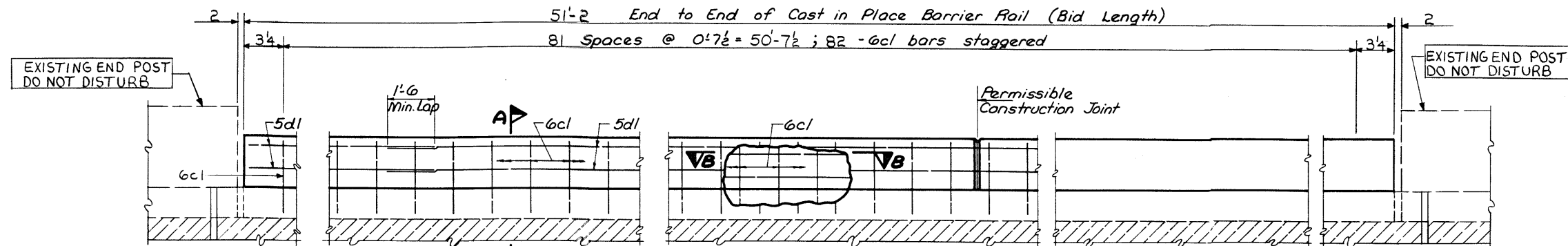
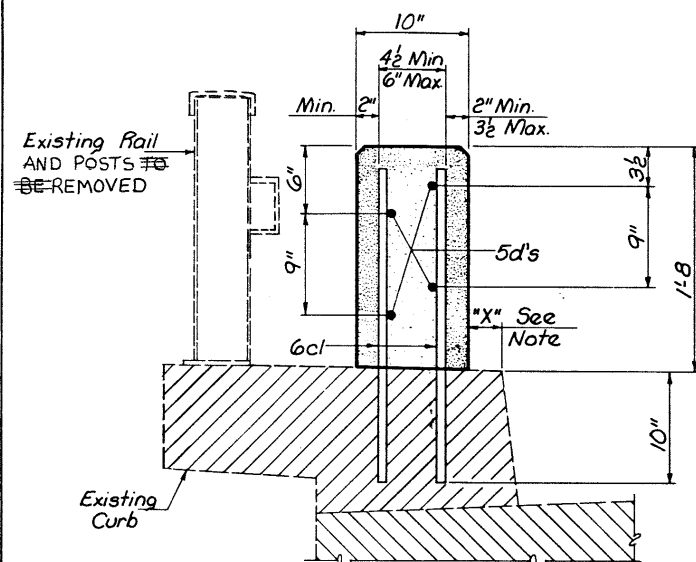


FN-34-3(18)--21-02

SHEET NO. 1

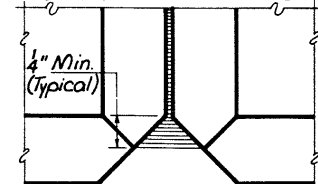


ELEVATION OF CAST IN PLACE BARRIER RAIL

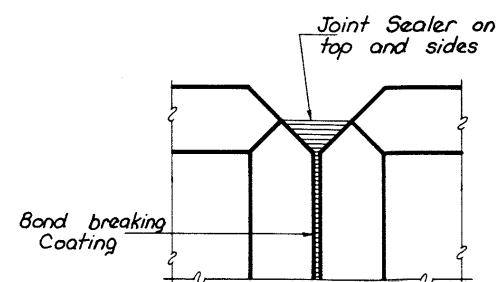


Note: On each side of bridge, Dimension "X" can be a minimum of 1" and a maximum of 3", but must be constant for full length of bridge. However approximately 10 linear feet at either end of rail length shall be transitioned to match beam guard rail attachment.

PART SECTION A-A

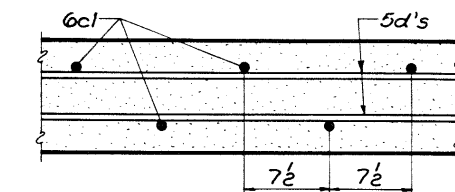


PART PLAN VIEW

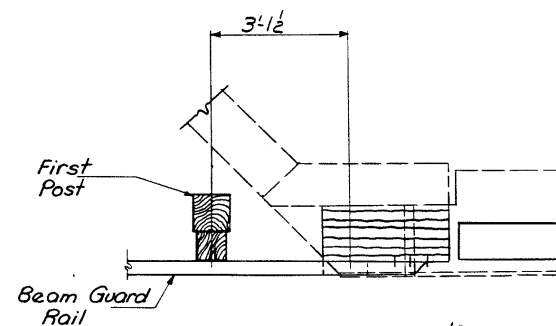


PART ELEVATION VIEW

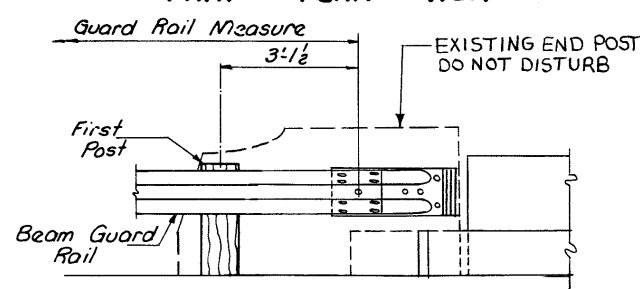
CAST IN PLACE BARRIER RAIL JOINT DETAILS



SECTION B-B
(SHOWING 6cl PLACEMENT)



PART PLAN VIEW



PART ELEVATION VIEW

LOCATION

T 71N
R 32W
SECTION 3
GRANT TWP.
U.S. 34 OVER W.
PLATTE RIVER

EPOXY REINFORCING STEEL ~ TWO RAILS

BAR	LOCATION	SHAPE	Nº	LENGTH	WEIGHT
6cl	Rail, Vertical	—	164	2'-4	575
5d1	Rail, Longitudinal	—	16	26'-2	437
TOTAL (lbs.)					1012✓

CONCRETE PLACEMENT SUMMARY

CONCRETE	TOTAL
102.3' @ 0.05 cu yds per lin. ft.	5.1✓

ESTIMATED QUANTITIES

ITEM	UNITS	QUANTITY
Rail, Concrete Barrier (Cast In Place)	lin. ft.	102.3✓

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 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 Article 4151.03B of the Standard Specifications.

EXISTING RAILS, AND RAIL POSTS SHALL BE REMOVED. 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. THE COST OF REMOVAL AND DISPOSAL OF RAILS AND RAIL POSTS AND CUTTING OFF AND PAINTING OF EXISTING ANCHOR BOLTS SHALL BE CONSIDERED INCIDENTAL TO THE COST OF PLACEMENT OF THE CAST-IN-PLACE BARRIER RAIL. ALL ELEMENTS REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE BY HIM.

DOWEL SETTING NOTE

The 6cl 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:

- EPOXY GROUT SYSTEM IN ACCORDANCE WITH STANDARD SPECIFICATIONS ARTICLE 2301.15.
- 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 Repairs to

50'x30' I-BEAM BRIDGE

Bridge Maintenance No. 0273.85034

CAST IN PLACE BARRIER RAIL DETAILS

Station: 624+59.70 (U.S. 34)

MAR., 1986

ADAMS COUNTY

IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION

Design Sheet No. 1 Of 1 File No. 27301 Design No. 586

DESIGNED BY: M.S. WALSANEN
DETAILED BY: M.S. WALSANEN

TRACED BY: R.R. WALTON
CHECKED BY: R.R. WALTON

CAST IN PLACE BARRIER RAIL

STANDARD SHEET 031

Adams-Union COUNTY

PROJECT NO.

FN-34-3(18)--21-02

STATE: IOWA
FED. ROAD DIST. NO.: 5
FISCAL YEAR: 1986
SHEET NO.: 4
TOTAL SHEETS: 19

Revised 6-3-85: Dowel Setting Note changed.
Revised 8-23-83: Notes concerning steel inserts and anchor bolts changed.
Revised: 7-7-81; GROUT requirement changed.
Revised: 4-16-1980; This sheet re-drawn.