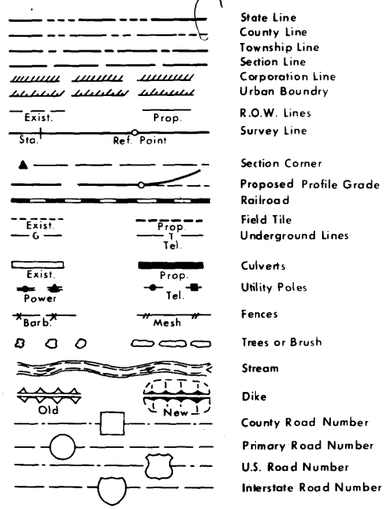
LETTING DATE JUNE 24, 1986

A.C.C. RESURFACING AND

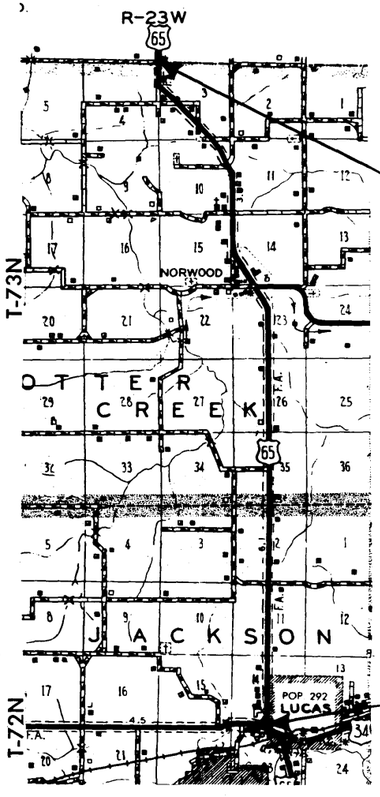
FN-65-2(5)--21-59

LUCAS COUNTY

CONVENTIONAL SIGNS



State Line
County Line
Township Line
Section Line
Corporation Line
Urban Boundry
R.O.W. Lines
Survey Line
Section Corner
Proposed Profile Grade
Railroad
Field Tile
Underground Lines
Culverts
Utility Poles
Fences
Trees or Brush
Stream
Dike
County Road Number
Primary Road Number
U.S. Road Number
Interstate Road Number



LOCATION MAP SCALE
0 1 2 3
Miles

Lucas 63.00

086 SJK

IOWA
DEPARTMENT OF TRANSPORTATION
Highway Division

PLANS OF PROPOSED IMPROVEMENTS ON THE

PRIMARY ROAD SYSTEM
LUCAS COUNTY
A.C.C. RESURFACING

ON U.S. 65 FROM THE WEST JUNCTION OF U.S. 65 AND U.S. 34 NORTH TO THE WARREN COUNTY LINE

The standard specifications, series of 1984 of the Iowa Department of Transportation, shall apply to construction work on this project.

STATE	FHWA Region	F.Y.	SHEET	TOTAL
IOWA	7		1	8

PROJECT NUMBER
FN-65-2(5)--21-59

R.O.W. PROJECT NUMBER

PIN NUMBER
85-59030-1

INDEX OF SHEETS 105-3, 5-3-85

NO.	DESCRIPTION
1	TITLE SHEET
2	TYPICAL CROSS SECTIONS
3A-E	ESTIMATE OF PROJECT QUANTITIES & GENERAL INFORMATION
4	DETAIL OF INTERSECTION U.S. 34 & U.S. 65
5-6	DETAIL OF CAST IN PLACE BARRIER RAILS
7-8	DETAIL SHEET 530-3 & 560-2
3-F	CORNER STONES & POINT TIES
3GH	POINT TIES

MILEAGE SUMMARY 105-1, 8-20-85

DIV.	LOCATION	LIN. FT.	MILES	STATE CONTROL SECTION NO.
1	RURAL LUCAS CO. (U.S. 65) STA. 4+82.00 TO STA. 515+31.60	51049.6		
	EQUATION: STA. 95+93.17 = STA. 95+91.40 (LENGTHENS LINE)	1.77		
	NET LENGTH DIV. 1	51051.37	9.669	59-0800
2	RURAL CLARK CO. (U.S. 34) STA. 542+62.50 TO STA. 556+62.50	1400.00		
	NET LENGTH DIV. 2	1400.00	.265	20-0200
	TOTAL NET LENGTH PROJECT	52451.37	9.934	

STANDARD ROAD PLANS 105-4, 6-17-77

The following Standard Road Plans shall be considered applicable to construction work on this project.

IDENT	DATE	IDENT	DATE	IDENT	DATE
RA-5	3-30-73	RA-27	8-6-82	RE-33	5-13-86
RE-2A	11-5-85	RE-12A	5-13-86	RE-47	8-20-85
RE-48A	8-20-85	RE-48B	8-20-85	RE-41	11-5-85
RE-52	5-13-86	RE-55	5-13-86	RE-57	11-5-85
RF-19C	5-13-86	RF-19D	5-13-86	RG-2	3-16-79
RL-11	5-13-86	RS-2	8-2-85	RS-3	8-20-85
RS-4	8-20-85	RS-63A	5-13-86		
		RS-62	11-5-85		

CONSTRUCTION PLANS SHOWING PROJECT AS BUILT

Plan Preparation Supervised By: R.D. CHAPMAN Resident Construction Engineer

Date _____ Iowa Reg. No. 4471

REVIEWED AND FORWARDED TO AMES

PETE TOLLENAERE Date 2-4-91
District Construction Engineer

One 50% Reduced [redacted] Prints To Be Made and Returned To

ROBERT F. PERCIVAL
District Engineer

AFTER MICROFILMING RETURN ORIGINAL TO DISTRICT NO. 5

150

THIS AS BUILT PLAN INCLUDES

YEAR	WORK	CONTRACTOR	PROJ. INSPECTOR
1986	A.C.C. RESURFACING	NORRIS	D.V. EXLEY

MICROFILMED
DATE 5-23-91

REVISIONS

Iowa Department of Transportation
Highway Division
AUTHORIZED FOR LETTING
D. W. Anderson 5-9-86
DEPUTY CHIEF ENGINEER DATE

AADT 1540 V.P.D.

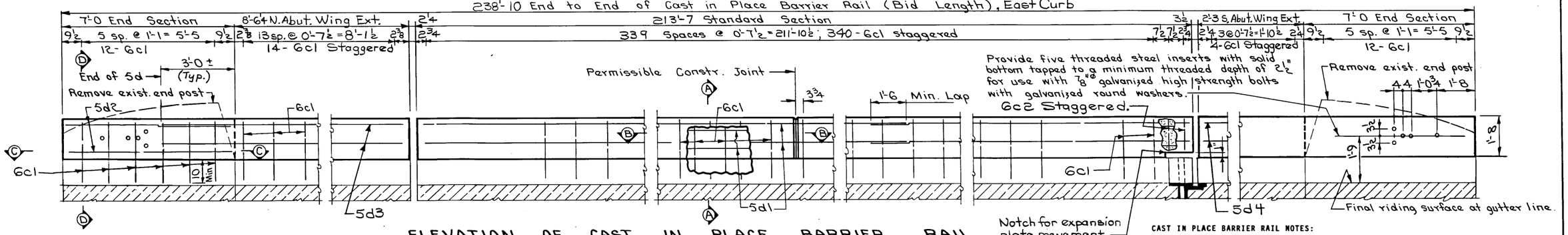
Hugo J. Sisson
ROAD DESIGN ENGINEER DATE 5-01-86

REGISTERED PROFESSIONAL ENGINEER JOHN R. ABRAMS 7229 IOWA

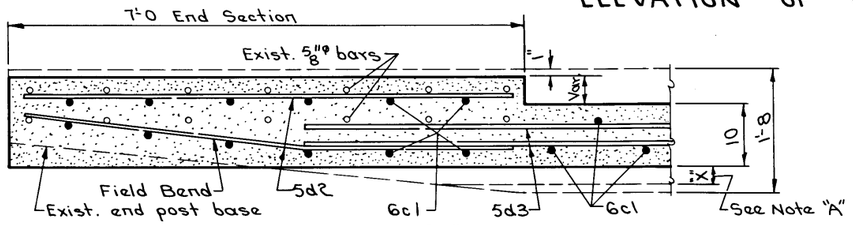
I hereby certify that this plan was prepared under my supervision and that engineering decisions with regard to the design were made by me or by other duly Registered Professional Engineers under the laws of the State of Iowa.
Name John R. Abrams
Iowa Registration No. 7229 Date 5/1/86

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED

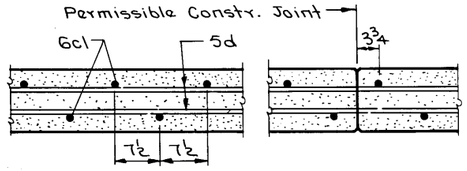
FOR THE DIVISION ADMINISTRATOR DATE



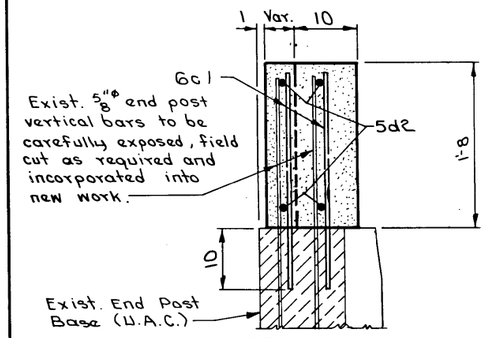
ELEVATION OF CAST IN PLACE BARRIER RAIL (LOOKING EAST)



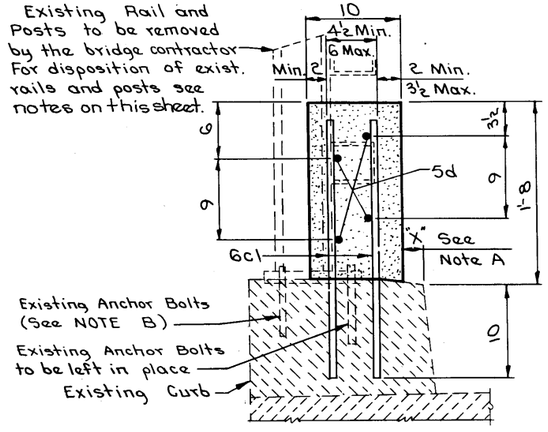
SECTION C-C



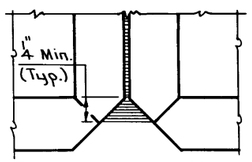
SECTION B-B



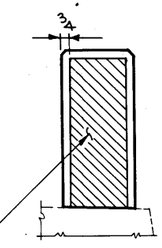
SECTION D-D

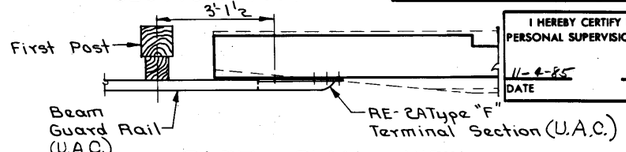


SECTION A-A

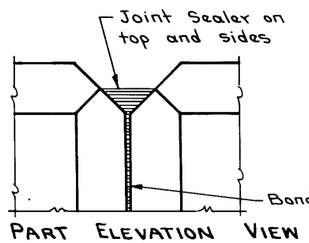


PART PLAN VIEW



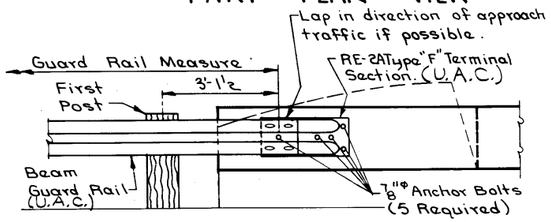


PART PLAN VIEW



PART ELEVATION VIEW

CAST IN PLACE BARRIER RAIL JOINT DETAILS



PART ELEVATION VIEW

(Showing beam guard rail attachment to RE-2A Type "F" Terminal Section)

EPOXY REINFORCING STEEL - EAST RAIL

Bar	Location	Shape	No	Length	Weight
6c1	Rail, Vertical	——	382	2'-4	1339
6c2	Rail, Vert. @ Exp. Plate	——	2	1'-2	4
5d1	Standard Section, Longit.	——	24	36'-10	922
5d2	End Section, Longit.	——	8	6'-8	56
5d3	Wing Extension, N. Abut.	——	4	11'-4	47
5d4	Wing Extension, S. Abut.	——	4	5'-1	21
				Total (Lbs.)	2389

CONCRETE PLACEMENT SUMMARY

Section	Total
End Sections 2 @ 0.5 C.Y. per section	1.0
Standard Section 213.6 L.F. @ 0.05 C.Y. / lin. ft.	10.7
Wing Extensions 10.8 L.F. @ 0.05 cy. / lin. ft.	0.5
EAST RAIL Total (Cu. Yd.)	12.2

ESTIMATED QUANTITY - TWO RAILS

Item	Unit	Quantity
Rail, Concrete Barrier (Cast In Place)	L.F.	478.3
Removal Of Existing Handrail	L.S.	Lump Sum

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA

11-6-85 DATE — LeRoy Phillips — LE ROY PHILLIPS — REG. NO. 4138

NOTE A:
ON EACH SIDE OF BRIDGE, DIMENSION "X" SHALL BE A MINIMUM OF 1" AND A MAXIMUM OF 3", BUT MUST BE CONSTANT FOR FULL LENGTH OF BRIDGE, HOWEVER APPROXIMATELY 10 LINEAR FEET AT EITHER END OF RAIL LENGTH SHALL BE TRANSITIONED TO MATCH BEAM GUARD RAIL ATTACHMENT.

NOTE B:
EXISTING ANCHOR BOLTS SHALL BE CUT OFF FLUSH WITH OR SLIGHTLY BELOW CONCRETE SURFACE AND THE REMAINING EXPOSED ENDS PAINTED WITH TWO COATS OF ZINC RICH PAINT. IF THE EXISTING ANCHOR BOLTS ARE STAINLESS STEEL THEY MAY BE LEFT IN POSITION AT THE CONTRACTOR'S OPTION SUBJECT TO THE APPROVAL OF THE ENGINEER.

CAST IN PLACE BARRIER RAIL NOTES:

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

THE PERMISSIBLE CONSTRUCTION JOINTS ARE TO BE PLACED BETWEEN VERTICAL BARS AT A MINIMUM SPACING OF 20 FEET. CONSTRUCTION JOINT CONTACT SURFACES ARE TO BE COATED WITH AN APPROVED BOND BREAKER.

COST OF JOINT SEALER AND BOND BREAKER SHALL BE CONSIDERED INCIDENTAL TO OTHER CONSTRUCTION.

THE CAST IN PLACE BARRIER RAIL IS TO BE BID ON A LINEAL FOOT BASIS MEASURED FROM END TO END OF RAIL. THE NUMBER OF LINEAL FEET OF CAST IN PLACE BARRIER RAIL INSTALLED WILL BE PAID FOR AT THE CONTRACT PRICE PER LINEAL FOOT BASED ON PLAN QUANTITIES. PRICE BID FOR CAST IN PLACE BARRIER RAIL SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, INCLUDING REINFORCING STEEL, AND ALL OF THE EQUIPMENT AND LABOR REQUIRED TO ERECT THE RAIL IN ACCORDANCE WITH THESE PLANS AND CURRENT SPECIFICATIONS.

ALL CAST IN PLACE BARRIER RAIL CONCRETE IS TO BE CLASS D.

THE JOINT SEALER SHALL CONFORM TO FED. SPEC. TT-S00230 OR TT-S00227 FOR TYPE II, CLASS A OR B.

ALL REINFORCING IS TO BE EPOXY COATED. THE EPOXY COATING SHALL BE IN ACCORDANCE WITH CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS OF THE IOWA D.O.T. HIGHWAY DIVISION.

ANCHOR BOLTS SHALL CONFORM TO REQUIREMENTS OF ASTM A325 OR A449 AND SHALL BE GALVANIZED IN COMPLIANCE WITH ASTM A-153. ANCHOR BOLTS SHALL BE INSTALLED IN THREADED STEEL INSERTS HELD IN PROPER POSITION BY USE OF AN ASSEMBLY SET IN THE CONCRETE AND ALLOWING A MINIMUM EMBEDMENT OF 2 1/2" FOR THE ANCHOR BOLTS. THE COMPONENTS AND PROCEDURE SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

THE COST OF THE THREADED STEEL INSERTS AND ANCHOR BOLTS SHALL BE INCLUDED IN PRICE BID FOR "CAST IN PLACE BARRIER RAIL".

DOWEL SETTING NOTE

THE 6C1 BARS SHALL BE SET AS DOWELS IN DRILLED HOLES. HOLES ARE TO BE 10" DEEP. THE DOWELS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ONE OF THE TWO FOLLOWING SYSTEMS SHALL BE USED AS A BONDING AGENT FOR THE DOWELS.

A. EPOXY GROUT SYSTEM IN ACCORDANCE WITH STANDARD SPECIFICATIONS ARTICLE 2301.15 AND CURRENT SUPPLEMENTAL SPECIFICATIONS OF THE IOWA D.O.T. HIGHWAY DIVISION.

B. HYDRAULIC CEMENT GROUT SYSTEMS. DRILLED HOLES ARE TO BE 2 1/2 TIMES THE DOWEL DIAMETER AND ARE TO BE BLOWN CLEAN WITH COMPRESSED AIR IMMEDIATELY PRIOR TO PLACING GROUT. THE HYDRAULIC CEMENT GROUT SHALL BE IN ONE OF THOSE APPROVED IN MATERIALS I.M. 491.13 AND SHALL BE USED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

THE COST OF REMOVAL OF THE EXISTING END POSTS AND THE CUTTING OFF AND PAINTING OF THE EXISTING RAIL POST ANCHOR BOLTS, IF REQUIRED, SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE PLACEMENT OF THE CAST IN PLACE BARRIER RAIL.

THE COST OF REMOVING HANDRAILS SHALL BE INCLUDED IN THE BID ITEM "REMOVAL OF EXISTING HANDRAIL". HANDRAILS ARE TO BECOME PROPERTY OF THE CONTRACTOR.

BRIDGE MAINTENANCE # 5932.38034

Design For Retrofit Rail To
210'-0 x 48' CONTINUOUS I-BEAM BRIDGE
64'-0 End Spans 82'-0 Interior Span

CAST IN PLACE BARRIER RAIL DETAILS (EAST RAIL)

Station: 807+91.955 On Iowa №34 Nov. 1985
LUCAS COUNTY
IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION

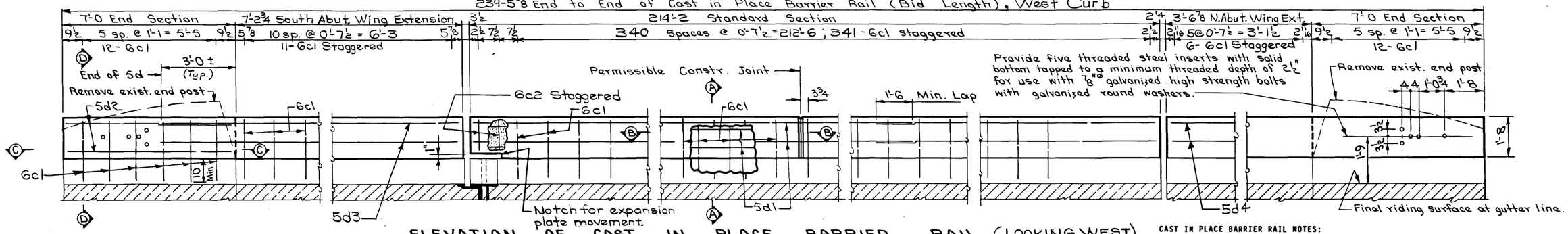
Design Sheet No.: 1 Of 2 File No.: 27271 Design No.: 386

DESIGNED BY: Ray Gustafson DETAILED BY: Otis Twedt, Jr. TRACED BY: CHECKED BY: L. Phillips

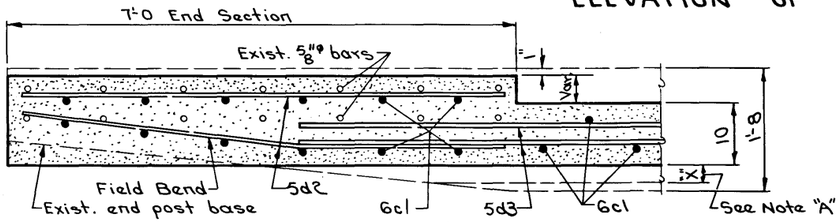
Cast In Place Barrier Rail | Standard Sheet 1031 A | DKS 11/11/85 | LUCAS COUNTY

PROJECT NUMBER	STATE	FHWA Region	FISCAL YEAR	SHEET NO	TOTAL SHEETS
FN-65-2(5)--21-59	IOWA	7		6	8

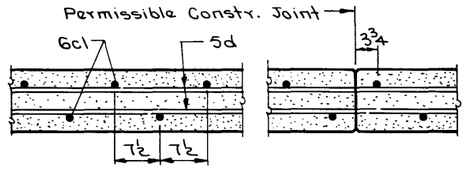
DRAWING #4 131 6572/9 BRIDGE WORK SHEET 880 31MM



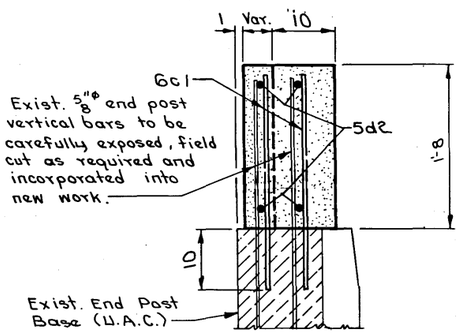
ELEVATION OF CAST IN PLACE BARRIER RAIL (LOOKING WEST)



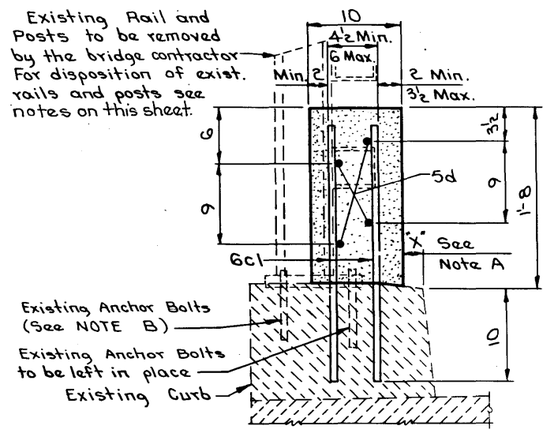
SECTION C-C



SECTION B-B



SECTION D-D



SECTION A-A

EPOXY REINFORCING STEEL - WEST RAIL					
Bar	Location	Shape	No	Length	Weight
6c1	Rail, Vertical	——	382	2'-4	1339
6c2	Rail, Vert. At Expansion Pt.	——	2	1'-2	4
5d1	Standard Section, Longit.	——	24	36'-11	924
5d2	End Section, Longit.	——	8	6'-8	56
5d3	Wing Extension, S. Abut.	——	4	10'-0	42
5d4	Wing Extension, N. Abut.	——	4	6'-4	26
				Total (Lbs.)	2391

CONCRETE PLACEMENT SUMMARY	
Section	Total
End Sections 2 @ 0.5 C.Y. per section	1.0
Standard Section 214.2 L.F. @ 0.05 C.Y./lin.ft.	10.7
Wing Extensions 10.8 L.F. @ 0.05 c.y./lin.ft.	0.5
WEST RAIL Total (Cu.Yd.)	12.2

CAST IN PLACE BARRIER RAIL NOTES:

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

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COST OF JOINT SEALER AND BOND BREAKER SHALL BE CONSIDERED INCIDENTAL TO OTHER CONSTRUCTION.

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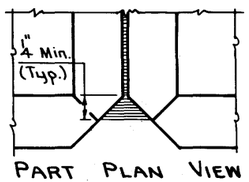
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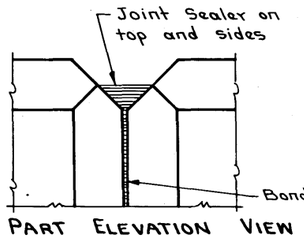
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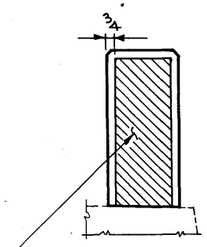
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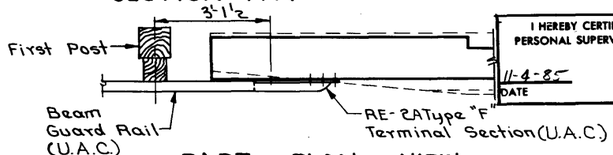


PART PLAN VIEW

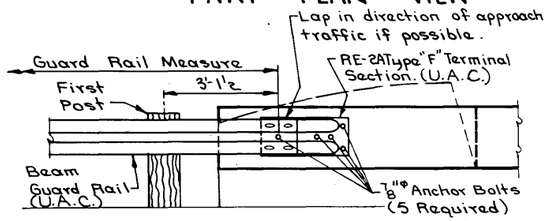


PART ELEVATION VIEW





PART PLAN VIEW



PART ELEVATION VIEW

(Showing beam guard rail attachment to RE-2A Type "F" Terminal Section)

CAST IN PLACE BARRIER RAIL JOINT DETAILS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA

11-4-85 DATE — LeRoy Phillips (LE ROY PHILLIPS) — REG. NO. 4138

NOTE A:

ON EACH SIDE OF BRIDGE, DIMENSION "X" SHALL BE A MINIMUM OF 1" AND A MAXIMUM OF 3", BUT MUST BE CONSTANT FOR FULL LENGTH OF BRIDGE, HOWEVER APPROXIMATELY 10 LINEAR FEET AT EITHER END OF RAIL LENGTH SHALL BE TRANSITIONED TO MATCH BEAM GUARD RAIL ATTACHMENT.

NOTE B:

EXISTING ANCHOR BOLTS SHALL BE CUT OFF FLUSH WITH OR SLIGHTLY BELOW CONCRETE SURFACE AND THE REMAINING EXPOSED ENDS PAINTED WITH TWO COATS OF ZINC RICH PAINT. IF THE EXISTING ANCHOR BOLTS ARE STAINLESS STEEL THEY MAY BE LEFT IN POSITION AT THE CONTRACTOR'S OPTION SUBJECT TO THE APPROVAL OF THE ENGINEER.

BRIDGE MAINTENANCE # 5932.38 034

Design For Retrofit Rail To
210'-0 x 48' CONTINUOUS I-BEAM BRIDGE
64'-0 End Spans 82'-0 Interior Span
CAST IN PLACE BARRIER RAIL DETAILS (WEST RAIL)
Station: 807+91.955 On Iowa №34 Nov. 1985
LUCAS COUNTY
IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION
Design Sheet No.: 2 Of 2 File No.: 2727(Design No.: 386

DESIGNED BY: Ray Gustafson DETAILED BY: Otis Twedt, Jr. TRACED BY: CHECKED BY: L. Phillips

Cast In Place Barrier Rail | Standard Sheet 1031A | LUCAS COUNTY

PROJECT NUMBER	STATE	FHWA Region	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
FN-65-2(5)--21-59	IOWA	7		5	8

BRUNING 44-131 65219 BRIDGE WORK SHEET 80 31668