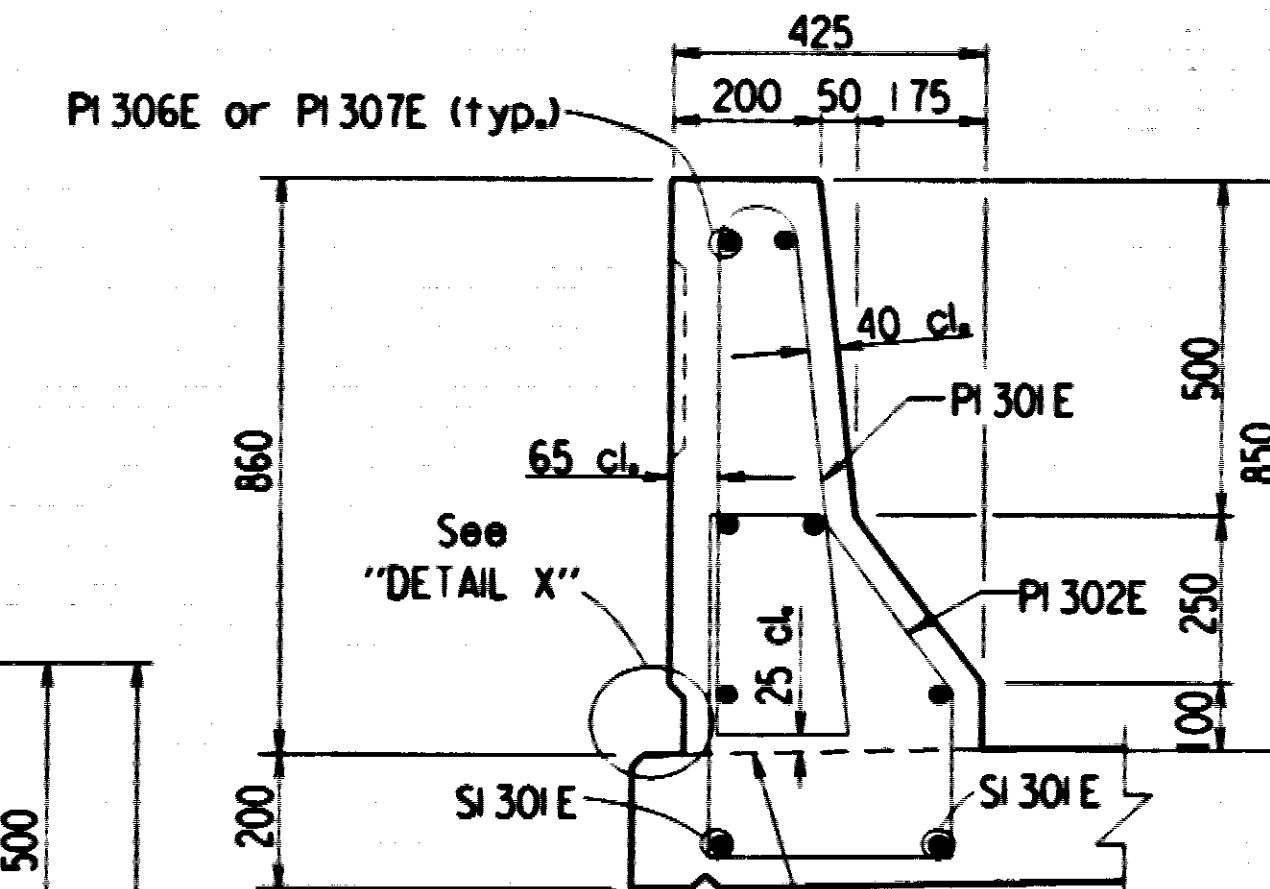


SECTION D-D

N.T.S.

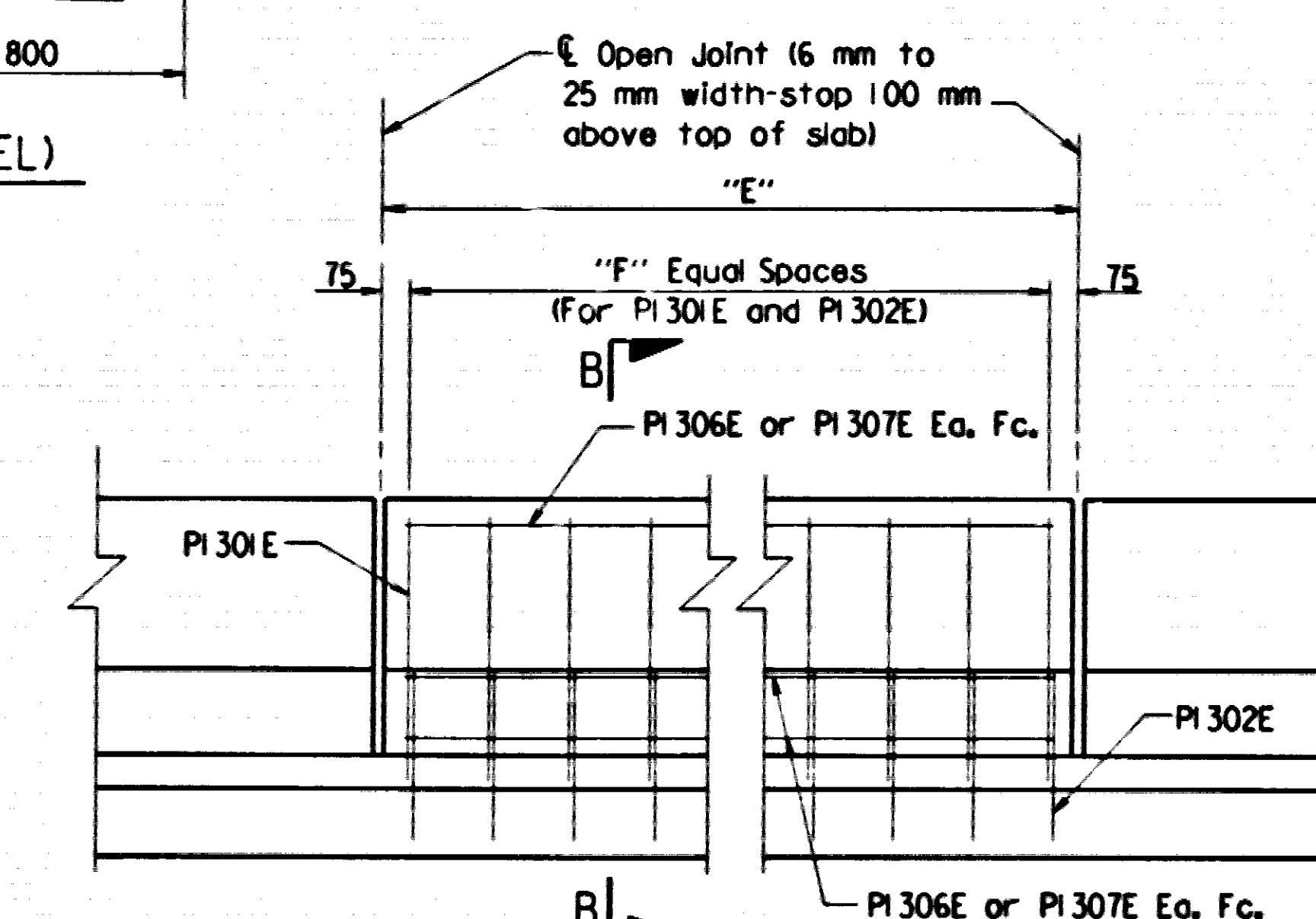


SECTION A-A (TYPICAL 3700 mm OPEN PANEL)



SECTION B-B

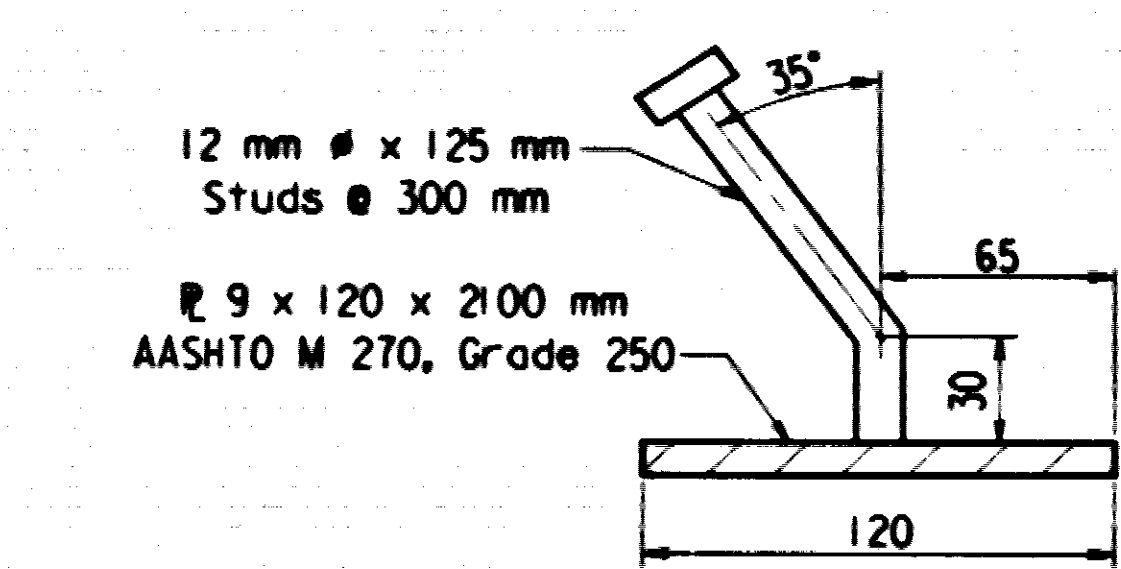
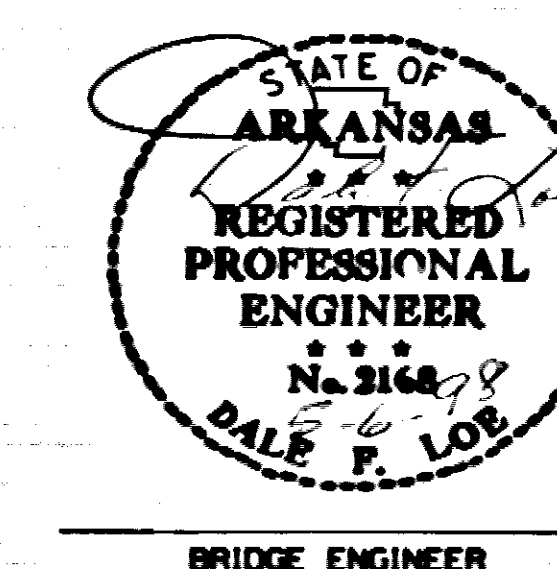
N.T.S.



SECTION A-A (TYPICAL CLOSED PANEL)

TABLE OF CLOSED PARAPET VARIABLES

| PANEL LENGTH "E" | "F" | LONGITUDINAL REINFORCING |
|------------------|-----|--------------------------|
| 2200 | 7 | PI 306E |
| 1850 | 6 | PI 307E |



DETAIL Z

N.T.S.

Notes:
The Surfaces of the 9 mm Plates which will not be in contact with concrete shall be painted in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to Structural Steel or Class 5 (AE) Concrete-Bridge.

ALTERNATE NO. 1

(SHEET 2 OF 3)

DETAILS OF

68 METER CONTINUOUS

W-BEAM UNIT

SALINE RIVER

ROUTE 229 SEC. 5

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DESIGNED BY: TEB DATE: 02/20/97

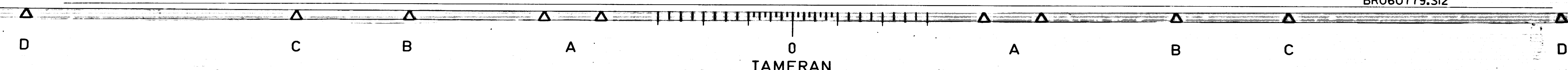
CHECKED BY: AJS DATE: 4/18/97

DESIGNED BY: AJS DATE: 4/18/97

BRIDGE NO. 06715 DRAWING NO. 39049

BRO60779.SI2

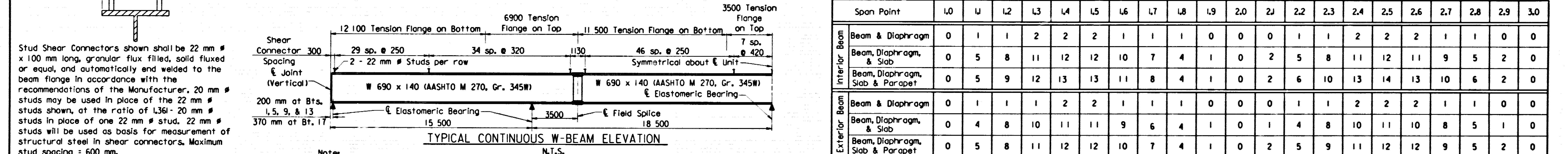
MICROFILMED
AUG 3 1 1998



[illegible]

REINFORCING AND FRAMING PLAN
 1:100

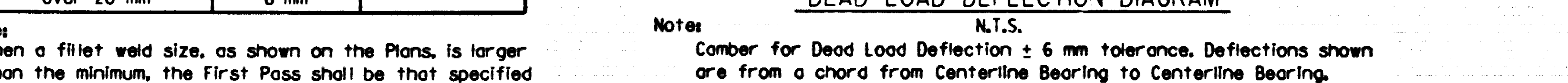
DEAD LOAD DEFLECTIONS (mm)



| Span Point | | L0 | L1 | L2 | L3 | L4 | L5 | L6 | L7 | L8 | L9 | 2.0 | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 | 2.6 | 2.7 | 2.8 | 2.9 | 3.0 |
|---------------|---------------------------------|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Interior Beam | Beam & Diaphragm | 0 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 0 | 0 |
| | Beam, Diaphragm, & Slab | 0 | 5 | 8 | 11 | 12 | 12 | 10 | 7 | 4 | 1 | 0 | 2 | 5 | 8 | 11 | 12 | 11 | 9 | 5 | 2 | 0 |
| | Beam, Diaphragm, Slab & Parapet | 0 | 5 | 9 | 12 | 13 | 13 | 11 | 8 | 4 | 1 | 0 | 2 | 6 | 10 | 13 | 14 | 13 | 10 | 6 | 2 | 0 |
| Exterior Beam | Beam & Diaphragm | 0 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 0 | 0 |
| | Beam, Diaphragm, & Slab | 0 | 4 | 8 | 10 | 11 | 11 | 9 | 6 | 4 | 1 | 0 | 1 | 4 | 8 | 10 | 11 | 10 | 8 | 5 | 1 | 0 |
| | Beam, Diaphragm, Slab & Parapet | 0 | 5 | 8 | 11 | 12 | 12 | 10 | 7 | 4 | 1 | 0 | 2 | 5 | 9 | 11 | 12 | 12 | 9 | 5 | 2 | 0 |

| TABLE FOR WELD | | | | | |
|----------------|------|------|------|------|------|
| | .0 | .1 | .2 | .3 | .4 |
| Weld | 0.0 | 0.1 | 0.2 | 0.3 | 0.4 |
| Weld | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 |
| Weld | 1.0 | 1.1 | 1.2 | 1.3 | 1.4 |
| Weld | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 |
| Weld | 2.0 | 2.1 | 2.2 | 2.3 | 2.4 |
| Weld | 2.5 | 2.6 | 2.7 | 2.8 | 2.9 |
| Weld | 3.0 | 3.1 | 3.2 | 3.3 | 3.4 |
| Weld | 3.5 | 3.6 | 3.7 | 3.8 | 3.9 |
| Weld | 4.0 | 4.1 | 4.2 | 4.3 | 4.4 |
| Weld | 4.5 | 4.6 | 4.7 | 4.8 | 4.9 |
| Weld | 5.0 | 5.1 | 5.2 | 5.3 | 5.4 |
| Weld | 5.5 | 5.6 | 5.7 | 5.8 | 5.9 |
| Weld | 6.0 | 6.1 | 6.2 | 6.3 | 6.4 |
| Weld | 6.5 | 6.6 | 6.7 | 6.8 | 6.9 |
| Weld | 7.0 | 7.1 | 7.2 | 7.3 | 7.4 |
| Weld | 7.5 | 7.6 | 7.7 | 7.8 | 7.9 |
| Weld | 8.0 | 8.1 | 8.2 | 8.3 | 8.4 |
| Weld | 8.5 | 8.6 | 8.7 | 8.8 | 8.9 |
| Weld | 9.0 | 9.1 | 9.2 | 9.3 | 9.4 |
| Weld | 9.5 | 9.6 | 9.7 | 9.8 | 9.9 |
| Weld | 10.0 | 10.1 | 10.2 | 10.3 | 10.4 |
| Weld | 10.5 | 10.6 | 10.7 | 10.8 | 10.9 |
| Weld | 11.0 | 11.1 | 11.2 | 11.3 | 11.4 |
| Weld | 11.5 | 11.6 | 11.7 | 11.8 | 11.9 |
| Weld | 12.0 | 12.1 | 12.2 | 12.3 | 12.4 |
| Weld | 12.5 | 12.6 | 12.7 | 12.8 | 12.9 |
| Weld | 13.0 | 13.1 | 13.2 | 13.3 | 13.4 |
| Weld | 13.5 | 13.6 | 13.7 | 13.8 | 13.9 |
| Weld | 14.0 | 14.1 | 14.2 | 14.3 | 14.4 |
| Weld | 14.5 | 14.6 | 14.7 | 14.8 | 14.9 |
| Weld | 15.0 | 15.1 | 15.2 | 15.3 | 15.4 |
| Weld | 15.5 | 15.6 | 15.7 | 15.8 | 15.9 |
| Weld | 16.0 | 16.1 | 16.2 | 16.3 | 16.4 |
| Weld | 16.5 | 16.6 | 16.7 | 16.8 | 16.9 |
| Weld | 17.0 | 17.1 | 17.2 | 17.3 | 17.4 |
| Weld | 17.5 | 17.6 | 17.7 | 17.8 | 17.9 |
| Weld | 18.0 | 18.1 | 18.2 | 18.3 | 18.4 |
| Weld | 18.5 | 18.6 | 18.7 | 18.8 | 18.9 |
| Weld | 19.0 | 19.1 | 19.2 | 19.3 | 19.4 |
| Weld | 19.5 | 19.6 | 19.7 | 19.8 | 19.9 |
| Weld | 20.0 | 20.1 | 20.2 | 20.3 | 20.4 |
| Weld | 20.5 | 20.6 | 20.7 | 20.8 | 20.9 |
| Weld | 21.0 | 21.1 | 21.2 | 21.3 | 21.4 |
| Weld | 21.5 | 21.6 | 21.7 | 21.8 | 21.9 |
| Weld | 22.0 | 22.1 | 22.2 | 22.3 | 22.4 |
| Weld | 22.5 | 22.6 | 22.7 | 22.8 | 22.9 |
| Weld | 23.0 | 23.1 | 23.2 | 23.3 | 23.4 |
| Weld | 23.5 | 23.6 | 23.7 | 23.8 | 23.9 |
| Weld | 24.0 | 24.1 | 24.2 | 24.3 | 24.4 |
| Weld | 24.5 | 24.6 | 24.7 | 24.8 | 24.9 |
| Weld | 25.0 | 25.1 | 25.2 | 25.3 | 25.4 |
| Weld | 25.5 | 25.6 | 25.7 | 25.8 | 25.9 |
| Weld | 26.0 | 26.1 | 26.2 | 26.3 | 26.4 |
| Weld | 26.5 | 26.6 | 26.7 | 26.8 | 26.9 |
| Weld | 27.0 | 27.1 | 27.2 | 27.3 | 27.4 |
| Weld | 27.5 | 27.6 | 27.7 | 27.8 | 27.9 |
| Weld | 28.0 | 28.1 | 28.2 | 28.3 | 28.4 |
| Weld | 28.5 | 28.6 | 28.7 | 28.8 | 28.9 |
| Weld | 29.0 | 29.1 | 29.2 | 29.3 | 29.4 |
| Weld | 29.5 | 29.6 | 29.7 | 29.8 | 29.9 |
| Weld | 30.0 | 30.1 | 30.2 | 30.3 | 30.4 |
| Weld | 30.5 | 30.6 | 30.7 | 30.8 | 30.9 |
| Weld | 31.0 | 31.1 | 31.2 | 31.3 | 31.4 |
| Weld | 31.5 | 31.6 | 31.7 | 31.8 | 31.9 |
| Weld | 32.0 | 32.1 | 32.2 | 32.3 | 32.4 |
| Weld | 32.5 | 32.6 | 32.7 | 32.8 | 32.9 |
| Weld | 33.0 | 33.1 | 33.2 | 33.3 | 33.4 |
| Weld | 33.5 | 33.6 | 33.7 | 33.8 | 33.9 |
| Weld | 34.0 | 34.1 | 34.2 | | |

| | | | |
|---|-----------------------------|-------------------------------|--|
| 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 | | |

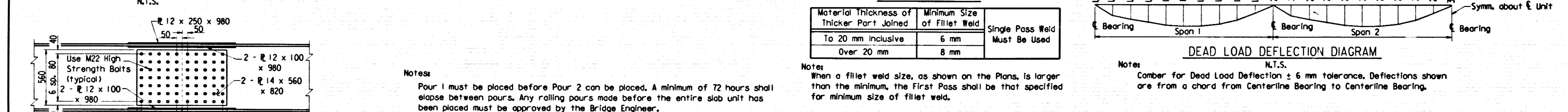


SHEAR CONNECTOR DETAIL
 N.T.C.

Bolted Field Splices shown may be eliminated or a shop welded splice may be substituted with approval of the Bridge Engineer. Payment will be made on the basis of the bolted splices shown.

TABLE FOR WELD

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0.0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 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 | 2.6 | 2.7 | 2.8 | 2.9 | 3.0 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|



Notes

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

40 4 80 4 80 40

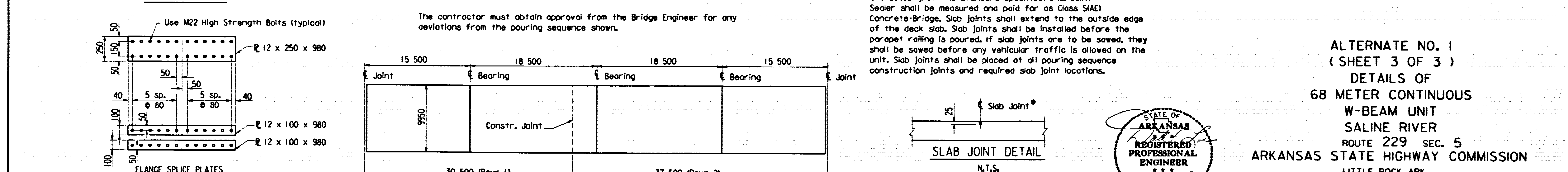
12 x 250 x 980

4 80 4 80 40

WEB SPLICE PLATES

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.

* 12 mm x 25 mm Type 6 Joint Sealer. See Sections 504.02 (b) and 504.05 (1) of the Standard Specifications. Joint



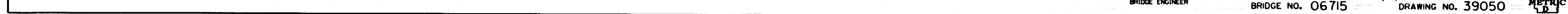
TYPICAL FIELD SPLICE

POURING SEQUENCE

DRAWN BY: TEB DATE: 02/20/97
CHECKED BY: AMS DATE: 6/19/97
SCALE: As Noted



N.T.S. N.T.S. DESIGNED BY: AMS DATE: 12/17/96



BR060779-S13

MICROFILMED
AUG 31 1998

100
50
12 x 100 x 980
12 x 100 x 980

95555

Constr. Joint

2

STATE OF ARKANSAS

W-BEAM UNIT
SALINE RIVER
ROUTE 229 SEC 5

D C B A A B C

D C B A A B C

D C B A A B C

D C B A A B C

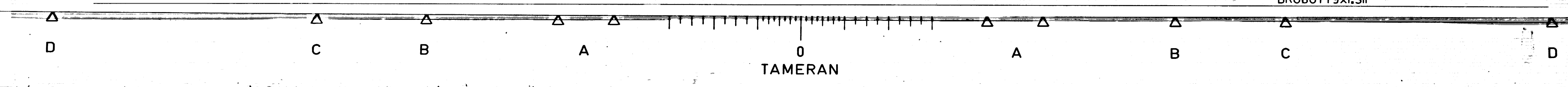
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D C B A A B C

D C B A A B C

D C B A A B C

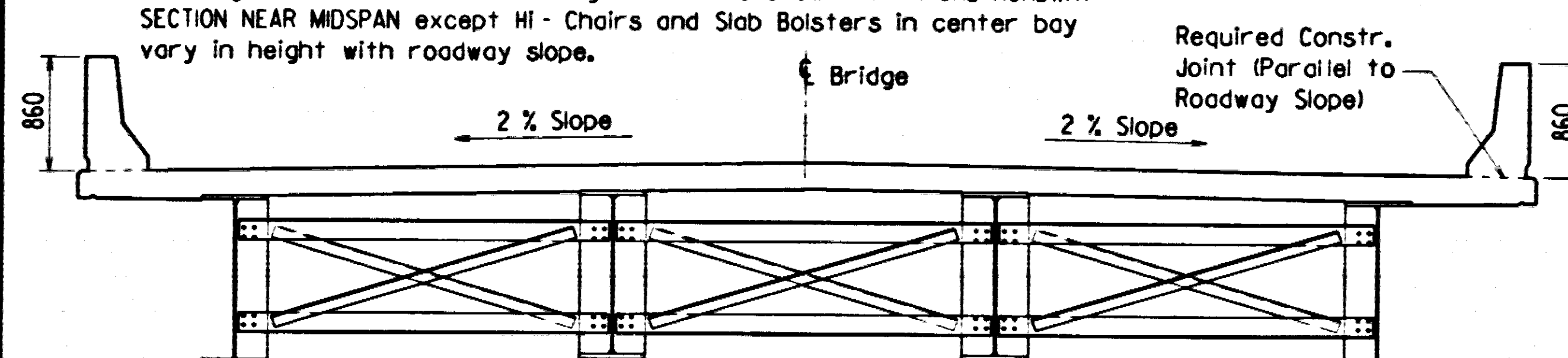
D C B A A B C



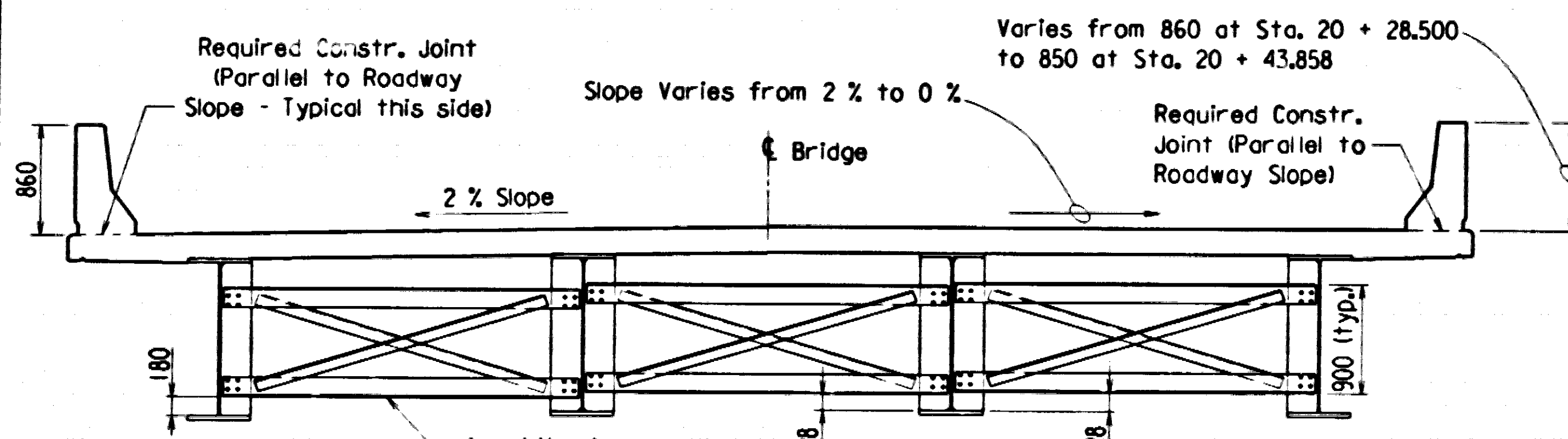
Notes

See Layout for Method of Superelevation Transition.

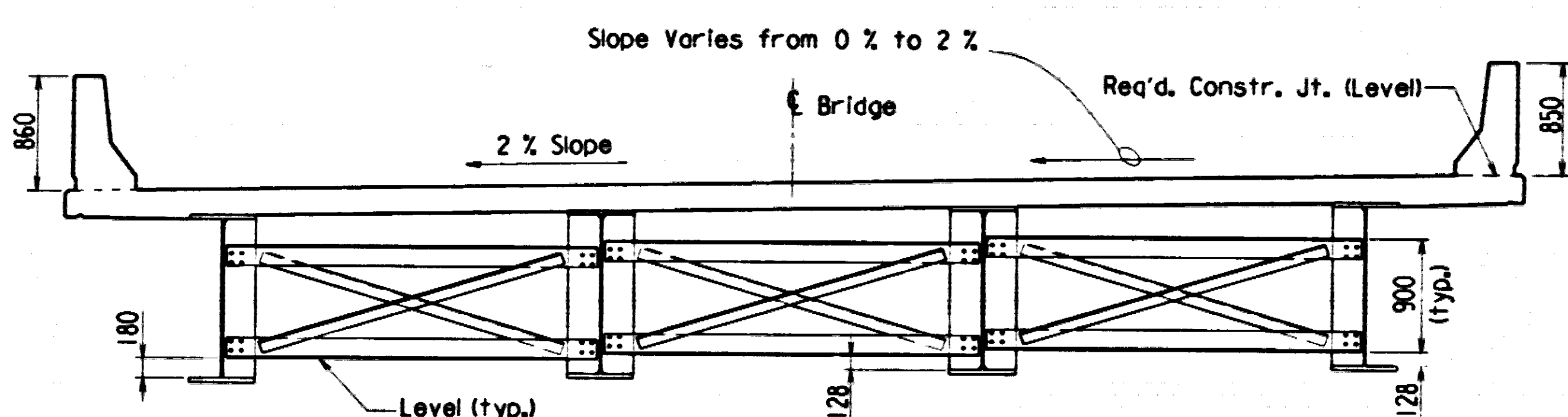
For Details not otherwise shown, see the applicable Roadway Sections on dwg. no. 39051. Slab Reinforcing is same as shown in TYPICAL ROADWAY SECTION NEAR MIDSPAN except HI-Chairs and Slab Bolsters in center bay vary in height with roadway slope.



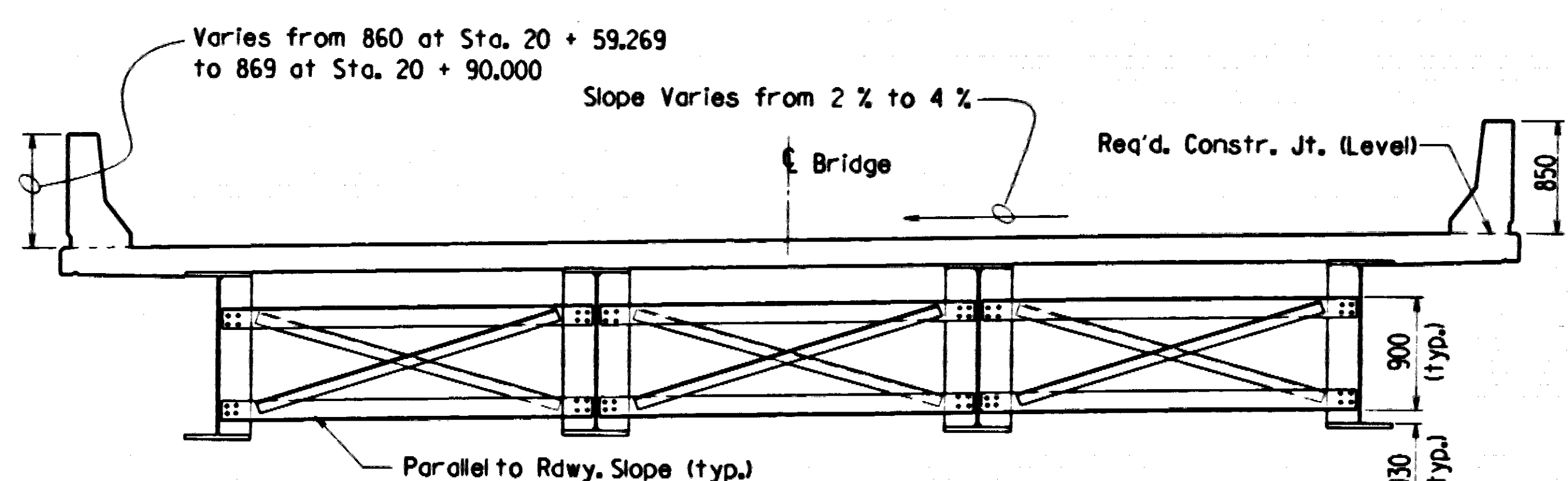
STA. 19+88.000 TO STA. 20+28.500



STA. 20+28.500 TO STA. 20+43.858

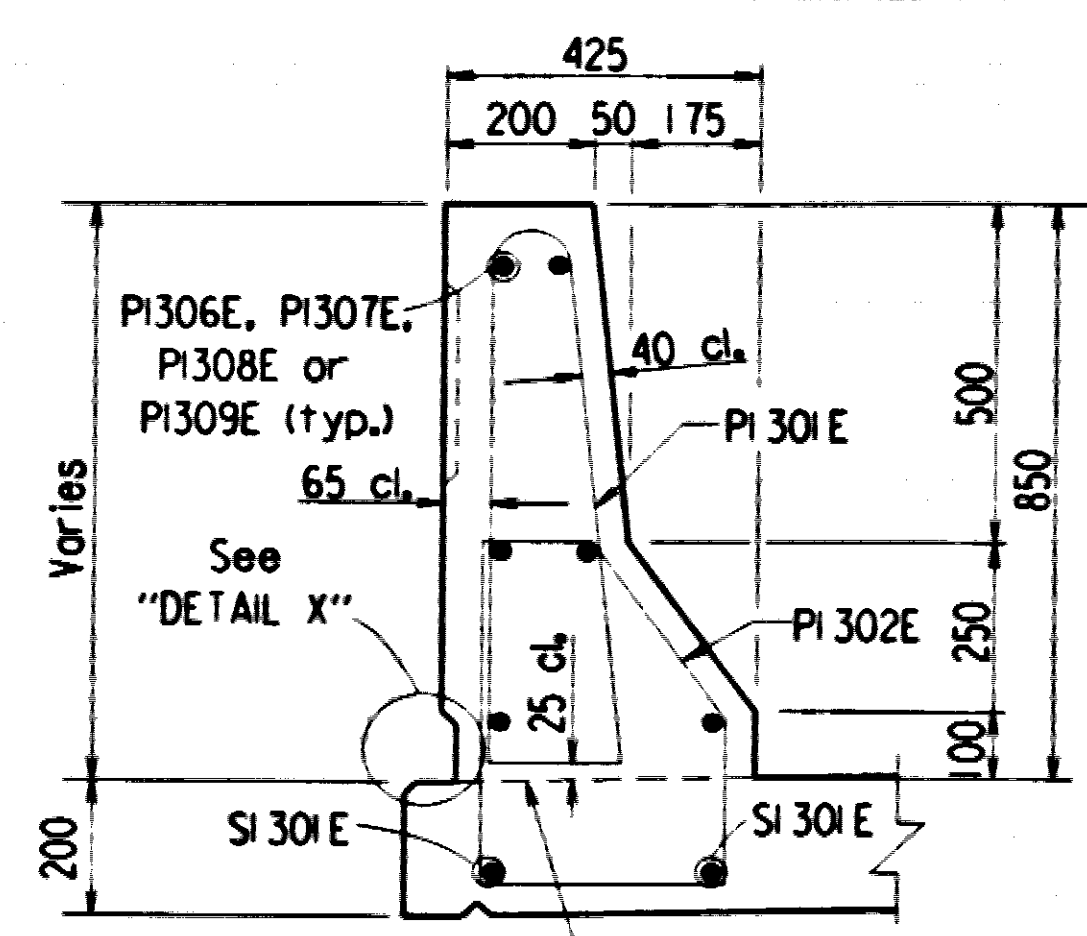


STA. 20+43.858 TO STA. 20+59.269

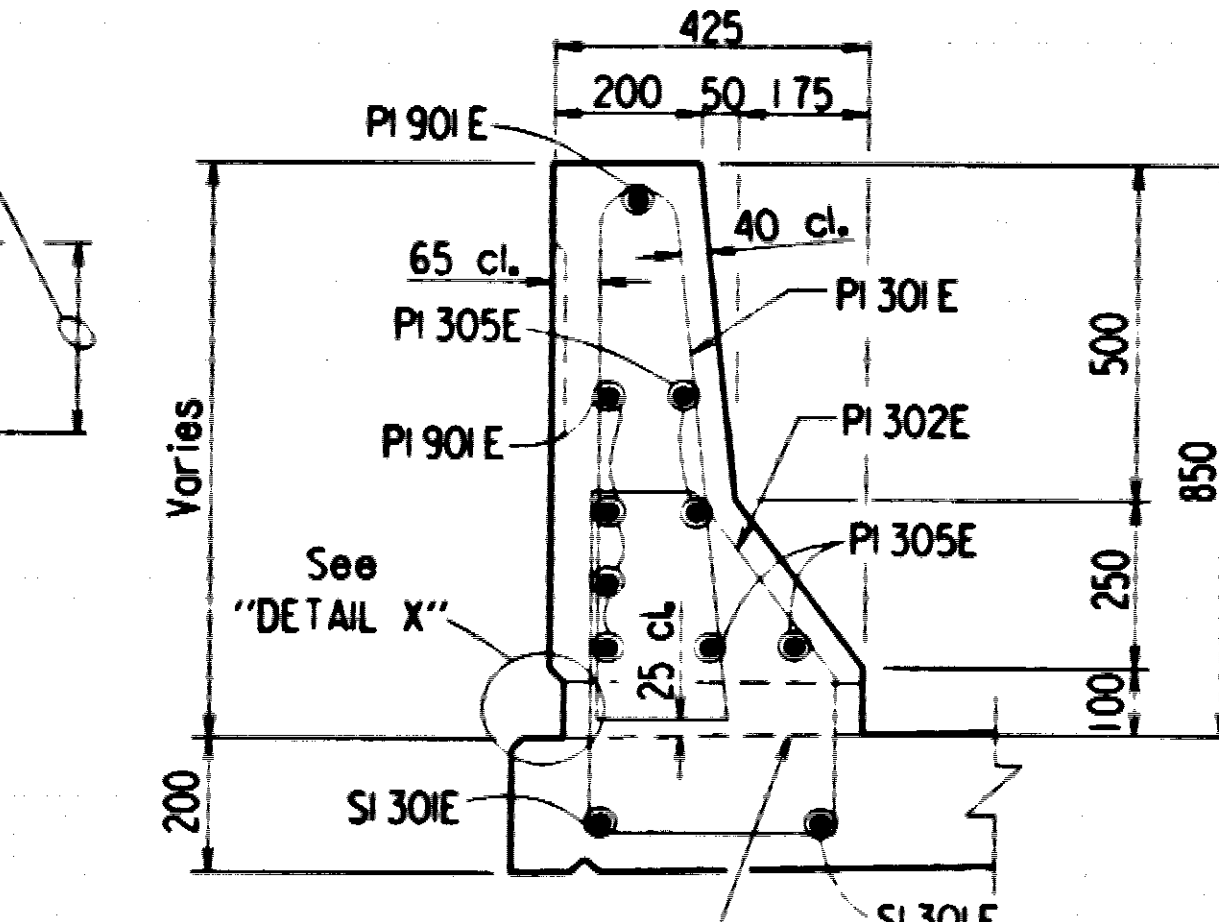


STA. 20+59.269 TO STA. 20+90.000 (END OF UNIT)

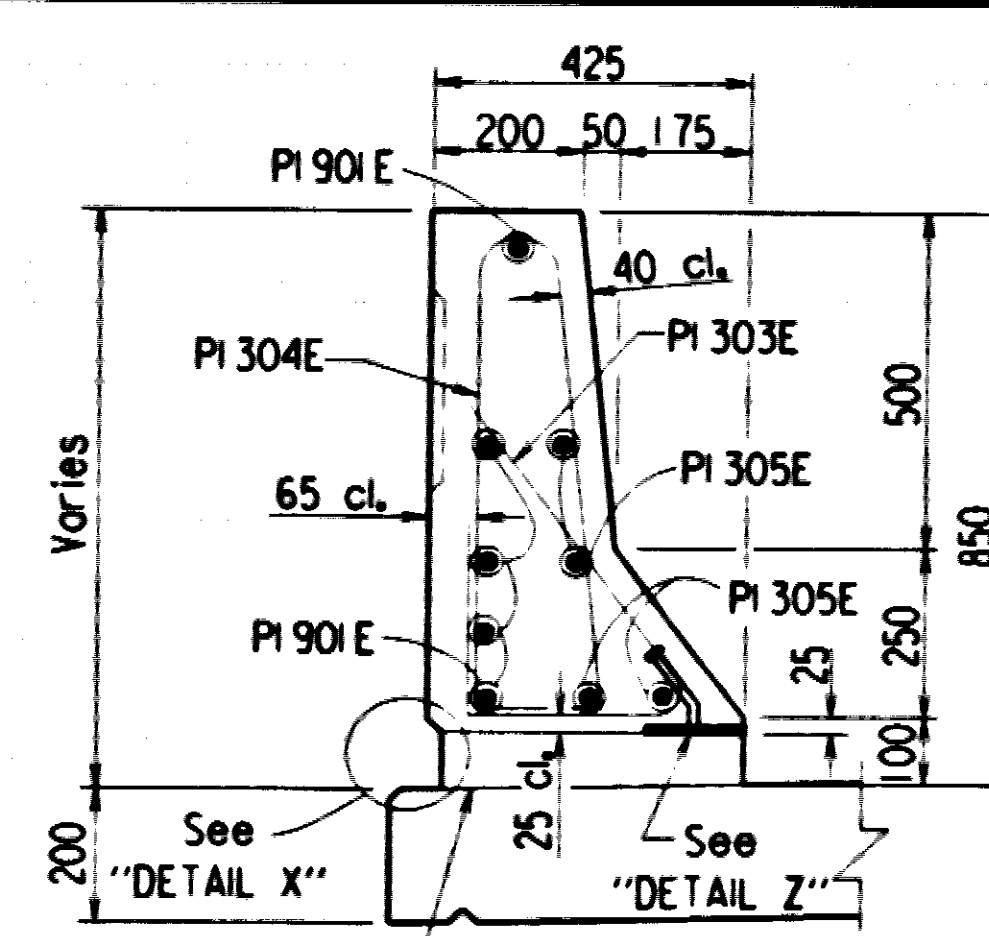
ROADWAY CROSS - SLOPE TRANSITION (LOOKING AHEAD)



SECTION B-B



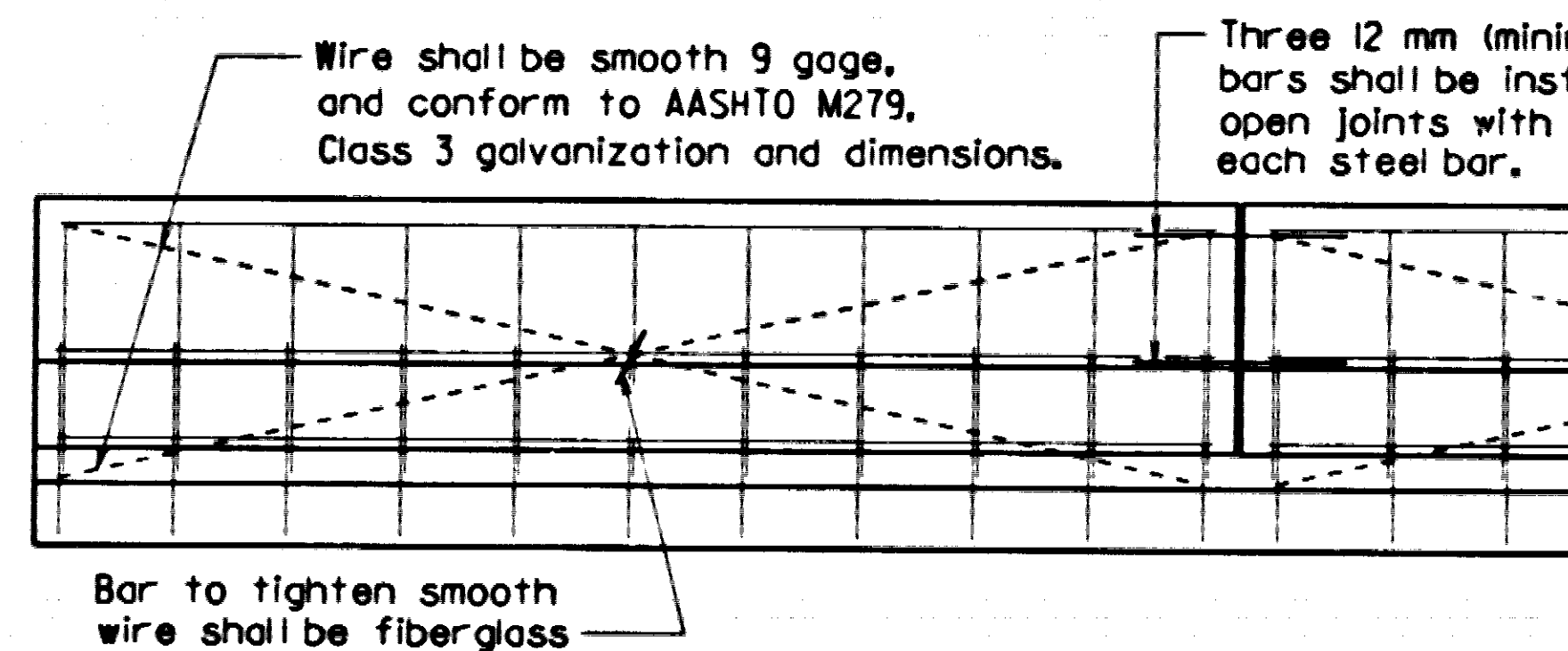
SECTION D-D



SECTION C-C

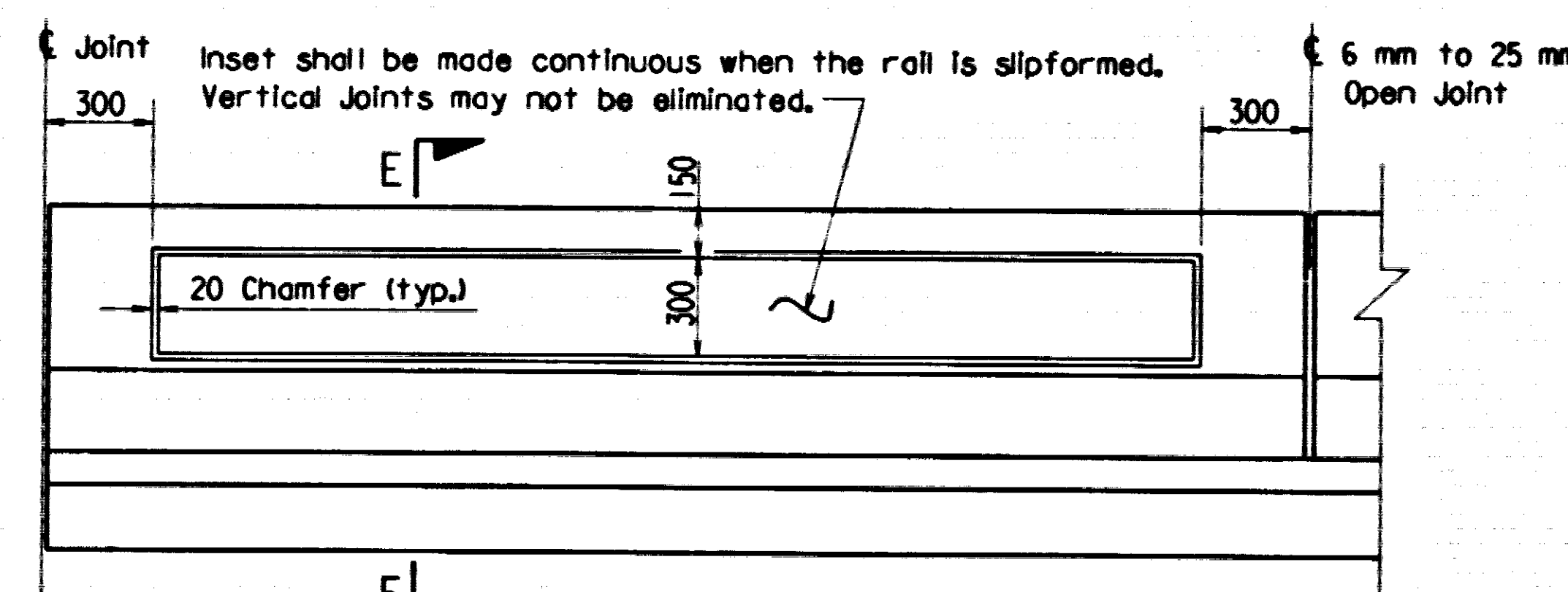
Notes

The Surfaces of the 9 mm Plates which will not be in contact with concrete shall be painted in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to Structural Steel or Class 5 (AE) Concrete Bridge.

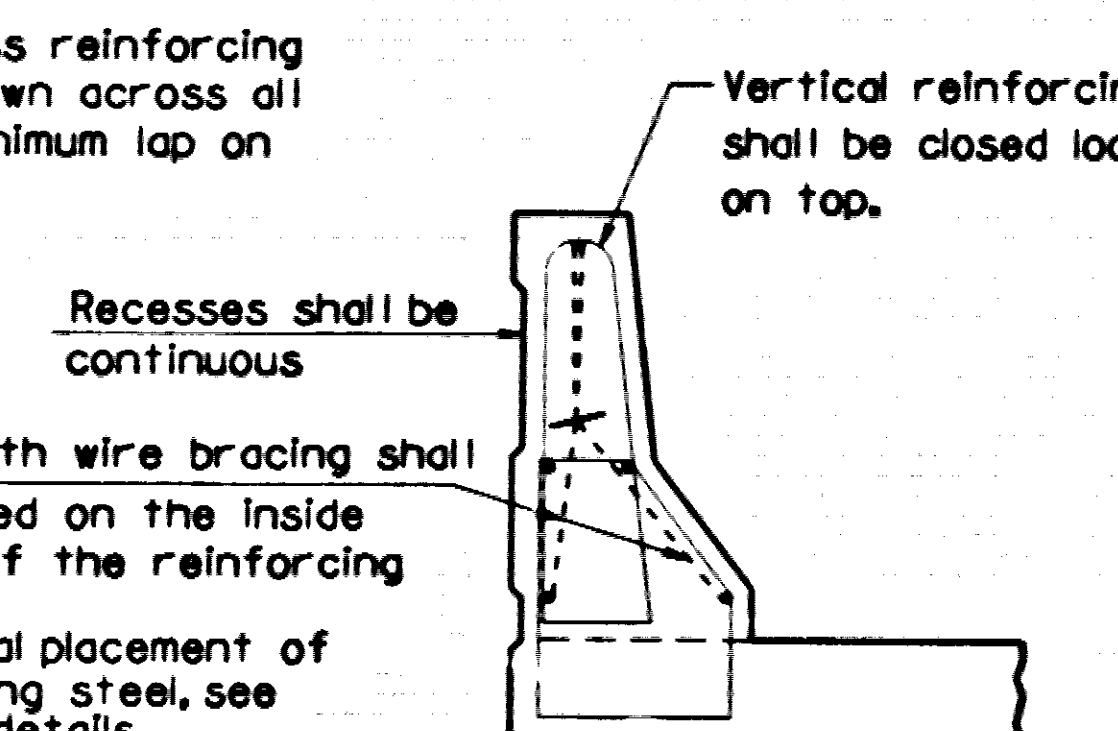


All panels shall be braced as shown to prevent racking. All open joints shall be sowed as soon as practical to a minimum width of 6 mm. To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

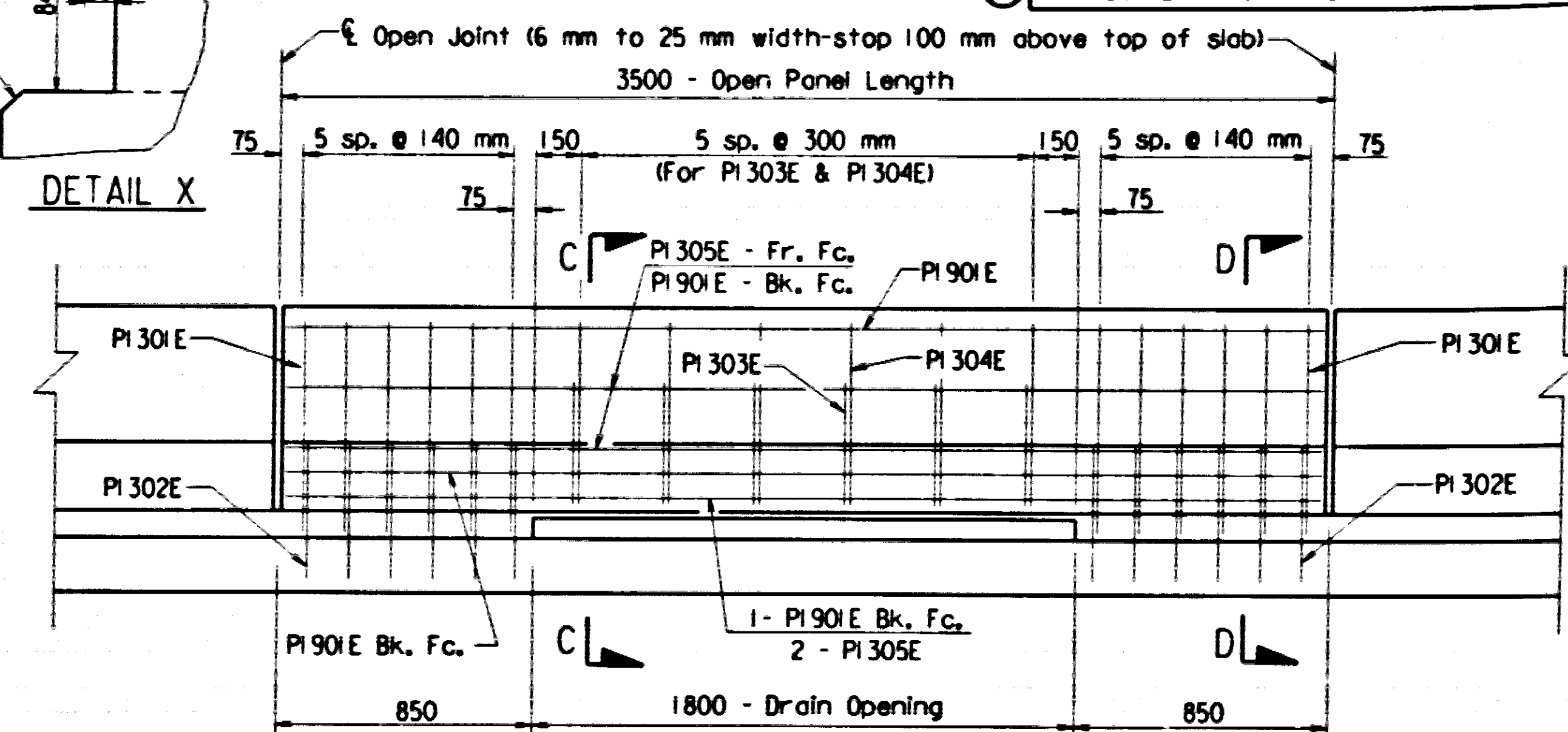


DETAILS OF PARAPET ENHANCEMENT

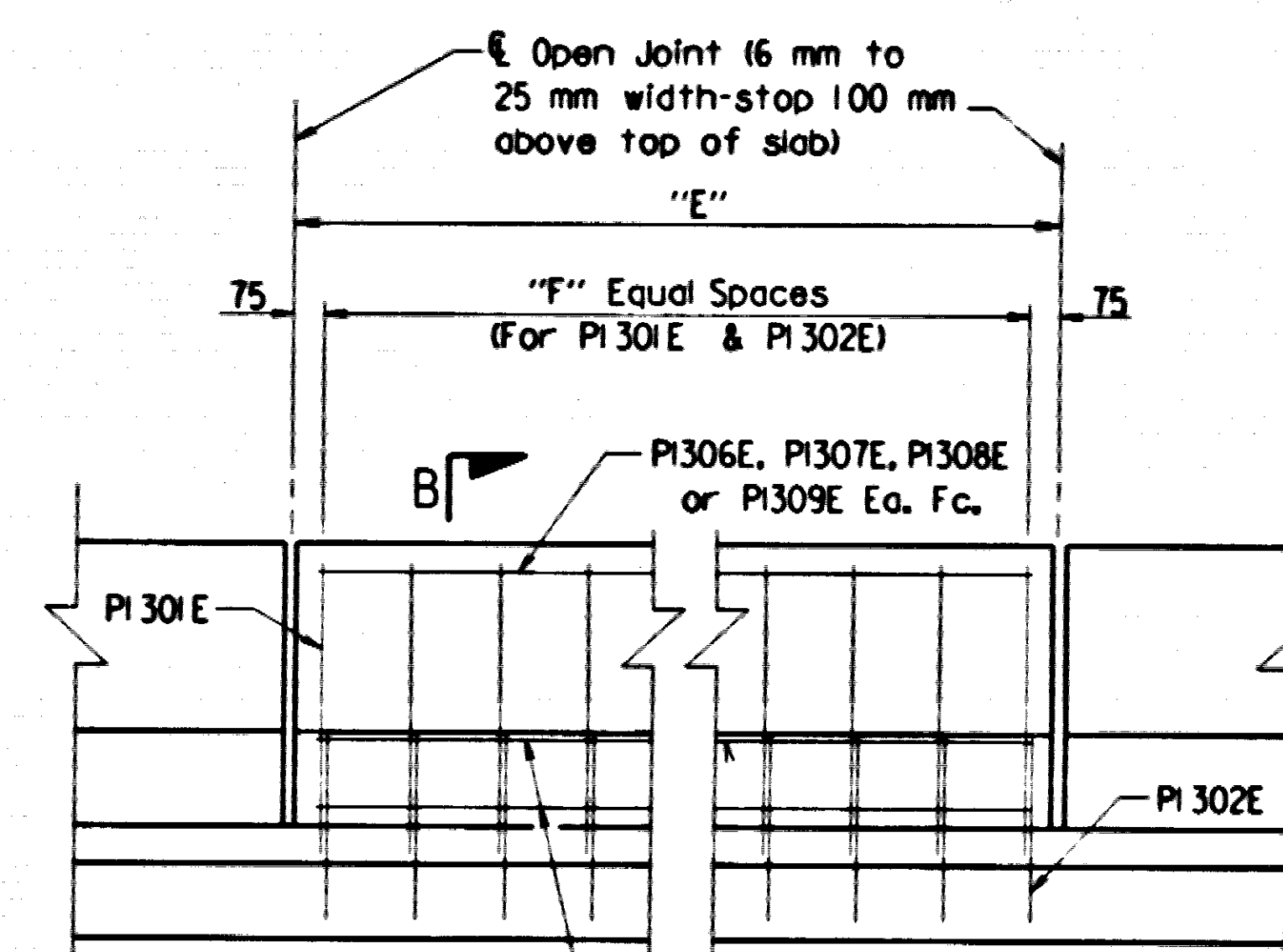


The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Exposed surfaces may be given a light brush finish or a Class 3, Textured Coating Finish, in place of Class 2, Rubbed Finish.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|--------|--------------------|-----------|--------------|
| | | | | 6 | ARK. | | 52 | 119 |
| | | | | JOB NO. | 060779 | | 52 | 119 |
| | | | | 06715 | | SPAN DETAILS 39052 | | |



TYPICAL OPEN PANEL PARAPET RAIL



TYPICAL CLOSED PANEL PARAPET RAIL

TABLE OF CLOSED PARAPET VARIABLES

| PANEL LENGTH "E" | "F" | LONGITUDINAL REINFORCING |
|------------------|-----|--------------------------|
| 2000 | 7 | PI 306E |
| 1500 | 5 | PI 307E |
| 3500 | 12 | PI 308E |
| 4000 | 13 | PI 309E |

ALTERNATE NOS. 1 & 2

(SHEET 2 OF 6)

DETAILS OF

102 METER CONTINUOUS

PLATE GIRDER UNIT

SALINE RIVER

ROUTE 229 SEC. 5

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 02/20/97

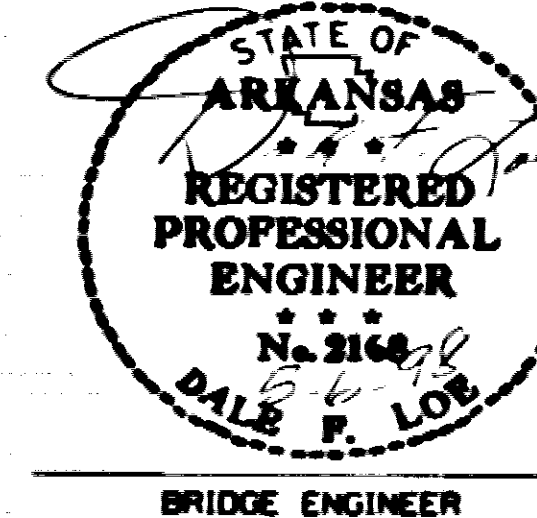
CHECKED BY: AMS DATE: 6/16/97

DESIGNED BY: AMS DATE: 12/11/96

BRIDGE NO. 06715 DRAWING NO. 39052

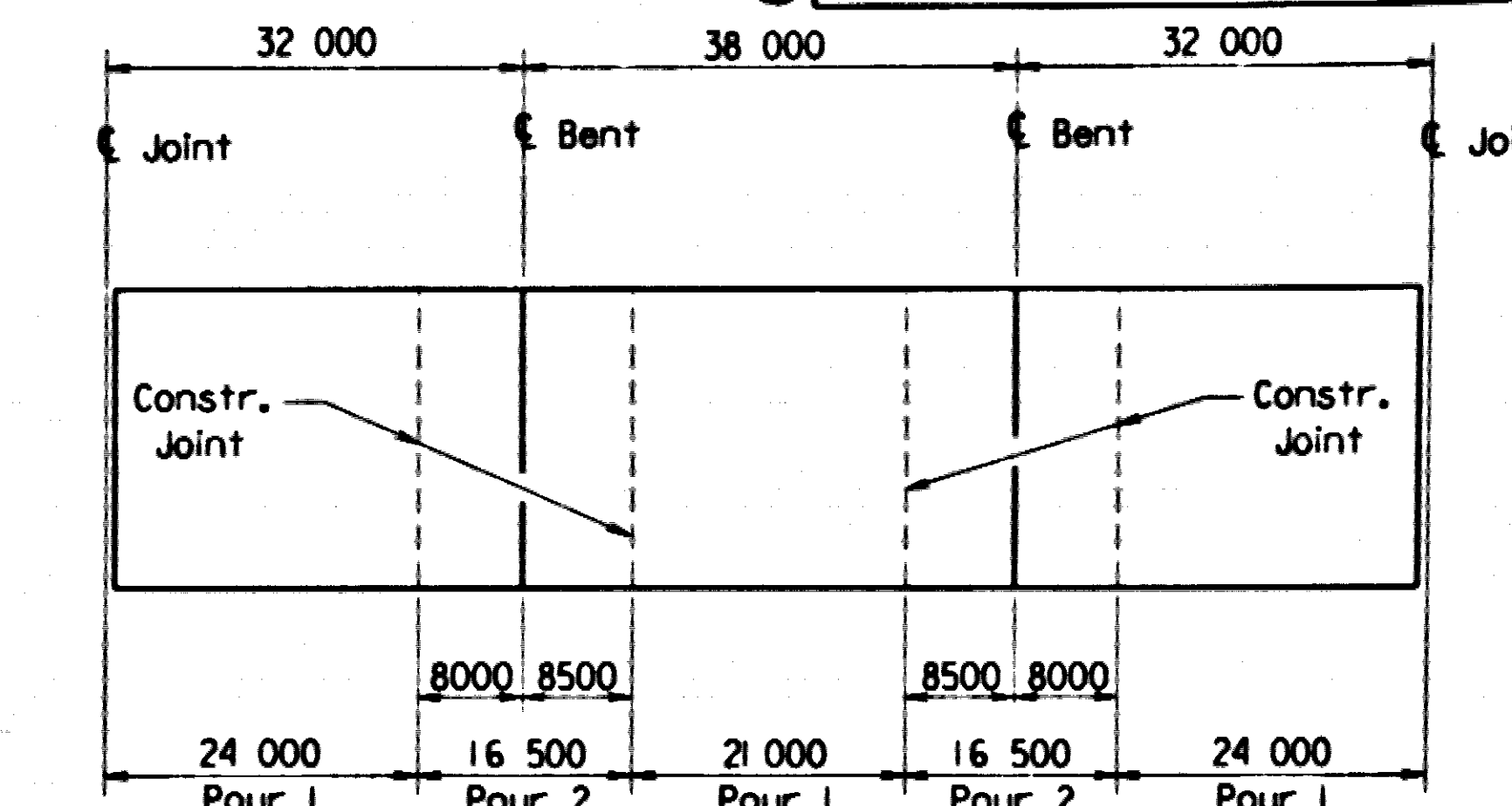
BR060779XLS12

MICROFILMED
AUG 3 1 1998

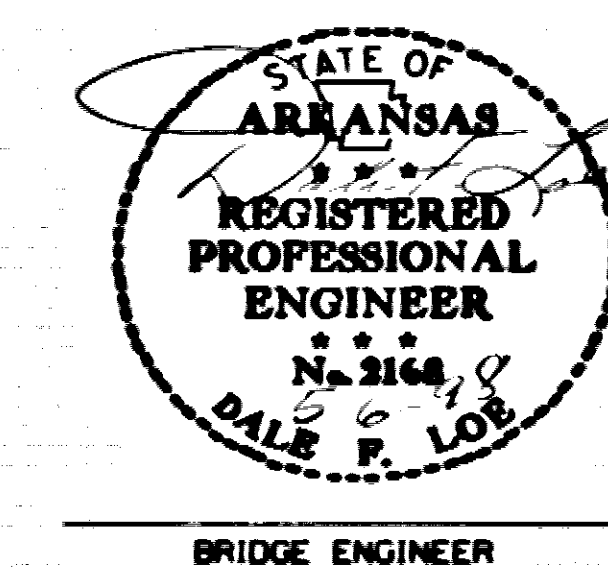
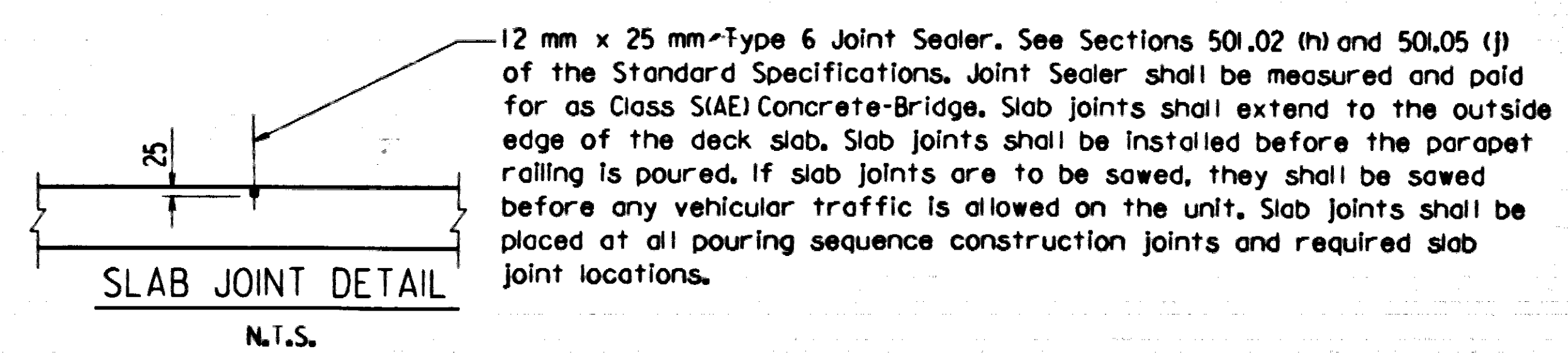
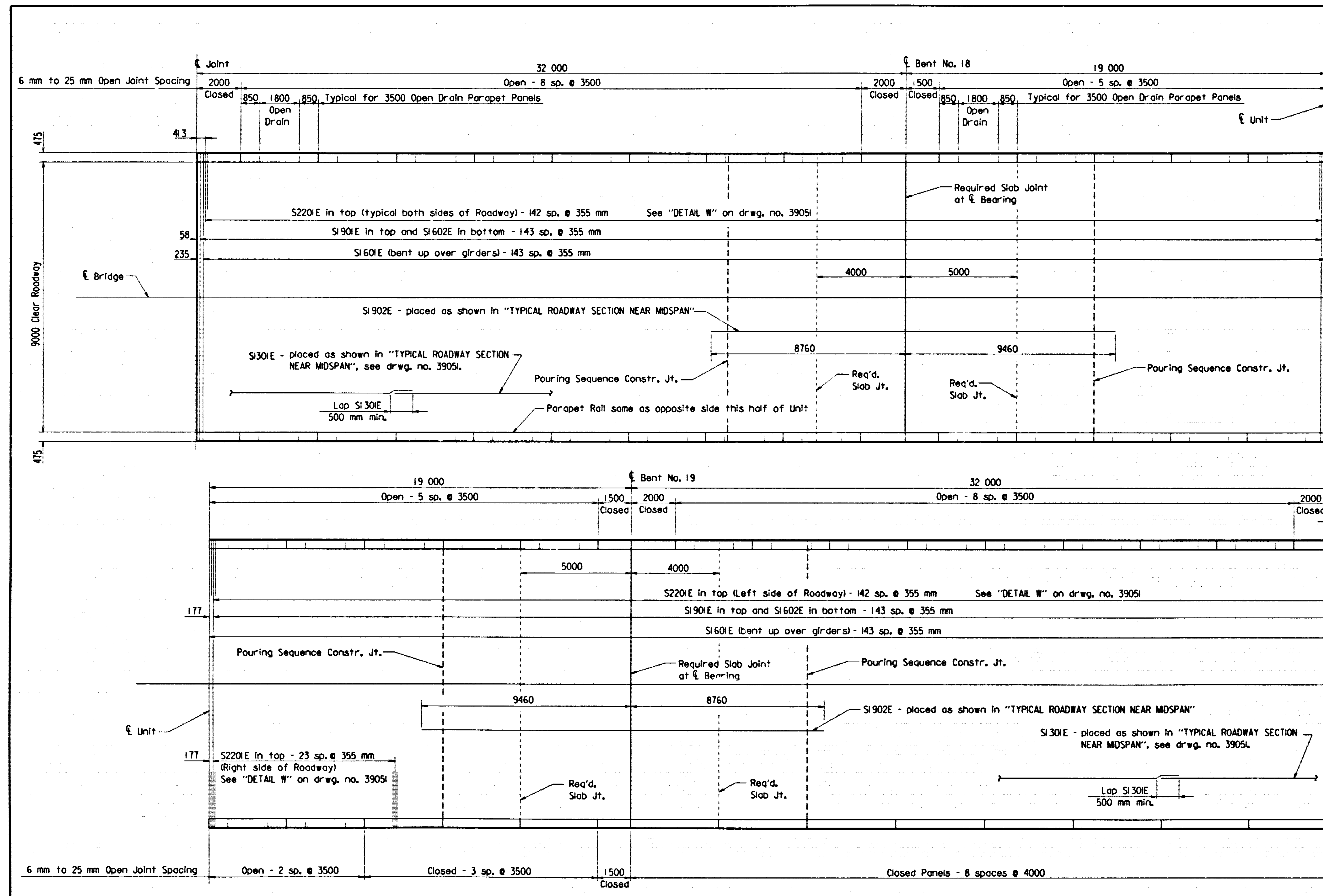


| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|-----------|--------------|
| | | | | 6 | ARK. | 060779 | 53 | 119 |
| | | | | | | | | |

JOB NO. 06715 SPAN DETAILS 39053



Notes:
 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 shown.

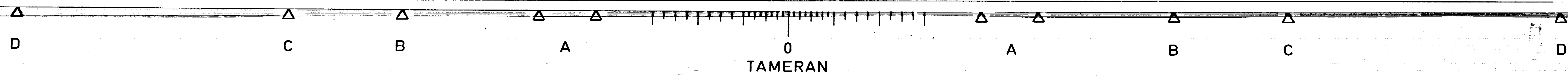


ALTERNATE NOS. 1 & 2
 (SHEET 3 OF 6)
 DETAILS OF
 102 METER CONTINUOUS
 PLATE GIRDER UNIT
 SALINE RIVER

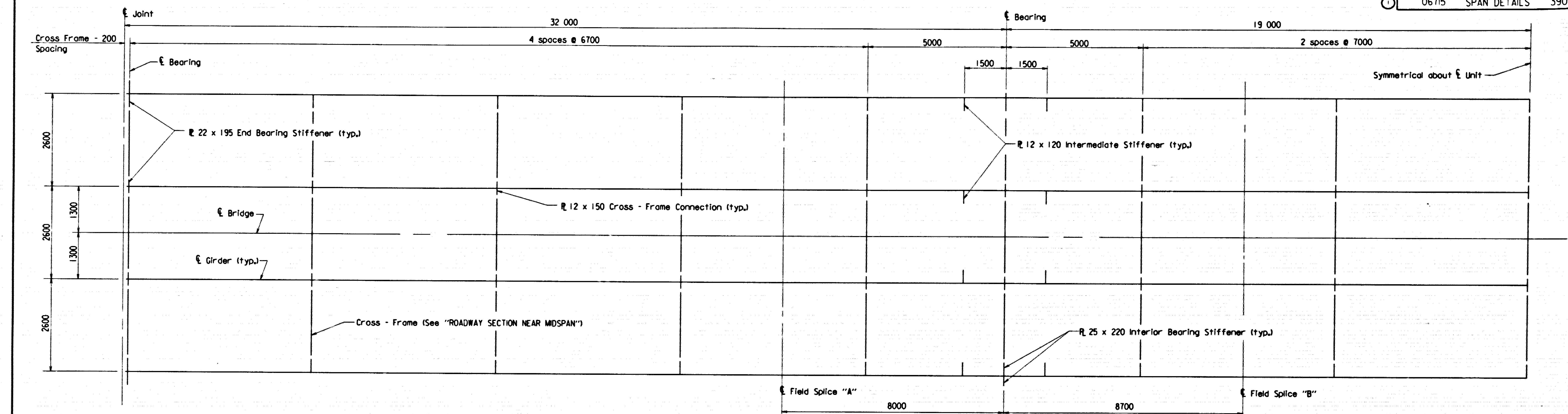
ROUTE 229 SEC. 5
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 02/20/97
 CHECKED BY: AMS DATE: 6/6/97
 DESIGNED BY: AMS DATE: 12/11/96
 BRIDGE NO. 06715 DRAWING NO. 39053

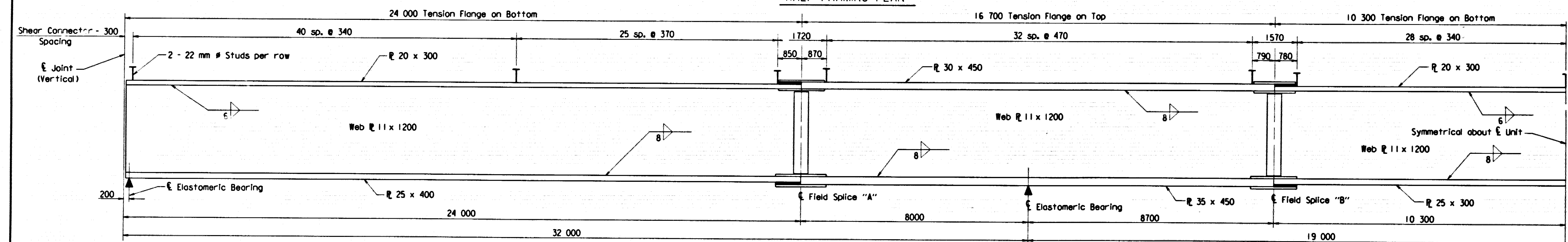
MICROFILMED
 AUG 3 1 1998



| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|----------------|-----------------|----------------|------------------------|--------------|--------------------|--------------|-----------------|
| | | | | 6 | ARK. | | 54 | 119 |
| | | | | JOB NO. | 060779 | | 54 | 119 |
| | | | | 06715 | SPAN DETAILS | | 39054 | |

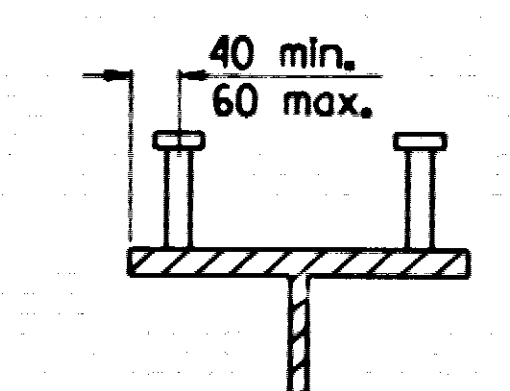


HALF FRAMING PLAN



TYPICAL HALF CONTINUOUS PLATE GIRDER ELEVATION

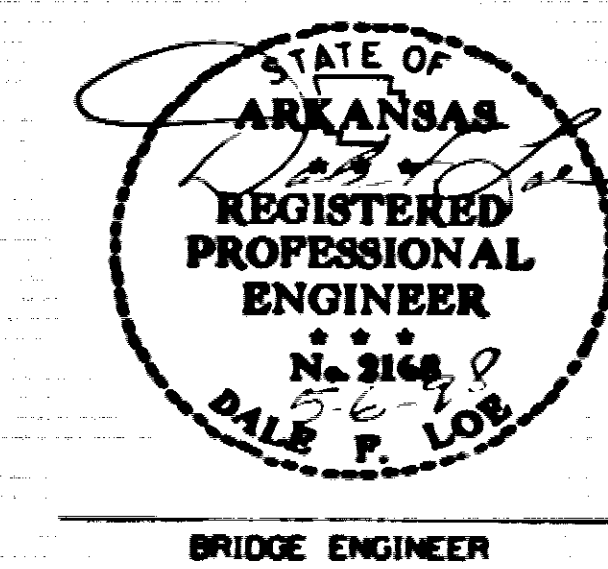
Notes For Details of Elastomeric Bearings, see Drwg. No. 39058.



Stud Shear Connectors shown shall be 22 mm # 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 # studs may be used in place of the 22 mm # studs shown, at the ratio of 1.36 - 20 mm # studs in place of one 22 mm # stud. 22 mm # studs will be used as basis for measurement of structural steel in shear connectors. Maximum stud spacing = 600 mm.

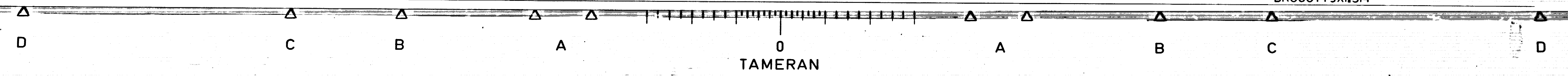
SHEAR CONNECTOR DETAIL
N.T.S.

MICROFILMED
AUG 31 1998

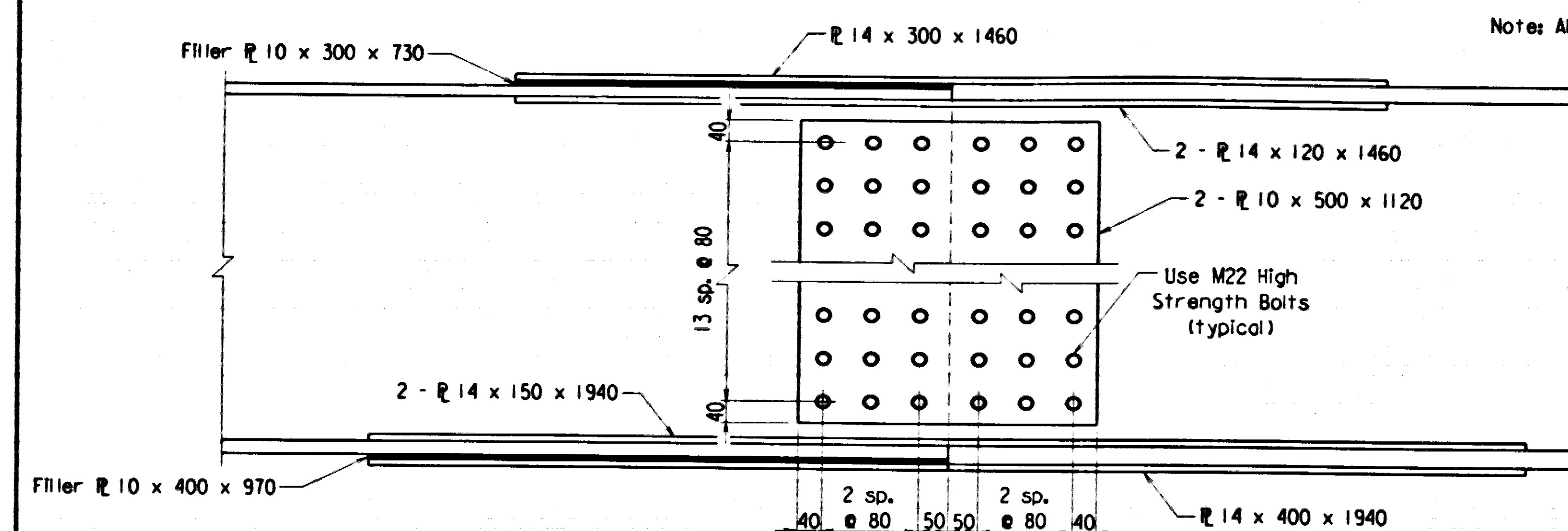


ALTERNATE NOS. 1 & 2
(SHEET 4 OF 6)
DETAILS OF
102 METER CONTINUOUS
PLATE GIRDER UNIT
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: TEB DATE: 02/20/97
CHECKED BY: AME DATE: 6/6/97
DESIGNED BY: AME DATE: 12/11/96
BRIDGE NO. 06715 DRAWING NO. 39054

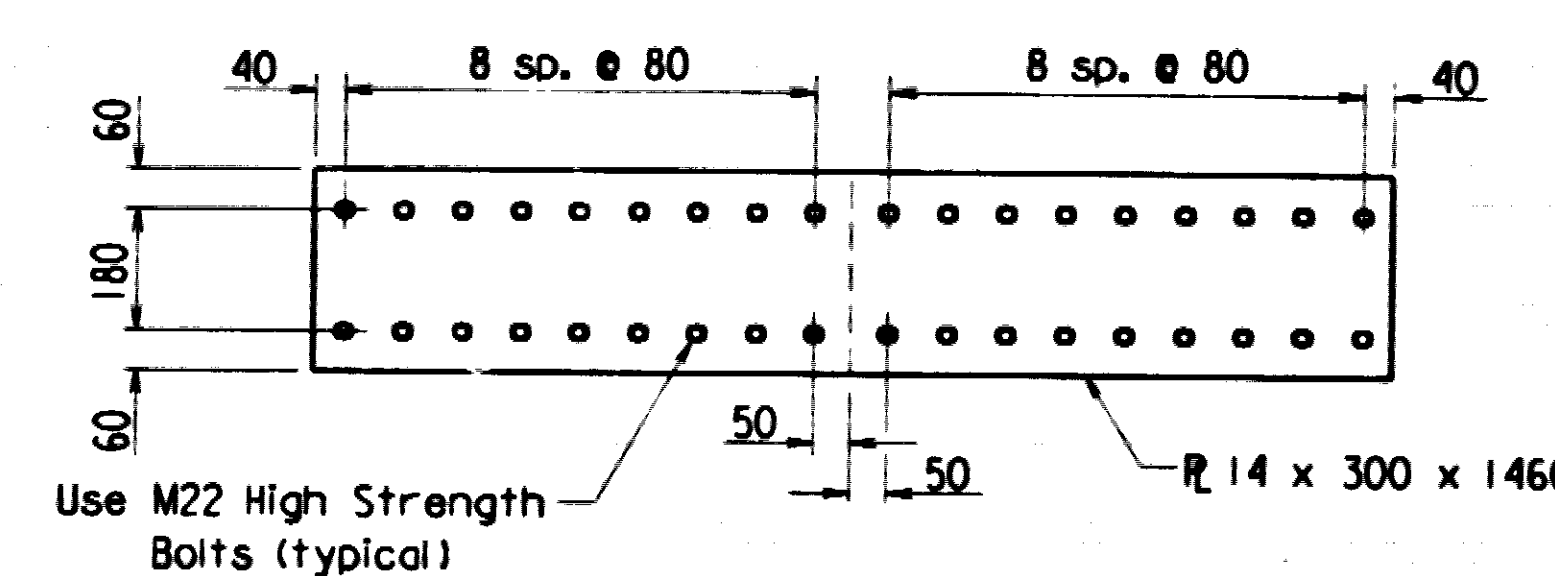
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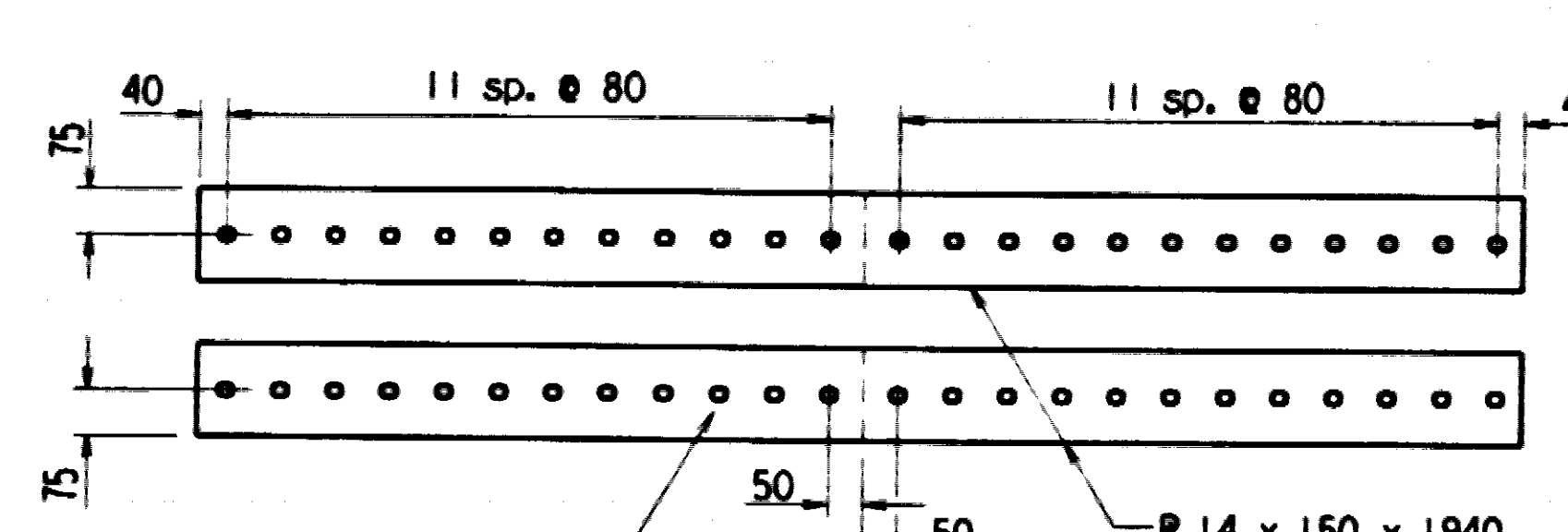
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|--------------|--------------|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 060779 | 55 | 119 |
| | | | | | | 06715 | SPAN DETAILS | 39055 |



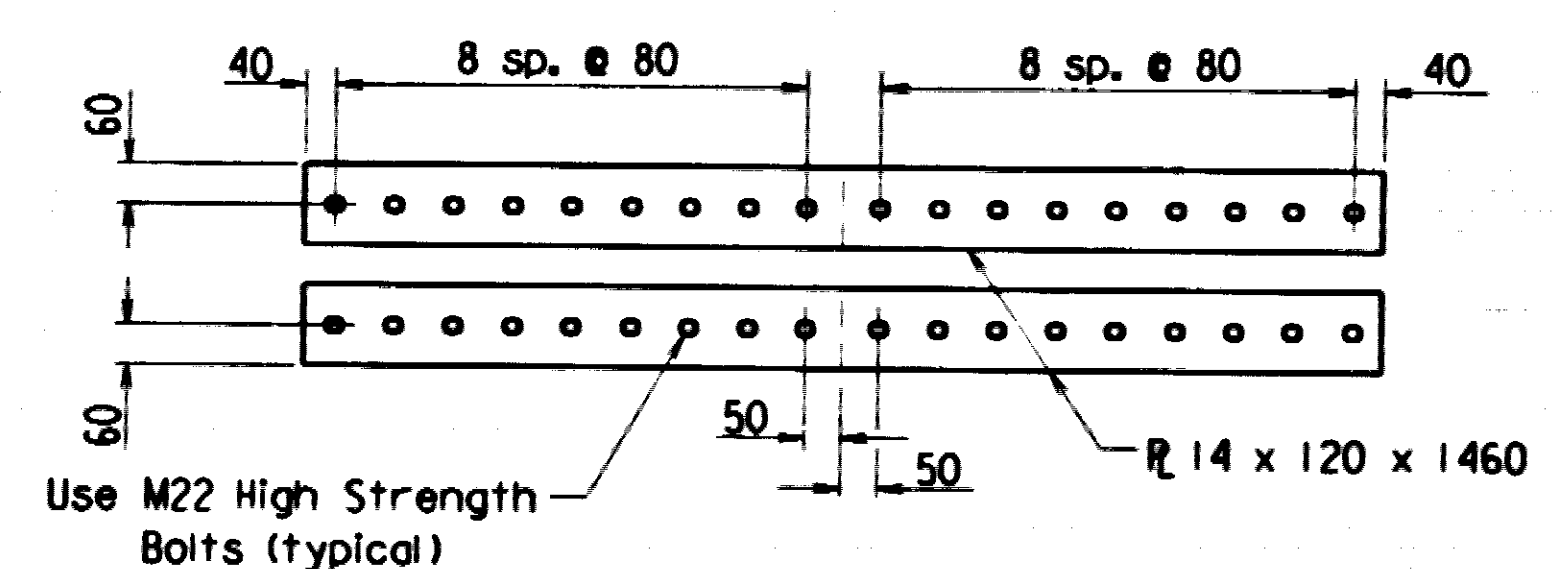
DETAILS OF FIELD SPLICE "A"



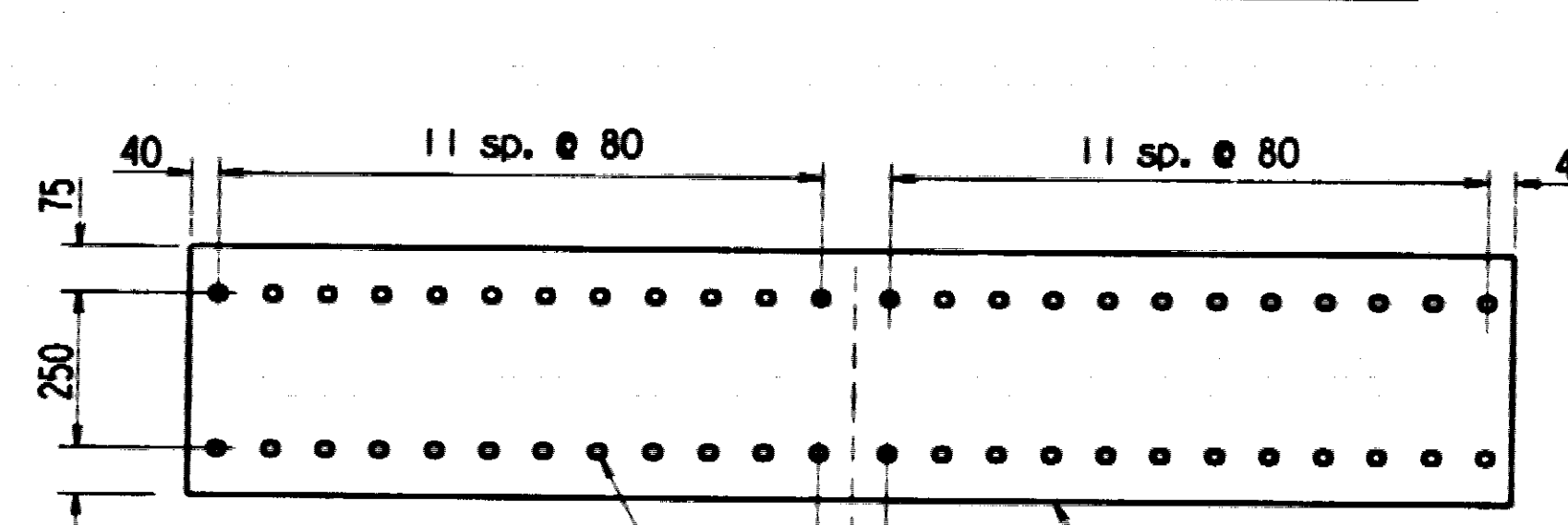
TOP FLANGE SPLICE PLATES ("A")



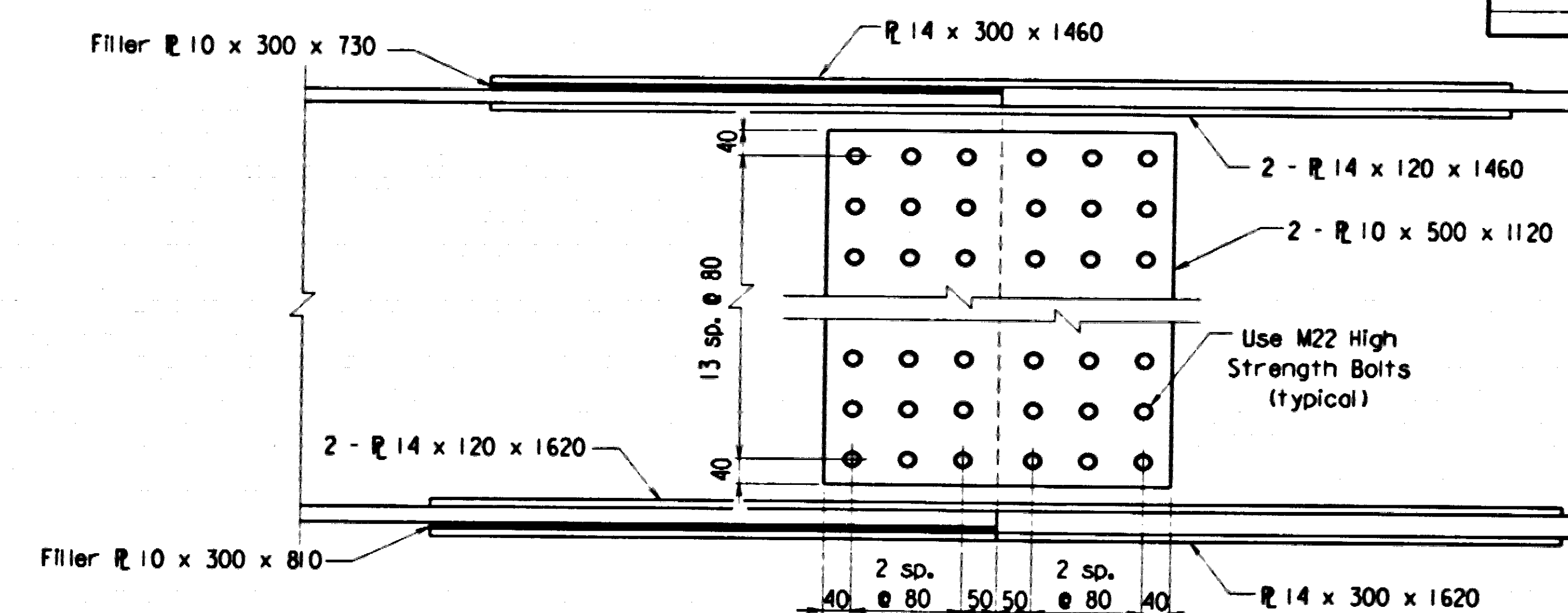
BOTTOM FLANGE SPLICE PLATES ("A")



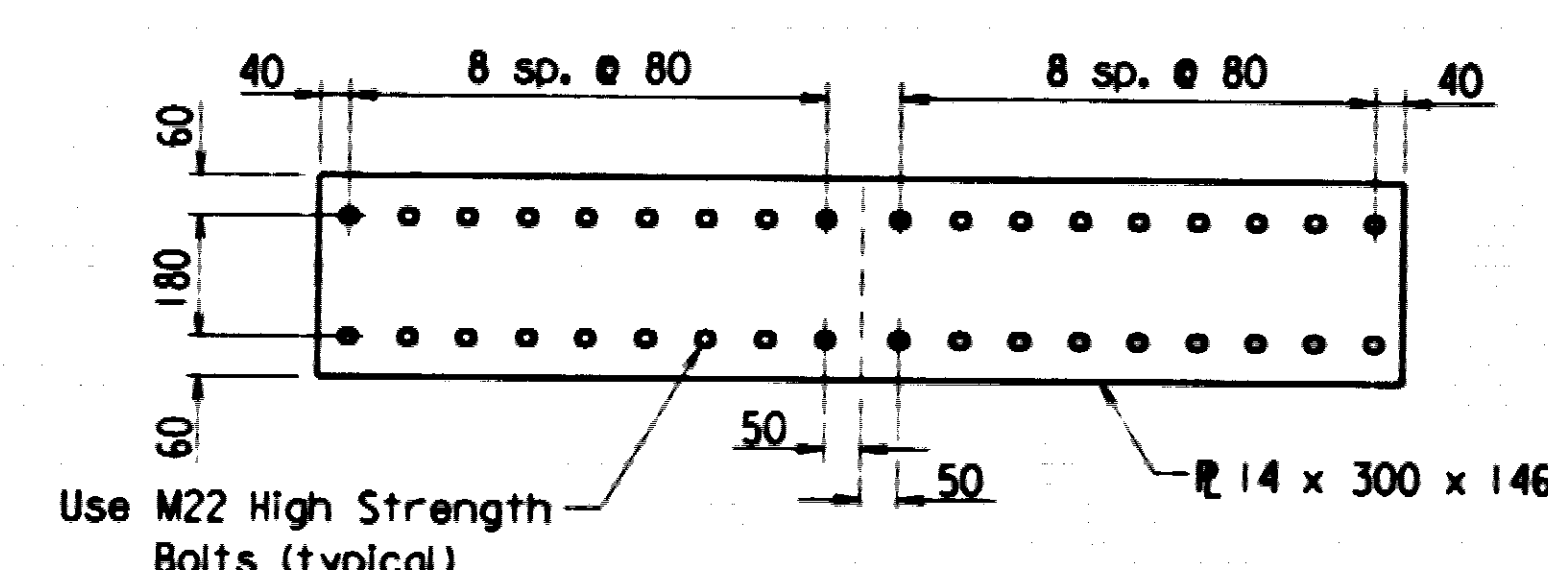
TOP FLANGE SPLICE PLATES ("A")



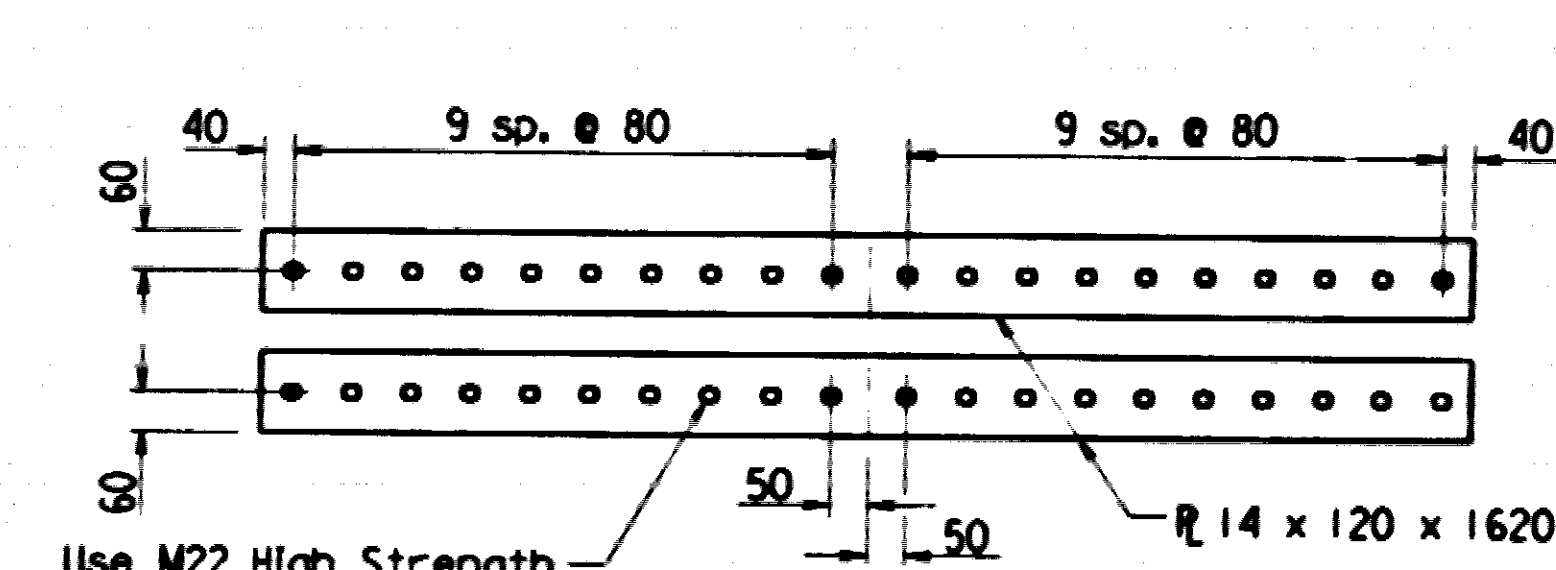
BOTTOM FLANGE SPLICE PLATES ("A")



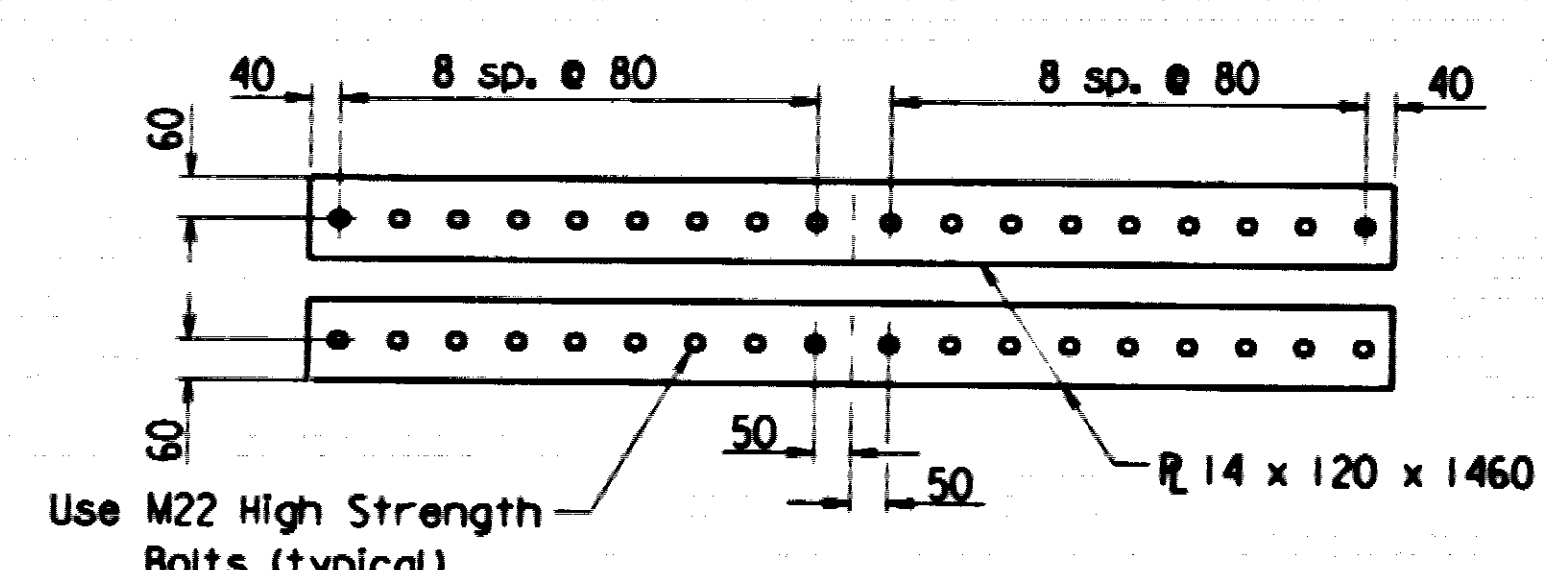
DETAILS OF FIELD SPLICE "B"



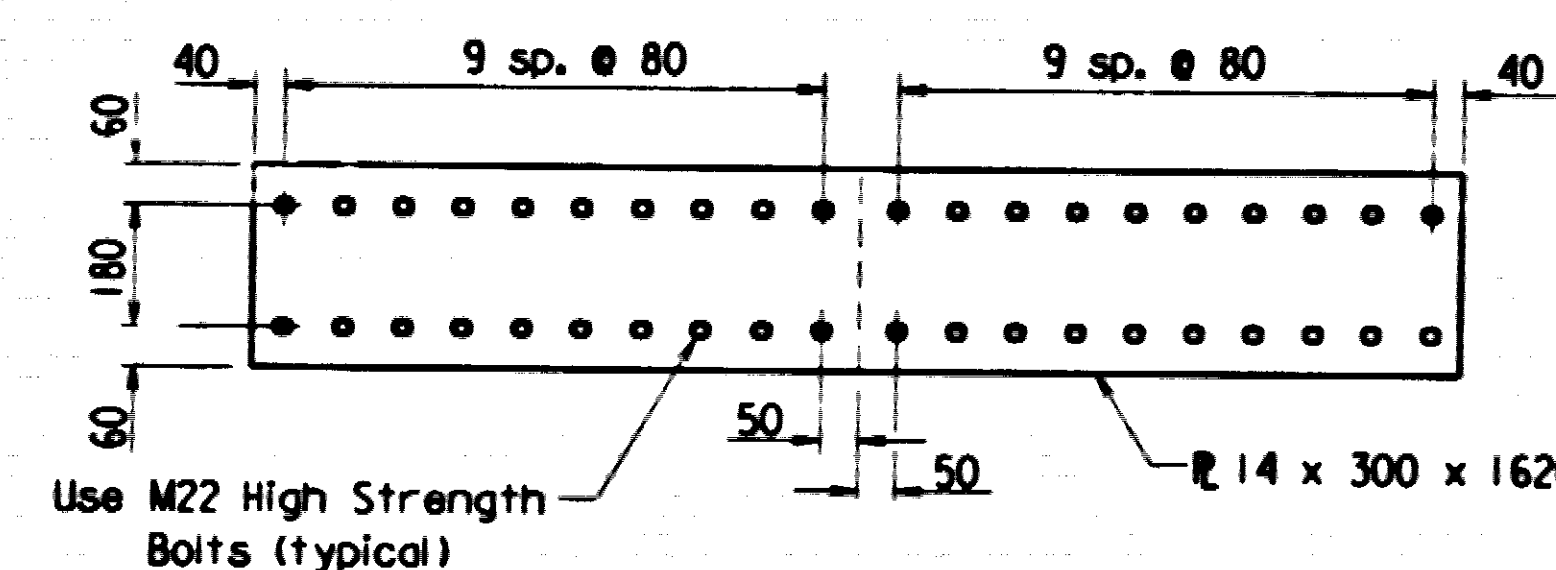
TOP FLANGE SPLICE PLATES ("B")



BOTTOM FLANGE SPLICE PLATES ("B")



TOP FLANGE SPLICE PLATES ("B")

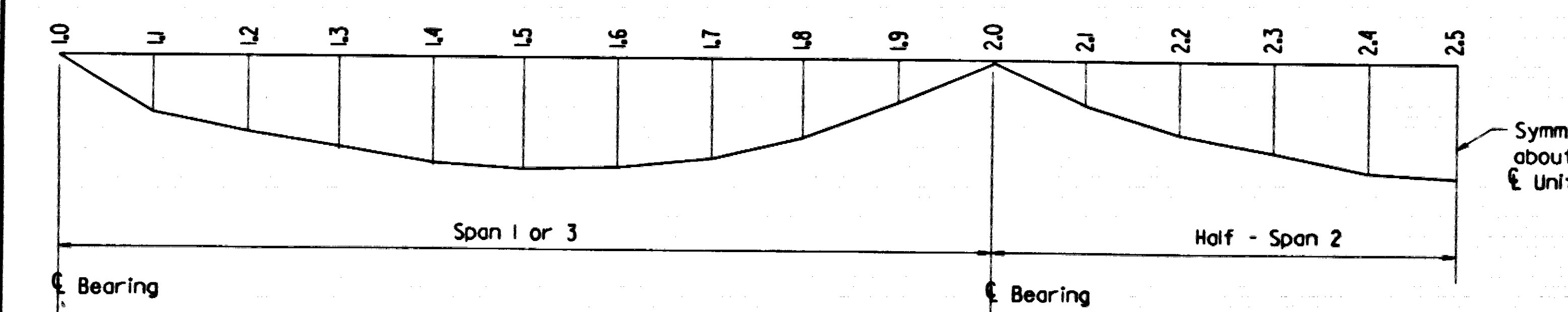


BOTTOM FLANGE SPLICE PLATES ("B")

DEAD LOAD DEFLECTIONS (mm)

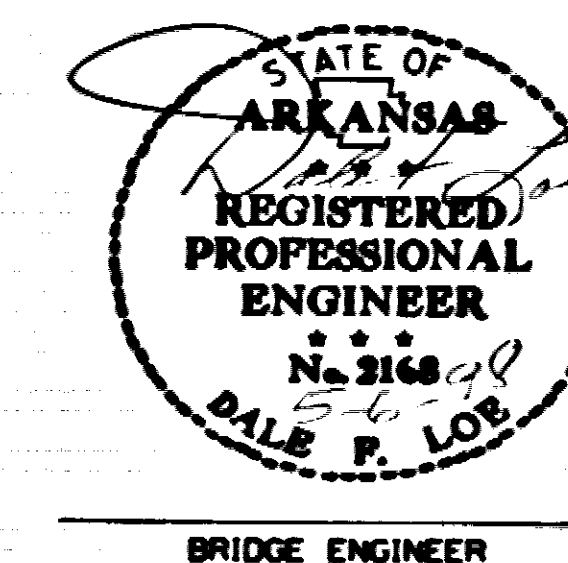
| Span Point | 1.0 | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 | 2.0 | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 |
|------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Interior Girder | | | | | | | | | | | | | | | | |
| Structural Steel | 0 | 3 | 6 | 8 | 9 | 9 | 7 | 5 | 3 | 1 | 0 | 0 | 2 | 3 | 5 | 5 |
| Structural Steel, and Slab | 0 | 20 | 36 | 48 | 52 | 50 | 42 | 30 | 17 | 6 | 0 | 2 | 10 | 21 | 30 | 33 |
| Structural Steel, Slab and Parapet | 0 | 22 | 40 | 53 | 58 | 55 | 47 | 33 | 19 | 7 | 0 | 3 | 12 | 25 | 34 | 38 |
| Exterior Girder | | | | | | | | | | | | | | | | |
| Structural Steel | 0 | 3 | 6 | 8 | 9 | 8 | 7 | 5 | 3 | 1 | 0 | 0 | 1 | 3 | 4 | 5 |
| Structural Steel, and Slab | 0 | 18 | 33 | 44 | 48 | 46 | 38 | 28 | 16 | 6 | 0 | 2 | 10 | 19 | 27 | 30 |
| Structural Steel, Slab and Parapet | 0 | 20 | 37 | 49 | 53 | 51 | 43 | 31 | 18 | 6 | 0 | 2 | 12 | 23 | 32 | 35 |

Notes
Camber for Dead Load Deflection ± 6 mm Tolerance. Deflections shown are from a chord from Centerline Bearing to Centerline Bearing.



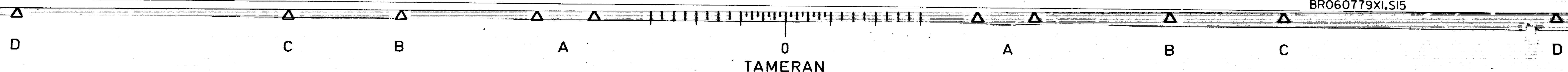
DEAD LOAD DEFLECTION DIAGRAM
N.T.S.

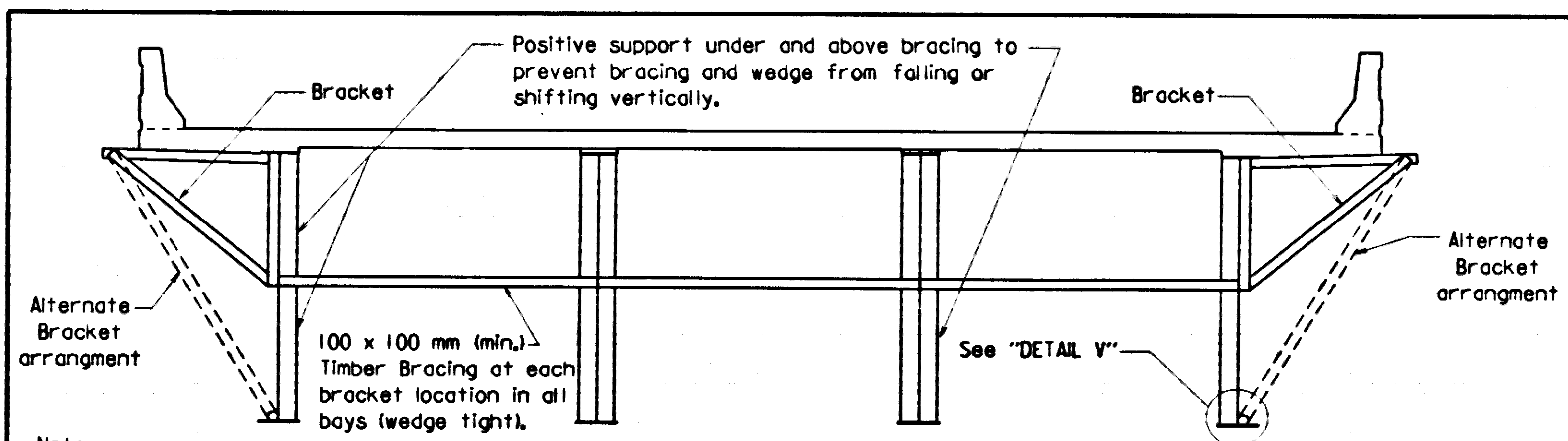
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AUG 31 1990



ALTERNATE NOS. 1 & 2
(SHEET 5 OF 6)
DETAILS OF
102 METER CONTINUOUS
PLATE GIRDER UNIT
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: TEB DATE: 02/20/97
CHECKED BY: AMS DATE: 4/4/97
DESIGNED BY: AMS DATE: 12/11/96
BRIDGE NO. 06715 DRAWING NO. 39055

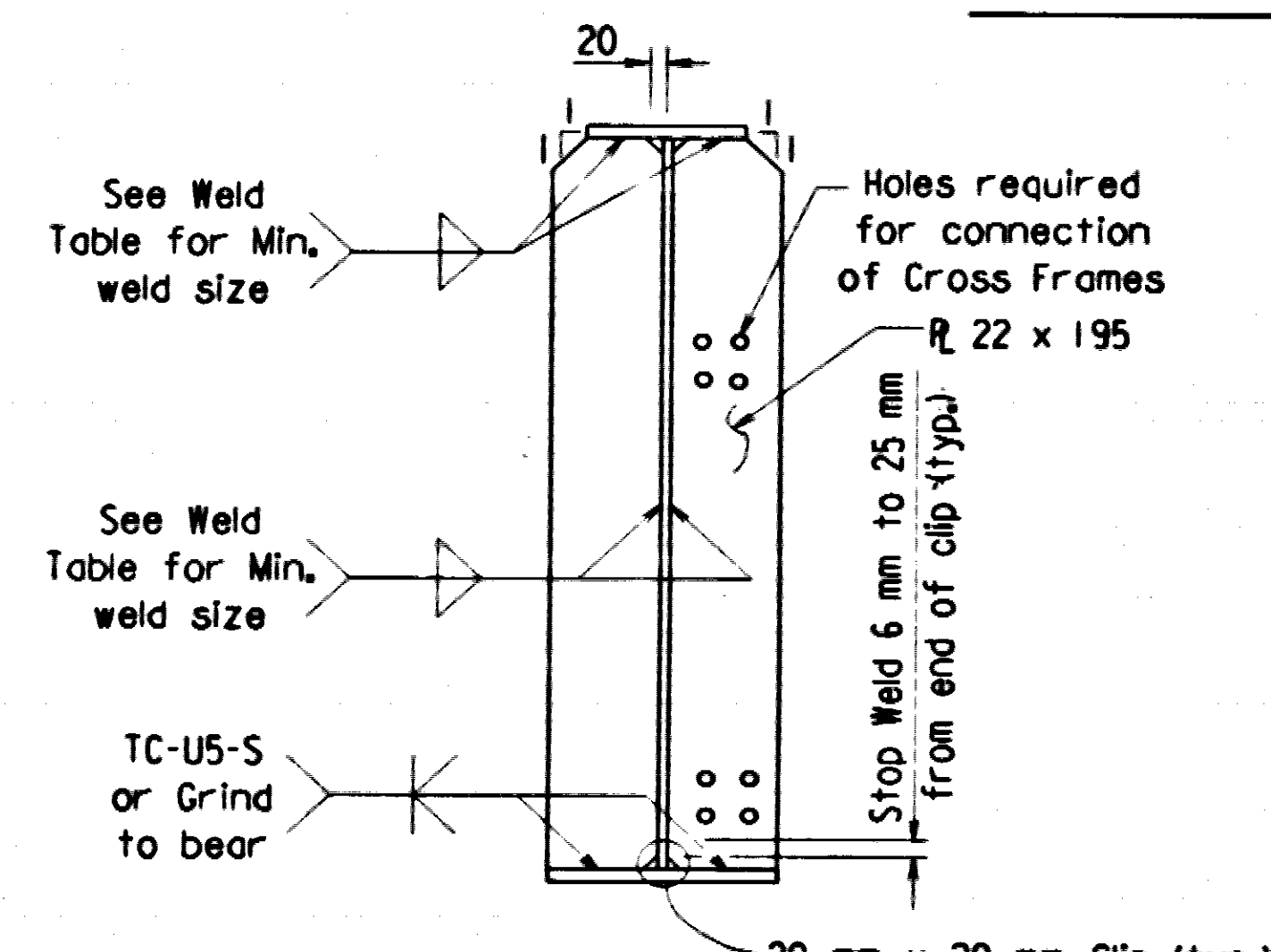
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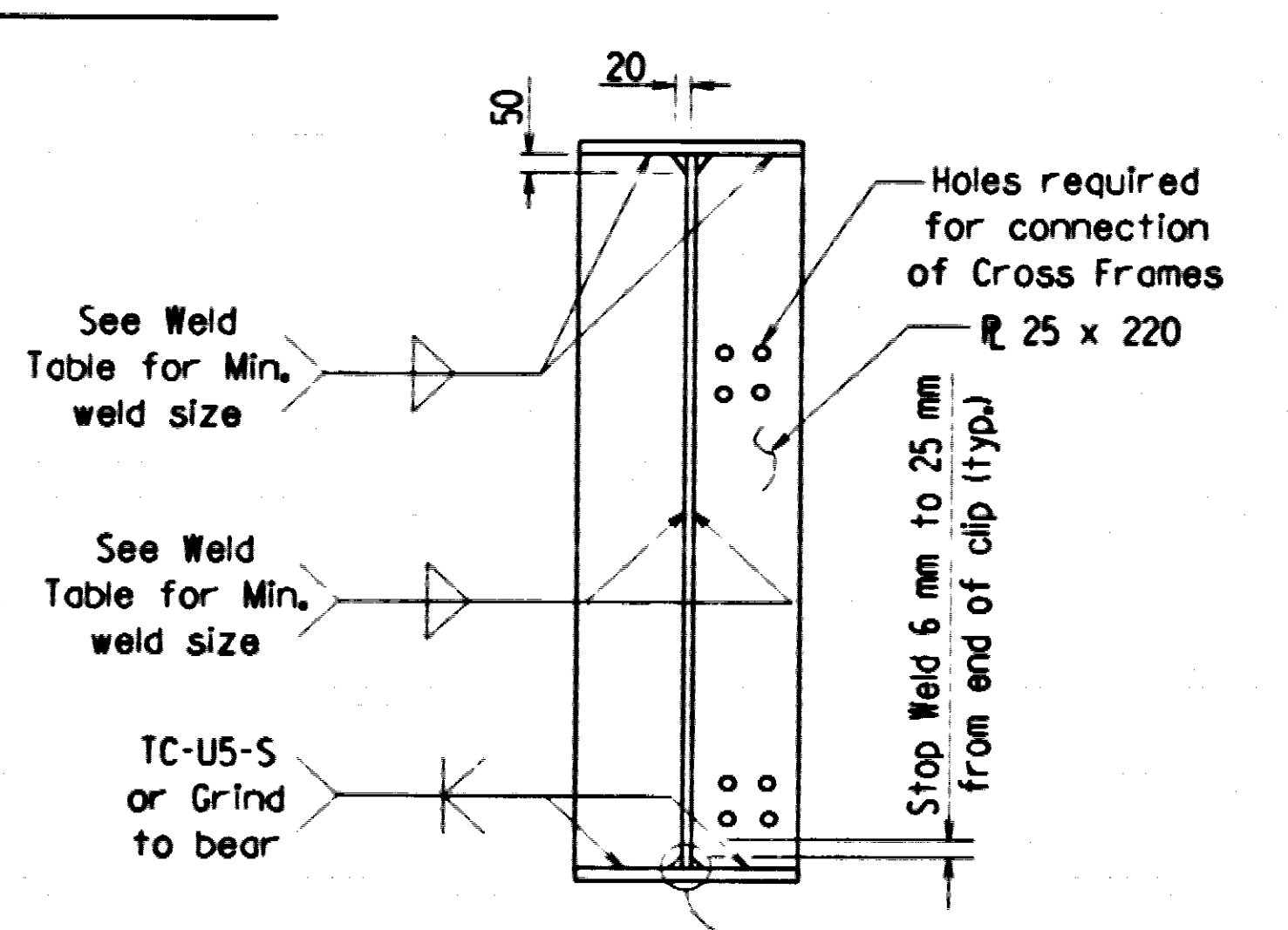


Notes:
If a transverse finishing machine is used, the rail shall be supported directly over the exterior girders, or as an alternate, the rail may be supported by the overhang brackets if the above strutting system is used. The strutting system may be omitted if 12 x 120 mm web stiffeners are welded to the insides of the exterior girders at the location of each bracket or if the alternate bracket arrangement shown above is used. The Alternate Bracket arrangement shall extend down to the junction of the web and bottom flange. The stiffener shall conform to the details for intermediate stiffener plates. No direct payment will be made for brackets, timber bracing, supports, or welded stiffeners. Payment shall be subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, Gr. 345W)". This system shall be used on the 102 m Unit only.

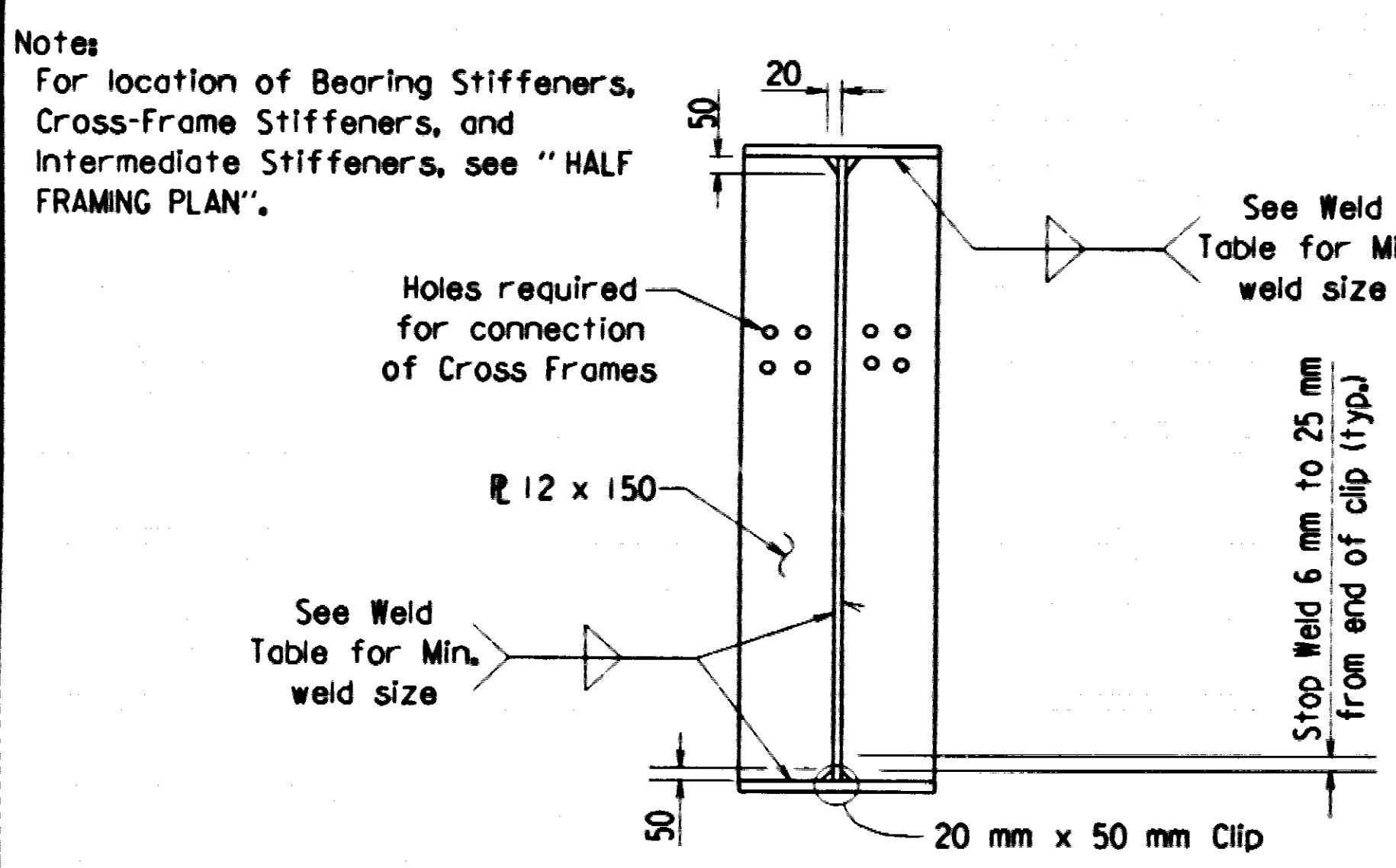
SCREED RAIL SUPPORT



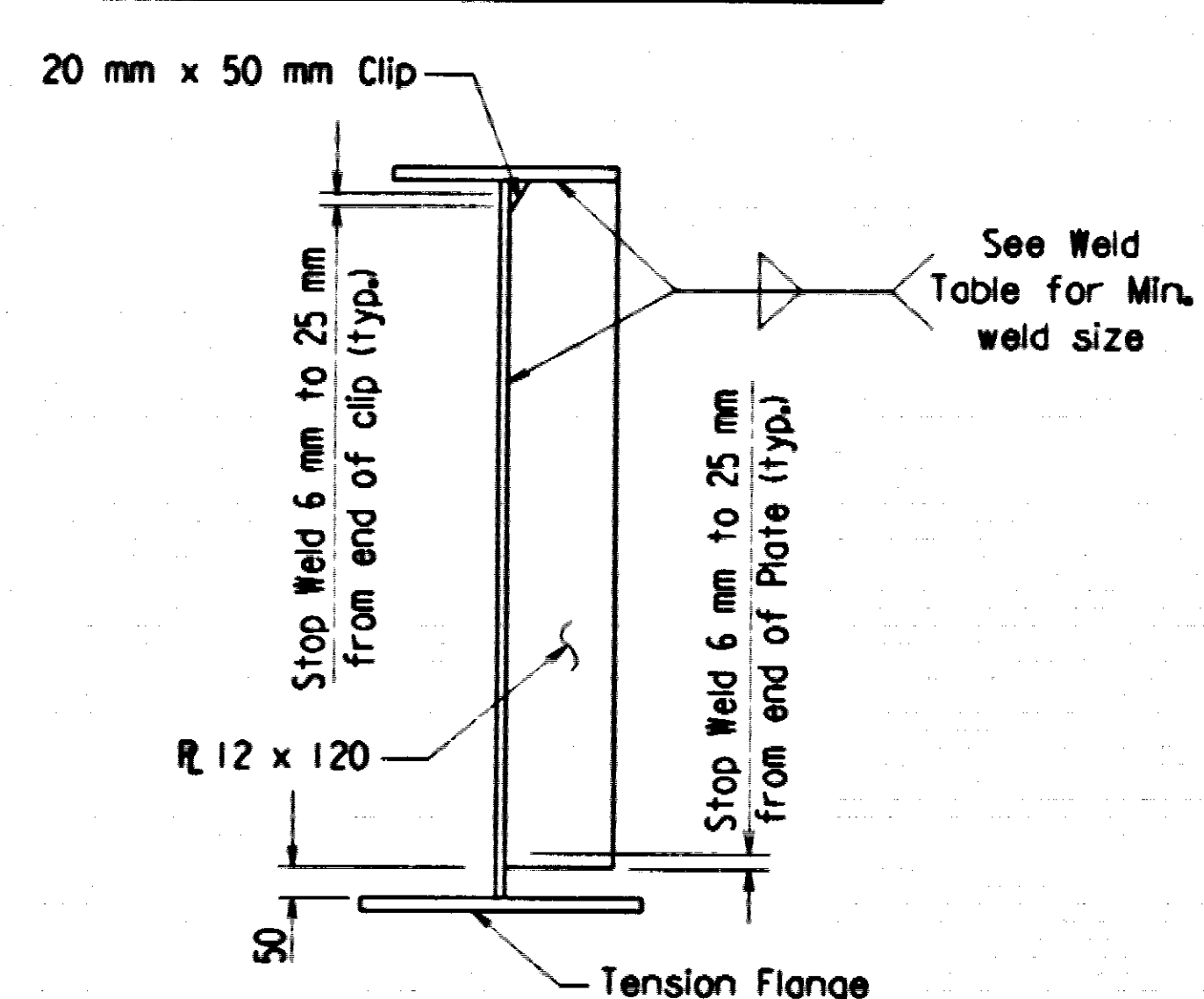
END BEARING STIFFENER DETAIL



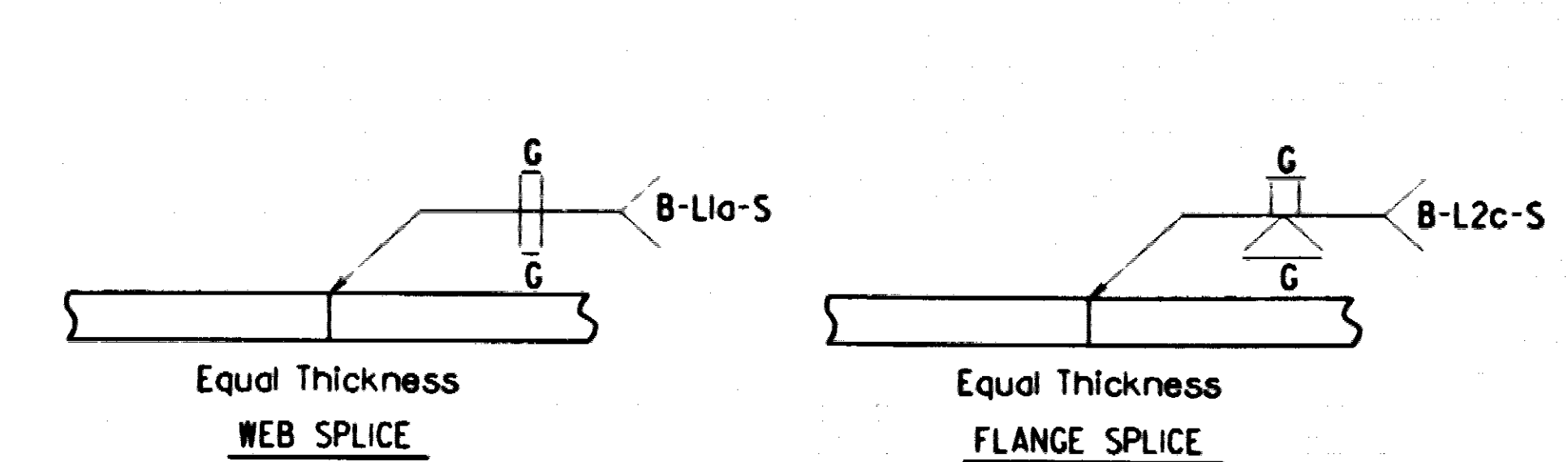
INTERIOR BEARING STIFFENER DETAIL



CROSS FRAME CONNECTION DETAIL



INTERMEDIATE STIFFENER DETAIL

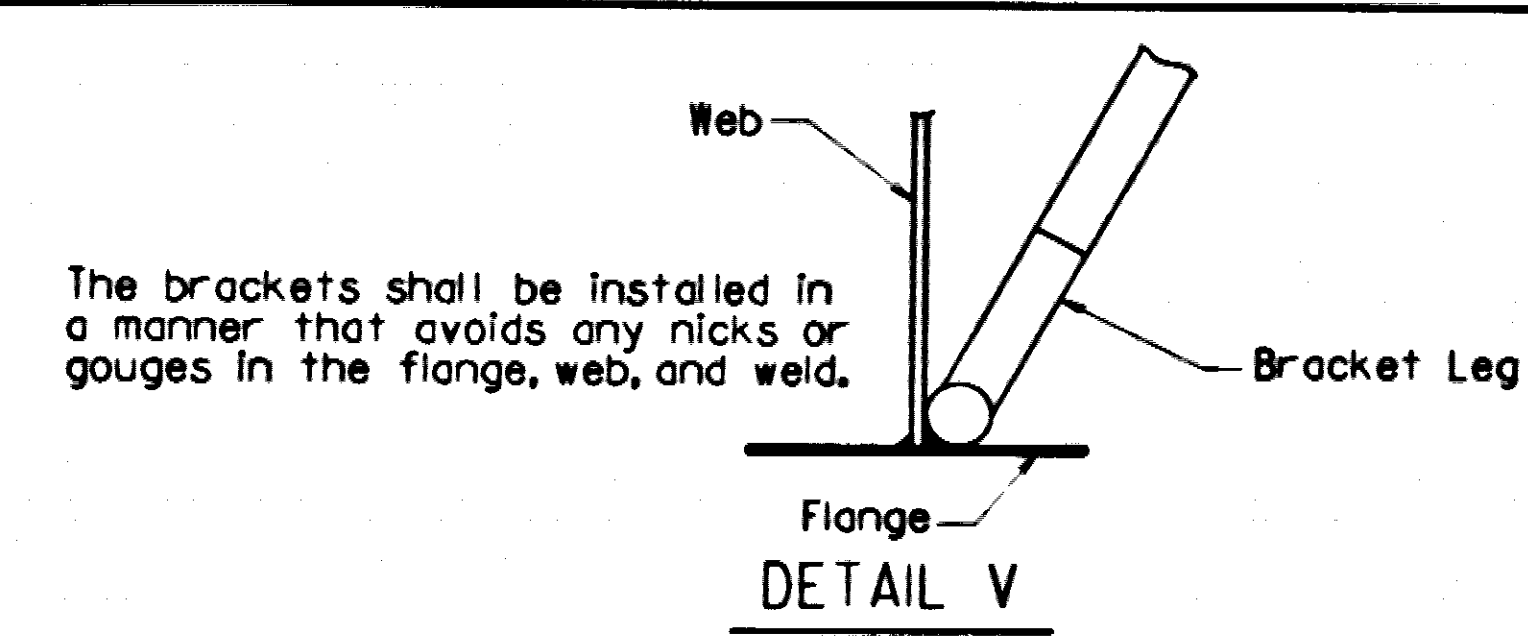


DETAILS OF WELDED SPLICES

TABLE FOR WELD

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

Notes:
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.



The brackets shall be installed in a manner that avoids any nicks or gouges in the flange, web, and weld.

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

CONCRETE:

Concrete shall be poured in the dry and all exposed corners to be chamfered 20 mm unless otherwise noted.
Concrete in bridge superstructure 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.
The Superstructure Details shown are for use when REMOVABLE DECK FORMING is used and are the basis for measurement of Class 5 (AE) Concrete. See Standard Drawing No. 36515 for allowable modifications and for tolerances when Permanent Steel Bridge Deck forms are used.
The concrete bridge deck shall be given a fine finish in accordance with Section 802.19 of the Standard Specifications for a Class 5, Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be 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. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. 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 of the railing.

REINFORCING:

The reinforcing steel shall be accurately located in the forms and firmly held in place by steel wire supports sufficient in number and size 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 of "REINFORCING STEEL-BRIDGE".

STRUCTURAL STEEL:

All structural steel shall be AASHTO designation M 270, Gr. 345W unless otherwise noted and shall be paid for at the unit price per kilogram bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, Gr. 345W)". M 270, Gr. 345W steel shall not be painted. All exposed surfaces to be cleaned in accordance with subsection 807.84 (a) of the Standard Specifications. Structural steel completely embedded in concrete may be AASHTO M 270, Gr. 250, unless otherwise noted.
Girder web and flange plates are considered main load carrying members and shall meet the Longitudinal Charpy V - Notch Test specified in section 807.05 of the Standard Specifications.
Girder webs may be made by shop splicing with a minimum length of 8000 mm for sections. Flange plates longer than 15 000 mm may be made by shop splicing with a minimum length of 8000 mm for sections. No additional payment for welds for these splices will be made.
Structural shapes of equal or greater strength may be substituted for shapes shown if prior approval is obtained from the Bridge Engineer. Payment will be made on the basis of shapes shown.
Cross - Frames shall be installed as girders are erected. Cross - Frames shall be installed and completely bolted prior to pouring of floor slabs.
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.
All girders shall be blocked in their true position in the shop, in groups of a minimum of 3 sections as specified in Section 807.54(b)(2). Girders shall be blocked with webs horizontal. The camber, length of sections, distance between bearings and opening of joints shall be measured with the girders in their true position and this information shall become part of the permanent record of this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All girder dimensions are based on a temperature of 16 degrees C. A tolerance of 6 mm (plus or minus) is allowed for camber.

| 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. | 060779 | | 56 | 119 |
| | | | | 06715 SPAN DETAILS | | 39056 | | |

GENERAL NOTES

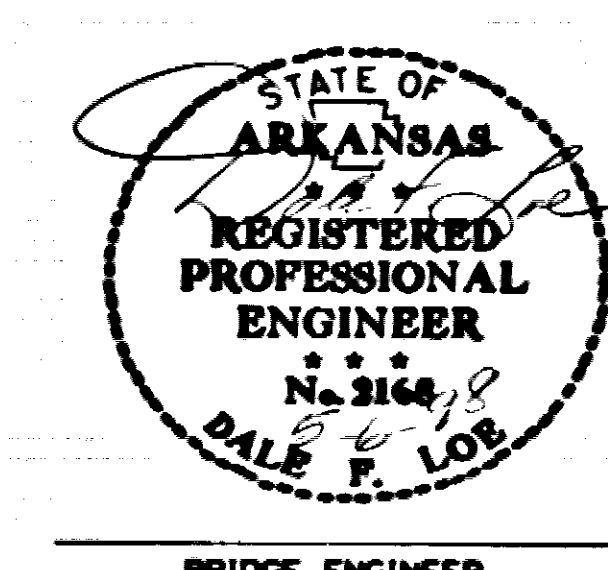
Bearings shall be seated in accordance with subsection 808.08 of the Standard Specifications. This work and material are to be considered as subsidiary to the item "ELASTOMERIC BEARINGS" and will not be paid for directly.
Steel plates for main members and flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.
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.
Groove welds in web and flange plates shall be Quality Control (Q.C.) tested by non-destructive testing, as required by the governing specifications in subsection 807.23(b). Fillet welds at flange to web plate connections shall be Q.C. tested by the magnetic particle method. All Quality Control (Q.C.) testing is at the contractor's expense.
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 girder webs and on the bottom of the girder flanges. Holes for M20 High Strength bolts in expansion device and cross frame connections may be 24 mm # if a washer is supplied for use under both the nut and the head of the bolt.

CONSTRUCTION SPECIFICATIONS:

Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 1996 edition, with applicable supplemental specifications and special provisions.

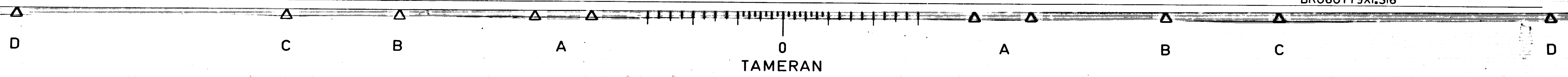
DESIGN SPECIFICATIONS:

AASHTO Standard Specifications for Highway Bridges, 1996 edition, with current Interim specifications.
Live Loadings: MS18 **Method of Design:** Load Factor
Materials and Strengths:
Class 5 (AE) Concrete $f'_c = 28.0 \text{ MPa}$
Reinforcing Steel (ASTM A615/A615M-96a Gr. 420) $F_y = 420 \text{ MPa}$
Structural Steel (M 270, Gr. 345W) $F_y = 345 \text{ MPa}$
Structural Steel (M 270, Gr. 250) $F_y = 250 \text{ MPa}$
Load Distributions:
Dead Load: Interior Girder $12.58 \text{ kN/m} + 1.3(\text{Wt. of Girder})$ Exterior Girder $11.41 \text{ kN/m} + 1.3(\text{Wt. of Girder})$
To Girders: 5.41 kN/m^2
To Composite Girders: 5.41 kN/m^2
Live Load to Composite Girders: L551 Wheels + Impact $1.39 \text{ Wheels} + \text{Impact}$
• Includes 2.585 kN/m future wearing surface.



ALTERNATE NOS. 1 & 2
(SHEET 6 OF 6)
DETAILS OF
102 METER CONTINUOUS
PLATE GIRDER UNIT
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: TEB DATE: 02/20/97
CHECKED BY: AMS DATE: 6/6/97
DESIGNED BY: AMS DATE: 12/11/96
BRIDGE NO. 06715 DRAWING NO. 39056
BR060779X1.S16

MICROFILMED
AUG 31 1998



| 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. | | 060779 | 58 | 119 |
| | | | | | | 06715 | ELASTO. BRGS. | 39058 |

TABLE OF DESIGN VARIABLES (mm)

| ANCHOR BOLT DIAMETER | PIPE SLEEVE NOMINAL DIAMETER | SHEET METAL SLEEVE DIA. | STANDARD WASHER SIZE (O.D.) | MINIMUM EMBEDMENT LENGTH | SLOT WIDTH "F" | P Min. | R Min. | V | W |
|----------------------|------------------------------|-------------------------|-----------------------------|--------------------------|----------------|--------|--------|-----|----|
| 25.4 | 25.4 | 76 | 50.8 | 260 | 40 # | 50 | 50 | 65 | 40 |
| 31.7 | 31.7 | 76 | 63.5 | 30 | 50 # | 50 | 60 | 65 | 45 |
| 38.1 | 38.1 | 76 | 76.2 | 380 | 60 # | 60 | 65 | 70 | 50 |
| 44.4 | 50.8 | 100 | 85.7 | 460 | 70 # | 65 | 70 | 75 | 60 |
| 50.8 | 63.5 | 100 | 95.2 | 50 | 80 # | 70 | 75 | 85 | 65 |
| 57.1 | 63.5 | 100 | 101.6 | 590 | 80 # | 70 | 75 | 85 | 70 |
| 63.5 | 76.2 | 100 | 114.3 | 640 | 95 # | 75 | 85 | 90 | 75 |
| 69.8 | 76.2 | 127 | 127.0 | 720 | 95 # | 75 | 90 | 90 | 85 |
| 76.2 | 88.9 | 127 | 139.7 | 770 | 115 # | 85 | 90 | 100 | 90 |

NOTE: Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required.

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a OPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the items "STRUCTURAL STEEL IN BEAM SPANS (M 270, Gr. 345W)" and "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, Gr. 345W).

GENERAL NOTES

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

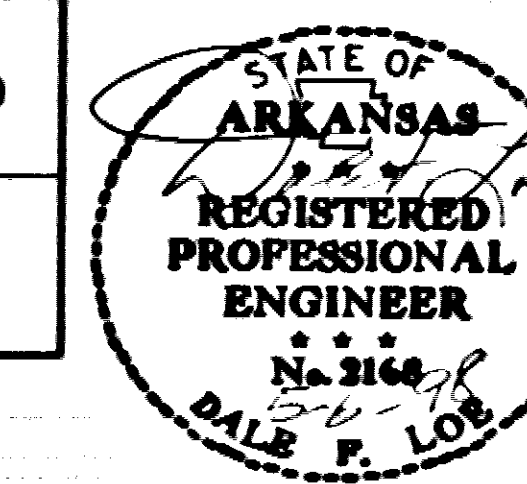
Elastomeric Bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "Elastomeric Bearings."

External load plates shall conform to AASHTO M 270, Grade 345W. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or AASHTO M 298, Class 50.

External load plates shall be completely fabricated (including bevel, bolt holes and all shop welding) and shall be blast cleaned to remove rust, loose mill scale, dirt, oil, grease and other foreign substances before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be blast cleaned to the surface finish specified in subsection 808.04(b). Other surfaces shall be blast cleaned in accordance with subsection 807.84(a) for unpainted Grade 345W steel.

Anchor Bolts, Washers and Nuts shall conform to subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "TABLE OF FABRICATOR VARIABLES". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

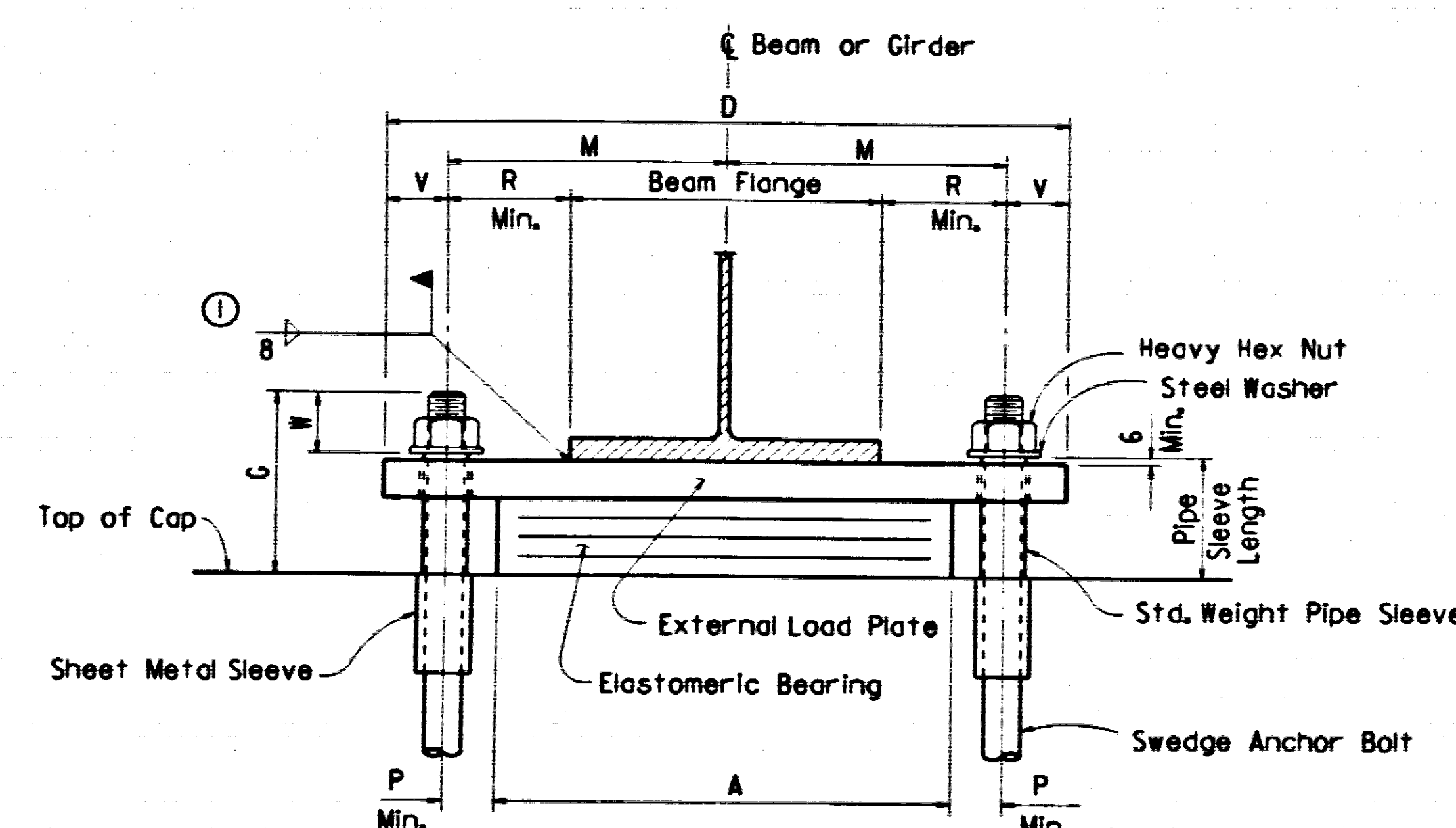
Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN BEAM SPANS (M 270, Gr. 345W)" and "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, Gr. 345W)".



ALTERNATE NOS. 1 AND 2
DETAILS OF
ELASTOMERIC BEARINGS
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

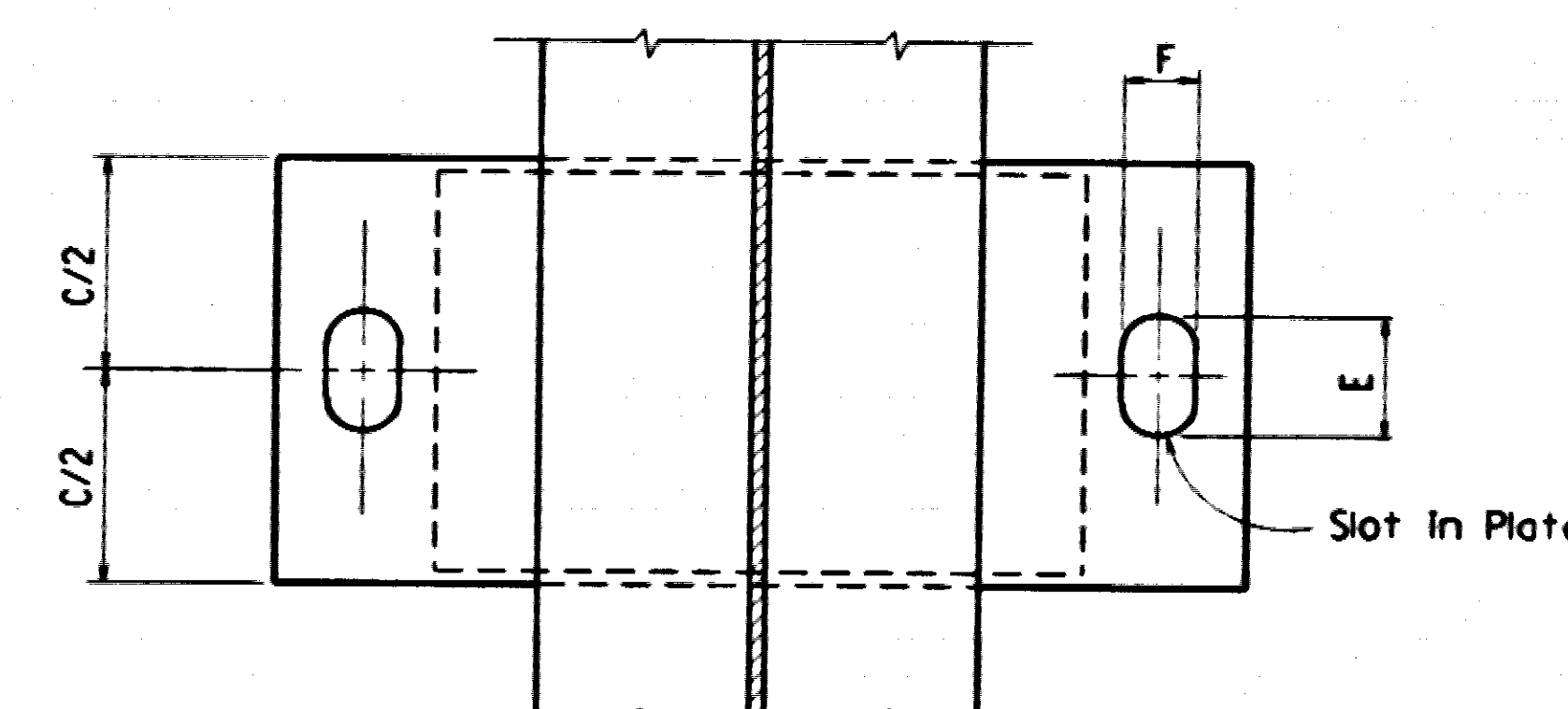
DRAWN BY: TEB DATE: 4/1/97
CHECKED BY: AMS DATE: 6/12/97
DESIGNED BY: AMS DATE: 12/11/96
BRIDGE NO. 06715 DRAWING NO. 39058

BR060779.EBI

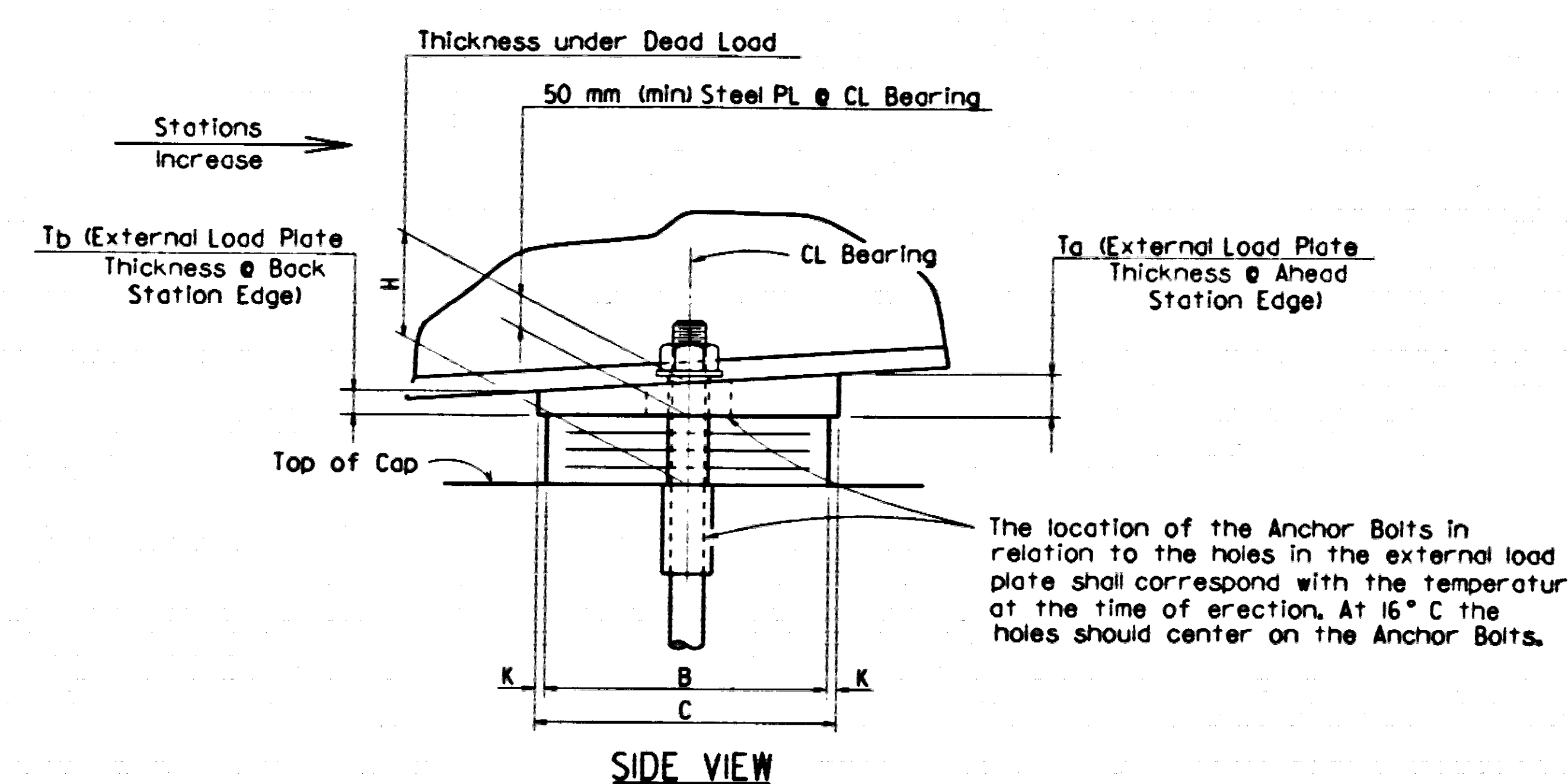


FRONT VIEW

① Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.

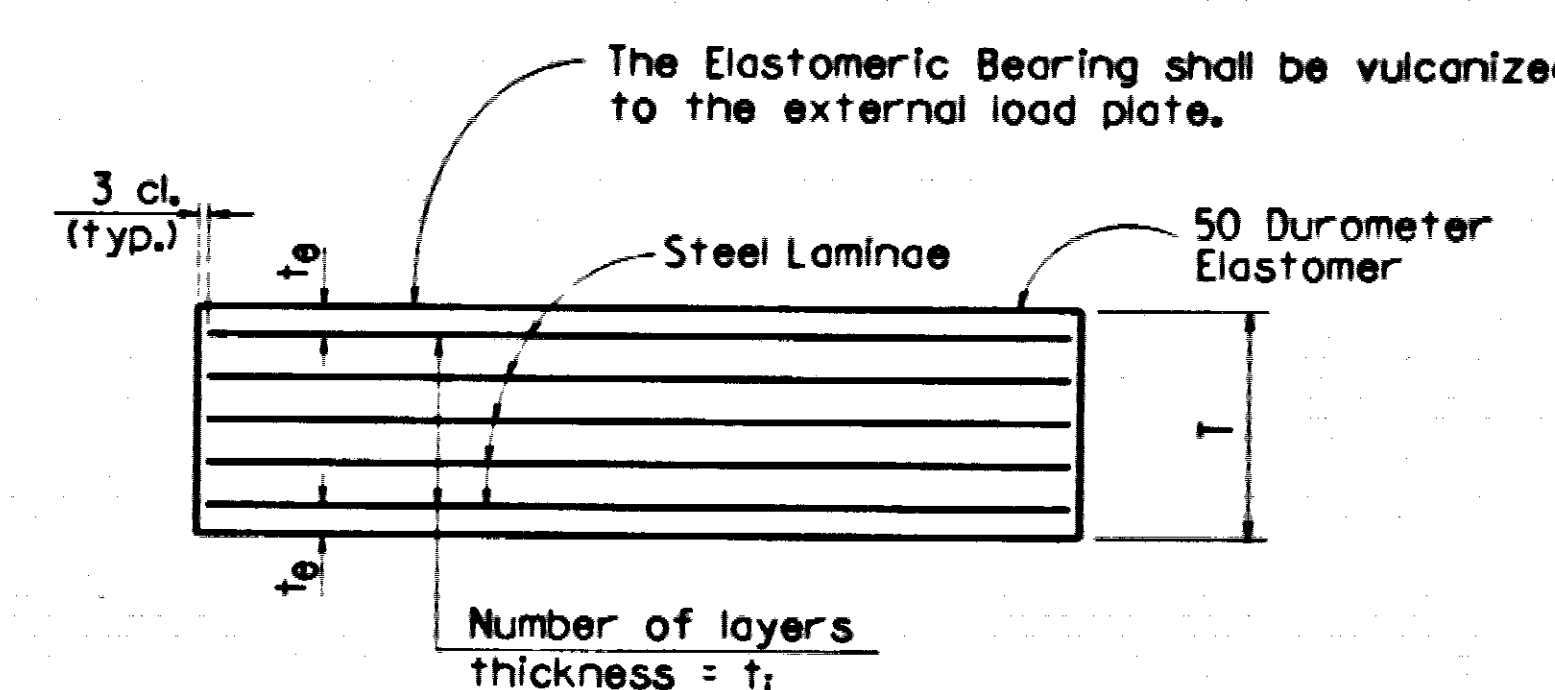


PLAN VIEW



SIDE VIEW

The location of the Anchor Bolts in relation to the holes in the external load plate shall correspond with the temperature at the time of erection. At 16° C the holes should center on the Anchor Bolts.



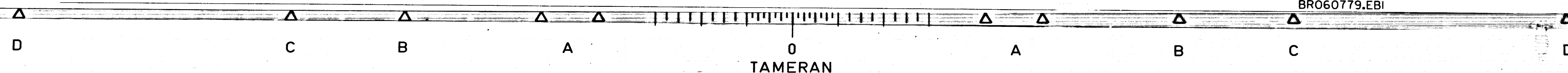
ti = thickness of elastomer cover on top and bottom of pad
ti = thickness of elastomer between steel laminae
N = number of elastomer layers of thickness ti

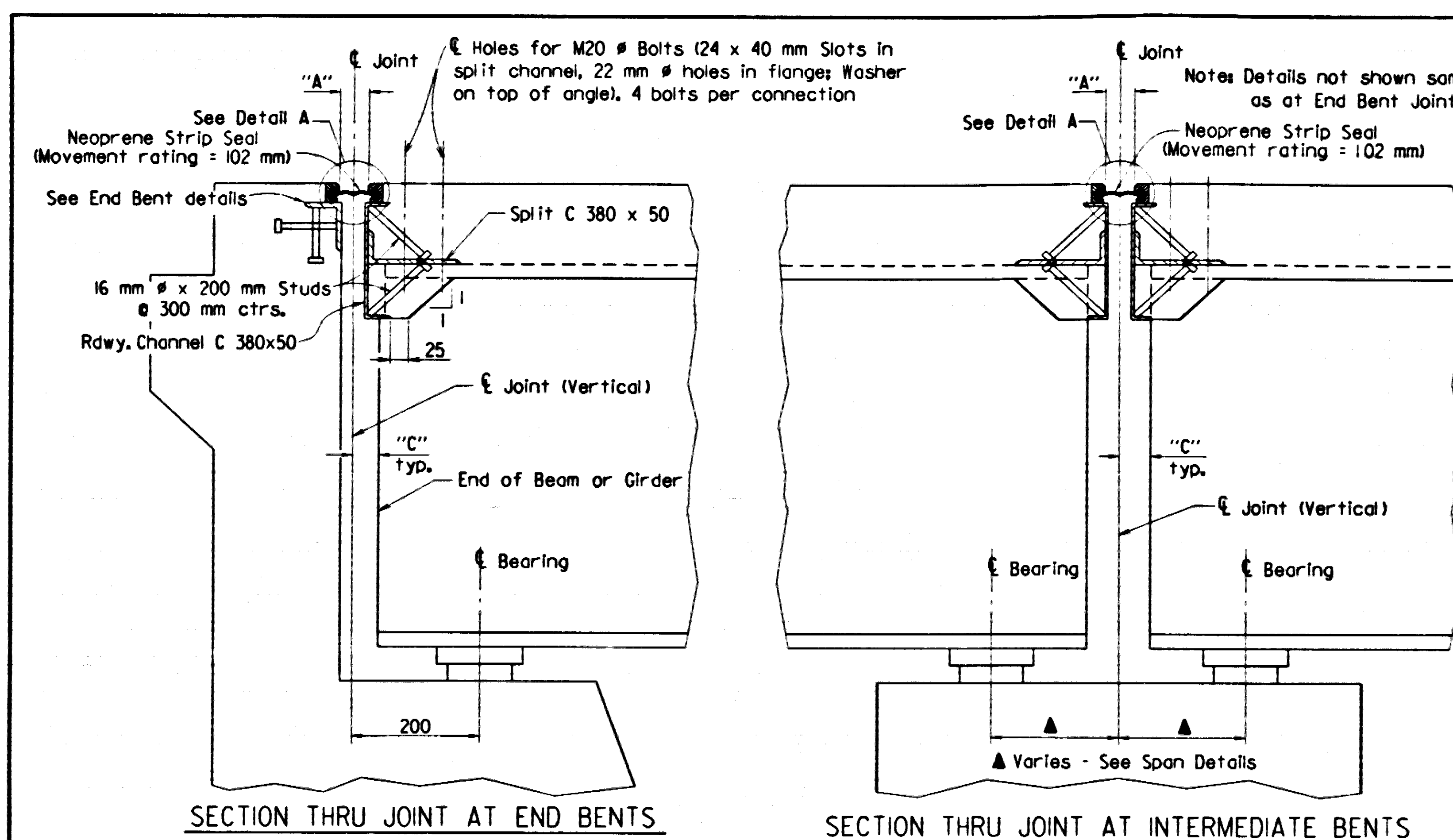
ELASTOMERIC BEARING

TABLE OF FABRICATOR VARIABLES

| * Maximum Design Load = Service Load | | | | | | | | | | ELASTOMERIC PAD | | | | | | | | | | EXTERNAL LOAD PLATE | | | | | | | | | | ANCHOR BOLT | | | |
|--------------------------------------|-------|--|--------------|---------------------------|-----------------------------|-----|-----|-----|-----|-----------------|----------------|----------------|---------------------------------------|-----|-----|-----|-----|----|----|---------------------|----------------|----------------|---------------|-------|--------------------------|---------------------------------|-------------------------|--|--|-------------|--|--|--|
| ALT. NO. | UNIT | LOCATION | BEARING TYPE | NO. OF BEARINGS EACH BENT | * MAXIMUM DESIGN LOAD (K·N) | G | H | A | B | N | t ₁ | t ₂ | NUMBER AND THICKNESS OF STEEL LAMINAE | T | C | D | E | F | K | M | T _a | T _b | ANCHOR BOLT | | PIPE SLEEVE SIZE (# x L) | SHEET METAL SLEEVE SIZE (# x L) | STEEL WASH. SIZE (O.D.) | | | | | | |
| | | BENT NUMBERS | | | | | | | | | | | | | | | | | | | | | (# x L) | GRADE | | | | | | | | | |
| 1 | 68 m | 2, 3, 4, 6, 7, 8, 10, 11, 12, 14, 15, & 16 | Fixed | 5 | 526 | 211 | 140 | 400 | 160 | 7 | 9 | 7 | 10 @ 14 ga. | 92 | 190 | 710 | 80 | 80 | 15 | 270 | 51.3 | 48.7 | 50.8 # x 760 | 55 | 63.5 # x 146 | 100 # x 175 | 95.2 | | | | | | |
| 1 AND 2 | 102 m | 17 | Exp. | 4 | 502 | 262 | 196 | 480 | 190 | 10 | 11 | 9 | 11 @ 14 ga. | 149 | 230 | 790 | 140 | 80 | 20 | 30 | 51.6 | 48.4 | 50.8 # x 830 | 55 | 63.5 # x 202 | 100 # x 175 | 95.2 | | | | | | |
| | 102 m | 18 | Fixed | 4 | 1298 | 252 | 171 | 580 | 220 | 9 | 10 | 8 | 10 @ 14 ga. | 125 | 250 | 910 | 95 | 95 | 15 | 365 | 51.7 | 48.3 | 69.8 # x 1050 | 55 | 76.2 # x 177 | 127 # x 250 | 127.0 | | | | | | |
| | 102 m | 19 | Fixed | 4 | 1298 | 252 | 171 | 580 | 220 | 9 | 10 | 8 | 10 @ 14 ga. | 125 | 250 | 910 | 95 | 95 | 15 | 365 | 52.1 | 47.9 | 69.8 # x 1050 | 55 | 76.2 # x 177 | 127 # x 250 | 127.0 | | | | | | |
| | 102 m | 20 | Exp. | 4 | 502 | 262 | 196 | 480 | 190 | 10 | 11 | 9 | 11 @ 14 ga. | 149 | 230 | 790 | 140 | 80 | 20 | 30 | 51.8 | 48.2 | 50.8 # x 830 | 55 | 63.5 # x 202 | 100 # x 175 | 95.2 | | | | | | |

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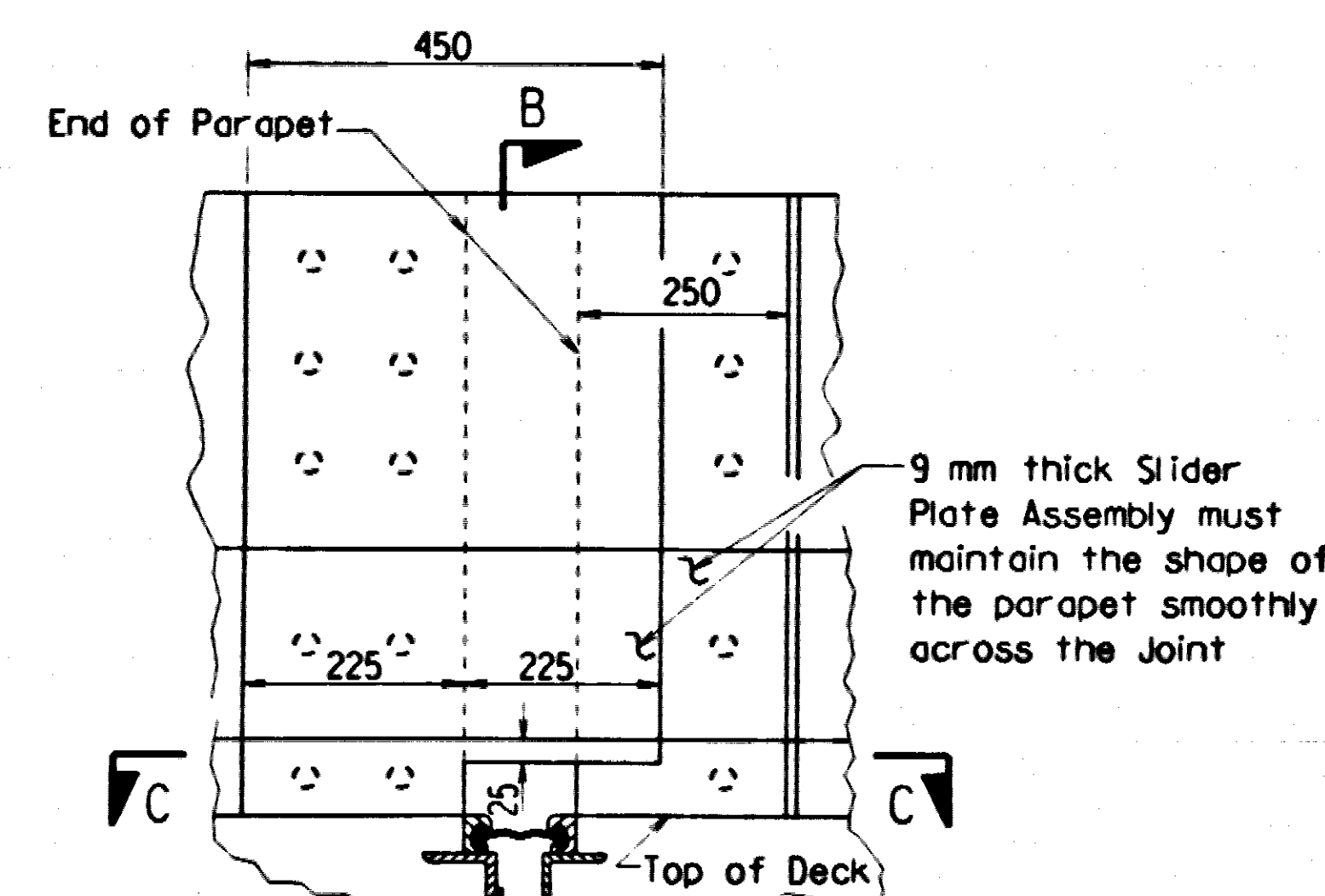


Notes: Sections thru joints are taken normal to C.L. Joint.

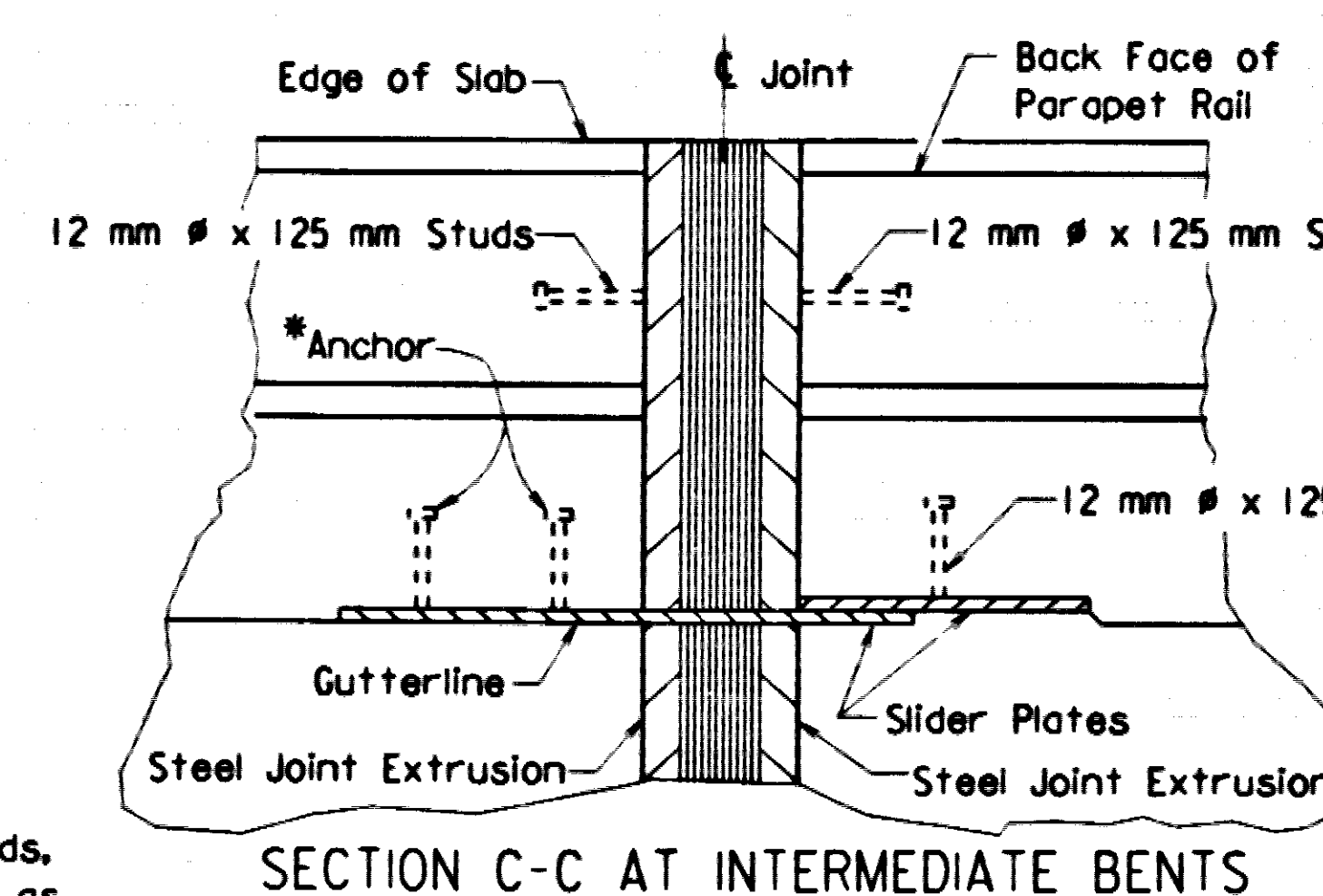
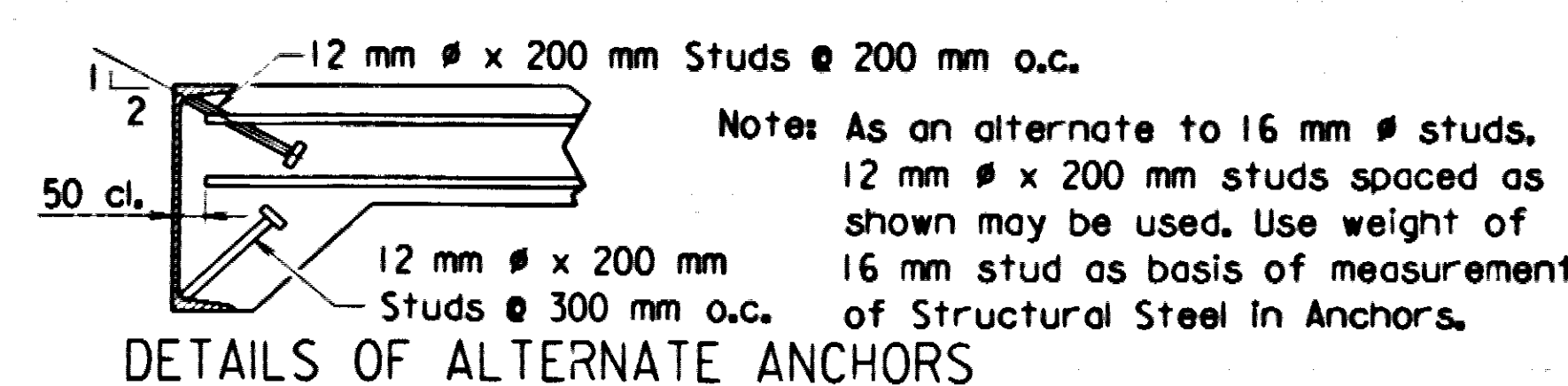
STRIP SEAL JOINT DATA

| Bent No. 1 | Movement Rating (mm) | "A" Width Perpendicular to Joint at 24 Hour Average Temperature ** of : | | | "B" Width Perpendicular to Joint at 24 Hour Average Temperature ** of : | | | "C" Perpendicular to Joint at 24 Hour Average Temperature of 16° C |
|------------|----------------------|---|-------|------|---|-------|------|--|
| | | 28° C | 16° C | 4° C | 28° C | 16° C | 4° C | |
| 1 | 102 | 58 | 62 | 66 | 46 | 50 | 54 | 57 |
| 5, 9 & 13 | | 57 | 66 | 75 | 45 | 54 | 63 | 59 |
| 17 | | 53 | 64 | 75 | 41 | 52 | 63 | 58 |
| 20 | | 55 | 62 | 69 | 43 | 50 | 57 | 57 |

** The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature.

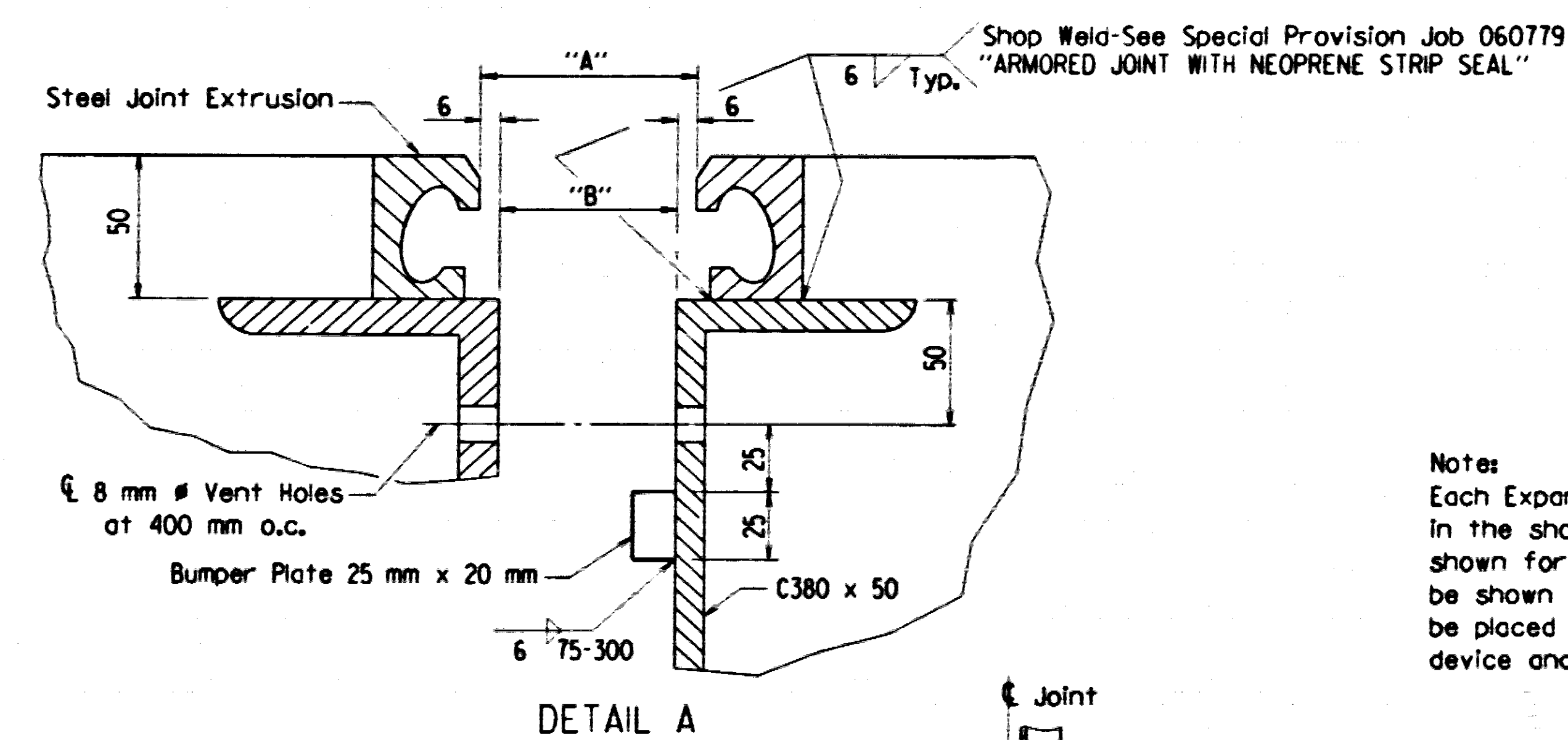


DETAIL OF NEOPRENE SEAL AT CURB

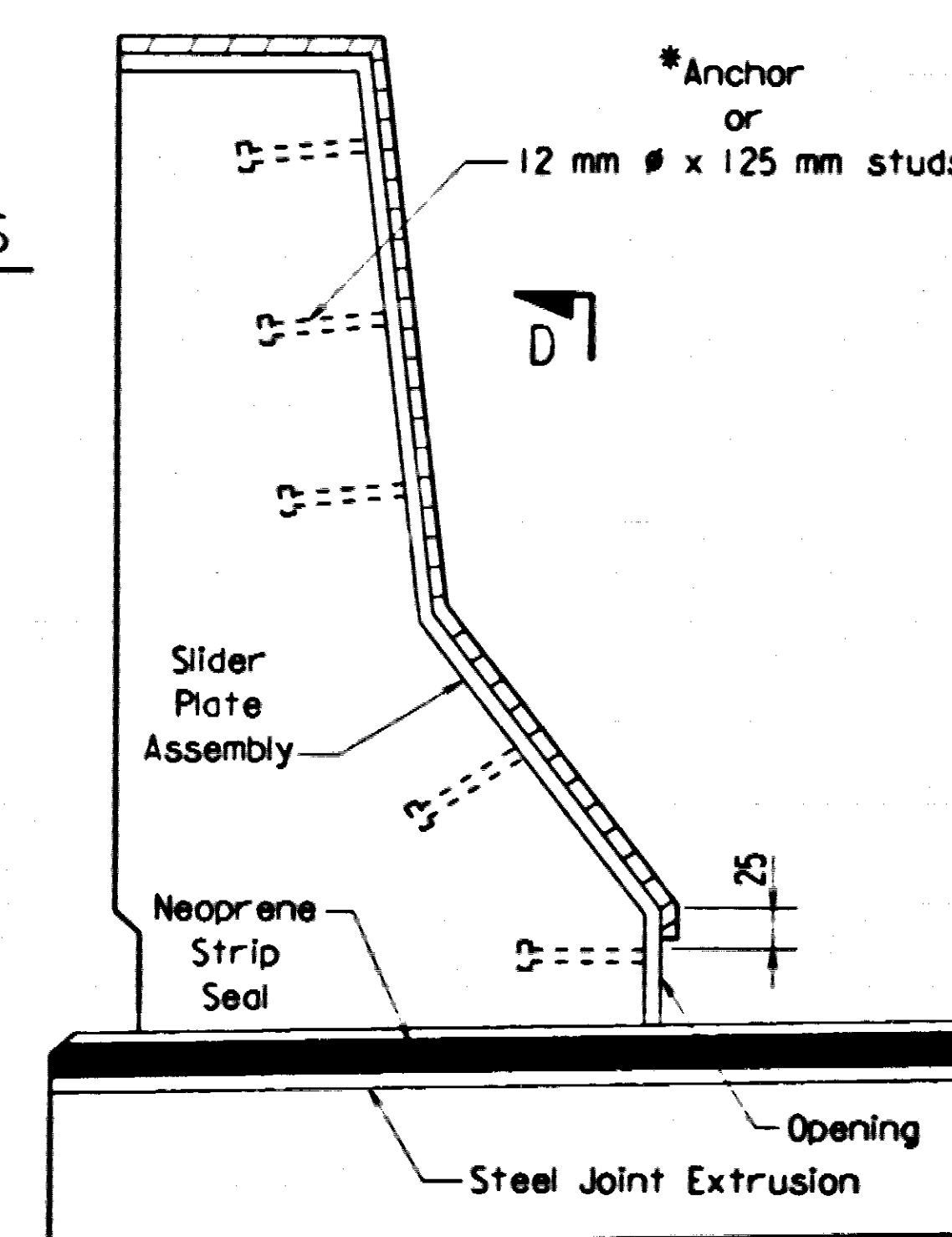


SECTION C-C AT INTERMEDIATE BENTS

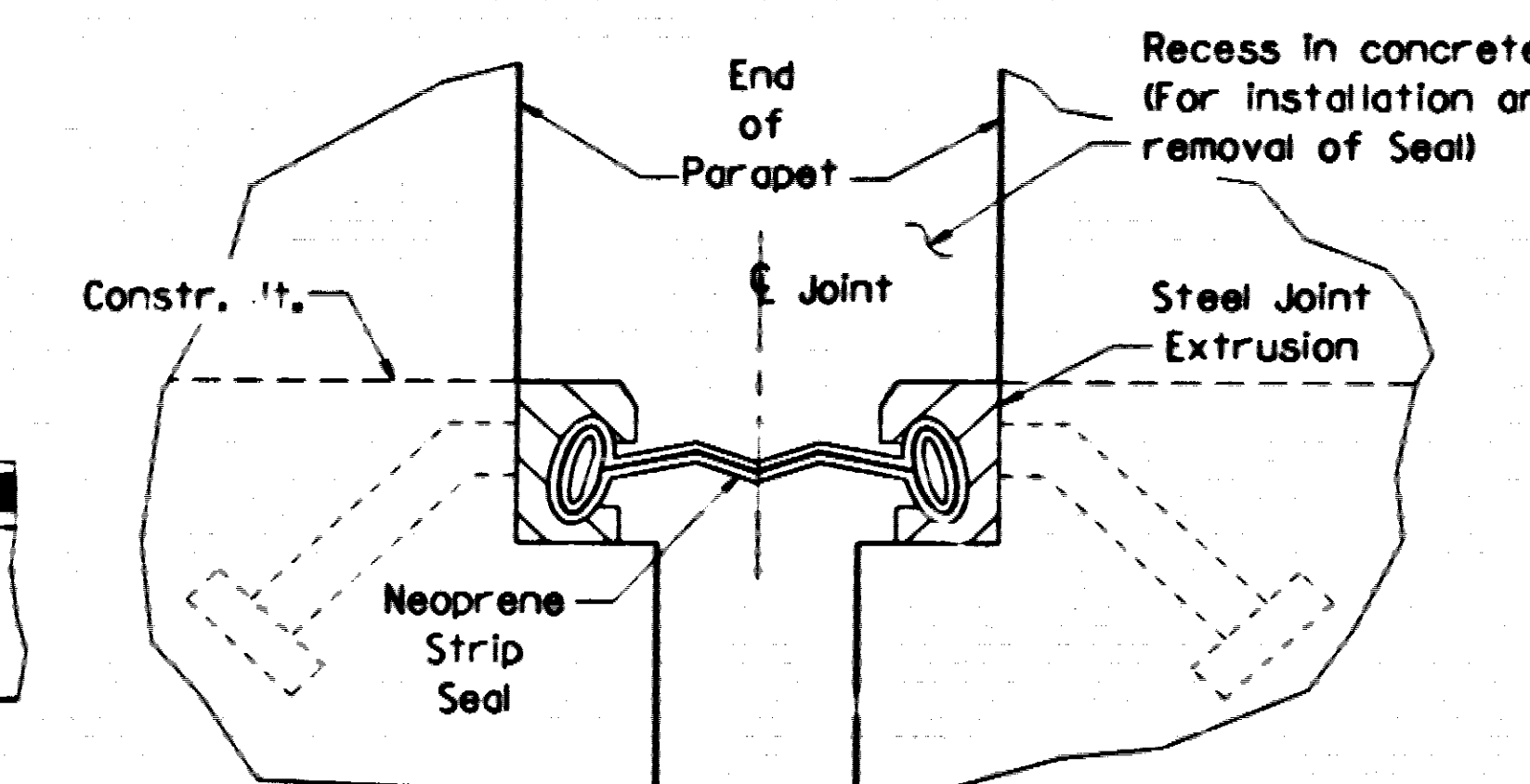
* The method of attachment of the cover slider plate assembly or similar device must be such that it may be removed in order to provide for future replacement of the neoprene seal.
Anchors will not be paid for directly but will be considered subsidiary to "STRUCTURAL STEEL IN BEAM SPANS (M270, Gr. 345W)" and "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, Gr. 345W)".



DETAIL A



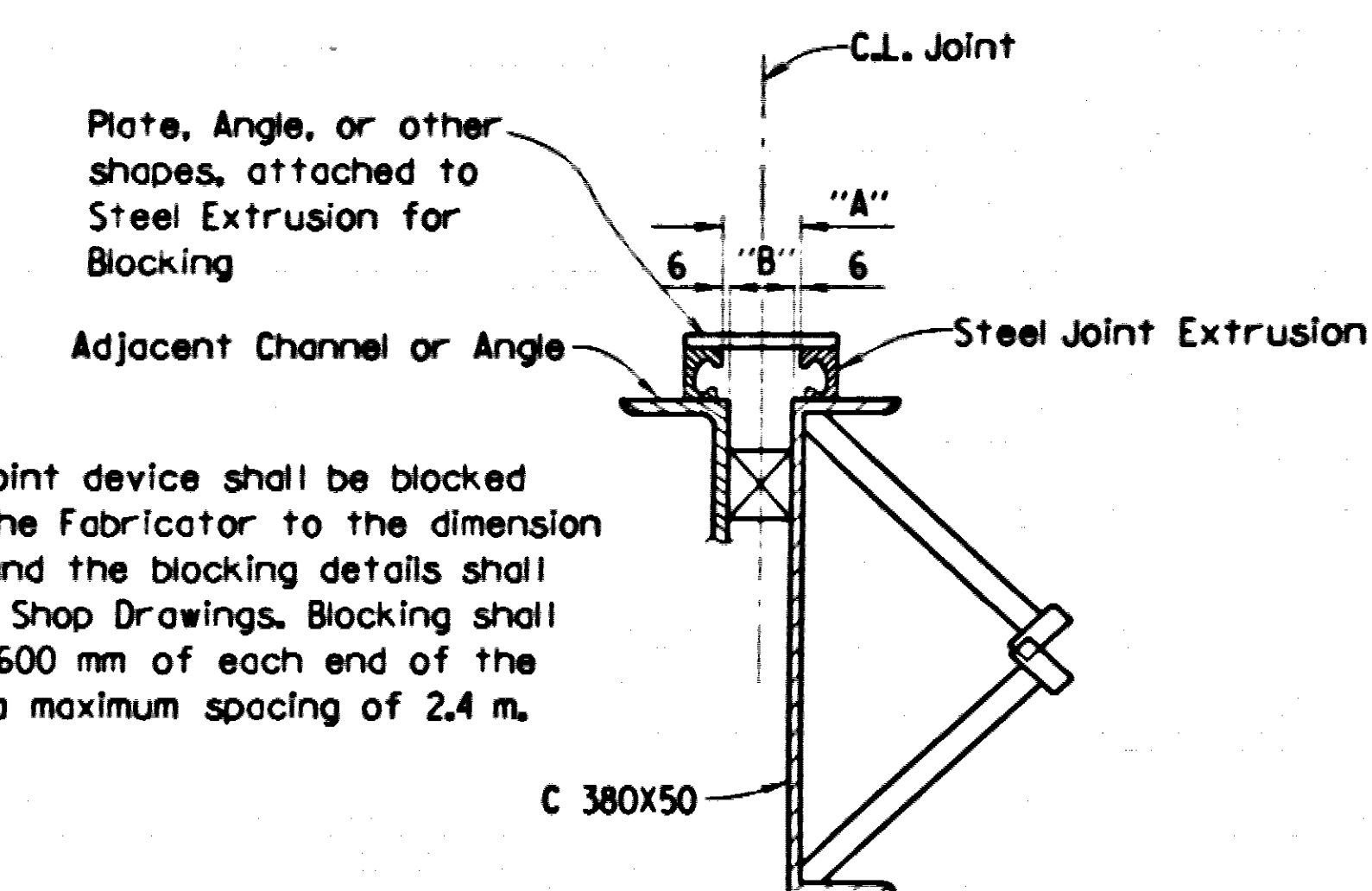
SECTION B-B



SECTION D-D

TYPICAL CHANNEL CONNECTION

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|-----------------------------------|-------|--------------------|-----------|--------------|
| | | | | 6 | ARK. | 060779 | 59 | 119 |
| | | | | JOB NO. 06715 JOINT DETAILS 39059 | | | | |



DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

EXPANSION DEVICE INSTALLATION AT END BENTS

The concrete span pour shall be placed before the end bent backwall concrete is placed. After beams or girders are erected the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent, immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature and grade, and the backwall constructed.

EXPANSION DEVICE INSTALLATION AT INTERMEDIATE BENTS

After all beams or girders on each side of the joint are erected the blocked expansion device shall be installed and adjusted for grade. Deck concrete shall be placed for the entire unit or span on one side of the joint before deck concrete on the other side is placed. Connection bolts for the first side to have deck concrete placed shall be completely bolted. Bolts on the other side shall be loosely installed so that thermal and rotational movements will not be restricted during concrete placement on the first side.

Connection bolts on the second side shall remain loose until the concrete pour adjacent to the joint is to be placed, immediately prior to pouring the span concrete on the second side, the blocking shall be removed, the joint adjusted for temperature and grade, and the connection bolts tightened.

GENERAL NOTES

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

EXPANSION NEOPRENE STRIP SEALS: The expansion device shall provide a movement of 102 mm as shown in the "STRIP SEAL JOINT DATA" table. The expansion joint shall be capable of sealing the deck surface and parapet area to prevent moisture and other contaminants from descending through the joint.

Details of proposed slider plate assembly shall be submitted to and approved by the Bridge Engineer prior to the fabrication of any structural steel at the expansion device.

All Structural Steel, except for the steel extrusion for the strip seal, shall be paid for as "STRUCTURAL STEEL IN BEAM SPANS (M 270, Grade 345W)" or "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, Grade 345W)". The steel extrusion and neoprene strip seal shall be paid for in accordance with Special Provision Job 060779 "ARMORED JOINT WITH NEOPRENE STRIP SEAL".

ALTERNATE NO. 1

DETAILS OF ARMORED JOINT

WITH NEOPRENE STRIP SEAL

SALINE RIVER

ROUTE 229 SEC. 5

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 02/20/97

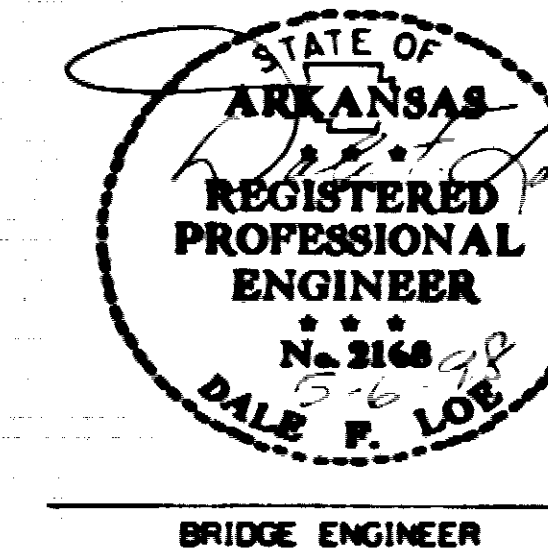
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DESIGNED BY: AMS DATE: 2/14/97

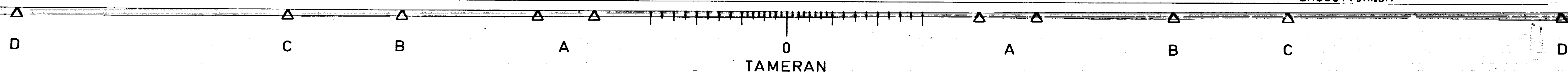
BRIDGE NO. 06715

DRAWING NO. 39059

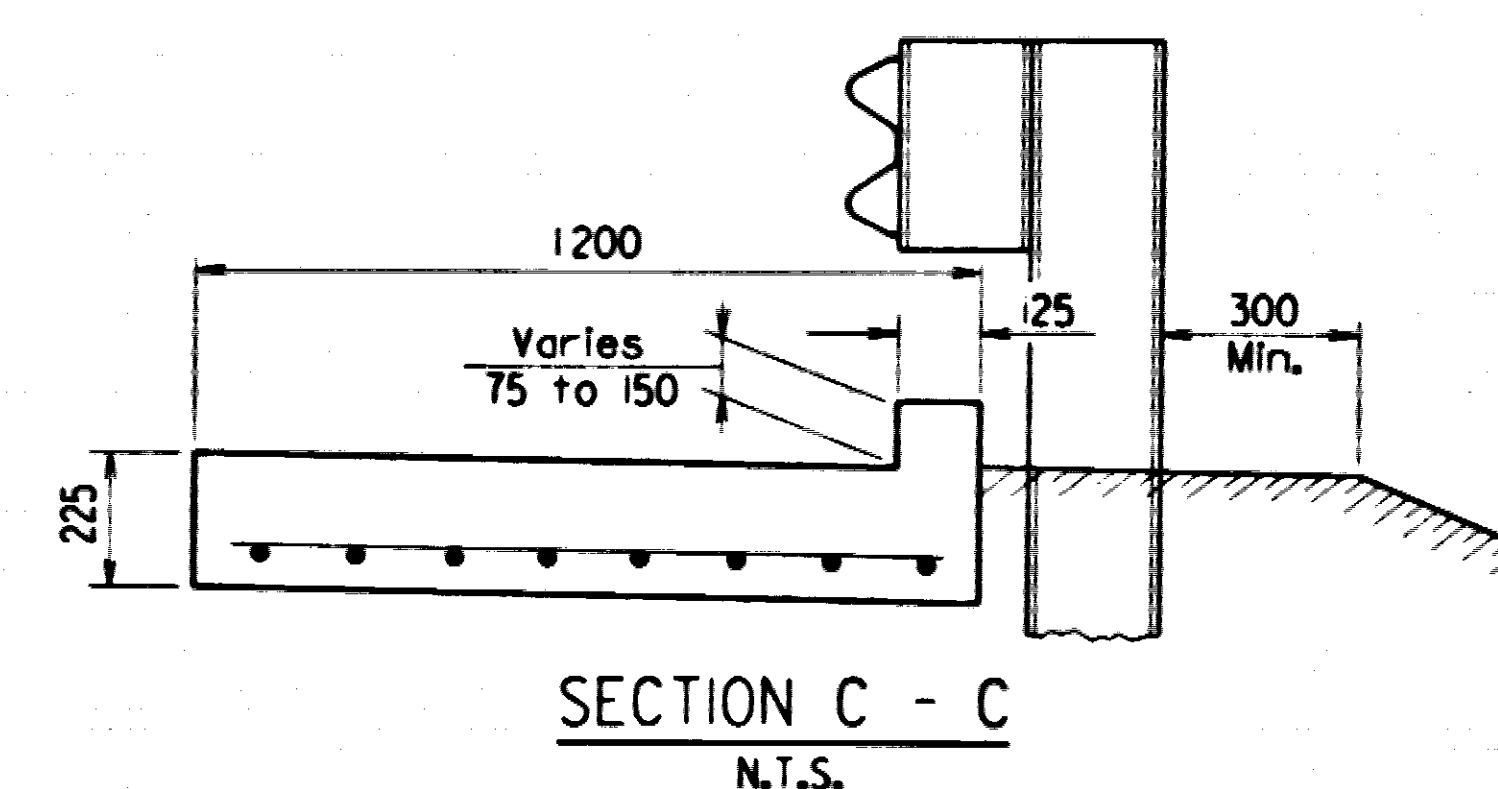
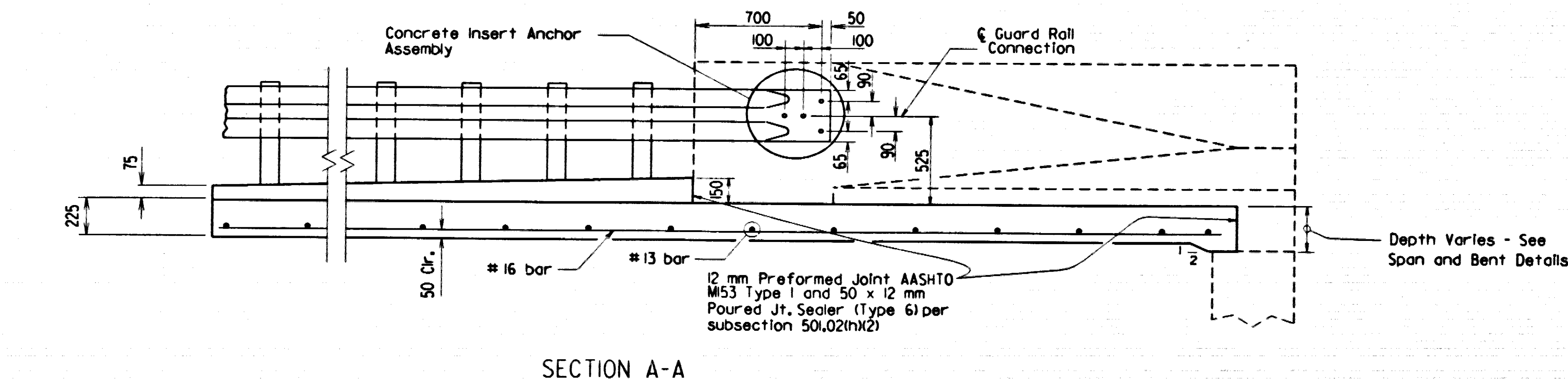
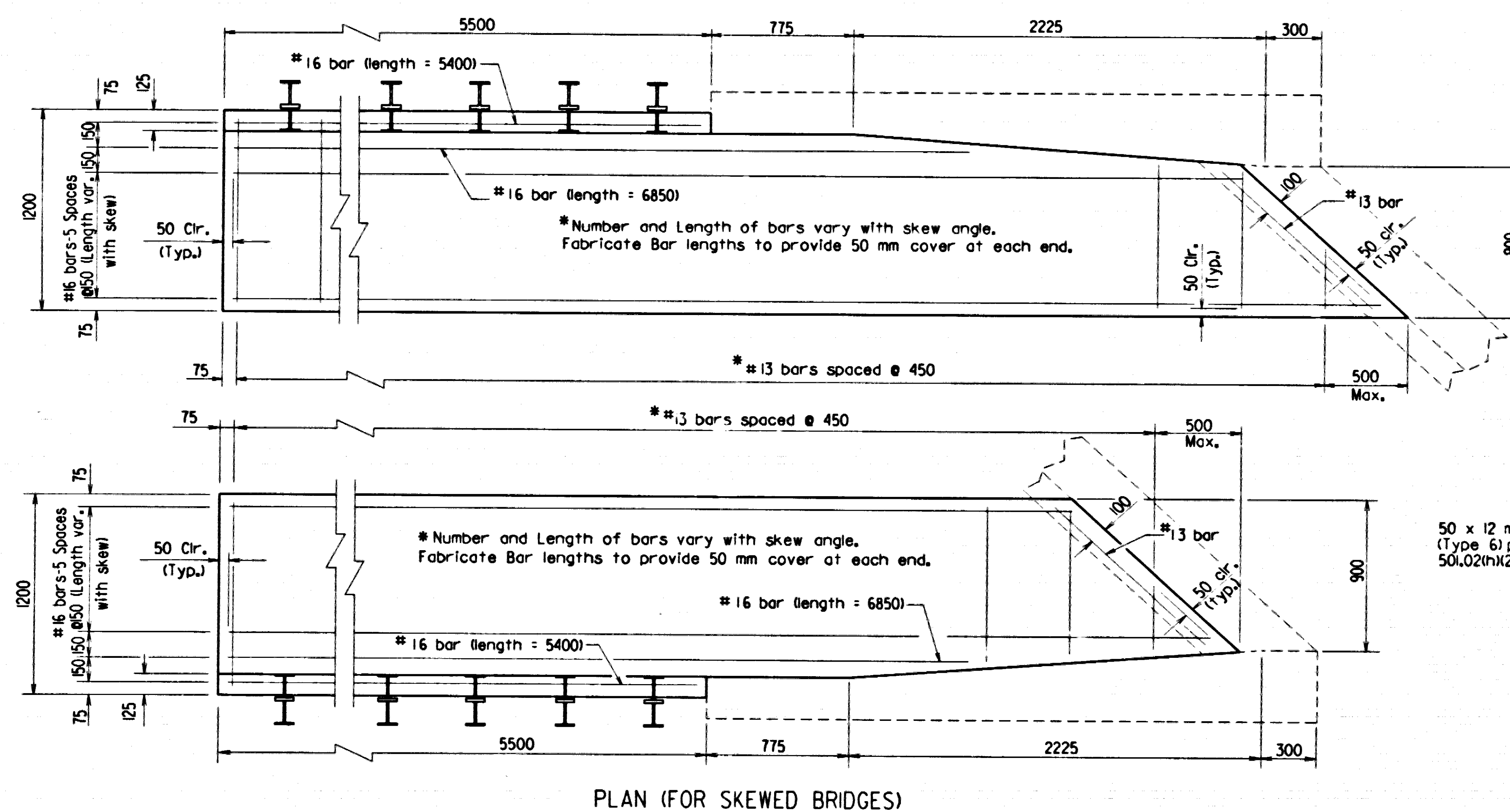
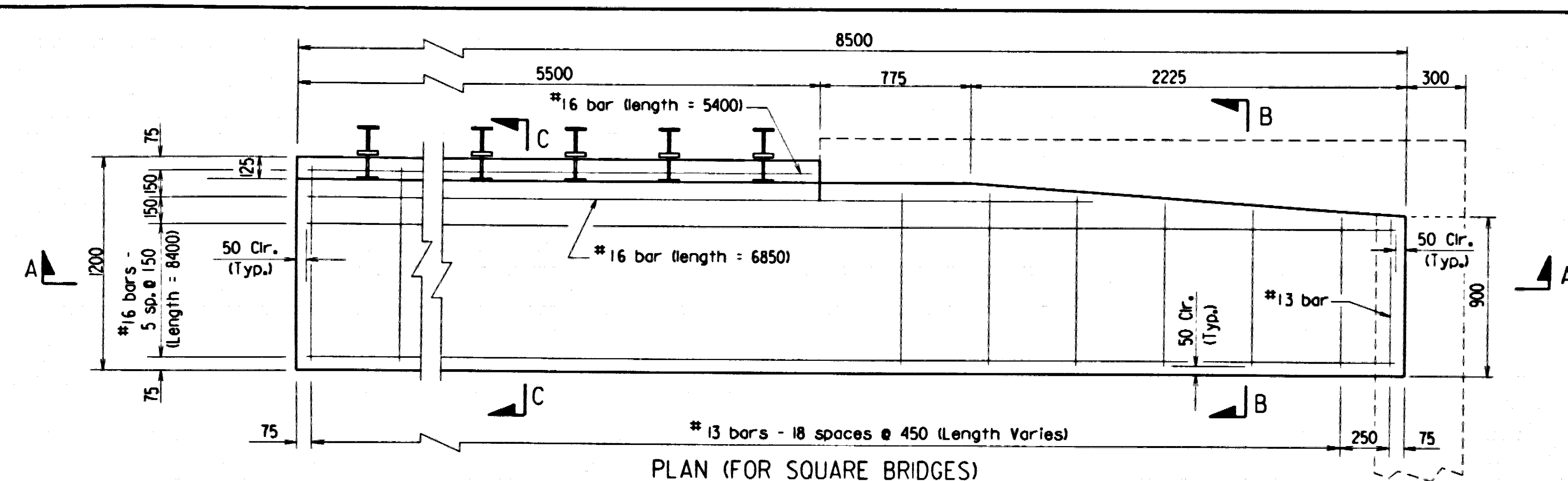
BR060779X1.S17



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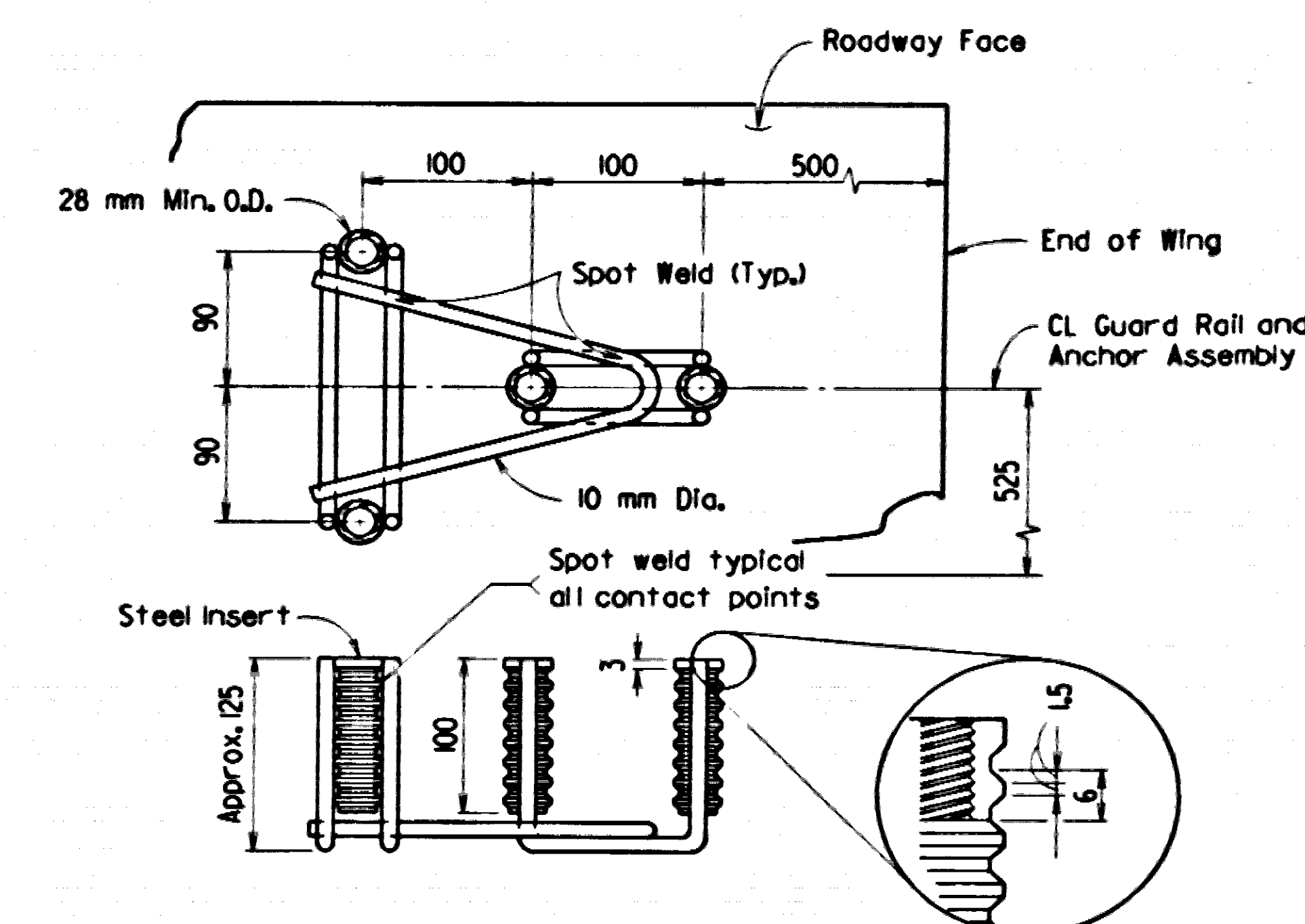


| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------------|-----------|--------------|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 060779 | 60 | 119 |
| | | | | | | 06715 SPEC. APPR. GUTRS. | 39060 | |



QUANTITIES FOR ONE SQUARE APPROACH GUTTER

| Concrete | Reinforcing Steel |
|---------------------|-------------------|
| 2.24 m ³ | 117 kg |



CONCRETE INSERT ANCHOR ASSEMBLY

Minimum capacity of guard rail attachment by concrete insert anchor assembly or other means shall be 53 kN ultimate shear capacity per bolt and insert (212 kN per assembly). There shall be a minimum of four bolts per attachment located as shown. The contractor may use the insert anchor assembly shown, or one similar which provides the same ferrule depth and thread length. The capacity of the insert anchor assembly shall be certified to the Engineer.

Guard rail attachment using other types of concrete insert will be allowed, provided they meet the minimum capacity specified, the capacity is certified, and approval is obtained from the Engineer before use.

The threaded steel insert shall have a solid bottom, tapered to a minimum threaded depth of 60 mm. The guard rail shall be connected with M22 x 60 mm high strength hex bolts and one hardened steel washer. See Section 807 of the Standard Specifications.

Bolts shall conform to the requirements of AASHTO M 164 and shall be threaded full length. Bolts and washers shall be galvanized in accordance with AASHTO M 232.

Bolts shall be installed in accordance with subsection 807.7 of the Standard Specifications.

Concrete Insert Anchor Assembly will not be paid for directly, but will be considered subsidiary to the item of Class 5 Concrete - Bridge or Class 5 (AE) Concrete - Bridge.

For Details of Guard Rail, see detg. no. GR-80M.

GENERAL NOTES

All dimensions are in millimeters unless otherwise noted.

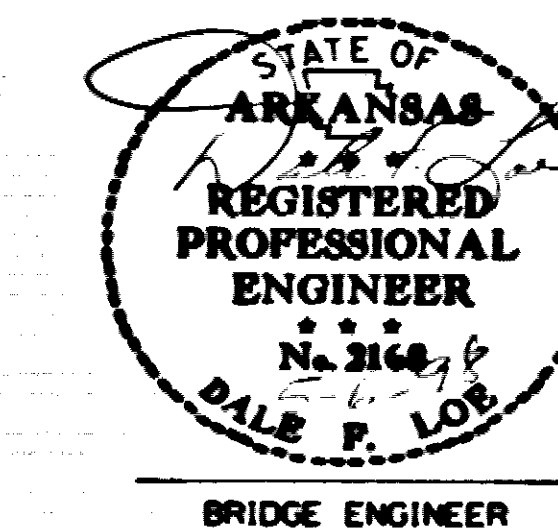
Concrete shall be Class 5 or Class 5 (AE) or mixture used for Portland Cement Concrete Pavement.

Reinforcement Steel shall conform to ASTM A 615/A615M-96a, Grade 420. Fabricate bar lengths to provide 50 mm cover at each end.

Approach Gutters will be measured and paid for in accordance with Section 504 of the Standard Specifications.

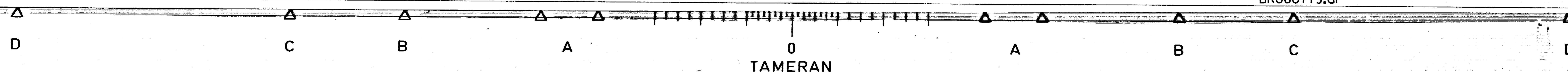
ALTERNATE NOS. 1 & 2
DETAILS OF
TYPE SPECIAL APPROACH GUTTERS
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

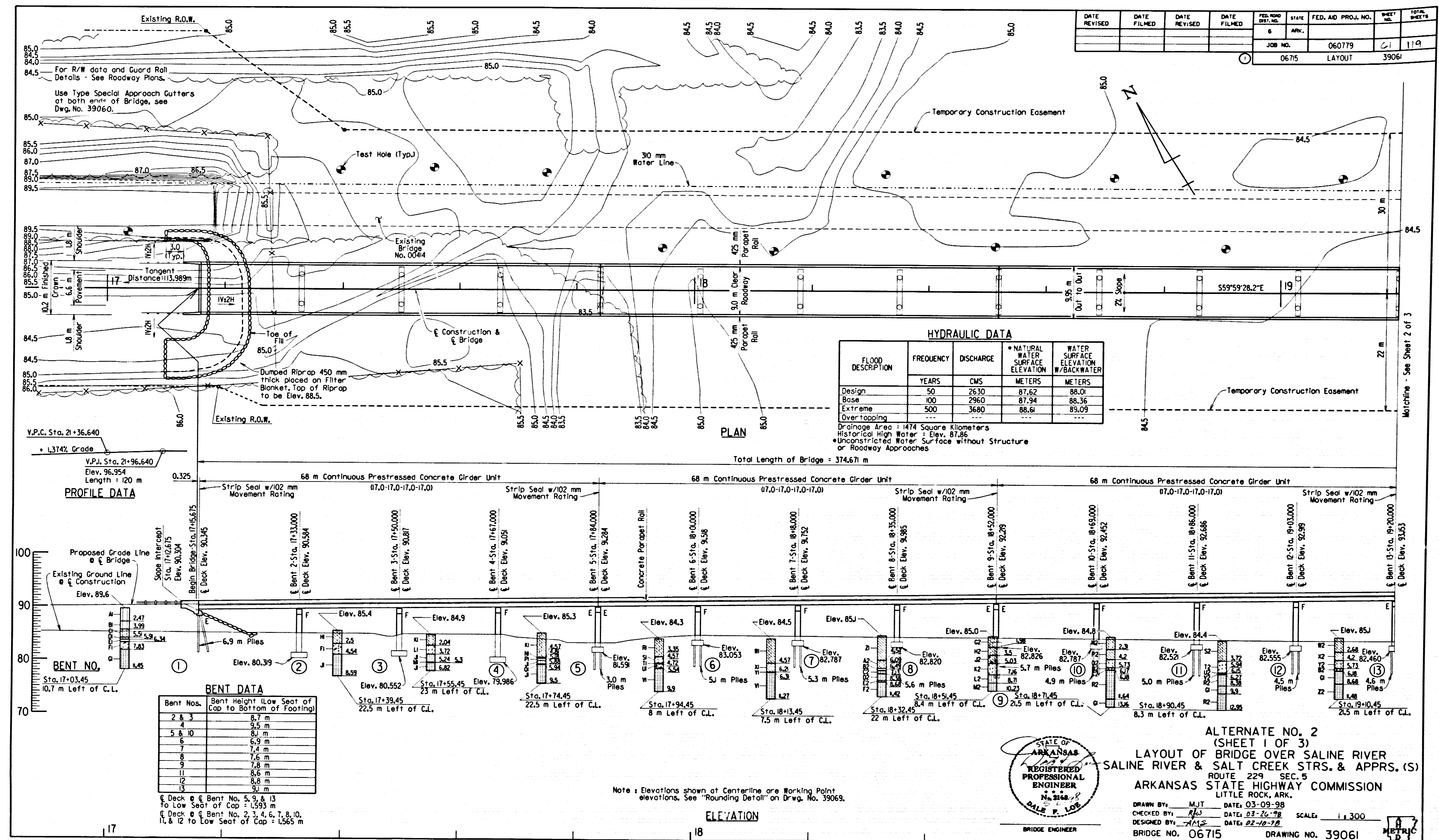
DRAWN BY: YEB DATE: 06/16/97
CHECKED BY: JMS DATE: 6/26/97
DESIGNED BY: DATE:
BRIDGE NO. 06715 DRAWING NO. 39060



BR060779.dl

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AUG 31 1998

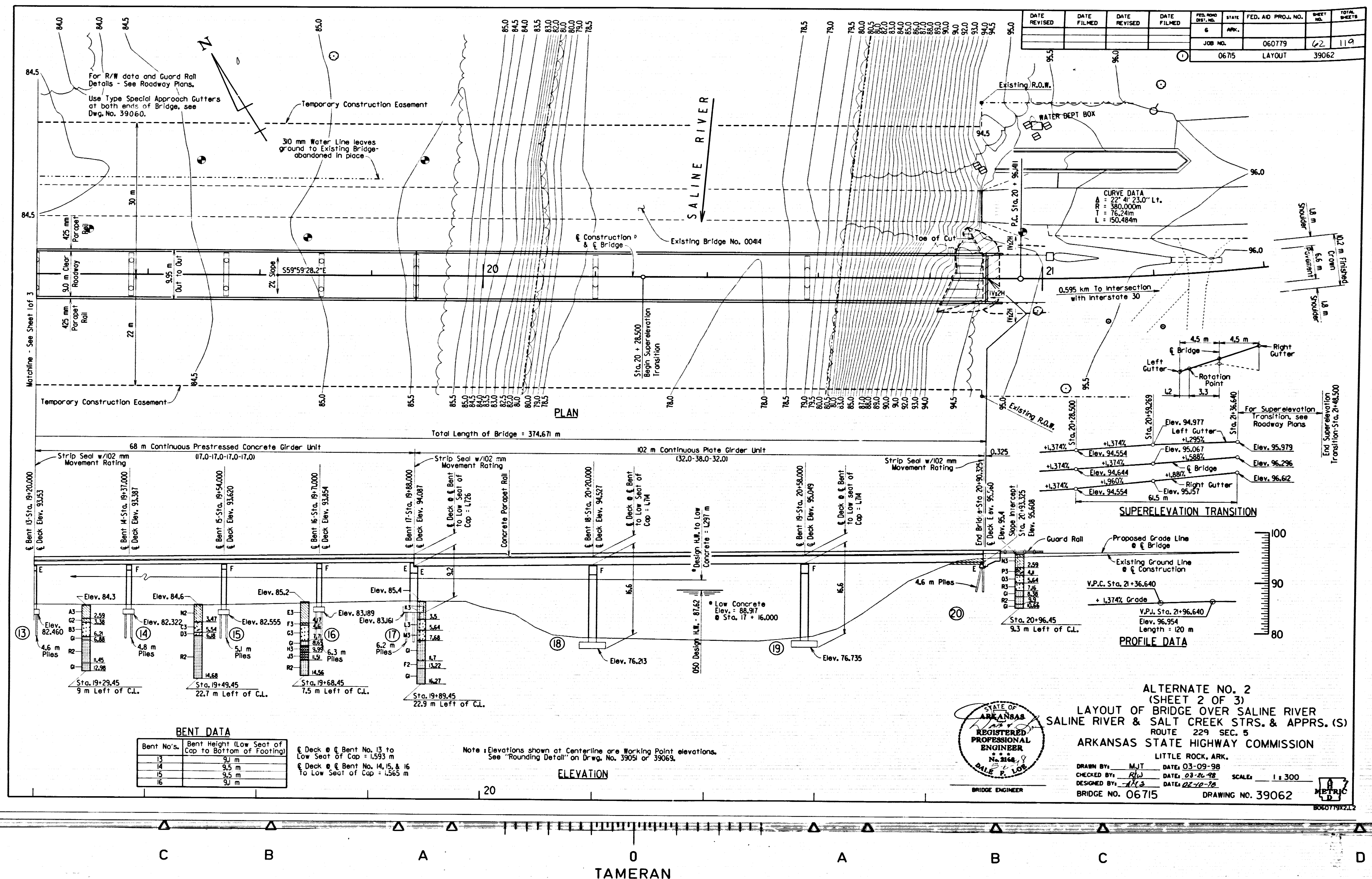




MICROFILMED
AUG 31 1998

STATE OF
ARKANSAS
REGISTERED
PROFESSIONAL
ENGINEER
No. 2168
DALE F. LOE
BRIDGE ENGINEER

ALTERNATE NO. 2
(SHEET 1 OF 3)
LAYOUT OF BRIDGE OVER SALINE RIVER
SALINE RIVER & SALT CREEK STRS. & APPRS. (S)
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: MJT DATE: 03-09-98
CHECKED BY: RJW DATE: 03-26-98 SCALE: 1" = 300'
DESIGNED BY: AMS DATE: 02-10-98
BRIDGE NO. 06715 DRAWING NO. 39061
METRIC



MICROFILMED
AUG 3 1 1998

STATE OF
ARKANSAS
REGISTERED
PROFESSIONAL
ENGINEER
No. 2164
5-1-88
DALE F. LOE

ALTERNATE NO. 2
(SHEET 2 OF 3)
LAYOUT OF BRIDGE OVER SALINE RIVER
SALINE RIVER & SALT CREEK STRS. & APPRS. (S)
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: MJT DATE: 03-09-98
CHECKED BY: RJW DATE: 03-26-98 SCALE: 1" = 300'
DESIGNED BY: HCS DATE: 02-10-78
BRIDGE NO. 06715 DRAWING NO. 39062
METRIC

BORING LEGEND

A1-Moist, Medium Dense, Brown Silt with Traces of Clay
 B1-Moist, Loose, Brown Silt with Traces of Clay
 C1-Moist, Medium Dense, Brown Clayey Silt
 D1-Moist, Stiff, Gray and Brown Sandy Clay
 E1-Wet, Medium Dense, Gray and Brown Sand with some Pea Gravel
 F1-Wet, Dense, Brown and Gray Sand with Clay Seams and Gravel
 G1-Hard, Dark Gray Calcareous, Fractured Shale with some Limestone Seams
 H1-Moist, Stiff, Brown and Gray Sandy, Silty Clay
 J1-Hard, Dark Gray Calcareous, Fractured Shale with some Gray Limestone Seams
 K1-Moist, Stiff, Gray and Brown Sandy, Silty Clay
 L1-Wet, Dense, Brown and Gray Sand and Gravel with some Clay Seams
 M1-Moist, Very Stiff, Gray Clay
 N1-Wet, Soft, Gray and Brown Sandy Clay
 P1-Soft to Medium Hard, Dark Gray Weathered Shale
 Q1-Medium Hard, Dark Gray Highly Weathered Shale
 R1-Wet, Soft to Medium Stiff, Gray and Brown Sandy, Silty Clay with some Gravel
 S1-Wet, Loose, Brown and Gray Sand with Clay Seams and Gravel
 T1-Wet, Very Loose, Gray and Brown Sand and Gravel
 U1-Wet, Soft, Gray Sandy Clay with Organic Matter
 V1-Hard, Dark Gray Calcareous, Fractured Shale with Quartz and some Gray Limestone Seams
 W1-Wet, Soft to Medium Stiff, Gray and Brown Sandy, Silty Clay
 X1-Wet, Soft, Gray Sandy Clay
 Y1-Wet, Dense, Gray and Brown Sand and Gravel
 Z1-Wet, Very Soft, Brown to Brown and Gray Sandy Clay
 A2-Wet, Very Soft, Gray Silty Clay
 B2-Wet, Medium Dense, Gray Sand and Gravel
 C2-Medium Hard, Dark Gray Weathered Shale
 D2-Hard, Dark Gray Calcareous, Fractured Shale with some Quartz Seams
 E2-Moist, Stiff, Gray Calcareous Clay
 F2-Hard, Dark Gray Calcareous, Fractured Shale with some Quartz and Limestone Seams
 G2-Moist, Stiff, Brown and Gray Silty Clay
 H2-Moist to Wet, Stiff, Brown Sandy, Silty Clay
 J2-Wet, Soft, Gray Sandy, Silty Clay with Organic Matter (Wood)
 K2-Wet, Medium Dense, Gray and Brown Sand and Gravel
 L2-Hard, Dark Gray Calcareous, Fractured Shale with some Gray Limestone and Weathered Shale Seams
 M2-Hard, Dark Gray Calcareous, Fractured Shale with some Gray Limestone and Quartz Seams
 N2-Moist, Medium Stiff, Brown Silty Clay
 P2-Wet, Soft, Brown and Gray Sandy Clay
 Q2-Wet, Soft, Gray Silty Clay
 R2-Hard, Dark Gray Calcareous, Fractured Shale with some Limestone and Quartz Seams
 S2-Moist, Medium Stiff, Brown to Brown and Gray Silty Clay
 T2-Wet, Loose, Brown Sand and Gravel
 U2-Wet, Dense, Brown Sand and Gravel
 V2-Hard, Dark Gray Weathered Shale
 W2-Moist, Medium Stiff, Brown Silty Clay with Traces of Pea Gravel
 X2-Wet, Soft, Brown Sandy Clay
 Y2-Wet, Soft, Gray Sandy, Silty Clay
 Z2-Hard, Dark Gray Calcareous, Fractured Shale with Quartz and some Limestone Seams
 A3-Moist, Medium Stiff, Brown Sandy Clay with some Organic Matter
 B3-Wet, Loose, Brown and Gray to Gray Sand and Gravel
 C3-Moist to Wet, Loose, Brown Sand with Clay Seams and Gravel
 D3-Wet, Medium Dense, Brown and Gray Sand and Gravel
 E3-Moist, Soft, Brown Sandy Clay
 F3-Wet, Medium Stiff, Gray and Brown Sandy, Silty Clay with some Organic Matter
 G3-Wet, Loose, Brown Sand and Gravel with some Clay Seams
 H3-Alternating Layers of Hard, Dark Gray Calcareous, Fractured Shale and Hard, Gray Limestone
 J3-Alternating Layers of Hard, Dark Gray Calcareous, Fractured Shale with Quartz Seams and Hard, Gray Limestone
 K3-Moist, Loose to Medium Dense, Brown Clayey Silt
 L3-Wet, Medium Dense, Brown Sand and Gravel with some Clay Seams
 M3-Moist, Medium Stiff, Brown Sandy, Silty Clay with some Gravel
 P3-Moist, Medium Stiff, Brown and Gray Sandy, Silty Clay with Gravel
 Q3-Moist, Medium Dense, Brown Sand and Gravel
 R3-Moist, Dense, Brown Sand and Gravel

"N" VALUES

Sta. 17+03.45 - 10.7 m Left of Center Line

1.09- 1.39, N+11
 2.62- 2.92, N+9
 4.14- 4.44, N+27
 5.66- 5.96, N+14
 7.19- 7.49, N+34

Sta. 17+39.5 - 22.5 m Left of Center Line

1.67- 1.97, N+11
 3.20- 3.50, N+33
 6.40- 6.46, N+60(.06)

Sta. 17+55.45 - 23 m Left of Center Line

1.67- 1.97, N+13
 3.20- 3.50, N+32

Sta. 17+74.45 - 22.5 m Left of Center Line

1.67- 1.97, N+15
 3.20- 3.50, N+11
 4.72- 5.02, N+31

Sta. 17+94.45 - 8 m Left of Center Line

1.67- 1.97, N+3
 3.20- 3.50, N+8
 4.72- 5.02, N+2

Sta. 18+13.45 - 7.5 m Left of Center Line

1.67- 1.97, N+4
 3.20- 3.50, N+5
 4.72- 5.02, N+2
 6.24- 6.46, N+107(.21)

Sta. 18+32.45 - 22 m Left of Center Line

1.67- 1.97, N+0
 3.20- 3.50, N+1
 4.72- 5.02, N+0
 6.24- 6.54, N+33

Sta. 18+51.45 - 8.4 m Left of Center Line

1.67- 1.97, N+10
 3.20- 3.50, N+10
 4.72- 5.02, N+3
 6.24- 6.54, N+15

Sta. 18+71.45 - 21.5 m Left of Center Line

1.31- 1.61, N+7
 2.83- 3.13, N+3
 4.35- 4.65, N+2
 5.88- 6.18, N+24

Sta. 18+90.45 - 8.3 m Left of Center Line

1.67- 1.97, N+6
 3.20- 3.50, N+8
 4.72- 5.02, N+6
 6.09- 6.28, N+120(.18)

Sta. 19+10.45 - 21.5 m Left of Center Line

1.31- 1.61, N+8
 2.83- 3.13, N+4
 4.35- 4.65, N+3
 5.88- 6.18, N+16

Sta. 19+29.45 - 9 m Left of Center Line

1.22- 1.52, N+6
 2.74- 3.04, N+11
 4.26- 4.56, N+6
 5.79- 6.09, N+6

Sta. 19+49.45 - 22.7 m Left of Center Line

1.12- 1.42, N+6
 2.65- 2.95, N+8
 4.17- 4.47, N+6
 5.69- 5.99, N+14

Sta. 19+68.45 - 7.5 m Left of Center Line

1.28- 1.58, N+3
 2.80- 3.10, N+4
 4.32- 4.62, N+6
 5.85- 6.15, N+8
 7.37- 7.67, N+12

Sta. 19+88.45 - 22.9 m Left of Center Line

1.22- 1.52, N+9
 2.74- 3.04, N+14
 4.26- 4.56, N+12
 5.79- 6.09, N+9
 7.31- 7.61, N+7

Sta. 20+06.45 - 9.3 m Left of Center Line

1.22- 1.52, N+8
 2.74- 3.04, N+6
 4.26- 4.56, N+11
 5.79- 6.09, N+50
 7.31- 7.34, N+60(.03)

| 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. | | 060779 | 63 | 119 |
| | | | | | | 06715 | LAYOUT | 39063 |

GENERAL NOTES

All dimensions are in meters unless otherwise noted.

BENCH MARK: Cotton Picker Spike in Telephone Pole, 24.99 m Lt. of Sta. 19+95.09, Elev. 86.069

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.

LIVE LOADING: MSB METHOD OF DESIGN: Load Factor
SEISMIC PERFORMANCE CATEGORY: A

MATERIALS AND STRENGTHS:

Class 5 Concrete (Prestressed Girder) f'c = 35.0 MPa
 Class 5 Concrete (superstructure) f'c = 28.0 MPa
 Class 5 Concrete (substructure) f'c = 24.0 MPa
 Reinforcing Steel (ASTM A615/A615M-96a, Grade 420) 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.

STEEL PILING: All piling shall be HP 250x62 and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 490 kN per pile and into the material designated as hard shale on the boring legend. Lengths shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with the Standard Specifications. Piles in and bents to be driven after embankment to bottom of cap is in place. On all piles the contractor shall use approved steel H-Pile driving points. Minimum penetration for all piles shall be 3.0 m below bottom of cap or footing.

FOOTINGS: Footings in Bent Nos. 2, 3, 4, 18 and 19 shall be set a minimum of 0.5 m into material designated as hard, fractured shale on the boring legend. The top of the footings of Bent No. 18 and 19 shall be set a minimum of 0.75 m below the channel bottom. Rock excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in the footings shall be poured directly against excavated surfaces of rock. The top of the footings for Bent No. 5 through 17 shall be set a minimum of 0.8 m below Natural ground. Foundations for footings shall be prepared in accordance with Section 80.04 of the 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.

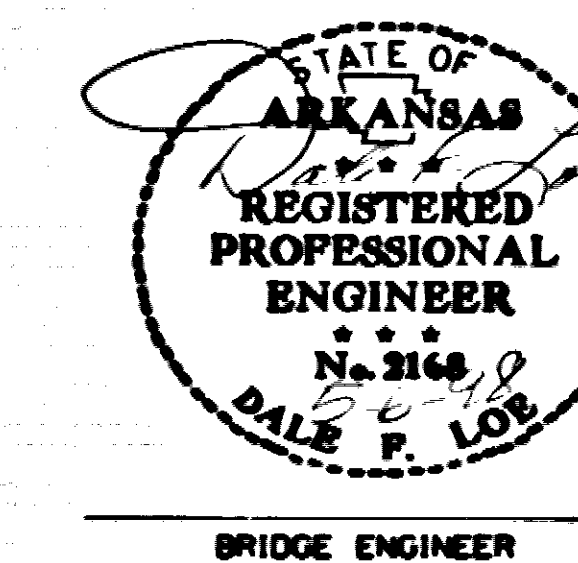
PROTECTIVE SURFACE TREATMENT: Class I Protective Surface Treatment shall be applied to the roadway surface and to the face and top of the concrete parapet rail.

DETAIL DRAWINGS: DRAWING NO.

End Bents 39047 & 39064
 Intermediate Bents 39065 - 39068 & 39045 & 39046
 68 m Prestressed Concrete Girder Units 39069 - 39072
 102 m Continuous Plate Girder Unit 39051 - 39056
 Steel Piling 36505
 Type Special Approach Gutters 39060

EXISTING BRIDGE: Existing Bridge No. 00414 (log mile 0.37) is 7.0 m wide and 37.2 m long. It consists of 29 R.C. Deck Girder approach spans and two 32.5 m R.C. Deck Girder Arch spans over the main channel. Concrete pile bents and concrete piers support the superstructure. Plans of the existing bridge will be made available to the Contractor upon request. Original bridge plans are shown on drawing No. 923-929, 100, and 109. Modifications have been made to some of the original bridge substructure units. These modifications are not shown on the above original bridge drawings, but include the following: 1) four 40 mm X 40 mm concrete columns with a concrete cap are attached to Bent Nos. 10 & 22; 2) a 40 mm X 40 mm steel pile sitting on a 1 m X 1 m concrete slab are added to Bent No. 18; 3) three 30 mm steel piles, each sitting on a 5 m X 2 m concrete slab, and four 40 mm X 40 mm concrete columns with a concrete cap have been installed approximately 1 m ahead of Bent No. 24.

REMOVAL AND SALVAGE: After the new bridge is opened to traffic, existing Bridge No. 00414 shall be removed in accordance with Section 205 of the Standard Specifications. This includes any modifications added subsequent to original construction, and any original components which are in the floodplain but are no longer a functional part of the existing structure. All material from the existing bridge shall become the property of the Contractor.



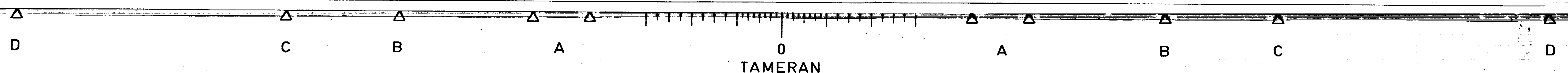
ALTERNATE NO. 2
 (SHEET 3 OF 3)
 LAYOUT OF BRIDGE OVER SALINE RIVER
 SALINE RIVER & SALT CREEK STRS. & APPRS. (S)
 ROUTE 229 SEC. 5
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.

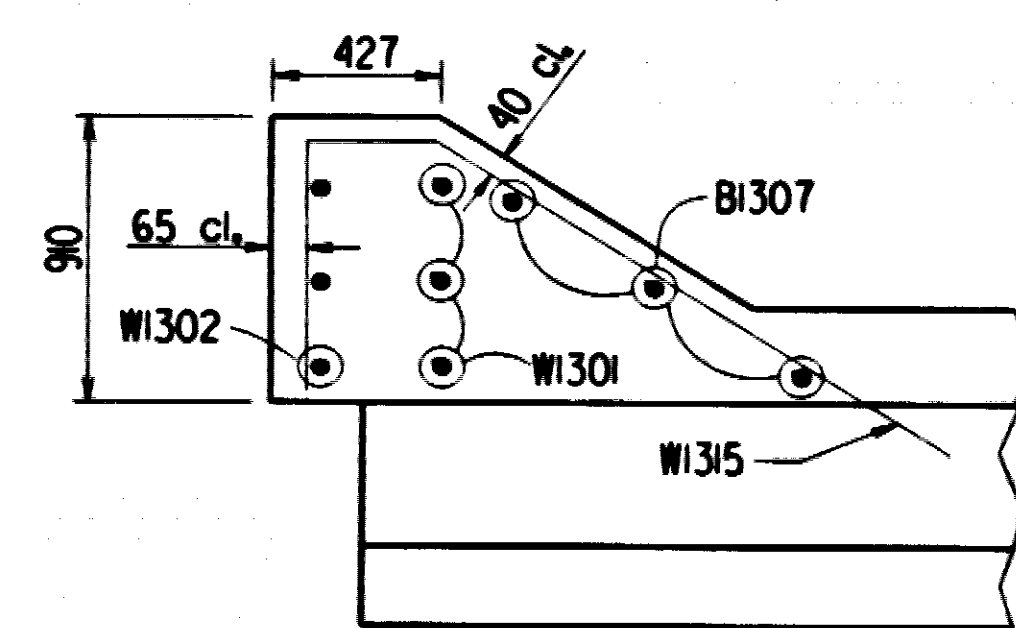
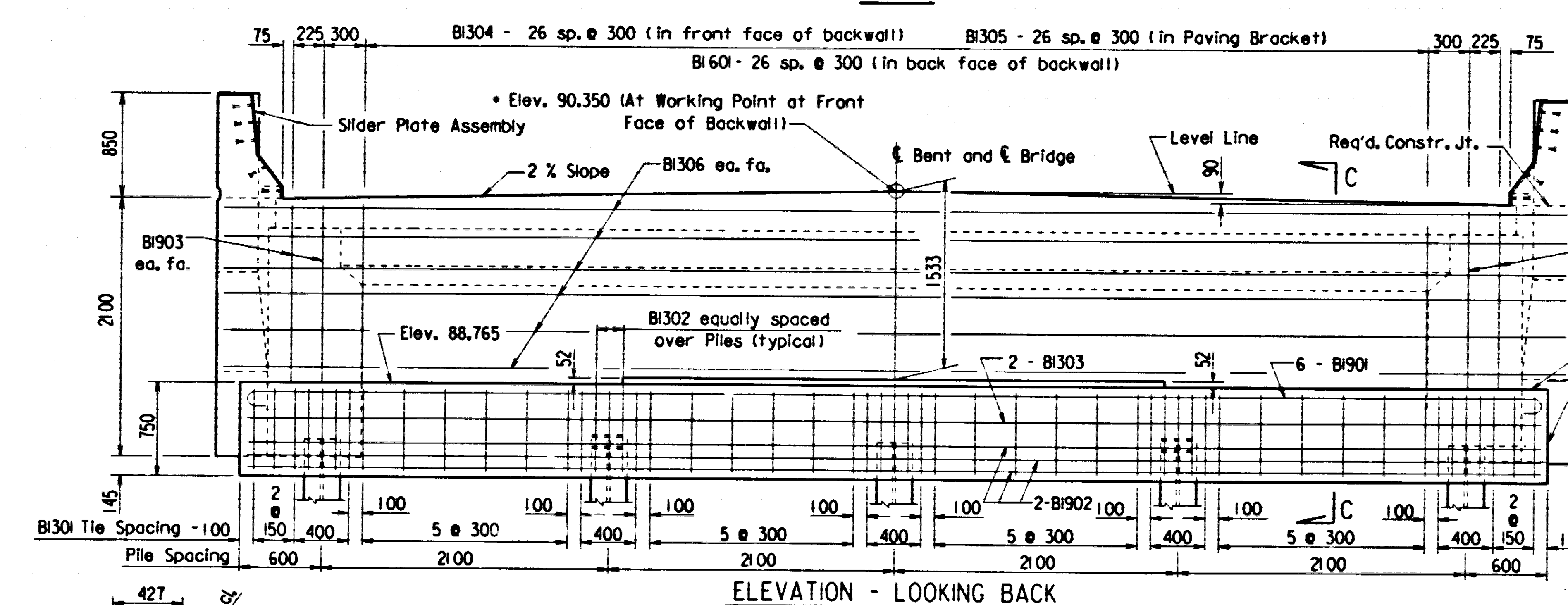
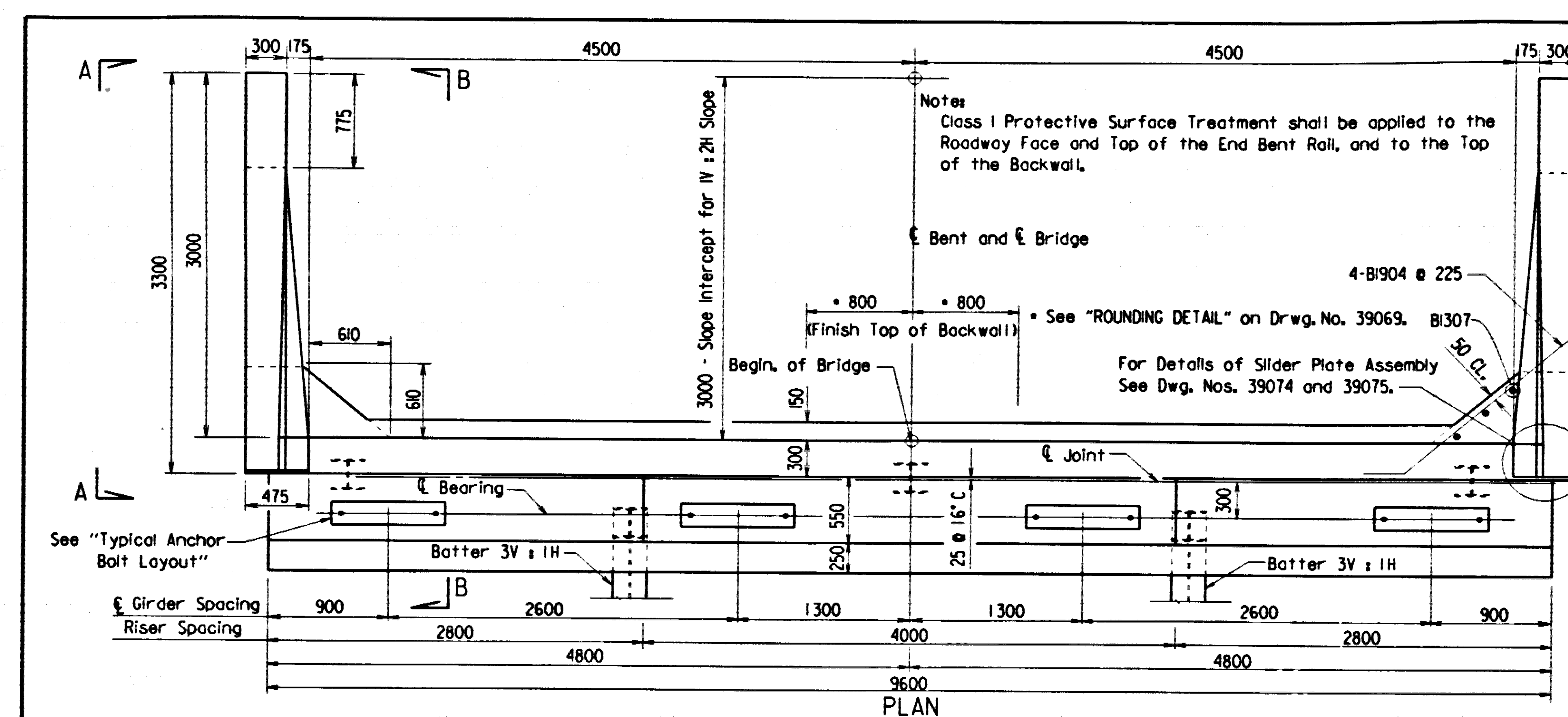
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 BRIDGE NO. 06715 DRAWING NO. 39063



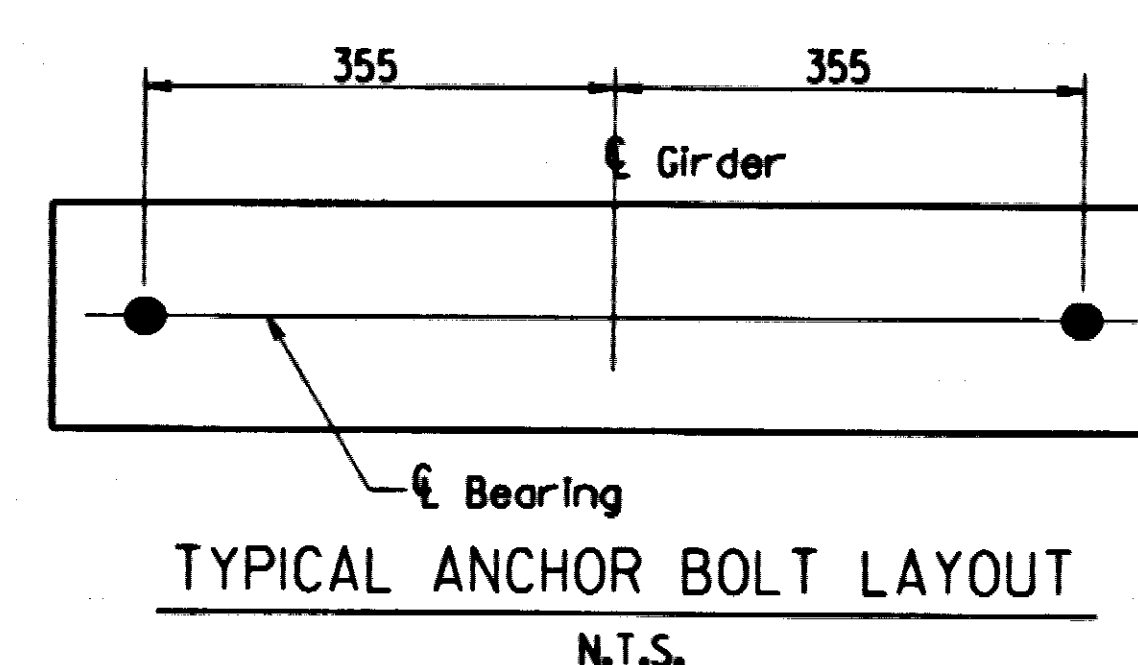
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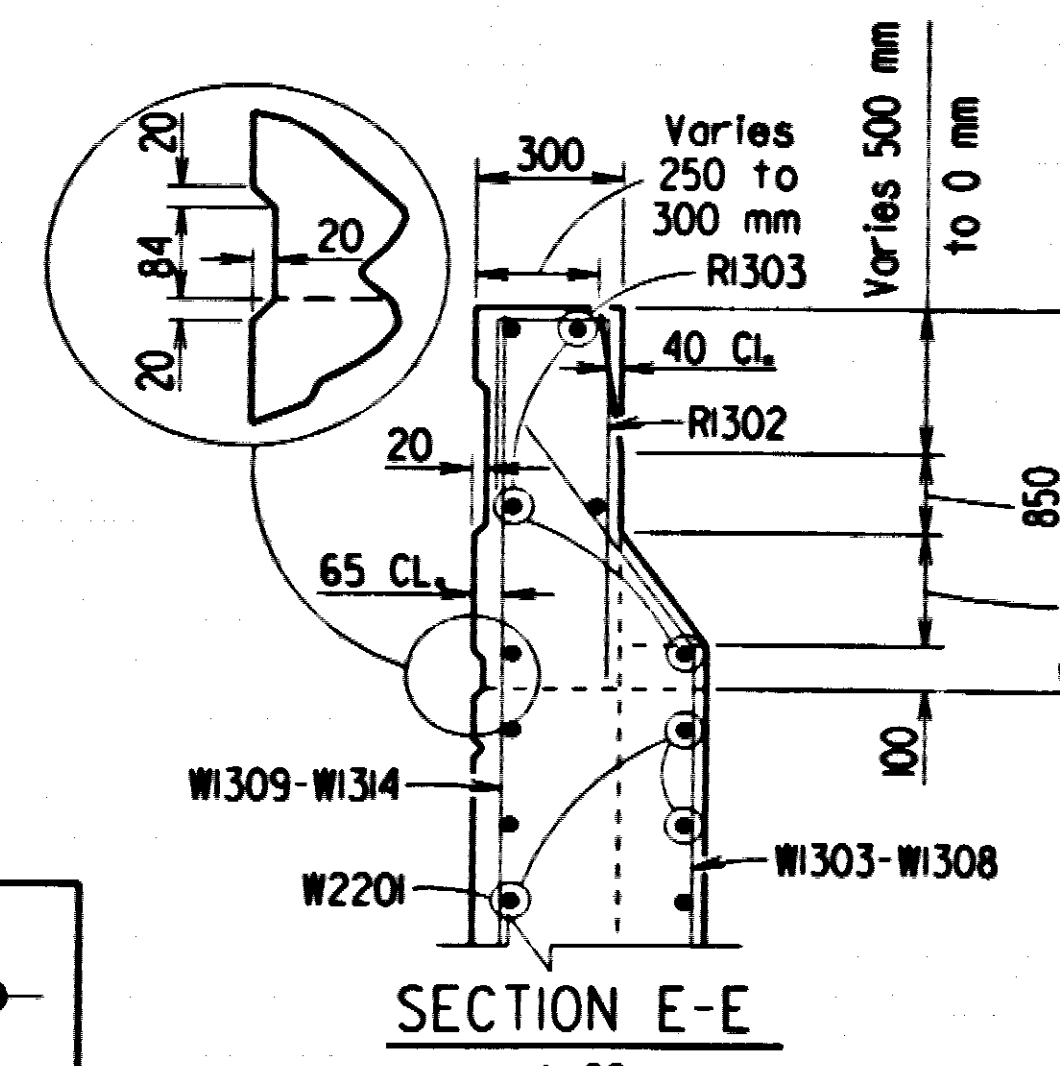




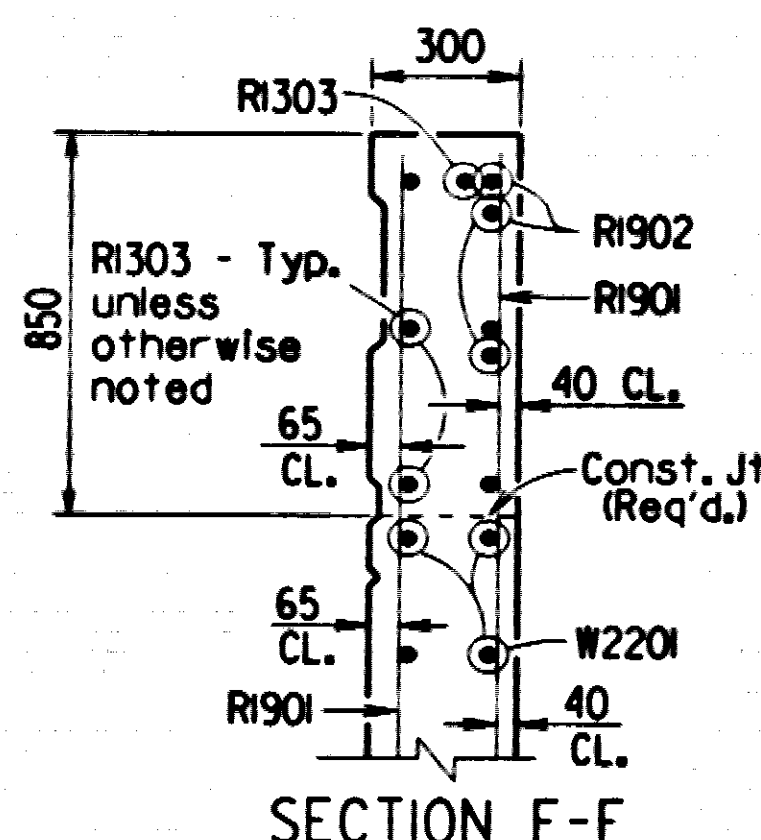
SECTION X-X
N.T.S.



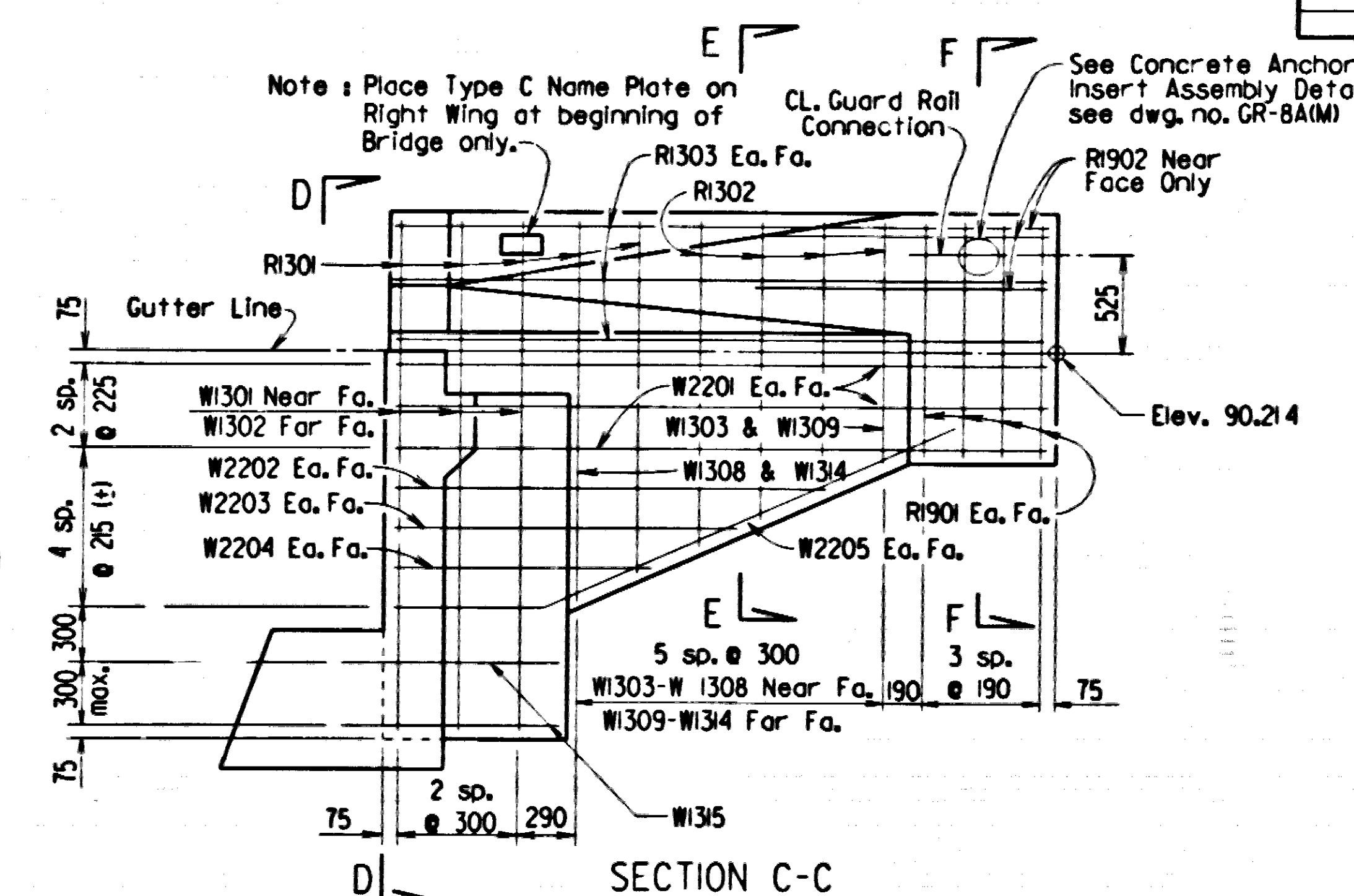
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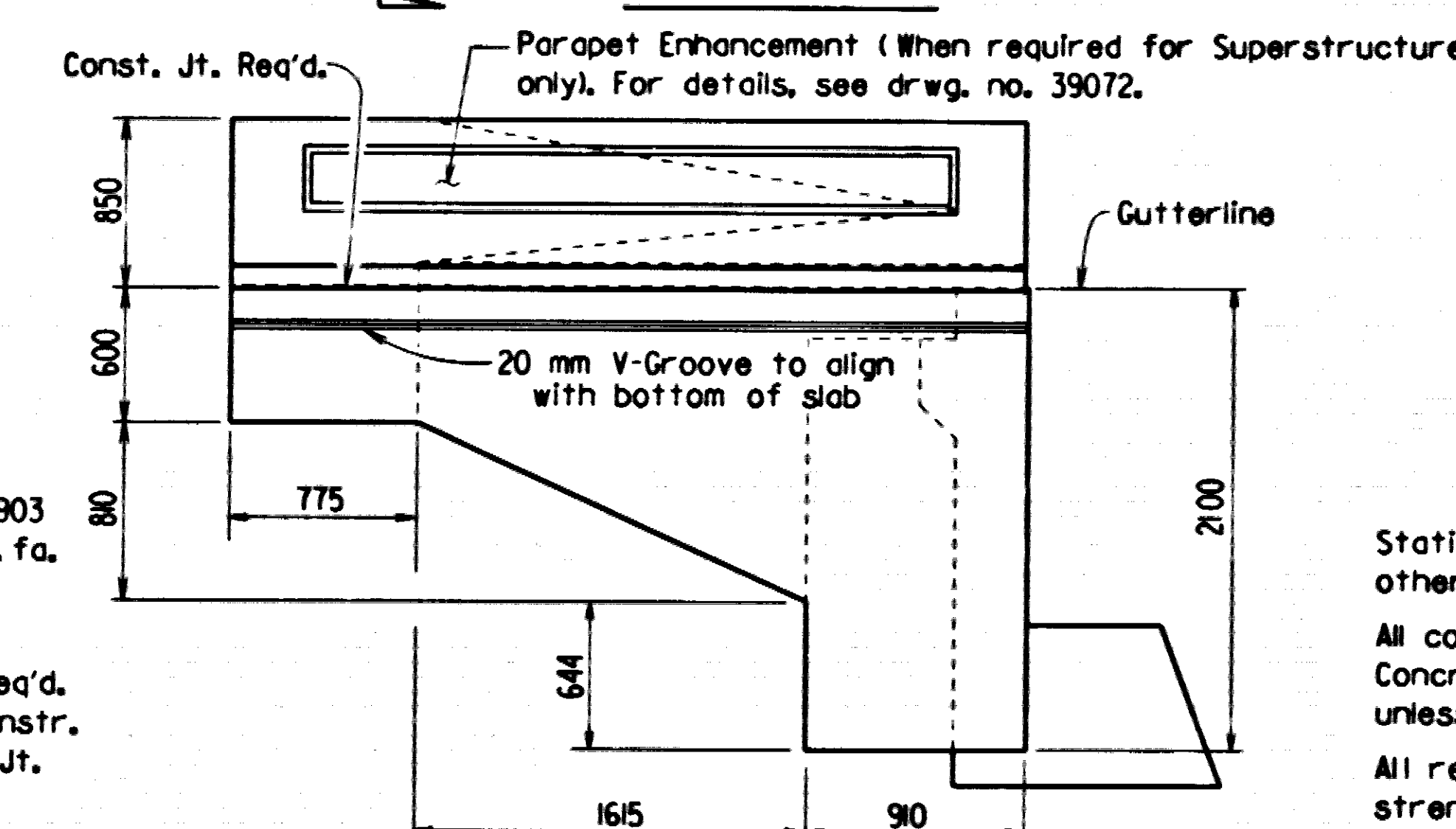
SECTION E-E



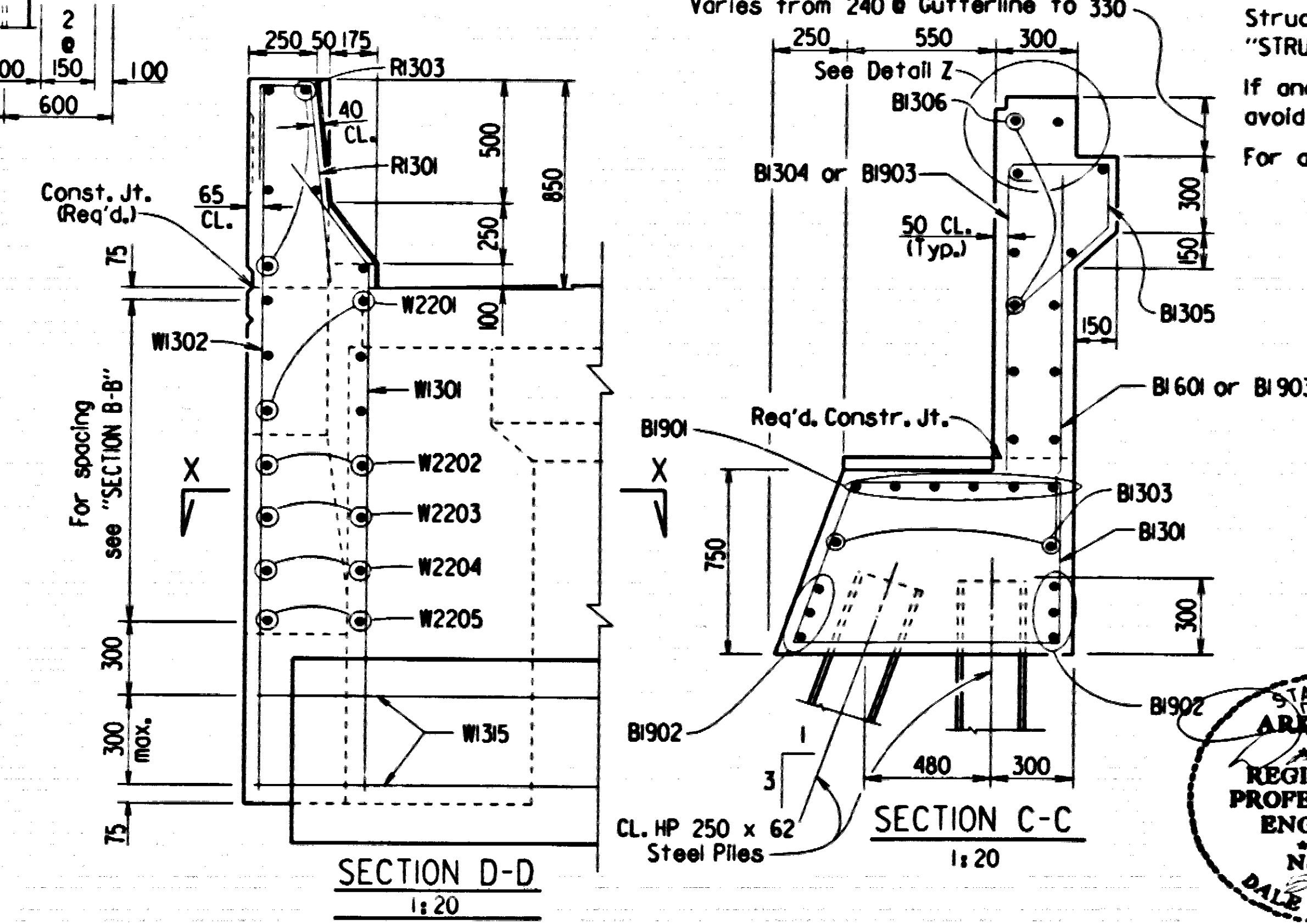
SECTION F-F



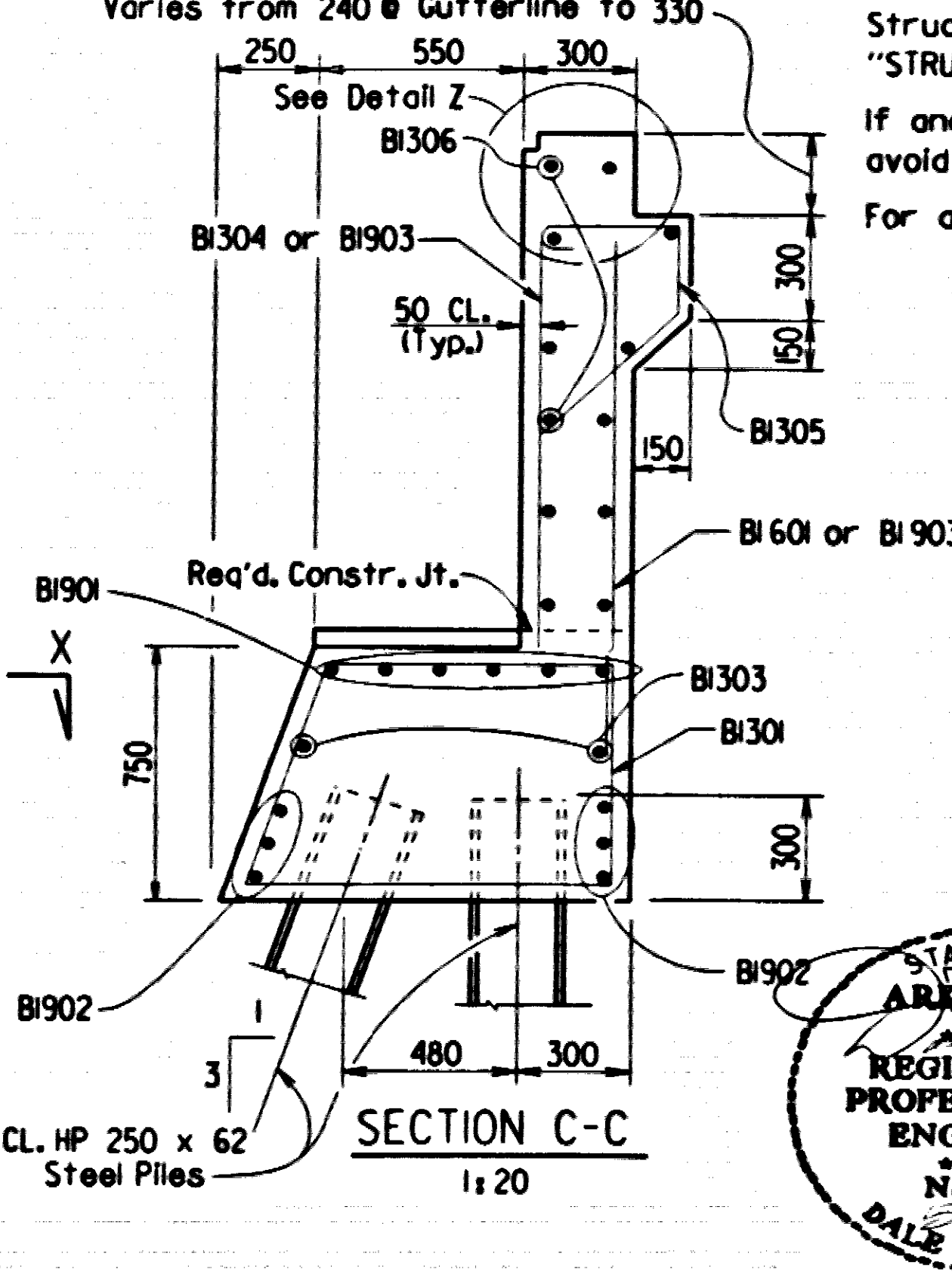
SECTION C-C



VIEW A-



SECTION D-1



SECTION C-C

| | | | | | | | | |
|-----------------|----------------|-----------------|----------------|-------------------------|------------------------|--------------------|--------------|-----------------|
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. PROJ. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| | | | | 6 | ARK. | | | |
| | | | | | | 060779 | | 119 |
| Anchor | | | | JOB NO. | 06715 End Bent Details | | 39064 | |

| | | | | Bending Diagrams |
|----------------|------------|------------------|----------|--------------------------------------|
| | | | | (Dimensions are out to out of bars.) |
| Mark | No. Req'd. | Length | Pin Dia. | |
| B1301 | 38 | 3' 90 | 50 | |
| B1302 | 15 | 2' 040 | 50 | |
| B1303 | 2 | 9' 500 | Str. | |
| B1304 | 27 | 1' 950 | Str. | |
| B1305 | 27 | 1' 20 | 50 | |
| B1306 | 12 | 9' 850 | Str. | |
| B1307 | 6 | 1' 760 | Str. | |
| B1601 | 27 | 1' 950 | Str. | |
| R1901 | 6 | 9' 930 | 114 | |
| B1902 | 6 | 9' 500 | Str. | |
| B1903 | 8 | 1' 430 | Str. | |
| B1904 | 8 | 2' 250 | 114 | |
| R1301 | 10 | 1' 170 | 50 | |
| R1302 | 8 | 1' 190 | 50 | |
| R1303 | 12 | 3' 200 | Str. | |
| R1901 | 16 | 1' 350 | Str. | |
| R1902 | 6 | 1' 40 | Str. | |
| N1301 | 6 | 2' 500 | 76 | |
| N1302 | 6 | 2' 860 | Str. | |
| N1303 to N1308 | 2 Ea. | 10' 20 to 1' 780 | 76 | |
| N1309 to N1314 | 2 Ea. | 1' 390 to 2' 140 | Str. | |
| N1315 | 4 | 2' 470 | 50 | |
| N2201 | 12 | 3' 200 | Str. | |
| N2202 | 4 | 2' 070 | Str. | |
| N2203 | 4 | 1' 660 | Str. | |
| N2204 | 4 | 1' 230 | Str. | |
| N2205 | 4 | 2' 770 | 133 | |

END BENT NOTE

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.

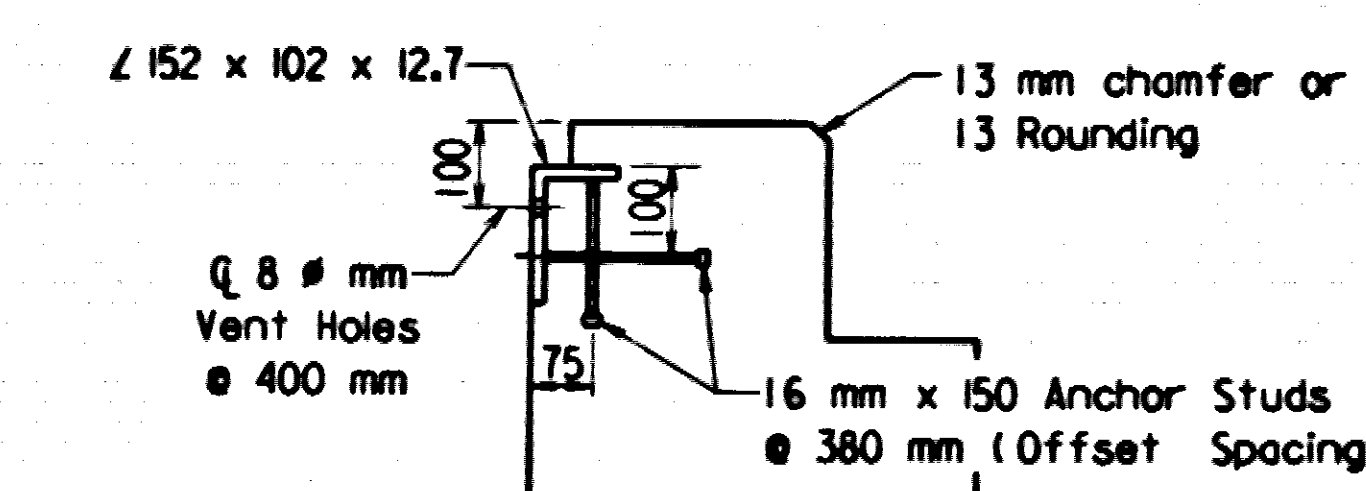
All reinforcing steel shall conform to ASTM A 615/A 615M-96a, Grade 420 (yield strength strength = 420 MPa.)

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 PLATE GIRDER 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.



DETAIL
N.T.S.

ALTERNATE NO. 2

DETAILS OF END BENT NO. 1

SALINE RIVER

ROUTE 229 SEC

S STATE HIGHWAY

LITTLE ROCK, ARK.

EB DATE: 04/13/98

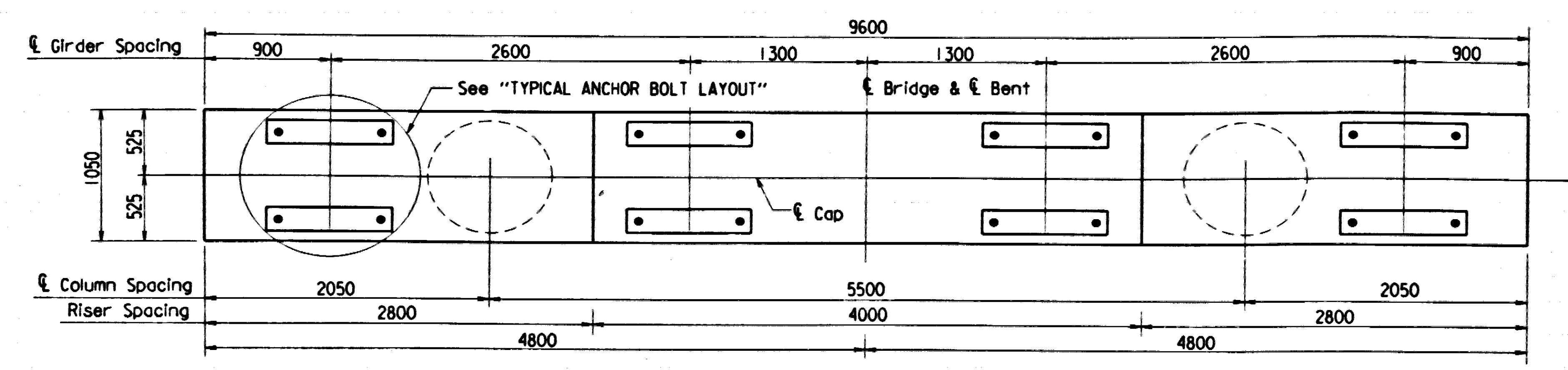
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DESIGNED BY: AMS DATE: 3/31/98

DESIGNED BY W/L DATES 3/31/78 as Noted
BRIDGE NO. 06715 DRAWING NO. 39064

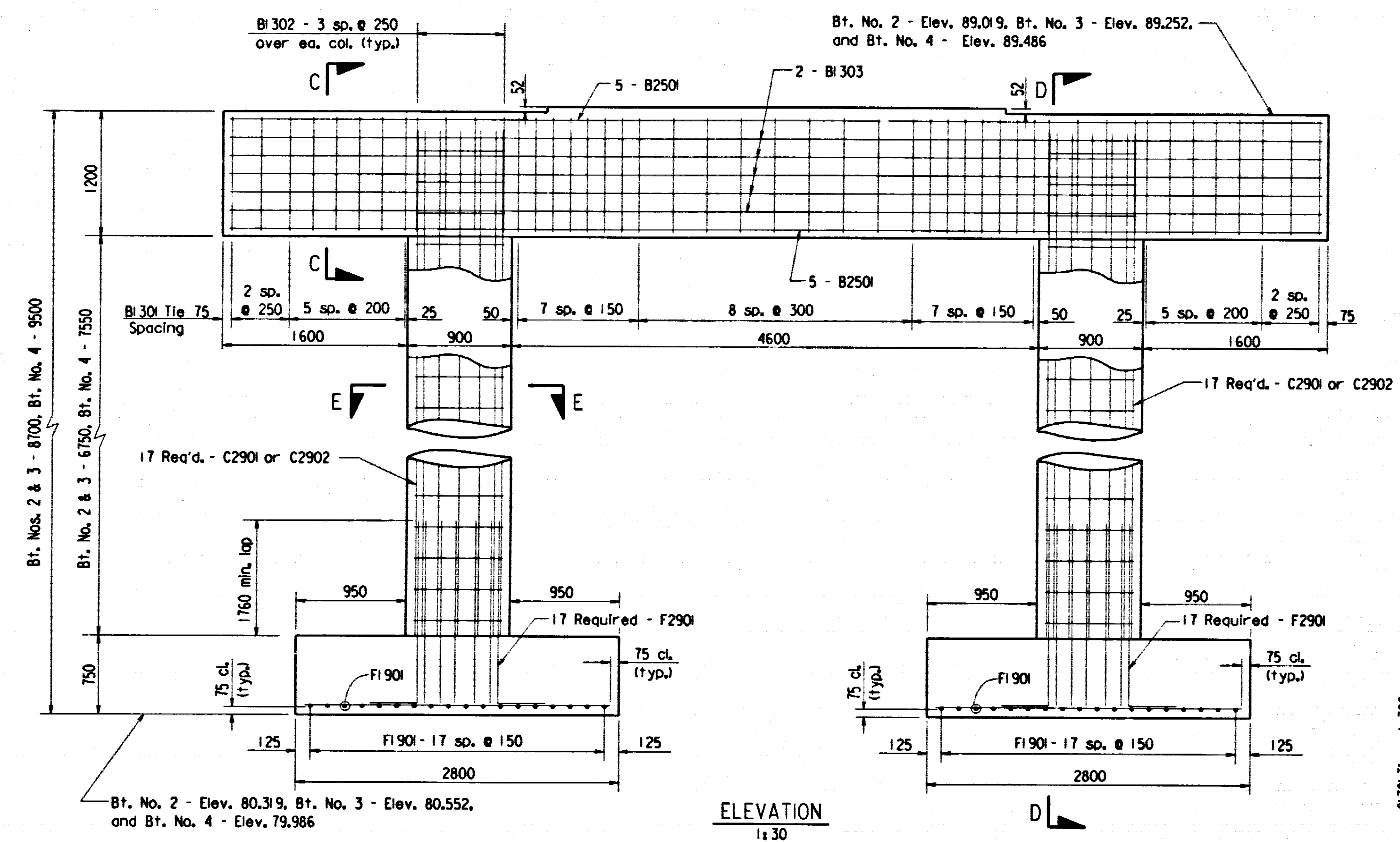
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BR060779a.BII

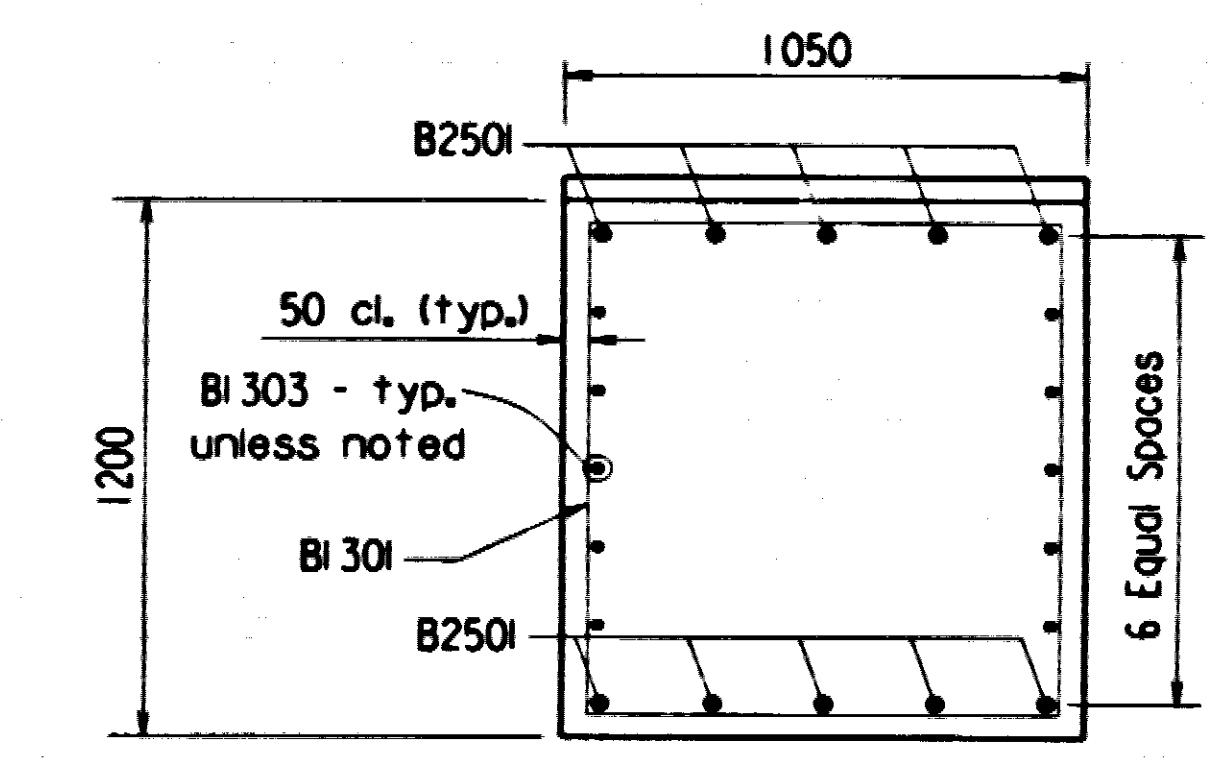
© 2004 Blackwell Publishing Ltd *Journal of Internal Medicine* 255: 105–112



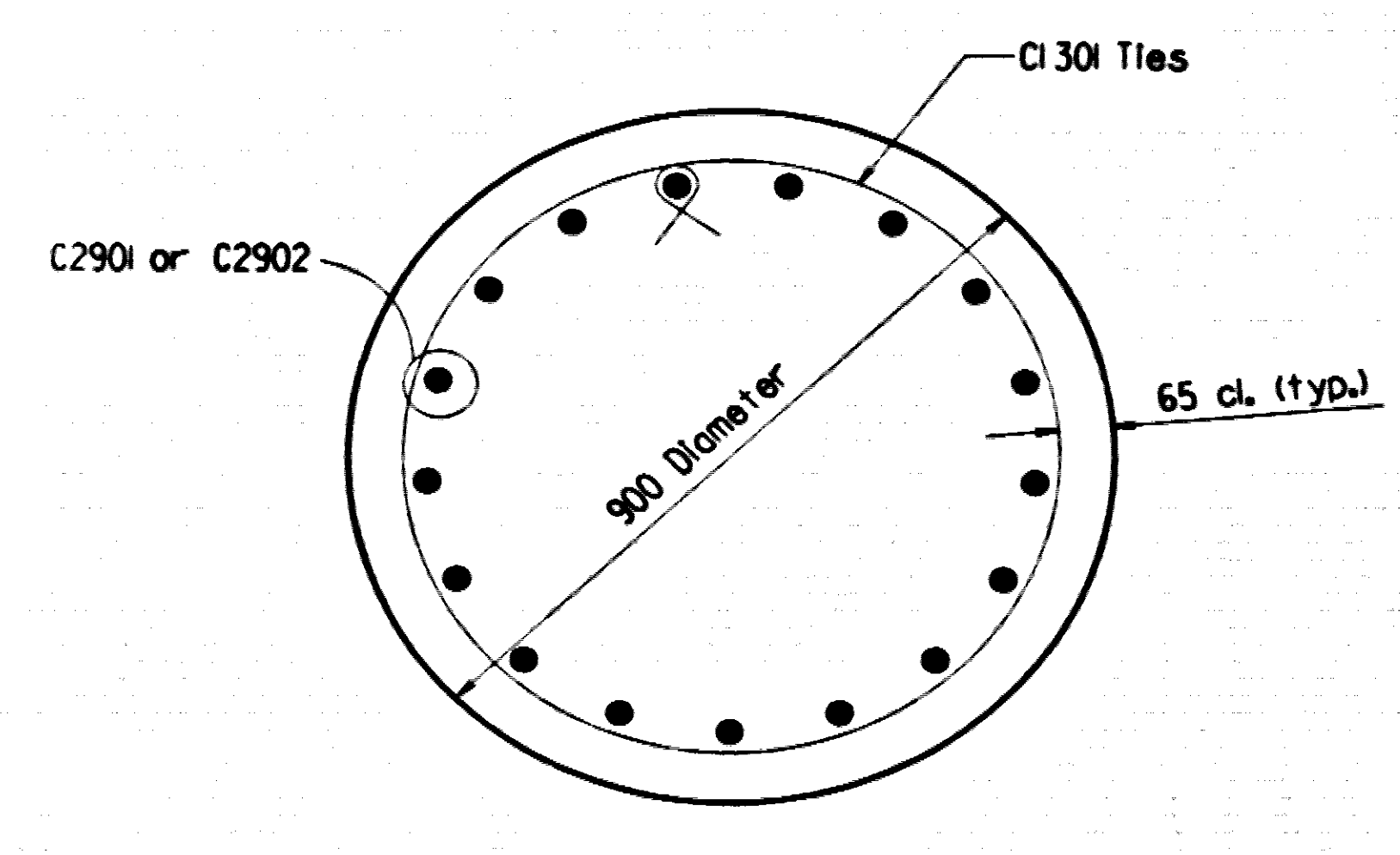
PLAN
1:30



ELEVATION
1:30

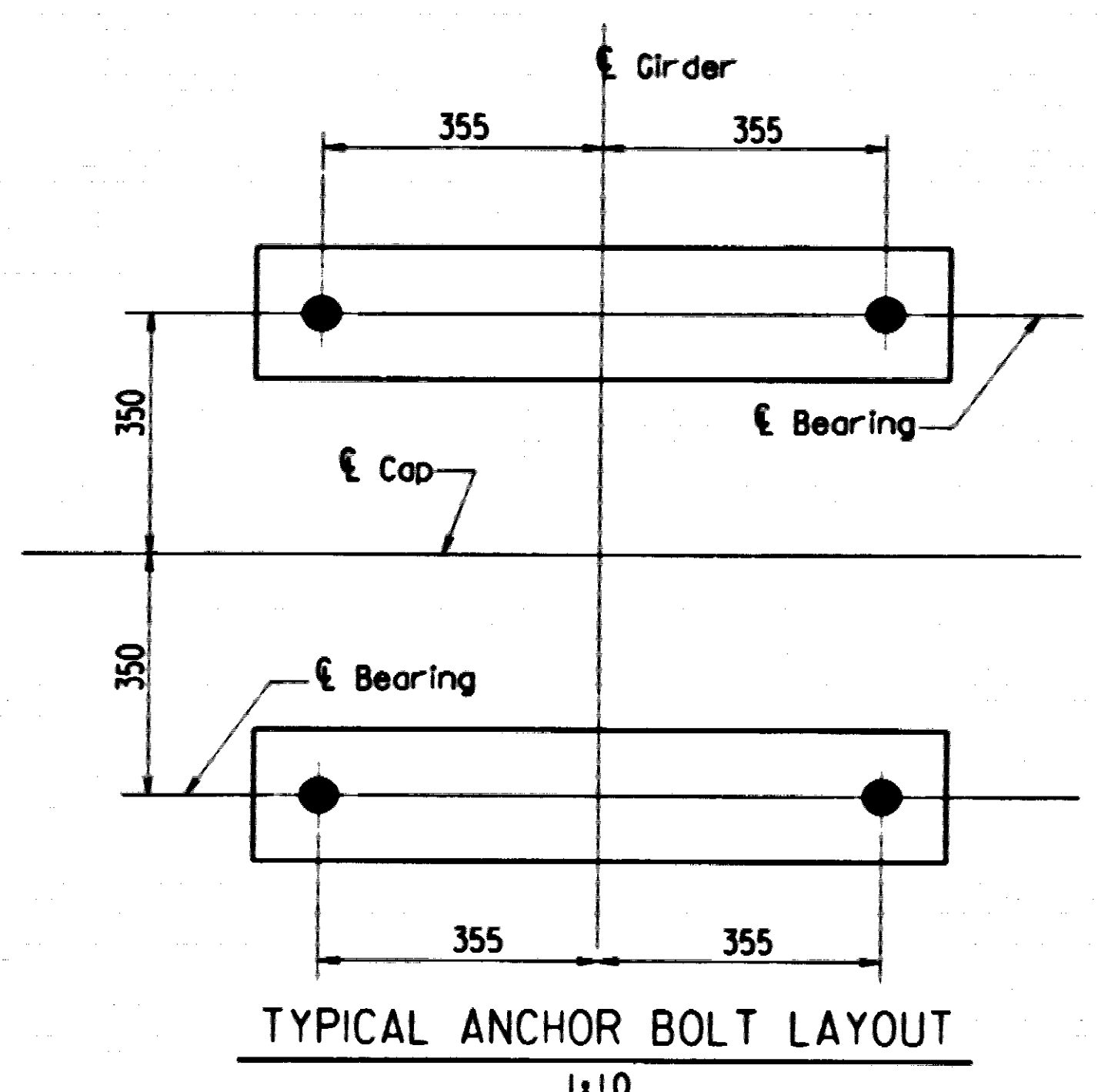


SECTION C-C
1:20

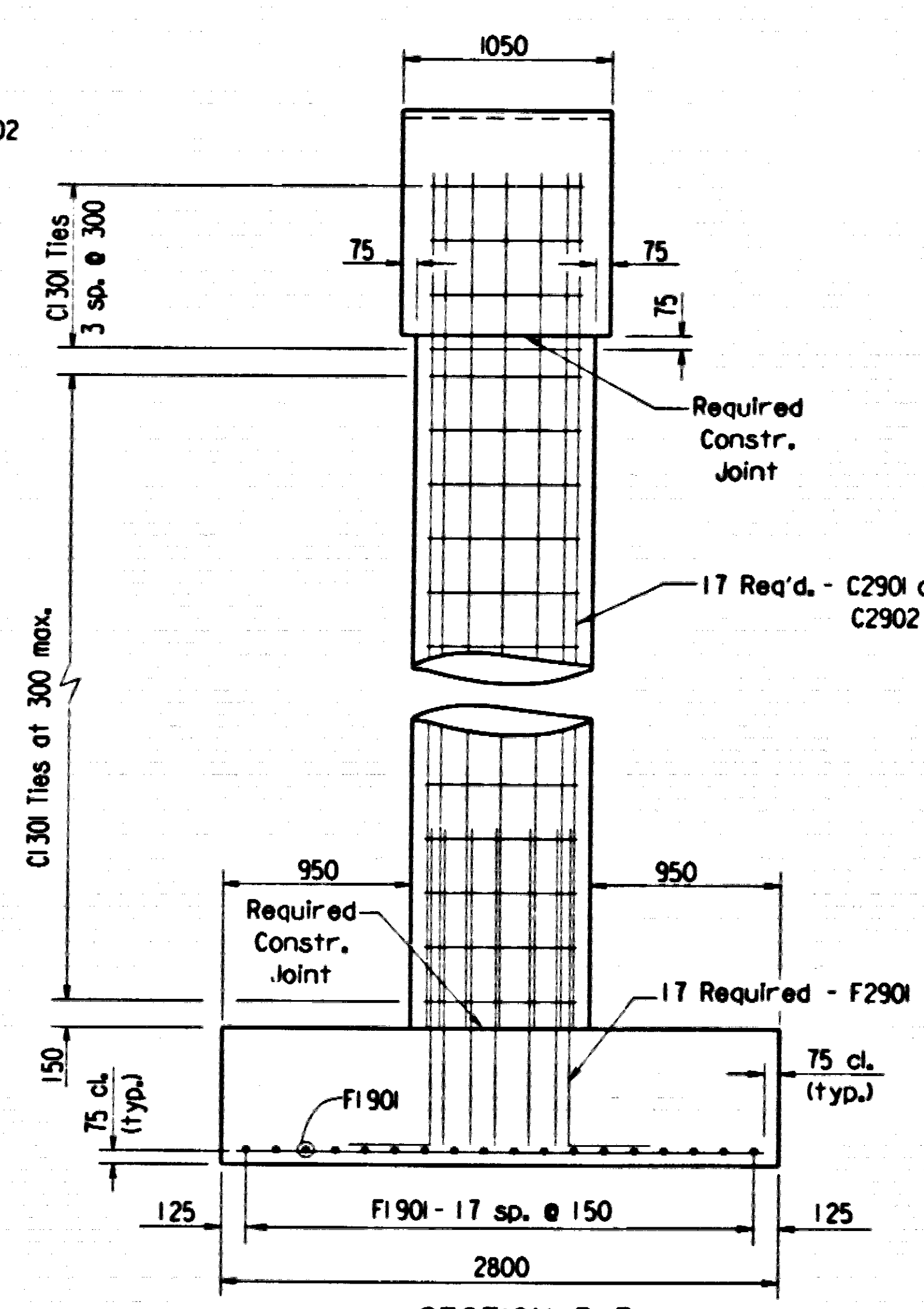


SECTION E-E
1:10

Notes:
For details of Elastomeric Bearings, see drwg. no. 39073.



TYPICAL ANCHOR BOLT LAYOUT
1:10



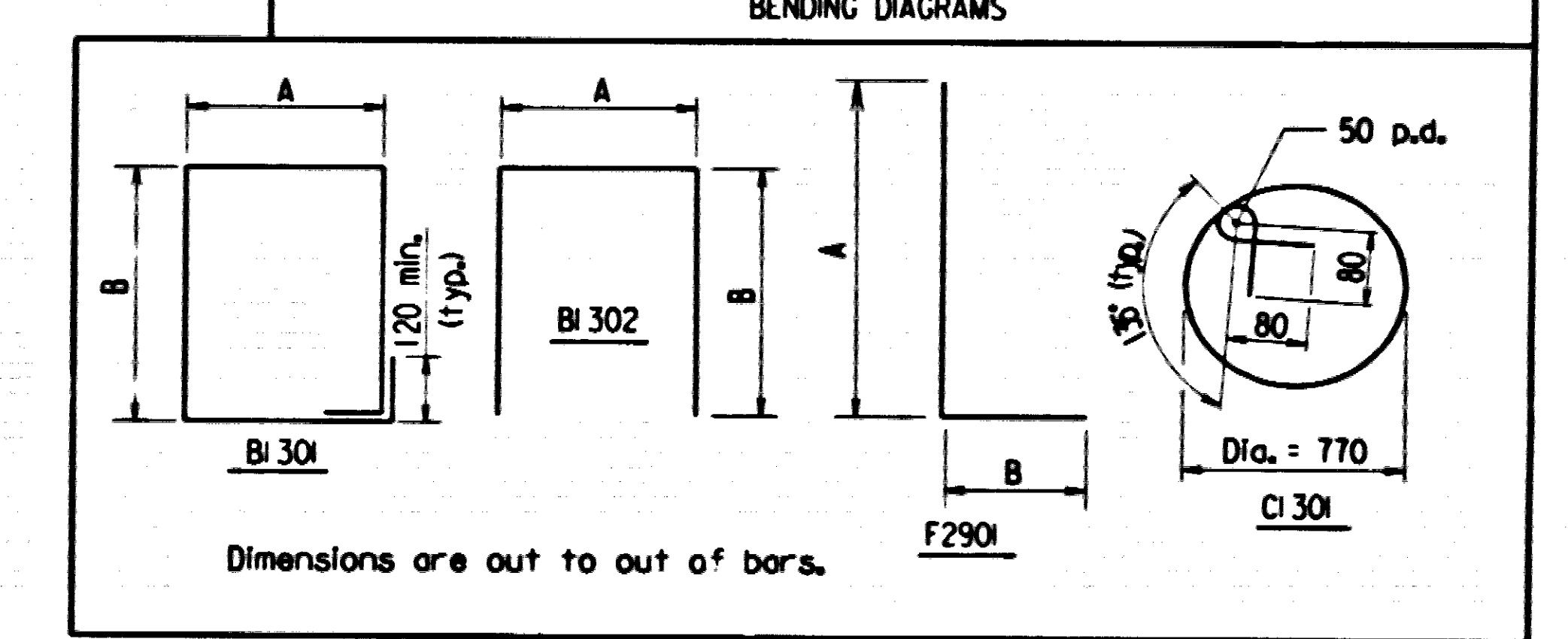
SECTION D-D
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| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|-----------|--------------|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 060779 | 45 | 119 |
| | | | | | | 06715 BENT DETAILS | | 39065 |

BAR LIST - PER BENT

| MARK | NUMBER REQUIRED | | LENGTH | A | B | PIN DIA. |
|-------|-----------------|-------|--------|------|------|----------|
| | BT. 2 or 3 | BT. 4 | | | | |
| B130I | 39 | 39 | 4210 | 950 | 1100 | 50 |
| B1302 | 8 | 8 | 3100 | 950 | 1100 | 50 |
| B1303 | 10 | 10 | 9500 | | | Str. |
| B250I | 10 | 10 | 9500 | | | Str. |
| C130I | 52 | 58 | 2690 | | | 50 |
| C290I | 34 | | 7770 | | | Str. |
| C2902 | | 34 | 8570 | | | Str. |
| F190I | 72 | 72 | 2650 | | | Str. |
| F290I | 34 | 34 | 3110 | 2700 | 490 | 228 |

BENDING DIAGRAMS

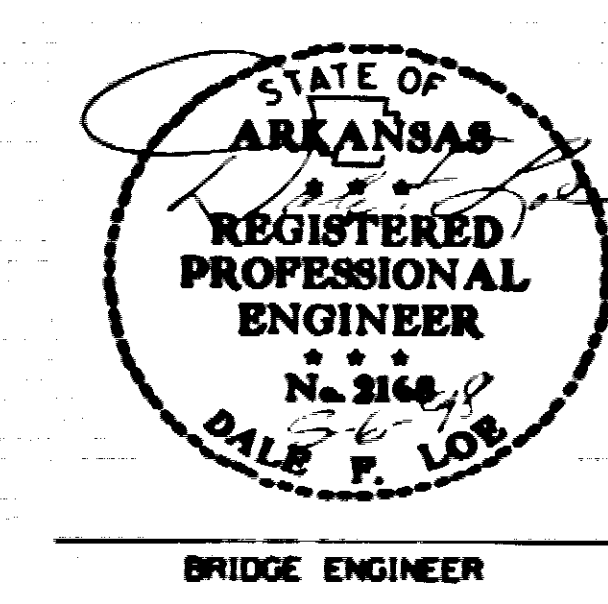


GENERAL NOTES

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 A615/A615M-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.

ALTERNATE NO. 2
DETAILS OF INTERMEDIATE
BENT NOS. 2 THROUGH 4
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

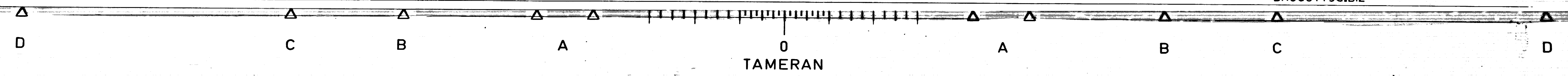
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DESIGNED BY: AMS DATE: 3/26/98
BRIDGE NO. 06715 DRAWING NO. 39065

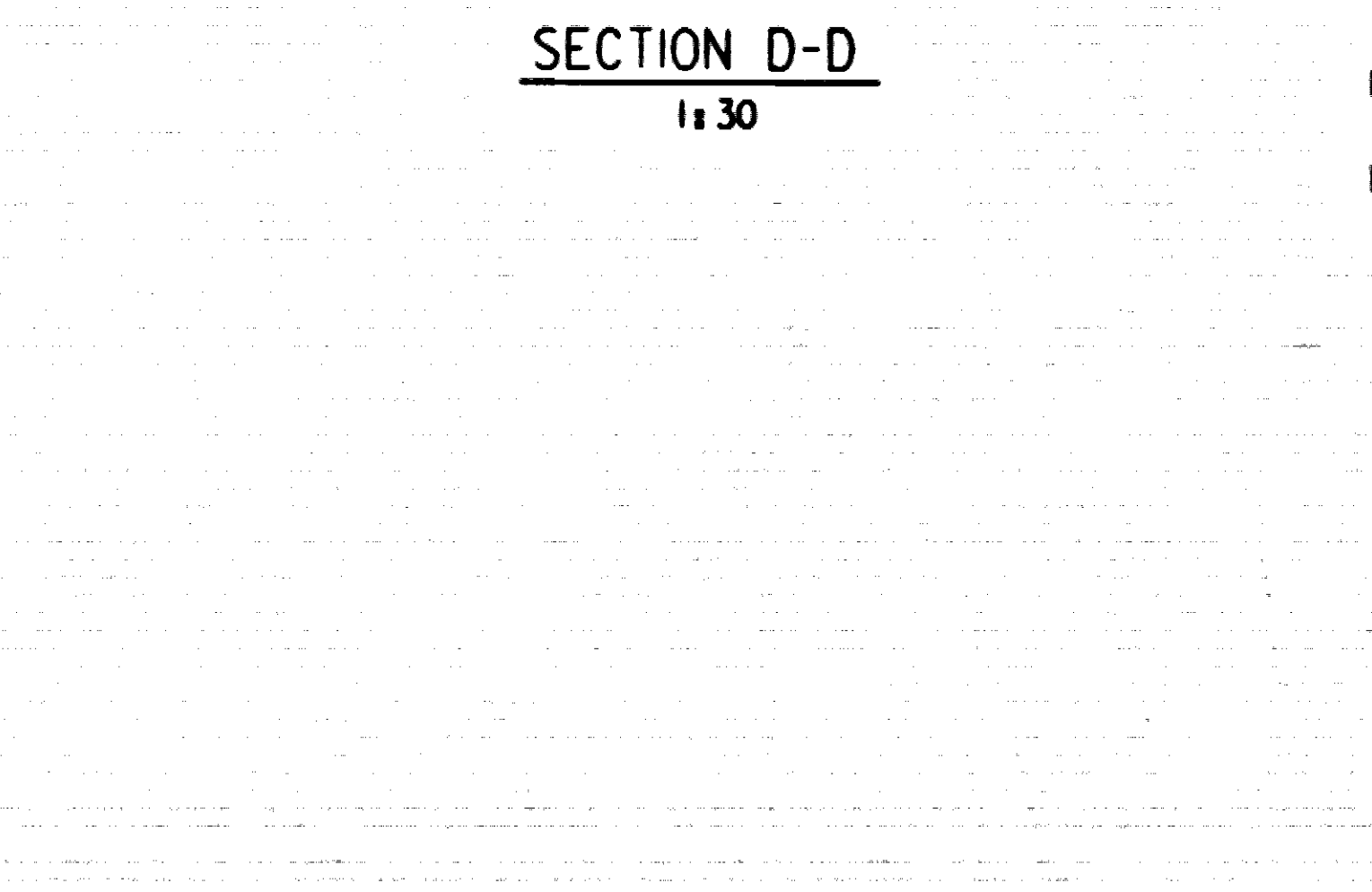
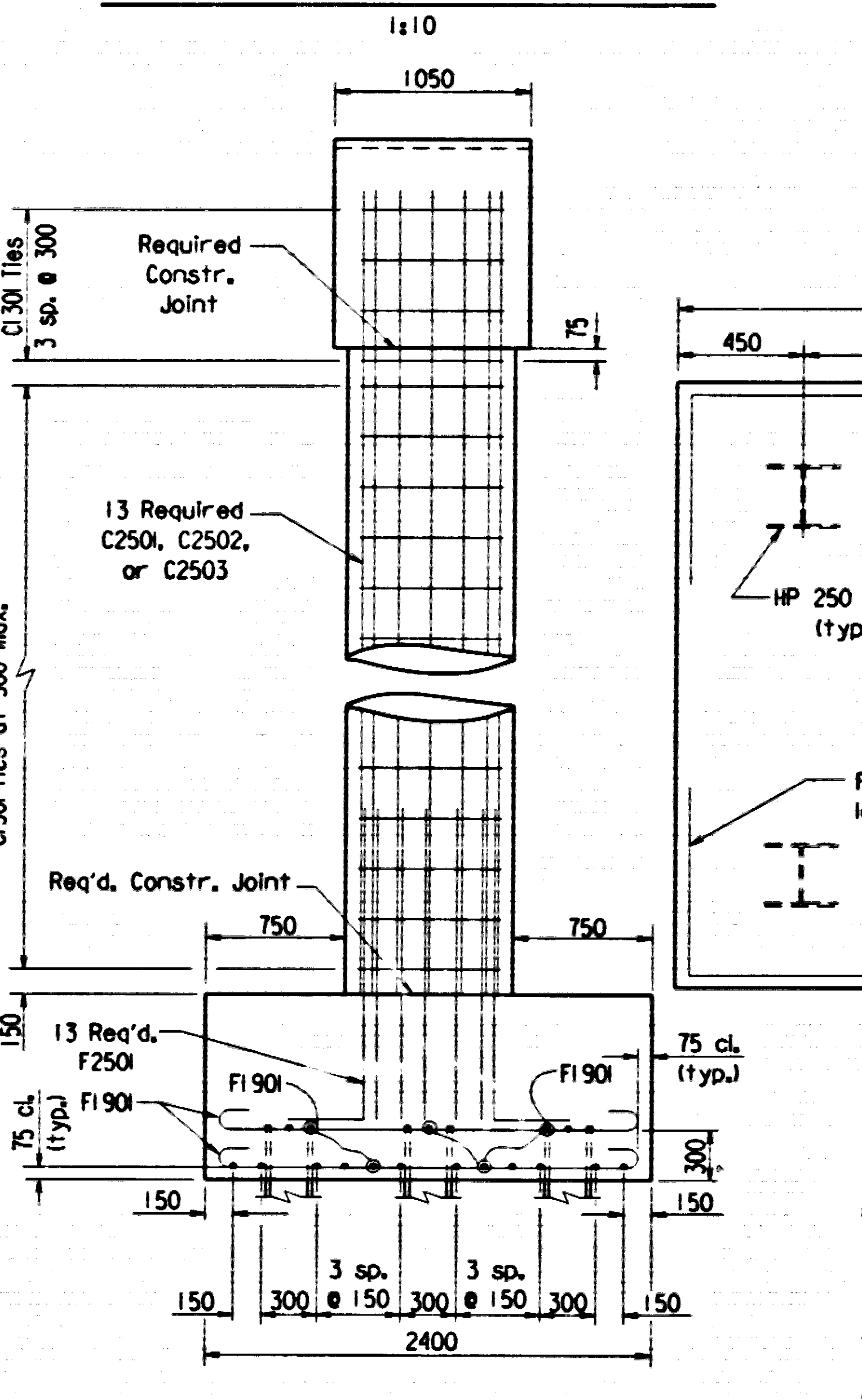
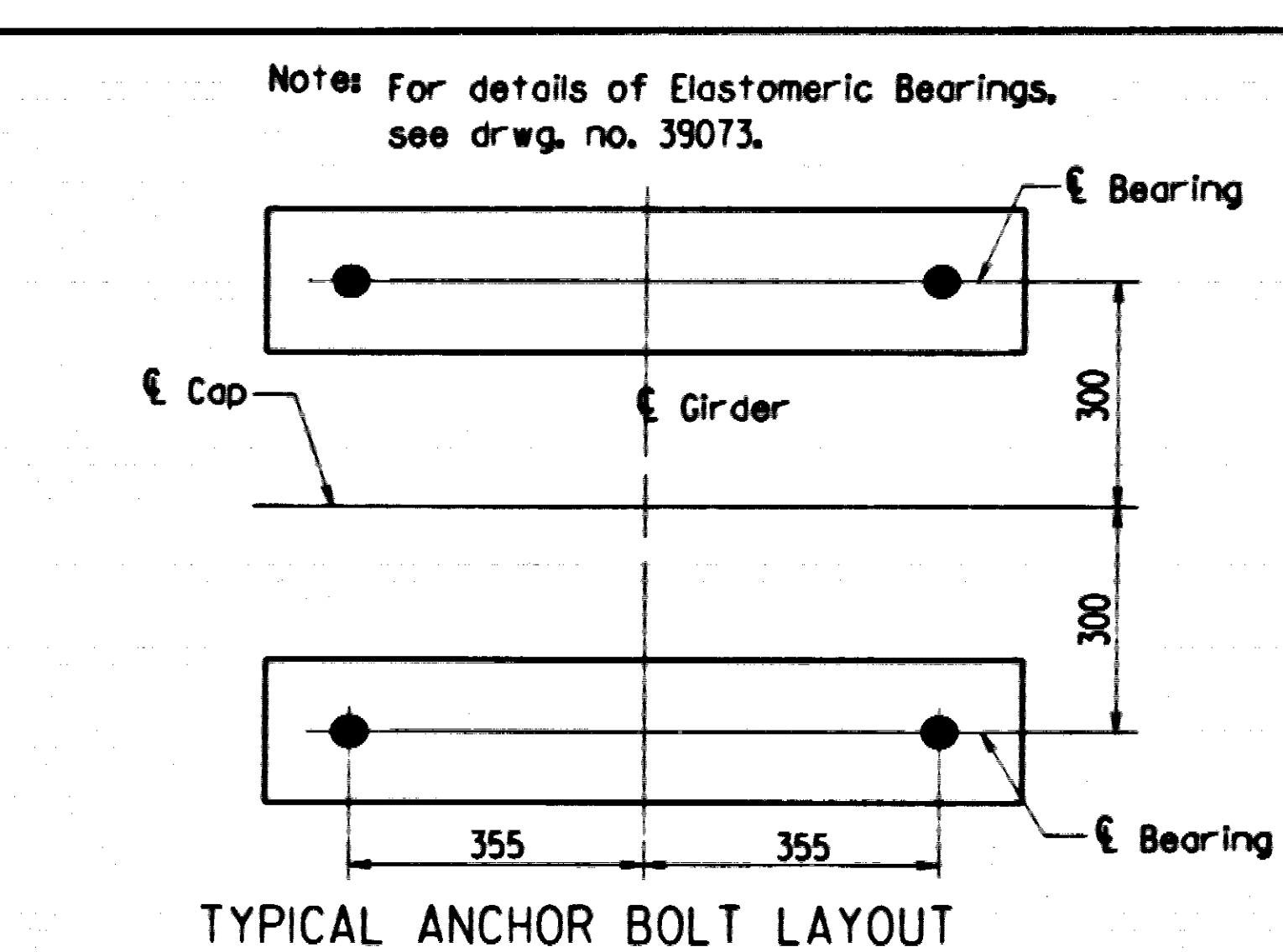
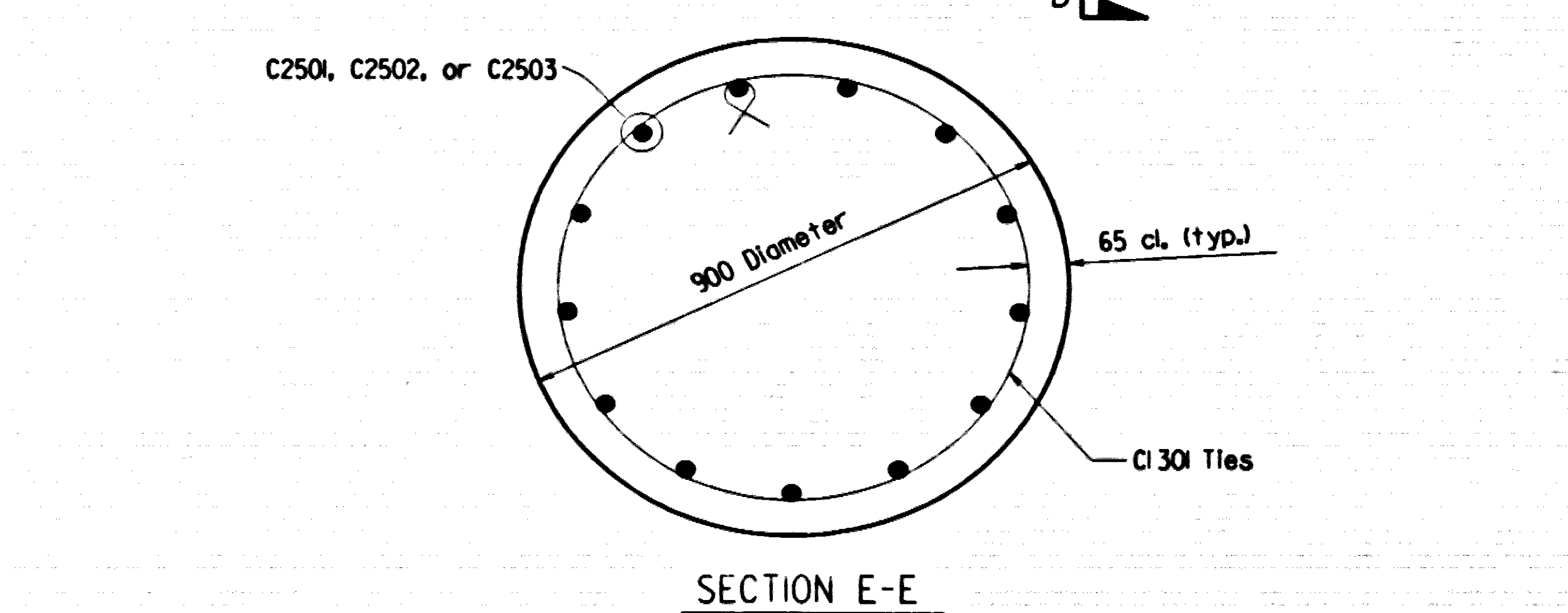
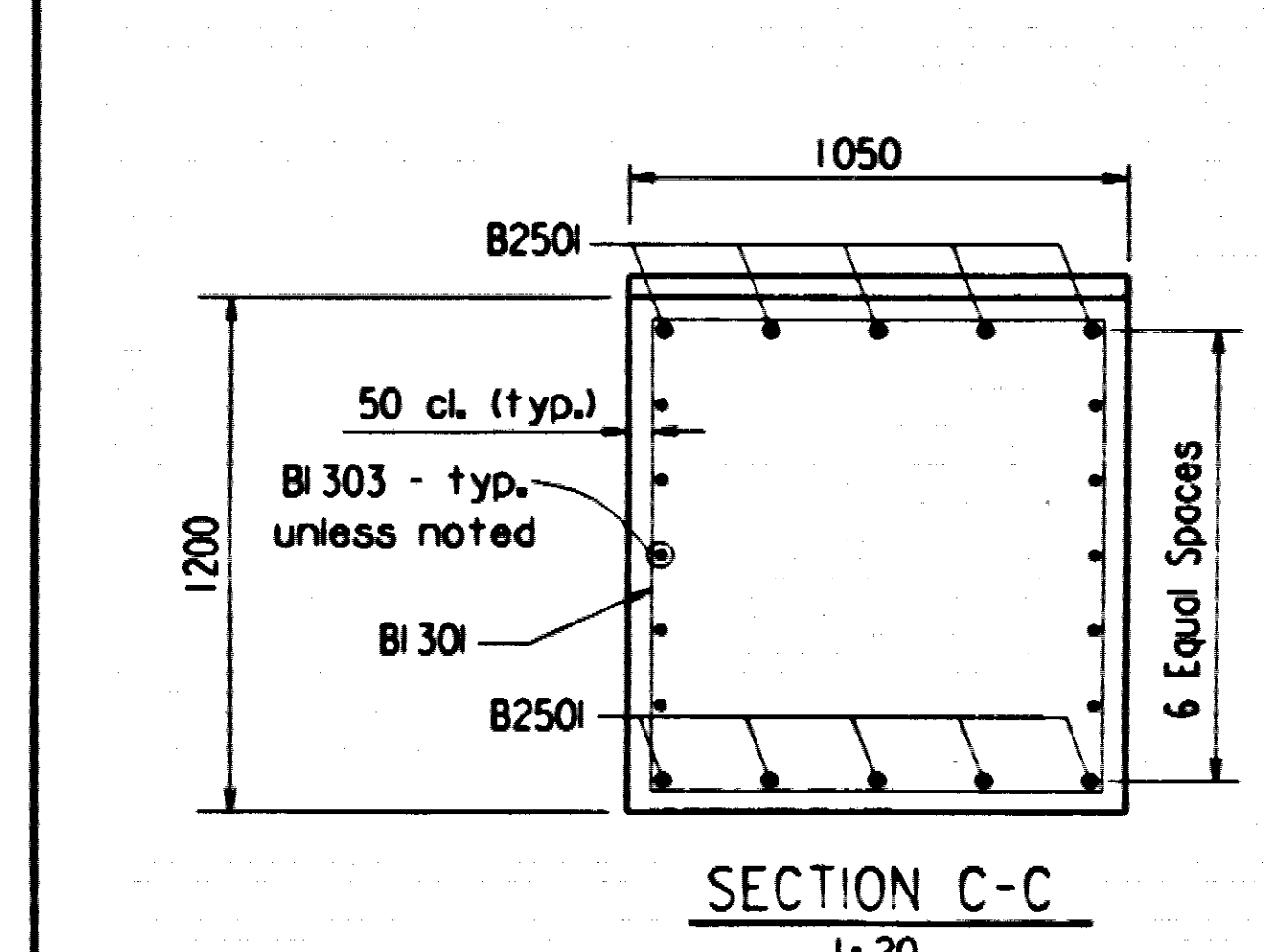
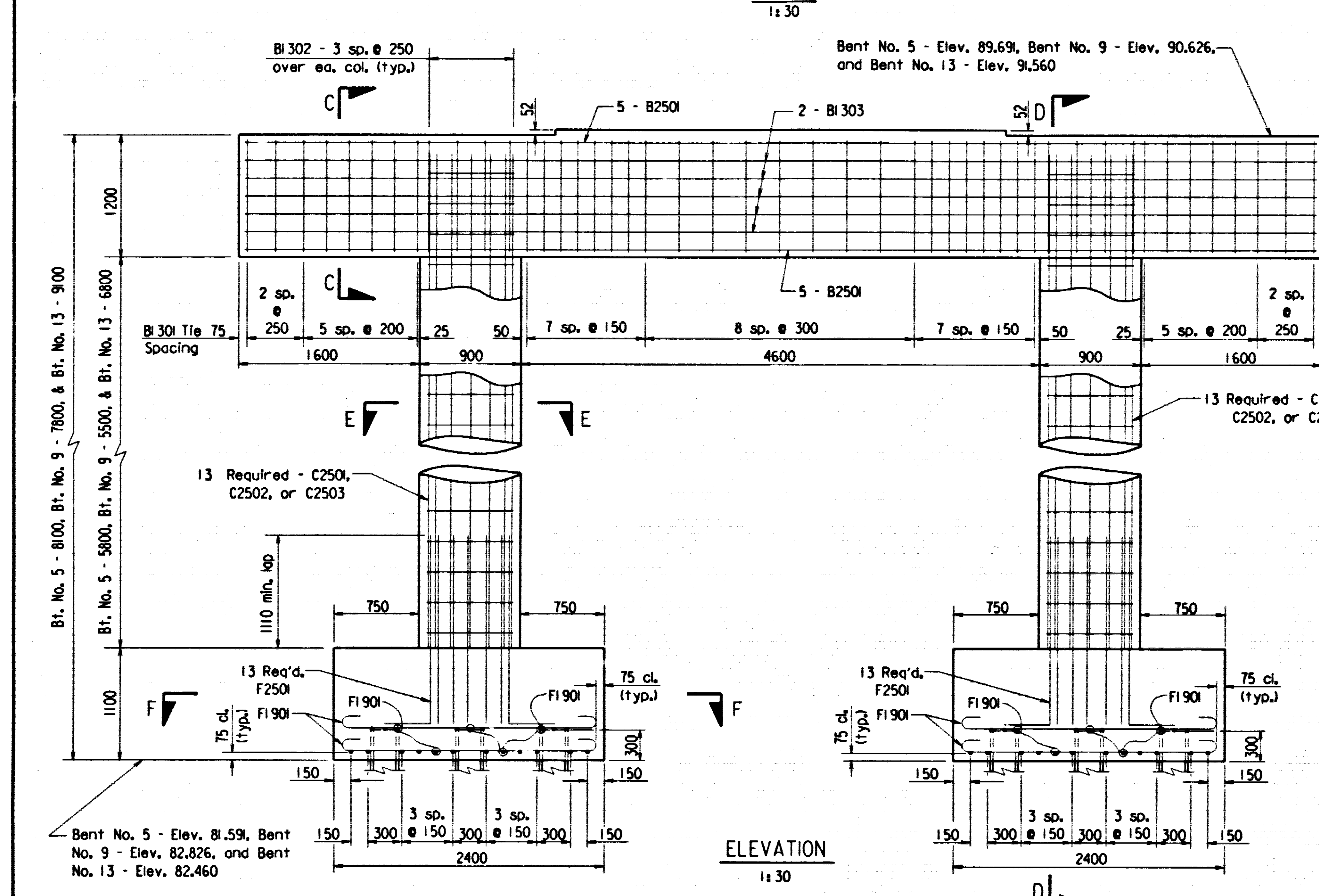
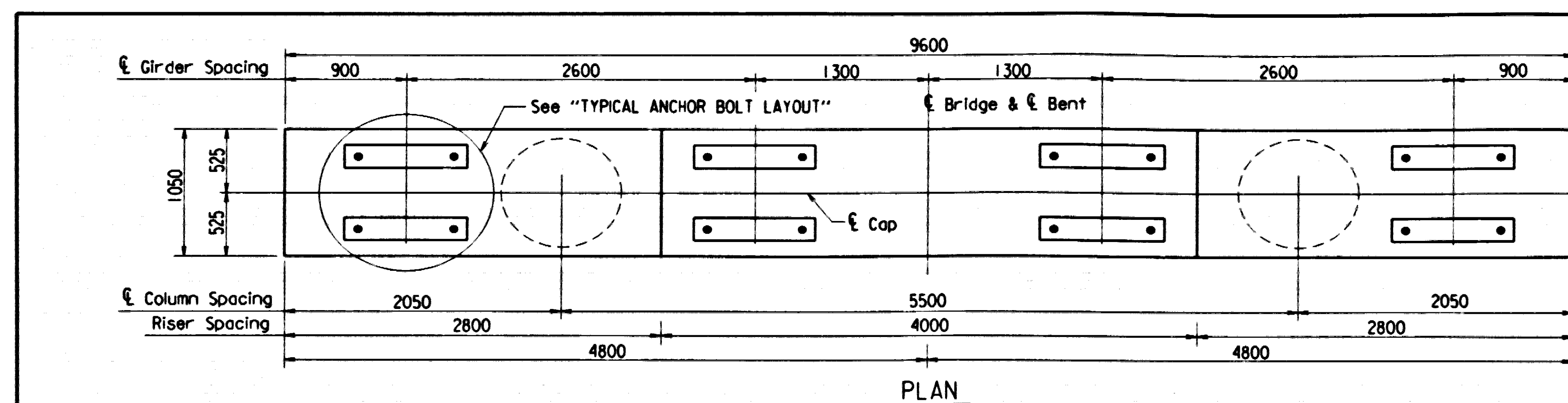


BRIDGE ENGINEER

BR060779a.B12

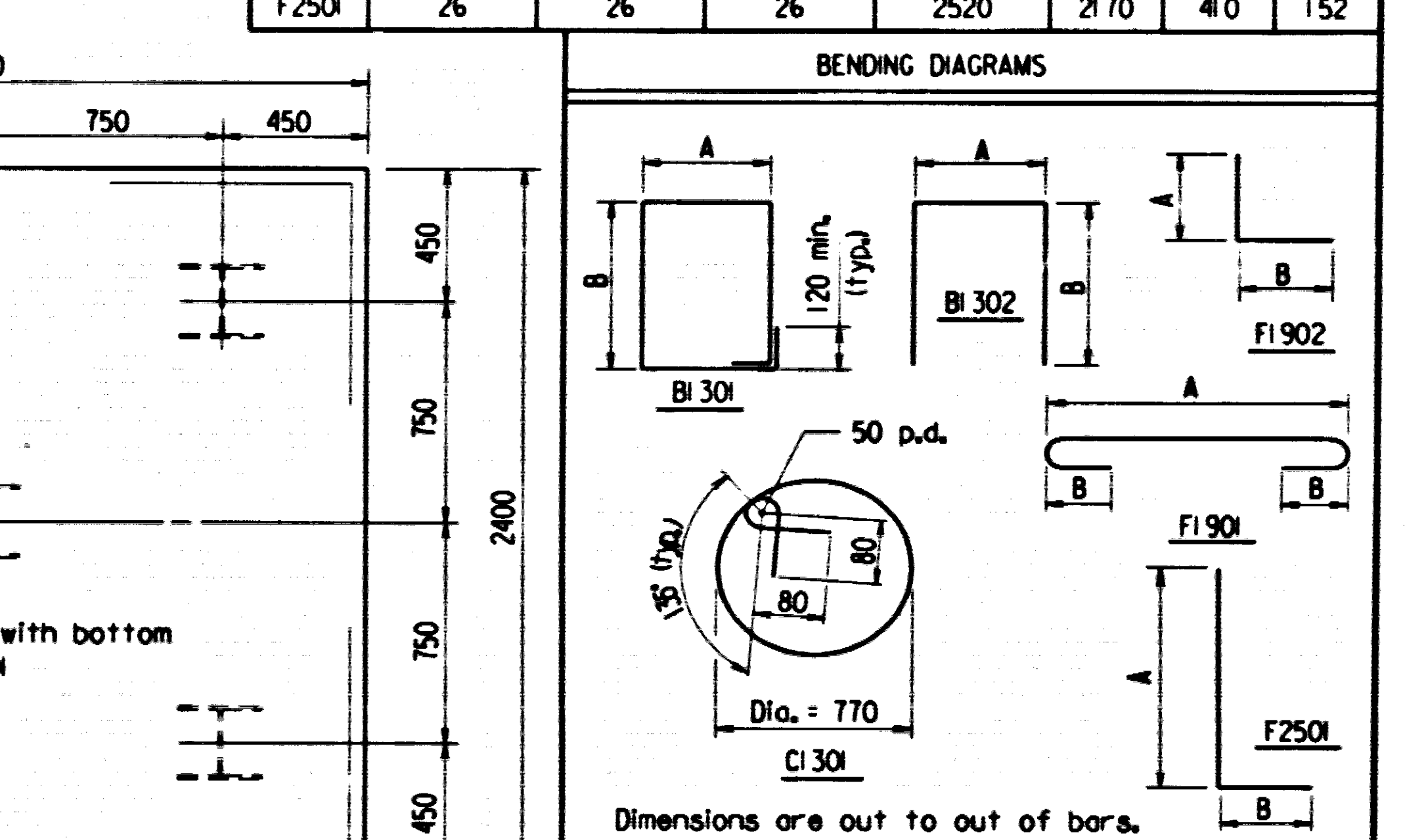
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| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|--------------|--------------|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 060779 | 66 | 119 |
| | | | | BRIDGE NO. | | 06715 | BENT DETAILS | 39066 |

| BAR LIST | | | | | | | |
|----------|-----------------|-----------|------------|--------|------|------|----------|
| MARK | NUMBER REQUIRED | | | LENGTH | A | B | PIN DIA. |
| | BT. NO. 5 | BT. NO. 9 | BT. NO. 13 | | | | |
| BI 301 | 39 | 39 | 39 | 4210 | 950 | 1100 | 50 |
| BI 302 | 8 | 8 | 8 | 3100 | 950 | 1100 | 50 |
| BI 303 | 10 | 10 | 10 | 9500 | — | — | Str. |
| B2501 | 10 | 10 | 10 | 9500 | — | — | Str. |
| | | | | | | | |
| C1301 | 46 | 44 | 52 | 2690 | — | — | 50 |
| C2501 | 26 | — | — | 6820 | — | — | Str. |
| C2502 | — | 26 | — | 6520 | — | — | Str. |
| C2503 | — | — | 26 | 7820 | — | — | Str. |
| FI 901 | 84 | 84 | 84 | 2570 | 2250 | 160 | 114 |
| FI 902 | 8 | 8 | 8 | 1830 | 940 | 940 | 114 |
| F2501 | 26 | 26 | 26 | 2520 | 2170 | 410 | 152 |



GENERAL NOTES

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

All piling shall be HP 250 x 62 and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 490 kN per pile.

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 A615/A615M-96a Grade 420 ($f_y = 420$ MPa).

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

For additional information, see Layout.

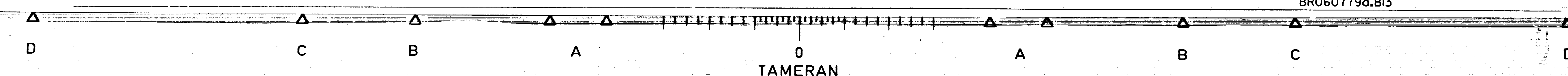
ALTERNATE NO. 2
DETAILS OF INTERMEDIATE
BENT NOS. 5, 9, AND 13
SALINE RIVER

ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

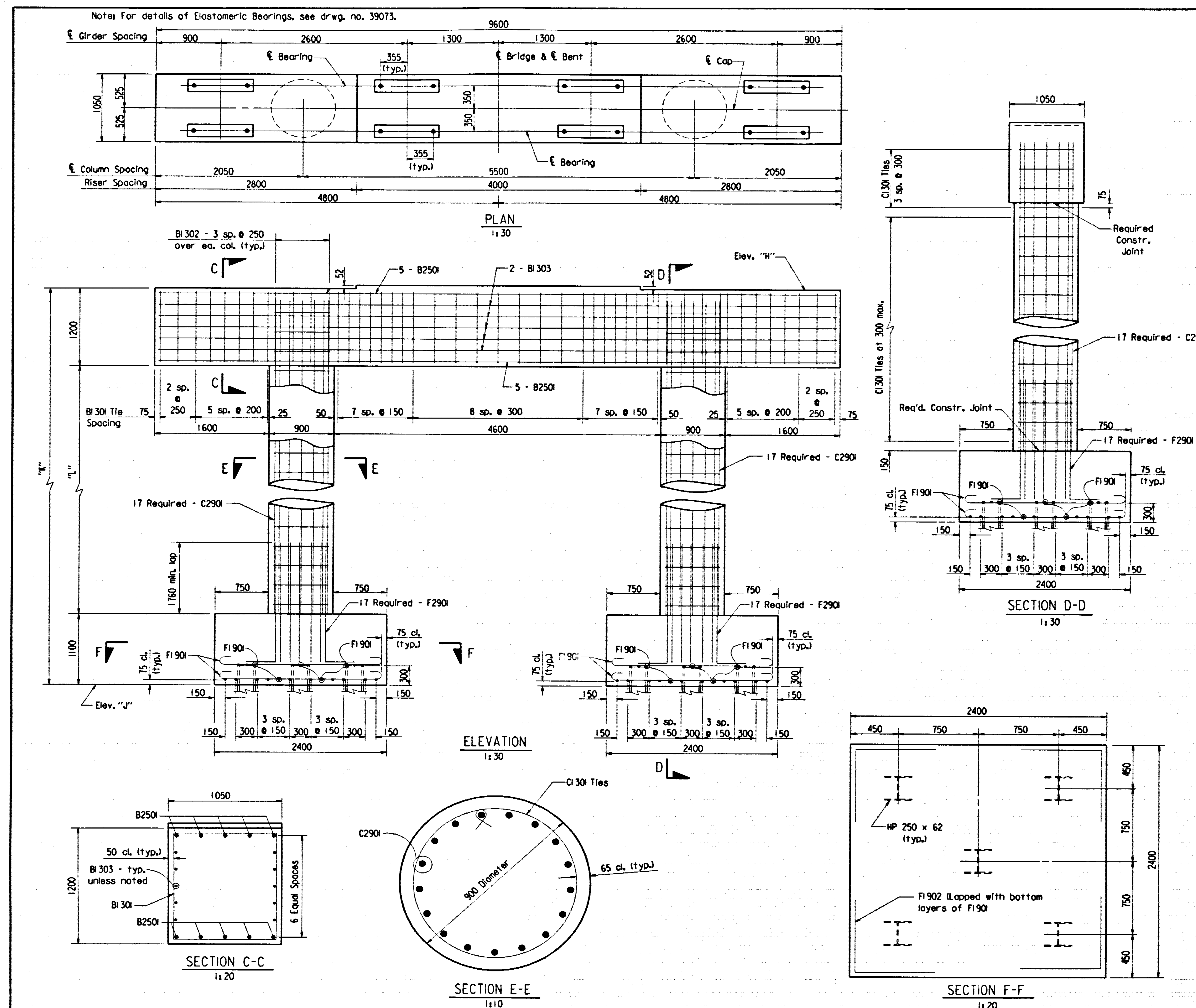
BRIDGE ENGINEER
DATE 4/16/98

DRAWN BY: TEB DATE: 04/07/98
CHECKED BY: AMS DATE: 4/22/98
DESIGNED BY: AMS DATE: 4/6/98

BRIDGE NO. 06715 DRAWING NO. 39066



MICROFILMED
AUG 3 1 1998



| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|--------------|--------------------|-----------|--------------|
| | | | | 6 | ARK. | | 67 | 119 |
| | | | | JOB NO. | 060779 | | 67 | 119 |
| | | | | 06715 | BENT DETAILS | | 39067 | |

BAR LIST - PER BENT

| MARK | NO. REQ'D. | LENGTH | A | B | PIN. DIA. | BENDING DIAGRAMS |
|--------|------------|--------|------|------|-----------|------------------|
| BI 301 | 39 | 4210 | 950 | 1100 | 50 | |
| BI 302 | 8 | 3100 | 950 | 1100 | 50 | |
| BI 303 | 10 | 9500 | | | Str. | |
| B2501 | 10 | 9500 | | | Str. | |
| C1301 | "M" | 2690 | | | 50 | |
| C2901 | 34 | "N" | | | Str. | |
| F1901 | 84 | 2570 | 2250 | 160 | 114 | |
| F1902 | 8 | 1830 | 940 | 940 | 114 | |
| F2901 | 34 | 3230 | 2820 | 490 | 228 | |

Dimensions are out to out of bars.

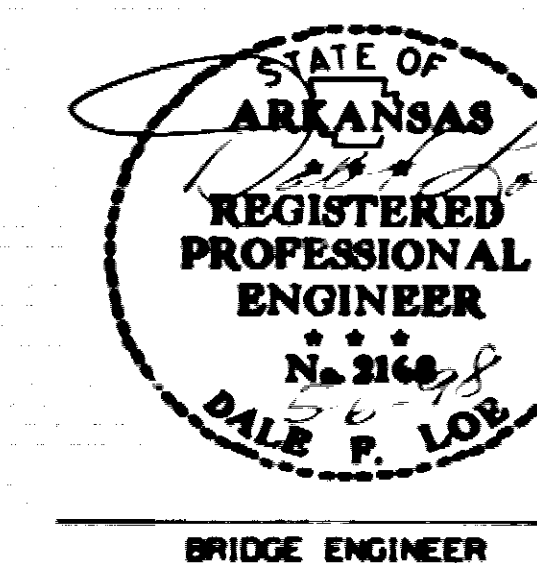
TABLE OF VARIABLES

| BENT NO. | Elev. "H" | Elev. "J" | "K" | "L" | "M" | "N" |
|----------|-----------|-----------|------|------|-----|------|
| 6 | 89.953 | 83.053 | 6900 | 4600 | 38 | 5620 |
| 7 | 90.187 | 82.787 | 7400 | 5100 | 42 | 6120 |
| 8 | 90.420 | 82.820 | 7600 | 5300 | 42 | 6320 |
| 10 | 90.887 | 82.787 | 8100 | 5800 | 46 | 6820 |
| 11 | 91.121 | 82.521 | 8600 | 6300 | 50 | 7320 |
| 12 | 91.355 | 82.555 | 8800 | 6500 | 50 | 7520 |
| 14 | 91.822 | 82.322 | 9500 | 7200 | 56 | 8220 |
| 15 | 92.055 | 82.555 | 9500 | 7200 | 56 | 8220 |
| 16 | 92.289 | 83.189 | 9100 | 6800 | 52 | 7820 |

GENERAL NOTES

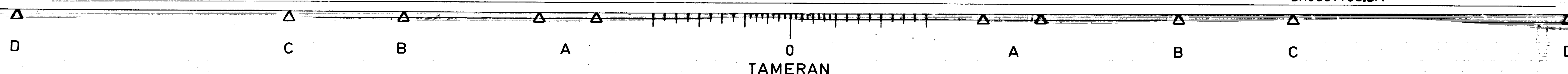
- Stations and elevations are in meters. All other dimensions are in millimeters unless otherwise noted.
- All piling shall be HP 250 x 62 and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 490 kN per pile.
- All Concrete shall be Class "S" and shall be poured in the dry.
- All exposed corners to be chamfered 20 mm unless otherwise noted.
- All Reinforcing Steel shall conform to ASTM A615/A615M-96a Grade 420 ($f_y = 420$ MPa).
- If Anchor Bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.
- For additional information, see Layout.

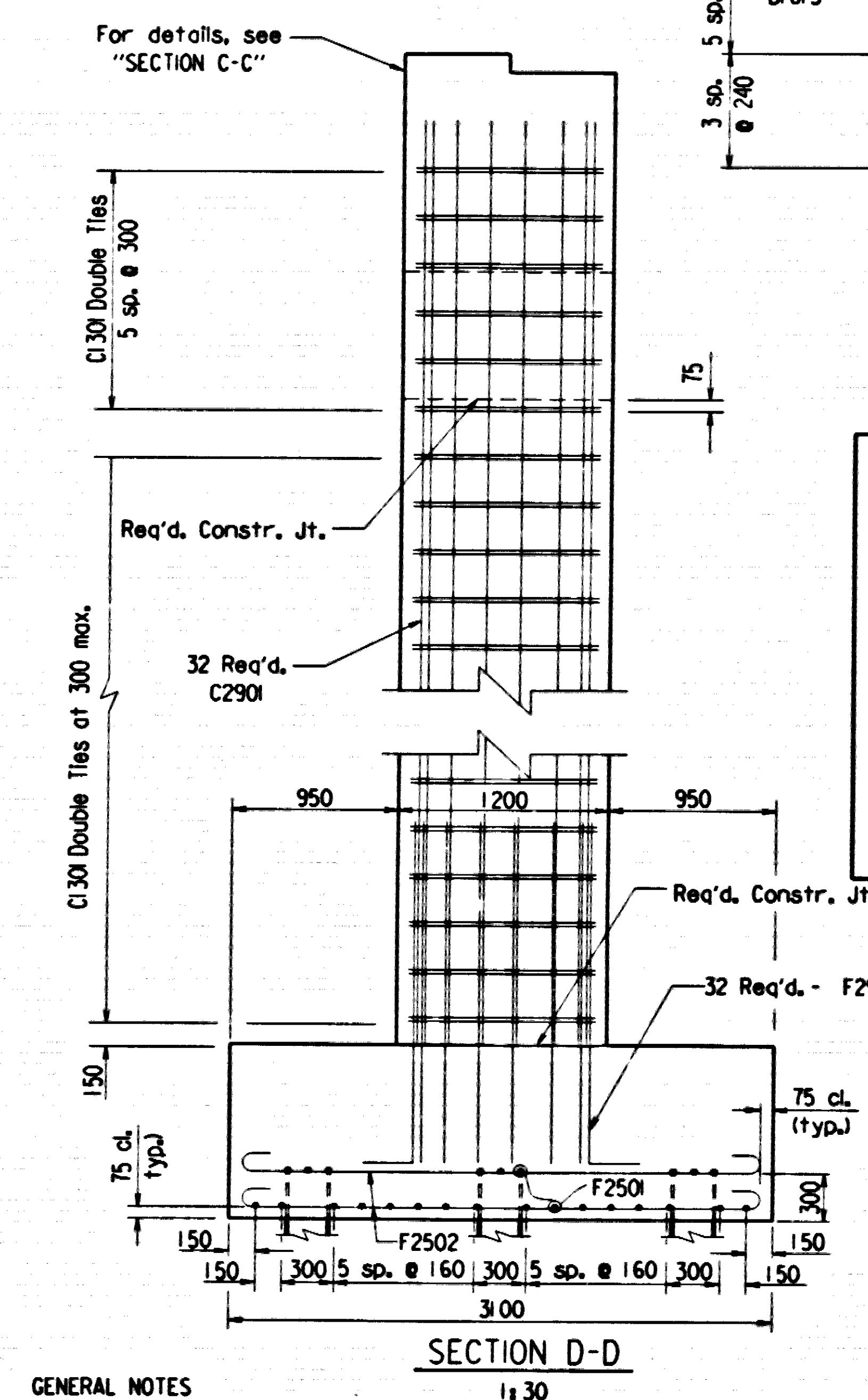
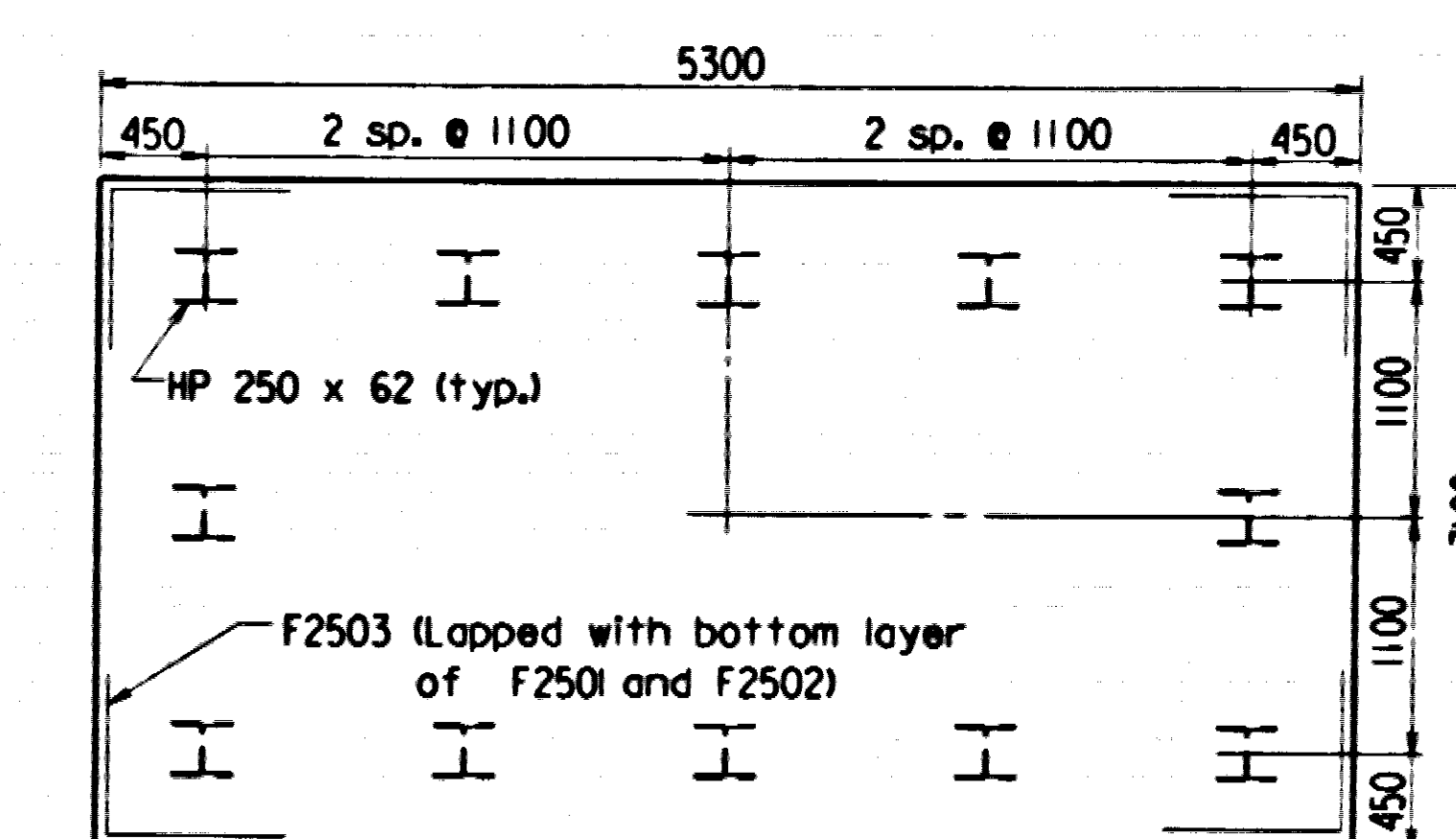
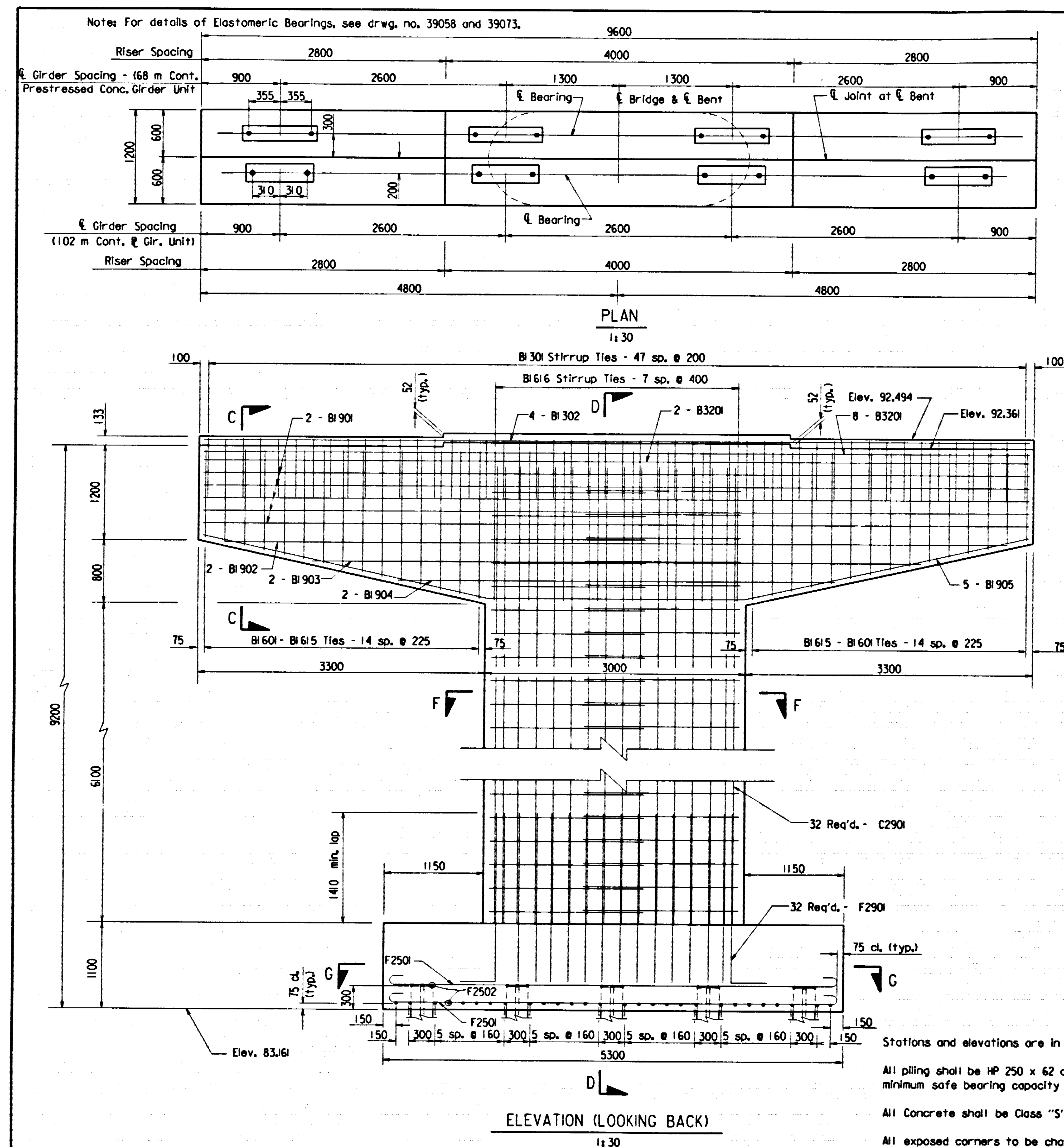
ALTERNATE NO. 2
DETAILS OF INTERMEDIATE
BENT NOS. 6, 7, 8, 10, 11,
12, 14, 15, AND 16
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.



DRAWN BY: TEB DATE: 04/07/98
CHECKED BY: AMS DATE: 4/28/98
DESIGNED BY: AMS DATE: 4/6/98
BRIDGE NO. 06715 DRAWING NO. 39067

BR060779a.B14





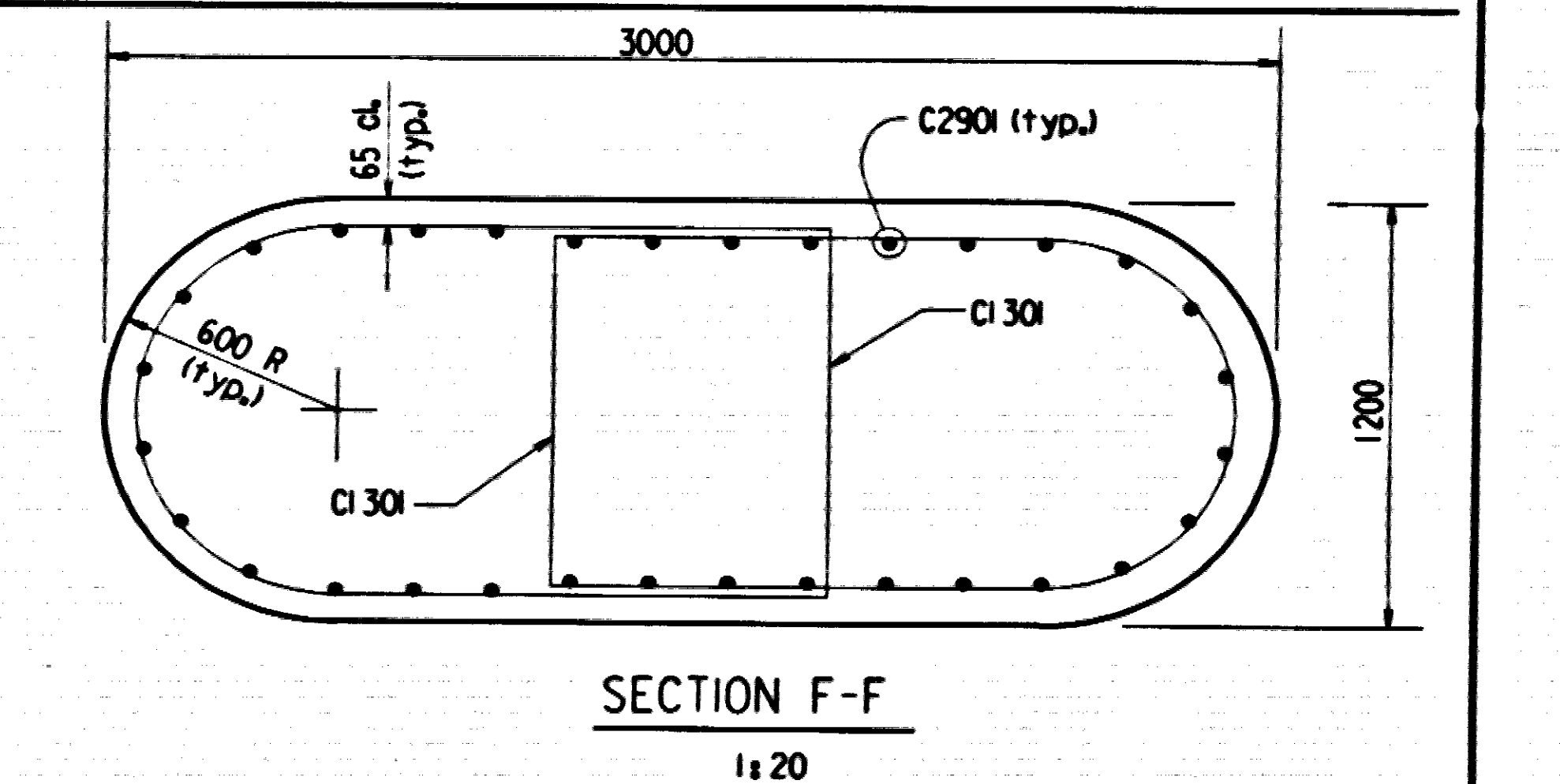
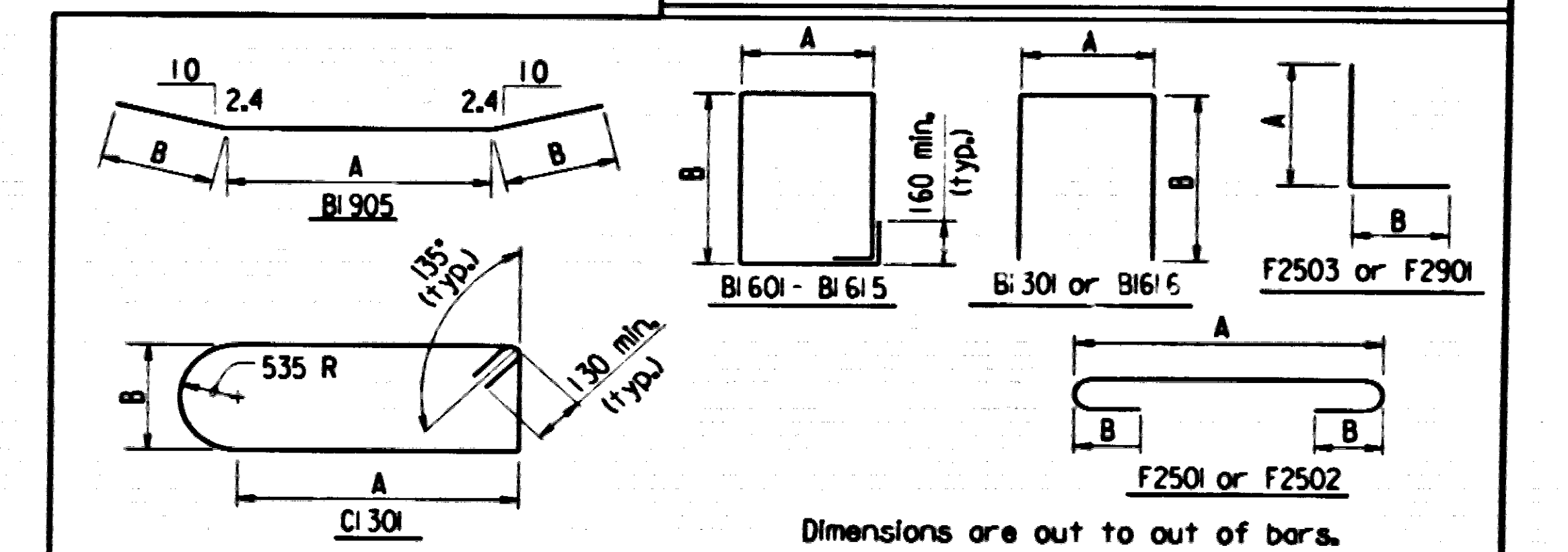
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|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|-----------|--------------|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 060779 | 68 | 119 |

06715 BENT DETAILS 39068

BAR LIST

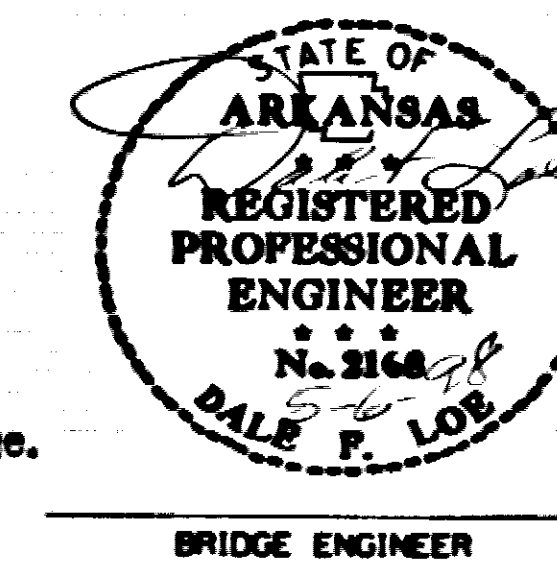
| MARK | NO. REQ'D. | LENGTH | A | B | PIN. DIA. |
|------------------|------------|--------------|------|--------------|-----------|
| BI 301 | 48 | 1870 | 500 | 710 | 50 |
| BI 302 | 4 | 9500 | | | Str. |
| BI 601 to BI 615 | 2 of Each | 4590 to 6110 | 1100 | 1120 to 1880 | 63 |
| BI 616 | 8 | 4830 | 1100 | 1900 | 63 |
| BI 901 | 10 | 9500 | | | Str. |
| BI 902 | 2 | 9170 | | | Str. |
| BI 903 | 2 | 7190 | | | Str. |
| BI 904 | 2 | 5210 | | | Str. |
| BI 905 | 5 | 9680 | 3220 | 3230 | 114 |
| B3201 | 10 | 9500 | | | Str. |
| CI 301 | 52 | 5460 | 1250 | 1070 | 76 |
| C2901 | 32 | 7800 | | | Str. |
| F2501 | 25 | 5720 | 5150 | 210 | 152 |
| F2502 | 43 | 3520 | 2950 | 210 | 152 |
| F2503 | 4 | 2600 | 1330 | 1330 | 152 |
| F2901 | 32 | 2870 | 2460 | 490 | 228 |

BENDING DIAGRAMS



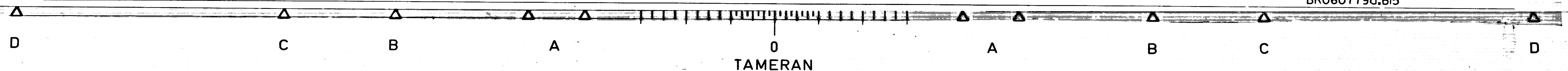
GENERAL NOTES

- Stations and elevations are in meters. All other dimensions are in millimeters unless otherwise noted.
- All piling shall be HP 250 x 62 and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 490 kN per pile.
- 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 A615/A615M-96a Grade 420 ($f_y = 420$ MPa).
- If Anchor Bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.
- For additional information, see Layout.



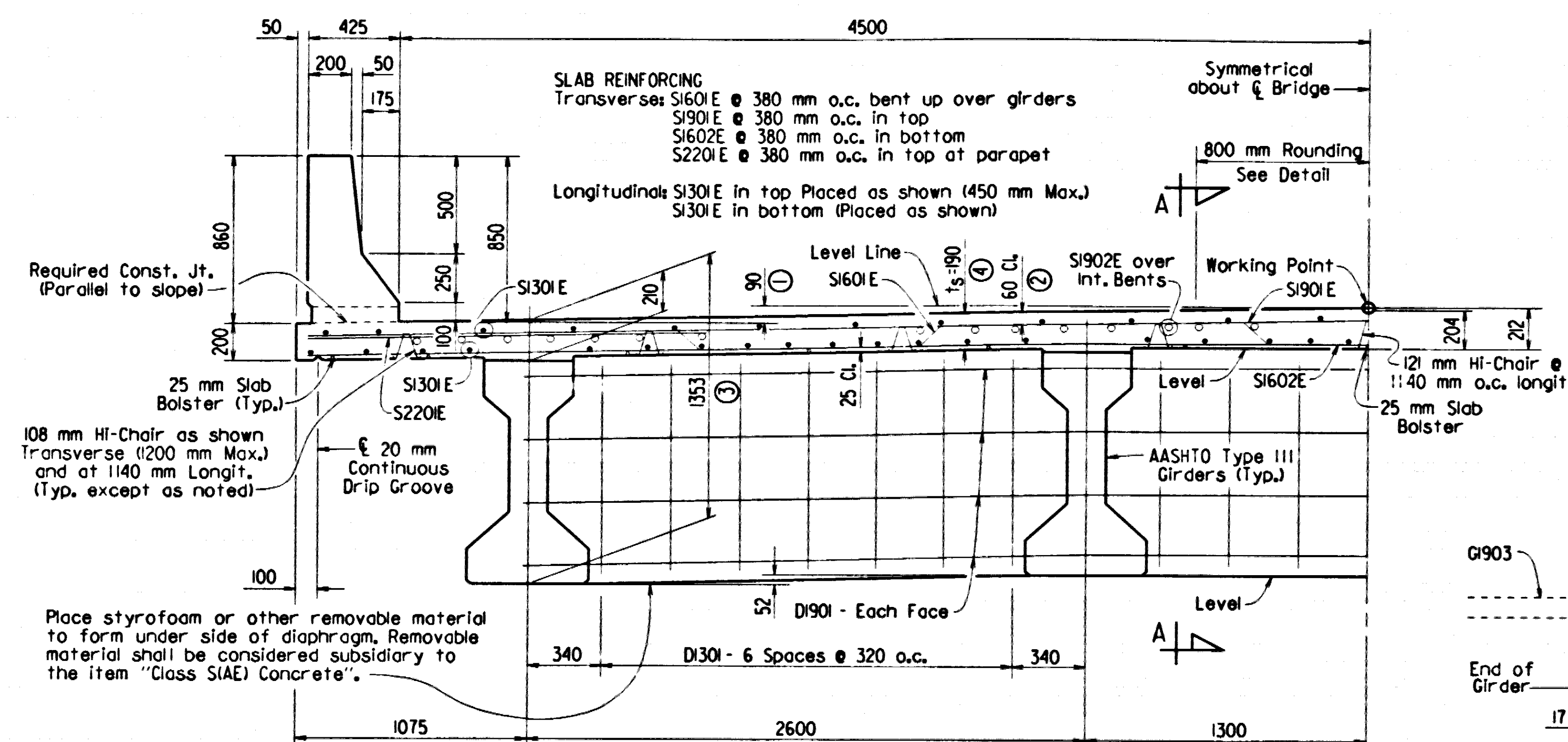
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DETAILS OF INTERMEDIATE
BENT NO. 17
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: TEB DATE: 04/08/98
CHECKED BY: AMS DATE: 4/24/98
DESIGNED BY: AMS DATE: 4/6/98
BRIDGE NO. 06715 DRAWING NO. 39068
BR060779a.B15

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AUG 3 1 1998



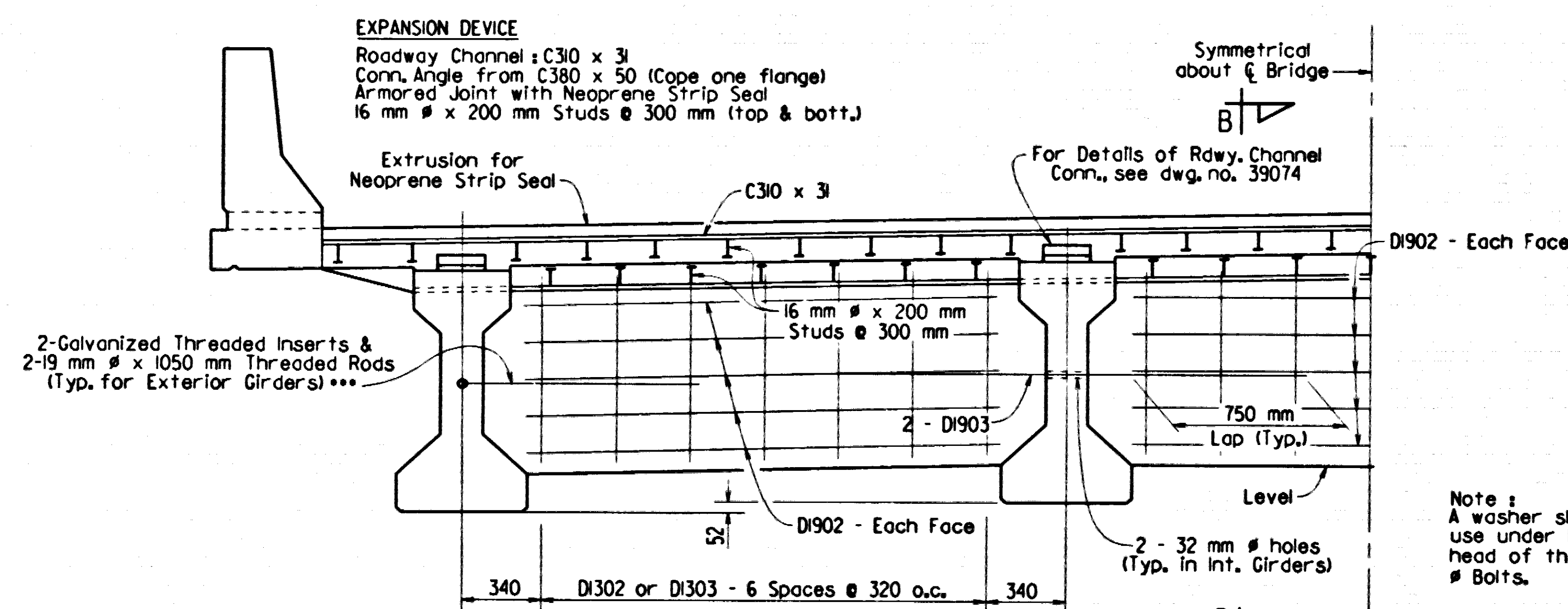
Note: Class I Protective Surface Treatment shall be applied to the Roadway Surface and the Face and Top of Concrete Parapet Wall.

Note: One epoxy coated #16 bar in the top and one epoxy coated #16 bar in the bottom may be substituted for each S1601E bar. Payment will be based on the weight of the S1601E bar.



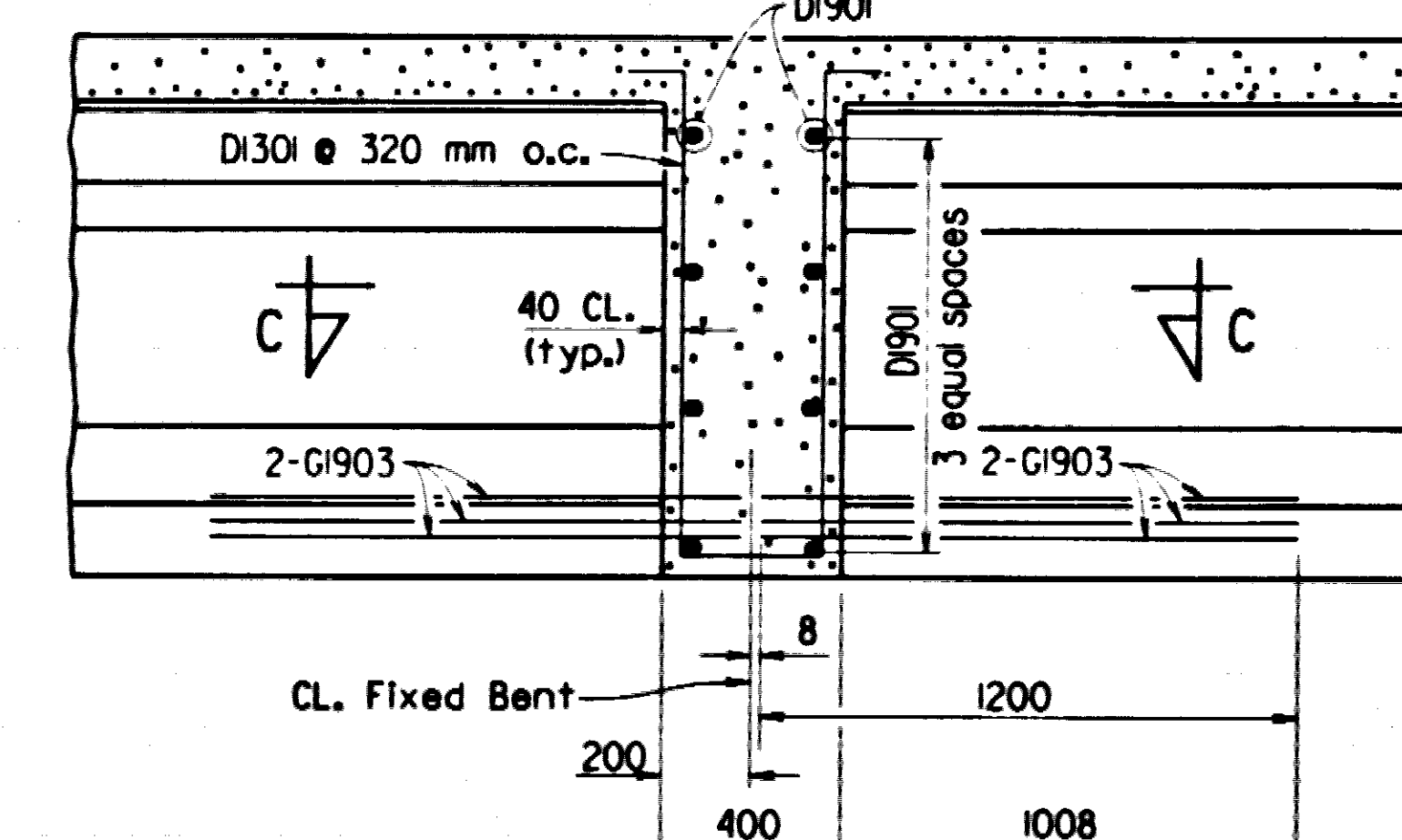
- ① Working Point to Gutter Line
- ② Tolerance: Minus 6 mm
Plus: Equal to amount of slab thickening used to meet slab thickness tolerance. See "Adjustment for Slab Thickness Tolerance when Removable Deck Forming is Used".
- ③ These dimensions are taken at \bar{C} Bearing & \bar{C} Girder
- ④ See "Adjustment for Slab Thickness Tolerance when Removable Deck Forming is Used".

TYPICAL HALF-SECTION AT BENTS BETWEEN ENDS OF UNIT

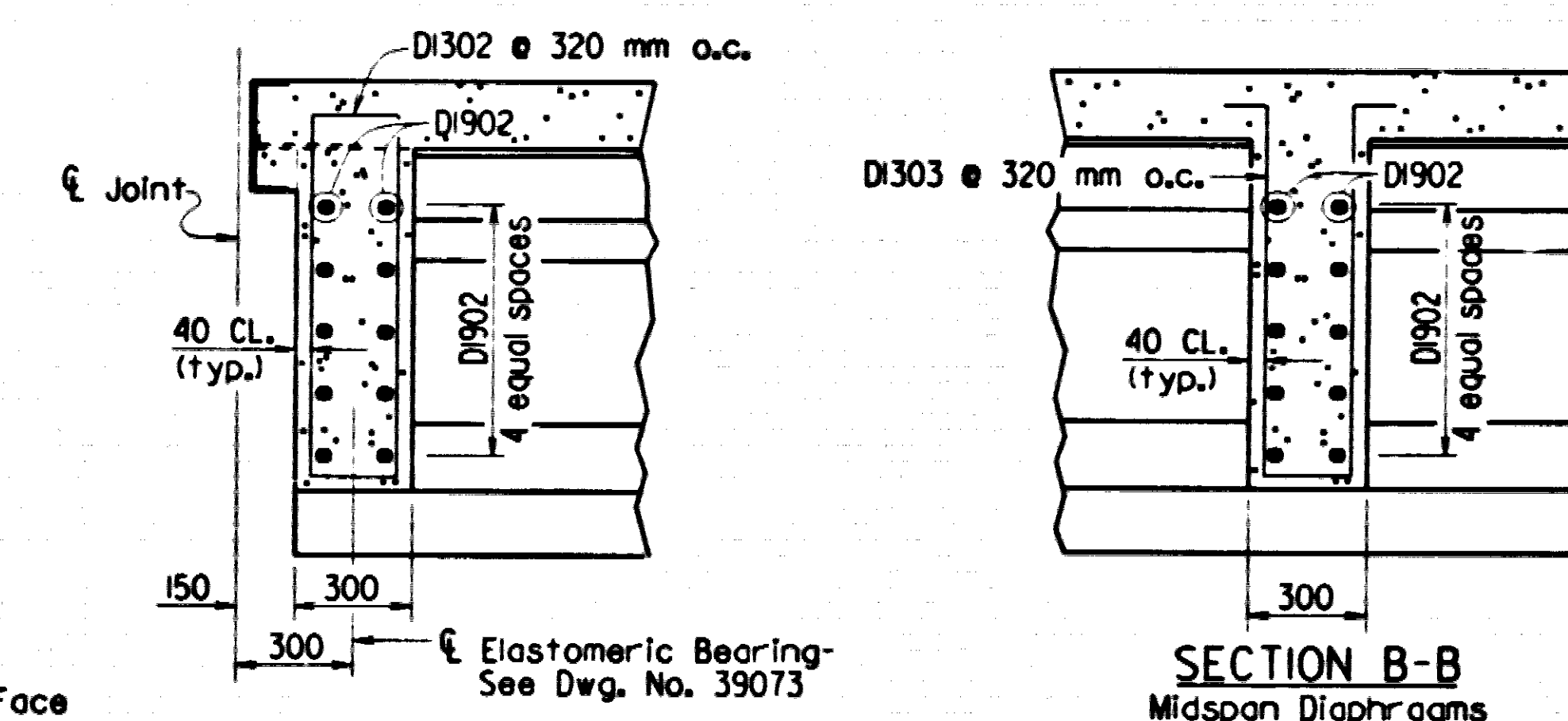
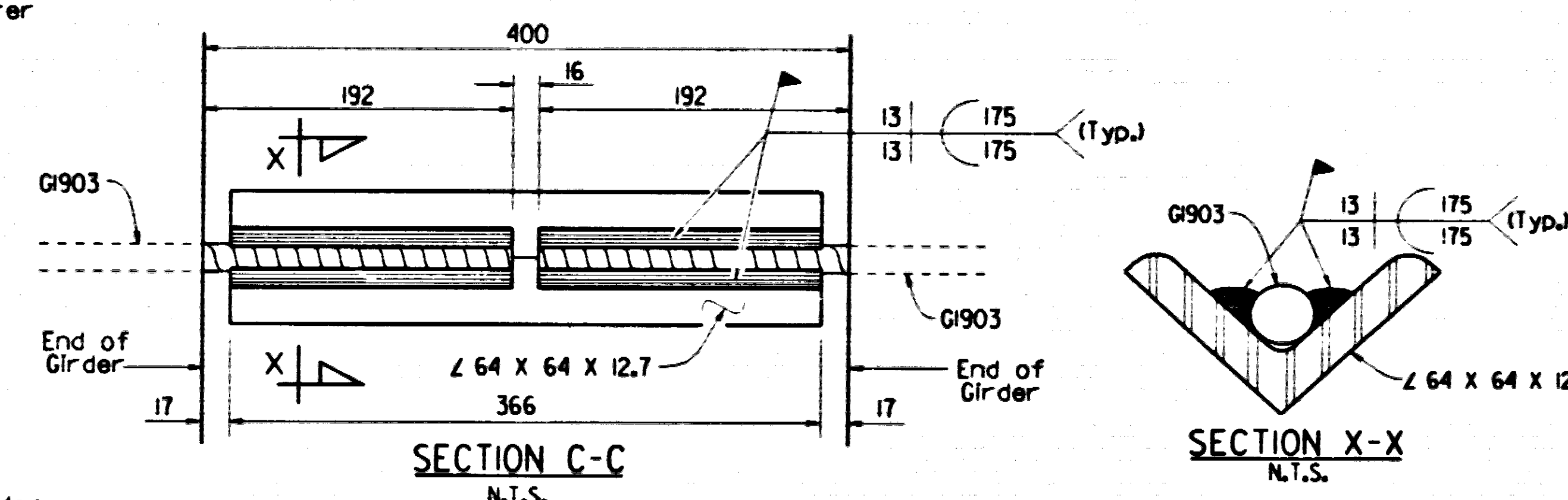


*** Galvanized Threaded Inserts & 19 mm $\bar{\Phi}$ Threaded Rods to be AASHTO M 270, Gr. 250 Threaded Inserts shall be Richmond Structural Concrete Inserts or equivalent. (Non-pay item - subsidiary to the item "Prestressed Concrete Girders.") Galvanizing shall be in accordance with AASHTO M 232.

TYPICAL HALF-SECTION AT ENDS OF UNITS AND MIDSPAN DIAPHRAGMS

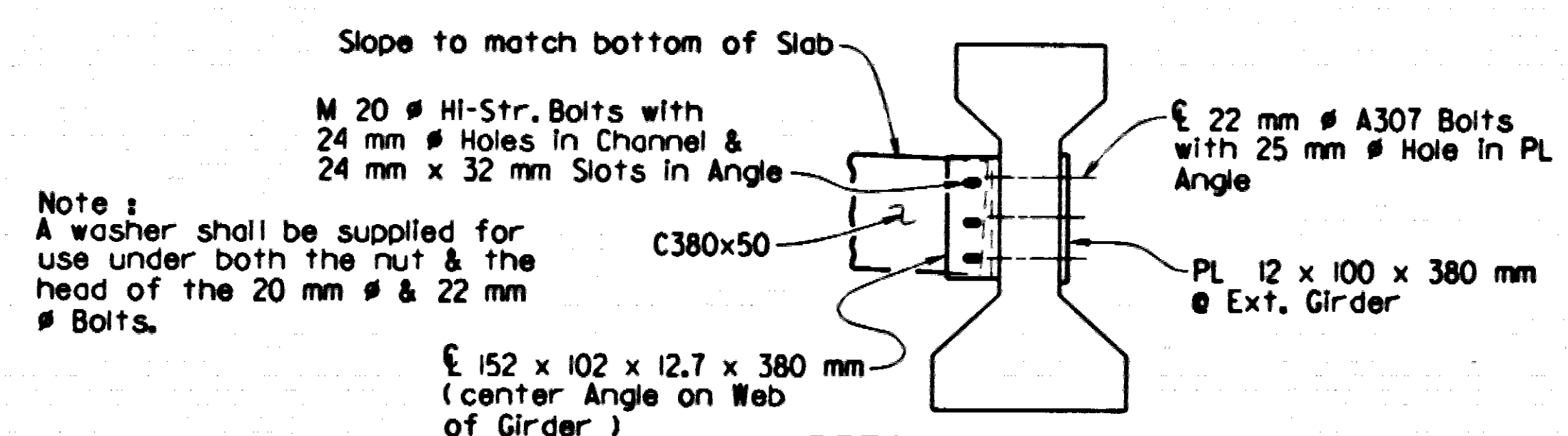


SECTION A-A
Interior Unit Diaphragm



SECTION B-B
End of Unit Diaphragm

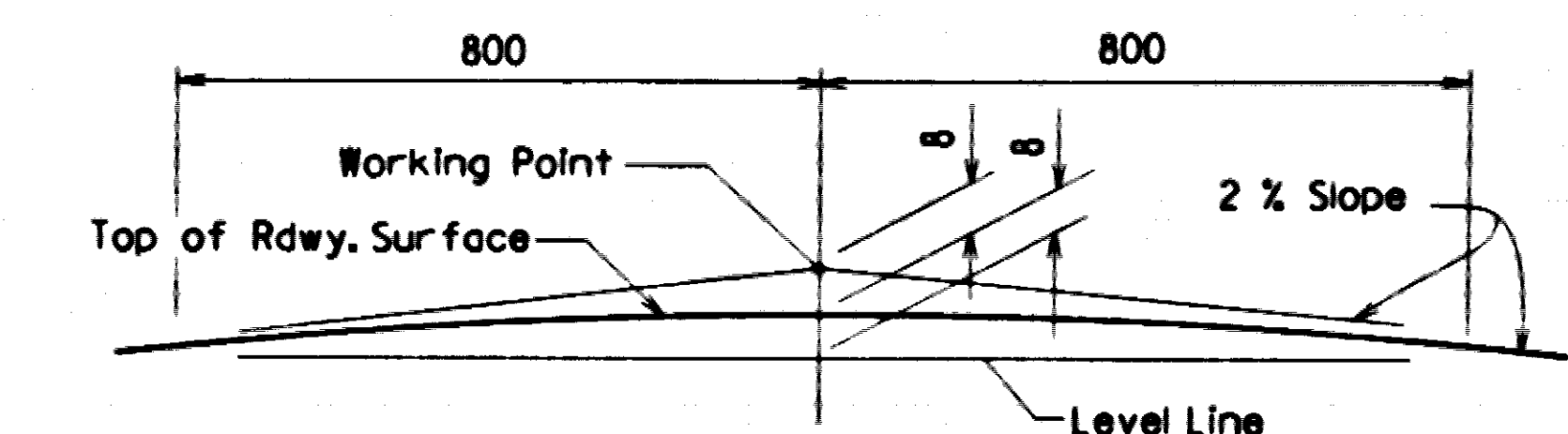
SECTION B-B
Midspan Diaphragms



DETAIL OF ALTERNATE
MIDSPAN DIAPHRAGM

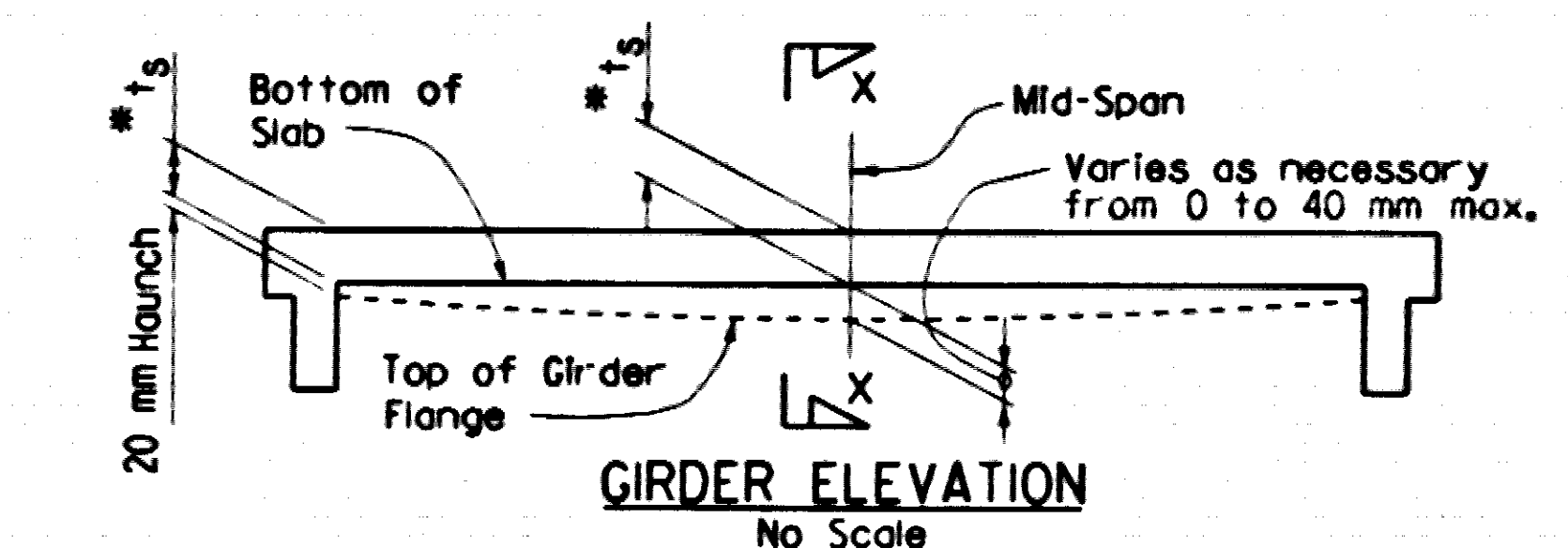
⑤ Galvanized Steel Diaphragms may be used in place of concrete at Midspan Diaphragms only. All components of the Alternate Steel Diaphragms shall be Galvanized. Payment will be based on concrete diaphragms.

| 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. | | 060779 | 19 | 119 |
| | | | | | | 06715 | SPAN DETAILS | 39069 |

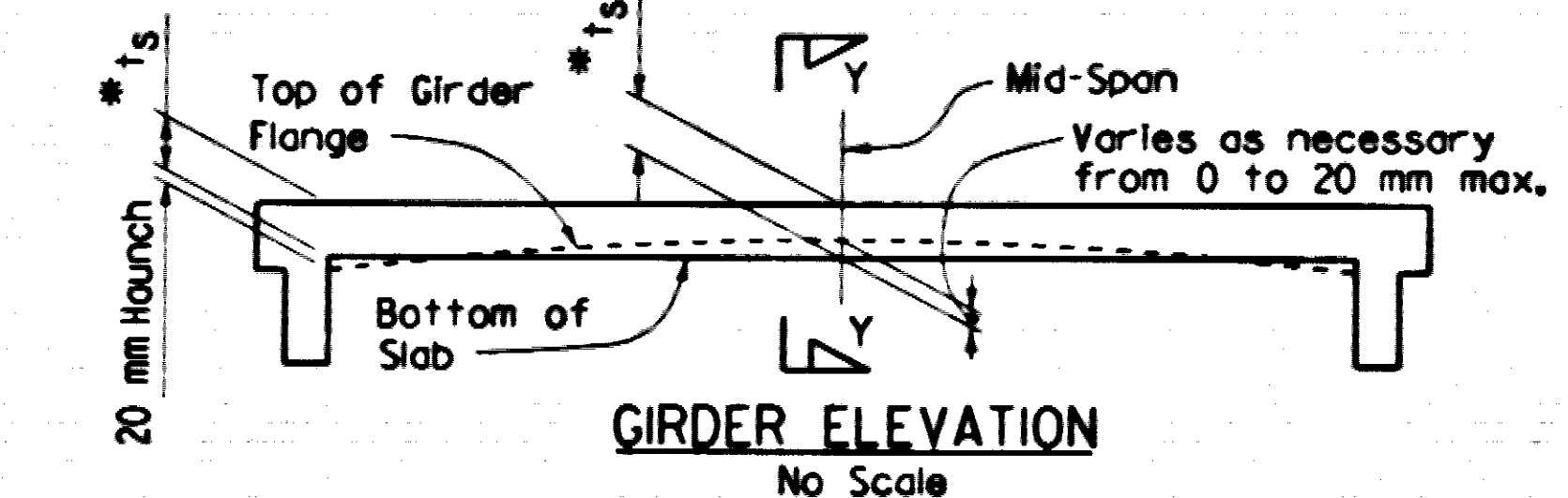


NOTE: Working Point matches Theoretical Roadway Grade.

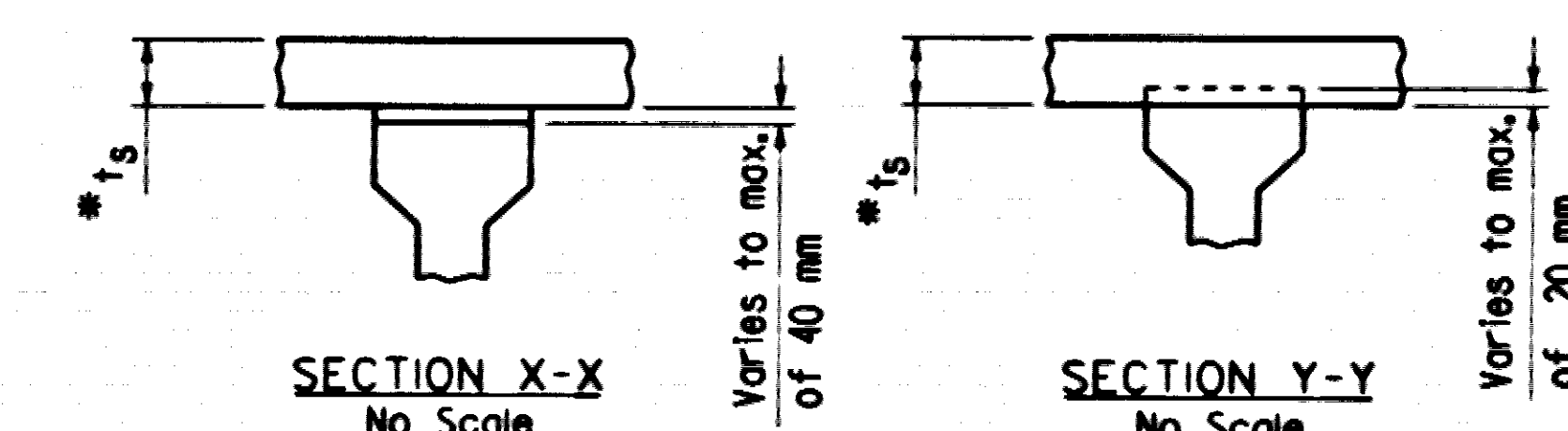
ROUNDING DETAIL
No Scale



GIRDER ELEVATION
No Scale



GIRDER ELEVATION
No Scale



SECTION X-X
No Scale

SECTION Y-Y
No Scale

Notes: 1. Slab thickness as shown on superstructure details. See "Typical Half Section at Bents Between Ends of Unit".

2. 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. See Dwg. No. 36515 for tolerances when permanent steel deck forms are used.

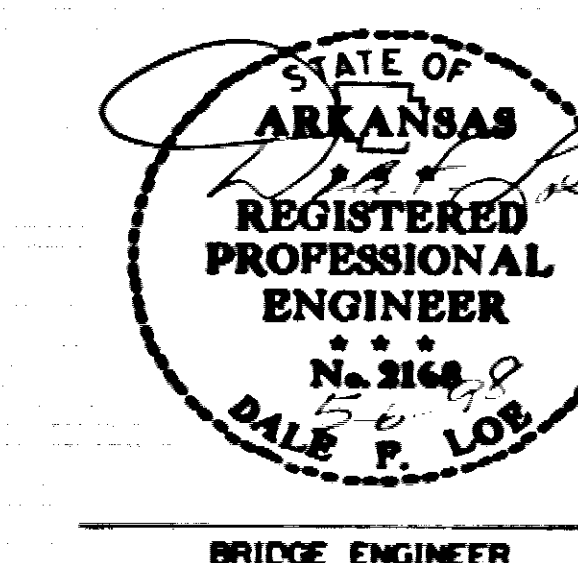
3. 'Girder Elevation' sketches show the range of acceptability of the top of the Girder relative to bottom of slab after the placement of the slab. When the top of the Girder projects more than 20 mm into the slab, a raise in grade will be necessary. Girders shall be set in a sufficient number of spans so when adjustment is necessary the Profile Grade can be adjusted over suitable increments so the revised grade line will produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN
REMOVABLE DECK FORMING IS USED

Notes: All dimensions are in millimeters unless otherwise noted.

ALTERNATE NO. 2
(SHEET 1 OF 4)
DETAILS OF 68 METER
CONTINUOUS PRESTRESSED
CONCRETE GIRDER UNIT
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.
DRAWN BY: MJT DATE: 03-17-98
CHECKED BY: CES DATE: 6-30-98
DESIGNED BY: AME DATE: 3-16-78
BRIDGE NO. 06715 DRAWING NO. 39069

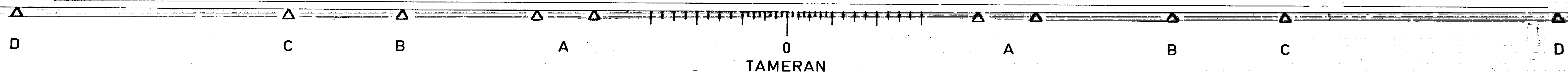


BRIDGE ENGINEER

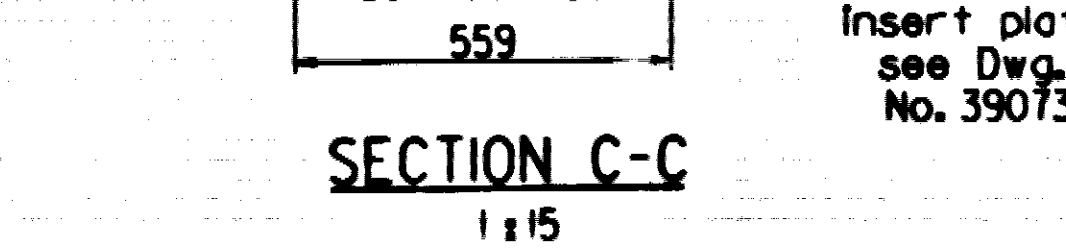
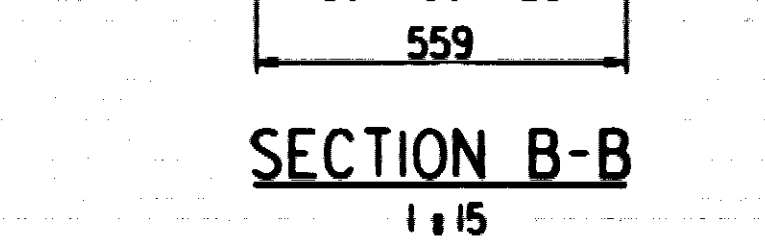
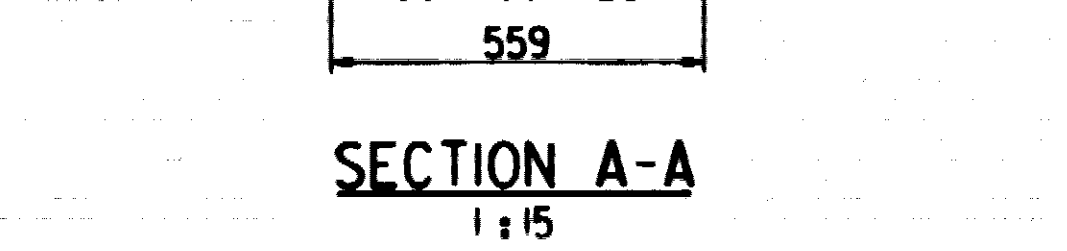
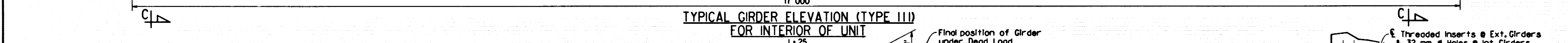
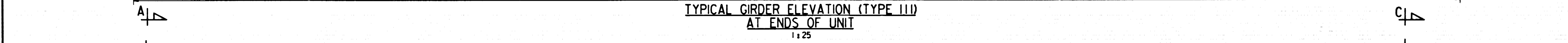


060779x2.51

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AUG 31 1998



06715 SPAN DETAILS 35010



All bars in this list shall be subsidiary to the item "Prestressed Concrete Girders"
For Bar List of Span Reinforcing. See Dwg. No. 39071



ALTERNATE NO. 2
(SHEET 2 OF 4)
DETAILS OF 68 METER
CONTINUOUS PRESTRESSED
CONCRETE GIRDER UNIT
SALINE RIVER
ROUTE 229 SEC. 5
KANSAS STATE HIGHWAY COMM

DRAWN BY: MJT DATE: 03-20-98

DESIGNED BY: AJS DATE: 3-18-98
BRIDGE NO. OC 71E DRAWING NO. 30030

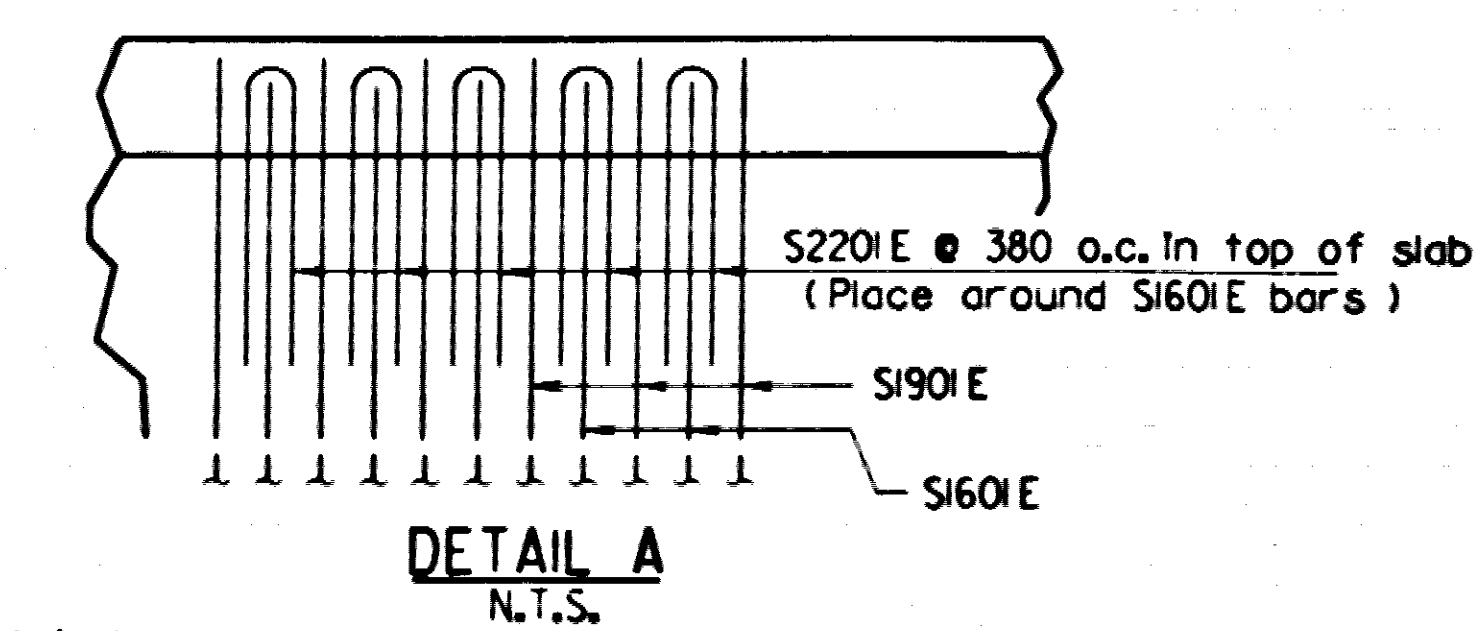
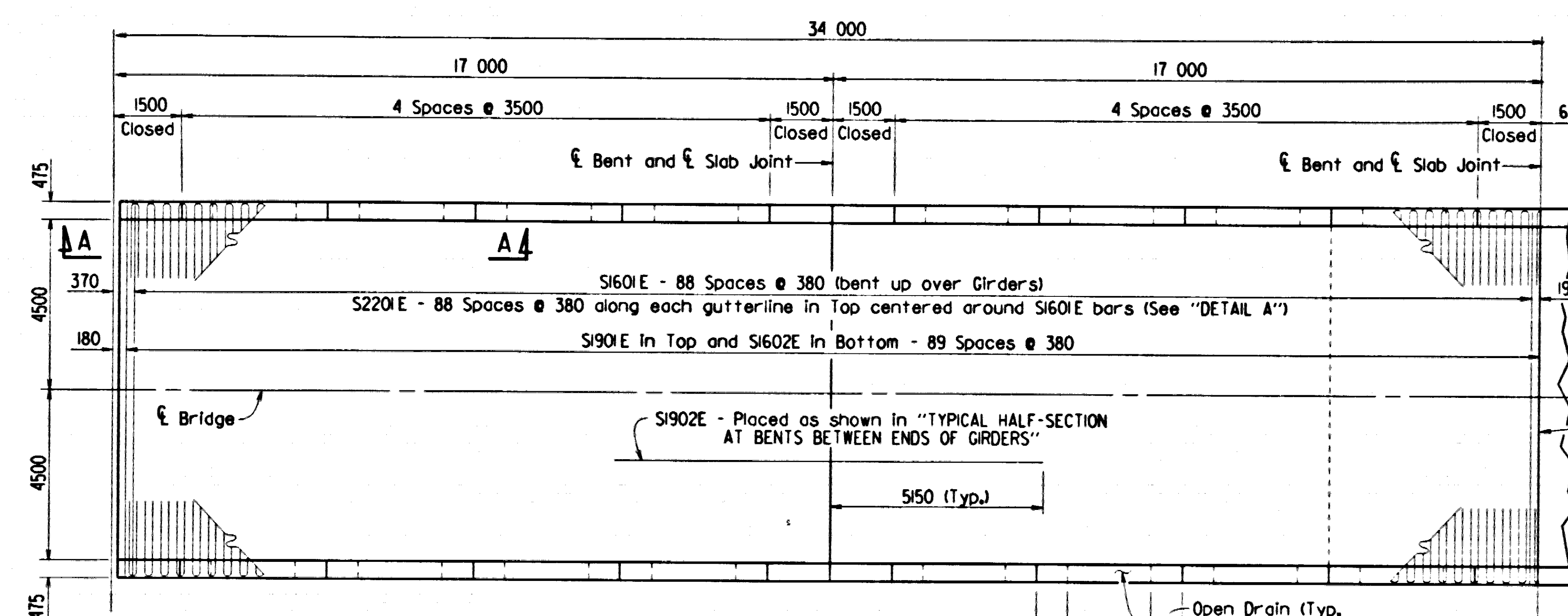
127

Figure 1. The effect of the number of trials on the number of correct responses. The number of correct responses was significantly higher for the 10-trial condition than for the 5-trial condition. Error bars represent the standard error of the mean.

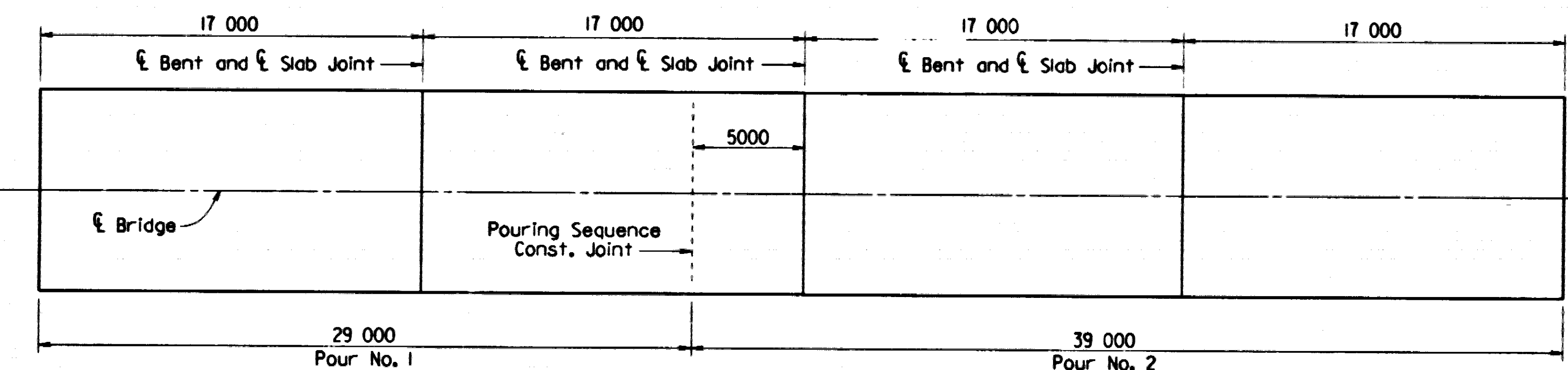
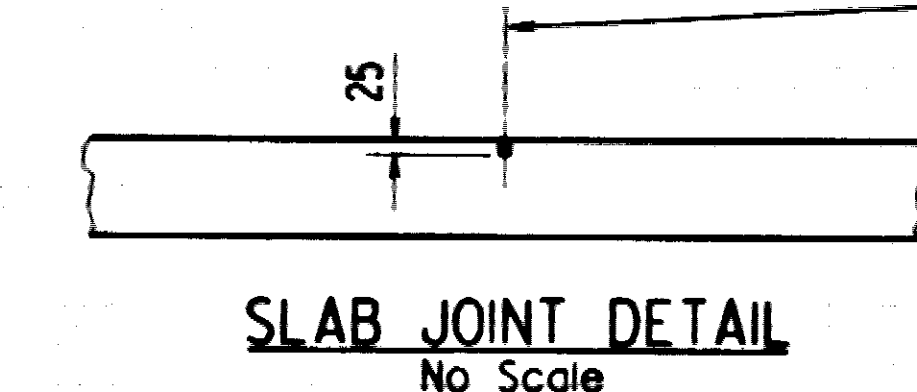
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| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|--------------|--------------|
| | | | | 6 | ARK. | 060779 | 71 | 119 |
| | | | | JOB NO. | 06715 | | SPAN DETAILS | 39071 |



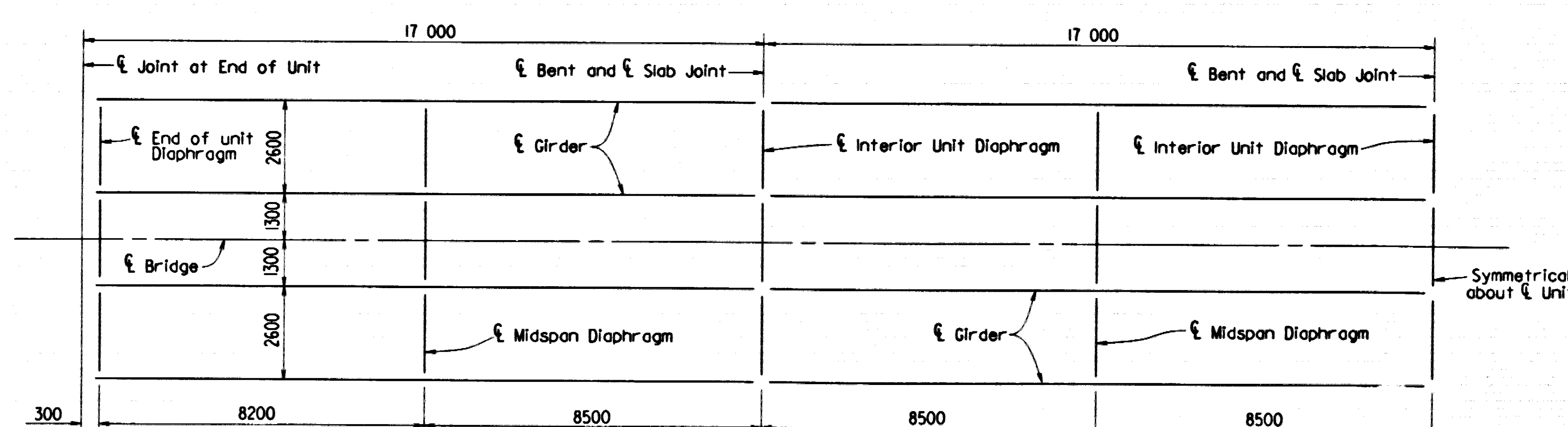
12 mm x 25 mm Type 6 Joint Sealer. See Sections 50L02 (h) and 50L05 (j) of the Standard Specifications. Joint Sealer shall be measured and paid for as Class SIAE Concrete. Bridge Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed before any vehicular traffic is allowed on the unit. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations.



NOTES: Pour 1 must be placed before Pour 2 can be placed. A minimum of 72 hours shall elapse between pours. Any railing pours made before the entire slab unit has been placed must be approved by the Bridge Engineer.

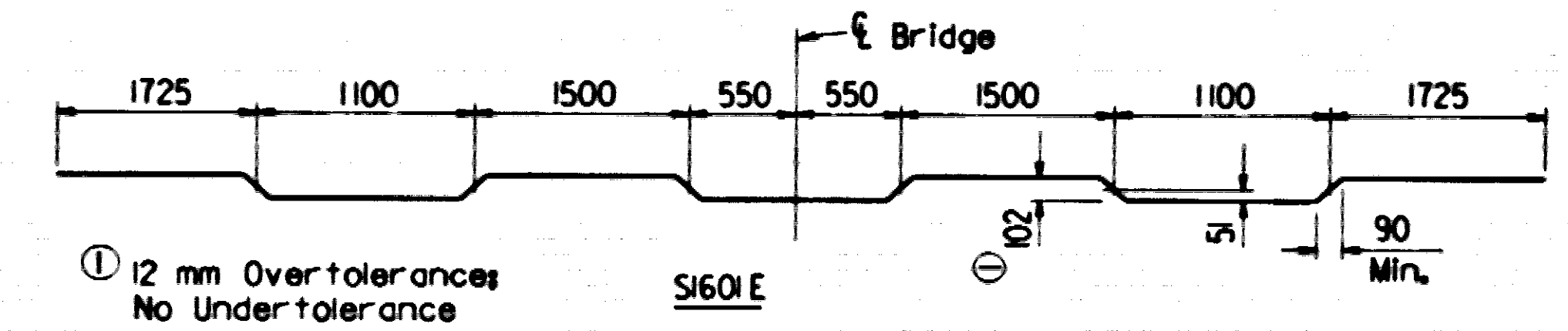
Concrete in diaphragms between girders over fixed bents shall be cast monolithically with the slab. All concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set.

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



BAR LIST-PER UNIT

| MK | No. Req'd. | Length | Pin Dia. | Bending Diagrams (Dimensions are out to out of bars.) |
|--------|------------|--------|----------|---|
| D1301 | 63 | 2900 | 50 | |
| D1302 | 42 | 2630 | 50 | |
| D1303 | 84 | 2440 | 50 | |
| D1901 | 24 | 7880 | Str. | |
| D1902 | 180 | 2060 | Str. | |
| S1301E | 434 | 9300 | Str. | |
| S1601E | 178 | 9930 | 76 | |
| S1602E | 179 | 9850 | Str. | |
| S1901E | 179 | 9850 | Str. | |
| S1902E | 90 | 10 300 | Str. | |
| S2201E | 356 | 380 | 168 | |
| P1301E | 464 | 1930 | 50 | |
| P1302E | 464 | 1660 | 50 | |
| P1303E | 192 | 1780 | 50 | |
| P1304E | 192 | 950 | 50 | |
| P1305E | 128 | 3380 | Str. | |
| P1306E | 96 | 1380 | Str. | |
| P1901E | 160 | 3380 | Str. | |

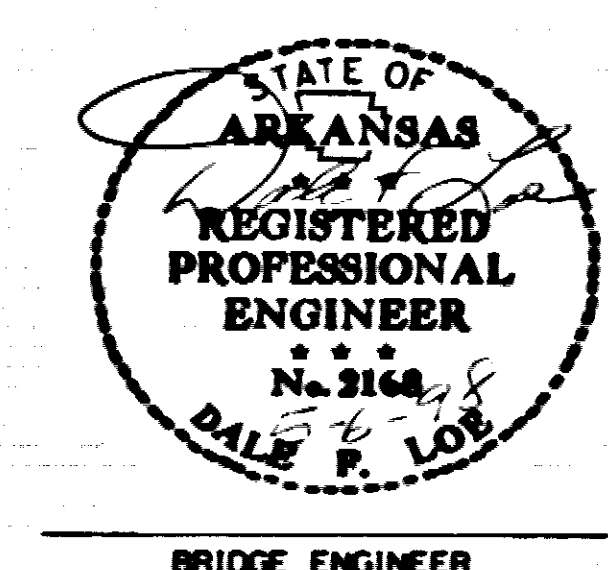


Notes Bar designations ending with "E" indicates Epoxy Coated bars.

General Notes

All dimensions are in millimeters unless otherwise noted.

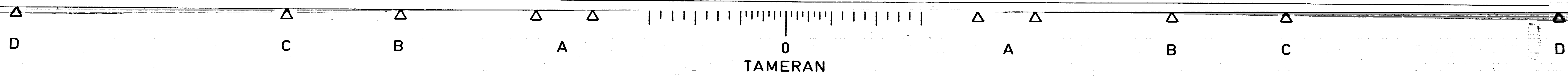
For Section A-A (showing parapet reinforcing), see Sheet 4 of 4.

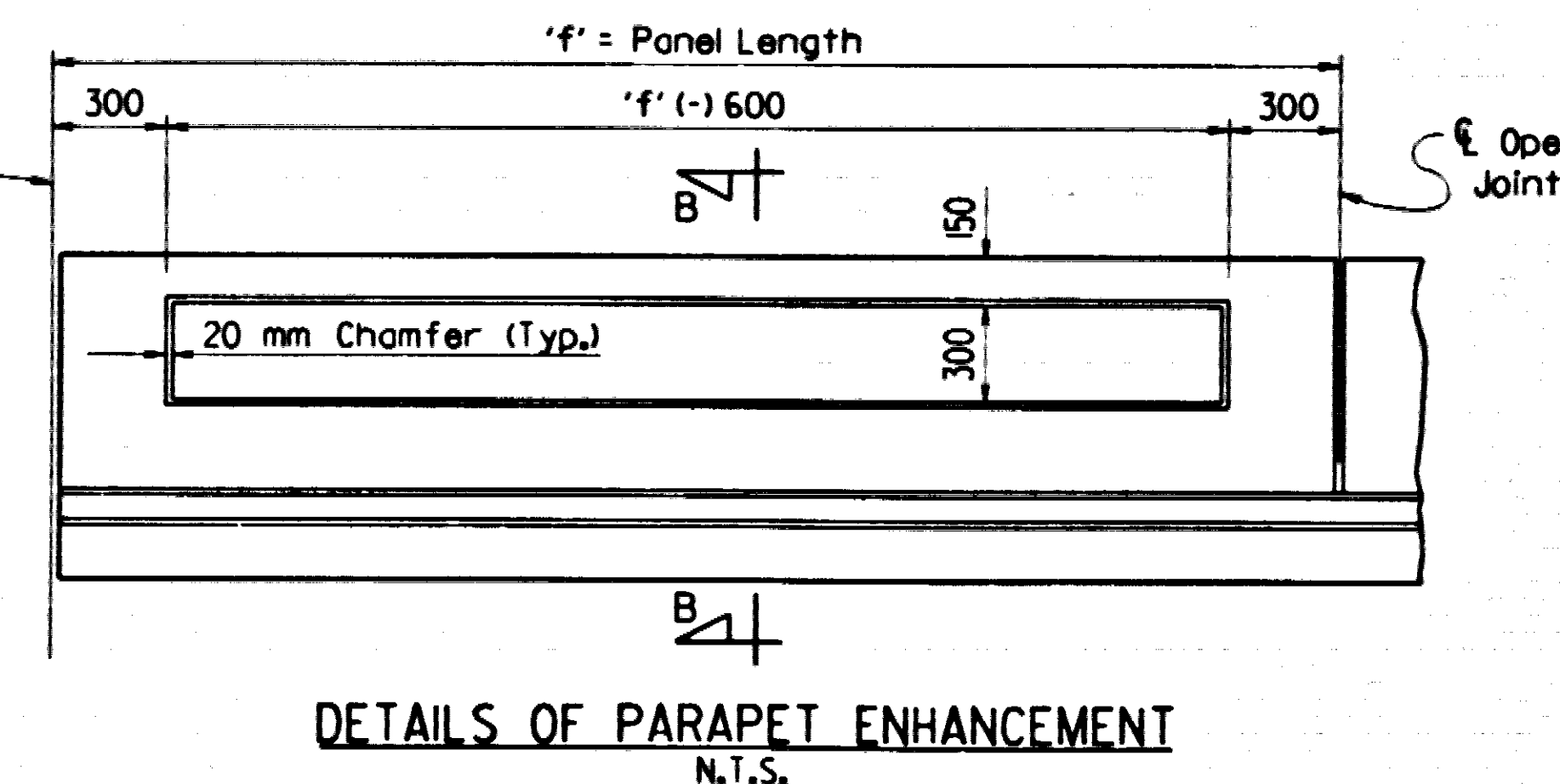
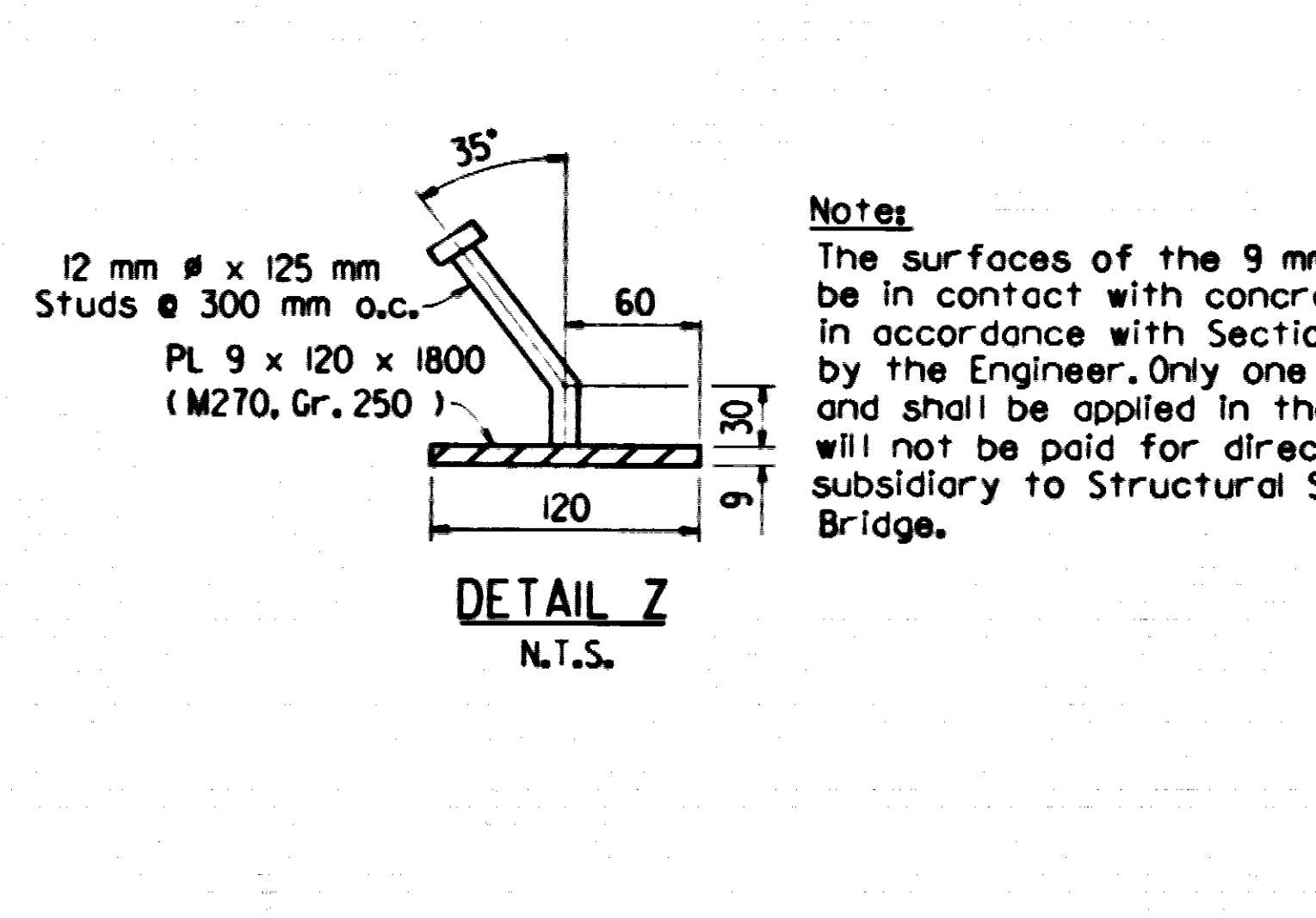
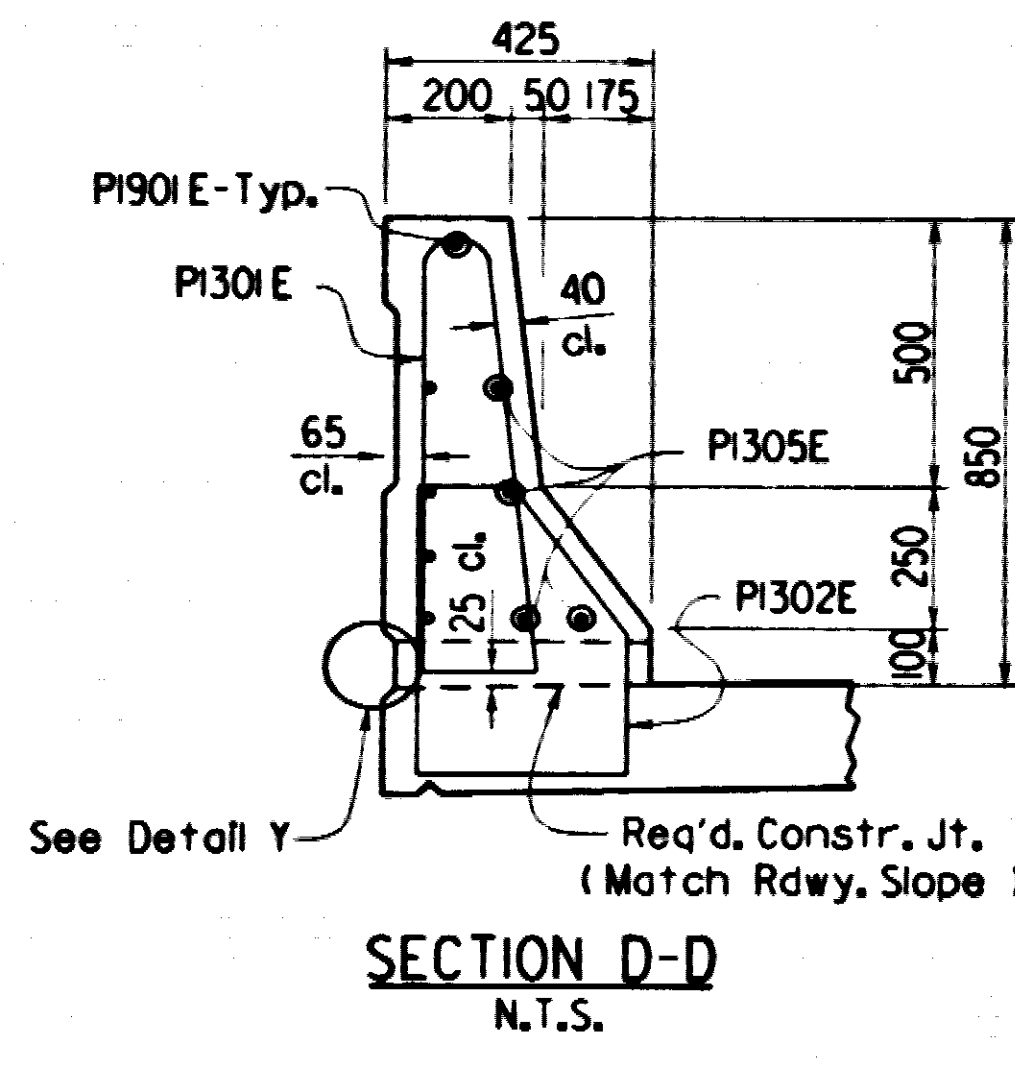
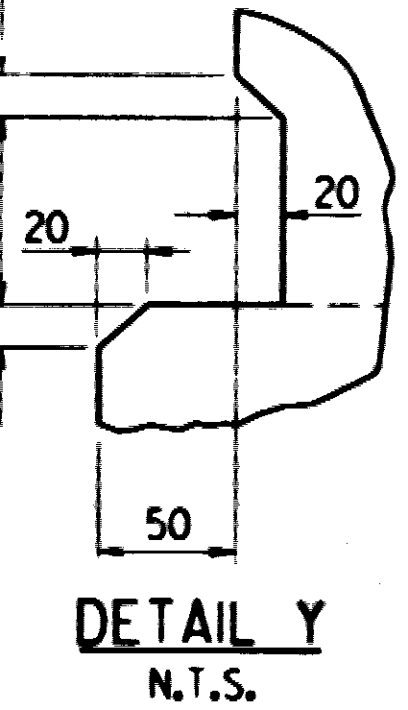
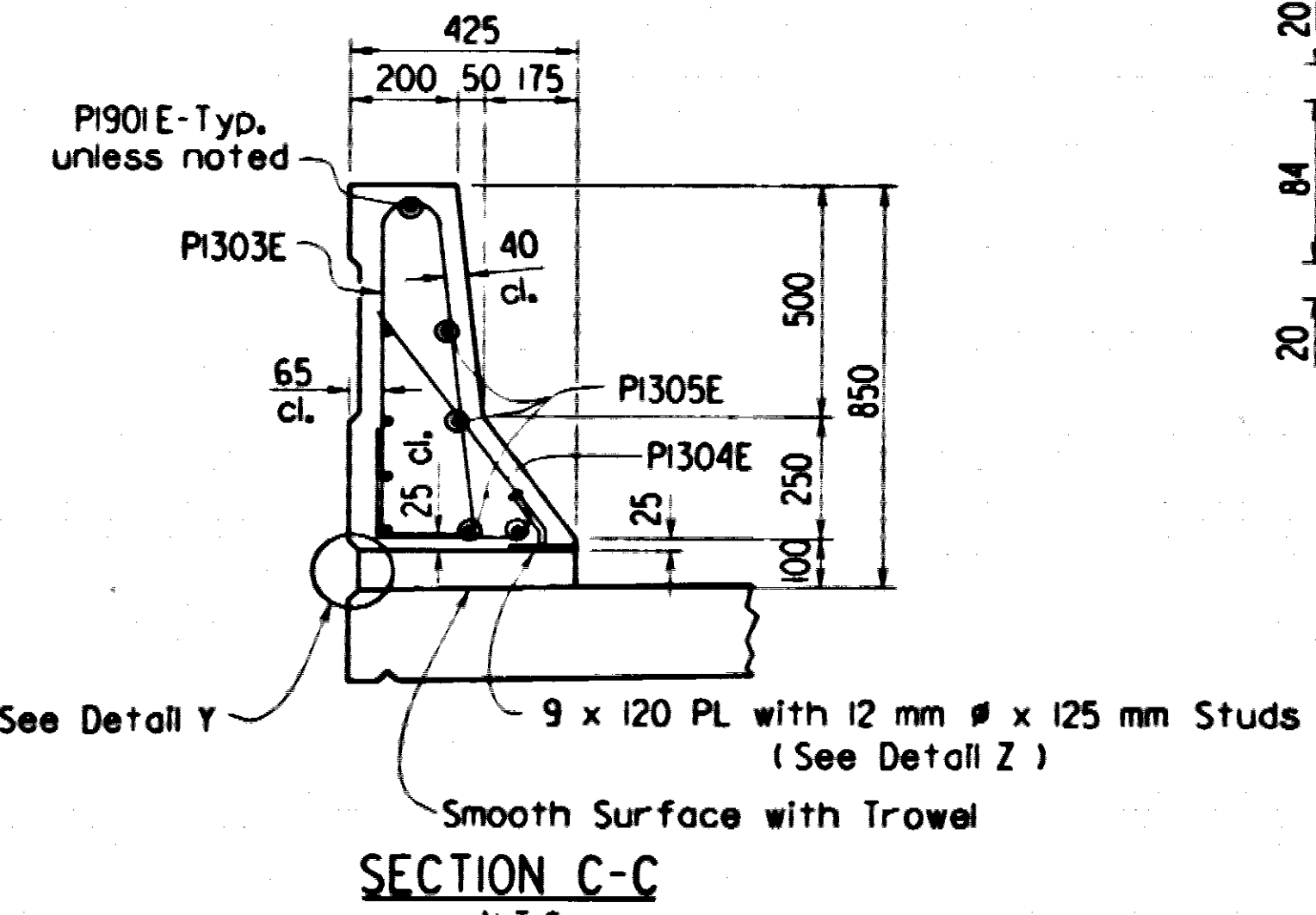
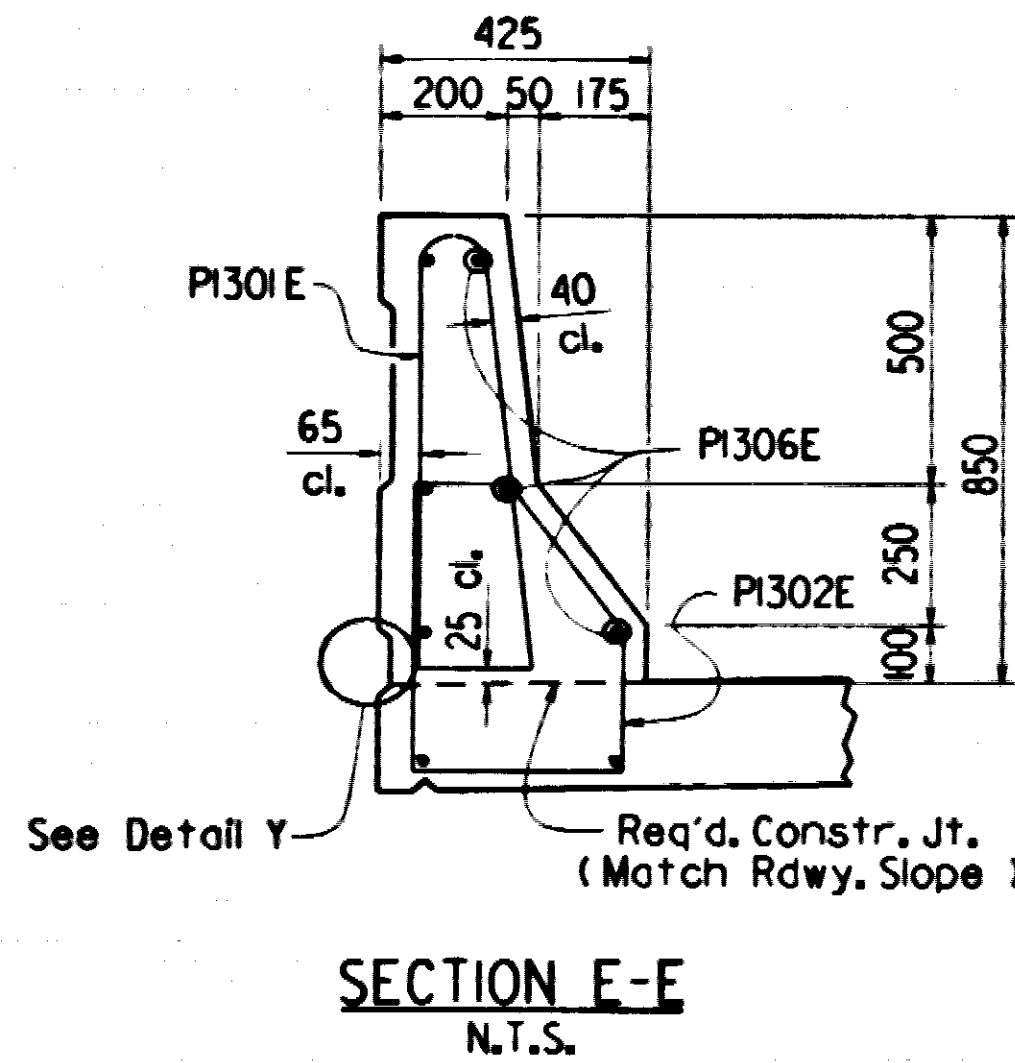
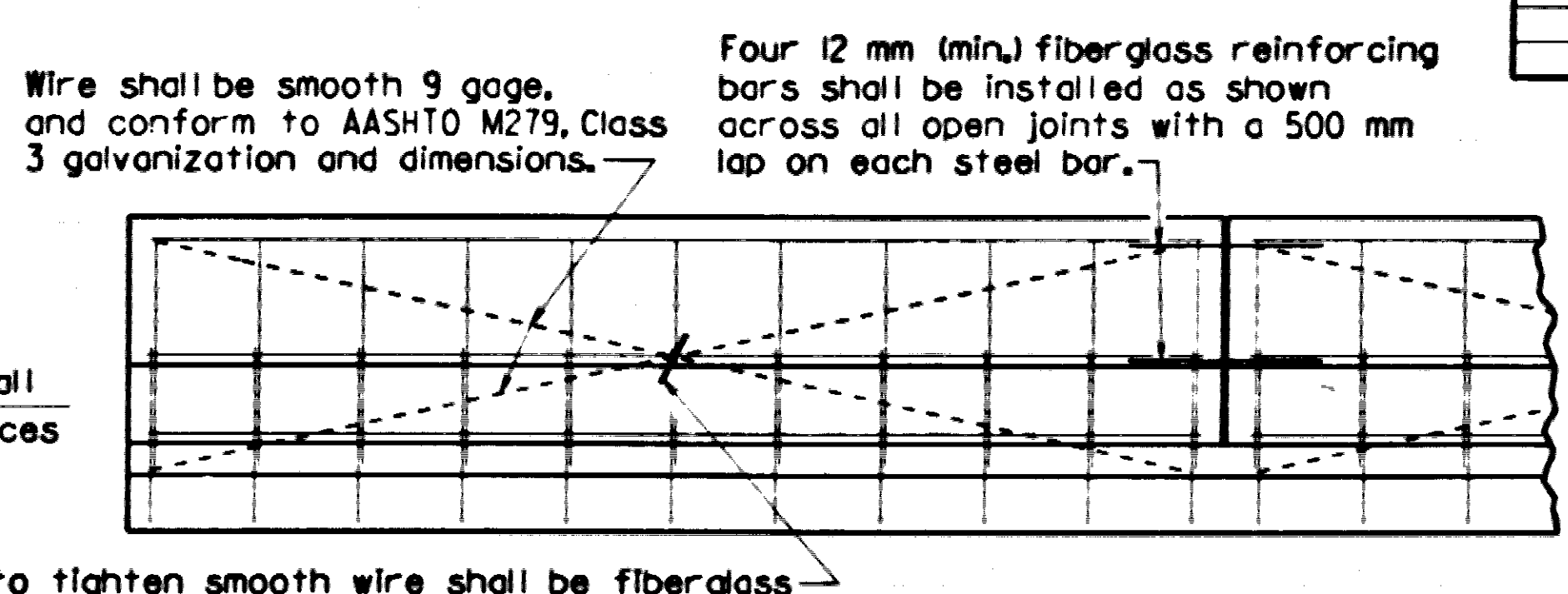
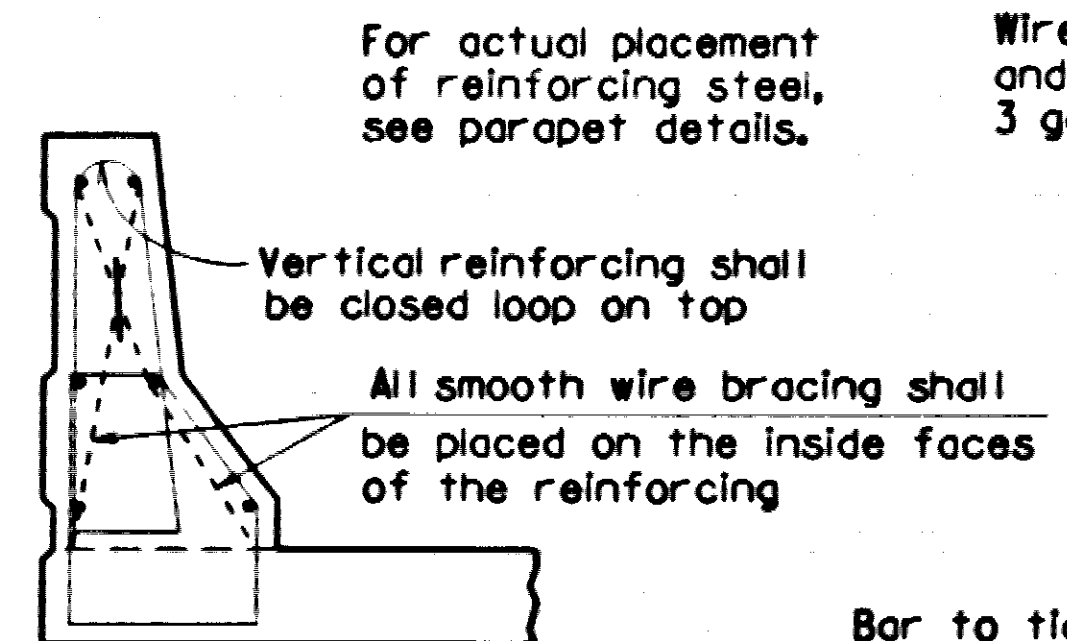
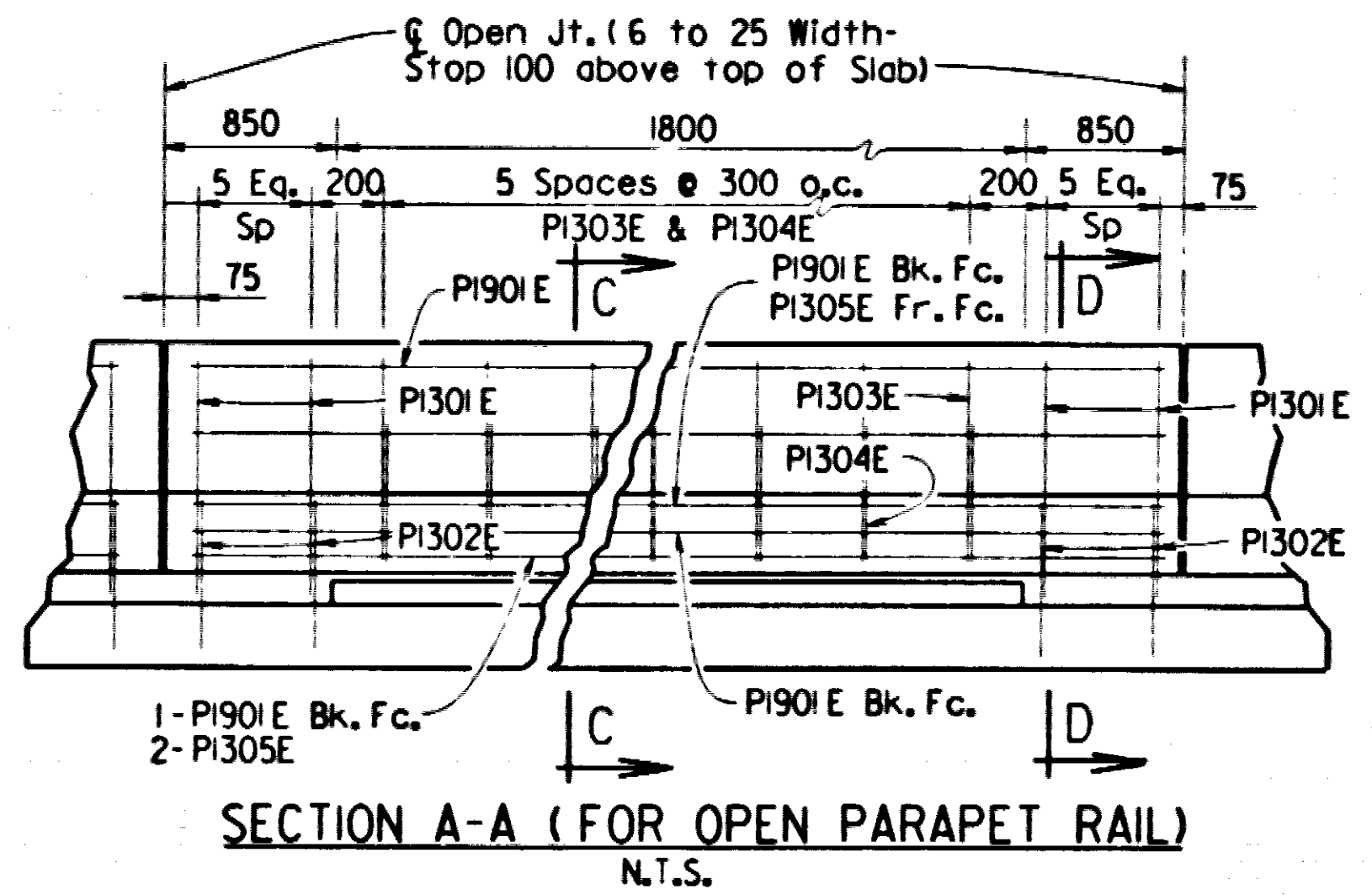
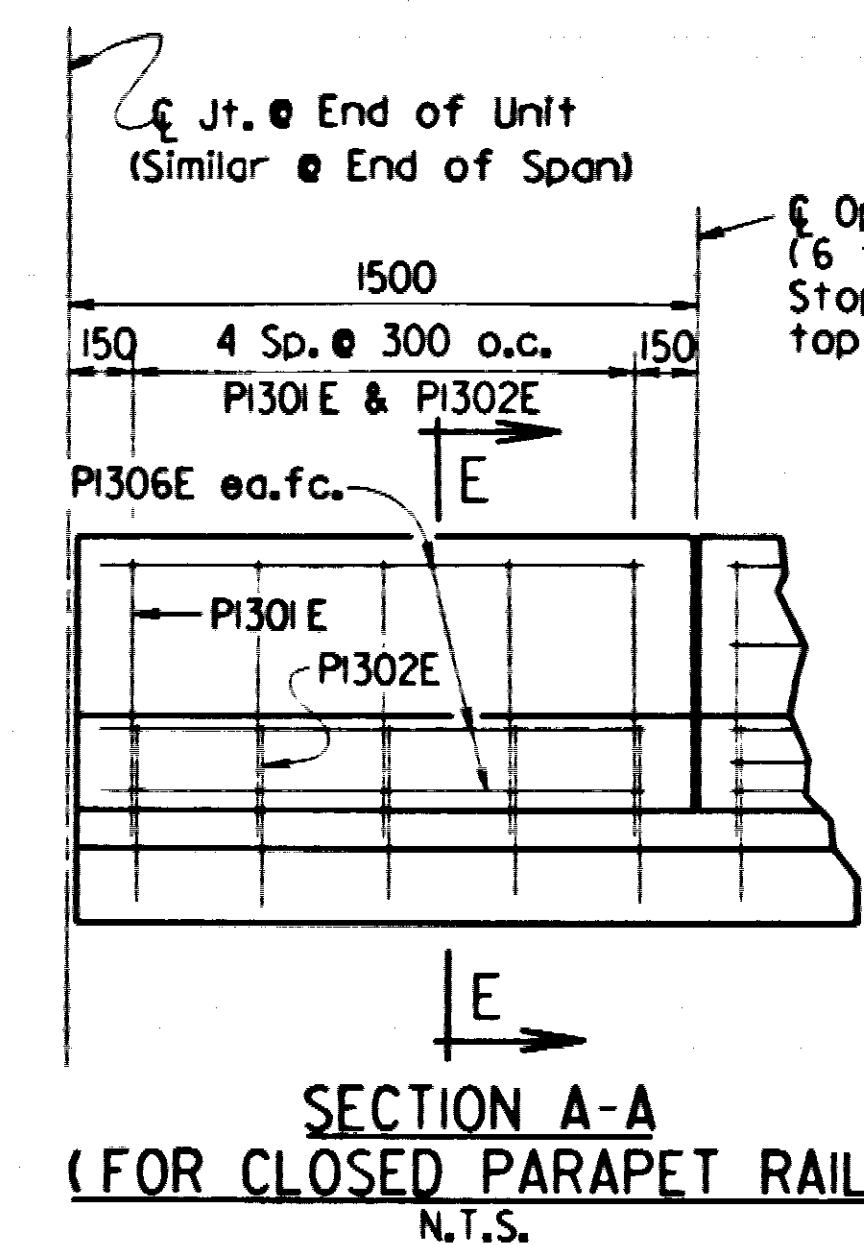


ALTERNATE NO. 2
(SHEET 3 OF 4)
DETAILS OF 68 METER
CONTINUOUS PRESTRESSED
CONCRETE GIRDER UNIT
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 03-18-98
CHECKED BY: CES DATE: 4-29-98
DESIGNED BY: AMS DATE: 3-18-98
BRIDGE NO. 06715 DRAWING NO. 39071

MICROFILMED
AUG 31 1998





For actual placement of reinforcing steel, see parapet details.

Wire shall be smooth 9 gage, and conform to AASHTO M279, Class 3 galvanization and dimensions.

Four 12 mm (min) fiberglass reinforcing bars shall be installed as shown across all open joints with a 500 mm lap on each steel bar.

Bar to tighten smooth wire shall be fiberglass

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 (OPEN OR CLOSED)

PRESTRESSED GIRDERS GENERAL NOTES

Prestressing steel shall be 13 mm dia. Low Relaxation strands with a minimum ultimate strength of 1860 MPa, and shall conform to AASHTO M 203.

Distances from the forms and spacing of the Prestressing Steel shall be maintained by stays, ties, hangers, spacers, or other approved supports which shall be shown on the Shop Drawings.

All girders shall be Type III as noted on the details and shall be the standard prestressed sections adopted by the Joint Committee of AASHTO and the Prestressed Concrete Institute. All girders shall be cast in concrete floored pallets and in metal forms. All work and materials shall be as specified in section 802.22 of the Standard Specifications.

Concrete shall be Class S and shall have a minimum 28 day compressive strength, $f_c = 35.0$ MPa.

The initial tensile force applied to each 13 mm dia. strand shall be 138 kN. Transfer of this tensioning load to the girder shall not be done until the compressive strength of the concrete is 28.0 MPa.

Dimensions shown are to the center of the strands.

The contractor shall submit the method and sequence for release of strands to the Bridge Engineer for approval prior to casting of the girders.

The first 400 mm of the tops of the girders at beginning and end of bridge shall have a smooth surface, the rest of the tops of the girders shall be rough floated at approximately the time of set. This portion of the tops of girders shall be scrubbed transversely with a coarse wire brush to remove all laitance and to produce a roughened surface for bonding slabs.

All exposed steel at end of girders shall be protected against corrosion with a coating of tar or other waterproofing material.

Extreme care shall be exercised in handling and moving precast prestressed concrete girders. Girders must be maintained in an upright position at all times and must be picked up from points near the girder ends. Disregard of this requirement may lead to collapse of the girder. The contractor's proposed lifting details shall be submitted on shop drawings to the Bridge Engineer for approval. The use of holes for lifting purposes will not be permitted.

The points of support and directions of the reactions with respect to the member shall be approximately the same during transportation and storage as when the member is in its final position.

Reinforcing steel shall be ASTM A 615/A 615M-96a, Gr. 420 ($f_y = 420$ MPa).

The contractor may submit alternate strand patterns with design calculations for review and approval.

Load Distribution to Girders

| | | |
|------------------------------|--|---|
| Dead Load (a) to girder only | To Interior Girder 2.12 kN/m + Girder + Diaph. | To Exterior Girder 10.83 kN/m + Girder + Diaph. |
| (b) To composite girder | 5.25 kN/m | 5.25 kN/m |
| Live Load to Comp. Girder | 1.551 Wheels+Impact | 1.289 Wheels+Impact |

Includes 2.59 kN/m for future wearing surface

| 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. | | 060779 | 72 | 119 |
| | | | | | | 06715 | SPAN DETAILS | 39072 |

SUPERSTRUCTURE GENERAL NOTES

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

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Dept. Standard Specifications for Highway Construction, 1996 edition, with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Highway Bridges 1996 with current interim specifications.

LIVE LOADING: MS18

METHOD OF DESIGN: Load Factor

REINFORCING STEEL: Reinforcing Steel shall conform to ASTM A 615/A 615M-96a, Grade 420 ($f_y = 420$ MPa).

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 of "Reinforcing Steel - Bridge".

CONCRETE: Concrete in Slab, Parapet, and Diaphragms shall be Class S (AE) with a minimum 28 day compressive strength $f_c = 28.0$ MPa and shall be poured in the dry. All end of unit and midspan diaphragms shall be cast in place and poured a minimum of 48 hours before the slab is poured. Interior bent diaphragms shall be cast monolithically with the slab.

All exposed corners to be chamfered 20 mm unless otherwise noted.

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. 3655 for allowable modifications and for tolerances when permanent steel bridge deck forms are used.

Concrete in bridge superstructure 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. The concrete bridge deck shall be given a fine finish as specified for final finishing in subsection 802.19 for a Class 5 finished bridge roadway surface finish. Movement of the finishing machine across the new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. 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 due to the railing.

STRUCTURAL STEEL: All Structural Steel shall be AASHTO M270, Gr. 345W unless otherwise noted and shall be paid for at the unit price bid for "Structural Steel in Plate Girder Spans (M270, Gr. 345W) AASHTO M270, Gr. 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 M270, Gr. 250.

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.

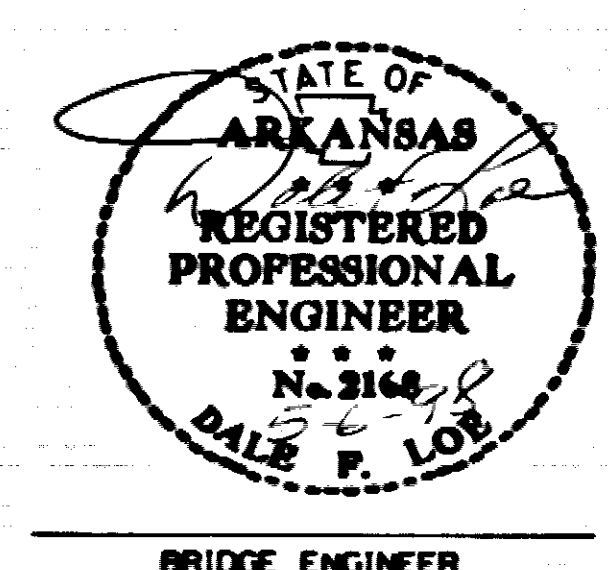
All welding that is to be done during fabrication of structural steel, including temporary welds shall be detailed on the shop drawings and submitted for approval. If the contractor or erector should want to make additional welds, whether temporary or permanent, he shall submit detailed drawings with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

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.

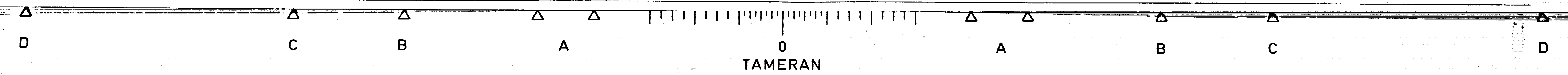
ALTERNATE NO. 2 (SHEET 4 OF 4) DETAILS OF 68 METER CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT

SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

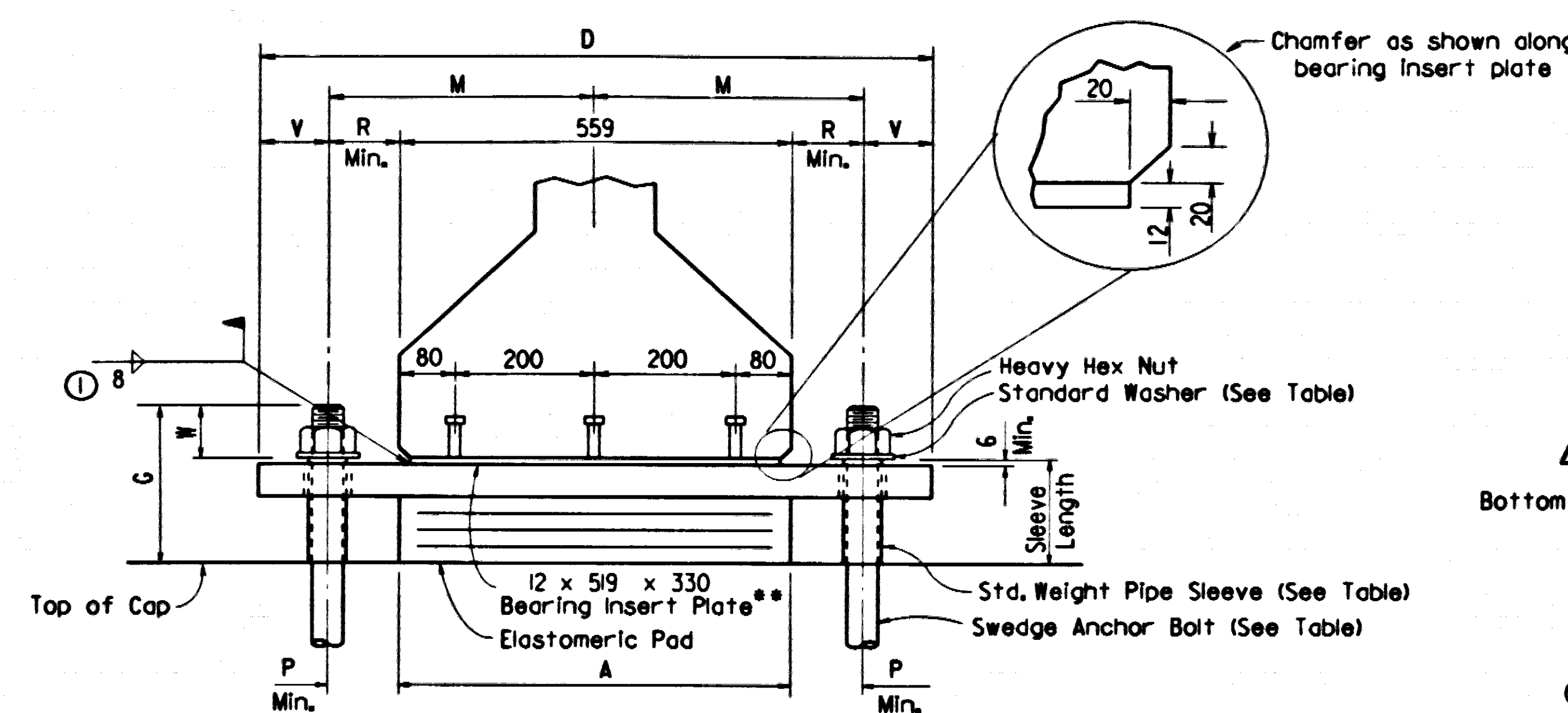
DRAWN BY: M.J.T. DATE: 03-18-98
CHECKED BY: DATE: 03-18-98
DESIGNED BY: A.M.S. DATE: 03-18-98
BRIDGE NO. 06715 DRAWING NO. 39072



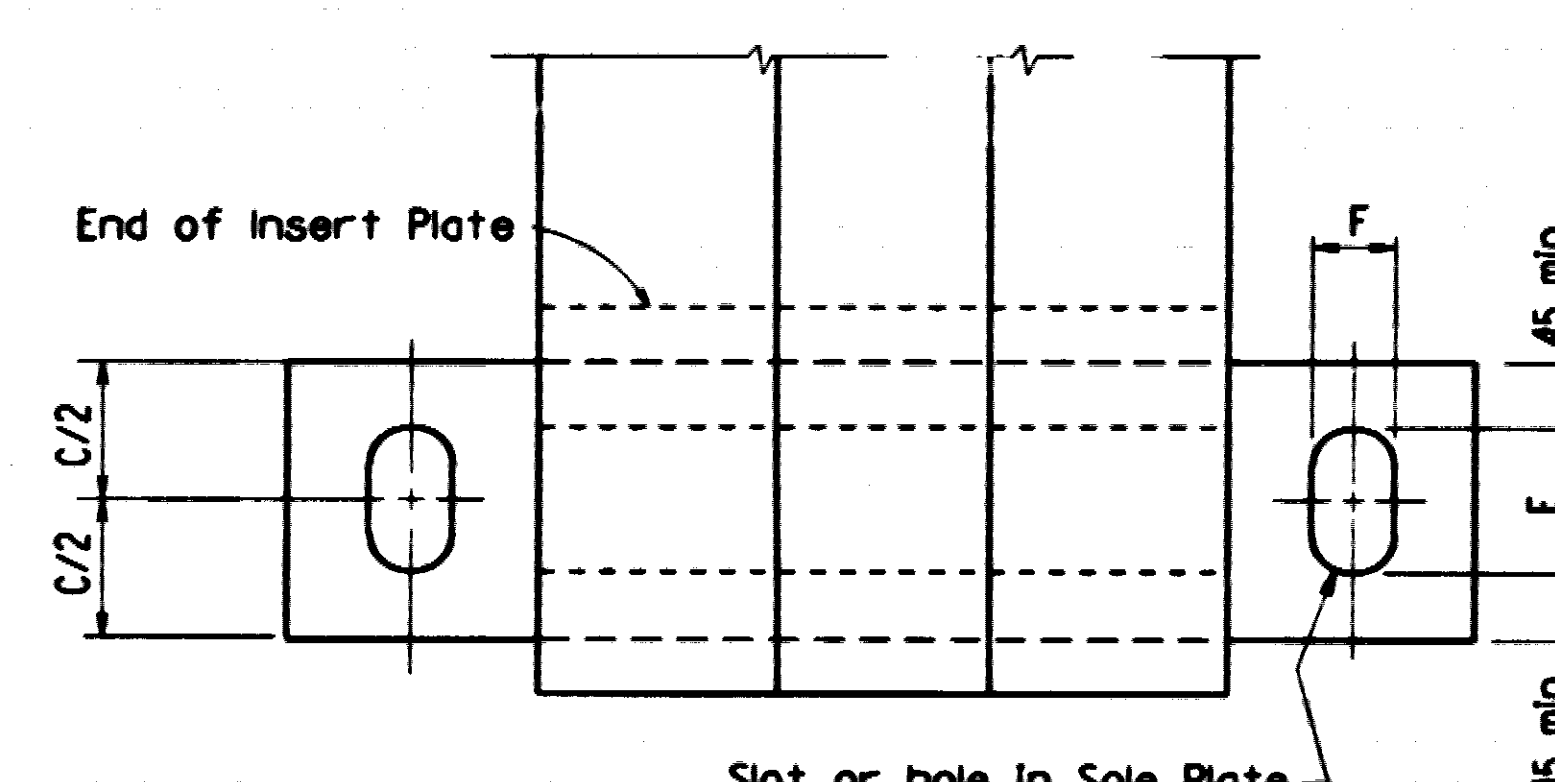
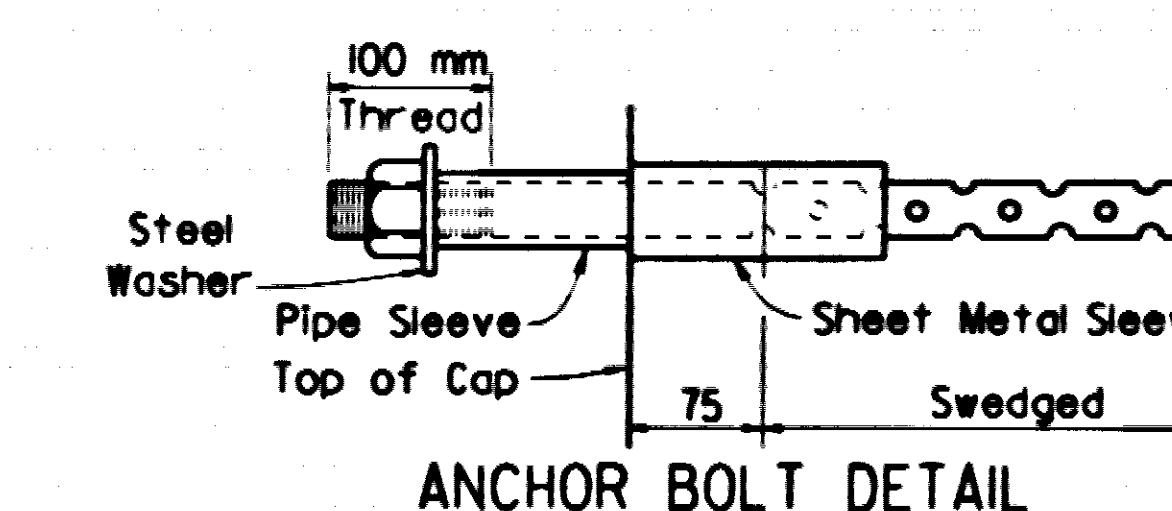
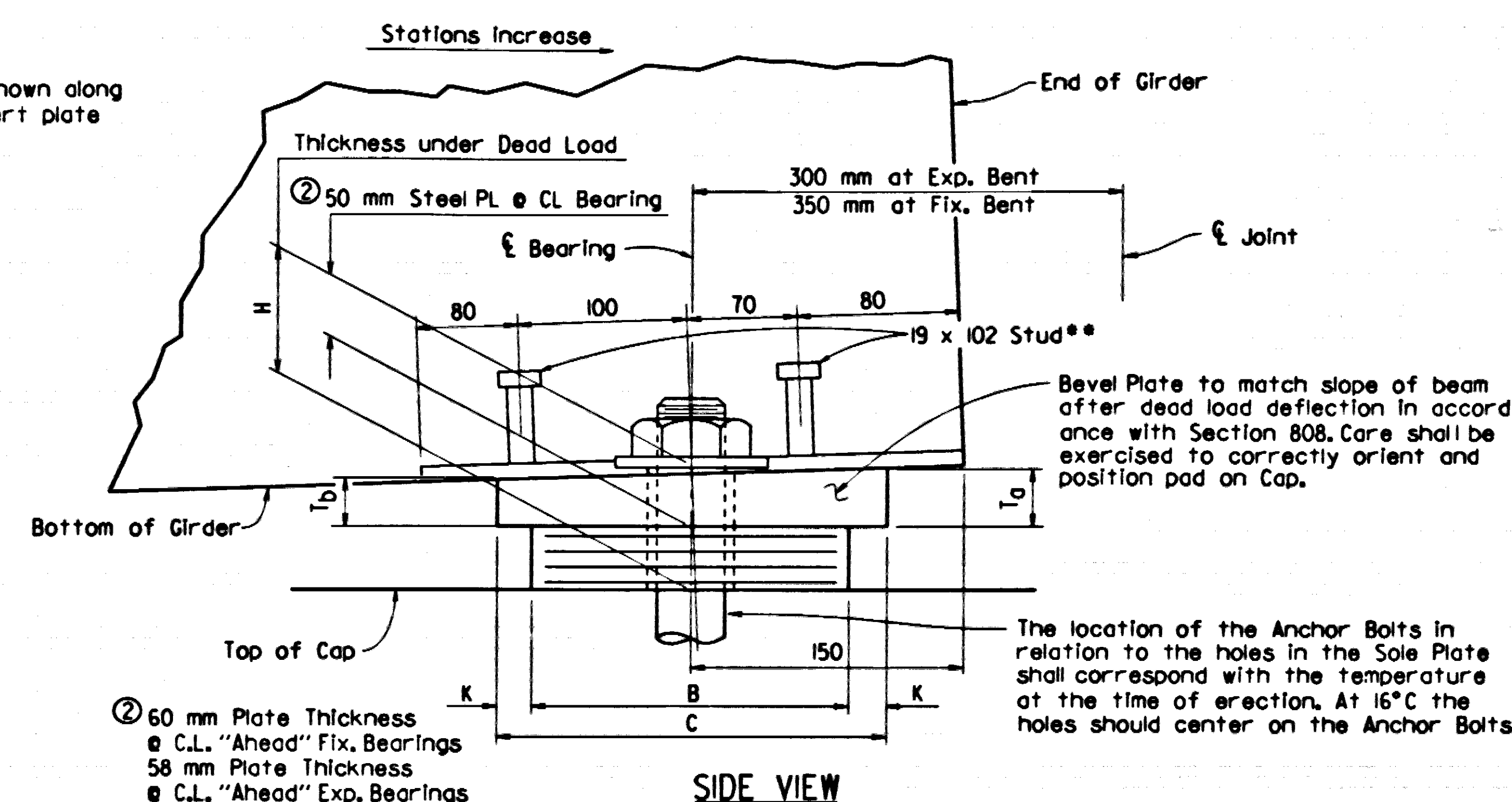
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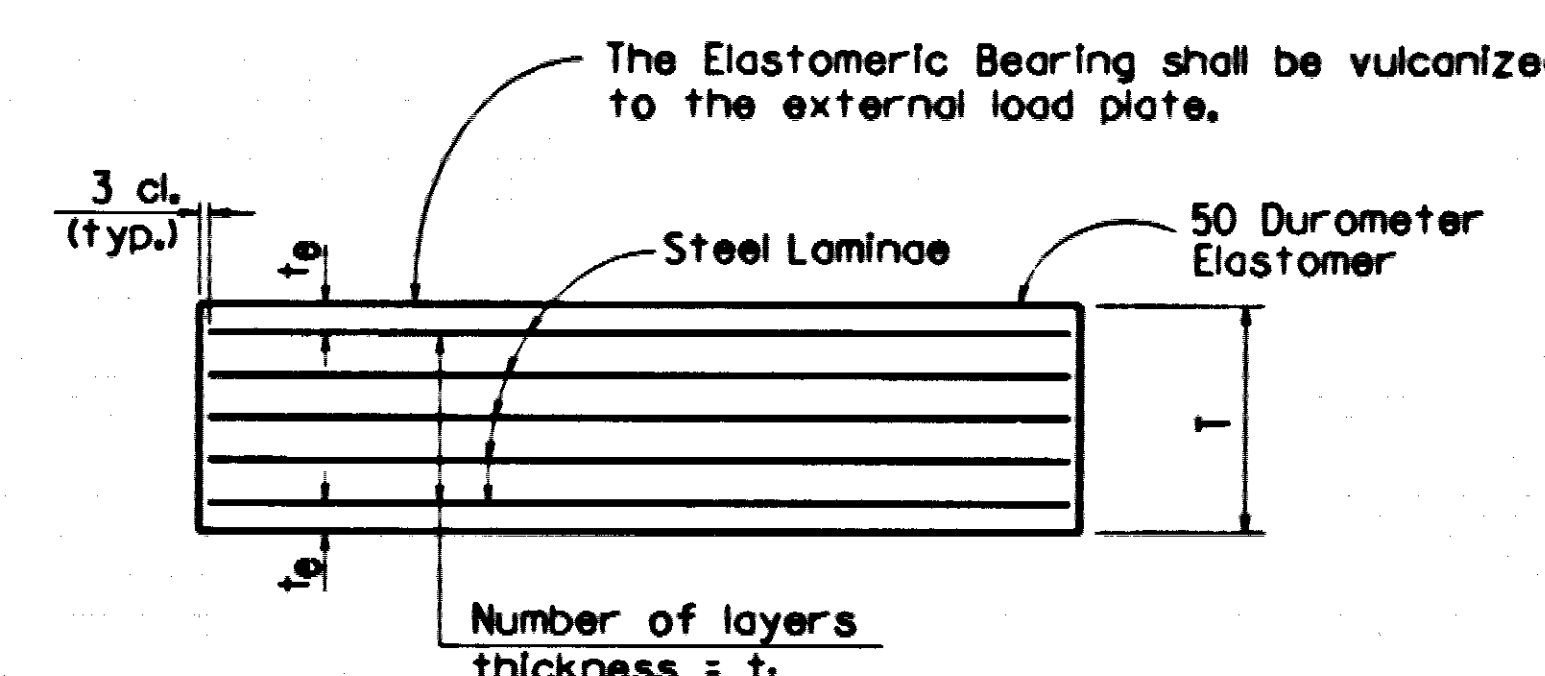
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
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| | | | | 6 | ARK. | | 73 | 119 |
| | | | | JOB NO. | | 060779 | | |
| | | | | | | ELASTOMERIC BEARINGS | 39073 | |



① Care shall be taken to ensure that the sole plate is in full, complete contact with the Bearing Insert Plate before welding begins.



PLAN VIEW



t_e = thickness of elastomer cover on top and bottom of pad
 t_l = thickness of elastomer between steel laminae
 N = number of elastomer layers of thickness t_l

ELASTOMERIC BEARING

TABLE OF DESIGN VARIABLES (mm)

| ANCHOR BOLT DIAMETER | PIPE SLEEVE NOMINAL DIAMETER | SHEET METAL SLEEVE DIA. | STANDARD WASHER SIZE (O.D.) | MINIMUM EMBEDMENT LENGTH | SLOT WIDTH "P" | P Min. | R Min. | V | W |
|----------------------|------------------------------|-------------------------|-----------------------------|--------------------------|----------------|--------|--------|-----|----|
| 25.4 | 25.4 | 76 | 50.8 | 260 | 40 # | 50 | 50 | 65 | 40 |
| 31.7 | 31.7 | 76 | 63.5 | 30 | 50 # | 50 | 60 | 65 | 45 |
| 38J | 38J | 76 | 76.2 | 380 | 60 # | 60 | 65 | 70 | 50 |
| 44.4 | 50.8 | 100 | 85.7 | 460 | 70 # | 65 | 70 | 75 | 60 |
| 50.8 | 63.5 | 100 | 95.2 | 50 | 80 # | 70 | 75 | 85 | 65 |
| 57J | 63.5 | 100 | 106 | 590 | 80 # | 70 | 75 | 85 | 70 |
| 63.5 | 76.2 | 100 | 114.3 | 640 | 95 # | 75 | 85 | 90 | 75 |
| 69.8 | 76.2 | 127 | 127.0 | 720 | 95 # | 75 | 90 | 90 | 85 |
| 76.2 | 88.9 | 127 | 139.7 | 770 | 115 # | 85 | 90 | 100 | 90 |

NOTES:
 Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required.

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of prestressed girders, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a OPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, Gr. 345W)

GENERAL NOTES

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

Elastomeric Bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "Elastomeric Bearings."

External load plates shall conform to AASHTO M 270, Grade 345W. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or AASHTO M 298, Class 50.

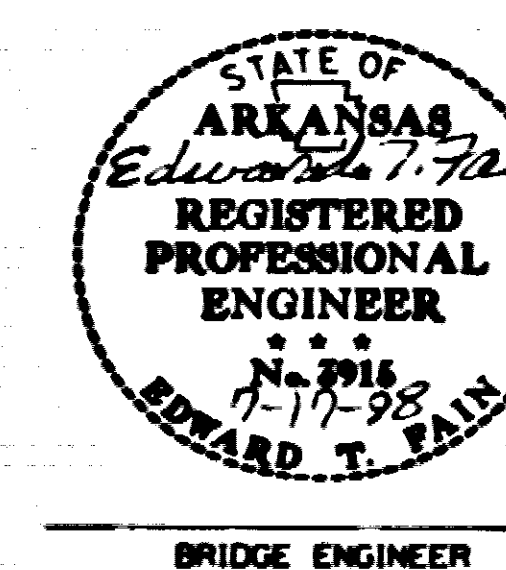
External load plates shall be completely fabricated (including bevel, bolt holes and all shop welding) and shall be blast cleaned to remove rust, loose mill scale, dirt, oil, grease and other foreign substances before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be blast cleaned to the surface finish specified in subsection 808.04(b). Other surfaces shall be blast cleaned in accordance with subsection 807.84(e) for unpainted Grade 345W steel.

Anchor Bolts, Washers and Nuts shall conform to subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "TABLE OF FABRICATOR VARIABLES". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, Gr. 345W)".

ALTERNATE NO. 2 DETAILS OF ELASTOMERIC FIXED AND EXPANSION BEARINGS FOR PRESTRESSED CONCRETE GIRDERS ROUTE 229 SEC. 5 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 03-25-98
 CHECKED BY: CES DATE: 7-17-98 SCALE: NO SCALE
 DESIGNED BY: AMS DATE: 3-18-98
 BRIDGE NO. 06715 DRAWING NO. 39073

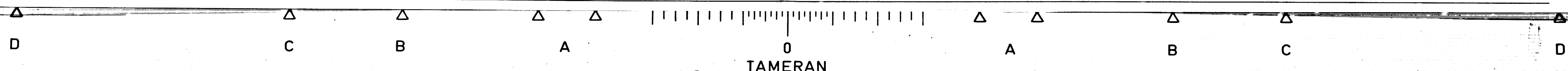


Tabular Data by: MJT Date: 4/8/98
 Checked by: CES Date: 7-17-98

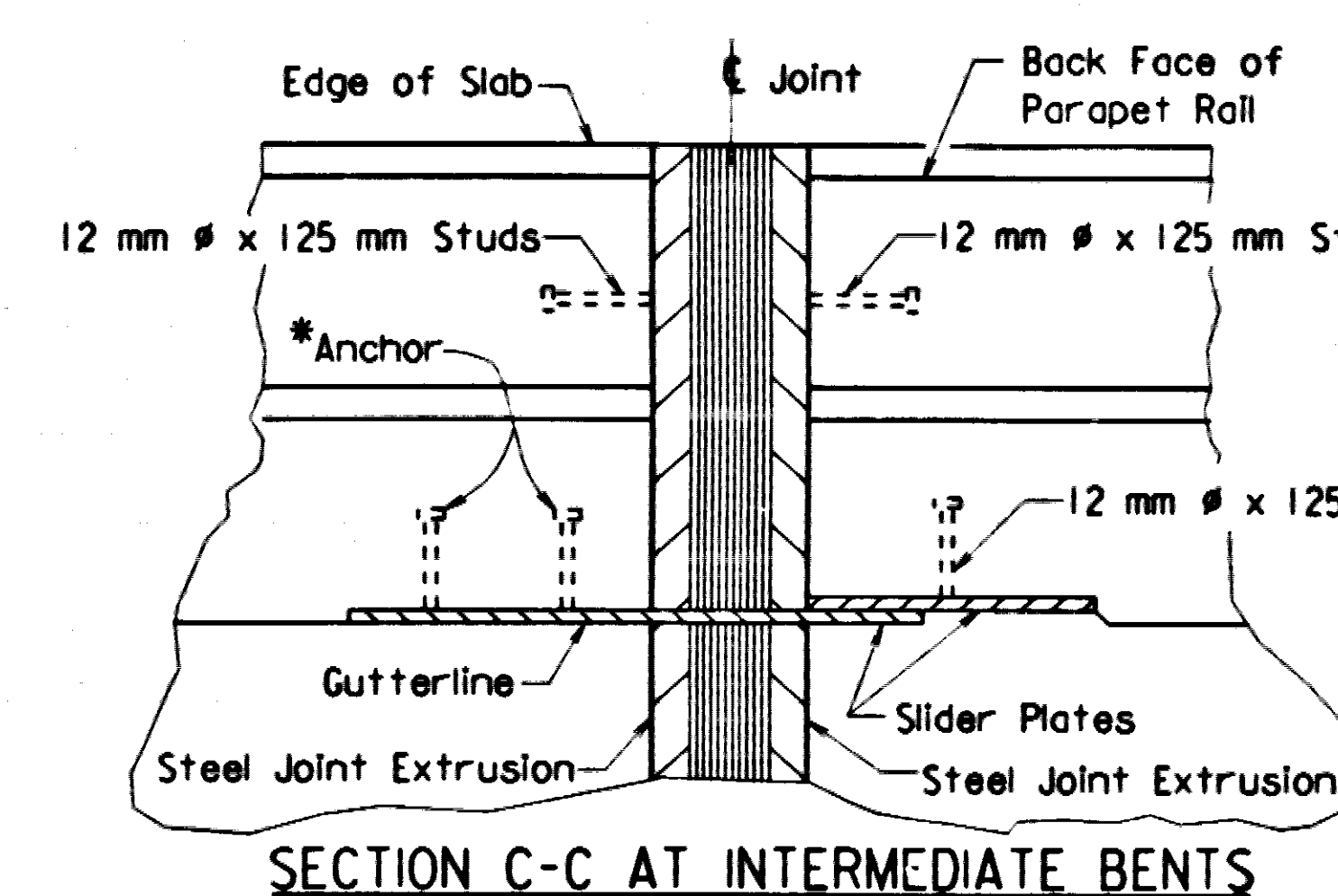
| TABLE OF FABRICATOR VARIABLES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|---|--|--------------|---------------------------|----------------------------|-----|------------|-----|-----|-----------------|----------------|----------------|---------------------------------------|-----|-----|-----|-----|---------------------|----|-----|----------------|----------------|--------------|-------|--------------------------|---------------------------------|-------------------------|--|--|--|--|--|--|--|--|--|--|
| * Maximum Design Load = Service Load | | | | | | | | | | ELASTOMERIC PAD | | | | | | | | EXTERNAL LOAD PLATE | | | | | | | | ANCHOR BOLT | | | | | | | | | | | |
| UNIT | LOCATION | | BEARING TYPE | NO. OF BEARINGS EACH BENT | * MAXIMUM DESIGN LOAD (kN) | G | H | A | B | N | t _l | t _e | NUMBER AND THICKNESS OF STEEL LAMINAE | T | C | D | E | F | K | M | T _a | T _b | ANCHOR BOLT | | PIPE SLEEVE SIZE (# x L) | SHEET METAL SLEEVE SIZE (# x L) | STEEL WASH. SIZE (O.D.) | | | | | | | | | | |
| | BENT NUMBERS | | | | | | | | | | | | | | | | | | | | | | # x L | GRADE | | | | | | | | | | | | | |
| 68 m | 1 & 17 | | Exp. | 4 | 474 | 240 | 158 | 460 | 150 | 10 | 8 | 5 | 11 @ 14 ga. | III | 200 | 880 | 110 | 80 | 25 | 355 | 5L7 | 48.3 | 50.8 # x 750 | 55 | 63.5 # x 175 | 100 # x 150 | 95.2 | | | | | | | | | | |
| 68 m | 5, 9 & 13 | | Exp. | 8 | 474 | 240 | 158 166 | 460 | 150 | 10 | 8 | 5 | 11 @ 14 ga. | III | 200 | 880 | 110 | 80 | 25 | 355 | 5L0 59.7 | 49.0 56.3 | 50.8 # x 750 | 55 | 63.5 # x 175 | 100 # x 150 | 95.2 | | | | | | | | | | |
| 68 m | 2, 3, 4, 6, 7, 8, 10, 11, 12, 14, 15 & 16 | | Fix. | 8 | 394 | 215 | 129 139 | 320 | 150 | 7 | 8 | 5 | 8 @ 14 ga. | 8 | 190 | 880 | 80 | 80 | 20 | 355 | 5L0 64.6 | 49.0 58.4 | 57J # x 80 | 55 | 63.5 # x 145 | 100 # x 150 | 101.6 | | | | | | | | | | |

* Back Bearing
 ** Ahead Bearing

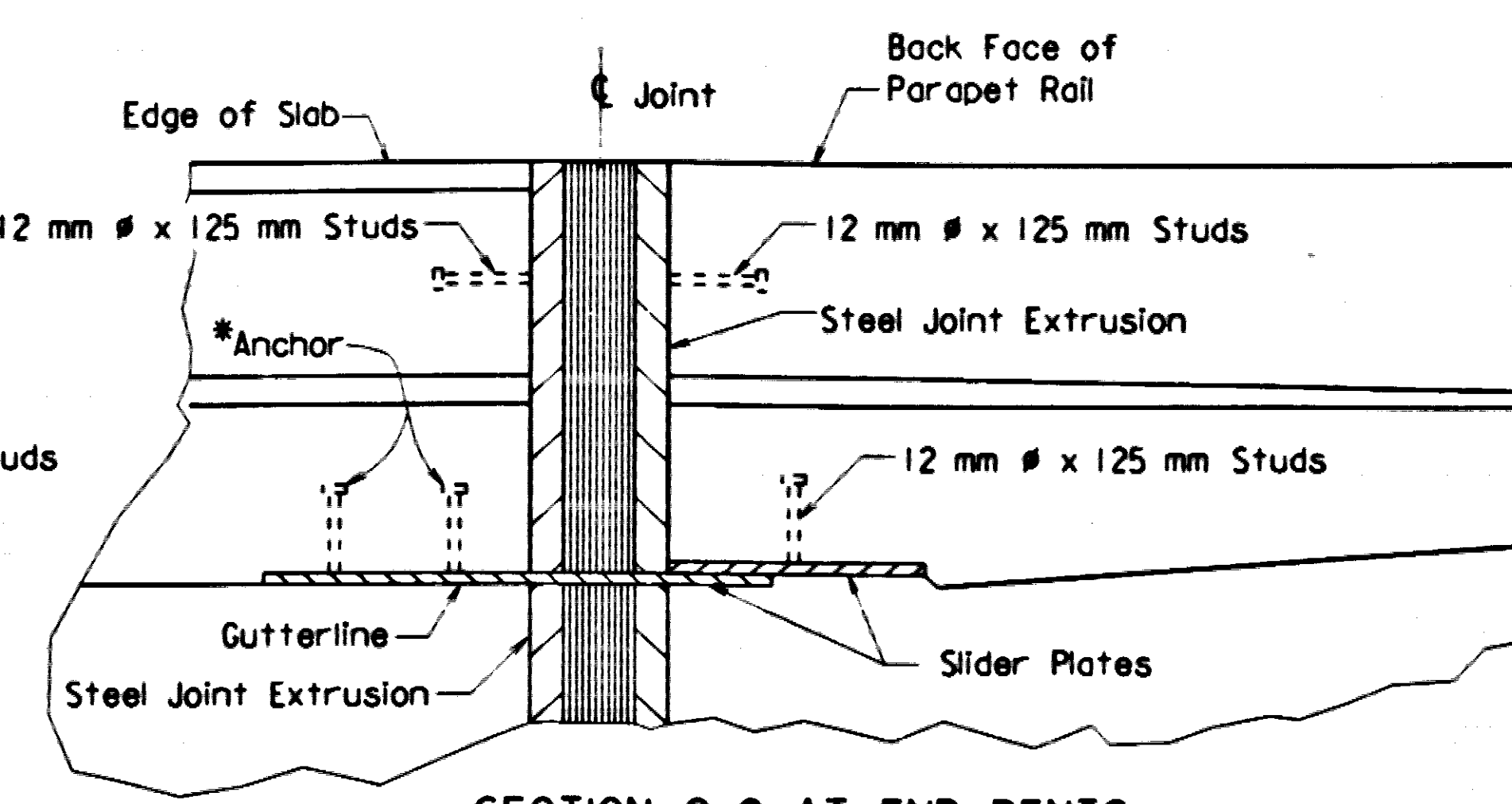
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| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
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| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 060779 | 75 | 119 |
| | | | | | | 06715 | JOINT DETAILS | 39075 |

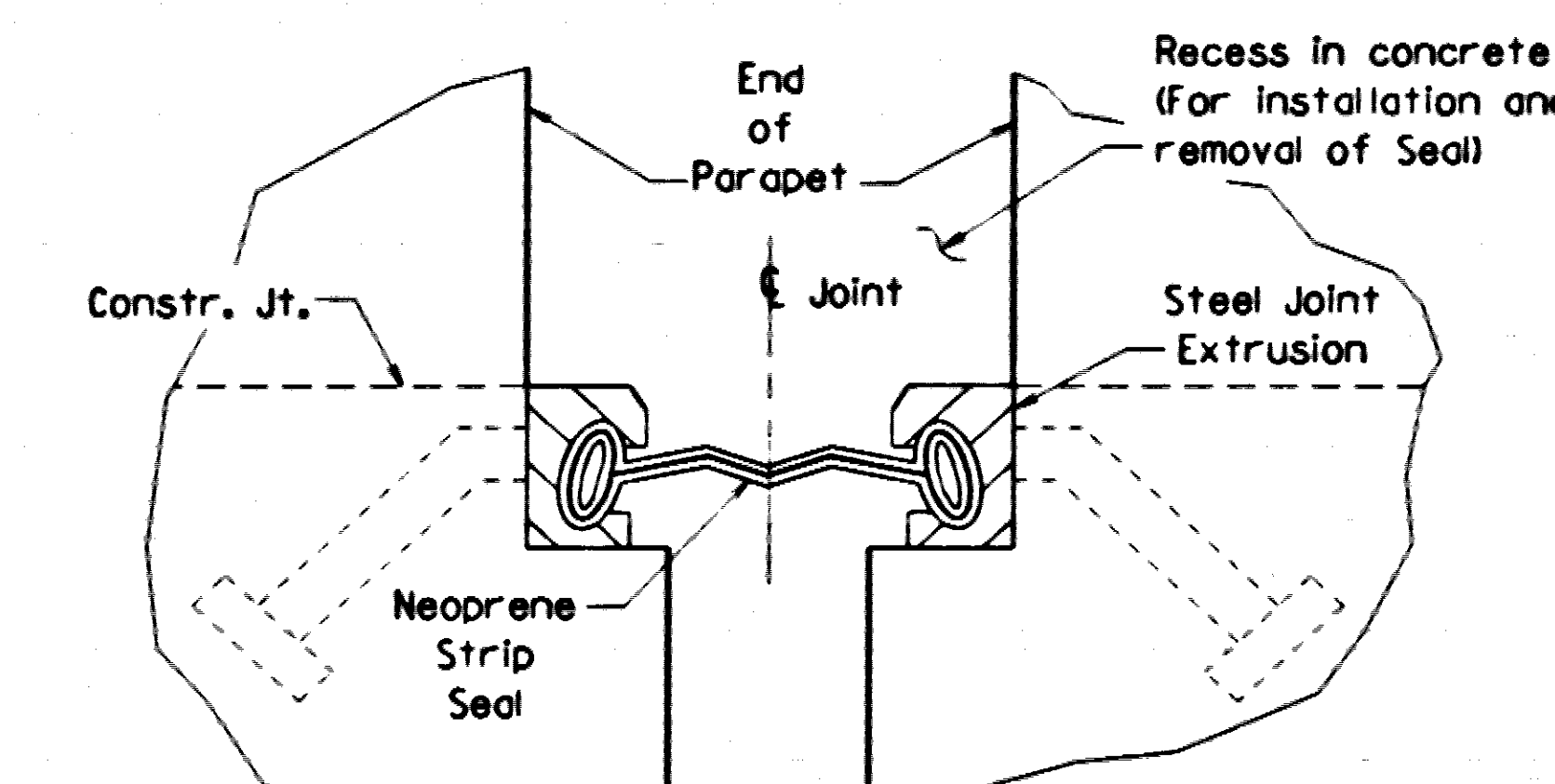


SECTION C-C AT INTERMEDIATE BENTS

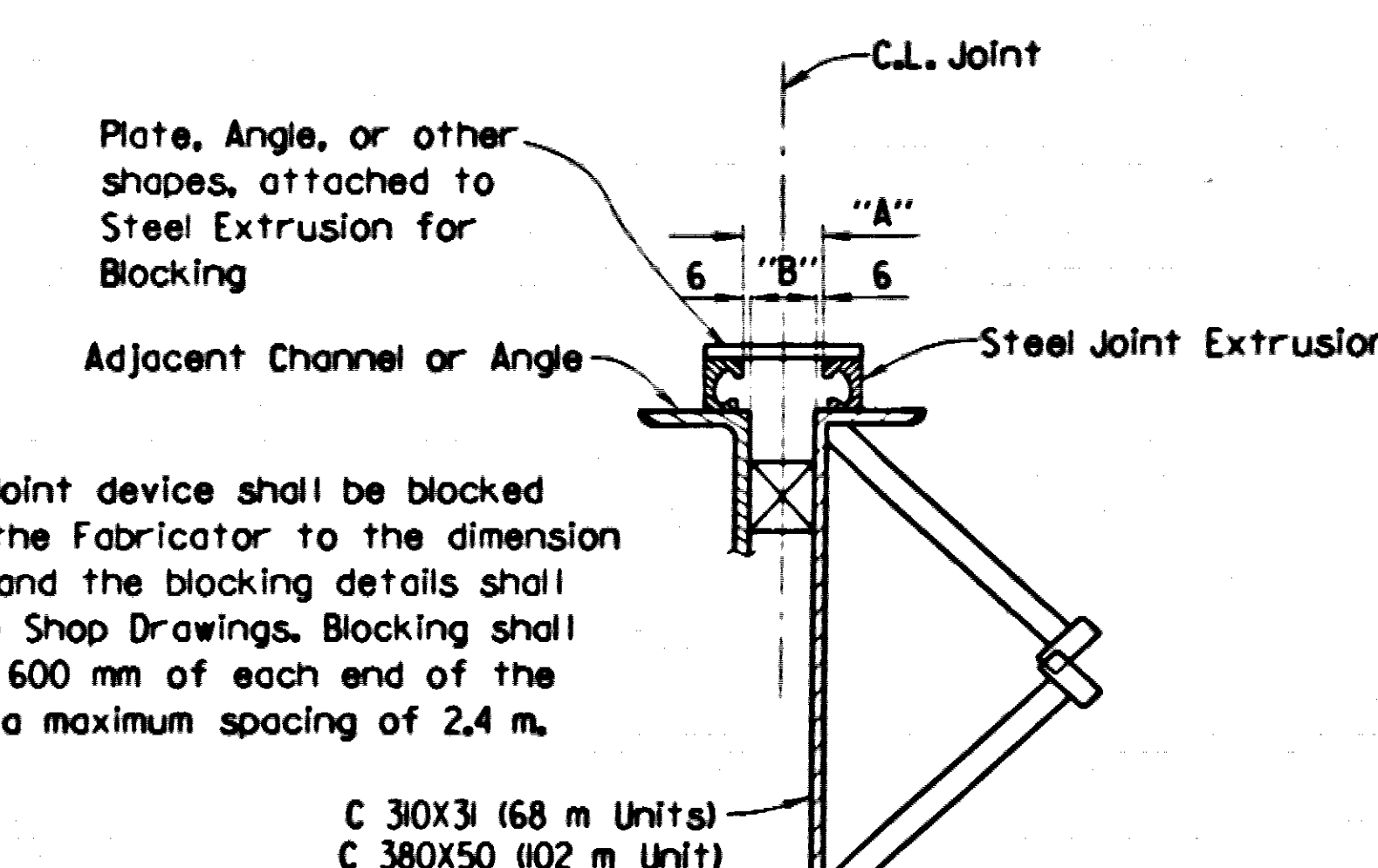


SECTION C-C AT END BENTS

* The method of attachment of the cover slider plate assembly or similar device must be such that it may be removed in order to provide for future replacement of the neoprene seal.
Anchors will not be paid for directly but will be considered subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, Gr. 345#)".



SECTION D-D



Notes:
Each Expansion Joint device shall be blocked in the shop by the fabricator to the dimension shown for 16° C and the blocking details shall be shown on the Shop Drawings. Blocking shall be placed within 600 mm of each end of the device and with a maximum spacing of 2.4 m.

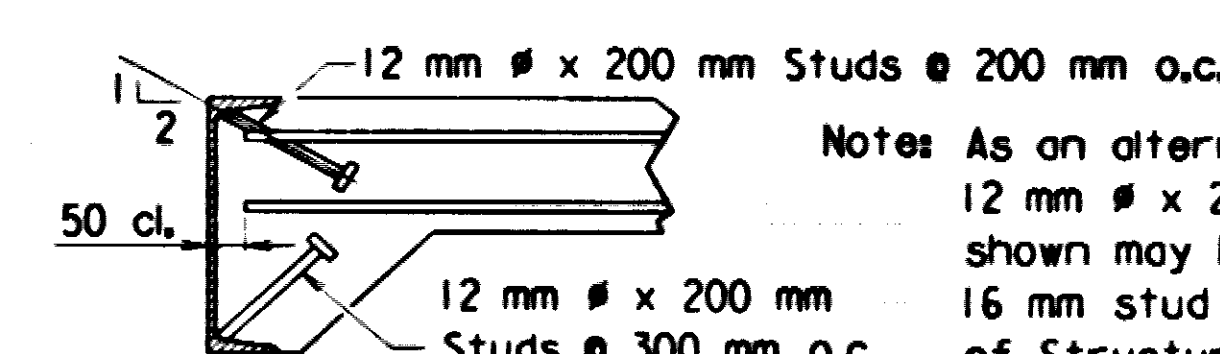
C 30X3 (68 m Unit)
C 30X50 (102 m Unit)

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

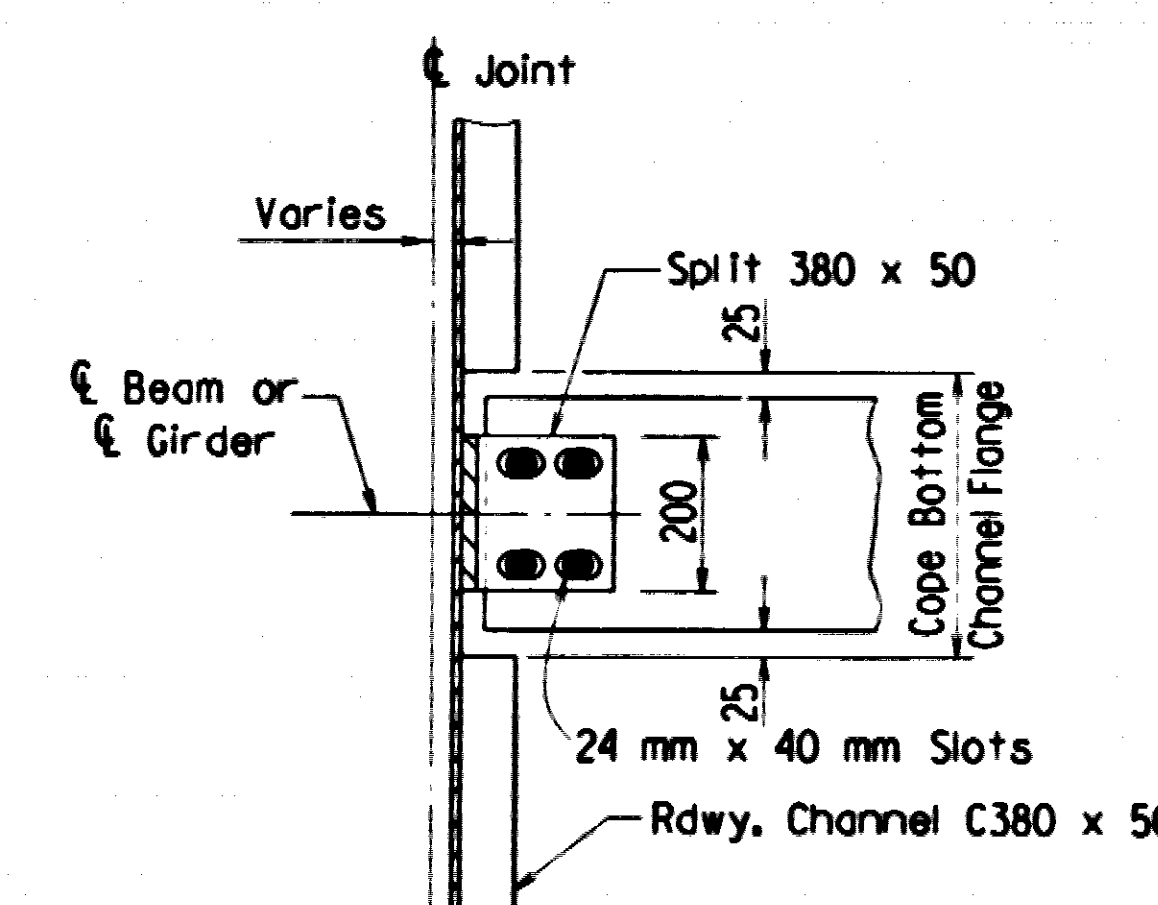
STRIP SEAL JOINT DATA

| Bent No(s). | Movement Rating (mm) | "A" Width Perpendicular to Joint at 24 Hour Average Temperature ** of : | | | "B" Width Perpendicular to Joint at 24 Hour Average Temperature ** of : | | | "C" Perpendicular to Joint at 24 Hour Average Temperature of 16° C |
|-------------|----------------------|---|-------|------|---|-------|------|--|
| | | 28° C | 16° C | 4° C | 28° C | 16° C | 4° C | |
| 1 | | 58 | 62 | 66 | 46 | 50 | 54 | 57 |
| 5, 9 & 13 | 102 | 57 | 66 | 75 | 45 | 54 | 63 | 59 |
| 17 | | 53 | 64 | 75 | 41 | 52 | 63 | 58 |
| 20 | | 55 | 62 | 69 | 43 | 50 | 57 | 57 |

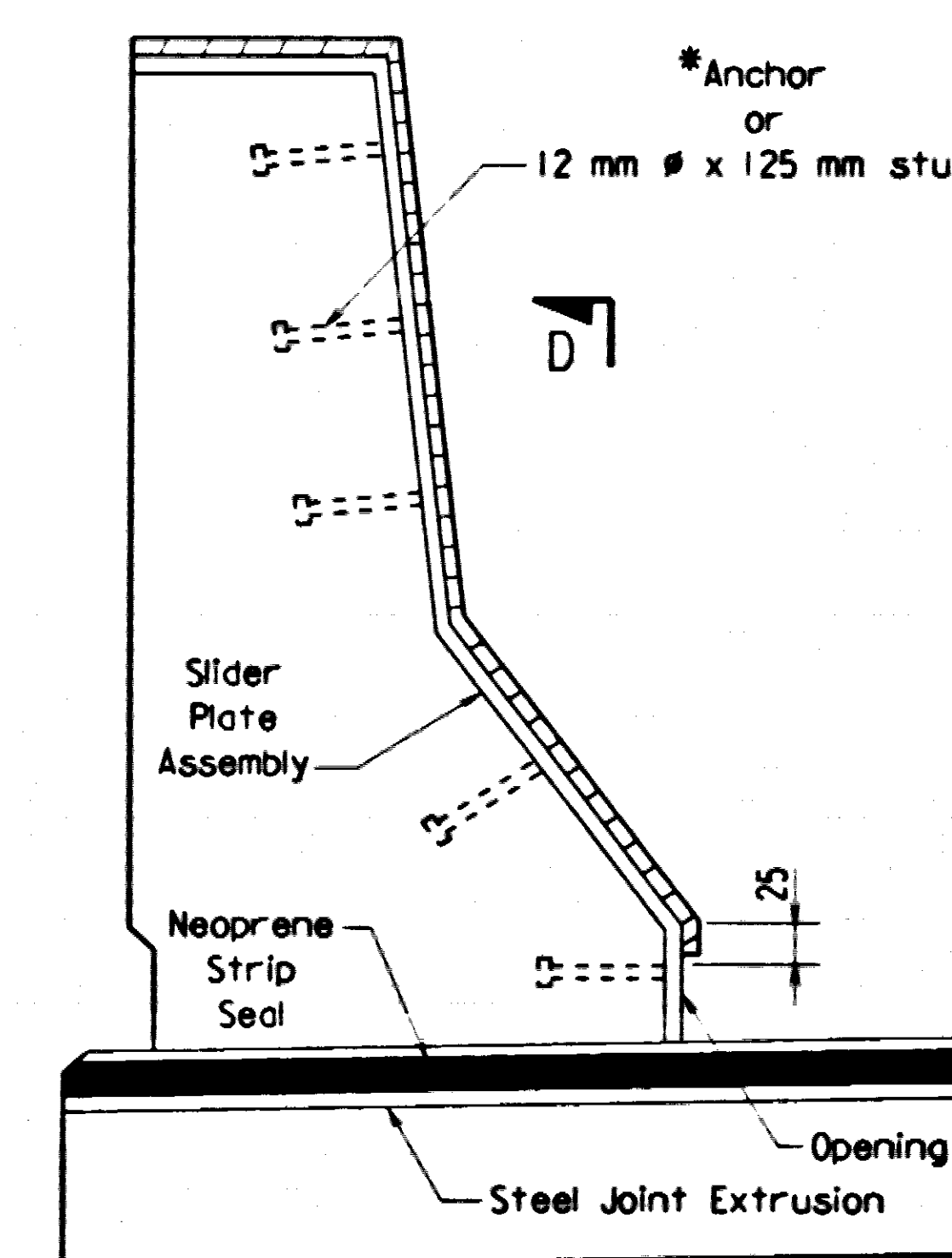
** The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature.



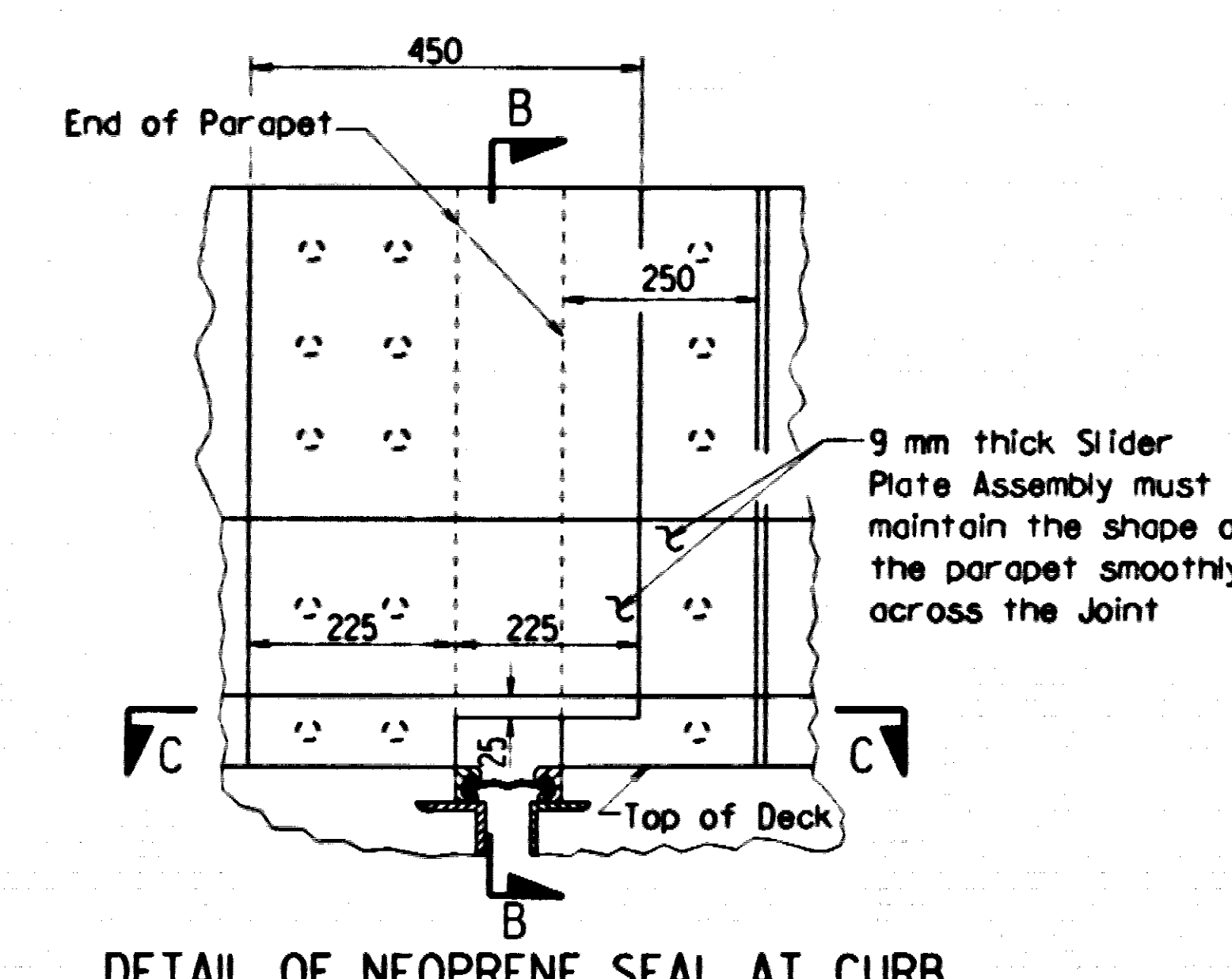
DETAILS OF ALTERNATE ANCHORS
Steel Units shown Prestressed Units are similar.



TYPICAL CHANNEL CONNECTION
For steel units only; for Prestressed Unit details, See Dwg. No. 39074



SECTION B-B



DETAIL OF NEOPRENE SEAL AT CURB

EXPANSION DEVICE INSTALLATION AT END BENTS:

The concrete span pour shall be placed before the end bent backwall concrete is placed. After beams or girders are erected the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature and grade, and the backwall constructed.

EXPANSION DEVICE INSTALLATION AT INTERMEDIATE BENTS:

After all beams or girders on each side of the joint are erected the blocked expansion device shall be installed and adjusted for grade. Deck concrete shall be placed for the entire unit or span on one side of the joint before deck concrete on the other side is placed. Connection bolts for the first side to have deck concrete placed shall be completely bolted. Bolts on the other side shall be loosely installed so that thermal and rotational movements will not be restricted during concrete placement on the first side.

Connection bolts on the second side shall remain loose until the concrete pour adjacent to the joint is to be placed. Immediately prior to pouring the span concrete on the second side, the blocking shall be removed, the joint adjusted for temperature and grade, and the connection bolts tightened.

GENERAL NOTES

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

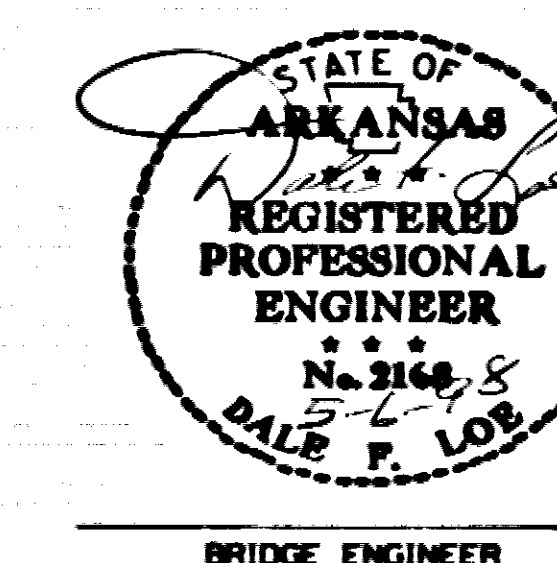
EXPANSION NEOPRENE STRIP SEAL: The expansion device shall provide a movement of 102 mm as shown in the "STRIP SEAL JOINT DATA" table. The expansion joint shall be capable of sealing the deck surface and parapet area to prevent moisture and other contaminants from descending through the joint.

Details of proposed slider plate assembly shall be submitted to and approved by the Bridge Engineer prior to the fabrication of any structural steel at the expansion device.

All Structural Steel, except for the steel extrusion for the strip seal, shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, Grade 345#)". The steel extrusion and neoprene strip seal shall be paid for in accordance with Special Provision Job 060779 "ARMORED JOINT WITH NEOPRENE STRIP SEAL".

ALTERNATE NO. 2
(SHEET 2 OF 2)
DETAILS OF ARMORED JOINT
WITH NEOPRENE STRIP SEAL
SALINE RIVER
ROUTE 229 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 04-07-98
CHECKED BY: CES DATE: 4-29-98
DESIGNED BY: AMS DATE: 3-18-98
BRIDGE NO. 06715 DRAWING NO. 39075



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