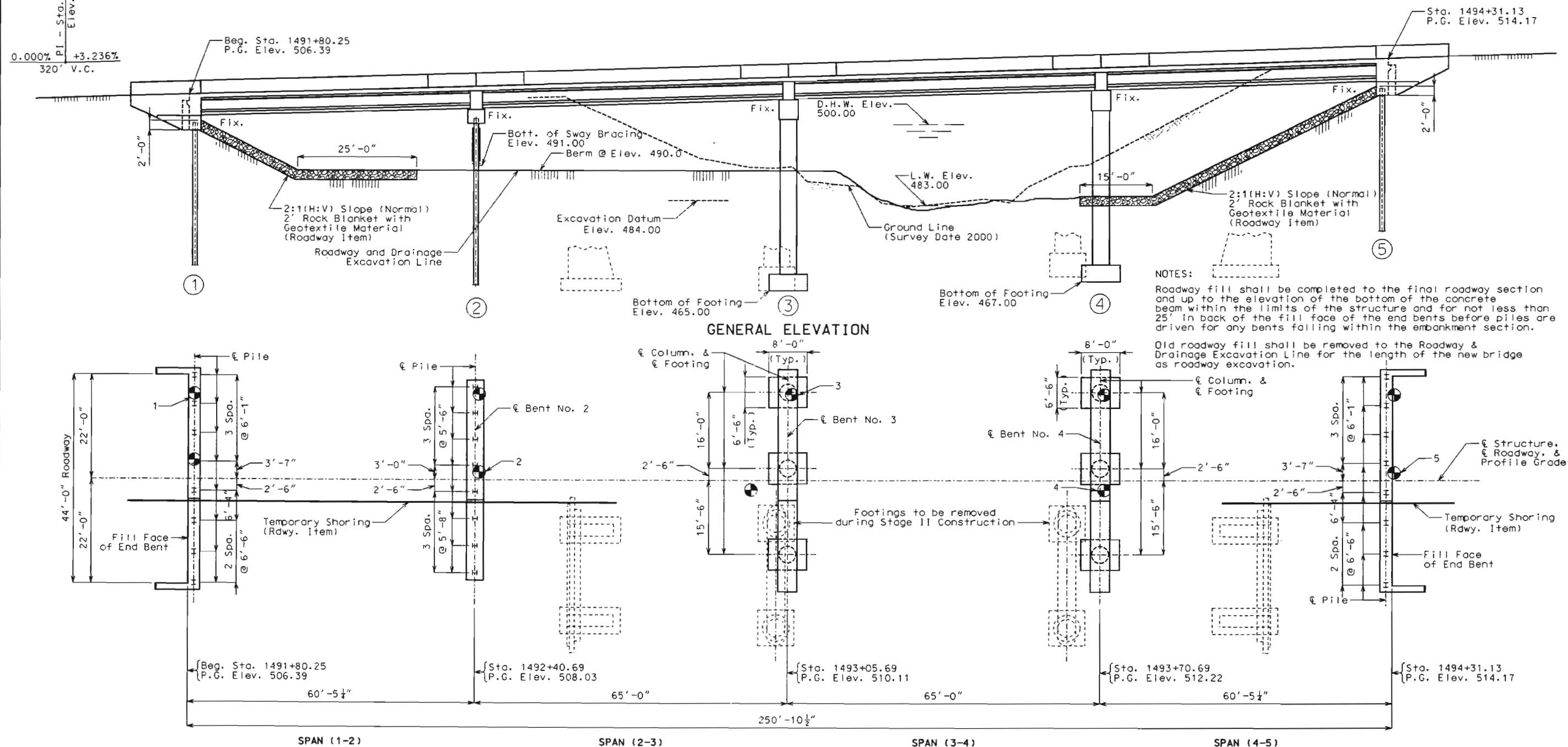


MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION
(60.0' - 65.0' - 65.0' - 60.0') PRESTRESSED CONCRETE I-GIRDER SPANS

State	Proj. No.	Sheet No.
MO		B1
SEC/SUR 28	TWP 43N	RGE 1E



NOTES:

For General Notes, Estimated Quantities, Estimated Quantities for Slab on Concrete I-Girder, Pile & Footing Data, Hydrologic Data and Location Sketch, see Sheet No. 2.

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 no. 4. 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.

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

Sheet No. 1 of 33

B.M.-17-88 CHISELED "C" WEST END SOUTH ABUTMENT OF BRIDGE #4-389R OVER BIRCH CREEK, 17' RIGHT STA. 1492+55 & RTE. 50

BRIDGE OVER BIRCH CREEK

STATE ROAD FROM ROUTE 47 TO I-44

ABOUT 3.5 MILES EAST OF ROUTE 47

PROJECT NO.

STA. 1491+80.25

JOB NO. J6P1381

RTE. 50

FRANKLIN COUNTY

Date: 10/29/01



DATE 10-29-01

STD. 609.00

STD. 706.35

A6361

Designed Apr 2001
Detailed Aug 2001
Checked Aug 2001

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General Notes:

- Design Specifications:
AASHTO - 1996 and Interims thru 2000
Load Factor Design
Seismic Performance Category A
- Design Loading:
HS20 Modified
35#/ft² Future Wearing Surface
Earth - 120 #/Cu. Ft., Equivalent Fluid Pressure 45#/Cu. Ft.
Superstructure: Simply-supported, non-composite for dead load.
Continuous composite for live load.
- Design Unit Stresses:
Class B Concrete (Substructure) f'c = 3,000 psi
Class B1 Concrete (Safety Barrier Curb) f'c = 4,000 psi
Class B2 Concrete (Superstructure except
Prestressed Girders & Safety
Barrier Curb) f'c = 4,000 psi
Reinforcing Steel (Grade 60) fy = 60 ksi
Structural Carbon Steel (ASTM A709, Grade 36) fy = 36000 psi
Steel Pile (ASTM A709, Grade 36) fb = 9000 psi, fy = 36000 psi
For Prestressed Girder stresses, see Sheets No. 15, 16, & 17.
For Precast Prestressed Panel stresses, see Sheet No. 20.

- Neoprene Pads:
Bearings shall be 60 durometer neoprene pads. 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.
- Joint Filler:
All joint filler shall meet the requirements of Section 1057.2.4 of the Missouri Standard Specifications, except as noted.
- Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.
- Coatings:
All exposed surfaces of structural steel piles and steel sway bracing shall be painted with a calcium sulfonate system in accordance with the Special Provisions.

Traffic:
See Staging Sheet No. 3.

HYDROLOGIC DATA	
Drainage Area	= 11.8 sq. miles (Hilly)
Design Discharge	= 5618 cu. ft./sec. (100 years)
Design H.W. Elev.	= 500.0 feet (100 years)
Estimated Backwater	= 0.85 feet
OVERTOPPING FLOOD DATA	
Greater than or equal to 250 years	

Estimated Quantities for Slab on Concrete I-Girder		
Item		Total
Reinforcing Steel (Plain)	Lbs.	7760
Reinforcing Steel (Epoxy Coated)	Lbs.	115520
Concrete (Class B2)	Cu. Yds.	367.8 ***

The table of Estimated Quantities for Slab on Concrete I-Girder represents the quantities used by the state in preparing the cost estimate for concrete slabs. Variations may be encountered in these estimated quantities but these variations cannot be used for an adjustment in the contract unit price per square yard of Slab on Concrete I-Girder.

See Special Provisions for method of forming slab.

The prestressed panel quantities are not included in the table of Estimated Quantities for Slab on Concrete I-Girder.

*** Based on minimum top flange thickness and minimum joint filler thickness.

Elevations:
All elevations are specified in feet except as noted.

Estimated Quantities			
Item		Substr.	Superstr.
Removal of Bridges (H-389R)	Lump Sum		1
Class 1 Excavation	Cu. Yd.	165	
Class 2 Excavation	Cu. Yd.	413	
Cofferdams - Bent 3	Lump Sum	1	
Cofferdams - Bent 4	Lump Sum	1	
Bridge Approach Slab (Bridge)	Sq. Yd.		250
Structural Steel Piles (10 in)	Lin. Ft.	784	
Structural Steel Piles (14 in)	Lin. Ft.	416	
Pile Point Reinforcement	Each	24	
Class B Concrete (Substr)	Cu. Yd.	210.1	
Slab on Concrete I-Girder	Sq. Yd.		1301
Safety Barrier Curb	Lin. Ft.		552
Laminated Neoprene Bearing Pads (Tapered)	Each		40
Prestressed Concrete I-Girder (60' Span)	Each		10
Prestressed Concrete I-Girder (65' Span)	Each		10
Reinforcing Steel (Bridges)	Lb.	24720	
Mechanical Bar Splice	Each	64	58
Fabricated Structural Carbon Steel (Misc)	Lb.	1910	
Slab Drain	Each		8
Vertical Drain at End Bents	Each		2

- * Safety barrier curb shall be cast-in-place option or slip-form option.
- All concrete above the construction joint in the end bents is included in the Estimated Quantities for Slab on Concrete I-Girder.
- All reinforcement in the end bents is included in the Estimated Quantities for Slab on Concrete I-Girder.
- All reinforcement in the intermediate bent concrete diaphragms except reinforcement embedded in the beam cap is included in the Estimated Quantities for Slab on Concrete I-Girder.
- All concrete above the intermediate bent cap is included in the Estimated Quantities for Slab on Concrete I-Girder.
- The cost of furnishing, fabricating and installing Neoprene Bearing Pads, complete-in-place, will be paid for at the contract unit price for Laminated Neoprene Bearing Pads Tapered per each.

Pile and Footing Data						
Bent No.		1	2	3	4	5
Bearing Pile	Pile Type and Size	HP10 X 42	HP14 X 73			HP10 X 42
	Number	8	8			8
	Approximate Length	ft.	48	52		50
	Design Bearing	tons	48	64		48
	Hammer Energy Required	ft.-lbs.	10,800	15,000		10,800
Spread Footings	Foundation Material			Rock	Rock	
	Design Bearing	tons/sq. ft.		7.6	7.6	

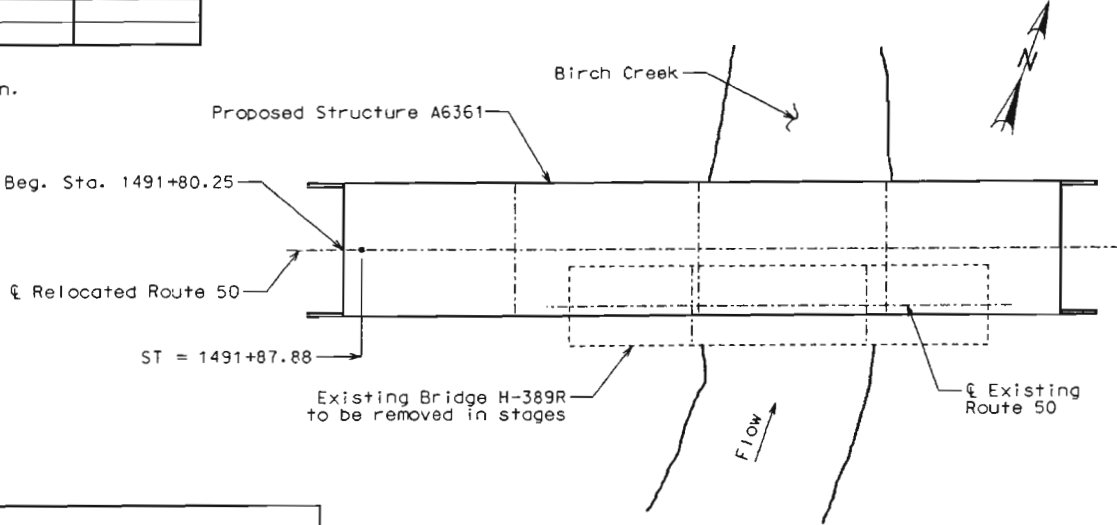
Minimum energy requirement of hammer is based on plan length and design bearing value of piles.

All piles shall be driven to practical refusal.

The cost of furnishing and installing steel sway bracing on piles at the intermediate bent, will be paid for at the contract unit price for Fabricated Structural Carbon Steel (Misc.).

No direct payment will be made for cleaning and coating of bracing at intermediate bent.

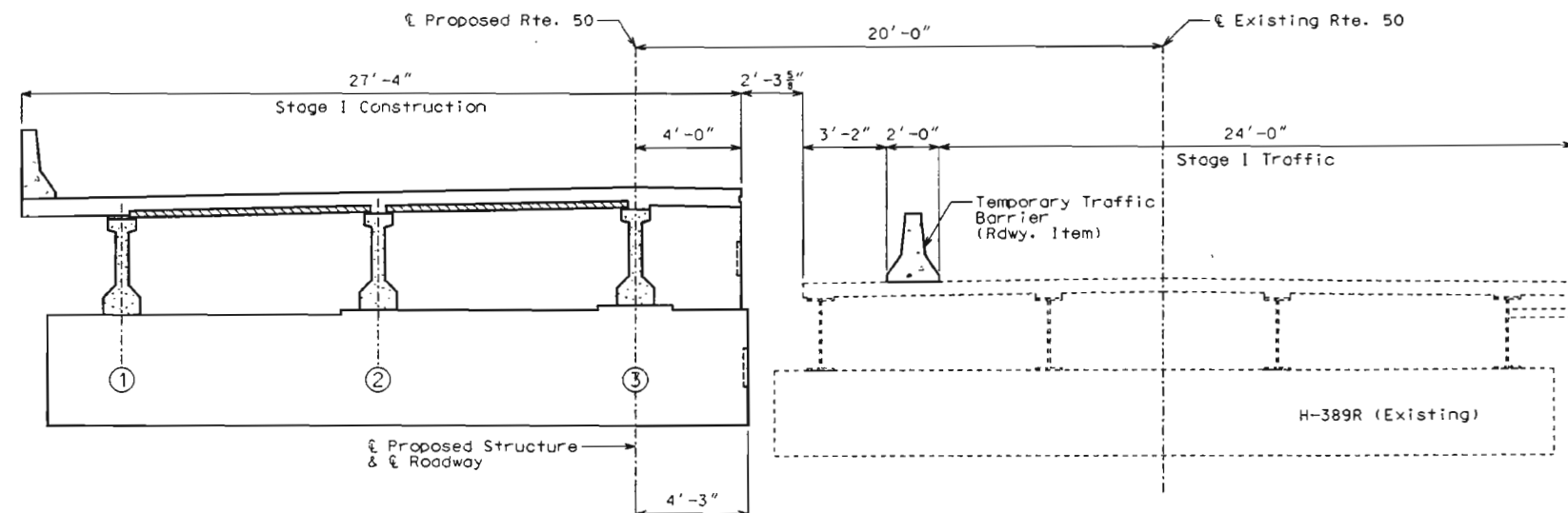
Manufactured pile point reinforcement shall be used on all piles in this structure at Bents 1, 2, & 5. See Special Provisions.



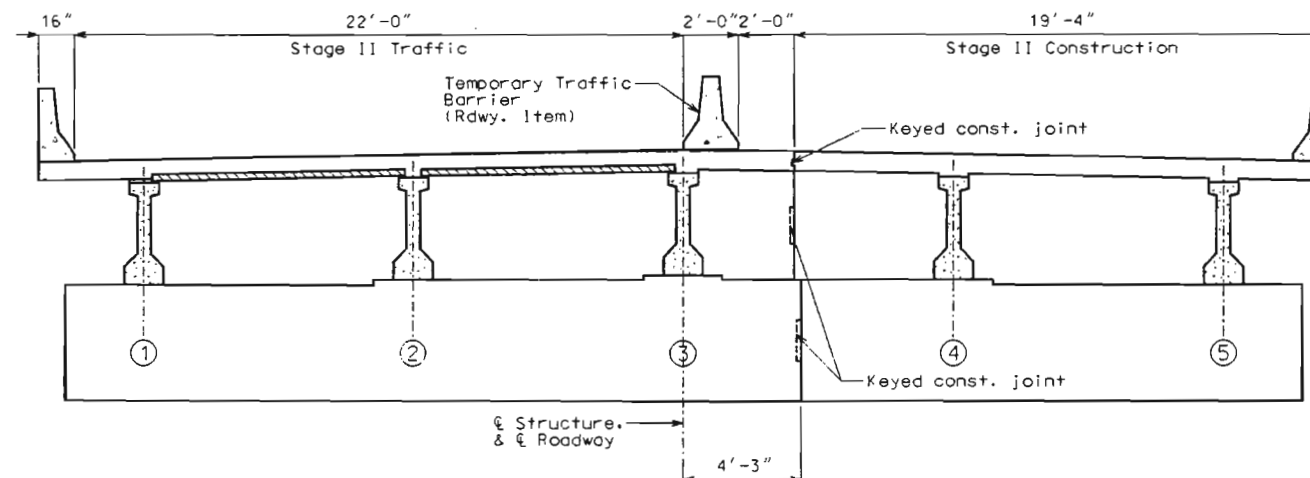
Curve Data:
T.S. = 1488+57.88
S.S. = 1490+22.88
S.T. = 1491+87.88
Ls = 165.00'
Bs = 0°36'7"
Xs = 164.99'
Ys = 1.73'



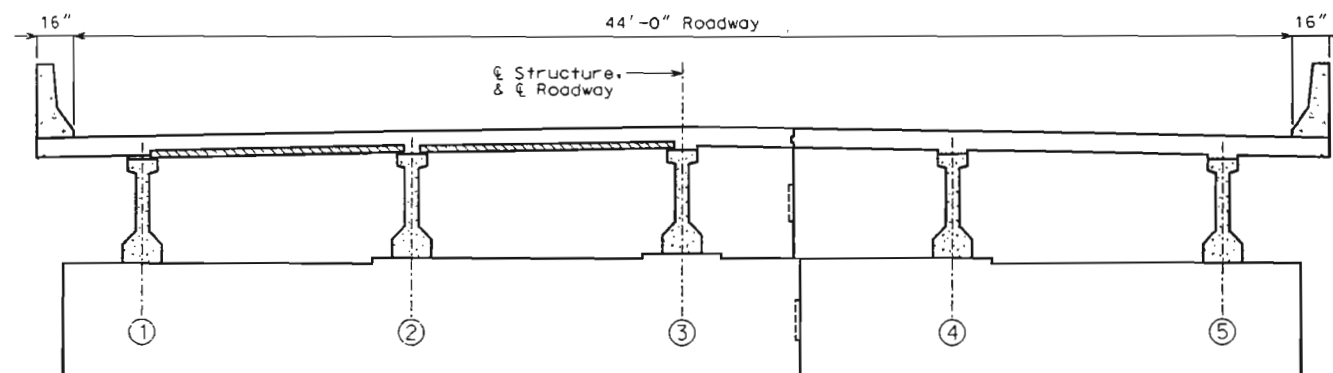
State	Proj. No.	Sheet No.
MO		B 3



STAGE I CONSTRUCTION & STAGE I TRAFFIC



STAGE II CONSTRUCTION & STAGE II TRAFFIC



FINAL ROADWAY
DETAILS OF STAGED CONSTRUCTION

Note:
Prestressed Panels may only be used
in girder bays (1-2) & (2-3) as shown
at left.
Light dashed lines indicate old work.
Heavy solid lines indicate new work.

Detailed Aug 2001
Checked Aug 2001

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

Sheet No. 3 of 33

FRANKLIN COUNTY A6361



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TEST DATA

Depth. ft.	SPT Blows/6"	N ₆₀	Pocket Pen., tsf
5.0	3-5-2	9	1.25
10.0	1-1-2	4	0.50
15.0	2-2-9	14	Sand
20.0	13-9-7	20	Sand
25.0	11-10-11	26	Sand
30.0	5-6-11	21	0.25
35.0	3-1-24	31	Sand

Elev. 496.20	Brown lean clay, trace cobbles, medium stiff, moist.
Elev. 492.80	Tan lean clay, scattered gravel and cobbles, medium stiff, moist.
Elev. 490.40	Brown lean clay, trace gravel, soft to medium stiff, moist.
Elev. 485.10	Gray lean clay, medium stiff, moist.
Elev. 480.20	Gray medium grained sand, scattered gravel, loose to medium dense, wet.
Elev. 467.70	Gray fat clay, scattered sandstone layers.
Elev. 460.20	Weathered rock, rockbit.
Elev. 459.00	Light gray and tan fine and medium grained dolomite, very thin to medium bedded, hard.
Elev. 456.20	Light gray and tan medium grained sandstone, very thin to medium bedded, medium hard, weathered sandstone with green staining from 44.9' to 45.5'.
Elev. 449.20	

①
CORE

Elev. 504.20	Brown lean sandy clay, moist.
Elev. 503.10	
	Brown lean to fat clay, scattered gravel and cobbles, medium stiff, moist.
Elev. 490.40	
	Gray fat clay, scattered sand, moist.
Elev. 474.90	
	Gray fat clay, scattered sandstone seams to layers.
Elev. 459.80	Moderately hard rock.
Elev. 456.70	Soft clay.
Elev. 451.40	Moderately hard rock.
Elev. 450.50	Hard rock, possibly sandstone.
Elev. 449.20	

②

TEST DATA

Depth. ft.	SPT Blows/6"	N ₆₀	Pocket Pen., tsf
5.0	1-1-1	3	0.25
10.0	5-2-3	6	--
15.0	20-15-26	51	--
20.0	20-9-10	24	No Sample
25.0	35-55	113	Sandstone

BORING DATA

For location of borings see sheet no. 1.

TEST DATA

Depth. ft.	SPT Blows/6"	N ₆₀	Pocket Pen., tsf
5.0	2-4-3	9	1.75
10.0	1-1-2	4	Gravelly
15.0	1-2-3	6	Gravelly
20.0	1-3-2	6	Gravelly
25.0	2-12-5	21	Gravelly
30.0	2-11-56	84	Sand
35.0	49-21 in 3.5"	--	Sand

Elev. 511.98	Brown lean sandy clay, moist.
Elev. 511.58	Base rock, moist.
Elev. 510.98	Gravel, with tan lean clay and cobbles.
Elev. 507.18	Tan lean clay, with gravel, scattered cobbles, medium stiff, moist.
Elev. 491.78	Gravelly tan lean clay, scattered cobbles, moist.
Elev. 483.08	Boulder, hard.
Elev. 482.08	Light gray medium grained sand, dense.
Elev. 479.38	White to light gray sandstone, medium hard.
Elev. 473.18	Light tan medium grained sandstone, very thin bedded, medium hard.
Elev. 470.88	White dolomite medium grained sandstone, moderately hard.
Elev. 468.08	Sandy chert layer.
Elev. 467.68	Brown weathered sandstone.
Elev. 466.68	Brown medium grained sandstone, medium hard.
Elev. 466.18	Brown and light gray medium grained sandstone, thin bedded, hard.
Elev. 462.68	Tan and light gray to white dolomite, medium grained, moderately hard rock.
Elev. 458.18	

⑤
CORE

Elev. 489.40	Brown lean clay, scattered gravel and cobbles, medium stiff, moist.
Elev. 487.60	Brown lean clay, trace sand, soft, moist.
Elev. 478.60	Gray lean clay, with sand and gravel, medium stiff, moist.
Elev. 476.30	Gray sand and gravel, scattered cobbles.
Elev. 471.80	Gray lean clay, with sand and gravel.
Elev. 466.90	Light gray sandstone, medium grained, medium hard.
Elev. 461.30	Light gray dolomite, medium grained, very thin to medium bedded, trace white very fine grained seams, hard.
Elev. 455.50	Light tan and light gray fine grained dolomite, thin bedded, hard.
Elev. 454.20	Light gray and brown sandstone, medium grained, hard.
Elev. 453.90	Clay seam.
Elev. 453.60	Light gray medium grained sandstone, thin to medium bedded, hard.
Elev. 451.30	

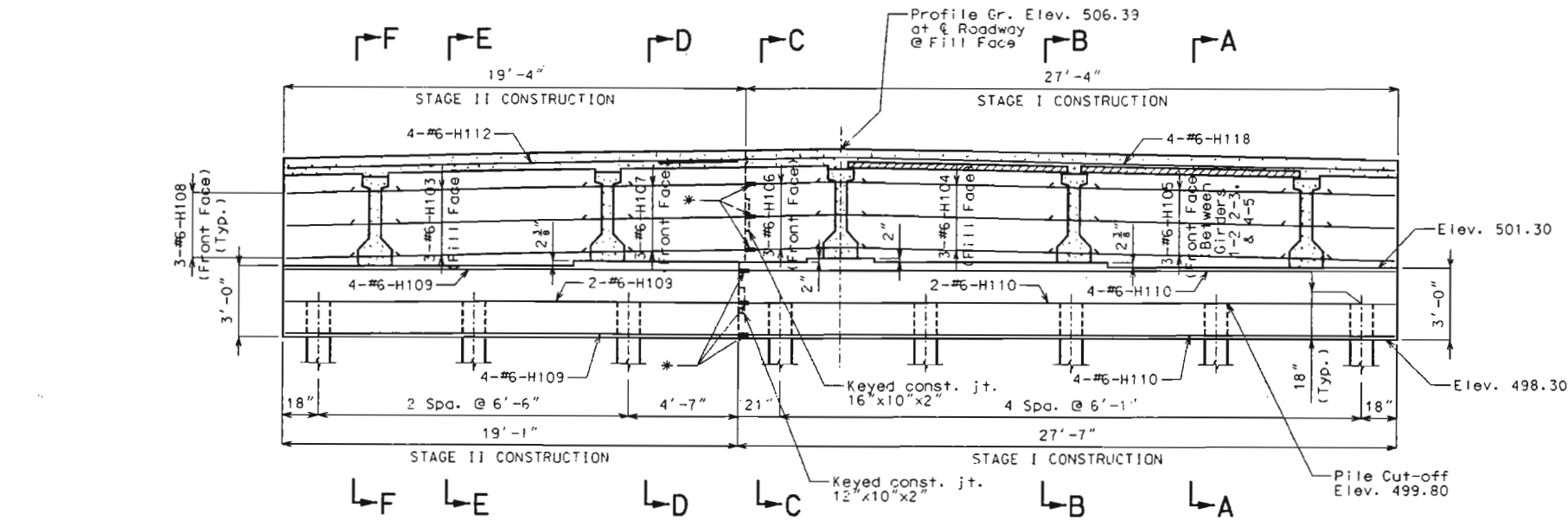
③
CORE

Elev. 489.00	Brown lean clay, with gravel and cobbles, medium stiff, moist.
Elev. 487.50	Brown lean clay, very soft, very moist.
Elev. 478.60	Gray lean clay, with sand, very soft, wet.
Elev. 474.00	Gravel and cobbles.
Elev. 467.40	Moderately hard rock, possibly sandstone.
Elev. 462.30	

④



State	Proj. No.	Sheet No.
MO		B6

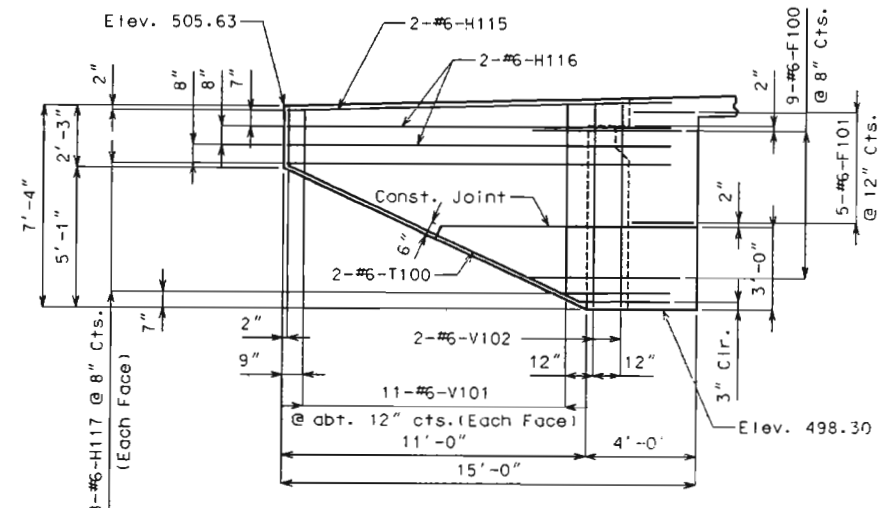


Substructure Quantity Table for Bent No. 1		
Item		Quantity
Class 1 Excavation	Cu. Yds.	45
Structural Steel Pile (10")	Lin. Ft.	384
Pile Point Reinforcement	Each	8
Class B Concrete (Substructure)	Cu. Yds.	15.3

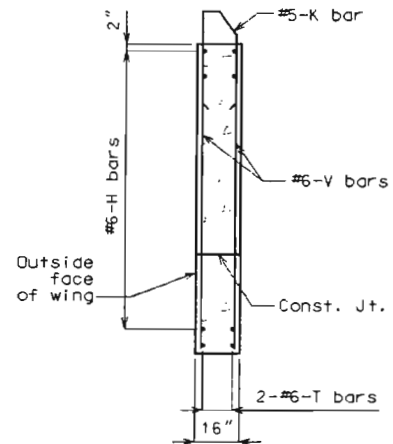
Note: These quantities are included in the estimated quantities table on sheet no. 2.

Note: See Sheet No. 5 for location of Elevation G-G & H-H.

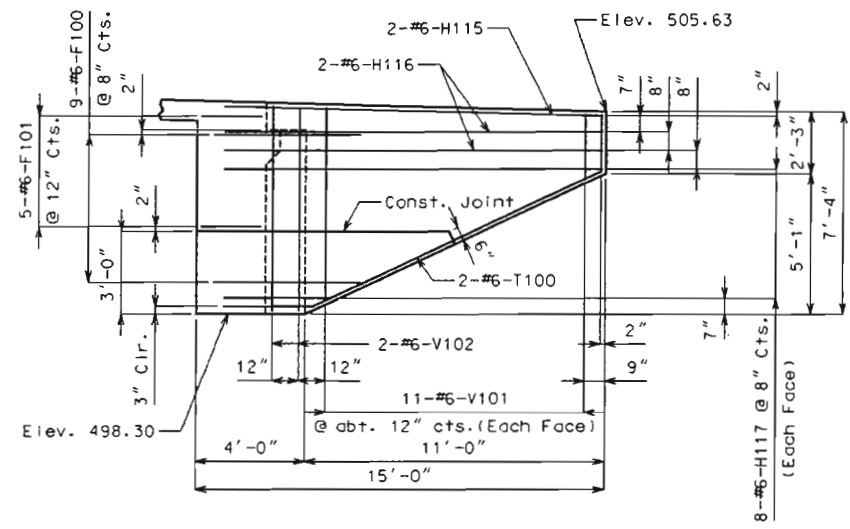
* Mechanical Bar Splice



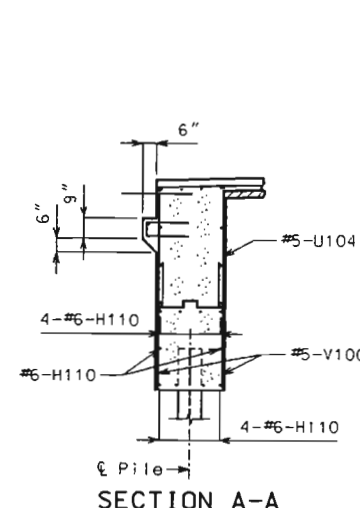
ELEVATION G-G



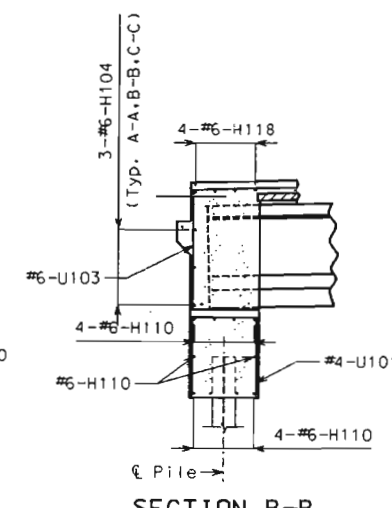
TYPICAL SECTION THRU WING



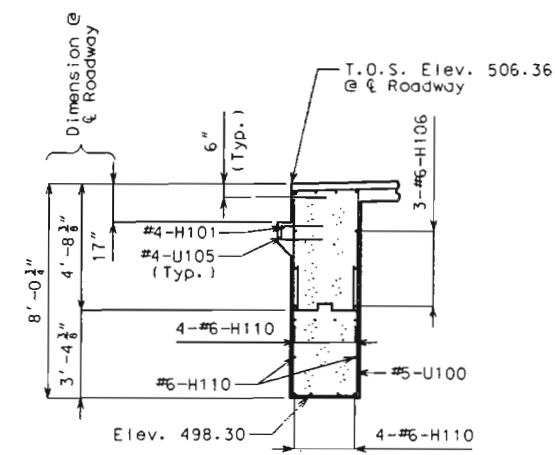
ELEVATION H-H



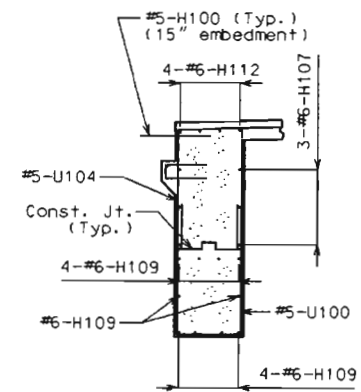
SECTION A-A



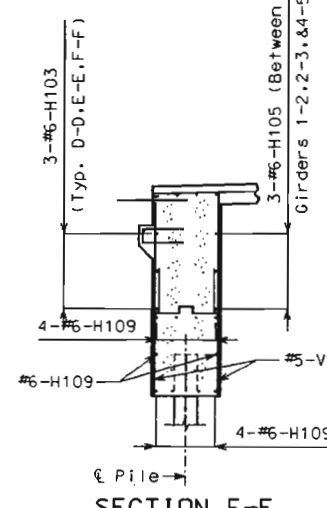
SECTION B-B



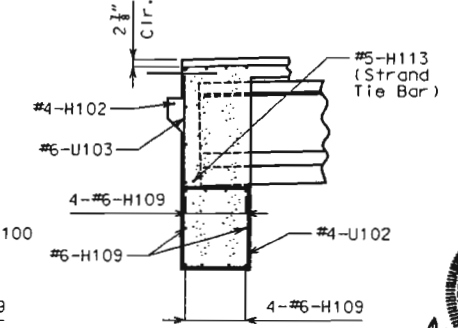
SECTION C-C
DETAILS OF END BENT NO. 1



SECTION D-D



SECTION E-E



SECTION F-F

Detailed July 2001
Checked Sept 2001

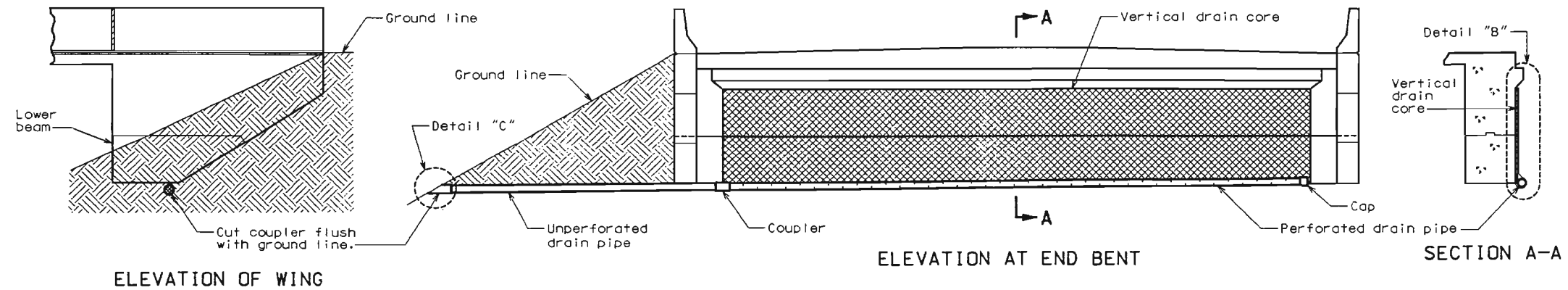
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 6 of 33

FRANKLIN COUNTY A6361

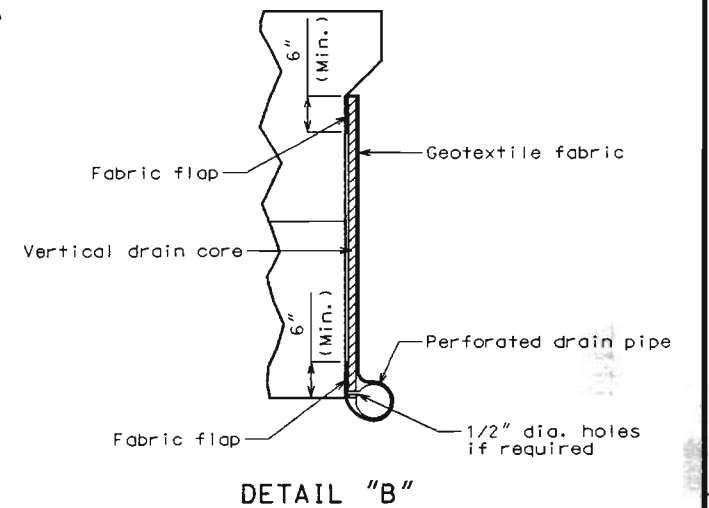
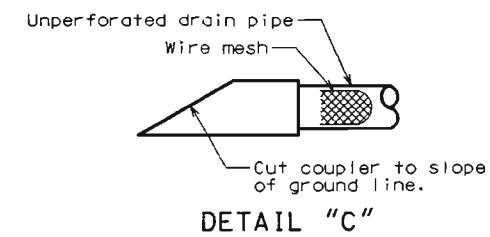
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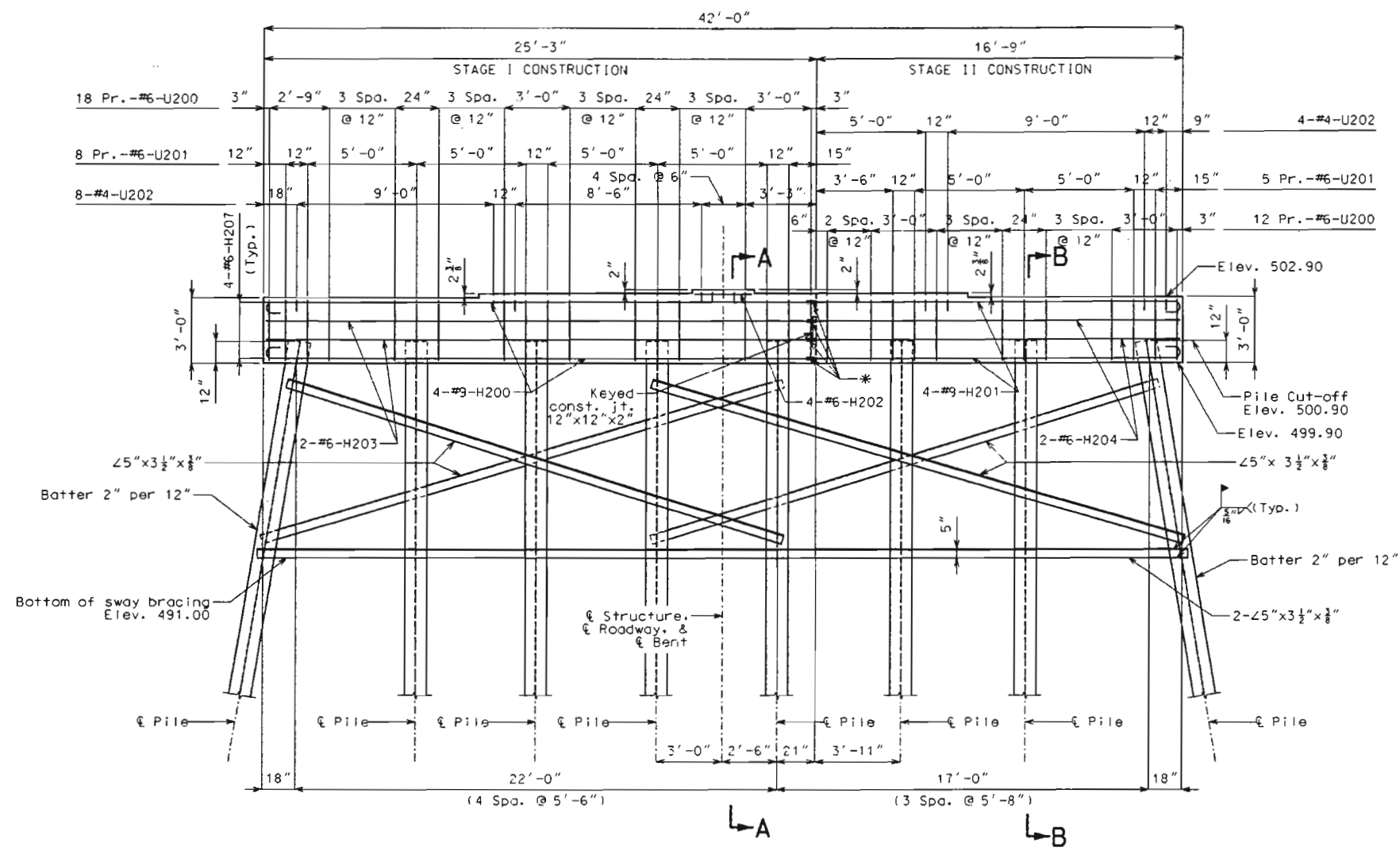
State	Proj. No.	Sheet No.
MO		57



Note:
 Drain pipe may be either 6" diameter corrugated metallic-coated steel pipe underdrain, 4" diameter corrugated polyvinyl chloride (PVC) drain pipe, or 4" diameter corrugated polyethylene (PE) drain pipe.
 Place drain pipe at fill face of end bent and slope to lowest grade of ground line, also missing the lower beam of end bent by 1-1/2". (See elevation at end bent.)
 Perforated pipe shall be placed at fill face side at the bottom of end bent and plain pipe shall be used where the vertical drain ends to the exit at ground line.

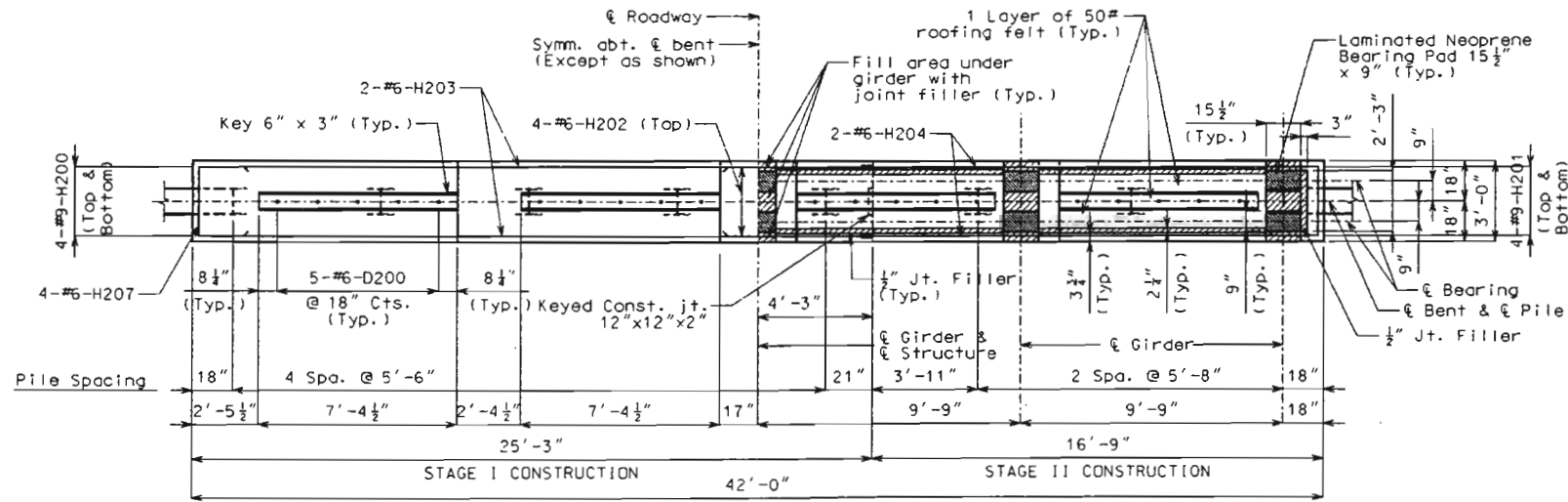
VERTICAL DRAIN AT END BENTS





ELEVATION

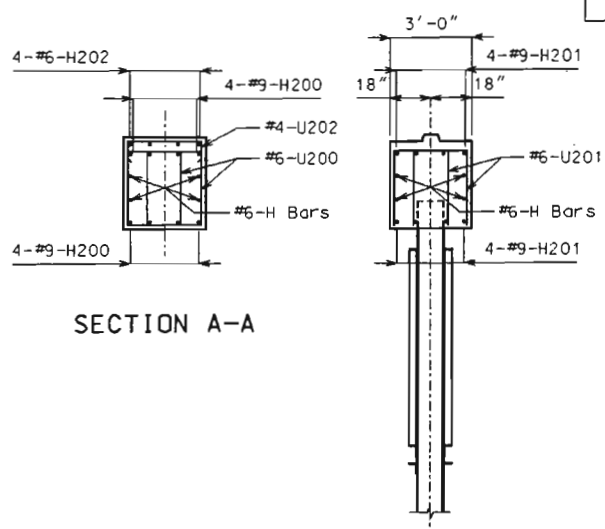
(Key in Elevation not shown for clarity)



PLAN OF BEAM

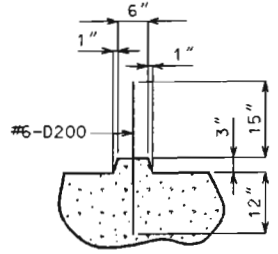
DETAILS OF INTERMEDIATE BENT NO. 2

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



SECTION A-A

SECTION B-B



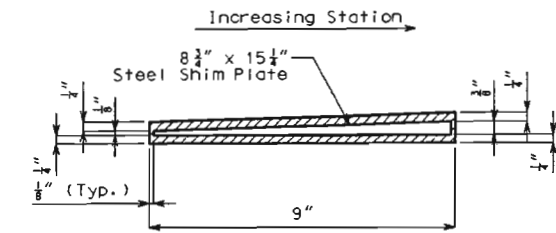
DETAIL OF KEY

Substructure Quantity Table for Bent No. 2		
Item	Unit	Quantity
Structural Steel Pile (14")	Lin. Ft.	416
Pile Point Reinforcement	Each	8
Class B Concrete (Substructure)	Cu. Yds.	14.6
Reinforcing Steel (Bridges)	Lbs.	2830
Mechanical Bar Splice	Each	12
Fabricated Structural Carbon Steel (Misc.)	Lbs.	1910

Note: These quantities are included in the estimated quantities table on Sheet No. 2.

* Mechanical Bar Splice:

The contractor shall use a mechanical bar splice for bars at the specified location. The total bar lengths for the #6-H203 & H204 and #9-H200 & H201 bars shown in the Bill of Reinforcing Steel are determined based on the end of the bars being located flush to the face of the construction joint. Extra bar lengths from that specified in the bar list may be required depending on the specific splice system to be used. No payment will be made for additional bar lengths added. See job special provisions for additional requirements of mechanical bar splices. Mechanical bar splices for epoxy coated bars shall be epoxy coated.



DETAIL OF LAMINATED NEOPRENE BEARING PAD

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



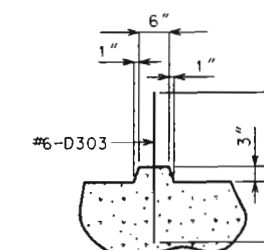
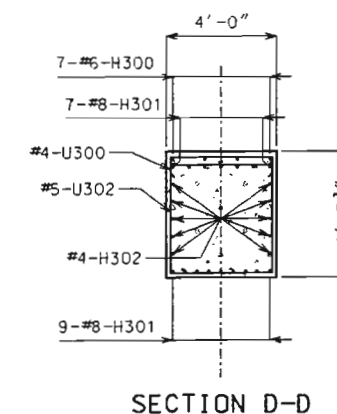
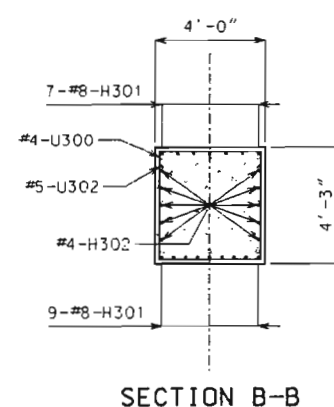
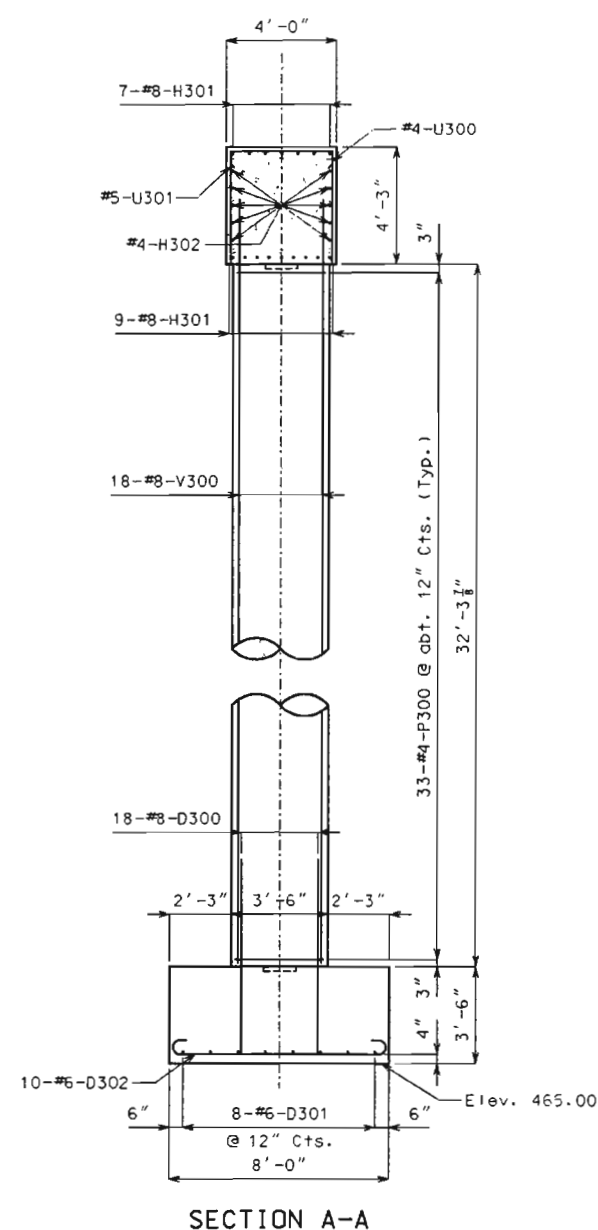
Detailed July 2001
Checked Sept 2001

Sheet No. 8 of 33

FRANKLIN COUNTY A6361

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State	Proj. No.	Sheet No.
MO		B/10

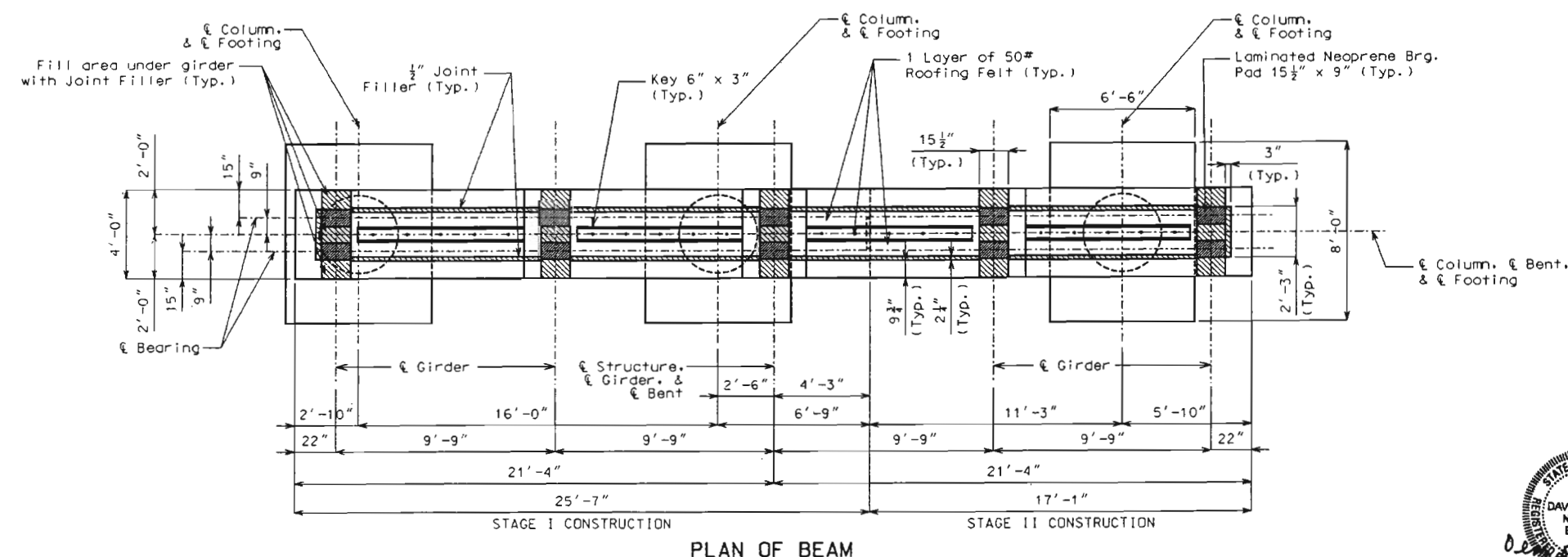


Notes:

For steps 2" or more, use 2-1/4" x 1/2" joint filler up vertical face.

Work with Sheet No. 9.

For location of Sections A-A, B-B, & D-D, see Sheet No. 9.



DETAILS OF INTERMEDIATE BENT 3

Detailed June 2001
Checked Sept 2001

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

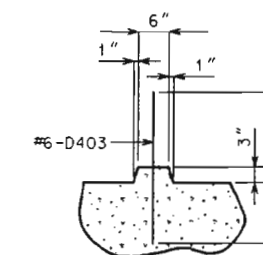
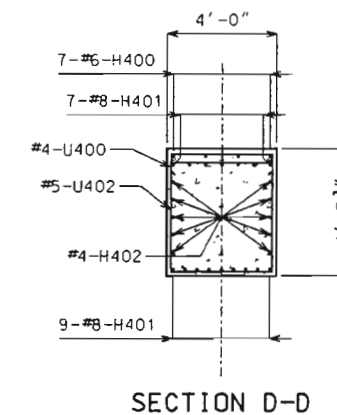
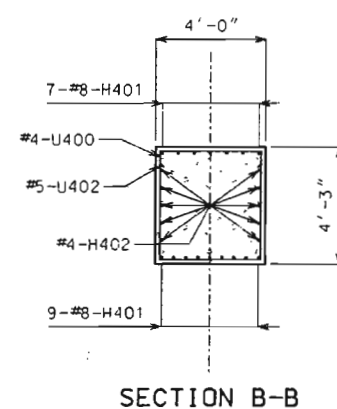
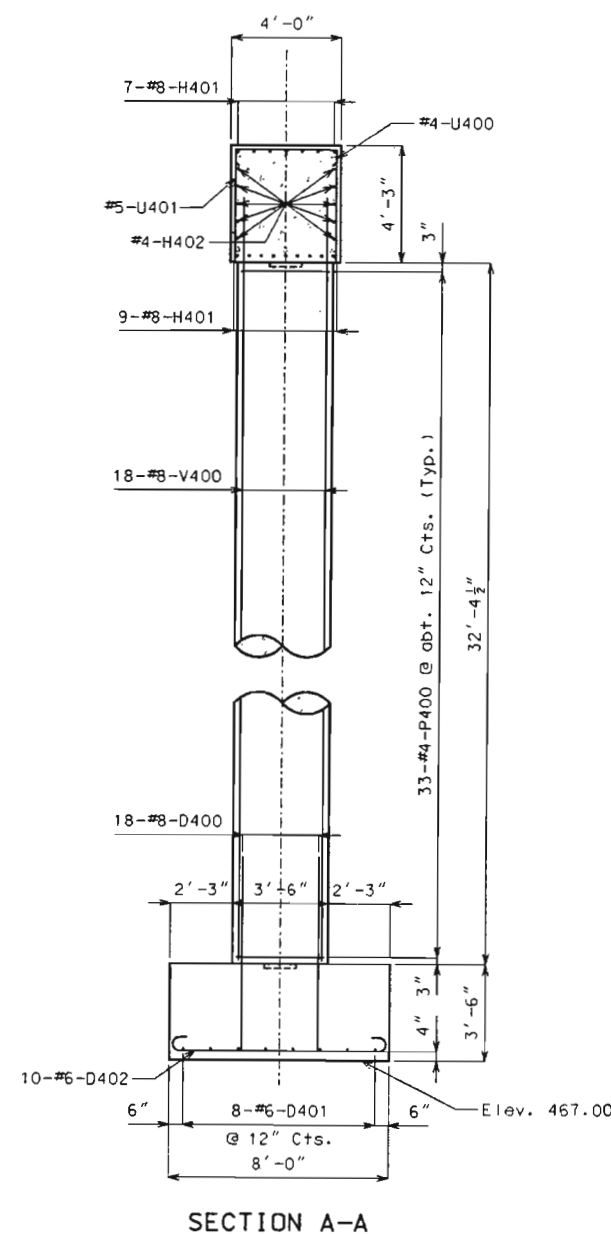
Sheet No. 10 of 33

FRANKLIN COUNTY A6361

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State	Proj. No.	Sheet No.
MO		12

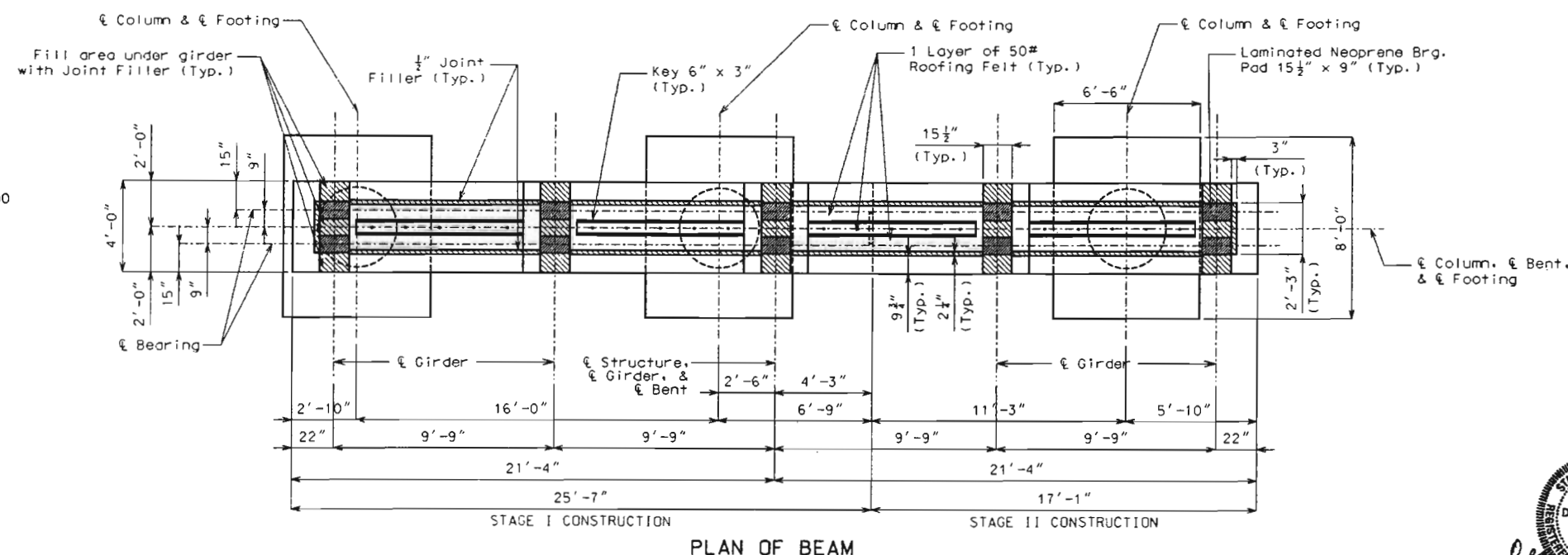


Notes:

For steps 2" or more, use 2-1/4" x 1/2" joint filler up vertical face.

Work with Sheet No. 11.

For location of Sections A-A, B-B, & D-D, see Sheet No. 11.



DETAILS OF INTERMEDIATE BENT 4

Detailed June 2001
Checked Sept 2001

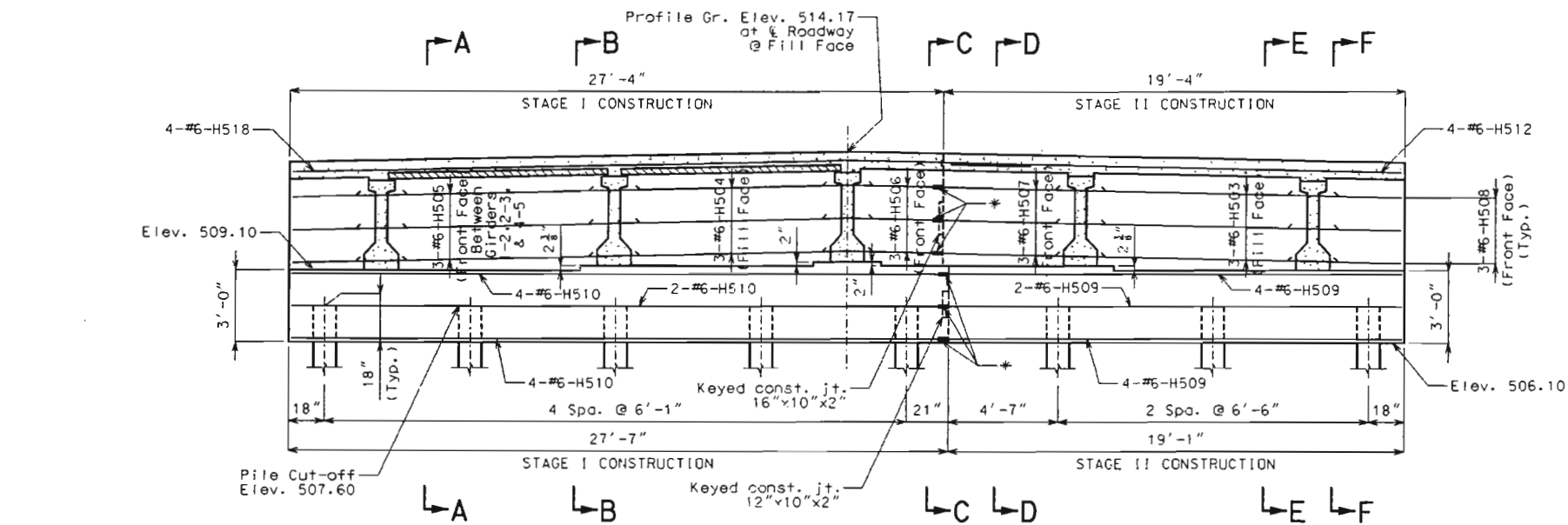
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 12 of 33

FRANKLIN COUNTY A6361



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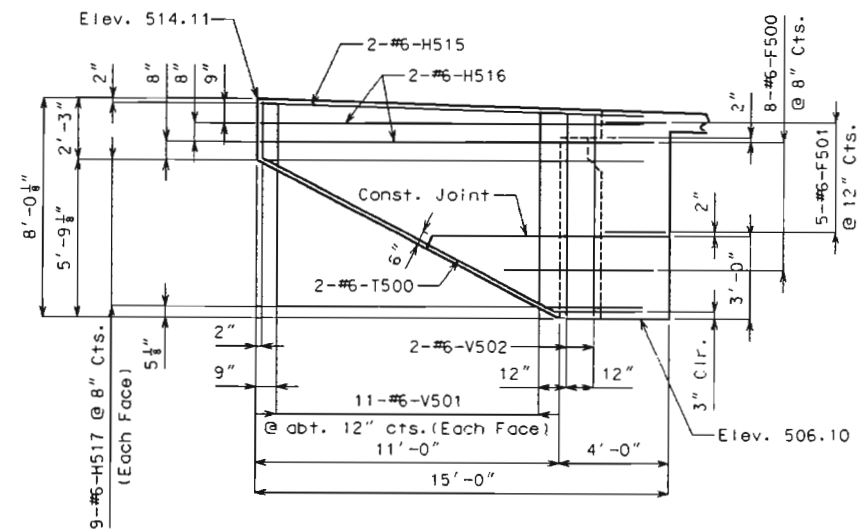


Substructure Quantity Table for Bent No. 5		
Item		Quantity
Class 1 Excavation	Cu. Yds.	40
Structural Steel Pile (10")	Lin. Ft.	400
Pile Point Reinforcement	Each	8
Class B Concrete (Substructure)	Cu. Yds.	15.1

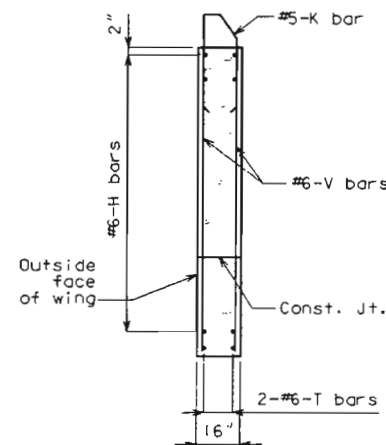
Note: These quantities are included in the estimated quantities table on sheet no. 2.

Note: See Sheet No. 13 for location of Elevation G-G & H-H.

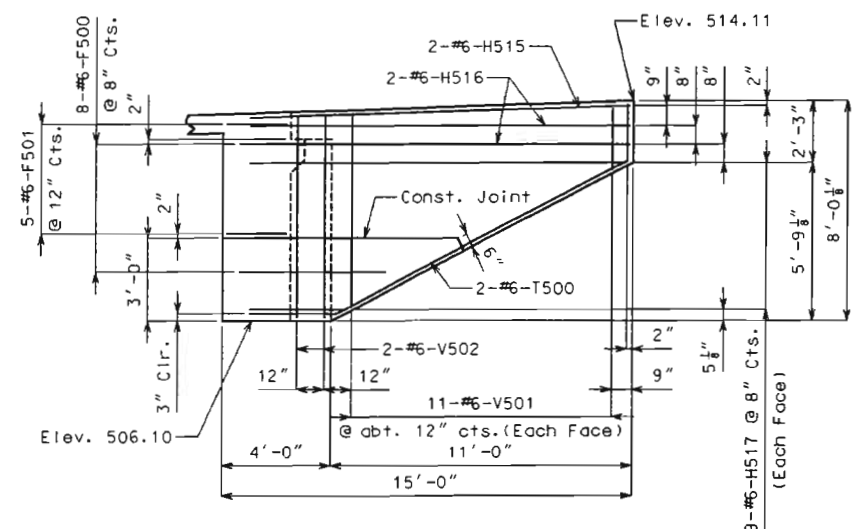
* Mechanical Bar Splice



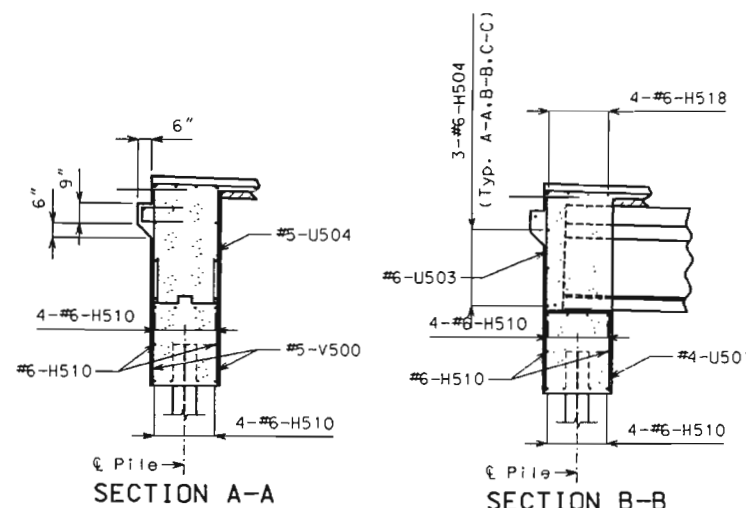
ELEVATION G-G



TYPICAL SECTION THRU WING

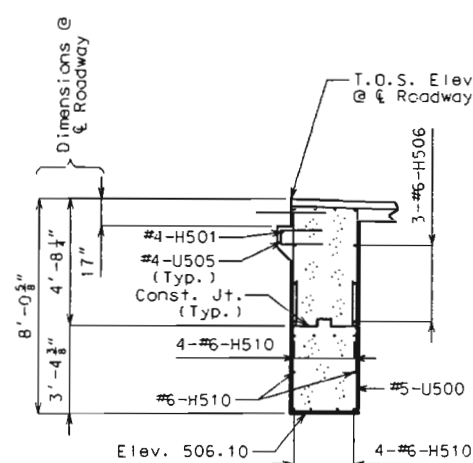


ELEVATION H-H

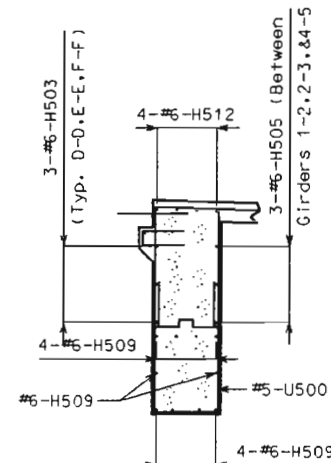


SECTION A-A

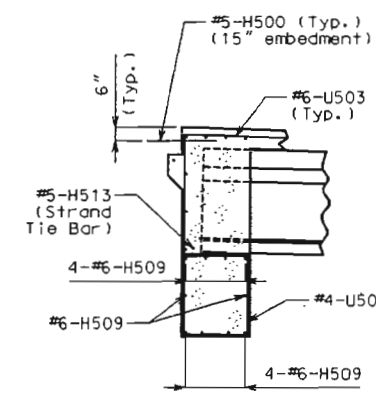
SECTION B-B



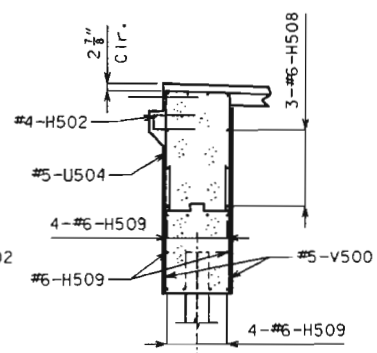
SECTION C-C



SECTION D-D



SECTION E-E



SECTION F-F

DETAILS OF END BENT NO. 5

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

Sheet No. 14 of 33

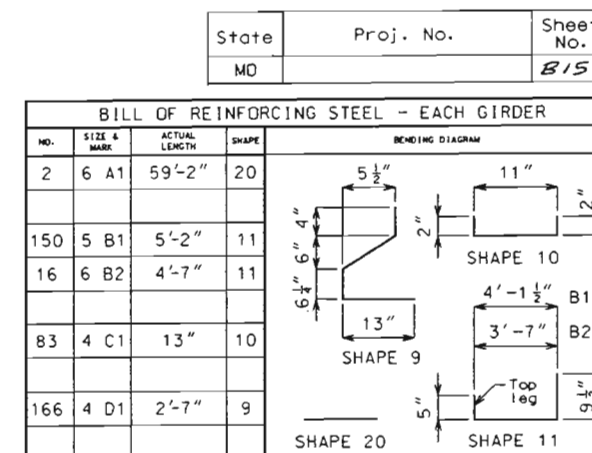
FRANKLIN COUNTY A6361

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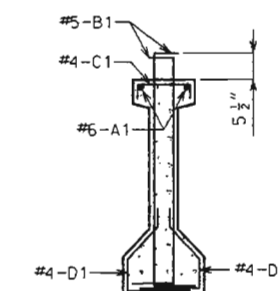


Detailed July 2001
Checked Sept 2001

REV.



All B1 bars shall be epoxy coated.



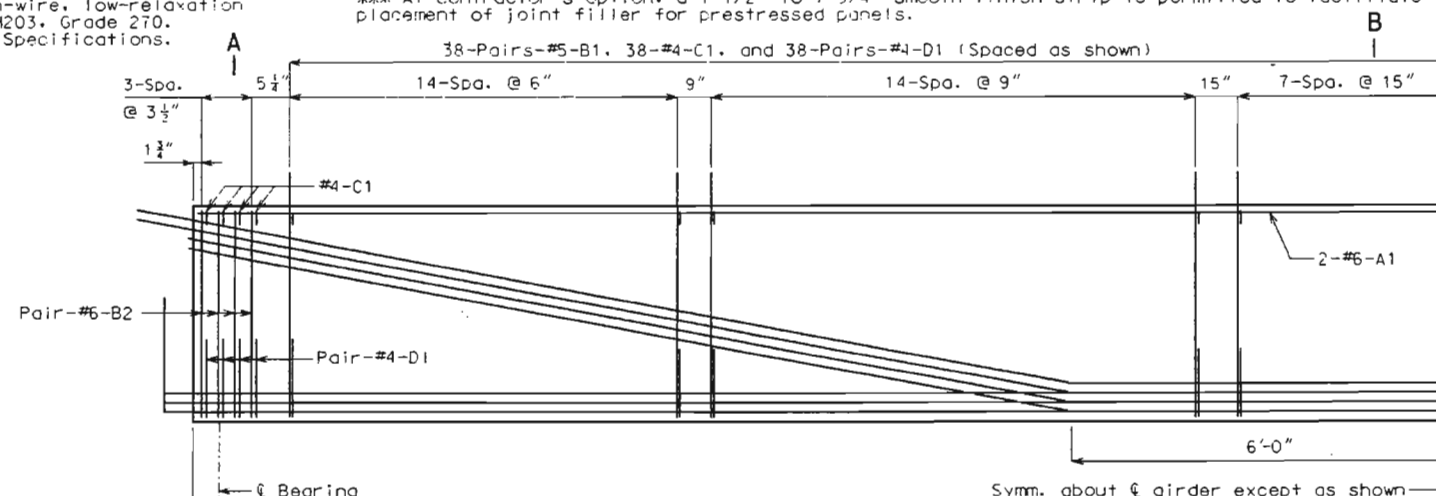
SECTION B-B
Strands not shown for clarity.

For Girder Camber Diagram, see sheet
no. 22.

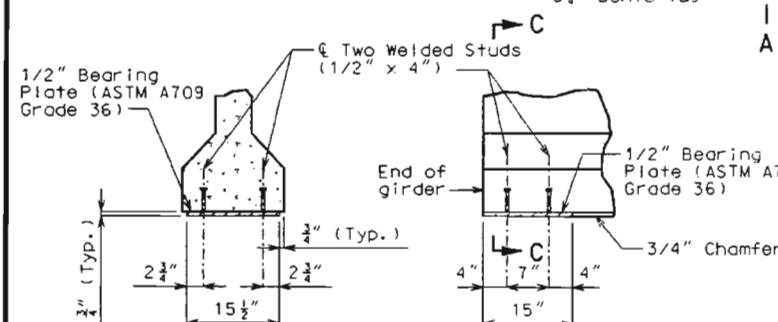


DATE 10-29-0

SECTION A-A
Strands not shown for clarity.



HALF ELEVATION OF GIRDER SPAN (1-2) & (4-5)
Exterior and interior girders are the same except for coil ties.



SECTION C-C PART ELEVATION AT
END OF GIRDER

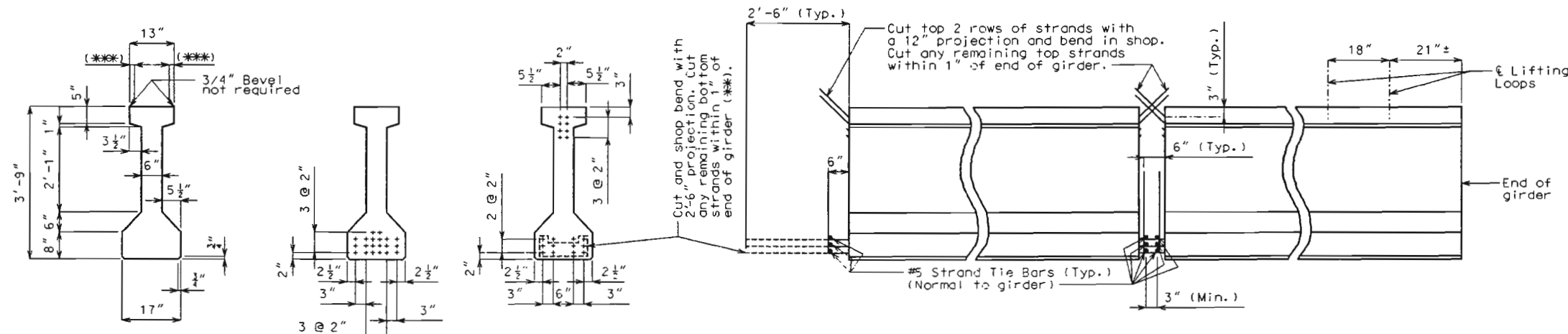
BEARING PLATE DETAILS

DETAILS OF COIL TIES

FRANKLIN COUNTY

A636

State	Proj. No.	Sheet No.
MO		517



GIRDER DIMENSIONS

END OF GIRDER STRAND ARRANGEMENTS

INTERMEDIATE BENT STRAND DETAILS AT GIRDER ENDS

LOCATION OF LIFTING LOOPS

Concrete for prestressed girders shall be Class A1 with $f'c = 6000$ psi and $f'ci = 4500$ psi.

(+) Indicates prestressing strand.

Use 20 strands with an initial prestress force of 620 kips.

Prestressing tendons shall be uncoated, seven-wire, low-relaxation strands, 1/2 inch diameter conforming to AASHTO M203, Grade 270. See Section 705.4.8 of the Missouri Standard Specifications.

At the contractor's option, the location for bent-up strands may be varied from that shown. The total number of bent-up strands shall not be changed.

One strand tie bar is required for each layer of bent-up strands except at end bents which require one bar on the bottom layer of strands only. No additional payment will be made if additional strand tie bars are required.

At contractor's option, a 1-1/2" to 1-3/4" smooth finish strip is permitted to facilitate placement of joint filler for prestressed panels.

All dimensions in bending diagram are out to out.

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

Actual lengths are measured along centerline of bar to the nearest inch.

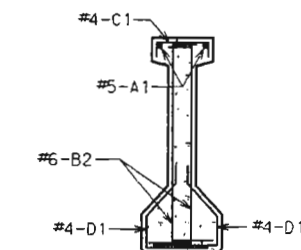
Minimum clearance to reinforcing shall be 1".

All reinforcement shall be Grade 60.

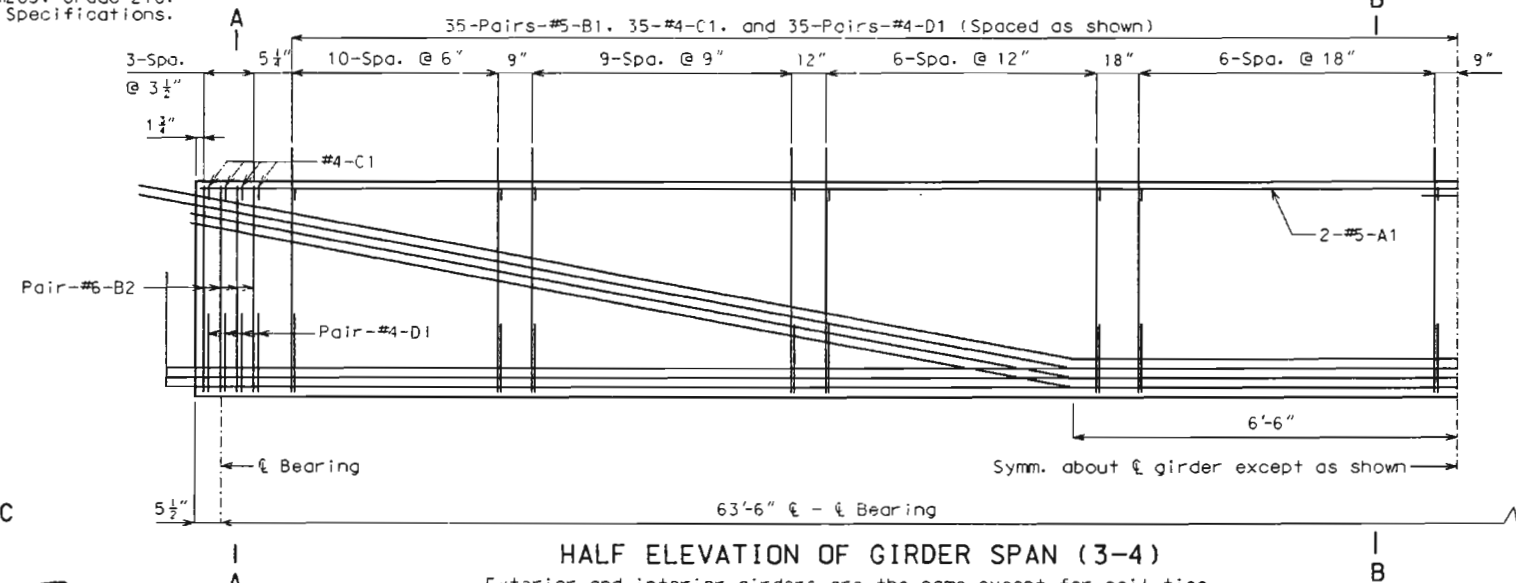
The two D1 bars may be furnished as one bar at the fabricator's option.

All B1 bars shall be epoxy coated.

BILL OF REINFORCING STEEL - EACH GIRDER				
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAM
4	5 A1	32'-11 1/2"	20	
140	5 B1	5'-2"	11	
16	6 B2	4'-7"	11	
78	4 C1	13"	10	
156	4 D1	2'-7"	9	

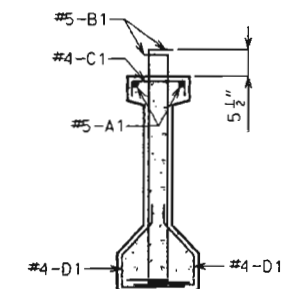


SECTION A-A
Strands not shown for clarity.

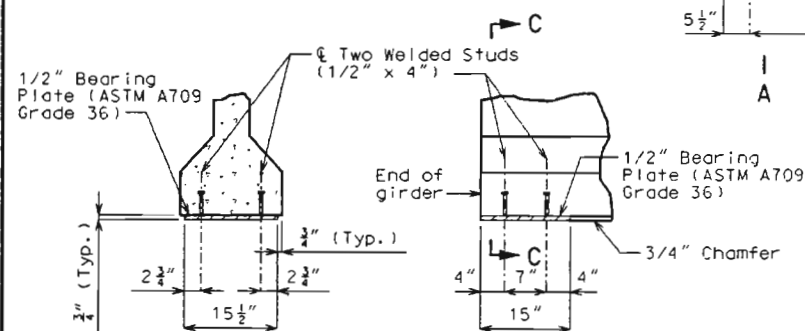


HALF ELEVATION OF GIRDER SPAN (3-4)

Exterior and interior girders are the same except for coil ties.



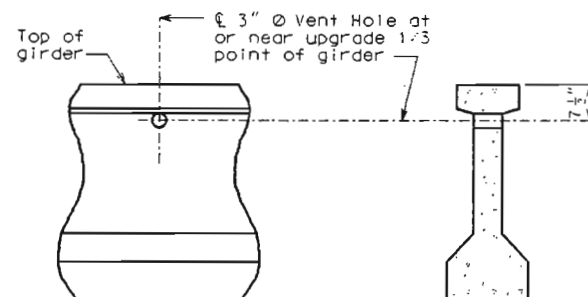
SECTION B-B
Strands not shown for clarity.



SECTION C-C
PART ELEVATION AT
END OF GIRDER
BEARING PLATE DETAILS

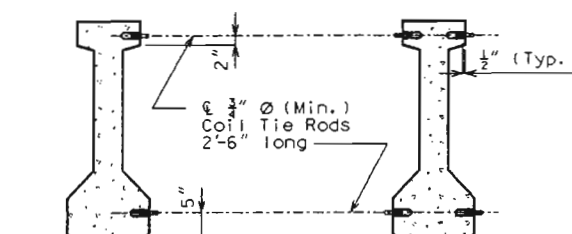
Galvanize the 1/2" bearing plate (ASTM A709 Grade 36) in accordance with ASTM A123.

Cost of furnishing, galvanizing, and installing the 1/2" bearing plate (ASTM A709 Grade 36) and welded studs in the prestressed girder shall be included in the price bid for Prestressed Concrete I-girder per each.



PART ELEVATION
OF GIRDER
PART SECTION NEAR
VENT HOLE

Place vent holes at or near upgrade 1/3 point of girders and clear reinforcing steel or strands by 1-1/2" minimum and steel intermediate diaphragm bolt connections by 6" minimum.



EXTERIOR GIRDERS
AT INT. BENTS
INTERIOR GIRDERS
AT ALL BENTS

DETAILS OF COIL TIES

Cost of 3/4" coil tie rods placed in diaphragms is included in contract unit price for Prestressed Concrete I-Girder.

Coil ties shall be held in place in the forms by slotted wire-setting-studs projecting thru forms. Studs are to be left in place or replaced with temporary plugs until girders are erected, then replaced by coil tie rods.

For location of coil inserts at slab drain, see sheet no. 21

For location of coil ties, see sheets no. 19.

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

For detail of diaphragms, see sheets no. 18 & 19.

For Girder Camber Diagram, see sheet no. 22.



Detailed July 2001
Checked Aug 2001

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

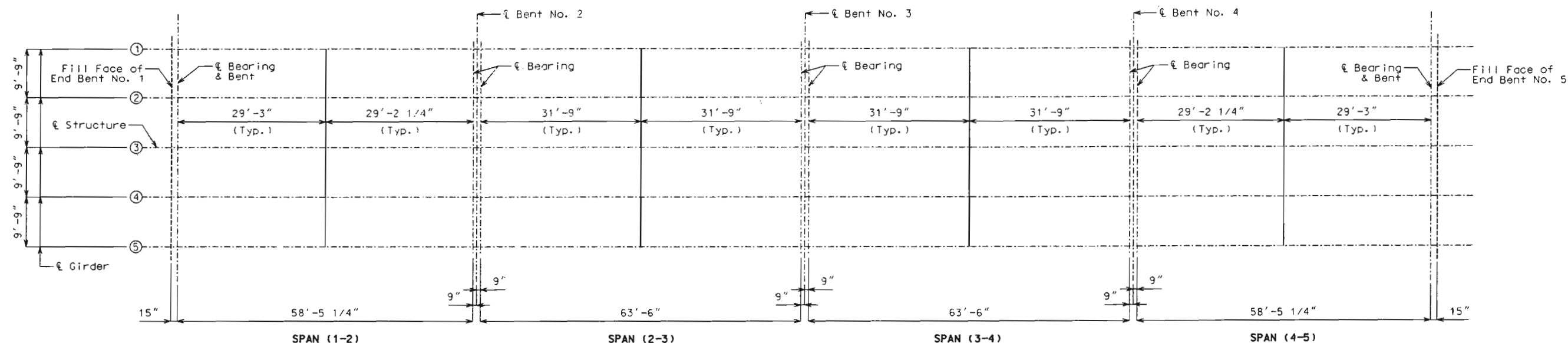
Sheet No. 17 of 33

FRANKLIN COUNTY

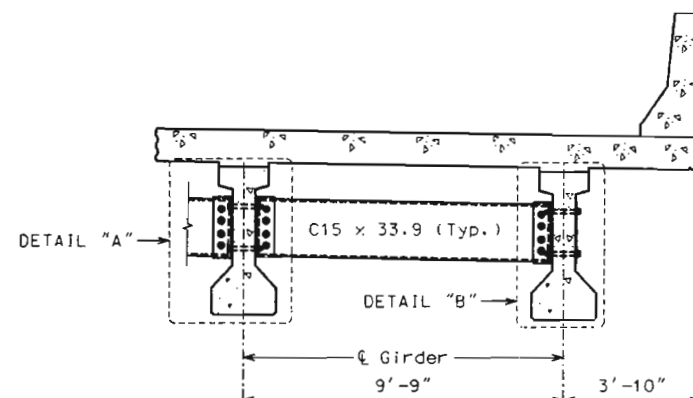
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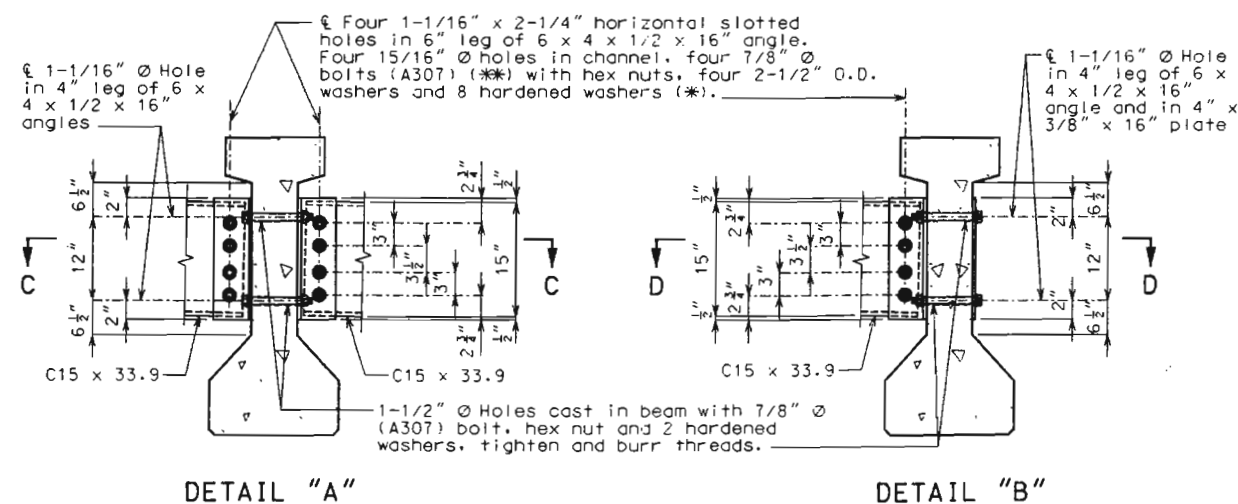
State	Proj. No.	Sheet No.
MO		B/8



LOCATION OF INTERMEDIATE DIAPHRAGMS

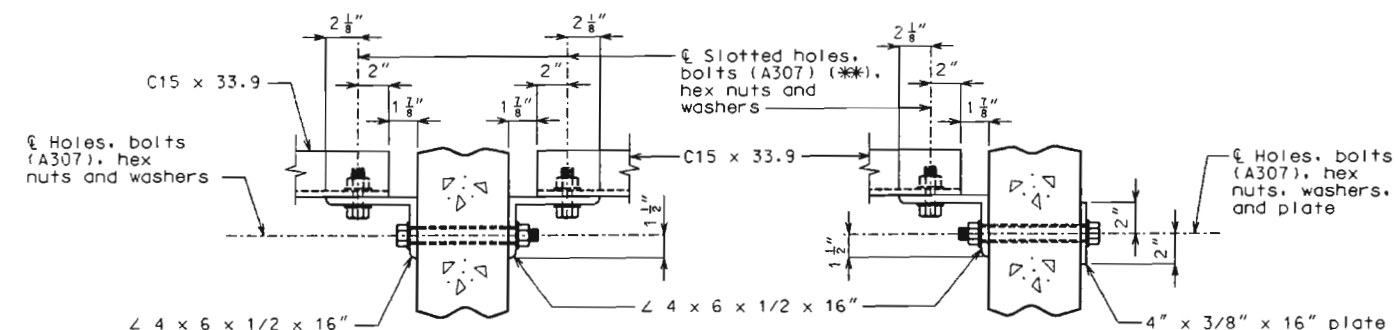


PART SECTION SHOWING INTERMEDIATE DIAPHRAGMS



DETAIL "A"

DETAIL "B"



SECTION C-C

SECTION D-D

STEEL DIAPHRAGM NOTES:

- (*) In lieu of 2-1/2" outside diameter washers, contractor may substitute a 3/16" (Min. thickness) plate with four 15/16" \varnothing holes and one hardened washer per bolt.
- (**) These bolts shall be tightened to provide a tension of one-half that specified by Section 712.10.2. of the Missouri Standard Specifications. A325 bolts may be substituted for and installed in accordance with the requirements for the specified A307 bolts.
- All diaphragm materials including bolts, nuts, and washers shall be galvanized.
- Fabricated structural steel shall be ASTM A709 Grade 36 except as noted.
- Payment for furnishing and installing steel intermediate diaphragms shall be included in the contract unit price for Prestressed Concrete I-Girders.
- Shop drawings will not be required for steel intermediate diaphragms and angle connections.

STEEL INTERMEDIATE DIAPHRAGM DETAILS

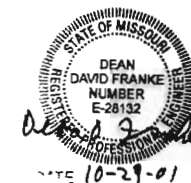
Detailed July 2001
Checked Aug 2001

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

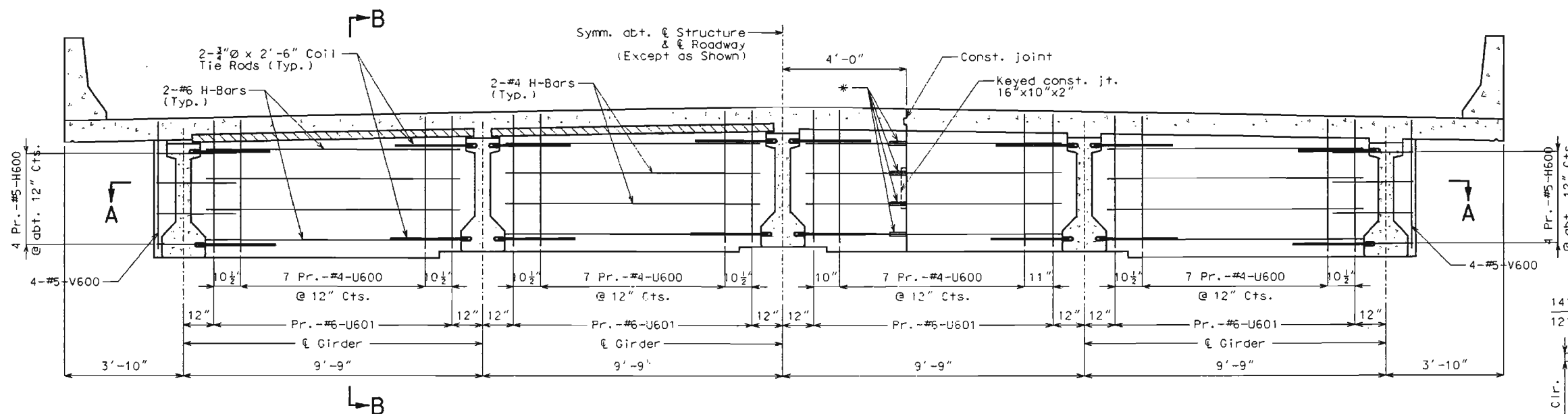
Sheet No. 18 of 33

FRANKLIN COUNTY A6361

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State	Proj. No.	Sheet No.
MO		B19

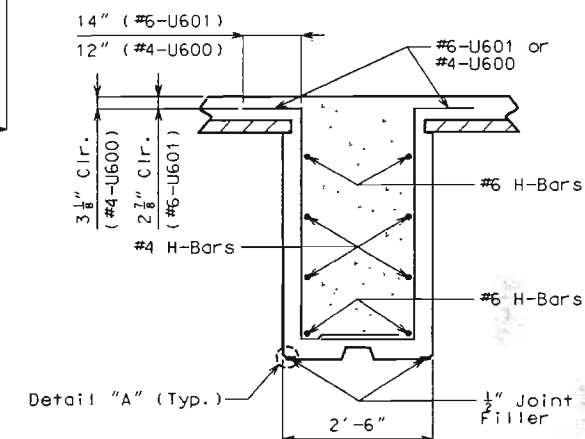


*** Mechanical Bar Splice:**

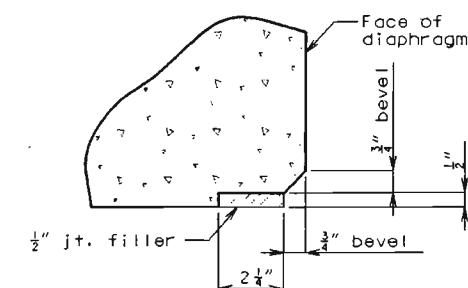
The contractor shall use a mechanical bar splice for the bars at the specified location. The total bar lengths for the #4-H603 & H606 and #6-H604 & H605 bars shown in the Bill of Reinforcing Steel are determined based on the end of the bars being located flush to the face of the construction joint. Extra bar lengths from that specified in the bar list may be required depending on the specific splice system to be used. No payment will be made for additional bar lengths added. See job special provisions for additional requirements of mechanical bar splices. Mechanical bar splices for epoxy coated bars shall be epoxy coated.

Note:

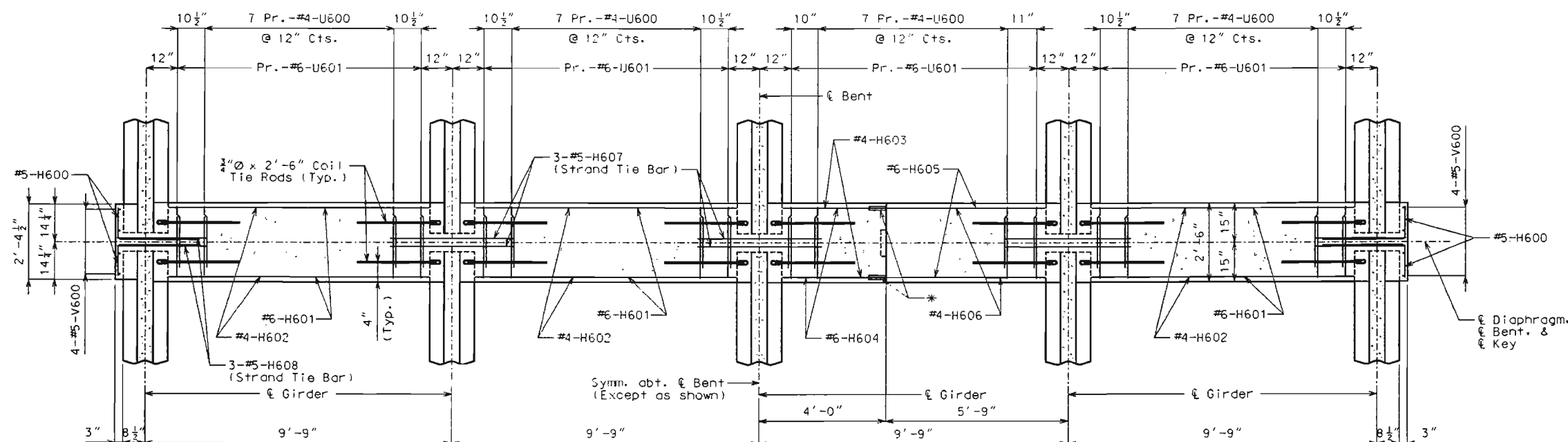
For location of Strand Tie Bars, see Sheets No. 15, 16, & 17.
For location and details of coil ties, see Sheets No. 15, 16, & 17.
Diaphragms at intermediate bents shall be built vertical.



SECTION B-B

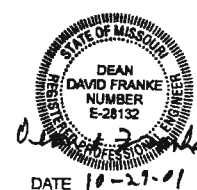


DETAIL "A"



SECTION A-A

DETAILS OF DIAPHRAGMS AT INTERMEDIATE BENTS 2, 3, & 4



DATE 10-27-01

Detailed July 2001
Checked Sept 2001

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

Sheet No. 19 of 33

FRANKLIN COUNTY A6361

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State	Proj. No.	Sheet No.
MO		B20

GENERAL NOTES:

PRESTRESSED PANELS:

Concrete for prestressed panels shall be Class A1 with $f'c = 6,000$ psi. $f'ci = 3,500$ psi.

The top surface of all panels shall receive a scored finish with a depth of scoring of $1/8"$ perpendicular to the prestressing strands in the panels (See Special Provisions).

Prestressing tendons shall be high-tensile strength uncoated seven-wire (7), low-relaxation strands for prestressed concrete conforming to AASHTO M203 Grade 270, with nominal diameter of strand = $3/8"$ and nominal area = 0.085 sq. in. and minimum ultimate strength = 22.95 kips (270 ksi). Larger strands may be used with the same spacing and initial tension.

Initial prestressing force = 17.2 kips/strand.

The method and sequence of releasing the strands shall be shown on the shop drawings.

Suitable anchorage devices for lifting panels may be cast in panels, provided they are shown on the shop drawings and approved by the engineer. Panel lengths shall be determined by the contractor and shown on the shop drawings.

When square end panels are used at skewed bents, it is required that the skewed portion be cast full depth. No separate payment will be made for additional concrete and reinforcing required.

Support from diaphragm forms is required under the optional skewed end until cast-in-place concrete has reached $3,000$ psi compressive strength.

Minimum joint filler or polystyrene bedding material thickness shall be $3/4"$ inch. Thicker joint filler or polystyrene bedding material may be used on one or both sides of the girder to reduce cast-in-place concrete thickness, within tolerances. No more than 2 inches total thickness of joint filler or polystyrene bedding material shall be used.

The same thickness of joint filler material shall be used under any one edge of any panel except at locations where top flange thickness may be stepped. The maximum change in thickness between adjacent panels shall be $1/4"$ inch. The polystyrene bedding material may be cut to match haunch height above top of flange.

Slab thickness over prestressed panels varies due to girder camber.

At the contractor's option, the variation in slab thickness over prestressed panels may be eliminated or reduced by increasing and varying the girder top flange thickness. Dimensions shall be shown on the shop drawings.

REINFORCING STEEL:

All dimensions are out to out.

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

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

Actual lengths are measured along centerline of bar to the nearest inch.

The prestressed panel quantities are not included in the table of Estimated Quantities for Slab on Concrete I-Girder.

If U1 bars interfere with placement of slab steel, U1 loops may be bent over, as necessary, to clear slab steel.

Welded wire fabric or welded deformed bar mats providing a minimum area of reinforcing perpendicular to strands of 0.22 sq. in./ft., with spacing parallel to strands sufficient to insure proper handling, may be used in lieu of the #3-P2 bars shown. Wire or bar diameter shall not be larger than 0.375 inch. The above alternative reinforcement criteria may be used in lieu of the #3-P3 bars, when required, and placed over a width not less than 2 feet.

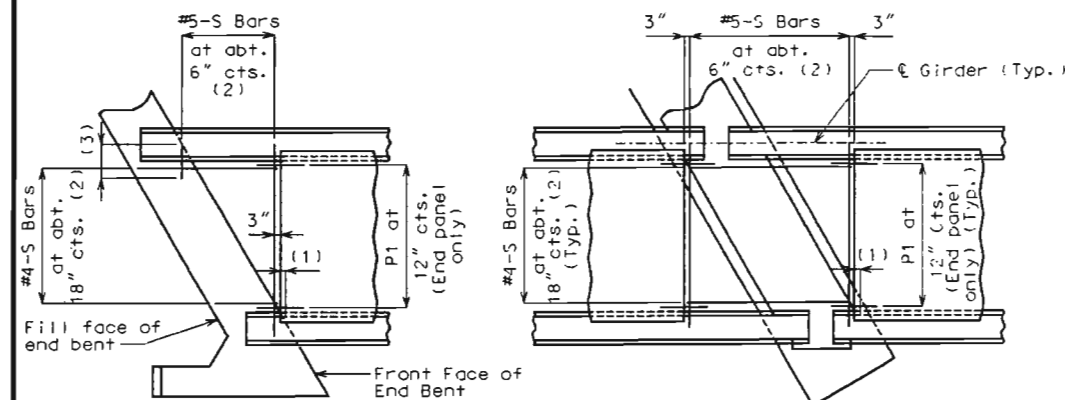
The reinforcing steel shall be tied securely to the $3/8"$ \emptyset strands with the following maximum spacing in each direction: #3-P2 bars at 16 inches.

Welded wire fabric or welded deformed bar mats at 24 inches.

Tie the #3-U1 bars to the #3-P2 bars, to the welded wire fabric or the welded deformed bar mats at about 36 inch centers.

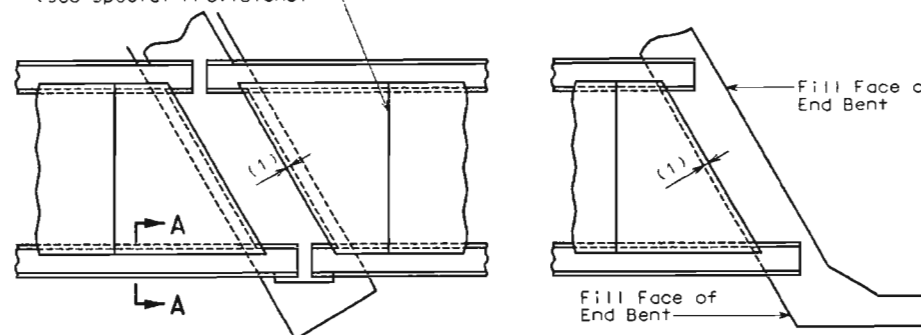
All reinforcement other than prestressing strands shall be epoxy coated.

Precast panels may be in contact with stirrup reinforcing in diaphragms.



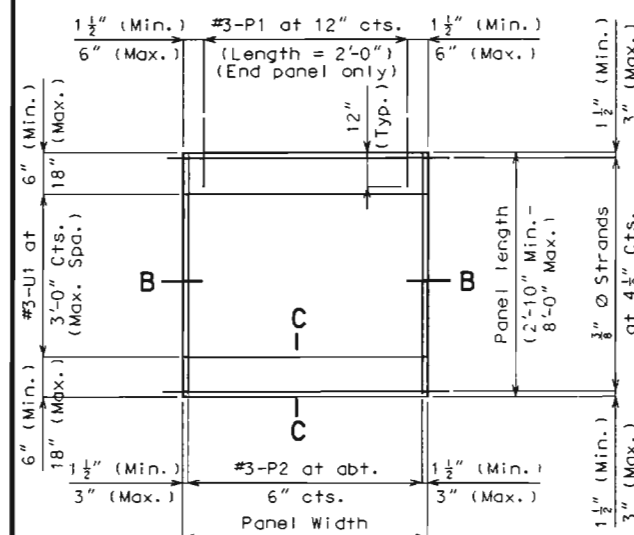
PANELS-SQUARED ENDS

Prevent excessive grout leak (Typ.) (See Special Provisions)

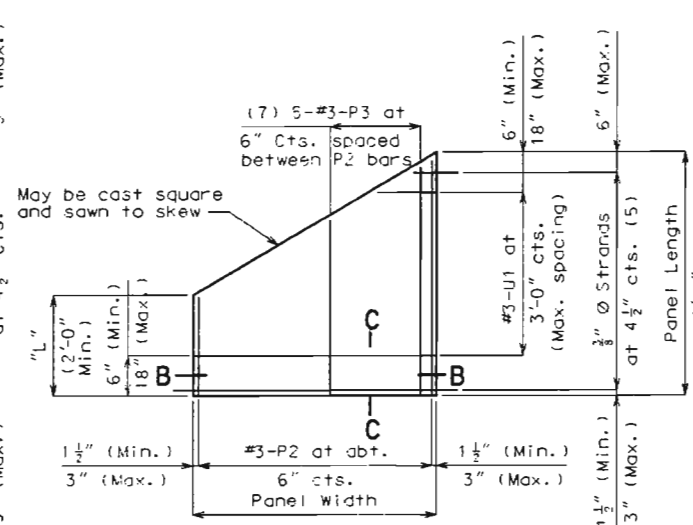


PANELS-SKEWED ENDS

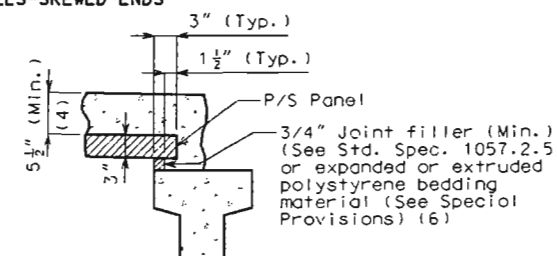
PLAN OF PRECAST PRESTRESSED PANELS PLACEMENT



PLAN OF PRECAST PRESTRESSED PANEL



PLAN OF PRECAST PRESTRESSED PANEL (SKEWED END-OPTIONAL)



SECTION A-A

Note: Use slab haunching diagram on sheet No. 22 for determining thickness of joint filler or polystyrene bedding material within the limits noted in general notes.

NOTES:

Cost of S-bars shall be included in the price bid for Slab on Concrete I-Girder per square yard.

S-bars are not listed in the bill of reinforcing.

(1) End panels shall be dimensioned $1"$ min. to $1-1/2"$ max. from the inside face of diaphragm.

(2) S-bars shown are bottom steel in slab between panels and used with squared end panels only.

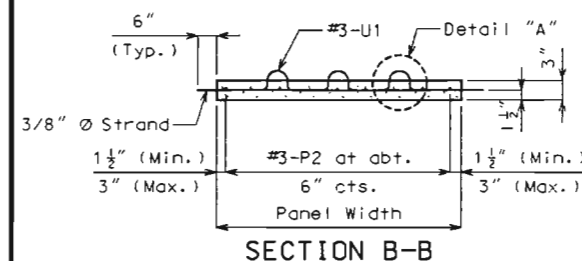
(3) Extend S-Bars 18 inches beyond the front face of end bents only.

(4) In order to maintain minimum slab thickness, it may be necessary to raise the grade uniformly throughout the structure. No payment will be made for additional labor or materials required for necessary grade adjustment.

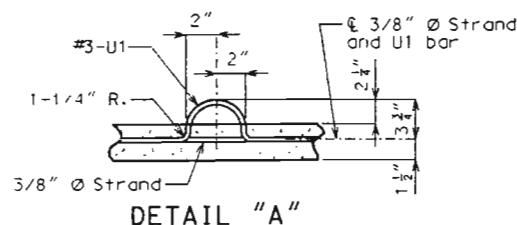
(5) Any strand $2'-0"$ or shorter shall have a #4 reinforcing bar on each side of it, centered between strands. Strands $2'-0"$ or shorter may then be debonded at the fabricator's option.

(6) All panel support pads shall be glued to the girder. When support thickness exceeds $1-1/2$ inches, the pads shall be glued top and bottom. The glue used shall be the type recommended by the panel support pads manufacturer.

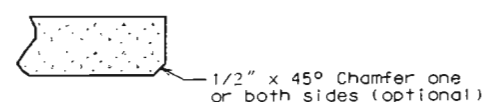
(7) Use #3-P3 bars if panel is skewed 45° or greater.



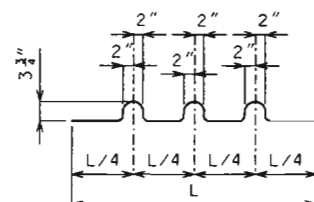
SECTION B-B



DETAIL "A"



SECTION C-C



BENDING DIAGRAM FOR U1 BAR

(U1 Bars may be oriented at right angles to location and spacing shown. U1 Bars shall be placed between P1 bars.)

DETAILS OF PRECAST PRESTRESSED PANELS

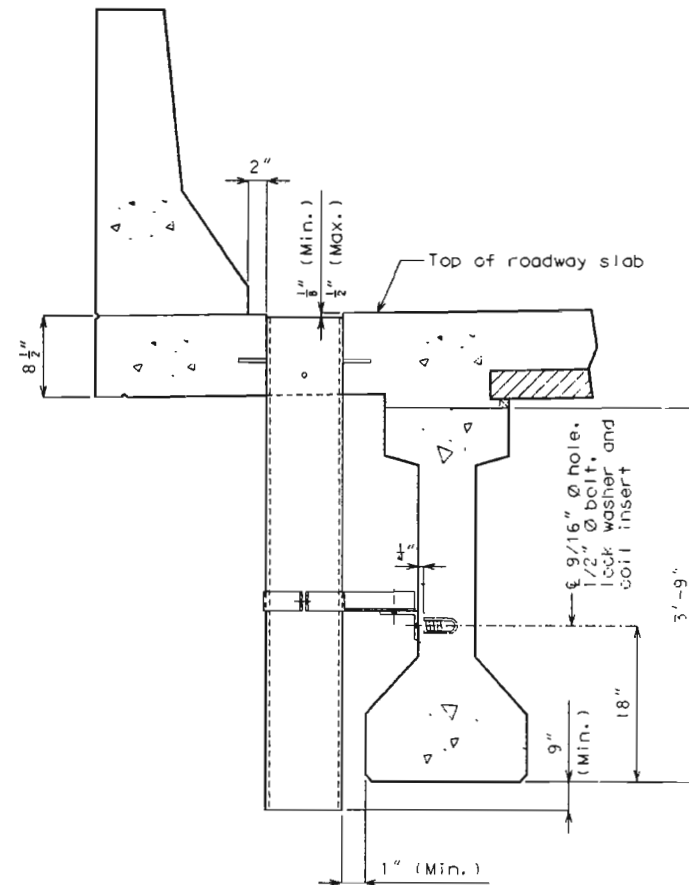
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 20 of 33

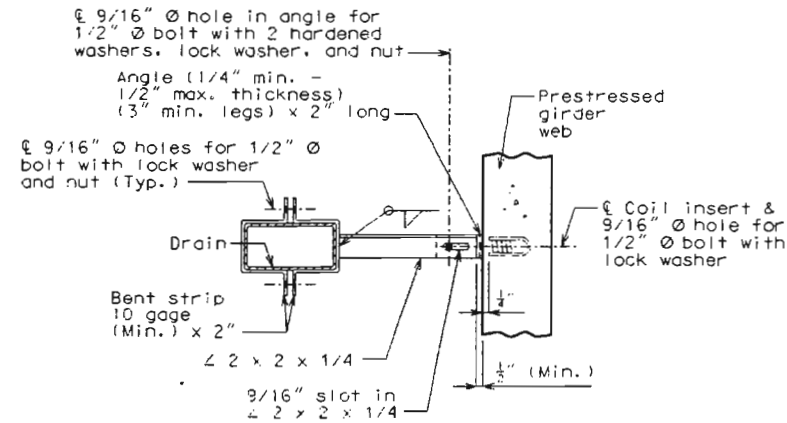
FRANKLIN COUNTY A6361

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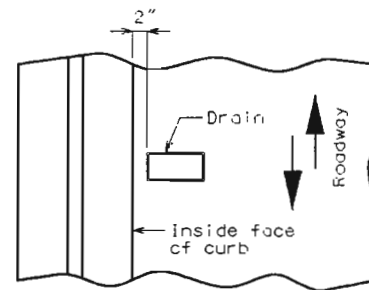
Detailed July 2001
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PART SECTION NEAR DRAIN



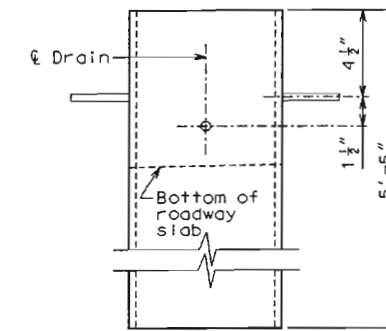
PART SECTION SHOWING BRACKET ASSEMBLY



PART PLAN OF SLAB AT DRAIN

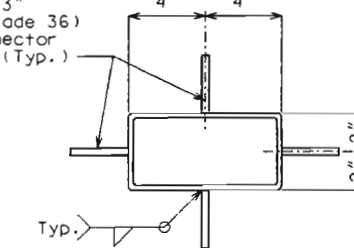
DETAILS OF DRAINS TRANSVERSE TO ROADWAY

SLAB DRAIN DETAILS



ELEVATION OF DRAIN

Rod 1/2" Ø x 3"
(ASTM A709 Grade 36)
or shear connector
1/2" Ø x 3" ± (Typ.)



PLAN OF DRAIN

State	Proj. No.	Sheet No.
MO		B21

NOTE:

Slab drains may be fabricated of either 1/4" welded sheets of ASTM A709 Grade 36 steel or from 1/4" structural steel tubing ASTM A500 or A501.

Slab drain bracket assembly shall be ASTM A709 Grade 36 steel.

Outside dimensions of drains are 8" x 4".

Locate drains in slab by dimensions shown in Part Section Near Drain.

Shift reinforcing steel in field where necessary to clear drains.

The drains, coil inserts and bracket assembly shall be galvanized in accordance with ASTM A123.

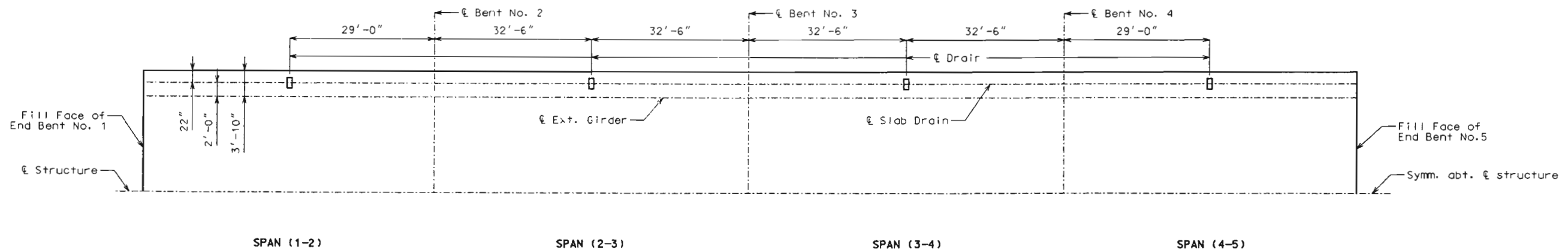
All bolts, hardened washers, lock washers and nuts shall be galvanized in accordance with ASTM A153.

The coil insert required for the bracket assembly attachment shall be located on the Prestressed I-Girder shop drawings.

Shop drawings will not be required for the slab drains and the bracket assembly.

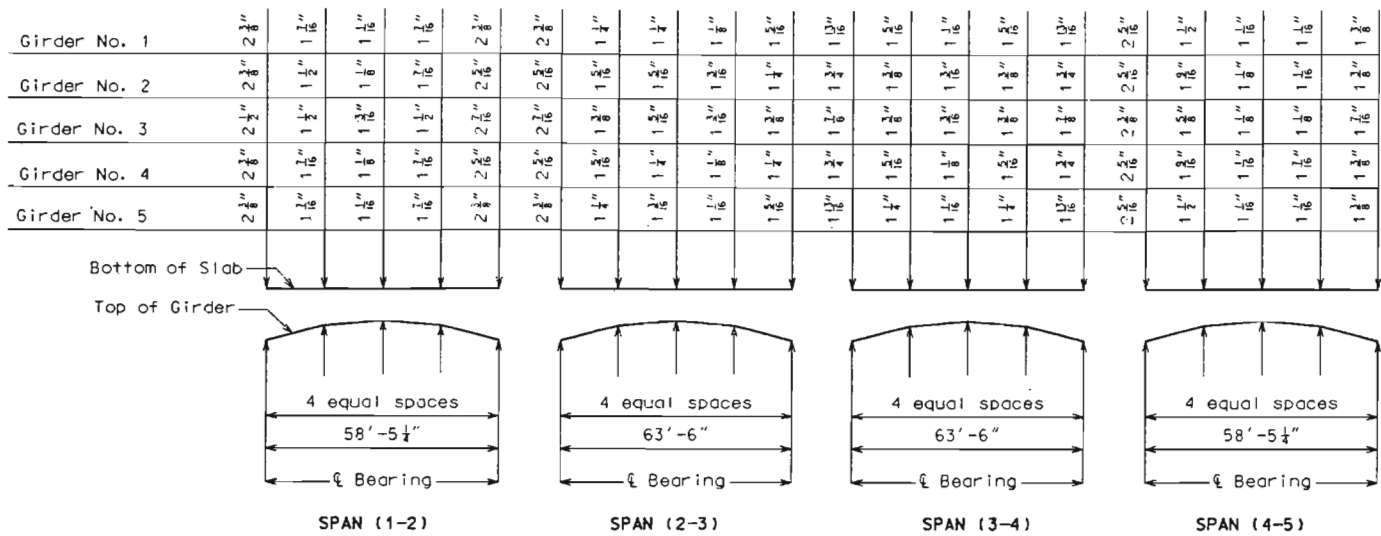
Coil inserts shall have a concrete pull-out strength (ultimate load) of at least 2,500 pounds in 5,000 psi concrete.

The bolt required to attach the slab drain bracket assembly to the prestressed girder web shall be supplied by the prestressed I-Girder fabricator.

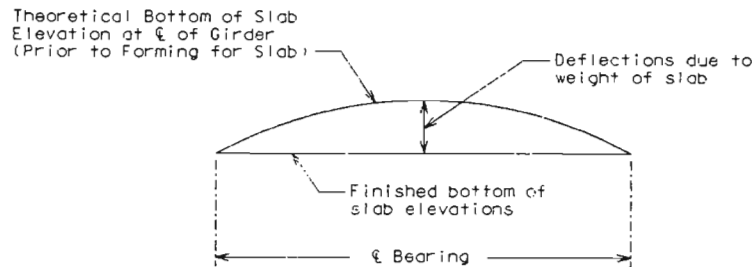


PLAN SHOWING SLAB DRAIN DETAILS

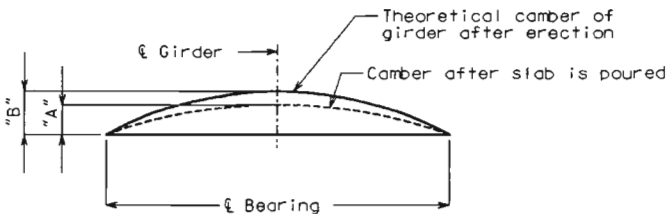




THEORETICAL SLAB HAUNCHING DIAGRAM



TYPICAL SLAB ELEVATIONS DIAGRAM



	Span (1-2)		Span (2-3)		Span (3-4)		Span (4-5)	
	"A"	"B"	"A"	"B"	"A"	"B"	"A"	"B"
Girder 1&5	13/16"		3/16"		3/16"		13/16"	
Girder 2	11/16"	1 5/16"	3/16"	1 1/2"	3/16"	1 1/2"	11/16"	1 5/16"
Girder 3	3/4"		11/16"		11/16"		3/4"	
Girder 4	11/16"		5/8"		5/8"		11/16"	

GIRDER CAMBER DIAGRAM

Conversion factors for girder camber
0.25 pt. = 0.7125 x 0.5 pt.

If girder camber is different from that shown in the camber diagram, it shall be necessary to adjust the slab haunches, increase the slab thickness, or raise the grade uniformly throughout the structure. No payment will be made for additional labor or materials required for variation in haunching, slab thickness, or grade adjustment.

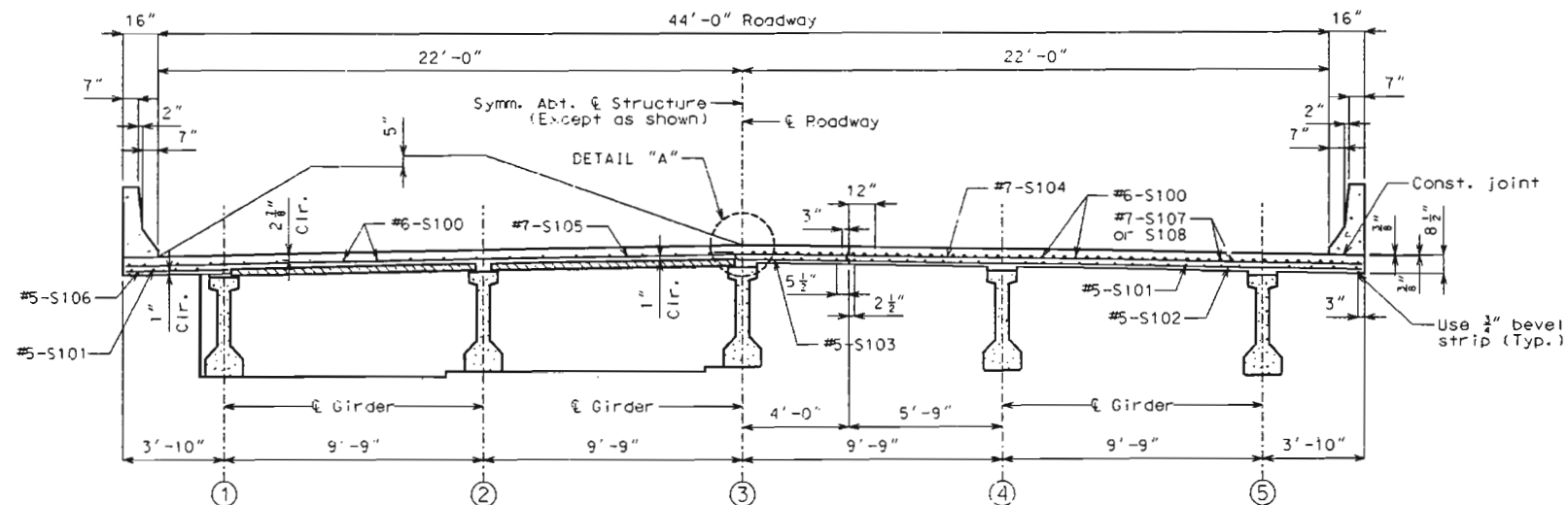
Concrete in the slab haunches is included in the Estimated Quantities for Slab on Concrete I-Girders.

Longitudinal dimensions are horizontal.

Theoretical Bottom of Slab Elevations at C of Girder (Prior to Forming for Slab) **																											
	Span (1-2) (58'-5½" C brg - C brg.)					Span (2-3) (63'-6" C brg - C brg.)					Span (3-4) (63'-6" C brg - C brg.)					Span (4-5) (58'-5½" C brg - C brg.)											
	C brg.	.25	.50	.75	C brg.	C brg.	.25	.50	.75	C brg.	C brg.	.25	.50	.75	C brg.	C brg.	.25	.50	.75	C brg.	C brg.	.25	.50	.75	C brg.		
Girder no. 1	505.32	505.72	506.12	506.51	506.91	506.95	507.49	508.02	508.52	508.99	509.04	509.60	510.13	510.62	511.09	511.14	511.65	512.13	512.59	513.03							
Girder no. 2	505.51	505.92	506.32	506.71	507.10	507.15	507.70	508.23	508.72	509.18	509.23	509.80	510.33	510.83	511.29	511.34	511.85	512.34	512.79	513.23							
Girder no. 3	505.69	506.09	506.49	506.88	507.28	507.33	507.87	508.40	508.89	509.36	509.41	509.97	510.50	511.00	511.46	511.51	512.02	512.50	512.96	513.40							
Girder no. 4	505.51	505.91	506.32	506.71	507.10	507.15	507.69	508.23	508.72	509.18	509.23	509.80	510.33	510.83	511.29	511.34	511.84	512.33	512.79	513.23							
Girder no. 5	505.32	505.71	506.11	506.51	506.91	506.95	507.49	508.02	508.52	508.99	509.04	509.60	510.13	510.62	511.09	511.14	511.65	512.13	512.59	513.03							

** Elevations are based on a constant slab thickness of 8 1/4" and include allowance for theoretical dead load deflections due to weight of slab (including precast panel).

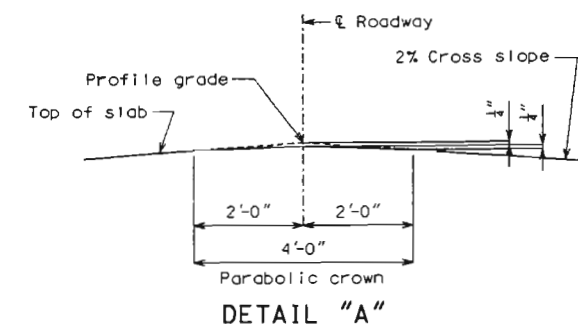




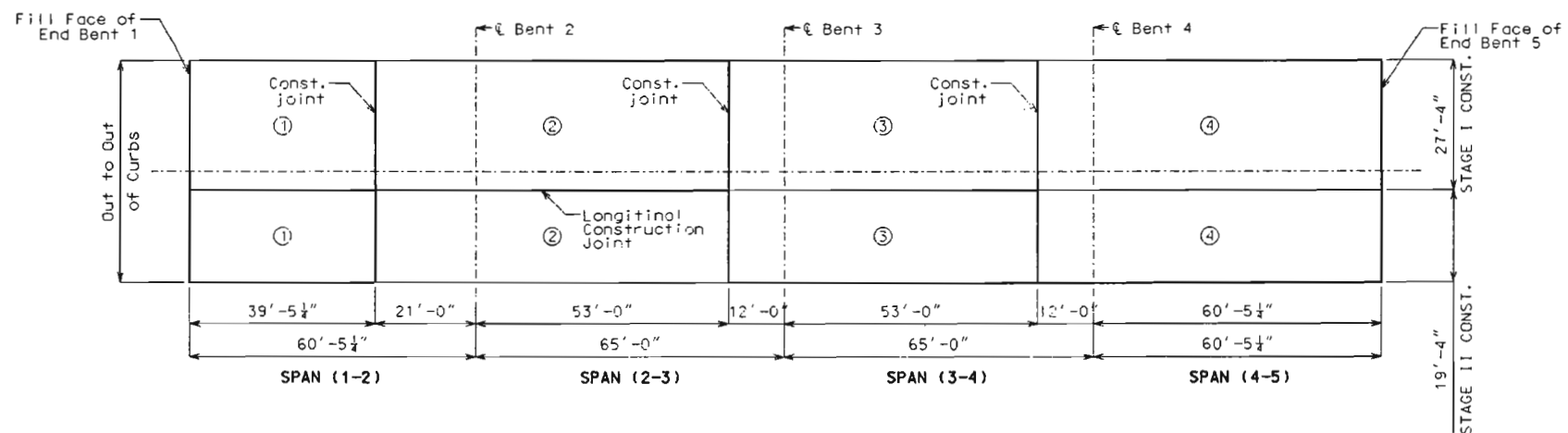
HALF SECTION NEAR INTERMEDIATE BENT

HALF SECTION NEAR CENTER SPAN

Note: For Details and Reinforcement of Safety Barrier Curb, see Sheets No. 26, 27, & 28.



DETAIL "A"



Notes:

- Longitudinal dimensions shown are horizontal.
- For Details and Reinforcement of Safety Barrier Curb, see Sheets No. 26, 27, & 28.
- For Theoretical Slab Haunching Diagram and Bottom of Slab Elevations, see Sheet No. 22.
- For Details of Precast Prestressed Panels, see Sheet No. 20.
- For Location of Slab Drains, see Sheet No. 21.
- For Plan of Slab Showing Top Reinforcement, see Sheet No. 25.
- For Plan of Slab Showing Bottom Reinforcement, see Sheet No. 24.

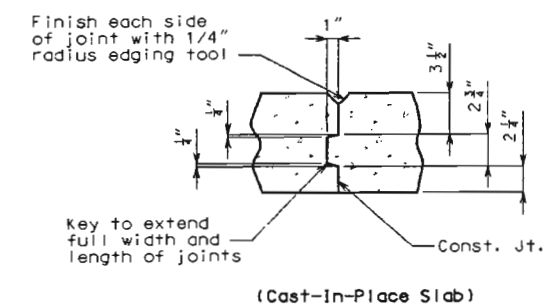
	Sequence of Pours				STAGE I CONSTRUCTION	STAGE II CONSTRUCTION
	Direction				Min. rate of pour cu. yds./hr.	Min. rate of pour cu. yds./hr.
	1	2	3	4	With retarder	With retarder
Basic sequence	End to 2	1 to 3	2 to 4	3 to end	25	25
Alternate pours to the basic sequence are subject to the approval of the engineer in accordance with Section 703.3.12.4 of Missouri Standard Specifications.						
Alternate "A" pours	1 + 2	3	4	3 to end	25	25
Alternate "B" pours	1 + 2	3 + 4	2 to end		25	25
Alternate "C" pours	1 + 2 + 3 + 4				25	25

Note: The contractor shall furnish an approved retarder to retard the set of the concrete to 2.5 hours, and shall pour and satisfactorily finish the slab pours at the rate given.

The concrete diaphragm at the intermediate bents and integral end bents shall be poured a minimum of 30 minutes and a maximum of 2 hours before the slab is poured.

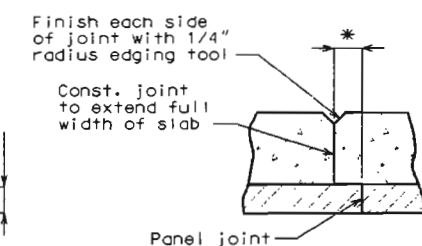
SLAB POURING SEQUENCE

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



(Cast-in-Place Slab)

* Adjust the construction joint to a clearance of 6 inches minimum from the panel joint.

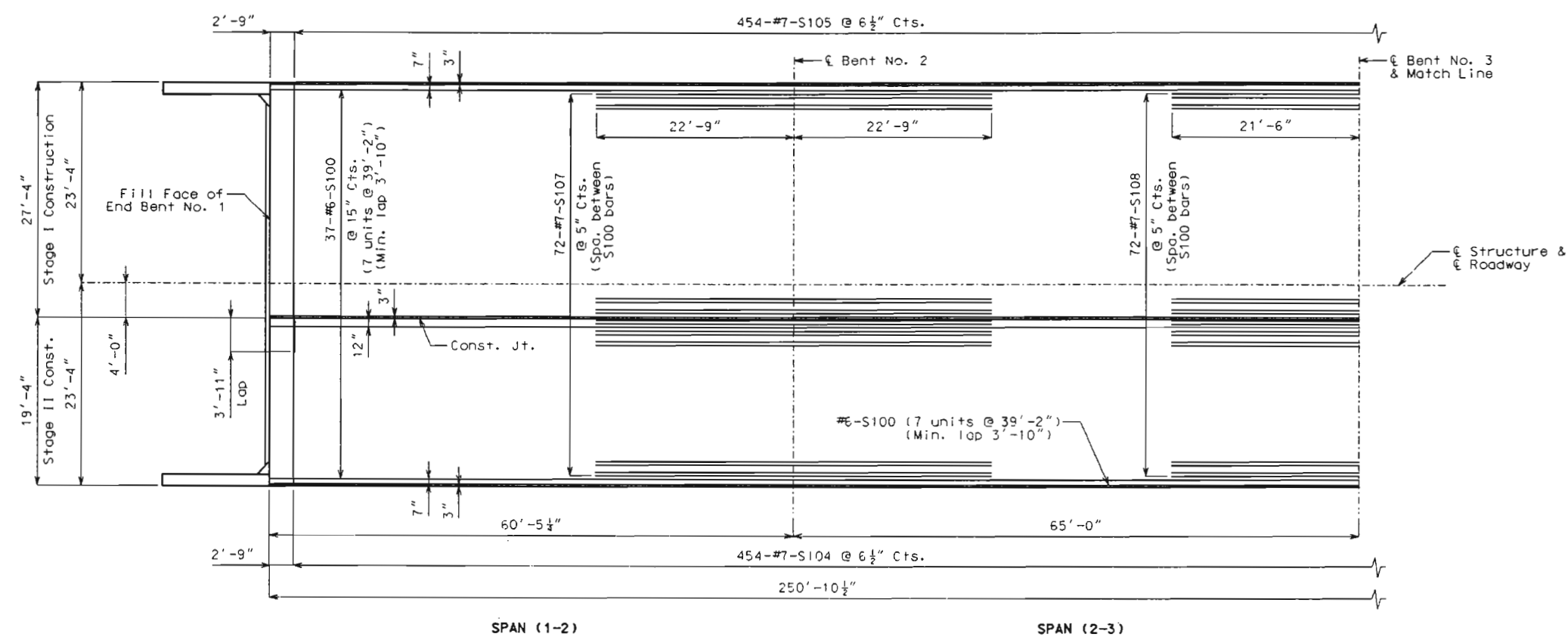


(Slab on Precast Panels)

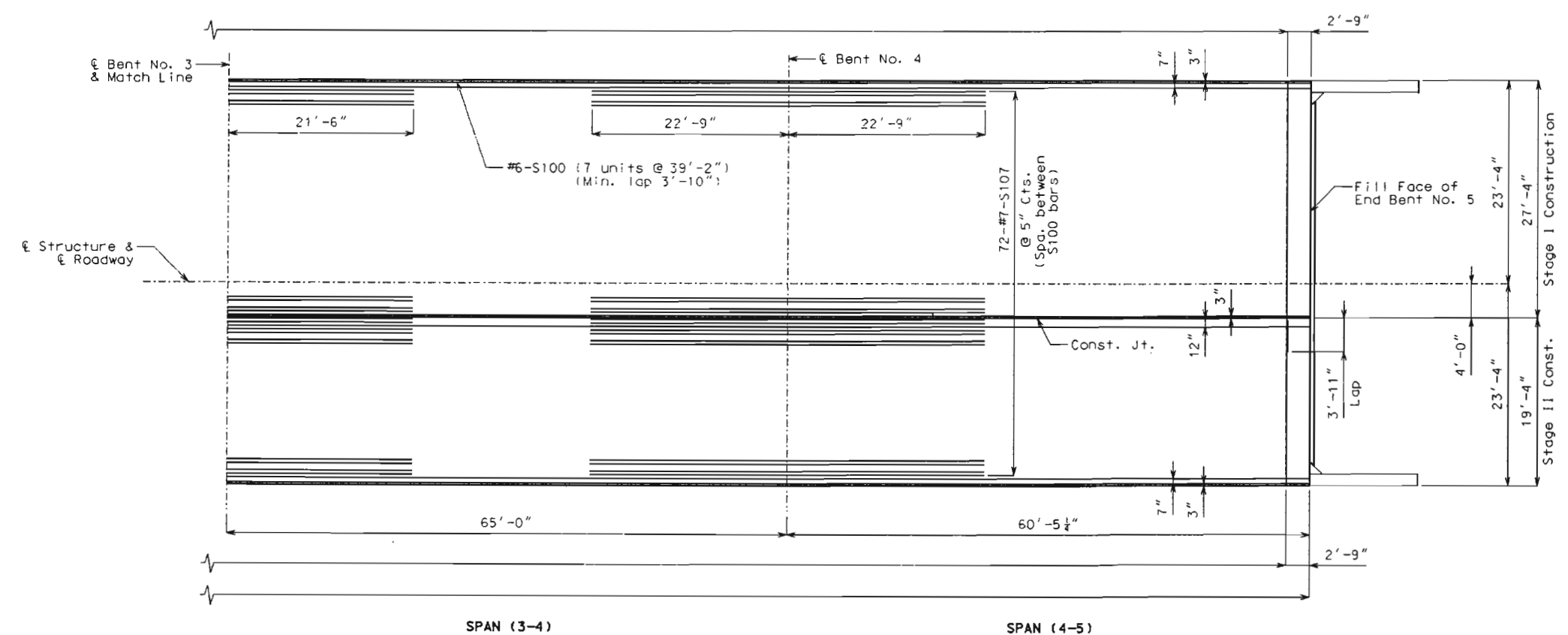
SLAB CONSTRUCTION JOINT DETAILS



State	Proj. No.	Sheet No.
MO		B25



Notes:
 Longitudinal dimensions shown are horizontal.
 For Details and Reinforcement of Safety Barrier Curb, see Sheets No. 26, 27, & 28.
 For Theoretical Slab Haunching Diagram and Bottom of Slab Elevations, see Sheet No. 22.
 For Section Thru Slab, & Slab Pouring Sequence, see Sheet No. 23.
 For Details of Precast Prestressed Panels, see Sheet No. 20.
 For Location of Slab Drains, see Sheet No. 21.
 For Plan of Slab Showing Bottom Reinforcement, see Sheet No. 25.



PLAN OF SLAB SHOWING TOP REINFORCEMENT

Detailed June 2001
 Checked Sept 2001

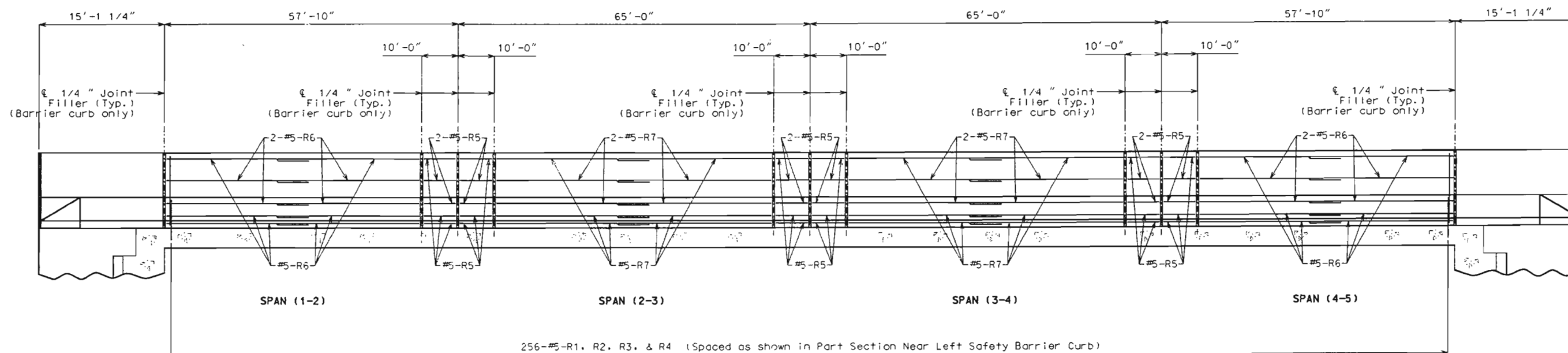
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 25 of 33

FRANKLIN COUNTY A6361

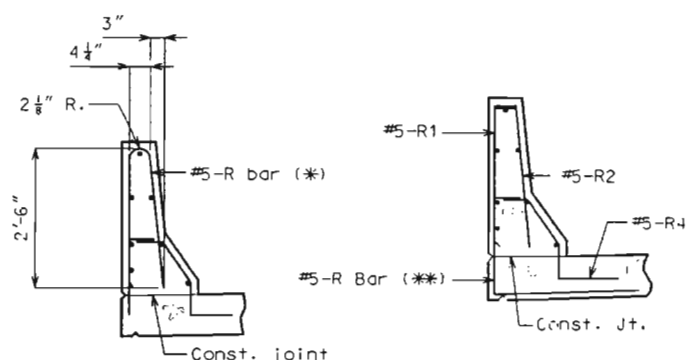


State	Proj. No.	Sheet No.
MO		B26



SECTION NEAR LEFT SAFETY BARRIER CURB (Right barrier curb similar by 180° rotation)

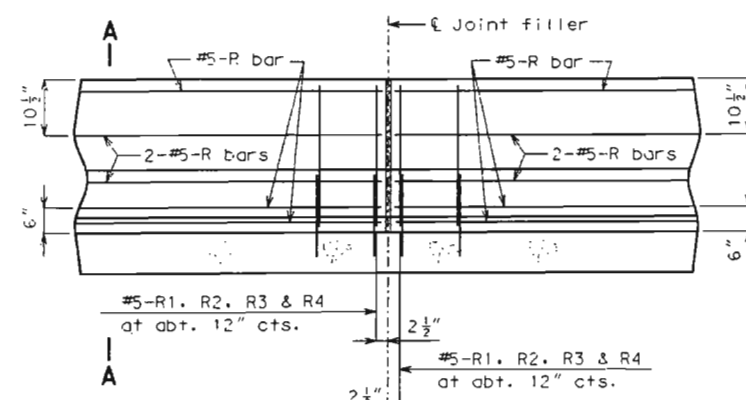
Note: Longitudinal dimensions are horizontal.



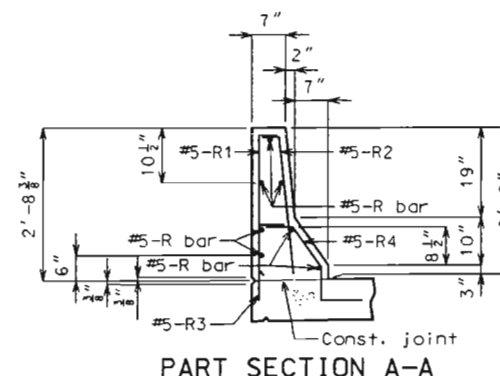
R-BAR PERMISSIBLE ALTERNATE SHAPE

(*) 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.)

(**) The R3 bar and #5-S106 bottom transverse slab bar in cantilever (P/S panels only) combination may be furnished as one bar as shown, at the contractor's option.



PART SECTION A-A (CAST-IN-PLACE CONVENTIONAL FORMING OPTION)



PART 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.

Notes:

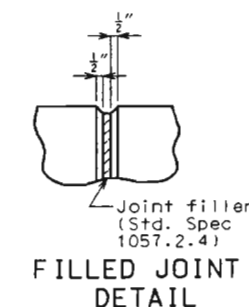
Top of safety barrier curb shall be built parallel to grade with safety barrier curb joints (except at end bents) normal to grade.

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

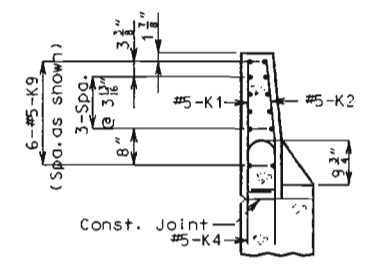
When the safety barrier curb is bid by linear feet, the contract unit price shall include the cost of all concrete and reinforcement, complete in place.

Concrete in the safety barrier curb shall be Class B1.

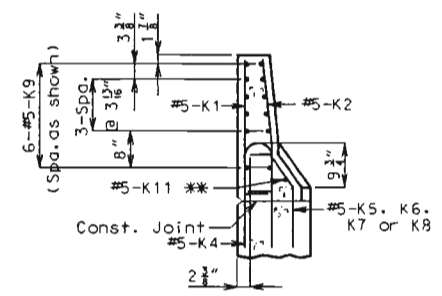
Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.



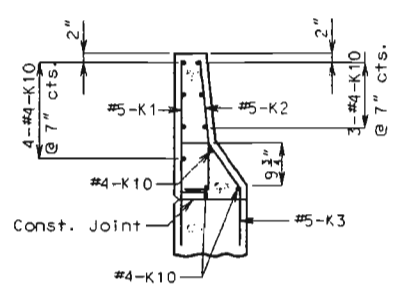
State	Proj. No.	Sheet No.
MO		B21



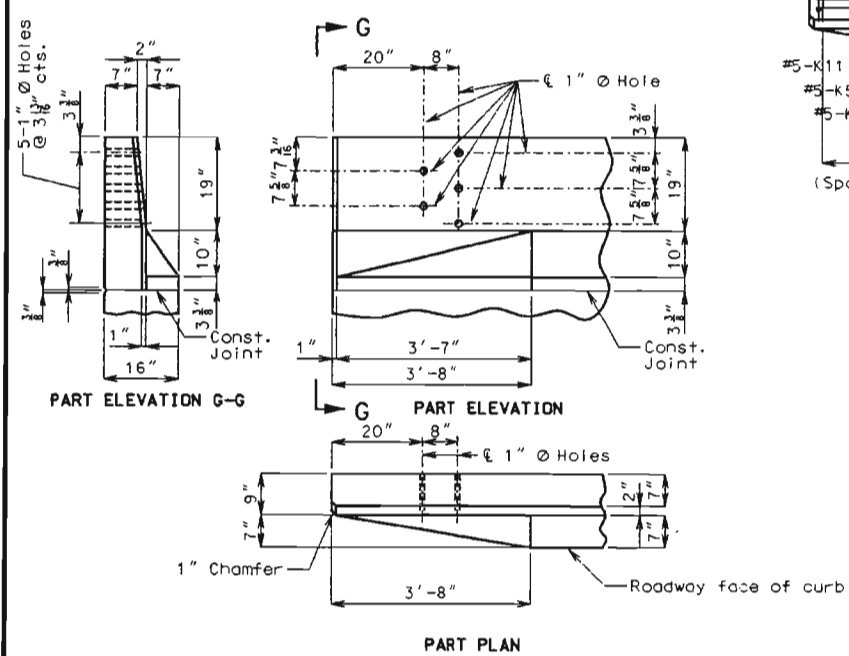
SECTION A-A



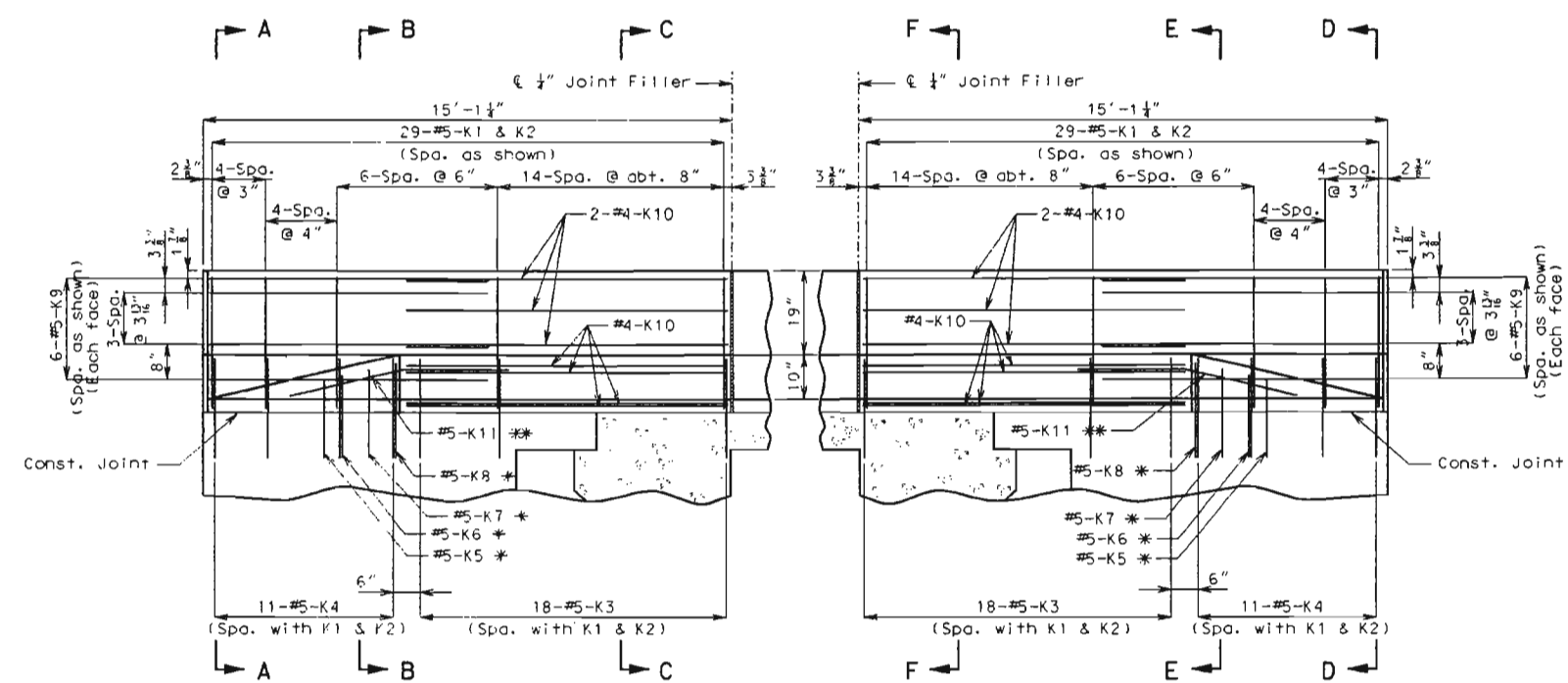
SECTION B-B



SECTION C-C

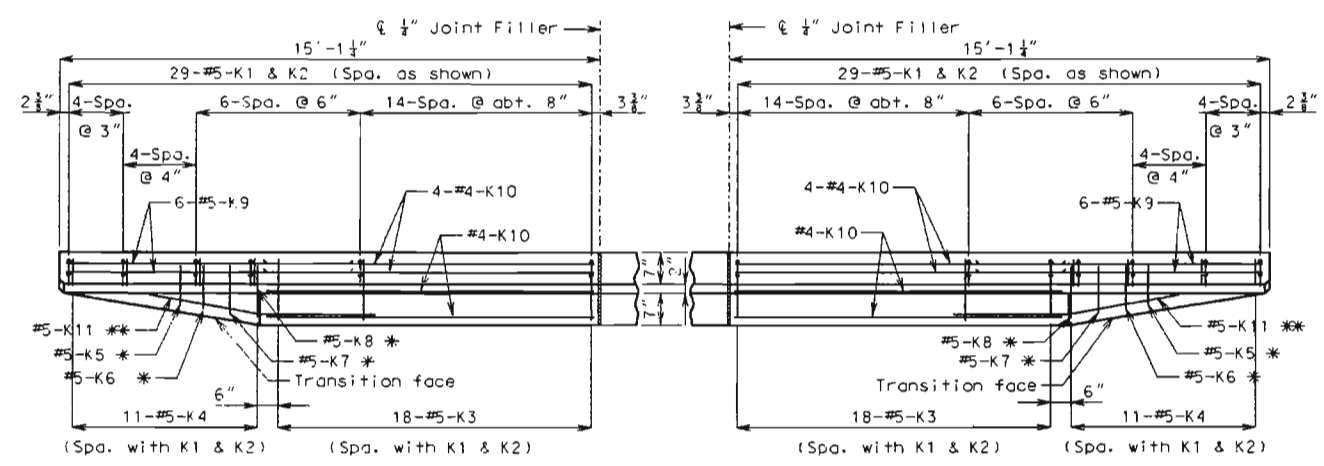


DETAILS OF GUARD RAIL ATTACHMENT



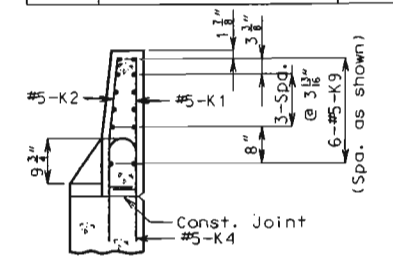
ELEVATION

ELEVATION

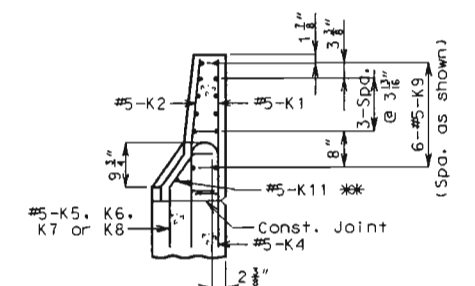


PLAN

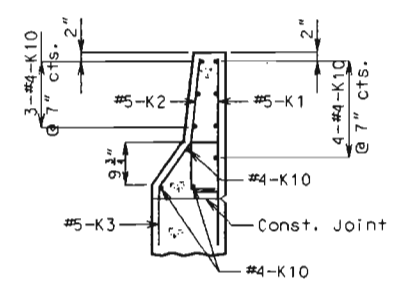
PLAN



SECTION D-D



SECTION E-E



SECTION F-F

* Spaced with #5-K4 bars.
** Fit bar to follow transition face of curb.

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

DETAILS OF SAFETY BARRIER CURB AT END BENTS

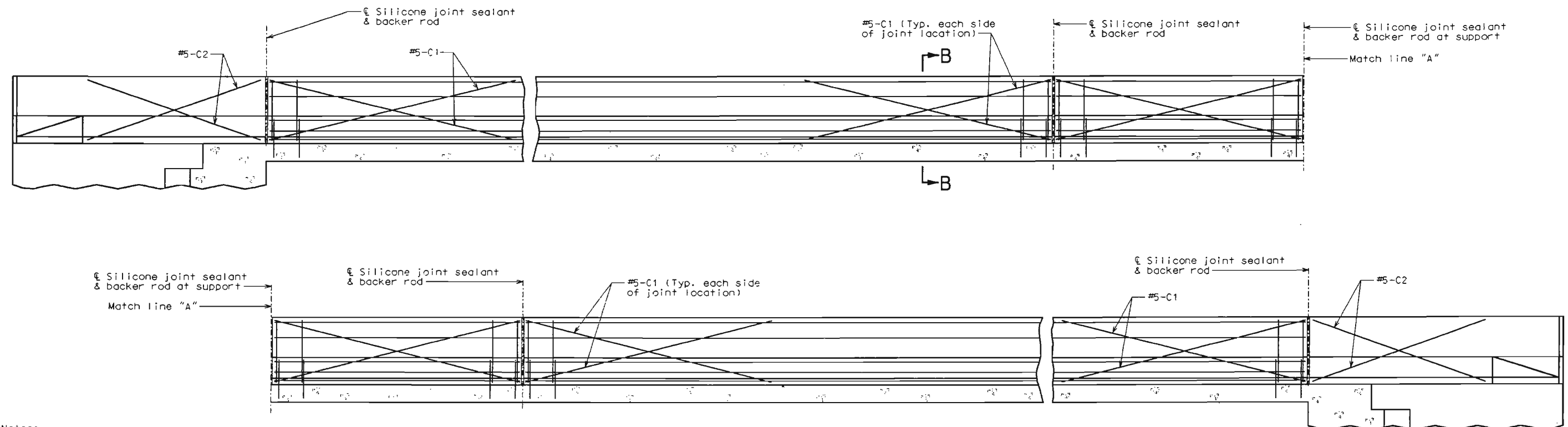
(Left barrier curb shown; right barrier curb similar)

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

Sheet No. 27 of 33

STATE OF MISSOURI
DEAN DAVID FRANK
NUMBER E-28132
DATE 10-29-11

State	Proj. No.	Sheet No.
MO		B28



Notes:

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

When the safety barrier curb is bid by linear feet, the contract unit price shall include the cost of all concrete and reinforcement, complete-in-place.

Concrete in the safety barrier curb shall be Class B1.

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.

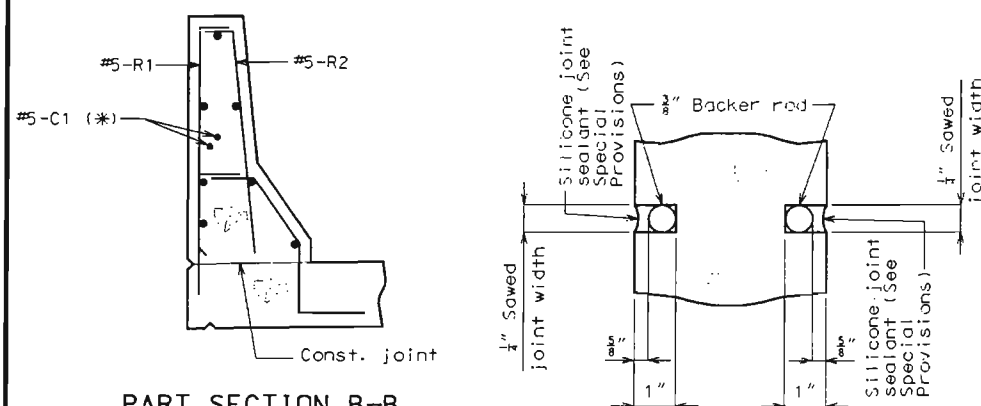
TYPICAL SECTION NEAR LEFT SAFETY BARRIER CURB AT SUPPORT LOCATIONS (OPTIONAL SLIP-FORM BRIDGE SAFETY BARRIER CURB)

Note:

Joint sealant and backer rods shall be used on all slip-form bridge safety barrier curbs instead of joint filler.

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.



PART SECTION B-B

Notes:

(*) Each side of joint location.

(**) 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.)

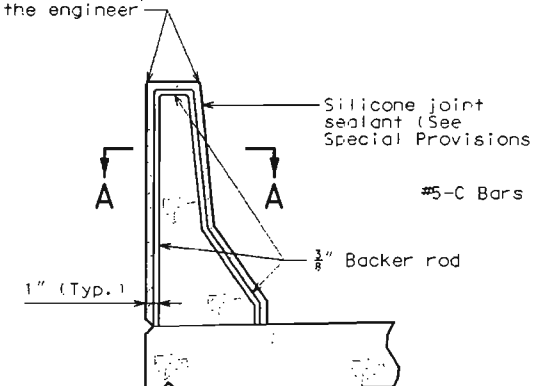
(***) The R3 bar and #5-S106 bottom transverse slab bar in cantilever (P/S panels only) combination may be furnished as one bar as shown, at the contractor's option.

SECTION A-A

Note:

Cost of silicone joint sealant and backer rod complete in place to be included on the contract unit price for Safety Barrier Curb.

3/8\" Bevel, 1/2\" Radius or alternate as approved by the engineer

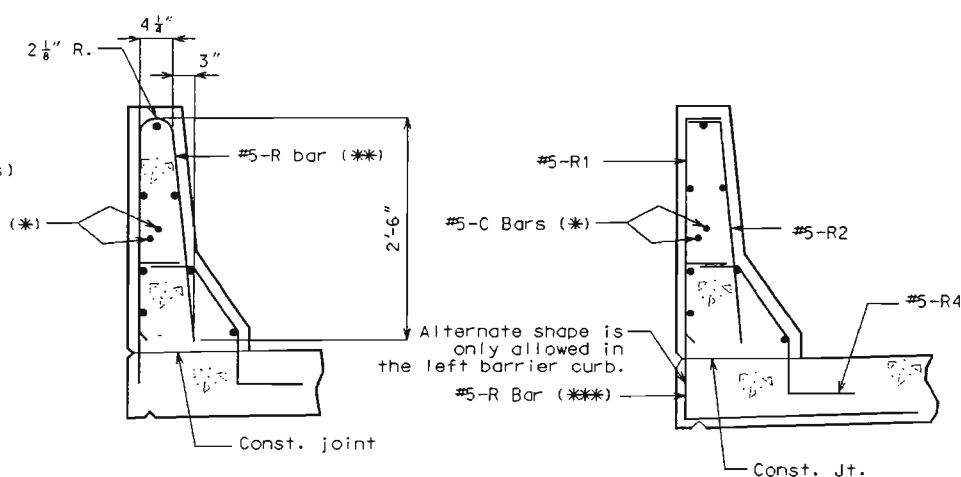


SECTION THRU JOINT

OPTIONAL SLIP-FORM BRIDGE SAFETY BARRIER CURB

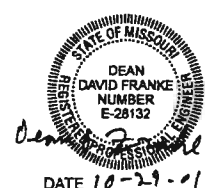
(Left barrier curb shown, right barrier curb similar.)

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



R-BAR PERMISSIBLE ALTERNATE SHAPE

FRANKLIN COUNTY A6361

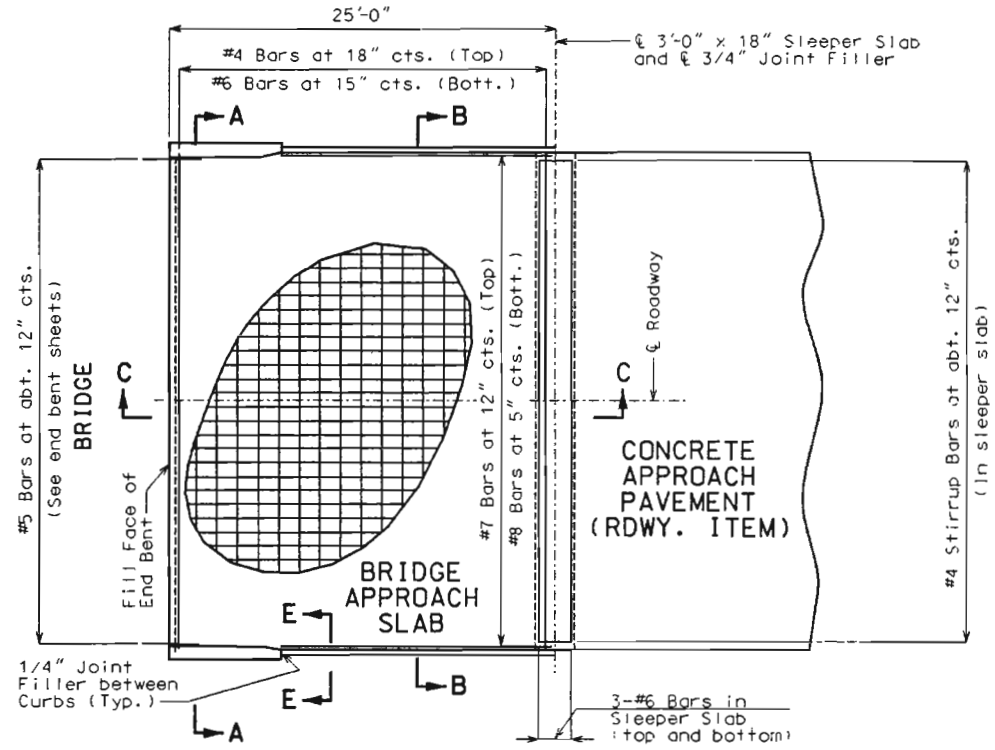


Detailed July 2001
Checked Aug 2001

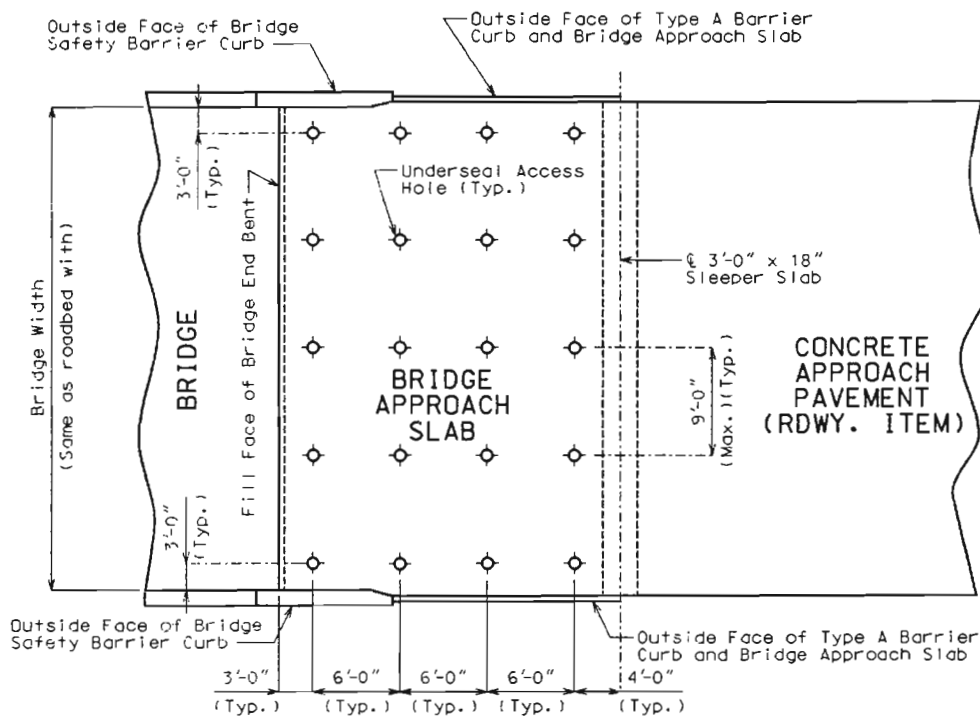
Sheet No. 28 of 33

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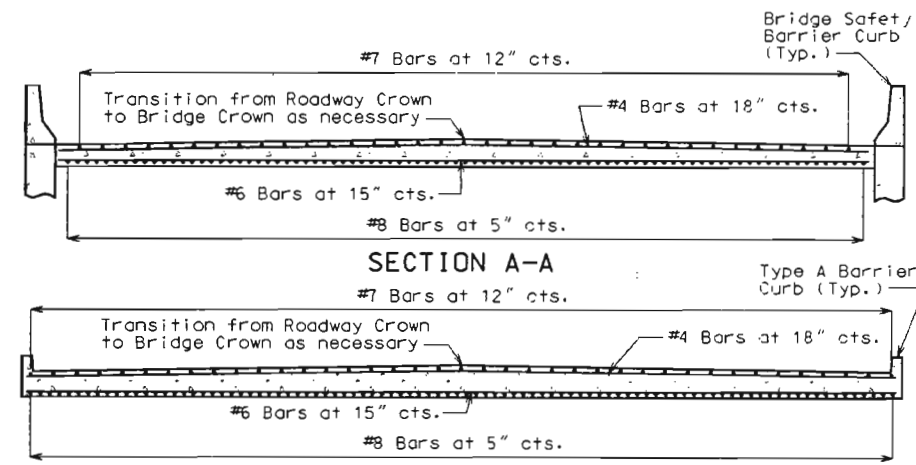
State	Proj. No.	Sheet No.
MO		B29



PART PLAN SHOWING REINFORCEMENT



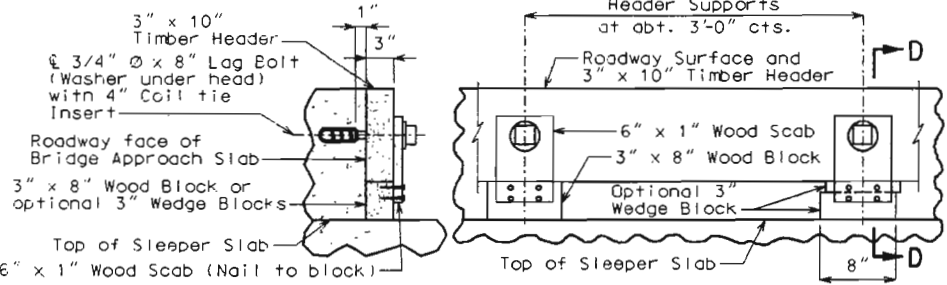
PART PLAN (SHOWING TYPICAL UNDERSEAL ACCESS HOLE LOCATIONS)



SECTION A-A

SECTION B-B

Note: With the approval of the Engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.

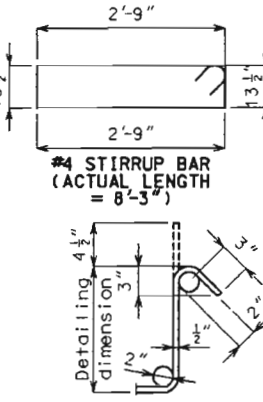


SECTION D-D

PART ELEVATION

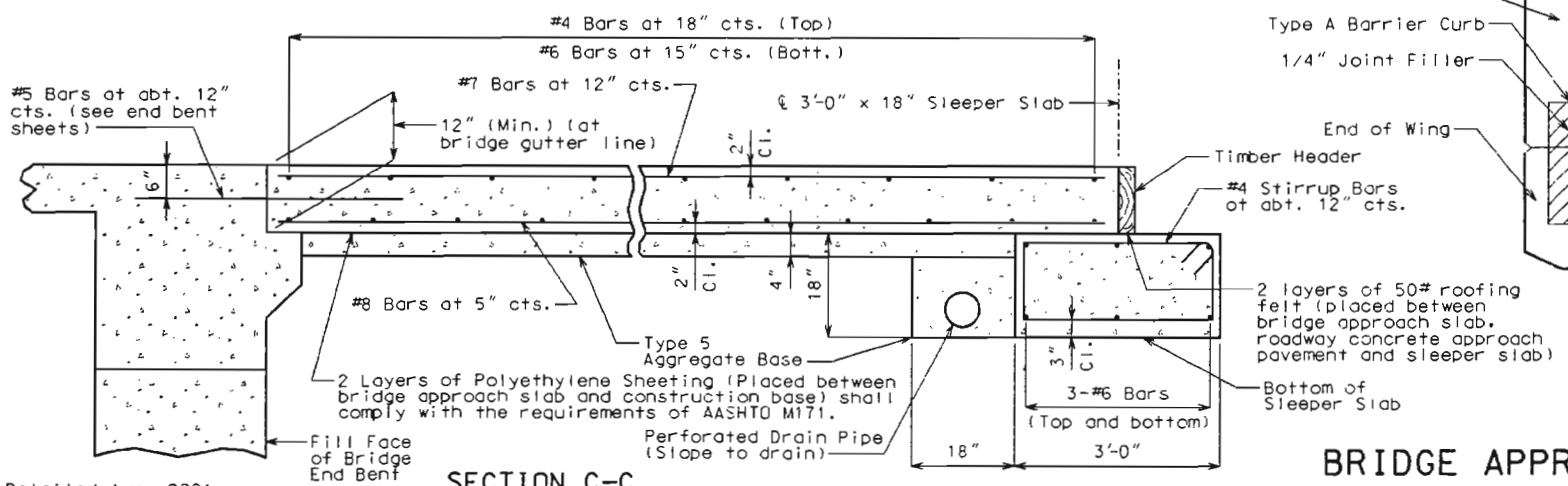
DETAILS OF TIMBER HEADER

Note: Remove timber header when concrete pavement is placed.

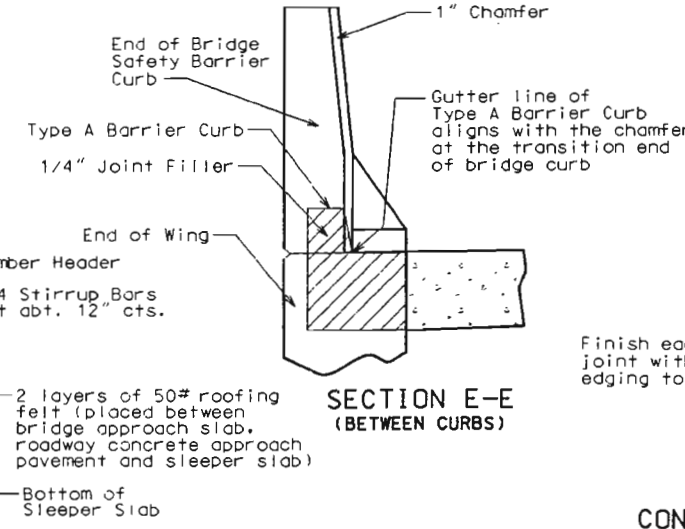


TYPICAL 135° STIRRUP BAR HOOK DIMENSIONS BENDING DIAGRAM

Note: Nominal lengths are based on the dimensions shown in the bending diagram and are listed for fabricators use (nearest inch).

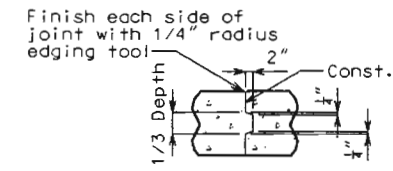


SECTION C-C

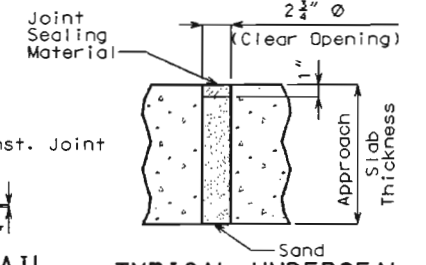


SECTION E-E (BETWEEN CURBS)

BRIDGE APPROACH SLAB



CONST. JOINT DETAIL (IF REQUIRED)



TYPICAL UNDERSEAL ACCESS HOLE DETAIL

GENERAL NOTES:

All concrete for the bridge approach slab and sleeper slab shall be in accordance with Section 503 (f/c = 4,000 psi) of the Missouri Standard Specifications.

All joint filler shall meet the requirements of Section 1057.2.5 of the Missouri Standard Specifications, 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 26" respectively.

Mechanical bar splices will be permitted and shall develop at least 125 percent of the specified yield strength of the reinforcing bars being spliced. The contractor shall furnish the Engineer the manufacturer's certification that this requirement is met and is required to follow the manufacturer's recommendation for installation.

Mechanical bar splices shall be epoxy coated in accordance with Section 710 of the Missouri Standard Specifications.

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 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 slab.

Longitudinal construction joints in approach slab and sleeper slab shall be aligned with longitudinal construction joints in bridge 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 and all other appurtenances and incidental work as shown on this sheet, complete in place, shall be considered as completely covered under the contract unit price for Bridge Approach Slab (Bridge), per sq. yd.

For Concrete Approach Pavement details, see roadway plans.

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

When a lap splice is required for the use of a mechanical bar splice, the minimum lap length shall be 40" for transverse approach slab bar splices.

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 abutment. 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 abutment, the reinforcement may be bent up to 90 degrees with a 2" minimum radius near the abutment to allow compaction of the backfill material near the abutment. Damage to epoxy coating shall be repaired according to Section 710.3.3 of the Missouri Standard Specifications.

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.



DATE 10-29-01

Detailed Aug 2001
Checked Aug 2001

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

Sheet No. 29 of 33

FRANKLIN COUNTY A6361

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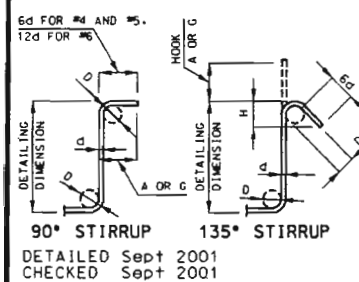
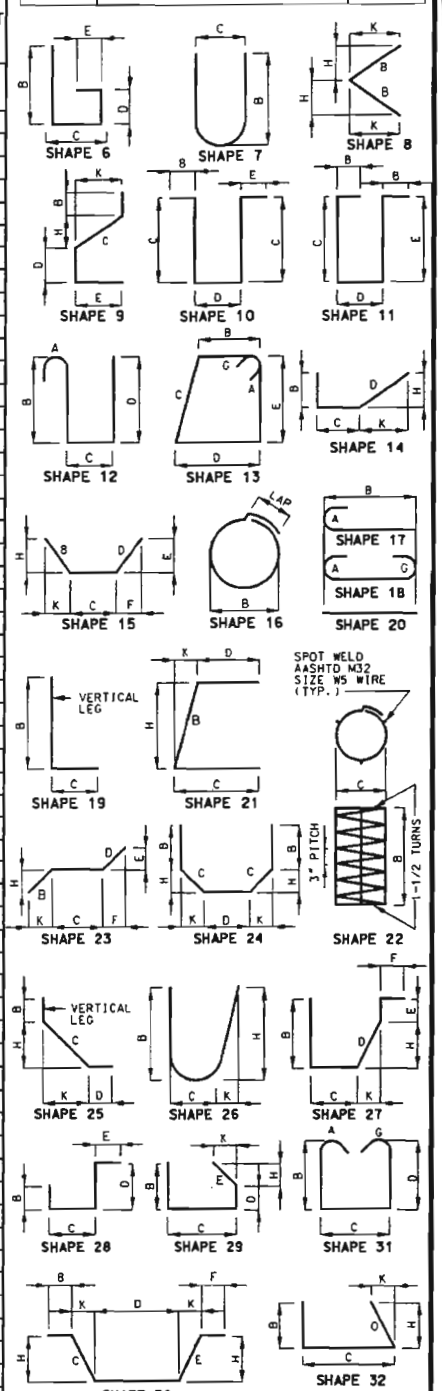
BILL OF REINFORCING STEEL

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.
		SUBSTR.																			
		INT. BENT 2																			
20	6 D200	KEY		20	X				2	6.000							2	6	75		
8	9 H200	BEAM		17	X				25	1.000							26	4	716		
8	9 H201	BEAM		17	X				16	7.000							17	10	485		
4	6 H202	BEAM		20	X				2	7.000							2	7	16		
4	6 H203	BEAM		20	X				25	1.000							25	1	151		
4	6 H204	BEAM		20	X				16	7.000							16	7	100		
8	6 H207	BEAM		10	S	X					22.000		2	7.500			6	4	72		
60	6 U200	BEAM		13	S	X			22.000		2	9.000		22.000		2	9.000	10	6	901	
26	6 U201	BEAM		10	S	X			2	9.000		22.000					7	4	7	0	273
12	4 U202	BEAM		10	S	X				13.000		2	9.000				4	11	4	9	38
		INT. BENT 3																			
54	8 D300	FOOTING		20	X				7	1.000							7	1	7	1	1021
24	6 D301	FOOTING		20	X				6	2.000							6	2	6	2	222
30	6 D302	FOOTING		18	X				7	8.000							9	0	9	0	406
20	6 D303	KEY		20	X				2	6.000							2	6	2	6	75
7	6 H300	BEAM		20	X				2	7.000							2	7	2	7	27
16	8 H301	BEAM		17	X				25	5.000							26	4	26	4	1125
10	4 H302	BEAM		20	X				25	5.000							25	5	25	5	170
7	8 H304	BEAM		17	X				16	11.000							17	10	17	10	333
10	4 H305	BEAM		20	X				16	11.000							16	11	16	11	113
9	8 H306	BEAM		20	X				16	11.000							16	11	16	11	407
14	6 H307	BEAM		10	S	X					22.000		3	7.750			7	4	7	0	147
99	4 P300	COLUMN		16	X				3	3.000							11	1	11	1	733
10	4 U300	BEAM		10	S	X				12.000		3	9.000				5	9	5	7	37
12	5 U301	BEAM		10	S	X				4	0.000		3	9.000			11	9	11	7	145
46	5 U302	BEAM		13	S	X			3	9.000		4	0.000		3	9.000	16	5	16	1	772
54	8 V300	COLUMN		20	X				36	1.000							36	1	36	1	5202
		INT. BENT 4																			
54	8 D400	FOOTING		20	X				7	1.000							7	1	7	1	1021
24	6 D401	FOOTING		20	X				6	2.000							6	2	6	2	222
30	6 D402	FOOTING		18	X				7	8.000							9	0	9	0	406
20	6 D403	KEY		20	X				2	6.000							2	6	2	6	75
7	6 H400	BEAM		20	X				2	7.000							2	7	2	7	27
16	8 H401	BEAM		17	X				25	5.000							26	4	26	4	1125
10	4 H402	BEAM		20	X				25	5.000							25	5	25	5	170
7	8 H404	BEAM		17	X				16	11.000							17	10	17	10	333
10	4 H405	BEAM		20	X				16	11.000							16	11	16	11	113
9	8 H406	BEAM		20	X				16	11.000							16	11	16	11	407

BILL OF REINFORCING STEEL

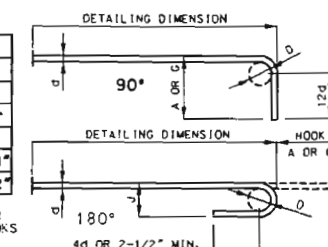
NO. REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS								NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT					
									B	C	D	E	F	H	K									
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.
14	6 H407	BEAM		10	S	X				22.000	3	7.750						7	4	7	0	147		
99	4 P400	COLUMN		16		X			3	3.000								11	1	11	1	733		
10	4 U400	BEAM		10	S	X				12.000	3	9.000						5	9	5	7	37		
12	5 U401	BEAM		10	S	X				4	0.000	3	9.000					11	9	11	7	145		
46	5 U402	BEAM		13	S	X			3	9.000	4	0.000	3	9.000	4	0.000		16	5	16	1	772		
54	8 V400	COLUMN		20		X			36	2.000								36	2	36	2	5215		
		SUPERSTR.																						
		END BENT 1																						
18	6 F100	WING		23	S				14.000	4	3.625	14.000	9.875	9.875	9.875	9.875		6	8	6	7	178		
10	6 F101	DIAPHRAGM		19	S				5	5.125	2	3.000						7	8	7	6	113		
43	5 H100	DIAPHRAGM	E	20					2	6.000								2	6	2	6	112		
1	4 H101	APP. HAUNCH		20					25	10.000								25	10	25	10	17		
1	4 H102	APP. HAUNCH		20					17	10.000								17	10	17	10	12		
3	6 H103	DIAPHRAGM		20					19	2.000								19	2	19	2	86		
3	6 H104	DIAPHRAGM		20					27	2.000								27	2	27	2	122		
9	6 H105	DIAPHRAGM		20					8	0.000								8	0	8	0	108		
3	6 H106	DIAPHRAGM		20					3	2.000								3	2	3	2	14		
3	6 H107	DIAPHRAGM		20					4	11.000								4	11	4	11	22		
6	6 H108	DIAPHRAGM		20					2	10.000								2	10	2	10	26		
10	6 H109	BEAM		20					18	11.000								18	11	18	11	284		
10	6 H110	BEAM		20					27	5.000								27	5	27	5	412		
4	6 H112	DIAPHRAGM	E	20					19	1.000								19	1	19	1	115		
5	5 H113	STRAND TIE		20					3	11.000								3	11	3	11	20		
4	6 H115	WING	E	20					13	10.000								13	10	13	10	83		
8	6 H116	WING		20					13	10.000								13	10	13	10	166		
32	6 H117	WING		20			V	4	3	11.000								3	11	3	11	186		
		INCREMENT =							13	10.000								13	10	13	10	427		
		17.000 INCH																						
4	6 H118	DIAPHRAGM	E	20					30	11.000								30	11	30	11	186		
4	6 T100	WING		25	S				2	0.750	11	8.000	3	3.250		4	10.750	10	7.125	17	0	16	11	102
32	5 U100	BEAM		10	S				5	1.375	2	3.000						12	6	12	3	409		
3	4 U101	BEAM		10	S				2	9.000	2	3.000						7	9	7	7	15		
14	4 U102	BEAM		13	S				2	3.000	2	9.000	2	3.000	2	9.000		10	9	10	6	98		
58	6 U103	DIAPHRAGM	E	19	S				4	4.375	4	7.500						9	0	8	10	770		
40	5 U104	DIAPHRAGM	E	10	S				4	4.375	2	3.000						11	0	10	9	448		
32	4 U105	APP. HAUNCH		10	S				17.750	6.000								3	6	3	4	71		
16	5 V100	BEAM		20					5	2.000								5	2	5	2	86		
44	6 V101	WING		20			V	4	2	4.000								2	4	2	4	24		
		INCREMENT =							7	0.000								7	0	7	0	308		
		5.625 INCH																						
8	6 V102	WING		20					7	5.000								7	5	7	5	89		
		END BENT 5																						
16	6 F500	WING		23	S				14.000	4	3.625	14.000	9.875	9.875	9.875	9.875		6	8	6	7	158		

State MO Proj. No. Sheet No. B30



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.

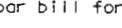



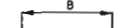
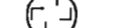
DIMENSIONS
ALL GRADES

HOOKS	90° HOOKS
J	A OR D
3"	6"
4"	8"
5"	10"
6"	12"
7"	14"
8"	16"
1-3/4"	19"
13-1/4"	22"
14-3/4"	2'-0"
21-3/4"	2'-7"

Two additional #4-K10, #5-S102, #6-H515, & #7-S104 are included in the bar bill for testing.

NOTE:
 ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH THE SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS.
 HOOKS & 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. 2, 3 = NUMBER OF BARS.
 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 SPIRALS 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) = F_y 60,000 PSI.

SHEET NO. 31 OF 33

FRANKLIN

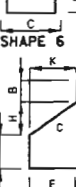
135° HOOK

SHAPE 35


SHAPE 35

SHAPE 35

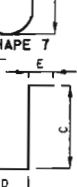
State	Proj. No.	Sheet No.
MO		B 3 i




SHAPE 6



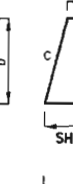
SHAPE 7




SHAPE 8



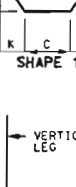
SHAPE 9




SHAPE 10



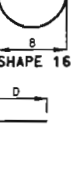
SHAPE 11



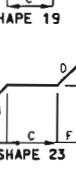
SHAPE 12




SHAPE 13



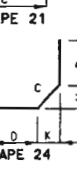
SHAPE 14



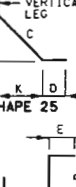
SHAPE 15



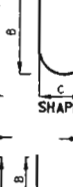
SHAPE 16



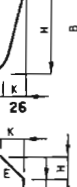
SHAPE 17




SHAPE 18



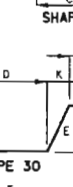
SHAPE 19




SHAPE 20



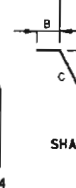
SHAPE 21



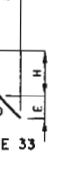
SHAPE 22




SHAPE 23




SHAPE 24



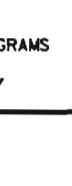
SHAPE 25




SHAPE 26



SHAPE 27



SHAPE 28



SHAPE 29

SHAPE 30

SHAPE 31

SHAPE 32

SHAPE 33

SHAPE 34

SHAPE 35

SPOT WELD
AASHTO M32
SIZE #5 WIRE
(TYP.)

VERTICAL LEG

3\" PITCH

1 1/2 THICK

DATE 10-29-01

DEAN DAVID FRANKIE
NUMBER E-28132

STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER

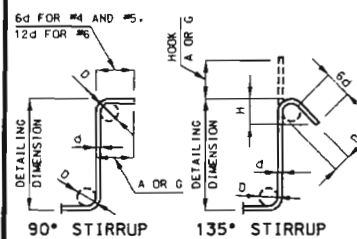
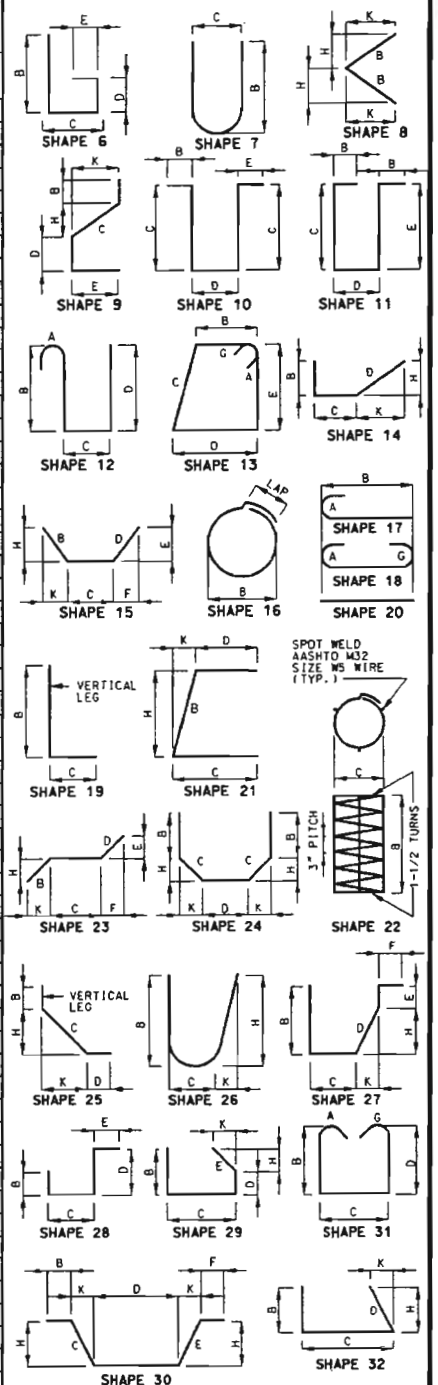
BILL OF REINFORCING STEEL

[illegible]

BILL OF REINFORCING STEEL

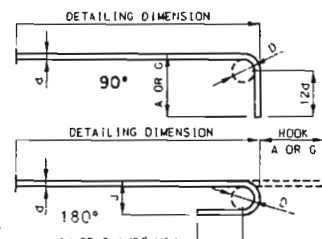
[illegible]

State	Proj. No.	Sheet No.
MO		B32



STIRRUP HOOK DIMENSIONS				
GRADES 40 - 50 - 60 KSI				
BAR SIZE	D (IN.)	90° HOOK		135° HOOK
		HOOK A OR G	HOOK A OR G	APPROX. H
#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"

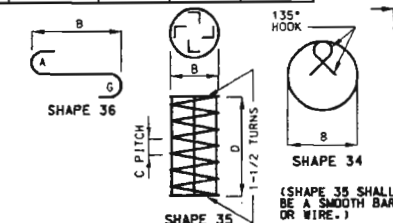
NOTE: UNLESS OTHERWISE NOTED DIAMETER
"O" IS THE SAME FOR ALL BENDS AND HOOKS
ON A BAR.



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

END HOOK DIMENSIONS					
BAR SIZE	D. (IN.)	ALL GRADES			
		180° HOOKS		90° HOOKS	
		A OR G	J	A OR G	J
#2	2-1/4"	5"	3"	6"	6"
#3	3"	6"	4"	8"	8"
#4	3-3/4"	7"	5"	10"	10"
#5	4-1/2"	8"	6"	12"	12"
#6	5-1/4"	10"	7"	14"	14"
#8	6"	11"	8"	16"	16"
#9	9-1/2"	15"	11-3/4"	19"	19"
#10	10-3/4"	17"	13-1/4"	22"	22"
#11	12"	19"	14-3/4"	24"	24"
#14	18-1/4"	23"	21-3/4"	27"	27"

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 LENGTHS 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.
DOUBLE END OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED
OUT INSTEAD OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.



BENDING DIAGRAMS

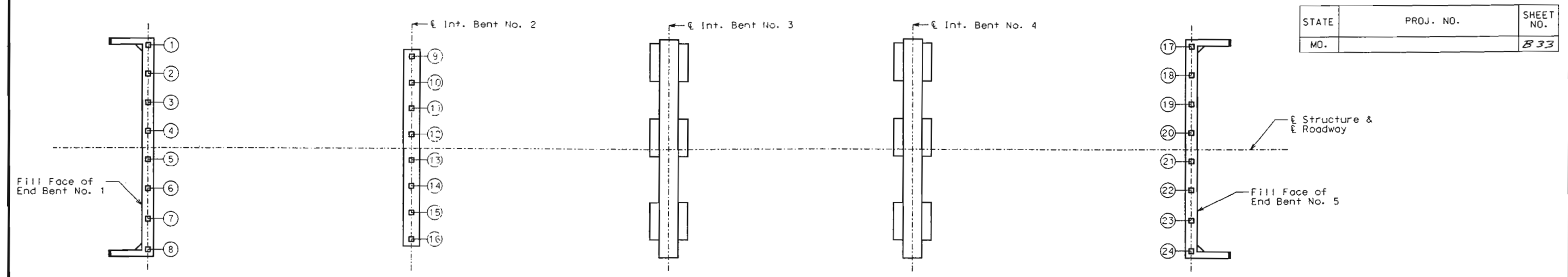


DATE 10-29-01

FRANKLIN

COUNTY

A6361



STATE	PROJ. NO.	SHEET NO.
MO.		833

PART PLAN SHOWING
PILE NUMBERING FOR RECORDING
"AS BUILT PILE" DATA

"AS BUILT PILE" DATA			
PILE NO.	LENGTH IN PLACE (FT.)	COMPUTED BEARING (TONS)	REMARKS
End Bent No. 1			
1			
2			
3			
4			
5			
6			
7			
8			
Int. Bent No. 2			
9			
10			
11			
12			
13			
14			
15			
16			

"AS BUILT PILE" DATA			
PILE NO.	LENGTH IN PLACE (FT.)	COMPUTED BEARING (TONS)	REMARKS
End Bent No. 5			
17			
18			
19			
20			
21			
22			
23			
24			

NOTE: INDICATE IN REMARKS COLUMN:
A.) IF PILING WERE DRIVEN TO PRACTICAL REFUSAL.
B.) PILE BATTER IF OTHER THAN SHOWN ON BENT DETAIL SHEET.
C.) TYPE OF PILING USED.

NOTE: THIS SHEET TO BE COMPLETED BY
MODOT CONSTRUCTION PERSONNEL.

DETAILED July 2001
CHECKED Aug 2001

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

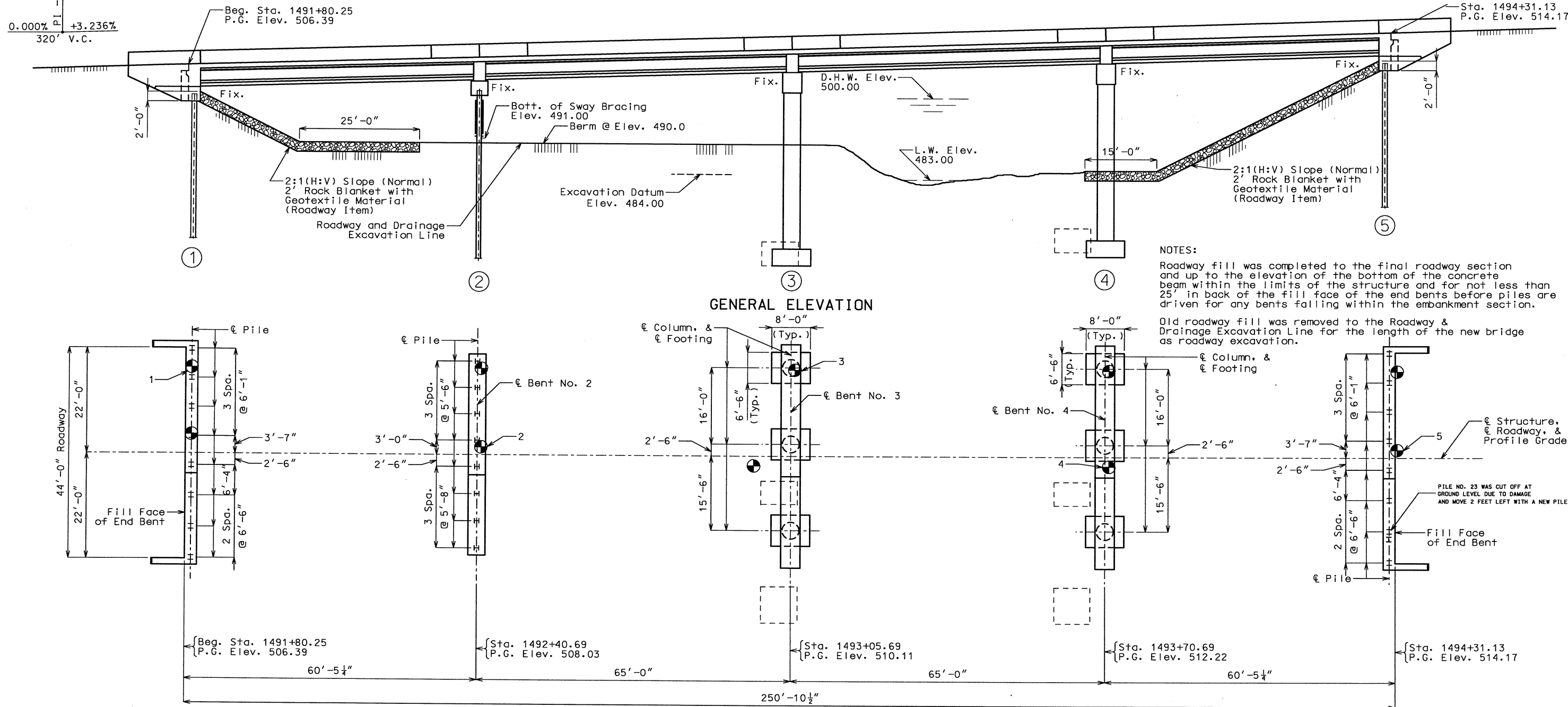
SHEET NO. 33 OF 33

FRANKLIN COUNTY A6361



MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION
 (60.0' - 65.0' - 65.0' - 60.0') PRESTRESSED CONCRETE I-GIRDER SPANS

ROUTE 50	STATE MO.	DISTRICT 6	SHEET NO. B1
JOB NO. J6P1381			
PROJECT NO. FAF-50-4(25)			
CONTRACT NO. 021213-603			
COUNTY FRANKLIN			



NOTES:

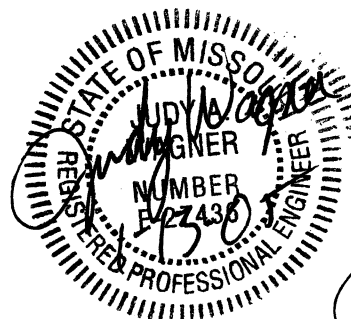
Roadway fill was completed to the final roadway section and up to the elevation of the bottom of the concrete beam within the limits of the structure and for not less than 25' in back of the fill face of the end bents before piles are driven for any bents falling within the embankment section.

Old roadway fill was removed to the Roadway & Drainage Excavation Line for the length of the new bridge as roadway excavation.

BENCH MARK

SQUARE BOX ON THE NORTHWEST END
ON THE TOP OF BRIDGE BARRIER
ELEV. 508.35

BRIDGE OVER BIRCH CREEK
STATE ROAD FROM ROUTE 47 TO I-44
ABOUT 3.5 MILES EAST OF ROUTE 47
STA. 1491+80.25
RTE. 50



I CERTIFY THAT THIS PLAN SHEET ACCURATELY DEPICTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND ALL ITS APPURTENANT FEATURES, TO THE BEST OF MY KNOWLEDGE, AS I AND MY STAFF HAVE OBSERVED THE CONTRACTOR'S CONSTRUCTION OF THIS PROJECT. I SPECIFICALLY DISCLAIM ANY RESPONSIBILITY FOR THE DESIGN OF THIS PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE MODIFIED OR AUTHORIZED THE MODIFICATION OF THE PROJECT DESIGN DURING ITS CONSTRUCTION; AND I DISCLAIM RESPONSIBILITY FOR THE CONTRACTOR'S ACTUAL CONSTRUCTION OF THE PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE DIRECTED OR ORDERED THAT THE PROJECT BE CONSTRUCTED.

Judy Wagner 1-13-05
SIGNATURE DATE

Designed Apr 2001
Detailed Aug 2001
Checked Aug 2001

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

Sheet No. 1 of 33

STD. 609.00
STD. 706.35
A6361

General Notes:

Design Specifications:

AASHTO - 1996 and Interims thru 2000
Load Factor Design
Seismic Performance Category A

Design Loading:

HS20 Modified
35#/ft² Future Wearing Surface
Earth - 120 #/Cu. Ft., Equivalent Fluid Pressure 45#/Cu. Ft.
Superstructure: Simply-supported, non-composite for dead load.
Continuous composite for live load.

Design Unit Stresses:

Class B Concrete (Substructure) $f'c = 3,000$ psi
Class B1 Concrete (Safety Barrier Curb) $f'c = 4,000$ psi
Class B2 Concrete (Superstructure except
Prestressed Girders & Safety
Barrier Curb) $f'c = 4,000$ psi
Reinforcing Steel (Grade 60) $fy = 60$ ksi
Structural Carbon Steel (ASTM A709, Grade 36) $fy = 36,000$ psi
Steel Pile (ASTM A709, Grade 36) $fb = 90,000$ psi, $fy = 36,000$ psi
For Prestressed Girder stresses, see Sheets No. 15, 16, & 17.
For Precast Prestressed Panel stresses, see Sheet No. 20.

Neoprene Pads:

Bearings was 60 durometer neoprene pads. 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.

Joint Filler:

All joint filler meet the requirements of Section 1057.2.4 of the Missouri Standard Specifications, except as noted.

Reinforcing Steel:

Minimum clearance to reinforcing steel was 1-1/2", unless otherwise shown.

Coating:

All exposed surfaces of structural steel piles and steel sway bracing shall be painted with a calcium sulfonate system in accordance with the Special Provisions.

HYDROLOGIC DATA

Drainage Area	=	11.8 sq. miles (Hilly)
Design Discharge	=	5618 cu. ft./sec. (100 years)
Design H.W. Elev.	=	500.0 feet (100 years)
Estimated Backwater	=	0.85 feet

OVERTOPPING FLOOD DATA

Greater than or equal to 250 years

Final Quantities for Slab on Concrete I-Girder

Item		Total
Reinforcing Steel (Plain)	Lbs.	7760
Reinforcing Steel (Epoxy Coated)	Lbs.	115520
Concrete (Class B2)	Cu. Yds.	367.8 ***

The table of Quantities for Slab on Concrete I-Girder represents the quantities used by the state in preparing the cost estimate for concrete slabs. Variations may be encountered in these quantities but these variations cannot be used for an adjustment in the contract unit price per square yard of Slab on Concrete I-Girder.

See Special Provisions for method of forming slab.

The prestressed panel quantities are not included in the table of Estimated Quantities for Slab on Concrete I-Girder.

*** Based on minimum top flange thickness and minimum joint filler thickness.

Elevations:

All elevations are specified in feet except as noted.

Final Quantities

Item		Substr.	Superstr.	Total
Removal of Bridges (H-389R)	Lump Sum			1
Class 1 Excavation	Cu. Yd.	137.5		137.5
Class 2 Excavation	Cu. Yd.	408		408
Cofferdams - Bent 3	Lump Sum	1		1
Cofferdams - Bent 4	Lump Sum	1		1
Bridge Approach Slab (Bridge)	Sq. Yd.		250	250
Structural Steel Piles (10 in)	Lin. Ft.	603		603
Structural Steel Piles (14 in)	Lin. Ft.	352		352
Pile Point Reinforcement	Each	25		25
Class B Concrete (Substr)	Cu. Yd.	212.5		212.5
Slab on Concrete I-Girder	Sq. Yd.		1301	1301
* Safety Barrier Curb	Lin. Ft.		552	552
Laminated Neoprene Bearing Pads (Tapered)	Each		40	40
Prestressed Concrete I-Girder (60' Span)	Each		10	10
Prestressed Concrete I-Girder (65' Span)	Each		10	10
Reinforcing Steel (Bridges)	Lb.	24720		24720
Mechanical Bar Splice	Each	64	58	122
Fabricated Structural Carbon Steel (Misc)	Lb.	1910		1910
Slab Drain	Each		8	8
Vertical Drain at End Bents	Each			2
Line No. 5010 - Additional Reinforcement	Lb.		710	710
Steel for Slab				
Line No. 5011 - Foundation Test Holes	Lin. Ft.	36		36
Line No. 5015 - Class 2 Excavation in Rock	Cu. Yd.	10.5		10.5

* Safety Barrier Curb was slip - form

All concrete above the construction joint in the end bents is included in the Quantities for Slab on concrete I-Girder

All reinforcement in the end bents is included in the Quantities for slab concrete I-Girder.

All reinforcement in the intermediate bent concrete diaphragms except reinforcement embedded in the beam cap is included in the quantities for slab on concrete I-Girder

All concrete above the intermediate bent cap is included in the Quantities for Slab on Concrete I-Girder.

The cost of furnishing, fabricating and installing Neoprene Bearing Pads, complete-in-place, will be paid for at the contract unit price for Laminated Neoprene Bearing Pads Tapered per each.

Pile and Footing Data

Bent No.		1	2	3	4	5
Bearing Pile	Pile Type and Size	HP10 X 42	HP14 X 73			HP10 X 42
	Number	8	8			8
	Approximate Length	ft.	52			50
	Design Bearing	tons	64			48
Spread Footings	Hammer Energy Required	ft.-lbs.	10,800	15,000		10,800
	Foundation Material			Rock	Rock	
	Design Bearing	tons/sq. ft.		7.6	7.6	

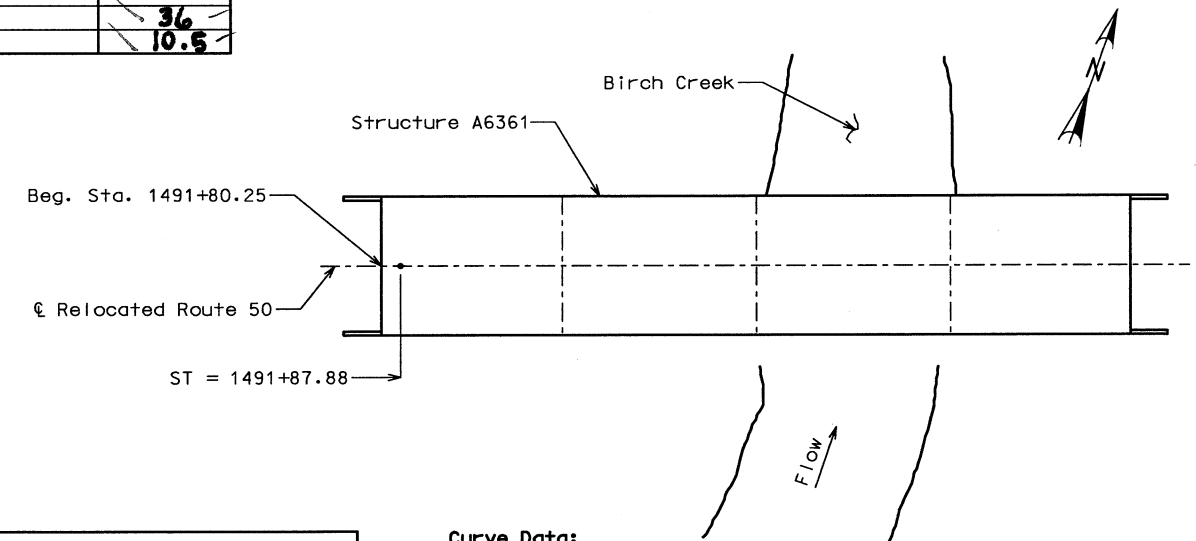
Minimum energy requirement of hammer is based on plan length and design bearing value of piles.

All piles were driven to practical refusal.

The cost of furnishing and installing steel sway bracing on piles at the intermediate bent, will be paid for at the contract unit price for Fabricated Structural Carbon Steel (Misc.).

No direct payment was made for cleaning and coating of bracing at intermediate bent.

Manufactured pile point reinforcement was used on all piles in this structure at Bents 1, 2, & 5. See Special Provisions.

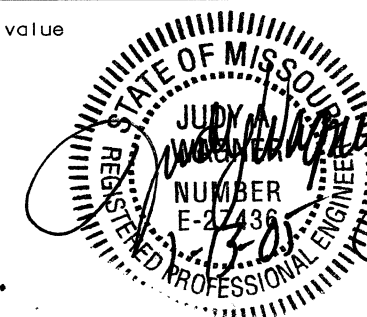


Curve Data:

T.S. = 1488+57.88
S.S. = 1490+22.88
S.T. = 1491+87.88
Ls = 165.00'
Os = 0°36'7"
Xs = 164.99'
Ys = 1.73'

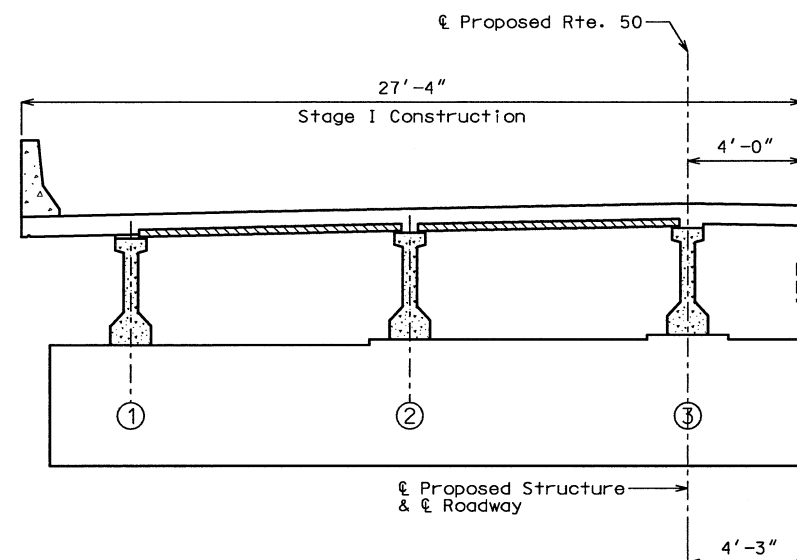
FINAL PLANS

I CERTIFY THAT THIS PLAN SHEET ACCURATELY DEPICTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND ALL ITS APPURTENANT FEATURES, TO THE BEST OF MY KNOWLEDGE, AS I AND MY STAFF HAVE OBSERVED THE CONTRACTOR'S CONSTRUCTION OF THIS PROJECT. I SPECIFICALLY DISCLAIM ANY RESPONSIBILITY FOR THE DESIGN OF THIS PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE MODIFIED OR AUTHORIZED THE MODIFICATION OF THE PROJECT DESIGN DURING ITS CONSTRUCTION; AND I DISCLAIM RESPONSIBILITY FOR THE CONTRACTOR'S ACTUAL CONSTRUCTION OF THE PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE DIRECTED OR ORDERED THAT THE PROJECT BE CONSTRUCTED.

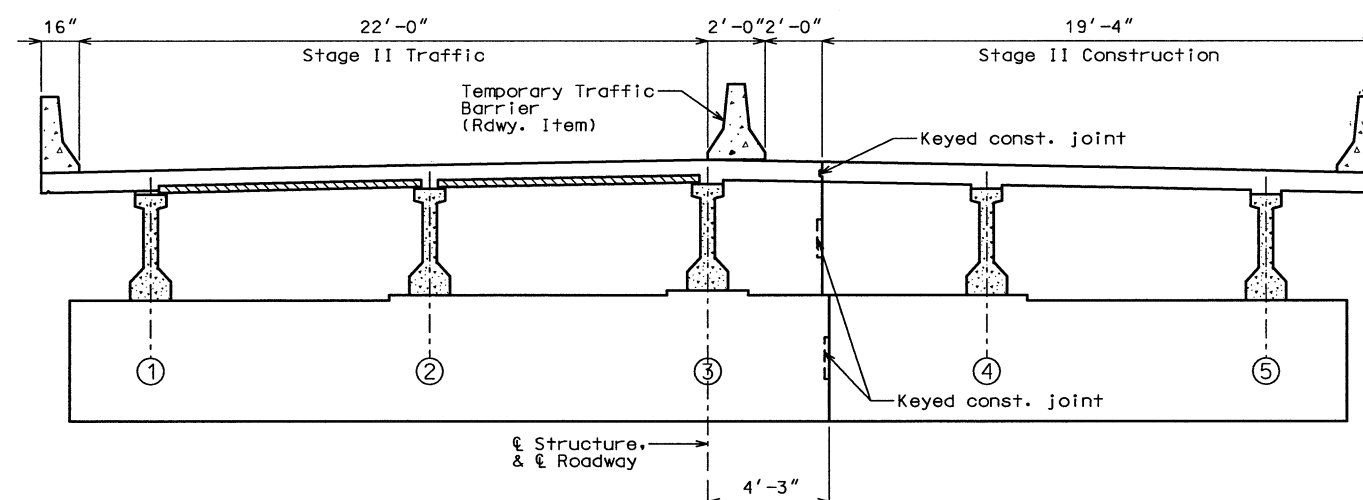


FRANKLIN COUNTY A6361

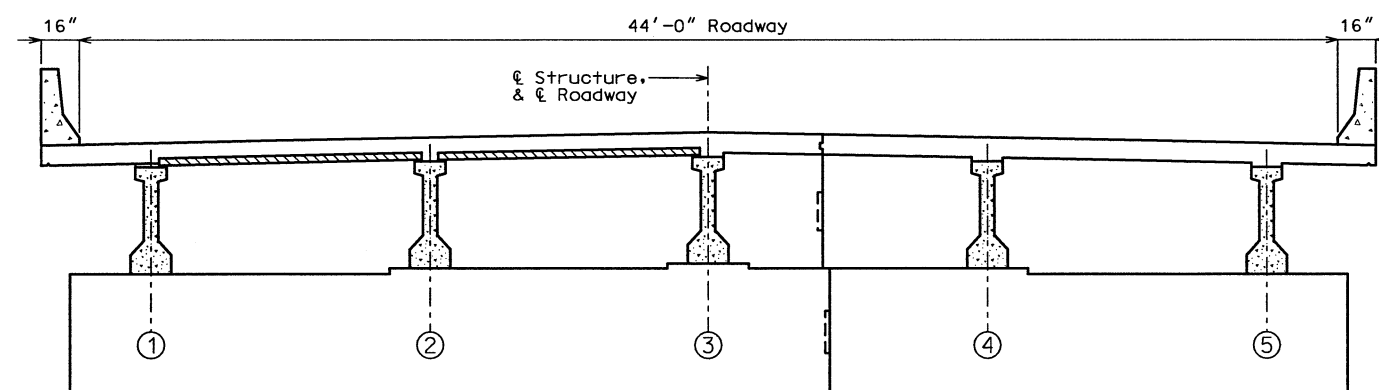
ROUTE 50	STATE MO.	DISTRICT 6	SHEET NO. B3	
JOB NO. J6P1381				
PROJECT NO. FAF-50-4(25)				
CONTRACT NO. 021213-603				
COUNTY FRANKLIN				



STAGE I CONSTRUCTION & STAGE I TRAFFIC



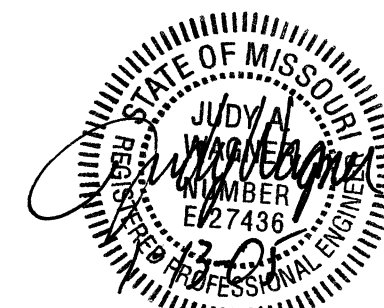
STAGE II CONSTRUCTION & STAGE II TRAFFIC



FINAL ROADWAY
DETAILS OF STAGED CONSTRUCTION

Note:

Prestressed Panels were used in girder bays (1-2) & (2-3) as shown at left.



FINAL PLANS

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Judy Wagner 1-13-05
SIGNATURE DATE

Detailed Aug 2001
Checked Aug 2001

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

Sheet No. 3 of 33

FRANKLIN COUNTY A6361

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ROUTE 50	STATE MO.	DISTRICT 6	SHEET NO. B4
JOB NO. J6P1381			
PROJECT NO. FAF-50-4(25)			
CONTRACT NO. 021213-603			
COUNTY FRANKLIN			

TEST DATA			
Depth, ft.	SPT Blows/6"	N ₆₀	Pocket Pen., tsf
5.0	3-5-2	9	1.25
10.0	1-1-2	4	0.50
15.0	2-2-9	14	Sand
20.0	13-9-7	20	Sand
25.0	11-10-11	26	Sand
30.0	5-6-11	21	0.25
35.0	3-1-24	31	Sand

Elev. 496.20	Brown lean clay, trace cobbles, medium stiff, moist.
Elev. 492.80	
Elev. 490.40	Tan lean clay, scattered gravel and cobbles, medium stiff, moist.
Elev. 485.10	Brown lean clay, trace gravel, soft to medium stiff, moist.
Elev. 480.20	Gray lean clay, medium stiff, moist.
Elev. 467.70	Gray medium grained sand, scattered gravel, loose to medium dense, wet.
Elev. 460.20	Gray fat clay, scattered sandstone layers.
Elev. 459.00	Weathered rock, rockbit.
Elev. 456.20	Light gray and tan fine and medium grained dolomite, very thin to medium bedded, hard.
Elev. 449.20	Light gray and tan medium grained sandstone, very thin to medium bedded, medium hard, weathered sandstone with green staining from 44.9' to 45.5'.

①
CORE

TEST DATA			
Depth, ft.	SPT Blows/6"	N ₆₀	Pocket Pen., tsf
5.0	2-4-3	9	1.75
10.0	1-1-2	4	Gravelly
15.0	1-2-3	6	Gravelly
20.0	1-3-2	6	Gravelly
25.0	2-12-5	21	Gravelly
30.0	2-11-56	84	Sand
35.0	49-21 in 3.5"	--	Sand

Elev. 511.98	Brown lean sandy clay, moist.
Elev. 511.58	
Elev. 510.98	Base rock, moist.
Elev. 507.18	Gravel, with tan lean clay and cobbles.
Elev. 491.78	Tan lean clay, with gravel, scattered cobbles, medium stiff, moist.
Elev. 483.08	Gravelly tan lean clay, scattered cobbles, moist.
Elev. 482.08	Boulder, hard.
Elev. 479.38	Light gray medium grained sand, dense.
Elev. 473.18	White to light gray sandstone, medium hard.
Elev. 470.88	Light tan medium grained sandstone, very thin bedded, medium hard.
Elev. 468.08	White dolomite medium grained sandstone, moderately hard.
Elev. 467.68	Sandy chert layer.
Elev. 466.68	Brown weathered sandstone.
Elev. 466.18	Brown medium grained sandstone, medium hard.
Elev. 462.68	Brown and light gray medium grained sandstone, thin bedded, hard.
Elev. 458.18	Tan and light gray to white dolomite, medium grained, moderately hard rock.

⑤
CORE

Elev. 504.20	Brown lean sandy clay, moist.
Elev. 503.10	
Elev. 490.40	Brown lean to fat clay, scattered gravel and cobbles, medium stiff, moist.
	Gray fat clay, scattered sand, moist.
Elev. 474.90	
	Gray fat clay, scattered sandstone seams to layers.
Elev. 459.80	Moderately hard rock.
Elev. 456.70	Soft clay.
Elev. 451.40	Moderately hard rock.
Elev. 450.50	Hard rock, possibly sandstone.
Elev. 449.20	

②

TEST DATA			
Depth, ft.	SPT Blows/6"	N ₆₀	Pocket Pen., tsf
5.0	1-1-1	3	0.25
10.0	5-2-3	6	--
15.0	20-15-26	51	--
20.0	20-9-10	24	No Sample
25.0	35-55	113	Sandstone

BORING DATA

For location of borings see sheet no. 1.

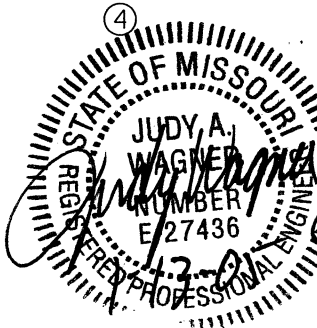
Elev. 489.40	Brown lean clay, scattered gravel and cobbles, medium stiff, moist.
Elev. 487.60	
Elev. 478.60	Brown lean clay, trace sand, soft, moist.
Elev. 476.30	Gray lean clay, with sand and gravel, medium stiff, moist.
Elev. 471.80	Gray sand and gravel, scattered cobbles.
Elev. 466.90	Gray lean clay, with sand and gravel.
Elev. 461.30	Light gray sandstone, medium grained, medium hard.
Elev. 455.50	Light gray dolomite, medium grained, very thin to medium bedded, trace white very fine grained seams, hard.
Elev. 454.20	Light tan and light gray fine grained dolomite, thin bedded, hard.
Elev. 453.90	Light gray and brown sandstone, medium grained, hard.
Elev. 453.60	Clay seam.
Elev. 451.30	Light gray medium grained sandstone, thin to medium bedded, hard.

③
CORE

Elev. 489.00	Brown lean clay, with gravel and cobbles, medium stiff, moist.
Elev. 487.50	
Elev. 478.60	Brown lean clay, very soft, very moist.
Elev. 474.00	Gray lean clay, with sand, very soft, wet.
Elev. 467.40	Gravel and cobbles.
Elev. 462.30	Moderately hard rock, possibly sandstone.

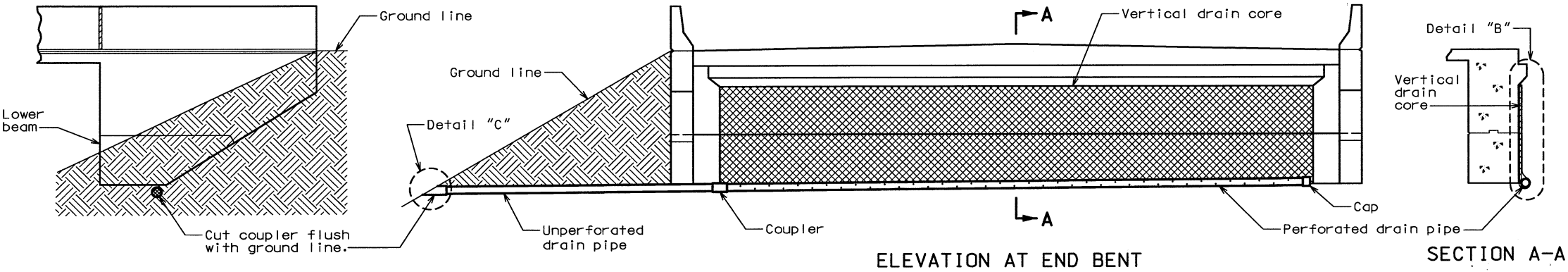
FINAL PLANS

I CERTIFY THAT THIS PLAN SHEET ACCURATELY DEPICTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND ALL ITS APPURTENANT FEATURES, TO THE BEST OF MY KNOWLEDGE, AS I AND MY STAFF HAVE OBSERVED THE CONTRACTOR'S CONSTRUCTION OF THIS PROJECT. I SPECIFICALLY DISCLAIM ANY RESPONSIBILITY FOR THE DESIGN OF THIS PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE MODIFIED OR AUTHORIZED THE MODIFICATION OF THE PROJECT DESIGN DURING ITS CONSTRUCTION; AND I DISCLAIM RESPONSIBILITY FOR THE CONTRACTOR'S ACTUAL CONSTRUCTION OF THE PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE DIRECTED OR ORDERED THAT THE PROJECT BE CONSTRUCTED.



Judy A. Wagner
1-13-05

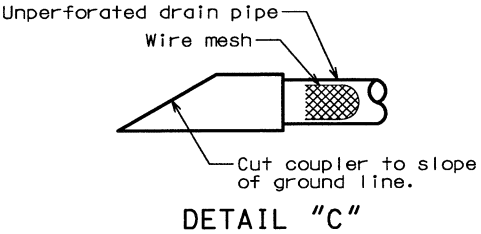
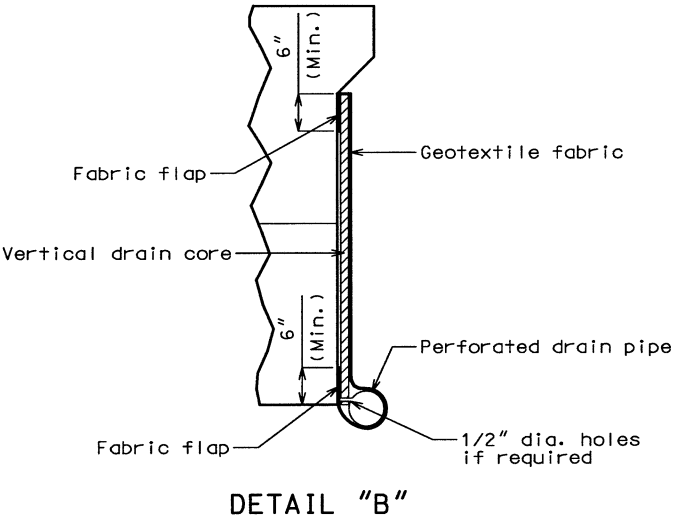
ROUTE	STATE	DISTRICT	SHEET NO.	
50	MO.	6	B7	
JOB NO. J6P1381				
PROJECT NO. FAF-50-4(25)				
CONTRACT NO. 021213-603				
COUNTY FRANKLIN				



Note:
Drain pipe was 6" diameter corrugated metallic-coated steel pipe underdrain, 4" diameter corrugated polyvinyl chloride (PVC) drain pipe, or 4" diameter corrugated polyethylene (PE) drain pipe.

Place drain pipe at fill face of end bent and slope to lowest grade of ground line, also missing the lower beam of end bent by 1-1/2". (See elevation at end bent.)

Perforated pipe was placed at fill face side at the bottom of end bent and plain pipe was used where the vertical drain ends to the exit at ground line.

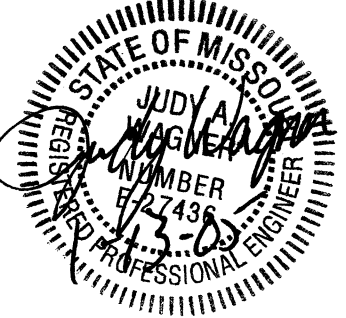


VERTICAL DRAIN AT END BENTS

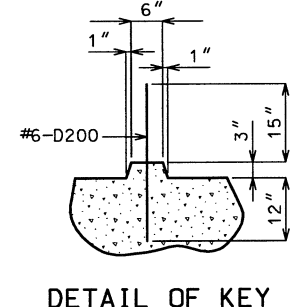
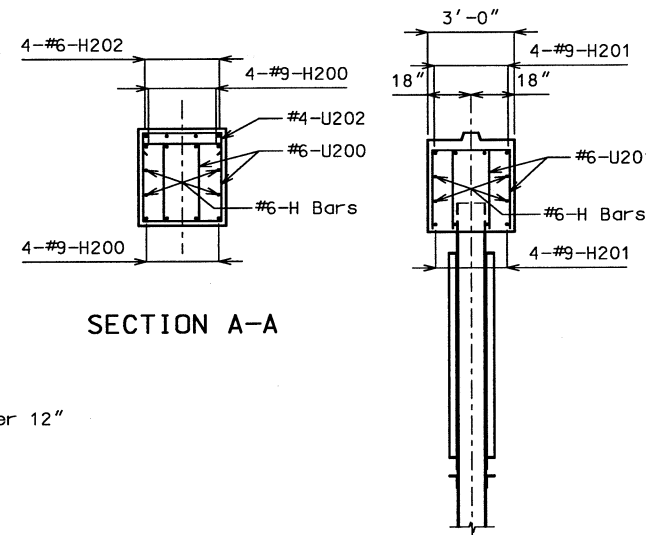
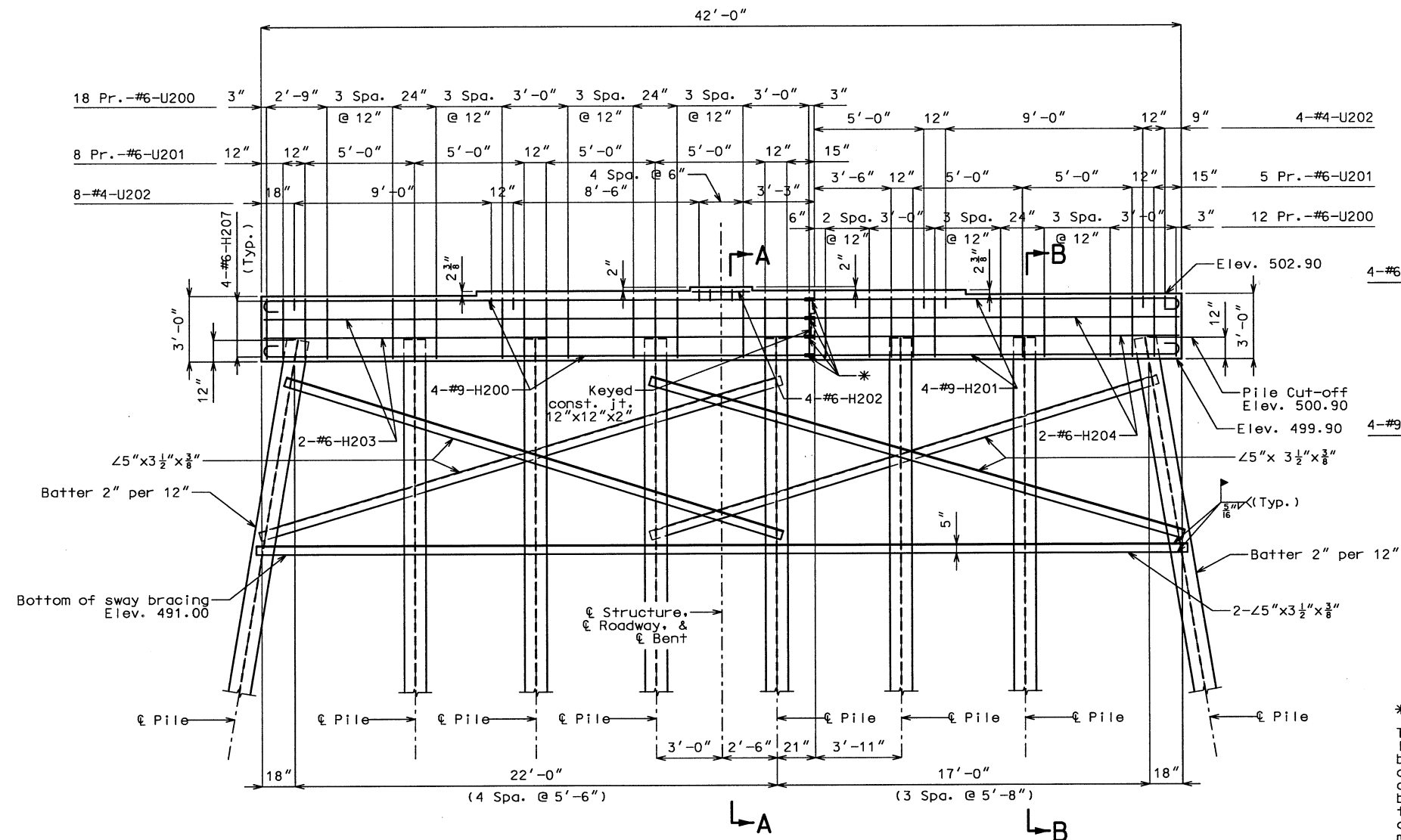
FINAL PLANS

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Judy Wagner 1-13-05
SIGNATURE DATE



ROUTE	STATE	DISTRICT	SHEET NO.	
50	MO.	6	B8	
JOB NO. J6P1381				
PROJECT NO. FAF-50-4(25)				
CONTRACT NO. 021213-603				
COUNTY FRANKLIN				



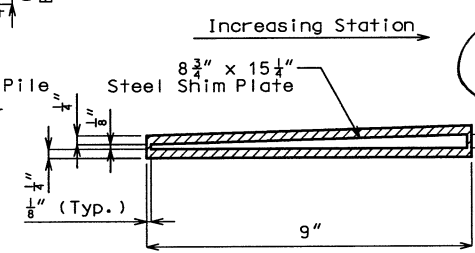
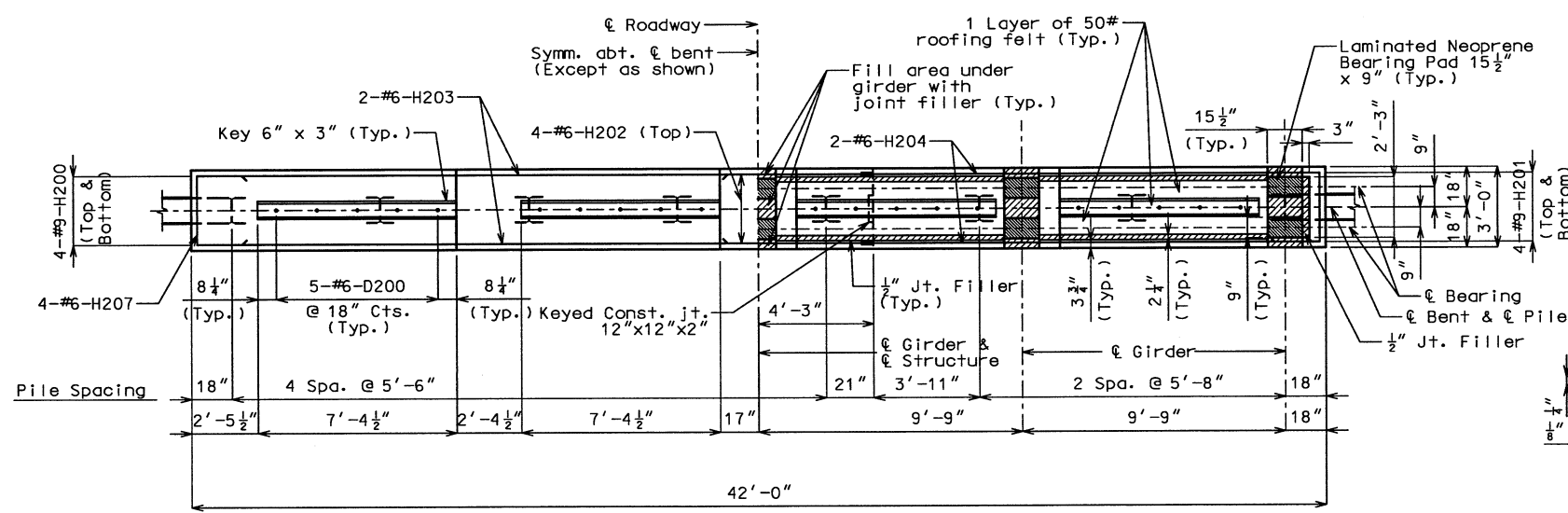
* Mechanical Bar Splice:

The contractor use a mechanical bar splice for bars at the specified location. The total bar lengths for the #6-H203 & H204 and #9-H200 & H201 bars shown in the Bill of Reinforcing Steel are determined based on the end of the bars being located flush to the face of the construction joint. Extra bar lengths from that specified in the bar list may be required depending on the specific splice system to be used. No payment will be made for additional bar lengths added. See job special provisions for additional requirements of mechanical bar splices. Mechanical bar splices for epoxy coated bars were epoxy coated.

FINAL PLANS

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Judy Wagner 1-13-05
SIGNATURE DATE



DETAILS OF INTERMEDIATE BENT NO. 2

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

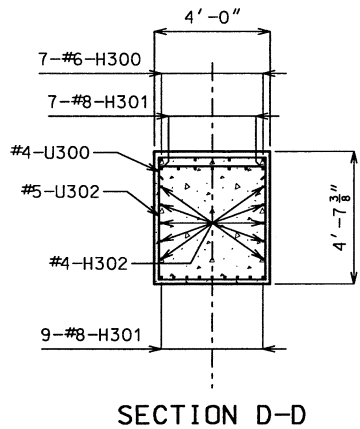
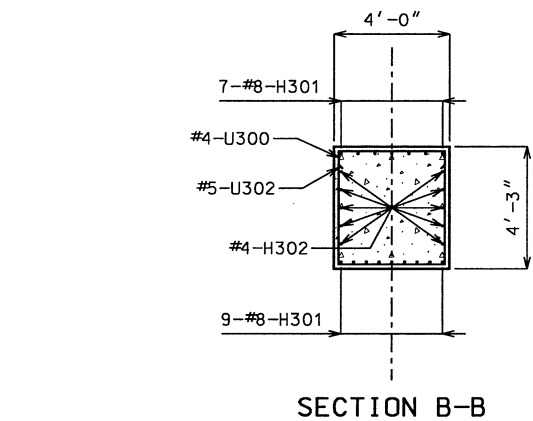
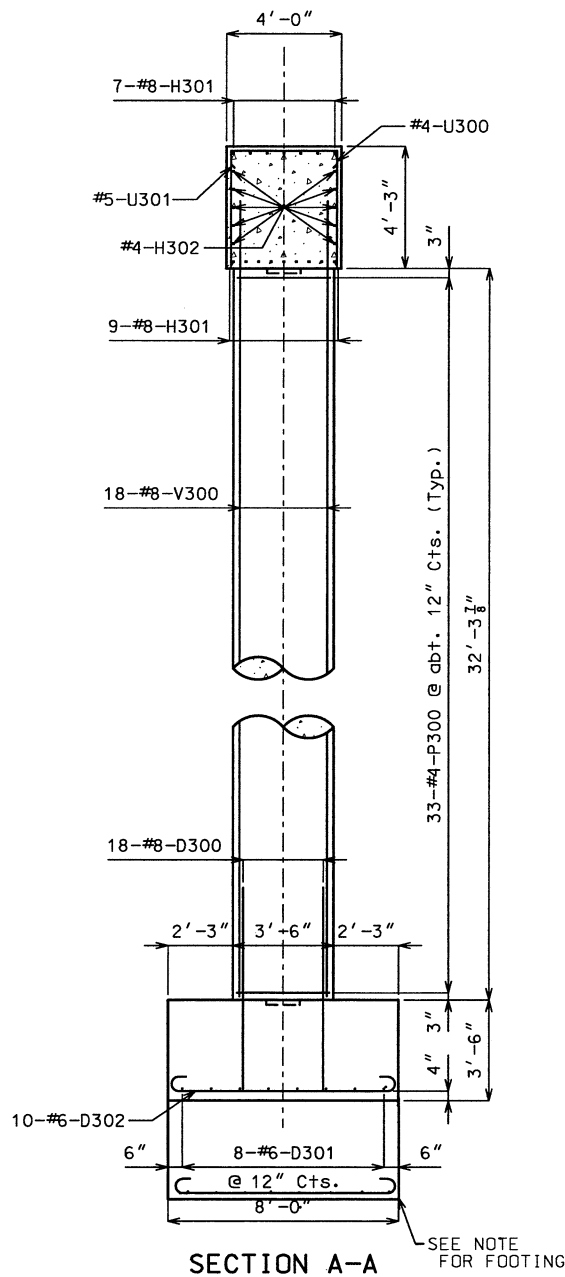
Sheet No. 8 of 33

Note: The required shim plate were placed between layers of elastomer and molded together to form an integral unit.

FRANKLIN COUNTY A6361

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ROUTE 50	STATE MO.	DISTRICT 6	SHEET NO. B10
JOB NO. J6P1381			
PROJECT NO. FAF-50-4(25)			
CONTRACT NO. 021213-603			
COUNTY FRANKLIN			



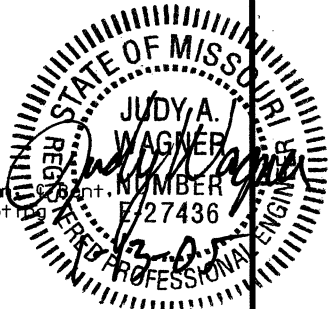
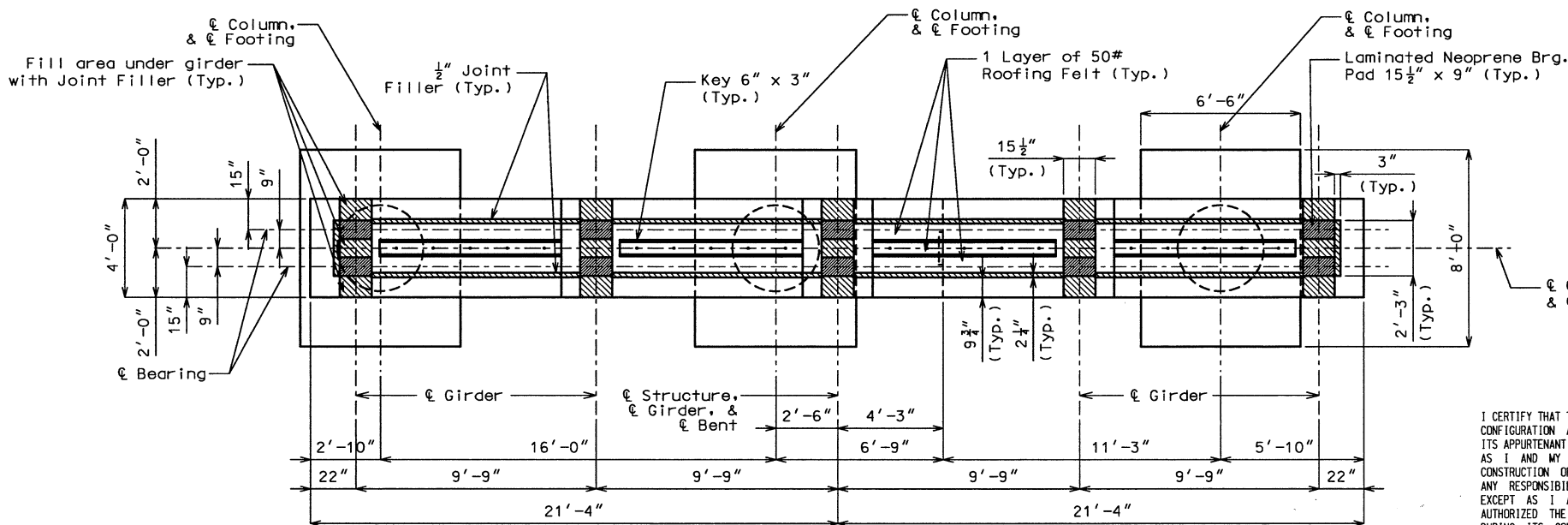
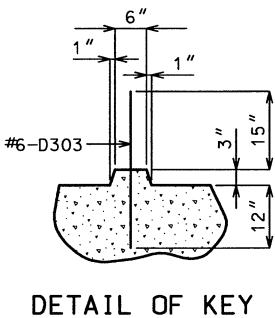
Notes:

For steps 2" or more, use 2-1/4" x 1/2" joint filler up vertical face.

Work with Sheet No. 9.

For location of Sections A-A, B-B, & D-D, see Sheet No. 9.

NOTE: SEE PAGE B9 FOR FOOTING ELEV.

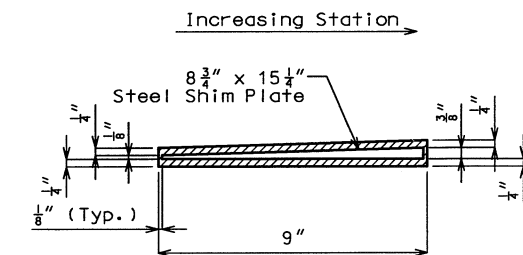
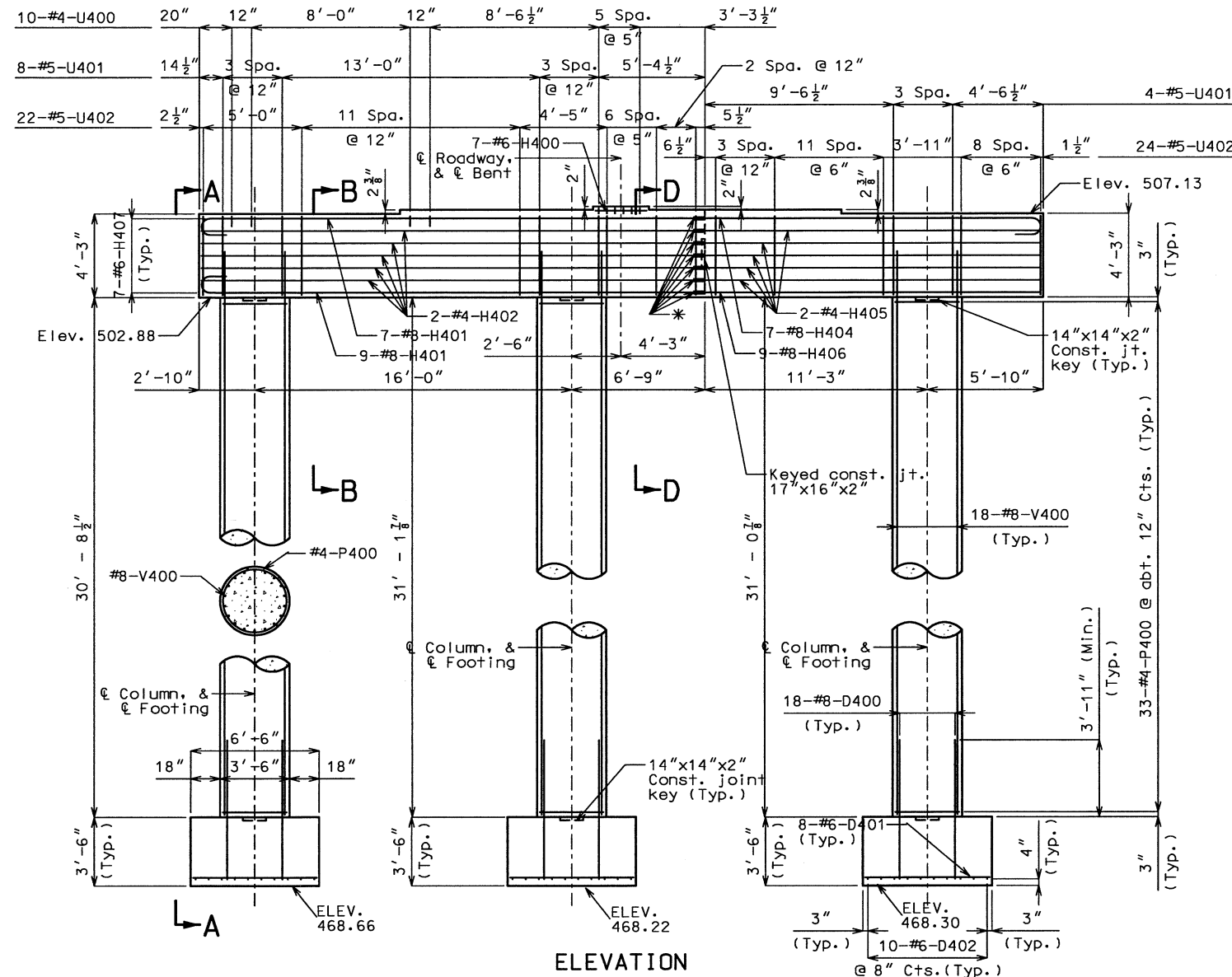


FINAL PLANS

I CERTIFY THAT THIS PLAN SHEET ACCURATELY DEPICTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND ALL ITS APPURTENANT FEATURES, TO THE BEST OF MY KNOWLEDGE, AS I AND MY STAFF HAVE OBSERVED THE CONTRACTOR'S CONSTRUCTION OF THIS PROJECT. I SPECIFICALLY DISCLAIM ANY RESPONSIBILITY FOR THE DESIGN OF THIS PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE MODIFIED OR AUTHORIZED THE MODIFICATION OF THE PROJECT DESIGN DURING ITS CONSTRUCTION; AND I DISCLAIM RESPONSIBILITY FOR THE CONTRACTOR'S ACTUAL CONSTRUCTION OF THE PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE DIRECTED OR ORDERED THAT THE PROJECT BE CONSTRUCTED.

Judy A. Wagner 1-13-05
DATE

ROUTE 50	STATED MO.	DISTRICT 6	SHEET NO. B11
JOB NO. J6P1381			
PROJECT NO. FAF-50-4(25)			
CONTRACT NO. 021213-603			
COUNTY FRANKLIN			



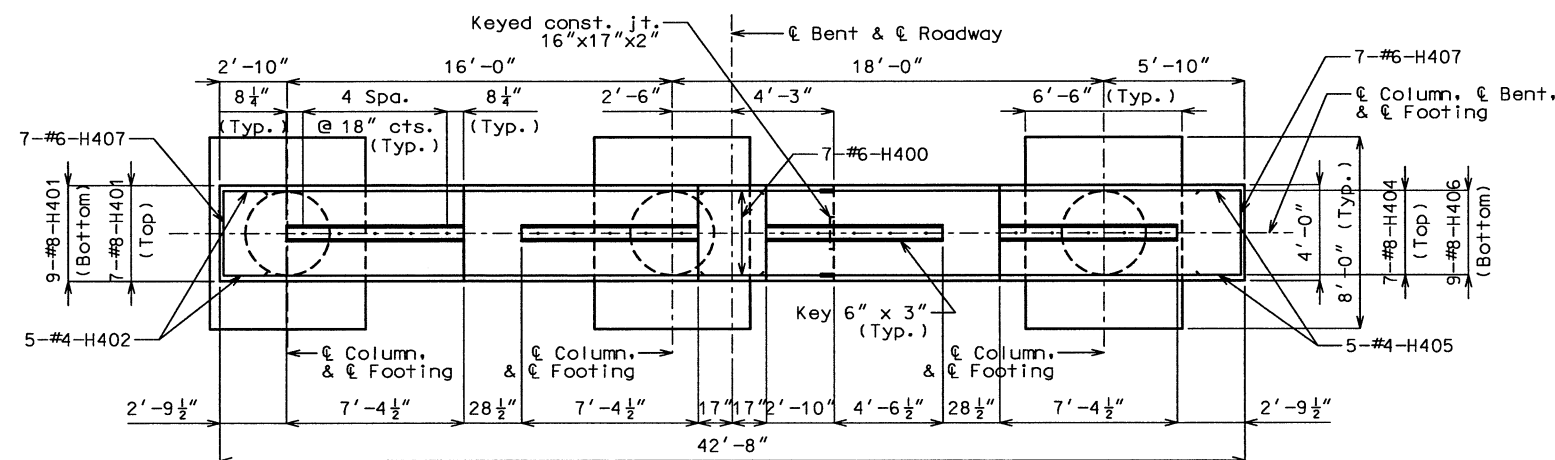
DETAIL OF LAMINATED
NEOPRENE BEARING PAD

Note: The required shim plate was placed between layers of elastomer and molded together to form an integral unit.

* Mechanical Bar Splice:

The contractor use a mechanical bar splice for the bars at the specified location. The total bar lengths for the #4-H402 & H405 and #8-H401 & H404/H406 bars shown in the Bill of Reinforcing Steel are determined based on the end of the bars being located flush to the face of the construction joint. Extra bar lengths from that specified in the bar list may be required depending on the specific splice system to be used. No payment will be made for additional bar lengths added. See job special provisions for additional requirements of mechanical bar splices. Mechanical bar splices for epoxy coated bars were epoxy coated.

Work with Sheet No. 12.



PLAN OF BEAM SHOWING REINFORCEMENT

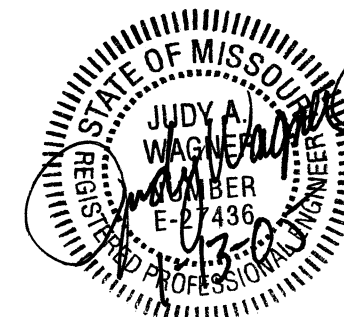
DETAILS OF INTERMEDIATE BENT NO. 4

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

Sheet No. 11 of 33

FINAL PLANS

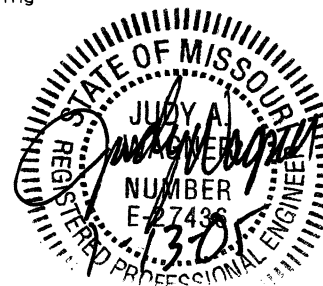
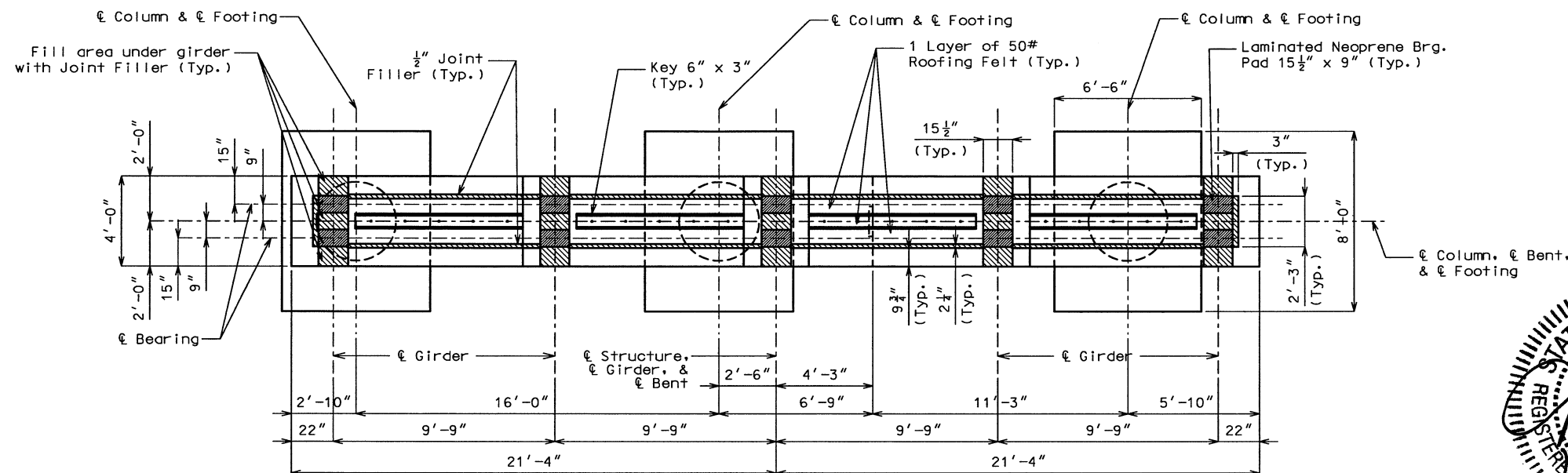
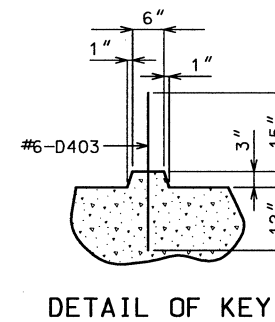
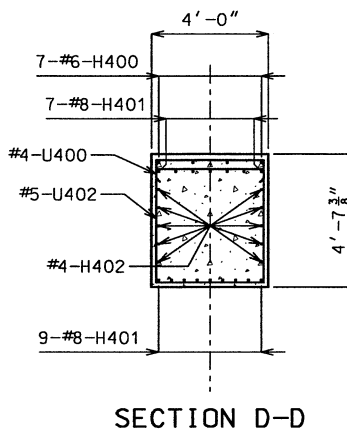
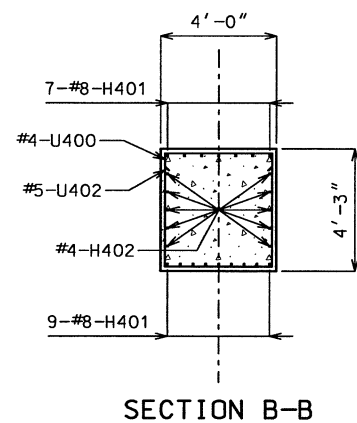
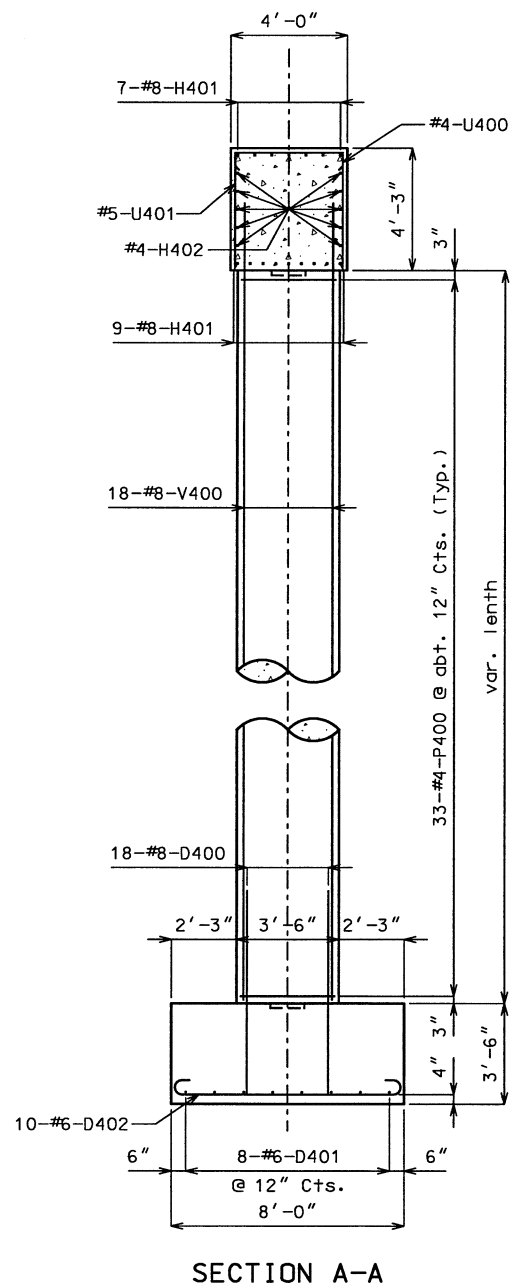
I CERTIFY THAT THIS PLAN SHEET ACCURATELY DEPICTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND ALL ITS APPURTENANT FEATURES, TO THE BEST OF MY KNOWLEDGE, AS I AND MY STAFF HAVE OBSERVED THE CONTRACTOR'S CONSTRUCTION OF THIS PROJECT. I SPECIFICALLY DISCLAIM ANY RESPONSIBILITY FOR THE DESIGN OF THIS PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE MODIFIED OR AUTHORIZED THE MODIFICATION OF THE PROJECT DESIGN DURING ITS CONSTRUCTION; AND I DISCLAIM RESPONSIBILITY FOR THE CONTRACTOR'S ACTUAL CONSTRUCTION OF THE PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE DIRECTED OR ORDERED THAT THE PROJECT BE CONSTRUCTED.



Judy A. Wagner
SIGNATURE
1-13-05
DATE

FRANKLIN COUNTY A6361

ROUTE	STATE	DISTRICT	SHEET NO.
50	MO.	6	B12
JOB NO. J6P1381			
PROJECT NO. FAF-50-4(25)			
CONTRACT NO. 021213-603			
COUNTY FRANKLIN			



FINAL PLANS

I CERTIFY THAT THIS PLAN SHEET ACCURATELY DEPICTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND ALL ITS APPURTENANT FEATURES, TO THE BEST OF MY KNOWLEDGE, AS I AND MY STAFF HAVE OBSERVED THE CONTRACTOR'S CONSTRUCTION OF THIS PROJECT. I SPECIFICALLY DISCLAIM ANY RESPONSIBILITY FOR THE DESIGN OF THIS PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE MODIFIED OR AUTHORIZED THE MODIFICATION OF THE PROJECT DESIGN DURING ITS CONSTRUCTION; AND I DISCLAIM RESPONSIBILITY FOR THE CONTRACTOR'S ACTUAL CONSTRUCTION OF THE PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE DIRECTED OR ORDERED THAT THE PROJECT BE CONSTRUCTED.

Judy Wagner
SIGNATURE
1-13-05
DATE

Notes:

For steps 2" or more, use 2-1/4" x 1/2" joint filler up vertical face.

Work with Sheet No. 11.

For location of Sections A-A, B-B, & D-D, see Sheet No. 11.

DETAILS OF INTERMEDIATE BENT 4

PLAN OF BEAM

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

Sheet No. 12 of 33

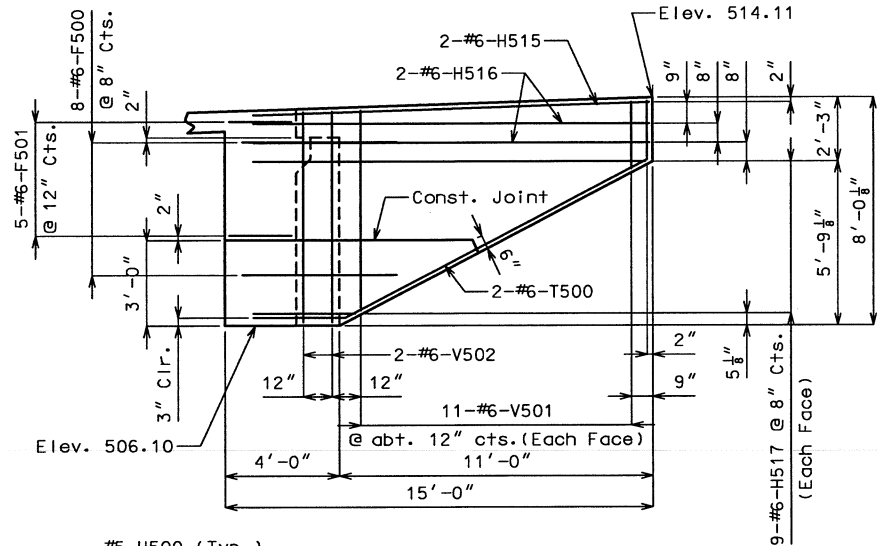
FRANKLIN COUNTY A6361

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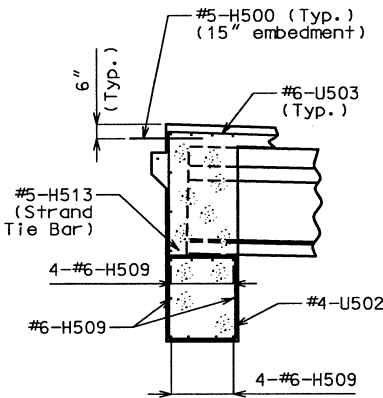
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JOB NO. J6P1381			
PROJECT NO. FAF-50-4(25)			
CONTRACT NO. 021213-603			
COUNTY FRANKLIN			

Note: See Sheet No. 13 for location of Elevation G-G & H-H.

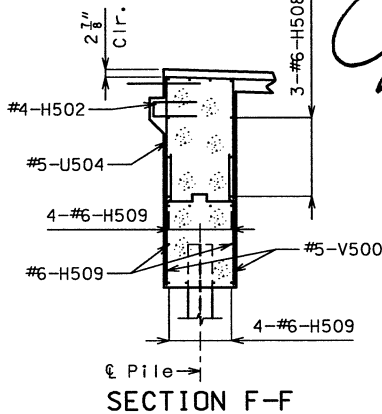
* Mechanical Bar Splice



ELEVATION H-H



SECTION E-E

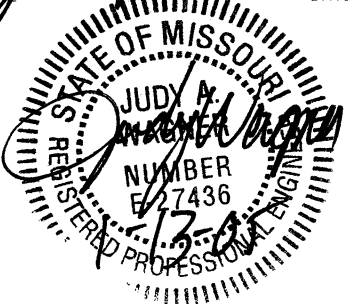


SECTION F-F

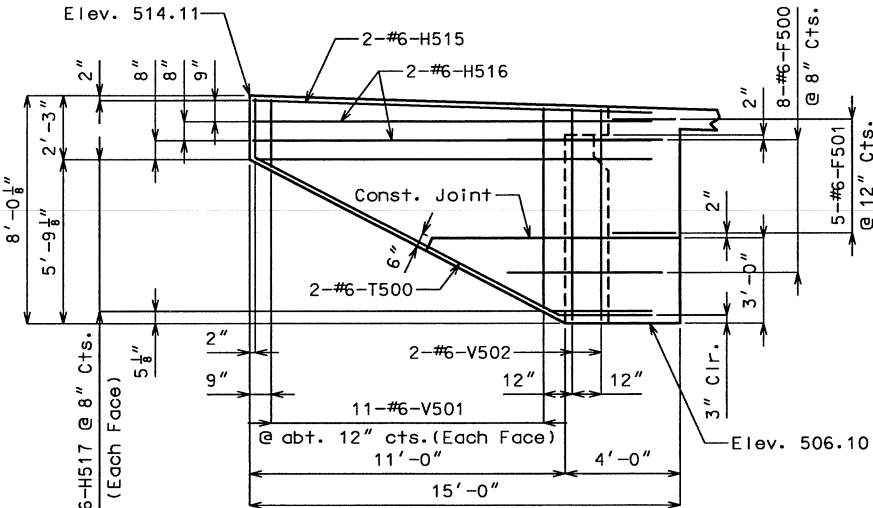
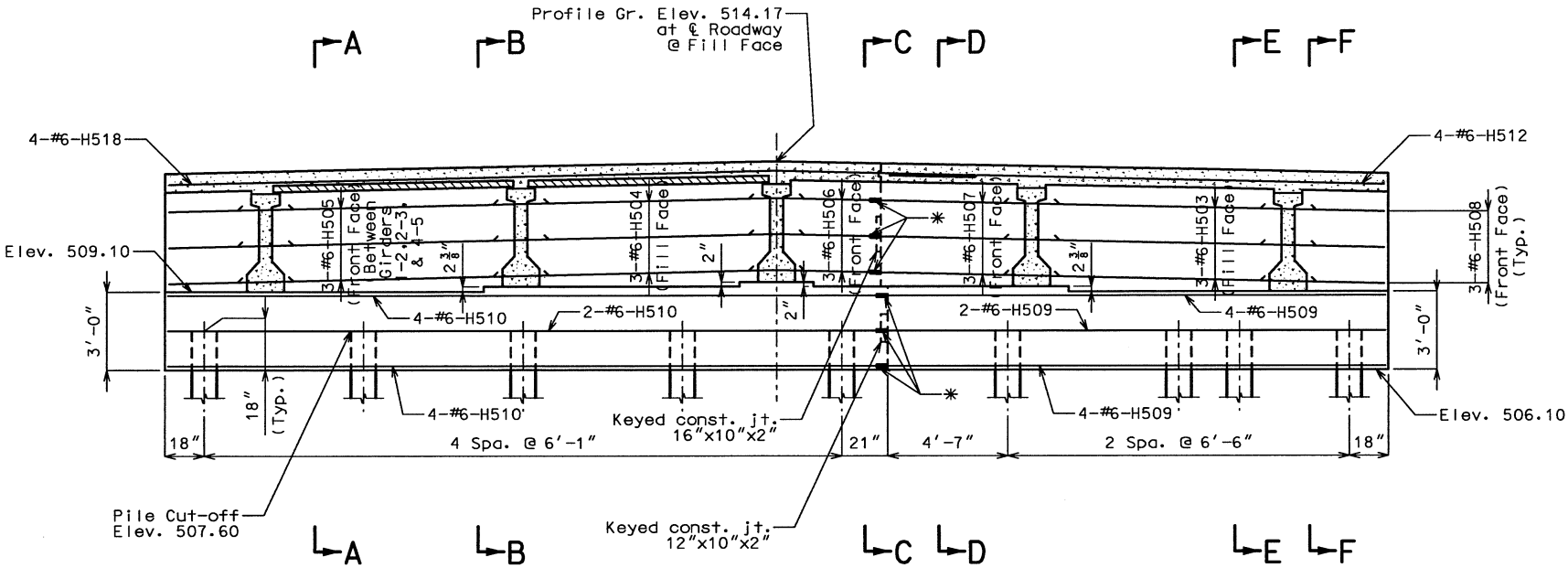
FINAL PLANS

I CERTIFY THAT THIS PLAN SHEET ACCURATELY DEPICTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND ALL ITS APPURTENANT FEATURES, TO THE BEST OF MY KNOWLEDGE, AS I AND MY STAFF HAVE OBSERVED THE CONTRACTOR'S CONSTRUCTION OF THIS PROJECT. I SPECIFICALLY DISCLAIM ANY RESPONSIBILITY FOR THE DESIGN OF THIS PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE MODIFIED OR AUTHORIZED THE MODIFICATION OF THE PROJECT DESIGN DURING ITS CONSTRUCTION; AND I DISCLAIM RESPONSIBILITY FOR THE CONTRACTOR'S ACTUAL CONSTRUCTION OF THE PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE DIRECTED OR ORDERED THAT THE PROJECT BE CONSTRUCTED.

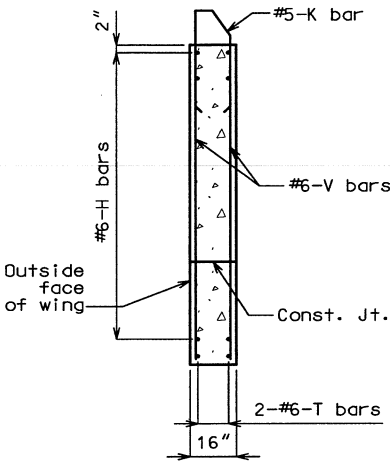
Judy Wagner 1-13-05
SIGNATURE DATE



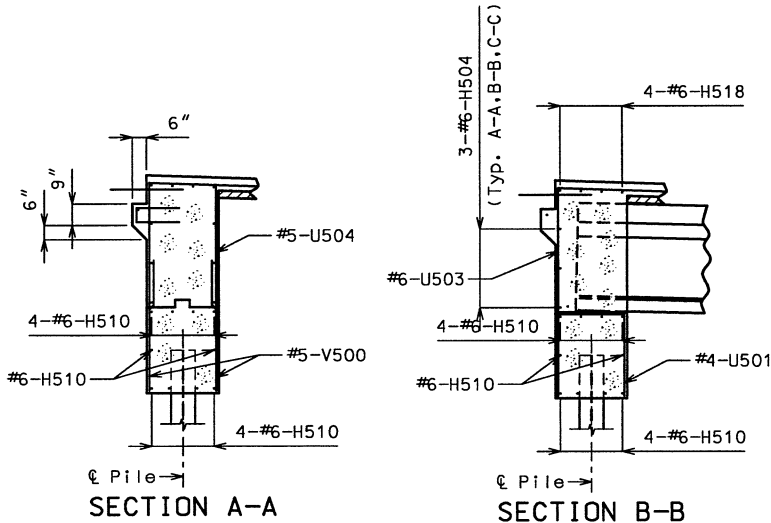
FRANKLIN COUNTY A6361



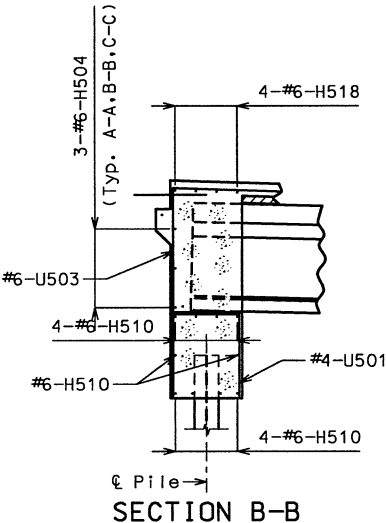
ELEVATION G-G



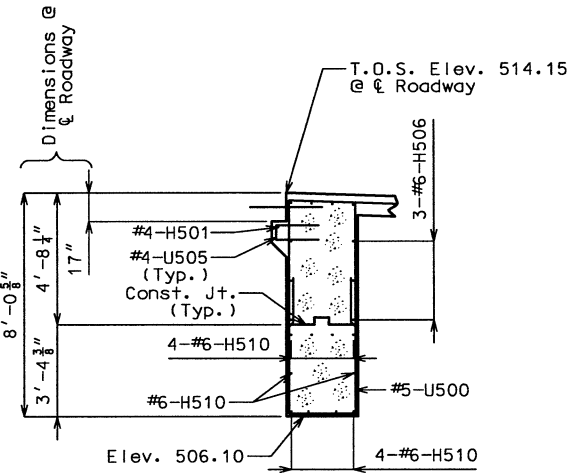
TYPICAL SECTION THRU WING



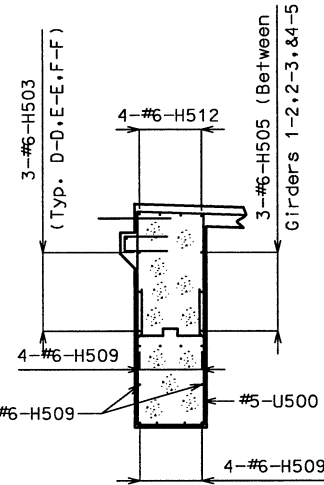
SECTION A-A



SECTION B-B



SECTION C-C
DETAILS OF END BENT NO. 5

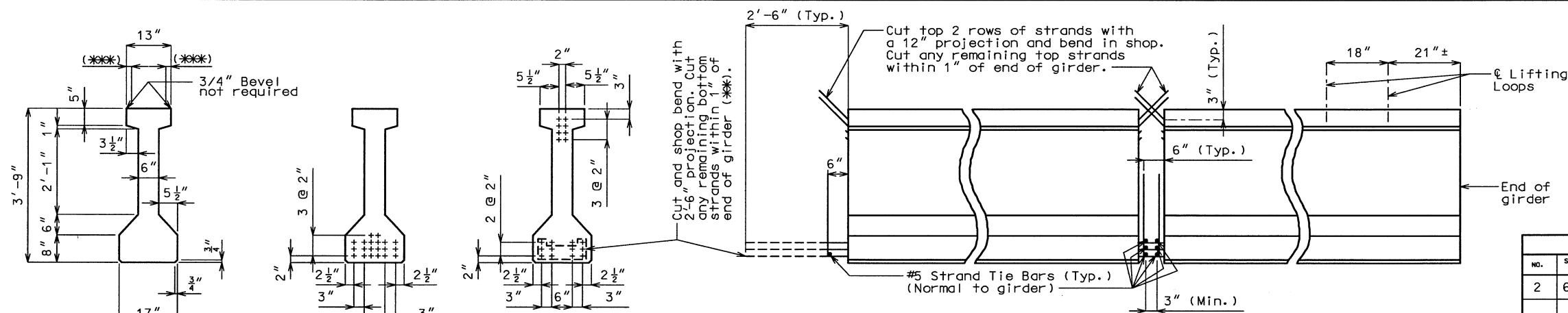


SECTION D-D

Sheet No. 14 of 33

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

Detailed July 2001
Checked Sept 2001



ROUTE 50	STATE MO.	DISTRICT 6	SHEET NO. B15
JOB NO. J6P1381			
PROJECT NO. FAF-50-4(25)			
CONTRACT NO. 021213-603			
COUNTY FRANKLIN			

BILL OF REINFORCING STEEL - EACH GIRDER				BENDING DIAGRAM	
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE		
2	6 A1	59'-2"	20		
150	5 B1	5'-2"	11		
16	6 B2	4'-7"	11		
83	4 C1	13"	10		
166	4 D1	2'-7"	9		

Concrete for prestressed girders was Class A1 with $f'_c = 6000$ psi and $f'_{ci} = 4500$ psi.

(+) Indicates prestressing strand.

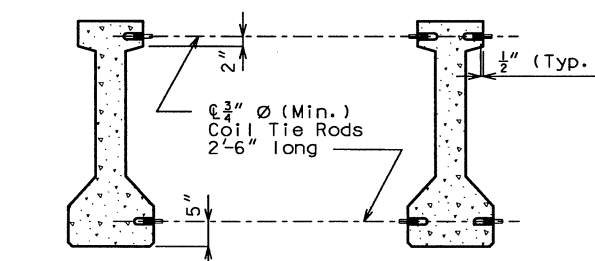
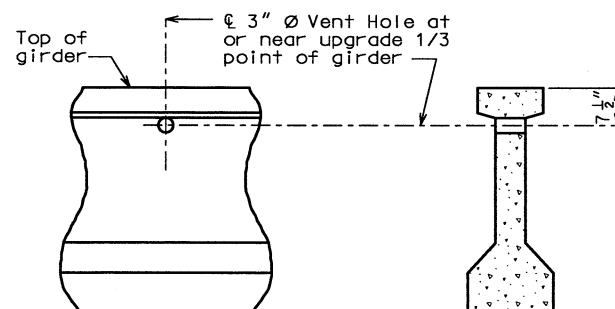
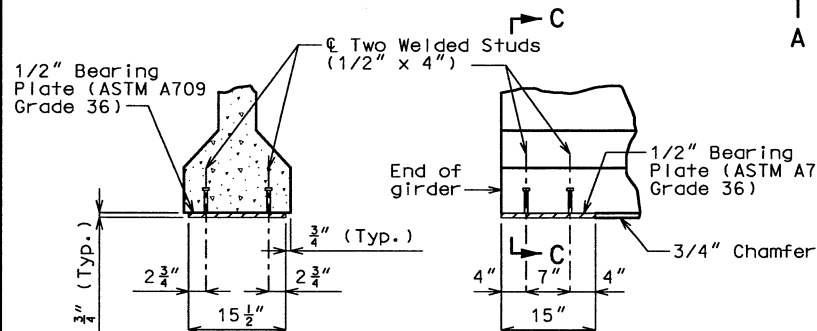
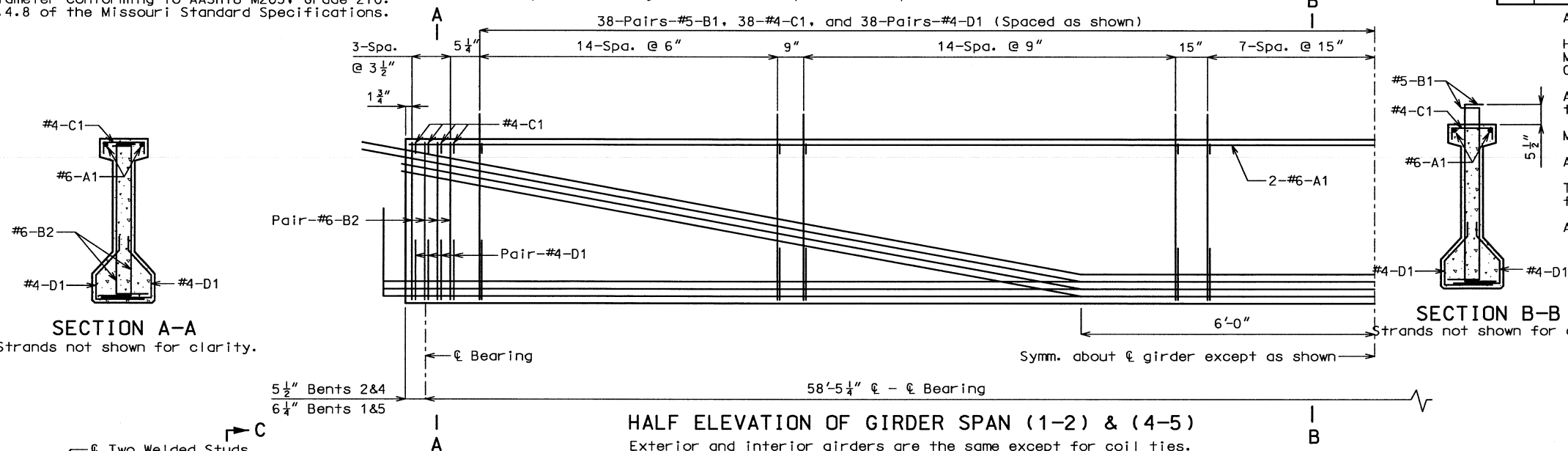
Use 20 strands with an initial prestress force of 620 kips.

Prestressing tendons were uncoated, seven-wire, low-relaxation strands, $\frac{1}{2}$ inch diameter conforming to AASHTO M203, Grade 270. See Section 705.4.8 of the Missouri Standard Specifications.

* At the contractor's option, the location for bent-up strands may be varied from that shown. The total number of bent-up strands was not be changed.

One strand tie bar is required for each layer of bent-up strands except at end bents which require one bar on the bottom layer of strands only. No additional payment will be made if additional strand tie bars are required.

*** At contractor's option, a 1-1/2" to 1-3/4" smooth finish strip is permitted to facilitate placement of joint filler for prestressed panels.



All dimensions in bending diagram are out to out.

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

Actual lengths are measured along centerline of bar to the nearest inch.

Minimum clearance to reinforcing was 1".

All reinforcement were Grade 60.

The two D1 bars may be furnished as one bar at the fabricator's option.

All B1 bars were epoxy coated.

FINAL PLANS

I CERTIFY THAT THIS PLAN SHEET ACCURATELY DEPICTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND ALL ITS APPURTENANT FEATURES, TO THE BEST OF MY KNOWLEDGE, AS I AND MY STAFF HAVE OBSERVED THE CONTRACTOR'S CONSTRUCTION OF THIS PROJECT. I SPECIFICALLY DISCLAIM ANY RESPONSIBILITY FOR THE DESIGN OF THIS PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE MODIFIED OR AUTHORIZED THE MODIFICATION OF THE PROJECT DESIGN DURING ITS CONSTRUCTION; AND I DISCLAIM RESPONSIBILITY FOR THE CONTRACTOR'S ACTUAL CONSTRUCTION OF THE PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE DIRECTED OR ORDERED THAT THE PROJECT BE CONSTRUCTED.

Cost of $\frac{3}{4}$ " ϕ coil tie rods placed in diaphragms is included in contract unit price for Prestressed Concrete I-Girder.

Coil ties were held in place in the forms by slotted wire-setting-studs projecting thru forms. Studs are to be left in place or replaced with temporary plugs until girders are erected, then replaced by coil tie rods.

For location of coil inserts at slab drain, see
sheet no. 21.

For location of coil ties, see sheets
no. 5, 13, & 19.

The 1-1/2" Ø holes were cast in the web for steel intermediate diaphragms. Drilling is not allowed.

For detail of diaphragms, see sheets
no. 18 & 19.

For Girder Camber Diagram, see sheet
no. 22.

Detailed July 2001
Checked Aug 2001

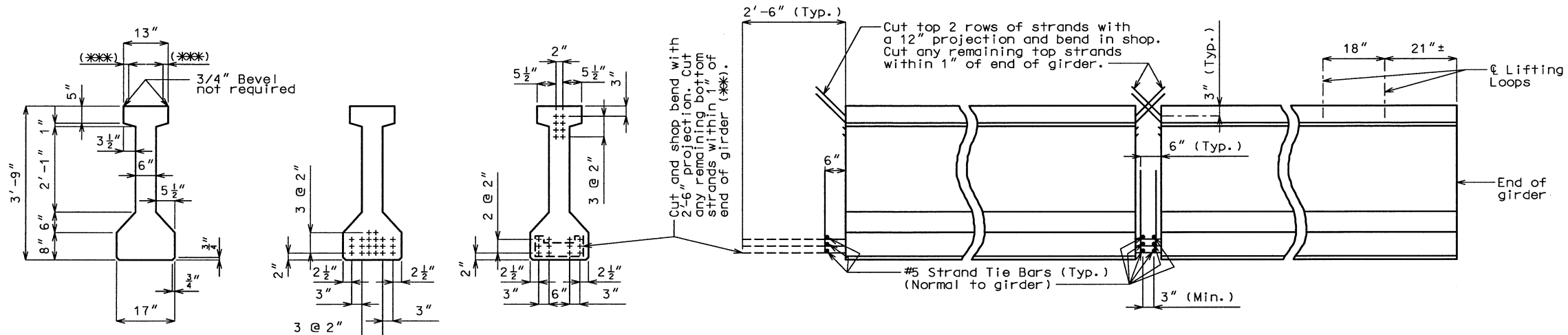
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 15 of 33

FRANKLIN COUNTY

A6361

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ROUTE	STATE	DISTRICT	SHEET NO.
50	MO.	6	B17
JOB NO. J6P1381			
PROJECT NO. FAF-50-4(25)			
CONTRACT NO. 021213-603			
COUNTY FRANKLIN			

BILL OF REINFORCING STEEL - EACH GIRDER				
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAM
4	5 A1	32'-11 1/2"	20	
140	5 B1	5'-2"	11	
16	6 B2	4'-7"	11	
78	4 C1	13"	10	
156	4 D1	2'-7"	9	

All dimensions in bending diagram are out to out.

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

Actual lengths are measured along centerline of bar to the nearest inch.

Minimum clearance to reinforcing were 1".

All reinforcement was Grade 60.

The two D1 bars may be furnished as one bar at the fabricator's option.

All B1 bars were epoxy coated.

Cost of $\frac{3}{4}$ " \emptyset coil tie rods placed in diaphragms is included in contract unit price for Prestressed Concrete I-Girder.

Coil ties were held in place in the forms by slotted wire-setting-studs projecting thru forms. Studs are to be left in place or replaced with temporary plugs until girders are erected, then replaced by coil tie rods.

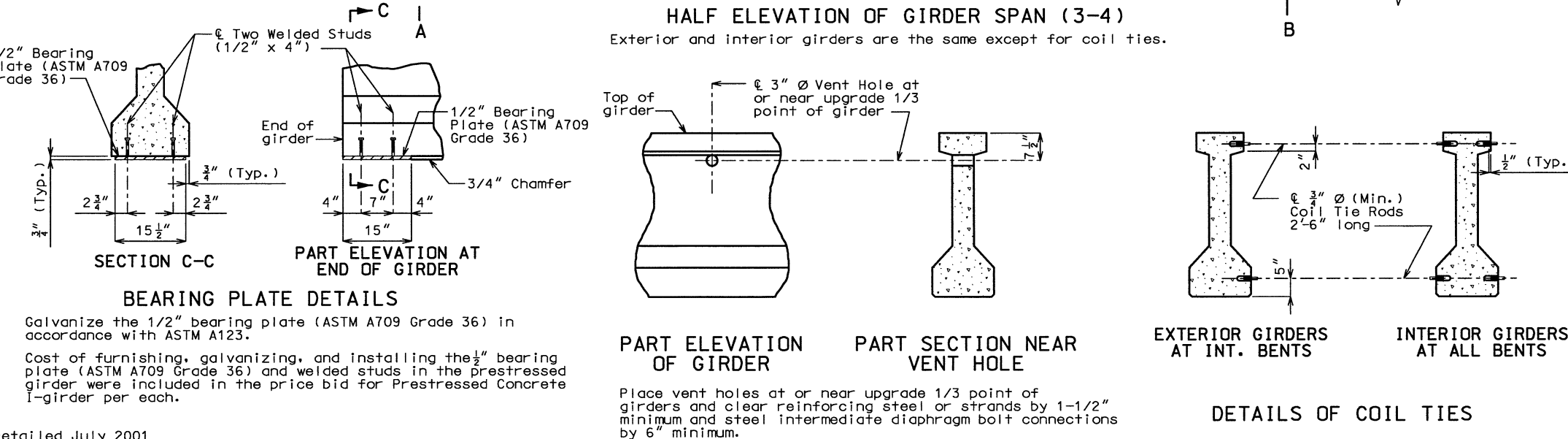
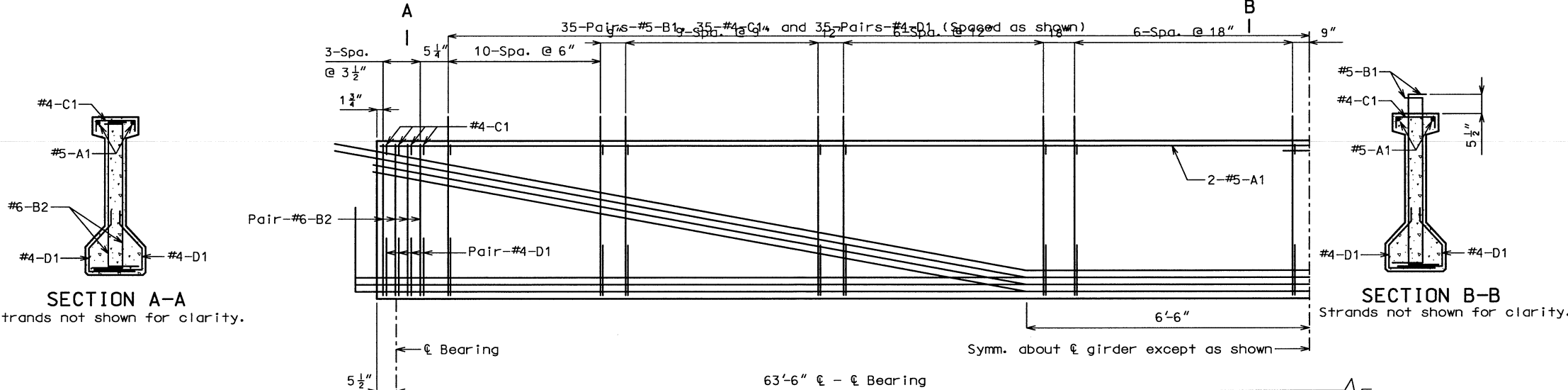
For location of coil inserts at slab drain, see sheet no. 21.

For location of coil ties, see sheets no. 19.

The 1-1/2" \emptyset holes was cast in the web for steel intermediate diaphragms. Drilling is not allowed.

For detail of diaphragms, see sheets no. 18 & 19.

For Girder Camber Diagram, see sheet no. 22.

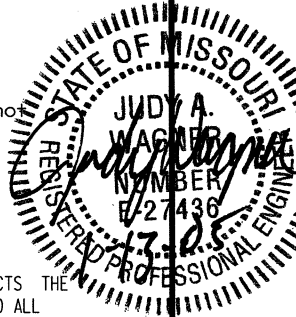


FINAL PLANS

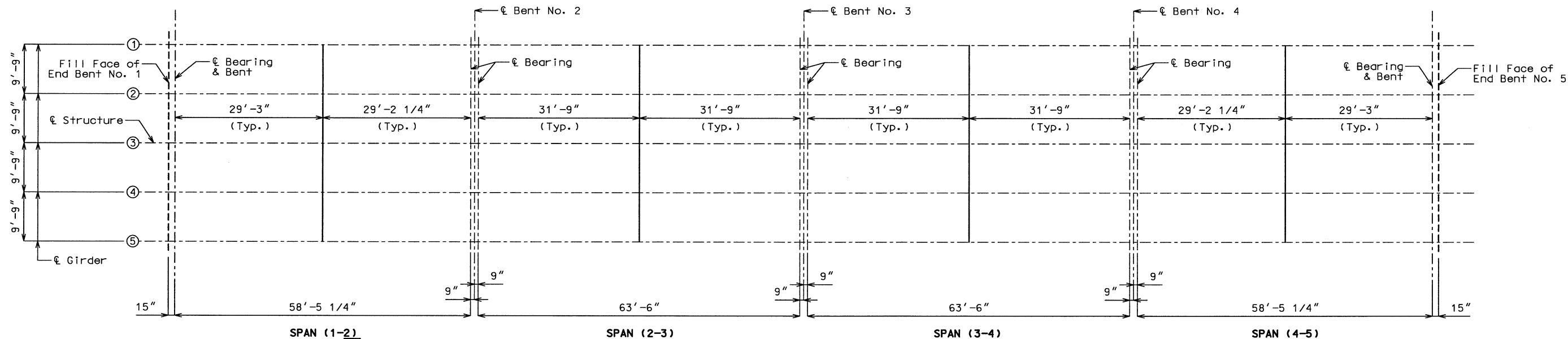
I CERTIFY THAT THIS PLAN SHEET ACCURATELY DEPICTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND ALL ITS APPURTENANT FEATURES, TO THE BEST OF MY KNOWLEDGE, AS I AND MY STAFF HAVE OBSERVED THE CONTRACTOR'S CONSTRUCTION OF THIS PROJECT. I SPECIFICALLY DISCLAIM ANY RESPONSIBILITY FOR THE DESIGN OF THIS PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE MODIFIED OR AUTHORIZED THE MODIFICATION OF THE PROJECT DESIGN DURING ITS CONSTRUCTION; AND I DISCLAIM RESPONSIBILITY FOR THE CONTRACTOR'S ACTUAL CONSTRUCTION OF THE PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE DIRECTED OR ORDERED THAT THE PROJECT BE CONSTRUCTED.

Judy A. Wagner
DATE 1-13-05

FRANKLIN COUNTY A6361



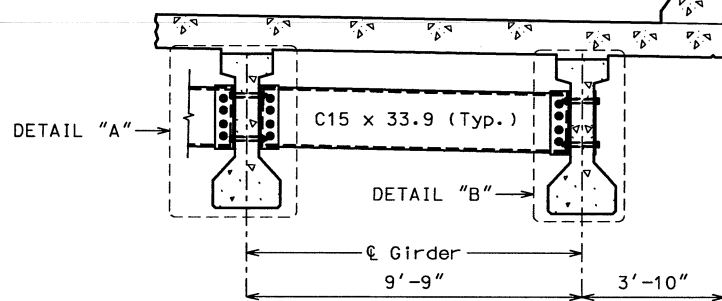
ROUTE	STATE	DISTRICT	SHEET NO.
50	MO.	6	B18
JOB NO. J6P1381			
PROJECT NO. FAF-50-4(25)			
CONTRACT NO. 021213-603			
COUNTY FRANKLIN			



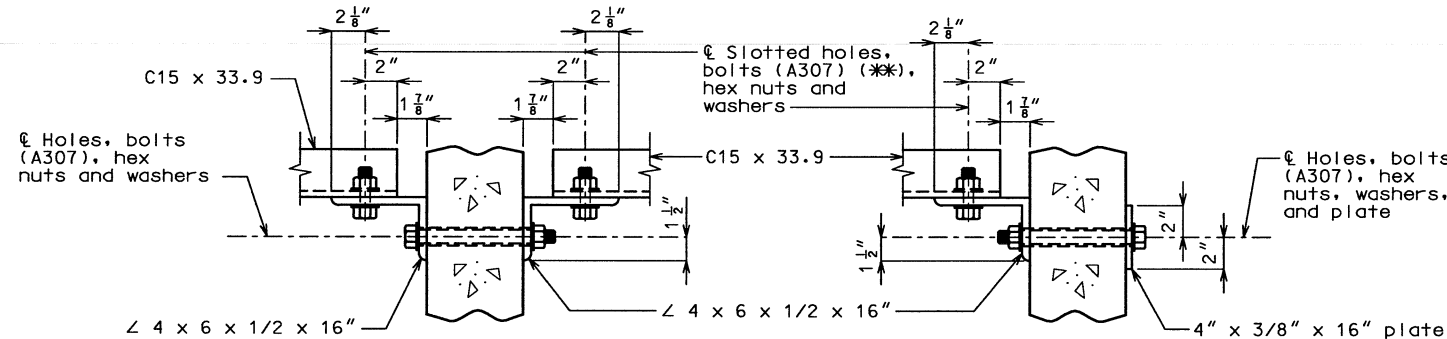
LOCATION OF INTERMEDIATE DIAPHRAGMS

FINAL PLANS

I CERTIFY THAT THIS PLAN SHEET ACCURATELY DEPICTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND ALL ITS APPURTENANT FEATURES, TO THE BEST OF MY KNOWLEDGE, AS I AND MY STAFF HAVE OBSERVED THE CONTRACTOR'S CONSTRUCTION OF THIS PROJECT. I SPECIFICALLY DISCLAIM ANY RESPONSIBILITY FOR THE DESIGN OF THIS PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE MODIFIED OR AUTHORIZED THE MODIFICATION OF THE PROJECT DESIGN DURING ITS CONSTRUCTION; AND I DISCLAIM RESPONSIBILITY FOR THE CONTRACTOR'S ACTUAL CONSTRUCTION OF THE PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE DIRECTED OR ORDERED THAT THE PROJECT BE CONSTRUCTED.

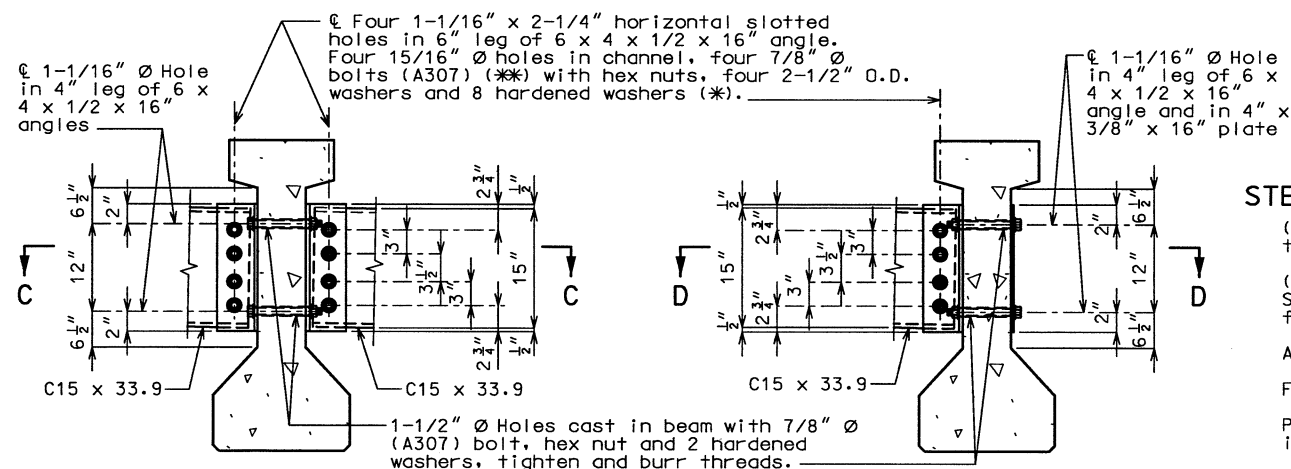


PART SECTION SHOWING INTERMEDIATE DIAPHRAGMS



SECTION C-C

SECTION D-D



DETAIL "A"

DETAIL "B"

STEEL DIAPHRAGM NOTES:

(*) In lieu of 2-1/2" outside diameter washers, contractor may substitute a 3/16" (Min. thickness) plate with four 15/16" Ø holes and one hardened washer per bolt.

(**) These bolts were tightened to provide a tension of one-half that specified by Section 712.10.2. of the Missouri Standard Specifications. A325 bolts may be substituted for and installed in accordance with the requirements for the specified A307 bolts.

All diaphragm materials including bolts, nuts, and washers were galvanized.

Fabricated structural steel was ASTM A709 Grade 36 except as noted.

Payment for furnishing and installing steel intermediate diaphragms were included in the contract unit price for Prestressed Concrete I-Girders.

Shop drawings will not be required for steel intermediate diaphragms and angle connections.

STEEL INTERMEDIATE DIAPHRAGM DETAILS

Detailed July 2001
Checked Aug 2001

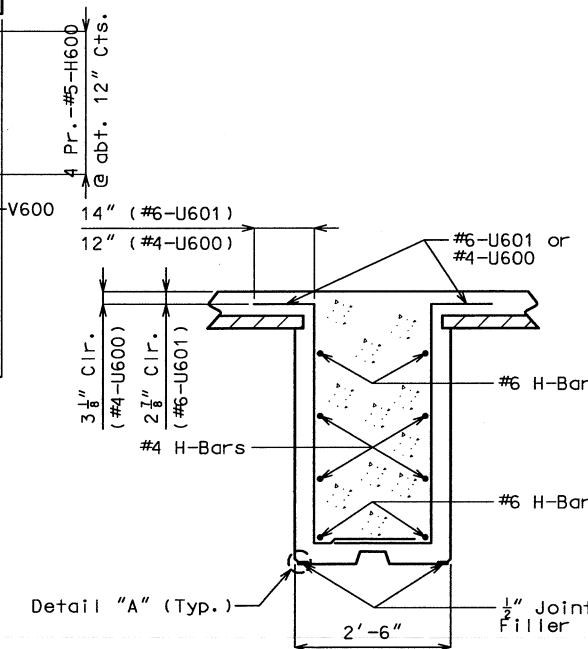
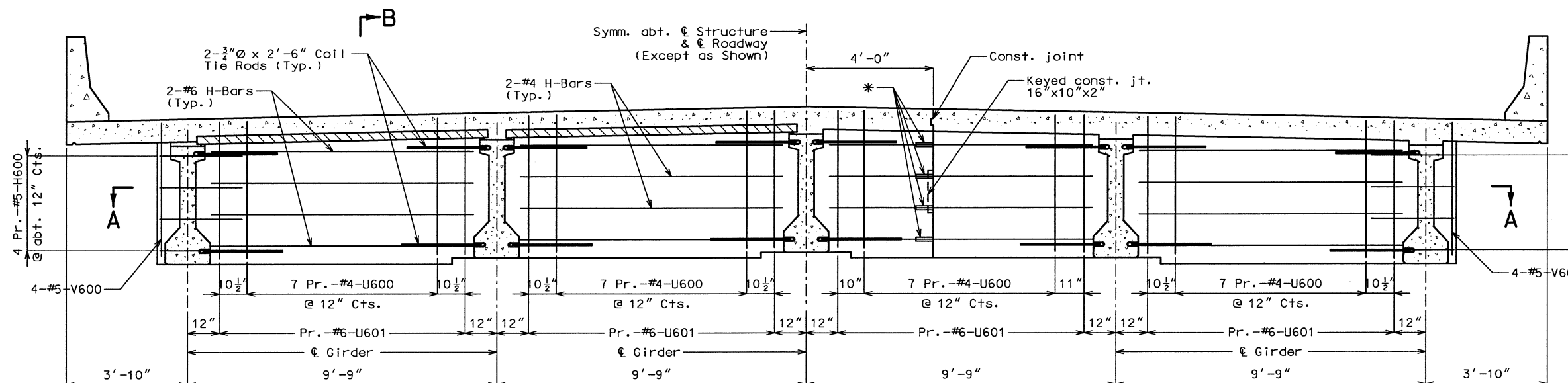
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 18 of 33

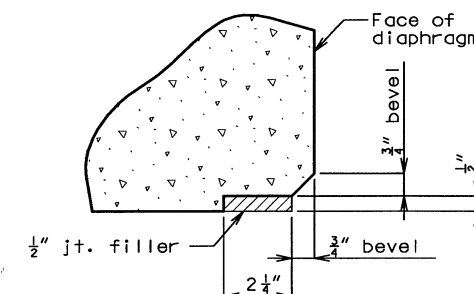
FRANKLIN COUNTY A6361

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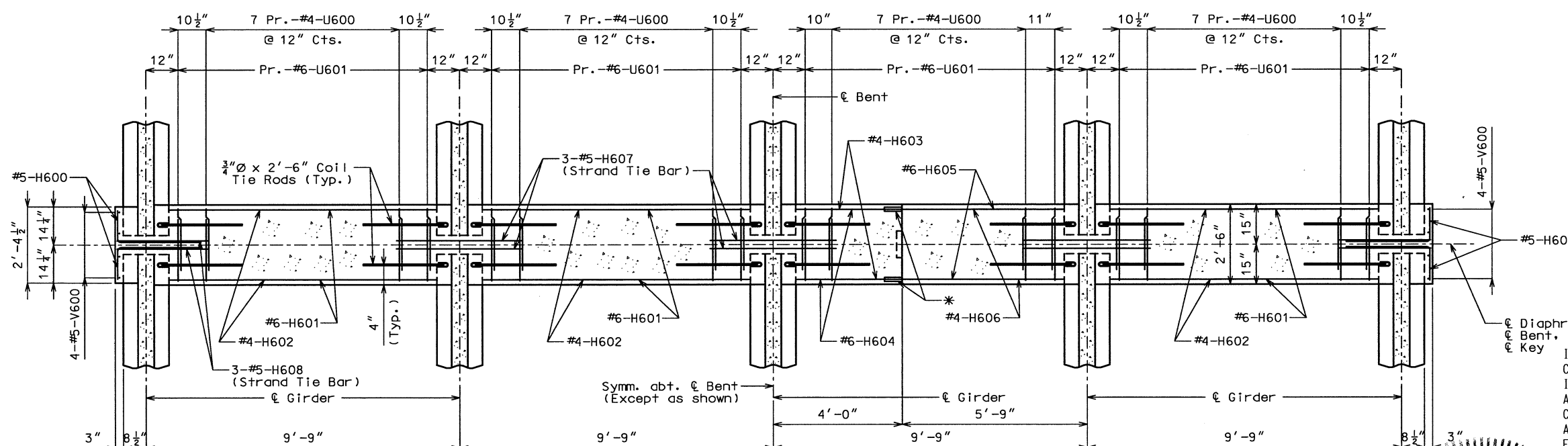
ROUTE	STATE	DISTRICT	SHEET NO.
50	MO.	6	B19
JOB NO. J6P1381			
PROJECT NO. FAF-50-4(25)			
CONTRACT NO. 021213-603			
COUNTY FRANKLIN			



SECTION B-B



DETAIL "A"

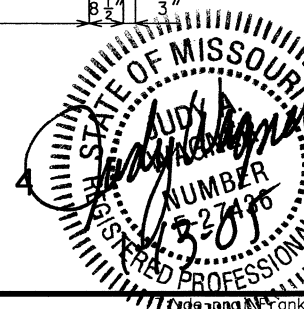


SECTION A-A

DETAILS OF DIAPHRAGMS AT INTERMEDIATE BENTS 2, 3, & 4

FINAL PLANS

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SIGNATURE *Judy Wagner* DATE 1-13-05

FRANKLIN COUNTY A6361

Detailed July 2001
Checked Sept 2001

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

Sheet No. 19 of 33

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ROUTE	STATE	DISTRICT	SHEET NO.
50	MO.	6	B20
JOB NO. J6P1381			
PROJECT NO. FAF-50-4(25)			
CONTRACT NO. 021213-603			
COUNTY FRANKLIN			

GENERAL NOTES:

PRESTRESSED PANELS:

Concrete for prestressed panels was Class A1 with f'c = 6,000 psi, f'ci = 3,500 psi.

The top surface of all panels did receive a scored finish with a depth of scoring of 1/8" perpendicular to the prestressing strands in the panels (See Special Provisions).

Prestressing tendons were high-tensile strength uncoated seven-wire (7), low-relaxation strands for prestressed concrete conforming to AASHTO M203 Grade 270, with nominal diameter of strand = 3/8" and nominal area = 0.085 sq. in. and minimum ultimate strength = 22.95 kips (270 ksi). Larger strands may be used with the same spacing and initial tension.

Initial prestressing force = 17.2 kips/strand.

The method and sequence of releasing the strands was shown on the shop drawings.

Suitable anchorage devices for lifting panels may be cast in panels, provided they are shown on the shop drawings and approved by the engineer. Panel lengths were determined by the contractor and shown on the shop drawings.

When square end panels are used at skewed bents, it is required that the skewed portion be cast full depth. No separate payment will be made for additional concrete and reinforcing required.

Support from diaphragm forms is required under the optional skewed end until cast-in-place concrete has reached 3,000 psi compressive strength.

Minimum joint filler or polystyrene bedding material thickness was 3/4 inch. Thicker joint filler or polystyrene bedding material may be used on one or both sides of the girder to reduce cast-in-place concrete thickness, within tolerances. No more than 2 inches total thickness of joint filler or polystyrene bedding material was used.

The same thickness of joint filler material was used under any one edge of any panel except at locations where top flange thickness may be stepped. The maximum change in thickness between adjacent panels were 1/4 inch. The polystyrene bedding material may be cut to match haunch height above top of flange.

Slab thickness over prestressed panels varies due to girder camber.

At the contractor's option, the variation in slab thickness over prestressed panels may be eliminated or reduced by increasing and varying the girder top flange thickness. Dimensions were shown on the shop drawings.

REINFORCING STEEL:

All dimensions are out to out.

Minimum clearance to reinforcing steel was 1-1/2", unless otherwise shown.

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

Actual lengths are measured along centerline of bar to the nearest inch.

The prestressed panel quantities are not included in the table of Estimated Quantities for Slab on Concrete I-Girder.

If U1 bars interfere with placement of slab steel, U1 loops may be bent over, as necessary, to clear slab steel.

Welded wire fabric or welded deformed bar mats providing a minimum area of reinforcing perpendicular to strands of 0.22 sq. in./ft., with spacing parallel to strands sufficient to insure proper handling, may be used in lieu of the #3-P2 bars shown. Wire or bar diameter was not be larger than 0.375 inch. The above alternative reinforcement criteria may be used in lieu of the #3-P3 bars, when required, and placed over a width not less than 2 feet.

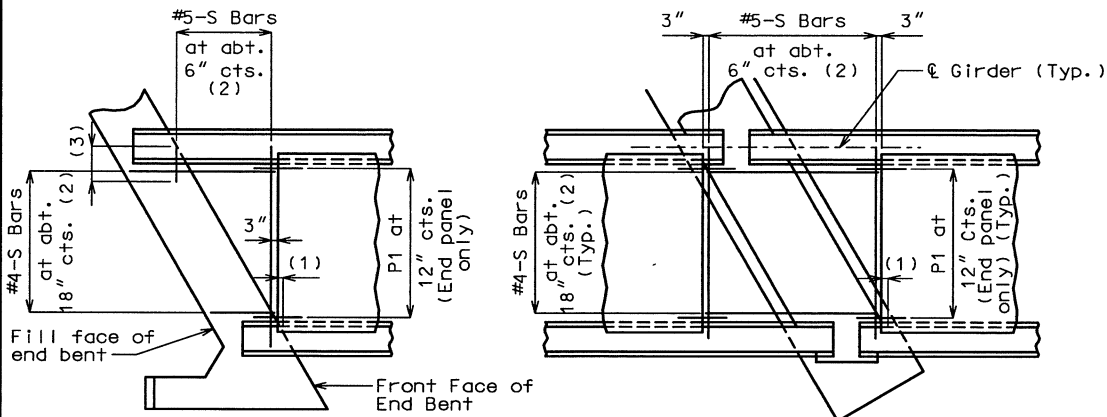
The reinforcing steel were tied securely to the 3/8" Ø strands with the following maximum spacing in each direction: #3-P2 bars at 16 inches.

Welded wire fabric or welded deformed bar mats at 24 inches.

Tie the #3-U1 bars to the #3-P2 bars, to the welded wire fabric or the welded deformed bar mats at about 36 inch centers.

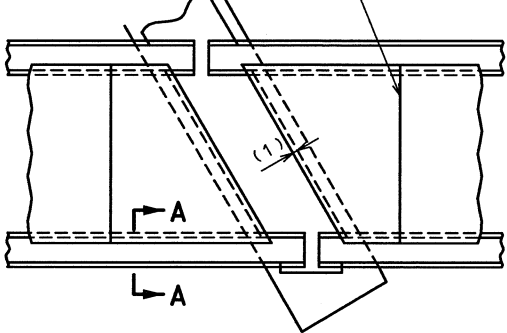
All reinforcement other than prestressing strands were epoxy coated.

Precast panels may be in contact with stirrup reinforcing in diaphragms.

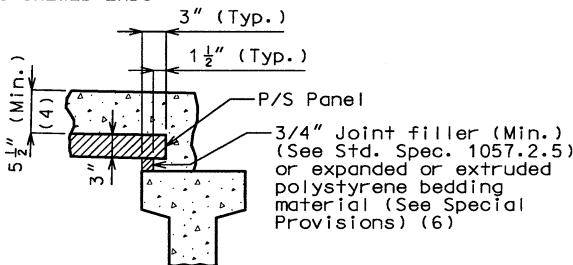


PANELS-SQUARED ENDS

Prevent excessive grout leak (Typ.) (See Special Provisions)



PANELS-SKEWED ENDS



SECTION A-A

Note: Use slab haunching diagram on sheet No. 22 for determining thickness of joint filler or polystyrene bedding material within the limits noted in general notes.

FINAL PLANS

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NOTES:

Cost of S-bars were included in the price bid for Slab on Concrete I-Girder per square yard.

S-bars are not listed in the bill of reinforcing.

(1) End panels was dimensioned 1" min. to 1-1/2" max. to the inside face of diaphragm.

(2) S-bars shown are bottom steel in slab between panels only used with squared end panels only.

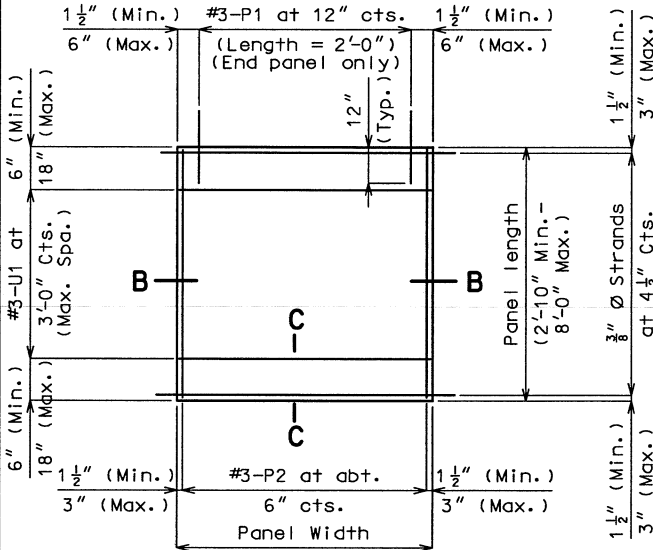
(3) Extend S-Bars 18 inches beyond the front face of end bents only.

(4) In order to maintain minimum slab thickness, it may be necessary to raise the grade uniformly throughout the structure. No payment will be made for additional labor or materials required for necessary grade adjustment.

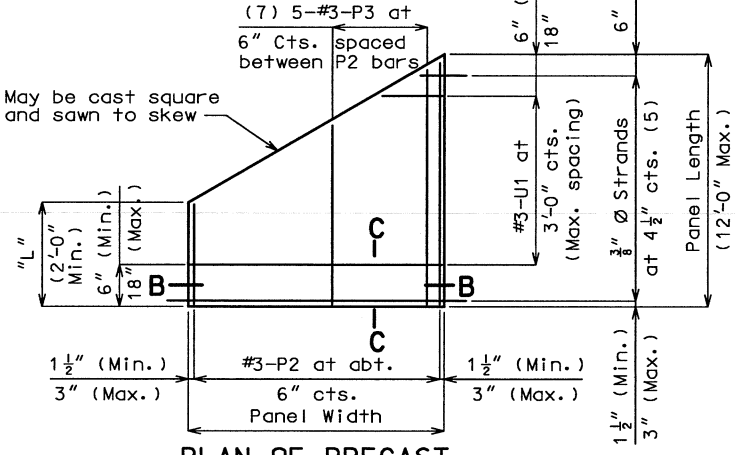
(5) Any strand 2'-0" or shorter shall have a #4 reinforcing bar on each side of it, centered between strands. Strands 2'-0" or shorter may then be debonded at the fabricator's option.

(6) All panel support pads was glued to the girder. When support thickness exceeds 1-1/2 inches, the pads were glued top and bottom. The glue used was the type recommended by the panel support pads manufacturer.

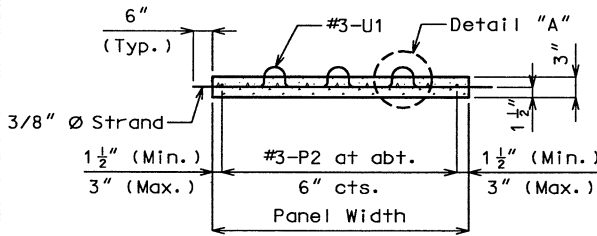
(7) Use #3-P3 bars if panel is skewed 45° or greater.



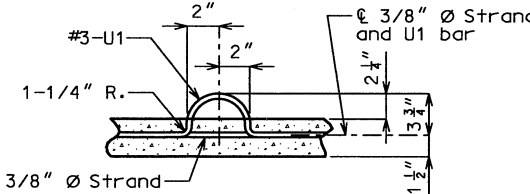
PLAN OF PRECAST PRESTRESSED PANEL



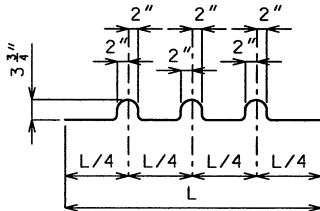
PLAN OF PRECAST PRESTRESSED PANEL (SKEWED END-OPTIONAL)



SECTION B-B

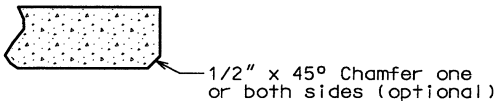


DETAIL "A"



BENDING DIAGRAM FOR U1 BAR

(U1 Bars may be oriented at right angles to location and spacing shown. U1 Bars shall be placed between P1 bars).



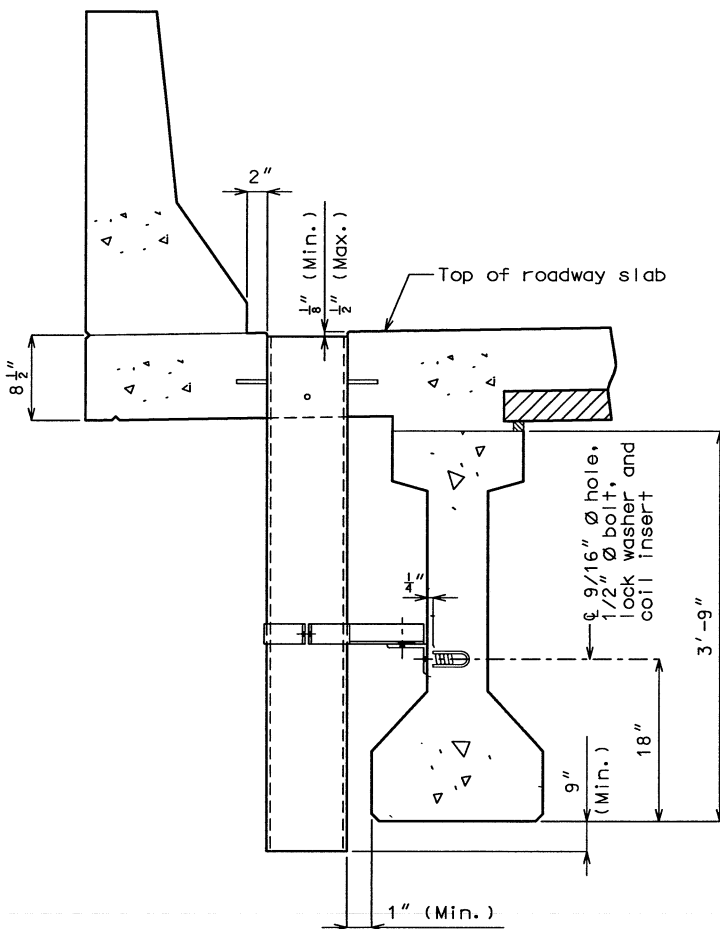
SECTION C-C

DETAILS OF PRECAST PRESTRESSED PANELS

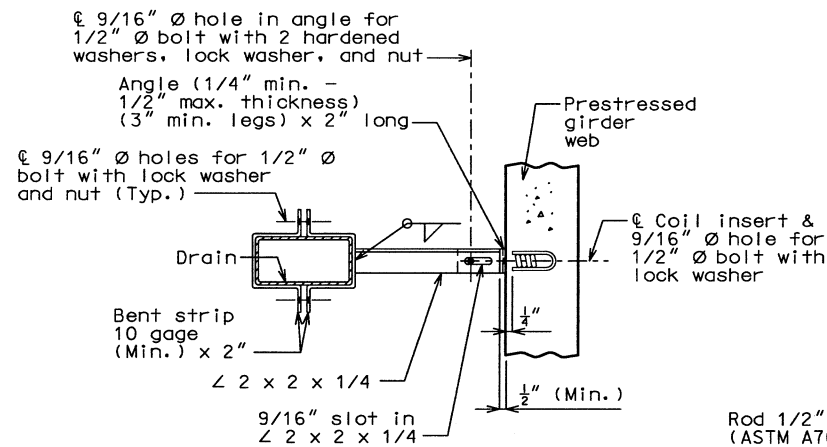
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 20 of 33

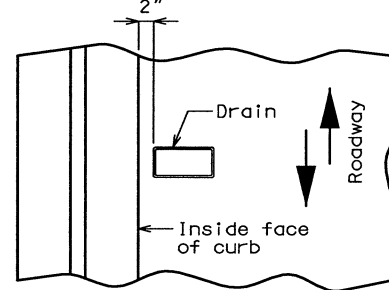
FRANKLIN COUNTY A6361



PART SECTION NEAR DRAIN



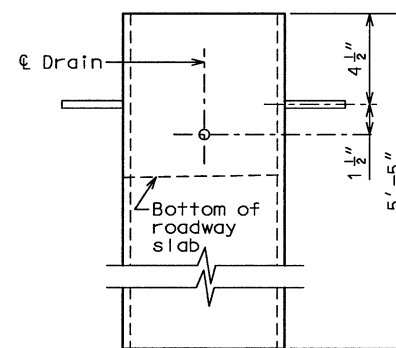
PART SECTION SHOWING BRACKET ASSEMBLY



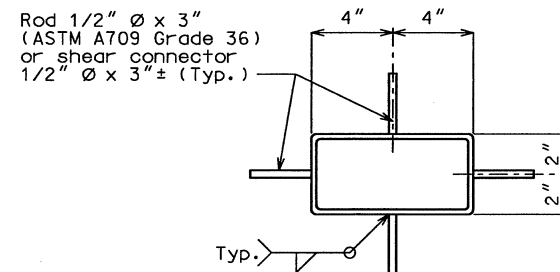
PART PLAN OF SLAB AT DRAIN

DETAILS OF DRAINS TRANSVERSE TO ROADWAY

SLAB DRAIN DETAILS



ELEVATION OF DRAIN



PLAN OF DRAIN

NOTE:

Slab drains may be fabricated of either 1/4" welded sheets of ASTM A709 Grade 36 steel or from 1/4" structural steel tubing ASTM A500 or A501.

Slab drain bracket assembly were ASTM A709 Grade 36 steel.

Outside dimensions of drains are 8" x 4".

Locate drains in slab by dimensions shown in Part Section Near Drain.

Shift reinforcing steel in field where necessary to clear drains.

The drains, coil inserts and bracket assembly shall be galvanized in accordance with ASTM A123.

All bolts, hardened washers, lock washers and nuts were galvanized in accordance with ASTM A153.

ROUTE	STATE	DISTRICT	SHEET NO.
50	MO.	6	B21
JOB NO. J6P1381			
PROJECT NO. FAF-50-4(25)			
CONTRACT NO. 021213-603			
COUNTY FRANKLIN			

FINAL PLANS

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Judy Wagner
SIGNATURE

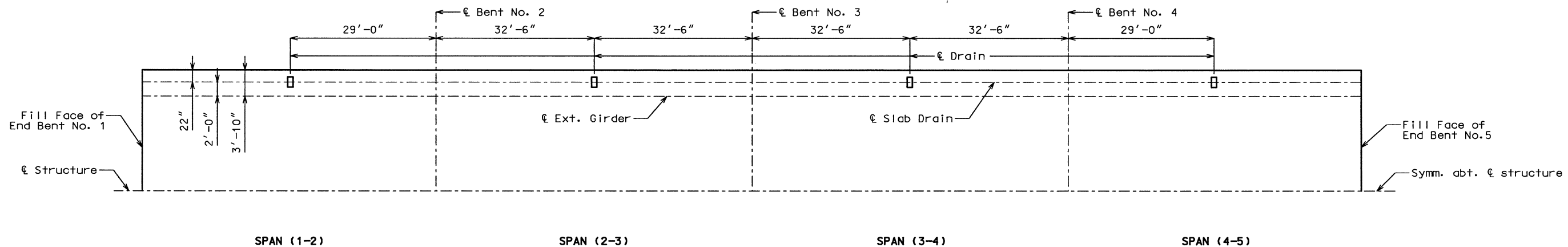
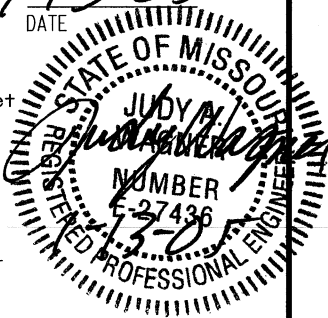
1-13-05
DATE

The coil insert required for the bracket assembly attachment were located on the Prestressed I-Girder shop drawings.

Shop drawings will not be required for the slab drains and the bracket assembly.

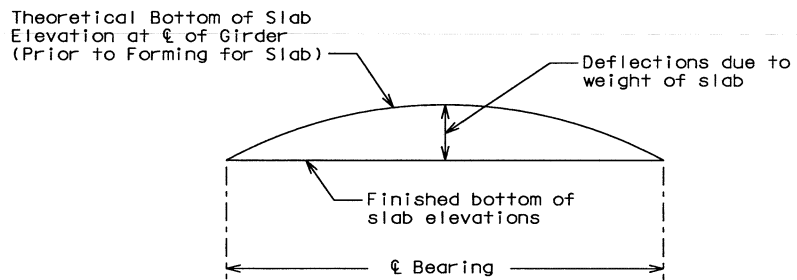
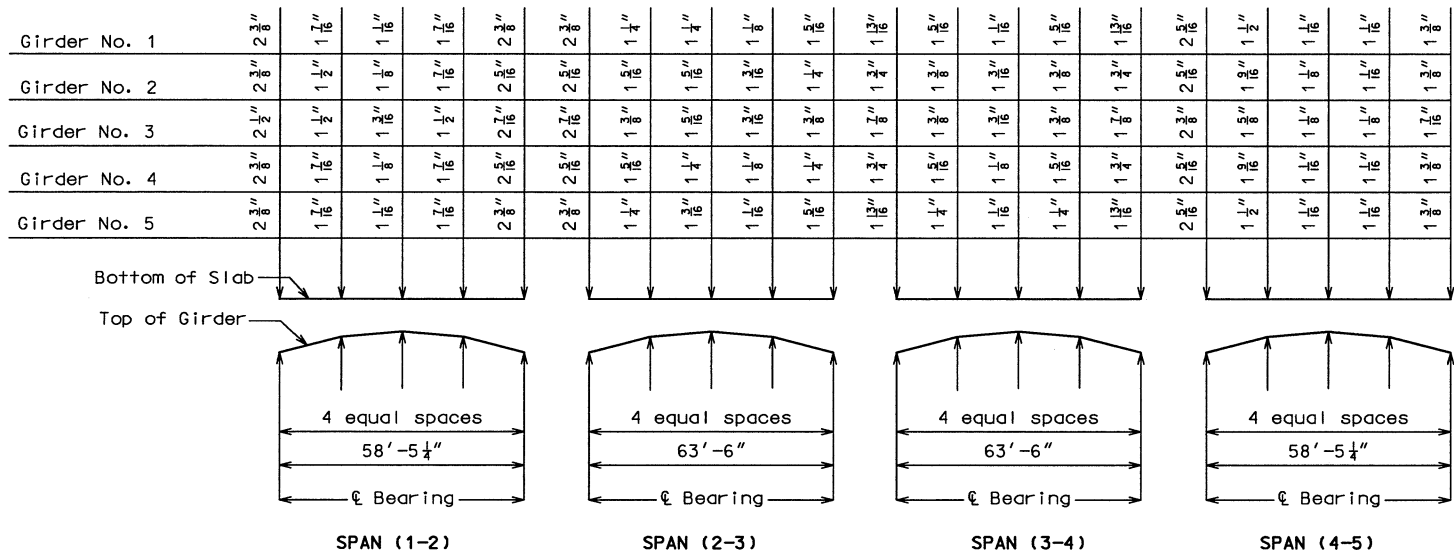
Coil inserts have a concrete pull-out strength (ultimate load) of at least 2,500 pounds in 5,000 psi concrete.

The bolt required to attach the slab drain bracket assembly to the prestressed girder web were supplied by the prestressed I-Girder fabricator.



PLAN SHOWING SLAB DRAIN DETAILS

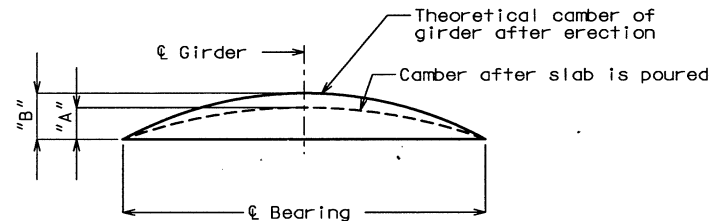
ROUTE 50	STATE MO.	DISTRICT 6	SHEET NO. B22
JOB NO. J6P1381			
PROJECT NO. FAF-50-4(25)			
CONTRACT NO. 021213-603			
COUNTY FRANKLIN			



If girder camber is different from that shown in the camber diagram, it was necessary to adjust the slab haunches, increase the slab thickness, or raise the grade uniformly throughout the structure. No payment will be made for additional labor or materials required for variation in haunching, slab thickness, or grade adjustment.

Concrete in the slab haunches is included in the Estimated Quantities for Slab on Concrete I-Girders.

Longitudinal dimensions are horizontal.



	Span (1-2)		Span (2-3)		Span (3-4)		Span (4-5)	
	"A"	"B"	"A"	"B"	"A"	"B"	"A"	"B"
Girder 1&5	$\frac{13}{16}$ "		$\frac{3}{4}$ "		$\frac{3}{4}$ "		$\frac{13}{16}$ "	
Girder 2	$\frac{11}{16}$ "	$1\frac{5}{16}$ "	$\frac{9}{16}$ "	$1\frac{1}{2}$ "	$\frac{9}{16}$ "	$1\frac{1}{2}$ "	$\frac{11}{16}$ "	$1\frac{5}{16}$ "
Girder 3	$\frac{3}{4}$ "		$\frac{11}{16}$ "		$\frac{11}{16}$ "		$\frac{3}{4}$ "	
Girder 4	$\frac{11}{16}$ "		$\frac{5}{8}$ "		$\frac{5}{8}$ "		$\frac{11}{16}$ "	

GIRDER CAMBER DIAGRAM

Conversion factors for girder camber

0.25 pt. = 0.7125 x 0.5 pt.



FINAL PLANS

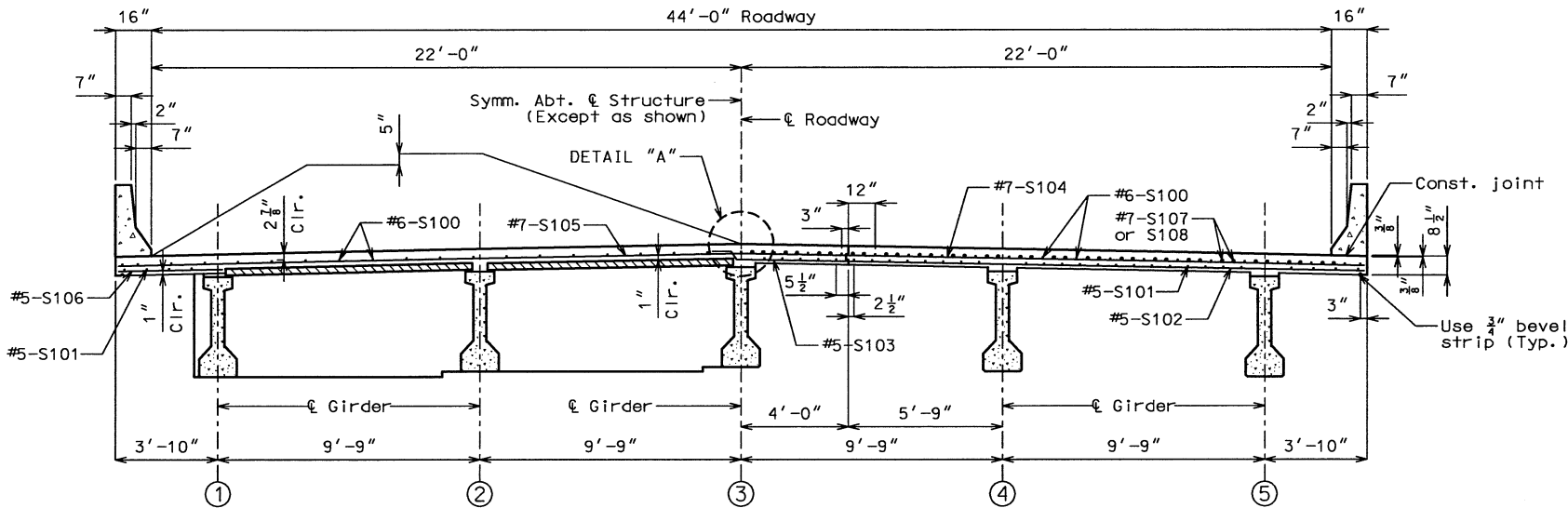
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Judy A. Anderson
SIGNATURE
1-13-05
DATE

Theoretical Bottom of Slab Elevations at ℓ of Girder (Prior to Forming for Slab) **																				
	Span (1-2) (58'-5 $\frac{1}{4}$ " ℓ brg - ℓ brg.)					Span (2-3) (63'-6" ℓ brg - ℓ brg.)					Span (3-4) (63'-6" ℓ brg - ℓ brg.)					Span (4-5) (58'-5 $\frac{1}{4}$ " ℓ brg - ℓ brg.)				
	ℓ brg.	.25	.50	.75	ℓ brg.	ℓ brg.	.25	.50	.75	ℓ brg.	ℓ brg.	.25	.50	.75	ℓ brg.	ℓ brg.	.25	.50	.75	ℓ brg.
Girder no. 1	505.32	505.72	506.12	506.51	506.91	506.95	507.49	508.02	508.52	508.99	509.04	509.60	510.13	510.62	511.09	511.14	511.65	512.13	512.59	513.03
Girder no. 2	505.51	505.92	506.32	506.71	507.10	507.15	507.70	508.23	508.72	509.18	509.23	509.80	510.33	510.83	511.29	511.34	511.85	512.34	512.79	513.23
Girder no. 3	505.69	506.09	506.49	506.88	507.28	507.33	507.87	508.40	508.89	509.36	509.41	509.97	510.50	511.00	511.46	511.51	512.02	512.50	512.96	513.40
Girder no. 4	505.51	505.91	506.32	506.71	507.10	507.15	507.69	508.23	508.72	509.18	509.23	509.80	510.33	510.83	511.29	511.34	511.84	512.33	512.79	513.23
Girder no. 5	505.32	505.71	506.11	506.51	506.91	506.95	507.49	508.02	508.52	508.99	509.04	509.60	510.13	510.62	511.09	511.14	511.65	512.13	512.59	513.03

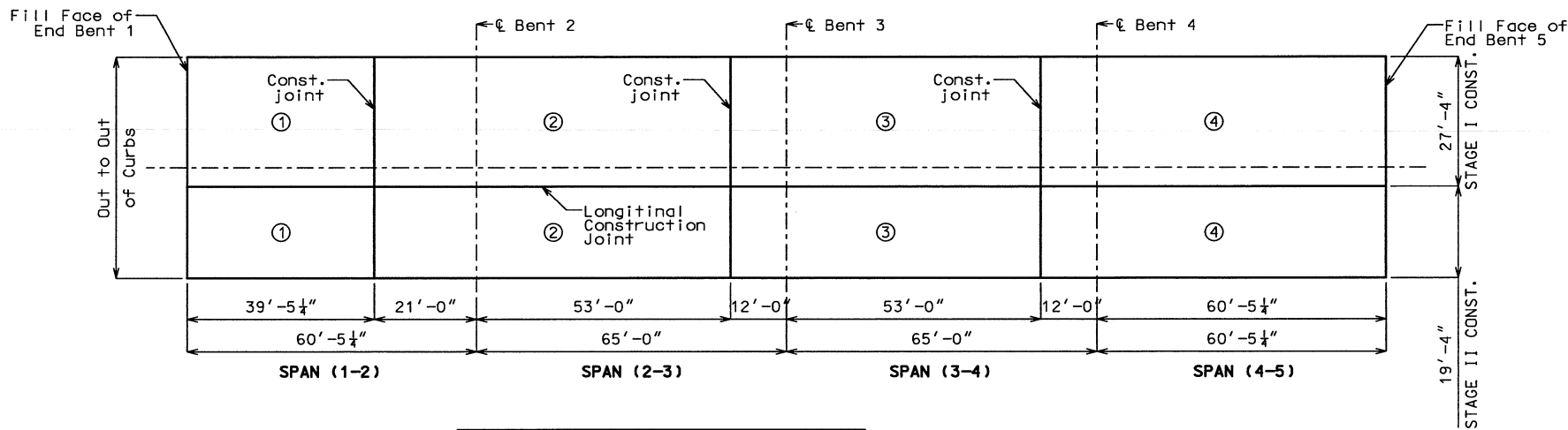
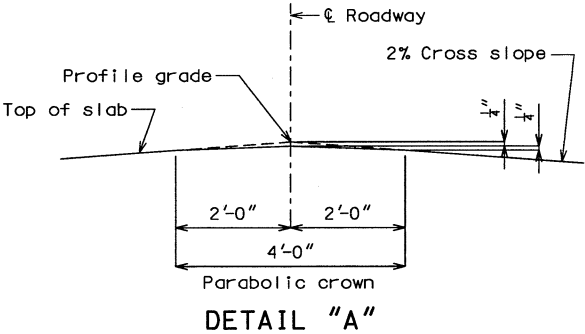
** Elevations are based on a constant slab thickness of 8 1/2" and include allowance for theoretical dead load deflections due to weight of slab (including precast panel).

ROUTE 50	STATE MO.	DISTRICT 6	SHEET NO. B23
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COUNTY FRANKLIN			



HALF SECTION NEAR INTERMEDIATE BENT HALF SECTION NEAR CENTER SPAN

Note: For Details and Reinforcement of Safety Barrier Curb, see Sheets No. 26, 27, & 28.



Notes:

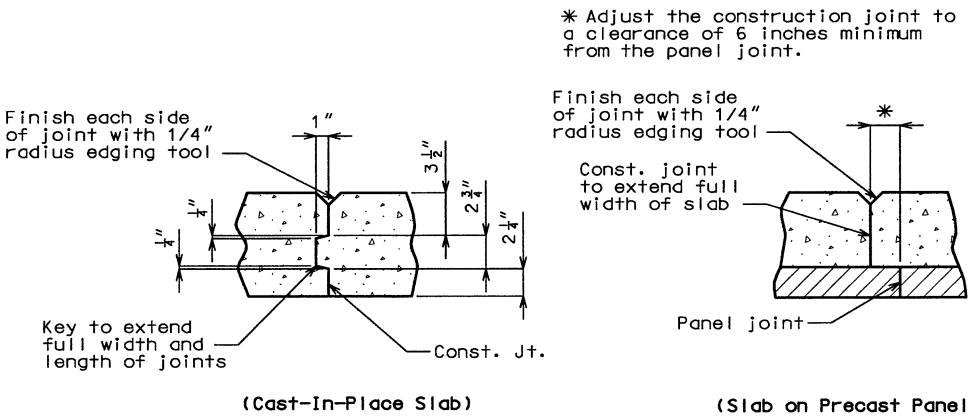
- Longitudinal dimensions shown are horizontal.
- For Details and Reinforcement of Safety Barrier Curb, see Sheets No. 26, 27, & 28.
- For Theoretical Slab Haunching Diagram and Bottom of Slab Elevations, see Sheet No. 22.
- For Details of Precast Prestressed Panels, see Sheet No. 20.
- For Location of Slab Drains, see Sheet No. 21.
- For Plan of Slab Showing Top Reinforcement, see Sheet No. 25.
- For Plan of Slab Showing Bottom Reinforcement, see Sheet No. 24.

	Sequence of Pours				STAGE I CONSTRUCTION	STAGE II CONSTRUCTION
	Direction				Min. rate of pour cu. yds./hr.	Min. rate of pour cu. yds./hr.
Basic sequence	1	2	3	4	With retarder	With retarder
	End to 2	1 to 3	2 to 4	3 to end	25	25
Alternate pours to the basic sequence are subject to the approval of the engineer in accordance with Section 703.3.12.4 of Missouri Standard Specifications.						
Alternate "A" pours	1 + 2	3	4		25	25
	End to 3	2 to 4	3 to end			
Alternate "B" pours	1 + 2	3 + 4			25	25
	End to 3	2 to end				
Alternate "C" pours	1 + 2 + 3 + 4				25	25
	End to end					

Note: The contractor furnish an approved retarder to retard the set of the concrete to 2.5 hours, and was pour and satisfactorily finish the slab pours at the rate given.

The concrete diaphragm at the intermediate bents and integral end bents were poured a minimum of 30 minutes and a maximum of 2 hours before the slab is poured.

SLAB POURING SEQUENCE



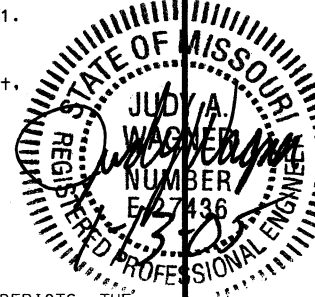
SLAB CONSTRUCTION JOINT DETAILS

FINAL PLANS

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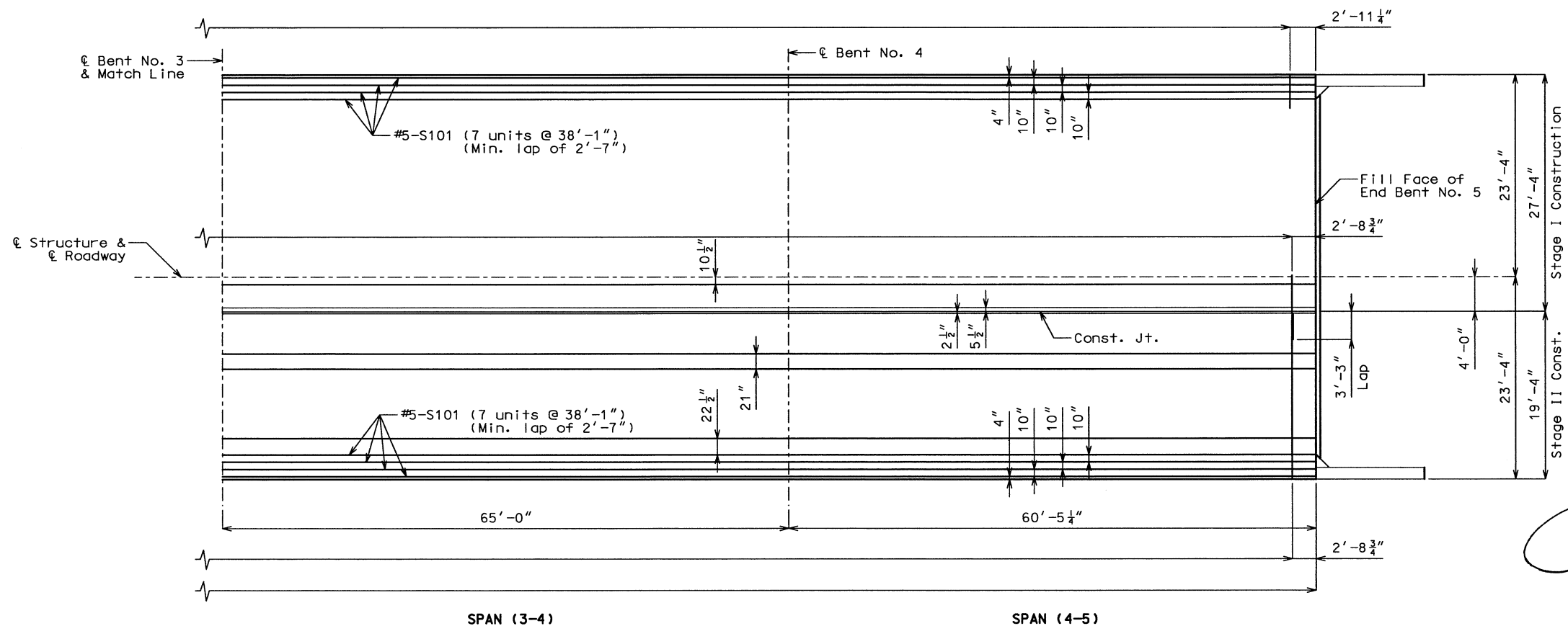
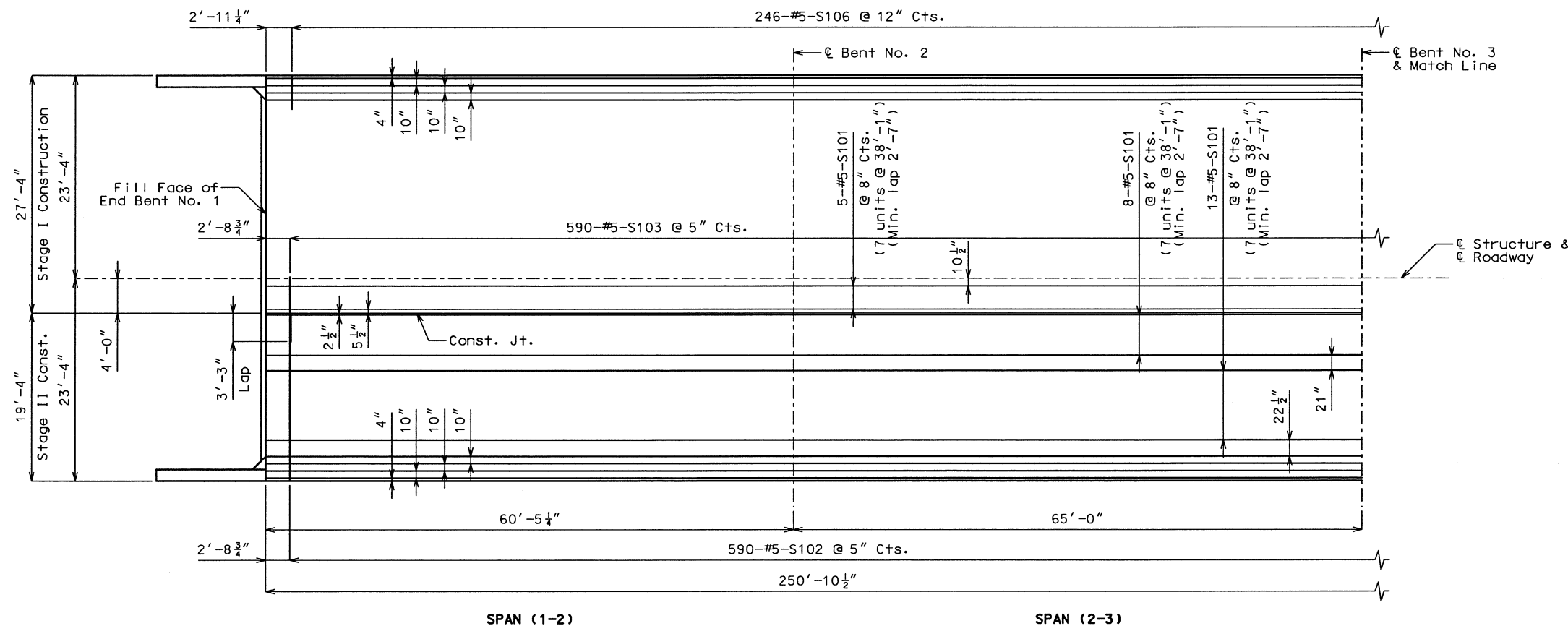
Judy A. Wagner
SIGNATURE

1-13-05
DATE



ROUTE	STATE	DISTRICT	SHEET NO.	
50	MO.	6	B24	
JOB NO. J6P1381				
PROJECT NO. FAF-50-4(25)				
CONTRACT NO. 021213-603				
COUNTY FRANKLIN				

Notes:
 Longitudinal dimensions shown are horizontal.
 For Details and Reinforcement of Safety Barrier Curb, see Sheets No. 26, 27, & 28.
 For Theoretical Slab Haunching Diagram and Bottom of Slab Elevations, see Sheet No. 22.
 For Section Thru Slab, & Slab Pouring Sequence, see Sheet No. 23.
 For Details of Precast Prestressed Panels, see Sheet No. 20.
 For Location of Slab Drains, see Sheet No. 21.
 For Plan of Slab Showing Top Reinforcement, see Sheet No. 25.



FINAL PLANS
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SIGNATURE: *Judy A. Wagner* DATE: 1-13-05

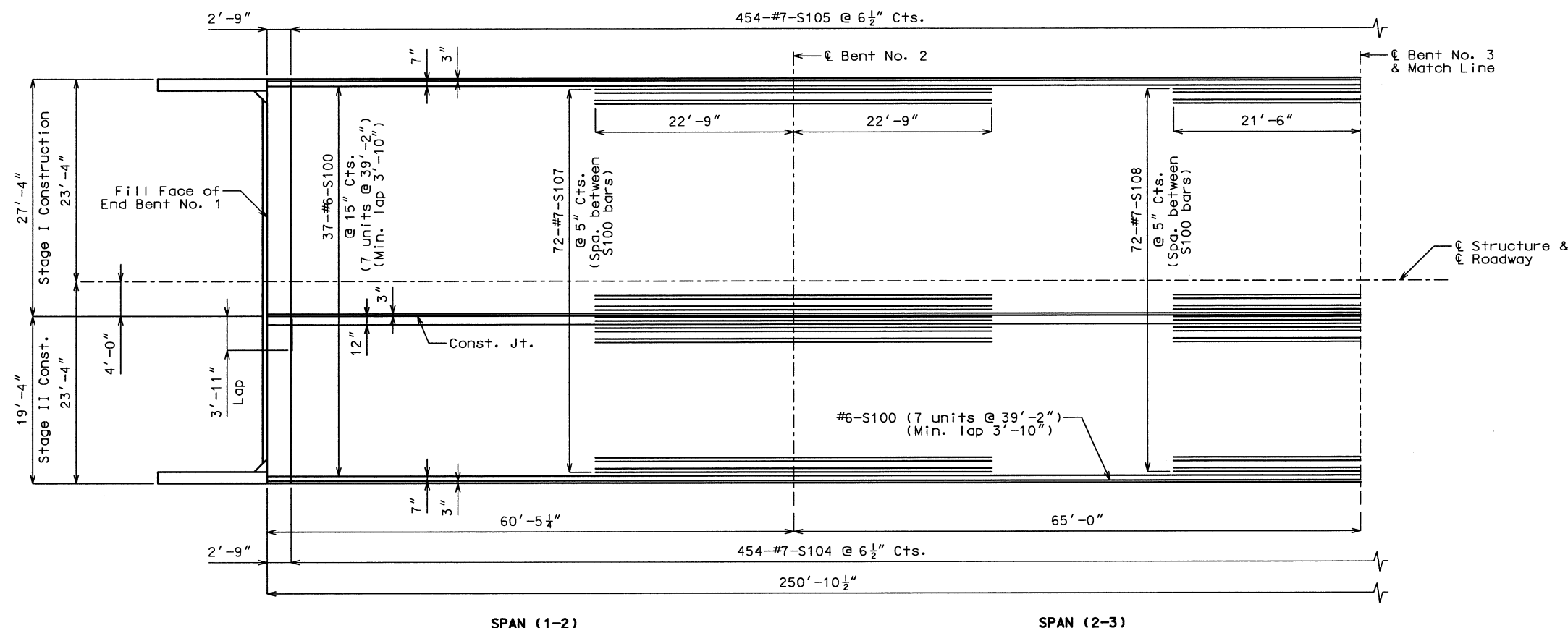
PLAN OF SLAB SHOWING BOTTOM REINFORCEMENT

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

Sheet No. 24 of 33

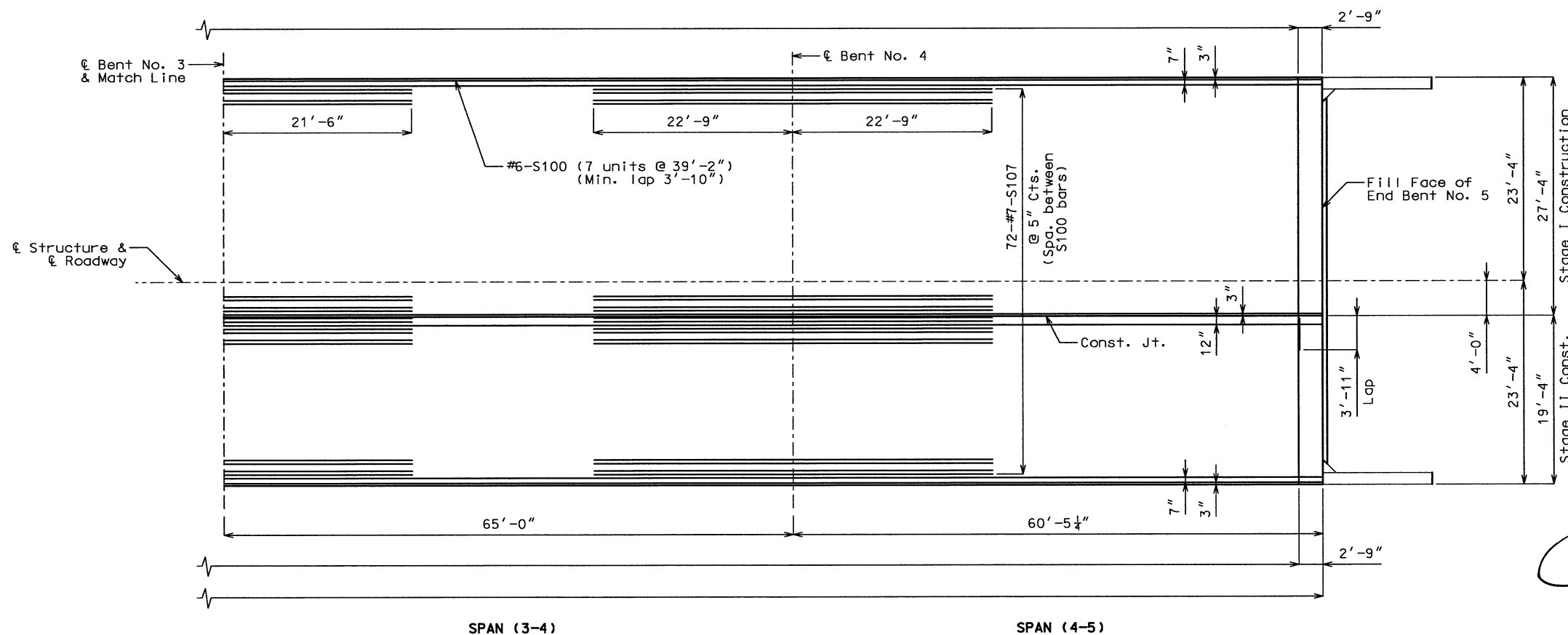
FRANKLIN COUNTY A6361

ROUTE 50	STATE MO.	DISTRICT 6	SHEET NO. B25
JOB NO. J6P1381			
PROJECT NO. FAF-50-4(25)			
CONTRACT NO. 021213-603			
COUNTY FRANKLIN			

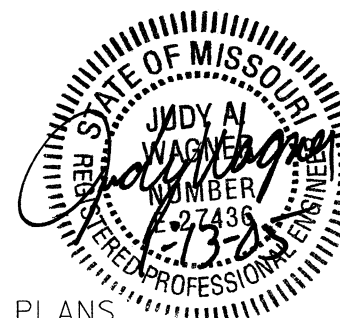


Notes:

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PLAN OF SLAB SHOWING TOP REINFORCEMENT

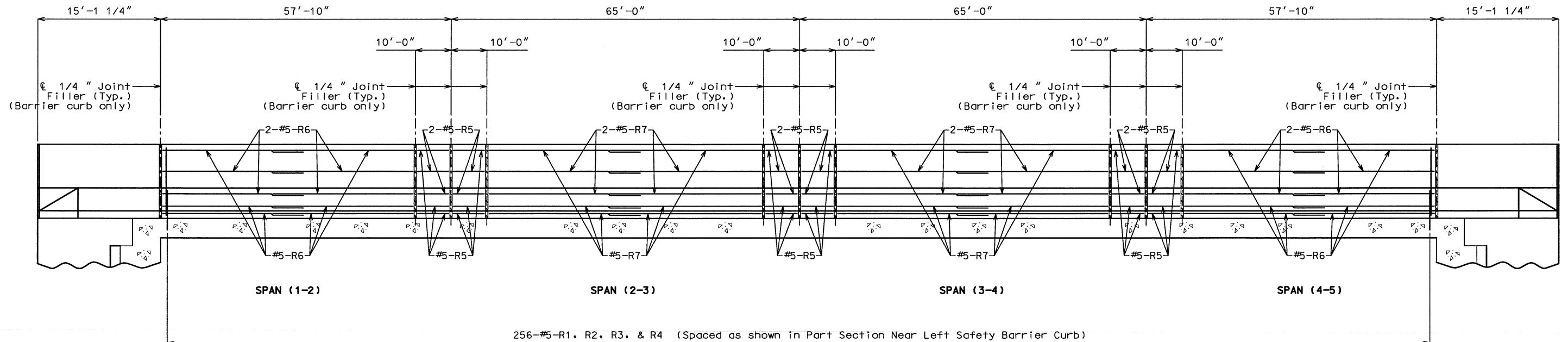


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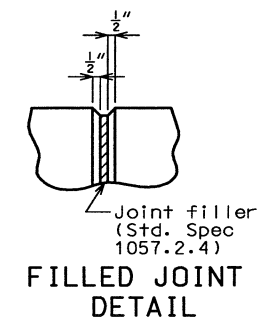
Judy Wagner 1-13-05
 SIGNATURE DATE

ROUTE	STATE	DISTRICT	SHEET NO.
50	MO.	6	B26
JOB NO. J6P1381			
PROJECT NO. FAF-50-4(25)			
CONTRACT NO. 021213-603			
COUNTY FRANKLIN			



SECTION NEAR LEFT SAFETY BARRIER CURB (Right barrier curb similar by 180° rotation)

Note: Longitudinal dimensions are horizontal.



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DATE 1-13-05

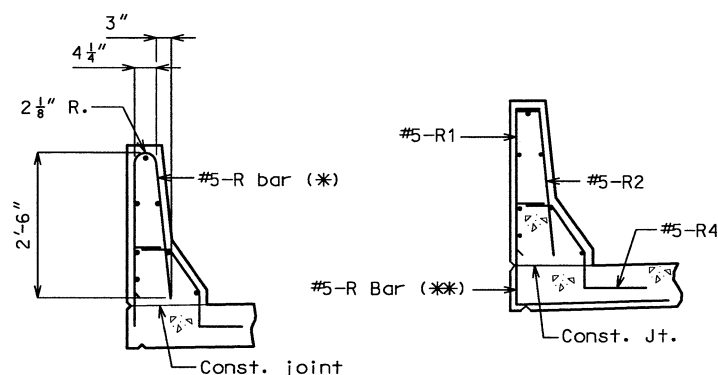
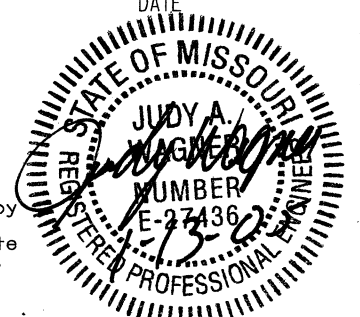
Notes:
Top of safety barrier curb was built parallel to grade with safety barrier curb joints (except at end bents) normal to grade.

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

When the safety barrier curb is bid by linear feet, the contract unit price shall include the cost of all concrete and reinforcement, complete in place.

Concrete in the safety barrier curb shall be Class B1.

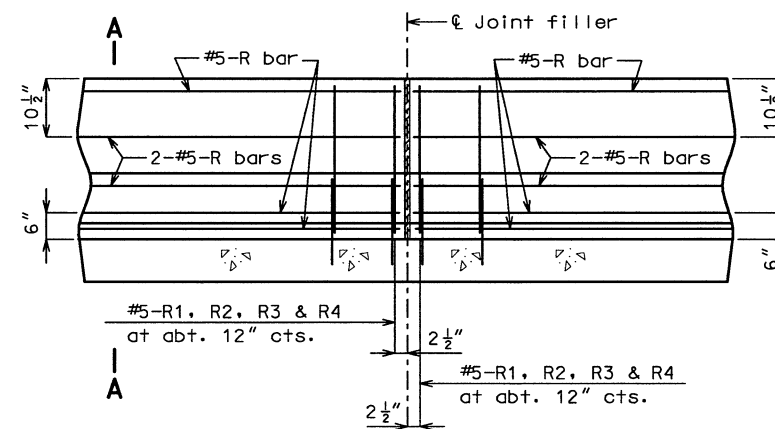
Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.



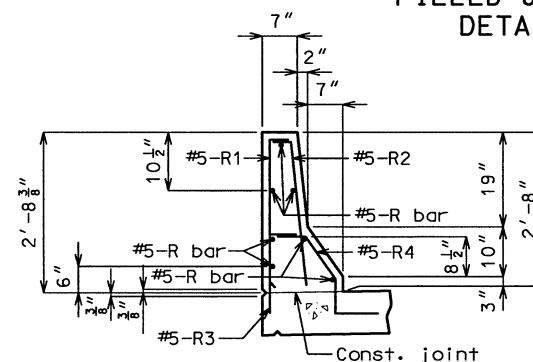
R-BAR PERMISSIBLE ALTERNATE SHAPE

(*) 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.)

(**) The R3 bar and #5-S106 bottom transverse slab bar in cantilever (P/S panels only) combination may be furnished as one bar as shown, at the contractor's option.



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



PART 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.

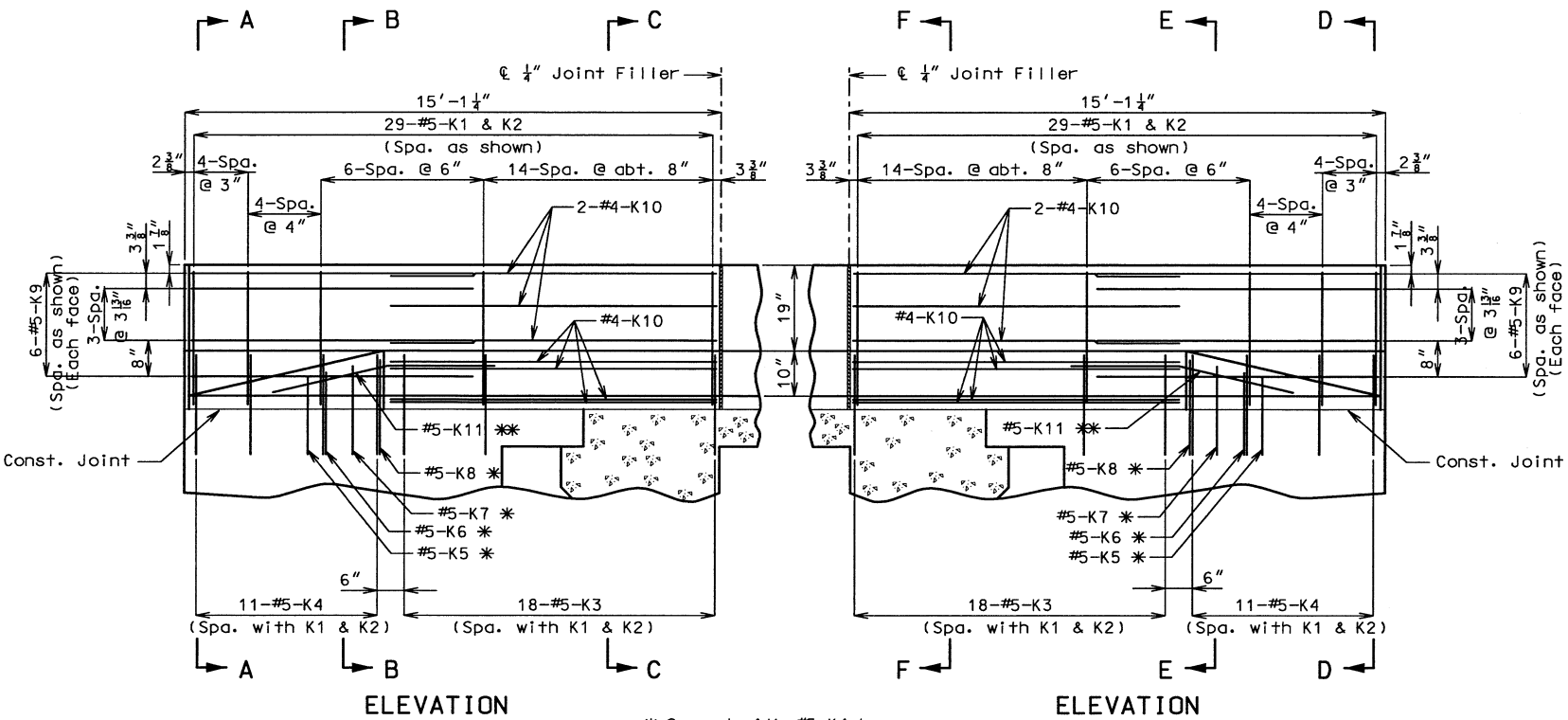
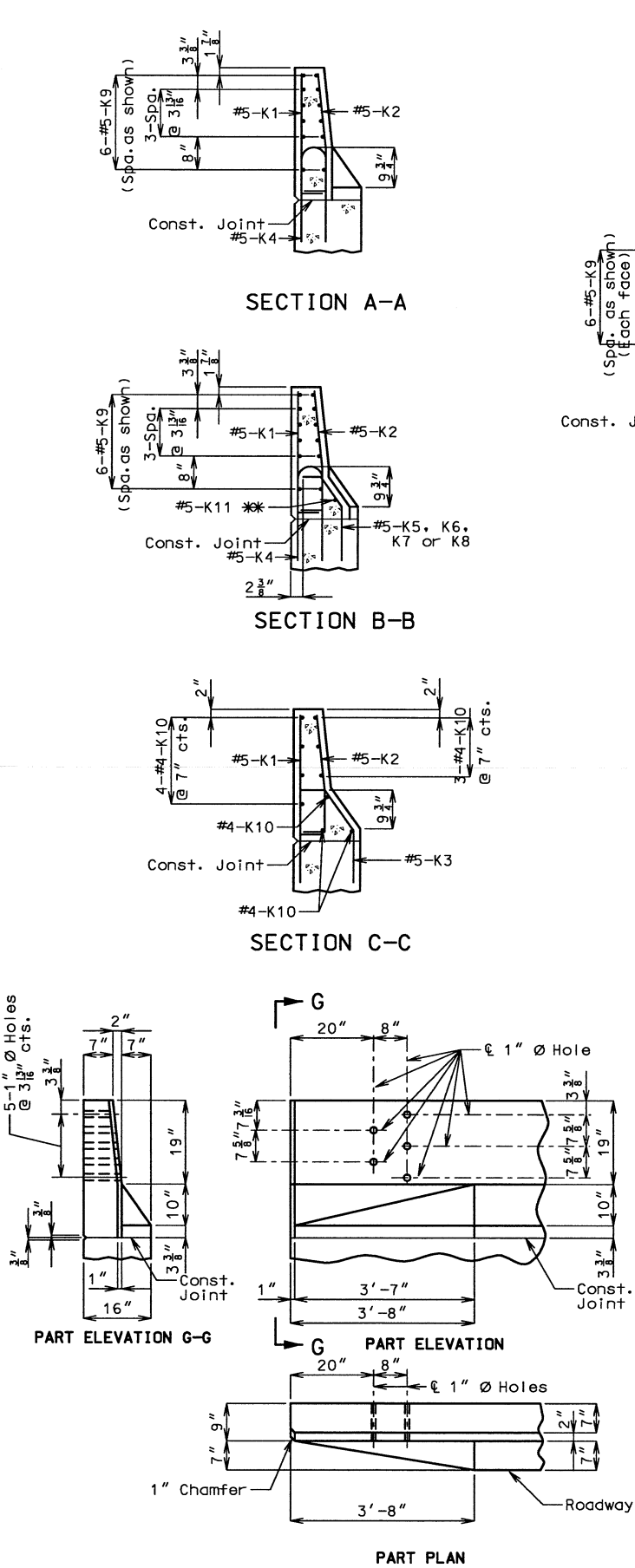
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 26 of 33

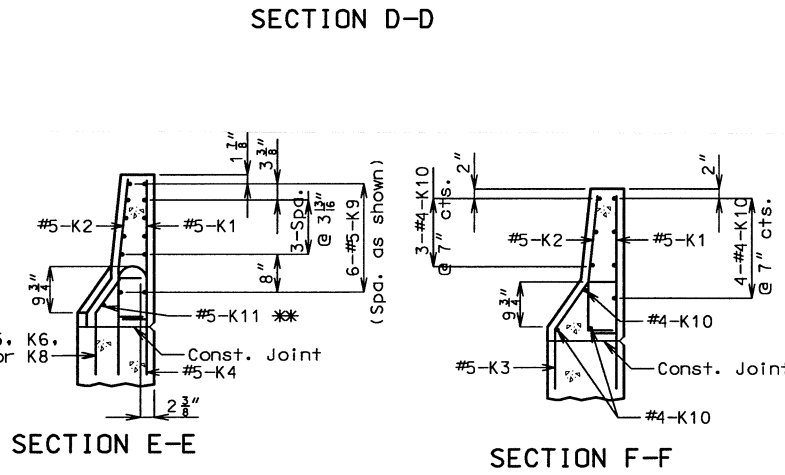
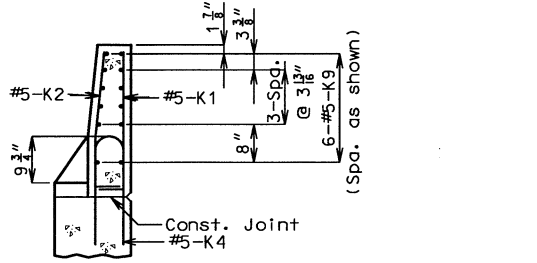
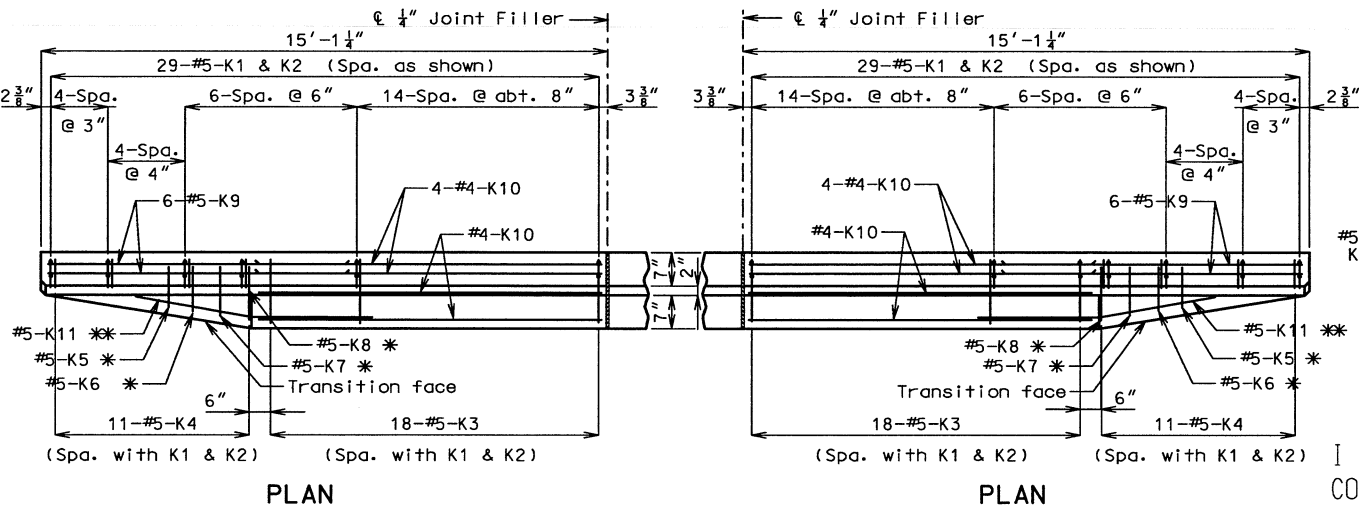
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Detailed July 2001
Checked Aug 2001

ROUTE 50	STATE MO.	DISTRICT 6	SHEET NO. B27
JOB NO. J6P1381			
PROJECT NO. FAF-50-4(25)			
CONTRACT NO. 021213-603			
COUNTY FRANKLIN			

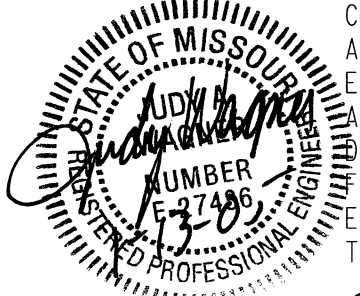


* Spaced with #5-K4 bars.
** Fit bar to follow transition face of curb.



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Judy Wagner
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1-13-05
DATE

DETAILS OF SAFETY BARRIER CURB AT END BENTS
(Left barrier curb shown; right barrier curb similar)

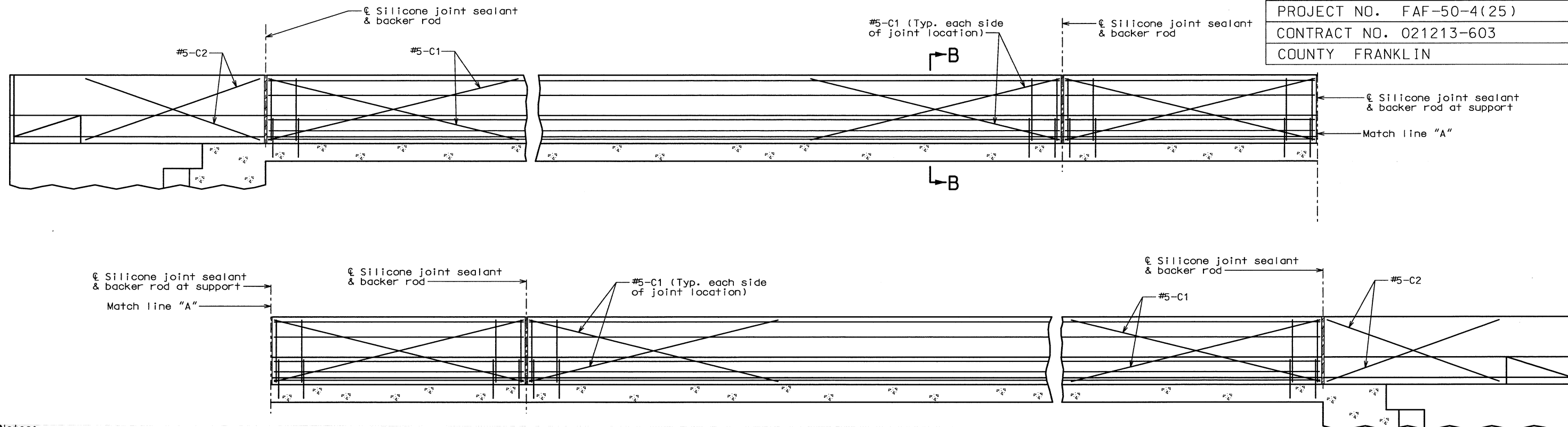
NOTE: Use a minimum lap of 2'-0" between K9 and K10 bars.

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

Sheet No. 27 of 33

FRANKLIN COUNTY A6361

ROUTE 50	STATE MO.	DISTRICT 6	SHEET NO. B28
JOB NO. J6P1381			
PROJECT NO. FAF-50-4(25)			
CONTRACT NO. 021213-603			
COUNTY FRANKLIN			



Notes:

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

When the safety barrier curb is bid by linear feet, the contract unit price was include the cost of all concrete and reinforcement, complete-in-place.

Concrete in the safety barrier curb was Class B1.

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.

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

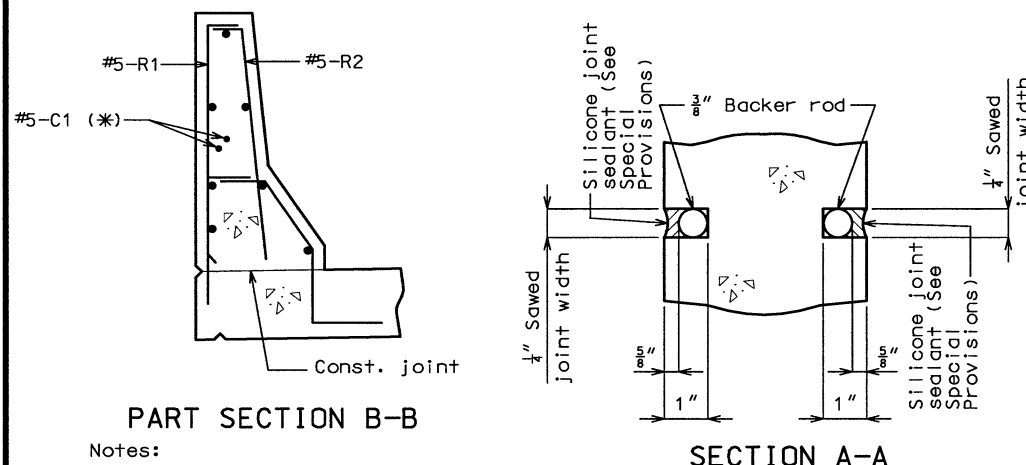
Note:

Joint sealant and backer rods were used on all slip-form bridge safety barrier curbs instead of joint filler.

C Bars (Slip-form option only) were 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 have a vertically broomed finish and the curb top have a transversely broomed finish.

3/8" Bevel, 1/2" Radius or alternate as approved by the engineer



Notes:

(*) Each side of joint location.

(**) 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.)

(***) The R3 bar and #5-S106 bottom transverse slab bar in cantilever (P/S panels only) combination may be furnished as one bar as shown, at the contractor's option.

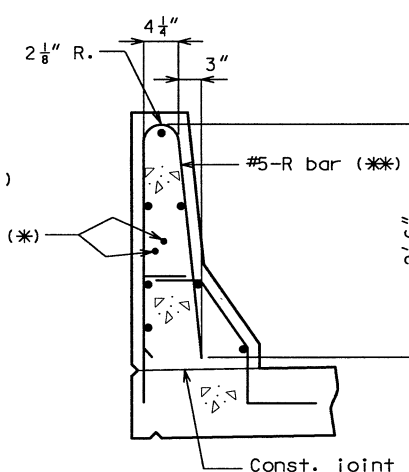
Note

Cost of silicone joint sealant and backer rod complete in place to be included on the contract unit price for Safety Barrier Curb.

OPTIONAL SLIP-FORM BRIDGE SAFETY BARRIER CURB

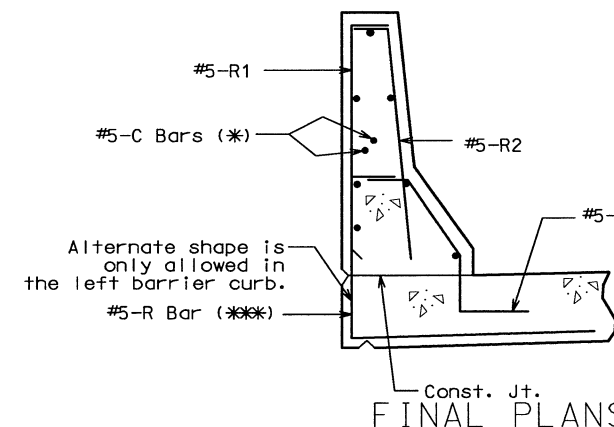
(Left barrier curb shown, right barrier curb similar.)

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



SECTION THRU JOINT

R-BAR PERMISSIBLE ALTERNATE SHAPE



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Judy A. Wagner 1-13-05
SIGNATURE DATE

FRANKLIN COUNTY A6361

Cont. Id. 021213-603	State	Proj. No. FAF-50-4(25)	Sheet No.
Franklin County	MO	Job No. J6P1381	830
Route 50			

GENERAL NOTES:

All concrete for the bridge approach slab and sleeper slab were in accordance with Section 503 (f/c = 4,000 psi) of the Missouri Standard Specifications.

All joint filler was meet the requirements of Section 1057.2.5 of the Missouri Standard Specifications, except as noted.

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

Minimum clearance to reinforcing steel was 1-1/2", unless otherwise shown.

The reinforcing steel in the bridge approach slab and the sleeper slab was continuous. The transverse reinforcing steel may be made continuous by lap splicing the #4 & #6 bars 18" and 26" respectively.

Mechanical bar splices will be permitted and develop at least 125 percent of the specified yield strength of the reinforcing bars being spliced. The contractor furnish the Engineer the manufacturer's certification that this requirement is met and is required to follow the manufacturer's recommendation for installation.

Mechanical bar splices were epoxy coated in accordance with Section 710 of the Missouri Standard Specifications.

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

The contractor pour and satisfactorily finish the bridge slab before pouring the bridge approach slabs. Longitudinal construction joints in approach slab and sleeper slab were aligned with longitudinal construction joints in bridge slab.

Longitudinal construction joints in approach slab and sleeper slab was aligned with longitudinal construction joints in bridge 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 and all other appurtenances and incidental work as shown on this sheet, complete in place, was considered as completely covered under the contract unit price for Bridge Approach Slab (Bridge), per sq. yd.

For Concrete Approach Pavement details, see roadway plans.

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

When a lap splice is required for the use of a mechanical bar splice, the minimum lap length was 40" for transverse approach slab bar splices.

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 abutment. 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 abutment, the reinforcement shall be bent up to 90 degrees with a 2" minimum radius near the abutment to allow compaction of the backfill near the abutment. Damage to epoxy coating shall be repaired according to Section 710.3 of the Missouri Standard Specifications.

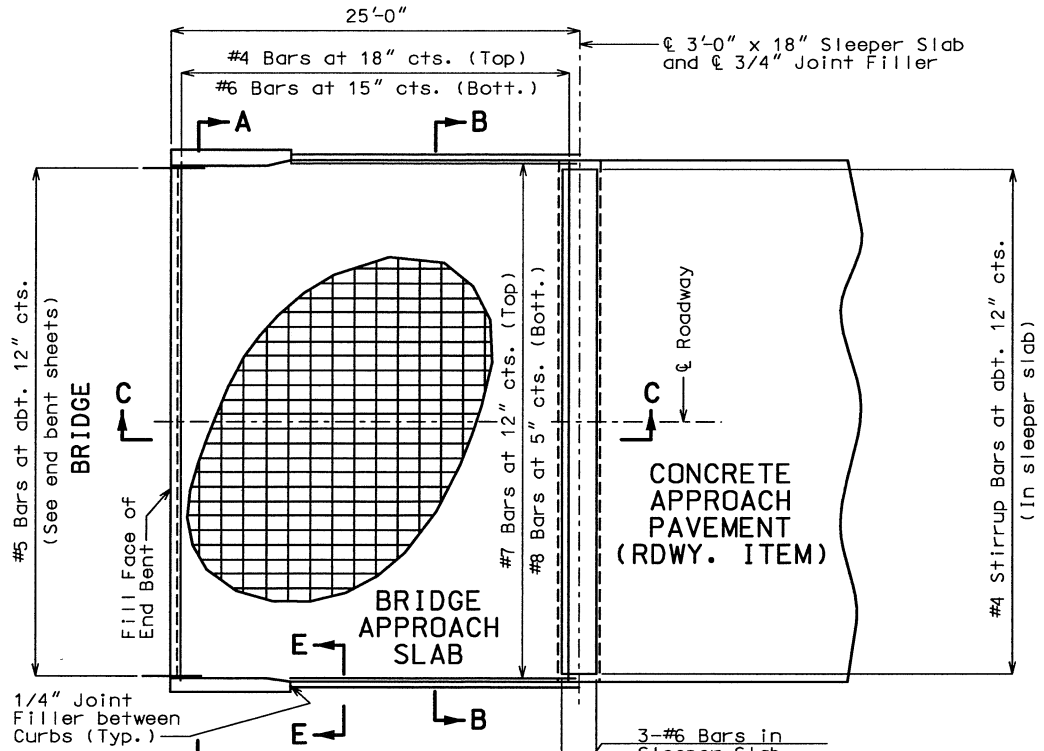
Drain pipe may be either 6" diameter corrugated metallic-coated pipe underdrain, 4" diameter corrugated polyvinyl chloride (PVC) drain pipe, or corrugated polyethylene (PE) drain pipe.

FINAL PLANS

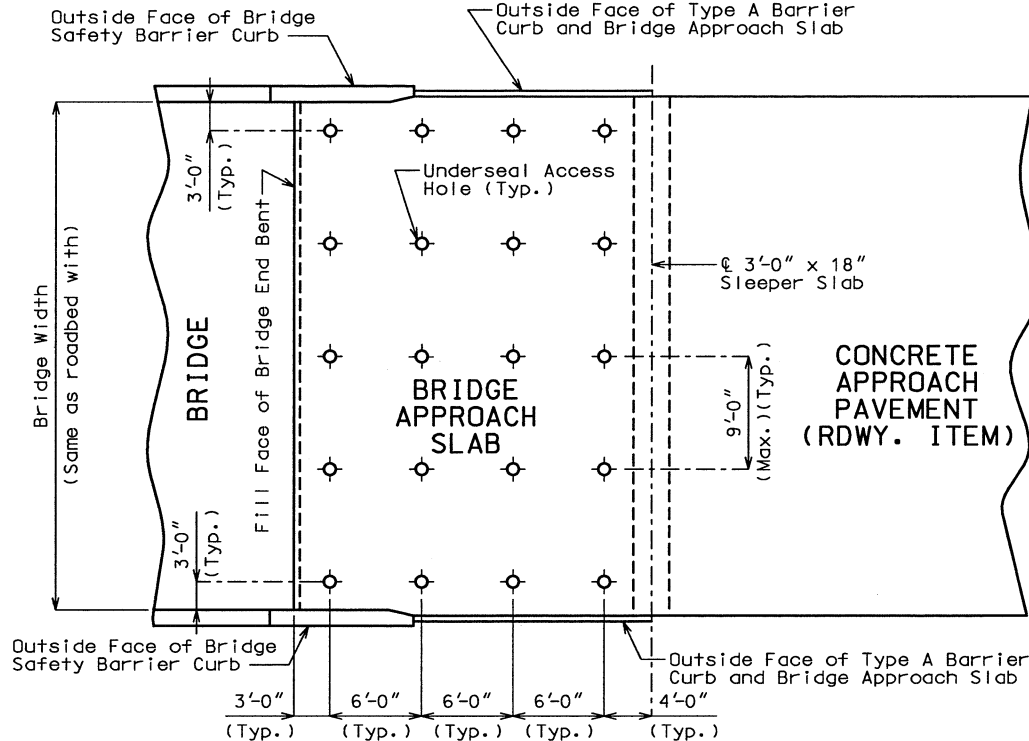
I CERTIFY THAT THIS PLAN SHEET ACCURATELY DEPICTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND ALL ITS APPURTENANT FEATURES, TO THE BEST OF MY KNOWLEDGE, AS I AND MY STAFF HAVE OBSERVED THE CONTRACTOR'S CONSTRUCTION OF THIS PROJECT. I SPECIFICALLY DISCLAIM ANY RESPONSIBILITY FOR THE DESIGN OF THIS PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE MODIFIED OR AUTHORIZED THE MODIFICATION OF THE PROJECT DESIGN DURING ITS CONSTRUCTION; AND I DISCLAIM RESPONSIBILITY FOR THE CONTRACTOR'S ACTUAL CONSTRUCTION OF THE PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE DIRECTED OR ORDERED THAT THE PROJECT BE CONSTRUCTED.

1-13-05

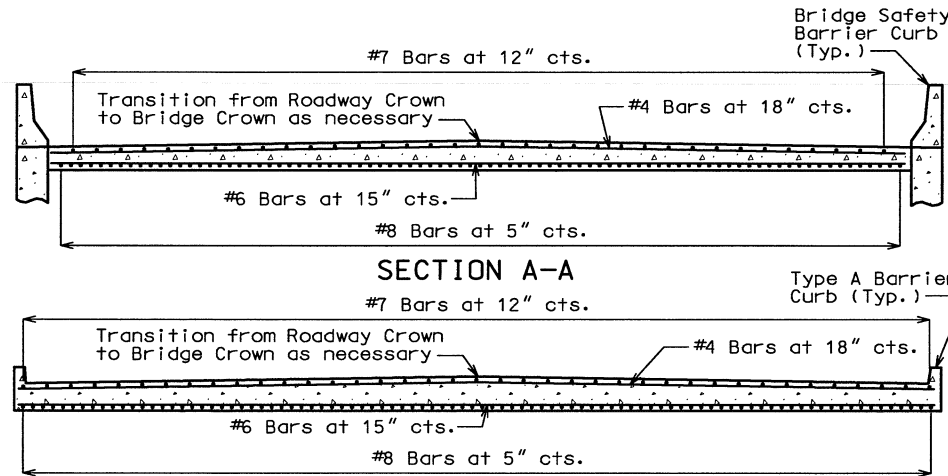
FRANKLIN COUNTY A6361



PART PLAN SHOWING REINFORCEMENT



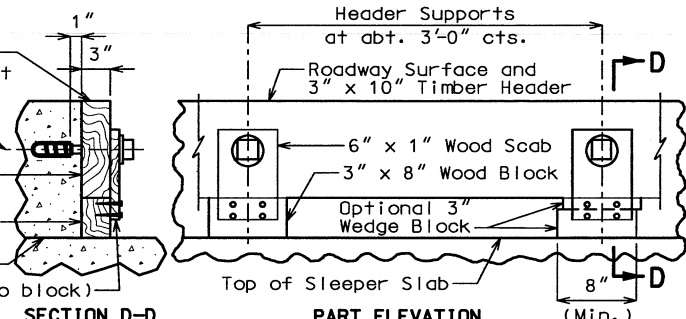
PART PLAN (SHOWING TYPICAL UNDERSEAL ACCESS HOLE LOCATIONS)



SECTION A-A

SECTION B-B

Note: With the approval of the Engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.

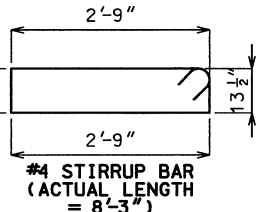
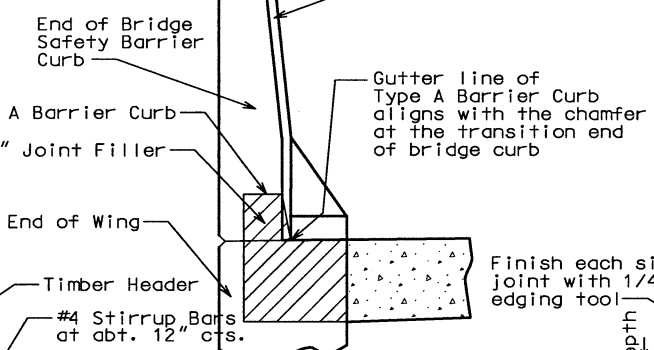


SECTION D-D

PART ELEVATION

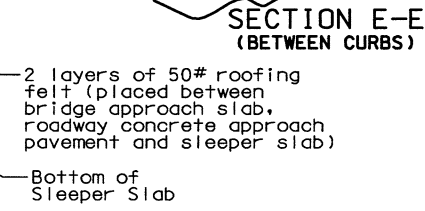
Note: Remove timber header when concrete pavement is placed.

DETAILS OF TIMBER HEADER



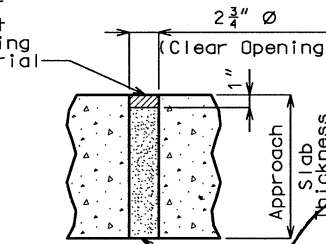
TYPICAL 135° STIRRUP BAR BENDING DIAGRAM

Note: Nominal lengths are based on out to out dimensions shown in bending diagram and are listed for fabricators use (nearest inch).



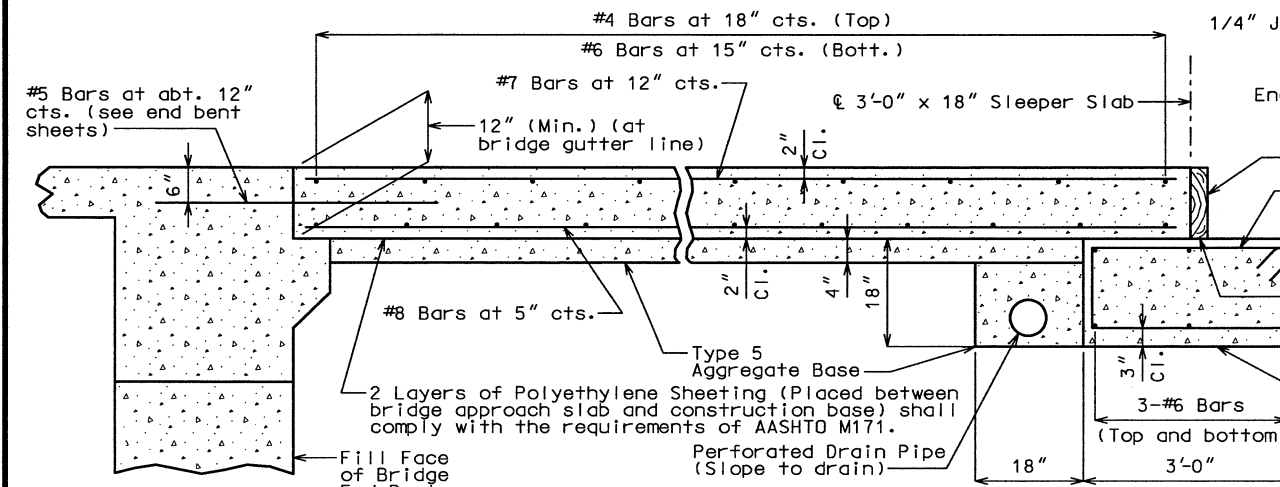
SECTION E-E (BETWEEN CURBS)

CONST. JOINT DETAIL (IF REQUIRED)



TYPICAL UNDERSEAL ACCESS HOLE DETAIL

BRIDGE APPROACH SLAB



SECTION C-C

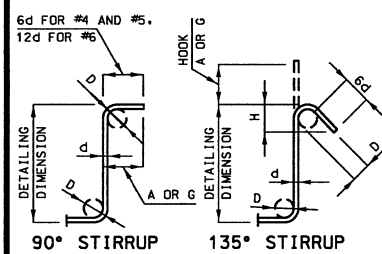
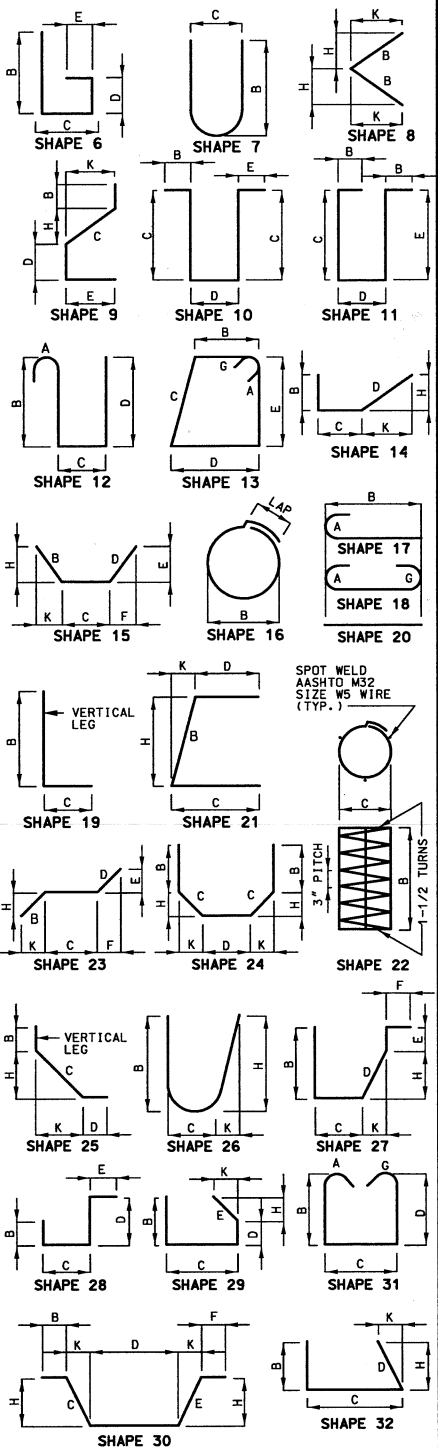
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 29 of 33

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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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BILL OF REINFORCING STEEL																																		
NO.	REQ'D.	MARK NO.	SIZE	MARK	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.								
14	6	H407	BEAM				10	S	X										7	4		7	0		147									
99	4	P400	COLUMN				16		X				3	3.000										11	1		11	1		733				
10	4	U400	BEAM				10	S	X					12.000		3	9.000								5	9		5	7		37			
12	5	U401	BEAM				10	S	X					4	0.000		3	9.000								11	9		11	7		145		
46	5	U402	BEAM				13	S	X				3	9.000		4	0.000		3	9.000		4	0.000				16	5		16	1		772	
54	8	V400	COLUMN				20		X				36	2.000												36	2		36	2		5215		
					SUPERSTR.																													
					END BENT 1																													
18	6	F100	WING				23	S					14.000		4	3.625		14.000		9.875		9.875		9.875		9.875	6	8		6	7		178	
10	6	F101	DIAPHRAGM				19	S					5	5.125		2	3.000										7	8		7	6		113	
43	5	H100	DIAPHRAGM			E	20						2	6.000													2	6		2	6		112	
1	4	H101	APP. HAUNCH				20						25	10.000													25	10		25	10		17	
1	4	H102	APP. HAUNCH				20						17	10.000													17	10		17	10		12	
3	6	H103	DIAPHRAGM				20						19	2.000													19	2		19	2		86	
3	6	H104	DIAPHRAGM				20						27	2.000													27	2		27	2		122	
9	6	H105	DIAPHRAGM				20						8	0.000													8	0		8	0		108	
3	6	H106	DIAPHRAGM				20						3	2.000													3	2		3	2		14	
3	6	H107	DIAPHRAGM				20						4	11.000													4	11		4	11		22	
6	6	H108	DIAPHRAGM				20						2	10.000													2	10		2	10		26	
10	6	H109	BEAM				20						18	11.000													18	11		18	11		284	
10	6	H110	BEAM				20						27	5.000													27	5		27	5		412	
4	6	H112	DIAPHRAGM			E	20						19	1.000													19	1		19	1		115	
5	5	H113	STRAND TIE				20						3	11.000													3	11		3	11		20	
4	6	H115	WING			E	20						13	10.000													13	10		13	10		83	
8	6	H116	WING				20						13	10.000													13	10		13	10		166	
32	6	H117	WING				20				V	4	3	11.000													3	11		3	11			
			INCREMENT =										13	10.000													13	10		13	10		427	
			17.000 INCH																															
4	6	H118	DIAPHRAGM			E	20						30	11.000													30	11		30	11		186	
4	6	T100	WING				25	S					2	0.750		11	8.000		3	3.250					4	10.750	10	7.125		17	0	16	11	102
32	5	U100	BEAM				10	S						5	1.375		2	3.000									12	6		12	3		409	
3	4	U101	BEAM				10	S						2	9.000		2	3.000									7	9		7	7		15	
14	4	U102	BEAM				13	S					2	3.000		2	9.000		2	3.000		2	9.000				10	9		10	6		98	
58	6	U103	DIAPHRAGM			E	19	S					4	4.375		4	7.500										9	0		8	10		770	
40	5	U104	DIAPHRAGM			E	10	S					4	4.375		2	3.000										11	0		10	9		448	
32	4	U105	APP. HAUNCH				10	S						17.750		6.000											3	6		3	4		71	
16	5	V100	BEAM				20						5	2.000													5	2		5	2		86	
44	6	V101	WING				20			V	4		2	4.000													2	4		2	4			
			INCREMENT =										7	0.000													7	0		7	0		308	
			5.625 INCH																															
8	6	V102	WING				20						7	5.000													7	5		7	5		89	
					END BENT 5																													
16	6	F500	WING				23	S					14.000		4	3.625		14.000		9.875		9.875		9.875		9.875	6	8		6	7		158	

State MO	JOB NO. J6P1381	Sheet No. B30
DISTRICT 06	PROJECT NO. FAF-50-4(25)	Route 50
	CONTRACT I.D. NO. 021213-603	
	COUNTY FRANKLIN	

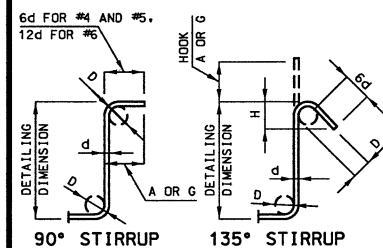


STIRRUP HOOK DIMENSIONS				
GRADES 40 - 50 - 60 KSI				
BAR SIZE	D (IN.)	90° HOOK	135° HOOK	APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER

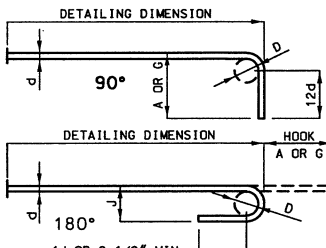
BILL OF REINFORCING STEEL

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.
10	6 F501	DIAPHRAGM		19	S				5	5.125	2	3.000							7	8	7	6	113		
43	5 H500	DIAPHRAGM	E	20					2	6.000									2	6	2	6	112		
1	4 H501	APP. HAUNCH		20					25	10.000									25	10	25	10	17		
1	4 H502	APP. HAUNCH		20					17	10.000									17	10	17	10	12		
3	6 H503	DIAPHRAGM		20					19	2.000									19	2	19	2	86		
3	6 H504	DIAPHRAGM		20					27	2.000									27	2	27	2	122		
9	6 H505	DIAPHRAGM		20					8	0.000									8	0	8	0	108		
3	6 H506	DIAPHRAGM		20					3	2.000									3	2	3	2	14		
3	6 H507	DIAPHRAGM		20					4	11.000									4	11	4	11	22		
6	6 H508	DIAPHRAGM		20					2	10.000									2	10	2	10	26		
10	6 H509	BEAM		20					18	11.000									18	11	18	11	284		
10	6 H510	BEAM		20					27	5.000									27	5	27	5	412		
4	6 H512	DIAPHRAGM	E	20					19	1.000									19	1	19	1	115		
5	5 H513	STRAND TIE		20					3	11.000									3	11	3	11	20		
6	6 H515	WING	E	20					13	10.000									13	10	13	10	125		
8	6 H516	WING		20					13	10.000									13	10	13	10	166		
36	6 H517	WING		20			V	4	3	6.000									3	6	3	6	466		
		INCREMENT =							13	9.000									13	9	13	9	466		
		15.375 INCH																							
4	6 H518	DIAPHRAGM	E	20					30	11.000									30	11	30	11	186		
4	6 T500	WING		25	S				2	0.750	11	11.875	3	2.500			5	6.750	10	7.500	17	3	17	2	103
32	5 U500	BEAM		10	S					5	1.375	2	3.000						12	6	12	3	409		
3	4 U501	BEAM		10	S					2	9.000	2	3.000						7	9	7	7	15		
14	4 U502	BEAM		13	S				2	3.000	2	9.000	2	3.000	2	9.000			10	9	10	6	98		
58	6 U503	DIAPHRAGM	E	19	S				4	3.375	4	7.500							8	11	8	9	762		
40	5 U504	DIAPHRAGM	E	10	S					4	3.375	2	3.000						10	10	10	7	442		
32	4 U505	APP. HAUNCH		10	S					17.750	6.000								3	6	3	4	71		
16	5 V500	BEAM		20					5	2.000									5	2	5	2	86		
44	6 V501	WING		20			V	4	2	4.000									2	4	2	4			
		INCREMENT =							7	0.000									7	0	7	0	308		
		5.625 INCH																							
8	6 V502	WING		20					7	4.000									7	4	7	4	88		
		DIAPH. AT																							
		INT. BENTS																							
48	5 H600	DIAPHRAGM		19	S				2	7.125	11.500								3	7	3	5	171		
36	6 H601	DIAPHRAGM		20					8	1.000									8	1	8	1	437		
36	4 H602	DIAPHRAGM		20					9	0.000									9	0	9	0	216		
12	4 H603	DIAPHRAGM		20					3	8.000									3	8	3	8	29		
12	6 H604	DIAPHRAGM		20					3	2.000									3	2	3	2	57		
12	6 H605	DIAPHRAGM		20					4	11.000									4	11	4	11	89		
12	4 H606	DIAPHRAGM		20					5	4.000									5	4	5	4	43		
54	5 H607	STRAND TIE		20					3	11.000									3	11	3	11	221		
36	5 H608	STRAND TIE		20					2	11.000									2	11	2	11	110		
168	4 U600	DIAPHRAGM	E	28	S					2	1.000	4	1.250	12.000					7	2	7	0	786		
48	6 U601	DIAPHRAGM	E	28	S					2	1.000	4	1.500	14.000					7	5	7	1	511		
24	5 V600	DIAPHRAGM	E	20					4	1.000									4	1	4	1	102		
		SLAB																							
273	6 S100	SLAB	E	20					38	6.000									38	6	38	6	15787		



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"

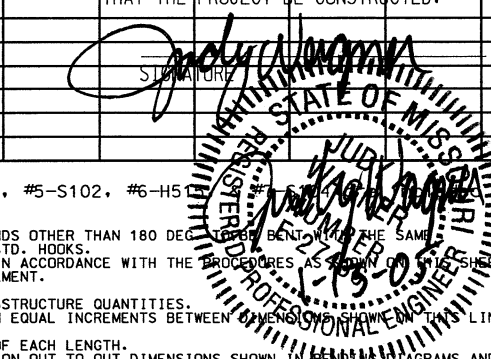
NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.



END HOOK DIMENSIONS				
ALL GRADES				
BAR SIZE	D (IN.)	180° HOOKS	90° HOOKS	
#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"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

Two additional #4-K10, #5-S102, #6-H517 in the bar bill for testing.

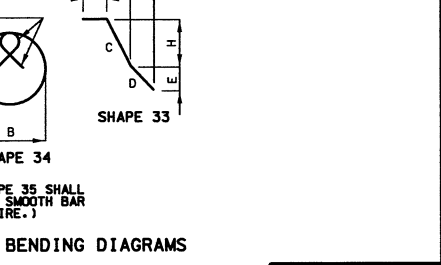
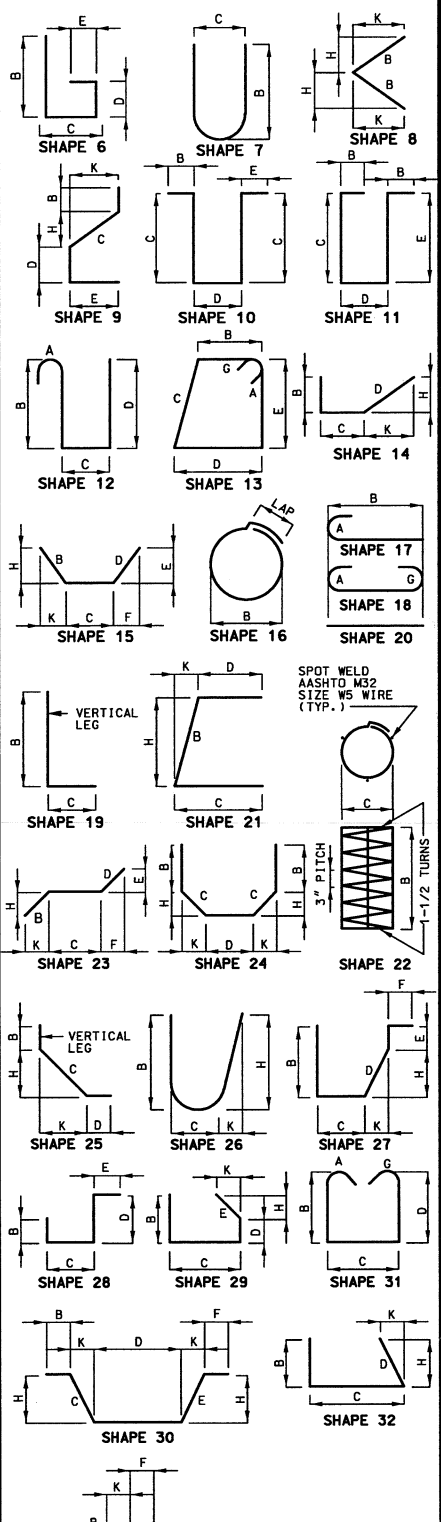
NOTE: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE BENT SHALL BE THE SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET. E = EPOXY COATED REINFORCEMENT. X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES. V = BAR DIMENSIONS VARY 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. PAYMENTS 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) = F_y 60,000 PSI.



I CERTIFY THAT THIS PLAN SHEET ACCURATELY DEPICTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND ALL ITS APPURTENANT FEATURES, TO THE BEST OF MY KNOWLEDGE, AS I AND MY STAFF HAVE OBSERVED THE CONTRACTOR'S CONSTRUCTION OF THIS PROJECT. I SPECIFICALLY DISCLAIM ANY RESPONSIBILITY FOR THE DESIGN OF THIS PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE MODIFIED OR AUTHORIZED THE MODIFICATION OF THE PROJECT DESIGN DURING ITS CONSTRUCTION, AND I DISCLAIM RESPONSIBILITY FOR THE CONTRACTOR'S ACTUAL CONSTRUCTION OF THE PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE DIRECTED OR ORDERED THAT THE PROJECT BE CONSTRUCTED.

FINAL PLANS

State MO	JOB NO. JAFM13891	Sheet No. B31
DISTRICT 06	PROJECT NO. FAF56044(225)	ROUTE 50
	CONTRACT I.D. NO. 021213-8038	
	COUNTY FRANKLIN	



SHAPE 33
SHAPE 34
SHAPE 35

BILL OF REINFORCING STEEL


[illegible]

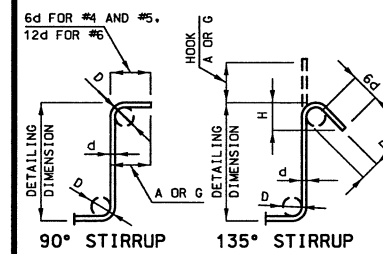
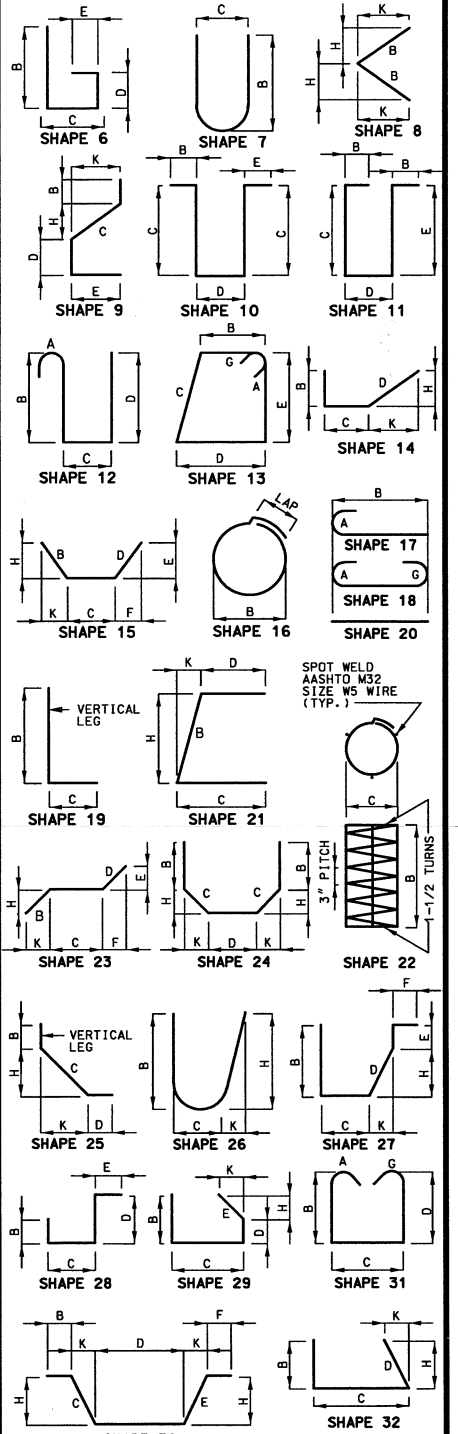
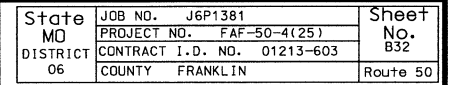
BILL OF REINFORCING STEEL

[illegible]

~~FINAL PLANS~~

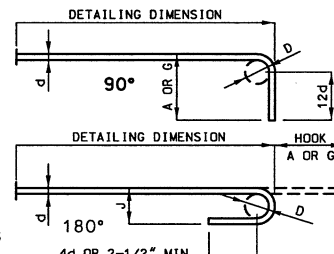
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 1-13-05
 SIGNATURE DATE



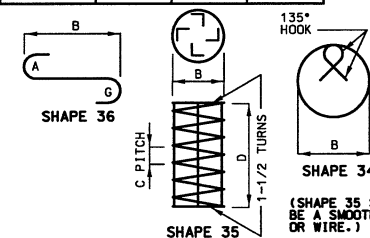
STIRRUP HOOK DIMENSIONS				
GRADES 40 - 50 - 60 KSI				
BAR SIZE	D (IN.)	90° HOOK		135° HOOK
		HOKK A OR G	HOKK A OR G	APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1-1/2"

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



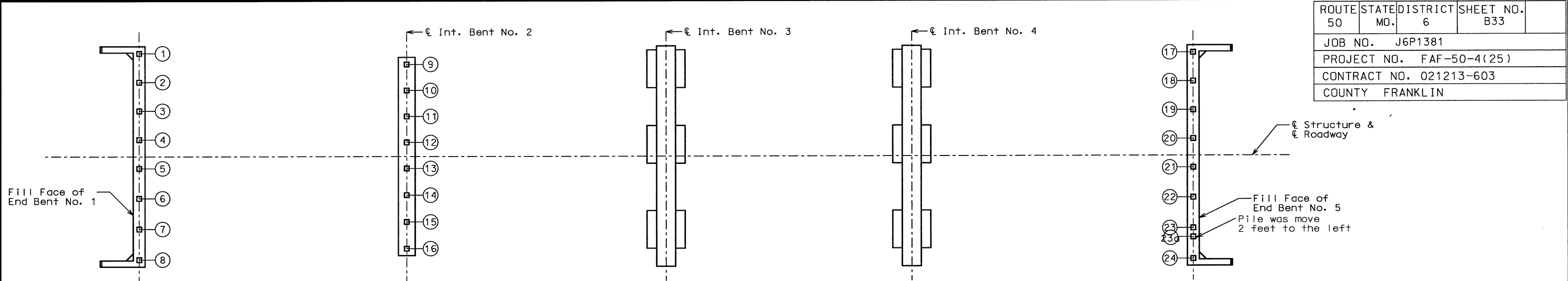
END HOOK DIMENSIONS					
BAR SIZE	D (IN.)	ALL GRADES			
		180° HOOKS		90° HOOKS	
		A OR G	J	A OR G	J
#3	2-1/4"	5"	3"	6"	4"
#4	3"	6"	4"	8"	5"
#5	3-3/4"	7"	5"	10"	6"
#6	4-1/2"	8"	6"	12"	7"
#7	5-1/4"	10"	7"	14"	8"
#8	6"	11"	8"	16"	9"
#9	9-1/2"	15"	11-3/4"	19"	12"
#10	10-3/4"	17"	13-1/4"	22"	14"
#11	12"	19"	14-3/4"	24"	16"
#14	18-1/4"	27-3/4"	21-3/4"	34"	22-7/8"

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 BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAM AND ARE LISTED FOR FABRICATOR'S USE (NEAREST INCH).
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PANEL WEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR CHAIN OR CHANEL 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.



(SHAPE 35
BE A SMOOT
OR WIRE.)

BENDING DIAGRAMS



ROUTE	STATE	DISTRICT	SHEET NO.
50	MO.	6	B33
JOB NO. J6P1381			
PROJECT NO. FAF-50-4(25)			
CONTRACT NO. 021213-603			
COUNTY FRANKLIN			

PART PLAN SHOWING
PILE NUMBERING FOR RECORDING
"AS BUILT PILE" DATA

"AS BUILT PILE" DATA			
PILE NO.	LENGTH IN PLACE (FT.)	COMPUTED BEARING (TONS)	REMARKS
End Bent No. 1			
1	40		REFUSAL ON ROCK ✓
2	41		REFUSAL ON ROCK ✓
3	41		REFUSAL ON ROCK ✓
4	41		REFUSAL ON ROCK ✓
5	41		REFUSAL ON ROCK ✓
6	41		REFUSAL ON ROCK ✓
7	41		REFUSAL ON ROCK ✓
8	42		REFUSAL ON ROCK ✓
Int. Bent No. 2			
9	42	171	(2"/12") BATTER 1/2 INCH IN 10 BLOW ✓
10	56	171	1/2 INCH IN 10 BLOW ✓
11	41	171	1/2 INCH IN 10 BLOW ✓
12	47	171	1/2 INCH IN 10 BLOW ✓
13	43	171	1/2 INCH IN 10 BLOW ✓
14	41	171	1/2 INCH IN 10 BLOW ✓
15	41	171	1/2 INCH IN 10 BLOW ✓
16	41	171	(2"/12") BATTER 1/2 INCH IN 10 BLOW ✓

"AS BUILT PILE" DATA			
PILE NO.	LENGTH IN PLACE (FT.)	COMPUTED BEARING (TONS)	REMARKS
End Bent No. 5			
17	28	128	1 INCH IN 10 BLOW ✓
18	28	128	1 INCH IN 10 BLOW ✓
19	29	128	1 INCH IN 10 BLOW ✓
20	28	128	1 INCH IN 10 BLOW ✓
21	28	128	1 INCH IN 10 BLOW ✓
22	30	128	1 INCH IN 10 BLOW ✓
23	*43	128	*PILE WAS DAMAGE WHILE DRIVING 1 INCH IN 10 BLOW ✓
*23a	30	128	*PILE WAS MOVE 2 FEET TO THE LEFT 1 INCH IN 10 BLOW ✓
24	31	128	1 INCH IN 10 BLOW ✓

NOTE: INDICATE IN REMARKS COLUMN:
A.) IF PILING WERE DRIVEN TO PRACTICAL REFUSAL.
B.) PILE BATTER IF OTHER THAN SHOWN ON BENT DETAIL SHEET.
C.) TYPE OF PILING USED.

NOTE: THIS SHEET TO BE COMPLETED BY
MoDOT CONSTRUCTION PERSONNEL.

NOTE:
PILE USE ON END BENTS 1 AND 5 10 INCH TYPE H STRUCTURAL STEEL PILE
PILE USE ON BENT NO. 2 14 INCH TYPE H STRUCTURAL STEEL PILE

FINAL PLANS

I CERTIFY THAT THIS PLAN SHEET ACCURATELY DEPICTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND ALL ITS APPURTENANT FEATURES, TO THE BEST OF MY KNOWLEDGE, AS I AND MY STAFF HAVE OBSERVED THE CONTRACTOR'S CONSTRUCTION OF THIS PROJECT. I SPECIFICALLY DISCLAIM ANY RESPONSIBILITY FOR THE DESIGN OF THIS PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE MODIFIED OR AUTHORIZED THE MODIFICATION OF THE PROJECT DESIGN DURING ITS CONSTRUCTION; AND I DISCLAIM RESPONSIBILITY FOR THE CONTRACTOR'S ACTUAL CONSTRUCTION OF THE PROJECT, EXCEPT AS I AND MY STAFF MAY HAVE DIRECTED OR ORDERED THAT THE PROJECT BE CONSTRUCTED.

Judy Wagner 1-13-05
SIGNATURE DATE

