LETTING DATE 05/15/2012

MILLING & HMA RESURFACING
IMX-35-8(44)205--02-98

WORTH Co.

Iowa Department of Transportation

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

INTERSTATE ROAD SYSTEM

WORTH COUNTY

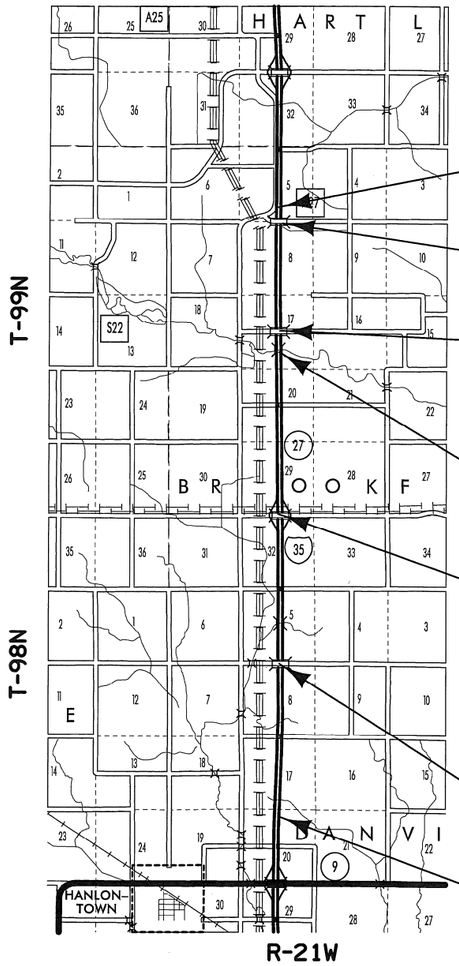
MILLING & HMA RESURFACING

I-35 from 0.9 miles north of Iowa 9 to 1.8 miles south of County Road 105, (NSL & SBL)

SCALES: As Noted

REVISIONS

	TOTAL 46
PROJECT IDENTIFICATION NUMBER	
10-98-035-010	
PROJECT NUMBER	
IMX-35-8(44)205--02-98	
R.O.W. PROJECT NUMBER	



Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.15 of the Specifications.

IOWA ONE CALL 1-800-292-8989 811 Know what's below. Call before you dig.

INDEX OF SHEETS

105-3
10-18-05

No.	Description
A.1	TITLE SHEET & LOCATION MAP
B.1 TO B.7	TYPICAL SECTIONS
C.1 TO C.9	ESTIMATE OF QUANITITIES & GENERAL INFORMATION
D.1 TO D.18	AS-BUILT PLAN SHEETS
J.1	TRAFFIC CONTROL DETAILS
U.1 TO U.3	SPECIAL DETAILS
V.1 TO V.7	BRIDGE DETAILS

MILEAGE SUMMARY

105-1
09-27-94

Div.	Location	Lin. Ft.	Miles
1	Sta. 152+90 to Sta. 591+75	43,885.00	8.312
	Deduct bridge at Sta. 489+00	125.00	0.024
	Total length of Division 1	43,760.00	8.288

INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1	Mark R. Callahan	Primary Signature Block
V.1	James S. Nelson	Bridge Design Sheets

LOCATION MAP SCALE
0 1 2 3
Miles

DESIGN DATA RURAL

2009 AADT	18,100	V.P.D.
2031 AADT	29,000	V.P.D.
2009 DHV	--	V.P.H.
TRUCKS	27	%
Total Design ESALs	14,300,000	

LICENSED PROFESSIONAL ENGINEER MARK R. CALLAHAN 11835 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 licensed Professional Engineers under the laws of the State of Iowa.

Mark Callahan 3-8-12
Signature Date

MARK R. CALLAHAN

My license renewal date is December 31, 2013

Pages or sheets covered by this seal: A.1, B.1-B.7, C.1-C.9, D.1-D.18, J.1, U.1-U.3,

ENGLISH	IOWA DOT	DESIGN TEAM Callahan\Coggins\Suntken	WORTH COUNTY	PROJECT NUMBER IMX-35-8(44)205--02-98	SHEET NUMBER A.1

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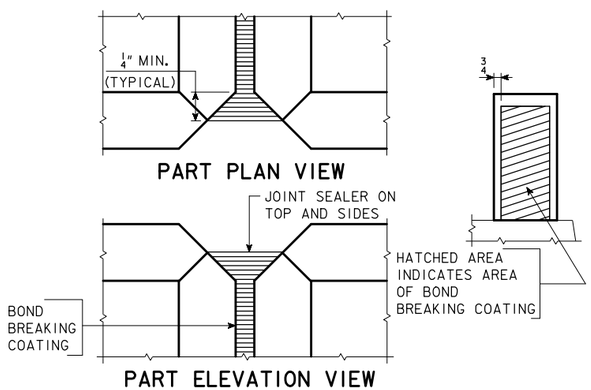
REVISION 10-08 - ESTIMATED QUANTITIES BOX REMOVED, DOWEL SETTING NOTE CHANGED, ADDED ADDITIONAL NOTES.
ENGLISHREPAIRRETROFITBRIDGES.DGN 1031T - THIS SHEET ISSUED 01-01.

ESTIMATED BRIDGE QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2401-6745636	REMOVAL OF EXISTING HANDRAIL AND END POSTS	LS	1.00	
2	2414-6431100	RETROFIT CONCRETE BARRIER RAILING	LF	639.7	

ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	DESCRIPTION
1	2401-6745636	**REMOVAL OF EXISTING HANDRAIL AND END POSTS** - -
2	2414-6431100	**RETROFIT CONCRETE BARRIER RAILING** INCLUDES FURNISHING AND INSTALLING 1" DIAMETER PLASTIC CONDUIT. INCLUDES 51.8 CY OF CLASS C OR CLASS BR STRUCTURAL CONCRETE AND 6792 LBS OF GRADE 60 EPOXY COATED REINFORCING STEEL. IF PLACEMENT OF CONCRETE IS DONE BY THE SLIPFORMING METHOD, CLASS BR CONCRETE IS REQUIRED. CAST-IN-PLACE BARRIER RAILS SHALL USE CLASS C MIX. PRICE BID FOR THIS ITEM SHALL INCLUDE THE COST OF CAST-IN-PLACE FORMS IF REQUIRED FOR PLACEMENT OF THE CONCRETE.



RETROFIT BARRIER RAIL JOINT DETAILS

THE 6c1 AND 6c2 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. EITHER OF THE FOLLOWING SYSTEMS MAY BE USED AS A BONDING AGENT FOR VERTICAL DOWELS, BUT ONLY SYSTEM "A" MAY BE USED FOR HORIZONTAL DOWELS:

A. POLYMER GROUT SYSTEM IN ACCORDANCE WITH STANDARD SPECIFICATIONS ARTICLE 2301.03,E.
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.

NOTE A: (SEE SECTION A-A ON BARRIER RAIL LAYOUT SHEET).
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 STANDARD RAIL SECTION SHALL BE TRANSITIONED TO 2" AT END SECTION AS SHOWN.

SPECIFICATIONS:

DESIGN: AASHTO SERIES OF 2002.
CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2009, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES OF 2002.
REINFORCING STEEL IN ACCORDANCE WITH SECTION 8, GRADE 60.
CONCRETE IN ACCORDANCE WITH SECTION 8, f'c = 3,500 PSI.

RETROFIT BARRIER RAILING NOTES:

COPIES OF ORIGINAL DESIGN PLANS WILL BE MADE AVAILABLE TO THE CONTRACTOR. CONTACT THE OFFICE OF CONTRACTS - HIGHWAY DIVISION - IOWA D.O.T. - AMES. DIMENSIONS SHOWN ON THESE PLANS ARE BASED ON DESIGN PLANS (ORIGINAL DESIGN NO. 568A).

UTILITY COMPANIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE BRIDGE CONTRACTOR OF THE STARTING DATE.

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.

ALL DIMENSIONS AND DETAILS SHOWN IN THESE PLANS PERTINENT TO NEW CONSTRUCTION IN RELATION TO EXISTING PORTIONS OF THE STRUCTURE SHALL BE VERIFIED IN THE FIELD BY THE BRIDGE CONTRACTOR BEFORE STARTING CONSTRUCTION.

FAINT LINES ON PLANS INDICATE THE EXISTING STRUCTURE.

THESE BRIDGE PLANS LABEL ALL REINFORCING STEEL WITH ENGLISH NOTATION (5a1 IS $\frac{5}{8}$ INCH DIAMETER BAR). ENGLISH REINFORCING STEEL RECEIVED IN THE FIELD MAY DISPLAY THE FOLLOWING "BAR DESIGNATION". THE "BAR DESIGNATION" IS THE STAMPED IMPRESSION ON THE REINFORCING BARS, AND IS EQUIVALENT TO THE BAR DIAMETER IN MILLIMETERS.

ENGLISH SIZE	3	4	5	6	7	8	9	10	11
BAR DESIGNATION	10	13	16	19	22	25	29	32	36

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

THE RETROFIT BARRIER RAIL IS TO BE BID ON A LINEAL FOOT BASIS MEASURED FROM END TO END OF RAIL. THE NUMBER OF LINEAL FEET OF RETROFIT BARRIER RAIL INSTALLED WILL BE PAID FOR AT THE CONTRACT PRICE PER LINEAL FOOT BASED ON PLAN QUANTITIES. PRICE BID FOR RETROFIT CONCRETE BARRIER RAILING SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL (INCLUDING REINF. STEEL AND 1"Φ PLASTIC CONDUIT) PLUS ALL OF THE EQUIPMENT AND LABOR REQUIRED TO ERECT THE RAIL IN ACCORDANCE WITH THESE PLANS AND CURRENT SPECIFICATIONS.

IF PLACEMENT OF CONCRETE IS DONE BY THE SLIPFORMING METHOD, CLASS BR CONCRETE IS REQUIRED. CAST-IN-PLACE BARRIER RAILS SHALL USE CLASS C MIX. PRICE BID FOR THIS ITEM SHALL INCLUDE THE COST OF CAST-IN-PLACE FORMS IF REQUIRED FOR PLACEMENT OF THE CONCRETE.

ALL REINFORCING STEEL IS TO BE GRADE 60 AND EPOXY COATED.

THE JOINT SEALER SHALL BE LIGHT GRAY NONSAG LATEX CAULKING SEALER MARKETED FOR OUTDOOR USE. NO TESTING OR CERTIFICATION IS REQUIRED.

THE PRICE BID FOR "REMOVAL OF EXISTING HANDRAIL AND END POSTS" SHALL INCLUDE ALL COSTS ASSOCIATED WITH DISMANTLING THE EXISTING ALUMINUM HANDRAIL (APPROX. 611.7 L.F. AND 74 POSTS). THE RAILS AND POSTS ARE TO BECOME THE PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE SITE BY THE CONTRACTOR. 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 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 THE CONTRACTOR AT NO COST TO THE STATE.

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

LOCATION

COUNTY ROAD A38 OVER I-35
T-99N R-21W
SECTION 29 & 32
BROOKFIELD TWP.
WORTH COUNTY
MAINTENANCE NO. 9808.80035
FHWA NO. 356217

CONCRETE PLACEMENT SUMMARY

SECTION		TOTAL
STANDARD SECTION	609.33' AT 0.08 CU. YDS. PER LIN. FT	48.7
END SECTIONS	4 AT 0.77 CU. YDS. PER SECTION	3.1
	TOTAL (CU. YDS.)	51.8

DESIGN HISTORY AT THIS SITE

DES. NO.	TYPE OF WORK
568A	ORIGINAL DESIGN

DESIGN FOR REPAIRS TO A 0° SKEW

287'-0 x 32'-0 CONTINUOUS WELDED GIRDER BRIDGE

50'-0 END SPANS 2-93'-6 INTERIOR SPANS

GENERAL NOTES

STATION: 370+14.29 JUNE, 2010

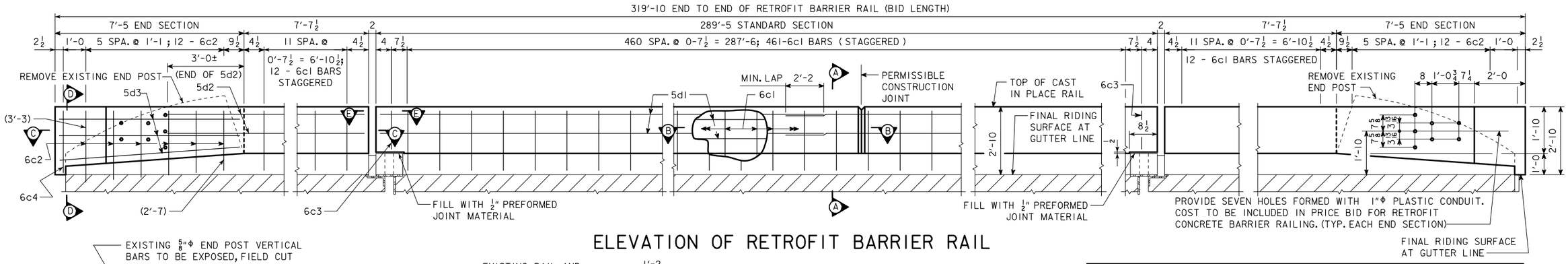
WORTH COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

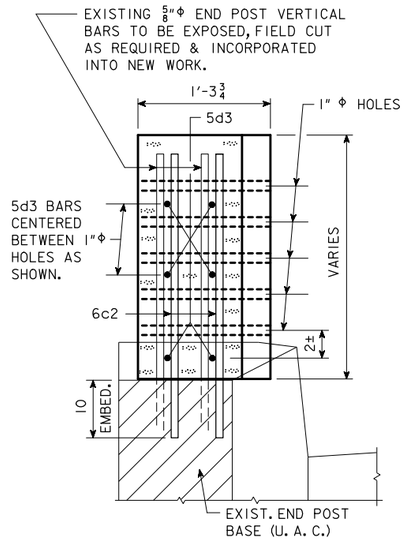
DESIGN SHEET NO. 1 OF 2 FILE NO. 30515 DESIGN NO. 210

DESIGN TEAM DAW/JSZ	RETROFIT BARRIER RAIL DETAILS	STANDARD SHEET 1031T	WORTH COUNTY	PROJECT NUMBER IMX-035-8(44)205--02-98	SHEET NUMBER V.4

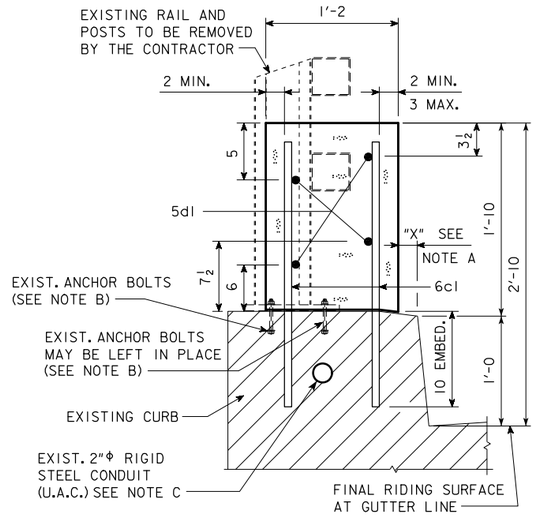
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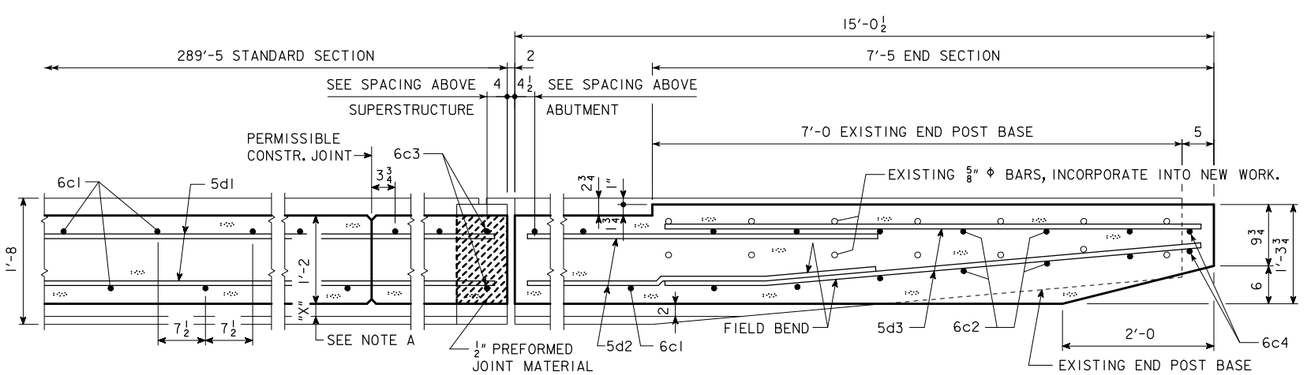
ELEVATION OF RETROFIT BARRIER RAIL



SECTION D-D



SECTION A-A



SECTION B-B PART VIEW E-E
(SHOWING 6c1 PLACEMENT)

SECTION C-C
(SHOWING 6c2 PLACEMENT)

EPOXY REINFORCING STEEL - TWO RAILS

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6c1	STANDARD RAIL, VERT.	——	970	2'-6	3642
6c2	END SECTION, VERT.	——	48	VARIES	209
6c3	STANDARD RAIL, VERT.	——	8	1'-5	17
6c4	END SECTION, VERT.	——	8	2'-6	30
5d1	STANDARD RAIL, LONGIT.	——	64	38'-1	2542
5d2	END SECTION, LONGIT.	——	16	10'-6	175
5d3	END SECTION, LONGIT.	——	24	7'-1	177
				TOTAL (LBS.)	6792

NOTE A: (SEE DESIGN SHEET 1 FOR STANDARD SHEET 1031T IN THESE PLANS).

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:
THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE EXISTING CONDUIT IN THE BRIDGE CURBS. IN ORDER TO ENSURE THE EXISTING CONDUITS AND/OR ELECTRICAL SERVICE (IF PRESENT) ARE NOT DAMAGED DURING PLACEMENT OF THE RETROFIT CONCRETE BARRIER RAILING, THE CONTRACTOR SHALL BE REQUIRED TO DO THE FOLLOWING:

1. PHYSICALLY LOCATE THE CONDUIT AT APPROXIMATELY 50 FOOT INTERVALS PRIOR TO DRILLING ANY HOLES FOR ¾" DIAMETER DOWEL BARS.

2. AFTER COMPLETION OF DRILLING FOR THE ¾" DOWEL BARS AND PRIOR TO PLACEMENT OF THE DOWELS, PROVE TO THE INSPECTOR BY A REASONABLE METHOD THE USABILITY OF THE CONDUIT HAS NOT BEEN COMPROMISED.

COST OF THESE OPERATIONS WILL BE CONSIDERED INCIDENTAL TO THE COST OF THE RETROFIT CONCRETE BARRIER RAILING. ANY DAMAGE TO THE CONDUIT OR WIRING BY THE CONTRACTOR WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND REPAIRED AT NO EXTRA COST TO THE STATE.

DESIGN FOR REPAIRS TO A 0° SKEW

287'-0 x 32'-0 CONTINUOUS WELDED GIRDER BRIDGE

50'-0 END SPANS 2-93'-6 INTERIOR SPANS

RETROFIT BARRIER RAIL DETAILS

STATION: 370+14.29 JUNE, 2010

WORTH COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 2 FILE NO. 30515 DESIGN NO. 210

DESIGN TEAM DAW/JSZ	MODIFIED STANDARD SHEET 1031C	WORTH COUNTY	PROJECT NUMBER IMX-035-8(44)205--02-98	SHEET NUMBER V.5

REVISED: 5-25-99 ; BID ITEM NO. 1 CHANGED.

REVISED 01-01 - CONC. PLACEMENT, QUANTITY, JOINT DETAILS AND NOTES MOVED TO STD. 1031T.
HE1031C.S01 (HSTD1031C.S01--LEP; THIS SHEET REDRAWN. DEVICE:ZHAO;(200,004) ARCH.TAPE NO. 000016 DATE 11-3-88)

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