

LETTING DATE
DEC. 5, 1989

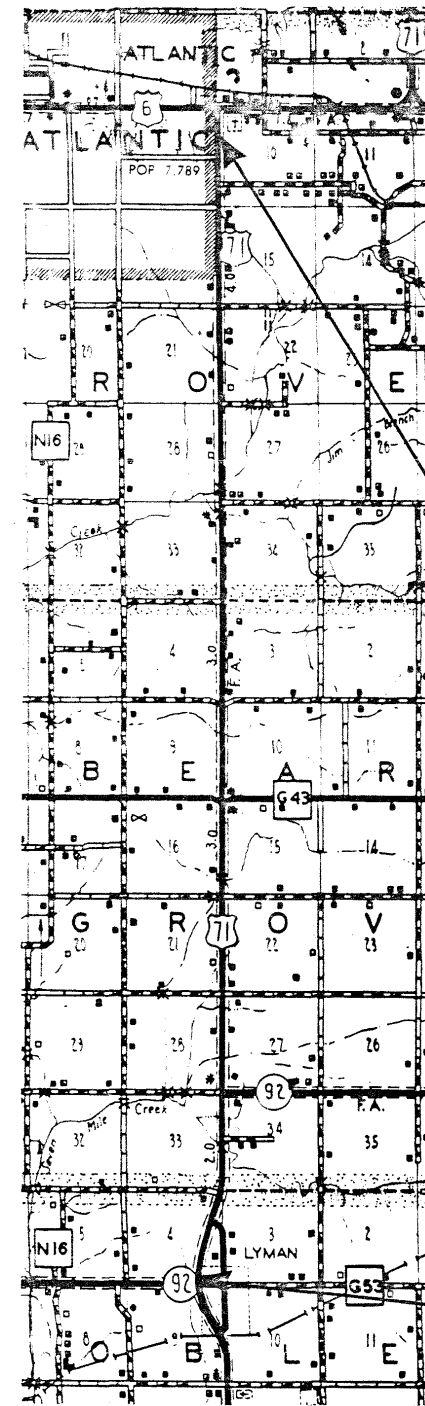
MISC. (SUBDRAINS)
FN-71-3(29)--21-15

CASS COUNTY

T-76N

T-75N

T-74N



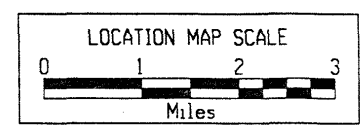
STA. 758+75.00
END PROJECT
M.P. 58.61

STA. 154+35.00
BEGIN PROJECT
M.P. 47.16

R-36W



891576
005030
014
SJK



IOWA
DEPARTMENT OF TRANSPORTATION
Highway Division
PLANS OF PROPOSED IMPROVEMENTS ON THE
PRIMARY ROAD SYSTEM
CASS COUNTY
MISCELLANEOUS (SUBDRAINS)
ON U.S. 71 FROM THE SOUTH JUNCTION OF IA. 92
TO THE CITY OF ATLANTIC (11.45 MILES)

SCALES: As Noted

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

NO MILEAGE SUMMARY
STATE CONTROL SECTION NUMBER
15-1000, 15-1100

CONSTRUCTION PLANS SHOWING PROJECT AS BUILT

Plan Preparation Supervised By: T. Dunlap
Resident Construction Engineer

Date: January 10, 1991 Iowa Reg. No. 9130

REVIEWED AND FORWARDED TO AMES
James E. Klein Date: JAN 23 1991
District Construction Engineer

One 50% Reduced and Two Full-Size Prints To Be Made and Returned To

District Engineer

AFTER MICROFILMING RETURN ORIGINAL
TO DISTRICT NO. _____

DESIGN DATA RURAL			
1988	AADT	1,710	V.P.D.
200	AADT		V.P.D.
200	DHV		V.P.H.
TRUCKS		14	%

George F. Lison
ROAD DESIGN ENGINEER DATE 9/28/89



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 9/28/89

REVISIONS

YEAR	WORK	CONTRACTOR	PROJ. INSPECTOR
1990	MISCELLANEOUS SUBDRAINS	MUSCATINE BRIDGE Co. INC.	DICK BLANKENHORN

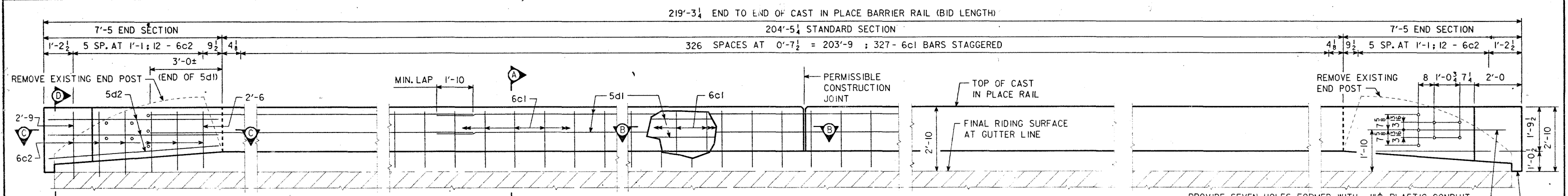
Iowa Department of Transportation
Highway Division
AUTHORIZED FOR LETTING
John E. Anderson 9-28-89
DEPUTY CHIEF ENGINEER DATE

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

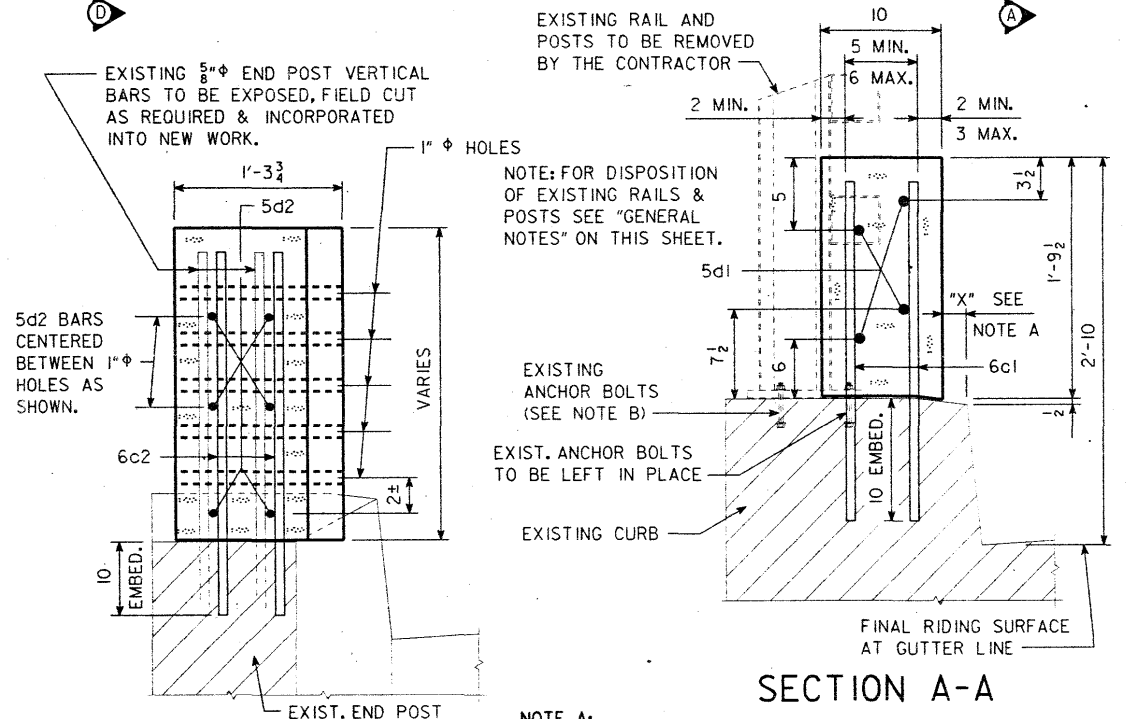
INDEX OF SHEETS	
105-3 07-21-87	
NO.	DESCRIPTION
1	TITLE SHEET
2A-2C 3-5	ESTIMATE OF PROJECT QUANTITIES & GENERAL INFORMATION DETAIL SHEETS FOR CONCRETE BARRIER RAIL

STANDARD ROAD PLANS					
The following Standard Road Plans shall be considered applicable to construction work on this project.					
NUMBER	DATE	NUMBER	DATE	NUMBER	DATE
RE-2A	02-17-87	RE-68	08-08-89	RS-2	10-11-88
RE-2B	04-04-89	RE-69	08-08-89	RS-3	11-15-88
RE-12A	10-11-88	RF-19C	05-10-88	RS-4	11-15-88
RE-12B	10-11-88	RF-19E	02-17-87		
RE-47	11-10-87	RL-11	10-11-88		
RE-52	08-08-89				
RE-65	04-04-89				

REVISD: BARRIER RAIL DETAILS CHANGED. TAPE NO. 11-3-88
HSTD1031C.S01 --LEP; THIS SHEET REDRAWN, DEVICE:ZHAH200,004 ARCH. TAPE NO. 000006. DATE 11-3-88

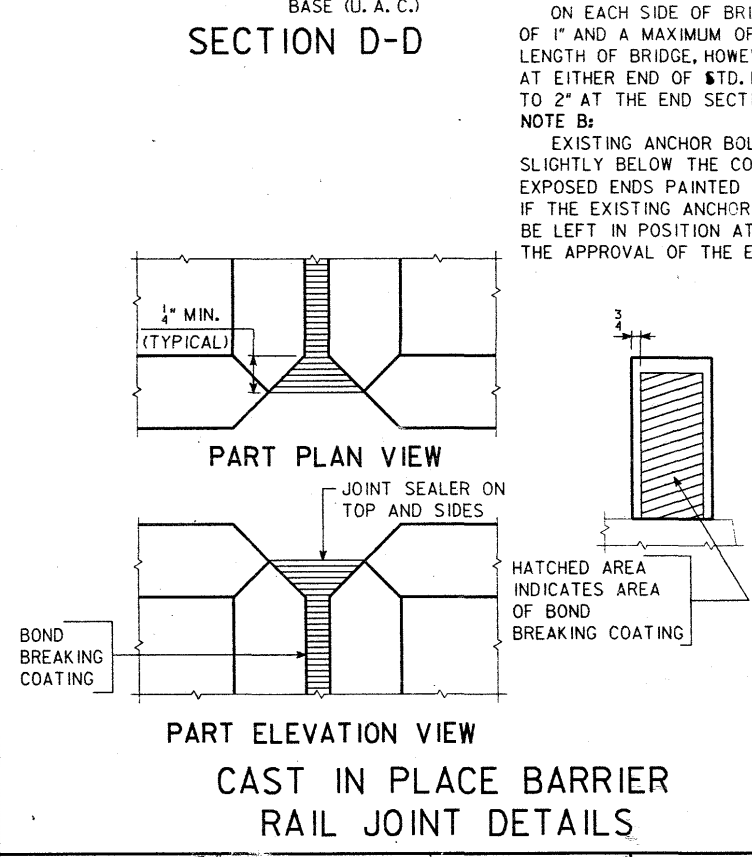


ELEVATION OF CAST IN PLACE BARRIER RAIL



SECTION A-A

SECTION D-D



CAST IN PLACE BARRIER RAIL JOINT DETAILS

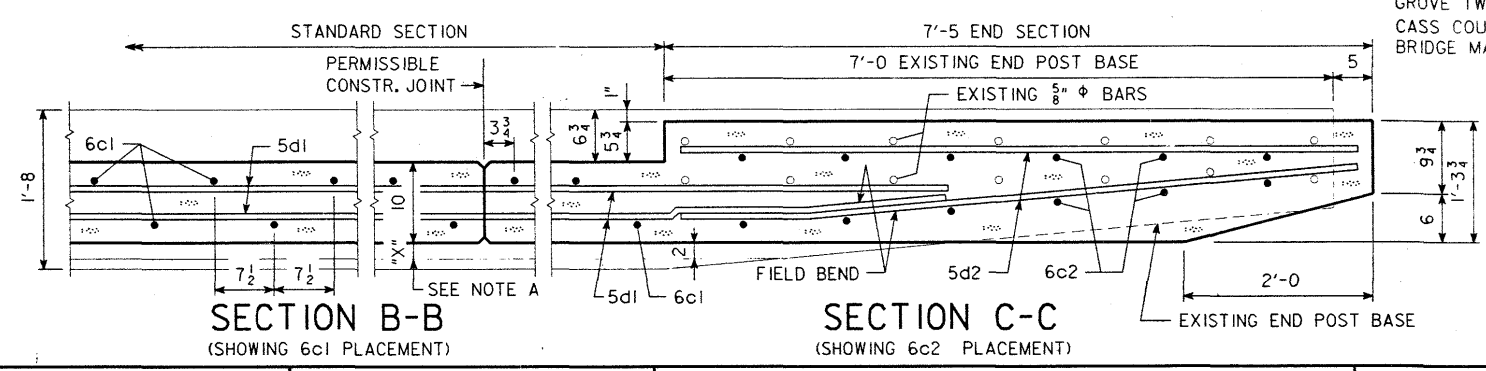
EPOXY REINFORCING STEEL-TWO RAILS						
BAR	LOCATION	SHAPE	NO.	LENGTH	LIN. FT.	WEIGHT
6c1	RAIL, VERTICAL	---	654	2'-6	1,635	2,456
6c2	END SECTION, VERTICAL	---	48	SHOWN	126	189
5d1	RAIL, LONGITUDINAL	---	48	36'-8	1,760	1,836
5d2	END SECTION, LONGIT.	---	24	7'-1	170	177
					#5 BARS	1,930
					#6 BARS	1,761
					TOTAL (LBS.)	4,658

CONCRETE PLACEMENT SUMMARY	
SECTION	TOTAL
STANDARD SECTION 408.9 AT .055 CU. YDS. PER LIN. FT	22.5
END SECTIONS 4 AT .68 CU. YDS. PER SECTION	2.7
TOTAL (CU. YDS.)	25.2

ESTIMATED QUANTITIES-TWO RAILS			
ITEM NO.	ITEM	UNITS	QUANTITY
1	CONCRETE BARRIER RAIL - CAST IN PLACE	LIN. FT.	438.5
2	REMOVAL OF EXISTING HANDRAIL	L.S.	LUMP SUM

DESIGN HISTORY AT THIS SITE	
DES. NO.	TYPE OF WORK
369	201'-4 x 44' PRETENSIONED PRESTRESSED CONC. BEAM BRIDGE

LOCATION:
U.S. NO. 71 OVER
LONE TREE CREEK
T-76N R-36W
SECTIONS 33-34
GROVE TWP.
CASS COUNTY
BRIDGE MAINT. NO. 1554.9S071



SECTION B-B (SHOWING 6c1 PLACEMENT)

SECTION C-C (SHOWING 6c2 PLACEMENT)

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 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.
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.

GENERAL NOTES:
THE INTENT OF THIS DESIGN IS TO CONSTRUCT CAST IN PLACE BARRIER RAILS ON THE EXISTING 201'-4x44' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE, ORIGINAL DESIGN NO. 369 CASS COUNTY. PLANS OF THE EXISTING STRUCTURE MAY BE OBTAINED FROM THE AMES OFFICE OF THE IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION.
THE LUMP SUM BID ITEM, "REMOVAL OF EXISTING HANDRAIL", SHALL INCLUDE ALL COSTS ASSOCIATED WITH DISMANTLING THE EXISTING HANDRAIL (APPROXIMATELY 411 L.F. AND 50 POSTS). THE HANDRAIL AND POSTS ARE TO BECOME THE PROPERTY OF THE CONTRACTOR.

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
9-11-89 DATE
Gene J. Pollmann
REG. NO. 4060

DESIGN FOR REMODELING A 15° SKEW (L.A.)
201'-4x44' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE
68'-3 & 64'-1 END SPANS 69'-0 CENTER SPAN
CAST IN PLACE BARRIER RAIL DETAILS
STATION: 565+93.00 JULY, 1989
CASS COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 1 OF 1 FILE NO. 27974 DESIGN NO. 1189