

PROJECT NUMBER
IR-35-1(61)13--12-27
R.O.W. PROJECT NUMBER
PIN NUMBER
90-27040-2

INDEX OF SHEETS		105-3
		07-21-87
NO.	DESCRIPTION	
1	TITLE PAGE	
2A-C	ESTIMATE OF QUANTITIES, TABULATIONS & GENERAL INFO.	
3A-E	PLAN SHEETS OF GUARDRAIL LOCATIONS	
4A-K	CAST-IN-PLACE BARRIER RAIL DETAIL SHEETS	
5A-I	DETAIL SHEETS	

THIS AS BUILT PLAN INCLUDES			
YEAR	WORK	CONTRACTOR	PROJ. INSPECTOR
1991	Misc. (Guardrail)	Schmidt Cons.	C. Griswold

STANDARD ROAD PLANS						105-4
						06-17-77
The following Standard Road Plans shall be considered applicable to construction work on this project.						
NUMBER	DATE	NUMBER	DATE	NUMBER	DATE	
RC-16	10-02-90	RE-52	08-08-89	RS-2	10-11-88	
RE-2A	02-17-87	RE-53	01-11-89	RS-3	11-15-88	
RE-2B	10-02-90	RE-65	01-09-90			
RE-7	10-02-90	RE-67	01-09-90	RS-62	10-11-88	
RE-12A	10-11-88	RE-68	08-08-89	RS-63A	08-08-89	
RE-12B	01-09-90	RE-69	08-08-89	RS-63B	08-08-89	
RE-47	11-10-87			RS-65A	11-15-88	
RE-48A	02-20-85	RL-11	10-11-88			
RE-48B	08-20-8	RL-12	04-04-89			

* 125 *

REVISIONS

Iowa Department of Transportation
Highway Division
AUTHORIZED FOR LETTING
George F. Sisson 10-15-90
DEPUTY CHIEF ENGINEER DATE

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 10/04/90

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED
FOR THE DIVISION ADMINISTRATOR DATE

IOWA
DEPARTMENT OF TRANSPORTATION
Highway Division
PLANS OF PROPOSED IMPROVEMENTS ON THE
INTERSTATE ROAD SYSTEM
DECATUR-CLARKE COUNTY
MISC. (GUARDRAIL)
ON I-35 FROM IA. 2 INTERCHANGE NORTH TO U.S. 34 INTERCHANGE

SCALES: As Noted

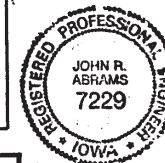
The Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, series of 1984, plus current Supplemental Specifications and Special Provisions shall apply to construction work on this project.

MILEAGE SUMMARY					105-1
					08-20-85
DIV.	LOCATION	LIN. FT.	MILES	STATE CONTROL SECTION NO.	
1	NORTHBOUND - DECATUR CO. STA. 830+00 TO STA. 883+00	5 300	1.00	27-0900	
	STA. 942+00 TO STA. 986+00	4 400	.83		
	STA. 1060+00 TO STA. 1120+00	6 000	1.14		
	STA. 1197+25 TO STA. 1268+75	7 150	1.35		
	STA. 1306+00 TO STA. 1381+00	7 500	1.42		
	NORTHBOUND - CLARKE CO. STA. 90+00 TO STA. 206+00	11 600	2.20	20-0400	
	STA. 259+00 TO STA. 403+00	14 400	2.73		
	EQ. STA. 351+11.8 = STA. 351+21.9 (Deduct)	-10.1			
	BRIDGE STA. 400+70.9 TO STA. 402+17.2	-146.2	.03		
	NET N.B. LENGTH	56 193.7	10.64		
	SOUTHBOUND - DECATUR CO. STA. 854+60 TO STA. 1060+00	20 540	3.89	27-0900	
	STA. 1182+25 TO STA. 1240+75	5 850	1.11		
	SOUTHBOUND - CLARKE CO. STA. 78+50 TO STA. 127+00	4 850	.92		
	STA. 250+00 TO STA. 314+93.9	6 494	1.23		
	EQ. STA. 314+93.9 BACK = 1314+93.9	9 077.8	1.72		
	EQ. STA. 1405+71.7 BACK = STA. 404+23.5	5 576.5	1.06	20-0400	
	404+23.5 TO 460+00	-142.2	.03		
	BRIDGE STA. 1401+76.8 TO 1403+19.1 (Deduct)				
	NET S.B. LENGTH	52 246.1	9.89		
	TOTAL PROJECT LENGTH	108 440	20.53		

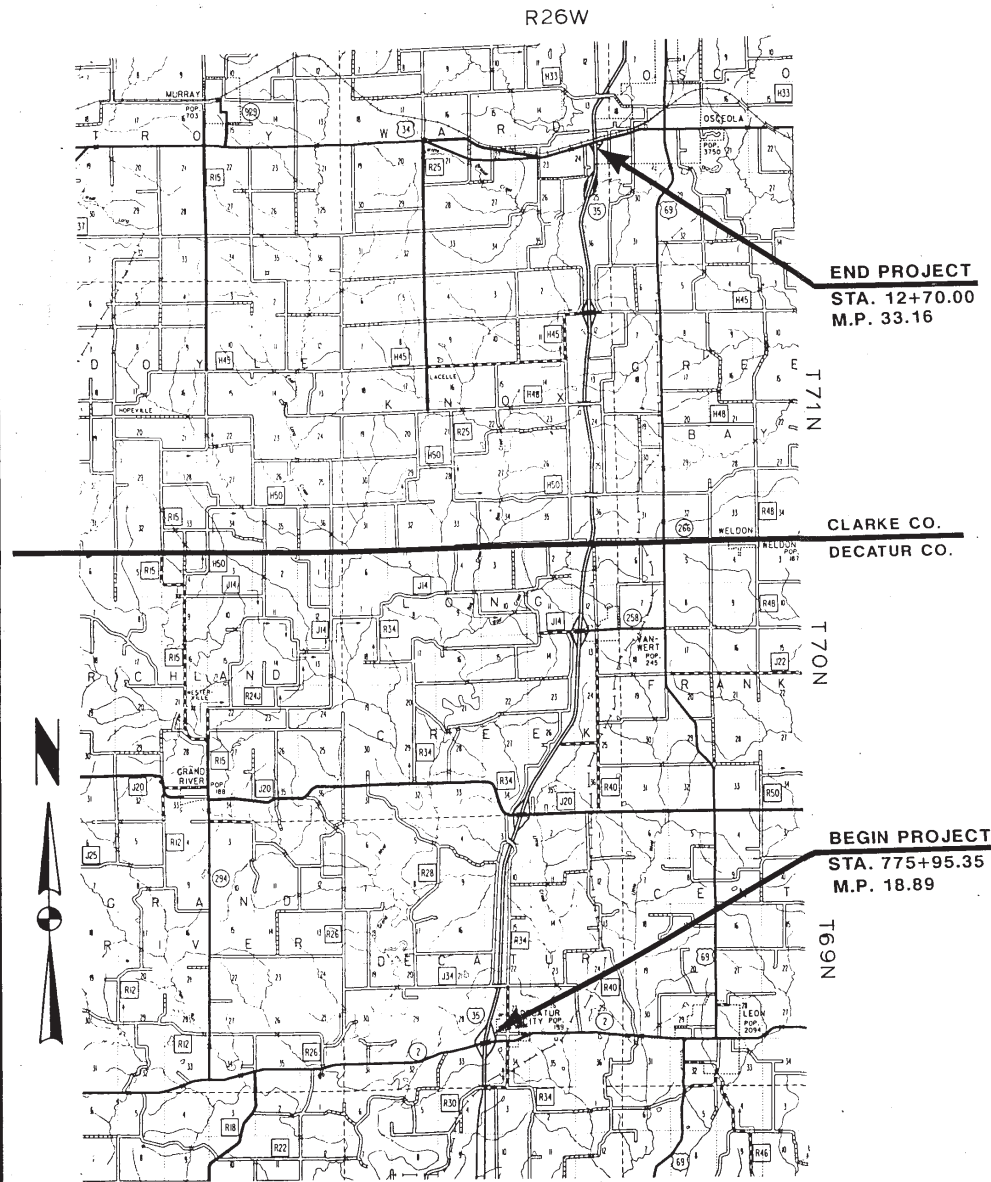
101-4
DESIGN DATA RURAL
1990 AADT 7245 V.P.D.
20 AADT V.P.D.
20 DHV V.P.H.
TRUCKS 34 %
SERVICE LEVEL "A"

Donald L. East
ROAD DESIGN ENGINEER DATE OCT 05 1990

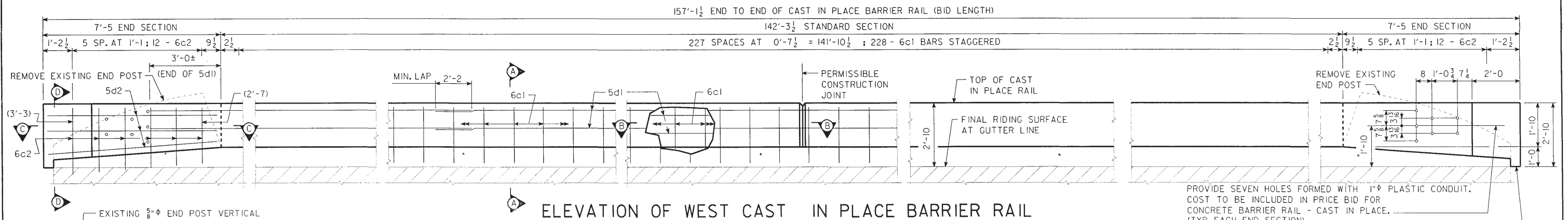
MICROFILMED



CONSTRUCTION PLANS SHOWING PROJECT AS BUILT
Plan Preparation Supervised By: RONALD D. CHAPMAN Resident Construction Engineer
Date 12-28-90 Iowa Reg. No. 4471
REVIEWED AND FORWARDED TO AMES
District Construction Engineer PETER A. TOLLENAERE
Date 3-26-94
One 50% Reduced and Full Size Prints to be Made and Returned
District Engineer
THOMAS J. McDONALD
AFTER MICROFILMING RETURN ORIGINAL
TO DISTRICT NO.



901706
006829
016
STK



EPOXY REINFORCING STEEL-WEST RAIL						
BAR	LOCATION	SHAPE	NO.	LENGTH	LIN. FT.	WEIGHT
6c1	STANDARD RAIL, VERT.	——	228	2'-6	570	856
6c2	END SECTION, VERTICAL	——	24	SHOWN	70	105
5d1	STANDARD RAIL, LONGIT.	——	16	39'-0	624	651
5d2	END SECTION, LONGIT.	——	12	7'-1	85	89
					TOTAL (LBS.)	1701

CONCR. PLACEMENT SUMMARY-WEST RAIL		
SECTION		TOTAL
STANDARD SECTION	142.3' AT .078 CU. YDS. PER LIN. FT	11.1
END SECTIONS	2 AT .78 CU. YDS. PER SECTION	1.6
TOTAL (CU. YDS.)		12.7

ESTIMATED QUANTITIES-WEST RAIL

ITEM		UNITS	QUANTITY
CONCRETE BARRIER RAIL, (CAST-IN-PLACE)		LIN. FT.	157.1
TOTAL ESTIMATED BRIDGE QUANTITIES			
ITEM NO.	ITEM	UNITS	QUANTITY
1	CONCRETE BARRIER RAIL, (CAST-IN-PLACE)	LIN. FT.	636.7
2	REMOVAL OF EXISTING HANDRAIL	L.S.	LUMP SUM

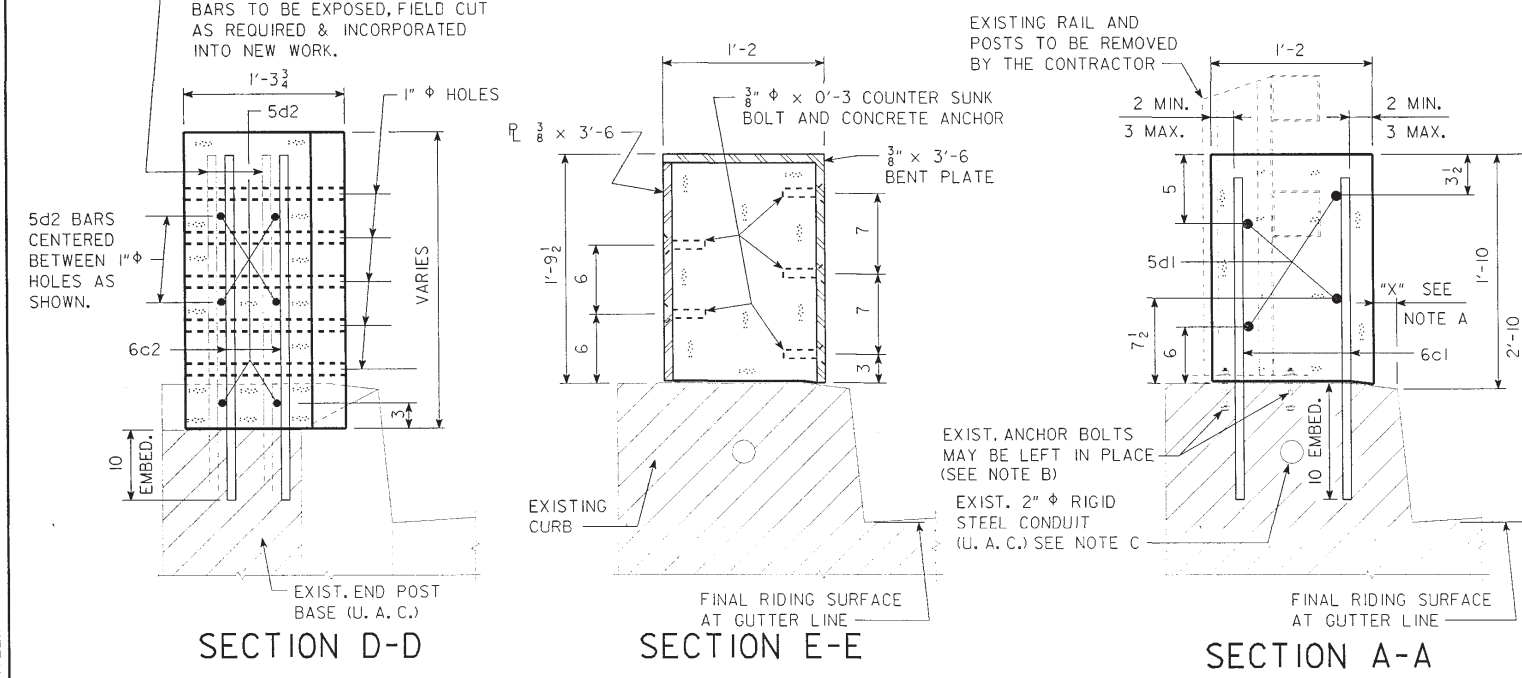
ITEM NO.	ESTIMATE REFERENCE INFORMATION
1	INCLUDES 45.1 CU. YDS. OF CLASS D STRUCTURAL CONCRETE, AND 6880 LBS. OF EPOXY COATED REINFORCING STEEL. REINFORCING STEEL COMPRISED OF 2866 L.F. OF #5 BAR & 2590 L.F. OF #6 BAR.

DESIGN STRESSES:
DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES OF 1989. REINFORCING STEEL IN ACCORDANCE WITH SECTION 8, GRADE 60. CONCRETE IN ACCORDANCE WITH SECTION 8, $f'_c = 3,500$ PSI.

NOTE C:
CARE SHALL BE EXERCISED WHEN DRILLING HOLES FOR THE CAST IN PLACE BARRIER RAIL DOWELS TO INSURE THE EXISTING CONDUIT IS NOT DAMAGED. ANY DAMAGE TO THE CONDUIT BY THE CONTRACTOR WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND REPAIRED BY HIM AT NO EXTRA COST TO THE STATE.

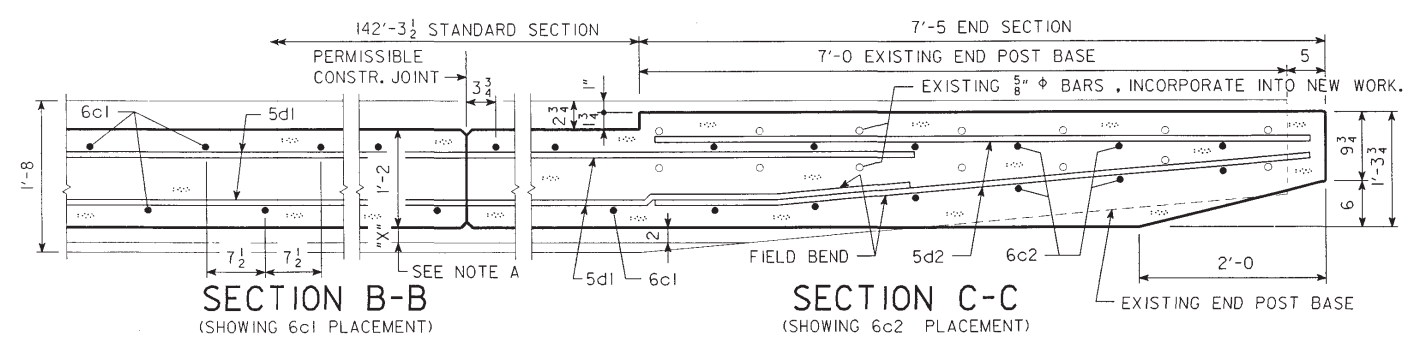
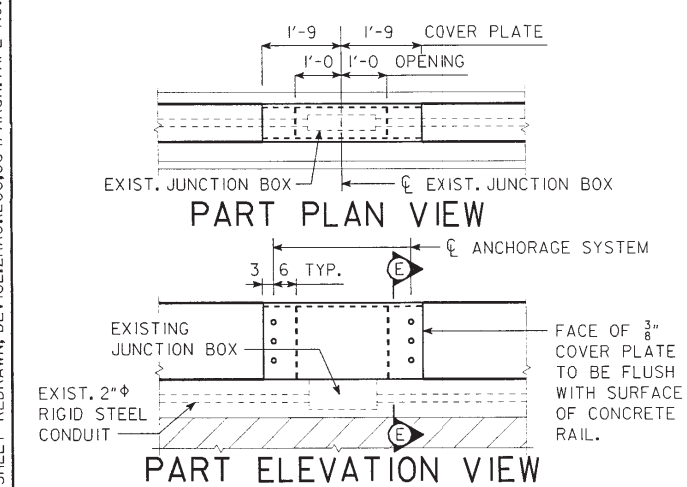
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT
PERSONAL SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF IOWA

8-9-90 L. Ray Phillips REG. NO. 4138
DATE LEROY/PHILLIPS



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 STD. RAIL SECTION SHALL BE TRANSITIONED TO 2" AT THE END SECTION AS SHOWN IN SECTION C-C.

NOTE B:
EXISTING RAIL IS TO BE REMOVED. ANY ANCHOR BOLTS THAT WILL HAVE AT LEAST 2" OF CONCRETE COVER WHEN ENCOMPASSED BY THE NEW BARRIER RAIL MAY BE LEFT IN PLACE AT THE CONTRACTORS OPTION SUBJECT TO THE APPROVAL OF THE ENGINEER. ANY ANCHOR BOLTS NOT HAVING THE 2" MIN. COVER SHALL BE CUT OFF FLUSH WITH OR SLIGHTLY BELOW THE TOP OF CURB AND ENDS OF NON STAINLESS STEEL BOLTS PAINTED WITH TWO COATS OF ZINC RICH PAINT. STAINLESS STEEL ANCHOR BOLTS OUTSIDE THE AREA OF NEW BARRIER RAIL MAY BE LEFT IN PLACE AT CONTRACTORS OPTION SUBJECT TO APPROVAL OF THE ENGINEER. STAINLESS STEEL BOLTS NEED NOT BE PAINTED. NON STAINLESS STEEL ANCHOR BOLTS OUTSIDE THE AREA OF NEW BARRIER RAIL SHALL BE CUT OFF FLUSH WITH OR SLIGHTLY BELOW TOP OF CURB SURFACE. AND THE REMAINING EXPOSED ENDS PAINTED WITH TWO COATS OF ZINC RICH PAINT.



PROVIDE SEVEN HOLES FORMED WITH 1" ϕ PLASTIC CONDUIT.
 COST TO BE INCLUDED IN PRICE BID FOR
 CONCRETE BARRIER RAIL - CAST IN PLACE.
 (TYP. EACH END SECTION)

4" MIN.
 (TYPICAL)

PART PLAN VIEW

JOINT SEALER ON
 TOP AND SIDES

BOND
 BREAKING
 COATING

PART ELEVATION VIEW

FINAL RIDING SURFACE
 AT GUTTER LINE

HATCHED AREA INDICATES
 AREA OF BOND BREAKING
 COATING

CAST IN PLACE BARRIER RAIL JOINT DETAILS

NOTE:
 SEE DESIGN SHEET 2 FOR CAST-
 IN-PLACE BARRIER RAIL NOTES.

DOWEL SETTING NOTE :
THE 6c 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. THE FOLLOWING SYSTEM SHALL BE USED AS A BONDING AGENT FOR THE DOWELS :

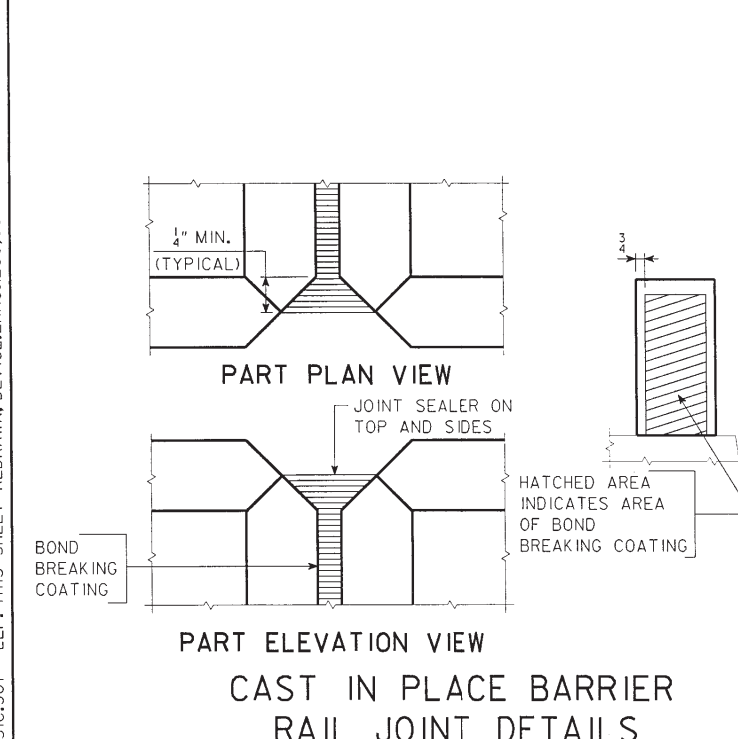
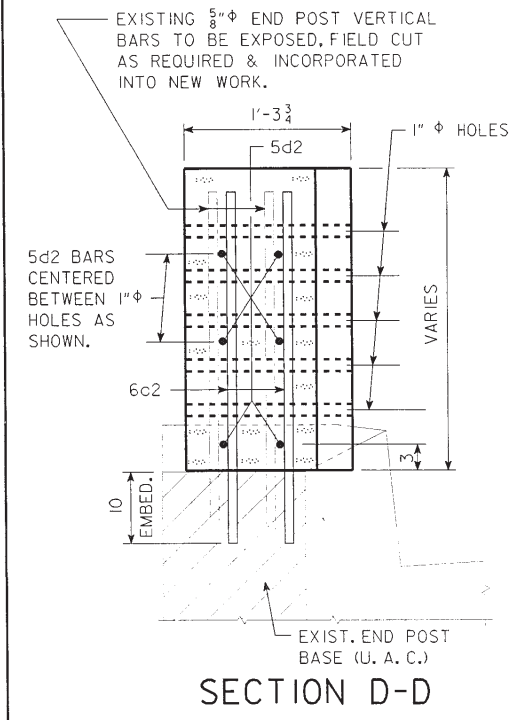
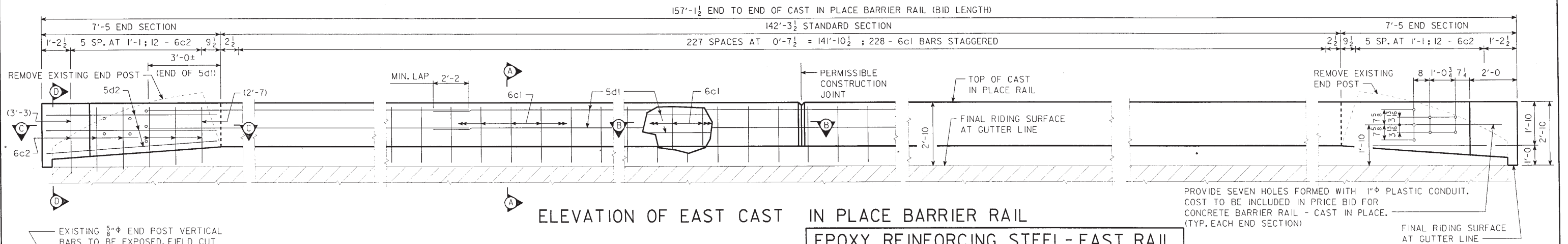
A. EPOXY GROUT SYSTEM IN ACCORDANCE WITH STANDARD SPECIFICATIONS ARTICLE 2301.15 AND CURRENT SUPPLEMENTAL SPECIFICATIONS OF THE IOWA D.O.T. HIGHWAY DIVISION.

LOCATION:
I-35 OVER
WHITE BREAST CREEK
T - 72N R - 26W
SECTION 25
WARD TWP.
CLARKE COUNTY
BR. MAINT. # 2031.9L035

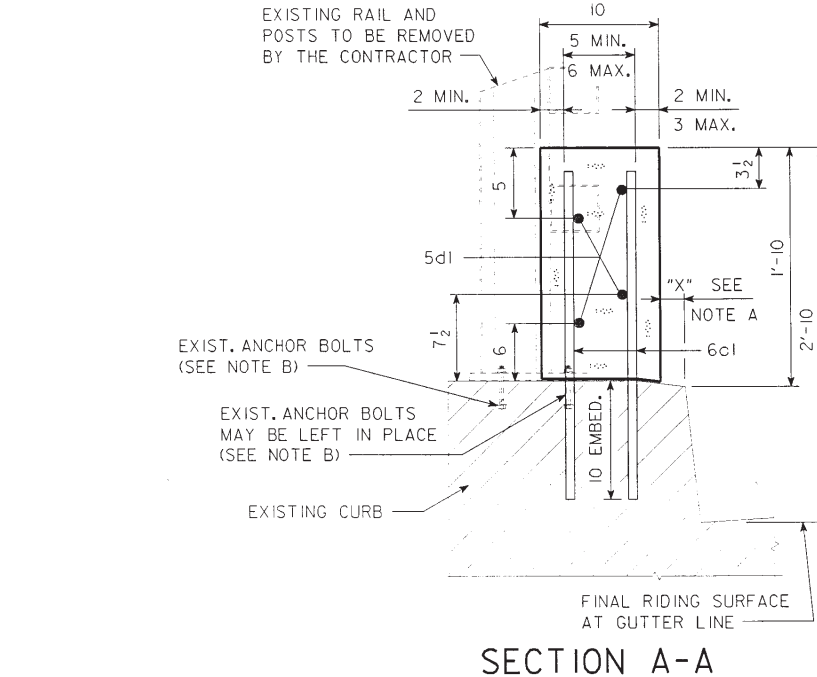
DESIGN HISTORY AT THIS SITE	
DES. NO.	TYPE OF WORK
2467	ORIGINAL DESIGN
890	RETROFIT RAIL

DESIGN FOR REPAIR TO A
DUAL 143'-0 X 40' & 138'-10 X 55'-6 PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGES
43'-3 & 39'-1 END SPANS 56'-6 INTERIOR SPAN
CAST IN PLACE BARRIER RAIL DETAILS
SOUTHBOUND BRIDGE
STA. 401 + 48.00 N.B. LANE
STA. 1402 + 50.00 S.B. LANE SEPTEMBER, 1990
CLARKE COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 1 OF 5 FILE NO. 28212 DESIGN NO. 890

REVISOR: BARRIER RAIL DETAILS CHANGED. TAPE NO. 11-3-88
HST01031C.S01 --LEP: THIS SHEET REDRAWN, DEVICE:ZHA0(200,004) ARCH. TAPE NO. 000016. DATE 11-3-88

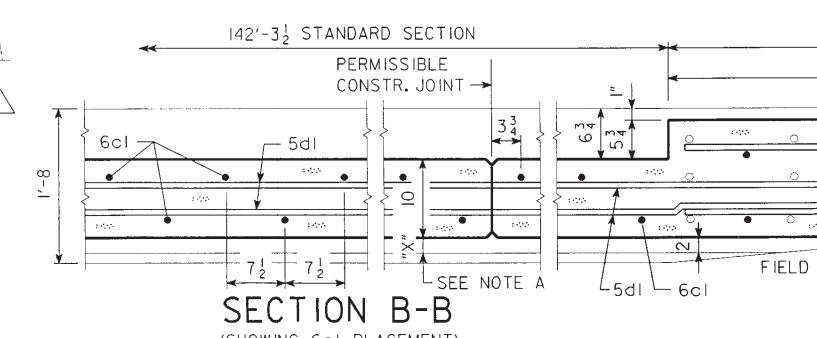


CAST IN PLACE BARRIER RAIL JOINT DETAILS



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 LINEAL FEET AT EITHER END OF STD. RAIL SECTION SHALL BE TRANSITIONED TO 2" AT THE END SECTION AS SHOWN IN SECTION C-C.

NOTE B:
EXISTING RAIL IS TO BE REMOVED. ANY ANCHOR BOLTS THAT WILL HAVE AT LEAST 2" OF CONCRETE COVER WHEN ENCOMPASSED BY THE NEW BARRIER RAIL MAY BE LEFT IN PLACE AT THE CONTRACTOR'S OPTION SUBJECT TO THE APPROVAL OF THE ENGINEER. ANY ANCHOR BOLTS NOT HAVING THE 2" MIN. COVER SHALL BE CUT OFF FLUSH WITH OR SLIGHTLY BELOW THE TOP OF CURB AND ENDS OF NON STAINLESS STEEL BOLTS PAINTED WITH TWO COATS OF ZINC RICH PAINT. STAINLESS STEEL ANCHOR BOLTS OUTSIDE THE AREA OF NEW BARRIER RAIL MAY BE LEFT IN PLACE AT CONTRACTOR'S OPTION SUBJECT TO APPROVAL OF THE ENGINEER. STAINLESS STEEL BOLTS NEED NOT BE PAINTED. NON STAINLESS STEEL ANCHOR BOLTS OUTSIDE THE AREA OF NEW BARRIER RAIL SHALL BE CUT OFF FLUSH WITH OR SLIGHTLY BELOW TOP OF CURB SURFACE AND THE REMAINING EXPOSED ENDS PAINTED WITH TWO COATS OF ZINC RICH PAINT.



EPOXY REINFORING STEEL- EAST RAIL						
BAR	LOCATION	SHAPE	NO.	LENGTH	LIN. FT.	WEIGHT
6c1	STANDARD RAIL, VERT.	---	228	2'-6"	570	856
6c2	END SECTION, VERTICAL	---	24	SHOWN	70	105
5d1	STANDARD RAIL, LONGIT.	---	16	39'-0"	624	651
5d2	END SECTION, LONGIT.	---	12	7'-1"	85	89
TOTAL (LBS.)					1701	

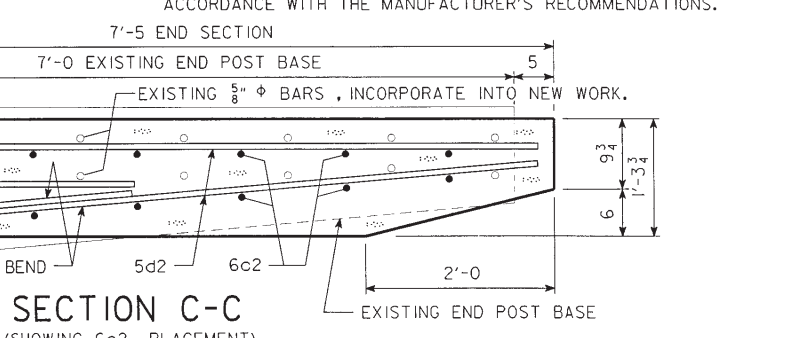
CONCR. PLACEMENT SUMMARY-EAST RAIL			TOTAL
STANDARD SECTION	142.3' AT .056 CU. YDS. PER LIN. FT		8.0
END SECTIONS	2 AT .78 CU. YDS. PER SECTION		1.6
TOTAL (CU. YDS.)			9.6

ESTIMATED QUANTITIES-EAST RAIL		
ITEM	UNITS	QUANTITY
CONCRETE BARRIER RAIL, (CAST-IN-PLACE)	LIN. FT.	157.1

DOWEL SETTING NOTE :
THE 6c 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 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 ONE OF THOSE APPROVED IN MATERIALS I.M. 491.13 AND SHALL BE USED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.



PROVIDE SEVEN HOLES FORMED WITH 1" ϕ PLASTIC CONDUIT. COST TO BE INCLUDED IN PRICE BID FOR CONCRETE BARRIER RAIL - CAST IN PLACE. (TYP. EACH END SECTION)

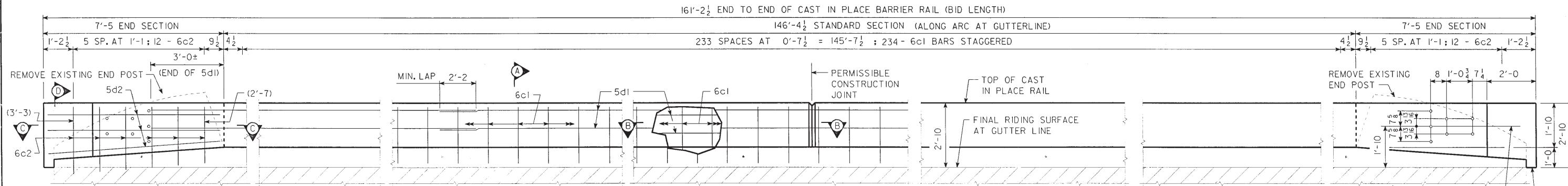
FINAL RIDING SURFACE AT GUTTER LINE

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.
ALL EXPOSED CORNERS 90° OR SHARPER ARE TO BE FILLETED WITH A 3/4" DRESSED AND BEVELED STRIP.
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 REINF. STEEL & 1" ϕ PLASTIC CONDUIT) PLUS 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.
ALL REINFORCING STEEL IS TO BE GRADE 60 AND EPOXY COATED.
THE JOINT SEALER SHALL CONFORM TO FED. SPEC. TT-S00230 OR TT-S00227 FOR TYPE II, CLASS A OR B.
THE PRICE BID FOR "REMOVAL OF EXISTING HANDRAIL" SHALL INCLUDE ALL COSTS ASSOCIATED WITH DISMANTLING THE EXISTING ALUMINUM HANDRAIL (APPROX. 286 L.F. AND 36 POSTS). THE RAILS AND POSTS ARE TO BECOME THE PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE SITE BY HIM. THE BID ITEM SHALL ALSO INCLUDE ALL COSTS ASSOCIATED WITH THE REMOVAL OF THE EXISTING CONCRETE END POSTS AND THE CUTTING OFF AND PAINTING OF THE EXISTING RAIL POST ANCHOR BOLTS IF REQUIRED.
ANY REMOVALS AND DISPOSALS REQUIRED SHALL BE IN ACCORDANCE WITH SECTION 2401 OF THE STANDARD SPECIFICATIONS. ANY DAMAGE TO OTHER PORTIONS OF THE EXISTING STRUCTURE NOT NOTED FOR REMOVAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPAIRED BY HIM AT NO COST TO THE STATE.
EXISTING BRIDGE RAIL IS NOT TO BE REMOVED UNTIL AUTHORIZED BY THE ENGINEER.

DESIGN FOR REPAIR TO A
DUAL 143'-0" X 40' & 138'-10" X 55'-6" PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES
43'-3" & 39'-1" END SPANS 56'-6" INTERIOR SPAN
CAST IN PLACE BARRIER RAIL DETAILS
SOUTHBOUND BRIDGE
STA. 401+ 48.00 N.B. LANE
STA. 1402+ 50.00 S.B. LANE
SEPTEMBER, 1990
CLARKE COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 2 OF 5 FILE NO. 28212 DESIGN NO. 890

STATE	REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		4F	

REVISIONS: BARRIER RAIL DETAILS CHANGED, TAPE NO. 11-3-88, DATE 11-3-88, HSTD031.D,S01--LEP: THIS SHEET REDRAWN, DEVICE:ZHAO(200,004) ARCH, TAPE NO.000016, DATE 11-3-88



ELEVATION OF EAST CAST IN PLACE BARRIER RAIL

EPOXY REINFORCING STEEL-EAST RAIL

BAR	LOCATION	SHAPE	NO.	LENGTH	LIN. FT.	WEIGHT
6c1	STANDARD RAIL, VERT.	---	234	2'-6	585	879
6c2	END SECTION, VERTICAL	---	24	SHOWN	70	105
5d1	STANDARD RAIL, LONGIT.	---	16	39'-11	639	666
5d2	END SECTION, LONGIT.	---	12	7'-1	85	89
TOTAL (LBS.)					1739	

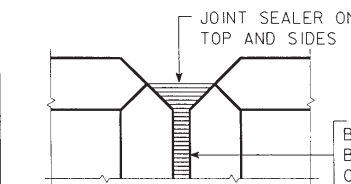
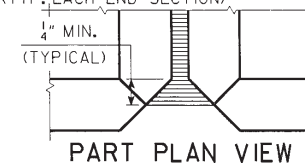
CONCR. PLACEMENT SUMMARY-EAST RAIL

SECTION	TOTAL
STANDARD SECTION 146.4' AT .078 CU. YDS. PER LIN. FT	11.4
END SECTIONS 2 AT .78 CU. YDS. PER SECTION	1.6
TOTAL (CU. YDS.)	13.0

ESTIMATED QUANTITIES-EAST RAIL

ITEM	UNITS	QUANTITY
CONCRETE BARRIER RAIL, (CAST-IN-PLACE)	LIN. FT.	161.2

PROVIDE SEVEN HOLES FORMED WITH 1" ϕ PLASTIC CONDUIT. COST TO BE INCLUDED IN PRICE BID FOR CONCRETE BARRIER RAIL - CAST IN PLACE. (TYP. EACH END SECTION).



CAST IN PLACE BARRIER RAIL JOINT DETAILS

NOTE:
SEE DESIGN SHEET 4 FOR CAST-IN-PLACE BARRIER RAIL NOTES.

DOWEL SETTING NOTE :
THE 6c 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. THE FOLLOWING SYSTEM 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.

LOCATION:

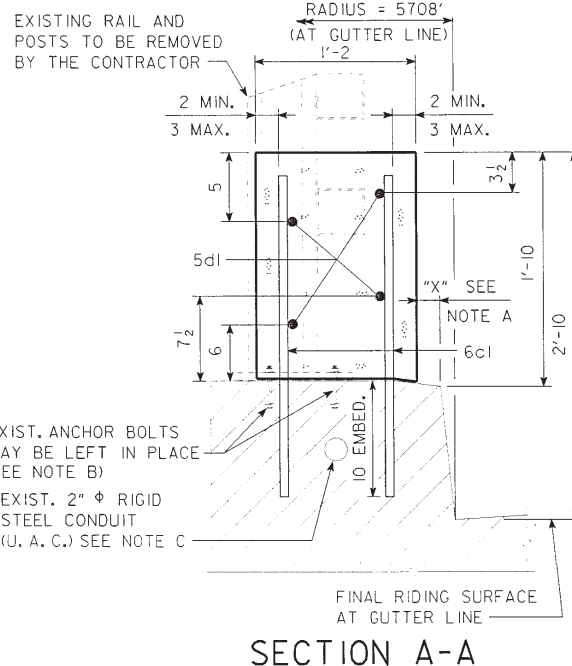
I-35 OVER
WHITE BREAST CREEK
T - 72N R - 26W
SECTION 25
WARD TWP.
CLARKE COUNTY
BR. MAINT. # 2031.9R035

DESIGN HISTORY AT THIS SITE

DES. NO.	TYPE OF WORK
2467	ORIGINAL DESIGN
890	RETROFIT RAIL

DESIGN FOR REPAIR TO A
DUAL 143'-0" X 40" & 138'-10" X 55'-6" PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGES
47'-5" & 39'-1" END SPANS 56'-6" INTERIOR SPAN
CAST IN PLACE BARRIER RAIL DETAILS
NORTHBOUND BRIDGE

STA. 401 + 48.00 N.B. LANE
STA. 1402 + 50.00 S.B. LANE
CLARKE COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 3 OF 5 FILE NO. 28212 DESIGN NO. 890
SEPTEMBER, 1990



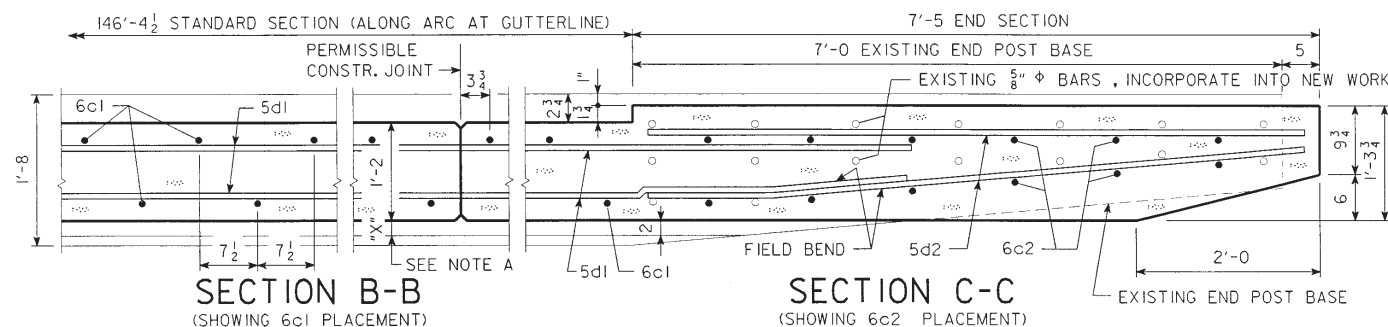
NOTE A:
ON EACH SIDE OF BRIDGE, DIMENSION "X" SHALL BE A MINIMUM OF 1" AND A MAXIMUM OF 3", BUT MUST BE CONSTANT FOR FULL LENGTH OF BRIDGE, HOWEVER APPROXIMATELY 10 LINEAR FEET AT EITHER END OF STD. RAIL SECTION SHALL BE TRANSITIONED TO 2" AT THE END SECTION AS SHOWN IN SECTION C-C.

NOTE B:
EXISTING RAIL IS TO BE REMOVED. ANY ANCHOR BOLTS THAT WILL HAVE AT LEAST 2" OF CONCRETE COVER WHEN ENCOMPASSED BY THE NEW BARRIER RAIL MAY BE LEFT IN PLACE AT THE CONTRACTORS OPTION SUBJECT TO THE APPROVAL OF THE ENGINEER. ANY ANCHOR BOLTS NOT HAVING THE 2" MIN. COVER SHALL BE CUT OFF FLUSH WITH OR SLIGHTLY BELOW THE TOP OF CURB AND ENDS OF NON STAINLESS STEEL BOLTS PAINTED WITH TWO COATS OF ZINC RICH PAINT.

STAINLESS STEEL ANCHOR BOLTS OUTSIDE THE AREA OF NEW BARRIER RAIL MAY BE LEFT IN PLACE AT CONTRACTORS OPTION SUBJECT TO APPROVAL OF THE ENGINEER. STAINLESS STEEL BOLTS NEED NOT BE PAINTED.

NON STAINLESS STEEL ANCHOR BOLTS OUTSIDE THE AREA OF NEW BARRIER RAIL SHALL BE CUT OFF FLUSH WITH OR SLIGHTLY BELOW TOP OF CURB SURFACE AND THE REMAINING EXPOSED ENDS PAINTED WITH TWO COATS OF ZINC RICH PAINT.

NOTE C:
CARE SHALL BE EXERCISED WHEN DRILLING HOLES FOR THE CAST IN PLACE BARRIER RAIL DOWELS TO INSURE THE EXISTING CONDUIT IS NOT DAMAGED. ANY DAMAGE TO THE CONDUIT BY THE CONTRACTOR WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND REPAIRED BY HIM AT NO EXTRA COST TO THE STATE.



DESIGNED BY MARK HENDERSON
TRACED BY HM
CHECKED BY K. L. L. S.

CAST IN PLACE BARRIER RAIL

DECATUR / CLARKE COUNTY

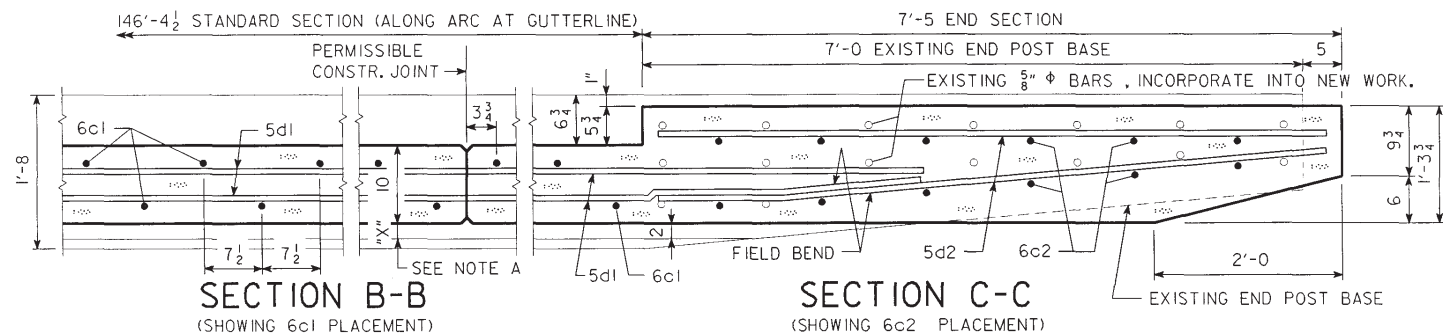
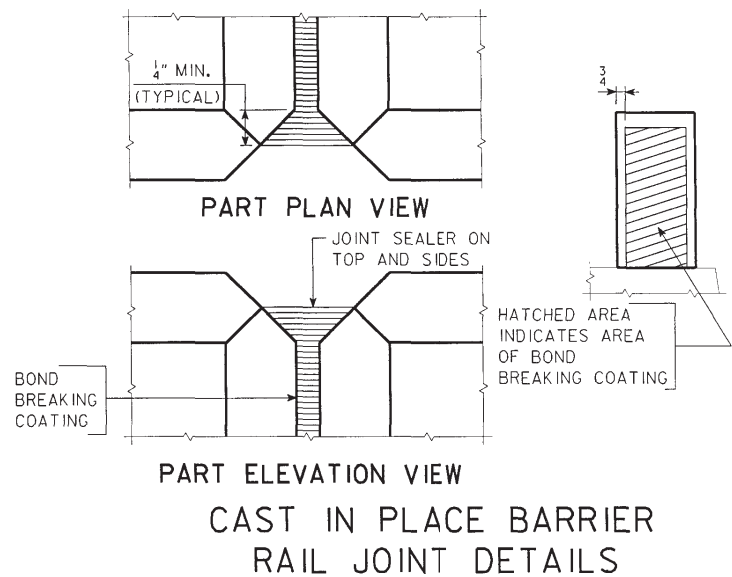
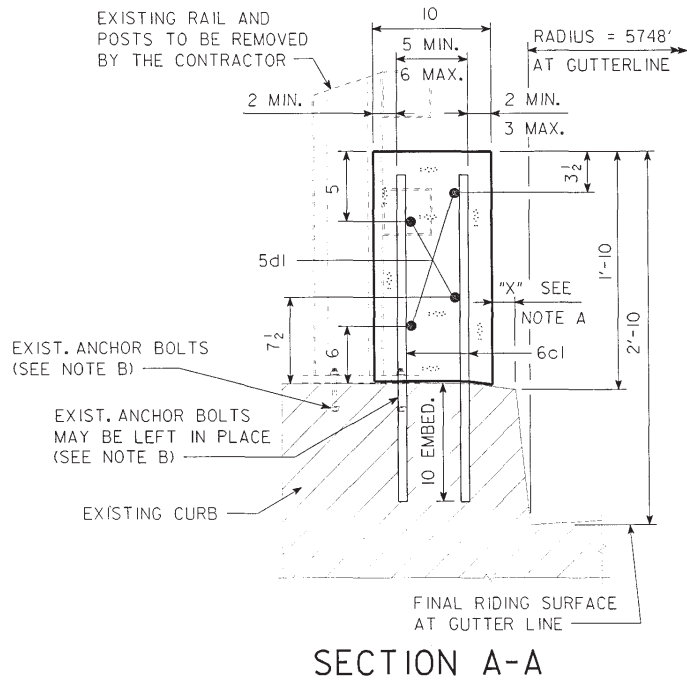
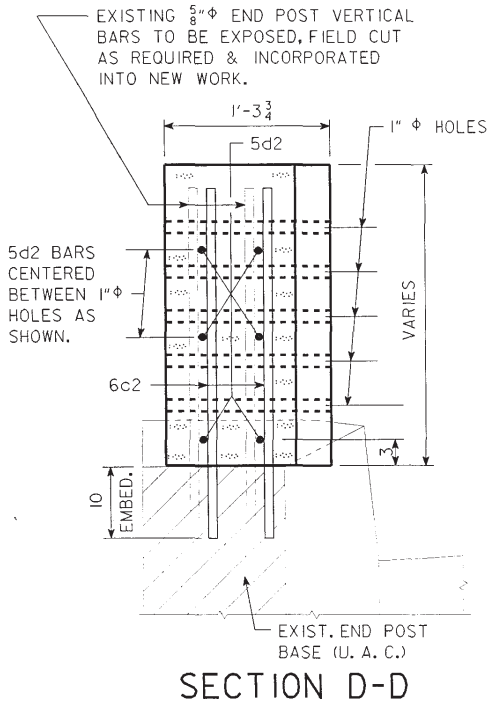
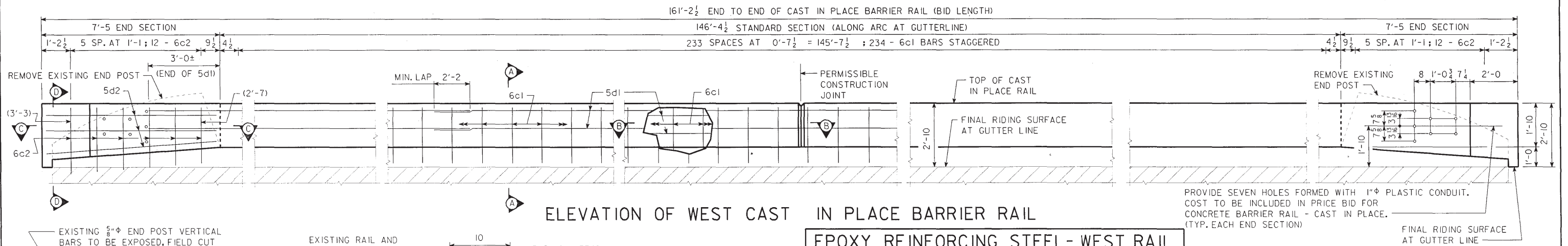
PROJECT NUMBER

IR-35-1(61)13--12-27

STATE IOWA
FISCAL YEAR 7
SHEET NO. 4G
TOTAL SHEETS

H2708900.S03

DEVICE : ZHAO(200,004) ARCH. TAPE NO. DATE



EPOXY REINFORCING STEEL- WEST RAIL						
BAR	LOCATION	SHAPE	NO.	LENGTH	LIN. FT.	WEIGHT
6c1	STANDARD RAIL, VERT.	—	234	2'-6	585	879
6c2	END SECTION, VERTICAL	—	24	SHOWN	70	105
5d1	STANDARD RAIL, LONGIT.	—	16	39'-11	639	666
5d2	END SECTION, LONGIT.	—	12	7'-1	85	89
TOTAL (LBS.)						1739

CONCR. PLACEMENT SUMMARY-WEST RAIL			TOTAL
STANDARD SECTION	146.4' AT .056 CU. YDS. PER LIN. FT		8.2
END SECTIONS	2 AT .78 CU. YDS. PER SECTION		1.6
TOTAL (CU. YDS.)			9.8

ESTIMATED QUANTITIES- WEST RAIL		
ITEM	UNITS	QUANTITY
CONCRETE BARRIER RAIL, (CAST-IN-PLACE)	LIN. FT.	161.2

PROVIDE SEVEN HOLES FORMED WITH 1" ϕ PLASTIC CONDUIT. COST TO BE INCLUDED IN PRICE BID FOR CONCRETE BARRIER RAIL - CAST IN PLACE. (TYP. EACH END SECTION)

FINAL RIDING SURFACE AT GUTTER LINE

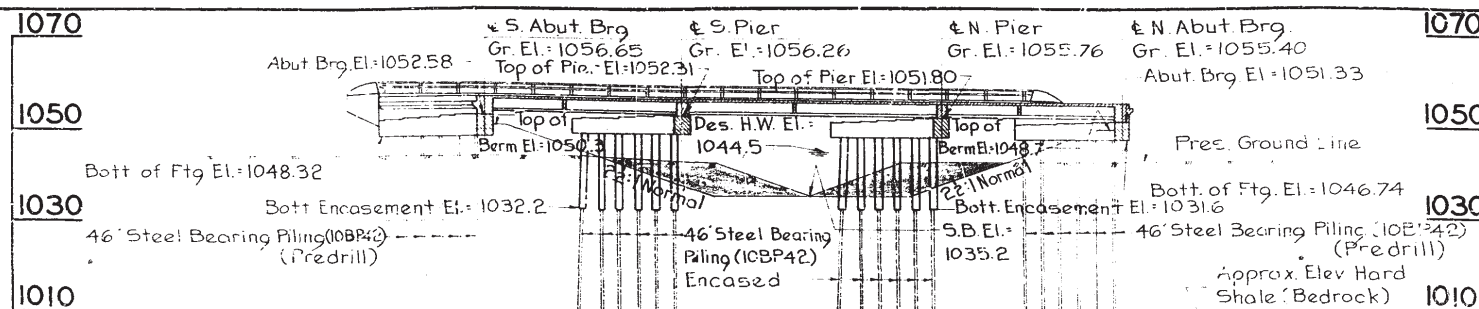
CAST IN PLACE BARRIER RAIL NOTES:
MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.
ALL EXPOSED CORNERS 90° OR SHARPER ARE TO BE FILLETED WITH A 3/4" DRESSED AND BEVELED STRIP.
THE PERMISSIBLE CONSTRUCTION JOINTS ARE TO BE PLACED BETWEEN 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 REINF. STEEL & 1" ϕ PLASTIC CONDUIT) PLUS 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.
ALL REINFORCING STEEL IS TO BE GRADE 60 AND EPOXY COATED.
THE JOINT SEALER SHALL CONFORM TO FED. SPEC. TT-S00230 OR TT-S00227 FOR TYPE II, CLASS A OR B.
THE PRICE BID FOR "REMOVAL OF EXISTING HANDRAIL" SHALL INCLUDE ALL COSTS ASSOCIATED WITH DISMANTLING THE EXISTING ALUMINUM HANDRAIL (APPROX. 295 L.F. AND 36 POSTS). THE RAILS AND POSTS ARE TO BECOME THE PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE SITE BY HIM. THE BID ITEM SHALL ALSO INCLUDE ALL COSTS ASSOCIATED WITH THE REMOVAL OF THE EXISTING CONCRETE END POSTS AND THE CUTTING OFF AND PAINTING OF THE EXISTING RAIL POST ANCHOR BOLTS IF REQUIRED.
ANY REMOVALS AND DISPOSALS REQUIRED SHALL BE IN ACCORDANCE WITH SECTION 2401 OF THE STANDARD SPECIFICATIONS. ANY DAMAGE TO OTHER PORTIONS OF THE EXISTING STRUCTURE NOT NOTED FOR REMOVAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPAIRED BY HIM AT NO COST TO THE STATE.
EXISTING BRIDGE RAIL IS NOT TO BE REMOVED UNTIL AUTHORIZED BY THE ENGINEER.

DOWEL SETTING NOTE :
THE 6c 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 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 ONE OF THOSE APPROVED IN MATERIALS I.M. 491.13 AND SHALL BE USED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

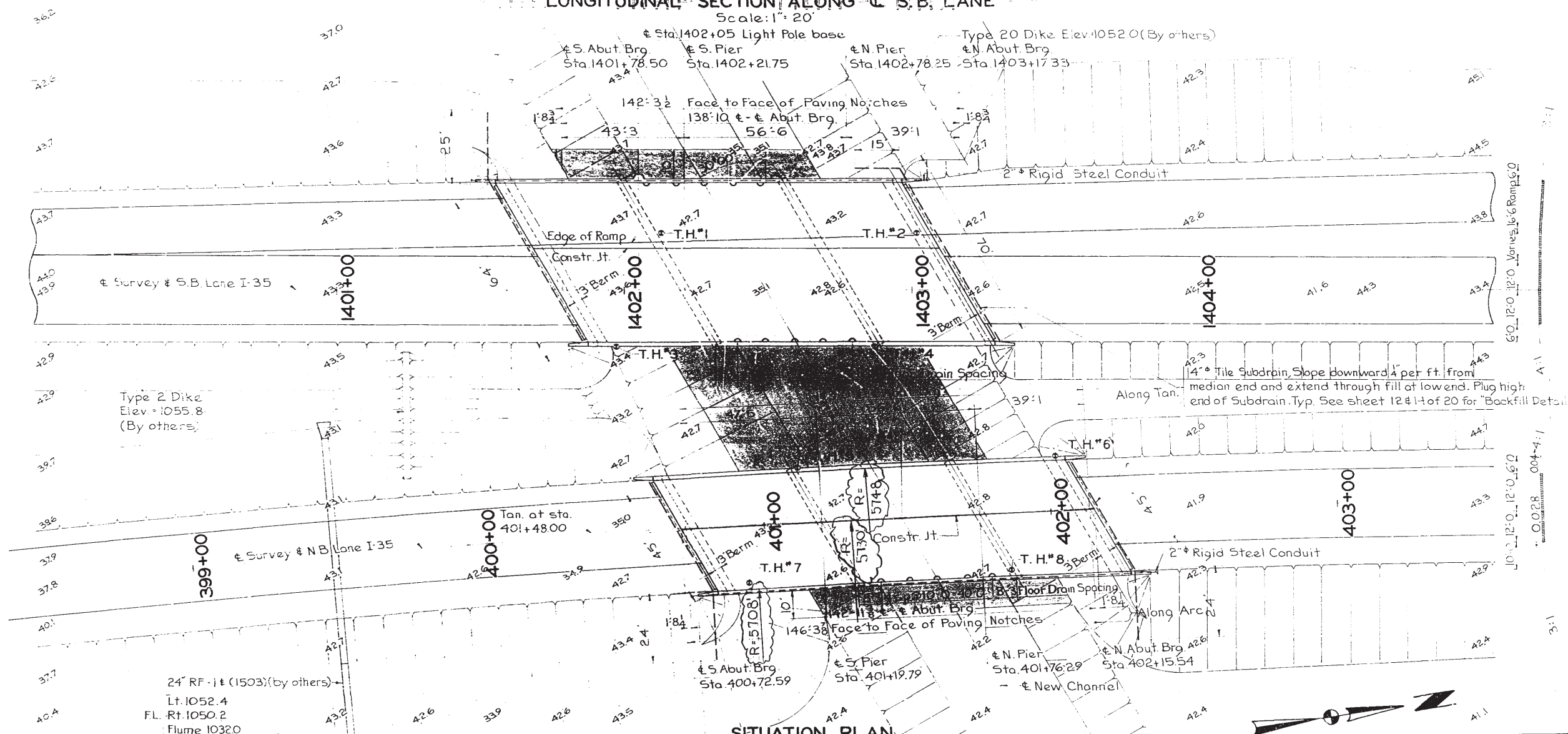
DESIGN FOR REPAIR TO A
DUAL 143'-0 X 40' & 138'-10 X 55'-6 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES
47'-5 & 39'-1 END SPANS 56'-6 INTERIOR SPAN
CAST IN PLACE BARRIER RAIL DETAILS
NORTHBOUND BRIDGE
STA. 401 + 48.00 N.B. LANE
STA. 1402 + 50.00 S.B. LANE
SEPTEMBER, 1990
CLARKE COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 4 OF 5 FILE NO. 28212 DESIGN NO. 890

**PROPOSED GRADE LINE
ALONG & S.B. LANE**

0.90 %
P.I. Sta 1380+00
P.I. Elev = 1076.26



Bench Mark: N° 45; Sta. 391+80, Lt. 98' Set P.R. Spk. in N. Side 12" Elm. E. 225° 00' 00" 132.4



APPROACH SECTION NEAR END OF BRIDGE

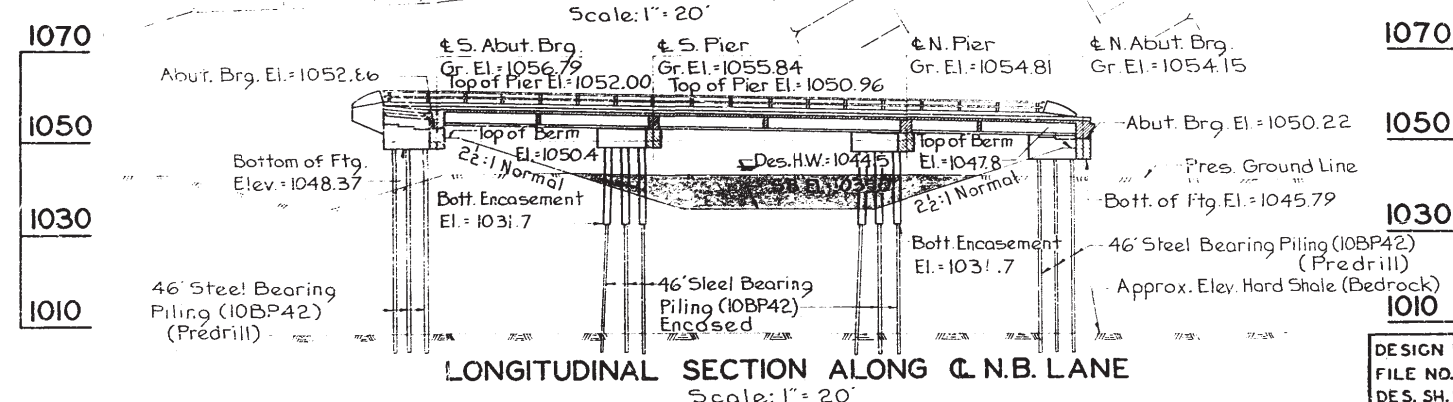
LOCATION:
Clarke County,
Ward Twp.
T-72-N R-28-W
Section 28
On I-35
Over White Branch Creek

HYDRAULIC DATA:
Drainage Area = 5 sq. mi.
Design Discharge 2200 cfs

THIS SHEET FROM ORIGINAL
DESIGN IS INCLUDED FOR
INFORMATION ONLY.

DESIGN FOR
**DUAL 143'-0" x 40' & 138'-10" x 55'-6" PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGES**
143'-0" BR.-47'-5" & 39'-1" END SPANS (SK. 27' 14' 42") 56'-6" CTR. SPAN
138'-10" BR.-43'-3" & 39'-1" END SPANS (SKEW 30") 56'-6" CTR. SPAN

SITUATION PLAN
STATION: 401+48.00 N.B. LANE
STATION: 1402+50.00 S.B. LANE
CLARKE COUNTY
IOWA STATE HIGHWAY COMMISSION



DESIGN NO. 830
FILE NO. 28212
DES. SH. NO. 5 OF 5