LETTING DATE 12-18-92

A.C.C. RESURFACING
IM-35-6(64)166-13-35

FRANKLIN COUNTY

CONSTRUCTION PLANS SHOWING PROJECT AS BUILT

Plan Preparation Supervised By: Arnold W. Johnson
Resident Construction Engineer
Date 7-8-94 Iowa Reg. No. 4250

REVIEWED AND FORWARDED TO AMES

DAVID ROEBER Date
District Construction Engineer

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

PHILIP HASSENSTAB
District Engineer

AFTER MICROFILMING RETURN ORIGINAL TO DISTRICT NO. 2

IOWA
DEPARTMENT OF TRANSPORTATION
Highway Division

PLANS OF ~~PROPOSED~~ IMPROVEMENTS ON THE

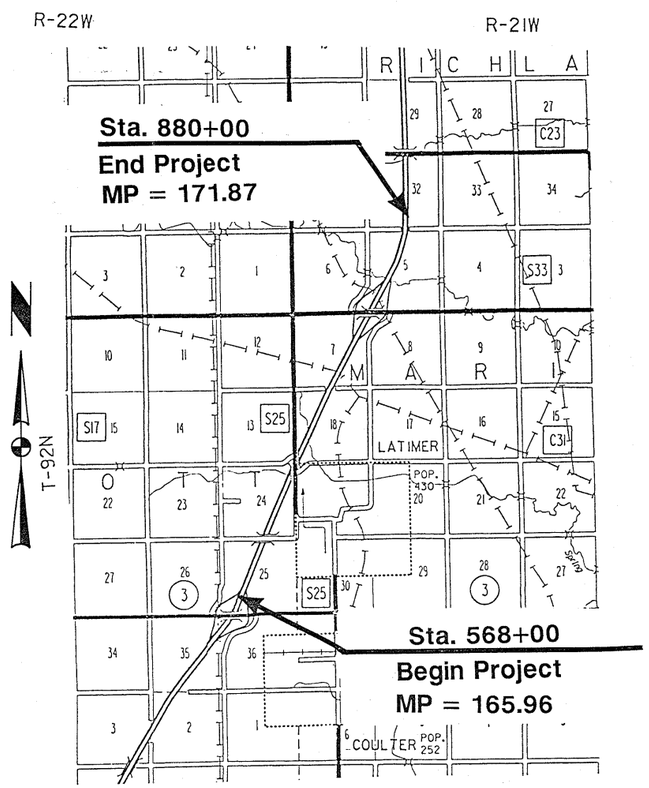
INTERSTATE ROAD SYSTEM
FRANKLIN COUNTY
A.C.C. RESURFACING

ON I-35, FROM IA-3 INCHG. N TO N. OF THE ALEXANDER INCHG. (NBL & SBL)

SCALES: As Noted

The Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, series of 1992, plus current Supplemental Specifications and Special Provisions shall apply to construction work on this project.

Value Engineering Saves. Refer to Standard Notation 203-4 on Sheet C.02



LOCATION MAP SCALE
0 1 2 3
Miles

STATE	FHWA REGION	F.Y.	SHEET	TOTAL
IOWA	7		1	26

PROJECT NUMBER
IM-35-6(64)166-13-35
R.O.W. PROJECT NUMBER

PIN NUMBER
92-35030-1

INDEX OF SHEETS
105-3 07-21-87

NO.	DESCRIPTION
A.01	Title Sheet
A.02	Strip Map
B.01-B.04	Typical Cross Sections
C.01-C.05	~~Estimate~~ of Quantities and General Information
U.01-U.13	500 Series, Modified Standards, and Special Details
V.01-V.03	Bridge Retrofit Layouts

D

MILEAGE SUMMARY
105-1 08-20-85

DIV.	LOCATION	LIN. FT.	MILES	STATE CONTROL SECTION NO.
1	Sta. 568+00 to Sta. 880+00	31,200	5.909	35-1100

THIS AS BUILT PLAN INCLUDES

YEAR	WORK	CONTRACTOR	CONTRACT AMT.
1993	ACC RESURFACING	FRED CARLSON CO. INC.	$2,915,659.31

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
RE-2A	01-17-87	RE-65	01-07-92	RL-11	10-11-88
RE-2B	10-02-90	RE-67	07-16-91	RL-12	04-04-89
RE-7	04-28-92	RE-68	08-08-89	RS-2	07-16-91
RE-12A	10-11-88	RE-69	08-08-89	RS-3	09-29-92
RE-12B	01-09-90	RG-2	10-02-90	~~RS-4~~	~~09-29-92~~
RE-46	11-10-87	RH-41D	10-02-90	RS-62	09-29-92
RE-48A	09-29-92	RH-50	11-10-92	RS-63A	09-29-92
RE-52	11-10-92	RH-51	11-10-92	RS-63B	09-29-92
RE-53	11-10-92	RH-52	09-29-92	RS-65A	09-29-92
				RS-65B	09-29-92

101-4
DESIGN DATA RURAL

1993	AADT	10 300	V.P.D.
20	AADT		V.P.D.
20	DHV		V.P.H.
TRUCKS		26	%

150

MICROFILMED

Donald L East
ROAD DESIGN ENGINEER DATE 10/9/92

JOHN R. ABRAMS 7229 REGISTERED PROFESSIONAL ENGINEER 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 10/9/92

REVISIONS

Iowa Department of Transportation
Highway Division

AUTHORIZED FOR LETTING
George A. Swesson 10-12-92
DEPUTY CHIEF ENGINEER DATE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED

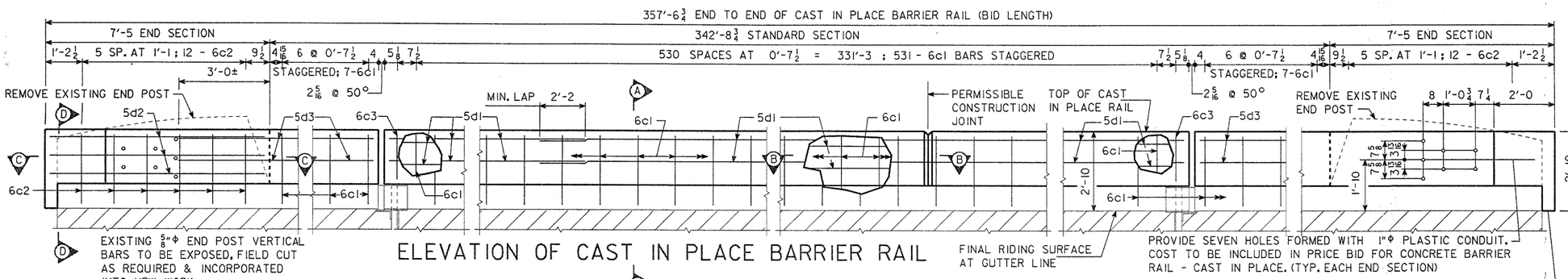
FOR THE DIVISION ADMINISTRATOR DATE

ROAD DESIGN CADD PRODUCED

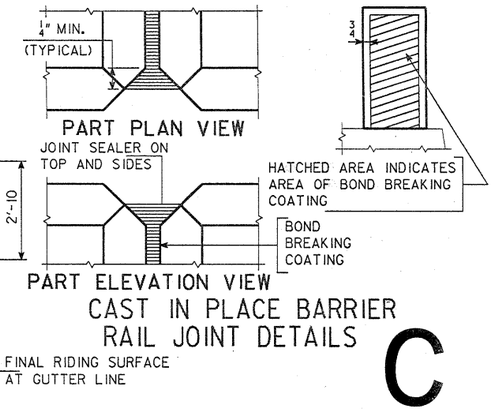
921429
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043
SJK

REH (ECHER)

Sent out

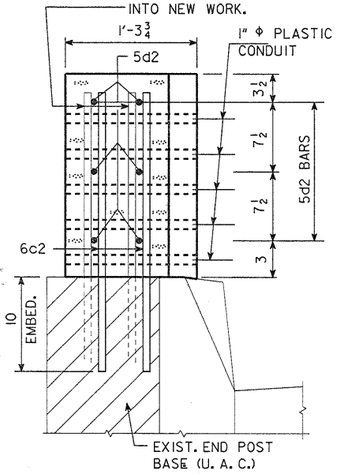


ELEVATION OF CAST IN PLACE BARRIER RAIL

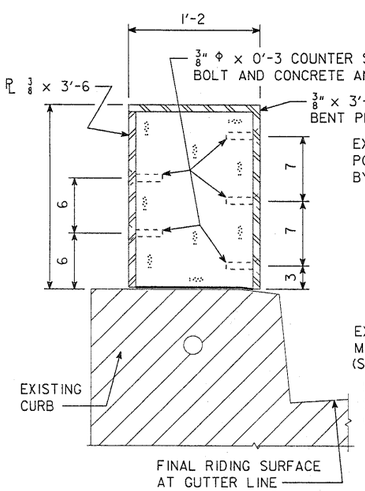


CAST IN PLACE BARRIER RAIL JOINT DETAILS

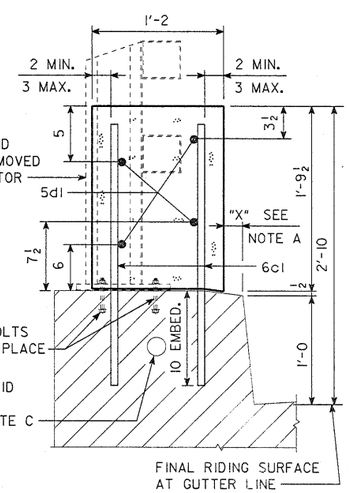
C



SECTION D-D



SECTION E-E



SECTION A-A

EPOXY REINFORCING STEEL- TWO RAILS

BAR	LOCATION	SHAPE	NO.	LENGTH	LIN. FT.	WEIGHT
6c1	STANDARD RAIL, VERT.	——	1090	2'-5	2635	3957
6c2	END SECTION, VERTICAL	——	48	2'-5	116	174
6c3	END SECTION, VERTICAL	——	4	1'-5	6	9
5d1	STANDARD RAIL, LONGIT.	——	72	38'-10	2796	2916
5d2	END SECTION, LONGIT.	——	24	7'-1	170	177
5d3	END SECTION, LONGIT.	——	16	7'-4	117	122
				TOTAL (LBS.)		7355

CONCRETE PLACEMENT SUMMARY

SECTION		TOTAL
STANDARD SECTION *	681.5 AT 0.077 CU. YDS. PER LIN. FT.	52.5
END SECTIONS	4 AT 0.58 CU. YDS. PER SECTION	2.3
* OPENING AT JUNCT. BOXES DEDUCTED.	TOTAL (CU. YDS.)	54.8

ESTIMATED QUANTITIES- TWO RAILS

ITEM NO.	ITEM	UNITS	QUANTITY
1	CONCRETE BARRIER RAIL, (CAST-IN-PLACE)	LIN. FT.	715.1
2	REMOVAL OF EXISTING HANDRAIL	L.S.	LUMP SUM

ITEM NO. — ESTIMATE REFERENCE INFORMATION

1 — INCLUDES 2757 LIN. FT. #6 BAR AND 3083 LIN. FT. #5 BAR; ALSO INCLUDES 54.8 CU. YDS. CLASS D STRUCTURAL CONCRETE.

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 2½ 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.

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 ¾" 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. 687 L.F. AND 82 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.

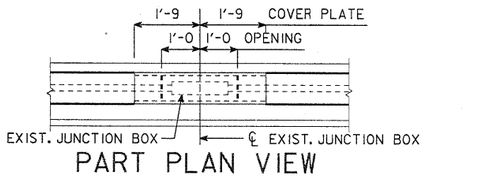
ANY REMOVALS AND DISPOSALS REQUIRED SHALL BE IN ACCORDANCE WITH SECTION 2401 OF THE STANDARD SPECIFICATIONS. ANY DAMAGE TO OTHER PORTIONS OF THE EXISTING STRUCTURE NOT NOTED FOR REMOVAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPAIRED BY HIM AT NO COST TO THE STATE.

EXISTING BRIDGE RAIL IS NOT TO BE REMOVED UNTIL AUTHORIZED BY THE ENGINEER.

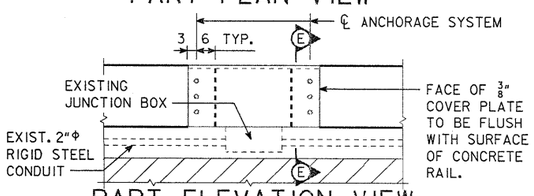
GENERAL NOTES:

THE INTENT OF THIS DESIGN IS TO CONSTRUCT CAST IN PLACE BARRIER RAILS ON THE EXISTING 330'-0x32' CONTINUOUS WELDED GIRDER BRIDGE, ORIGINAL DESIGN 4470 FRANKLIN COUNTY. PLANS OF THE EXISTING STRUCTURE MAY BE OBTAINED FROM THE AMES OFFICE OF THE IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION.

ALL DIMENSIONS AND DETAILS SHOWN ON THESE PLANS SHALL BE VERIFIED IN THE FIELD BY THE CONTRSCTOR BEFORE STARTING CONTRUCTION.



PART PLAN VIEW



PART ELEVATION VIEW

THE CAST IN PLACE RAIL SHALL BE GAPPED AT EXISTING JUNCTION BOXES AS DETAILED. THE VERTICAL BARS SHALL BE SHIFTED AS REQUIRED AND THE LONGITUDINAL BARS SHALL BE FIELD CUT AS REQUIRED. CUT ENDS OF LONGITUDINAL BARS SHALL BE PATCHED WITH EPOXY. A ⅜" GALVANIZED PLATE SHALL FIT OVER THE GAPPED AREA IN THE RAIL AND SHALL BE HELD IN PLACE WITH COUNTERSUNK BOLTS AND CONCRETE ANCHORS. THE COST OF THE GALVANIZED PLATES AND ANCHORAGE SYSTEM SHALL BE INCIDENTAL TO THE COST OF THE CAST IN PLACE RAIL.

REQUIRED AT 2 EXISTING JUNCTION BOXES.

NOTE A:

ON EACH SIDE OF EXPANSION JOINT 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:

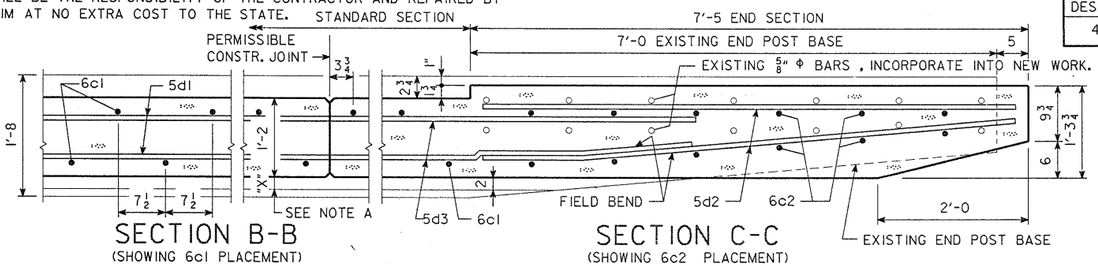
EXISTING RAIL IS TO BE REMOVED. ANY ANCHOR BOLTS THAT WILL HAVE AT LEAST 2" OF CONCRETE COVER WHEN ENCOMPASSED BY THE NEW BARRIER RAIL MAY BE LEFT IN PLACE AT THE CONTRACTORS OPTION SUBJECT TO THE APPROVAL OF THE ENGINEER. ANY ANCHOR BOLTS NOT HAVING THE 2" MIN. COVER SHALL BE CUT OFF FLUSH WITH OR SLIGHTLY 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.



SECTION B-B (SHOWING 6c1 PLACEMENT)

SECTION C-C (SHOWING 6c2 PLACEMENT)

DESIGN HISTORY AT THIS SITE

DESIGN NO.	TYPE OF WORK
4470	ORIGINAL DESIGN

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

11-19-91 (DATE) — GENE O. POLLMANN — REG. NO. 4060

Constructed according to details.

LOCATION:

MAINTENANCE NO. 3570.20035
CO. RD. OVER I-35
T-92N R-21W
SECTIONS 5&8
MARION TWP.
FRANKLIN COUNTY

DESIGN FOR RETROFIT RAIL TO 29° 07' 30" SKEW (L.A.)

330'-0x32' CONTINUOUS WELDED GIRDER BRIDGE

58'-0 END SPANS — 2-107'-0 INTERIOR SPANS

CAST IN PLACE BARRIER RAIL DETAILS

STATION: 3790+62.40 LOCAL ROAD
STATION: 790+62.40 I-35

DECEMBER, 1991

FRANKLIN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 1 FILE NO. 28485 DESIGN NO. 292

DESIGNED BY	TRACED BY	CAST IN PLACE BARRIER RAIL	STANDARD SHEET 1031 D	FRANKLIN COUNTY	PROJECT NUMBER	IR-35-6(64)166--12-35	STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
DETAILED BY E. OGAWA	CHECKED BY						IOWA	7		V.02	

H35029200.S01 DEVICE : ZHAI:[200,5] ARCH. TAPE NO. _____ DATE _____

REVISED: OPENING AT JUNCT. BOX DEDUCTED. TAPE NO. 11 DATE 3-28-91
REVISED: BARRIER RAIL DETAILS CHANGED. TAPE NO. 9 DATE 2-26-90
HSTD1031O.S01 --EP: THIS SHEET REDRAWN, DEVICE:ZHAO:[200,004] ARCH.TAPE NO.000016 DATE 11-3-88