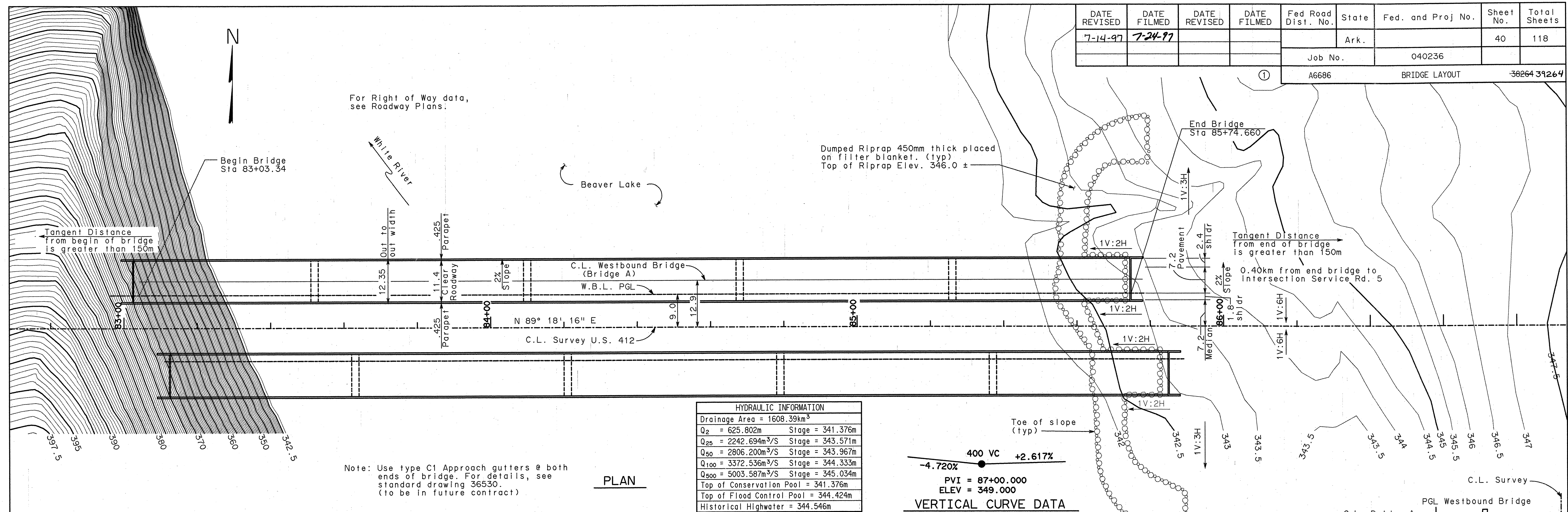


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	Fed Road Dist. No.	State	Fed. and Proj No.	Sheet No.	Total Sheets
7-14-97	7-24-97				Ark.		40	118
				Job No.		040236		
				A6686		BRIDGE LAYOUT	30264	39264



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	Fed Road Dist. No.	State	Fed. and Proj No.	Sheet No.	Total Sheets
7-14-97	7-24-97				Ark.		41	118
						Job No.	040236	
						A6686	BRIDGE LAYOUT	39245

GENERAL NOTES

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

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete. See Standard Drawing No. 36515 (14991) for allowable modifications and for tolerances when permanent steel bridge deck forms are used.

BENCH MARK: Standard Bronze Benchmark SW corner of bridge across White River/Beaver Lake "19WHV reset 1961", Sta. 88+35.985 Offset 440.061 Elev. 347.551 m, N 218,708.917 m E 25,360.030 m.

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

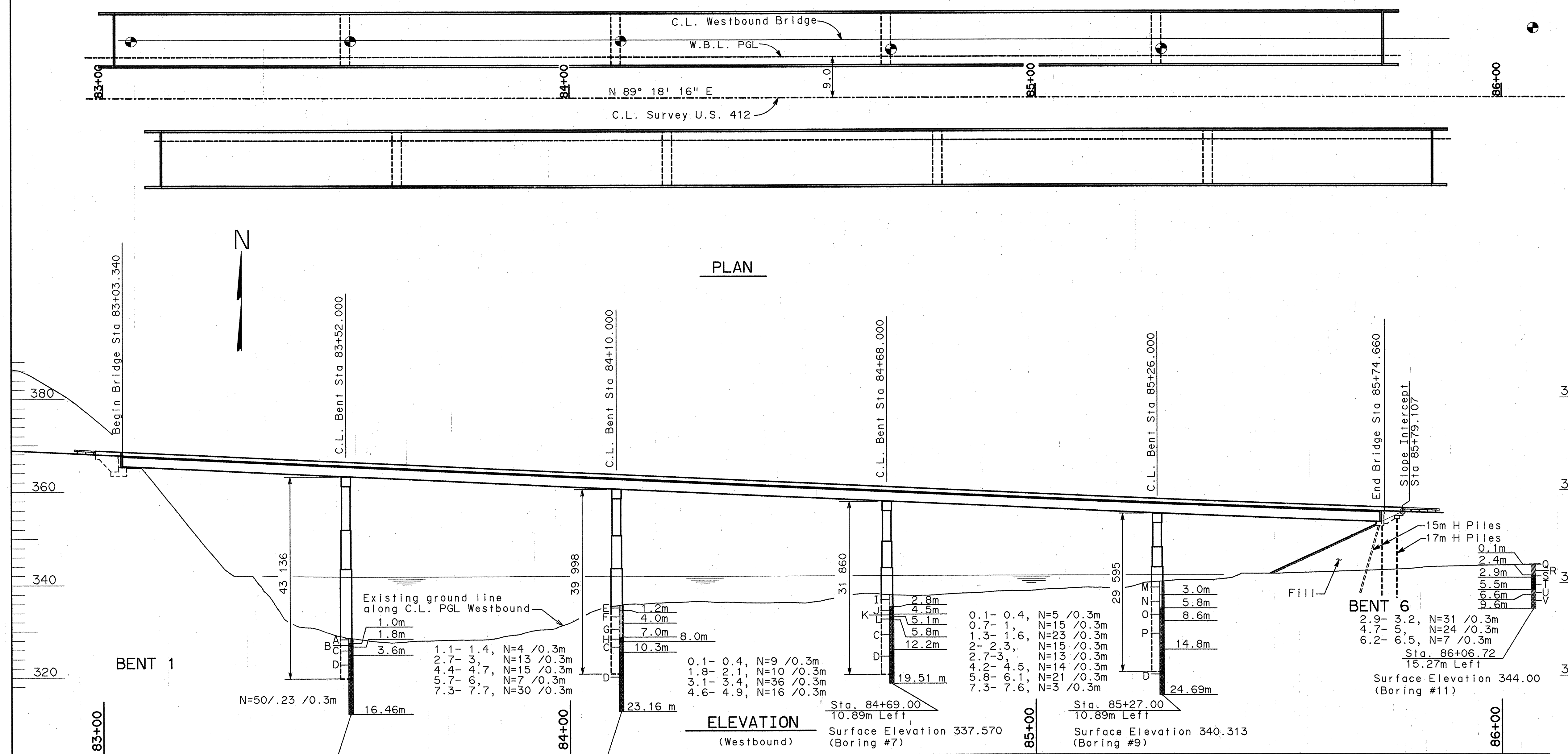
MATERIALS AND STRENGTHS:
Class S(AE) Concrete (superstructure) f'c = 28 MPa
Class S Concrete (substructure) f'c = 24 MPa
Class S (modified) Concrete f'c = 28 MPa (drilled shafts)
Reinf. Steel (AASHTO M31 or M53 GR. 400) fy = 400 MPa
Structural Steel (AASHTO M270, GR. 345W) Fy = 345 MPa

BORING LOGS: Boring logs may be obtained from the Programs and Contract Division.

ABUTMENT FOOTING: The footing shall be founded a minimum of 0.3m into the material designated as Hard Chert and Limestone rock formation on the boring legend. The allowable bearing capacity for this rock formation is 1200KPa. The rock at the abutment shall be cored to a depth of 2m below the bottom of the abutment.

DRILLED SHAFTS: For drilled shafts see special provisions. The caissons shall be drilled into the material designated as Hard Dark Gray Shale formation on the boring legend. The minimum depth of embedment into the shale or limestone formation shall be 2 times the diameter of the shaft. Lengths of drilled shafts shown are for estimation quantities and for use in determining payment in accordance with the special provision. The design assumes material that will provide a minimum bearing capacity of 4.0MPa per caisson.

STEEL PILING: Piling in End Bent 6 shall be H Piles and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 448kN per pile and into the material designated as hard gray limestone on the boring legend. Lengths of piling 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 bent to be driven after embankment to bottom of cap is in place. Approved pile points shall be used.



GENERAL NOTES CONTINUED

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.

CLASS 1 PROTECTIVE SURFACE TREATMENT: Class 1 Protective surface treatment shall be applied to the roadway surface and to the face and top of the concrete parapet rail.

FILL MATERIAL: Select material as specified in the roadway plans shall be used for the 2:1 end slope at Bent 6.



Arkansas Temporary Permit Number 96-45,
Issued 12-15-96.
Signature of Holder *SLH* 12/17

- BENT 2 Boring Legend**
- A-Very soft gray silt
 - B-Very dense gravel and chert fragments
 - C-Very hard light gray limestone with gray shale seams
 - D-Hard dark gray shale
 - E-Very loose gray fine sandy silt with organics
 - F-Very soft to soft brown clayey fine sandy silt with organics
 - G-Soft brown silty fine sandy clay
 - H-Dense chert and gravel rounded
 - I-Firm reddish brown and gray silty fine sandy clay with organics
 - J-Dense gravel
 - K-Medium dense reddish brown silty clayey sand
 - L-Gravel
 - M-Soft to stiff reddish tan and tan fine sandy silty clay with organics

- BENT 3**
- N-Soft tan silty fine sandy clay with organics
 - O-Medium dense to loose gravel and chert fragments
 - P-Very hard light gray limestone
 - Q-Topsoil
 - R-Stiff to very stiff reddish brown silty clay
 - S-Stiff reddish brown silty clay with chert gravel
 - T-Dense reddish brown to brown silty clay with weathered chert gravel and cobbles
 - U-Firm brown silty clay
 - V-Hard gray limestone with very thin chert seams

Rev. dwg. no. WRR 7-14-97

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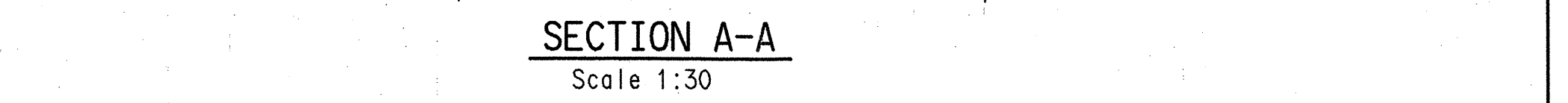
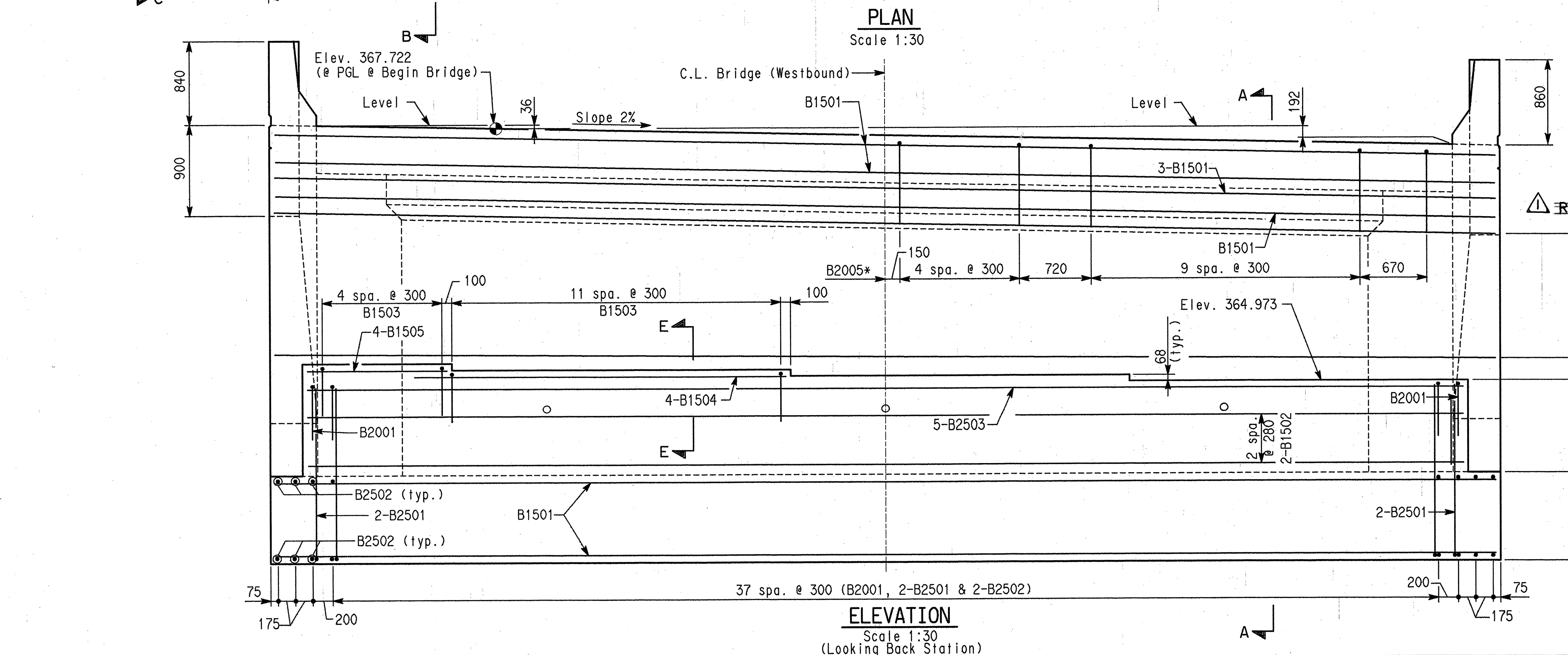
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**WESTBOUND BRIDGE
SHEET 2 OF 2
LAYOUT OF WESTBOUND
BORING AND NOTES**
US. HWY. 412
**ARKANSAS STATE HIGHWAY
COMMISSION**
LITTLE ROCK, ARKANSAS

DRAWN NO. TBI DATE: 12/96
CHECKED BY: SLH DATE: 12/96 SCALE: As Noted
DESIGNED BY: SLH DATE: 12/96
BRIDGE NO. A6686 DRAWING NO. 39245

Abbreviations: Begin Bridge →

* See finger Jt. sheet for block-out details and Reinforcing Layout.

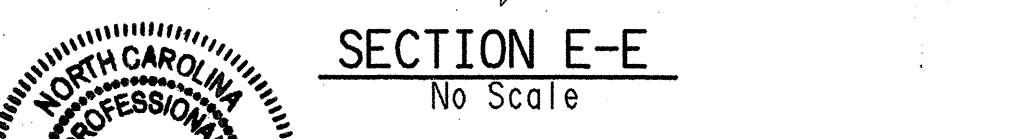


All concrete shall be class "S" with a minimum 28 day compressive strength $f'_c = 24$ MPa. Concrete shall be poured in the dry and all exposed corners to be chamfered 20 unless otherwise noted.

Backwall shall not be poured before beams are in place.

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

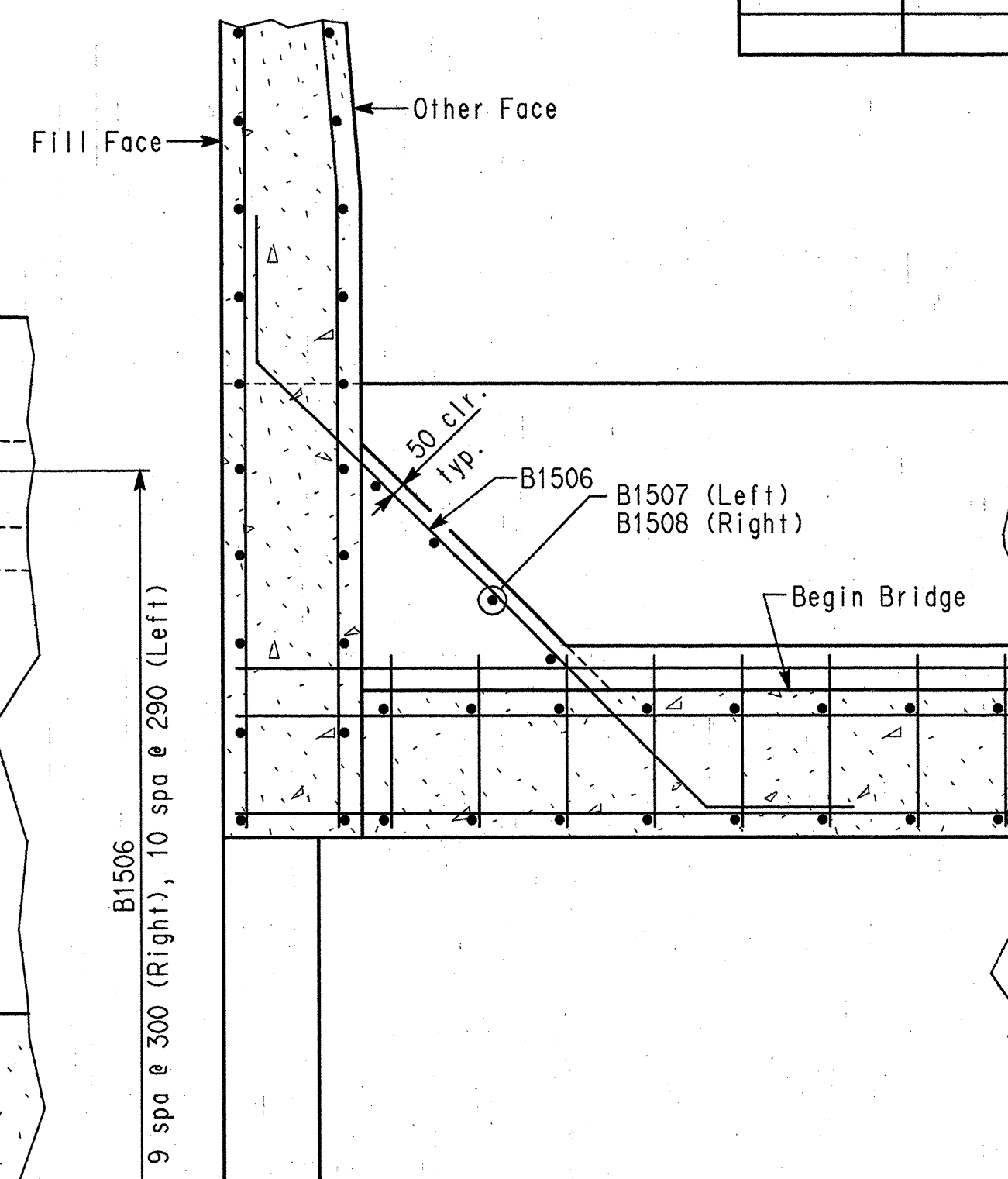
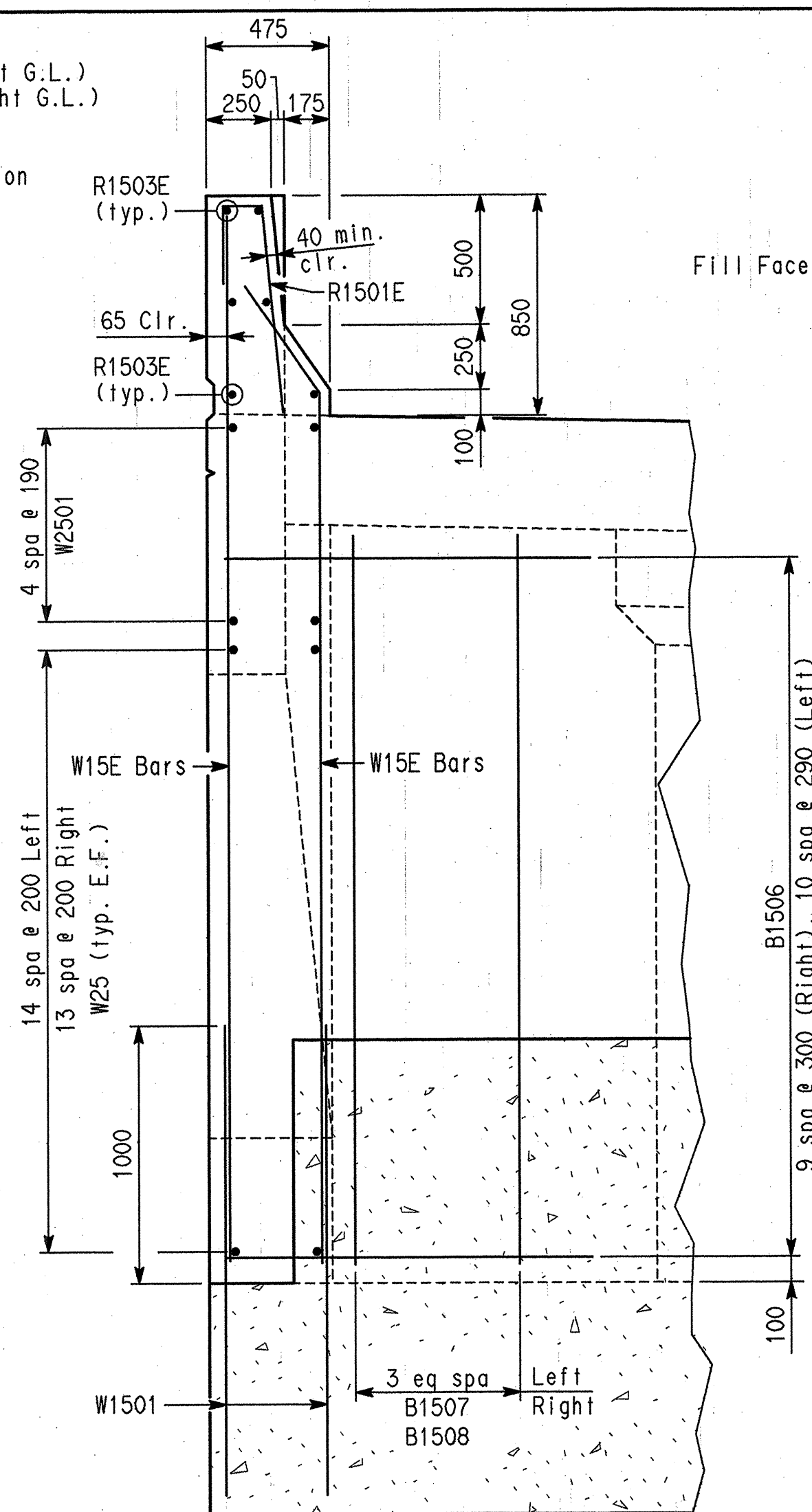
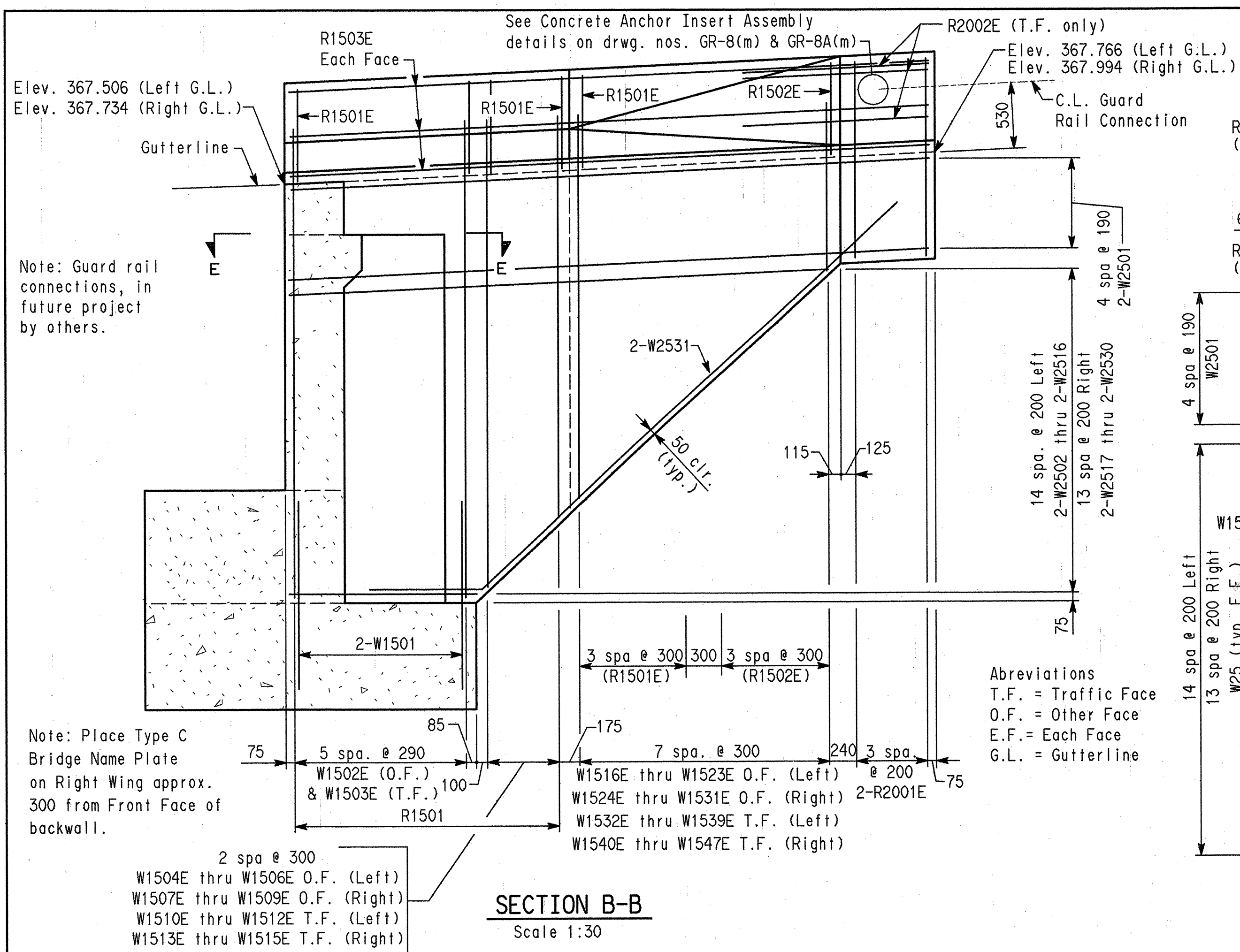
For additional information see layout.



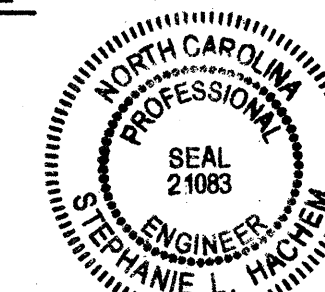
Arkansas Temporary Permit Number 96-
Issued 12-15-96.
Signature of Holder *[Signature]* 4/7/97

WESTBOUND BRIDGE
SHEET 1 OF 2
BENT 1
(PLAN AND ELEVATION)
US. HWY. 412
ARKANSAS STATE HIGHWAY
COMMISSION
LITTLE ROCK, ARKANSAS

NO.	TBI	DATE:	12/96	
D BY:	CLN	DATE:	12/96	SCALE: As Noted
ED BY:	DS	DATE:	12/96	
GE NO.	A6686	DRAWING NO.	32226	39266

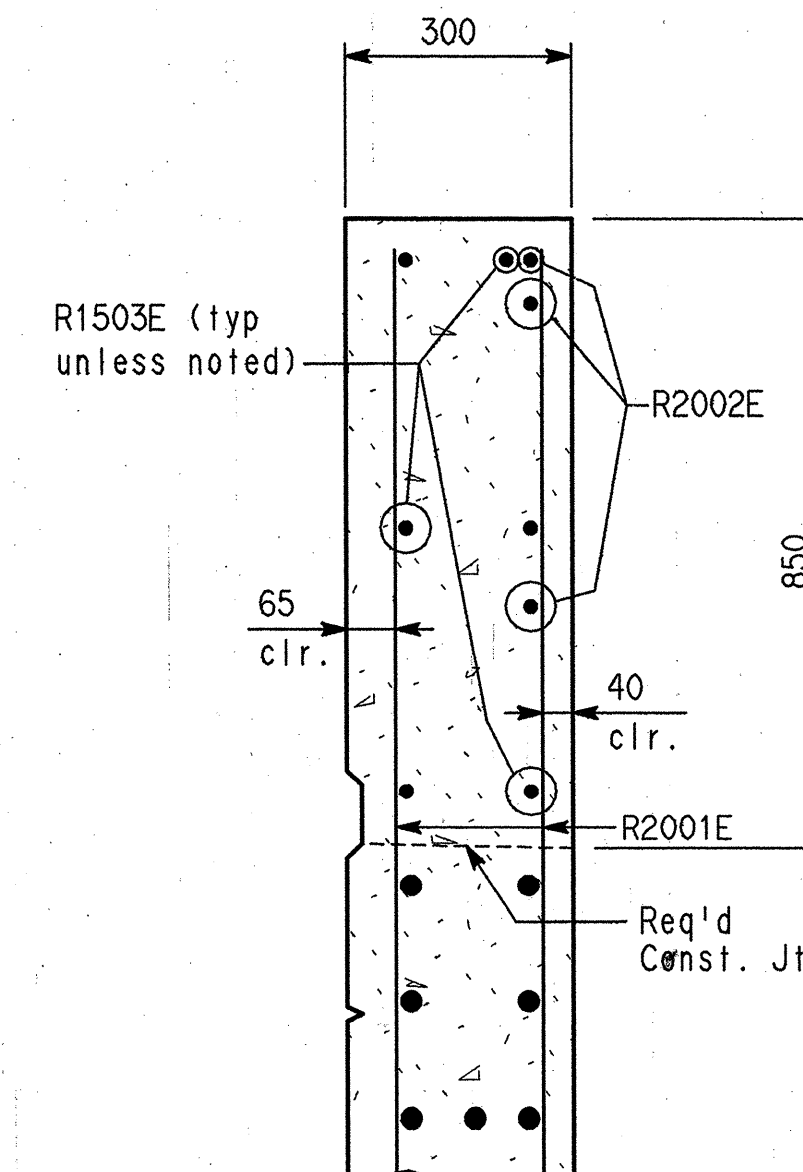
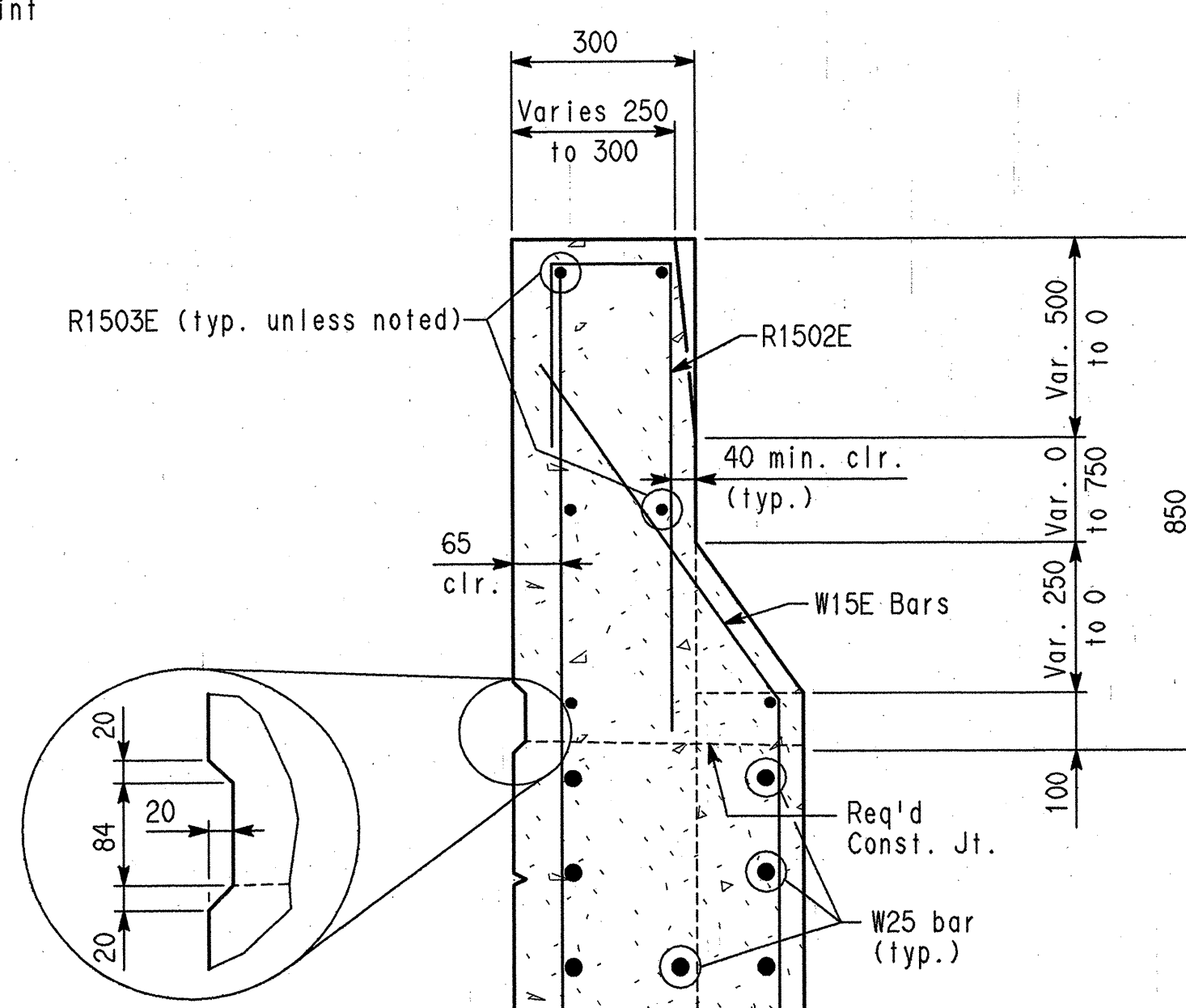


SECTION E-E
No Scale



Arkansas Temporary Permit Number 96-45,
Issued 12-15-96.
Signature of Holder *[Signature]* 2/1/97

VIEW F-F
Scale 1:20



SECTION H-H
Scale 1:10

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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	Fed Road Dist. No.	State	Fed. and Proj No.	Sheet No.	Total Sheets
7-14-97	7-24-97				Ark.		43	118
				Job No.		040236		
				A6686		BENT 1	36267 39267	

MARK	NO.	REQ'D	LENGTH	P.D.	BENDING DIAGRAMS
B1501	42	12240	Str		(Dimensions are out to out on bars)
B1502	6	11600	Str		
B1503	17	2600	70		
B1504	4	3800	Str		
B1505	4	1400	Str		
B1506	21	2720	70		
B1507	4	3060	Str		
B1508	4	2820	Str		
B2001	40	2580	120		
B2002	76	2900	Str		
B2003	40	1740	120		
B2004	4	2440	Str		
B2005	32	1900	120		
B2501	80	1880	150		
B2502	88	2700	Str		
B2503	5	11 600	Str		
W1501	24	1400	Str		
W1502E	12	4120	Str		
W1503E	12	3740	70		
W1504E	One of	Var. 4280	Str		
W1506E	Each	to 3760	Str		
W1507E	One of	Var. 4080	Str		
W1509E	Each	to 3580	Str		
W1510E	One of	Var. 3940	70		
W1512E	Each	to 3420	70		
W1513E	One of	Var. 3740	70		
W1515E	Each	to 3220	70		
W1516E	One of	Var. 3580	Str		
W1523E	Each	to 1720	Str		
W1524E	One of	Var. 3420	Str		
W1531E	Each	to 1700	Str		
W1532E	One of	Var. 3240	70		
W1539E	Each	to 1380	70		
W1540E	One of	Var. 3080	70		
W1547E	Each	to 1360	70		
W2501	20	5400	Str		
W2502	Two of	Var. 1540	Str		
W2516	Each	to 4540	Str		
W2517	Two of	Var. 1540	Str		
W2530	Each	to 4540	Str		
W2531	4	5600	150		
R1501E	26	1150	70		
R1502E	8	1180	70		
R1503E	12	5400	Str		
R2001E	16	1660	Str		
R2002E	6	1560	Str		

Details shown are for Right Wing, Left Wing is similar.

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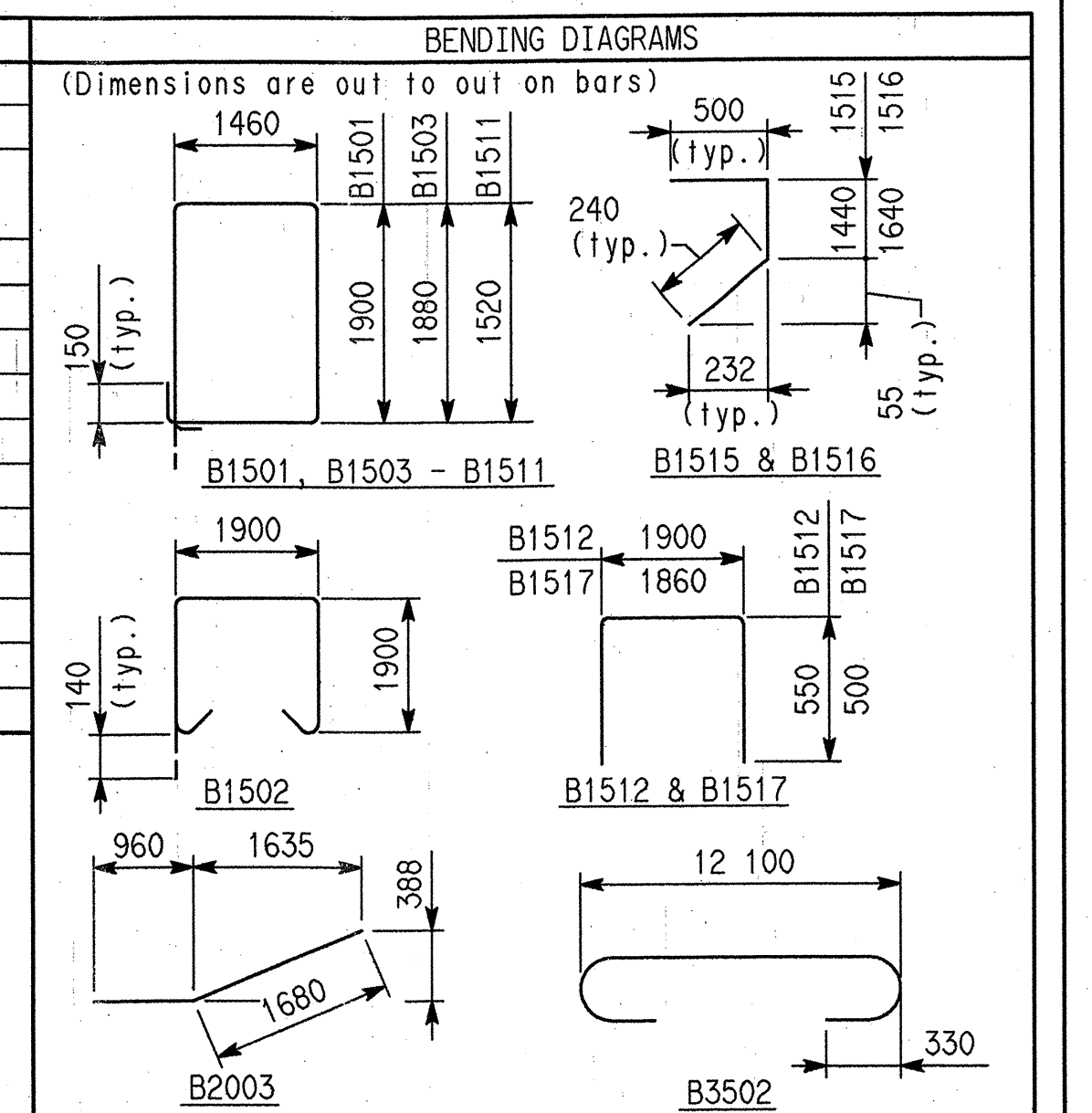
Post Office Box 33068
Raleigh, North Carolina 27636

WESTBOUND BRIDGE
SHEET 2 OF 2
BENT 1
(WING DETAIL)
US. HWY. 412
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN NO. TBI DATE: 12/96
CHECKED BY: CLN DATE: 12/96 SCALE: As Noted
DESIGNED BY: DS DATE: 12/96
BRIDGE NO. A6686 DRAWING NO. 36267 39267

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	Fed Road Dist. No.	State	Fed. and Proj No.	Sheet No.	Total Sheets
7-14-97	7-21-97				Ark.		44	118
				Job No.		040236		
			①	A6686	BENTS 2 THRU 5		3268	39268

MARK	NO. REQ'D	LENGTH	P.D.
B1501	52	6860	70
B1502	14	5920	70
B1503-B1511	4 of each	6820-6100	70
B1512	25	2940	70
B1513	5	1700	Str
B1514	5	3560	Str
B1515	5	2180	100
B1516	5	2380	100
B1517	11	2800	70
B2001	10	12 100	Str
B2002	2	10 500	Str
B2003	10	2640	120
B3501	9	9100	Str
B3502	9	13 060	290



Arkansas Temporary Permit Number 96-45,
Issued 12-15-96.
Signature of Holder Sgt. Hel 2/2/97

GENERAL NOTES

Stations and elevations are in meters (m).
All other dimensions are in millimeters (mm)
unless otherwise noted.

All concrete shall be Class "S" with a minimum 28 day compressive strength $f'_c = 24$ MPa. Concrete shall be poured in the dry and all exposed corners to be chamfered 20 unless otherwise noted.

All reinforcing steel shall conform to AASHTO
M 31M or M 53M, Gr. 400 (yield strength = 400 MPa)

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

For additional information see layout.

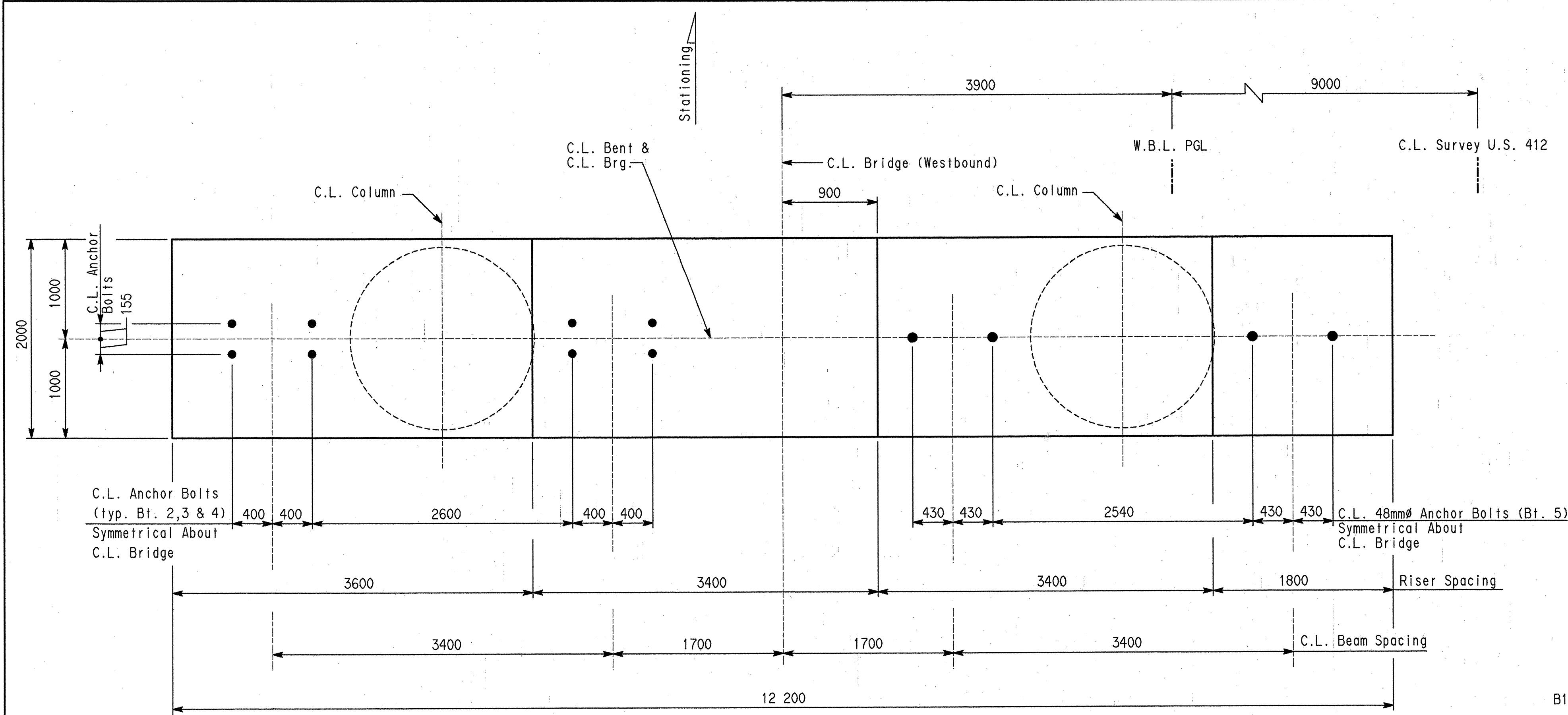


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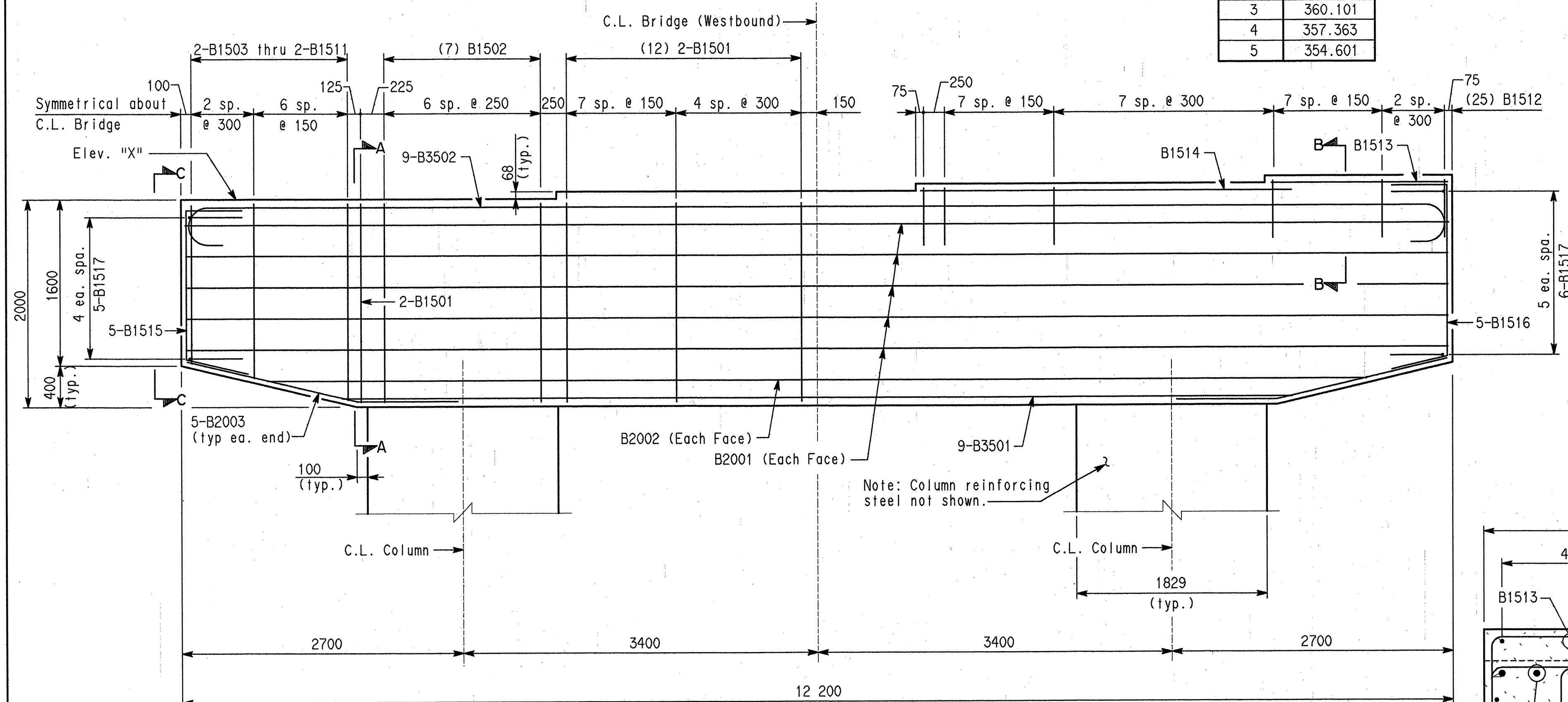
WESTBOUND BRIDGE
SHEET 1 OF 1
BENT 2 THRU 5
CAP DETAILS
US. HWY. 412
ARKANSAS STATE HIGHWAY
COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN NO. TBI DATE: 12/96
CHECKED BY: CLN DATE: 12/96 SCALE: As Noted
DESIGNED BY: SLH DATE: 12/96
BRIDGE NO. A6686 DRAWING NO. 38266 39268

BRIDGE NO. A6686 DRAWING NO. ~~38266~~ 39268

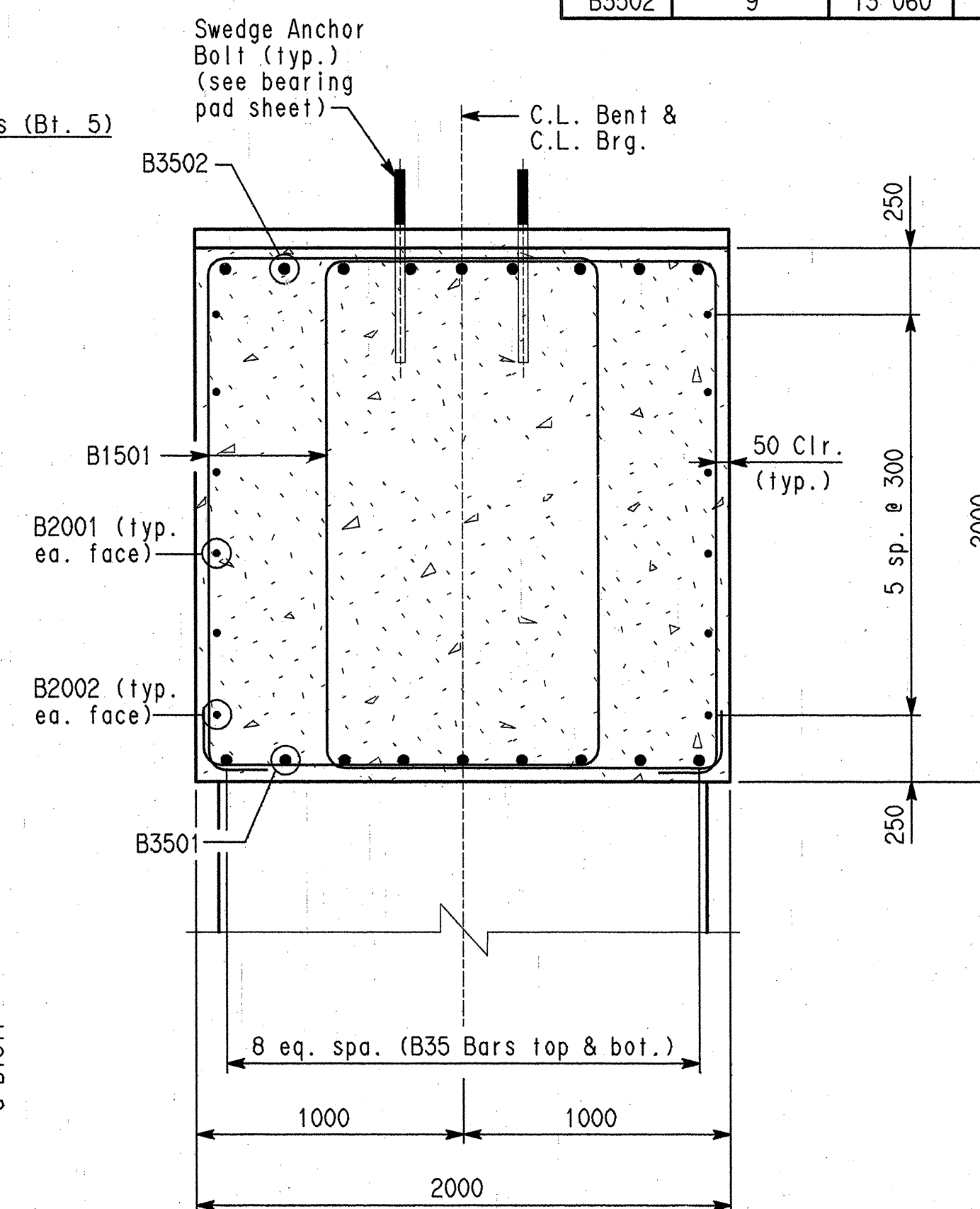
PLAN
Scale 1:30

BENT	ELEV. "X"
2	362.839
3	360.101
4	357.363
5	354.601

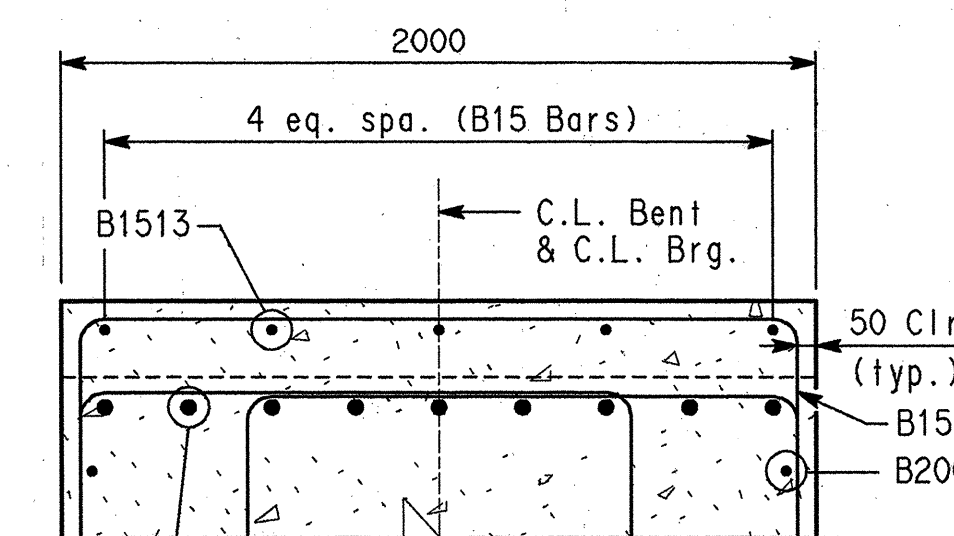


ELEVATION
Scale 1:30

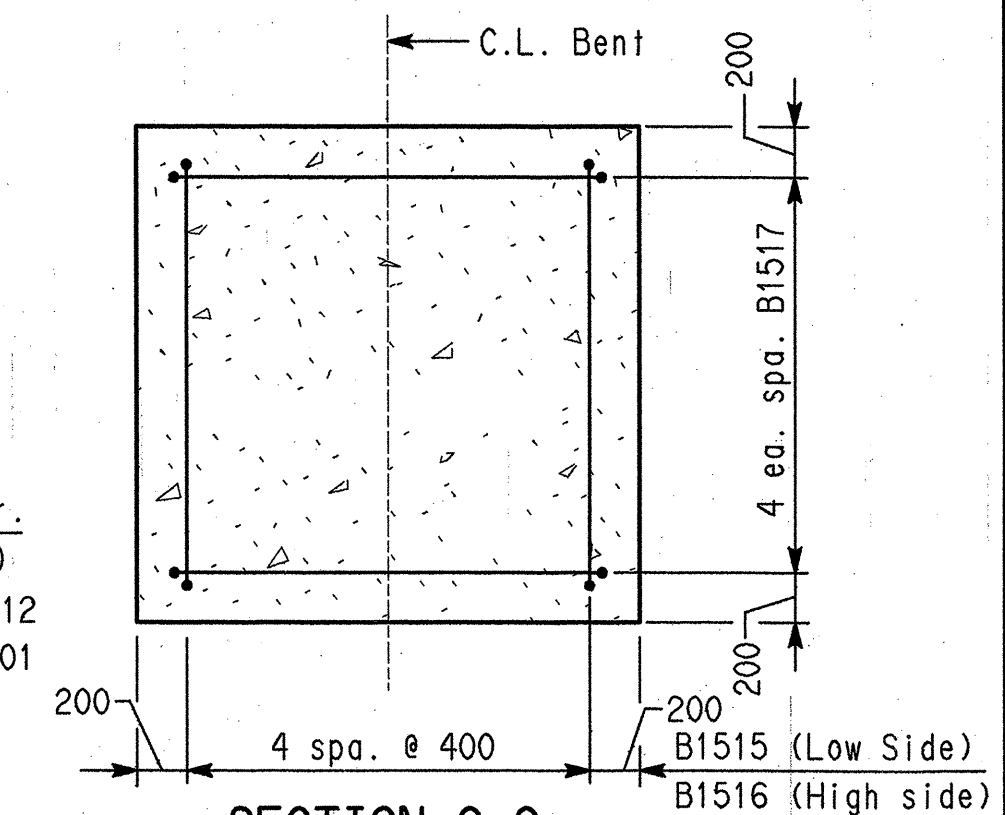
① Rev. dwg. no. WRR 7-14-97



SECTION A-A
Scale 1:20

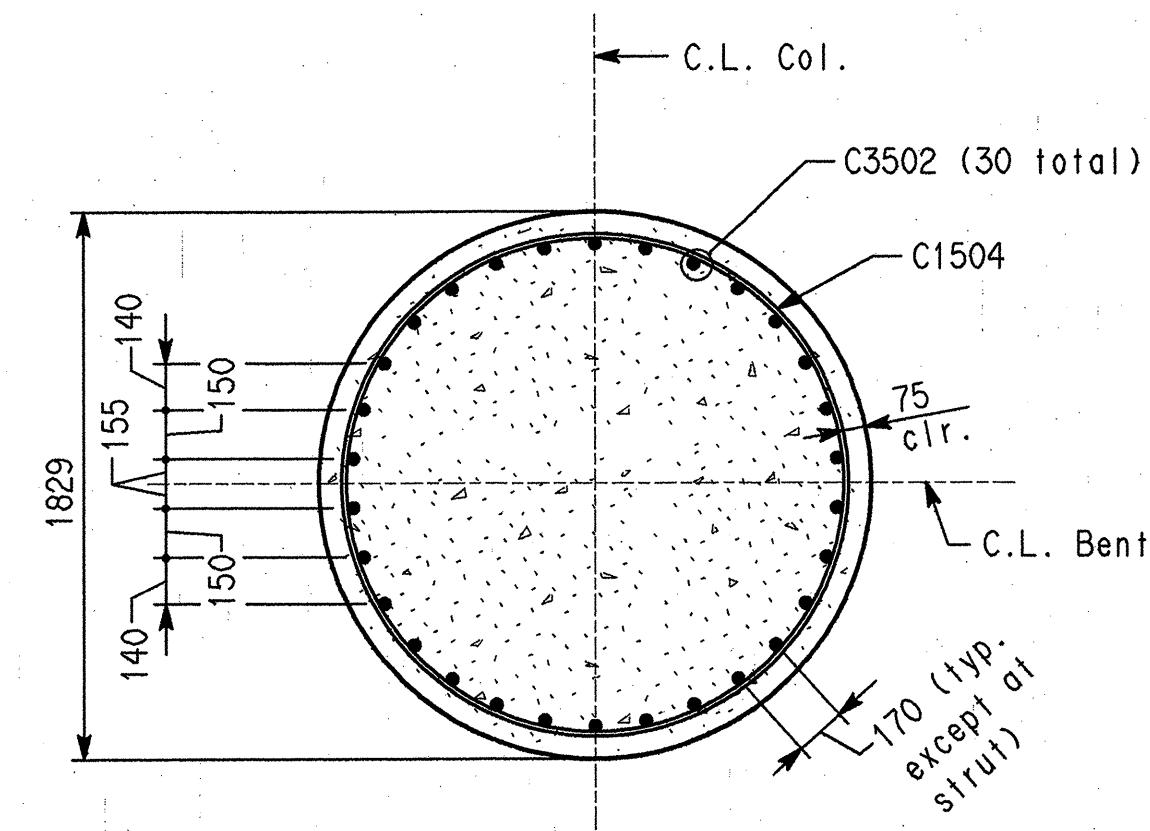
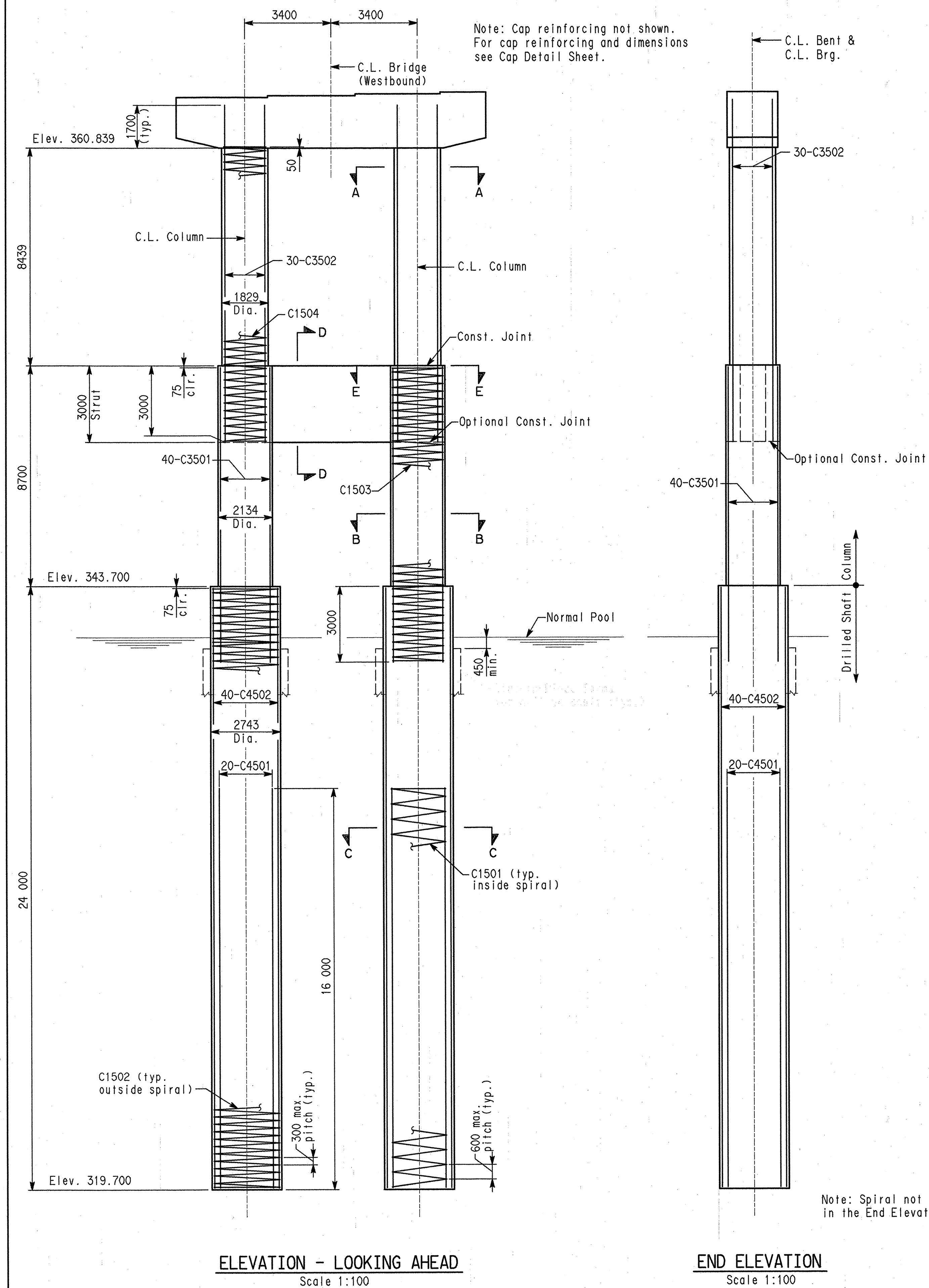


SECTION B-B
Scale 1:20

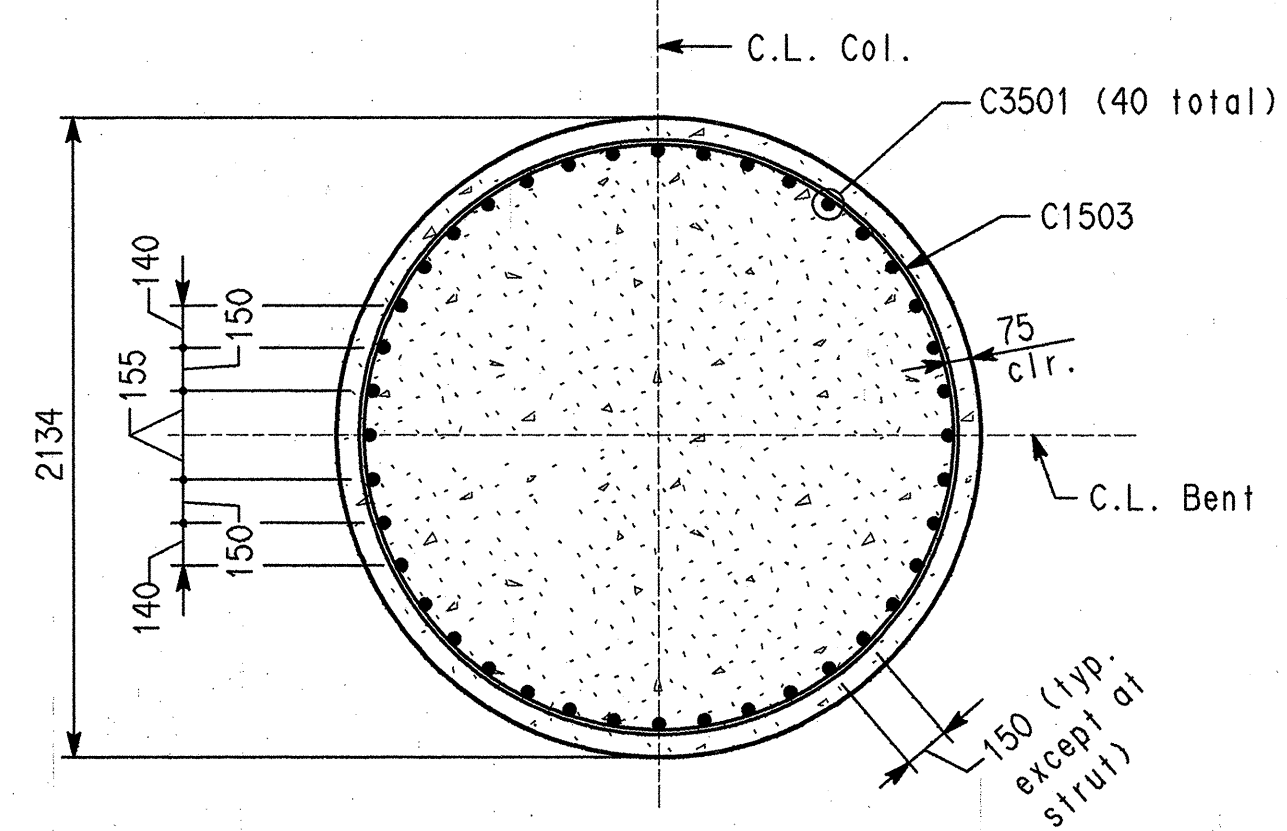


SECTION C-C
No Scale

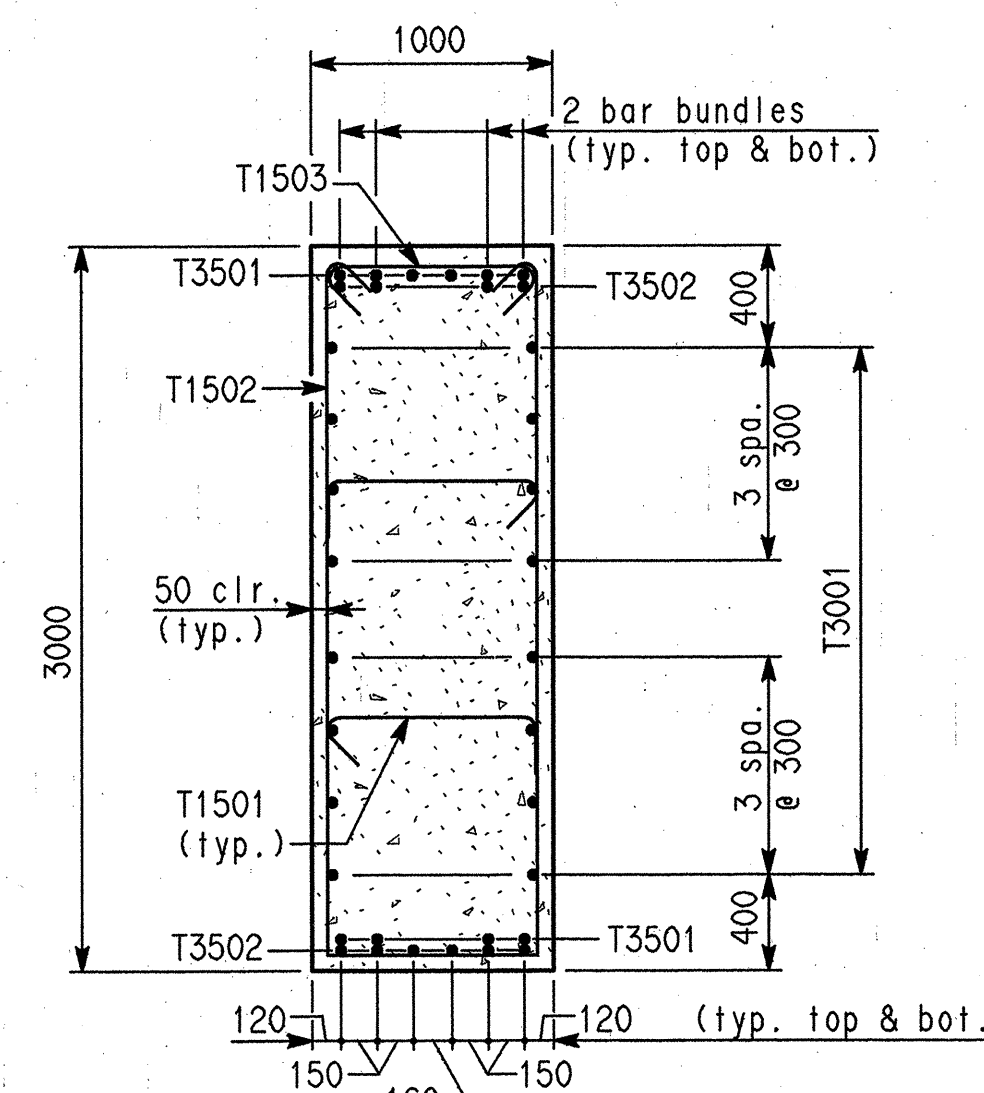
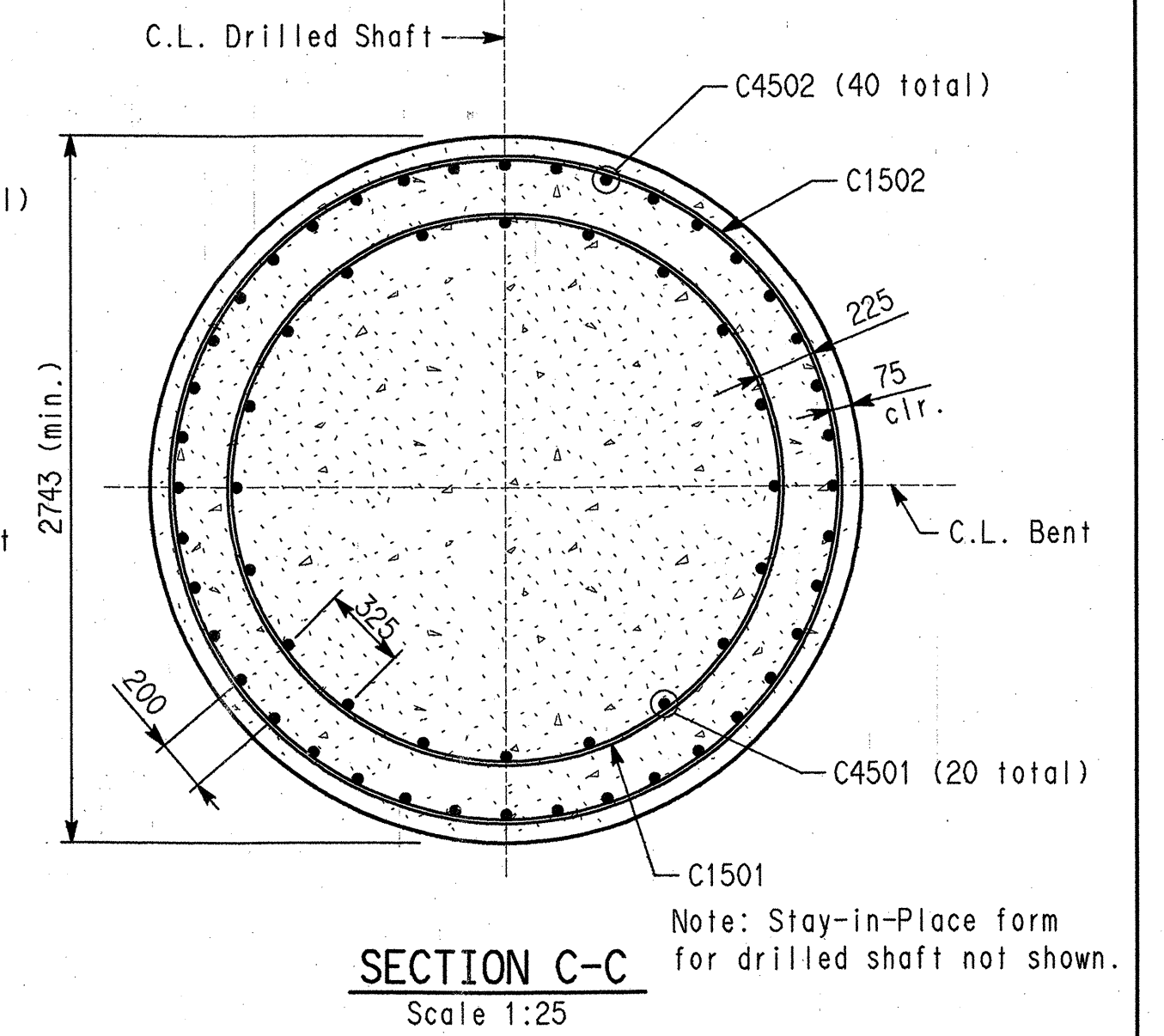
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7-14-97	7-24-97				Ark.		45	118
				Job No.		040236		
			①	A6686		BENT 2		38265 39269



SECTION A-A
Scale 1:25



SECTION B-B
Scale 1:25

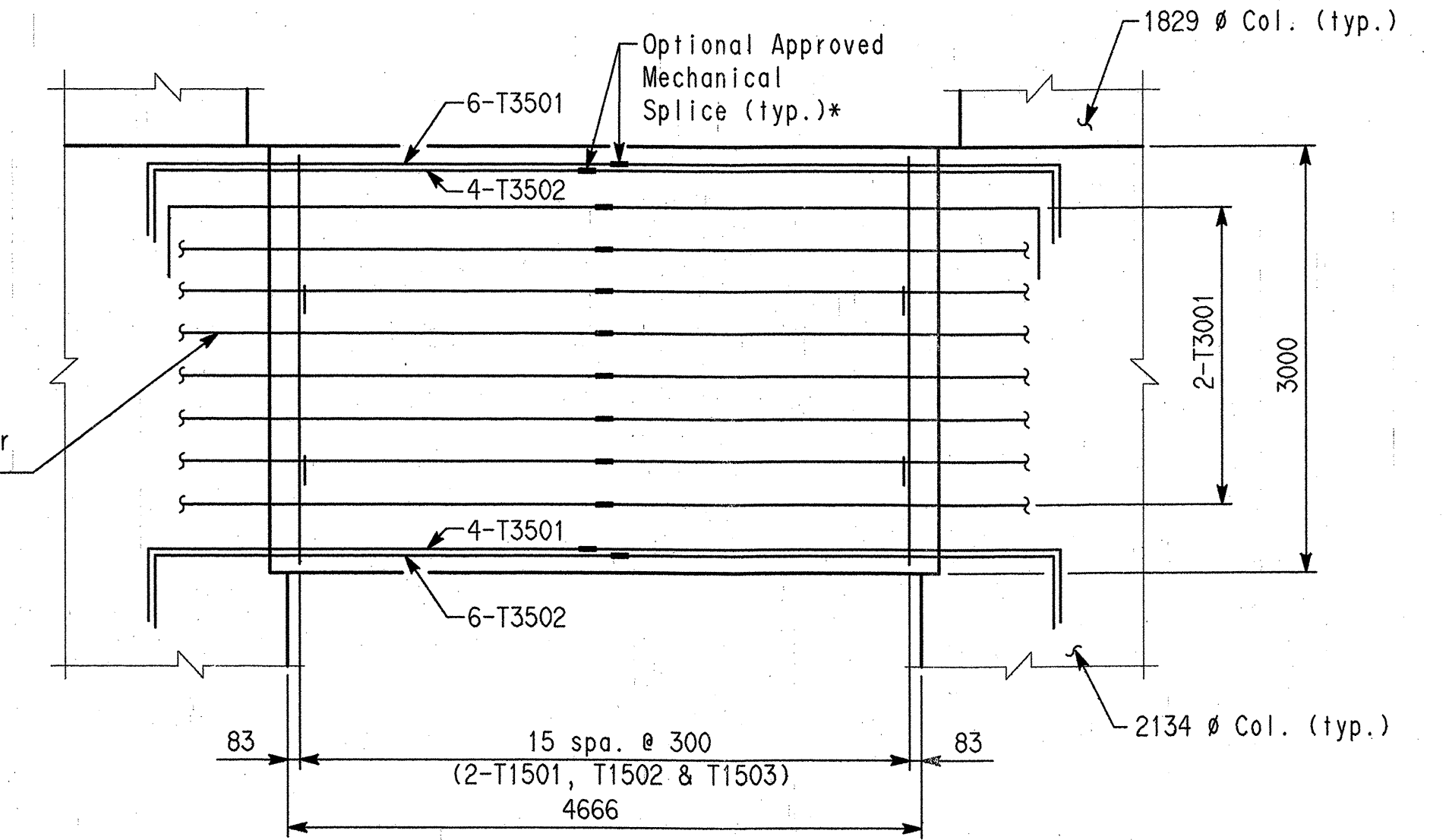


SECTION D-D
No Scale

Note: Alternate the 135° hook on each side of strut for the T1501 bars in each row.

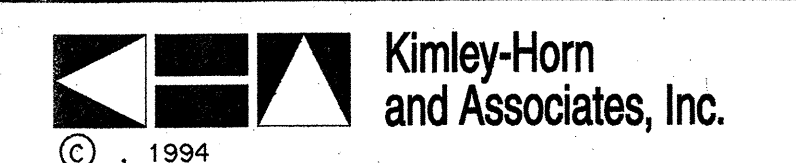
T3001 maybe shifted slightly to pass column reinforcement.

Arkansas Temporary Permit Number 96-45,
Issued 12-15-96.
Signature of Holder Stacy Hall 2/7/97



STRUT ELEVATION
No Scale

*No extra payment will be made for optional mechanical splices.



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WESTBOUND BRIDGE
SHEET 1 OF 1
BENT 2
(COLUMNS)
US. HWY. 412
ARKANSAS STATE HIGHWAY
COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN NO. TBI DATE: 12/96
 CHECKED BY: CLN DATE: 12/96 SCALE: As Noted
 DESIGNED BY: SLH DATE: 12/96
 BRIDGE NO. A6686 DRAWING NO. ~~39269~~ 39269

NOTES

Stations and elevations are in meters (m).
All other dimensions are in millimeters (mm)
unless otherwise noted.

Bent concrete shall be Class "S" with a minimum
28 day compressive strength $f'_c = 24 \text{ MPa}$.
Concrete shall be poured in the dry and all exposed
corners to be chamfered 20 unless otherwise noted.

Drilled Shafts concrete shall be Class "S" (modified) with a minimum 28 day compressive strength $f'_c = 28 \text{ MPa}$.

All reinforcing steel shall conform to AASHTO M 31M or M 53M, Gr. 400 (yield strength = 400 MPa).

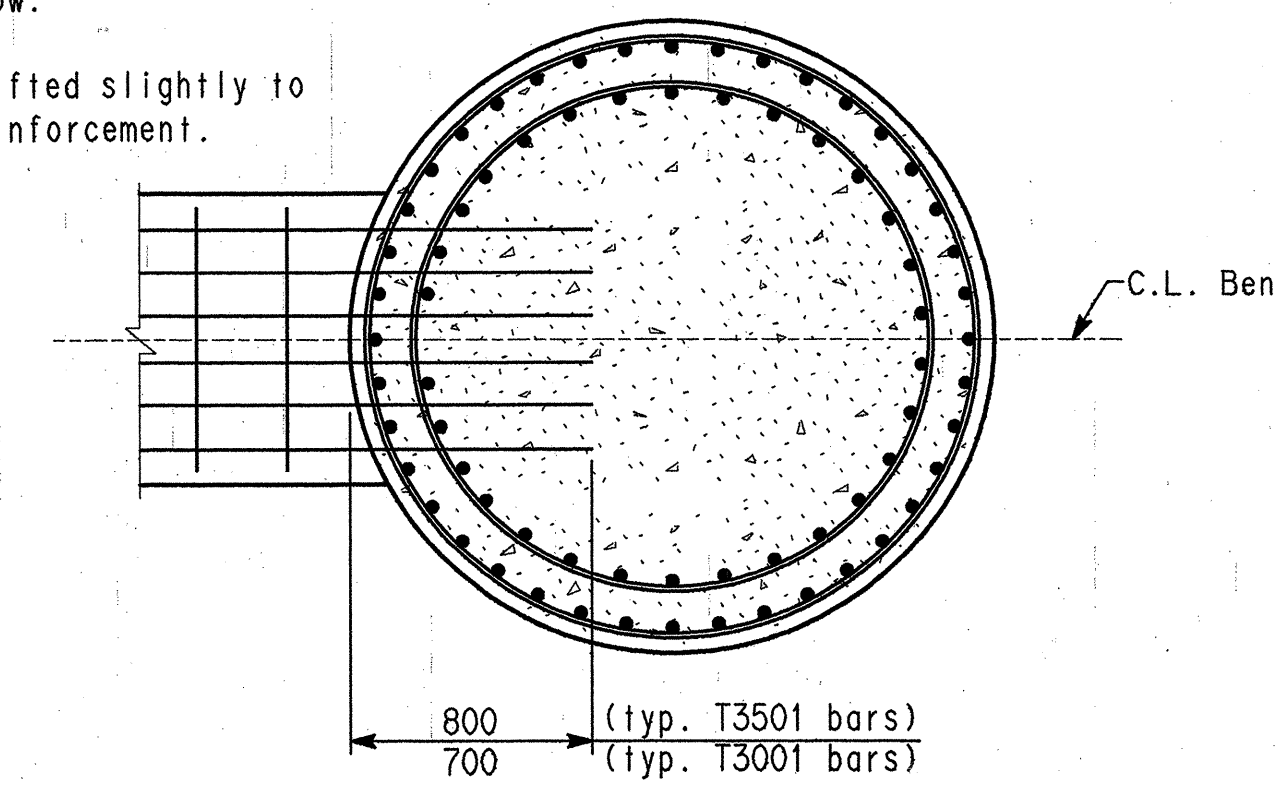
For additional information see layout.

For drilled shafts information see reinforcing bar list sheet.



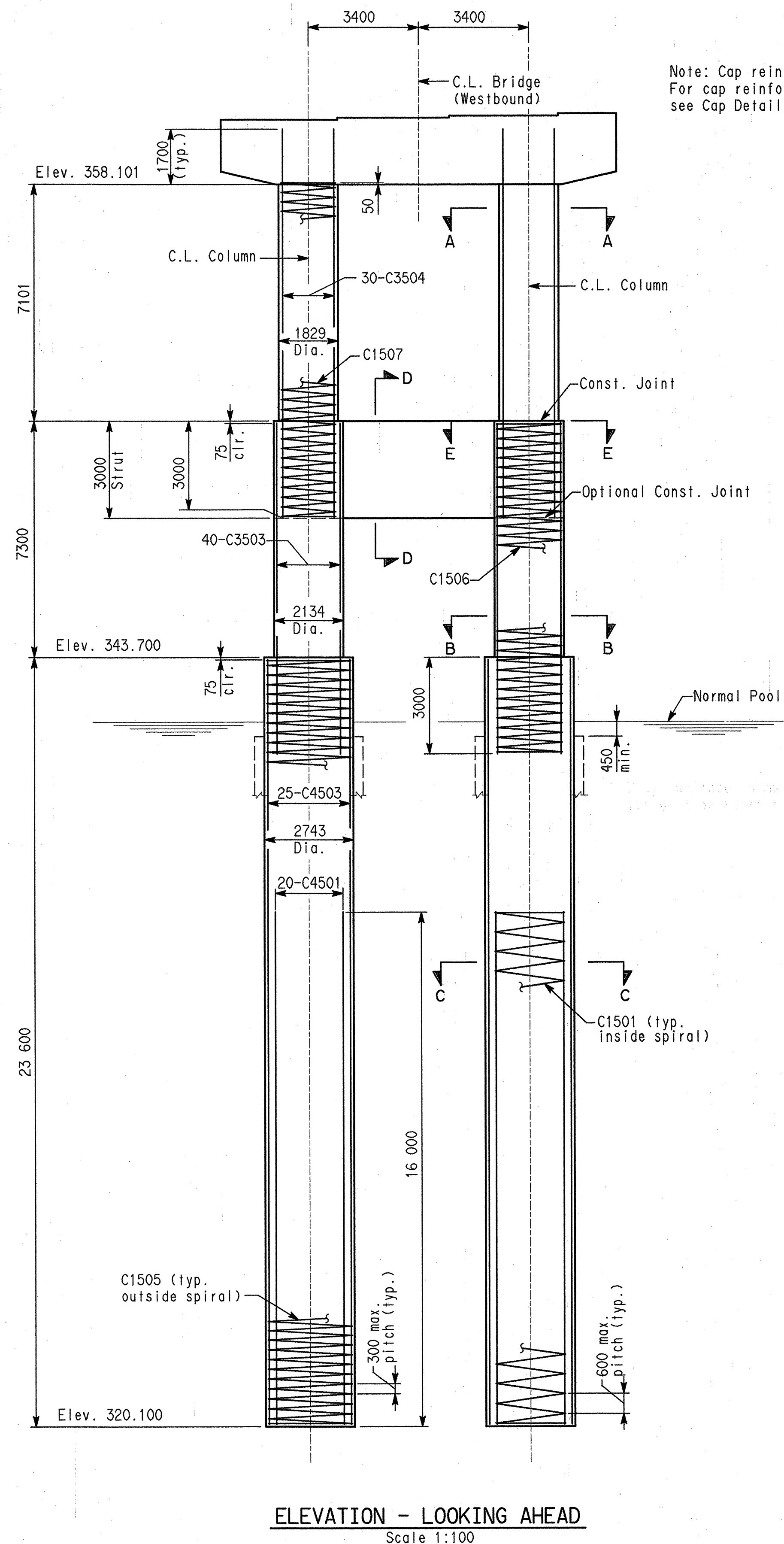
Rev. dwg. no. WRR 7-14-97

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

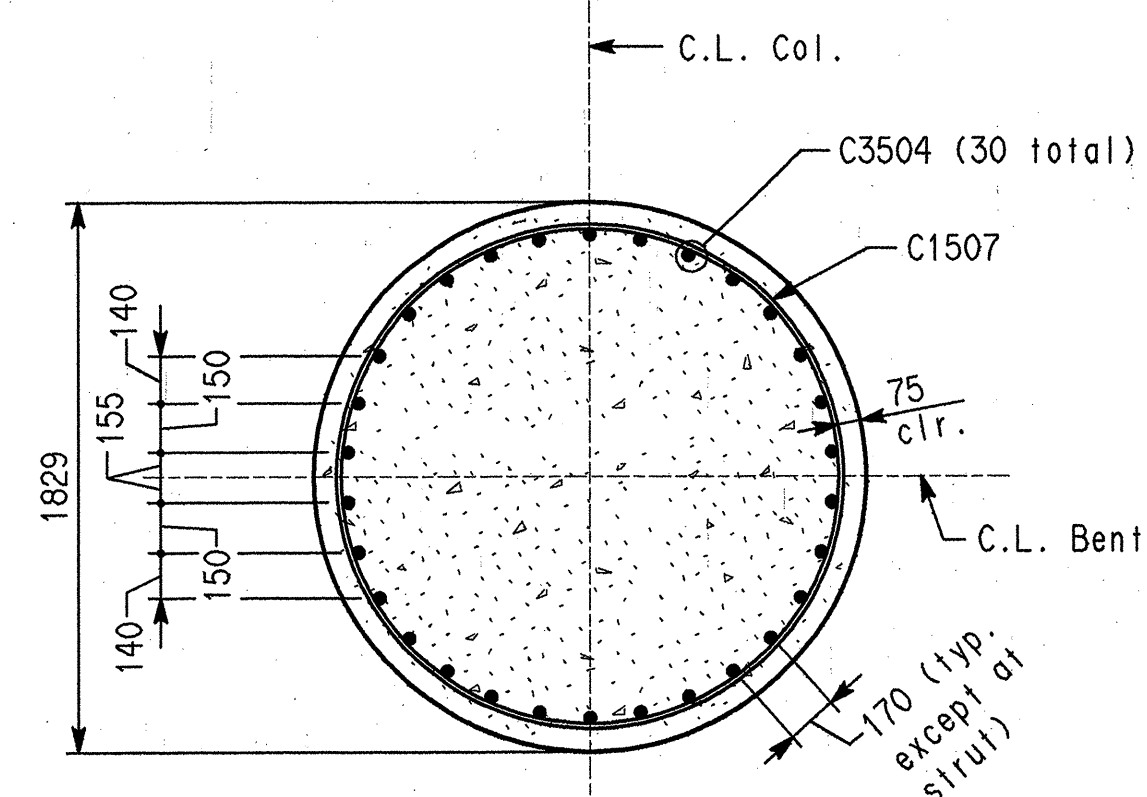
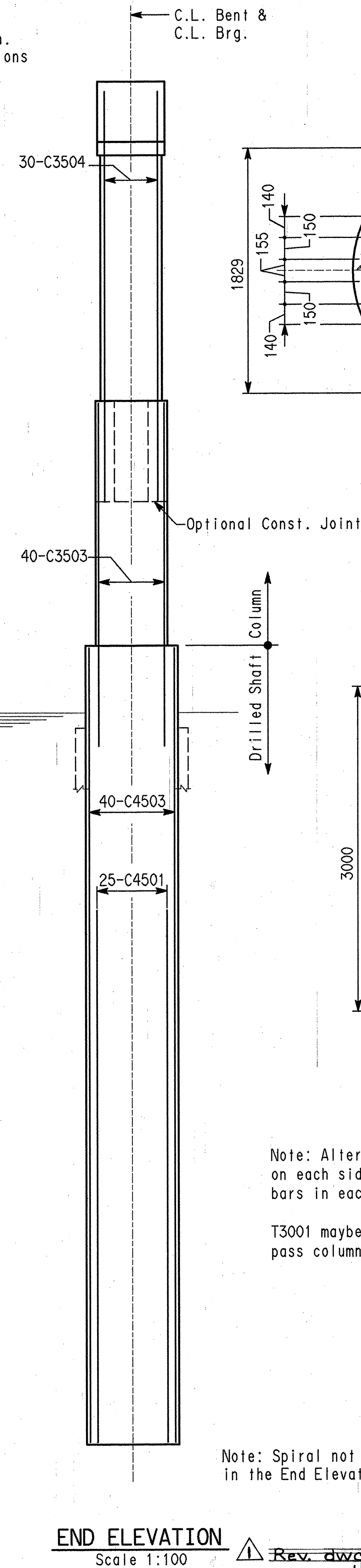


SECTION E-E
No Scale

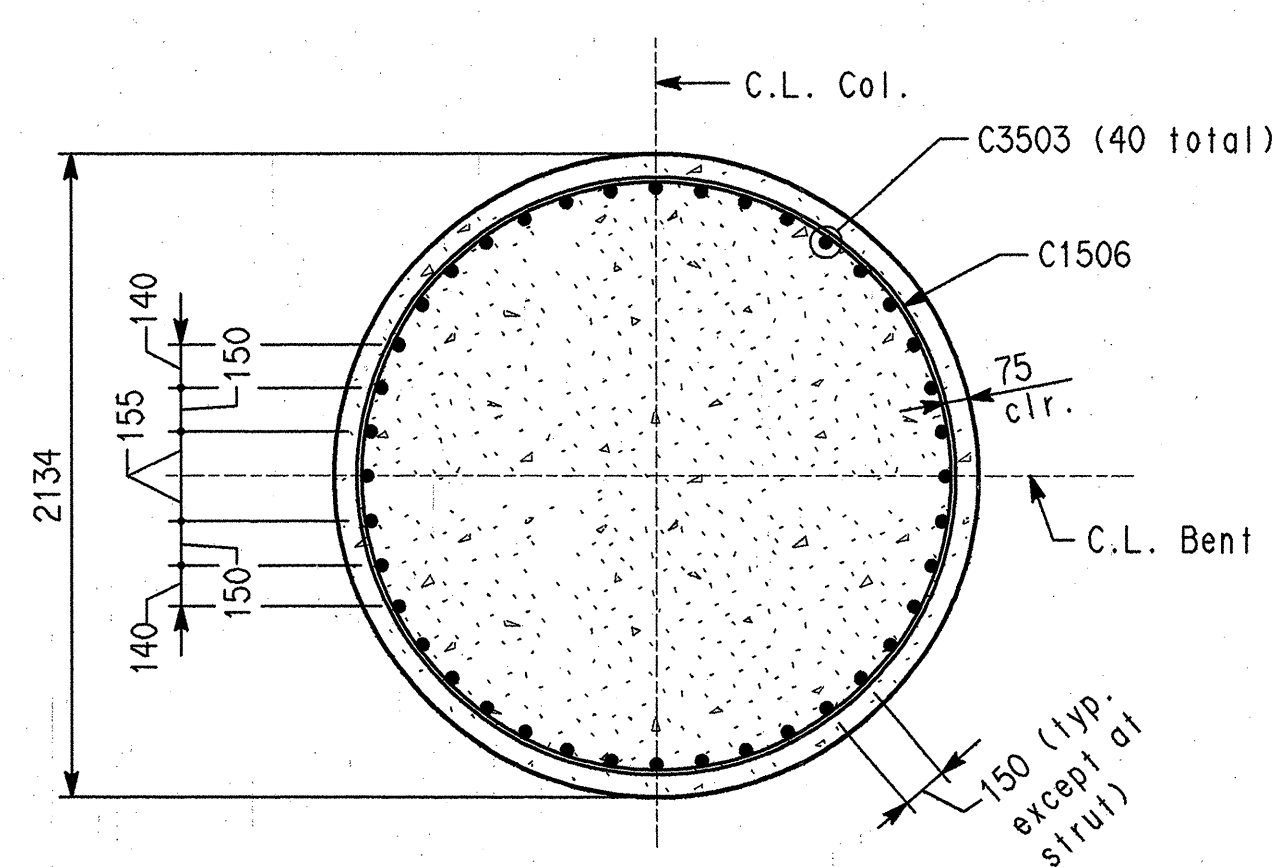
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				Job No.		040236		
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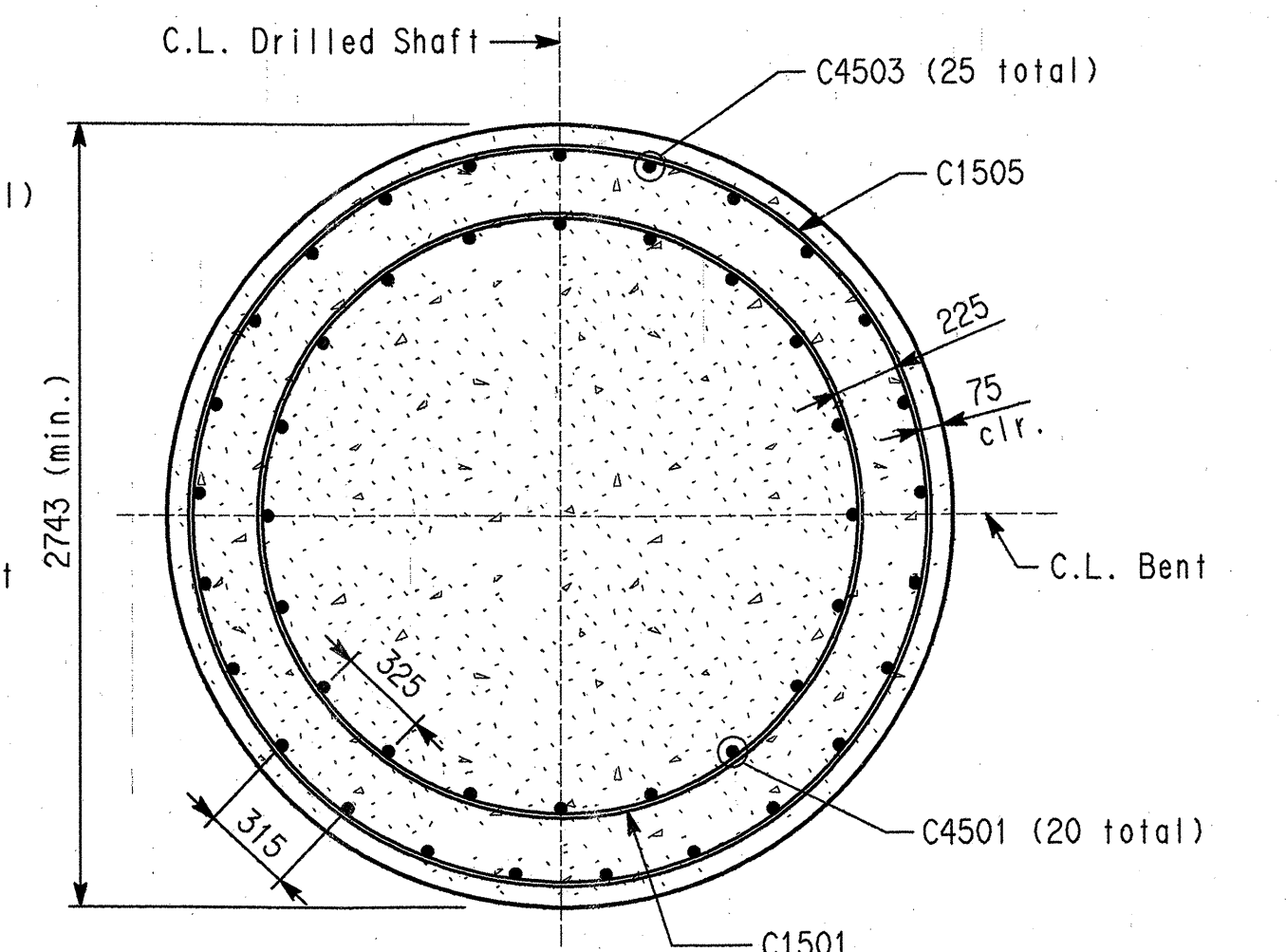
Note: Cap reinforcing not shown.
For cap reinforcing and dimensions
see Cap Detail Sheet.



SECTION A-A
Scale 1:25

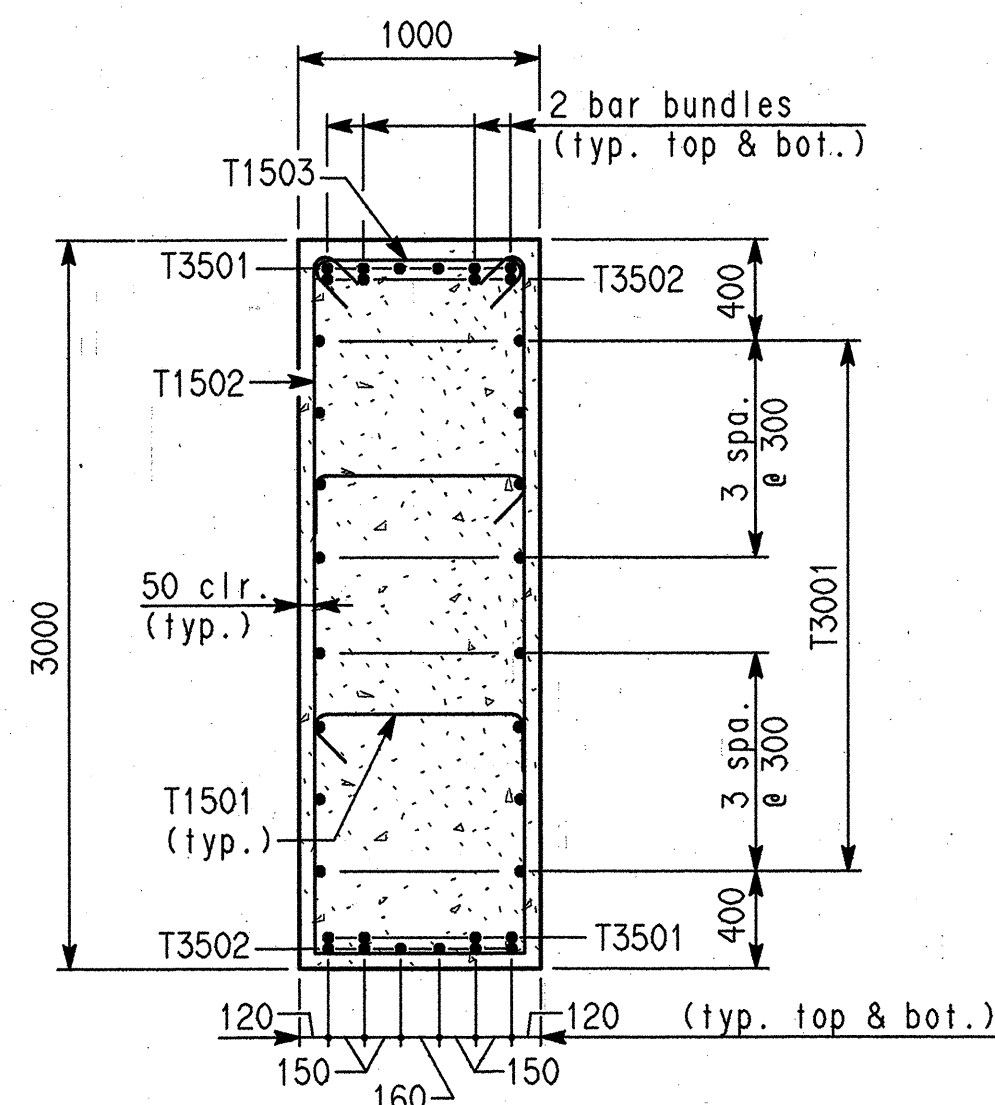


SECTION B-B
Scale 1:25



SECTION C-C
Scale 1:25

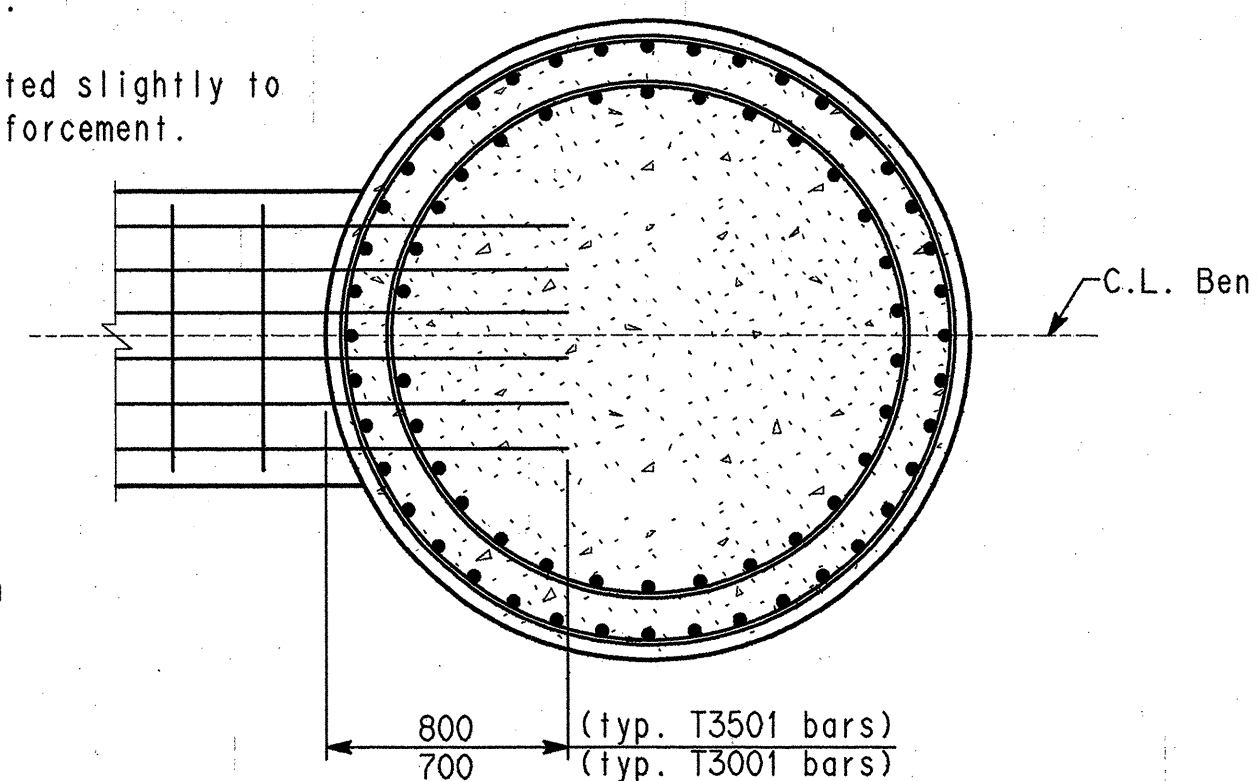
Note: Stay-in-Place form
for drilled shaft not shown.



SECTION D-D
No Scale

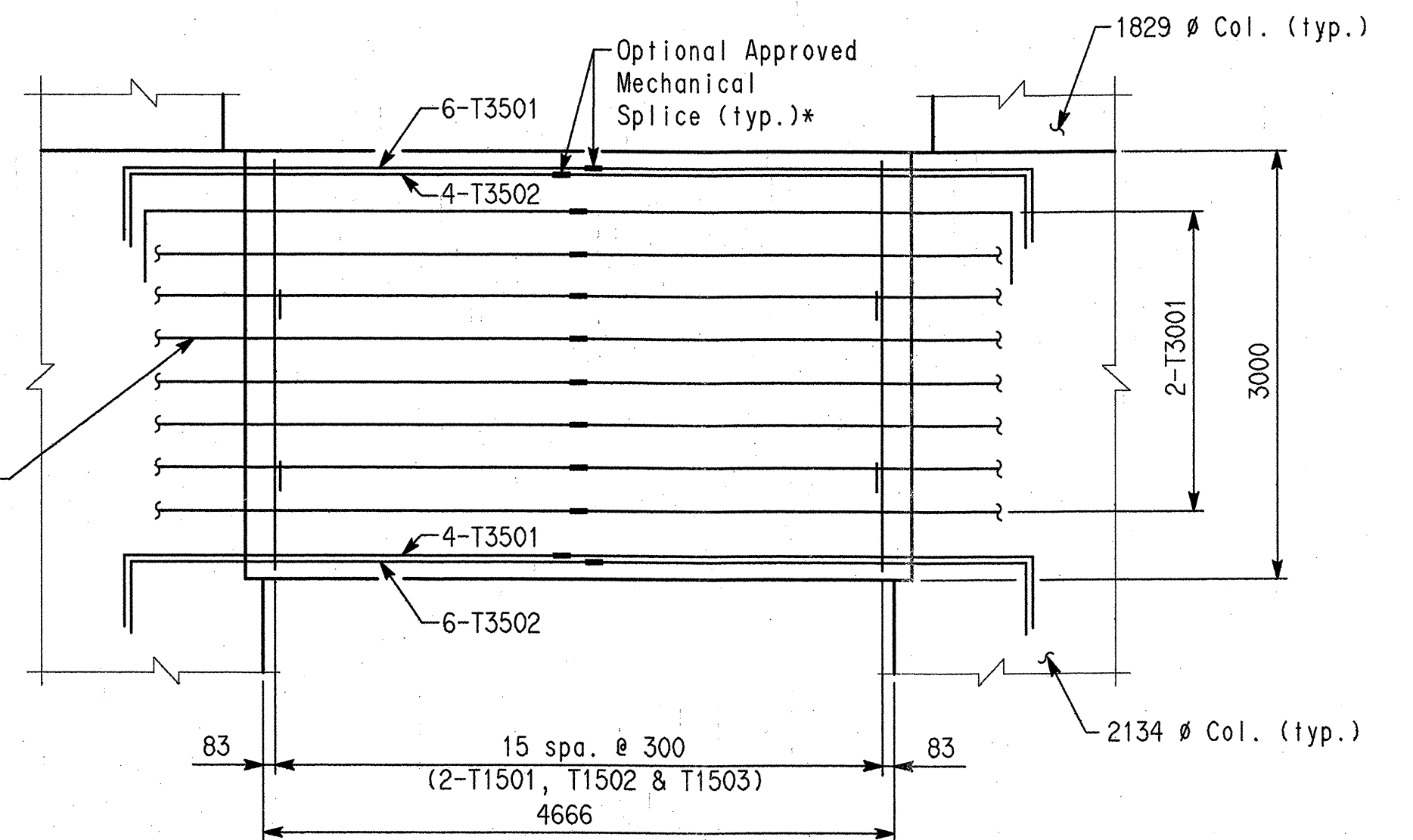
Note: Alternate the 135° hook on each side of strut for the T1501 bars in each row.

T3001 maybe shifted slightly to
pass column reinforcement.



SECTION E-E
No Scale

Arkansas Temporary Permit Number 96-45,
Issued 12-15-96.
Signature of Holder Spencer H. H. 2/7/97



STRUT ELEVATION
No Scale

*No extra payment will be made for optional mechanical splices.

NOTES

Stations and elevations are in meters (m).
All other dimensions are in millimeters (mm)
unless otherwise noted.

Bent concrete shall be Class "S" with a minimum 28 day compressive strength $f'_c = 24$ MPa. Concrete shall be poured in the dry and all exposed corners to be chamfered 20 unless otherwise noted.

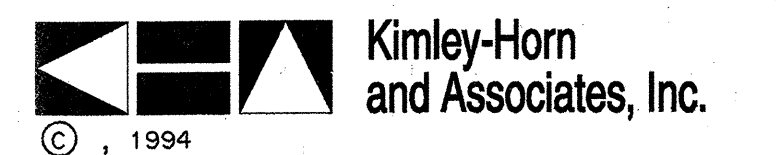
Drilled Shafts concrete shall be Class "S" (modified) with a minimum 28 day compressive strength $f'_c = 28 \text{ MPa}$.

All reinforcing steel shall conform to AASHTO
M 31M or M 53M, Gr. 400 (yield strength = 400 MPa)

For additional information see layout.

For drilled shafts information see reinforcing bar list sheet.

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



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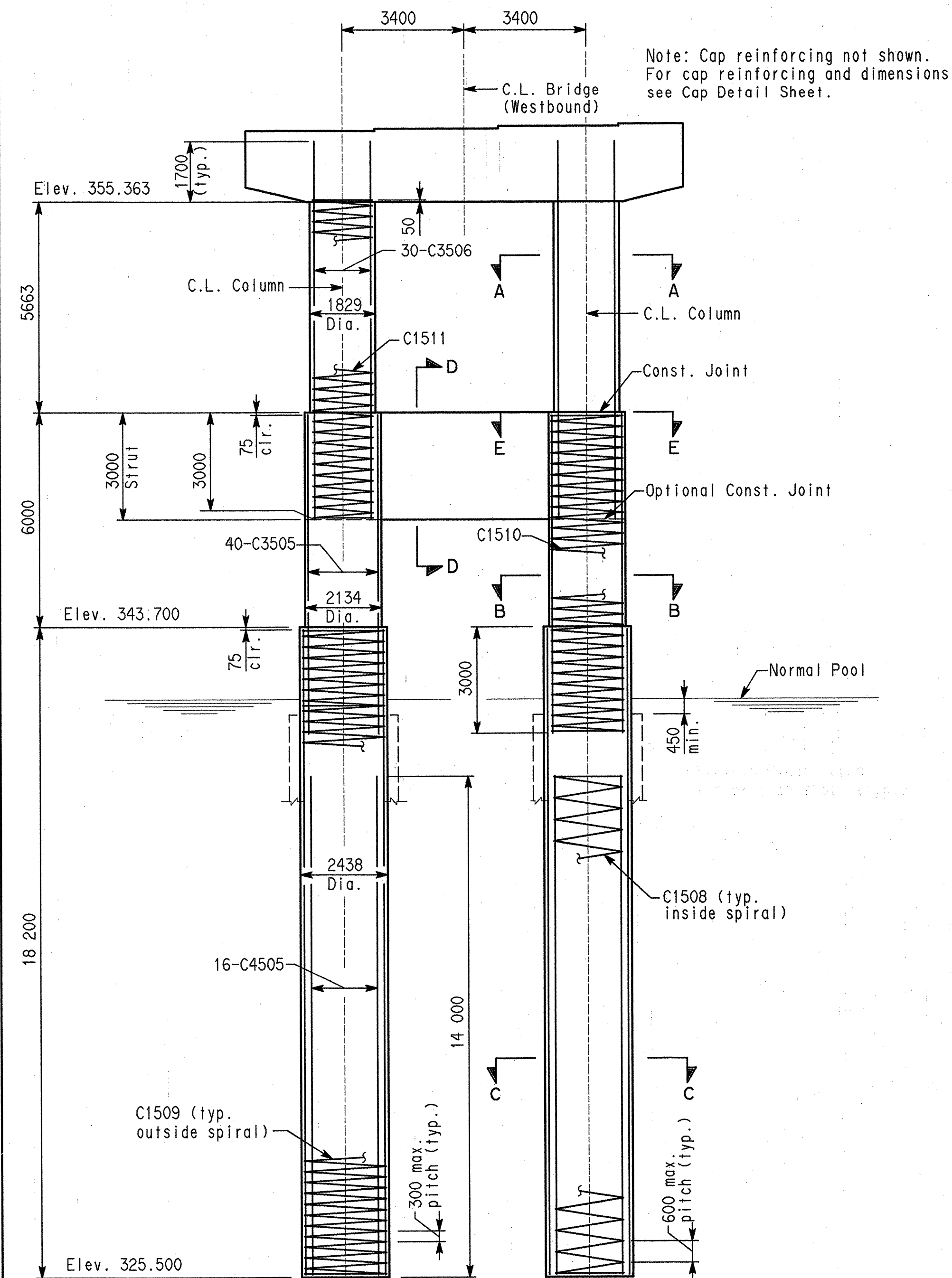
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WESTBOUND BRIDGE
SHEET 1 OF 1
BENT 3
(COLUMNS)
US. HWY. 412
ARKANSAS STATE HIGHWAY
COMMISSION
LITTLE ROCK, ARKANSAS

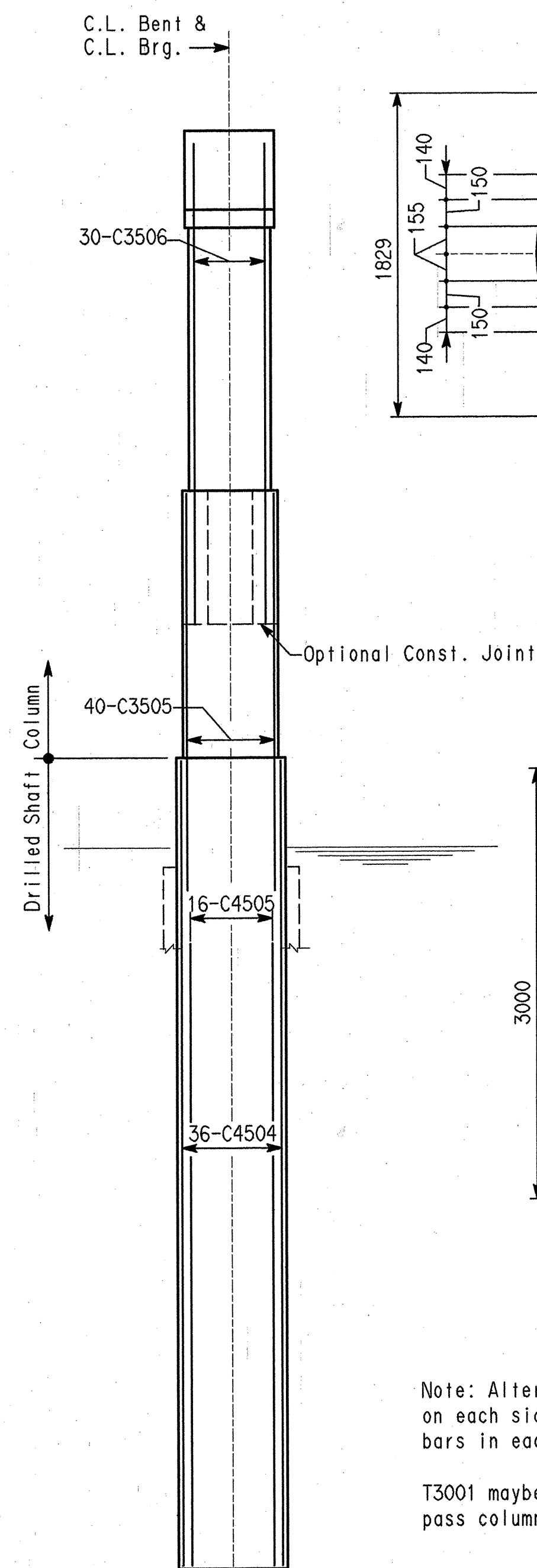
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 CHECKED BY: CLN DATE: 12/96 SCALE: As Noted
 DESIGNED BY: SLH DATE: 12/96
 BRIDGE NO. A6686 DRAWING NO. ~~2000~~ 31270

BRIDGE NO. A6686 DRAWING NO. ~~39270~~ 39270

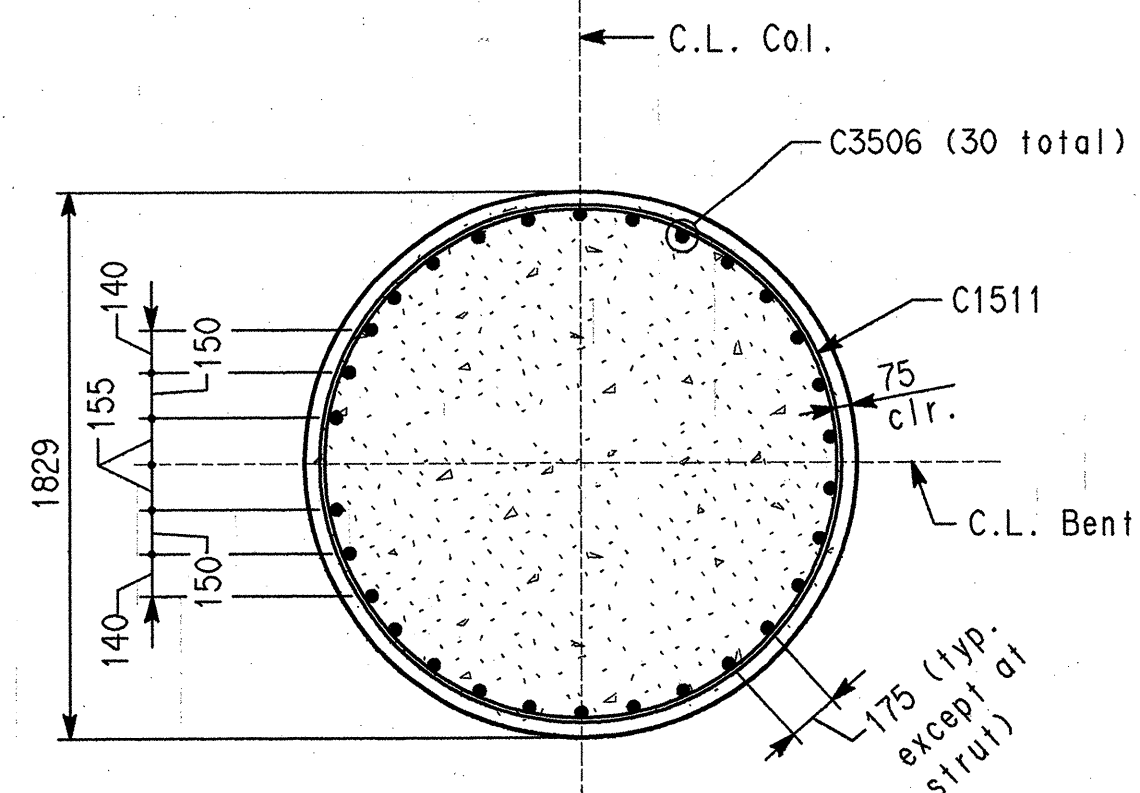
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	Fed Road Dist. No.	State	Fed. and Proj No.	Sheet No.	Total Sheets
7-14-97	7-24-97				Ark.		47	118
				Job No.		040236		
			①	A6686	BENT 4		3927	39271



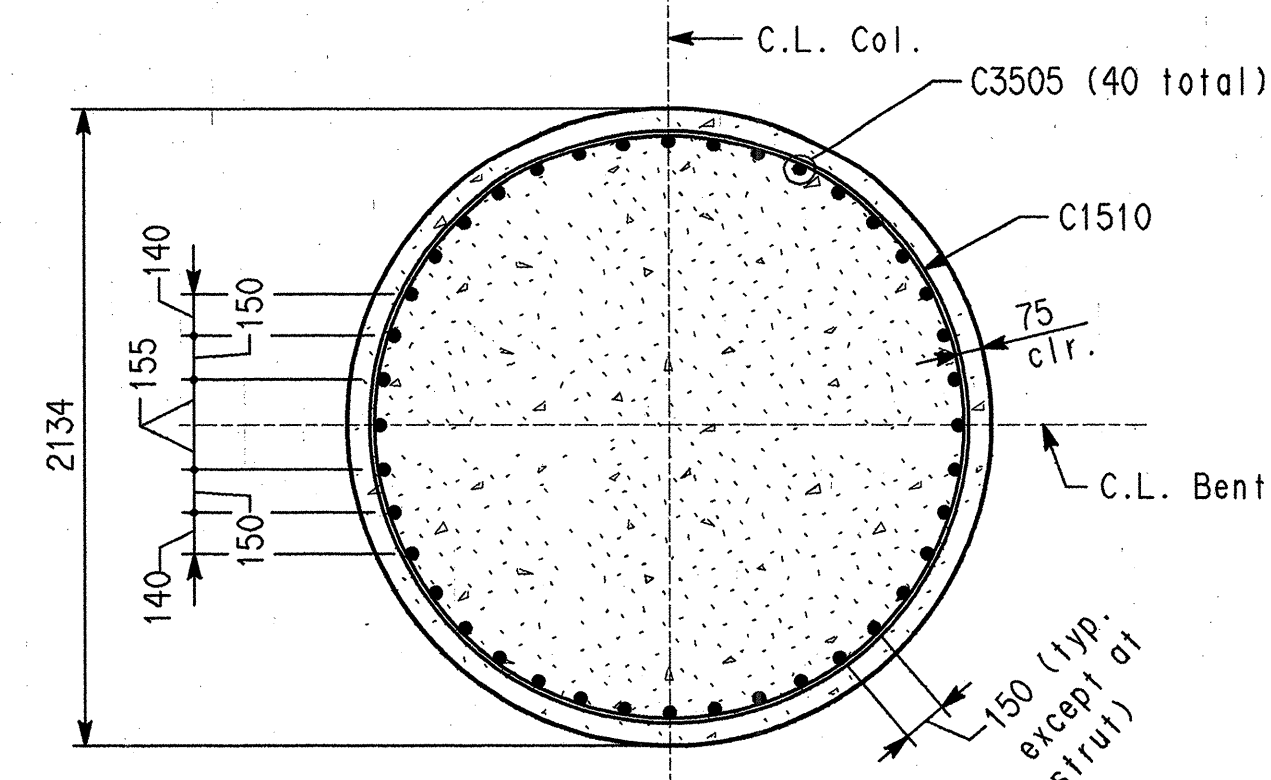
ELEVATION - LOOKING AHEAD
Scale 1:100



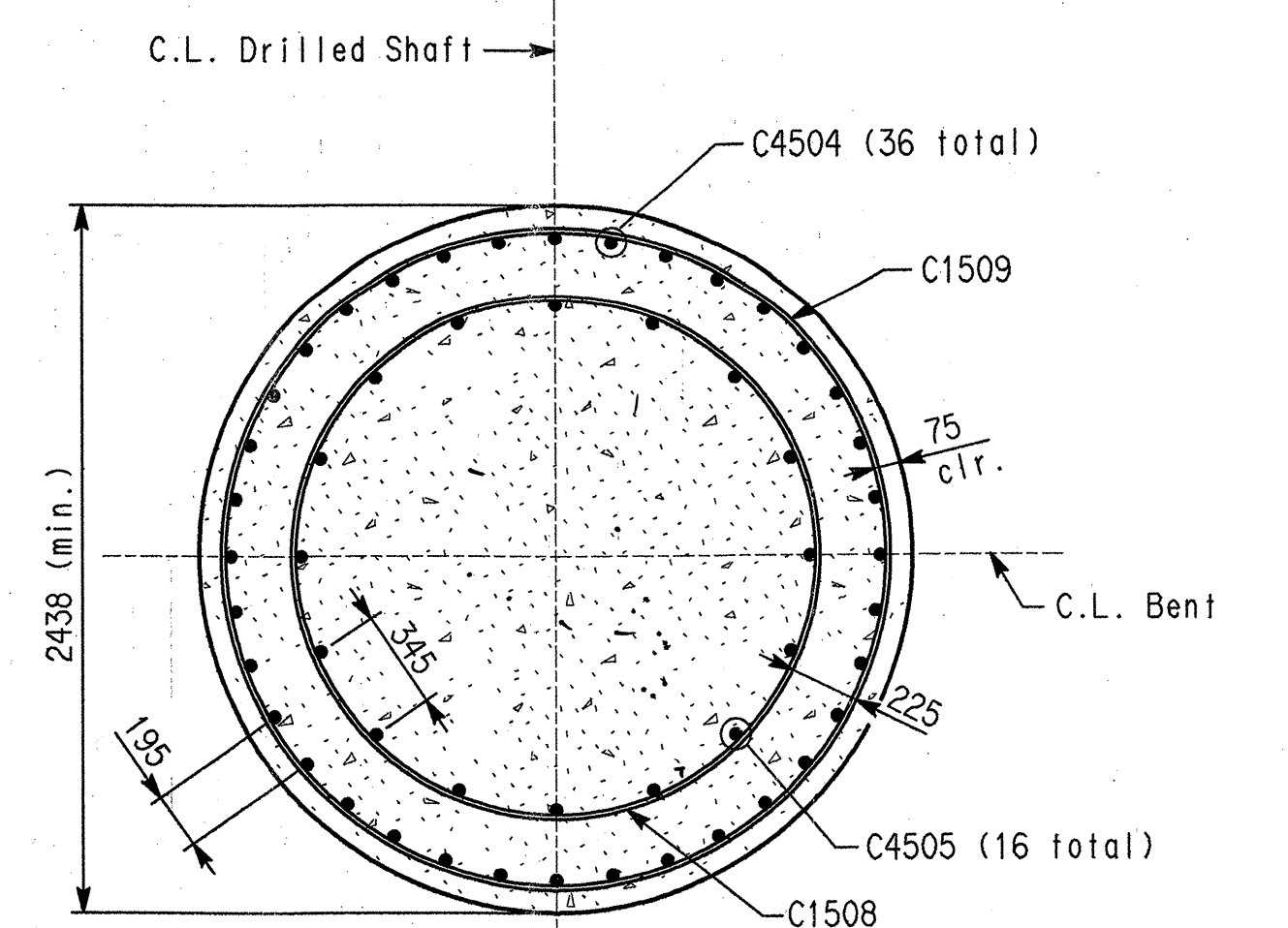
END ELEVATION
Scale 1:100



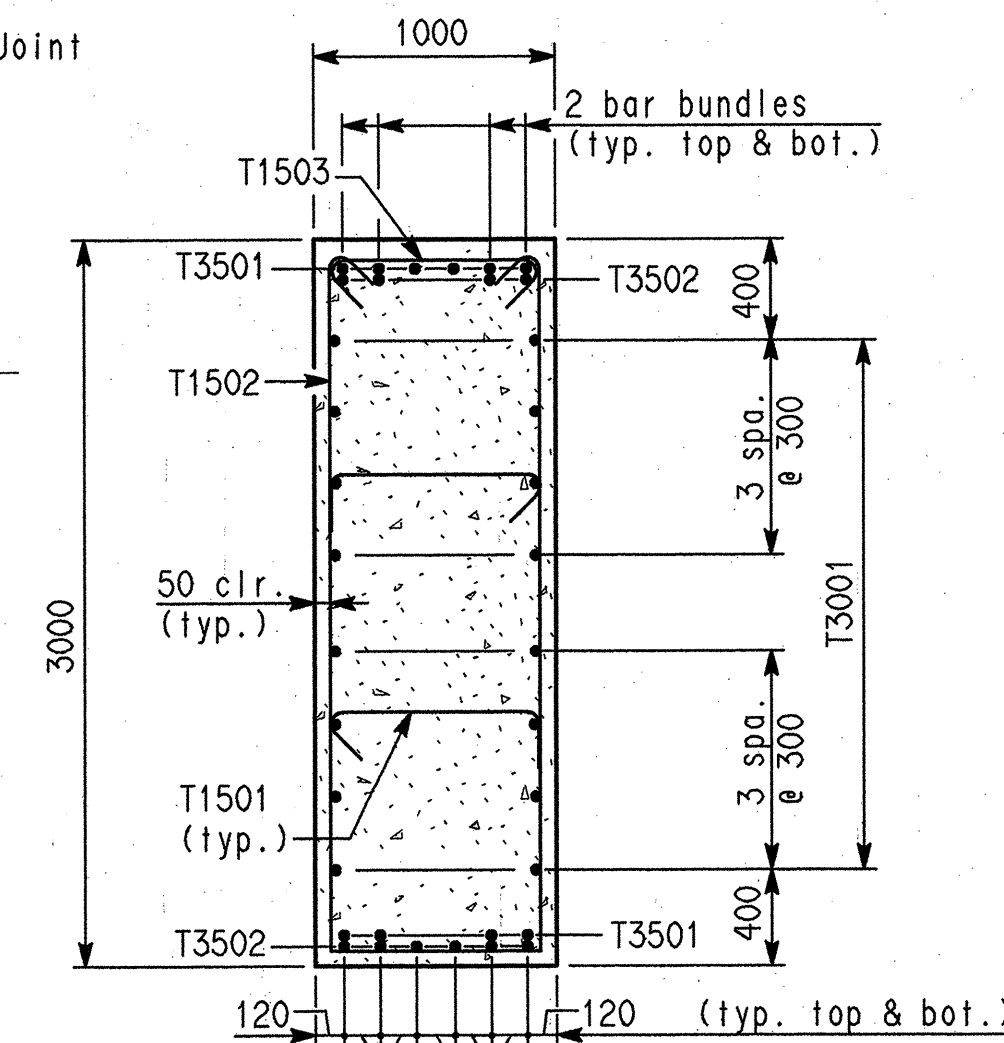
SECTION A-A
Scale 1:25



SECTION B-B
Scale 1:25



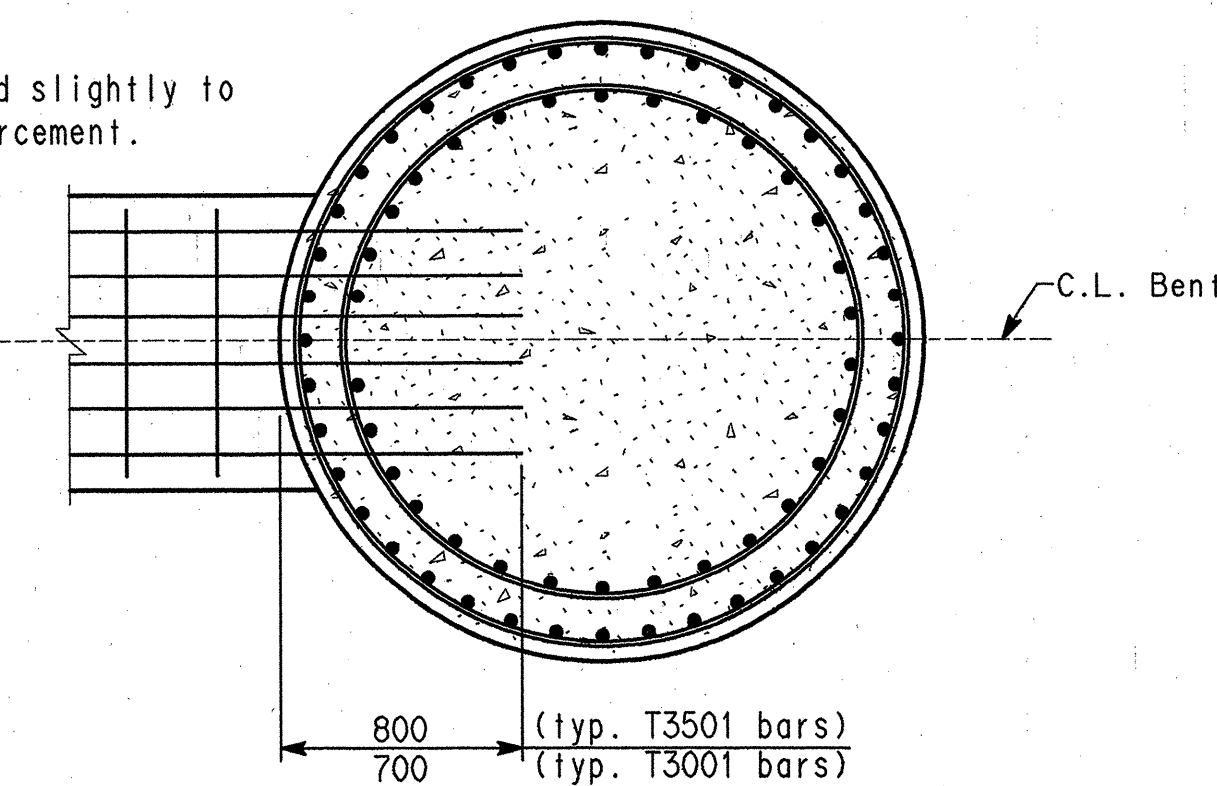
SECTION C-C
Scale 1:25




SECTION D-D
No Scale

Note: Alternate the 135° hook on each side of strut for the T1501 bars in each row.

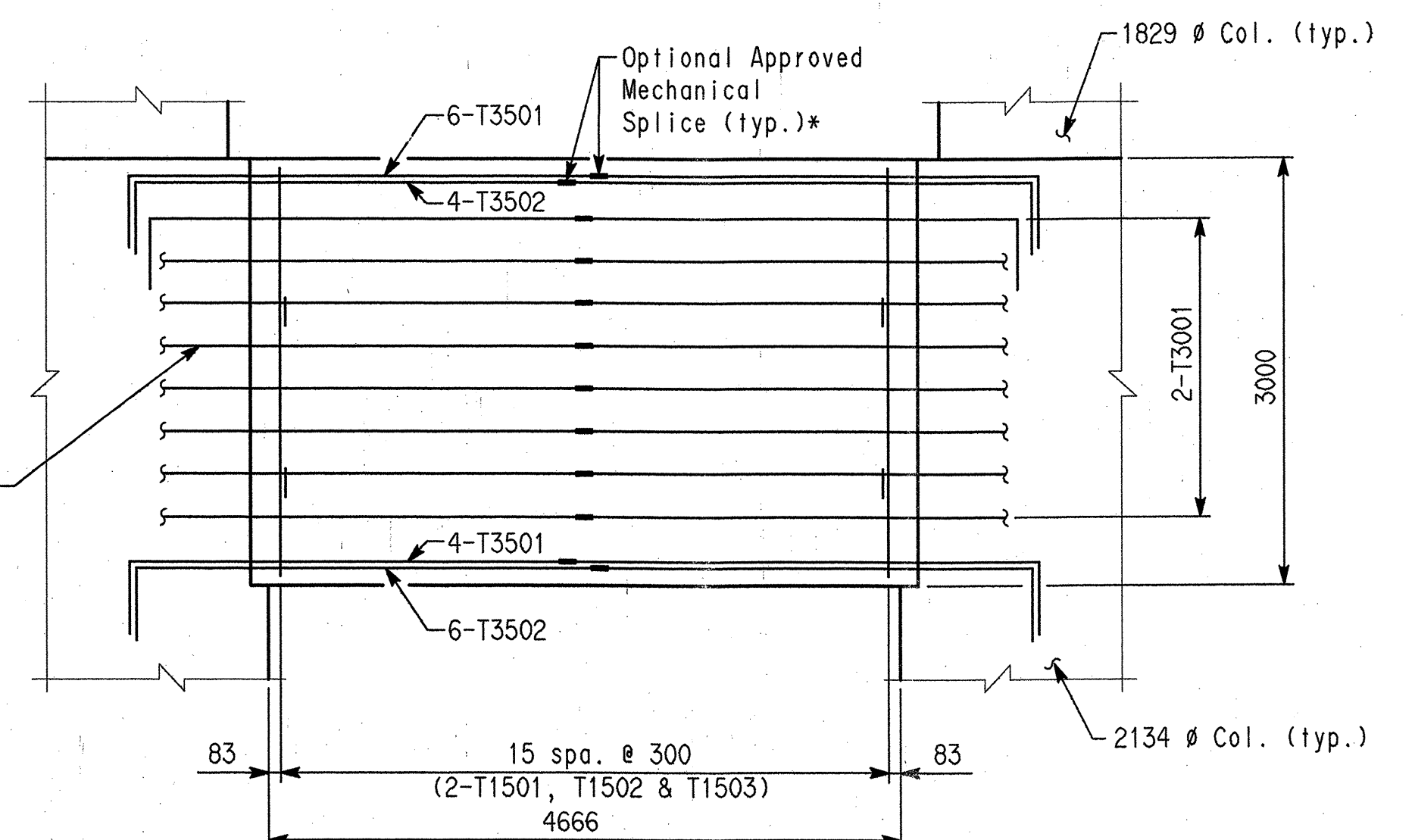
T3001 maybe shifted slightly to pass column reinforcement.



SECTION E-E
No Scale



Arkansas Temporary Permit Number 96-45,
Issued 12-15-96.
Signature of Holder Stella Hall 2/2/97



STRUT ELEVATION
No Scale

*No extra payment will be made for optional mechanical splices.

NOTES

Stations and elevations are in meters (m).
All other dimensions are in millimeters (mm)
unless otherwise noted.

Bent concrete shall be Class "S" with a minimum 28 day compressive strength $f'_c = 24$ MPa. Concrete shall be poured in the dry and all exposed corners to be chamfered 20 unless otherwise noted.

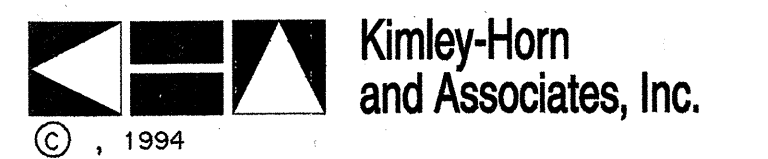
Drilled Shafts concrete shall be Class "S" (modified) with a minimum 28 day compressive strength $f'_c = 28 \text{ MPa}$.

All reinforcing steel shall conform to AASHTO M 31M or M 53M, Gr. 400 (yield strength = 400 MPa)

For additional information see layout.

For drilled shafts information see reinforcing
bar list sheet.

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



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WESTBOUND BRIDGE
SHEET 1 OF 1
BENT 4
(COLUMNS)

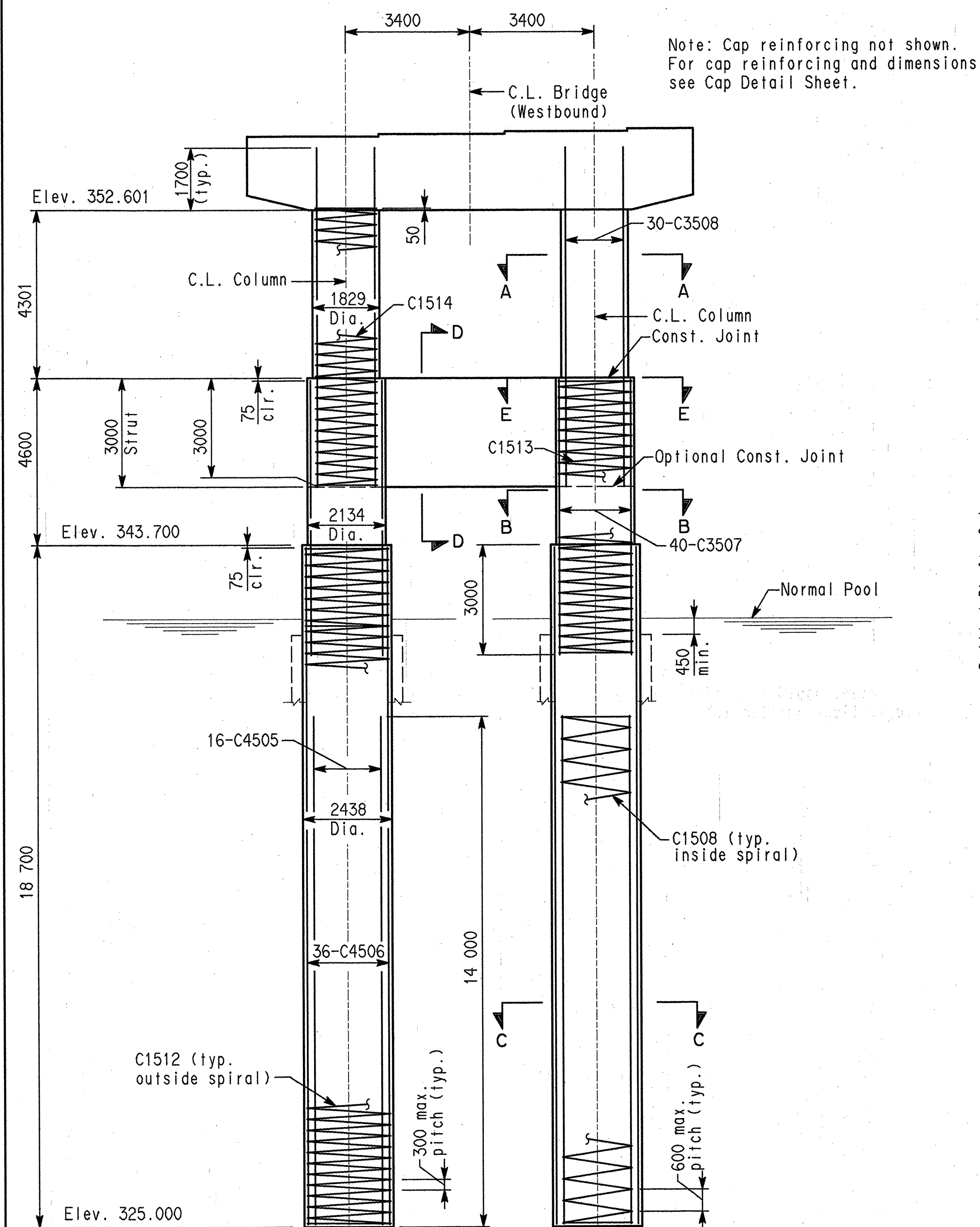
US. HWY. 412
ARKANSAS STATE HIGHWAY
COMMISSION

LITTLE ROCK, ARKANSAS

DRAWN NO. TBI DATE: 12/96
CHECKED BY: CLN DATE: 12/96 SCALE: As Noted
DESIGNED BY: SLH DATE: 12/96

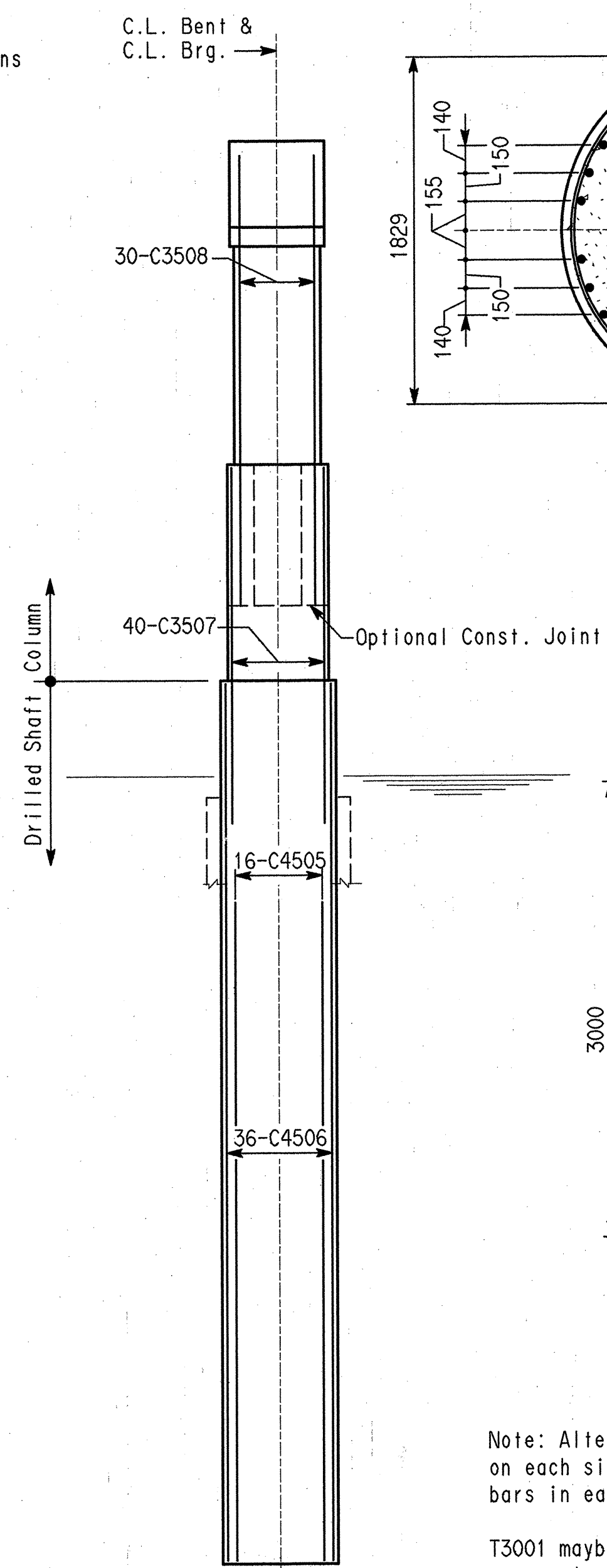
BRIDGE NO. A6686 DRAWING NO. ~~39271~~ 39271

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	Fed Road Dist. No.	State	Fed. and Proj No.	Sheet No.	Total Sheets
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				Job No.		040236		
				A6686		BENT 5		39272 39272



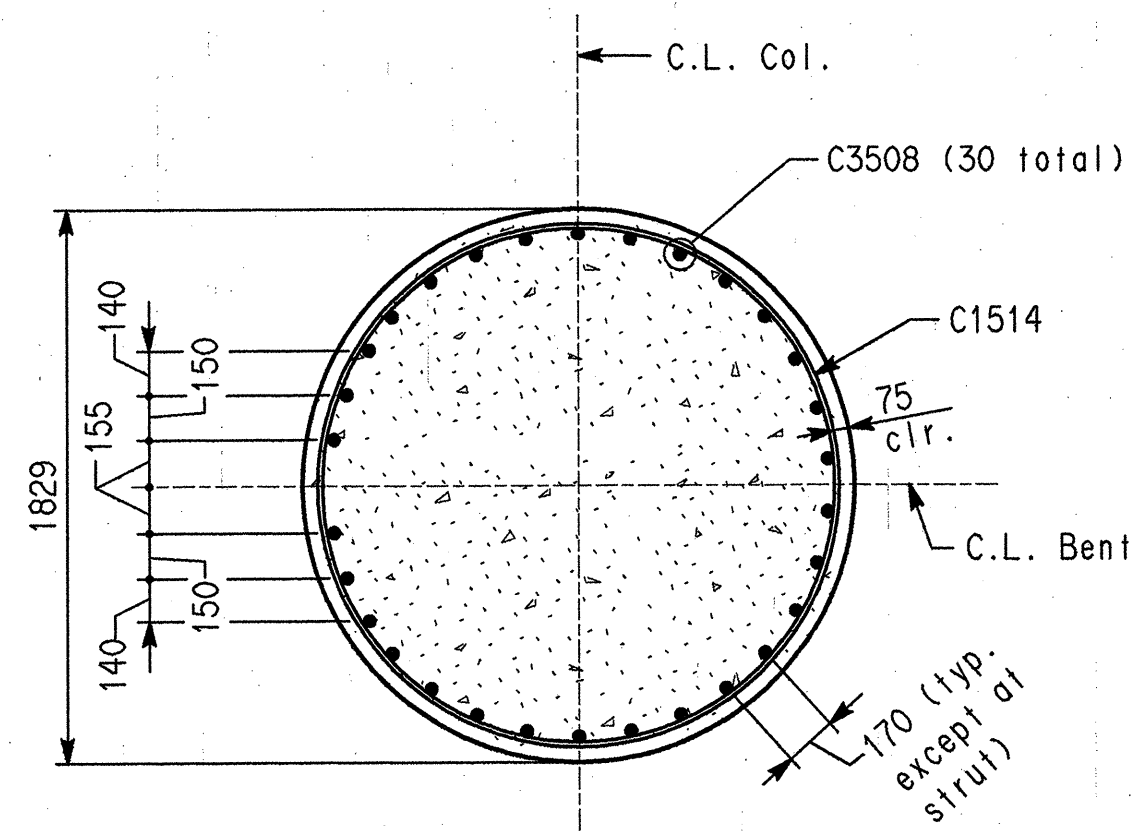
ELEVATION - LOOKING AHEAD
Scale 1:100

Note: Cap reinforcing not shown.
For cap reinforcing and dimensions
see Cap Detail Sheet.

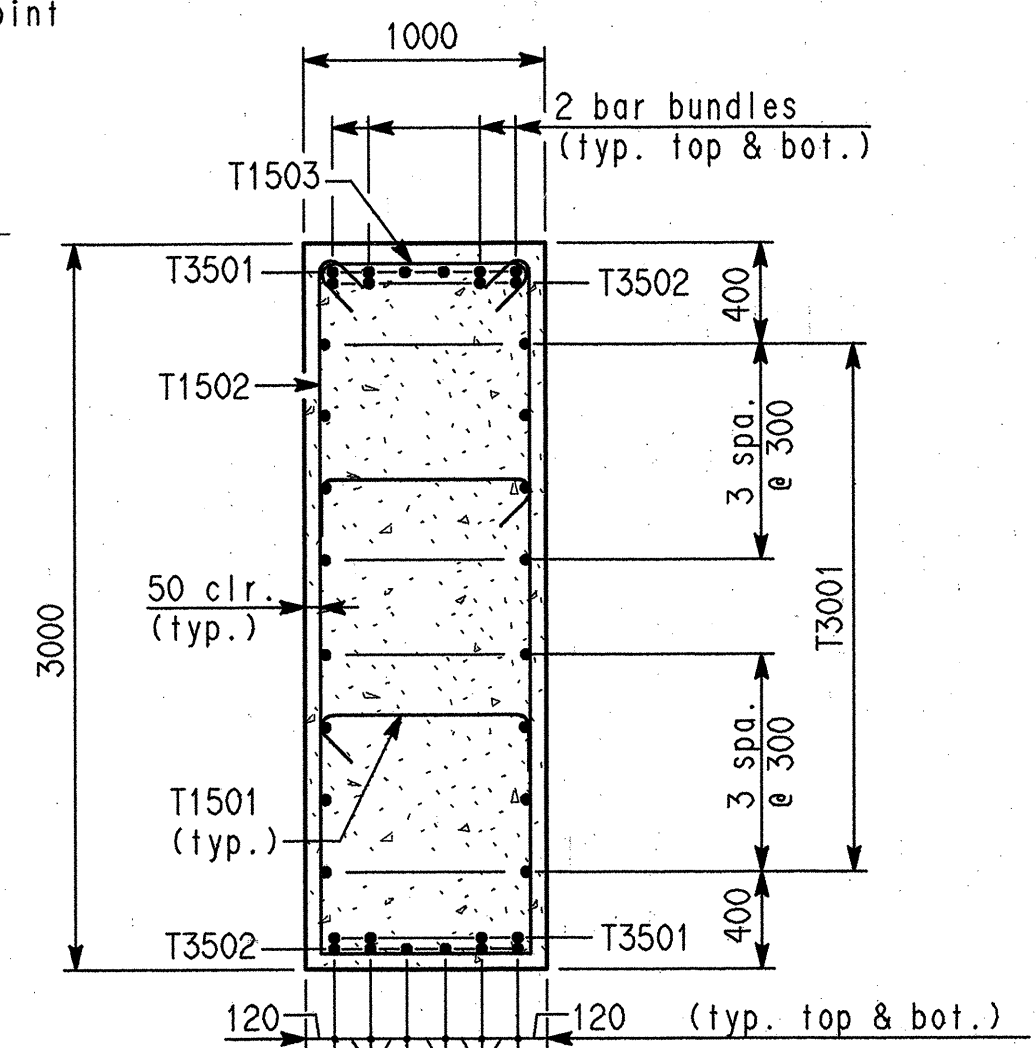


END ELEVATION
Scale 1:100

Note: Spiral not shown
in the End Elevation



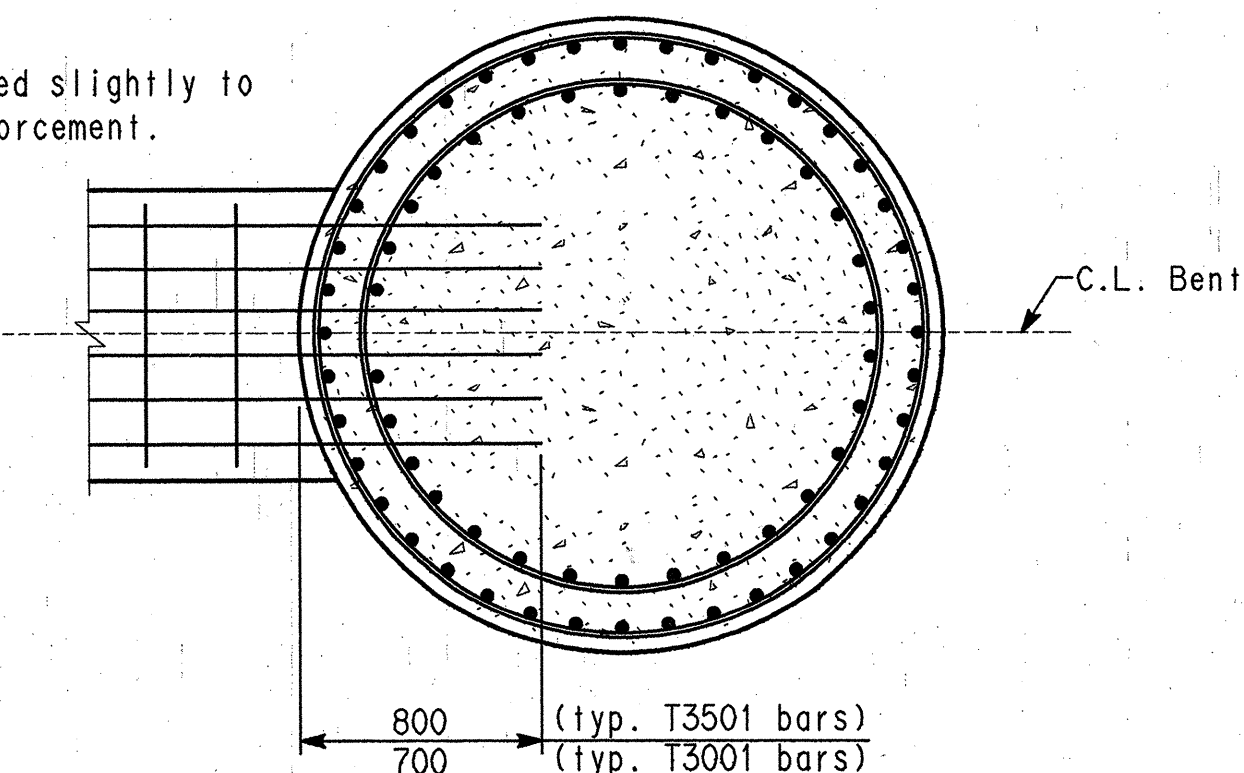
SECTION A-A
Scale 1:25



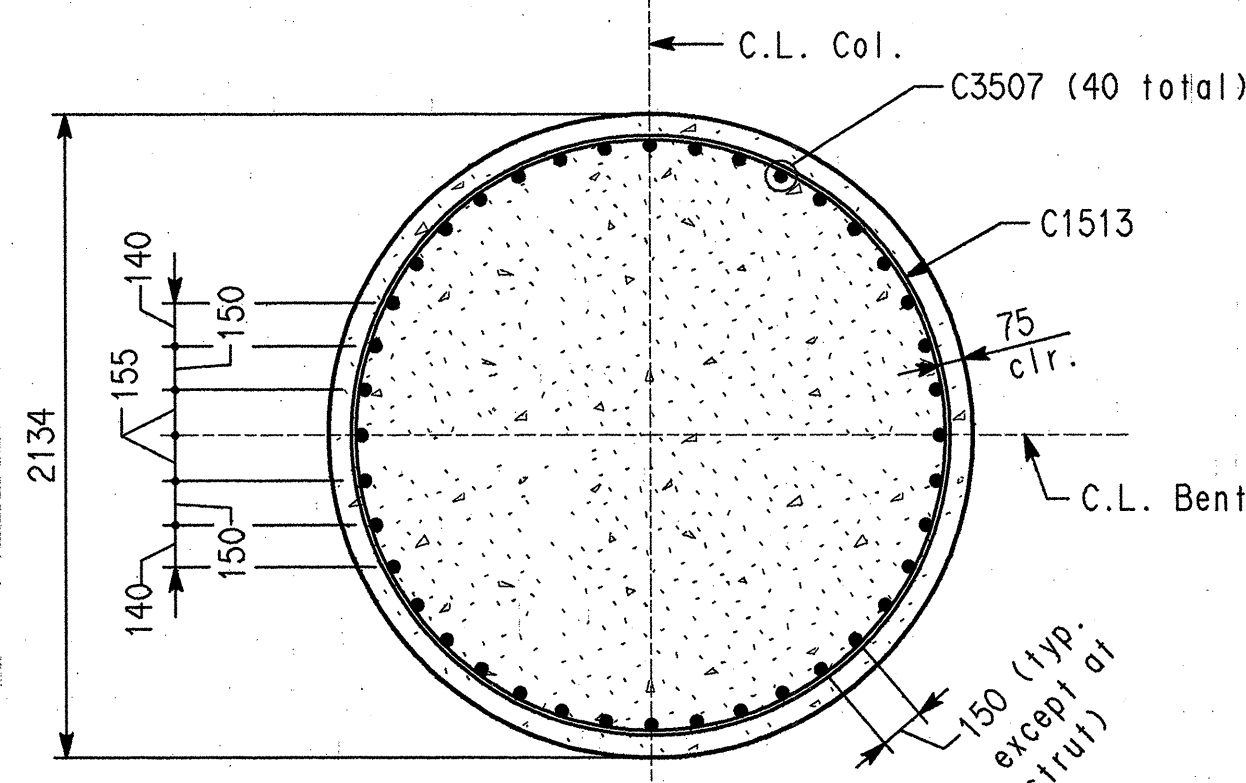
SECTION D-D
No Scale

Note: Alternate the 135° hook
on each side of strut for the T1501
bars in each row.

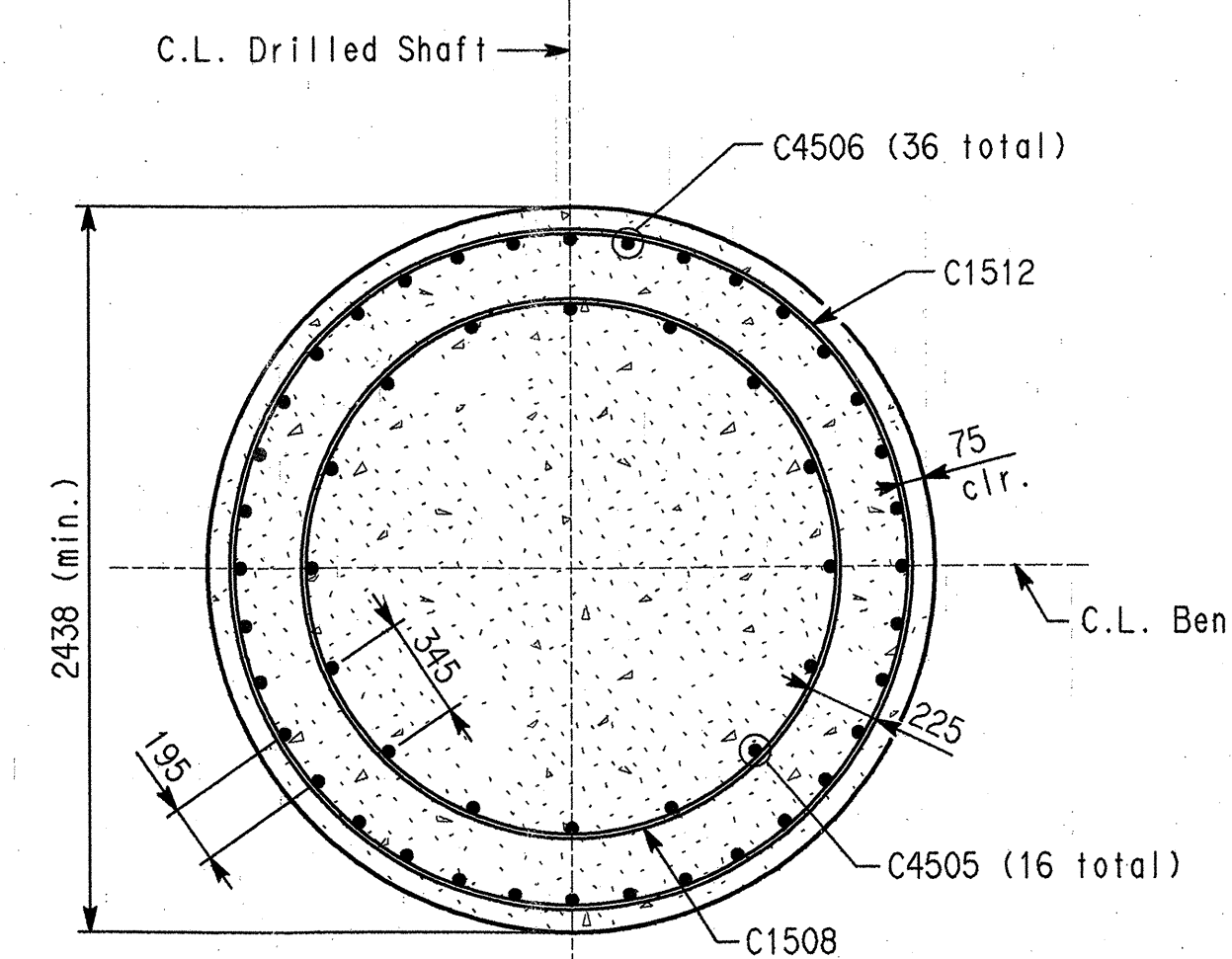
T3001 maybe shifted slightly to
pass column reinforcement.



SECTION E-E
No Scale

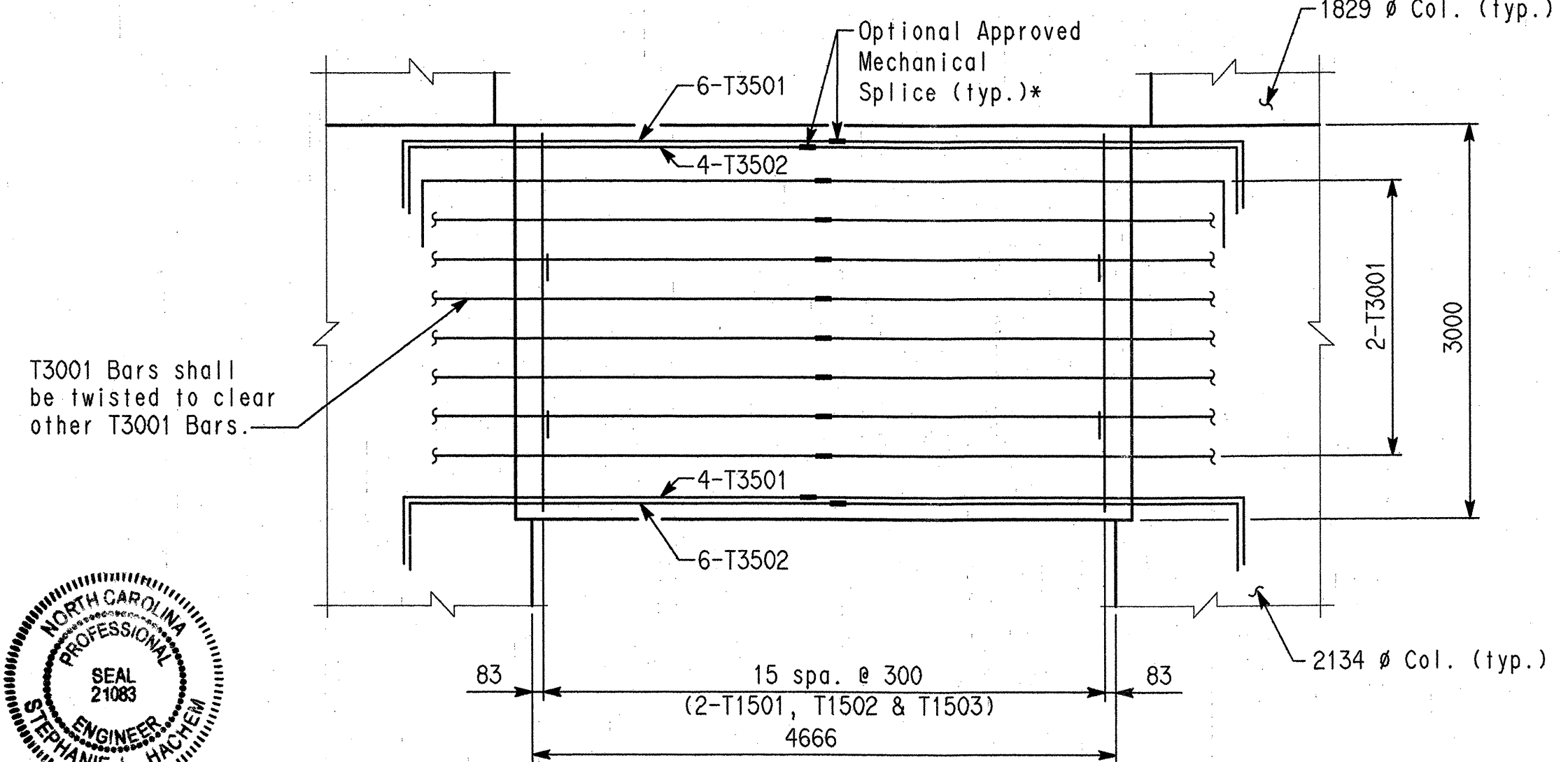


SECTION B-B
Scale 1:25



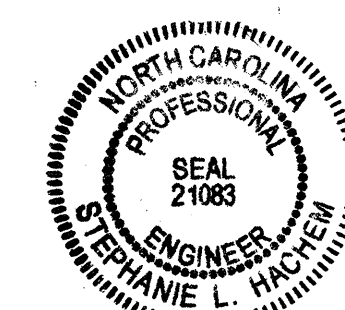
SECTION C-C
Scale 1:25

Note: Stay-in-Place form
for drilled shaft not shown.



STRUT ELEVATION
No Scale

*No extra payment will be
made for optional mechanical
splices.



Arkansas Temporary Permit Number 96-45,
Issued 12-15-96.
Signature of Holder *SLH*

NOTES

Stations and elevations are in meters (m).
All other dimensions are in millimeters (mm)
unless otherwise noted.

Bent concrete shall be Class "S" with a minimum
28 day compressive strength $f'_c = 24$ MPa.
Concrete shall be poured in the dry and all exposed
corners to be chamfered 20 unless otherwise noted.

Drilled Shafts concrete shall be Class "S" (modified)
with a minimum 28 day compressive strength $f'_c = 28$ MPa.

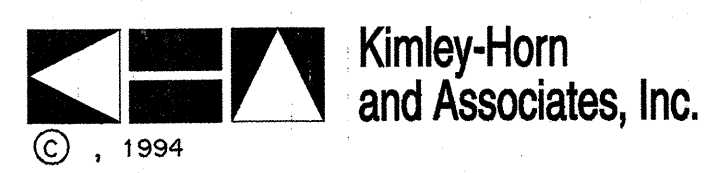
All reinforcing steel shall conform to AASHTO
M 31M or M 53M, Gr. 400 (yield strength = 400 MPa)

For additional information see layout.

For drilled shafts information see reinforcing
bar list sheet.

Rev. dwg. no. WRR 7-14-97

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



WESTBOUND BRIDGE
SHEET 1 OF 1
BENT 5
(COLUMNS)
US. HWY. 412
ARKANSAS STATE HIGHWAY
COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN NO. TBI DATE: 12/96
CHECKED BY: CLN DATE: 12/96 SCALE: As Noted
DESIGNED BY: SLH DATE: 12/96
BRIDGE NO. A6686 DRAWING NO. ~~39272~~ 39272

BENT 2 BAR LIST AND BENDING DIAGRAMS

[illegible]

BENT 3 BAR LIST AND BENDING DIAGRAMS

[illegible]

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	Fed Road Dist. No.	State	Fed. and Proj No.	Sheet No.	Total Sheets
7-14-97	7-24-97				Ark.		49	118
				Job No.		040236		
①				A6686 BENT BAR LIST 2023 31273				

Notes on Drilled Shafts:

For drilled shafts see special provisions.

Any parts of the permanent steel casing shall be removed, or the concrete shall be placed by use of forms, to a depth of 0.7m below the water level. Curing, stripping, and finishing shall be the same as for other structural concrete.

Construction of the columns shall proceed on the drilled shafts.

The design assumes material that will provide a minimum bearing capacity of 4.0 MPa per caisson. The caissons for Bent 2 and Bent 3 shall be drilled into the material designated as Hard Dark Gray Shale formation on the boring legend. The caissons for Bent 4 and Bent 5 shall be drilled into the material designated as Very Hard Light Gray Limestone on the boring legend. The minimum depth of embedment into the respective formations shall be 2 times the diameter of the shaft. (The expected tip elevations are shown in the plans; however, the above criteria must be met.)

Lengths of drilled shafts shown are for estimating quantities and for use in determining payment in accordance with the special provision.

Beaver Lake is the water source for the Beaver Water District, and the contractor cannot discharge excavated material or materials involved with drilling the shafts into the lake. Drilled shaft construction shall be in accordance with Section 110.07 of the 1996 standard specifications.

To facilitate construction, the contractor may drill a larger caisson to the beginning of the competent rock formation then reduce the diameter to the dimensions shown on the plans. If the maximum shaft diameter exceeds 3.048m, approval of the Engineer is required. A minimum of the diameter shown in the plans must be maintained. No additional costs will be paid for this option.

Drilled shaft reinforcing will be included in pay item for Drilled Shaft. The quantities shown in the Drilled Shafts are for informational purposes only. The quantities are not included in the totals shown on the Schedule of Bridge Quantities sheet.

BENT 4 BAR LIST AND BENDING DIAGRAMS

[illegible]

BENT 5 BAR LIST AND BENDING DIAGRAMS

[illegible]

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Issued 12-15-96.
Signature of Holder S. L. Hall 2/7/97



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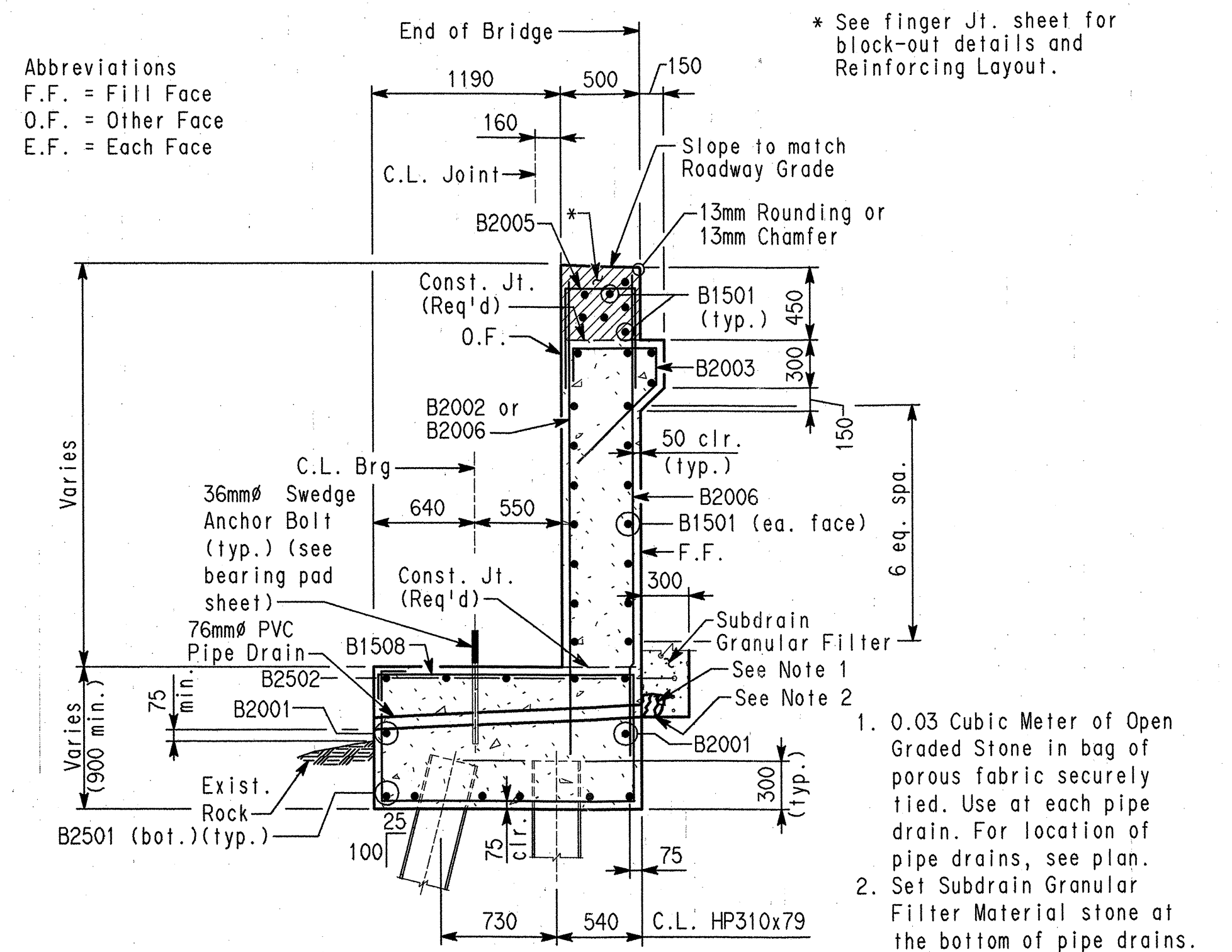
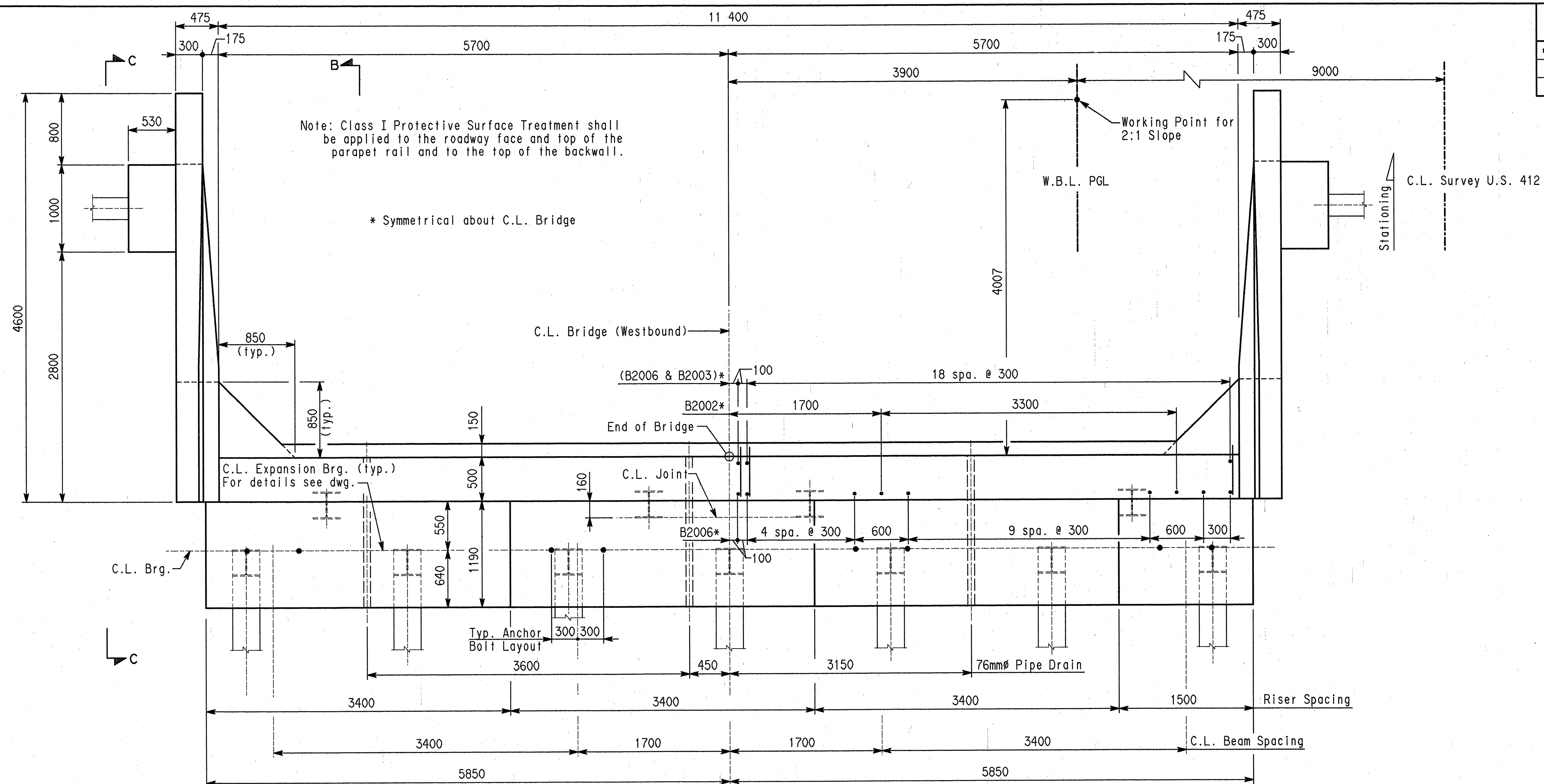
WESTBOUND BRIDGE
SHEET 1 OF 1
BENT 2 THRU 5
REINFORCING BAR LIST
US. HWY. 412
ARKANSAS STATE HIGHWAY
COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN NO. TBI DATE: 12/96
 CHECKED BY: CLN DATE: 12/96 SCALE: No Scale
 DESIGNED BY: SLH DATE: 12/96
 BRIDGE NO. A6686 DRAWING NO. 39273 39273

Rev. dwg. no. WRR 7-14-97

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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	Fed Road Dist. No.	State	Fed. and Proj No.	Sheet No.	Total Sheets
7-14-97	7-24-97				Ark.		50	118
				Job No.		040236		
(1)				A6686	BENT 6	387439274		



SECTION A-A
Scale 1:30

GENERAL NOTES

Stations and elevations are in meter (m). All other dimensions are in millimeters (mm) unless otherwise noted.

All concrete shall be class "S" with a minimum 28 day compressive strength $f'_c = 24$ MPa. Concrete shall be poured in the dry and all exposed corners to be chamfered 20 unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31M or M53M, Gr. 400 (yield strength = 400 MPa)

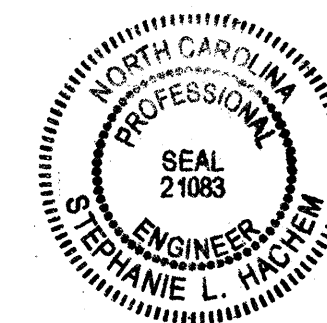
Backwall shall not be poured before beams are in place.

Structural steel in end bents (see Finger Joint Detail sheet) shall be AASHTO M270, Gr. 345W and shall be paid for as "Structural Steel in Plate Girder Spans (M270, Gr. 345W)"

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

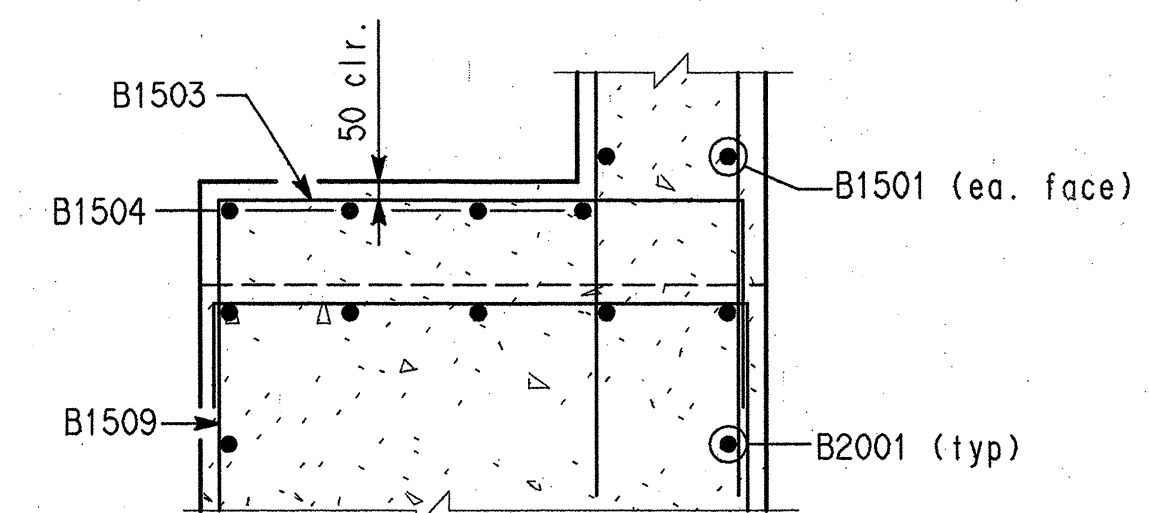
Approved pile points shall be used on all piles.

For additional information see layout.



Arkansas Temporary Permit Number 96-45,
Issued 12-15-96.
Signature of Holder *Shiloh 4/1/97*

Rev. dwg. no. WRR 7-14-97



SECTION D-D
No. Scale



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WESTBOUND BRIDGE
SHEET 1 OF 2
BENT 6

(PLAN AND ELEVATION)
US. HWY. 412
ARKANSAS STATE HIGHWAY
COMMISSION
LITTLE ROCK, ARKANSAS

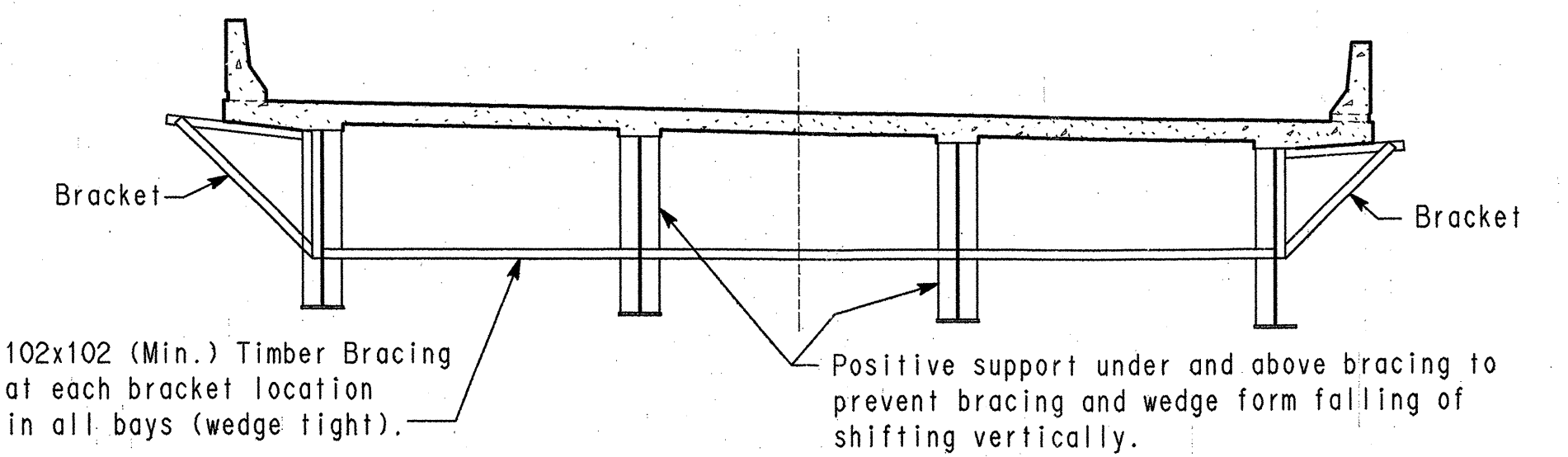
DRAWN NO. TBI DATE: 12/96
CHECKED BY: CLN DATE: 12/96 SCALE: As Noted
DESIGNED BY: DS DATE: 12/96
BRIDGE NO. A6686 DRAWING NO. ~~39274~~ 39274

s:\203400\dgn\west\eb6wa01.dgn
06 FEB 97

09:35:10
IRELAND


MICROFILMED
MAY 13 1997

①



Camber for Dead Load Deflection plus Vertical curve $\pm 6\text{mm}$ tolerance.
Negative sign (-) indicates upward deflection.

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Issued 12-15-96.
Signature of Holder S. J. Hall 2/3/97



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LITTLE ROCK, ARKANSAS

DRAWN NO. TBI DATE: 12/96

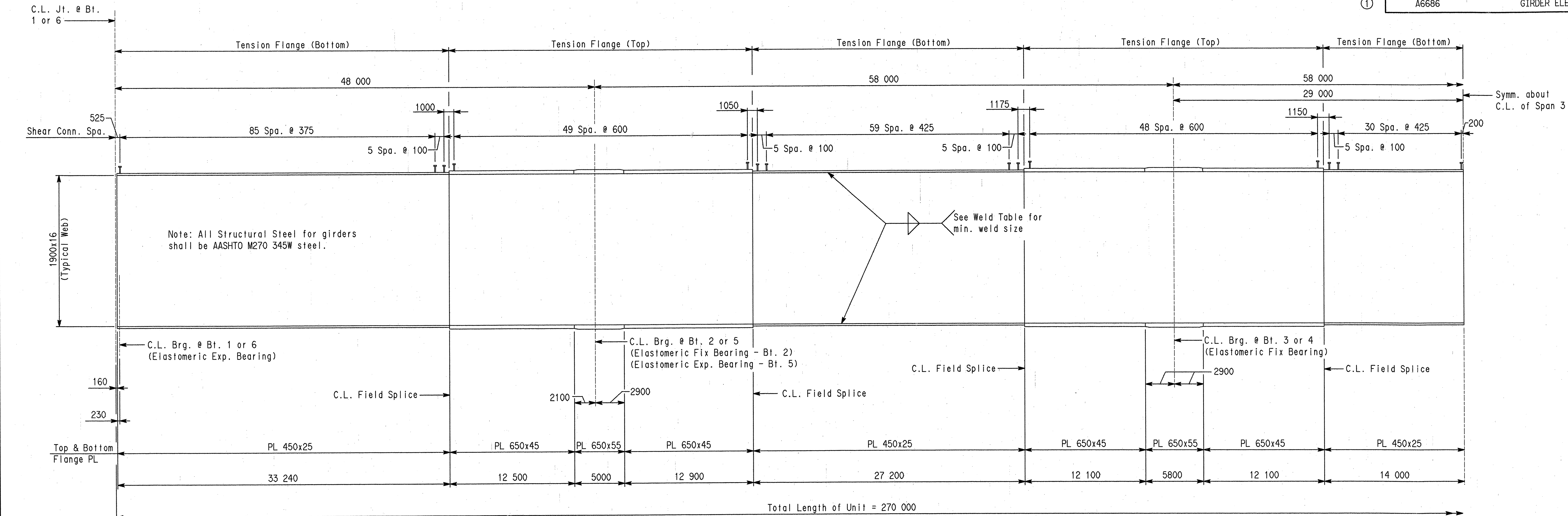
CHECKED BY: CLN DATE: 12/96 SCALE: As Noted

DESIGNED BY: MLR DATE: 12/96

BRIDGE NO. A6686 DRAWING NO. 3027 39277

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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	Fed Road Dist. No.	State	Fed. and Proj No.	Sheet No.	Total Sheets
7-14-97	7-24-97				Ark.		54	118
				Job No.		040236		
				A6686		GIRDER ELEV.	39278	39278



Note: For details of Elastomeric Bearings, see drwg. no. 39285 39285

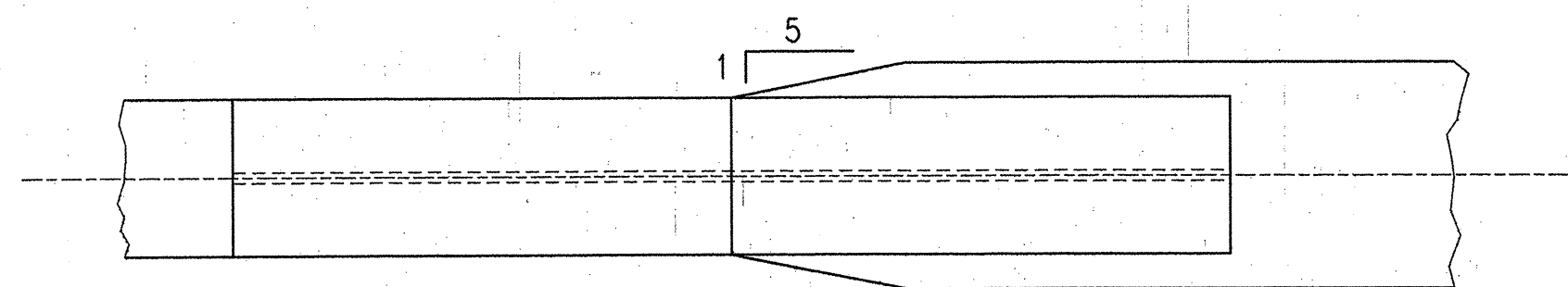
TYPICAL GIRDER ELEVATION

Not to Scale

Note: For Structural Steel notes see Typical Roadway Section.

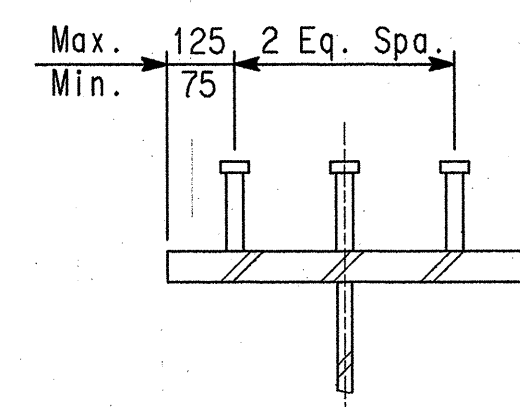


Arkansas Temporary Permit Number 96-45,
Issued 12-15-96.
Signature of Holder *[Signature]*



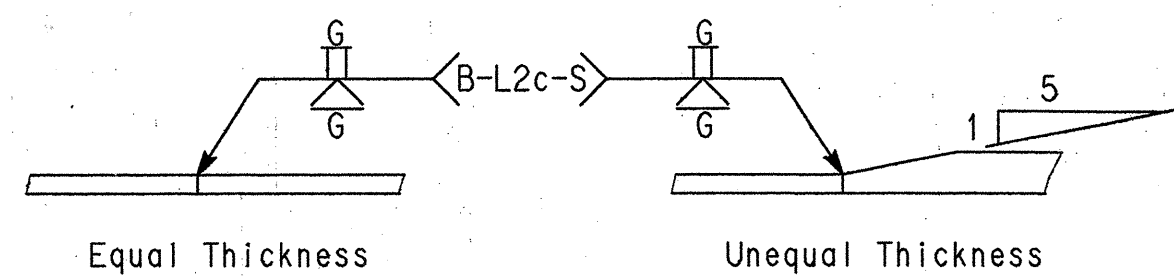
TOP FLANGE SPLICE

No Scale

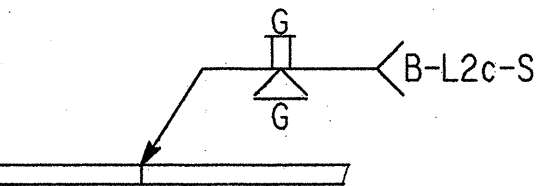


SHEAR CONNECTOR DETAIL

No Scale



FLANGE SPLICE



WEB SPLICE

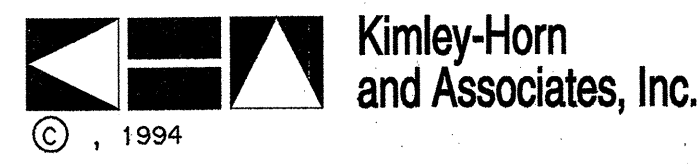
DETAILS OF WELDED SPLICES

No Scale

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

Stud Shear Connectors shown shall be 22x127 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# studs may be used in place of the 22# studs shown, at the ratio of 1.361-20# studs in place of one 22# stud. 22# studs will be used as basis for measurement of structural steel in shear connectors. Maximum stud spacing = 600mm.

Rev. dwg. no. WRR 7-14-97



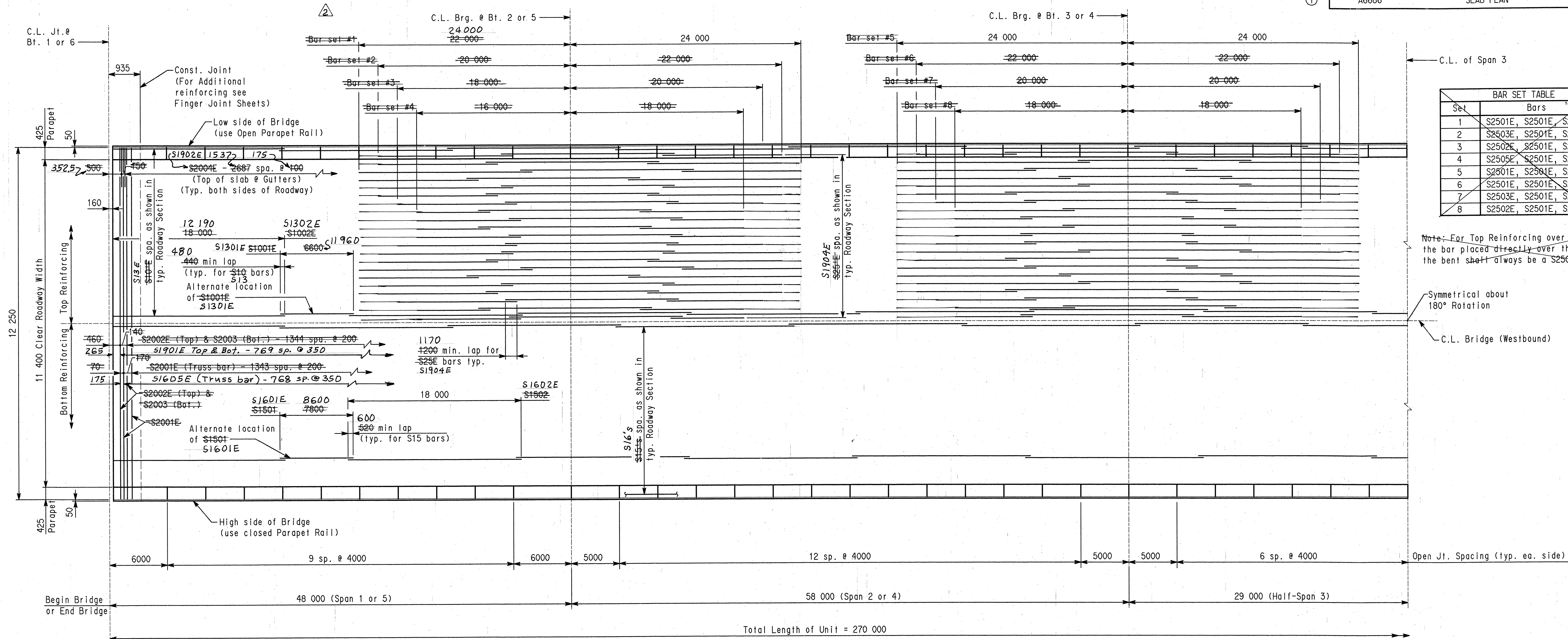
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WESTBOUND BRIDGE
SHEET 3 OF 5
270m CONTINUOUS PLATE
GIRDER (GIRDER ELEVATION)
US. HWY. 412
ARKANSAS STATE HIGHWAY
COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN NO. TBI DATE: 12/96
CHECKED BY: CLN DATE: 12/96 SCALE: No Scale
DESIGNED BY: MLR DATE: 12/96
BRIDGE NO. A6686 DRAWING NO. 39278 39278

Note: For details of concrete parapet rail, see drwg. no. 38201 39281

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	Fed Road Dist. No.	State	Fed. and Proj No.	Sheet No.	Total Sheets
7-14-97	7/24/97				Ark.		56	118
12-4-98	2-11-99							
				Job No.		040236		
				A6686		SLAB PLAN	38200 39280	



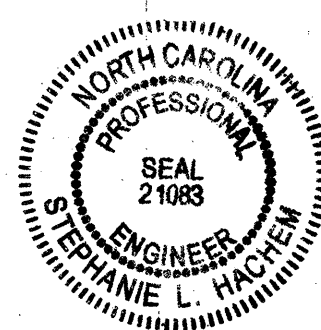
Set	Bars
1	S2501E, S2501E, S2502E
2	S2503E, S2501E, S2502E
3	S2502E, S2501E, S2504E
4	S2505E, S2501E, S2506E
5	S2501E, S2501E, S2507E
6	S2501E, S2501E, S2508E
7	S2503E, S2501E, S2508E
8	S2502E, S2501E, S2509E

Note: For Top Reinforcing over Bents, the bar placed directly over the C.L. of the bent shall always be a S2501E bar.

Symmetrical about 180° Rotation

C.L. Bridge (Westbound)

SLAB PLAN
Scale Length 1:200, Width 1:100
(Parapet Reinforcing not shown for clarity)



Arkansas Temporary Permit Number 96-45,
Issued 12-15-96.
Signature of Holder *Stephanie L. Richey* 7/21/97

6 x 25 Type 6 Joint Sealer. See Sections 501.02 (h) and 501.05 (j) of the Standard Specification. Joint Sealer shall be measured and paid for as class S(AE) Concrete. If slab joints are to be sawed, they shall be sawed before any vehicular traffic is allowed on the unit.

SLAB JOINT DETAIL
No Scale

△ Rev. dwg. no. WRR 7-14-97
△ Rev. Reinf. Bars. LDF 12-4-98

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

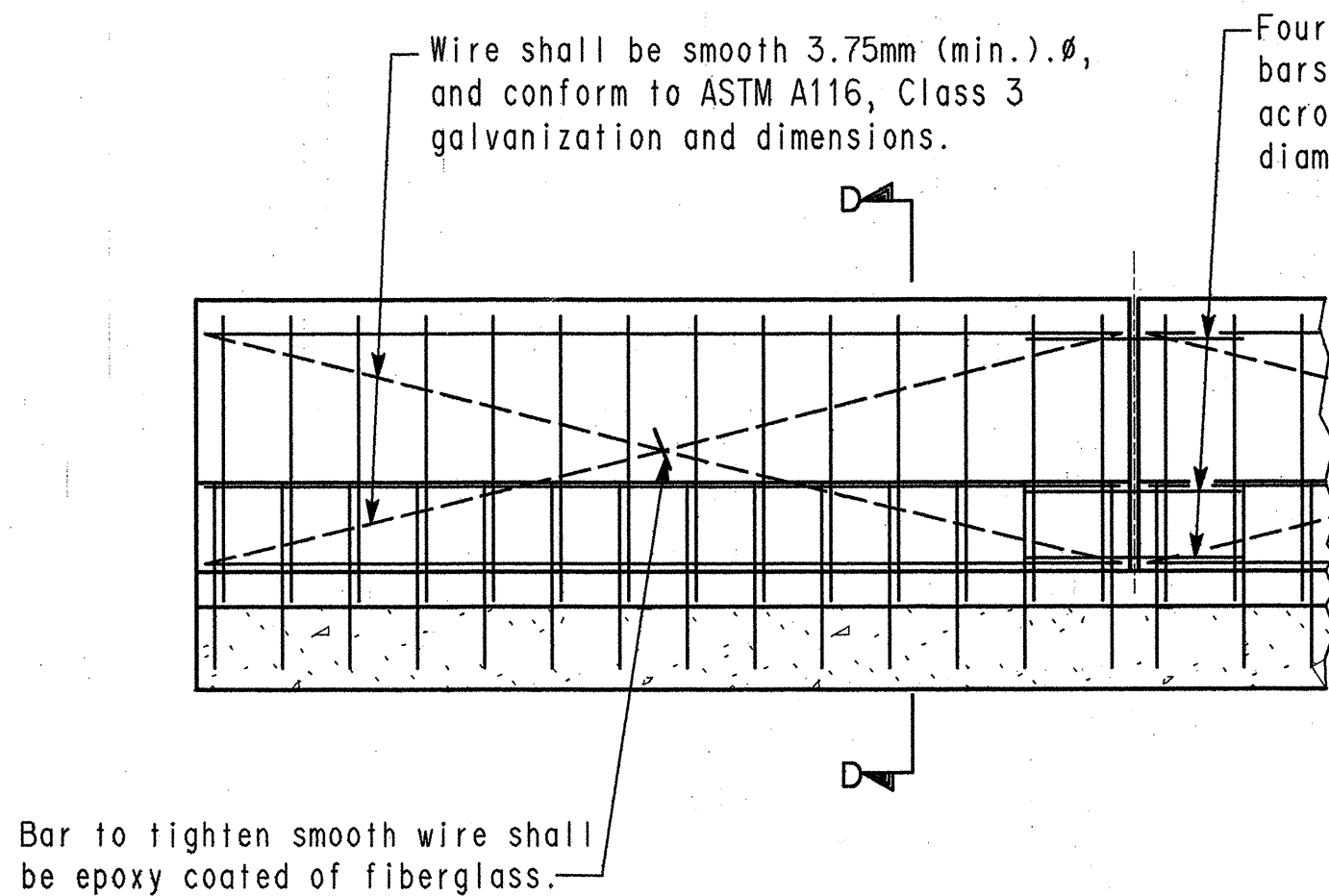


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WESTBOUND BRIDGE
SHEET 5 OF 5
270m CONTINUOUS PLATE GIRDER (SLAB PLAN)
US. HWY. 412
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

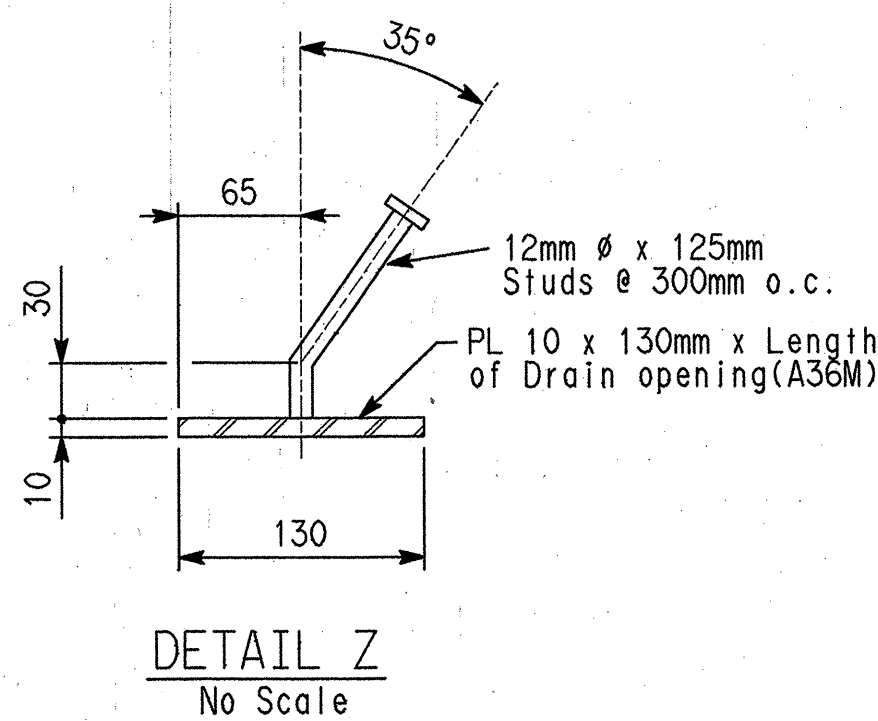
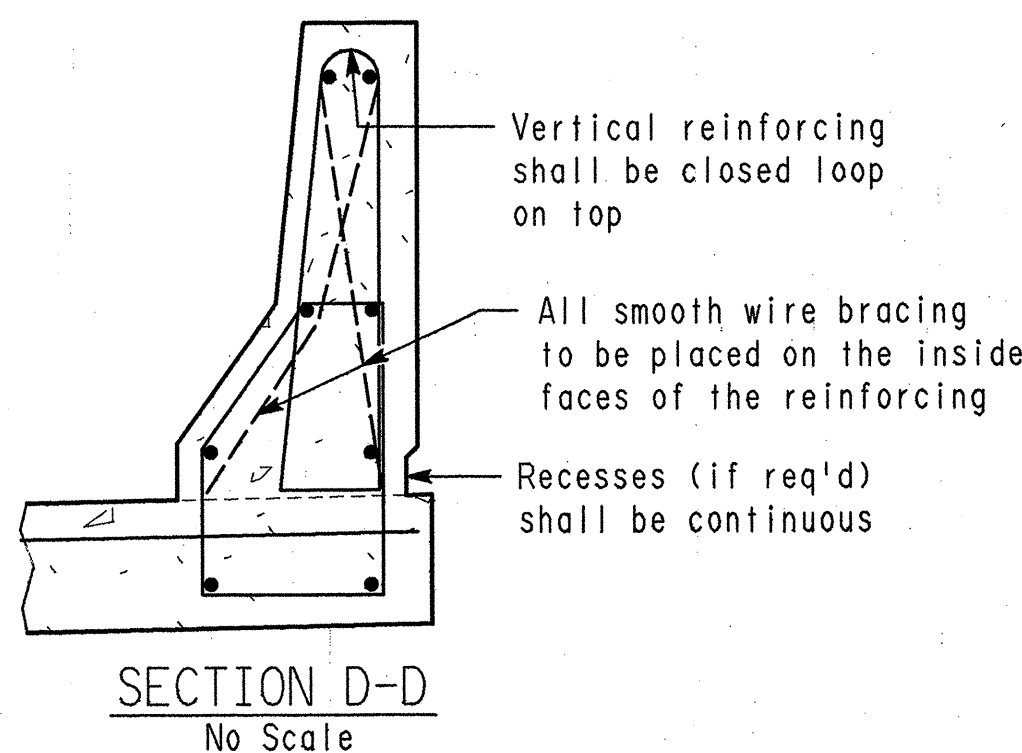
DRAWN NO. TBI DATE: 12/96
CHECKED BY: CLN DATE: 12/96 SCALE: As Noted
DESIGNED BY: SLH DATE: 12/96
BRIDGE NO. A6686 DRAWING NO. 38200 39280

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	Fed Road Dist. No.	State	Fed. and Proj No.	Sheet No.	Total Sheets
7-14-97	7-24-97				Ark.		57	118
12-4-98	2-11-99							
				Job No.		040236		
				A6686		PARAPET	38281	39281

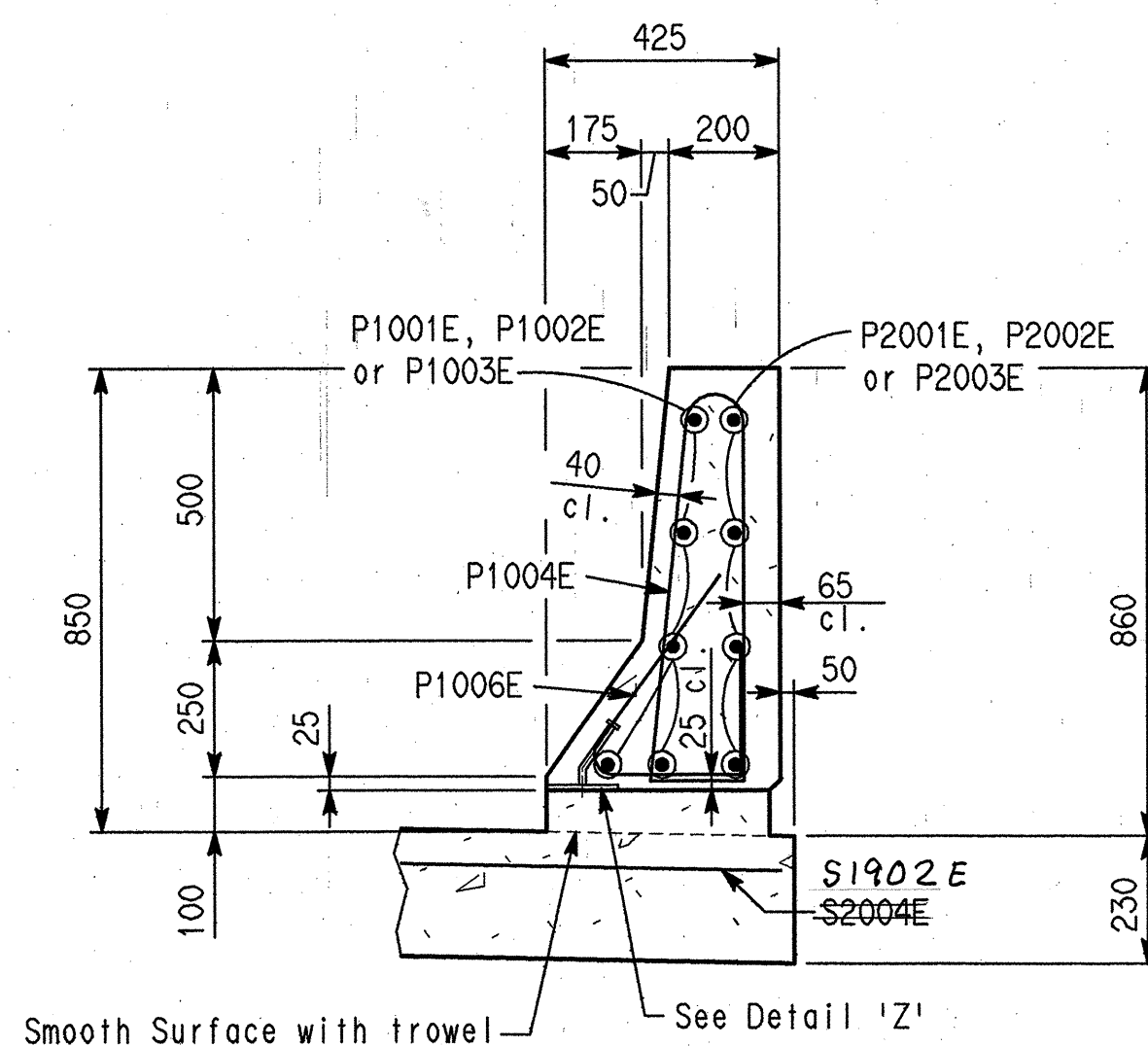
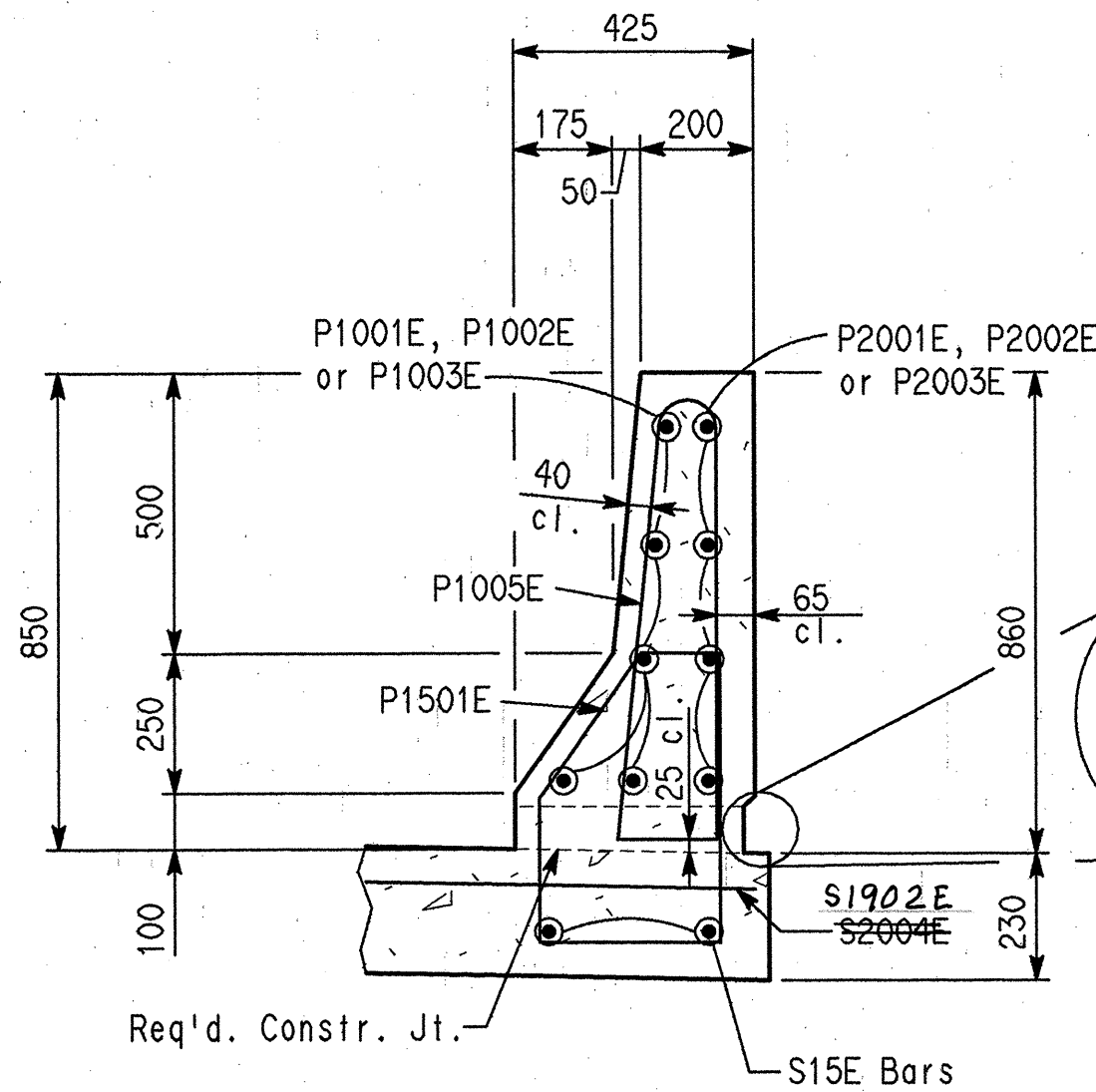
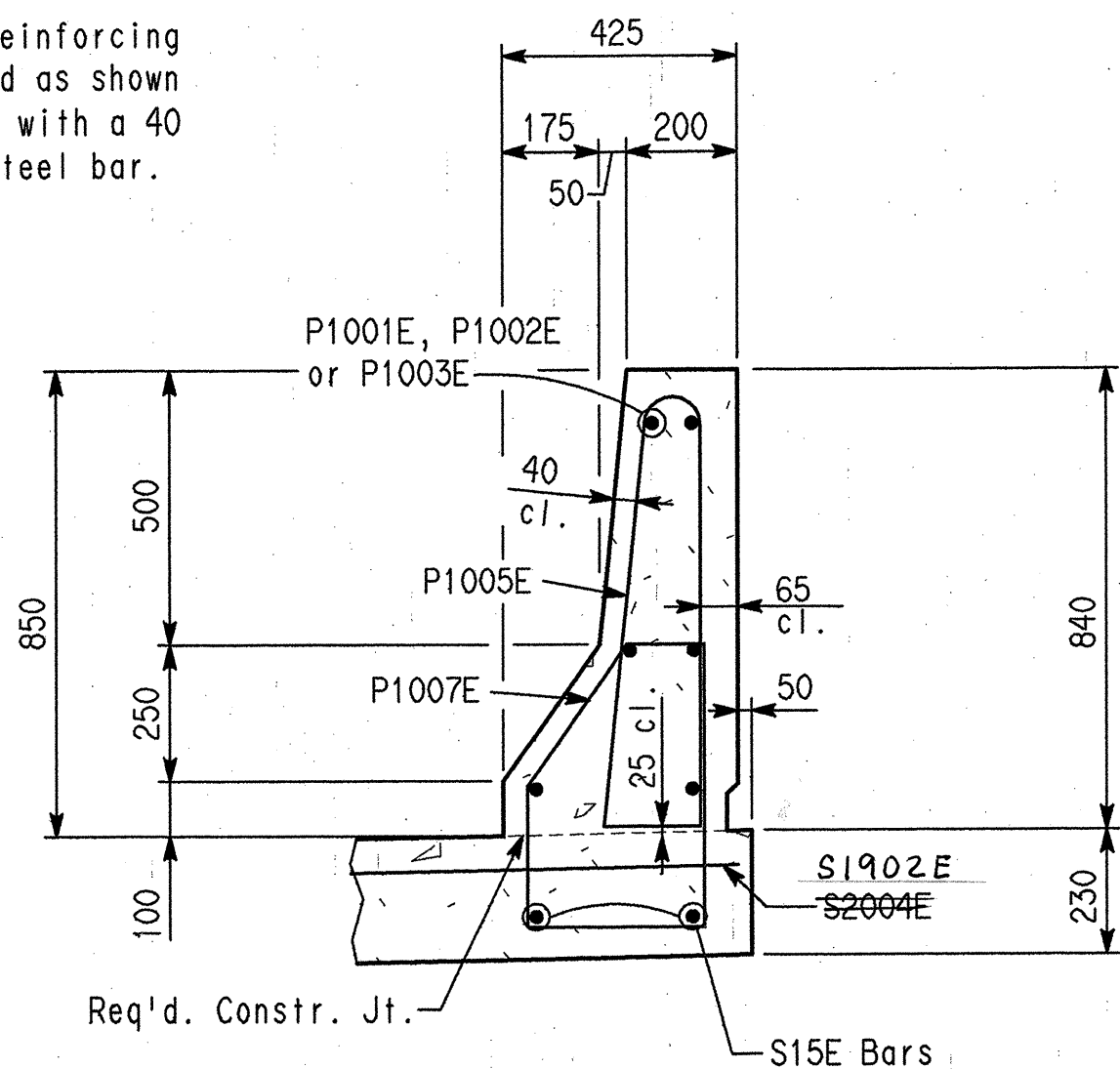


All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a min. width of 6mm. to control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

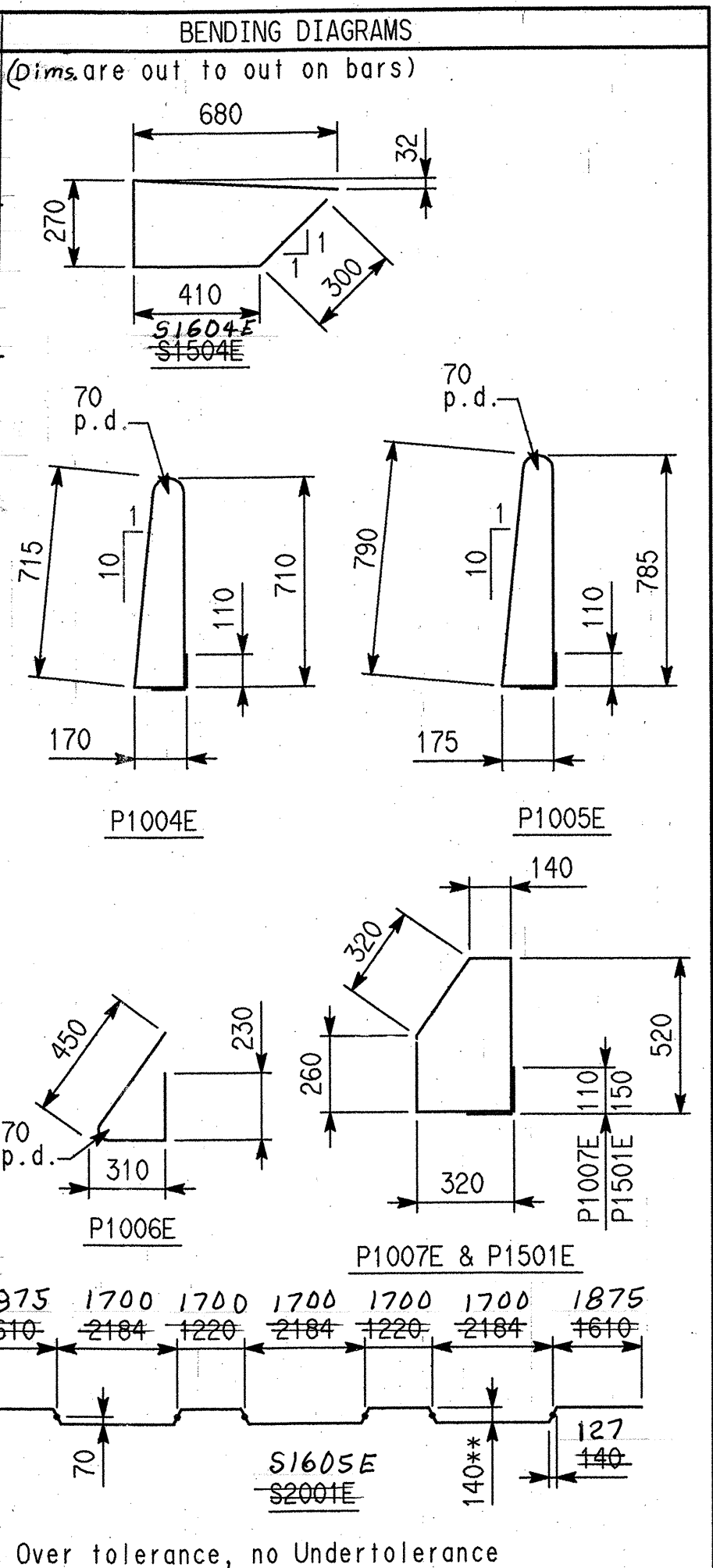
DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL (OPEN OR CLOSED)
No Scale



Note:
The surfaces of the 10mm 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 the item "Structural Steel in Beam Spans (AASHTO M270)."



MARK	MARK	NO. REQ'D	LENGTH	P.D.	LENGTH
S1301E	S1001E	43	6600	Str.	11960
S1302E	S1002E	646	946	Str.	12190
S1601E	S1501	53	7800	Str.	8600
S1602E	S1502	795	18000	Str.	18000
S1603E	S1503E	18	3200	Str.	3200
S1604E	S1504E	64	1600	Str.	1600
S1605E	S2001E	1346	769	120	12520
S1901E	S2002E	1347	1540	Str.	12250
S1902E	S2003E	1347	12140	Str.	
S2201E	S2004E	5380	3076	Str.	1720
	S2005E	8	12140	Str.	12250
	S2501E	232	18000	Str.	
	S2502E	84	12400	Str.	
	S2503E	44	14000	Str.	
	S2504E	12	10000	Str.	
	S2505E	24	10800	Str.	
	S2506E	24	7600	Str.	
	S2507E	16	14400	Str.	
	S2508E	44	10400	Str.	
	S2509E	24	8000	Str.	
	P1001E	594	3900	Str.	
	P1002E	66	4900	Str.	
	P1003E	44	5900	Str.	
	P1004E	448	1800	50	
	P1005E	2590	1920	50	
	P1006E	448	990	50	
	P1007E	1350	1660	50	
	P1501E	1240	1690	70	
	P2001E	216	3900	Str.	
	P2002E	24	4900	Str.	
	P2003E	16	5900	Str.	
S1904E		720	16780	Str.	



Arkansas Temporary Permit Number 96-45,
Issued 12-15-96.
Signature of Holder *SLH* 2/1/97

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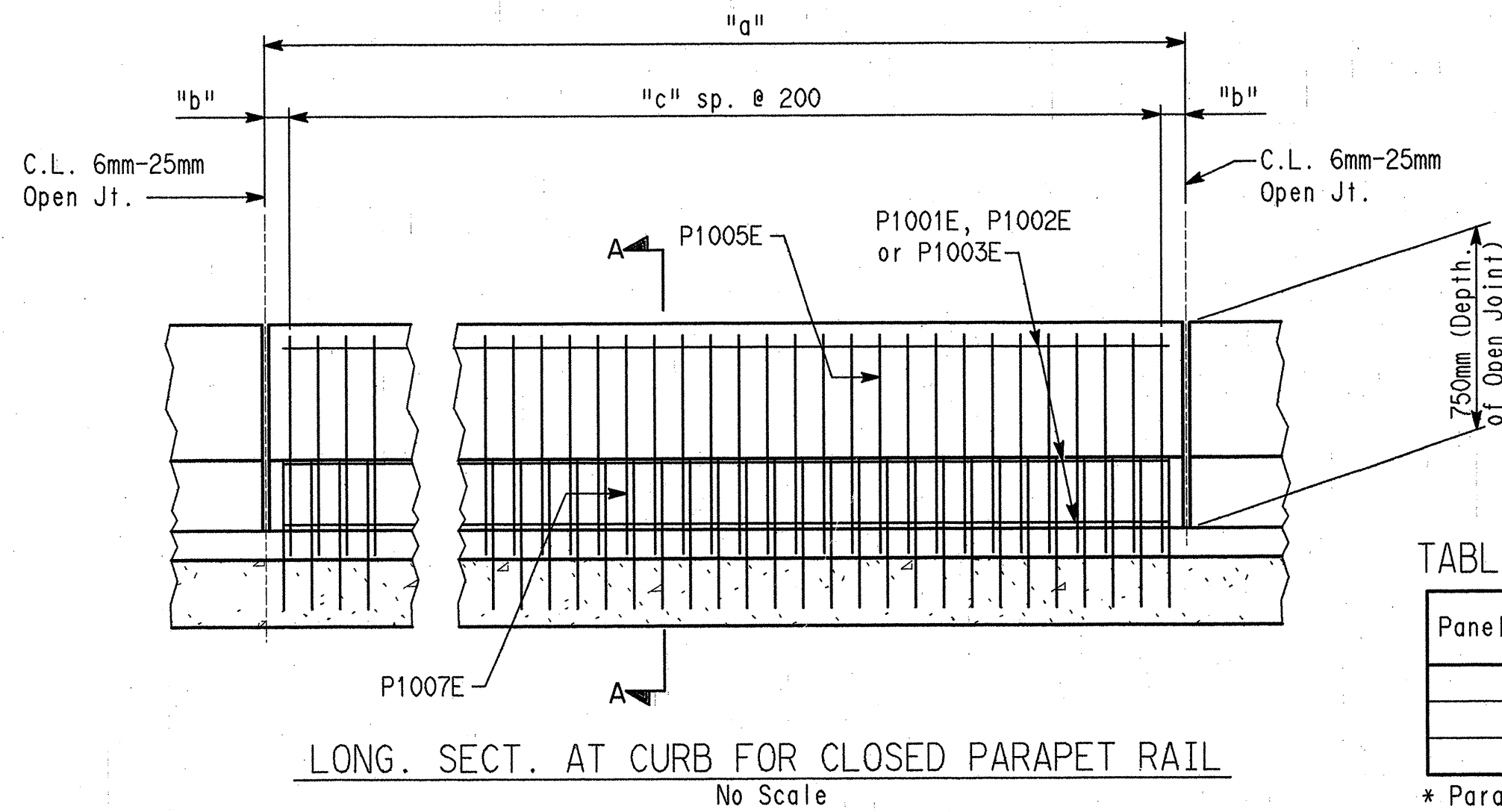
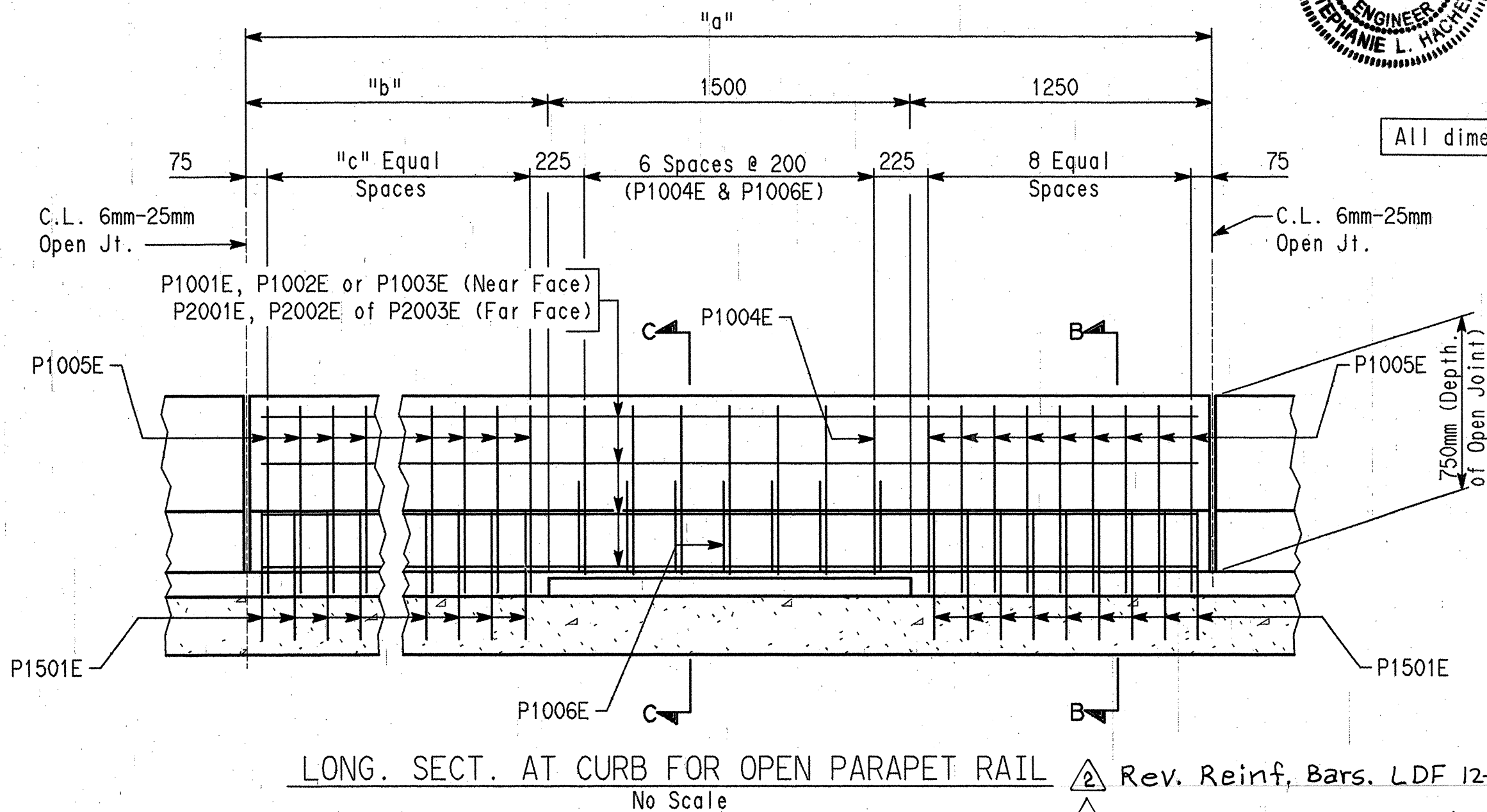


TABLE OF PARAPET RAIL VARIABLES

Panel Length "a"	Open Panel		Closed Panel	
	"b"	"c"	"b"	"c"
4000	1250	8	100	19
5000	*2250	14	100	24
6000	*3250	21	100	29

* Parapet shall be constructed so that dimension "b" is started at the C.L. of Bent.



Rev. Reinf. Bars. LDF 12-4-98

Rev. dwg. no. WRR 7-14-97



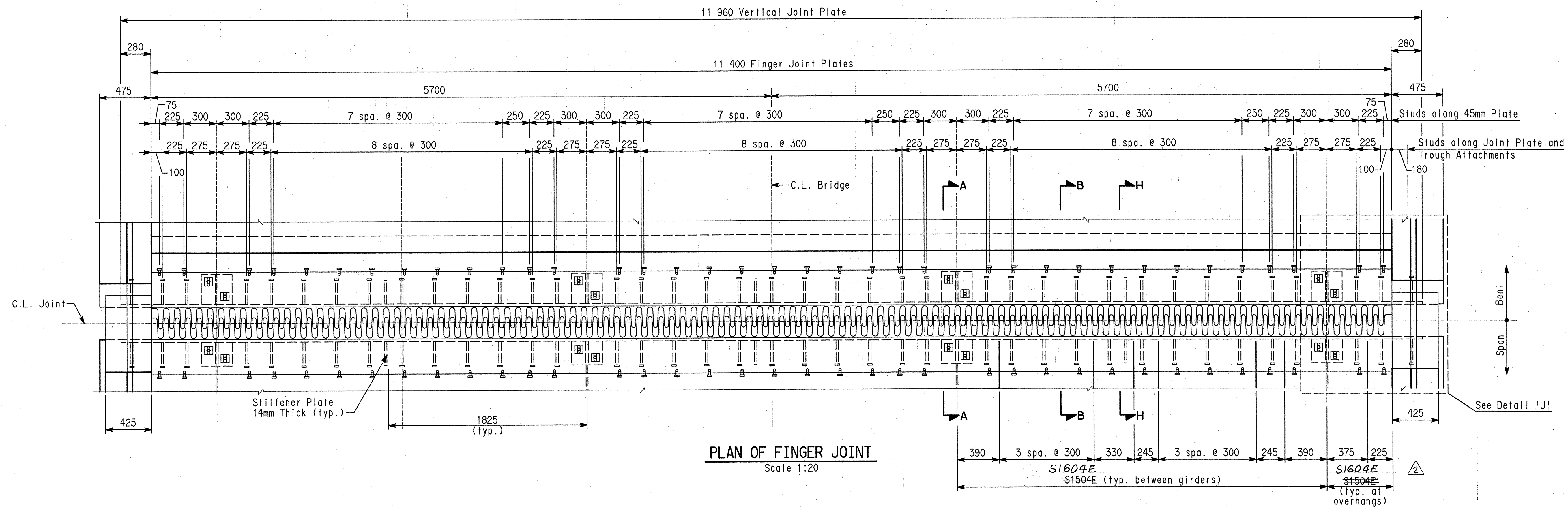
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WESTBOUND BRIDGE NOTES AND PARAPET DETAILS

US. HWY. 412
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN NO. TBI DATE: 12/96
CHECKED BY: SLH DATE: 12/96 SCALE: As Noted
DESIGNED BY: CLN DATE: 12/96
BRIDGE NO. A6686 DRAWING NO. 38281 39281

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	Fed Road Dist. No.	State	Fed. and Proj No.	Sheet No.	Total Sheets
7/14/97	7-24-97				Ark.		58	118
12-4-98	2/11/99					040236		
				Job No.				
				A6686		FINGER JOINT	30202	31282



NOTES

Unless otherwise noted, structural steel shall be AASHTO M270, Grade 345W and shall be fabricated in accordance with Section 807 of the Standard Specifications for Highway Construction.

Bolts, nuts and washers in trough shall be ASTM A278, type 304 stainless steel.

Material for troughs shall be nylon reinforced neoprene 6mm thick sheet.

Finger plates shall be flame cut from one plate by a single cut of a machine guided torch. Sharp corners are to be removed by grinding. Width of cut shall be 6mm.

Joint shall be fabricated to follow the grade and the transverse contour of the roadway.

To assure that all bedding areas and recesses of the structural elements are completely filled with well compacted concrete, adequate venting, vibrating and hand packing of concrete into these areas shall be done.

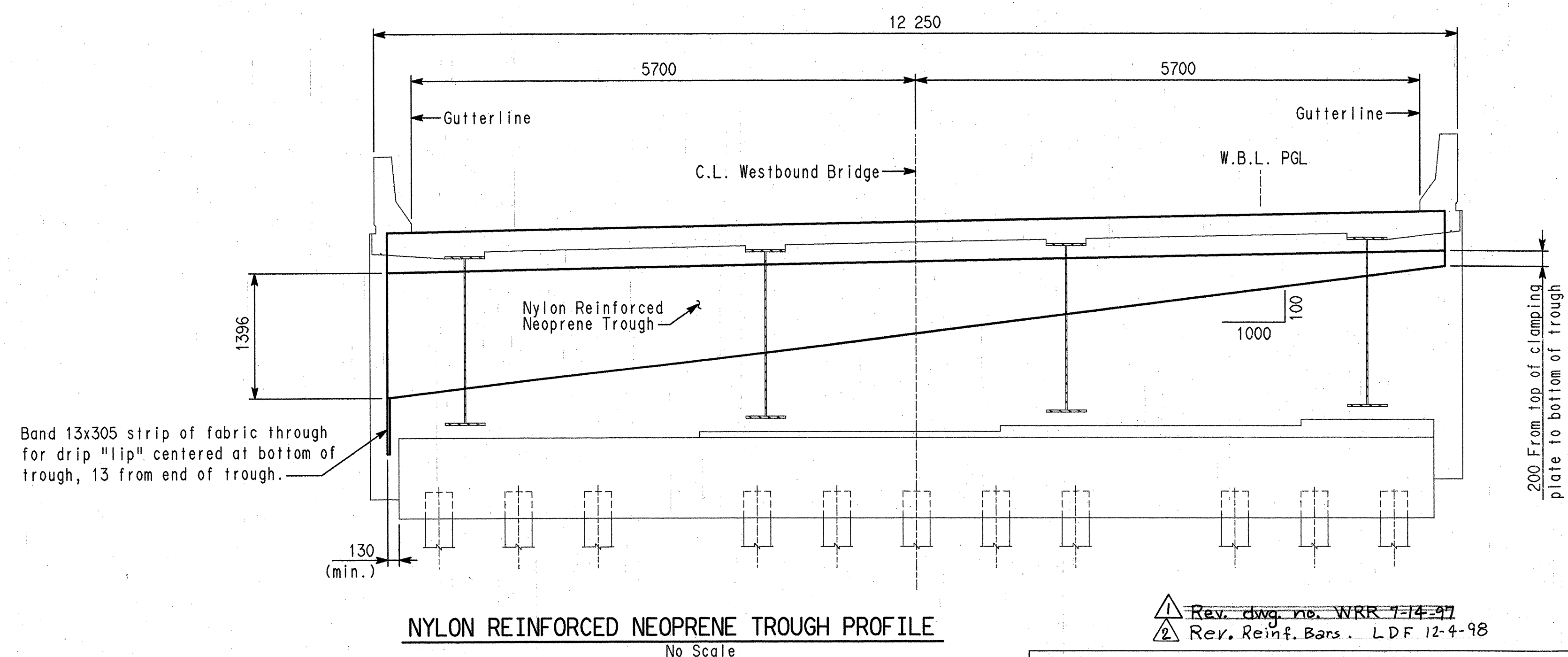
The studs shall be granular flux filled, solid fluxed, or equal and automatically end welded to the plates in accordance with the recommendations of the manufacturer.

Anchor bolts shall be cast in the position shown when the concrete is placed in the backwall.

Units shall be shipped to the job site preassembled.

Temporary L102 x 76 x 12.7 at maximum 1.5m centers shall be shop welded. After erection and adjustment, bolts shall be tightened. After concrete has been set, angles shall be removed by chipping connection welds and grinding surfaces smooth.

Set Joint and place blockout concrete after the deck slab in the adjacent span has been placed. Before placing blockout concrete, apply epoxy bonding agent to transverse construction joint.



Arkansas Temporary Permit Number 96-45,
Issued 12-15-96.
Signature of Holder *[Signature]* 2/3/97

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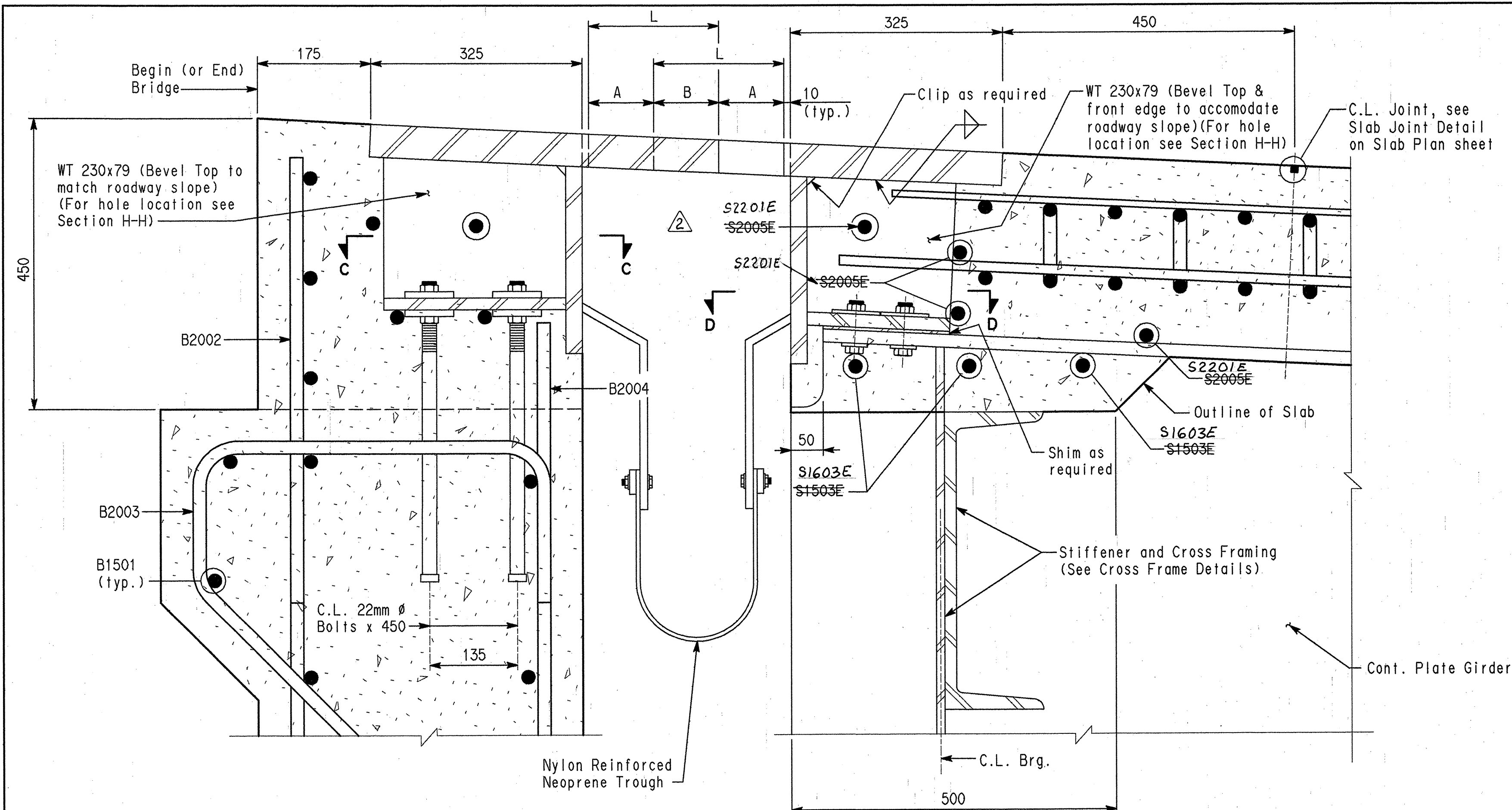
**WESTBOUND BRIDGE
SHEET 1 OF 3
FINGER JOINT
(PLAN & PROFILE)**
US. HWY. 412
**ARKANSAS STATE HIGHWAY
COMMISSION**
LITTLE ROCK, ARKANSAS

DRAWN NO. TBI DATE: 12/96
CHECKED BY: CLN DATE: 12/96 SCALE: As Noted
DESIGNED BY: SLH DATE: 12/96
BRIDGE NO. A6686 DRAWING NO. 30202 31282

Rev. dwg. no. WRR 7-14-97
Rev. Reinf. Bars. LDF 12-4-98

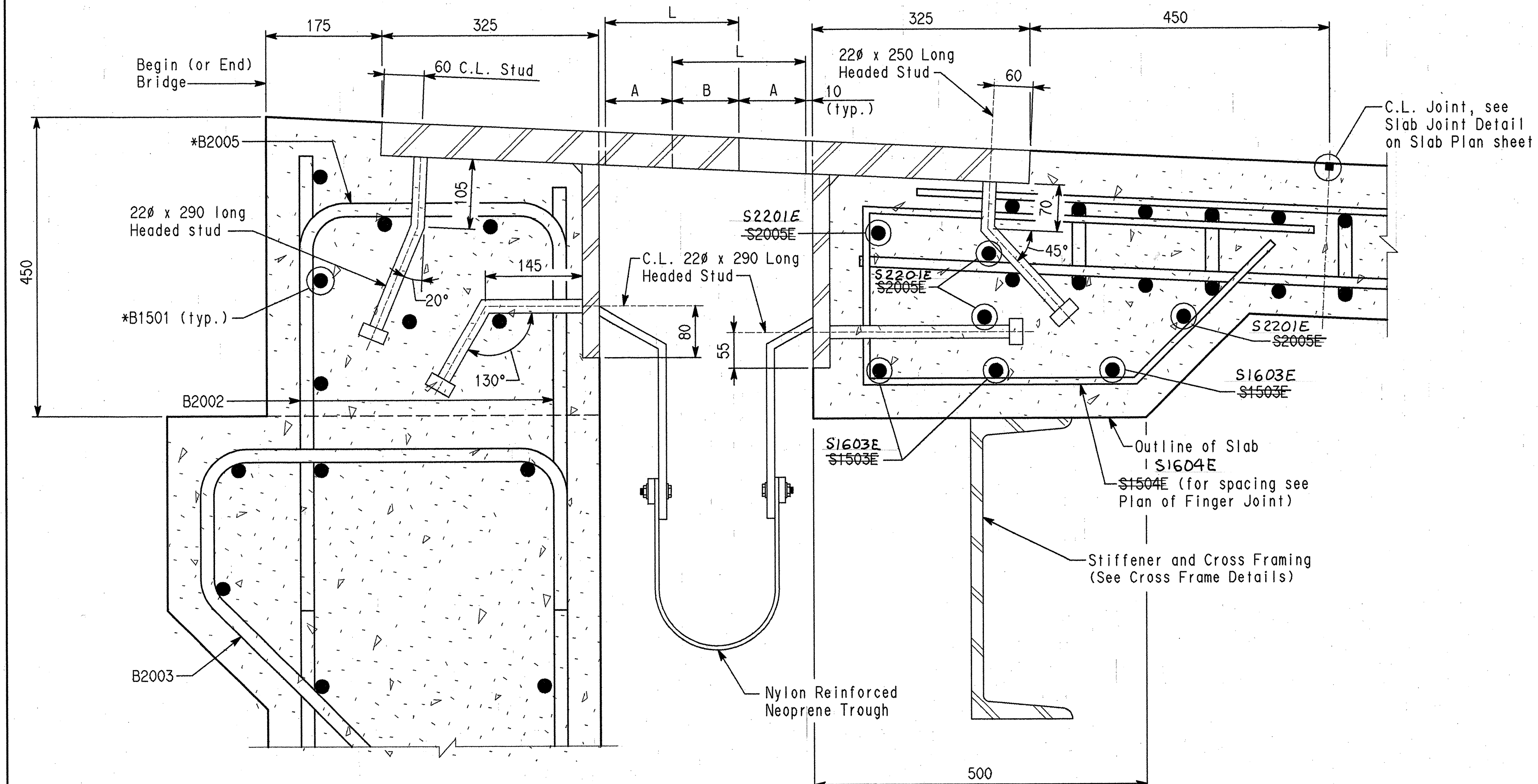
All dimensions are in millimeters (mm) unless otherwise noted.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	Fed Road Dist. No.	State	Fed. and Proj No.	Sheet No.	Total Sheets
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				Job No.		040236		
				A6686		FINGER JOINT	38283	39283

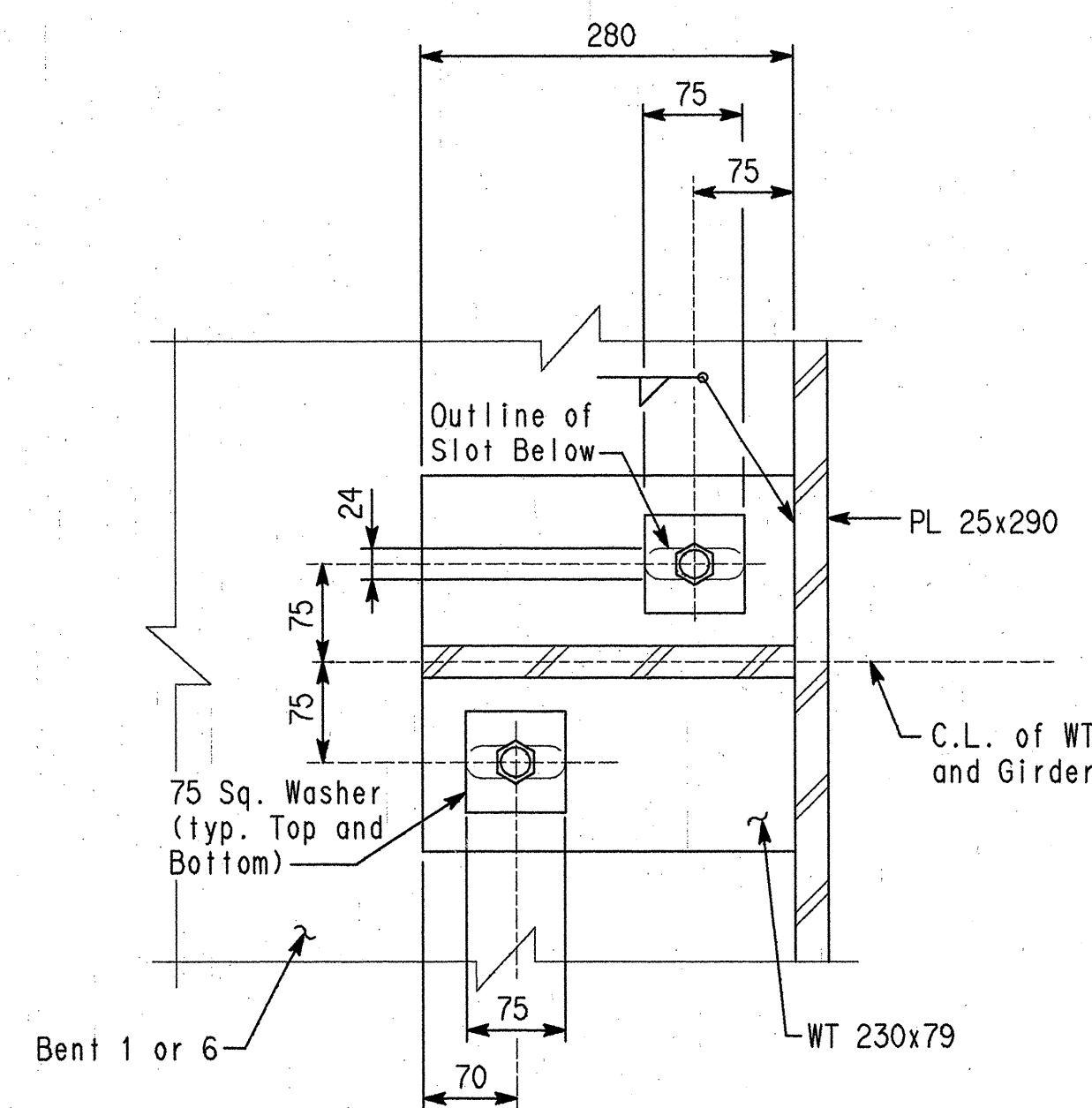


* See Bent 1 or 6
for Bar List.

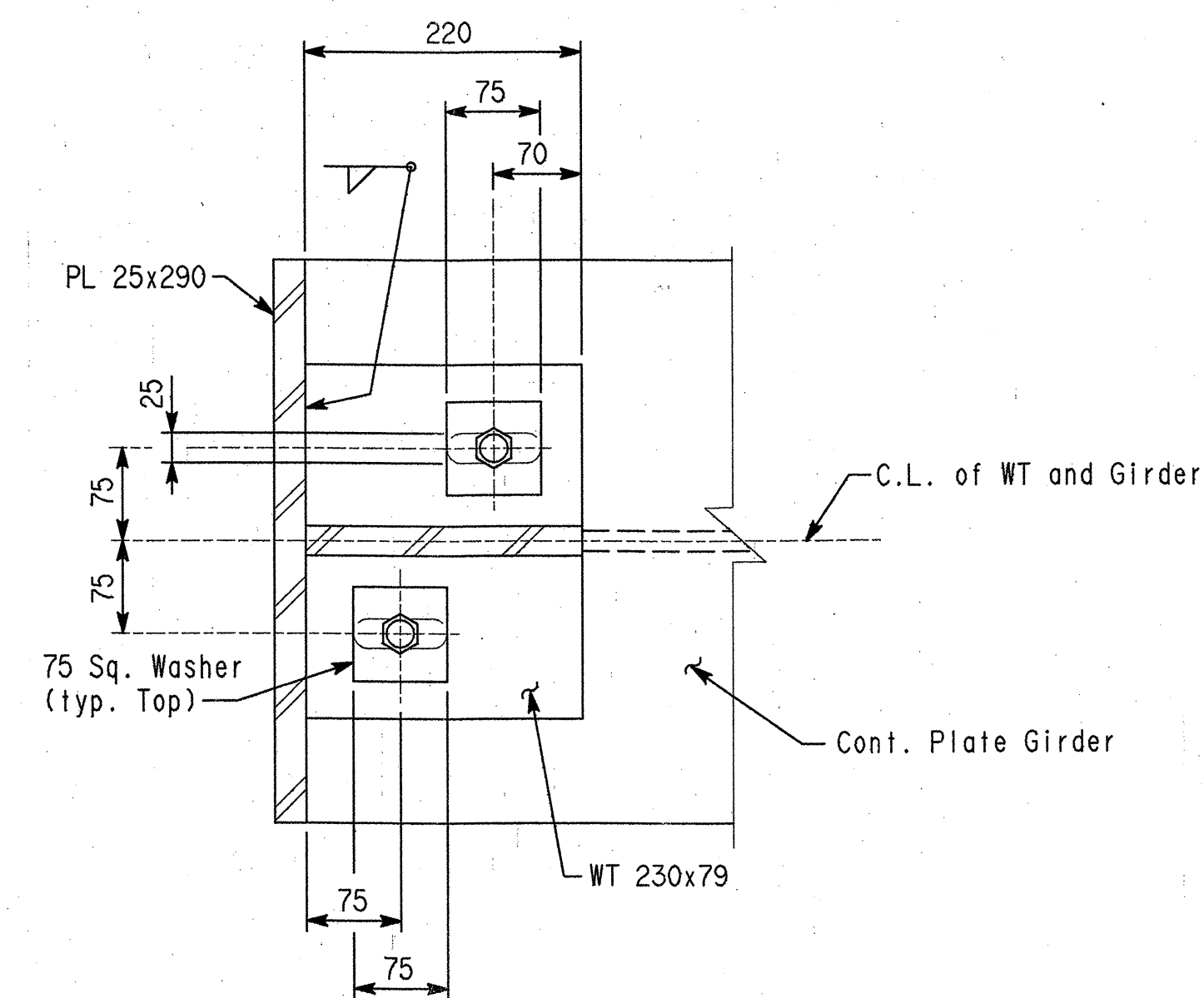
SECTION A-A
For End Bent Reinforcing (See Bent 1 or 6)
See Slab Plan for Bar Spacing



SECTION B-B
For End Bent Reinforcing (See Bent 1 or 6)
See Slab Plan for Bar Spacing

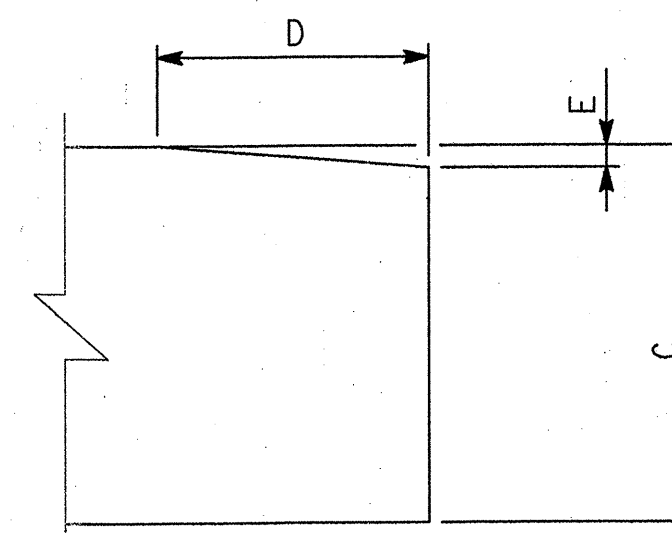


SECTION C-C



SECTION D-D

A	B	C	D	E	L
95	110	45	40	3	205



FINGER BEVEL DETAIL

1 Rev. dwg. no. WRR 7-14-97
2 Rev. Reinf. Bars. LDF 12-4-98



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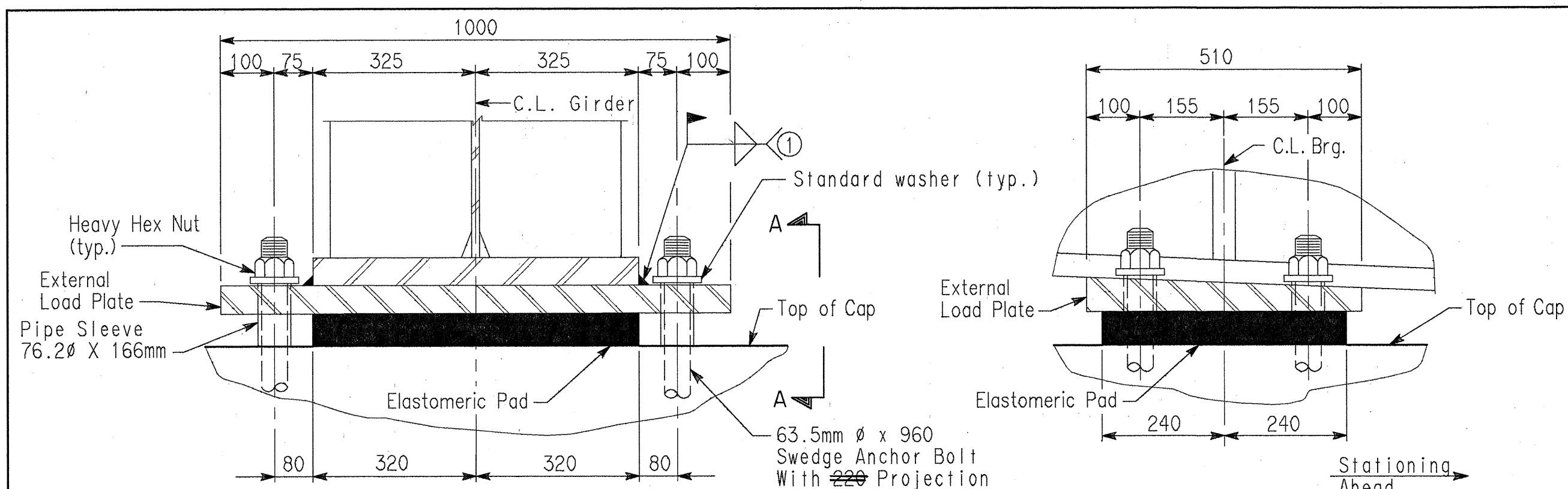
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**WESTBOUND BRIDGE
SHEET 2 OF 3
FINGER JOINT
(DETAILS)**
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LITTLE ROCK, ARKANSAS

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DESIGNED BY: SLH DATE: 12/96
BRIDGE NO. A6686 DRAWING NO. 38283 39283

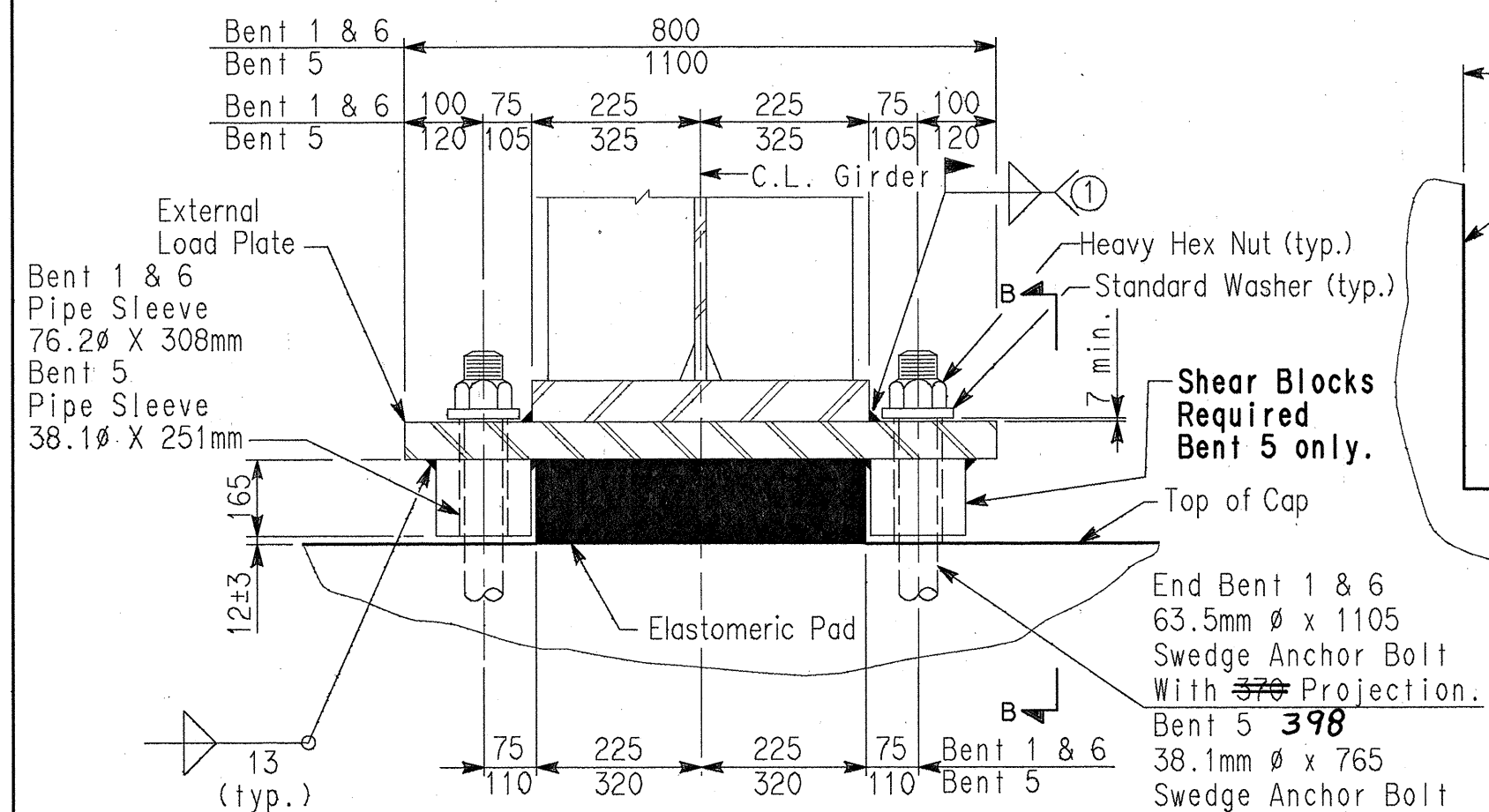
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10-23-97	10-29-97							
				Job No.	040236			
				A6686	BEARING PADS		39261	39285



FIXED
(Bent 2,3 & 4)

SECTION A-A
(Bent 2,3 & 4)

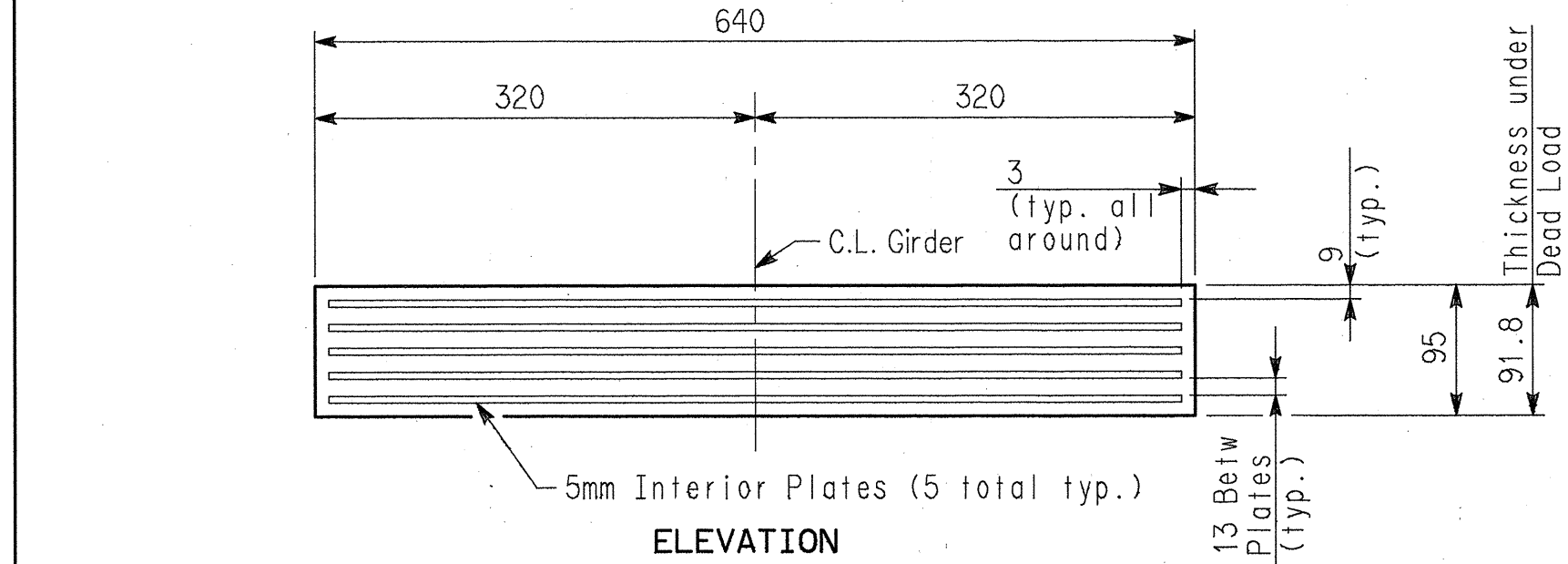
① Care shall be taken to ensure that the external load plate is in full and complete contact with the girder flange before welding begins.



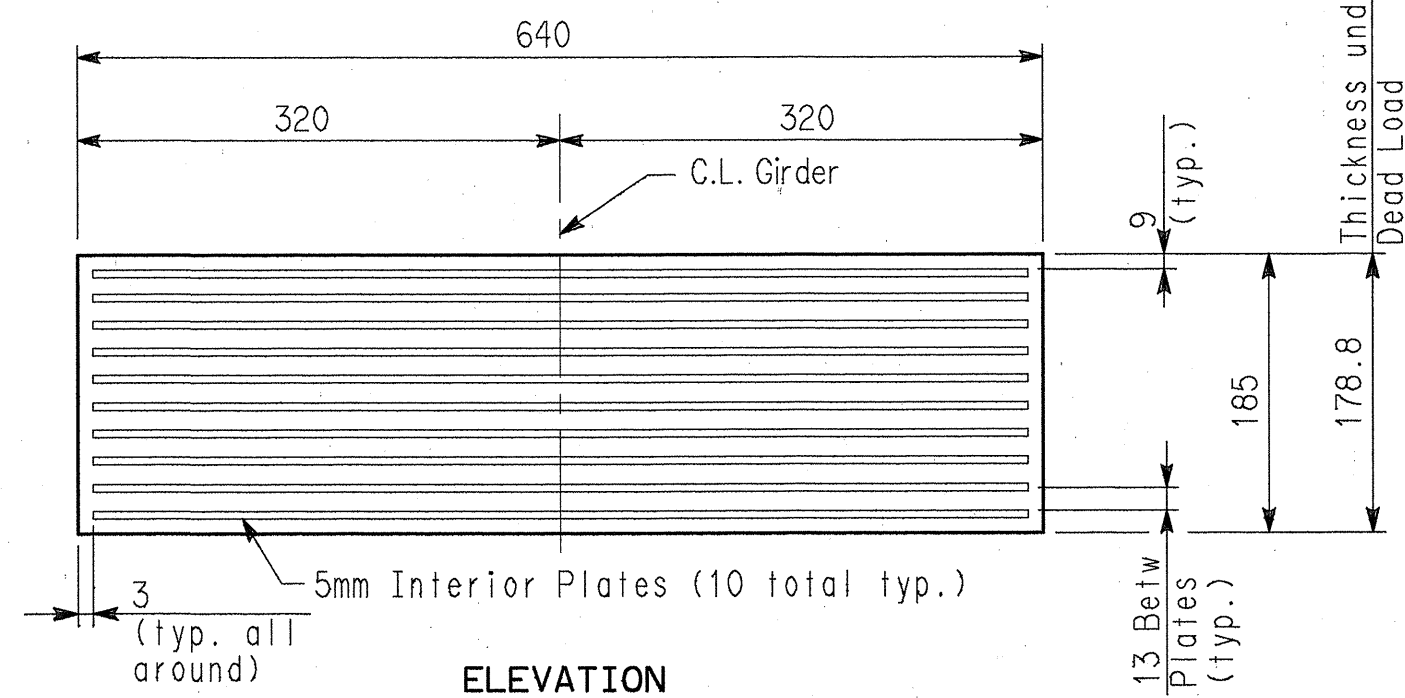
EXPANSION
(Bent 1,5 & 6)

SECTION B-B
(Bent 1 & 6 shown, Bent 5 similar)

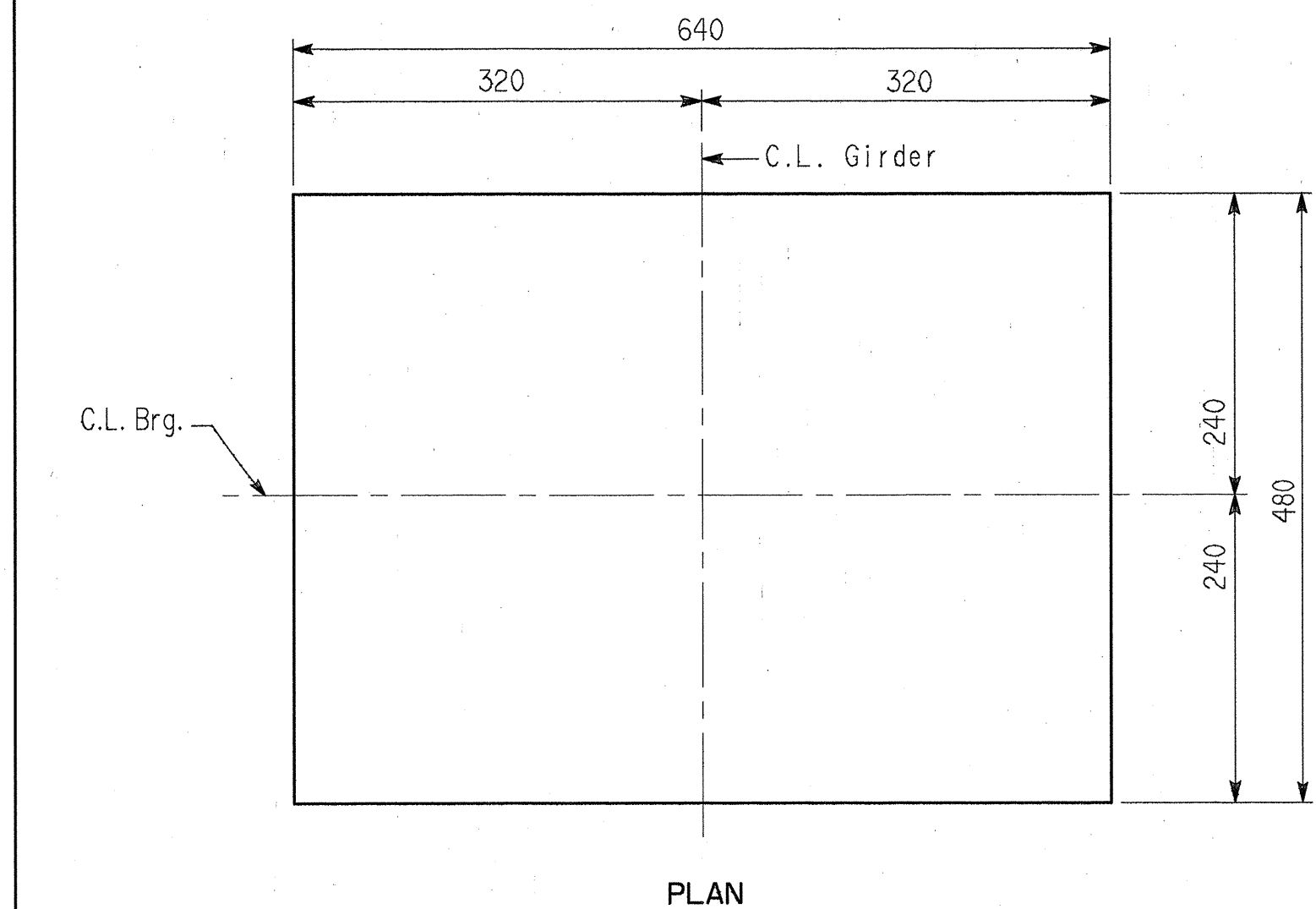
Bevel External Load Plate to match slope of girder after dead load deflection. The location of the Anchor Bolts in relation to the holes in the External Load Plate shall correspond with the temperature at the time of erection. At 15° C the holes should center on the anchor bolts.



ELEVATION

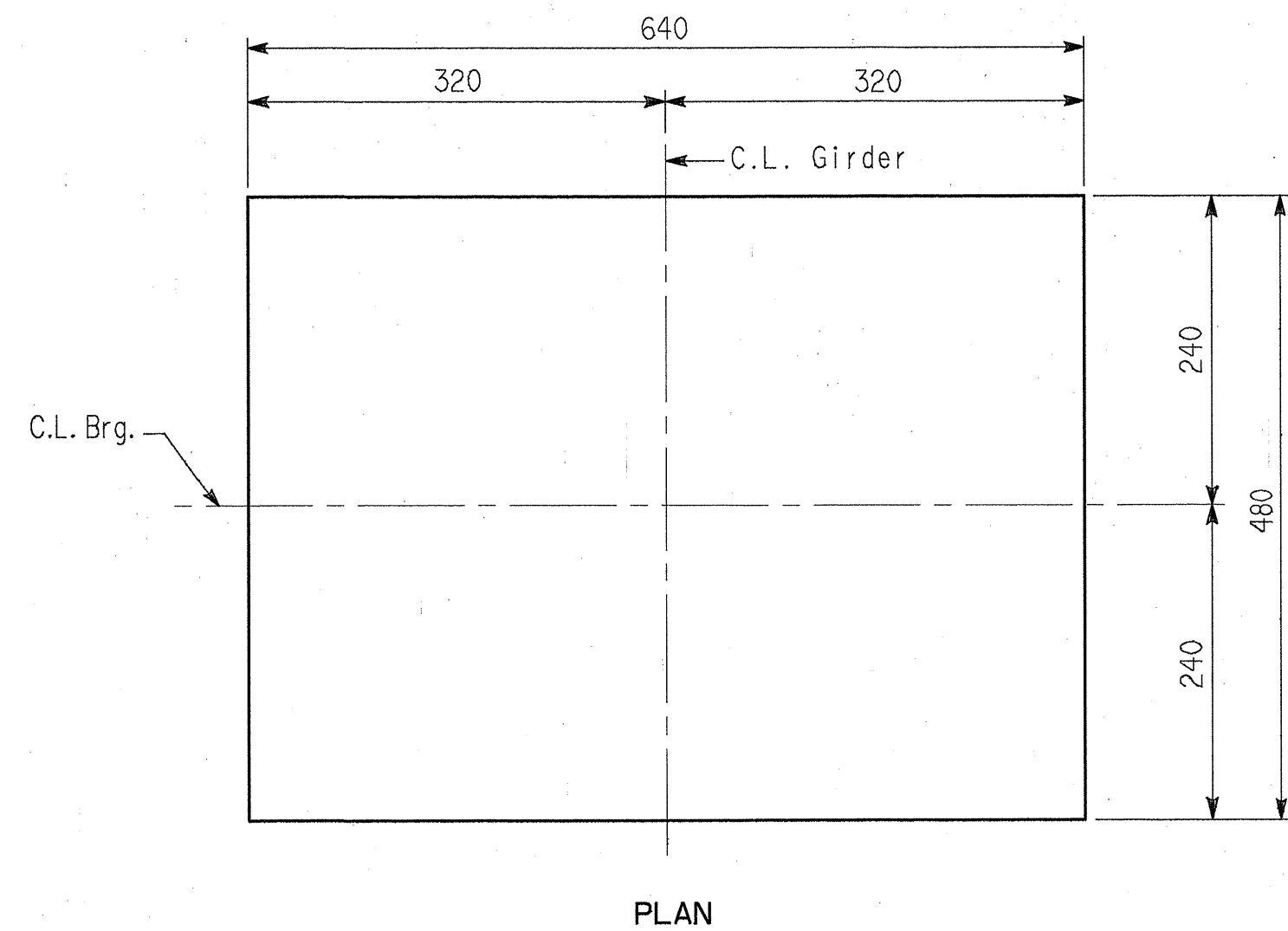


ELEVATION



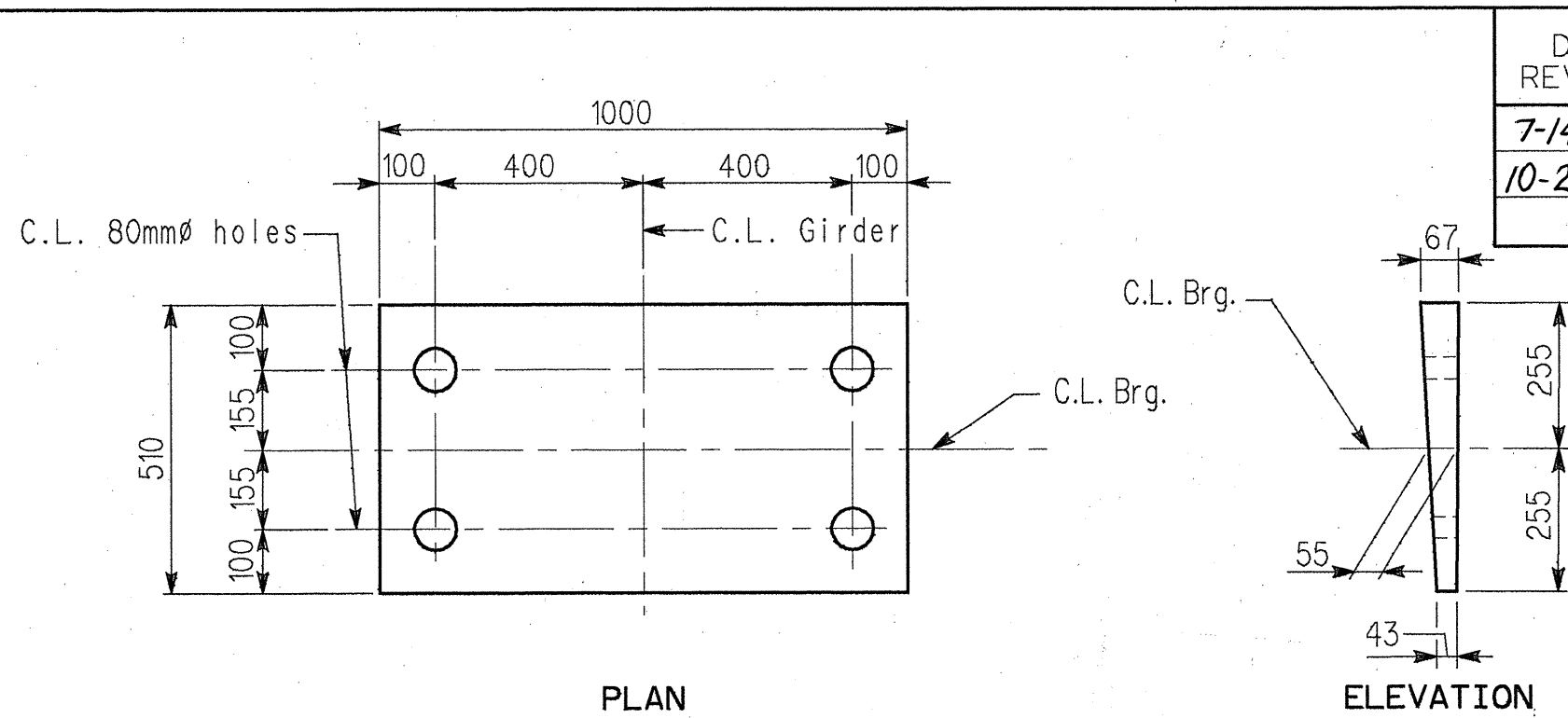
PLAN

ELASTOMERIC BEARING PAD
(Bent 2,3 & 4)



PLAN

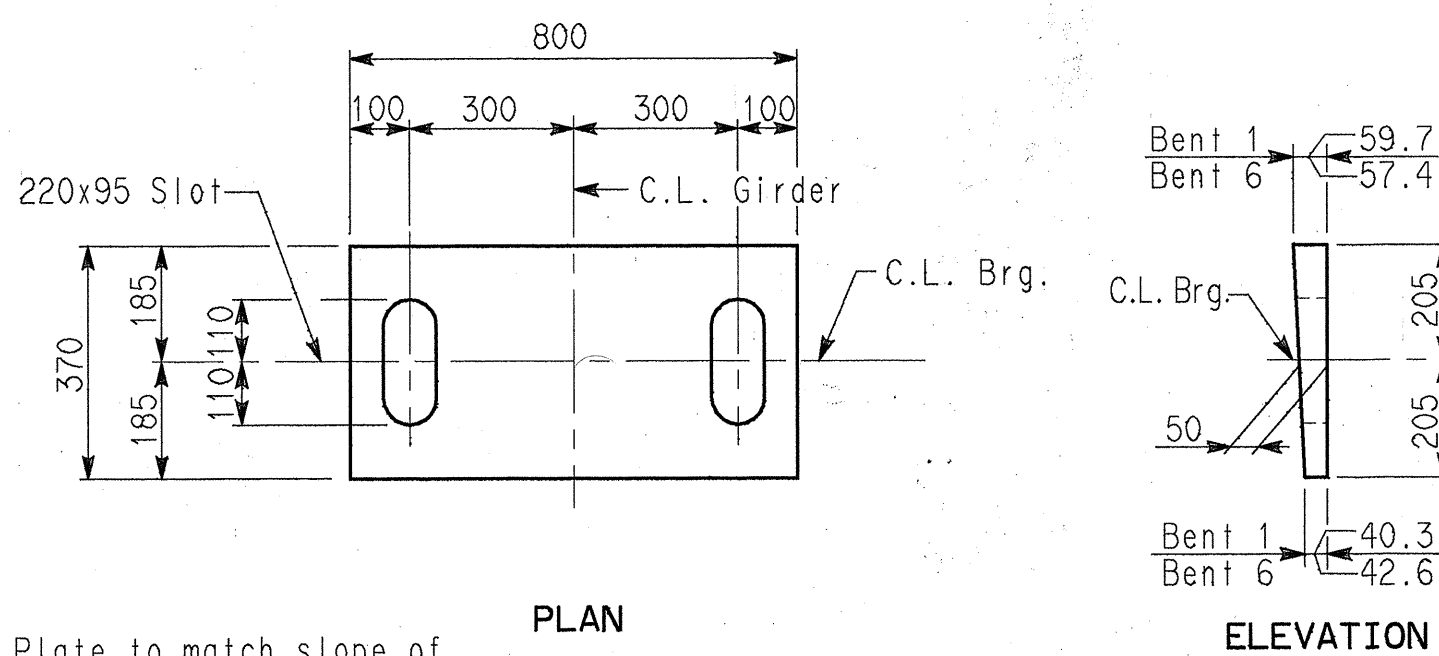
ELASTOMERIC BEARING PAD
(Bent 5)



PLAN

ELEVATION

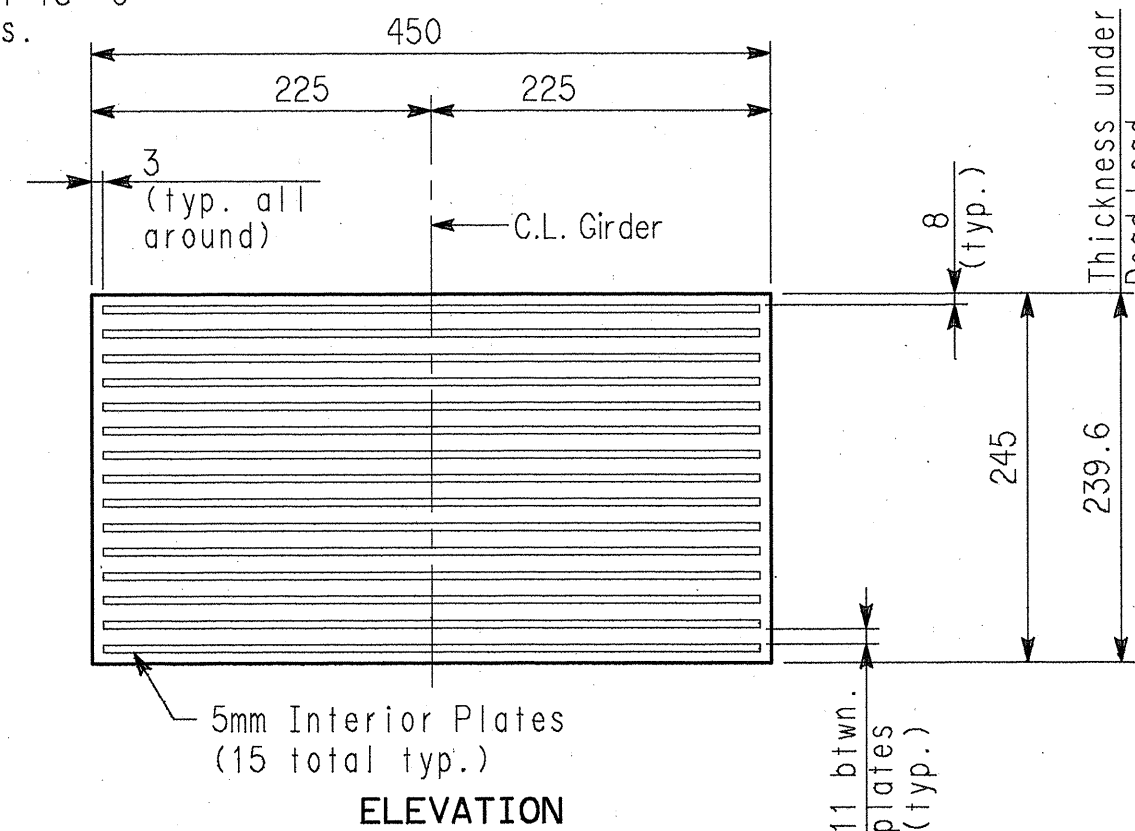
EXTERNAL LOAD PLATE
(Bent 2,3 & 4)



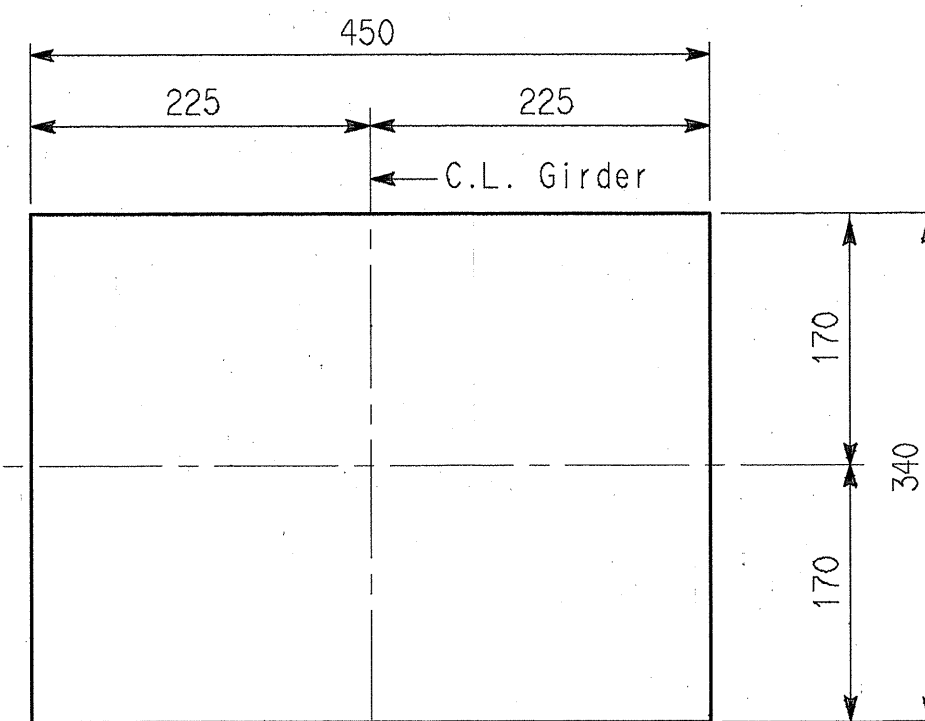
PLAN

ELEVATION

EXTERNAL LOAD PLATE
(Bent 1 & 6)



ELEVATION

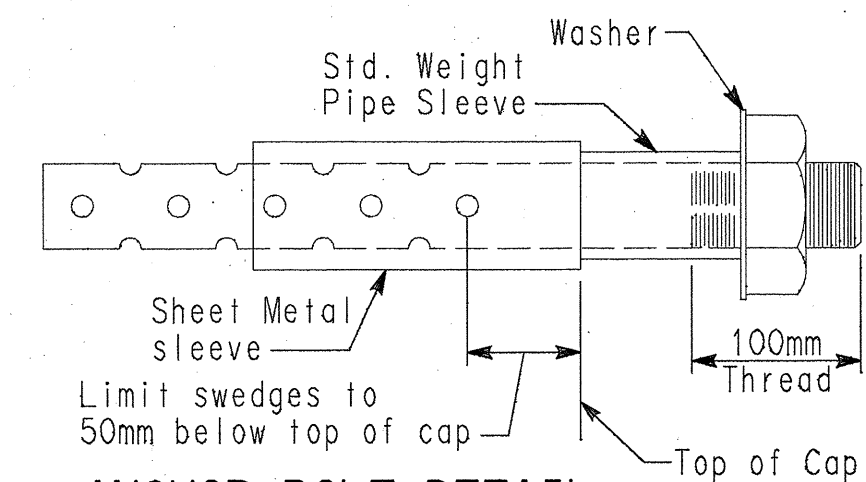


PLAN

ELASTOMERIC BEARING PAD
(Bent 1 & 6)

Note: Anchor bolts may be cast in place or drilled and grouted into place. If Anchor bolts are to be drilled and grouted into place, the 100mmx290mm Galvanized Sheet Metal sleeve shall be cast in place as shown. It shall be dry packed with styrofoam or urethane foam or approved equal prior to pouring 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. The bolts shall then be set and fixed with Portland Cement grout or an approved non-shrink grout, completely filling the holes.
If anchor bolts are to be cast in place, the 100mmx290mm Galvanized Sheet Metal Sleeve will not be required. Galvanized Sheet metal Sleeves are to be considered subsidiary to the item "Structural Steel in Girder Span (M270, Gr. 345W)"

EXTERNAL LOAD PLATE
(Bent 5)



ANCHOR BOLT DETAIL
No Scale

NOTES

Anchor bolts, Washers and Nuts shall be in accordance with subsection 807.07 of the specifications and shall be paid for in the unit price bid for "Structural Steel in Plate Girder Spans (M270, Gr. 345W)". Indentations shall be circular with rounded bottoms and staggered as shown in the details. Anchor bolts shall be Grade 105. If nuts conform to AASHTO M291 M, they shall be Property Class 8S or better, and Anchor Bolt threads shall be in accordance with ANSI B.18.2.4.6M.

Pipe sleeves shall be ASTM A53, Grade B and shall be galvanized to conform to AASHTO M232, Class C, or AASHTO M298, Grade 50.

External Load Plates shall be AASHTO M270 345W Steel. External Load Plates will not be paid for directly, but will be considered as part of the item "Elastomeric Bearings".

AASHTO M270 External Load Plates shall be cleaned in accordance with Subsection 807.84(e).

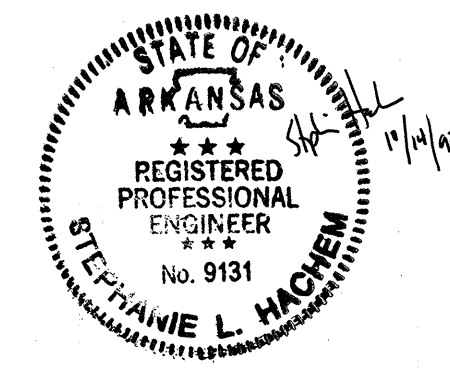
Elastomeric Pads shall conform to Section 808 for the Standard Specifications and shall be paid for at the unit price bid for "Elastomeric Bearings". The elastomeric pads must be vulcanized to the external load plate

Interior Plated shall be in accordance with subsection 808.02 of the standard specifications.

External load plates with shear blocks 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(b) for painted steel and 807.84(e) for unpainted grade 345W steel.

WORKING LOADS ON BEARINGS

BENT	INTERIOR	EXTERIOR
1 & 6	885Kn	788Kn
2 & 5	2755Kn	2484Kn
3 & 4	2716Kn	2450Kn



Anchor bolts, shear blocks, sleeves, loads revised. MEC 10-23-97

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

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WESTBOUND BRIDGE
SHEET 1 OF 1
BEARING PADS

US. HWY. 412
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARKANSAS

DRAWN NO. TBI DATE: 10/97
CHECKED BY: SLH DATE: 10/97 SCALE: 1:10
DESIGNED BY: CLN DATE: 10/97
BRIDGE NO. A6686 DRAWING NO. 39261 39285