

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

(25.0m - 28.5m) Continuous, Composite Steel Plate Girder

FINAL PLANS

STATE MO	JOB NO. J611220D	SHEET NO. B05
DIST. NO. 6	PROJECT NO. FAI-70-5(274)	ROUTE I-70
SEC./SUR. TWP. 46N	COUNTY ST. LOUIS	RGE. 6E

CONTRACT ID. 001215-610

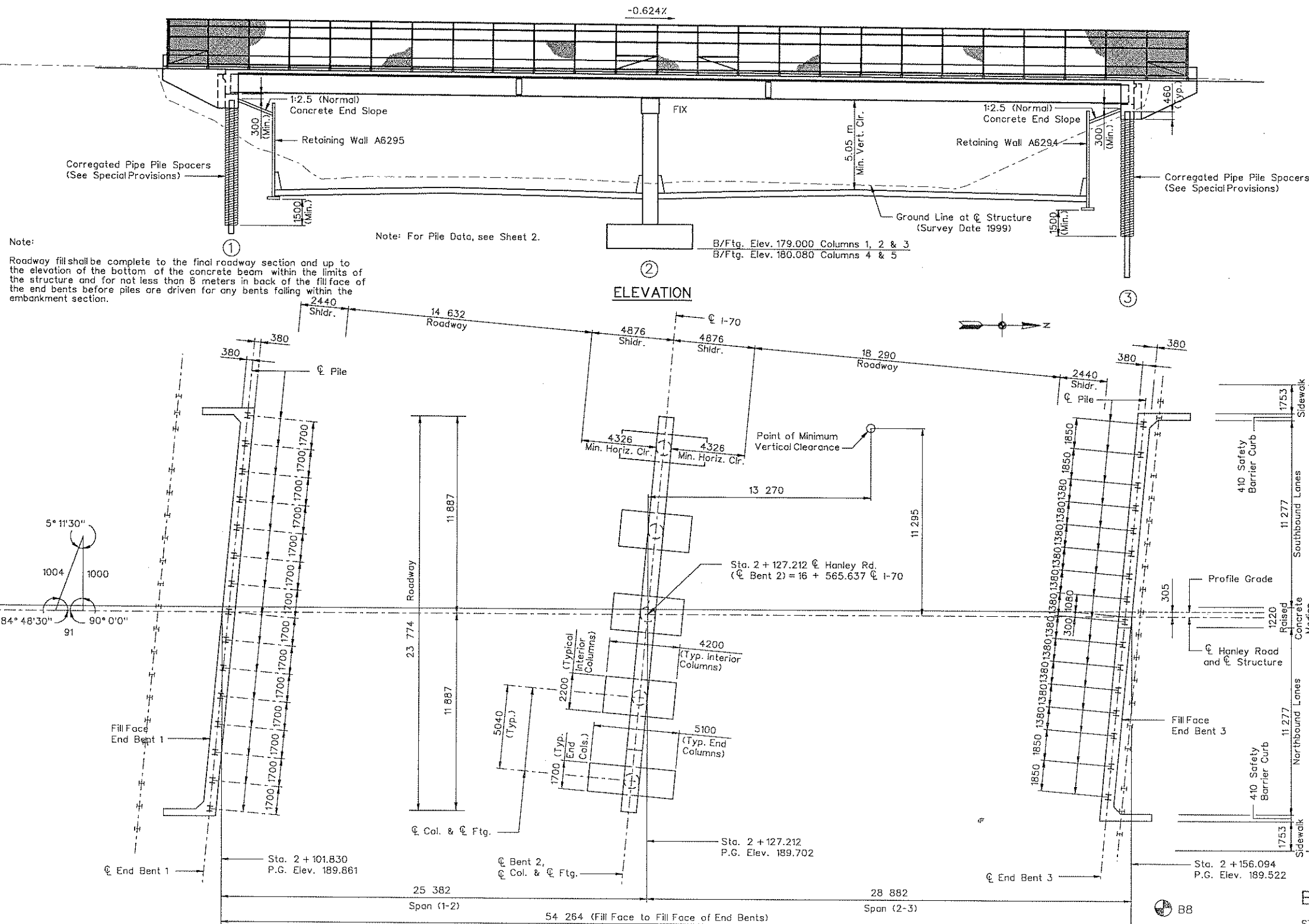
NOTES:

"B" Indicates location of borings.

Notice and disclaimer regarding Boring Log Data

The locations of all subsurface borings for this structure are shown on the bridge plan sheet for this structure. Boring data of the numbered locations is shown on Sheet 3. 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 the 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.



BRIDGE: HANLEY ROAD OVER I-70

STATE ROAD: FROM ROUTE I-70 TO LUCAS-HUNT ROAD
ABOUT 1.6 KM EAST OF ROUTE I-70

PROJECT NO. FAI-70-5(274) STA. 16+565.637
JOB NO. J611220D RTE. I-70

ST. LOUIS COUNTY

STD. M609.00
STD. M611.60
STD. M706.35
A6175

Designed August 2000 Williams
Detailed August 2000 Cunningham
Checked August 2000 Sachtleben



4227 EARTH CITY EXPRESSWAY SUITE 130 ST. LOUIS, MISSOURI 63045

PLAN

Note: For General Notes, Estimated Quantities, and Pile and Footing Data, See Sheet 2.

This drawing is not to scale. Follow dimensions.

Sheet 1 of 31

Date:

STATE	JOB NO.	SHEET NO.
MO	J611220D ✓	B06
DIST NO.	PROJECT NO. FAI-70-5(274) ✓	ROUTE
6	COUNTY ST. LOUIS ✓	I-70 ✓

CONTRACT ID. 001215-610 ✓

PILE AND FOOTING DATA				
BENT NO.		1	2	3
Bearing Pile	Pile Type and Size	HP310 x 79	HP310 x 79	HP310 x 79
	Number	15	16	16
	Approximate Length m	8.0	10.0	10.0
	Design Bearing kN	605	624	624
	Hammer Energy Required kN-m	20.7	21.4	21.4
Spread Footings	Foundation Material	Rock	Rock	Rock
	Design Bearing kN/m²	475	475	475

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

All piles shall be driven to practical refusal.

BRIDGE QUANTITIES				
ITEM		SUBSTR.	SUPERSTR.	TOTAL
Removal of Bridge (Bridge No. L-686R)		(lump sum)		1
Class 1 Excavation		(cu. meter)	355	355
Bridge Approach Slab (Bridge)		(sq. meter)	386	386
2800 mm Curved Top Pedestrian Fence (Structures)		(meter)	122.5	122.5
Structural Steel Piles (310 mm)		(meter)	290.0	290.0
Class B Concrete (Substructure)		(cu. meter)	164.1	164.1
Slab on Steel		(sq. meter)	1335	1335
*Safety Barrier Curb		(meter)	123.5	123.5
*Raised Median Barrier		(sq. meter)	66	66
Sidewalks (Bridges)		(sq. meter)	217	217
Plain Neoprene Bearing Pads		(each)	20	20
Laminated Neoprene Bearing Pads (Steel Structures)		(each)	10	10
Reinforcing Steel (Bridges)		(kilogram)	11 365	11 365
Mechanical Bar Splice		(each)	18	18
Conduit System on Structure (Telephone)		(lump sum)	1	1
Conduit System on Structure (Signals)		(lump sum)	1	1
Fabricated Structural Carbon Steel (Plate Girder)		(kilogram)	103 055	103 055
Fabricated Sign Support Brackets		(lump sum)	1	1
Fabricated Structural Low Alloy Steel (Plate Girders) ASTM A709M Grade 345		(kilogram)	74 950	74 950
Intermediate Field Coat (System G) Brown		(sq. meter)	2140	2140
Finish Field Coat (System G) Brown		(sq. meter)	200	200
Vertical Drain at End Bents		(each)	2	2
Corrugated Metal Pipe Spacers		(each)	0	0
Pre-Bore for Pile (5017)		(each)	42.5	42.5

Cost of channel shear connectors C100 x 8 (ASTM A709M, Grade 250) in place to be included in contract unit price for Structural Steel Piles (310 mm).

* Safety Barrier Curb and Raised Median Barrier are slip form option.

All concrete between the upper and lower construction joints in the end bents is included with the Superstructure Quantities for Slab on Steel, see Special Provisions.

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

Cost of concrete and reinforcing steel in the sidewalk is included in the contract unit price for Sidewalk (Bridges).

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

QUANTITIES FOR SLAB ON STEEL		
ITEM		TOTAL
Reinforcing Steel (Plain)	(kilogram)	5160
Reinforcing Steel (Epoxy Coated)	(kilogram)	50 920
Concrete **	(cu. meter)	286.4

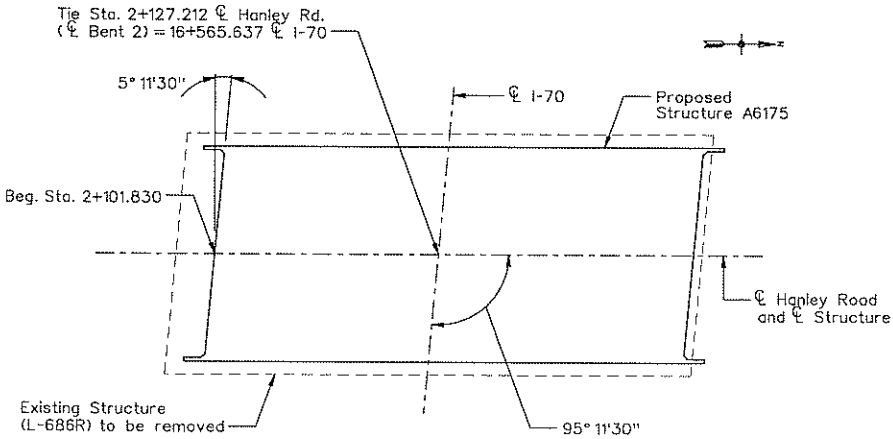
The table of Quantities for Slab on Steel represents the quantities used by the state in preparing the cost estimate for concrete slabs. Variations may be encountered in these quantities, but these variations cannot be used for an adjustment in the contract unit price per square meter of Slab on Steel.

See Special Provisions for method of forming slab.

The Quantities for Slab on Steel are based on skewed precast prestressed end panels.

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

The prestressed panel quantities are not included in the table of Quantities for Slab on Steel.



LOCATION SKETCH

GENERAL NOTES:

DESIGN SPECIFICATIONS:

AASHTO - 1996 and Interims thru 1998
Load Factor Design
Seismic Performance Category B
Acceleration Coefficient = 0.10

DESIGN LOADING:

MS18 Modified
185 kg/m² Future Wearing Surface
Earth 1900 kg/m³
Equivalent Fluid Pressure = 7.0 kPa/m
Fatigue Stress - Case II

DESIGN UNIT STRESSES:

Class B Concrete (Substructure) f'c = 21 MPa
Class B1 Concrete (Safety Barrier Curbs and Raised Median Barrier) f'c = 28 MPa
Class B2 Concrete (Superstructure, except Safety Barrier Curb and Raised Median Barrier) f'c = 28 MPa
Reinforcing Steel (Grade 420) fy = 420 MPa
Structural Carbon Steel (ASTM A709M Grade 250) fy = 250 MPa
Structural Steel (ASTM A709M Grade 345) fy = 345 MPa
Steel Pile (ASTM A709M Grade 250) fy = 250 MPa, fb = 62 MPa

STEEL STRUCTURES:

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.
Field connections shall be made with 19.0 mm diameter high strength bolts and 20.6 mm diameter holes, except as noted.

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 40 mm, unless otherwise shown.

COATING:

Protective Coating: System G by the contractor. (See Special Provisions.)
Prime Coat: The cost of the prime coat shall be included in the contract unit price of the Fabricated Structural Steel. Tint of the prime coat for System G shall be similar to the color of the field coat to be used.
Field Coat: The color of the finish coat shall be Brown (Federal Standard #30045). The cost of the intermediate coat shall be included in the contract unit price per square meter of Intermediate Field Coat (System G) Brown. The cost of the finish coat shall be included in the contract unit price per square meter of Finish Field Coat System G Brown. (See Special Provisions.) At the option of the contractor, the intermediate field coats may be applied in the shop. The contractor shall exercise extreme care during all phases of loading, hauling, erection and pouring of the slab to minimize damage and shall be fully responsible for all repairs and cleaning of the coating systems as required by the engineer.

MISCELLANEOUS:

A minimum vertical clearance of 4.75 m (Signing Required) from crown of existing lanes and a minimum lateral clearance of 8.5 m in both directions shall be maintained during construction. Traffic over structure to be maintained during construction.
High strength bolts, nuts and washers will be sampled for quality assurance as specified in Section 106 of the Missouri Standard Specifications and Field Section (FS-712) from Materials Manual.

DIMENSIONS:

All dimensions are shown in millimeters (mm) unless otherwise specified.
Drawings are not to scale. Follow dimensions.

ELEVATIONS:

All elevations are specified in meters except as noted.

QUANTITIES AND GENERAL NOTES

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Designed August 2000 Williams
Detailed August 2000 Cunningham
Checked August 2000 Sachtleben



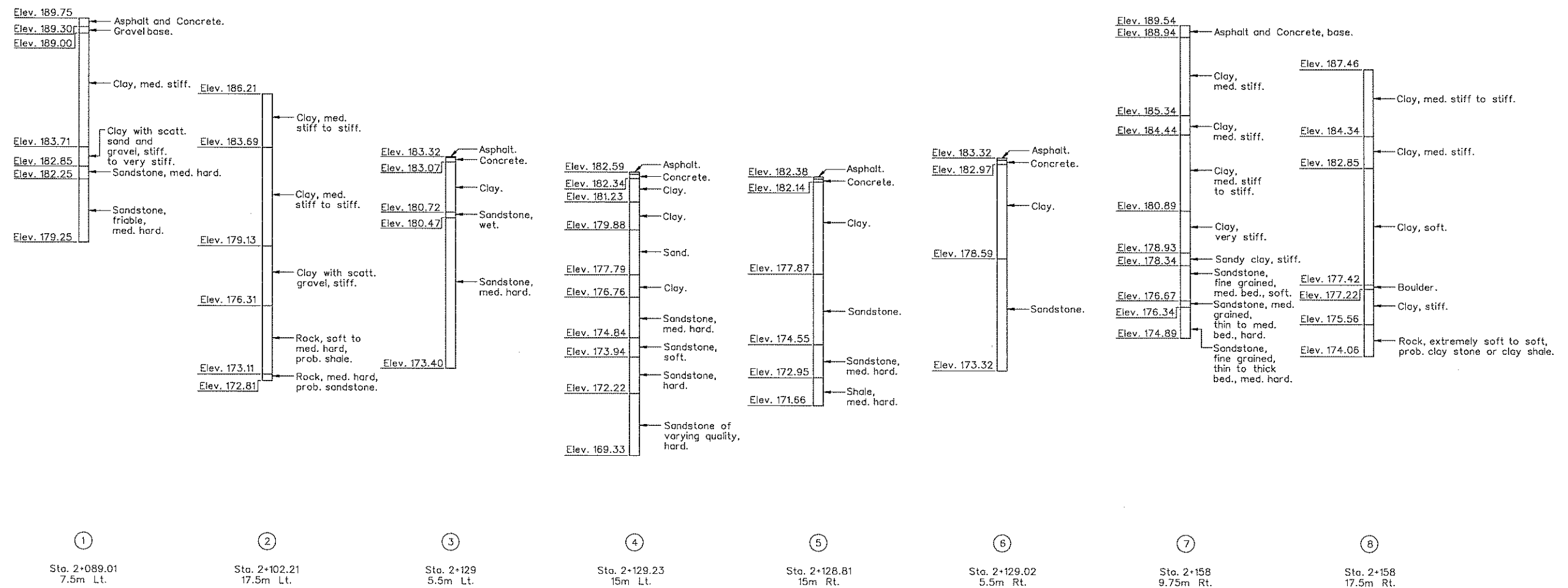
4227 EARTH CITY EXPRESSWAY SUITE 130 ST. LOUIS, MISSOURI 63045

This drawing is not to scale. Follow dimensions.

Sheet 2 of 31

FINAL PLANS

STATE MO	JOB NO. J611220D	SHEET NO. B07
DIST. NO. 6	PROJECT NO. FAI-70-5(274)	ROUTE I-70
COUNTY ST. LOUIS	CONTRACT ID. 001215-610	



BORING DATA

Note: For location of borings, see Sheet 1.

BORING DATA

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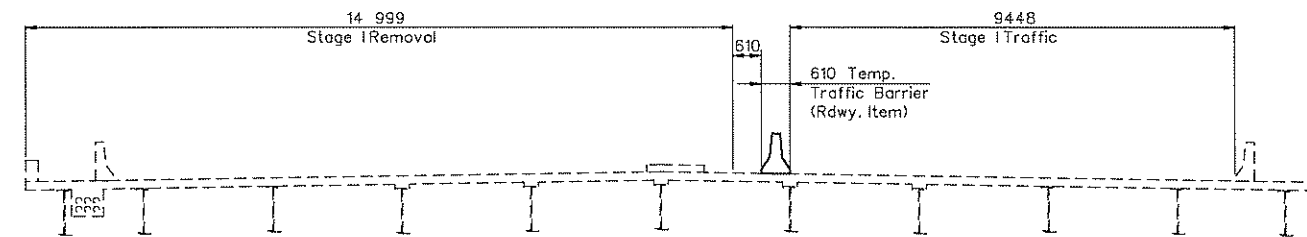
Sheet 3 of 31

ST. LOUIS COUNTY

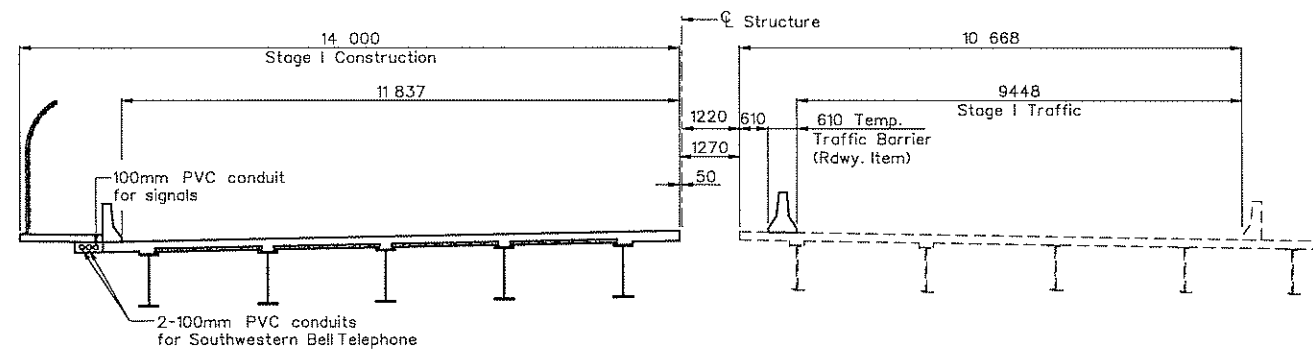
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	COUNTY ST. LOUIS	
	CONTRACT ID. 001215-610	

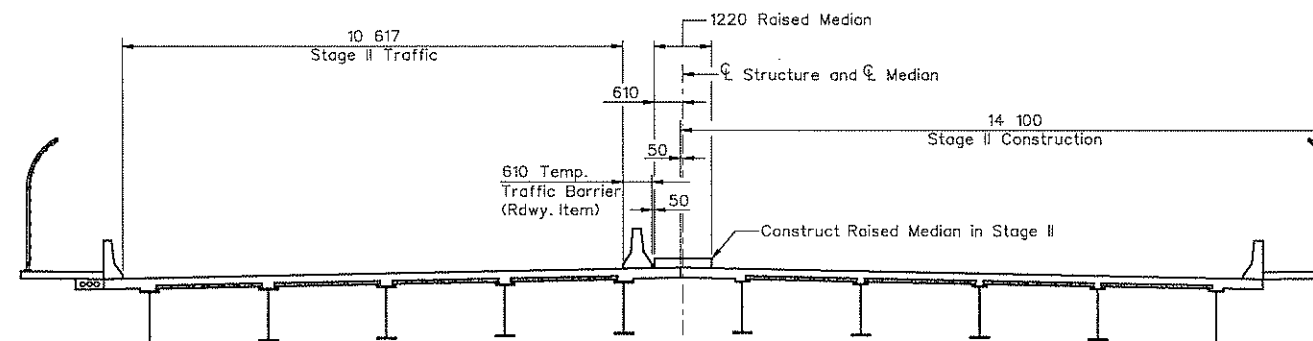
FINAL PLANS



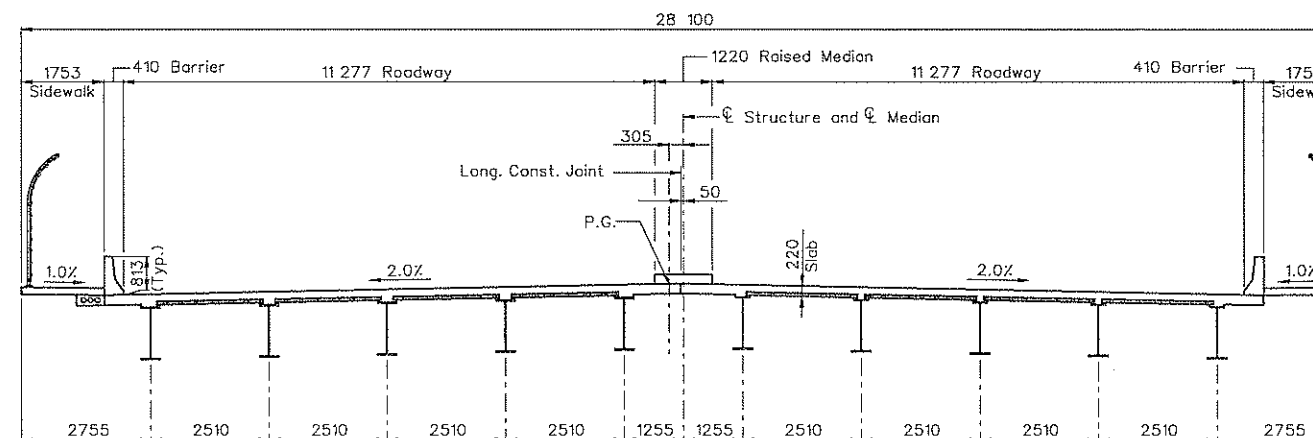
STAGE I REMOVAL



STAGE I CONSTRUCTION



STAGE II CONSTRUCTION



FINAL CROSS SECTION



4227 EARTH CITY EXPRESSWAY SUITE 120 ST. LOUIS, MISSOURI 63045

STAGE CONSTRUCTION DETAILS

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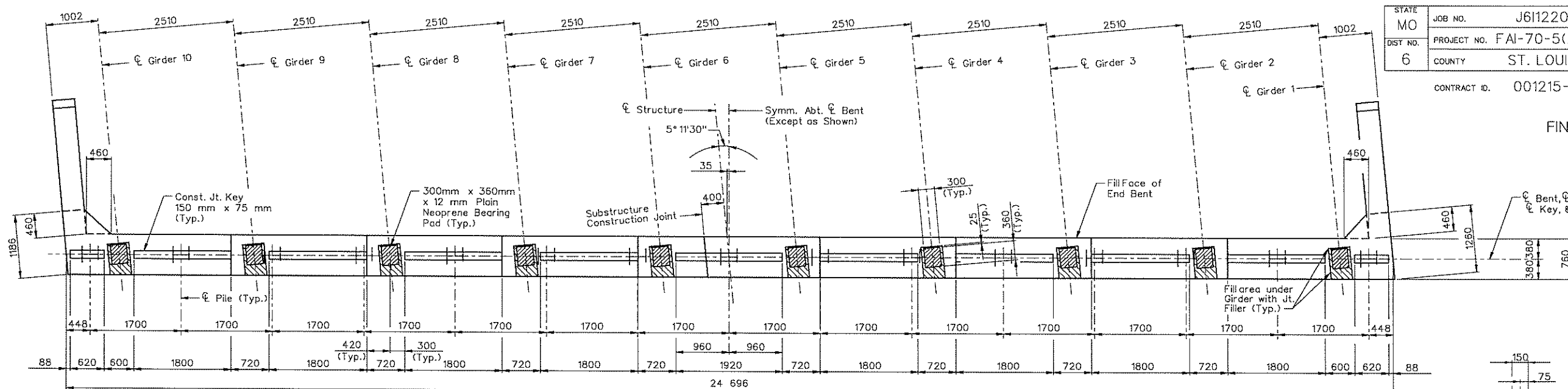
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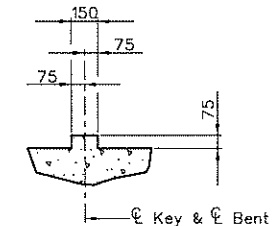
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COUNTY	ST. LOUIS	CONTRACT ID. 001215-610			

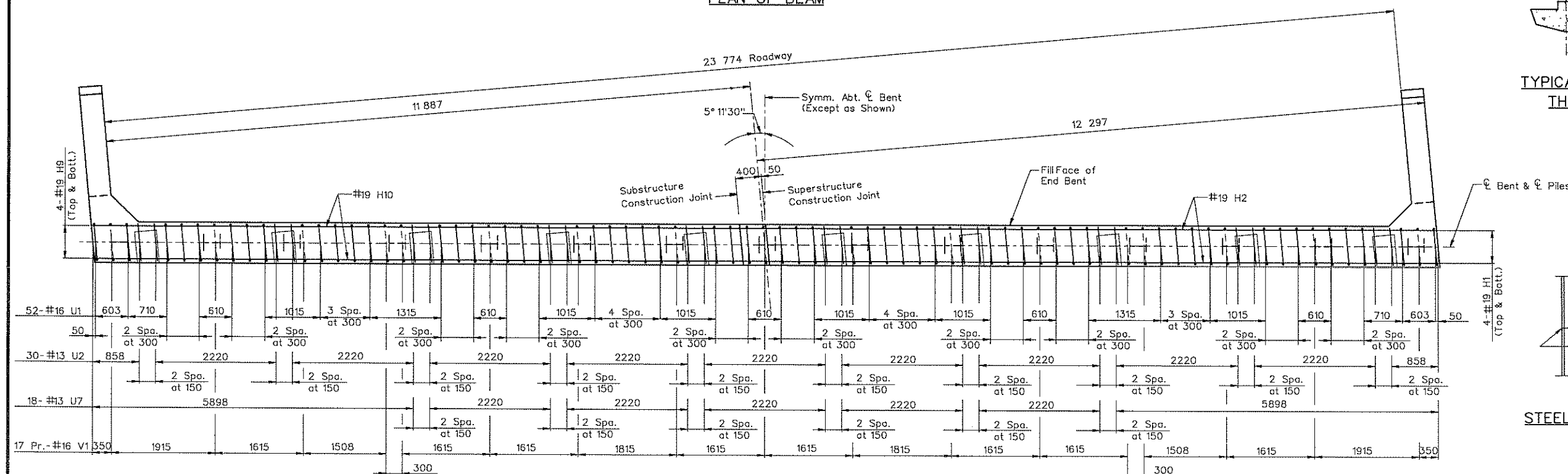
FINAL PLANS



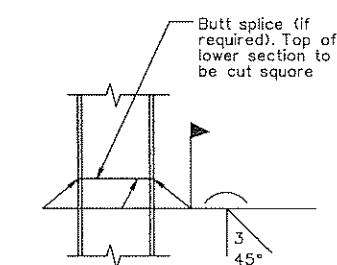
PLAN OF BEAM



TYPICAL SECTION THRU KEY



PLAN OF BEAM SHOWING REINFORCEMENT



STEEL PILE SPLICE

NOTES:

All U bars in end bent are to be parallel to roadway.

SUBSTRUCTURE QUANTITY TABLE FOR END BENT 1		
ITEM		QUANTITY
Class 1 Excavation	cu. meter	26.1
Structural Steel Piles (310 mm)	meter	141.3
Class B Concrete (Substructure)	cu. meter	19.9
Pre-Bore for Pile (5017)	Each	42.5

Note: These quantities are included in the Quantities table on Sheet 2.

DETAILS OF END BENT 1

Designed August 2000 Williams
 Detailed August 2000 Cunningham
 Checked August 2000 Sachtleben



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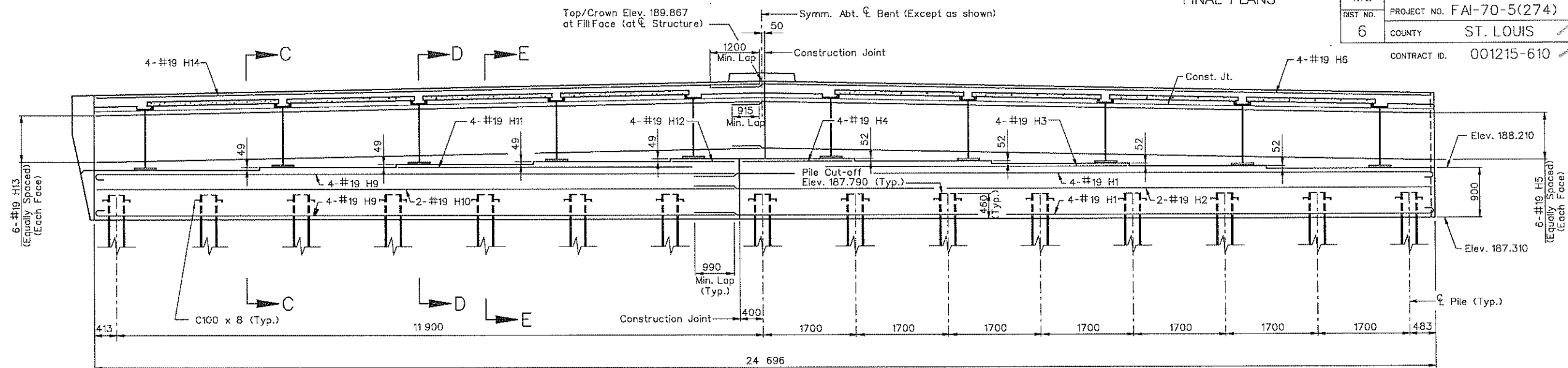
Sheet 5 of 31

ST. LOUIS COUNTY

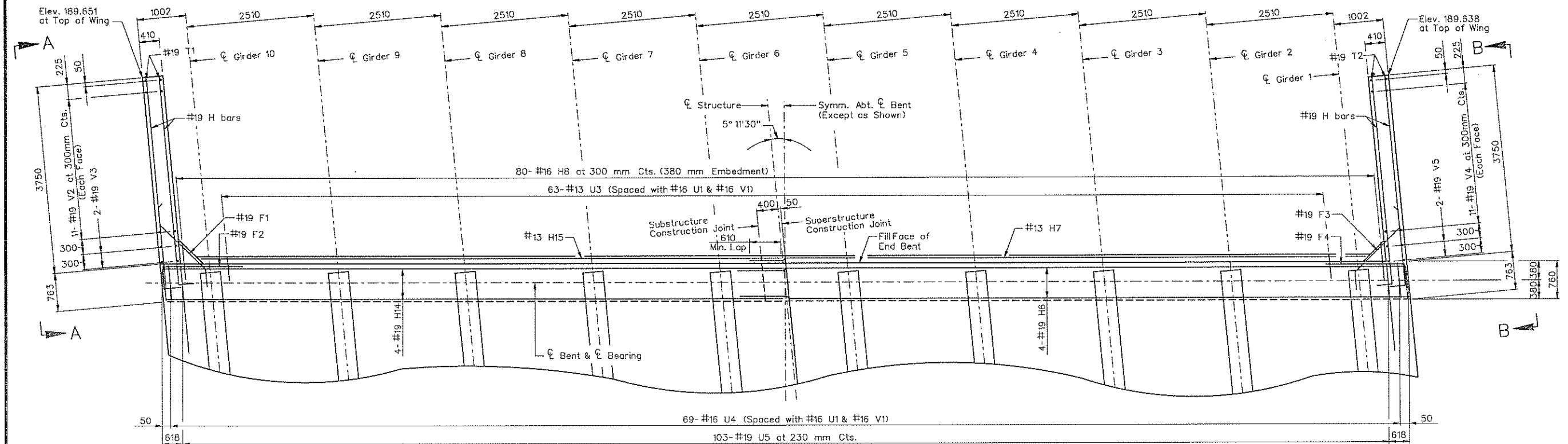
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FINAL PLANS

STATE	MO	JOB NO.	J611220D	SHEET NO.	B10
DIST. NO.	6	PROJECT NO.	FAI-70-5(274)	ROUTE	I-70
COUNTY	ST. LOUIS	CONTRACT ID.	001215-610		



SECTION NEAR END BENT



PLAN

NOTES:

- For Elevation A-A and Elevation B-B, see Sheet 7.
- For Sections C-C, D-D and E-E, see Sheet 7.
- For details and reinforcement of safety barrier curb not shown, see Sheet 24.
- Bent #19-F1 and #19-F3 in field to clear girders.
- All concrete in the end bent above top of beam and below top of slab shall be Class B2.
- All U-bars in End Bent are to be placed parallel to ϕ roadway.
- Concrete diaphragms shall be poured prior to the slab, allowing sufficient time for the set of the concrete in the diaphragms.

DETAILS OF END BENT 1

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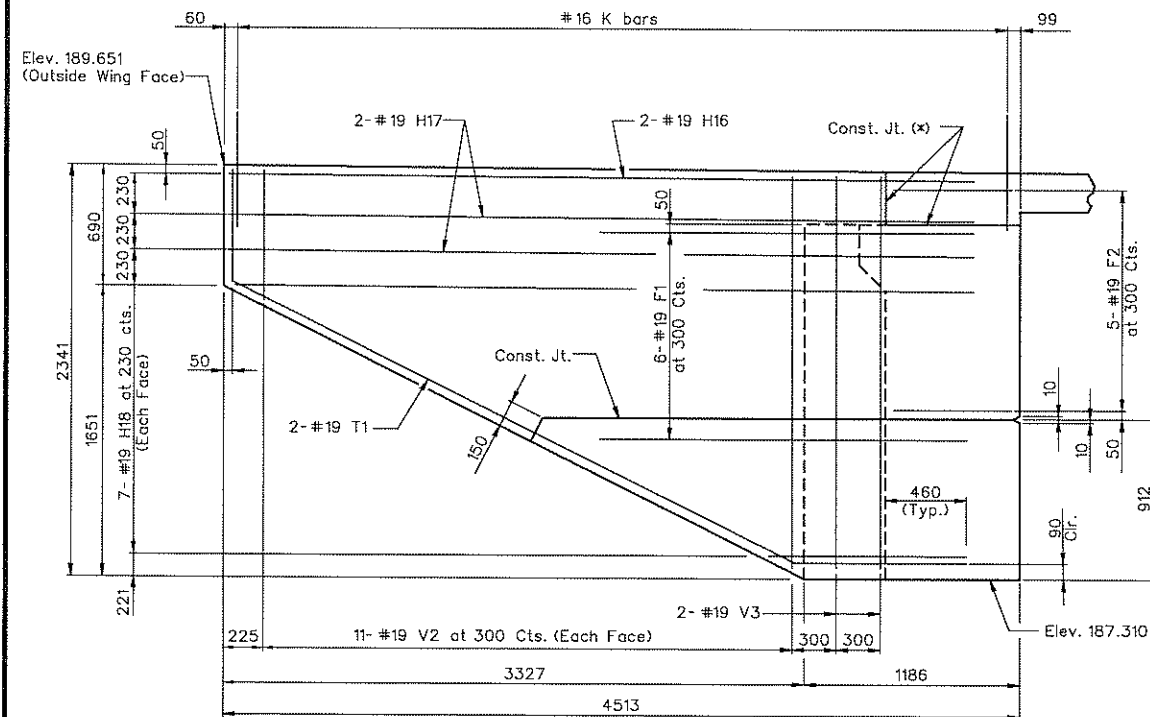
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Sheet 6 of 31

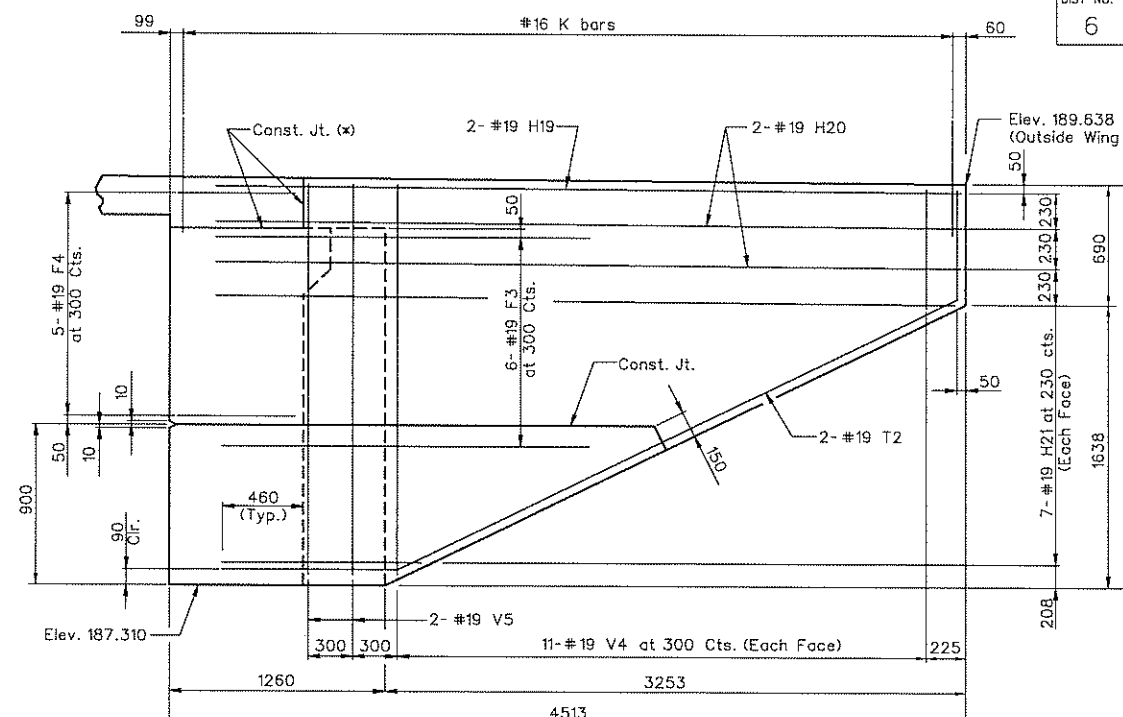
FINAL PLANS

STATE	JOB NO.	J611220D	SHEET NO.
MO	PROJECT NO.	FAI-70-5(274)	B11
DIST. NO.	ROUTE		1-70
6	COUNTY	ST. LOUIS	

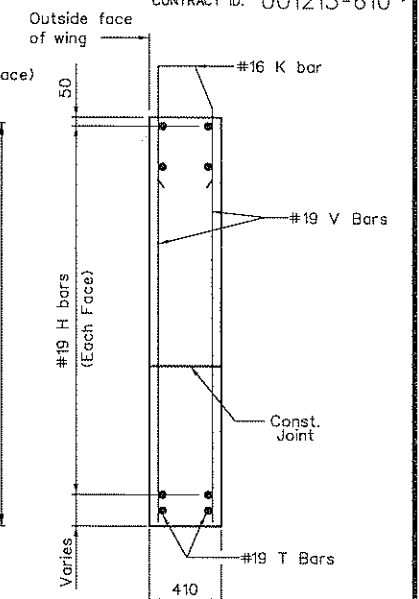
CONTRACT ID. 001215-610



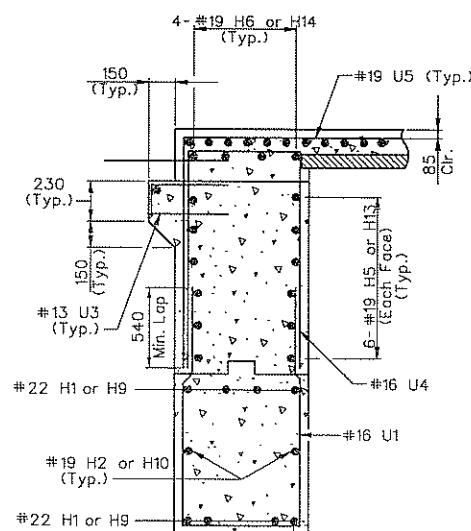
ELEVATION A-A



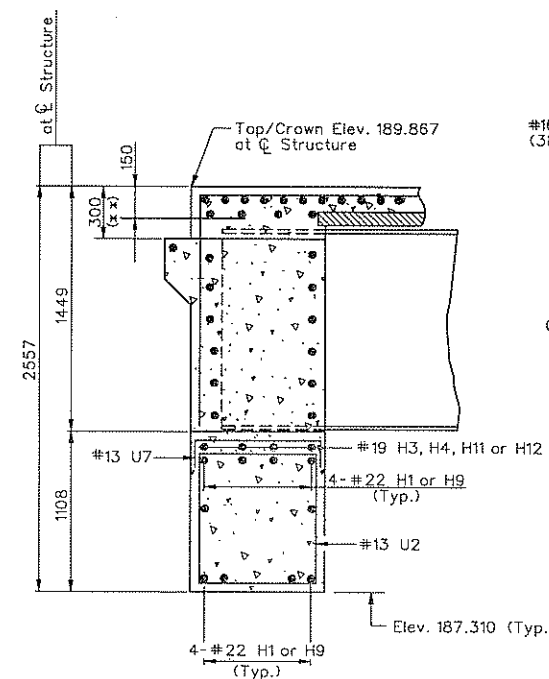
ELEVATION B-B



TYPICAL SECTION THRU WING

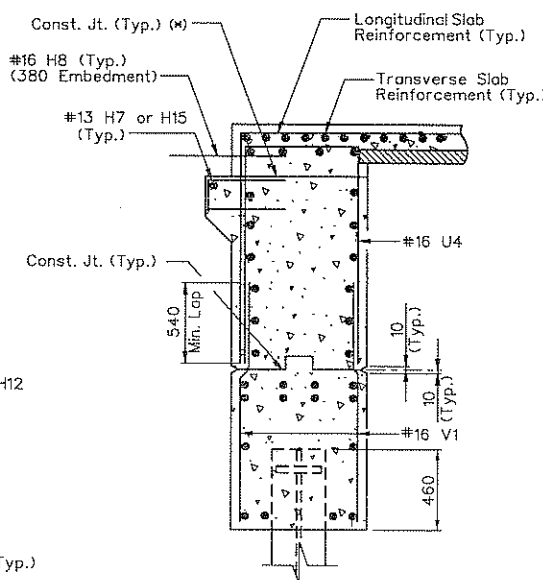


SECTION C-C

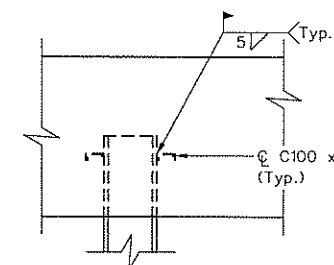


SECTION D-D

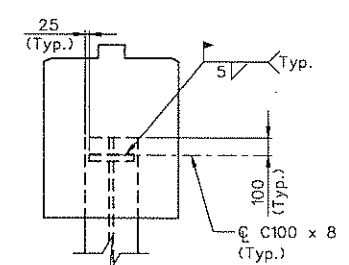
(x) 300 mm for entire length of diaphragm.



SECTION E-E



PART ELEVATION OF BEAM



SECTION THRU BEAM

NOTES:

- For location of Elevation A-A and B-B, see Sheet No. 6.
- For location of Sections C-C, D-D and E-E, see Sheet No. 6.
- For details and reinforcement of Safety Barrier Curb not shown, see Sheet 24.
- Minimum clearance to F-Bars near Const. Jt. is 40 mm.
- (x) Upper construction joint shall be formed on slope in order to maintain a 40 mm (Min.) clearance to #19 H5 or H13 reinforcing steel in diaphragm. (Also shown in Section Near End Bent, see Sheet 6)

DETAILS OF END BENT 1

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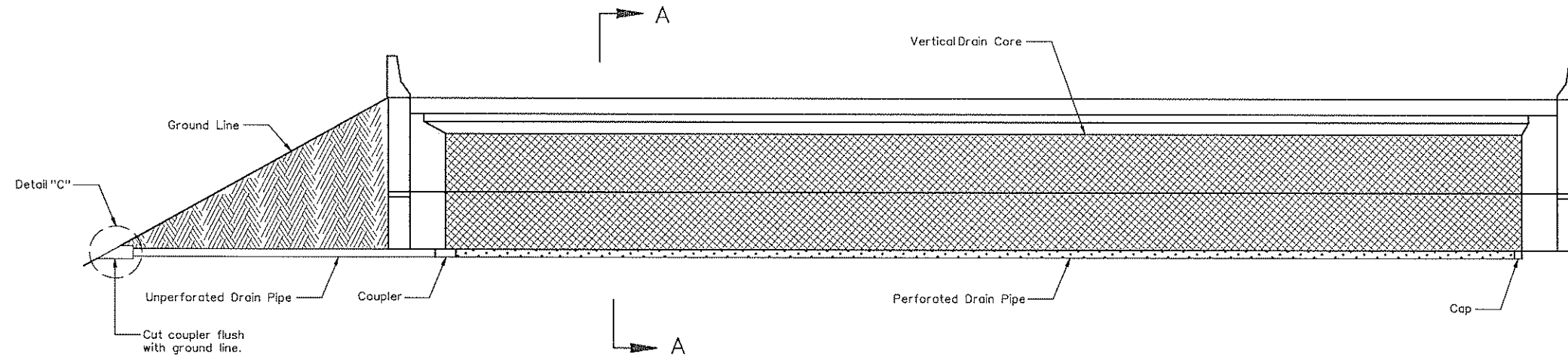


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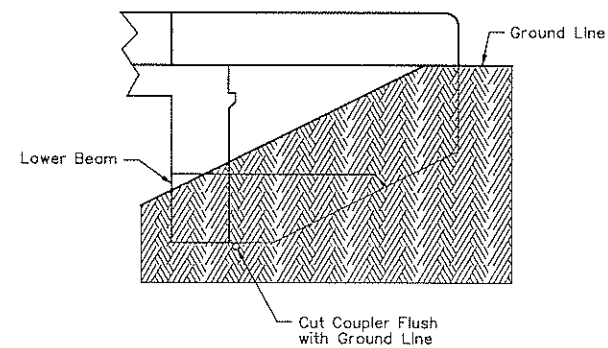
Sheet 7 of 31

FINAL PLANS

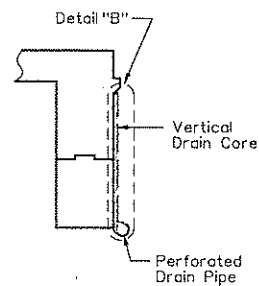
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DIST NO.	6	PROJECT NO.	FAI-70-5(274)	ROUTE	I-70
COUNTY	ST. LOUIS	CONTRACT ID.	001215-610		



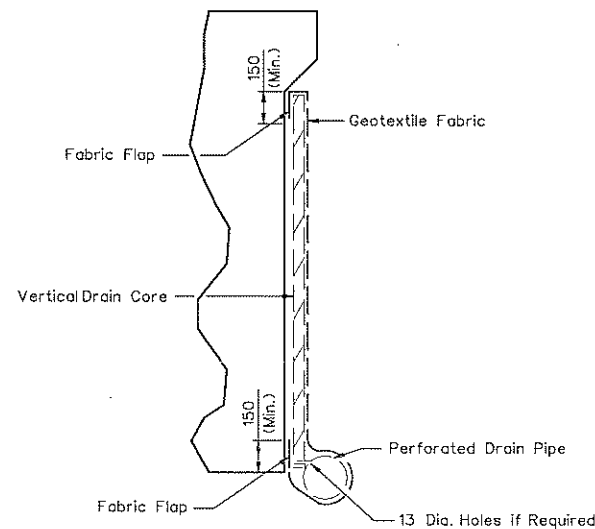
ELEVATION AT END BENT



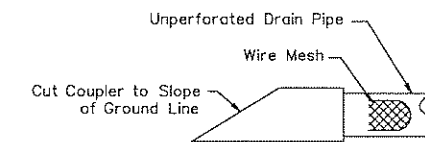
ELEVATION OF WING



SECTION A-A



DETAIL "B"



DETAIL "C"

NOTES:

Drain pipe is 150 mm diameter corrugated metallic-coated steel pipe underdrain.

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 40 mm. (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

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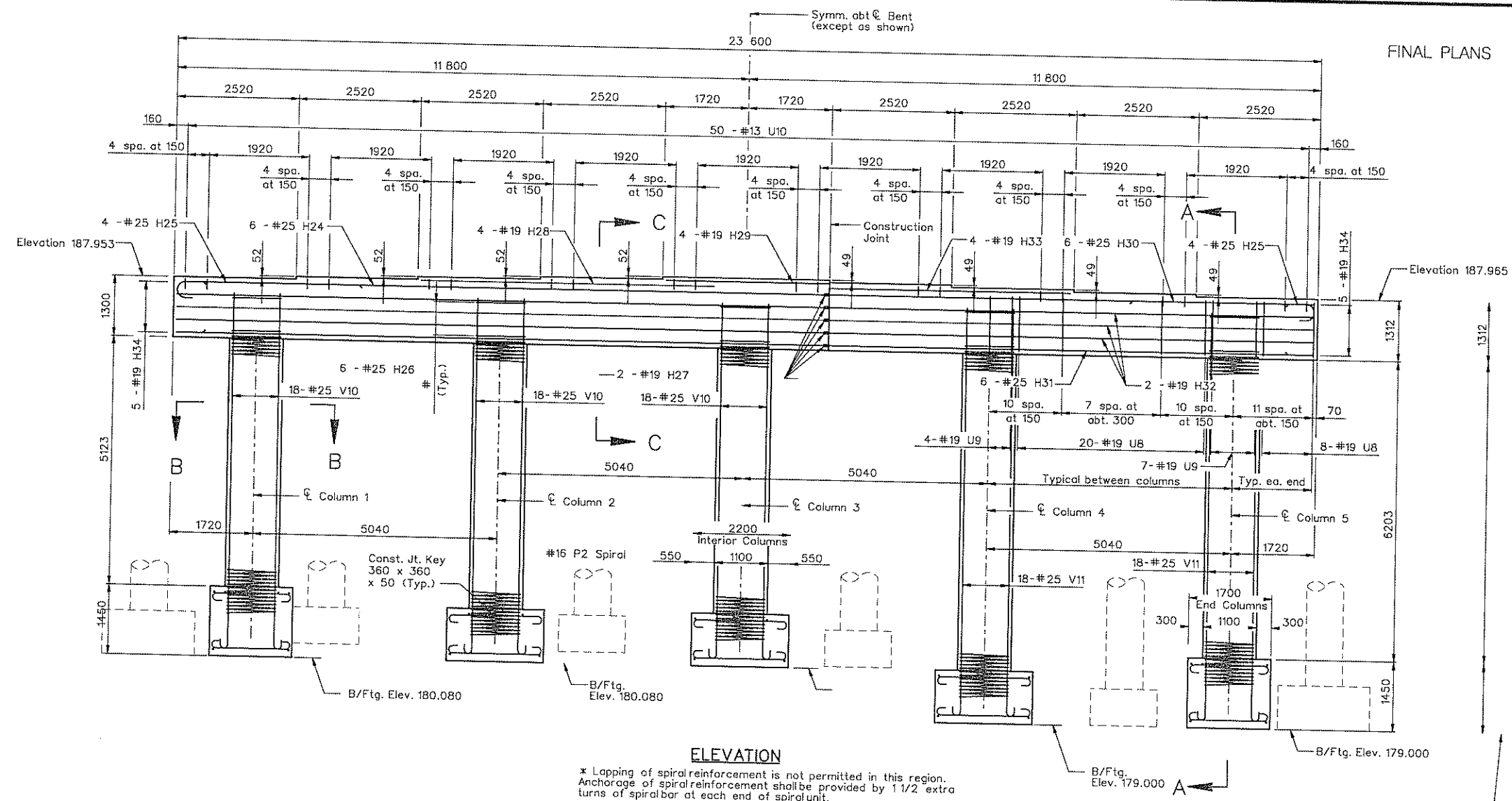
4227 EARTH CITY EXPRESSWAY SUITE 130 ST. LOUIS, MISSOURI 63045

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Sheet 8 of 31

ST. LOUIS COUNTY

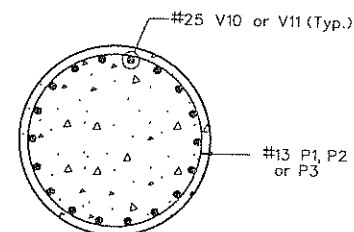
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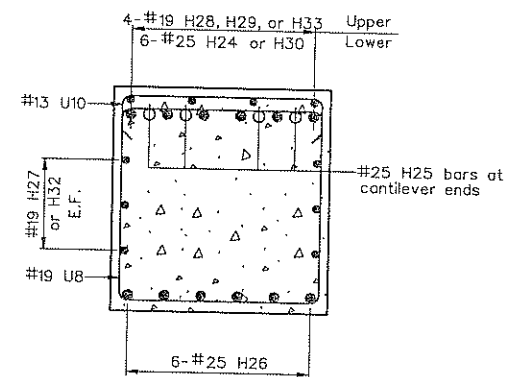
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MO	PROJECT NO.	FAI-70-5(274)	B13
DIST NO.	COUNTY	ST. LOUIS	ROUTE
6			I-70

CONTRACT ID. 001215-610

SECTION A-A



SECTION B-B



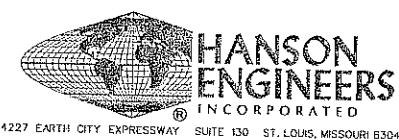
SECTION C-C

NOTES:

The contractor shall use a mechanical bar splice for #25 H24 and H30, #25 H26 and H31, and #19 H27 and H32 bars at the specified location. The total bar lengths for H24, H26, H27, H30, H31 and H32 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 being 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: These quantities are included in the Quantities table on Sheet No. 2.

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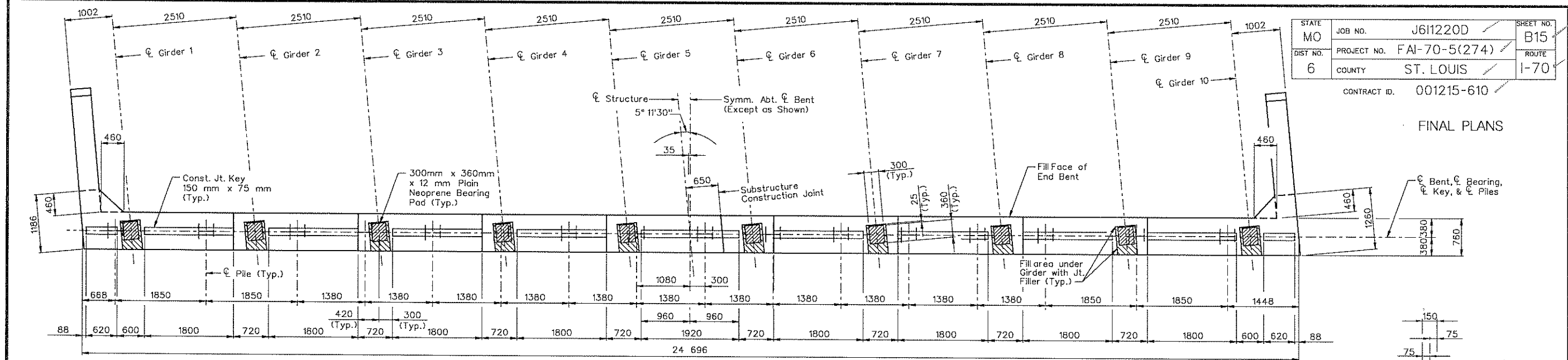


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Sheet 9 of 31

DETAILS OF BENT 2
ST. LOUIS COUNTY

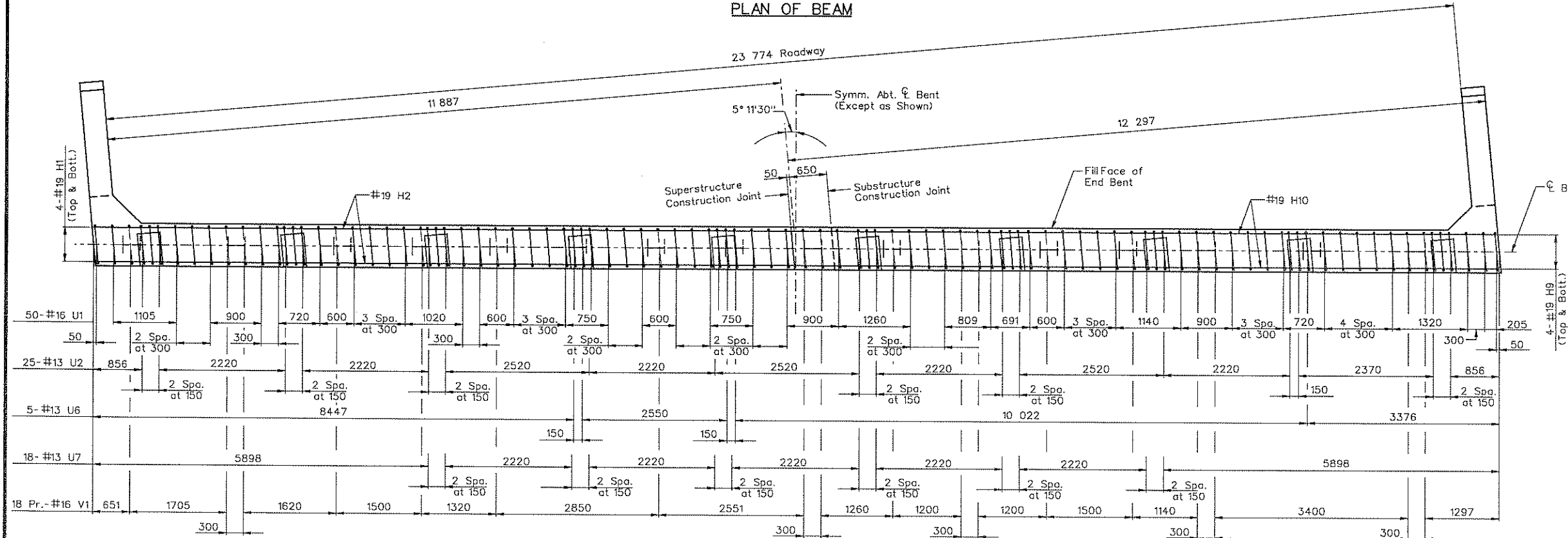
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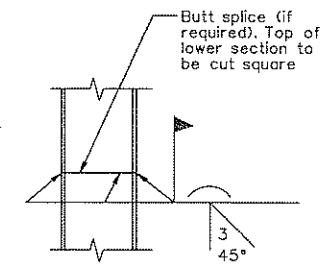
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MO	J611220D	B15
DIST NO.	PROJECT NO.	ROUTE
6	FAI-70-5(274)	I-70
COUNTY	ST. LOUIS	
CONTRACT ID.	001215-610	

FINAL PLANS

PLAN OF BEAM



TYPICAL SECTION THRU KEY



STEEL PILE SPLICE

PLAN OF BEAM SHOWING REINFORCEMENT

SUBSTRUCTURE QUANTITY TABLE FOR END BENT 3		
ITEM		QUANTITY
Class 1 Excavation	cu. meter	45.0
Structural Steel Piles (310 mm)	meter	148.7
Class B Concrete (Substructure)	cu. meter	19.9

Note: These quantities are included in the Quantities table on Sheet 2.

NOTES:

All U bars in end bent are to be parallel to CL roadway.

DETAILS OF END BENT 3

ST. LOUIS COUNTY

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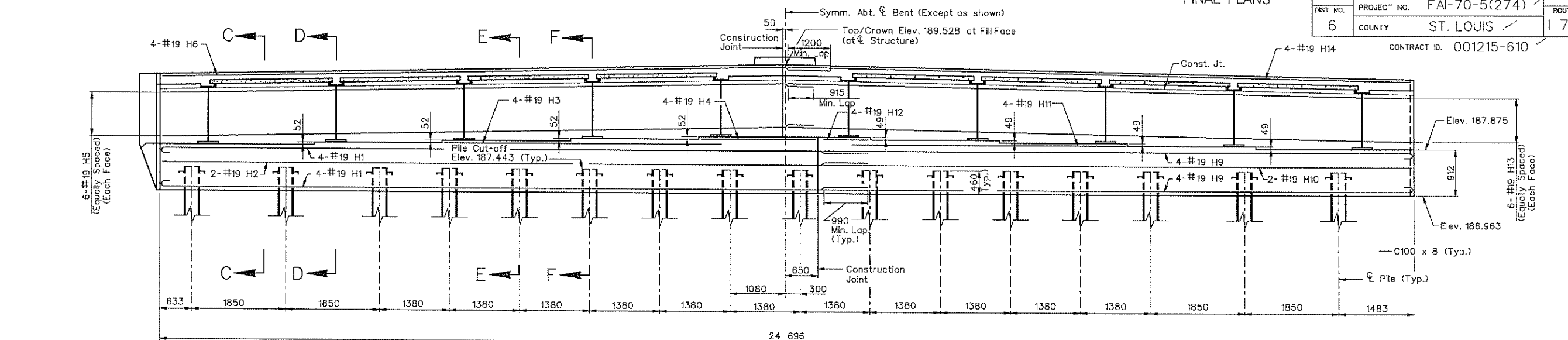
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Sheet 11 of 31

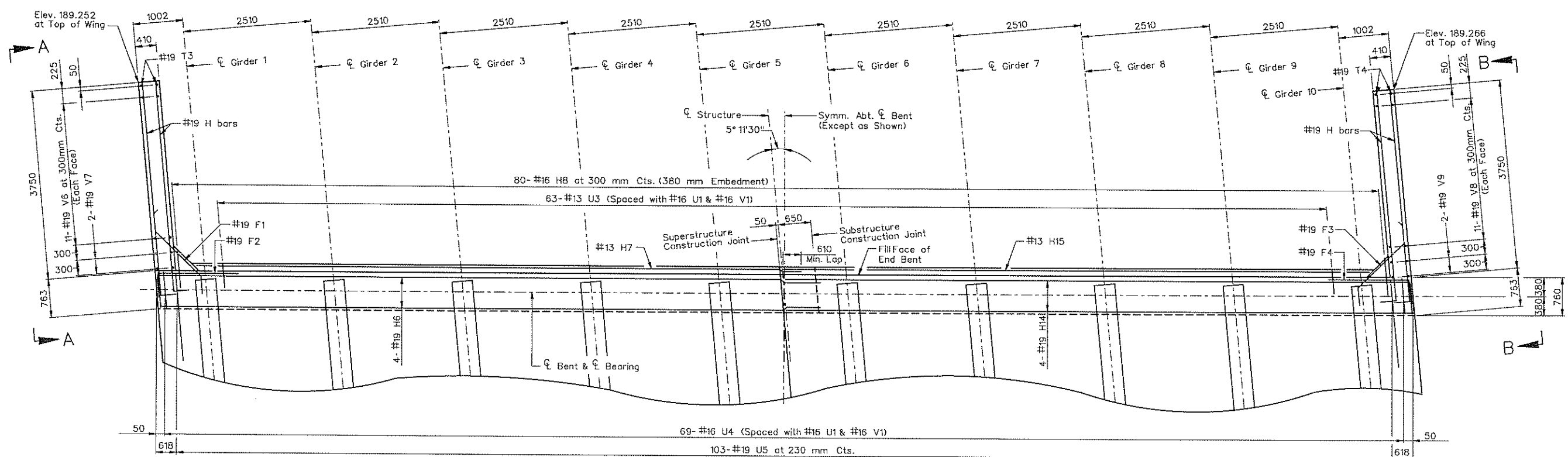
FINAL PLANS

STATE	MO	JOB NO.	J611220D	SHEET NO.	B16
DIST. NO.	6	PROJECT NO.	FAI-70-5(274)	ROUTE	I-70
		COUNTY	ST. LOUIS		

CONTRACT ID. 001215-610



SECTION NEAR END BENT



PLAN

NOTES:

- For Elevation A-A and Elevation B-B, see Sheet 13.
- For Sections C-C, D-D, E-E and F-F, see Sheet 13.
- For details and reinforcement of safety barrier curb not shown, see Sheet 24.
- Bent #19-F1 and #19-F3 in field to clear girders.
- All concrete in the end bent above top of beam and below top of slab shall be Class B2.
- All U-bars in End Bent are to be placed parallel to roadway.
- Concrete diaphragms shall be poured prior to the slab, allowing sufficient time for the set of the concrete in the diaphragms.

DETAILS OF END BENT 3

Designed August 2000 Williams
Detailed August 2000 Cunningham
Checked August 2000 Sachtleben



4227 EARTH CITY EXPRESSWAY SUITE 130 ST. LOUIS, MISSOURI 63045

This drawing is not to scale. Follow dimensions.

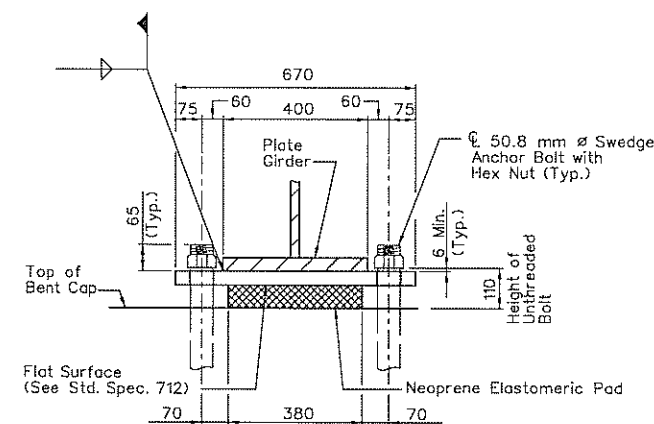
Sheet 12 of 31

ST. LOUIS COUNTY

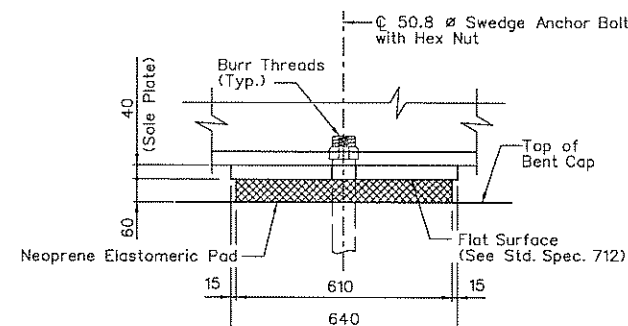
A6175

FINAL PLANS

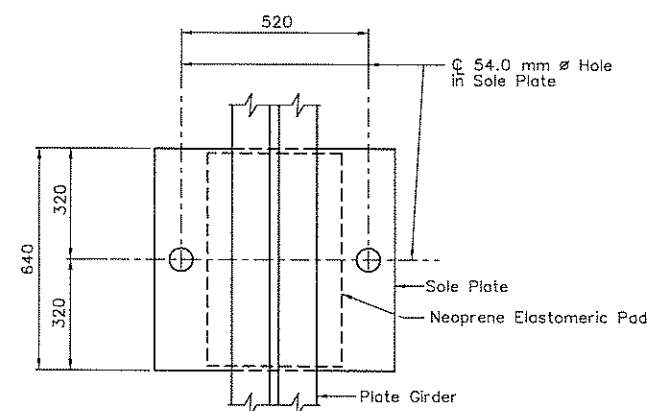
STATE	JOB NO.	SHEET NO.
MO	J611220D	B18
DIST NO.	PROJECT NO.	ROUTE
6	FAI-70-5(274)	I-70
COUNTY	ST. LOUIS	
CONTRACT ID. 001215-610		



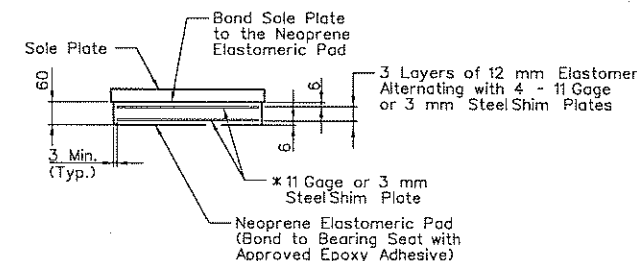
END VIEW



SIDE VIEW

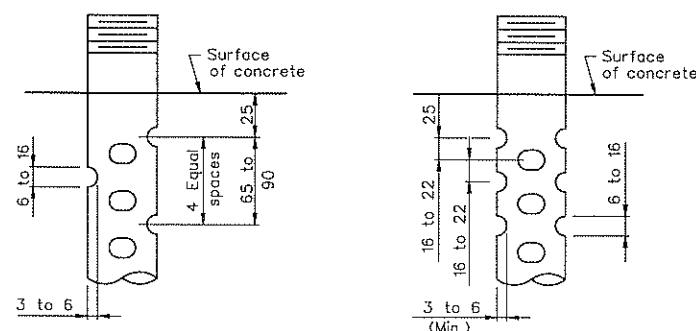


PART PLAN



NEOPRENE ELASTOMERIC PAD
 * The required shim plates between layers of Elastomer and molded together to form an integral unit.

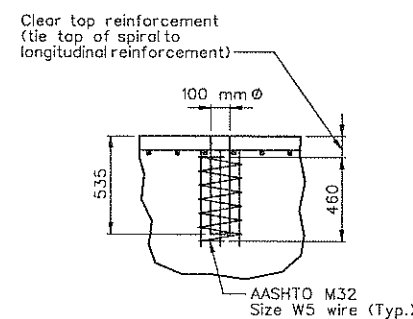
ELASTOMERIC FIXED BEARING PADS
 (Bent 2 - 10 Required)



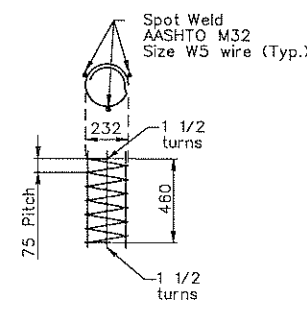
DETAIL FOR 19.0 mm Ø THRU 63.5 mm Ø ANCHOR BOLTS

OPTIONAL DETAIL FOR 34.9 mm Ø THRU 63.5 mm Ø ANCHOR BOLTS

SWEDGE ANCHOR BOLTS



ANCHOR BOLT WELLS



SPIRAL REINFORCEMENT

NOTES:

Anchor bolts shall be 50.8 mm diameter, ASTM A709M Grade 345W steelswedge bolts and shall extend 500 mm into the concrete with ASTM A194M - 2, 2H, or ASTM A563M - C, D, DH, DH3 heavy hexagon nuts. Actual manufacturer's certified mill test reports (chemical and mechanical) shall be provided. Swedging shall be 25 mm less than extension into the concrete.

All structural steel for anchor bolts and heavy hexagon nuts shall be coated with a minimum of two coats of inorganic zinc primer (125 micrometers minimum thickness) or galvanized in accordance with ASTM A153.

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

The sole plate shall be furnished with the bearing and field welded to the girders.

Structural steel for sole plate shall be ASTM A709M Grade 250 and shall be coated with a minimum of two coats of inorganic zinc primer (125 micrometers minimum thickness).

Payment for the sole plate, anchor bolts and heavy hexagon nuts shall be included in the cost of the bearing assembly. See Special Provisions.

The accepted quantity of elastomeric bearing assemblies, complete-in-place, will be paid for at the contract unit price for Laminated Neoprene Bearing Pads (Steel Structures), each.

LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURES)

ST. LOUIS COUNTY

A6175

Designed August 2000 Williams
 Detailed August 2000 Cunningham
 Checked August 2000 Sachtleben



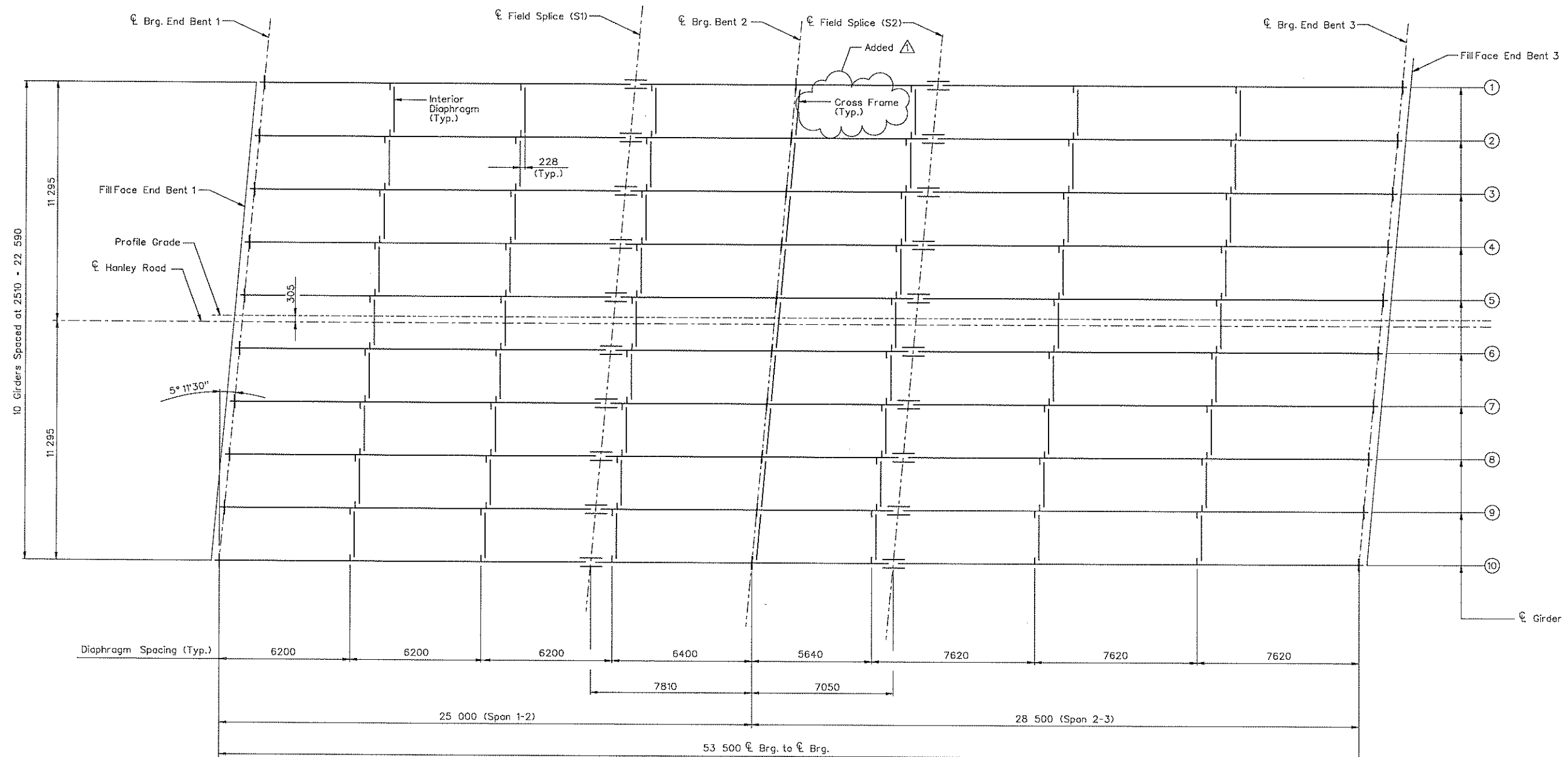
4227 EARTH CITY EXPRESSWAY SUITE 130 ST. LOUIS, MISSOURI 63045

This drawing is not to scale. Follow dimensions.

Sheet 14 of 31

FINAL PLANS

STATE MO	JOB NO. J611220D	SHEET NO. B19
DIST NO. 6	PROJECT NO. FAI-70-5(274)	ROUTE I-70
	COUNTY ST. LOUIS	
CONTRACT ID. 001215-610		



PLAN OF STRUCTURAL STEEL

NOTES:

Longitudinal dimensions are horizontal from the centerline of bearing to centerline of bearing. See Part Longitudinal Section on Sheet 16.
Bolts on intermediate diaphragms and cross frames that connect girders under different construction stage slab pours shall be snug tight, then tightened after both adjacent slab pours are completed.

Designed August 2000 Williams
Detailed August 2000 Cunningham
Checked August 2000 Sachtleben



January 9, 2001
This drawing is not to scale. Follow dimensions.

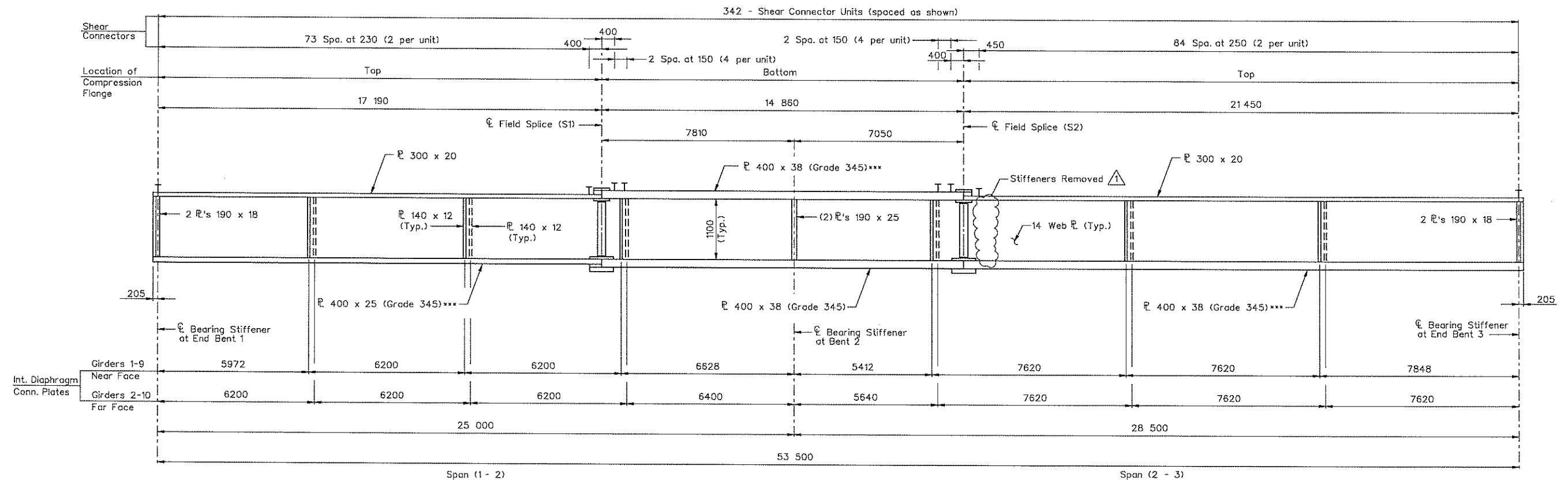
Sheet 15 of 31

STEEL FRAMING PLAN
ST. LOUIS COUNTY

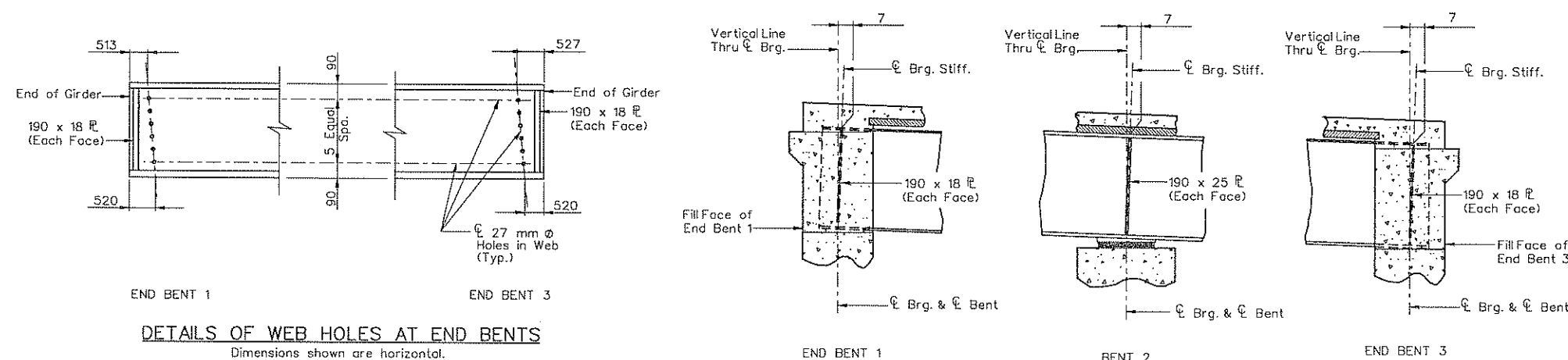
A6175

FINAL PLANS

STATE MO	JOB NO. J611220D	SHEET NO. B20
DIST NO. 6	PROJECT NO. FAI-70-5(274)	ROUTE I-70
	COUNTY ST. LOUIS	
	CONTRACT ID. 001215-610	



ELEVATION OF GIRDER



NOTES:

- Longitudinal dimensions are horizontal from the centerline of bearing to centerline of bearing.
- Fabricated structural steel shall be ASTM A709M Grade 250, except as noted.
- *** Indicates flange plates subject to notch toughness requirements.
- All web plates shall be subject to notch toughness requirements.
- Plate girders shall be fabricated to conform to the camber diagram shown on Sheet 20.

GIRDER ELEVATION

Designed August 2000 Williams
Detailed August 2000 Cunningham
Checked August 2000 Sachtleben



January 9, 2001
This drawing is not to scale. Follow dimensions.

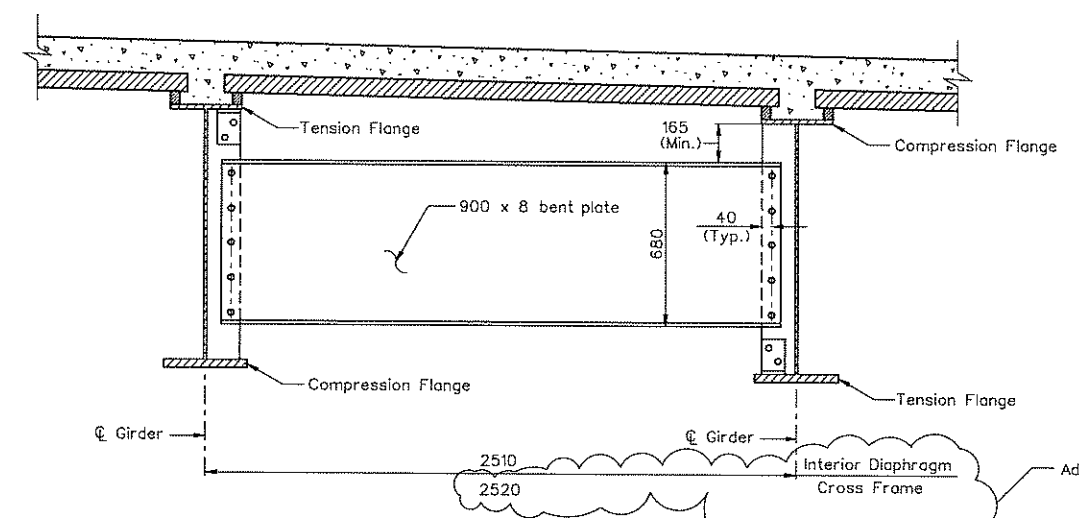
Sheet 16 of 31

ST. LOUIS COUNTY

A6175

STATE	MO	JOB NO.	J611220D	SHEET NO.	B22
DIST. NO.	6	PROJECT NO.	FAI-70-5(274)	ROUTE	I-70
		COUNTY	ST. LOUIS		

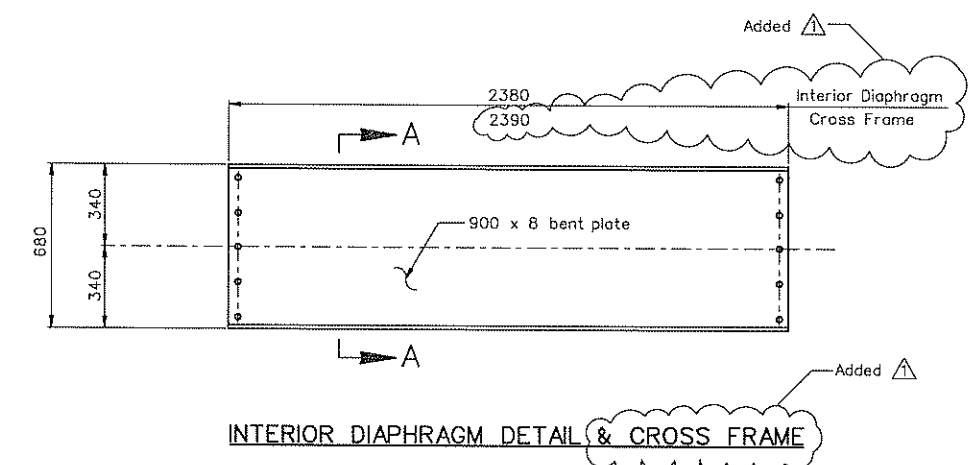
CONTRACT ID. 001215-610



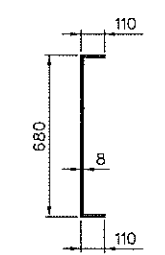
TYPICAL SECTION SHOWING INTERIOR DIAPHRAGM & CROSS FRAME

At the contractor's option, holes in the diaphragm plate on non slab bearing diaphragms may be made 5 mm larger than the nominal diameter of the bolt. A hardened washer shall be used under the bolt head and nut when this option is used. Holes in the girder diaphragm connection plate or transverse web stiffener shall be standard size.

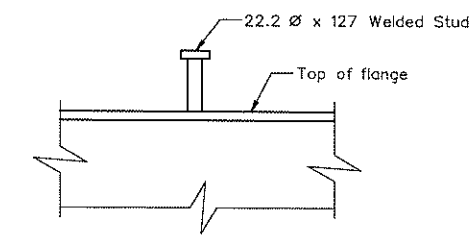
Bolts on intermediate diaphragms and cross frames that connect girders under different construction stage slab pours shall be installed snug tight, then tightened after both adjacent slab pours are completed.



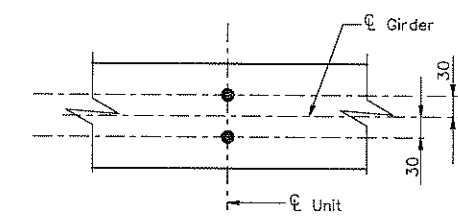
INTERIOR DIAPHRAGM DETAIL & CROSS FRAME



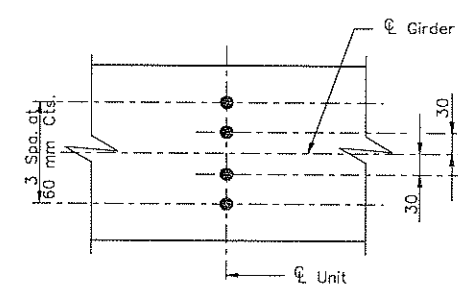
SECTION A-A



ELEVATION



PLAN - 2 STUDS PER UNIT

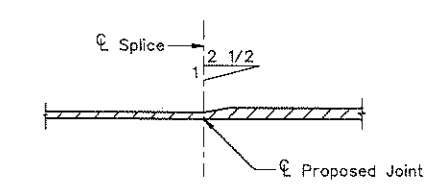


PLAN - 4 STUDS PER UNIT

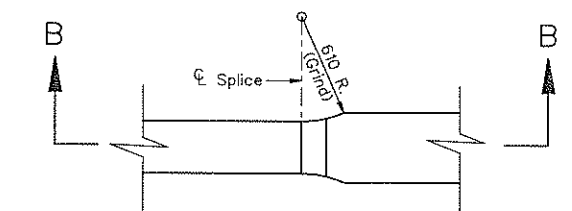
DETAILS OF SHEAR CONNECTORS

Mass of 1520 kg of shear connectors is included in the mass of Fabricated Structural Carbon Steel.

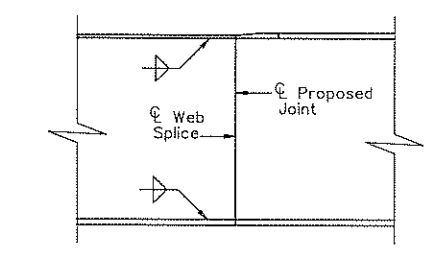
Shear connectors shall meet the requirements of Section 1037 of the Missouri Standard Specifications.



SECTION B-B



**PLAN
610 mm RADIUS TRANSITION
WELDED SHOP FLANGE SPLICE**



WELDED SHOP WEB SPLICE

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

STEEL DETAILS

Designed August 2000 Williams
Detailed August 2000 Cunningham
Checked August 2000 Sachtleben

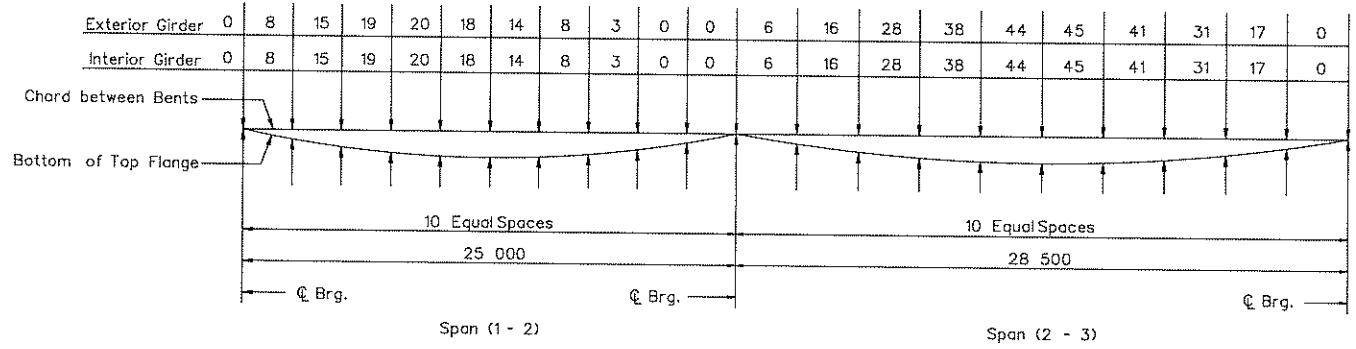


January 9, 2001
This drawing is not to scale. Follow dimensions.

Sheet 18 of 31

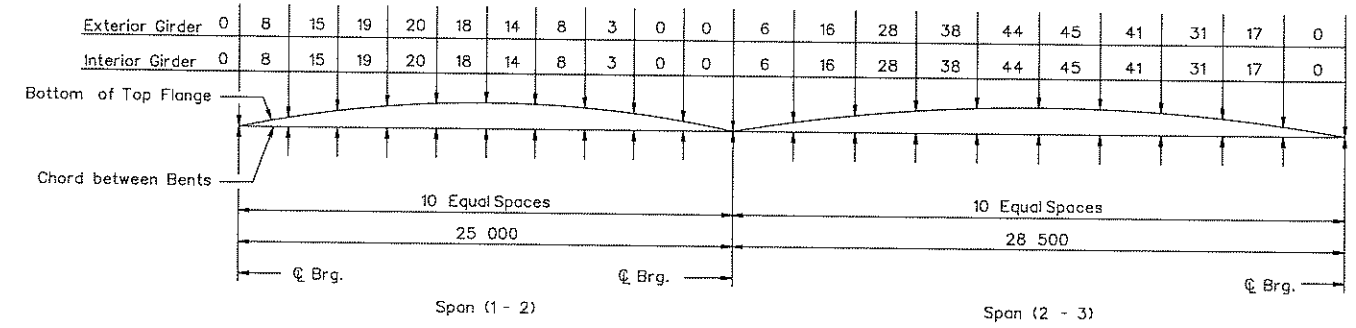
ST. LOUIS COUNTY

A6175



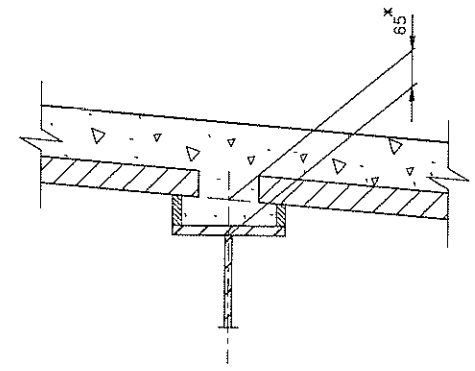
DEAD LOAD DEFLECTION

15% of dead load deflection is due to the mass of structural steel.
Dead load deflection includes mass of structural steel, concrete slab, and barrier curb.



CAMBER DIAGRAM

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



THEORETICAL SLAB HAUNCH

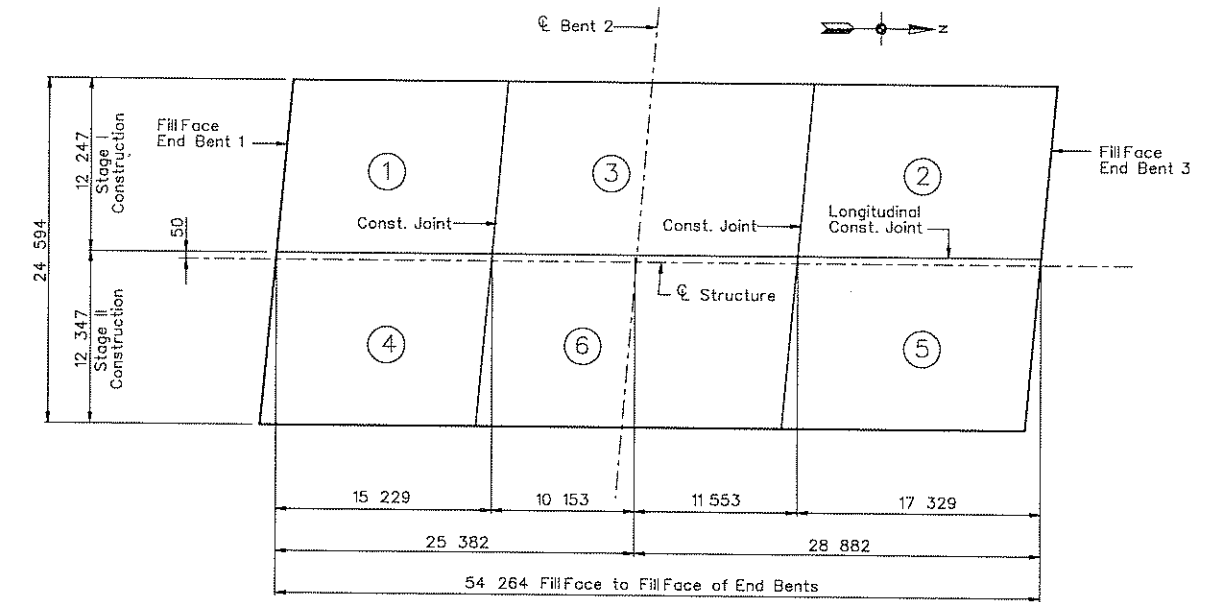
(P/C P/S Panel Section)

* Dimension (bottom of slab to top of web) may vary if girder camber after erection differs from plan camber by more than the 1/2 of Dead Load Deflection due to mass of structural steel. No payment will be made for adjustment in forming or additional concrete required for variation in haunching.

FINAL PLANS

STATE	JOB NO.	J611220D	SHEET NO.
MO	PROJECT NO.	FAI-70-5(274)	B24
DIST. NO.	COUNTY	ST. LOUIS	ROUTE
6			I-70

CONTRACT ID. 001215-610



SLAB POURING SEQUENCE

Longitudinal dimensions shown are horizontal.

	SEQUENCE OF POURS			MIN. RATE OF POUR CU. METERS/HR.	
	DIRECTION			WITH RETARDER	NO RETARDER
BASIC SEQUENCE	1 (4)	2 (5)	3 (6)	19	19
	EITHER DIRECTION				
ALTERNATE POURS TO THE BASIC SKIP 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 (4)	3 + 2 (6 + 5)		23	39
	END TO 3 (6)	1 (4) TO END			
ALTERNATE "B" POURS	1 + 3 + 2 (4 + 6 + 5)			32	50
	END TO END				

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



4227 EARTH CITY EXPRESSWAY SUITE 130 ST. LOUIS, MISSOURI 63045

Designed August 2000 Williams
Detailed August 2000 Cunningham
Checked August 2000 Sachtleben

This drawing is not to scale. Follow dimensions.

Sheet 20 of 31

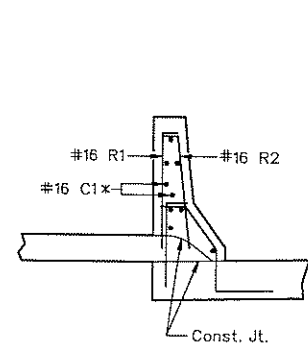
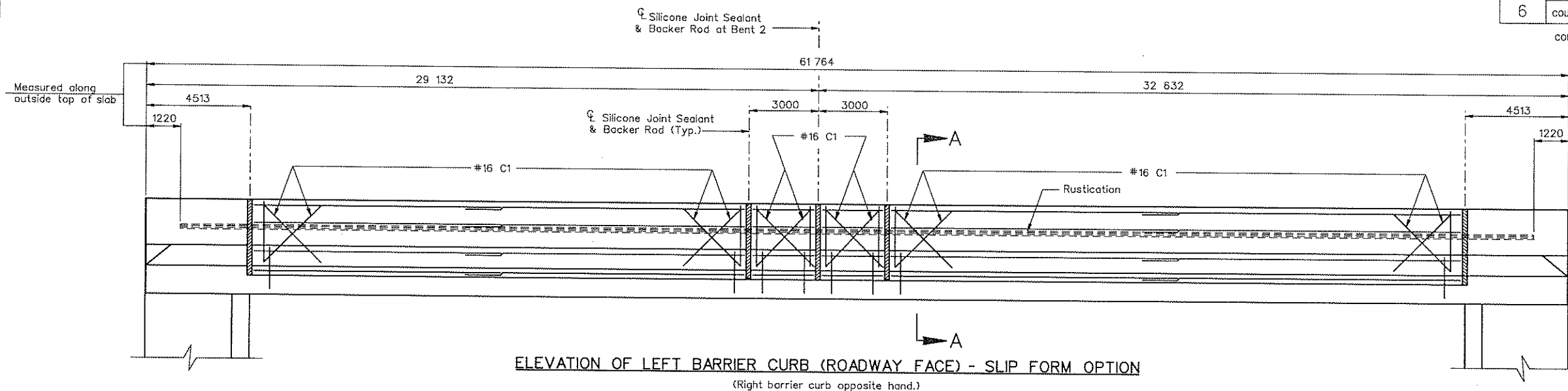
GIRDER CAMBER DIAGRAM AND DEAD LOAD DEFLECTION

ST. LOUIS COUNTY

A6175

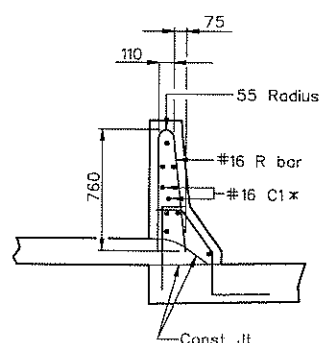
FINAL PLANS

STATE	MO	JOB NO.	J61220D	SHEET NO.	B29
DIST NO.	6	PROJECT NO.	FAI-70-5(274)	ROUTE	1-70
		COUNTY	ST. LOUIS		
CONTRACT ID. 001215-610					



SECTION A-A

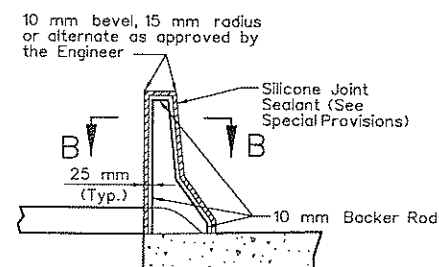
* Each side of joint location.
Sidewalk reinforcing steel not shown for clarity.



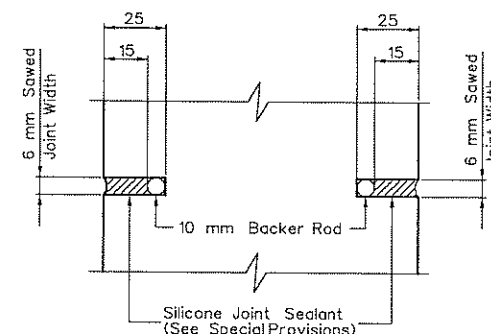
R BAR PERMISSIBLE ALTERNATE SHAPE

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.)

Sidewalk reinforcing steel not shown for clarity.

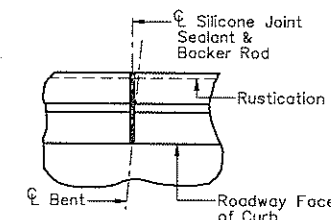


SECTION THRU JOINT

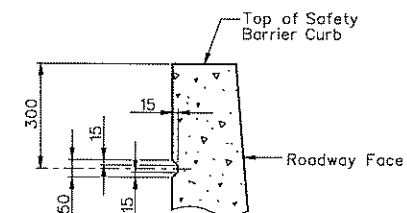


SECTION B-B

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



PART PLAN SHOWING SAFETY BARRIER CURB JOINT



PART SECTION SHOWING RUSTICATION DETAILS

RUSTICATION DETAIL

NOTES:

Joint Sealant and Backer Rods shall be used on all slip-form safety barrier curbs instead of joint filler.

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

C1 bars (Slip-Form Option only) shall be used in addition to cast-in-place conventional forming reinforcement for bridge safety barrier curb.

SAFETY BARRIER CURB SLIP FORM OPTION

Designed August 2000 Williams
Detailed August 2000 Cunningham
Checked August 2000 Sachtleben



4227 EARTH CITY EXPRESSWAY SUITE 130 ST. LOUIS, MISSOURI 63045

This drawing is not to scale. Follow dimensions.

Sheet 25 of 31

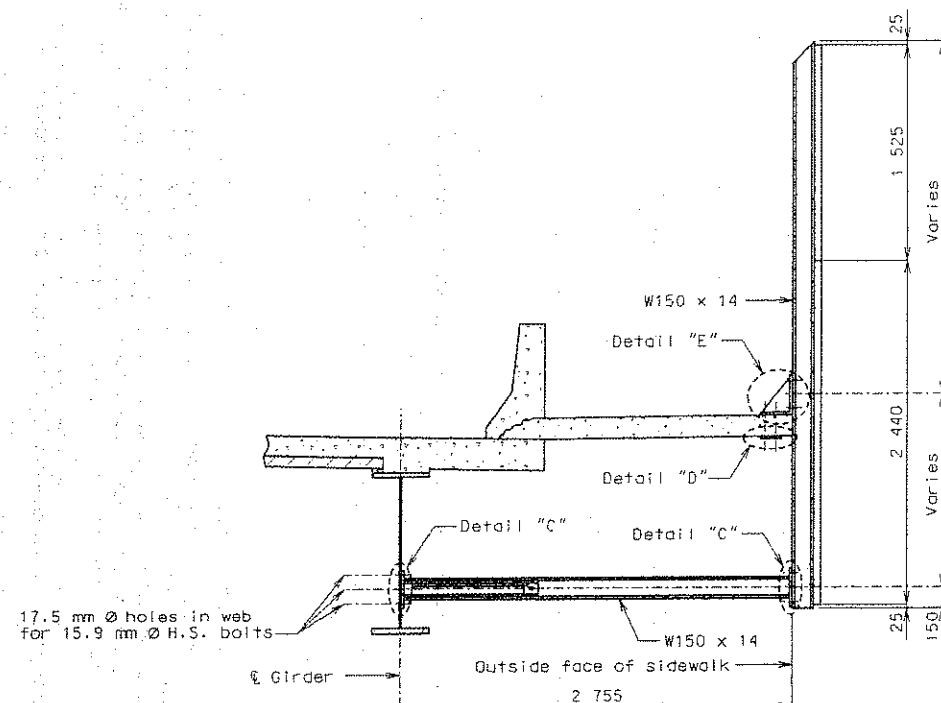
ST. LOUIS COUNTY

A6175

State	Proj. No.	Sheet No.
MO	FAT-70-5(274)	637

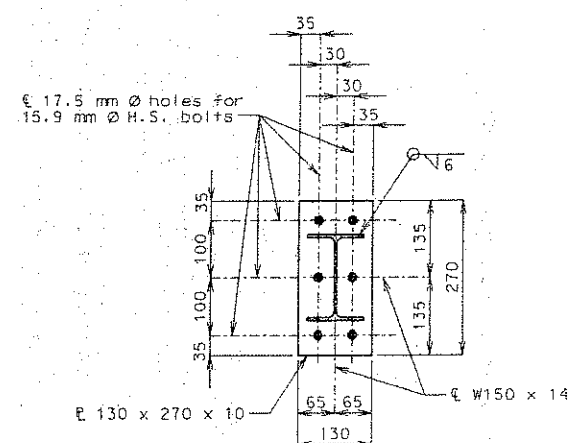
JOB NO. J61220D
CONTRACT NO. 001215-610

FINAL PLANS

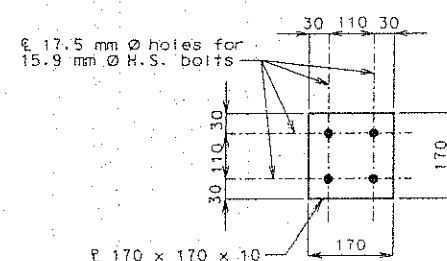


SECTION B-B

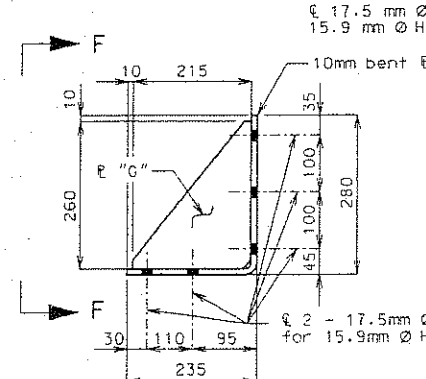
Note: Pedestrian fence not shown for clarity.



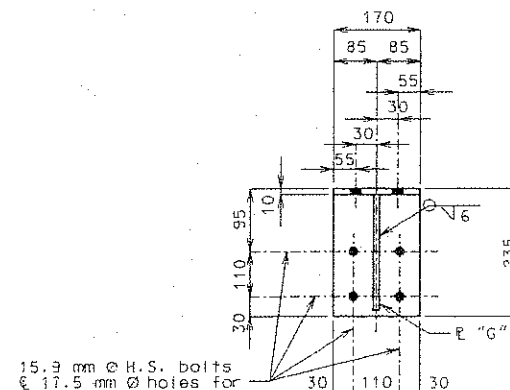
DETAIL "C"



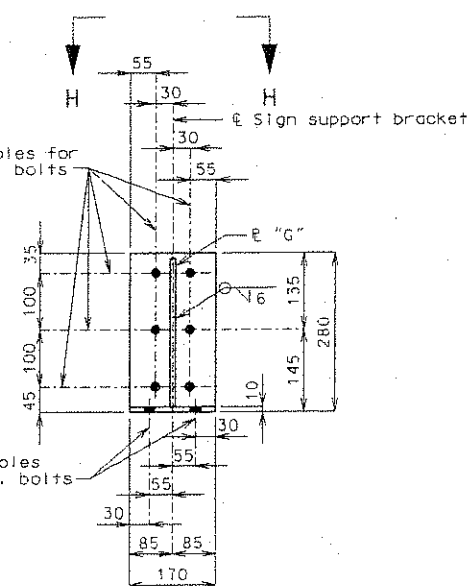
DETAIL "D"



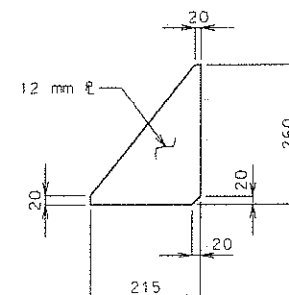
DETAIL "E"



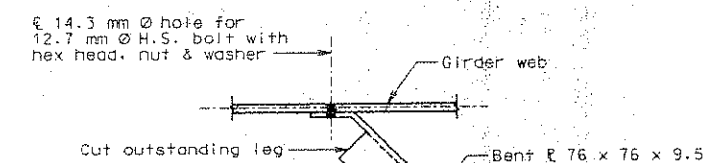
ELEVATION H-H



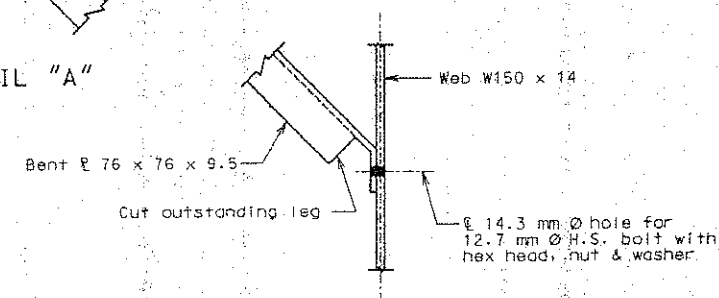
ELEVATION F-F



DETAIL OF E "G"



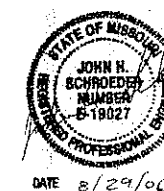
DETAIL "A"



DETAIL "B"

SIGN SUPPORT BRACKETS, SIGN NO. 39

(East side of Bridge No. A6175: Hanley Rd. over I-70)



DATE 8/29/00

Detailed July 2000
Checked Aug. 2000

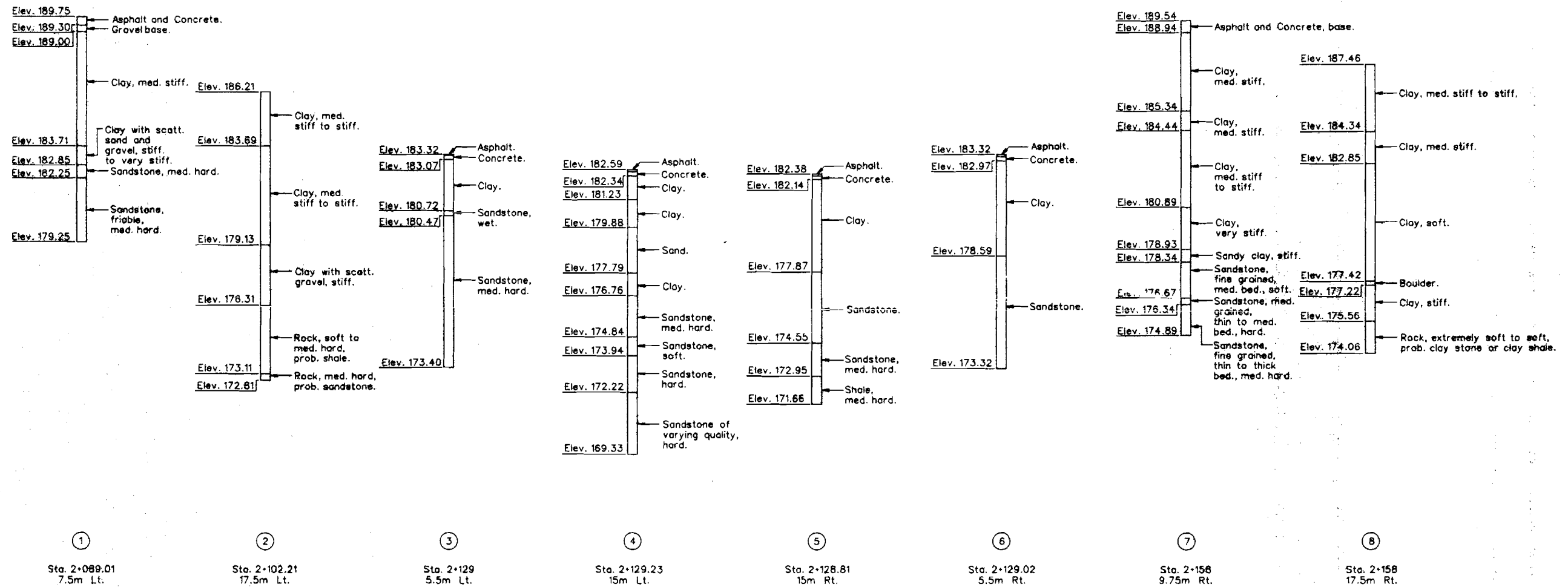
Sheet No. 27F of 31

ST. LOUIS COUNTY

A6175

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STATE	JOB NO.	SHEET NO.
MO	J611220D	87
DIST NO.	PROJECT NO.	ROUTE
6	COUNTY	ST. LOUIS
		1-70



BORING DATA

Note: For location of borings, see Sheet 1.



Designed August 2000 Williams
 Detailed August 2000 Gunningham
 Checked August 2000 Sachtleben



This drawing is not to scale. Follow dimensions.

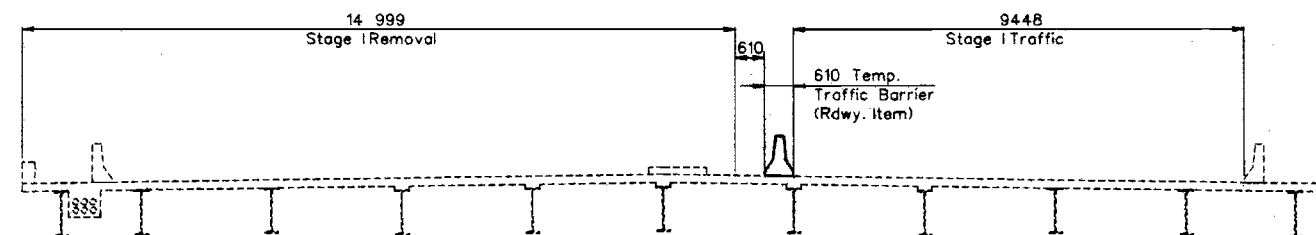
Sheet 3 of 31

BORING DATA

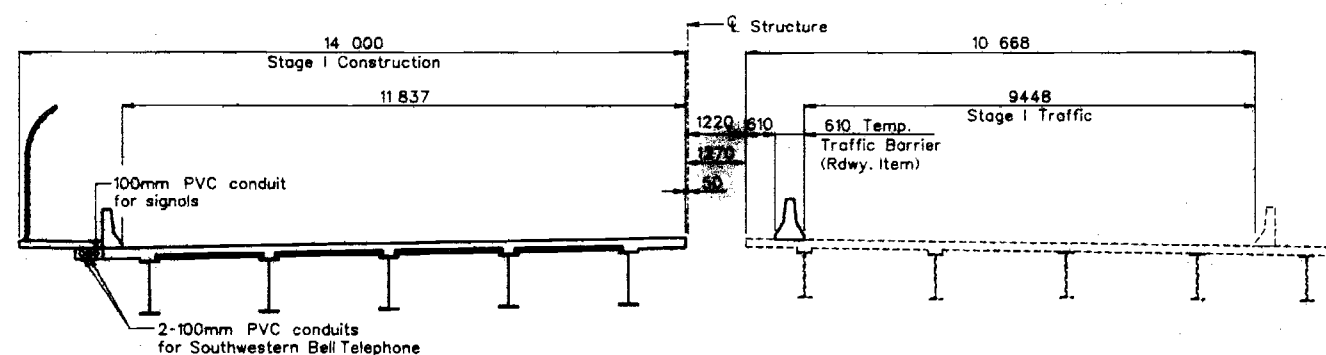
ST. LOUIS COUNTY

A6175

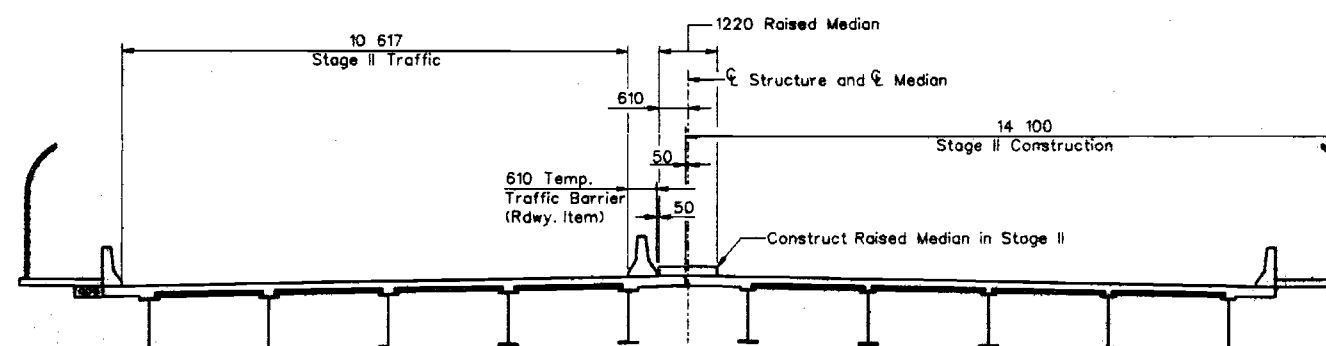
STATE	JOB NO.	J611220D	SHEET NO.
MO			B 8
DIST NO.	PROJECT NO.		ROUTE
6	COUNTY	ST. LOUIS	I-70



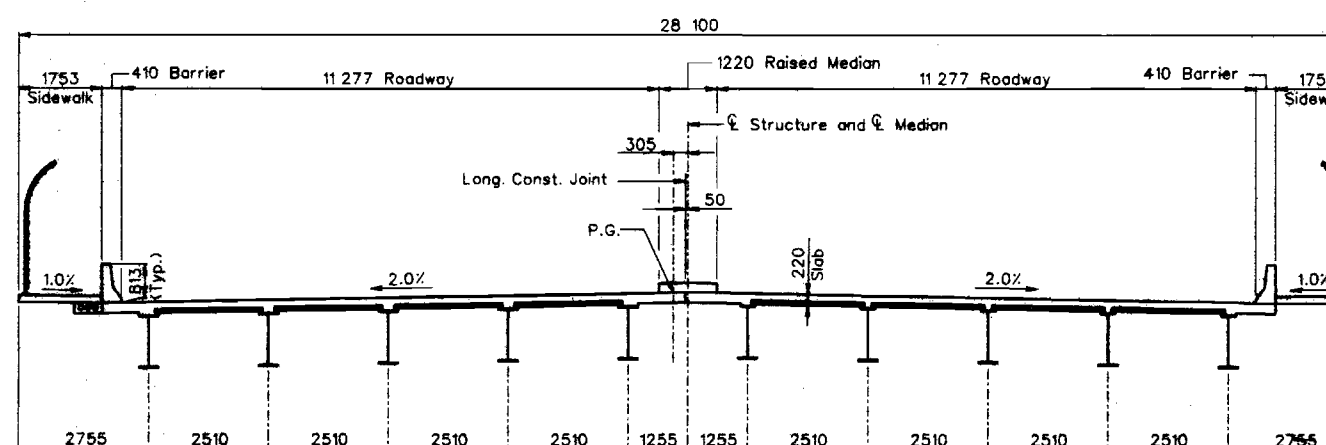
STAGE I REMOVAL



STAGE I CONSTRUCTION



STAGE II CONSTRUCTION



FINAL CROSS SECTION



STAGE CONSTRUCTION DETAILS

ST. LOUIS COUNTY

A6175

Designed August 2000 Williams
Detailed August 2000 Cunningham
Checked August 2000 Sachtleben



4227 EARTH CITY EXPRESSWAY SUITE 130 ST. LOUIS, MISSOURI 63045

This drawing is not to scale. Follow dimensions.

Sheet 4 of 31

