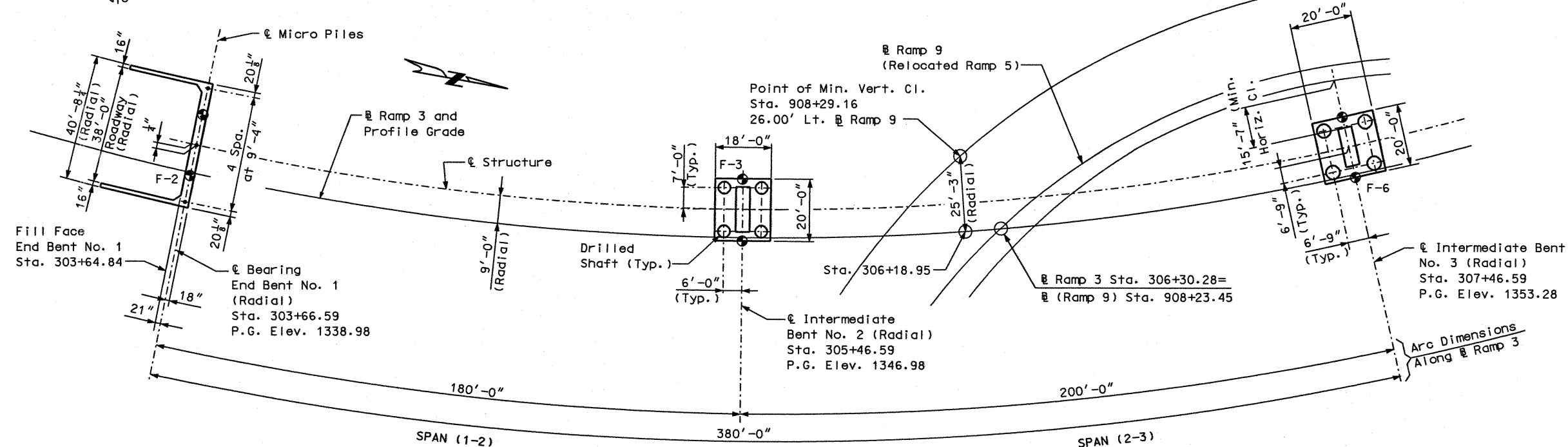
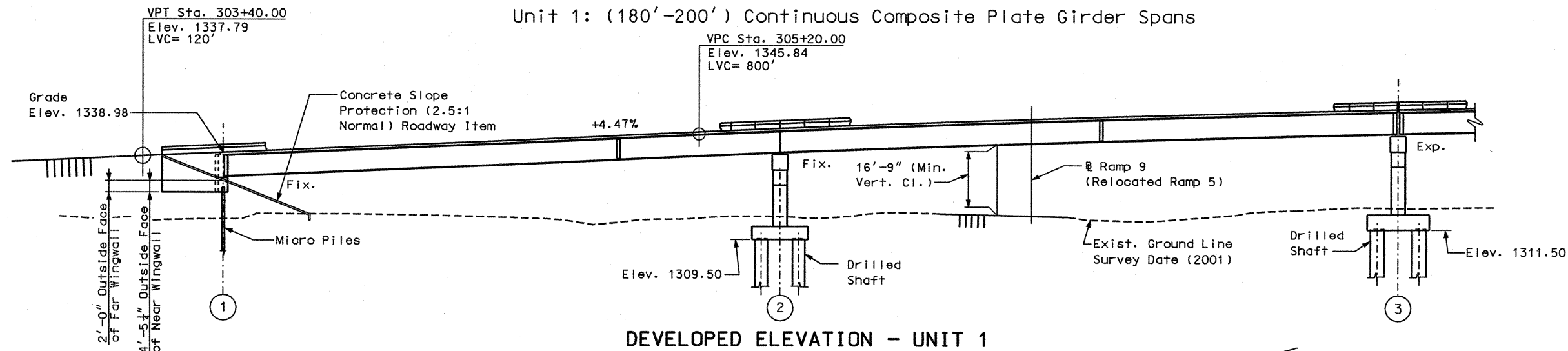


MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

Unit 1: (180'-200') Continuous Composite Plate Girder Spans

STATE	PROJ. NO.	SHEET NO.
MO		81
SEC./SUR. 3/4 TWP. 29N RGE. 21W		



"⊕" indicates location of Borings.

Notice and Disclaimer Regarding Boring Log Data.

The locations of all subsurface borings for this structure are shown on the bridge plan sheet for this structure. Boring data for the numbered locations is shown on sheet Nos. 6 thru 8.

The boring data for all locations indicated, as well as any other boring logs or other factual records of subsurface data and investigations performed by the department for the design of the project, is available from the Project Contact upon written request as outlined in the Project Special Provisions. No greater significance or weight should be given to the boring data depicted on the plan sheets than is subsurface data available from the district or elsewhere.

The Commission does not represent or warrant that any such boring data accurately depicts the conditions to be encountered in constructing this project. A Contractor assumes all risks it may encounter in basing its bid prices, time or schedule of performance on the boring data depicted here or those available from the district, or on any other documentation not expressly warranted, which the Contractor may obtain from the Commission.

DETAILED: GJD JULY 2005
CHECKED: JEF DEC. 2005

JACOBS CIVIL INC.
ST. LOUIS, MO.

For General Notes, Estimated Quantities, Estimated Quantities for Slab on Steel and Footing data, see Sheet No. 5.

Intermediate Bent No. 4 skewed 40°-00'-00" to a radial line at Sta. 309+46.59. All remaining Bents radial. For Location Sketch, see Sheet No. 2.

Roadway fill shall be completed to the final roadway section and up to the elevation of the bottom of the concrete approach beam within the limits of the structure and for not less than 25 feet in back of the fill face of the end bents before any piles are driven for any bents falling within the embankment section.

CURVE DATA - RAMP 3

P.I. STA. = 313+93.26
P.C. STA. = 301+86.46
P.T. STA. = 318+32.80
Δ = 6°-35'-08.6" (LT.)
D = 6°-35'-08.6"
L = 1,646.34'
T = 1,206.80'
R = 870.00'
S.E. = 0.06 1/1'

BENCH MARK - U.S.G.S. DATUM

BM #4 CHISELED SQUARE ON NORTH SIDE OF D.I. IN MEDIAN
I-44 STATION 1326+00 ELEV. 1303.46

BRIDGE OVER RAMP 9 ROUTE 65 AND I-44

STATE ROAD FROM RTE. 744 TO RTE. C

ABOUT 0.8 MILES NORTH OF RTE. 744

PROJECT NO.

JOB NO. J8U0548B

STA. 303+64.84
(RAMP 3)
RTE. 65

STD. 706.35
STD. 617.10
STD. 611.60
STD. 609.00

A7024

SHEET NO. 1 OF 77

GREENE COUNTY

DATE: 2/6/06

P:\c1x21400\700cadd\709str\A7024 Ramp 3\A7024_GPE01_J8U0548B.dgn

18:48 01-FEB-2006



2/1/06

STATE	PROJ. NO.	SHEET NO.
MO		B2

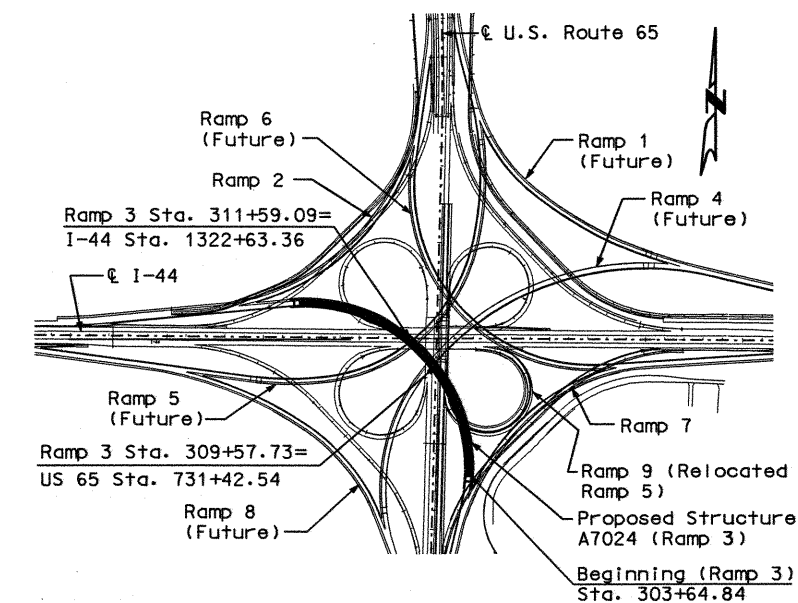


P.I. STA. = 313+93.26
P.C. STA. = 301+86.46
P.T. STA. = 318+32.80
 $\Delta = 6^{\circ}-35'-08.6''$ (LT.)
D = $6^{\circ}-35'-08.6''$
L = 1,646.34'
T = 1,206.80'
R = 870.00'
S.E. = 0.06 ' / '

" " indicates location of Borings.

For General Notes, Estimated Quantities, Estimated Quantities
for Slab on Steel and Footing data, see Sheet No. 5.

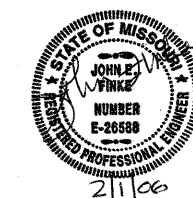
Intermediate Bent No. 4 skewed 40°-00'-00" to a radial line at Sta. 309+46.59. All remaining Bents radial.



LOCATION SKETCH

Notes:

For Notice and Disclaimer Regarding Boring
Log Data, see Sheet No. 1.

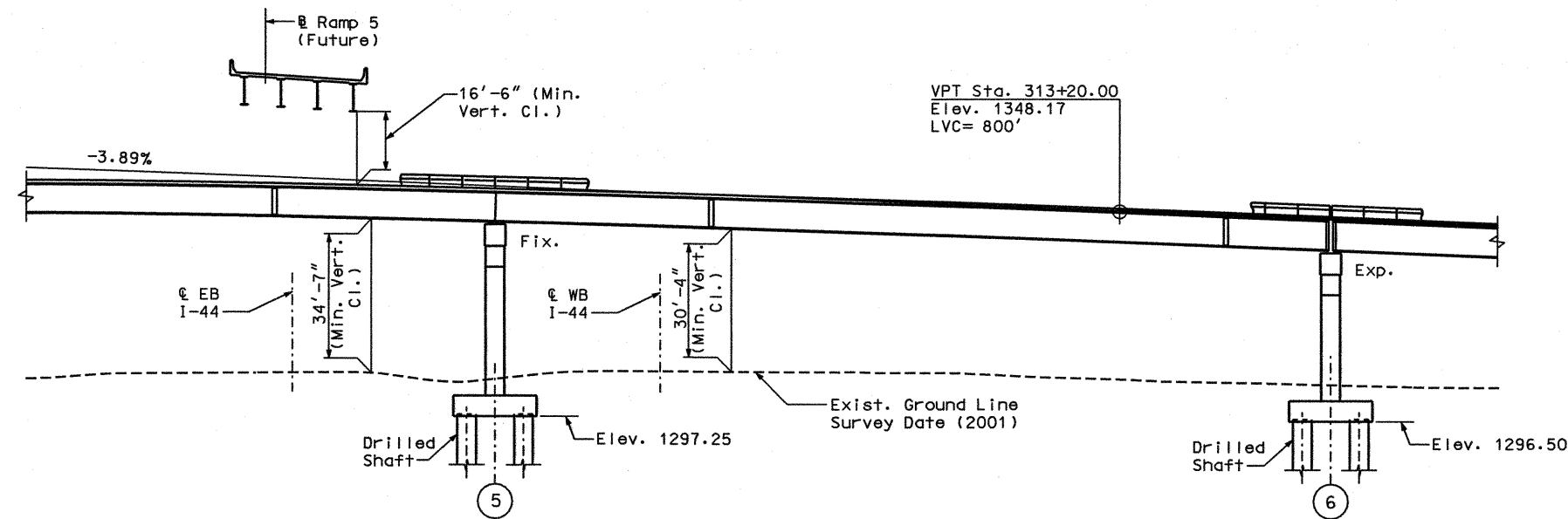


Unit 2: (200'-224'-200') Continuous Composite Plate Girder Spans

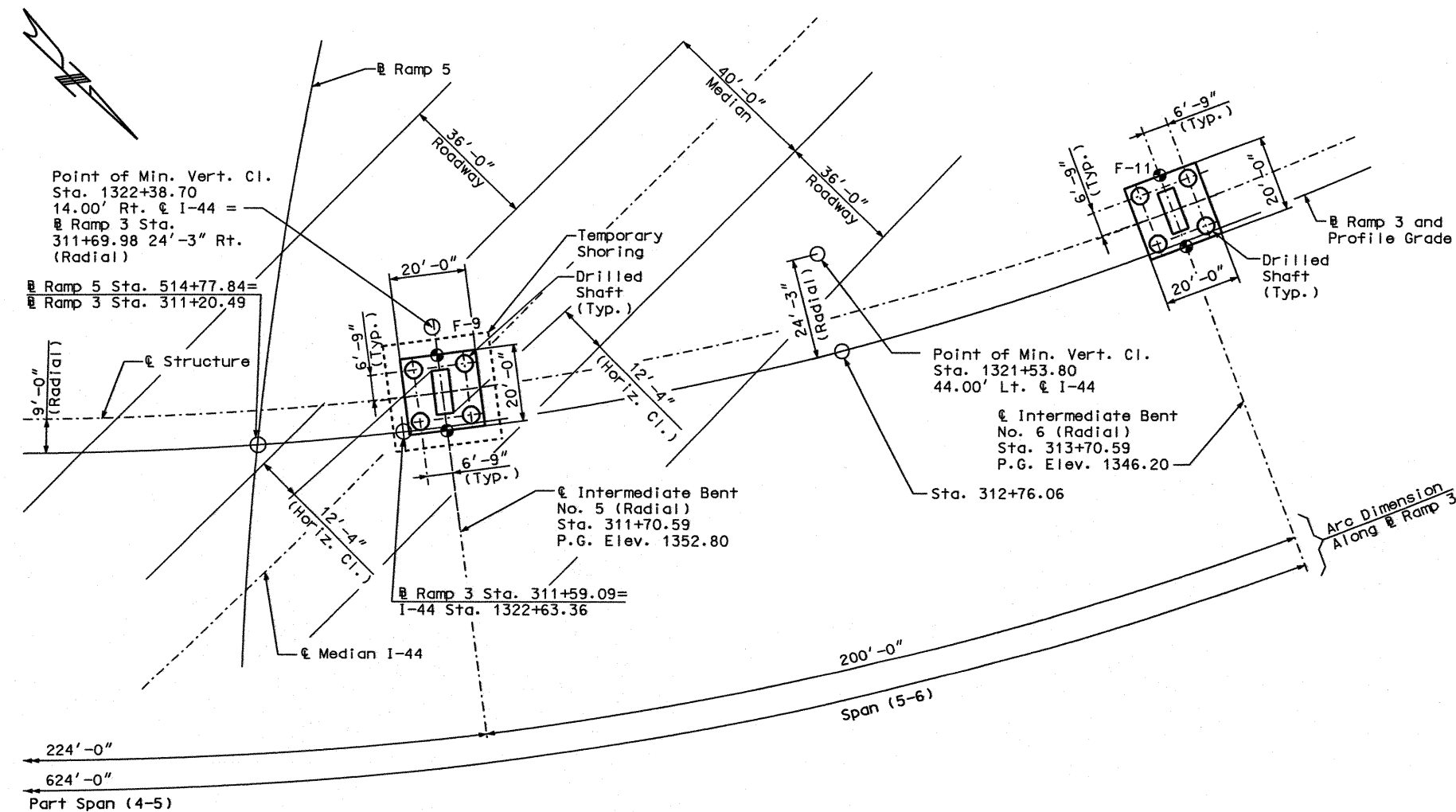
STATE	PROJ. NO.	SHEET NO.
MO		33

CURVE DATA - RAMP 3

P.I. STA. = 313+93.26
P.C. STA. = 301+86.46
P.T. STA. = 318+32.80
 $\Delta = 6^{\circ}-35'-08.6''$ (LT.)
 $D = 6^{\circ}-35'-08.6''$
 $L = 1,646.34'$
 $T = 1,206.80'$
 $R = 870.00'$
 $S.E. = 0.06'/'$



PART DEVELOPED ELEVATION - UNIT 2



PART PLAN - UNIT 2

"⊙" indicates location of Borings.

For General Notes, Estimated Quantities, Estimated Quantities for Slab on Steel and Footing data, see Sheet No. 5.

Intermediate Bent No. 4 skewed $40^{\circ}-00'-00''$ to a radial line at Sta. 309+46.59. All remaining Bents radial. For location sketch, see Sheet No. 2.

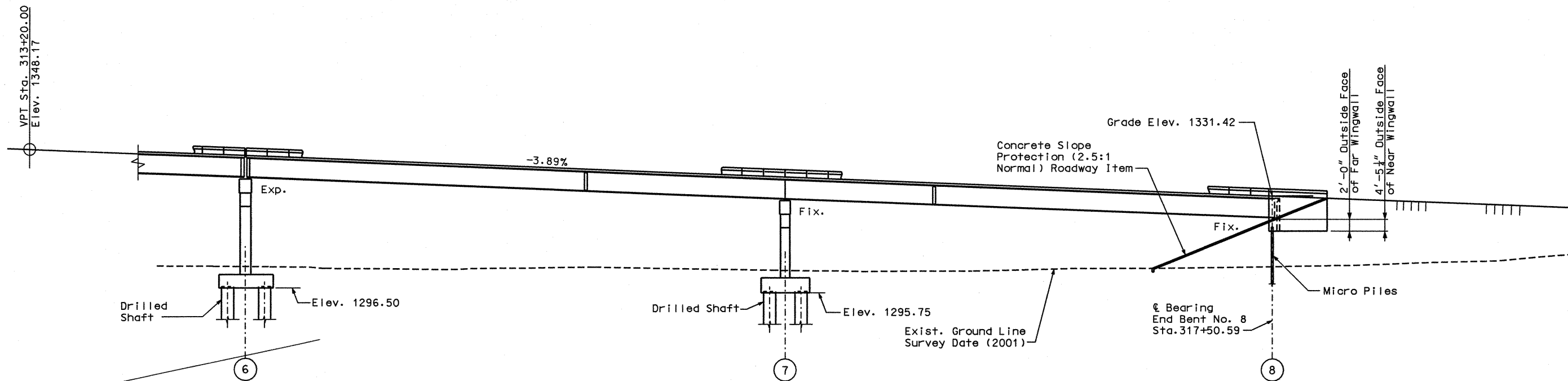
Notes:

For Notice and Disclaimer Regarding Boring Log Data, see Sheet No. 1.

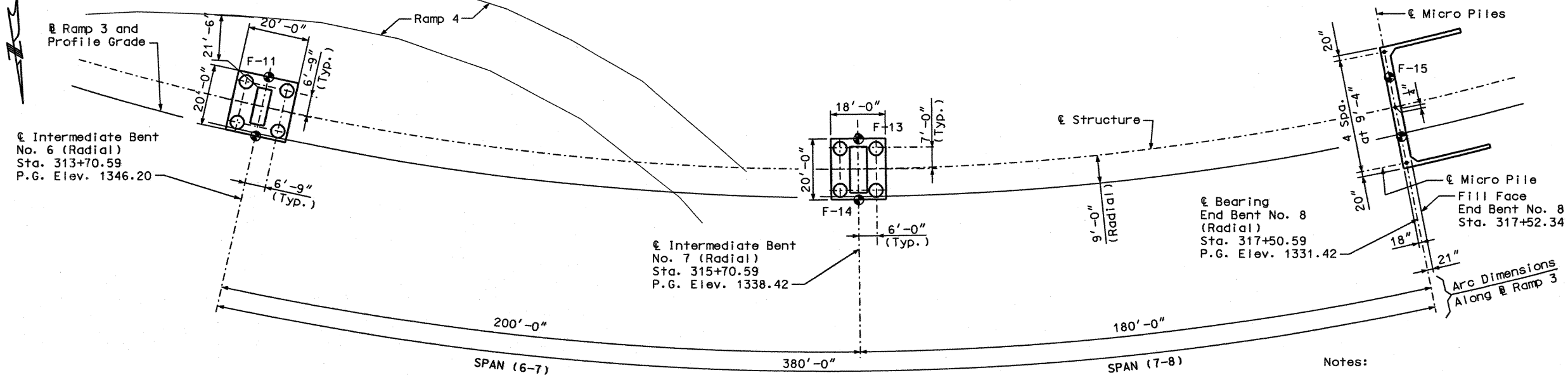


Unit 3: (200'-180') Continuous Composite Plate Girder Spans

STATE	PROJ. NO.	SHEET NO.
MO		B4



DEVELOPED ELEVATION - UNIT 3



PLAN - UNIT 3

CURVE DATA - RAMP 3

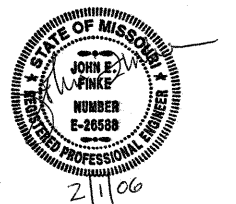
P.I. STA. = 313+93.26
P.C. STA. = 301+86.46
P.T. STA. = 318+32.80
 $\Delta = 60^\circ-35'-08.6''$ (LT.)
 $D = 60^\circ-35'-08.6''$
 $L = 1,646.34'$
 $T = 1,206.80'$
 $R = 870.00'$
 $S.E. = 0.06 \text{ '/'}$

Notes:

For Notice and Disclaimer Regarding Boring Log Data, see Sheet No. 1.

For General Notes, Estimated Quantities, Estimated Quantities for Slab on Steel and Footing data, see Sheet No. 5.

Intermediate Bent No. 4 skewed $40^\circ-00'-00''$ to a radial line at Sta. 309+46.59. All remaining Bents radial. For Location Sketch, see Sheet No. 2.



DETAILED: GJD JULY 2005
CHECKED: JEF DEC. 2005

JACOBS CIVIL INC.
ST. LOUIS, MO.

SHEET NO. 4 OF 77

GREENE COUNTY

A7024

P:\c1x21400\700cadd\709str\A7024 Ramp 3\A7024_GPE03_J8U0548B.dgn

18:49 01-FEB-2006

REV.

Estimated Quantities				
Item		Substr.	Superstr.	Total
Class 1 Excavation	cu. yard	1,030		1,030
Temporary Shoring	lump sum	1		1
Bridge Approach Slab (Bridge)	square yard		226	226
Drilled Shafts (4 ft. 0 in. Dia.)	linear foot	195.4		195.4
Drilled Shafts (4 ft. 6 in. Dia.)	linear foot	431.6		431.6
Rock Sockets (3 ft. 6 in. Dia.)	linear foot	128		128
Rock Sockets (4 ft. 0 in. Dia.)	linear foot	268		268
Supplemental Television Camera Inspection	each	24		24
Foundation Inspection Holes	linear foot	636		636
Concrete Coring	linear foot	257.5		257.5
Sonic Logging Testing	Each	24		24
Micro Piles (9.625 in.)	each	10		10
Loading Tests	each	2		2
Class B Concrete (Substructure)	cu. yard	1,239.4		1,239.4
Slab on Steel	square yard		6254	6254
* Safety Barrier Curb	linear foot		2820	2820
Form Liners	square yard	224		224
Reinforcing Steel (Bridges)	pound	362,210		362,210
Conduit System on Structure	lump sum		1	1
Reinforcing Steel (Epoxy Coated)	pound	21,990		21,990
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1		1
Expansion Device (Finger Plate)	linear foot		76	76
Fabricated Structural Low Alloy Steel (Plate Girder) A709, Grade 50	pound		2,765,000	2,765,000
Slab Drain	each		38	38
Intermediate Field Coat (System G)	square foot		149,000	149,000
Finish Field Coat (System G)	square foot		22,900	22,900
Vertical Drain at End Bents	each	2		2
Laminated Neoprene Bearing Pad (Tapered)	each		8	8
Laminated Neoprene Bearing Pad Assembly	each		32	32

All concrete between the upper and lower construction joints in the end bents is included in the Estimated Quantities for Slab on Steel.

All reinforcement in the end bents is included in the Estimated Quantities for Slab on Steel.

* Safety barrier curb shall be cast-in-place option or slip-form option.

Estimated Quantities for Slab on Steel		
Item		Total
Class B-2 Concrete	cu. yard	1,825.7
Reinforcing Steel (Epoxy Coated)	pound	481,860
Reinforcing Steel (Bridges)	pound	19,050

The table of Estimated Quantities for Slab on Steel represents the quantities used by the State in preparing the cost estimate for concrete slabs. The area of the concrete slab will be measured to the nearest square yard with the horizontal dimensions as shown on the plan of slab. Payment for conventional forms, all concrete and coated and uncoated reinforcing steel will be considered completely covered by the contract unit price for the slab. Variations may be encountered in the estimated quantities but the variations cannot be used for an adjustment in the contract unit price.

Method of forming the slabs shall be as shown on the plans and in accordance with Sec 703. All hardware for forming the slab to be left in place as a permanent part of the structure shall be coated in accordance with ASTM A123 or ASTM B633 with a thickness class SC 4 and a finish type I, II, or III.

Pile Data				
Bent No.		1	8	
Bearing Pile	Pile Type & Size	Micro Pile (9.625 in.)	Micro Pile (9.625 in.)	
	Number	5	5	
	Approximate Length	ft. 29	67	
	Design Bearing	tons 138	138	

For Micro Pile details, see Sheet No. 33.

For Details of Drilled, Shaft see Sheet No. 32.

General Notes:

Design Specifications:
 2002 - AASHTO 17th Edition
 Load Factor Design
 Seismic Performance Category A
 Acceleration Coefficient = 0.05

Design Loading:
 HS20 Modified
 35#/Sq. Ft. Future Wearing Surface
 Military 24,000# Tandem Axle
 Earth 120#/Cu. Ft., Equivalent Fluid
 Pressure 45#/Cu. Ft.
 Fatigue Stress - Case I
 Superstructure: Continuous composite for live-load.

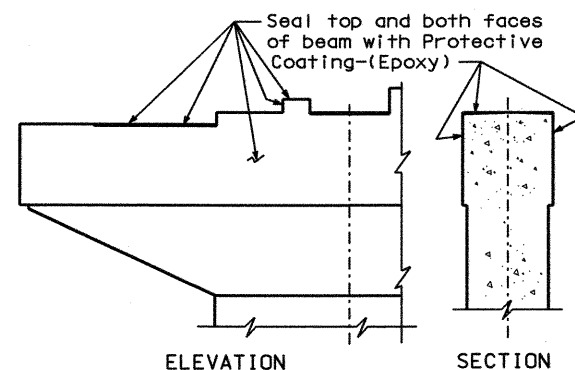
Design Unit Stresses:
 Class B Concrete (Substructure) f'c = 3,000 psi
 Class B-2 Concrete (Superstructure, except Safety Barrier Curb) f'c = 4,000 psi
 Class B-1 Concrete (Safety Barrier Curb) f'c = 4,000 psi
 Grout Strength f'c = 5000 psi
 Reinforcing Steel (Grade 60) fy = 60,000 psi
 Structural Steel Low Alloy (ASTM A709 Grade 50) fy = 50,000 psi
 Steel Pile (ASTM A709 Grade 36) fb = 9,000 psi
 fy = 36,000 psi

Neoprene Pads:
 Bearings shall be 60 durometer neoprene pads.
 Laminated Neoprene Bearing Pads (Tapered) shall be in accordance with Sec 716.

Fabricated Steel Connections:
 Field connections shall be made with 7/8" diameter high strength bolts and 15/16" diameter holes, except as noted.

Joint Filler:
 All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

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



PROTECTIVE COATING
 INTERMEDIATE BENT NOS. 3 AND 6
 Note: Slope beam cap to drain between bearings.

STATE	PROJ. NO.	SHEET NO.
MO		B5

Structural Steel Protective Coatings:
 Protective Coating: System G in accordance with Sec 1081.

Prime Coat: The cost of the prime coat will be considered completely covered by the contract unit price for the "Fabricated Structural Steel".
 Tint of the prime coat for System G shall be similar to the color of the field coat to be used.

Field Coat: The color of the finish field coat shall be Gray (Federal Standard #26373). The cost of the intermediate field coat will be considered completely covered by the contract unit price per sq. foot for "Intermediate Field Coat (System G)". The cost of the finish field coat will be considered completely covered by the contract unit price per sq. foot for "Finish Field Coat (System G)".

At the option of the contractor, the intermediate and finish field coats may be applied in the shop. The contractor shall exercise extreme care during all phases of loading, hauling, handling, erection and pouring of the slab to minimize damage and shall be fully responsible for all repairs and cleaning of the coating systems as required by the engineer.

Traffic Handling:
 See Roadway Plans. No staging on this structure.

Concrete Protective Coatings:
 Protective coating for concrete bents (Epoxy) shall be applied as shown on the bridge plans and in accordance with Sec 711.

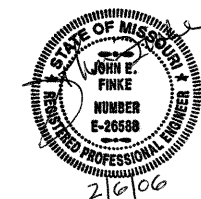
Miscellaneous:
 A minimum vertical clearance of 14'-6" over Route 65 and a minimum horizontal clearance of 5'-3" from the edge of the traffic lanes of Route 65. Existing Ramps 4 and 9 and I-44 shall be maintained during construction.

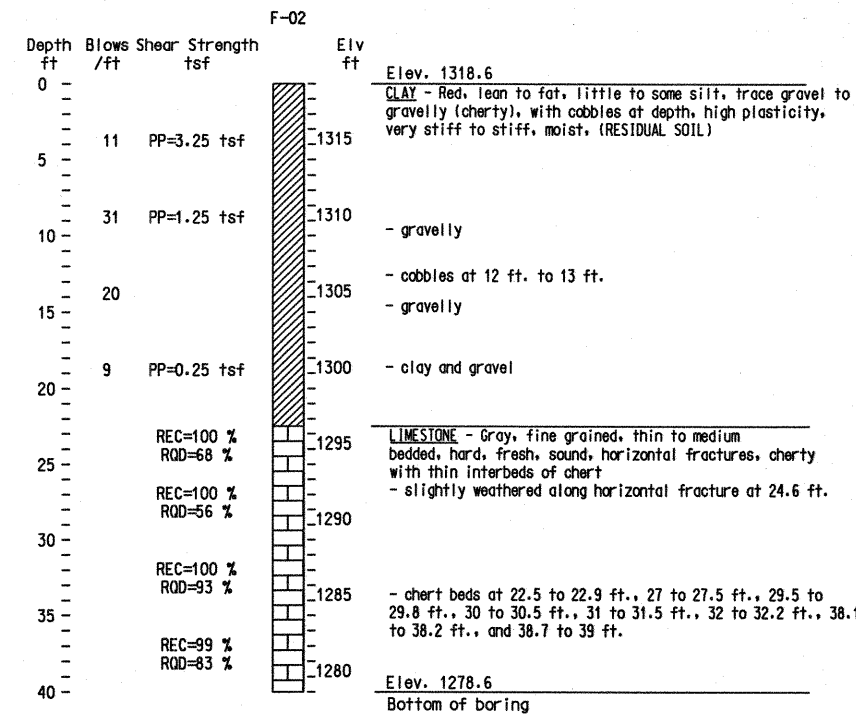
High strength bolts, nuts and washers will be sampled for quality assurance as specified in Sec 106 and Field Section (FS-712) from Materials Manual.

"Sec" refers to the sections in the standard and supplemental specifications unless specified otherwise.

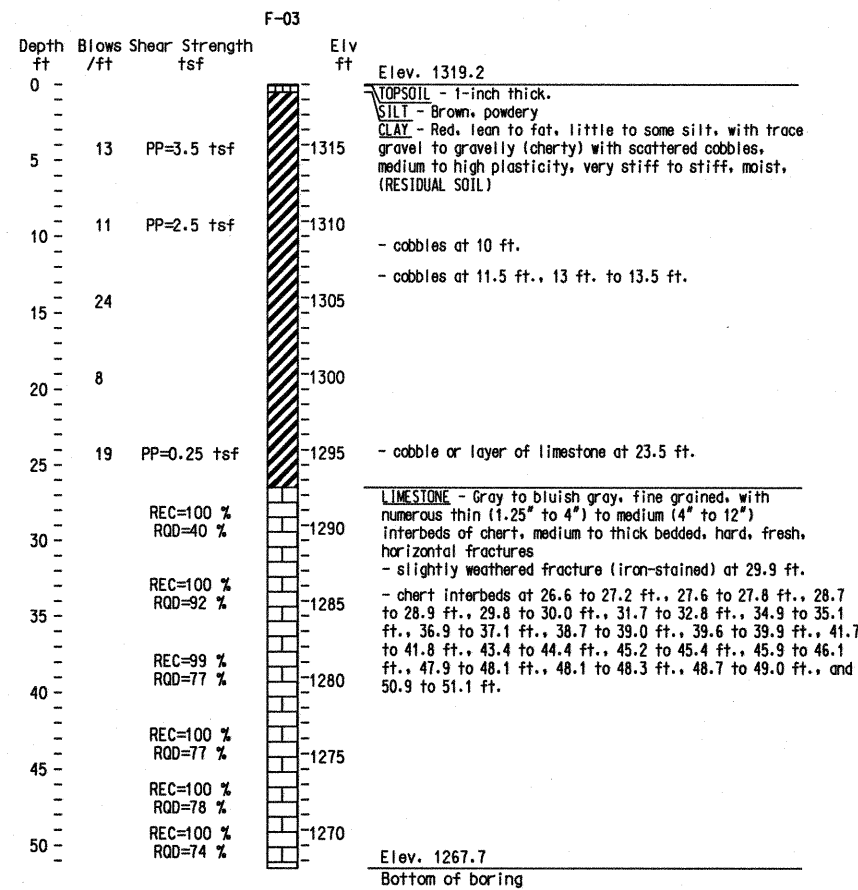
Erection:
 During erection, the contractor shall temporarily support, anchor and brace primary members such as girders in a manner that will produce alignment and camber in the completed structure. The contractor shall install cross frames and diagonal bracing as necessary to provide stability and assure correct geometry. The contractor shall provide temporary bracing or stiffening devices if necessary during any stage of erection. Wind loads shall be included in the design of such bracing members. The contractor shall support, anchor and brace all erected superstructure members as detailed in the Erection Plan before allowing traffic under the bridge.

Design temporary supports and falsework in accordance with the current edition of the AASHTO Bridge Construction Specifications, Section 3 "Temporary Works."

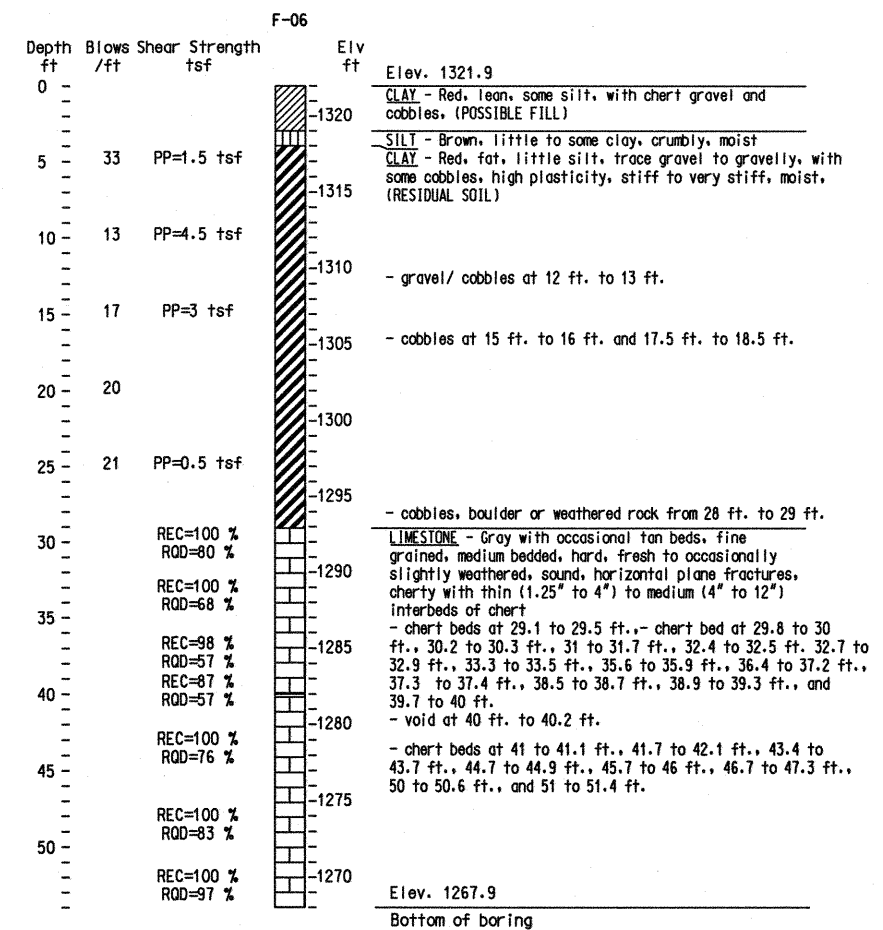




F-02
(CORE)
1' Rt.



F-03
(CORE)
19' Lt.



F-06
(CORE)
1' Rt.

BORING DATA

DETAILED: GJD JULY 2005
CHECKED: BJE OCT. 2005

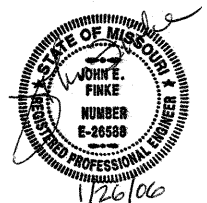
JACOBS CIVIL INC.
ST. LOUIS, MO.

SHEET NO. 6 OF 77

P:\c1x21400\700cadd\709str\A7024 Ramp 3\A7024_BOR01_JBU0548B.dgn

GREENE COUNTY

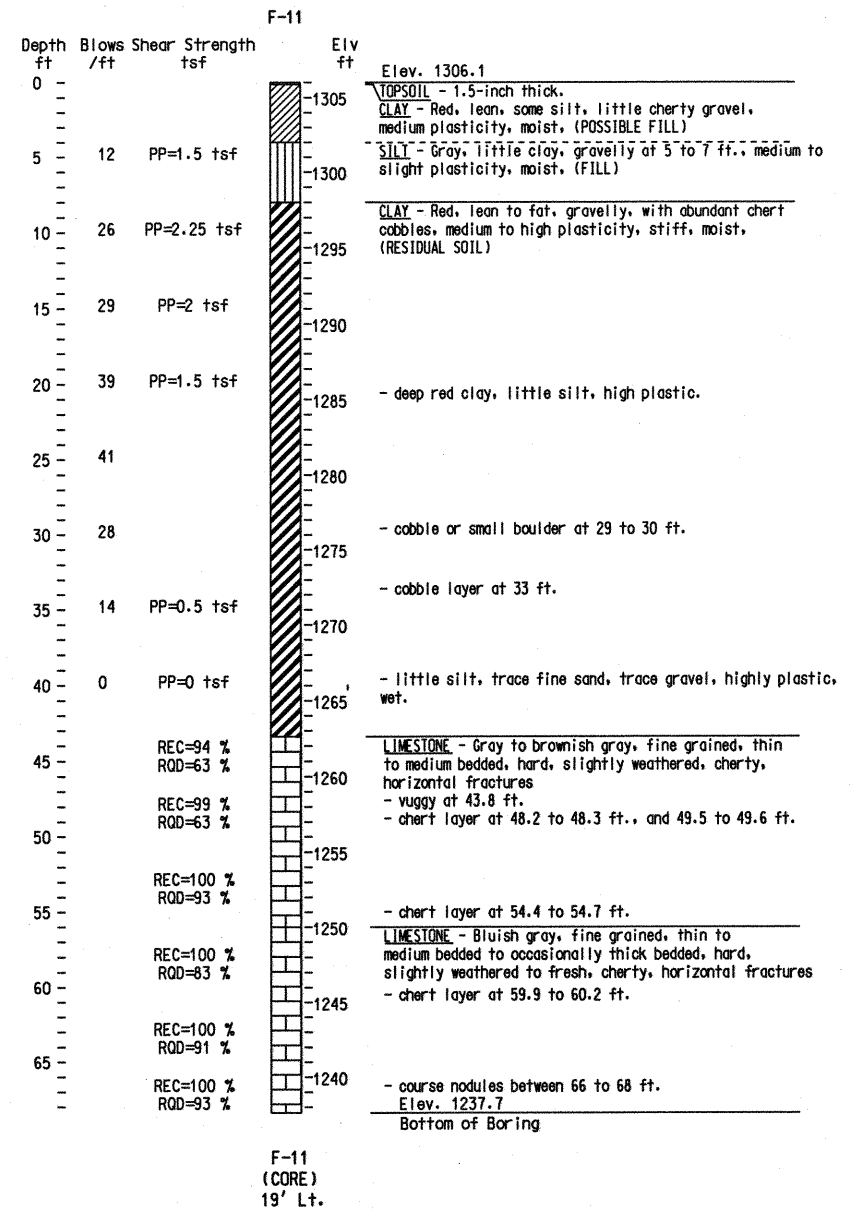
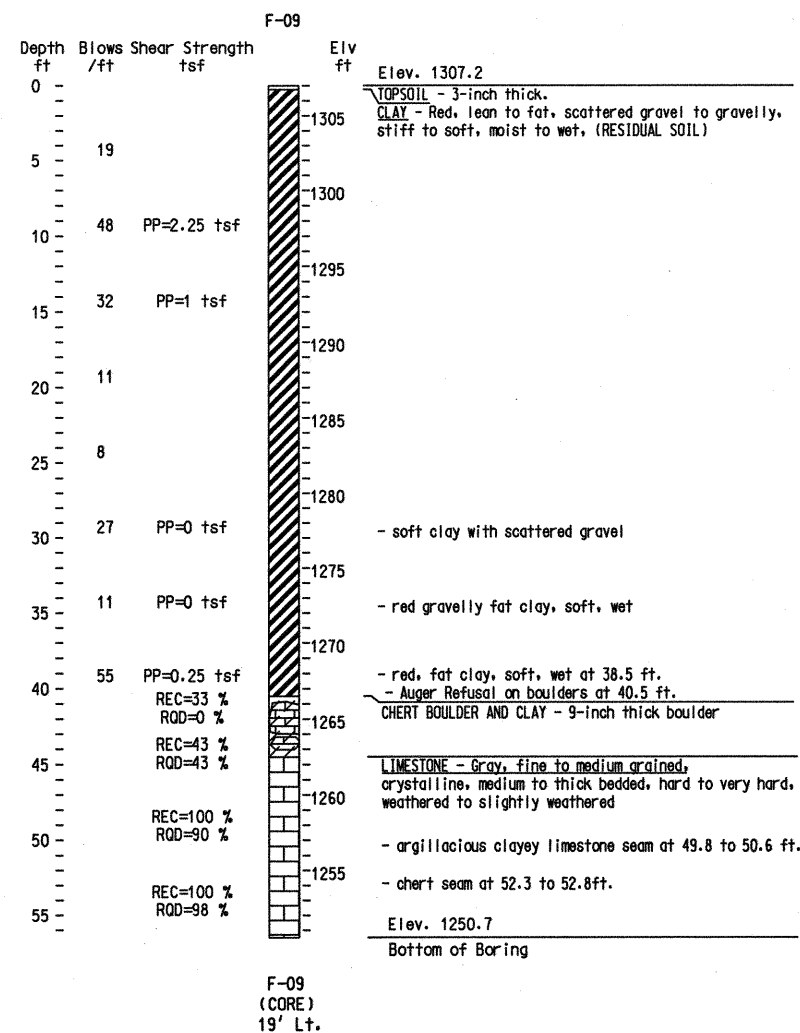
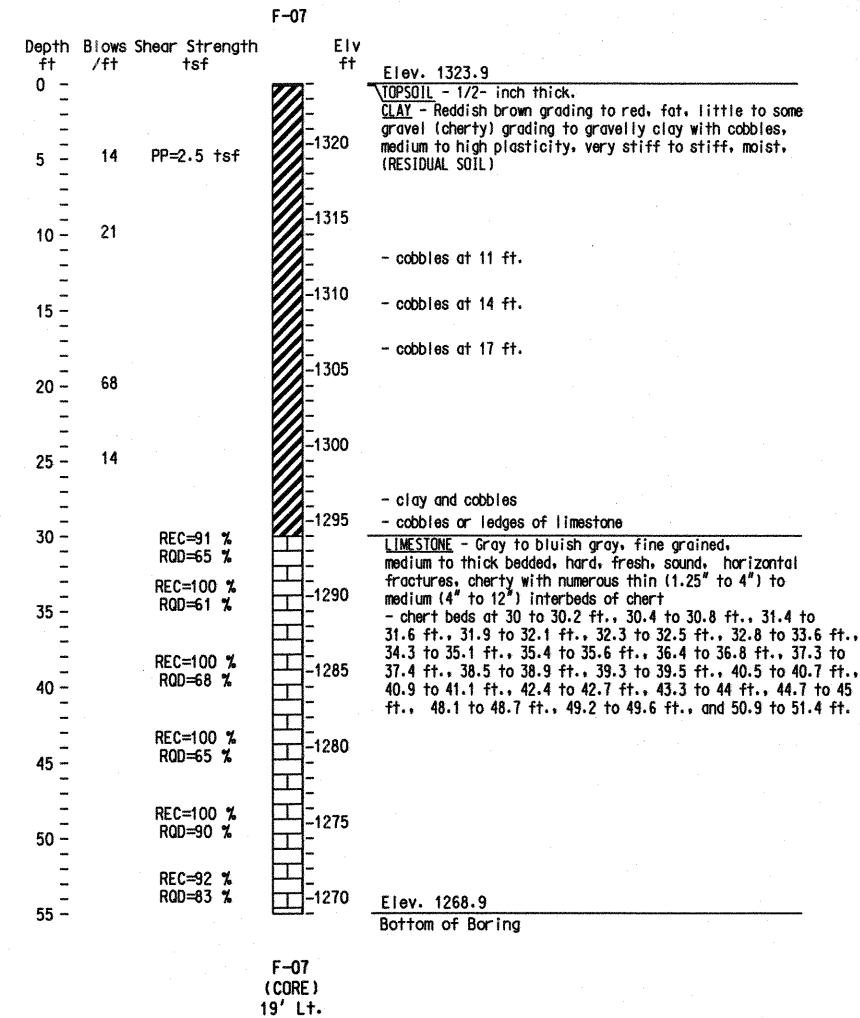
A7024



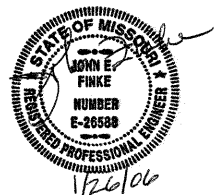
Note:
For Notice and Disclaimer Regarding Boring Log Data,
see Sheet No. 1.

For Location of Borings see, Sheet Nos. 1 thru 4.

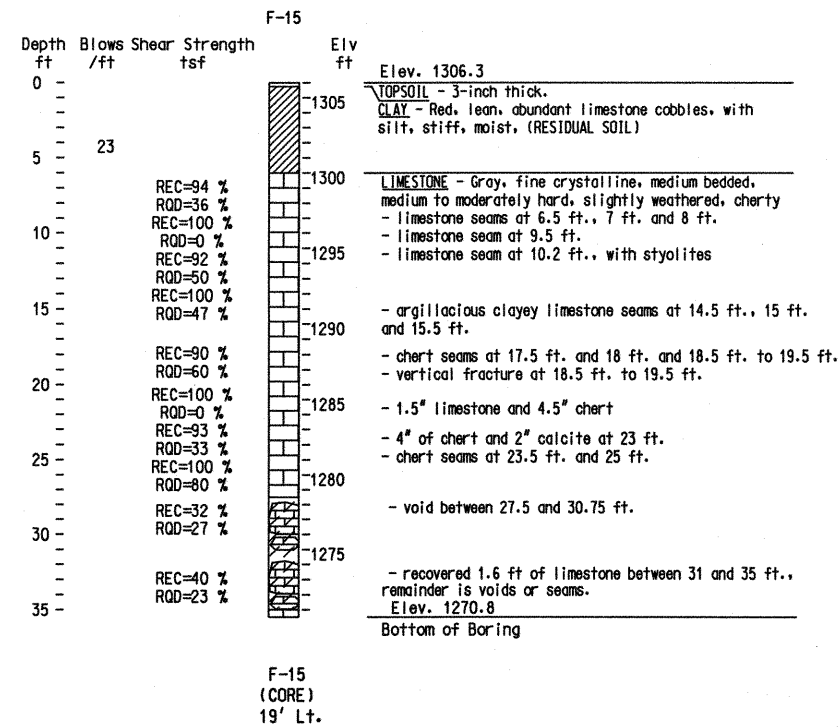
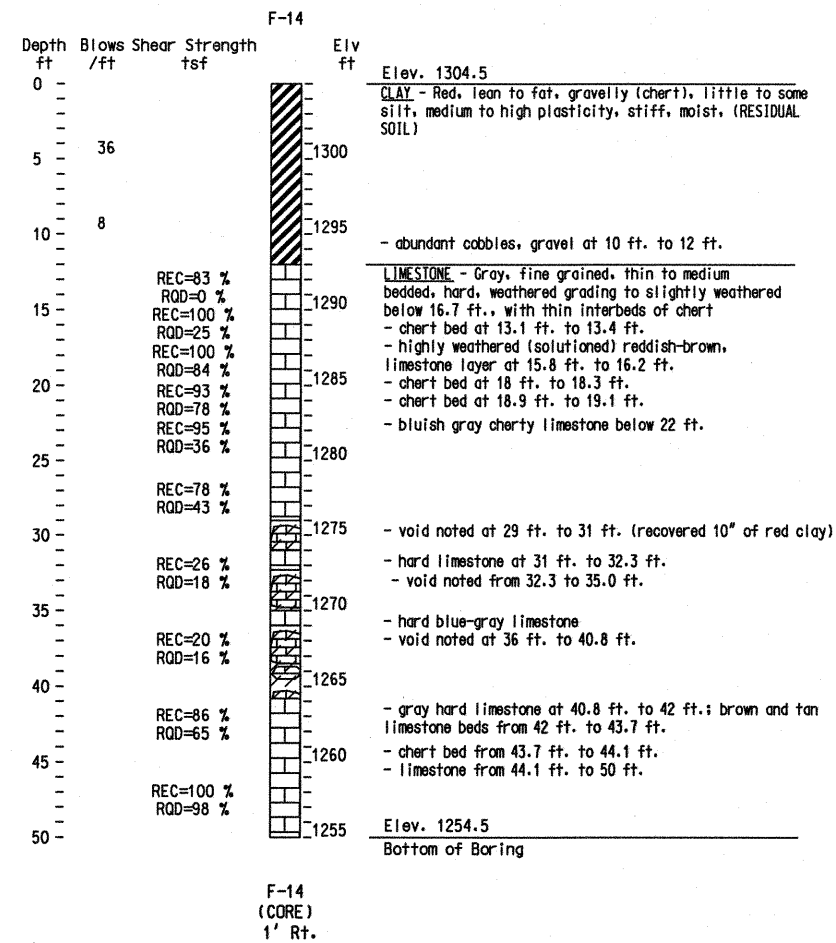
10:26 25-JAN-2006



Note:
For Notice and Disclaimer Regarding Boring Log Data, see Sheet No. 1.
For Location of Borings, see Sheet Nos. 1 thru 4.

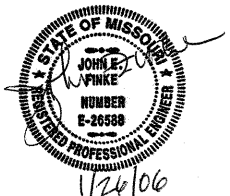


BORING DATA

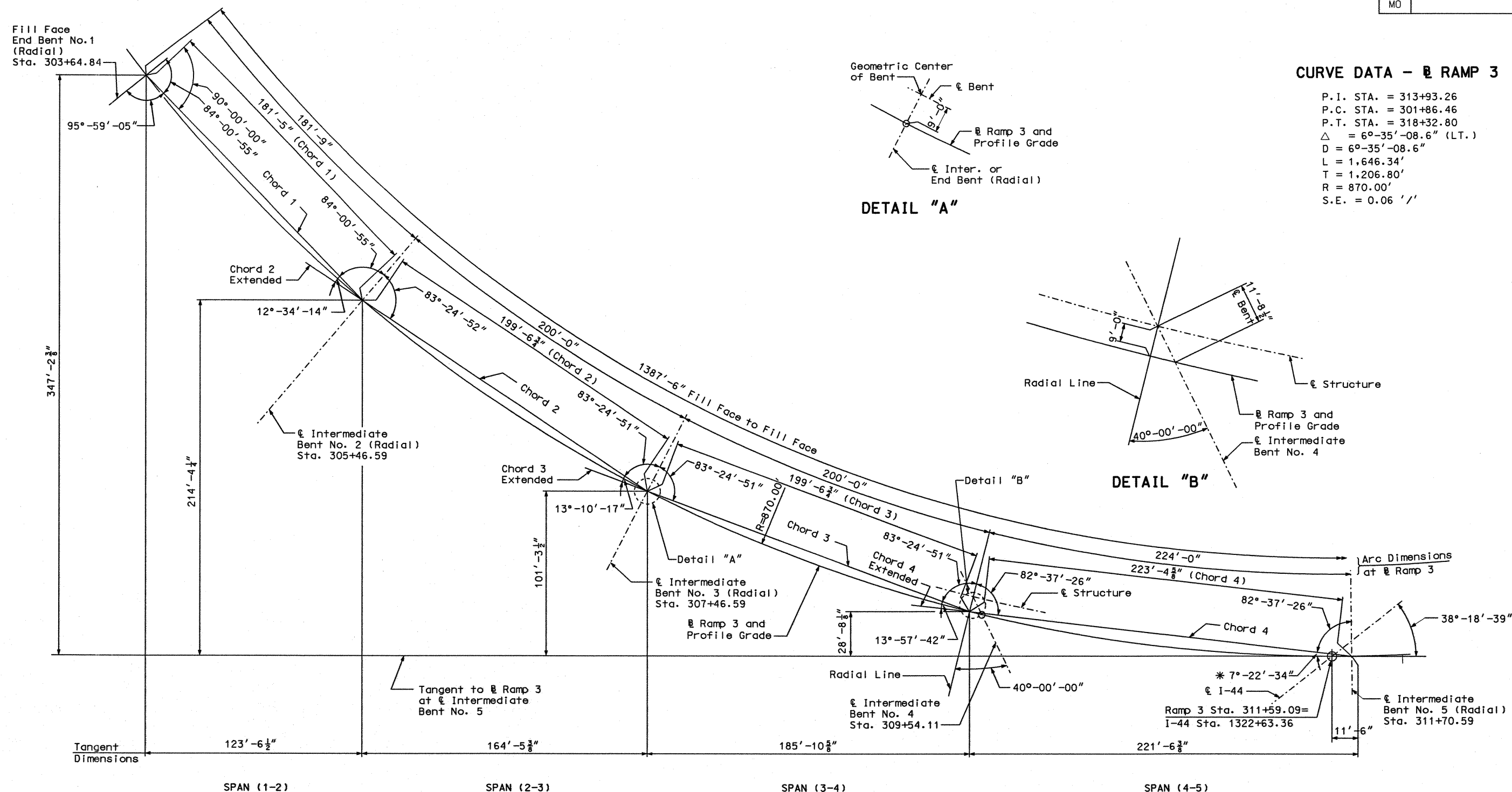


BORING DATA

Note:
For Notice and Disclaimer Regarding Boring Log Data,
see Sheet No. 1.
For Location of Borings, see Sheet Nos. 1 thru 4.



STATE	PROJ. NO.	SHEET NO.
MO		89

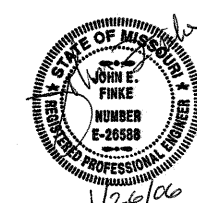


SUBSTRUCTURE LAYOUT

Notes:

All dimensions are horizontal.

* Angle between tangent and chord.
Bent Nos. 1 thru 3, and 5 thru 8 are parallel.
Intermediate Bent No. 4 skewed 40°-00'-00" R.A.
to a radial line at Sta. 309+46.59 Ramp 3.



DETAILED: GJD JUNE 2005
CHECKED: JEF NOV. 2005

JACOBS CIVIL INC.
ST. LOUIS, MO.

SHEET NO. 9 OF 77

GREENE COUNTY

A7024

P:\cix21400\700cadd\709str\A7024 Ramp 3\A7024_SUBLAY_J8U0548B.dgn

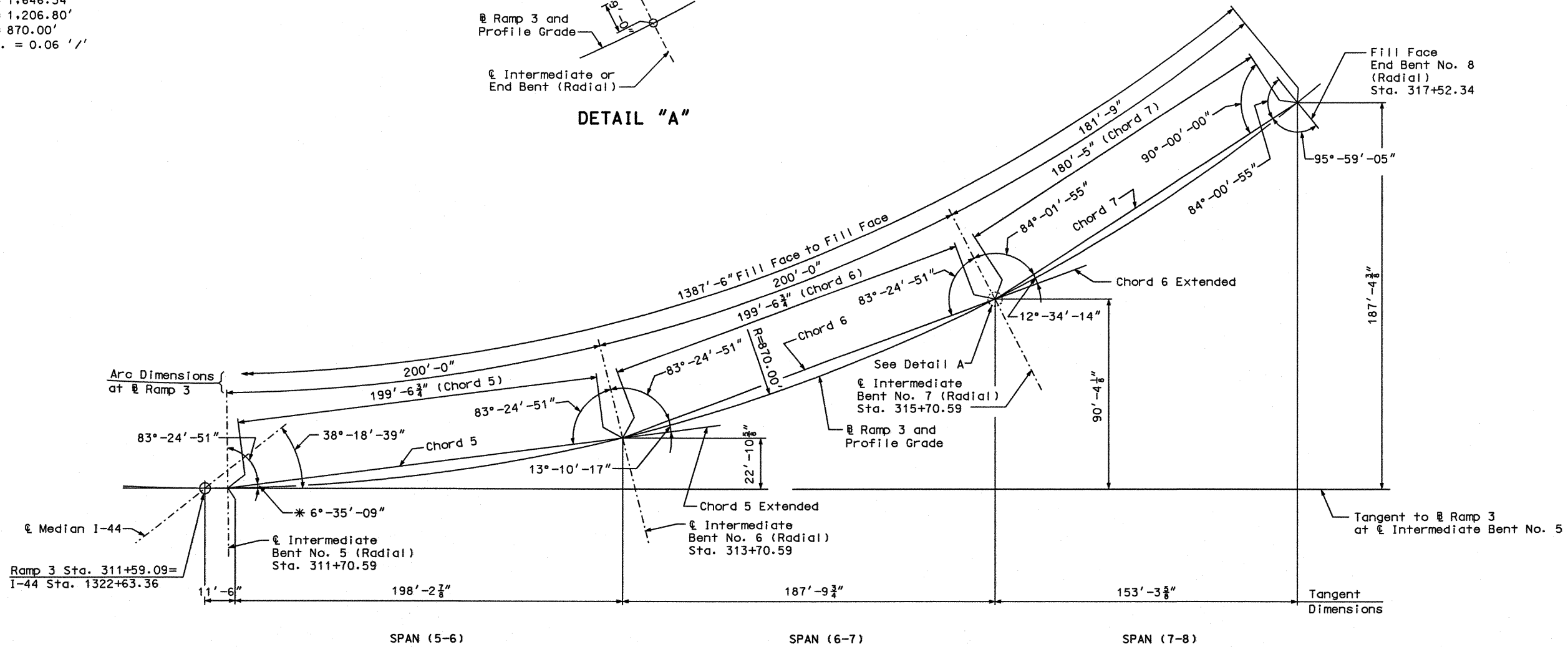
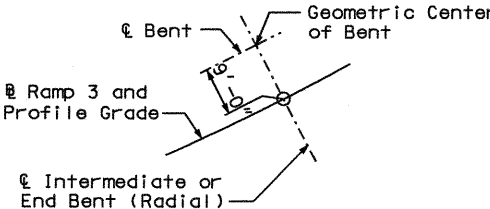
10:29 25-JAN-2006

REV.

STATE	PROJ. NO.	SHEET NO.
MO		810

CURVE DATA - RAMP 3

P.I. STA. = 313+93.26
P.C. STA. = 318+86.46
P.T. STA. = 318+32.80
 $\Delta = 6^{\circ}-35'-08.6''$ (LT.)
 $D = 6^{\circ}-35'-08.6''$
 $L = 1,646.34'$
 $T = 1,206.80'$
 $R = 870.00'$
 $S.E. = 0.06'/'$



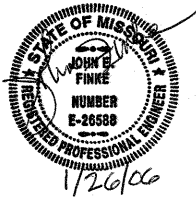
SUBSTRUCTURE LAYOUT

Notes:

All dimensions are horizontal.

* Angle between tangent and chord. Bent Nos. 1 thru 3 and 5 thru 8 are parallel.

Intermediate Bent No. 4 skewed 40°-00'-00" R.A. to a radial line at Sta. 309+46.59 Ramp 3.



DETAILED: GJD JUNE 2005
CHECKED: JEF DEC. 2005

JACOBS CIVIL INC.
ST. LOUIS, MO.

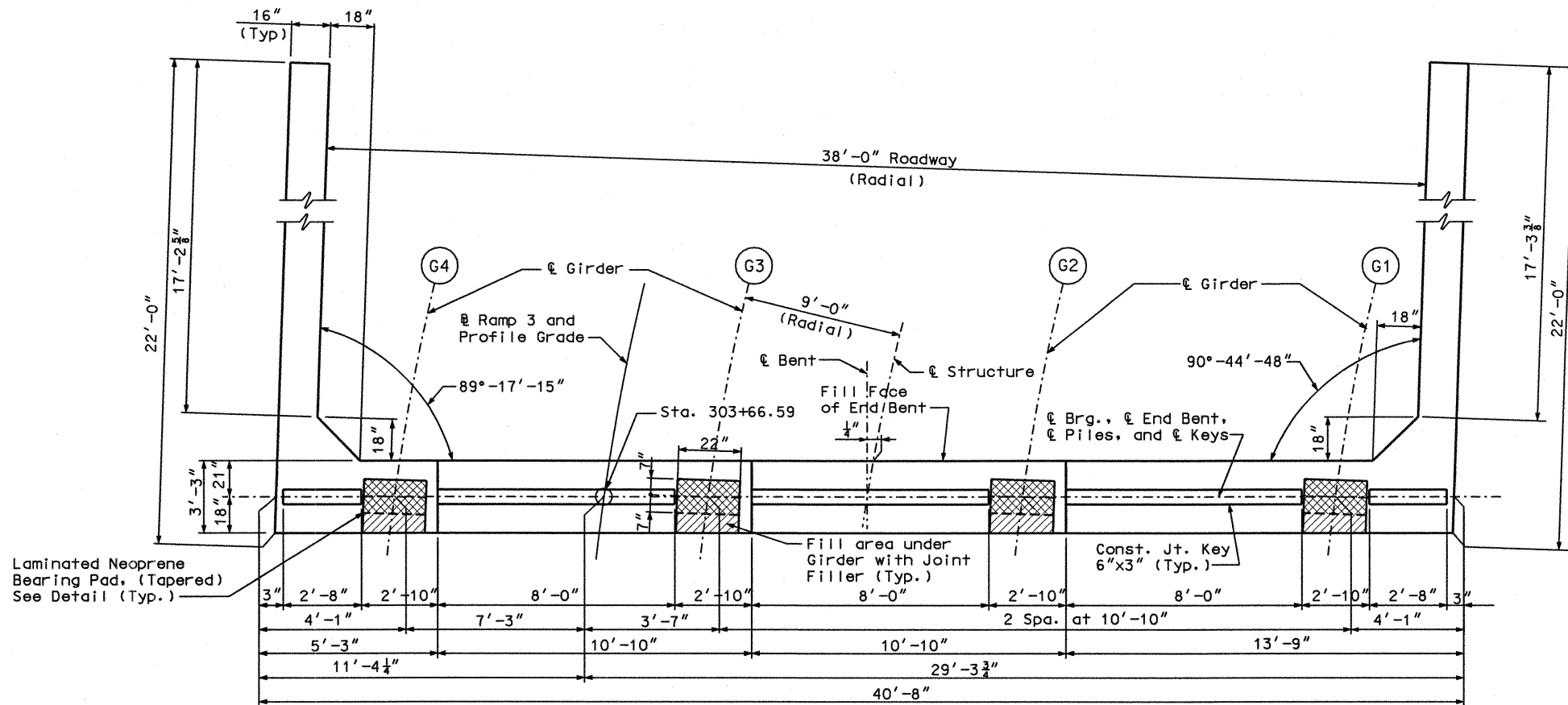
SHEET NO. 10 OF 77

GREENE COUNTY

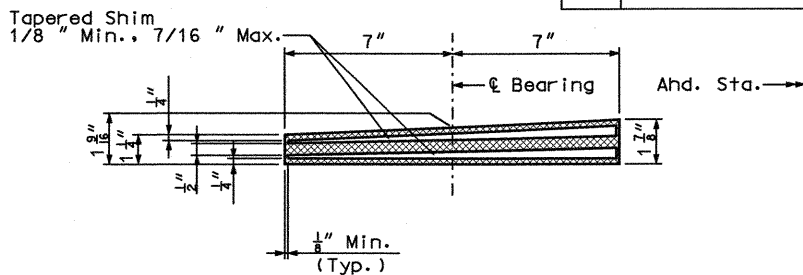
A7024

P:\c1x21400\700cadd\709str\A7024 Ramp 3\A7024_SUBLAY01_J8U0548B.dgn

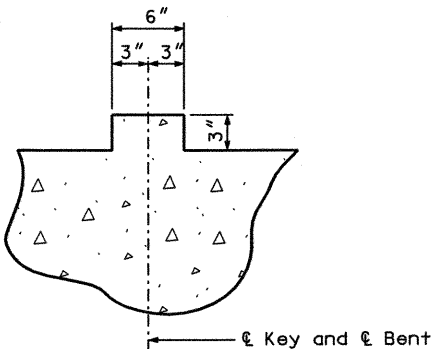
10:31 25-JAN-2006



PLAN OF BEAM SHOWING DIMENSIONS



DETAIL OF LAMINATED NEOPRENE BEARING AT END BENT NO. 1



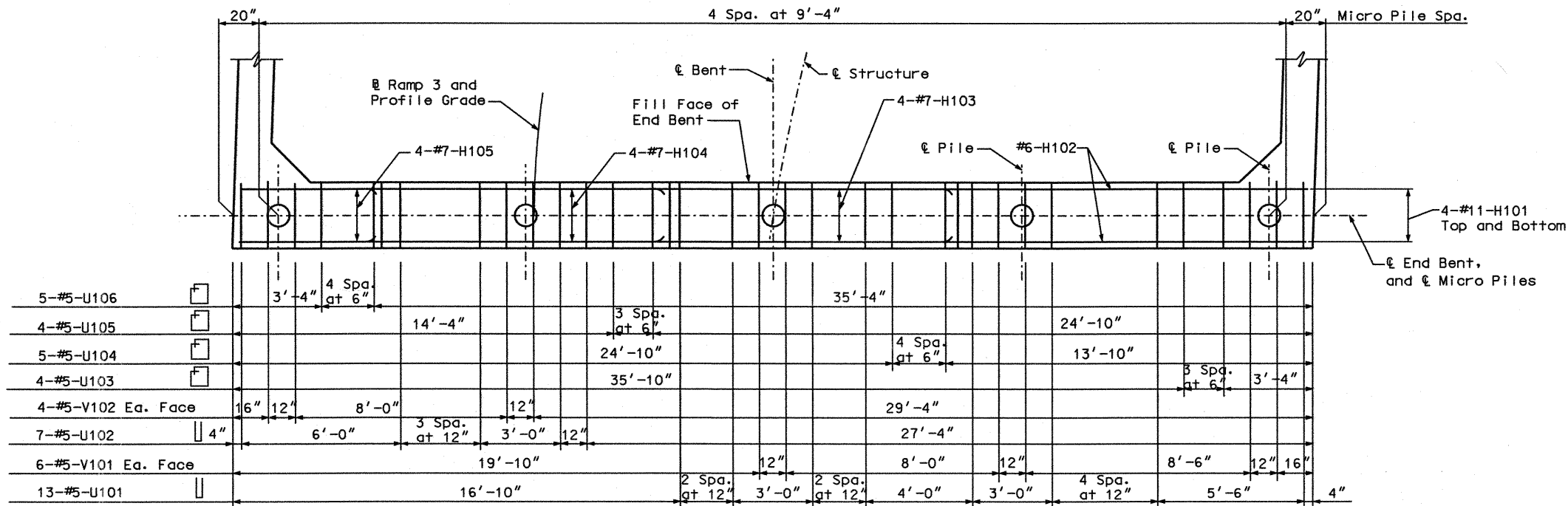
TYPICAL SECTION THRU KEY AT END BENT

Substructure Quantity Table for End Bent No. 1		
Item	each	Quantity
Micro Piles (9.625 in.)	each	5
Loading Tests	each	1
Class B Concrete (Substructure)	cu. yard	28.7

Note: These quantities are included in the Estimated Quantities Table on Sheet No. 5.

Notes:

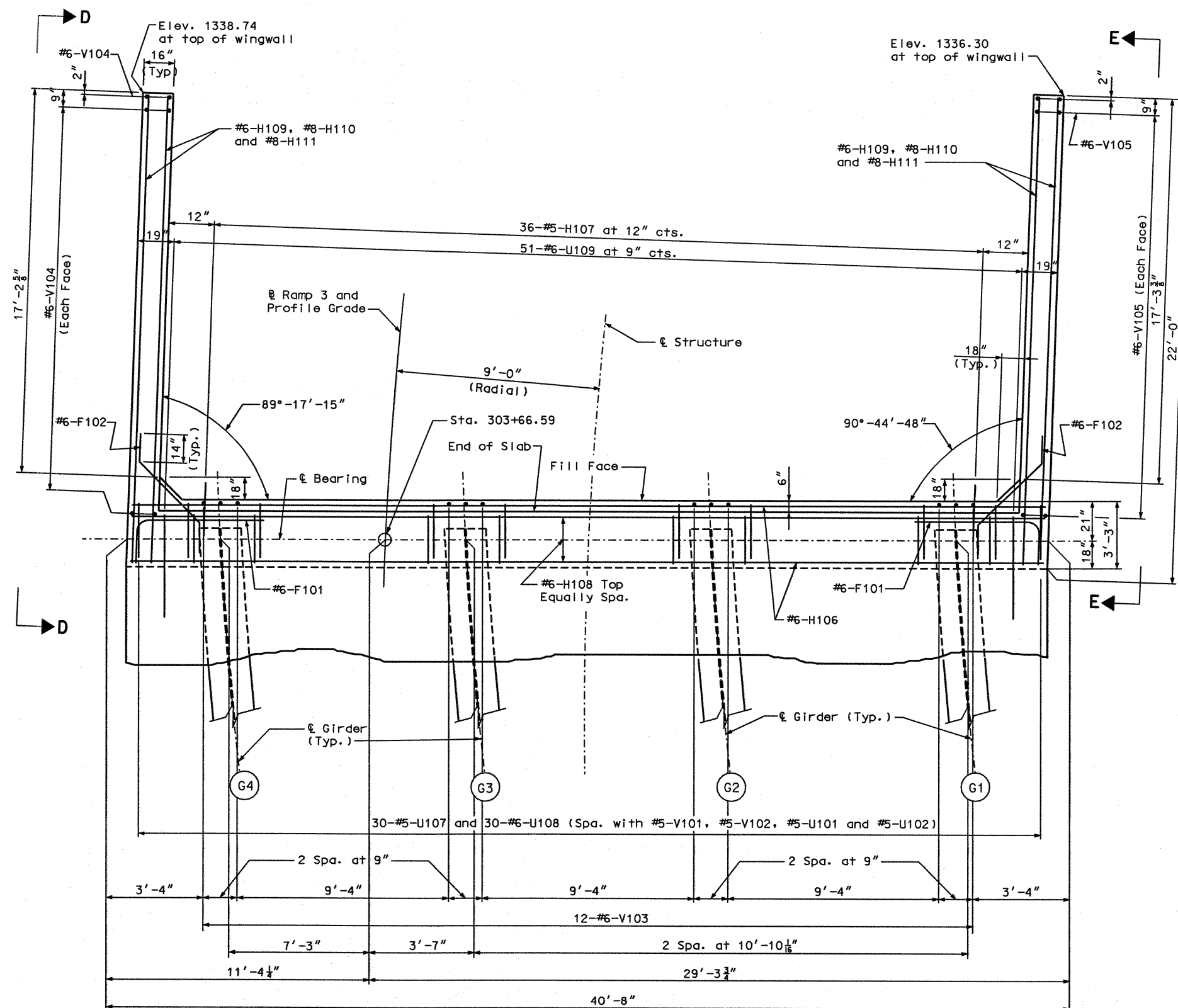
- For reinforcement of Safety Barrier Curb, see Sheet No. 67.
- For details of End Bent No. 1 not shown, see Sheet Nos. 12 thru 14.
- For details of Approach Slab, see Sheet No. 70.
- For details of Vertical Drain at End Bent, see Sheet No. 34.
- All Vertical reinforcement bars in the substructure beams or caps shall be field adjusted to clear piles by at least 1 1/2".
- For Micro Pile Details, see Sheet No. 33.



PLAN OF BEAM SHOWING REINFORCEMENT

DETAILS OF END BENT NO. 1

STATE	PROJ. NO.	SHEET NO.
MO		B12



Notes:

For details of End Bent No. 1 not shown, see Sheet Nos. 11, 13 and 14.

For details of Approach Slab, see Sheet No. 70.

For details of Vertical Drain at End Bent, see Sheet No. 34.

Reinforcing in the end bent shall be placed parallel to Δ Ramp 3.

For Elevations D-D and E-E, see Sheet No. 14.

Bend F102 Bars in field to clear Girder.

Concrete Diaphragms at the Integral End Bents shall be poured a minimum of 12 hours before the Slab is poured.

PART PLAN

DETAILS OF END BENT NO. 1

DETAILED: EAK JULY 2005
CHECKED: SEM NOV. 2005

JACOBS CIVIL INC.
ST. LOUIS, MO.

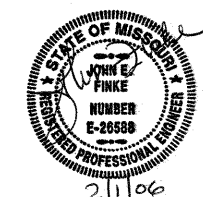
SHEET NO. 12 OF 77

GREENE COUNTY

A7024

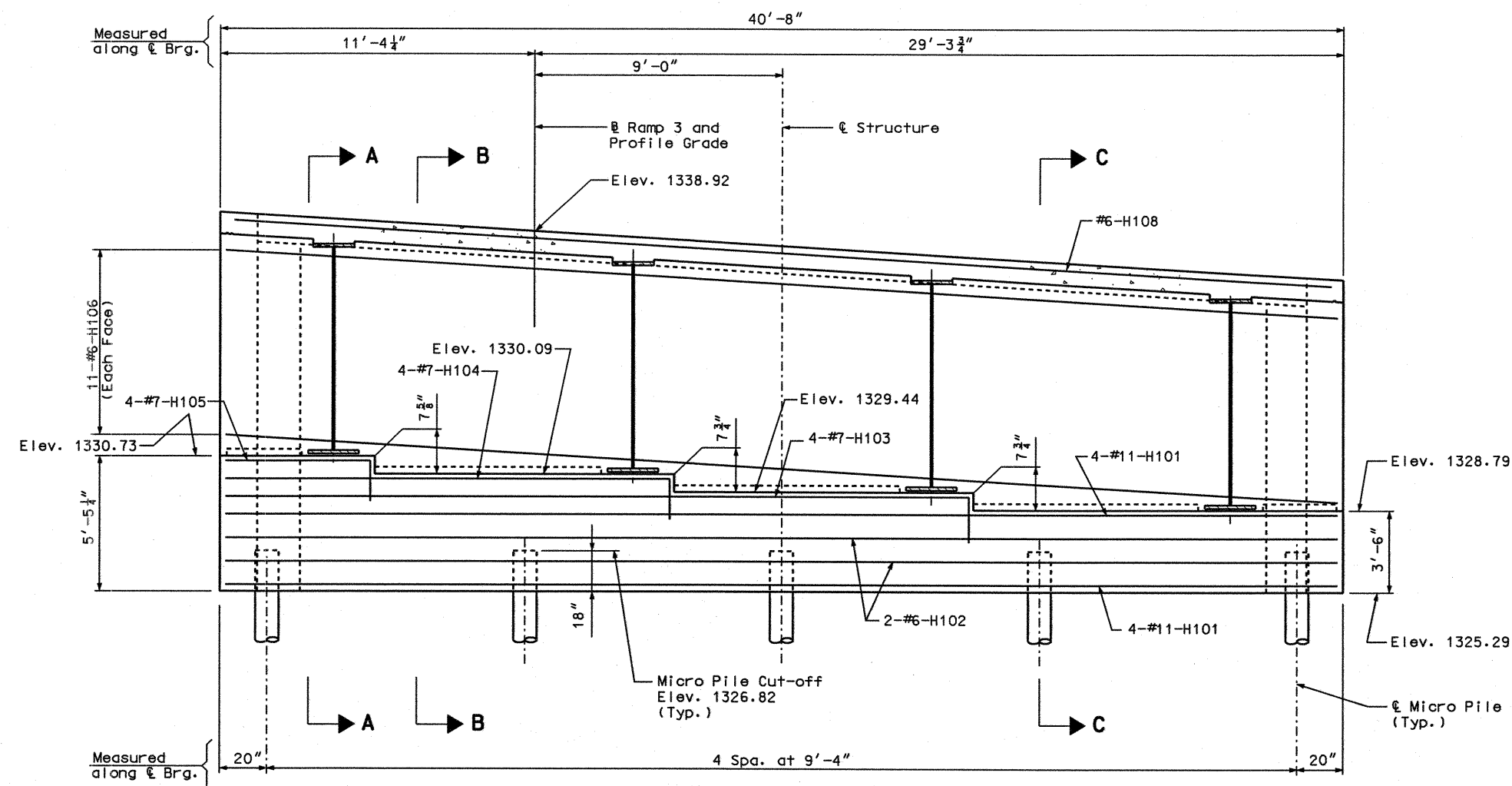
P:\C1X21400\700cadd\709str\A7024 Ramp 3\A7024_EBT02_J8U0548B.dgn

11:43 01-FEB-2006



REV.

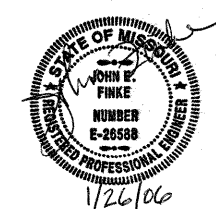
STATE	PROJ. NO.	SHEET NO.
MO		B13



SECTION NEAR END BENT
Elevations at top of slab are at end of Slab.

Notes:

- For details of End Bent No. 1 not shown, see Sheet Nos. 11, 12 and 14.
- For details of Approach Slab, see Sheet No. 70.
- For details of Vertical Drain at End Bent, see Sheet No. 34.
- All concrete in the End Bent above the top of Beam and below top of Slab shall be Class B-2.
- Concrete Diaphragms at Integral End Bents shall be poured a minimum of 12 hours before the Slab is poured.
- Reinforcing in the end bent shall be placed parallel to Ramp 3.
- For Micro Pile Details, see Sheet No. 33.



DETAILED: GJD/EAK JULY 2005
CHECKED: JEF DEC. 2005

JACOBS CIVIL INC.
ST. LOUIS, MO.

DETAILS OF END BENT NO. 1

SHEET NO. 13 OF 77

GREENE COUNTY

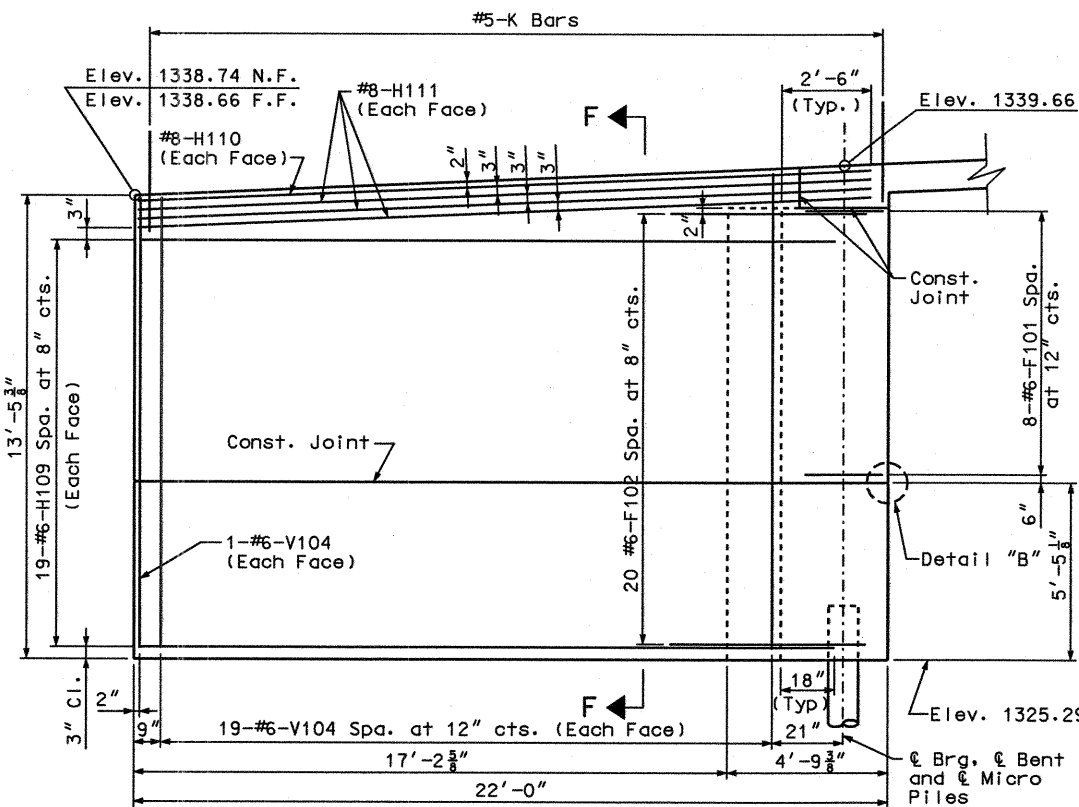
A7024

P:\c1x21400\700cadd\709str\A7024 Ramp 3\A7024_EB102A_J8U0548B.dgn

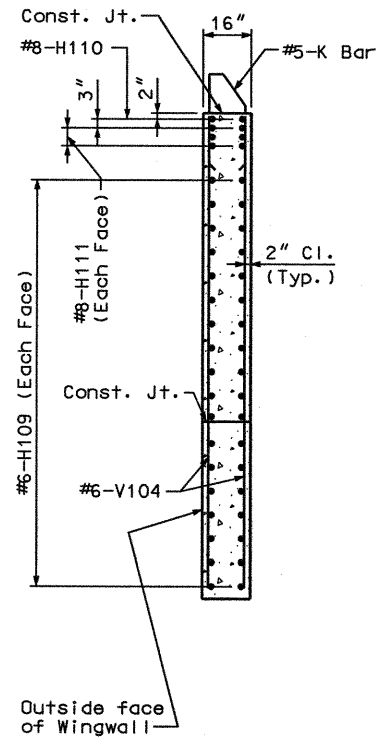
10:39 25-JAN-2006

REV.

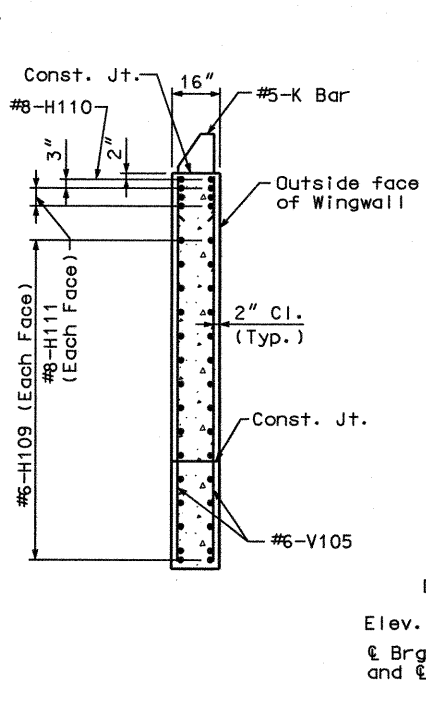
STATE	PROJ. NO.	SHEET NO.
MO		B14



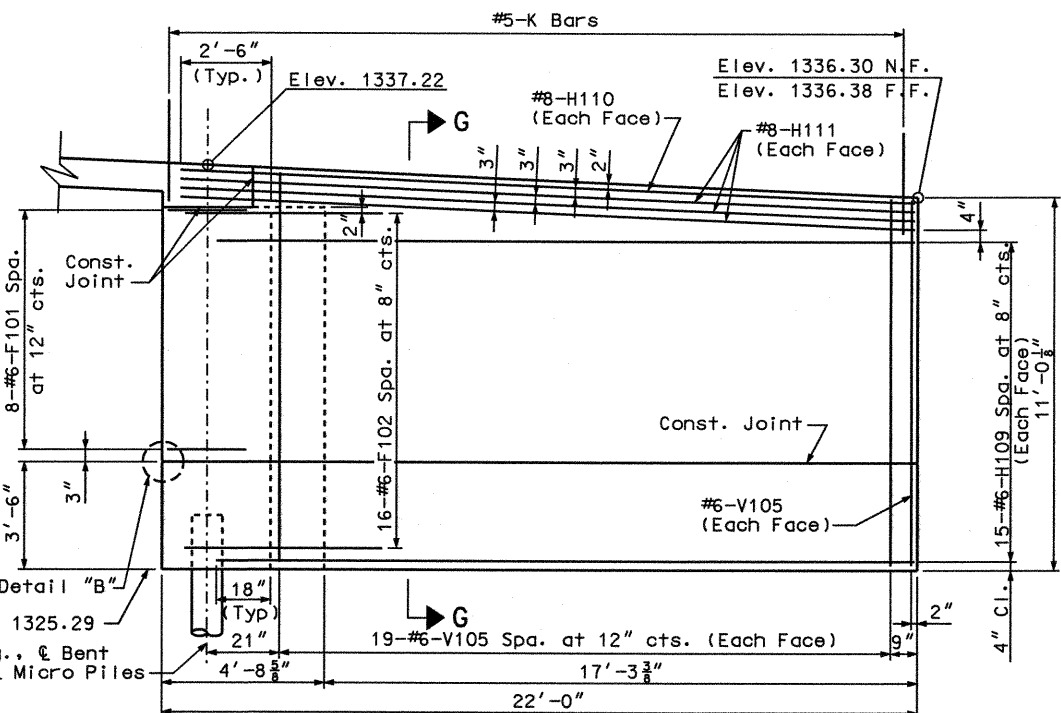
ELEVATION D-D



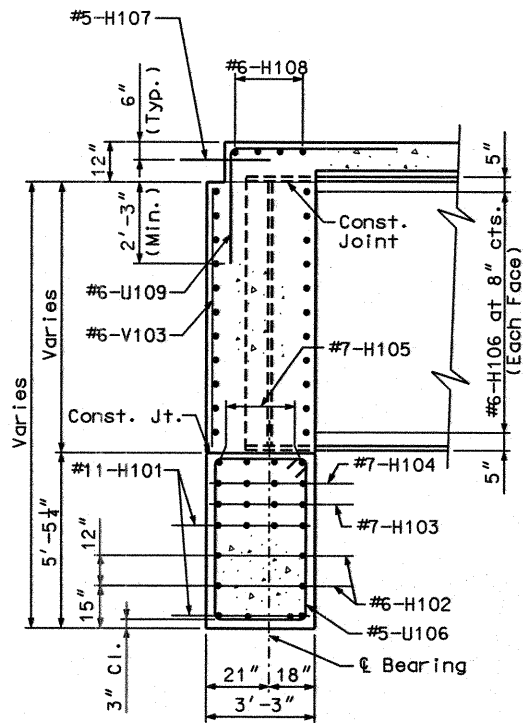
SECTION F-F



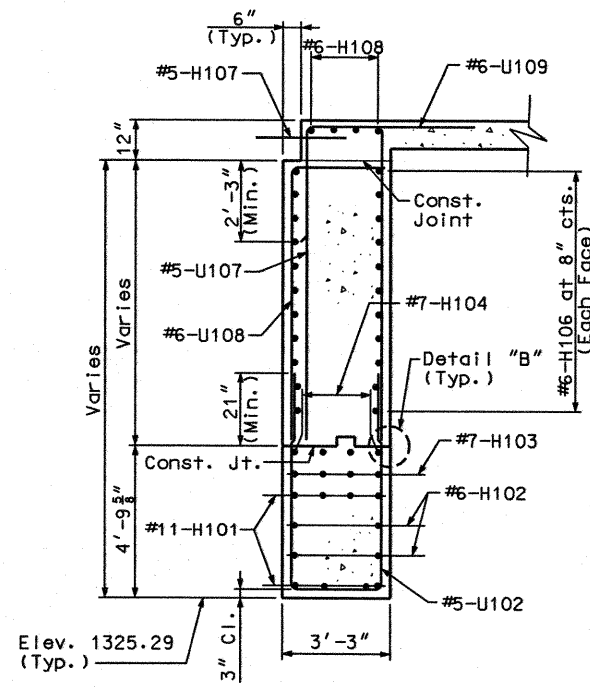
SECTION G-G



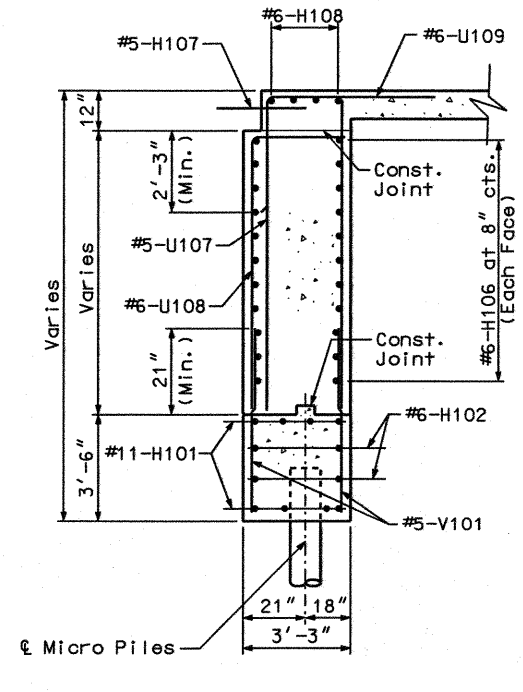
ELEVATION E-E



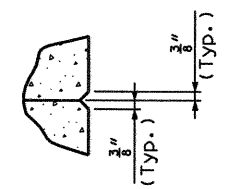
SECTION A-A



SECTION B-B

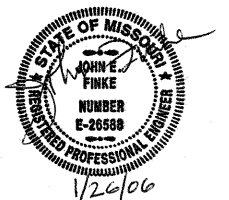


SECTION C-C



DETAIL "B"

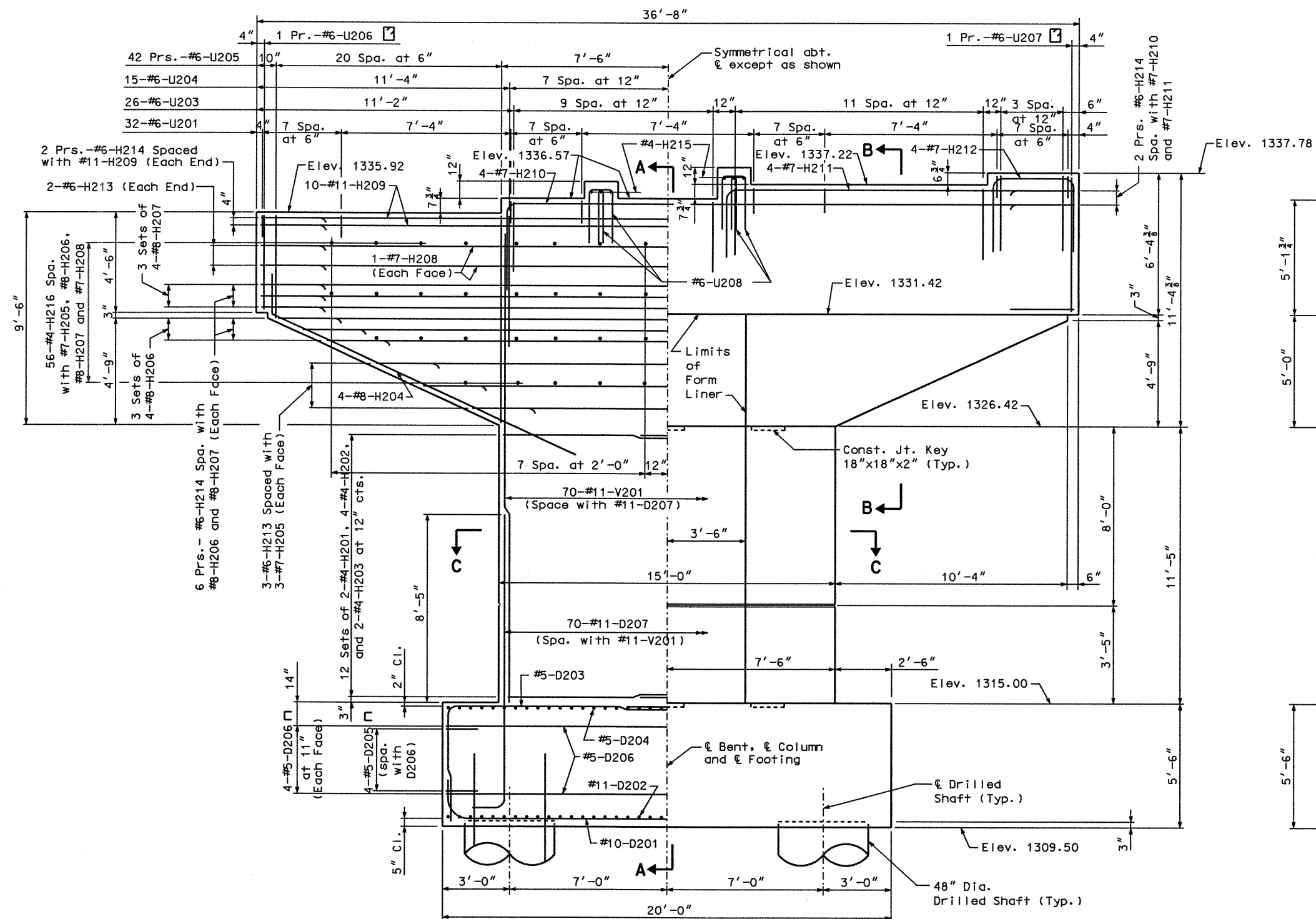
Notes:
 For location of Elevation D-D and E-E, see Sheet No. 12.
 For reinforcement of safety barrier curb, see Sheet No. 67.
 For locations of Sections A-A, B-B and C-C see Sheet No. 13.
 For details of End Bent No. 1 not shown, see Sheet Nos. 11 thru 13.
 For Micro Pile Details, see Sheet No. 33.



DETAILS OF END BENT NO. 1

DETAILED: EAK SEP. 2005
 CHECKED: SEM NOV. 2005

JACOBS CIVIL INC.
 ST. LOUIS, MO.



ELEVATION

Notes:

For Sections B-B and C-C, see Sheet No. 16.

For Form Liner Details, see Sheet No. 33.

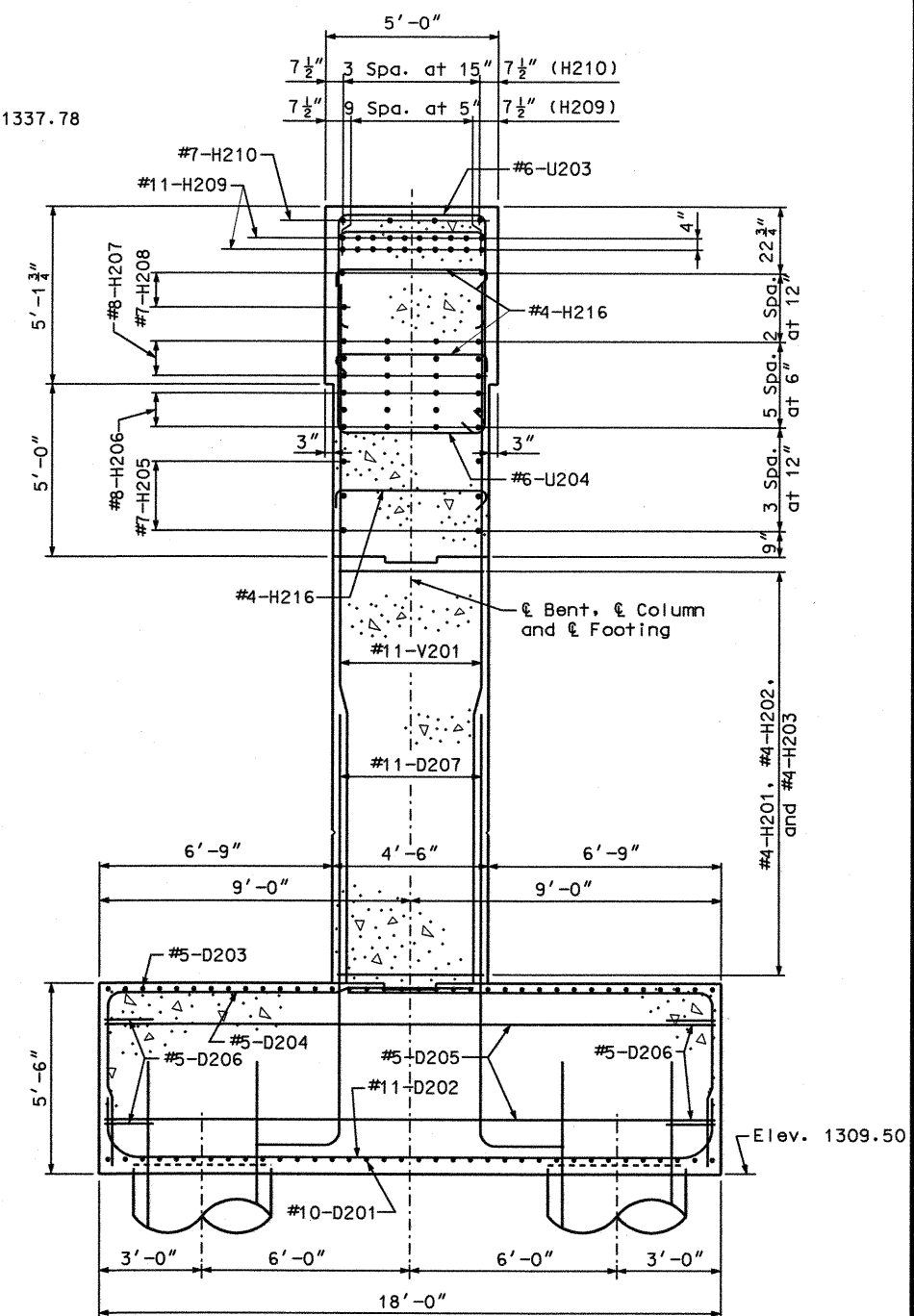
For Footing Plan, see Sheet No. 16.

For Details of Laminated Neoprene Bearing Pad, see Sheet No. 35.

For Details of Drilled Shafts, see Sheet No. 32.

Substructure Quantity Table
for Intermediate Bent No. 2

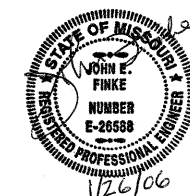
Item	Quantity
Class 1 Excavation	cu. yard 140
Drilled Shafts (4 ft. 0 in. Dia.)	linear foot 64.2
Rock Sockets (3 ft. 6 in. Dia.)	linear foot 64
Supplemental Television Camera Inspection	each 4
Foundation Inspection Holes	linear foot 104
Concrete Coring	linear foot 32
Sonic Logging Testing	each 4
Class B Concrete (Substructure)	cu. yard 159.5
Form Liner	sq. yard 26
Reinforcing Steel (Bridges)	pound 49,680

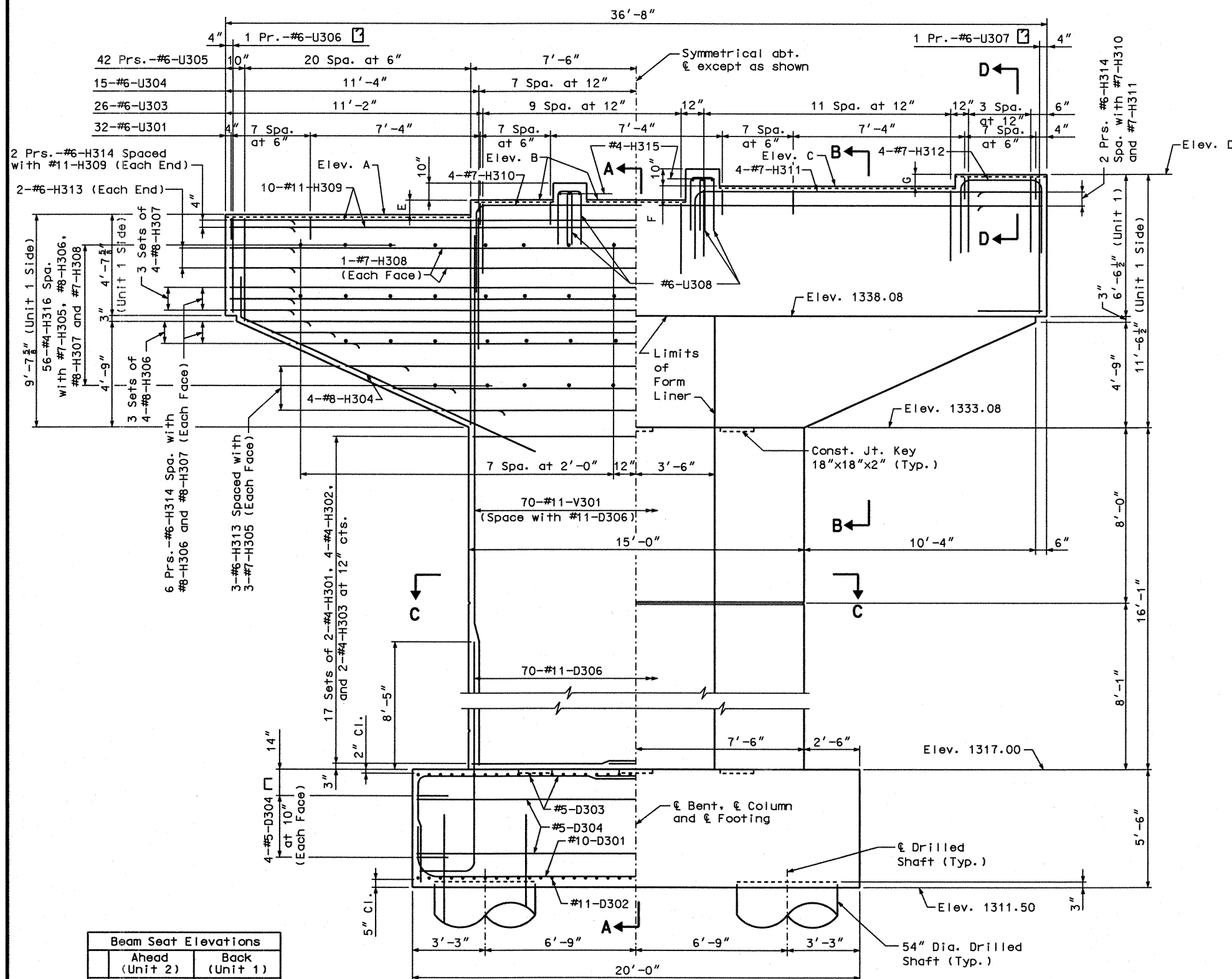


SECTION A-A

Note:

NOTE:
These quantities are included in
the Estimated Quantities Table
on Sheet No. 5.



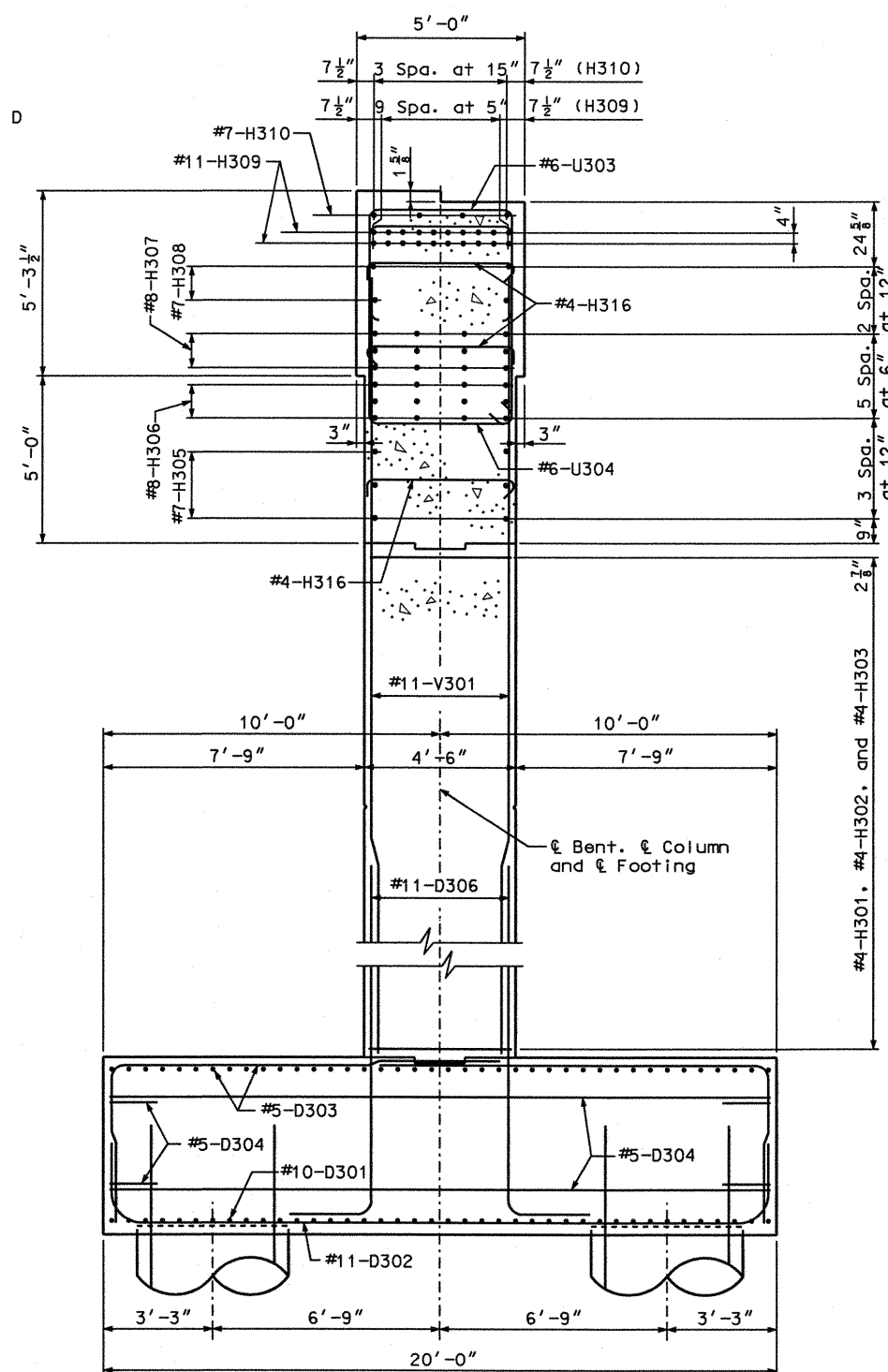


Beam Seat Elevations		
	Ahead (Unit 2)	Back (Unit 1)
A	1342.58	1342.72
B	1343.23	1343.37
C	1343.79	1344.02
D	1344.36	1344.62
Dimensions		
E	7 3/4"	7 3/4"
F	6 3/4"	7 3/4"
G	6 1/8"	7 1/4"

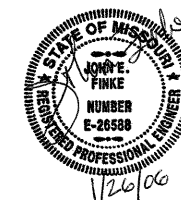
ELEVATION

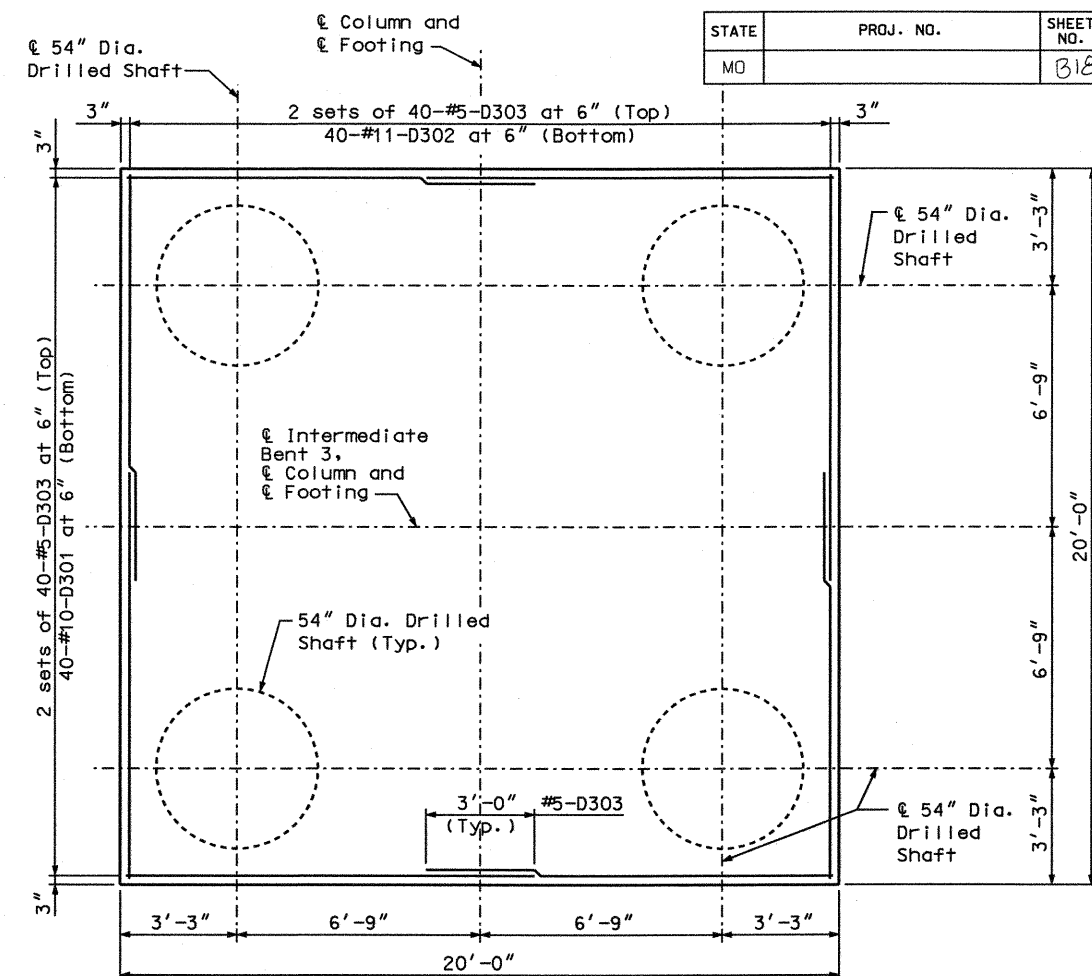
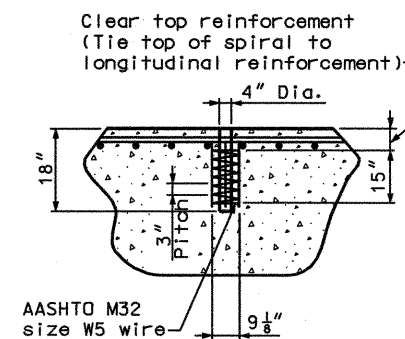
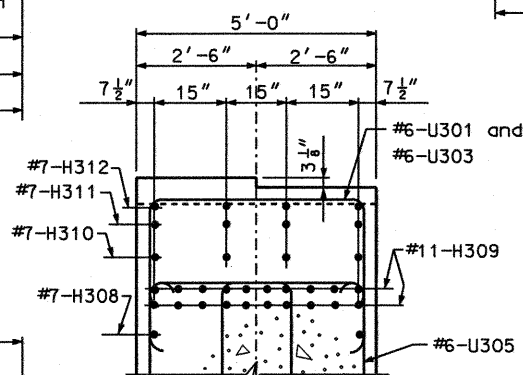
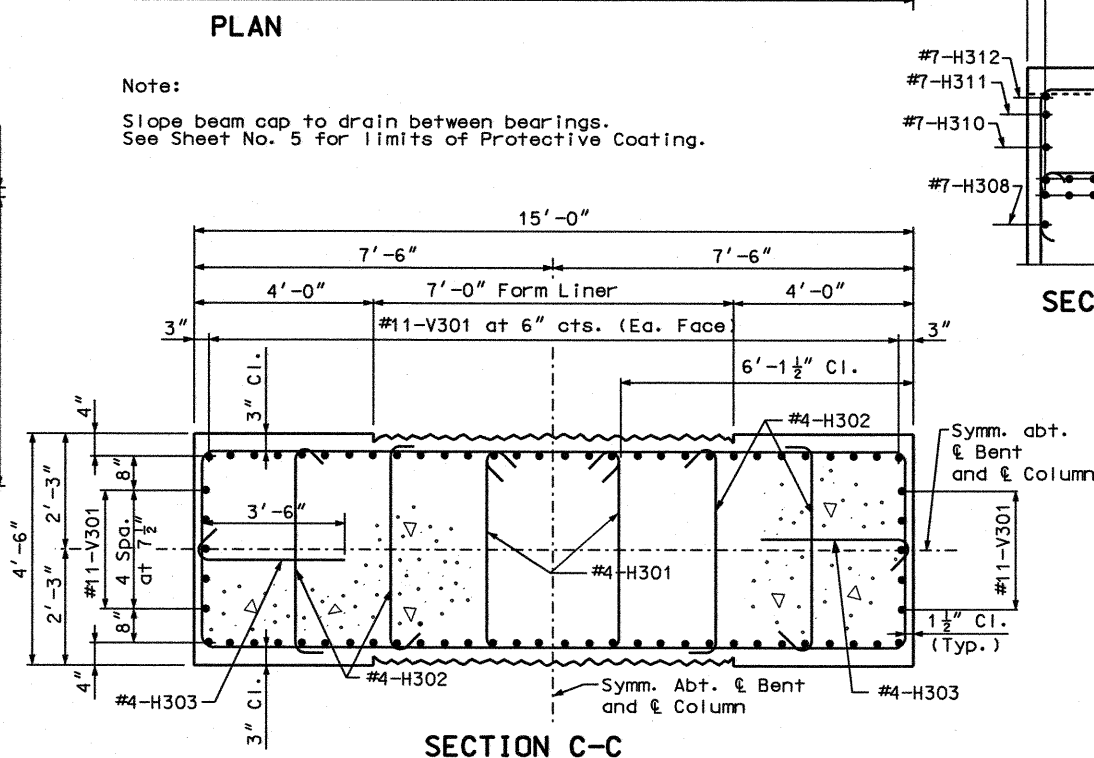
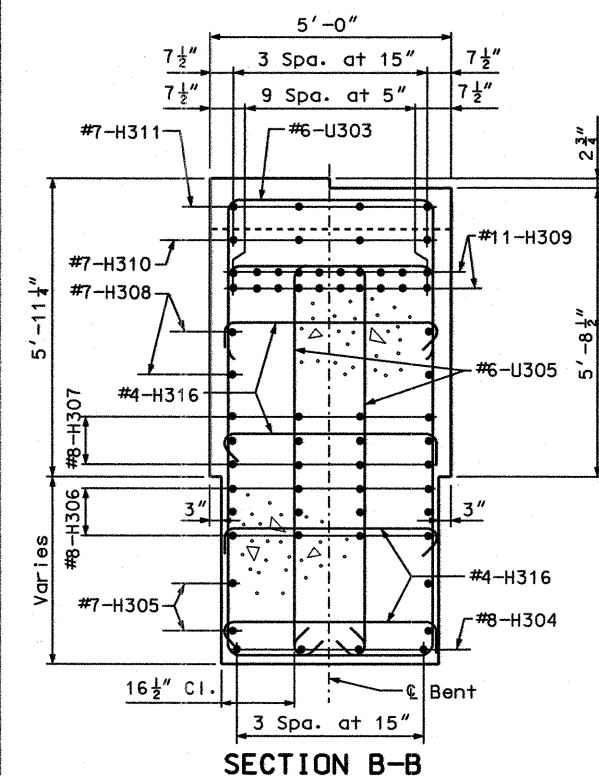
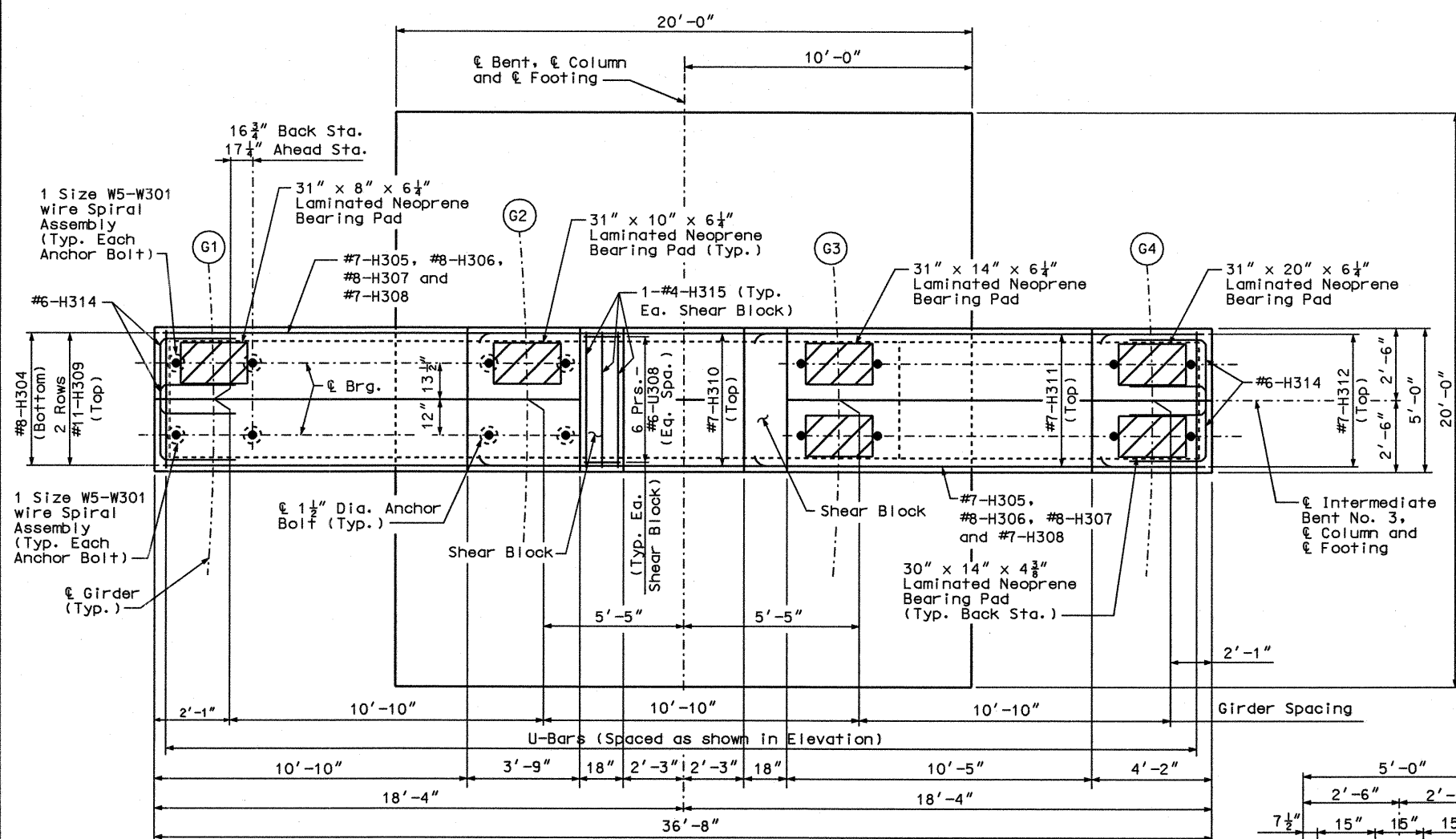
Note:
Slope beam cap to drain between bearings.
See Sheet No. 5 for limits of Protective Coating.

Notes:
For Sections B-B, C-C and D-D, see Sheet No. 18.
For Details of Laminated Neoprene Bearing Pad, see Sheet No. 36.
For Form Liner Details, see Sheet No. 33.
For Plan of Footing, see Sheet No. 18.
For Plan of Beam showing Bearings and reinforcing and details of Bearing pads, see sheet No. 18.
For Details of Drilled Shafts, see Sheet No. 32.



SECTION A-A





Item	Quantity
Class 1 Excavation cu. yard	200
Drilled Shafts (4 ft. 6 in. Dia.) linear foot	82
Rock Sockets (4 ft. 0 in. Dia.) linear foot	60
Supplemental Television Camera Inspection each	4
Foundation Inspection Holes linear foot	100
Concrete Coring linear foot	36
Sonic Logging Testing each	4
Class B Concrete (Substructure) cu. yard	179.1
Form Liner sq. yard	33
Reinforcing Steel (Bridges) pound	48,590
Reinforcing Steel (Epoxy Coated) pound	11,360

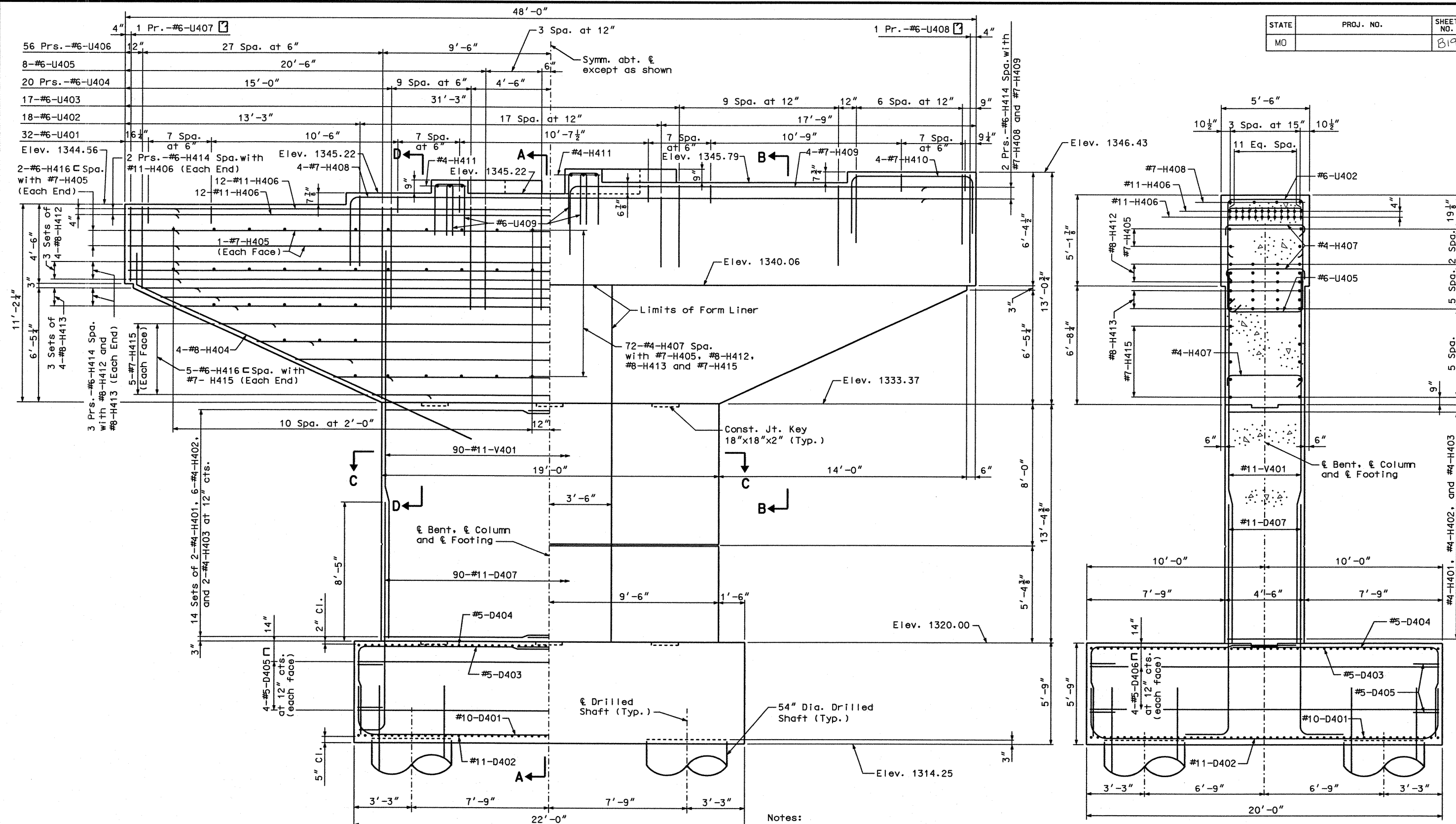
Note: These quantities are included in the Estimated Quantities Table on Sheet No. 5.

For location of Section B-B, Section C-C, and D-D see Sheet No. 17.

For Details of Drilled Shafts, see Sheet No. 32.

All reinforcing bars in the tops of substructure beams or cap shall be spaced to clear anchor bolt wells for bearings by at least 1/2".

STATE	PROJ. NO.	SHEET NO.
MO		B19



ELEVATION

SECTION A-A

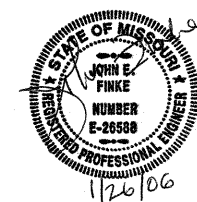
Notes:

For Sections B-B, C-C and D-D see Sheet No. 21.

For Form Liner Details, see Sheet No. 33.

For Plan of Footing, see Sheet No. 21.

For Details of Drilled Shafts, see Sheet No. 32.



DETAILED: SEM NOV. 2005
CHECKED: GJD DEC. 2005

JACOBS CIVIL INC.
ST. LOUIS, MO.

DETAILS OF INTERMEDIATE BENT NO. 4

SHEET NO. 19 OF 77

GREENE COUNTY

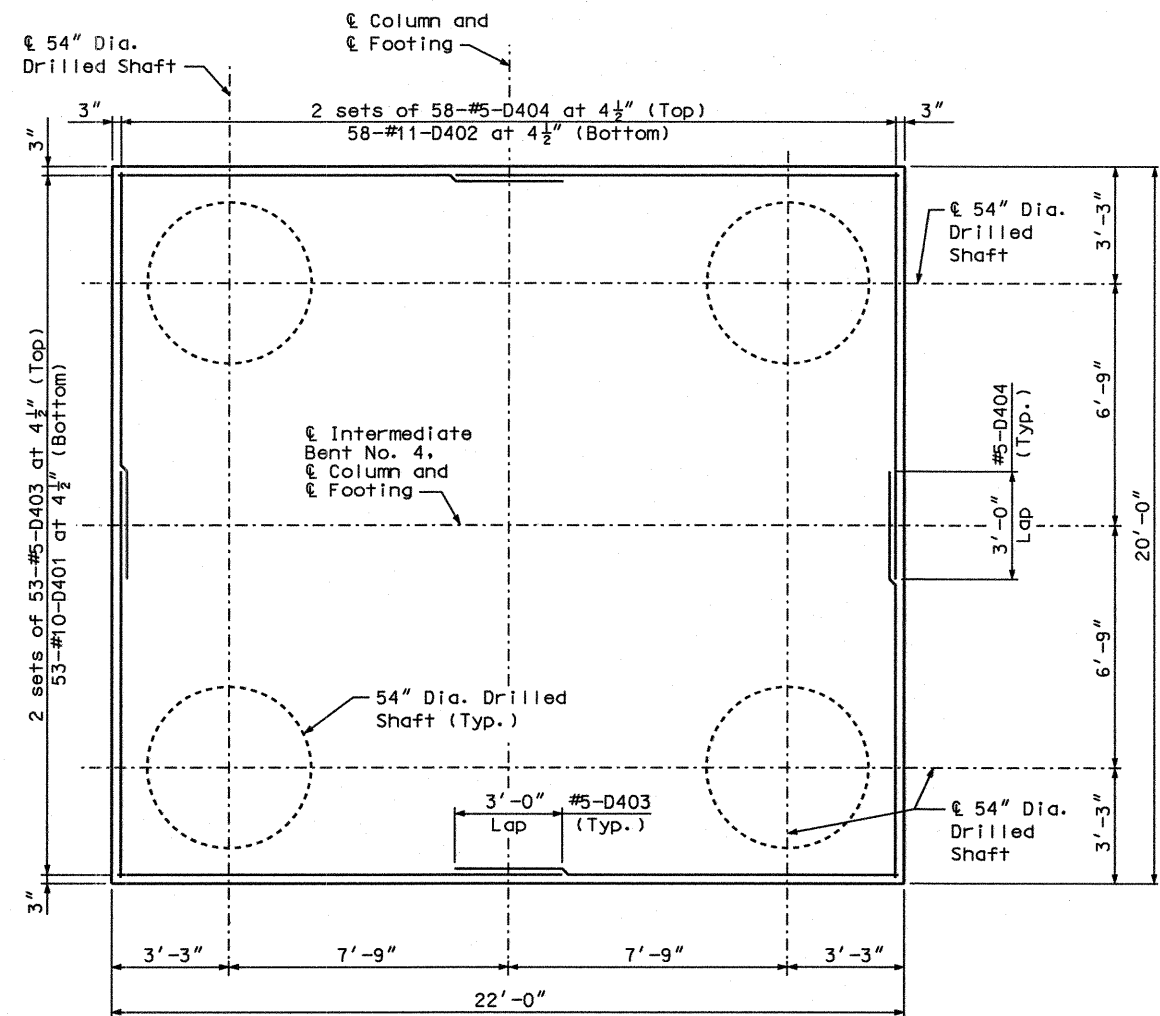
A7024

P:\c1x21400\700cadd\709str\A7024 Ramp 3\A7024_BT402_J8U0548B.dgn

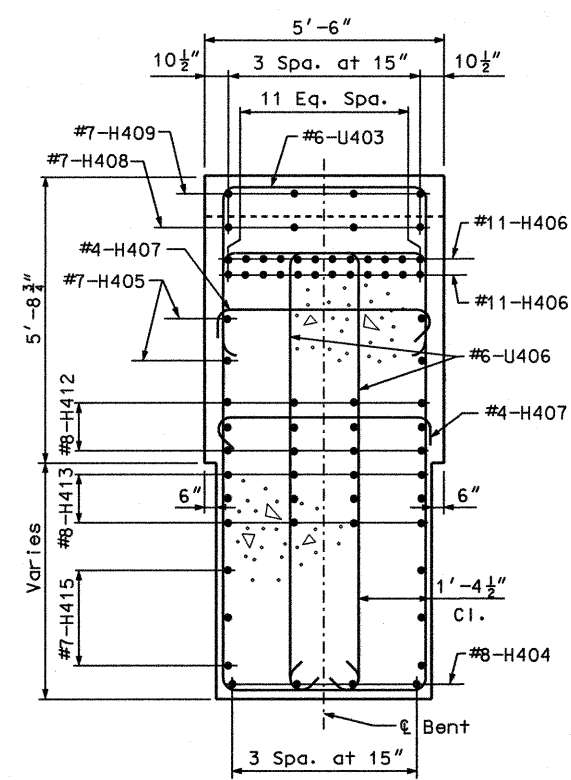
10:48 25-JAN-2006

REV.

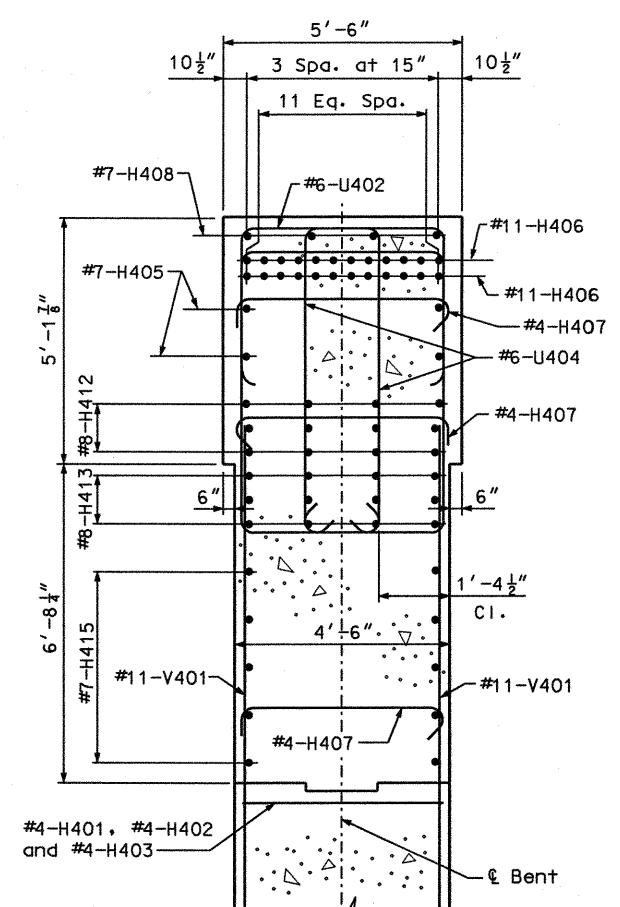
STATE	PROJ. NO.	SHEET NO.
MO		821



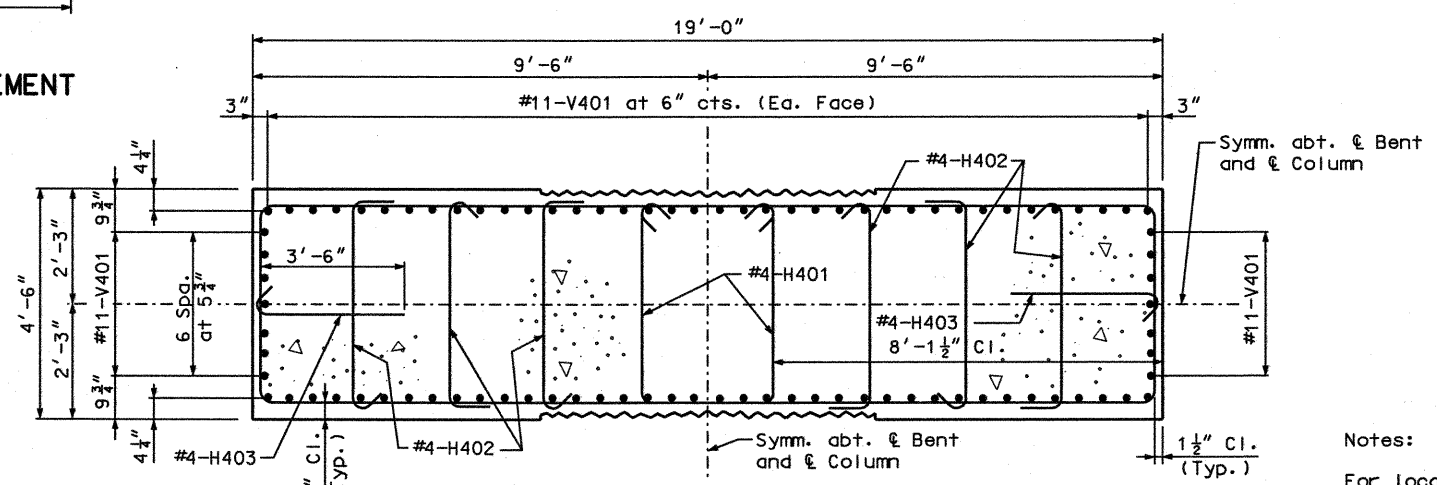
PLAN OF FOOTING
SHOWING DRILLED SHAFTS AND REINFORCEMENT



SECTION B-B

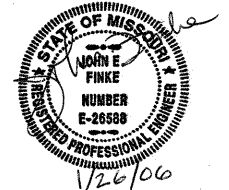


SECTION D-D



SECTION C-C

Notes:
For location of Sections B-B, C-C and D-D see Sheet No. 19.
For Details of Drilled Shafts, see Sheet No. 32.



DETAILS OF INTERMEDIATE BENT NO. 4

DETAILED: SEM NOV. 2005
CHECKED: GJD DEC. 2005

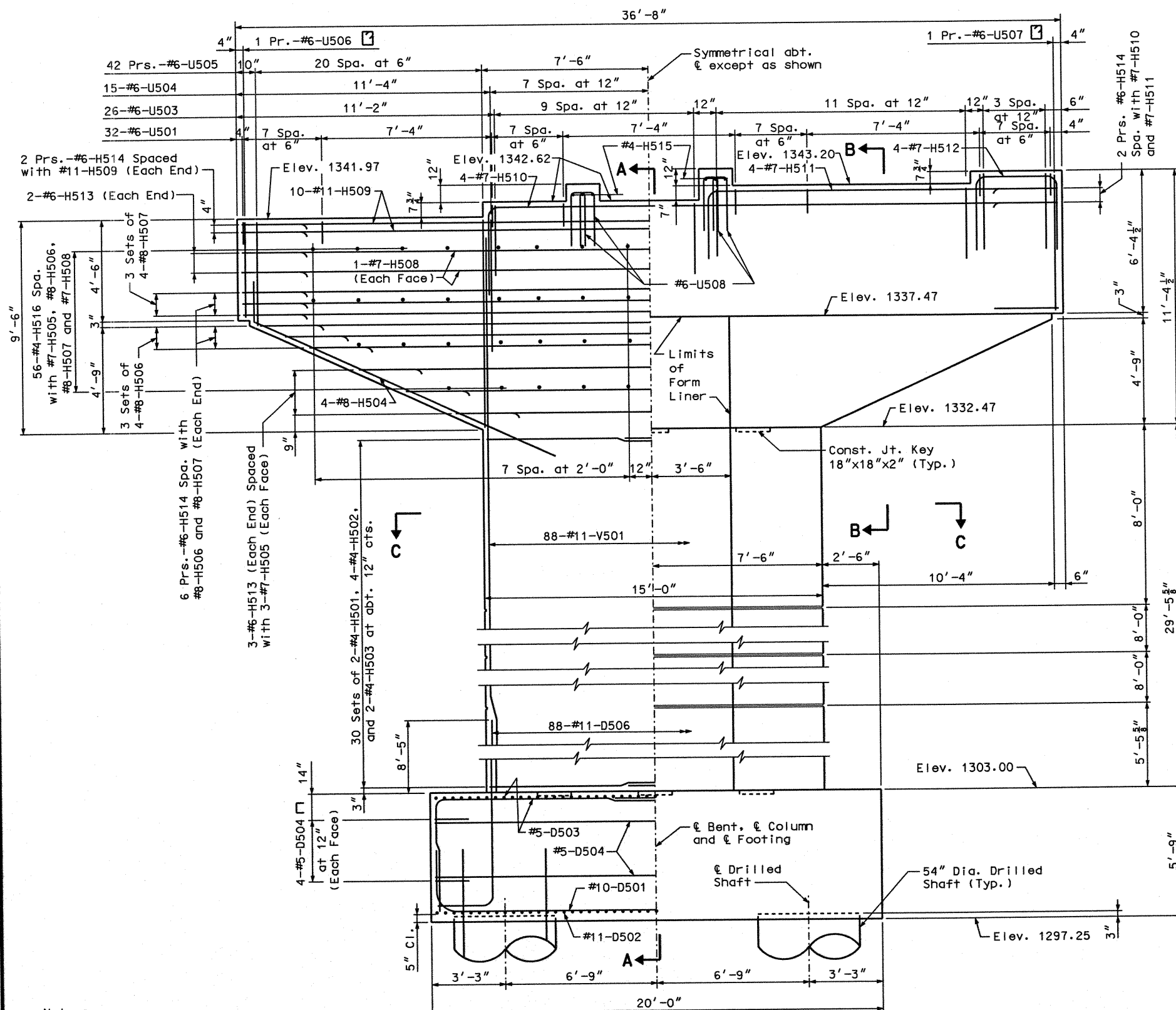
JACOBS CIVIL INC.
ST. LOUIS, MO.

SHEET NO. 21 OF 77
P:\C1X21400\700cadd\709str\A7024 Ramp 3\A7024_BT403_J8U0548B.dgn

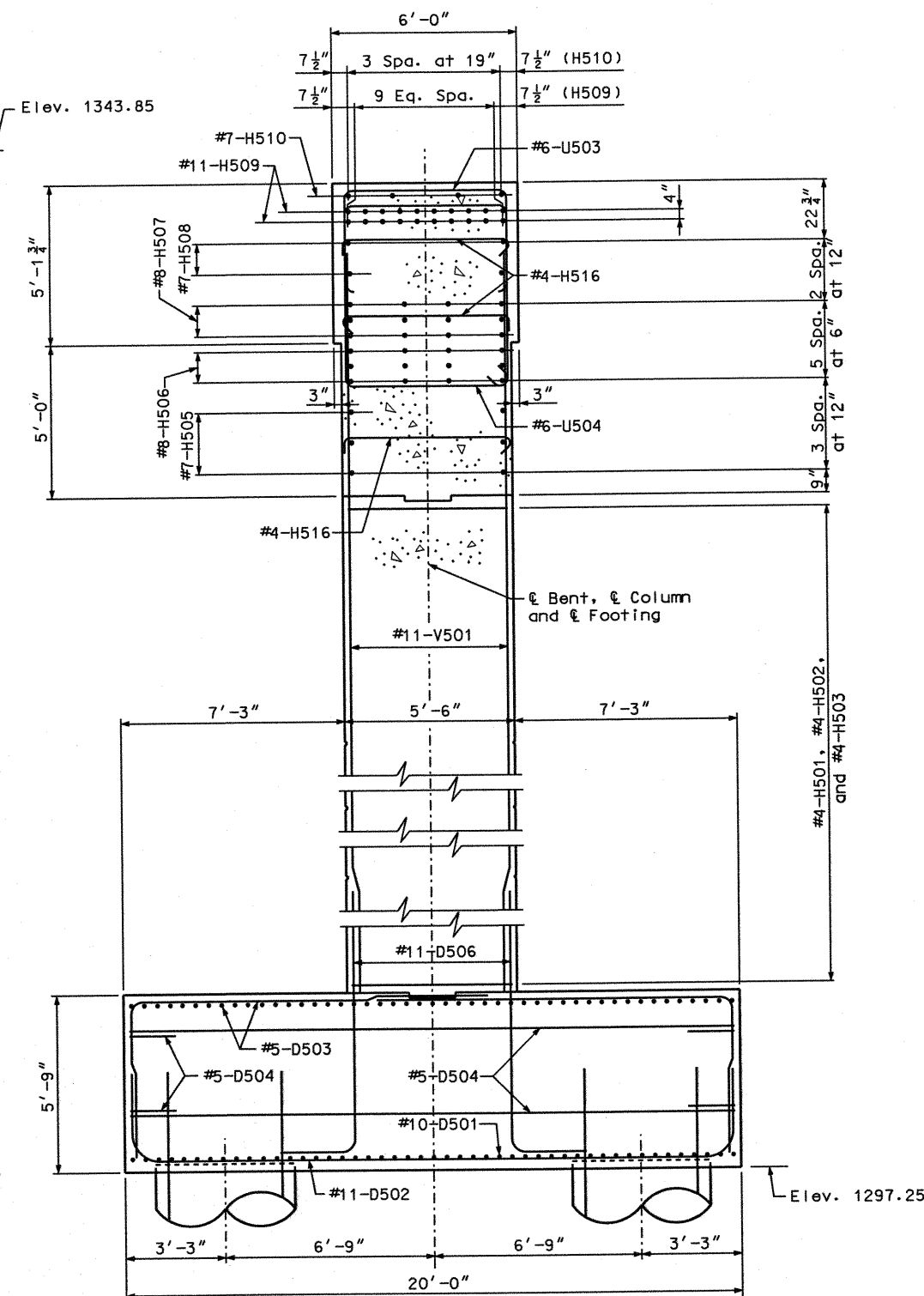
GREENE COUNTY

A7024

STATE	PROJ. NO.	SHEET NO.
MO		BZZ

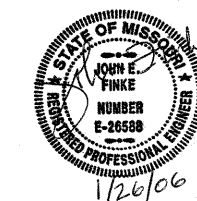


ELEVATION



SECTION A-A

- Notes:
- For Details of Laminated Neoprene Bearing Pad, see Sheet No. 35.
 - For Form Liner Details, see Sheet No. 33.
 - For Footing Plan, of see Sheet No. 23.
 - For Plan of Beam showing Bearings and Reinforcement, see Sheet 23.
 - For Details of Drilled Shafts, see Sheet No. 32.



DETAILED: SEM JULY 2005
CHECKED: BCK DEC. 2005

JACOBS CIVIL INC.
ST. LOUIS, MO.

DETAILS OF INTERMEDIATE BENT NO. 5

SHEET NO. 22 OF 77

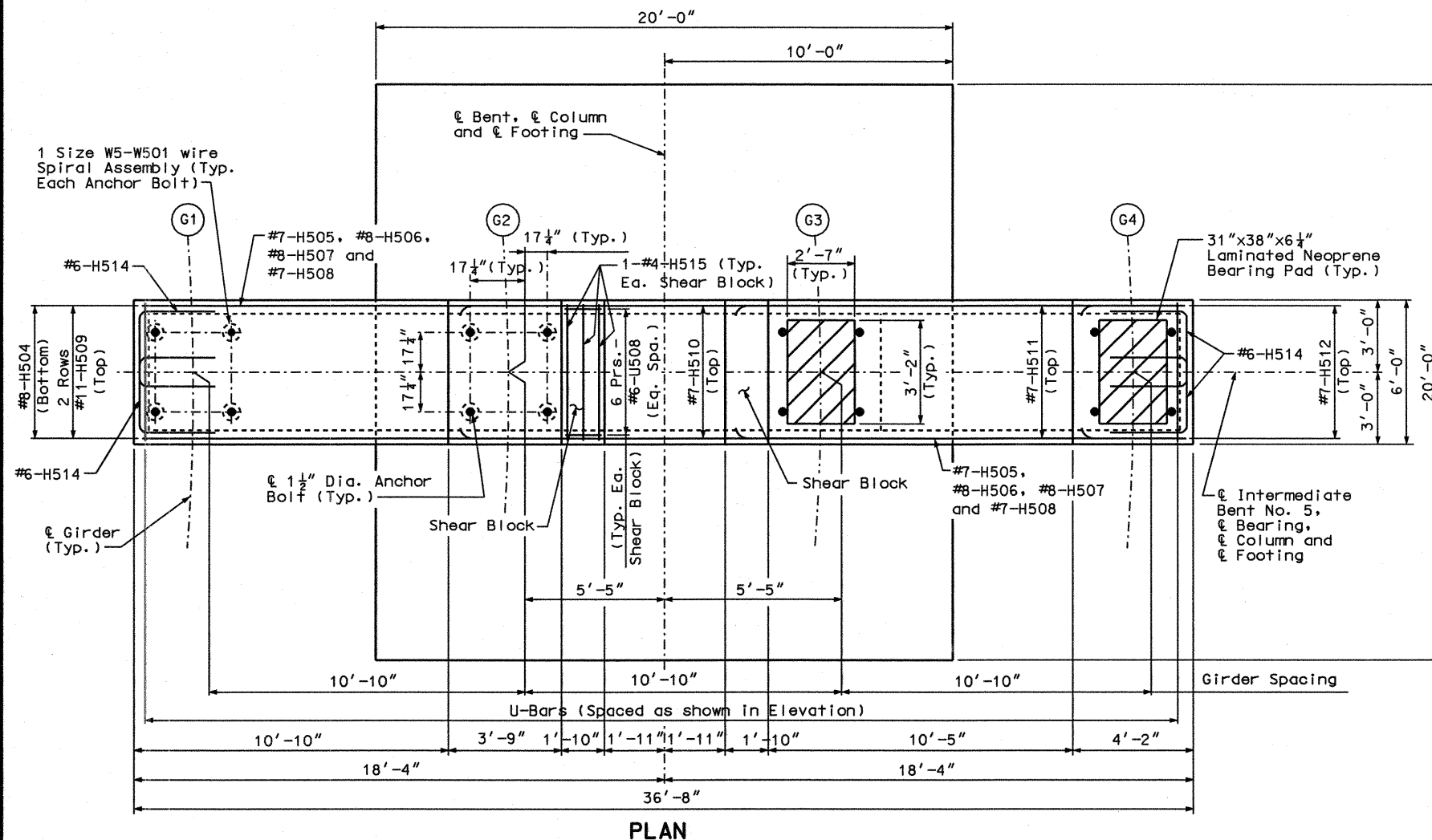
GREENE COUNTY

A7024

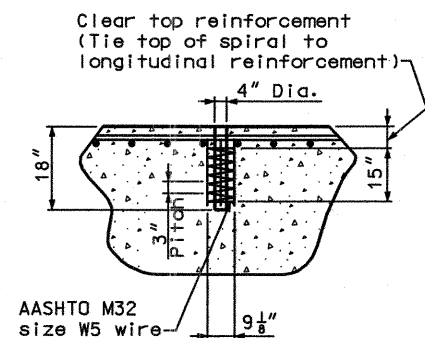
P:\c1x21400\700cadd\709str\A7024 Ramp 3\A7024_BT502_J8U0548B.dgn

10:52 25-JAN-2006

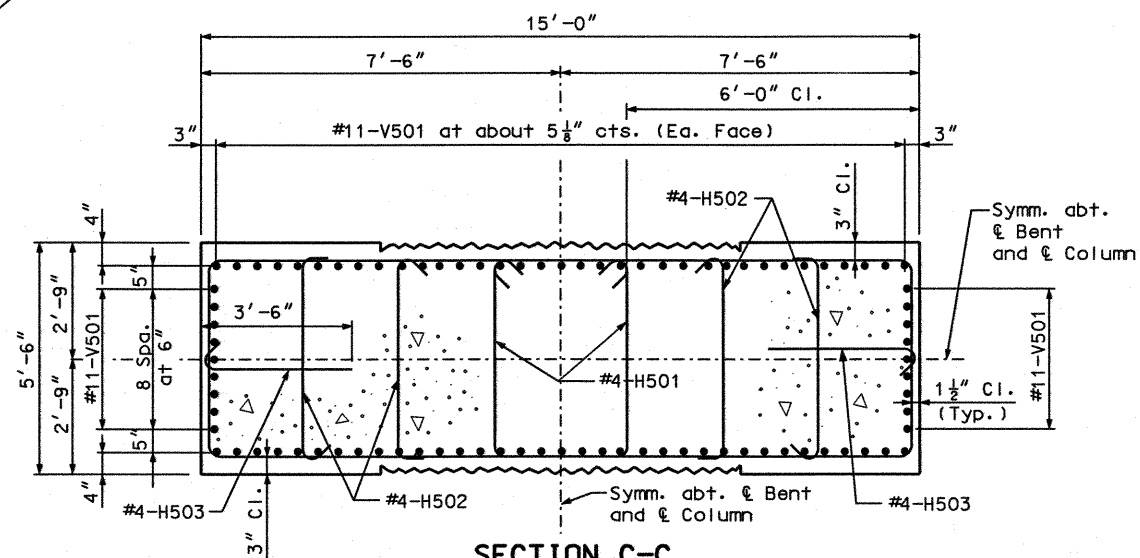
REV.



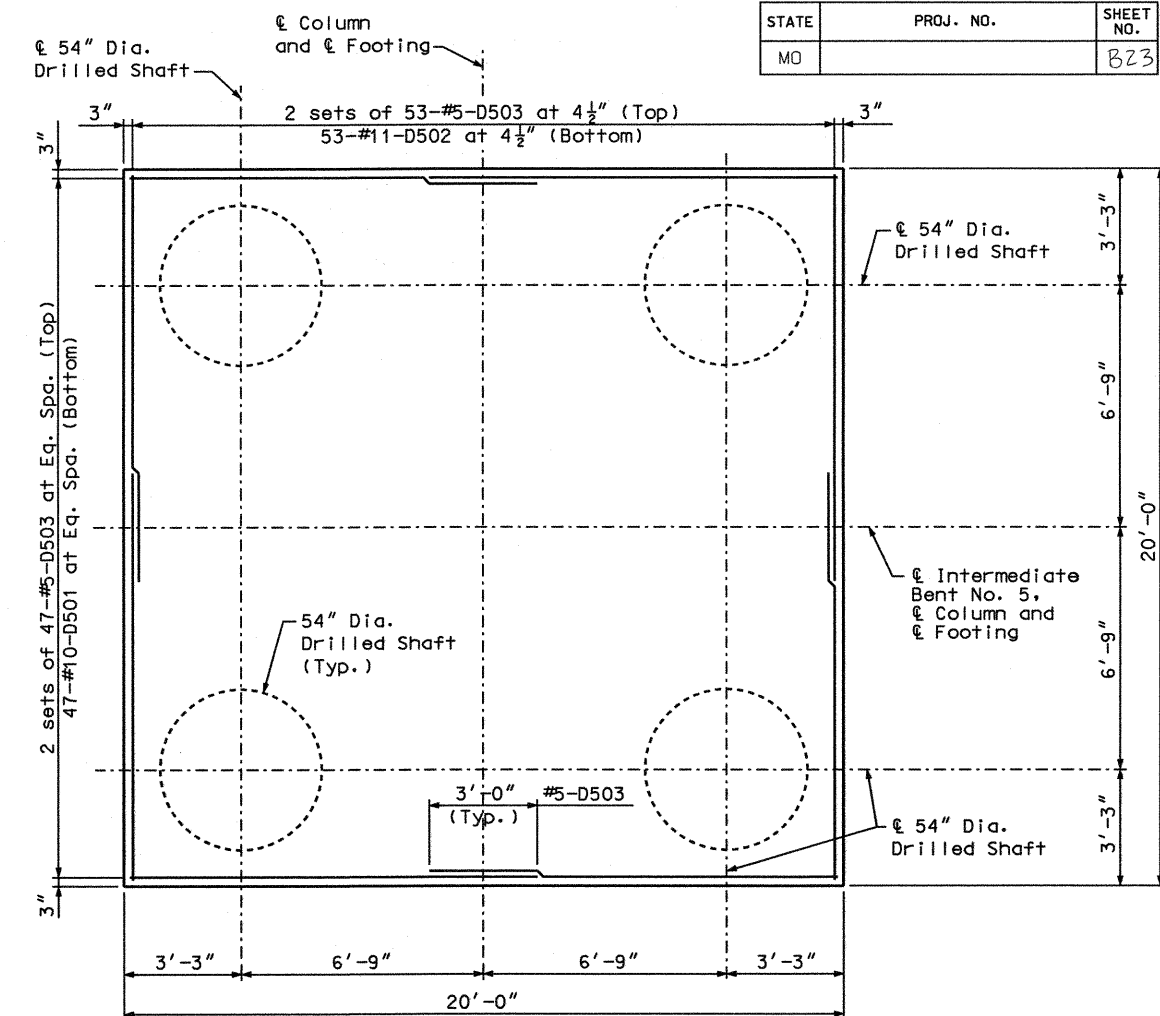
PLAN



DETAIL OF ANCHOR BOLT WELLS



SECTION C-C



PLAN OF FOOTING
SHOWING DRILLED SHAFTS AND REINFORCEMENT

Substructure Quantity Table for Intermediate Bent No. 5		
Item		Quantity
Class 1 Excavation	cu. yard	185
Drilled Shafts (4 ft. 6 in. Dia.)	linear foot	140.4
Rock Sockets (4 ft. 0 in. Dia.)	linear foot	72
Supplemental Television Camera Inspection	each	4
Foundation Inspection Holes	linear foot	112
Concrete Coring	linear foot	53.8
Sonic Logging Testing	each	4
Class B Concrete (Substructure)	cu. yard	244.7
Form Liner	sq. yard	54
Reinforcing Steel (Bridges)	pound	76,850

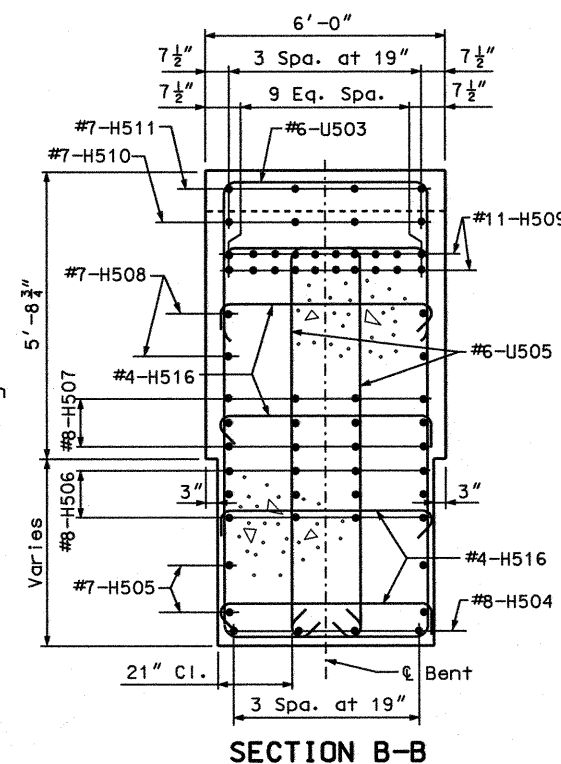
Note: These quantities are included in the Estimated Quantities Table on Sheet No. 5.

Notes:

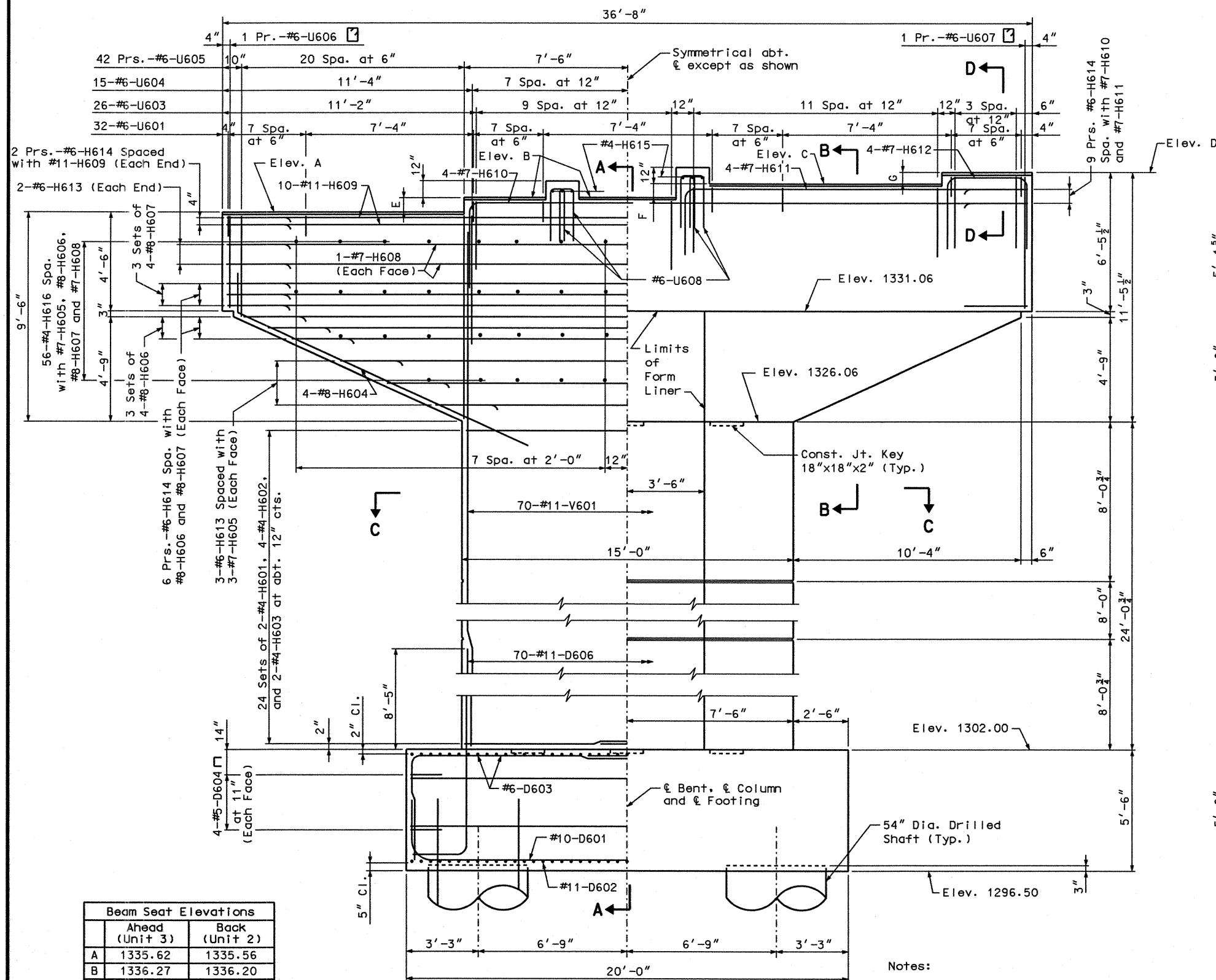
For location of Sections B-B and C-C, see Sheet No. 22.

For Details of Drilled Shafts, see Sheet No. 32.

All reinforcing bars in the tops of substructure beams or caps shall be spaced to clear anchor bolt wells for bearings by at least 1/2".



SECTION B-B

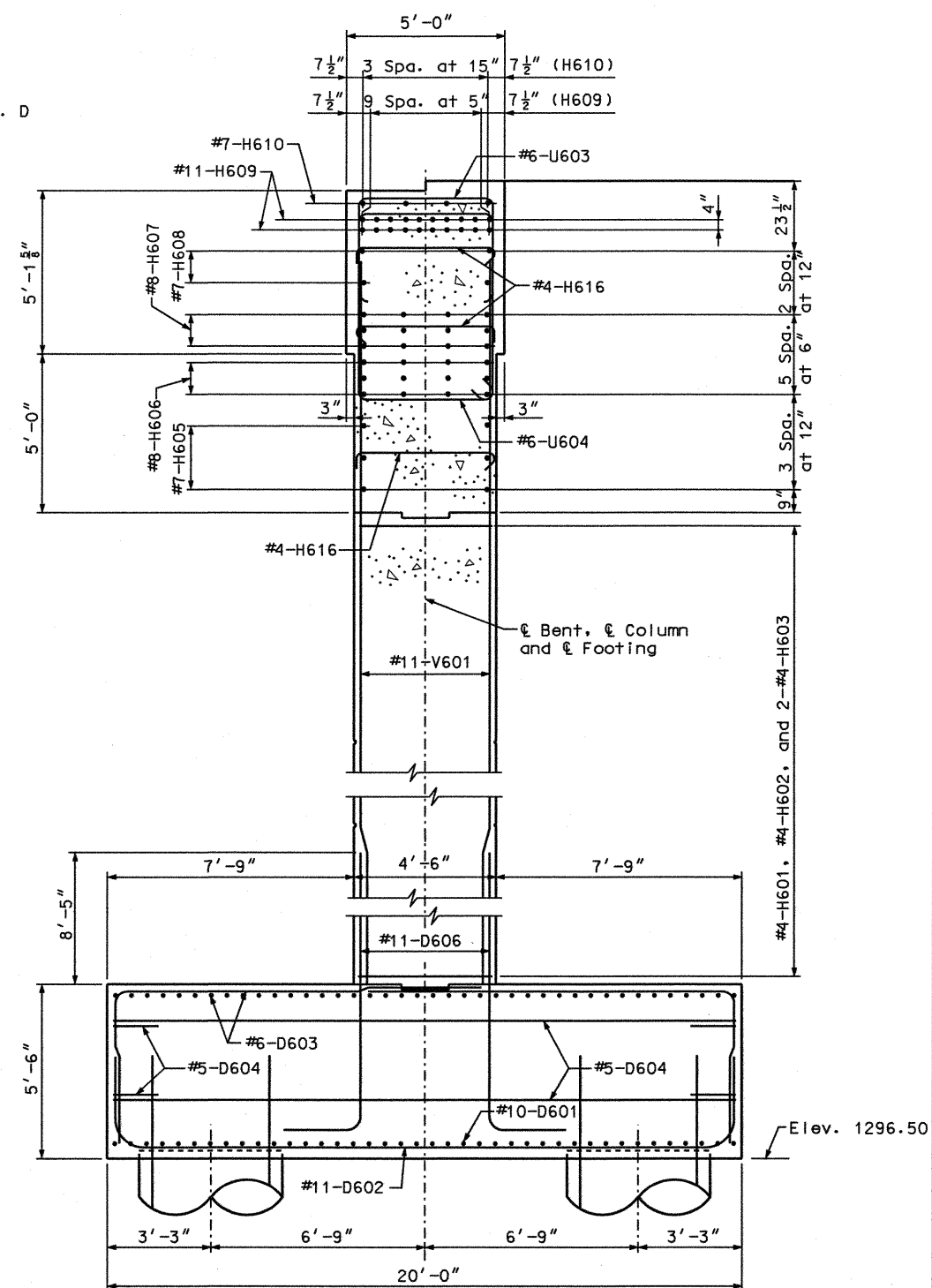


Beam Seat Elevations		
	Ahead (Unit 3)	Back (Unit 2)
A	1335.62	1335.56
B	1336.27	1336.20
C	1336.92	1336.77
D	1337.52	1337.34
Dimensions		
E	7' 3/4"	7' 5/8"
F	7' 3/4"	6' 7/8"
G	7' 1/4"	6' 7/8"

Note:
Slope beam cap to drain between bearings.
See Sheet No. 5 for limits of Protective Coating.

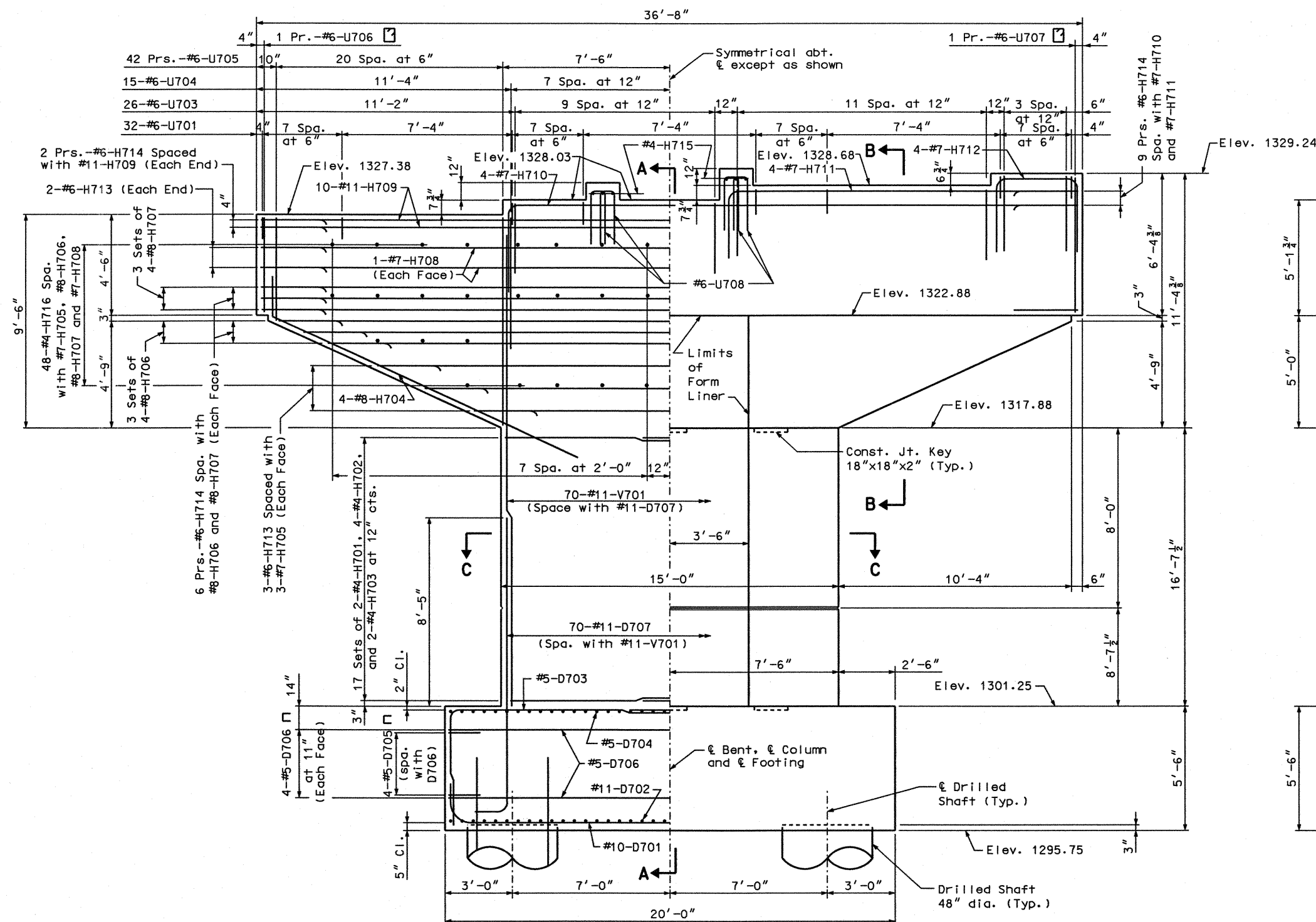
ELEVATION

- Notes:
- For Details of Laminated Neoprene Bearing Pad, see Sheet No. 36.
 - For Form Liner Details, see Sheet No. 33.
 - For Plan of Footing, see Sheet No. 25.
 - For Plan of Beam showing Bearings and Reinforcing, and Sections B-B and C-C, see Sheet 25.
 - For Details of Drilled Shafts, see Sheet No. 32.

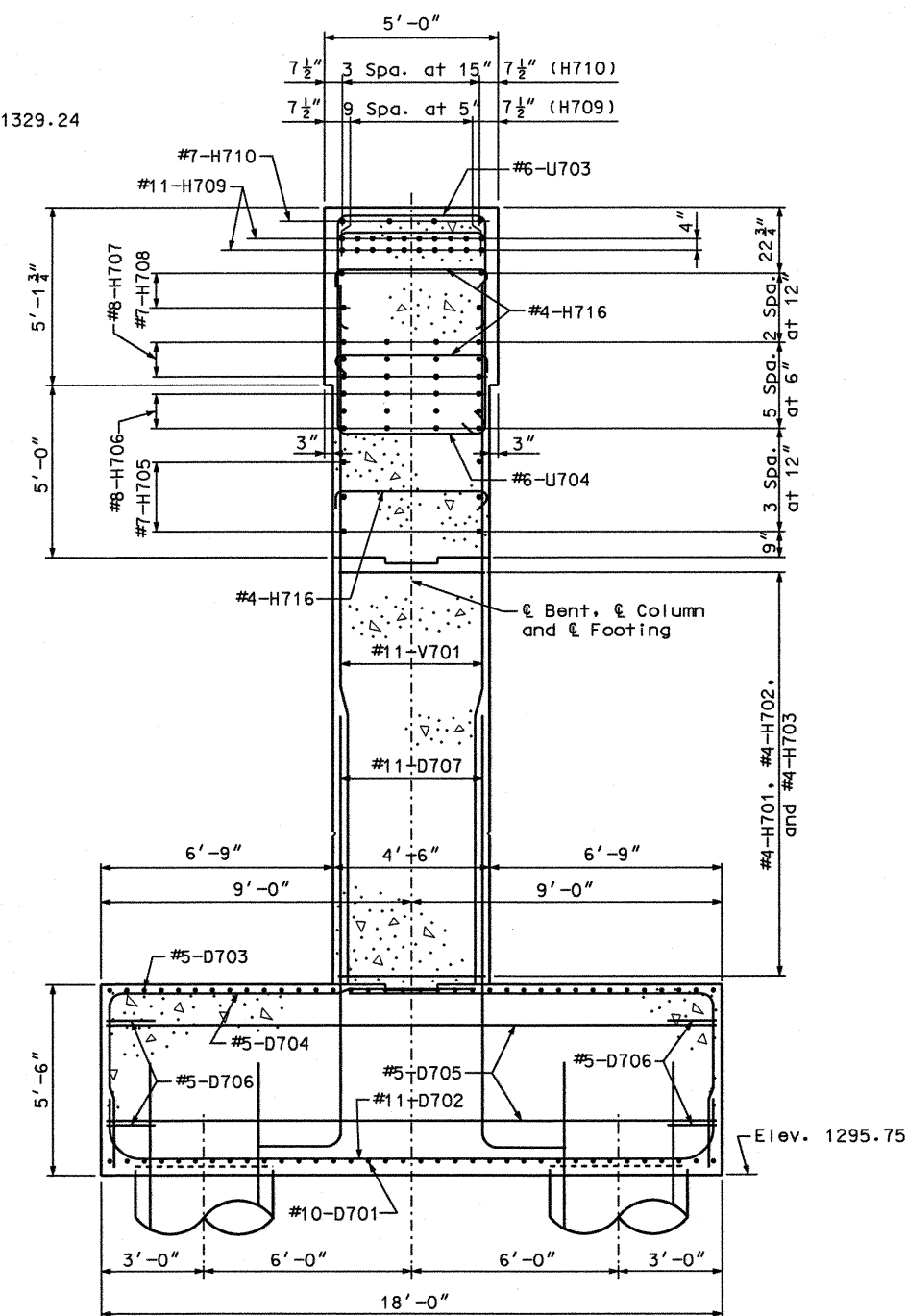


SECTION A-A





ELEVATION



SECTION A-A

Notes:

For Sections B-B and C-C, see Sheet No. 27.

For Form Liner Details, see Sheet No. 33.

For Footing Plan, of see Sheet No. 27.

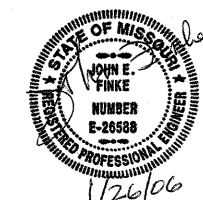
For Details of Laminated Neoprene Bearing Pad, see Sheet No. 35.

For Details of Drilled Shafts, see Sheet No. 32.

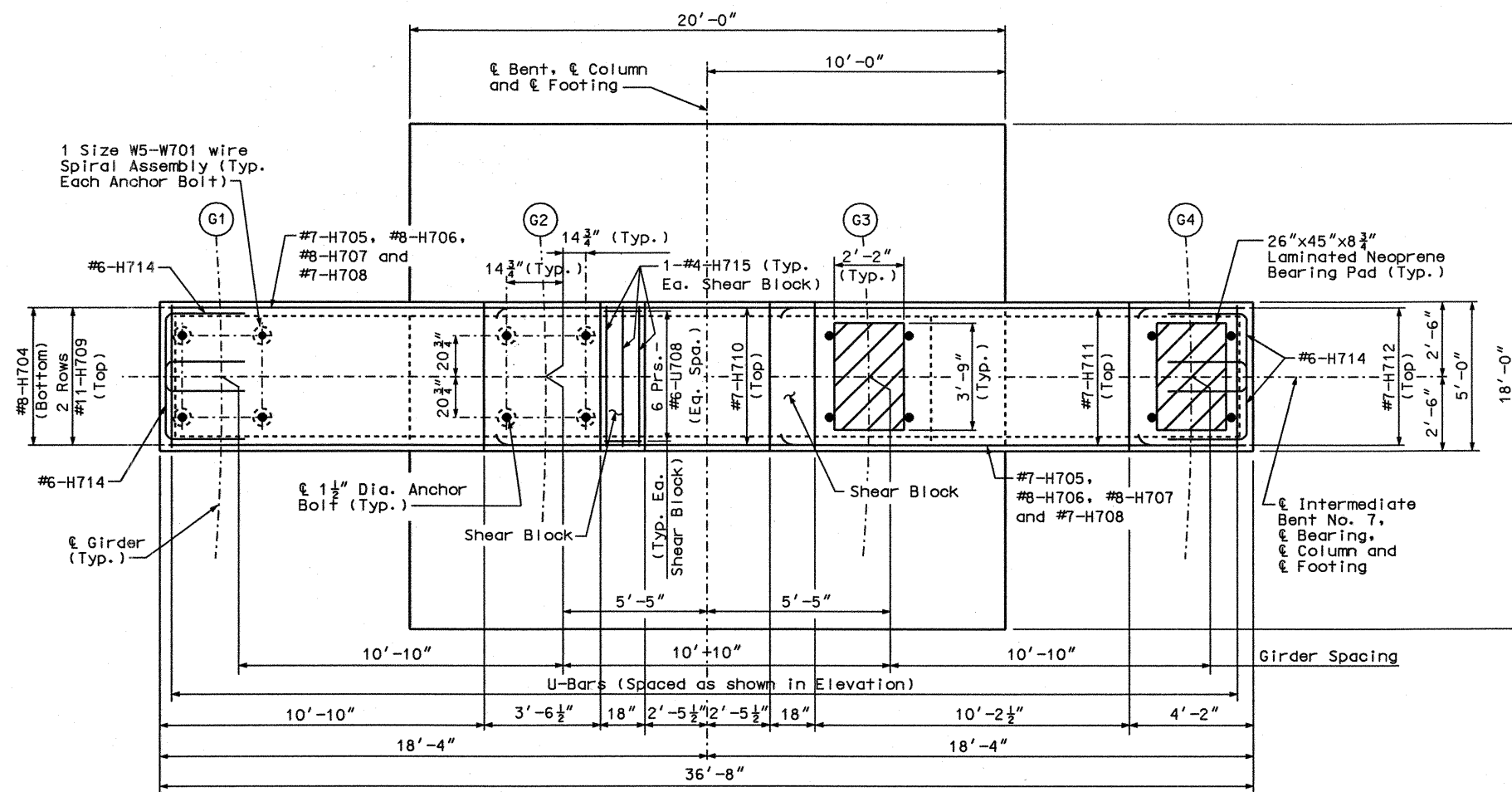
Substructure Quantity Table for Intermediate Bent No. 7		
Item		Quantity
Class 1 Excavation	cu. yard	145
Drilled Shafts (4 ft. 0 in. Dia.)	linear foot	131.2
Rock Sockets (3 ft. 6 in. Dia.)	linear foot	64
Supplemental Television Camera Inspection	each	4
Foundation Inspection Holes	linear foot	104
Concrete Coring	linear foot	49.8
Sonic Logging Testing	each	4
Class B Concrete (Substructure)	cu. yard	172.5
Form Liners	sq. yard	34
Reinforcing Steel (Bridges)	pound	56,460

Note:

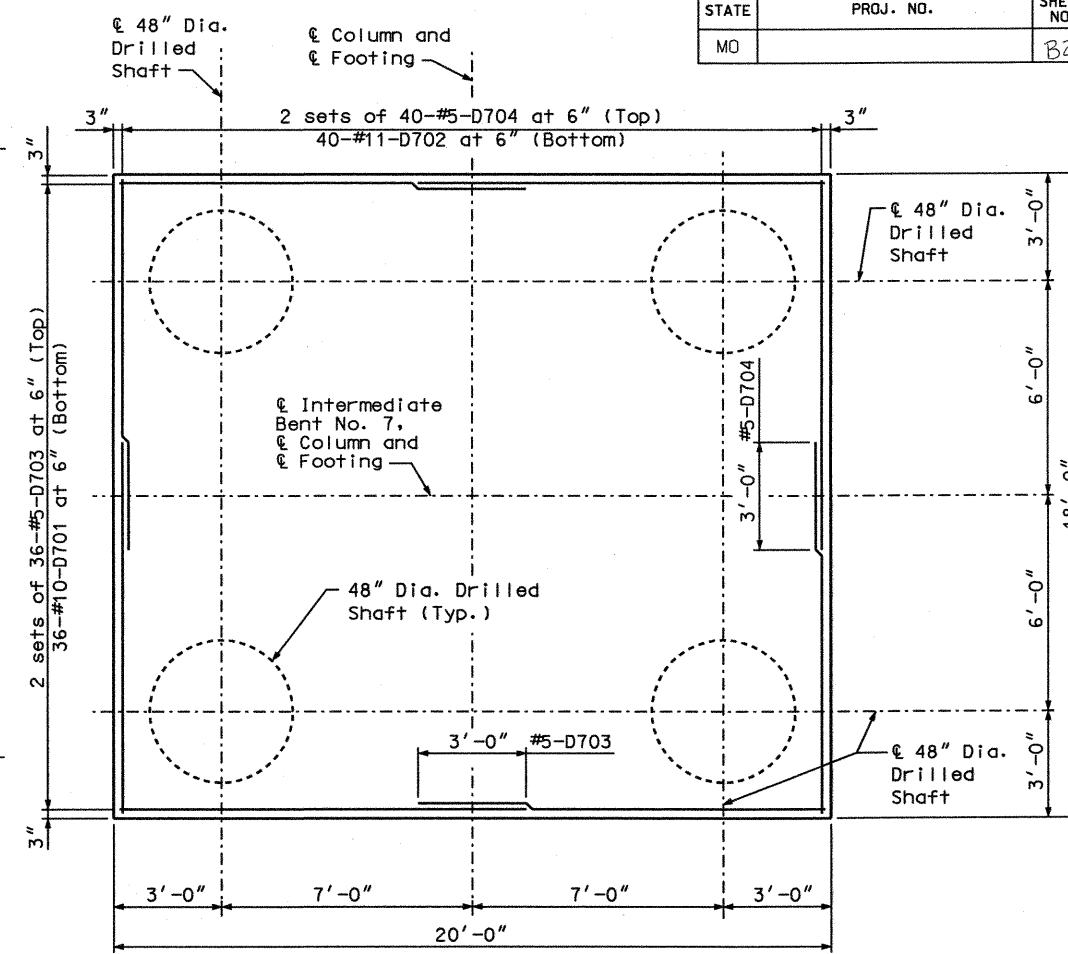
NOTE: These quantities are included in the Estimated Quantities Table on Sheet No. 5.



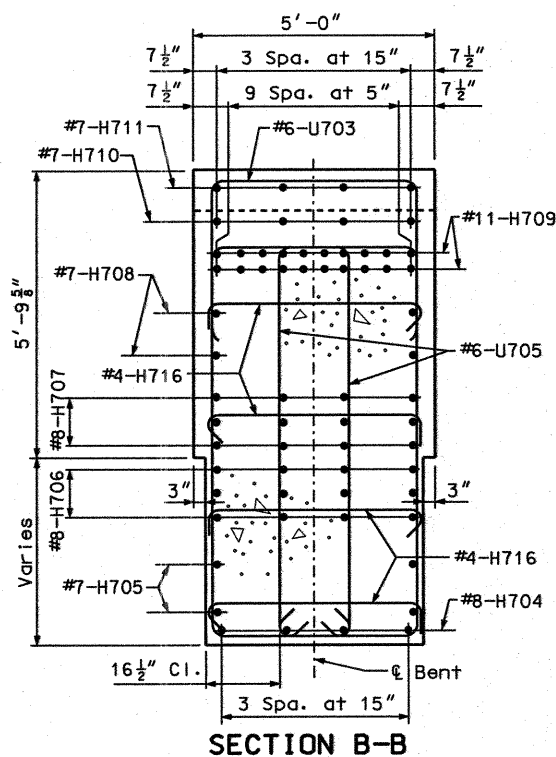
STATE	PROJ. NO.	SHEET NO.
MO		B27



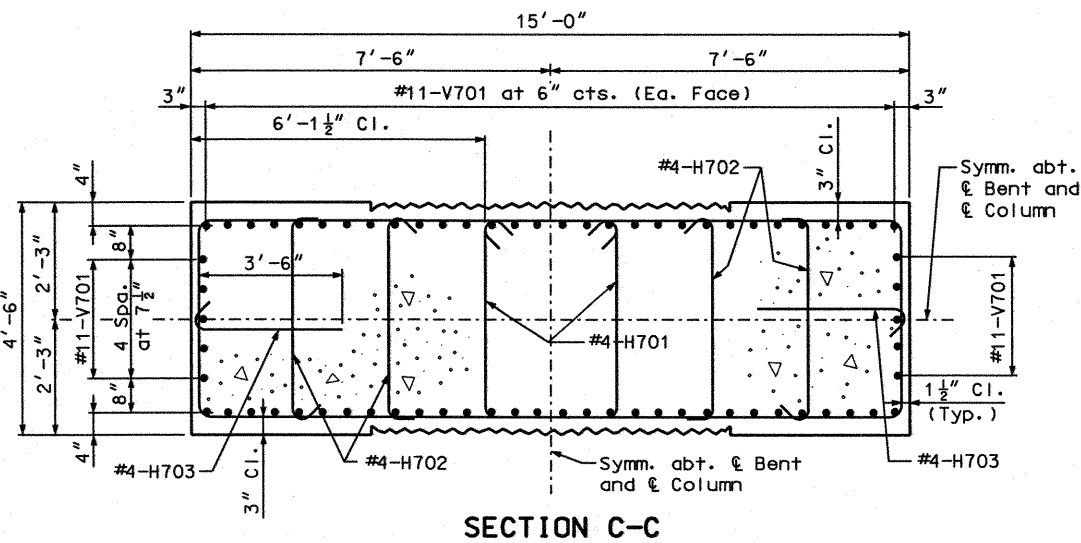
PLAN



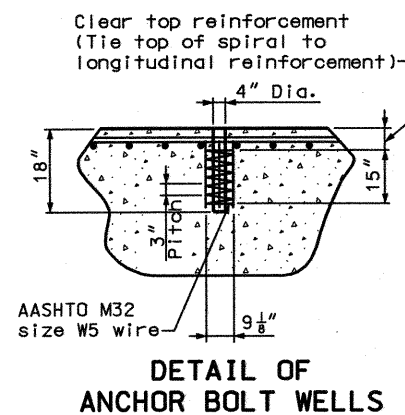
PLAN OF FOOTING
SHOWING DRILLED SHAFTS AND REINFORCEMENT



SECTION B-B



SECTION C-C



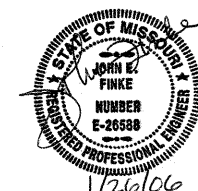
DETAIL OF
ANCHOR BOLT WELLS

Notes:

For location of Sections B-B and C-C, see Sheet No. 26.

For Details of Drilled Shafts, see Sheet No. 32.

All reinforcing bars in the tops of substructure beams or cap shall be spaced to clear anchor bolt wells for bearings by at least 1/2".



DETAILED: SEM JULY 2005
CHECKED: RDR DEC. 2005

JACOBS CIVIL INC.
ST. LOUIS, MO.

DETAILS OF INTERMEDIATE BENT NO. 7

SHEET NO. 27 OF 77

GREENE COUNTY

A7024

P:\c1x21400\700cadd\709str\A7024 Ramp 3\A7024_BT701_J8U0548B.dgn

10:59 25-JAN-2006

Tapered Shim
 $\frac{1}{8}$ " Min., $\frac{7}{16}$ " Max.

7"

7"

⌀ Bearing

$\frac{1}{8}$ "

$\frac{1}{16}$ "

$\frac{1}{4}$ "

$\frac{1}{2}$ "

$\frac{1}{4}$ "

$\frac{1}{8}$ " Min.
 (Typ.)

1 7/8"

[illegible]

Line	Notes	Dimensions
5-#5-U806		35'-4"
4-#5-U805		24'-10"
5-#5-U804		13'-10"
4-#5-U803		3'-4"
4-#5-V802 Ea. Face		29'-4"
7-#5-U802		27'-4"
6-#5-V801 Ea. Face		16"
13-#5-U801		4"

Substructure Quantity Table for End Bent No. 8		
Item		Quantity
Micro Piles (9.625 in.)	each	5
Loading Tests	each	1
Class B Concrete (Substructure)	cu. yard	29

Notes:

For reinforcement of Safety Barrier Curb, see Sheet No. 67.

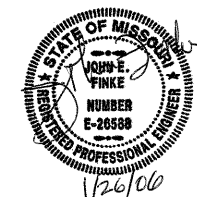
For details of End Bent No. 8 not shown, see Sheet Nos. 29 thru 31.

For details of Approach Slab, see Sheet No. 70.

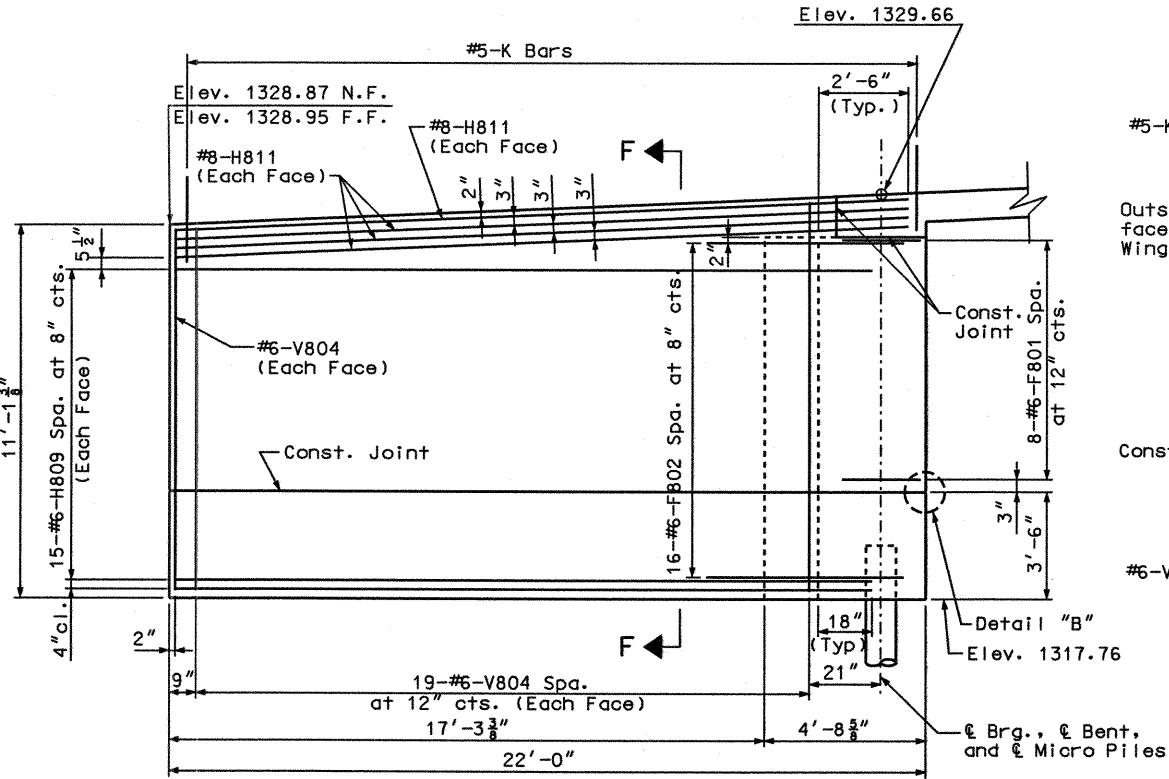
For details of Vertical Drain at End Bent, see Sheet No. 34.

All Vertical reinforcement bars in the substructure beams or caps shall be field adjusted to clear piles by at least 1 1/2".

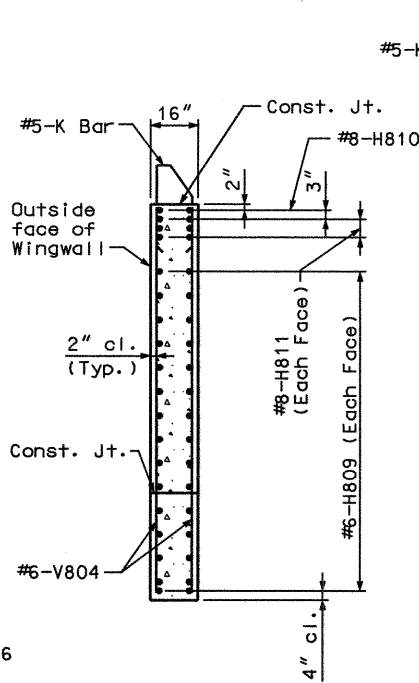
For Micro Pile Details, see Sheet No. 33.



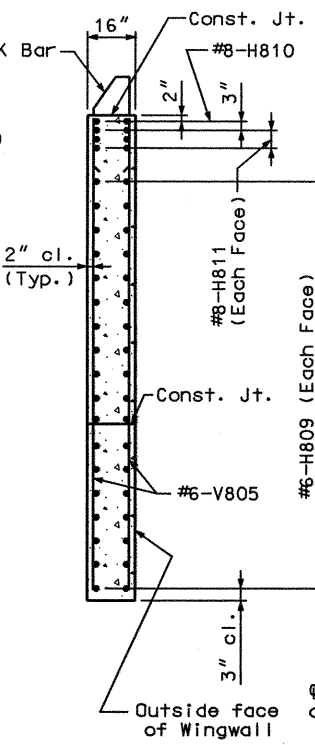
STATE	PROJ. NO.	SHEET NO.
MO		331



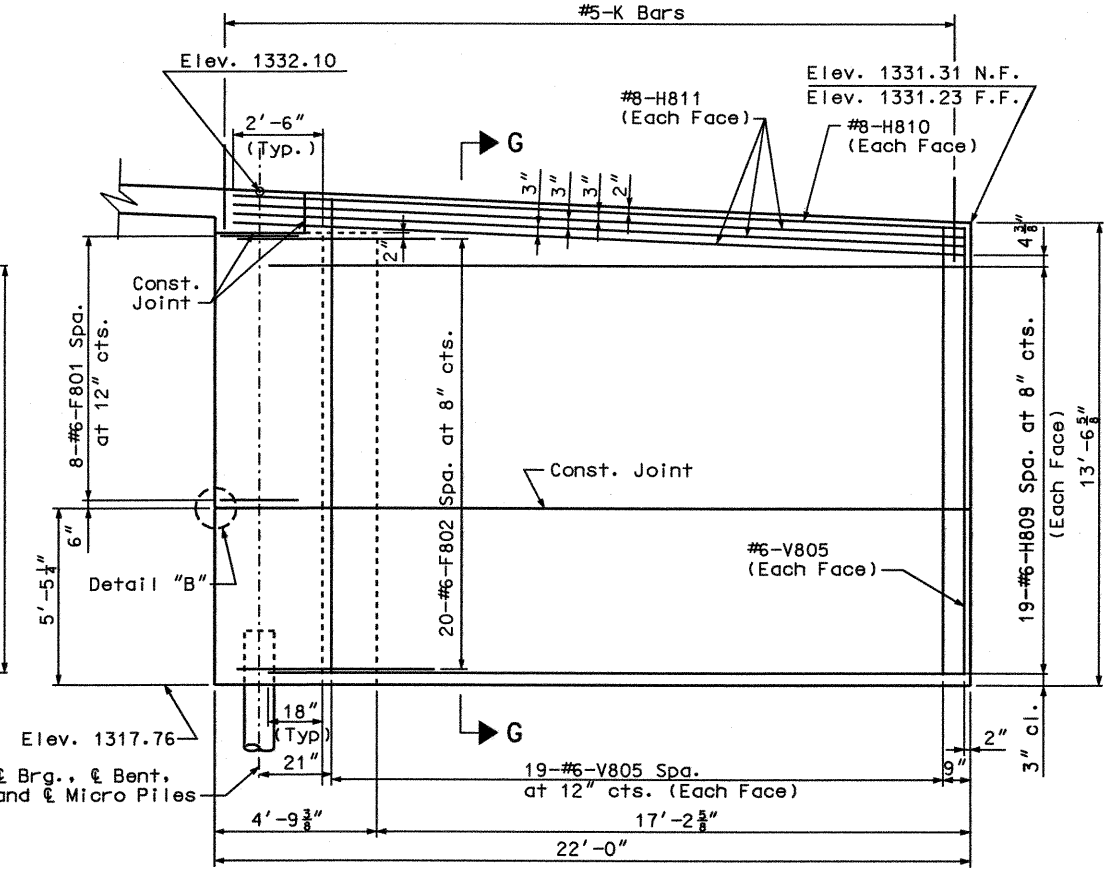
ELEVATION E-E



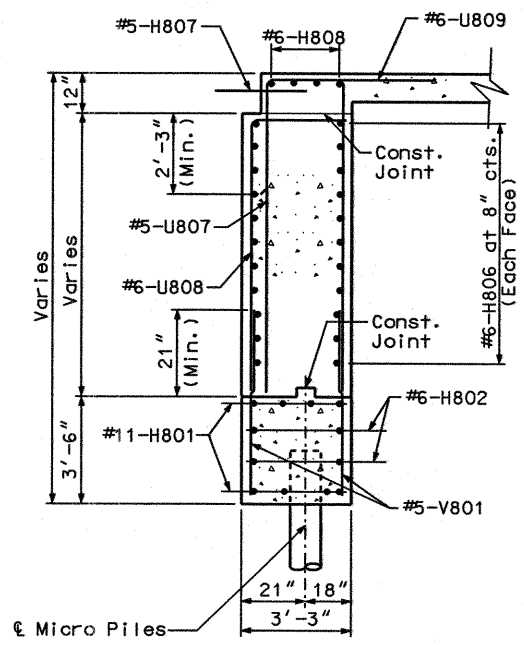
SECTION F-F



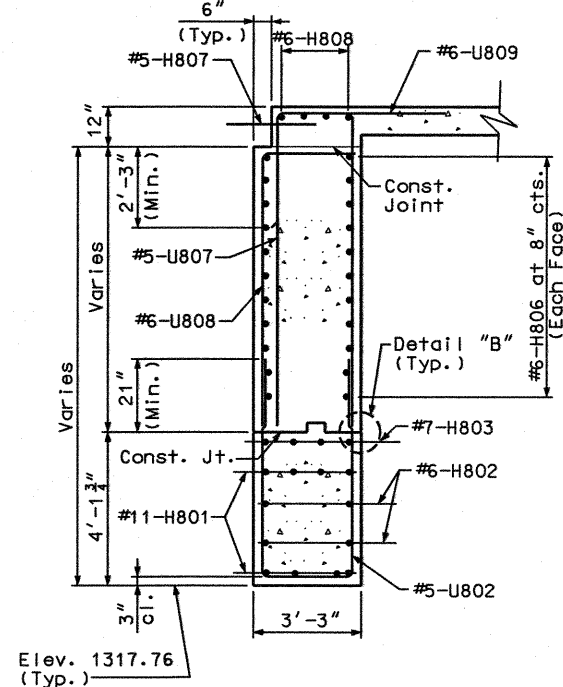
SECTION G-G



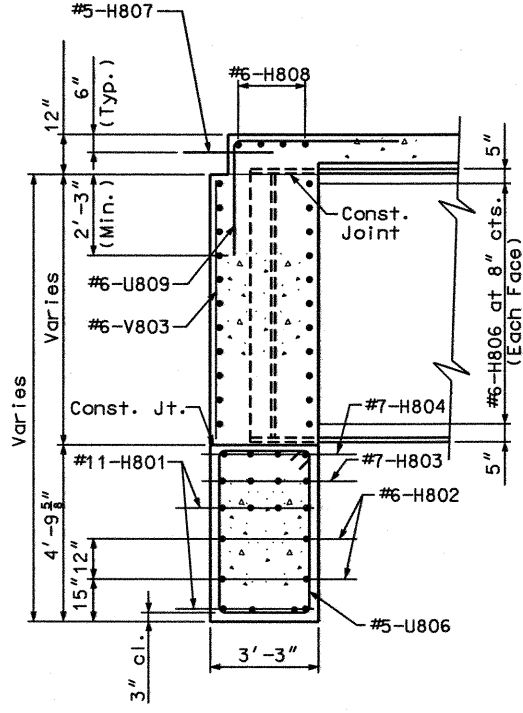
ELEVATION D-D



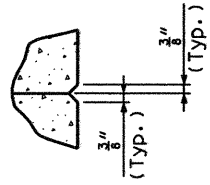
SECTION A-A



SECTION B-B

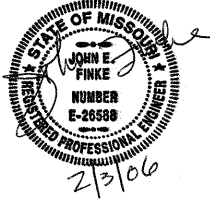


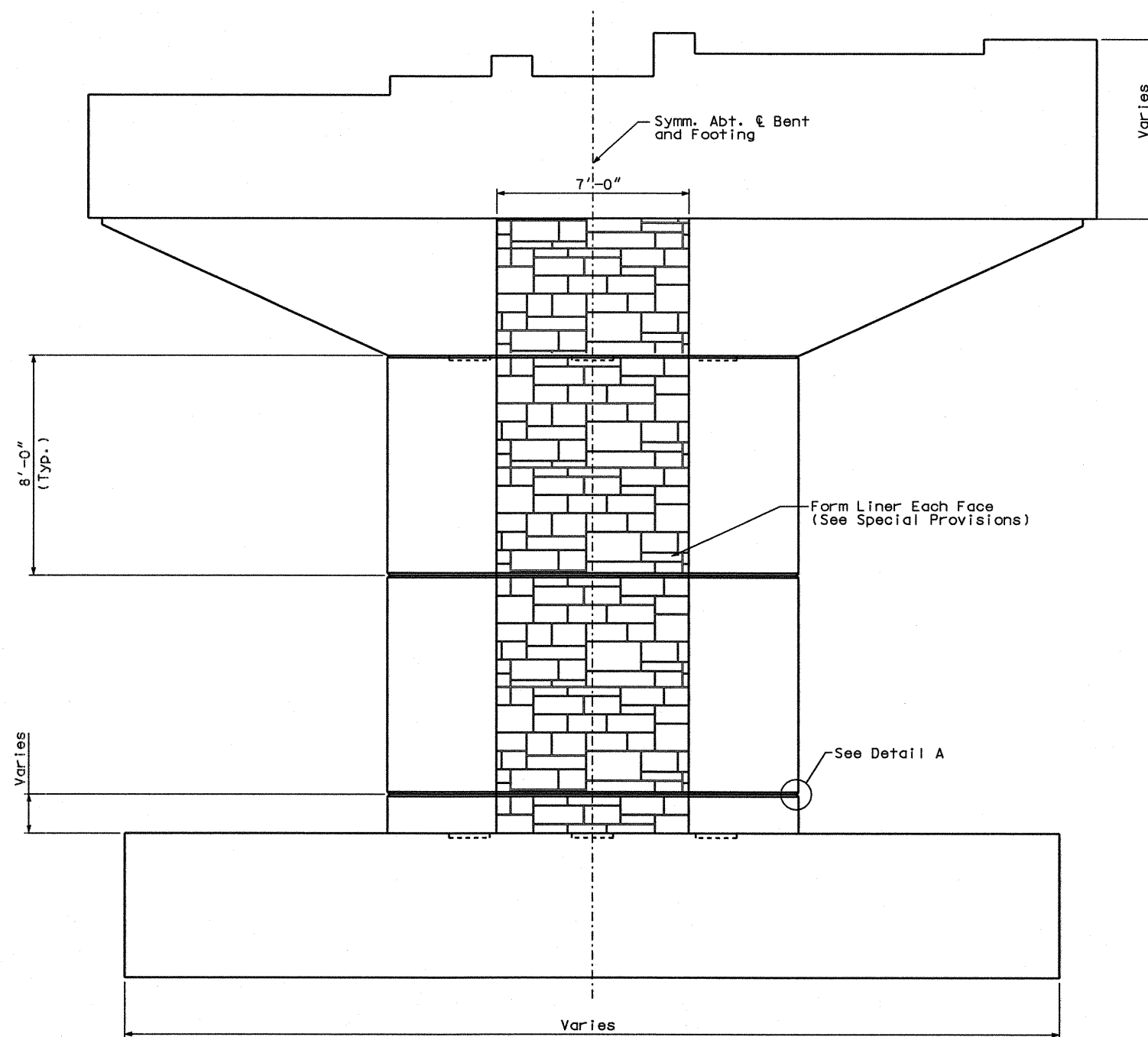
SECTION C-C



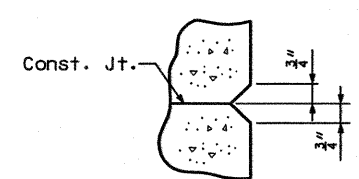
DETAIL "B"

Notes:
For location of Elevation D-D and E-E, see Sheet No. 29.
For reinforcement of Safety Barrier Curb, see Sheet No. 67.
For locations of Sections A-A, B-B and C-C see Sheet No. 30.
For details of End Bent No. 8 not shown, see Sheet Nos. 28 thru 30.
For Micro Pile Details, see Sheet No. 33.





ELEVATION - INTERMEDIATE BENT NOS. 2 THRU 7

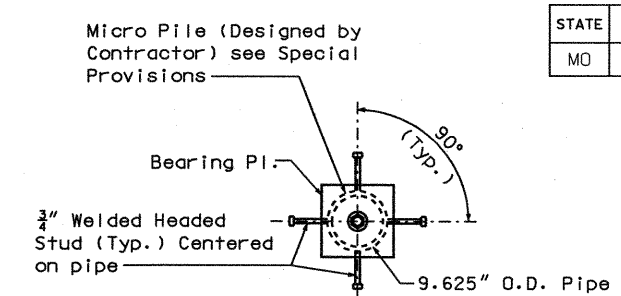


DETAIL "A"

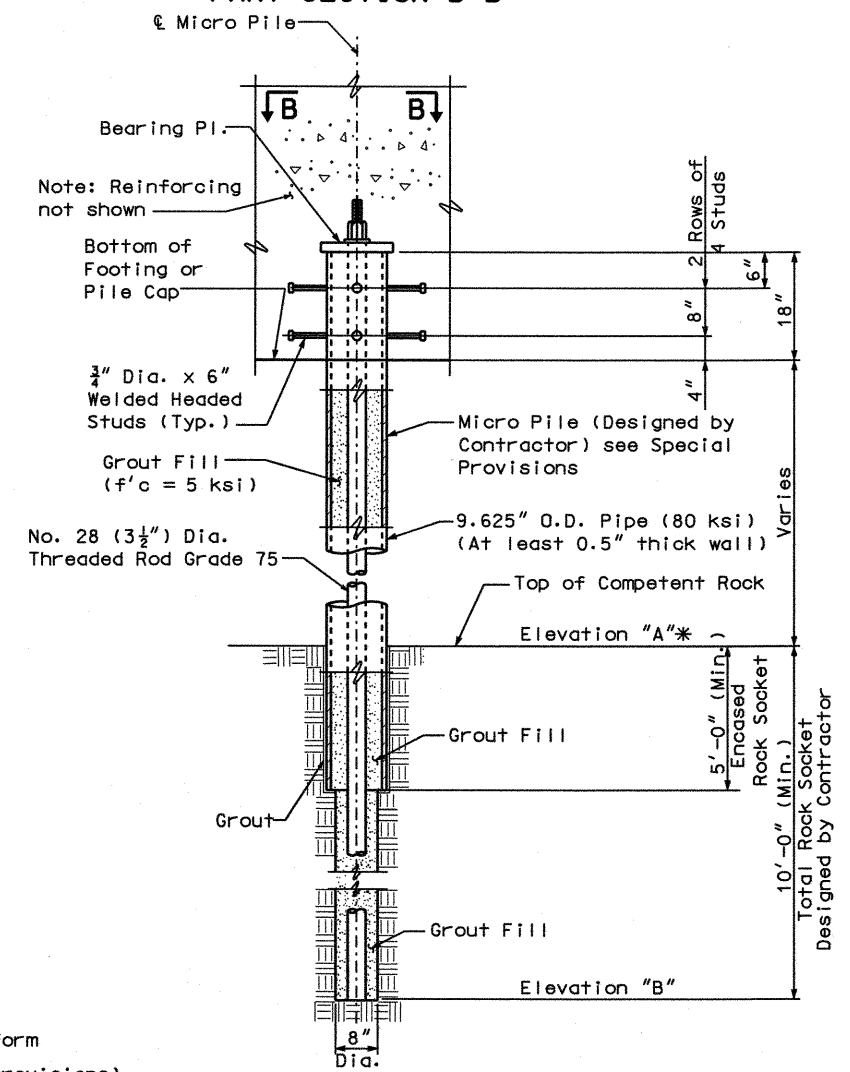
ELEVATION CHART		
Bent No.	Elevation "A"	Elevation "B"
1	1,297 (1,290 to 1,303)	1287 (1,280 to 1,293)
8	1,263	1,253

* Expect coring through limestone ledges and solutioned zones above top of competent rock.

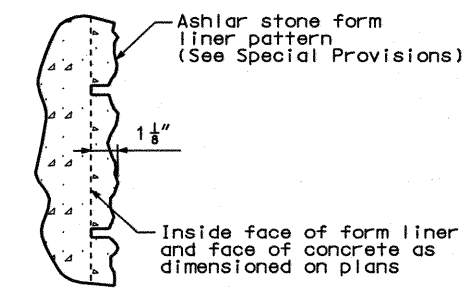
DETAILS OF FORM LINER - INTERMEDIATE BENTS



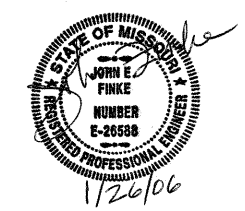
PART SECTION B-B



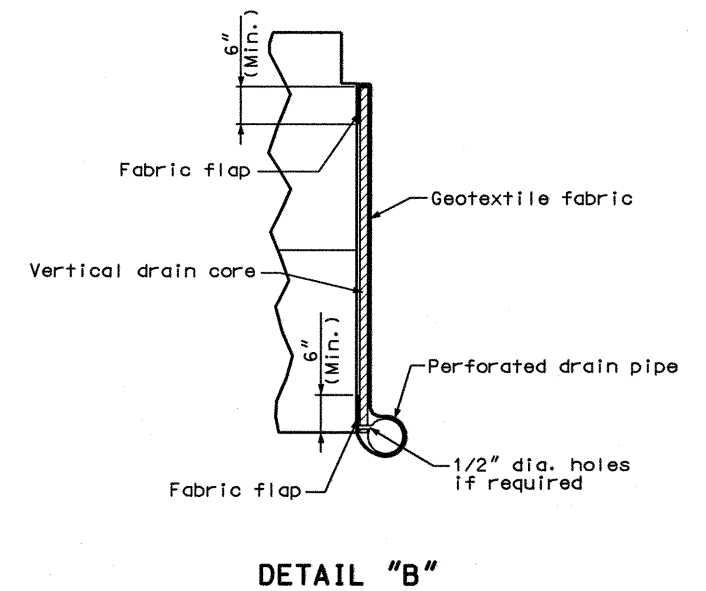
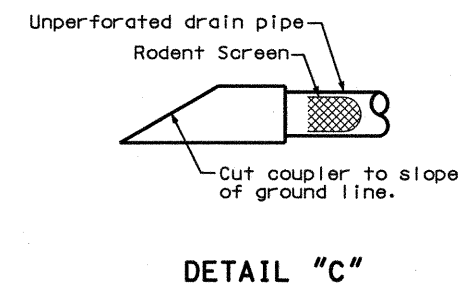
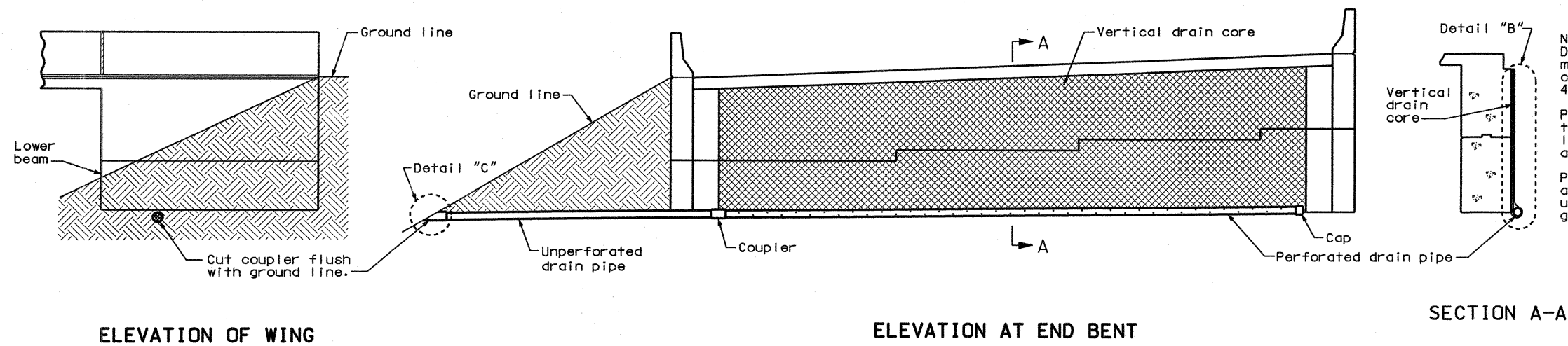
MICRO PILE DETAIL



TYPICAL PART SECTION AT FORM LINER



STATE	PROJ. NO.	SHEET NO.
MO		834



VERTICAL DRAINS AT END BENTS

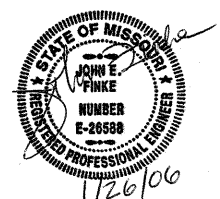
DETAILED: JOS OCT. 2005
CHECKED: BCK JAN. 2006

JACOBS CIVIL INC.
ST. LOUIS, MO.

SHEET NO. 34 OF 77

GREENE COUNTY

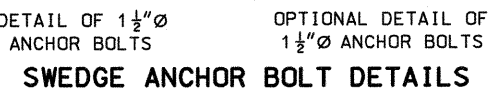
A7024



P:\cix21400\700cadd\709str\A7024 Ramp 3\A7024_VDN01J8U0548B.dgn

12:30 25-JAN-2006

REV.

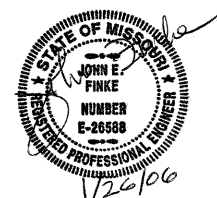


GENERAL NOTES:

All structural steel for the anchor bolts and heavy hexagon nuts shall be coated with a minimum of two coats of inorganic zinc primer (5 mils minimum).

Neoprene Elastomeric Pads shall be 60 Durometer. The neoprene pad shall be bonded to the bearing seat with an epoxy adhesive as approved by the bearing manufacturer for bonding neoprene to concrete.

Structural steel for sole plate shall be ASTM A709 Grade 50 and shall be coated with a minimum of two coats of inorganic zinc primer (5 mils minimum). Laminated Neoprene Bearing Pad Assembly shall be in accordance with Sec 716.



DETAILED: EAK SEP. 2005
CHECKED: BCK JAN. 2006

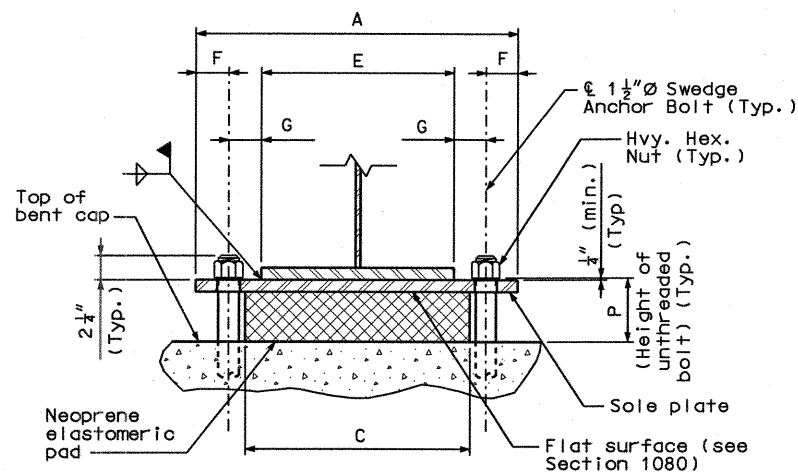
JACOBS CIVIL INC.
ST. LOUIS, MO.

SHEET NO. 35 OF 77

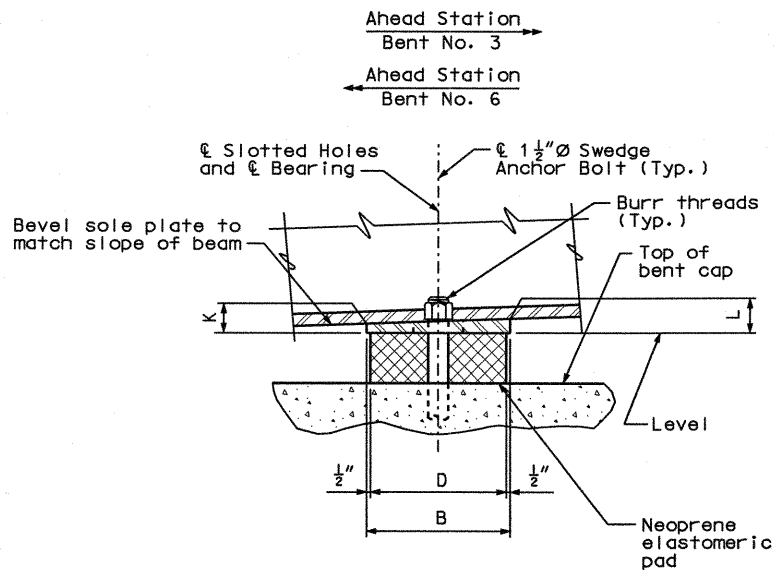
GREENE COUNTY

A7024

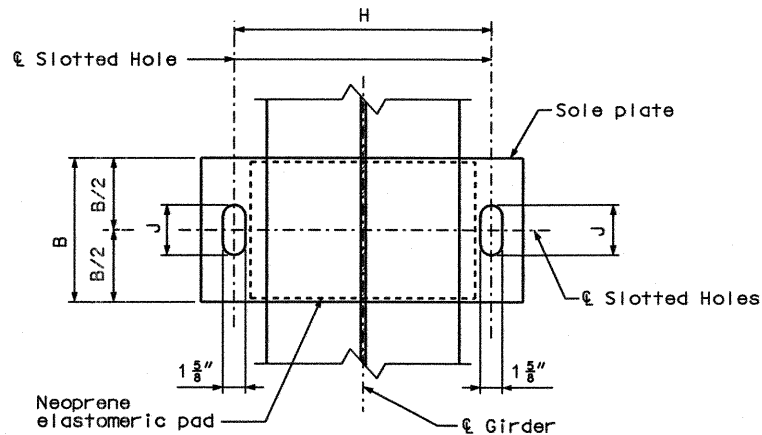
12:32 25-JAN-2006



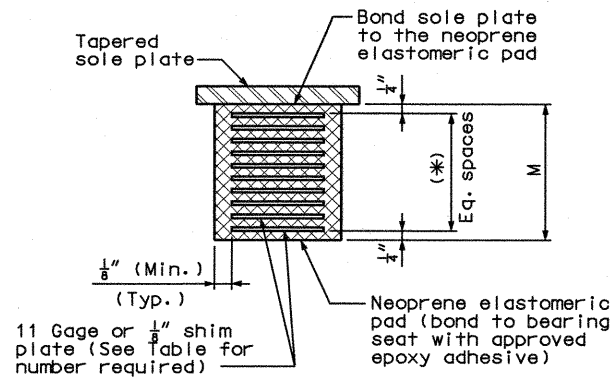
END VIEW



SIDE VIEW



PART PLAN



(*) Layers of 1/2" elastomer alternating with 11 gage or 1/8" shim plate

NEOPRENE ELASTOMERIC PAD

The required shim plate shall be placed between layers of elastomer and molded together to form an integral unit.

EXPANSION BEARINGS																	
UNIT NO.	GDR. NO.	VARIABLE DIMENSION (IN.)														NO. OF SHIM PLATES	NO. REQD.
		A	B	C	D	E	F	G	H	J	K	L	M	P			
BENT No. 3	1	1	39	15	30	14	22	2 1/4	5 1/4	33 1/2	5 1/4	1 1/16	1 1/16	4 1/8	6 1/8	7	1
	1	2	39	15	30	14	22	2 1/4	5 1/4	33 1/2	5 1/4	1 1/16	1 1/16	4 1/8	6 1/8	7	1
	1	3	39	15	30	14	22	2 1/4	5 1/4	33 1/2	5 1/4	1 1/16	1 1/16	4 1/8	6 1/8	7	1
	1	4	39	15	30	14	24	2 1/4	4 1/4	33 1/2	5 1/4	1 1/16	1 1/16	4 1/8	6 1/8	7	1
	2	1	39	9	31	8	24	2 1/4	5 1/4	34 1/2	7 1/2	1 1/8	2 1/8	6 1/8	8 1/2	10	1
	2	2	39	11	31	10	24	2 1/4	5 1/4	34 1/2	7 1/2	1 1/8	2 1/8	6 1/8	8 1/2	10	1
	2	3	39	15	31	14	24	2 1/4	5 1/4	34 1/2	7 1/2	1 1/8	2 1/8	6 1/8	8 1/2	10	1
	2	4	39	21	31	20	24	2 1/4	5 1/4	34 1/2	7 1/2	1 1/8	2 1/8	6 1/8	8 1/2	10	1
BENT No. 6	2	1	39	13	31	12	24	2 1/4	5 1/4	34 1/2	7 1/2	1 1/8	1 1/8	6 1/8	8	10	1
	2	2	39	17	31	16	24	2 1/4	5 1/4	34 1/2	7 1/2	1 1/8	1 1/8	6 1/8	8	10	1
	2	3	39	13	31	12	24	2 1/4	5 1/4	34 1/2	7 1/2	1 1/8	1 1/8	6 1/8	8	10	1
	2	4	39	21	31	20	24	2 1/4	5 1/4	34 1/2	7 1/2	1 1/8	1 1/8	6 1/8	8	10	1
	3	1	39	15	30	14	22	2 1/4	6 1/4	34 1/2	5 1/4	1 1/16	1 1/16	4 1/8	6 1/8	7	1
	3	2	39	15	30	14	22	2 1/4	6 1/4	34 1/2	5 1/4	1 1/16	1 1/16	4 1/8	6 1/8	7	1
	3	3	39	15	30	14	22	2 1/4	6 1/4	34 1/2	5 1/4	1 1/16	1 1/16	4 1/8	6 1/8	7	1
	3	4	39	15	30	14	24	2 1/4	4 1/4	33 1/2	5 1/4	1 1/16	1 1/16	4 1/8	6 1/8	7	1

EXPANSION BEARING DETAILS AT INTERMEDIATE BENT NOS. 3 AND 6

DETAILED: EAK SEP. 2005
CHECKED: FAC/BCK JAN. 2006

JACOBS CIVIL INC.
ST. LOUIS, MO.

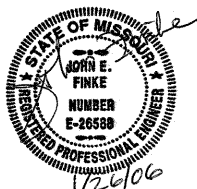
SHEET NO. 36 OF 77

GREENE COUNTY

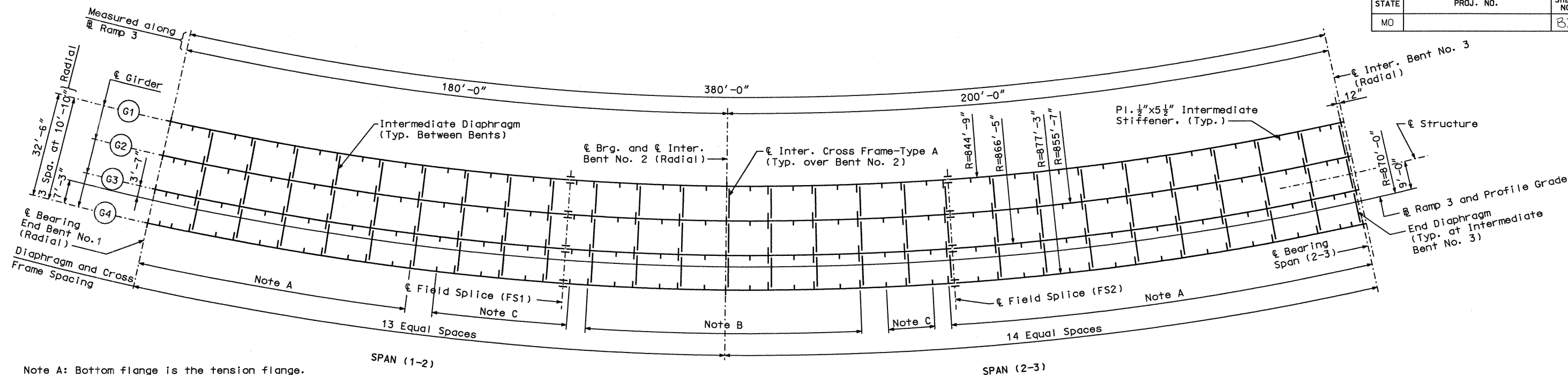
A7024

P:\c1x21400\700cadd\709str\A7024 Ramp 3\A7024_BRG02_J8U0548B.dgn

15:18 25-JAN-2006

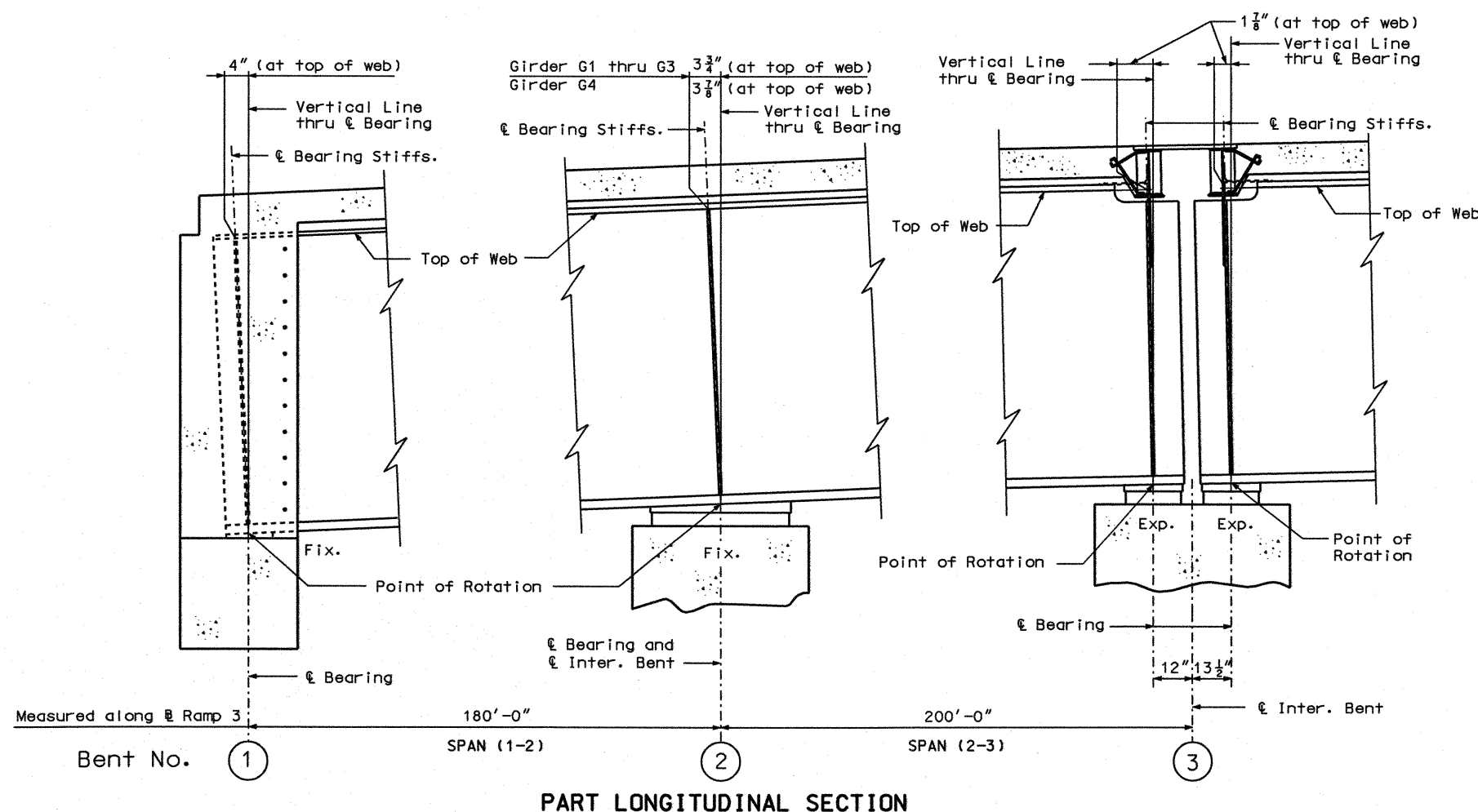


STATE	PROJ. NO.	SHEET NO.
MO		837



Note A: Bottom flange is the tension flange.
 Note B: Top flange is the tension flange.
 Note C: Both top and bottom flanges are tension flanges.

PLAN OF STRUCTURAL STEEL - UNIT 1



Notes:

All diaphragms and cross frames are radial.

Transverse intermediate stiffeners are located on each girder in each bay midway between the diaphragms and cross frames. One additional intermediate stiffener is located in the quarter point of the bays adjacent to End Bent No. 1 and Intermediate Bent No. 3.

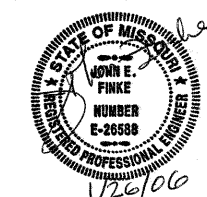
Longitudinal dimensions are horizontal from $\&$ bearing to $\&$ bearing.

For details of Bolted Field Splices, see Sheet Nos. 45 and 46.

For details of End Diaphragms, Intermediate Diaphragms, and Cross Frames, see Sheet No. 47.

All Fabricated Structural Steel shall be ASTM A709, Grade 50.

For Erection Notes, see General Notes Sheet No. 5.



FRAMING PLAN AND LONGITUDINAL SECTION - UNIT 1

DETAILED: EAK JUNE 2005
 CHECKED: GJD NOV. 2005

JACOBS CIVIL INC.
 ST. LOUIS, MO.

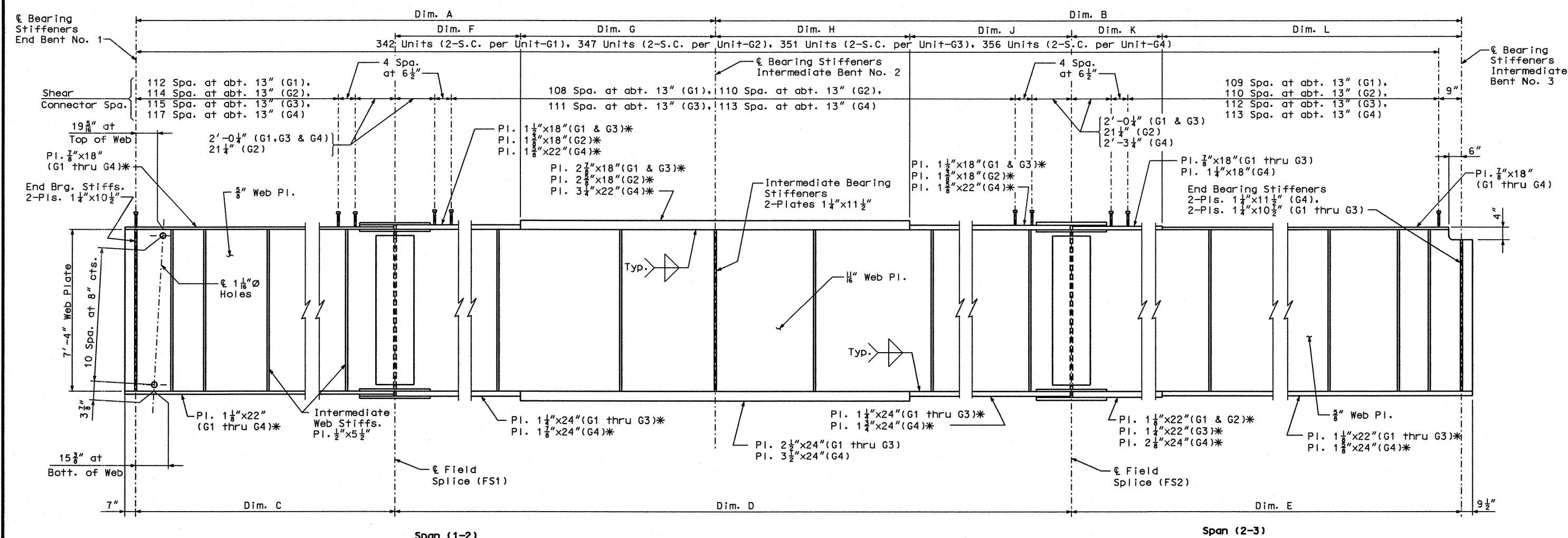
SHEET NO. 37 OF 77

GREENE COUNTY

A7024

P:\cix21400\700cadd\709str\A7024 Ramp 3\A7024_FRM01-J8U0548B.dgn

12:33 25-JAN-2006



ELEVATION OF GIRDER

Note:
Shear connector spacings may be shifted slightly to clear shop flange splices.
For limits of top and bottom flanges in tension, see Plan of Structural Steel.

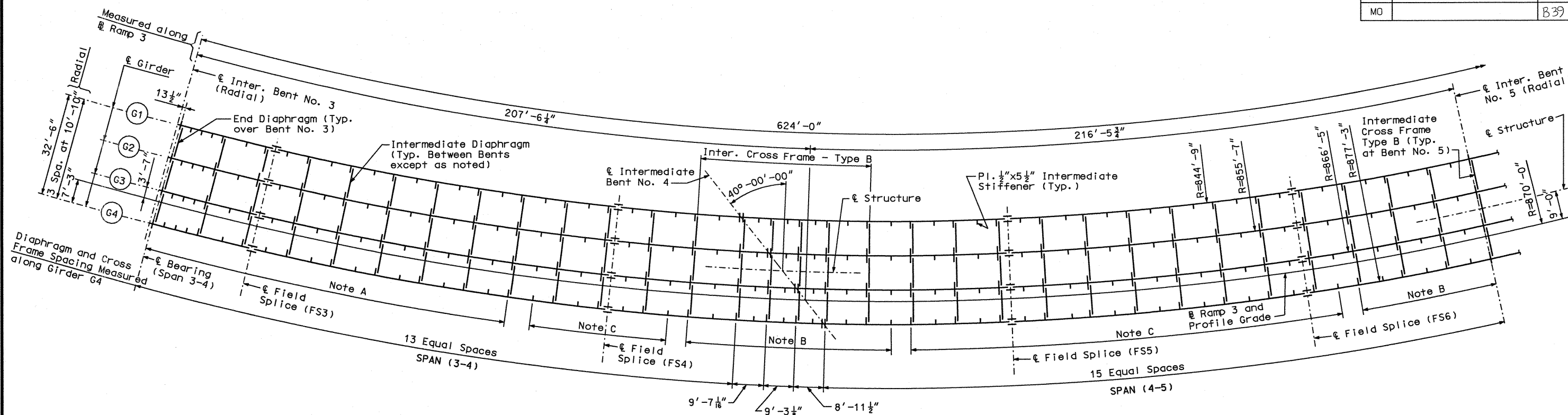
Notes:
Longitudinal dimensions are horizontal from center of bearing to center of bearing.
Plate girders shall be fabricated to be in accordance with the camber diagram shown on Sheet No. 55.
For location of slab drain attachment holes see slab drain details, Sheet No. 63.
All Fabricated Structural Steel shall be ASTM A709, Grade 50.
* Indicates flange plates subject to notch toughness requirements.
Weight of 2,600 lbs. of shear connectors is included in the weight of Fabricated Structural Low Alloy Steel (Plate Girder) A709, Grade 50.
Shear connectors shall be in accordance with Sec 712, 1037 and 1080.
All web plates subject to notch toughness requirements.
The flange and web splice plates shall be subject to notch toughness requirements when notch toughness is required for flanges on both sides of splice.

GIRDER VARIABLES

Girder No.	Dim. A	Dim. B	Dim. C	Dim. D	Dim. E	Dim. F	Dim. G	Dim. H	Dim. J	Dim. K	Dim. L
G1	174'-9 5/16"	193'-2 11/16"	124'-3 7/16"	122'-4 1/16"	121'-4 1/2"	27'-2 1/4"	23'-3 5/8"	23'-3 5/8"	48'-6 9/16"	76'-8 1/2"	44'-8"
G2	177'-0 3/16"	195'-8 7/16"	125'-10 1/2"	123'-11"	122'-11 5/8"	27'-6 7/16"	23'-7 1/4"	23'-7 1/4"	49'-2 1/16"	77'-8 5/16"	45'-2 3/16"
G3	179'-3 1/8"	198'-2 3/16"	127'-5 11/16"	125'-5 3/4"	124'-5 7/8"	27'-10 5/8"	23'-10 3/16"	23'-10 3/16"	49'-9 1/2"	78'-8 1/16"	45'-9 3/16"
G4	181'-6"	200'-7 7/8"	129'-0 13/16"	127'-0 9/16"	126'-0 1/2"	28'-2 13/16"	24'-2 3/8"	24'-2 3/8"	50'-5"	79'-7 7/8"	46'-4 5/8"

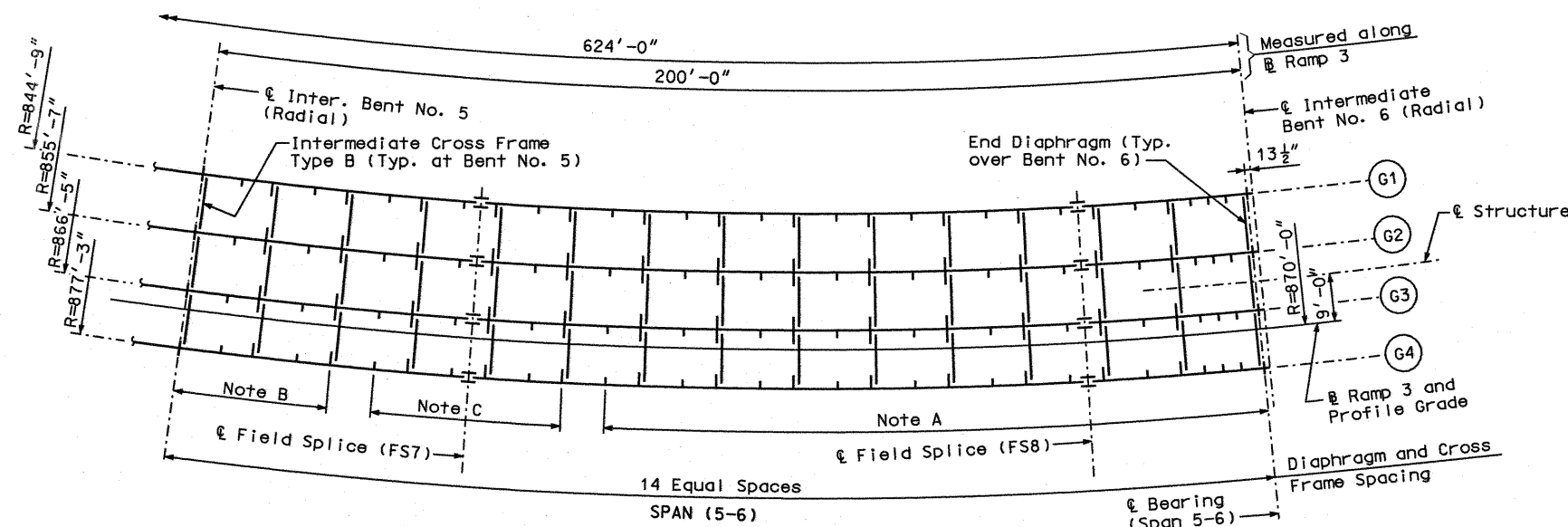
ELEVATION OF GIRDER - UNIT 1

STATE	PROJ. NO.	SHEET NO.
MO		839



Note A: Bottom flange is the tension flange.
 Note B: Top flange is the tension flange.
 Note C: Both top and bottom flanges are tension flanges.

PLAN OF STRUCTURAL STEEL - UNIT 2



PLAN OF STRUCTURAL STEEL - UNIT 2

Notes:

- All diaphragms and cross frames are radial.
- Transverse intermediate stiffeners are located on each girder in each bay midway between the diaphragms and cross frames. One additional intermediate stiffener is located in the quarter points of the bays adjacent to Intermediate Bent No. 3 and Intermediate Bent No. 6.
- Longitudinal dimensions are horizontal from & bearing to & bearing.
- For details of Bolted Field Splices, see Sheet Nos. 45 and 46.
- For details of End Diaphragms, Intermediate Diaphragms, and Cross Frames, see Sheet Nos. 47 and 48.
- All Fabricated Structural Steel shall be ASTM A709, Grade 50.
- For Erection Notes, See General Notes Sheet No. 5.

FRAMING PLAN - UNIT 2

DETAILED: EAK JUNE 2005
 CHECKED: GJD NOV. 2005

JACOBS CIVIL INC.
 ST. LOUIS, MO.

SHEET NO. 39 OF 77

GREENE COUNTY

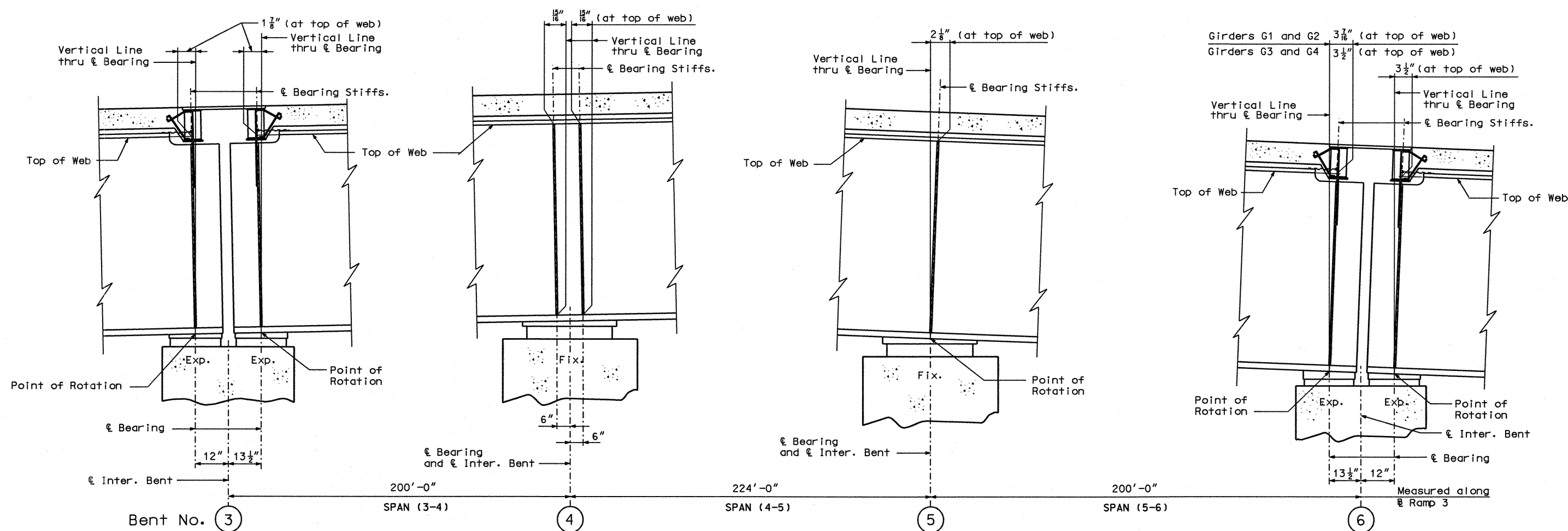
A7024

P:\c1x21400\700cadd\709str\A7024 Ramp 3\A7024_FRM02_J8U0548B.dgn

12:34 25-JAN-2006



STATE	PROJ. NO.	SHEET NO.
MO		B40



PART LONGITUDINAL SECTION

LONGITUDINAL SECTION - UNIT 2

DETAILED: EAK JUNE 2005
CHECKED: GJD NOV. 2005

JACOBS CIVIL INC.
ST. LOUIS, MO.

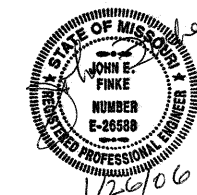
SHEET NO. 40 OF 77

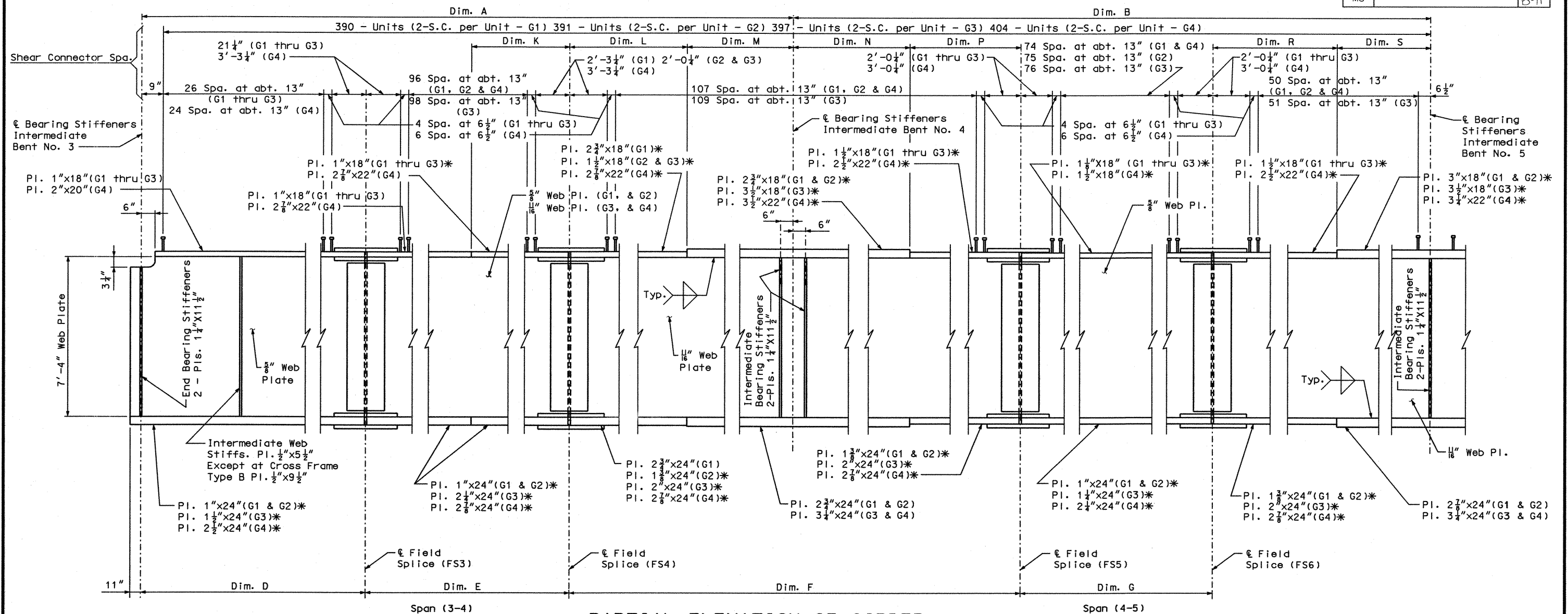
GREENE COUNTY

A7024

P:\c1x21400\700cadd\709str\A7024 Ramp 3\A7024_LONGDR02_J8U0548B.dgn

12:35 25-JAN-2006





Notes:
 Longitudinal dimensions are horizontal from ℓ bearing to ℓ bearing.
 Plate girders shall be fabricated to be in accordance with the camber diagram shown on Sheet No. 56.
 For location of slab drain attachment holes see slab drain details, Sheet No. 63.

All Fabricated Structural Steel shall be ASTM A709, Grade 50.

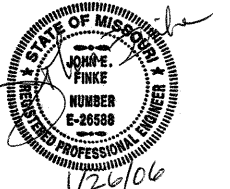
* Indicates flange plates subject to notch toughness requirements.

Weight of 18,290 lbs. of shear connectors is included in the weight of Fabricated Structural Low Alloy Steel (Plate Girder) A709, Grade 50.

Shear connectors shall be in accordance with Sec 712, 1037 and 1080.

All web plates subject to notch toughness requirements.

The flange and web splice plates shall be subject to notch toughness requirements when notch toughness is required for flanges on both sides of splice.



GIRDER VARIABLES													
Girder No.	Dim. A	Dim. B	Dim. D	Dim. E	Dim. F	Dim. G	Dim. K	Dim. L	Dim. M	Dim. N	Dim. P	Dim. R	Dim. S
G1	179'-4 $\frac{11}{16}$ "	231'-2 $\frac{11}{16}$ "	31'-1 $\frac{11}{16}$ "	110'-5"	122'-7 $\frac{3}{8}$ "	88'-3 $\frac{7}{8}$ "	43'-0 $\frac{1}{8}$ "	12'-9 $\frac{3}{8}$ "	25'-0"	29'-0"	55'-10"	34'-0 $\frac{3}{8}$ "	24'-0 $\frac{7}{8}$ "
G2	191'-0 $\frac{11}{16}$ "	224'-10 $\frac{1}{8}$ "	31'-6 $\frac{11}{16}$ "	111'-10"	124'-2 $\frac{1}{4}$ "	89'-5"	43'-6 $\frac{3}{4}$ "	22'-7 $\frac{3}{8}$ "	25'-0"	29'-0"	47'-6 $\frac{7}{8}$ "	34'-5 $\frac{3}{8}$ "	24'-4 $\frac{5}{8}$ "
G3	202'-7 $\frac{11}{16}$ "	218'-6 $\frac{9}{16}$ "	31'-11 $\frac{11}{16}$ "	113'-3"	125'-9 $\frac{1}{8}$ "	90'-6 $\frac{5}{8}$ "	44'-1 $\frac{3}{8}$ "	32'-4 $\frac{3}{8}$ "	25'-0"	29'-0"	39'-4 $\frac{3}{4}$ "	34'-10 $\frac{7}{8}$ "	24'-8 $\frac{5}{8}$ "
G4	214'-1 $\frac{11}{16}$ "	212'-3 $\frac{7}{8}$ "	32'-4 $\frac{5}{8}$ "	114'-8"	127'-4"	91'-8 $\frac{3}{8}$ "	44'-8"	42'-0 $\frac{7}{16}$ "	25'-0"	29'-0"	31'-3 $\frac{3}{8}$ "	35'-4 $\frac{1}{8}$ "	25'-0"

PARTIAL ELEVATION OF GIRDER - UNIT 2

DETAILED: EAK SEPT. 2005
 CHECKED: JOS JAN. 2006

JACOBS CIVIL INC.
 ST. LOUIS, MO.

SHEET NO. 41 OF 77

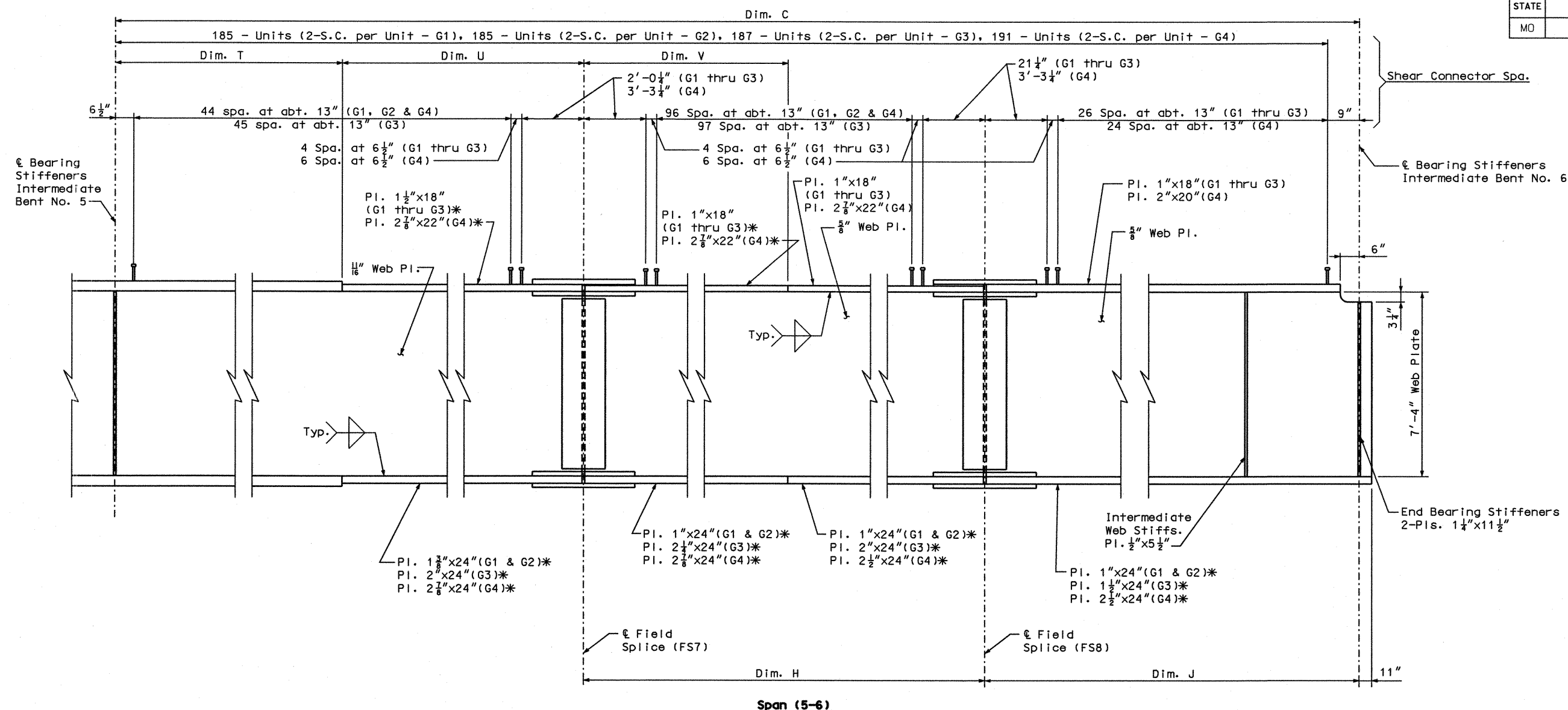
GREENE COUNTY

A7024

P:\CIX21400\700cadd\709str\A7024 Ramp 3\A7024_EL_UNI02A_J8U0548B.dgn

14:48 26-JAN-2006

STATE	PROJ. NO.	SHEET NO.
MO		B4



PARTIAL ELEVATION OF GIRDER

Notes:
Shear connector spacing may be shifted to clear shop flange splices.
For limits of top and bottom flanges in tension, see Plan of Structural Steel.

GIRDER VARIABLES						
Girder No.	Dim. C	Dim. H	Dim. J	Dim. T	Dim. U	Dim. V
G1	193'-0 $\frac{7}{8}$ "	110'-3 $\frac{1}{8}$ "	31'-1 $\frac{1}{16}$ "	24'-0 $\frac{7}{8}$ "	27'-7 $\frac{3}{16}$ "	48'-1 $\frac{3}{4}$ "
G2	195'-6 $\frac{3}{4}$ "	111'-8 $\frac{1}{16}$ "	31'-6 $\frac{11}{16}$ "	24'-4 $\frac{5}{8}$ "	27'-11 $\frac{3}{8}$ "	48'-9 $\frac{3}{16}$ "
G3	198'-0 $\frac{5}{8}$ "	113'-1 $\frac{1}{16}$ "	31'-11 $\frac{3}{8}$ "	24'-8 $\frac{5}{16}$ "	28'-3 $\frac{5}{8}$ "	49'-4 $\frac{9}{16}$ "
G4	200'-6 $\frac{1}{2}$ "	114'-6"	32'-4 $\frac{3}{8}$ "	25'-0"	28'-7 $\frac{1}{4}$ "	50'-0"

Notes:

Longitudinal dimensions are horizontal from $\odot$ bearing to $\odot$ bearing.

Plate girders shall be fabricated to be in accordance with the camber diagram shown on Sheet No. 56.

For location of slab drain attachment holes see slab drain details,
Sheet No. 63.

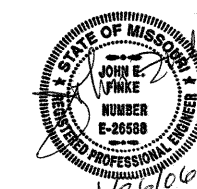
All Fabricated Structural Steel shall be ASTM A709, Grade 50.

* Indicates flange plates subject to notch toughness requirements.

Shear connectors shall be in accordance with Sec 712, 1037 and 1080.

All web plates subject to notch toughness requirements.

The flange and web splice plates shall be subject to notch toughness requirements when notch toughness is required for flanges on both sides of splice.



PARTIAL ELEVATION OF GIRDER - UNIT 2

DETAILED: EAK SEPT. 2005
CHECKED: JOS JAN. 2006

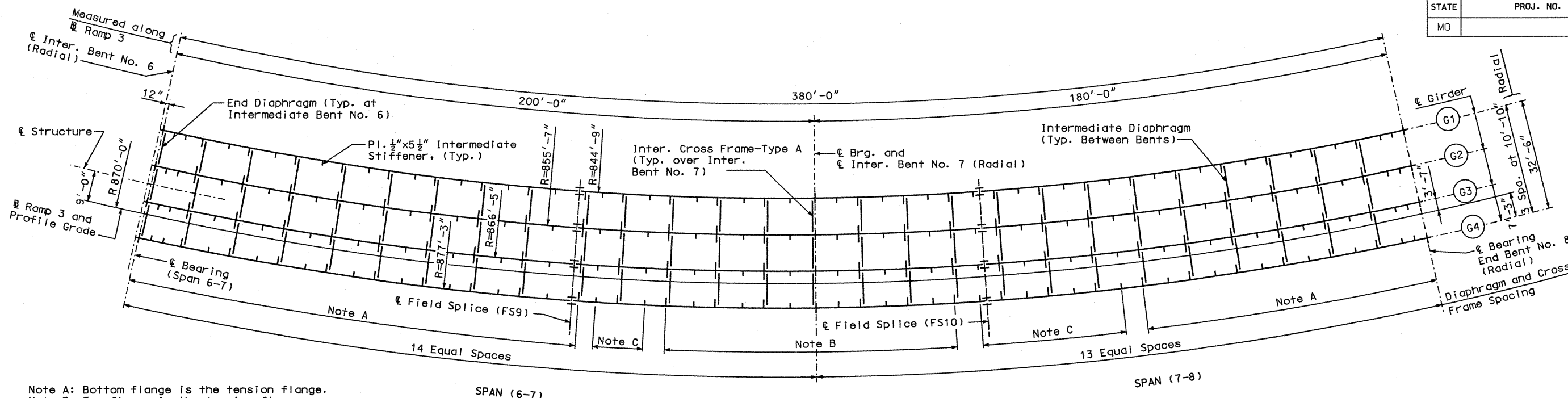
JACOBS CIVIL INC.
ST. LOUIS, MO.

SHEET NO. 42 OF 77

GREENE COUNTY

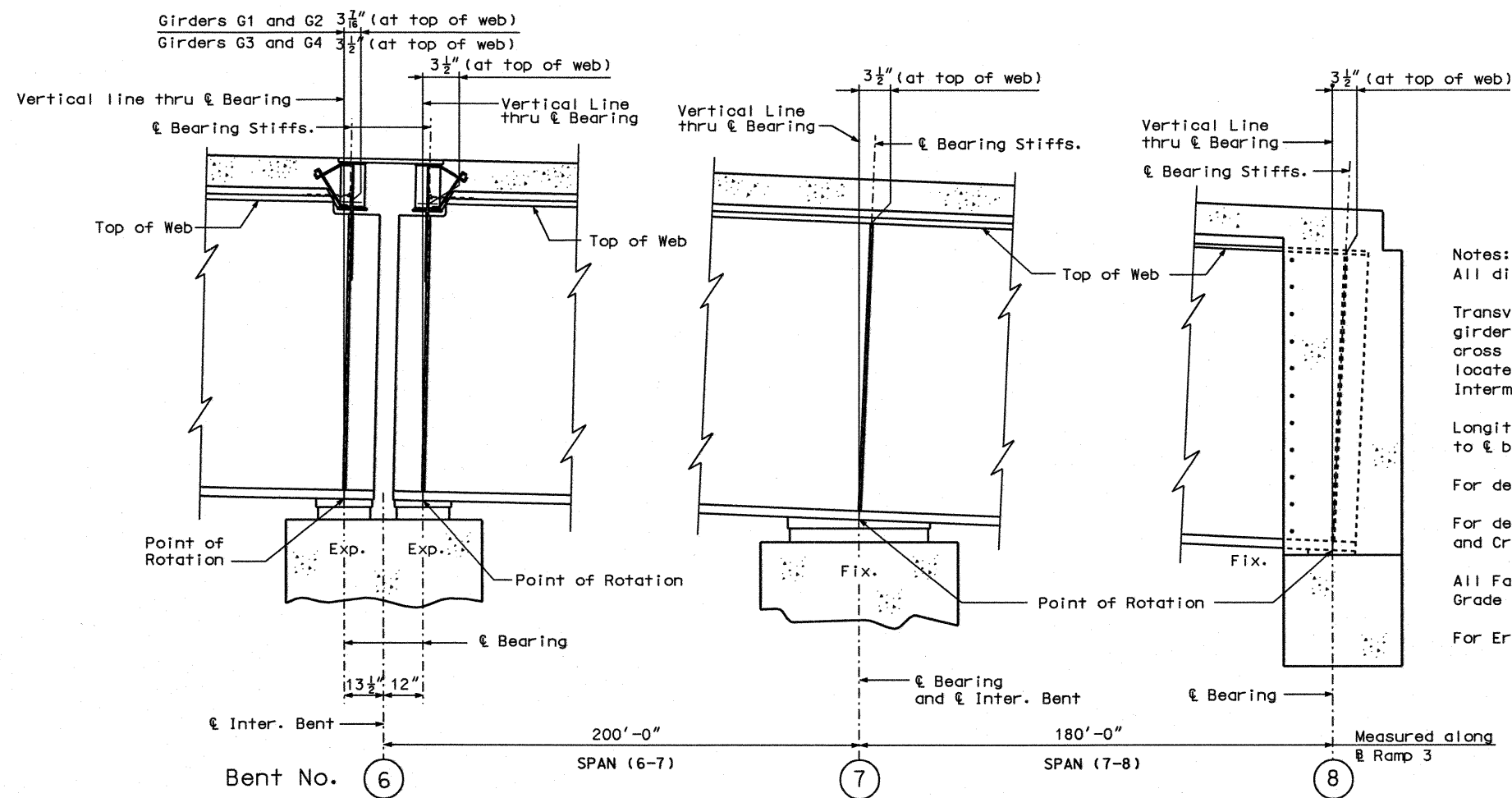
A7024

STATE	PROJ. NO.	SHEET NO.
MO		843



Note A: Bottom flange is the tension flange.
 Note B: Top flange is the tension flange.
 Note C: Both top and bottom flanges are tension flanges.

PLAN OF STRUCTURAL STEEL - UNIT 3



Notes:
 All diaphragms and cross frames are radial.
 Transverse intermediate stiffeners are located on each girder in each bay midway between the diaphragms and cross frames. One additional intermediate stiffener is located in the quarter point of the bays adjacent to Intermediate Bent No. 6 and End Bent No. 8.
 Longitudinal dimensions are horizontal from ∇ bearing to ∇ bearing.
 For details of Bolted Field Splices, see Sheet Nos. 45 and 46.
 For details of End Diaphragms, Intermediate Diaphragms, and Cross Frames, see Sheet No. 47.
 All Fabricated Structural Steel shall be ASTM A709, Grade 50.
 For Erection Notes, see General Notes Sheet No. 5.

PART LONGITUDINAL SECTION

FRAMING PLAN AND LONGITUDINAL SECTION - UNIT 3

DETAILED: EAK JUNE 2005
 CHECKED: GJD NOV. 2005

JACOBS CIVIL INC.
 ST. LOUIS, MO.

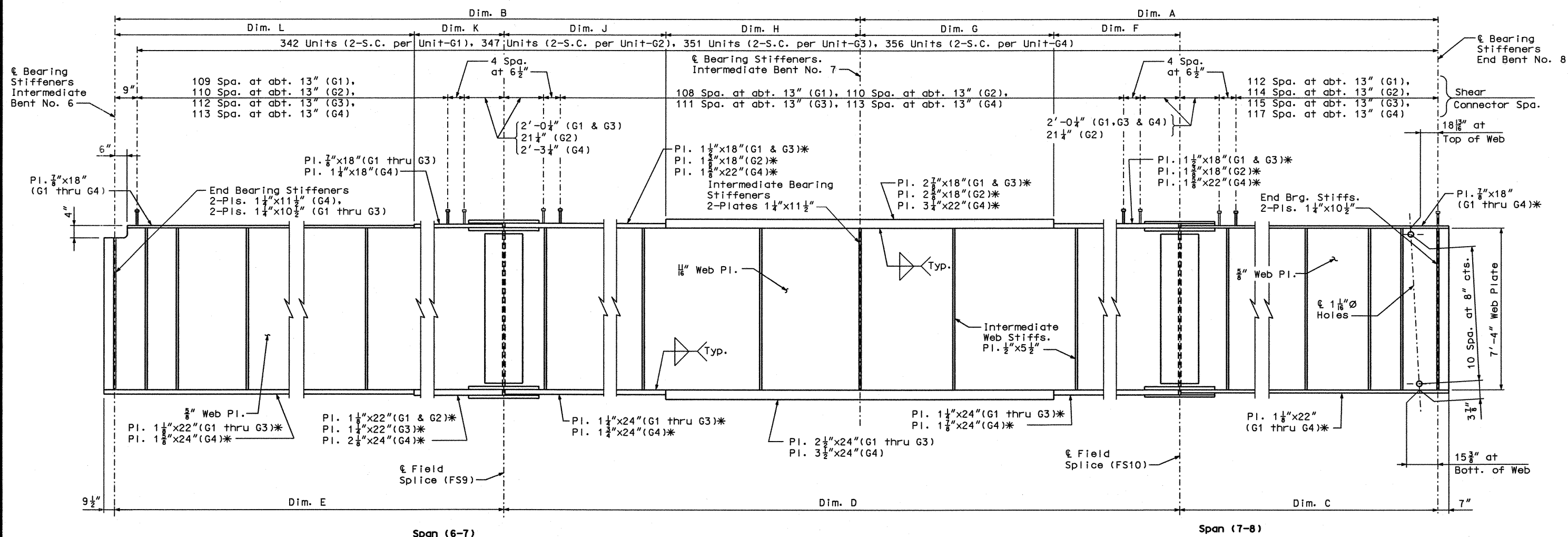
SHEET NO. 43 OF 77

GREENE COUNTY

A7024

P:\c1x21400\700cadd\709str\A7024 Ramp 3\A7024_FRM03_J8U0548B.dgn

12:38 25-JAN-2006



ELEVATION OF GIRDER

Note:
Shear connector spacings may be shifted slightly to clear shop flange splices.
For limits of top and bottom flanges in tension, see Plan of Structural Steel.

Notes:

Longitudinal dimensions are horizontal from bearing to bearing.

Plate girders shall be fabricated to be in accordance with the camber diagram shown on Sheet No. 58.

For location of slab drain attachment holes see slab drain details, Sheet No. 63.

All Fabricated Structural Steel shall be ASTM A709, Grade 50.

* Indicates flange plates subject to notch toughness requirements.

Weight of 2,600 lbs. of shear connectors is included in the weight of Fabricated Structural Low Alloy Steel (Plate Girder) A709, Grade 50.

Shear connectors shall be in accordance with Sec 712, 1037 and 1080.

All web plates subject to notch toughness requirements.

The flange and web splice plates shall be subject to notch toughness requirements when notch toughness is required for flanges on both sides of splice.

GIRDER VARIABLES

Girder No.	Dim. A	Dim. B	Dim. C	Dim. D	Dim. E	Dim. F	Dim. G	Dim. H	Dim. J	Dim. K	Dim. L
G1	174'-9 5/16"	193'-2 11/16"	124'-3 7/16"	122'-4 1/16"	121'-4 1/2"	27'-2 1/4"	23'-3 5/8"	23'-3 5/8"	48'-6 3/16"	76'-8 1/2"	44'-8"
G2	177'-0 3/16"	195'-8 7/16"	125'-10 1/2"	123'-11"	122'-11 5/8"	27'-6 7/16"	23'-7 1/4"	23'-7 1/4"	49'-2 1/16"	77'-8 5/16"	45'-2 13/16"
G3	179'-3 1/8"	198'-2 3/16"	127'-5 1/16"	125'-5 3/4"	124'-5 7/8"	27'-10 5/8"	23'-10 13/16"	23'-10 13/16"	49'-9 1/2"	78'-8 1/16"	45'-9 13/16"
G4	181'-6"	200'-7 7/8"	129'-0 13/16"	127'-0 9/16"	126'-0 1/2"	28'-2 1/16"	24'-2 3/8"	24'-2 3/8"	50'-5"	79'-7 7/8"	46'-4 5/8"

ELEVATION OF GIRDER - UNIT 3

DETAILED: EAK SEP. 2005
CHECKED: GJD NOV. 2005

JACOBS CIVIL INC.
ST. LOUIS, MO.

SHEET NO. 44 OF 77

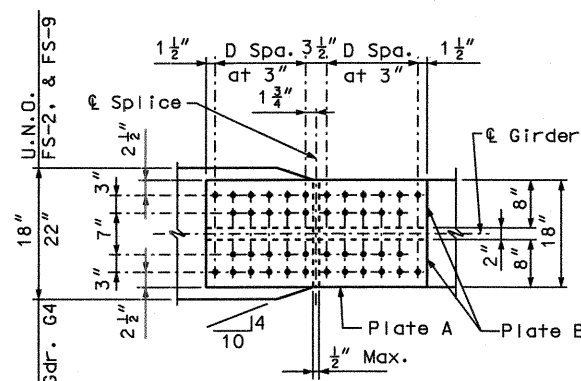
GREENE COUNTY

A7024

P:\C1X21400\700cadd\709str\A7024 Ramp 3\A7024_EL_UNIT03_J8U0548B.dgn

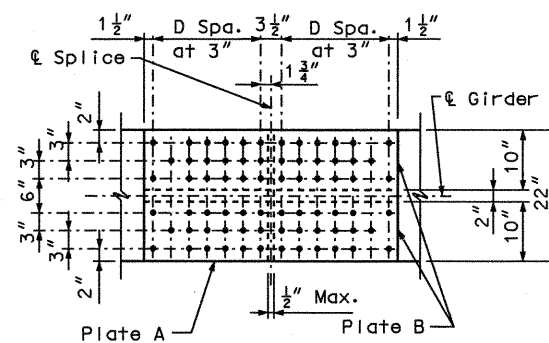
14:11 26-JAN-2006





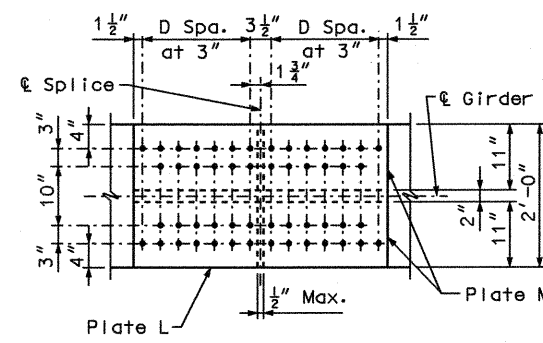
TOP FLANGE SPLICE - TYPE 1

Note: Fill plate C not shown.



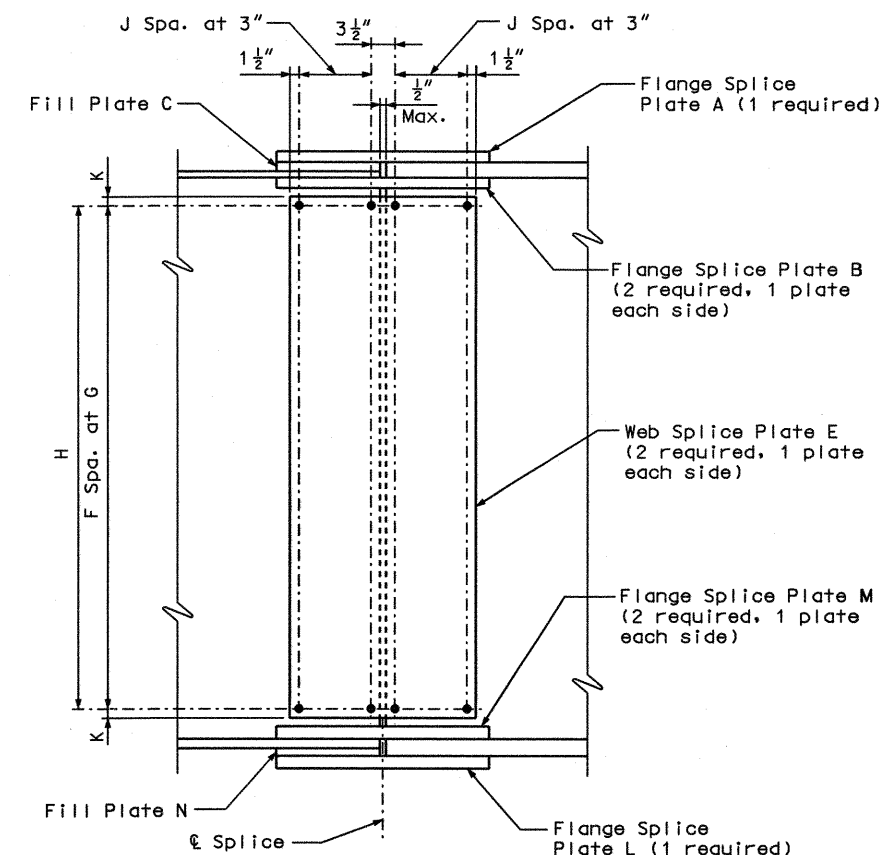
TOP FLANGE SPLICE - TYPE 4

Note: Fill plate C not shown.

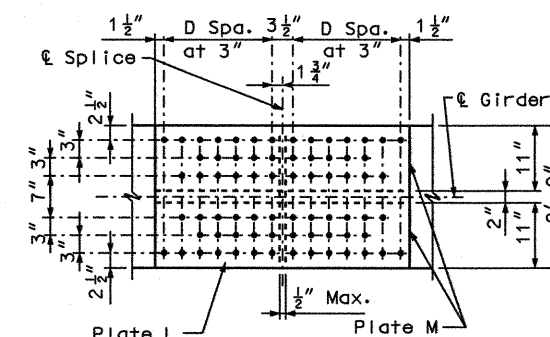


BOTTOM FLANGE SPLICE - TYPE 7

Note: Fill plate N not shown.

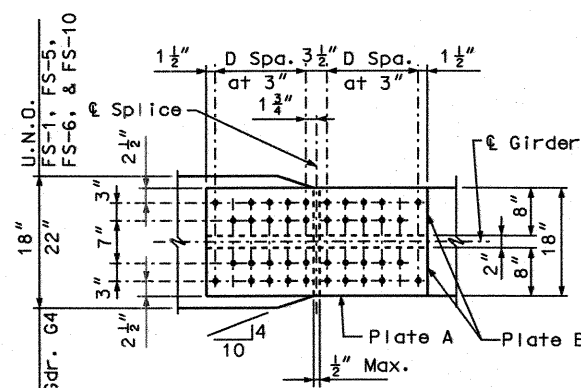


DETAIL OF BOLTED FIELD SPLICE



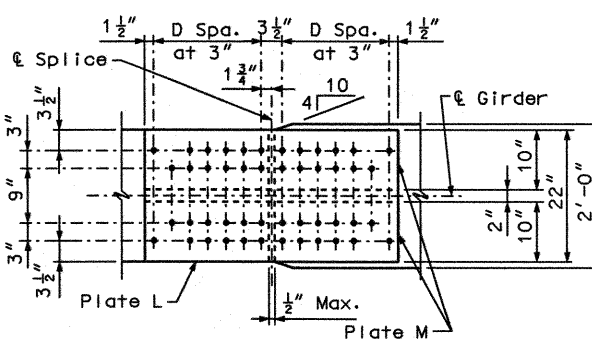
BOTTOM FLANGE SPLICE - TYPE 10

Note: Fill plate N not shown.



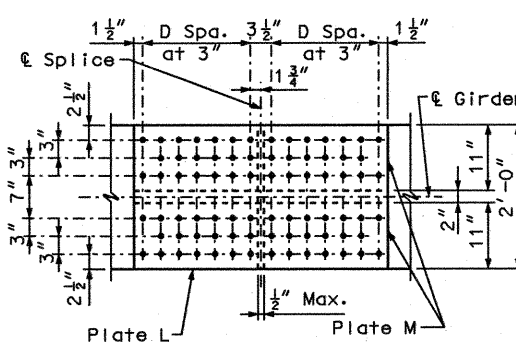
TOP FLANGE SPLICE - TYPE 3

Note: Fill plate C not shown.



BOTTOM FLANGE SPLICE - TYPE 6

Note: Fill plate N not shown.



BOTTOM FLANGE SPLICE - TYPE 9

Note: Fill plate N not shown.

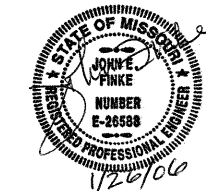
Notes:

All Fabricated Structural Steel shall be ASTM A709, Grade 50.

All bolts are 7/8"Ø ASTM A325 high strength bolts in 15/16"Ø holes.

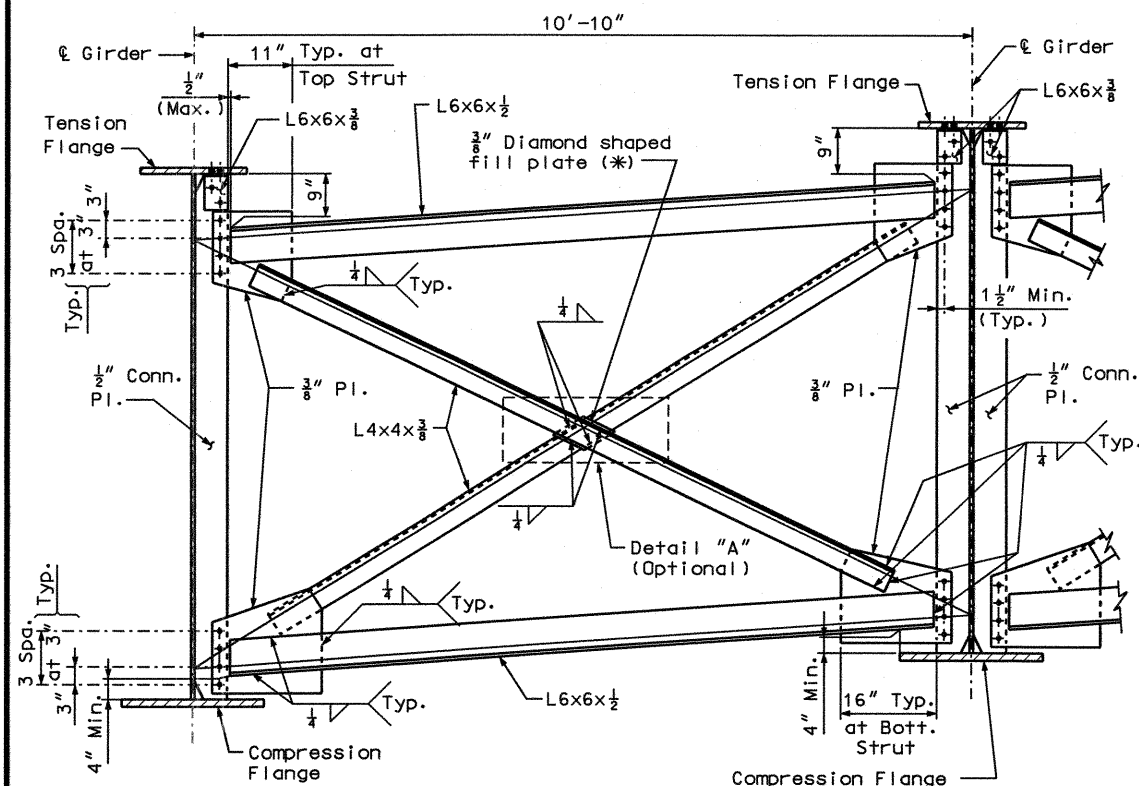
Contact surfaces shall be in accordance with Sec 1081 for surface preparation.

All splice plates shall be subject to notch toughness requirements.

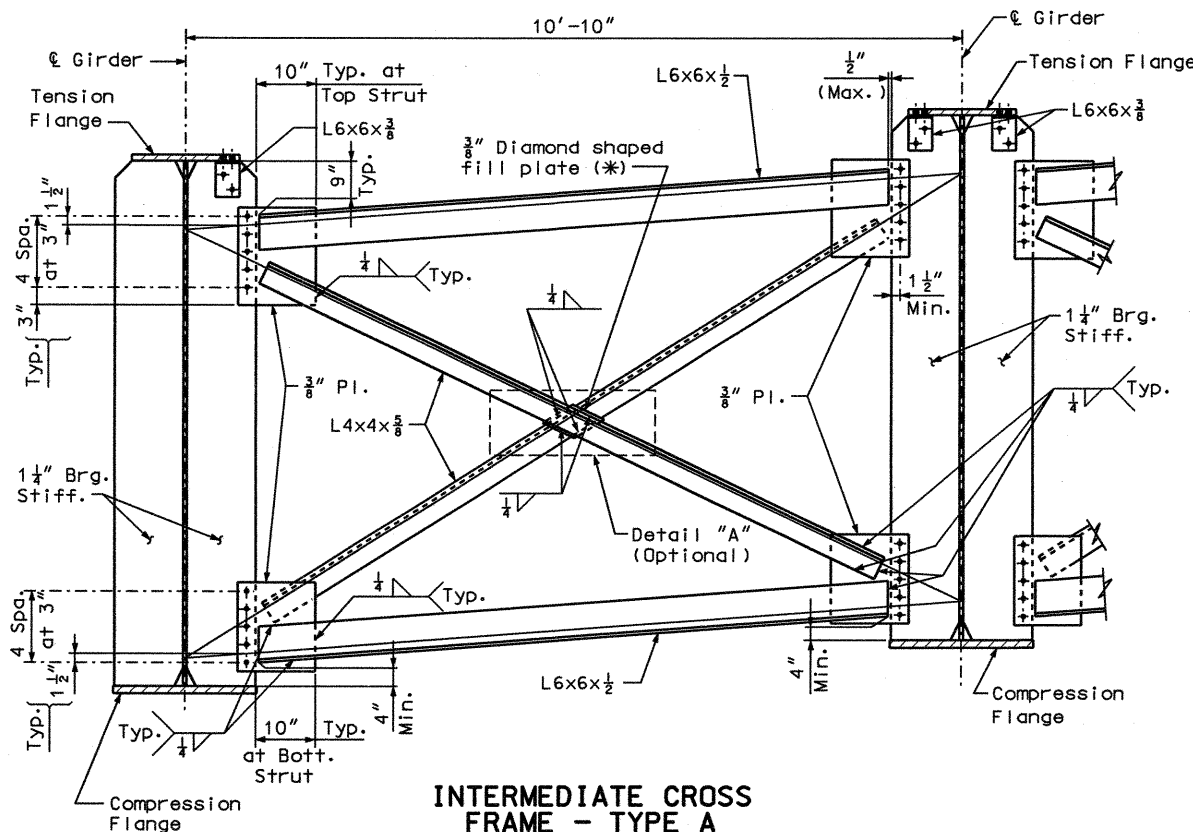


STEEL DETAILS

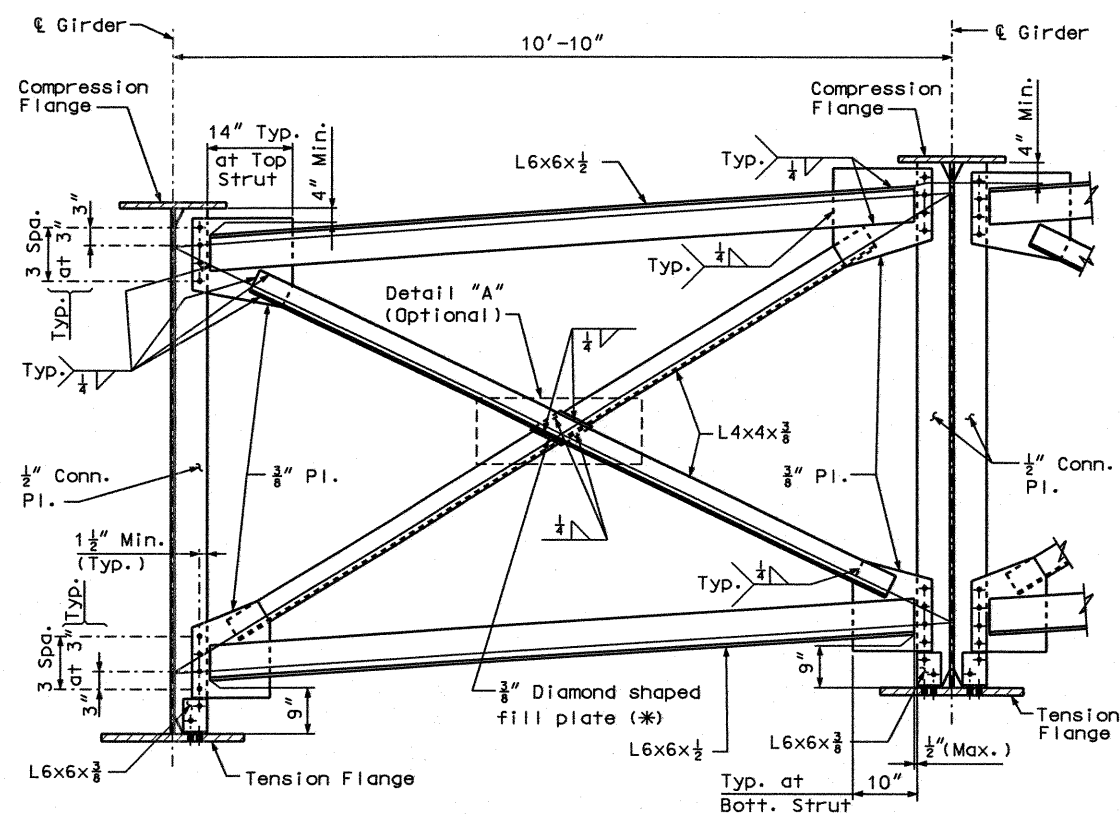
STATE	PROJ. NO.	SHEET NO.
MO		B47



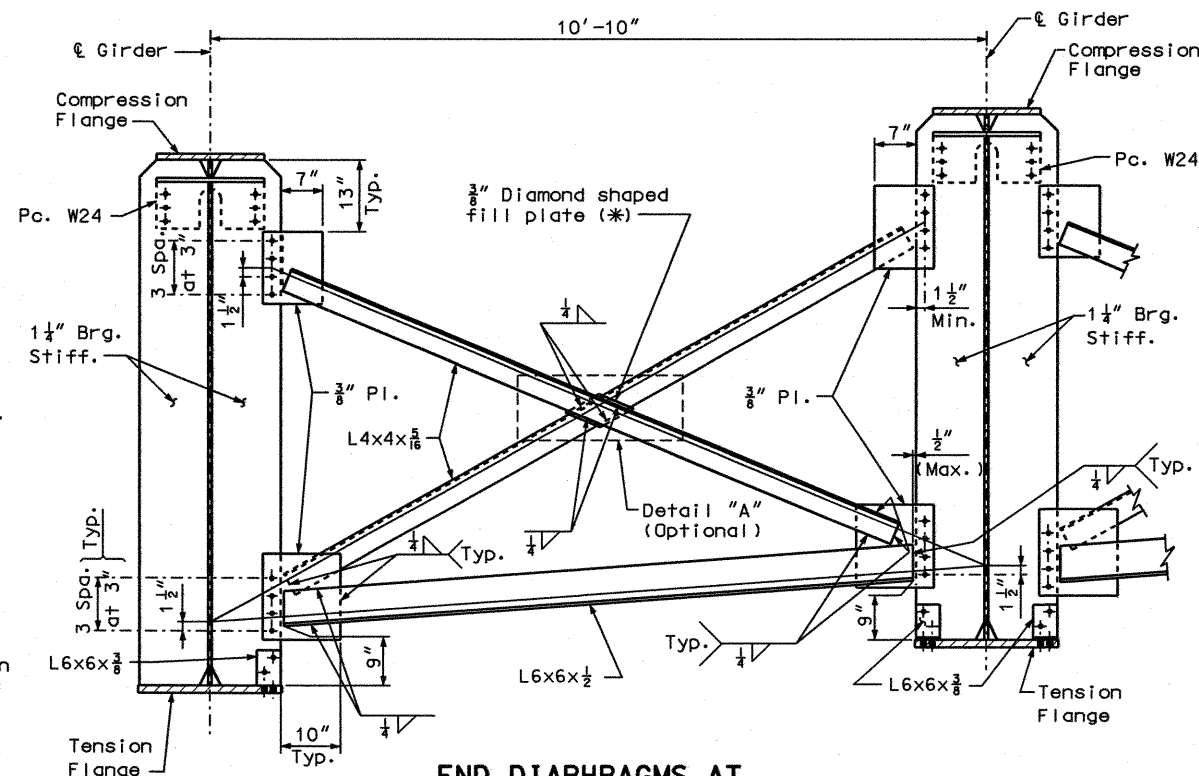
**INTERMEDIATE DIAPHRAGMS
TOP FLANGE IN TENSION
UNITS 1 AND 3**



**INTERMEDIATE CROSS
FRAME - TYPE A
(At Bent Nos. 2 and 7)**



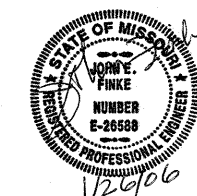
**INTERMEDIATE DIAPHRAGMS
BOTTOM FLANGE IN TENSION
UNITS 1 AND 3**



**END DIAPHRAGMS AT
INTERMEDIATE BENT NOS. 3 AND 6**
Note: Connection for Pc. W24 to girder shall be made with 3/4\"/>

Notes:
At the Contractor's option, holes in the diaphragm plate of non slab bearing diaphragms may be made 3/16\"/>

* At the Contractor's option, rectangular fill plates may be used in lieu of diamond fill plates as shown in Detail "A", Sheet No. 49.



STEEL DETAILS

SHEET NO. 47 OF 77

GREENE COUNTY

A7024

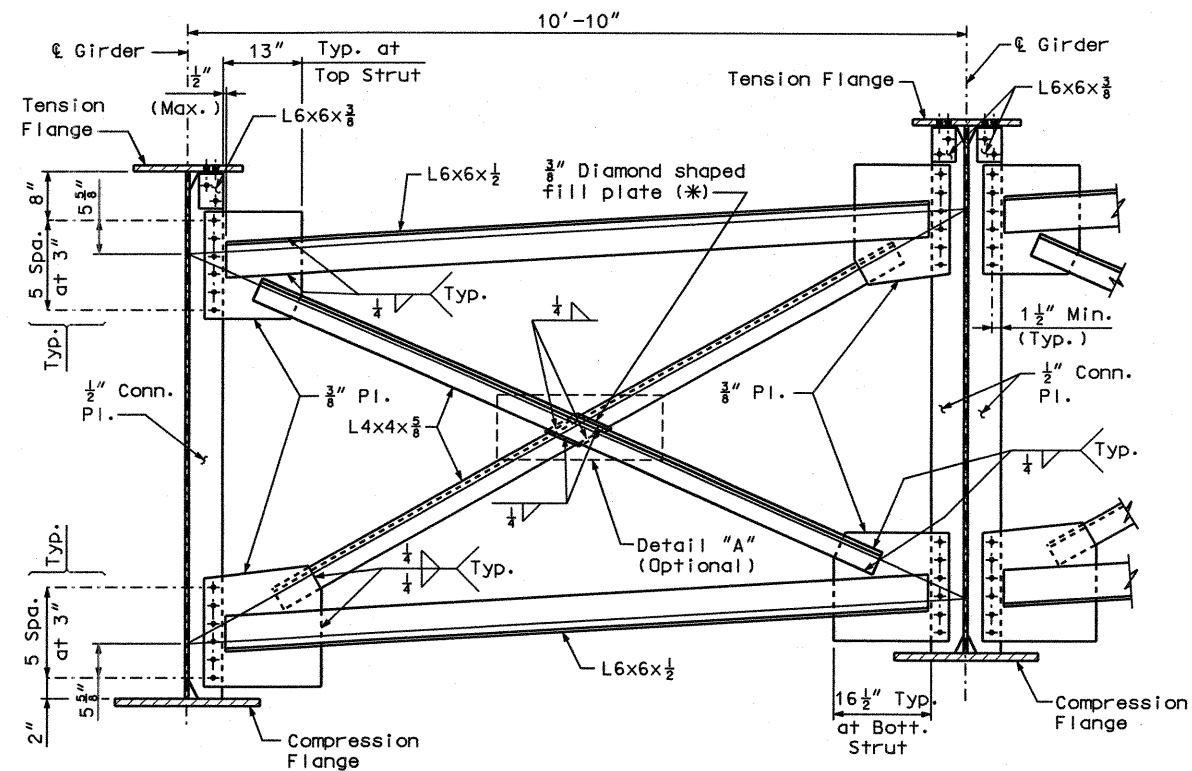
DETAILED: GJD/EAK NOV. 2005
CHECKED: RDR JAN. 2006

JACOBS CIVIL INC.
ST. LOUIS, MO.

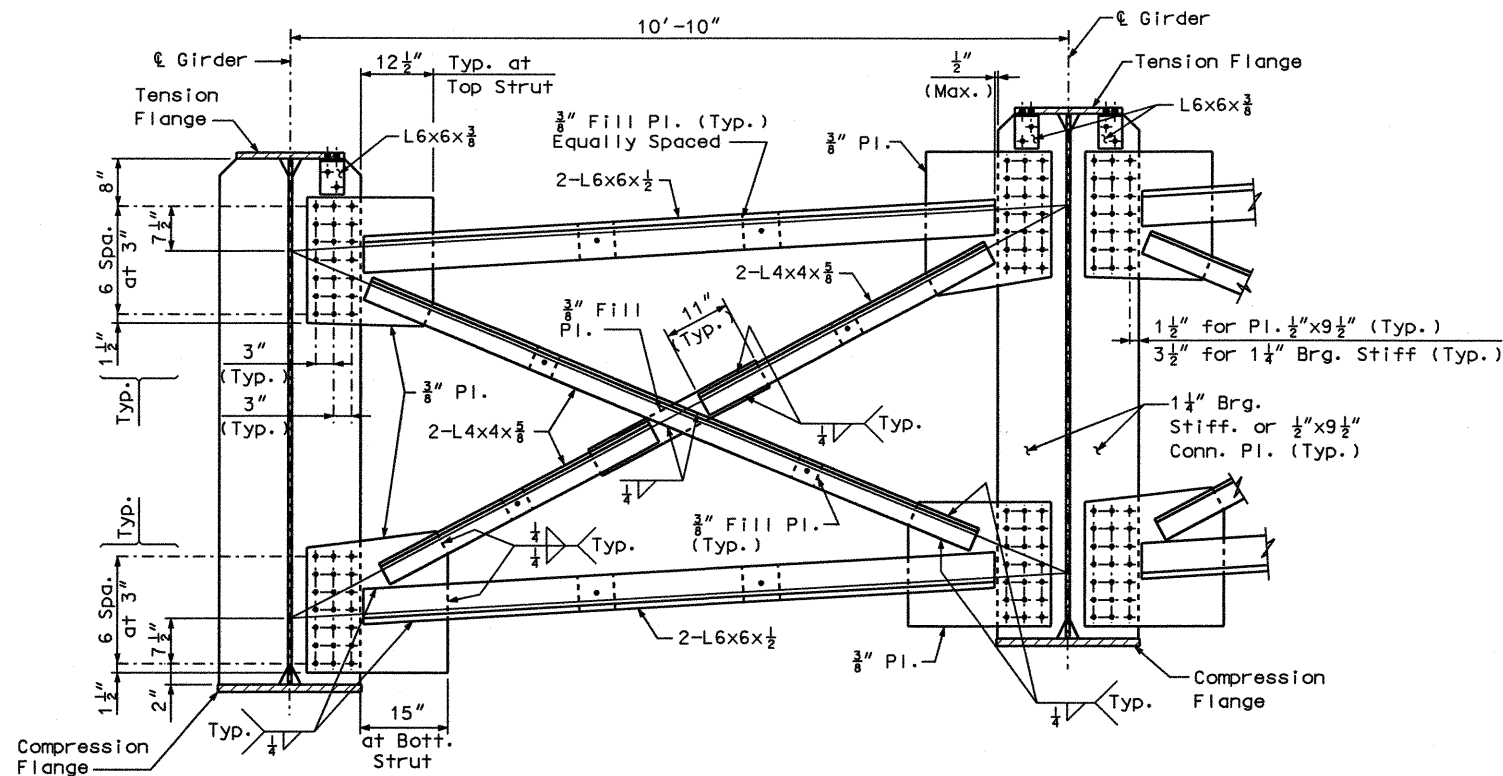
P:\cix21400\700cadd\709str\A7024 Ramp 3\A7024_STL01_J8U0548B.dgn

12:40 25-JAN-2006

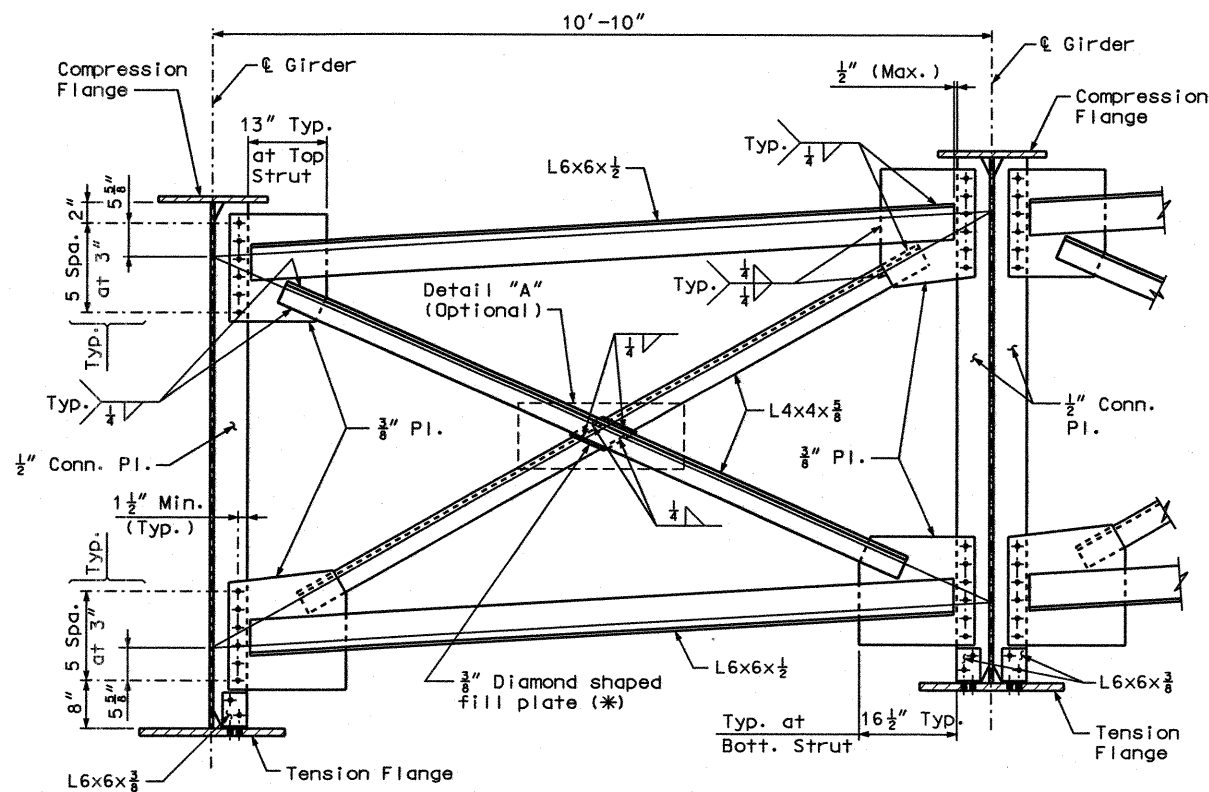
STATE	PROJ. NO.	SHEET NO.
MO		B4B



INTERMEDIATE DIAPHRAGMS
TOP FLANGE IN TENSION
UNIT 2



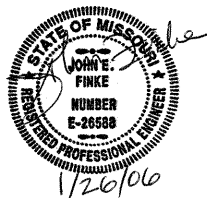
INTERMEDIATE CROSS
FRAME TYPE - B
(At Bents Nos. 4 and 5)



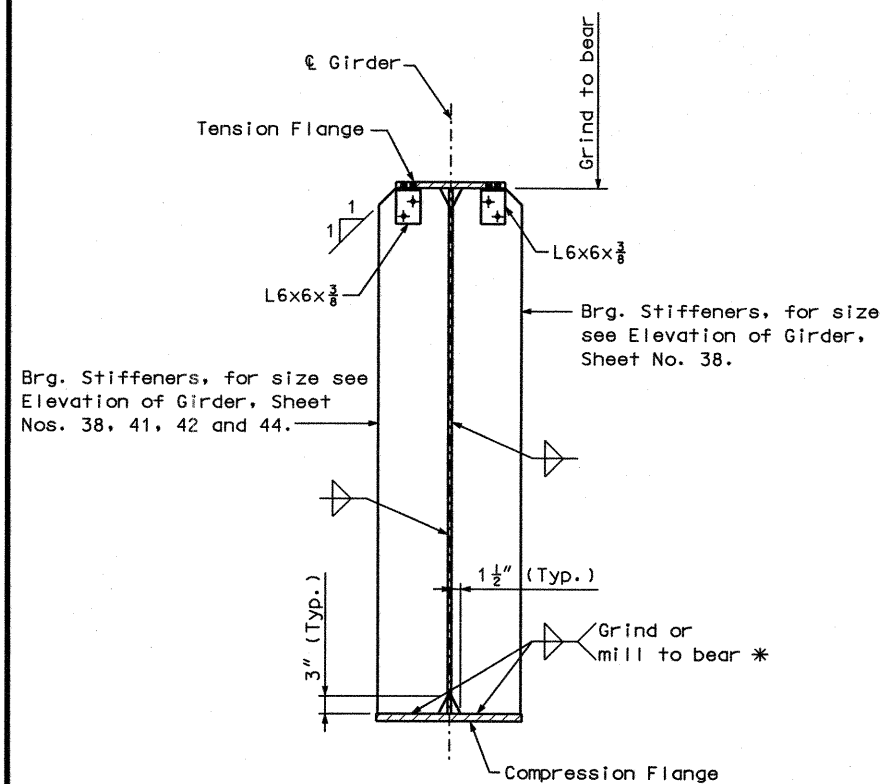
INTERMEDIATE DIAPHRAGMS
BOTTOM FLANGE IN TENSION
UNIT 2

Notes:
At the Contractor's option, holes in the diaphragm plate of non slab bearing diaphragms may be made 3/16" larger than the nominal diameter of the bolt. A hardened washer shall be used under the bolt head and nut when this option is used. Holes in the girder diaphragm connection plate or transverse web stiffener shall be standard size.

* At the Contractor's option, rectangular fill plates may be used in lieu of diamond fill plates as shown in Detail "A", Sheet No. 49.

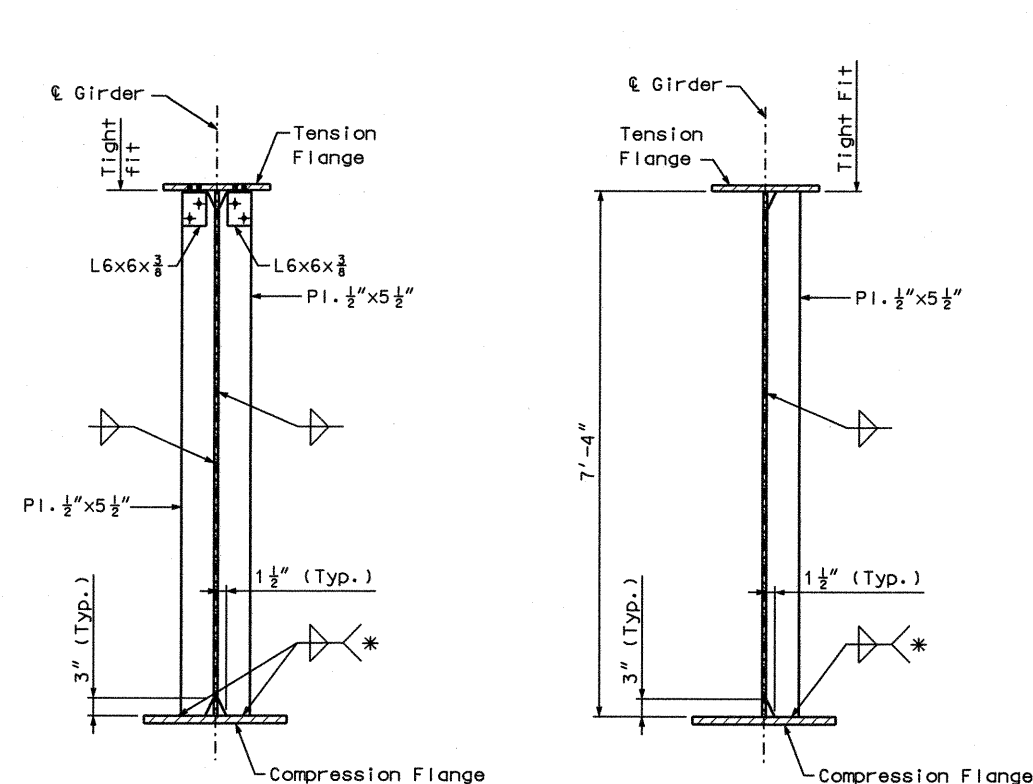


STATE	PROJ. NO.	SHEET NO.
MO		B49



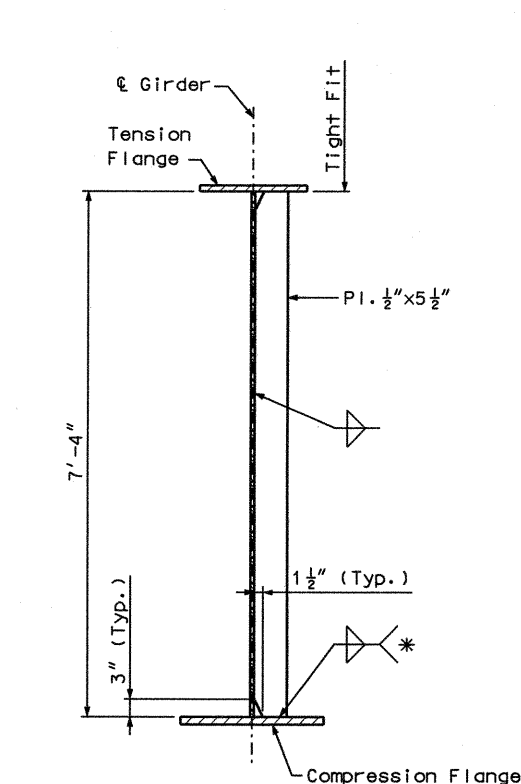
BEARING STIFFENERS

Note:
* Weld to compression flange as indicated on Plan of Structural Steel, Sheet Nos. 37, 39 and 43.



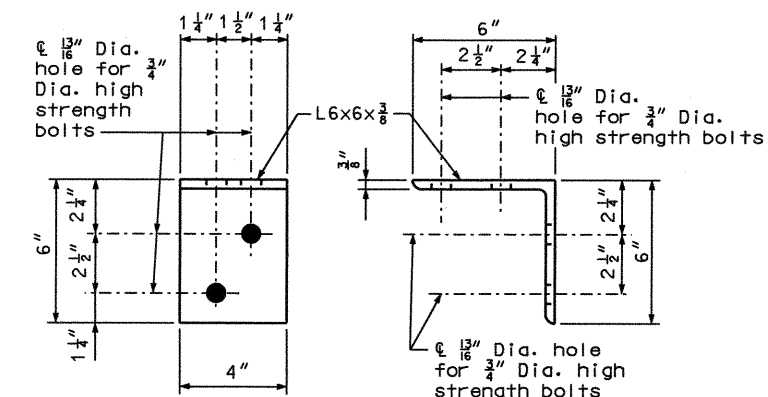
INTERMEDIATE DIAPHRAGM CONNECTION PLATE

Note:
If both flanges are in tension provide connection angles at both ends of the connection plate.
* Weld to compression flange as indicated on Plan of Structural Steel, sheet Nos. 37, 39 and 43.



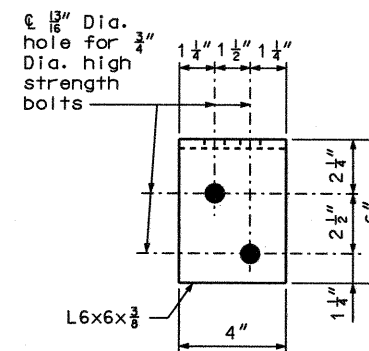
INTERMEDIATE STIFFENERS BETWEEN INTERMEDIATE DIAPHRAGMS

Note:
* Weld to compression flange as indicated on Plan of Structural Steel, Sheet Nos. 37, 39 and 43.



ELEVATION

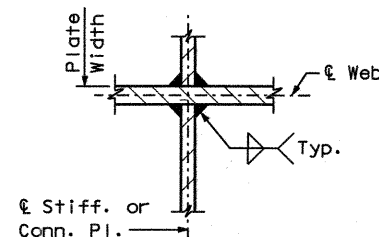
SIDE VIEW



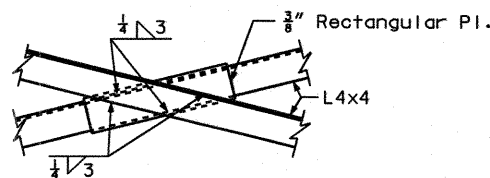
PLAN

DETAIL OF FLANGE CONNECTION ANGLE

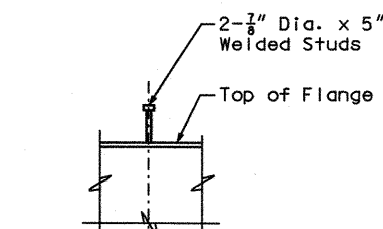
Notes:
All Fabricated Structural Steel shall be ASTM A709, Grade 50.
The two 3/4" diameter H.S. bolts that connect the 6x6x3/8 angles to the top flange shall be placed so the nut is on the inside of flange toward the web.
The 6x6x3/8 angle legs shall be adjusted to the variable angle between bearing stiffener and top flange created by girder tilt due to grade requirements.



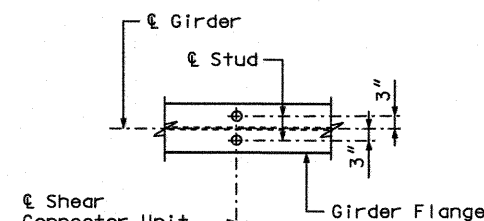
WELDING DETAILS



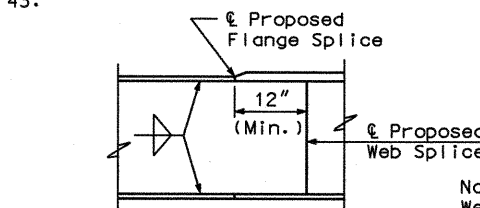
DETAIL "A" (OPTIONAL)



ELEVATION OF SHEAR CONNECTOR

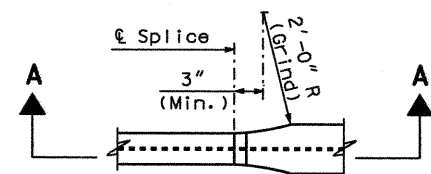


PLAN OF SHEAR CONNECTOR

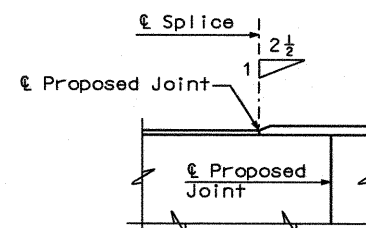


WELDED SHOP WEB SPLICE

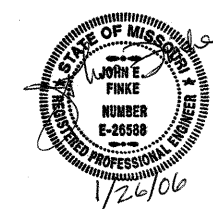
Note:
Welded shop web and flange splices may be permitted when detailed on the shop drawings and approved by the engineer. No additional payment will be made for optional welded shop web and flange splices.



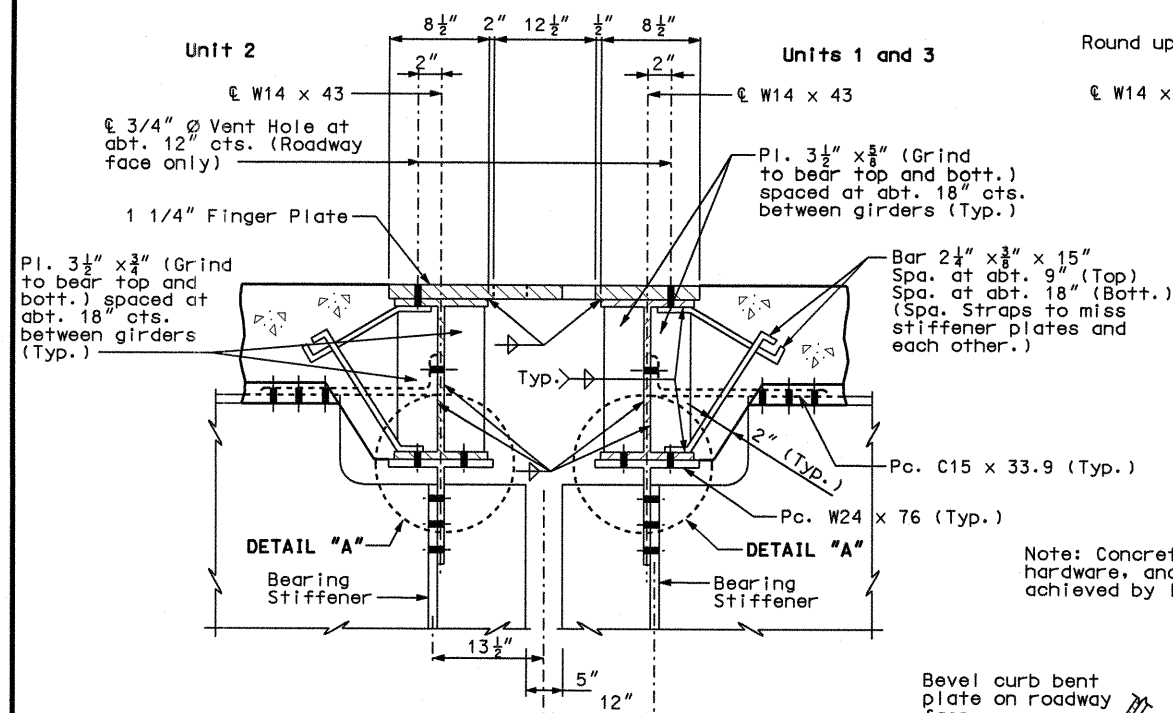
PLAN 2'-0" RADIUS TRANSITION



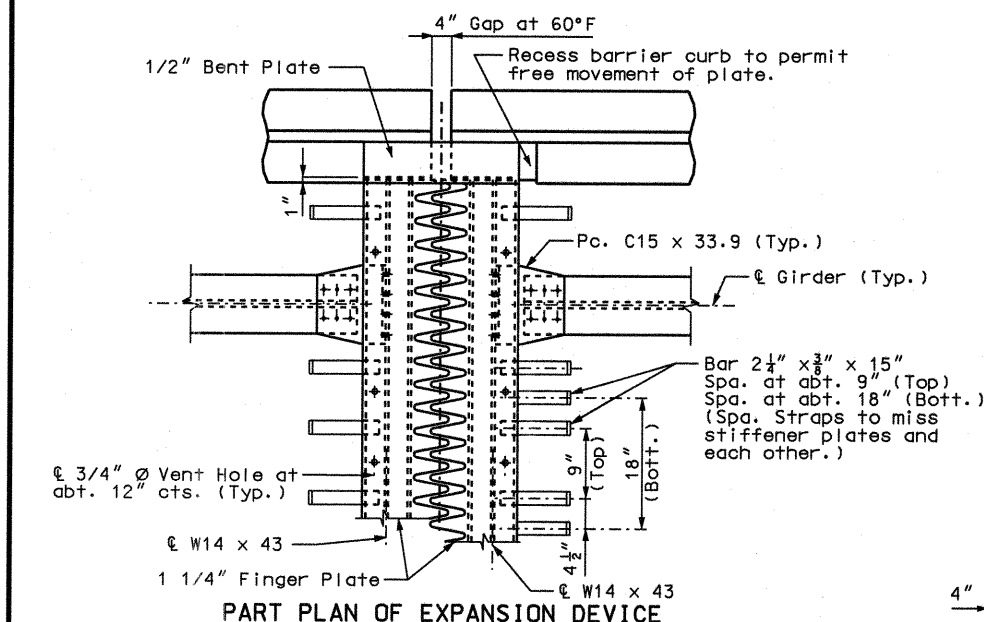
SECTION A-A WELDED SHOP FLANGE SPLICE



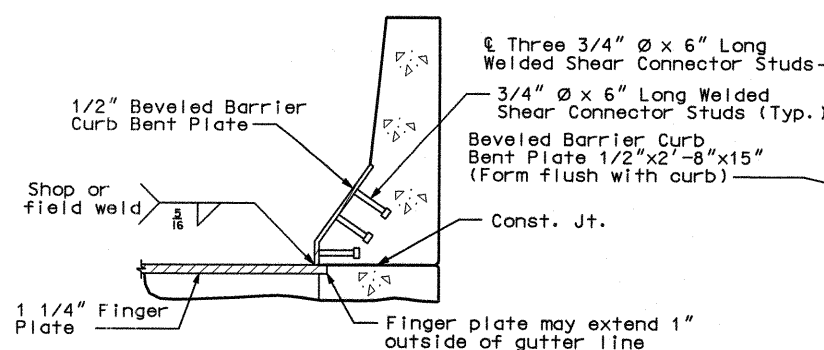
STATE	PROJ. NO.	SHEET NO.
MO		B50



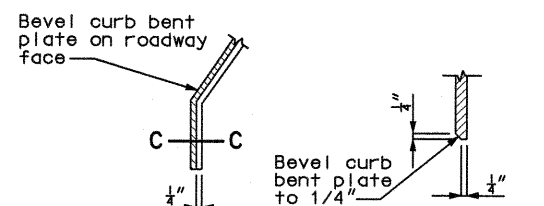
PART SECTION THRU EXPANSION DEVICE



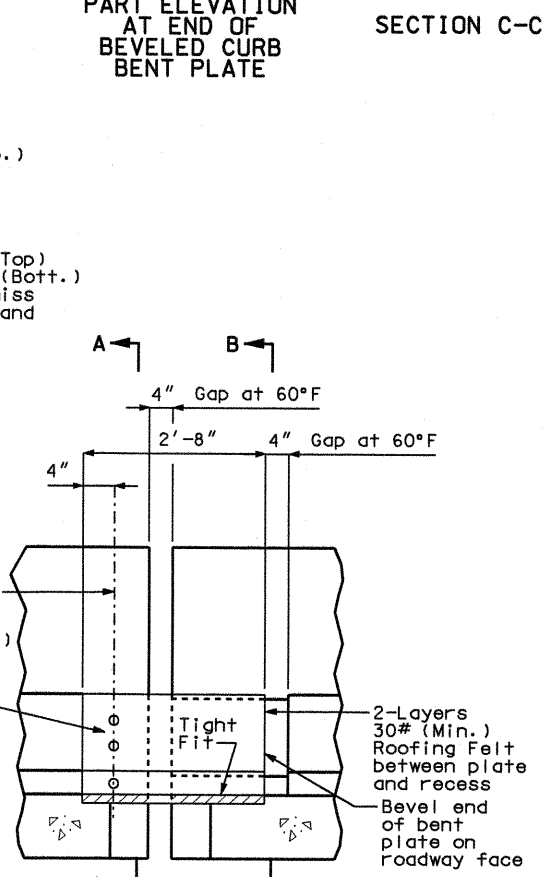
PART PLAN OF EXPANSION DEVICE



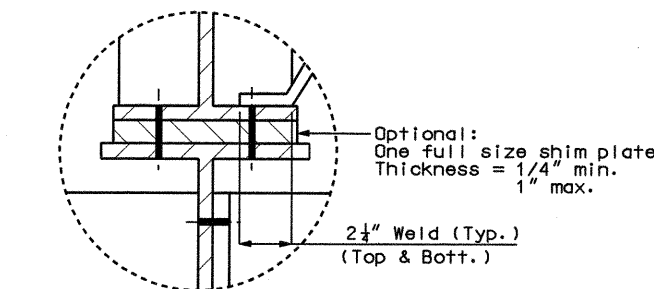
PART SECTION A-A



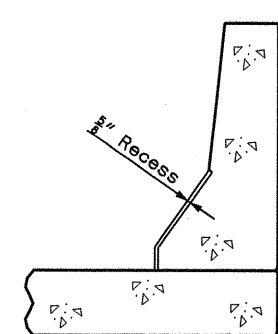
PART ELEVATION AT END OF BEVELED CURB BENT PLATE



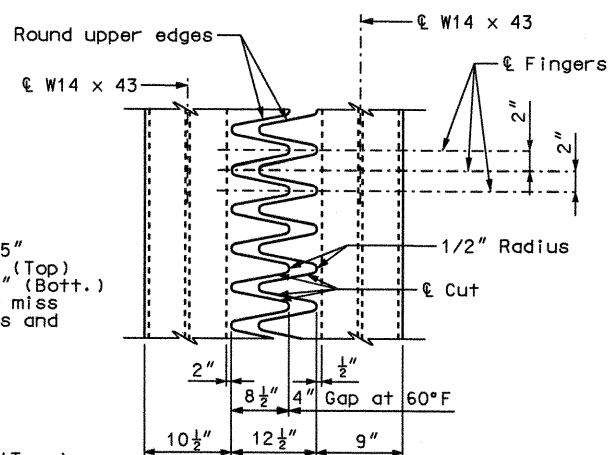
ELEVATION OF BARRIER CURB



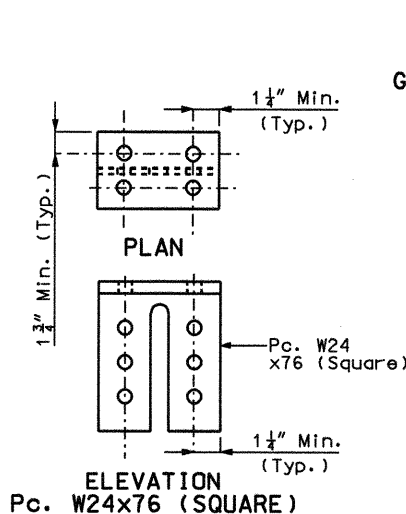
DETAIL "A"



PART SECTION B-B



TYPICAL PLAN OF PLATE



ELEVATION
Pc. W24x76 (SQUARE)

Note: Concrete shall be forced under and around finger plate supporting hardware, anchors, angles and bars. Proper consolidation shall be achieved by localized internal vibration.

GENERAL NOTES:

Finger plate shall be cut with a machine guided gas torch from one plate. The plate from which fingers are cut may be spliced before fingers are cut. The surface of cut shall be perpendicular to the surface of the plate. The cut shall not exceed 1/8" in width. The centerline of cut shall not deviate more than 1/16" from the position of centerline of cut shown. No splicing of finger plate or finger plate assembly will be allowed after fingers are cut. The expansion device shall be fabricated and installed to the crown and grade of the roadway.

Plan dimensions are based on installation at 60°F. The expansion gap and other dimensions shall be increased or decreased 5/16" for Bent 3 and 1/2" for Bent 6 for each 10°F rise or fall in temperature at installation.

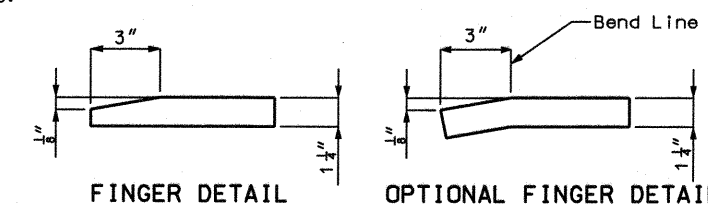
Material for the expansion device shall be ASTM A709 Grade 36 structural steel. Anchors for the expansion device shall be in accordance with Sec 1037.

Structural steel for the expansion device and curb plate shall be coated with a minimum of two coats of inorganic zinc primer (5 mils minimum) or galvanized in accordance with ASTM A123. Anchors need not be protected from overspray.

Payment for furnishing, coating or galvanizing and installing the structural steel for the expansion device will be considered completely covered by the contract unit price for Expansion Device (Finger Plate) per lin. ft.

All holes shown for connections to be subpunched 11/16" Ø (shop or field drill) and reamed to 13/16" Ø in field.

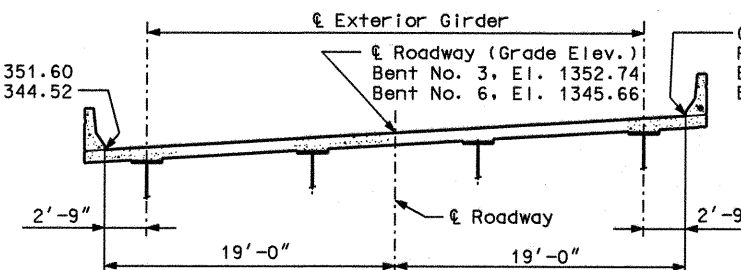
Longitudinal reinforcing steel shall be placed so that ends shall not be more than ±1" from the web of W14x43 at the expansion device.



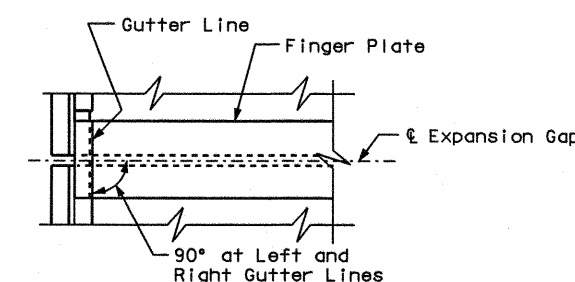
FINGER DETAIL

OPTIONAL FINGER DETAIL

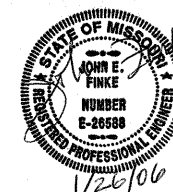
Grade Elevation	Left Gutter Line	Right Gutter Line
Bent No. 3, El. 1351.60	Bent No. 3, El. 1352.74	Bent No. 3, El. 1353.88
Bent No. 6, El. 1344.52	Bent No. 6, El. 1345.66	Bent No. 6, El. 1346.80



SECTION THRU EXPANSION GAP
AT INTERMEDIATE BENT NOS. 3 AND 6



PART PLAN



DETAILED: GJD OCT. 2005
CHECKED: FAC JAN. 2006

JACOBS CIVIL INC.
ST. LOUIS, MO.

DETAILS OF FINGER PLATE EXPANSION DEVICE AT INT. BENT NOS. 3 AND 6

SHEET NO. 50 OF 77

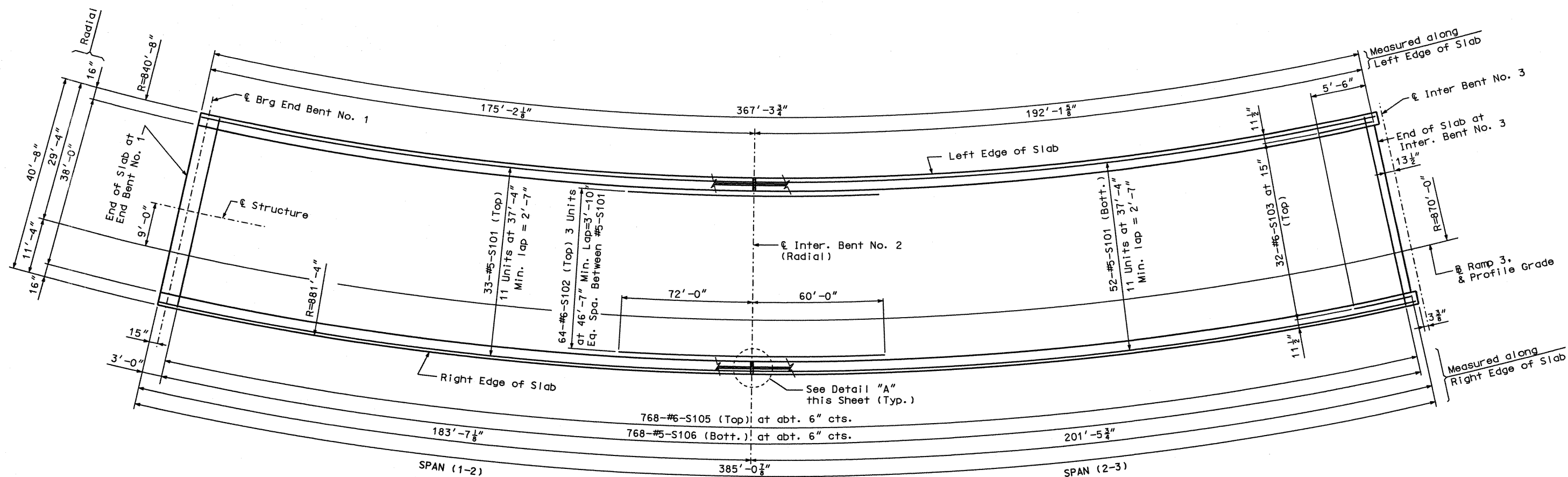
GREENE COUNTY

A7024

P:\c1x21400\700cadd\709str\A7024 Ramp 3\A7024_EXPDEV01\J8U0548B.dgn

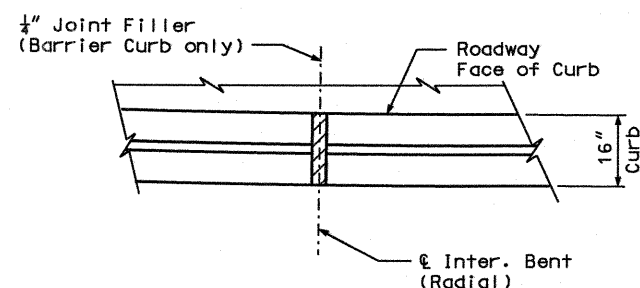
12:44 25-JAN-2006

STATE	PROJ. NO.	SHEET NO.
MO		351



PLAN OF SLAB SHOWING REINFORCEMENT- UNIT 1

Note: All transverse reinforcing shall be spaced and placed radial along right edge of slab. Longitudinal reinforcing steel shall be placed so that ends shall not be more than 1"± from the web of the W14x43 at the expansion device.



DETAIL "A"

Notes:

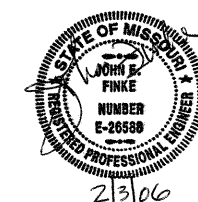
Longitudinal slab dimensions are measured horizontally.

For Section thru Slab, see Sheet No. 54.

For Slab Pouring Sequence, see Sheet No. 62.

For details and Reinforcement of Safety Barrier Curb not shown, see Sheet No. 64.

For Theoretical Bottom of Slab Elevations, Theoretical Slab Haunching Diagram, Plate Girder Camber Diagram and Dead Load Deflections, see Sheet No. 55.



DETAILS OF SLAB REINFORCEMENT - UNIT 1

DETAILED: GJD JUNE 2005
CHECKED: FAC JAN. 2006

JACOBS CIVIL INC.
ST. LOUIS, MO.

SHEET NO. 51 OF 77

GREENE COUNTY

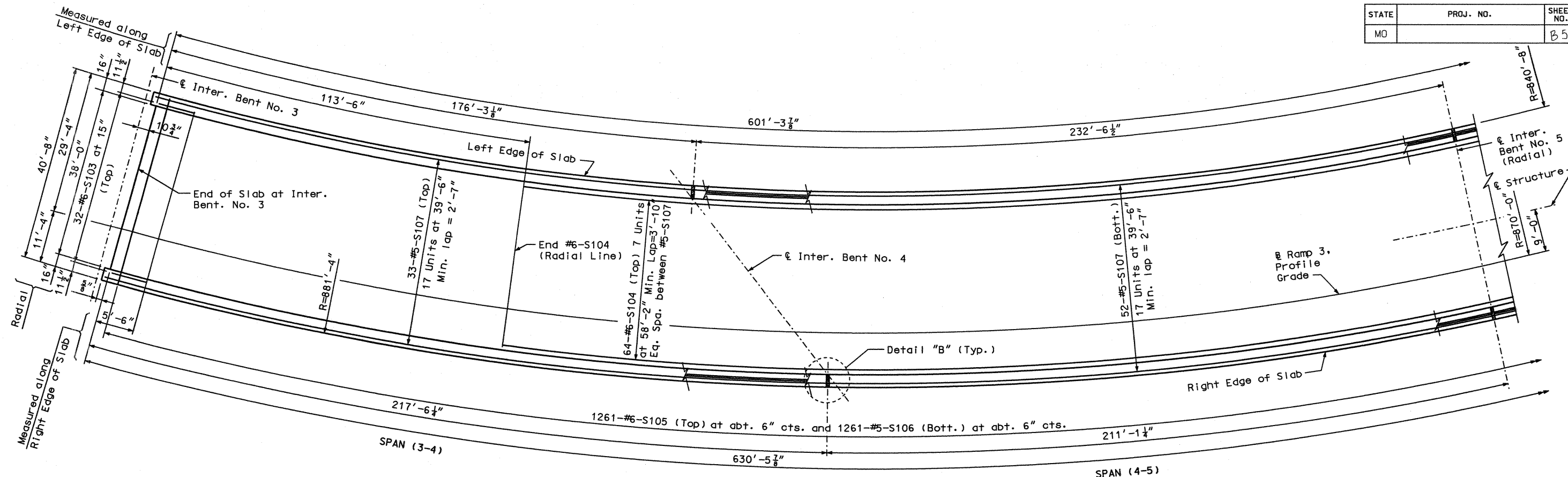
A7024

P:\CIX21400\700cadd\709str\A7024 Ramp 3\A7024_SLB01_J8U0548B.dgn

12:50 03-FEB-2006

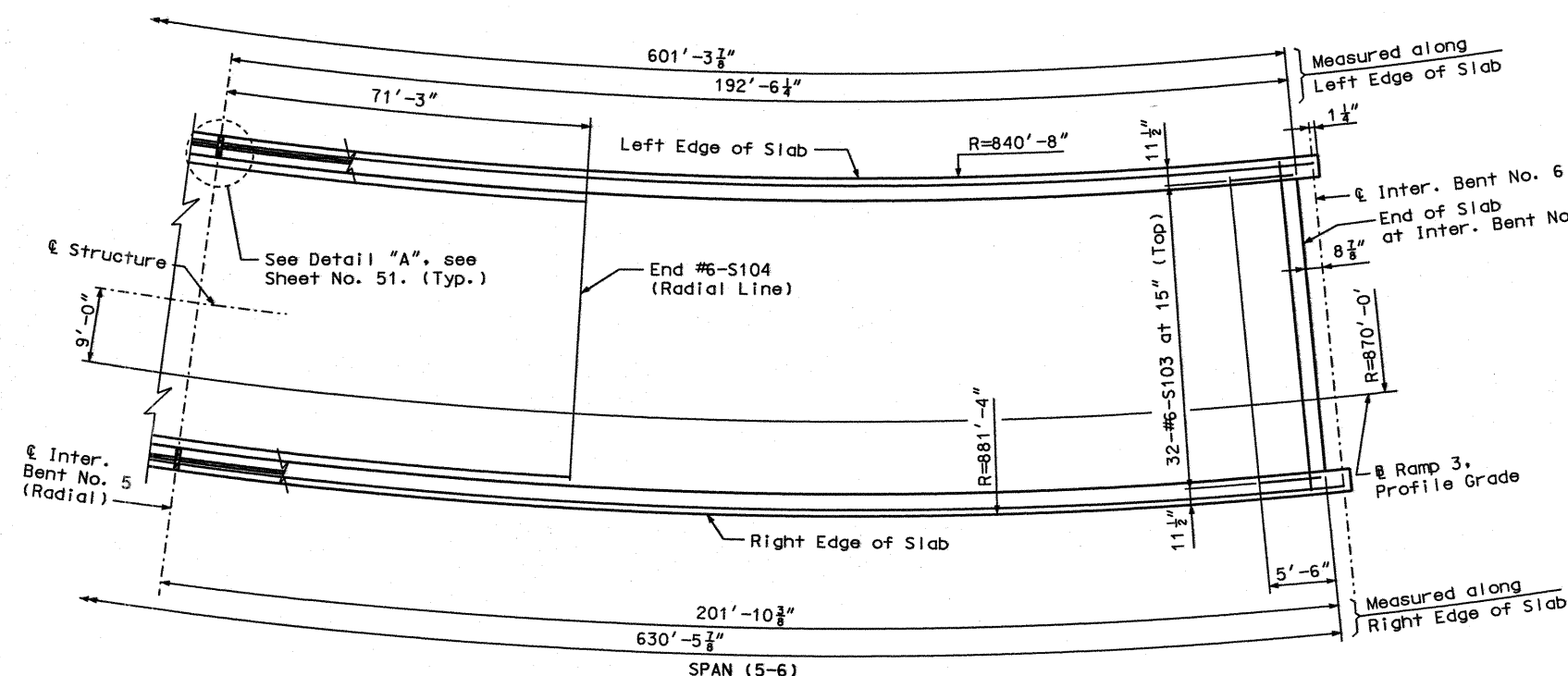
REV.

STATE	PROJ. NO.	SHEET NO.
MO		B 52

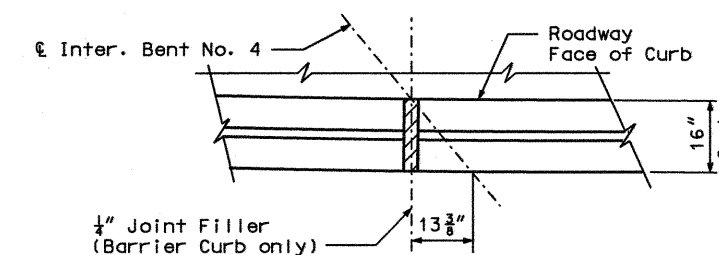


PLAN OF SLAB SHOWING REINFORCEMENT - UNIT 2

Note: All transverse reinforcing shall be spaced and placed radial along right edge of slab. Longitudinal reinforcing steel shall be placed so that ends shall not be more than 1"± from the web of the W14x43 at the expansion device.



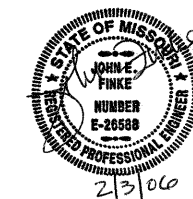
PLAN OF SLAB SHOWING REINFORCEMENT - UNIT 2



DETAIL "B"

Notes:

- Longitudinal slab dimensions are measured horizontally.
- For Section thru Slab, see Sheet No. 54.
- For Slab Pouring Sequence, see Sheet No. 62.
- For details and Reinforcement of Safety Barrier Curb not shown, see Sheet No. 65.
- For Plate Girder Camber Diagram and Dead Load Deflections, see Sheet No. 56.
- For Theoretical Bottom of Slab Elevations and Theoretical Slab Haunching Diagram, see Sheet No. 57.
- For Detail "A", see Sheet No. 51.



DETAILS OF SLAB REINFORCEMENT - UNIT 2

DETAILED: GJD JUNE 2005
CHECKED: FAC JAN. 2006

JACOBS CIVIL INC.
ST. LOUIS, MO.

SHEET NO. 52 OF 77

GREENE COUNTY

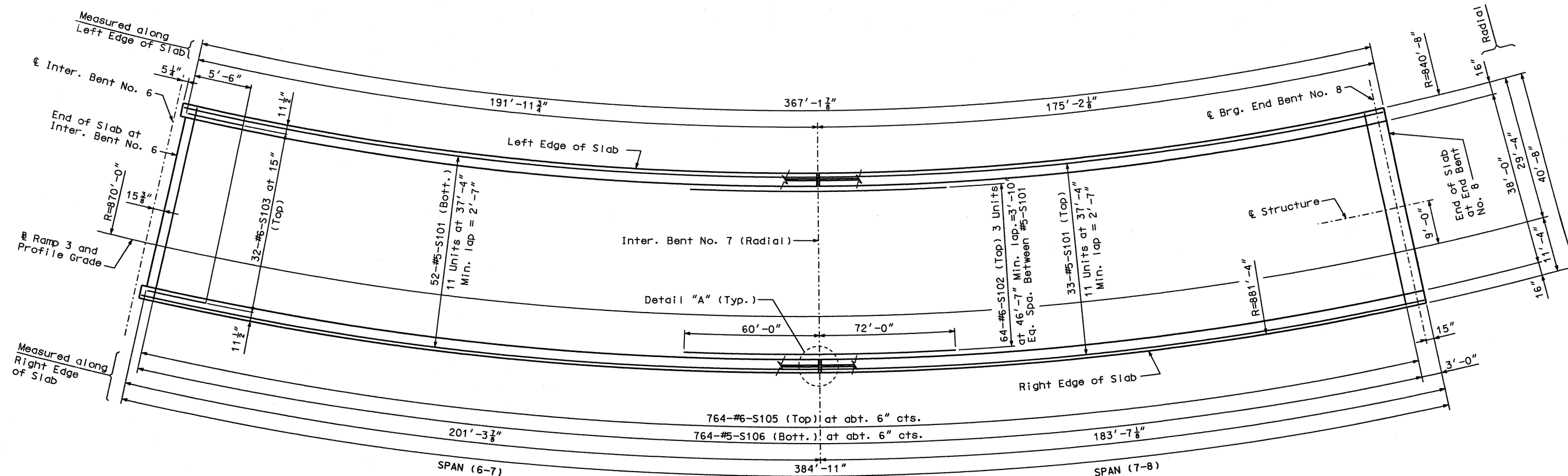
A7024

P:\C1X21400\700cadd\709str\A7024 Ramp 3\A7024_SLB02_J8U0548B.dgn

12:57 03-FEB-2006

REV.

STATE	PROJ. NO.	SHEET NO.
MO		B53



PLAN OF SLAB SHOWING REINFORCEMENT- UNIT 3

Note: All transverse reinforcing shall be spaced and placed radial along right edge of slab. Longitudinal reinforcing steel shall be placed so that ends shall not be more than 1"± from the web of the W14x43 at the expansion device.

Notes:

- Longitudinal slab dimensions are measured horizontally.
- For Section thru Slab, see Sheet No. 54.
- For Slab Pouring Sequence, see Sheet No. 62.
- For details and Reinforcement of Safety Barrier Curb not shown, see Sheet No. 66.
- For Theoretical Bottom of Slab Elevations, Theoretical Slab Haunching Diagram, Plate Girder Camber Diagram and Dead Load Deflections, see Sheet No. 58.
- For Detail "A", see Sheet No. 51.



DETAILS OF SLAB REINFORCEMENT - UNIT 3

DETAILED: GJD JUNE 2005
CHECKED: FAC JAN. 2006

JACOBS CIVIL INC.
ST. LOUIS, MO.

SHEET NO. 53 OF 77

GREENE COUNTY

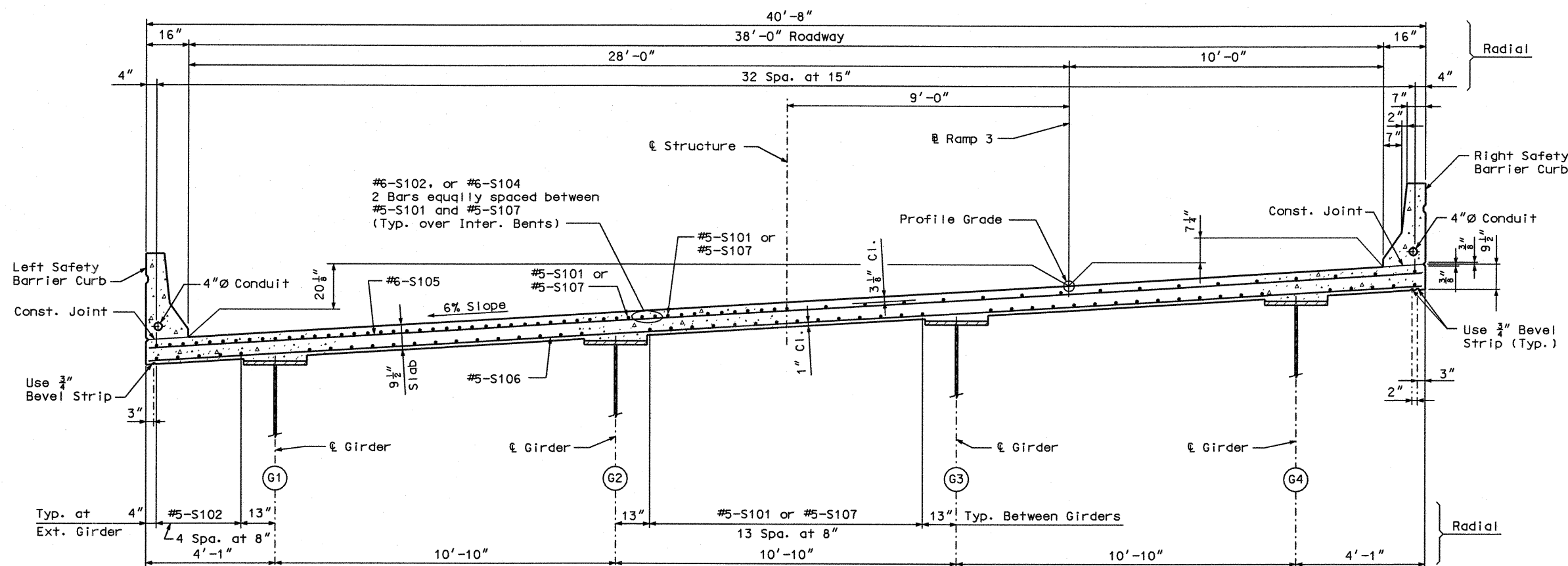
A7024

P:\C1X21400\700cadd\709str\A7024 Ramp 3\A7024_SLB03-J8U0548B.dgn

12:52 03-FEB-2006

REV.

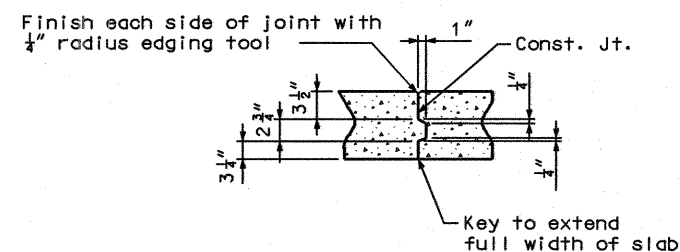
STATE	PROJ. NO.	SHEET NO.
MO		B54



HALF SECTION NEAR INTERMEDIATE BENT
AND HALF SECTION AT SPAN (4-5)

HALF SECTION NEAR ℓ SPAN

TYPICAL CROSS SECTION
(Looking ahead station)



TYPICAL SLAB CONSTRUCTION JOINT DETAIL

Notes:

- For details of Slab Pouring Sequence, see Sheet No. 62.
- For details of Safety Barrier Curbs, see Sheet Nos. 64 thru 66.
- For Plan of Slab Showing Reinforcement, see Sheet Nos. 51 thru 53.
- For details of Slab Drains, see Sheet No. 63.

DETAILS OF SLAB REINFORCEMENT - UNITS 1 THRU 3

DETAILED: GJD JULY 2005
CHECKED: FAC DEC. 2005

JACOBS CIVIL INC.
ST. LOUIS, MO.

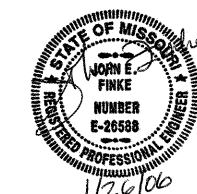
SHEET NO. 54 OF 77

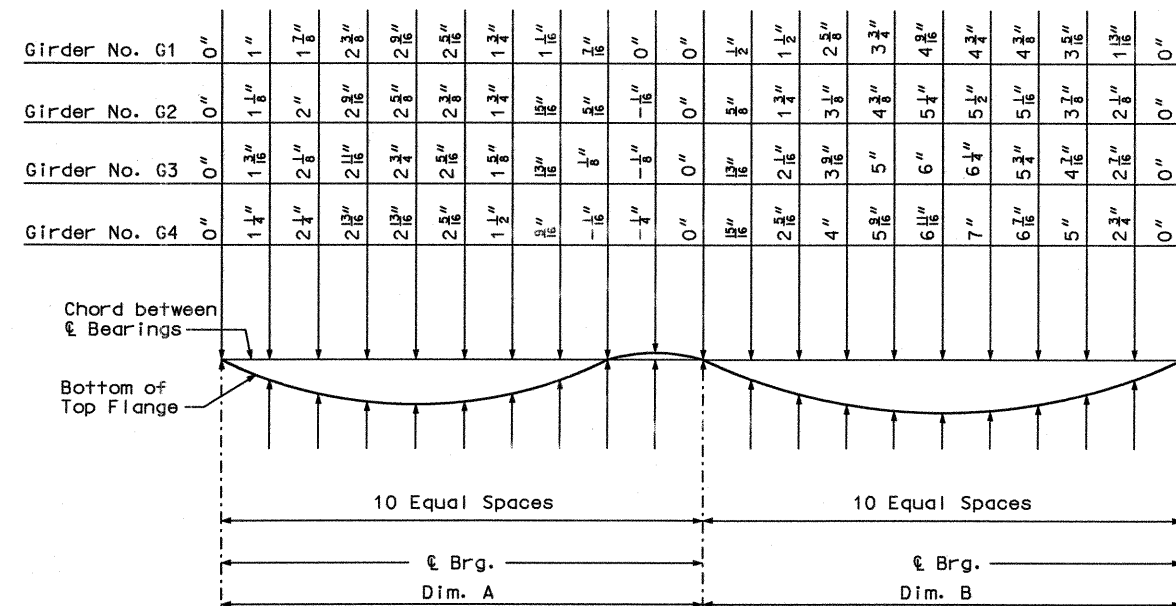
GREENE COUNTY

A7024

P:\cix21400\700cadd\709str\A7024 Ramp 3\A7024_SLB05-J8U0548B.dgn

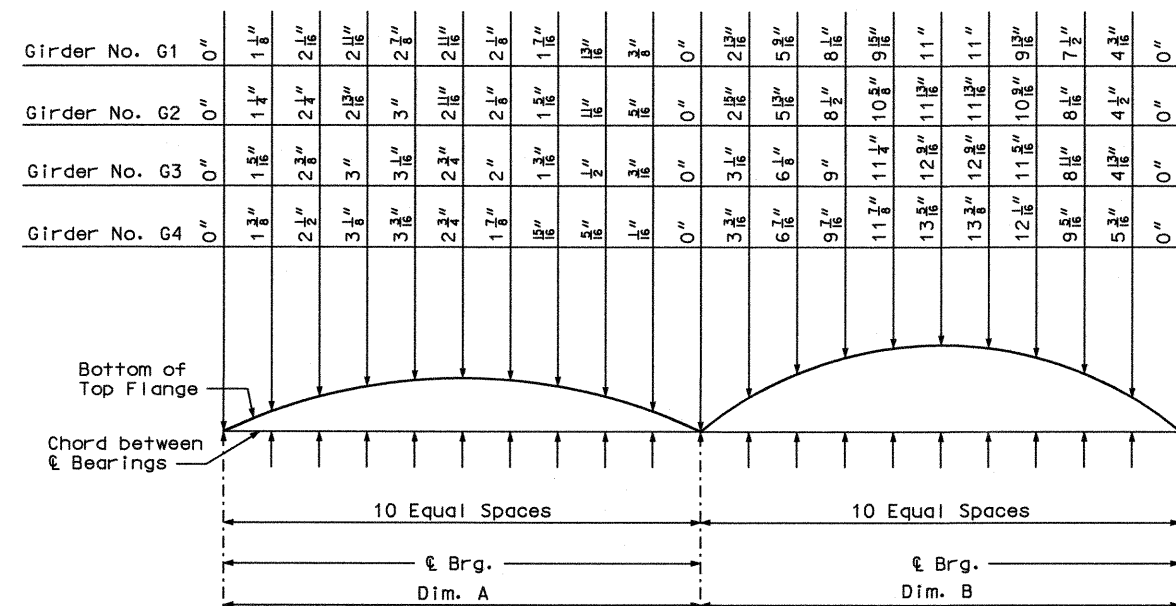
12:50 25-JAN-2006





SPAN (1-2) SPAN (2-3)
DEAD LOAD DEFLECTION DIAGRAM

Notes:
 Dead load deflection includes weight of structural steel, concrete slab, and barrier curb.
 24% of dead load deflection is due to the weight of structural steel.



SPAN (1-2) SPAN (2-3)
PLATE GIRDER CAMBER DIAGRAM

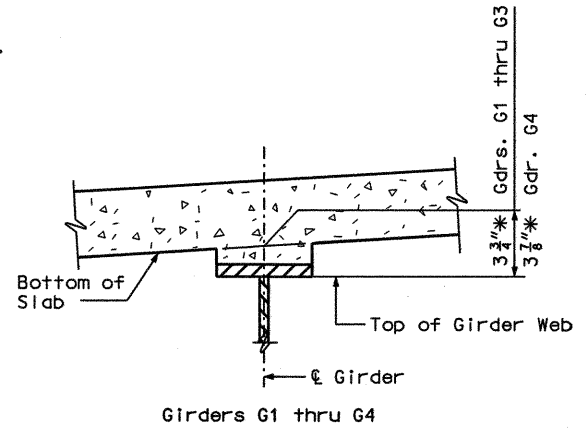
Note:
 Camber includes allowance for vertical curve and dead load deflection due to concrete slab, curb and structural steel.

STATE	PROJ. NO.	SHEET NO.
MO		B55

VARIABLE DIMENSIONS		
Girder	Dim. A	Dim. B
G1	174'-9 5/8"	193'-2 11/16"
G2	177'-0 3/8"	195'-8 1/16"
G3	179'-3 1/8"	198'-2 3/16"
G4	181'-6"	200'-7 1/8"

THEORETICAL BOTTOM OF SLAB ELEVATIONS AT £ OF GIRDER (PRIOR TO FORMING FOR SLAB) **																					
Location	Span 1-2 (Dim. A £ Brg. - £ Brg.)										Span 2-3 (Dim. B £ Brg. - £ Brg.)										
	£ Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90	£ Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90	£ Brg.
Girder No. G1	1336.67	1337.55	1338.41	1339.25	1340.07	1340.85	1341.62	1342.38	1343.14	1343.91	1344.68	1345.53	1346.37	1347.18	1347.95	1348.65	1349.27	1349.81	1350.26	1350.64	1350.95
Girder No. G2	1337.32	1338.21	1339.07	1339.92	1340.73	1341.51	1342.27	1343.02	1343.78	1344.56	1345.33	1346.18	1347.03	1347.85	1348.63	1349.34	1349.96	1350.50	1350.94	1351.30	1351.60
Girder No. G3	1337.97	1338.86	1339.74	1340.58	1341.39	1342.17	1342.93	1343.67	1344.43	1345.20	1345.98	1346.84	1347.69	1348.53	1349.31	1350.02	1350.65	1351.18	1351.62	1351.97	1352.25
Girder No. G4	1338.62	1339.52	1340.40	1341.25	1342.06	1342.83	1343.57	1344.31	1345.07	1345.85	1346.63	1347.50	1348.36	1349.20	1349.99	1350.71	1351.34	1351.87	1352.30	1352.64	1352.90

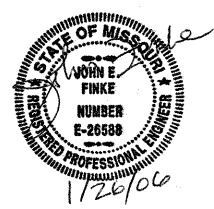
** Elevations are based on a constant slab thickness of 9 1/2" and include allowance for theoretical dead load deflections due to weight of slab and barrier curb.

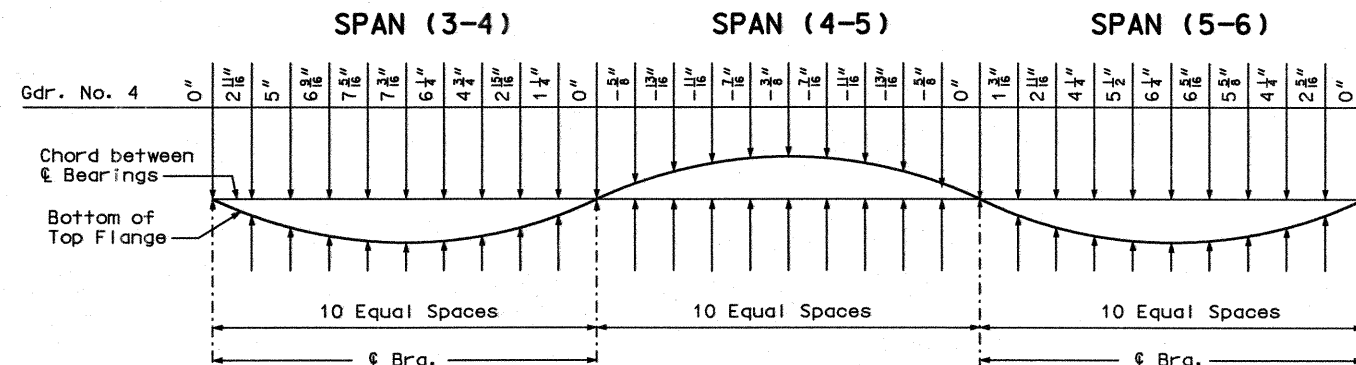
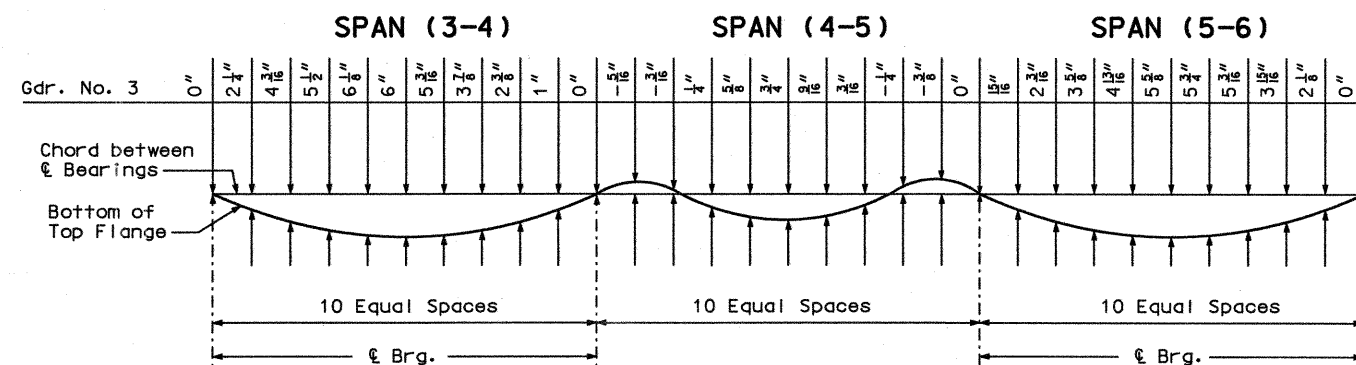
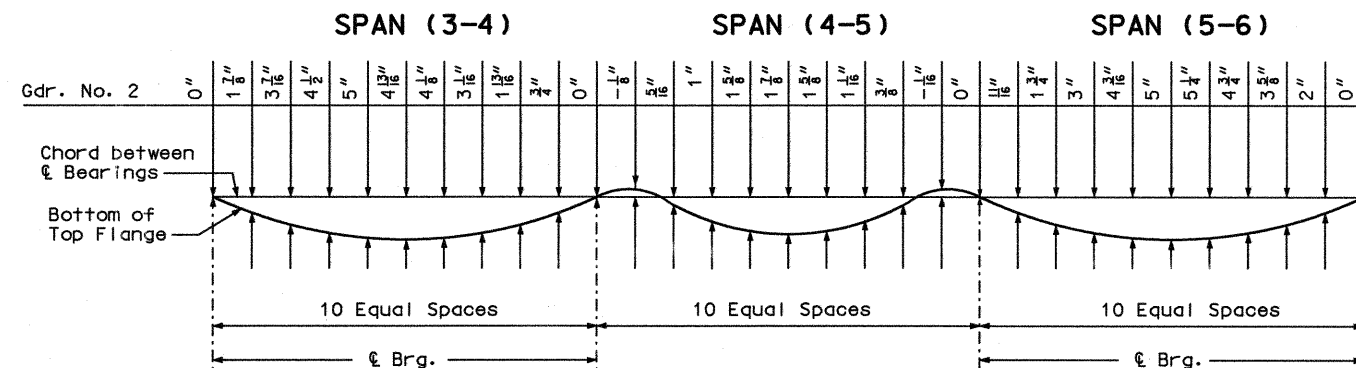
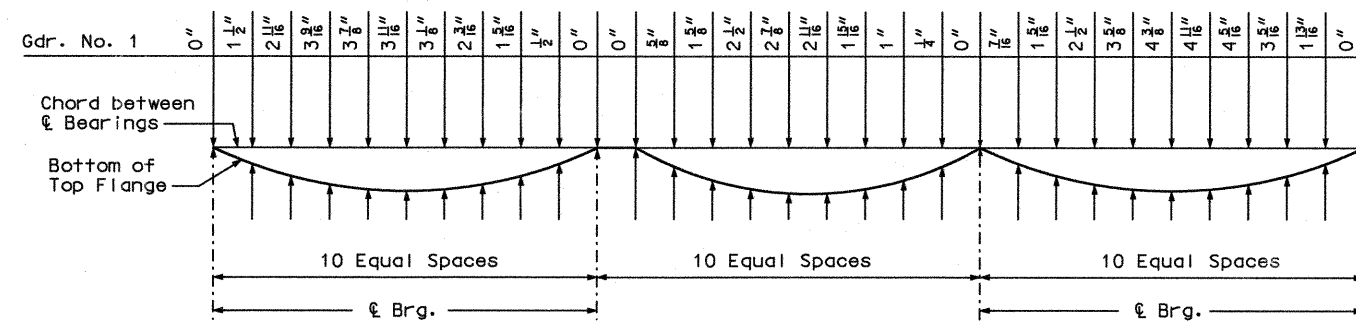


THEORETICAL SLAB HAUNCH

Note:
 * Dimensions may vary if the girder camber after erection differs from plan camber by more or less than the % of dead load deflection due to weight of structural steel. No payment will be made for any adjustment in forming or additional concrete required for variation in haunching.

DEAD LOAD DEFLECTIONS, CAMBER DIAGRAMS AND BOTTOM OF SLAB ELEVATIONS - UNIT 1





Notes:

Dead load deflection includes weight of structural steel, concrete slab and barrier curb.

24% of dead load deflection is due to weight of structural steel.

DEAD LOAD DEFLECTION DIAGRAM

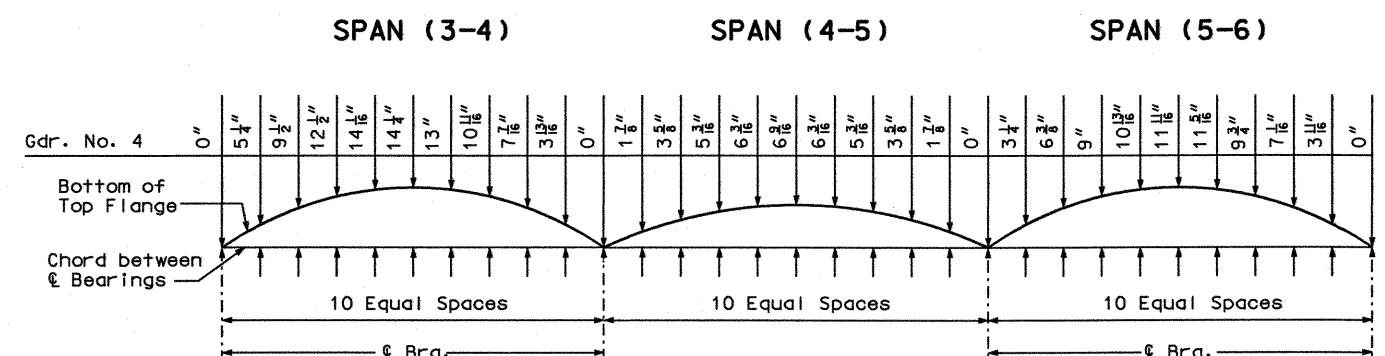
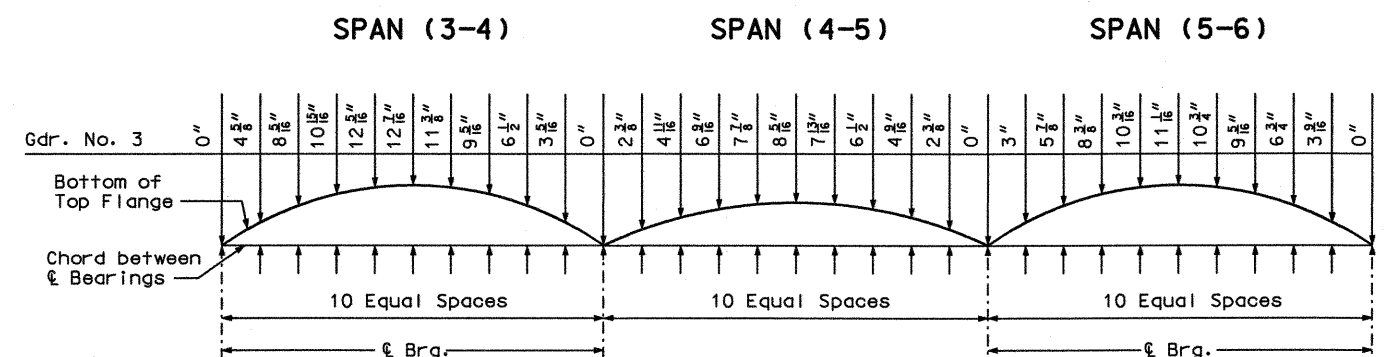
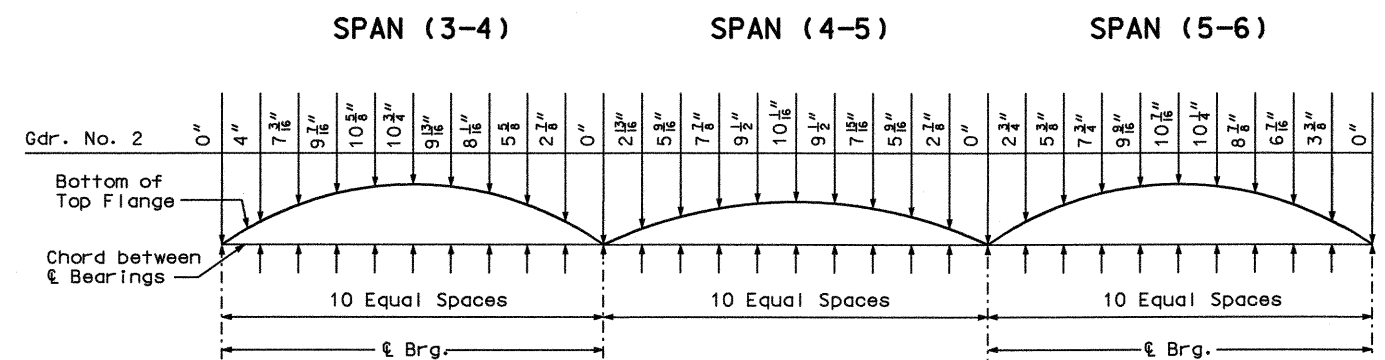
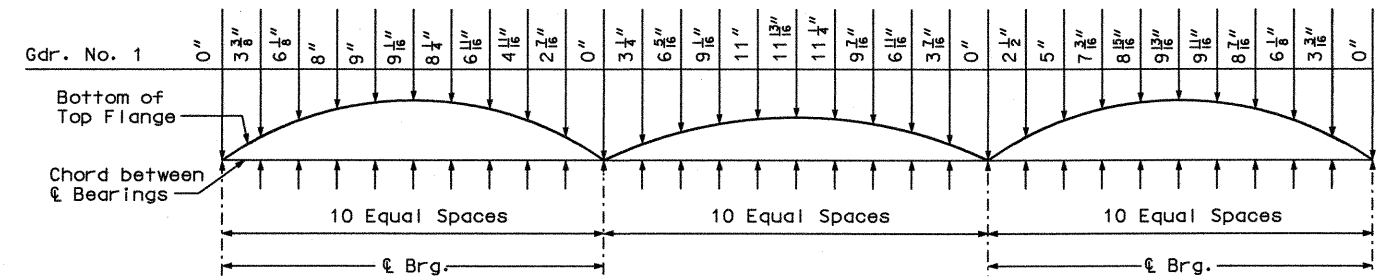


PLATE GIRDER CAMBER DIAGRAM

Note:

Camber includes allowance for vertical curve and dead load deflection due to concrete slab, curb and structural steel.



DEAD LOAD DEFLECTIONS AND CAMBER DIAGRAMS - UNIT 2

DETAILED: GJD JUNE 2005
CHECKED: JOS JAN. 2006

JACOBS CIVIL INC.
ST. LOUIS, MO.

SHEET NO. 56 OF 77

GREENE COUNTY

A7024

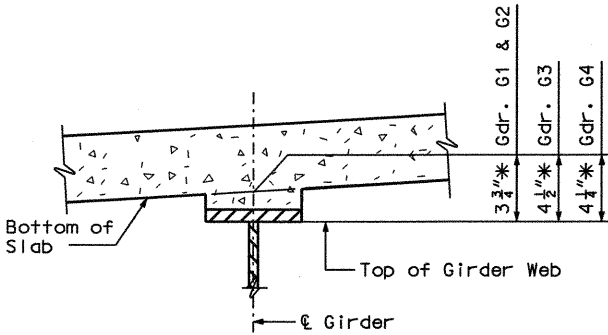
P:\c1x21400\700cadd\709str\A7024 Ramp 3\A7024_DLDEF02_J8U0548B.dgn

13:21 25-JAN-2006

REV.

THEORETICAL BOTTOM OF SLAB ELEVATIONS AT C OF GIRDER (PRIOR TO FORMING FOR SLAB **)																					
Location	Span 3-4 (199'-10 1/2" C Brg. - C Brg.)											Span 4-5 (224'-0" C Brg. - C Brg.)									
	C Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90	C Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90	C Brg.
Girder No. G1	1350.99	1351.46	1351.88	1352.23	1352.51	1352.73	1352.88	1352.97	1353.03	1353.06	1353.08	1353.09	1353.08	1353.03	1352.92	1352.71	1352.41	1352.02	1351.56	1351.04	1350.50
Girder No. G2	1351.64	1352.15	1352.59	1352.96	1353.25	1353.48	1353.53	1353.71	1353.74	1353.75	1353.74	1353.72	1353.68	1353.61	1353.47	1353.25	1352.95	1352.57	1352.13	1351.65	1351.15
Girder No. G3	1352.29	1352.83	1353.30	1353.70	1354.01	1354.23	1354.37	1354.44	1354.45	1354.43	1354.39	1354.34	1354.27	1354.17	1354.01	1353.79	1353.49	1353.13	1352.72	1352.27	1351.80
Girder No. G4	1352.94	1353.52	1354.02	1354.43	1354.75	1354.98	1355.11	1355.16	1355.15	1355.10	1355.03	1354.95	1354.85	1354.72	1354.55	1354.32	1354.04	1353.69	1353.31	1352.89	1352.45
Location	Span 5-6 (199'-10 1/2" C Brg. - C Brg.)																				
	C Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90	C Brg.										
Girder No. G1	1350.50	1350.05	1349.58	1349.10	1348.56	1347.97	1347.30	1346.54	1345.71	1344.83	1343.94										
Girder No. G2	1351.15	1350.71	1350.25	1349.77	1349.23	1348.64	1347.96	1347.20	1346.36	1345.48	1344.59										
Girder No. G3	1351.80	1351.37	1350.92	1350.44	1349.90	1349.30	1348.62	1347.86	1347.02	1346.14	1345.24										
Girder No. G4	1352.45	1352.03	1351.59	1351.11	1350.57	1349.97	1349.28	1348.52	1347.57	1346.79	1345.89										

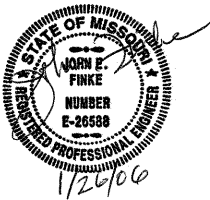
** Elevations are based on a constant slab thickness of 9 1/2" and include allowance for theoretical dead load deflections due to weight of slab and barrier curb.

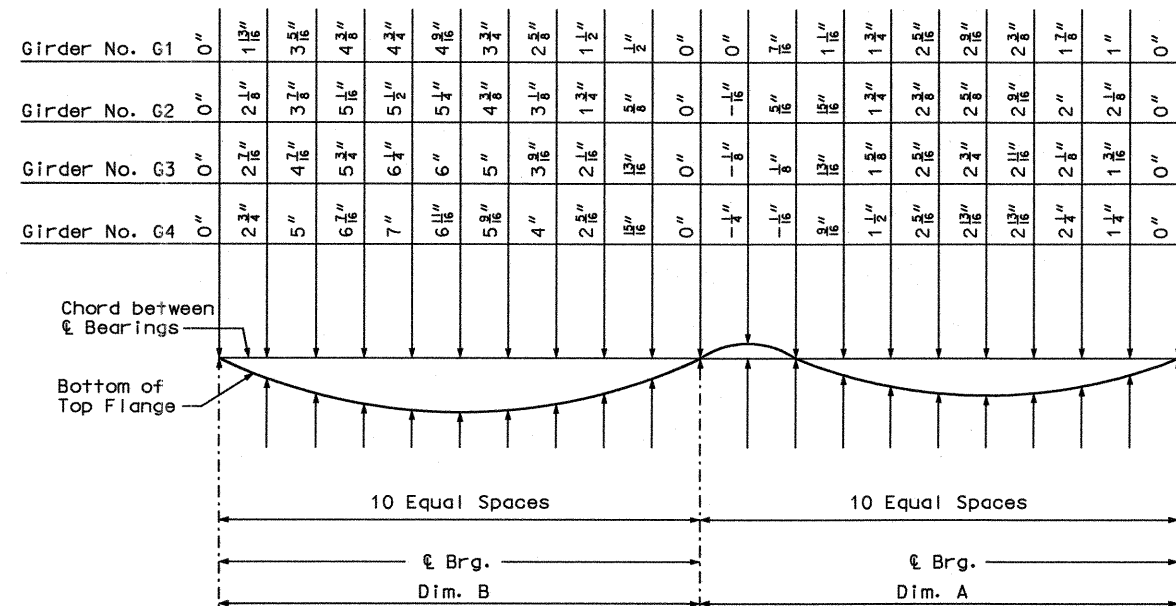


Girders G1 thru G4
THEORETICAL SLAB HAUNCH

Note:
* Dimensions may vary if the girder camber after erection differs from plan camber by more or less than the % of dead load deflection due to weight of structural steel. No payment will be made for any adjustment in forming or additional concrete required for variation in haunching.

BOTTOM OF SLAB ELEVATIONS - UNIT 2



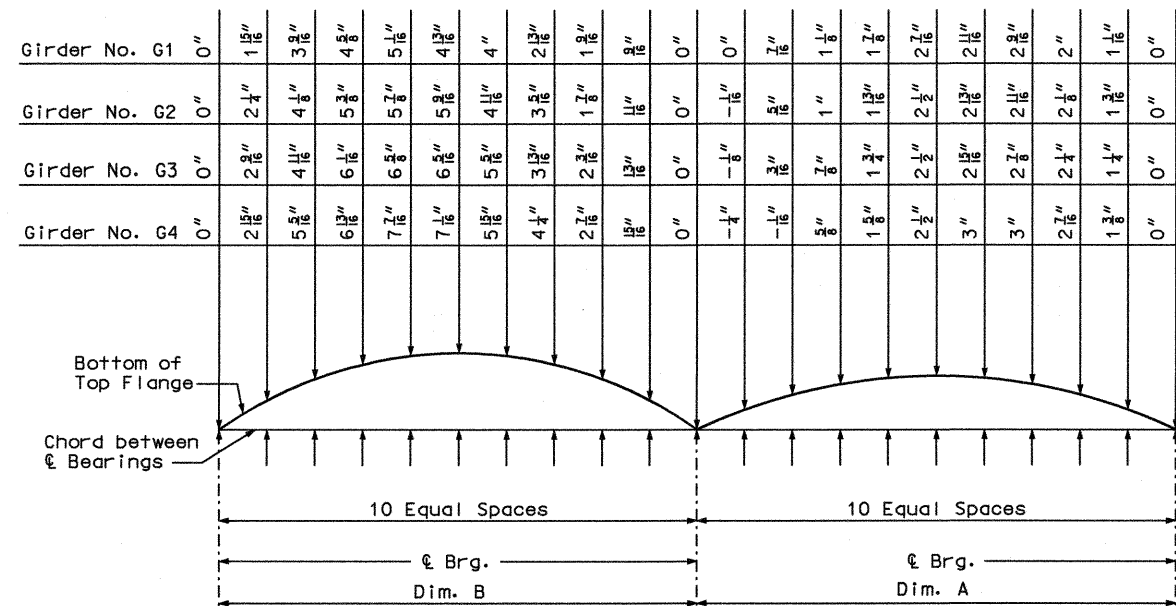


SPAN (6-7) SPAN (7-8)

DEAD LOAD DEFLECTION DIAGRAM

Notes:

Dead load deflection includes weight of structural steel, concrete slab, and barrier curb.
24% of dead load deflection is due to the weight of structural steel.



SPAN (6-7) SPAN (7-8)

PLATE GIRDER CAMBER DIAGRAM

Note:

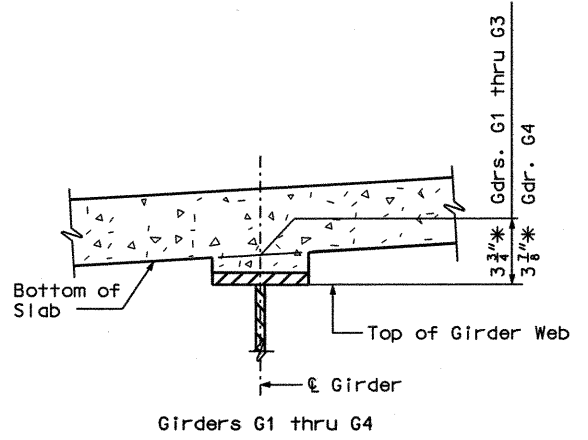
Camber includes allowance for dead load deflection due to concrete slab, curb and structural steel.

STATE	PROJ. NO.	SHEET NO.
MO		B58

VARIABLE DIMENSIONS		
Girder	Dim. A	Dim. B
G1	174'-9 5/16"	193'-2 11/16"
G2	177'-0 3/16"	195'-8 7/16"
G3	179'-3 1/8"	198'-2 3/16"
G4	181'-6"	200'-7 3/8"

THEORETICAL BOTTOM OF SLAB ELEVATIONS AT & OF GIRDER (PRIOR TO FORMING FOR SLAB) **																				
Location	Span 6-7 (Dim. B & Brg. - & Brg.)										Span 7-8 (Dim. A & Brg. - & Brg.)									
	& Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90	& Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90
Girder No. G1	1343.86	1343.21	1342.55	1341.84	1341.10	1340.31	1339.48	1338.63	1337.78	1336.94	1336.13	1335.43	1334.76	1334.10	1333.45	1332.79	1332.11	1331.40	1330.66	1329.90
Girder No. G2	1344.51	1343.88	1343.23	1342.53	1341.79	1341.00	1340.17	1339.31	1338.44	1337.59	1336.78	1336.08	1335.40	1334.75	1334.11	1333.45	1332.77	1332.06	1331.33	1330.56
Girder No. G3	1345.16	1344.55	1343.91	1343.22	1342.48	1341.68	1340.85	1339.98	1339.10	1338.25	1337.43	1336.72	1336.05	1335.40	1334.76	1334.11	1333.43	1332.73	1331.99	1331.22
Girder No. G4	1345.81	1345.21	1344.59	1343.91	1343.17	1342.37	1341.52	1340.65	1339.77	1338.90	1338.08	1337.37	1336.69	1336.04	1335.41	1334.76	1334.10	1333.39	1332.65	1331.88

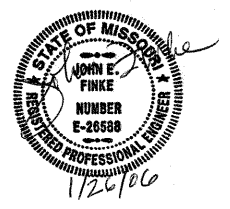
** Elevations are based on a constant slab thickness of 9 1/2" and include allowance for theoretical dead load deflections due to weight of slab and barrier curb.



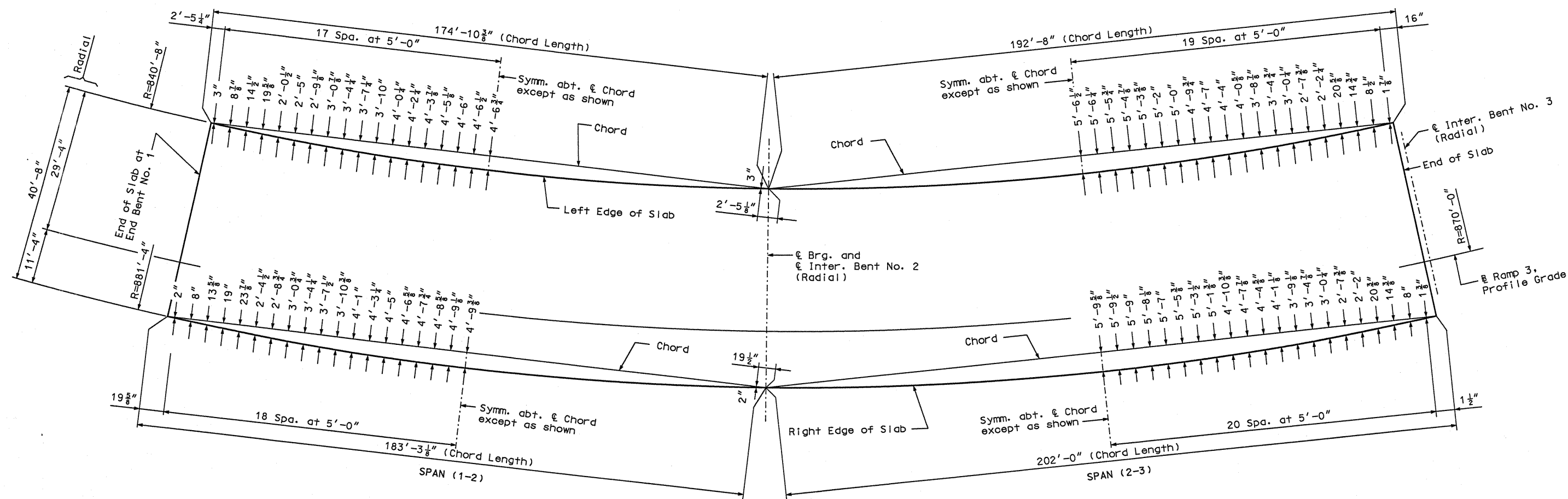
THEORETICAL SLAB HAUNCH

Note:
* Dimensions may vary if the girder camber after erection differs from plan camber by more or less than the % of dead load deflection due to weight of structural steel. No payment will be made for any adjustment in forming or additional concrete required for variation in haunching.

DEAD LOAD DEFLECTIONS, CAMBER DIAGRAMS AND BOTTOM OF SLAB ELEVATIONS - UNIT 3



STATE	PROJ. NO.	SHEET NO.
MO		B59



PLAN - UNIT 1

EDGE OF SLAB ORDINATES - UNIT 1

DETAILED: GJD JUNE 2005
CHECKED: JEF JAN. 2006

JACOBS CIVIL INC.
ST. LOUIS, MO.

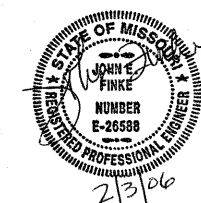
SHEET NO. 59 OF 77

GREENE COUNTY

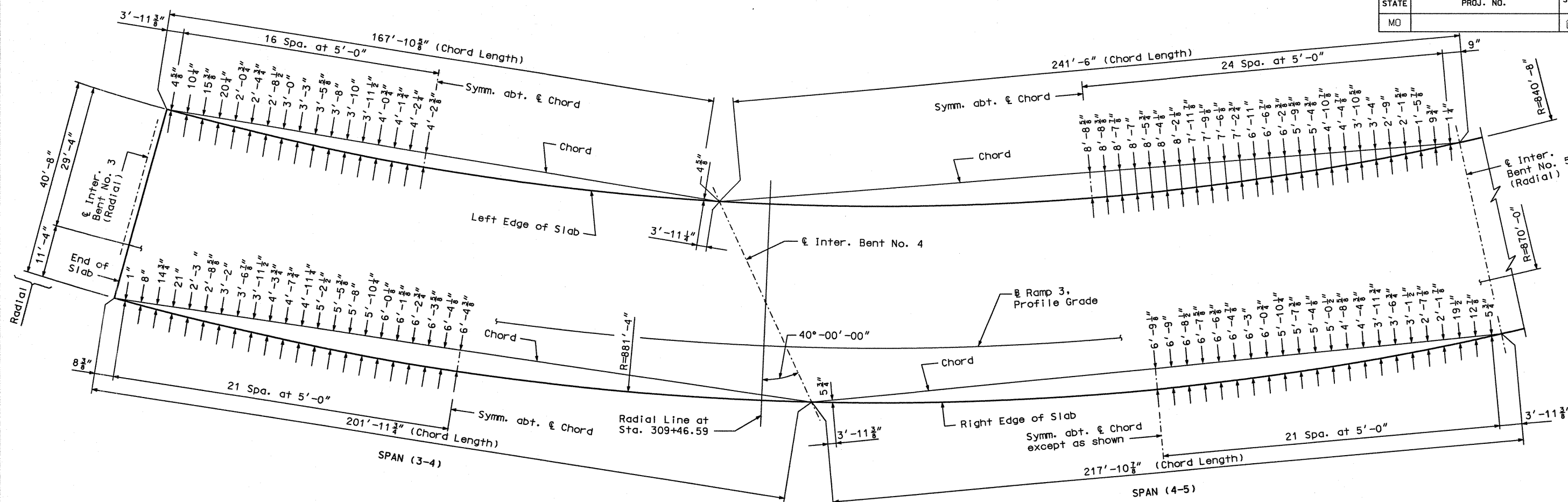
A7024

P:\cix21400\700cadd\709str\A7024 Ramp 3\A7024_SLBORD01-J8U0548B.dgn

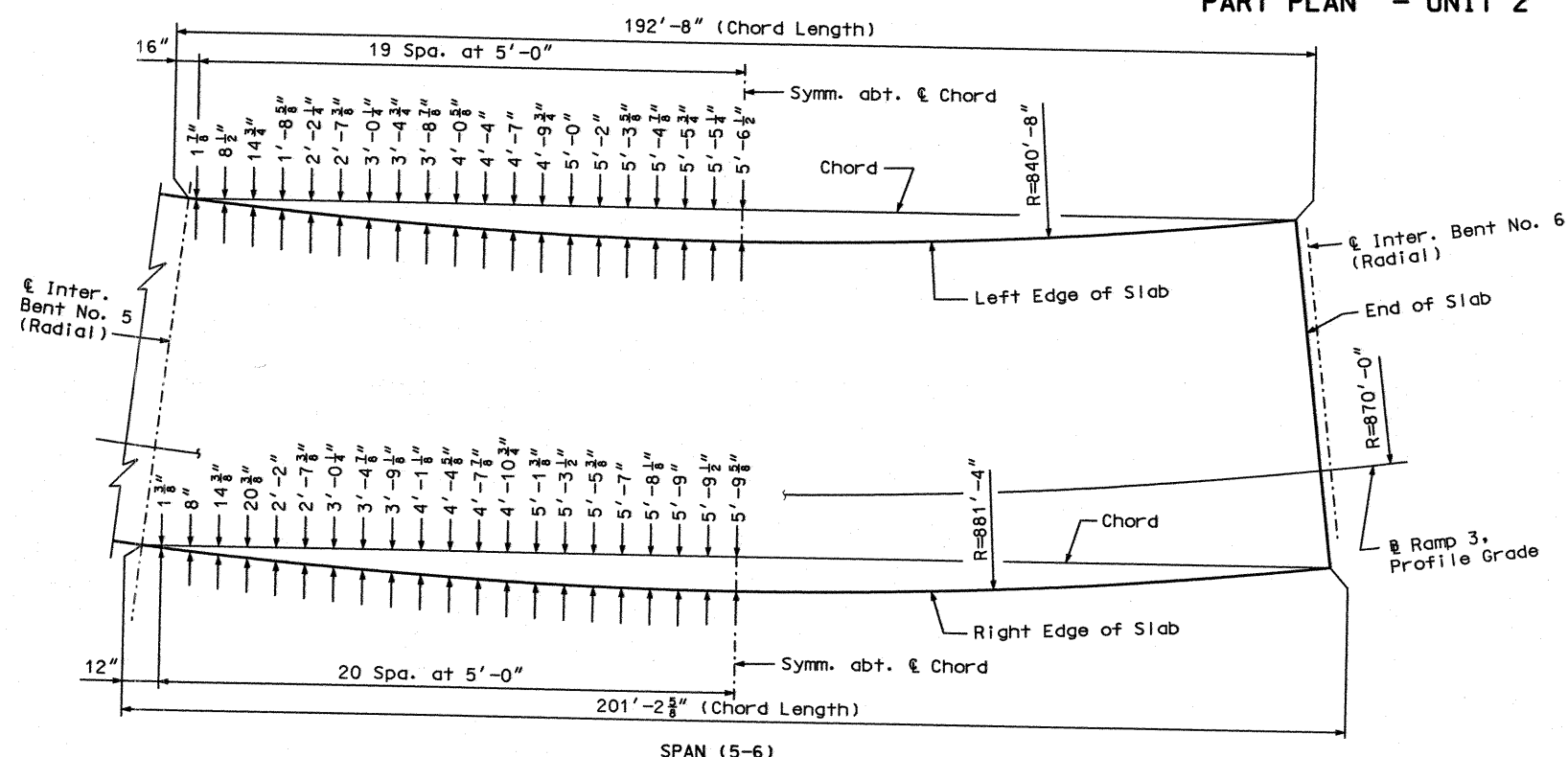
10:36 03-FEB-2006



STATE	PROJ. NO.	SHEET NO.
MO		860

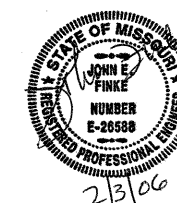


PART PLAN - UNIT 2



PART PLAN - UNIT 2

EDGE OF SLAB ORDINATES - UNIT 2



DETAILED: GJD JUNE 2005
CHECKED: JEF JAN. 2006

JACOBS CIVIL INC.
ST. LOUIS, MO.

SHEET NO. 60 OF 77

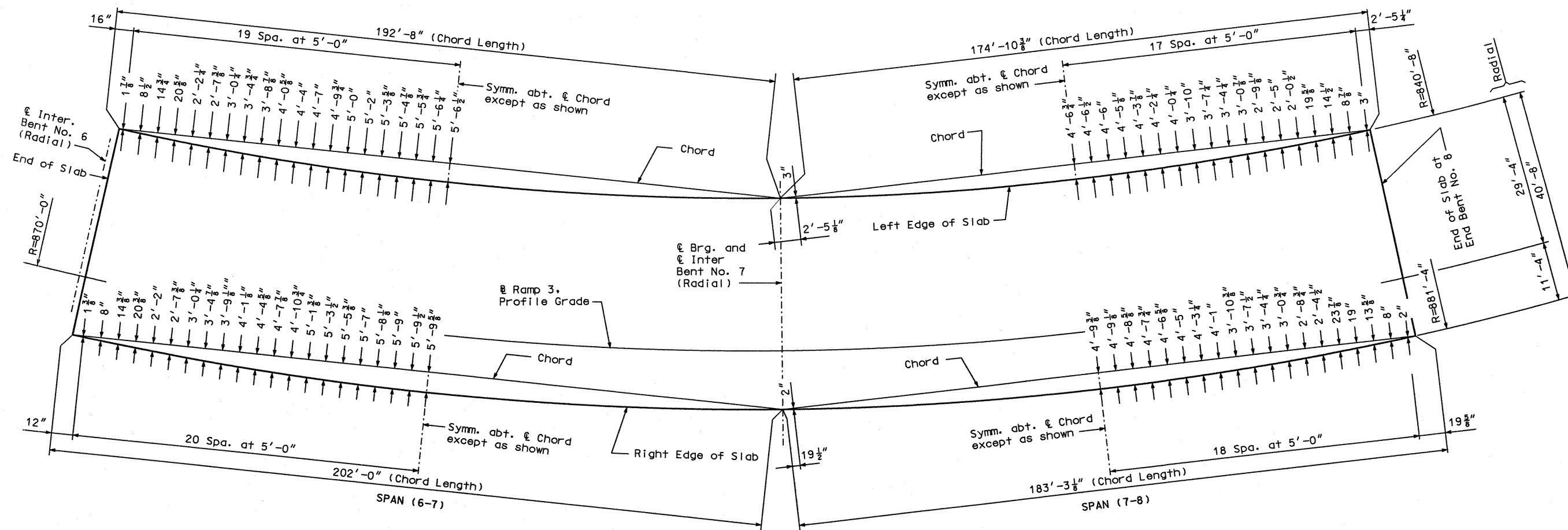
GREENE COUNTY

A7024

P:\C1X21400\700cadd\709str\A7024 Ramp 3\A7024_SLBORD02_J8U0548B.dgn

13:34 02-FEB-2006

STATE	PROJ. NO.	SHEET NO.
MO		B61



PLAN - UNIT 3

EDGE OF SLAB ORDINATES - UNIT 3

DETAILED: GJD JUNE 2005
CHECKED: JEF JAN. 2006

JACOBS CIVIL INC.
ST. LOUIS, MO.

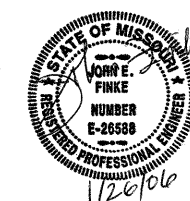
SHEET NO. 61 OF 77

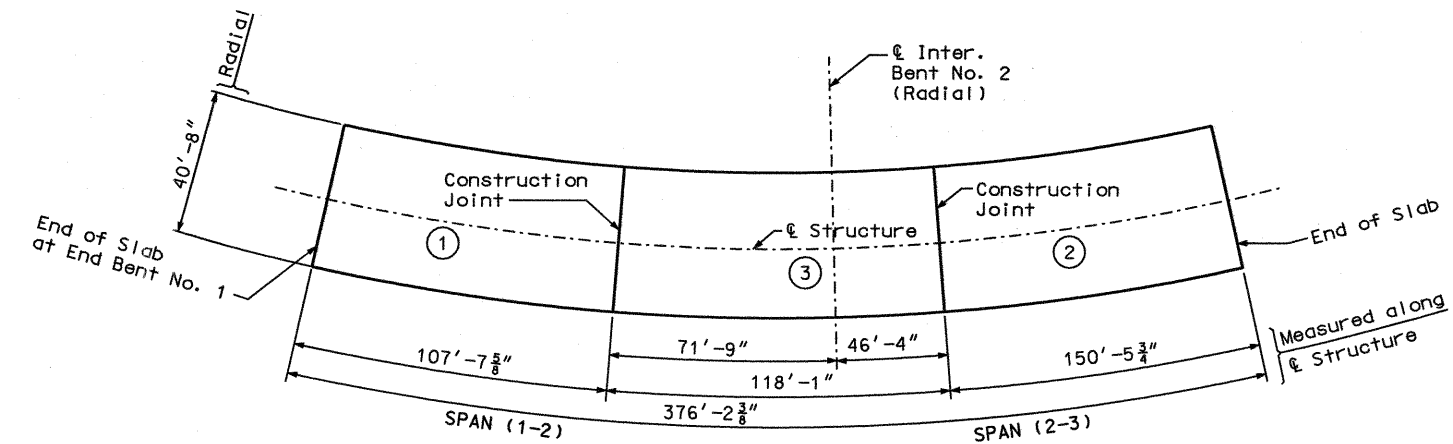
GREENE COUNTY

A7024

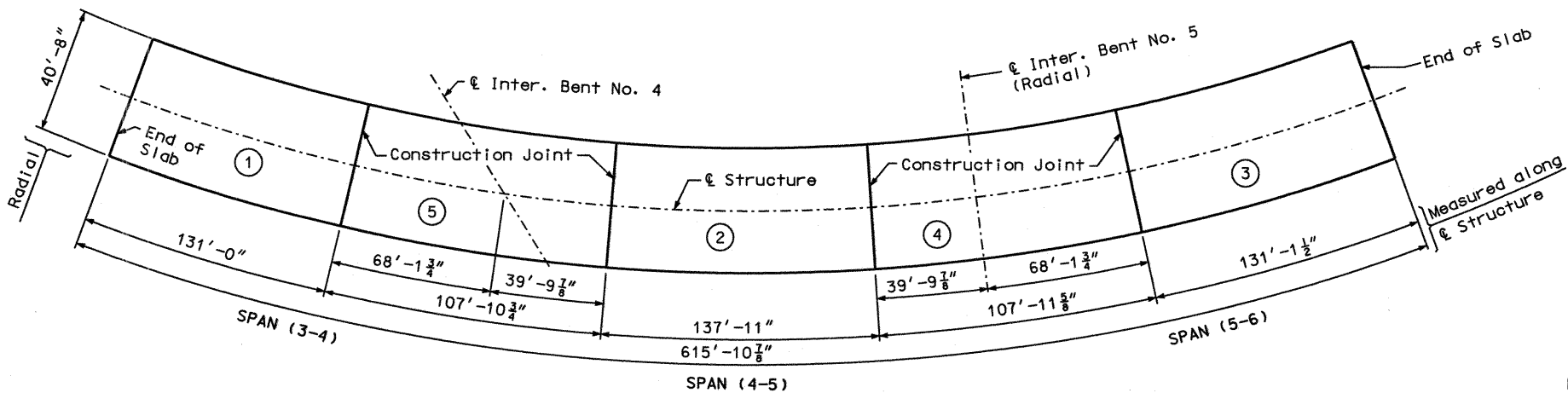
P:\cix21400\700cadd\709str\A7024 Ramp 3\A7024_SLBORD03_J8U0548B.dgn

13:33 25-JAN-2006

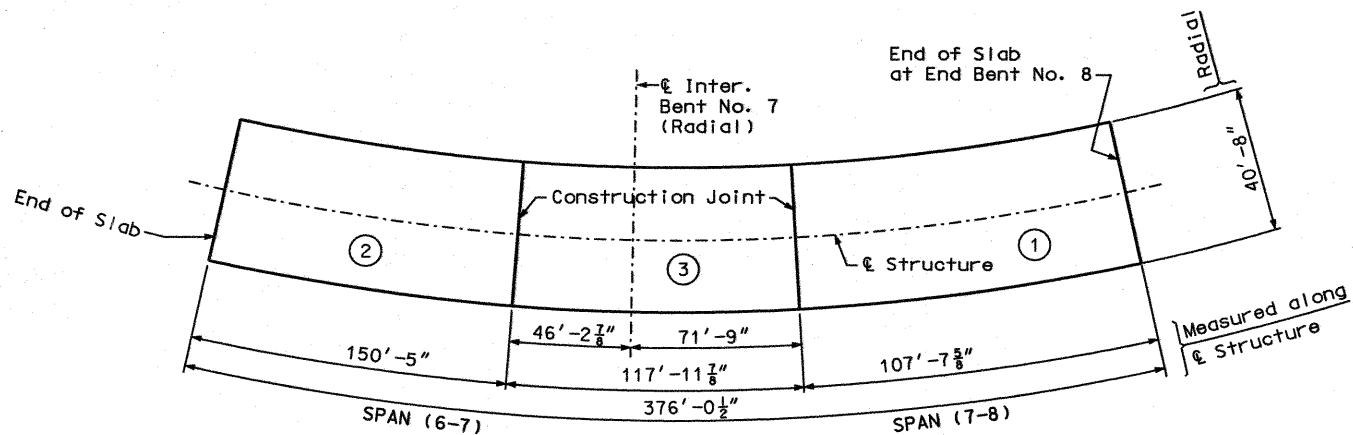




SLAB POURING SEQUENCE- UNIT 1



SLAB POURING SEQUENCE- UNIT 2

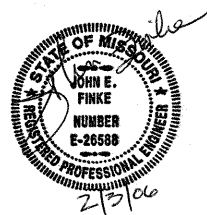


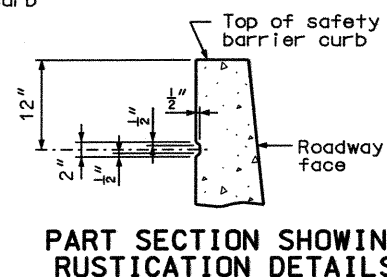
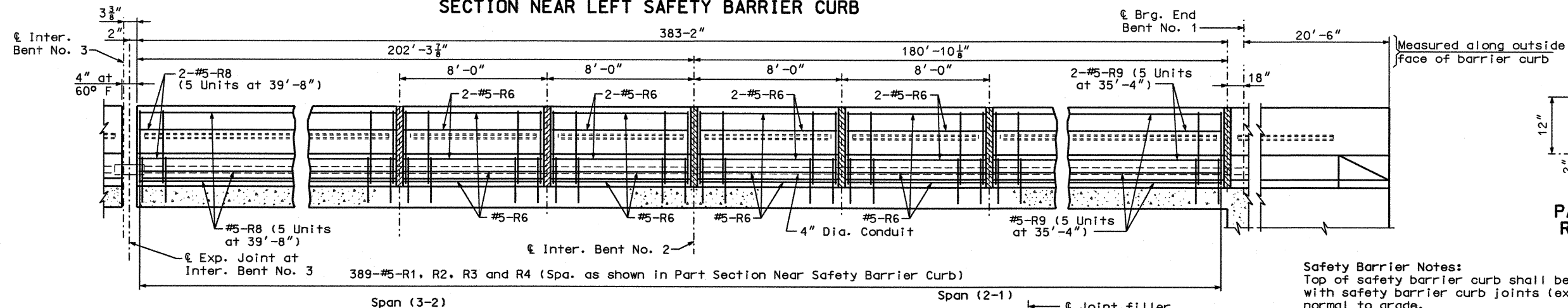
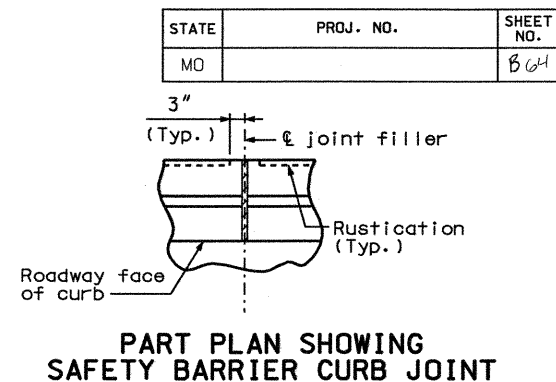
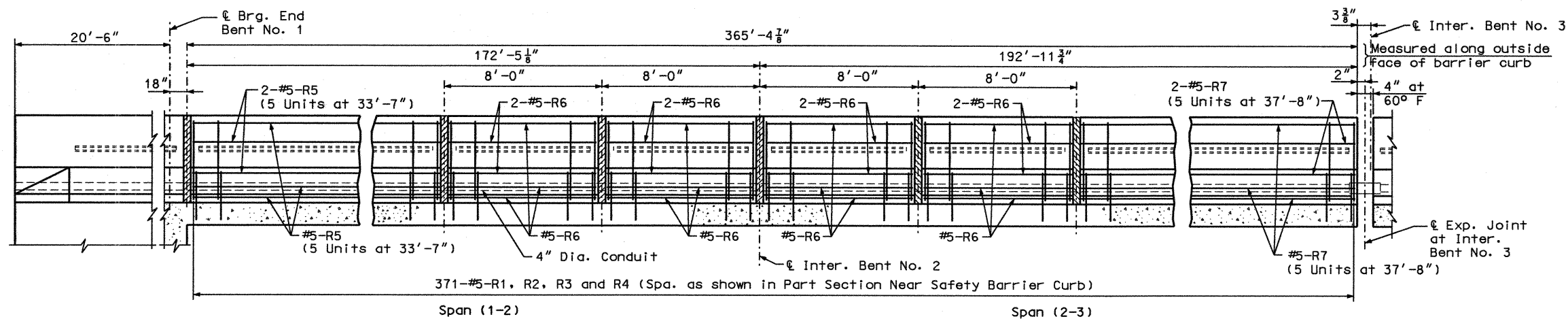
SLAB POURING SEQUENCE- UNIT 3

SLAB POURING SEQUENCE - UNITS 1 THRU 3

Unit 1	Sequence of Pours					Min. rate of pour cu. yds./hr.		
	Direction					With Retarder	No Retarder	
	1	2		3		25	25	
Basic Sequence	As Shown							
Alternate pours to the basic skip sequence are subject to the approval of the engineer in accordance with Sec 703 of Missouri Standard Specifications.								
Alternate "A" pours	1		3 + 2			65	---	
	End to 3		1 to End					
	Alternate "B" pours	1 + 3 + 2					65	---
End to End								
Unit 2	Sequence of Pours					Min. rate of pour cu. yds./hr.		
	Direction					With Retarder	No Retarder	
	1	2	3	4	5	25	25	
Basic Sequence	As Shown							
Alternate pours to the basic skip sequence are subject to the approval of the engineer in accordance with Sec 703 of Missouri Standard Specifications.								
Alternate "A" pours	1		5 + 2		4 + 3		65	---
	End to 5		1 to 4		2 to End			
Alternate "B" pours	1 + 5 + 2			4 + 3			65	---
	End to 4			2 to End				
Alternate "C" pours	1 + 5 + 2 + 4 + 3					65	---	
	End to End							
Unit 3	Sequence of Pours					Min. rate of pour cu. yds./hr.		
	Direction					With Retarder	No Retarder	
	1	2		3		25	25	
Basic Sequence	As Shown							
Alternate pours to the basic skip sequence are subject to the approval of the engineer in accordance with Sec 703 of Missouri Standard Specifications.								
Alternate "A" pours	1		3 + 2			65	---	
	End to 3		1 to End					
Alternate "B" pours	1 + 3 + 2					65	---	
	End to End							

Note:
The Contractor shall pour and satisfactorily finish the slab pours at the rate given. Retarder, if used, shall be an approved type and retard the set of concrete to 2.5 hours.





Safety Barrier Notes:
Top of safety barrier curb shall be built parallel to grade with safety barrier curb joints (except at end bents) normal to grade.

All exposed edges of safety barrier curb shall have either a 1/2" radius or a 3/8" bevel, unless otherwise noted.

Payment for all concrete and reinforcement, complete-in-place, will be considered completely covered by the contract unit price for safety barrier curb per linear foot.

Concrete in the safety barrier curb shall be Class B-1.

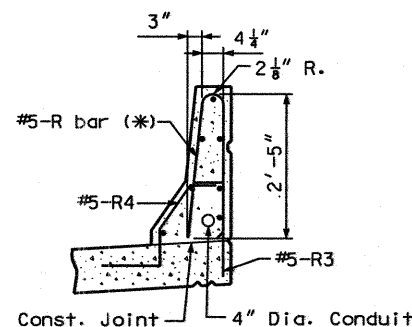
Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.

Movement Gauge Notes:
A movement gauge shall be provided on one side of bridge at all safety barrier curb expansion joints.

All steel shall be galvanized.

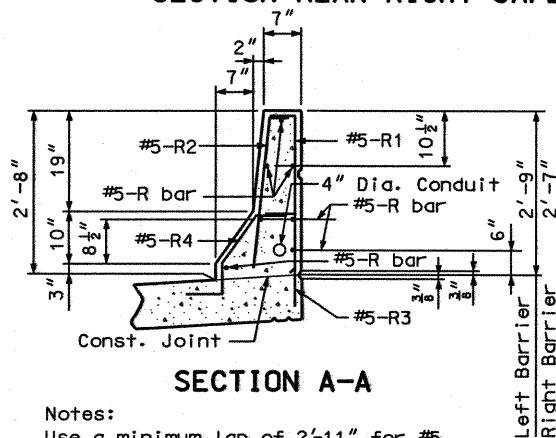
Cost of movement gauge complete-in-place will be considered completely covered by the contract unit price for Safety Barrier Curb.

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb".



R-BAR PERMISSIBLE ALTERNATE SHAPE

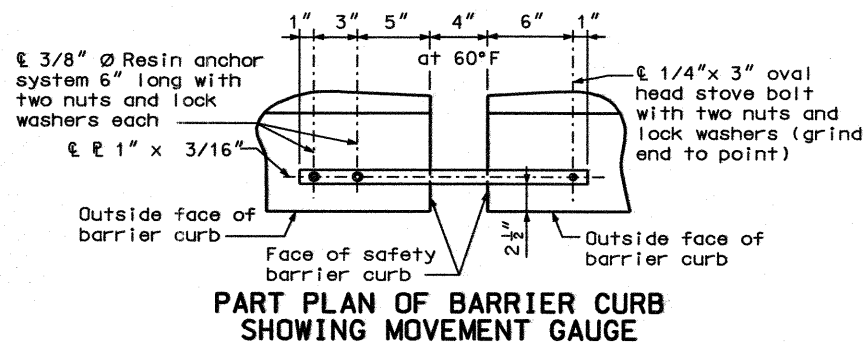
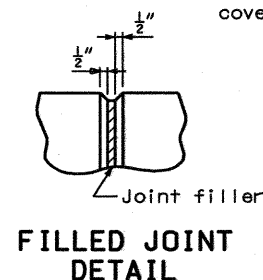
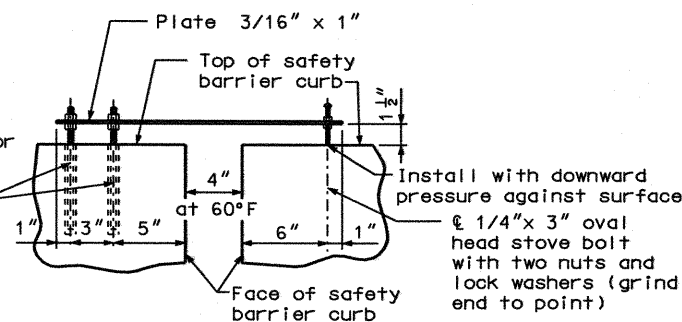
(*) The R1 and R2 bar combination may be furnished as one bar, as shown, at the contractor's option. (All dimensions are out to out.)



SECTION A-A

Notes:
Use a minimum lap of 2'-11" for #5 horizontal safety barrier curb bars.
The cross-sectional area above the slab = 2.28 sq. ft.

PART SECTION NEAR SAFETY BARRIER CURB (CAST-IN-PLACE CONVENTIONAL FORMING OPTION)



SAFETY BARRIER CURBS - UNIT 1

DETAILED: GJD JULY 2005
CHECKED: FAC JAN. 2006

JACOBS CIVIL INC.
ST. LOUIS, MO.

SHEET NO. 64 OF 77

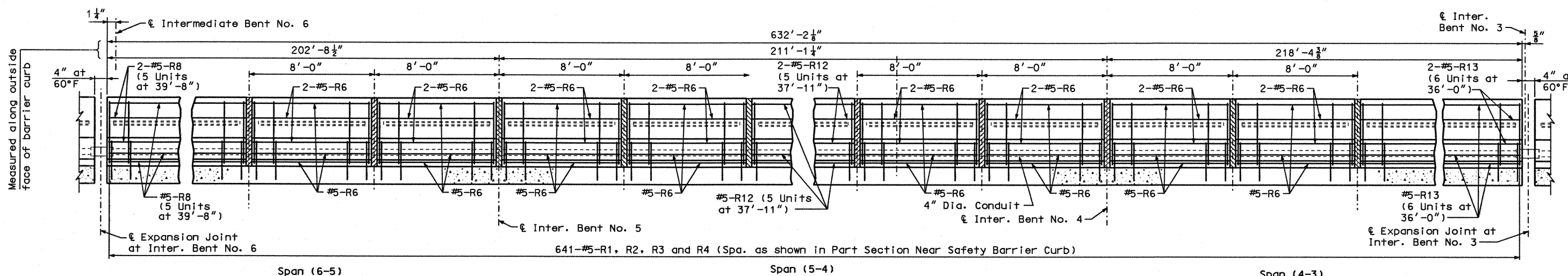
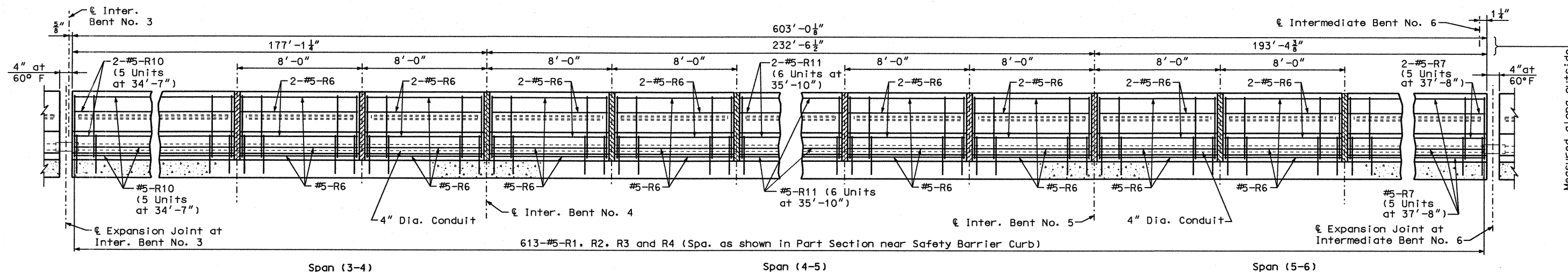
GREENE COUNTY

A7024

P:\C1X21400\700cadd\709str\A7024 Ramp 3\A7024_BAR01_J8U0548B.dgn

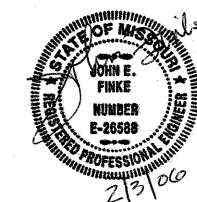
12:58 03-FEB-2006

STATE	PROJ. NO.	SHEET NO.
MO		B65



Notes:

- For Safety Barrier Notes and Movement Gage Notes, see Sheet No. 64.
- For Part Section Near Safety Barrier Curb, see Sheet No. 64.
- For Filled Joint Detail, see Sheet No. 64.
- For Rustication Detail, see Sheet No. 64.
- For Movement Gage Detail, see Sheet No. 64.
- For Safety Barrier Sections and Details, see Sheet No. 64.



SAFETY BARRIER CURBS - UNIT 2

DETAILED: GJD JULY 2005
CHECKED: FAC JAN. 2006

JACOBS CIVIL INC.
ST. LOUIS, MO.

SHEET NO. 65 OF 77

GREENE COUNTY

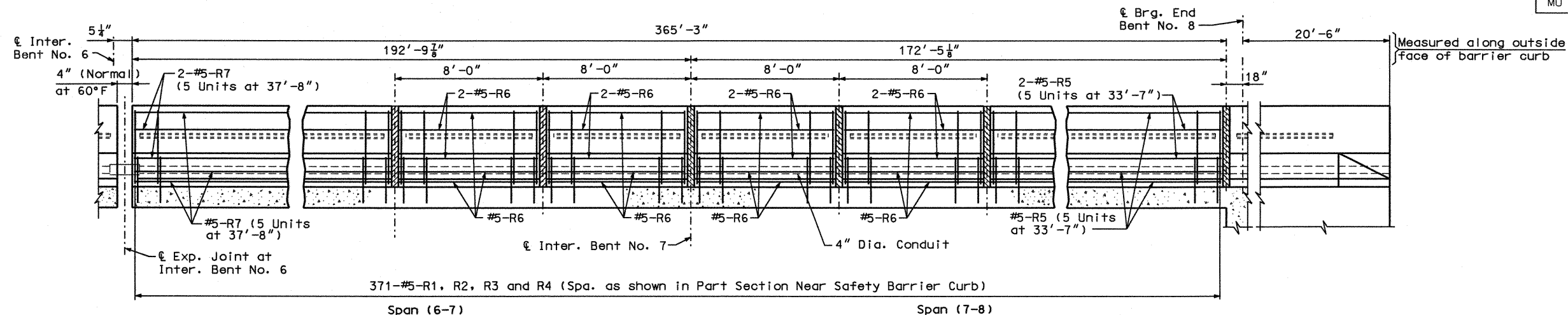
A7024

P:\C1X21400\700cadd\709str\A7024 Ramp 3\A7024_BAR02_J8U0548B.dgn

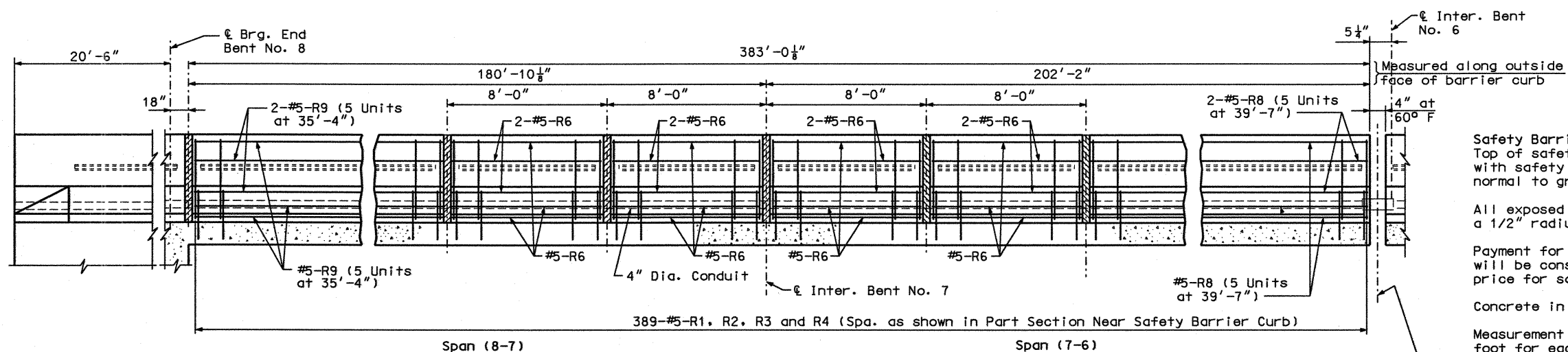
13:17 03-FEB-2006

REV.

STATE	PROJ. NO.	SHEET NO.
MO		B66



SECTION NEAR LEFT SAFETY BARRIER CURB



SECTION NEAR RIGHT SAFETY BARRIER CURB

Safety Barrier Notes:
Top of safety barrier curb shall be built parallel to grade with safety barrier curb joints (except at end bents) normal to grade.

All exposed edges of safety barrier curb shall have either a 1/2" radius or a 3/8" bevel, unless otherwise noted.

Payment for all concrete and reinforcement, complete-in-place, will be considered completely covered by the contract unit price for safety barrier curb per linear foot.

Concrete in the safety barrier curb shall be Class B-1.

Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.

Movement Gauge Notes:
A movement gauge shall be provided on one side of bridge at all safety barrier curb expansion joints.

All steel shall be galvanized.

Cost of movement gauge complete-in-place will be considered completely covered by the contract unit price for Safety Barrier Curb.

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb".

Notes:

For Safety Barrier Notes and Movement Gauge Notes, see Sheet No. 64.

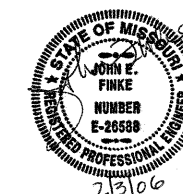
For Part Section Near Safety Barrier Curb, see Sheet No. 64.

For Filled Joint Detail, see Sheet No. 64.

For Rustication Detail, see Sheet No. 64.

For Movement Gauge Detail, see Sheet No. 64.

For Safety Barrier Sections and Details, see Sheet No. 64.



DETAILED: GJD JULY 2005
CHECKED: FAC JAN. 2006

JACOBS CIVIL INC.
ST. LOUIS, MO.

SAFETY BARRIER CURBS - UNIT 3

SHEET NO. 66 OF 77

GREENE COUNTY

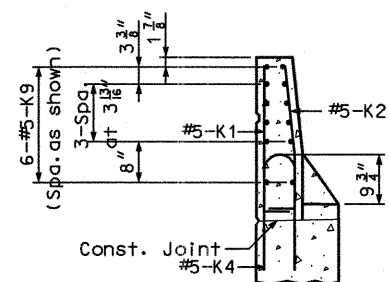
A7024

P:\C1X21400\700cadd\709str\A7024 Ramp 3\A7024_BAR03_J8U0548B.dgn

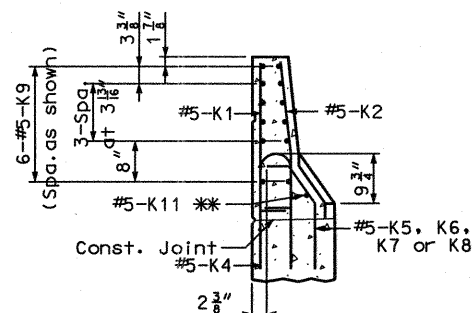
13-11 03-FEB-2006

REV.

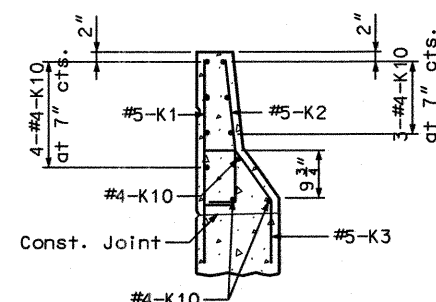
STATE	PROJ. NO.	SHEET NO.
MO		B67



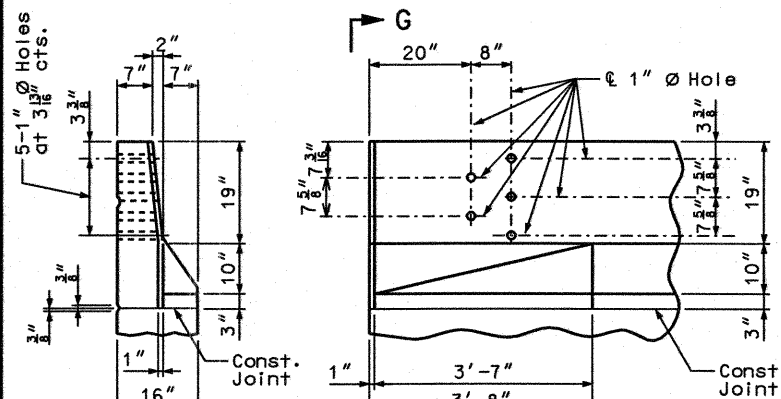
SECTION A-A



SECTION B-B

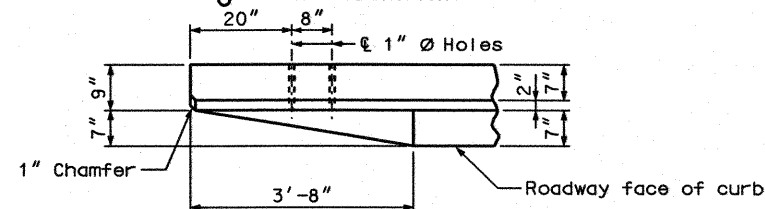


SECTION C-C



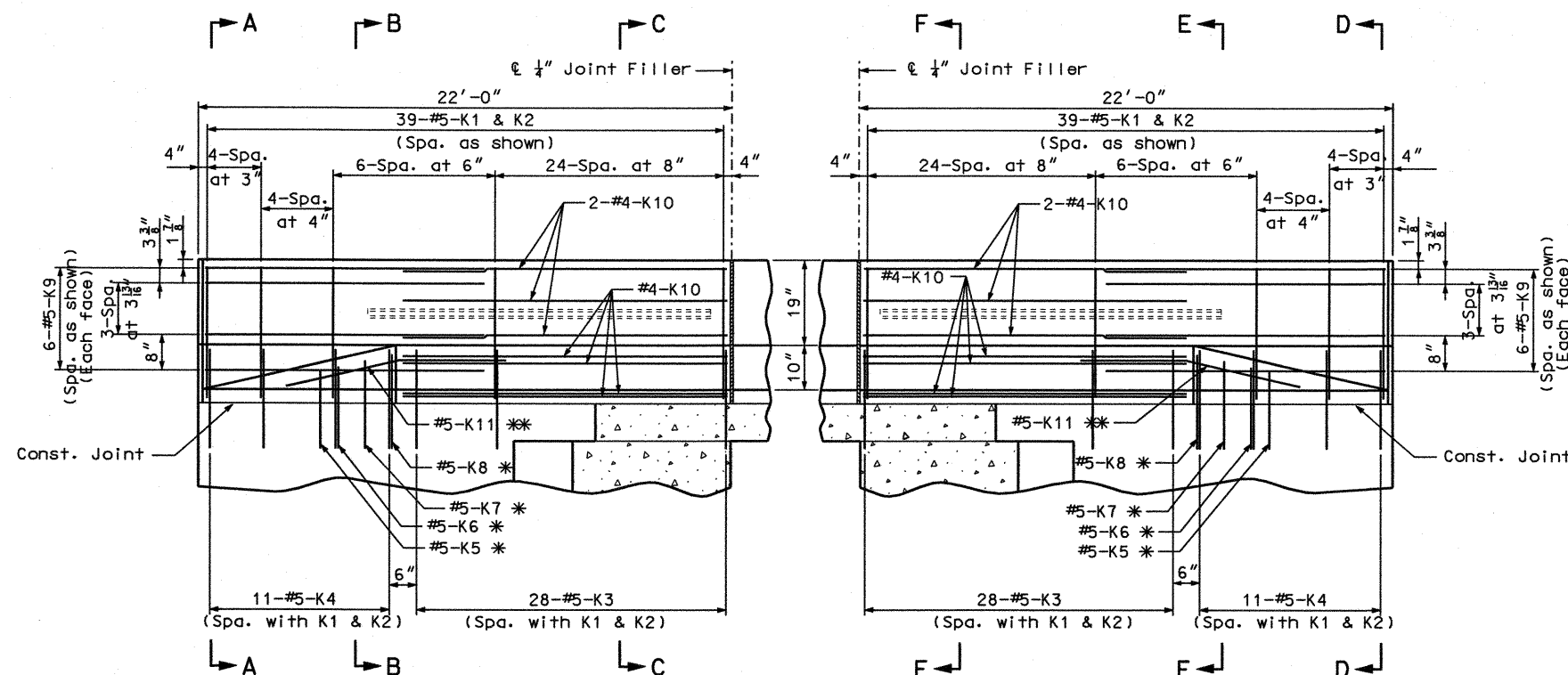
PART ELEVATION G-G

PART ELEVATION



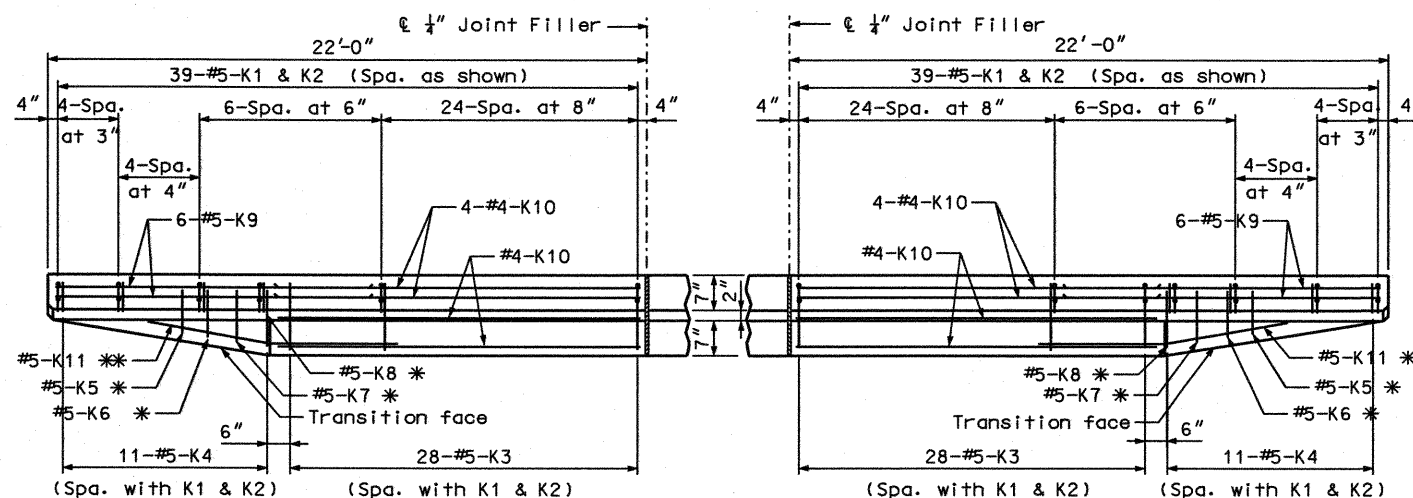
PART PLAN

DETAILS OF GUARD RAIL ATTACHMENT



PART ELEVATION

PART ELEVATION



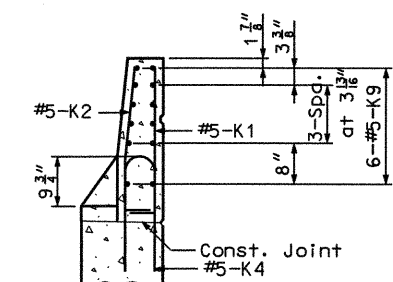
PART PLAN

PART PLAN

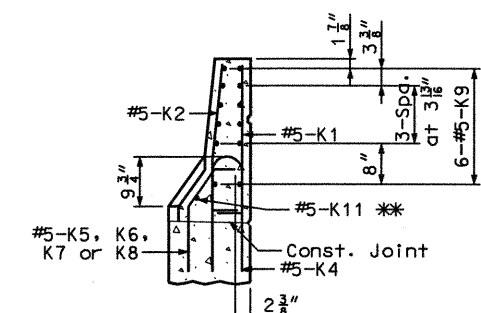
NOTE: Use a minimum lap of 2'-0" between K9 and K10 bars.

DETAILS OF SAFETY BARRIER CURB AT END BENTS

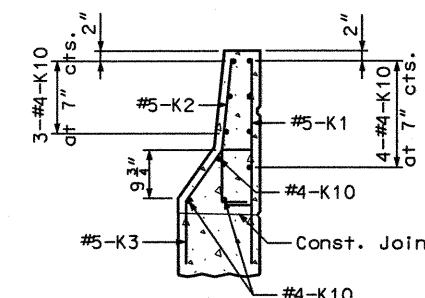
(Left barrier curb shown, right barrier curb similar)



SECTION D-D



SECTION E-E



SECTION F-F

Notes:

Work this Sheet with Sheet Nos. 64, 66 and 68.

(*)At the contractors option, #5 R bars shall be field or shop bent to permit placement near curved portion of safety barrier curb



DETAILED: GJD JULY 2005
CHECKED: FAC NOV. 2005

JACOBS CIVIL INC.
ST. LOUIS, MO.

SHEET NO. 67 OF 77

GREENE COUNTY

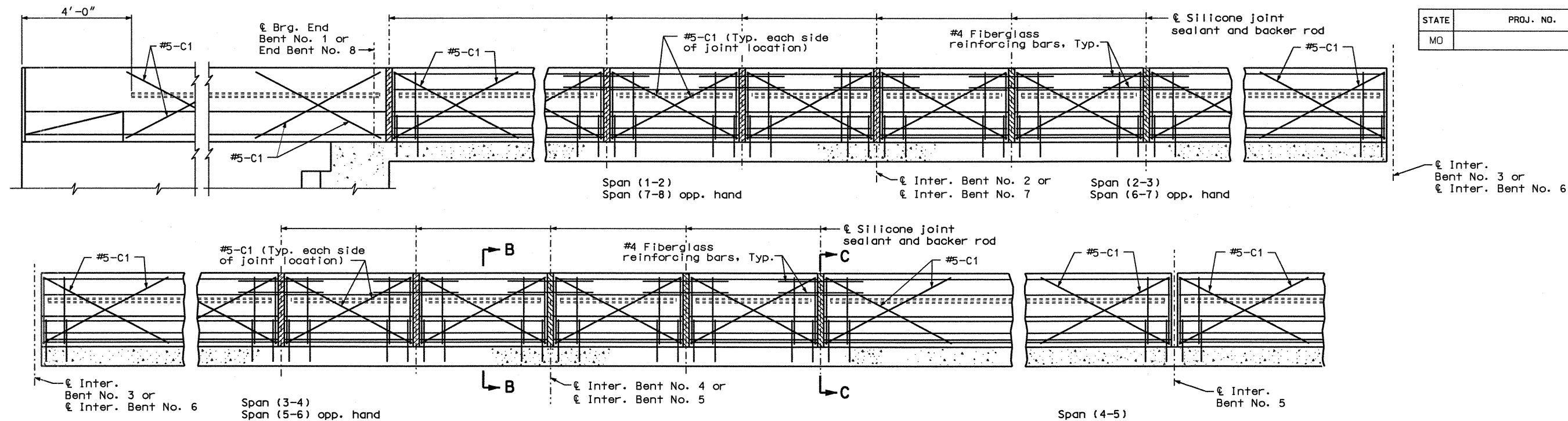
A7024

P:\CIX21400\700cadd\709str\A7024 Ramp 3\A7024_BAR05_J8U0548B.dgn

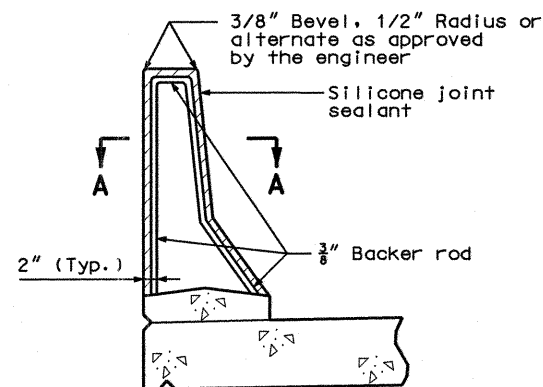
17:52 26-JAN-2006

REV.

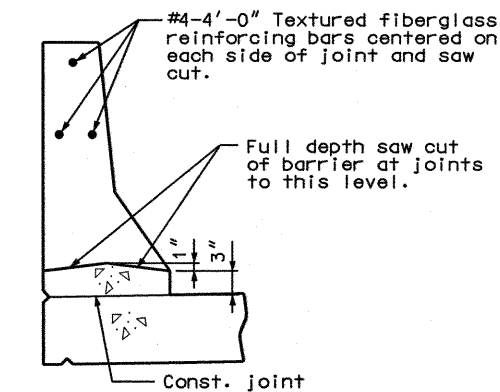
STATE	PROJ. NO.	SHEET NO.
MO		68



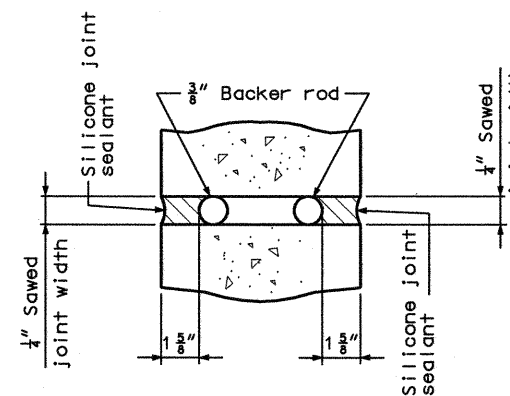
**TYPICAL SECTION NEAR LEFT SAFETY BARRIER CURB AT SUPPORT LOCATIONS
(OPTIONAL SLIP-FORM BRIDGE SAFETY BARRIER CURB)**



SECTION THRU JOINT



PART SECTION C-C



SECTION A-A

Notes:

Joint sealant and backer rods shall be used on all slip-form barrier curbs instead of joint filler and shall be in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

Plastic waterstop shall not be used with slip-form option.

C Bars (Slip-form option only) shall be used in addition to cast-in-place conventional forming reinforcement for bridge safety barrier curb.

For Slip-Form option, all sides of the safety barrier curb shall have a vertically broomed finish and the curb top shall have a transversely broomed finish.

Cost of silicone joint sealant and backer rod complete-in-place will be considered completely covered by the contract unit price for safety barrier curb.

Notes:

Top of safety barrier curb shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

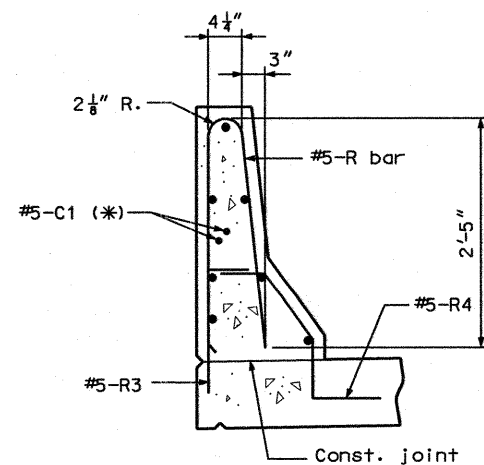
Payment for all concrete and reinforcement, complete-in-place, will be considered completely covered by the contract unit price for safety barrier curb per linear foot.

Concrete in the safety barrier curb shall be Class B-1.

Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.

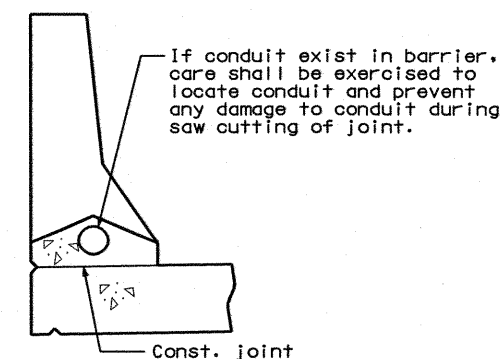
The curb shall be cured by application of Type 1-D or Type 2 Liquid Membrane-Forming Compound in accordance with Sec 1055. Scale prevention treatment will not be permitted.

Concrete traffic barrier delineators shall be placed on top of safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb".

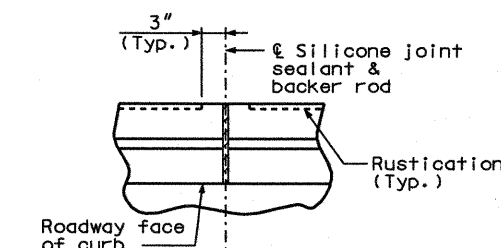


PART SECTION B-B

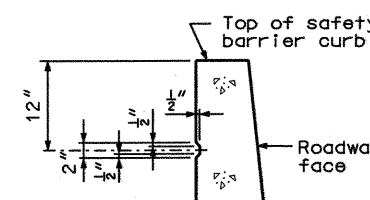
Note:
(*) Each side of joint location.



**PART SECTION C-C
(Use when conduit required)**



**PART PLAN SHOWING
SAFETY BARRIER CURB JOINT**



**PART SECTION SHOWING
RUSTICATION DETAILS**

RUSTICATION DETAIL

OPTIONAL SLIP-FORM BRIDGE SAFETY BARRIER CURB
(Left barrier curb shown, right barrier curb similar.)

DETAILED: GJD JULY 2005
CHECKED: FAC NOV. 2005

JACOBS CIVIL INC.
ST. LOUIS, MO.

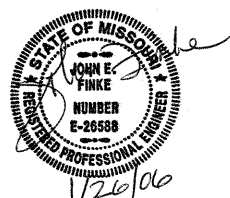
SHEET NO. 68 OF 77

P:\c1x21400\700cadd\709str\A7024 Ramp 3\A7024_BAR04_J8U0548B.dgn

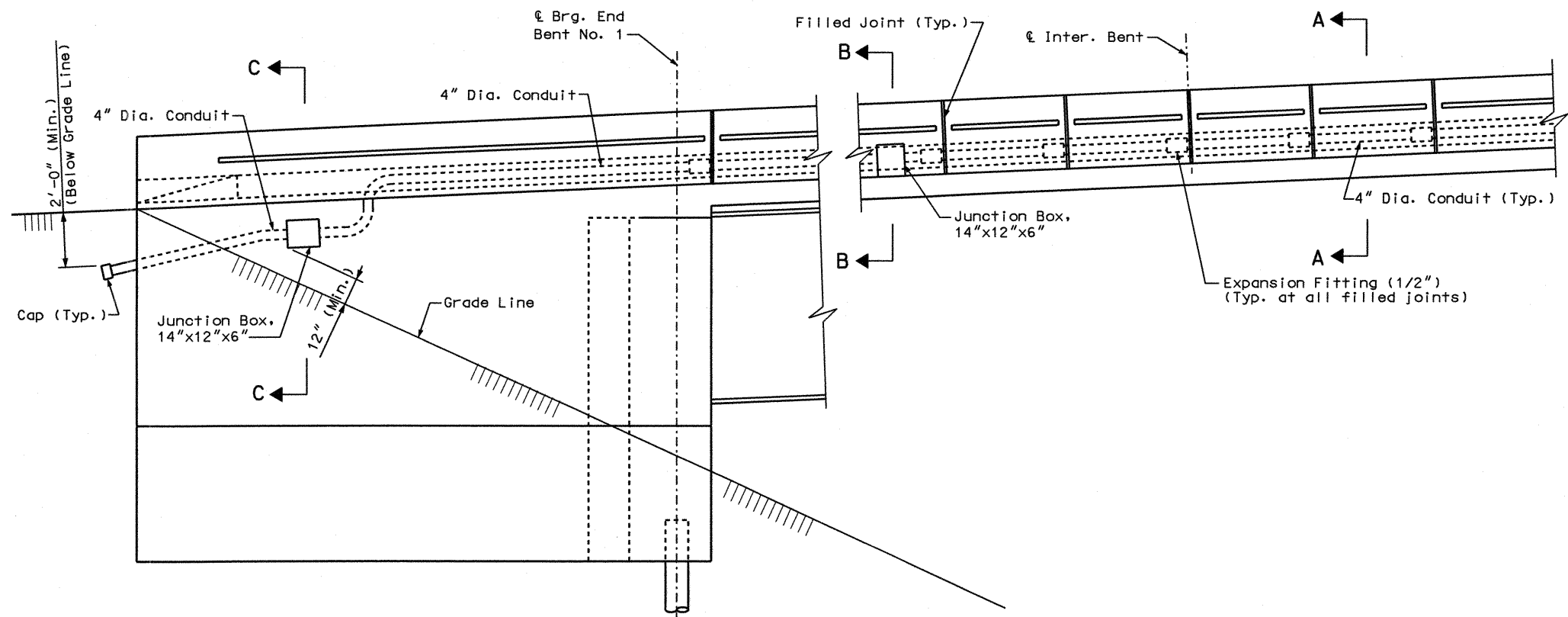
GREENE COUNTY

A7024

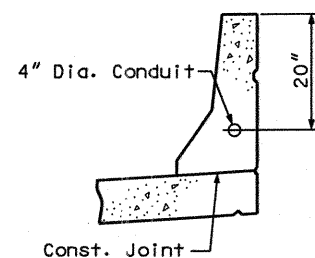
13:40 25-JAN-2006



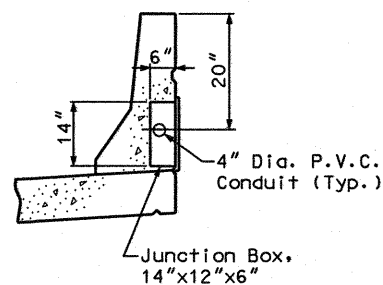
STATE	PROJ. NO.	SHEET NO.
MO		B69



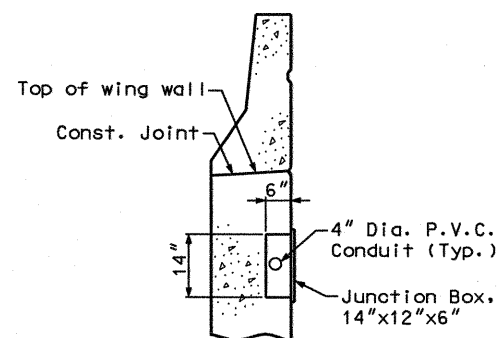
**PART ELEVATION OF RIGHT BARRIER CURB
SHOWING LOCATION OF CONDUIT**
(End Bent No. 1 shown. End Bent No. 8 similar)
(Right Barrier Curb shown. Left Barrier Curb similar)



PART SECTION A-A



PART SECTION B-B



PART SECTION C-C

Conduit System Notes:

All conduit shall be rigid non-metallic schedule 40 heavy wall PVC (polyvinyl chloride plastic) with 3" minimum cover in concrete (except when conduit is in the slab). Each section of conduit shall bear the Underwriters Laboratories, Inc., (UL) label.

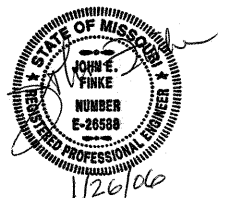
Shift reinforcing steel in field where necessary to clear conduit and junction boxes.

Expansion fittings shall provide a minimum movement in either direction of $1\frac{3}{4}$ " at open joints. Expansion Fittings shall be equal to Carlon Electrical Construction Products or Context, Inc.

All Safety Barrier Curb junction boxes shall be PVC molded flush surface mounted and equal to Carlon Electrical Construction Products or Context, Inc. The conduit terminations shall be permanent or separable. The terminations and covers shall be of watertight construction and shall meet requirements for NEMA 4 enclosure.

Weepholes shall be provided at appropriate locations to drain any moisture in conduit system.

Payment for furnishing and installing Conduit System, complete-in-place, will be paid for at the contract unit price for Conduit System on Structure, lump sum.



DETAILS OF CONDUIT SYSTEM

DETAILED: SEM NOV. 2005
CHECKED: JEF JAN. 2006

JACOBS CIVIL INC.
ST. LOUIS, MO.

SHEET NO. 69 OF 77

GREENE COUNTY

A7024

P:\c1x21400\700cadd\709str\A7024 Ramp 3\A7024_CON01_J8U0548B.dgn

13:41 25-JAN-2006

REV.

STATE	PROJ. NO.	SHEET NO.
MO		370

GENERAL NOTES:

All concrete for the bridge approach slab and sleeper slab shall be in accordance with Sec 503 (f'c = 4,000 psi).

All joint filler shall be in accordance with Sec 1057 for preformed fiber expansion joint filler, except as noted.

The reinforcing steel in the bridge approach slab and the sleeper slab shall be epoxy coated Grade 60 with $F_y = 60,000$ psi.

Minimum clearance to reinforcing steel shall be 1 1/2", unless otherwise shown.

The reinforcing steel in the bridge approach slab and the sleeper slab shall be continuous. The transverse reinforcing steel may be made continuous by lap splicing the #4 & #6 bars 18" and 2'-2" respectively.

Mechanical bar splices will be in accordance with Sec 706

(*) Seal joint between vertical face of approach slab and wing with Silicone Joint Sealant for Saw Cut and Formed Joints in accordance with Sec 717.

Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures, Stirrup and Tie Dimensions.

The contractor shall pour and satisfactorily finish the bridge or semi-deep slab before pouring the bridge approach slabs.

Longitudinal construction joints in approach slab and sleeper slab shall be aligned with longitudinal construction joints in bridge or semi-deep slab.

Payment for furnishing all materials, labor and excavation necessary to construct the approach slab, including the timber header, sleeper slab, underdrain, Type 5 aggregate base, joint filler and all other appurtenances and incidental work as shown on this sheet, complete in place, will be considered completely covered by the contract unit price for Bridge Approach Slab (Bridge), per square yard.

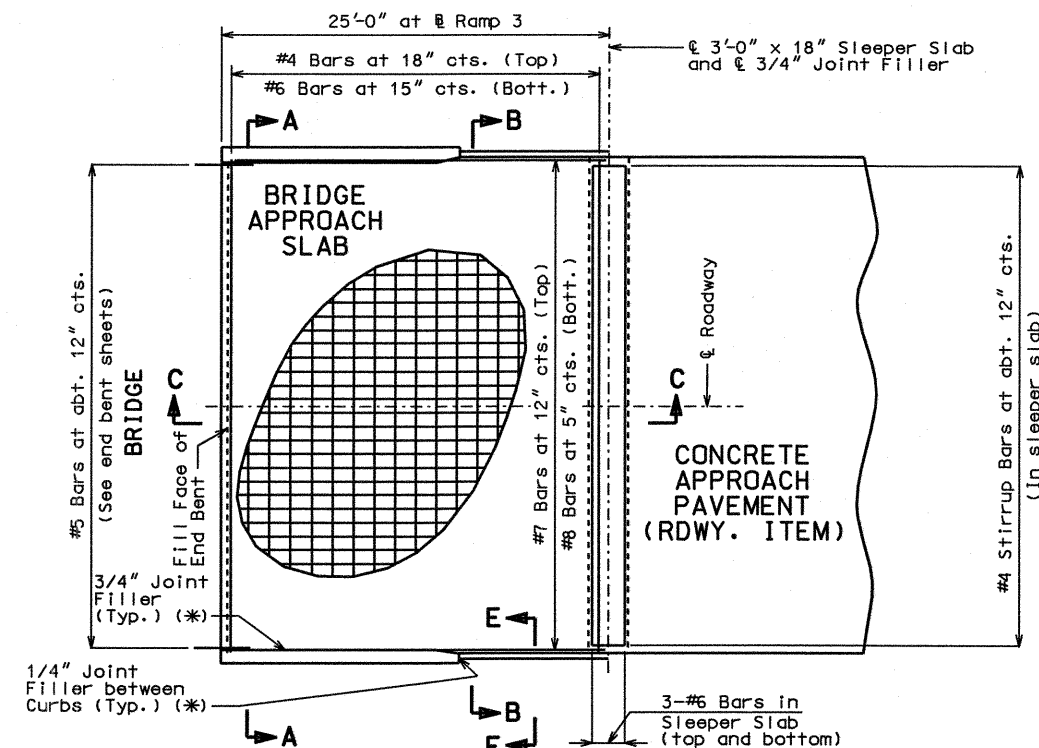
For Concrete Approach Pavement details, see roadway plans.

See Missouri Standard Plans Drawing 609.00 for details of Type A Curb.

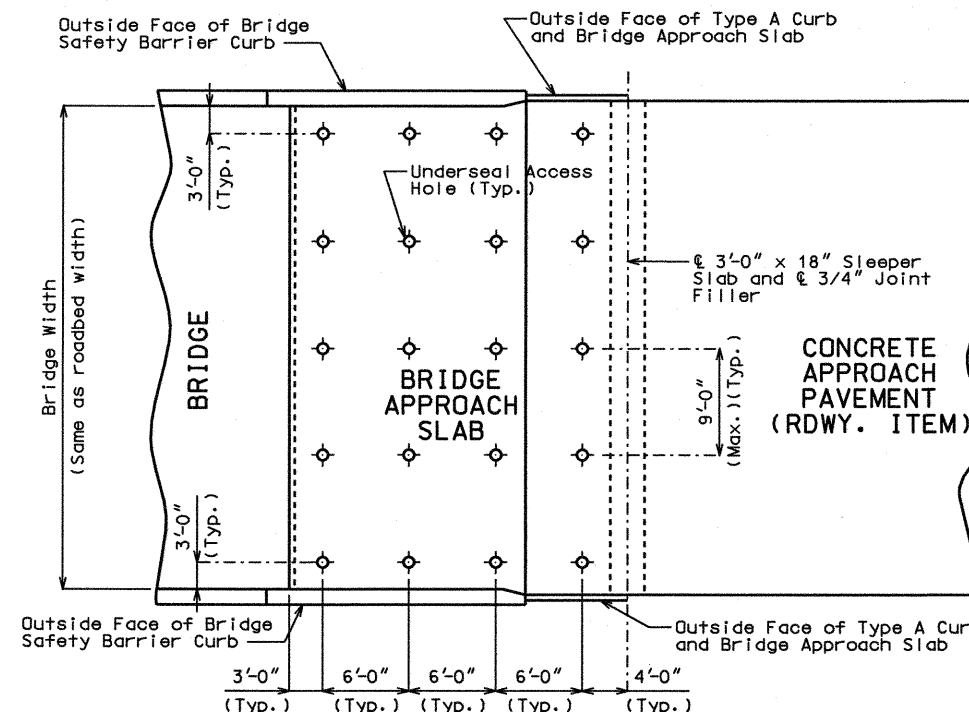
At the contractor's option, Grade 40 reinforcement may be substituted for the Grade 60 #5 dowel bars connecting the bridge approach slab to the bridge end bent. No additional payment will be made for this substitution.

When Grade 40 reinforcement is substituted for the Grade 60 #5 dowel bars connecting the bridge approach slab to the bridge end bent, the reinforcement may be bent up to 90 degrees with a 2" minimum radius near the end bent to allow compaction of the backfill material near the end bent. Damage to epoxy coating shall be repaired in accordance with Sec 710.

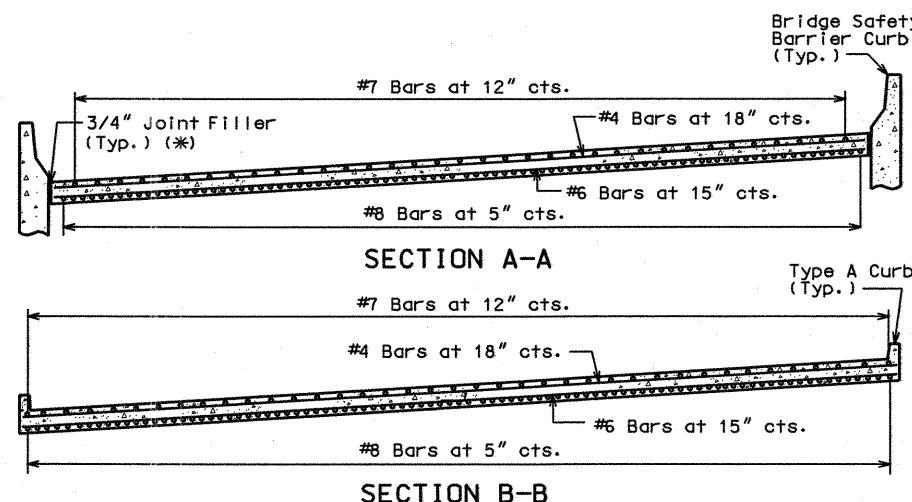
Drain pipe may be either 6" diameter corrugated metallic-coated pipe underdrain, 4" diameter corrugated polyvinyl chloride (PVC) drain pipe, or 4" diameter corrugated polyethylene (PE) drain pipe.



PART PLAN SHOWING REINFORCEMENT

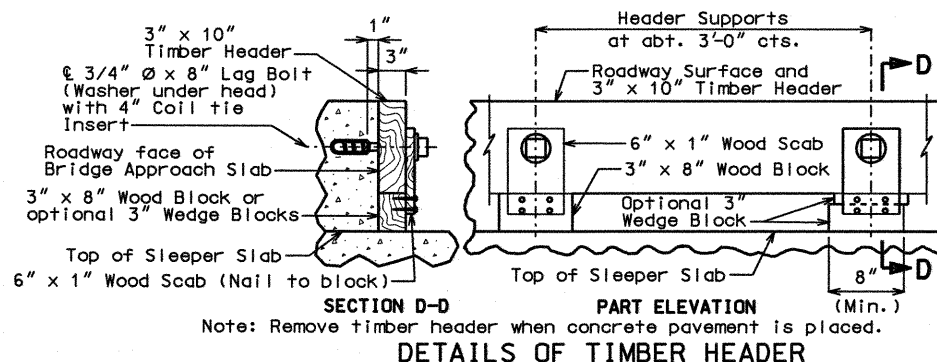


PART PLAN (SHOWING TYPICAL UNDERSEAL ACCESS HOLE LOCATIONS)



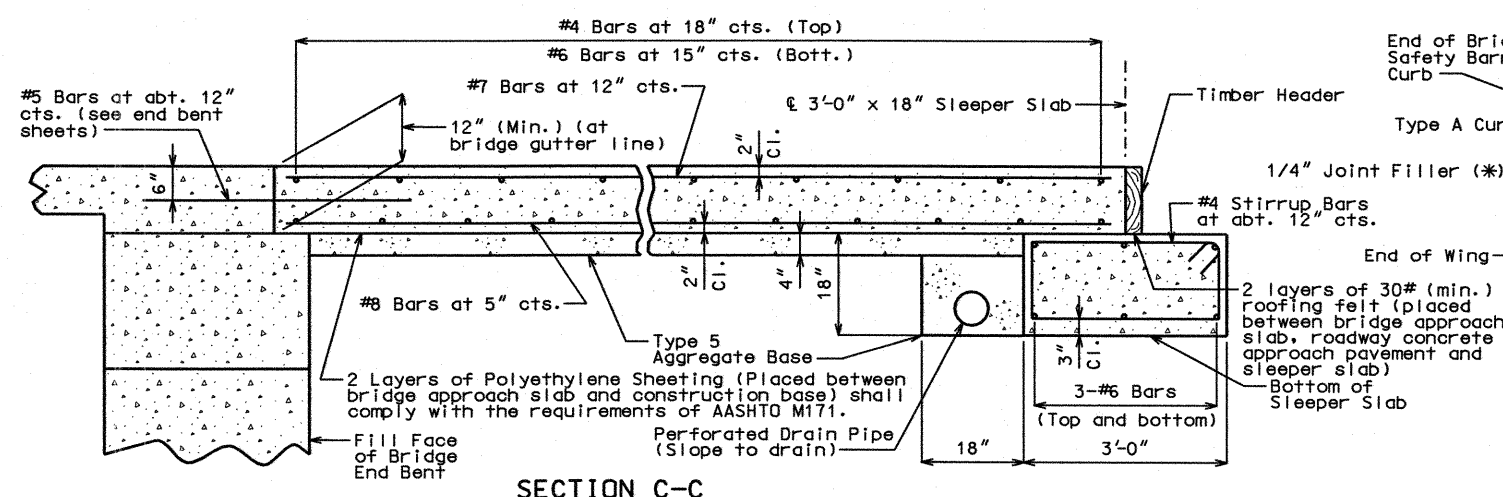
SECTION A-A

SECTION B-B



Note: Remove timber header when concrete pavement is placed.

DETAILS OF TIMBER HEADER



SECTION C-C

BRIDGE APPROACH SLAB

DETAILED: GJD JULY 2005
CHECKED: DDB JAN. 2006

JACOBS CIVIL INC.
ST. LOUIS, MO.

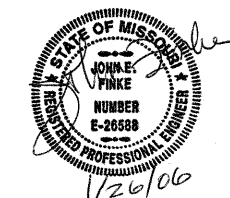
SHEET NO. 70 OF 77

GREENE COUNTY

A7024

P:\c1x21400\700cadd\709str\A7024 Ramp 3\A7024_APSLB_J8U0548B.dgn

13:42 25-JAN-2006



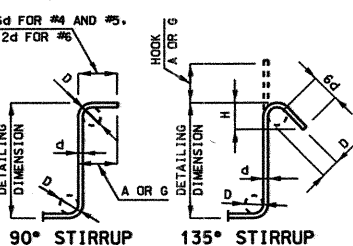
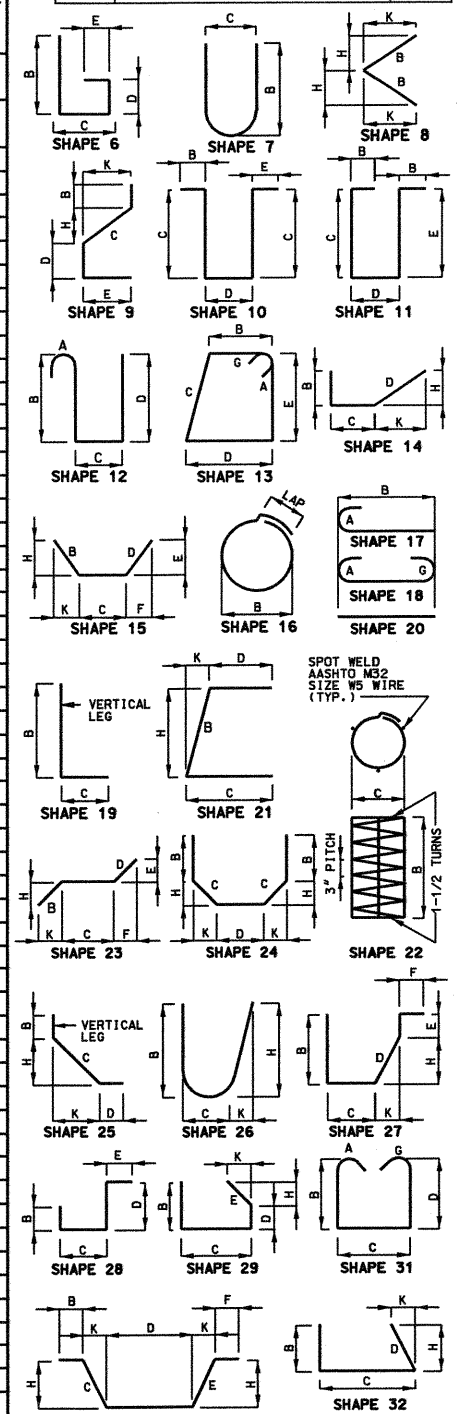
BILL OF REINFORCING STEEL

NO.	REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS								NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
										B	C	D	E	F	H	K				
										FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.			
SUBSTRUCTURE																				
END BENT NO. 1																				
16	6	F101	DIAPHRAGM		19	S				5- 5.500	3- 0.000							8- 6	8- 4	200
36	6	F102	WING BRACE		23					1- 2.000	4- 3.000	1- 2.000	0- 9.875	0- 9.875	0- 9.875	0- 9.875		6- 7	6- 6	351
8	11	H101	BEAM		20					40- 5.000								40- 5	40- 5	1718
4	6	H102	BEAM		20					40- 5.000								40- 5	40- 5	243
4	7	H103	BEAM		19					1- 2.000	26- 8.000							27-10	27- 8	226
4	7	H104	BEAM		19					1- 2.000	15-10.000							17- 0	16-10	138
4	7	H105	BEAM		19					1- 2.000	5- 0.000							6- 2	6- 0	49
22	6	H106	DIAPHRAGM		20					40- 6.000								40- 6	40- 6	1338
36	5	H107	DIAPHRAGM	E	20					2- 6.000								2- 6	2- 6	94
4	6	H108	DIAPHRAGM	E	20					40- 6.000								40- 6	40- 6	243
68	6	H109	WINGWALL		20					20- 1.500								20- 2	20- 2	2060
4	8	H110	WINGWALL	E	20					21- 3.000								21- 3	21- 3	227
12	8	H111	WINGWALL		20					21- 3.000								21- 3	21- 3	681
13	5	U101	BEAM		10	S				5- 7.750	3- 0.000							14- 4	14- 1	191
7	5	U102	BEAM		10	S				6-11.125	3- 0.000							16-10	16- 8	122
4	5	U103	BEAM		13	S				3- 0.000	3- 3.000	3- 0.000	3- 3.000					13- 5	13- 1	55
5	5	U104	BEAM		13	S				3- 0.000	3-10.750	3- 0.000	3-10.750					14- 9	14- 5	75
4	5	U105	BEAM		13	S				3- 0.000	4- 6.500	3- 0.000	4- 6.500					16- 0	15- 8	65
5	5	U106	BEAM		13	S				3- 0.000	5- 2.125	3- 0.000	5- 2.125					17- 3	16-11	88
30	5	U107	DIAPHRAGM	E	10	S				8- 5.125	4- 4.500							21- 3	21- 0	657
30	5	U108	DIAPHRAGM		19	S				7- 4.000	3- 0.000							10- 4	10- 3	321
51	6	U109	DIAPHRAGM	E	19	S				3- 3.000	4-10.500							8- 2	8- 0	613
12	5	V101	DIAPHRAGM		20					5-10.750								5-11	5-11	74
8	5	V102	DIAPHRAGM		20					7- 2.125								7- 2	7- 2	60
14	6	V103	DIAPHRAGM	E	20					7- 4.000								7- 4	7- 4	154
40	6	V104	WINGWALL		20		V	2		13-10.000								13-10	13-10	809
			INCR.=							13- 1.000								13- 1	13- 1	
			.5 in																	
40	6	V105	WINGWALL		20		V	2		11- 4.000								11- 4	11- 4	658
			INCR.=							10- 7.000								10- 7	10- 7	
			.5 in																	

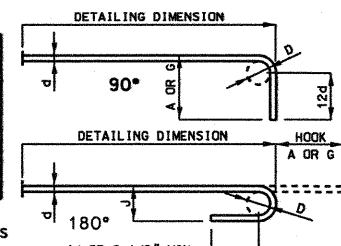
BILL OF REINFORCING STEEL

NO.	REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS							NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
										B	C	D	E	F	H	K			
										FT.	IN.	FT.	IN.	FT.	IN.	FT.			
INTERMEDIATE BENT NO. 2																			
36	10	D201	FOOTING		10	X					2- 0.000	19- 5.000					23- 5	22- 9	3524
40	11	D202	FOOTING		10	X					2- 0.000	17- 5.000					21- 5	20- 8	4392
72	5	D203	FOOTING		19	X				4-10.000	11- 3.000						16- 1	15-11	1195
80	5	D204	FOOTING		19	X				4-10.000	10- 3.000						15- 1	14-11	1245
8	5	D205	FOOTING		10	X					2- 6.000	17- 6.000					22- 6	22- 3	186
8	5	D206	FOOTING		10	X					2- 6.000	19- 6.000					24- 6	24- 3	202
70	11	D207	FOOTING		19	X				13- 5.000	2- 0.000						15- 5	15- 1	5610
24	4	H201	COLUMN		13	X				8- 9.000	4- 0.000	8- 9.000	4- 0.000				26- 3	25-11	415
48	4	H202	COLUMN		31	X				4- 0.000	0- 4.000						4- 9	4- 7	147
24	4	H203	COLUMN		31	X				3- 6.000							3-11	3-11	63
8	8	H204	BENT CAP		15	X				2- 0.000	14- 3.000				1- 9.875	0-10.000	16- 3	16- 2	345
6	7	H205	BENT CAP		20	X	V	2		17- 8.000							17- 8	17- 8	270
			INCR.=							26- 4.000							26- 4	26- 4	
			52. in																
12	8	H206	BENT CAP		20	X	V	3		30- 8.000							30- 8	30- 8	1052
			INCR.=							35- 0.000							35- 0	35- 0	
			17.375 in																
12	8	H207	BENT CAP		20	X				36- 5.000							36- 5	36- 5	1167
4	7	H208	BENT CAP		20	X				36- 5.000							36- 5	36- 5	298
20	11	H209	BENT CAP		20	X				36- 5.000							36- 5	36- 5	3870
4	7	H210	BENT CAP		19	X				2-10.000	25- 6.000						28- 4	28- 2	230
4	7	H211	BENT CAP		19	X				3- 6.000	15- 6.000						19- 0	18-10	154
4	7	H212	BENT CAP		10	X					3-10.000	4- 1.000					11- 9	11- 5	93
10	6	H213	BENT CAP		10	X				2- 5.000	3- 9.000						8- 7	8- 3	124
36	6	H214	BENT CAP		10	X					2- 5.000	2- 7.000					7- 5	7- 1	383
6	4	H215	BENT CAP		20	X				4- 9.000							4- 9	4- 9	19
56	4	H216	BENT CAP		31	X				4- 0.000	0- 4.000						4- 9	4- 7	171
68	5	P201	SHAFT		16	X				3- 4.000							12-11	12-10	910
64	5	P202	SHAFT		16	X				2-10.000							11- 3	11- 3	751
32	6	U201	BENT CAP		10	S	X				1- 0.000	4- 0.000					6- 0	5- 8	272
0		U202	NOT USED		0														
26	6	U203	BENT CAP		10	S	X				3- 5.000	4- 0.000					10-10	10- 6	410
15	6	U204	BENT CAP		13	S	X			4- 0.000	6- 5.000	4- 0.000	6- 5.000				22- 2	21- 8	488
84	6	U205	BENT CAP		13	S	X	V	4	2-11.000	4- 7.500	2-11.000	4- 7.500				16- 5	15-11	2534
			INCR.=							2-11.000	8- 9.500	2-11.000	8- 9.500				24- 9	24- 3	
			5. in																
2	6	U206	BENT CAP		13	S	X			2-11.000	4- 3.000	2-11.000	4- 3.000				15- 8	15- 2	46
2	6	U207	BENT CAP		13	S	X			2-11.000	6- 1.000	2-11.000	6- 1.000				19- 4	18-10	57
24	6	U208	BENT CAP		10	S	X				3- 2.000	0-10.000					7- 2	6-10	246
70	11	V201	COLUMN		20	X				20- 0.000							20- 0	20- 0	7438
36	9	V202	SHAFT		20	X				24- 1.250							24- 1	24- 1	2948
36	9	V203	SHAFT		20	X				22- 0.000							22- 0	22- 0	2693
64	9	V204	SHAFT		20	X				26- 0.000							26- 0	26- 0	5658
16	W5	W201	BENT CAP		22	X				1- 6.000	0- 9.125						26- 1	26- 1	71

STATE	PROJ. NO.	SHEET NO.
MO		671



STIRRUP HOOK DIMENSIONS				
GRADES 40 - 50 - 60 KSI				
BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"



BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS												NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT	
									B		C		D		E		F		H					K
	FT.								IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.				IN.

SUBSTRUCTURE (CONT.) INTERMEDIATE BENT NO. 3

47	10 D301	FOOTING		10	X												23-6	22-10	4618
53	11 D302	FOOTING		10	X												23-6	22-9	6406
200	5 D303	FOOTING		19	X				4-10.000								16-1	15-11	3320
16	5 D304	FOOTING		10	X				1-9.000								23-0	22-9	380
0	D305	NOT USED		0															
70	11 D306	FOOTING		19	X				13-5.000								15-5	15-1	5610
34	4 H301	COLUMN		13	X				8-9.000	4-0.000	8-9.000	4-0.000					26-3	25-11	589
68	4 H302	COLUMN		31	X				4-0.000	0-4.000							4-9	4-7	208
34	4 H303	COLUMN		31	X				3-6.000								3-11	3-11	89
8	8 H304	BENT CAP		15	X				2-0.000	14-3.000				1-9.875	0-10.000		16-3	16-2	345
6	7 H305	BENT CAP		20	X	V	2		17-8.000								17-8	17-8	270
		INCR.=							26-4.000								26-4	26-4	
		52. in																	
12	8 H306	BENT CAP		20	X	V	3		30-8.000								30-8	30-8	1052
		INCR.=							35-0.000								35-0	35-0	
		17.375 in																	
14	8 H307	BENT CAP		20	X				36-5.000								36-5	36-5	1361
6	7 H308	BENT CAP		20	X				36-5.000								36-5	36-5	447
22	11 H309	BENT CAP		20	X				36-5.000								36-5	36-5	4257
4	7 H310	BENT CAP		19	X				2-10.000	25-6.000							28-4	28-2	230
4	7 H311	BENT CAP		19	X				3-6.000	15-6.000							19-0	18-10	154
4	7 H312	BENT CAP		10	X				3-10.000	4-1.000							11-9	11-5	93
10	6 H313	BENT CAP		10	X				2-5.000	3-9.000							8-7	8-3	124
36	6 H314	BENT CAP		10	X				2-5.000	2-7.000							7-5	7-1	383
6	4 H315	BENT CAP		20	X				4-9.000								4-9	4-9	19
56	4 H316	BENT CAP		31	X				4-0.000	0-4.000							4-9	4-7	171
92	5 P301	SHAFT		16	X				3-10.000								14-7	14-5	1383
60	5 P302	SHAFT		16	X				3-4.000								12-11	12-10	803
32	6 U301	BENT CAP		10	S	X			1-0.000	4-0.000							6-0	5-8	272
0	U302	NOT USED		0															
26	6 U303	BENT CAP		10	S	X			3-5.000	4-0.000							10-10	10-6	410
15	6 U304	BENT CAP		13	S	X			4-0.000	6-5.000	4-0.000	6-5.000					22-2	21-8	488
84	6 U305	BENT CAP		13	S	X	V	4	2-11.000	4-7.500	2-11.000	4-7.500					16-5	15-11	2534
		INCR.=							2-11.000	8-9.500	2-11.000	8-9.500					24-9	24-3	
		5. in																	
2	6 U306	BENT CAP		13	S	X			2-11.000	4-3.000	2-11.000	4-3.000					15-8	15-2	46
2	6 U307	BENT CAP		13	S	X			2-11.000	6-1.000	2-11.000	6-1.000					19-4	18-10	57
24	6 U308	BENT CAP		10	S	X			3-2.000	0-10.000							7-2	6-10	246
70	11 V301	COLUMN		20	X				24-7.000								24-7	24-7	9143
44	9 V302	SHAFT		20	X				28-3.625								28-4	28-4	4239
44	9 V303	SHAFT		20	X				26-9.625								26-10	26-10	4014
72	9 V304	SHAFT		20	X				25-0.000								25-0	25-0	6120
16	W5 W301	BENT CAP		22	X				1-6.000	0-9.125							26-1	26-1	71

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS												NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT		
									B		C		D		E		F		H					K	
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.				FT.	IN.

INTERMEDIATE BENT NO. 4

53	10	D401	FOOTING		10	X			2- 0.000	21- 6.000							25- 6	24-10	5663
58	11	D402	FOOTING		10	X			2- 0.000	19- 6.000							23- 6	22- 9	7011
106	5	D403	FOOTING		19	X		5- 2.000	12- 3.000								17- 5	17- 3	1907
116	5	D404	FOOTING		19	X		5- 2.000	11- 3.000								16- 5	16- 3	1966
8	5	D405	FOOTING		10	X			1- 9.000	21- 9.000							25- 3	25- 0	209
8	5	D406	FOOTING		10	X			1- 9.000	19- 9.000							23- 3	23- 0	192
90	11	D407	FOOTING		19	X		13- 9.000	2- 0.000								15- 9	15- 5	7372
28	4	H401	COLUMN		13	S	X		10- 9.000	4- 0.000	10- 9.000	4- 0.000					30- 3	30- 0	561
56	4	H402	COLUMN		31	S	X		4- 0.000	0- 4.000							4- 9	4- 8	175
28	4	H403	COLUMN		31	S	X		3- 6.000								3-11	3-11	73
8	8	H404	BENT CAP		15	X			2- 0.000	18- 2.625			1- 9.875	0-10.000			20- 3	20- 2	431
4	7	H405	BENT CAP		20	X			47- 9.000								47- 9	47- 9	390
24	11	H406	BENT CAP		20	X			47- 9.000								47- 9	47- 9	6089
92	8	H407	BENT CAP		31	S	X		4- 0.000								4-10	4-10	1187
4	7	H408	BENT CAP		19	X			2-10.000	35- 5.500							38- 4	38- 1	311
4	7	H409	BENT CAP		19	X	V	1	3- 6.000	23- 0.000							26- 6	26- 4	201
			INCR.=						3- 6.000	19- 5.625							23- 0	22- 9	
			14.125 in																
4	7	H410	BENT CAP		10	X				3-10.000	7- 0.000						14- 8	14- 4	117
6	4	H411	BENT CAP		20	X			6-11.125								6-11	6-11	28
12	8	H412	BENT CAP		20	X			47- 9.000								47- 9	47- 9	1530
12	8	H413	BENT CAP		20	X	V	3	47- 9.000								47- 9	47- 9	1466
			INCR.=						43- 9.125								43- 9	43- 9	
			16. in																
7	6	H414	BENT CAP		10	S	X			2- 5.000	2- 7.000						7- 5	7- 1	74
36	7	H415	BENT CAP		20	X	V	5	39- 4.875								39- 5	39- 5	2260
			INCR.=						22- 0.125								22- 0	22- 0	
			33.625 in																
14	6	H416	BENT CAP		10	S	X			2- 5.000	3- 9.000						8- 7	8- 3	173
82	5	P401	SHAFT		16	X			3-10.000								14- 7	14- 5	1233
72	5	P402	SHAFT		16	X			3- 4.000								12-11	12-10	964
32	6	U401	BENT CAP		10	S	X			1- 0.000	4- 0.000						6- 0	5- 8	272
18	6	U402	BENT CAP		10	S	X			3- 7.500	4- 0.000						11- 3	10-11	295
17	6	U403	BENT CAP		10	S	X			6- 1.500	4- 0.000						16- 3	15-11	406
40	6	U404	BENT CAP		13	S	X		2- 7.750	6- 1.625	2- 7.750	6- 1.625					18-11	18- 5	1106
8	6	U405	BENT CAP		13	S	X		4- 0.000	6- 1.625	4- 0.000	6- 1.625					21- 7	21- 2	254
112	6	U406	BENT CAP		13	S	X	V	4	2- 7.750	4- 6.000	2- 7.750	4- 6.000				15- 8	15- 2	3631
			INCR.=						2- 7.750	10-11.250	2- 7.750	10-11.250					28- 6	28- 0	
			5.75 in																
2	6	U407	BENT CAP		13	S	X		2- 7.750	4- 3.000	2- 7.750	4- 3.000					15- 2	14- 8	44
2	6	U408	BENT CAP		10	S	X		2- 7.750		2- 7.750	6- 1.500					11- 5	10-10	33
30	6	U409	BENT CAP		10	S	X			3- 2.000	0-10.000						7- 2	6-10	308
90	11	V401	COLUMN		20	X			21-11.500								22- 0	22- 0	10520
44	9	V402	SHAFT		20	X			27- 7.250								27- 7	27- 7	4126
44	9	V403	SHAFT		20	X			22-10.750								22-11	22-11	3428
72	9	V404	SHAFT		20	X			28- 0.000								28- 0	28- 0	6854
16	W5	W401	BENT CAP		22	X			1- 6.000	0- 9.125							26- 1	26- 1	71

[illegible]SUBSTRUCTURE (CONT.)[illegible]

INTERMEDIATE BENT NO. 6

SHAPE 6

SHAPE 7

SHAPE 8

SHAPE 9

SHAPE 10

SHAPE 11

SHAPE 12

SHAPE 13

SHAPE 14

SHAPE 15

SHAPE 16

SHAPE 17

SHAPE 18

SHAPE 19

SHAPE 20

SHAPE 21

SHAPE 22

SHAPE 23

SHAPE 24

SHAPE 25

SHAPE 26

SHAPE 27

SHAPE 28

SHAPE 29

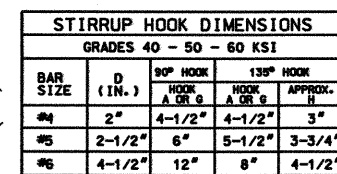
SHAPE 31

SHAPE 32

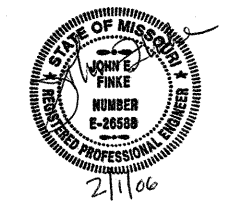
SPOT WELD
AASHTO NO. 2
SIZE W5 WIRE
(TYP.)

3" PITCH

1 1/2 TURNS



NOTE:
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH THE SAME
PROCEDURE AS FOR 90 DEG. STD. HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE
AND THE FOLLOWING LINE.
NO. E.A. = NUMBER OF BASES OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE
LISTED FOR FABRICATOR'S USE (NEAREST INCH).
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED
ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 601) = FY 60,000 PSI.



BILL OF REINFORCING STEEL																		
NO. REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS							NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									B	C	D	E	F	H	K			
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.			
SUBSTRUCTURE (CONT.)																		
INTERMEDIATE BENT NO. 7																		
36	10 D701	FOOTING		10	X					2- 0.000	19- 5.000					23- 5	22- 9	3524
40	11 D702	FOOTING		10	X					2- 0.000	17- 5.000					21- 5	20- 8	4392
72	5 D703	FOOTING		19	X				4-10.000	11- 3.000						16- 1	15-11	1195
80	5 D704	FOOTING		19	X				4-10.000	10- 3.000						15- 1	14-11	1245
8	5 D705	FOOTING		10	X					2- 6.000	17- 6.000					22- 6	22- 3	186
8	5 D706	FOOTING		10	X					2- 6.000	19- 6.000					24- 6	24- 3	202
70	11 D707	FOOTING		19	X				13- 5.000	2- 0.000						15- 5	15- 1	5610
24	4 H701	COLUMN		13	X				8- 9.000	4- 0.000	8- 9.000	4- 0.000				26- 3	25-11	415
48	4 H702	COLUMN		31	X				4- 0.000	0- 4.000						4- 9	4- 7	147
24	4 H703	COLUMN		17	X				3- 6.000							4- 0	4- 0	64
8	8 H704	BENT CAP		15	X				2- 0.000	14- 3.000			1- 9.875	0-10.000		16- 3	16- 2	345
6	7 H705	BENT CAP		20	X V	2			17- 8.000							17- 8	17- 8	270
		INCR.=							26- 4.000							26- 4	26- 4	
		52. in																
12	8 H706	BENT CAP		20	X V	4			30- 8.000							30- 8	30- 8	1052
		INCR.=							35- 0.000							35- 0	35- 0	
		26. in																
12	8 H707	BENT CAP		20	X				36- 5.000							36- 5	36- 5	1167
4	7 H708	BENT CAP		20	X				36- 5.000							36- 5	36- 5	298
20	11 H709	BENT CAP		20	X				36- 5.000							36- 5	36- 5	3870
4	7 H710	BENT CAP		19	X				2-10.000	25- 6.000						28- 4	28- 2	230
4	7 H711	BENT CAP		19	X				3- 6.000	15- 6.000						19- 0	18-10	154
4	7 H712	BENT CAP		10	X					3-10.000	4- 1.000					11- 9	11- 5	93
10	6 H713	BENT CAP		10	X					2- 5.000	3- 9.000					8- 7	8- 3	124
36	6 H714	BENT CAP		10	X					2- 5.000	2- 7.000					7- 5	7- 1	383
6	4 H715	BENT CAP		20	X				4- 9.000							4- 9	4- 9	19
56	4 H716	BENT CAP		31	X				4- 0.000	0- 4.000						4- 9	4- 7	171
134	5 P701	SHAFT		16	X				3- 4.000							12-11	12-10	1794
64	5 P702	SHAFT		16	X				2-10.000							11- 3	11- 3	751
32	6 U701	BENT CAP		10	X					1- 0.000	4- 0.000					6- 0	5- 8	272
	0 U702	NOT USED		0														
26	6 U703	BENT CAP		10	X					3- 5.000	4- 0.000					10-10	10- 6	410
15	6 U704	BENT CAP		13	X				4- 0.000	6- 5.000	4- 0.000	6- 5.000				22- 2	21- 8	488
84	6 U705	BENT CAP		13	X V	4			2-11.000	4- 7.500	2-11.000	4- 7.500				16- 5	15-11	2534
		INCR.=							2-11.000	8- 9.500	2-11.000	8- 9.500				24- 9	24- 3	
		5. in																
2	6 U706	BENT CAP		13	X				2-11.000	4- 3.000	2-11.000	4- 3.000				15- 8	15- 2	46
2	6 U707	BENT CAP		13	X				2-11.000	6- 1.000	2-11.000	6- 1.000				19- 4	18-10	57
4	6 U708	BENT CAP		10	X					3- 2.000	0-10.000					7- 2	6-10	41
70	11 V701	COLUMN		20	X				25- 2.500							25- 3	25- 3	9391
36	9 V702	SHAFT		20	X				40- 0.000							40- 0	40- 0	4896
36	9 V703	SHAFT		20	X				40- 0.000							40- 0	40- 0	4896
64	9 V704	SHAFT		20	X				26- 0.000							26- 0	26- 0	5658
16	W5 W701	BENT CAP		22	X				1- 6.000	0- 9.125						26- 1	26- 1	71

BILL OF REINFORCING STEEL																			
NO.	REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS							NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
										B	C	D	E	F	H	K			
										FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.
END BENT NO. 8																			
16	6	F801	DIAPHRAGM		19	S				5- 5.500	3- 0.000						8- 6	8- 4	200
36	6	F802	WING BRACE		23					1- 2.000	4- 3.000	1- 2.000	0- 9.875	0- 9.875	0- 9.875	0- 9.875	6- 7	6- 6	351
8	11	H801	BEAM		20					40- 5.000							40- 5	40- 5	1718
4	6	H802	BEAM		20					40- 5.000							40- 5	40- 5	243
4	7	H803	BEAM		19					1- 2.000	26- 8.000						27-10	27- 8	226
4	7	H804	BEAM		19					1- 2.000	15-10.000						17- 0	16-10	138
4	7	H805	BEAM		19					1- 2.000	5- 0.000						6- 2	6- 0	49
22	6	H806	DIAPHRAGM		20					40- 6.000							40- 6	40- 6	1338
37	5	H807	DIAPHRAGM	E	20					2- 6.000							2- 6	2- 6	96
4	6	H808	DIAPHRAGM	E	20					40- 6.000							40- 6	40- 6	243
68	6	H809	WINGWALL		20					20- 1.500							20- 2	20- 2	2060
4	8	H810	WINGWALL	E	20					21- 3.000							21- 3	21- 3	227
12	8	H811	WINGWALL		20					21- 3.000							21- 3	21- 3	681
13	5	U801	BEAM		10	S					5- 7.750	3- 0.000					14- 4	14- 1	191
7	5	U802	BEAM		10	S					6-11.125	3- 0.000					16-10	16- 8	122
4	5	U803	BEAM		13	S				3- 0.000	3- 3.000	3- 0.000	3- 3.000				13- 5	13- 1	55
5	5	U804	BEAM		13	S				3- 0.000	3-10.750	3- 0.000	3-10.750				14- 9	14- 5	75
4	5	U805	BEAM		13	S				3- 0.000	4- 6.500	3- 0.000	4- 6.500				16- 0	15- 8	65
5	5	U806	BEAM		13	S				3- 0.000	5- 2.125	3- 0.000	5- 2.125				17- 3	16-11	88
30	5	U807	DIAPHRAGM	E	10	S					8- 5.125	4- 4.500					21- 3	21- 0	657
30	5	U808	DIAPHRAGM		19	S				7- 4.000	3- 0.000						10- 4	10- 3	321
51	6	U809	DIAPHRAGM	E	19	S				4-10.500	3- 3.000						8- 2	8- 0	613
12	5	V801	DIAPHRAGM		20					5-10.750							5-11	5-11	74
8	5	V802	DIAPHRAGM		20					7- 2.125							7- 2	7- 2	60
12	6	V803	DIAPHRAGM	E	20					7- 4.000							7- 4	7- 4	132
40	6	V804	WINGWALL		20		V	2		13-10.000							13-10	13-10	809
			INCR.=							13- 1.000							13- 1	13- 1	
			.5 in																
40	6	V805	WINGWALL		20		V	2		11- 4.000							11- 4	11- 4	658
			INCR.=							10- 7.000							10- 7	10- 7	
			.5 in																

STATE

PROJ. NO.

SHEET NO.

MO

B74

SHAPE 6

SHAPE 7

SHAPE 8

SHAPE 9

SHAPE 10

SHAPE 11

SHAPE 12

SHAPE 13

SHAPE 14

SHAPE 15

SHAPE 16

SHAPE 17

SHAPE 18

SHAPE 19

SHAPE 20

SHAPE 21

SHAPE 22

SHAPE 23

SHAPE 24

SHAPE 25

SHAPE 26

SHAPE 27

SHAPE 28

SHAPE 29

SHAPE 30

SHAPE 31

SHAPE 32

SHAPE 33

SHAPE 34

SHAPE 35

SHAPE 36

SPOT WELD

AASHTO M32

SIZE #5 WIRE

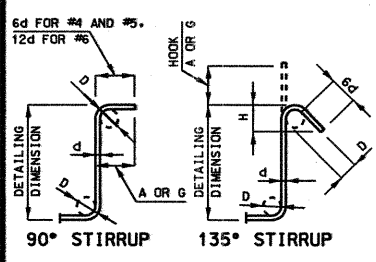
(TYP.)

3" PITCH

1-1/2 TURNS

BENDING DIAGRAMS

2/3/06



STIRRUP HOOK DIMENSIONS				
-------------------------	--	--	--	--

BILL OF REINFORCING STEEL																		
NO. REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS							NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									B	C	D	E	F	H	K			
									FT.	IN.	FT.	IN.	FT.	IN.	FT.			
SUPERSTRUCTURE																		
SLAB																		
1870	5 S101	SLAB	E 20						37- 4.000							37- 4	37- 4	72815
384	5 S102	SLAB	E 20						46- 7.000							46- 7	46- 7	18657
128	6 S103	SLAB	E 20						5- 6.000							5- 6	5- 6	1057
448	6 S104	SLAB	E 20						58- 2.000							58- 2	58- 2	39140
2793	6 S105	SLAB	E 20						40- 4.000							40- 4	40- 4	169202
2793	5 S106	SLAB	E 20						40- 4.000							40- 4	40- 4	117495
1445	5 S107	SLAB	E 20						39- 6.000							39- 6	39- 6	59532

BILL OF REINFORCING STEEL																							
NO. REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS												NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									B	C	D	E	F	H	K								
	SIZE								MARK	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.			
SUMMARY																							
SLAB ON GIRDER																							
4																		0					
4			E															0					
5																		2102					
5			E															270003					
6																		11318					
6			E															211397					
7																		826					
7			E															0					
8																		1362					
8			E															454					
11																		3436					
REINFORCING STEEL (BRIDGES)																							
4																		6561					
4			E															380					
5																		35761					
5			E															0					
6																		20518					
6			E															9120					
7																		6954					
7			E															1699					
8																		15100					
8			E															2528					
9																		93633					
10																		25877					
11																		157514					
11			E															8127					
W5																		284					
W5			E															142					
BARRIER CURB																							
4			E															507					
5			E															52428					
SLIP FORM OPTION																							
5			E															534					
TOTALS																							
4																		6561					
4			E															380					
5																		37863					
5			E															270003					
6																		31836					
6			E															220517					
7																		7780					
7			E															1699					
8																		16462					
8			E															2982					
9																		93633					
10																		25877					
11																		160950					
11			E															8127					
W5																		284					
W5			E															142					

STATE

PROJ. NO.

SHEET NO.

MO

875

SHAPE 6

SHAPE 7

SHAPE 8

SHAPE 9

SHAPE 10

SHAPE 11

SHAPE 12

SHAPE 13

SHAPE 14

SHAPE 15

SHAPE 16

SHAPE 17

SHAPE 18

SHAPE 20

SHAPE 19

SHAPE 21

SHAPE 22

SHAPE 23

SHAPE 24

SHAPE 25

SHAPE 26

SHAPE 27

SHAPE 28

SHAPE 29

SHAPE 31

SHAPE 30

SHAPE 32

SHAPE 33

SHAPE 34

SHAPE 35

SHAPE 36

90° STIRRUP

135° STIRRUP

END HOOK DIMENSIONS

NOTE:

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

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

E = EPOXY COATED REINFORCEMENT.

S = STIRRUP.

X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.

V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

NO. EA. = NUMBER OF BARS OF EACH LENGTH.

NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE (NEAREST INCH).

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

PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.

FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.

REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

STATE OF MISSOURI

JOHN E. FINKE

REGISTERED PROFESSIONAL ENGINEER

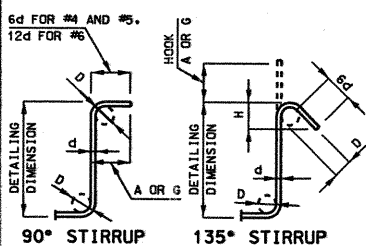
NUMBER E-26588

2/3/06

SHAPE 34

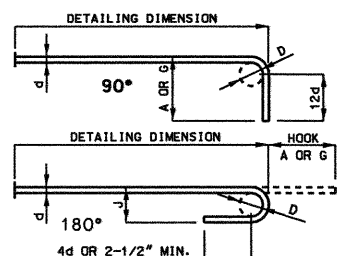
(SHAPE 35 SHALL BE A DEFORMED OR PLAIN SPIRAL BAR OR WIRE.)

BENDING DIAGRAMS



STIRRUP HOOK DIMENSIONS				
GRADES 40 - 50 - 60 KSI				
BAR SIZE	D (IN.)	90° HOOK	135° HOOK	APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

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



END HOOK DIMENSIONS				
ALL GRADES				
BAR SIZE	D (IN.)	180° HOOK	90° HOOK	
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	24"
#14	18-1/4"	27-3/4"	21-3/4"	27-7/8"

TWO ADDITIONAL #4-K10 AND #5-R6 ARE INCLUDED IN THE BAR BILL FOR TESTING.

DETAILED: SJ DEC. 2005
CHECKED: JEF JAN. 2006

JACOBS CIVIL INC.
ST. LOUIS, MO.

SHEET NO.75 OF 77

P:\C1X21400\700cadd\709str\A7024 Ramp 3\A7024_BARL5_J8U0548B.dgn

GREENE COUNTY

A7024

11:18 03-FEB-2006

