

GUARDRAIL

POWESHIEK/IOWA CO.

LETTING DATE

01/19/2011

IHSIPX-80-5(289)187--08-79

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
A.2	Location Map
B Sheets	Typical Cross Sections and Details
B.1	Typical Cross Sections and Details
C Sheets	Quantities and General Information
C.1 - 6	Estimated Project Quantities
D Sheets	Mainline Plan and Profile Sheets
* D.1 - 5	Strip Map (For Information Only)
J Sheets	Traffic Control and Staging Sheets
* J.1	Traffic Control Plan
U Sheets	500 Series, Mod.Stds. and Detail Sheets
U.1 - 6	Detail Sheets
V Sheets	Bridge and Culvert Situation Plans
V.1 - 9	Bridge and Culvert Situation Plans



Iowa Department of Transportation

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

INTERSTATE ROAD SYSTEM

POWESHIEK/IOWA COUNTY

GUARDRAIL

From 4 Miles E. Of Ia. 146 E. To 2 Miles E. Of Iowa Co. line

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

NO MILEAGE SUMMARY



For Project Location Map
Refer to Sheet A.2

04-30-02		101-4	
DESIGN DATA RURAL			
2008	AADT	26,800	V.P.D.
20	AADT		V.P.D.
20	DHV		V.P.H.
TRUCKS			%
Total			
Design ESALs			

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	Paul Flattery	Primary Signature Block
V.1	James S. Nelson	Structural Design



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Paul W. Flattery

Signature

10-05-2010

Date

Paul W. Flattery

Printed or Typed Name

My license renewal date is December 31, 2011

Pages or sheets covered by this seal: A.1-A.2, B.1, C.1-C.6, D.1-D.5, J.1, U.1-U.6

ENGLISH	IOWA DOT	DESIGN TEAM	Flattery\Humpal\Luong	POWESHIEK/IOWA COUNTY	PROJECT NUMBER	IHSIPX-80-5(289)187--08-79	SHEET NUMBER	A.1
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8:37:43 AM

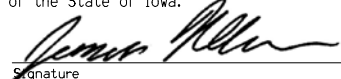
11/16/2010

hluong

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ESTIMATED BRIDGE QUANTITIES					
ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2401-6750001	REMOVALS, AS PER PLAN	LS	1.00	
2	2403-0100000	STRUCTURAL CONCRETE (MISCELLANEOUS)	CY	3.6	
3	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	588	

ESTIMATE REFERENCE INFORMATION		
ITEM NO.	ITEM CODE	DESCRIPTION
1	2401-6750001	REMOVALS, AS PER PLAN - -
2	2403-0100000	STRUCTURAL CONCRETE (MISCELLANEOUS) INCLUDES FURNISHING AND INSTALLING 1 INCH DIAMETER PLASTIC CONDUIT.
3	2404-7775005	REINFORCING STEEL, EPOXY COATED - -

STRUCTURAL DESIGN	
	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.
	Signature:  Date: 8-19-10
	Printed or Typed Name: James S. Nelson
	My license renewal date is December 31, 2011
	Pages or sheets covered by this seal: V.I THRU V.9

NOTE:
ROADWAY QUANTITIES SHOWN
ELSEWHERE IN THESE PLANS.

DESIGN FOR REPAIRS TO 2 ND 40' SKEW (L.A.)	
DUAL 125'-10 x 40' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE	
38'-11½ END SPANS	47'-11 INTERIOR SPAN
QUANTITIES	
STATION: 58+58.90 (C SURVEY 1-80)	AUGUST, 2010
IOWA COUNTY	
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION	
DESIGN SHEET NO. 1 OF 3	FILE NO. 30536 DESIGN NO. 210

RETROFIT BARRIER RAILING NOTES:

IT IS THE INTENT OF THIS DESIGN TO CONSTRUCT 2 RETROFIT BARRIER RAIL END SECTIONS ON EACH OF THE EXISTING DUAL 125'-10 x 40' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES ON I-80 OVER COUNTY ROAD V38, STATION 58+58.90.

COPIES OF ORIGINAL DESIGN PLANS WILL BE MADE AVAILABLE TO THE BRIDGE 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. 162, RETROFIT RAIL DESIGN NO. 178, AND DECK REPAIR DESIGN NO. 282 AND 382).

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 EXISTING PORTIONS OF THE BRIDGE.

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 CONSTRUCTION STARTING DATE.

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.

ALL RETROFIT BARRIER RAIL CONCRETE IS TO BE CLASS C.

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

ANY REMOVALS REQUIRED SHALL BE IN ACCORDANCE WITH SECTION 240I OF THE STANDARD SPECIFICATIONS. ANY DAMAGE TO OTHER PORTIONS OF THE EXISTING STRUCTURE NOT NOTED FOR REMOVAL SHALL BE THE RESPONSIBILITY OF THE BRIDGE CONTRACTOR AND SHALL BE REPAIRED AT NO COST TO THE STATE.

THE BID ITEM "REMOVALS AS PER PLAN" SHALL INCLUDE ALL COSTS ASSOCIATED WITH REMOVING THE PORTIONS OF EXISTING CONCRETE RAIL, CURB, AND THE CUTTING OFF AND PAINTING OF THE EXISITNG REINFORCING IF REQUIRED.

EXISTING REINFORCING AT THE ENDS OF THE STANDARD BARRIER RAIL SECTIONS IS TO BE CAREFULLY EXPOSED AND INCORPORATED INTO THE NEW TRANSITION SECTIONS. INITIATE THE CONCRETE REMOVAL LINES WITH A 3⁄4" SAW CUT.

THE TOP AND INTERIOR FACES OF THE EXISTING CONCRETE RAILING ARE TO BE CLEANED AND SEALED IN ACCORDANCE WITH STANDARD SPECIFICATION 2403.2I PART D. IF NEW SECTIONS OF RAIL ARE CONSTRUCTED, THE NEW SECTIONS SHALL NOT BE SEALED. ALL COSTS ASSOCIATED WITH CLEANING AND SEALING OF THE CONCRETE RAILS SHALL BE INCLUDED IN THE UNIT PRICE BID ITEM "STRUCTURAL CONCRETE".

THE BRIDGE CONTRACTOR SHALL DRESS UP THE SLOPES AROUND THE WINGS WHICH ARE DISTURBED DURING CONSTRUCTION. THIS WORK SHALL BE CONSIDERED INCIDENTAL AND NO EXTRA PAYMENT WILL BE MADE.

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.

THESE BRIDGE PLANS LABEL ALL REINFORCING STEEL WITH ENGLISH NOTATION (5dI IS 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

REMOVAL NOTES:

REMOVE EXISTING END POSTS DOWN TO TOP OF CURB. EXISTING REINFORCING WHICH WILL HAVE LESS THAN 2" OF CONCRETE COVER FROM NEW CONSTRUCTION SHALL BE CUT OFF FLUSH WITH OR SLIGHTLY BELOW SURFACE OF CURB AND REMAINING EXPOSED ENDS COATED WITH 2 COATS OF ZINC RICH PAINT.

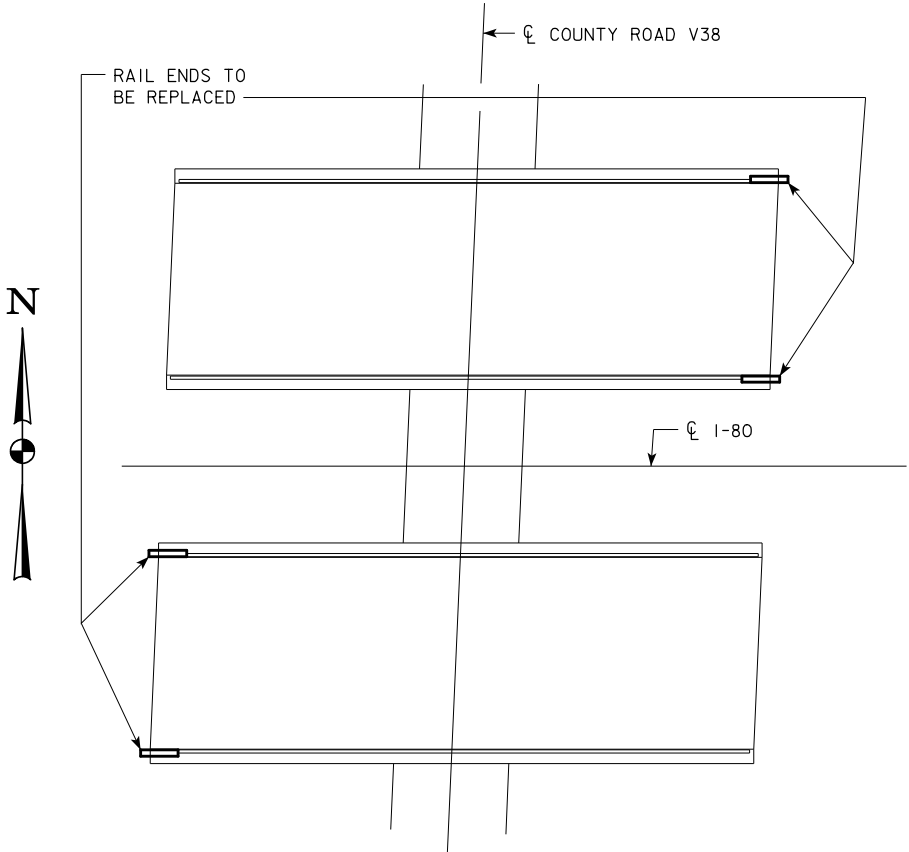
EXISTING REINFORCING AT THE ENDS OF THE STANDARD BARRIER RAIL SECTIONS IS TO BE CAREFULLY EXPOSED AND INCORPORATED INTO THE NEW TRANSITION SECTIONS. INITIATE THE CONCRETE REMOVAL LINES WITH A 3⁄4" SAW CUT.

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

DOWEL SETTING NOTE :

THE 6c2, 6c3, & 5dI BARS SHALL BE SET AS DOWELS IN 10" DEEP DRILLED HOLES. THE 6c4 AND 6c5 BARS SHALL BE SET AS DOWELS IN 6" DEEP DRILLED HOLES. THE DOWELS SHALL BE INSTALLED IN ACCORDANCE WITH THE GROUT 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 230I.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. 49I.13 AND SHALL BE USED IN ACCORDANCE WITH THE GROUT MANUFACTURER'S RECOMMENDATIONS.



LOCATION:

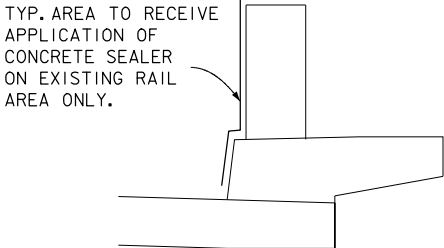
I-80 OVER COUNTY ROAD V38
T-80N R-12W
SECTION 32
HARTFORD TOWNSHIP
IOWA COUNTY
BRIDGE MAINT. NO. 4805.8L080 (W.B. LANE)
BRIDGE MAINT. NO. 4805.8R080 (E.B. LANE)
FHWA NO. 029730 (W.B. LANE)
FHWA NO. 029720 (E.B. LANE)

EPOXY REINFORCING STEEL- ONE END SECTION

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6c1	END SECTION, VERTICAL	—	10	2'-6	38
6c2	END SECTION, VERTICAL, F.F.	—	1	2'-7	4
6c3	TRANSITION SECTION, VERTICAL, F.F.	—	6	2'-7 TO 2'-3	22
6c4	END SECTION, VERTICAL, B.F.	—	1	2'-3	3
6c5	TRANSITION SECTION, VERTICAL, B.F.	—	6	2'-3 TO 1'-11	19
5d1	END SECTION, LONGIT.	—	2	4'-5	9
5d2	END SECTION, LONGIT. (F.F.)	—	3	8'-4	26
5d3	END SECTION, LONGIT. (B.F.)	—	3	8'-4	26
TOTAL (LBS.)					147

CONCRETE PLACEMENT SUMMARY

SECTION	TOTAL
END SECTIONS 4 AT 0.899 CU. YDS. PER SECTION	3.6
TOTAL (CU. YDS.)	3.6



DETAIL OF CONCRETE SEALER AREA

DESIGN HISTORY AT THIS SITE

DES. NO.	TYPE OF WORK
162	ORIGINAL DESIGN
178	RETROFIT RAIL
282	DECK REPAIR (E.B. LANE)
382	DECK REPAIR (W.B. LANE)

DESIGN FOR REPAIRS TO 2° 40' SKEW (L.A.)

DUAL 125'-10 x 40' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

38'-11½ END SPANS 47'-11 INTERIOR SPAN

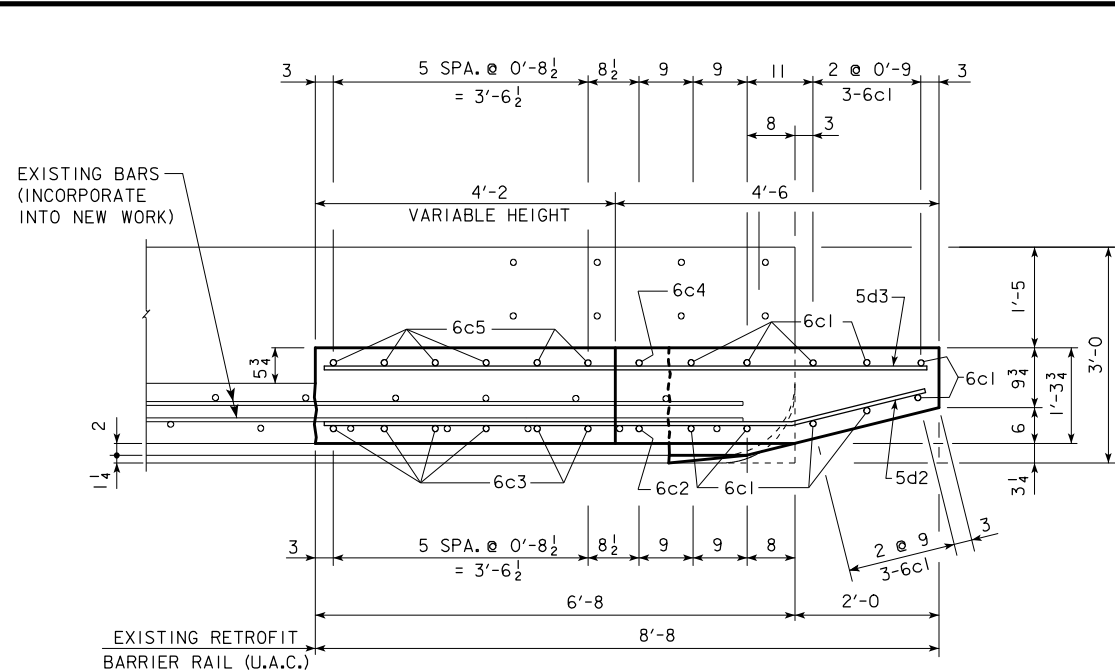
QUANTITIES & GENERAL NOTES

STATION: 58+58.90 (C SURVEY I-80) AUGUST, 2010

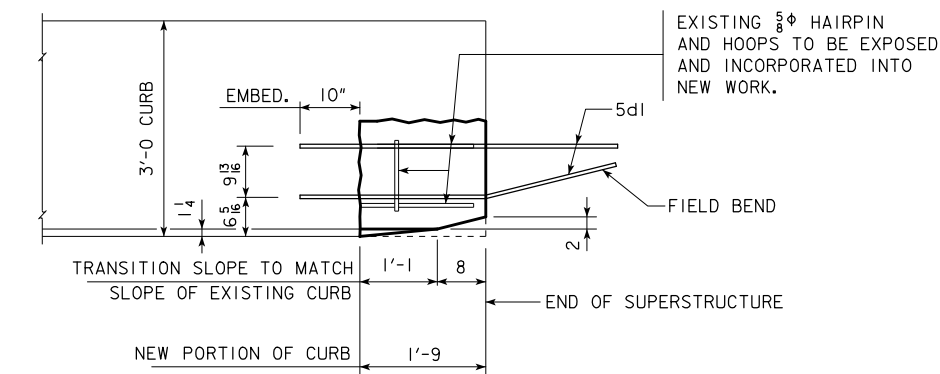
IOWA COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

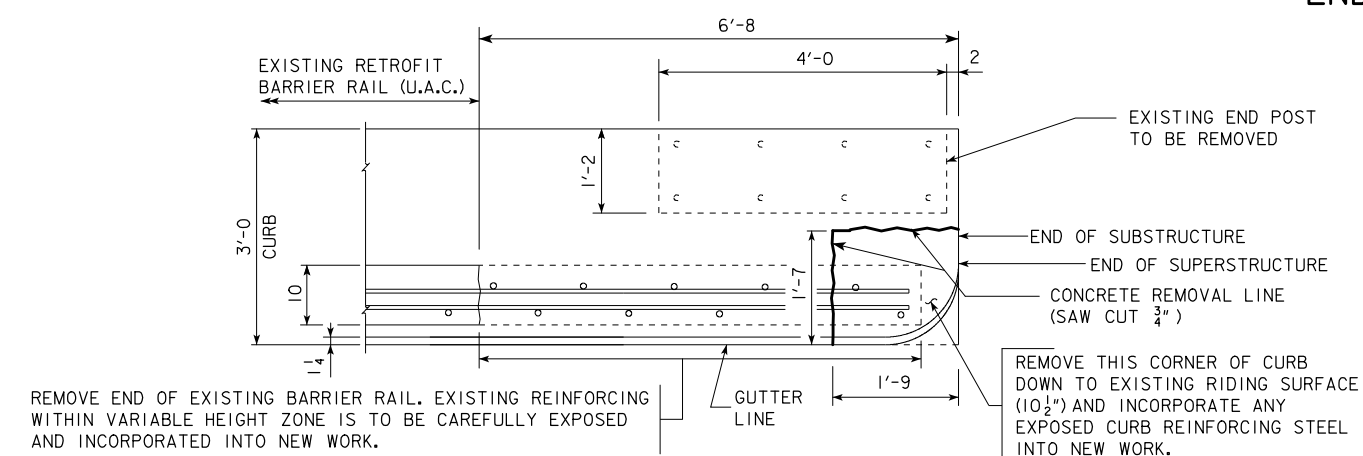
DESIGN SHEET NO. 2 OF 3 FILE NO. 30536 DESIGN NO. 210



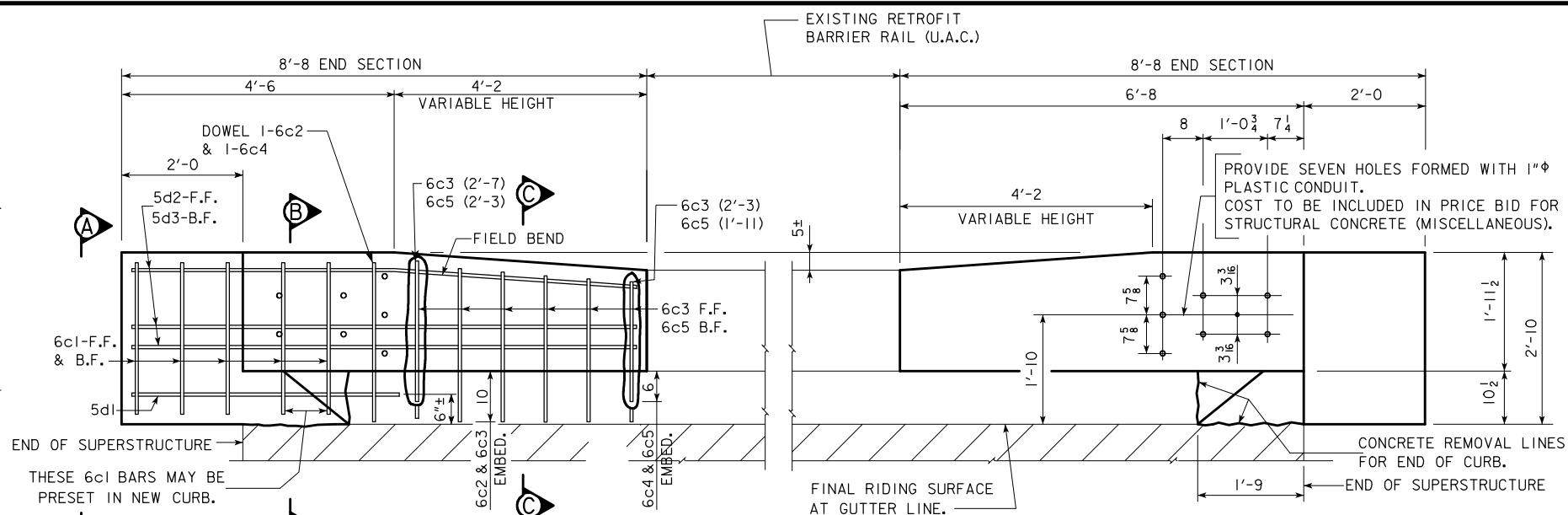
PLAN VIEW OF END SECTION



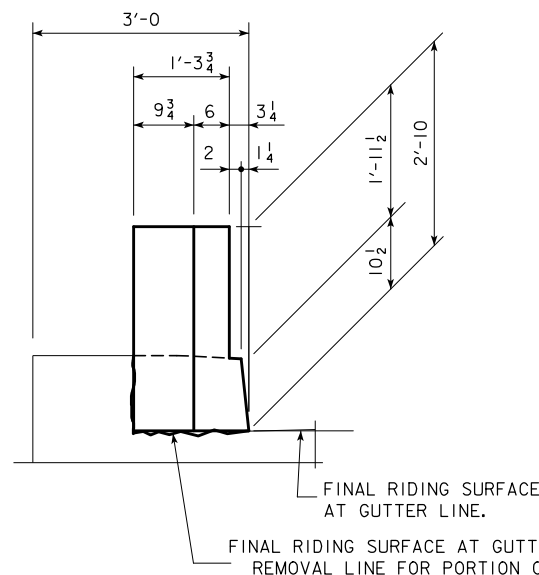
PLAN VIEW OF NEW PORTION OF CURB



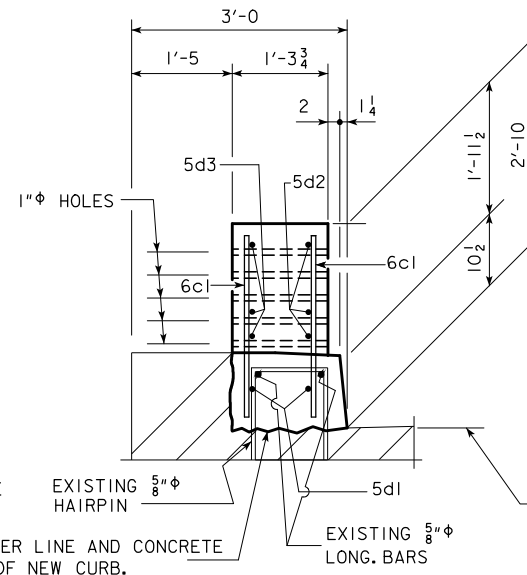
PART PLAN VIEW
(SHOWING EXISTING CONDITIONS AND REMOVAL DETAILS)



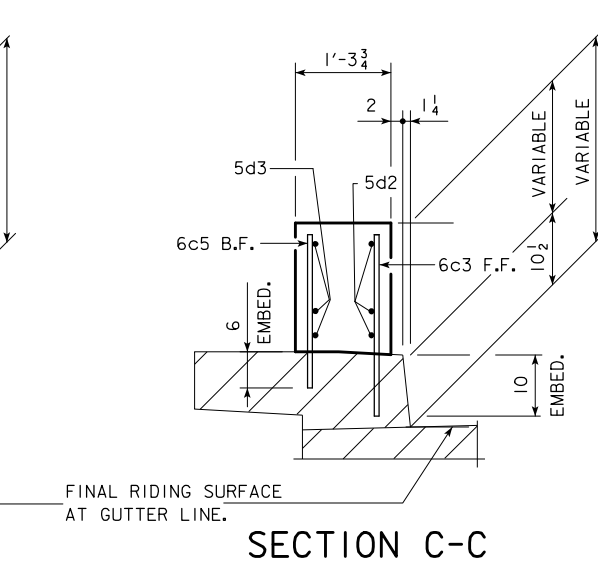
PART LONGITUDINAL SECTION



END VIEW A-A



SECTION B-B



SECTION C-C

DESIGN FOR REPAIRS TO 2° 40' SKEW (L.A.)
DUAL 125'-10 x 40' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE
 38'-11½" END SPANS 47'-11" INTERIOR SPAN
RETROFIT END SECTION DETAILS
 STATION: 58+58.90 (C SURVEY 1-80) AUGUST, 2010
IOWA COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 3 OF 3 FILE NO. 30536 DESIGN NO. 210