DISTRICT OFFICES

SL District
Thomas Blair, PE – District Engineer
Missouri Department of Transportation
1590 Woodlake Drive
Chesterfield, MO 63017

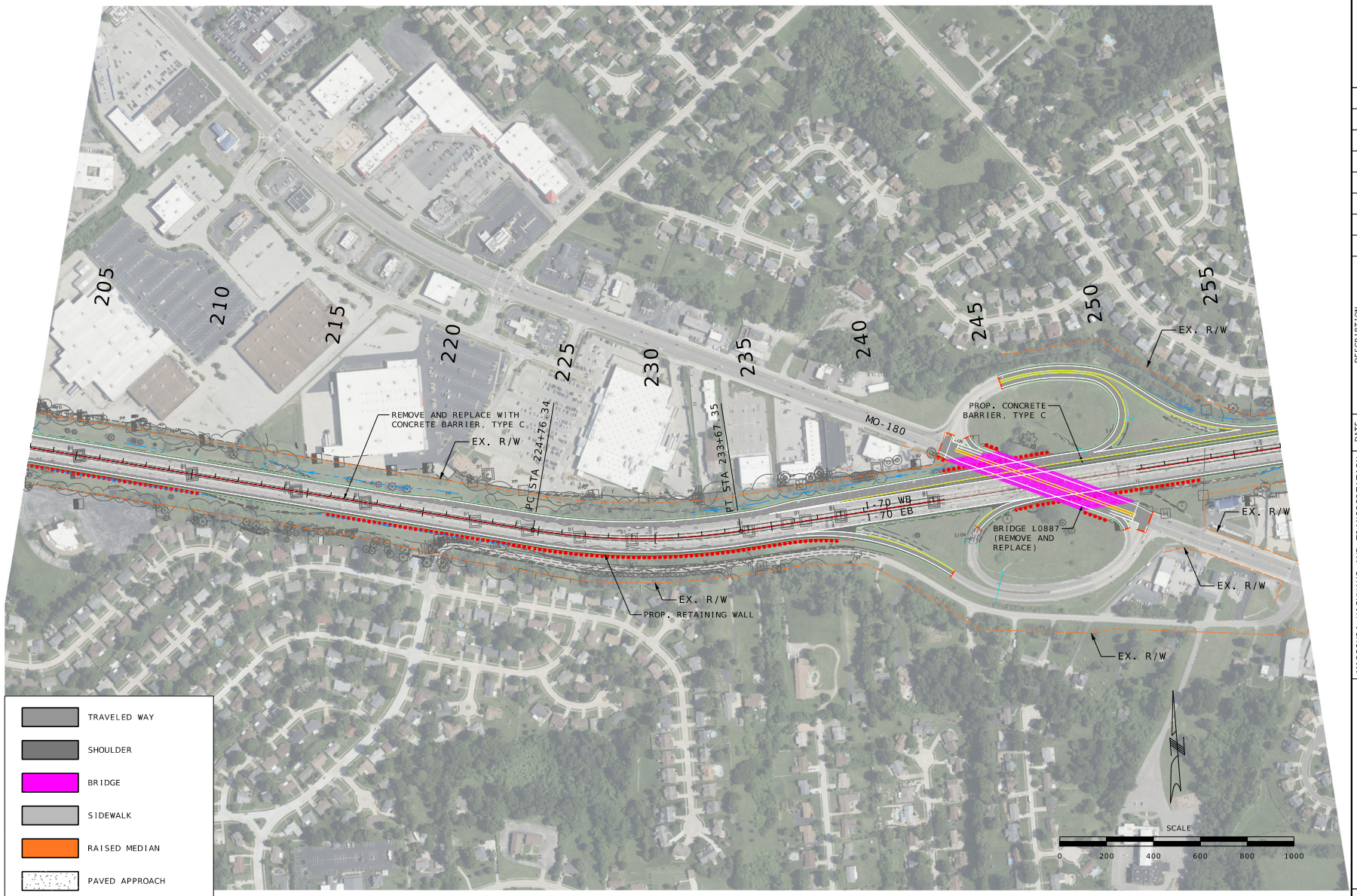
Contact
Dan Savageau, PE – Project Manager
314-453-5089
Daniel.Savageau@modot.mo.gov
Email responses are required.

District SL

St. Louis County, Route 180	
Job No:	J6S3311
Location:	Route 180 at the I-70 interchange
Proposed Improvement:	Replace Route 180 Bridge (L0887) over I-70 and ADA Improvements
Length:	0.1 miles
Approximate Construction Cost:	$20,910K
DBE Goal (if applicable)	0%
Consultant Services Required:	Conceptual report, preliminary and final design services (bridge and roadway), including the final PS&E package for new bridge and improvements on Route 180 over I-70. At minimum, extending the acceleration lanes from the loop ramps to I-70 will be included in the design. Additional improvements to I-70 may be included as part of the final PS&E package as part of a Supplemental. Surveying (boundary and utility) and utility coordination services will be required. Geotechnical services will be required. Anticipated Timeline: Consultant Selected: 03/04/26 Contract Negotiated by 06/12/26 Final PS&E due: March 2028 Letting: June 2028
Other Comments:	No interviews/presentations will be required for selection. Please see the following link to MoDOT's I-70 Corridor Study: https://www.modot.org/projects/i-70-stl-conceptual-study Attachments Included within Solicitation: -Existing Bridge Plans L0887 -Conceptual Plan from I-70 Study -As-builts related to Utilities (MOAW & MSD)

Rating Criteria w/Weighted Values

Project Understanding & Innovation	25 Points Max
Past Performance	25 Points Max
Qualifications of Personnel Assigned	20 Points Max
General Experience of Firm	10 Points Max
Familiarity/Capability	10 Points Max
Accessibility of Firm & Staff	10 Points Max
	100 Points Max Total



"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
12/10/2025

ROUTE: I-70 | STATE: MO
DISTRICT: SL | SHEET NO.
COUNTY: ST LOUIS
JOB NO.: J613660
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DESCRIPTION | DATE

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

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
TELEPHONE (816) 472-1201
CERTIFICATE OF AUTHORITY NO. 001270

CONCEPTUAL STUDY

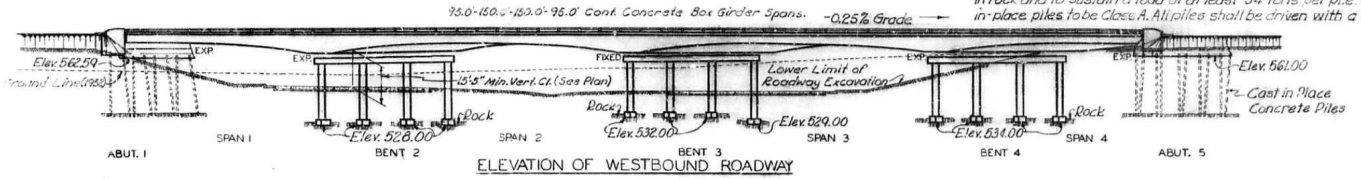
008_PN_05_J613660_I200_Segment1.dgn 4:05:08 PM 12/10/2025

FED. ROAD INV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	Mo.	I-270(13) 246.40			

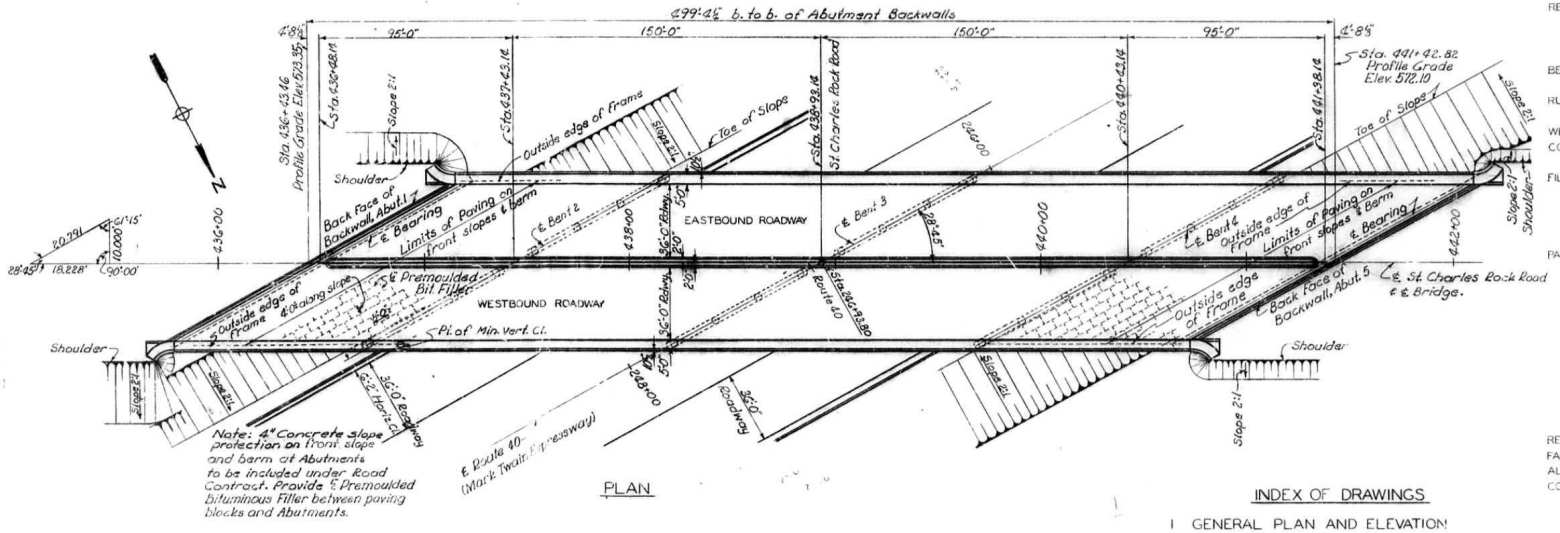
Note: The embankment adjacent to and not less than 25'-0" back of Abutment 1 (full roadway width) shall be placed and compacted up to the elevation of the bottom of the concrete for the abutment prior to placing the cast-in-place concrete piles.

Note: All loose, shelly or disintegrated rock shall be removed and the footings placed at least 6" into sound rock and cast against vertical faces of same. 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 piling shall be cast-in-place concrete piles in accordance with Special Provisions for concrete piles. Estimated quantities shown on plans are based on the following length: 30 @ 35'-0". This indicated length is approximate only. Proper length to give required bearing and penetration is to be determined by the Contractor. All piling shall be driven to refusal in rock and to sustain a load of at least 54 tons per pile. Concrete for cast-in-place piles to be Class A. All piles shall be driven with a steam hammer.

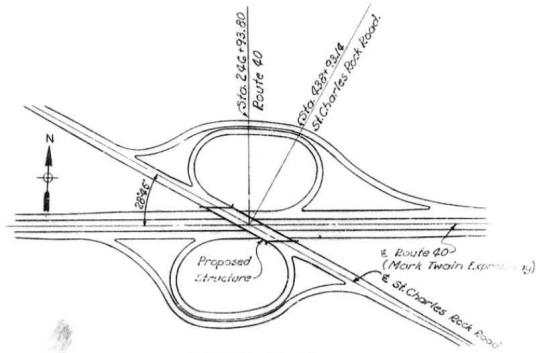


ELEVATION OF WESTBOUND ROADWAY



Note: 4" Concrete slope protection on front slope and berm of Abutments to be included under Road Contract. Provide ½" Premoulded Bituminous Filler between paving blocks and Abutments.

PLAN



LOCATION PLAN

ESTIMATED QUANTITIES				
Item		Substr.	Superstr.	Total
Class 1 Excavation for Structures	Cu.Yd.	4,960	—	4,960
Class 'B' Concrete	Cu.Yd.	4,325.7	—	4,325.7
Class 'B1' Concrete	Cu.Yd.	—	3,312.0	3,312.0
Reinforcing Steel	Lbs.	157,350	4,177,370	4,334,720
Fabricated Structural Steel	Lbs.	—	79,365	79,365
Concrete Piles in Place	Lin.Ft.	2,800	—	2,800
Aluminum Alloy Handrail	Lin.Ft.	—	993	993

Note: All Excavation for Bridge will be paid for as Class 1 Excavation for Structures.
Estimated quantities of Class 1 Excavation for Structures includes only amount of excavation below limits of Roadway Excavation. (See Special Provisions.)

INDEX OF DRAWINGS

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 FOR CONCRETE:
Concrete in Flexure ---------- 1,200 lbs. per sq. in.
Reinforcing Steel ---------- 20,000 lbs. per sq. in.

ROADWAY WEARING SURFACE: The roadway slab as detailed includes a ½" wearing surface poured monolithically with slab.

FOUNDATION ROCK PRESSURES: Maximum computed load is 12 tons per square foot.

CURING OF CONCRETE: See Special Provisions.

REMOVAL OF FORMS: See Special Provisions.

REINFORCEMENT: All dimensions to reinforcing steel on detail drawings are to ℄ of bar except where the clear distance is noted from the face of concrete. All reinforcing steel shall be lapped a minimum of 32 diameters unless otherwise shown or noted.

BEVELED EDGES: All exposed edges of concrete shall be beveled ¾" unless otherwise shown or noted.

RUBBED FINISH: A rubbed finish will be required on all exposed surfaces of concrete end posts.

WELDING: Qualification of welding operators will be required.

CONSTRUCTION JOINTS: Construction joints shall be made only where shown on the plans. See Special Provisions.

FILLED JOINTS: Where filled joints are specified on the plans, the joint filler shall conform to 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 bid for concrete.

PAINT: Access Doors and Frames: See Special Provisions.
Bearings: Shop, one coat of red lead. Field, First coat of brown, second coat of aluminum.
All other structural steel, except in pile shells: Shop, none. Field, surfaces inaccessible after erection two coats of red lead. All other exposed surfaces, one coat of brown and one coat of aluminum.
Steel Shells for cast-in-place piles shall be painted as specified for steel piles in Section 22-9C of the Standard Specifications.
Contractor to furnish required paint. Payment for paint, cleaning and painting specified surfaces to be included in unit price bid for items painted.

REMOVAL OF FALSEWORK: See Special Provisions.

FABREEKA PADS: See Special Provisions.

ALUMINUM ALLOY HANDRAIL: See Special Provisions.

CONCRETE: Concrete for superstructure shall be Class 'B-1', air entrained. See Special Provisions.
Concrete for substructure shall be Class 'B', air entrained. If the Contractor desires, he may use Class 'B-1' in lieu of Class 'B' for concrete in substructure with payment on the basis of Class 'B' concrete.

WATERPROOFING DECK: Superstructure deck to be waterproofed. See Special Provisions.

BENCH MARKS (U.S.G.S. Datum)
B.M.# 21- 36" Elm across St. Charles Rock Rd. from Orchard Inn. 140' Lt. of Sta. 243+20. Elev. 568.38
B.M.# 22- Maple 200' North of Willows, 100' Rt. of Sta. 254+50. Elev. 566.71

Note: Do not scale this drawing. Follow dimensions.

MISSOURI STATE HIGHWAY DEPARTMENT

ST. CHARLES ROCK ROAD UNDERPASS

STATE ROAD-MARK TWAIN EXPRESSWAY
ABOUT 3 MILES S.W. OF ROBERTSON
PROJECT NO. I-891(13) (RT. 40) STA. 246 + 93.8

ST. LOUIS COUNTY

GENERAL PLAN AND ELEVATION

SUBMITTED BY: J. A. Wilkerson DATE 8-9-1956 BRIDGE ENGINEER
APPROVED BY: Rud. M. Preston DATE 8-9-1956 CHIEF ENGINEER

SVERDRUP AND PARCEL, INC.
ENGINEERS - ARCHITECTS
ST. LOUIS, MO.

SUBMITTED BY:
REGISTERED PROFESSIONAL ENGINEER
MISSOURI NO. E-919

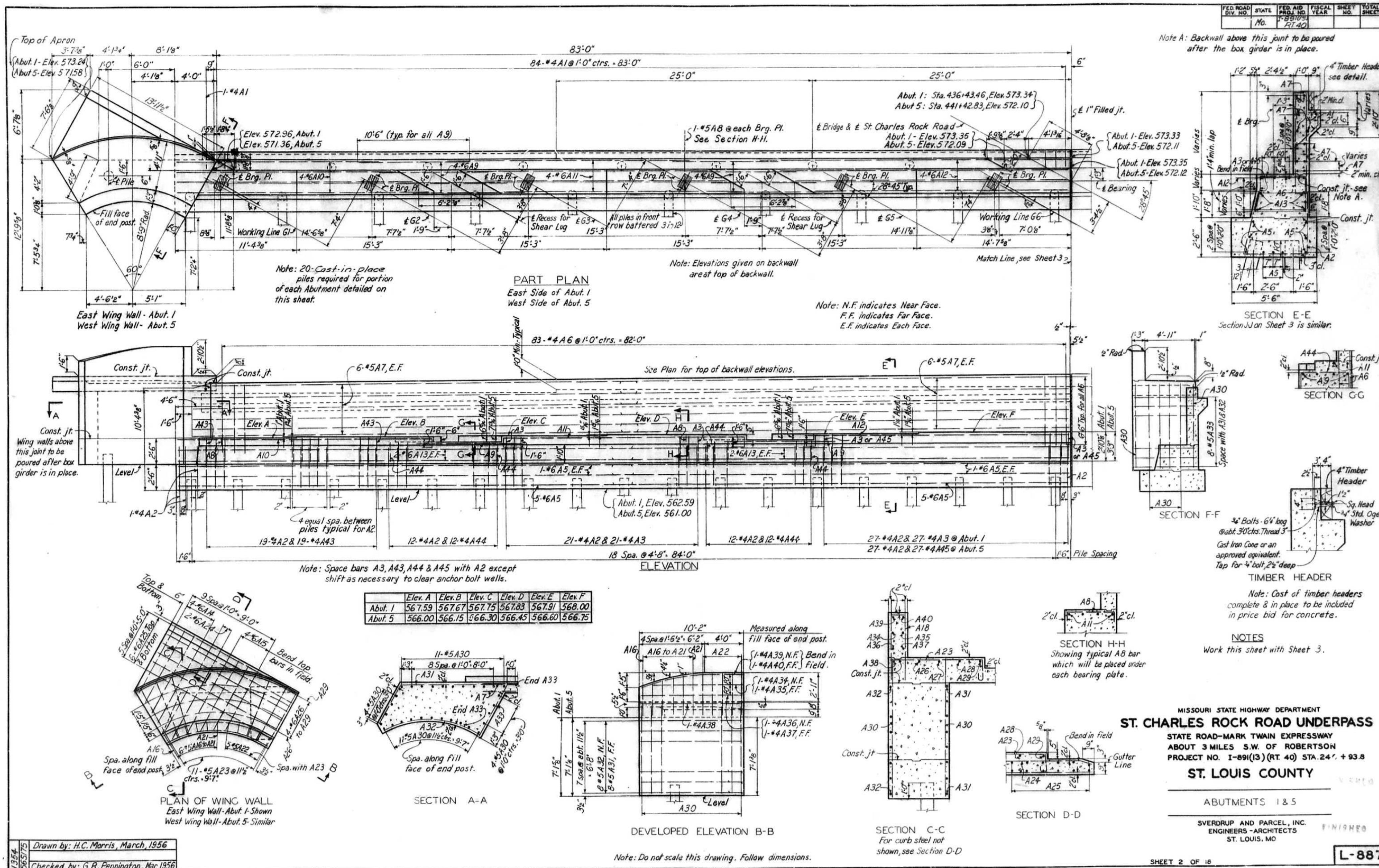
SHEET 1 OF 16

STD. C110 R1

L-887

Drawn by: L. H. Glaser, Jan. 1956
Checked by: R.F. Beck, Apr. 1956

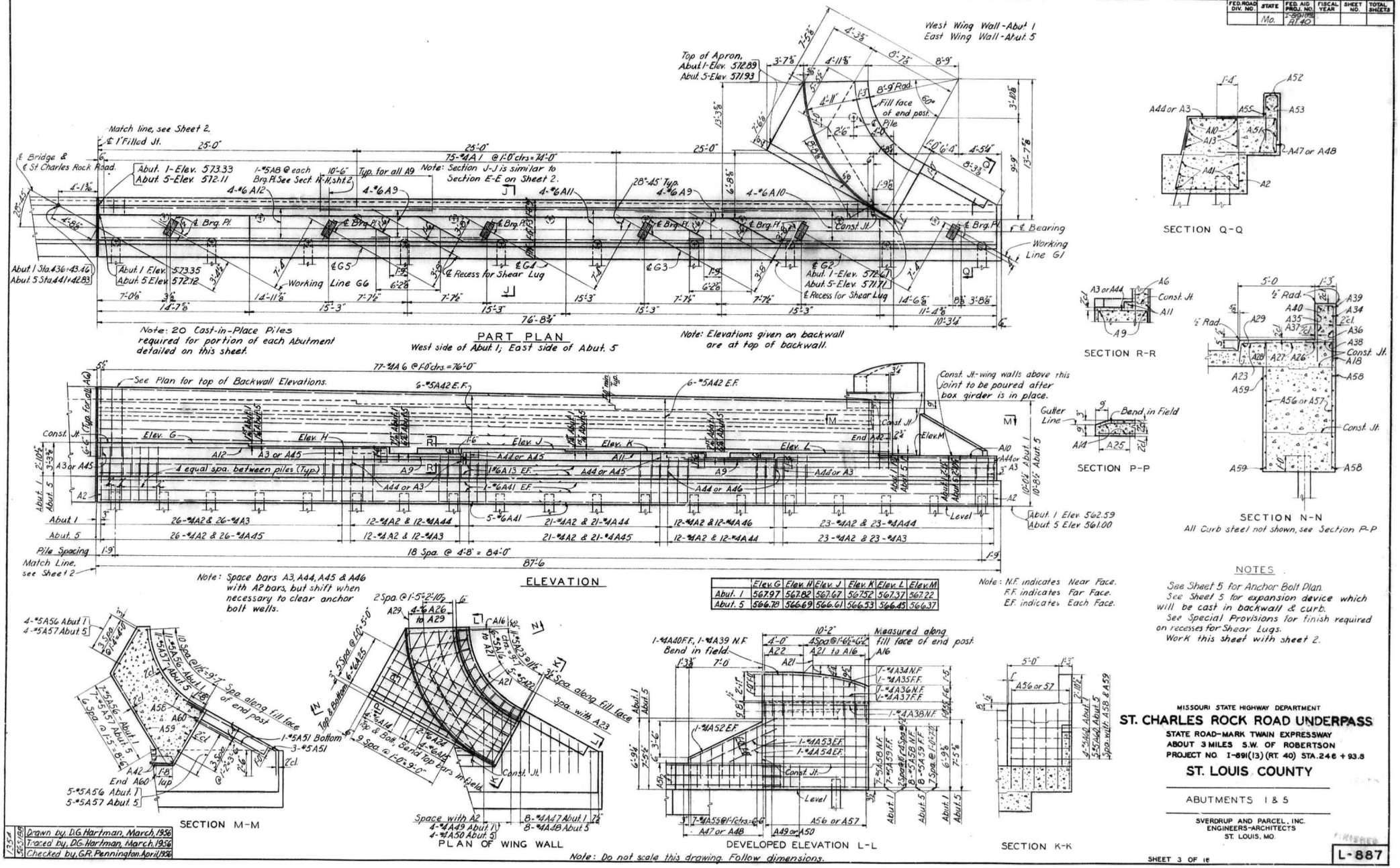
SEE FINAL PLANS BROWN LINES



PART PLAN
East Side of Abut. 1
West Side of Abut. 5
East Wing Wall - Abut. 1
West Wing Wall - Abut. 5
Note: 20-Cast-in-place piles required for portion of each Abutment detailed on this sheet.
Note: Elevations given on backwall are at top of backwall.
Note: N.F. indicates Near Face. F.F. indicates Far Face. E.F. indicates Each Face.
Abut. 1: Sta. 436+43.46, Elev. 573.34
Abut. 5: Sta. 441+42.83, Elev. 572.10
℄ Bridge & ℄ St. Charles Rock Road
Match Line, see Sheet 3
ELEVATION
See Plan for top of backwall elevations.
Note: Space bars A3, A43, A44 & A45 with A2 except shift as necessary to clear anchor bolt wells.
Const. jt. Wing walls above this joint to be poured after box girder is in place.
SECTION E-E
Section J-J on Sheet 3 is similar.
Note A: Backwall above this joint to be poured after the box girder is in place.
SECTION G-G
SECTION F-F
TIMBER HEADER
Note: Cost of timber headers complete & in place to be included in price bid for concrete.
NOTES
Work this sheet with Sheet 3.
PLAN OF WING WALL
East Wing Wall - Abut. 1 Shown
West Wing Wall - Abut. 5 Similar
SECTION A-A
DEVELOPED ELEVATION B-B
SECTION C-C
For curb steel not shown, see Section D-D
SECTION H-H
Showing typical A8 bar which will be placed under each bearing plate.
SECTION D-D
Note: Do not scale this drawing. Follow dimensions.
MISSOURI STATE HIGHWAY DEPARTMENT
ST. CHARLES ROCK ROAD UNDERPASS
STATE ROAD-MARK TWAIN EXPRESSWAY
ABOUT 3 MILES S.W. OF ROBERTSON
PROJECT NO. I-891(13) (RT. 40) STA. 24+93.8
ST. LOUIS COUNTY
ABUTMENTS 1 & 5
SVERDRUP AND PARCEL, INC.
ENGINEERS - ARCHITECTS
ST. LOUIS, MO
SHEET 2 OF 16
L-887
Drawn by: H.C. Morris, March, 1956
Checked by: G.R. Pennington, Mar. 1956
SEE FINAL PLANS BROWN-LINES

	Elev. A	Elev. B	Elev. C	Elev. D	Elev. E	Elev. F
Abut. 1	567.59	567.67	567.75	567.83	567.91	568.00
Abut. 5	566.00	566.15	566.30	566.45	566.60	566.75

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	Mo.	I-391(13) Rt. 40			



	Elev. G	Elev. H	Elev. J	Elev. K	Elev. L	Elev. M
Abut. 1	567.97	567.82	567.67	567.52	567.37	567.22
Abut. 5	566.78	566.69	566.61	566.53	566.45	566.37

NOTES

See Sheet 5 for Anchor Bolt Plan.
See Sheet 5 for expansion device which will be cast in backwall & curb.
See Special Provisions for finish required on recesses for Shear Lugs.
Work this sheet with sheet 2.

MISSOURI STATE HIGHWAY DEPARTMENT

ST. CHARLES ROCK ROAD UNDERPASS

STATE ROAD-MARK TWAIN EXPRESSWAY
ABOUT 3 MILES S.W. OF ROBERTSON
PROJECT NO. I-891(13) (RT. 40) STA. 246 + 93.8

ST. LOUIS COUNTY

ABUTMENTS 1 & 5

SVERDRUP AND PARCEL, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

Drawn by D.G. Hartman, March, 1956
Traced by D.G. Hartman, March, 1956
Checked by G.R. Pennington, April, 1956

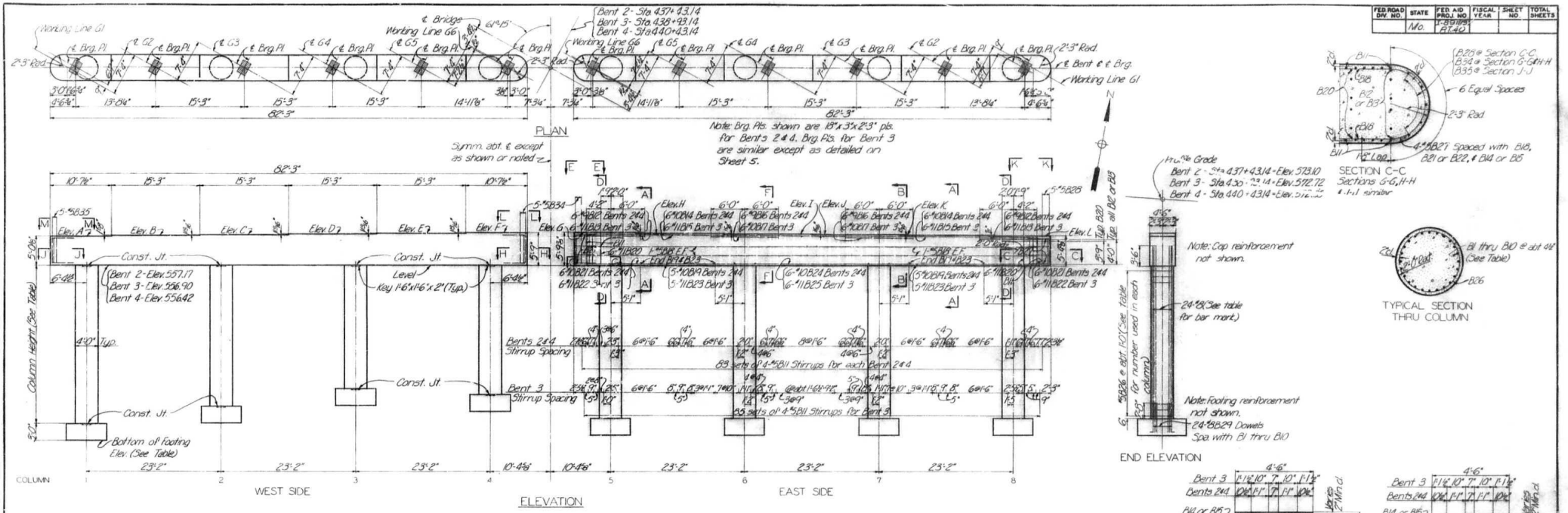
Note: Do not scale this drawing. Follow dimensions.

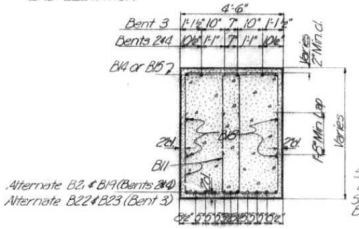
SHEET 3 OF 16

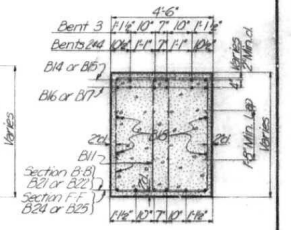
L-887

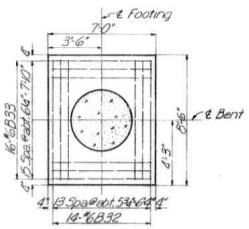
SEE FINAL PLANS BROWN-LINES

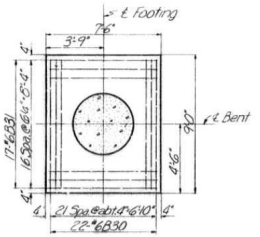
FED ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	Mo.	I-891(13) RT.40			











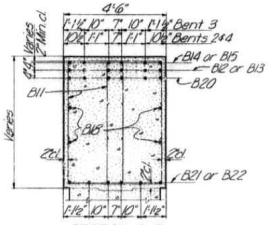
Note: Column reinforcement and dowels not shown.

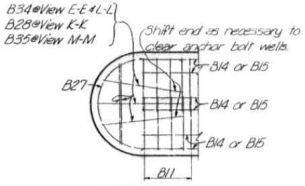
TABLE OF ELEVATION

Elev.	Bent 2	Bent 3	Bent 4
A	562.16	561.91	561.43
B	562.32	562.05	561.57
C	562.47	562.20	561.72
D	562.62	562.35	561.87
E	562.77	562.50	562.02
F	562.92	562.65	562.17
G	562.95	562.68	562.20
H	562.86	562.59	562.11
I	562.78	562.51	562.03
J	562.70	562.43	561.95
K	562.62	562.35	561.87
L	562.55	562.28	561.80

TABLE OF COLUMN DIMENSIONS AND REINFORCEMENT

Bent	Column No.	Bottom F'tg. Elev.	Column Height	Vert. Rein. Bar Mark	No. Ties
2	1	527.00	27'-2"	B1	27
	2	530.00	24'-2"	B2	24
	3	533.00	21'-2"	B3	21
	4	532.00	22'-2"	B4	22
	5,6,7 & 8	528.00	26'-2"	B5	26
3	1,2,3 & 4	533.50	20'-4⅝"	B6	20
	5	529.00	24'-10⅝"	B7	25
	6,7 & 8	532.00	21'-10⅝"	B8	22
4	1,4,5,6,7 & 8	534.00	19'-5"	B9	19
	2 & 3	529.00	24'-5"	B10	24





NOTES

See Sheet 5 for Anchor Bolt Plan.

MISSOURI STATE HIGHWAY DEPARTMENT

ST. CHARLES ROCK ROAD UNDERPASS

STATE ROAD-MARK TWAIN EXPRESSWAY
ABOUT 3 MILES S.W. OF ROBERTSON
PROJECT NO. I-891(13) (RT. 40) STA. 246 + 93.8

ST. LOUIS COUNTY

BENTS 2, 3 & 4

SVERDRUP AND PARCEL, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

Drawn by: H.T. Sanders, Feb. 1956
Checked by: G.P. Pennington, Apr. 1956

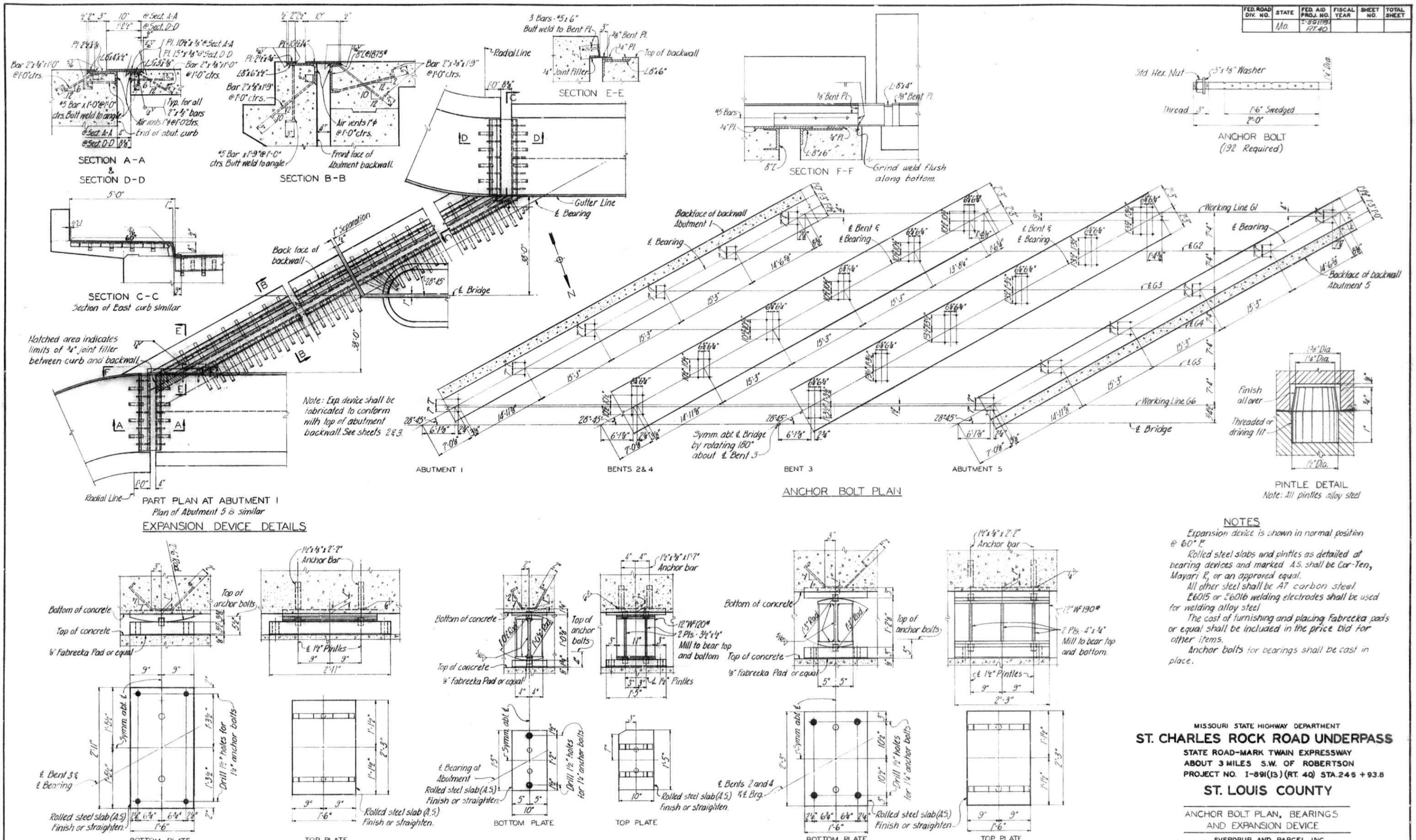
Note: Do not scale this drawing, follow dimensions.

SHEET 4 OF 16

L-887

SEE FINAL PLANS BROWN LINES

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEET
	Mo.	I-891(13) RT.40			



NOTES

Expansion device is shown in normal position @ 60° F.

Rolled steel slabs and pintles as detailed at bearing devices and marked A.S. shall be Cor-Ten, Mayari R, or an approved equal.

All other steel shall be A7 carbon steel. E6015 or E6016 welding electrodes shall be used for welding alloy steel.

The cost of furnishing and placing Fabreeka pads or equal shall be included in the price bid for other items.

Anchor bolts for bearings shall be cast in place.

Note: Do not scale this drawing. Follow dimensions.

MISSOURI STATE HIGHWAY DEPARTMENT

ST. CHARLES ROCK ROAD UNDERPASS

STATE ROAD–MARK TWAIN EXPRESSWAY
ABOUT 3 MILES S.W. OF ROBERTSON
PROJECT NO. I-891(13) (RT. 40) STA. 246 + 93.8

ST. LOUIS COUNTY

ANCHOR BOLT PLAN, BEARINGS AND EXPANSION DEVICE

SVERDRUP AND PARCEL, INC.
ENGINEERS–ARCHITECTS
ST. LOUIS, MO.

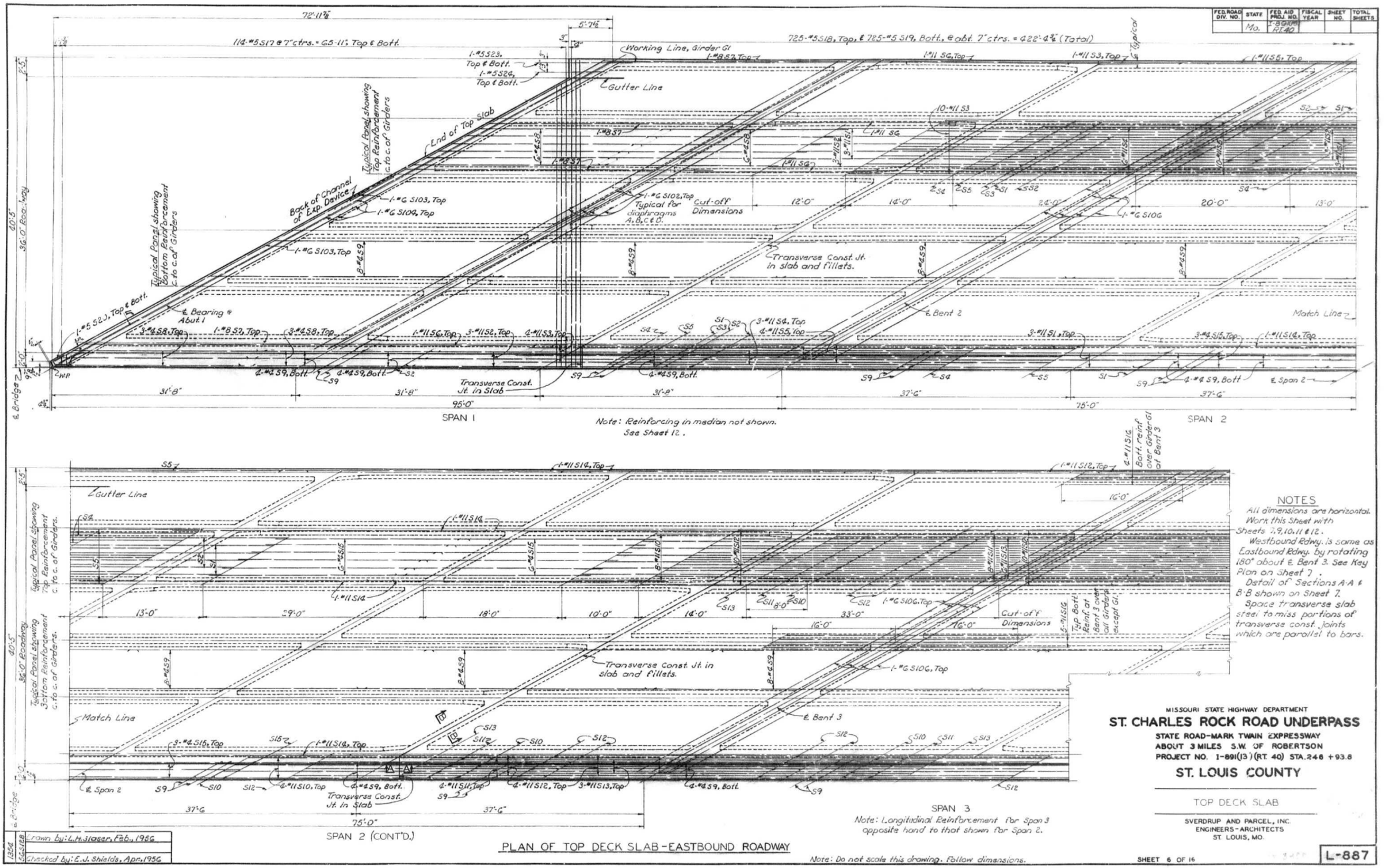
Drawn by: R.E. Skubiz, March 1956
Checked by: G.R. Pennington, Mar. 1956

1934
565156

SHEET 5 OF 16

L-887

NO CONSTRUCTION CHANGES



NOTES

All dimensions are horizontal. Work this Sheet with Sheets 7, 9, 10, 11 & 12.

Westbound Rdwy. is same as Eastbound Rdwy. by rotating 180° about ℄ Bent 3. See Key Plan on Sheet 7.

Detail of Sections A-A & B-B shown on Sheet 7.

Space transverse slab steel to miss portions of transverse const. joints which are parallel to bars.

MISSOURI STATE HIGHWAY DEPARTMENT

ST. CHARLES ROCK ROAD UNDERPASS

STATE ROAD-MARK TWAIN EXPRESSWAY
ABOUT 3 MILES S.W. OF ROBERTSON
PROJECT NO. I-891(13)(RT. 40) STA. 246 + 93.8

ST. LOUIS COUNTY

TOP DECK SLAB

SVERDRUP AND PARCEL, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	Mo.	I-BRMS (13) 40			

Drawn by: L.H. Glaser, Feb., 1956
Checked by: E.J. Shields, Apr., 1956

PLAN OF TOP DECK SLAB - EASTBOUND ROADWAY

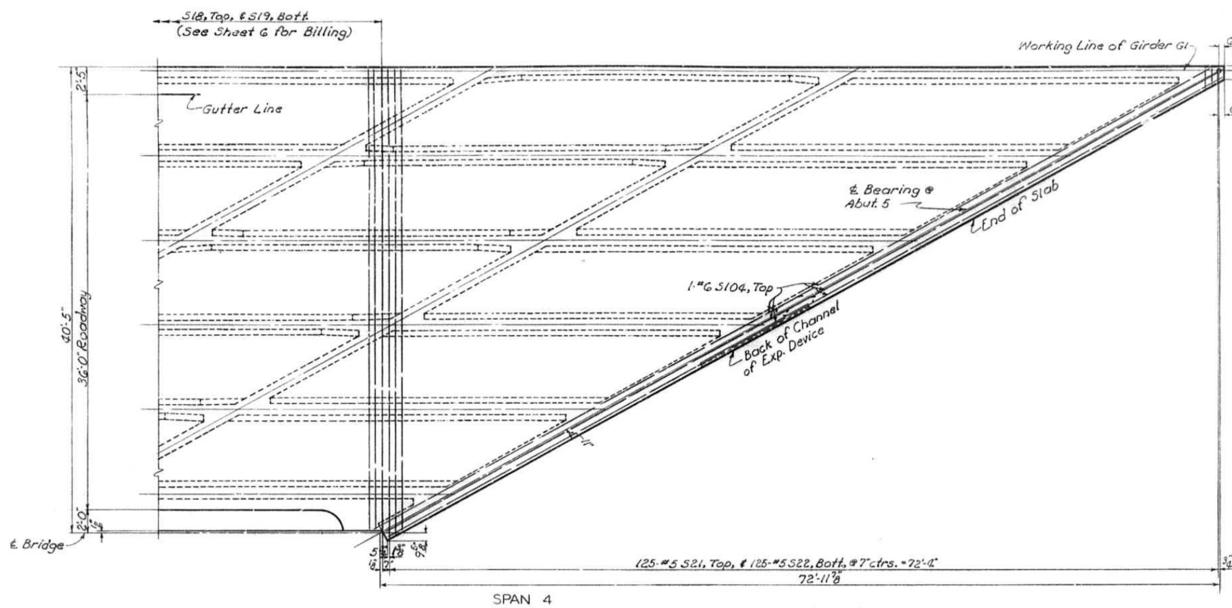
Note: Do not scale this drawing. Follow dimensions.

SHEET 6 OF 16

L-887

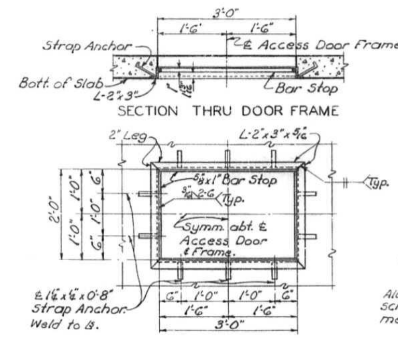
NO CONSTRUCTION CHANGES

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	Mo.	I-891(13) RT.40			



Note: Longitudinal reinforcement for Span 4 opposite hand to that shown for Span 1.

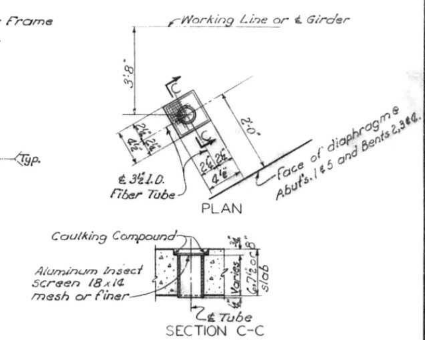
PLAN OF TOP DECK SLAB-EASTBOUND ROADWAY



ACCESS DOOR & FRAME

(16 Required)

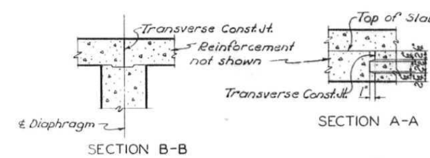
Note: Provide hollow flush-type 16 ga. metal door with lock and one pair of hinges with concealed mounting. See Special Provisions.
Payment for furnishing and installing access doors and frames shall be included in price bid for other items of work.



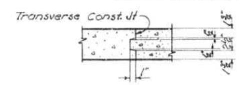
AIR INLET

(80 Required)

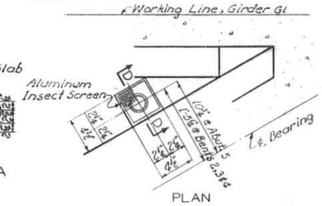
Note: Payment for furnishing and placing fiber tube, aluminum screen and caulking compound shall be included in price bid for other items of work.



TOP SLAB CONST. JOINT



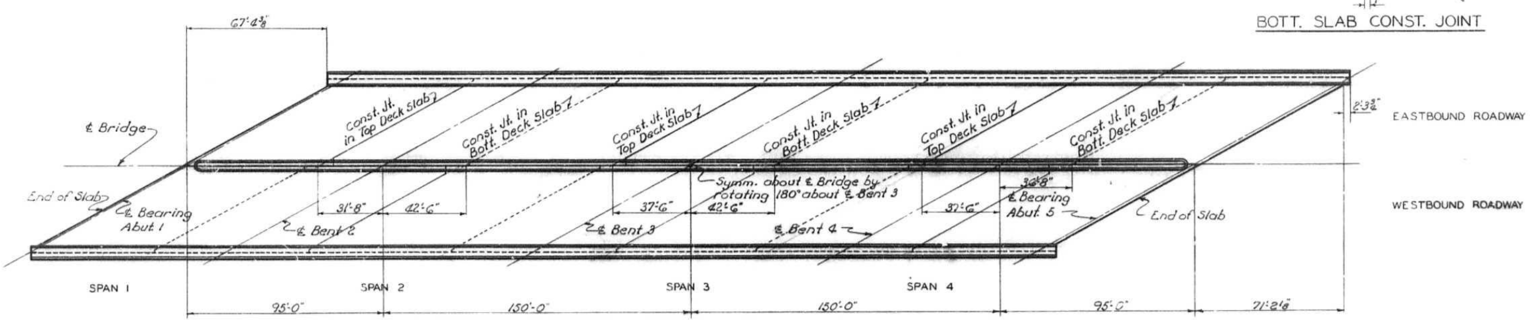
BOTT. SLAB CONST. JOINT



DECK CELL DRAINS

(14 Required)

Note: Payment for furnishing and placing deck cell drains shall be included in price bid for other items of work.



KEY PLAN

Note: For location of construction joints in girders, see Sheets 8 & 10.

POURING SEQUENCE: All concrete in each half of the bridge superstructure shall be poured, beginning at one end of the bridge and progressing in one direction to the other end. Following the pouring of the bottom slab sections, subsequent pours are dependent upon the prescribed curing intervals in the Standard Specifications. The entire bottom slab need not be poured before starting other pours.

Note: Do not scale this drawing. Follow dimensions.

NOTES

Work this Sheet with Sheets 6, 9, 10, 11 & 12.

MISSOURI STATE HIGHWAY DEPARTMENT

ST. CHARLES ROCK ROAD UNDERPASS

STATE ROAD-MARK TWAIN EXPRESSWAY
ABOUT 3 MILES S.W. OF ROBERTSON
PROJECT NO. I-891(13) (RT. 40) STA. 246 + 93.8

ST. LOUIS COUNTY

TOP DECK SLAB
AND MISC. DETAILS

SVERDRUP AND PARCEL, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

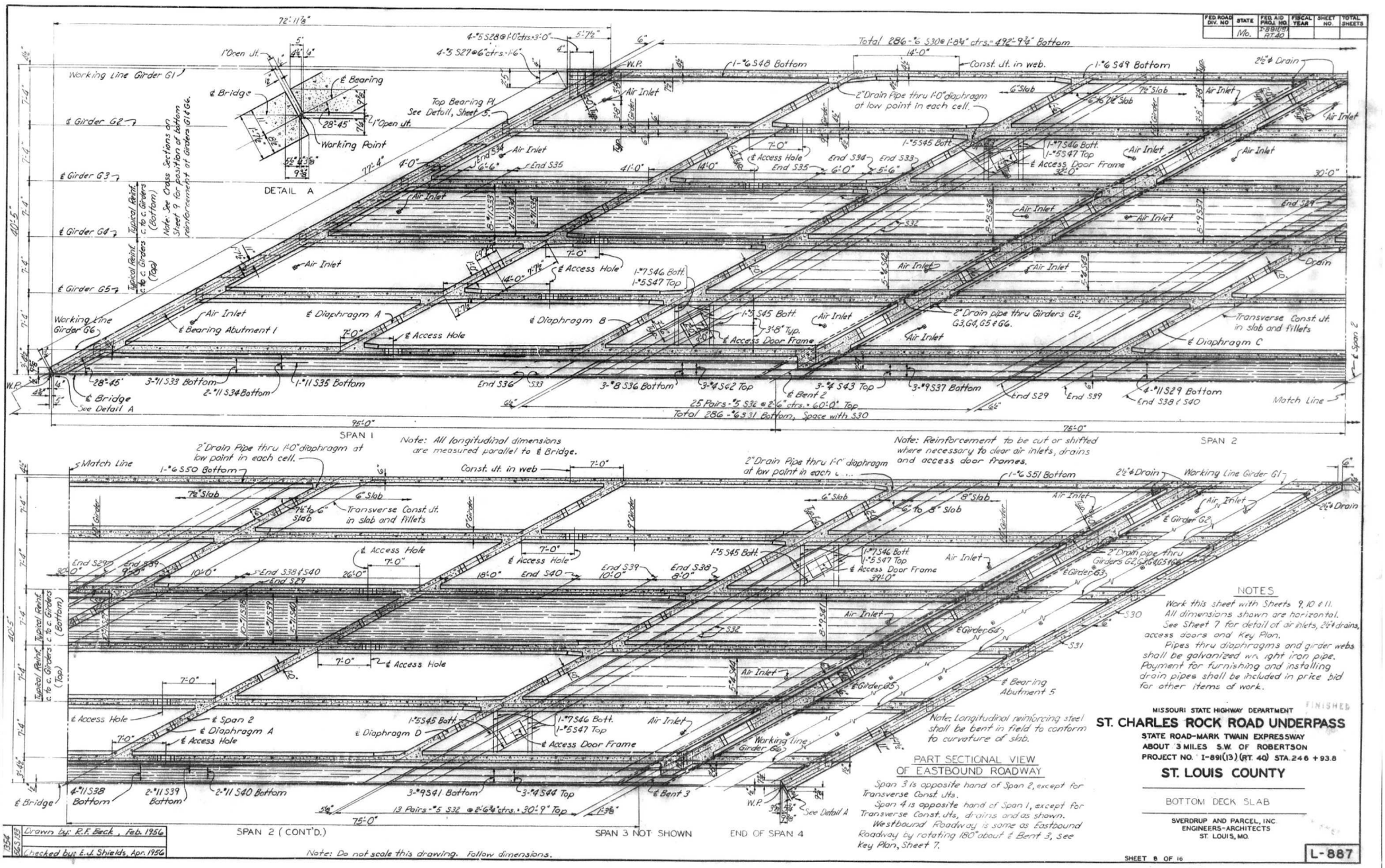
Drawn by: L.H. Glaser, Mar., 1956
Checked by: E.J. Shields, Apr., 1956

1354 | 55540

SHEET 7 OF 16

L-887

NO CONSTRUCTION CHANGES



FED. ROAD DIV. NO	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	Mo.	I-391(13) PT.40			

PART SECTIONAL VIEW OF EASTBOUND ROADWAY

Span 3 is opposite hand of Span 2, except for Transverse Const. Jts.

Span 4 is opposite hand of Span 1, except for Transverse Const. Jts., drains and as shown.

Westbound Roadway is same as Eastbound Roadway by rotating 180° about ℄ Bent 3, see key Plan, Sheet 7.

NOTES

Work this sheet with Sheets 9, 10 & 11.

All dimensions shown are horizontal.

See Sheet 7 for detail of air inlets, 2½" ϕ drains, access doors and Key Plan.

Pipes thru diaphragms and girder webs shall be galvanized wr. ight iron pipe. Payment for furnishing and installing drain pipes shall be included in price bid for other items of work.

MISSOURI STATE HIGHWAY DEPARTMENT

FINISHED

ST. CHARLES ROCK ROAD UNDERPASS

STATE ROAD-MARK TWAIN EXPRESSWAY
ABOUT 3 MILES S.W. OF ROBERTSON
PROJECT NO. I-891(13) (RT. 40) STA. 246 + 93.8

ST. LOUIS COUNTY

BOTTOM DECK SLAB

SVERDRUP AND PARCEL, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

Drawn by: R.F. Beck, Feb. 1956
Checked by: E.J. Shields, Apr. 1956

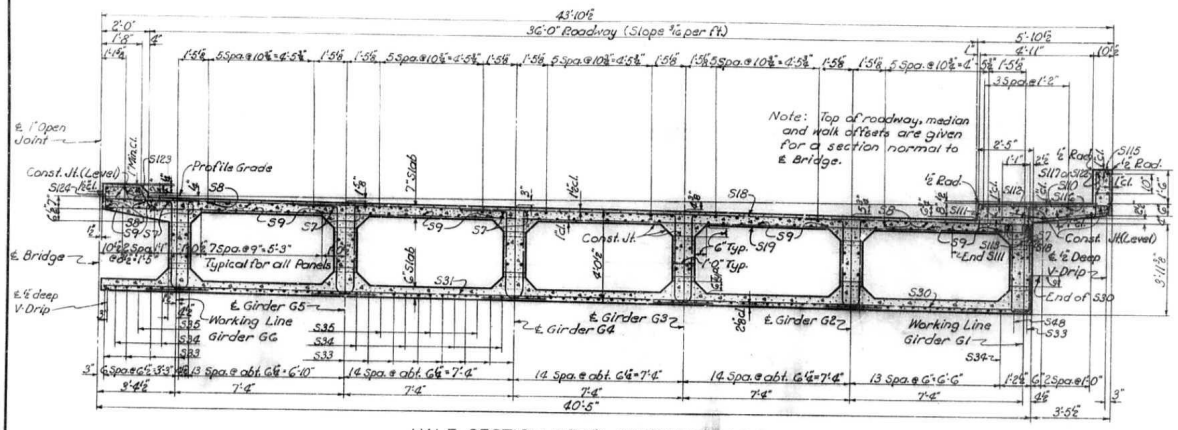
Note: Do not scale this drawing. Follow dimensions.

SHEET 8 OF 16

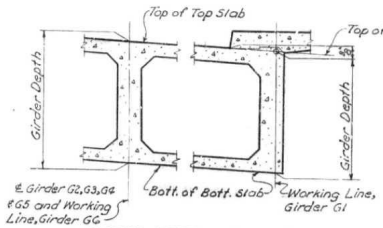
L-887

NO CONSTRUCTION CHANGES

FED.ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	Mo.	I-891(13) RT. 40			

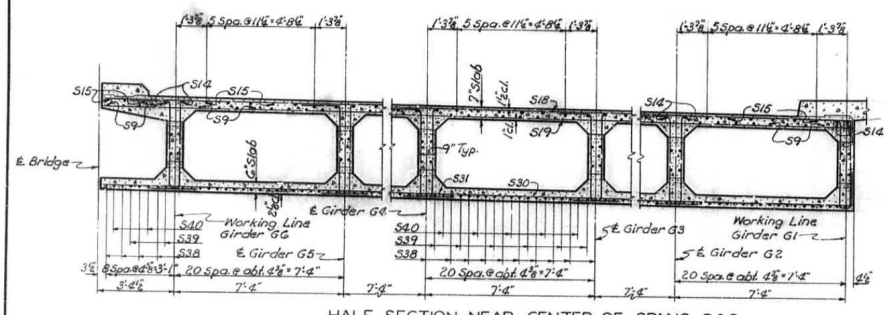


HALF SECTION NEAR ABUTMENTS 1 & 5



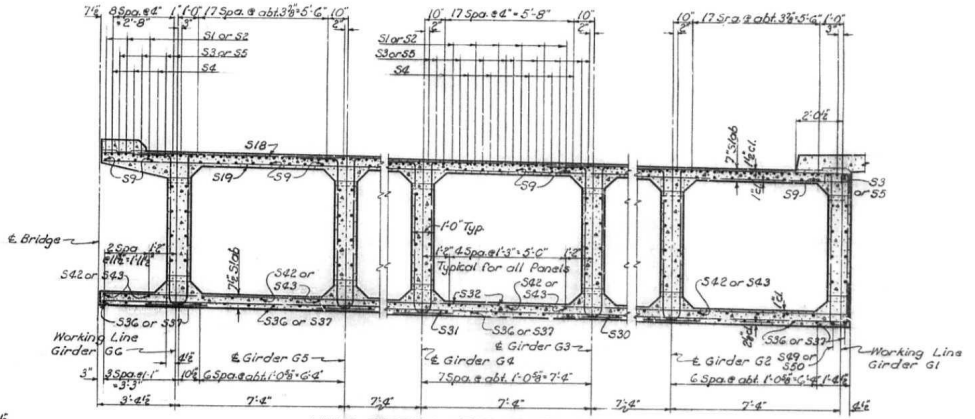
GIRDER DEPTH MEASUREMENTS

Note: For Girder Depths, see Sheet 10.



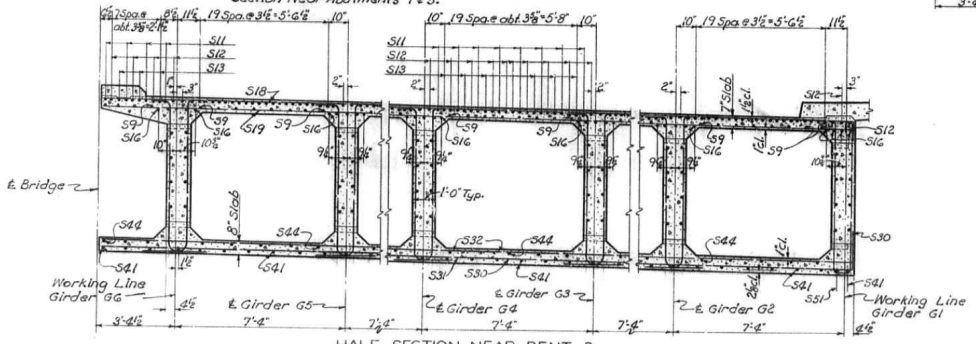
HALF SECTION NEAR CENTER OF SPANS 2&3

Note: Dimensions not shown same as those shown on Half Section Near Abutments 1 & 5.



HALF SECTION NEAR BENTS 2 & 4

Note: Dimensions not shown same as those shown on Half Section Near Abutments 1 & 5.



HALF SECTION NEAR BENT 3

Note: Dimensions not shown same as those shown on Half Section near Bents 2 & 4.

NOTES

Work this Sheet with Sheets 6, 7, 8, 10, 11 & 12

MISSOURI STATE HIGHWAY DEPARTMENT

ST. CHARLES ROCK ROAD UNDERPASS

STATE ROAD-MARK TWAIN EXPRESSWAY
ABOUT 3 MILES S.W. OF ROBERTSON
PROJECT NO. I-891(13) (RT. 40) STA. 246 + 93.8

ST. LOUIS COUNTY

CROSS SECTIONS

SVERDRUP AND PARCEL, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

1366	Drawn by: L.H. Glaser, Mar., 1956
565179	Checked by: L.J. Shields, Apr., 1956

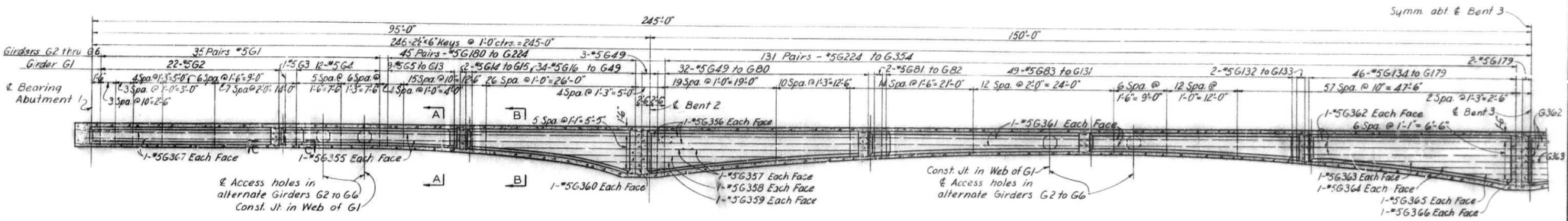
Note: Do not scale this drawing. Follow dimensions.

SHEET 9 OF 16

L-887

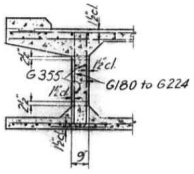
NO CONSTRUCTION CHANGES

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	Mo.	I-Beginning 44-1(13)			

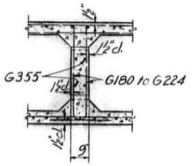


LONGITUDINAL SECTION THRU BRIDGE SHOWING ELEVATION OF GIRDERS

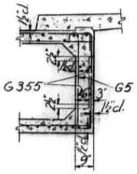
Note: All dimensions are horizontal and along ℄ of girder.



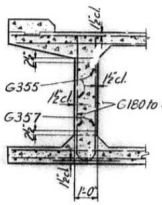
SECTION A-A
Girder G6



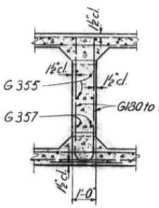
SECTION A-A
Girders G2 thru G5



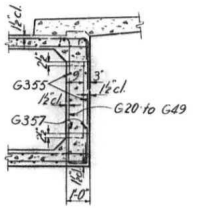
SECTION A-A
Girder G1



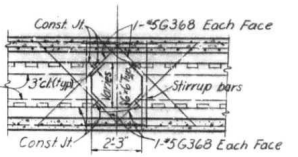
SECTION B-B
Girder G6



SECTION B-B
Girders G2 thru G5

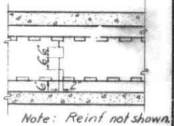


SECTION B-B
Girder G1



TYPICAL ACCESS HOLE THRU GIRDERS G2 TO G6

Note: For location see sheet 8.
Omit keys at access holes.
Longitudinal reinf to be cut to clear access hole.
Stirrups bars to be respaced at access hole.



WEB CONST. JOINT GIRDER G1

Note: For location see sheet 8.

Note: Reinf not shown.

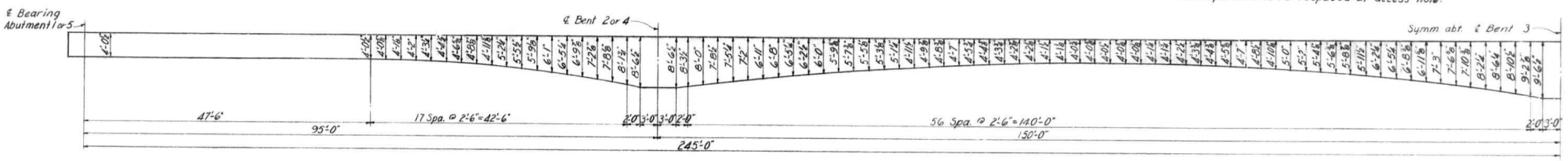
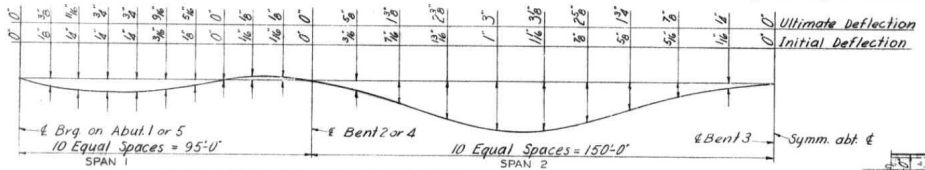


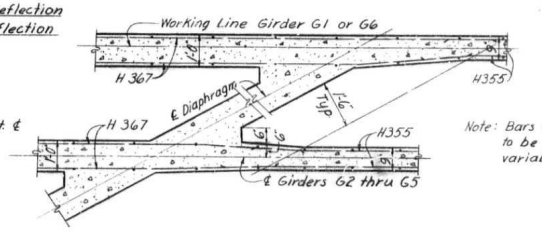
DIAGRAM SHOWING GIRDER DEPTHS

See Sheet 9 for location of girder depths measurements.



DEAD LOAD DEFLECTION ORDINATES

Note: The Contractor shall make allowances in setting forms to compensate for ultimate dead load deflection.
Top of slab elevations, computed from grade line, are desired elevations after ultimate dead load deflection has occurred.
Ec = 4,000,000 p.s.i. used in computing initial dead load deflection.
Ec = 1,333,333 p.s.i. used in computing ultimate dead load deflection.



SECTION C-C

Note: Bars G355, G356, G361, G362 & G367 to be bent in the field to fit variable width of girder webs.

MISSOURI STATE HIGHWAY DEPARTMENT

ST. CHARLES ROCK ROAD UNDERPASS

STATE ROAD-MARK TWAIN EXPRESSWAY
ABOUT 3 MILES S.W. OF ROBERTSON
PROJECT NO I-891(13) (RT. 40) STA. 246 + 93.8

ST. LOUIS COUNTY

GIRDER DETAILS

SVERDRUP AND PARCEL, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

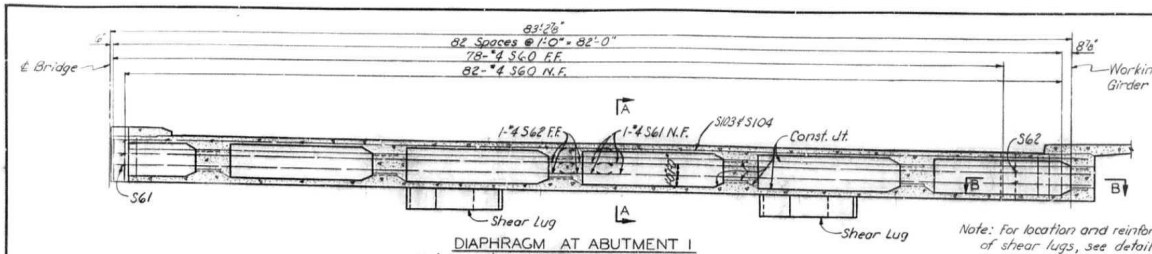
DRAWN	CHECKED
D.G. Hartman, Feb. 1956	E.J. Shields, April, 1956

SHEET 10 OF 16

L-887

NO CONSTRUCTION CHANGES

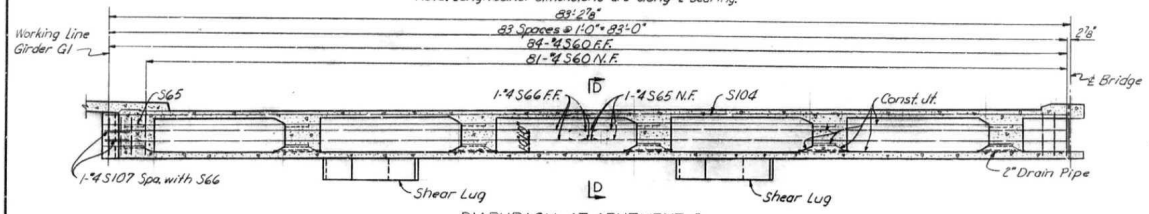
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	Mo.	F-391(13) FAP 40			



DIAPHRAGM AT ABUTMENT 1

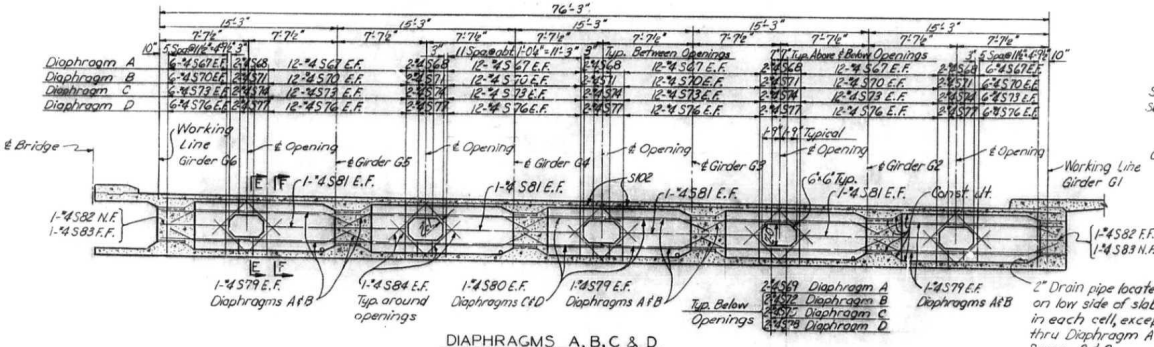
Note: Longitudinal dimensions are along ℄ Bearing.

Note: For location and reinforcing of shear lugs, see detail.



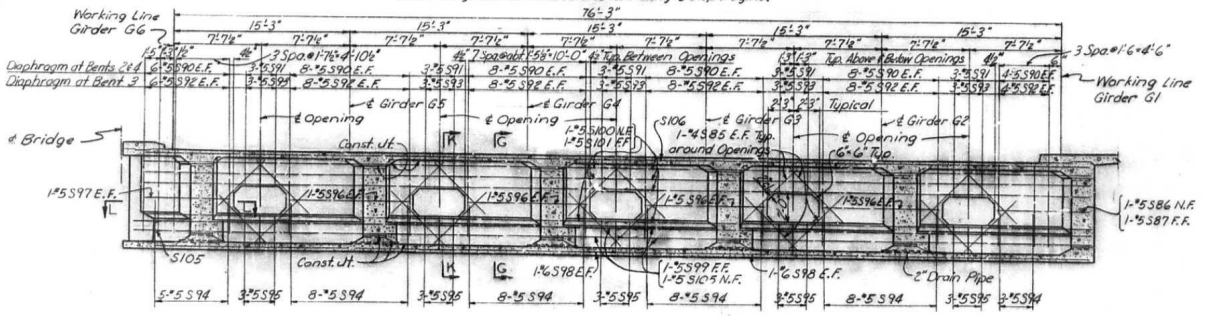
DIAPHRAGM AT ABUTMENT 5

Note: Longitudinal dimensions are along ℄ Bearing.



DIAPHRAGMS A, B, C & D

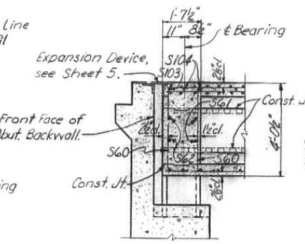
Note: Longitudinal dimensions are along ℄ diaphragms.

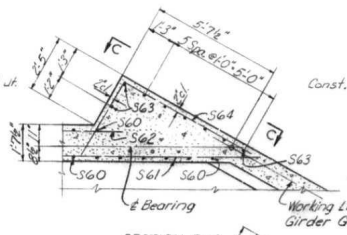


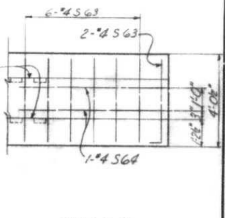
DIAPHRAGM AT BENTS 2, 3 & 4

Note: Longitudinal dimensions are along ℄ Bent.

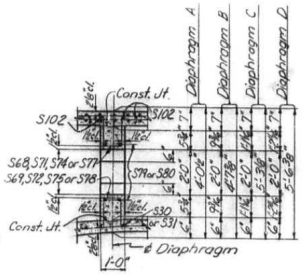
Note: E.F. indicates Each Face. N.F. indicates Near Face. F.F. indicates Far Face.

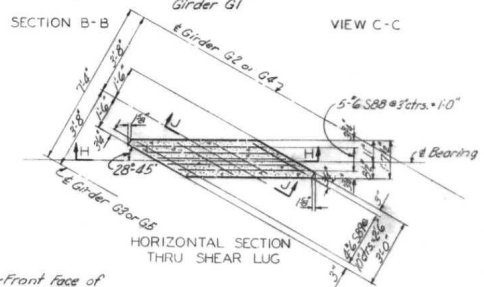


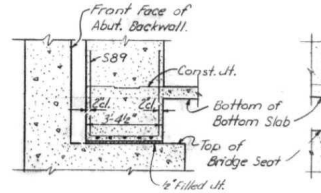


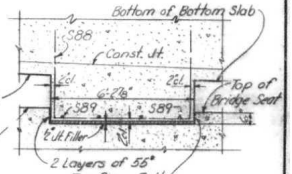


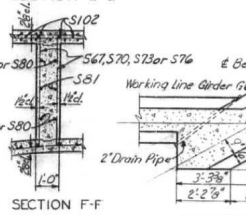
Note: Shift transverse bars in bottom slab to fit corner of stirrups.

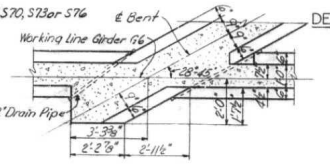






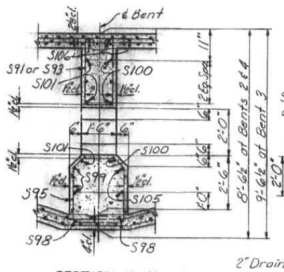


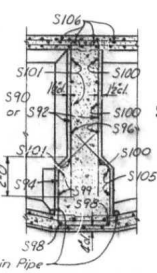




NOTES

All dimensions are horizontal. Diaphragms shown are for Eastbound Roadway. See Key Plan on Sheet 7 for location of similar diaphragms for Westbound Roadway.





MISSOURI STATE HIGHWAY DEPARTMENT

ST. CHARLES ROCK ROAD UNDERPASS

STATE ROAD-MARK TWAIN EXPRESSWAY
ABOUT 3 MILES S.W. OF ROBERTSON
PROJECT NO. I-891(13) (RT. 40) STA. 246 + 93.8

ST. LOUIS COUNTY

DIAPHRAGMS

SVERDRUP AND PARCEL, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

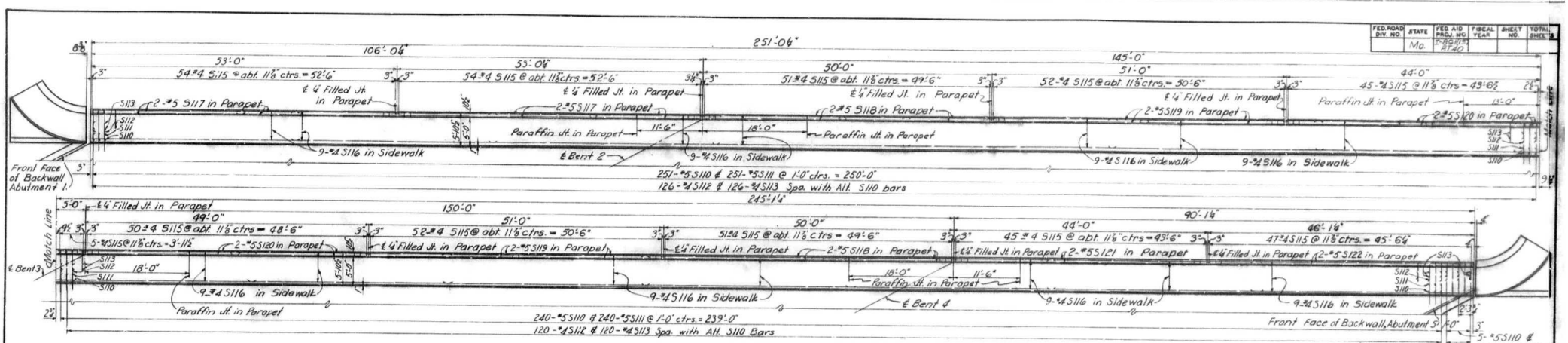
Drawn by: R.F. Beck, Mar. 1956
Checked by: E.J. Shields, Apr. 1956

Note: Do not scale this drawing. Follow dimensions.

SHEET 11 OF 16

L-887

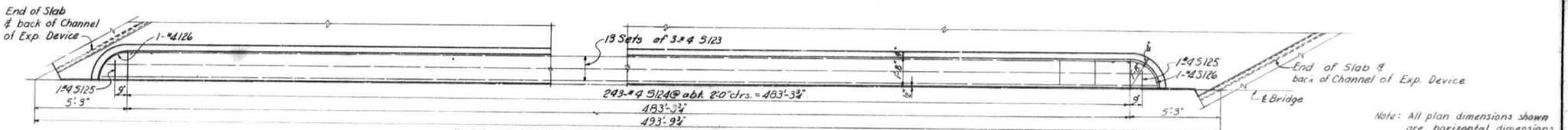
NO CONSTRUCTION CHANGES



PLAN OF SIDEWALK AND PARAPET FOR EASTBOUND ROADWAY

Sidewalk and Parapet for Westbound Roadway same by 180° rotation.

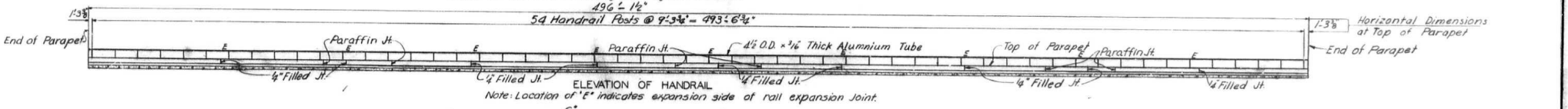
Note: Paraffin joints in parapet shall be coated with hot paraffin before pouring adjacent section of concrete.



PLAN OF MEDIAN FOR EASTBOUND ROADWAY

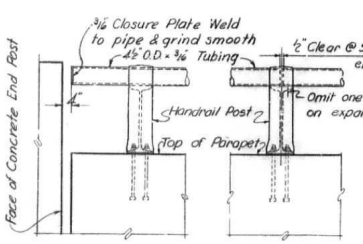
Median for Westbound Roadway same by 180° rotation.

Note: All plan dimensions shown are horizontal dimensions



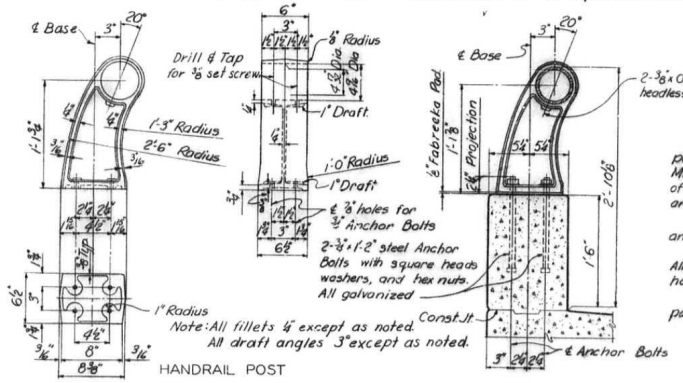
ELEVATION OF HANDRAIL

Note: Location of "℄" indicates expansion side of rail expansion Joint.



TYPICAL RAIL DETAIL AT ABUTMENT

TYPICAL RAIL EXPANSION JOINT



Note: All fillets ¼" except as noted. All draft angles 3° except as noted.

HANDRAIL POST

TYPICAL SECTION THRU RAIL AND PARAPET

ALUMINUM HANDRAIL

NOTES

All handrail posts shall be set normal to grade. Aluminum washer shims between Fabreeka pad and post base may be used for adjusting rail alignment. Maximum thickness of shims to be ⅛. Where more tilting of post is required for proper alignment, concrete bearing area 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 for "Aluminum Alloy Handrail," shall include furnishing and erecting the handrail complete with anchor bolts, shims and Fabreeka pads.

The length of "Aluminum Alloy Handrail" measured for payment shall be the total length out to out of rails.

MISSOURI STATE HIGHWAY DEPARTMENT

ST. CHARLES ROCK ROAD UNDERPASS

STATE ROAD-MARK TWAIN EXPRESSWAY
ABOUT 3 MILES S.W. OF ROBERTSON
PROJECT NO I-891(13)(RT 40) STA. 246 + 93.8

ST. LOUIS COUNTY

SIDEWALK, PARAPET, MEDIAN & HANDRAIL

SVERDRUP AND PARCEL, INC.
ENGINEERS - ARCHITECTS
ST. LOUIS, MO

Drawn by: S. A. Hussaini, Feb. 1956
Checked by: L. H. Glaser, Apr. 1956

Note: Do not scale this drawing. Follow dimensions.

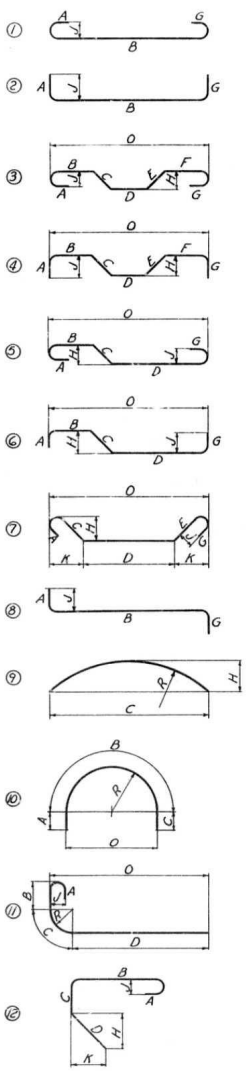
SHEET 12 OF 16

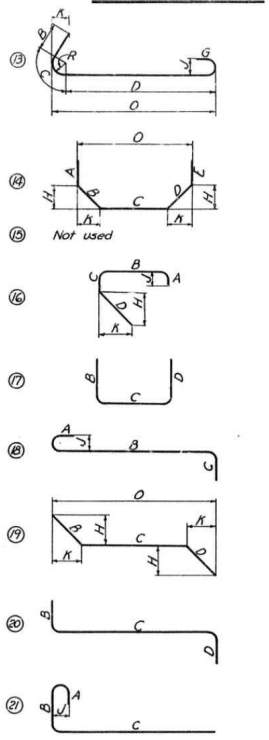
L-887

NO CONSTRUCTION CHANGES

FED.ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	MO.	I-891(13) RT.40			

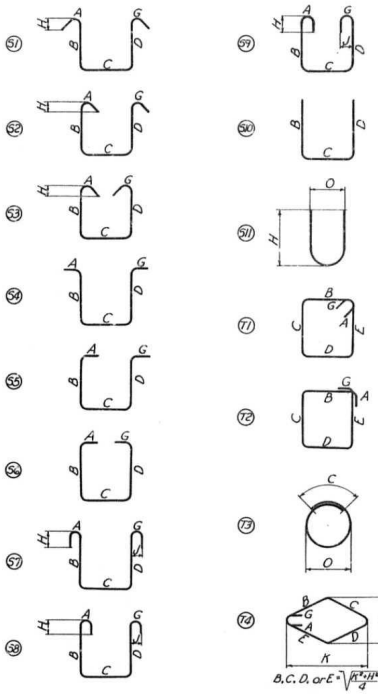
TYPICAL BAR TYPES





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

ENLARGED VIEW SHOWING BAR BENDING DETAILS

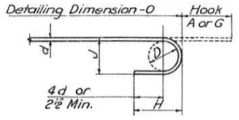


NOTES

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. CAUTION: 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 73 shall also be measured along outside of bar.

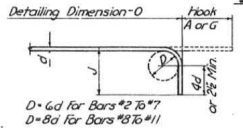
STANDARD HOOK DIMENSIONS

180° HOOK



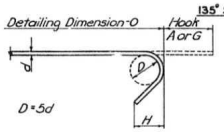
Bar Size	Hook A or G	J	Approx. H
#2	4"	2"	3½
#3	5"	3"	4"
#4	6"	4"	4½
#5	7"	5"	5"
#6	8"	6"	6"
#7	10"	7"	7"
#8	1'-1"	10"	9"
#9	1'-3"	1'-1"	10½
#10	1'-5"	1'-0½"	11½
#11	1'-7"	1'-2"	1'-0½

90° HOOK



Bar Size	Hook A or G	Approx. J
#2	3"	3½
#3	3"	4"
#4	3"	4½
#5	4"	5"
#6	4"	6"
#7	5"	7"
#8	6"	9"
#9	7"	10"
#10	8"	11½
#11	9"	1'-0½

135° STIRRUP HOOK



Bar Size	Hook A or G	H
#2	3½"	2"
#3	4"	2½
#4	4½"	2½
#5	5"	2⅝

BAR SIZE EQUIVALENTS

#2	6"ø	#7	⅞"ø
#3	⅜"ø	#8	1"ø
#4	½"ø	#9	1'-0
#5	⅝"ø	#10	1'-1⅛"
#6	¾"ø	#11	1'-4"

MISSOURI STATE HIGHWAY DEPARTMENT

ST. CHARLES ROCK ROAD UNDERPASS

STATE ROAD - MARK TWAIN EXPRESSWAY
ABOUT 3 MILES S.W. OF ROBERTSON
PROJECT NO. I-891(13)(RT 40) STA. 246+93.6

ST. LOUIS COUNTY

TYPICAL BAR TYPES AND HOOK DIMENSIONS

SVERDRUP AND PARCEL, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

SHEET 13 OF 16

L-887

STANDARD BI

NO CONSTRUCTION CHANGES

5/5/69
Drawn by: A. Avila, Dec. 1951
Traced by: L. Glaser, Dec. 1951
Checked by: W. Littlefield, Jan. 1952
Revised: Feb., 1963

13

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	Mo.	I-891(13) RT. 40			

ABUTMENTS 1 & 5

No. Reqd	Size	Length	Mark	Type	Location	A	B	C	D	E	F	G	H	J	K	R	O
320	#4	4'-2"	A1	16	Lug	3"	1'-5"	6"	2'-0"				1'-5"		1'-5"		
376	#4	12'-0"	A2	Spcl.	Footing	See Bending Detail											
130	#4	7'-11"	A3	17	Bridge Seat		2'-5"	3'-0½"	2'-5"								
			A4			Not Used											
36	#6	44'-4"	A5	Str.	Footing												
320	#4	13'-8"	A6	17	Backwall		6'-6"	8"	6'-6"								
48	#5	43'-6"	A7	Str.	do												
24	#5	3'-11"	A8	17	Bridge Seat		5"	3'-0½"	5"								
32	#6	10'-6"	A9	Str.	do												
8	#6	47'-2"	A10	Spcl.	do	See Cutting Diagram & Bending Detail											
16	#6	26'-11"	A11	17	do		1'-6"	23'-11"	1'-6"								
8	#6	58'-2"	A12	Spcl.	do	See Cutting Diagram & Bending Detail											
32	#6	44'-4"	A13	Str.	do												
16	#6	16'-9"	A14	Str.	Apron	See Cutting Diagram											
16	#6	15'-3"	A15	Str.	do	See Cutting Diagram											
4	#5	6'-5"	A16	17	Wingwall		2'-9"	11"	2'-9"								
4	#5	7'-2"	A17	17	do		3'-1½"	11"	3'-1½"								
4	#5	7'-11"	A18	17	do		3'-6"	11"	3'-6"								
4	#5	8'-5"	A19	17	do		3'-9"	11"	3'-9"								
4	#5	8'-9"	A20	17	do		3'-11"	11"	3'-11"								
4	#5	8'-11"	A21	17	do		4'-0"	11"	4'-0"								
20	#5	9'-1"	A22	17	do		4'-1"	11"	4'-1"								
44	#5	7'-7"	A23	21	do	7"	1'-1"	5'-11"									
16	#6	9'-9"	A24	Str.	Apron												
48	#6	13'-8"	A25	Str.	do												
4	#6	11'-8"	A26	Spcl.	Sidewalk	See Bending Detail											
4	#6	13'-2"	A27	Spcl.	do	See Bending Detail											
4	#6	14'-8"	A28	Spcl.	do	See Bending Detail											
4	#6	16'-1"	A29	Spcl.	do	See Bending Detail											
60	#5	8'-1"	A30	Str.	Wingwall												
15	#5	14'-8"	A31	19	do		4'-5"	10'-3"	—				3'-10½"		2'-1½"		
16	#5	10'-1"	A32	Spcl.	do	See Bending Detail											
16	#5	8'-6"	A33	Spcl.	do	See Bending Detail											
4	#4	8'-10"	A34	Spcl.	do	See Bending Detail											
4	#4	9'-7"	A35	Spcl.	do	See Bending Detail											
4	#4	10'-1"	A36	Spcl.	do	See Bending Detail											
4	#4	10'-11"	A37	Spcl.	do	See Bending Detail											
4	#4	10'-2"	A38	Spcl.	do	See Bending Detail											
4	#4	10'-3"	A39	Str.	do												
4	#4	11'-2"	A40	Str.	do												
36	#6	44'-7"	A41	Str.	Footing												
48	#5	38'-9"	A42	Str.	Backwall												
38	#4	7'-5"	A43	17	Bridge Seat		2'-2"	3'-0½"	2'-2"								
116	#4	6'-11"	A44	17	do		1'-11"	3'-0½"	1'-11"								
74	#4	8'-7"	A45	17	do		2'-9"	3'-0½"	2'-9"								
12	#4	5'-9"	A46	17	do		1'-4"	3'-0½"	1'-4"								
4	#4	20'-3"	A47	Spcl.	do	See Cutting Diagram & Bending Detail											
4	#4	21'-9"	A48	Spcl.	do	See Cutting Diagram & Bending Detail											
4	#4	14'-4"	A49	17	do		6'-3"	1'-9¾"	6'-3"								
4	#4	15'-1"	A50	17	do		6'-3"	2'-6½"	6'-3"								
8	#5	12'-6"	A51	19	Wingwall		2'-6"	9'-11½"	—				2'-2¼"	1'-2½"			
4	#4	9'-0"	A52	Str.	do												
4	#4	7'-6"	A53	Str.	do												
4	#4	5'-0"	A54	Str.	do												
7	#4	14'-6"	A55	Spcl.	do	See Cutting Diagram & Bending Detail											
27	#5	7'-10"	A56	Str.	do												
27	#5	8'-7"	A57	Str.	do												
15	#5	10'-1"	A58	Spcl.	do	See Bending Detail											
15	#5	16'-0"	A59	Spcl.	do	See Bending Detail											
9	#5	9'-3"	A60	Spcl.	do	See Bending Detail											

BENTS 2, 3 & 4

No. Reqd	Size	Length	Mark	Type	Location	A	B	C	D	E	F	G	H	J	K	R	O
24	#8	30'-8"	B1	Str.	Column												
24	#8	27'-8"	B2	Str.	do												
24	#8	24'-8"	B3	Str.	do												
24	#8	25'-8"	B4	Str.	do												
96	#8	29'-8"	B5	Str.	do												
96	#8	23'-11"	B6	Str.	do												
24	#8	28'-5"	B7	Str.	do												
72	#8	25'-5"	B8	Str.	do												
144	#8	22'-11"	B9	Str.	do												
48	#8	27'-11"	B10	Str.	do												
2008	#5	9'-8"	B11	S10	Beam		3'-7"	2'-6"	3'-7"								
48	#9	14'-2"	B12	20	do		—	10'-2"	4'-0"								
24	#11	14'-2"	B13	20	do		—	10'-2"	4'-0"								
48	#10	40'-7"	B14	Str.	do												
24	#11	40'-9"	B15	Str.	do												
48	#9	12'-0"	B16	Str.	do												
24	#10	12'-0"	B17	Str.	do												
48	#5	39'-9"	B18	Str.	do												
40	#10	13'-0"	B19	Str.	do												
72	#11	6'-7"	B20	11	do	—	1'-7½"	3'-4"	1'-7½"							2'-0"	
48	#10	29'-0"	B21	Str.	do												
24	#11	29'-2"	B22	Str.	do												
24	#11	13'-0"	B23	Str.	do												
24	#10	26'-7"	B24	Str.	do												
12	[illegible]	26'-11"	B25	Str.	do												
531	#5	13'-2"	B26	T3	Column			1'-8"									3'-8"
48	[illegible]	9'-9"	B27	10	Beam	1'-8"	6'-5"	1'-8"								1'-11¾"	4'-0¾"
15	[illegible]	12'-5"	B28	17	do		3'-9"	4'-11"	3'-9"								
576	#8	5'-8"	B29	2	Footing	6"	5'-2"					—					
176	#6	8'-6"	B30	Str.	do												

BENTS 2, 3 & 4 (CONT'D)

No. Reqd	Size	Length	Mark	Type	Location	A	B	C	D	E	F	G	H	J	K	R	O
136	#6	7'-0"	B31	Str.	Footing												
224	#6	8'-0"	B32	Str.	do												
256	#6	6'-6"	B33	Str.	do												
30	#5	12'-10"	B34	17	Beam		3'-9"	5'-4"	3'-9"								
15	#5	12'-1"	B35	17	do		3'-9"	4'-7"	3'-9"								

BRIDGE

No. Reqd	Size	Length	Mark	Type	Location	A	B	C	D	E	F	G	H	J	K	R	O
132	#11	62'-0"	S1	Str.	Top Slab												
132	#11	37'-9"	S2	Str.	do												
220	#11	20'-0"	S3	Str.	do												
132	#11	44'-0"	S4	Str.	do												
220	#11	54'-9"	S5	Str.	do												
48	#11	24'-11"	S6	Str.	do												
48	#8	40'-0"	S7	Str.	do												
264	#4	24'-7"	S8	Str.	do												
1144	#4	39'-2"	S9	Str.	do												
176	#11	31'-9"	S10	Str.	do												
88	#11	58'-0"	S11	Str.	do												
330	#11	33'-10"	S12	Str.	do												
66	#11	66'-0"	S13	Str.	do												
96	#11	40'-8"	S14	Str.	do												
264	#4	25'-6"	S15	Str.	do												
58	#11	32'-0"	S16	Str.	do												
228	#5	38'-10"	S17	Str.	do	See Cutting Diagram											
1450	#5	41'-0"	S18	20	do		—	40'-1"	11"								
1450	#5	40'-1"	S19	Str.	do												
4	#5	3'-11"	S20	12	do	—	1'-8"	7"	1'-8"				1'-5½"		9⅝"		
125	#5	43'-10"	S21	Spcl.	do	See Cutting Diagram & Bending Detail											
125	#5	42'-0"	S22	Str.	do	See Cutting Diagram											
4	#5	6'-0"	S23	Str.	do												
4	#5	4'-0"	S24	Str.	do												
			S25			Not Used											
			S26			Not Used											
4	#5	9'-11"	S27	Str.	Bottom Slab	See Cutting Diagram											
4	#5	5'-9"	S28	Str.	do	See Cutting Diagram											
200	#11	22'-10"	S29	Str.	do												
572	#6	44'-2"	S30	20	do		1'-5"	42'-9"	—								
572	#6	42'-9"	S31	Str.	do												
304	#5	42'-7"	S32	Str.	do												
156	#11	64'-7	S33	Str.	do												
88	#11	53'-6"	S34	Str.	do												
64	#11	41'-0"	S35	Str.	do												
156	#8	36'-9"	S36	19	do		32'-3"	4'-6"	—				6'-3¼"		31'-8"		
156	#9	34'-9"	S37	19	do		30'-3"	4'-6"	—				3'-9"		30'-0"		
200	#11	62'-3"	S38	Str.	do												
128	#11	64'-3"	S39	Str.	do												
108	#11	44'-2"	S40	Str.	do												
156	#9	43'-11"	S41	19	do		39'-5"	4'-6"	—				5'-10¾"		39'-0"		
112	#4	28'-6"	S42	19	do		24'-10"	3'-8"	—				4'-9¾"		24'-4"		
112	#4	34'-1"	S43	19	do		30'-5"	3'-8"	—				3'-9¼"		30'-2"		
112	#4	33'-2"	S44	19	do		29'-6"	3'-8"	—				4'-4⅞"		29'-2"		
32	#5	6'-6"	S45	Str.	do												
64	#7	6'-6"	S46	Str.	do												
64	#5	6'-6"	S47	Str.	do												
4	#6	31'-8"	S48	Str.	do												
4	#6	35'-1"	S49	19	do		31'-1"	4'-0"	—				6'-0½"		30'-6"		
4	#6	40'-4"	S50	19	do		36'-4"	4'-0"	—				4'-6"		36'-0"		
4	#6	40'-5"	S51	19	do		36'-5"	4'-0"	—				5'-5¼"		36'-0"		
			S52				Not Used										
			S53				Not Used										
			S54				Not Used										
			S55				Not Used										
			S56				Not Used										
			S57				Not Used										
			S58				Not Used										
			S59				Not Used										
650	#4	5'-9"	S60	17	Diaphragm		1'-0⅜"	3'-8¼"	1'-0⅜"								
8	#4	43'-0"	S61	Str.	do												
8	#4	40'-0"	S62	Str.	do												
16	#4	4'-0"	S63	2	do	3"	3'-9"					—					
4	#4	10'-0"	S64	17	do		3'-9"	6'-3"	—								
8	#4	42'-0"	S65	Str.	do												
8	#4	42'-3"	S66	Str.	do												
960	#4	5'-9"	S67	17	do		1'-0⅜"	3'-8¼"	1'-0⅜"								
80	#4	4'-3"	S68	Spcl.	do	See Bending Detail											
80	#4	4'-1"	S69	Spcl.	do	See Bending Detail											
480	#4	6'-3"	S70	17	do		1'-0"	4'-3"	1'-0"								
40	#4	4'-10"	S71	Spcl.	do	See Bending Detail											
40	#4	4'-8"	S72	Spcl.	do	See Bending Detail											
480	#4	6'-11"	S73	17	do		1'-0"	4'-11"	1'-0"								
40	#4	5'-6"	S74	Spcl.	do	See Bending Detail											
40	#4	5'-4"	S75	Spcl.	do	See Bending Detail											
480	#4	7'-2"	S76	17	do		1'-0"	5'-2"	1'-0"								
40	#4	5'-9"	S77	Spcl.	do	See Bending Detail											
40	#4	5'-7"	S78	Spcl.	do	See Bending Detail											
240	#4	16'-10"	S79	14	do	—	3'-0"	10'-10"	3'-0"	—			1'-6⅝"		2'-7"		
64	#4	39'-4"	S80	Str.	do												
160	#4	11'-6"	S81	Str.	do												
40	#4	5'-7"	S82	Str.	do												
40	#4	6'-9"	S83	Str.	do												

BRIDGE (CONT'D)

No. Reqd	Size	Length	Mark	Type	Location	A	B	C	D	E	F	G	H	J	K	R	O
800	#4	4'-9"	S84	Str.	Diaphragm												
240	#4	6'-0"	S85	Str.	do												
6	#5	6'-8"	S86	Str.	do												
6	#5	4'-9"	S87	Str.	do												
40	#6	14'-11"	S88	17	Shear Lug		4'-6"	5'-11"	4'-6"								
32	#6	12'-1"	S89	17	do		4'-6¼"	3'-0½"	4'-6¼"								
336	#5	7'-10	S90	1	Diaphragm	7"	7'-3"					—					
60	#5	8'-8"	S91	S9	do	7"	3'-1½"	1'-3"	3'-1½"			7"					
168	#5	8'-10"	S92	1	do	7"	8'-3"					—					
30	#5	10'-7"	S93	S9	do	7"	4'-1"	1'-3"	4'-1"			7"					
240	#5	11'-0"	S94	Spcl.	do	See Bending Detail											
90	#5	10'-5"	S95	Spcl.	do	See Bending Detail											
48	#5	10'-6"	S96	Str.	do												
12	#5	8'-0"	S97	Str.	do												
24	#6	41'-3"	S98	Str.	Bottom Slab												
24	#5	39'-7"	S99	Str.	Diaphragm												
48	#5	40'-11"	S100	Str.	do												
48	#5	40'-2"	S101	Str.	do												
160	#6	40'-0"	S102	Str.	Top Slab												
4	#6	42'-2"	S103	Str.	do												
20	#6	42'-9"	S104	Str.	do												
24	#5	40'-11"	S105	Str.	Diaphragm												
48	#6	42'-0"	S106	Str.	Top Slab												
4	#4	3'-5"	S107	12	Diaphragm	—	1'-4"	9"	1'-4"				7½"		1'-2"		
			S108			Not Used											
			S109			Not Used											
992	#5	6'-2"	S110	1	Sidewalk	7"	5'-7"					—					
982	#5	3'-11"	S111	Spcl.	do	See Bending Detail											
498	#4	4'-9"	S112	19	do		—	2'-11"	1'-10"				6½"		1'-9"		
498	#4	2'-1"	S113	8	do	3"	1'-7"					3"					
10	#5	3'-11"	S114	Spcl.	do	See Bending Detail											
1012	#4	6'-3"	S115	Spcl.	Parapet	See Bending Detail											
252	#4	36'-8"	S116	Str.	Sidewalk												
32	#5	27'-2"	S117	Str.	Parapet												
32	#5	25'-8"	S118	Str.	do												
32	#5	26'-2"	S119	Str.	do												
32	#5	25'-2"	S120	Str.	do												
8	#5	43'-8"	S121	Str.	do												
8	#5	45'-9"	S122	Str.	do												
78	#4	38'-8"	S123	Str.	Median												
486	#4	5'-1"	S124	Spcl.	do	See Bending Detail											
4	#4	1'-2"	S125	Str.	do												
4	#4	3'-8"	S126	Spcl.	do	See Bending Detail											
1400	#5	7'-4"	G1	Spcl.	Girder	See Bending Detail											
88	#5	9'-6"	G2	S8	do	7"	3'-9½"	9"	3'-9½"			7"					
4	#5	9'-5"	G3	S8	do	7"	3'-9½"	8"	3'-9½"			7"					
48	#5	9'-3"	G4	S8	do	7"	3'-9½"	6"	3'-9½"			7"					
4	#5	9'-4"	G5	S8	do	7"	3'-9⅞"	6"	3'-9⅞"			7"					
4	#5	9'-4"	G6	S8	do	7"	3'-10"	6"	3'-10"			7"					
4	#5	9'-5"	G7	S8	do	7"	3'-10⅜"	6"	3'-10⅜"			7"					
4	#5	9'-5"	G8	S8	do	7"	3'-10⅝"	6"	3'-10⅝"			7"					
4	#5	9'-6"	G9	S8	do	7"	3'-11"	6"	3'-11"			7"					
4	#5	9'-7"	G10	S8	do	7"	3'-11⅜"	6"	3'-11⅜"			7"					
4	#5	9'-8"	G11	S8	do	7"	3'-11¾"	6"	3'-11¾"			7"					
4	#5	9'-8"	G12	S8	do	7"	4'-0⅛"	6"	4'-0⅛"			7"					
4	#5	9'-9"	G13	S8	do	7"	4'-0⅝"	6"	4'-0⅝"			7"					
4	#5	9'-11"	G14	S8	do	7"	4'-1⅛"	7"	4'-1⅛"			7"					
4	#5	10'-2"	G15	S8	do	7"	4'-1⅝"	8½"	4'-1⅝"			7"					
4	#5	10'-4"	G16	S8	do	7"	4'-2¼"	9"	4'-2¼"			7"					
4	#5	10'-5"	G17	S8	do	7"	4'-2⅞"	9"	4'-2⅞"			7"					
4	#5	10'-6"	G18	S8	do	7"	4'-3½"	9"	4'-3½"			7"					
4	#5	10'-8"	G19	S8	do	7"	4'-4¼"	9"	4'-4¼"			7"					
4	#5	10'-9"	G20	S8	do	7"	4'-4⅞"	9"	4'-4⅞"			7"					
4	#5	10'-11"	G21	S8	do	7"	4'-5¾"	9"	4'-5¾"			7"					
4	#5	11'-0"	G22	S8	do	7"	4'-6½"	9"	4'-6½"			7"					

Note: Bar List for Bridge continued on Sheet 15.

NOTES

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.

See Sheet 13 for Typical Bar Types and Hook Dimensions.

See Sheet 16 for Special Bending Details and Cutting Diagrams.

MISSOURI STATE HIGHWAY DEPARTMENT

ST. CHARLES ROCK ROAD UNDERPASS

STATE ROAD–MARK TWAIN EXPRESSWAY
ABOUT 3 MILES S.W. OF ROBERTSON
PROJECT NO. I-891(13) (RT. 40) STA. 246 + 93.8

ST. LOUIS COUNTY

BAR LIST

SVERDRUP AND PARCEL, INC.
ENGINEERS - ARCHITECTS
ST. LOUIS, MO.

Drawn by: R.R. Nea, Apr. 1956
Checked by: [illegible] 1956

56S309
1354

L-887

NO CONSTRUCTION CHANGES

14

No. Req'd	Size	Length	Mark	Type	Location	A	B	C	D	E	F	G	H	J	K	R	O
BRIDGE (CONT'D)																	
4	#5	11'-2"	G23	S8	Girder	7"	4'-7 3/8"	9"	4'-7 3/8"			7"					
4	#5	11'-4"	G24	S8	do	7"	4'-8 3/8"	9"	4'-8 3/8"			7"					
4	#5	11'-6"	G25	S8	do	7"	4'-9 1/2"	9"	4'-9 1/2"			7"					
4	#5	11'-9"	G26	S8	do	7"	4'-10 3/4"	9"	4'-10 3/4"			7"					
4	#5	11'-11"	G27	S8	do	7"	4'-11 5/8"	9"	4'-11 5/8"			7"					
4	#5	12'-2"	G28	S8	do	7"	5'-1 1/4"	9"	5'-1 1/4"			7"					
4	#5	12'-4"	G29	S8	do	7"	5'-2 1/2"	9"	5'-2 1/2"			7"					
4	#5	12'-7"	G30	S8	do	7"	5'-3 7/8"	9"	5'-3 7/8"			7"					
4	#5	12'-10"	G31	S8	do	7"	5'-5 3/8"	9"	5'-5 3/8"			7"					
4	#5	13'-1"	G32	S8	do	7"	5'-6 5/8"	9"	5'-6 5/8"			7"					
4	#5	13'-4"	G33	S8	do	7"	5'-8 3/8"	9"	5'-8 3/8"			7"					
4	#5	13'-7"	G34	S8	do	7"	5'-10"	9"	5'-10"			7"					
4	#5	13'-11"	G35	S8	do	7"	5'-11 3/4"	9"	5'-11 3/4"			7"					
4	#5	14'-2"	G36	S8	do	7"	6'-1 3/8"	9"	6'-1 3/8"			7"					
4	#5	14'-6"	G37	S8	do	7"	6'-3 1/4"	9"	6'-3 1/4"			7"					
4	#5	14'-9"	G38	S8	do	7"	6'-5"	9"	6'-5"			7"					
4	#5	15'-1"	G39	S8	do	7"	6'-6 7/8"	9"	6'-6 7/8"			7"					
4	#5	15'-5"	G40	S8	do	7"	6'-8 5/8"	9"	6'-8 5/8"			7"					
4	#5	15'-9"	G41	S8	do	7"	6'-10 3/8"	9"	6'-10 3/8"			7"					
4	#5	16'-1"	G42	S8	do	7"	7'-0 1/8"	9"	7'-0 1/8"			7"					
4	#5	16'-5"	G43	S8	do	7"	7'-3"	9"	7'-3"			7"					
4	#5	16'-9"	G44	S8	do	7"	7'-5 1/8"	9"	7'-5 1/8"			7"					
4	#5	17'-2"	G45	S8	do	7"	7'-7 3/8"	9"	7'-7 3/8"			7"					
4	#5	17'-6"	G46	S8	do	7"	7'-9 5/8"	9"	7'-9 5/8"			7"					
4	#5	17'-11"	G47	S8	do	7"	7'-11 7/8"	9"	7'-11 7/8"			7"					
4	#5	18'-4"	G48	S8	do	7"	8'-2 1/4"	9"	8'-2 1/4"			7"					
20	#5	18'-6"	G49	S8	do	7"	8'-3 1/2"	9"	8'-3 1/2"			7"					
4	#5	18'-5"	G50	S8	do	7"	8'-2 3/4"	9"	8'-2 3/4"			7"					
4	#5	18'-2"	G51	S8	do	7"	8'-1 1/4"	9"	8'-1 1/4"			7"					
4	#5	17'-11"	G52	S8	do	7"	7'-11 7/8"	9"	7'-11 7/8"			7"					
4	#5	17'-8"	G53	S8	do	7"	7'-10 3/8"	9"	7'-10 3/8"			7"					
4	#5	17'-5"	G54	S8	do	7"	7'-9"	9"	7'-9"			7"					
4	#5	17'-2"	G55	S8	do	7"	7'-7 5/8"	9"	7'-7 5/8"			7"					
4	#5	17'-0"	G56	S8	do	7"	7'-6 1/4"	9"	7'-6 1/4"			7"					
4	#5	16'-9"	G57	S8	do	7"	7'-4 7/8"	9"	7'-4 7/8"			7"					
4	#5	16'-6"	G58	S8	do	7"	7'-3 1/2"	9"	7'-3 1/2"			7"					
4	#5	16'-4"	G59	S8	do	7"	7'-2 1/4"	9"	7'-2 1/4"			7"					
4	#5	16'-1"	G60	S8	do	7"	7'-0 7/8"	9"	7'-0 7/8"			7"					
4	#5	15'-10"	G61	S8	do	7"	6'-11 5/8"	9"	6'-11 5/8"			7"					
4	#5	15'-8"	G62	S8	do	7"	6'-10 3/8"	9"	6'-10 3/8"			7"					
4	#5	15'-5"	G63	S8	do	7"	6'-9 1/8"	9"	6'-9 1/8"			7"					
4	#5	15'-3"	G64	S8	do	7"	6'-8"	9"	6'-8"			7"					
4	#5	15'-1"	G65	S8	do	7"	6'-6 3/4"	9"	6'-6 3/4"			7"					
4	#5	14'-10"	G66	S8	do	7"	6'-5 5/8"	9"	6'-5 5/8"			7"					
4	#5	14'-8"	G67	S8	do	7"	6'-4 1/2"	9"	6'-4 1/2"			7"					
4	#5	14'-6"	G68	S8	do	7"	6'-3 3/8"	9"	6'-3 3/8"			7"					
4	#5	14'-3"	G69	S8	do	7"	6'-2"	9"	6'-2"			7"					
4	#5	14'-0"	G70	S8	do	7"	6'-0 7/8"	9"	6'-0 7/8"			7"					
4	#5	13'-10"	G71	S8	do	7"	5'-11 1/4"	9"	5'-11 1/4"			7"					
4	#5	13'-7"	G72	S8	do	7"	5'-10"	9"	5'-10"			7"					
4	#5	13'-5"	G73	S8	do	7"	5'-8 3/4"	9"	5'-8 3/4"			7"					
4	#5	13'-2"	G74	S8	do	7"	5'-7 1/2"	9"	5'-7 1/2"			7"					
4	#5	13'-0"	G75	S8	do	7"	5'-6 3/8"	9"	5'-6 3/8"			7"					
4	#5	12'-10"	G76	S8	do	7"	5'-5 1/4"	9"	5'-5 1/4"			7"					
4	#5	12'-7"	G77	S8	do	7"	5'-4 1/8"	9"	5'-4 1/8"			7"					
4	#5	12'-5"	G78	S8	do	7"	5'-3"	9"	5'-3"			7"					
4	#5	12'-3"	G79	S8	do	7"	5'-1 3/4"	9"	5'-1 3/4"			7"					
4	#5	12'-0"	G80	S8	do	7"	5'-0 1/2"	9"	5'-0 1/2"			7"					
4	#5	11'-9"	G81	S8	do	7"	4'-11 3/8"	8"	4'-11 3/8"			7"					
4	#5	11'-6"	G82	S8	do	7"	4'-10 1/4"	7"	4'-10 1/4"			7"					
4	#5	11'-3"	G83	S8	do	7"	4'-9 1/4"	6"	4'-9 1/4"			7"					
4	#5	11'-0"	G84	S8	do	7"	4'-8 1/8"	6"	4'-8 1/8"			7"					
4	#5	10'-11"	G85	S8	do	7"	4'-7 1/4"	6"	4'-7 1/4"			7"					
4	#5	10'-9"	G86	S8	do	7"	4'-6 1/4"	6"	4'-6 1/4"			7"					
4	#5	10'-7"	G87	S8	do	7"	4'-5 3/8"	6"	4'-5 3/8"			7"					
4	#5	10'-5"	G88	S8	do	7"	4'-4 1/2"	6"	4'-4 1/2"			7"					
4	#5	10'-4"	G89	S8	do	7"	4'-3 3/4"	6"	4'-3 3/4"			7"					
4	#5	10'-2"	G90	S8	do	7"	4'-3"	6"	4'-3"			7"					
4	#5	10'-1"	G91	S8	do	7"	4'-2 3/8"	6"	4'-2 3/8"			7"					
4	#5	9'-11"	G92	S8	do	7"	4'-1 5/8"	6"	4'-1 5/8"			7"					
4	#5	9'-10"	G93	S8	do	7"	4'-0 7/8"	6"	4'-0 7/8"			7"					
4	#5	9'-8"	G94	S8	do	7"	4'-0 1/8"	6"	4'-0 1/8"			7"					
4	#5	9'-7"	G95	S8	do	7"	3'-11 1/2"	6"	3'-11 1/2"			7"					
4	#5	9'-6"	G96	S8	do	7"	3'-11"	6"	3'-11"			7"					
4	#5	9'-5"	G97	S8	do	7"	3'-10 1/2"	6"	3'-10 1/2"			7"					
4	#5	9'-4"	G98	S8	do	7"	3'-10 1/8"	6"	3'-10 1/8"			7"					
4	#5	9'-4"	G99	S8	do	7"	3'-9 7/8"	6"	3'-9 7/8"			7"					
4	#5	9'-3"	G100	S8	do	7"	3'-9 5/8"	6"	3'-9 5/8"			7"					
4	#5	9'-3"	G101	S8	do	7"	3'-9 1/2"	6"	3'-9 1/2"			7"					
4	#5	9'-3"	G102	S8	do	7"	3'-9 1/2"	6"	3'-9 1/2"			7"					
4	#5	9'-3"	G103	S8	do	7"	3'-9 1/2"	6"	3'-9 1/2"			7"					
4	#5	9'-4"	G104	S8	do	7"	3'-9 3/4"	6"	3'-9 3/4"			7"					
4	#5	9'-4"	G105	S8	do	7"	3'-9 7/8"	6"	3'-9 7/8"			7"					
4	#5	9'-4"	G106	S8	do	7"	3'-10 1/8"	6"	3'-10 1/8"			7"					
4	#5	9'-5"	G107	S8	do	7"	3'-10 3/8"	6"	3'-10 3/8"			7"					
4	#5	9'-6"	G108	S8	do	7"	3'-10 3/4"	6"	3'-10 3/4"			7"					
4	#5	9'-6"	G109	S8	do	7"	3'-11 1/8"	6"	3'-11 1/8"			7"					
4	#5	9'-7"	G110	S8	do	7"	3'-11 5/8"	6"	3'-11 5/8"			7"					
4	#5	9'-8"	G111	S8	do	7"	4'-0"	6"	4'-0"			7"					
4	#5	9'-9"	G112	S8	do	7"	4'-0 3/8"	6"	4'-0 3/8"			7"					
4	#5	9'-10"	G113	S8	do	7"	4'-0 7/8"	6"	4'-0 7/8"			7"					
4	#5	9'-10"	G114	S8	do	7"	4'-1 3/8"	6"	4'-1 3/8"			7"					
4	#5	9'-11"	G115	S8	do	7"	4'-1 7/8"	6"	4'-1 7/8"			7"					
4	#5	10'-0"	G116	S8	do	7"	4'-2 1/8"	6"	4'-2 1/8"			7"					
4	#5	10'-1"	G117	S8	do	7"	4'-2 5/8"	6"	4'-2 5/8"			7"					
4	#5	10'-2"	G118	S8	do	7"	4'-3 1/8"	6"	4'-3 1/8"			7"					
4	#5	10'-3"	G119	S8	do	7"	4'-3 5/8"	6"	4'-3 5/8"			7"					
4	#5	10'-5"	G120	S8	do	7"	4'-4 1/4"	6"	4'-4 1/4"			7"					
4	#5	10'-6"	G121	S8	do	7"	4'-4 7/8"	6"	4'-4 7/8"			7"					

No. Req'd	Size	Length	Mark	Type	Location	A	B	C	D	E	F	G	H	J	K	R	O
BRIDGE (CONT'D)																	
4	#5	10'-7"	G122	S8	Girder	7"	4'-5 1/2"	6"	4'-5 1/2"			7"					
4	#5	10'-8"	G123	S8	do	7"	4'-6"	6"	4'-6"			7"					
4	#5	10'-9"	G124	S8	do	7"	4'-6 1/2"	6"	4'-6 1/2"			7"					
4	#5	10'-10"	G125	S8	do	7"	4'-7 1/8"	6"	4'-7 1/8"			7"					
4	#5	11'-0"	G126	S8	do	7"	4'-7 3/4"	6"	4'-7 3/4"			7"					
4	#5	11'-1"	G127	S8	do	7"	4'-8 3/8"	6"	4'-8 3/8"			7"					
4	#5	11'-2"	G128	S8	do	7"	4'-9"	6"	4'-9"			7"					
4	#5	11'-3"	G129	S8	do	7"	4'-9 5/8"	6"	4'-9 5/8"			7"					
4	#5	11'-5"	G130	S8	do	7"	4'-10 1/4"	6"	4'-10 1/4"			7"					
4	#5	11'-6"	G131	S8	do	7"	4'-11"	6"	4'-11"			7"					
4	#5	11'-8"	G132	S8	do	7"	4'-11 5/8"	7"	4'-11 5/8"			7"					
4	#5	11'-11"	G133	S8	do	7"	5'-0 3/8"	8 1/2"	5'-0 3/8"			7"					
4	#5	12'-1"	G134	S8	do	7"	5'-1 1/8"	9"	5'-1 1/8"			7"					
4	#5	12'-3"	G135	S8	do	7"	5'-1 7/8"	9"	5'-1 7/8"			7"					
4	#5	12'-4"	G136	S8	do	7"	5'-2 5/8"	9"	5'-2 5/8"			7"					
4	#5	12'-6"	G137	S8	do	7"	5'-3 3/8"	9"	5'-3 3/8"			7"					
4	#5	12'-7"	G138	S8	do	7"	5'-4 1/4"	9"	5'-4 1/4"			7"					
4	#5	12'-9"	G139	S8	do	7"	5'-5"	9"	5'-5"			7"					
4	#5	12'-11"	G140	S8	do	7"	5'-5 7/8"	9"	5'-5 7/8"			7"					
4	#5	13'-1"	G141	S8	do	7"	5'-6 3/4"	9"	5'-6 3/4"			7"					
4	#5	13'-2"	G142	S8	do	7"	5'-7 5/8"	9"	5'-7 5/8"			7"					
4	#5	13'-4"	G143	S8	do	7"	5'-8 1/2"	9"	5'-8 1/2"			7"					
4	#5	13'-6"	G144	S8	do	7"	5'-9 3/8"	9"	5'-9 3/8"			7"					
4	#5	13'-8"	G145	S8	do	7"	5'-10 3/8"	9"	5'-10 3/8"			7"					
4	#5	13'-10"	G146	S8	do	7"	5'-11 1/4"	9"	5'-11 1/4"			7"					
4	#5	14'-0"	G147	S8	do	7"	6'-0 1/4"	9"	6'-0 1/4"			7"					
4	#5	14'-2"	G148	S8	do	7"	6'-1 1/4"	9"	6'-1 1/4"			7"					
4	#5	14'-4"	G149	S8	do	7"	6'-2 1/4"	9"	6'-2 1/4"			7"					
4	#5	14'-6"	G150	S8	do	7"	6'-3 1/4"	9"	6'-3 1/4"			7"					
4	#5	14'-8"	G151	S8	do	7"	6'-4 1/4"	9"	6'-4 1/4"			7"					
4	#5	14'-10"	G152	S8	do	7"	6'-5 1/4"	9"	6'-5 1/4"			7"					
4	#5	15'-0"	G153	S8	do	7"	6'-6 3/8"	9"	6'-6 3/8"			7"					
4	#5	15'-2"	G154	S8	do	7"	6'-7 1/2"	9"	6'-7 1/2"			7"					
4	#5	15'-5"	G155	S8	do	7"	6'-8 5/8"	9"	6'-8 5/8"			7"					
4	#5	15'-7"	G156	S8	do	7"	6'-9 3/4"	9"	6'-9 3/4"			7"					
4	#5	15'-9"	G157	S8	do	7"	6'-10 7/8"	9"	6'-10 7/8"			7"					
4	#5	15'-11"	G158	S8	do	7"	7'-0"	9"	7'-0"			7"					
4	#5	16'-1"	G159	S8	do	7"	7'-1 1/8"	9"	7'-1 1/8"			7"					
4	#5	16'-4"	G160	S8	do	7"	7'-2 3/8"	9"	7'-2 3/8"			7"					
4	#5	16'-6"	G161	S8	do	7"	7'-3 5/8"	9"	7'-3 5/8"			7"					
4	#5	16'-9"	G162	S8	do	7"	7'-4 7/8"	9"	7'-4 7/8"			7"					
4	#5	16'-11"	G163	S8	do	7"	7'-6"	9"	7'-6"			7"					
4	#5	17'-2"	G164	S8	do	7"	7'-7 3/8"	9"	7'-7 3/8"			7"					
4	#5	17'-4"	G165	S8	do	7"	7'-8 5/8"	9"	7'-8 5/8"			7"					
4	#5	17'-7"	G166	S8	do	7"	7'-9 7/8"	9"	7'-9 7/8"			7"					
4	#5	17'-10"	G167	S8	do	7"	7'-11 1/4"	9"	7'-11 1/4"			7"					
4	#5	18'-0"	G168	S8	do	7"	8'-0 1/2"	9"	8'-0 1/2"			7"					
4	#5	18'-3"	G169	S8	do	7"	8'-1 7/8"	9"	8'-1 7/8"			7"					
4	#5	18'-6"	G170	S8	do	7"	8'-3 1/4"	9"	8'-3 1/4"			7"					
4	#5	18'-8"	G171	S8	do	7"	8'-4 5/8"	9"	8'-4 5/8"			7"					
4	#5	18'-11"	G172	S8	do	7"	8'-6 1/8"	9"	8'-6 1/8"			7"					
4	#5	19'-2"	G173	S8	do	7"	8'-7 1/2"	9"	8'-7 1/2"			7"					
4	#5	19'-5"	G174	S8	do	7"	8'-9"	9"	8'-9"			7"					
4	#5	19'-8"	G175	S8	do	7"	8'-10 3/8"	9"	8'-10 3/8"			7"					
4	#5	19'-11"	G176	S8	do	7"	8'-11 7/8"	9"	8'-11 7/8"			7"					
4	#5	20'-2"	G177	S8	do	7"	9'-1 3/8"	9"	9'-1 3/8"			7"					
4	#5	20'-5"	G178	S8	do	7"	9'-2 7/8"	9"	9'-2 7/8"			7"					
10	#5	20'-6"	G179	S8	do	7"	9'-3 1/2"	9"	9'-3 1/2"			7"					
40	#5	7'-4"	G180	Spcl.	do	See Bending Detail											
40	#5	7'-4"	G181	Spcl.	do		do										
40	#5	7'-5"	G182	Spcl.	do		do										
40	#5	7'-5"	G183	Spcl.	do		do										
40	#5	7'-5"	G184	Spcl.	do		do										
40	#5	7'-6"	G185	Spcl.	do		do										
40	#5	7'-6"	G186	Spcl.	do		do										
40	#5	7'-6"	G187	Spcl.	do		do										
40	#5	7'-7"	G188	Spcl.	do		do										
40	#5	7'-7"	G189	Spcl.	do		do										
40	#5	7'-8"	G190	Spcl.	do		do										
40	#5	7'-9"	G191	Spcl.	do		do										
40	#5	7'-9"	G192	Spcl.	do		do										
40	#5	7'-10"	G193	Spcl.	do		do										
40	#5	7'-11"	G194	Spcl.	do		do										
40	#5	7'-11"	G195	Spcl.	do		do										
40	#5	8'-0"	G196	Spcl.	do		do										
40	#5	8'-1"	G197	Spcl.	do		do										
40	#5	8'-2"	G198	Spcl.	do		do										
40	#5	8'-3"	G199	Spcl.	do		do										
40	#5	8'-4"	G200	Spcl.	do		do										
40	#5	8'-5"	G201	Spcl.	do		do										
40	#5	8'-6"	G202	Spcl.	do		do										
40	#5	8'-8"	G203	Spcl.	do		do										
40	#5	8'-9"	G204	Spcl.	do		do										
40	#5	8'-10"	G205	Spcl.	do		do										
40	#5	9'-0"	G206	Spcl.	do		do										
40	#5	9'-1"	G207	Spcl.	do		do										
40	#5	9'-3"	G208	Spcl.	do		do										
40	#5	9'-4"	G209	Spcl.	do		do										
40	#5	9'-6"	G210	Spcl.	do		do										
40	#5	9'-8"	G211	Spcl.	do		do										
40	#5	9'-10"	G212	Spcl.	do		do										
40	#5	9'-11"	G213	Spcl.	do		do										
40	#5	10'-1"	G214	Spcl.	do		do										
40	#5	10'-3"	G215	Spcl.	do		do										
40	#5	10'-5"	G216	Spcl.	do		do										
40	#5	10'-7"	G217	Spcl.	do		do										
40	#5	10'-9"	G218	Spcl.	do		do										
40	#5	10'-11"	G219	Spcl.	do		do										
40	#5	11'-2"	G220	Spcl.	do		do										

No. Req'd	Size	Length	Mark	Type	Location	A	B	C	D	E	F	G	H	J	K	R	O
BRIDGE (CONT'D)																	
40	#5	11'-4"	G221	Spcl.	Girder	See Bending Detail											
40	#5	11'-6"	G222	Spcl.	do		do										
40	#5	11'-9"	G223	Spcl.	do		do										
80	#5	11'-10"	G224	Spcl.	do		do										
40	#5	11'-9"	G225	Spcl.	do		do										
40	#5	11'-8"	G226	Spcl.	do		do										
40	#5	11'-6"	G227	Spcl.	do		do										
40	#5	11'-5"	G228	Spcl.	do		do										
40	#5	11'-3"	G229	Spcl.	do		do										
40	#5	11'-2"	G230	Spcl.	do		do										
40	#5	11'-1"	G231	Spcl.	do		do										
40	#5	10'-11"	G232	Spcl.	do		do										
40	#5	10'-10"	G233	Spcl.	do		do										
40	#5	10'-9"	G234	Spcl.	do		do										
40	#5	10'-7"	G235	Spcl.	do		do										
40	#5	10'-6"	G236	Spcl.	do		do										
40	#5	10'-5"	G237	Spcl.	do		do										
40	#5	10'-3"	G238	Spcl.	do		do										
40	#5	10'-2"	G239	Spcl.	do		do										
40	#5	10'-1"	G240	Spcl.	do		do										
40	#5	10'-0"	G241	Spcl.	do		do										
40	#5	9'-11"	G242	Spcl.	do		do										
40	#5	9'-10"	G243	Spcl.	do		do										
40	#5	9'-8"	G244	Spcl.	do		do										
40	#5	9'-7"	G245	Spcl.	do		do										
40	#5	9'-6"	G246	Spcl.	do		do										
40	#5	9'-4"	G247	Spcl.	do		do										
40	#5	9'-3"	G248	Spcl.	do		do										
40	#5	9'-2"	G249	Spcl.	do		do										
40	#5	9'-1"	G250	Spcl.	do		do										
40	#5	9'-0"	G251	Spcl.	do		do										
40	#5	8'-10"	G252	Spcl.	do		do										
40	#5	8'-9"	G253	Spcl.	do		do										
40	#5	8'-8"	G254	Spcl.	do		do										
40	#5	8'-7"	G255	Spcl.	do		do										
40	#5	8'-6"	G256	Spcl.	do		do										
40	#5	8'-5"	G257	Spcl.	do		do										
40	#5	8'-4"	G258	Spcl.	do		do										
40	#5	8'-2"	G259	Spcl.	do		do										
40	#5	8'-2"	G260	Spcl.	do		do										
40	#5	8'-1"	G261	Spcl.	do		do										
40	#5	8'-0"	G262	Spcl.	do		do										
40	#5	7'-11"	G263	Spcl.	do		do										
40	#5	7'-10"	G264	Spcl.	do		do										
40	#5	7'-9"	G265	Spcl.	do		do										
40	#5	7'-9"	G266	Spcl.	do		do										
40	#5	7'-8"	G267	Spcl.	do		do										
40	#5	7'-7"	G268	Spcl.	do		do										
40	#5	7'-6"	G269	Spcl.	do		do										
40	#5	7'-6"	G270	Spcl.	do		do										
40	#5	7'-5"	G271	Spcl.	do		do										
40	#5	7'-5"	G272	Spcl.	do		do										
40	#5	7'-4"	G273	Spcl.	do		do										
40	#5	7'-4"	G274	Spcl.	do		do										
40	#5	7'-4"	G275	Spcl.	do		do										
40	#5	7'-4"	G276	Spcl.	do		do										
40	#5	7'-4"	G277	Spcl.	do		do										
40	#5	7'-4"	G278	Spcl.	do		do										
40	#5	7'-4"	G279	Spcl.	do		do										
40	#5	7'-4"	G280	Spcl.	do		do										
40	#5	7'-4"	G281	Spcl.	do		do										
40	#5	7'-5"	G282	Spcl.	do		do										
40	#5	7'-5"	G283	Spcl.	do		do										
40	#5	7'-5"	G284	Spcl.	do		do										
40	#5	7'-6"	G285	Spcl.	do		do										
40	#5	7'-6"	G286	Spcl.	do		do										
40	#5	7'-7"	G287	Spcl.	do		do										
40	#5	7'-7"	G288	Spcl.	do		do										
40	#5	7'-7"	G289	Spcl.	do		do										
40	#5	7'-8"	G290	Spcl.	do		do										
40	#5	7'-8"	G291	Spcl.	do		do										
40	#5	7'-9"	G292	Spcl.	do		do										
40	#5	7'-9"	G293	Spcl.	do		do										
40	#5	7'-10"	G294	Spcl.	do		do										
40	#5	7'-11"	G295	Spcl.	do		do										

Note: Bar List for Bridge continued on Sheet 16.

NOTES

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.

See Sheet 13 for Typical Bar Types and Hook Dimensions.

See Sheet 16 for Special Bending Details and Cutting Diagrams.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	Mo.	I-891(13) RT. 40			

MISSOURI STATE HIGHWAY DEPARTMENT

ST. CHARLES ROCK ROAD UNDERPASS

STATE ROAD–MARK TWAIN EXPRESSWAY
ABOUT 3 MILES S.W. OF ROBERTSON
PROJECT NO. I-891(13) (RT. 40) STA. 246 + 93.8

ST. LOUIS COUNTY

BAR LIST

SVERDRUP AND PARCEL, INC.
ENGINEERS - ARCHITECTS
ST. LOUIS, MO.

SHEET 15 OF 16

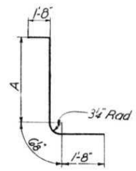
L-887

NO CONSTRUCTION CHANGES

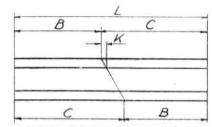
Checked by: L.H. Glaser, Apr. 1956

6S310
1354

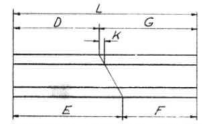
No. Req'd	Size	Length	Mark	Type	Location	A	B	C	D	E	F	G	H	J	K	R	O
40	#5	7'-11"	G296	Spcl.	Girder	See	Bending Detail										
40	#5	8'-0"	G297	Spcl.	do.		do.										
40	#5	8'-0"	G298	Spcl.	do.		do.										
40	#5	8'-1"	G299	Spcl.	do.		do.										
40	#5	8'-1"	G300	Spcl.	do.		do.										
40	#5	8'-2"	G301	Spcl.	do.		do.										
40	#5	8'-3"	G302	Spcl.	do.		do.										
40	#5	8'-3"	G303	Spcl.	do.		do.										
40	#5	8'-4"	G304	Spcl.	do.		do.										
40	#5	8'-5"	G305	Spcl.	do.		do.										
40	#5	8'-5"	G306	Spcl.	do.		do.										
40	#5	8'-6"	G307	Spcl.	do.		do.										
40	#5	8'-7"	G308	Spcl.	do.		do.										
40	#5	8'-7"	G309	Spcl.	do.		do.										
40	#5	8'-8"	G310	Spcl.	do.		do.										
40	#5	8'-9"	G311	Spcl.	do.		do.										
40	#5	8'-10"	G312	Spcl.	do.		do.										
40	#5	8'-11"	G313	Spcl.	do.		do.										
40	#5	8'-11"	G314	Spcl.	do.		do.										
40	#5	9'-0"	G315	Spcl.	do.		do.										
40	#5	9'-1"	G316	Spcl.	do.		do.										
40	#5	9'-2"	G317	Spcl.	do.		do.										
40	#5	9'-3"	G318	Spcl.	do.		do.										
40	#5	9'-4"	G319	Spcl.	do.		do.										
40	#5	9'-5"	G320	Spcl.	do.		do.										
40	#5	9'-6"	G321	Spcl.	do.		do.										
40	#5	9'-7"	G322	Spcl.	do.		do.										
40	#5	9'-8"	G323	Spcl.	do.		do.										
40	#5	9'-9"	G324	Spcl.	do.		do.										
40	#5	9'-10"	G325	Spcl.	do.		do.										
40	#5	9'-11"	G326	Spcl.	do.		do.										
40	#5	10'-0"	G327	Spcl.	do.		do.										
40	#5	10'-1"	G328	Spcl.	do.		do.										
40	#5	10'-2"	G329	Spcl.	do.		do.										
40	#5	10'-3"	G330	Spcl.	do.		do.										
40	#5	10'-4"	G331	Spcl.	do.		do.										
40	#5	10'-5"	G332	Spcl.	do.		do.										
40	#5	10'-6"	G333	Spcl.	do.		do.										
40	#5	10'-7"	G334	Spcl.	do.		do.										
40	#5	10'-9"	G335	Spcl.	do.		do.										
40	#5	10'-10"	G336	Spcl.	do.		do.										
40	#5	10'-11"	G337	Spcl.	do.		do.										
40	#5	11'-0"	G338	Spcl.	do.		do.										
40	#5	11'-2"	G339	Spcl.	do.		do.										
40	#5	11'-3"	G340	Spcl.	do.		do.										
40	#5	11'-4"	G341	Spcl.	do.		do.										
40	#5	11'-6"	G342	Spcl.	do.		do.										
40	#5	11'-7"	G343	Spcl.	do.		do.										
40	#5	11'-8"	G344	Spcl.	do.		do.										
40	#5	11'-10"	G345	Spcl.	do.		do.										
40	#5	11'-11"	G346	Spcl.	do.		do.										
40	#5	12'-0"	G347	Spcl.	do.		do.										
40	#5	12'-2"	G348	Spcl.	do.		do.										
40	#5	12'-3"	G349	Spcl.	do.		do.										
40	#5	12'-5"	G350	Spcl.	do.		do.										
40	#5	12'-6"	G351	Spcl.	do.		do.										
40	#5	12'-8"	G352	Spcl.	do.		do.										
40	#5	12'-9"	G353	Spcl.	do.		do.										
40	#5	12'-10"	G354	Spcl.	do.		do.										
96	#5	27'-2"	G355	Str.	do.												
192	#5	39'-7"	G356	Str.	do.												
96	#5	33'-10"	G357	Str.	do.												
48	#5	40'-9"	G358	Str.	do.												
48	#5	23'-4"	G359	Str.	do.												
48	#5	8'-0"	G360	Str.	do.												
192	#5	36'-1"	G361	Str.	do.												
144	#5	42'-6"	G362	Str.	do.												
48	#5	30'-10"	G363	Str.	do.												
24	#5	39'-6"	G364	Str.	do.												
24	#5	22'-2"	G365	Str.	do.												
24	#5	6'-8"	G366	Str.	do.												
96	#5	36'-6"	G367	Str.	do.												
320	#5	8'-7"	G368	3	do.	—	—	—	1'-8"	5'-3"	1'-8"	—	3'-8¼"				



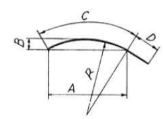
Mark	A	Mark	A	Mark	A
G1	3'-5⅝"	G239	6'-4⅛"	G299	4'-2⅝"
G180	3'-6"	G240	6'-2⅞"	G300	4'-3¼"
G181	3'-6⅛"	G241	6'-1¾"	G301	4'-3⅞"
G182	3'-6½"	G242	6'-0⅝"	G302	4'-4½"
G183	3'-6¾"	G243	5'-11½"	G303	4'-5⅛"
G184	3'-7⅛"	G244	5'-10⅜"	G304	4'-5¾"
G185	3'-7½"	G245	5'-8¾"	G305	4'-6⅜"
G186	3'-7⅞"	G246	5'-7⅝"	G306	4'-7⅛"
G187	3'-8¼"	G247	5'-6⅛"	G307	4'-7¾"
G188	3'-8¾"	G248	5'-4⅞"	G308	4'-8½"
G189	3'-9¼"	G249	5'-3⅝"	G309	4'-9¼"
G190	3'-9¾"	G250	5'-2½"	G310	4'-10"
G191	3'-10⅜"	G251	5'-1⅜"	G311	4'-10¾"
G192	3'-11"	G252	5'-0¼"	G312	4'-11½"
G193	3'-11⅝"	G253	4'-11⅛"	G313	5'-0⅜"
G194	4'-0⅜"	G254	4'-9⅞"	G314	5'-1⅛"
G195	4'-1"	G255	4'-8⅞"	G315	5'-2"
G196	4'-1⅞"	G256	4'-7½"	G316	5'-2⅞"
G197	4'-2⅝"	G257	4'-6⅜"	G317	5'-3¾"
G198	4'-3½"	G258	4'-5⅛"	G318	5'-4⅝"
G199	4'-4½"	G259	4'-4¼"	G319	5'-5½"
G200	4'-5⅝"	G260	4'-3⅜"	G320	5'-6½"
G201	4'-6⅞"	G261	4'-2⅜"	G321	5'-7⅝"
G202	4'-8"	G262	4'-1½"	G322	5'-8⅜"
G203	4'-9⅜"	G263	4'-0⅝"	G323	5'-9⅜"
G204	4'-10⅝"	G264	3'-11⅞"	G324	5'-10⅜"
G205	5'-0"	G265	3'-11⅛"	G325	5'-11⅜"
G206	5'-1½"	G266	3'-10½"	G326	6'-0⅜"
G207	5'-3"	G267	3'-9¾"	G327	6'-1⅜"
G208	5'-4½"	G268	3'-9"	G328	6'-2½"
G209	5'-6⅛"	G269	3'-8¼"	G329	6'-3⅝"
G210	5'-7⅞"	G270	3'-7⅝"	G330	6'-4⅝"
G211	5'-9½"	G271	3'-7⅛"	G331	6'-5⅞"
G212	5'-11⅜"	G272	3'-6⅝"	G332	6'-7"
G213	6'-1⅛"	G273	3'-6¼"	G333	6'-8⅛"
G214	6'-3"	G274	3'-6"	G334	6'-9¼"
G215	6'-5"	G275	3'-5¾"	G335	6'-10½"
G216	6'-7"	G276	3'-5⅝"	G336	6'-11¾"
G217	6'-9"	G277	3'-5⅝"	G337	7'-1"
G218	6'-11⅛"	G278	3'-5⅝"	G338	7'-2⅛"
G219	7'-1¼"	G279	3'-5⅞"	G339	7'-3½"
G220	7'-3½"	G280	3'-6"	G340	7'-4¾"
G221	7'-5¾"	G281	3'-6¼"	G341	7'-6"
G222	7'-8"	G282	3'-6½"	G342	7'-7⅜"
G223	7'-10⅜"	G283	3'-6⅞"	G343	7'-8⅝"
G224	7'-11⅝"	G284	3'-7¼"	G344	7'-10"
G225	7'-10⅞"	G285	3'-7¾"	G345	7'-11⅜"
G226	7'-9⅜"	G286	3'-8⅛"	G346	8'-0¾"
G227	7'-8"	G287	3'-8½"	G347	8'-2¼"
G228	7'-6½"	G288	3'-8⅞"	G348	8'-3⅝"
G229	7'-5⅛"	G289	3'-9¼"	G349	8'-5⅛"
G230	7'-3¾"	G290	3'-9¾"	G350	8'-6½"
G231	7'-2⅜"	G291	3'-10¼"	G351	8'-8"
G232	7'-1"	G292	3'-10¾"	G352	8'-9½"
G233	6'-11⅝"	G293	3'-11¼"	G353	8'-11"
G234	6'-10⅜"	G294	3'-11¾"	G354	8'-11⅝"
G235	6'-9"	G295	4'-0⅜"		
G236	6'-7¾"	G296	4'-1"		
G237	6'-6½"	G297	4'-1⅝"		
G238	6'-5¼"	G298	4'-2⅛"		



EQUAL CUTTING DIAGRAM
(One Set Shown)



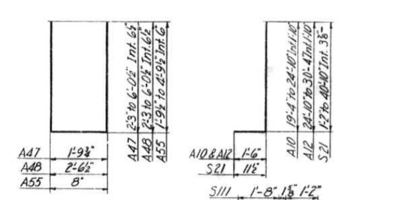
UNEQUAL CUTTING DIAGRAM
(One Set Shown)

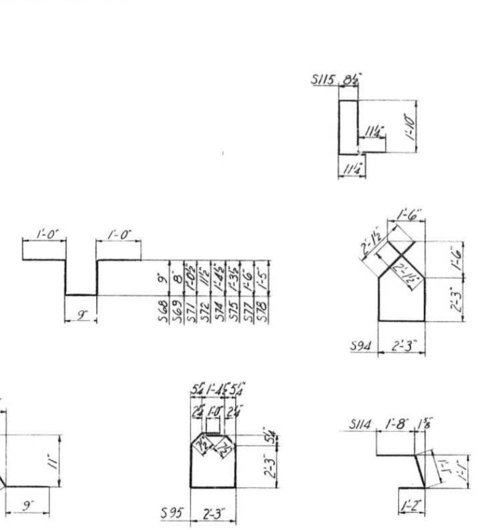


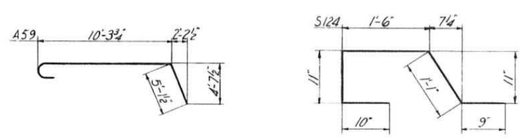
Mark	Cutting Schedule	B	C	K	L
A10	Cut 2 Sets of 4 Each & Bend	20'-10"	26'-4"	1'-10"	47'-2"
A12	Cut 2 Sets of 4 Each & Bend	26'-4"	31'-10"	1'-10"	58'-2"
A14	Cut 4 Sets of 4 Each	7'-6"	9'-3"	7"	16'-9"
A15	Cut 4 Sets of 4 Each	6'-6"	8'-9"	9"	15'-3"
A55	Cut 1 Set of 7 & Bend	4'-3"	10'-3"	1'-0"	14'-6"
S17	Cut 2 Sets of 114 Each	1'-4"	37'-6"	3⅞"-	38'-10"
S21	Cut 1 Set of 125 & Bend	2'-1"	41'-9"	3⅞"-	43'-10"
S22	Cut 1 Set of 125	1'-2"	40'-10"	3⅞"-	42'-0"
S27	Cut 1 Set of 4	3'-7"	6'-4"	11"	9'-11"
S28	Cut 1 Set of 4	2'-0"	3'-9"	7"	5'-9"

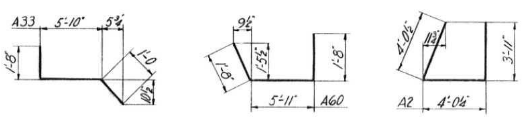
Mark	Cutting Schedule	D	E	F	G	K	L
A47	Cut 1 Set of 4 & bend	6'-4"	9'-7"	10'-8"	13'-11"	1'-1"	20'-[illegible]"
A48	Cut 1 Set of 4 & bend	7'-1"	10'-4"	11'-5"	14'-8"	1'-1"	21'-9"

Mark	A	B	R	C	D
A26	10'-4½"	1'-5"	10'-5⅝"	10'-10¼"	10"
A27	11'-9"	1'-7½"	11'-10⅝"	12'-4"	10"
A28	13'-2"	1'-9½"	13'-3⅝"	13'-10"	10"
A29	14'-6"	2'-0"	14'-7⅝"	15'-2¾"	10"
A32	8'-9½"	1'-2½"	8'-11"	9'-2¾"	10"
A34	7'-9½"	11"	8'-11⅝"	8'-0"	10"
A35	8'-6"	1'-0"	9'-8⅝"	8'-9½"	10"
A36	8'-10"	1'-2½"	8'-11⅝"	9'-3¼"	10"
A37	9'-7½"	1'-3½"	9'-8⅞"	10'-1"	10"
A38	8'-11"	1'-2½"	9'-0¼"	9'-4"	10"
A58	8'-9½"	1'-2½"	8'-11"	9'-2¾"	10"
S126	2'-1½"	5"	1'-6¼"	2'-4"	1'-4"









NOTES

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.

See Sheet 13 for Typical Bar Types and Hook Dimensions.

Dimensioning, bending and hooks for Special Bending Details shall conform to the standards as noted or shown on Sheet 13.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	Mo.	I-891(13) Rt. 40			

MISSOURI STATE HIGHWAY DEPARTMENT

ST. CHARLES ROCK ROAD UNDERPASS

STATE ROAD-MARK TWAIN EXPRESSWAY
ABOUT 3 MILES S.W. OF ROBERTSON
PROJECT NO. I-891 (13)(RT. 40) STA. 246+93.8

ST. LOUIS COUNTY

BAR LIST, SPECIAL BENDING DETAILS & CUTTING DIAGRAMS

SVERDRUP AND PARCEL, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

L-887

Drawn by: D.G. Hartman ... 1956
Checked by: ... Apr. 1956
56 5319
1354

16

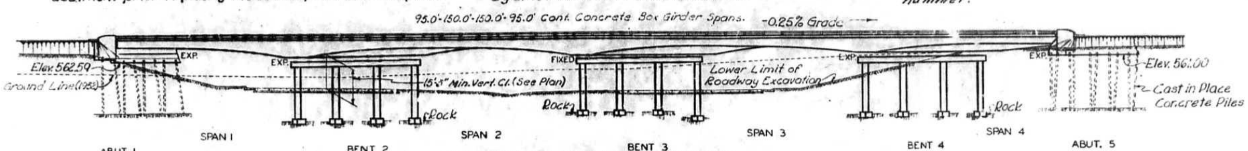
FED. ROAD DIV. NO.	STATE	FED AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	Mo.	I-89(13) RT.40			

FINAL PLANS

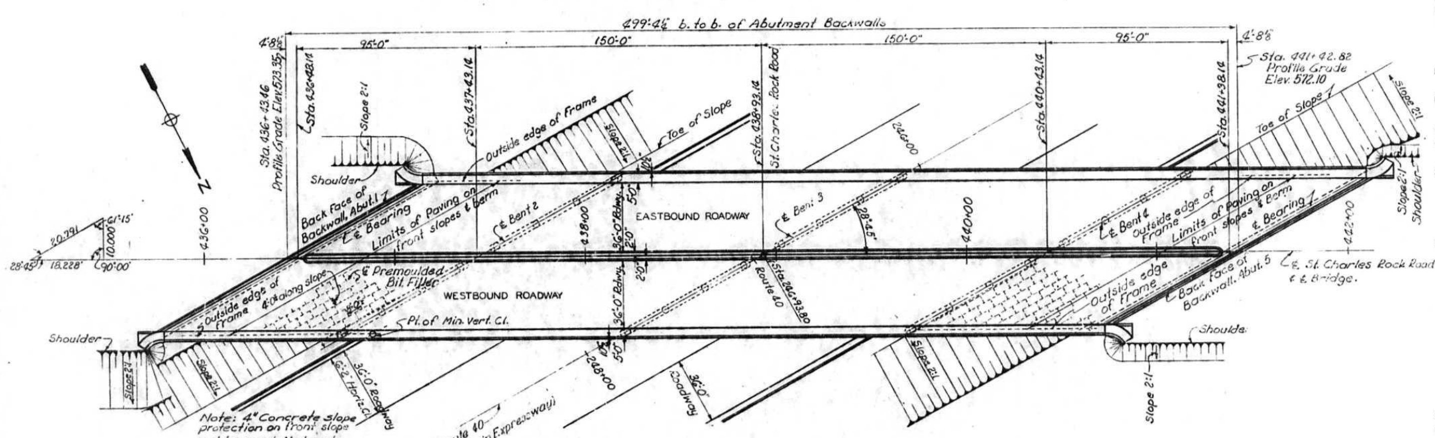
Note: The embankment adjacent to and not less than 25'-0" back of Abutment 1 (full roadway width) was placed and compacted up to the elevation of the bottom of the concrete for the abutment prior to placing the cast-in-place concrete piles.

Note: All loose, shaly or disintegrated rock was removed and the footings placed at least 6" into sound rock and cast against vertical faces of same. When soft rock or shale was encountered, the footings were carried at least 18" into and cast against vertical faces of same.

Note: All piling are cast-in-place concrete piles in accordance with Special Provisions for concrete piles. All piling were driven to refusal in rock and to substain a load of at least 54 tons per pile. Concrete for cast-in-place piles is Class A. All piles were driven with a steam hammer.

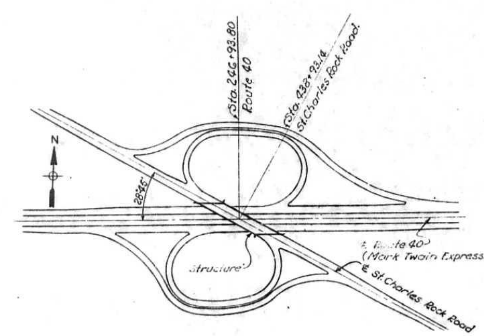


ELEVATION OF WESTBOUND ROADWAY



Note: 4" Concrete slope protection on front slope and berm of Abutments is included under Road Contract. Provide ½" Premoulded Bituminous Filler between paving blocks and Abutments.

PLAN



LOCATION PLAN

ESTIMATED QUANTITIES				
Item		Substr.	Superstr.	Total
Class I Excavation for Structures	Cu.Yd.	1774.5	—	1774.5
Class "B" Concrete	Cu.Yd.	1316.3	—	1316.3
Class "B-1" Concrete	Cu.Yd.	—	3,312.0	3,312.0
Reinforcing Steel	Lbs.	153,530	1,177,370	1,330,900
Fabricated Structural Steel	Lbs.	—	79110	79110
Concrete Piles in Place	Lin.Ft.	2124	—	2124
Aluminum Alloy Handrail	Lin.Ft.	—	993	993
Class I Excavation Plus 25%	Cu.Yd.	15	—	15
Test holes	Lin. Ft.	277	—	277

Note: All Excavation for Bridge is paid for as Class I Excavation for Structures.
Final quantities of Class I Excavation for Structures includes only amount of excavation below limits of Roadway Excavation. (See Special Provisions.)

BENCH MARKS (U.S.G. Datum)
B.M. - □ in conc. on safety curb Rt. sd bent No 1 - Elev. 573.71
B.M. - □ in conc. on safety curb Lt. sd. bent No 5 - Elev. 572.03

INDEX OF DRAWINGS

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 FOR CONCRETE:
Concrete in flexure ---------- 1,200 lbs. per sq. in.
Reinforcing Steel ---------- 20,000 lbs. per sq. in.

ROADWAY WEARING SURFACE: The roadway slab as detailed includes a ½" wearing surface poured monolithically with slab.

FOUNDATION ROCK PRESSURES: Maximum computed load is 12 tons per square foot.

CURING OF CONCRETE: See Special Provisions.

REMOVAL OF FORMS: See Special Provisions.

REINFORCEMENT: All dimensions to reinforcing steel on detail drawings are to ℄ of bar except where the clear distance is noted from the face of concrete. All reinforcing steel is lapped a minimum of 32 diameters unless otherwise shown or noted.

BEVELED EDGES: All exposed edges of concrete were beveled ¾" unless otherwise shown or noted.

RUBBED FINISH: All exposed surfaces of concrete end posts were given a rubbed finish.

WELDING: Qualification of welding operators were required.

CONSTRUCTION JOINTS: Construction joints were made only where shown on the plans. See Special Provisions.

FILLED JOINTS: Where filled joints are specified on the plans, the joint filler conforms to the requirements for "Gray Rubber Compound Joints", as given in Section 59-22B of the Standard Specifications. Payment for furnishing and placing joint filler is included in unit contract price bid for concrete.

PAINT: Access Doors and Frames: See Special Provisions.
Bearings: Shop, one coat of red lead. Field, first coat of brown, second coat of aluminum.
All other structural steel, except in pile shells: Shop, none. Field, surfaces inaccessible after erection two coats of red lead. All other exposed surfaces, one coat of brown and one coat of aluminum.
Steel Shells for cast-in-place piles are painted as specified for steel piles in Section 22-9C of the Standard Specifications.
Contractor furnished required paint. Payment for paint, cleaning and painting specified surfaces is included in unit price bid for items painted.

REMOVAL OF FALSEWORK: See Special Provisions.

FABREEKA PADS: See Special Provisions.

ALUMINUM ALLOY HANDRAIL: See Special Provisions.

CONCRETE: Concrete for superstructure is Class "B-1", air entrained. See Special Provisions.
Concrete for substructure is Class "B", air entrained. When the contractor desired he used Class "B-1" in lieu of Class "B" for concrete in substructure with payment on the basis of Class "B" concrete.

WATERPROOFING DECK: Superstructure deck was waterproofed. See Special Provisions.

MISSOURI STATE HIGHWAY DEPARTMENT

ST. CHARLES ROCK ROAD UNDERPASS

STATE ROAD-MARK TWAIN EXPRESSWAY
ABOUT 3 MILES S.W. OF ROBERTSON
PROJECT NO. I-89(13) (RT. 40) STA. 246 + 93.8

ST. LOUIS COUNTY

GENERAL PLAN AND ELEVATION

SUBMITTED BY: J.A. Williams DATE 8-9-1956 BRIDGE ENGIN.
APPROVED BY: Rex M. Whitton DATE 8-9-1956 CHIEF ENGINEER

SVERDRUP AND PARCEL, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

SUBMITTED BY: [signature]
REGISTERED PROFESSIONAL ENGINEER MISSOURI NO. E-919

STD. C110 R4-
L-887

SHEET 1 OF 4.

Drawn by: L.H. Glaser, Jan. 1956
Checked by: R.F. Beck, Apr. 1956
1354 5C33C

Note: Do not scale this drawing. Follow dimensions.

FINISHED
FINAL PLANS

17

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	Mo.	I-691(13) RT 40			

FINAL PLANS

Note A: Backwall above this joint was poured after the box girder was in place.

PART PLAN
East Side of Abut. 1
West Side of Abut. 5

Note: 20-Cast-in-place piles required for portion of each Abutment detailed on this sheet.

Note: Elevations given on backwall at top of backwall.

Note: N.F. indicates Near Face. F.F. indicates Far Face. E.F. indicates Each Face.

ELEVATION

Note: Spacerbars A3, A43, A44 & A45 with A2 except as necessary to clear anchor bolt wells.

	Elev. A	Elev. B	Elev. C	Elev. D	Elev. E	Elev. F
Abut. 1	567.59	567.67	567.75	567.83	567.91	568.00
Abut. 5	566.00	566.15	566.30	566.45	566.60	566.75

SECTION E-E
Section JJ on Sheet 3 is similar.

SECTION G-G

SECTION F-F

TIMBER HEADER

Note: Cost of timber headers complete & in place is included in price bid for concrete.

NOTES
Work this sheet with Sheet 3.

PLAN OF WING WALL
East Wing Wall-Abut. 1-Shown
West Wing Wall-Abut. 5-Similar

SECTION A-A

DEVELOPED ELEVATION B-B

SECTION C-C
For curb steel not shown, see Section D-D

SECTION D-D

SECTION H-H
Showing typical A8 bar which are placed under each bearing plate.

MISSOURI STATE HIGHWAY DEPARTMENT

ST. CHARLES ROCK ROAD UNDERPASS

STATE ROAD-MARK TWAIN EXPRESSWAY
ABOUT 3 MILES S.W. OF ROBERTSON
PROJECT NO. I-691(13) (RT. 40) STA. 246 + 23.8

ST. LOUIS COUNTY

ABUTMENTS 1 & 5

SVERDRUP AND PARCEL, INC.
ENGINEERS - ARCHITECTS
ST. LOUIS, MO.

1364	Drawn by: H.C. Morris, March, 1956
565/75	Checked by: G.R. Pennington, Mar. 1956

Note: Do not scale this drawing. Follow dimensions.

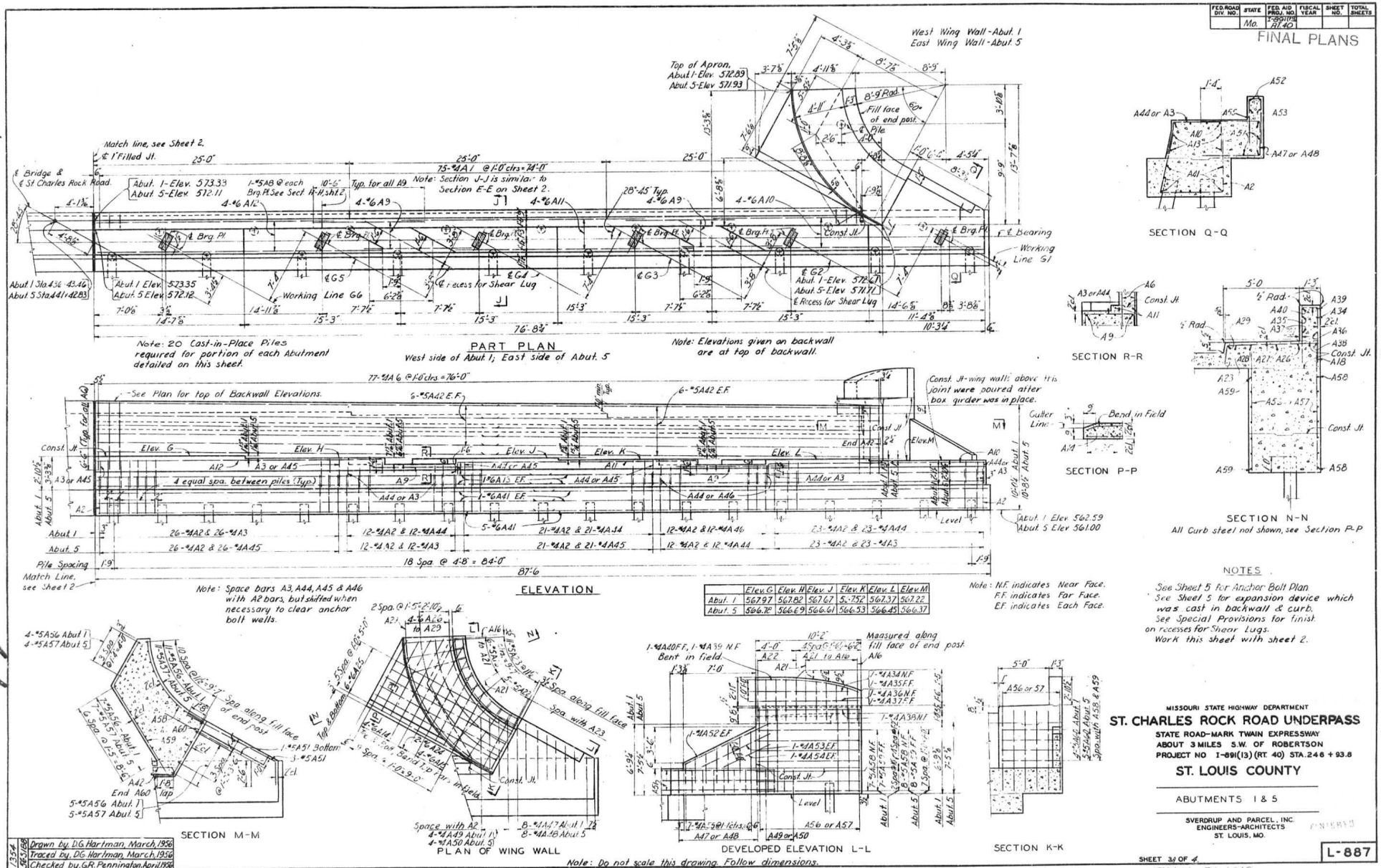
SHEET 2A OF 4.

L-887

18

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	Mo.	I-891(13) RT. 40			

FINAL PLANS



	Elev. G	Elev. H	Elev. J	Elev. K	Elev. L	Elev. M
Abut. 1	567.97	567.82	567.67	567.52	567.37	567.22
Abut. 5	566.78	566.69	566.61	566.53	566.45	566.37

NOTES

See Sheet 5 for Anchor Bolt Plan.
See Sheet 5 for expansion device which was cast in backwall & curb.
See Special Provisions for finish on recesses for Shear Lugs.
Work this sheet with sheet 2.

MISSOURI STATE HIGHWAY DEPARTMENT

ST. CHARLES ROCK ROAD UNDERPASS

STATE ROAD - MARK TWAIN EXPRESSWAY
ABOUT 3 MILES S.W. OF ROBERTSON
PROJECT NO. I-891(13) (RT. 40) STA. 246 + 93.8

ST. LOUIS COUNTY

ABUTMENTS 1 & 5

SVERDRUP AND PARCEL, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

1354	Drawn by D.G. Hartman, March, 1956
365/68	Traced by D.G. Hartman, March, 1956
	Checked by G.R. Pennington April, 1956

Note: Do not scale this drawing. Follow dimensions.

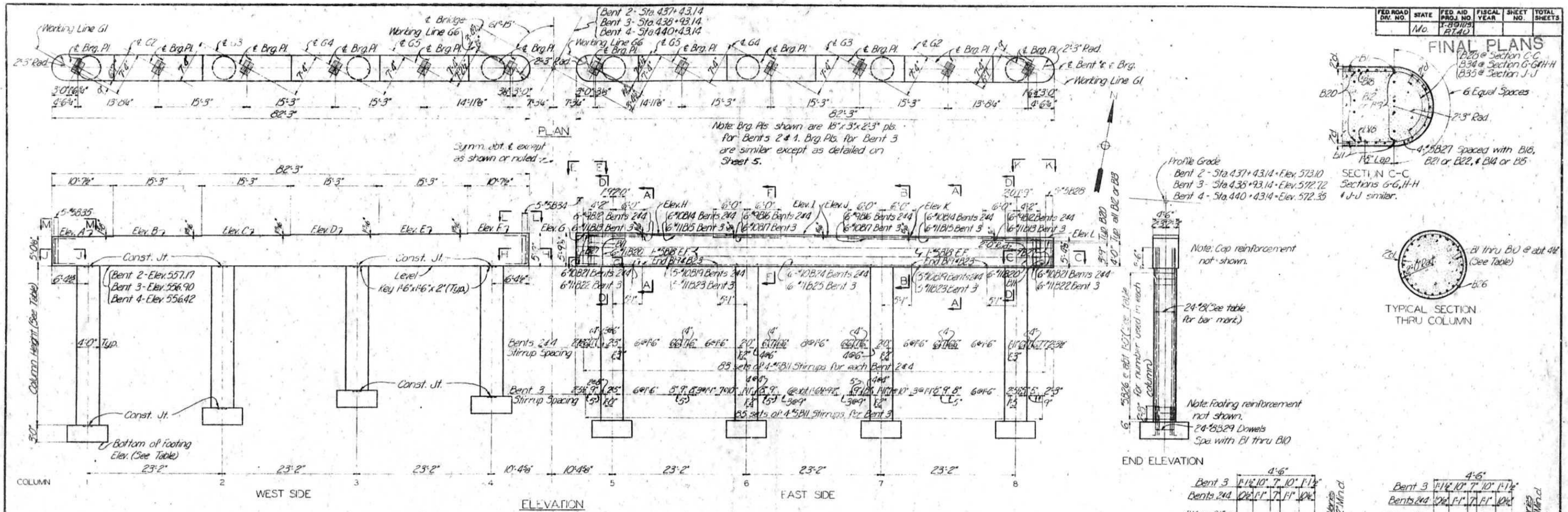
L-887

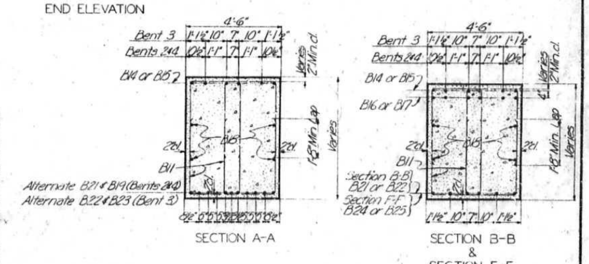
SHEET 34 OF 4.

FINAL PLANS

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	Mo.	I-891(13) RT.40			

FINAL PLANS





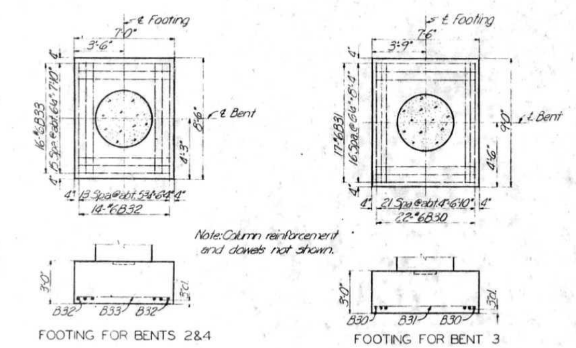
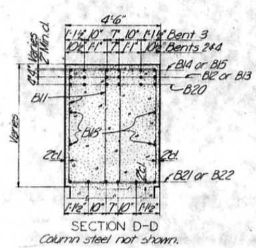
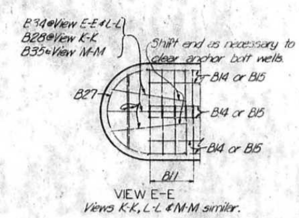


TABLE OF ELEVATION			
Elev.	Bent 2	Bent 3	Bent 4
A	562.15	561.91	561.43
B	562.32	562.05	561.57
C	562.47	562.20	561.72
D	562.62	562.35	561.87
E	562.77	562.50	562.02
F	562.92	562.65	562.17
G	562.95	562.68	562.20
H	562.86	562.59	562.11
I	562.78	562.51	562.03
J	562.70	562.43	561.95
K	562.62	562.35	561.87
L	562.55	562.28	561.80

TABLE OF COLUMNS DIMENSIONS AND REINFORCEMENT

Bent No	Column No.	Bottom Ftg. Elev	Column Height	Vert. Reinf. Bar Mark	No. Ties	Bent No	Column No	Bottom Ftg. Elev	Column Height	Vert. Reinf. Bar Mark	No. Ties
2	1	527.90	26'-3¼"	B1	26	3	5	535.42	18'-5¾"	B7	18
2	2	532.70	21'-5⅝"	B2	21	3	6	535.57	18'-4"	B8	18
2	3	533.20	20'-11⅝"	B3	21	3	7	534.72	19'-2⅛"	B8	19
2	4	533.60	20'-6⅞"	B4	21	3	8	531.00	22'-10¾"	B8	23
2	5	534.20	19'-11⅝"	B5	20	4	1	533.80	19'-7½"	B9	20
2	6	534.00	20'-2"	B5	20	4	2	532.86	20'-6¾"	B10	21
2	7	529.20	24'-11⅝"	B5	25	4	3	535.90	17'-6¼"	B10	18
2	8	529.60	24'-6⅞"	B5	25	4	4	534.48	18'-11¼"	B9	19
3	1	532.90	21'-0"	B6	21	4	5	535.41	18'-0⅛"	B9	18
3	2	533.29	20'-7⅞"	B6	21	4	6	533.79	19'-7⅝"	B9	20
3	3	536.53	17'-4½"	B6	17	4	7	534.24	19'-2⅛"	B9	19
3	4	536.20	17'-8⅞"	B6	18	4	8	536.04	17'-4⅝"	B9	17





NOTES

See Sheet 5 for Anchor Bolt Plan.

CREVICES

Bent	Footing No	Location	Length	Width	Depth
2	2	East Side	7.0'	2.5'	2.5'
2	2	West Side	7.0'	1.5'	1.0'
2	3	West Side	7.0'	1.5'	1.5'
2	3	Center	9.0	2.5	3.0
2	6	Center	9.0	2.0	2.0
3	1	N.E. Corner	8.0	2.0	3.0
3	2	North Side	7.5	3.0	2.5
3	8	N.E. Corner	9.0	3.5	1.5
3	8	S.W. Corner	9.0	3.0	1.0
4	1	N.E. Corner	3.0	1.5	2.0
4	3	S.E. Corner	6.5	1.5	3.5

TEST HOLES

Footing No	1	2	3	4	5	6	7	8	Total
Bent 2	2-5' Shale	2-5'	1-5 3-4'	2-4'	2-5' Shale	3-4'	3-5' Shale	1-3' 1-4' 1-5' Shale	94'
Bent 3	2-4' 2-3' Shale	3-4' 2-2'	2'-4'	3-4'	5-4'	4-4'	2-4'	4-4'	110'
Bent 4	3-3' 1-4' Shale	2-4'	3-4'	2-4'	2-4'	2-4'	2-4'	2-4'	73'
Total Lin. Ft. for Bridge									277'

Note: The footings are on Limestone except where shown

MISSOURI STATE HIGHWAY DEPARTMENT

ST. CHARLES ROCK ROAD UNDERPASS

STATE ROAD—MARK TWAIN EXPRESSWAY
ABOUT 3 MILES S.W. OF ROBERTSON
PROJECT NO. I-891(13) (RT. 40) STA. 246 + 93.8

ST. LOUIS COUNTY

BENTS 2, 3 & 4

SVERDRUP AND PARCEL, INC.
ENGINEERS-ARCHITECTS
ST. LOUIS, MO.

FINISHED

Drawn by: H.T. Sanders, Feb. 1956
Checked by: G.P. Pennington, Apr. 1956

Note: Do not scale this drawing. Follow dimensions.

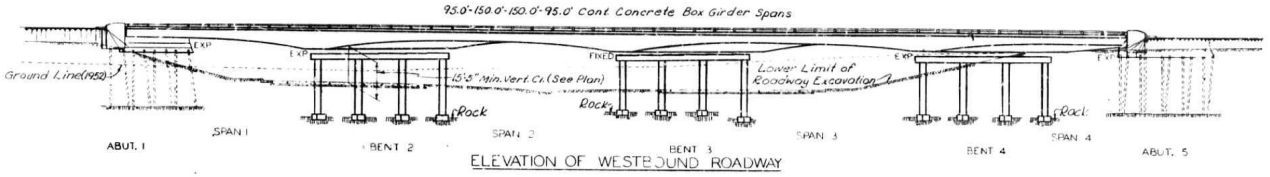
SHEET 4 OF 4.

L-887

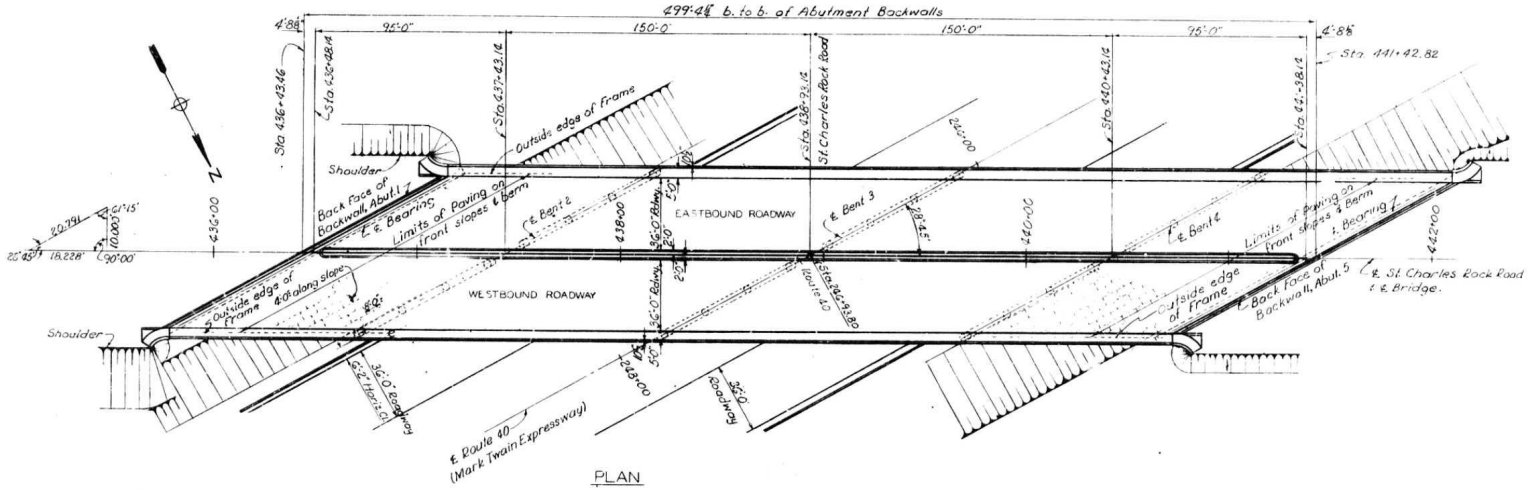
FINAL PLANS

MISSOURI STATE HIGHWAY DEPARTMENT

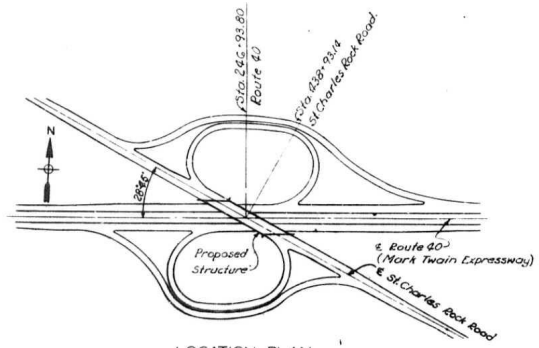
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	2	



ELEVATION OF WESTBOUND ROADWAY



PLAN



LOCATION PLAN

ESTIMATED QUANTITIES		
Item		Total
Latex Concrete Wearing Surface	Sq. Yd.	3996
Repairing Concrete (Half-Sole)	Sq. Ft.	5395
Full Depth Repair	Sq. Ft.	720
Reinforcing Steel	Lbs.	1000
Modification of Expansion Devices (Lump Sum)		1

Note: An estimated 1000lbs of Reinforcing Steel has been added to the Estimated Quantities for the replacement of reinforcing steel for repairing the deck by half-sole and full depth repair.

B.M. - ▫ in conc. on safety curb Rt. Sd. bent No. 1 - Elev. 573.71
B.M. - ▫ in conc. on safety curb Lt. Sd. bent No. 5 - Elev. 572.03

BRIDGE OVER ROUTE I-70

STATE ROAD 180
IN BRIDGETON

PROJECT NO. 6-U180-55 **STA.** 436+43.46

ST LOUIS **COUNTY**

SUBMITTED BY W. A. Carey BRIDGE ENGINEER DATE 7-3-73

APPROVED BY Robert M. Hewitt CHIEF ENGINEER DATE 7-3-73

STD. L-887R

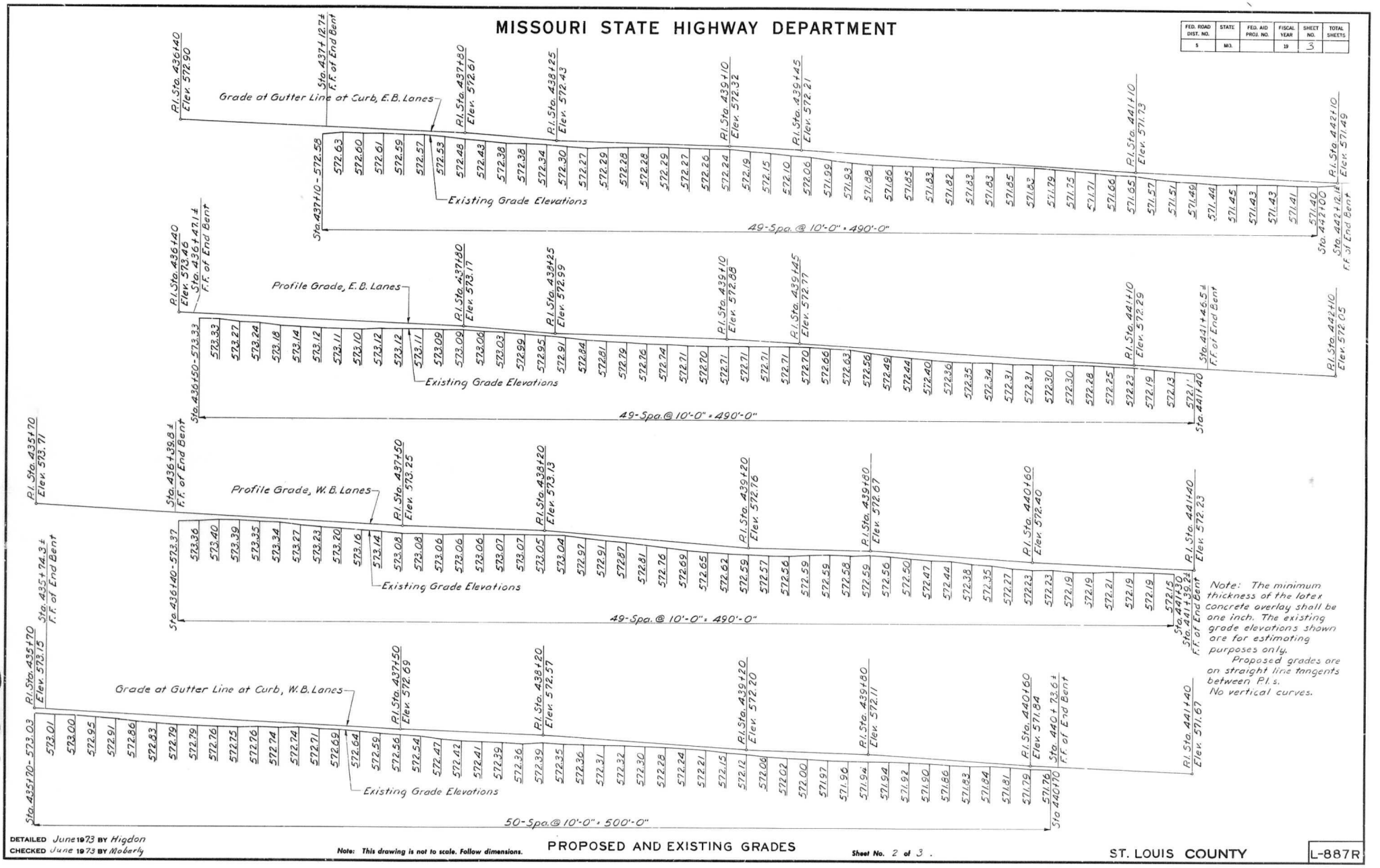
DESIGNED 19 BY
DETAILED JUN 1973 BY CHAPMAN
CHECKED June 1973 BY Moberly

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

Sheet No. 1 of 3.

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	3	



Note: The minimum thickness of the latex concrete overlay shall be one inch. The existing grade elevations shown are for estimating purposes only.
Proposed grades are on straight line tangents between P.I.s.
No vertical curves.

DETAILED June 1973 BY Higdon
CHECKED June 1973 BY Moberly

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

PROPOSED AND EXISTING GRADES

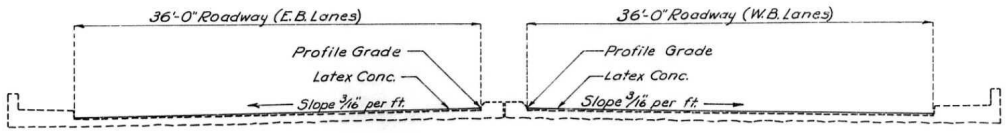
Sheet No. 2 of 3.

ST. LOUIS COUNTY

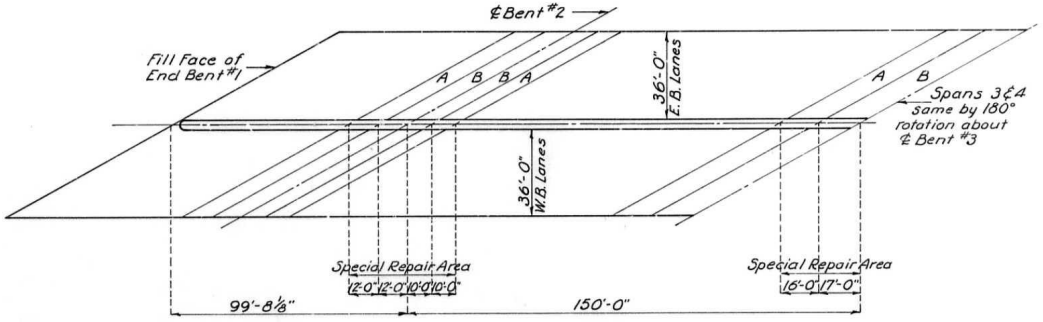
L-887R

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	4	

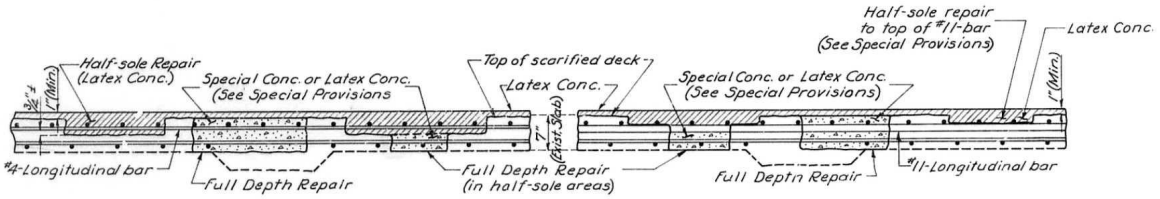


PART TYPICAL SECTION

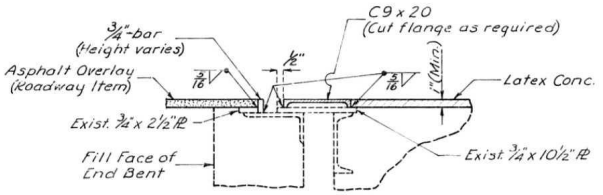


PART PLAN

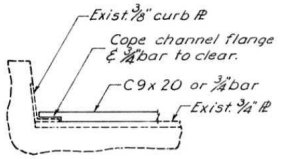
Note: Any concrete removal for half-sole or full depth repair shall be done first in the areas designated "A", next in areas "B" and then in the remainder of the spans. (See Special Provisions)



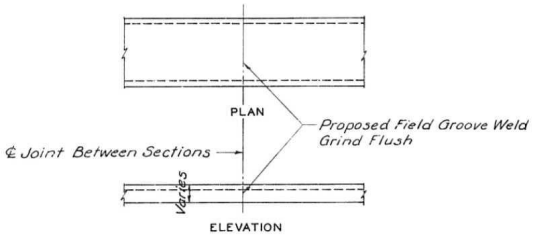
TYPICAL DECK REPAIR



EXPANSION DEVICE MODIFICTION AT END BENTS



EXPANSION DEVICE AT CURBS (Typ.)



DETAILS OF CHANNEL SPLICE

DETAILED June 1973 BY Higdon
CHECKED June 1973 BY Moberly

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

Sheet No. 3 of 3.

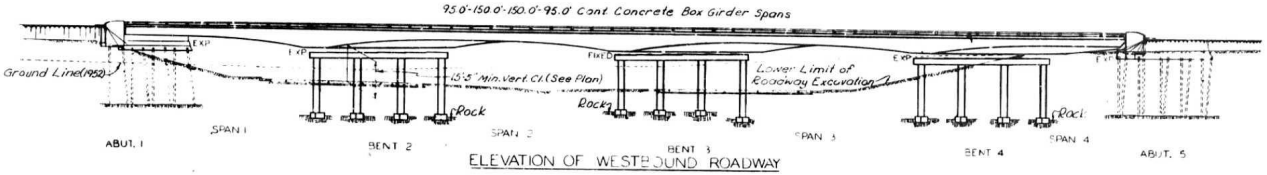
ST. LOUIS COUNTY

L-887R

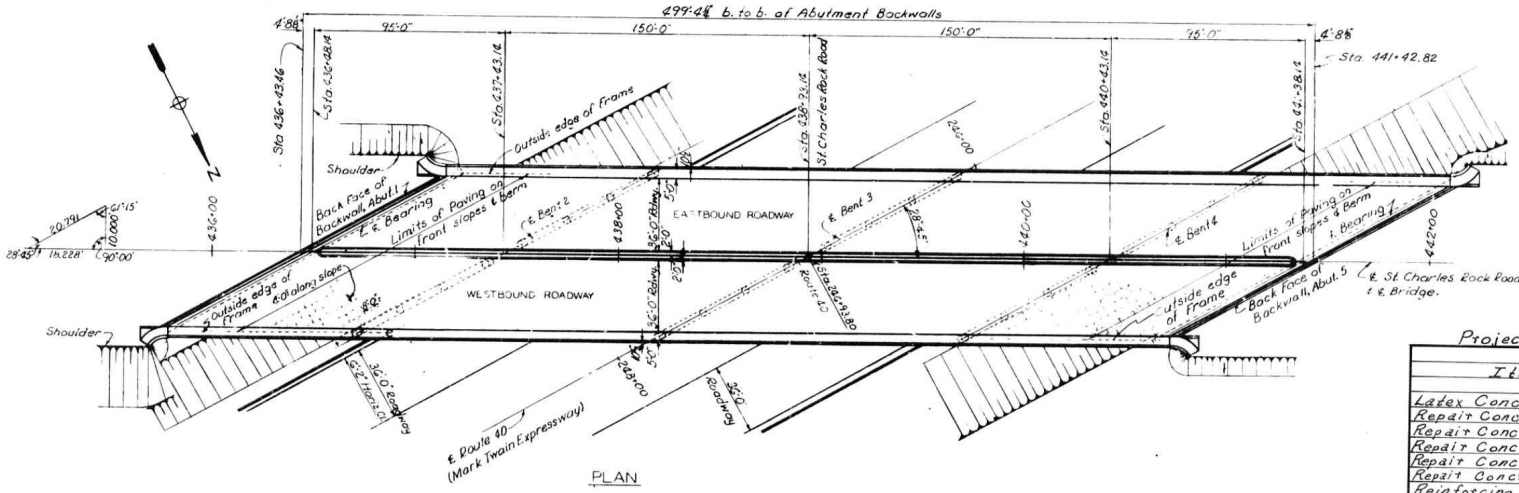
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	2	

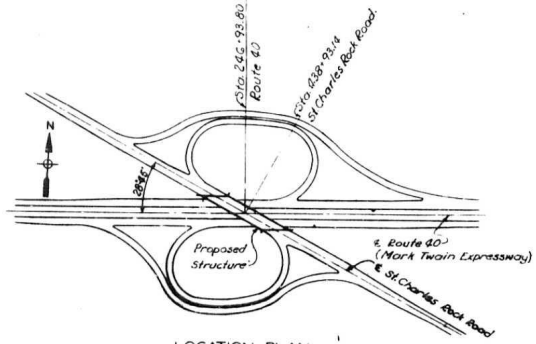
FINAL PLANS



ELEVATION OF WESTBOUND ROADWAY



PLAN



LOCATION PLAN

Proj. 6-U180-55 (Westbound Roadway)

QUANTITIES		
Item		Total
Latex Concrete Wearing Surface	Sq.Yd	1998
Repairing Concrete (Half-Sole)	Sq.Ft.	2333
Full Depth Repair	Sq.Ft	431
Reinforcing Steel	Lbs.	870
Modification of Expansion Devices (Lump Sum)		1

Project 6-U180-55(A) (Eastbound Roadway)

Quantities		
Item	Unit	Total
Latex Concrete Wearing Surface	Sq.Yd.	1998
Repair Concrete, Sawed & Chipped (Half-Sole)	Sq.Ft.	3702
Repair Concrete, Sawed (Half-Sole)	Sq.Ft.	1257
Repair Concrete, Sawed, Chipped & Formed (Full Depth)	Sq.Ft.	164
Repair Concrete, Sawed & Chipped (Full Depth)	Sq.Ft.	173
Repair Concrete, Sawed (Full Depth)	Sq.Ft.	1134
Reinforcing Steel	Lbs.	1910
Modification of Expansion Device	L.S.	1
CONTINGENT ITEMS		
Seal Cracks in West Bound Lanes	F.A.	#297.94
Additional Latex Modified Concrete	Cu.Yd.	19.94
*Repair Concrete (Full Depth) (Proj. 6-U180-55)	Sq.Ft.	338**
*Reinforcing Steel (Proj. 6-U180-55)	Lbs.	300**

*Note: Repair Concrete (Full Depth) & Reinforcing Steel Completed under Proj. 6-U180-55 by Default Contractor.
** Not a Pay Item under Project 6-U180-55(A)

B.M. - □ in conc. on safety curb Rt. Sd. bent No. 1 - Elev. 573.71
B.M. - □ in conc. on safety curb Lt. Sd. bent No. 5 - Elev. 572.03

BRIDGE OVER ROUTE I-70

STATE ROAD 180

IN BRIDGETON

PROJECT NO. 6-U180-55 & 6-U180-55(A) **STA.** 436+43.46

ST LOUIS **COUNTY**

SUBMITTED BY W. D. Carney BRIDGE ENGINEER DATE 7-3-73

APPROVED BY Robert N. Hunter CHIEF ENGINEER DATE 7-3-73

DESIGNED 19 BY

DETAILED JUN 1973 BY CHAPMAN

CHECKED June 1973 BY Moberly

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

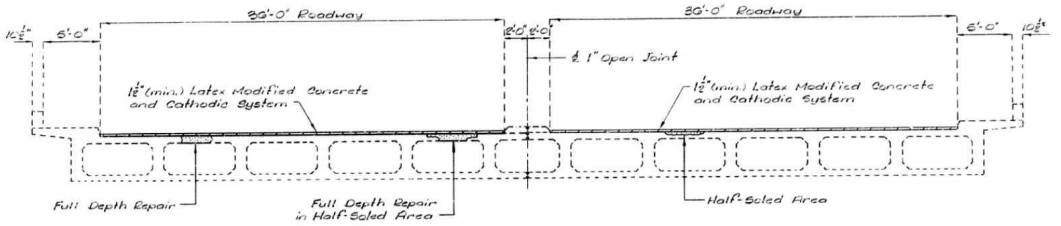
Sheet No. 1 of 3

FINAL PLANS

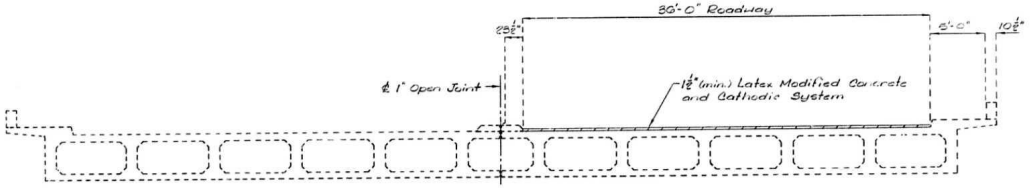
STD. L-887R

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

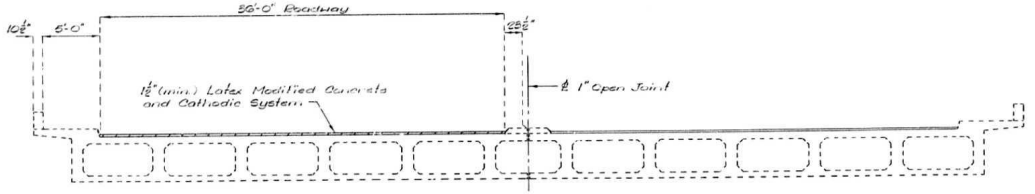
STATE	PROJ. NO.	SHEET NO.
MO.		1
SEC./SUR. 12	TWP. 46N RGE. 5E	



SECTION THRU SLAB



STAGE ONE CONSTRUCTION

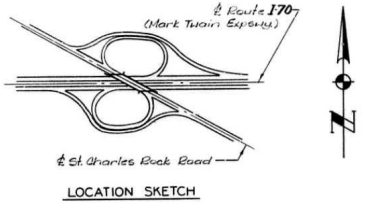


STAGE TWO CONSTRUCTION

GENERAL NOTES:

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

Traffic over structure to be maintained during construction. (See road plans)



LOCATION SKETCH

ESTIMATED QUANTITIES		
ITEM		TOTAL
Repairing Concrete Deck (Half-Soling)	Sq. Ft.	1,785
Full Depth Repair	Sq. Ft.	713
Latex Concrete Wearing Surface	Sq. Yd.	3,962
Cathodic Protection System	Lump Sum	1
Steel Bar Dams	Ea.	4

REPAIRS TO:

BRIDGE OVER INTERSTATE ROUTE 70

STATE ROAD FROM LINDBERGH BLVD. TO ROUTE 115

IN BRIDGETON

PROJECT NO. IR-70-5(221) STA. 436+43.46

JOB NO. 6-U180-687 RTE. 180

ST. LOUIS COUNTY

DATE April 24, 1985

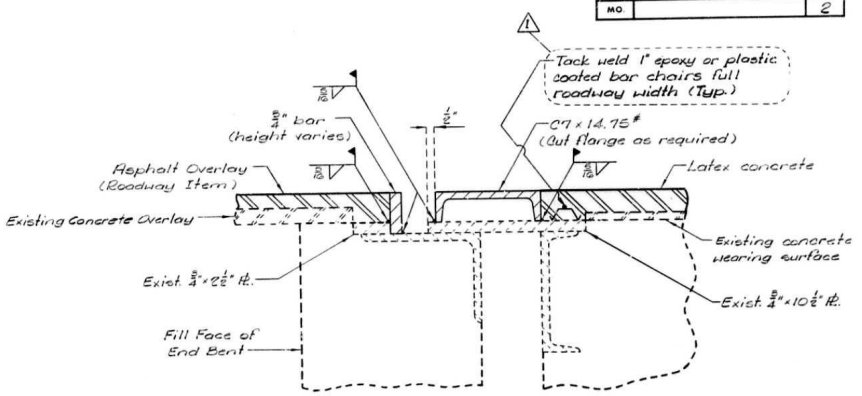
STD.
STD. 712.40
L-887R1

DESIGNED April, 1985
DETAILED April, 1985
CHECKED April, 1985

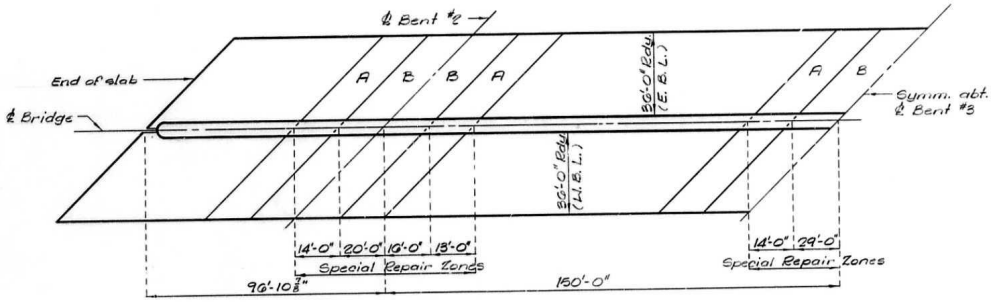
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 1 of 5.

STATE	PROJ. NO	SHEET NO.
MO.		2

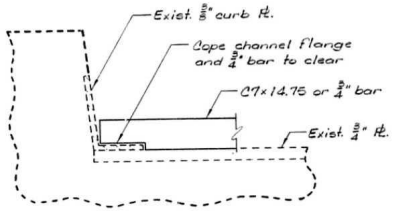


EXPANSION DEVICE MODIFICATIONS AT END BENTS



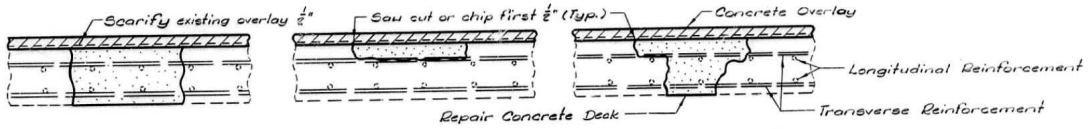
PLAN OF EXISTING SLAB SHOWING SPECIAL REPAIR ZONES

Note: Any repair in the remainder of the bridge that is within 4'-0" of Zone A shall be completed before removing old concrete in Zones A.
Sequence of Repair: Zones A then Zones B.
Zones with the same letter designation may be repaired at the same time.



EXPANSION DEVICE AT CURBS

Note: For 'General Notes' pertaining to expansion device modifications see Std. Drawing No. 712.40.
Remove the existing bar dam (3/4" bar and C9 x 20 channel) and grind welds flush. The engineer shall inspect the existing plates and instruct the contractor to make any additional repairs or adjustments to insure a uniform surface to receive the new steel bar dam.
Payment for removing the existing steel bar dams, including surface preparation for new steel bar dams, shall be included in the contract unit price for Steel Bar Dams, Each.
Contractor shall verify all dimensions in field before ordering new steel.
Bar dams extending from sidewalk to median in each lane shall be considered as one bar dam.



FULL DEPTH REPAIR | HALF-SOLED AREA | FULL DEPTH REPAIR IN HALF-SOLED AREA

DETAILED April, 1986
CHECKED April, 1986

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

⚠ Revised Jan. 10, 1986

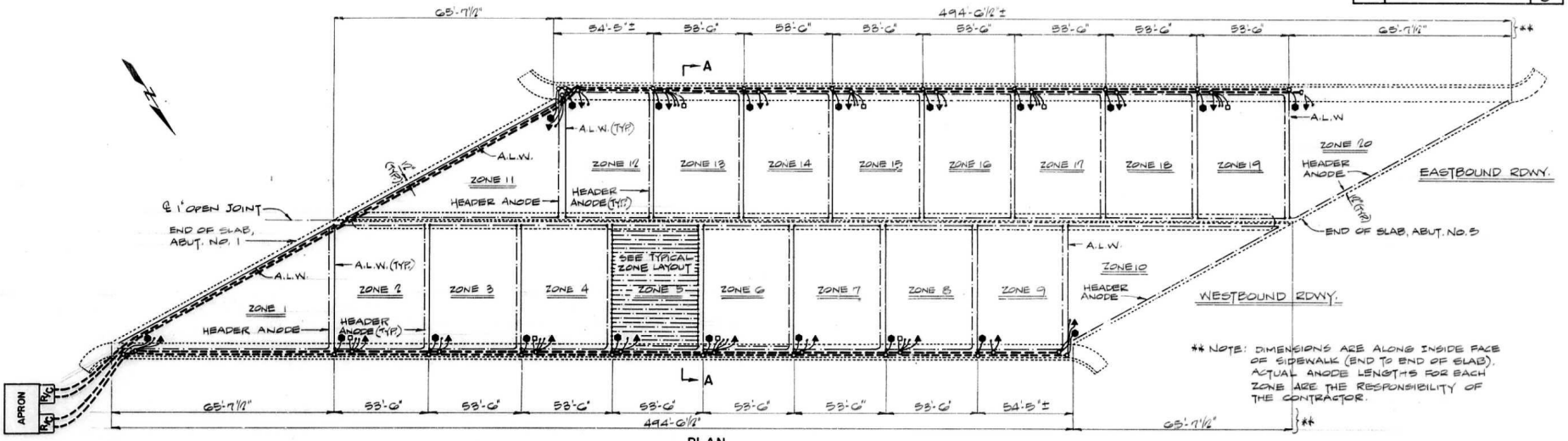
Sheet No. 2 of 5

ST. LOUIS COUNTY

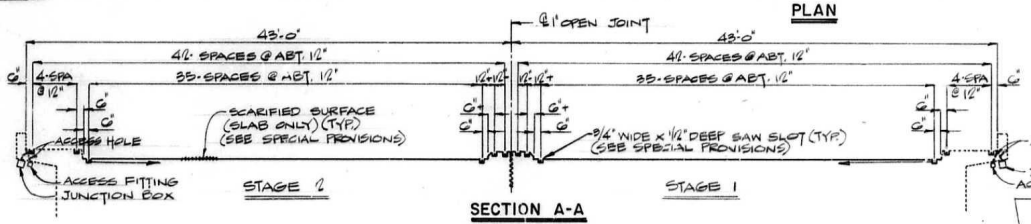
L-887R1

367

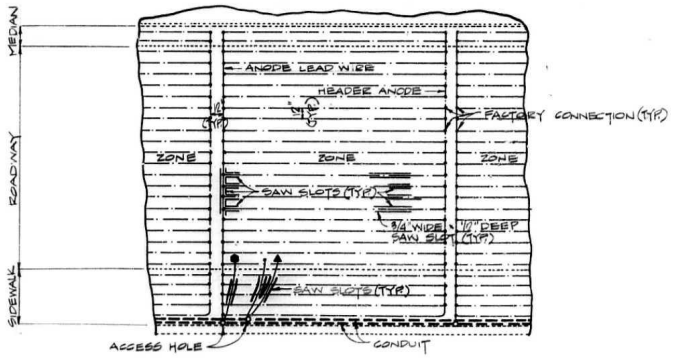
STATE	PROJ NO	SHEET NO
MO		3



PLAN

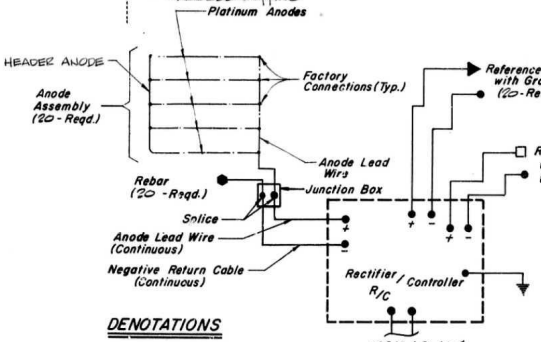


SECTION A-A



TYPICAL ZONE LAYOUT EXCEPT AS NOTED

Note: Anode strands shall be placed as shown with a minimum tolerance of plus or minus three inches.



PARTIAL SCHEMATIC

DENOTATIONS

- A.L.W. Anode Lead Wire
- Platinum Anode
- System Negatives Connection
- Reference Cell
- Rebar Probe (Corrosometer)
- Grounds
- Conduit

NOTE: The anode leads and system negative return leads shall be routed in the same conduit.

The reference cell, reference cell ground leads, rebar probe and probe ground leads shall be routed in the same conduit.

Reference cells are to be placed between anodes.

Reference cell ground shall be welded to top rebar within one foot of reference cell.

All zones are similar with varying widths (see Section A-A).

Anode assembly number must match zone number.

ESTIMATED QUANTITIES *

ITEM	UNIT	QUANTITY
Anode Strands	Lin. Ft.	4280
Reference Cells	Each	20
Rebar Probes	Each	8
Thermite Welds	Each	48
Conduit 2" ø P.V.C.	Lin. Ft.	2560

* For information only.

Note: Anode strands and conduit lengths are approximate. Actual lengths are the responsibility of the contractor.

CATHODIC PROTECTION SYSTEM

ST. LOUIS **COUNTY**

L-887Ri

DETAILED APRIL 1988
CHECKED APRIL 1988

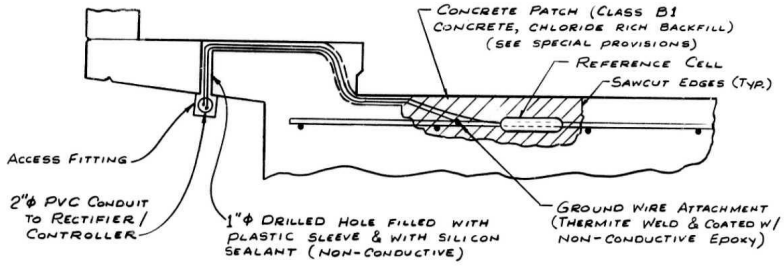
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 3 of 5

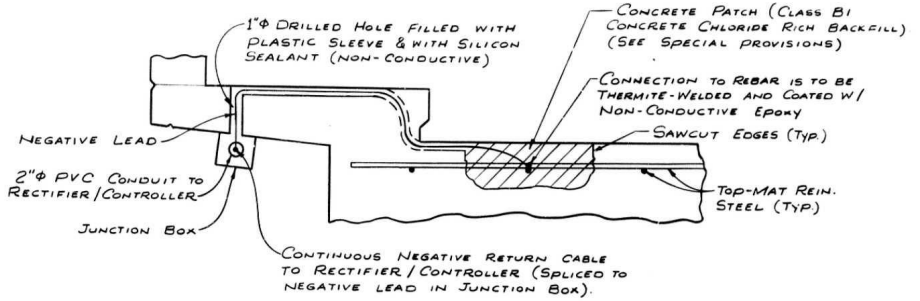
368

STATE	PROJ NO	SHEET NO
MO		4

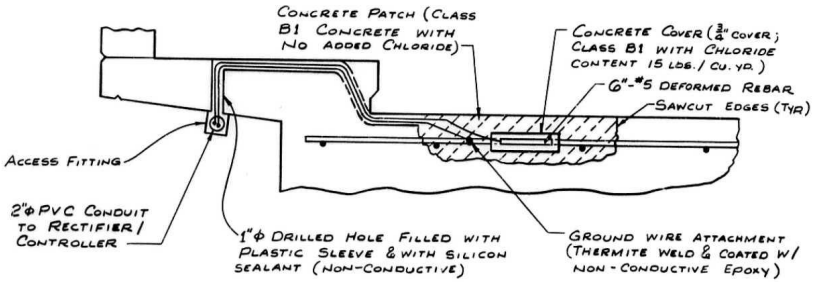
NOTE: THE REFERENCE CELL SHALL BE PLACED IN THE EXCAVATED AREA WITHIN 1" BUT NOT IN DIRECT CONTACT OF TOP-MAT REINFORCING STEEL.



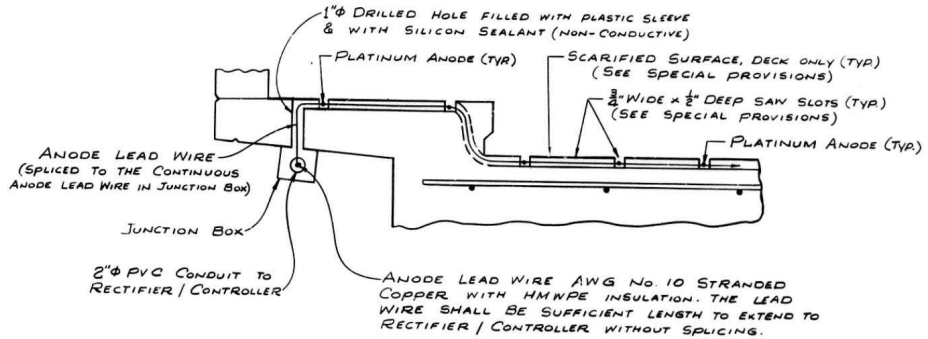
REFERENCE CELL DETAILS



SYSTEM NEGATIVES CONNECTION DETAIL

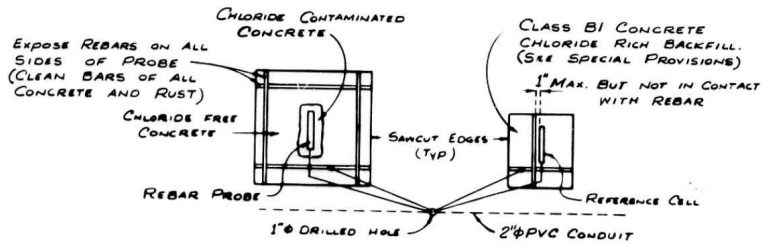


REBAR PROBE DETAILS



Note: All concrete removal shall be initiated by saw cutting the first ½"

PRIMARY ANODE TO ANODE LEAD WIRE DETAIL



PLAN OF REBAR PROBE AND REFERENCE CELL

Notes: Conduit shall be schedule 40 Heavy Wall PVC (Polyvinyl Chloride Plastic). Each section of conduit shall bear the Underwriters Laboratories, Inc. (UL) label.
Conduit shall be secured to concrete with clamps at abt. 5'-0" cts.
Weepholes shall be provided at appropriate locations to drain any moisture in the conduit lines.
The location and direction of conduit may be shifted to meet field conditions as approved by the engineer.
Use expansion couplings and access fittings where appropriate.
The junction boxes shall be PVC molded, surface mounted, size 6"x 6"x 4" They shall be equal to "Carlon" Electrical Construction Products or "Triangle" Conduit & Cable Co. Inc. The conduit terminations and cover shall be of water tight construction.

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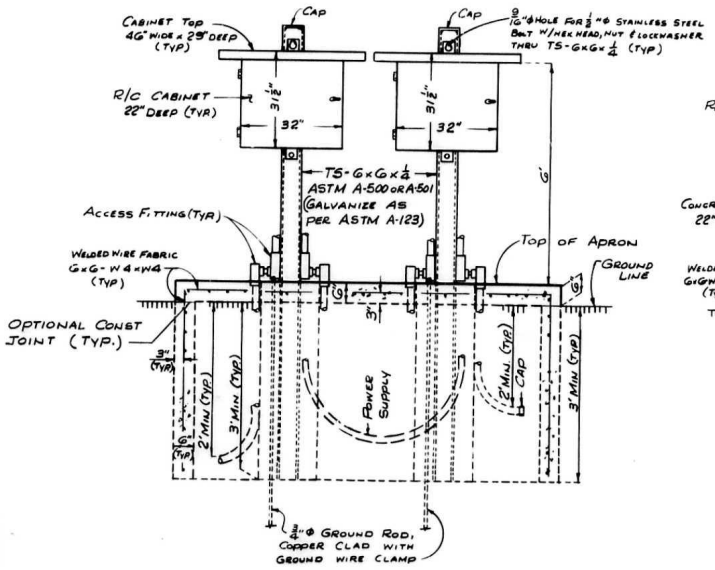
DETAILED APRIL 1985
CHECKED APRIL 1985

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

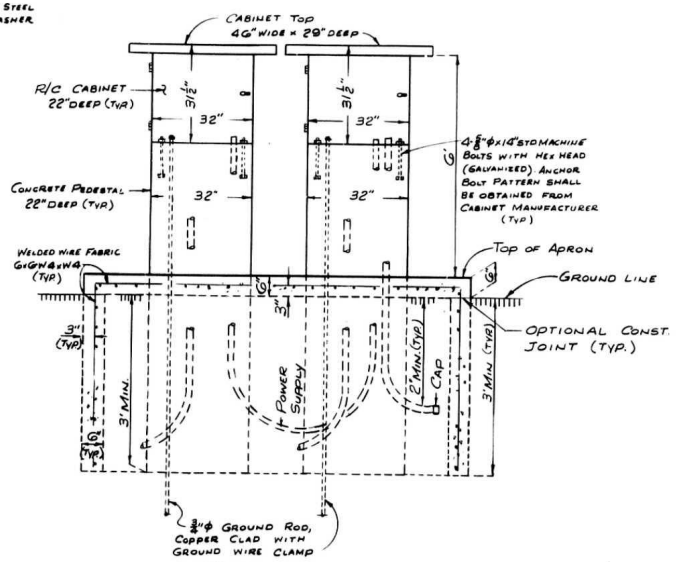
ST. LOUIS COUNTY

L-887R1

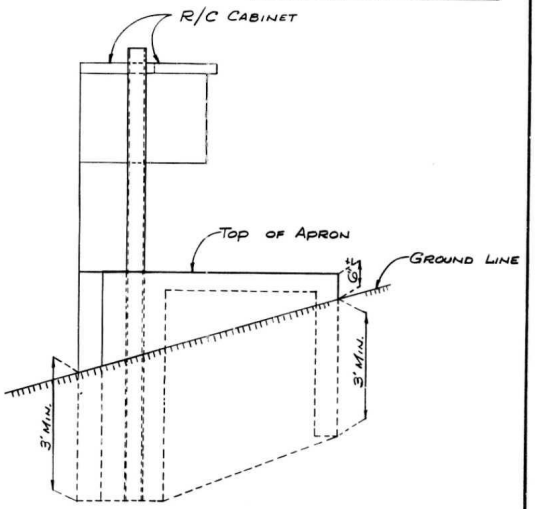
STATE	PROJ NO	SHEET NO
MO		5



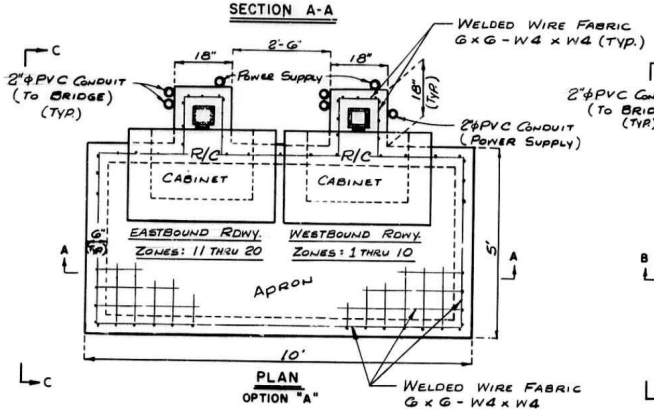
SECTION A-A

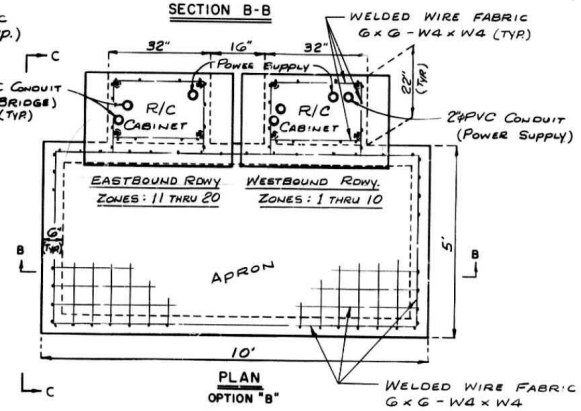


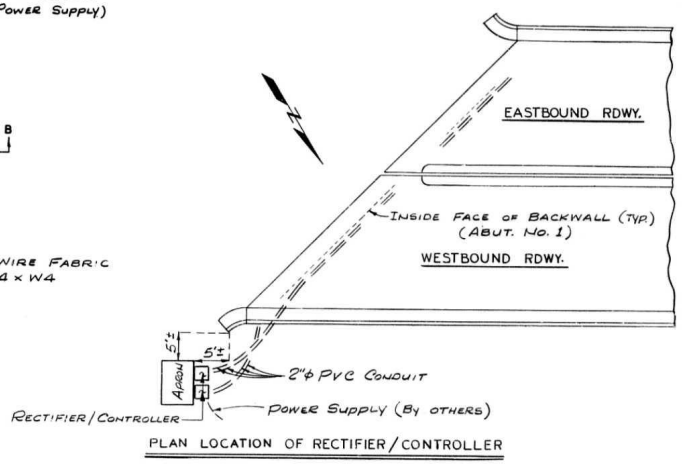
SECTION B-B



ELEVATION C-C







PLAN LOCATION OF RECTIFIER/CONTROLLER

Note: The 3/4"ϕ ground rods shall be sufficient length to extend a minimum of 10'-0" below bottom of concrete pedestal.
Ground wire shall be No. 6 AWG minimum.
Knockouts or drilled holes shall be provided in cabinets for all conduit. Locations of such are the responsibility of the contractor and cabinet manufacturer.

DETAILED APRIL 1985
CHECKED APRIL 1985

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

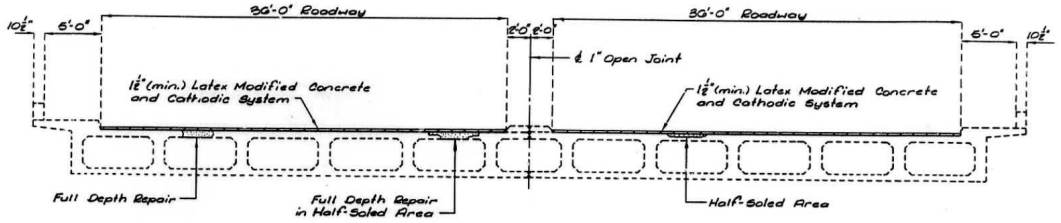
Sheet No. 5 of 5.

ST. LOUIS COUNTY

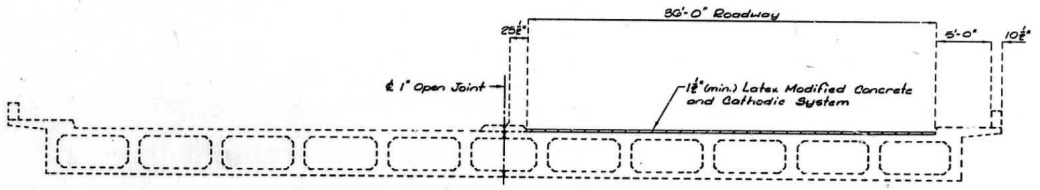
L-887RI

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

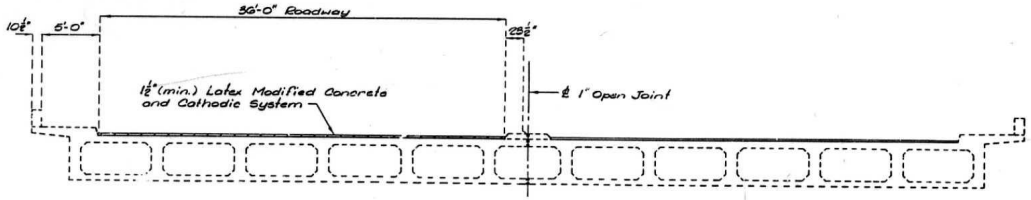
STATE	PROJ. NO.	SHEET NO.
MO.		1
SEC/SUR 12	TWP. 46N	RGE. 5E



SECTION THRU SLAB



STAGE ONE CONSTRUCTION

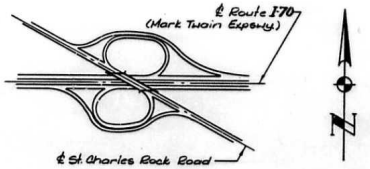


STAGE TWO CONSTRUCTION

GENERAL NOTES:

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

Traffic over structure to be maintained during construction. (See road plans)



LOCATION SKETCH

FINAL QUANTITIES		
ITEM		TOTAL
Repairing Concrete Deck (Half-Soling)	Sq. Ft.	3,317
Full Depth Repair	Sq. Ft.	127
Latex Concrete Wearing Surface	Sq. Yd.	8,902
Cathodic Protection System	Lump Sum	1
Steel Bar Dams	Ea.	4

REPAIRS TO:

BRIDGE OVER INTERSTATE ROUTE 70

STATE ROAD FROM LINDBERGH BLVD. TO ROUTE 115

IN BRIDGETON

PROJECT NO. IR-70-5(221) STA. 436+43.46

JOB NO. 6-U130-687 RTE. 180

ST. LOUIS COUNTY

DATE April 24, 1985

STD.
STD. 712.40
L-887R1

DESIGNED April, 1985
DETAILED April, 1985
CHECKED April, 1985

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

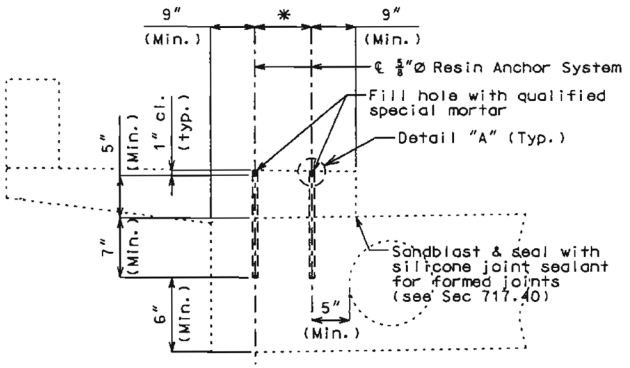
Sheet No. 1 of 5.

Job No.	Bridge No	New Bridge No.	County	Feature Intersected	Facility Carried
J6S2143	A0831	A08313	JEFFERSON	IS 55	MAIN ST E
J6S2143	A0240	A02403	ST. LOUIS	IS 270	OLD HALLS FERRY RD
J6S2143	A0964	A09642	ST. LOUIS	IS 270	BIG BEND
J6S2143	A1721	A17214	ST. LOUIS	SAPPINGTON RD S	IS 44
J6S2143	A1726	A17264	ST. LOUIS	ROCK HILL RD S	IS 44
J6S2143	A1732	A17323	ST. LOUIS	MURDOCH AVE E	IS 44
J6S2143	A1736	A17362	ST. LOUIS	SHREWSBURY AVE S	IS 44
J6S2143	L0638	L06382	ST. LOUIS	IS 64	GRAND
J6S2143	L0793	L07934	ST. LOUIS	CST LACLEDE STATION RD	IS 64 E
J6S2143	L0794	L07942	ST. LOUIS	IS 64	BOLAND PLACE
J6S2143	L0795	L07954	ST. LOUIS	CST CLAYTON TER	IS 64 E
J6S2143	L0887	L08873	ST. LOUIS	MO 180 E	IS 70
J6S2143	L0887	L08873	ST. LOUIS	MO 180 W	IS 70
J6S2143	L0888	L08884	ST. LOUIS	FEE FEE RD S	IS 70
J6S2143	A0136	A01362	ST. LOUIS CITY	9TH ST S	IS 70, RV 70
J6S2143	A0141	A01413	ST. LOUIS CITY	IS 70, RV 70	ST LOUIS AVE E
J6S2143	A0840	A08402	ST. LOUIS CITY	MARKET ST E	RP PINE ST TO IS64E, RP,
J6S2143	A0891	A08912	ST. LOUIS CITY	KINGSHIGHWAY BLVD	IS 64
J6S2143	A0891	A08912	ST. LOUIS CITY	KINGSHIGHWAY BLVD	IS 64
J6S2143	A0892	A08921	ST. LOUIS CITY	KINGSHIGHWAY BLVD	CST CLAYTON AVE
J6S2143	A0892	A08921	ST. LOUIS CITY	KINGSHIGHWAY BLVD	CST CLAYTON AVE
J6S2143	A0918	A09183	ST. LOUIS CITY	WEBER RD E	IS 55
J6S2143	A1077	A10772	ST. LOUIS CITY	IS 55	LOUGHBOROUGH AVE E
J6S2143	A1077	A10772	ST. LOUIS CITY	IS 55	LOUGHBOROUGH AVE W
J6S2143	A1078	A10783	ST. LOUIS CITY	HOLLY HILLS AVE E	IS 55
~~J6S2143~~	~~A1081~~	~~A10814~~	~~ST. LOUIS CITY~~	~~IS 55~~	~~DELOR ST E~~
J6S2143	A1087	A10874	ST. LOUIS CITY	UTAH ST E	IS 55
J6S2143	A1088	A10886	ST. LOUIS CITY	ARSENAL ST E	IS 55
J6S2143	A1088	A10886	ST. LOUIS CITY	ARSENAL ST W	IS 55
J6S2143	A1089	A10894	ST. LOUIS CITY	PESTALOZZI ST E	IS 55
J6S2143	A1090	A10904	ST. LOUIS CITY	SIDNEY ST E	IS 55
J6S2143	A1091	A10914	ST. LOUIS CITY	MO 30 E	IS 55
J6S2143	A1094	A10944	ST. LOUIS CITY	IS 55, IS 44	GRAVOIS AVE E
J6S2143	A1510	A15102	ST. LOUIS CITY	WALNUT ST E	IS 70
J6S2143	A1511	A15112	ST. LOUIS CITY	MARKET ST W	IS 70
J6S2143	A1512	A15122	ST. LOUIS CITY	CHESTNUT ST E	IS 70
J6S2143	A1513	A15132	ST. LOUIS CITY	PINE ST W	IS 70
J6S2143	A2257	A22573	ST. LOUIS CITY	NEBRASKA AVE S	IS 44
J6S2143	A2279	A22793	ST. LOUIS CITY	IS 44	GRAND BLVD S
J6S2143	A2279	A22793	ST. LOUIS CITY	IS 44	GRAND BLVD N
J6S2143	A2317	A23178	ST. LOUIS CITY	IS 44	JAMIESON
J6S2143	A2317	A23178	ST. LOUIS CITY	IS 44	JAMIESON

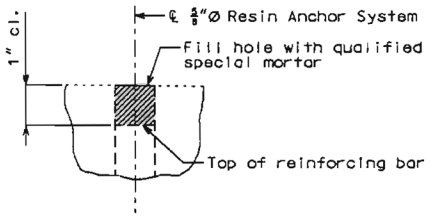
Job No.	Bridge No	New Bridge No.	County	Feature Intersected	Facility Carried
J6S2143	A2322	A23224	ST. LOUIS CITY	IS 44	MACKLIND AVE S
J6S2143	A3263	A32632	ST. LOUIS CITY	IS 44	EDWARDS ST S
J6S2143	K0432	K04322	ST. LOUIS CITY	IS 64	TAMM ENTRANCE S
J6S2143	K0434	K04343	ST. LOUIS CITY	HAMPTON CONCOURSE	IS 64
J6S2143	K0434	K04343	ST. LOUIS CITY	HAMPTON CONCOURSE	IS 64
J6S2143	K0453	K04537	ST. LOUIS CITY	IS 64	TAYLOR
J6S2143	K0465	K04653	ST. LOUIS CITY	IS 64	NEWSTEAD
J6S2143	K0466	K04663	ST. LOUIS CITY	IS 64	TOWER GROVE
J6S2143	L0668	L06683	ST. LOUIS CITY	IS 64	BOYLE AVE S
J6S2143	L0837	L08371	ST. LOUIS CITY	OAKLAND AVE E	IS 64

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

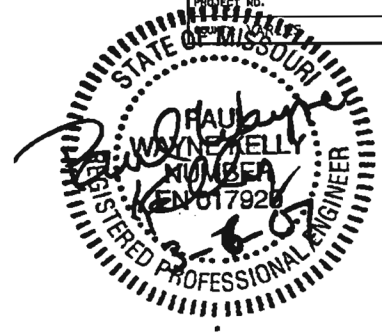
ROUTE	STATE	DISTRICT	SHEET NO.
	MO	BR	
JOB NO. J6S2143			
CONTRACT ID			
PROJECT NO.			



PART SECTION SHOWING RESIN ANCHORS

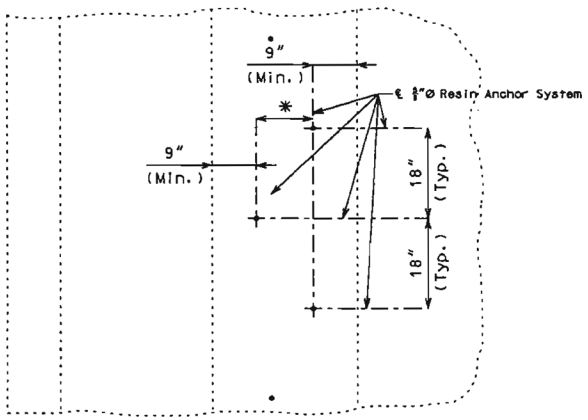


DETAIL "A"



Estimated Quantities			
Item		Estimated Quantities	Final Quantities
Resin Anchor System (Slab Bridges)	each	4.042	
Silicone Joint Sealant	linear foot	6.052	

8



PART PLAN SHOWING RESIN ANCHORS

* This dimension may be reduced to 0" to avoid rebar and voids in the slab.

GENERAL NOTES:

See Roadway Plans for traffic control.

Temporary weight shall be placed on the sidewalk in line with the resin anchors. This temporary weight shall be sufficient to balance the cantilevered sidewalk. It shall remain in place until the epoxy bonding agent is cured.

Resin Anchors:
The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

Cost of furnishing and installing the anchor system complete in place shall be included in the price bid for Resin Anchor System (Slab Bridges) including the qualified special mortar to cap the resin anchor.

The minimum ultimate pullout strength shall be in accordance with Sec 1039 with f'c = 4,000 psi.

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the ⅝"Ø threaded rod stud.

The epoxy bonding agent shall extend the full length of reinforcing bar.

The Silicone Joint Sealant will be measured to the nearest linear foot. Silicone Joint Sealant, including all materials, equipment, labor and any other incidental work necessary to complete this work, will be paid for at the contract unit price for Silicone Joint Sealant.

CANTILEVER SIDEWALK RETROFIT FOR SLAB BRIDGES

Detailed Mar. 2007
Checked Mar. 2007

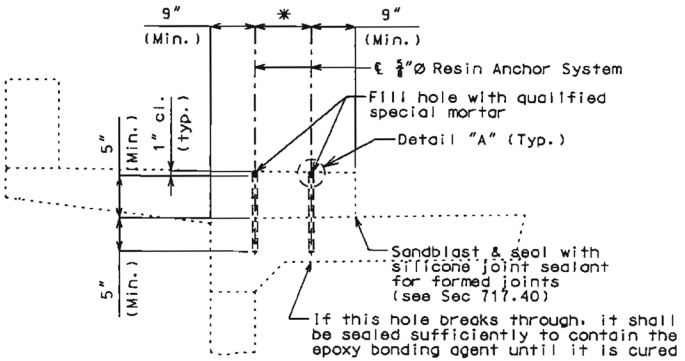
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 1 of 2

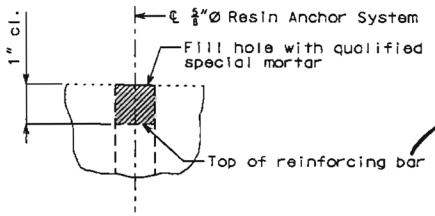
VARIES

REV.

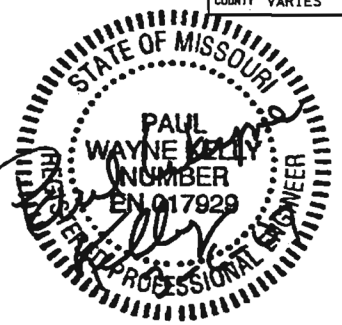
ROUTE	STATE	DISTRICT	SHEET NO.
	MO	BR	
JOB NO. J6S2143			
CONTRACT ID			
PROJECT NO.			
COUNTY VARIES			



PART SECTION SHOWING RESIN ANCHORS

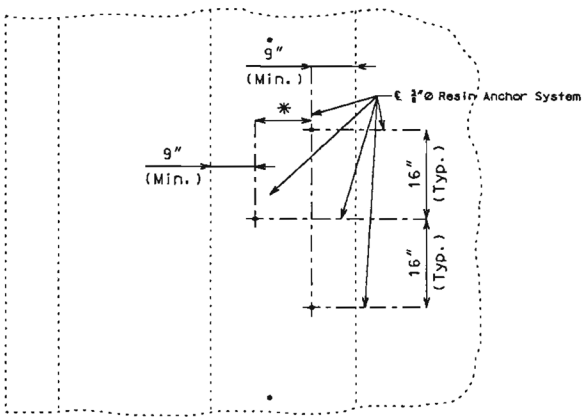


DETAIL "A"



Estimated Quantities			
Item		Estimated Quantities	Final Quantities
Resin Anchor System (Box Girder Bridges)	each	8,407	
Silicone Joint Sealant	linear foot	11,199	

(6)



PART PLAN SHOWING RESIN ANCHORS

* This dimension may be reduced to 0" to avoid rebar and voids in the slab.

GENERAL NOTES:

See Roadway Plans for traffic control.

Temporary weight shall be placed on the sidewalk in line with the resin anchors. This temporary weight shall be sufficient to balance the cantilevered sidewalk. It shall remain in place until the epoxy bonding agent is cured.

Resin Anchors:
The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

Cost of furnishing and installing the anchor system complete in place shall be included in the price bid for Resin Anchor System (Box Girder Bridges) including the qualified special mortar to cap the resin anchor.

The minimum ultimate pullout strength shall be in accordance with Sec 1039 with f'c = 4,000 psi.

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the ⅜"Ø threaded rod stud.

The epoxy bonding agent shall extend the full length of reinforcing bar.

The Silicone Joint Sealant will be measured to the nearest linear foot. Silicone Joint Sealant, including all materials, equipment, labor and any other incidental work necessary to complete this work, will be paid for at the contract unit price for Silicone Joint Sealant.

CANTILEVER SIDEWALK RETROFIT FOR BOX GIRDER BRIDGES

Detailed Mar. 2007
Checked Mar. 2007

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

VARIES REV.

T:\br-proj\gabelr1\J6S2143_sidewalk_retrofit.dgn 12:34:16 PM 03/06/2007

DIST 6 SLAB STRUCTURES WITH SIDEWALKS
FOR CONTRACT
(Total 17)

Bridge No	County	Feature Intersected	Facility Carried	Bridge Length Ft.	Comment	Resin Anchor System (Slab Bridges)	Silicone Joint Sealant Lin. Ft.
A0831	JEFFERSON	IS 55	MAIN ST E	211	Conduit	282	422
A0240	ST. LOUIS	IS 270	OLD HALLS FERRY RD	131		175	262
A0961	ST. LOUIS	IS 270	DOUGHERTY FERRY RD	236	Conduit	315	472
K0690	ST. LOUIS	RVR DES PERES	MO 340 E	123		164	246
L0793	ST. LOUIS	CST LACLEDE STATION RD	IS 64 E	137		183	274
L0795	ST. LOUIS	CST CLAYTON TER	IS 64 E	137		183	274
A0141	ST. LOUIS CITY	IS 70, RV 70	ST LOUIS AVE E	177		236	354
A0892	ST. LOUIS CITY	KINGSHIGHWAY BLVD	CST CLAYTON AVE	118	Sidewalk on one side only, Conduit	79	118
A0892	ST. LOUIS CITY	KINGSHIGHWAY BLVD	CST CLAYTON AVE	118	Sidewalk on one side only, Conduit	79	118
A1077	ST. LOUIS CITY	IS 55	LOUGHBOROUGH AVE E	209	Sidewalk on one side only, Conduit	140	209
A1077	ST. LOUIS CITY	IS 55	LOUGHBOROUGH AVE W	209	Sidewalk on one side only, Conduit	140	209
A1081	ST. LOUIS CITY	IS 55	DELOR ST E	218		291	436
A1094	ST. LOUIS CITY	IS 55, IS 44	GRAVOIS AVE E	328		438	656
A2279	ST. LOUIS CITY	IS 44	GRAND BLVD S	142		190	284
A2279	ST. LOUIS CITY	IS 44	GRAND BLVD N	142		190	284
A2322	ST. LOUIS CITY	IS 44	MACKLIND AVE S	183	Conduit	244	366
A3263	ST. LOUIS CITY	IS 44	EDWARDS ST S	142	Sidewalk on one side only	95	142
K0432	ST. LOUIS CITY	IS 64	TAMM ENTRANCE S	230		307	460
L0668	ST. LOUIS CITY	IS 64	BOYLE AVE S	233		311	466
					SubTotal	**4,042**	**6,052**

STATE OF MISSOURI
PAUL WAYNE KELLY
NUMBER
E-017929
REGISTERED PROFESSIONAL ENGINEER

DIST 6 BOX GIRDERS WITH SIDEWALKS
FOR CONTRACT
(Total 29)

Bridge No	County	Feature Intersected	Facility Carried	Bridge Length Ft.	Comment	Resin Anchor System (Box Girder Bridges)	Silicone Joint Sealant Lin. Ft.
A1721	ST. LOUIS	SAPPINGTON RD S	IS 44	228		342	456
A1726	ST. LOUIS	ROCK HILL RD S	IS 44	251		377	502
A1732	ST. LOUIS	MURDOCH AVE E	IS 44	196		294	392
A1736	ST. LOUIS	SHREWSBURY AVE S	IS 44	243	Sidewalk on one side only	183	243
L0887	ST. LOUIS	MO 180 E	IS 70	499		749	998
L0887	ST. LOUIS	MO 180 W	IS 70	499		749	998
L0888	ST. LOUIS	FEE FEE RD S	IS 70	226	Cathodic Protection System	339	452
A0136	ST. LOUIS CITY	9TH ST S	IS 70, RV 70	292		438	584
A0840	ST. LOUIS CITY	MARKET ST E	RP PINE ST TO IS64E, RP,	345	Conduit	518	690
A0891	ST. LOUIS CITY	KINGSHIGHWAY BLVD	IS 64	231	Sidewalk on one side only, Conduit	174	231
A0891	ST. LOUIS CITY	KINGSHIGHWAY BLVD	IS 64	231	Sidewalk on one side only, Conduit	174	231
A0918	ST. LOUIS CITY	WEBER RD E	IS 55	271	Conduit	407	542
A1078	ST. LOUIS CITY	HOLLY HILLS AVE E	IS 55	230	Conduit	345	460
A1087	ST. LOUIS CITY	UTAH ST E	IS 55	192	Conduit	288	384
A1088	ST. LOUIS CITY	ARSENAL ST E	IS 55	240	Sidewalk on one side only, Conduit	180	240
A1088	ST. LOUIS CITY	ARSENAL ST W	IS 55	240	Sidewalk on one side only, Conduit	180	240
A1089	ST. LOUIS CITY	PESTALOZZI ST E	IS 55	245	Conduit	368	490
A1090	ST. LOUIS CITY	SIDNEY ST E	IS 55	237	Conduit	356	474
A1091	ST. LOUIS CITY	MO 30 E	IS 55	259	Conduit	389	518
A1510	ST. LOUIS CITY	WALNUT ST E	IS 70	80	Conduit	120	160
A1511	ST. LOUIS CITY	MARKET ST W	IS 70	80	Conduit	120	160
A1512	ST. LOUIS CITY	CHESTNUT ST E	IS 70	80	Conduit	120	160
A1513	ST. LOUIS CITY	PINE ST W	IS 70	80	Conduit	120	160
A2257	ST. LOUIS CITY	NEBRASKA AVE S	IS 44	225	Conduit	338	450
K0434	ST. LOUIS CITY	HAMPTON CONCOURSE	IS 64	254	Sidewalk on one side only, Conduit	191	254
K0434	ST. LOUIS CITY	HAMPTON CONCOURSE	IS 64	254	Sidewalk on one side only, Conduit	191	254
L0837	ST. LOUIS CITY	OAKLAND AVE E	IS 64	238	Sidewalk on one side only, Conduit	357	476
					SubTotal	**8,407**	**11,199**

PRECAST DROP INLETS			
STATION	LOCATION	TYPE	SIZE
234+00	I-70, 6'RT.	B	4'x2'
235+65	I-70 ℄	B	4'x2'
236+45	I-70 ℄	B	4'x2'
238+00	I-70 ℄	B	4'x2'
238+00	I-70, 6'RT.	B	4'x2'
242+00	I-70 ℄	B	4'x2'
242+00	I-70, 6'RT.	B	4'x2'
245+70	I-70 ℄	B	4'x2'
245+70	I-70, 6'RT.	B	4'x2'
250+20	I-70, 2.5'LT.	B	3'x2'
250+20	I-70, 2.5'RT.	B	3'x2'
259+00	I-70, 3'LT.	B	4'x2'
250+00	I-70, 115' RT.	B	4'x2'

234+00 ℄ I-70
48" PRECAST M.H.
1-TYPE 1-B FRAME & COVER

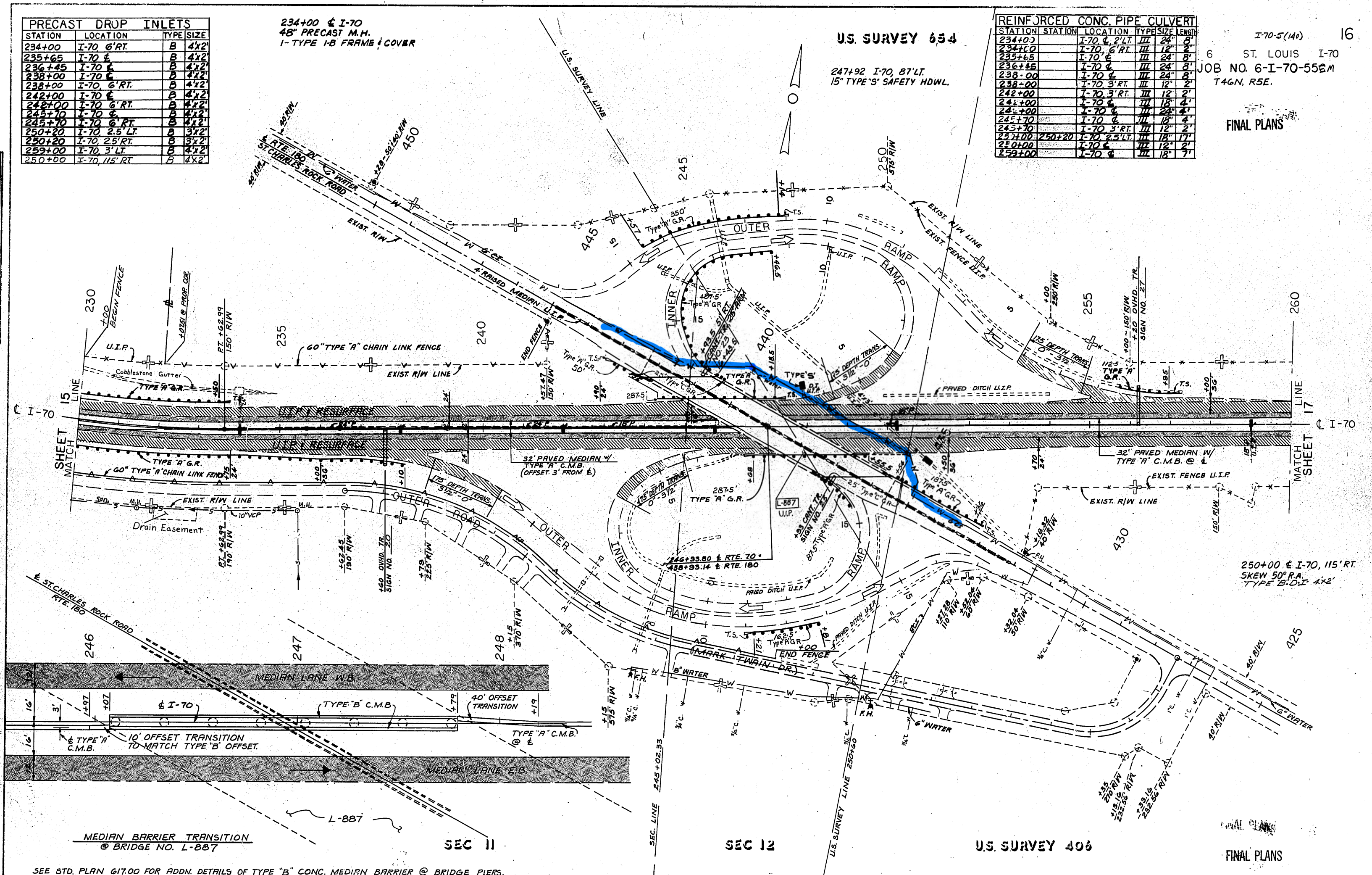
U.S. SURVEY 654

247+92 I-70, 87'LT.
15" TYPE "S" SAFETY HDWL.

REINFORCED CONC. PIPE CULVERT					
STATION	STATION	LOCATION	TYPE	SIZE	LENGTH
234+0[illegible]		I-70, ℄, 2'LT.	III	24"	8'
234+00		I-70, 6'RT.	III	12"	2'
235+65		I-70 ℄	III	24"	8'
236+45		I-70 ℄	III	24"	8'
238+00		I-70 ℄	III	24"	8'
238+00		I-70, 3'RT.	III	12"	2'
242+00		I-70, 3'RT.	III	12"	2'
24[illegible]+00		I-70 ℄	III	18"	4'
24[illegible]+00		I-70 ℄	III	24"	4'
245+70		I-70 ℄	III	18"	4'
245+70		I-70, 3'RT.	III	12"	2'
25[illegible]+00	250+20	I-70, 2.5'LT.	III	18"	17'
250+00		I-70 ℄	III	12"	2'
259+00		I-70 ℄	III	18"	7'

I-70-5(140) 16
6 ST. LOUIS I-70
JOB NO. 6-I-70-55EM
T46N, R5E.

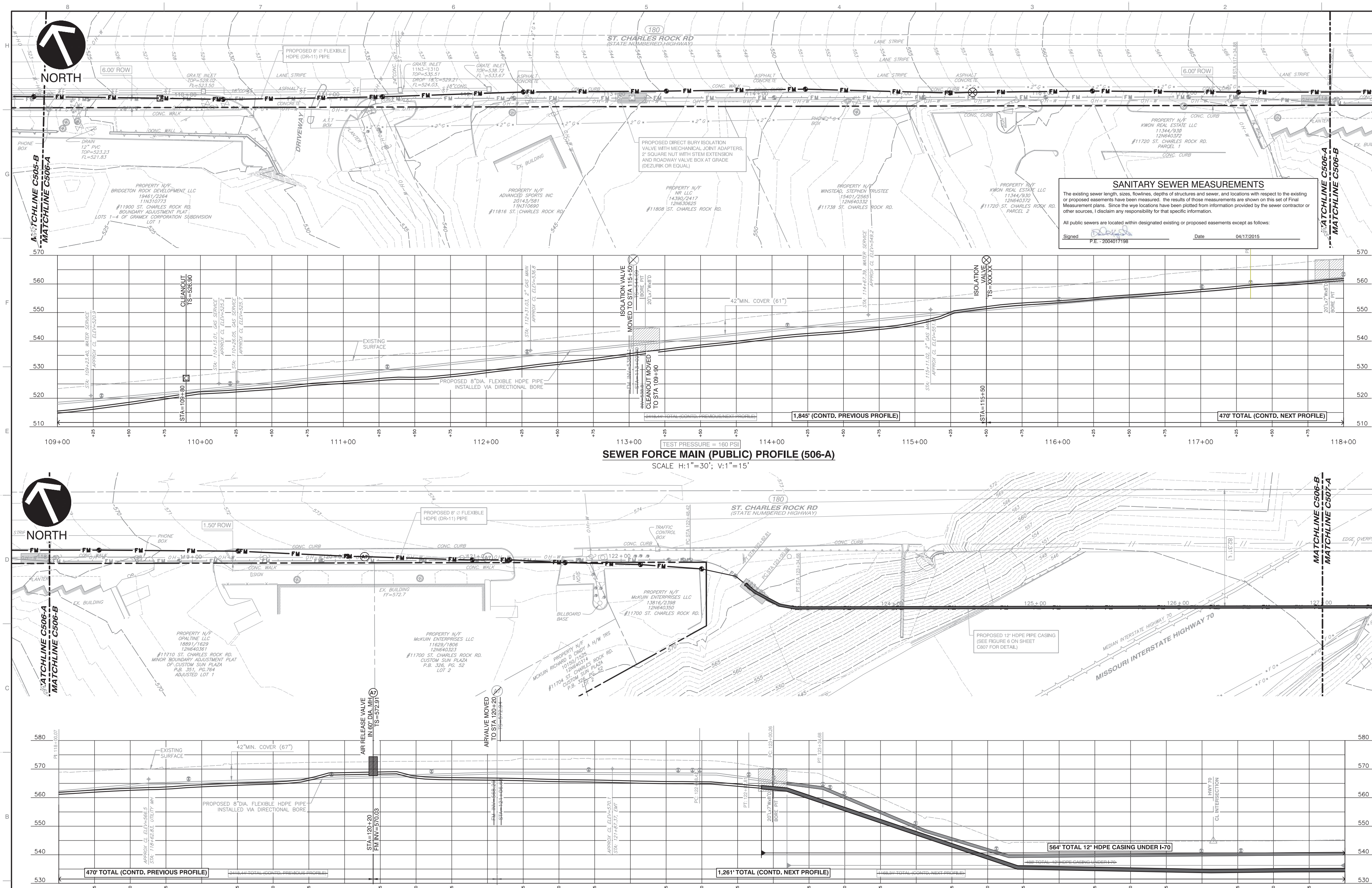
FINAL PLANS



SEE STD. PLAN 617.00 FOR ADDN. DETAILS OF TYPE "B" CONC. MEDIAN BARRIER @ BRIDGE PIERS.

206

1011 24 TO 1



SANITARY SEWER MEASUREMENTS

The existing sewer length, sizes, flowlines, depths of structures and sewer, and locations with respect to the existing or proposed easements have been measured. the results of those measurements are shown on this set of Final Measurement plans. Since the wye locations have been plotted from information provided by the sewer contractor or other sources, I disclaim any responsibility for that specific information.

All public sewers are located within designated existing or proposed easements except as follows:

Signed: [signature] P.E. - 2004017198 Date: 04/17/2015

LEGEND

- EXISTING CONTOUR (MAJOR)
- EXISTING CONTOUR (MINOR)
- EXISTING SURFACE (PROFILE)
- ASBUILT 8" FORCEMAIN HDPE SEWER PIPE (PROFILE)
- SAN — ASBUILT SEWER PIPE
- ASBUILT CLEANOUT
- ASBUILT ISOLATION VALVE
- FM — ASBUILT 8" FORCEMAIN HDPE SEWER PIPE (PLAN)
- ASBUILT COMBINATION MONITORING AND AIR VALVE IN 60" DIA. MANHOLE
- ASBUILT SANITARY MANHOLE (DIA. LABELED ON PLAN)
- ASBUILT LOCATOR BALL
- PROPOSED BORE PIT
- ASBUILT ELECTRICAL GATE VALVE JUNCTION BOX IN 4'X4' I.D. JUNCTION BOX
- ASBUILT MANUAL PLUG VALVE JUNCTION BOX IN 60" DIA. MANHOLE

REFERENCE

TOPOGRAPHIC SURVEY CONDUCTED BY:
FRAZIER LAND SURVEYING SERVICES, INC.
705 BALLANTRAE DRIVE
WENTZVILLE, MO. 63385
PHONE:636-332-0610
FAX:636-332-0710
DATED: 03/03/2014
DWG NAME: 14-2128 bridgeton-bissel force main-topographic survey.dwg

SCALE IN FEET: 0 30 60

BENCHMARK

1. BASIS OF BEARINGS FOR THIS SURVEY WAS ADOPTED FROM THE MISSOURI COORDINATE SYSTEM, 1983-EAST ZONE.
2. REFERENCE BENCHMARKS:
   - REFERENCE BENCHMARK 8-3 597.15 – "X" ON SOUTH END OF EAST ABUTMENT OF LINDBERGH BOULEVARD AT BRIDGE #845R; OVERPASS OF ST. CHARLES ROCK ROAD.
   - REFERENCE BENCHMARK 8-242 506.30 – "SQ." ON THE SOUTHERN MOST LEG OF A SIGN AT #12701 ST. CHARLES ROCK ROAD; 70' NORTH OF THE CENTER LINE OF ST. CHARLES ROCK ROAD AND 145' WEST OF THE CENTERLINE OF PENRIDGE LANE.
   - REFERENCE BENCHMARK 9-294 636.29 – "SQ." ON THE SOUTHEAST CORNER OF THE FIRST STEP AT THE ENTRANCE TO #3409 BROWN ROAD; 50' WEST OF THE CENTERLINE OF BROWN ROAD AND 0.3 MILE NORTH OF ST. CHARLES ROCK ROAD.

DAN KOZIATEK
ENGINEER
PE - 2004017198
*HAND SIGNATURE ON FILE

REVISION RECORD

NO	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		
7		
8		

Civil & Environmental Consultants, Inc.
CERTIFICATION/LICENSE NO. 2002013942
4848 Park 370 Blvd., Suite F - Hazelwood, MO 63042
314-656-4566 · 866-250-3679
www.cecinc.com

METROPOLITAN SEWER DISTRICT
2350 MARKET STREET
ST. LOUIS, MISSOURI 63103
PHONE: (314) 768-2743
FAX: (314) 768-6342

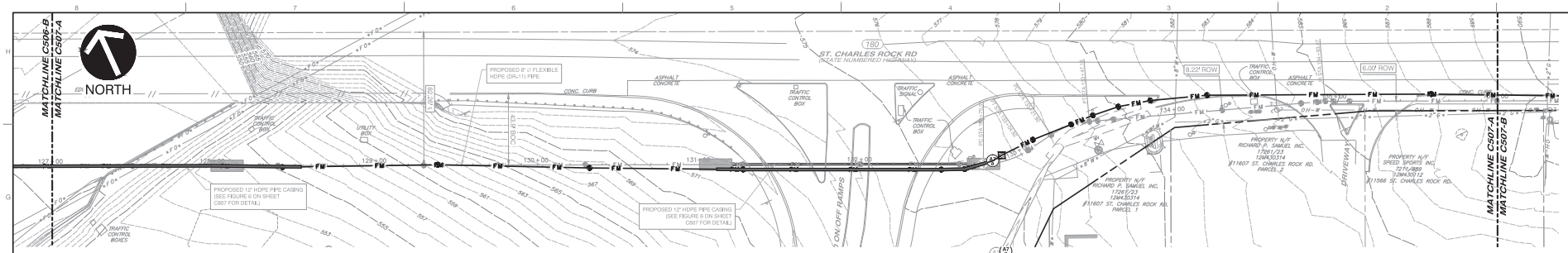
MSD MAP# 09-W ZIP 63044

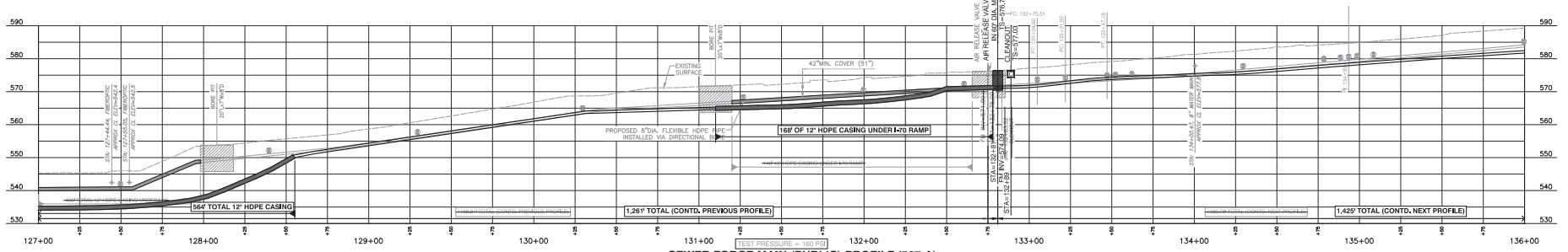
P- #30098-00

BRIDGETON-BISSELL FORCE MAIN
13037 BOENKER LN, 63044
AS-BUILT PHASE II - COLDWATER CREEK
AS-BUILT PLAN & PROFILE SHEET

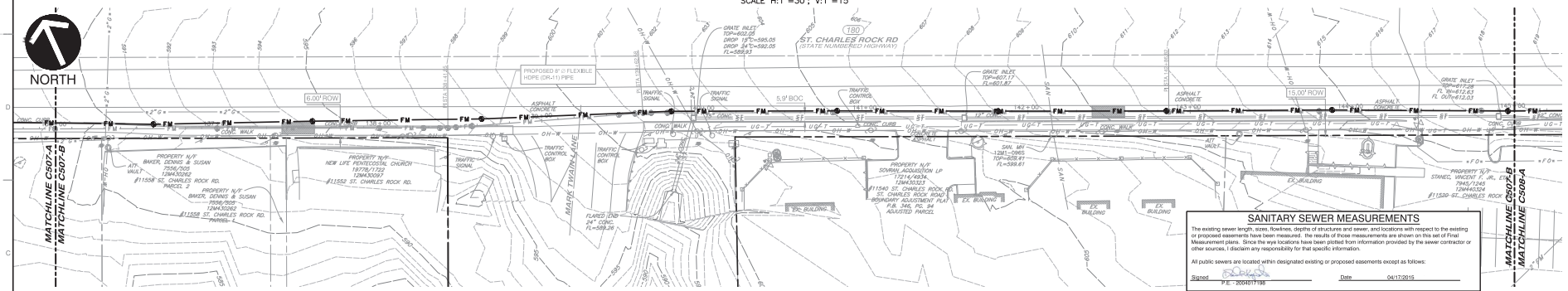
DATE:	APRIL 2015	DRAWN BY:	MRV
DWG SCALE:	1" = 30'	CHECKED BY:	DRK
PROJECT NO:	130-484		
APPROVED BY:	DRK* (SIGNED&SEALED)		

DRAWING NO.: ASB506
SHEET 09 OF 12





SEWER FORCE MAIN (PUBLIC) PROFILE (507-A)
SCALE H:1"=30'; V:1"=15'



SANITARY SEWER MEASUREMENTS

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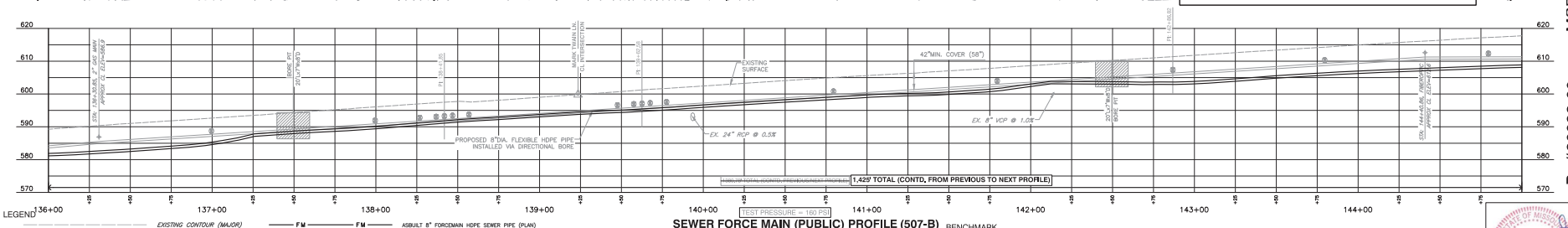
Signed _____ Date 04/17/2015

P.E. - 2004017198



SEWER FORCE MAIN (PUBLIC) PROFILE (507-B)
SCALE H:1"=30'; V:1"=15'

LEGEND

EXISTING CONTOUR (MAJOR)
EXISTING CONTOUR (MINOR)
EXISTING SURFACE (PROFILE)
ASBUILT 8" FORCEMAIN HDPE SEWER PIPE (PROFILE)
ASBUILT SEWER PIPE
ASBUILT CLEANOUT
ASBUILT ISOLATION VALVE
ASBUILT 8" FORCEMAIN HDPE SEWER PIPE (PLAN)
ASBUILT COMBINATION MONITORING AND AIR VALVE IN 60" DIA. MANHOLE
ASBUILT SANITARY MANHOLE (DIA. LABELED ON PLAN)
ASBUILT LOCATOR BALL
PROPOSED BORE PIT
ASBUILT ELECTRICAL GATE VALVE JUNCTION BOX IN 4'X4' I.D. JUNCTION BOX
ASBUILT MANUAL PLUG VALVE JUNCTION BOX IN 60" DIA. MANHOLE

REFERENCE

TOPOGRAPHIC SURVEY CONDUCTED BY:
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WENTZVILLE, MO. 63385
PHONE:636-332-0610
FAX:636-332-0710
DATED: 03/03/2014
DWG NAME: 14-2128 bridgeton-bissel force main-topographic survey.dwg

SCALE H:1"=30'; V:1"=15'
SCALE IN FEET
0 30 60

BENCHMARK

1. BASIS OF BEARINGS FOR THIS SURVEY WAS ADOPTED FROM THE MISSOURI COORDINATE SYSTEM, 1983–EAST ZONE.
2. REFERENCE BENCHMARKS:
   - REFERENCE BENCHMARK 8–3 597.15 – "X" ON SOUTH END OF EAST ABUTMENT OF LINDBERGH BOULEVARD AT BRIDGE #845R; OVERPASS OF ST. CHARLES ROCK ROAD.
   - REFERENCE BENCHMARK 8–242 506.30 – "SQ." ON THE SOUTHERN MOST LEG OF A SIGN AT #12701 ST. CHARLES ROCK ROAD; 70' NORTH OF THE CENTER LINE OF ST. CHARLES ROCK ROAD AND 145' WEST OF THE CENTERLINE OF PENRIDGE LANE.
   - REFERENCE BENCHMARK 9–294 636.29 – "SQ." ON THE SOUTHEAST CORNER OF THE FIRST STEP AT THE ENTRANCE TO #3409 BROWN ROAD; 50' WEST OF THE CENTERLINE OF BROWN ROAD AND 0.3 MILE NORTH OF ST. CHARLES ROCK ROAD.

DAN KOZIATEK
ENGINEER
PE - 2004017198
*HAND SIGNATURE ON FILE

STATE OF MISSOURI
DANIEL RAY KOZIATEK
NUMBER PE-2004017198
REGISTERED PROFESSIONAL ENGINEER
4-17-15

REVISION RECORD

NO.	DATE	DESCRIPTION
1	---	---
2	---	---
3	---	---
4	---	---
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7	---	---
8	---	---

Civil & Environmental Consultants, Inc.
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MSD MAP# 09-W ZIP 63044

P- #30098-00

BRIDGETON-BISSELL FORCE MAIN
13037 BOENKER LN, 63044
AS-BUILT PHASE II - COLDWATER CREEK
AS-BUILT PLAN & PROFILE SHEET

DATE:	APRIL 2015
DWG SCALE:	1" = 30'
PROJECT NO.	130-484
APPROVED BY:	DRK* (SIGNED&SEALED)

DRAWN BY: MRV
CHECKED BY: DRK

DRAWING NO.: ASB507
SHEET 10 OF 12

P:\2013\130-484\--CAD\DWG\BRIDGETON-BISSELL_FORCEMAIN\CURB-ASBUILT\130484-FM-ASBUILT.DWG LAST SAVED BY:MTUCKWILLER(MTU) - 4/17/2015 8:08:15 PM, LAST PRINTED BY:(NONE, MTU) - 4/17/2015 8:14:05 PM