HMA RESURFACING
STP-122-1(13)--2C-17
CERRO GORDO Co.

LETTING DATE
FEB. 21, 2012

INDEX OF SHEETS

105-3
10-18-05

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D.1-D.2	Design Plan Sheets
D.3-D.14	As-Built Plan Sheets
E.1	School Entrance Design Plan Sheet
G.1	Reference Ties
J.1-J.5	Traffic Control Sheets
K.1	School Entrance Design Sheet
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Iowa Department of Transportation

Highway Division

PLANS OF ~~PROPOSED~~ IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

CERRO GORDO COUNTY

HMA RESURFACING

On IA 122 in Mason City from Illinois Ave. east to the east city limits of Mason City

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

REVISIONS

TOTAL
71
PROJECT IDENTIFICATION NUMBER
11-17-122-010
PROJECT NUMBER
STP-122-1(13)--2C-17
R.O.W. PROJECT NUMBER

IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com
811

MILEAGE SUMMARY

105-1
09-27-94

Div.	Location	Lin. Ft.	Miles
1	Sta. 305+22.0 to Sta. 462+65.0	15743.00	2.98
	Deduct bridge and approaches at Sta. 328+57.50	336.00	0.06
	Deduct bridge and approaches at Sta. 371+94.50	185.16	0.03
	Total length of Roadway in Division 1	15221.84	2.89
	Total length of Bridge and Approaches in Division 1	521.16	0.09
	Total length of Division 1	15743.00	2.98

INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1	Mark R. Callahan	Primary Signature Block
A.1	Michael L. Danburg	Primary Signature Block
V.1	James S. Nelson	Primary Signature Block

For Project Location Map
Refer to Sheet A.2



101-5
04-30-02

DESIGN DATA URBAN

2009 AADT	12500	V.P.D.
20 AADT	--	V.P.D.
20 DHV	--	V.P.H.
TRUCKS	2.4	%
Total Design ESALs	876,000	

101-4
04-30-02

DESIGN DATA RURAL

2009 AADT	8500	V.P.D.
20 AADT	--	V.P.D.
20 DHV	--	V.P.H.
TRUCKS	2.5	%
Total Design ESALs	620,500	

Form 520003 11-12

LICENSED PROFESSIONAL ENGINEER
ROY A. GELHAUS
13168
IOWA

I hereby certify that this project was constructed in accordance with the contract documents, the "as-built" plans were prepared under my supervision, and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Roy A. Gelhaus — May 2, 2013
Project Engineer — Date

My license renewal date is December 31, 2014

2012 — Heartland Asphalt — Mr. Jason Ruter
Year — Contractor — Project Inspector

LICENSED PROFESSIONAL ENGINEER
MICHAEL L. DANBURG
16294
IOWA

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

Michael L. Danburg — 11/07/11
Michael L. Danburg — Date
License number 16294
My license renewal date is December 31, 2011

Pages or sheets covered by this seal: B.01, A.01, D.02, E.01, K.01, T.01, W.01-W.05 + Z.01

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 — 11-7-11
Signature — Date

MARK R. CALLAHAN

My license renewal date is December 31, 2011

Pages or sheets covered by this seal: A.1-A.2, B.2-B.7, C.1-C.16, D.3-D.14, J.1-J.5, L.1-L.4, U.1-U.8

ENGLISH	IOWA DOT	DESIGN TEAM District 2\Yaggy Colby Associates	CERRO GORDO COUNTY	PROJECT NUMBER STP-122-1(13)--2C-17	SHEET NUMBER A.1

3:11:06 PM 11/3/2011 csuntke W:\Projects\1712201011\DistrictDesign\1712201301.sht

ESTIMATED BRIDGE QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2499-0800000	PAVING NOTCH REPLACEMENT	LF	108.0	115.000

ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	DESCRIPTION
1	2499-0800000	PAVING NOTCH REPLACEMENT INCLUDES 7.6 CY OF STRUCTURAL CONCRETE CLASS "C", 1728 LBS OF EPOXY-COATED REINFORCING STEEL, EXCAVATION, REMOVING AND DISPOSING OF A PORTION OF EXISTING PAVING NOTCHES AND CONCRETE REMOVED TO FORM THE SHEAR KEYWAYS, DRILLING HOLES FOR DOWEL BARS, AND POLYMER GROUT MATERIAL.

LOCATION

IA. 122 OVER WINNEBAGO RIVER
T-96N R-20W
SECTION 11
MASON TOWNSHIP
CERRO GORDO COUNTY
BRIDGE MAINT. NO. 1710.2S122
FHWA NO. 018831

NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

DESIGN HISTORY AT THIS SITE

DES. NO.	TYPE OF WORK
982	ORIGINAL DESIGN

STRUCTURAL DESIGN

LICENSED PROFESSIONAL ENGINEER
James S. Nelson
16032
IOWA

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 8-8-11 Date

James S. Nelson
Printed or Typed Name

My license renewal date is December 31, 2011

Pages or sheets covered by this seal: V.1 THRU V.6

DESIGN FOR 0° SKEW

193'-0 x 54' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

64'-1 END SPANS 64'-10 INTERIOR SPAN

QUANTITIES & GENERAL NOTES

STATION: 328+57.50 AUGUST, 2011

CERRO GORDO COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 2 FILE NO. 30639 DESIGN NO. 112

~~ESTIMATED~~ BRIDGE QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2401-6750001	REMOVALS, AS PER PLAN	LS	1.00	$9,000.000
2	2414-6431100	RETROFIT CONCRETE BARRIER RAILING	LF	168.5	168.500
3	2426-6772016	CONCRETE REPAIR	SF	30	30.000

~~ESTIMATE~~ REFERENCE INFORMATION

ITEM NO.	ITEM CODE	DESCRIPTION
1	2401-6750001	**REMOVALS, AS PER PLAN**
2	2414-6431100	**RETROFIT CONCRETE BARRIER RAILING** INCLUDES FURNISHING AND INSTALLING 1" DIAMETER PLASTIC CONDUIT. INCLUDES 13.2 CY OF CLASS C OR CLASS BR STRUCTURAL CONCRETE AND 2162 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.
3	2426-6772016	**CONCRETE REPAIR** - -
4	2499-0800000	**PAVING NOTCH REPLACEMENT** INCLUDES 7.6 CY OF STRUCTURAL CONCRETE CLASS "C", 1728 LBS OF EPOXY-COATED REINFORCING STEEL,EXCAVATION, REMOVING AND DISPOSING OF A PORTION OF EXISTING PAVING NOTCHES AND CONCRETE REMOVED TO FORM THE SHEAR KEYWAYS, DRILLING HOLES FOR DOWEL BARS, AND POLYMER GROUT MATERIAL.

NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

DESIGN FOR 0° SKEW

42'-6 x 68' PRESTRESSED DOUBLE-TEE BEAM BRIDGE

QUANTITIES

STATION: 371+94.50 AUGUST, 2011

CERRO GORDO COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 4 FILE NO. 30639 DESIGN NO. 212

DESIGN TEAM DAW/JSN | CERRO GORDO COUNTY | PROJECT NUMBER STP-122-1(13)--2C-17 | SHEET NUMBER V.3

GENERAL NOTES:

THIS DESIGN IS FOR REPAIR TO THE EXISTING 42'-6 X 68' PRESTRESSED DOUBLE-TEE BEAM BRIDGE. COPIES OF THE ORIGINAL DESIGN PLANS WILL BE MADE AVAILABLE TO THE CONTRACTOR. CONTACT THE OFFICE OF CONTRACTS - HIGHWAY DIVISION - IOWA D.O.T. - AMES. REPAIR SHALL CONSIST OF THE FOLLOWING:

1. INSTALL CONCRETE TEMPORARY BARRIER RAIL TO REDIRECT TRAFFIC AWAY FROM WORK AREA.
2. RETROFIT BARRIER RAILS.
3. REPAIR PAVING NOTCH.
4. CONSTRUCT NEW APPROACH SECTIONS AND UPDATE GUARDRAIL ENDS.

CONSTRUCTION SHALL BE DONE IN STAGES WITH AT LEAST ONE TRAFFIC LANE MAINTAINED AT ALL TIMES IN ACCORDANCE WITH THE TRAFFIC CONTROL PLAN.

ALL DIMENSIONS AND DETAILS SHOWN ON THESE PLANS PERTINENT TO NEW CONSTRUCTION SHALL BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION.

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO REINFORCING BAR SHALL BE 2 INCHES UNLESS NOTED OTHERWISE.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE WASTE AREAS OR DISPOSAL SITES FOR EXCESS MATERIAL (EXCAVATION OR BROKEN CONCRETE). NO PAYMENT FOR OVERHAUL WILL BE GIVEN.

THE BID ITEM "CONRETE REPAIR" INCLUDES ALL MATERIAL AND LABOR REQUIRED TO REPAIR THE CURBS AND THE WEST ABUTMENT FOOTING PAVING NOTCH AS SHOWN IN THE PLANS. THIS QUANTITY IS AN ESTIMATION. ACTUAL SPALLED AND HOLLOW AREAS AS DETERMINED BY THE ENGINEER AT THE TIME OF CONSTRUCTION SHALL BE REPAIRED.

THE LUMP SUM BID ITEM FOR "REMOVALS AS PER PLAN" SHALL INCLUDE ALL COSTS ASSOCIATED WITH REMOVING UPPER PORTION OF CURB RAILS, ALUMINUM HANDRAILS, AND END POSTS. REMOVAL OF THESE ITEMS SHALL BE IN ACCORDANCE WITH SECTION 2401. ANY DAMAGE TO STEEL OR CONCRETE NOT TO BE REMOVED SHALL BE REPAIRED AT NO EXTRA COST TO THE STATE.

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.

LOCATION

IA. 122 OVER IDEAL CREEK
T-96N R-20W
SECTION 12
MASON TOWNSHIP
CERRO GORDO COUNTY
BRIDGE MAINT. NO. 1711.1S122
FHWA NO. 018841

TRAFFIC CONTROL PLAN

NOTE: THE ROADWAY WILL BE OPEN TO THRU TRAFFIC. REFER TO THE TRAFFIC CONTROL PLAN AND THE TBR LAYOUT ON THE ROAD PLAN IN THESE PLANS.

DESIGN HISTORY AT THIS SITE

DES. NO.	TYPE OF WORK
NO. 1-1919	ORIGINAL DESIGN
1082	WIDENING

DESIGN FOR 0° SKEW

42'-6 x 68' PRESTRESSED DOUBLE-TEE BEAM BRIDGE

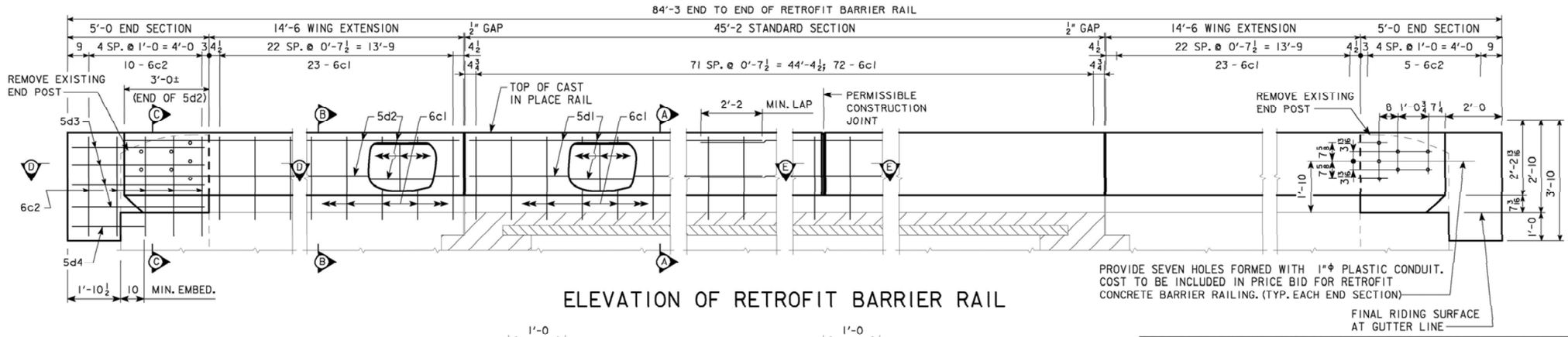
GENERAL NOTES

STATION: 371+94.50 AUGUST, 2011

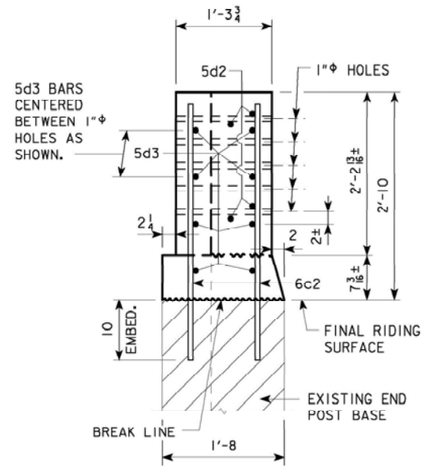
CERRO GORDO COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

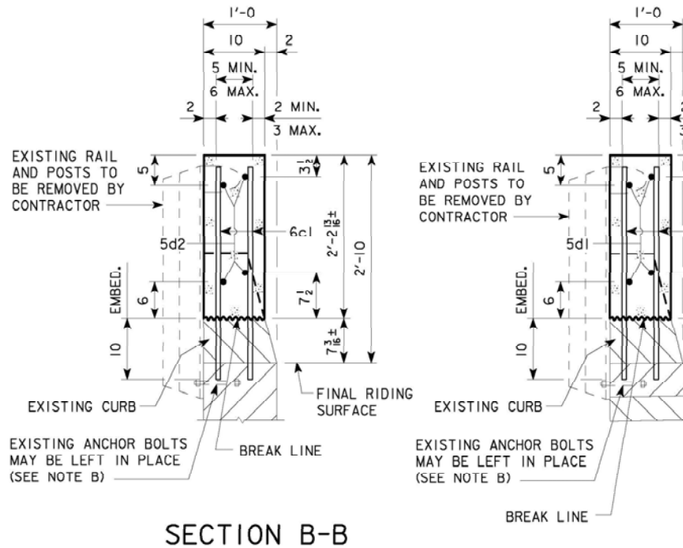
DESIGN SHEET NO. 2 OF 4 FILE NO. 30639 DESIGN NO. 212



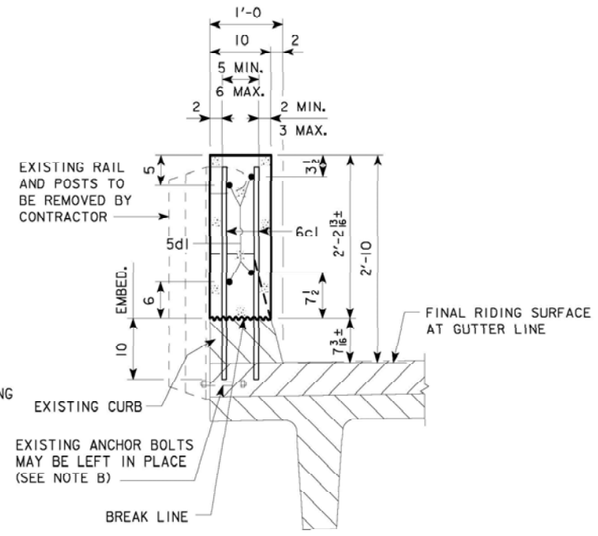
ELEVATION OF RETROFIT BARRIER RAIL



SECTION C-C



SECTION B-B



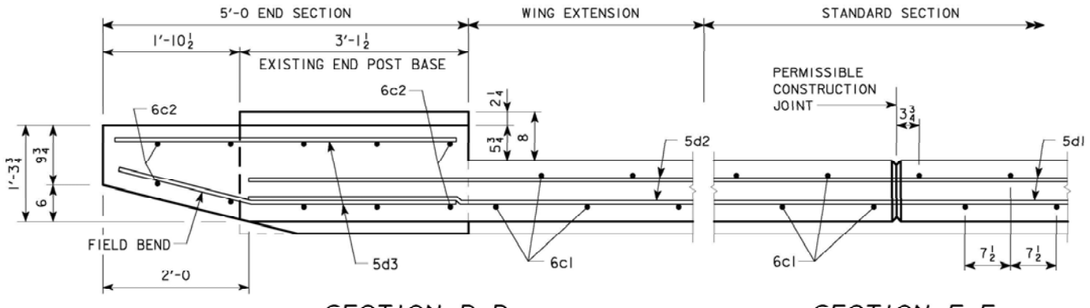
SECTION A-A

EPOXY REINFORCING STEEL-TWO RAILS					
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6c1	STANDARD RAIL & WING EXT., VERT.	——	236	3'-1	1093
6c2	END SECTION, VERTICAL	——	40	3'-6	210
5d1	STANDARD RAIL, LONGIT.	——	16	23'-6	392
5d2	WING EXTENSION RAIL, LONGIT.	——	16	17'-4	289
5d3	END SECTION, LONGIT.	——	32	4'-8	156
5d4	END SECTION, LONGIT.	——	8	2'-7	22
				TOTAL (LBS.)	2162

NOTE B:
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.

DOWEL SETTING NOTE:

THE DEFORMED 6c1, 6c2 & 5d4 BARS SHALL BE SET AS DOWELS IN DRILLED HOLES. HOLES ARE TO BE 10" DEEP. A POLYMER GROUT SYSTEM SHALL BE USED TO INSTALL THE DEFORMED DOWEL BARS IN ACCORDANCE WITH ARTICLE 2301.03, E, OF THE STANDARD SPECIFICATIONS, AND THE GROUT MANUFACTURER'S RECOMMENDATIONS.



SECTION D-D

SECTION E-E

DESIGN FOR 0° SKEW

42'-6 x 68' PRESTRESSED DOUBLE-TEE BEAM BRIDGE

RETROFIT BARRIER RAIL DETAILS

STATION: 371+94.50 AUGUST, 2011

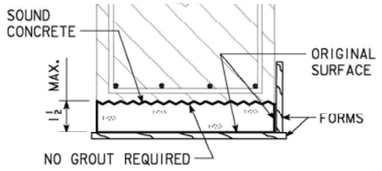
CERRO GORDO COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

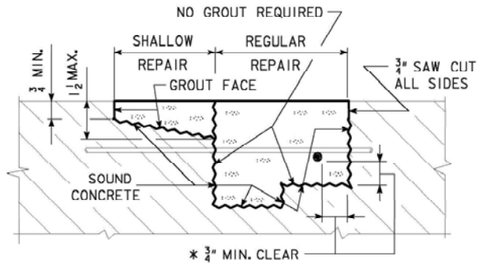
DESIGN SHEET NO. 3 OF 4 FILE NO. 30639 DESIGN NO. 212

DESIGN TEAM DAW/JSN	CERRO GORDO COUNTY	PROJECT NUMBER STP-122-1(13)--2C-17	SHEET NUMBER V.5

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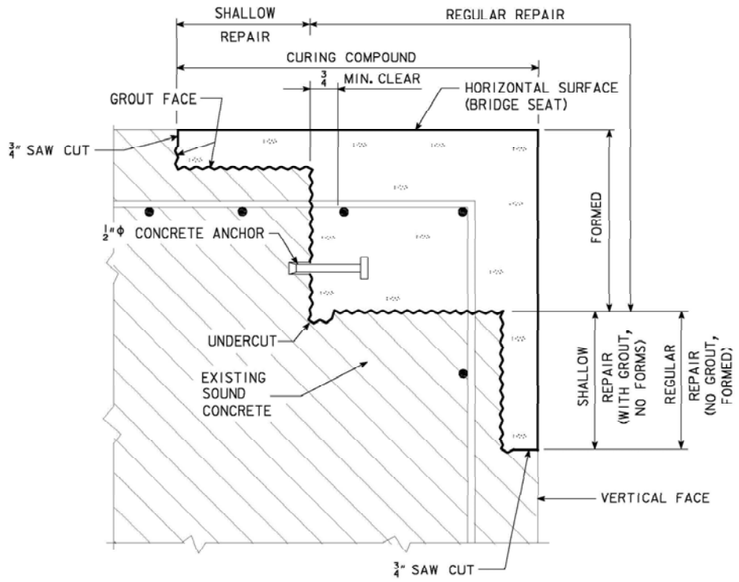


SHALLOW REPAIR BOTTOM SURFACE

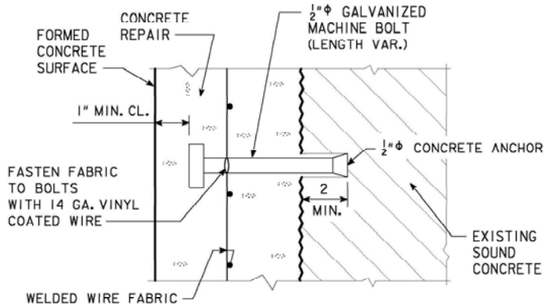


REPAIR DEFINITION

* INDICATES CLEARANCE FOR AN UN-BONDED REBAR.

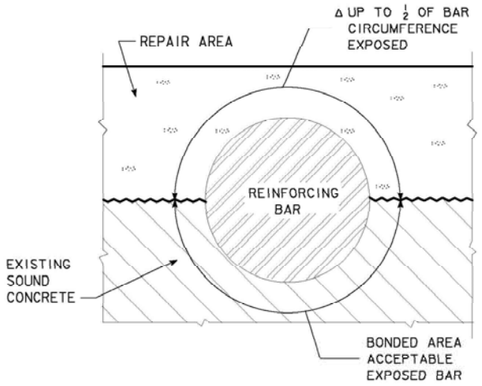


CORNER REPAIR

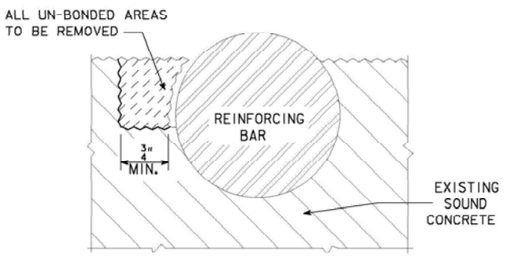


ANCHOR DETAIL

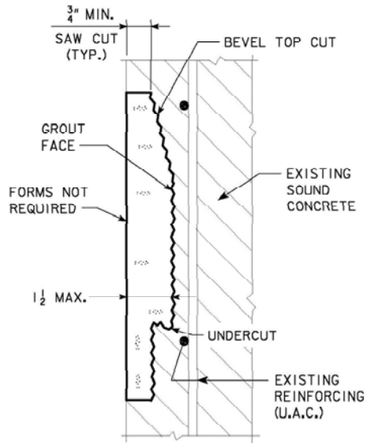
FOR SPACING AND USE OF CONCRETE ANCHORS AND WWF SEE THE STANDARD NOTES.



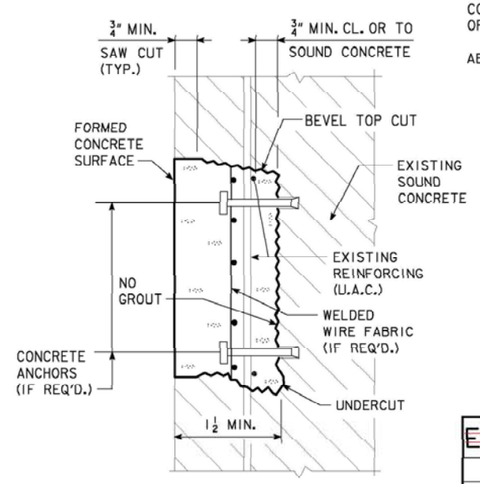
Δ IF MORE THAN ½ OF THE REBAR IS EXPOSED IT SHALL BE TREATED AS AN UN-BONDED REBAR.



CONCRETE REMOVAL ADJACENT TO REINFORCING



SHALLOW REPAIR VERTICAL FACE



REGULAR REPAIR VERTICAL FACE

STANDARD NOTES:

THE SPALLED AND HOLLOW AREAS OF THIS BRIDGE AS NOTED AND SHOWN IN THESE PLANS SHALL BE REPAIRED AS FOLLOWS:

ALL THE COSTS OF EQUIPMENT AND MATERIALS REQUIRED TO REPAIR THE SPALLED AND HOLLOW AREAS OF THIS BRIDGE SHALL BE INCLUDED IN THE PRICE BID FOR " CONCRETE REPAIR".

THE PRICE BID FOR "CONCRETE REPAIR" SHALL INCLUDE THE COST OF ALL CONCRETE ANCHORS AND MESH REQUIRED BY THE PLANS.

THE ENGINEER SHALL DETERMINE AND OUTLINE BY VISUAL AND AUDIBLE INSPECTION THE ACTUAL AREAS OF THE CONCRETE REPAIRS. THE CONTRACTOR SHALL BE PAID FOR THE ACTUAL AMOUNT OF REPAIRS MADE ON A SQUARE FOOT BASIS BASED ON THE PRICE BID PER SQUARE FOOT.

ALL EXISTING REINFORCING BARS THAT ARE EXPOSED BY CONCRETE REMOVAL SHALL BE CLEANED AND CAREFULLY INCORPORATED INTO THE NEW WORK, EXCEPT BADLY DETERIORATED EXISTING REINFORCING WHICH SHALL BE REPLACED AS DIRECTED BY THE ENGINEER.

THE CONCRETE ANCHORS REQUIRED SHALL HAVE A MINIMUM PULL OUT OF 5000 LBS. BASED ON 4000 PSI CONCRETE. AN ANCHOR MEETING THE REQUIREMENTS OF IOWA D.O.T. MATERIALS I.M. 453.09 AND THE PULL OUT LOAD ABOVE IS REQUIRED. THE ANCHORS SHALL BE GALVANIZED AND SHALL BE INSTALLED ACCORDING TO RECOMMENDATIONS OF THE MANUFACTURER. THE COST OF FURNISHING AND INSTALLING THE CONCRETE ANCHORS SHALL BE INCLUDED IN THE PRICE BID FOR "CONCRETE REPAIR".

THE WELDED WIRE FABRIC SHALL BE ASTM A185 AND GALVANIZED AS PER ASTM A-641. THE WWF WIRES SHALL BE SPACED 3 x 3 OR 4 x 4 AND THE WIRES SHALL HAVE A NOMINAL AREA OF 0.014 TO 0.029 SQUARE INCHES INCLUSIVE, EXAMPLE "WWF 3 x 3 - W1.4 x W2.9".

WHERE REINFORCEMENT HAS BEEN EXPOSED AND CLEARANCE AROUND THE PERIPHERY OF THE EXISTING BAR IS PROVIDED NO SUPPLEMENTAL REINFORCING IS REQUIRED, EXCEPT WHERE EXISTING REINFORCEMENT DENSITY AND PATTERN ARE SUCH THAT INDIVIDUAL OPEN SPACES BETWEEN BARS ARE OF 1.5 SQUARE FOOT OR LARGER. FOR THIS CONDITION ½"Φ CONCRETE ANCHORS AND WELDED WIRE FABRIC SHALL BE INSTALLED AT THE RATE OF ONE CONCRETE ANCHOR WITH WWF PER EACH 1.5 SQUARE FEET OF AREA WITHIN EACH OPEN SPACE.

REFER TO SECTION 2426, OF THE STANDARD SPECIFICATIONS, FOR INFORMATION ABOUT REPAIRING STRUCTURAL CONCRETE.

CONCRETE PLACEMENT QUANTITIES

MARK	TYPE	UNITS	QUANTITY
①	SHALLOW REPAIR	SQ. FT.	10
②	REGULAR REPAIR	SQ. FT.	20
		TOTAL (SQ. FT.)	30

~~ESTIMATED~~ CONCRETE REPAIR QUANTITIES

DESCRIPTION	UNITS	AMOUNT
CONCRETE REPAIR	SQ. FT.	30

DESIGN FOR 0° SKEW

42'-6 x 68' PRESTRESSED DOUBLE-TEE BEAM BRIDGE

CONCRETE REPAIRS

STATION: 371+94.50 AUGUST, 2011

CERRO GORDO COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 4 OF 4 FILE NO. 30639 DESIGN NO. 212

CORRECTION 11-10 - ADDED SECTION 2426 FOR CONCRETE REPAIR TO STANDARD NOTES.
ENGLISHREPAIRRETROFTBRIDGES.DGN 1045 - THIS SHEET REDRAWN 3-27-90.

DESIGN TEAM DAW/JSN	STANDARD SHEET 1045	CERRO GORDO COUNTY	PROJECT NUMBER STP-122-1(13)--2C-17	SHEET NUMBER V.6

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