Missouri Department of Transportation
State Bridge Inspection Report

May 02, 2024
4:07:41PM

COUNTY: JACKSON **DISTRICT: KC** **CLASS: STATBR** **FED-ID: 215** **BRIDGE: A0245**

GENERAL STRUCTURE INFORMATION

ROUTE: IS70W	**# SPANS:** 3	**PLACE CODE:** 38000 KANSAS CITY CITY	
FEATURE: CST E 12TH ST	**LANES ON:** 1	**LENGTH:** 156 FT 0 IN	
STATUS: A-OPEN	**LANES UNDER:** 2	**MAXIMUM SPAN:** 63 FT 0 IN	
LOG MILE: 247.578	**COMPASS DIRECTION:** SOUTH to NORTH	**APPROACH ROADWAY:** 36 FT 0 IN	
DETOUR: 1.00 MILES	**DIRECTION OF TRAFFIC:** 1-WAY TRAF	**CURB TO CURB:** 36 FT 1 IN	
NHS: YES	**FUNCTIONAL CLASS:** UR-INTERSTATE	**OUT TO OUT:** 39 FT 10 IN	
BUILT: 1958	**NBI OWNER:** MODOT	**AADT:** 18591	
REHAB: 1984	**NBI MAINTAINED:** MODOT	**AADT YEAR:** 2023	
LOCATION: S 5 T 49 R 33 W	**MAINTENANCE DISTRICT:** KC	**AADT TRUCK:** 15.0%	
LATITUDE: 39 5 58.23 (DMS)	**MAINTENANCE COUNTY:** JACKSON	**FUTURE AADT:** 25098	
LONGITUDE: 94 34 21.06 (DMS)	**SUB AREA:** 7C01	**FUTURE AADT YEAR:** 2043	

BRIDGE INSPECTION INFORMATION

DATE: 09/12/2023 **RESPONSIBILITY:** DISTRICT
FREQUENCY: 24 **CALCULATED INTERVAL**:** 24
TEAM LEADER: TIMOTHY HAZLETT **ELEMENT:** YES
INSPECTOR 2: **INSPECTOR 4:**
INSPECTOR 3:

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

GENERAL INSPECTION COMMENTS

FRACTURE CRITICAL INSPECTION INFORMATION

DATE: **RESPONSIBILITY:** **CATEGORY:**
FREQUENCY: **CALCULATED INTERVAL**:** **NBI:**
TEAM LEADER: **INSPECTOR 3:** **METHOD:**
INSPECTOR 2: **INSPECTOR 4:**

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

FRACTURE CRITICAL INSPECTION COMMENTS

INDEPTH INSPECTION INFORMATION

DATE: **RESPONSIBILITY:** **CATEGORY:**
FREQUENCY: **CALCULATED INTERVAL**:** **NBI:**
TEAM LEADER: **INSPECTOR 3:** **METHOD:**
INSPECTOR 2: **INSPECTOR 4:**

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

INDEPTH INSPECTION COMMENTS

SPECIAL INSPECTION INFORMATION

DATE: **RESPONSIBILITY:** **CATEGORY:**
FREQUENCY: **CALCULATED INTERVAL**:** **NBI:**
TEAM LEADER: **INSPECTOR 3:** **METHOD:**
INSPECTOR 2: **INSPECTOR 4:**

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

SPECIAL INSPECTION COMMENTS

UNDERWATER INSPECTION INFORMATION

DATE: **RESPONSIBILITY:** **CATEGORY:**
FREQUENCY: **CALCULATED INTERVAL**:** **NBI:**
TEAM LEADER: **INSPECTOR 3:** **METHOD:**
INSPECTOR 2: **INSPECTOR 4:**

** When calculated interval exceeds the frequency, a justification comment per BIRM is required.

UNDERWATER INSPECTION COMMENTS

OTHER SPECIAL INSPECTIONS

DATE	FREQUENCY	CATEGORY	NBI	CALCULATED INTERVAL	RESPONSIBILITY	METHOD

OTHER UNDERWATER INSPECTIONS

DATE	FREQUENCY	CATEGORY	NBI	CALCULATED INTERVAL	RESPONSIBILITY	METHOD

COUNTY: JACKSON **DISTRICT: KC** **CLASS: STATBR** **FED-ID: 215** **BRIDGE: A0245**

STRUCTURE POSTING

APPROVED CATEGORY: S-1 NO POSTING REQUIRED
Ton 1: **Ton 2:** **Ton 3:**
COMMENTS:

FIELD CATEGORY: S-1 NO POSTING REQUIRED
Ton 1: **Ton 2:** **Ton 3:** **PROBLEM:** **PROBLEM DIRECTION:**
COMMENTS:

GENERAL COMMENTS/MAJOR RATED ITEMS

GENERAL COMMENTS: (BOWDEJ1, 10/07/2008)--(44'-63'-44') CONT CONC BOX GDR SPANS

[ITEM 58] DECK: 6-SATISFACTORY CONDITION **COMMENTS:** (OTISL1, 10/01/2019)--INTEGRAL
RATING : 10/01/2019

[ITEM 59] SUPER: 6-SATISFACTORY CONDITION **COMMENTS:** (OTISL1, 10/01/2019)--MODERATE CRACKING/MINOR SATURATION/DELAMINATE & SPALLS @ ABUTMENTS
RATING : 10/01/2019

[ITEM 60] SUB: 5-FAIR CONDITION **COMMENTS:** (OTISL1, 09/21/2015)--HEAVY DETERIORATION @ NORTH ABUT.
RATING : 10/01/2019

[ITEM 61] BANK/CHANNEL: N-NOT APPLIC NO WATRWAY **COMMENTS:**
RATING : 05/18/2001

[ITEM 113] SCOUR: N-NOT APPLIC NOT WATERW **COMMENTS:**
RATING : 05/18/2001
EVALUATION TYPE :

[ITEM 71] WATERWAY ADEQUACY: NOT APPLICABLE **COMMENTS:**
RATING : 05/18/2001

[ITEM 72] APPRRDWY ALIGNMENT: 8-VERYGOOD **COMMENTS:**
RATING : 05/18/2001

RAILING AND APPROACH PAVEMENT COMPONENTS AND RATINGS

[ITEM 36A] BRIDGE RAILING RATING: *MEETS CURRENT STANDARDS-1* ***RATING :*** *02/04/2004* ***COMMENTS:***

MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
REINFORCED CONCRETE	SAFETY BARRIER CURB	LEFT	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	COMMENT
VERTICAL CRACKS	THROUGHOUT		FEW	

MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
REINFORCED CONCRETE	PARAPET	RIGHT	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	COMMENT
SPALLS	THROUGHOUT		SMALL	
VERTICAL CRACKS	THROUGHOUT		FEW	

[ITEM 36B] TRANSITION RAILING RATING: *MEETS CURRENT STANDARDS-1* ***RATING :*** *05/18/2001* ***COMMENTS:***

MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
GALVANIZED STEEL	THRIE BEAM TO W-BEAM	BOTH-SOUTH	

[ITEM 36C] APPROACH RAILING RATING: *MEETS CURRENT STANDARDS-1* ***RATING :*** *05/18/2001* ***COMMENTS:***

Design_No = a0245

MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
GALVANIZED STEEL	W-BEAM	BOTH-SOUTH	

[ITEM 36D] RAIL END TREATMENT RATING: MEETS CURRENT STANDARDS-1 *RATING :* 05/18/2001 *COMMENTS:*

MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS
GALVANIZED STEEL	BREKAWAY SYSTEM	SOUTHEAST	(OTISL1, 09/21/2015)--CONTINOUS W-BEAM
OTHER	OTHER	SOUTHWEST	

APPROACH PAVEMENT: *Overall condition assigned for each approach pavemenet component is shown below.

MATERIAL	CONSTRUCTION	DIRECTION	CONDITION*	COMMENTS
ASPHALT/CONCRETE	MAT/TIESLAB	BOTH	FAIR	(OTISL1, 10/01/2019)--FAILING @ JOINT

DRAINAGE, EXPANSION DEVICES, BANK/SLOPE, AND DECK PROTECTIVE COMPONENTS

DECK PROTECTIVE COMPONENTS:

SERIES TYPE-#	COMPONENT	MATERIAL	CONSTRUCTION	THICKNESS	YEAR APPLIED	MANUFACTURE	OVERALL CONDITION
MAIN SERIES-1	WEARING SURFACE	PLAIN CONCRETE	LOW SLUMP	2.25 IN			FAIR

COMMENT:

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	COMMENT
MAP CRACKS	THROUGHOUT		MANY	
PATCHES	THROUGHOUT		FEW	
SPALLS	THROUGHOUT		FEW	

DECK PROTECTION	NOTAPPLICABLE	NONE	

COMMENT:

MEMBRANE	NOTAPPLICABLE	NONE	

COMMENT:

SECONDARY DECK PROTECTION	NOTAPPLICABLE	NONE	

COMMENT:

DRAINAGE COMPONENTS:

COMPONENT	MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS

EXPANSION DEVICE COMPONENTS:

SUB UNIT-#	SUB LABEL	COMPONENT	MATERIAL	CONSTRUCTION	GAP	YEAR APPLIED	MANUFACTURE	OVERALL CONDITION
ABUTMENT-1		CLOSED EXPANSION JOINT	ELASTOMERIC	STRIP SEAL				VERY POOR

COMMENT: (RACKEM, 10/04/2011)--COVERED.

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	COMMENT
TORN	THROUGHOUT		HEAVY	

ABUTMENT-4		CLOSED EXPANSION JOINT	ELASTOMERIC	STRIP SEAL				VERY POOR

COMMENT: (OTISL1, 09/21/2015)--COVERE4D WITH ASPHALT

BANK/SLOPE PROTECTION COMPONENTS:

COMPONENT	MATERIAL	CONSTRUCTION	DIRECTION	COMMENTS

DECK COMPONENTS

SPAN TYPE-#	COMPONENT	MATERIAL	CONSTRUCTION	COMMENTS
MAIN SPANS-1	DECK	REINFORCED CONCRETE	CAST-IN-PLACE	(OTISL1, 09/21/2015)--LOW SLUMP WEARING SURFACE

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
PATCHES	OVERHANGS		FEW		
TRANSVERSE CRACKS	OVERHANGS		FEW		

SPAN TYPE-#	COMPONENT	MATERIAL	CONSTRUCTION	COMMENTS
MAIN SPANS-2	DECK	REINFORCED CONCRETE	CAST-IN-PLACE	(OTISL1, 09/21/2015)--LOW SLUMP WEARING SURFACE

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
EFFLORESCENCE	OVERHANGS		LIGHT		
SPALLS	OVERHANGS		MINOR		
TRANSVERSE CRACKS	OVERHANGS		MODERATE		

SPAN TYPE-#	COMPONENT	MATERIAL	CONSTRUCTION	COMMENTS
MAIN SPANS-3	DECK	REINFORCED CONCRETE	CAST-IN-PLACE	(OTISL1, 09/21/2015)--LOW SLUMP WEARING SURFACE

SUPERSTRUCTURE COMPONENTS

SERIES TYPE-#	SPAN TYPE	MATERIAL	CONSTRUCTION	LABEL	COMMENTS
MAIN SERIES-1	CONTINUOUS SPAN	REINFORCED CONCRETE	BOX GIR-CIP MUL CELL		

SPAN	COMPOSITE INDICATOR	LENGTH	WEATHERING STEEL	COMMENTS
MAIN SPANS-1	NON-COMPOSITE	44 FT 0 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
PATCHES	THROUGHOUT		FEW		
SATURATION	THROUGHOUT		MINOR		
TRANSVERSE CRACKS	THROUGHOUT		FEW		
VERTICAL CRACKS	THROUGHOUT		MANY		

SPAN	COMPOSITE INDICATOR	LENGTH	WEATHERING STEEL	COMMENTS
MAIN SPANS-2	NON-COMPOSITE	63 FT 0 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
COLLISION DAMAGE	THROUGHOUT		MINOR		
SATURATION	THROUGHOUT		MINOR		
VERTICAL CRACKS	THROUGHOUT		MANY		

SPAN	COMPOSITE INDICATOR	LENGTH	WEATHERING STEEL	COMMENTS
MAIN SPANS-3	NON-COMPOSITE	44 FT 0 IN	NO	

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT
DELAMINATION	BOTTOM		MODERATE		
PATCHES	THROUGHOUT		FEW		
VERTICAL CRACKS	THROUGHOUT		MANY		

SUBSTRUCTURE COMPONENTS

SUBSTRUCTURE	SKEW	LENGTH	MATERIAL	CONSTRUCTION	LABEL	COMMENTS
ABUTMENT-1		39 FT 10 IN	REINFORCED CONCRETE	NON-INTEGRAL		

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT

ASSOCIATED COMPONENT	MATERIAL	CONSTRUCTION
BACKWALL	REINFORCED CONCRETE	CAST-IN-PLACE

CONDITION	LOCATION 1	LOCATION 2	SEVERITY	MEASUREMENT	COMMENT

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LEACHING	THROUGHOUT		MODERATE		
BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
EFFLORESCENCE	THROUGHOUT		MODERATE		
LEACHING	ENDS		MODERATE		
VERTICAL CRACKS	THROUGHOUT		FEW		
PILING	STEEL	H-SHAPE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
TURNED BACK WINGS	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
LEACHING	RIGHT SIDE		HEAVY		
MAP CRACKS	THROUGHOUT		MANY		
REBAR EXPOSED	RIGHT SIDE		FEW		
SPALLS	RIGHT SIDE		HEAVY		
WING PILES	STEEL	H-SHAPE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
EXPANSION BEARING	STEEL	SINGLE ROLLER			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
RUSTING	THROUGHOUT		HEAVY		

BENT-2 *REINFORCED CONCRETE* *MULTIPLE COLUMN*

CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
ASSOCIATED COMPONENT	***MATERIAL***	***CONSTRUCTION***			
COLUMN	REINFORCED CONCRETE	INTEGRAL CAST-IN-PLACE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
FOOTING	REINFORCED CONCRETE	H-PILE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***

BENT-3 *REINFORCED CONCRETE* *MULTIPLE COLUMN*

CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
ASSOCIATED COMPONENT	***MATERIAL***	***CONSTRUCTION***			
COLUMN	REINFORCED CONCRETE	INTEGRAL CAST-IN-PLACE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
FOOTING	REINFORCED CONCRETE	H-PILE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***

ABUTMENT-4 *39 FT 10 IN* *REINFORCED CONCRETE* *NON-INTEGRAL*

CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
ASSOCIATED COMPONENT	***MATERIAL***	***CONSTRUCTION***			
BACKWALL	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
BEAM CAP	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
DELAMINATION	TOP		MANY		
HORIZONTAL CRACKS	THROUGHOUT		LARGE		
LEACHING	THROUGHOUT		MODERATE		
SPALLS	THROUGHOUT		MODERATE		
VERTICAL CRACKS	THROUGHOUT		FEW		
PILING	STEEL	H-SHAPE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***
TURNED BACK WINGS	REINFORCED CONCRETE	CAST-IN-PLACE			
CONDITION	***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT***	***COMMENT***

DELAMINATION		RIGHT SIDE		HEAVY	
DETERIORATION		RIGHT SIDE		MODERATE	
REBAR EXPOSED		RIGHT SIDE		FEW	
SPALLS		RIGHT SIDE		LARGE	
WING PILES	STEEL		H-SHAPE		
CONDITION		***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT*** ***COMMENT***
EXPANSION BEARING	STEEL		SINGLE ROLLER		
CONDITION		***LOCATION 1***	***LOCATION 2***	***SEVERITY***	***MEASUREMENT*** ***COMMENT***
RUSTING		RANDOM		HEAVY	
RUSTING		THROUGHOUT		HEAVY	

OVER/UNDER ROUTES CLEARANCE INFORMATION

CLEARANCES OVER DECK

**NOTE: Vertical clearances for permitting purposes are taken as 2 inches less than the actual field measured clearance.

VERTICAL CLEARANCE TYPE**	VALUE	DIRECTION	DATE	COMMENT

CLEARANCES UNDER BRIDGE

**NOTE: Vertical clearances for permitting purposes are taken as 2 inches less than the actual field measured clearance.

RECORD #	ROUTE	# LANES	DIRECTION OF TRAFFIC	RIGHT LATERAL CLEARANCE	LEFT LATERAL CLEARANCE	UR-ID
1	CST E 12TH ST E	2	1-WAY TRAF	12 FT 6 IN		517

VERTICAL CLEARANCE TYPE**	VALUE	DIRECTION	DATE	COMMENT
ACTUAL	13 FT 9 IN			

STRUCTURE PAINT INFORMATION

CONDITION: **RUST AMOUNT :** **STEEL TONS :**

ORIGINAL PAINT	CONTRACT REPAINT	DEPARTMENT REPAINT	
PAINT TYPE :	**PAINT TYPE :**	**PAINT TYPE :**	**MANUFACTURE :**
NAME :	**NAME :**	**NAME :**	**SURFACE PREP :**
PAINT COLOR :	**PAINT COLOR :**	**PAINT COLOR :**	
PAINT YEAR :	**PAINT YEAR :**	**PAINT YEAR :**	
MILS :	**MILS :**	**MILS :**	

REQUESTED WORK ITEMS

GENERAL WORK COMMENTS:

Missouri Department of Transportation
State Bridge Inspection Report

COUNTY: JACKSON **DISTRICT: KC** **CLASS: STATBR** **FED-ID: 215** **BRIDGE: A0245**

RESPONSIBILITY	*LOCATION*	*ITEM*	*CATEGORY*	*PRIORITY*	*DATE*	*WORK ITEM COMMENT*
DISTRICT SPECIAL	BENT	REPLACE EXPANSION DEVICE	EXPANSION DEVICE	2	09/18/2017	(OTISL1, 10/01/2019)--CLEAN DEBRIS FROM ABUTMENT, CLEAN & PAINT BEARINGS
DISTRICT SPECIAL	ROADWAY SURFACE	SEAL WITH SILANE	DECK	3	04/11/2023	

UTILITY ATTACHMENTS

UTILITY	*OWNER*	*METHOD*	*MEASUREMENT TYPE*	*VALUE*	*NUMBER*	*UTILITY ATTACHMENT COMMENT*

PROGRAM NOTES INFORMATION

YEAR	PROJECT #	MONTH LET	YEAR LET	ITEMS	COMMENT

COMPUTER GENERATED RATINGS AND DEFICIENCY ITEMS

NOTE: The items listed in this section are updated whenever computer edits are ran on a structure after the inspection updates have been entered in to TMS.

Rated Item	Rating	Rating Date
[Item 67] Structure Evaluation Rating:	5-BETTER THAN MINIMUM	10/1/2019
[Item 68] Deck Geometry Rating:	4-MEETS MINIMUM TOLERABLE	12/9/2015
[Item 69] Underclearance:	3-BASICALLY INTOL CORRECT	3/21/2003
Sufficiency Rating:	79.9%	3/2/2023
Deficiency:	FUNCTIONAL	3/21/2003
Funding Eligibility:	PARTIAL	----
Estimated New Structure Length:	190 FT.	----
Estimated Structure Cost:	$787,991	----
Estimated Total Project Cost:	$1,181,986	----
Year of Cost Estimate:	2024	----

NOTE: The above structure length and cost estimates are computer generated using algorithims in the TMS system. These algorthims are generalized to use NBI items to come up with a new structure length and width to calculate a new area which is taken times a representative cost per square foot. The actual structure size and cost may vary significantly from these numbers once site specific engineering is done.

ADVANCED SIGN INFORMATION

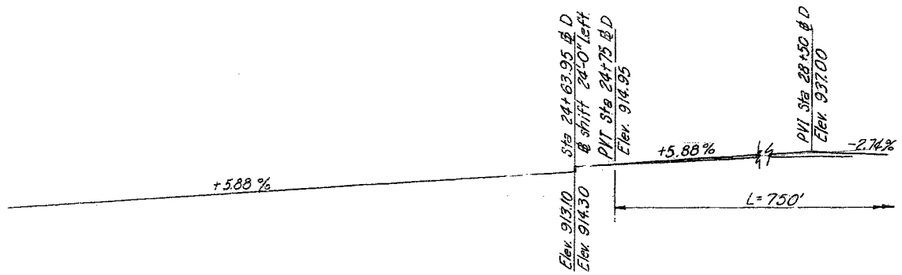
SIGN #	SIGN TYPE	PROBLEM	PROBLEM DIRECTION
1			

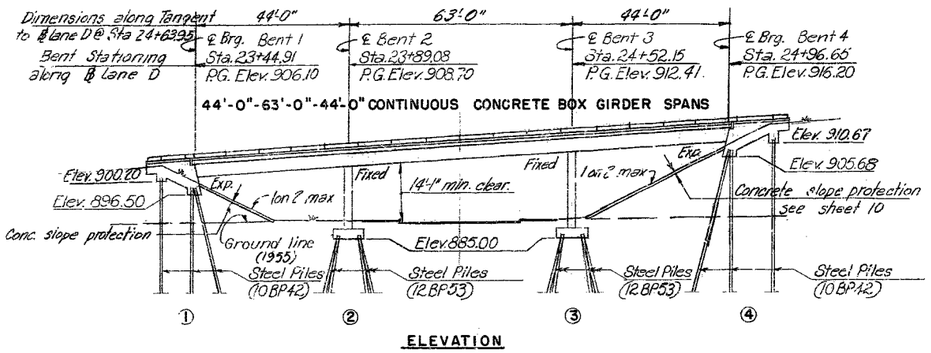
OUTFALL INSPECTION INFORMATION

 # OUTFALLS: **INSPECTOR:**
STATUS: **DATE:**
NOTES:

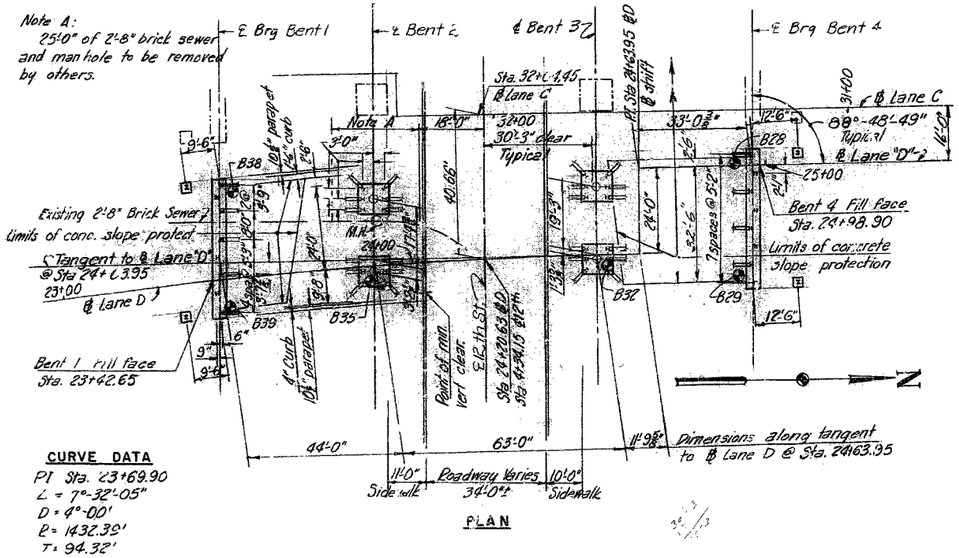
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIV. NO.	STATE	FEDERAL PROJECT No.	SEC.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.					
DIST. NO.	COUNTY			ROUTE	SEC.	
4				40		





ELEVATION



PLAN

CURVE DATA

PI Sta. 23+69.90
Δ = 7°-32'-05"
D = 4°-00'
R = 1432.39'
T = 94.32'
L = 188.37'

ESTIMATED QUANTITIES					
ITEM NO.	ITEM	UNIT	SUB-STRUCTURE	SUPER-STRUCTURE	TOTAL
1-G	Class 1 Excavation for Structures	cu.yd.	105		105
16-B	Class B Concrete	cu.yd.	116.5		116.5
16-B-1	Class B-1 Concrete	cu.yd.		374.6	374.6
17-B	Fabricated Structural Steel (Bearing)	lbs.		1850	1850
17-B	Fabricated Structural Steel	lbs.		5060	5060
17-J	Aluminum Alloy Handrail	lin.ft.		364	364
19-A	Reinforcing Steel	lbs.	9570	108,700	118,270
22-DD	Steel piles in place (10 BP 42) State furnished	lin.ft.	780		780
22-DD	Steel piles in place (12 BP 53) - State furnished	lin.ft.	508		508

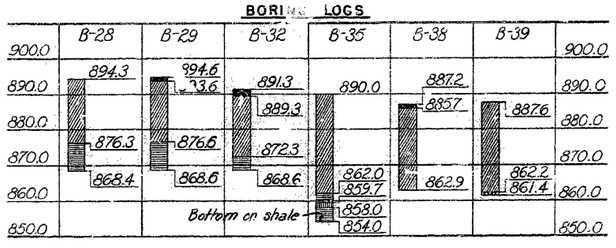
Excavation: All excavation for bridge will be paid for as Class 1 Excavation for Structures.

Quantity of steel piles in place includes an allowance of 8' per splice for an estimated number of 2 splices for 10 BP 42 and an estimated number of 2 splices for 12 BP 53.

Estimated quantity of Class "B" concrete substructure includes all concrete in end bents (including wingwalls and parapet), and intermediate bent footings. All other concrete is included in estimated quantity of Class "B-1" superstructure.

No excavation will be allowed for Bents No. 1 & 4.

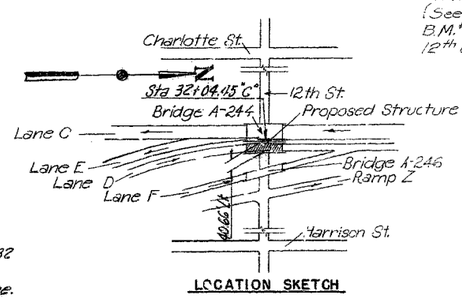
BORING LOGS



BORING LEGEND

- Pavement and road-bed
- Brown clay
- Shale
- Boulders and limestone
- Limestone

Notes:
Location of Boring logs note thus: ◔ B32
Top boring elevation is top of ground
Bottom boring elevation is top of limestone.



LOCATION SKETCH

GENERAL NOTES

Design Specifications: A.A.S.H.O. 1953.

Construction Specifications: Missouri Standard Specifications for State Roads, Materials, Bridges, Culverts, and Incidental Structures, (1955)

Design Loading: H20-S16-44 (Modified 24,000# Tandem Axle) (15#/sq.ft. future wearing surface.)

Concrete: Concrete stress for Class B-1 — Fc = 1400 p.s.i.
for Class B — Fc = 1200 p.s.i.
Concrete for superstructure shall be Class B-1 air-entrained. (See Special Provisions). Concrete for substructure shall be Class B, air-entrained. If contractor desires, Class B-1 may be used in lieu of Class B for concrete in substructure with payment made for Class B concrete.
(All forms are to be removed from interiors of box girders).

Reinforcing Steel: Allowable stress — 20,000 p.s.i.
All splices in reinforcing steel shall be 32 bar diameters.
Bar sizes are designated on plans by numbers. The first digit after the letter in three digit marks and the first two digits after the letter in four digit marks, indicate the size of the bar.
Dimensions shown on plans from reinforcing steel to outside edge of concrete are all clear dimensions.
All bending dimensions are from "out to out" of bars.

Piling: All piles shall conform with detail and notes on sheet 5. All steel piles required for this structure will be furnished by the state. (See special provisions. All piles shall be driven to or onto solid rock, boulders, shale, or cemented gravel; or to not less than full length authorized, and to sustain a load of not less than 37 tons per pile for 10 BP 42, and 46 tons per pile for 12 BP 53.
All piles shall be driven with a steam hammer.
See Section 22-9C of standard specifications for required painting of steel piles.
Compacted roadway fill (full roadway width) shall be placed up to elevation of bottom of concrete beam in front of and not less than 25'-0" in back of end bents before steel piles are driven.

Waterproofing of Decks: Superstructure deck to be waterproofed. (See Special Provisions)

Welding: Proper qualification of welding operators will be required.

Joint Filler: Where joint filler is specified, it shall conform with requirements for gray rubber compound joints as given in section 59-22B of Standard Specifications.

Fiber conduit: Expansion sleeves shall be required in fiber conduit at all expansion joints. Expansion sleeve shall be oversized fiber conduit with rubber ring as provided by manufacturer.

Utilities: All utilities, unless shown otherwise, shall be removed or relocated by others. Owner of utilities will be notified of contractor's work schedule by the contractor sufficiently in advance to allow for disposition of utilities.

Shipping Permits: Permits must be obtained for all truck loads over legal length.

Traffic: 12th Street shall remain open to traffic during construction. Falsework over 12th Street shall be constructed with a minimum vertical clearance of not less than 12'-0" and a minimum lateral clearance of not less than 28'-0". (See Special Provisions)

B.M. "1-X" on south bolt on top of hydrant N.W. corner 12th and Charlotte Sts. Elev. 888.18.

SUBMITTED BY:
K. A. Bergendoff
REGISTERED PROFESSIONAL ENGINEER MISSOURI NO. E-253

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

MADE TCH	DATE 2-17-58	TRACED	DATE
CHECKED NBB	DATE 3-5-58	SCALE	

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

BRIDGE: LANE "D" OVER 12TH STREET
STATE ROAD U.S. 40 MIDTOWN FREEWAY
KANSAS CITY, MO.
PROJECT NO. I-352 (18) (FAI-RT. 4) STA. 32+04.45 (LANE C) 40.66 Lt.
JACKSON COUNTY

SUBMITTED J. A. Williams 4-16-1958 BRIDGE ENGINEER
APPROVED BY Ralph M. Whitton Aug. 1958 CHIEF ENGINEER

STD. K2
STD. C-110 R5
A 245

GENERAL PLAN AND ELEVATION

SHEET 1 OF 10

SEE FINAL PLANS BROWN-LINES

304

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIV. NO.	STATE	FEDERAL PROJECT No.	SEC.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.					
DIST. NO.	COUNTY				ROUTE	SEC.
4					40	

SUBSTRUCTURE

END BENT 1

NO.	SIZE	LENGTH	MARK	TYPE	DIMENSIONS A	B	C	D
16	6	2'-6"	F601	Str.				
8	4	6'-6"	H401	105	2'-0"	2'-3"	2'-3"	
20	↕	20'-6"	H402	Str.				
4		12'-5"	H403	↕				
6		12'-3"	H404					
1		13'-6"	H405					
4	4	18'-9"	H406	Str.				
1	6	4'-6"	H601	Str.				
1	↕	6'-0"	H602	↕				
1		7'-6"	H603					
3		11'-0"	H604					
2		13'-6"	H605					
2		12'-6"	H606					
1		8'-10"	H607					
1		5'-0"	H608					
10		4'-3"	H609					
10		36'-6"	H610					
4		18'-1"	H611					
5		4'-8"	H612					
4		8'-5"	H613					
1		12'-5"	H614					
3		13'-9"	H615					
2		7'-11"	H616	↕				
2	6	5'-11"	H617	Str.				
38	4	14'-9"	V401	123	2'-11"	3'-7"	3'-10"	3'-8"
2	↕	13'-4"	V402	123	3'-1½"	2'-9⅛"	3'-10"	2'-10"
10		5'-10"	V403	Str.				
72		8'-0"	V404	Str.				
2		15'-2"	V405	105	2'-0"	6'-7"	6'-7"	
2		14'-0"	V406	105	10"	6'-7"	6'-7"	
3		2'-8"	V407	Str.				
4		4'-10"	V408	↕				
1		5'-1"	V409					
1		5'-2"	V410					
1		5'-6"	V411					
1		6'-2"	V412					
1		6'-5"	V413	Str.				
3		3'-5"	V414	104	2'-8"	10"		
4		5'-8"	V415	104	4'-10"	10"		
1		6'-0"	V417	104	5'-2"	10"		
1		6'-4"	V418	104	5'-6"	10"		
1		6'-10"	V419	104	6'-0	10"		
1		7'-7"	V420	104	6'-9"	10"		
1		5'-0"	V421	104	4'-2	10"		
28		5'-2"	V422	105	6"	2'-4"	2'-4"	
1		3'-11"	V423	Str.				
1		4'-2"	V424	↕				
1		6'-9"	V425					
5		9'-0"	V426					
3		3'-10"	V427	↕				
3		2'-7"	V428	Str.				
3		9'-2"	V429	131	2'-0½"	1'-5"	1'-6"	1'-0"
9		6'-9"	V430	124	6"	2'-0"	1'-5"	2'-10"
1		3'-5"	V431	Str.				
1		4'-0"	V432	Str.				
37	4	3'-9"	V433	124	6"	1'-2"	5"	1'-8"

BENTS 2 & 3

NO.	SIZE	LENGTH	MARK	TYPE	DIMENSIONS A	B	C	D
80	9	8'-8"	F901	Str.				
16	9	7'-2"	F902	126	4'-7"	1'-7"	1'-0"	1'-0"
24	11	7'-10"	F1101	126	5'-3"	1'-7"	1'-0"	1'-0"

END BENT 4

NO.	SIZE	LENGTH	MARK	TYPE	DIMENSIONS A	B	C	D
16	6	2'-8"	F601	Str.				
24	4	18'-2"	H401	Str.				
5	↕	17'-3"	H402	108	15'-5"	1½"	2'-0"	2'-0"
6		15'-5"	H403	Str.				
24		3'-7"	H404	Str.				
5	4	12'-0"	H405	105	2'-0"	1'-4"	2'-3" to 3'-1"	
10	6	39'-5"	H601	Str.				
4	↕	18'-0"	H602	↕				
3		16'-7"	H603					
3		16'-10"	H604					
6		14'-2"	H605					
2		10'-0"	H606					
4		8'-0"	H607					
4		6'-0"	H608					
4		12'-0"	H609	↕				
12	6	4'-1"	H610	Str.				
36	4	13'-0"	V401	105	8"	6'-2"	6'-2"	
6	↕	7'-11"	V402	108	5'-11"	7½"	1'-11"	2'-0"
38		14'-10"	V403	123	2'-11½"	3'-7"	3'-10"	3'-8"
3		13'-4"	V404	123	3'-2"	2'-9"	3'-10"	2'-10"
5		11'-7"	V405	Str.				
3		7'-9"	V406	Str.				
5		26'-0"	V407	105	10½"	4'-2" to 4'-8"	4'-2" to 4'-8"	
34		5'-3"	V408	105	6½"	2'-4"	2'-4"	
13		6'-9"	V409	124	6"	2'-0"	1'-5"	2'-10"
36		3'-9"	V410	124	6"	1'-2"	5"	1'-8"
4		4'-0"	V411	Str.				
4		10'-3"	V412	105	10½"	4'-8"	4'-8"	
3		6'-3"	V413	105	10½"	2'-8"	2'-8"	
3		9'-2"	V414	131	2'-0½"	1'-5"	1'-6"	1'-0"
1		2'-4"	V415	Str.				
2	↕	7'-10"	V416	Str.				
4	4	3'-10"	V417	Str.				

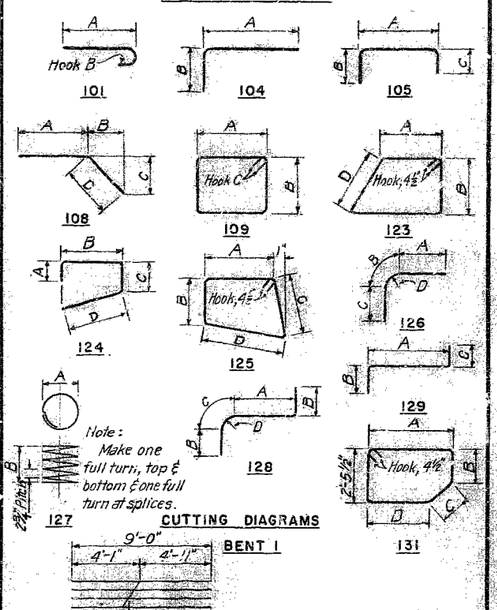
SUPERSTRUCTURE

NO.	SIZE	LENGTH	MARK	TYPE	DIMENSIONS A	B	C	D
46	6	14'-8"	B601	109	3'-2"	3'-3"	6"	
12	↕	34'-8"	B602	Str.				
22	10	34'-8"	B1001	Str.				
16	↕	13'-4"	B1002	Str.				
15	4	4'-2"	D401	109	8½"	1'-0"	4½"	
30	↕	4'-8"	D402	109	8½"	1'-3"	4½"	
30		5'-2"	D403	109	8½"	1'-6"	4½"	
30		5'-8"	D404	109	8½"	1'-9"	4½"	
8	6	13'-4"	D601	109	1'-2"	5'-0"	6"	
10	↕	2'-8"	D602	Str.				
12		34'-8"	D603	Str.				
64		10'-8"	D604	109	1'-2"	3'-8"	6"	
12		6'-6"	D605	101	5'-10	8"		
24	6	11'-8	D606	108	5'-10	5'-3"	2'-8"	5'-10"
84	4	26'-10"	G401	Str.				
36	↕	17'-10"	G402	↕				
36		9'-6"	G403					
24		13'-8"	G404					
18		12'-6"	G405					
18		18'-4"	G406					
24		18'-0"	G407					
12		28'-11"	G408	↕				
12	4	7'-8"	G409	Str.				
232	5	5'-9"	G501	128	3'-9"	1'-0"	1'-0"	
232	5	5'-9"	G502	105	3'-9"	1'-0"	1'-0"	
916	5	6'-0"	G503	128	3'-3"	1'-0"	9"	6"
72	6	2'-9"	G601	Str.				
24	8	26'-10"	G801	Str.				
42	10	60'-0"	G1001	Str.				
36	↕	15'-5"	G1002	↕				
24		30'-1"	G1003					
24		22'-1"	G1004					
24		15'-0"	G1005					
12		8'-0"	G1006					
2		49'-7"	G1007					
2		33'-9"	G1008					
12		43'-1"	G1009					
12		33'-1"	G1010					
6		19'-1"	G1011	↕				
12	10	18'-0"	G1012	Str.				
24	4	30'-0"	P401	Str.				
16	↕	10'-2"	P402	↕				
16		5'-8"	P403					
16		7'-8"	P404					
8		18'-1"	P405	Str.				
268	4	4'-10"	P406	109	1'-6"	6½"	4½"	
210	4	26'-7"	S401	Str.				
108	↕	29'-4"	S402	↕				
12		14'-4"	S403					
20		10'-4"	S404					
20		6'-4"	S406					
6		29'-9"	S406					
10		23'-9"	S407					
10		17'-9"	S408	↕				
10	↕	11'-8"	S409	Str.				
130	4	3'-11"	S410	108	1'-2"	6"	2'-8½"	2'-9"
162	5	34'-8"	S501	Str.				
242	↕	39'-5"	S502	↕				
244		37'-0"	S503					
18		9'-2"	S504					
6		11'-0"	S505					
6		22'-10"	S506	↕				
32	5	4'-0"	S507	Str.				
32	6	39'-7"	S601	Str.				
20	↕	37'-1"	S602	↕				
4		25'-1"	S603					
12		26'-8"	S604					
12		32'-3"	S605					
6		20'-10"	S606					
12		30'-5"	S607					
6		34'-8"	S608	↕				
10		39'-5"	S609	Str.				
35	↕	3'-2"	S610	124	4"	9"	10"	1'-3"
48	6	5'-1"	S611	Str.				
28	4	30'-0"	W401	Str.				
14	↕	16'-2"	W402	Str.				
7		5'-5"	W403	Str.				
134	↕	6'-11"	W404	125	1'-11½"	10"	1'-3"	2'-1½"
134	4	4'-5"	W405	125	10"	9½"	1'-0"	1'-0"

COLUMNS, BENTS 2 & 3

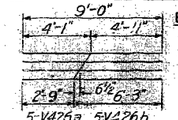
NO.	SIZE	LENGTH	MARK	TYPE	DIMENSIONS A	B	C	D
7	4	589'-4"	C401	127	2'-3"	19'-0"		
1	4	692'-9"	C402	127	2'-3"	22'-5"		
1	4	549'-1"	C403	127	2'-3"	17'-8"		
1	4	660'-1"	C404	127	2'-3"	21'-4"		
8	9	25'-1"	C901	Str.				
8	9	24'-3"	C902	Str.				
40	9	6'-11"	C903	126	1'-9"	3'-2"	2'-0"	2'-0"
12	11	21'-7"	C1101	Str.				
12	11	20'-3"	C1102	Str.				

BENDING DIAGRAMS



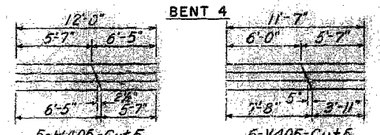
CUTTING DIAGRAMS

BENT 1



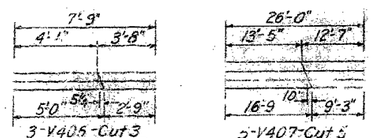
5-V426a 5V426b
5-V426-Cut 5

BENT 4



5-H405-Cut 5
Bend 10

5-V405-Cut 5



3-V405-Cut 3

2-V407-Cut 5
Bend 10

Note:
Prefix all bar marks for Bent 1 with B1, prefix all bar marks for Bent 4 with "B4" and prefix all bar marks for Superstructure with "SU". Example: B1-F601, B4-H401, SU-B601.

BRIDGE: LANE D OVER 12TH STREET

STATE ROAD US 40 MIDTOWN FREEWAY
KANSAS CITY, MO.
PROJECT NO. I-352 (18) (FAI-RT. 4) STA. 32+04.45 (LANE C) 40.66' LT.

JACKSON COUNTY

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

MADE H.T.S. DATE 3-4-58 TRACED DATE
CHECKED N.B.B. DATE 3-5-58 SCALE

NOTE: This Drawing is not to scale. Follow dimensions.

REINFORCING SCHEDULE

SHEET 2 OF 10

A 245

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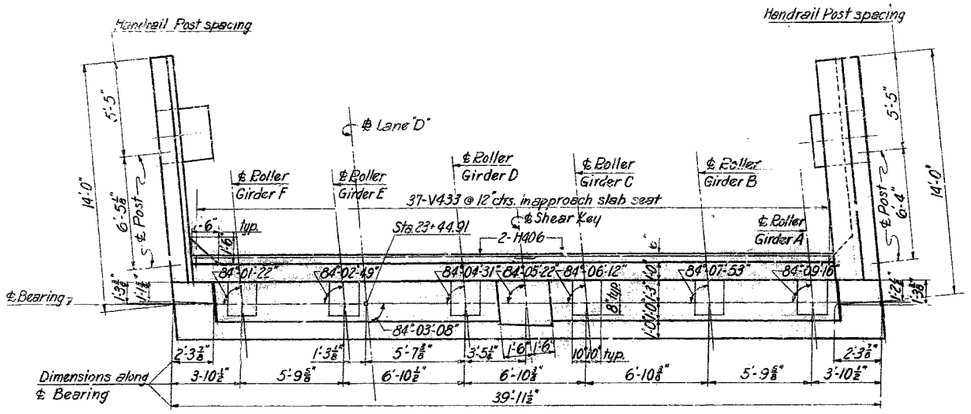
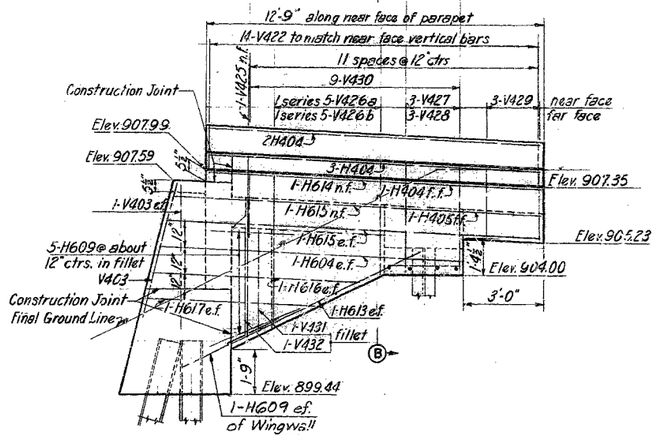
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FEDERAL PROJECT NO.	SEC.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.					
DIST. NO.	COUNTY			ROUTE	SEC.	
4				40		

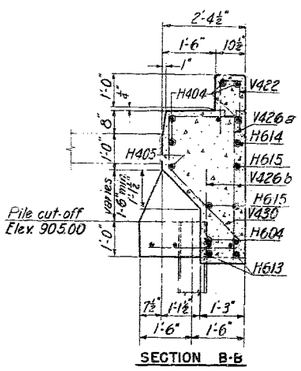
306



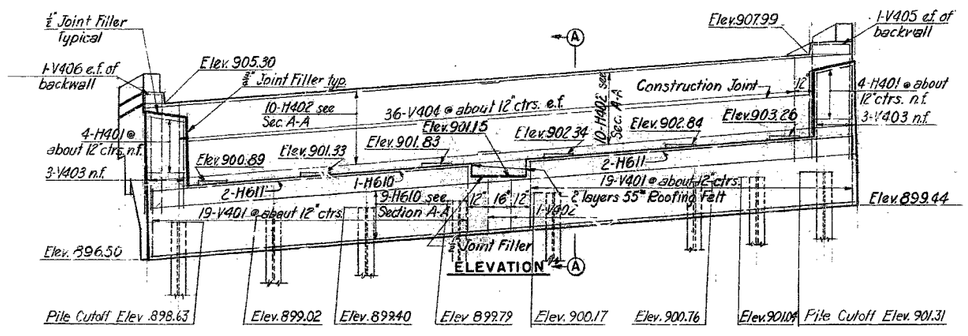
PLAN



WEST WINGWALL ELEVATION

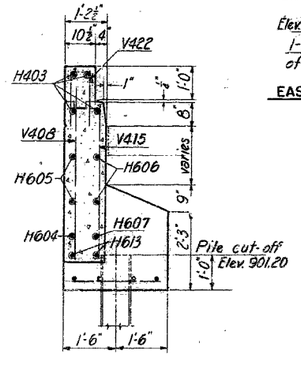


SECTION B-B



ELEVATION

EAST WINGWALL ELEVATION



SECTION C-C

SECTION A-A

FOOTING PLAN

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

Notes:
- Piles are 10BP42 and shall be battered 3" per foot where shown.
- Elevations and Dimensions to surfaces to receive Joint Filler are to face of concrete.
- For Rustication Detail see sheet 5
- Use 2" clear on all reinforcing except as otherwise shown.
- For Expansion Roller Device see sheet 10
- For Handrail Post Detail see sheet 10
- Backwall elevations shown on North Face

BRIDGE: LANE D OVER 12TH STREET

STATE ROAD US 40 MIDTOWN FREEWAY

KANSAS CITY, MO.

PROJECT NO. I-35 5 2 (18) (FAI-RT. 4) STA. 32+04.45 (LANE C) 40.66' LT.

JACKSON COUNTY

END BENT 1

SHEET 3 OF 10

A 245

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

MADE B.A.R.	DATE 1-28-58	TRACED	DATE
CHECKED NBB	DATE 2-28-58	SCALE	

NO CONSTRUCTION CHANGES

MISSOURI STATE HIGHWAY DEPARTMENT

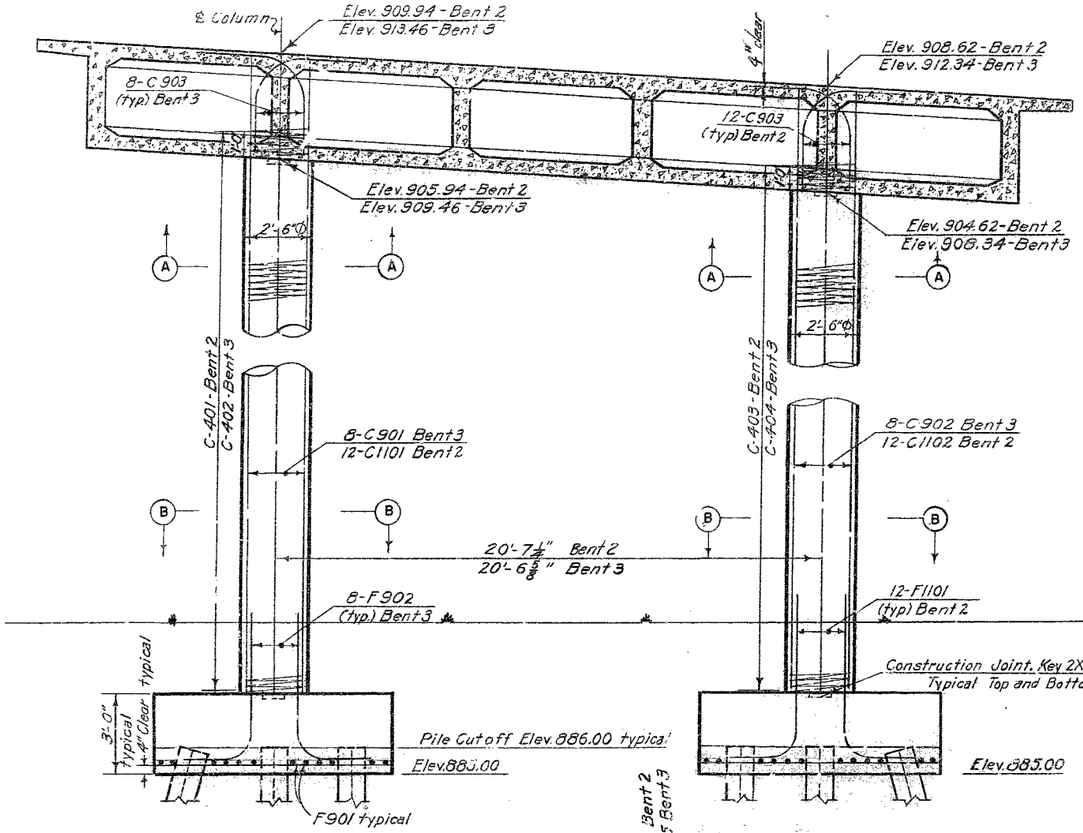
FED. ROAD DIV. NO.	STATE	FEDERAL PROJECT No. & Sec.			SHEET NO.	TOTAL SHEETS
5	MO.					
DIST. NO.	COUNTY			ROUTE	SEC	
4				40		

Notes:

All Piles are 12 BP 53. Battered Piles are Battered 3" per ft. as shown.

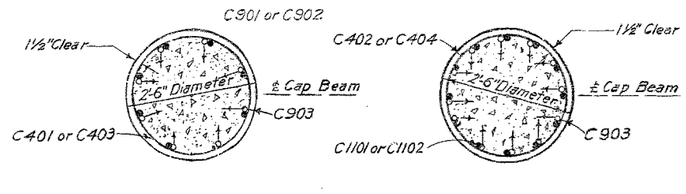
Footing Reinforcing shown in West footing is typical for all footings.

For Pile Splice Detail See Sheet 5



ELEVATION

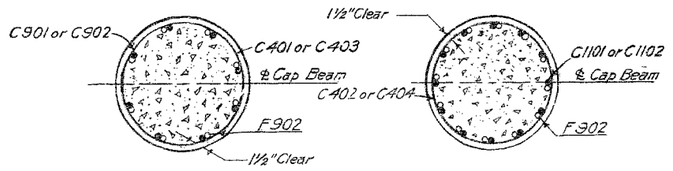
FOOTING PLAN



BENT 3 BENT 2

SECTION A-A

Note: Arrows show direction of placing C 903 Bars.



BENT 3 BENT 2

SECTION B-B

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

MADE W.O. DATE 1-21-58 TRACED DATE
CHECKED L.J.F. DATE 2-20-58 SCALE

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

BRIDGE: LANE D OVER 12TH STREET
STATE ROAD U.S. 40 MIDTOWN FREEWAY
KANSAS CITY, MO.
PROJECT NO. I-352 (18) (FAI-RT. 4) STA. 32+04.45 (LANE C) 40.66' LT.
JACKSON COUNTY

BENTS 2 AND 3 SHEET 4 OF 10

A 245

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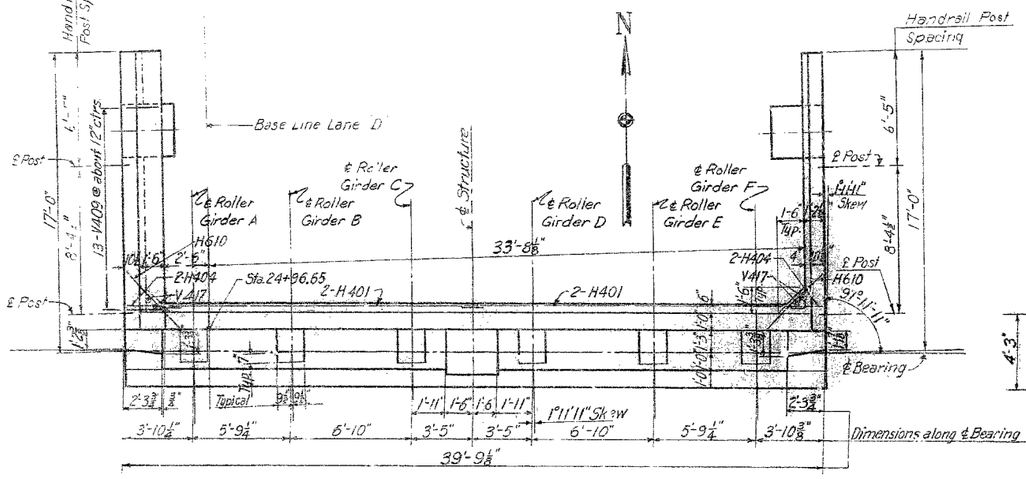
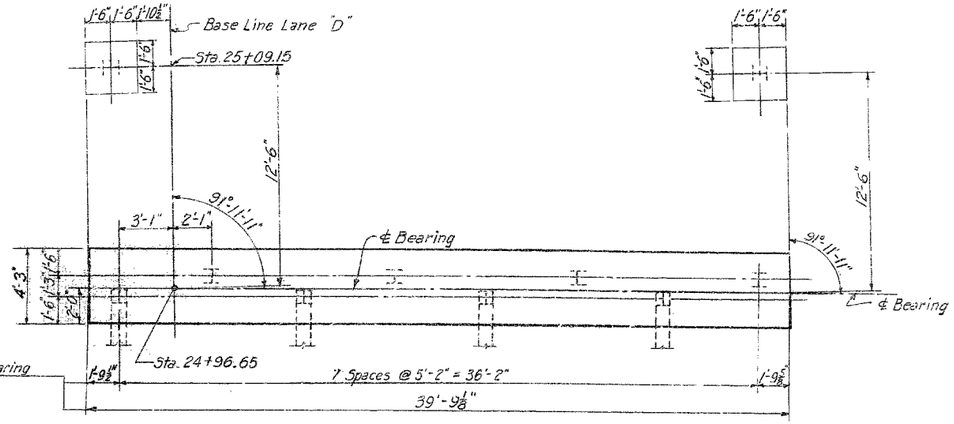
NO CONSTRUCTION CHANGES

MISSOURI STATE HIGHWAY DEPARTMENT

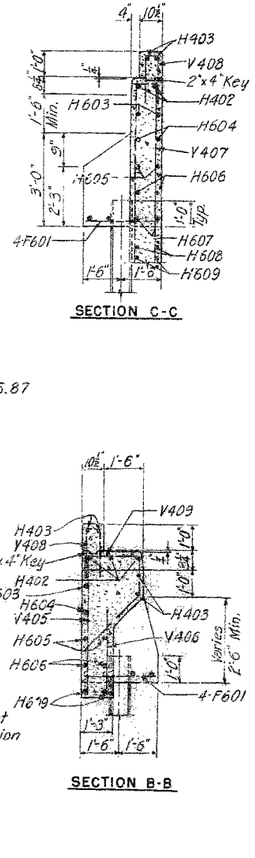
FED. ROAD DIV. NO.	STATE	FEDERAL PROJECT No. & Sec.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.				
DIST. NO.	COUNTY		ROUTE	SEC.	
4			40		

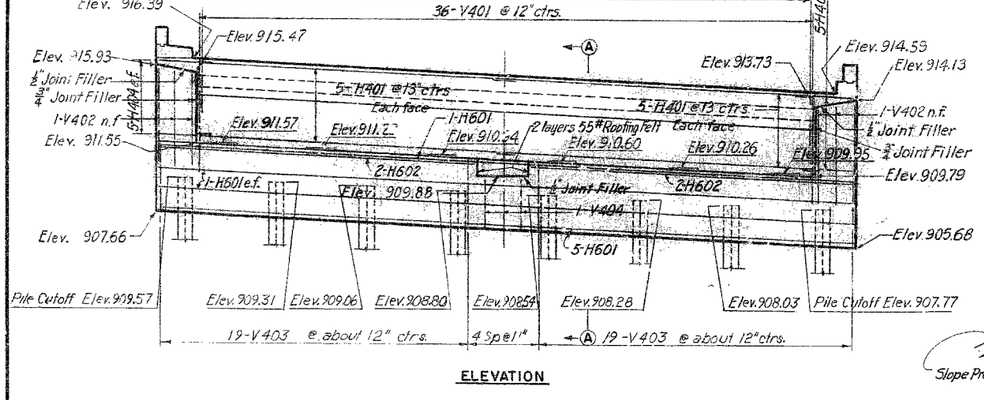


PLAN

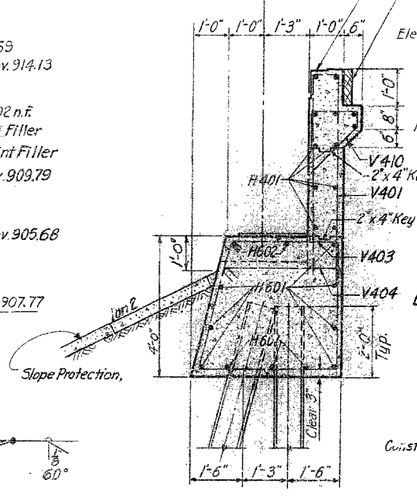


FOOTING PLAN

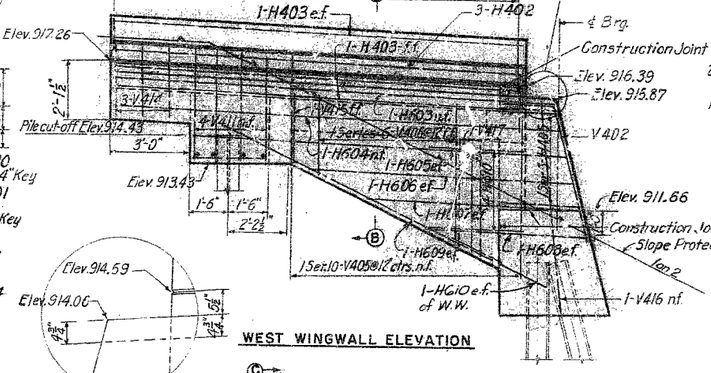




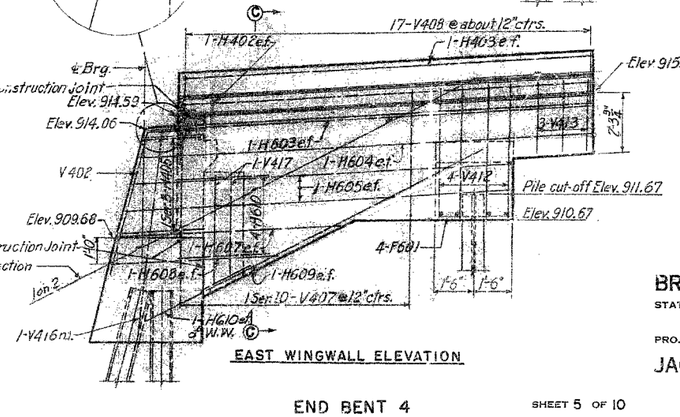
ELEVATION



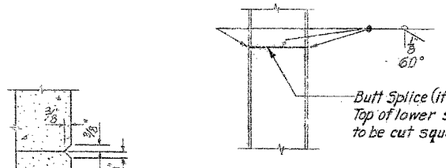
SECTION A-A



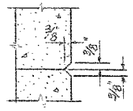
WEST WINGWALL ELEVATION



EAST WINGWALL ELEVATION



PILE SPLICE DETAIL



RUSTICATION DETAIL

Notes:
Piles are 10 BP 42 and shall be battered 3" per ft. where indicated.
Backwall elevations shown on South face.
Elevations or dimensions to surfaces which require Joint Filler are to the concrete.
For Expansion Joint Details see Sheet 10
Use 2" clear on all reinforcing except as otherwise shown.
Top of curb and parapet wall are to be built parallel to grade.
For profile grade see sheet 6.

BRIDGE: LANE D OVER 12TH STREET

STATE ROAD US 40 MIDTOWN FREEWAY
KANSAS CITY, MO.
PROJECT NO. I-352 (18) (FAI-RT. 4) STA. 32+04.15 (LANE C) 40.66' LT.
JACKSON COUNTY

END BENT 4

SHEET 5 OF 10

A 245

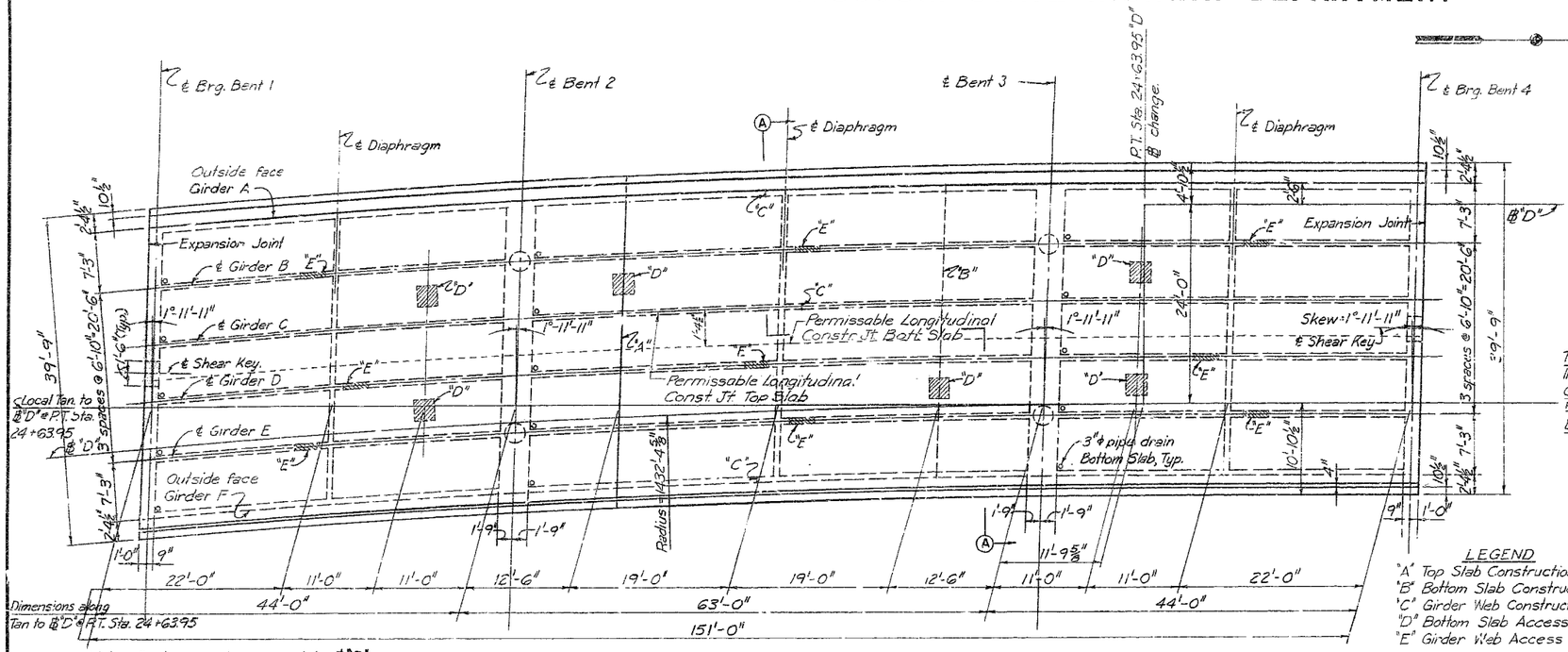
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK
MADE HFS DATE 2-24-55 TRACED DATE
CHECKED NBB DATE 2-24-55 SCALE

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

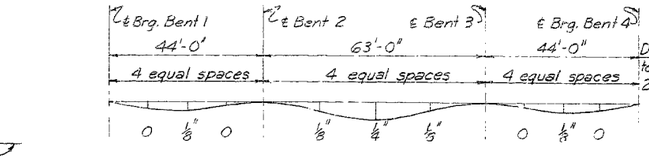
308

MISSOURI STATE HIGHWAY DEPARTMENT

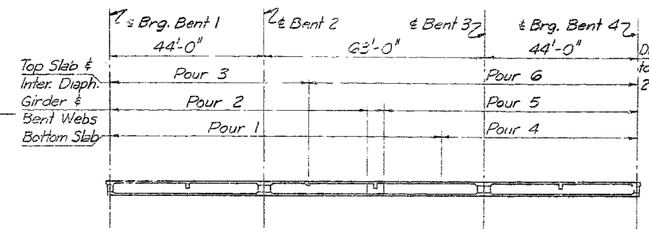
FED. ROAD DIV. NO.	STATE	FEDERAL PROJECT NO. & SEC.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.				
DIST. NO.	COUNTY		ROUTE	SEC.	
4			40		



FRAMING PLAN



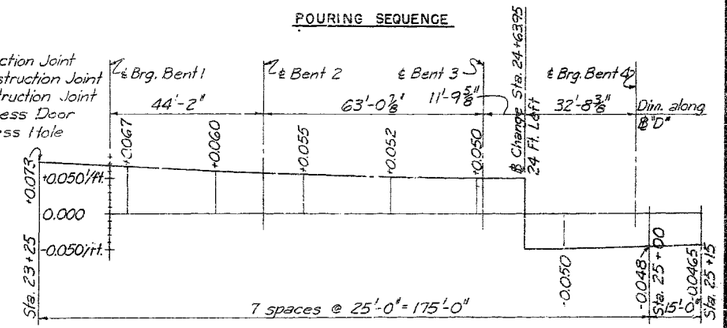
DEAD LOAD DEFLECTION DIAGRAM



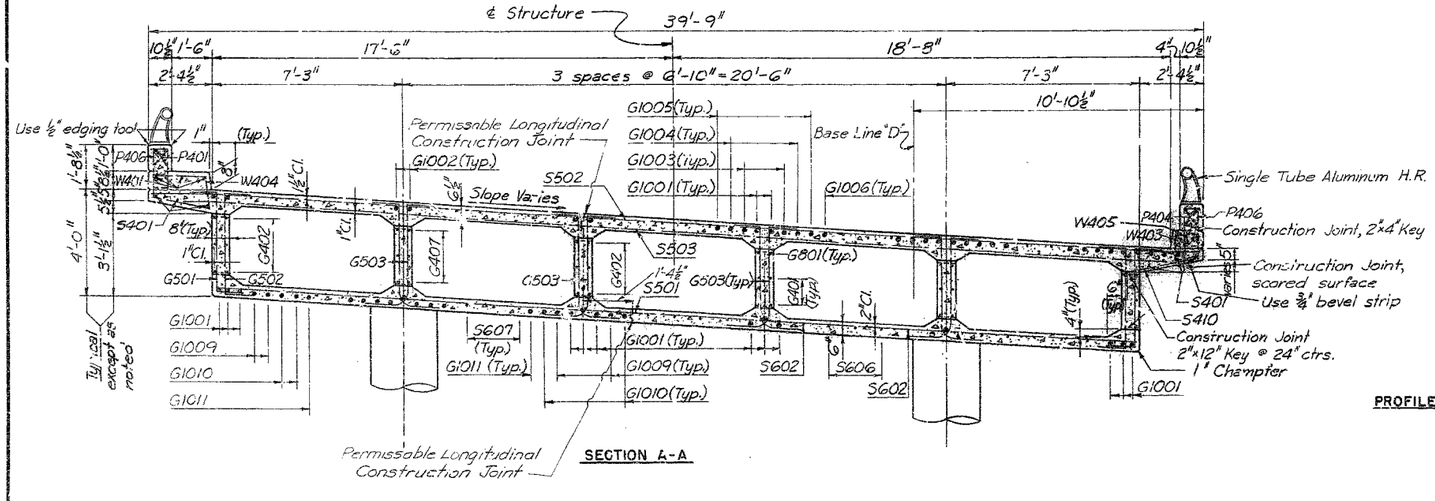
POURING SEQUENCE

LEGEND

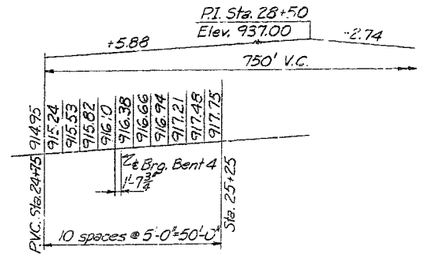
"A" Top Slab Construction Joint
"B" Bottom Slab Construction Joint
"C" Girder Web Construction Joint
"D" Bottom Slab Access Door
"E" Girder Web Access Hole



SUPERELEVATION TRANSITION



SECTION A-A



PROFILE GRADE ELEVATIONS ALONG ℄ LANE D

Notes:

For longitudinal slab and girder reinforcing see Sheet 7.

For transverse slab, diaphragm, and cap beam reinforcing see Sheet 8.

For girder web, end bent web, and cap beam web reinforcing see Sheet 8.

For curb and parapet reinforcing and handrail spacing see Sheet 9.

For details and reinforcing of construction joints and access holes see Sheets 9 & 10.

For details of handrail, expansion joints, pipe drains, access door, and bearing devices, see Sheet 10.

BRIDGE: LANE D OVER 12TH STREET
STATE ROAD US 40 MIDTOWN FREEWAY
KANSAS CITY, MO.
PROJECT NO. I-352 (18) (FAI-RT. 4) STA. 32+44.45 (LANE C) 40.38 LT.
JACKSON COUNTY

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

MADE NBB DATE 12-26-57 TRACED _____ DATE _____
CHECKED BAR DATE 2-21-58 SCALE _____

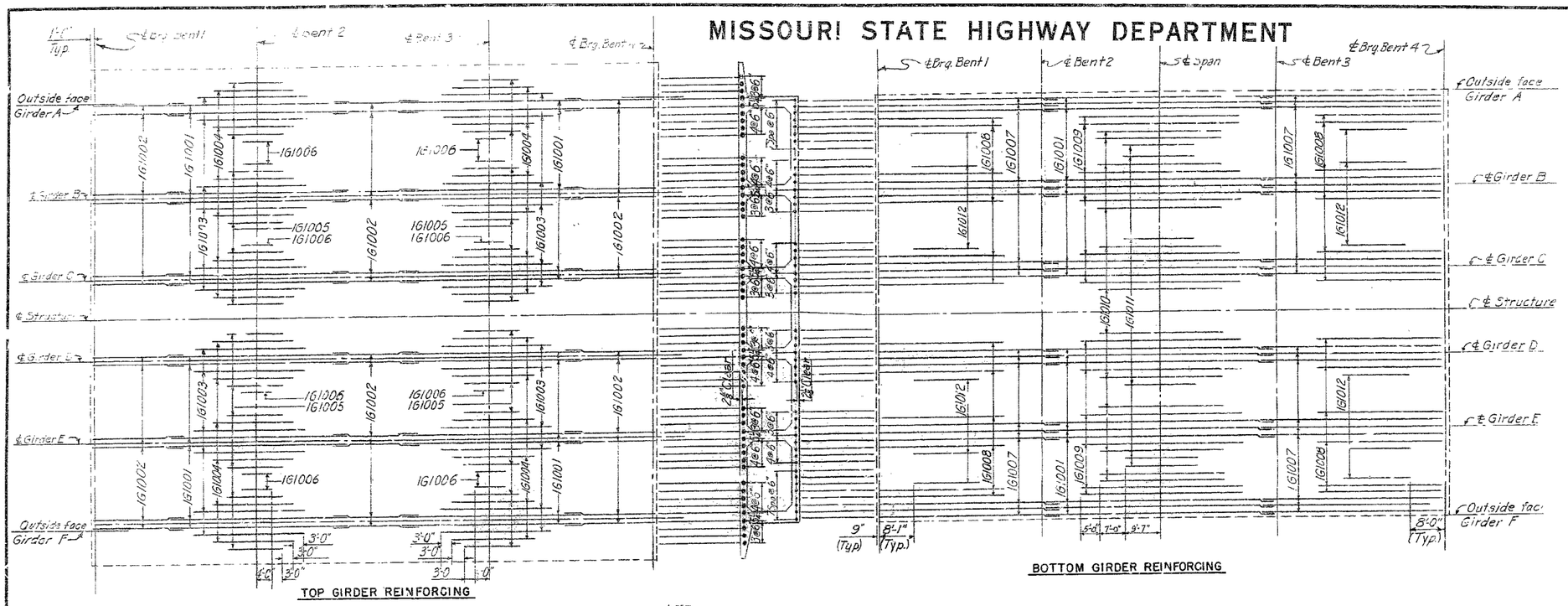
NOTE: This drawing is not to scale. Follow dimensions.

FRAMING PLAN SHEET 6 OF 10 A 245

309

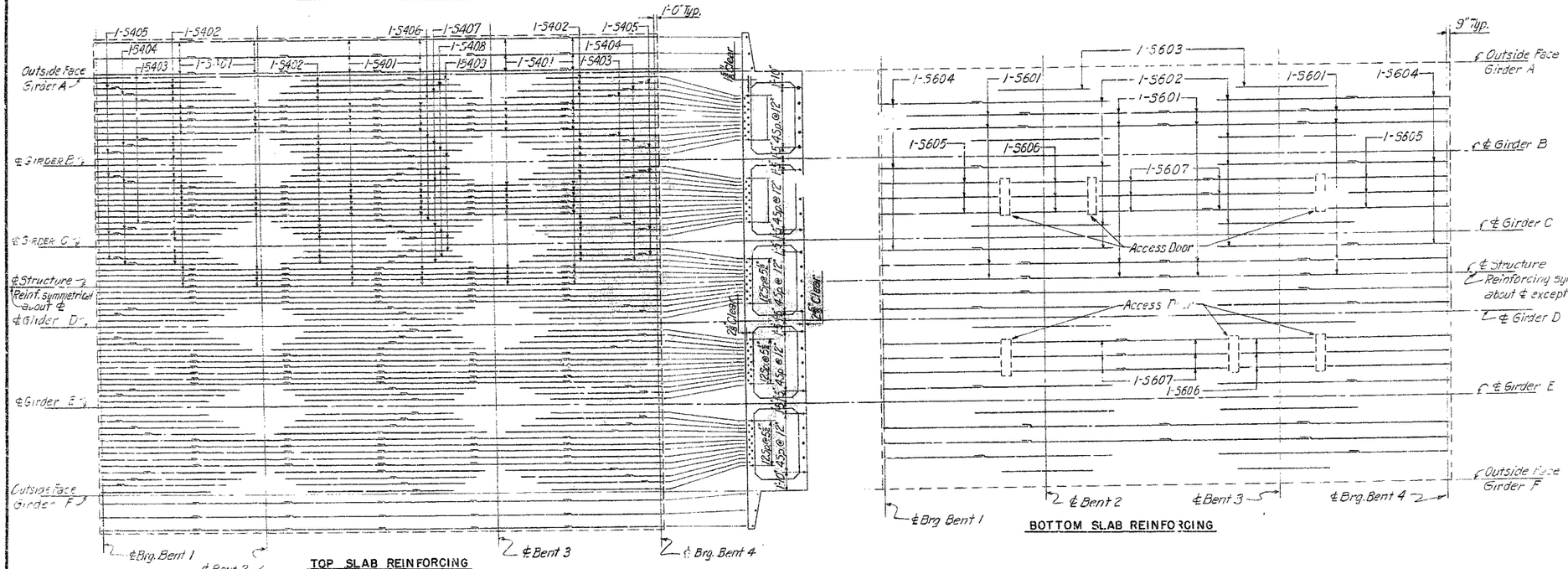
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIV. NO.	STATE	FEDERAL PROJECT NO. & SEC.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.				
DIST. NO.	COUNTY			ROUTE	SEC.
4				40	



TOP GIRDER REINFORCING

BOTTOM GIRDER REINFORCING



TOP SLAB REINFORCING

BOTTOM SLAB REINFORCING

Notes:
All longitudinal reinforcing to be placed parallel to ℄ Structure
Longitudinal top slab reinforcing to lap a minimum of 1'-4" with adjacent girder reinforcing.
Longitudinal bottom slab reinforcing to lap a minimum of 2'-0" with adjacent girder reinforcing.

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

MADE W.T.S.	DATE 12-31-57	TRACED	DATE
CHECKED H&B	DATE 2-20-58	SCALE	

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

BRIDGE: LANE D OVER 12TH STREET
STATE ROAD US 40 MIDTOWN FREEWAY
KANSAS CITY, MO.
PROJECT NO. I-352 (18)(FAI-RT. 4) STA. 32+04.45 (LANE C) 40.66' LT.
JACKSON COUNTY

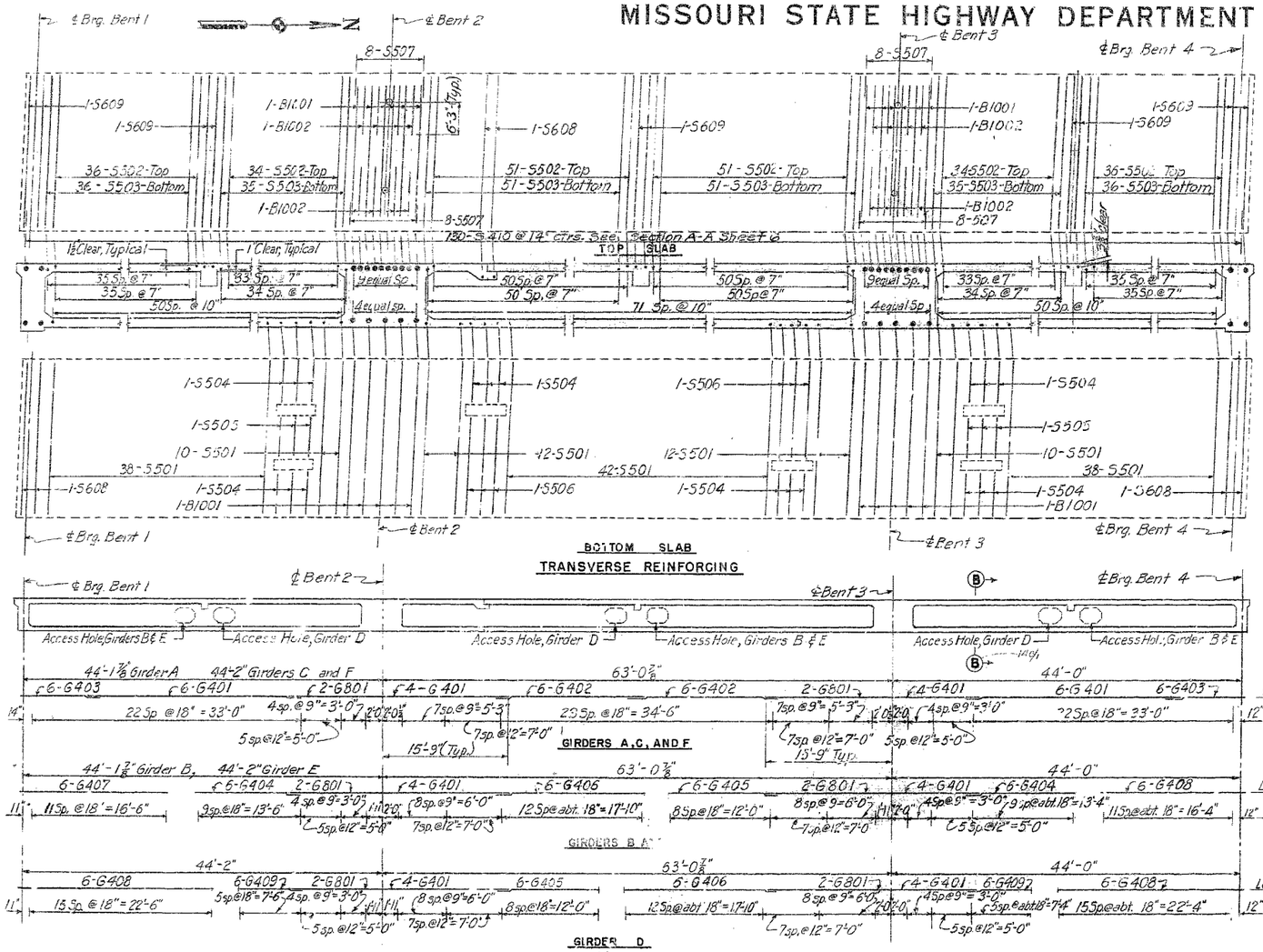
LONGITUDINAL REINFORCING SHEET 7 OF 10

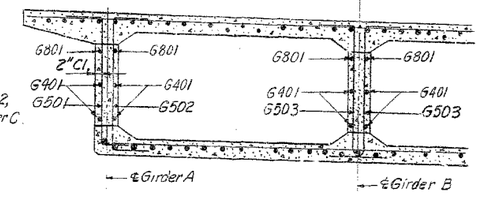
A 245

3/0

MISSOURI STATE HIGHWAY DEPARTMENT

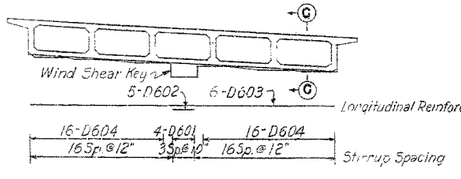
FED. ROAD DIV. NO.	STATE	FEDERAL PROJECT No. & Sec.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.				
DIST.	COUNTY		ROUTE	SEC.	
4				40	



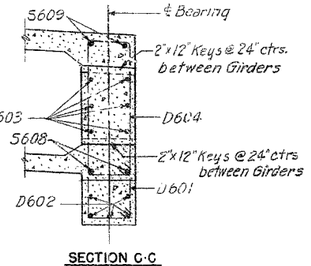


SECTION B-B

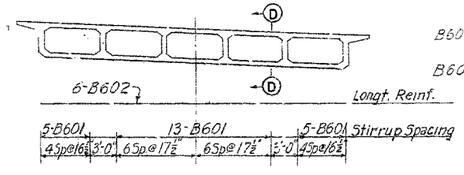
Note:
Transverse slab reinforcing to be placed parallel to centerlines of Bents.



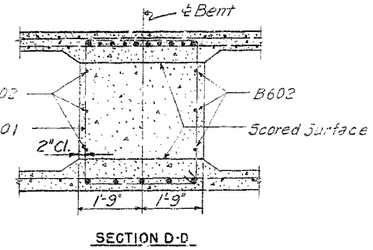
END DIAPHRAGM REINFORCING



SECTION C-C



CAP BEAM WEB REINFORCING



SECTION D-D

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

MADE H.T.S.	DATE 1-10-58	TRACED	DATE
CHECKED N.B.C.	DATE 2-20-58	SCALE	

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

BRIDGE: LANE D OVER 12TH STREET
STATE ROAD US 40 MIDTOWN FREEWAY
KANSAS CITY, MO.
PROJECT NO. I-352 (18) (FAI-RT. 4) STA. 32+04.45 (LANE C) 40.66' LT.
JACKSON COUNTY

TRANSVERSE AND WEB REINFORCING SHEET 8 OF 10

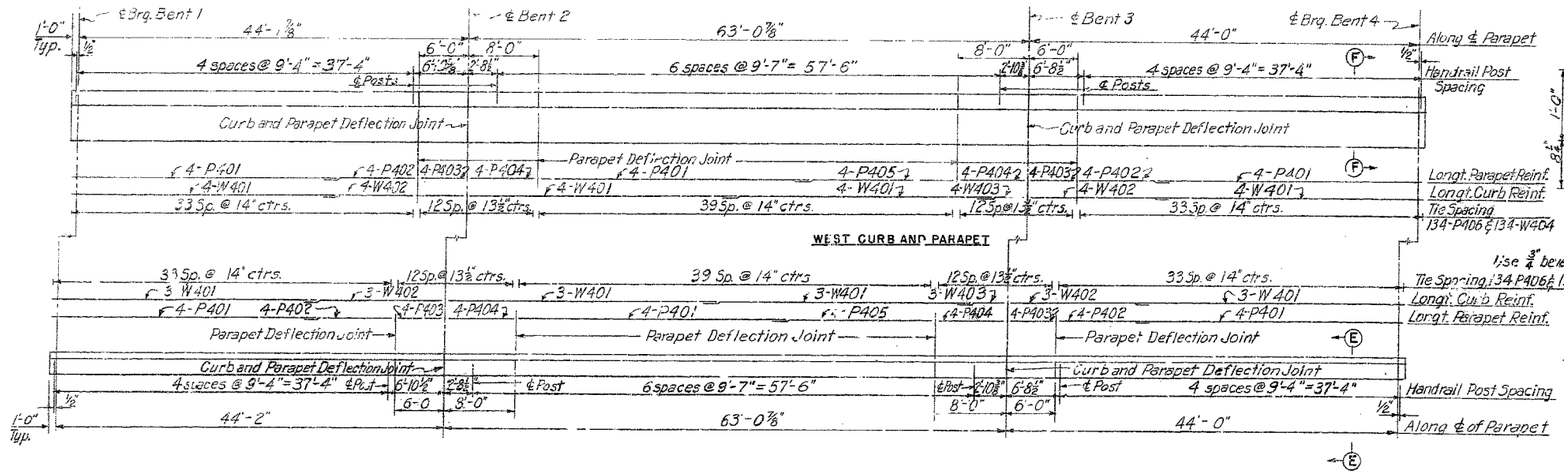
A 245

NO CONSTRUCTION CHANGES

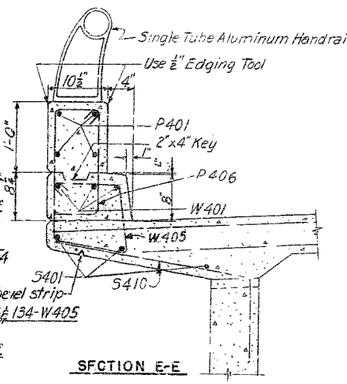
3/11

MISSOURI STATE HIGHWAY DEPARTMENT

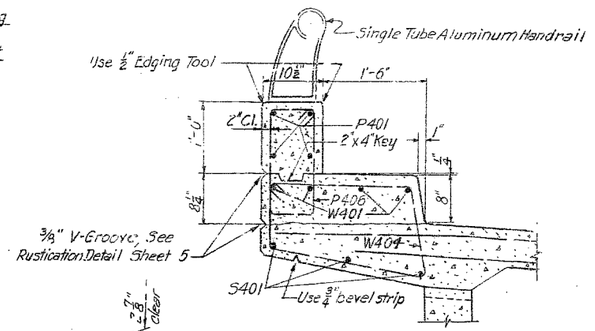
FED. ROAD DIV. NO.	STATE	FEDERAL PROJECT No. & SEC.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.				
DIST. NO.	COUNTY		ROUTE	SEC.	
4			40		



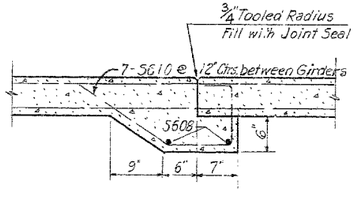
CURB AND PARAPET PLAN



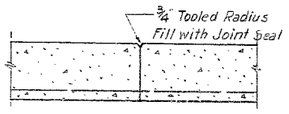
SECTION E-E



SECTION F-F

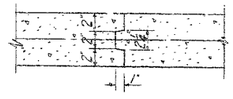


BETWEEN GIRDERS

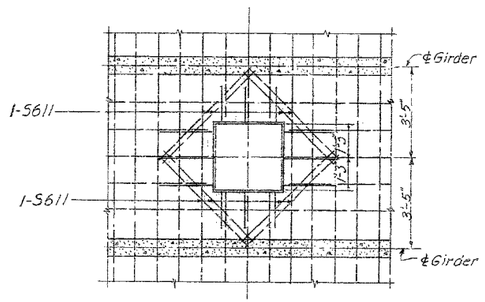


AT CURB

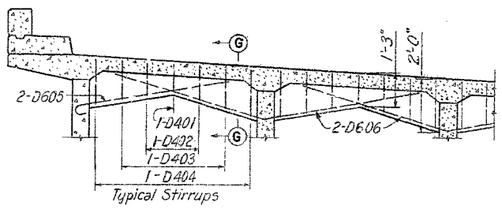
TOP SLAB CONSTRUCTION JOINT
TRANSVERSE



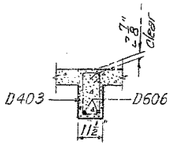
BOTTOM SLAB CONSTRUCTION JOINT



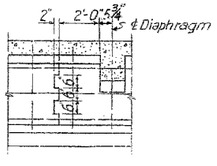
BOTTOM SLAB ACCESS DOOR



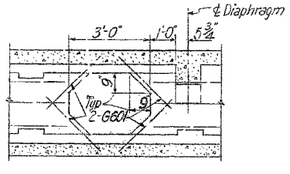
TYPICAL DIAPHRAGM



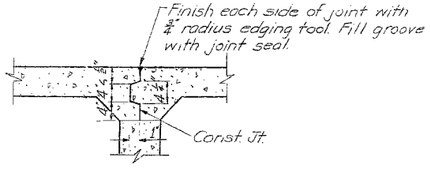
SECTION G-G



GIRDER WEB
CONSTRUCTION JOINT



GIRDER WEB ACCESS HOLE



TOP SLAB CONSTRUCTION JOINT
LONGITUDINAL

Notes:
For details of Handrail Posts See Sheet 10
For additional details of Access Door see Sheet 10
For continuation of Handrail on Bents 1 and 4 see Sheets 3 & 5

3/2

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

MADE H.T.S.	DATE 1-22-58	TRACED	DATE
CHECKED N.B.B.	DATE 2-21-58	SCALE	

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

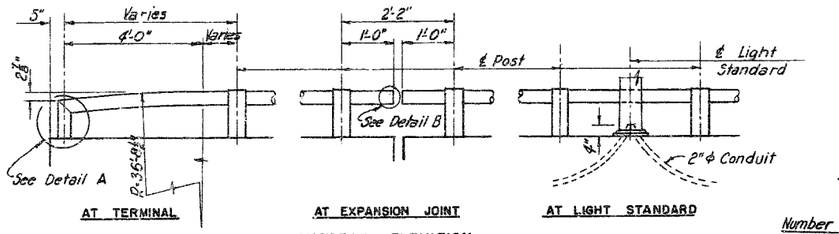
BRIDGE: LANE D OVER 12TH STREET
STATE ROAD US 40 MIDTOWN FREEWAY
KANSAS CITY, MO.
PROJECT NO. I-352 (18) (FA)-RT. 4 STA. 32+04.45 (LANE C) 40.68' LT.
JACKSON COUNTY

...RE DETAILS SHEET 9 OF 10

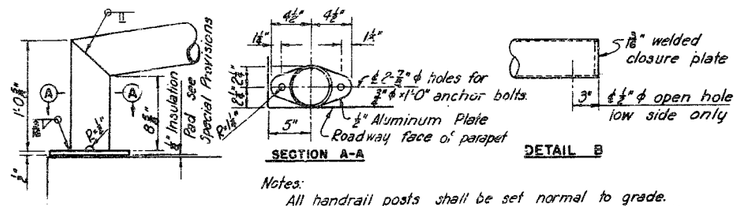
A 245

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FEDERAL PROJECT NO. & SEC.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.				
DIST. NO.	COUNTY			ROUTE	SEC.
4				40	

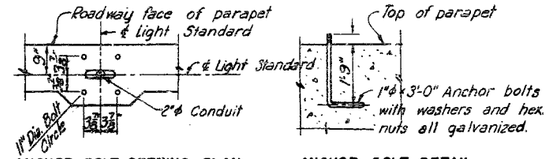


HANDRAIL ELEVATION



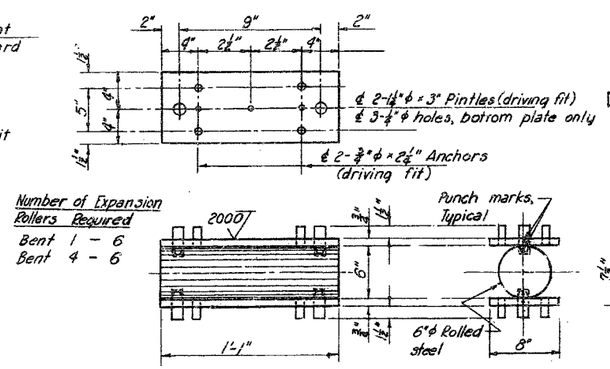
Notes:
All handrail posts shall be set normal to grade.
Rails to be fabricated in two or three panel lengths.
See Missouri Std. R-2 - Standard Handrail Details.

HANDRAIL DETAILS



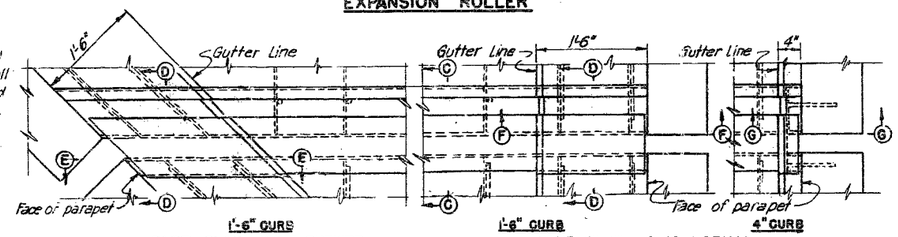
LIGHT STANDARD DETAILS

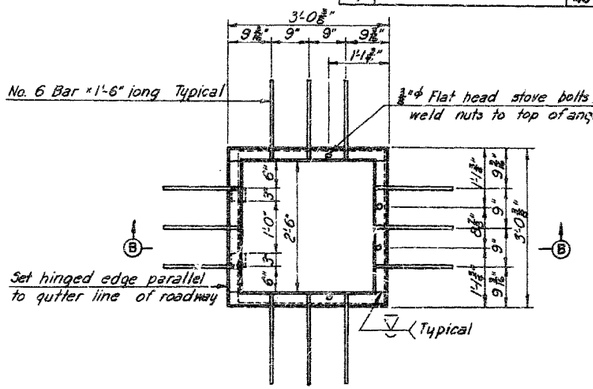
Note:
Cost of furnishing and placing anchor bolts shall be included in price bid for other items of work.

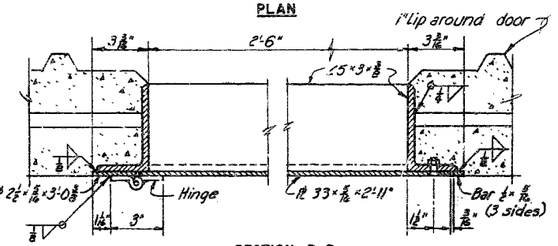


Notes:
Top and bottom plates to be U.S.S. T-1 Alloy or equivalent. Materials for pintles and rollers shall be cold finished carbon steel A.I.S.I.-C1042 or C1045 (turned and polished)
All bearing plates shall be straightened to plane surfaces.
E60-S or E6016 welding electrodes shall be used.
Paint: Shop: One coat red lead except top surface of top plate and bottom surface of bottom plate. Field: All exposed surfaces, first coat brown, second coat aluminum.

EXPANSION ROLLER

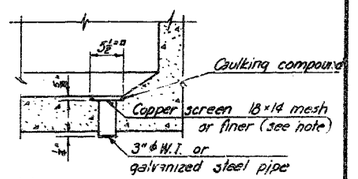






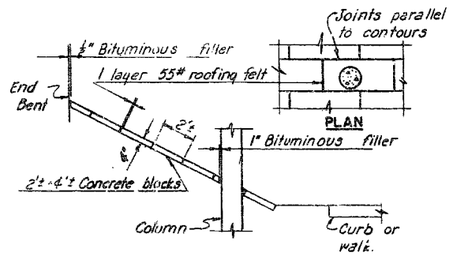
Notes:
Access Doors to be assembled and in place while slab is being poured.
Bottom surface of door to be flush with bottom of slab.
For painting see special provisions.
Payment for furnishing and installing access doors and frames shall be included in price bid for other items of work.

ACCESS DOOR IN BOTTOM SLAB

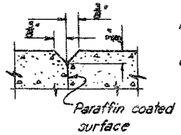


Notes:
If galvanized steel pipe is used, screen shall be aluminum.
Cost of furnishing and placing pipe, screen, and caulking compound shall be included in price bid for other items of work.

PIPE DRAIN IN BOTTOM SLAB

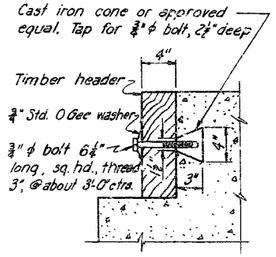


SLOPE PROTECTION UNDER ENDS OF SUPERSTRUCTURE



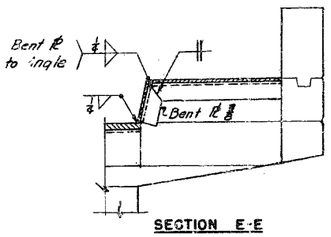
Notes:
Reinforcing shall stop 2" clear of joints.
No chamfer shall be placed on the sidewalk at deflection joints.

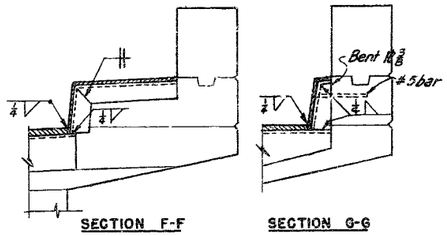
DEFLECTION JOINT DETAIL

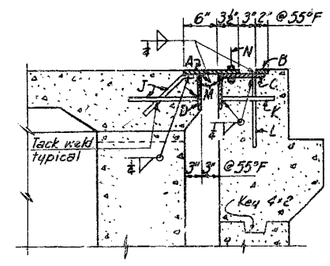


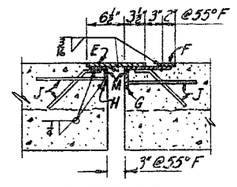
Note:
Cost of timber headers, complete in place, to be included in price bid for concrete.

TIMBER HEADER DETAIL









Note: Backwall to be poured and forms to be removed prior to pouring of top slab of box girder.

EXPANSION JOINT

A - ℔ 9½×⅜
B - Bar 2×⅜
C - L 8×6×½
D - ℔ 6×½
E - ℔ 10×⅜
F - ℔ 2×⅜
G - L 8×4×½
H - L 3×3×⅜
J - #5 bar 1'-0" long @ 12" ctrs.
K - #5 bar 9" long @ 12" ctrs.
L - #5 bar 1'-0" long @ 12" ctrs.
M - 1" ϕ air holes @ 12" ctrs.
N - ½" ϕ bolts @ 6'-0" ctrs. (2 per 1'-6" curb)
To be of structural grade
Tack weld nut to bottom of angle. Remove bolts with in two hours after top slab is poured

Note: For painting see special provisions.

BRIDGE: LANE D OVER 12TH STREET
STATE ROAD US 40 MIDTOWN FREEWAY
KANSAS CITY, MO.
PROJECT NO. I-352 (16) (FAI-RT. 4) STA. 32+04.46 (LANE C) 40.66' LT
JACKSON COUNTY

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

MADE WPO	DATE 11-1-57	TRACED	DATE
CHECKED BAR	DATE 3-3-58	SCALE	

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

MISCELLANEOUS DETAILS SHEET 10 OF 10

A 245

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NO CONSTRUCTION CHANGES

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

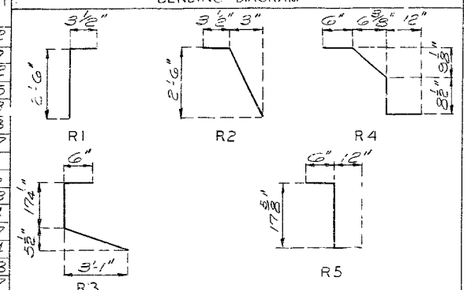
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	47	
SEC./SUR.	TWP.	RGE.			

BILL OF REINFORCING STEEL

NO.	SIZE & MARK	LENGTH	WEIGHT LB.
195	5 E1	2'-8"	542
195	5 E2	2'-9"	559
195	5 E3	4'-10"	982
187	5 E4	3'-0"	585
8	5 E5	2'-9"	23
3	5 E6	12'-0"	38
10	5 E7	12'-5"	127
1	5 E8	10'-6"	11
1	5 E9	15'-0"	16
10	5 E10	15'-7"	163
1	5 E11	13'-9"	14
6	5 E12	34'-9"	217
24	5 E13	3'-9"	244
6	5 E14	42'-9"	268
6	5 E15	34'-9"	217
23	5 H1	3'-1"	93
6	5 H2	12'-3"	77
6	5 H3	15'-6"	97
272	5 S1	3'-6"	993
9	5 S2	52'-3"	490
8	10 S3	15'-0"	516
2	10 S4	22'-1"	190
3	10 S5	30'-1"	259
2	10 S6	60'-0"	316
8	5 S7	35'-9"	329
2	5 S8	34'-8"	72

Epoxy Coated *

BENDING DIAGRAM



Varies

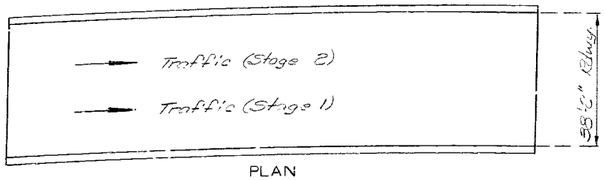
R6 THRU R15
S1 & S2
H1 THRU H3

NO.	SIZE & MARK	LENGTH	WEIGHT LB.
2	5 S9	29'-8"	62
2	10 S10	20'-5"	176
4	5 S11	52'-6"	219
1	5 S12	40'-6"	42
1	5 S13	40'-6"	42
1	10 S14	18'-10"	60

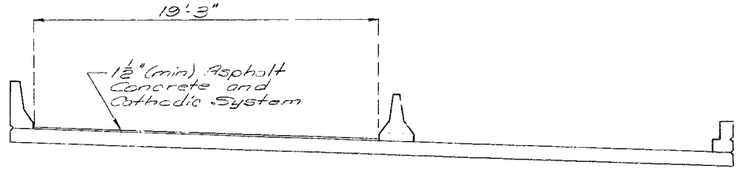
ESTIMATED QUANTITIES

ITEM		TOTAL
Special Work	Lump Sum	1
Cathodic Protection System	Lump Sum	1
Asphalt Cement 60-70 or AC 20	Ton	2.7
Mineral Aggregate (Asph. Conc.) (Type P Mix)	Ton	51
Tack Coat - Emulsified Asphalt	Gal.	80
Repairing Concrete Deck (Half-Saling)	Sq. Ft.	1169
Full Depth Repair	Sq. Ft.	392
Class B1 Concrete	Cu. Yd.	35.0
Reinforcing Steel (Epoxy Coated)	Lbs.	4010
Strip Seal Expansion Device	Lin. Ft.	76
Reinforcing Steel	Lbs	4230
Cleaning and Painting Bearings	Each	12

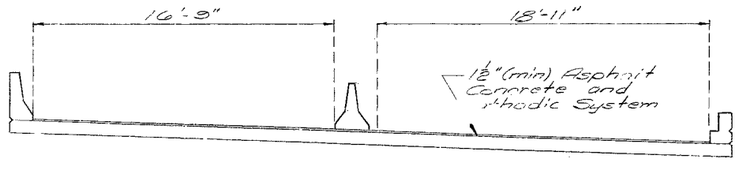
Tack Coat shall be emulsified asphalt applied at a rate of .05 gallons per square yard.



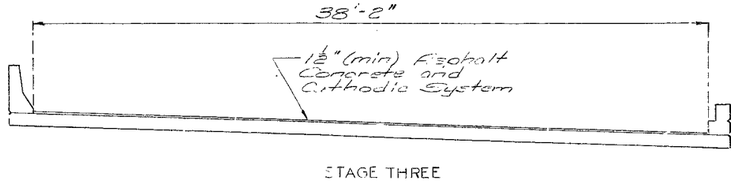
PLAN



STAGE ONE



STAGE TWO



STAGE THREE

NOTES:

Design Specifications: A.A.S.H.T.O. 1977 and Interims thru 1982

Design Unit Stresses:

Class B1 Concrete $f'_c = 4000$ psi

Reinforcing Steel (Gr. Ie 60) $f_y = 60{,}000$ psi

Joint Filler: All joint filler shall meet the requirements of Std. Spec. 1057.2.4 except as noted.

Reinforcing Steel: Minimum clearance to reinforcing steel shall be 1½" unless otherwise shown.

Traffic: Traffic over structure to be maintained during construction.

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work. Bars, bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars.

Taper roadway surfacing at bridge ends to match 1½" bridge overlay. (Roadway Item)

A minimum vertical clearance of 13'-6" from crown of existing lanes and a minimum lateral clearance of 32'-0" normal to 8 12th Street centered on existing lanes shall be maintained during construction.

All dimensions for E bars are out to out. Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures stirrup and tie dimensions.

Actual lengths of reinforcing bars are measured along centerline bar and to nearest inch.

All E-bars shall be epoxy coated.

* Two additional bar are included for testing.

B.M.

REPAIRS TO

BRIDGE OVER 12TH STREET

STATE ROAD: MIDTOWN FREEWAY

IN KANSAS CITY

PROJECT NO. I-IR-70-1(101) **STA.** 24 + 20.63

JOB NO. 4-1070 450 **RTE.** I-70

JACKSON **COUNTY**

DATE 6/29/84

STD.
STD. 706.30
A-245R

DESIGNED Apr. 1984

DETAILED April 1984

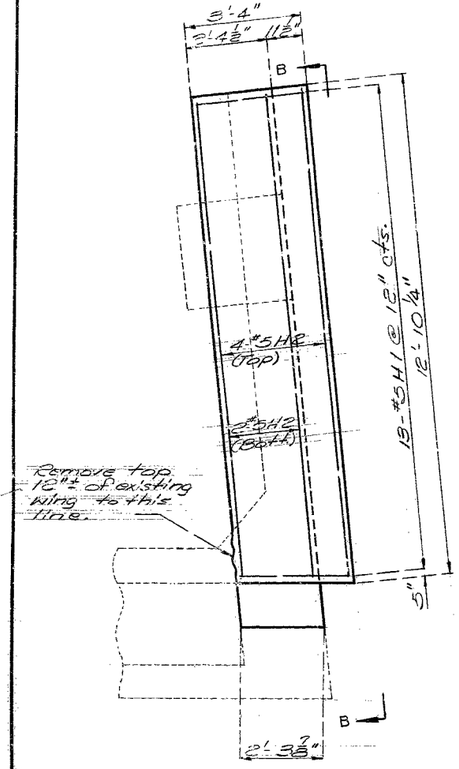
CHECKED May 1984

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

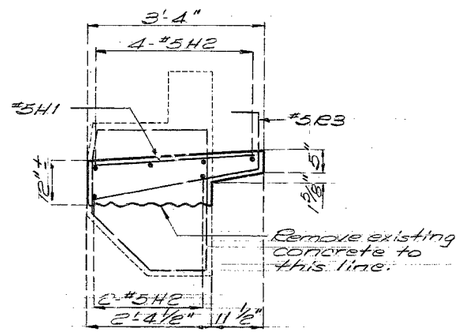
Sheet No. 1 of 3.

84

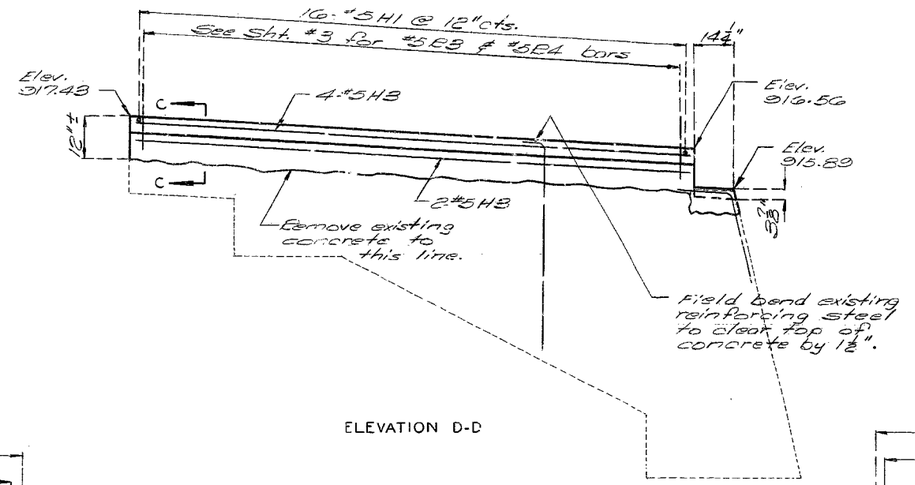
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		18	48	



PART PLAN

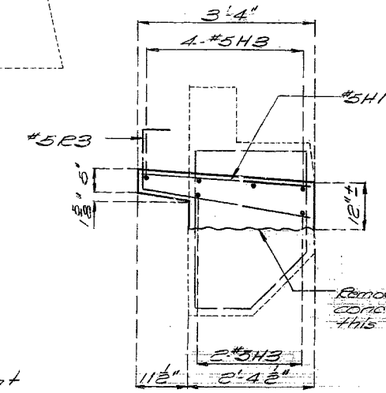


SECTION A-A

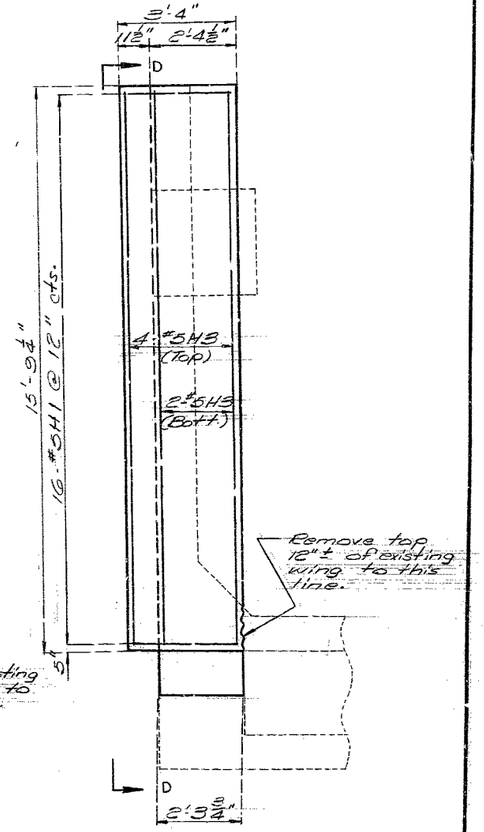


ELEVATION D-D

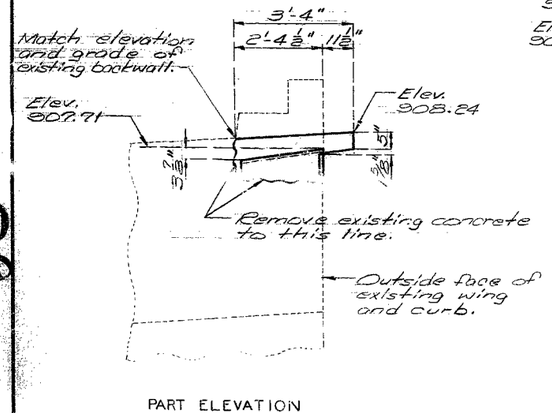
Note: For Detail of Expansion Device see sht. #5.
For Detail and reinforcement of Barrier Curb see Sht. #3.



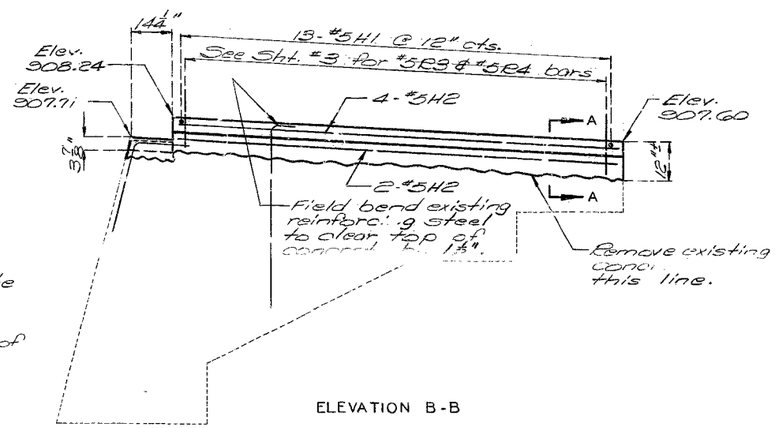
SECTION C-C



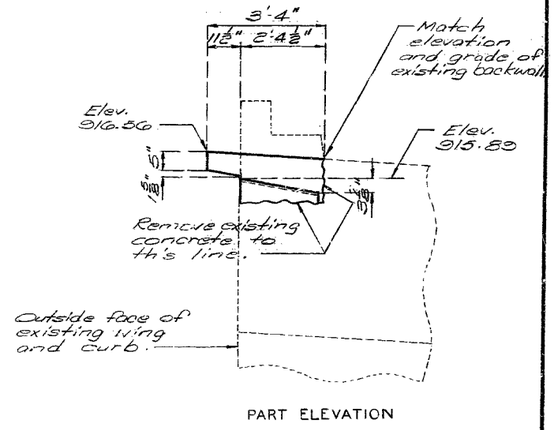
PART PLAN



PART ELEVATION



ELEVATION B-B



PART ELEVATION

DETAILS OF END BENT NO. 1

DETAILED April 19 84
CHECKED May 19 84

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

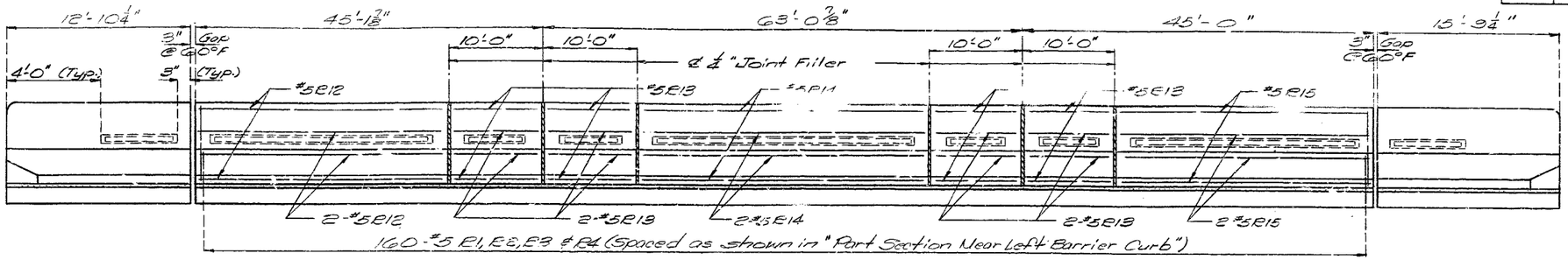
DETAILS OF END BENT NO. 4

Sheet No. 2 of 3.

JACKSON COUNTY

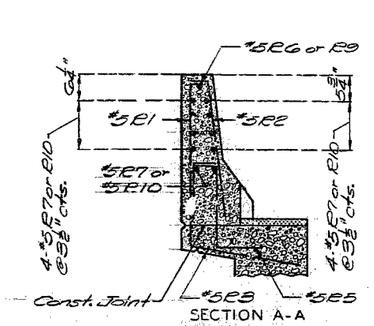
A-245R

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	49	

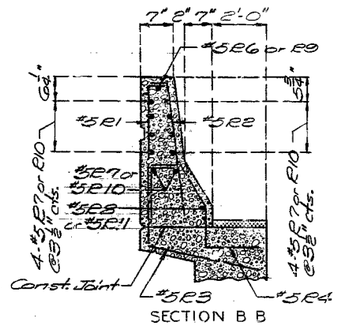


SPAN (1-2) SPAN (2-3) SPAN (3-4)

DEVELOPED SECTION NEAR LEFT BARRIER CURB



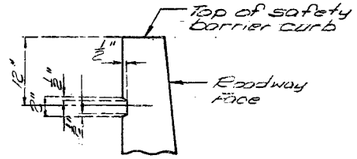
SECTION A-A



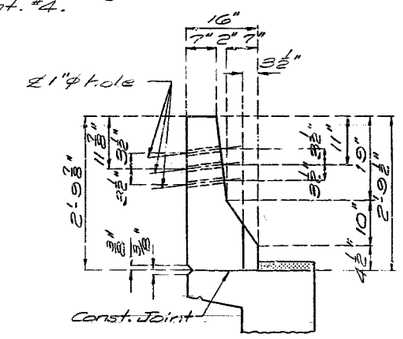
SECTION B B

Notes: Top of barrier curb to be built parallel to grade with barrier curb joint (except at end bents) normal to grade.
All exposed edges of barrier shall have ½" radius or ⅜" bevel unless otherwise noted.
Use a minimum lap of 17" for #5 horizontal barrier bars.
Plastic waterstop shall be placed in all safety barrier curb filled joints.
Cost of plastic waterstop complete in place to be included in unit price bid per cubic yard of Class B1 conc.

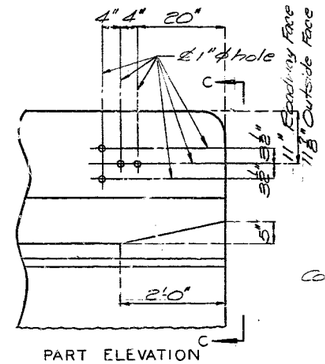
For Plan of Slab showing Reinforcement and location of Section D-D see Sht. "4.



RUSTICATION DETAILS

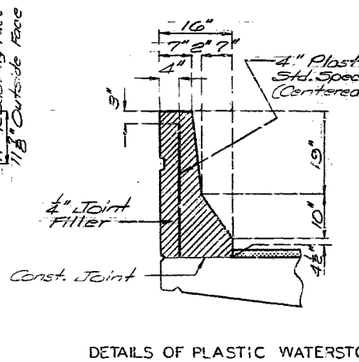


ELEVATION C-C

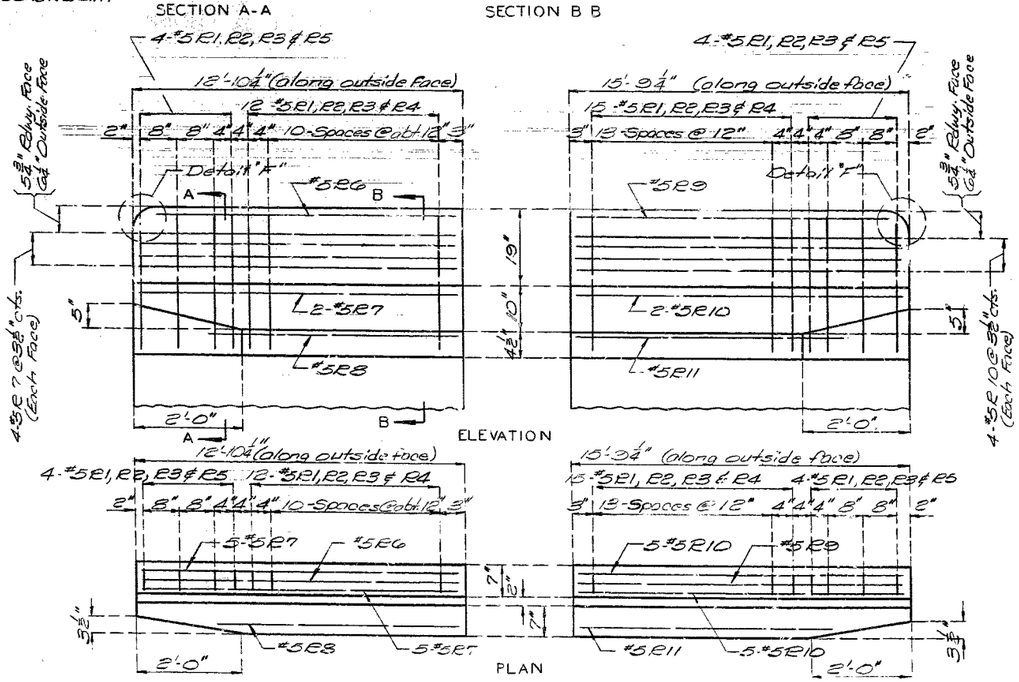


PART ELEVATION

DETAILS OF GUARD RAIL ATTACHMENT

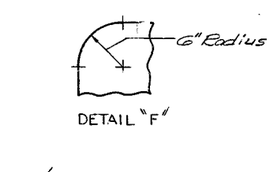


DETAILS OF PLASTIC WATERSTOP

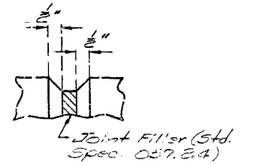


ELEVATION

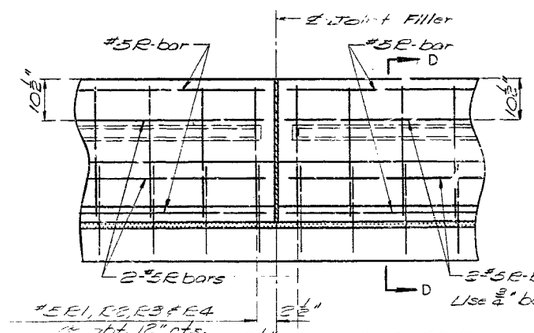
PLAN



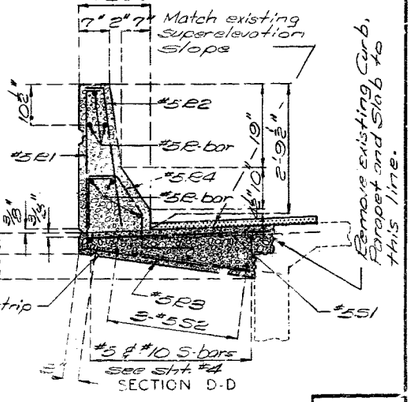
DETAIL "F"



FILLED JOINT DETAIL



PART SECTION NEAR LEFT BARRIER CURB



SECTION D-D

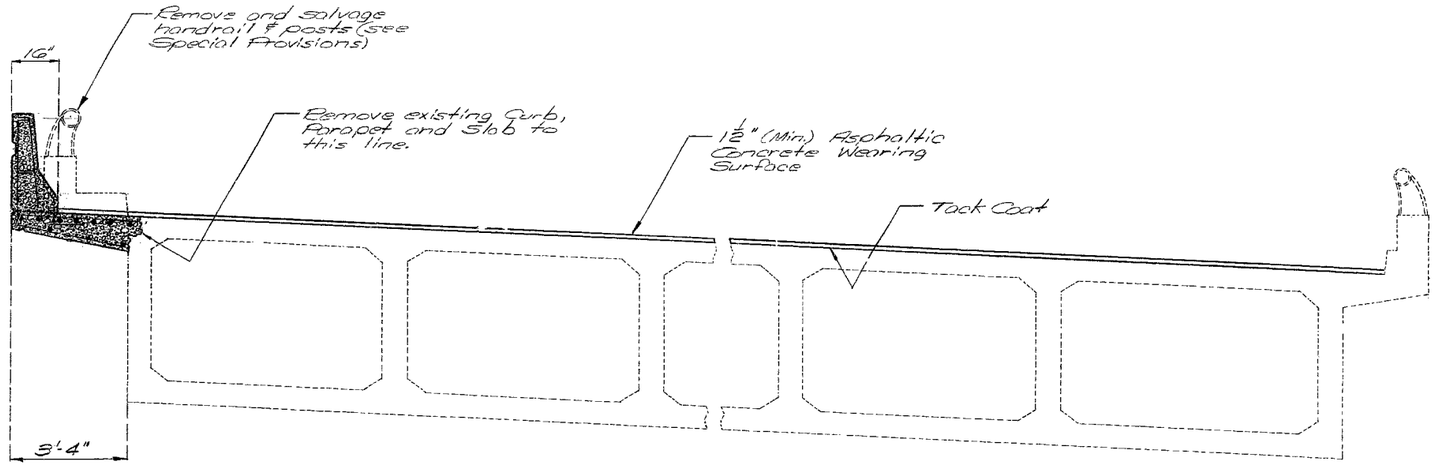
DETAILED Apr-1 1954
CHECKED May 10 84

Sheet No. 3 of 8.

JACKSON COUNTY

A-245R

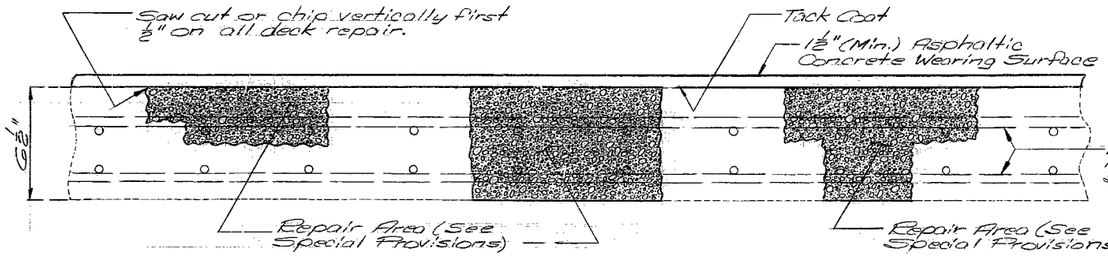
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	50	



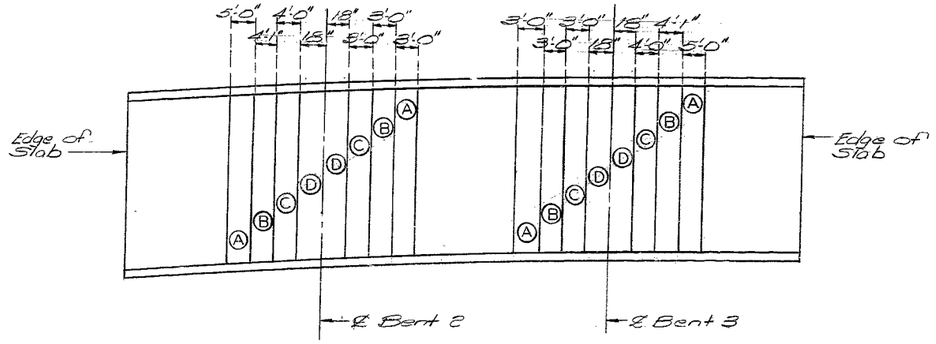
SECTION THRU SLAB

Note: Any concrete removal for half-sole repair or full-depth repair in areas designated "A", "B", "C" or "D" shall be repaired in alphabetical order (See Special Provisions, Stage construction requirements for handling traffic are to be met at all times during removal of old work and placing of new work.

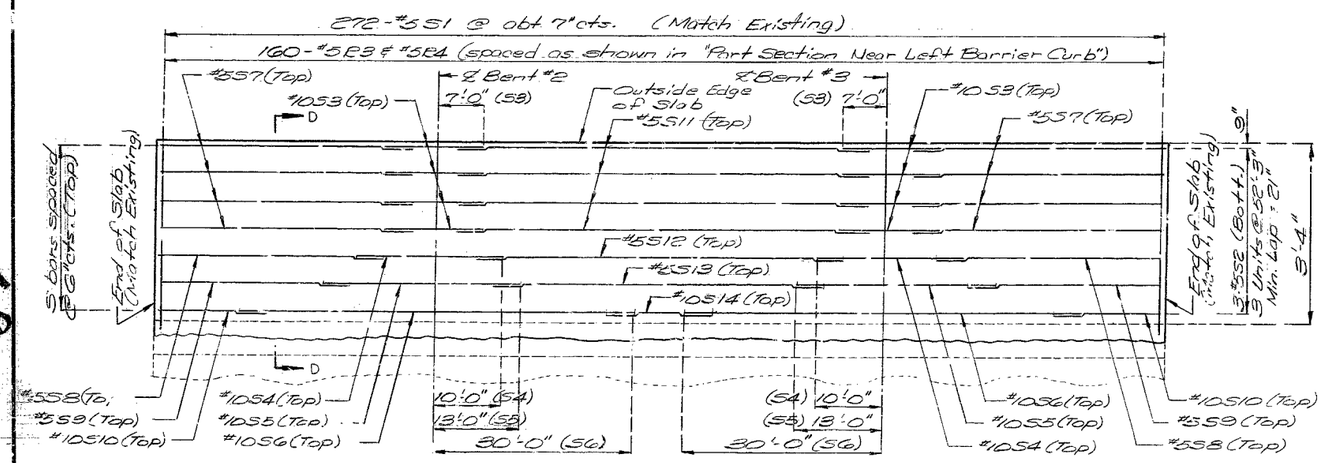
Any repair in the remainder of the bridge that is within 2'-6" of adjacent Zone A shall be completed before removing old concrete in Zones A.



HALF SOLE REPAIR | FULL DECK REPAIR | FULL DEPTH REPAIR IN HALF SOLE AREA



PLAN OF SLAB



PLAN OF SLAB SHOWING REINFORCEMENT

87

DETAILED April 1984
CHECKED May 1984

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

Sheet No. 4 of 8.

JACKSON **COUNTY** A-245R

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	51	

NOTES FOR EXPANSION DEVICE:

The expansion device shall be fabricated and installed in accordance with the recommendations of the manufacturer and as set forth in the special provisions.

The contractor must verify all dimensions prior to fabrication.

All welds shall conform to section 712 of the Standard Specifications.

Splices of steel extrusion shall develop full strength.

All steel shall be A-36 except steel extrusions shall be A.S.T.M. A-588 or A-36.

Neoprene extrusions shall meet A.S.T.M. D-2628-69 modified (recovery tests excluded).

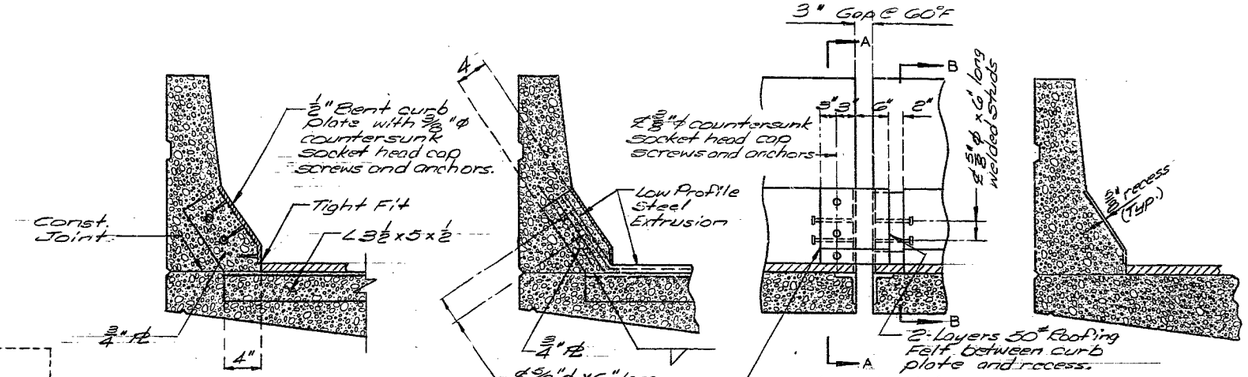
Welded stud anchors shall be A.S.T.M. A496.

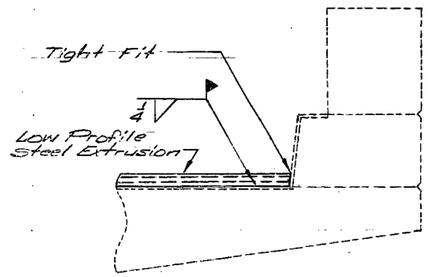
Payment for steel extrusions and neoprene extrusions shall be made under contract unit price for "Strip Seal Expansion Device".

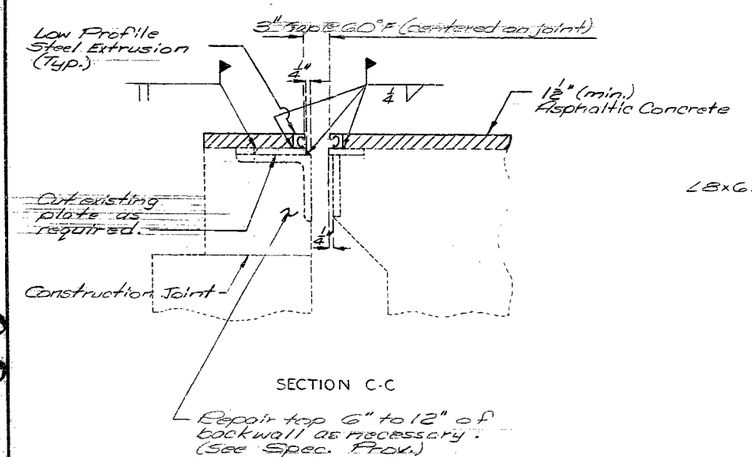
Payment for furnishing, painting and placing structural steel plates and angles shall be included in contract unit price for "Strip Seal Expansion Device".

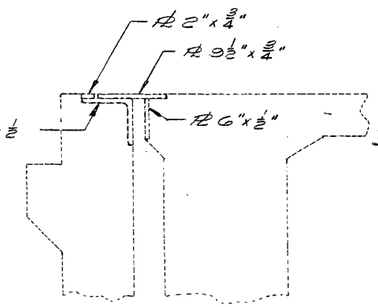
Strip Seal shall be "Low Profile Strip Seal" with 4" Rated Movement.

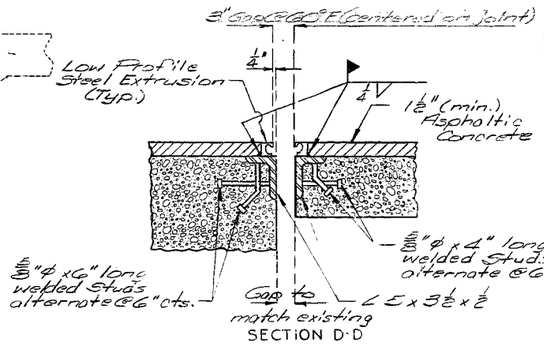
Expansion Gap dimensions shall be increased 1/16" for each 10° fall in temperature and decreased 1/16" for each 10° rise in temperature at installation.

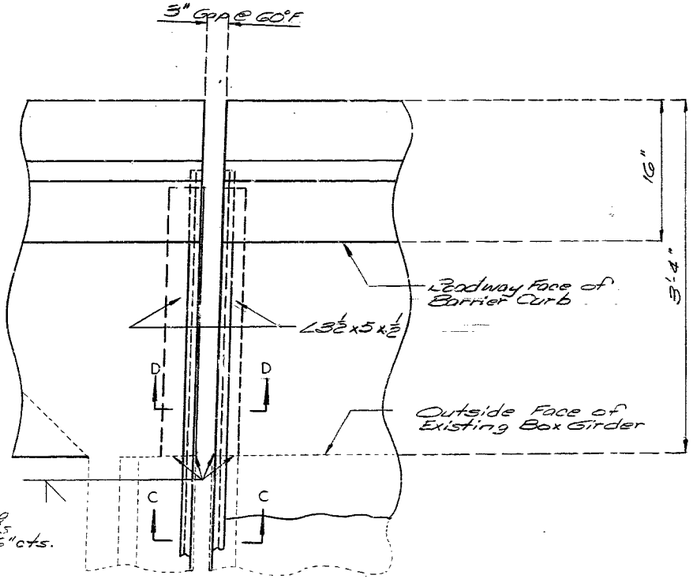












Note: If the contractor elects to use new structural steel in backwall repair, it shall be as shown for the backwall area in section D-D.

88

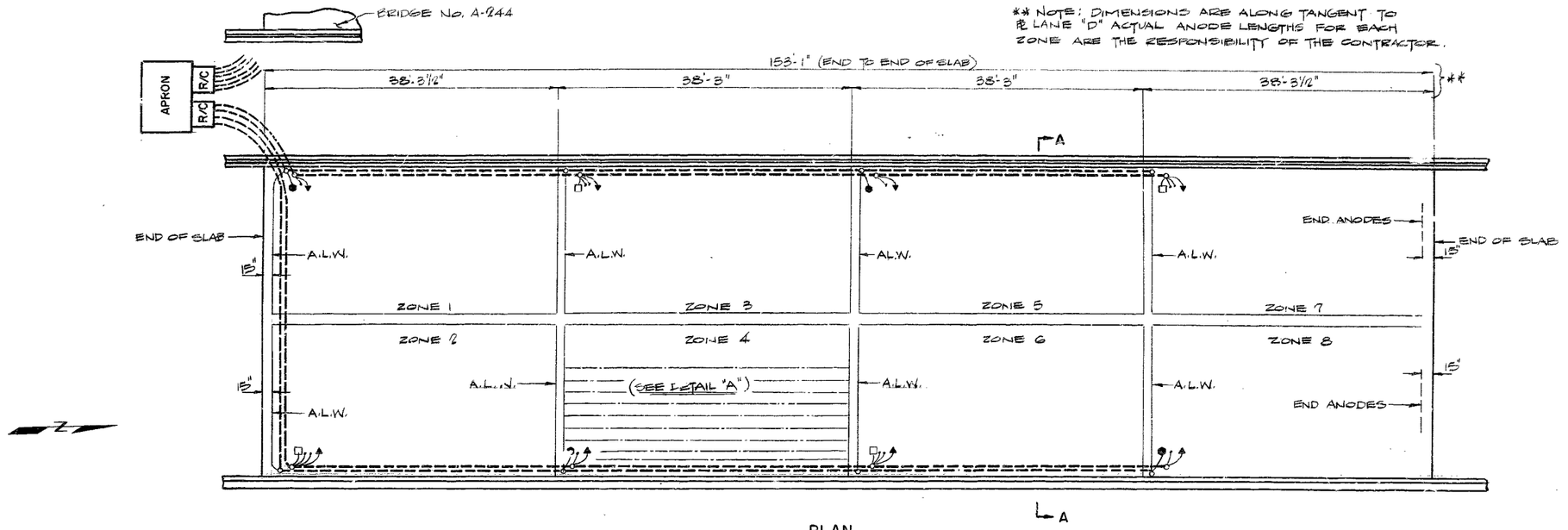
DETAILED April 1984
CHECKED May 1984

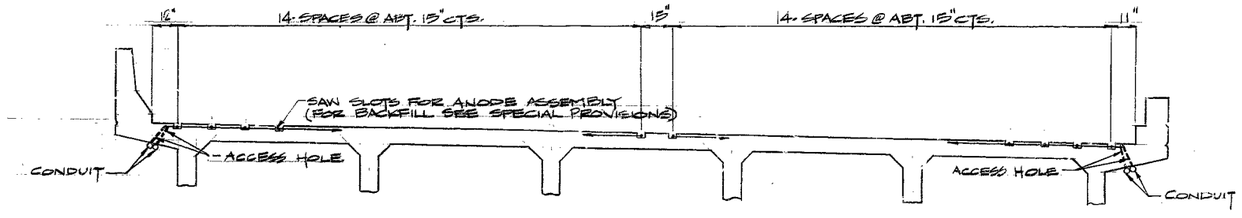
Note: This drawing is not to scale. Follow dimensions.

JACKSON COUNTY

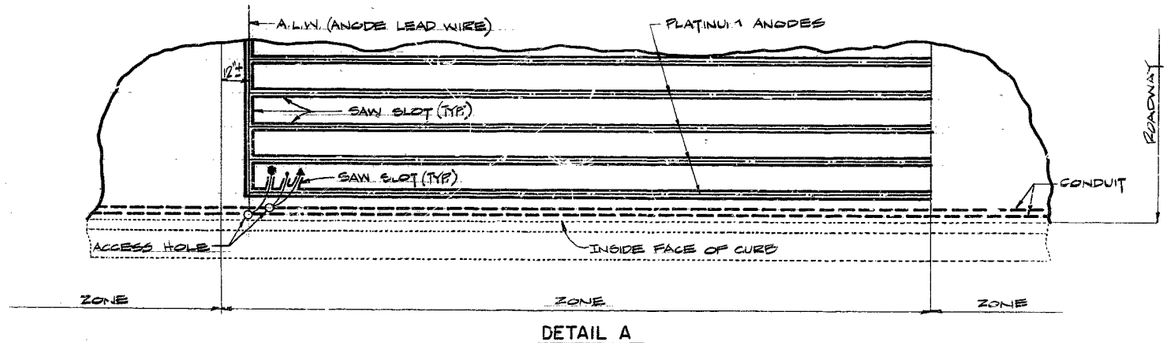
A-245R

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	52	





SECTION A-A



DETAIL A

TYPICAL ZONE LAYOUT EXCEPT AS NOTED ABOVE

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

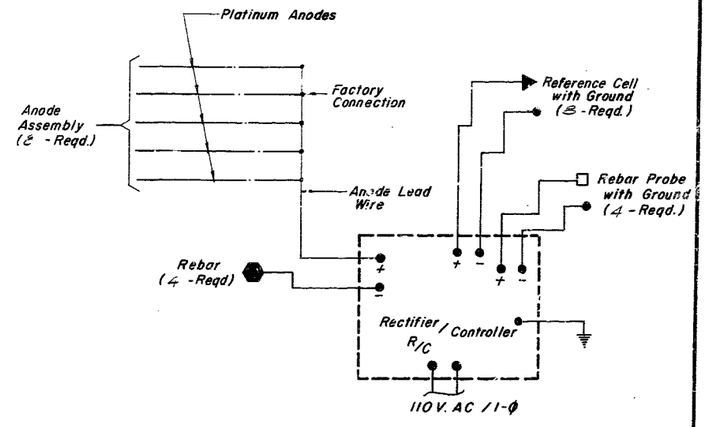
The reference cell, reference cell ground leads, rebar probe and probe ground leads shall be routed in the same conduit.

NOTE: 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.



PARTIAL SCHEMATIC

ESTIMATED QUANTITIES *

ITEM	UNIT	QUANTITY
Anode Strands	Lin. Ft.	4450
Reference Cells	Each	3
Rebar Probes	Each	4
Cadwelds	Each	16
Conduit 2" P.V.C.	Lin. Ft.	650

* For information only.

NOTE: ANODE STRANDS AND CONDUIT LENGTHS ARE APPROXIMATE. ACTUAL LENGTHS ARE THE RESPONSIBILITY OF THE CONTRACTOR.

DENOTATIONS

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

CATHODIC PROTECTION SYSTEM

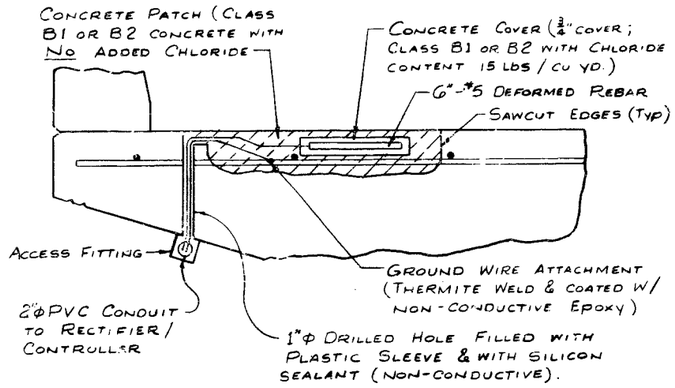
DETAILED MAY 1984
CHECKED MAY 1984

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

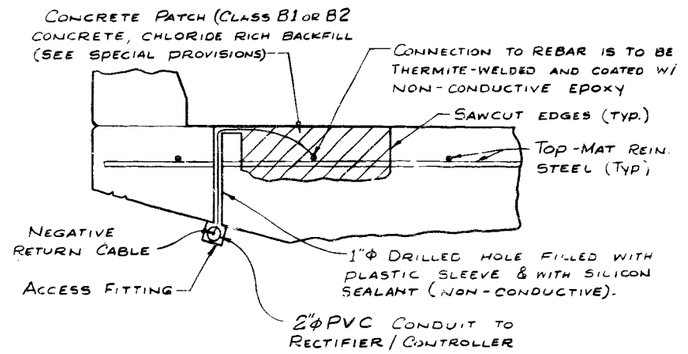
JACKSON COUNTY

A-245R

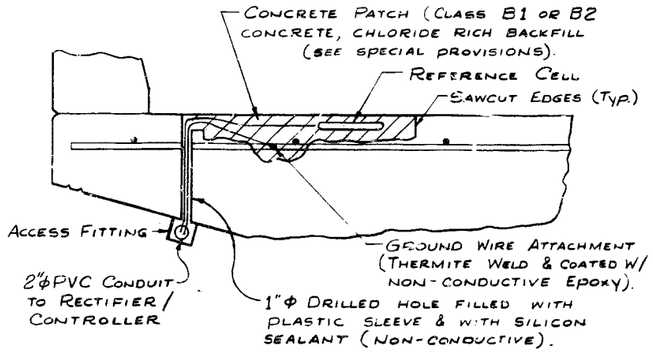
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	53	



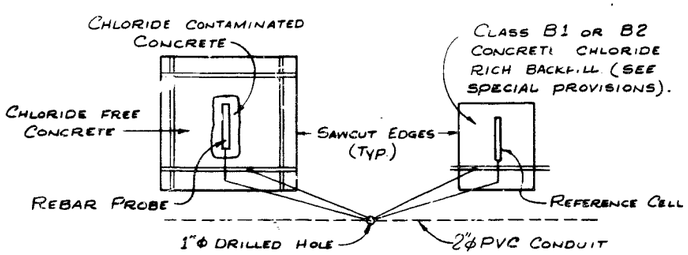
REBAR PROBE DETAILS



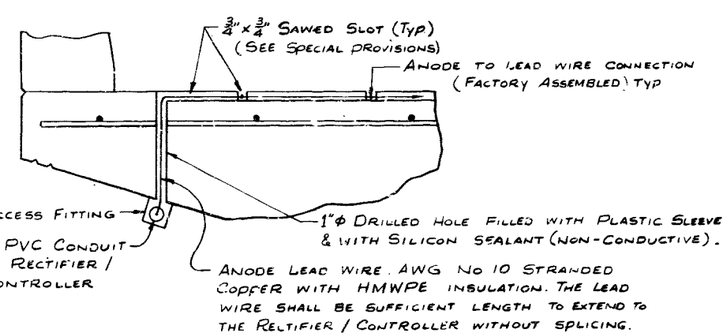
SYSTEM NEGATIVES CONNECTION DETAIL



REFERENCE CELL DETAILS



PLAN OF REBAR PROBE AND REFERENCE CELL



ANODE LEAD WIRE DETAIL

Notes: Conduit shall be Schedule 40 Heavy Wall PVC (Polyvinyl Chloride Plastic).
Conduit shall be secured to Concrete with Clamps @ abt. 5' centers.
Weep Holes 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.

90

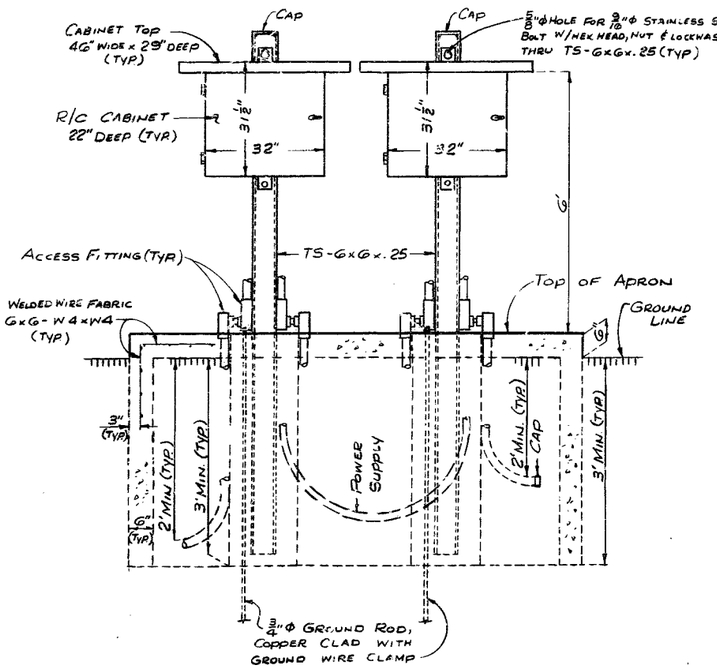
DETAILED June 1984
CHECKED June 1984

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

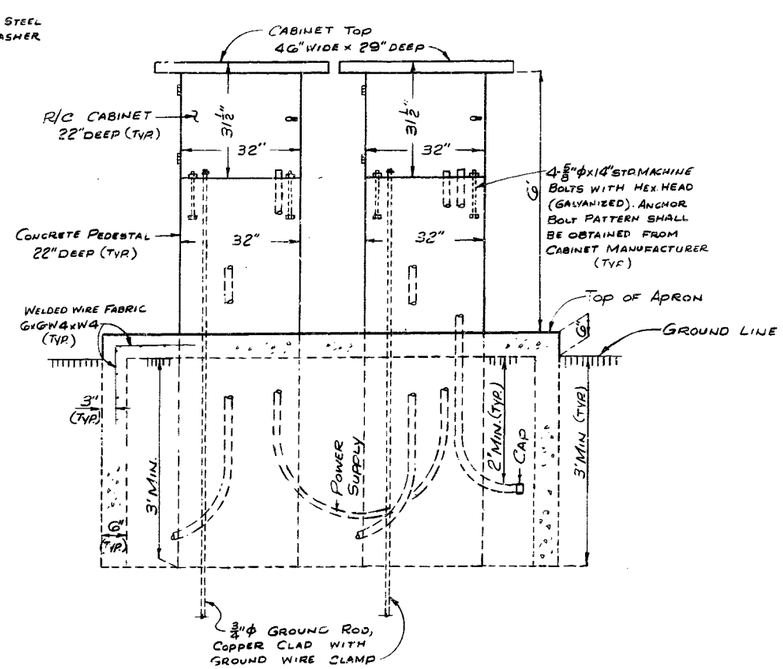
JACKSON COUNTY

A-245R

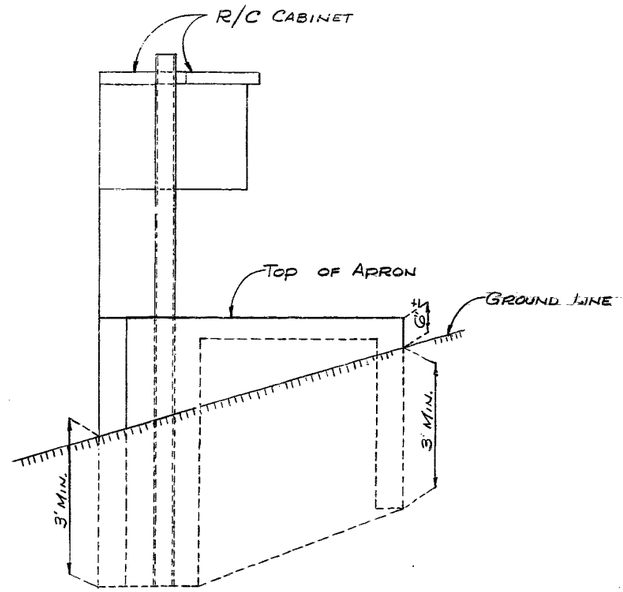
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
9	MO.		19	54	



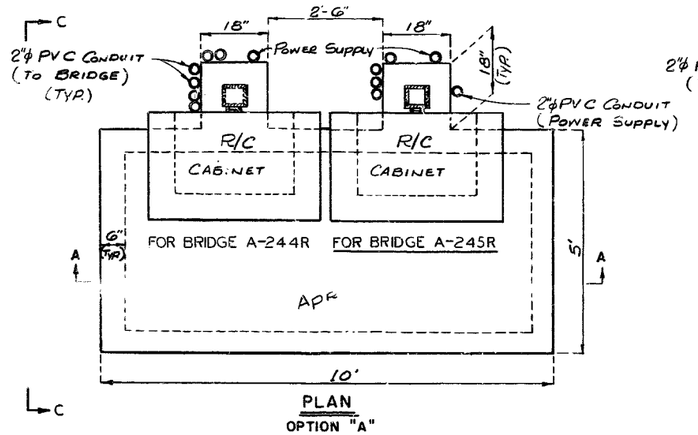
SECTION A-A



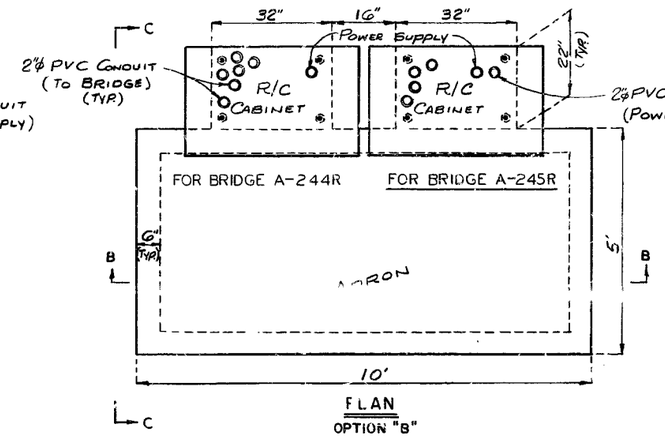
SECTION B-B



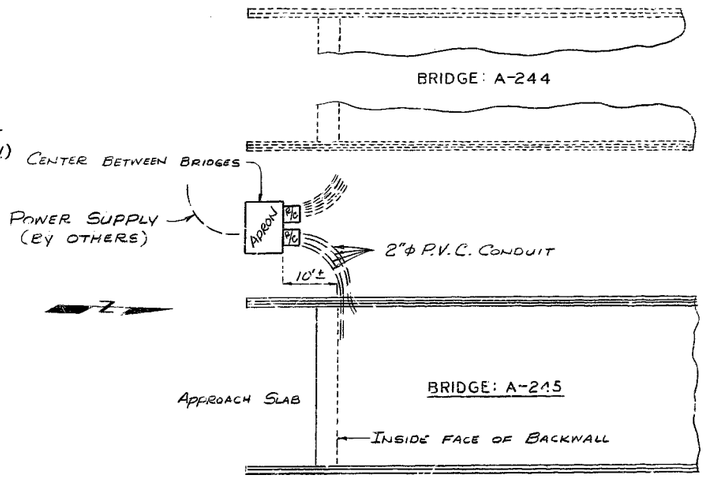
ELEVATION C-C



PLAN
OPTION "A"



PLAN
OPTION "B"



PLAN LOCATION OF RECTIFIER/CONTROLLER

NOTE: THE 3/4"ϕ GROUND RODS SHALL BE SUFFICIENT LENGTH TO EXTEND A MINIMUM OF 10' 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 JUNE 1984
CHECKED JUNE 1984

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

Sheet No. 8 of 8.

JACKSON COUNTY

A-245R

91

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

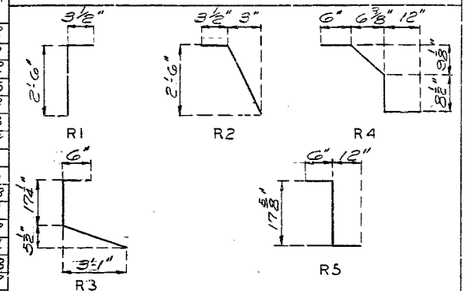
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOT. SHEETS
5	MO.		19	47	
SEC./SUR.		TWP.	RGE.		

FINAL PLANS

BILL OF REINFORCING STEEL

NO.	SIZE & MARK	LENGTH	WEIGHT LB.
195	5 B1	2'-8"	542
195	5 B2	2'-9"	559
195	5 B3	4'-10"	982
187	5 B4	3'-0"	585
3	5 B5	2'-9"	23
3	5 B6	12'-0"	38
10	5 B7	12'-3"	127
1	5 B8	10'-6"	11
1	5 B9	15'-0"	16
10	5 B10	15'-7"	163
1	5 B11	13'-9"	14
6	5 B12	34'-9"	217
24	5 B13	9'-9"	244
6	5 B14	42'-9"	268
6	5 B15	34'-9"	217
29	5 H1	3'-1"	98
6	5 H2	12'-3"	77
6	5 H3	15'-6"	97
272	5 S1	3'-6"	993
9	5 S2	52'-3"	490
8	10 S3	15'-0"	516
2	10 S4	22'-1"	190
2	10 S5	30'-1"	259
2	10 S6	60'-0"	316
8	5 S7	38'-9"	323
2	5 S8	34'-8"	72

BENDING DIAGRAM

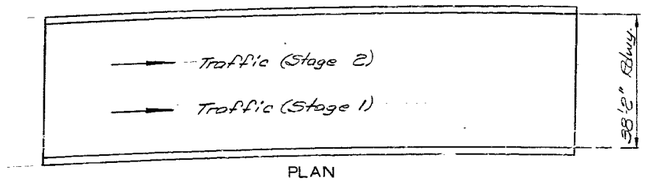


NO.	SIZE & MARK	LENGTH	WEIGHT LB.
2	5 S9	29'-8"	62
2	10 S10	20'-5"	176
4	5 S11	52'-6"	219
1	5 S12	46'-6"	48
1	5 S13	40'-6"	42
1	10 S14	18'-10"	60

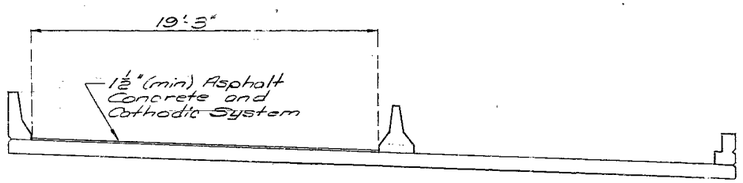
ESTIMATED QUANTITIES

ITEM		TOTAL
Special Work	Lump Sum	1 LS
Cathodic Protection System	Lump Sum	1 LS
Asphalt Cement AC 20	Ton	2.7 LS
Mineral Aggregate (Asph. Conc.) (Type A Mix)	Ton	53 LS
Tack Coat - Emulsified Asphalt	Gal.	30 LS
Repairing Concrete Deck (Half-Scaling)	Sq. Ft.	1611 LS
Full Depth Repair	Sq. Ft.	430 LS
Class B1 Concrete	Cu. Yd.	32.9 LS
Reinforcing Steel (Epoxy Coated)	Lbs.	4010 LS
Strip Seal Expansion Device	Lin. Ft.	76 LS
Reinforcing Steel	Lbs	4220 LS
Cleaning and Painting Bearings	Each	12 LS
Replace Re-Steel	P.A.	315.76 LS
Tapered Fill Plate	L.S.	1 LS
Exp. Joint Filler Plate	L.S.	1 LS

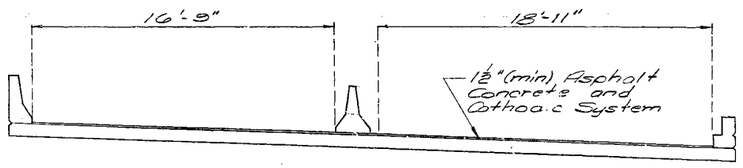
Tack Coat shall be emulsified asphalt applied at a rate of .05 gallons per square yard.



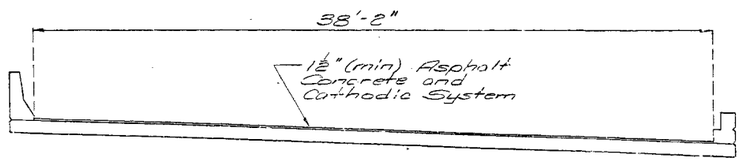
PLAN



STAGE ONE



STAGE TWO



STAGE THREE

NOTES:

Design Specifications: A.A.S.H.T.O. 1977 and Interims thru 1983

Design Unit Stresses:

Class B1 Concrete $f'_c = 4000$ psi

Reinforcing Steel (Grade 60) $f_y = 60{,}000$ psi

Joint Filler: All joint filler shall meet the requirement of Std. Spec. 1051.2.4 except as noted.

Reinforcing Steel: Minimum clearance to reinforcing steel shall be 1½" unless otherwise shown.

Traffic: Traffic over structure to be maintained during construction.

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work. Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars.

Taper roadway surfacing at bridge ends to match 1½" ± bridge overlay. (Roadway Item)

A minimum vertical clearance of 13'-6" from crown of existing lanes and a minimum lateral clearance of 32'-0" normal to E 12th Street centered on existing lanes shall be maintained during construction.

All dimensions for R bars are out to out. Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures stirrup and tie dimensions.

Actual lengths of reinforcing bars are measured along centerline bar and to nearest inch.

#5 R bars shall be epoxy coated.

* Two additional bar are included for testing.

Epoxy Coated *

B.M.

REPAIRS TO

BRIDGE OVER 12TH STREET

STATE ROAD: MIDTOWN FREEWAY

IN KANSAS CITY

PROJECT NO. I-IR-70-1(101) **STA.** 24+20.63

JOB NO. 4-1070 450 **RTE.** I-70

JACKSON **COUNTY**

DATE 6/29/84

STD.
STD. 706.30
A-245R

DESIGNED Apr. 1984
DETAILED April 1984
CHECKED May 1984

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

Sheet No. 1A of 2.

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MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ. NO.	SHEET NO.
MO.	F.A.I.-70-1(160)	122
SEC./SUR. 5	TWP. 49N	RGE. 33W

ESTIMATED QUANTITIES		
ITEM		TOTAL
REMOVAL OF EXISTING BITUMINOUS PAVEMENT (COLDMILLING)	SQ. YD.	650
ASPHALT CEMENT (ASPHALTIC CONCRETE) 60-70 OR AC-20 (TYPE A MIX)	TON	1.8
MINERAL AGGREGATE (ASPHALTIC CONCRETE)(TYPE A MIX)	TON	36

NOTE: IN ORDER TO MAINTAIN GRADE AND A MINIMUM THICKNESS OF OVERLAY AS SHOWN ON PLANS IT MAY BE NECESSARY TO USE ADDITIONAL QUANTITIES OF OVERLAY AT VARIOUS LOCATIONS THROUGHOUT THE STRUCTURE.

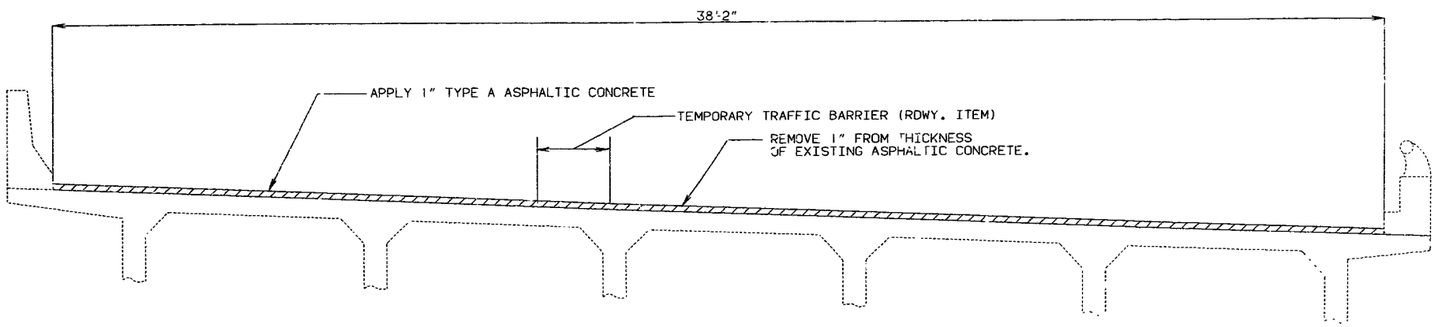
NO PAYMENT WILL BE ALLOWED FOR ADDITIONAL LABOR, MATERIALS OR EQUIPMENT FOR VARIATIONS IN THICKNESS OF OVERLAY.

GENERAL NOTES:

TRAFFIC MAINTAINED:
THE CONTRACTOR SHALL MAINTAIN ONE LANES OF TRAFFIC EACH DIRECTION DURING CONSTRUCTION. (SEE ROAD PLANS)

EXISTING WORK:
OUTLINE OF OLD WORK IS INDICATED BY LIGHT DASHED LINES. HEAVY LINES INDICATE NEW WORK.

THE CONTRACTOR IS CAUTIONED TO USE EXTREME CARE TO AVOID DAMAGE TO THE EXISTING CATHODIC PROTECTION SYSTEM IN PLACE ON THIS DECK.



SECTION THRU SLAB

342 120

DETAILED DEC. 1991
CHECKED JUNE 1992

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

SHEET NO. 1 OF 1.

REPAIRS TO
BRIDGE: LANE D OVER 12TH STREET

STATE ROAD : MIDTOWN FREEWAY

IN KANSAS CITY

PROJECT NO. F.A.I.-70-1(160) STA. 23+42.65 BL LANE D

JOB NO. J4I0991 RTE. I-70

JACKSON COUNTY

STD.
STD.
A-245R1

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

FINAL PLANS

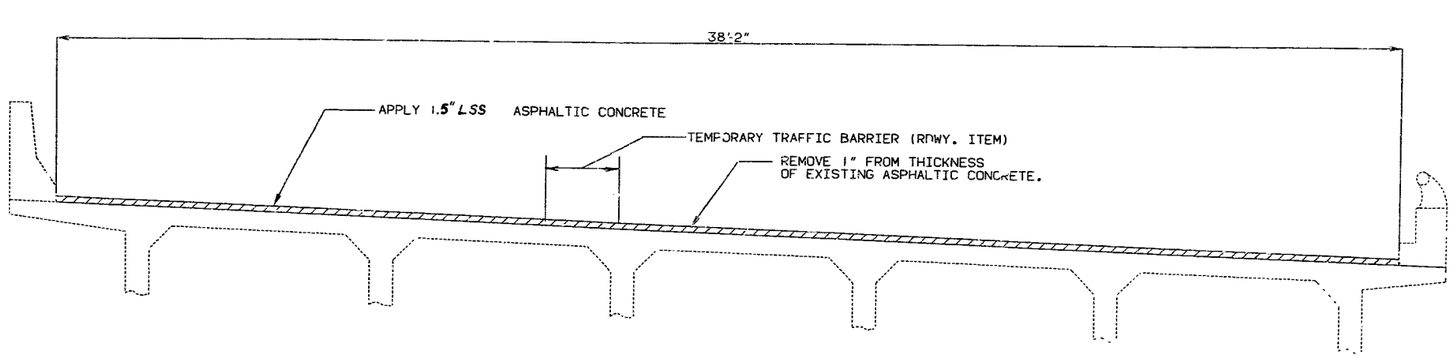
STATE	PROJ. NO.	SHEET NO.
MO.	F.A.I.-70-1(160)	111
SEC./SUR. 5	TWP. 49N	RGE. 33W

FINAL QUANTITIES

ITEM			TOTAL
REMOVAL OF EXISTING BITUMINOUS PAVEMENT (COLDMILLING)		SQ. YD.	650
ASPHALT CEMENT (ASPHALTIC CONCRETE)	AC-20	TON	3.1
MINERAL AGGREGATE (ASPHALTIC CONCRETE) (LSS)		TON	56

NOTE: IN ORDER TO MAINTAIN GRADE AND A MINIMUM THICKNESS OF OVERLAY AS SHOWN ON PLANS IT MAY BE NECESSARY TO USE ADDITIONAL QUANTITIES OF OVERLAY AT VARIOUS LOCATIONS THROUGHOUT THE STRUCTURE.

NO PAYMENT WILL BE ALLOWED FOR ADDITIONAL LABOR, MATERIALS OR EQUIPMENT FOR VARIATIONS IN THICKNESS OF OVERLAY.



SECTION THRU SLAB

GENERAL NOTES:

TRAFFIC MAINTAINED:
THE CONTRACTOR SHALL MAINTAIN ONE LANES OF TRAFFIC EACH DIRECTION DURING CONSTRUCTION. (SEE ROAD PLANS)

EXISTING WORK:
OUTLINE OF OLD WORK IS INDICATED BY LIGHT DASHED LINES. HEAVY LINES INDICATE NEW WORK.

THE CONTRACTOR IS CAUTIONED TO USE EXTREME CARE TO AVOID DAMAGE TO THE EXISTING CATHODIC PROTECTION SYSTEM IN PLACE ON THIS DECK.

362 131

DETAILED DEC. 1991
CHECKED JUNE 1992

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

SHEET NO. 1A OF 1 .

REPAIRS TO
BRIDGE: LANE D OVER 12TH STREET

STATE ROAD : MIDTOWN FREEWAY

IN KANSAS CITY

PROJECT NO. F.A.I.-70-1(160) STA. 23+42.65 BL LANE D

JOB NO. J4I0991 RTE. I-70

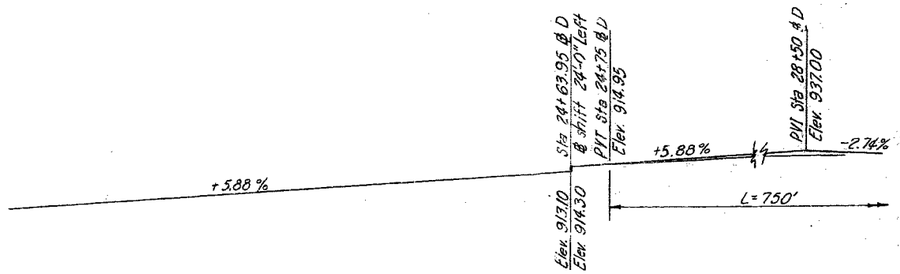
JACKSON COUNTY

STD.
STD.
A-245R1

MISSOURI STATE HIGHWAY DEPARTMENT

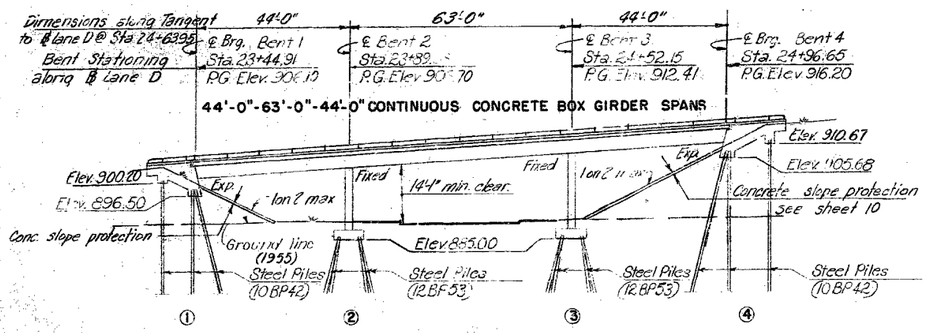
FINAL PLANS

FED. ROAD DIST. NO.	STATE	FEDERAL PROJECT No.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	I-352 (18)			
DIST. NO.	COUNTY		ROUTE	SEC.	
4	JACKSON		40		

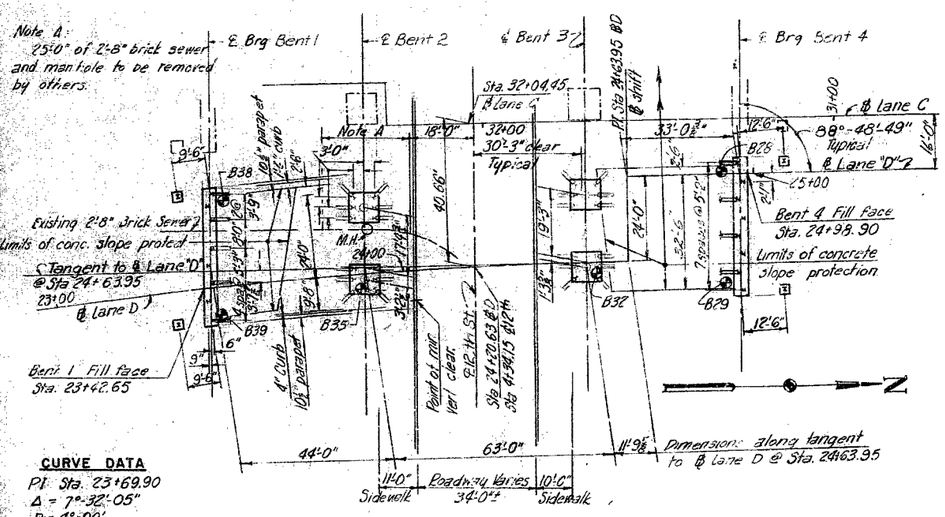


FINAL QUANTITIES

ITEM NO.	ITEM	UNIT	SUB-STRUCTURE	SUPER-STRUCTURE	TOTAL
1-G	Class 1 Excavation for Structures	cu.yd.	104.5		104.5
16-B	Class B Concrete	cu.yd.	116.5		116.5
16-B-1	Class B-1 Concrete	cu.yd.		374.6	374.6
17-B	Fabricated Structural Steel (Bearing)	lbs.		1820	1820
17-B	Fabricated Structural Steel	lbs.		5100	5100
17-J	Aluminum Alloy Handrail	lin.ft.		364	364
19-A	Reinforcing Steel	lbs.	9570	108,700	118,270
22-DD	Steel piles in place (10BP42) State furnished	lin.ft.	875		875
22-DD	Steel piles in place (12BP53) - State furnished	lin.ft.	520		520



ELEVATION



PLAN

CURVE DATA
PI Sta. 23+69.90
Δ = 7°-32'-05"
D = 9°-00'
R = 1432.39'
T = 94.32'
L = 188.37'

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY NEW YORK

MADE	TCH	DATE	2-17-58	TRACED		DATE	
CHECKED	NBB	DATE	3-5-58	SCALE			

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

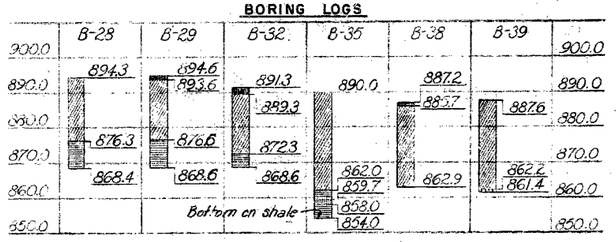
Excavation: All excavation for bridge paid for as Class 1 Excavation for Structures.

Quantity of steel piles in place includes an allowance of 8' per splice, or an estimated number of 4 splices for 14 BP42 and an estimated number of 2 splices for 12BP53.

Estimated quantity of Class "B" concrete substructure includes all concrete in end bents (including wingwalls and parapet), and intermediate bent footings. All other concrete is included in estimated quantity of Class "B-1" superstructure.

No excavation allowed for Bents No.1 & 4.

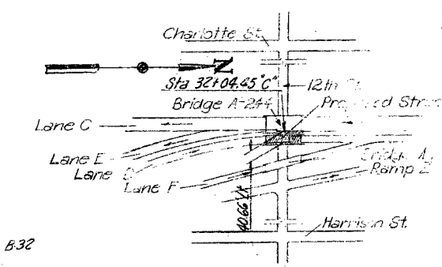
BORING LOGS



BORING LEGEND

- Pavement and road-bed
- Brown clay
- Shale
- Boulders and limestone
- Limestone

Notes:
Location of Boring logs note thus: ◔ B32
Top boring elevation is top of ground
Bottom boring elevation is top of limestone.



LOCATION SKETCH

GENERAL NOTES

Design Specifications: A.A.S.H.O. 1953

Construction Specifications: Missouri Standard Specifications for State Roads, Materials, Bridges, Culverts and Incidental Structures, (1952)

Design Loading: H20-S16-44 (Modified 24,000# Tandem Axle) (15#/sq ft. future wearing surface.)

Concrete: Concrete stress for Class B-1 — Fc = 1400 p.s.i. for Class B — Fc = 1200 p.s.i.
Concrete for superstructure: Class B-1 air-entrained. See Special Provisions. Concrete for substructure shall be Class B, air-entrained. If contractor desires, Class B-1 may be used in lieu of Class B for concrete in substructure with payment made for Class B concrete.
All forms are removed from interior of box girders).

Reinforcing Steel: Allowable stress — 20,000 p.s.i.
All splices in reinforcing steel 32 bar diameters.
Bar sizes are designated on plans by numbers. The first digit after the bar in three digit marks and the first two digits after the letter in four digit marks, indicate the size of the bar.
Dimensions shown on plans from reinforcing steel to outside edge of concrete are all clear dimensions.
All bending dimensions are to the "out to out" of bars.

Piling: All piles conform with detail and notes on sheet 5. All steel piles required for this structure furnished by the state. (See special provisions. All piles driven to refusal on solid rock, boulders, shale or cemented gravel; or to not less than full length authorized, and to sustain a load of not less than 37 tons per pile for 10 BP42, and 46 tons per pile for 12 BP53.
All piles driven with a steam hammer.
See Section 22-9C of standard specifications for required painting of steel piles.
Compact A roadway fill (full roadway width) placed up to elevation of bottom of concrete beam in front of and not less than 25'-0" in back of end bents before steel piles driven.

Waterproofing of Deck: Superstructure deck waterproofed. (See Special Provisions)

Welding: Proper qualification of welding operators required.

Joint Filler: Where joint filler is specified, it conform with requirements for preformed rubber compound joints as given in section 39-22.B of Standard Specifications.

Fiber conduit: Expansion sleeves required in fiber conduit at all expansion joints. Expansion sleeve oversized fiber conduit with rubber ring as provided by manufacturer.

Utilities: All utilities, unless shown otherwise, removed or relocated by others. Owners of utilities notified of contractor's work schedule by the contractor sufficiently in advance to allow for disposition of utilities.

Shipping: Permits obtained for all truck loads over legal length.

Traffic: 12th Street remain open to traffic during construction.
Falsework over 12th Street constructed with a minimum vertical clearance of not less than 12'-0" and a minimum lateral clearance of not less than 28'-0".
(See Special Provisions)

B.M. "1" "X" on south bolt on top of hydrant N.W. corner 8th and Charlotte Sts. Elev. 888.18.

SUBMITTED BY:
R. T. Bergendoff
REGISTERED PROFESSIONAL ENGINEER MISSOURI NO. E-253

BRIDGE: LANE "D" OVER 12TH STREET
STATE ROAD U.S. 40 MIDTOWN FREEWAY
KANSAS CITY, MO.
PROJECT NO. I-352 (18) (FAI-RT. 4) STA. 32+04.45 (LANE C) 40.66' LT.
JACKSON COUNTY

SUBMITTED J. A. Williams 4-16-1958 BRIDGE ENGINEER
APPROVED BY Ralph M. Whitton 4-16-1958 CHIEF ENGINEER

STD. R2
STD. C-110 R5
A 245

SHEET 1A OF 1

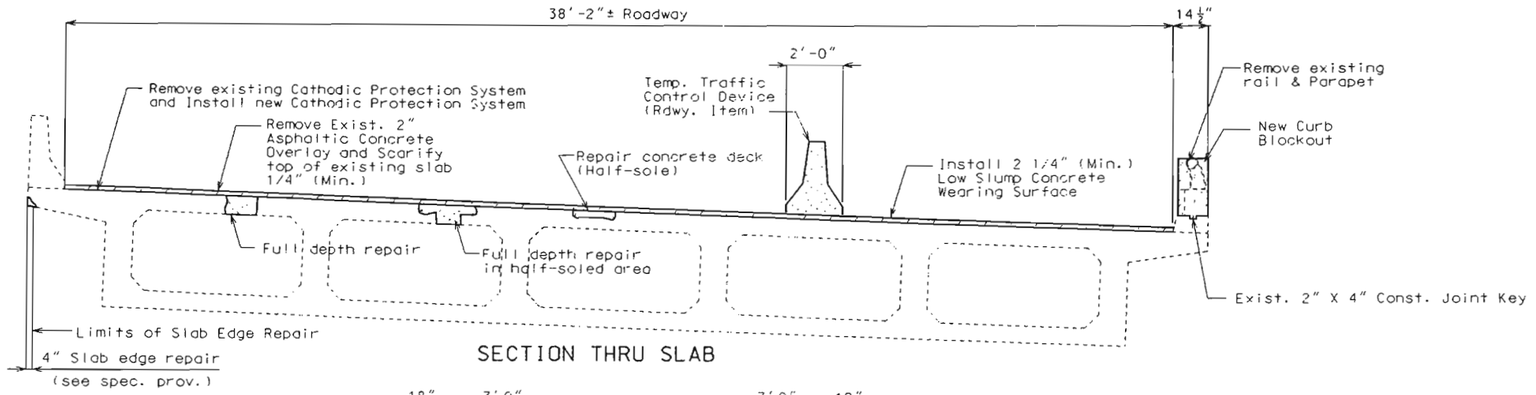
GENERAL PLAN AND ELEVATION

FINAL PLANS

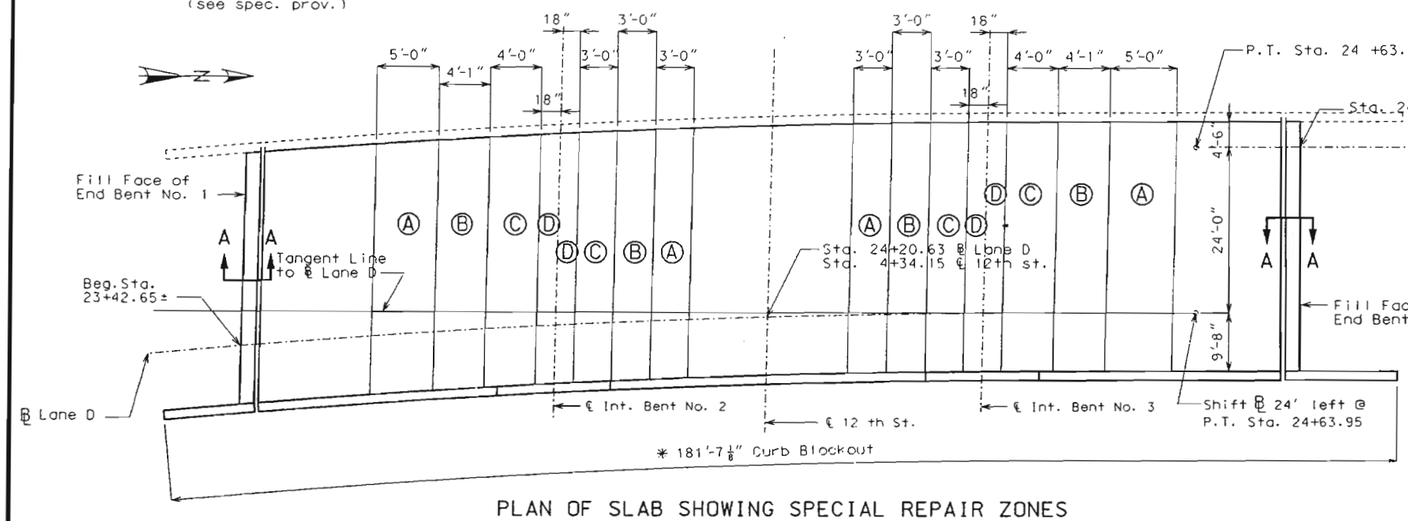
MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

State	Proj. No.	Sheet No.
MO		B46
SEC/SUR 5	TWP 49N	RGE 33W

U.I.P. EXISTING (44'-63'-44') CONT. CONCRETE BOX GIRDER SPANS

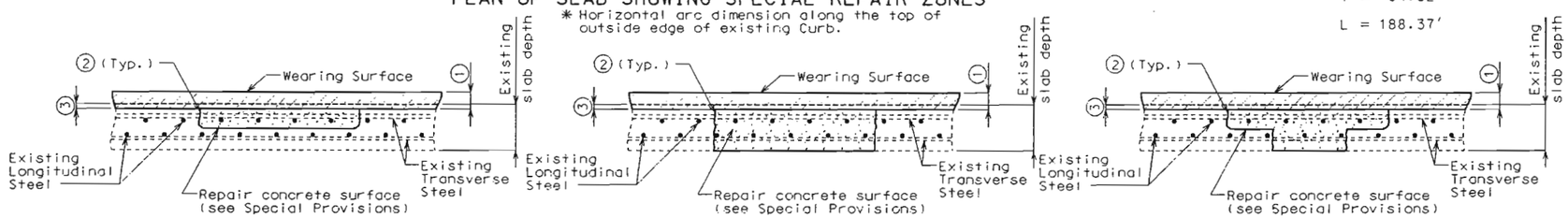


SECTION THRU SLAB



PLAN OF SLAB SHOWING SPECIAL REPAIR ZONES

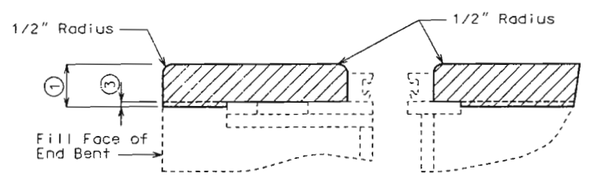
* Horizontal arc dimension along the top of outside edge of existing Curb.



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

ESTIMATED QUANTITIES

ITEM		TOTAL
Removal of Cathodic Protection System	lump sum	1
Parapet Removal (Bridges)	linear foot	182
Asphalt Removal (Bridges)	sq. foot	5.910
Curb Blockout	linear foot	182
Repairing Concrete Deck (Half-Soling)	sq. foot	400
Full Depth Repair	sq. foot	100
Slab Edge Repair	linear foot	25
Low Slump Concrete Wearing Surface	sq. yard	657
Cathodic Protection System	lump sum	1
Repainting Steel Bearings	lump sum	1



SECTION A-A AT EXPANSION JOINT

CURVE DATA ℄ Lane D

PI Sta. 23+69.90
D = 4°00'00"
△ = 7°32'05" (Rt.)
R = 1432.39'
T = 94.32'
L = 188.37'

GENERAL NOTES:

DESIGN SPECIFICATIONS:

AASHTO-1996 and Interims thru 2002

DESIGN UNIT STRESSES:

Reinforcing Steel (Grade 60) fy = 60,000 psi
Class B1 Concrete (Curb Blockout and End posts) f'c = 4000 psi

TRAFFIC HANDLING:

Maintain one lane of traffic on structure during construction (see Rdwy. Plans.)

REINFORCING STEEL:

Minimum clearance to reinforcing steel shall be 1½", unless otherwise shown.

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

BEARINGS:

Existing structural steel bearings at End Bents 1 & 4 shall be cleaned and recoated with calcium sulfonate sealer and topcoat (see Special Provisions)

JOINT FILLER:

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

CURB BLOCKOUTS:

Cost of Concrete and Reinforcement in End Posts shall be considered completely covered in the contract unit price for Curb Blockout per linear foot.

Cost of any concrete curb removal and/or repair shall be considered completely covered in the contract unit price for Curb Blockout per linear foot.

Cost of removing existing parapet and aluminum bridge rail shall be considered completely covered in the contract unit price for Parapet Removal (Bridges) per linear foot.

MISCELLANEOUS:

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

Roadway surfacing adjacent to bridge ends to match top of concrete wearing surface (Rdwy. Item).

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

In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. No payment will be allowed for additional labor, materials or equipment for variations in thickness of overlay.

SPECIAL REPAIR ZONES:

Any repair in the remainder of the bridge that is within 2'-6" of Zone A shall be completed before removing old concrete in Zone A.

Zones with the same letter designation may be repaired at the same time. Sequence of repairs follows Zone A, Zone B, Zone C then Zone D.

① Install 2-1/4" (Min.) Low Slump Concrete Wearing Suface.

② Saw cut or chip vertically first 1/2" of all deck repair. (Hydroblasting allowed by Special Provisions.)

③ Scarify existing slab (1/4" min.).

STATE OF MISSOURI
DANIEL M. SMITH
NUMBER E-28985
REGISTERED PROFESSIONAL ENGINEER
DATE 9-16-02

REPAIRS TO BRIDGE: LANE D OVER 12TH STREET

STATE ROAD : MIDTOWN FREEWAY
IN KANSAS CITY
PROJECT NO. STA. 23+42.65± (℄ LANE D) (Match existing)
JOB NO. J4I1403 RTE. I-70 (W.B.L.)

JACKSON COUNTY

Date: 9/6/02

STD. 706.35
A02453
REV.

Detailed Nov. 2001
Checked June 2002

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

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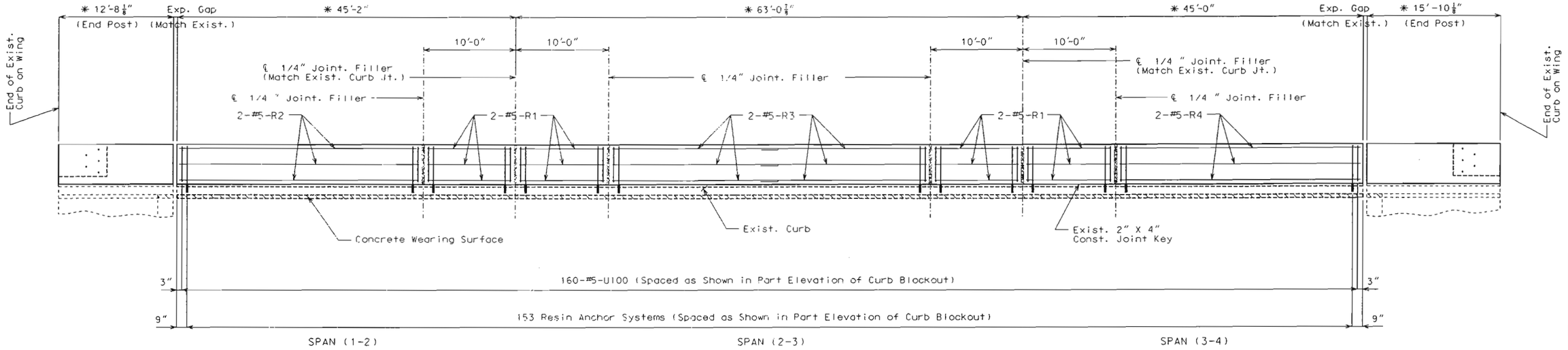
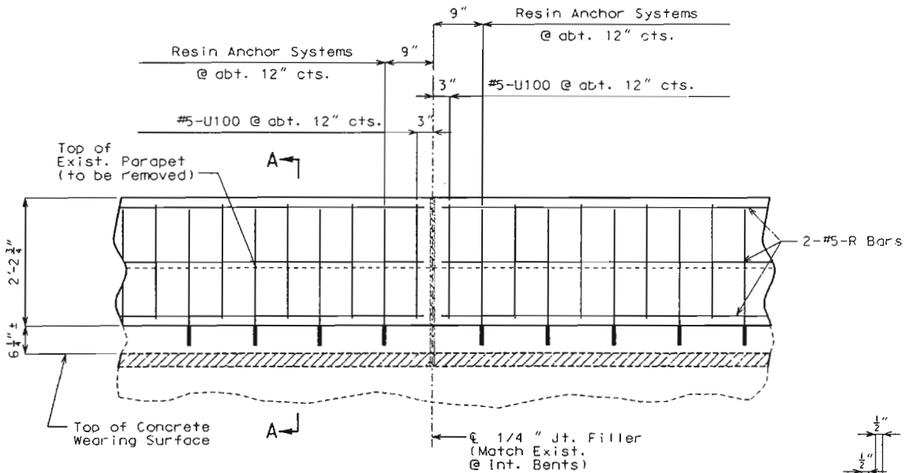
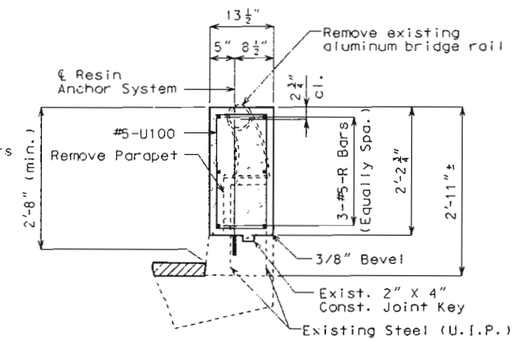


ELEVATION OF CURB BLOCKOUT

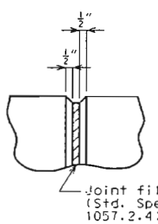
* Horizontal arc dimension along the top of outside edge of existing Curb.



PART ELEVATION OF CURB BLOCKOUT



SECTION A-A



FILLED JOINT DETAIL

DETAILS OF CURB BLOCKOUT

NOTES FOR CURB BLOCKOUT:

All reinforcement shall be epoxy coated.

Concrete in curb blockout shall be Class B1 with f'c = 4,000 psi

Measurement of curb blockout is to the nearest linear foot measured along the top of outside edge of existing curb from end of wing to end of wing.

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

Payment for concrete, reinforcing steel, resin anchor systems and any other work incidental to the curb blockout and end posts, complete in place shall be included in the contract unit price for Curb Blockout per lin. foot.

Use a minimum lap of 2'-11" for #5 horizontal Curb Blockout bars.

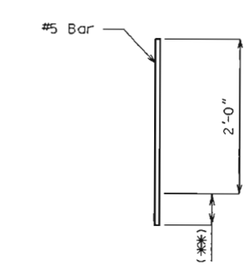
NOTES FOR RESIN ANCHOR SYSTEM:

The contractor shall use one of the resin anchor systems listed in the job special provisions. These resin anchor systems shall be installed according to the manufacturer's specifications, except as modified by the job special provisions.

The 5/8" diameter resin anchor systems shall have a minimum ultimate pullout strength of 15,500 lbs. in concrete with f'c = 4,000 psi (See Special Provisions).

Cost of furnishing and installing the anchor system complete in place shall be included in the price bid for Curb Blockout.

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8" Ø threaded rod stud.



(Install in Curb)

NOTE: (**) Manufacturer's embedment length. (6" Max.)

DETAIL OF RESIN ANCHORS

STATE OF MISSOURI
DANIEL M. SMITH
NUMBER E-26985
REGISTERED PROFESSIONAL ENGINEER

DATE 9-6-02

Detailed Nov. 2001
Checked June 2002

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

JACKSON COUNTY A02453 REV.

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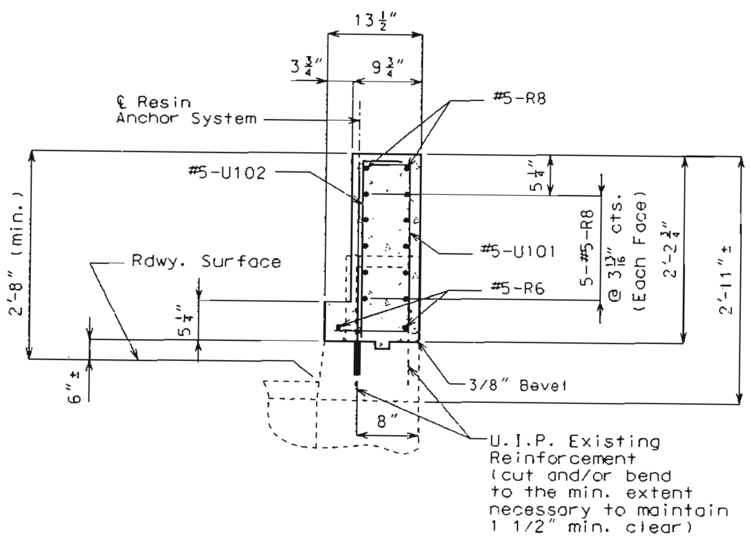
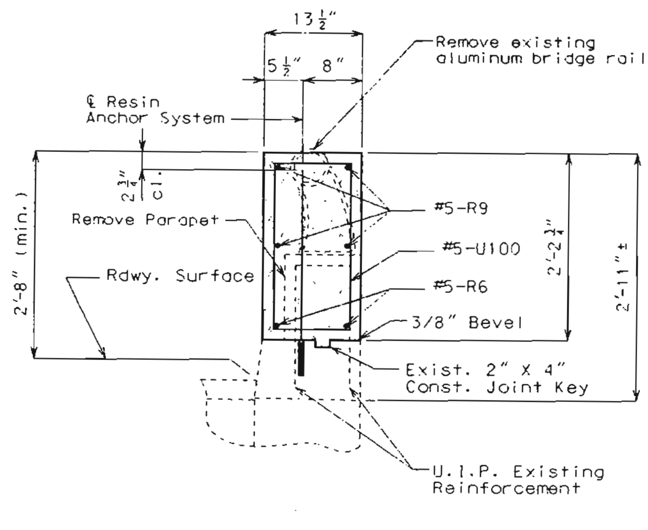
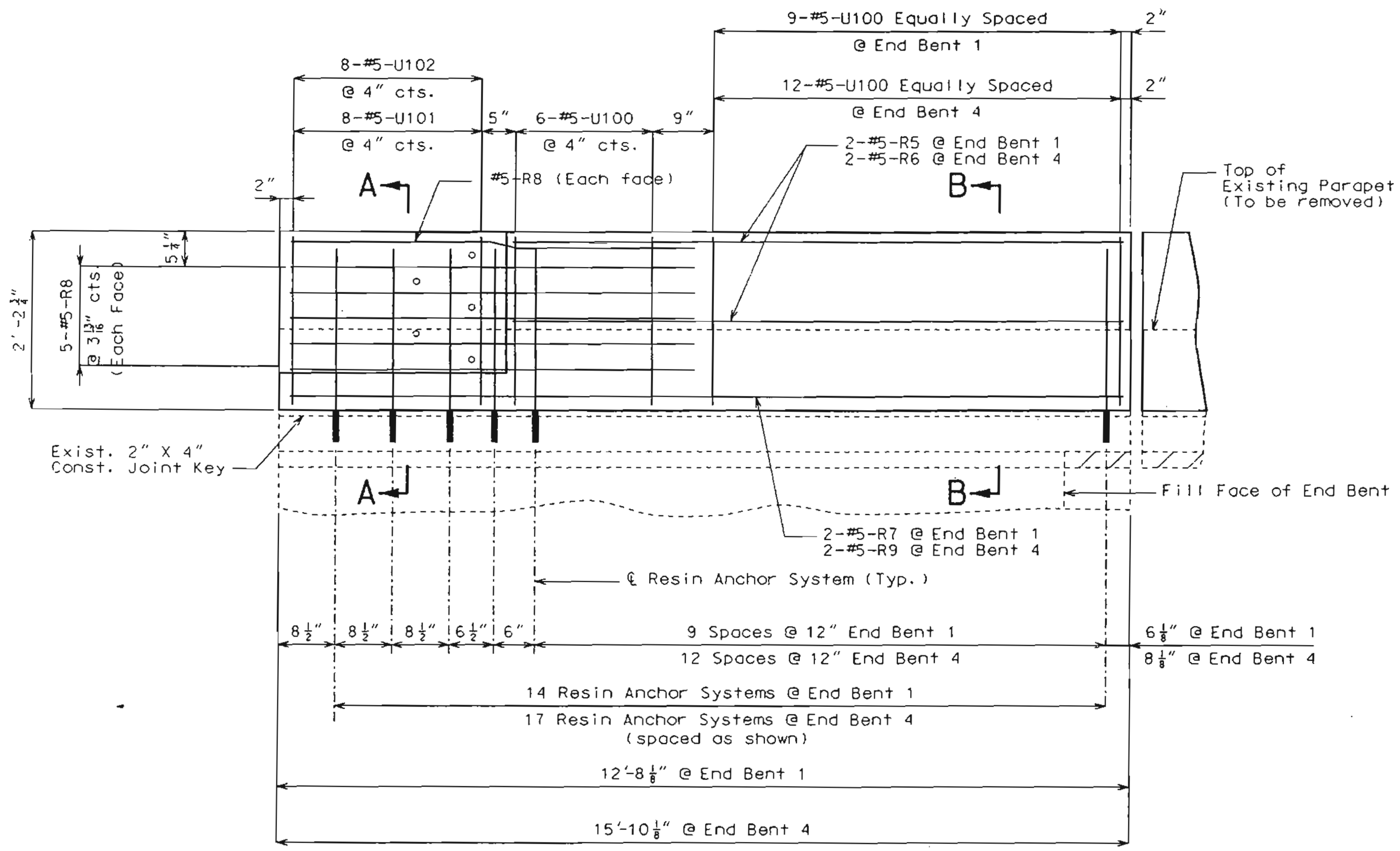


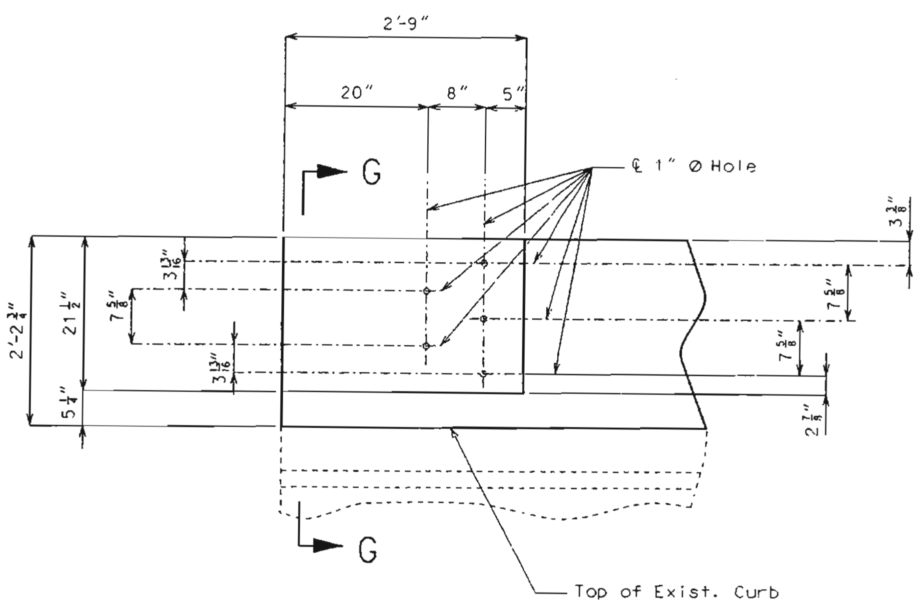
SECTION A-A



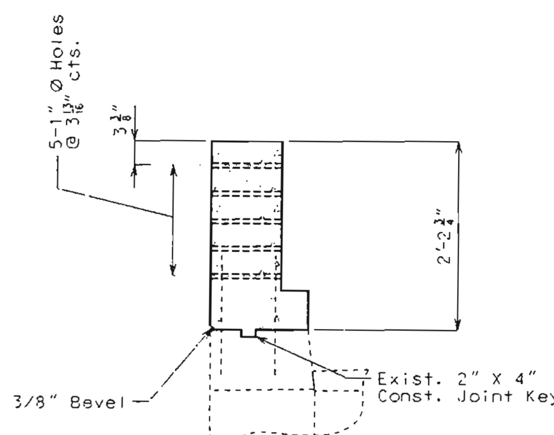
SECTION B-B



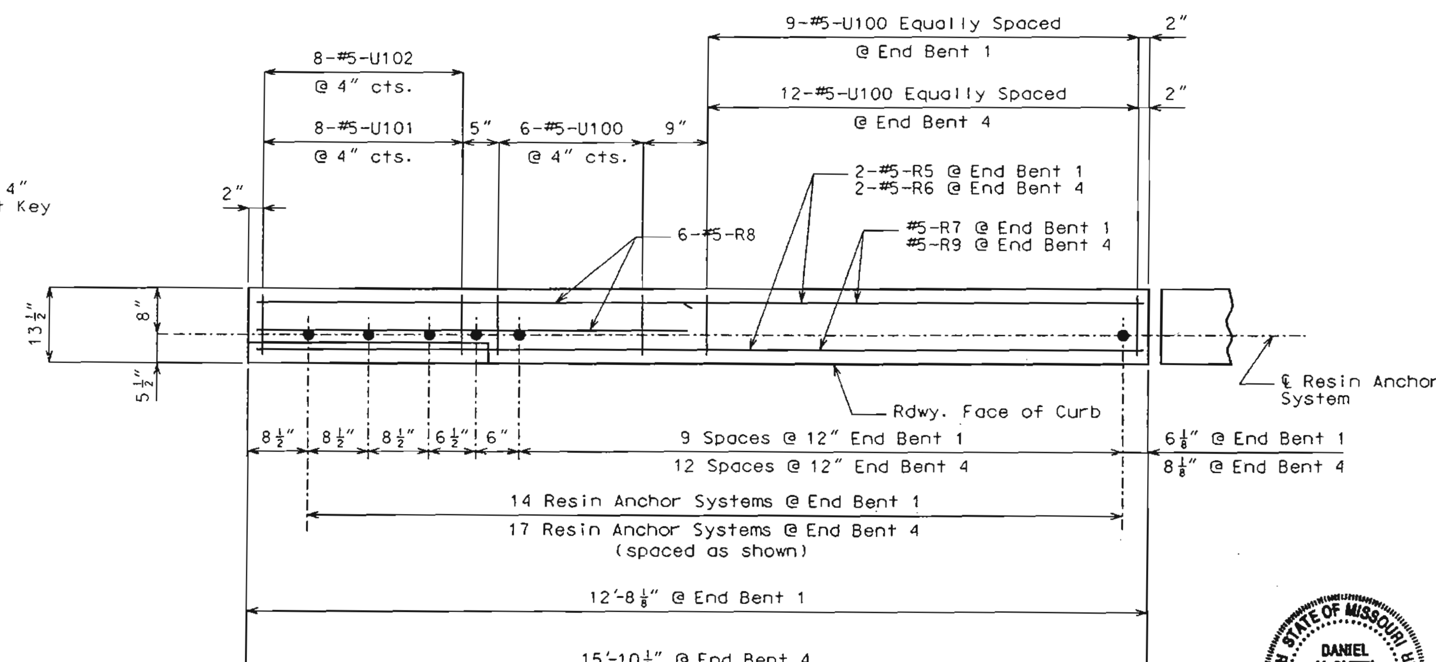
ELEVATION



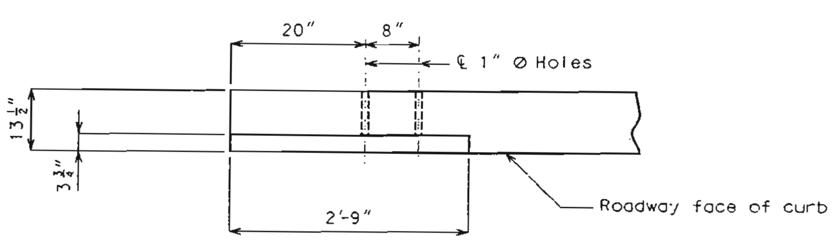
PART ELEVATION



PART SECTION G-G



PLAN



PART PLAN

DETAILS OF GUARD RAIL ATTACHMENT

STATE OF MISSOURI
DANIEL M. SMITH
NUMBER E-28985
REGISTERED PROFESSIONAL ENGINEER
DATE 9-6-02

DETAILS OF CURB BLOCKOUT AT END BENTS

Detailed Nov. 2001
Checked June 2002

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

Sheet No. 3 of 8

JACKSON COUNTY A02453

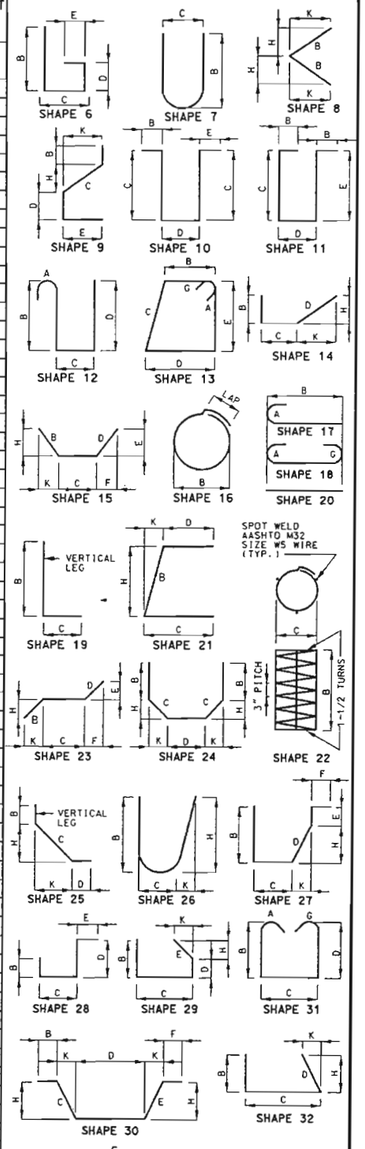
BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
			BLOCKOUT																
193	5	U100	BLOCKOUT	E	13	S				10.500	23.750	10.500	23.750				6 8	6 4	1275
16	5	U101	BLOCKOUT	E	11	S					10.500	23.750	6.750				3 5	3 3	54
16	5	U102	BLOCKOUT	E	19					23.750	6.750						2 7	2 5	40
24	5	R1	BLOCKOUT	E	20					9 9.000							9 9	9 9	244
6	5	R2	BLOCKOUT	E	20					34 11.000							34 11	34 11	219
12	5	R3	BLOCKOUT	E	20					22 11.000							22 11	22 11	287
6	5	R4	BLOCKOUT	E	20					34 9.000							34 9	34 9	217
4	5	R5	BLOCKOUT	E	20					9 8.000							9 8	9 8	40
* 6	5	R6	BLOCKOUT	E	20					12 10.000							12 10	12 10	80
2	5	R7	BLOCKOUT	E	20					12 5.000							12 5	12 5	26
24	5	R8	BLOCKOUT	E	20					5 7.000							5 7	5 7	140
2	5	R9	BLOCKOUT	E	20					15 7.000							15 7	15 7	33
			TOTALS																
	5			E															2655
			TOTAL																0
			TOTAL	E															2655

BILL OF REINFORCING STEEL

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

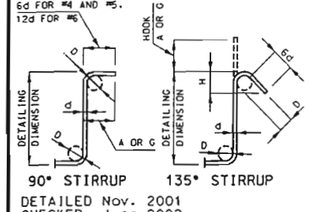
State	Proj. No.	Sheet No.
MO		849



BENDING DIAGRAMS

STATE OF MISSOURI
DANIEL M. SMITH
NUMBER E-28985
REGISTERED PROFESSIONAL ENGINEER

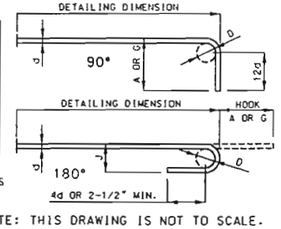
DATE 9-6-02



DETAILED Nov. 2001
CHECKED June 2002

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

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



END HOOK DIMENSIONS				
BAR SIZE	D (IN.)	ALL GRADES 180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

* TWO ADDITIONAL #5-R6 ARE INCLUDED IN THE BAR BILL FOR TESTING.

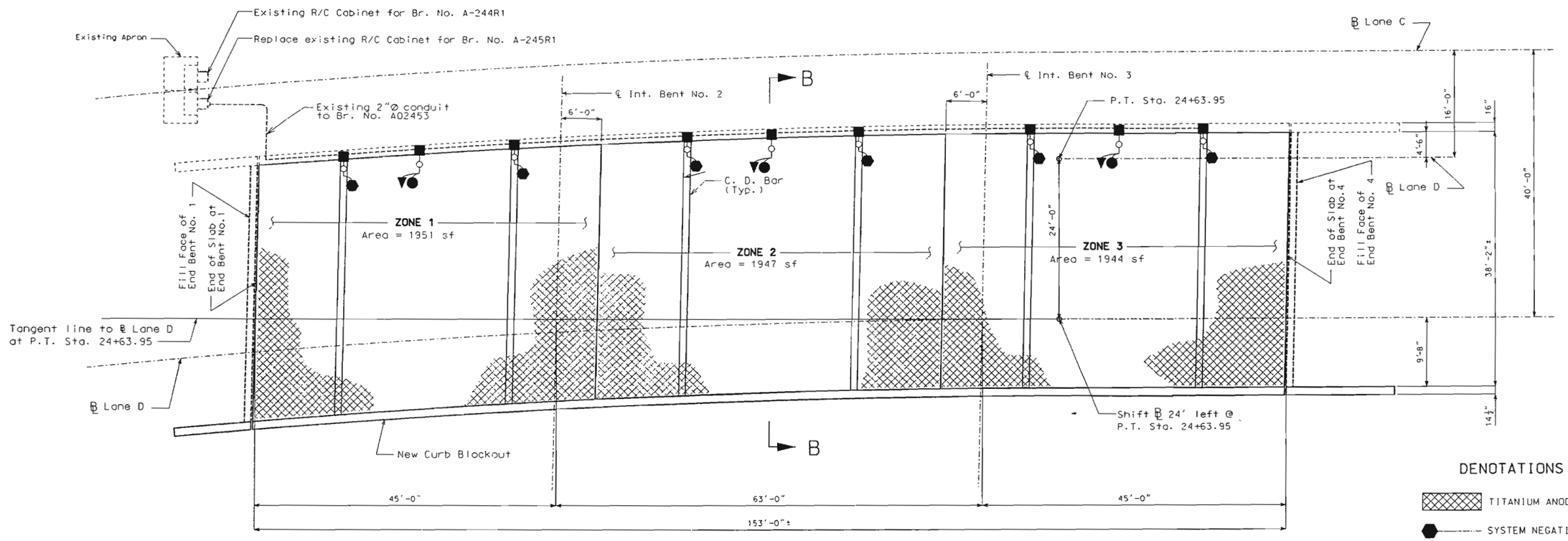
NOTE:
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH THE SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR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

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

JACKSON COUNTY

A02453

State	Proj. No.	Sheet No.
MO		5



PART PLAN OF SLAB SHOWING TITANIUM MESH CATHODIC PROTECTION SYSTEM

Note: Longitudinal dimensions are horizontal along tangent line to ℄ Lane D at P.T. Sta. 24+63.95

DENOTATIONS

- TITANIUM ANODE MESH
- SYSTEM NEGATIVE CONNECTION
- REFERENCE CELL
- GROUNDS
- EXISTING CONDUIT
- ACCESS HOLE
- EXISTING JUNCTION BOX/ ACCESS FITTING

ESTIMATED QUANTITIES	For information only	
ITEM	UNIT	QUANTITY
Titanium Anode Mesh (Elgard 210)	Sq. Feet	5842
Reference Cells	Each	3
Thermite Welds	Each	9

Note: No direct payment shall be made for any additional conduit, junction boxes, access fittings, additional material, labor and modification to existing conduit.

NOTE:

Reference cells are to be placed at approximate ℄ of zone length as determined by the engineer.

Current Distribution Bars (C.D. Bar) to be placed near 1/4 point of Zones.

For Section B-B Thru Slab, typical zone layout and partial electrical schematic, see sheet no. 6.

Existing overlay and cathodic protection system shall be removed and the original deck scarified prior to installation of new Cathodic Protection System (see special provisions).

NOTE:

Replace existing R/C Cabinet with new enclosure, mounted on existing apron and meeting required manufacturer's specifications and all local electrical codes.

Use existing conduit and appurtenances, with the approval of the Engineer, as shown on the plans. All existing conduit and appurtenances not used with the new Cathodic Protection System shall be removed from the Structure.

All existing wiring in the deck and conduits shall be removed and replaced with new wiring.

The anode leads, system negative return leads, reference cell and reference cell ground lead shall be routed in one of the existing conduits.

The telephone cable shall be routed into the rectifier through one of the unused existing conduits.

The reference cell ground lead shall be welded to the top rebar within 12" of the reference cell.

Anode assembly number must match zone number.

Existing access holes through deck not used with the new cathodic protection system shall have its plastic sleeve and silicone sealant removed, hole cleaned and plugged with a nonmetallic expansive mortar in accordance with Std. Spec. 1066.

STATE OF MISSOURI
DANIEL M. SMITH
NUMBER E-28985
REGISTERED PROFESSIONAL ENGINEER
DATE 9-6-02

Detailed Mar. 2002
Checked July 2002

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

JACKSON COUNTY A02453

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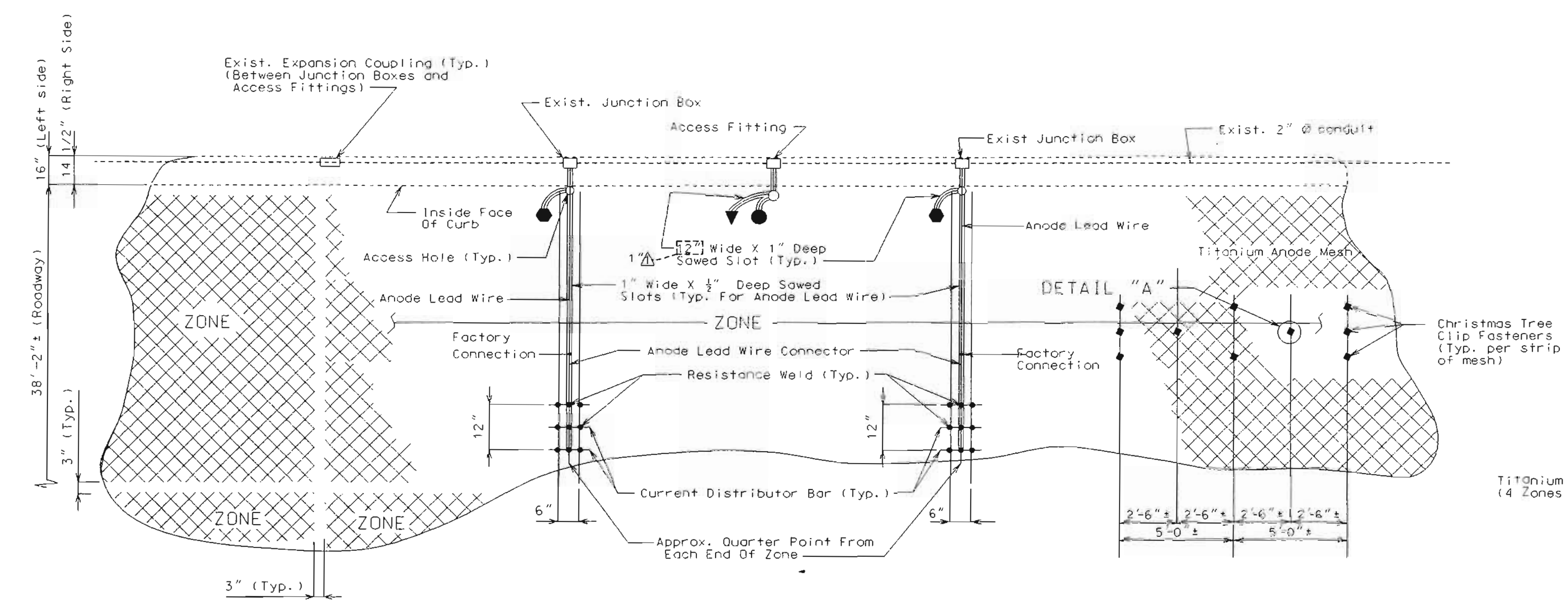
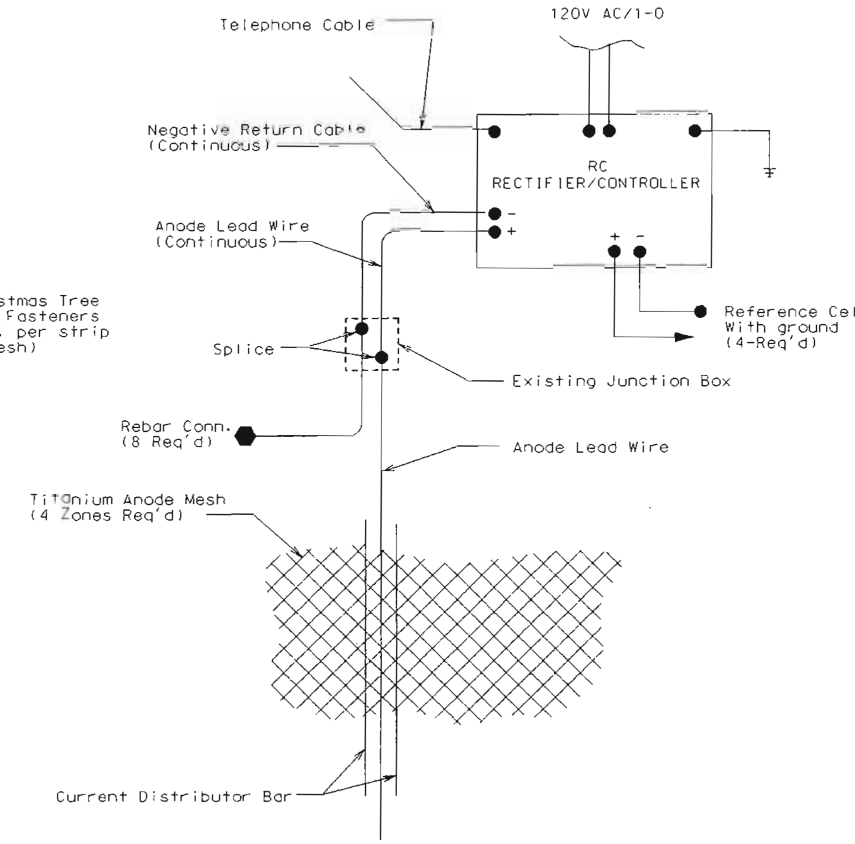
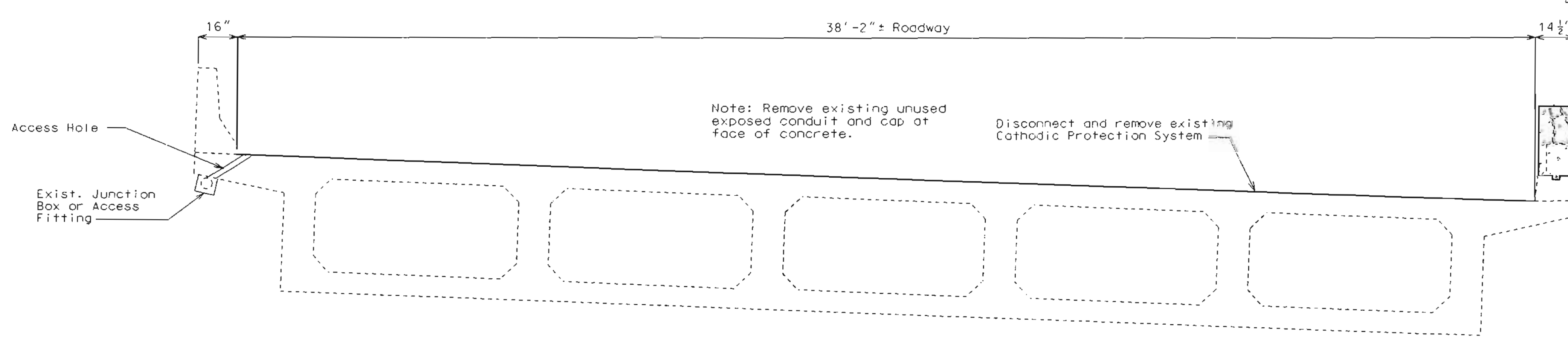


TYPICAL ZONE LAYOUT

Note: Use existing access holes, access fittings and junction boxes where acceptable as determined by the engineer.

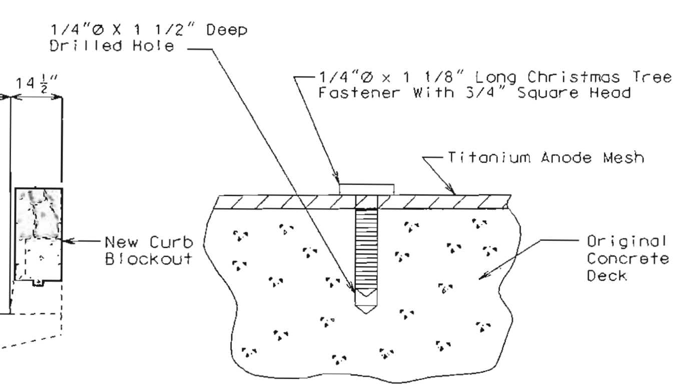


PARTIAL SCHEMATIC



SECTION B-B THRU SLAB

For Location of Section B-B, see Part Plan of Slab Showing Titanium Mesh Cathodic Protection System



DETAIL "A"

(Christmas Tree Clip)

STATE OF MISSOURI DANIEL M. SMITH NUMBER E-26385 REGISTERED PROFESSIONAL ENGINEER

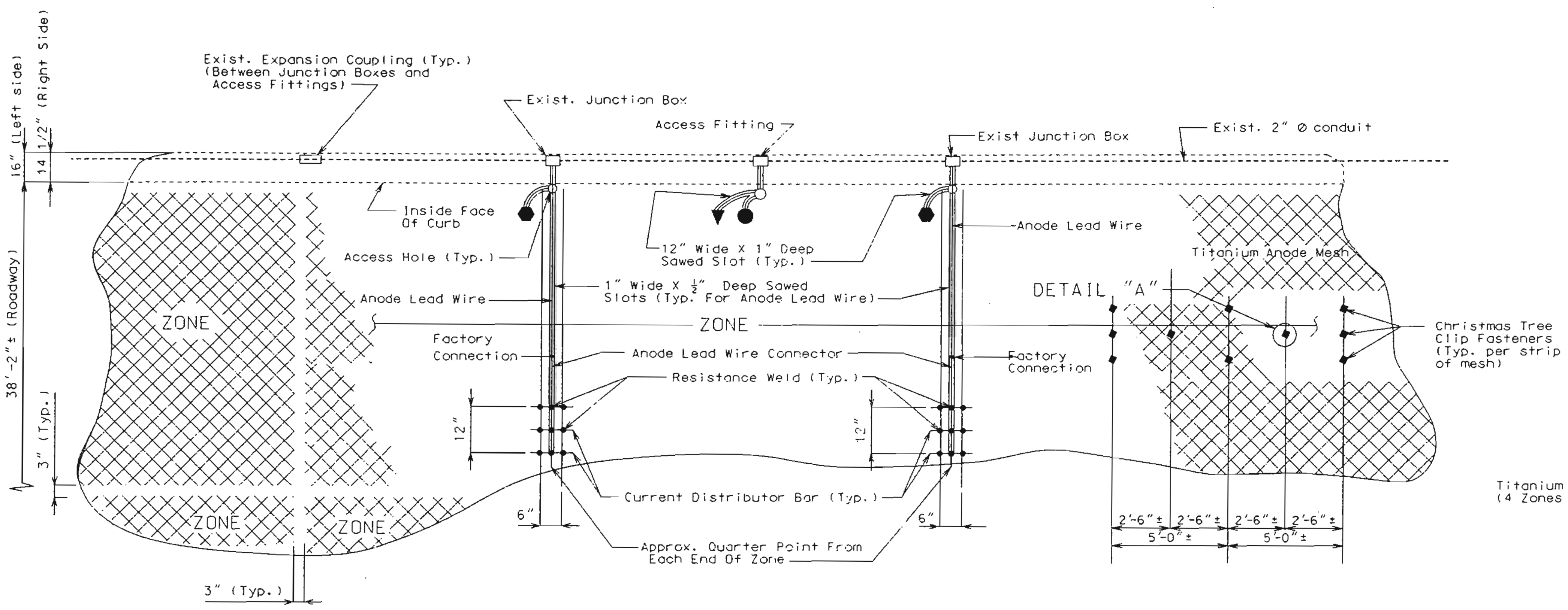
DATE 3-4-03

Detailed Mar. 2002
Checked July 2002

Note: This drawing is not to scale. Follow dimensions. Revised 3/4/2003 Sheet No. 6 of 8

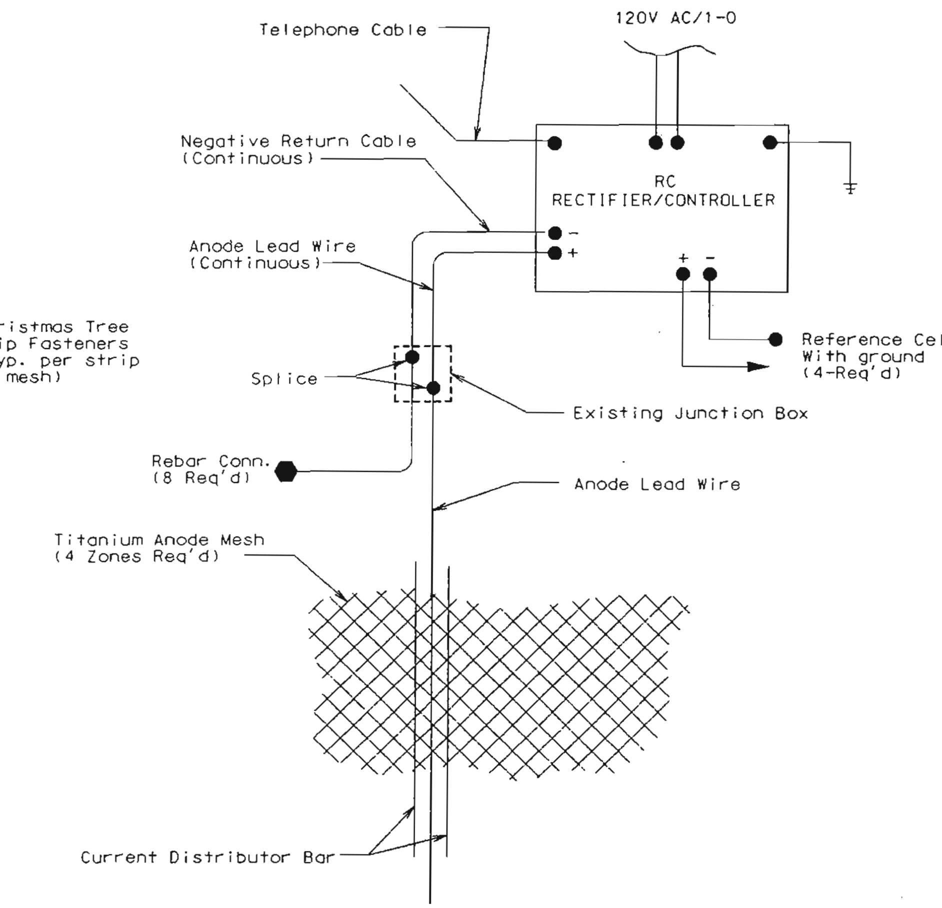
JACKSON COUNTY A02453

State	Proj. No.	Sheet No.
MO		B51



TYPICAL ZONE LAYOUT

Note: Use existing access holes, access fittings and junction boxes where acceptable as determined by the engineer.



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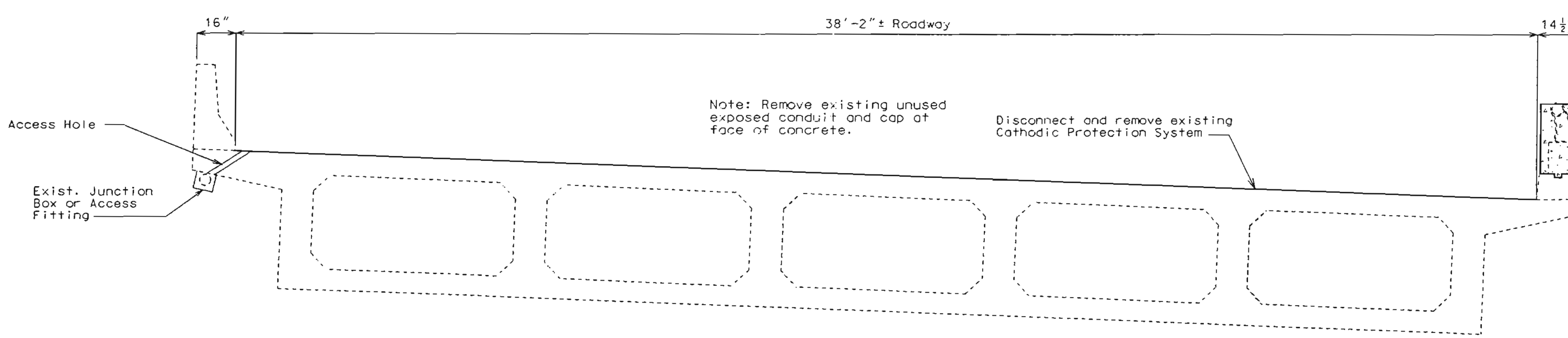
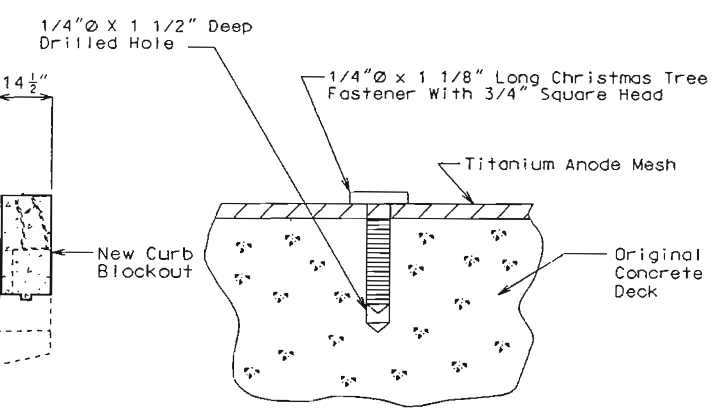


SECTION B-B THRU SLAB

For Location of Section B-B, see Part Plan of Slab Showing Titanium Mesh Cathodic Protection System



DETAIL "A"
(Christmas Tree Clip)

VOID

STATE OF MISSOURI DANIEL M. SMITH NUMBER E-28985 REGISTERED PROFESSIONAL ENGINEER

DATE 9-6-02

Detailed Mar. 2002
Checked July 2002

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

Sheet No. 6 of 8

JACKSON COUNTY A02453

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State	Proj. No.	Sheet No.
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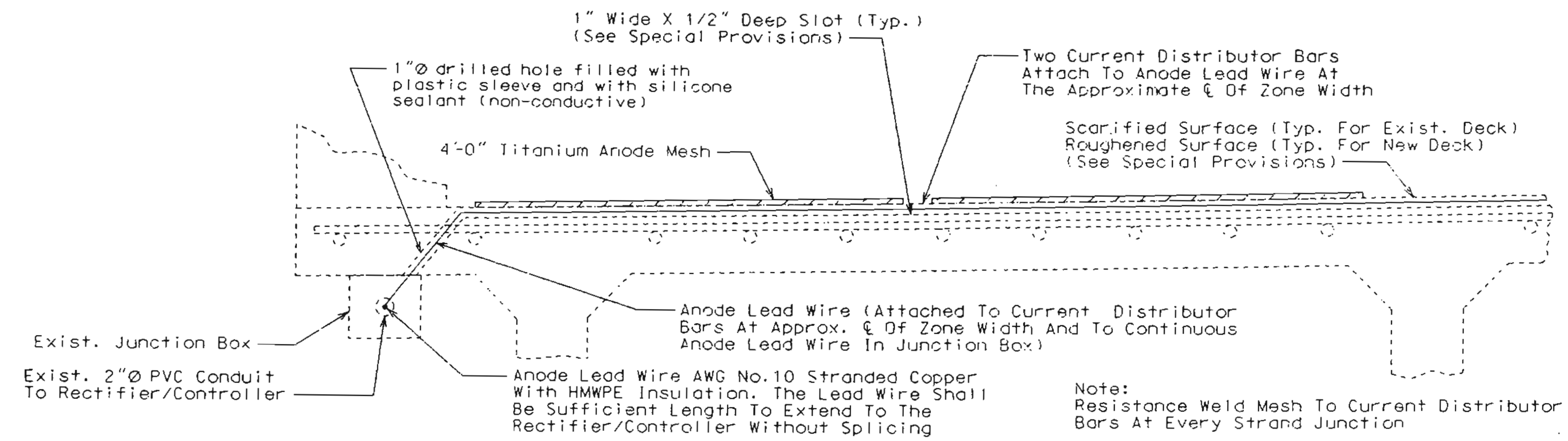


TITANIUM ANODE MESH DETAILS

Notes for New Conduit and Appurtenances (if required by Engineer):
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 (galvanized/AASHTO M111) at abt. 5'-0" cts. Concrete anchors for clamps shall meet federal specification FF-S-325. group II. type 4. class I and shall be galvanized in accordance with ASTM A-153. B695-91 class 50 or stainless steel. Minimum embedment in concrete shall be 1 3/4". The supplier shall furnish a manufacturer's certification that the concrete anchors meet the required material and galvanizing specifications.

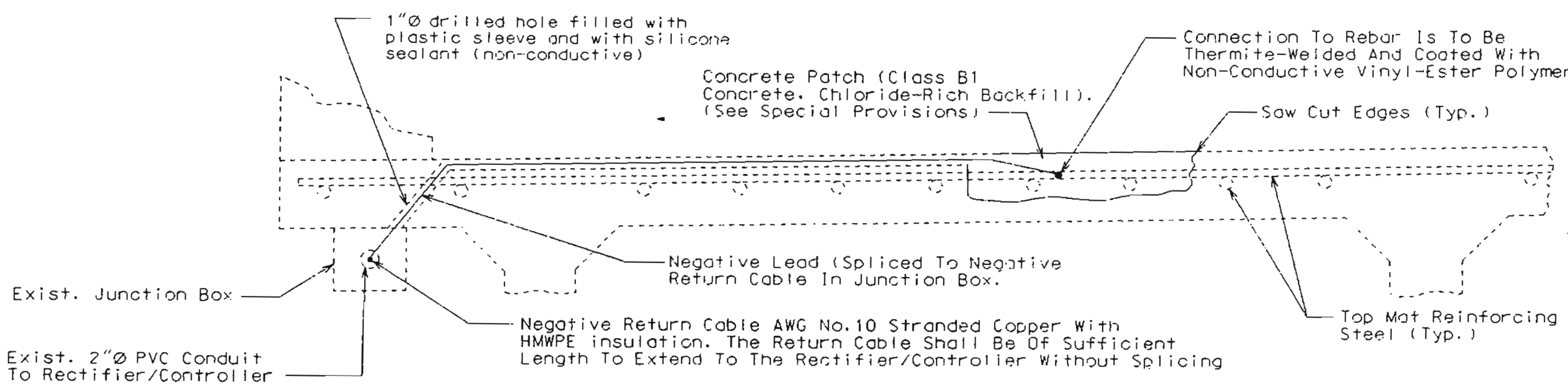
Weepholes shall be provided at appropriate locations to drain any moisture in the conduit lines.

Expansion couplings shall be installed on conduit lines between all junction boxes and access fittings as approved by the engineer.

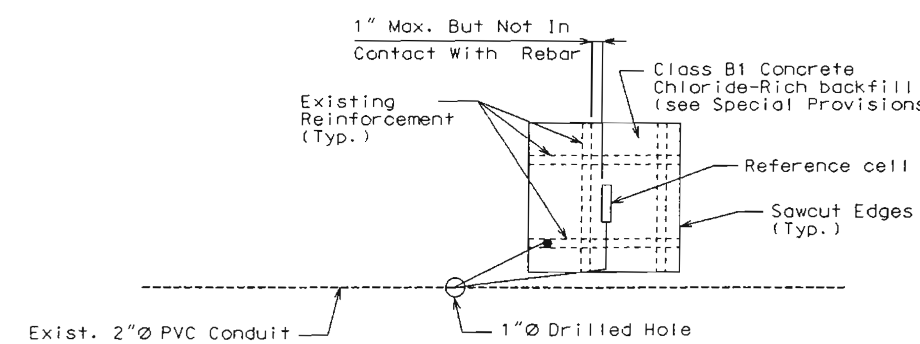
The location and direction of conduit may be shifted to meet field conditions as directed by the engineer.

All junction boxes shall be PVC molded. surface mounted. size 8" x 8" x 7" and equal to Carlon Electrical Construction products or Triangle Conduit and Cable company Inc.. The terminations shall be permanent or seperable.

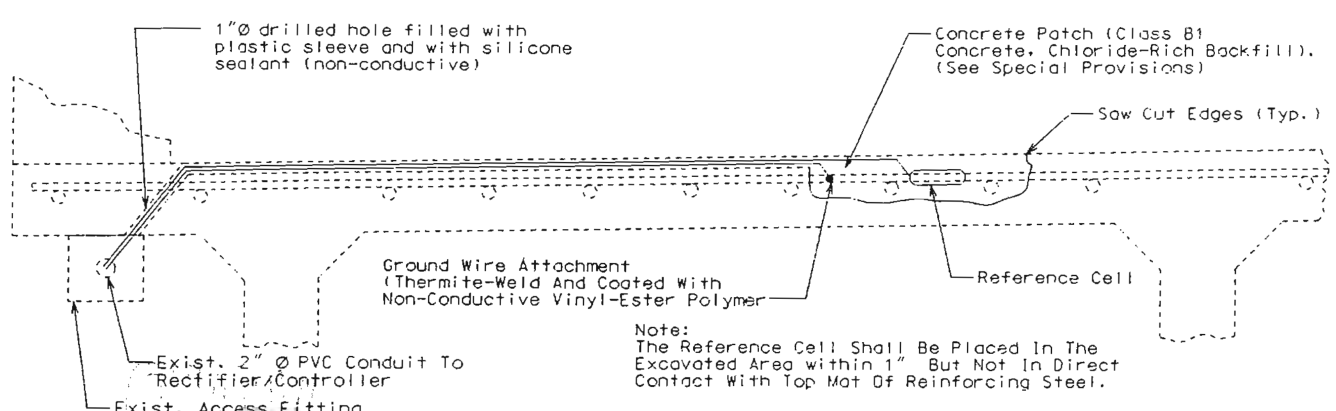
The terminations and covers shall be of watertight construction.



SYSTEM NEGATIVE CONNECTION DETAILS



PLAN OF REFERENCE CELL



REFERENCE CELL DETAILS

Note:
All concrete removal shall be intiated by saw cutting the first 1/2".

Note: The 3/4"Ø ground rod shall be of sufficient length to extend a minimum of 10'-0" below bottom of concrete pedestal. (Use existing if approved by the engineer).
Ground wire shall be AGW No.6 minimum (Use existing if approved by the engineer).
Knockouts or drilled holes shall be provided in cabinets for all conduit. Locations of these holes are the responsibility of the contractor and cabinet manufacturer.

STATE OF MISSOURI DANIEL M. SMITH NUMBER E-28985 REGISTERED PROFESSIONAL ENGINEER

DATE 9-6-02

Detailed Mar. 2002
Checked July 2002

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

JACKSON COUNTY A02453

REV.

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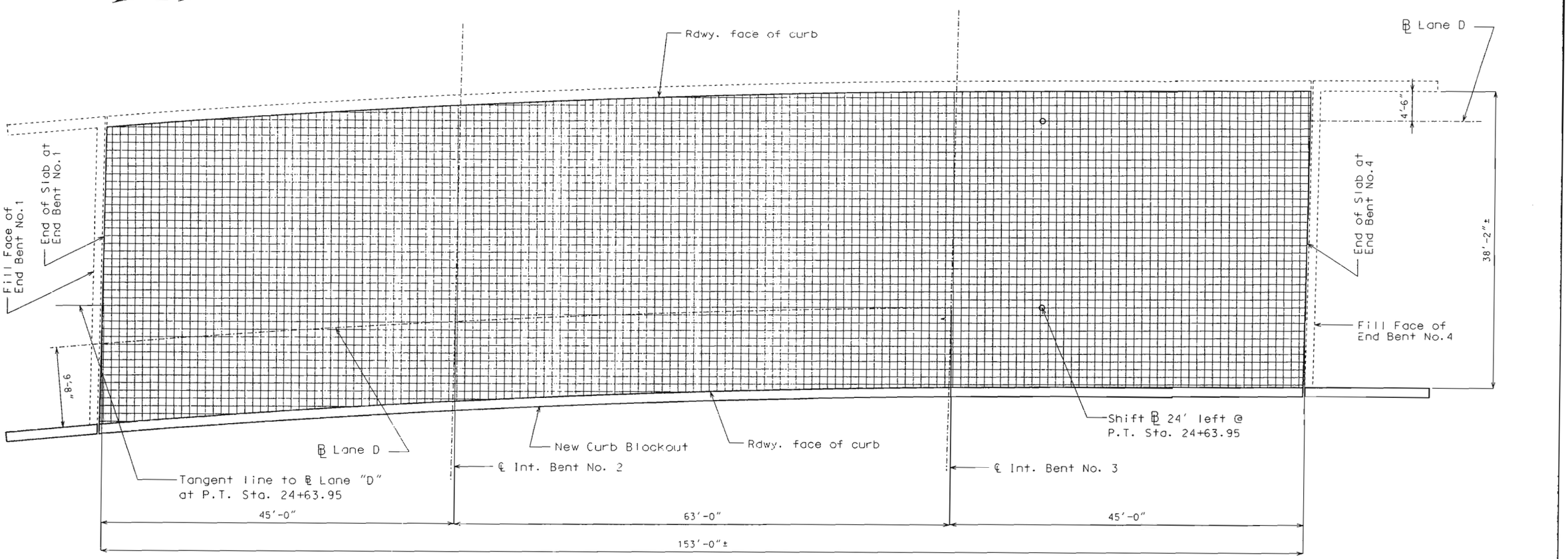
State	Proj. No.	Sheet No.
MO		B53



PLAN OF CONCRETE DECK SHOWING GRID

(For location of deck repair and reference cells.)

Note: This sheet is to be completed by MoDOT construction personnel.

0 5' 10'

Scale

Note: Grid = Approx. 12" Squares

Note: Longitudinal dimensions are horizontal along tangent line to ℄ Lane "D" at P.T. Sta. 24+63.95

STATE OF MISSOURI
DANIEL M. SMITH
NUMBER E-28985
REGISTERED PROFESSIONAL ENGINEER

DATE 9-6-02

I-70 LANE D OVER 12th ST.

Detailed Mar. 2002
Checked July 2002

Sheet No. 8 of 8

JACKSON COUNTY A02453

REV.

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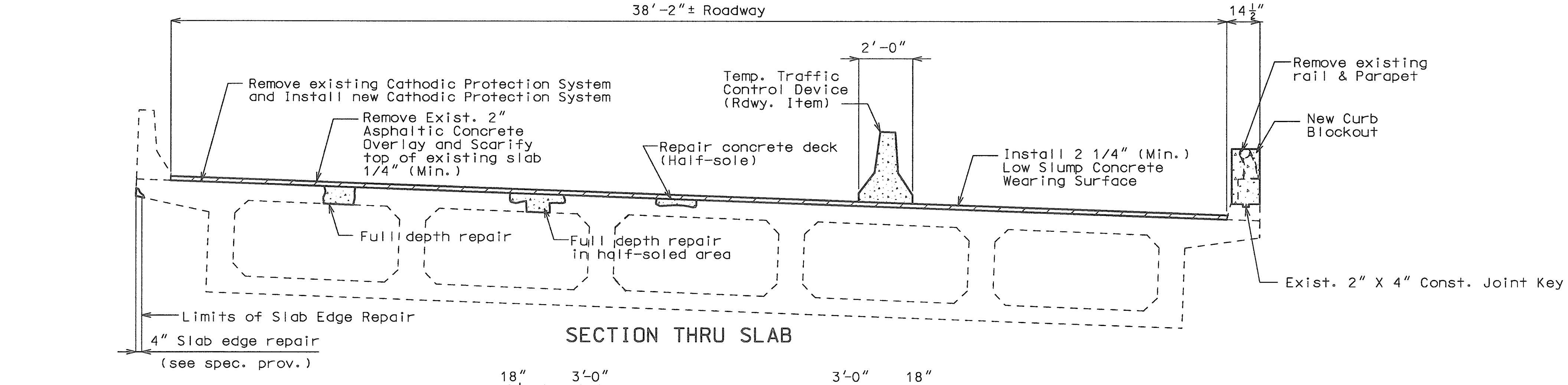
MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

U.I.P. EXISTING (44'-63'-44') CONT. CONCRETE BOX GIRDER SPANS

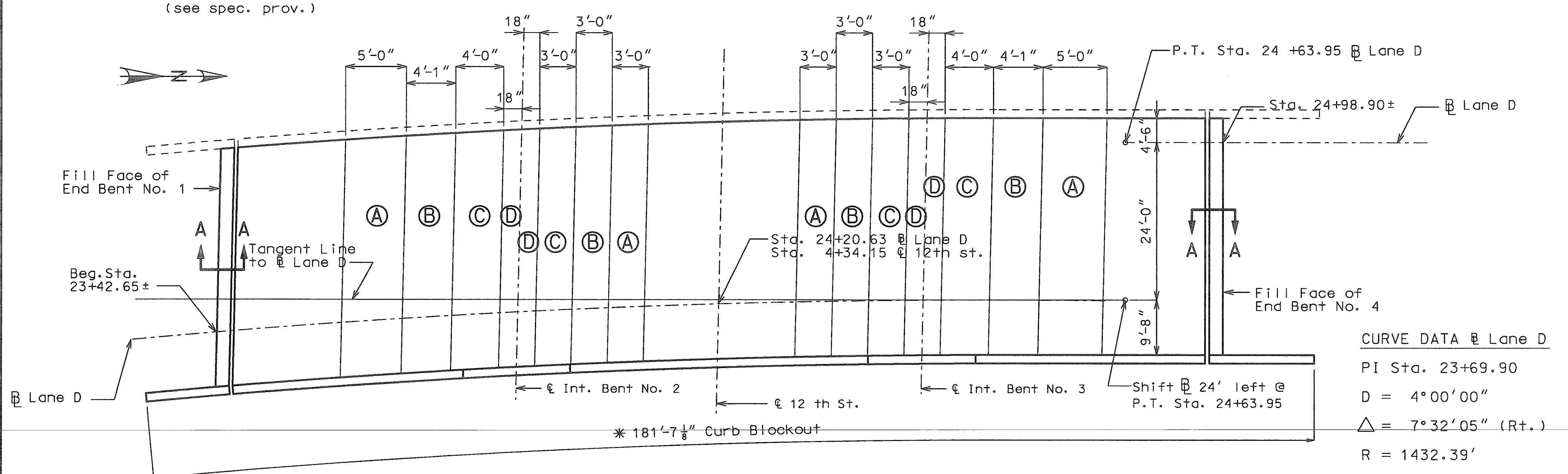
State	Proj. No.	Sheet No.
MO	021213-402	B23
SEC/SUR 5	TWP 49N	RGE 33W

FEDERAL PROJECT# I-70-1(175)

FINAL PLANS



SECTION THRU SLAB



PLAN OF SLAB SHOWING SPECIAL REPAIR ZONES

✱ Horizontal arc dimension along the top of outside edge of existing Curb.

CURVE DATA ℄ Lane D

PI Sta. 23+69.90

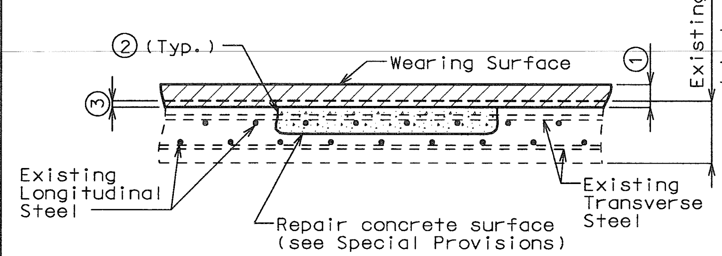
D = 4°00'00"

Δ = 7°32'05" (Rt.)

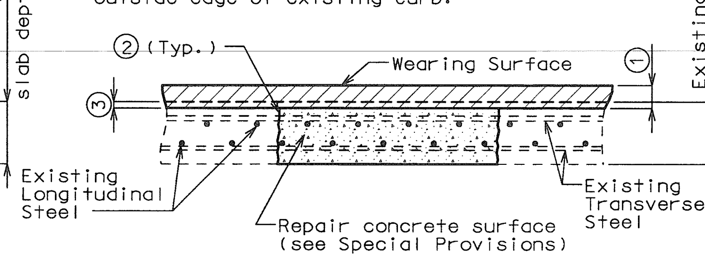
R = 1432.39'

T = 94.32'

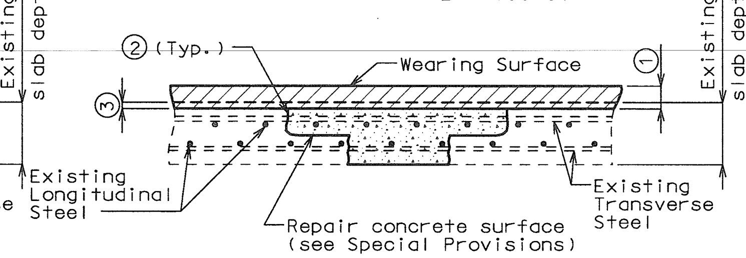
L = 188.37'



HALF-SOLED AREA



FULL DEPTH REPAIR



FULL DEPTH REPAIR IN HALF-SOLED AREA

GENERAL NOTES:

DESIGN SPECIFICATIONS:

AASHTO-1996 and Interims thru 2002

DESIGN UNIT STRESSES:

Reinforcing Steel (Grade 60) fy = 60,000 psi
Class B1 Concrete (Curb Blockout and End posts) f'c = 4000 psi

TRAFFIC HANDLING:

Maintain one lane of traffic on structure during construction (see Rdwy. Plans.)

REINFORCING STEEL:

Minimum clearance to reinforcing steel shall be 1½", unless otherwise shown.

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

BEARINGS:

Existing structural steel bearings at End Bents 1 & 4 shall be cleaned and recoated with calcium sulfonate sealer and topcoat (see Special Provisions)

JOINT FILLER:

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

CURB BLOCKOUTS:

Cost of Concrete and Reinforcement in End Posts shall be considered completely covered in the contract unit price for Curb Blockout per linear foot.

Cost of any concrete curb removal and/or repair shall be considered completely covered in the contract unit price for Curb Blockout per linear foot.

Cost of removing existing parapet and aluminum bridge rail shall be considered completely covered in the contract unit price for Parapet Removal (Bridges) per linear foot.

MISCELLANEOUS:

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

Roadway surfacing adjacent to bridge ends to match top of concrete wearing surface (Rdwy. Item).

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

In order to maintain grade and a minimum thickness of overlay as shown on plans it may be necessary to use additional quantities of overlay at various locations throughout the structure. No payment will be allowed for additional labor, materials or equipment for variations in thickness of overlay.

SPECIAL REPAIR ZONES:

Any repair in the remainder of the bridge that is within 2'-6" of Zone A shall be completed before removing old concrete in Zone A.

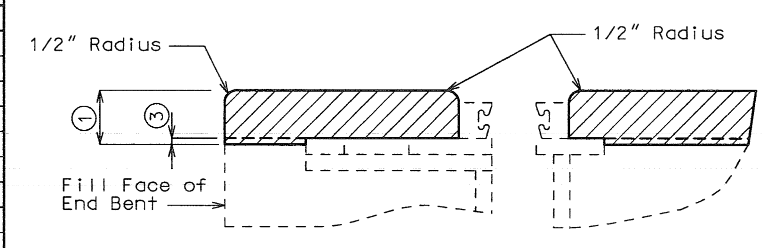
Zones with the same letter designation may be repaired at the same time. Sequence of repairs follows Zone A, Zone B, Zone C then Zone D.

① Install 2-1/4" (Min.) Low Slump Concrete Wearing Suface.

② Saw cut or chip vertically first 1/2" of all deck repair. (Hydroblasting allowed by Special Provisions.)

③ Scarify existing slab (1/4" min.).

FINAL QUANTITIES		
ITEM		TOTAL
Removal of Cathodic Protection System	lump sum	1
Parapet Removal (Bridges)	linear foot	182
Asphalt Removal (Bridges)	sq. foot	5,910
Curb Blockout	linear foot	182
Repairing Concrete Deck (Half-Soling)	sq. foot	951
Full Depth Repair	sq. foot	5
Slab Edge Repair	sq. foot	17
Low Slump Concrete Wearing Surface	sq. yard	657
Cathodic Protection System	lump sum	1
Repainting Steel Bearings	lump sum	1
SUPERSTRUCTURE REPAIR	sq. foot	61



SECTION A-A AT EXPANSION JOINT

FINAL PLANS

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

SIGNATURE DATE

REPAIRS TO BRIDGE: LANE D OVER 12TH STREET

STATE ROAD : MIDTOWN FREEWAY

IN KANSAS CITY

PROJECT NO. STA. 23+42.65± (LANE D) (Match existing)

JOB NO. J4I1403 RTE. I-70 ℄ (W.B.L.)

JACKSON COUNTY

Date: / /

STD. 706.35

A02453

REV.

Detailed Nov. 2001
Checked June 2002

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

Sheet No. 1 of 8

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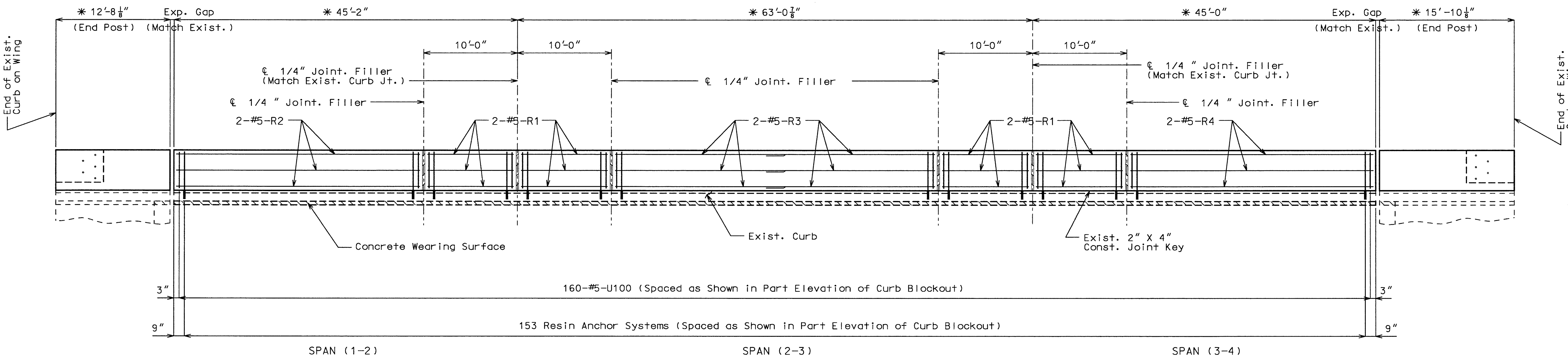
FINAL PLANS

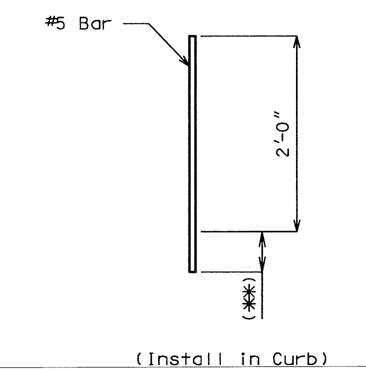
State	Proj. No.	Sheet No.
MO	021213-402	B24

FEDERAL PROJECT# I-70-1(175)



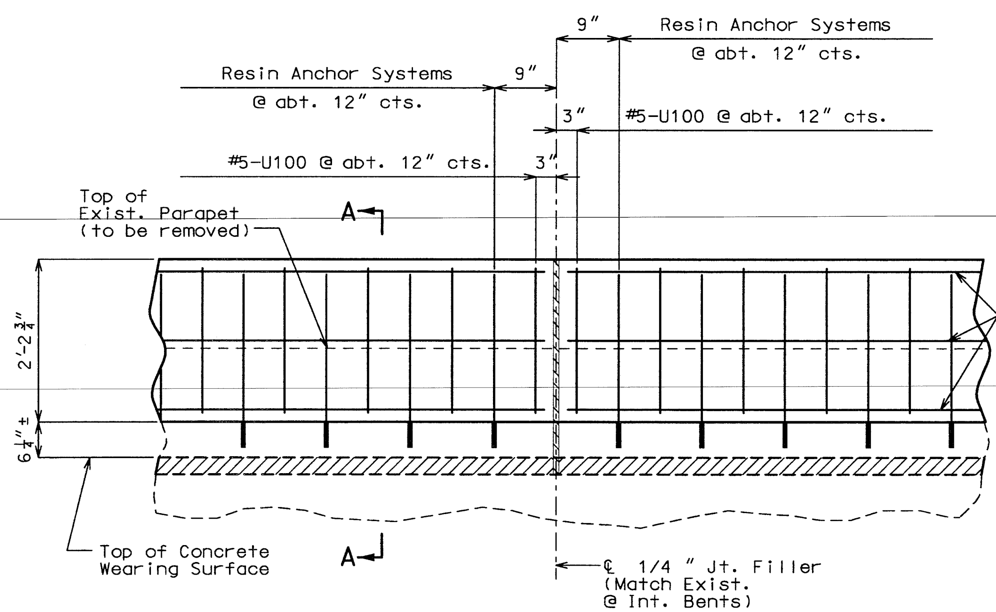
ELEVATION OF CURB BLOCKOUT

* Horizontal arc dimension along the top of outside edge of existing Curb.

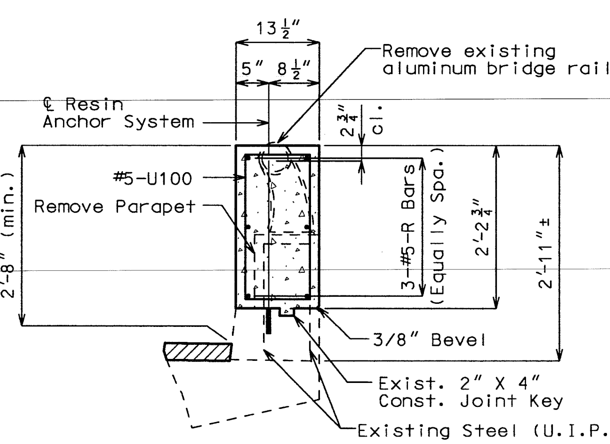


NOTE: (**) Manufacturer's embedment length. (6" Max.)

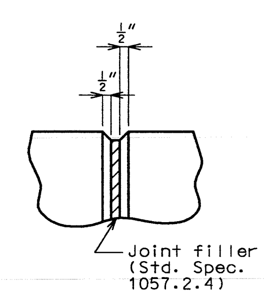
DETAIL OF RESIN ANCHORS



PART ELEVATION OF CURB BLOCKOUT



SECTION A-A



FILLED JOINT DETAIL

NOTES FOR CURB BLOCKOUT:

All reinforcement shall be epoxy coated.

Concrete in curb blockout shall be Class B1 with f'c = 4,000 psi

Measurement of curb blockout is to the nearest linear foot measured along the top of outside edge of existing curb from end of wing to end of wing.

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

Payment for concrete, reinforcing steel, resin anchor systems and any other work incidental to the curb blockout and end posts, complete in place shall be included in the contract unit price for Curb Blockout per lin. foot.

Use a minimum lap of 2'-11" for #5 horizontal Curb Blockout bars.

NOTES FOR RESIN ANCHOR SYSTEM:

The contractor shall use one of the resin anchor systems listed in the job special provisions. These resin anchor systems shall be installed according to the manufacturer's specifications, except as modified by the job special provisions.

The 5/8" diameter resin anchor systems shall have a minimum ultimate pullout strength of 15,500 lbs. in concrete with f'c = 4,000 psi (See Special Provisions).

Cost of furnishing and installing the anchor system complete in place shall be included in the price bid for Curb Blockout.

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8" Ø threaded rod stud.

FINAL PLANS

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

SIGNATURE DATE

DETAILS OF CURB BLOCKOUT

Detailed Nov. 2001
Checked June 2002

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

Sheet No. 2 of 8

JACKSON COUNTY A02453

REV.

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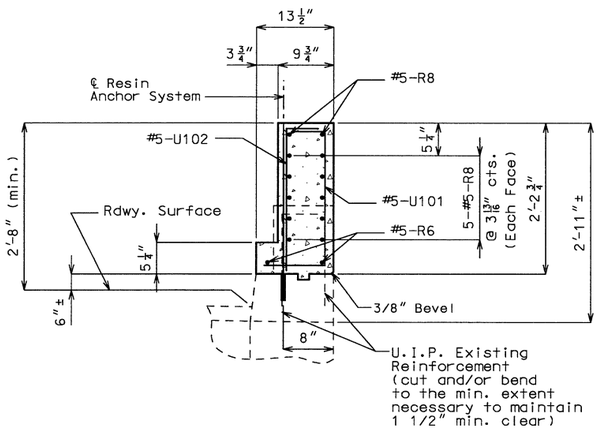
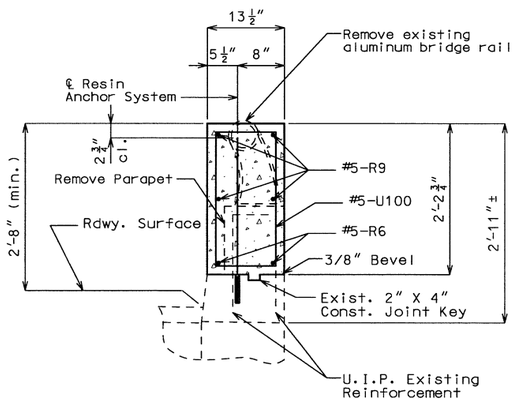
State	Proj. No.	Sheet No.
MO	021213-402	B25

FEDERAL PROJECT# I-70-1(175)

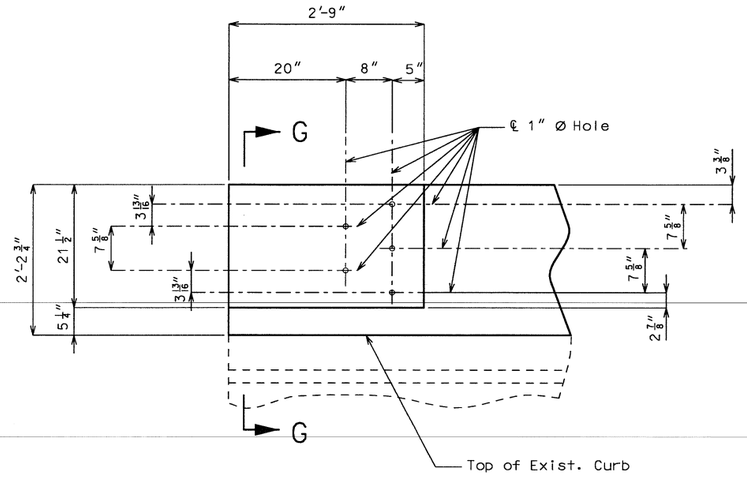
FINAL PLANS



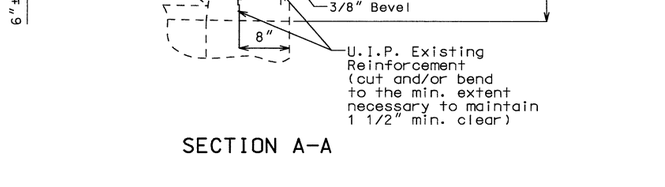
SECTION A-A



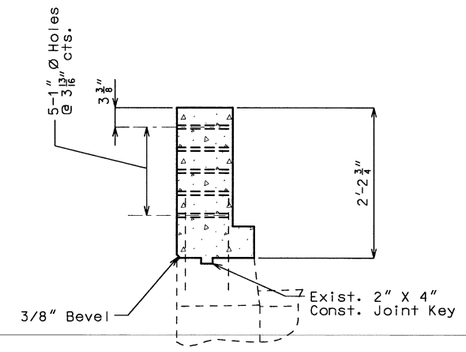
SECTION B-B



PART ELEVATION



PART PLAN



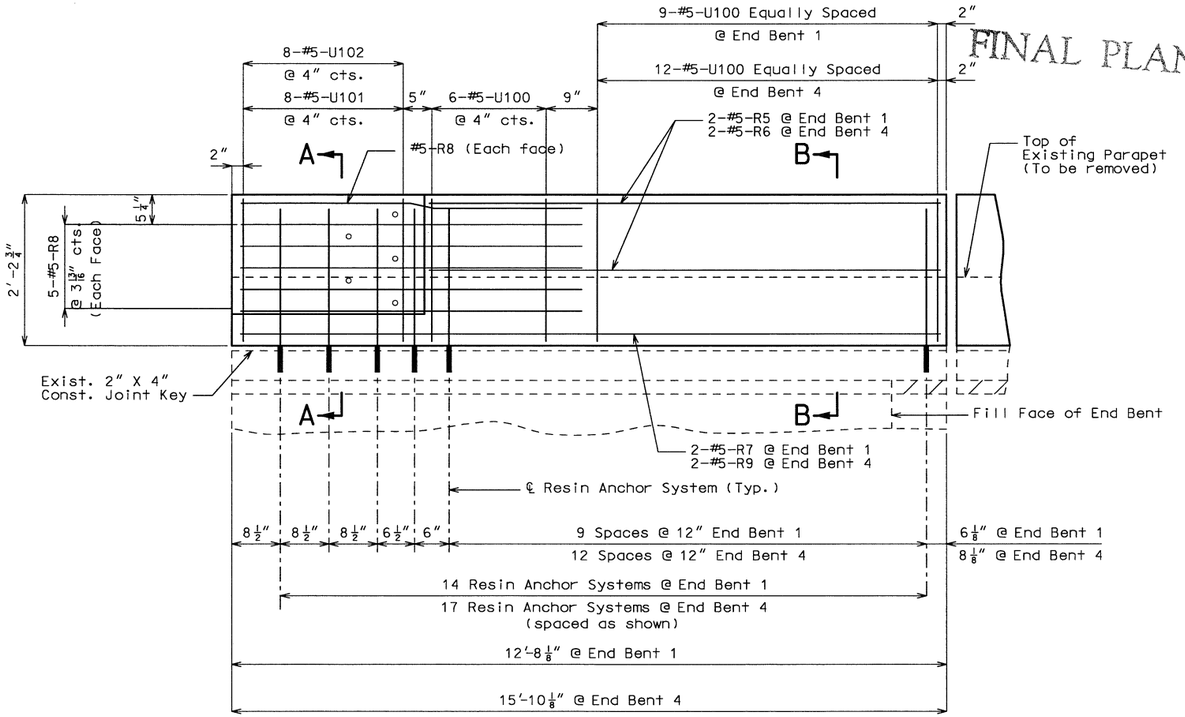
PART SECTION G-G

DETAILS OF GUARD RAIL ATTACHMENT

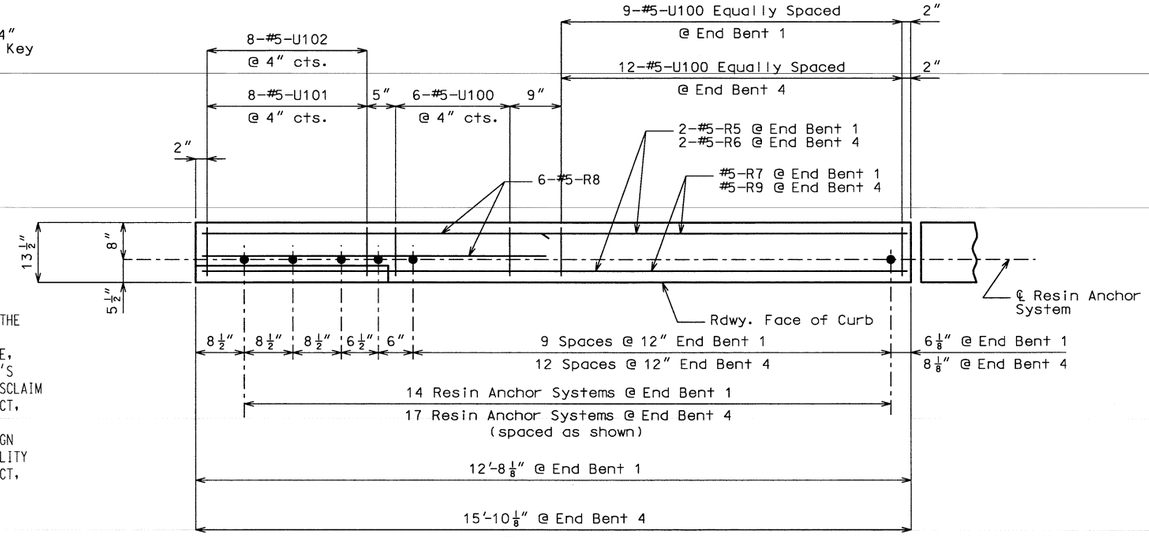
FINAL PLANS

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

SIGNATURE _____ DATE _____



ELEVATION



PLAN

DETAILS OF CURB BLOCKOUT AT END BENTS

FINAL PLANS

State	Proj. No.	Sheet No.
MO	021213-402	B26

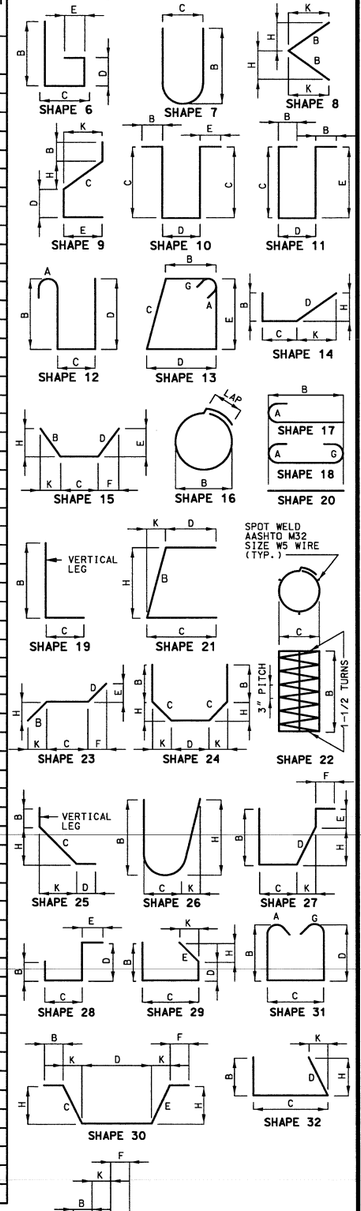
FEDERAL PROJECT# I-70-1(175)

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
		BLOCKOUT																
193	5 U100	BLOCKOUT	E	13	S				10.500	23.750	10.500	23.750				6 8	6 4	1275
16	5 U101	BLOCKOUT	E	11	S					10.500	23.750	6.750				3 5	3 3	54
16	5 U102	BLOCKOUT	E	19					23.750	6.750						2 7	2 5	40
24	5 R1	BLOCKOUT	E	20					9 9.000							9 9	9 9	244
6	5 R2	BLOCKOUT	E	20					34 11.000							34 11	34 11	219
12	5 R3	BLOCKOUT	E	20					22 11.000							22 11	22 11	287
6	5 R4	BLOCKOUT	E	20					34 9.000							34 9	34 9	217
4	5 R5	BLOCKOUT	E	20					9 8.000							9 8	9 8	40
* 6	5 R6	BLOCKOUT	E	20					12 10.000							12 10	12 10	80
2	5 R7	BLOCKOUT	E	20					12 5.000							12 5	12 5	26
24	5 R8	BLOCKOUT	E	20					5 7.000							5 7	5 7	140
2	5 R9	BLOCKOUT	E	20					15 7.000							15 7	15 7	33
		TOTALS																
	5		E															2655
		TOTAL																0
		TOTAL	E															2655

BILL OF REINFORCING STEEL

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



FINAL PLANS

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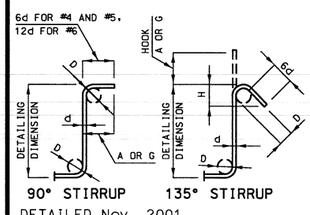
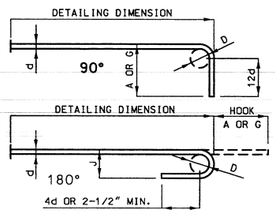
SIGNATURE DATE



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

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



END HOOK DIMENSIONS					
BAR SIZE	D (IN.)	ALL GRADES 180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

* TWO ADDITIONAL #5-R6 ARE INCLUDED IN THE BAR BILL FOR TESTING.

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

DETAILED Nov. 2001
CHECKED June 2002

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

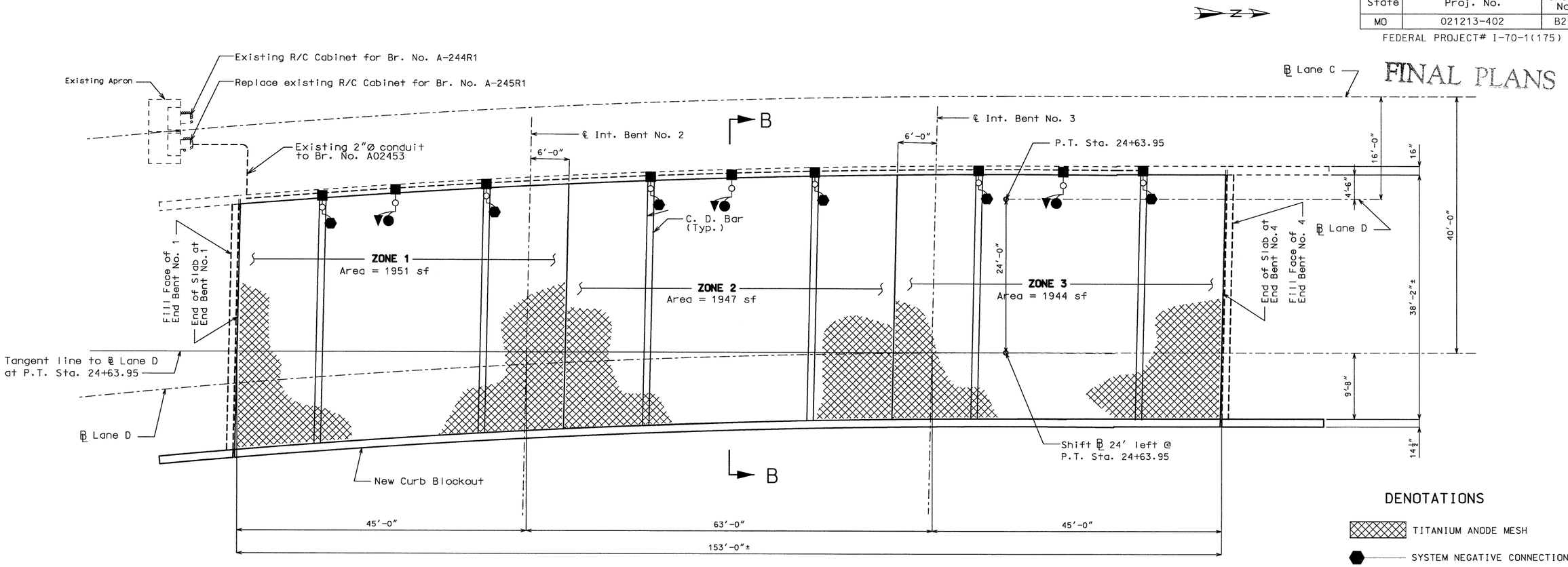
SHEET NO. 4 OF 8

JACKSON COUNTY A02453

State	Proj. No.	Sheet No.
MO	021213-402	B27

FEDERAL PROJECT# I-70-1(175)

FINAL PLANS



PART PLAN OF SLAB SHOWING TITANIUM MESH CATHODIC PROTECTION SYSTEM

Note: Longitudinal dimensions are horizontal along tangent line to ℄ Lane D at P.T. Sta. 24+63.95

DENOTATIONS

- TITANIUM ANODE MESH
- SYSTEM NEGATIVE CONNECTION
- REFERENCE CELL
- GROUNDS
- EXISTING CONDUIT
- ACCESS HOLE
- EXISTING JUNCTION BOX/ ACCESS FITTING

FINAL QUANTITIES	For information only	
ITEM	UNIT	QUANTITY
Titanium Anode Mesh (Elgard 210)	Sq. Feet	5842
Reference Cells	Each	3
Thermite Welds	Each	9

Note: No direct payment shall be made for any additional conduit, junction boxes, access fittings, additional material, labor and modification to existing conduit.

NOTE:

Reference cells are to be placed at approximate ℄ of zone length as determined by the engineer.

Current Distribution Bars (C.D. Bar) to be placed near 1/4 point of Zones.

For Section B-B Thru Slab, typical zone layout and partial electrical schematic, see sheet no. 6.

Existing overlay and cathodic protection system shall be removed and the original deck scarified prior to installation of new Cathodic Protection System (see special provisions).

NOTE:

Replace existing R/C Cabinet with new enclosure, mounted on existing apron and meeting required manufacturer's specifications and all local electrical codes.

Use existing conduit and appurtenances, with the approval of the Engineer, as shown on the plans. All existing conduit and appurtenances not used with the new Cathodic Protection System shall be removed from the Structure.

All existing wiring in the deck and conduits shall be removed and replaced with new wiring.

The anode leads, system negative return leads, reference cell and reference cell ground lead shall be routed in one of the existing conduits.

The telephone cable shall be routed into the rectifier through one of the unused existing conduits.

The reference cell ground lead shall be welded to the top rebar within 12" of the reference cell.

Anode assembly number must match zone number.

Existing access holes through deck not used with the new cathodic protection system shall have its plastic sleeve and silicone sealant removed, hole cleaned and plugged with a nonmetallic expansive mortar in accordance with Std. Spec. 1066.

FINAL PLANS

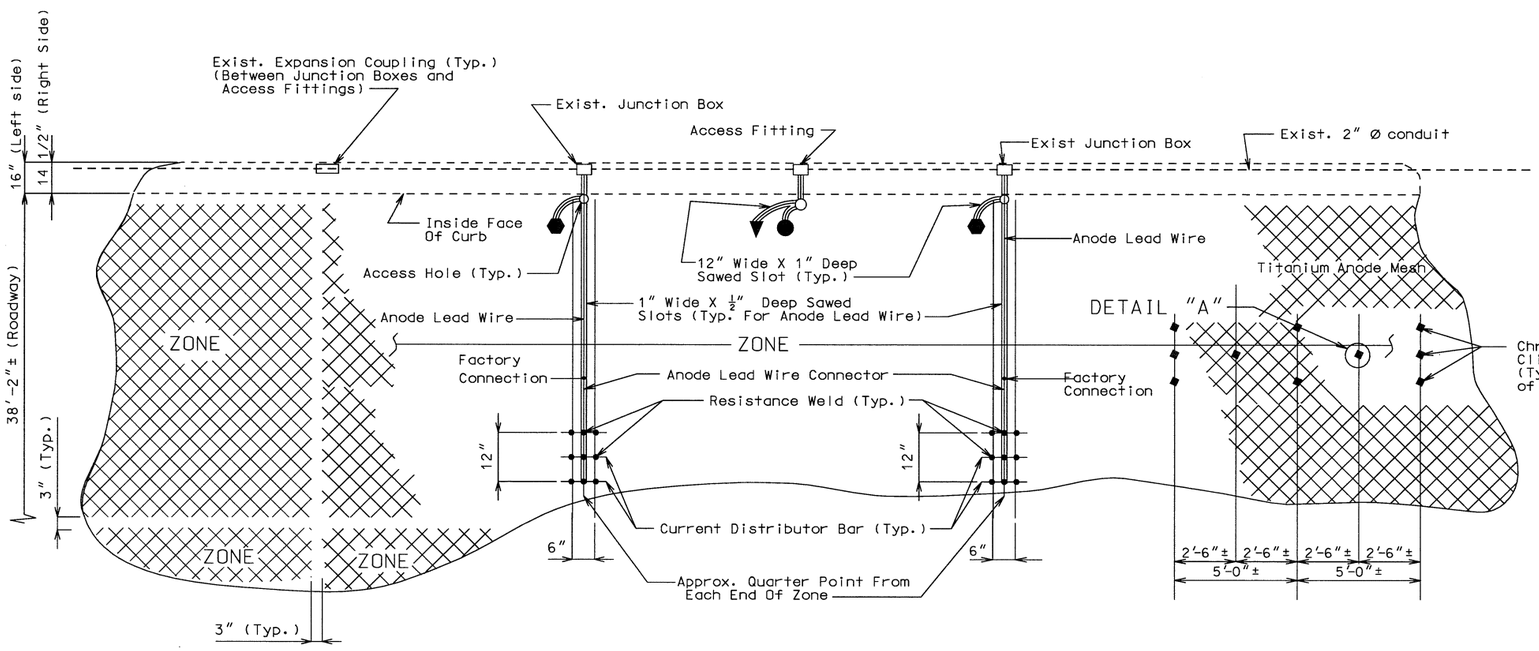
I CERTIFY THAT THIS PLAN SHEET ACCURATELY DEPICTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND ALL ITS APPURTENANT FEATURES, TO THE BEST OF MY KNOWLEDGE, AS I AND MY STAFF HAVE OBSERVED THE CONTRACTOR'S CONSTRUCTION OF THIS PROJECT. I SPECIFICALLY DISCLAIM ANY RESPONSIBILITY FOR THE DESIGN OF THIS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

SIGNATURE _____ DATE _____

State	Proj. No.	Sheet No.
MO	021213-402	B28

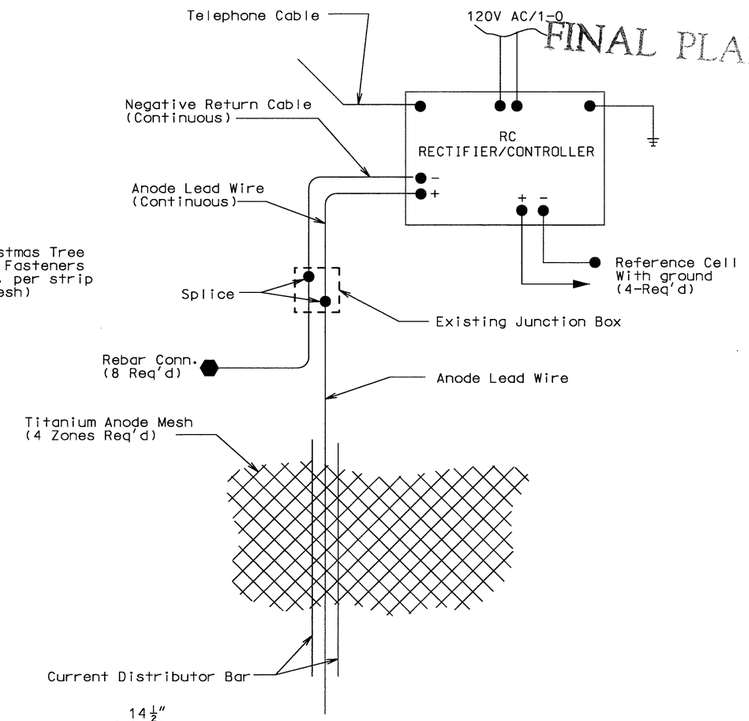
FEDERAL PROJECT# I-70-1(175)

FINAL PLANS

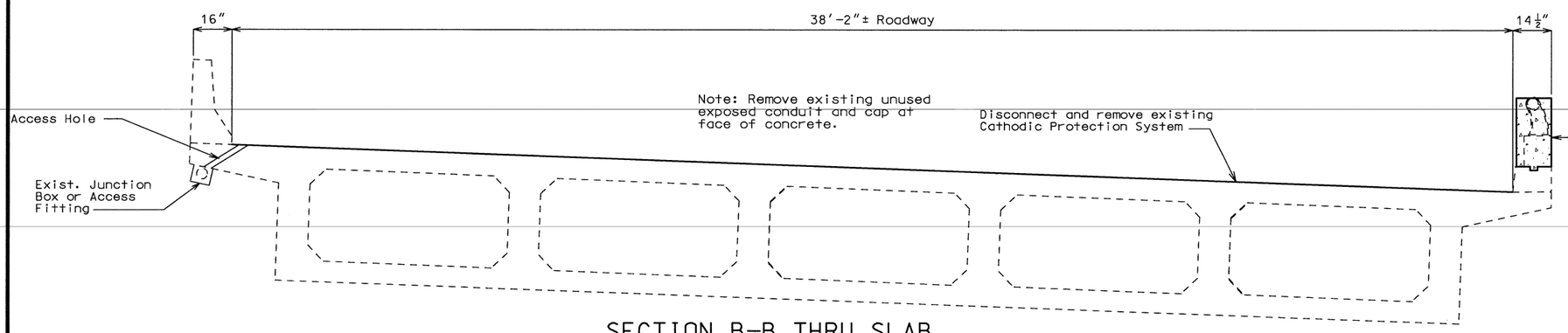


TYPICAL ZONE LAYOUT

Note: Use existing access holes, access fittings and junction boxes where acceptable as determined by the engineer.

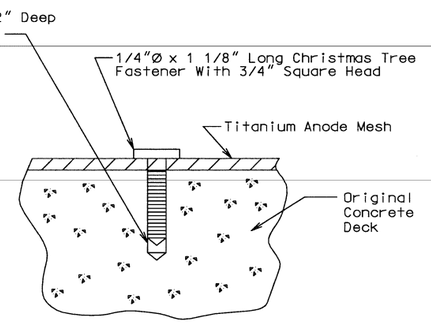


PARTIAL SCHEMATIC



SECTION B-B THRU SLAB

For Location of Section B-B, see Part Plan of Slab Showing Titanium Mesh Cathodic Protection System



DETAIL "A"

(Christmas Tree Clip)

FINAL PLANS

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SIGNATURE _____ DATE _____

Detailed Mar. 2002
Checked July 2002

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

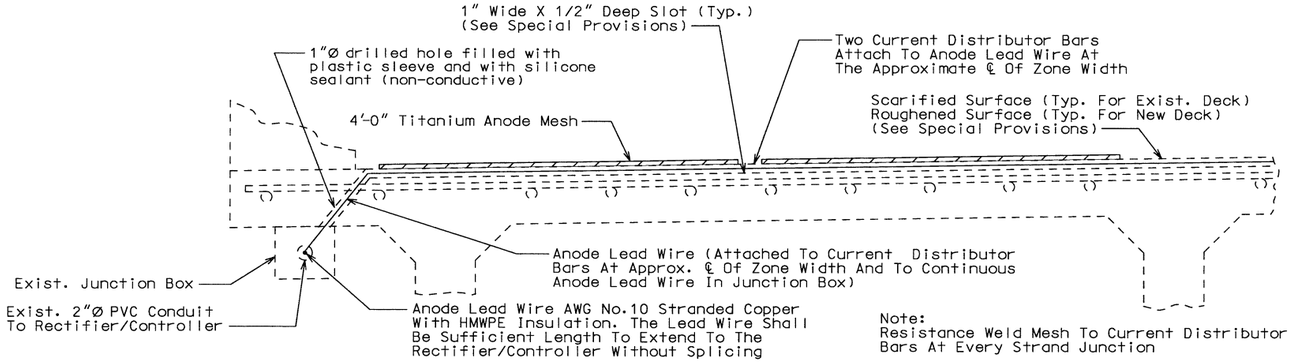
JACKSON COUNTY A02453 REV.

J:\$copeei\J411403 Bridge sheets\A02453\A02453_005_thru_8.dgn 10:56:40 AM 11/29/2004

State	Proj. No.	Sheet No.
MO	021213-402	B29

FEDERAL PROJECT# I-70-1(175)

FINAL PLANS



TITANIUM ANODE MESH DETAILS

Notes for New Conduit and Appurtenances (if required by Engineer):
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 (galvanized/AASHTO M111) at abt. 5'-0" cts. Concrete anchors for clamps shall meet federal specification FF-S-325, group II, type 4, class I and shall be galvanized in accordance with ASTM A-153, B695-91 class 50 Minimum embedment in concrete shall be 1¼". The supplier shall furnish a manufacturer's certification that the concrete anchors meet the required material and galvanizing specifications.

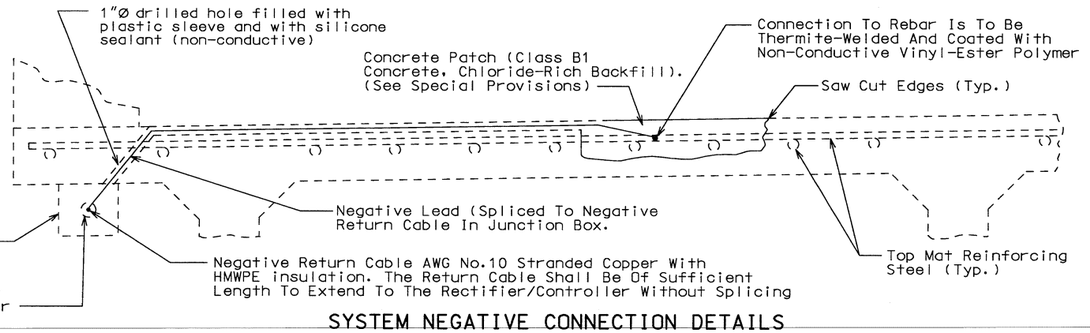
Weepholes shall be provided at appropriate locations to drain any moisture in the conduit lines.

Expansion couplings shall be installed on conduit lines between all junction boxes and access fittings as approved by the engineer.

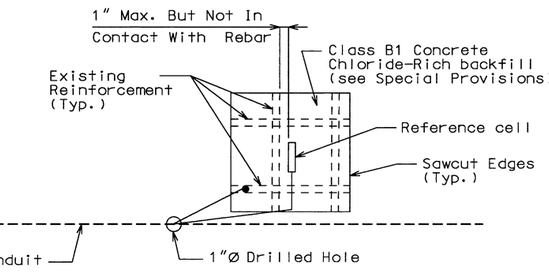
The location and direction of conduit may be shifted to meet field conditions as directed by the engineer.

All junction boxes shall be PVC molded, surface mounted, size 8" x 8" x 7" and equal to Carlon Electrical Construction products or Triangle Conduit and Cable company Inc.. The terminations shall be permanent or seperable.

The terminations and covers shall be of watertight construction.

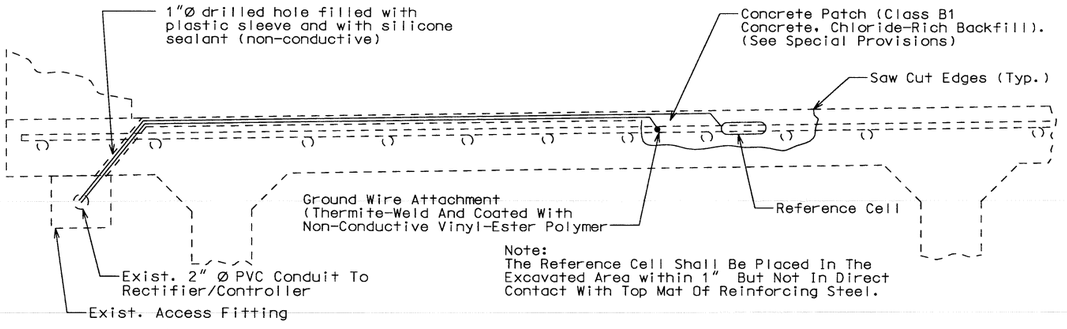


SYSTEM NEGATIVE CONNECTION DETAILS



PLAN OF REFERENCE CELL

Note: The ¾"Ø ground rod shall be of sufficient length to extend a minimum of 10'-0" below bottom of concrete pedestal. (Use existing if approved by the engineer).
Ground wire shall be AGW No.6 minimum (Use existing if approved by the engineer).
Drilled holes shall be provided in cabinets for all conduit. Locations of these holes are the responsibility of the contractor and cabinet manufacturer.



REFERENCE CELL DETAILS

Note:
All concrete removal shall be intiated by saw cutting the first 1/2".

FINAL PLANS

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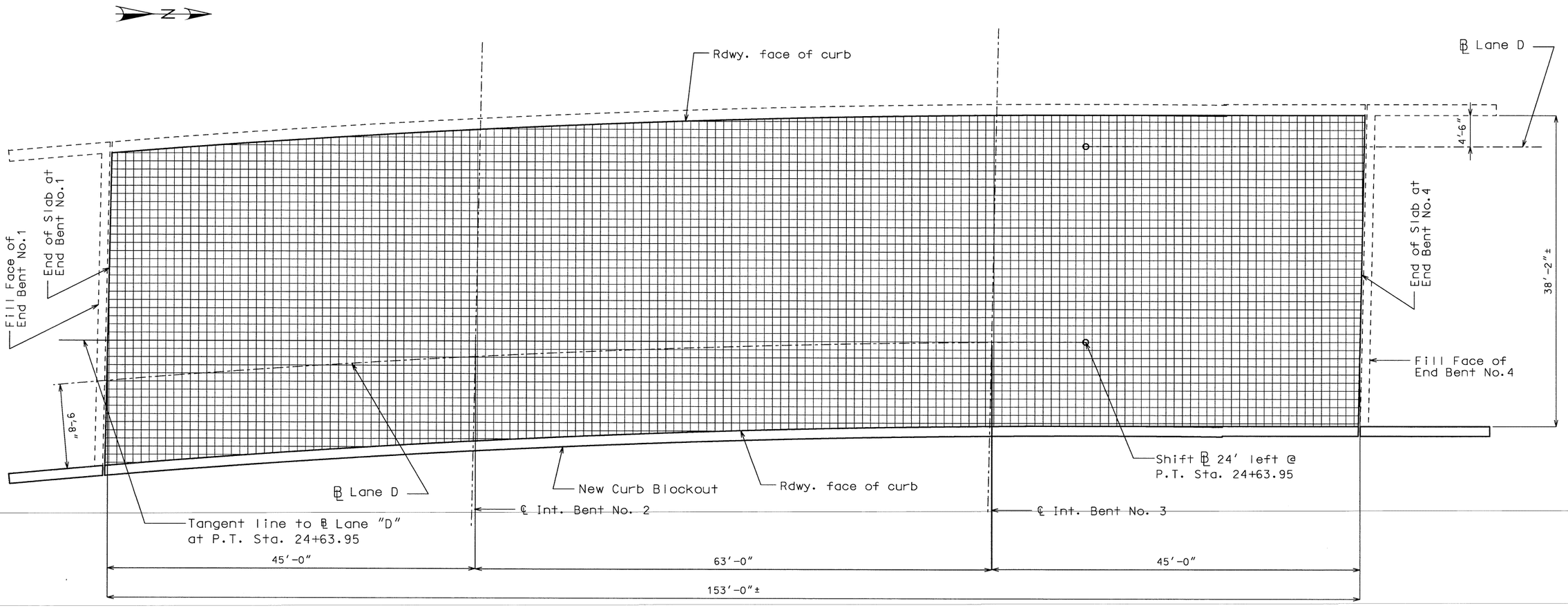
State	Proj. No.	Sheet No.
MO	021213-402	B30

FEDERAL PROJECT# I-70-1(175)

FINAL PLANS



PLAN OF CONCRETE DECK SHOWING GRID

(For location of deck repair and reference cells.)

Note: This sheet is to be completed by MoDOT construction personnel.

Note: Longitudinal dimensions are horizontal along tangent line to ℄ Lane "D" at P.T. Sta. 24+63.95

0 5' 10'

Scale

Note: Grid = Approx. 12" Squares

FINAL PLANS

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SIGNATURE DATE

Missouri Department of Transportation
Bridge Inventory and Inspection System
Structural Inventory & Appraisal Sheet

May 2, 2024
4:16:51pm

COUNTY : JACKSON **BRIDGE :** A0245 R1 **REVIEW STATUS :** APPROVED **NBI STATUS :** P
RECORD TYPE : ROUTE CARRIED 'ON' STRUCT **RUN DATE :** 3/7/2024 **SUBMITTAL YEAR :** 2023

GENERAL STRUCTURE INFORMATION

1	State	MISSOURI
2	District	KC
3	County	JACKSON
8	Federal ID No.	215
27	Year Built	1958
106	Year Reconstructed	1984
42A	Type of Service On	HIGHWAY
21	Structure Maintenance	STATE HIGHWAY AGENCY
22	Structure Owner	STATE HIGHWAY AGENCY
33	Br. Median Code	NO MEDIAN
37	Historical Significance	NOT ELIGIBLE FOR NR OF HP
101	Parallel Struc Desg	NONE EXISTS
103	Temporary Structure	NOT TEMPORARY
112	NBIS Bridge Length	YES

ROUTE DESIGNATION INFORMATION

5A	Record Type	ROUTE CARRIED 'ON' STRUCT
5B	Route Signing Prefix	IS
5C	Designated Level of Service	MAINLINE
5D	Route Number	00070
5E	Directional Suffix	NOT APPLICABLE
7	Facility Carried	IS 70 W
12	Base Hwy. Network	YES
13A	LRS Inventory Route No.	0000003506
13B	Subroute No.	00
20	Toll Status	ON FREE ROAD
26	Functional Classification	11-UR PRNCPL ARTERIAL-IS
28A	Lanes on Structure	01
100	STRAHNET Designation	ON A DEFENSE HWY
104	National Highway System	ON NHS
105	Federal Lands Highway	NOT APPLICABLE
110	Designated Nat. Network	YES

STRUCTURE LOCATION INFORMATION

4	Place	KANSAS CITY CITY
	Code	38000
9	Location	S 5 T 49 N R 33 W
11	Milepoint	247.03 miles
16	Latitude	39 D 5 M 58 S
17	Longitude	94 D 34 M 21 S

STRUCTURE TRAFFIC INFORMATION

29	AADT	18591
30	AADT Year	2023
102	Direction of Traffic	1-WAY TRAFFIC
109	AADT Truck Percent	15%
114	Future AADT	25098
115	Future AADT Year	2043

UNDERRECORD INFORMATION

6	Features Intersected	CST E 12TH ST
42B	Type of Service Under	HIGHWAY
28B	Lanes Under Structure	02
54A	Vert. Clearance Ref.	HIGHWAY
54B	Vert. Clearance	13 Ft. 9 In.
55A	Rt. Lat Clear Ref.	HIGHWAY
55B	Rt. Lat Clearance	12 Ft. 6 In.
56	Left Lat Clearance	0 Ft. 0 In.
38	Navigation Control	N/A
39	Nav Vertical Clear	0 Ft. 0 In.
40	Nav Horizontal Clear	0 Ft. 0 In.
111	Nav. Pier Protection	
116	Nav. Cl. Vert. Clear	

STRUCTURE GEOMETRIC INFORMATION

10	Inventory Rte. Vert. Clear	99 Ft. 99 In.
19	By pass Detour Length	0.62 miles
32	Approach Roadway Width	36 Ft. 1 In.
34	Skew	0.00 Degrees
35	Struct. Flared	NO
47	Total Horiz. Clear	36 Ft. 1 In.
48	Maximum Span Length	62 Ft. 12 In.
49	Structure Length	155 Ft. 10 In.
50A	Left Curb/Sidewalk Width	0 Ft. 0 In.
50B	Right Curb/Sidewalk Width	0 Ft. 0 In.
51	Curb to Curb Br. Width	36 Ft. 1 In.
52	Deck Width (Out-Out)	39 Ft. 8 In.
53	Vert.Clearance Over Deck	99 Ft. 99 In.

Design_No = A0245

Missouri Department of Transportation
Bridge Inventory and Inspection System
Structural Inventory & Appraisal Sheet

May 2, 2024
4:16:51pm

COUNTY : JACKSON **BRIDGE :** A0245 R1 **REVIEW STATUS :** APPROVED **NBI STATUS :** P
RECORD TYPE : ROUTE CARRIED 'ON' STRUCT **RUN DATE :** 3/7/2024 **SUBMITTAL YEAR :** 2023

LOAD RATING AND POSTING INFORMATION

31	Design Load	HS 20
41	Structure Status	A - OPEN NO RESTRICTIONS
63	Oper. Rating Meth.	LOAD FACTOR
64	Operating Rating	103 Tons.
65	Inventory Rating Meth	LOAD FACTOR
66	Inventory Rating	63 Tons.
70	Bridge Posting Code	=>LEGAL LOADS

PROPOSED IMPROVEMENT INFORMATION

	Sufficiency Rating	79.9 Percent
	Deficiency Rating	FUNCTIONAL
	Funding Eligibility	PARTIAL
75A	Proposed Work	REHAB-GENERAL DETERIORAT
75B	Work Done By	Contract
76	New Struc Length	0 Ft. 0 In.
94	Struc Improve Cost	$ 788,000
95	Roadway Improve Cost	$ 79,000
96	Total Project Cost	$ 1,182,000
97	Year of Cost Estimates	2024

APPRAISAL RATING INFORMATION

36A	Br. Rail App. Rating	MEETS ACCEPTBLE STND
36B	Transition Rail App. Rating	MEETS ACCEPTBLE STND
36C	Approach Rail App. Rating	MEETS ACCEPTBLE STND
36D	Rail End Treat. App. Rating	MEETS ACCEPTBLE STND
67	Struc Eval App. Rating	5
68	Deck Geometry App. Rating	4
69	Underclearance App. Rating	3
71	Waterway Adeq. App. Rating	N
72	Approach Road App. Rating	8
113	Scour Assess App. Rating	N

MATERIAL/CONSTRUCTION INFORMATION

43A	Main Struc. Mat type	CONCRETE CONTINUOUS
43B	Main struc Constr. Type	BOX BEAM OR GIRDERS- SING
45	# of Main Spans	3
44A	Appr Struc. Mat type	
44B	Appr Struc. Cnstr. type	
46	# of Approach Span	0
107	Deck Mat/Constr.	1 CONCRETE CIP
108A	Wear Surf Mat/Constr.	4 LOW SLUMP
108B	Membrane Mat/Constr.	0 NONE
108C	Deck Protect Mat/Constr.	0 NONE

CONDITION RATING INFORMATION

58	Deck Cond. Rating	6
59	Superstructure Cond. Rating	6
60	Substructure Cond. Rating	5
61	Channel /Channel Protection Cond. Rating	N
62	Culvert Cond. Rating	N

INSPECTION INFORMATION

90	Gen. Insp Date	9 / 23	
91	Gen. Insp. Frequency	24	Months
92A	Frac. Critical Inspection	N	Months
93A	Frac. Critical Insp. Date		
92B	Underwater Inspection	N	Months
93B	Underwater Insp. Date		
92C	Special Inspection	N	Months
93C	Special Inspection Date		

BORDER BRIDGE INFORMATION

98	Neighboring State Code
98B	Neighboring State % Respon
99	Neighboring State Struc. No.

APPROVED POSTING INFORMATION

Approved Posting Category S-1

Ton1 Ton2 Ton3

Tonnage Values for Posting Sign

General Text for Posting Sign

NO POSTING REQUIRED

FIELD POSTING INFORMATION

Field Posting Category S-1

Ton1 Ton2 Ton3

Tonnage Values for Posting Sign

General Text for Posting Sign

NO POSTING REQUIRED

Design_No = A0245

Missouri Department of Transportation
Bridge Inventory and Inspection System
Structural Inventory & Appraisal Sheet

May 2, 2024
4:16:51pm

COUNTY : JACKSON **BRIDGE :** A0245 R1 **REVIEW STATUS :** APPROVED **NBI STATUS :** P
RECORD TYPE : ROUTE 'UNDER' STRUCT **RUN DATE :** 3/7/2024 **SUBMITTAL YEAR :** 2023

GENERAL STRUCTURE INFORMATION

1	State	MISSOURI
2	District	KC
3	County	JACKSON
8	Federal ID No.	215
27	Year Built	1958
106	Year Reconstructed	0
42A	Type of Service On	HIGHWAY
21	Structure Maintenance	
22	Structure Owner	
33	Br. Median Code	
37	Historical Significance	
101	Parallel Struc Desg	NONE EXISTS
103	Temporary Structure	NOT TEMPORARY
112	NBIS Bridge Length	

ROUTE DESIGNATION INFORMATION

5A	Record Type	ROUTE 'UNDER' STRUCT	Code : 2
5B	Route Signing Prefix	CST	
5C	Designated Level of Service	MAINLINE	
5D	Route Number	00000	
5E	Directional Suffix	NOT APPLICABLE	
7	Facility Carried	IS 70 W	
12	Base Hwy. Network		
13A	LRS Inventory Route No.		
13B	Subroute No.		
20	Toll Status	ON FREE ROAD	
26	Functional Classification	17-URBAN COLLECTOR	
28A	Lanes on Structure	01	
100	STRAHNET Designation	RTE NOT A DEFENSE HWY	
104	National Highway System	NOT ON NHS	
105	Federal Lands Highway		
110	Designated Nat. Network	NO	

STRUCTURE LOCATION INFORMATION

4	Place	KANSAS CITY CITY
	Code	38000
9	Location	S 5 T 49 N R 33 W
11	Milepoint	0.57 miles
16	Latitude	39 D 5 M 58 S
17	Longitude	94 D 34 M 21 S

STRUCTURE TRAFFIC INFORMATION

29	AADT	1905
30	AADT Year	2023
102	Direction of Traffic	1-WAY TRAFFIC
109	AADT Truck Percent	5%
114	Future AADT	
115	Future AADT Year	

UNDERRECORD INFORMATION

6	Features Intersected	CST E 12TH ST
42B	Type of Service Under	HIGHWAY
28B	Lanes Under Structure	02
54A	Vert. Clearance Ref.	
54B	Vert. Clearance	
55A	Rt. Lat Clear Ref.	
55B	Rt. Lat Clearance	
56	Left Lat Clearance	
38	Navigation Control	
39	Nav Vertical Clear	
40	Nav Horizontal Clear	
111	Nav. Pier Protection	
116	Nav. Cl. Vert. Clear	

STRUCTURE GEOMETRIC INFORMATION

10	Inventory Rte. Vert. Clear	13 Ft. 9 In.
19	By pass Detour Length	0.00 miles
32	Approach Roadway Width	
34	Skew	
35	Struct. Flared	
47	Total Horiz. Clear	14 Ft. 1 In.
48	Maximum Span Length	62 Ft. 12 In.
49	Structure Length	155 Ft. 10 In.
50A	Left Curb/Sidewalk Width	
50B	Right Curb/Sidewalk Width	
51	Curb to Curb Br. Width	
52	Deck Width (Out-Out)	
53	Vert.Clearance Over Deck	

Design_No = A0245

Missouri Department of Transportation
Bridge Inventory and Inspection System
Structural Inventory & Appraisal Sheet

May 2, 2024
4:16:51pm

COUNTY :	**JACKSON**	**BRIDGE :**	**A0245 R1**	**REVIEW STATUS :**	**APPROVED**	**NBI STATUS :**	**P**
RECORD TYPE :	**ROUTE 'UNDER' STRUCT**			**RUN DATE :**	**3/7/2024**	**SUBMITTAL YEAR :**	**2023**

LOAD RATING AND POSTING INFORMATION

31	Design Load
41	Structure Status
63	Oper. Rating Meth.
64	Operating Rating
65	Inventory Rating Meth
66	Inventory Rating
70	Bridge Posting Code

PROPOSED IMPROVEMENT INFORMATION

	Sufficiency Rating
	Deficiency Rating
	Funding Eligibility
75A	Proposed Work
75B	Work Done By
76	New Struc Length
94	Struc Improve Cost
95	Roadway Improve Cost
96	Total Project Cost
97	Year of Cost Estimates

APPRAISAL RATING INFORMATION

36A	Br. Rail App. Rating
36B	Transition Rail App. Rating
36C	Approach Rail App. Rating
36D	Rail End Treat. App. Rating
67	Struc Eval App. Rating
68	Deck Geometry App. Rating
69	Underclearance App. Rating
71	Waterway Adeq. App. Rating
72	Approach Road App. Rating
113	Scour Assess App. Rating

MATERIAL/CONSTRUCTION INFORMATION

43A	Main Struc. Mat type	CONCRETE CONTINUOUS
43B	Main struc Constr. Type	BOX BEAM OR GIRDERS- SING
45	# of Main Spans	
44A	Appr Struc. Mat type	
44B	Appr Struc. Cnstr. type	
46	# of Approach Span	
107	Deck Mat/Constr.	
108A	Wear Surf Mat/Constr.	
108B	Membrane Mat/Constr.	
108C	Deck Protect Mat/Constr.	

CONDITION RATING INFORMATION

58	Deck Cond. Rating
59	Superstructure Cond. Rating
60	Substructure Cond. Rating
61	Channel /Channel Protection Cond. Rating
62	Culvert Cond. Rating

INSPECTION INFORMATION

90	Gen. Insp Date
91	Gen. Insp. Frequency
92A	Frac. Critical Inspection
93A	Frac. Critical Insp. Date
92B	Underwater Inspection
93B	Underwater Insp. Date
92C	Special Inspection
93C	Special Inspection Date

BORDER BRIDGE INFORMATION

98	Neighboring State Code
98B	Neighboring State % Respon
99	Neighboring State Struc. No.

APPROVED POSTING INFORMATION

Approved Posting Category

Ton1 Ton2 Ton3

Tonnage Values for Posting Sign

General Text for Posting Sign

FIELD POSTING INFORMATION

Field Posting Category

Ton1 Ton2 Ton3

Tonnage Values for Posting Sign

General Text for Posting Sign

Design_No = A0245