

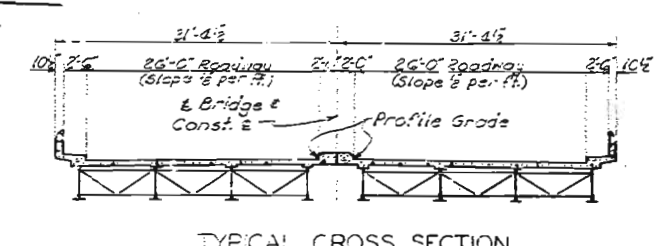
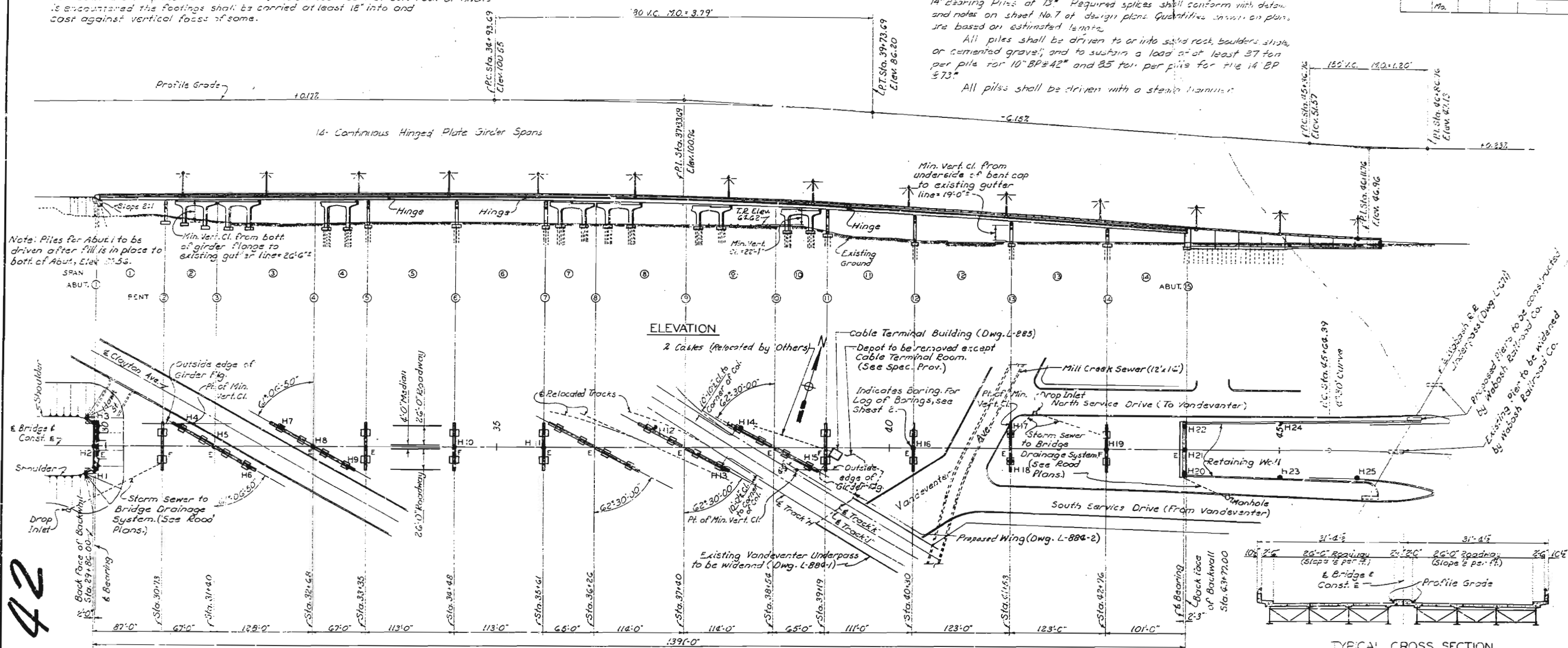
Note: All loose, shelly or disintegrated rock shall be removed and the footings for Bent 2 and 3 placed on hard, solid, undisturbed rock. If soft rock or shale is encountered the footings shall be carried at least 18" into and cast against vertical faces of same.

Note: All piles will be state furnished 10" Boring Piles & 12" or 14" Boring Piles at 75' Required splices shall conform with detail and notes on sheet No. 7 of design plans. Quantities shown on plans are based on estimated lengths.

All piles shall be driven to or into solid rock, boulders, shale, or cemented gravel, and to sustain a load of at least 37 ton per pile for 10" BP #42 and 35 ton per pile for the 14" BP #73.

All piles shall be driven with a steam hammer.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Mo.					



** Final pay weight for Fabricated Structural Steel will be based on using field rivets. If the Contractor desires he may use high tensile steel bolts with carburized washers in place of rivets for field connections. If high tensile bolts are used they shall be placed in such a manner that the nuts will be in the least exposed position.

ESTIMATED QUANTITIES

Item	Superstructure	Substructure	Walls	Total
Class I Excavation for Structures	Cu.Yds.	1940	823	2,763
Class II Concrete	Cu.Yds.	2,221.5	489.3	2,710.8
Class A Concrete (Lightweight Haydite)	Cu.Yds.	2,203.2		2,203.2
Reinforcing Steel	Lbs.	520,830	324,111	844,941
Fabricated Structural Carbon Steel	Lbs.	467,800		467,800
Fabricated Structural Low Alloy Steel	Lbs.	2,243,400		2,243,400
Steel Castings	Lbs.	60,400		60,400
Aluminum Alloy Handrail	Lin.Ft.	2,780	553	3,333
Steel Piles in place - 10" B.P. #42	Lin.Ft.		3875	3875
Steel Piles in place - 12" B.P. #73	Lin.Ft.		14,013	14,013
Perforated Backfill	Cu.Yds.		46	231
8" Perforated Corrugated Metal Pipe	Lin.Ft.		59	426
Conduit System	Lump Sum			1
Drainage System	Lump Sum			1

* State Furnished.

Note: Concrete in endposts is included with Substructure Concrete.

Estimated quantities of steel piles in place include an allowance of 6 feet per splice and payment for an estimated 112 splices for 14" piles and 4 splices for 10" piles.

SURVEY DATUM

All elevations refer to City Datum.
0.00 City Directrix = 413.526 U.S.G.S. Datum - Mean Sea Level at Biloxi.

BENCH MARKS - CITY DATUM

B.M. #9 - 0 on top of sidewalk 8'E. of E. curb of Hawk St. on S.E. corner of Hawk and Sarpy. Elev. = 77.49
B.M. #15 - Top of S.E. Bolt at base of fire alarm box S.E. corner of Vandeventer and Market. Elev. = 45.17

Note: Permits must be obtained for all truck loads over legal length. Items of material which cannot be transported by truck with overall length less than 75'-0" must be shipped by rail to the specified shipping point.

Note: Do not scale this drawing. Follow dimensions.

TEMPORARY CONSTRUCTION CLEARANCE

A minimum vertical clearance of 20'-0" from the top of rails and a minimum lateral clearance of 8'-0" from the centerline of tracks shall be maintained at railroad tracks during construction, except as otherwise required for driving bearing piles in footings for bents 9 and 10, see Special Provisions.

SUBMITTED BY:

REGISTERED PROFESSIONAL ENGINEER
MISSOURI NO. E-919

GENERAL PLAN AND ELEVATION

SUBMITTED BY: J.A. Williams, DATE 12-1-1955, BRIDGE ENGINEER

APPROVED BY: R.M. Whitton, DATE 12-1-1955, CHIEF ENGINEER

FINISHED

SVERDRUP AND PARCEL, INC.
CONSULTING ENGINEERS
ST. LOUIS, MO.

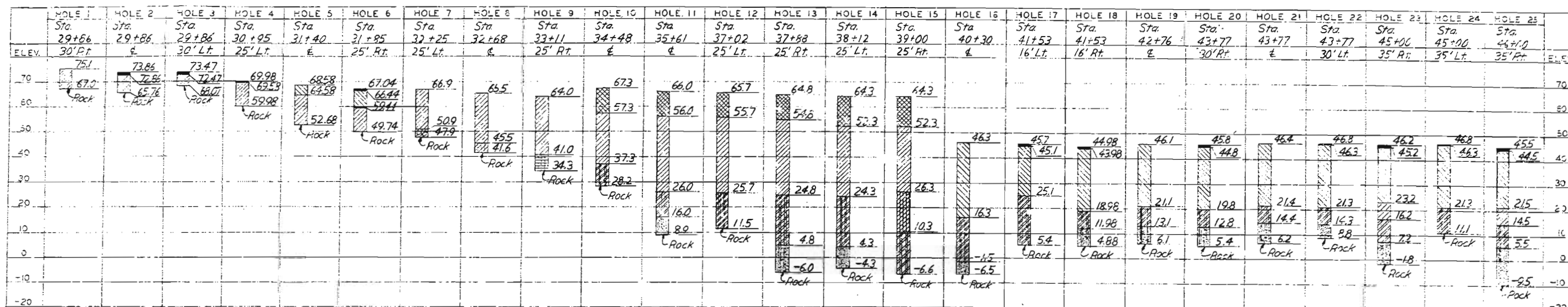
STD. C-102R
STD. C-103R

STD. C-110 R3

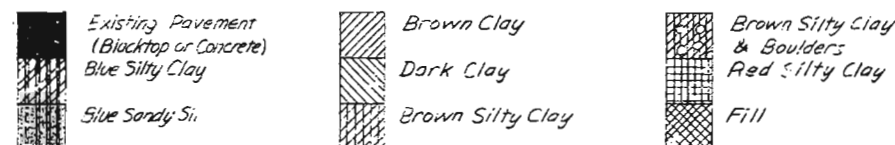
L-667

SHEET 1 OF 39

LOG OF BORINGS



LEGEND



Note: All stations along construction & The subsurface data shown hereon were obtained by borings at locations indicated. These data are furnished for information only and do not guarantee the actual conditions which may be found when work is executed.

INDEX OF DRAWINGS

- GENERAL PLAN AND ELEVATION
- GENERAL NOTES AND LOG OF BORINGS
- ABUTMENT 1
- BENTS 2, 6, 11 & 14
- BENT 3
- BENT 4
- BENTS 5, 7, 12 & 13
- BENT 8
- BENT 9
- BENT 10
- ABUTMENT 15
- WALLS-GENERAL PLAN & ELEVATION
- NORTH AND SOUTH WALLS
- NORTH AND SOUTH WALLS
- ANCHOR BOLT PLAN AND SHOES
- GIRDER LAYOUT DIMENSIONS
- CAMBER DIAGRAMS
- FRAMING PLAN-ABUT 1 TO HINGE IN SPAN 6
- FRAMING PLAN-HINGE IN SPAN 6 TO HINGE IN SPAN 11
- FRAMING PLAN-HINGE IN SPAN 11 TO ABUT. 15
- ELEVATION OF GIRDER G1-N
- ELEVATION OF GIRDER G2-N
- ELEVATION OF GIRDERS G3-N AND G3-S
- ELEVATION OF GIRDER G4-N
- ELEVATION OF GIRDERS G4-S AND G1-S
- ELEVATION OF GIRDER G2-S AND CROSS FRAME DETAILS
- GIRDER DETAILS
- EXPANSION DEVICES AT ABUTMENTS 1 & 15
- EXPANSION DEVICES IN SPANS 5, 6 & 11
- SLAB
- PLAN OF SAFETY CURBS AND MEDIAN
- SAFETY CURB, PARAPET, AND MEDIAN DETAILS
- HANDRAIL DETAILS
- DRAINAGE SYSTEM
- DRAINAGE SYSTEM
- CONDUIT SYSTEM
- STANDARD BI-TYPICAL BAR TYPES, HOOK DIMENSIONS AND CUTTING DIAGRAM
- BAR LIST
- BAR LIST AND SPECIAL BENDING DIAGRAMS

GENERAL NOTES

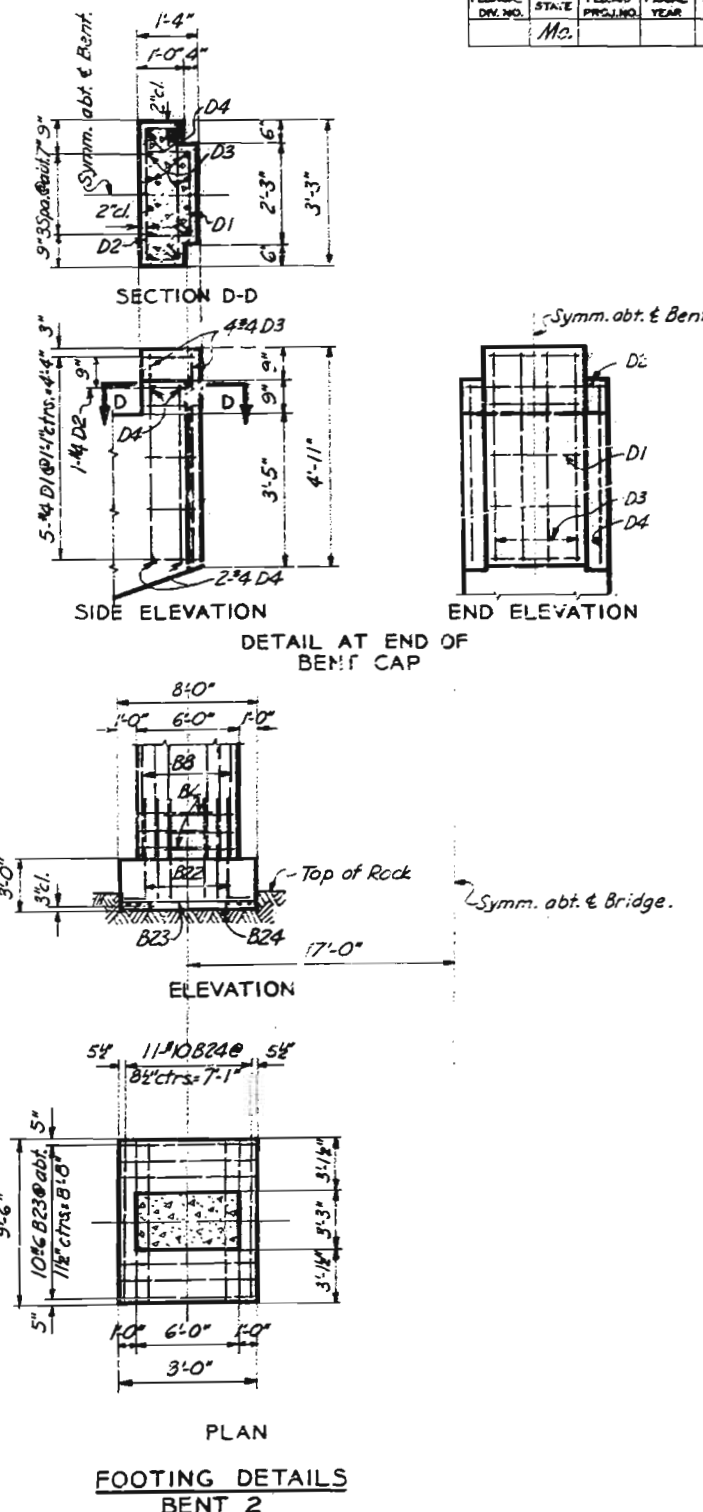
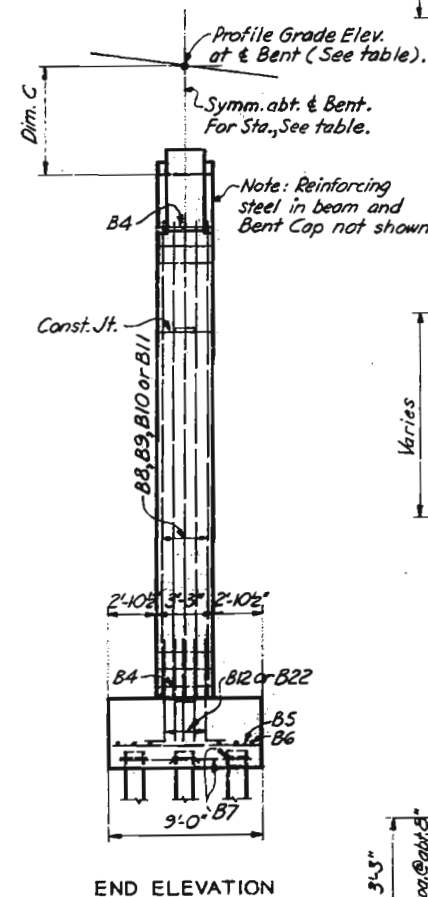
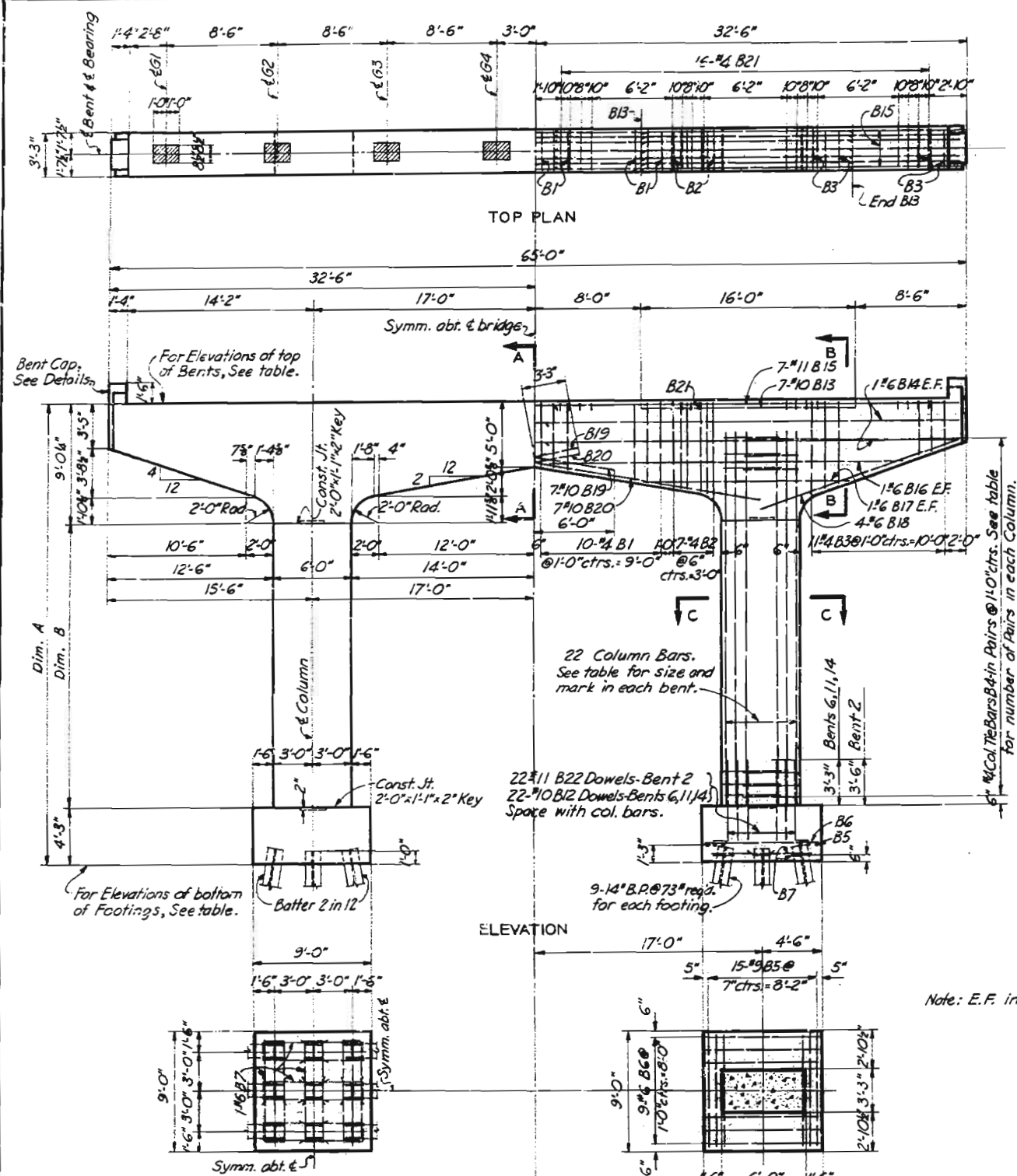
- SPECIFICATIONS:** Missouri State Highway Commission (1955 Standard) and Special Provisions.
- DESIGN LOADING:** In accordance with Division III of the A.A.S.H.O. Standard Specifications for Highway Bridges, 1953 Edition.
Live Load: H20-S16-44
Dead Load: Provision is made for a future wearing surface of 15 pounds per square foot of roadway surface.
- DESIGN UNIT STRESSES:**
Concrete in flexure: 1,200 lbs. per sq. in.
Lightweight (Haydite) Concrete in flexure: 1,000 lbs. per sq. in.
Reinforcing Steel: 20,000 lbs. per sq. in.
Structural Steel: A.A.S.H.O. Standard Stresses.
- ROADWAY WEARING SURFACE:** The roadway slab, as detailed, includes a 2" wearing surface poured monolithically with slab.
- CONCRETE:** Class B (air-entrained) concrete shall be used for all substructure units, including walls. Haydite (air-entrained) concrete shall be used for all superstructure concrete. (See Special Provisions.)
- STRUCTURAL CARBON STEEL:** Structural Carbon Steel shall conform to A.S.T.M. Specification A7.
- STEEL:** Rivet Steel shall conform to A.S.T.M. Specification A141.
- RIVET STEEL:** Rivet Steel shall conform to A.S.T.M. Specification A141.
- STEEL PILING:** All piles shall be driven with a steam hammer. Piles shall be driven to the following capacities:
14" B.P. @ 73" 85 Tons per pile.
10" B.P. @ 42" 37 Tons per pile.
- ROCK BEARING PRESSURE:** Maximum computed load is 12 tons per sq. ft.
- SOIL BEARING PRESSURE:** Maximum computed load is 3,000 lbs. per sq. ft.
- BEVELED EDGES:** All exposed edges of concrete shall be beveled 3/4" unless otherwise shown or noted.
- DAMP-PROOFING:** Limits of damp-proofing shall be as indicated on the detail drawings. (See Special Provisions.)
- RUBBED FINISH:** A rubbed finish will be required on all exposed surfaces of concrete end posts.
- REINFORCEMENT:** All dimensions to reinforcing steel on detail drawings are to 1/4" of bar except where the clear distance is noted from the face of the concrete. All reinforcing steel shall be lapped a minimum of 30 diameters unless otherwise shown or noted.
- JOINT FILLER:** Where joint filler is specified on the plans it shall conform with the requirements for "Gray Rubber Compound Joints" as given in Section 59-22B of the Standard Specifications. Payment for furnishing and placing joint filler shall be included in unit contract price for concrete.
- JOINT SEAL AND COPPER FLASHING:** Payment for furnishing and placing joint seal and copper flashing shall be included in the unit contract price for concrete.
- FAIRBANKS PADS:** See Special Provisions.
- ALUMINUM ALLOY HANDRAIL:** See Special Provisions.
- WELDING:** All welding shall be in accordance with the current "Specifications for Welded Highway and Railway Bridges" of the American Welding Society as supplemented by the Special Provisions. Qualification of Welding Operators will be required.
- EXISTING UTILITIES:** The Contractor shall exercise care to prevent damage to any utilities which may be encountered during construction. All utilities conflicting with the proposed construction will be removed or relocated by their respective owners, except as otherwise noted on the Road Plans.
- PAINT:** Shop - One coat of red lead, except that no shop coat is to be applied to contact surfaces of field connections where high tensile bolts will be used.
Field - Contact surfaces of bolted field connections, except where high tensile bolts are used, one coat of red lead and surfaces inaccessible after erection two coats of red lead. All other exposed surfaces, second coat brown, third coat aluminum.
Payment for cleaning and painting as specified above will be included in the price bid for items painted.

MISSOURI STATE HIGHWAY DEPARTMENT
BRIDGE OVER VANDEVENTER AVE,
CLAYTON AVE. AND WABASH R.R. TRACKS
STATE ROAD DANIEL BOONE EXPRESSWAY
PROJECT NO. U-611 (2) (RT. 40) STA. 29+86.30
CITY OF ST. LOUIS

GENERAL NOTES AND
LOG OF BORINGS

SVERDRUP AND PARCELL, INC.
CONSULTING ENGINEERS
ST. LOUIS, MO.

1237-1	555366	Dronin Ly: Yett Gee, June 1955
		Checked by: Yuen Gee, Aug. 1955



Note: E.F. indicates each face.

NOTES

For detail of pile splice, see Sheet 7.
For location and size of anchor bolt wells, see Sheet 15.

MISSOURI STATE HIGHWAY DEPARTMENT
BRIDGE OVER WANDEVENTER AVE,
CLAYTON AVE. AND WABASH R.R. TRACKS
STATE ROAD DANIEL BOONE EXPRESSWAY
PROJECT NO. U-811(2) (RT. 40) STA. 29+86.00
CITY OF ST. LOUIS

BENTS 2, 6, 11 & 14

SVENDRUP AND PARCEL, INC.
CONSULTING ENGINEERS
ST. LOUIS, MO.

BENTS	STATION	ELEVATIONS			DIMENSIONS			COLUMN BAR SIZES	COLUMN BAR MARKS	NO. PAIRS TIE BARS-B4
		Profile Grade at Bent	Top of Bent	Batt. of Flg.	A	B	C			
2	30+73	99.84	93.50	59.50	34'-0"	21'-11 1/2"	6'-4 1/2"	#11	B8	28
6	34+48	100.47	94.09	61.00	33'-1 1/2"	19'-9 3/4"	6'-4 1/2"	#10	B9	26
11	39+19	89.37	82.99	48.75	34'-2 3/8"	20'-11 1/8"	6'-4 1/2"	#10	B10	27
14	42+76	67.61	61.20	39.75	21'-5 1/2"	8'-2 3/8"	6'-4 1/2"	#10	B11	15

BENTS 2, 6, 11 & 14

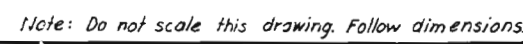
Note: Do not scale this drawing. Follow dimensions.

SHEET 4 OF 39

L-667

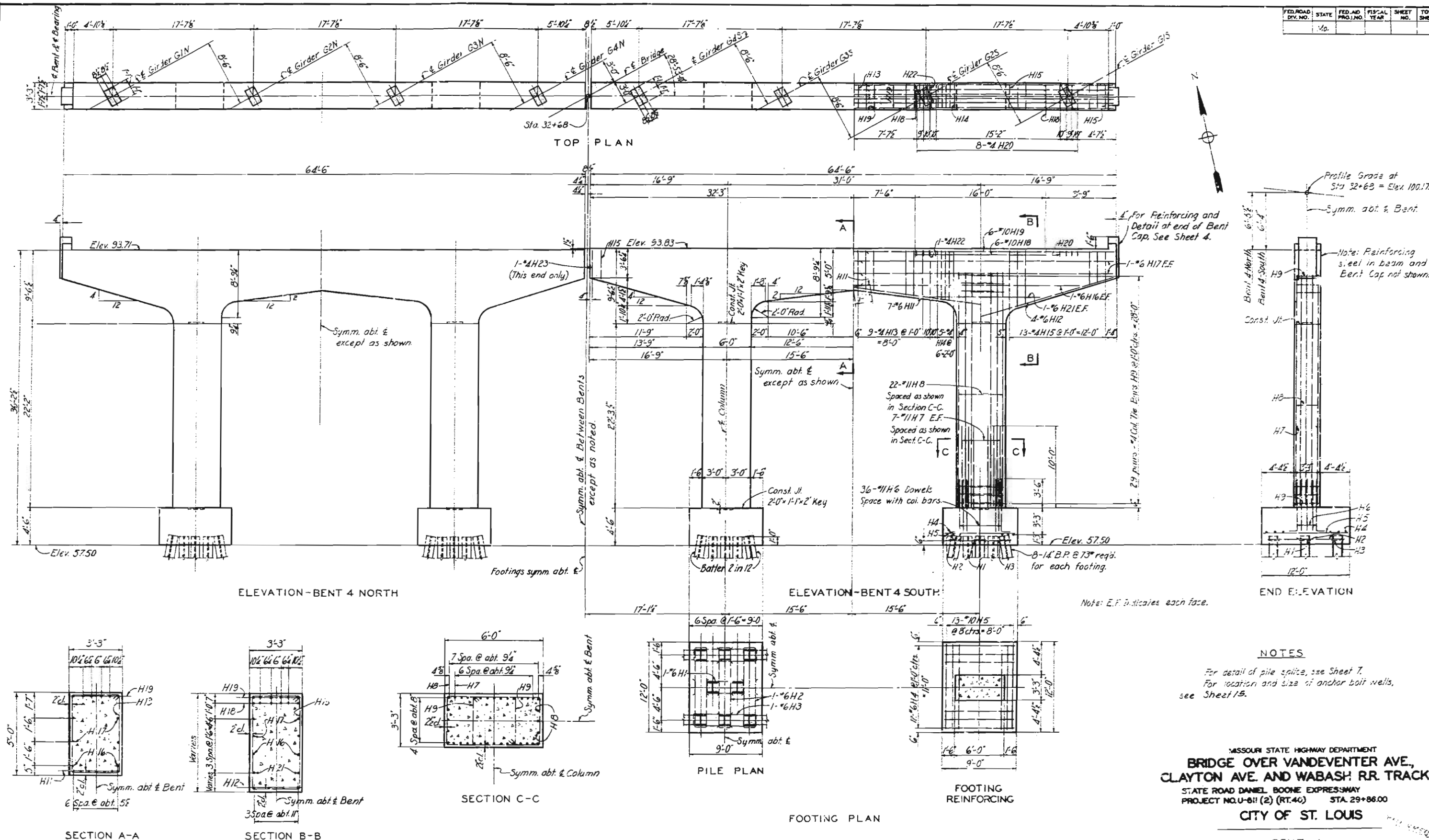
SEE FINAL PLANS BROUEN LINES

Q4



L-667

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
10.	Mo.				

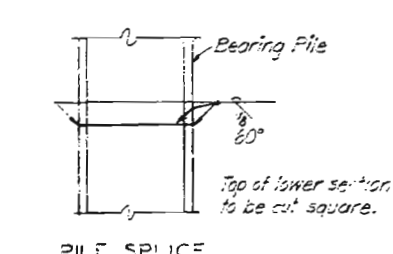
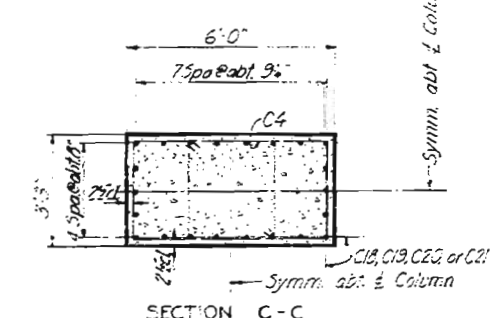
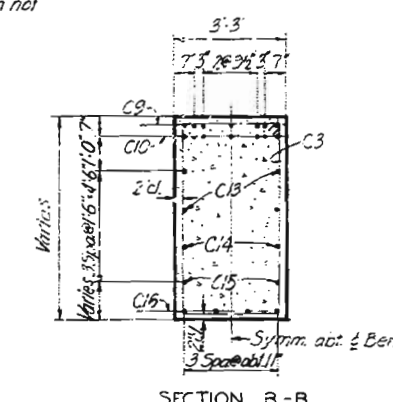
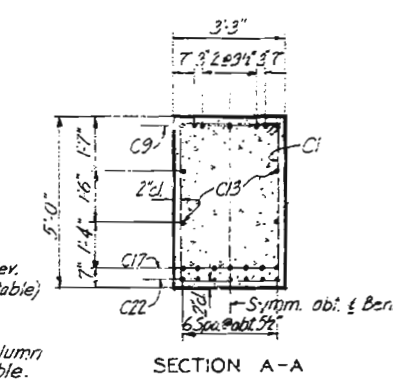
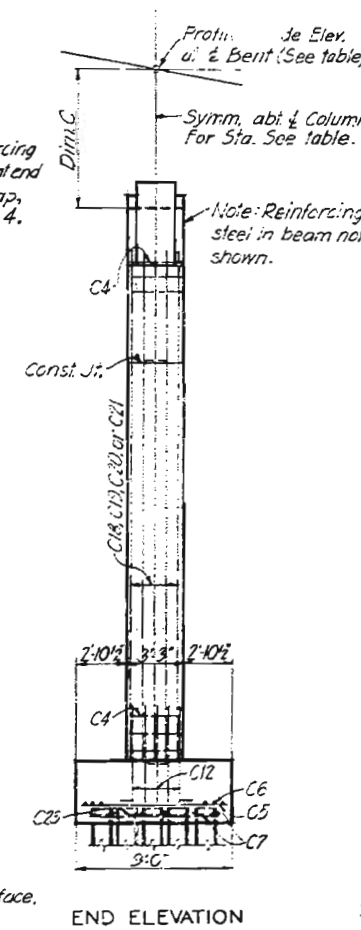
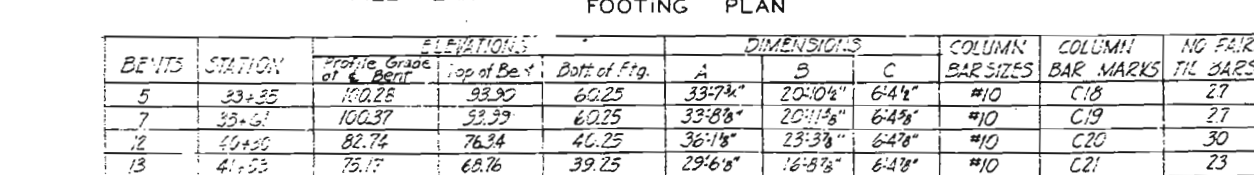
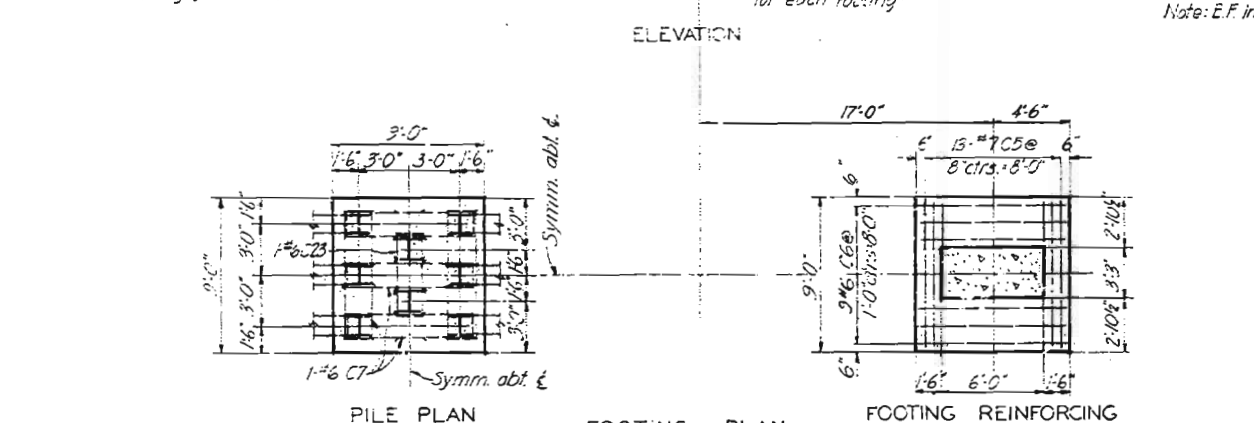
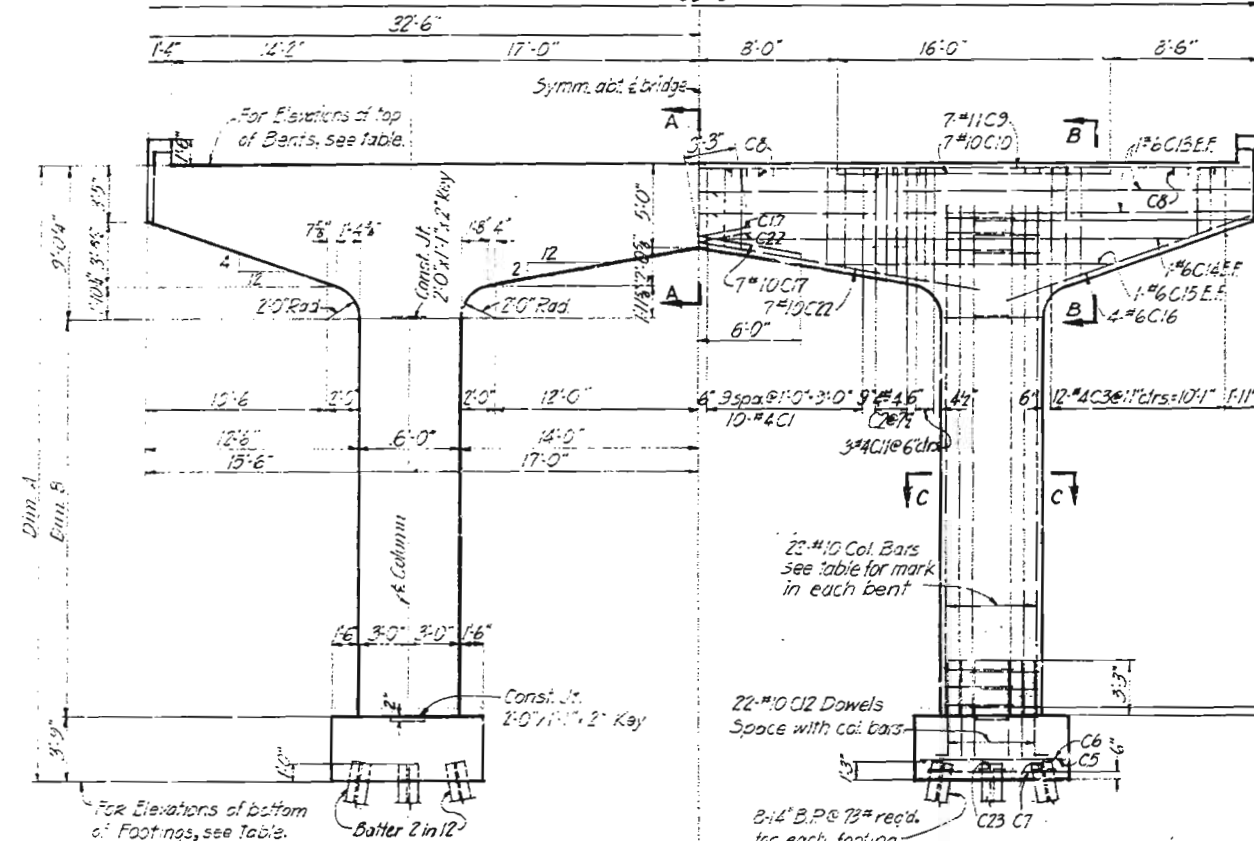
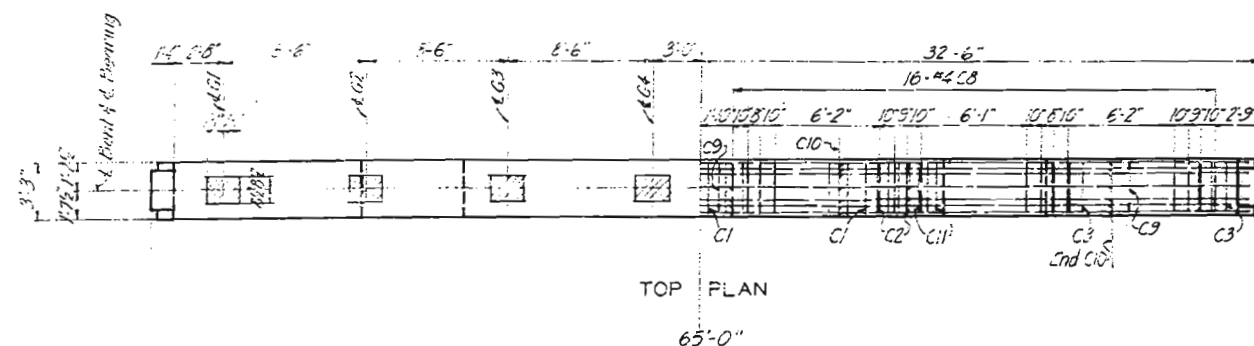


1237-1
555463
Drawn by: D.G. Hartman, July 1955
Checked by: Yeun Gee, Aug. 1955

Note: Do not scale this drawing. Follow dimensions.

SHEET 6 OF 39

L-667



NOTE

For location and size of anchor bolt wells, see Sheet 15.

MISSOURI STATE HIGHWAY DEPARTMENT
**BRIDGE OVER VANDEVENTER AVE.,
 CLAYTON AVE. AND WABASH R.R. TRACKS**
 STATE ROAD DANIEL BOONE EXPRESSWAY
 PROJECT NO. U-611 (2) (RT. 40) STA. 29+86.00
CITY OF ST. LOUIS

BENTS 5, 7, 12, & 13

SVERDRUP AND PARCEL, INC.
CONSULTING ENGINEERS
ST. LOUIS, MO.

FINISHED

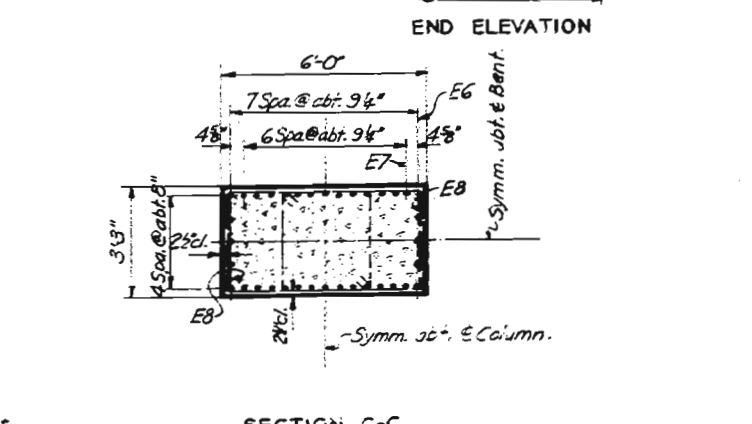
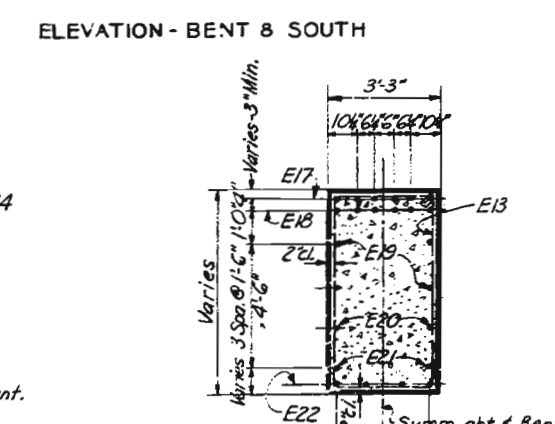
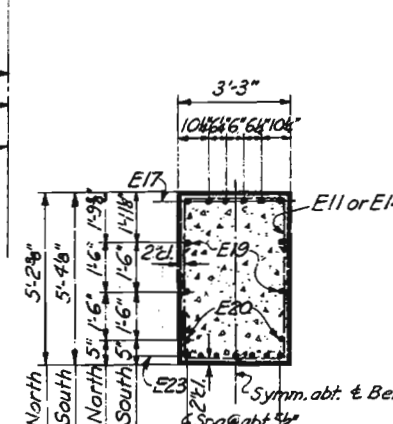
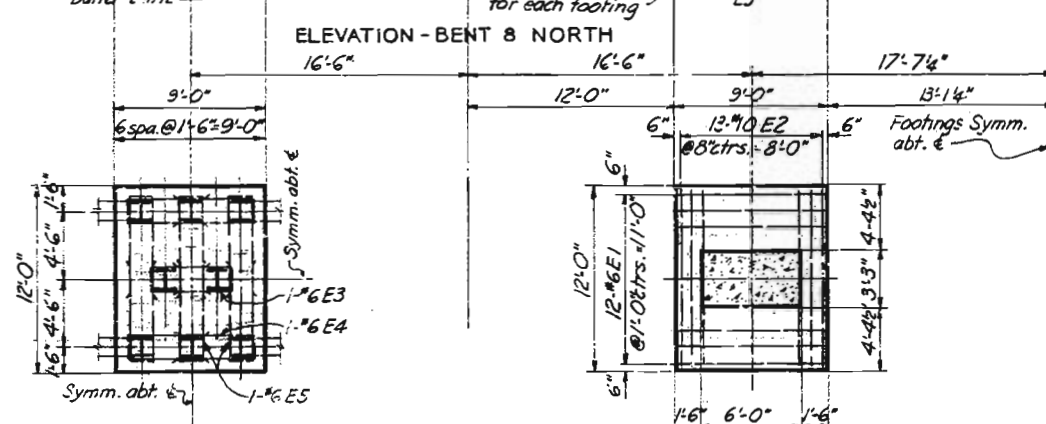
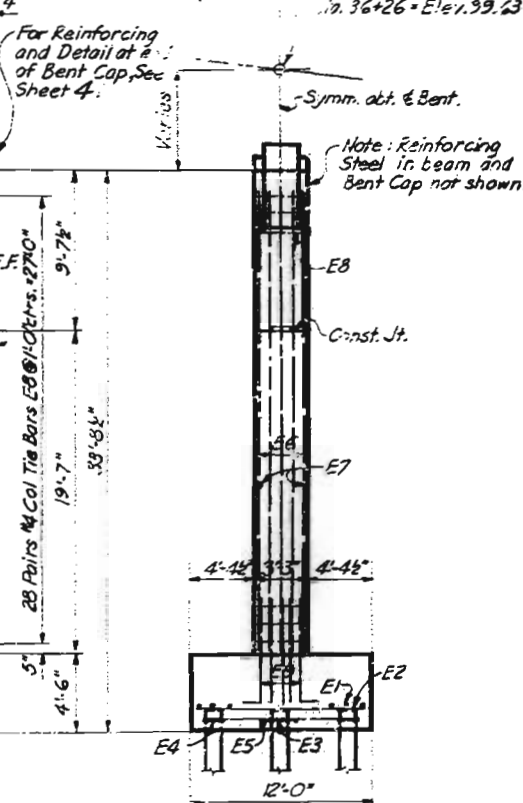
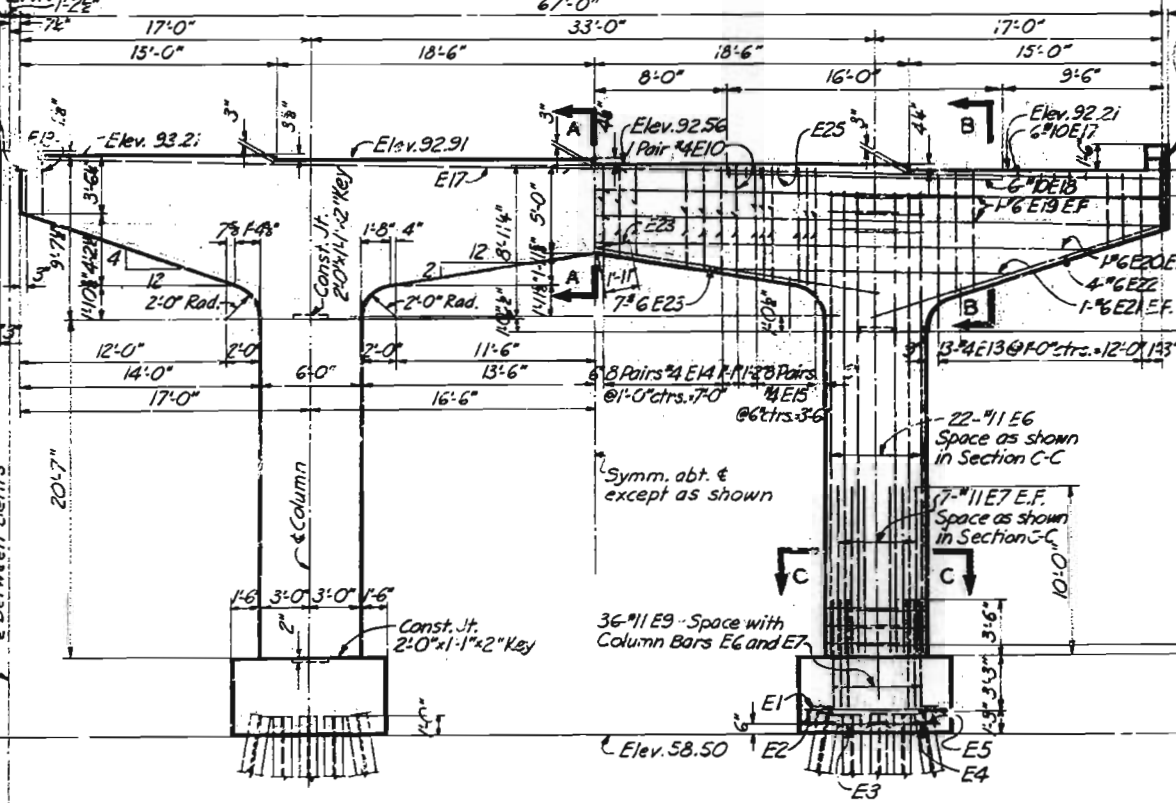
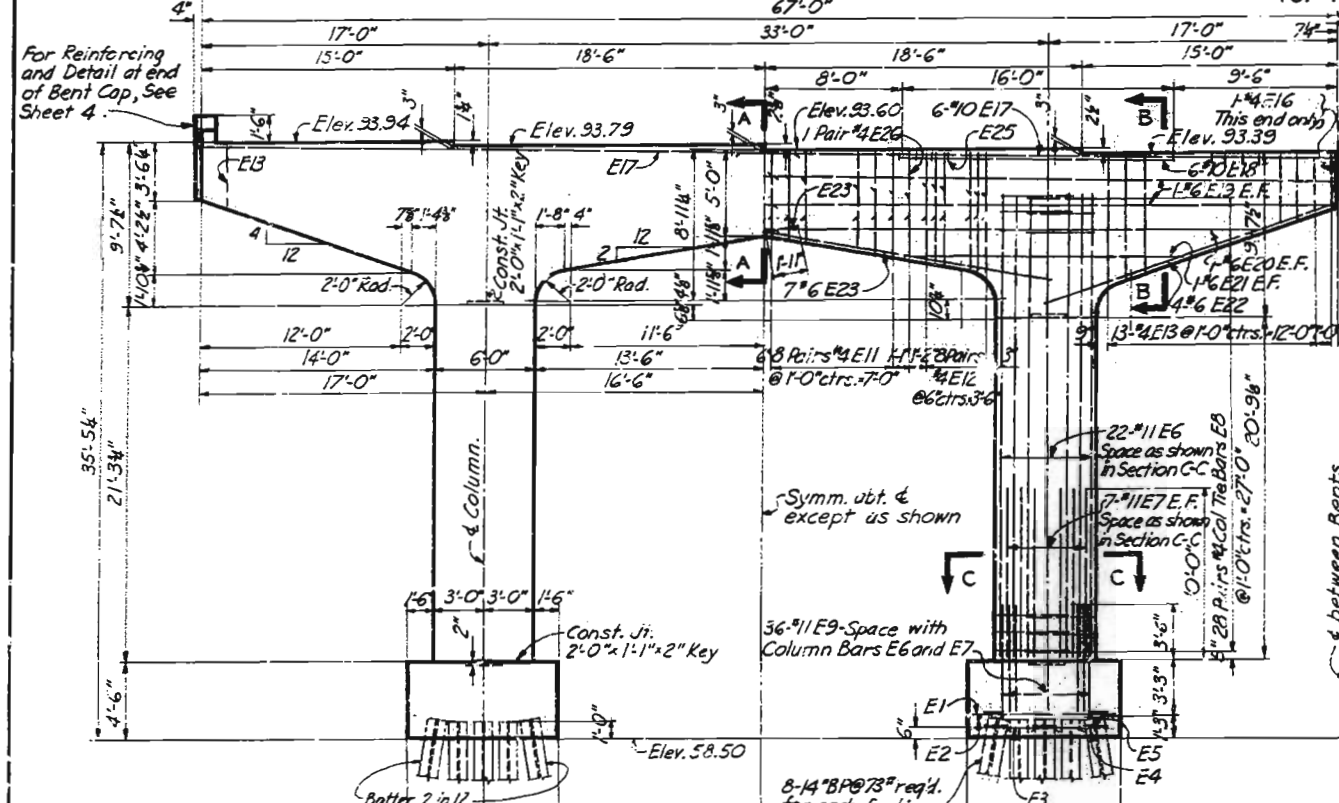
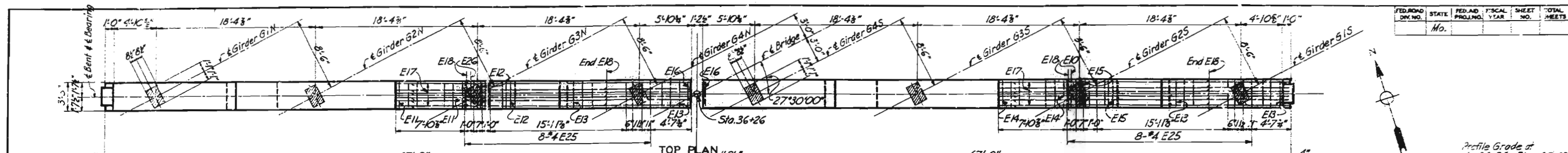
Note: Do not scale this drawing. Follow dimension

SHEET 7 OF 11

L-667

12-3-1	155-428	Drawn by: R. ^e Skv ^o tz, July 1955
		Checked by: Yev. Goe July 1955

BENTS 5,7,12.&13



NOTES
 For detail of pile splice, See Sheet 7.
 For location and size of anchor bolt wells, See Sheet 15.

MISSOURI STATE HIGHWAY DEPARTMENT
BRIDGE OVER VANDEVENTER AVE.,
CLAYTON AVE AND WABASH P.R. TRACKS
 STATE ROAD 200 - DANIEL BOONE EXPRESSWAY
 PROJECT NO. U-64 (2) (RT. 40) STA. 29+86.00
CITY OF ST. LOUIS

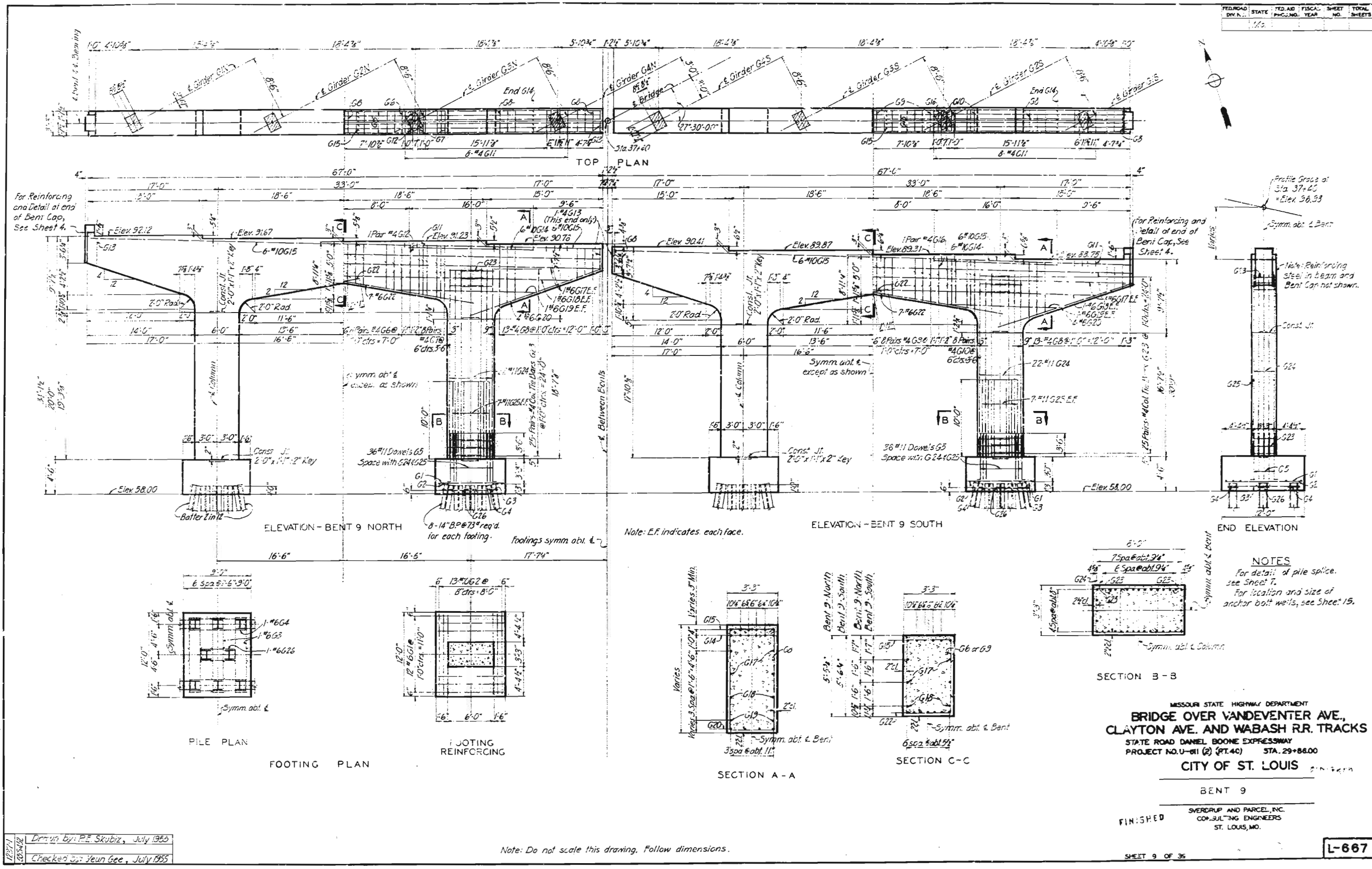
BENT 8
 SVERDRUP AND PARCELL, INC.
 CONSULTING ENGINEERS
 ST. LOUIS, MO.

Drawn by: C.M. Redfield, July 1955
 Checked by: Yeun Gee, Aug. 1955

Note: Do not scale this drawing. Follow dimensions.

SHEET 8 OF 39

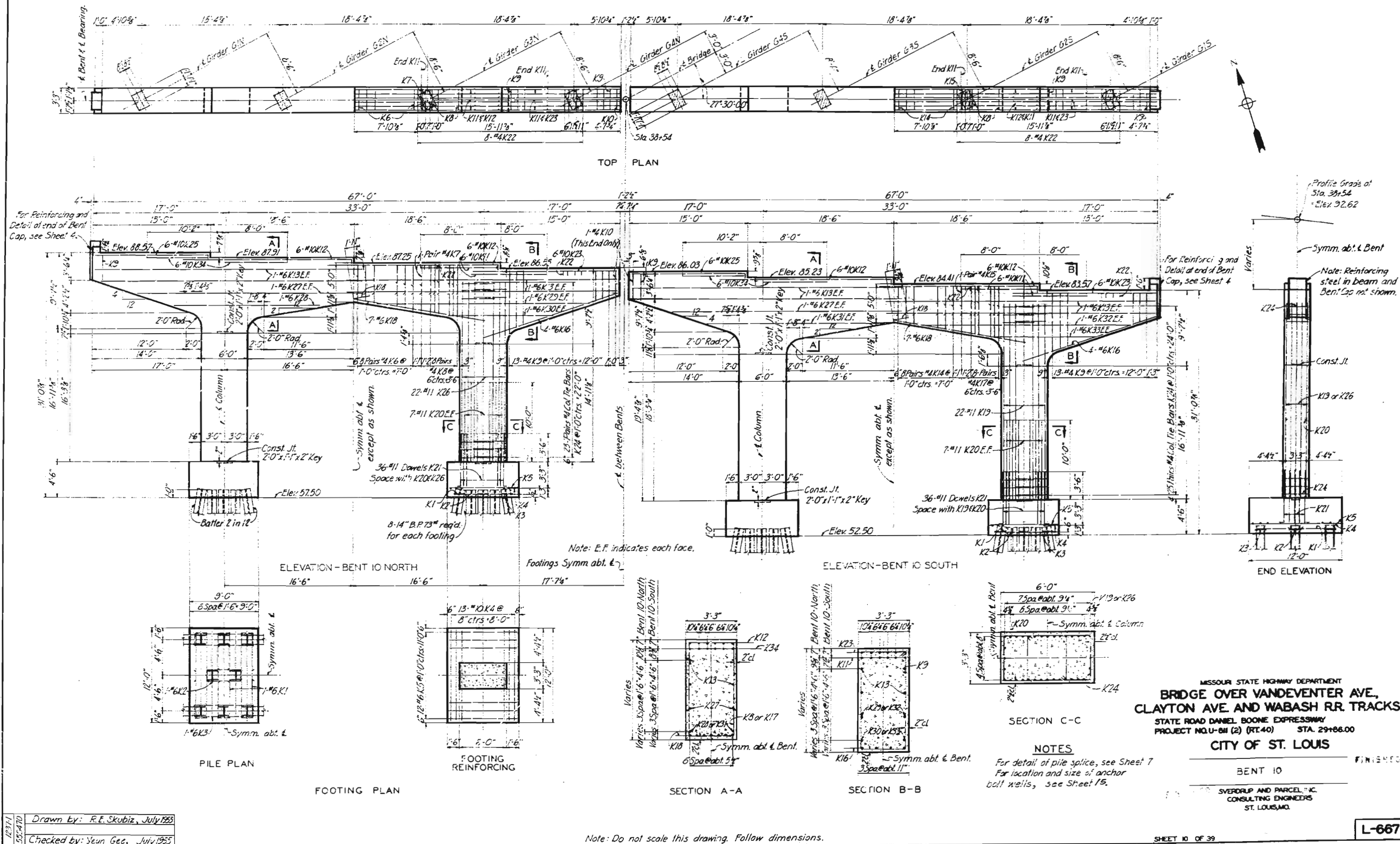
L-667



Drawn by: P.E. Skubiz, July 1955
 Checked by: Yeun Gee, July 1955

Note: Do not scale this drawing. Follow dimensions.

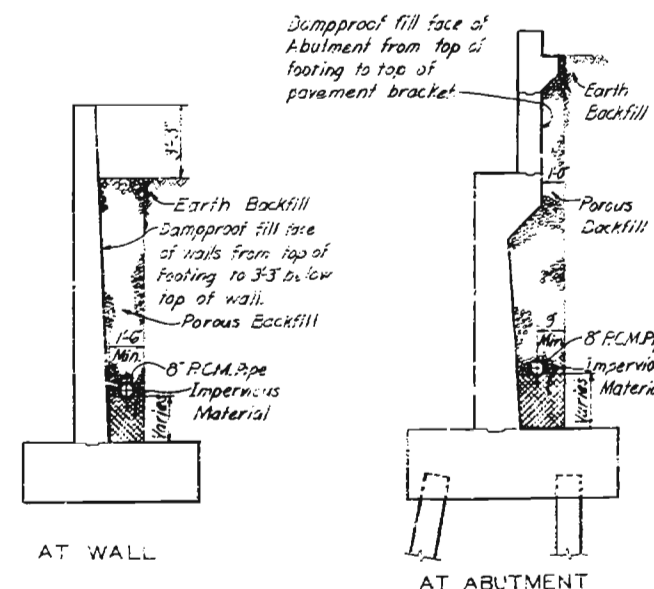
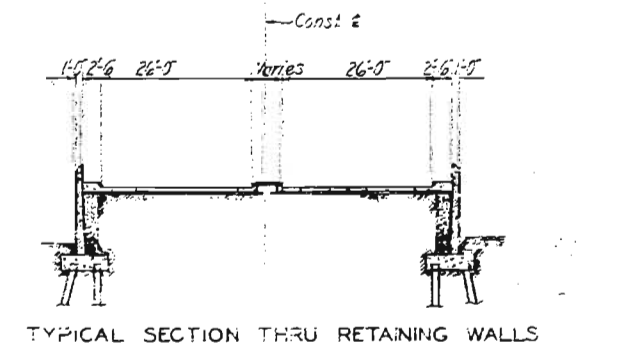
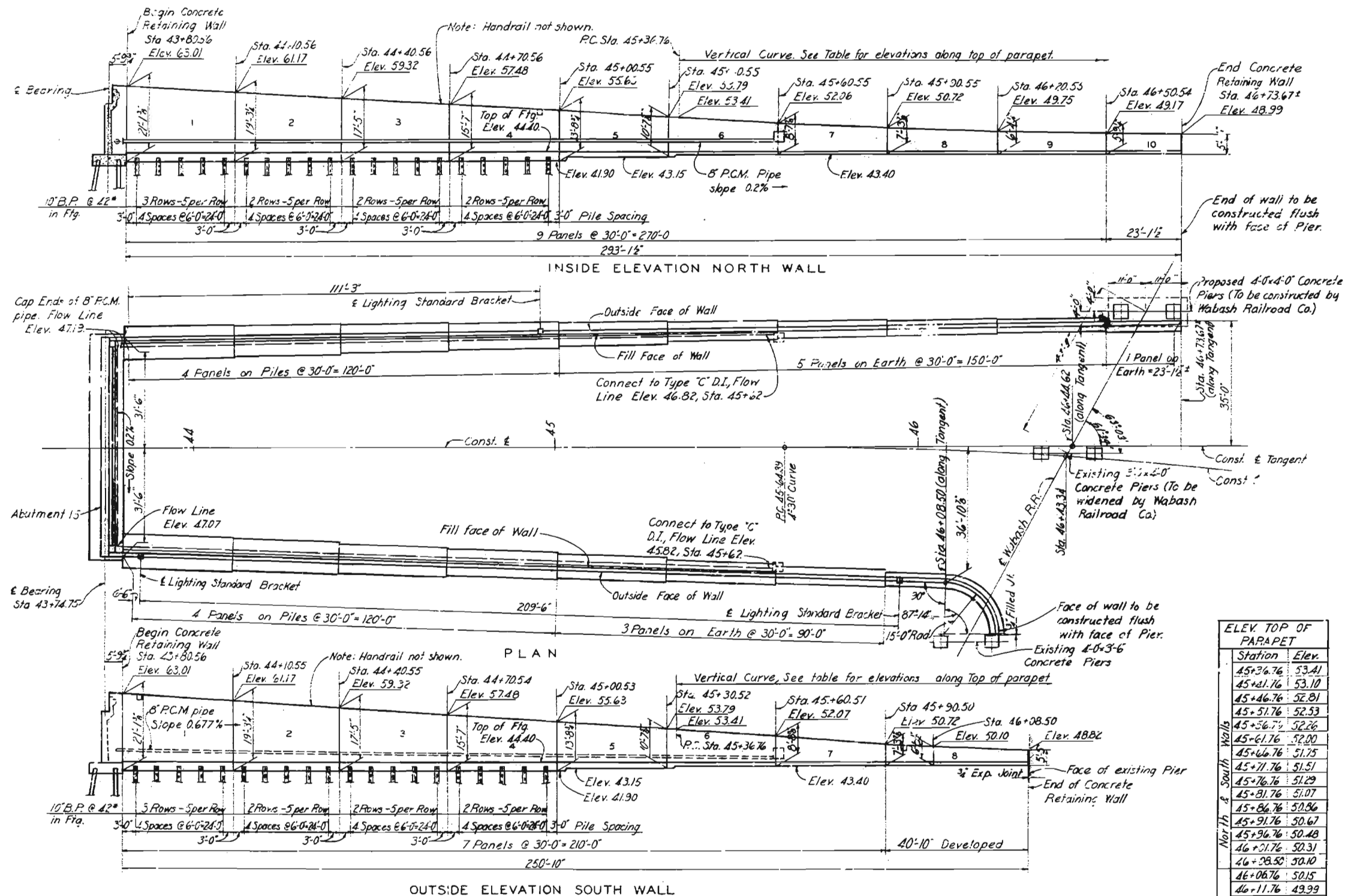
MISSOURI STATE HIGHWAY DEPARTMENT
**BRIDGE OVER VANDEVENTER AVE.,
 CLAYTON AVE. AND WABASH R.R. TRACKS**
 STATE ROAD DANIEL BOONE EXPRESSWAY
 PROJECT NO. U-811 (2) (PT. 4C) STA. 29+86.00
CITY OF ST. LOUIS
 BENT 9
 SVERDRUP AND PARCEL, INC.
 CONSULTING ENGINEERS
 ST. LOUIS, MO.
 FINISHED
 SHEET 9 OF 35
L-667



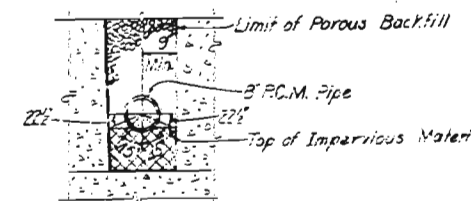
12371
555470
Drawn by: R.E. Skubiz, July 1955
Checked by: Seun Gee, July 1955

Note: Do not scale this drawing. Follow dimensions.

SHEET 10 OF 39



POROUS BACKFILL AND PIPE UNDERDRAIN



TYPICAL INSTALLATION FOR PERFORATED METAL PIPE

MISSOURI STATE HIGHWAY DEPARTMENT
**BRIDGE OVER VANDEVENTER AVE.,
 CLAYTON AVE. AND WABASH R.R. TRACKS**
 STATE ROAD DANIEL BOONE EXPRESSWAY
 PROJECT NO. U-81(2) (RT. 40) STA. 29+86.00
CITY OF ST. LOUIS

WALLS-GENERAL PLAN & ELEVATION

SVERDRUP AND PINCEL, INC.
 CONSULTING ENGINEERS
 ST. LOUIS, MO.

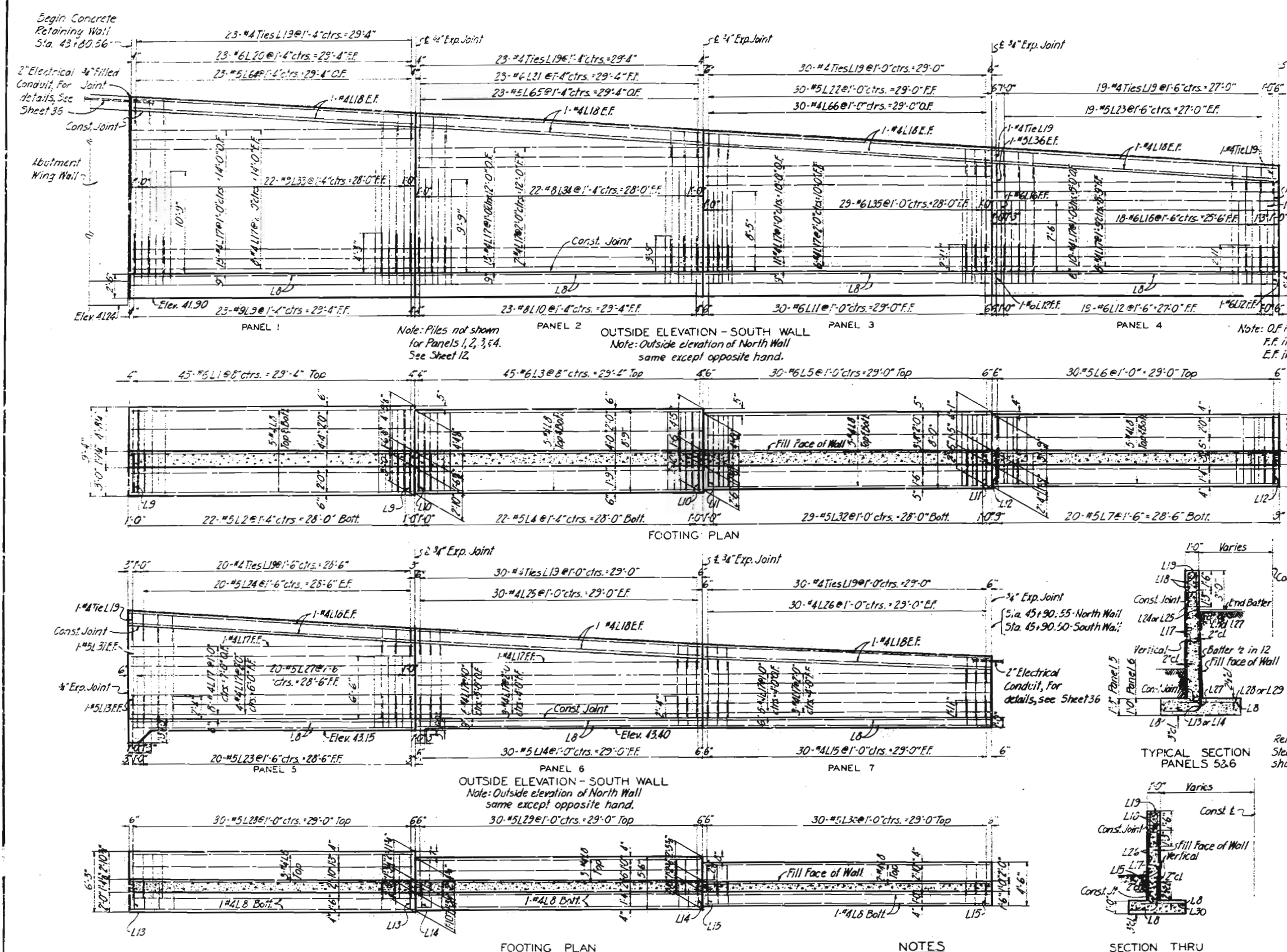
ELEV. TOP OF PARAPET	
Station	Elev.
45+36.76	53.41
45+41.76	53.10
45+46.76	52.81
45+51.76	52.53
45+56.76	52.26
45+61.76	52.00
45+66.76	51.75
45+71.76	51.51
45+76.76	51.29
45+81.76	51.07
45+86.76	50.86
45+91.76	50.67
45+96.76	50.48
46+01.76	50.31
46+06.50	50.10
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46+16.76	49.85
46+21.76	49.72
46+26.76	49.60
46+31.76	49.49
46+36.76	49.39
46+41.76	49.30
46+46.76	49.22
46+51.76	49.15
46+56.76	49.10
46+61.76	49.05
46+66.76	49.02
46+71.76	48.99
46+73.67	48.99

NOTES

Work this Sheet with Sheets 13 and 14.
 For handrail post spacing, see Sheet 33.

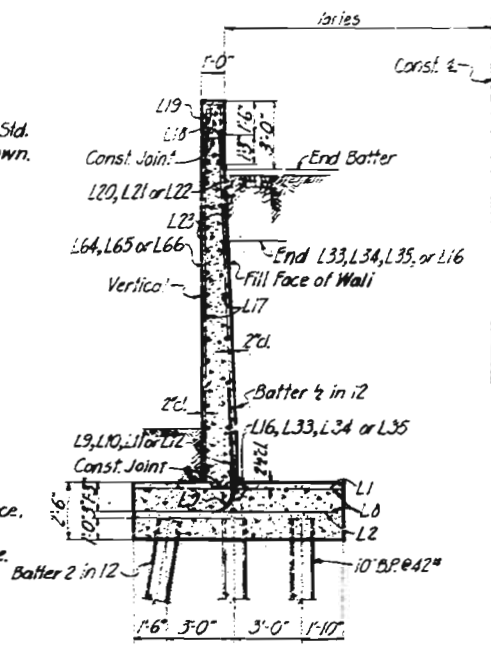
Note: Do not scale this drawing. Follow dimensions.

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110.					

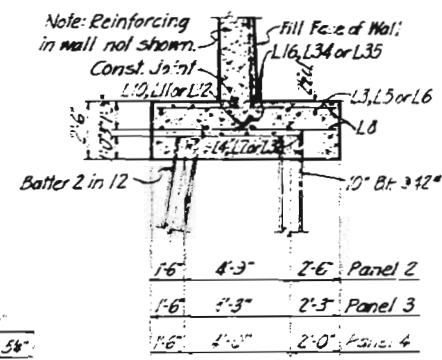


Note: Lighting Std. Bracket not shown. See Sheet 12.

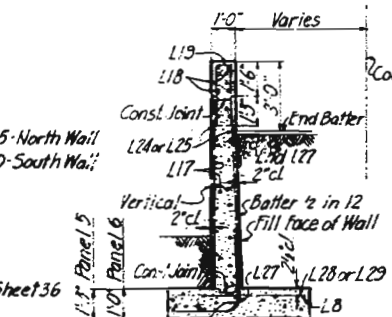
Note: O.F. indicates Outside Face, F.F. indicates Fill Face, E.F. indicates Each Face.



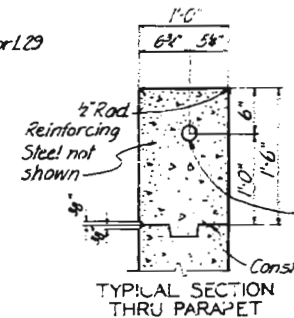
TYPICAL SECTION PANELS 1,2,3 & 4
Footing shown for Panel 1 Only



SECTION OF FOOTING PANELS 2,3 & 4.



TYPICAL SECTION PANELS 5 & 6



TYPICAL SECTION THRU PARAPET

NOTES
 Work this sheet with Sheets 12 and 14.
 For pile splice, see Sheet 7.
 For detail of expansion joints, see Sheet 11.
 For drainage details, see Sheet 12.
 For handrail post spacing, see Sheet 33.
 Reinforcing in top of wall may be shifted slightly to clear conduits and junction boxes.

Note: Do not scale this drawing. Follow dimensions.

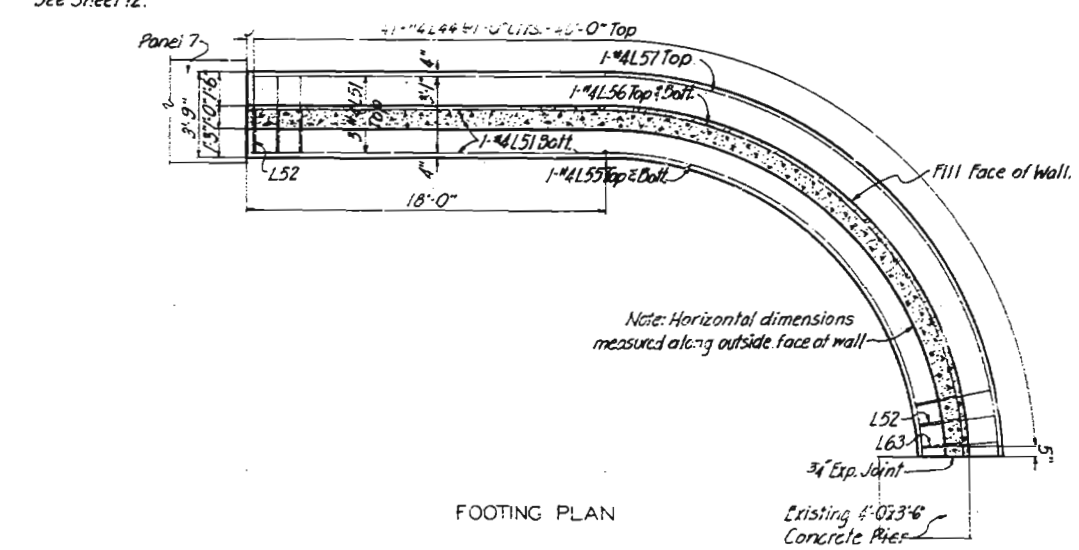
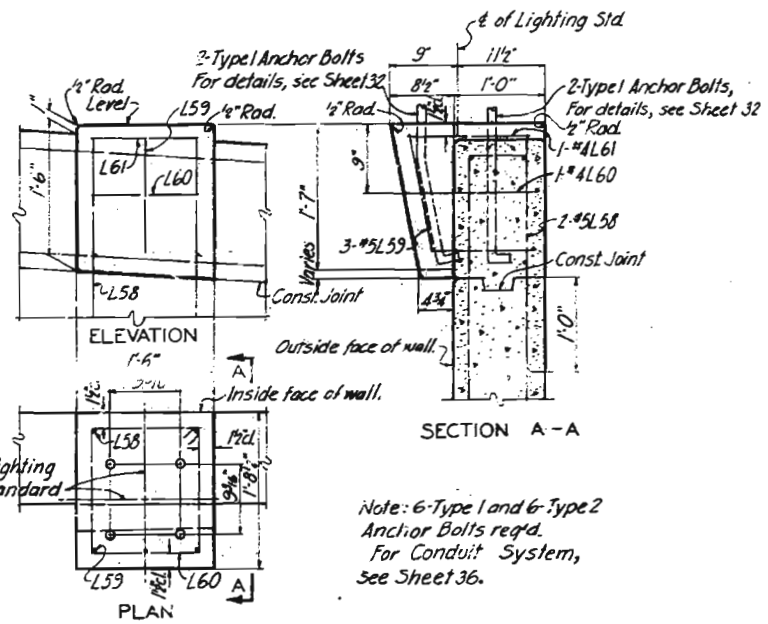
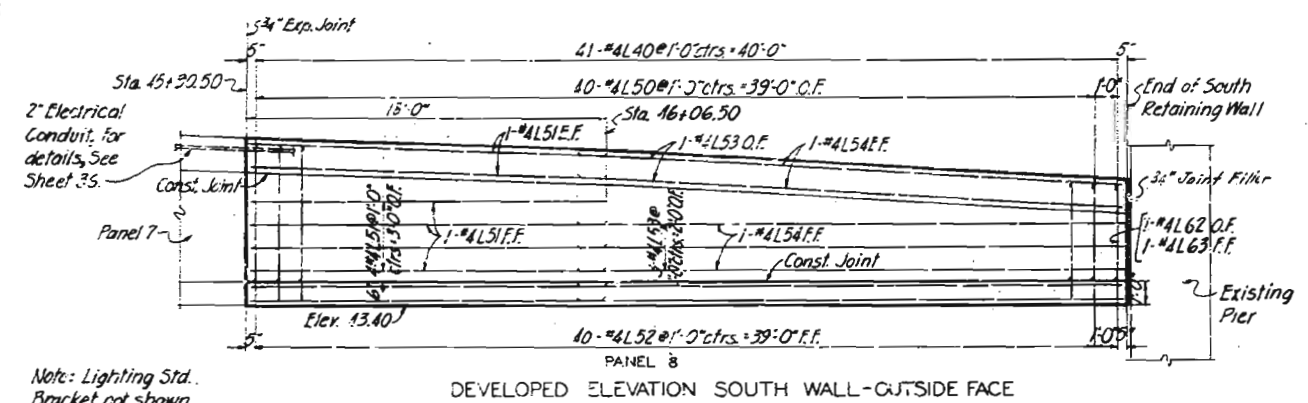
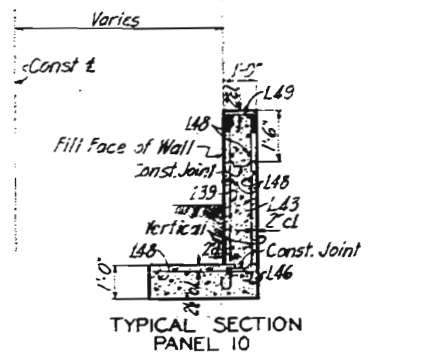
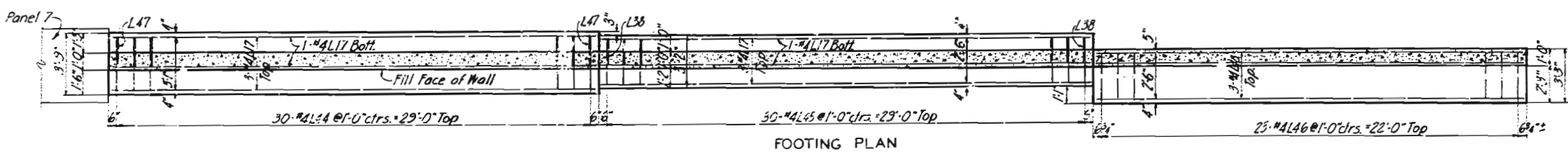
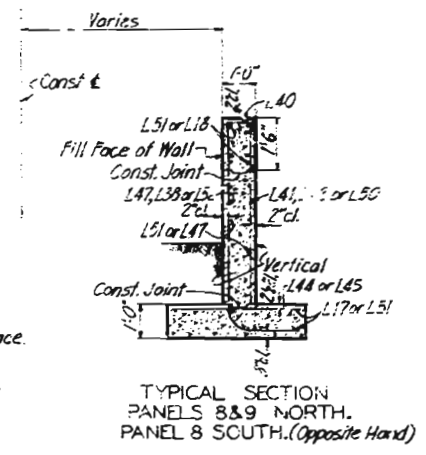
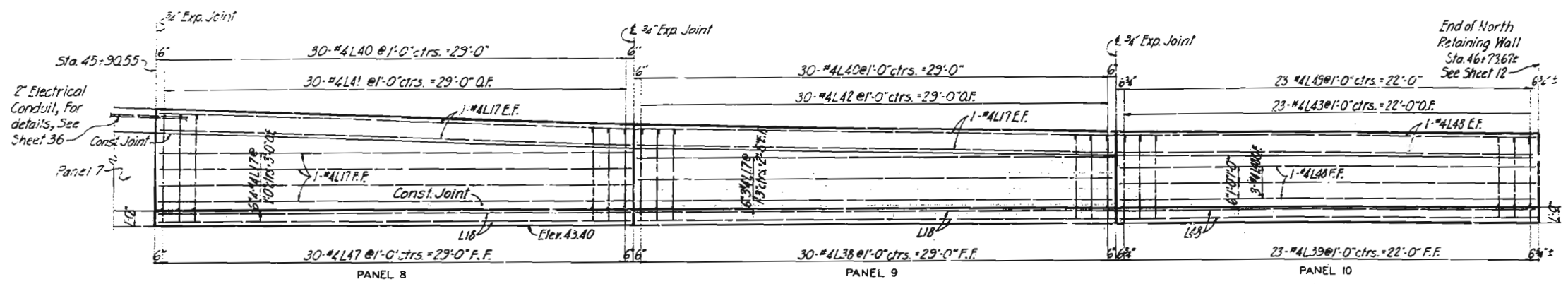
MISSOURI STATE HIGHWAY DEPARTMENT
**BRIDGE OVER VANDEVENTER AVE.,
 CLAYTON AVE. AND WABASH R.R. TRACKS**
 STATE ROAD DANIEL BOONE EXPRESSWAY
 PROJECT NO. U-811 (2) (RT. 40) STA. 29+86.00
CITY OF ST. LOUIS

NORTH AND SOUTH WALLS

SVERDRUP AND PARCEL, INC.
 CONSULTING ENGINEERS
 ST. LOUIS, MO.

Drawn by: R. E. Skubiz, Aug. 1955
 Checked by: Yeun Gee, Sept. 1955

IN. NO.	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Mo.				



DETAILS OF LIGHTING STANDARD BRACKET ON WALLS

NOTES
Work this Sheet with Sheets 12 and 13.
For detail of expansion joints, see Sheet 11.
For handrail post spacing, see Sheet 33.
Reinforcing in top of walls may be shifted slightly to clear conduits and junction boxes.

MISSOURI STATE HIGHWAY DEPARTMENT
**BRIDGE OVER VANDEVENTER AVE.,
CLAYTON AVE. AND WABASH RR TRACKS**
STATE ROAD DANIEL BOONE EXPRESSWAY
PROJECT NO. U-611 (2) (RT. 40) STA. 29+86.00
CITY OF ST. LOUIS

NORTH AND SOUTH WALLS

SVERDRUP AND PARCEL, INC.
CONSULTING ENGINEERS
ST. LOUIS, MO.

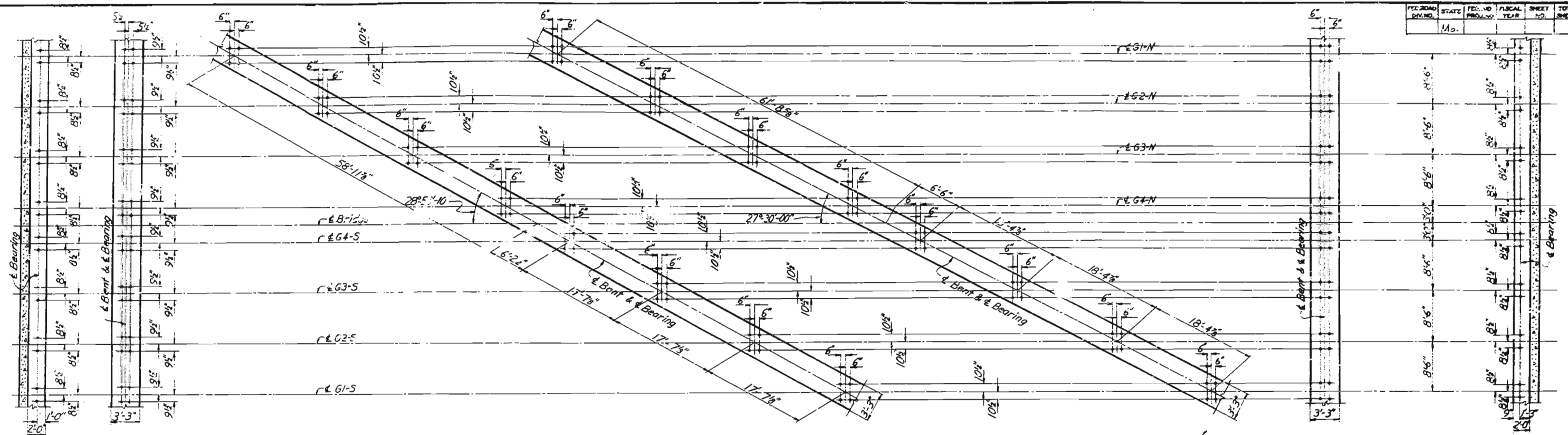
Drawn By: R.E. Skubiz, Aug. 1955
Checked By: Yeun Gee, Sept. 1955

Note: Do not scale this drawing. Follow dimensions.

SEE FINAL PLANS BROWN LINES

L-667

FED. ROAD DIST. NO.	STATE	FED. PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Mo.					



ABUTMENT 1 BENTS 2, 6, 11, & 14

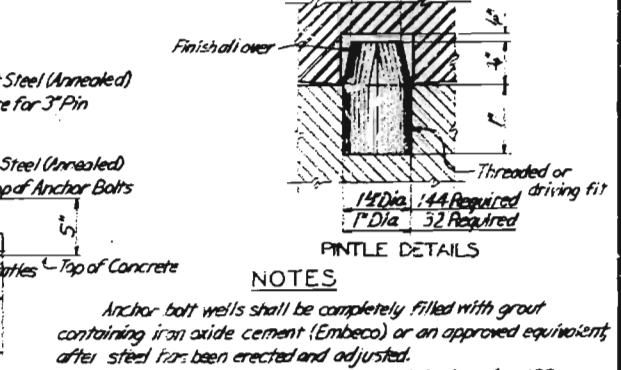
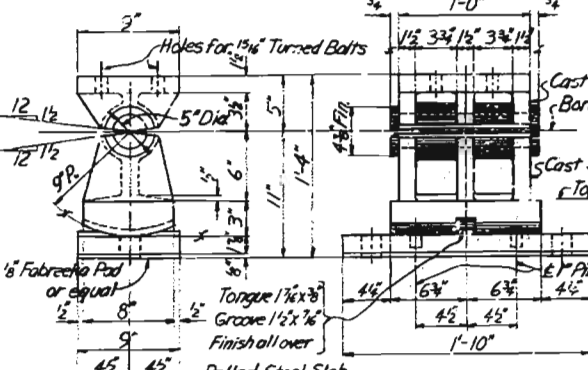
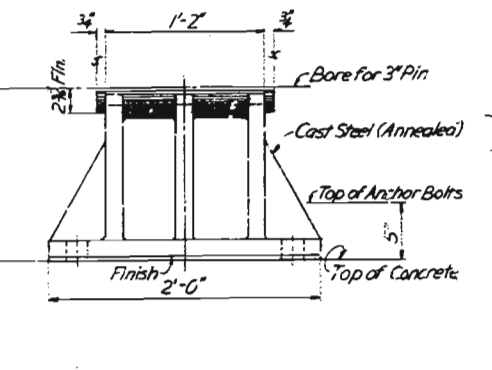
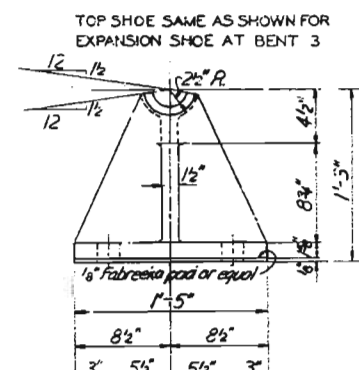
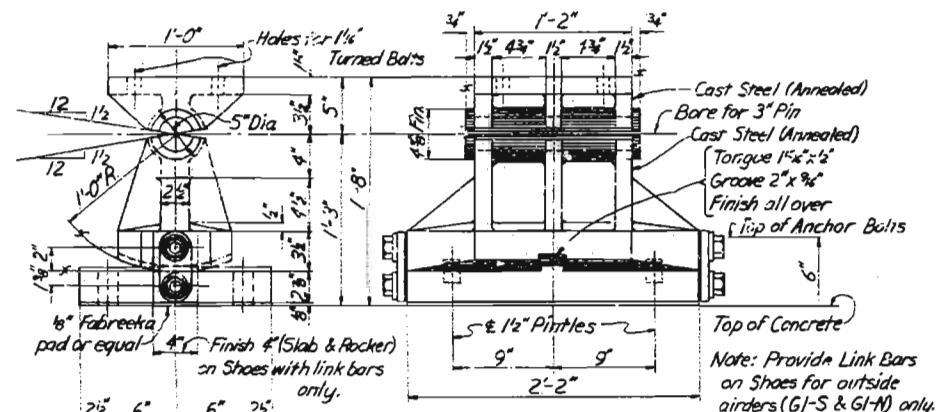
BENTS 3 & 4

BENTS 8, 9, & 10

BENTS 5, 7, 12, & 13

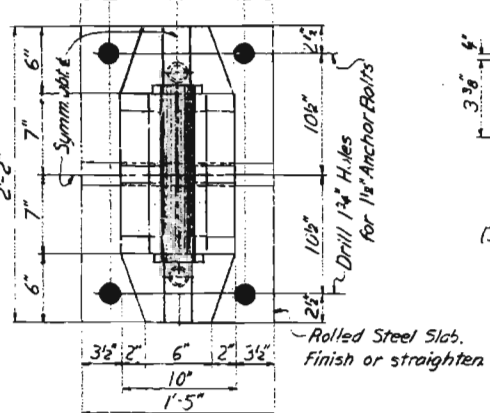
ABUTMENT 15

ANCHOR BOLT PLAN

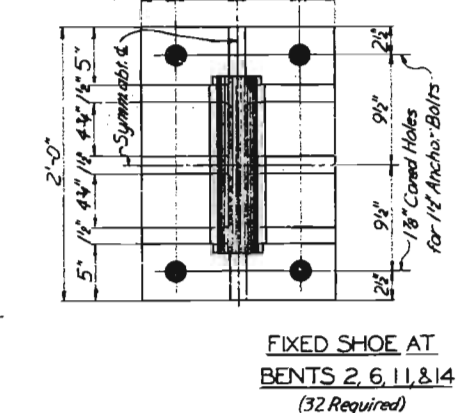
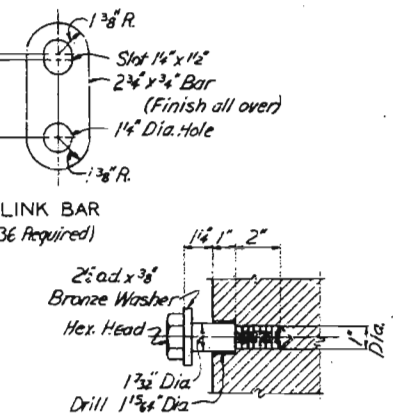


NOTES

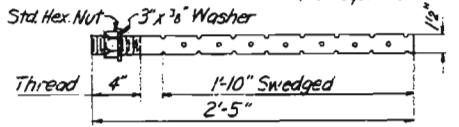
Anchor bolt wells shall be completely filled with grout containing iron oxide cement (Embeco) or an approved equivalent after steel has been erected and adjusted.
 All castings shall conform to A.S.T.M. Designation A27, Grade 65-35, fully annealed.
 All fillers on castings shall be "i".
 All pins shall be forged carbon steel.
 All bolts, nuts, washers, pins, pintles, link bars, and base slabs shall be paid for as "Fabricated Structural Carbon Steel".
 The cost of furnishing and placing Fabreka pads or equal shall be included in the price bid for other items.



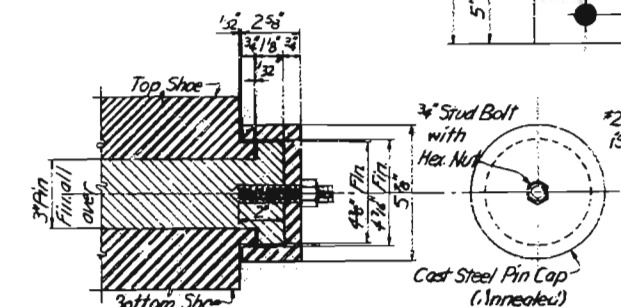
EXPANSION SHOE AT BENTS 3, 4, 5, 7, 8, 9, 10, 12, & 13 (172 Required)



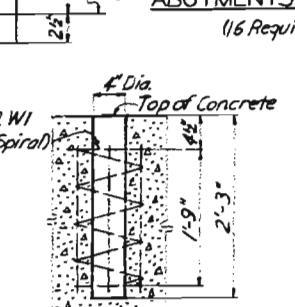
FIXED SHOE AT BENTS 2, 6, 11, & 14 (32 Required)



ANCHOR BOLT DETAILS (448 Required)



PIN END & PIN CAP DETAILS



ANCHOR BOLT WELL

MISSOURI STATE HIGHWAY DEPARTMENT
BRIDGE OVER WANDEVEN R. AVE., CLAYTON AVE. AND WABASH R.R. TRACKS
 STATE ROAD DANIEL BOONE EXPRESSWAY
 PROJECT NO. U-611 (2) (RT. 40) STA. 29+86.00
CITY OF ST. LOUIS

ANCHOR BOLT PLAN AND SHOES

SVERDRUP AND PARCEL, INC.
 CONSULTING ENGINEERS
 ST. LOUIS, MO.

Drawn by: R.V. Butterfield, Sept. 1955
 Traced by:
 Checked by: R.C. West, Sept. 1955

Note: Do not scale this drawing. Follow dimensions.

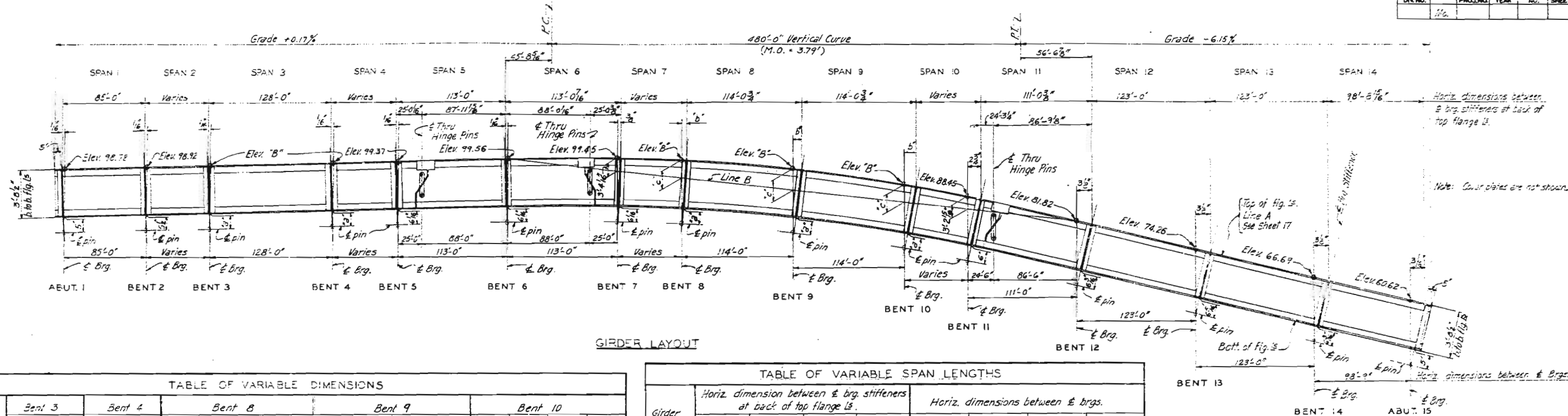


TABLE OF VARIABLE DIMENSIONS

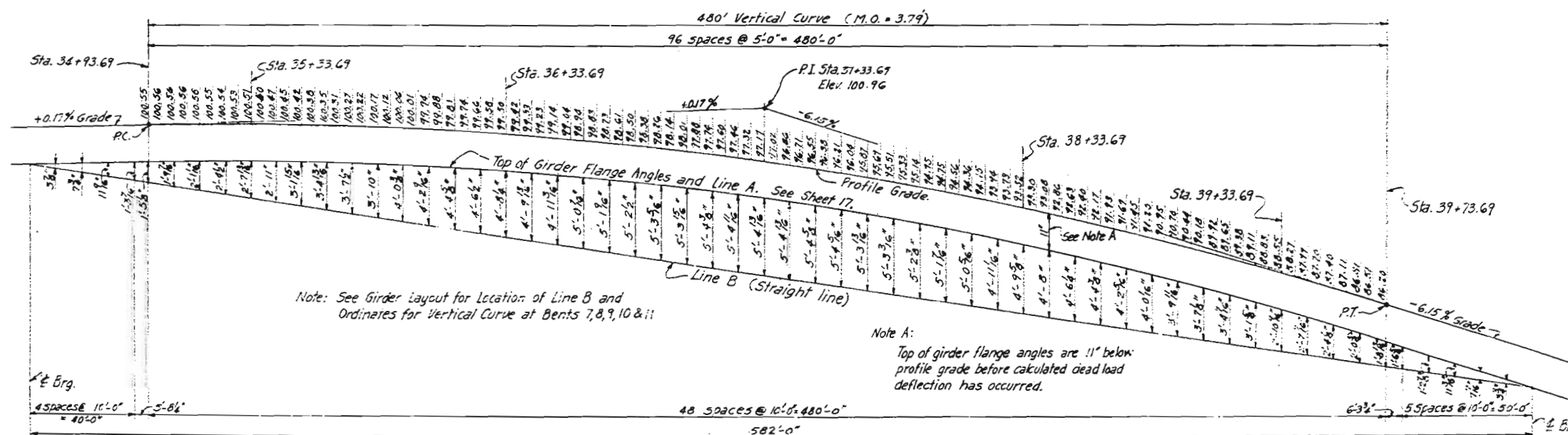
Girder	Bent 3		Bent 4		Bent 8		Bent 9		Bent 10	
	a	Elev. B	a	Elev. B	a	Elev. B	b	c	a	Elev. B
G1-N	5 1/2"	98.95	5 1/2"	99.16	5 3/8"	99.37	7 1/2"	3'-6 1/2"	5 3/8"	99.55
G2-N	6 1/2"	98.97	6 1/2"	99.19	5 7/8"	99.21	9 1/2"	3'-10 1/2"	6 1/2"	99.15
G3-N	6 1/2"	99.00	6 1/2"	99.22	5 5/8"	99.02	11 1/2"	4'-2 5/8"	6 3/8"	96.71
G4-N	6 3/4"	99.04	6 3/4"	99.24	5 3/8"	98.80	3 1/2"	4'-5 5/8"	6"	96.24
G3-S	6 1/2"	99.07	6 1/2"	99.29	5 7/8"	98.33	1 1/2"	4'-10 7/8"	6 3/8"	95.35
G2-S	6 3/8"	99.10	6 5/8"	99.31	5 7/8"	98.01	1 1/2"	5'-0 1/2"	6 1/2"	94.78
G1-S	6 1/2"	99.12	6 1/2"	99.34	5 3/8"	97.65	1 1/2"	5'-2 1/4"	5 3/8"	94.18

TABLE OF VARIABLE SPAN LENGTHS

Girder	Horiz. dimension between & brg. stiffeners at back of top flange is.				Horiz. dimensions between & brgs.			
	Span 2	Span 4	Span 7	Span 10	Span 2	Span 4	Span 7	Span 10
G1-N	15'-4 1/2"	118'-7 3/8"	10'-3 1/2"	119'-9 1/8"	15'-4 1/2"	118'-7 3/8"	10'-3"	117'-9"
G2-N	30'-9"	103'-3"	26'-7 1/2"	103'-5 3/8"	30'-9"	103'-3"	26'-6 1/2"	103'-5 1/2"
G3-N	46'-1 1/2"	87'-10 1/8"	42'-11 1/2"	87'-1 1/2"	46'-1 1/2"	87'-10 1/8"	42'-10 3/8"	87'-1 1/8"
G4-N	61'-6 3/4"	72'-5 1/2"	59'-3 1/4"	70'-9 3/8"	61'-6 3/4"	72'-5 1/2"	59'-2 3/8"	70'-9 1/8"
G3-S	87'-10 1/8"	46'-1 1/2"	87'-1 1/2"	42'-11 1/2"	87'-10 1/8"	46'-1 1/2"	87'-1 1/8"	42'-10 3/8"
G2-S	103'-3"	30'-9"	103'-5 3/8"	26'-7 1/2"	103'-3"	30'-9"	103'-5 1/2"	26'-6 1/2"
G1-S	118'-7 3/8"	15'-4 1/2"	119'-9 1/8"	10'-3 1/2"	118'-7 3/8"	15'-4 1/2"	119'-9"	10'-3"

NOTES

Girders are to be fabricated to the profile grade vertical curve. No dead load camber to be included in fabrication.



PROFILE GRADE ELEVATIONS AND GIRDER LAYOUT ORDINATES FOR VERTICAL CURVE

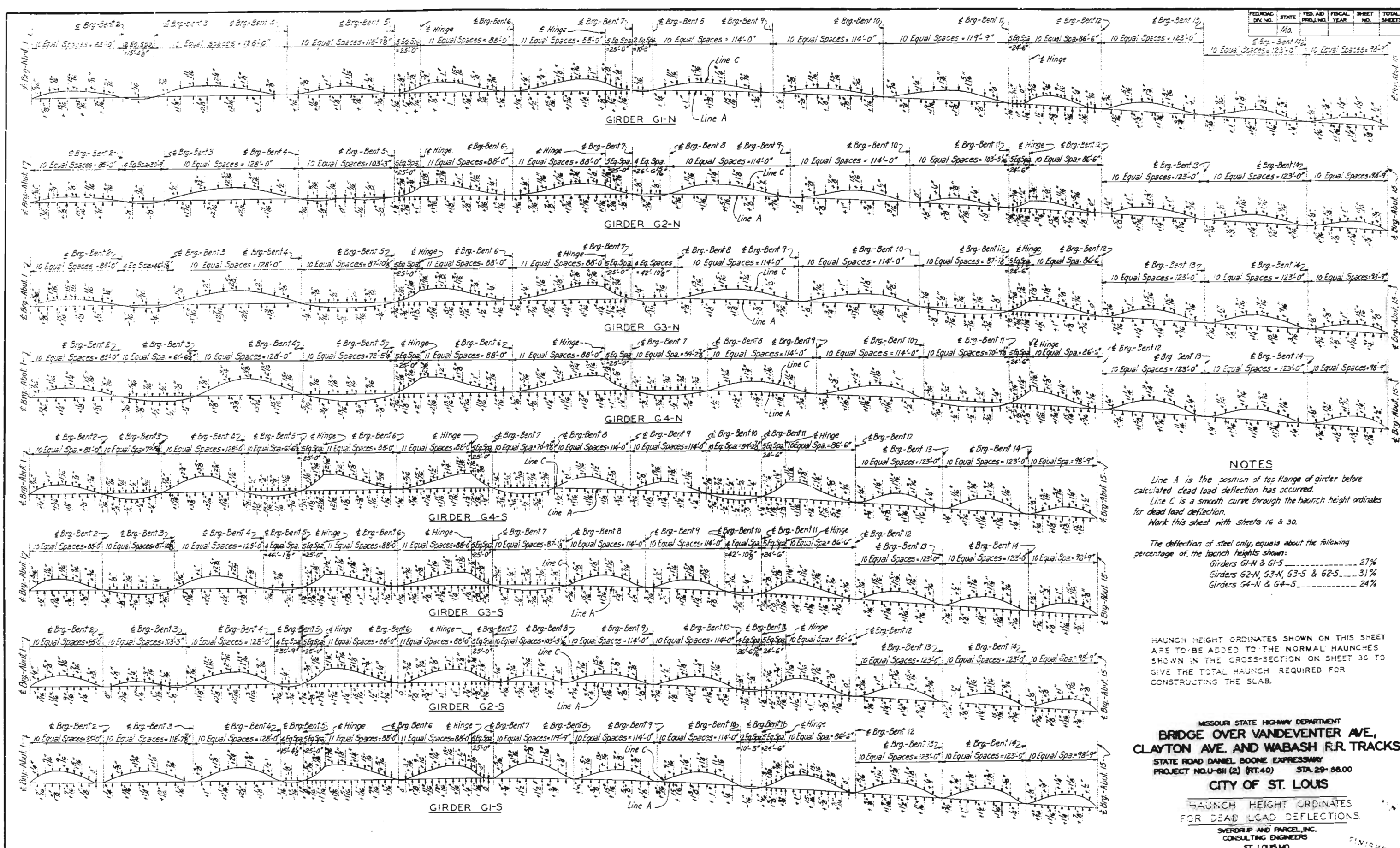
Drawn by: M.A. Razzuck, July 1955
Checked by: W.P. Berry, August 1955

Note: Do not scale this drawing. Follow dimensions.

MISSOURI STATE HIGHWAY DEPARTMENT
BRIDGE OVER VANDEVENTER AVE,
CLAYTON AVE. AND WABASH RR TRACKS
STATE ROAD DANIEL BOONE EXPRESSWAY
PROJECT NO. U-611(2) (RT. 40) STA. 29+66.00
CITY OF ST. LOUIS

GIRDER LAYOUT DIMENSIONS

SVERDRUP AND PARCELL, INC.
CONSULTING ENGINEERS
ST. LOUIS, MO.



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
112	Mo.				

NOTES

Line A is the position of top flange of girder before calculated dead load deflection has occurred.
 Line C is a smooth curve through the haunch height ordinates for dead load deflection.
 Work this sheet with sheets 16 & 30.

The deflection of steel only, equals about the following percentage of the haunch heights shown:

Girders G1-N & G1-S	27%
Girders G2-N, G3-N, G3-S & G2-S	31%
Girders G4-N & G4-S	24%

HAUNCH HEIGHT ORDINATES SHOWN ON THIS SHEET ARE TO BE ADDED TO THE NORMAL HAUNCHES SHOWN IN THE CROSS-SECTION ON SHEET 30 TO GIVE THE TOTAL HAUNCH REQUIRED FOR CONSTRUCTING THE SLAB.

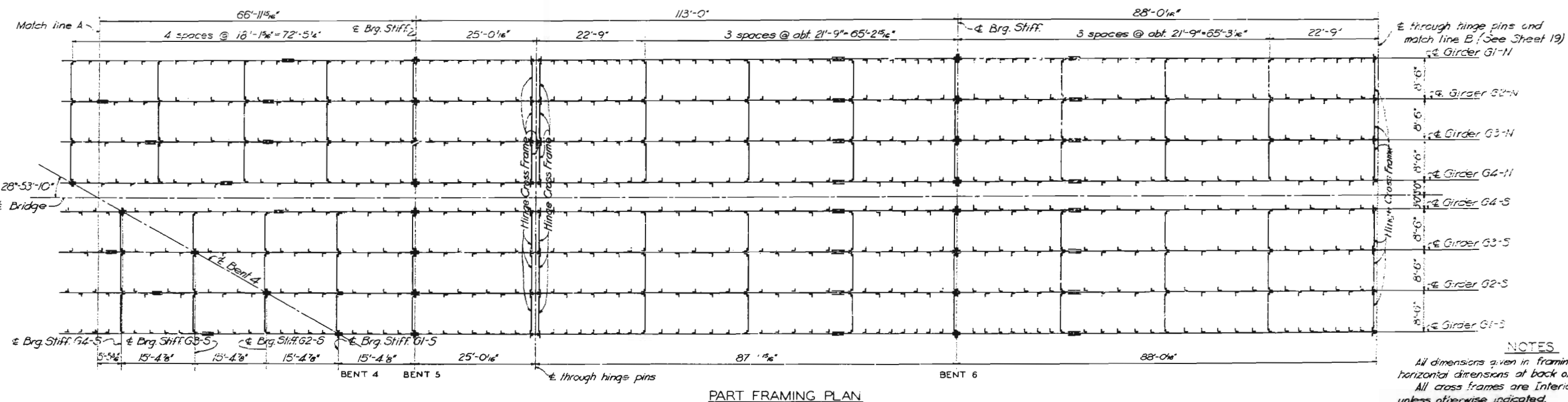
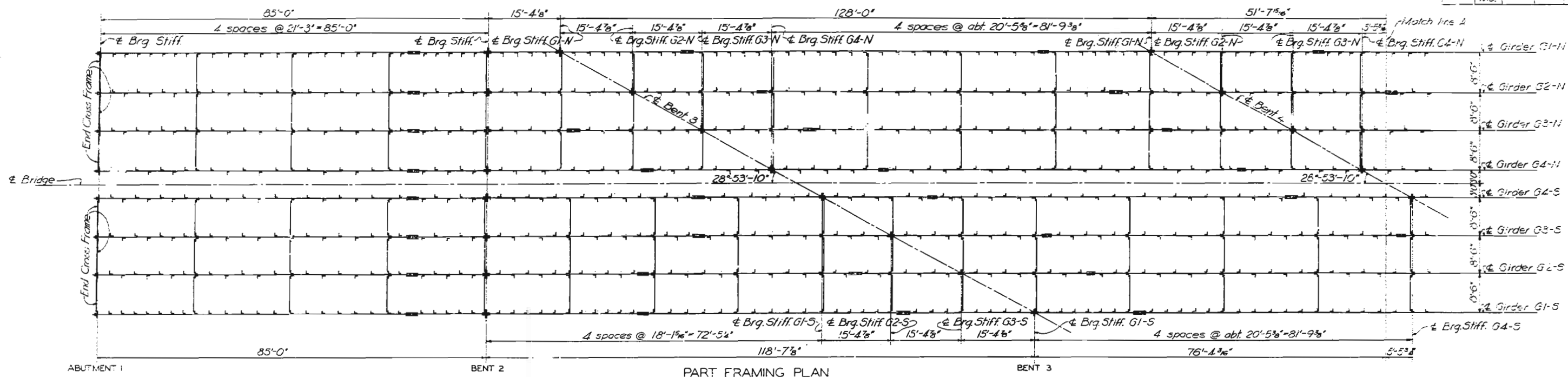
MISSOURI STATE HIGHWAY DEPARTMENT
**BRIDGE OVER VANDEVENTER AVE.,
 CLAYTON AVE. AND WABASH R.R. TRACKS**
 STATE ROAD DANIEL BOONE EXPRESSWAY
 PROJECT N.O.U.-811 (2) (RT.40) STA. 29+88.00
CITY OF ST. LOUIS

HAUNCH HEIGHT ORDINATES
 FOR DEAD LOAD DEFLECTIONS

SVERDRUP AND PARCEL, INC.
 CONSULTING ENGINEERS
 ST. LOUIS, MO.

Drawn by: M.A. Razzack, Aug. 1955
 Checked by: W.R. Berry, Sept. 1955

Note: Do not scale this drawing. Follow dimensions.



NOTES
 All dimensions given in framing plan are truly horizontal dimensions at back of top flange angles.
 All cross frames are Interior Cross Frames unless otherwise indicated.

MISSOURI STATE HIGHWAY DEPARTMENT
**BRIDGE OVER VANDEVENTER AVE,
 CLAYTON AVE. AND WABASH R.R. TRACKS**
 STATE ROAD DANIEL BOONE EXPRESSWAY
 PROJECT NO. U-611(2) (RT. 40) STA. 25+86.00
CITY OF ST. LOUIS

FRAMING PLAN
 ABUTMENT 1 TO HINGE IN SPAN 6
 SVERDRUP AND PARCEL, INC.
 CONSULTING ENGINEERS
 ST. LOUIS, MO.

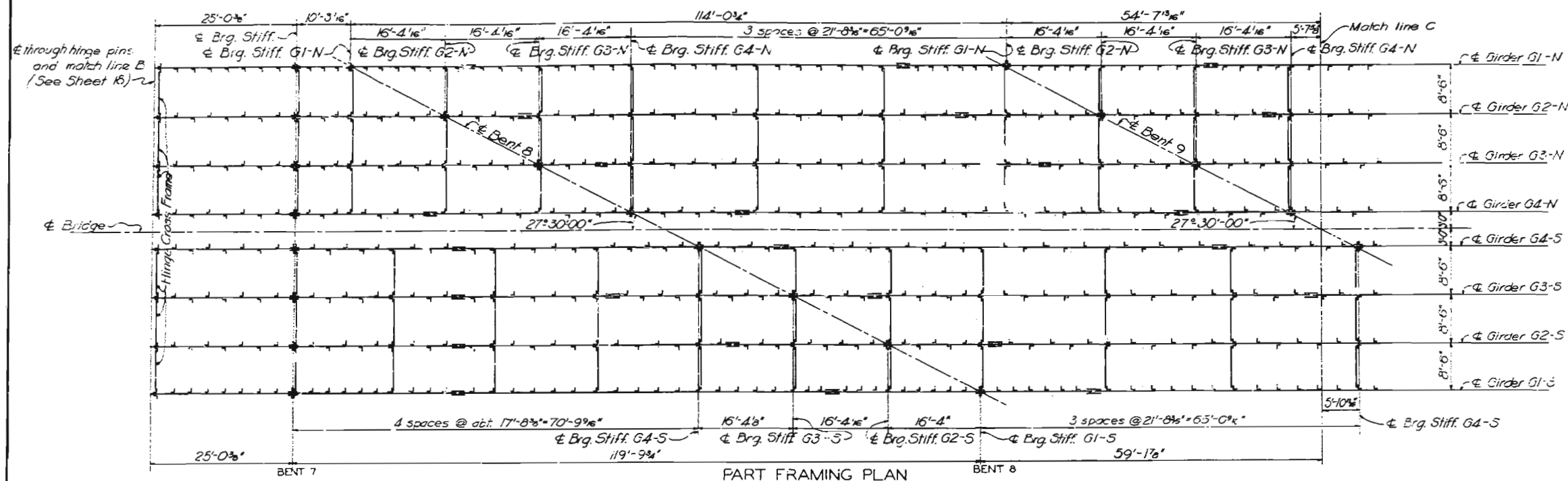
Drawn by: J. Latimann, June 1955
 Checked by: D. Kotakis, Aug. 1955

Note: Do not scale this drawing. Follow dimensions.

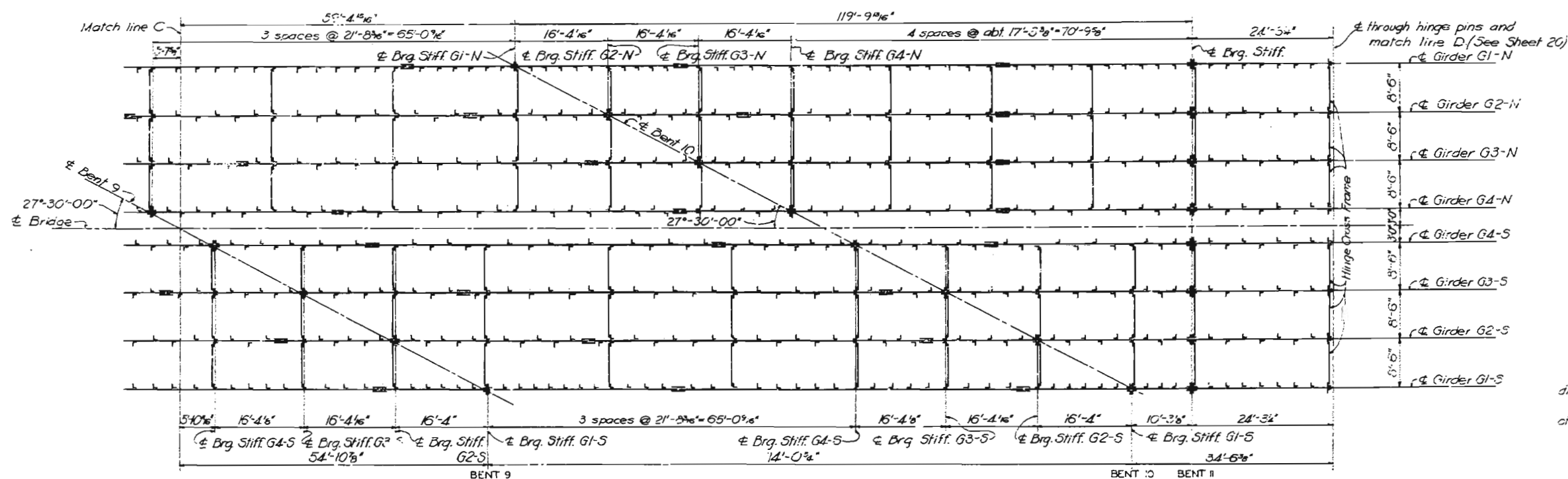
SHEET 18 OF 39

L-667

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	Mo.				



PART FRAMING PLAN



PART FRAMING PLAN

NOTES

All dimensions given in framing plan are truly horizontal dimensions at back of top flange angles.
All cross frames are Interior Cross Frames unless otherwise indicated.

MISSOURI STATE HIGHWAY DEPARTMENT
BRIDGE OVER VANDEVENTER AVE,
CLAYTON AVE AND WABASH RR TRACKS
STATE ROAD DANIEL BOONE EXPRESSWAY
PROJECT NO. U-811 (2) (RT. 40) STA. 29+66.00
CITY OF ST. LOUIS

FRAMING PLAN
HINGE IN SPAN 6 TO HINGE IN SPAN 11
SVERDRUP AND PARCEL, INC.
CONSULTING ENGINEERS
ST. LOUIS, MO.

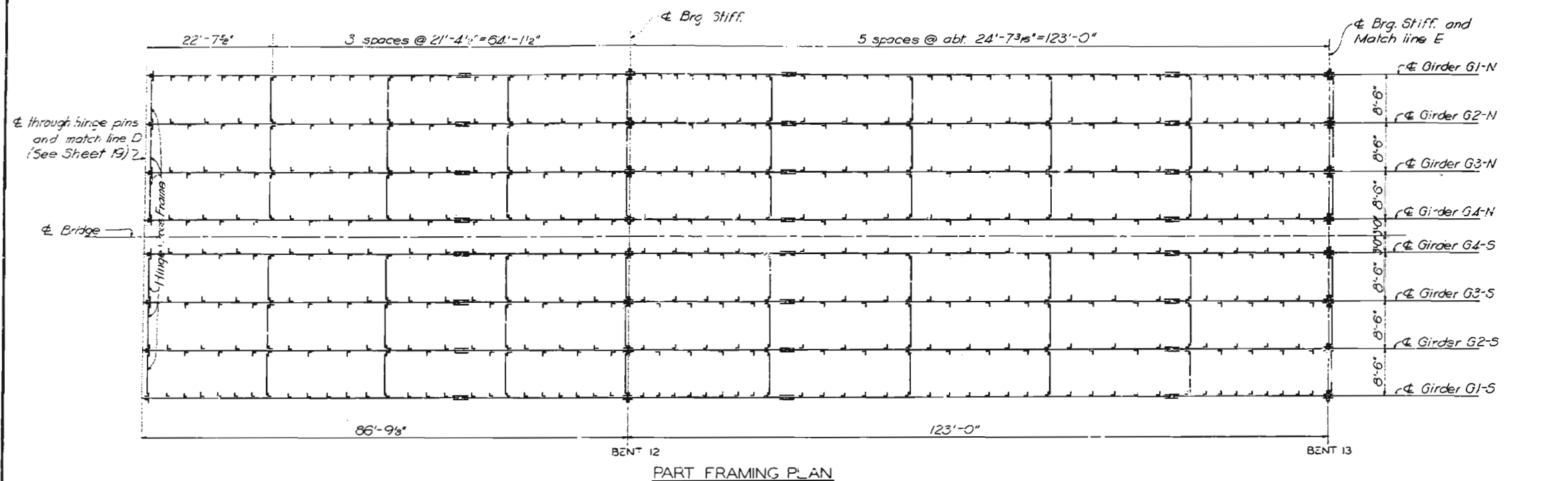
Drawn by: J. Lottman, June 1955.
Checked by: D. Kotakis, Aug. 1955.

Note: Do not scale this drawing. Follow dimensions.

SHEET 19 OF 39

L-667

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	Mo.				



STRUCTURAL STEEL DETAIL NOTES

Rivets shall be 3/4" except where otherwise noted.
All field connections shall be riveted except as noted on the plans. Where desired, shop and field rivets may be interchanged for convenience.

The length of cover plates may be as shown on the Girder Elevations without correcting to sloping dimensions. Cover plates shall have a staggered rivet spacing of 3" for at least 2'-0" from end of plate, gradually increasing to a maximum of 5". The end of each cover plate shall have sufficient number of rivets to develop its full stress before the end of the next outside plate is reached.

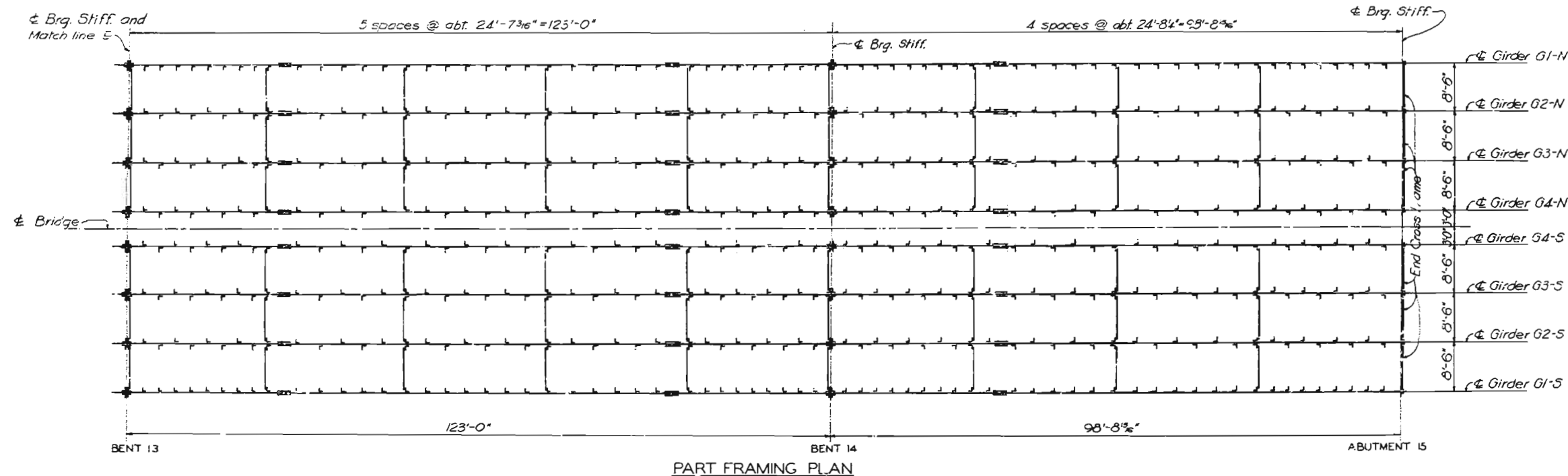
All cover plates and flange splice plates shall be universal mill plates.

Girders shall be cambered for vertical curve.

In lieu of crimping stiffener angles, the fabricator may provide fills at his own expense.

All splices shown on the Framing Plans and Girder Elevations are Field Splices. Splices are to be located substantially as shown, but may be shifted slightly in either direction if so desired.

The relative location and spacing of shear connectors shall essentially be as shown on the drawings, however, slight shifting will be permitted to match appropriate rivet pitch on cover plates.



NOTES

All dimensions given in framing plan are truly horizontal dimensions at back of top flange angles.

All cross frames are interior cross frames unless otherwise indicated.

MISSOURI STATE HIGHWAY DEPARTMENT
BRIDGE OVER VANDEVENTER AVE.,
CLAYTON AVE. AND WABASH R.R. TRACKS
STATE ROAD DIST. NO. 100
PROJECT NO. U-811(2) (RT. 40) STA. 29760.00
CITY OF ST. LOUIS

FRAMING PLAN
HINGE IN SPAN II TO ABUT. 15

SVERDRUP AND PARCEL, INC.
CONSULTING ENGINEERS
ST. LOUIS, MO.

FINISHED

L-667

1237-1
555-405
Drawn by: J. Lottmann, June 1955.
Checked by: D. Kotakis, Aug. 1955.

Note: Do not scale this drawing. Follow dimensions.

SHEET 20 OF 39



NOTES

All dimensions given in elevation of girder are truly horizontal dimensions at back of top flange angles.
 All stiffeners shall be 5" x 3 1/2" x 1/2" L except where otherwise indicated.
 All fill plates on bottom flange & bearing stiffeners to be 14" x 1'-0" and shall be bolted to girder for shipment.
 Material designated (A.S.) is Structural Low-Alloy Steel; all other material is Structural Carbon Steel.
 Bottom cover plates are the same as top cover plates.

MISSOURI STATE HIGHWAY DEPARTMENT
 BRIDGE OVER VANDEVENTER AVE,
 CLAYTON AVE. AND WABASH R.R. TRACKS
 STATE ROAD DANIEL BOONE EXPRESSWAY
 PROJECT NO. U-811 (2) (7E-40) STA. 29+68.00
 CITY OF ST. LOUIS

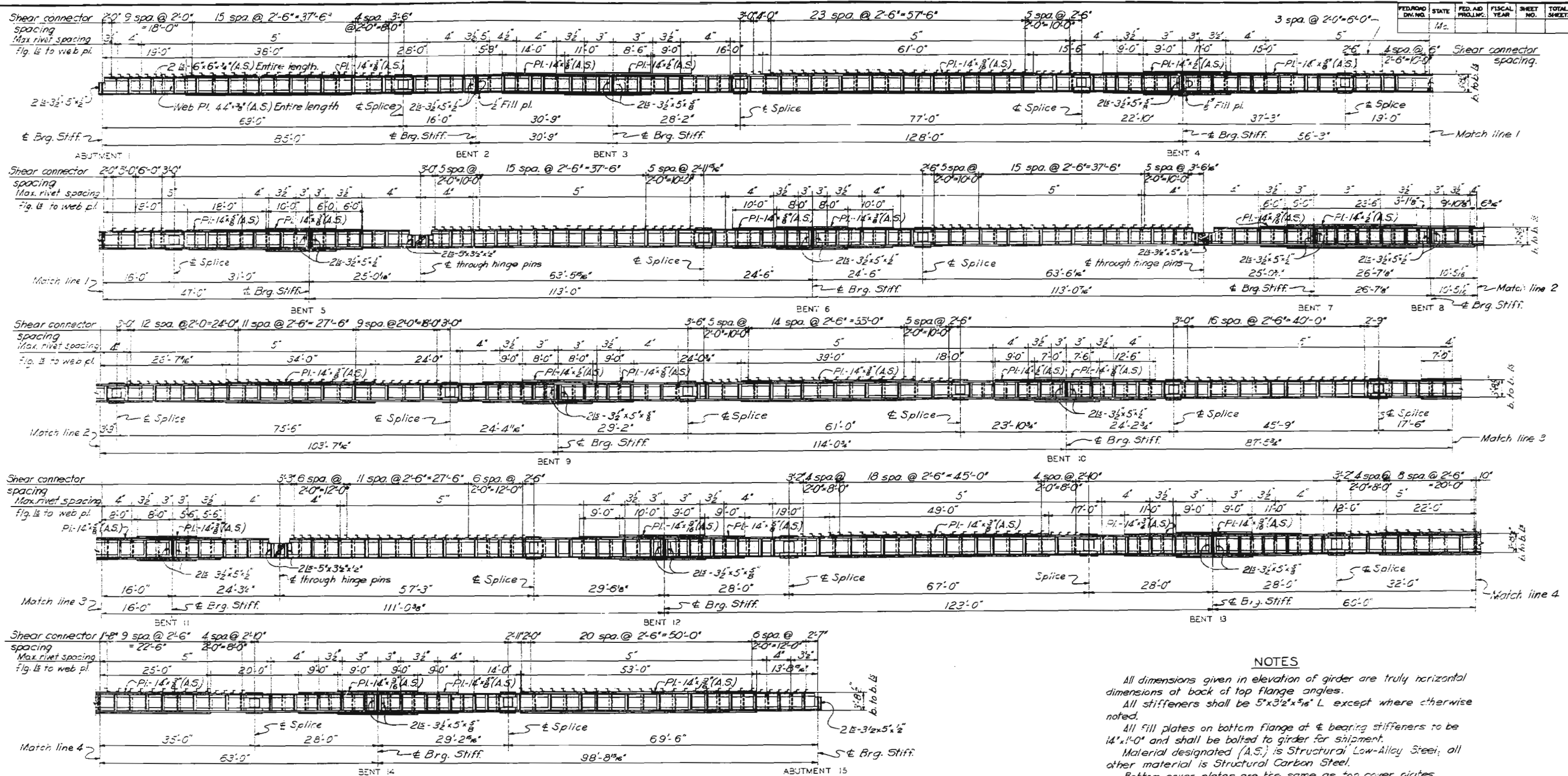
ELEVATION OF GIRDER GI-N

SVERDRUP AND PARTNER, INC.
 CONSULTING ENGINEERS
 ST. LOUIS, MO.

GIRDER GI-N

Note: Do not scale this drawing. Follow dimensions.

Drawn by: J. Lettmann, July 1955.
 Checked by: D. Kohnis, Sept. 1955.



GIRDER G2-N

NOTES

1. All dimensions given in elevation of girder are truly horizontal dimensions at back of top flange angles.
2. All stiffeners shall be 5"x3 1/2"x5/16" L except where otherwise noted.
3. All fill plates on bottom flange at bearing stiffeners to be 14"x1'-0" and shall be bolted to girder for shipment.
4. Material designated (A.S.) is Structural Low-Alloy Steel; all other material is Structural Carbon Steel.
5. Bottom cover plates are the same as top cover plates.

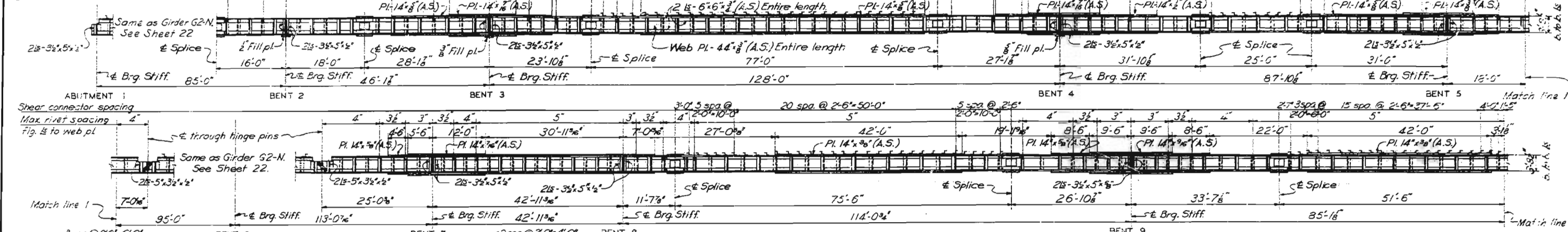
MISSOURI STATE HIGHWAY DEPARTMENT
**BRIDGE OVER VANDEVENTER AVE,
 CLAYTON AVE. AND WABASH R.R. TRACKS**
 STATE ROAD DANIEL BOONE EXPRESSWAY
 PROJECT NO. U-811(2) (RT. 40) STA. 29+66.00
CITY OF ST. LOUIS

ELEVATION OF GIRDER G2-N

SVERDRUP AND PARCEL, INC.
 CONSULTING ENGINEERS
 ST. LOUIS, MO.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
110.	Mo.				

Shear connector spacing
Max. rivet spacing
Fig. 15 to web pl.

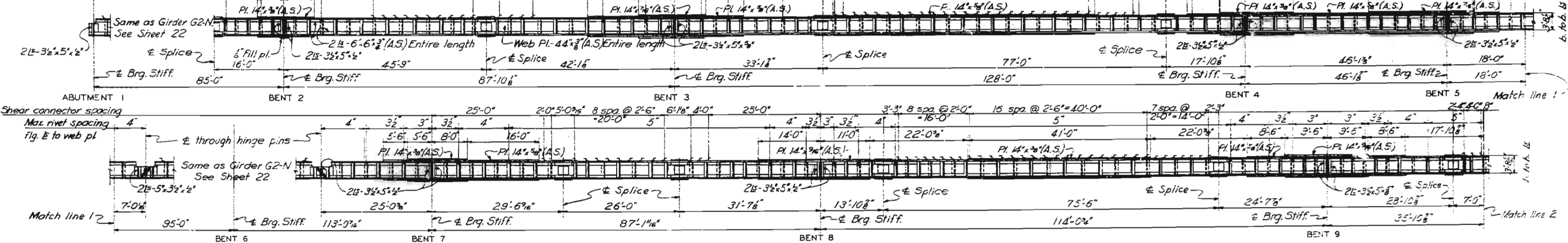


NOTES

All dimensions given in elevations of girders are truly horizontal dimensions of back of top flange angles.
All stiffeners shall be 5x3/2x5/8 L except where otherwise noted.
All fill plates on bottom flange of bearing stiffeners to be 14x1-0 and shall be bolted to girder for shipment.
Material designated (A.S.) is Structural Low-Alloy Steel, all other material is Structural Carbon Steel.
Bottom cover plates are the same as top cover plates.

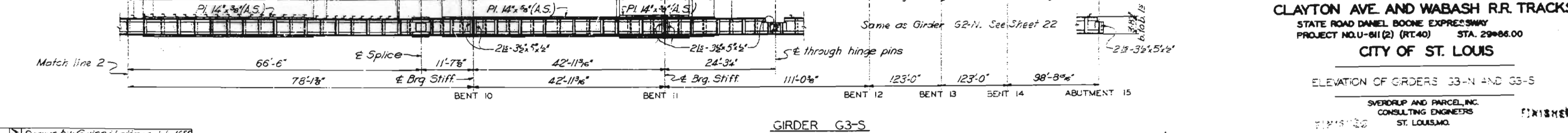
GIRDERS G2-N

Shear connector spacing
Max. rivet spacing
Fig. 15 to web pl.



GIRDERS G3-N

Shear connector spacing
Max. rivet spacing
Fig. 15 to web pl.



GIRDERS G3-S

MISSOURI STATE HIGHWAY DEPARTMENT
BRIDGE OVER VANDEVENTER AVE.
CLAYTON AVE. AND WABASH R.R. TRACKS
STATE ROAD DANIEL BOONE EXPRESSWAY
PROJECT NO. U-811(2) (RT.40) STA. 29+86.00
CITY OF ST. LOUIS

ELEVATION OF GIRDERS G3-N AND G3-S

SVERDRUP AND PARCEL, INC.
CONSULTING ENGINEERS
ST. LOUIS, MO.

FINISHED

Drawn by: G. L. Laitman, July 1955
Checked by: D. Katakis, Sept. 1955

Note: Do not scale this drawing. Follow dimensions.

SHEET 23 OF 39

L-667



GIRDER G4-N

MISSOURI STATE HIGHWAY DEPARTMENT
 BRIDGE OVER VANDEVENTER AVE.
 CLAYTON AVE. AND WABASH R.R. TRACKS
 STATE ROAD DANIEL BOONE EXPRESSWAY
 PROJECT NO. U-611(2) (RT. 40) STA. 29+86.00
 CITY OF ST. LOUIS

ELEVATION OF GIRDER G4-N

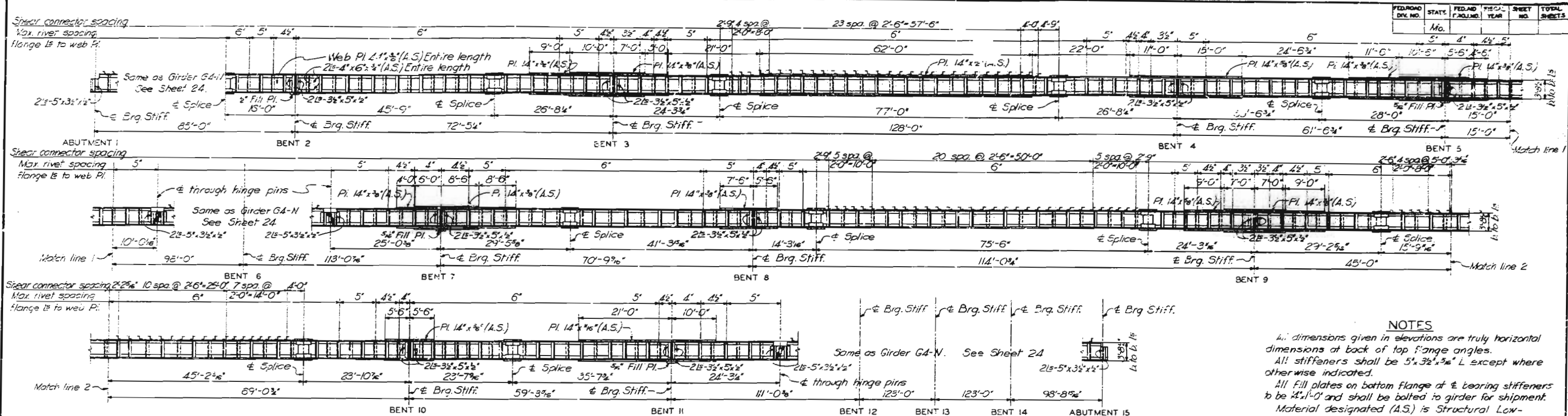
SVERDRUP AND PARCEL, INC.
 CONSULTING ENGINEERS
 ST. LOUIS, MO.

Note: Do not scale this drawing. Follow dimensions.

SHEET 24 OF 39

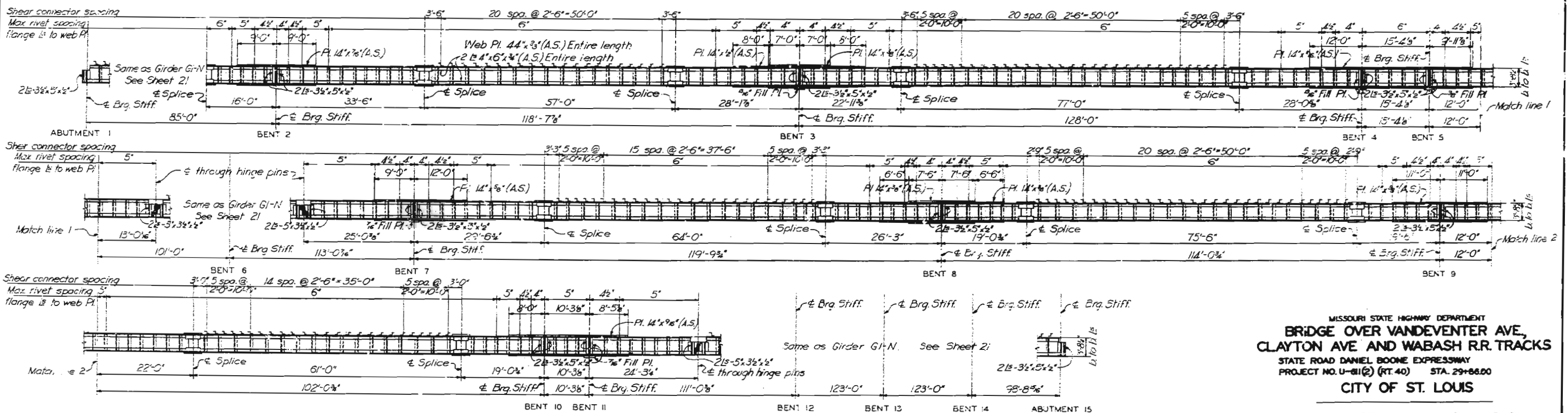
L-667

Drawn by: J. Lottmann, July 1955
 Checked by: C. Kotakis, Sept. 1955



GIRDER G4-S

NOTES
All dimensions given in elevations are truly horizontal dimensions at back of top flange angles.
All stiffeners shall be 5" x 3/8" x 5/8" L except where otherwise indicated.
All fill plates on bottom flange of bearing stiffeners to be 1/2" x 1'-0" and shall be bolted to girder for shipment.
Material designated (A.S.) is Structural Alloy Steel, all other material is Structural Carbon Steel.
Bottom cover plates are the same as top cover plates.



GIRDER G1-S

MISSOURI STATE HIGHWAY DEPARTMENT
**BRIDGE OVER VANDEVENTER AVE,
CLAYTON AVE AND WABASH R.R. TRACKS**
STATE ROAD DANIEL BOONE EXPRESSWAY
PROJECT NO. U-81(2) (RT. 40) STA. 29+86.00
CITY OF ST. LOUIS

ELEVATIONS OF GIRDERS G4-S AND G1-S

SVERDRUP AND PARCEL, INC.
CONSULTING ENGINEERS
ST. LOUIS, MO.

FINISHED

Note: Do not scale this drawing. Follow dimensions.

SHEET 25 OF 39

L-667

12371
555477
Drawn by: J. Lottmann, July 1955
Checked by: D. Kotakis, Sept. 1955

[illegible]

Hand-drawn cross-section diagram of a bridge abutment. The diagram shows a vertical structure with a horizontal top surface labeled "Horizontal". Above the structure, dimensions are given: 4' 4", 11 1/2", 8", and "at Profile Grade". A horizontal line is labeled "Down Grade". The structure has a sloped side labeled "Bk, 15°". A vertical line is labeled "Bearing Stiffener". A horizontal line is labeled "Horizontal". A vertical line is labeled "Front Face of Abutment Backwall". A horizontal line is labeled "Pin". A vertical line is labeled "Bearing". A horizontal line is labeled "1' 3/4\"".

Diagram illustrating a bent pile under horizontal and vertical loads. The pile is shown with a horizontal section and a bent section. The horizontal section is labeled "Horizontal" and the bent section is labeled "1/4" Bent Pl. (A.S.)". The angle of the bent section is indicated as $\theta = 60^\circ$. The vertical load is labeled E_v and the horizontal load is labeled E_h . The pile is shown with a cross-section of 1/4" bent plate (A.S.).

PLAN SHOWING CUTTING OF FINGER PLATE

Labels and dimensions in the plan view include:

- Top edge: 4" Spacing, 3 1/4"
- Left edge: Gutter Line 2, 3/8" Rad., 1/2" Cut.
- Right edge: 1/2" Bridge, 4 3/8", 9", 8 1/2"
- Bottom edge: 28-0"

TYPICAL
ROADWAY BRIDGE

tensile bolts @
abt. 1'-0" ctrs.

Raised Pattern Pl.
 $\frac{1}{4}$ " Pl.
3" leg
L-2"x28"x4"
 $\frac{1}{2}$ " holes for $\frac{3}{4}$ " high tensile bolts
Finger Pl.
Bent Pl.
15" I
 $\frac{1}{2}$ " holes in Pc. L, $\frac{1}{2}$ " x $\frac{1}{4}$ " slots
in 15" I diaph. for $\frac{3}{4}$ " high
tensile bolts.
 $\frac{1}{2}$ " holes in Pc. L, $\frac{1}{2}$ " x $\frac{1}{4}$ " slots in
upper L for $\frac{3}{4}$ " high tensile bolts.
Cross Frame Conn. Pl.
See N.

15' 8" 3'
2' 3"
15' 3"
27' 11 1/2" to Bridge
1'-6"
1'-10 1/2"
1'-6"

L-22"x28"x4"
L-26"x38"x4"
L-22"x38"x4"
Pc. 15" C

s in stiffener IS and
frame conn. pl., $\frac{1}{2}$ " x $\frac{1}{4}$ "
in Pc. L for $\frac{3}{4}$ "
tensile bolts

4'-8" Sq. x 5'

TYPICAL SECTION THRU
ROADWAY EXPANSION DEVICE

Hand-drawn structural detail of a butt wall connection. The diagram shows a vertical wall section with a horizontal reinforcement bar (4-#5 bars) and a horizontal stiffener (E Brq. Stiffener). Dimensions include 18 inches for the wall thickness, 11 inches for the stiffener width, and 12 inches for the stiffener height. A note indicates "See Note A" and another note says "Front Face of Butt Backwall". A dimension of 12 inches is also shown for the stiffener height.

Down Grade

9 1/2"

2 1/2" - 1 1/2"

7"

W.P.

Safety Curb

See Note "A"

Horizontal

Top of Safety Curb

11 1/2"

22' 4 1/2" 3"

1' 3" 10" 1 1/2"

Br. Stiffener

Pin

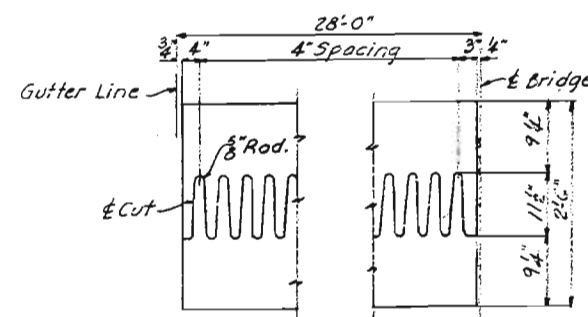
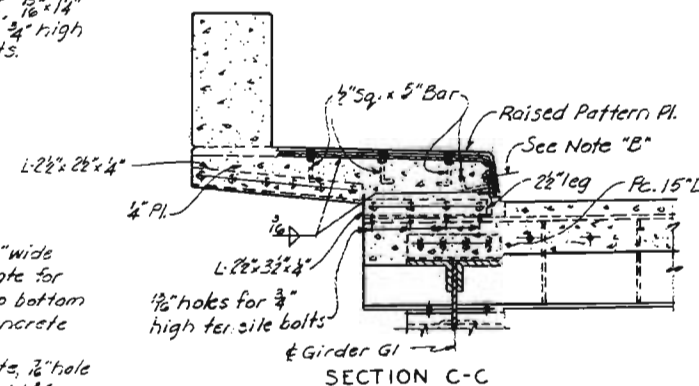
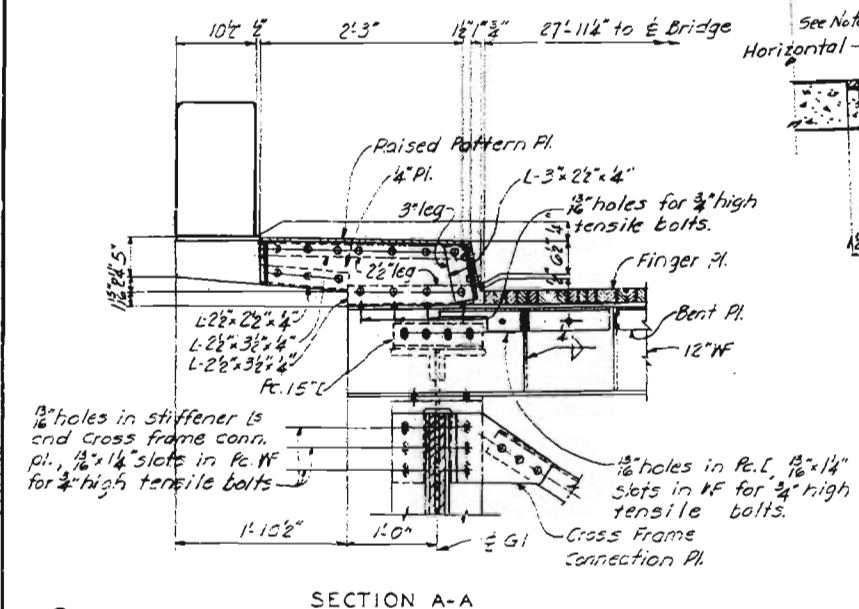
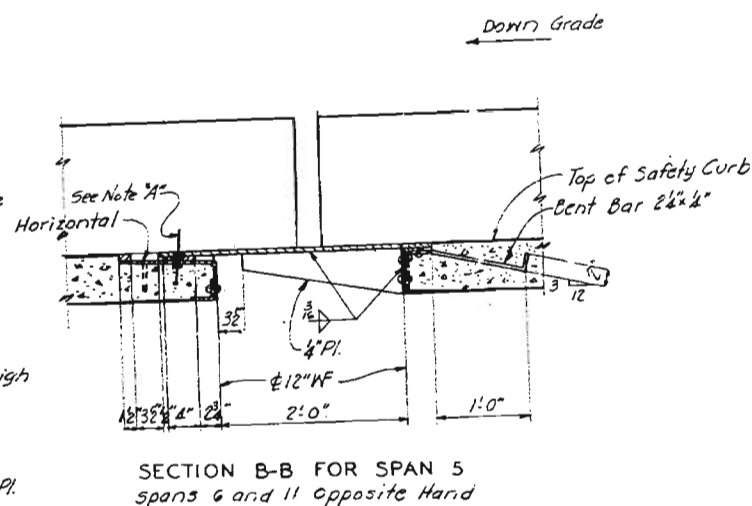
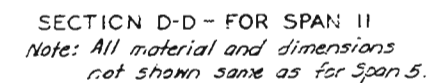
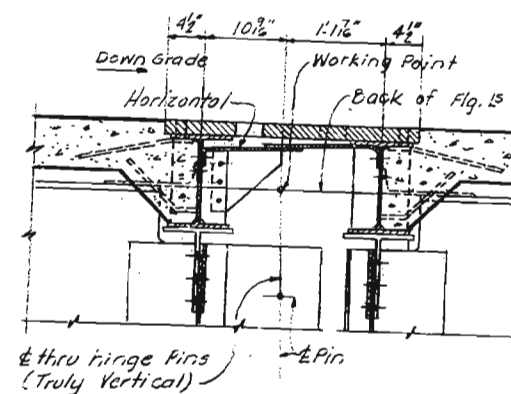
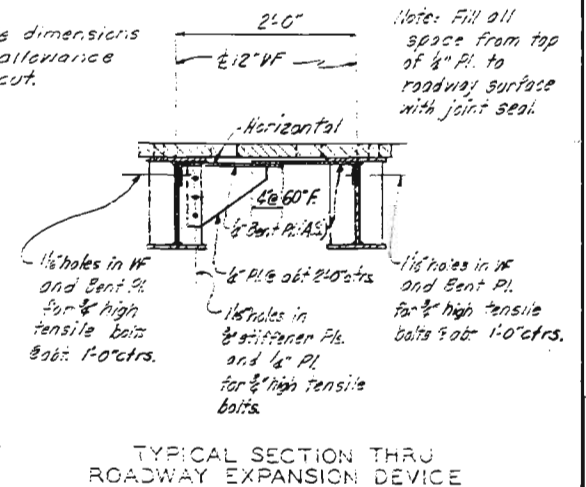
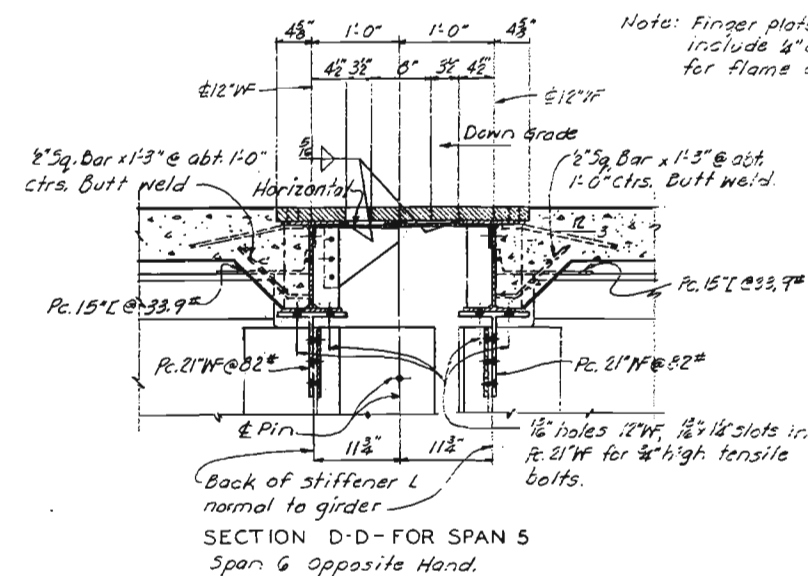
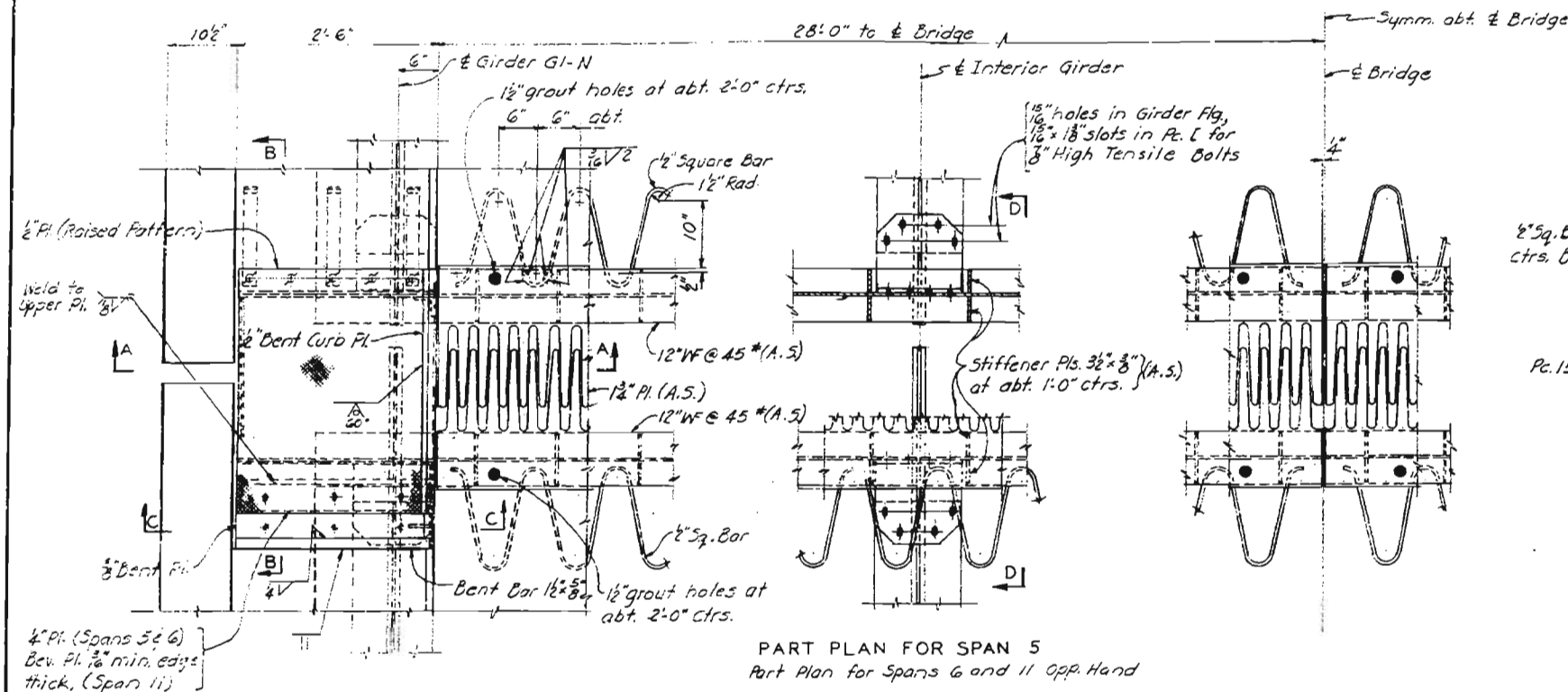
Front Face of Abut. Backwall

L-667

96

Drawn by: T. V. Dillon, June 1955
Checked by: R. C. West, Sept. 1955

FED. ROAD DIV. NO.	STATE	FED. AID PROG. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	172				



PLAN SHOWING CUTTING
OF FINGER FLATE

EXPANSION DEVICE NOTES

The expansion device is shown in the normal position at a temperature of 60°F. Flame cutting of finger plate shall be as narrow as practicable and shall not exceed 4" width. A mechanical guide shall be used to guide the cutting torch. All burrs shall be ground smooth.

All material marked (A.S.) shall be structural Low-Alloy Steel. All other material shall be structural Carbon Steel.

Expansion devices in spans 5, 6 and 11 shall not be finally adjusted and connected until the entire bridge slab with the exception of Pour 13 is in place.

Rivets in safety curb expansion device are $\frac{3}{4}$ ":
Weld symbols shown thus $\frac{3}{4}$ " indicate $\frac{3}{4}$ "
fillet weld at arrow side and other side of joint
or member. (Refer to American Welding Society
standard welding symbols).

No part of expansion device may be spliced.

MISSOURI STATE HIGHWAY DEPARTMENT

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CLAYTON AVE. AND WABASH R.R. TRACKS

STATE ROAD DANIEL BOONE EXPRESSWAY
PROJECT NO. U-6M (2) (RT. 40) STA. 29+86.00

CITY OF ST. LOUIS

EXPANSION DEVICES
IN SPANS 5, 6 & 11

SVERDRUP AND PARCEL, INC.
CONSULTING ENGINEERS
ST. LOUIS, MO.

SMASHED

SHEET 29 OF 39

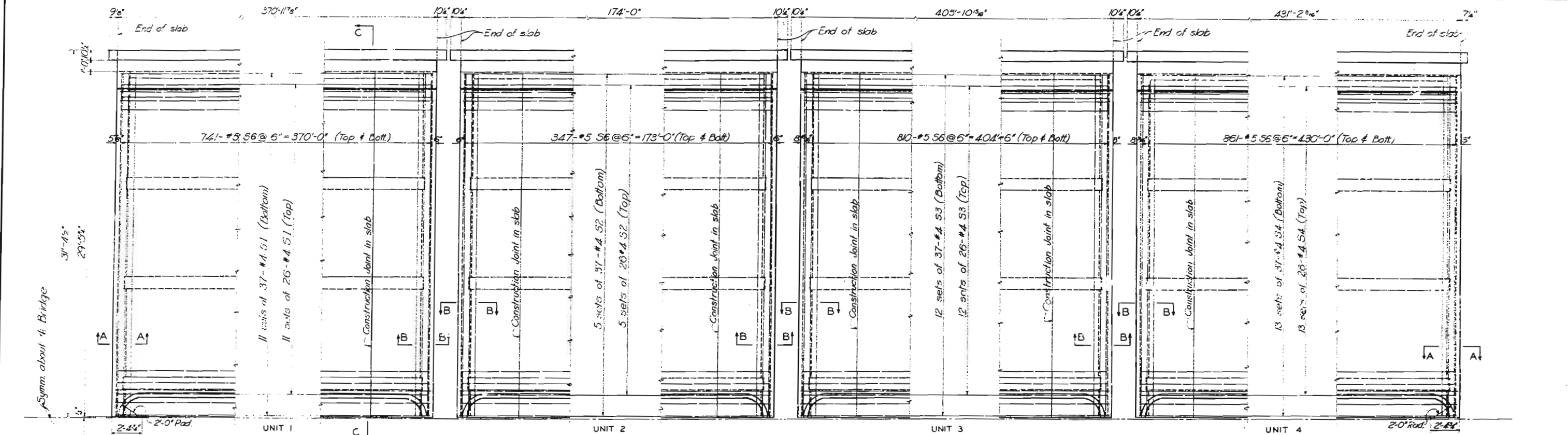
L-667

Note: Do not scale this drawing. Follow dimensions.

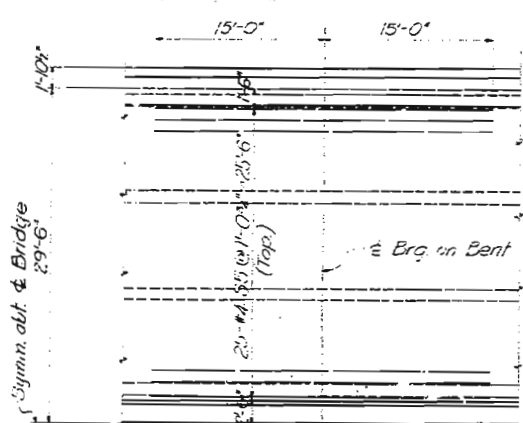
Note "A" - $7/8 \times 1 1/2$ " slot in top and 4" wide plate, $1 1/2$ " hole in bottom plate for $3/8$ " bolt. Weld $3/8$ " sq. nut to bottom plate. Remove bolt after concrete has set.

Note 3"- 7/8" x 12" slot in outside plate, 7/8" hole in inside plate for 3/8" bolt. Weld 3/8" sq. nut to inside plate. Remove bolt after concrete has set.

1297-1	Drawn by: T.V. Diller, June 1955
555316	Checked by: R.C. West, Sept. 1955

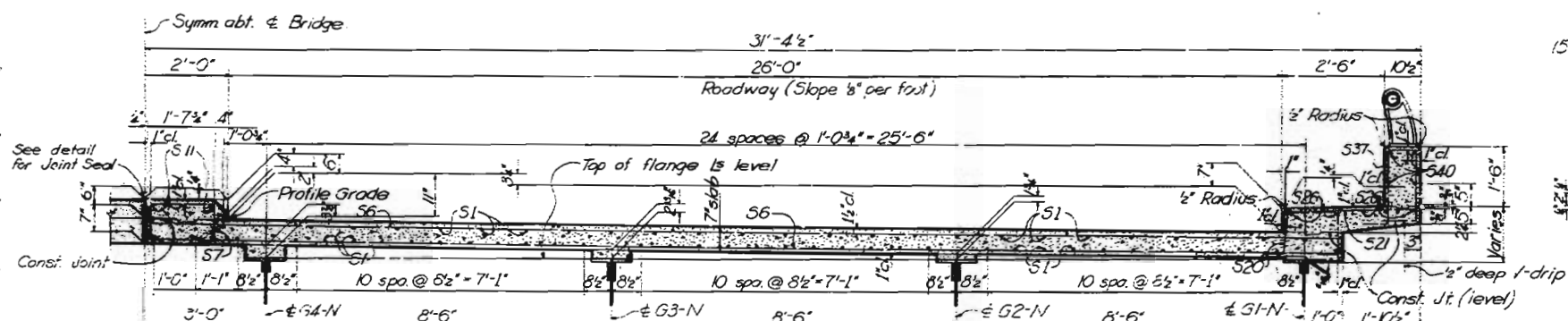


HALF PLAN OF SLAB



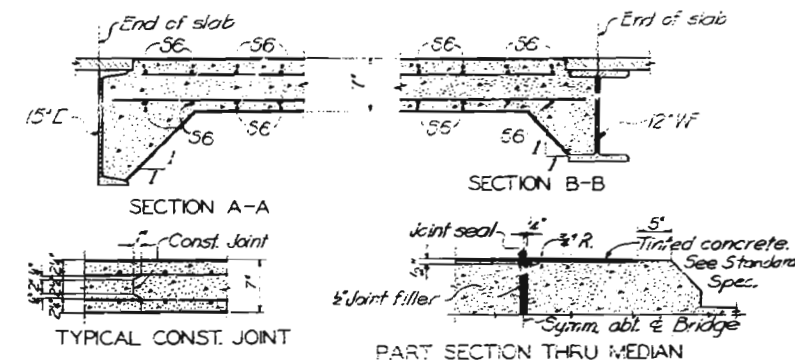
TYPICAL HALF PLAN AT BENTS

Bars S5 as shown shall be used in addition to the reinforcement billed in the Half Plan of Slab above. Skewed bents similar.



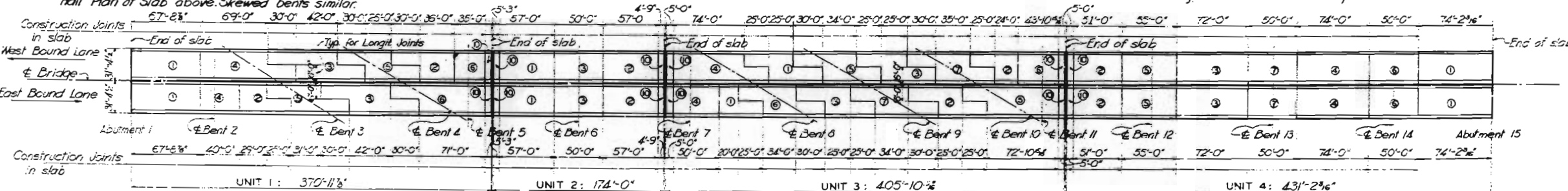
HALF CROSS SECTION C-C
Section is similar throughout the bridge.

Note: Haunch height ordinates for dead load deflection shown on Sheet 17 are to be added to those shown to give total haunch required for construction.



NOTES

* All longitudinal dimensions are along Profile Grade line.



KEY PLAN SHOWING LOCATION OF CONSTRUCTION JOINTS AND POURING SEQUENCE

Pours shall be made in the sequence indicated thus ①, for each unit. It is not necessary to make simultaneous pours of the East Bound and West Bound lanes. Construction shall begin with unit 1 and progress to unit 4 or vice versa. Pours ② are to be made after adjacent units are poured and Expansion Devices are adjusted.

Note: Do not scale this drawing. Follow dimensions.

MISSOURI STATE HIGHWAY DEPARTMENT
**BRIDGE OVER VANDEVENTER AVE.,
CLAYTON AVE. AND WABASH RR. TRACKS**
STATE ROAD DANIEL BOONE EXPRESSWAY
PROJECT NO. U-811(2) (RT.40) STA. 29+88.00
CITY OF ST. LOUIS

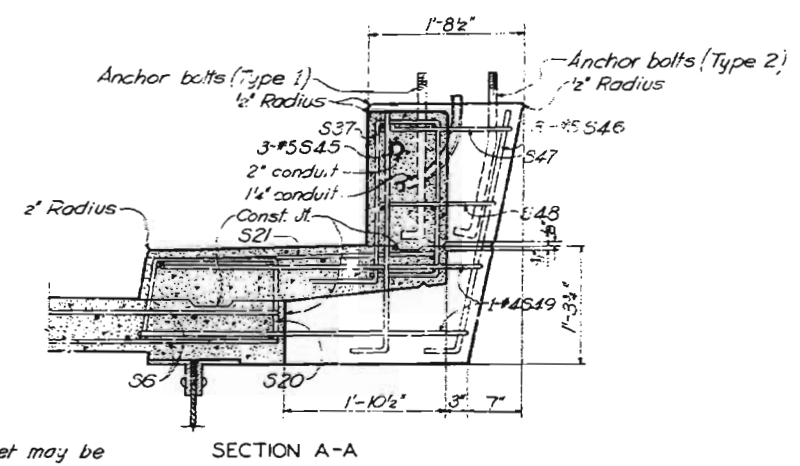
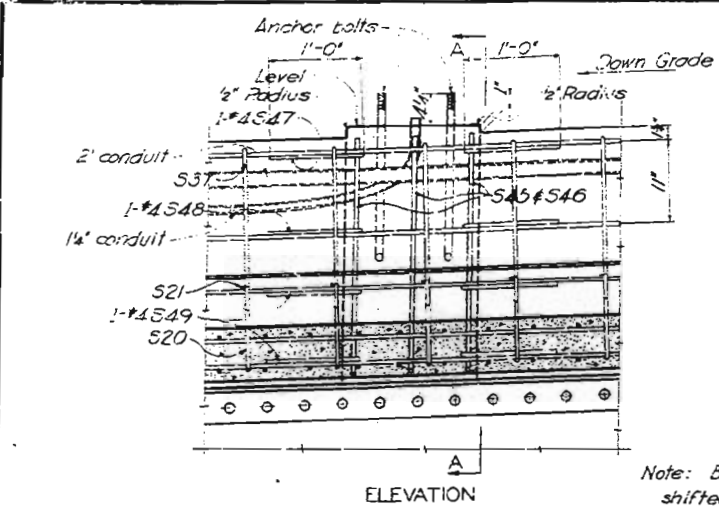
SLAB

FIG. 1

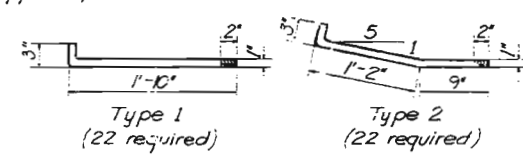
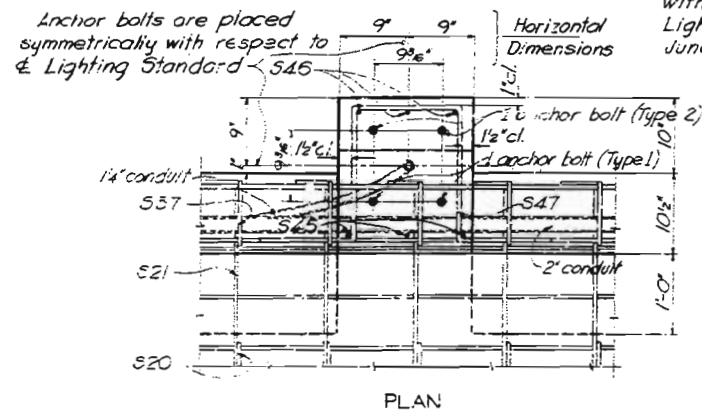
FINISHED

SVERDRUP AND PARCEL, INC.
CONSULTING ENGINEERS
ST. LOUIS, MO.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Mo.					

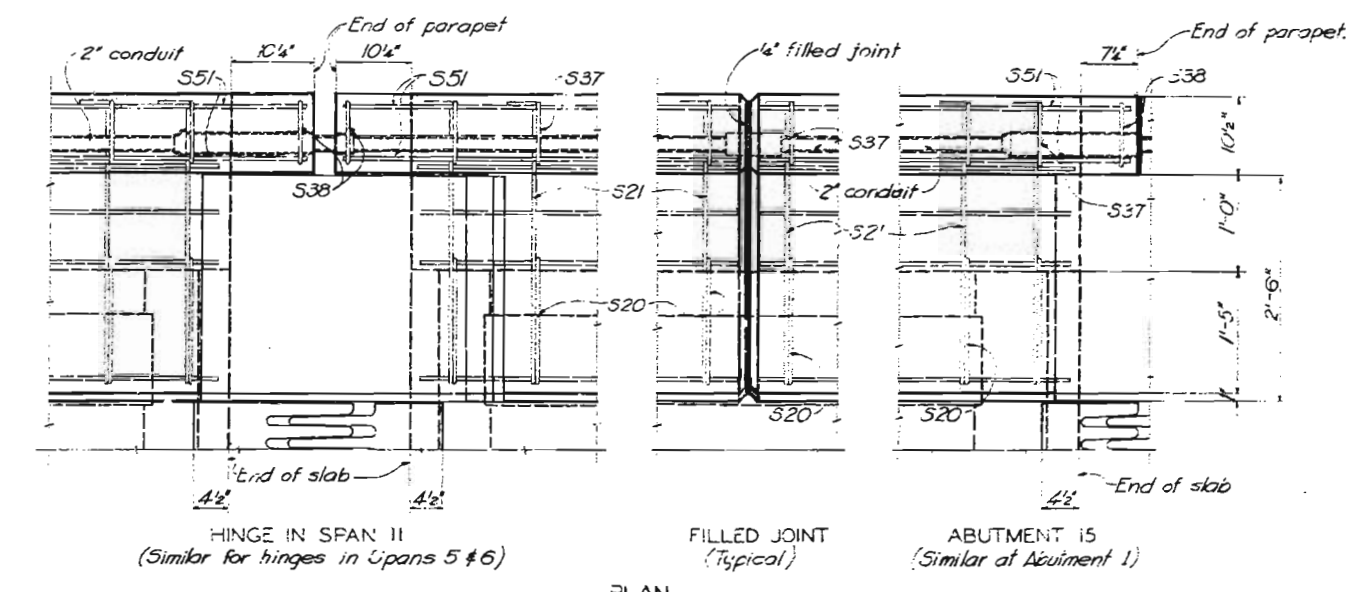
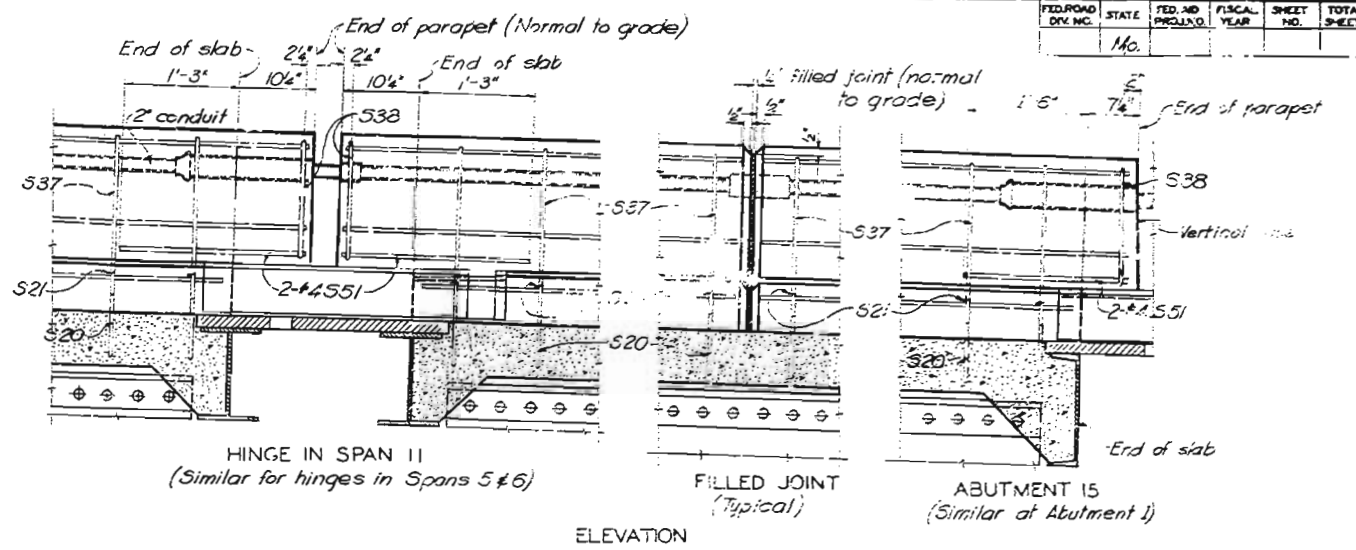
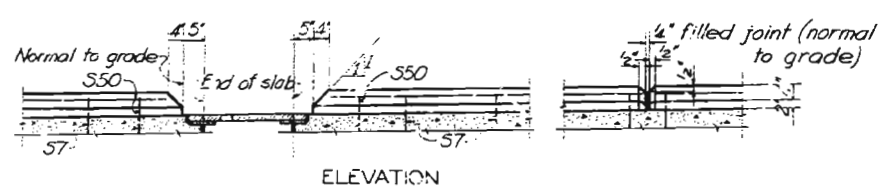


Note: Bars in parapet may be shifted slightly to avoid interference with bolts of reinforcement in Lighting Standard Supports, or Junction Boxes.



ANCHOR BOLTS
Anchor Bolts shall be furnished complete with std. hex nuts & washers, all galvanized. For additional anchor bolts required for Lighting Standard Supports on retaining walls see sheet 14

LIGHTING STANDARD SUPPORT DETAILS

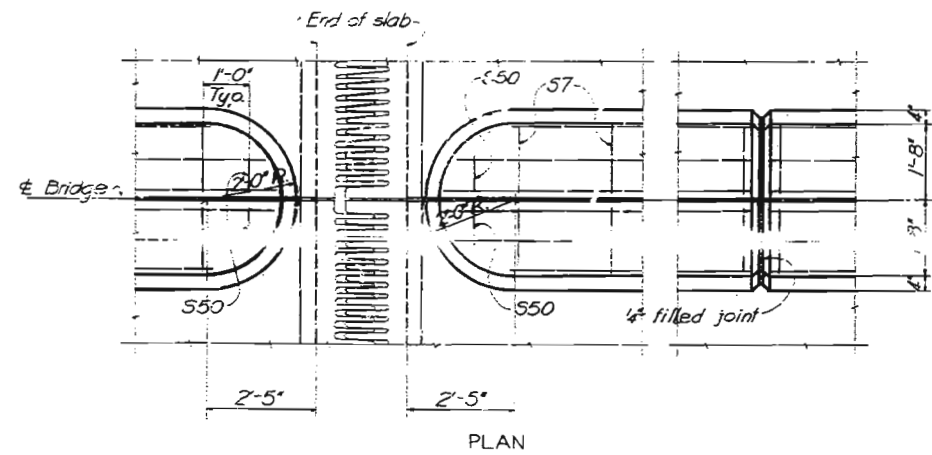


SAFETY CURB AND PARAPET DETAILS

Note: Slab reinforcing not shown.

NOTES

Longitudinal dimensions are along Profile Grade unless shown otherwise.



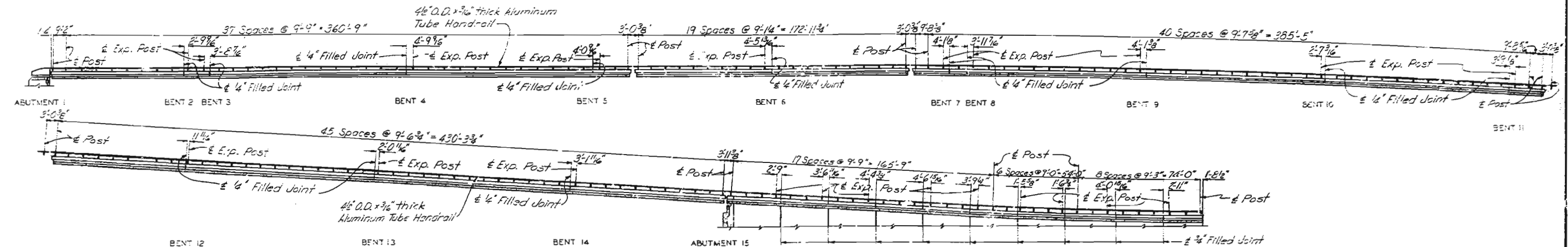
MEDIAN AT HINGE AND FILLED JOINT-TYPICAL

MISSOURI STATE HIGHWAY DEPARTMENT
BRIDGE OVER VANDEVENTER AVE,
CLAYTON AVE. AND WABASH R.R. TRACKS
STATE ROAD DANIEL BOONE EXPRESSWAY
PROJECT NO. U-811 (2) (RT. 40) STA. 29+86.00
CITY OF ST. LOUIS
SAFETY CURB, PARAPET, AND MEDIAN DETAILS

SVERDRUP AND PARCEL, INC.
CONSULTING ENGINEERS
ST. LOUIS, MO.

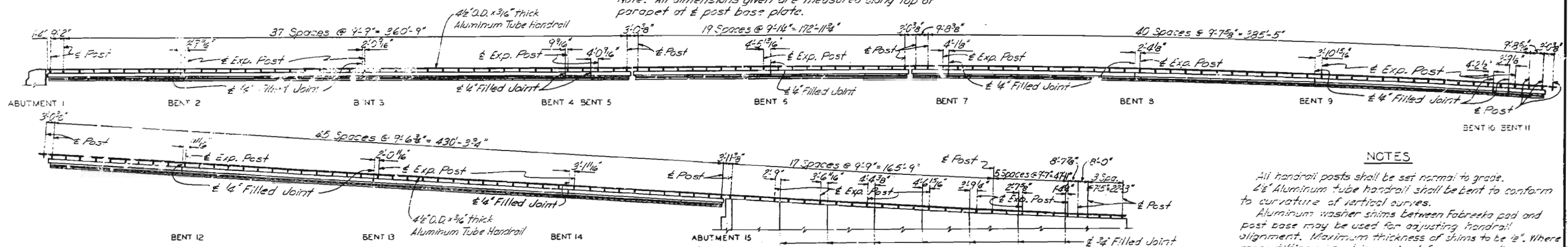
Drawn by: J. Lottmann, Aug. 1955
Checked by: R.C. West, Aug. 1955

Note: Do not scale this drawing. Follow dimensions.



DEVELOPED ELEVATION OF NORTH HANDRAIL

Note: All dimensions given are measured along top of parapet at \pm post base plate.

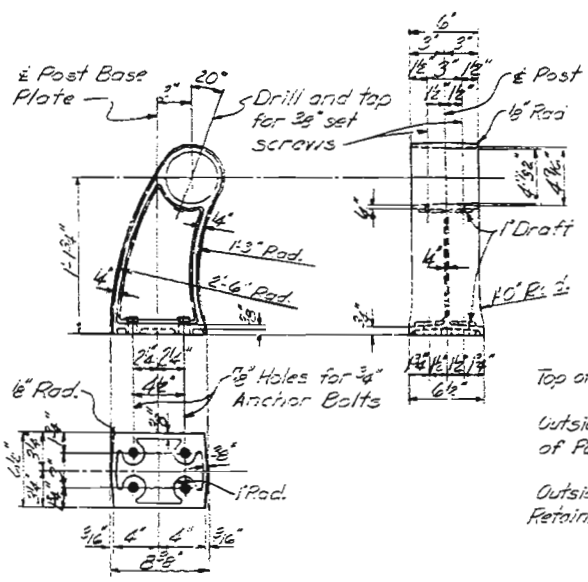


DEVELOPED ELEVATION OF SOUTH HANDRAIL

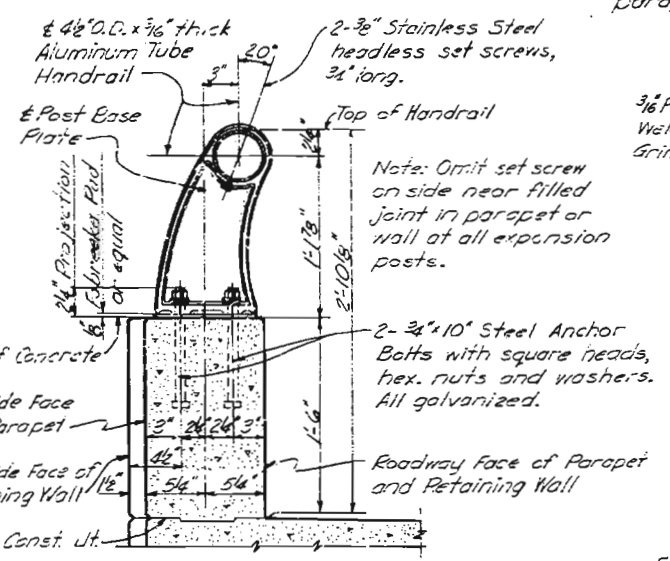
Note: All dimensions given are measured along top of parapet at \pm post base plate.

NOTES

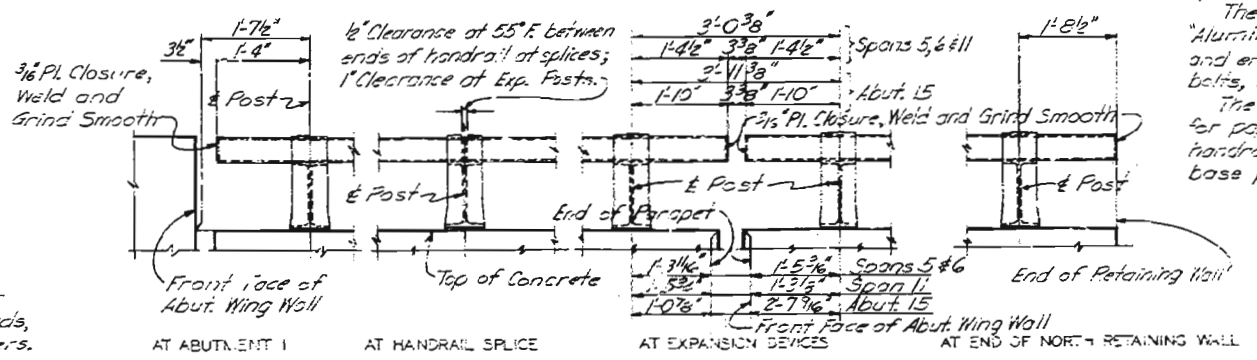
All handrail posts shall be set normal to grade.
 4 1/2" Aluminum tube handrail shall be bent to conform to curvature of vertical curves.
 Aluminum washer shims between Fabreka pad and post base may be used for adjusting handrail alignment. Maximum thickness of shims to be 1/2". Where more tilting or post is required for proper alignment, concrete bearing areas shall be ground down.
 All parts of handrail, except anchor bolts, nuts, washers, and set screws, to be Aluminum. See Special Provisions.
 The contract unit price per linear foot of "Aluminum Alloy Handrail", shall include furnishing and erecting the handrail complete with anchor bolts, shims and Fabreka pads.
 The length of "Aluminum Alloy Handrail" measured for payment shall be the total length cut to cut of handrails measured along top of parapet at \pm post base plate.



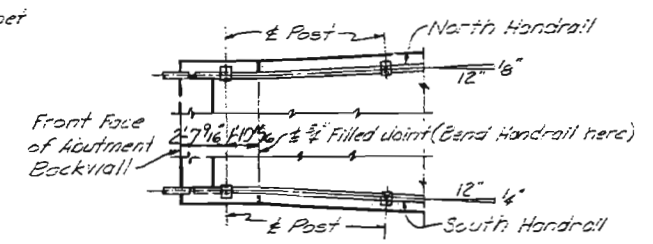
HANDRAIL POST
 All fillers 4" except as noted.
 All draft angles 3" except as noted.



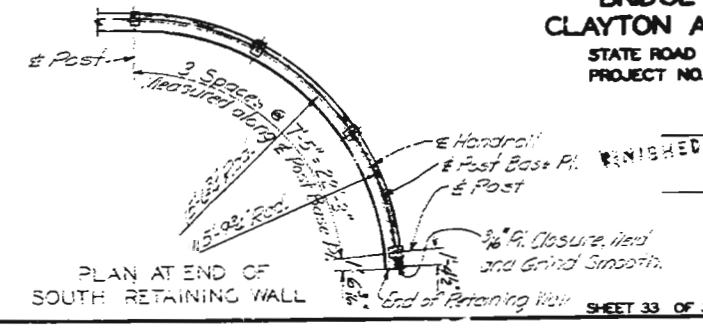
SECTION THRU HANDRAIL



TYPICAL HANDRAIL DETAILS



PLAN AT ABUTMENT 15
 Dimensions shown are measured along top of parapet.

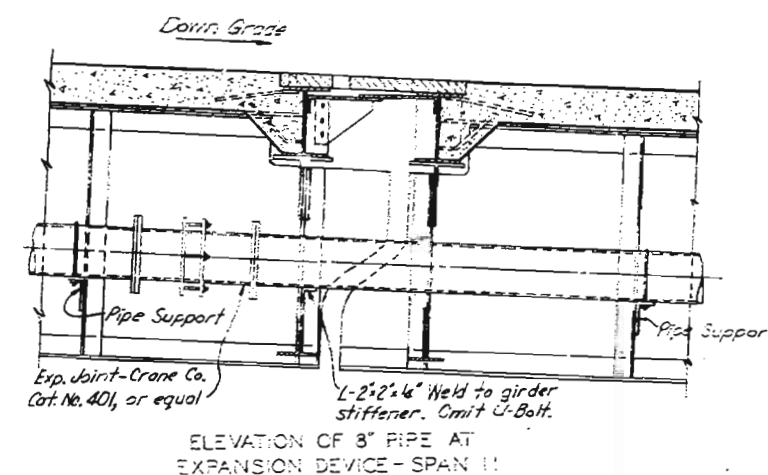
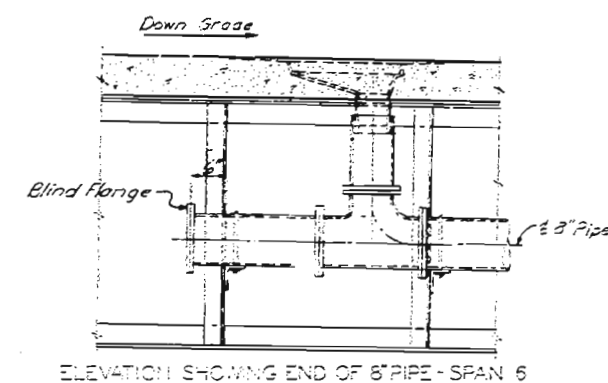
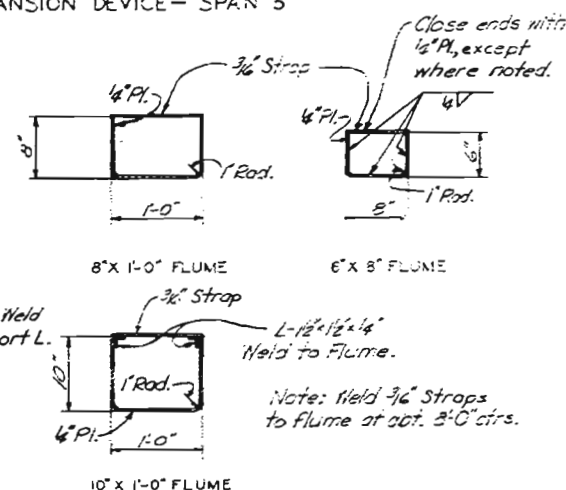
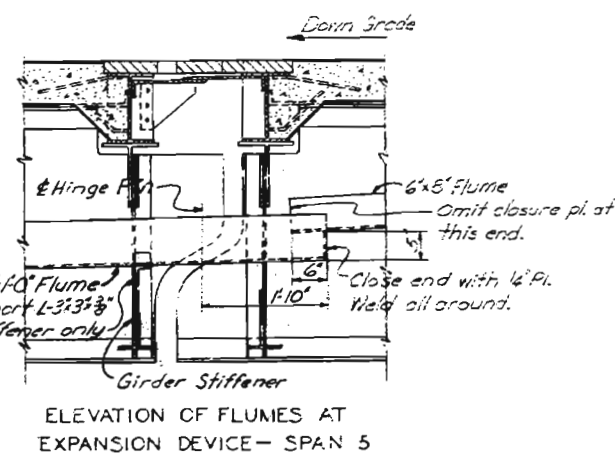
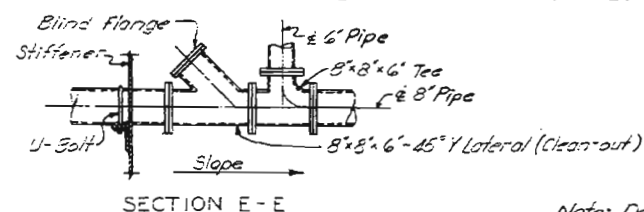
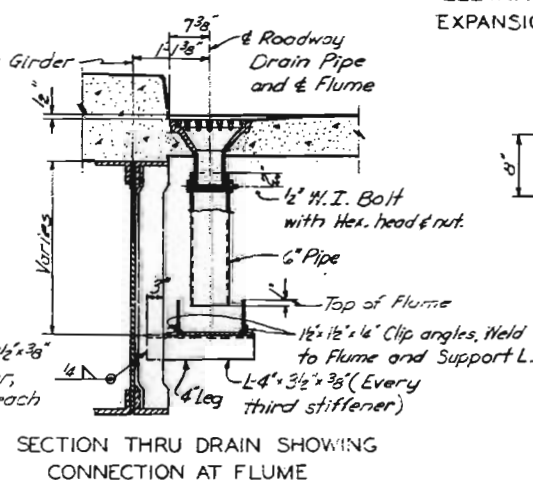
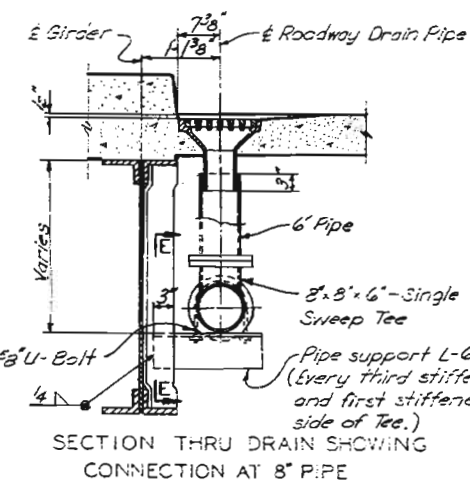
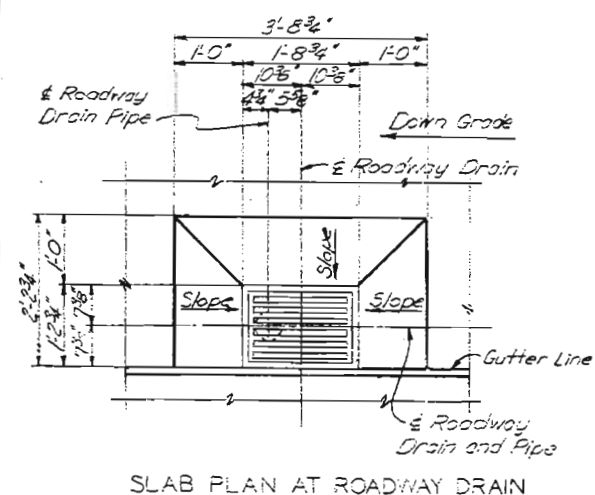
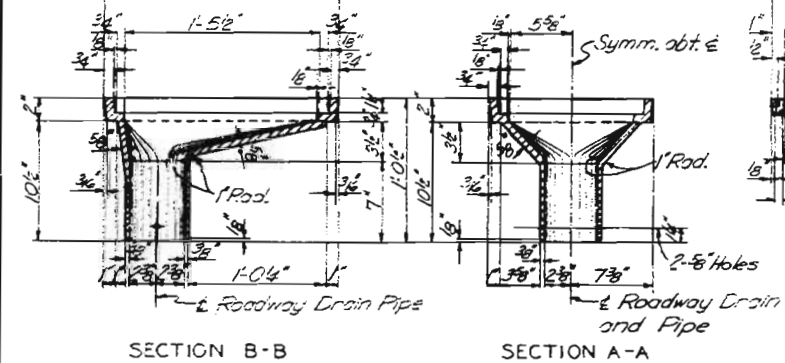
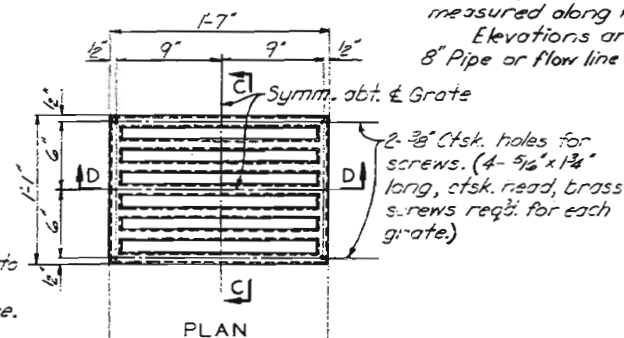
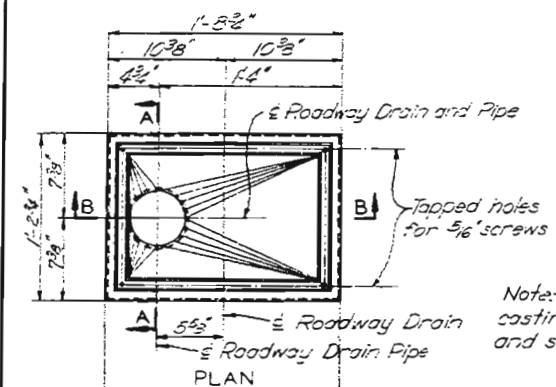
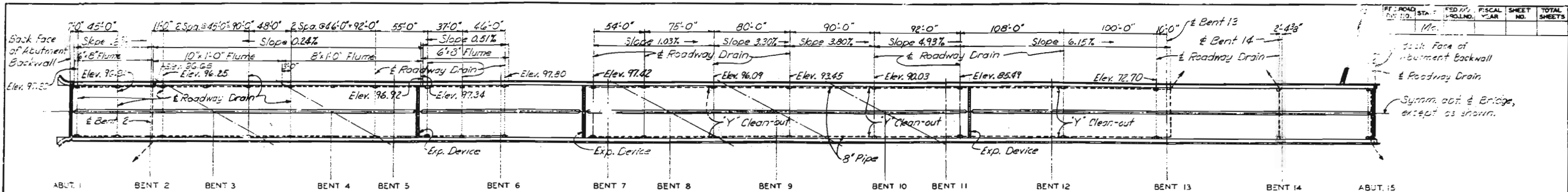


PLAN AT END OF SOUTH RETAINING WALL

MISSOURI STATE HIGHWAY DEPARTMENT
**BRIDGE OVER VANDEVENTER AVE,
 CLAYTON AVE AND WABASH R.R. TRACKS**
 STATE ROAD DANIEL BOONE EXPRESSWAY
 PROJECT NO. U-811(2) (RT.40) STA. 29+86.00
CITY OF ST. LOUIS

SVERDRUP AND PARCEL, INC.
 CONSULTING ENGINEERS
 ST. LOUIS, MO.

HANDRAIL DETAILS



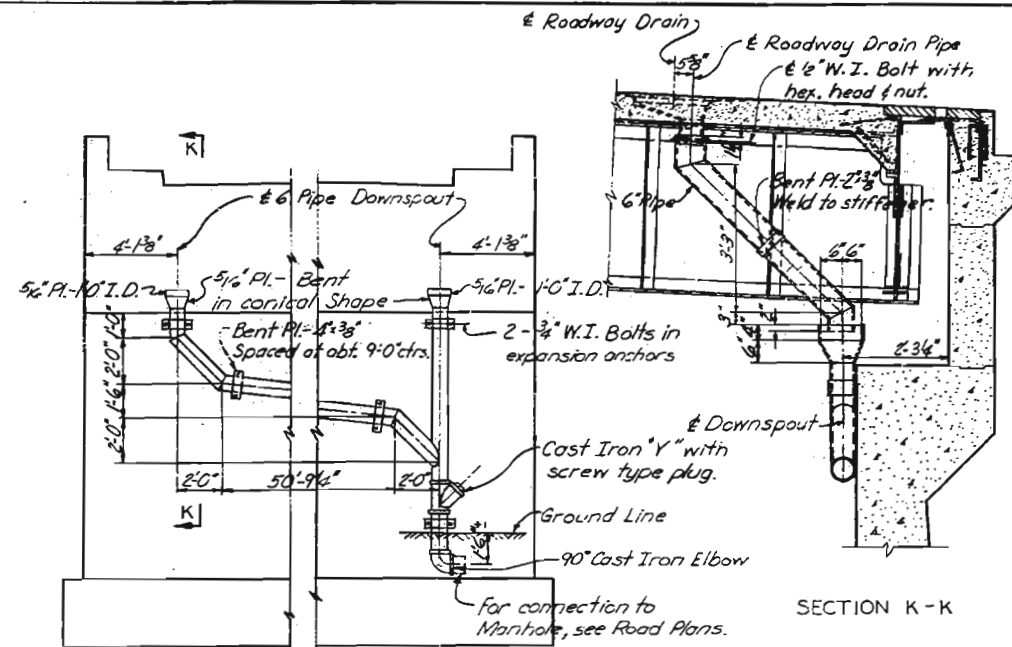
NOTES

Work this sheet with Sheet 35.

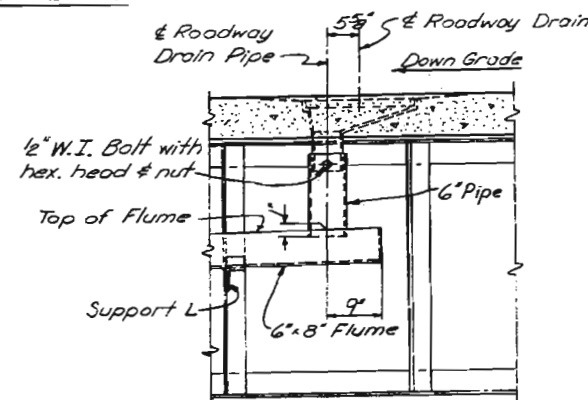
MISSOURI STATE HIGHWAY DEPARTMENT
 BRIDGE OVER WANDEVENTER AVE.,
 CLAYTON AVE. AND WABASH R.R. TRACKS
 STATE ROAD DANIEL BOONE EXPRESSWAY
 PROJECT NO. U-611(2) (RT. 40) STA. 29+86.00
 CITY OF ST. LOUIS

DRAINAGE SYSTEM

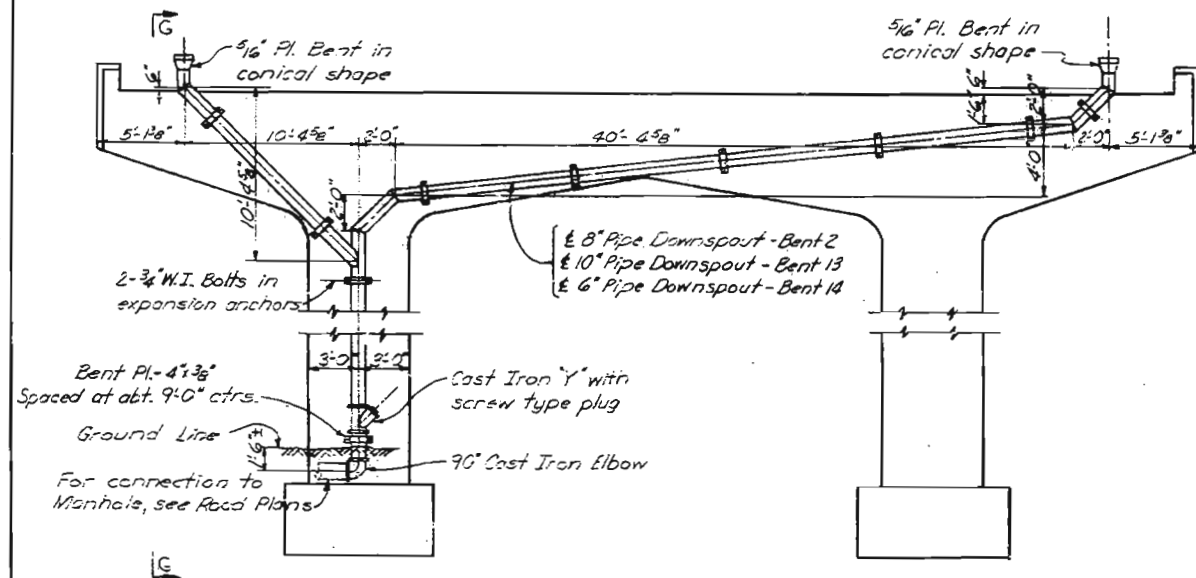
SVENDRUP AND PARCEL, INC.
 CONSULTING ENGINEERS
 ST. LOUIS, MO.



ABUTMENT 15

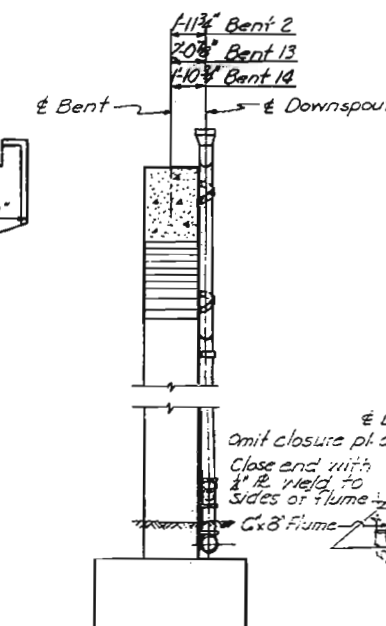


ELEVATION SHOWING END OF FLUME - SPAN 6
Note: Span 1 similar

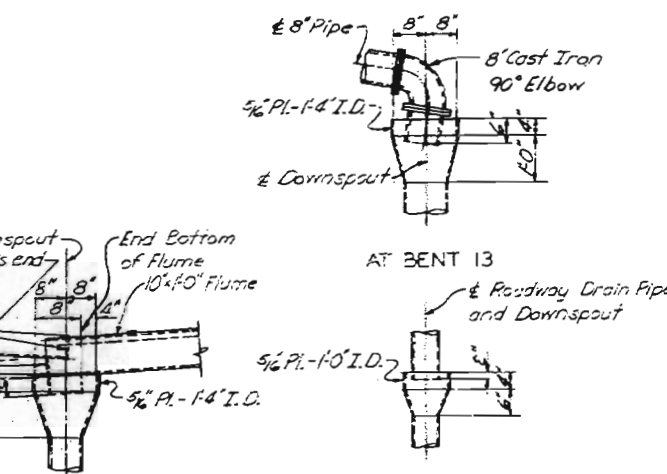


EAST ELEVATION - BENT 2
EAST ELEVATION - BENT 13
WEST ELEVATION - BENT 14
Note: Bents 2 and 14 as shown,
Bent 13 opposite hand.

BENTS 2, 13 & 14



SECTION G - G



AT BENT 2
AT BENT 14
CONNECTIONS TO DOWNSPOUTS

NOTES

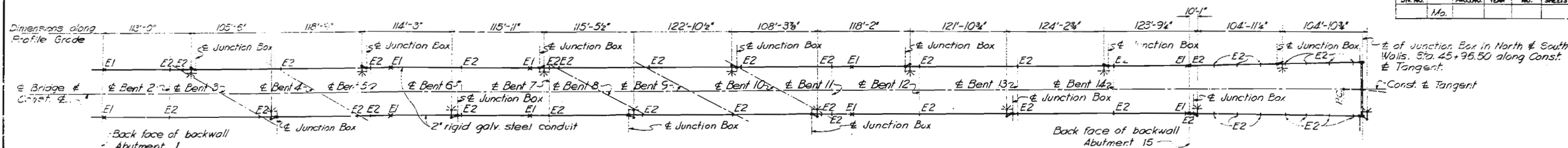
- Work this sheet with Sheet 34.
- Minimum distance from center of expansion anchors to edge of concrete shall be 4".
- Flumes and 8" W. I. pipe shall be installed after all structural steel and superstructure concrete are in place.
- All pipe and plate used in drainage system shall be wrought iron.
- Wrought Iron shall conform to the following A.S.T.M. Standards.
 - Plates; Designation A-42
 - Structural Shapes; Designation A-207
 - Pipe; Designation A-72
- Joints in W.I. downspout pipe shall be welded with a square or bevel weld with full penetration.
- Fittings and flanges for 8" W.I. pipe shall be 125 pound cast iron, faced and drilled.
- Fittings for downspouts shall be cast iron drainage fittings.
- Cast iron for all flanges and fittings shall conform to A.S.T.M. Standards, Designation A-126.
- Roadway drain castings shall be made of cast gray iron in accordance with A.S.T.M. Standards, Designation A48.
- Roadway drain grates shall be made of cast steel in accordance with A.S.T.M. Standards, Designation A27, Grade 65-35, full annealed.
- Where necessary, 3/16" reinforcing may be moved or bent in the field to clear drains.
- The cost of furnishing and placing drain castings, grates, pipe, flumes, anchors, supports, and all connecting material, etc. shall be included in the lump sum bid for "Drainage System."

MISSOURI STATE HIGHWAY DEPARTMENT
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CITY OF ST. LOUIS

DRAINAGE SYSTEM

SVERDRUP AND PARCEL, INC.
 CONSULTING ENGINEERS
 ST. LOUIS, MO.

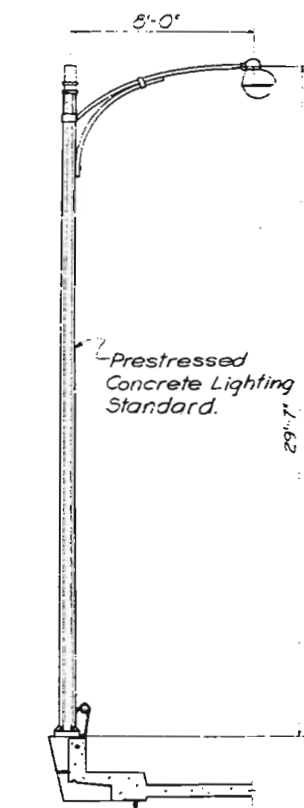
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CONDUIT AND LIGHTING STANDARD LOCATION DIAGRAM

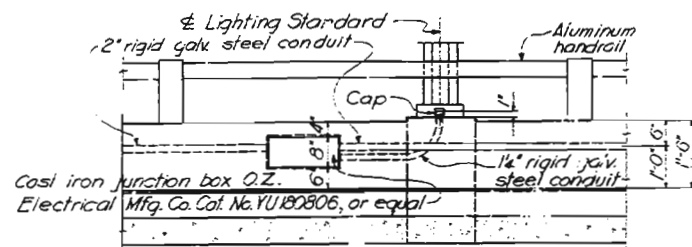
Note: E1 indicates conduit expansion device at roadway expansion devices.

E2 indicates conduit expansion fitting at 1/4" filled joints in bridge parapet and 1/4" expansion joints in retaining walls.

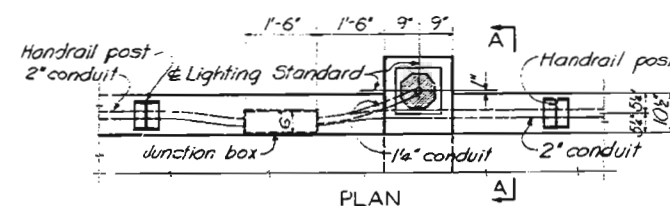


LIGHTING STANDARD

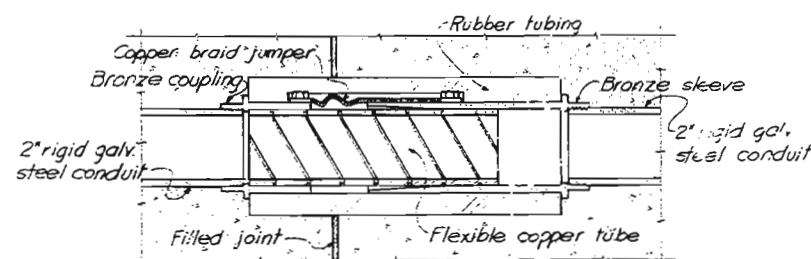
Note: Lighting standards will be furnished and installed by others.



ELEVATION

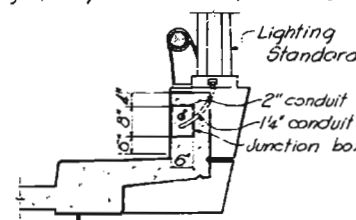


DETAIL AT JUNCTION BOX AND LIGHTING STANDARD

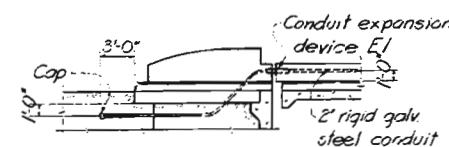


CONDUIT EXPANSION FITTING E2

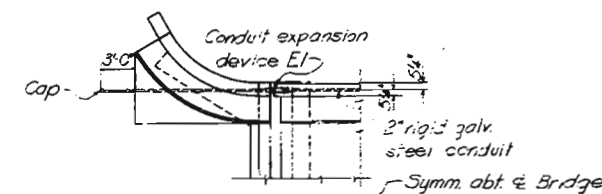
Expansion fitting to be O.Z. Electrical Mfg. Co. Cat. No. EXDS 200, or equal.



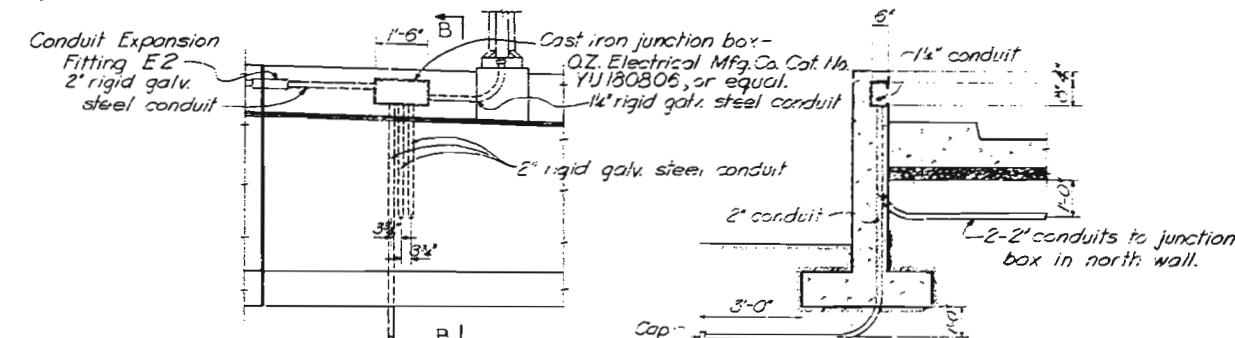
SECTION A-A



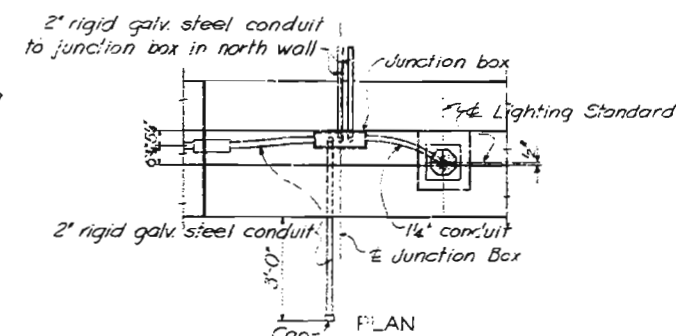
ELEVATION



DETAIL AT ABUTMENT 1



ELEVATION



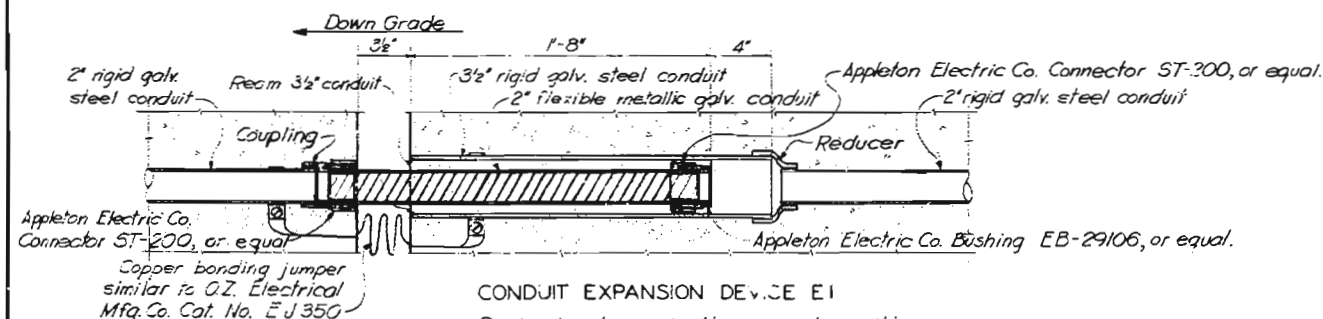
DETAIL OF JUNCTION BOX AND CONDUITS IN SOUTH WALL AT STATION 45+96.50

Note: Detail of Junction box & Conduits in North Wall at this station is same except for 1/4" conduit to lighting standard.

NOTES

The Contractor shall furnish and install all conduit, pull boxes, expansion fittings and expansion devices. See Special Provisions.

Lighting Standards and cable will be furnished and installed by others.



CONDUIT EXPANSION DEVICE E1

Device is shown in the normal position at a temperature of 60° F.

Note: Do not scale this drawing. Follow dimensions.

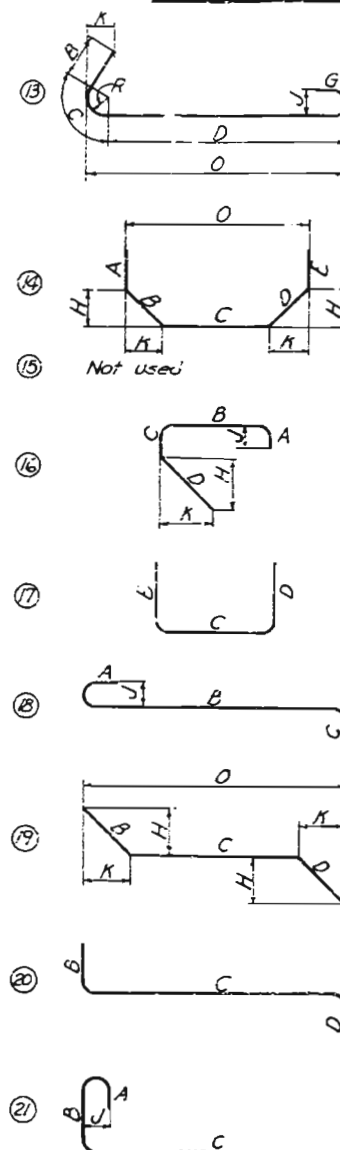
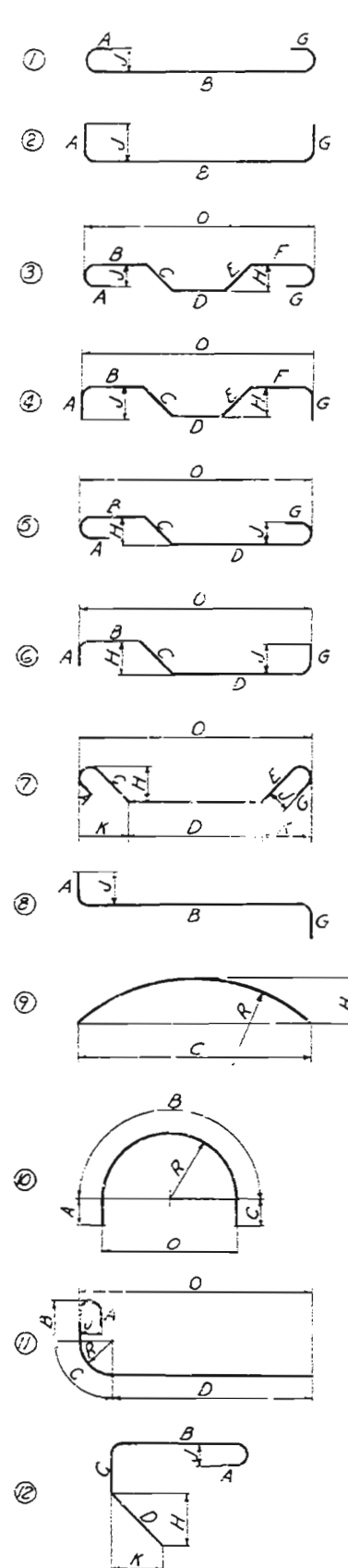
MISSOURI STATE HIGHWAY DEPARTMENT
BRIDGE OVER VANDEVENTER AVE.,
CLAYTON AVE. AND WABASH R.R. TRACKS
STATE ROAD DANIEL BOONE EXPRESSWAY
PROJECT NO. U-811 (2) (RT.40) STA. 29+86.00
CITY OF ST. LOUIS

CONDUIT SYSTEM

SYNDERUP AND PARCEL, INC.
CONSULTING ENGINEERS
ST. LOUIS, MO.

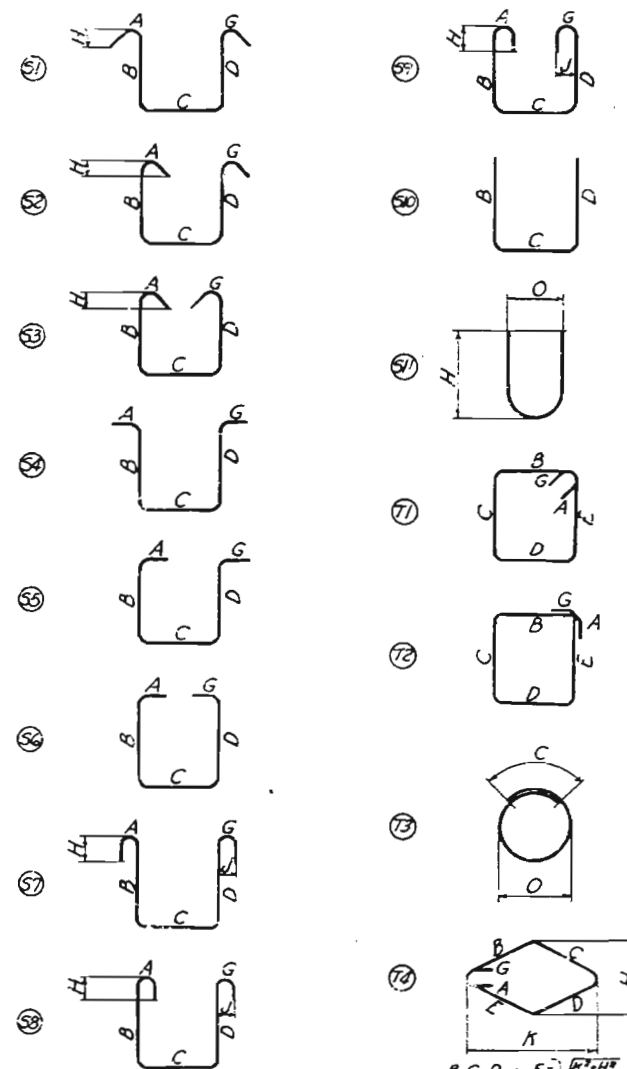
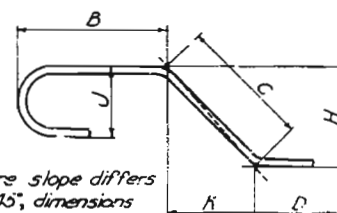
FOR SPEC. FINISHES

TYPICAL BAR TYPES



Where slope differs from 45°, dimensions "H" and "K" must be shown.

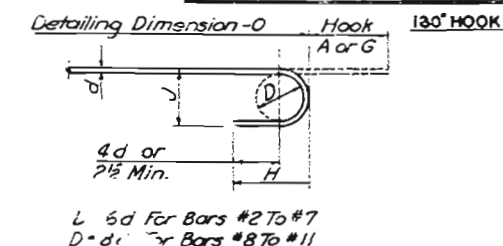
ENLARGED VIEW SHOWING BAR BENDING DETAILS



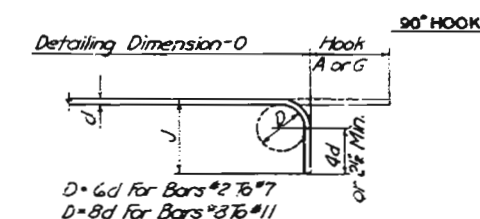
NOTES

1. All dimensions are out to out, except "R" which is to inside of bend.
2. "J" Dimension on 180° hooks to be shown in Bar List only where necessary to restrict hook size, otherwise standard hooks are to be used.
3. ~~C~~ Where "J" is not shown, "J" will be kept equal to or less than "H". Where "J" can exceed "H", it should be shown in Bar List.
4. "H" Dimension on stirrups to be shown on Bar List where necessary to restrict hooks.
5. Corrections in length, due to bending around a mandrel, will be made only when the radius "R" (as in types 11 and 13) exceeds the standard radii indicated in standard hook dimensions. However, the dimensions "A" or "G" shown for standard hooks have been corrected for curvature.
6. All bends shown are bent around a standard mandrel, except where radius "R" is indicated.
7. Figures in circles show bar types.
8. Where "R" is shown on bar types 9, 10, 11 and 13, the length of bend shall be measured along outside of bend. The length of bar type T3 shall also be measured along outside of bar.

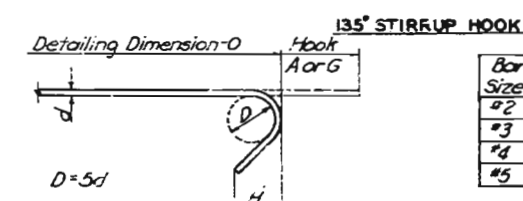
STANDARD HOOK DIMENSIONS



Bar Size	Hook A or G	J	Approx. H
#2	4"	2"	3 1/2"
#3	5"	3"	4"
#4	6"	4"	4 1/2"
#5	7"	5"	5"
#6	8"	6"	6"
#7	10"	7"	7"
#8	1-1"	10"	9"
#9	1-3"	11"	10 1/2"
#10	1-5"	10 1/2"	11 1/2"
#11	1-7"	1-2"	1-3 1/2"

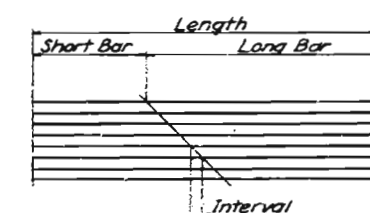


Bar Size	Hook A or G	J	Approx. H
#2	3"	3 1/2"	
#3	3"	4"	
#4	3"	4 1/2"	
#5	4"	5"	
#6	4"	6"	
#7	5"	7"	
#8	6"	9"	
#9	7"	10"	
#10	8"	11 1/2"	
#11	9"	1-0 1/2"	



Bar Size	Hook A or G	H
#2	3 1/2"	2"
#3	4"	2 1/2"
#4	4 1/2"	2 1/2"
#5	5"	2 1/2"

BAR SIZE EQUIVALENTS			
#2	6"	#7	7 1/8"
#3	5"	#8	1"
#4	1 1/2"	#9	1"
#5	5"	#10	1 1/8"
#6	5"	#11	1 1/8"



TYPICAL CUTTING DIAGRAM FOR ONE SET OF BARS

MISSOURI STATE HIGHWAY DEPARTMENT
BRIDGE OVER VANDEVENTER AVE.,
CLAYTON AVE. AND WABASH R.R. TRACKS
 STATE ROAD DANIEL BOONE EXPRESSWAY
 PROJECT NO. U-811(2) (RT.40) STA. 25+86.00
CITY OF ST. LOUIS

TYPICAL BAR TYPES, HOOK DIMENSIONS
 AND CUTTING DIAGRAM

SVERDRUP AND PARCEL, INC.
 CONSULTING ENGINEERS
 ST. LOUIS, MO.

[illegible]

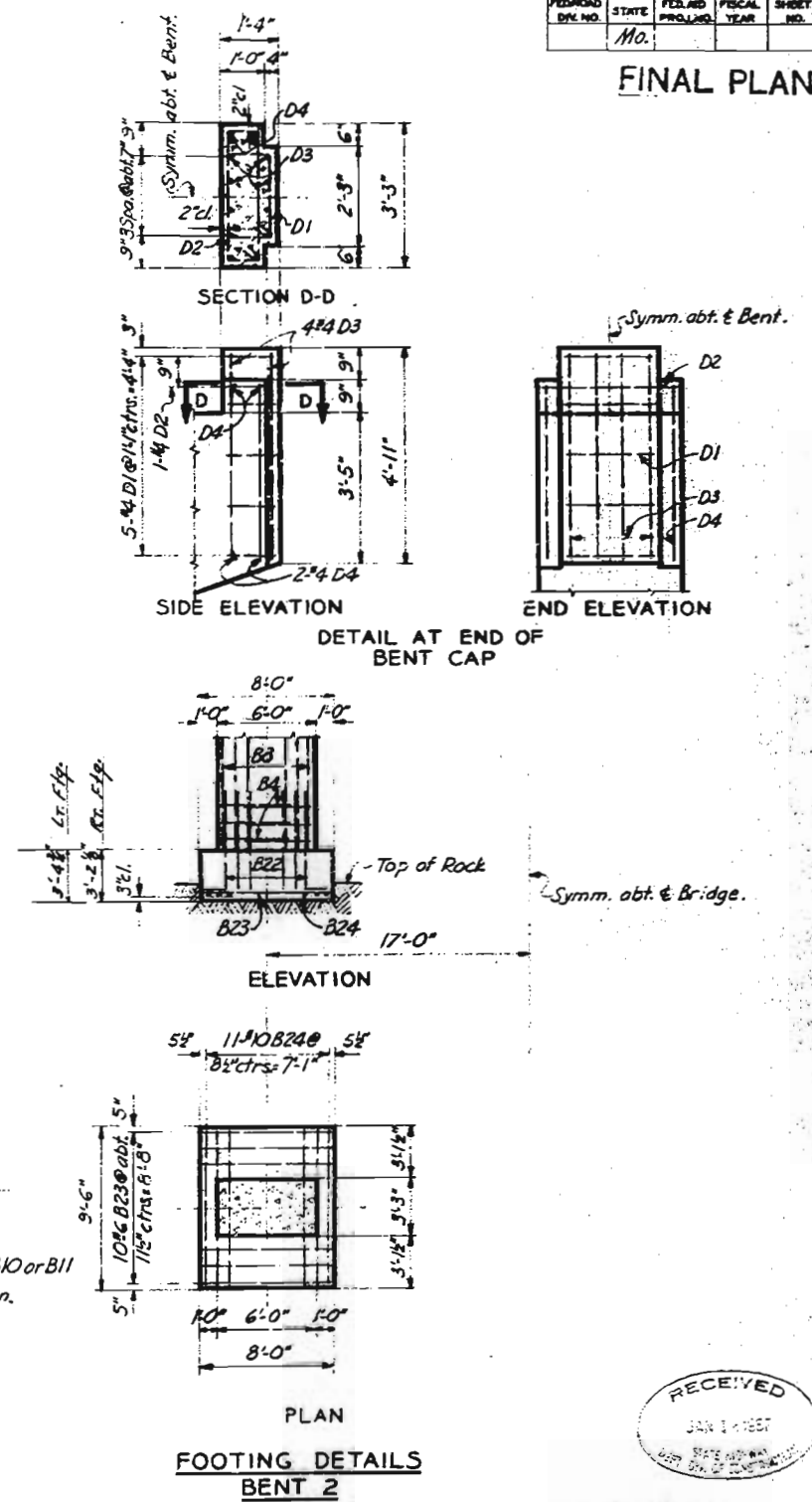
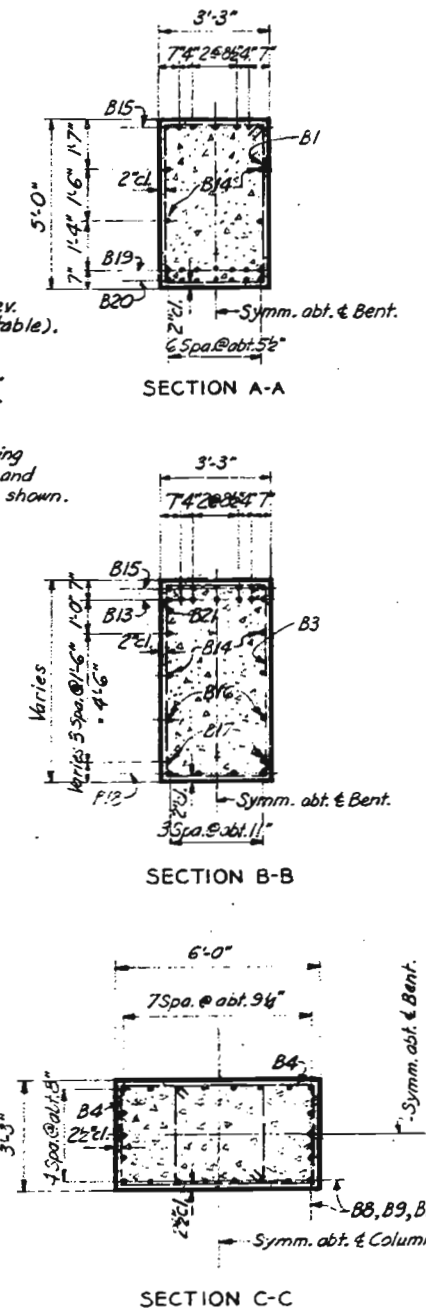
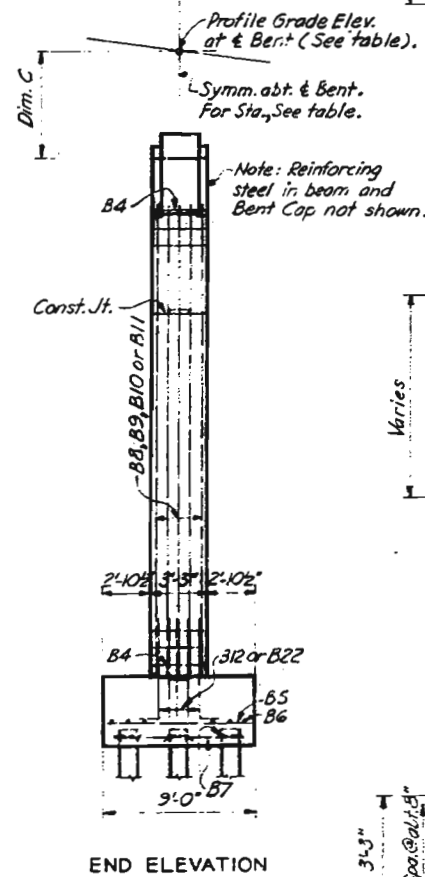
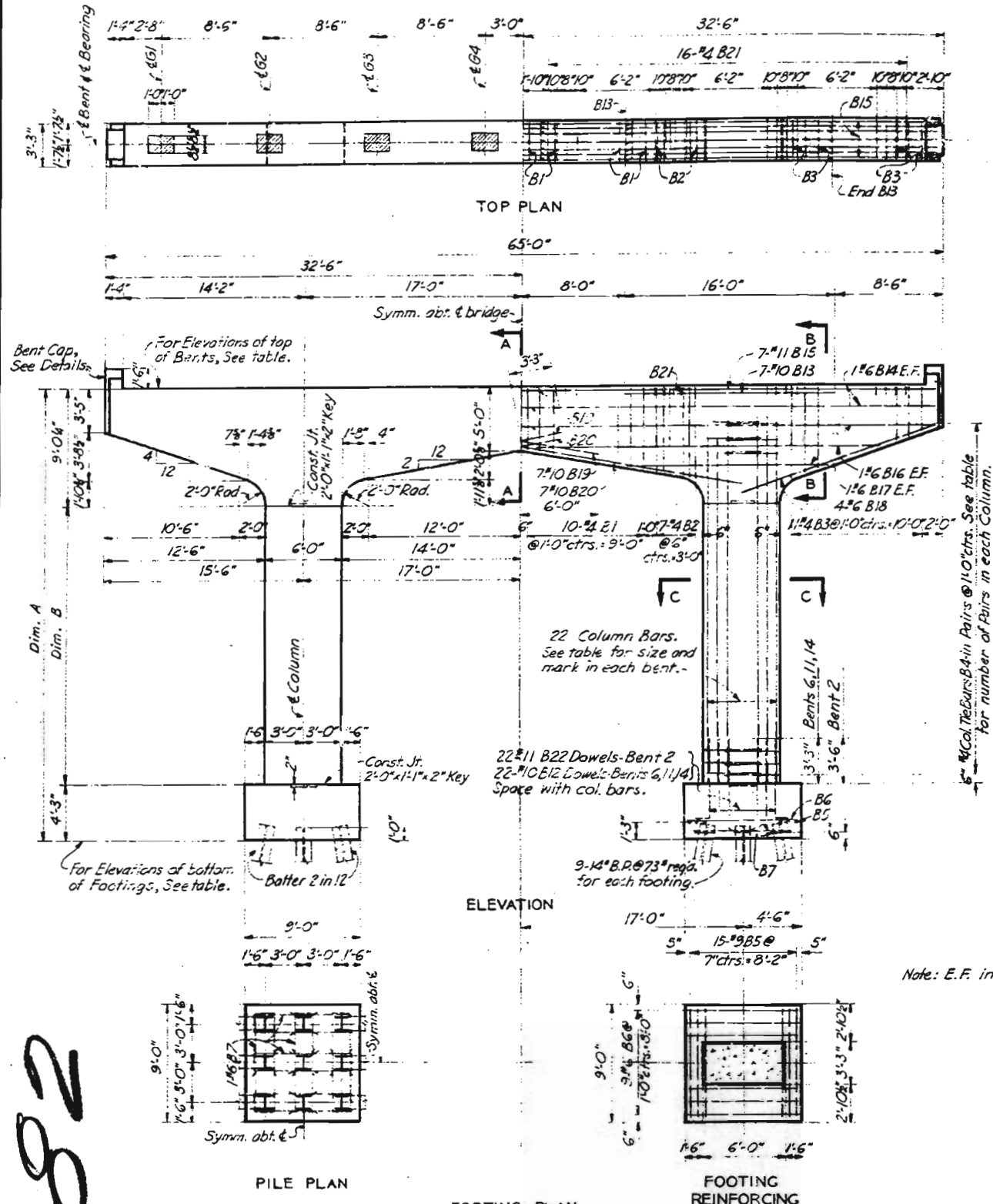
Rev. 5-8-56

SHEET 38 OF 39

SEE FINAL PLANS BROWN-LINES

L-667

FINAL PLANS



NOTES

For detail of pile splice, see Sheet 7.
For location and size of anchor bolt wells, see Sheet 5.

FOOTING DETAILS BENT 2

MISSOURI STATE HIGHWAY DEPARTMENT
BRIDGE OVER WANDEVENTER AVE,
CLAYTON AVE. AND WABASH R.R. TRACKS
STATE ROAD DANIEL BOONE EXPRESSWAY
PROJECT NO. U-811(2) (RT. 40) STA. 29+66.00
CITY OF ST. LOUIS

BENTS 2, 6, 11 & 14

SVERDRUP AND PARCEL, INC.
CONSULTING ENGINEERS
ST. LOUIS, MO.

SHEET 4A OF

FINAL PLANS

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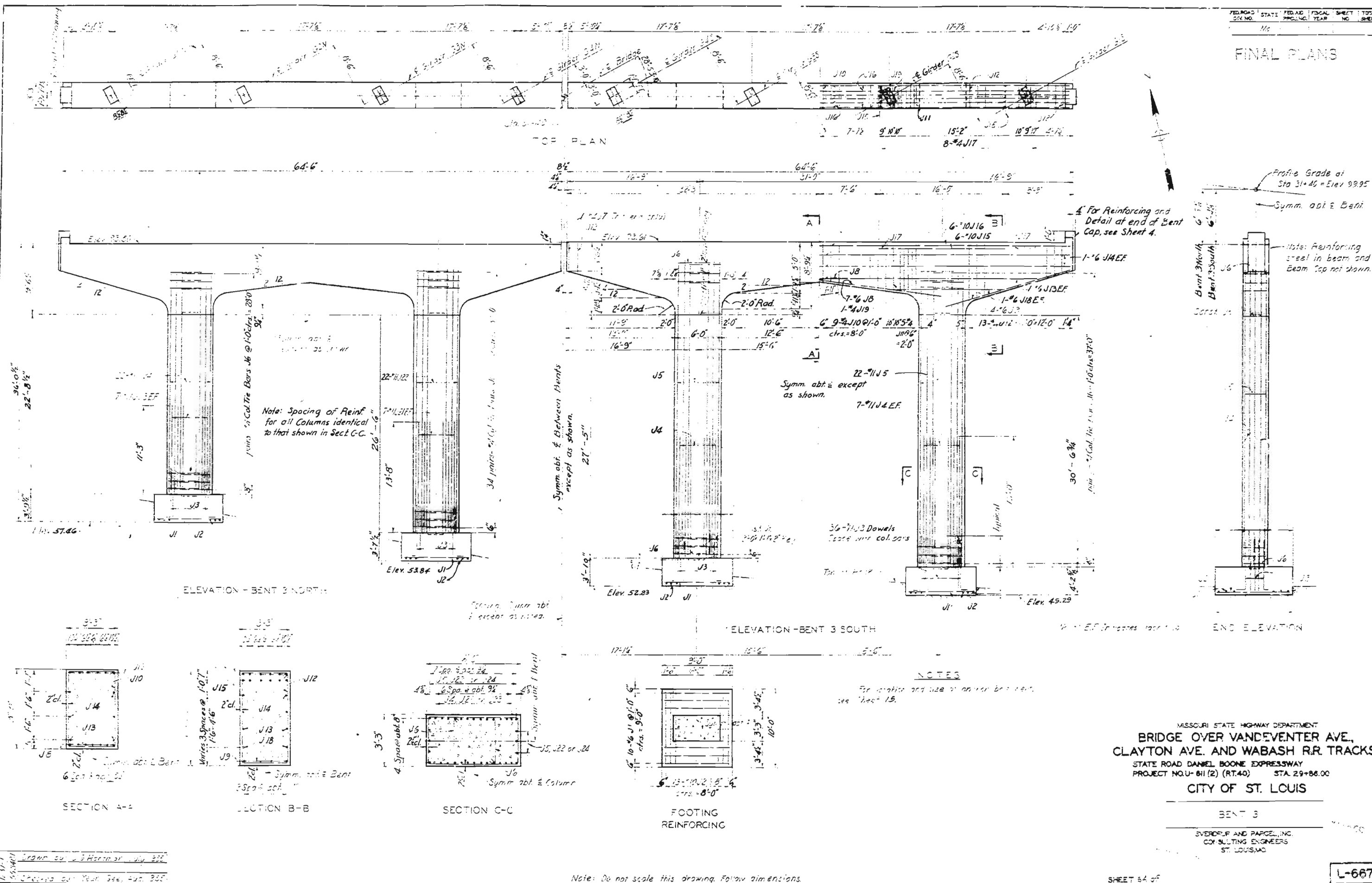
Note: Do not scale this drawing. Follow dimensions.

BENTS	STATION	ELEVATIONS		DIMENSIONS			COLUMN BAR SIZES	COLUMN BAR MARKS	NO. PAIRS TIE BARS-B4
		Profile Grade of Bent	Top of Bent	Bott. of Ftg.	A	B			
2	30+73	99.84	93.50	58.26 LT.	34'-4 1/2" LT.	22'-4 1/2" LT.	#11	B8	28
6	34+48	100.47	94.09	64.00	33'-1 1/2"	19'-9 1/2"	#10	B9	26
11	39+19	89.37	82.99	48.75	34'-2 1/2"	20'-11 1/2"	#10	B10	27
14	42+76	67.61	61.20	39.75	21'-5 1/2"	8'-2 1/2"	#10	B11	15

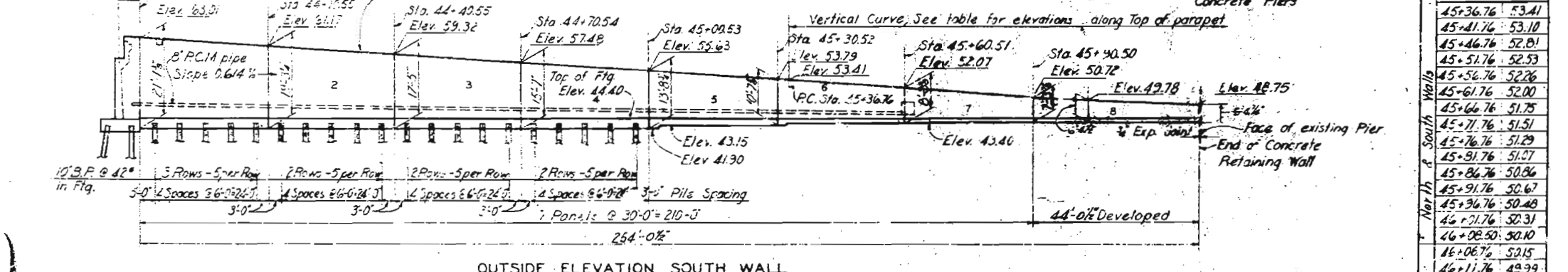
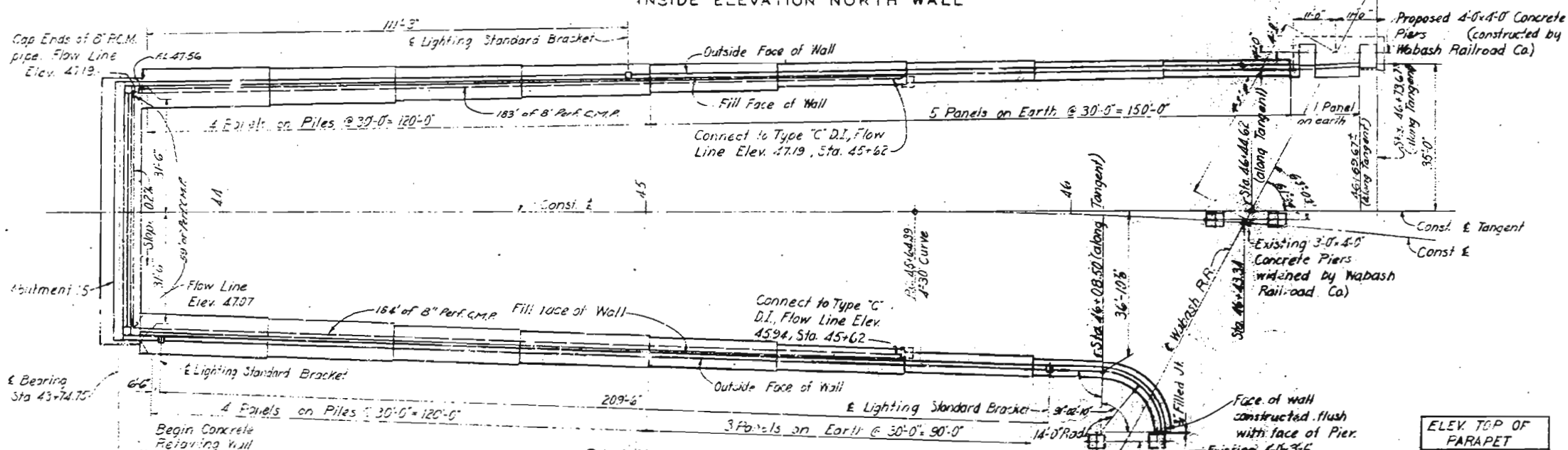
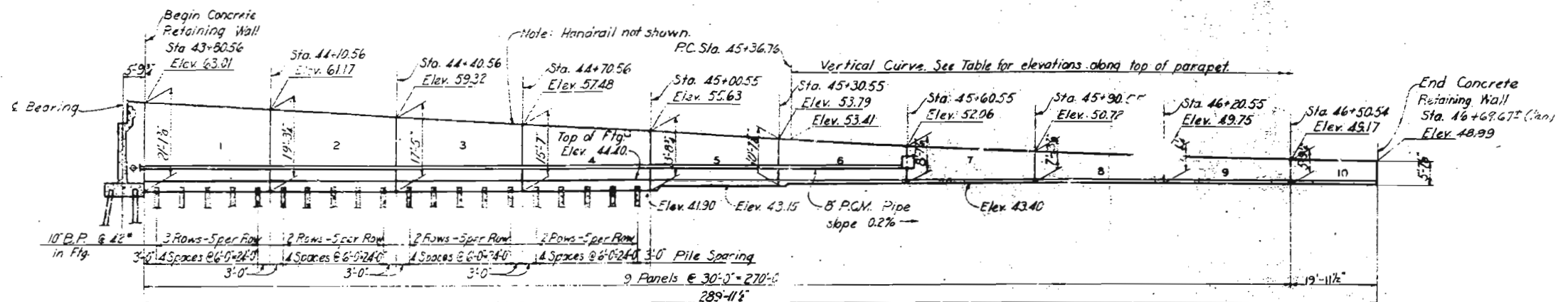
Note: Footings shown above are for Bents 6, 11, & 14 only.

BENTS 2, 6, 11 & 14

Drawn by: C.M. Redfield, July 1955
Checked by: Yeun Gee, Aug. 1955



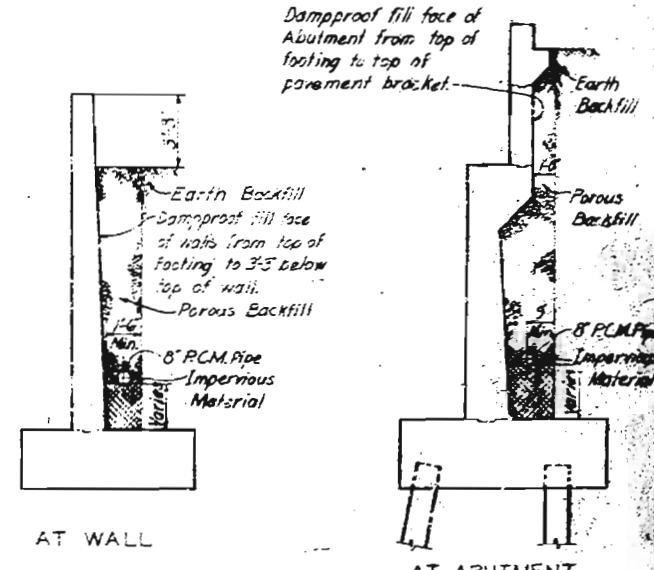
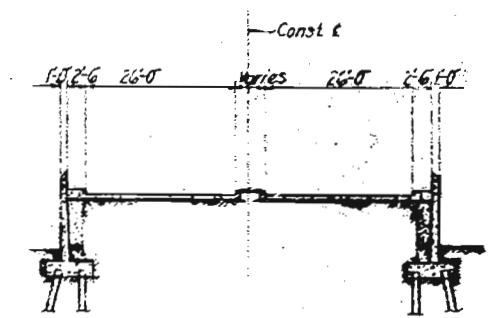
FINAL PLANS



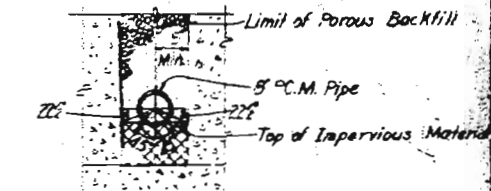
NOTES

Work this sheet with Sheets 13 and 14.
 For handrail post spacing, see Sheet 33.

Station	Elev.
45+36.76	53.41
45+41.76	53.10
45+46.76	52.81
45+51.76	52.53
45+56.76	52.26
45+61.76	52.00
45+66.76	51.75
45+71.76	51.51
45+76.76	51.29
45+81.76	51.07
45+86.76	50.86
45+91.76	50.67
45+96.76	50.48
46+01.76	50.31
46+06.50	50.10
46+06.76	50.15
46+11.76	49.99
46+16.76	49.85
46+21.76	49.72
46+26.76	49.60
46+31.76	49.49
46+36.76	49.39
46+41.76	49.30
46+46.76	49.22
46+51.76	49.15
46+56.76	49.10
46+61.76	49.05
46+66.76	49.02
46+69.66	48.99

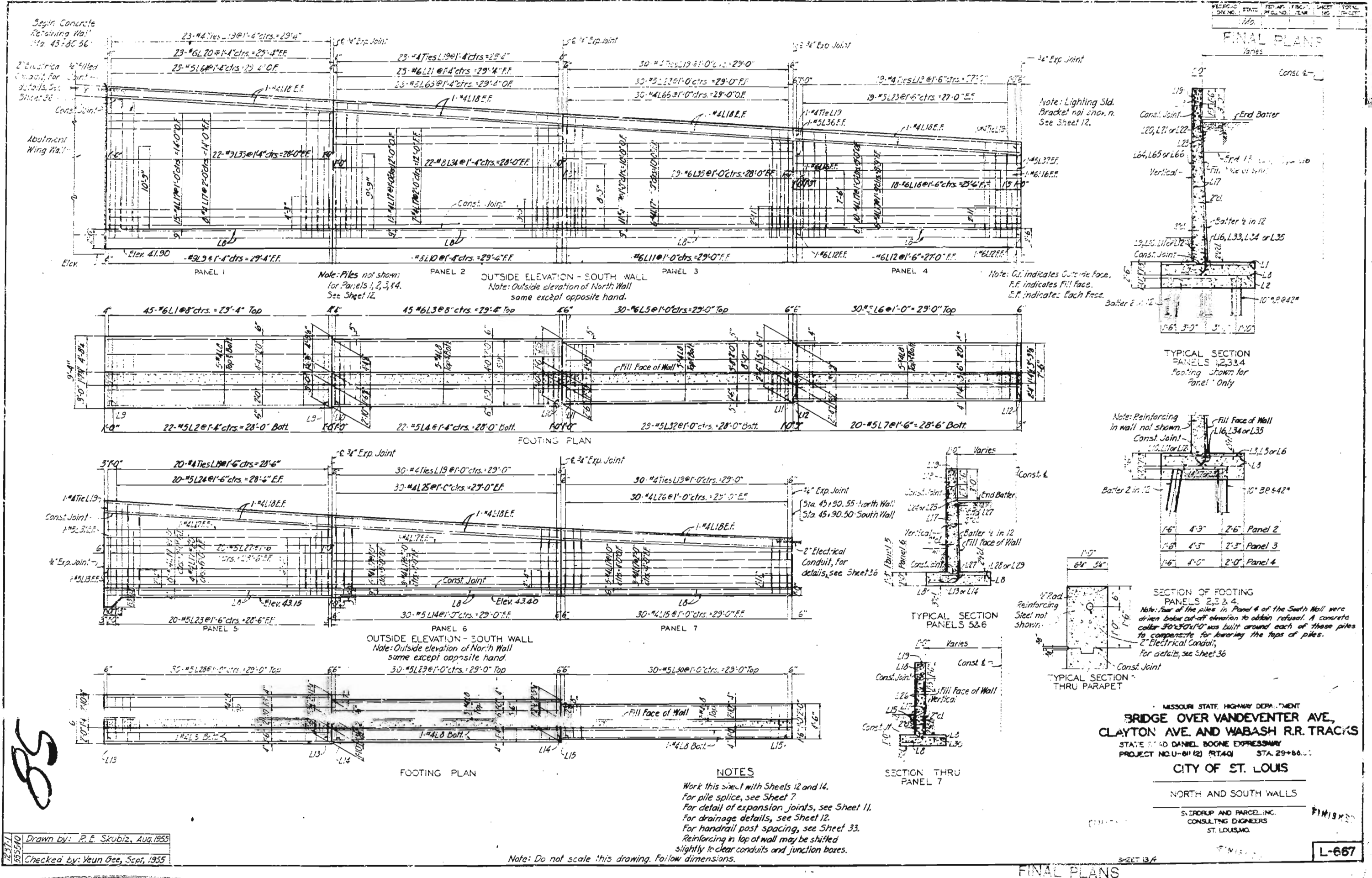


POROUS BACKFILL AND PIPE UNDERDRAIN



MISSOURI STATE HIGHWAY DEPARTMENT
 BRIDGE OVER VANDEVENTER AVE.
 CLAYTON AVE. AND WABASH R.R. TRACKS
 STATE ROAD DANIEL BOONE EXPRESSWAY
 PROJECT NO. U-81(2) (RT. 40) STA. 29+80.00
 CITY OF ST. LOUIS

WALLS-GENERAL
 FINISHED ST. LOUIS, MO.



85

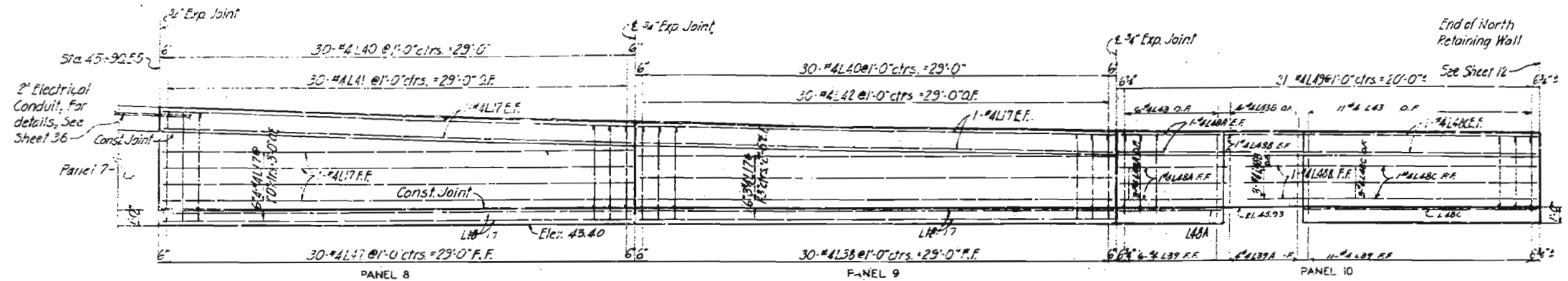
Drawn by: R.E. Skubiz, Aug. 1955
 Checked by: Yeun Gee, Sept. 1955

NOTES
 Work this sheet with Sheets 12 and 14.
 For pile splice, see Sheet 7.
 For detail of expansion joints, see Sheet 11.
 For drainage details, see Sheet 12.
 For handrail post spacing, see Sheet 33.
 Reinforcing in top of wall may be shifted slightly to clear conduits and junction boxes.
 Note: Do not scale this drawing. Follow dimensions.

MISSOURI STATE HIGHWAY DEPARTMENT
**BRIDGE OVER VANDEVENTER AVE,
 CLAYTON AVE. AND WABASH R.R. TRACKS**
 STATE ROAD DANIEL BOONE EXPRESSWAY
 PROJECT NO. U-611(2) RT. 401 STA. 29+86.00
CITY OF ST. LOUIS
 NORTH AND SOUTH WALLS
 STRUCTURAL AND PARCELING
 CONSULTING ENGINEERS
 ST. LOUIS, MO.
L-667

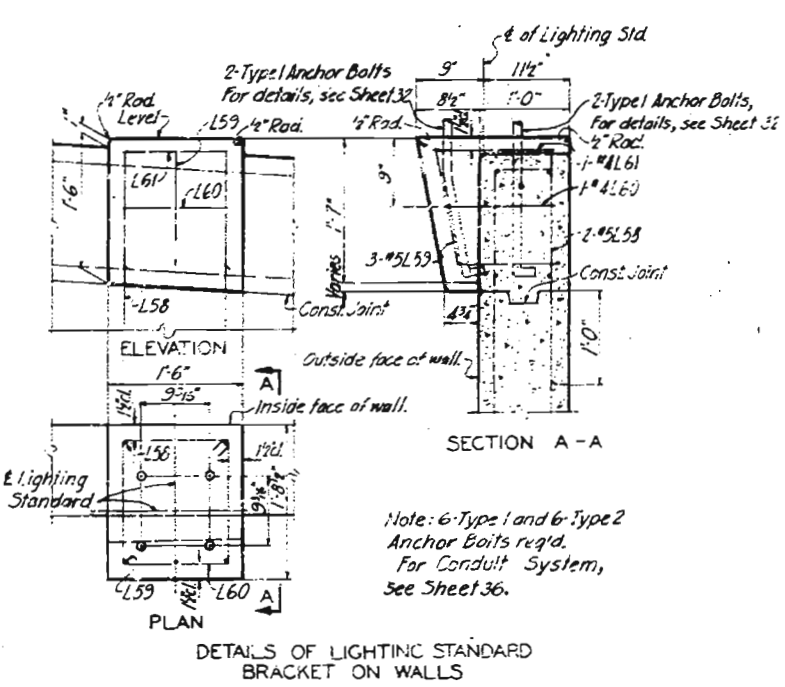
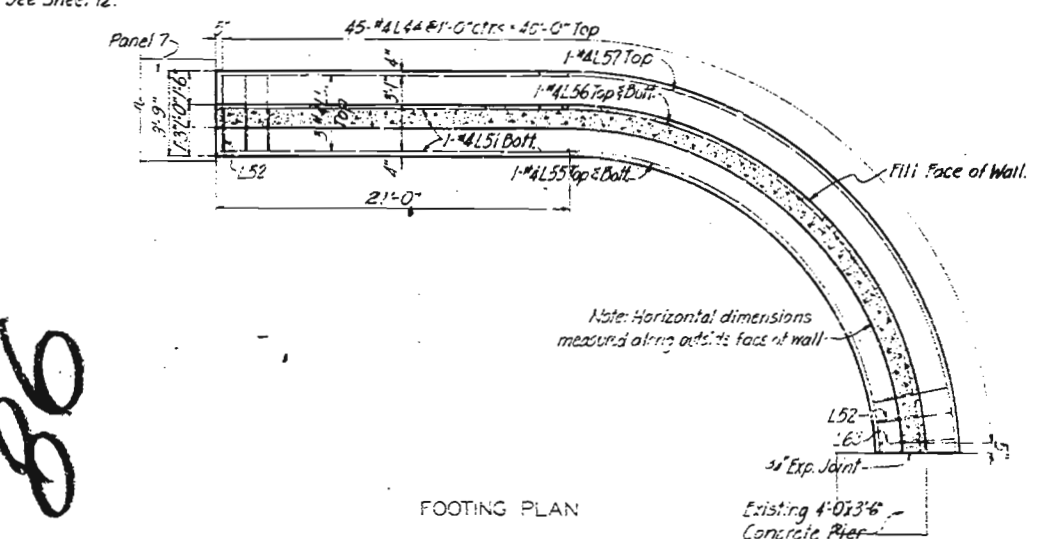
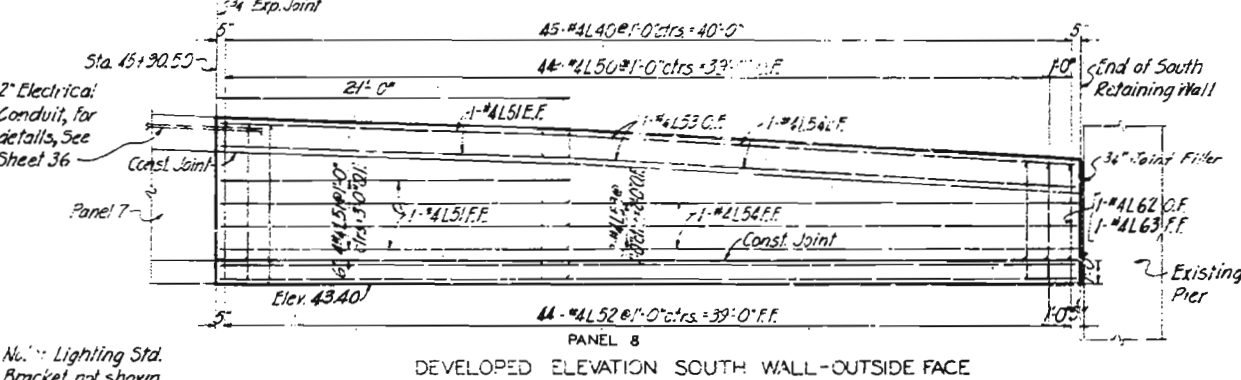
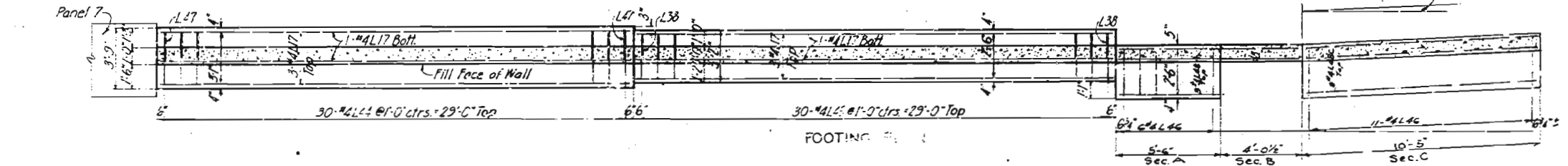
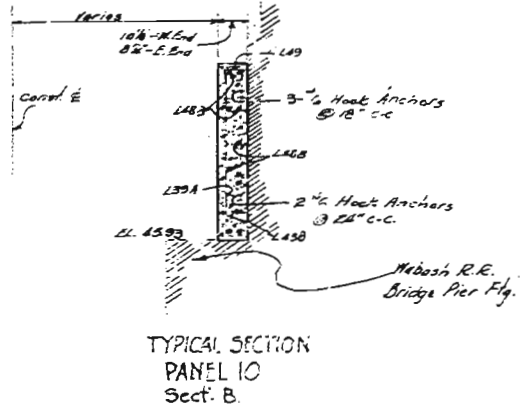
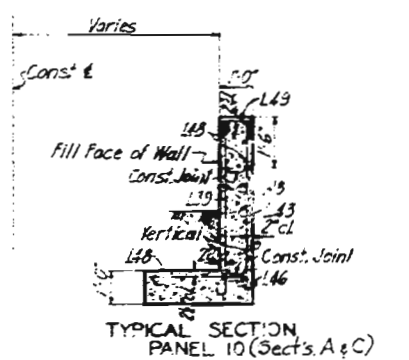
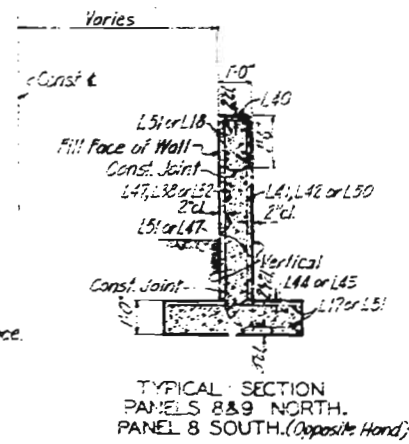
PROJECT	DATE	DESIGN	SCALE	SHEET	TOTAL
BRIDGE OVER VANDEVENTER AVE., CLAYTON AVE. AND WABASH RR TRACKS	Aug. 1955	R.E. Skubiz	1/4" = 1'-0"	14	14

FINAL PLANS



INSIDE ELEVATION NORTH WALL-FILL FACE

Note: O.F. indicates Outside Face.
F.F. indicates Fill Face.
E.F. indicates Each Face.



NOTES
Work this Sheet with Sheets 12 and 13.
For detail of expansion joints, see Sheet 11.
For handrail post spacing, see Sheet 33.
Reinforcing in top of walls may be shifted slightly to clear conduits and junction boxes.

Note: Do not scale this drawing. Follow dimensions.

MISSOURI STATE HIGHWAY DEPARTMENT
BRIDGE OVER VANDEVENTER AVE.,
CLAYTON AVE. AND WABASH RR TRACKS
STATE ROAD DANIEL BOONE EXPRESSWAY
PROJECT NC U-811 (2) (RT. 40) STA. 29+84.00
CITY OF ST. LOUIS
NORTH AND SOUTH WALLS
SVERDRUP AND PARCEL, INC.
CONSULTING ENGINEERS
ST. LOUIS, MO.

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Drawn By: R.E. Skubiz, Aug. 1955
Checked By: Yoon Gee, Sept. 1955

FINAL PLANS

L-667

BENT 3				
60° 6	8° 6"	J1	Str.	Footing.
52° 10	9° 6"	J2	Str.	do
144° 11	7° 8"	J3	2	do
25° 11	16° 0"	J4	Str.	Column
44° 11	37° 7"	J5	Str.	do
218° 4	14° 7"	J6	Tr.	do
218° 4	13° 2"	J7	Beam	do

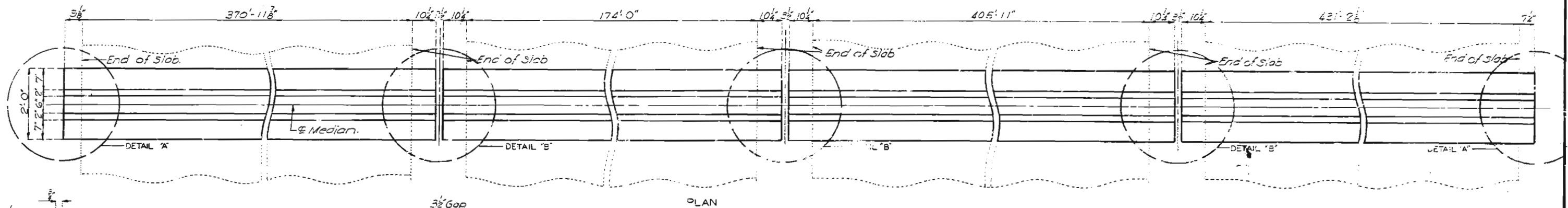
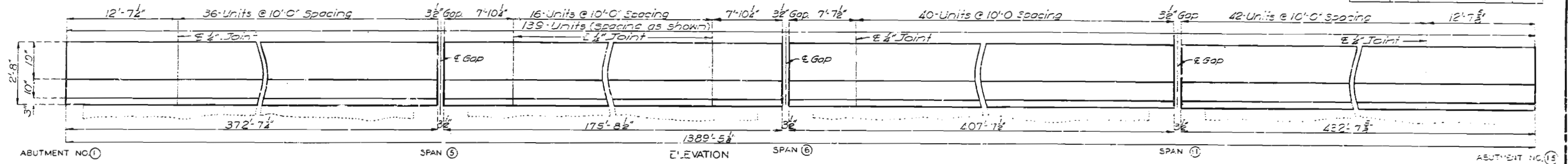
BENTS 5, 7, 12 & 13									
80	#2	17'-7"	C1	Spcl.	Beam	(4 sets of 10) 10'-11" to 16'-11"	Int 4"	See Detail	
32	#1	19'-8"	C2	Spcl.	do	(4 sets of 8) 17'-6" to 19'-11"	Int 2"	See Detail	
76	#3	17'-5"	C3	Spcl.	do	(2 sets of 12) 34'-18" to 20'-10"	Int 7"	See Detail	
428	#3	18'-6"	C4	TI	Column	4" 2'-0" 4'-0" 2'-0" 4'-0"	4"		
104	#7	8'-6"	C5	Str.	Footing				
72	#6	8'-6"	C6	Str.	do				
80	#6	10'-7"	C7	17	do	4'-7" 1'-5" 4'-7"			
128	#8	2'-5"	C8	2	Beam	3"			3"
56	#11	33'-9"	C9	Str.	do				
55	#10	16'-0"	C10	Str.	do				
24	#4	20'-3"	C11	Spcl.	do	(4 sets of 3) 20'-1 1/2" to 20'-5 1/2"	Int 2"	See Detail	
176	#10	6'-4"	C12	2	Footing	8" 5'-8"			
32	#6	27'-11"	C13	Str.	Beam				
16	#6	27'-6"	C14	Str.	do				
16	#6	16'-8"	C15	Str.	do				
32	#6	15'-10"	C16	Str.	do				
36	#10	9'-4"	C17	Str.	do				
44	#10	26'-9"	C18	Str.	Column				
44	#10	26'-9"	C19	Str.	do				
44	#10	28'-9"	C20	Str.	do				
44	#10	22'-6"	C21	Str.	do				
36	#10	27'-6"	C22	Str.	do				
16	#6	7'-9"	C23	17	Footing	3'-1" 1'-5" 3'-1"			
40	#4	6'-7"	D1	TI	Beam Cap	4 1/2" 1'-11" 1'-0" 1'-11" 1'-0"			4 1/2"
8	#4	7'-11"	D2	TI	do	4 1/2" 2'-11" 8" 2'-11" 8"			4 1/2"
64	#4	4'-7"	D3	Str.	do				
32	#8	5'-10"	D4	Str.	do				
100	#2	29'-6"	W1	Spcl.	A.B. Wells	See Detail			
BENT 8									
48	#6	8'-6"	E1	Str.	Footing				

<p><u>NOTES</u></p> <p>A dash is used in the appropriate dimension column to indicate that a hook, bend, or portion of the standard bar type is to be omitted.</p> <p>See Sheet 37 for Typical Bar Types, Hook Dimensions and Cutting Diagram.</p> <p>See Sheet 39 for Special Bending Diagrams.</p>	<p>MISSOURI STATE HIGHWAY DEPARTMENT</p> <p>BRIDGE OVER VANDEVENTER AVE. CLAYTON AVE AND WABASH R.R. TRACKS</p> <p>STATE ROAD DANIEL BOONE EXPRESSWAY PROJECT NO. U-611(2) (RT.40) STA. 29+66.00</p> <p>CITY OF ST. LOUIS</p> <p>BAR LIST</p> <p>SVERDRUP AND PARCEL, INC. CONSULTING ENGINEERS ST. LOUIS, MO.</p> <p>REVISED</p>
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10

MISSOURI STATE HIGHWAY DEPARTMENT

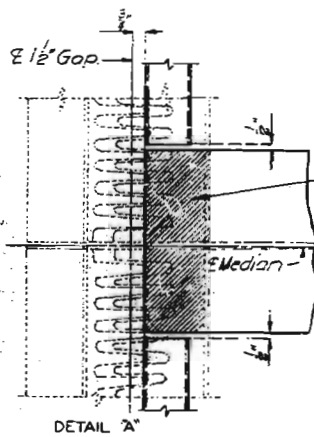
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		53		



Note: Light dotted lines indicate old work.
Heavy lines indicate new work.

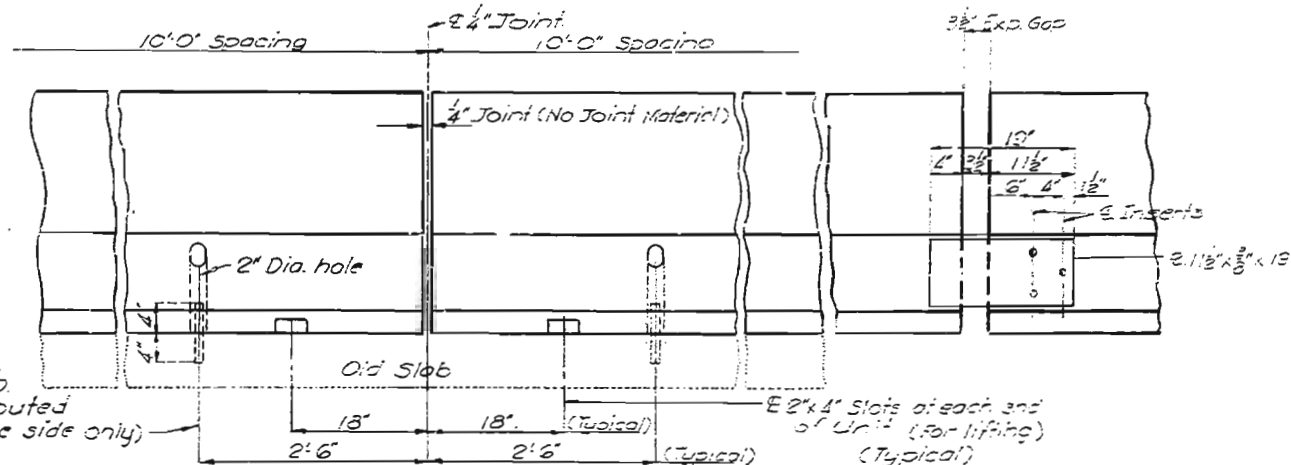
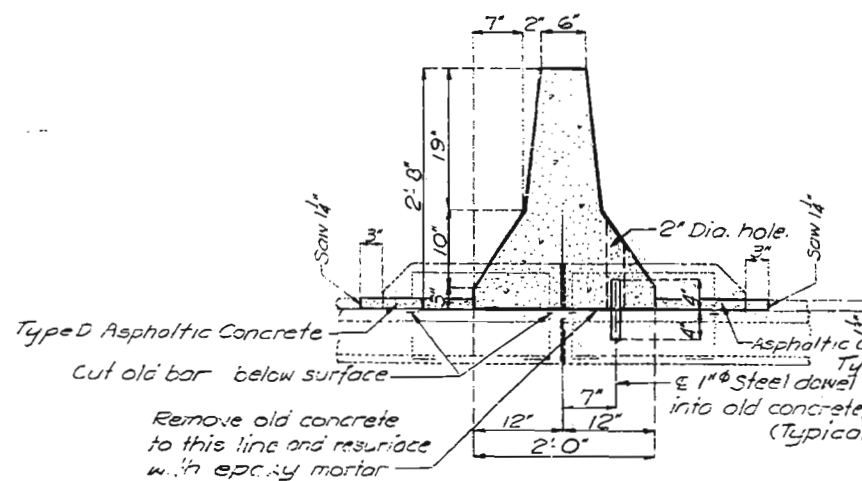
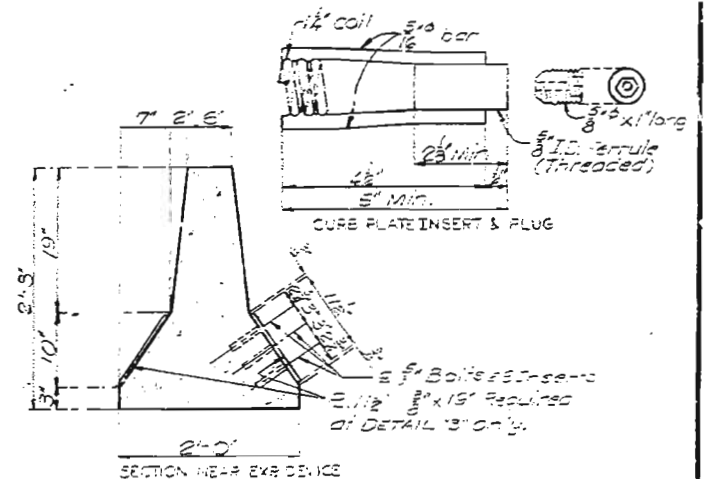
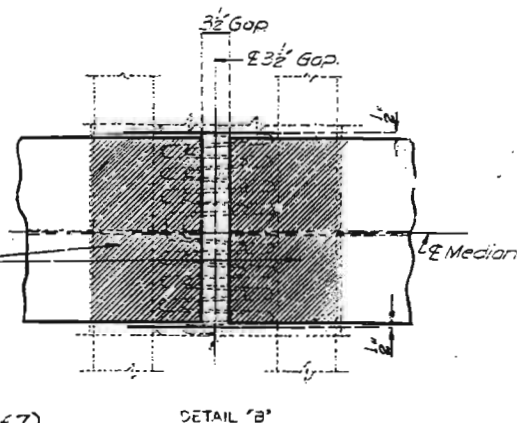
Note: 2" Dia. holes in precast units shall be filled with grout and finished after installation.

Note: Curb plate inserts with ferrule and setting plug shall be galvanized and cast in the concrete. Setting plugs shall remain in place until curb plate is attached. Payment for furnishing and installing curb plate inserts shall be included in price bid per Lin. ft. of median.



2-Layers 55# Roofing Felt shall be placed between top of expansion device and bottom of median in hatched area only.

Note: For method of raising expansion devices see attached sheet (Sheet 5 of 7)



DETAILS OF MEDIAN BARRIER-TYPE A

BRIDGE OVER VANDEVENTER AVE.,
CLAYTON AVE. AND WABASH R. R. TRACKS
STATE ROAD DANIEL BOONE EXPRESSWAY

PROJECT NO. CWS-4014 RTE 40TR STA. 29 + 36.00
CITY OF ST. LOUIS

DATE: MAY 1969 BY WOODS
CHECKED: MAY 1969 BY ALCOFF

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

2.736 Cu. ft. of concrete required for one Lin. ft. of median.

Sheet No. 6 of 7

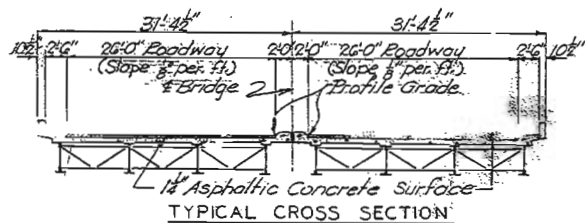
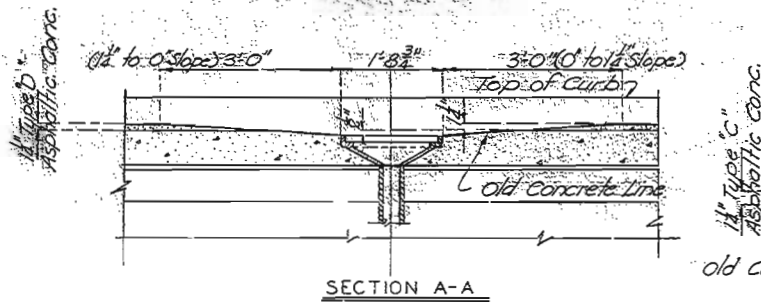
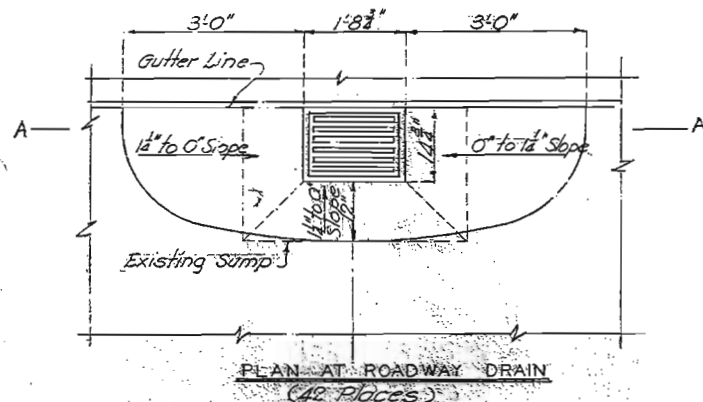
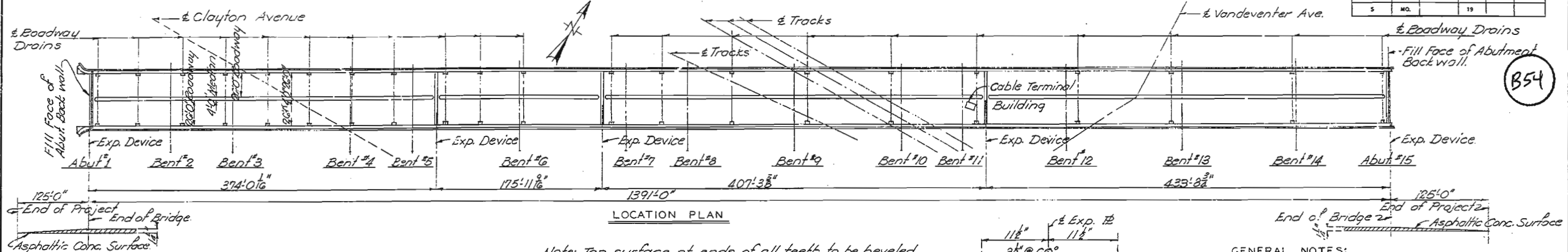
(Quantity of New Jersey Type Median - Let as Product Item)

STD. 67.00

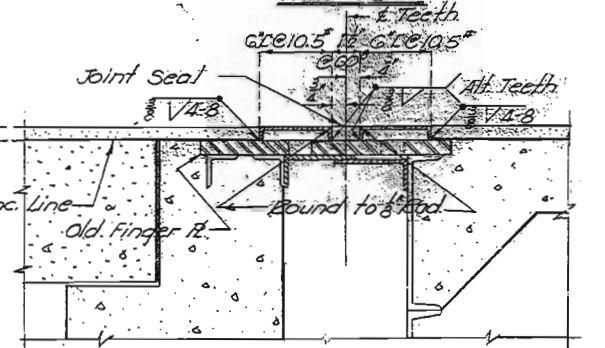
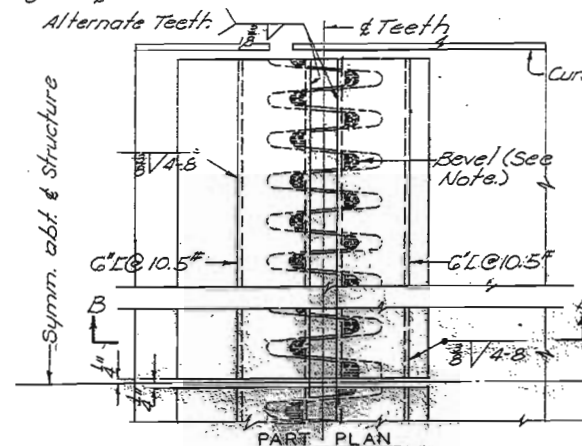
L-667

MISSOURI STATE HIGHWAY DEPARTMENT

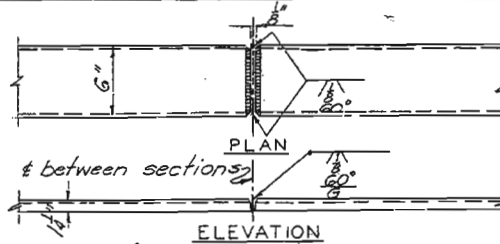
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19		



Note: Top surface of ends of all teeth to be beveled $\frac{3}{8}$ in $\frac{1}{2}$ " to permit free movement under new 6" channels.

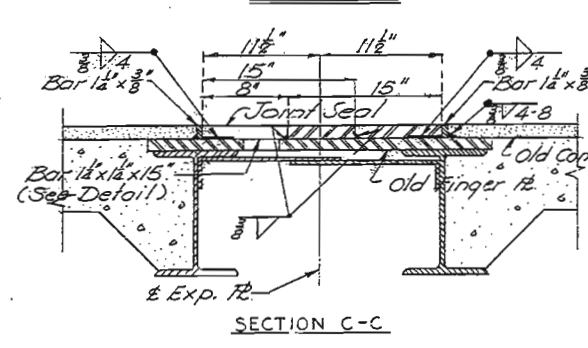
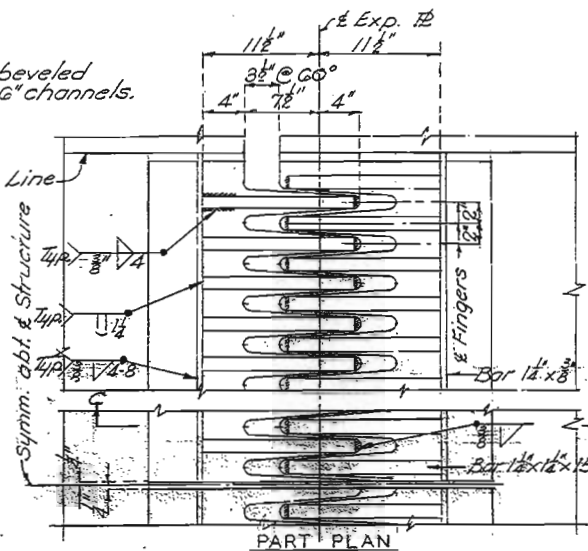


DETAILS OF EXPANSION DEVICES ABUT'S 1 & 15

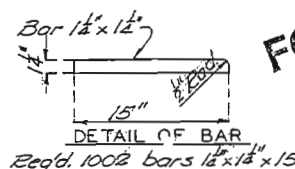


DETAILS OF CHANNEL SPLICE

Note: Clip flanges of 6" L @ 10.5" are required.



DETAILS OF EXPANSION DEVICES BENT'S 5, BENT'S 7 & BENT'S 11



GENERAL NOTES:

Design Specifications A.A.S.H.O. 1961.

Structural Steel Stress 20,000 p.s.i.

All structural steel shall be A.S.T.M. A36.

Qualification of welding operators will be required.

Use Series E70 low hydrogen electrodes (E7015-16, -18 or 28). Preheat 100° before welding all material over 1" in thickness.

The structural steel dams shall extend full roadway width between curbs but shall be installed in sections of such lengths as to permit at least one way traffic on each roadway at all times. Before traffic is permitted to cross over sections of dams in place, sufficient bituminous surfacing shall be placed on roadway slab adjacent to both sides of expansion device to prevent any damage to either the steel dams or tires of vehicles.

Steel dams shall conform to crown of roadway.

Steel channels or bars on both sides of expansion joint, for full width of roadway, shall be considered as a steel dam assembly and paid for as one steel bar dam.

Voids in bar dams shall be filled with joint seal conforming to Standard Specification 157.1.5.

SUMMARY OF QUANTITIES				
Item	DESCRIPTION	UNIT	TOTAL	REMARKS
37207	Primer (R.C.-0)	Gal.	570	Est'd @ 100 Gal/154
43045	Type "D" Asph. Conc.	Ton	597	
87100	Construction Signs	L.Sun	1	
55012	Steel Bar Dams	Each	5	

RESURFACING
BRIDGE OVER VANDEVENTER AVE.
CLAYTON AVE. AND WABASH R. R. TRACKS
STATE ROAD DANIEL BOONE EXPRESSWAY

PROJECT NO. RTE 40 T.R. SEC. 15(1) STA. 29+86
CITY OF ST LOUIS

SUBMITTED BY: D. B. Perkins
DATE: 4/2/66
APPROVED BY: M. J. Swider
DATE: 4/1/66

STD. 87.10
L-667 A

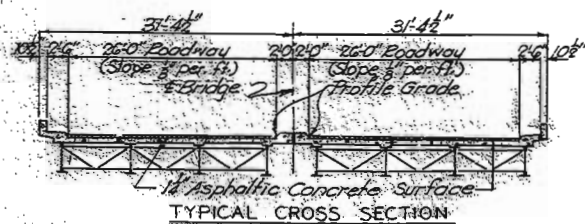
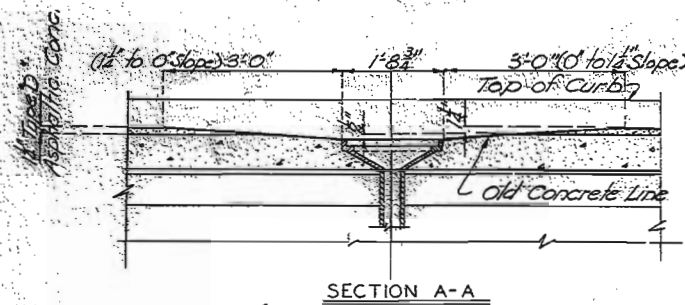
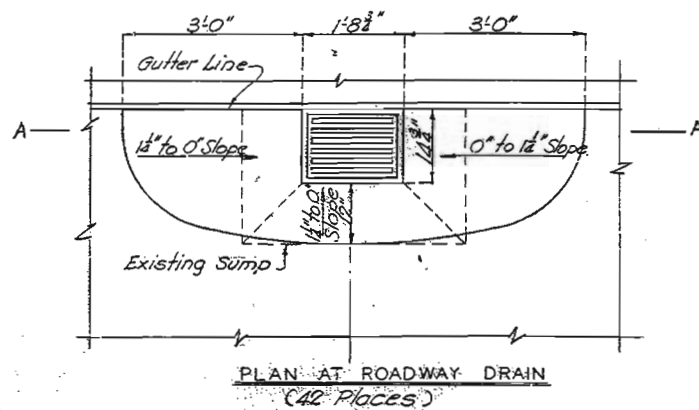
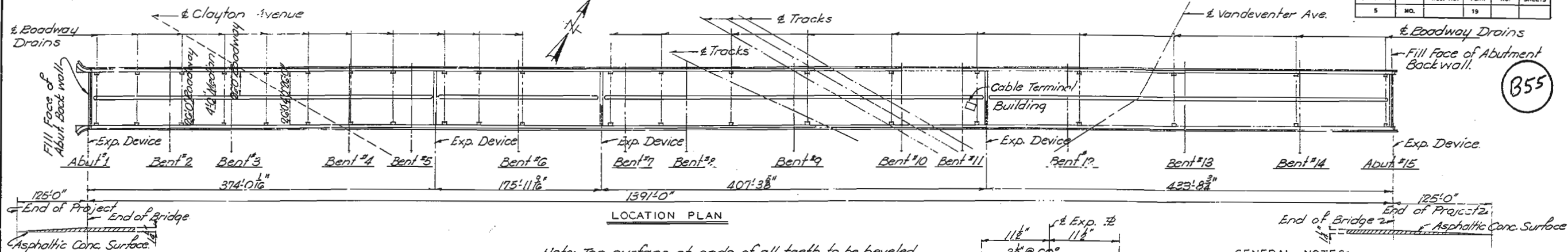
DESIGNED 19 BY
DETAILED Apr. 1964 BY M.E.L.
CHECKED Apr. 1964 BY J.N.N.

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

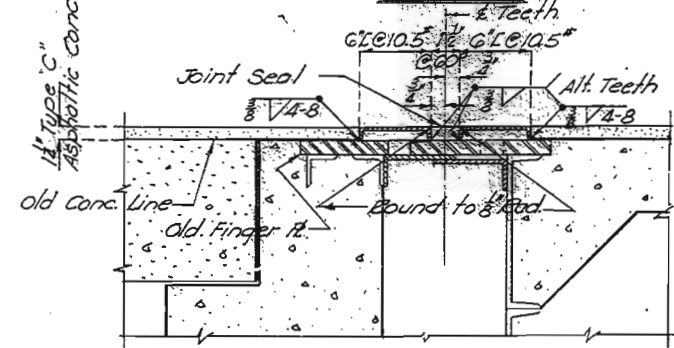
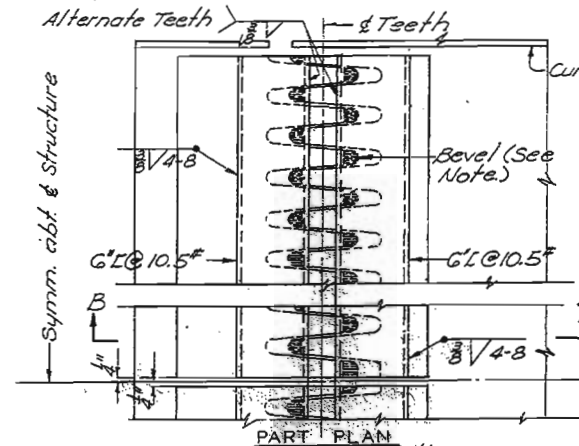
1 of 2
Sheet No. 1 of 1

MISSOURI STATE HIGHWAY DEPARTMENT

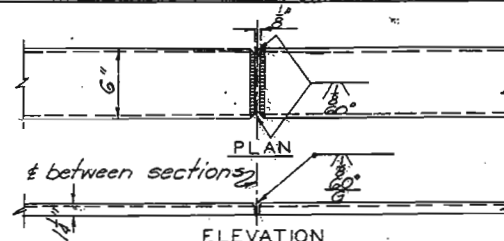
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19		



Note: Top surface of ends of all teeth to be beveled $\frac{1}{8}$ in $\frac{1}{2}$ " to permit free movement under new G channels.

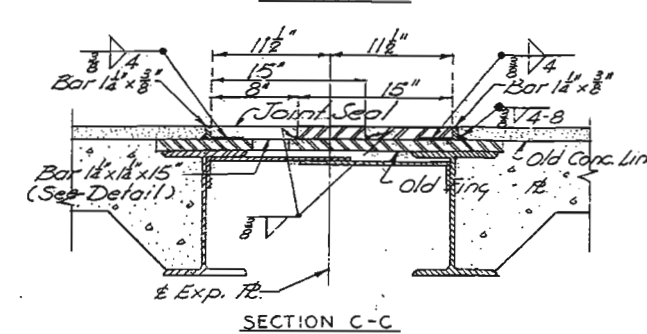
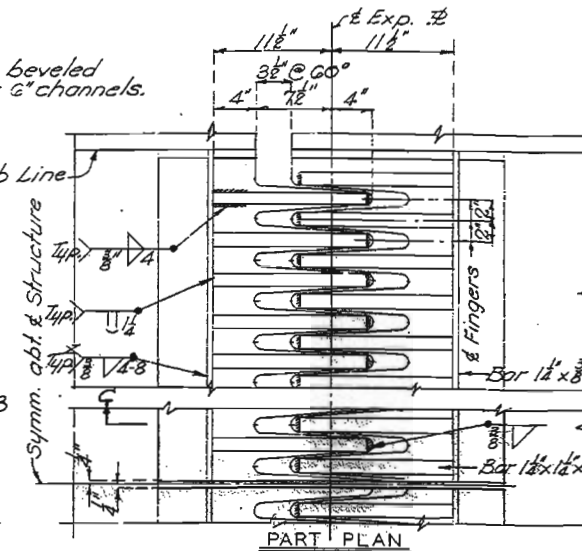


DETAILS OF EXPANSION DEVICES ABUT'S 1 & 15

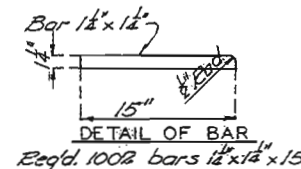


Note: Clip flanges of G.C. @ 10.5" as required.

DETAILS OF CHANNEL SPLICE



DETAILS OF EXPANSION DEVICES BENT'S 5, BENT'S 7 & BENT'S 11



GENERAL NOTES:

Design Specifications A.A.S.H.O. 1961.

Structural Steel Stress 20,000 p.s.i.

All structural steel shall be A.S.T.M. A36.

Qualification of welding operators will be required.

Use Series E70 low hydrogen electrodes (E7015-16, 18 or 28). Preheat 100° before welding all material over $\frac{1}{2}$ " in thickness.

The structural steel dams shall extend full roadway width between curbs but shall be installed in sections of such lengths as to permit at least one way traffic on each roadway at all times. Before traffic is permitted to cross over sections of dams in place, sufficient bituminous surfacing shall be placed on roadway slab adjacent to both sides of expansion device to prevent any damage to either the steel dams or tires of vehicles.

Steel dams shall conform to crown of roadway.

Steel channels, or bars on both sides of expansion joint, for full width of roadway, shall be considered as a steel dam assembly and paid for as one steel bar dam.

voids in bar dams shall be filled with joint seal conforming to Standard Specification 157.1.5.

FOR INFORMATION ONLY

RESURFACING
BRIDGE OVER VANDEVENTER AVE.
CLAYTON AVE. AND WABASH R.R. TRACKS
STATE ROAD DANIEL BOONE EXPRESSWAY

PROJECT NO. RTE. 40.T.R.-SEC.M-115(1) STA. 29+86
CITY OF ST. LOUIS

SUBMITTED BY: *D. B. Perkins* DATE: 6/2/64
APPROVED BY: *M. J. Switzer* DATE: 6/1/64

STD. 87.10
L-567 A

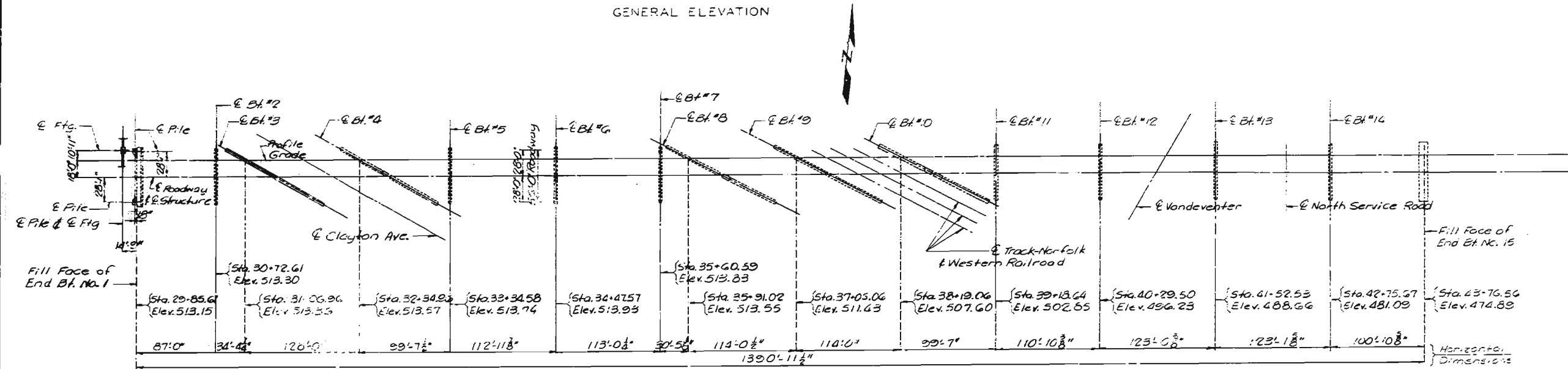
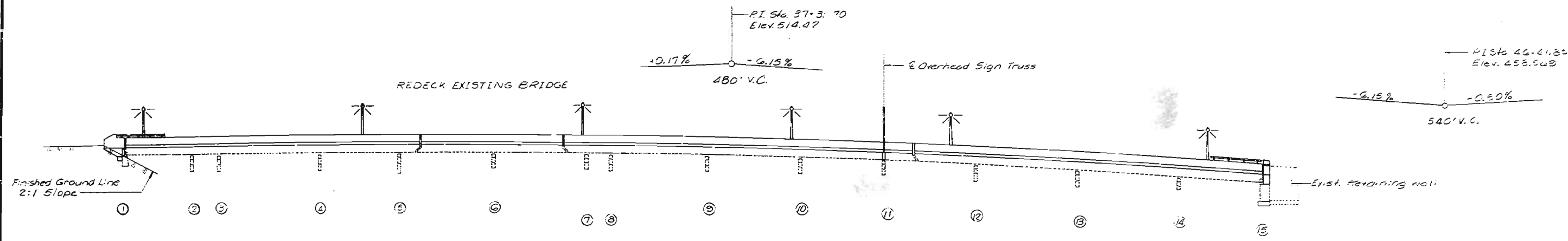
Sheet No. 5 of 7

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

DESIGNED 19 BY
CHECKED 1964 BY M.E.L.
1964 BY J.N.M.

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		70	101	
Sec. 15, Sur. 17 Twp. 45N Rge. 7E					



Note: For General Notes, Estimated Quantities, and Pile Data, see sheet no. 2.
Stations shown are Field Stations.
Elevations shown are at Profile Grade.

PLANS FOR REDECKING & REPAIR

B.M. #4 - Elev. 477.89 - 10' on stone curb in front of General Equipment Co. Bldg. #8052 Clayton Ave.
B.M. #5 - Elev. 489.32 - on N.E. Corner of 2nd 2' Conc. Base of Stop Light at Van. Ave. & W. Side of Exit Ramp from Market Street.

BRIDGE OVER VANDEVENTER & CLAYTON AVE., N&W. R.R.

STATE ROAD: ROUTE 40
IN CITY OF ST. LOUIS
PROJECT NO. 6-U-40-26 STA. 29+85.61
JOB NO. 6-U-40-26 RTE 40
CITY OF ST. LOUIS
DATE 2/25/71

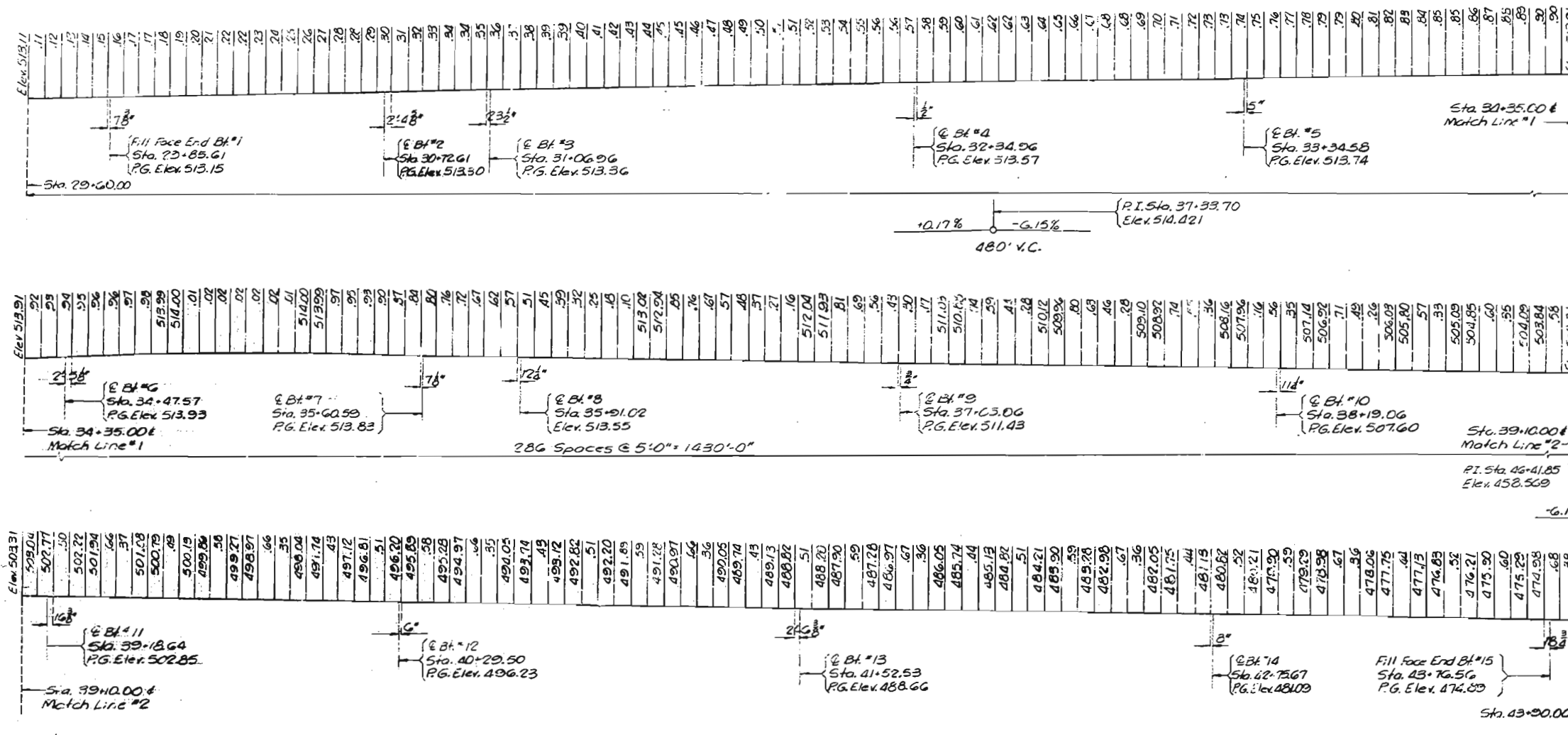
STD. 605.00
STD. 706.35
L-667 R

DESIGNED Dec. 1977
DETAILED Feb. 1980
CHECKED Feb. 1980

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

Sheet No. of 30.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	102	



GENERAL NOTES:

Design Specifications: A.A.S.H.T.O.-1273
Design Loading: 20-44, No Future Wearing Surface
Earth Pressure: Int Fluid Pressure 30"
Design Life: 35 Years
Class "C" Concrete (Substr. Repair) $f_c=12,000$ psi
Class "B1" Spec. Concrete (Superst. Grd Fill/Haunches) $f_c=16,000$ psi
Class "B1" Concrete (Barrier Curb) $f_c=16,000$ psi
Reinforcing Steel (Grade 60) $f_y=60,000$ psi
Structural Carbon Steel $f_s=20,000$ psi
Floor System:
Steel Grid Floor (Half Concrete Filled) (See Special Provisions)

Painting:
System B Green. (See Special Provisions)

Minimum clearance to reinforcing steel shall be 1 1/2" unless otherwise shown.
Light dotted lines indicate old work, heavy lines indicate new work.
Bars bonded in old concrete not removed shall be cut only stripped and bent into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars.
For field connections, use #1 High Strength Bolts, 1/2" x 1/2" except as noted.
Contractor shall verify all dimensions in field before ordering new steel.
All concrete and reinforcement in safety barrier curbs is included in superstructure quantities.
Provide the following openings for traffic during construction:
Clayton Ave. = 15'6" Vertical x 36'0" Horizontal
Jandeverter Ave. = 15'6" Vertical x 56'0" Horizontal
A minimum vertical clearance of 21'6" from top of rails and a minimum lateral clearance of 8'6" from the E of track to nearest temporary construction falsework shall be maintained during construction.
For Stage Construction Details, see sh. no. 53.

ESTIMATED QUANTITIES			
ITEM	SUBSTR.	SUPERSTR.	TOTAL
Removal of Existing Bridge Deck	Sq. Ft.	82070	82070
Special Work	Lump Sum		1
Asphalt Cement (Asphaltic Concrete)	Tons	35.8	35.8
Mineral Aggregate (Asphaltic Conc.) (Type A)	Tons	677	677
Bridge Deck Waterproofing (Liquid)	Sq. Yd.	8641	8641
Elastomeric Exp. Jt. Seal (1/4 in.)	Lin. Ft.	112	112
Elastomeric Exp. Jt. Seal (5/8 in.)	Lin. Ft.	56	56
Preformed Compression Jt. Seal (2 1/2 in.)	Lin. Ft.	112	112
Reinforcing Steel (Grade 60)	Lbs.	17,280	17,280
Reinforcing Steel (Grade 60) (Epoxy)	Lbs.	1990	57,210
Class B1 Concrete (Haunches)	Cu. Yd.	175.0	175.0
Class B1 Concrete (Substr.)	Cu. Yd.	237,270	237,270
Steel Grid Floor (Half Concrete Filled) *	Sq. Ft.	82,400	82,400
High Strength Bridge Rail (One Tube)	Lin. Ft.	2797	2797
Painting (System B) Green	Lump Sum	1	1
Conduit System on Structure	Lump Sum	1	1
Drainage System on Structure	Lump Sum	1	1
Substructure Repair (Formed)	Sq. Ft.	39	39
Substructure Repair (Unformed)	Sq. Ft.	140	140
Pressure Grouting (Epoxy)	Lin. Ft.	41	41
Class B1 Concrete (Barrier Curb)	Cu. Yd.	358.5	358.5
Class B Concrete (Substr.)	Cu. Yd.	173.8	173.8
Protective Coating for Concrete Bents	Lump Sum	1	1
Structural Steel Pile (HP10x42)	Lin. Ft.	104	104
Temporary Construction Traffic Barrier **	Lump Sum	1	1
Bearing removal for inspection	Each	120	120
Surface Finishing Bearing Rockers	Each	10	10
Rehabilitate Bearings	Each	16	16
New Bearing Materials	Lb.	1700	1700

PROFILE GRADE ELEVATIONS

PILE DATA			
Bent No.			1
Pile Type and Size			HP10x42
Number			4
Approximate Length	Lin. Ft.	Beam	Wing
		25	27
Design Bearing	Tons		10
Hammer Energy Req'd. Ft. Lbs.			7,000

Minimum energy requirement of hammer based on plan length and design bearing value of piles.
All piles shall be driven to practical refusal.

DETAILED Feb. 1980
CHECKED Feb. 1980

* Includes #3 Reinforcement bar.
** See Special Provisions

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

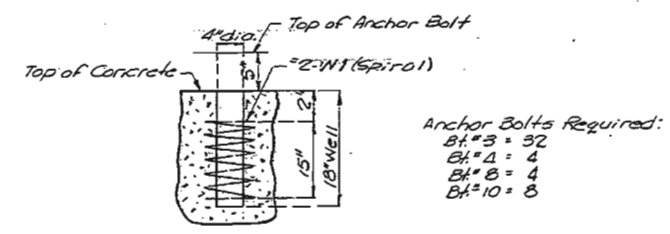
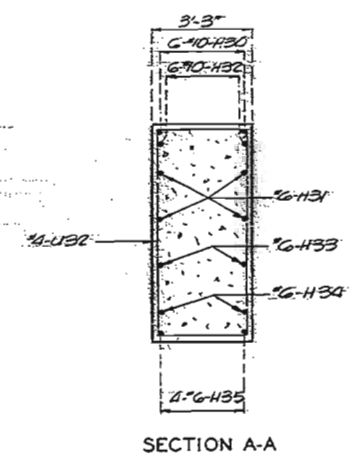
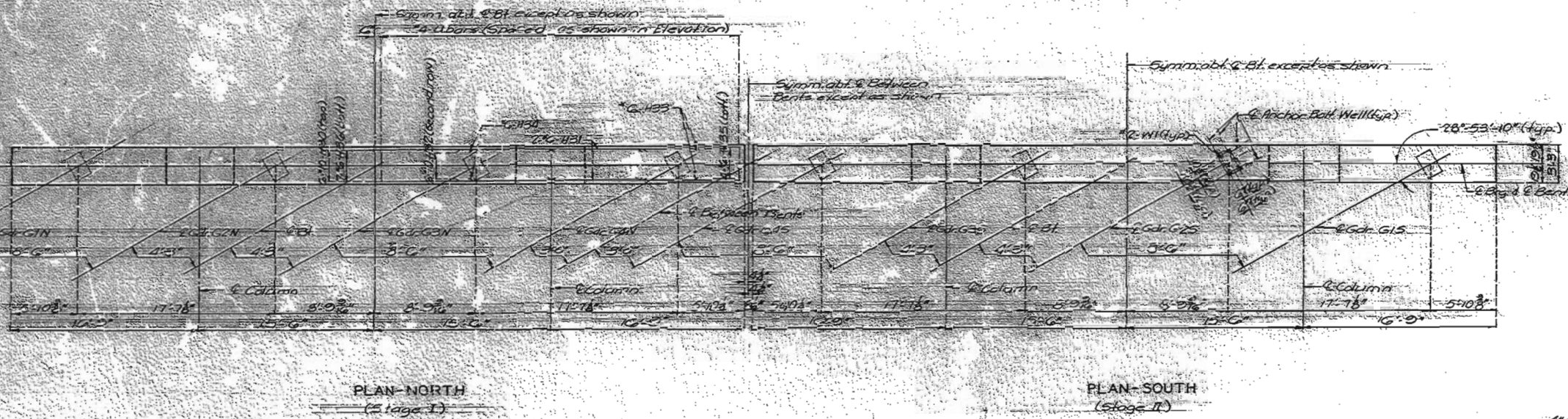
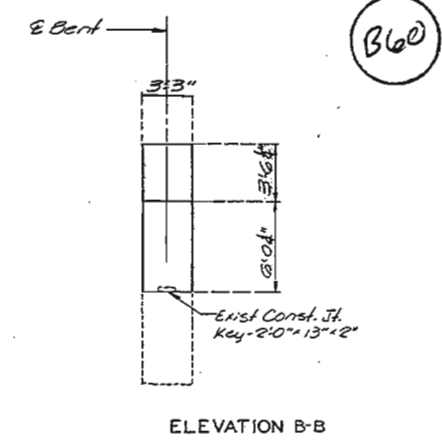
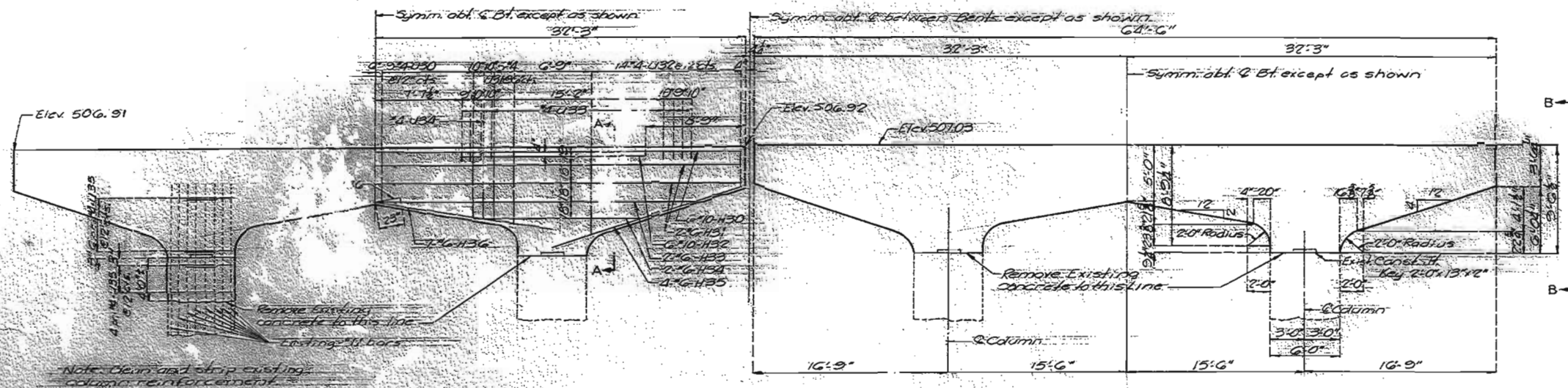
Sheet No. 2 of 35.

CITY OF ST. LOUIS

L-657 R



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		78	105	

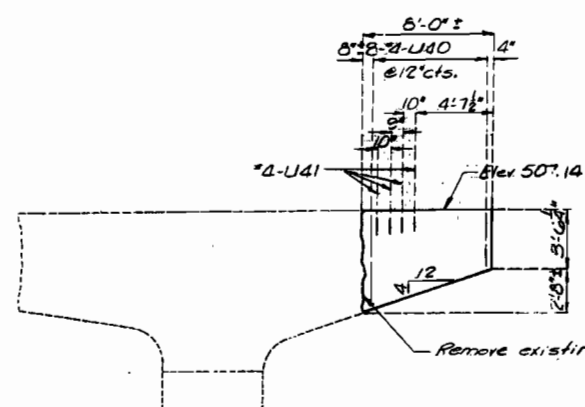


FOR INFORMATION ONLY

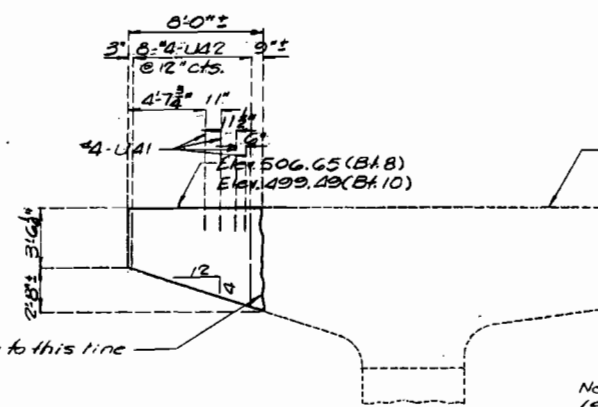
DETAILS OF ANCHOR BOLT WELL

Note: Anchor Bolts for Bearings shall be 1 1/2" dia swaged bolts and shall extend 15" into concrete with hexagon nuts and plain washers. Weight of Anchor Bolts for Bearings shall be included in weight of Fabricated Structural Carbon Steel. Reinforcing bars in tops of substructure beams or caps shall be spaced to clear anchor bolts for bearings by at least 1/2".

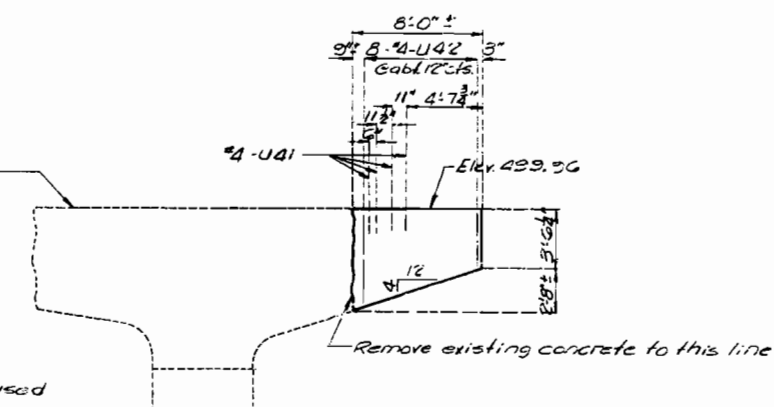
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5	17		10	156	



PART ELEVATION

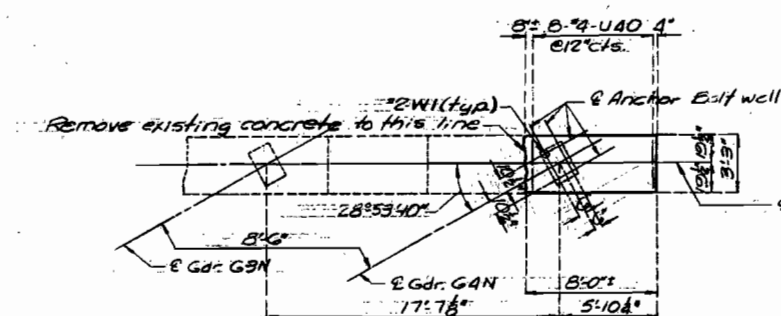


PART ELEVATION



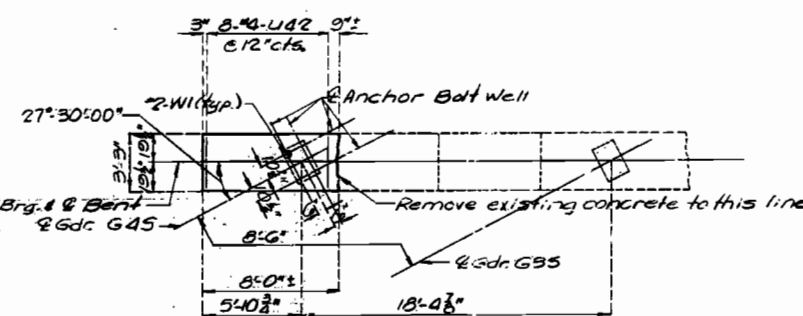
PART ELEVATION

Note: Horizontal Reinforcement to be reused (See Special Provisions).



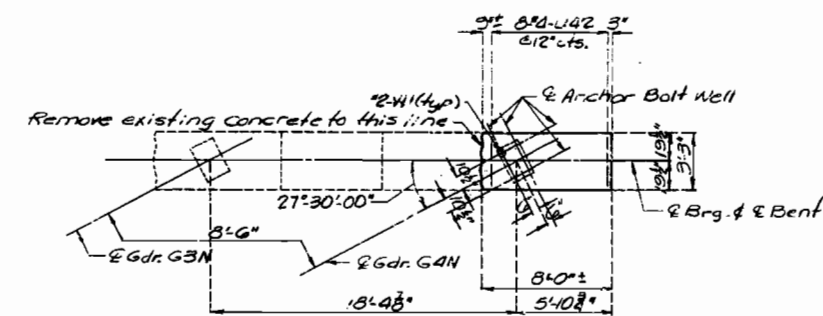
PART PLAN

BENT NO. 4 NORTH (RT. SIDE)
(Stage I)



PART PLAN

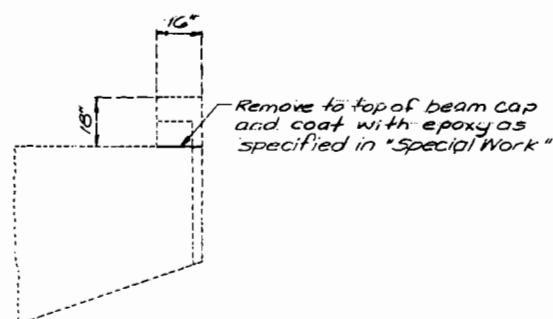
BENT NO. 8 SOUTH (LT. SIDE) (Stage II)
BENT NO. 10 SOUTH (LT. SIDE) (Stage II)



PART PLAN

BENT NO. 10 NORTH (RT. SIDE)
(Stage I)

Note: For Details of Anchor Bolt Well, see sheet no. 5.
Reinforcing bars in top of substructure beams or caps shall be spaced to clear anchor bolts for bearings by at least 1/2".



TYPICAL DETAILS AT
ALL INT. BENTS

REPAIR OF INT. BENTS

DETAILED Nov. 1977
CHECKED Feb. 1980

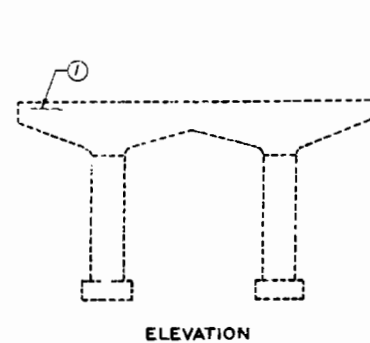
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Sheet No. 6 of 33.

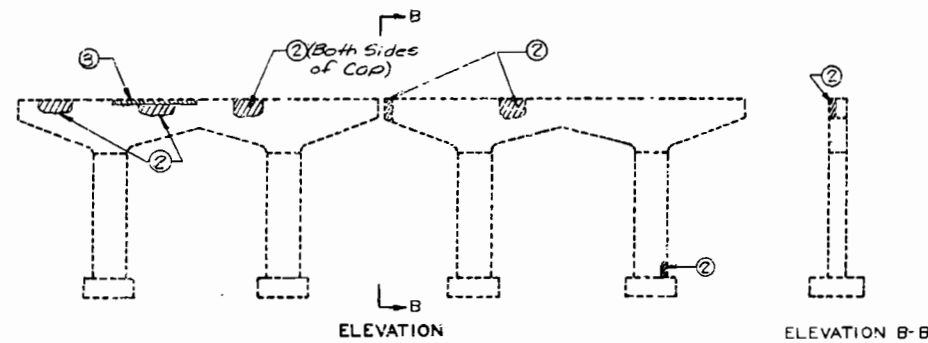
CITY OF ST. LOUIS

L-667R

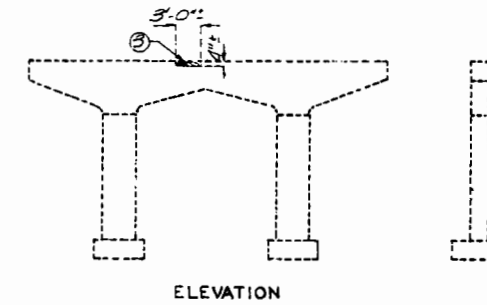
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1	MO.		88	107	



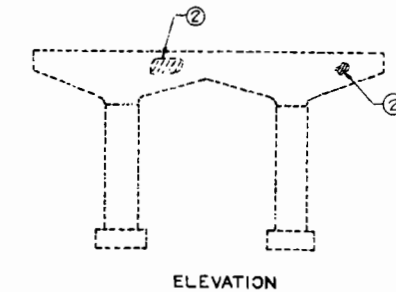
PLAN
BENT NO. 2



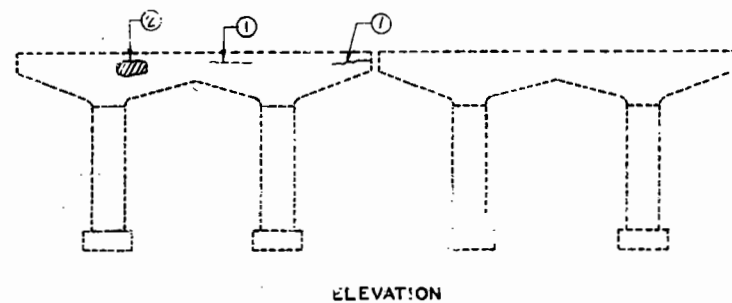
PLAN
BENT NO. 4 (For additional repairs, see sh. no. 6)



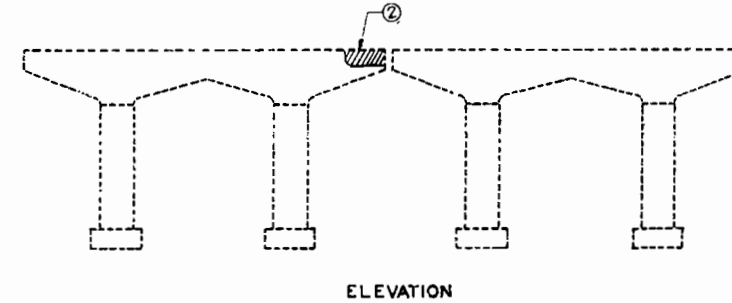
PLAN
BENT NO. 5



PLAN
BENT NO. 7

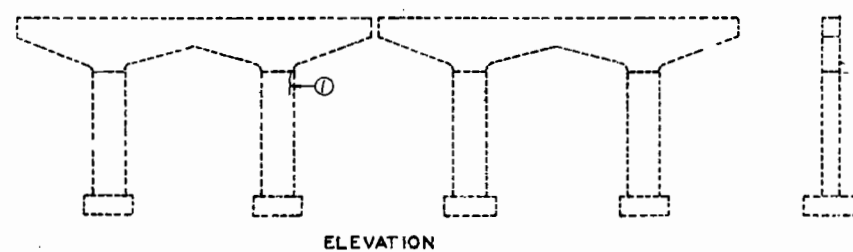


PLAN
BENT NO. 8 (For additional repairs, see sh. no. 6)

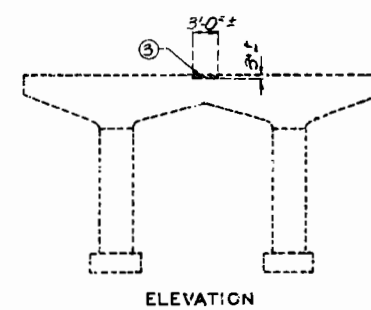


PLAN
BENT NO. 9

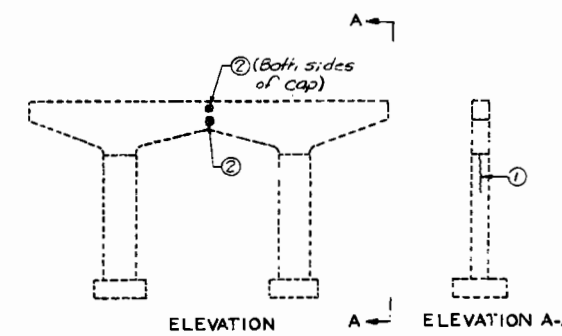
- ① Crack (Pressure Grout-Epoxy) (See Special Provisions)
- ② Substructure Repair (Unformed) Remove and replace concrete as required to a min. of 2" behind existing reinforcing steel and to sound concrete. (See Special Provisions)
- ③ Substructure Repair (Formed) (See Special Provisions)



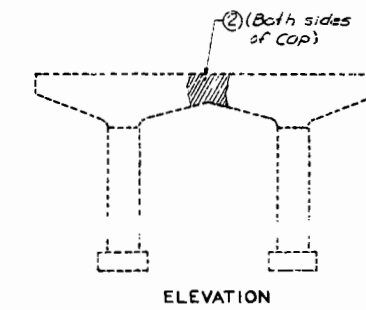
PLAN
BENT NO. 10 (For additional repairs, see sh. no. 6)



PLAN
BENT NO. 12



PLAN
BENT NO. 13



PLAN
BENT NO. 14

SUBSTRUCTURE REPAIRS

Note: For Substructure Repairs at End Bent No. 15, see sheet no. 8.

DESIGNED Jan. 1980
CHECKED Feb. 1980

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

Sheet No. 7 of 33.

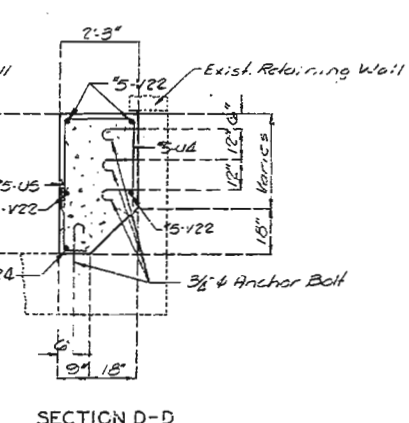
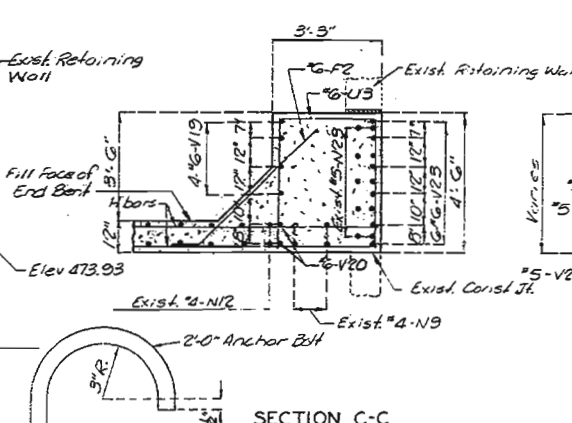
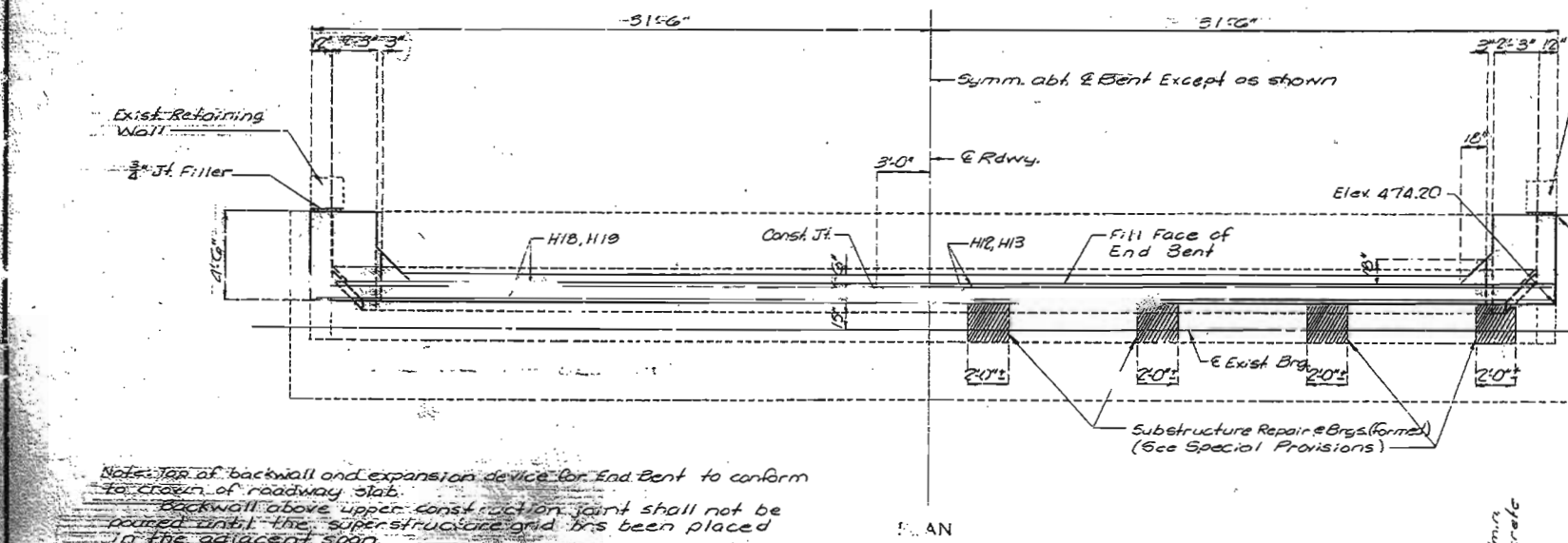
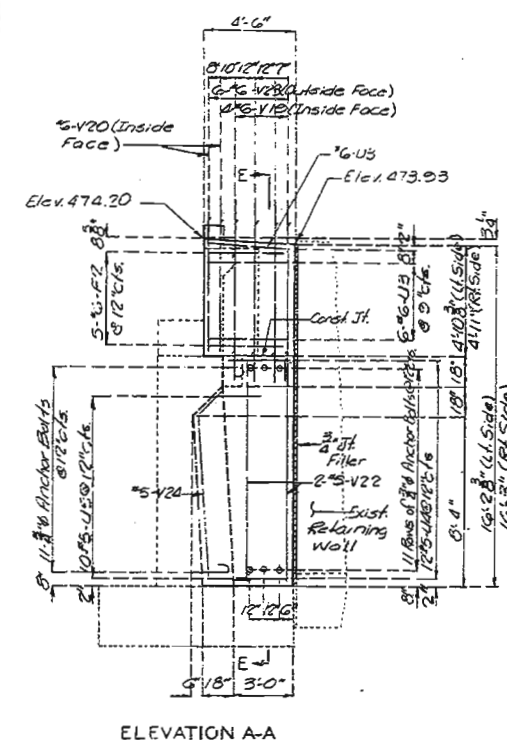
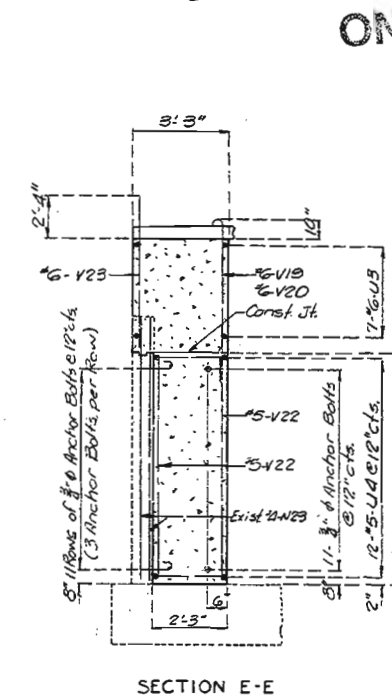
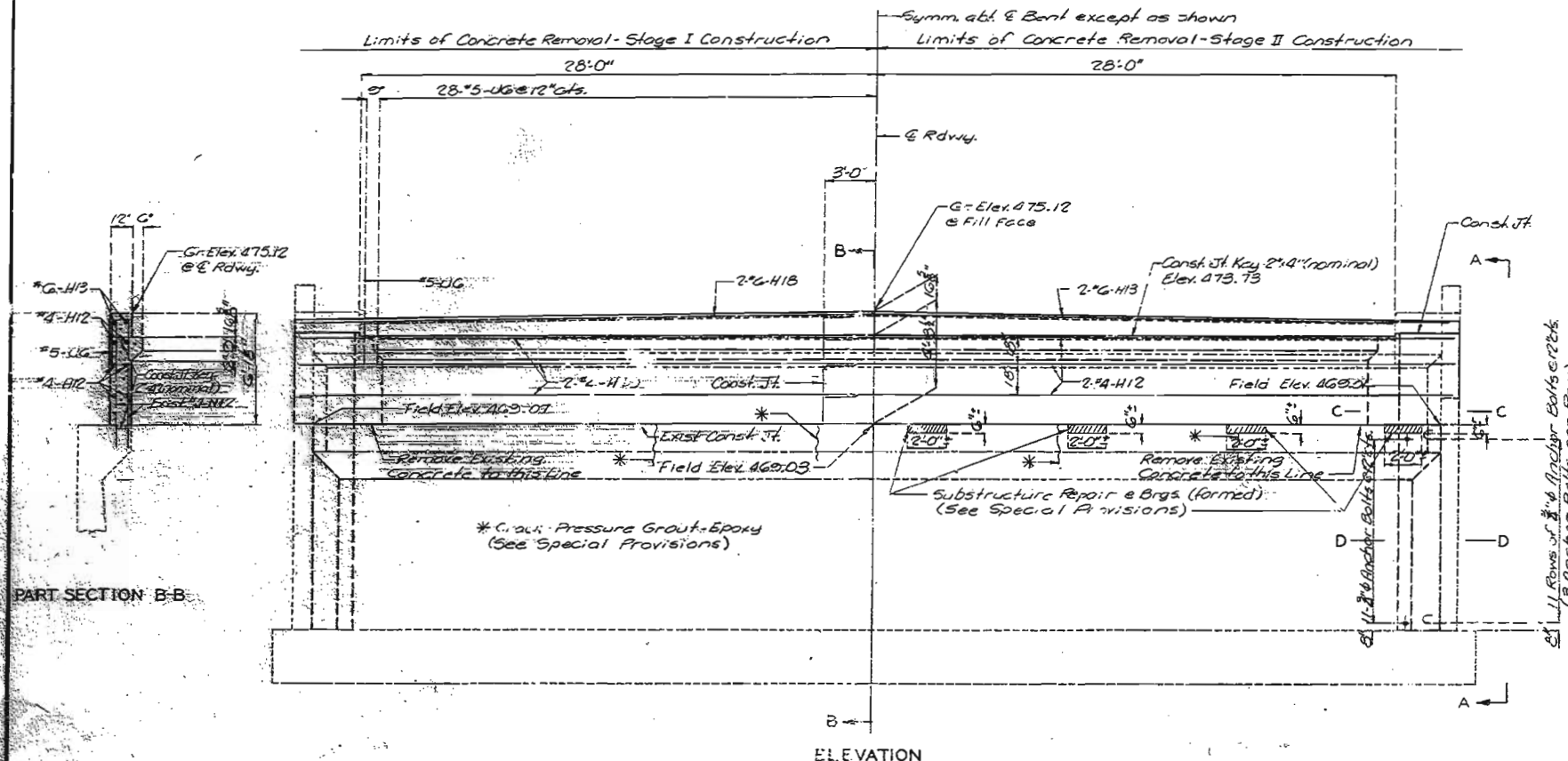
CITY OF ST. LOUIS

L-667R

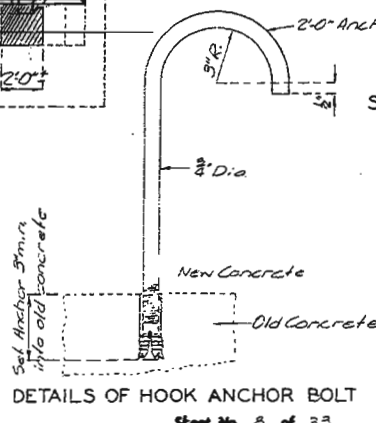
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	102	

363

FOR INFORMATION ONLY



Note: Top of backwall and expansion device for End Bent to conform to crown of roadway slab.
Backwall above upper construction joint shall not be poured until the substructure and bents have been placed in the adjacent span.
For Details of Timber Header, see sheet no. 30.



Note: Anchors shall be of the self drilling, expansion type, made of case hardened and drawn carburized steel, with self-cutting annular broaching grooves.
Cost of furnishing and installing hook anchor bolt assemblies shall be included in price bid for concrete.
See Curb sheet for reinforcement of Safety Barrier Curb.

DETAILS OF END BENT NO. 15
CITY OF ST. LOUIS

L-667R

DETAILED Dec. 1977
CHECKED Feb. 1980

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

Sheet No. 8 of 33.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		59	109	



Note: Longitudinal dimensions shown are taken at back of top flange angles (from Shop drawings of girders).

Note: For Sections A-A, B-B, C-C & D-D, and E-E see sheet No. 10

PLAN OF STRUCTURAL STEEL

DETAILED DEC. 1977
CHECKED JULY 1979

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

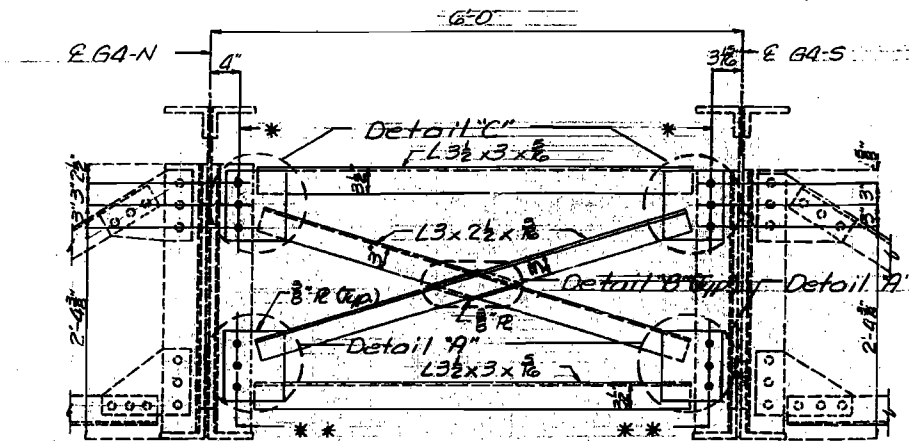
Sheet No. 2 of 33.

CITY OF ST. LOUIS

L-667R

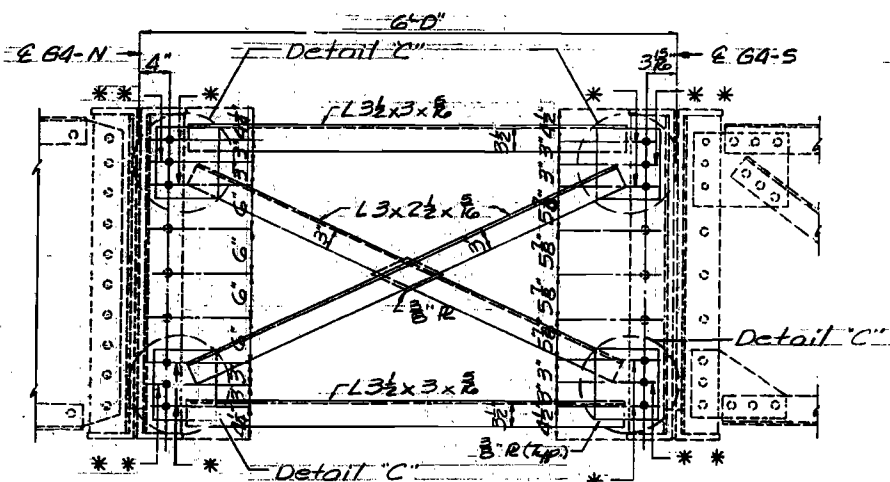
* = Existing Holes
 ** = of New $\frac{1}{2}$ " Holes

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	110	



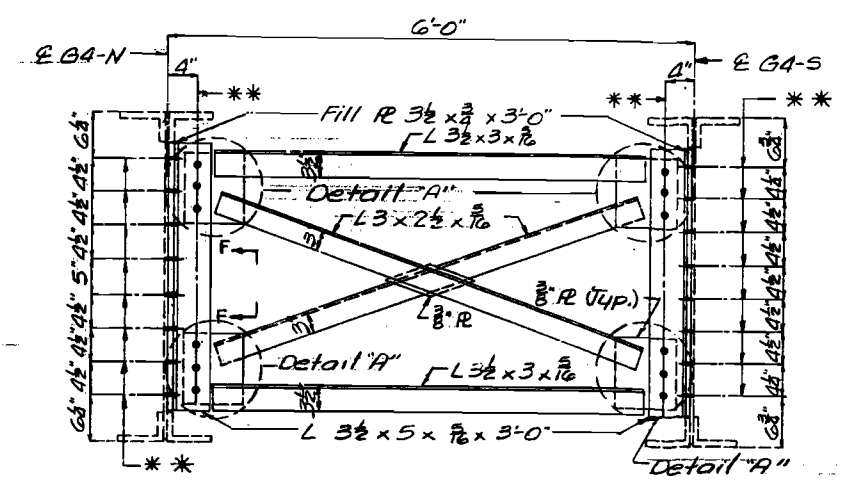
SECTION A-A

End Diaphragm



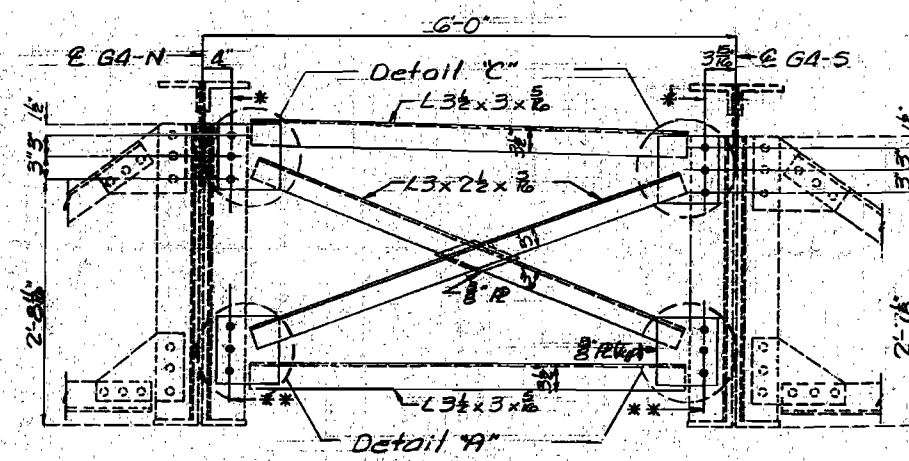
SECTION B-B

Cross Frame of Int. Bents



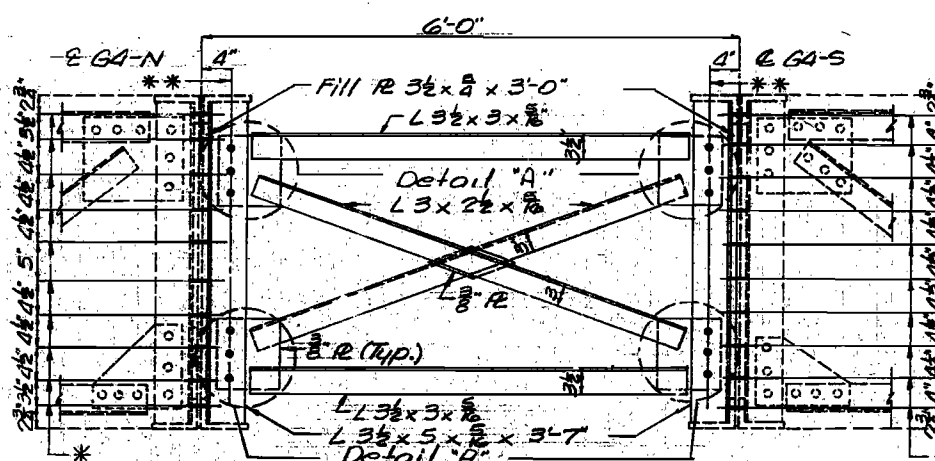
SECTION C-C

Int. Diaphragm placed not opposite Existing Stiffener Angles.



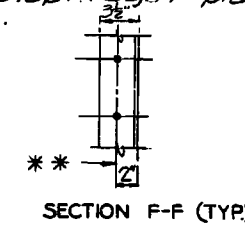
SECTION E-E

End Diaphragm at Hinge Pins



SECTION D-D

Int. Diaphragm placed opposite Existing Stiffener Angles.



Note: The holes in the new diaphragm connection plates shall be $\frac{1}{16}$ " ϕ .
 The diaphragms shall be erected with the bolts tightened to a snug-fit. After the concrete filled steel grid is in place and the deck paved (both lanes) with asphalt concrete, the bolts shall be tightened to the final tension.

Note: For location of Sections A-A, B-B, C-C, D-D and E-E see sheet No. 9.
 For Details A, B & C see sheet No. 11.
 When using existing holes, remove existing H.S. bolts or rivets and replace with new $\frac{3}{4}$ " H.S. bolts.

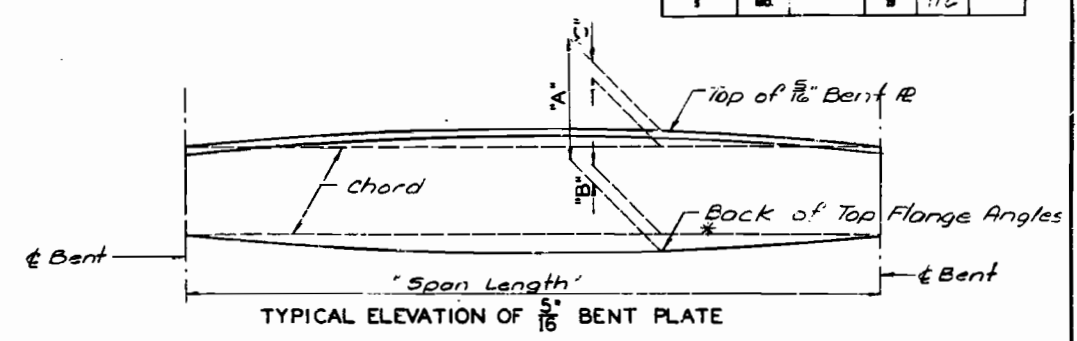
DETAILED July 1979
 CHECKED Oct. 1979

Note: This drawing is not to scale. Follow dimensions. DETAILS OF CROSS FRAME & DIAPHRAGMS

Sheet No. 10 of 33.

CITY OF ST. LOUIS

L-667R



Note: Dimensions 'A', 'B' & 'C' are taken at $\frac{1}{2}$ Girders. See Sheet No. 11.
 * For location and size of cover R's and Splice R's to cope Vertical leg of $\frac{1}{2}$ Bent R, see shop drawings of girders.
 The Contractor will be allowed to fabricate the curved portion of the $\frac{1}{2}$ Bent R on chords (maximum of 10') if he desires.

LOCATION	BT.#1	G1-N			G2-N			G3-N			G4-N			G4-S			G3-S			G2-S			G1-S		
		"A"	"B"	"C"	"A"	"B"	"C"	"A"	"B"	"C"	"A"	"B"	"C"	"A"	"B"	"C"	"A"	"B"	"C"	"A"	"B"	"C"	"A"	"B"	"C"
SPAN 1	1	2 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	2	3 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	3	3 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	4	3 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	5	3 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	6	3 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	7	3 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	8	3 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	9	3 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
SPAN 2	BT.#2	3 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	1	2 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	2	2 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	3	2 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	4	2 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	5	3 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	6	3 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	7	3 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	8	3 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
SPAN 3	BT.#3	3 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	1	3 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	2	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	7 1/2"	0"	0"	7 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	3 1/2"	0"	0"
	3	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	7 1/2"	0"	0"	7 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	3 1/2"	0"	0"
	4	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	7 1/2"	0"	0"	7 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	3 1/2"	0"	0"
	5	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	7 1/2"	0"	0"	7 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	3 1/2"	0"	0"
	6	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	7 1/2"	0"	0"	7 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	3 1/2"	0"	0"
	7	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	7 1/2"	0"	0"	7 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	3 1/2"	0"	0"
	8	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	7 1/2"	0"	0"	7 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	3 1/2"	0"	0"
SPAN 4	BT.#4	2 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	1	2 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	2	2 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	3	3 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	4	3 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	5	3 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	6	3 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	7	3 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	8	3 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
SPAN 5	BT.#5	2 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	1	2 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	2	2 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	3	2 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	4	2 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	5	2 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	6	2 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	7	2 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	8	2 1/2"	0"	0"	4 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	6 1/2"	0"	0"	5 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
SPAN 6	NEAR BT'S	3 1/2"	0"	0"	5 1/2"	0"	0"	7 1/2"	0"	0"	8 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	5 1/2"	0"	0"	3 1/2"	0"	0"
	09	3 1/2"	0"	0"	5 1/2"	0"	0"	7 1/2"	0"	0"	8 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	5 1/2"	0"	0"	3 1/2"	0"	0"
	18	3 1/2"	0"	0"	5 1/2"	0"	0"	7 1/2"	0"	0"	8 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	5 1/2"	0"	0"	3 1/2"	0"	0"
	27	3 1/2"	0"	0"	5 1/2"	0"	0"	7 1/2"	0"	0"	8 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	5 1/2"	0"	0"	3 1/2"	0"	0"
	36	3 1/2"	0"	0"	5 1/2"	0"	0"	7 1/2"	0"	0"	8 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	5 1/2"	0"	0"	3 1/2"	0"	0"
	45	3 1/2"	0"	0"	5 1/2"	0"	0"	7 1/2"	0"	0"	8 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	5 1/2"	0"	0"	3 1/2"	0"	0"
	54	3 1/2"	0"	0"	5 1/2"	0"	0"	7 1/2"	0"	0"	8 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	5 1/2"	0"	0"	3 1/2"	0"	0"
	63	3 1/2"	0"	0"	5 1/2"	0"	0"	7 1/2"	0"	0"	8 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	5 1/2"	0"	0"	3 1/2"	0"	0"
	72	3 1/2"	0"	0"	5 1/2"	0"	0"	7 1/2"	0"	0"	8 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	5 1/2"	0"	0"	3 1/2"	0"	0"
SPAN 7	82	2 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	7 1/2"	0"	0"	7 1/2"	0"	0"	6 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	91	2 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	7 1/2"	0"	0"	7 1/2"	0"	0"	6 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
	BT.#6	2 1/2"	0"	0"	5 1/2"	0"	0"	6 1/2"	0"	0"	7 1/2"	0"	0"	7 1/2"	0"	0"	6 1/2"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"

HAUNCHING DETAILS

DETAILED April 1981
 CHECKED April 1981

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

Sheet No. 12 of 33.

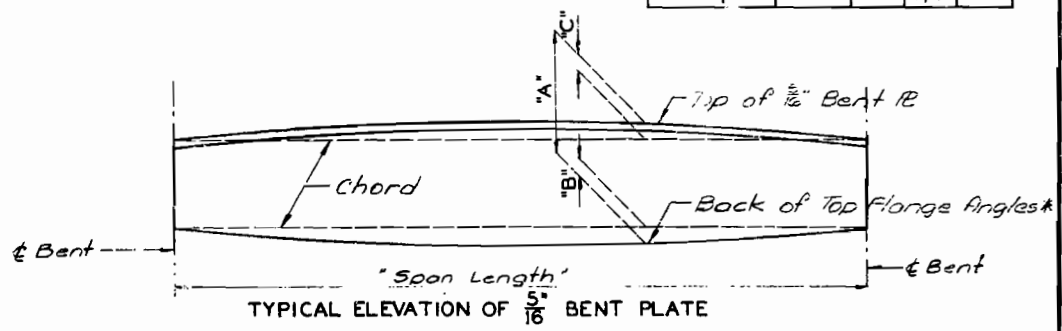
A hand-drawn technical diagram showing the typical elevation of a bent plate. The diagram depicts a curved plate with a dashed line representing the chord. Key features include:

- Chord:** A dashed line connecting the two ends of the plate.
- Span Length:** The horizontal distance between the two bent ends, indicated by a dimension line at the bottom.
- Top of 5th Bent Plate:** A line representing the upper surface of the plate.
- Back of Top Flange Angles:** A line representing the lower surface of the plate.
- Labels:** 'A' and 'B' are labeled near the top and bottom of the plate respectively. 'C' is labeled at the top right end.
- Arrows:** Arrows point from the text labels to the corresponding parts of the diagram.

Note: Dimensions A", B" & C" are taken at 4 Girders. See Sheet No. 11.
 *For location and size of cover Rls and Splice Rls to cope Vertical leg of $\frac{3}{8}$ " Bent R, see shop drawings of girders.
 For location and size of connection plate at Bt. "11" for overhead Sign Truss Support to cope vertical leg of $\frac{3}{8}$ " Bent R, see sheets No. 25 & 26.
 The Contractor will be allowed to fabricate the curved portion of the $\frac{3}{8}$ " Bt. R on chords (maximum of 10') if he desires.

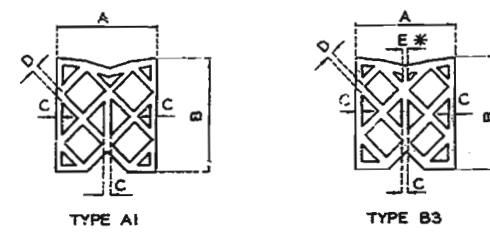
ROAD DIST. NO.	STATE	FED. AID PROJ. C.T.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	MO.		10	114	

LOCATION	G1-N			G2-N			G3-N			G4-N			G4-S			G3-S			G2-S			G1-S		
	"A"	"B"	"C"	"A"	"B"	"C"	"A"	"B"	"C"	"A"	"B"	"C"	"A"	"B"	"C"	"A"	"B"	"C"	"A"	"B"	"C"	"A"	"B"	"C"
BT.#11	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
1	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
2	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
3	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
4	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
5	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
6	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
7	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
8	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
9	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
NEAR BT.#11	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
1	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
2	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
3	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
4	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
5	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
6	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
7	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
8	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
9	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
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1	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
2	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
3	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
4	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
5	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
6	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
7	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
8	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
9	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
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1	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
2	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
3	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
4	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
5	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
6	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
7	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
8	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
9	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
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1	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
2	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
3	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
4	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
5	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
6	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
7	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
8	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
9	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"
BT.#15	2 1/2"	0"	0"	4 1/2"	0"	0"	6 1/2"	0"	0"	8 1/2"	0"	0"	7 1/2"	0"	0"	6"	0"	0"	4 1/2"	0"	0"	2 1/2"	0"	0"



Note: Dimensions "A", "B" & "C" are taken at $\frac{1}{4}$ Girders. See Sheet No. 11.
 *For location and size of Cover Rs to cope Vertical leg of $\frac{5}{16}$ Bent R, see shop drawings of girders.
 The contractor will be allowed to fabricate the curved portion of the $\frac{5}{16}$ Bt. R. on chords (maximum of 10') if he desires.

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* OPTIONAL "C"

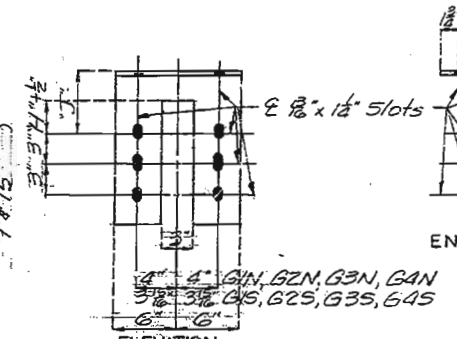
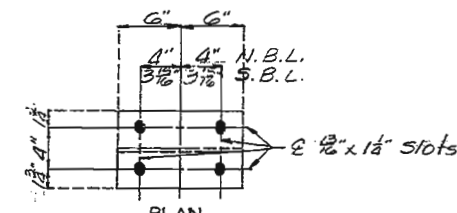
TABLE OF TRANSVERSE SEAL TOLERANCES (INCHES)					
TYPE	"A" (WIDTH)	"B" (HEIGHT)	"C" (SHELL)	"D" (WEBS)	"E" (B3 ONLY) (SMALL WEBS)
A1 OR B3	2.500 +0.250 -0.000	2.750 +0.125 -0.125	0.187 +0.046 -0.015	0.093 +0.031 -0.031	0.062 +0.031 -0.031
A1 OR B3	3.000 +0.250 -0.000	3.406 +0.187 -0.187	0.187 +0.046 -0.015	0.125 +0.046 -0.015	0.075 +0.046 -0.031
A1 OR B3	3.500 +0.250 -0.000	3.500 +0.187 -0.187	0.187 +0.046 -0.015	0.125 +0.046 -0.015	0.097 +0.046 -0.031
A1 OR B3	4.000 +0.312 -0.000	4.719 +0.250 -0.250	0.187 +0.046 -0.015	0.125 +0.046 -0.015	0.111 +0.046 -0.031

TABLE OF TRANSVERSE SEALS & ARMOR ANGLES					
TYPE	GROOVE SIZE AT 60°F.		SEAL SIZE		ANGLE SIZE
	①	②	WIDTH	HEIGHT	
A1 OR B3	1-5/8"	2-3/4"	2-1/2"	2-3/4"	5 X 3 X 3/8
A1 OR B3	1-7/8"	4-7/8"	3"	3-5/8"	6 X 3-1/2 X 3/8
A1 OR B3	2-1/4"	5-1/8"	3-1/2"	3-1/2"	6 X 3-1/2 X 3/8
A1 OR B3	2-5/8"	6-3/8"	4"	4-23/32"	8 X 4 X 7/16

TABLE OF GROOVE SIZE "A" (INSTALLATION DIMENSIONS)									
TEMP. (°F.)	CONCRETE STRUCTURES				STEEL STRUCTURES				
	2 1/2"	3"	3 1/2"	4"	2 1/2"	3"	3 1/2"	4"	
-10°	-	-	-	-	2-1/8"	2-5/8"	3"	3-3/8"	
0°	2-1/8"	2-5/8"	3"	3-3/8"	2"	2-1/2"	2-7/8"	3-1/4"	
+20°	1-7/8"	2-1/4"	2-3/4"	3-1/8"	1-1/8"	2-1/4"	2-5/8"	3"	
+40°	1-3/4"	2-1/8"	2-1/2"	2-7/8"	1-3/4"	2-1/8"	2-1/2"	2-7/8"	
+60°	1-5/8"	1-7/8"	2-1/4"	2-5/8"	1-5/8"	1-7/8"	2-1/4"	2-5/8"	
+80°	1-3/8"	1-3/4"	2"	2-1/4"	1-3/8"	1-3/4"	2"	2-1/4"	
+100°	1-1/4"	1-1/2"	1-3/4"	2"	1-1/4"	1-5/8"	1-7/8"	2-1/8"	
+120°	1-1/8"	1-3/8"	1-5/8"	1-7/8"	1-1/4"	1-1/2"	1-3/4"	2"	
+120°	-	-	-	-	1-1/8"	1-3/8"	1-5/8"	1-7/8"	

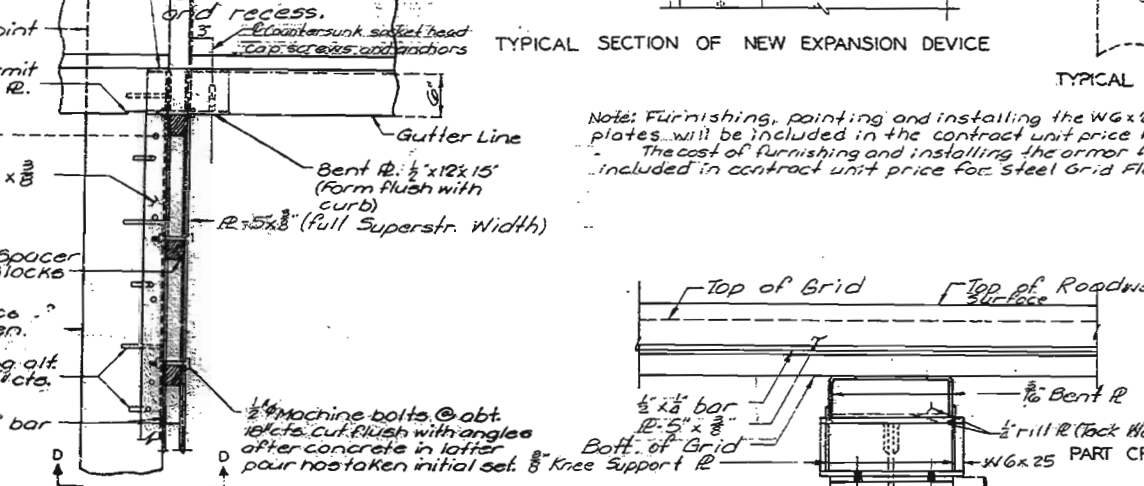
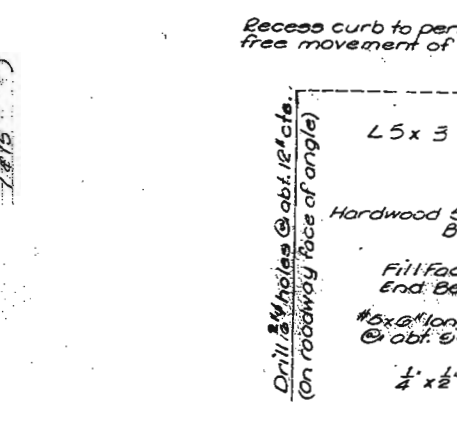
TABLE OF LONGITUDINAL SEALS					
TYPE	GROOVE SIZE AT 60°F.		SEAL SIZE		
	WIDTH	HEIGHT	WIDTH	HEIGHT	
A1 OR B3	1-5/16"	2-3/4"	2"	2-1/16"	

TABLE OF LONGITUDINAL SEAL TOLERANCES (INCHES)					
TYPE	"A" (WIDTH)	"B" (HEIGHT)	"C" (SHELL)	"D" (WEBS)	
A1 OR B3	2.000 +0.187 -0.000	2.0625 +0.125 -0.125	0.125 +0.030 -0.015	0.094 +0.030 -0.015	

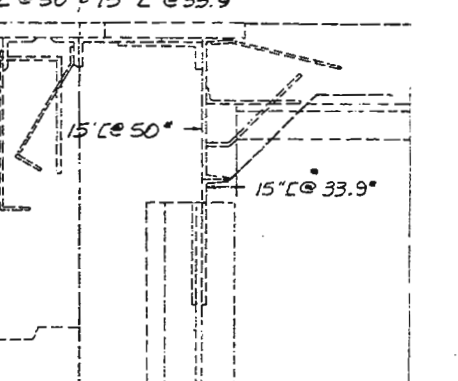


NOTES FOR PREFORMED COMPRESSION JOINT SEAL:
 STRUCTURAL STEEL FOR EXPANSION DEVICE SHALL BE FABRICATED IN LENGTHS AS REQUIRED FOR STAGE CONSTRUCTION.
 EXPANSION DEVICE SHALL BE BENT TO CONFORM TO CROWN AND GRADE OF ROADWAY.
 NO. 5 BARS FOR EXPANSION DEVICE SHALL BE STRUCTURAL GRADE.
 APPROVED STUD WELDED ANCHORS OR DEFORMED BAR ANCHORS (ASTM A496) MAY BE USED IN LIEU OF #5 BARS SHOWN.
 PREFORMED COMPRESSION JOINT SEAL SHALL BE INSTALLED BEFORE CURBS ARE POURED.
 3/8" CURB PLATE SHALL BE INSTALLED WITH CURB.
 PLAN DIMENSIONS ARE BASED ON INSTALLATION AT 60°F EXPANSION JOINT WIDTH SHALL BE ADJUSTED DURING INSTALLATION FOR COMPLIANCE WITH TABLES.
 SEE SPECIAL PROVISIONS FOR THE REQUIREMENTS OF COMPRESSION JOINT SEAL.

DETAILS OF W18X60



Remove Existing Expansion Device 15" L @ 50° 15" L @ 33.9°



Note: Furnishing, painting and installing the W6x25, W18x60, and 3/8" knee brace plates will be included in the contract unit price for fabricated structural carbon steel. The cost of furnishing and installing the armor for the compression joint seal will be included in contract unit price for steel grid flooring.

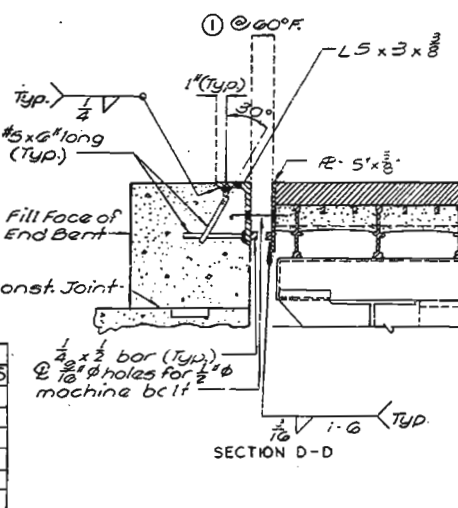
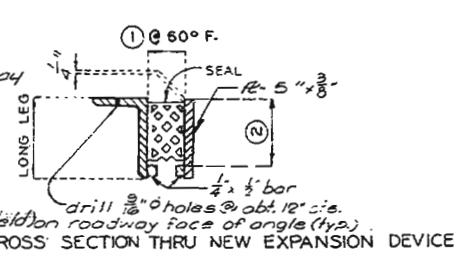
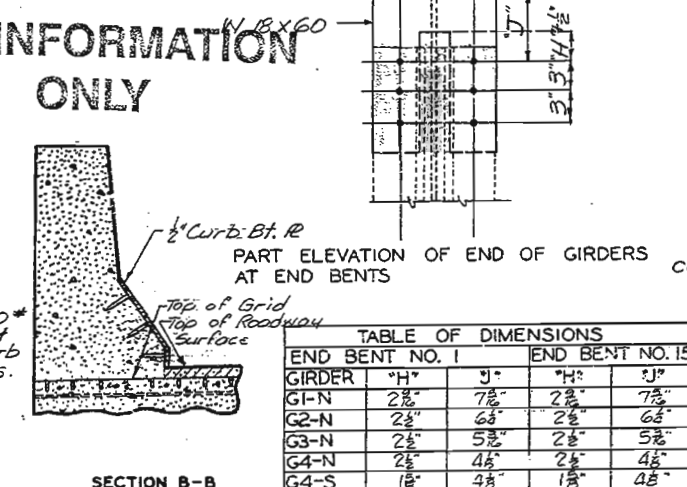
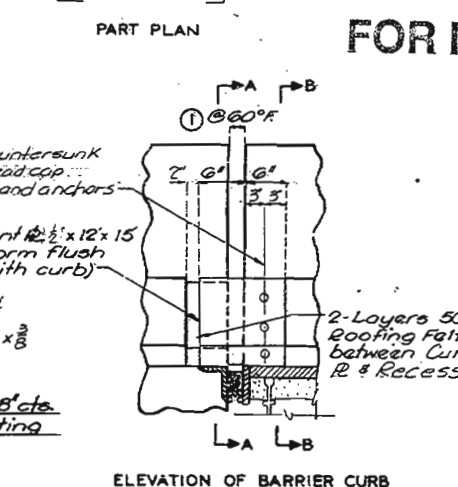
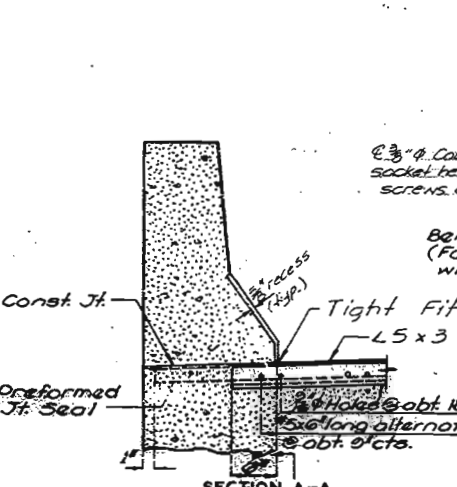


TABLE OF DIMENSIONS					
GIRDER	END BENT NO. 1	END BENT NO. 15	GIRDER	END BENT NO. 1	END BENT NO. 15
G1-N	2 1/2"	7 1/2"	G2-N	2 1/2"	7 1/2"
G2-N	2 1/2"	6 1/2"	G3-N	2 1/2"	5 1/2"
G3-N	2 1/2"	5 1/2"	G4-N	2 1/2"	4 1/2"
G4-N	2 1/2"	4 1/2"	G4-S	1 1/2"	4 1/2"
G4-S	1 1/2"	5 1/2"	G3-S	1 1/2"	5 1/2"
G3-S	1 1/2"	6 1/2"	G2-S	1 1/2"	6 1/2"
G2-S	1 1/2"	7 1/2"	G1-S	1 1/2"	7 1/2"

DETAILS OF PREFORMED COMPRESSION JOINT SEAL AT BENTS NO. 1 & 15

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

Sheet No. 15 of 33

CITY OF ST. LOUIS

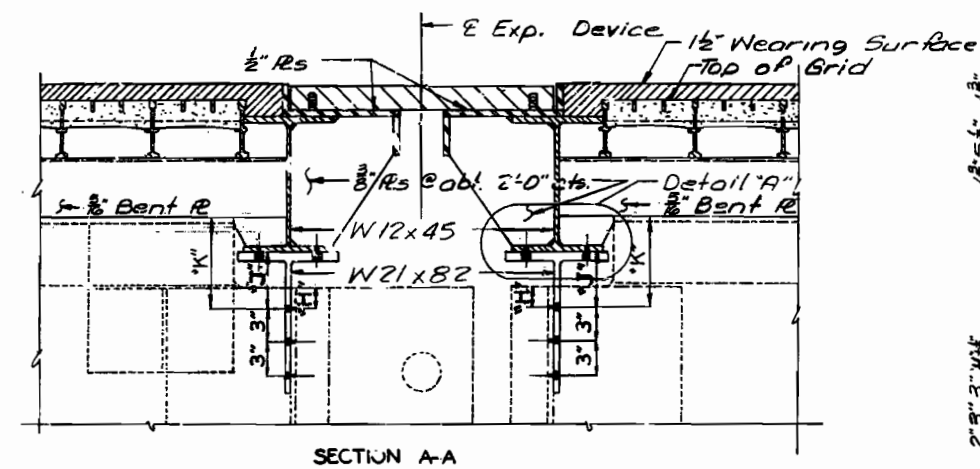
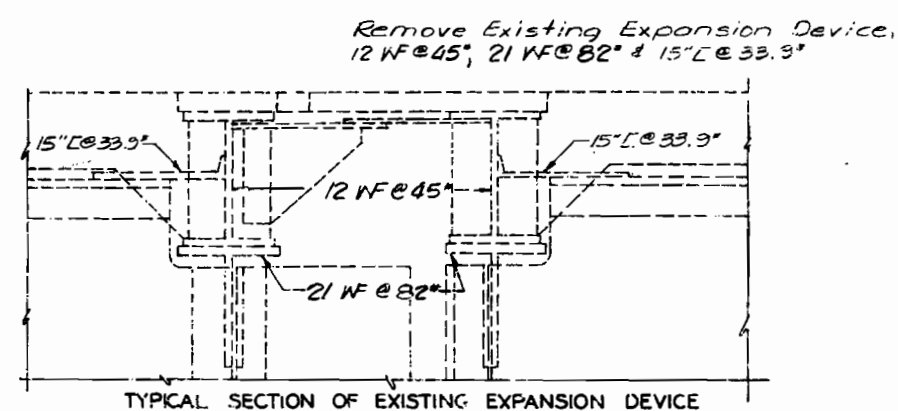
L-667R

STD. PGCS. REVISED OCT. 1979 AUG. 1978

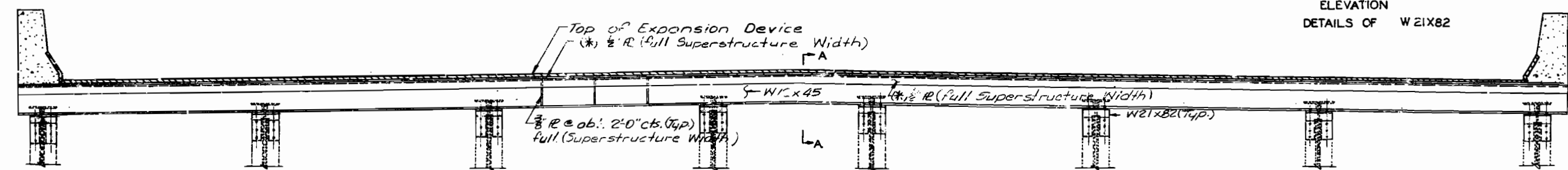
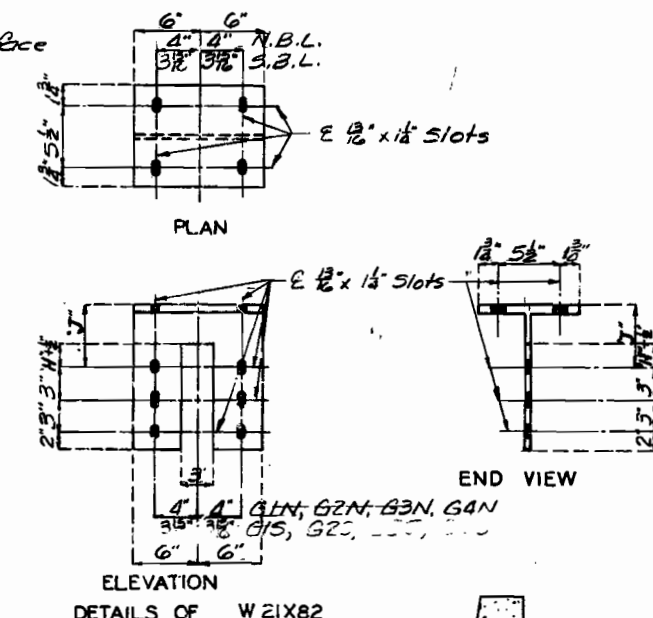
DETAILED: July 1979
 CHECKED: Nov. 1979

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MO.		19	119	

TABLE OF DIMENSIONS			
GIRDER	*J*	*J*	*K*
G1-N	12"	3 1/2"	9 1/2"
G2-N	12"	4 1/2"	8"
G3-N	12"	6 1/2"	8"
G4-N	12"	5 1/2"	5 1/2"
G4-S	12"	7 1/2"	7 1/2"
G3-S	12"	6 1/2"	8 1/2"
G2-S	12"	5 1/2"	9 1/2"
G1-S	12"	4 1/2"	10 1/2"



Note: For additional details, including welding details, see Part Section Thru Armored Joint, sheet No. 18.



(* These Plates may be one piece by using legs of equal or unequal angles.

Note: For Detail "A" see sheet No. 17.

DETAILED July 1979
CHECKED Nov. 1979

DETAILS OF ELASTOMERIC EXPANSION JOINT SEAL IN SPAN NO. 6

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

Sheet No. 19 of 35.

CITY OF ST. LOUIS

L-667 R

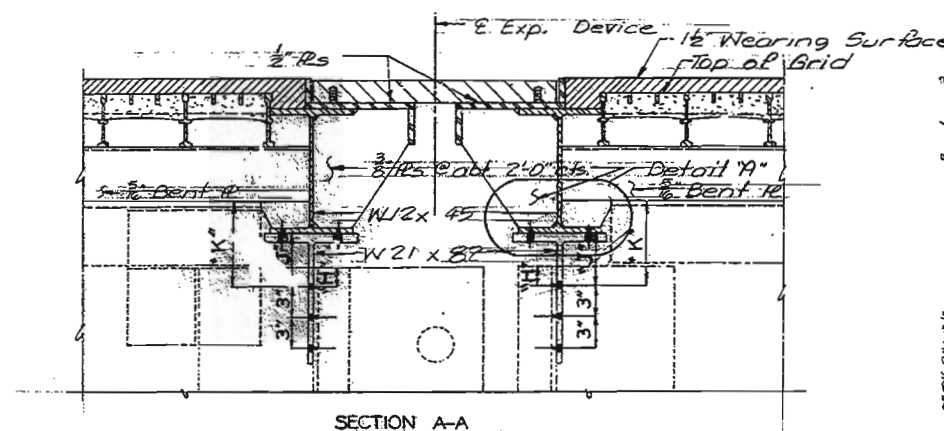
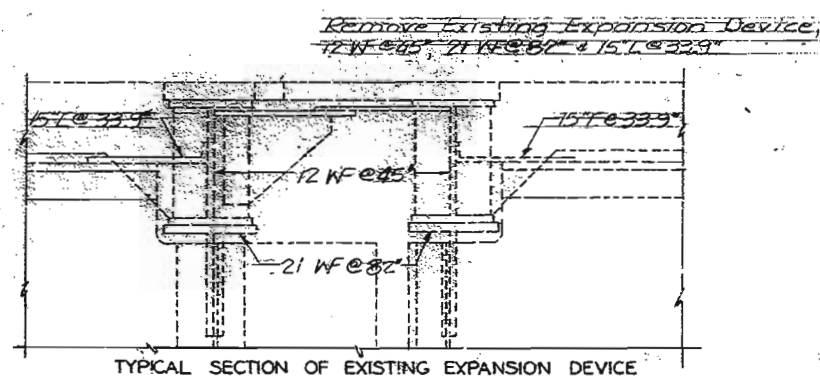
121

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	121	

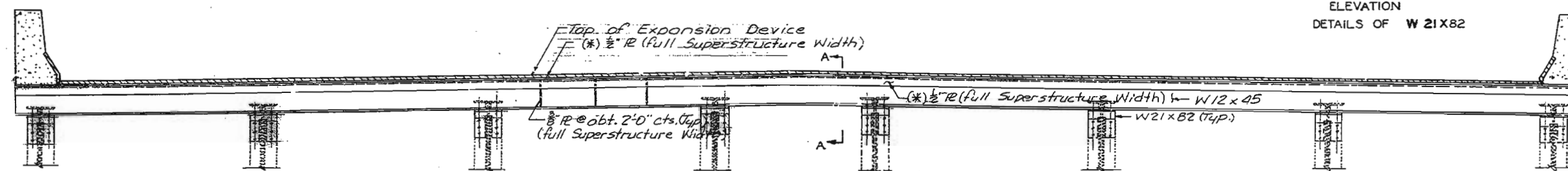
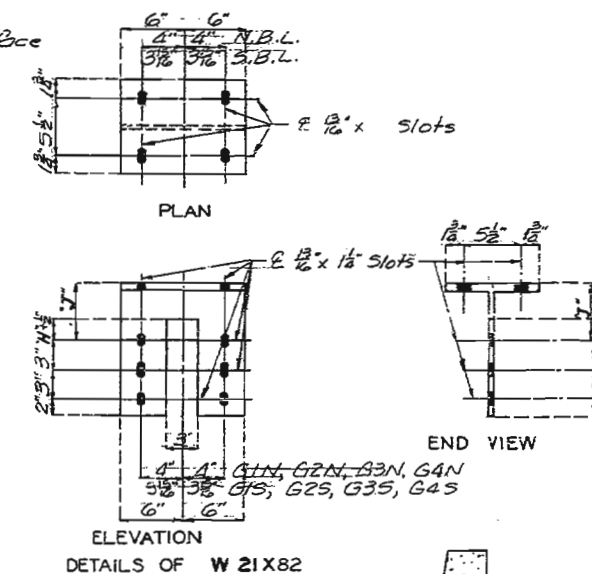
1376

FOR INFORMATION
ONLY

TABLE OF DIMENSIONS			
GIRDER	*J*	*J*	*K*
G1-N	15"	4"	5 1/2"
G2-N	15"	4 1/2"	8"
G3-N	15"	6 1/2"	8"
G4-N	15"	6 1/2"	5 1/2"
G4-S	15"	8 1/2"	7 1/2"
G3-S	15"	7 1/2"	8 1/2"
G2-S	15"	6 1/2"	5 1/2"
G1-S	15"	5 1/2"	10 1/2"



Note: For additional details, including welding details, see Port Section Thru Armored Joint, sheet No. 20.



(*) These Plates may be one piece by using legs of equal or unequal angles.

Note: For Detail "A" see sheet No. 17

DETAILED July 1979
CHECKED Nov. 1979

DETAILS OF ELASTOMERIC EXPANSION JOINT SEAL IN SPAN NO. 11

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

Sheet No. 21 of 33.

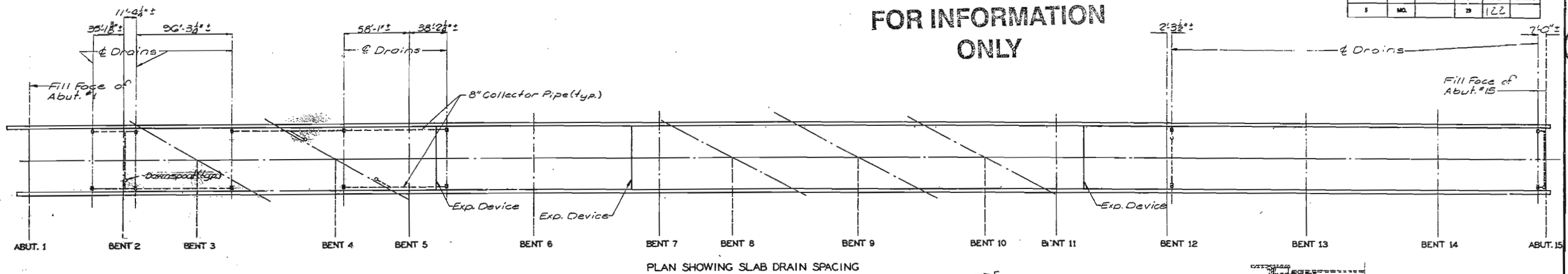
CITY OF ST. LOUIS

L-667 R

FOR INFORMATION ONLY

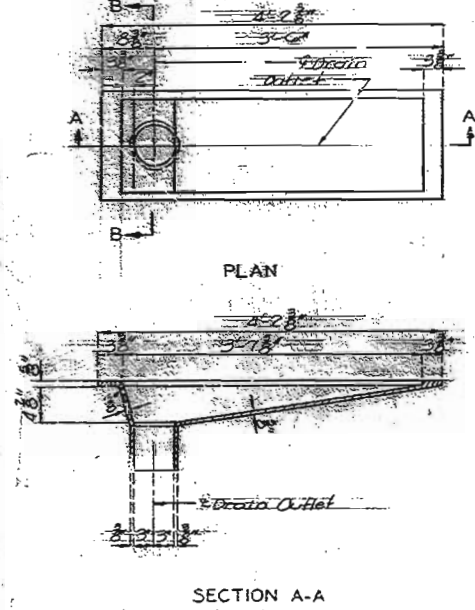
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		29	122	

B77

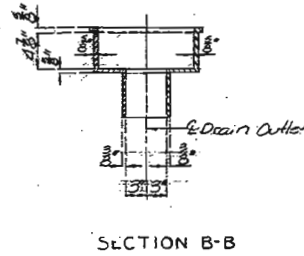


PLAN SHOWING SLAB DRAIN SPACING

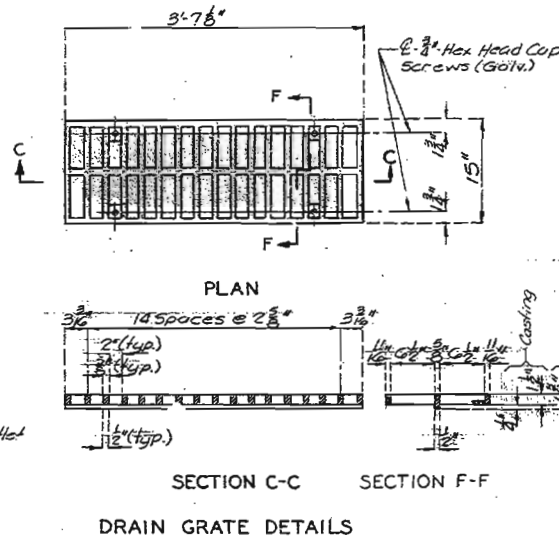
Note: Shift drains to fit grid as shown if necessary.



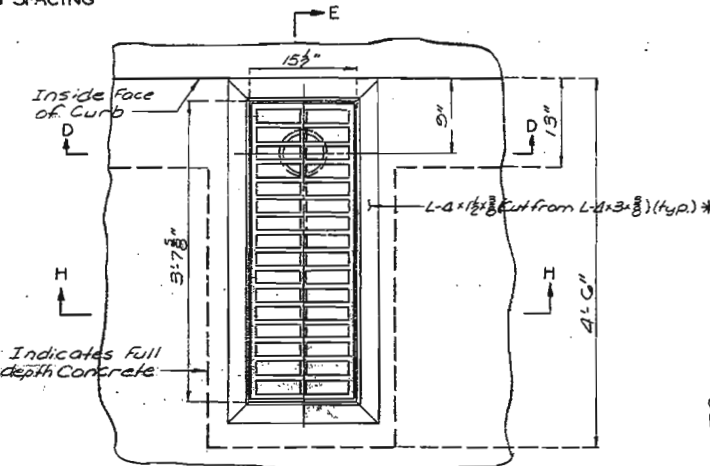
SECTION A-A



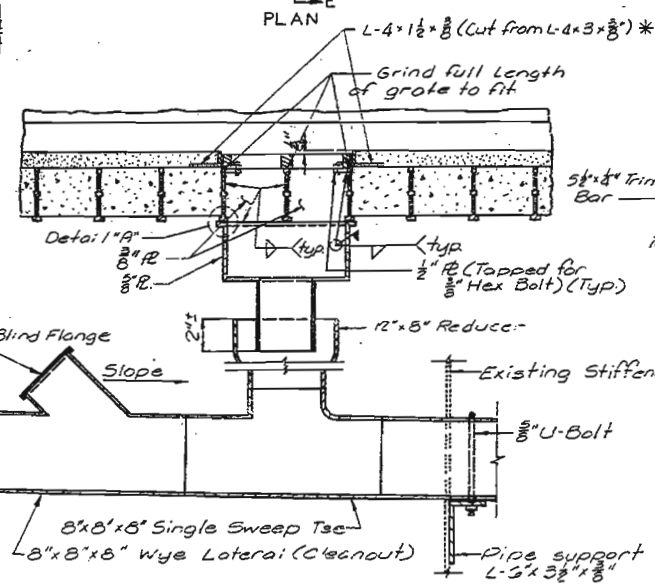
SECTION B-B



DRAIN GRATE DETAILS

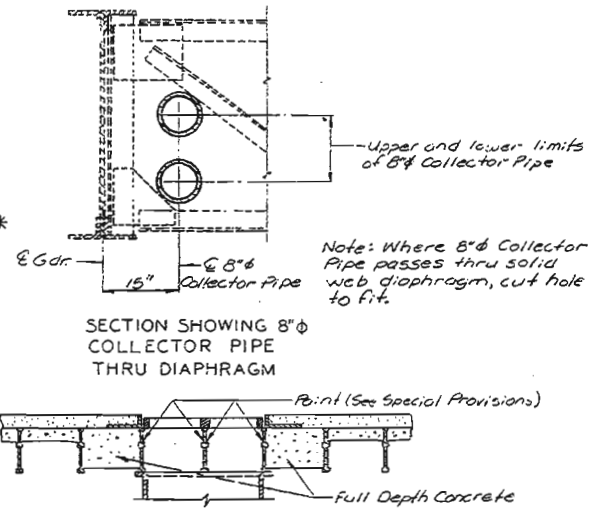


PLAN

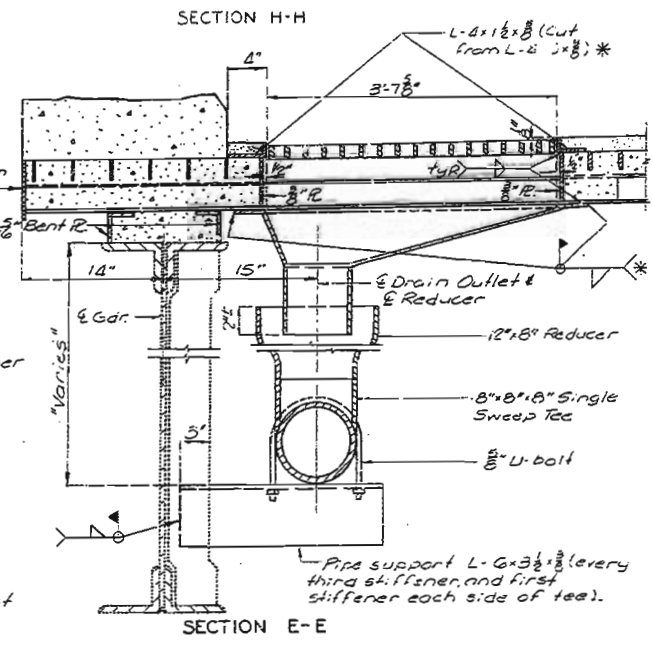


SECTION D-D

Note: Remove crossbars, reinforcement bars, & supplementary bars of grid within Drain.



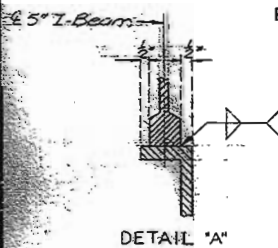
SECTION E-E



SECTION H-H

Drainage Notes: Materials for the drainage system may be steel or cast iron. The steel pipe shall be 8" A.S.T.M. A-501 or A.S.T.M. A-500 carbon steel pipe (Galvanized). (322 min. wall thickness) 8" collector pipes shall have the maximum slope possible, with a minimum slope of .0057 ft. per ft. The cast iron pipe and fittings shall conform to A.S.T.M. A-126, Class A. Pipe shall be spliced by full penetration groove weld or threaded steel couplings. All pipe support material is to be A.S.T.M. A36. (Galv.) All bolts and fasteners shall be galvanized. All grates and roadway drain castings shall be Ductile Iron conforming to A.S.T.M. A536, Grade 60-40-18, Class 15. Grates shall be hot-dip galvanized. Cost of fabricating, erecting, and galvanizing drainage system complete as detailed shall be all-inclusive in unit Price Bid. For Drainage System items. Piping shall be fabricated from field checked dimensions after installation of drains. Cost of removing the existing drainage system shall be included in the price bid for "Removal of Existing Bridge Deck". If the grid spacings vary from 7' the contractor, prior to submitting the shop drawing, shall modify the drain details. No additional payment will be made for the drain modification.

ROADWAY DRAIN DETAILS



DETAIL 'A'

DETAILED JAN. 1978
CHECKED Feb. 1980

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

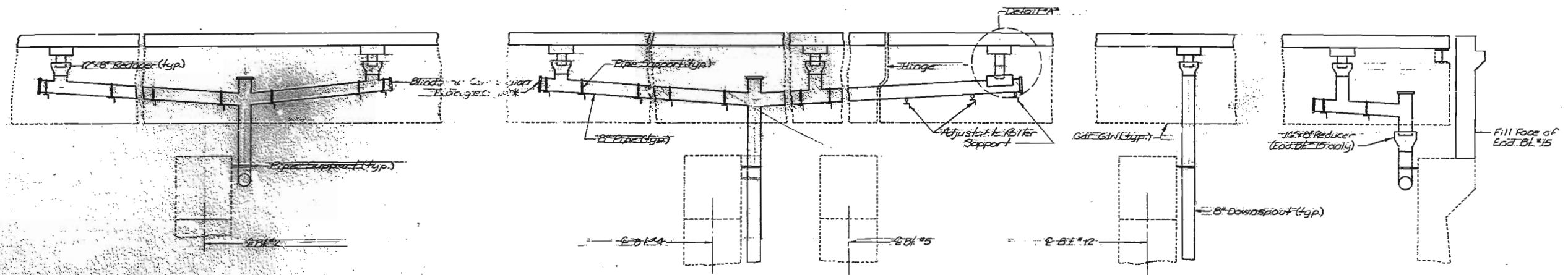
Sheet No. 22 of 53.

CITY OF ST. LOUIS

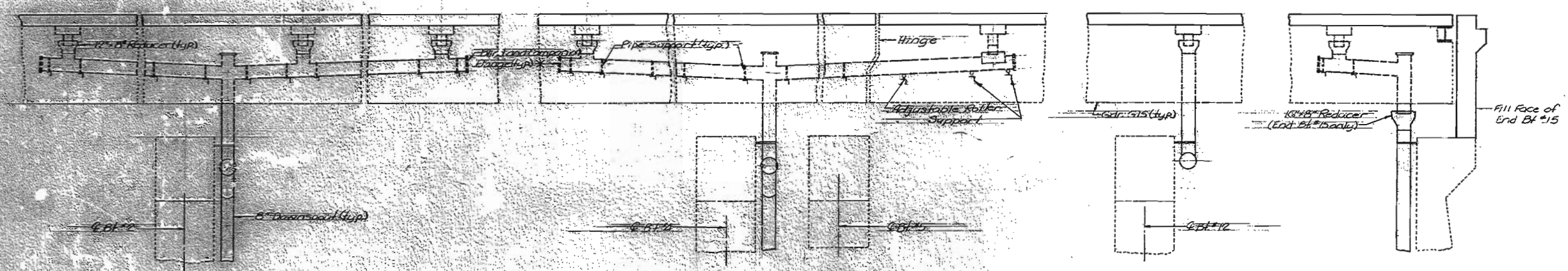
L-667R

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		28	123	

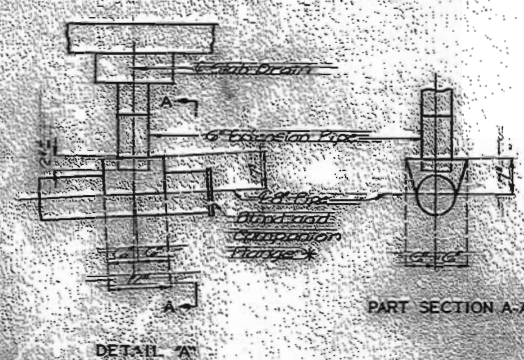
B78



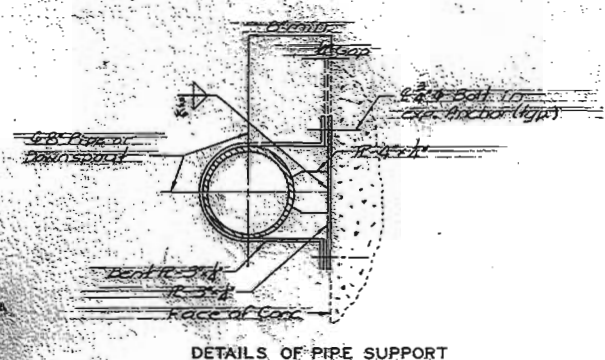
PART SECTION NEAR GDR. GIN



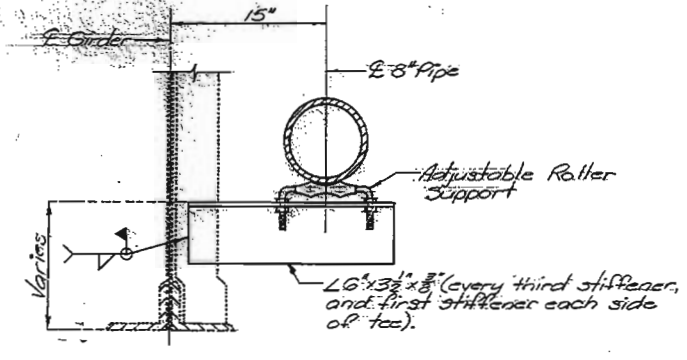
PART ELEVATION NEAR GDR. GIS



PART SECTION A-A



DETAILS OF PIPE SUPPORT



DETAILS OF ADJUSTABLE ROLLER SUPPORT

FOR INFORMATION ONLY

DETAILED A-A 1912
CHECKED E.C. 1920

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

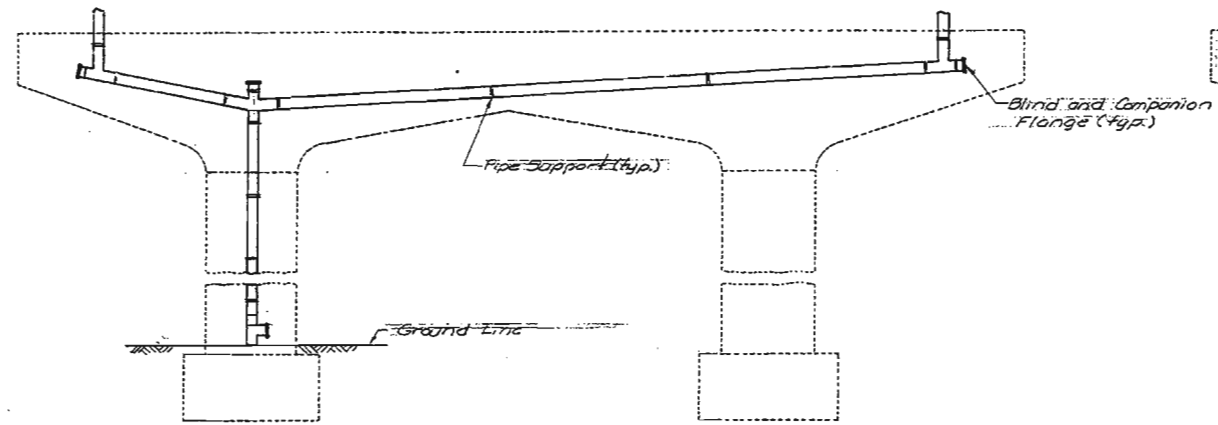
Sheet No. 23 of 33.

CITY OF ST LOUIS

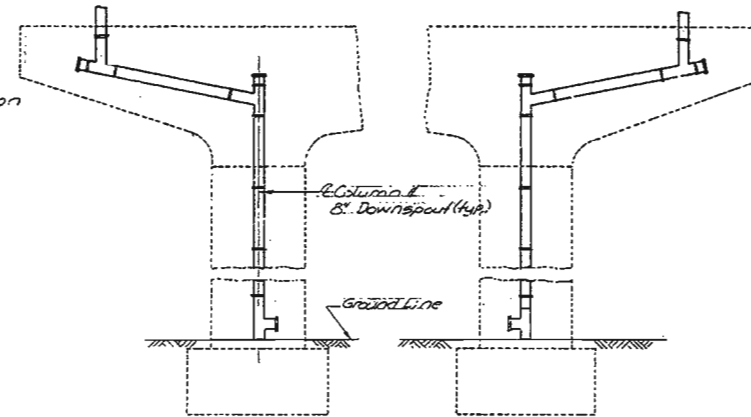
L-667R

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		25	124	

B79

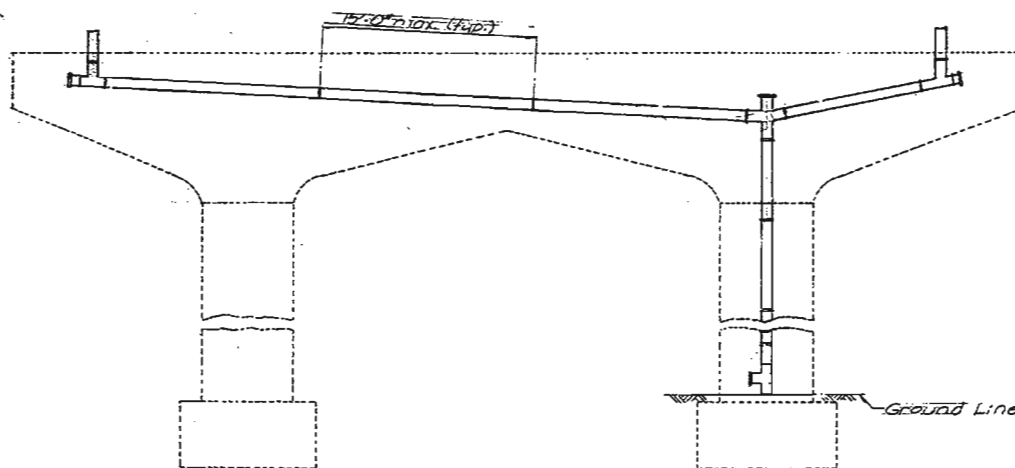


ELEVATION BT. NO. 2
LKG. BACK STA.

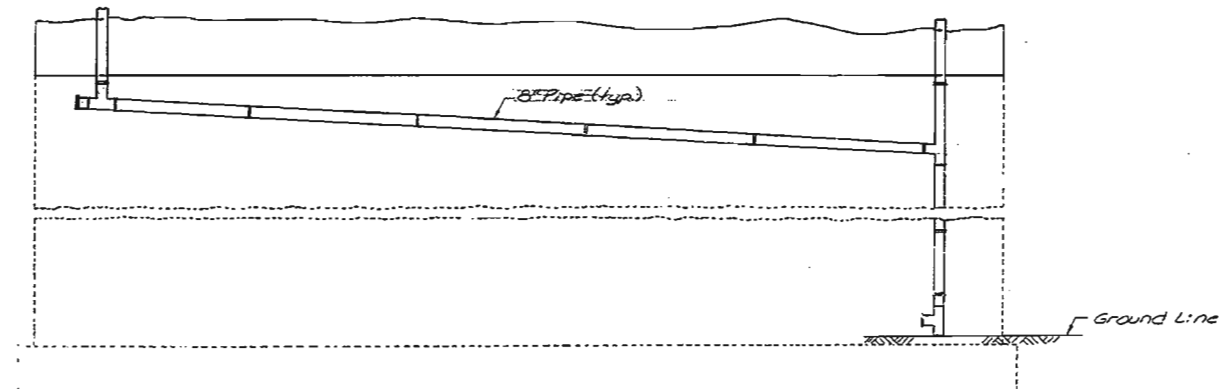


PART ELEVATION BT. NO. 4
LKG. BACK STA.

FOR INFORMATION
ONLY



ELEVATION BT. NO. 12
LKG. BACK STA.



PART ELEVATION BT. NO. 15

Note: Ground Line is the lower limits of the
drainage system on the structure.

DETAILS OF DRAINAGE SYSTEM

DETAILED Sept. 1979
CHECKED Feb. 1980

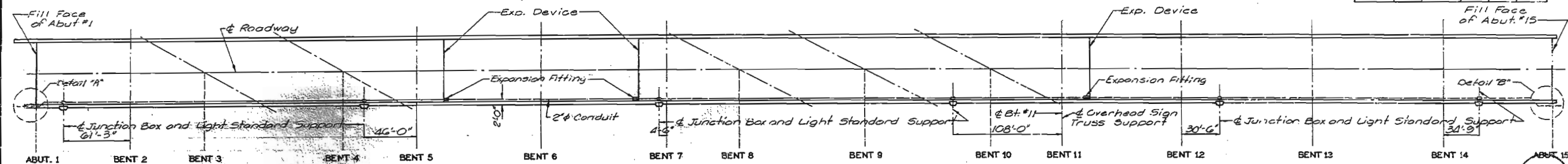
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 24 of 35.

CITY OF ST LOUIS

L-667R

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		79	125	



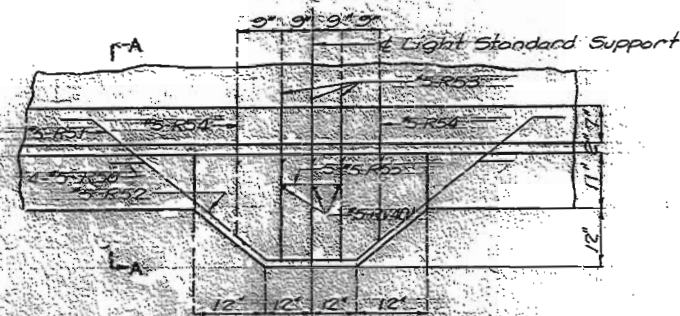
Note: Longitudinal dimensions shown are taken parallel to grade at $\frac{1}{2}$ of top of Safety Barrier Curb.

PLAN SHOWING LOCATION OF CONDUIT AND LIGHT STANDARD SUPPORTS AND OVERHEAD SIGN TRUSS POST SUPPORT

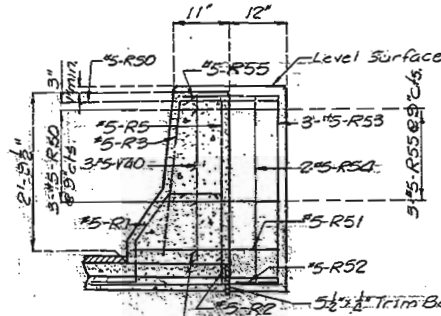
Note: For Section C-C, see sheet no. 26.

Note: For Detail "A" & Detail "B" see sheet no. 26.

380

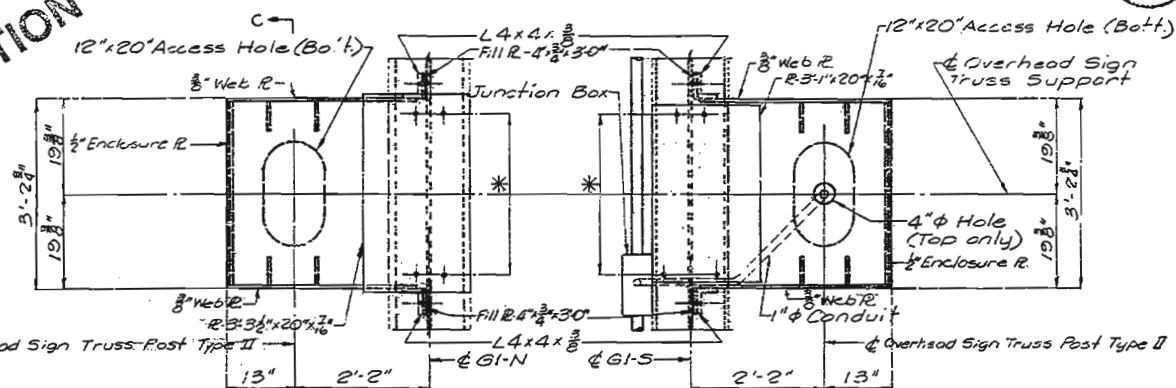


PLAN OF REINFORCEMENT

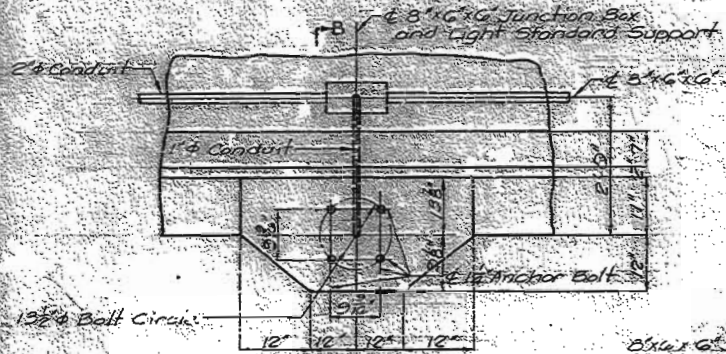


SECTION A-A

FOR INFORMATION ONLY

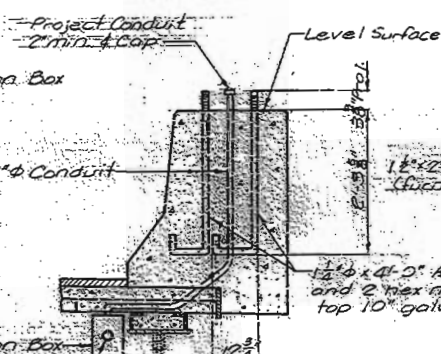


PLAN

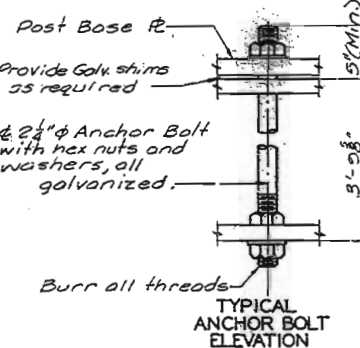


ANCHOR BOLT SETTING PLAN

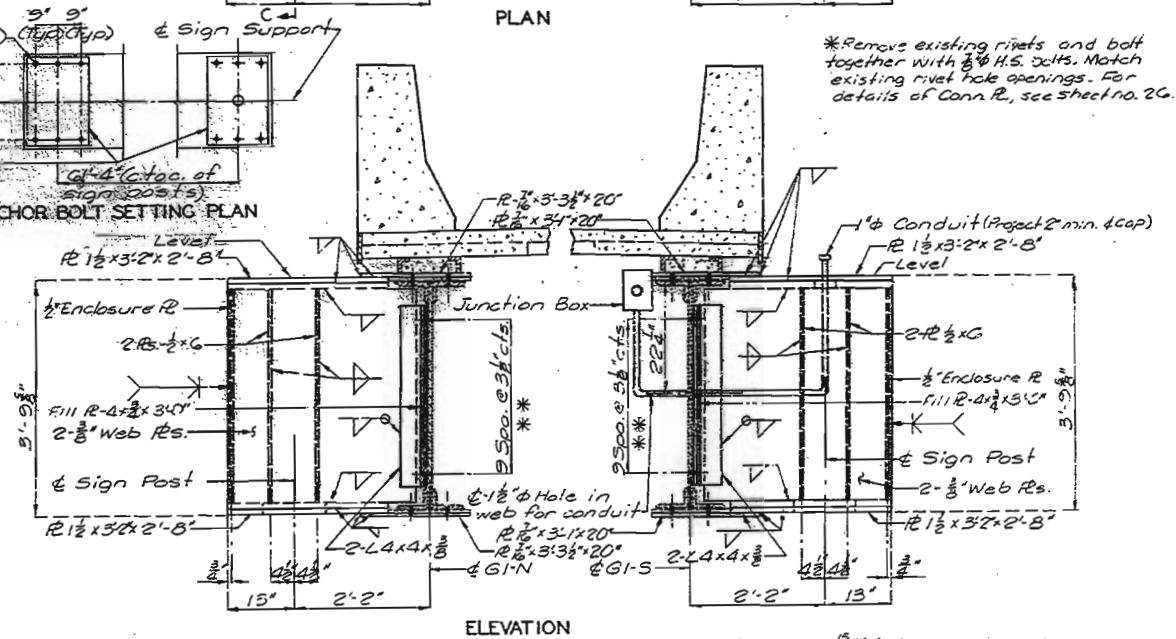
LIGHT STANDARD SUPPORT DETAILS



SECTION B-B



TYPICAL ANCHOR BOLT ELEVATION



ELEVATION

OVERHEAD SIGN TRUSS POST SUPPORT DETAILS

Note: Bolted connections are 3/4" bolts, hex heads and nuts with washers. Structural Steel material is A36 steel. Weight of sign support, including anchor bolts, nuts, shims and washers are included in Fabricated Structural Carbon Steel. Overhead Sign Truss to be furnished by others.

CITY OF ST. LOUIS

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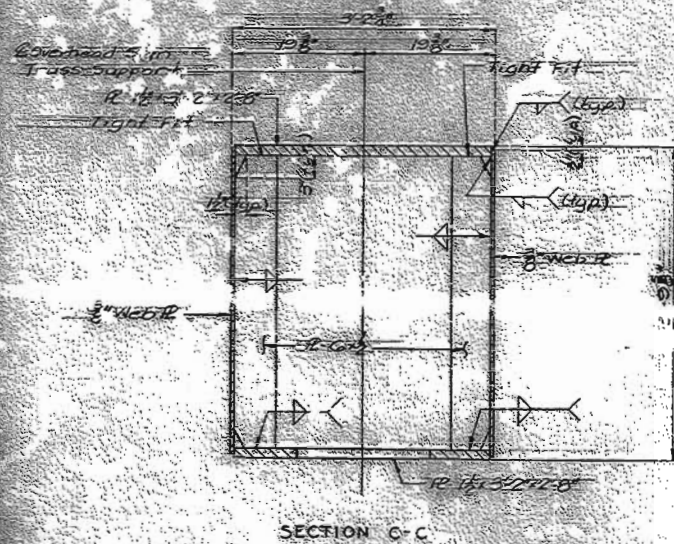
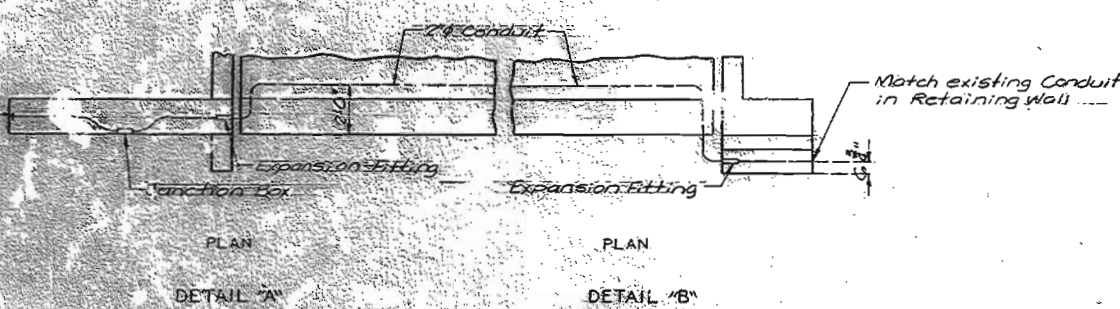
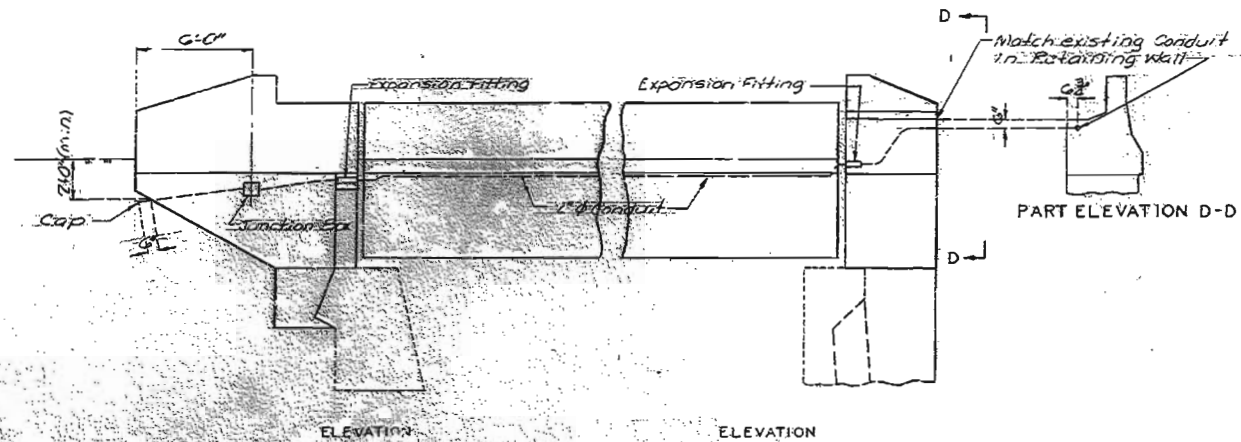
DETAILED Feb. 1978
CHECKED Feb. 1980

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

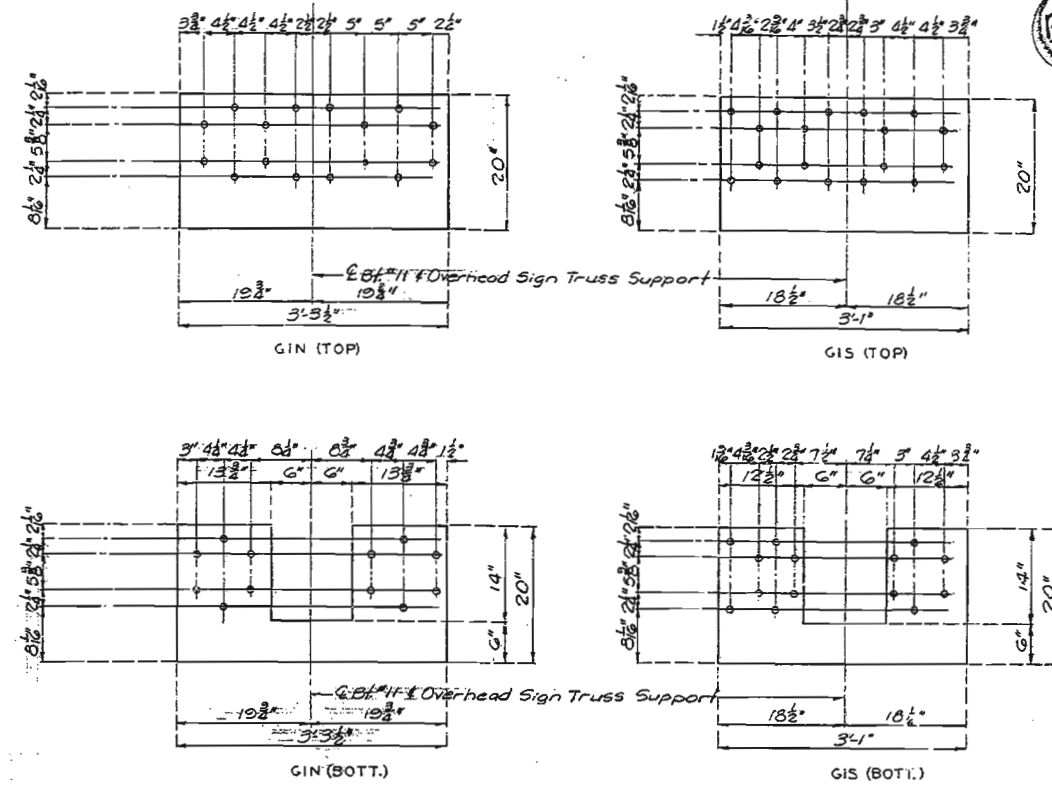
Sheet No. 25 of 33.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	126	

381



Note: For location of Detail 'A', Detail 'B' and Section C-C, see sheet no. 25.



DETAILS OF CONN. PL. AT OVERHEAD SIGN TRUSS SUPPORT
(Hole Spacing From Shop Drawings)

FOR INFORMATION
ONLY

DETAILED Feb. 1980
CHECKED Feb. 1980

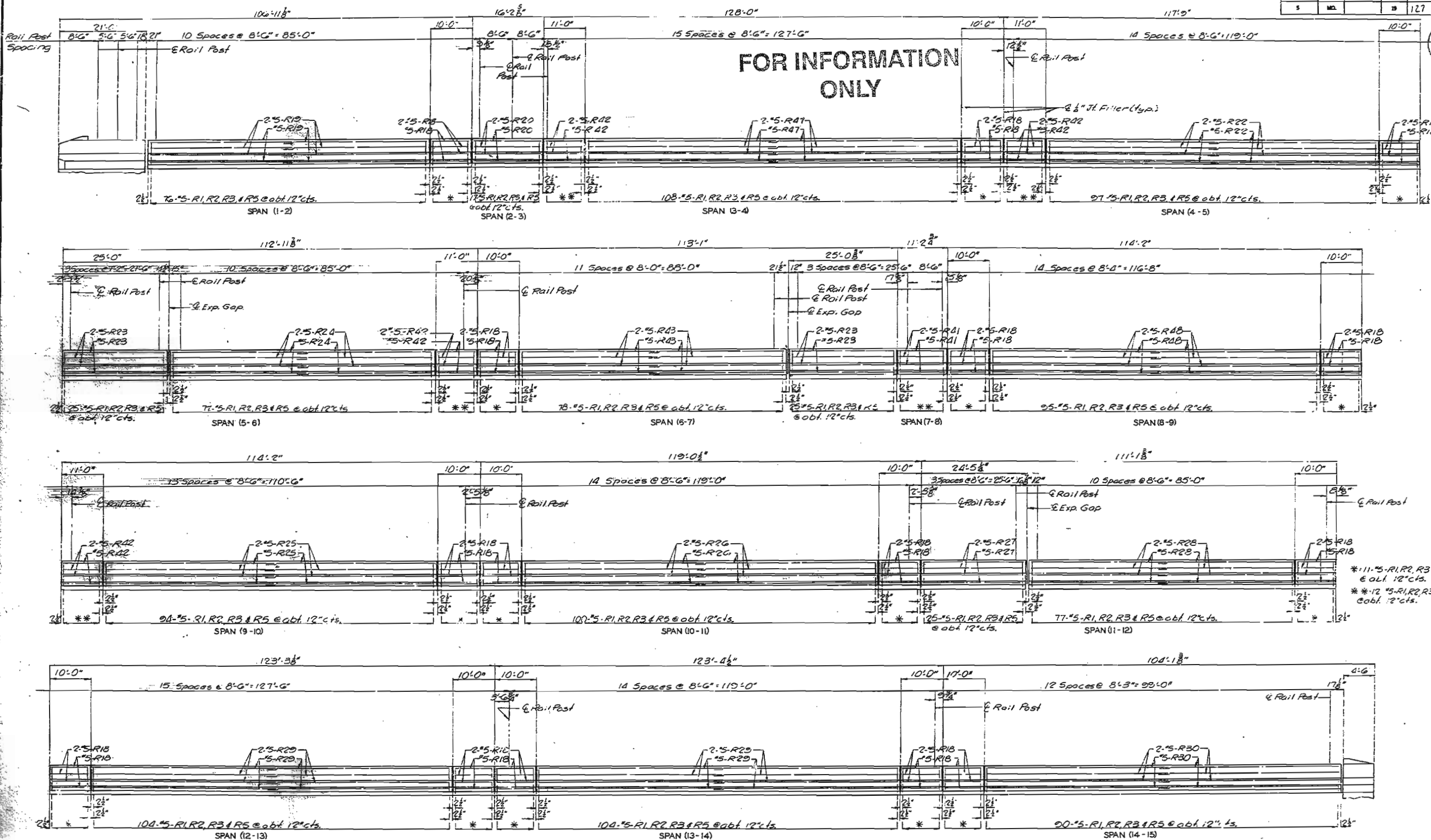
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 26 of 33.

CITY OF ST. LOUIS

L-667R

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		79	127	



DETAILED Jan. 1978
CHECKED Feb. 1980

1" = 20' This drawing is not to scale. Follow dimensions.

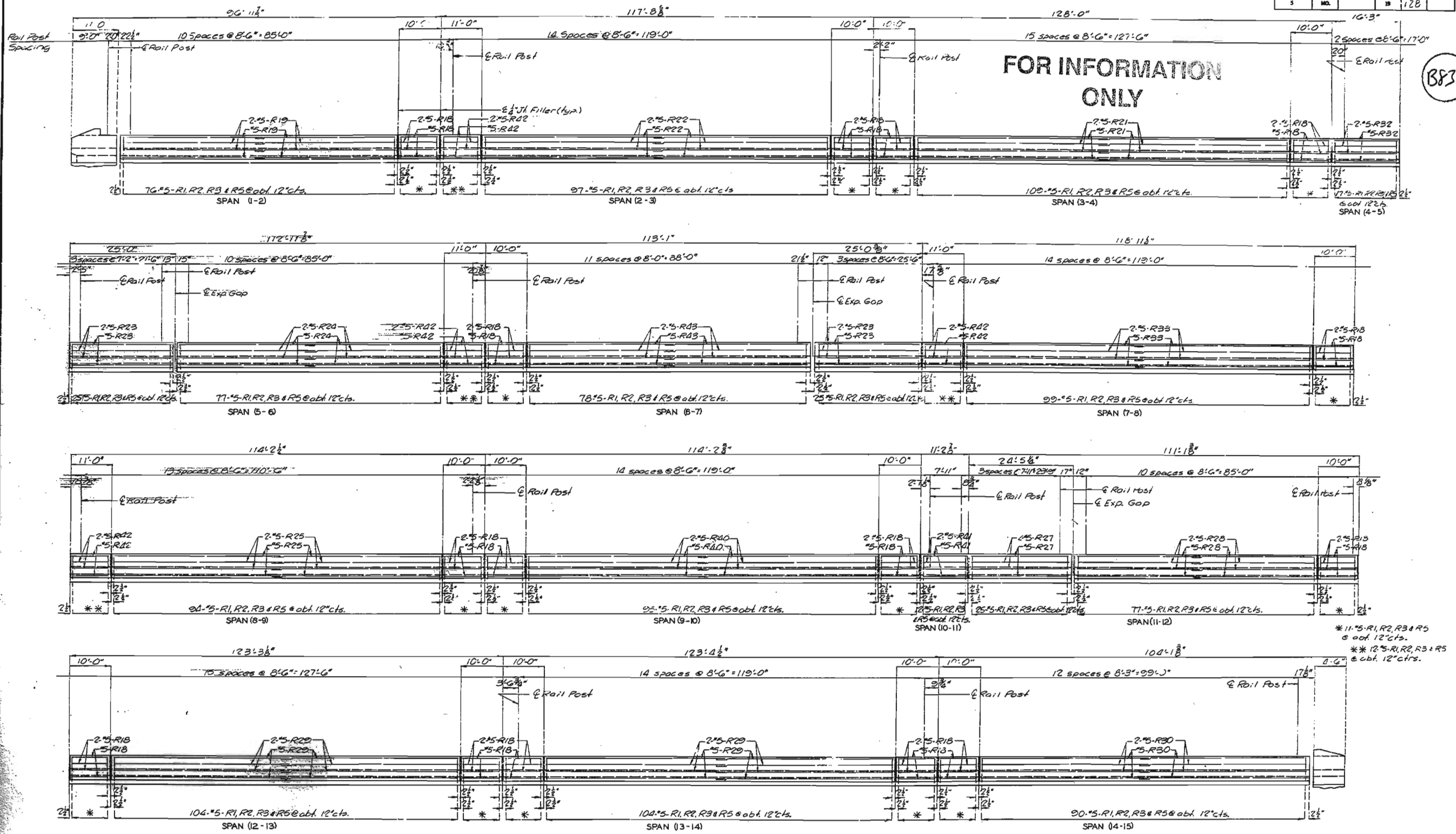
Sheet No. 27 of 33.

CITY OF ST. LOUIS

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SCALE 1/8" = 1'-0"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		78	128	



ELEVATION OF RIGHT BARRIER CURB

Note: Longitudinal dimensions shown are taken parallel to grade at & of top of Safety Barrier Curb. Use a minimum lap of 17" for #5 horizontal barrier curb bars. For typical section thru Barrier Curb, see sh. no. 29.

DETAILED Jan. 1978
CHECKED Feb. 1980

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

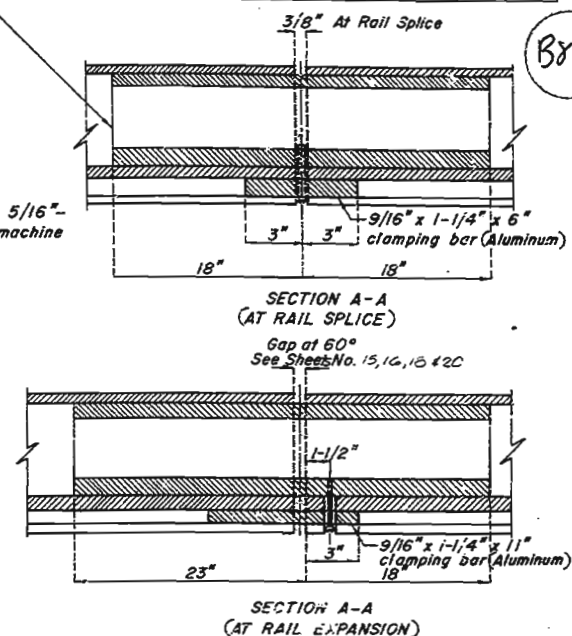
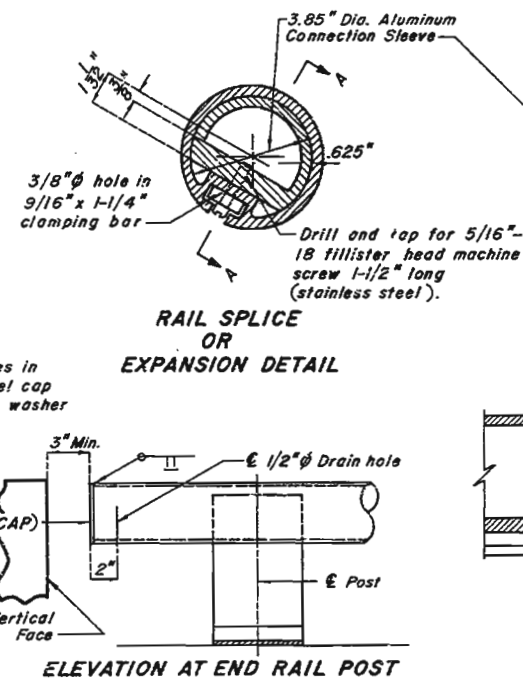
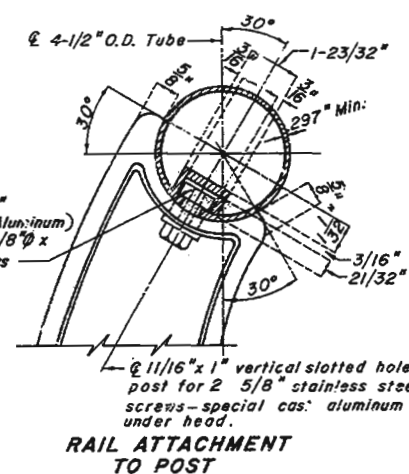
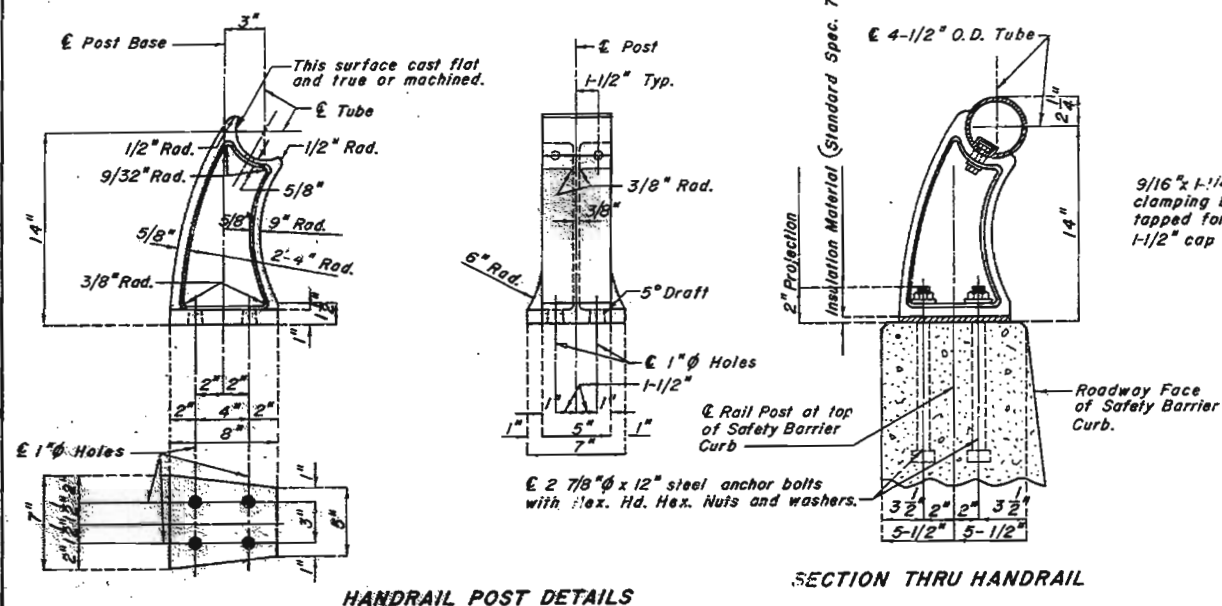
Sheet No. 28 of 33.

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L-667R

130

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEET
5	MO.		18	130	

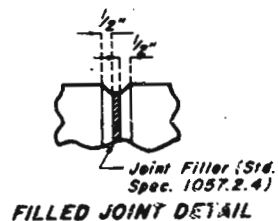
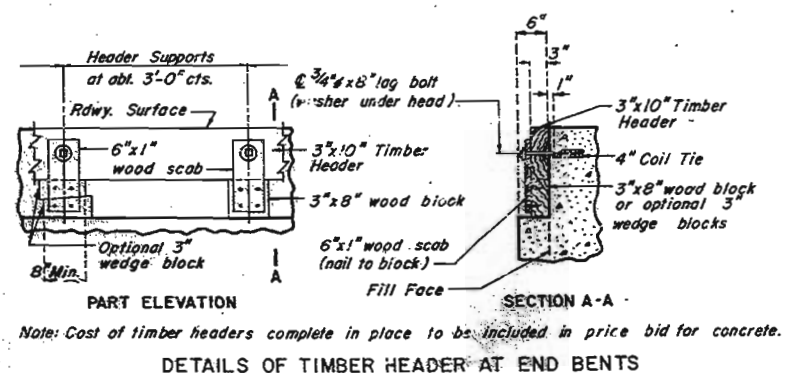


ONE TUBE ALUMINUM RAIL

**FOR INFORMATION
ONLY**

GENERAL NOTES:

ALL BRIDGE RAIL POSTS SHALL BE SET NORMAL TO GRADE.
ALUMINUM TUBE BRIDGE RAIL SHALL BE BENT TO CONFORM TO VERTICAL AND HORIZONTAL ALIGNMENT OF BARRIER CURB.
ALUMINUM WASHER SHIMS BETWEEN TOP OF BARRIER CURB AND POST BASE MAY BE USED FOR ADJUSTING BRIDGE RAIL ALIGNMENT. MAXIMUM THICKNESS OF SHIMS TO BE 1/8". WHERE MORE TILTING OF POST IS REQUIRED FOR PROPER ALIGNMENT, CONCRETE BEARING AREAS SHALL BE GROVED DOWN.
ALL PARTS OF BRIDGE RAIL, EXCEPT ANCHOR BOLTS, NUTS, WASHERS, AND SET SCREWS ARE TO BE OF ALUMINUM MATERIAL.
ALL FILLETS 1/4" EXCEPT AS NOTED.
ALL DRAFTS 3" EXCEPT AS NOTED.
TOP OF BARRIER CURB TO BE BUILT PARALLEL TO GRADE WITH BARRIER CURB JOINTS (EXCEPT AT END BENTS) NORMAL TO GRADE.
ALL EXPOSED EDGES OF BARRIER CURB SHALL HAVE 1/2" RADIUS OR 3/8" BEVEL UNLESS OTHERWISE NOTED.
ALL OUTSIDE CORNERS OF ALUMINUM POSTS TO HAVE 1/4" RADIUS EXCEPT AS NOTED.
ALL RAIL SPLICES SHALL BE LOCATED NEAR A 1/4 POINT BETWEEN RAIL POSTS.
A THIN COATING OF MATERIAL SHALL BE APPLIED TO THE STAINLESS STEEL CAP SCREWS AND THE STAINLESS STEEL FILLISTER HEAD MACHINE SCREWS TO PREVENT LOCKING TO ALUMINUM POSTS OR TUBE. THE COATING MATERIAL SHALL BE EQUAL TO WYNN OIL COMPANY'S "VISCOTENE", STAHL SPECIALTY COMPANY'S "PBC 516" OR NATIONAL CHEWSEARCH CORPORATION'S "THREAD EZE".



COMPLETE BILL OF REINFORCING STEEL

[illegible]

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

The diagram illustrates the detailing dimensions for two types of reinforcement hooks:

- 180° Hook (Left):** Labeled "DETAILING DIMENSION" and "HOOK A OR G". It shows a hook with a 180° bend. The dimensions include a hook length of $4d$ (or $2\frac{1}{2}$ MIN.), a bend radius of h , and a hook angle of 180° .
- 90° Hook (Right):** Labeled "DETAILING DIMENSION". It shows a hook with a 90° bend. The dimensions include a hook length of $4d$, a bend radius of h , and a hook angle of 90° .

SIZE OF 180° HOOKS (GRADE 40 KSI):

- $D = 5$; FOR #3 THROUGH #11
- $D = 10d$ FOR #14 AND #18

SIZE OF 90° HOOKS (ALL GRADES AND 180° HOOKS (GRADE 40 KSI)):

- $D = 6d$ FOR #3 THROUGH #8
- $D = 8d$ FOR #9, #10 AND #11
- $D = 10d$ FOR #14 AND #18

END HOOK DIMENSIONS						
BAR SIZE	180° HOOKS				90° HOOKS	
	GRADE 40		GRADE 60		ALL GRADES	
	A OR G	J	A OR G	J	A OR G	J
# 3	5"	2-3/4"	5"	3"	5"	3"
# 4	6"	3-1/2"	6"	4"	8"	4"
# 5	7"	4-1/2"	7"	5"	10"	5"
# 6	8"	5-1/4"	8"	6"	12"	6"
# 7	9"	6-1/4"	10"	7"	14"	7"
# 8	10"	7"	11"	8"	16"	8"
# 9	12"	8"	15"	11-1/4"	19"	9"
# 10	13"	9"	17"	12-3/4"	22"	10"
# 11	14"	10"	19"	14-1/4"	21-0"	11"
# 14	2-2"	20-1/2"	2-2"	20-1/2"	21-7"	14"
# 18	2-11"	21-3"	21-11"	21-3"	31-5"	18"

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

E - EPOXY COATED REINFORCEMENT.

Σ - STIRRUP

X- BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.

Y - BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

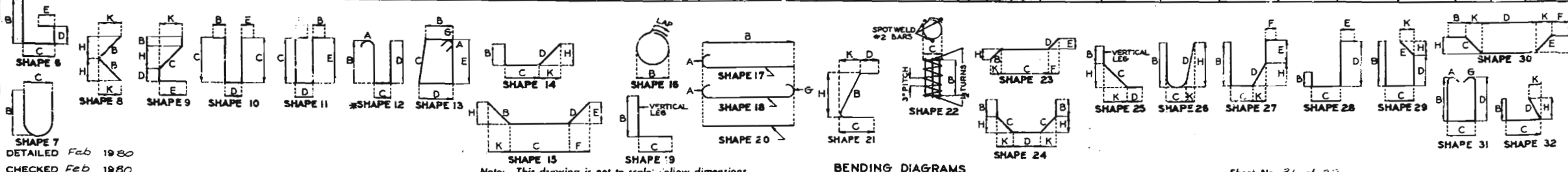
NO. EA. - NUMBER OF BARS OF EACH LENGTH.

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

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

* ALL HOOKS AND BENDS FOR SHAPE NO. 12 - GRADE 40 (ONLY) ARE BASED ON $D = 5d$.

** Includes 2 additional H13 bars for test purposes.



Note: This drawing is not to scale; follow dimensions.

BENDING DIAGRAMS

Sheet No. 31 of 32.

CITY OF ST. LOUIS

L-627R

3TD. 90.8	REVISED
MAY 1974	NOV. 1979

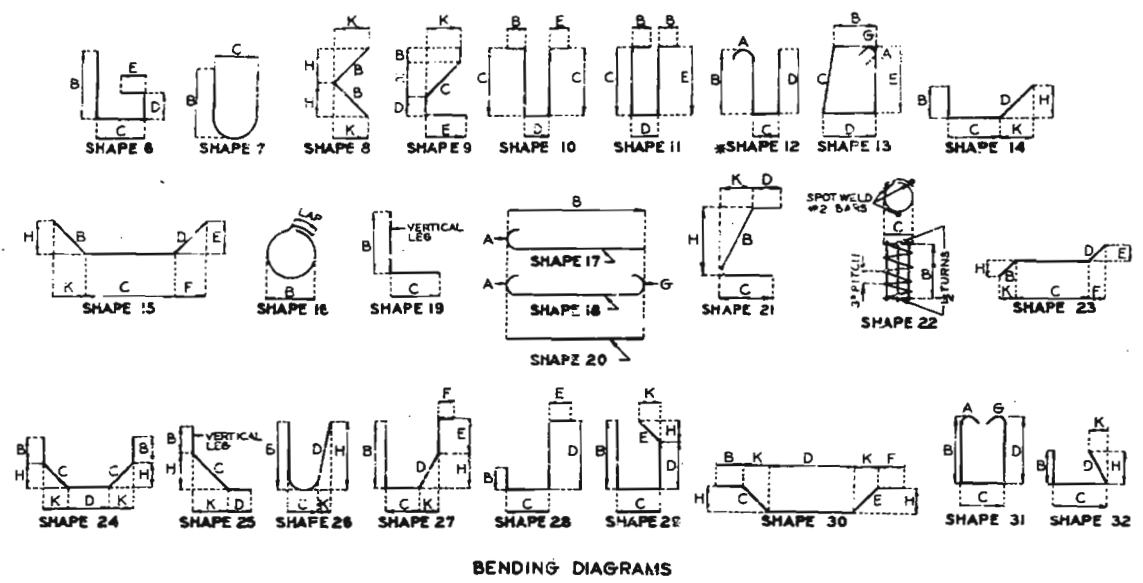
STD. 90.8.5 REVISED
MAY 1974 NOV. 1979

DETAILED Feb 1980
CHECKED Feb 1980

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

Sheet No. 32 of 35.

CITY OF ST. LOUIS L-667R



COMPLETE BILL OF REINFORCING STEEL																		
NO. REQ.	MARK NO.	LOCATION	EPOXY	SHAPE NO.	STIRRUP NO.	STIRRUP V.	NO. EACH	DIMENSIONS								NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
								B	C	D	E	F	G	H	K			
	SIZE	MARK						FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	LBS.
SUPERSTRUCTURE																		
2834	SR1	CURB	E 27 S							9.000	11.125	6.875	12.000	9.125	6.375	3 3	3 1	9114
2834	SR2	CURB	E 12 S							9.000		5.375	12.000			3 1	2 11	8621
2880	SR3	CURB & END POST	E 15 S					2	7.625	5.000				2	7.500	3.000	3 2	9262
46	SR4	END POST	E 27 S						12.000	8.000	11.125	9.000			6.375	9.125	3 4	152
2870	SR5	CURB & END POST	E 19 S					2	7.500	6.000							3 2	8960
11	SR6	END POST	E 20					20	9.000								20 9	238
1	SR7	END POST	E 17					19	6.000								20 1	21
4	SR8	END POST	E 20					6	9.000								6 9	28
2	SR9	END POST	E 20					19	9.000								19 9	41
1	SR10	END POST	E 17					9	6.000								10 1	11
13	SR11	END POST **	E 20					10	9.000								10 9	146
2	SR12	END POST	E 20					9	9.000								9 9	20
2	SR13	END POST	E 15 S					2	3.375	6.000				2	3.250	3.000	2 9	6
2	SR14	END POST	E 19 S					2	3.250	6.000							2 9	6
2	SR15	END POST	E 15 S					2	5.625	6.000				2	5.500	3.000	3 0	6
2	SR16	END POST	E 19 S					2	5.500	6.000							3 0	6
36	SR17	END POST	E 19 S					2	4.000	6.000							2 10	103
180	SR18	CURB	E 20					9	9.000								9 9	1830
24	SR19	CURB	E 20					38	6.000								38 6	964
6	SR20	CURB	E 20					15	11.000								15 11	100
12	SR21	CURB	E 20					54	7.000								54 7	683
24	SR22	CURB	E 20					49	0.300								49 0	1227
24	SR23	CURB	E 20					24	7.000								24 7	615
24	SR24	CURB	E 20					39	0.000								39 0	976
24	SR25	CURB	E 20					47	2.000								47 2	1181
12	SR26	CURB	E 20					50	1.000								50 1	627
12	SR27	CURB	E 20					24	0.000								24 0	300
24	SR28	CURB	E 20					38	10.000								38 10	972
48	SR29	CURB	E 20					52	3.000								52 3	2616
24	SR30	CURB	E 20					45	4.000								45 4	1135
6	SR32	CURB	E 20					16	0.000								16 0	100
12	SR33	CURB	E 20					49	7.000								49 7	621
18	SR34	END POST	E 20					4	3.000								4 3	80
4	SR35	END POST	E 20					4	3.000								4 3	18
2	SR36	END POST	E 19 S					4	4.000	6.000							4 10	10
2	SR37	END POST	E 10 S					2	6.000	4 3.000							9 3	19
4	SR38	END POST	E 10 S					2	7.000	4 3.000							9 5	39
2	SR39	END POST	E 19 S					3	0.000	6.000							3 6	7
12	SR40	CURB	E 20					47	9.000								47 9	598
12	SR41	CURB	E 20					10	11.000								10 11	137
48	SR42	CURB	E 20					10	9.000								10 9	538
24	SR43	CURB	E 20					39	7.000								39 7	991
12	SR47	CURB	E 20					54	1.000								54 1	677
12	SR48	CURB	E 20					47	8.000								47 8	597
40	SR49	CURB	E 19 S					17.125	9.000								2 2	87
24	SR50	LGT. STD. SUPPORT	E 30 S					12.000	2 4.250	22.500	2 4.250	12.000	20.000	20.000	8 7	8 7	215	
6	SR51	LGT. STD. SUPPORT	E 30 S					12.000	3 5.000	22.500	3 5.000	12.000	2 5.000	2 5.000	10 9	10 8	67	
6	SR52	LGT. STD. SUPPORT	E 15 S					14.125	22.500	14.125	10.000	10.000	10.000	10.000	4 3	4 2	26	
18	SR53	LGT. STD. SUPPORT	E 11 S					20.000	3 0.000	3 5.000					8 1	7 11	149	
12	SR54	LGT. STD. SUPPORT	E 11 S					13.000	3 0.000	2 10.000					6 11	6 9	84	
30	SR55	LGT. STD. SUPPORT	E 10 S					15.000	22.500						4 0	3 10	120	
18	SR56	LGT. STD. SUPPORT	E 20					2	9.000							2 9	2 9	52
END OF BAR LIST																		

FED. ROAD DIST. NO.

STATE

FED. RD PROJ. NO.

FILE NO.

SHEET NO.

TOTAL SHEETS

5

72

132

132

DETAILING DIMENSION

90°

DETAILING DIMENSION

135°

STIRRUP HOOK DIMENSIONS

GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK	135° HOOK	APPROX. H
#3	1-1/2"	4"	4"	2-1/2"
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	5"	5-1/2"	3-3/4"
#6	4-1/2"	8"	7"	4-1/2"

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

DETAILING DIMENSION

180°

DETAILING DIMENSION

90°

SIZE OF 180° HOOKS (GRADE 40 KSI)

SIZE OF 90° HOOKS (ALL GRADES) AND 180° HOOKS (GRADE 60 KSI)

D=5d FOR #3 THRU #11

D=10d FOR #14 AND #18

D=6d FOR #3 THRU #8

D=8d FOR #9, #10 AND #11

D=10d FOR #14 AND #18

END HOOK DIMENSIONS

BAR SIZE	180° HOOKS				90° HOOKS	
	GRADE 40	GRADE 60	ALL GRADES		GRADE 40	ALL GRADES
	A OR G	J	A OR G	J	A OR G	J
#3	5"	2-3/4"	5"	3"	5"	6"
#4	6"	3-1/2"	6"	4"	6"	8"
#5	7"	4-1/2"	7"	5"	7"	10"
#6	8"	5-1/4"	8"	6"	8"	12"
#7	9"	6-1/4"	10"	7"	10"	14"
#8	10"	7"	11"	8"	11"	16"
#9	12"	8"	15"	11-1/4"	15"	19"
#10	13"	9"	17"	12-3/4"	17"	22"
#11	14"	10"	19"	14-1/4"	19"	21-0"
#14	21-2"	20-1/2"	21-2"	20-1/2"	21-7"	21-7"
#18	21-11"	21-3"	21-11"	21-3"	31-5"	31-5"

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

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

E - EPOXY COATED REINFORCEMENT.

S - STIRRUP.

X - BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.

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

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

NOMINAL LENGTHS - ARE BASED ON CUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)

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

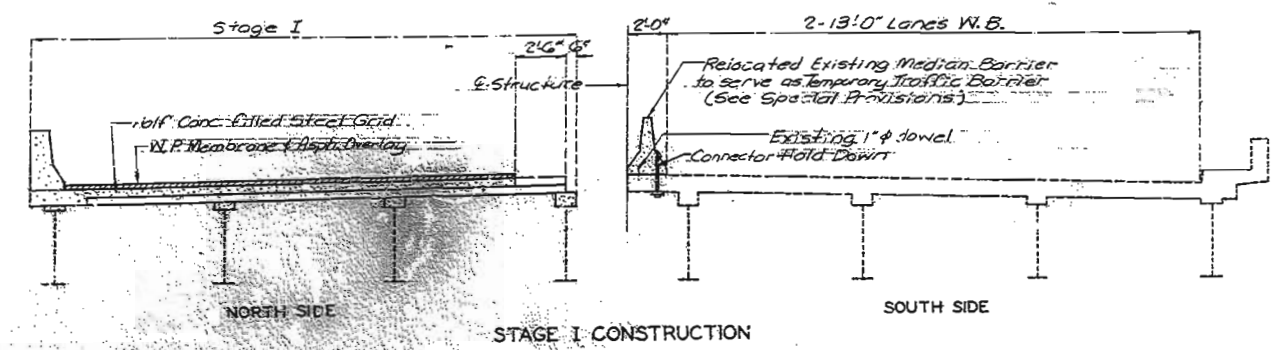
* ALL HOOKS AND BENDS FOR SHAPE NO. 12 - 6 RAD - J (ONLY) ARE BASED ON D=5d.

** Includes 2 additional R11 bars for test purposes

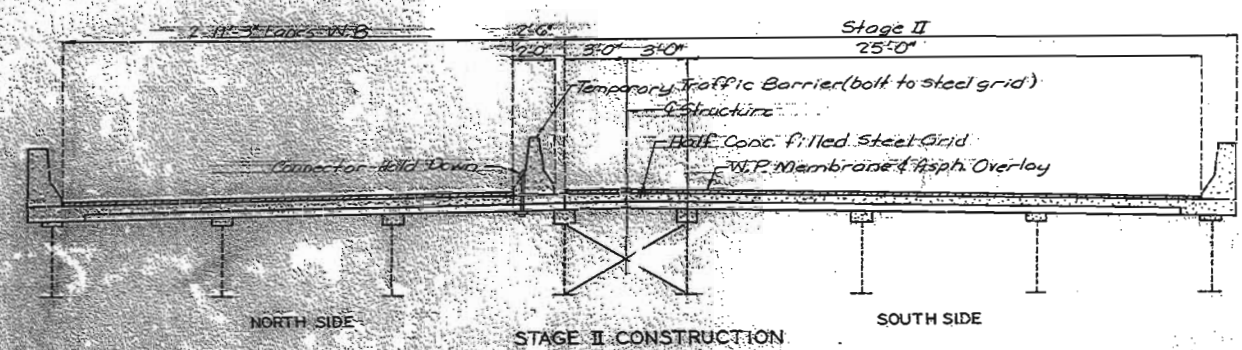
174

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	133	

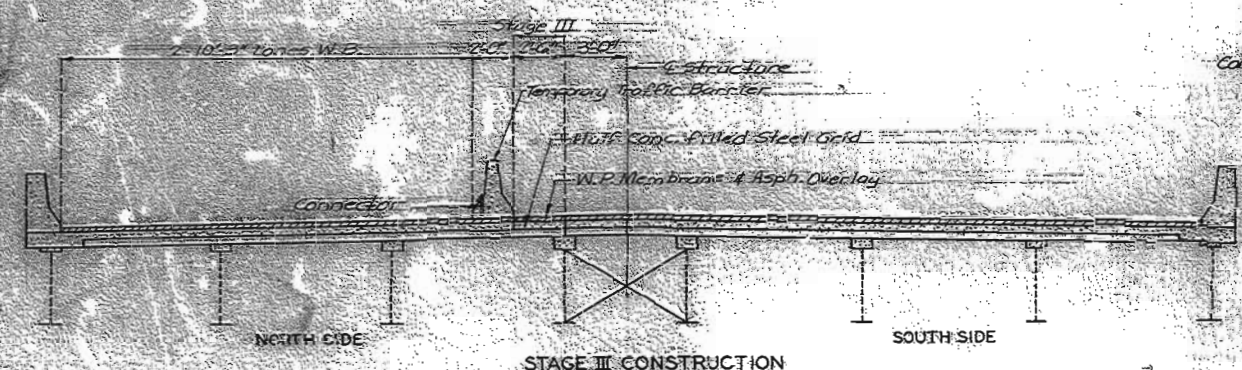
B86



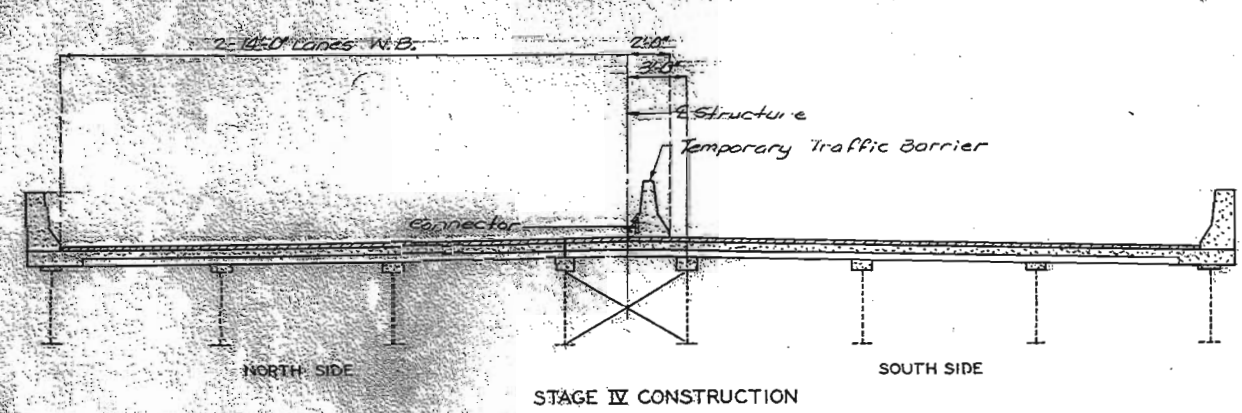
Stage I
Remove and relocate traffic barrier.
Detour W.B. traffic to South side.
Replace Exist. Deck with Steel Grid
Fill Grid with Concrete.
Apply W.P. Membrane & Asph. overlay



Stage II
Move tr. P.F. barrier to North side.
Detour W.B. traffic to North side.
Replace Exist. Deck with Steel Grid and Fill with concrete.
Apply W.P. Membrane & Asph. overlay.

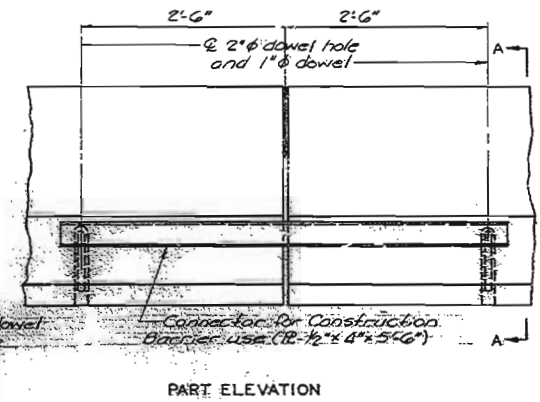
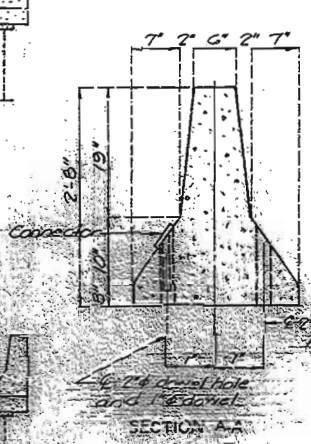


Stage III
Move traffic barrier as shown and fill Steel Grid with concrete and apply W.P. Membrane and Asph. overlay.

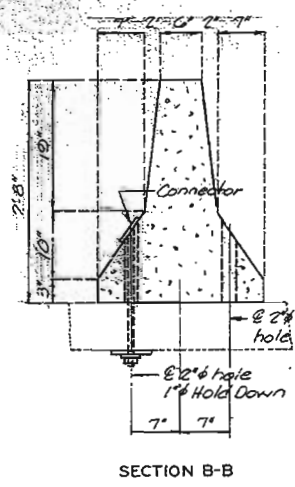
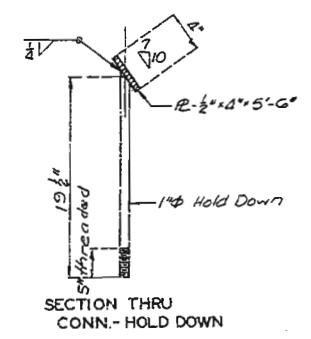
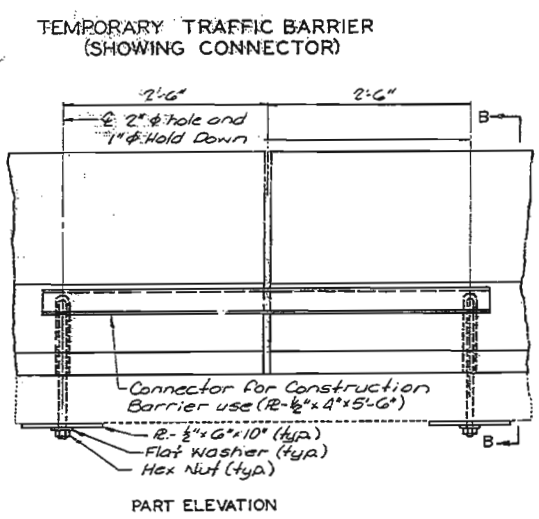
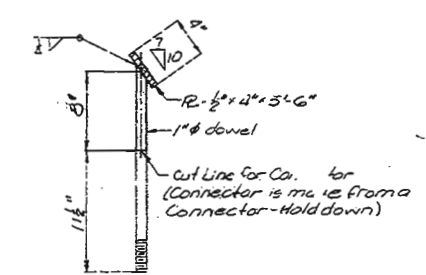


Stage IV
Move traffic barrier as required to provide 2-10'-0" Lanes of West bound traffic.

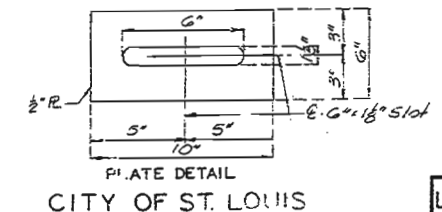
FOR INFORMATION ONLY



Note: Steel for connector - Hold Down shall be A-36.



TEMPORARY TRAFFIC BARRIER (SHOWING CONNECTOR - HOLD DOWN)



CITY OF ST. LOUIS

L-667R

SLAB SECTIONS SHOWING STAGE CONSTRUCTION

DETAILED March 1981
CHECKED March 1981

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

Sheet No. 33 of 33.

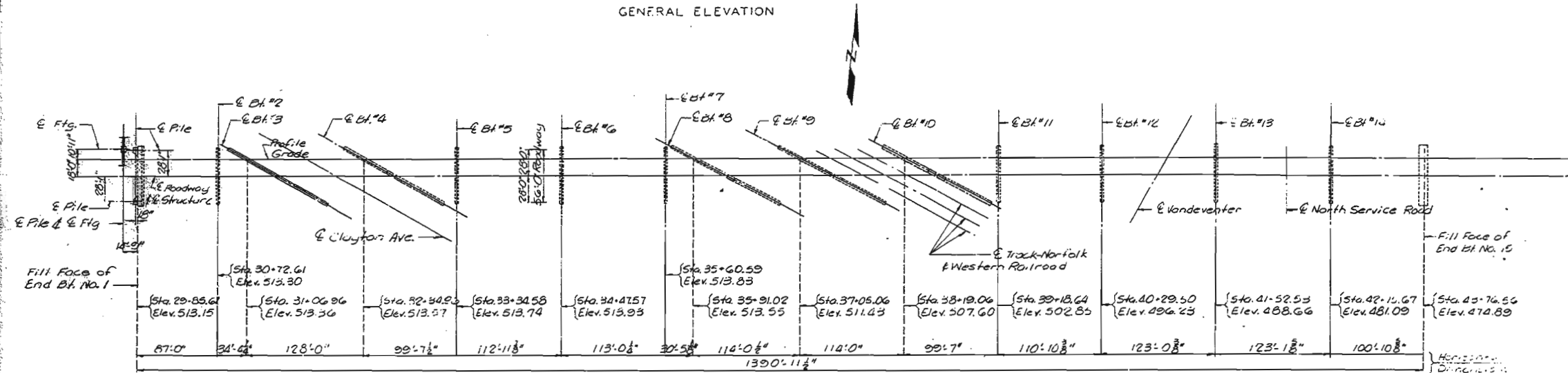
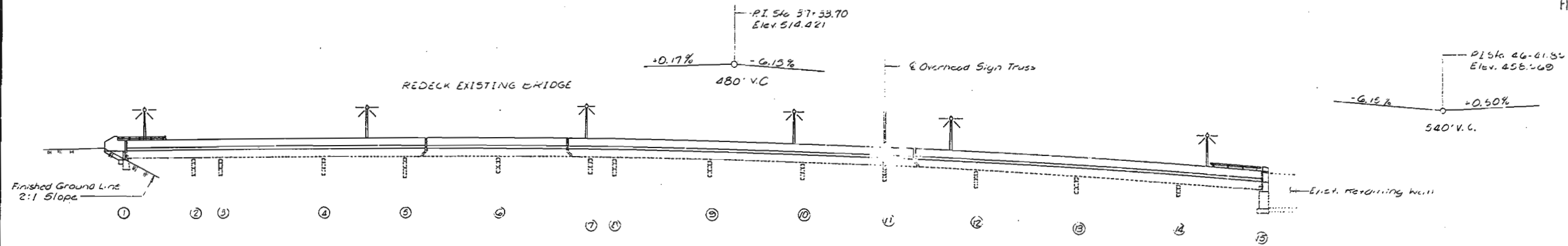
MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		79	112	120

Sec. 15, R. 17 Twp. 45N Rge. 7E

FINAL PLANS

B56



Note: For General Notes, final Quantities, and Pile Data, see sheet 116.2. Stations shown are field stations. Elevations shown are at Profile Grade.

FOR INFORMATION ONLY

PLANS FOR REDECKING & REPAIR

B.M. #4 - Elev. 477.89 - 5" on stone curb in front of General Equipment Co. Bldg. #39 1/2 Clayton Ave.

BRIDGE OVER VANDEVENTER & CLAYTON AVE., N&W. R.R.

STATE ROAD: ROUTE 40

IN CITY OF ST. LOUIS

PROJECT NO. BR-40-F-40-5(4) STA. 29+85.61

JOB NO. 6-U-40-26D RTE. 40

CITY OF ST. LOUIS

DATE 6/30/81

FINAL PLANS

STD. 606.00

STD. 706.35

L-667R

DESIGNED Dec. 1977
DETAILED Feb. 1980
CHECKED Feb. 1980

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

Sheet No. 1 of 35.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	113	

FINAL PLANS

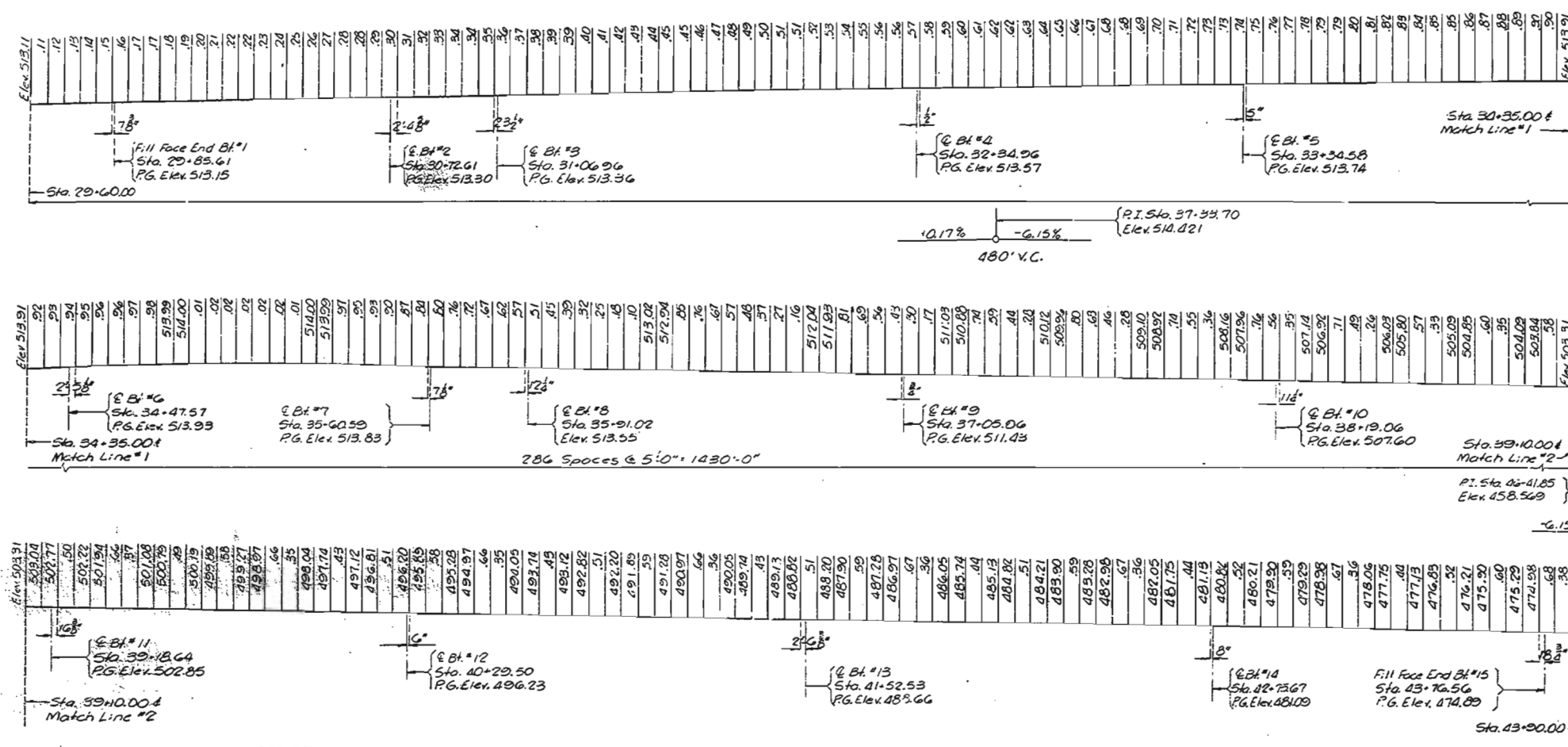
1357

GENERAL NOTES:

Design Specifications: A.A.S.H.T.O. - 1973
Design Loading: HS-20-44, No Future Wearing Surface,
Earth 120' Equivalent Fluid Pressure 30'.
Design Unit Stresses:
Class "B" Concrete (Substr. Repair) $f_c = 1200$ psi
Class "B1" Concrete (Superstr. Grd. F.I.I.) $f_c = 1620$ psi
Class "B1" Concrete (Barrier Curb) $f_c = 1300$ psi
Reinforcing Steel (Grade 60) $f_y = 60,000$ psi
Structural Carbon Steel $f_s = 20,000$ psi
Floor System:
Steel Grid Floor (Half Concrete Filled) (See Special Provisions)

Painting:
System B Green. (See Special Provisions)

Minimum clearance to reinforcing steel
18" unless otherwise shown.
Light dotted lines indicate old work. Heavy lines
indicate new work.
Bars bonded in old concrete not removed were
cleanly stripped and bent into new concrete, where
possible. If length is available, old bars did extend
into new concrete at least 40 diameters. Smooth
bars and 30 diameters for deformed bars.
For field connections, use 3" High Strength Bolts,
holes 1/2" except as noted.
Contractor did verify all dimensions in field
before ordering new steel.
All concrete and reinforcement in safety barrier
curbs included in superstructure quantities.
the following opening, for traffic during
construction were provided:
Clayton Ave. 15'6" x 13'6" Horizontal
Vanderwerker Ave. 15'6" Vertical 15'6" Horizontal
A minimum vertical clearance of 21'6" from top
of rails and a minimum lateral clearance of 8'6" from
the 6' of track to nearest temporary construction
framework was maintained during construction.
For Stage Construction Details, see sh. no. 53.



FINAL QUANTITIES			
ITEM	SUBSTR.	SUPERSTR.	TOTAL
Removal of Existing Bridge Deck	Sq. Ft.	82070	82070
Special Work	Lump Sum	1	1
Asphalt Cement (Asphaltic Concrete)	Tons	385	385
Mineral Aggregate (Asphaltic Conc.) (Type A)	Tons	657	657
Bridge Deck Waterproofing (Liquid)	Sq. Yd.	8566	8566
Elastomeric Exp. Jt. Seal (40 in.)	Lin. Ft.	112	112
Elastomeric Exp. Jt. Seal (6.5 in.)	Lin. Ft.	56	56
Preformed Compression Jt. Seal (2 1/2 in.)	Lin. Ft.	112	112
Reinforcing Steel (Grade 60)	Lbs.	12840	12840
Reinforcing Steel (Grade 60) (Epoxy)	Lbs.	1990	1990
Class B1 Concrete (Haunches)	Cu. Yd.	176.0	176.0
Fabricated Structural Carbon Steel	Lbs.	236330	236330
Steel Grid Floor (Half Concrete Filled) *	Sq. Ft.	82400	82400
High Strength Bridge Rail (one Tube)	Lin. Ft.	2797	2797
Painting (System B) Green	Lump Sum	1	1
Conduit System on Structure	Lump Sum	1	1
Drainage System on Structure	Lump Sum	1	1
Substructure Repair (Formed)	Sq. Ft.	77	77
Substructure Repair (Unformed)	Sq. Ft.	522	522
Pressure Grouting (Epoxy)	Lin. Ft.	39	39
Class B1 Concrete (Barrier Curb)	Cu. Yd.	358.5	358.5
Class B Concrete (Substr.)	Cu. Yd.	175.1	175.1
Protective Coating for Concrete Bents	Lump Sum	1	1
Structural Steel Pile (HP10x42)	Lin. Ft.	713	713
Temporary Construction Traffic Barrier **	Lump Sum	1	1
Bearing Removal for Inspection	Each	120	120
Surface Finishing Bearing Rockers	Each	2	2
Rehabilitate Bearings	Each	16	16
New Bearing Materials	Lb.	3301	3301

PROFILE GRADE ELEVATIONS

FINAL QUANTITIES CONTINGENT ITEMS			
ITEM	SUBSTR.	SUPERSTR.	TOTAL
Replace Anchor Bolts	F.P.	120340	120340
Replace Rusted Bolts	F.P.	192138	192138
Rebate Labor Saved - Bar-Border Arb. LUMP SUM (F200CT)		24500	24500
Conc. Wearing Surface at Joints	Each	3	3
Temporary Barrier	F.P.	120340	120340
Deck Drain Hold Down	F.P.	120340	120340
Replace Field Bolts	F.P.	120340	120340
Shim for Truss Column	F.P.	120340	120340
Fab. Costs Deck Drains - L.S. Deduct. 20 (203)		172.00	172.00
1 EXC. STR.	LUMP SUM	1	1

FINAL PILE DATA			
Bent No.		1	
Pile Type and Size		HP10x42	
Number		4	
Final Lengths Lin. Ft.		Beam wing	
		29' 12 1/2"	
Less in Bearing		Tons	10
Hammer Energy Req'd. Ft. Lbs.		7,000	

Minimum energy requirement of hammer
based on plan length and design bearing
value of piles.
All piles were driven to practical
refusal.

FOR INFORMATION
ONLY

FINAL PLANS

DETAILED Feb. 1980
CHECKED Feb. 1980

* Includes *3 Reinforcement bar
** See Special Provisions

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

Sheet No. 2A of 33.

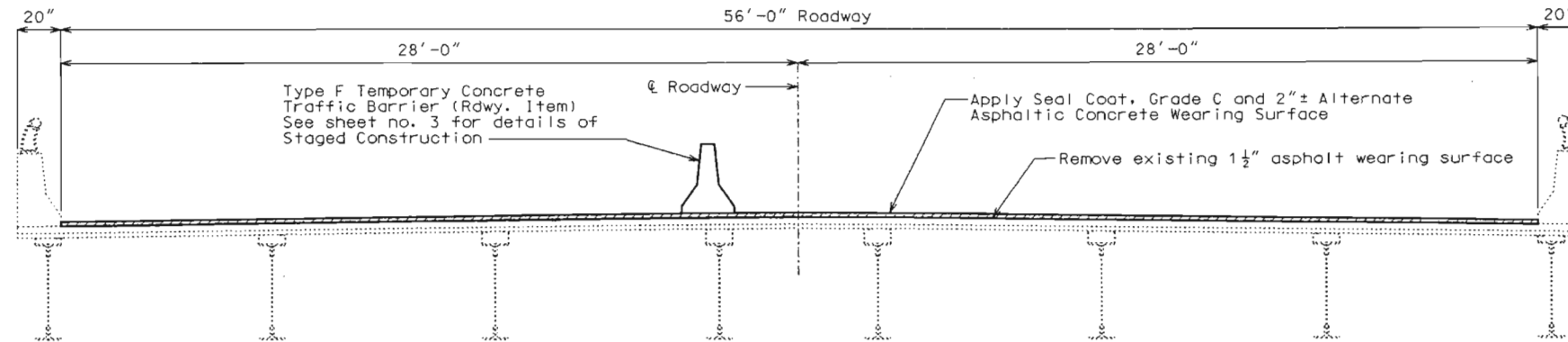
CITY OF ST. LOUIS

L-667 R

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

U.I.P. EXISTING (87'-67'-128'-67'-25') (88'-88') (25'-65'-114'-114'-65'-25')
(87'-123'-123'-99') CONT. PLATE GIRDER SPANS

State	Proj. No.	Sheet No.
MO		31
SEC/SUR 16	TWP 45N RGE 7E	



SECTION THRU SLAB

GENERAL NOTES:

Design Specifications:
2002 - AASHTO 17th Edition
Load Factor Design

Design Loading:
HS20-44 (New Construction)

Design Unit Stresses:

Class B-1 Concrete (Safety Barrier Curb) $f'c = 4,000$ psi
Class B-2 Concrete (Slab and Backwall) $f'c = 4,000$ psi
Reinforcing Steel (Grade 60) $f_y = 60,000$ psi
Structural Steel (ASTM A709 Grade 50) $f_y = 50,000$ psi

Reinforcing Steel:

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

Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars, unless otherwise noted.

Fabricated Steel Connections:

Field connections shall be made with 3/4" diameter high strength bolts and 1/8" diameter holes, except as noted.

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

Miscellaneous:

Outline of old work is indicated by dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

Traffic over structure to be maintained during construction per Roadway Traffic Control Plans. See details of Staged Construction on sheet no. 3.

Remove existing light pole under structure at east side of Vandeventer Ave. during construction, and reinstall light pole after construction is complete (Roadway Item).

Roadway surfacing adjacent to bridge ends to match bridge overlay (Roadway Item).

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

In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.

Concrete Protective Coatings:

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

Sacrificial graffiti protective coating shall be applied as shown on the bridge plans and in accordance with Sec 711.

GENERAL NOTES (Cont.):

Structural Steel Protective Coatings (Existing Steel Under Expansion Joints):

Protective Coating: System G in accordance with Sec 1081.

The surfaces of all structural steel located under expansion joints shall be coated with complete System G within a distance not less than 10 feet for finger plate expansion joints and not less than 5 feet for strip seal expansion joints, from the centerline of all deck joints. Within this limit, items to be coated shall include all surfaces of girders, diaphragms, stiffeners, bearings, hinges and miscellaneous structural steel items. Coating shall be excluded on exposed grid beams and grid floor pans.

Surface Preparation: Surface preparation of the existing steel shall be in accordance with Sec 1081 for "Recoating of Structural Steel (System G or H)". The cost of surface preparation will be considered completely covered by the contract lump sum price for "Surface Preparation for Recoating Structural Steel".

Prime Coat: The cost of the prime coat will be considered completely covered by the contract lump sum price for "Field Application of Inorganic Zinc Primer". Tint of the prime coat for System G shall be similar to the color of the field coat to be used.

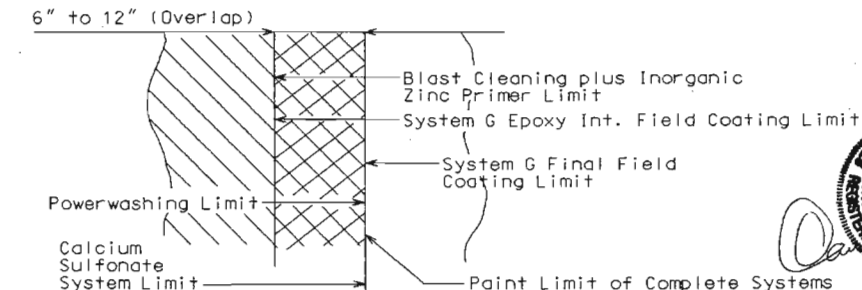
Field Coat: The color of the finish field coat shall be Gray (Federal Standard #26373). The cost of the intermediate field coat will be considered completely covered by the contract lump sum price for "Intermediate Field Coat (System G)". The cost of the finish field coat will be considered completely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

Sec 1081.4.5 shall be modified such that the word "RECOATED" is replaced by the words "RECOATED - SYSTEM G - EXPANSION AREAS ONLY". Identification in accordance with Sec 1081.5.5 shall also be performed.

It shall be required that the Calcium Sulfonate System overlap the System G epoxy intermediate field coating between 6 inches and 12 inches in order to achieve maximum coverage at the paint limit of each complete system under the expansion areas. The final field coatings shall be masked to provide crisp, straight lines and to prevent overspray beyond the overlap required. (See detail on this sheet.)

Structural Steel Protective Coatings (New Steel):

All new steel shall be coated with the prime coat and intermediate coat for System G in accordance with Sec 1081. The cost of the prime coat and intermediate coat will be considered completely covered by the pay items for the Fabricated Structural Steel and Connection Angle Removal and Replacement. Tint of the prime coat for System G shall be similar to the color of the field coat to be used.



PART ELEVATION SHOWING LIMITS OF PAINT OVERLAP

(Vertical or horizontal paint limit. Horizontal limit shown)

GENERAL NOTES (Cont.):

Field Coat: The color of the finish field coat for new steel under expansion joints shall be Gray (Federal Standard #26373). The cost of the finish field coat will be considered completely covered by the contract lump sum price for "Finish Field Coat (System G)".

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

The Calcium Sulfonate topcoat shall be applied to the System G intermediate coat for new steel not under expansion joints. The cost of the topcoat will be considered completely covered by the contract lump sum price for "Calcium Sulfonate Topcoat".

Structural Steel Protective Coatings (Existing Steel Not Under Expansion Joints):

Protective Coating: Calcium Sulfonate System in accordance with Sec 1081. Coating shall be excluded on exposed grid beams and grid floor pans.

Surface Preparation: Surface preparation of the existing steel shall be in accordance with Sec 1081 for "Overcoating of Structural Steel (Calcium Sulfonate System)". The cost of surface preparation will be considered completely covered by the contract lump sum price for "Surface Preparation for Overcoating Structural Steel".

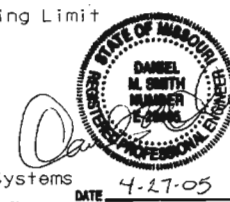
Rust Penetrating Sealer: The rust penetrating sealer shall be applied to the surfaces of all bearings, overlapping steel plates, pin connections, pin and hanger connections and other locations where rust bleeding, pack rust and layered rust is occurring. The cost of the rust penetrating sealer will be considered completely covered by the contract lump sum price for "Calcium Sulfonate Rust Penetrating Sealer".

Prime Coat: The cost of the prime coat will be considered completely covered by the contract lump sum price for "Calcium Sulfonate Primer".

Topcoat: The color of the topcoat shall be Gray (Federal Standard #26373). The cost of the topcoat will be considered completely covered by the contract lump sum price for "Calcium Sulfonate Topcoat".

Drainage Cleanout:

Clean out and thoroughly flush drainage system on structure. Remove grates and pipe cleanouts for cleaning if necessary. Effective system operation shall be demonstrated to the engineer. Cost of all work and material to complete this item will be considered completely covered by the contract lump sum price for Cleaning of Existing Drainage System.



REPAIRS TO BRIDGE OVER VANDEVENTER AVE.,
CLAYTON AVE. & METROLINK

STATE ROAD FROM KINGSHIGHWAY BLVD. TO MISSISSIPPI RIVER

ABOUT 1.3 MILES EAST OF KINGSHIGHWAY BLVD.

PROJECT NO.

STA. 29+85.61± (MATCH EXISTING)

JOB NO. J611607

RTE. I-64 (EBL)

CITY OF ST. LOUIS

Date: 4/29/05

STD. 617.20

STD. 706.35

L06672

Designed Feb. 2005
Detailed Feb. 2005
Checked Mar. 2005

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

Sheet No. 1 of 15

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State	Proj. No.	Sheet No.
MO		B2

Estimated Quantities		
Item		Total
Removal of Asphalt Wearing Surface	sq. foot	77.896
Partial Removal of Existing Bridge Decks	sq. foot	5.241
Alternate Asphaltic Concrete Wearing Surface (Bridge)	sq. yard	8.130
Seal Coat, Grade C	sq. yard	8.130
Class B-2 Concrete	cu. yard	125.9
Reinforcing Steel (Epoxy Coated)	pound	46.410
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
Sacrificial Graffiti Protection System	lump sum	1
Expansion Device (Finger Plate)	linear foot	168
Fabricated Structural Low Alloy Steel (Misc.)	pound	1,620
Surface Preparation for Recoating Structural Steel	lump sum	1
Surface Preparation for Overcoating Structural Steel	lump sum	1
Field Application of Inorganic Zinc Primer	lump sum	1
Intermediate Field Coat (System G)	lump sum	1
Finish Field Coat (System G)	lump sum	1
Calcium Sulfonate Rust Penetrating Sealer	lump sum	1
Calcium Sulfonate Primer	lump sum	1
Calcium Sulfonate Topcoat	lump sum	1
Strip Seal Expansion Joint System	linear foot	112
Cleaning of Existing Drainage System	lump sum	1
Connection Angle Removal and Replacement	each	127
Remove and Replace Safety Barrier Curb	linear foot	176
Slab Drain Modification	lump sum	1

Notes:
Concrete above the upper construction joint in backwall at Abutments No. 1 & 15 is included in the Class B-2 Concrete quantity.

All reinforcement in the backwall at Abutments No. 1 & 15 is included in the Reinforcing Steel (Epoxy Coated) quantity.

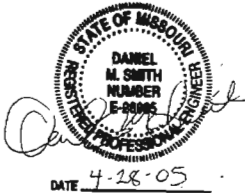
Alternate Asphaltic Concrete Wearing Surface	
Type of Wearing Surface with Asphalt Binder Type	Mix Used (✓)
SP125BSM Mix with PG 76-22	
SP125BLP Mix with PG 76-22	

MoDOT construction personnel shall complete column labeled "Mix Used (✓)".

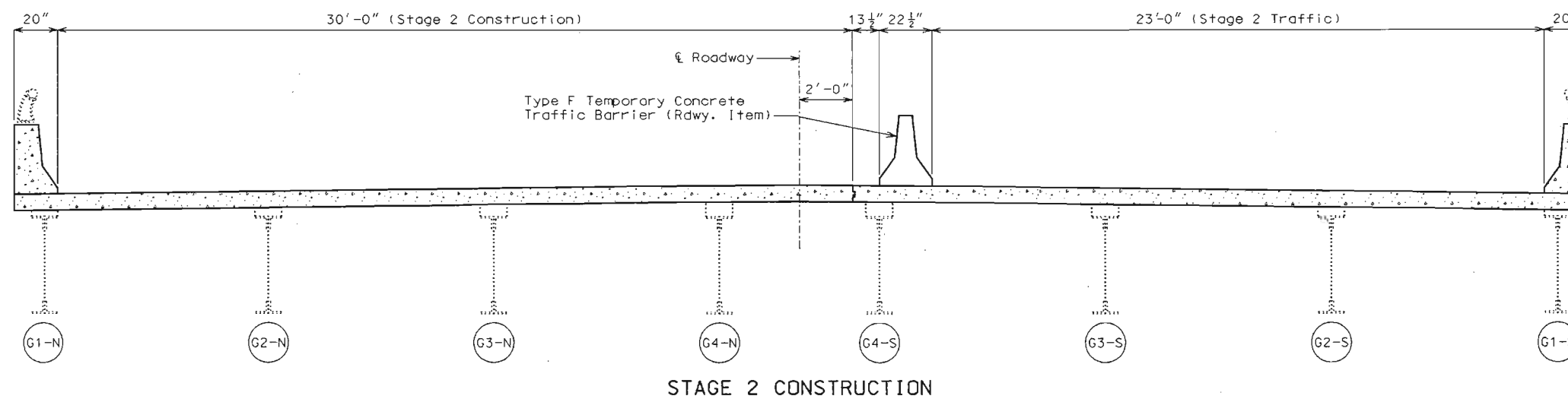
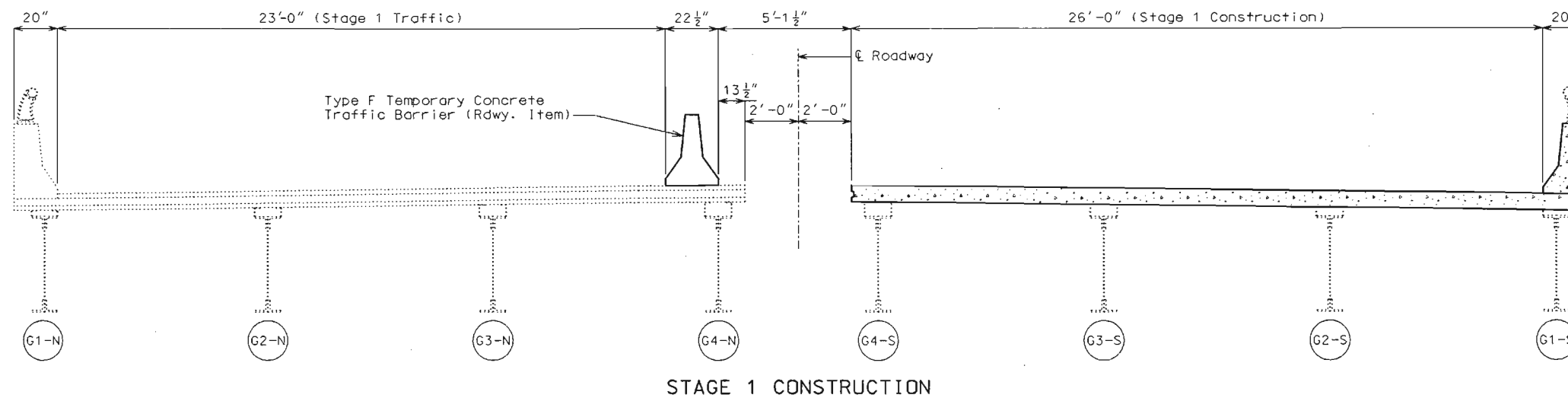
The contractor shall select one of the alternate asphaltic concrete wearing surfaces listed in the table. The mixture shall be in accordance with Sec 403 and produced in accordance with Sec 404.

The area of the asphaltic concrete wearing surface will be measured and computed to the nearest square yard. This area will be measured transversely from out to out of overlay and longitudinally from end of slab to end of slab excluding areas of slab replacement.

Payment for Alternate Asphaltic Concrete Wearing Surface will be considered completely covered by the contract unit price per square yard.

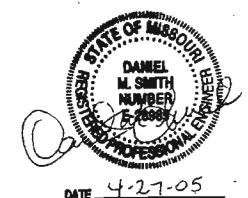


State	Proj. No.	Sheet No.
MO		B3



Notes:
 The steel grid deck and barrier curb are to be removed and replaced only where adjacent to expansion devices that are being replaced.
 Temporary Barrier shall not be attached to the bridge.

DETAILS OF STAGED CONSTRUCTION



Detailed Feb. 2005
 Checked Mar. 2005

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

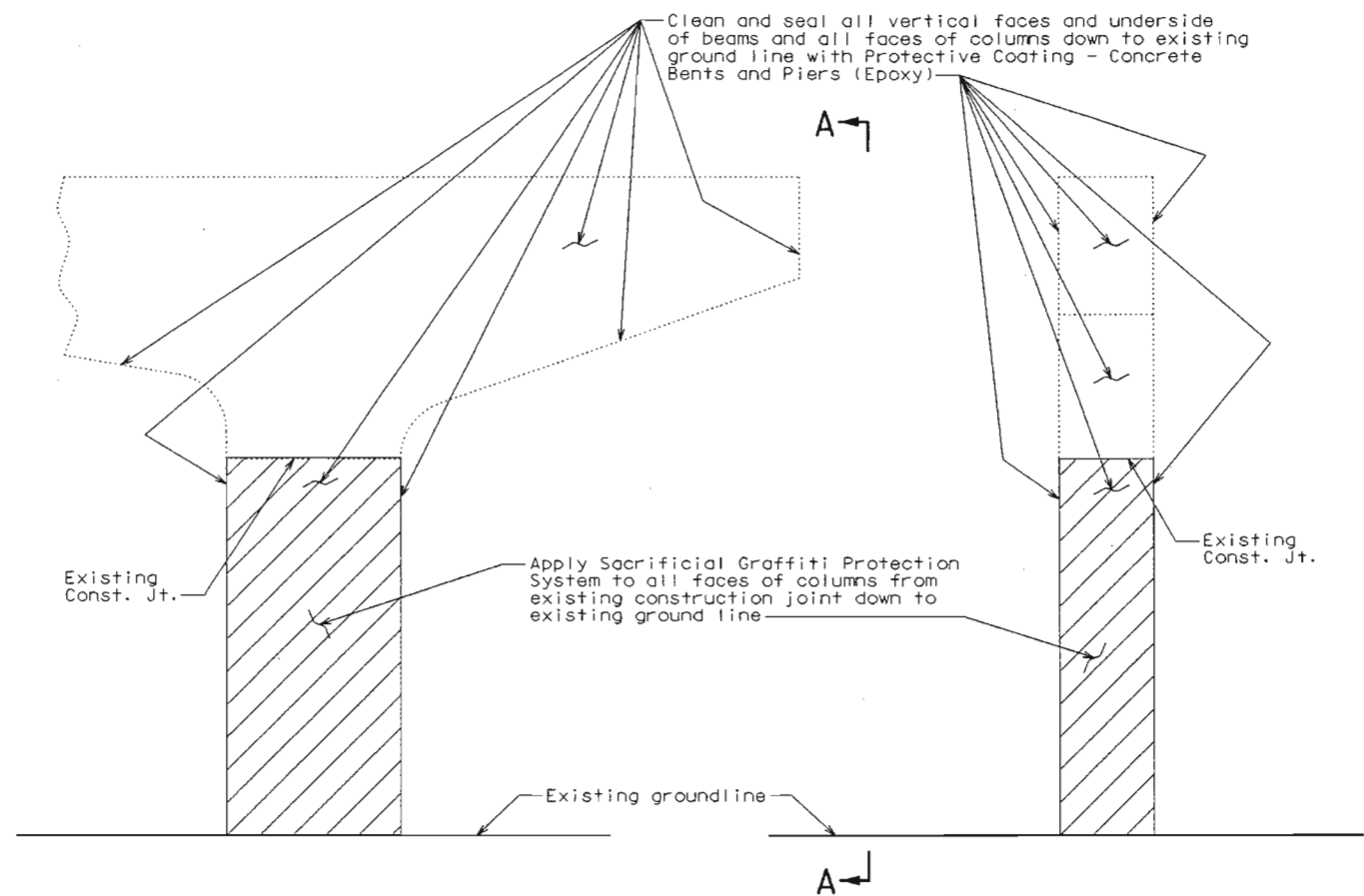
Sheet No. 3 of 15

CITY OF ST. LOUIS

L06672

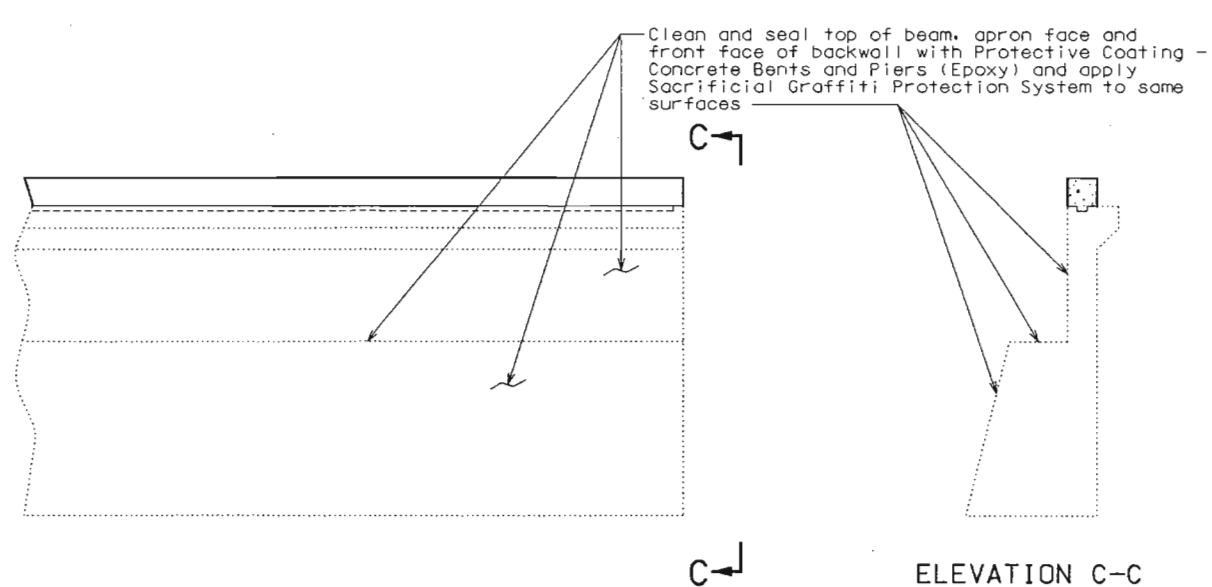
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State	Proj. No.	Sheet No.
MO		84



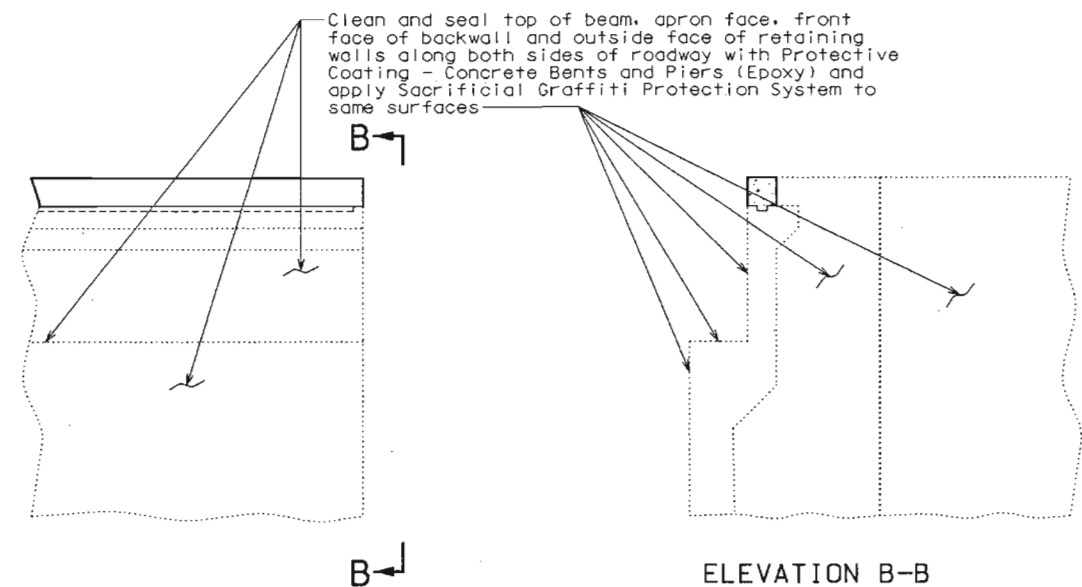
PART ELEVATION OF INT. BENTS NO. 2 THRU 14

ELEVATION A-A



PART ELEVATION OF ABUTMENT NO. 1

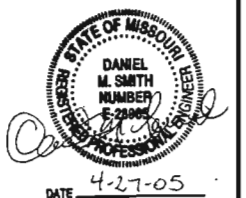
ELEVATION C-C



PART ELEVATION OF ABUTMENT NO. 15

ELEVATION B-B

DETAILS OF CONCRETE PROTECTIVE COATING



Detailed Feb. 2005
Checked Mar. 2005

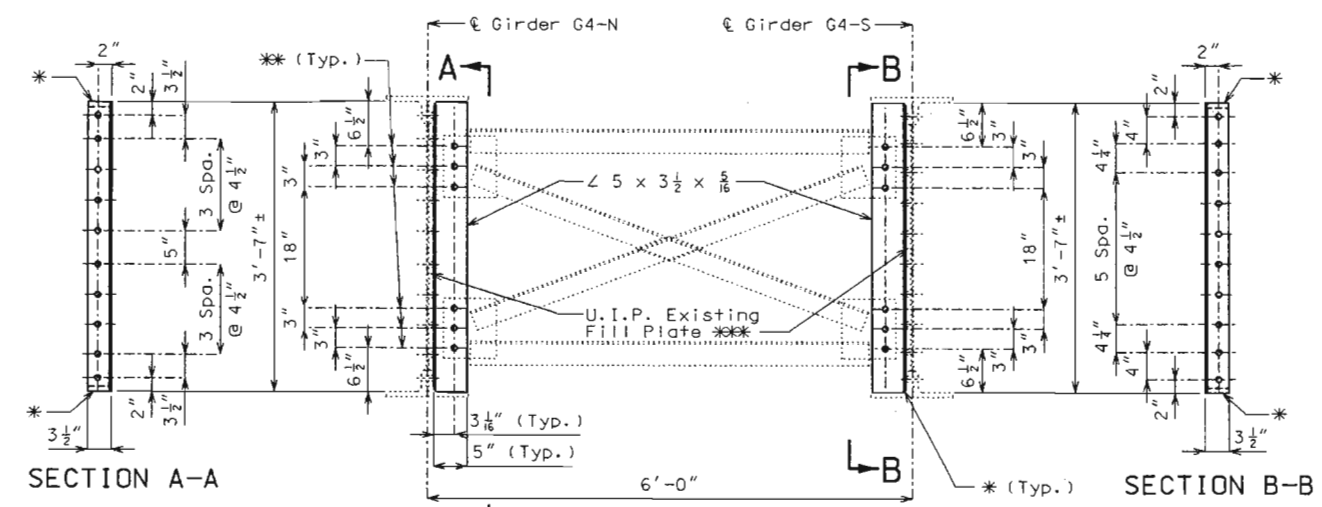
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 4 of 15

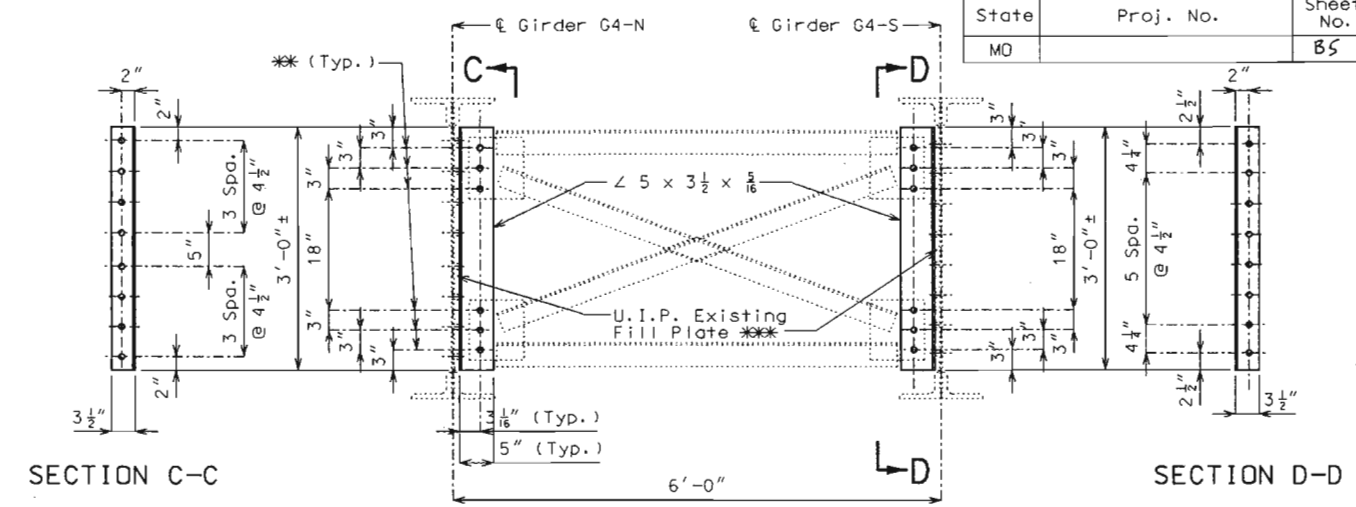
CITY OF ST. LOUIS

L06672

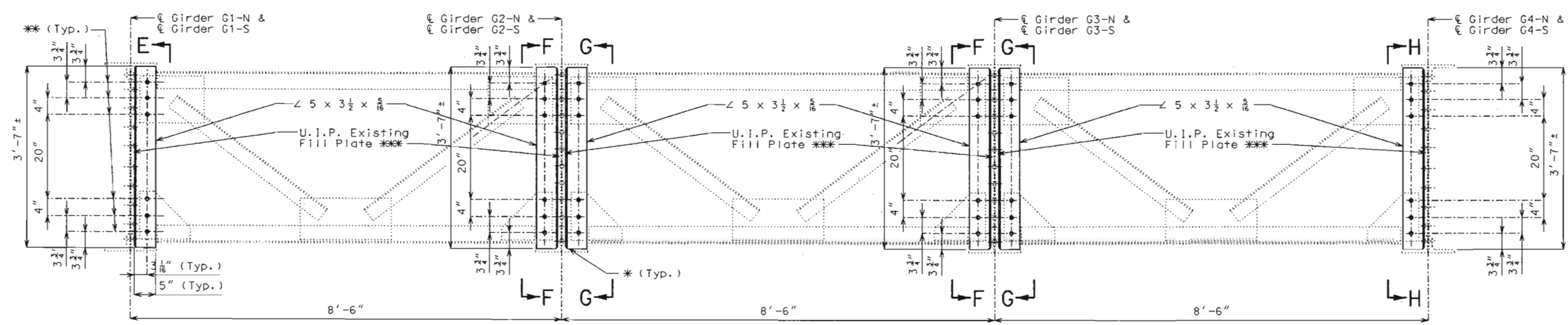
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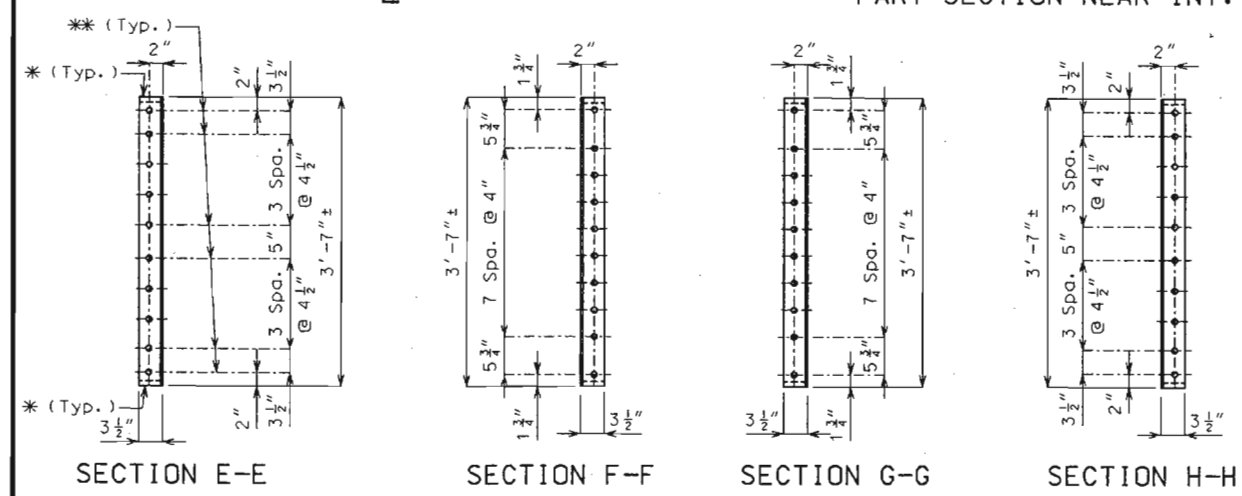
PART SECTION NEAR INT. DIAPHRAGM BETWEEN GIRDERS G4-N & G4-S
PLACED OPPOSITE OF EXISTING CONNECTION ANGLES



PART SECTION NEAR INT. DIAPHRAGM BETWEEN GIRDERS G4-N & G4-S
PLACED NOT OPPOSITE OF EXISTING CONNECTION ANGLES



PART SECTION NEAR INT. DIAPHRAGMS SHOWING NEW CONNECTION ANGLES



DETAILS OF CONNECTION ANGLE REMOVAL AND REPLACEMENT

Notes:

Details shown are for removing and replacing in-kind all cracked connection angles that connect the int. diaphragm to the girder web. The location of specific connection angles needed for removal and replacement will be determined by the engineer.

All new fabricated structural steel shall be ASTM A709 Grade 50.

When removing and replacing connection angle, remove existing high strength bolts or rivets as shown to install new Z5 x 3-1/2 x 5/16.

Field drill 13/16" Ø holes through new Z5 x 3-1/2 x 5/16 to match holes in existing int. diaphragm connection plates and girder web.

Use 3/4" Ø high strength bolts to connect new Z5 x 3-1/2 x 5/16 to existing int. diaphragm connection plates and girder web.

The cost of removing the existing connection angles and fabricating and installing new connection angles complete in place will be considered completely covered by the contract unit price for Connection Angle Removal and Replacement per each.

The contractor shall field verify all dimensions before ordering new material.

* Grind 3-1/2" leg of new connection angles at top and bottom to clear 3/4" fillet of existing flange angles.

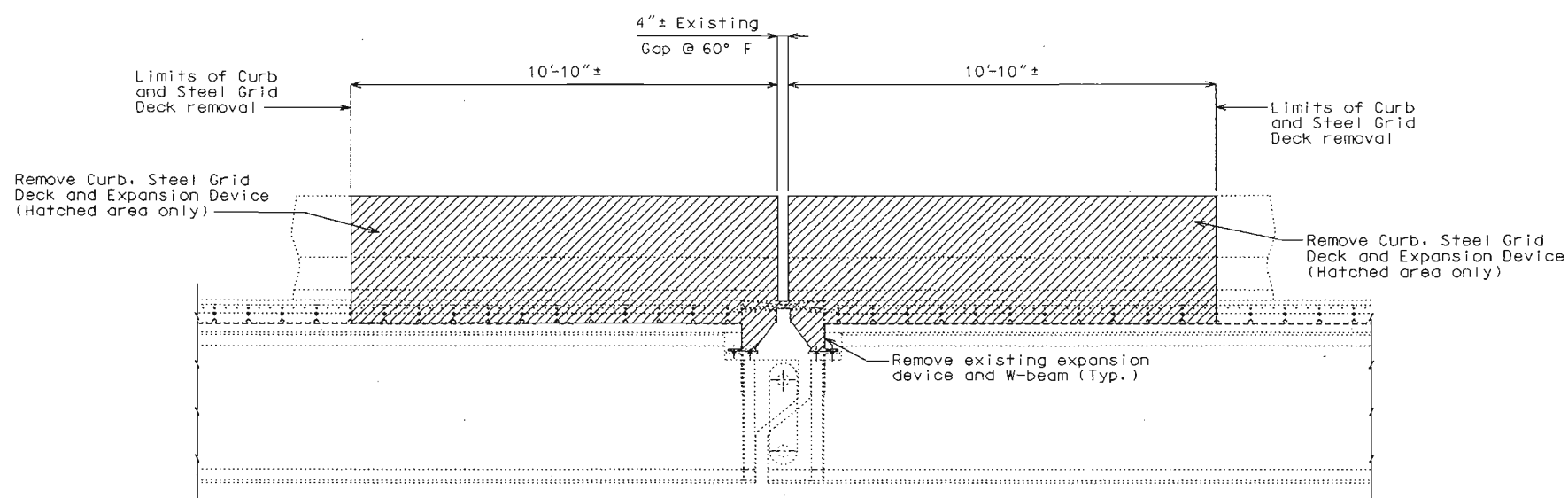
** 13/16" Ø holes for 3/4" Ø high strength bolts (field drill to match location of existing holes in int. diaphragm connection plates and girder web).

*** If any existing 3-1/2" x 3/4" fill plate is cracked, it shall be removed and replaced in-kind as directed by the engineer. Field drill 13/16" Ø holes to match existing holes in girder web. Cost will be considered completely covered by the contract unit price for Connection Angle Removal and Replacement per each.

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

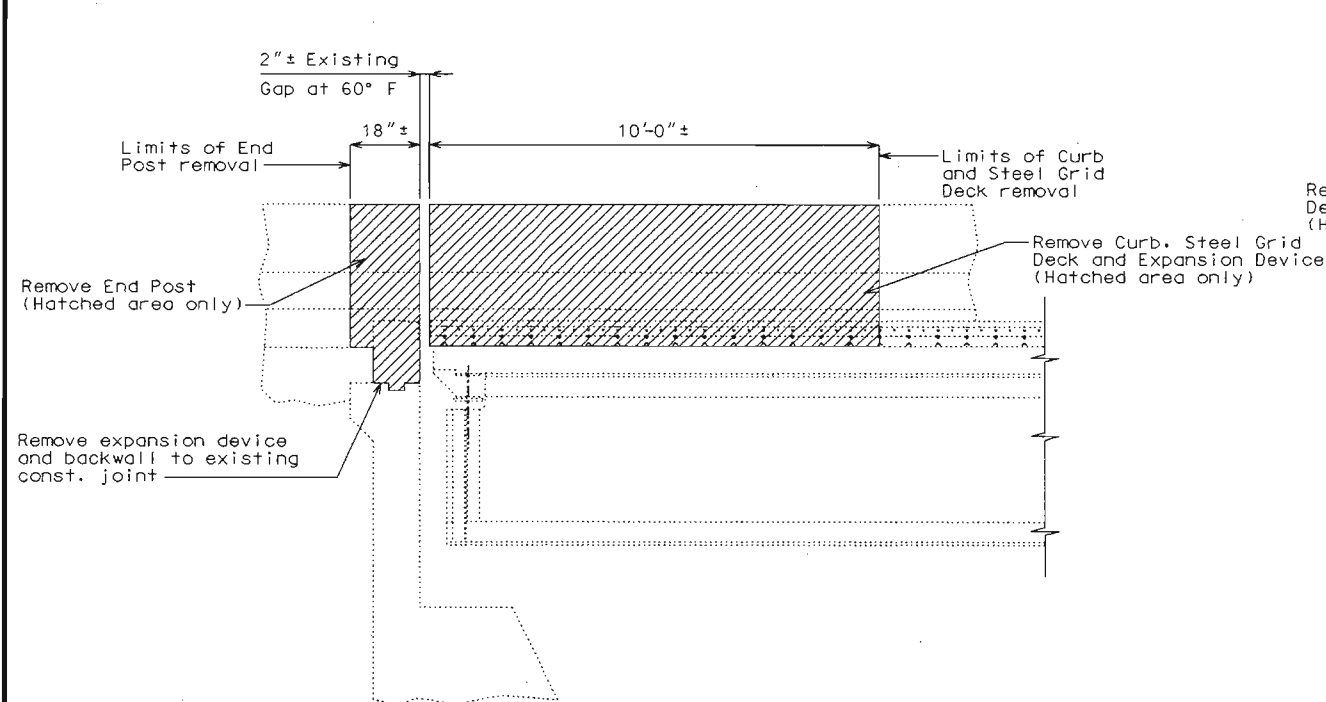
Sheet No. 5 of 15

State	Proj. No.	Sheet No.
MO		B6

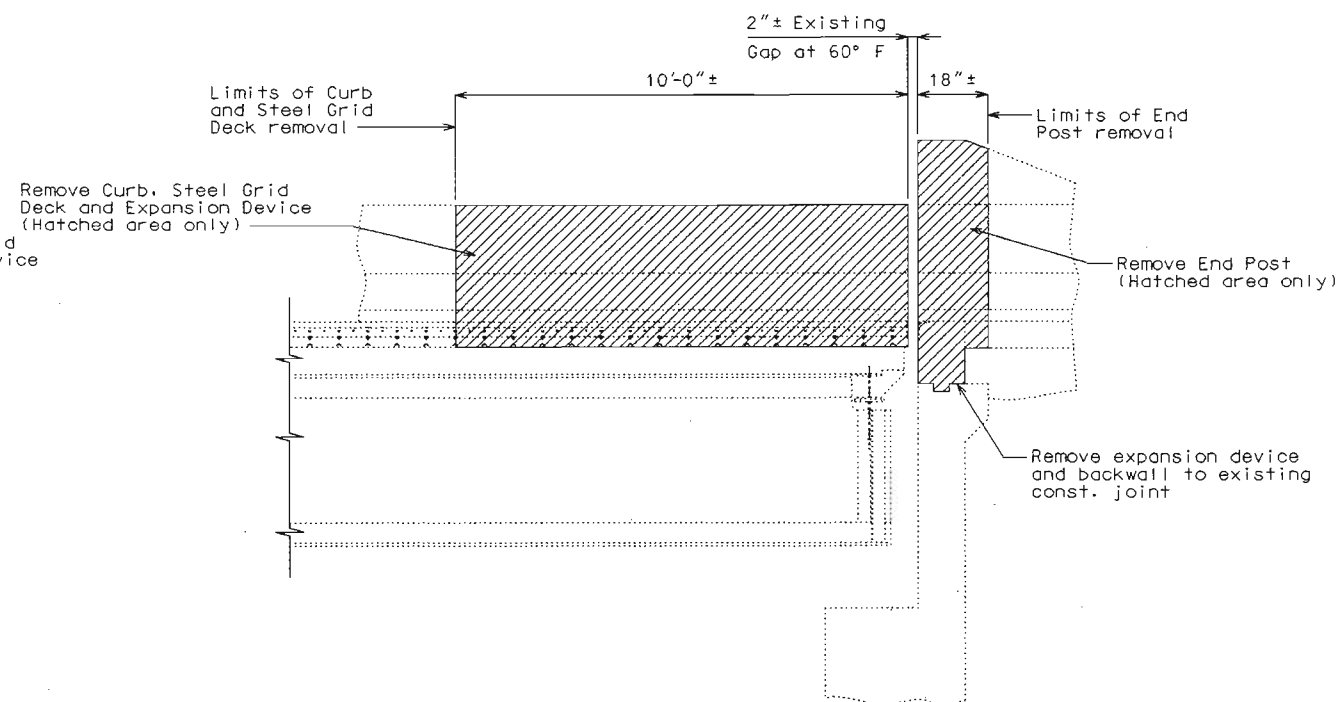


PART SECTION NEAR CURB SHOWING STEEL GRID DECK, EXPANSION DEVICE AND BARRIER CURB REMOVAL IN SPANS (5-6), (6-7) & (11-12)

Notes:
 Transverse dimensions of steel grid deck removal shall be from out-to-out of barrier curbs.
 Removal of existing concrete and expansion devices shall be in accordance with Sec 216.
 The cost of removing the existing steel grid deck within the limits shown will be considered completely covered by the contract unit price for Partial Removal of Existing Bridge Decks per sq. foot.
 The cost of removing the existing elastomeric seals, armor and W-beams at interior spans and the existing compression joint seals, armor and backwall concrete at end abutments will be considered completely covered by the contract unit price for Partial Removal of Existing Bridge Decks per sq. foot.
 The cost of removing the existing barrier curbs and end posts within the limits shown will be considered completely covered by the contract unit price for Remove and Replace Safety Barrier Curb per linear foot.

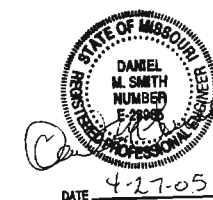


PART SECTION NEAR CURB SHOWING STEEL GRID DECK, BACKWALL, EXPANSION DEVICE, BARRIER CURB AND END POST REMOVAL AT ABUTMENT NO. 1



PART SECTION NEAR CURB SHOWING STEEL GRID DECK, BACKWALL, EXPANSION DEVICE, BARRIER CURB AND END POST REMOVAL AT ABUTMENT NO. 15

DETAILS OF CONCRETE REMOVAL



Detailed Mar. 2005
 Checked Mar. 2005

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

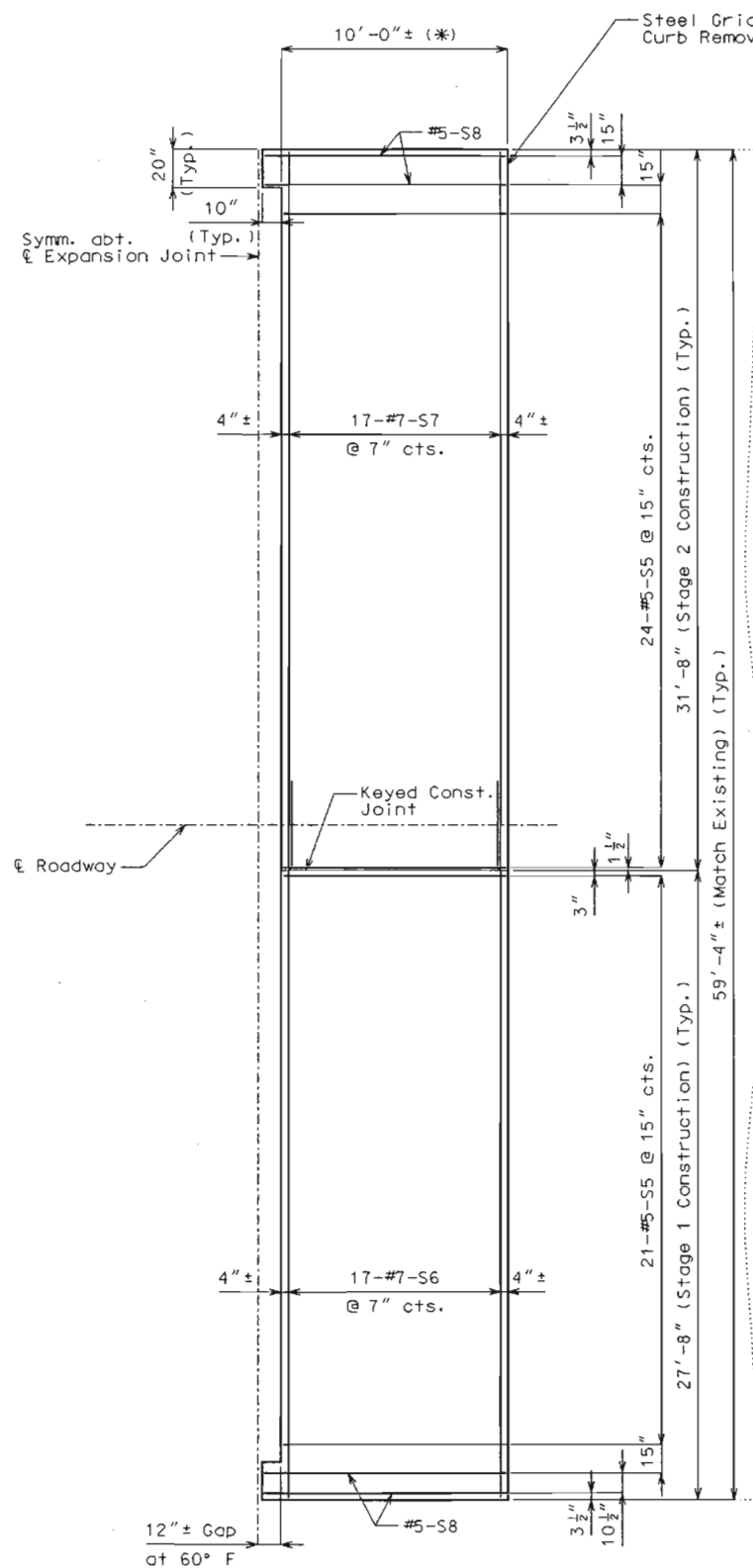
Sheet No. 6 of 15

CITY OF ST. LOUIS

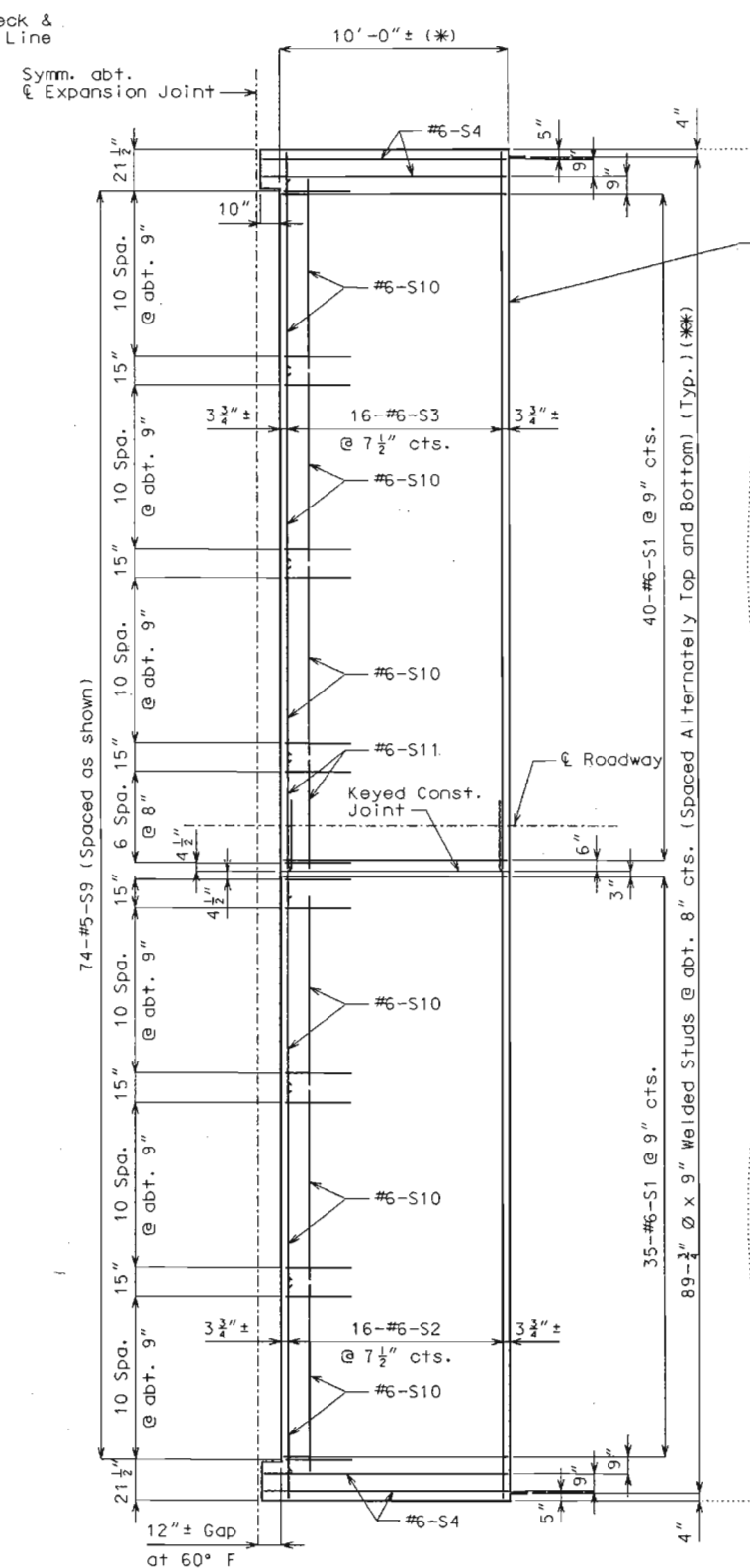
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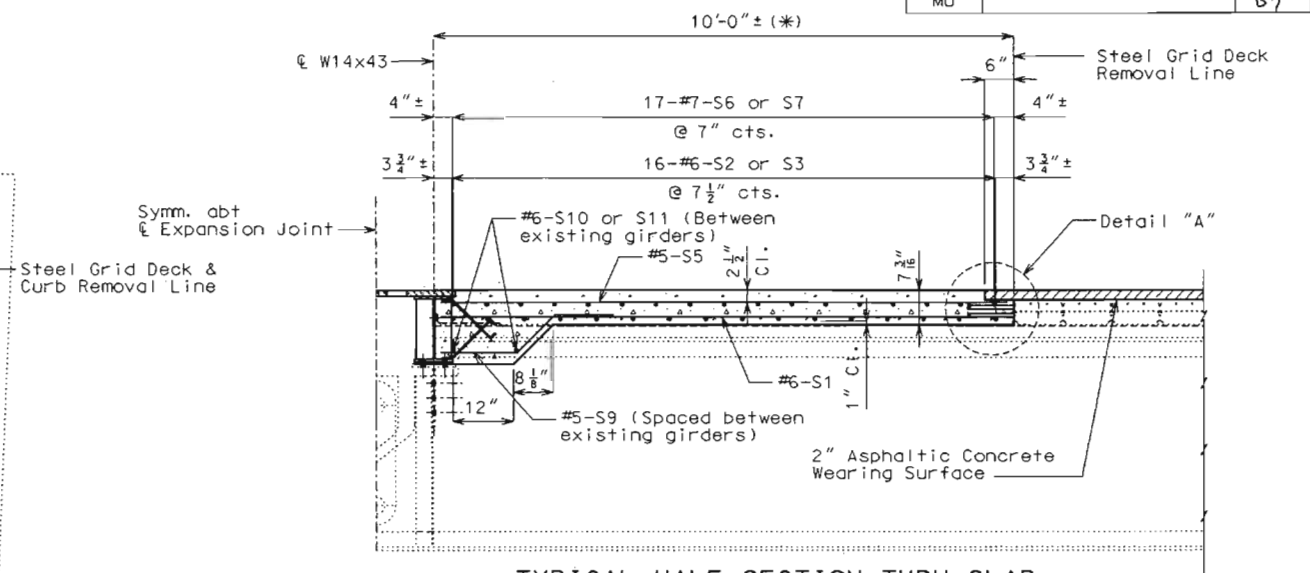
State	Proj. No.	Sheet No.
MO		87



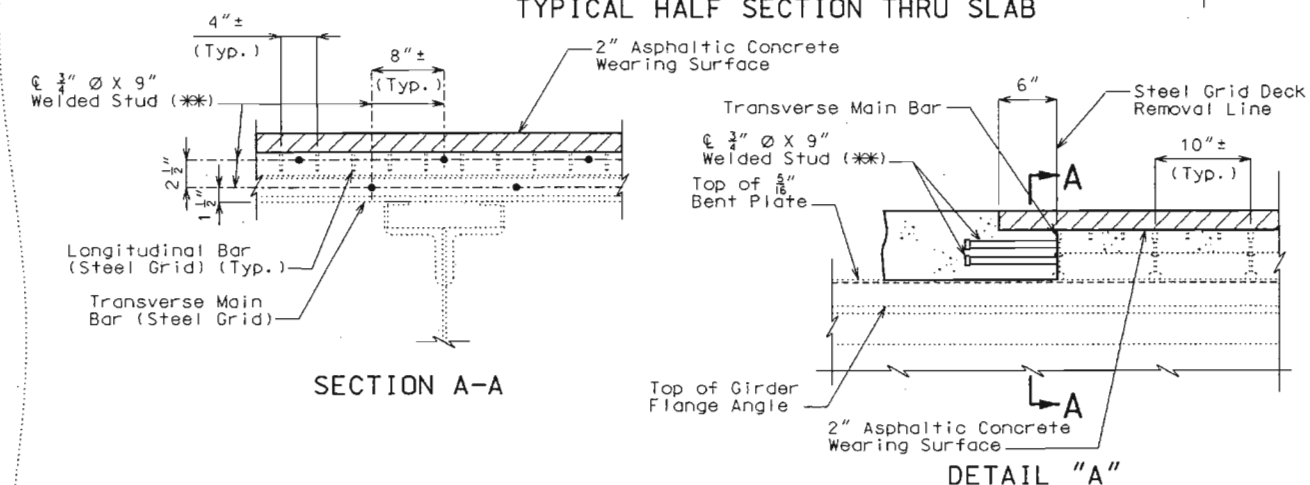
PART PLAN OF SLAB SHOWING
TOP REINFORCEMENT



PART PLAN OF SLAB SHOWING
BOTTOM REINFORCEMENT
DETAILS OF SLAB REPLACEMENT IN SPANS (5-6), (6-7) & (11-12)



TYPICAL HALF SECTION THRU SLAB



Notes:

For Details of Finger Plate Expansion Device, see sheet no. 8.

For details and reinforcement of Safety Barrier Curb replacement, see sheet no. 13.

For Typical Section thru Slab Near Expansion Device Replacement, see sheet no. 12.

For Details of Concrete Removal, see sheet no. 6.

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

(*) This dimension shall be adjusted as necessary (5" Max.) so that the steel grid deck removal line corresponds to the face of an existing steel grid transverse main bar. Variations may be encountered in the estimated quantities for concrete and reinforcing steel, but the variations cannot be used for adjustments in the contract unit prices.

(**) These shear connectors shall be in accordance with Sec 712, 1037 and 1080. The cost of furnishing, fabricating and installing the shear connectors will be considered completely covered by the contract unit price for Fabricated Structural Low Alloy Steel (Misc.) per pound.



DATE 4-27-05

Detailed Feb. 2005
Checked Mar. 2005

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

Sheet No. 7 of 15

CITY OF ST. LOUIS

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State	Proj. No.	Sheet No.
MO		88

GENERAL NOTES:

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

Plan dimensions are based on installation at 60°F. The expansion gap and other dimensions shall be increased or decreased ① for each 10°F rise or fall in temperature at installation.

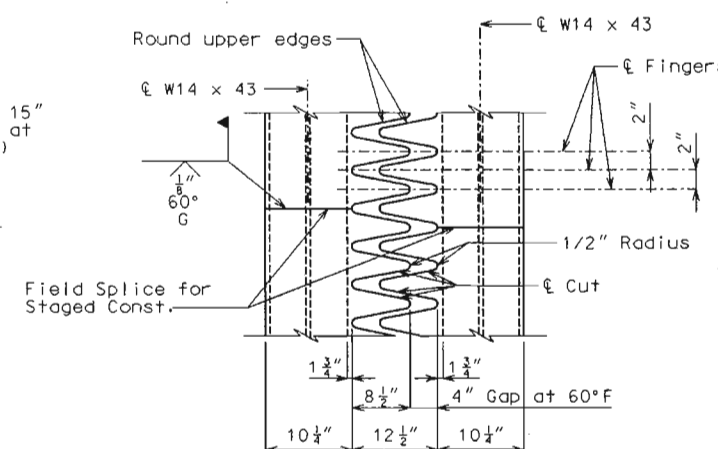
Material for the expansion device shall be ASTM A709 Grade 36 structural steel. Anchors for the expansion device shall be in accordance with Sec 1037.

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

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

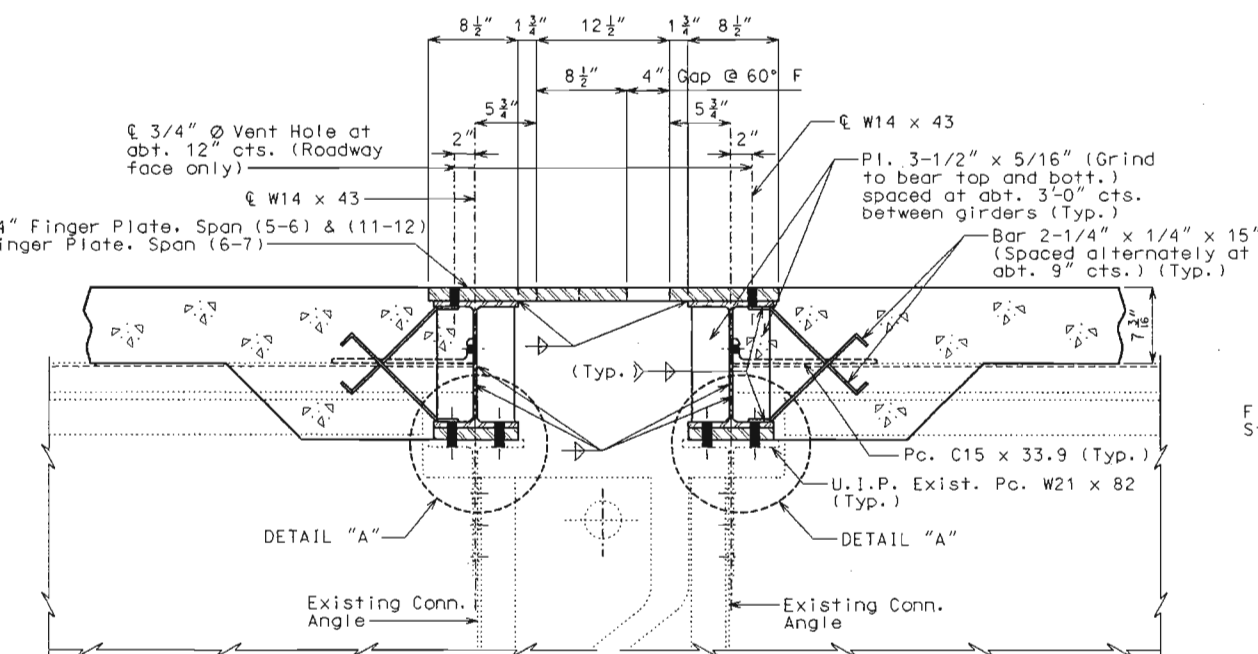
All holes shown for connections to be subpunched 11/16" Ø (shop or field drill) and reamed to 13/16" Ø in field.

Longitudinal reinforcing steel shall be placed so that ends shall not be more than ±1" from the web of W14 x 43 at the expansion device.

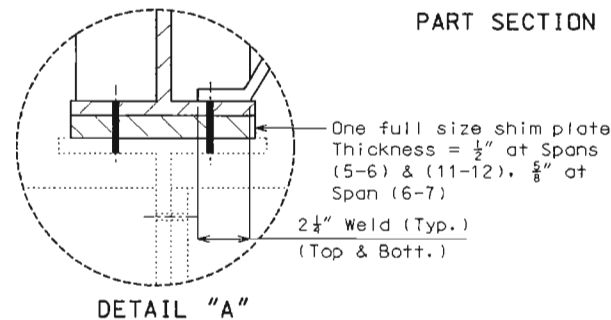


TYPICAL PLAN OF PLATE

- ① 5/16" Span (5-6)
3/8" Span (6-7)
1/4" Span (11-12)

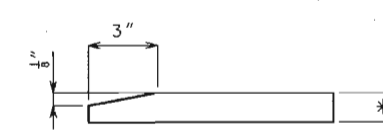


PART SECTION THRU EXPANSION DEVICE

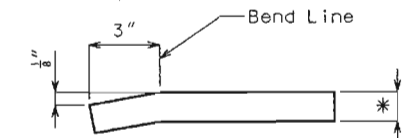


DETAIL "A"

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

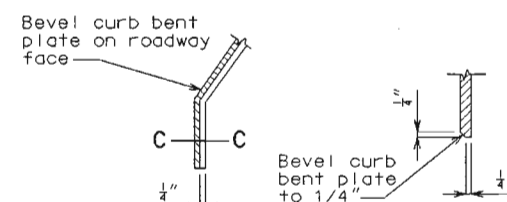


FINGER DETAIL



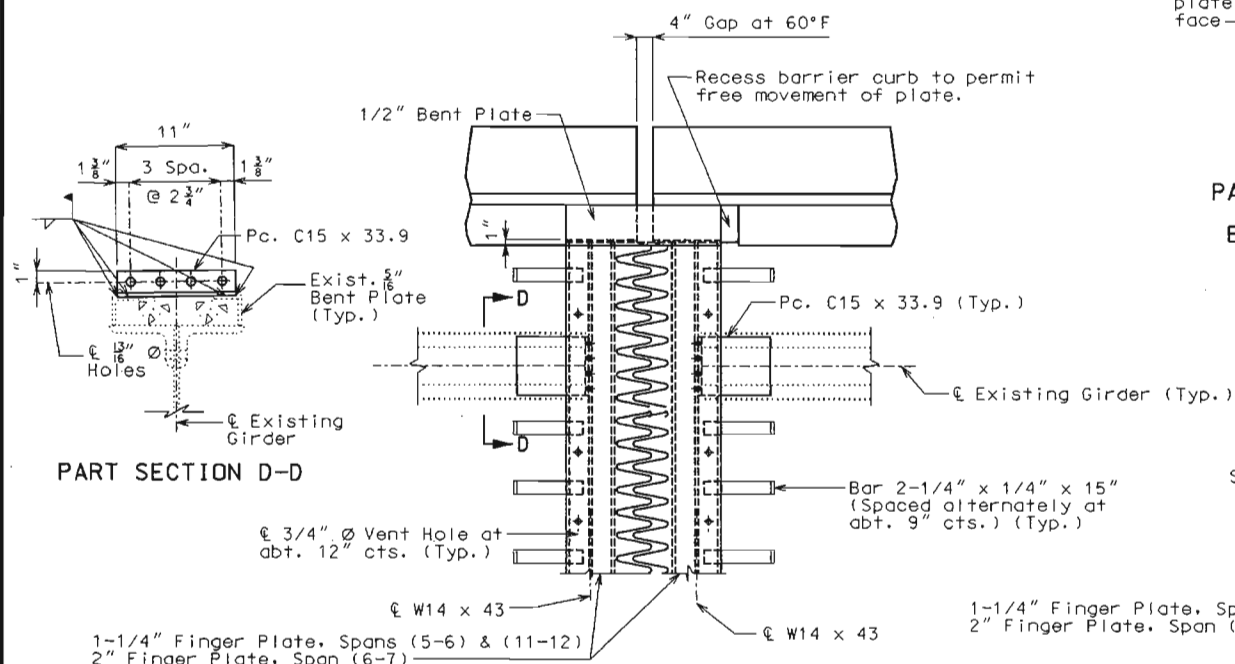
OPTIONAL FINGER DETAIL

* 1-1/4", Spans (5-6) & (11-12)
2", Span (6-7)



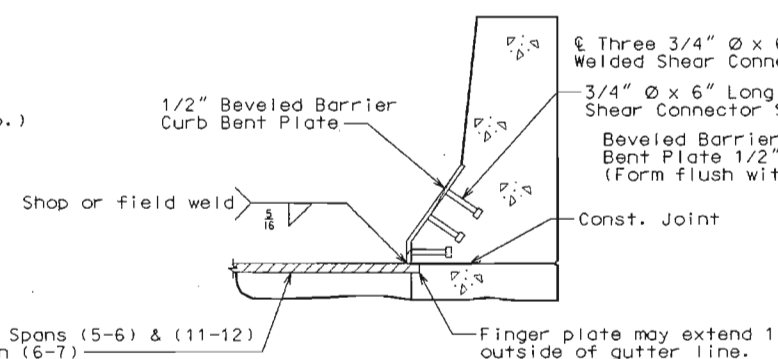
PART ELEVATION AT END OF BEVELED CURB BENT PLATE

SECTION C-C

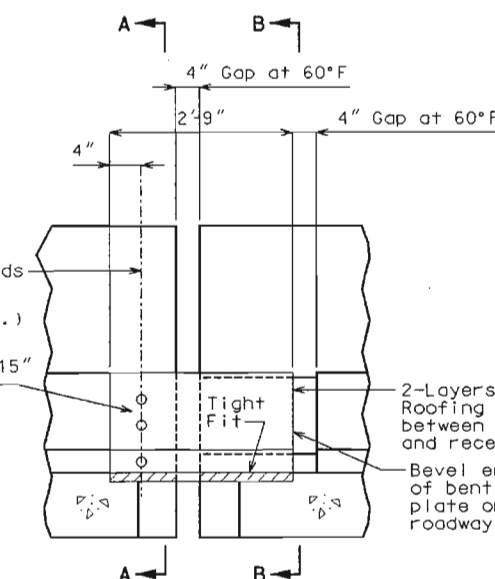


PART SECTION D-D

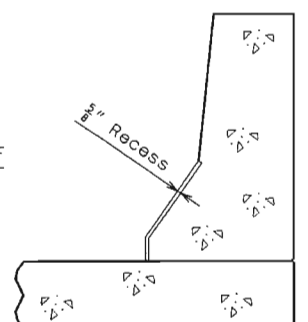
PART PLAN OF EXPANSION DEVICE



PART SECTION A-A



ELEVATION OF BARRIER CURB



PART SECTION B-B

DETAILS OF FINGER PLATE EXPANSION DEVICE IN SPANS (5-6), (6-7) & (11-12)

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

Sheet No. 8 of 15

CITY OF ST. LOUIS

L06672

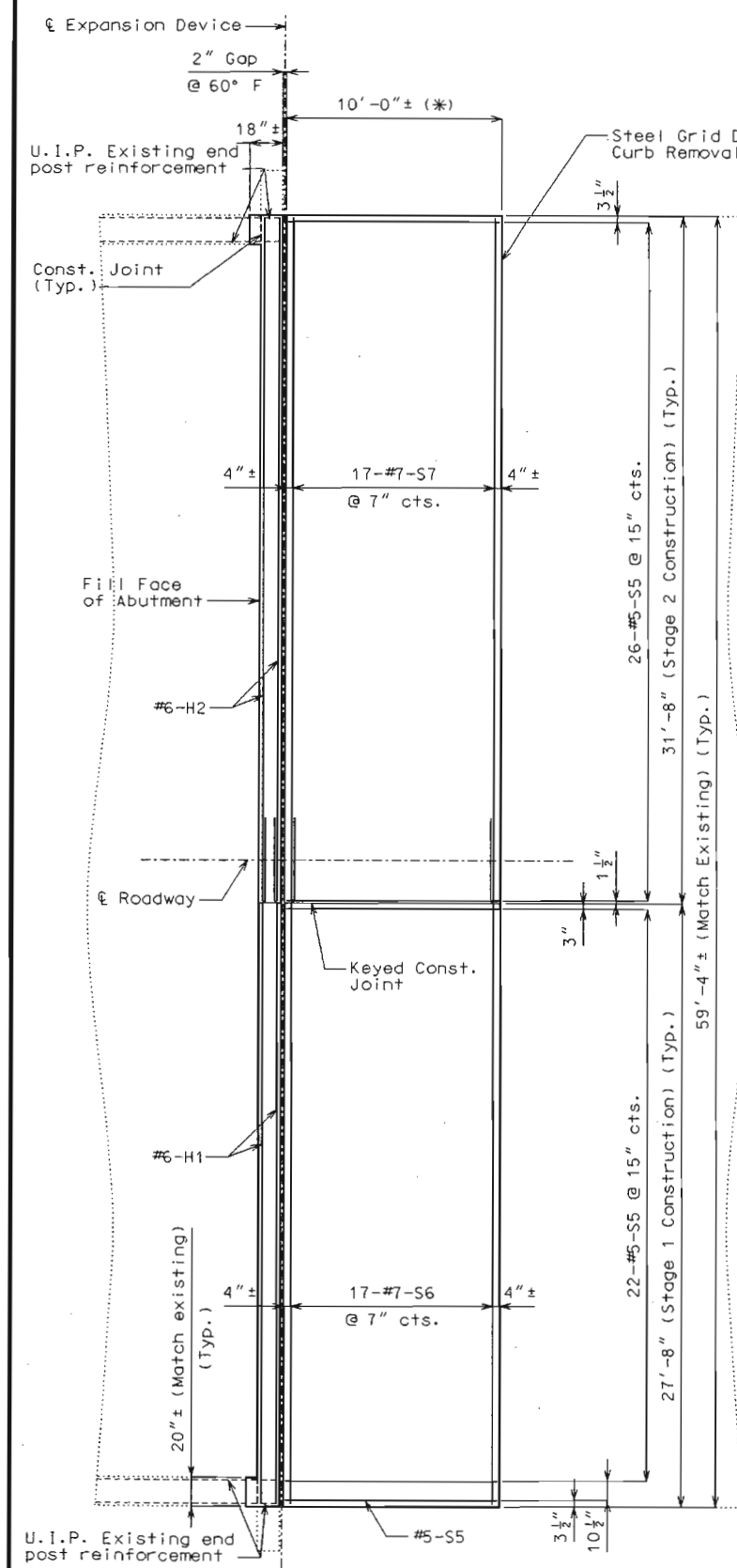


DATE 4-27-05

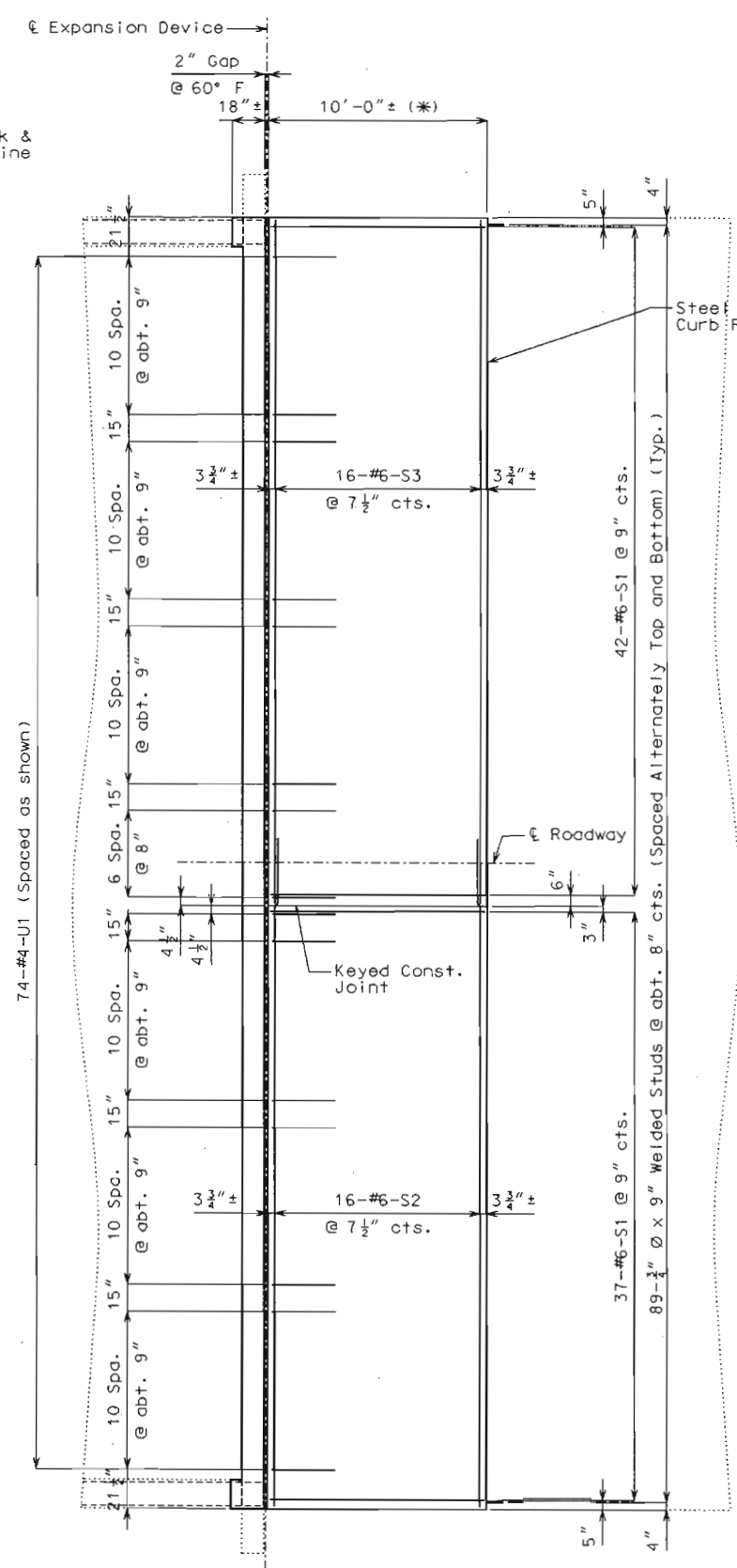
Detailed Feb. 2005
Checked Mar. 2005

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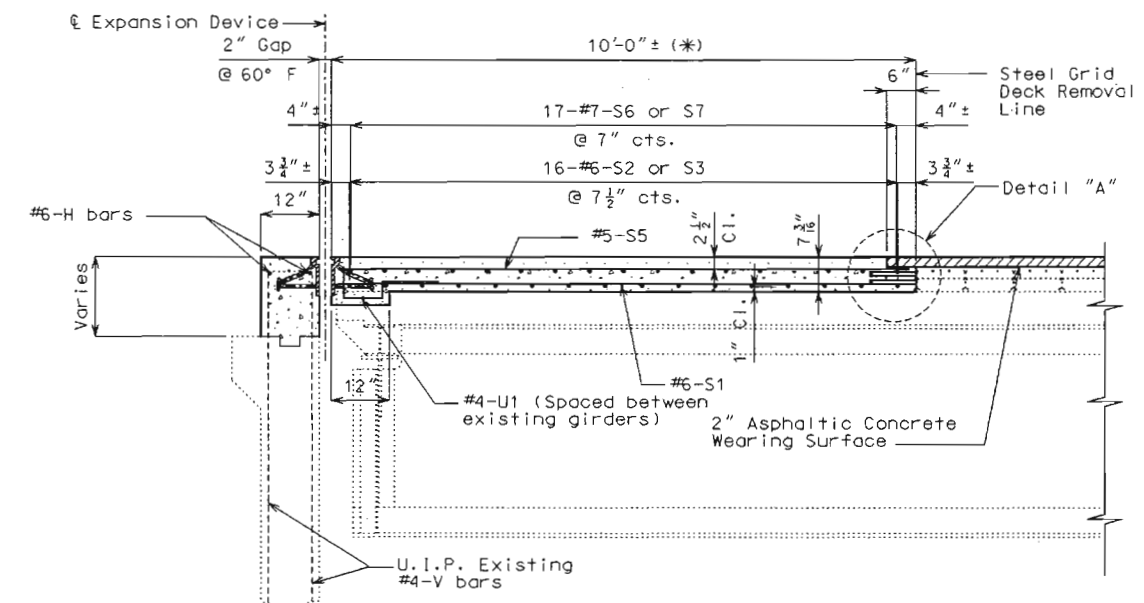
State	Proj. No.	Sheet No.
MO		09



PART PLAN OF SLAB SHOWING
TOP REINFORCEMENT

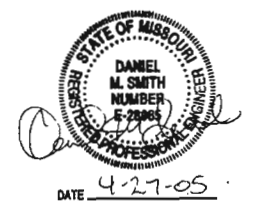


PART PLAN OF SLAB SHOWING
BOTTOM REINFORCEMENT
DETAILS OF SLAB AND BACKWALL REPLACEMENT AT ABUTMENT NO. 1



TYPICAL SECTION THRU SLAB & BACKWALL

Notes:
 For Details of Strip Seal Expansion Joint System, see sheet no. 11
 For details and reinforcement of Safety Barrier Curb replacement, see sheet no. 14.
 For Typical Section thru Slab Near Expansion Device Replacement, see sheet no. 12.
 For Details of Concrete Removal, see sheet no. 6.
 For Detail "A", see sheet no. 7.
 Top of backwall and expansion device for Abutments No. 1 & 15 shall be formed to the crown and grade of the roadway. Backwall above upper construction joints shall not be poured until the superstructure slab has been poured in the adjacent span.
 Longitudinal reinforcing steel shall be placed so that ends shall not be more than 1" ± from vertical leg of the steel armor at the expansion joint system.
 (*) This dimension shall be adjusted as necessary (5" Max.) so that the steel grid deck removal line corresponds to the face of an existing steel grid transverse main bar. Variations may be encountered in the estimated quantities for concrete and reinforcing steel, but the variations cannot be used for adjustments in the contract unit prices.



Detailed Feb. 2005
 Checked Mar. 2005

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

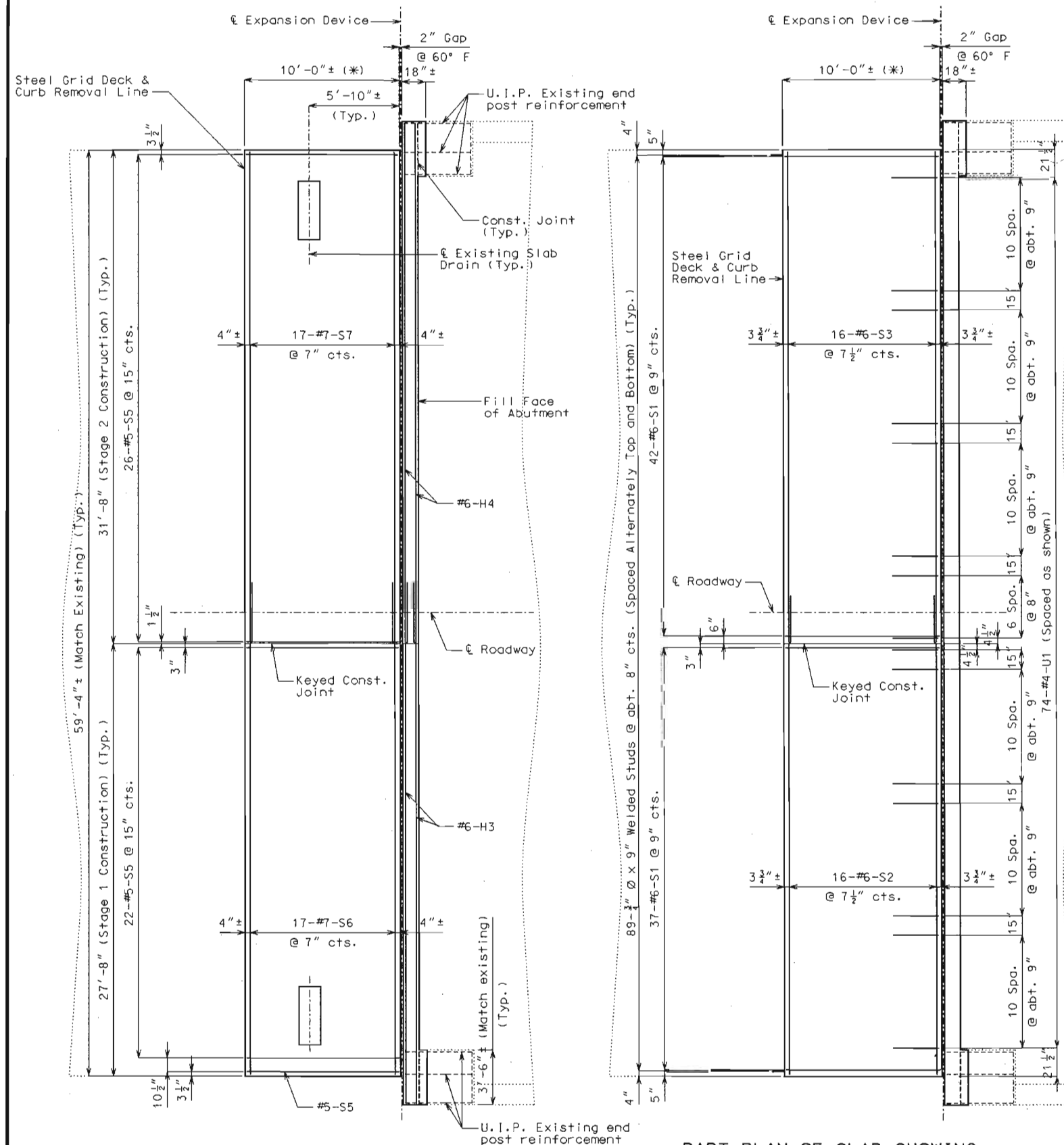
Sheet No. 9 of 15

CITY OF ST. LOUIS

L06672

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State	Proj. No.	Sheet No.
MO		10



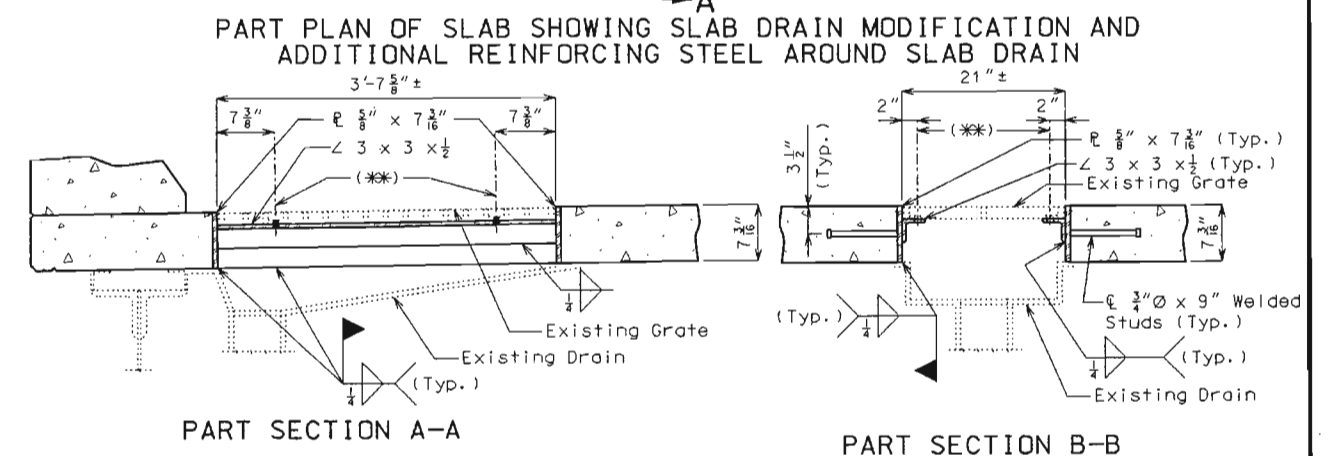
PART PLAN OF SLAB SHOWING TOP REINFORCEMENT

PART PLAN OF SLAB SHOWING BOTTOM REINFORCEMENT

DETAILS OF SLAB AND BACKWALL REPLACEMENT AT ABUTMENT NO. 15

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

Sheet No. 10 of 15



PART SECTION A-A

PART SECTION B-B

Notes:

For Notes and Typical Section Thru Slab and Backwall for Abutment No. 15, see sheet no. 9.

Existing drain grate shall be removed during removal of steel grid deck and reinstalled after slab replacement. Use 3/4" Ø high strength bolts to connect existing grate to new L 3 x 3 x 1/2."

Slab reinforcement shall be field cut as required to clear existing slab drain. Repair to epoxy coating shall be in accordance with Sec 710.

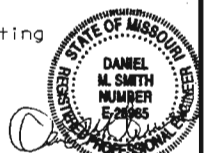
All new fabricated structural steel shall be ASTM A709 Grade 50 and galvanized in accordance with ASTM A123.

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

The cost of removing and reinstalling existing grate and fabricating and installing all new structural steel complete in place for this item will be considered completely covered by the contract lump sum price for Slab Drain Modification.

The contractor shall field verify all dimensions before ordering new material.

(*) Ø 13/16" Ø holes for 3/4" Ø high strength bolts (field drill to match location of existing holes in drain grate).



DATE 4-27-05

CITY OF ST. LOUIS

L06672

Detailed Feb. 2005
Checked Mar. 2005

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State	Proj. No.	Sheet No.
MO		B11

GENERAL NOTES:

Expansion joint system shall be fabricated in one section, except for stage construction and when the length is over 50 feet. A complete joint penetration groove welded splice shall be required. Welds shall be ground flush to provide a smooth surface. The expansion joint system shall be fabricated and installed to the crown and grade of the roadway.

The strip seal gland shall be installed in joints in one continuous piece without field splices. Factory splicing will be permitted for joints in excess of 53 feet.

Structural steel for the expansion joint system shall be ASTM A709 Grade 36 except the steel armor may be ASTM A709 Grade 50W. Anchors for the expansion joint system shall be in accordance with Sec 1037. Strip seal expansion joint system shall be in accordance with Sec 717.

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

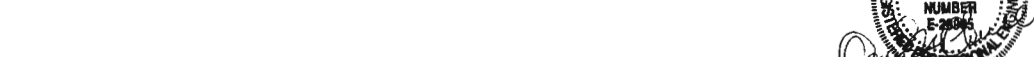
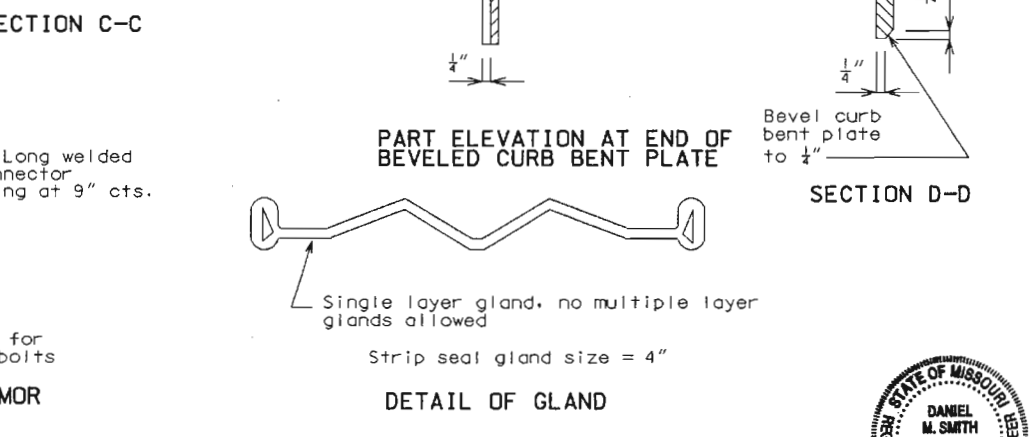
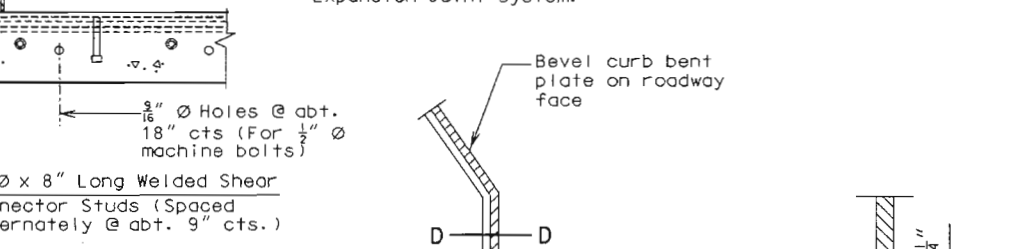
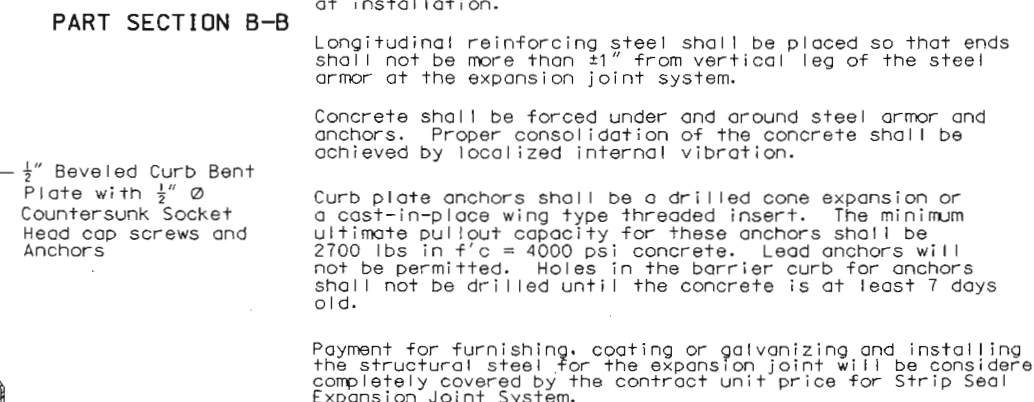
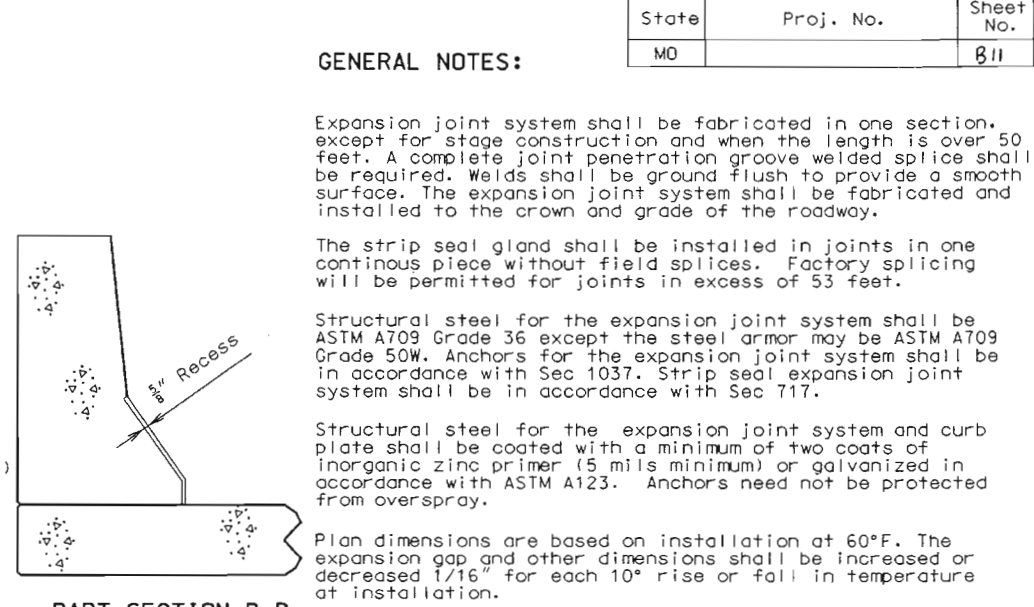
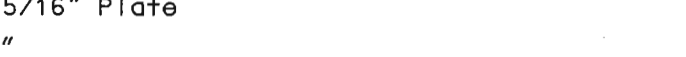
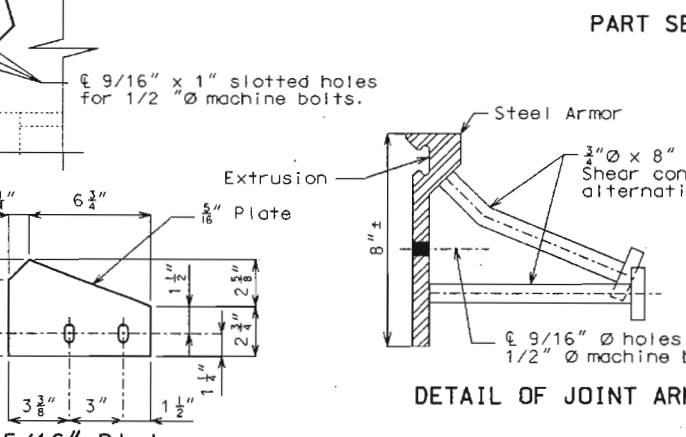
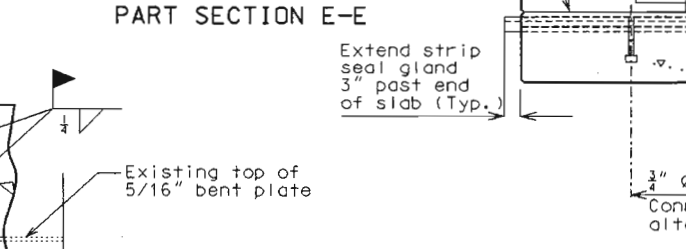
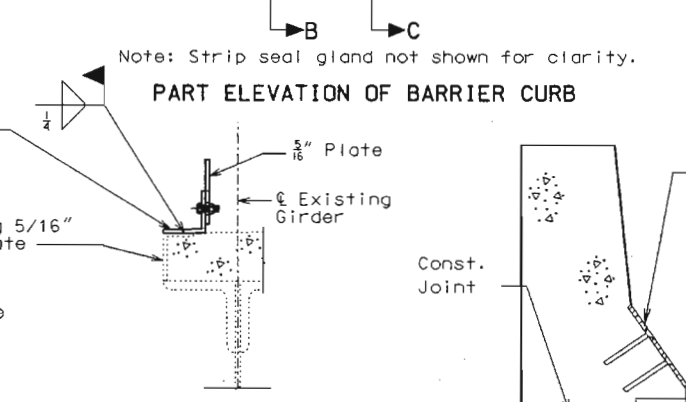
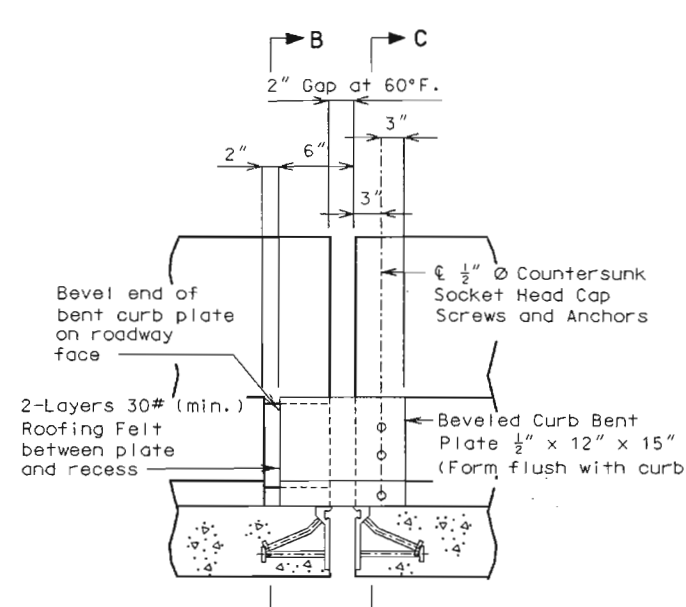
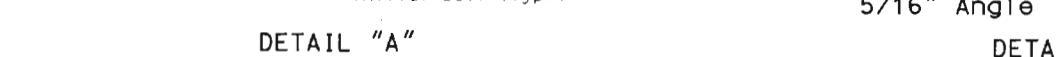
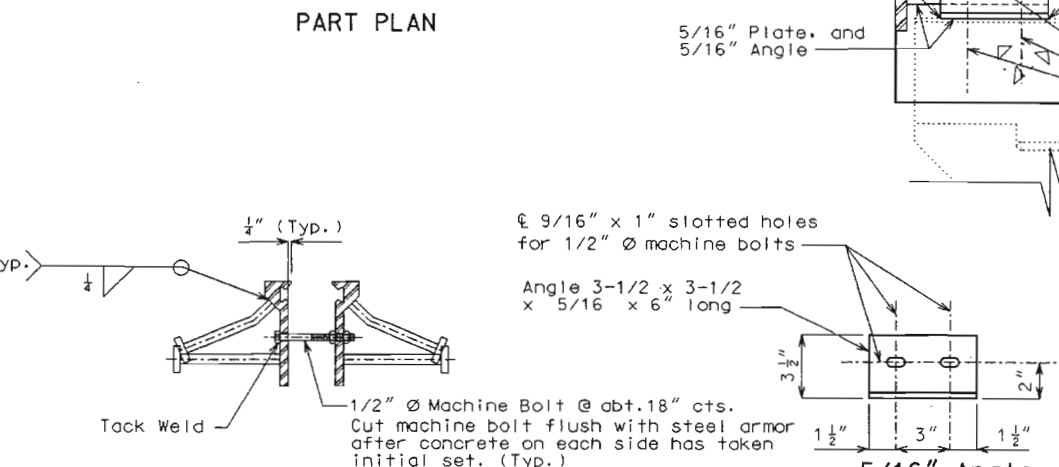
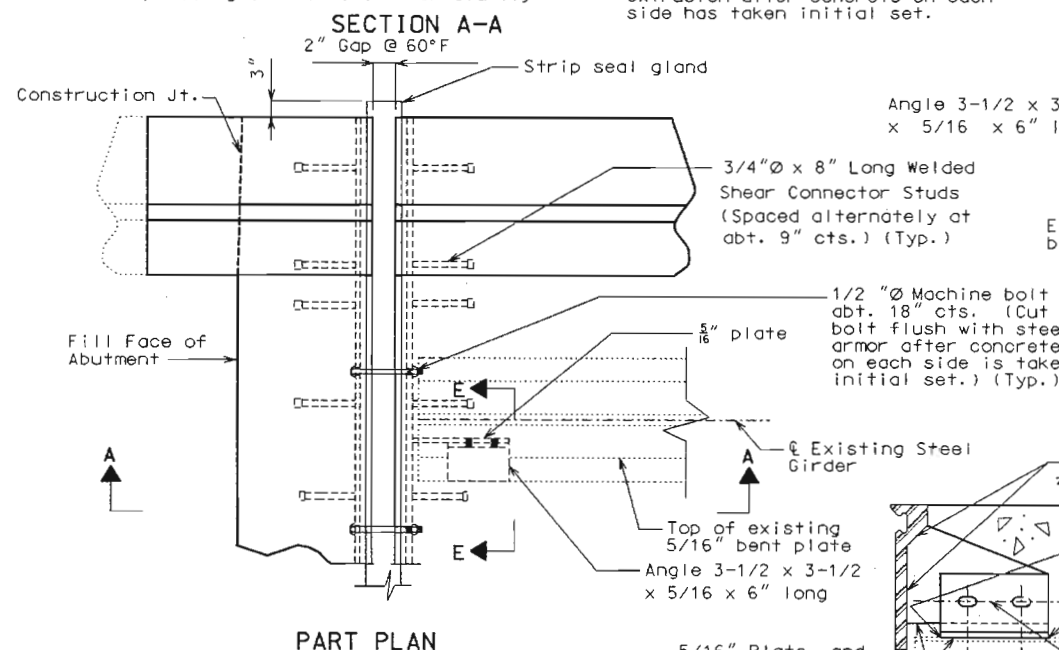
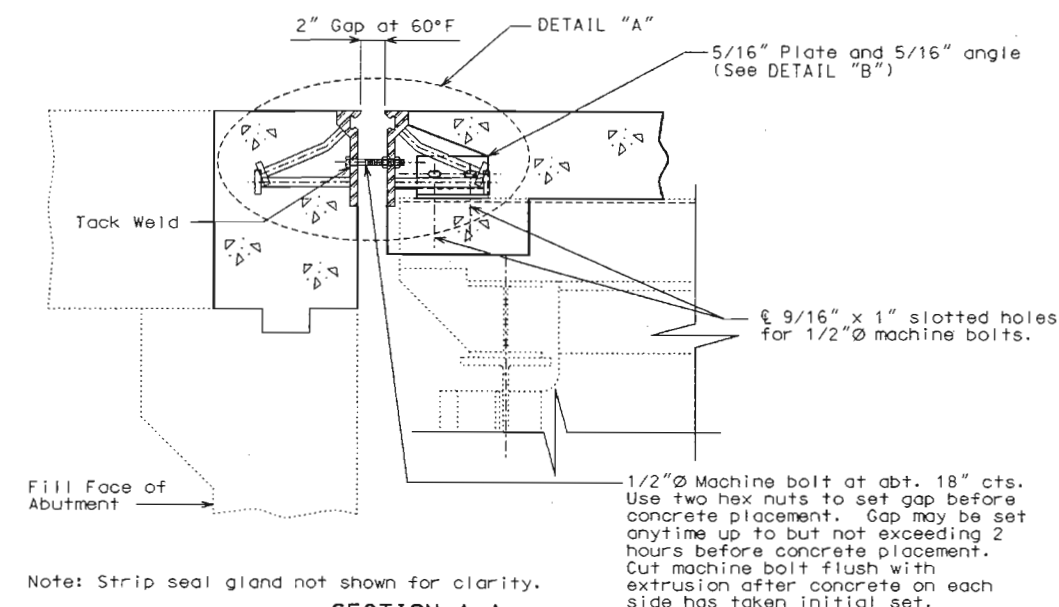
Plan dimensions are based on installation at 60°F. The expansion gap and other dimensions shall be increased or decreased 1/16" for each 10° rise or fall in temperature at installation.

Longitudinal reinforcing steel shall be placed so that ends shall not be more than 1" from vertical leg of the steel armor at the expansion joint system.

Concrete shall be forced under and around steel armor and anchors. Proper consolidation of the concrete shall be achieved by localized internal vibration.

Curb plate anchors shall be a drilled cone expansion or a cast-in-place wing type threaded insert. The minimum ultimate pullout capacity for these anchors shall be 2700 lbs in f'c = 4000 psi concrete. Lead anchors will not be permitted. Holes in the barrier curb for anchors shall not be drilled until the concrete is at least 7 days old.

Payment for furnishing, coating or galvanizing and installing the structural steel for the expansion joint will be considered completely covered by the contract unit price for Strip Seal Expansion Joint System.



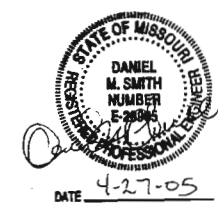
DETAILS OF STRIP SEAL AT ABUTMENTS NO. 1 & 15

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

Sheet No. 11 of 15

CITY OF ST. LOUIS

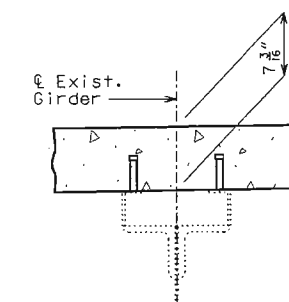
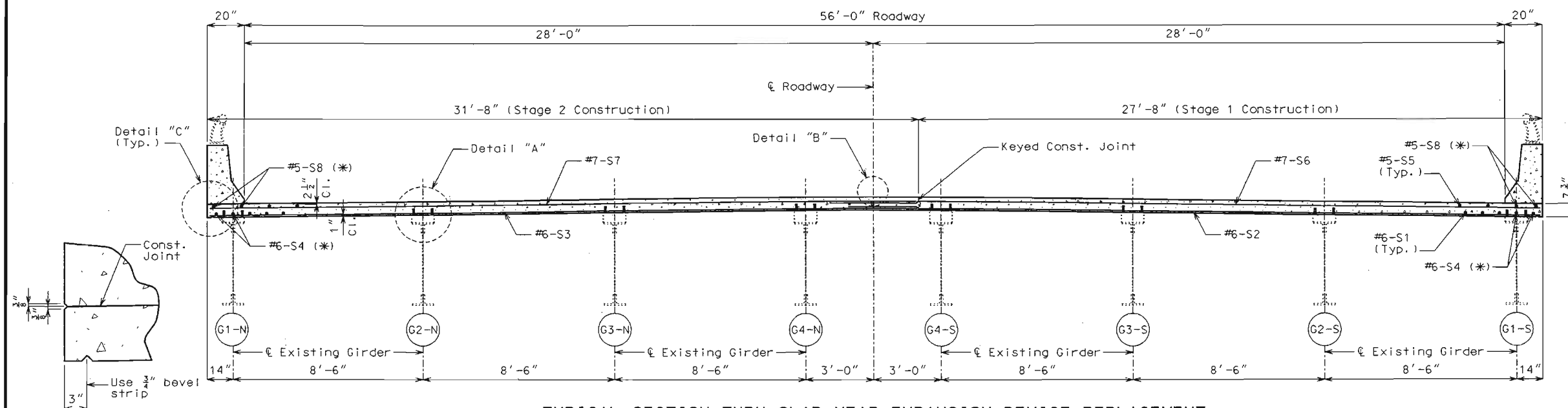
L06672



Detailed Jan. 2005
Checked Mar. 2005

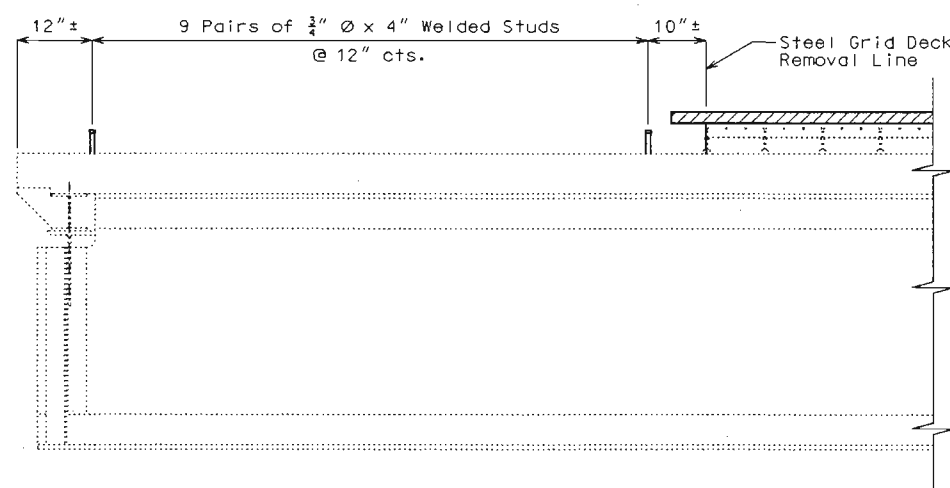
State	Proj. No.	Sheet No.
MO		B12

(*) Use S4 & S8 bars in place of S1 & S5 bars respectively at Spans (5-6), (6-7) & (11-12) only.

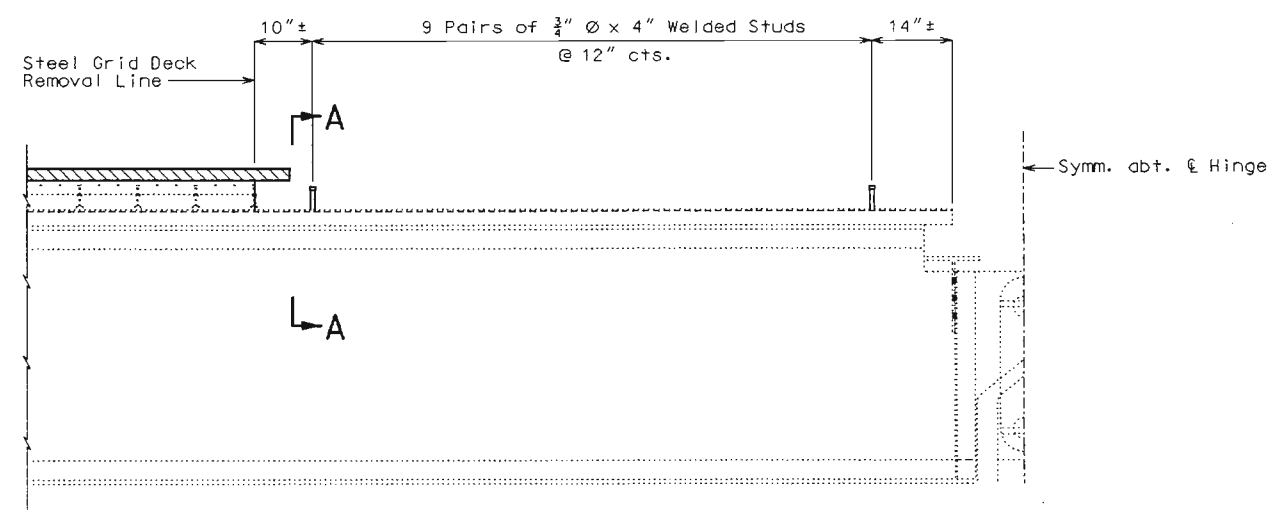


DETAIL "A"

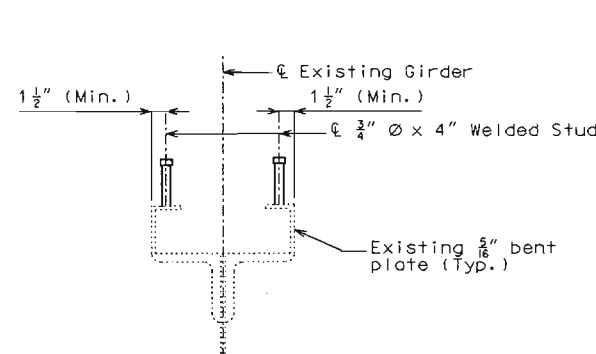
DETAIL "C"



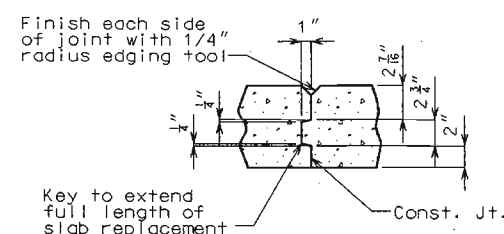
TYPICAL ELEVATION OF GIRDER SHOWING SHEAR CONNECTOR LOCATION AT ABUTMENTS NO. 1 & 15



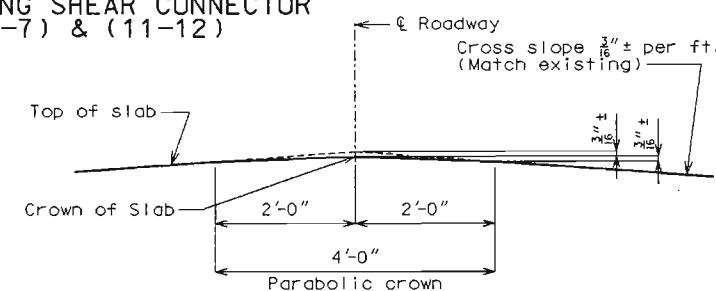
TYPICAL ELEVATION OF GIRDER SHOWING SHEAR CONNECTOR LOCATION AT SPANS (5-6), (6-7) & (11-12)



SECTION A-A



DETAIL OF KEYED LONGITUDINAL CONSTRUCTION JOINT



DETAIL "B"

Notes:
Shear connectors shall be in accordance with Sec 712, 1037 and 1080.
The cost of furnishing, fabricating and installing shear connectors will be considered completely covered by the contract unit price for Fabricated Structural Low Alloy Steel (Misc.) per pound.

DETAILS OF SLAB REPLACEMENT & SHEAR CONNECTOR LOCATIONS

Detailed Feb. 2005
Checked Mar. 2005

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

Sheet No. 12 of 15

CITY OF ST. LOUIS

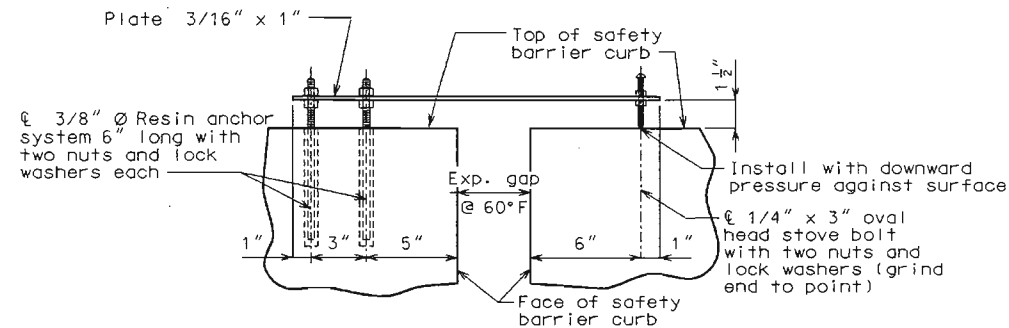


DATE 4-27-05

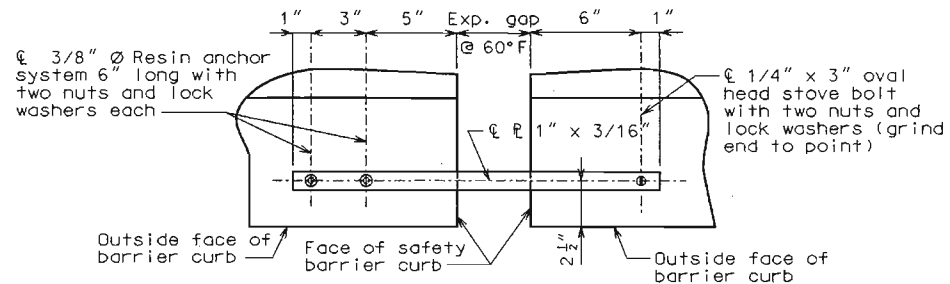
L06672

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State	Proj. No.	Sheet No.
MO		613



PART ELEVATION OF BARRIER CURB
SHOWING MOVEMENT GAUGE



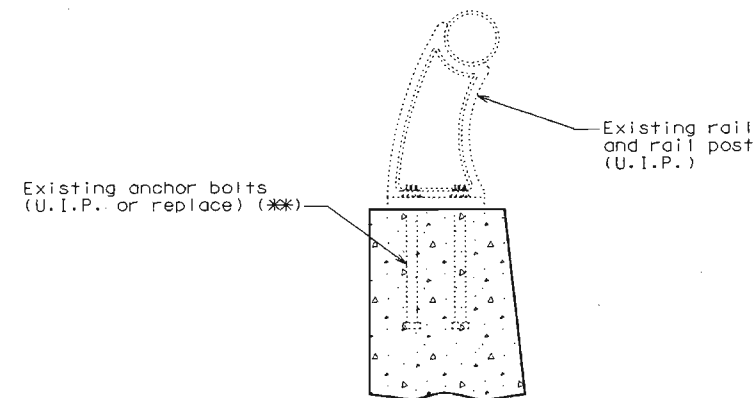
PART PLAN OF BARRIER CURB
SHOWING MOVEMENT GAUGE

Notes:

A movement gauge shall be provided on one side of bridge at all safety barrier curb expansion joints except at Abutment No. 15.

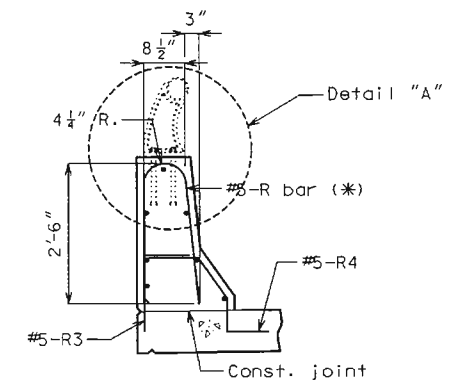
All steel shall be galvanized.

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



DETAIL "A"

(**) If existing rail post attachment is within length of safety barrier curb being removed and replaced, then rail post shall be reattached to new barrier curb. Contractor may clean and reuse existing anchor bolts as approved by the engineer or replace the anchor bolts with like kind. Cost of rail post reattachment will be considered completely covered by the contract unit price for Remove and Replace Safety Barrier Curb.



R-BAR PERMISSIBLE ALTERNATE SHAPE

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

Notes:

Top of safety barrier curb shall be built parallel to grade with barrier curb joints normal to grade.

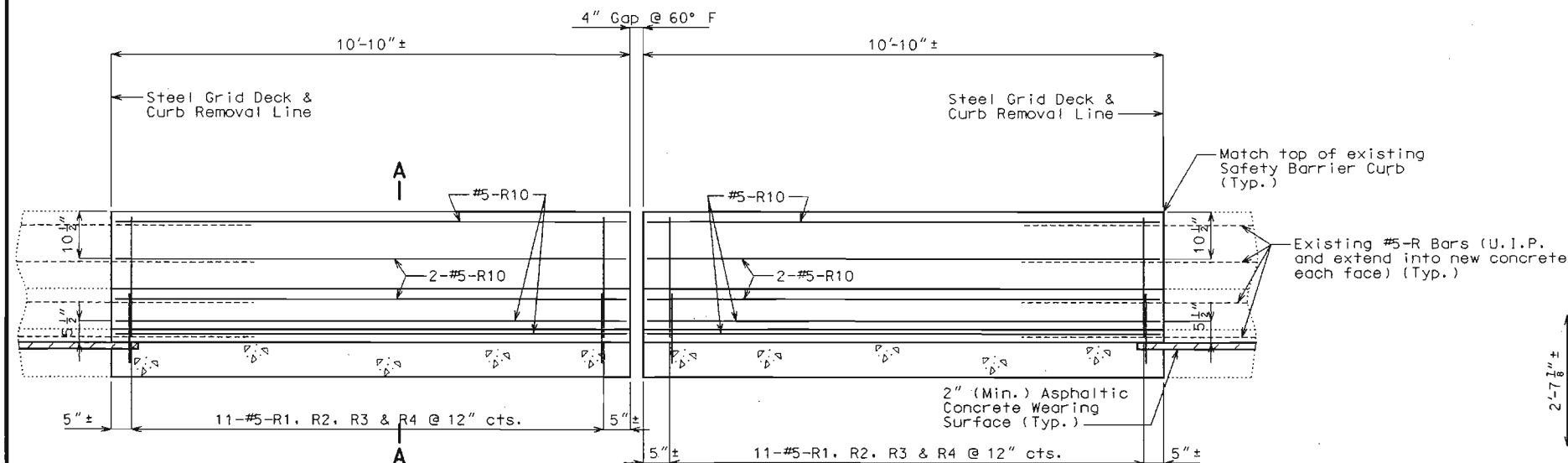
All exposed edges of safety barrier curb shall have either a 1/2" radius or a 3/8" bevel, unless otherwise noted.

Payment for all concrete and reinforcement, complete-in-place, will be considered completely covered by the contract unit price for Remove and Replace Safety Barrier Curb per linear foot.

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

Measurement of safety barrier curb is to the nearest linear foot measured along the outside top of slab between curb removal lines.

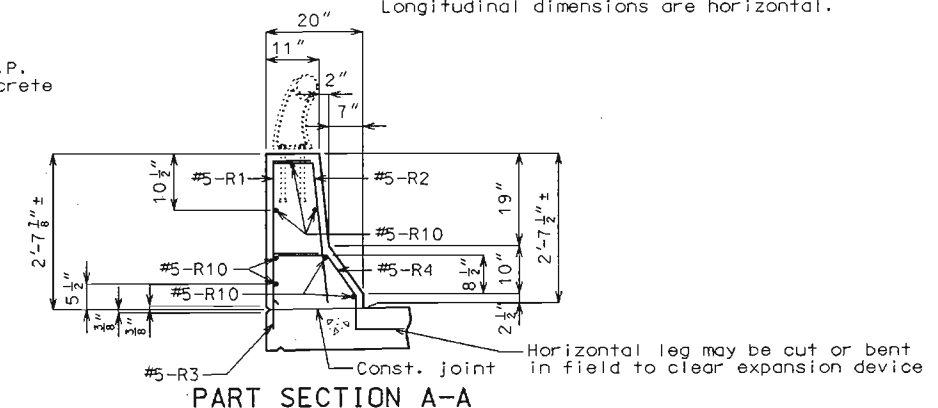
Longitudinal dimensions are horizontal.



TYPICAL PART SECTION NEAR LEFT SAFETY BARRIER CURB
AT SLAB AND EXPANSION DEVICE REPLACEMENT

DETAILS OF SAFETY BARRIER CURB REPLACEMENT
IN SPANS (5-6), (6-7) & (11-12)

(Left Safety Barrier Curb shown, Right Safety Curb similar)



Notes:

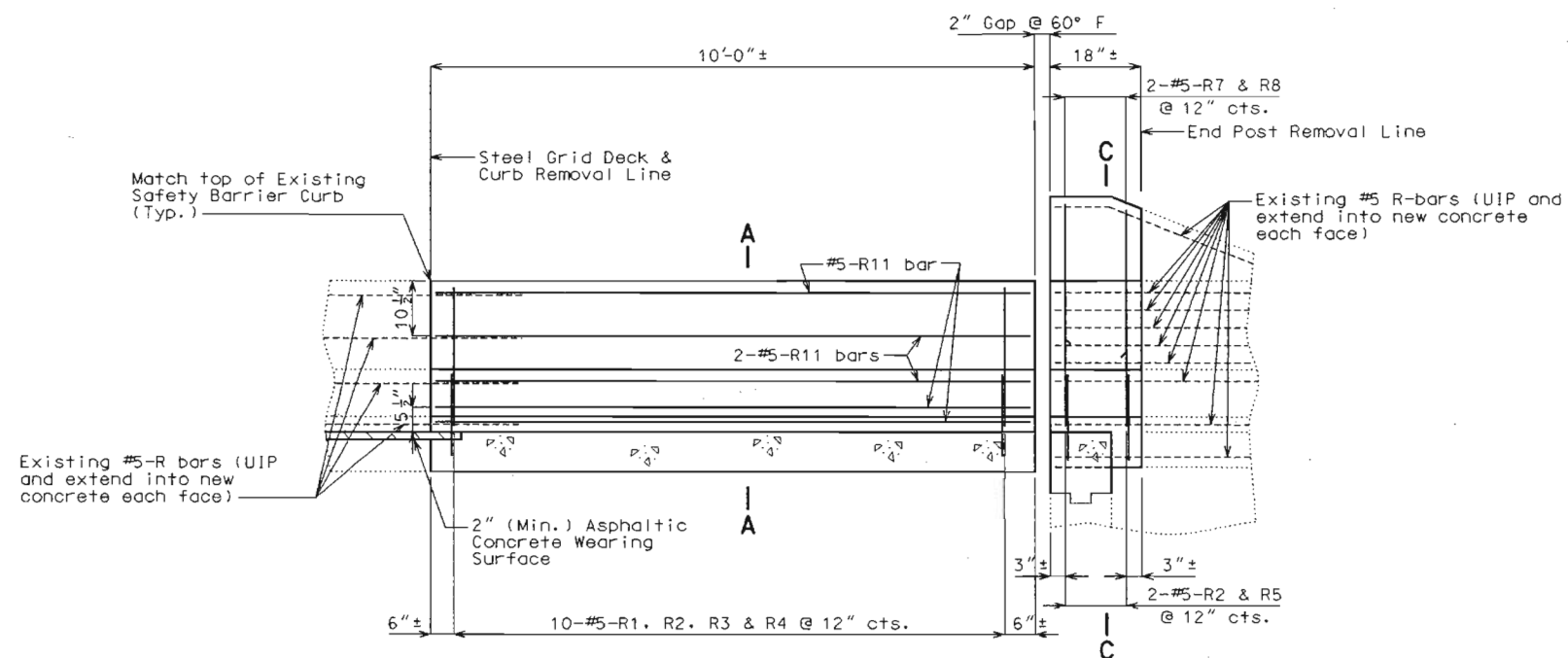
Use a minimum lap of 2'-11" for #5 horizontal safety barrier curb bars.

The cross-sectional area above the slab = 3.10 sq. ft.

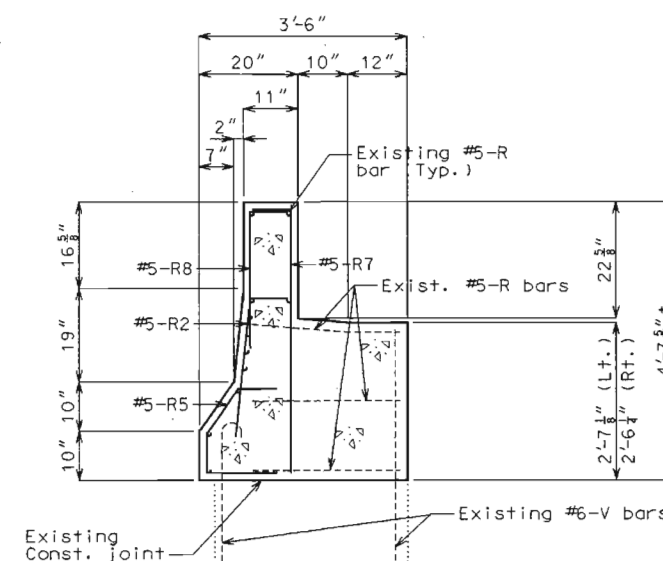


DATE 4-27-05

State	Proj. No.	Sheet No.
MO		814



TYPICAL PART SECTION NEAR LEFT SAFETY BARRIER CURB AT ABUTMENT NO. 15



PART SECTION C-C

Notes:

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

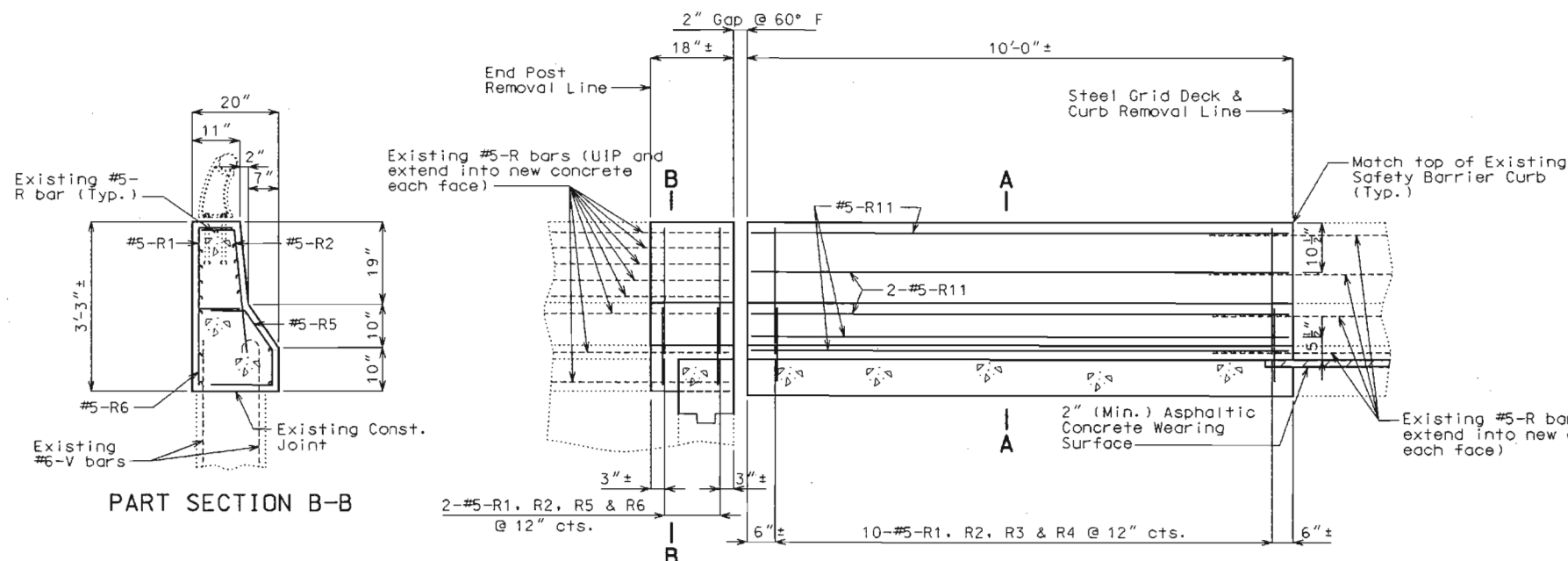
All exposed edges of safety barrier curb and end post shall have either a 1/2" radius or a 3/8" bevel, unless otherwise noted.

Payment for all concrete and reinforcement, complete-in-place, will be considered completely covered by the contract unit price for Remove and Replace Safety Barrier Curb per linear foot.

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

Measurement of safety barrier curb and end post is to the nearest linear foot measured along the outside top of slab between curb removal lines.

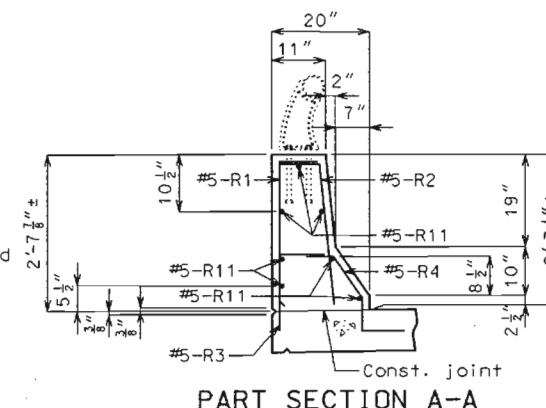
Longitudinal dimensions are horizontal.



TYPICAL PART SECTION NEAR LEFT SAFETY BARRIER CURB AT ABUTMENT NO. 1

DETAILS OF SAFETY BARRIER CURB AND END POST REPLACEMENT AT ABUTMENTS NO. 1 & 15

(Left Safety Barrier Curb shown, Right Safety Barrier Curb similar)

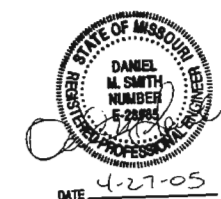


PART SECTION A-A

Notes:

Use a minimum lap of 2'-11" for #5 horizontal safety barrier curb bars.

The cross-sectional area above the slab = 3.10 sq. ft.



Detailed Feb. 2005
Checked Mar. 2005

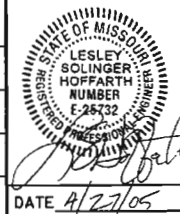
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 14 of 15

CITY OF ST. LOUIS

L06672

ROUTE I-64	STATE MO	DISTRICT 6	SHEET NO. 3
JOB NO. J611607			
CONTRACT ID			
PROJECT NO.			
COUNTY ST. LOUIS CITY			



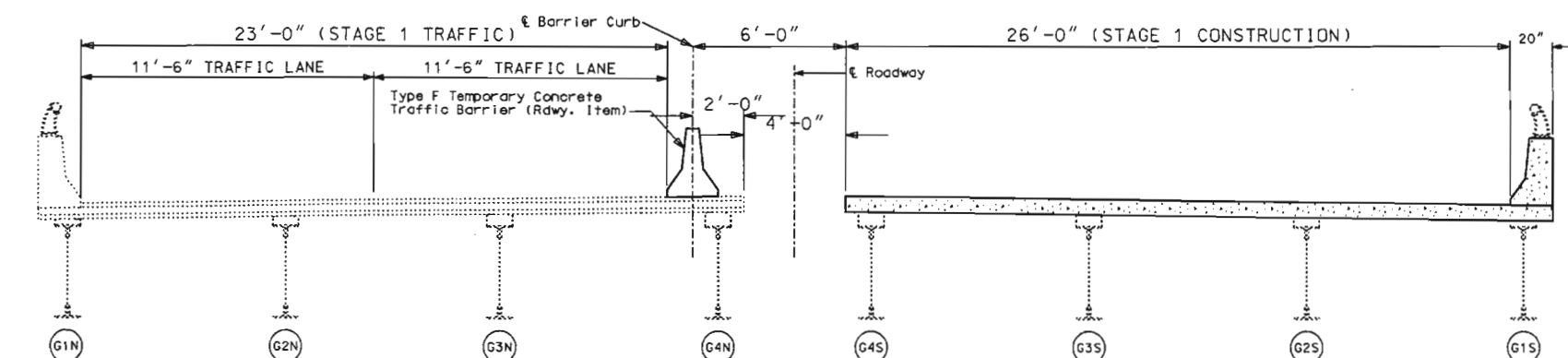
DISCLAIMER
 THE PROFESSIONAL WHOSE SIGNATURE AND PERSONAL SEAL APPEAR HEREON ASSUMES RESPONSIBILITY ONLY FOR WHAT APPEARS ON THIS PAGE, AND DISCLAIMS (PURSUANT TO SECTION 327.411 RSMO) SPECIFICATION, ESTIMATES, REPORTS, OR OTHER DOCUMENTS OR INSTRUMENTS NOT SEALED BY THE UNDERSIGNED PROFESSIONAL RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE PROJECT TO WHICH THIS PAGE REFERS.

UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEY AND RECORDS. THE COMMISSION DOES NOT WARRANT THE LOCATIONS OF THESE FACILITIES AS PRECISE. IT IS POSSIBLE THERE MAY BE OTHERS. THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN OR SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXISTENCE AND PRECISE LOCATION OF ALL FACILITIES AND TO AVOID DAMAGE. SEE THE JOB SPECIAL PROVISIONS FOR A LIST OF UTILITY COMPANIES ON OR WITHIN THE VICINITY OF THE PROJECT LIMITS.

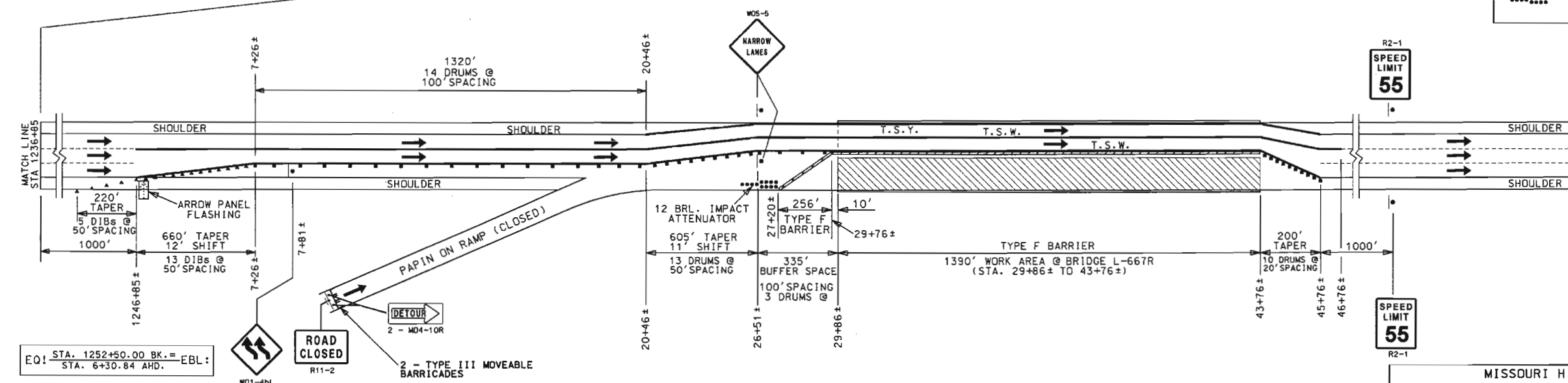
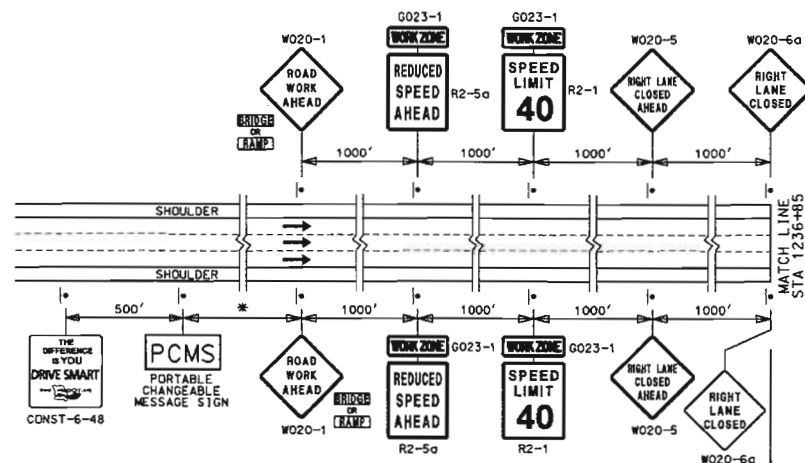
- * ALL SIGN SPACING SUBJECT TO CHANGE AS DIRECTED BY ENGINEER
 - * PCMS LOCATED AS DIRECTED BY THE ENGINEER
- ALL EXISTING SIGNS THAT CONFLICT WITH THE PROPOSED TCP SHALL BE COVERED, NO DIRECT PAY.

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- ▲ DIRECTION INDICATOR
- BARRICADE
- CHANNELIZER
- ▨ TYPE F BARRIER
- ☐ CHANGEABLE MESSAGE SIGN
- T.S.Y. TEMP. SOLID YELLOW STRIPE
- T.I.W. TEMP. INTER. WHITE STRIPE
- T.S.W. TEMP. SOLID WHITE STRIPE
- 12 BRL. IMPACT ATTENUATOR



STAGE 1 CONSTRUCTION



I-64 EASTBOUND STAGE I CONSTRUCTION RIGHT LANE CLOSURE

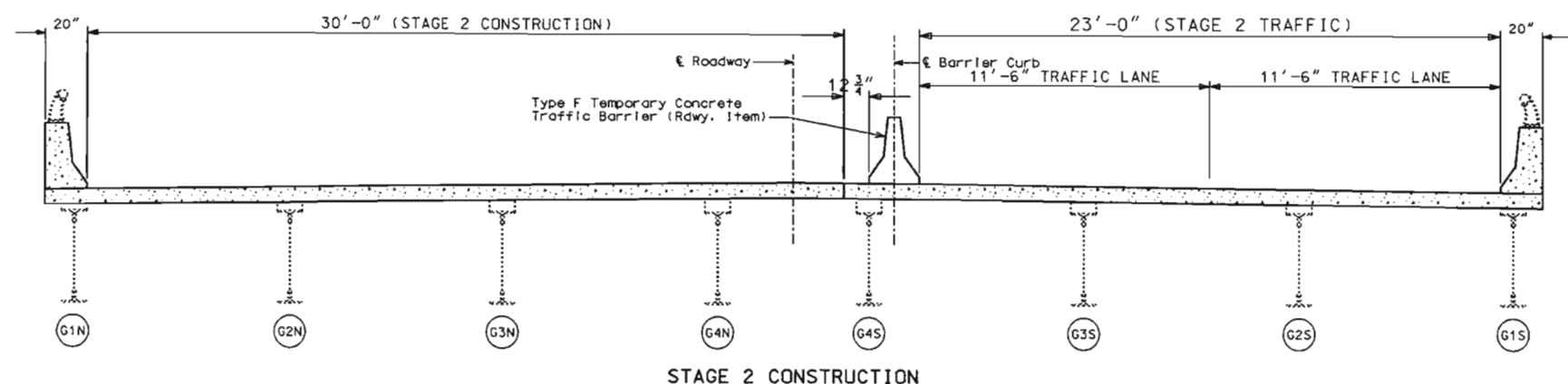
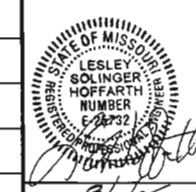
NOT TO SCALE

MISSOURI HIGHWAYS AND TRANSPORTATION
 COMMISSION

TRAFFIC CONTROL PLAN

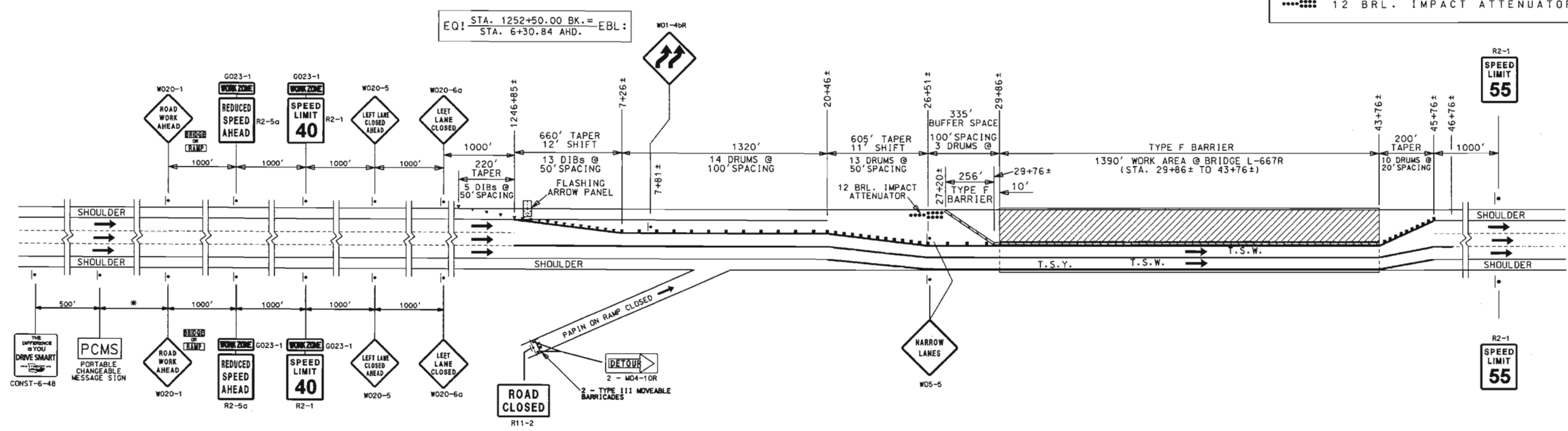
DATE: _____ EFFECTIVE: _____ BRIDGE NO. 1
 L06672 3

ROUTE	STATE	DISTRICT	SHEET NO.
I-64	MO	6	4
JOB NO. J611607			
CONTRACT ID.			
PROJECT NO.			
COUNTY ST. LOUIS CITY			
			DATE 8/1/05



* ALL SIGN SPACING SUBJECT TO CHANGE AS DIRECTED BY THE ENGINEER
 * PCMS LOCATED AS DIRECTED BY THE ENGINEER
 ALL EXISTING SIGNS THAT CONFLICT WITH THE PROPOSED TCP SHALL BE COVERED. NO DIRECT PAY.

TRAFFIC CONTROL LEGEND	
•	SIGN (SINGLE SIDED)
▲	DIRECTION INDICATOR
■	BARRICADE
■	CHANNELIZER
▨	TYPE F BARRIER
□	CHANGEABLE MESSAGE SIGN
T.S.Y.	TEMP. SOLID YELLOW STRIPE
T.I.W.	TEMP. INTER. WHITE STRIPE
T.S.W.	TEMP. SOLID WHITE STRIPE
•••••	12 BRL. IMPACT ATTENUATOR



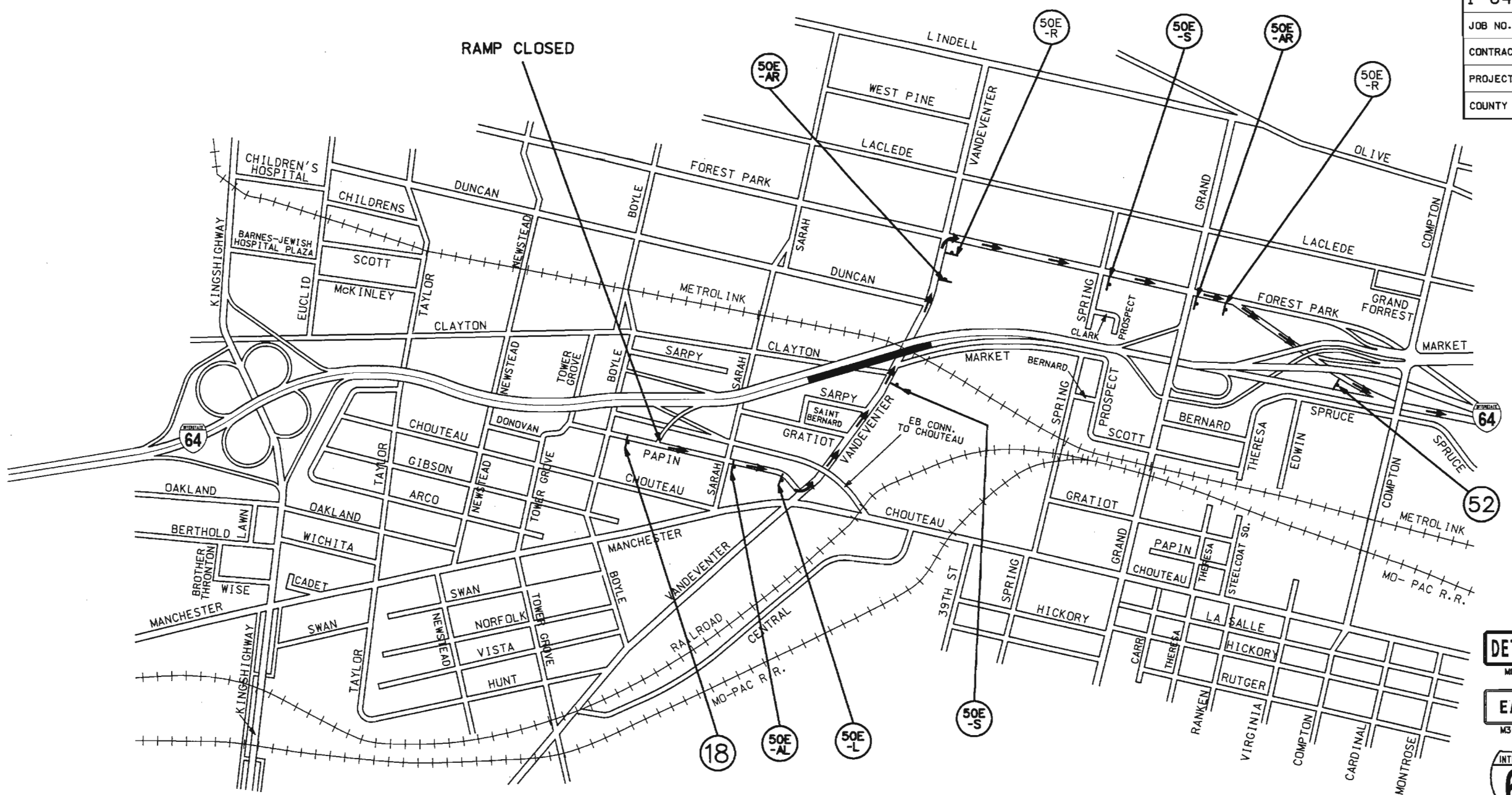
I-64 EASTBOUND
 STAGE II CONSTRUCTION
 LEFT LANE CLOSURE

NOT TO SCALE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION			
TRAFFIC CONTROL PLAN			
DATE: _____	EFFECTIVE: _____	BRIDGE NO. L06672	2/3

ROUTE	STATE	DISTRICT	SHEET NO.
I-64	MO	6	5
JOB NO. J611607			
CONTRACT ID			
PROJECT NO.			
COUNTY ST. LOUIS CITY			

DATE 4/27/05



DETOUR
 MO4-8
EAST
 M3-2-24
 INTERSTATE
64
 M1-1b
 M5-1R
 50-E-AR

DETOUR
 MO4-8
EAST
 M3-2-24
 INTERSTATE
64
 M1-1b
 M6-1
 50-E-R

DETOUR
 MO4-8
EAST
 M3-2-24
 INTERSTATE
64
 M1-1b
 M5-1L
 50-E-AL

DETOUR
 MO4-8
EAST
 M3-2-24
 INTERSTATE
64
 M1-1b
 M6-1
 50-E-L

DETOUR
 MO4-8
EAST
 M3-2-24
 INTERSTATE
64
 M1-1b
 M6-3
 50-E-S

DETOUR AHEAD
 W020-2
 18

END DETOUR
 MO4-8a
 52

- TRAFFIC CONTROL LEGEND**
- SIGN (SINGLE SIDED)
 - ▲ DIRECTION INDICATOR BARRICADE
 - CHANNELIZER
 - ▨ TYPE F BARRIER
 - ◻ CHANGEABLE MESSAGE SIGN
 - T.S.Y. TEMP. SOLID YELLOW STRIPE
 - T.I.W. TEMP. INTER. WHITE STRIPE
 - T.S.W. TEMP. SOLID WHITE STRIPE
 - 12 BRL. IMPACT ATTENUATOR

NOTES

- * COVER ALL CONTRADICTING SIGNS.
- * RAMP SIGN SPACING TO BE DETERMINED BY THE ENGINEER.
- * THIS TRAFFIC CONTROL PLAN MAY BE ADJUSTED AT THE APPROVAL OF THE ENGINEER TO ALLOW FOR SIMULTANEOUS USE WITH OTHER TRAFFIC CONTROL DRAWINGS.

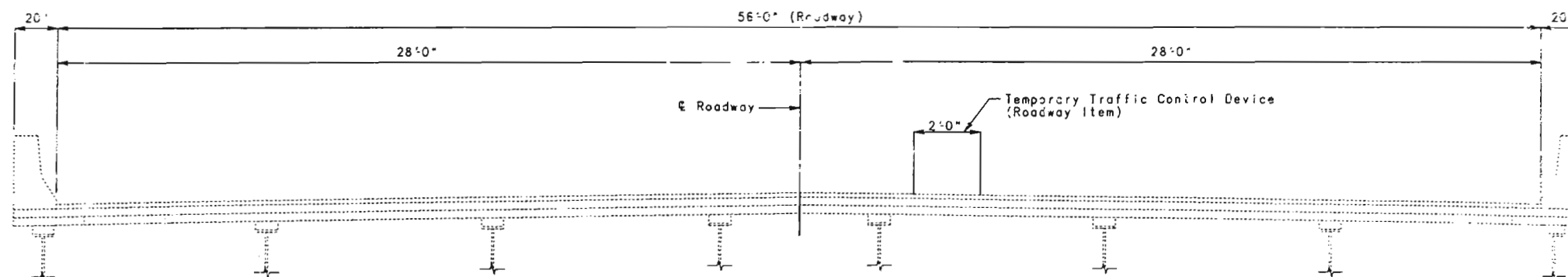
ANY WORK INDICATED ON THE PLANS THAT EXTENDS BEYOND THE PROJECT LIMITS IS CONSIDERED INCIDENTAL TO AND PART OF THE CONSTRUCTION OF THIS PROJECT.

NOT TO SCALE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION			
EB I-64 DETOUR			
DATE: _____	EFFECTIVE: _____	BRIDGE NO. 3	REV. 3
		L06672	

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ. NO.	SHEET NO.
MO.		
SEC./SUR.	TWP.	RGE.



SECTION THRU SLAB

ESTIMATED QUANTITIES		
ITEM		TOTAL
Strip Seal Expansion Device	Lin. Ft.	112
Modification of Existing Expansion Joint	Lin. Ft.	112

GENERAL NOTES:

DESIGN UNIT STRESSES:

Class B1 Concrete $f'_c = 4,000$ psi

OLD WORK:

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

MAINTAIN TRAFFIC:

Traffic over structure to be maintained during construction.

VERIFY DIMENSIONS:

Contractor shall verify all dimensions in field before ordering new steel.

PLAN DIMENSIONS:

Plan dimensions are based on installation at 60° F. The expansion gap and other dimensions shall be adjusted during installation for compliance with any temperature change.

BARS BONDED IN OLD CONCRETE:

Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars, unless otherwise noted.

REINFORCING STEEL:

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

Note: Top of expansion joint system shall conform to crown of roadway slab.

NOTES FOR STRIP SEAL:

The Expansion Device shall be fabricated and installed in accordance with the recommendations of the manufacturer, and as set forth in the Special Provisions.

All welds shall conform to Section 712 of the Standard Specifications and as modified by Special Provisions for "Welding".

All steel shall be A36, except steel extrusions shall be A.S.T.M. A588 or A36.

Payment for steel extrusions, steel plates, Elastomeric Concrete, furnishing, painting, cleaning and placing steel extrusions shall be made under the contract unit price bid for "Strip Seal Expansion Device".

For cleaning and painting of steel extrusions see Special Provisions.

Cost of B1 concrete required to replace removed concrete in barrier curb and removal of Exist. expansion device shall be included in the contract unit price bid for "Modification of Existing Expansion Joint".

Note: 9-16-96
PAT MARTENS WILL
NOTIFY BRIDGE DIVISION
WHEN JOB IS DONE.

REPAIRS TO BRIDGE OVER VANDEVENTER & CLAYTON AVE. & N&W R.R.

STATE ROAD

ABOUT

PROJECT NO.

STA. 29+85.61 (MATCH EXIST.)

JOB NO.

RTE. 40

CITY OF ST. LOUIS

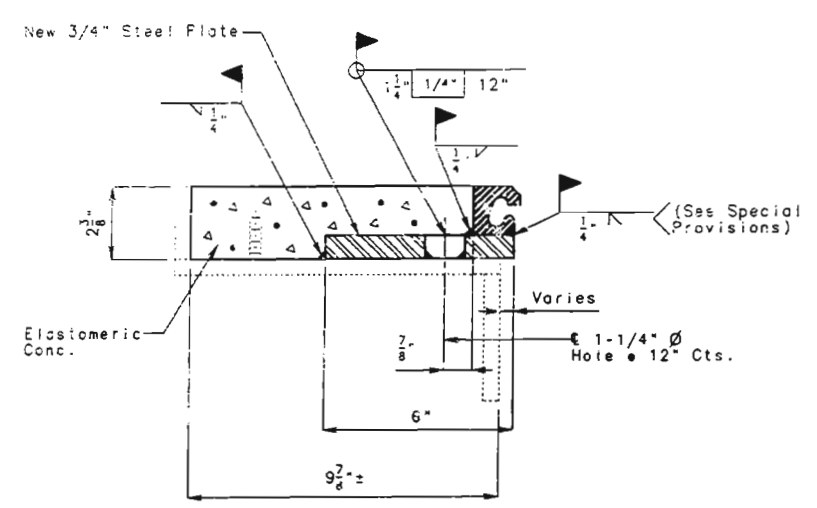
DETAILED MAY 1996
CHECKED MAY 1996

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

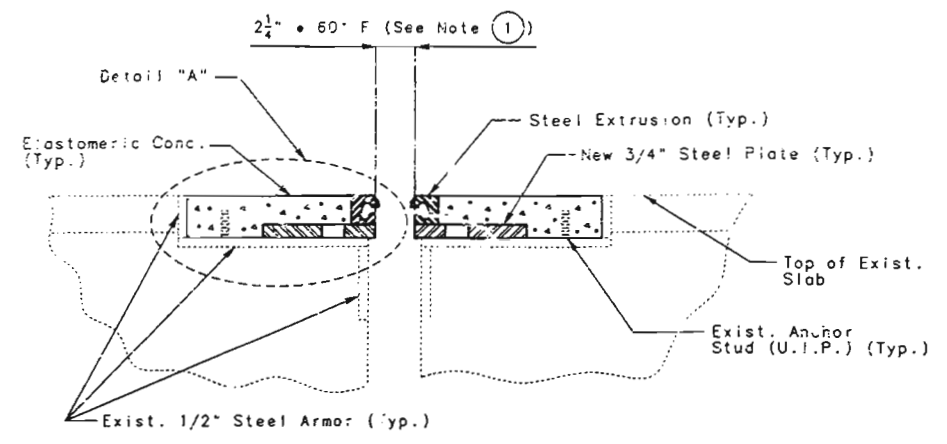
SHEET NO. 1 OF 2.

DATE

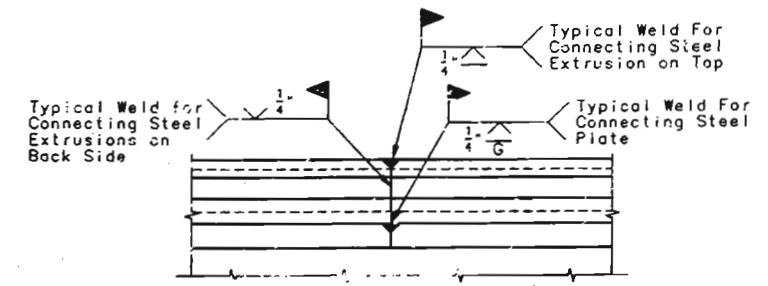
STD.
STD.
L06673



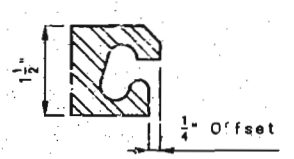
DETAIL "A"



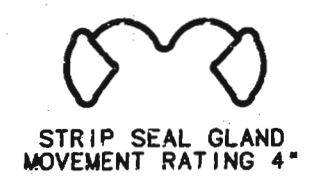
PART SECTION A-A



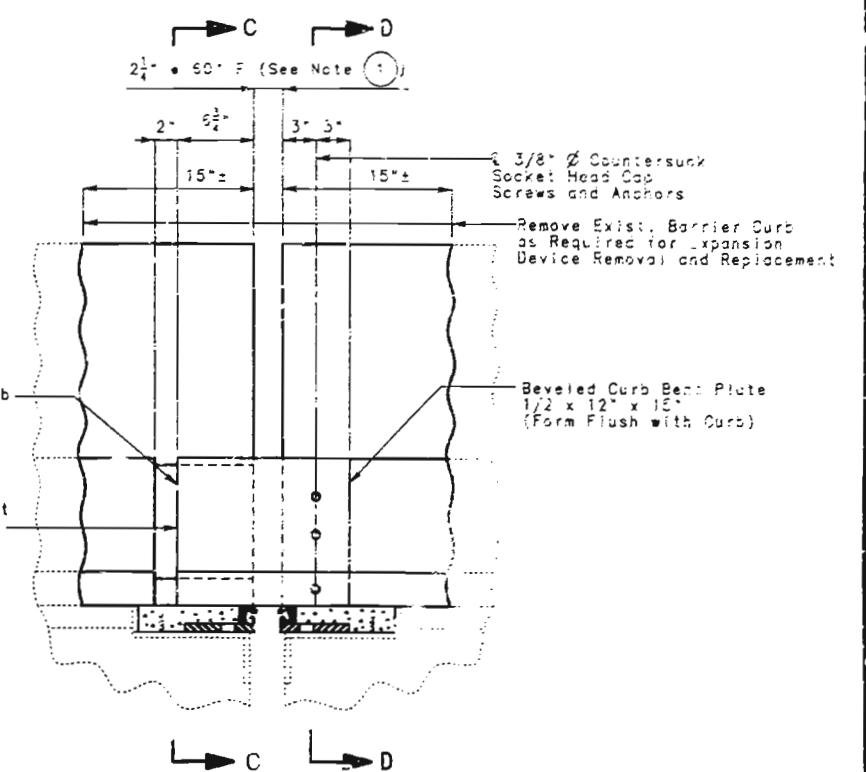
DETAIL "B" (TYP.)



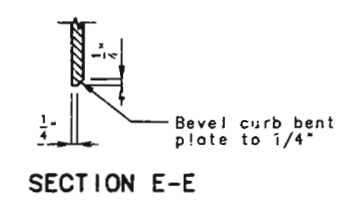
SECTION THRU EXTRUSION



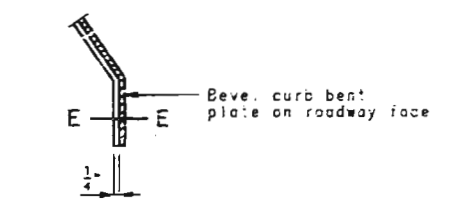
NOTE: The Strip Seal Gland shall extend to the end of the steel extrusion.



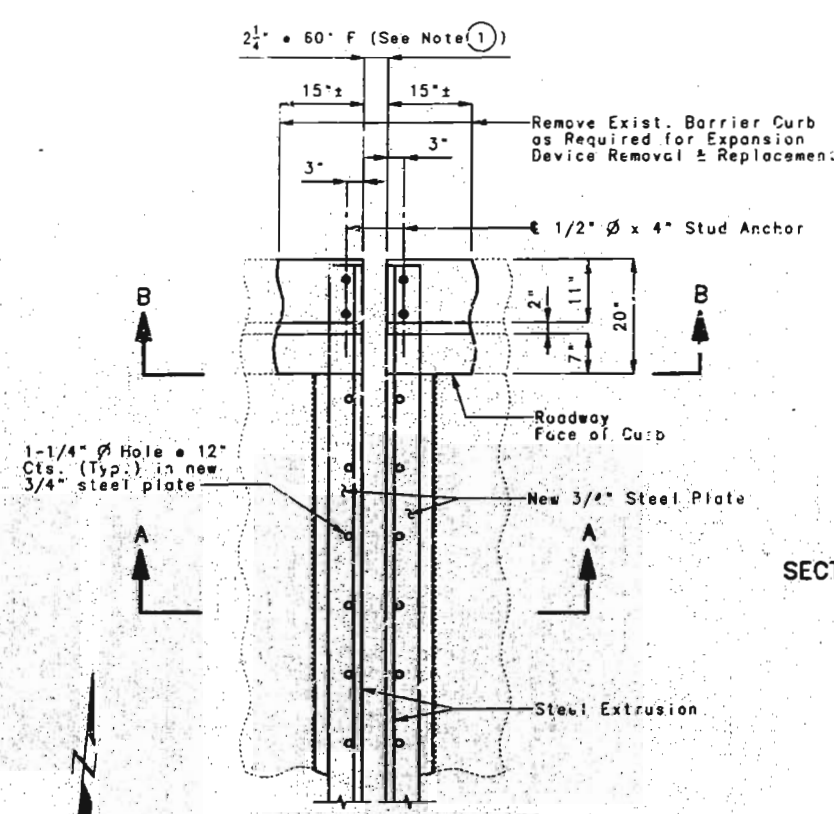
PART SECTION B-B



SECTION E-E



PART ELEVATION AT END OF BEVELED CURB BENT PLATE

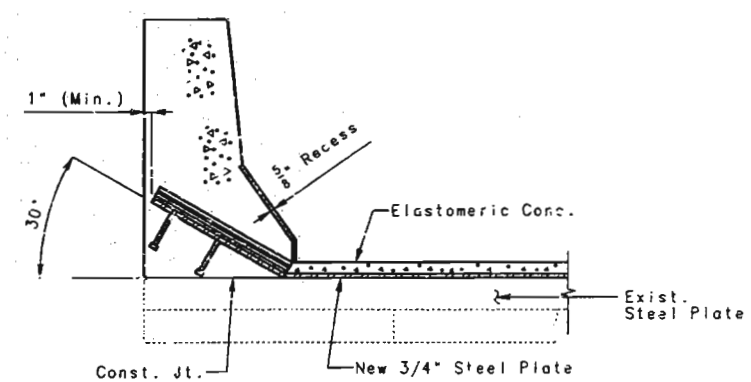


PART PLAN

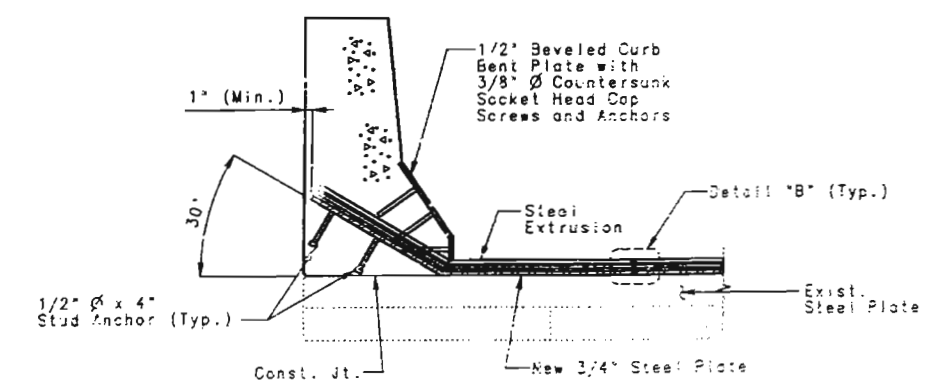
NOTE: North side shown, South side similar.

NOTE:

- Dimension shall be increased 5/16" (Span 5) & 1/4" (Span 11) for each 10° fall in temperature and decreased 5/16" (Span 5) & 1/4" (Span 11) for each 10° rise in temperature at installation.
- If Exist. Movement Gauge shall fall within the region of Safety Barrier Curb removal, then the contractor shall replace the Exist. Movement Gauge in the new Safety Barrier Curb.
- Match the replacement Safety Barrier Curb lines with the Exist. Safety Barrier Curb lines.
- Anchors for new 3/4" steel plate in Safety Barrier Curb shall be approved stud welded anchors (C1010 thru C1020).
- Gap for new expansion device must be less than Exist. gap.



PART SECTION C-C



PART SECTION D-D

DETAILS OF STRIP SEAL EXPANSION DEVICE IN SPANS NO. 5 & 11

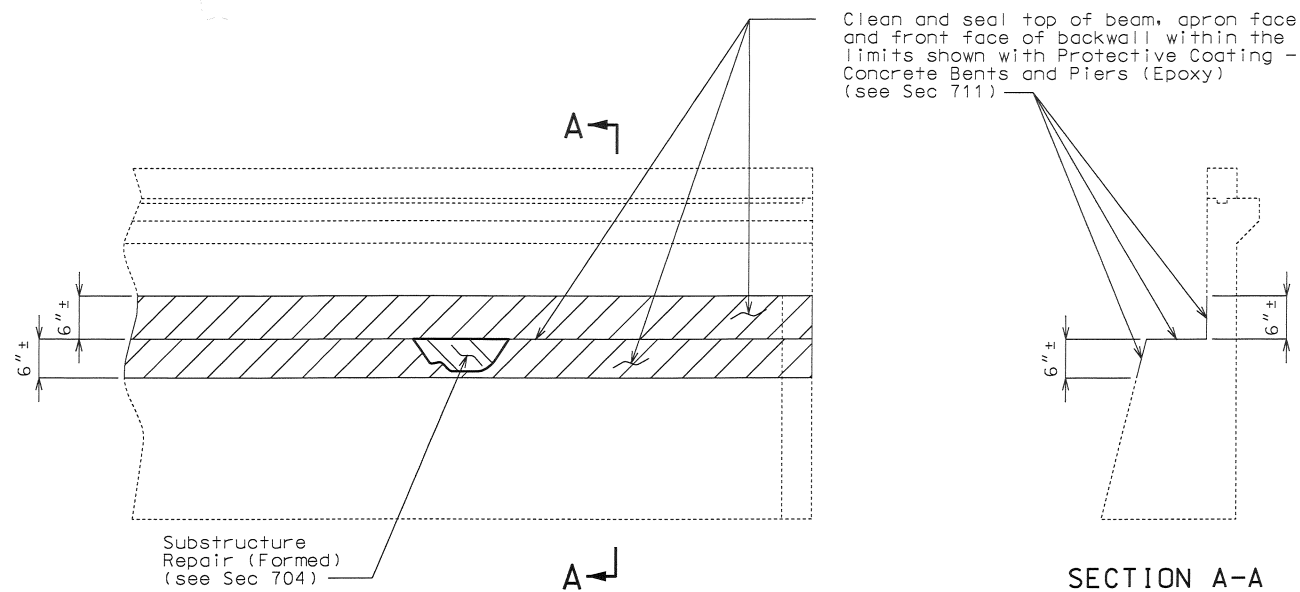
CITY OF ST. LOUIS

L06673

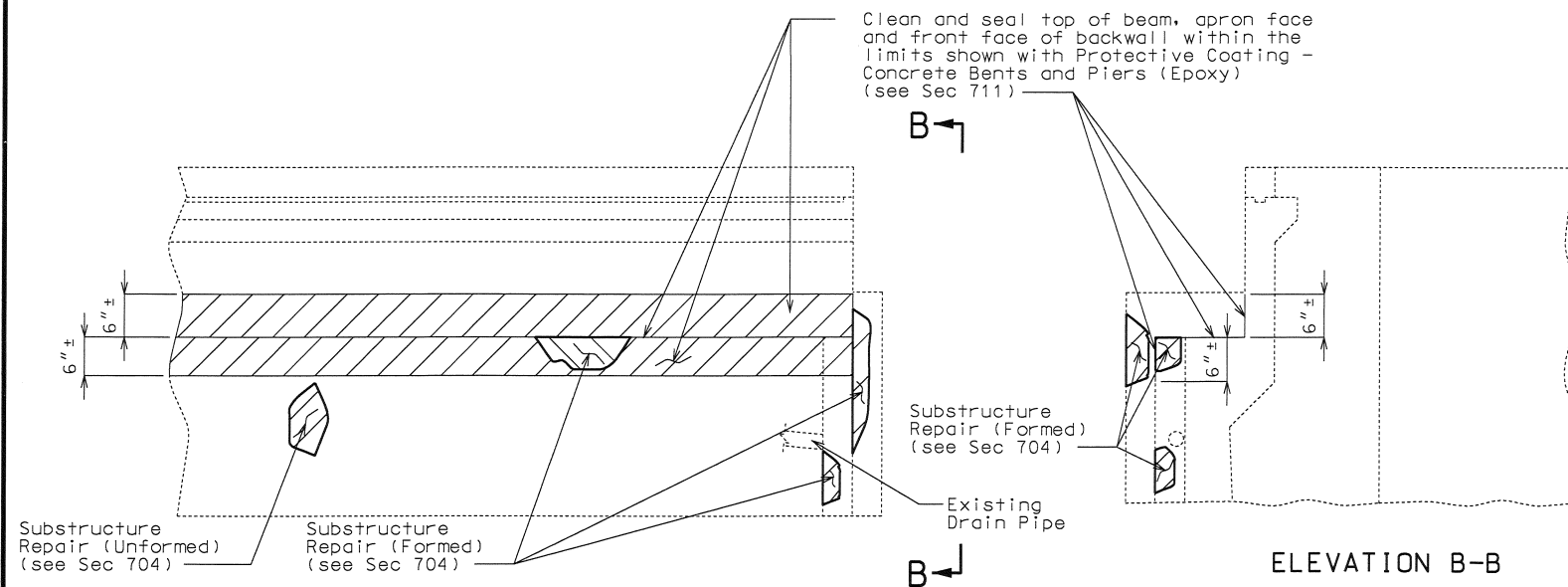
DETAILED MAY 1996
CHECKED MAY 1996

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

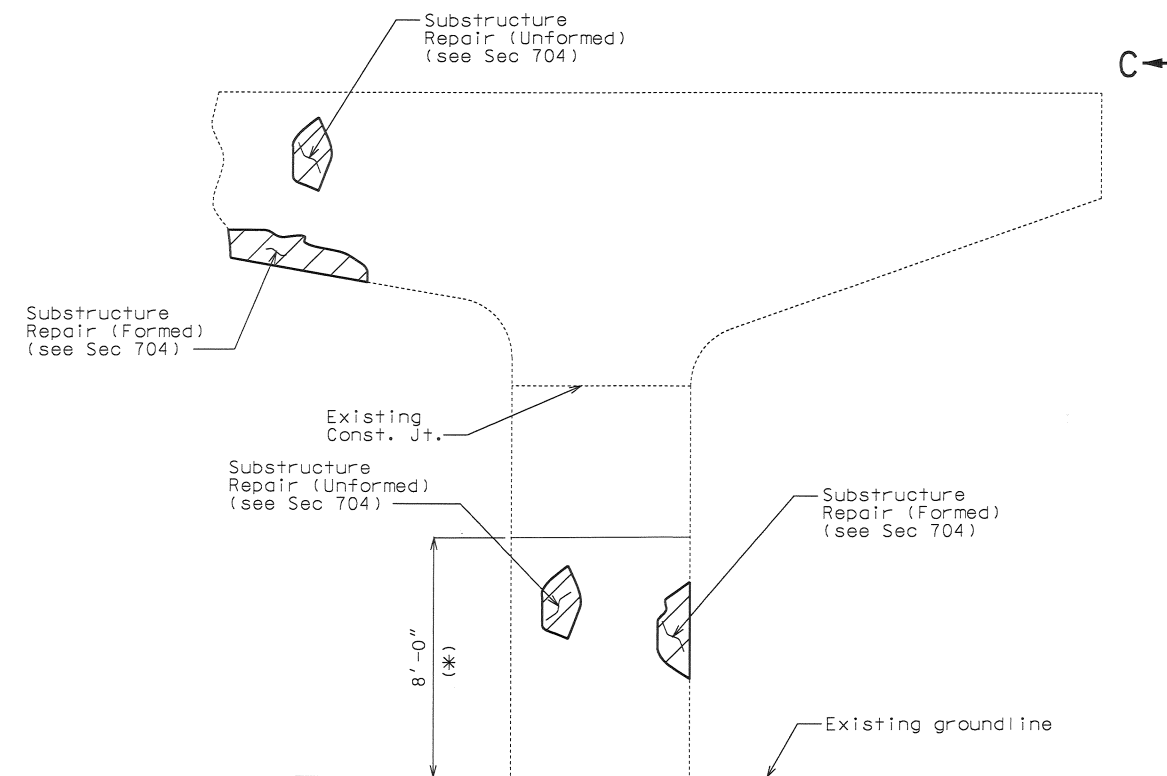
SHEET NO. 2 OF 2.



PART ELEVATION OF ABUTMENT NO. 1

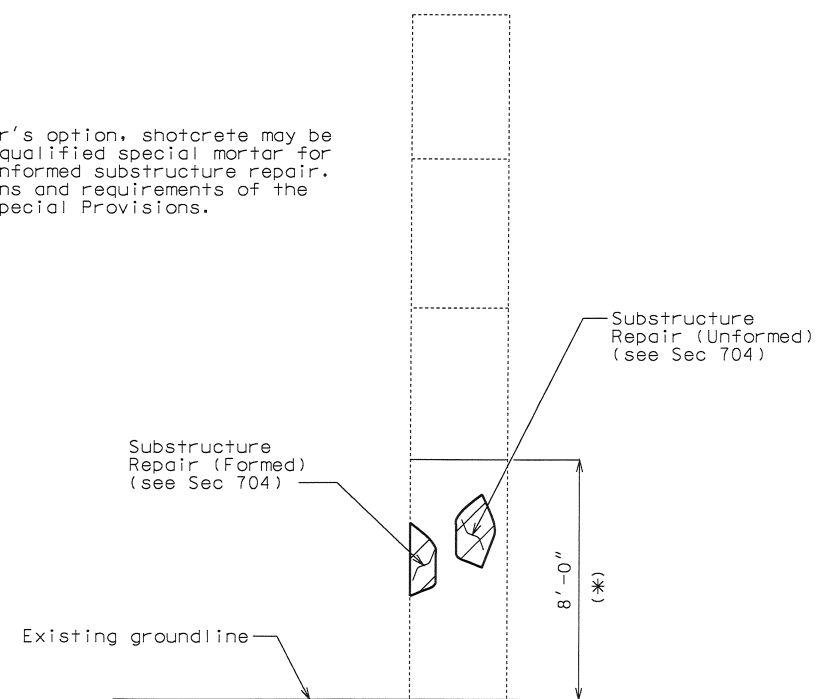


PART ELEVATION OF ABUTMENT NO. 15



PART ELEVATION OF INT. BENTS NO. 2 THRU 14

Note:
At the contractor's option, shotcrete may be used in lieu of qualified special mortar for all formed and unformed substructure repair. For specifications and requirements of the shotcrete, see Special Provisions.



ELEVATION C-C

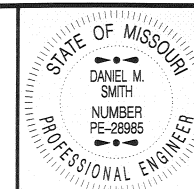
Note:
(*) Apply Sacrificial Graffiti Protection System to areas of substructure repair in bottom 8'-0" of all bents. Payment will be considered completely covered by the contract unit price for other items.

DETAILS OF CONCRETE PROTECTIVE COATING & SUBSTRUCTURE REPAIR

Detailed Jan. 2014
Checked Feb. 2014

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

Sheet No. 2 of 4



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

DATE PREPARED
4/9/2014

ROUTE 1-64 STATE MO
DISTRICT BR SHEET NO. 2

COUNTY
ST. LOUIS CITY

JOB NO.
J613016

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
L06674

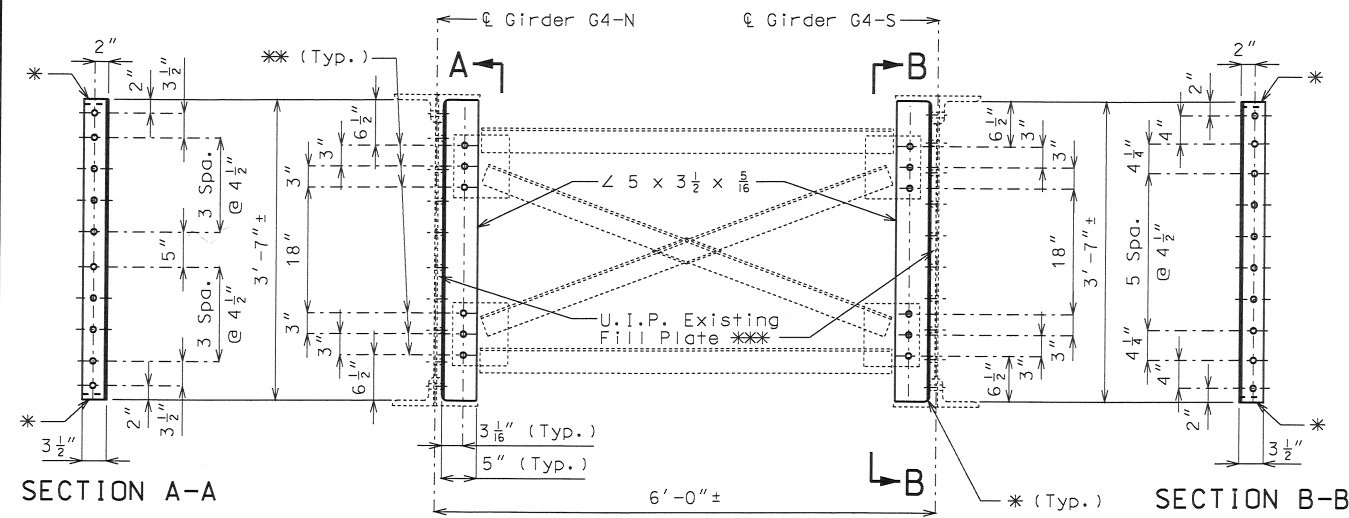
DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

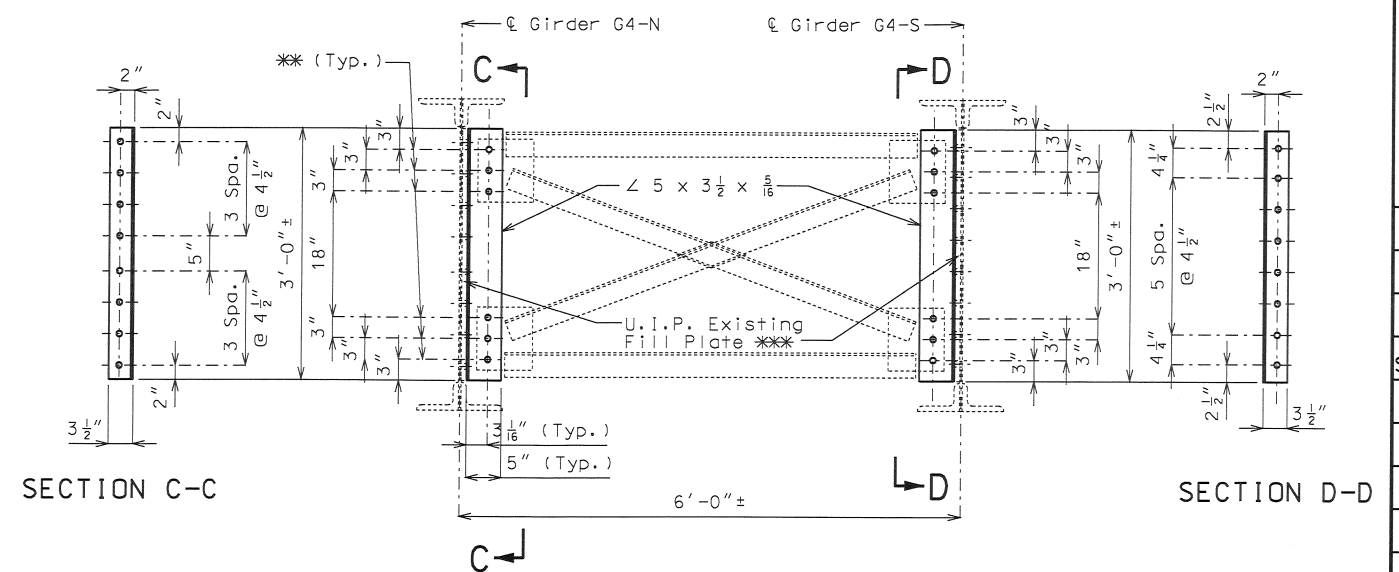
105 WEST CAPITAL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

MODOT

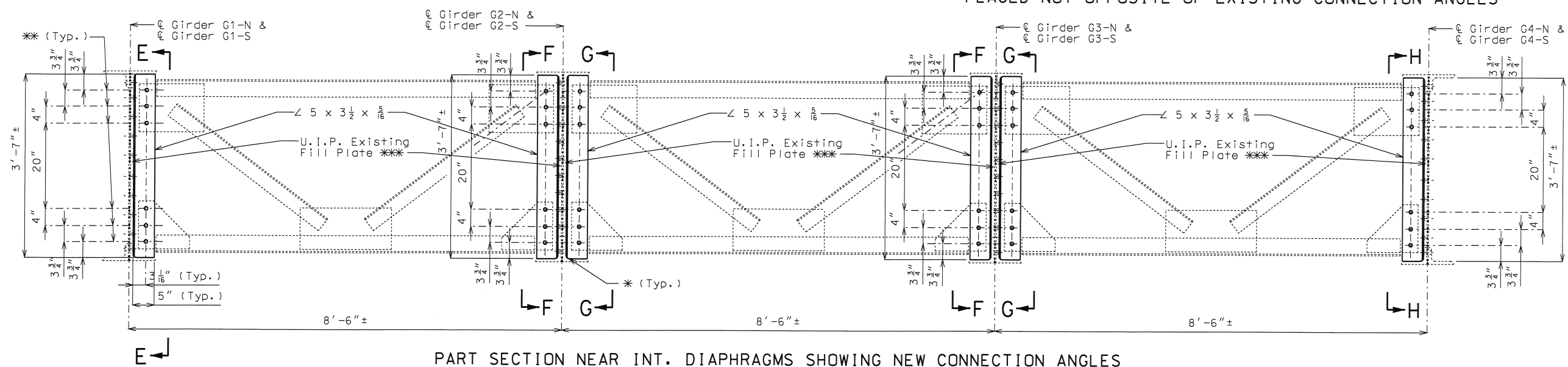
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



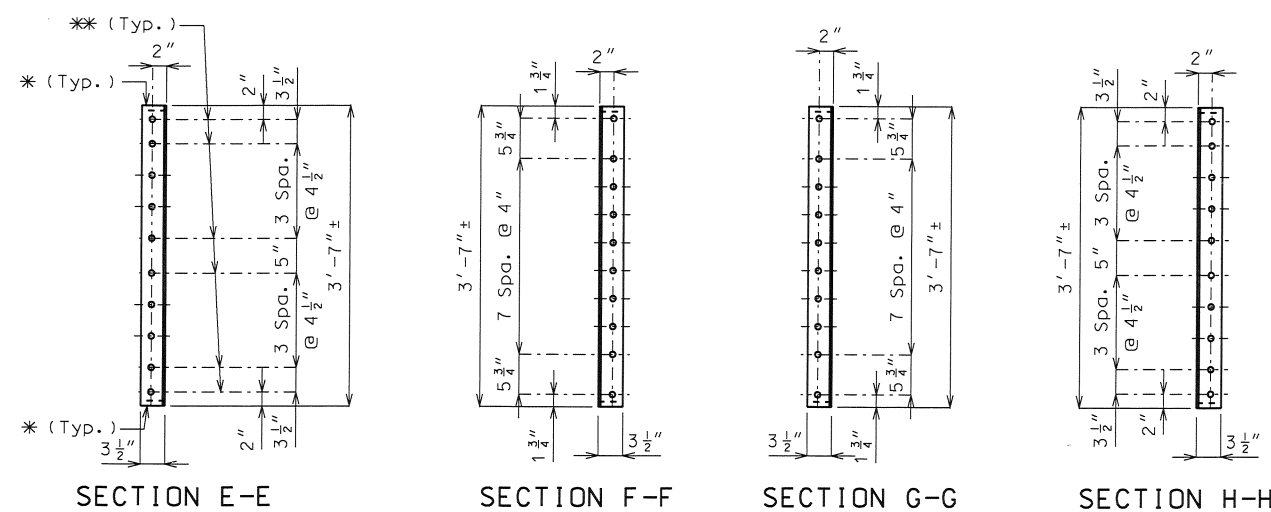
SECTION A-A
SECTION B-B
PART SECTION NEAR INT. DIAPHRAGM BETWEEN GIRDERS G4-N & G4-S
PLACED OPPOSITE OF EXISTING CONNECTION ANGLES



SECTION C-C
SECTION D-D
PART SECTION NEAR INT. DIAPHRAGM BETWEEN GIRDERS G4-N & G4-S
PLACED NOT OPPOSITE OF EXISTING CONNECTION ANGLES



PART SECTION NEAR INT. DIAPHRAGMS SHOWING NEW CONNECTION ANGLES



DETAILS OF CONNECTION ANGLE REMOVAL AND REPLACEMENT

Notes:

Details shown are for removing and replacing in-kind all cracked connection angles that connect the int. diaphragm to the girder web. The location of specific connection angles needed for removal and replacement will be determined by the engineer.

All new fabricated structural steel for replacement of connection angles shall be ASTM A709 Grade 50.

When removing and replacing connection angle, remove existing high strength bolts or rivets as shown to install new $25 \times 3-1/2 \times 5/16$.

Field drill $13/16"$ \varnothing holes through new $25 \times 3-1/2 \times 5/16$ to match holes in existing int. diaphragm connection plates and girder web.

Use $3/4"$ \varnothing high strength bolts to connect new $25 \times 3-1/2 \times 5/16$ to existing int. diaphragm connection plates and girder web.

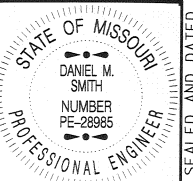
The cost of removing the existing connection angles and fabricating and installing new connection angles, complete in place, will be considered completely covered by the contract unit price for Remove and Replace Connection Angle per each.

The contractor shall field verify all dimensions before ordering new material.

* Grind $3-1/2"$ leg of new connection angles at top and bottom to clear $3/4"$ fillet of existing flange angles.

** $\varnothing 13/16"$ \varnothing holes for $3/4"$ \varnothing high strength bolts (field drill to match location of existing holes in int. diaphragm connection plates and girder web).

*** If any existing $3-1/2" \times 3/4"$ fill plate is cracked, it shall be removed and replaced in-kind as directed by the engineer. Field drill $13/16"$ \varnothing holes to match existing holes in girder web. Cost will be considered completely covered by the contract unit price for Remove and Replace Connection Angle per each.



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

DATE PREPARED
4/9/2014

ROUTE 1-64 STATE MO

DISTRICT BR SHEET NO. 3

COUNTY ST. LOUIS CITY

JOB NO. J613016

CONTRACT ID.

PROJECT NO.

BRIDGE NO. L06674

DESCRIPTION

DATE

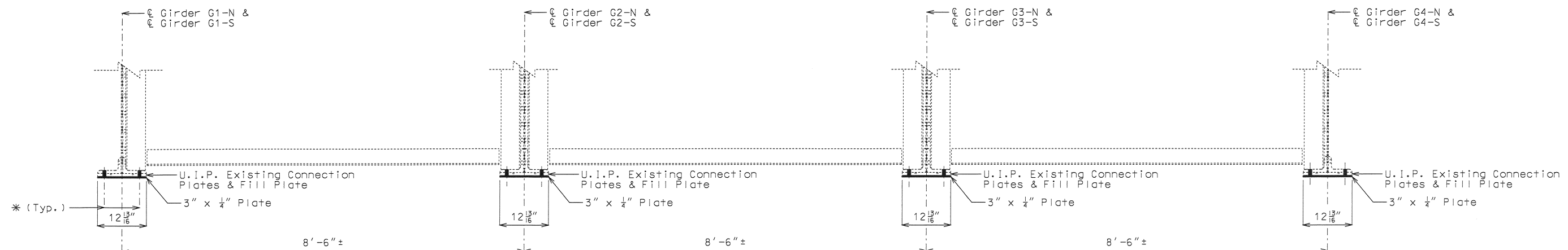
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITAL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

SEC/SUR 16 TWP 45N RGE 7E

GENERAL NOTES:

Design Specifications:
2002 AASHTO LFD (17th Ed.) Standard Specifications
Bridge Deck Rating = 4

Design Loading:
HS20-44 (New construction)

Design Unit Stresses:
Structural Steel (ASTM A709 Grade 50) fy = 50,000 psi

Fabricated Steel Connections:
Field connections shall be made with $\frac{3}{4}$ " diameter high strength bolts and $\frac{1}{16}$ " diameter holes, except as noted.

High strength bolts, nuts and washers will be sampled for quality assurance as specified in Sec 106.

Traffic Handling:
Structure to be closed during construction.

Miscellaneous:
Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

Roadway surfacing adjacent to bridge ends shall match new bridge wearing surface (Roadway Item).

In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.

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

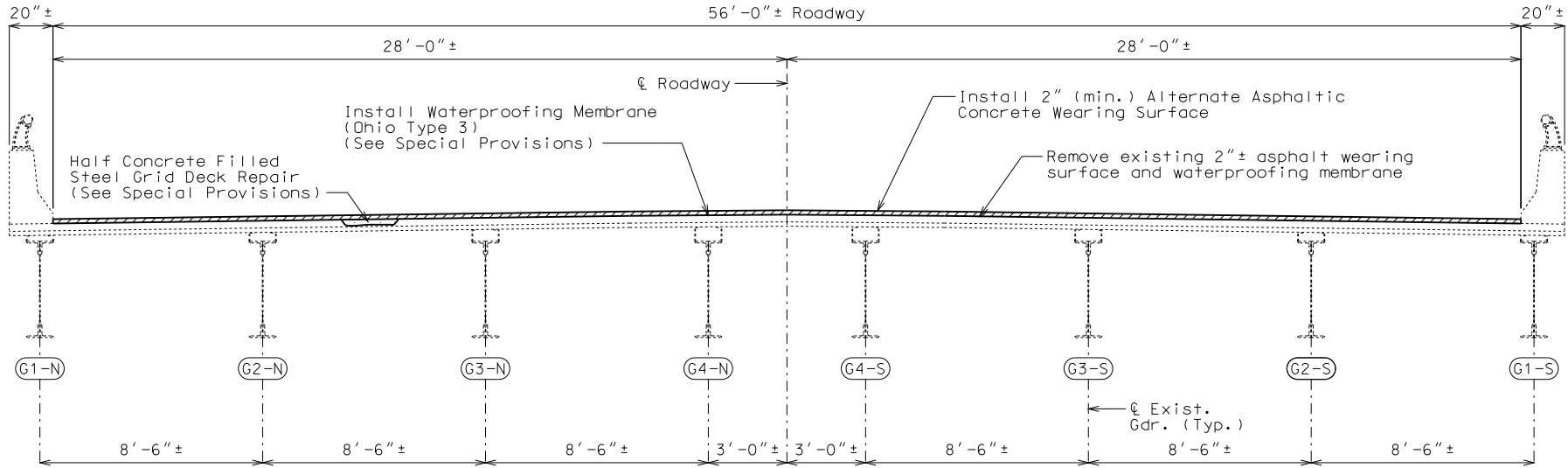
Sacrificial graffiti protective coating shall be applied as shown on the bridge plans and in accordance with Sec 711.

Structural Steel Protective Coatings (New Steel):
All new steel for replacement of connection angles and guide cover straps shall be coated with System G in accordance with Sec 1081.

Prime Coat: The cost of the prime coat for new steel will be considered completely covered by the contract unit price per each for "Remove and Replace Connection Angle" or "Remove and Replace Guide Cover Strap". Tint of the prime coat for System G shall be similar to the color of the field coat to be used.

Field Coats: The color of the field coats for new steel shall be Gray (Federal Standard #26373). The cost of the field coats will be considered completely covered by the contract unit price per each for "Remove and Replace Connection Angle" or "Remove and Replace Guide Cover Strap". At the option of the contractor, the field coats for new steel may be applied in the shop. The contractor shall exercise extreme care during all phases of loading, hauling, handling and erection to minimize damage and shall be fully responsible for all repairs and cleaning of the coating systems as required by the engineer.

U.I.P. AND REHAB EXISTING (85'-67'-128'-67'-25') (88'-88')
(25'-65'-114'-114'-65'-24') (87'-123'-123'-99') CONT. PLATE GIRDER SPANS



SECTION THRU SLAB

Alternate Asphaltic
Concrete Wearing Surface

Type of Wearing Surface with Asphalt Binder Type	Mix Used (✓)
SP125BSM Mix with PG 76-22	
SP125BLP Mix with PG 76-22	

Note:
Payment for removal of the existing waterproofing membrane will be considered completely covered by the contract unit price for Removal of Asphalt Wearing Surface per sq. foot.

MoDOT construction personnel shall complete column labeled "Mix Used (✓)".

The contractor shall select one of the alternate asphaltic concrete wearing surfaces listed in the table. The mixture shall be in accordance with Sec 403 and produced in accordance with Sec 404.

The area of the asphaltic concrete wearing surface will be measured and computed to the nearest square yard. This area will be measured transversely from out to out of overlay and longitudinally from end of slab to end of slab.

Payment for Alternate Asphaltic Concrete Wearing Surface will be considered completely covered by the contract unit price per square yard.

REPAIRS TO BRIDGE: RTE. I-64 EBL OVER
VANDEVENTER AVE., CLAYTON AVE. & METROLINK

STATE ROAD FROM KINGSHIGHWAY BLVD. TO MISSISSIPPI RIVER

ABOUT 1.3 MILES EAST OF KINGSHIGHWAY BLVD.

STA. 29+85.61± (MATCH EXISTING)

Detailed Jan. 2014
Checked Feb. 2014

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

Sheet No. 1 of 4



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

DATE PREPARED
4/15/2014

ROUTE 1-64 STATE MO
DISTRICT BR SHEET NO. 1

COUNTY
ST. LOUIS CITY

JOB NO.
J613016

CONTRACT ID.

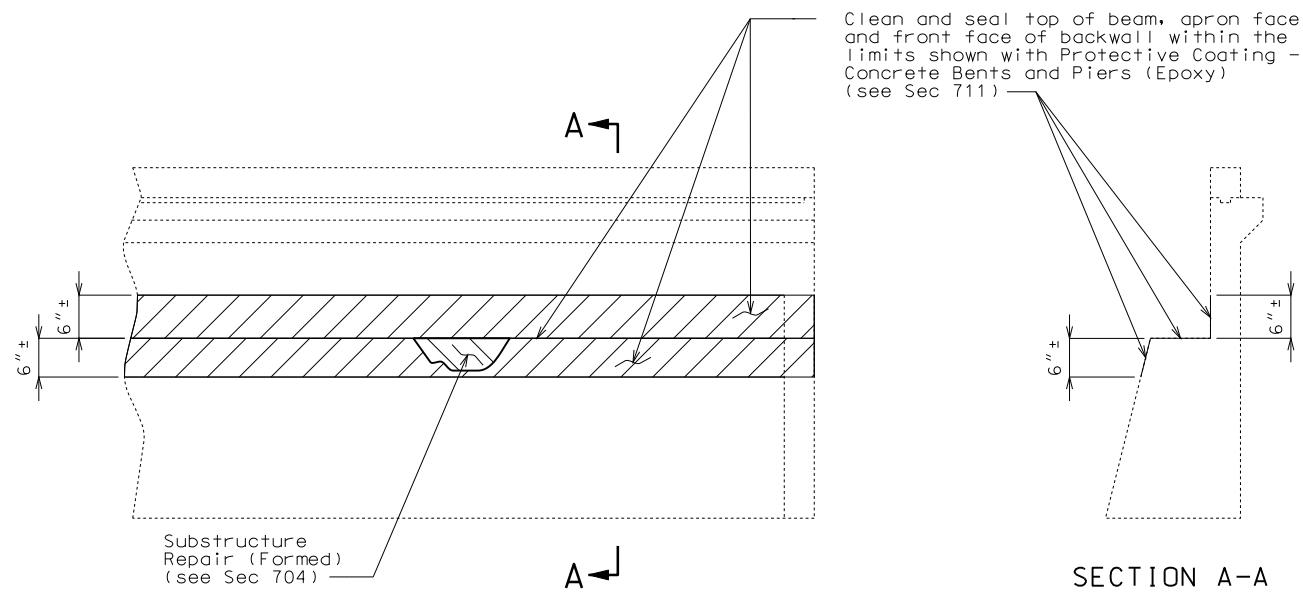
PROJECT NO.

BRIDGE NO.
L06674

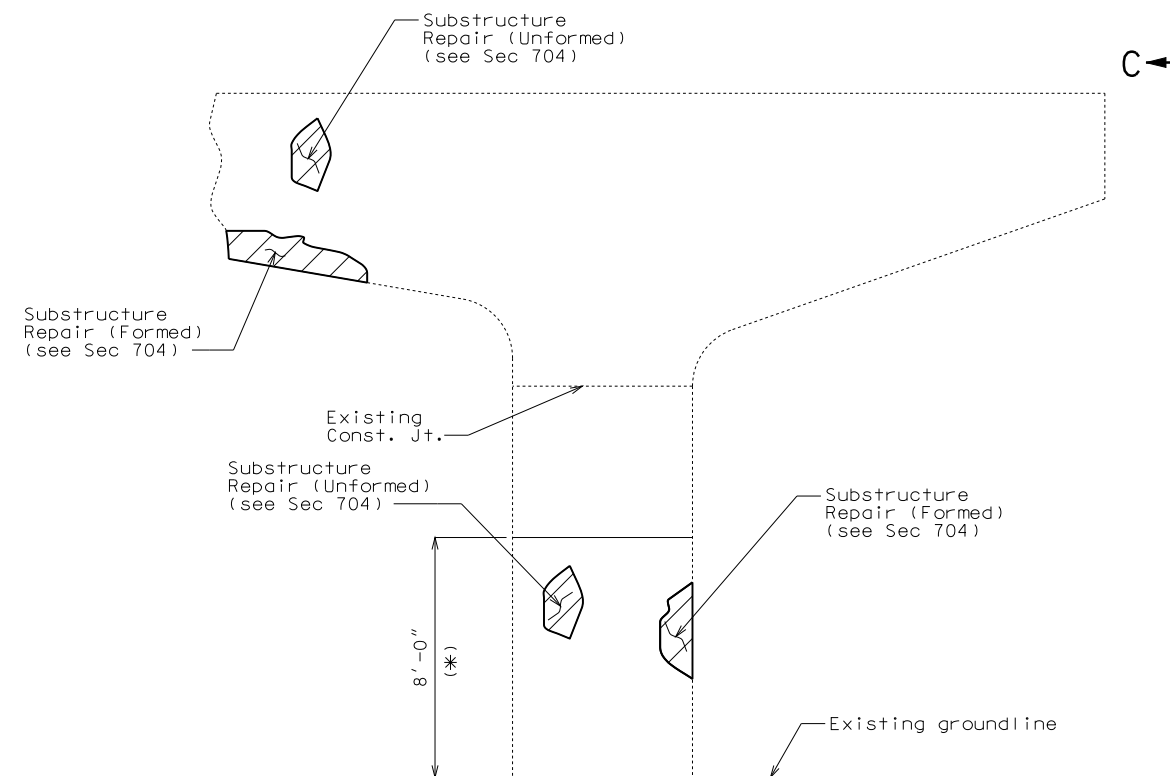
DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION
MoDOT
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

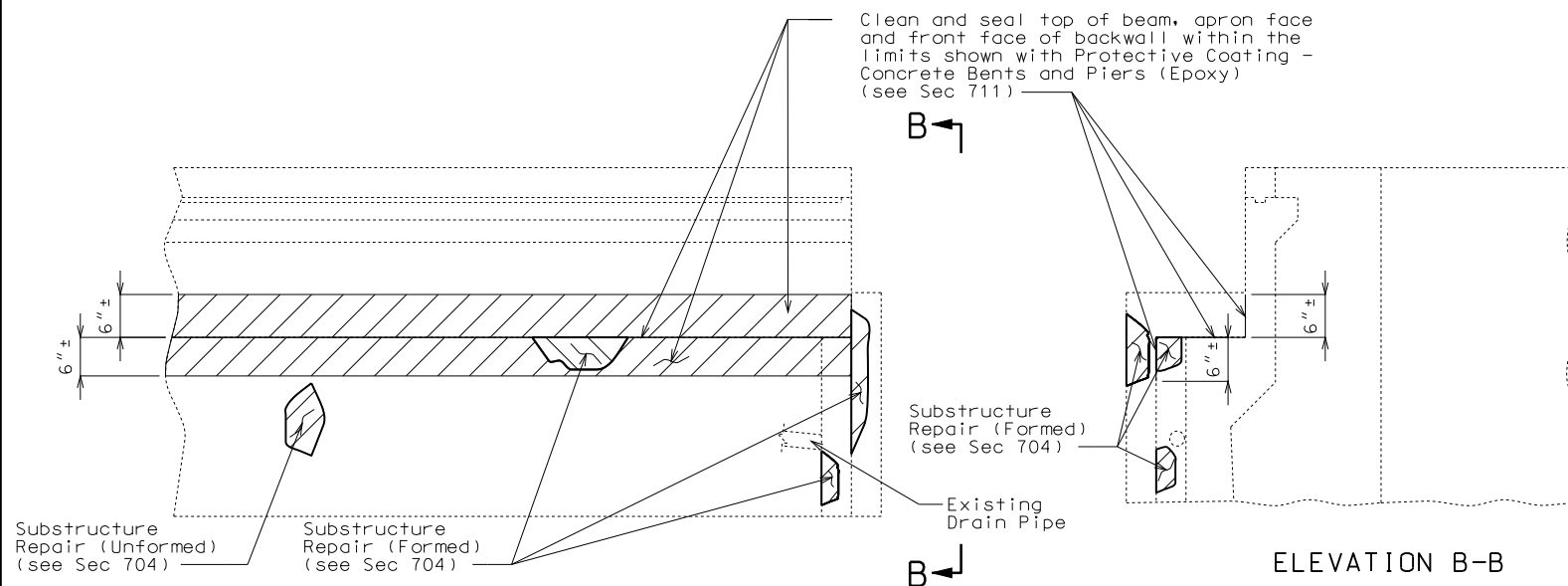
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



PART ELEVATION OF ABUTMENT NO. 1

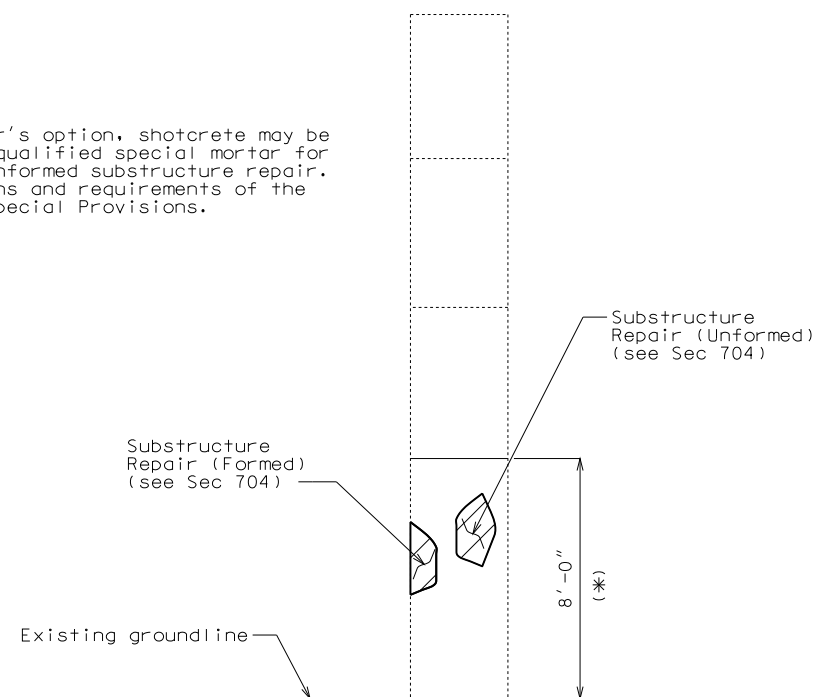


PART ELEVATION OF INT. BENTS NO. 2 THRU 14



PART ELEVATION OF ABUTMENT NO. 15

Note:
At the contractor's option, shotcrete may be used in lieu of qualified special mortar for all formed and unformed substructure repair. For specifications and requirements of the shotcrete, see Special Provisions.



ELEVATION C-C

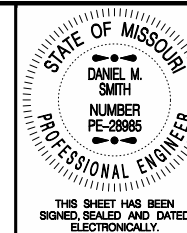
Note:
(*) Apply Sacrificial Graffiti Protection System to areas of substructure repair in bottom 8'-0" of all bents. Payment will be considered completely covered by the contract unit price for other items.

DETAILS OF CONCRETE PROTECTIVE COATING & SUBSTRUCTURE REPAIR

Detailed Jan. 2014
Checked Feb. 2014

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

Sheet No. 2 of 4



DATE PREPARED
4/9/2014

ROUTE 1-64 STATE MO
DISTRICT BR SHEET NO. 2

COUNTY
ST. LOUIS CITY

JOB NO.
J613016

CONTRACT ID.

PROJECT NO.

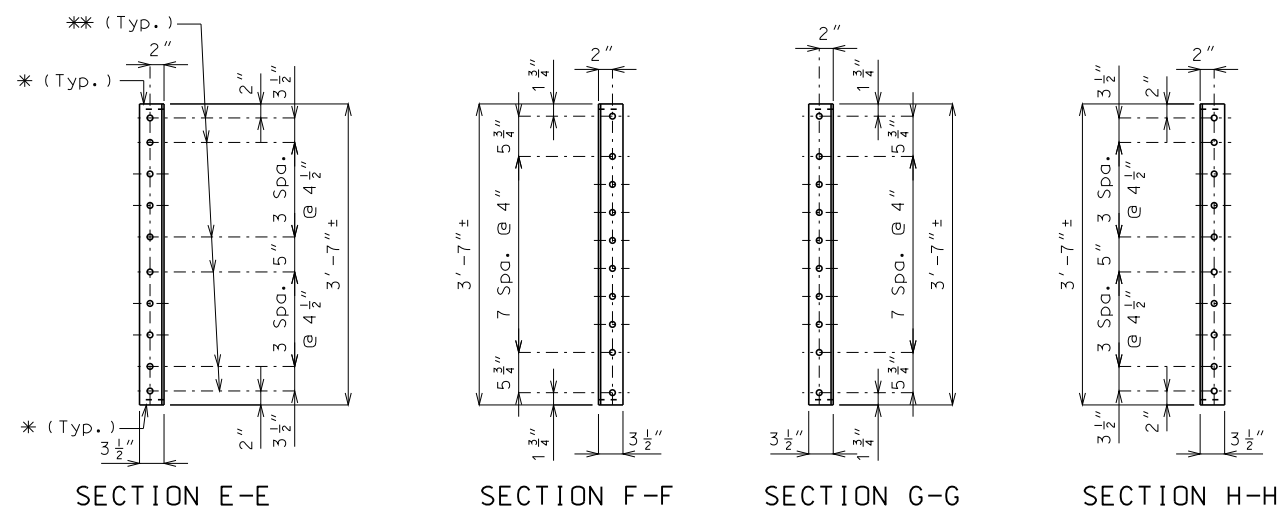
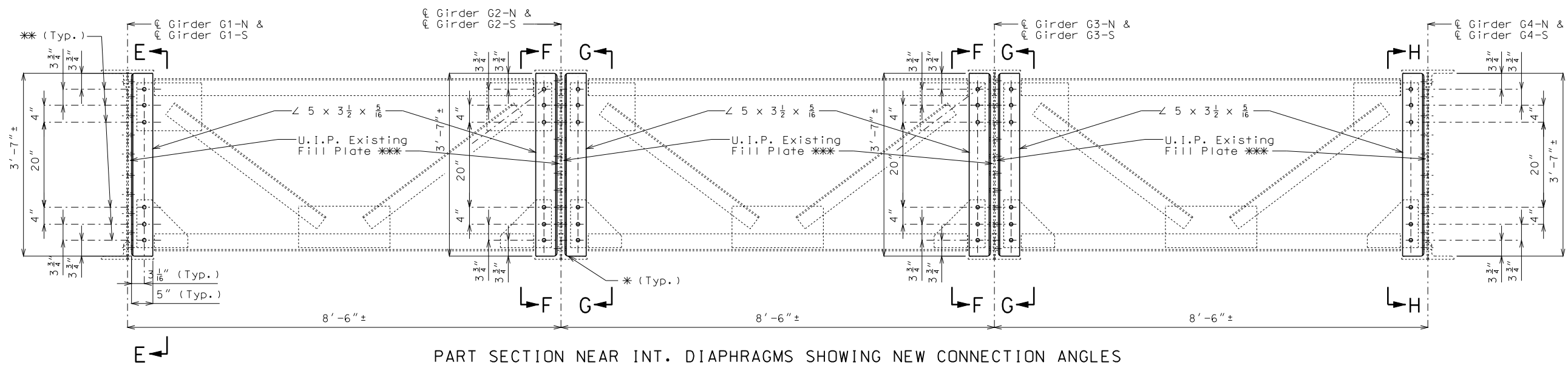
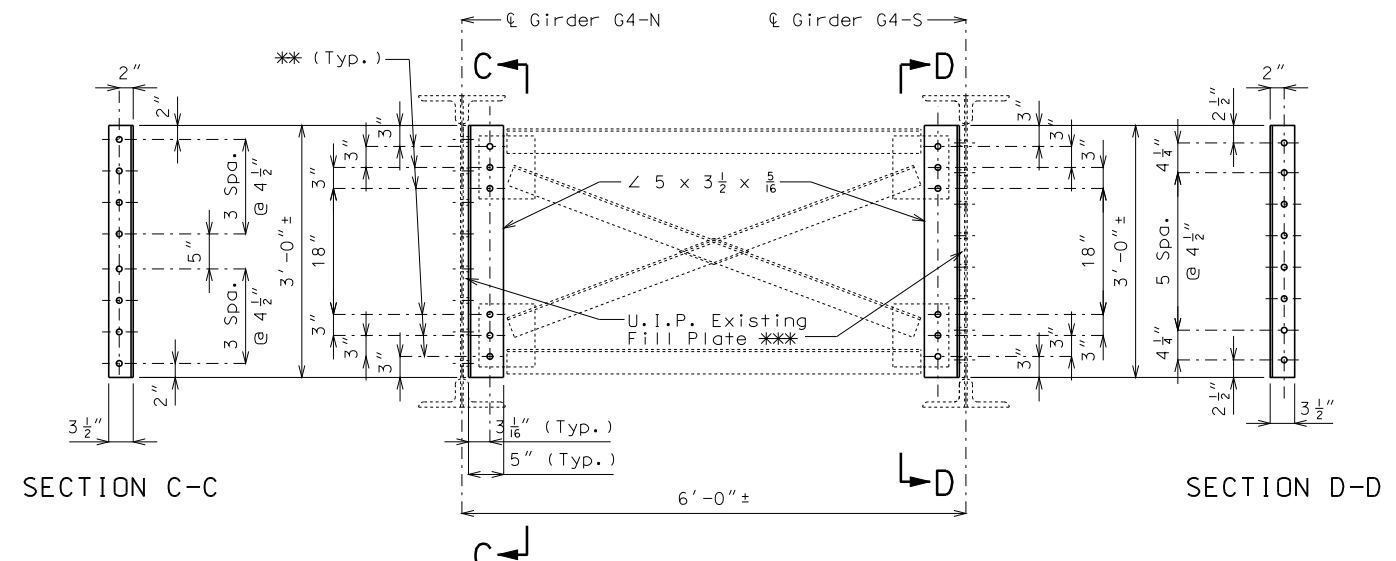
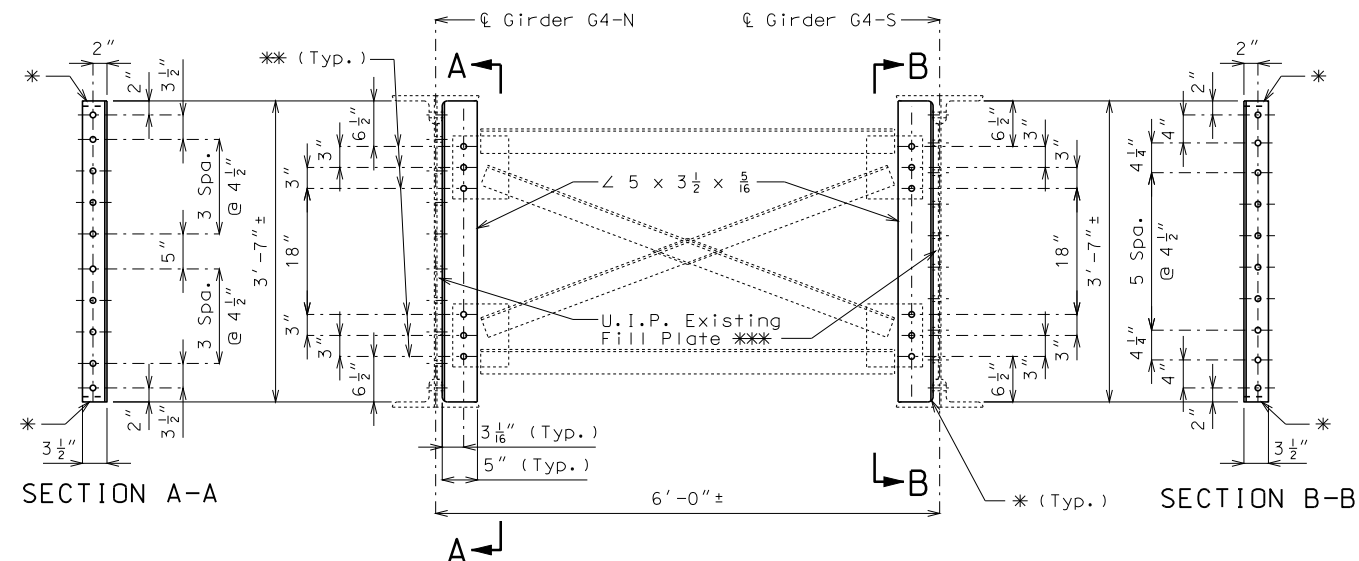
BRIDGE NO.
L06674

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

 105 WEST CAPITOL
 JEFFERSON CITY, MO 65102
 1-888-ASK-MODOT (1-888-275-6636)

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Notes:

NOTES: Details shown are for removing and replacing in-kind all cracked connection angles that connect the int. diaphragm to the girder web. The location of specific connection angles needed for removal and replacement will be determined by the engineer.

All new fabricated structural steel for replacement of connection angles shall be ASTM A709 Grade 50.

When removing and replacing connection angle, remove existing high strength bolts or rivets as shown to install new $Z5 \times 3\text{-}1/2 \times 5/16$.

Field drill 13/16" Ø holes through new L5 x 3-1/2 x 5/16 to match holes in existing int. diaphragm connection plates and girder web.

Use 3/4" Ø high strength bolts to connect new L5 x 3-1/2 x 5/16 to existing int. diaphragm connection plates and girder web.

The cost of removing the existing connection angles and fabricating and installing new connection angles, complete in place, will be considered completely covered by the contract unit price for Remove and Replace Connection Angle per each.

The contractor shall field verify all dimensions before ordering new material.

* Grind 3-1/2" leg of new connection angles at top and bottom to clear 3/4" fillet of existing flange angles.

*** @ 13/16" Ø holes for 3/4" Ø high strength bolts (field drill to match location of existing holes in int. diaphragm connection plates and girder web).

*** If any existing 3-1/2" x 3/4" fill plate is cracked, it shall be removed and replaced in-kind as directed by the engineer. Field drill 13/16" Ø holes to match existing holes in girder web. Cost will be considered completely covered by the contract unit price for Remove and Replace Connection Angle per each.

DETAILS OF CONNECTION ANGLE REMOVAL AND REPLACEMENT



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ELECTRONICALLY.

DATE PREPARED
4/9/2014

ROUTE	STATE
I - 64	MO

DISTRICT BR	SHEET NO 3
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COUNTY
ST. LOUIS CITY

JOB NO.
J6I3016

CONTRACT ID.

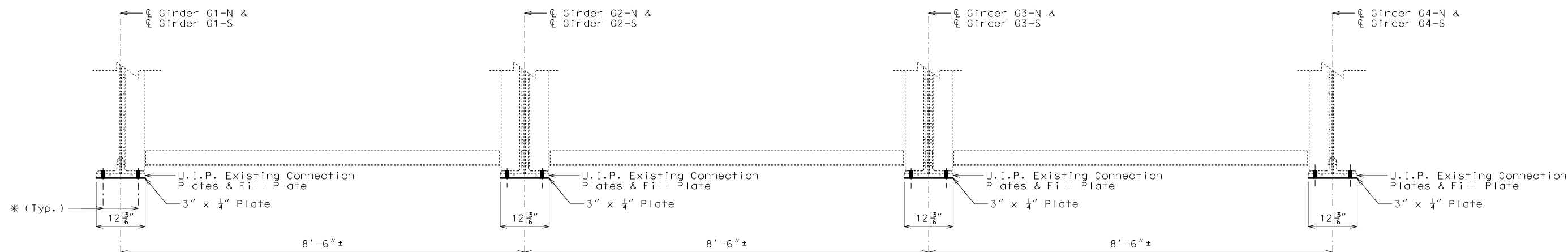
PROJECT NO.

BRIDGE NO.
106674

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COMMISSION

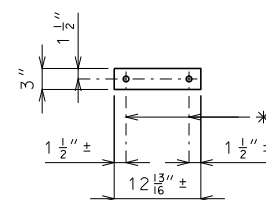
105 WEST CAPITOL
JEFFERSON CITY, MD 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

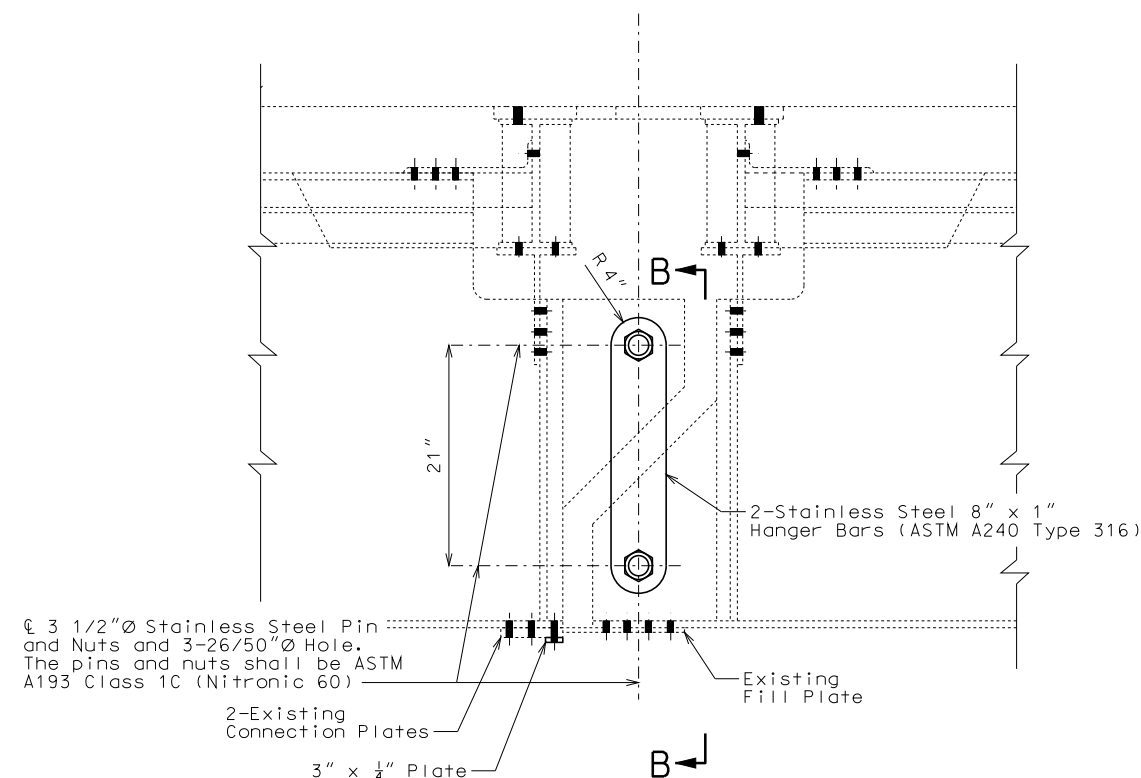


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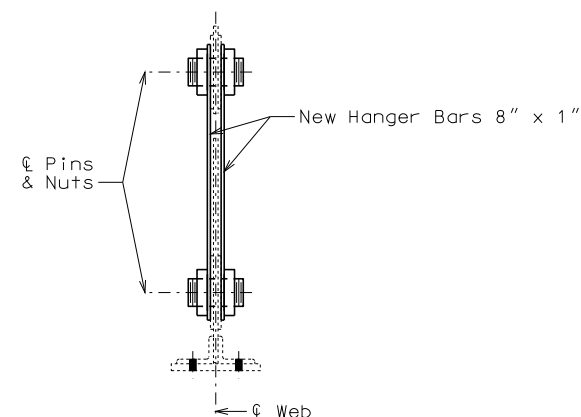
PART SECTION NEAR HINGE CROSS FRAME SHOWING NEW GUIDE COVER STRAPS IN SPANS (5-6), (6-7) & (11-12)



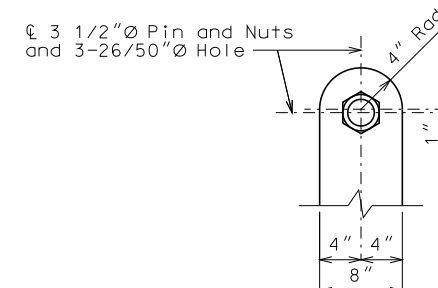
ELEVATION A-A



DETAIL SHOWING NEW PIN AND HANGER ASSEMBLY IN SPANS (5-6), (6-7) & (11-12)
(EXTERIOR GIRDERS ONLY)



SECTION B-B



HANGER BAR DETAIL

Notes:

All new fabricated structural steel for replacement of guide cover straps shall be ASTM A709 Grade 50.

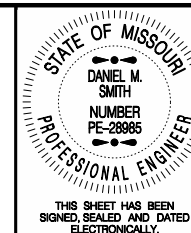
When removing and replacing guide cover straps, remove existing high strength bolts or rivets as shown to install new 3" x 1/4" plate.

Use 3/4" Ø high strength bolts to connect new 3" x 1/4" plate to existing connection plates and bottom flange.

The cost of removing the existing cover straps and fabricating and installing new cover straps, complete in place, will be considered completely covered by the contract unit price for Remove and Replace Guide Cover Strap per each.

The contractor shall field verify all dimensions before ordering new material.

* Field drill 13/16" Ø holes through new 3" x 1/4" plate to match holes in existing connection plates and bottom flange.



DATE PREPARED
4/9/2014

ROUTE
I-64
STATE
MO
DISTRICT
BR
SHEET NO.
4

COUNTY
ST. LOUIS CITY

JOB NO.
J613016

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
L06674

DESCRIPTION

DATE

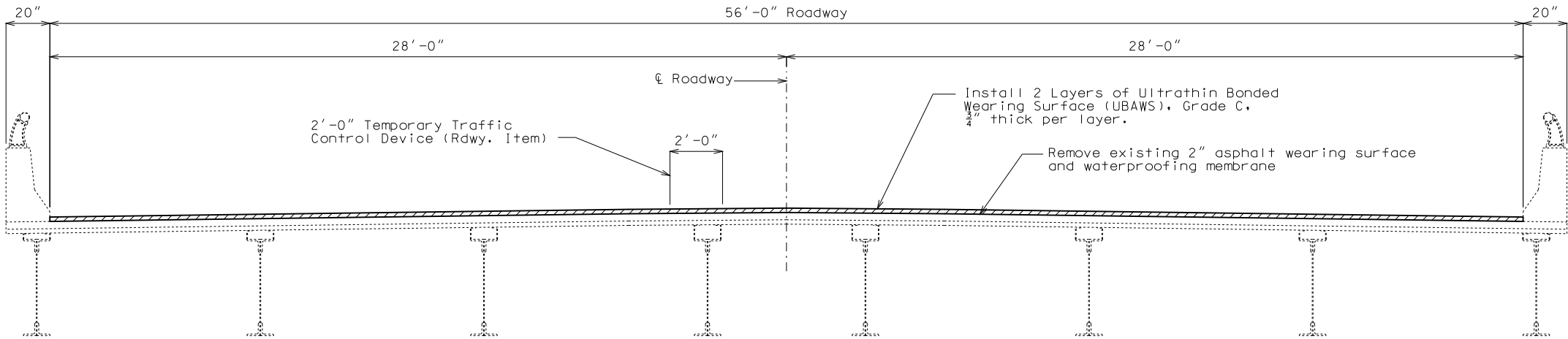
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



U.I.P. AND REHAB EXISTING (87'-67'-128'-67'-25')(88'-88')(25'-65'-114'-114'-65'-25')
(87'-123'-123'-99') CONTINUOUS PLATE GIRDER SPANS

SEC/SUR 16 TWP 45N RGE 7E



SECTION THRU EXISTING SLAB

Note:
Payment for removal of the existing waterproofing membrane will be considered completely covered by the contract unit price for Removal of Asphalt Wearing Surface.

GENERAL NOTES:

Design Specifications:

2002 AASHTO LFD (17th Ed.) Standard Specifications
Bridge Deck Rating = 6

Miscellaneous:

Outline of old work indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

Roadway sufacng adjacent to bridge ends shall match new bridge wearing surface (Roadway Item).

In order to maintain grade and a minimum thickness of overlay as shown on plans, it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered by the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.

Traffic Handling:

Traffic over structure to be maintained during construction. See roadway plans for traffic contol.

Estimated Quantities		
Item		Total
Removal of Asphalt Wearing Surface	sq. foot	73,171
Ultrathin Bonded Wearing Surface (UBAWS), Grade C, 1 1/2" thick	sq. yard	8130



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 3/14/2018

ROUTE I-64 STATE MO
DISTRICT BR SHEET NO. 1

COUNTY ST LOUIS CITY

JOB NO. J613111

CONTRACT ID.

PROJECT NO.

BRIDGE NO. L06675

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

REPAIRS TO BRIDGE: RTE. I-64 EBL
OVER VANDEVENTER AVE., CLAYTON AVE.
AND METROLINK

STATE ROAD FROM KINGSHIGHWAY BLVD. TO MISSISSIPPI RIVER
ABOUT 1.3 MILES EAST OF KINGSHIGHWAY BLVD.
BEGINNING STATION 29+85.61± (MATCH EXIST.)

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

SEC/SUR 16 TWP 45N RGE 7E

GENERAL NOTES:

Design Specifications:
2002 AASHTO LFD (17th Ed.) Standard Specifications
Bridge Deck Rating = 4

Design Loading:
HS20-44 (New construction)

Design Unit Stresses:
Structural Steel (ASTM A709 Grade 50) $f_y = 50,000$ psi

Fabricated Steel Connections:

Field connections shall be made with $\frac{3}{4}$ " diameter high strength bolts and $\frac{1}{4}$ " diameter holes, except as noted.

High strength bolts, nuts and washers will be sampled for quality assurance as specified in Sec 106.

Traffic Handling:

Structure to be closed during construction.

Miscellaneous:

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

Roadway surfacing adjacent to bridge ends shall match new bridge wearing surface (Roadway Item).

In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of overlay.

Concrete Protective Coatings:

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

Sacrificial graffiti protective coating shall be applied as shown on the bridge plans and in accordance with Sec 711.

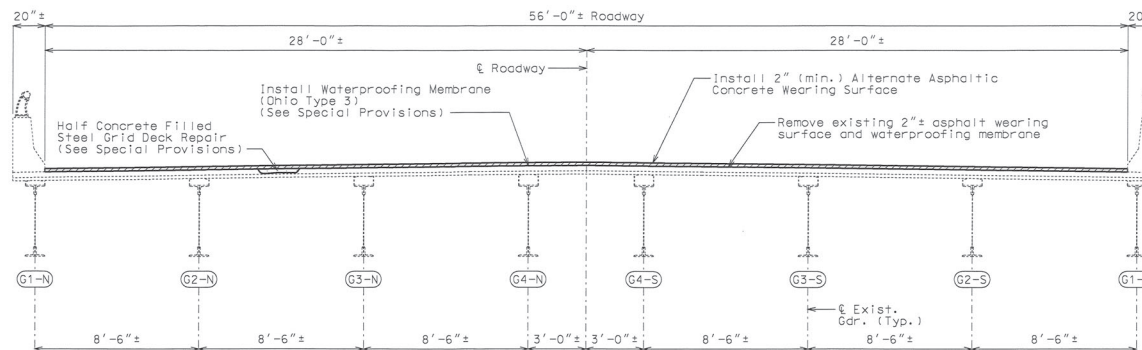
Structural Steel Protective Coatings (New Steel):

All new steel for replacement of connection angles and guide cover straps shall be coated with System G in accordance with Sec 1081.

Prime Coat: The cost of the prime coat for new steel will be considered completely covered by the contract unit price per each for "Remove and Replace Connection Angle" or "Remove and Replace Guide Cover Strap". Tint of the prime coat for System G shall be similar to the color of the field coat to be used.

Field Coats: The color of the field coats for new steel shall be Gray (Federal Standard #26373). The cost of the field coats will be considered completely covered by the contract unit price per each for "Remove and Replace Connection Angle" or "Remove and Replace Guide Cover Strap". At the option of the contractor, the field coats for new steel may be applied in the shop. The contractor shall exercise extreme care during all phases of loading, hauling, handling and erection to minimize damage and shall be fully responsible for all repairs and cleaning of the coating systems as required by the engineer.

U.I.P. AND REHAB EXISTING (85'-67'-128'-67'-25') (88'-88')
(25'-65'-114'-114'-65'-24')(87'-123'-123'-99') CONT. PLATE GIRDER SPANS



SECTION THRU SLAB

Alternate Asphaltic Concrete Wearing Surface	
Type of Wearing Surface with Asphalt Binder Type	Mix Used (✓)
SP125BSM Mix with PG 76-22	
SP125BLP Mix with PG 76-22	

Note:
Payment for removal of the existing waterproofing membrane will be considered completely covered by the contract unit price for Removal of Asphalt Wearing Surface per sq. foot.

MoDOT construction personnel shall complete column labeled "Mix Used (✓)".

The contractor shall select one of the alternate asphaltic concrete wearing surfaces listed in the table. The mixture shall be in accordance with Sec 403 and produced in accordance with Sec 404.

The area of the asphaltic concrete wearing surface will be measured and computed to the nearest square yard. This area will be measured transversely from out to out of overlay and longitudinally from end of slab to end of slab.

Payment for Alternate Asphaltic Concrete Wearing Surface will be considered completely covered by the contract unit price per square yard.

Estimated Quantities

Item		Total
Removal of Asphalt Wearing Surface	sq. foot	73,171
Alternate Asphaltic Concrete Wearing Surface (Bridge)	sq. yard	8,130
Substructure Repair (Formed)	sq. foot	700
Substructure Repair (Unformed)	sq. foot	700
Half Concrete Filled Steel Grid Deck Repairs	sq. foot	900
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
Ohio Type 3 Waterproofing Membrane	sq. yard	8,130
Remove and Replace Connection Angle	each	33
Remove and Replace Guide Cover Strap	each	24
Pin and Hanger Replacement	each	6

Detailed Jan. 2014
Checked Feb. 2014

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

Sheet No. 1 of 4

REPAIRS TO BRIDGE: RTE. I-64 EBL OVER
VANDEVENTER AVE., CLAYTON AVE. & METROLINK

STATE ROAD FROM KINGSHIGHWAY BLVD. TO MISSISSIPPI RIVER
ABOUT 1.3 MILES EAST OF KINGSHIGHWAY BLVD.

STA. 29+85.61± (MATCH EXISTING)



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DATE PREPARED
4/15/2014

ROUTE I-64 STATE MO

DISTRICT BR SHEET NO. 1

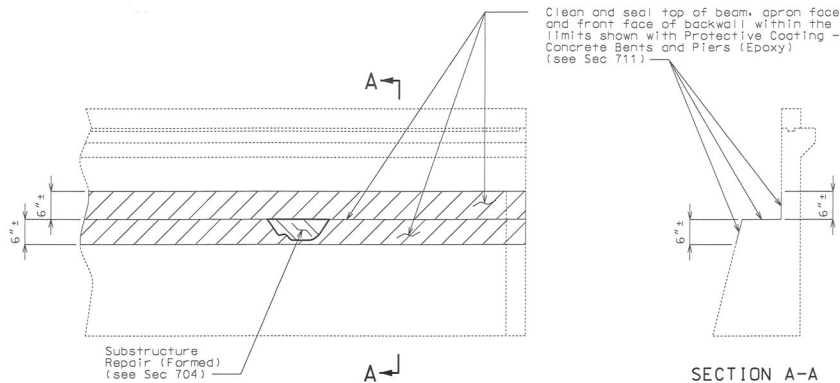
COUNTY ST. LOUIS CITY

JOB NO. J613016

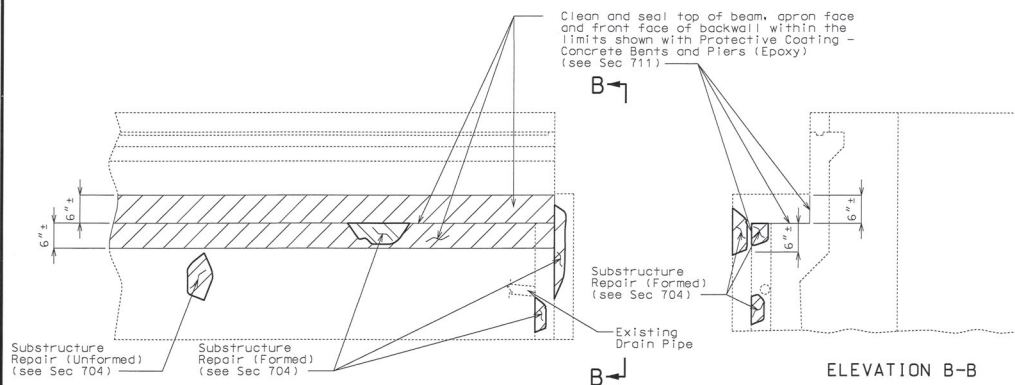
CONTRACT ID.

PROJECT NO.

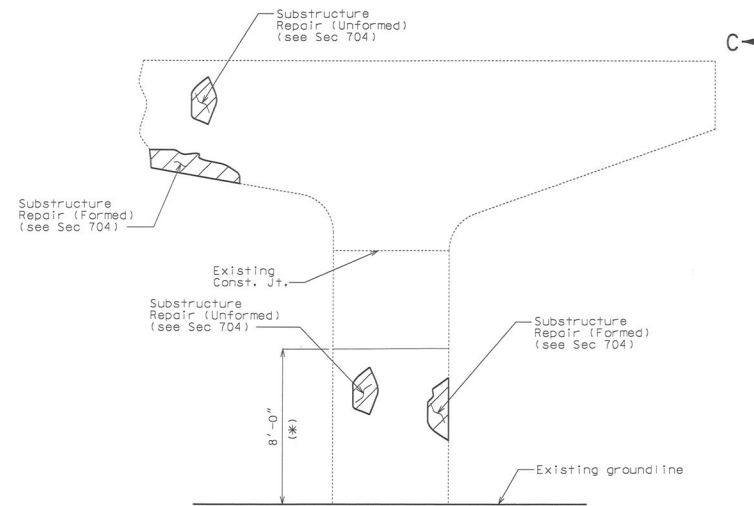
BRIDGE NO. L06674



PART ELEVATION OF ABUTMENT NO. 1

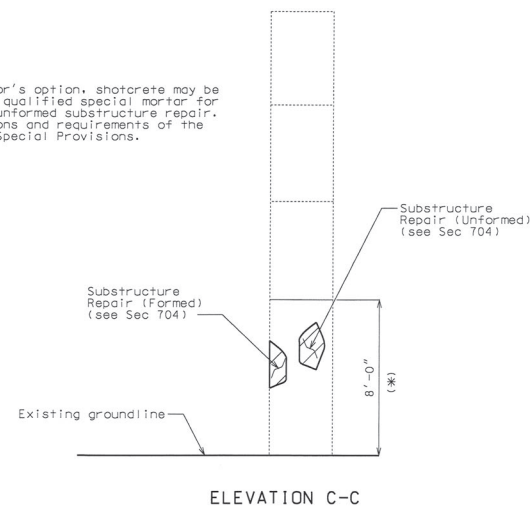


PART ELEVATION OF ABUTMENT NO. 15



PART ELEVATION OF INT. BENTS NO. 2 THRU 14

Note:
At the contractor's option, shotcrete may be used in lieu of qualified special mortar for all formed and unformed substructure repair. For specifications and requirements of the shotcrete, see Special Provisions.



ELEVATION C-C

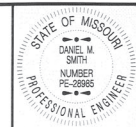
Note:
(*) Apply Sacrificial Graffiti Protection System to areas of substructure repair in bottom 8'-0" of all bents. Payment will be considered completely covered by the contract unit price for other items.

DETAILS OF CONCRETE PROTECTIVE COATING & SUBSTRUCTURE REPAIR

Detailed Jan. 2014
Checked Feb. 2014

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

Sheet No. 2 of 4



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ROUTE 1-64 STATE MO
DISTRICT BR SHEET NO. 2

COUNTY ST. LOUIS CITY

JOB NO. J613016

CONTRACT ID.

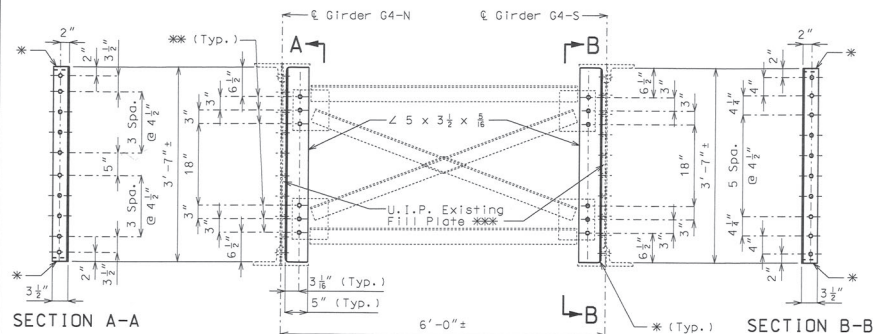
PROJECT NO.

BRIDGE NO. L06674

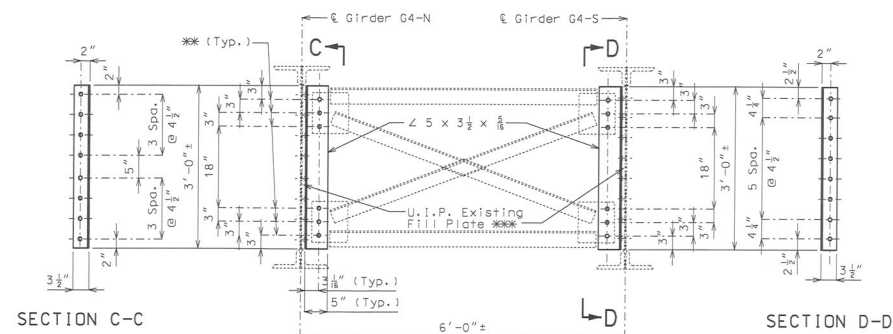
DESCRIPTION	DATE



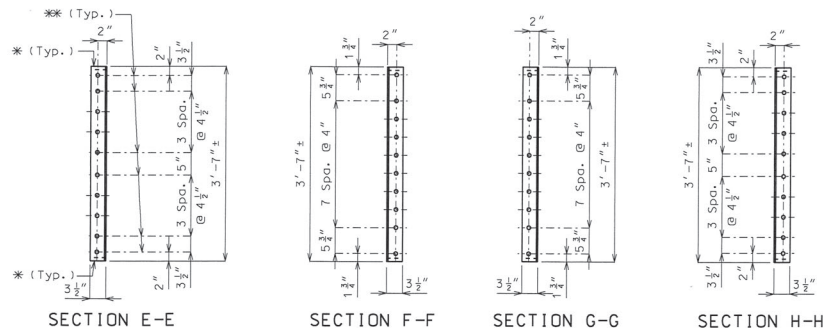
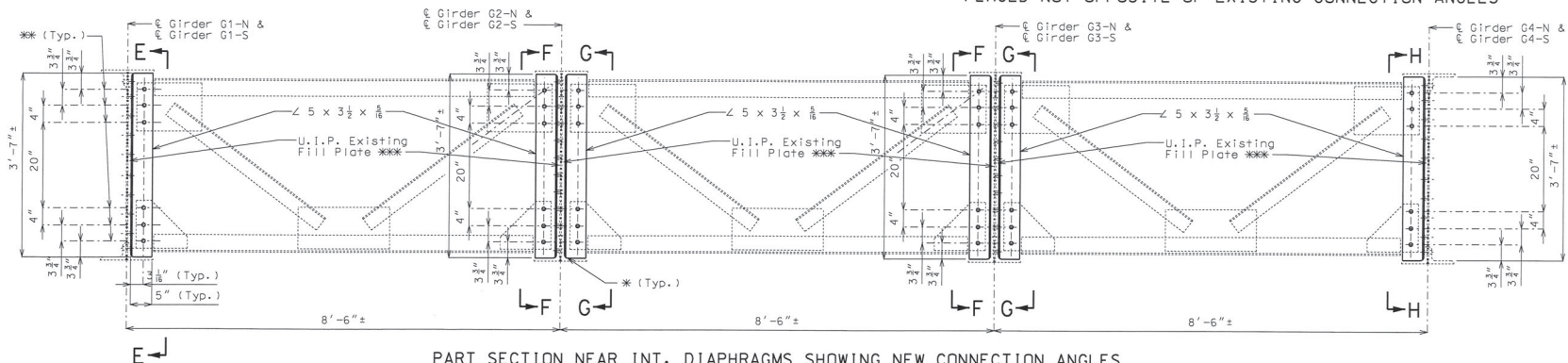
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PART SECTION NEAR INT. DIAPHRAGM BETWEEN GIRDERS G4-N & G4-S
PLACED OPPOSITE OF EXISTING CONNECTION ANGLES



PART SECTION NEAR INT. DIAPHRAGM BETWEEN GIRDERS G4-N & G4-S
PLACED NOT OPPOSITE OF EXISTING CONNECTION ANGLES



DETAILS OF CONNECTION ANGLE REMOVAL AND REPLACEMENT

Notes:

Details shown are for removing and replacing in-kind all cracked connection angles that connect the int. diaphragm to the girder web. The location of specific connection angles needed for removal and replacement will be determined by the engineer.

All new fabricated structural steel for replacement of connection angles shall be ASTM A709 Grade 50.

When removing and replacing connection angle, remove existing high strength bolts or rivets as shown to install new $Z 5 \times 3\frac{1}{2} \times 5/16$.

Field drill $13/16"$ ϕ holes through new $Z 5 \times 3\frac{1}{2} \times 5/16$ to match holes in existing int. diaphragm connection plates and girder web.

Use $3/4"$ ϕ high strength bolts to connect new $Z 5 \times 3\frac{1}{2} \times 5/16$ to existing int. diaphragm connection plates and girder web.

The cost of removing the existing connection angles and fabricating and installing new connection angles, complete in place, will be considered completely covered by the contract unit price for Remove and Replace Connection Angle per each.

The contractor shall field verify all dimensions before ordering new material.

* Grind $3\frac{1}{2}"$ leg of new connection angles at top and bottom to clear $3/4"$ fillet of existing flange angles.

** $13/16"$ ϕ holes for $3/4"$ ϕ high strength bolts (field drill to match location of existing holes in int. diaphragm connection plates and girder web).

*** If any existing $3\frac{1}{2}" \times 3/4"$ fill plate is cracked, it shall be removed and replaced in-kind as directed by the engineer. Field drill $13/16"$ ϕ holes to match existing holes in girder web. Cost will be considered completely covered by the contract unit price for Remove and Replace Connection Angle per each.

Detailed Jan. 2014
Checked Feb. 2014

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

Sheet No. 3 of 4



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4/9/2014

ROUTE I-64 STATE MO

DISTRICT BR SHEET NO. 3

COUNTY ST. LOUIS CITY

JOB NO. J613016

CONTRACT ID.

PROJECT NO.

BRIDGE NO. L06674

DATE	DESCRIPTION

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COMMISSION

105 WEST CAPITAL
JEFFERSON CITY, MO 64501
1-888-ASK-MODOT (1-888-275-6666)

Modot

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

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MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

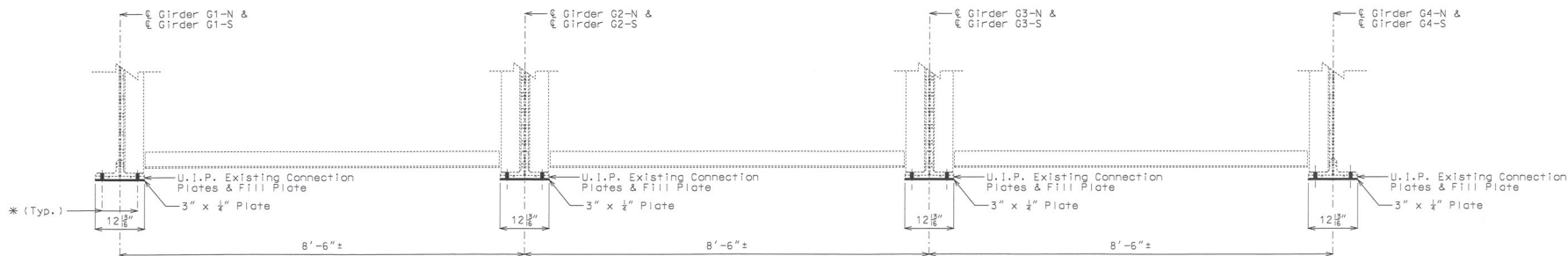
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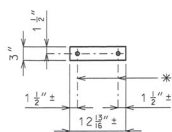
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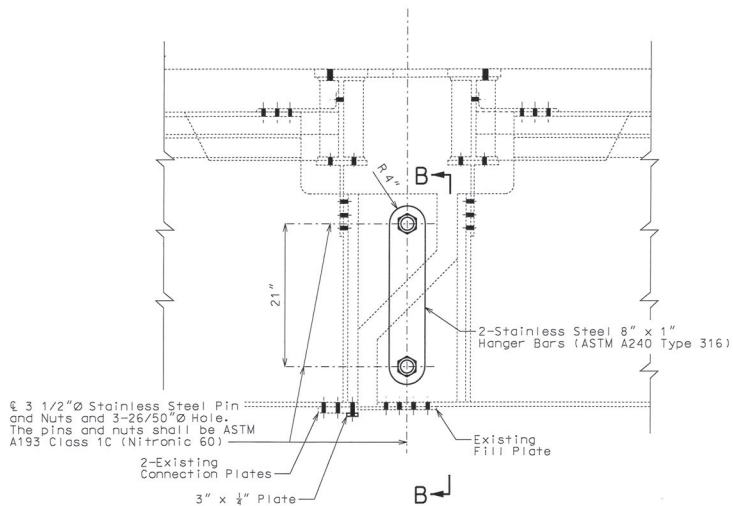
PART SECTION NEAR HINGE CROSS FRAME SHOWING NEW GUIDE COVER STRAPS IN SPANS (5-6), (6-7) & (11-12)



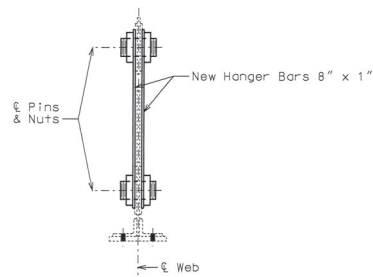
ELEVATION A-A

Notes:

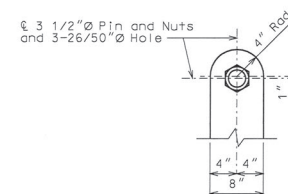
- All new fabricated structural steel for replacement of guide cover straps shall be ASTM A709 Grade 50.
- When removing and replacing guide cover straps, remove existing high strength bolts or rivets as shown to install new 3" x 1/4" plate.
- Use 3/4" high strength bolts to connect new 3" x 1/4" plate to existing connection plates and bottom flange.
- The cost of removing the existing cover straps and fabricating and installing new cover straps, complete in place, will be considered completely covered by the contract unit price for Remove and Replace Guide Cover Strap per each.
- The contractor shall field verify all dimensions before ordering new material.
- * Field drill 13/16" Ø holes through new 3" x 1/4" plate to match holes in existing connection plates and bottom flange.



DETAIL SHOWING NEW PIN AND HANGER ASSEMBLY IN SPANS (5-6), (6-7) & (11-12)
(EXTERIOR GIRDERS ONLY)



SECTION B-B



HANGER BAR DETAIL

DETAILS OF GUIDE COVER STRAP REMOVAL AND REPLACEMENT & NEW PIN AND HANGER ASSEMBLY

Detailed Jan. 2014
Checked Feb. 2014

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

Sheet No. 4 of 4



DATE PREPARED
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ROUTE
I-64
STATE
MO
DISTRICT
BR
SHEET NO.
4
COUNTY
ST. LOUIS CITY
JOB NO.
J613016
CONTRACT ID.
PROJECT NO.
BRIDGE NO.
L06674

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