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POWESHIEK COUNTY - DESIGN NO. 101

BRIDGE DECK OVERLAY
LETTING DATE
12-14-2002
IMN-80-5(217)184--OE-79

POWESHIEK COUNTY

- CONVENTIONAL SIGNS
- DIVIDED HIGHWAY
 - PAVED ROAD
 - BITUMINOUS ROAD
 - GRAVEL ROAD
 - EARTH ROAD
 - INTERSTATE HIGHWAY
 - UNITED STATES HIGHWAY
 - STATE HIGHWAY
 - COUNTY HIGHWAY
 - RAILROAD
 - PIPELINE
 - AIRPORT
 - HYDROLOGY
 - BRIDGE
 - STATE BOUNDARY
 - COUNTY BOUNDARY
 - CORPORATE LIMIT LINE
 - TOWNSHIP LINE
 - SECTION LINE

Iowa Department of Transportation
Highway Division

PLANS OF PROPOSED IMPROVEMENTS ON THE
INTERSTATE ROAD SYSTEM
POWESHIEK COUNTY
BRIDGE DECK OVERLAY
ON I-80
OVER LOCAL ROAD

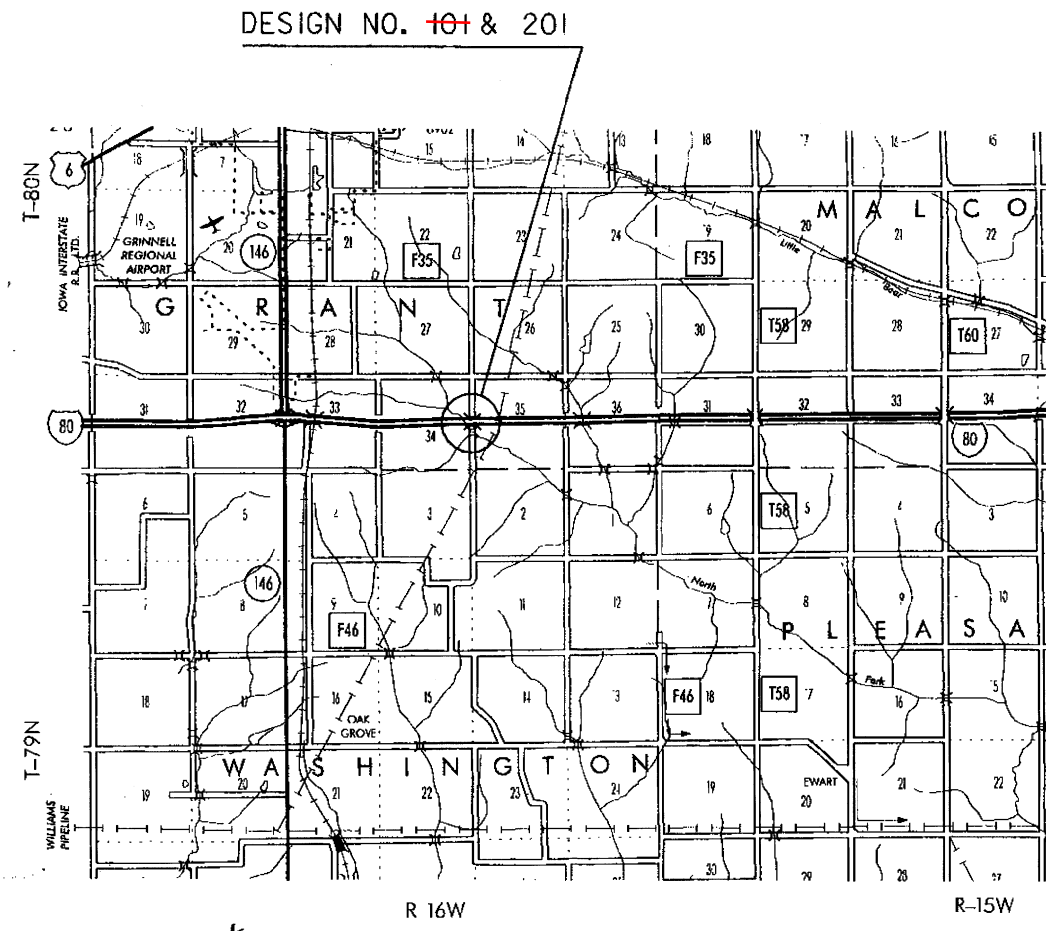
The Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, series of 2001, plus current supplemental specifications and special provisions shall apply to construction work on this project.

Value Engineering Saves. Refer to General Notes on Sheet 2.

TOTAL SHEETS	26
PROJECT NUMBER	IMN-80-5(217)184--OE-79
R.O.W. PROJECT NUMBER	
PROJECT IDENTIFICATION NUMBER	99-79-020-1

INDEX OF SHEETS	
NO.	DESCRIPTION
1	TITLE SHEET
2	BRIDGE ESTIMATE SHEET DES. NO. 101
2-6	BRIDGE DES. NO. 101
7	ROAD ESTIMATE SHEET DES. NO. 101
7-11	ROAD SHEETS DES. NO. 101
12	BRIDGE ESTIMATE SHEET DES. NO. 201
12-19	BRIDGE DES. NO. 201
20	ROAD ESTIMATE SHEET DES. NO. 201
20-26	ROAD SHEETS DESIGN NO. 201

STANDARD ROAD PLANS	
STANDARD ROAD PLANS ARE LISTED ON SHEETS 8 & 21 OF THESE PLANS.	
DESIGN DATA RURAL	
1999	AADT 25800 V.P.D.



Form 520003wd (11-03)

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.

Kenneth A. Yanna *Kenneth A. Yanna* 9-21-04
Project Engineer Date

My license renewal date is December 31, 2004.

2002 Cramer And Associates Douglas Ott
Year Contractor Project Inspector

DRAWING APPROVAL

ALL SHOP DRAWINGS AND FALSEWORK DRAWINGS THAT REQUIRE APPROVAL SHALL BE APPROVED BY WHKS & CO.
ADDRESS: P.O. BOX 1467
MASON CITY, IOWA 50402-1467

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
1	SURENDRA K. GUPTA	PRIMARY SIGNATURE BLOCK
7, 20	DANIEL J. COYLE	ROADWAY 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.

Suren K. Gupta 9-28-01
Suren K. Gupta, P.E. Date

License Number 7329

My license renewal date is December 31, 2001

Pages or sheets covered by this seal:
SHEETS 1 thru 6 of 26 & 12 thru 19 OF 26

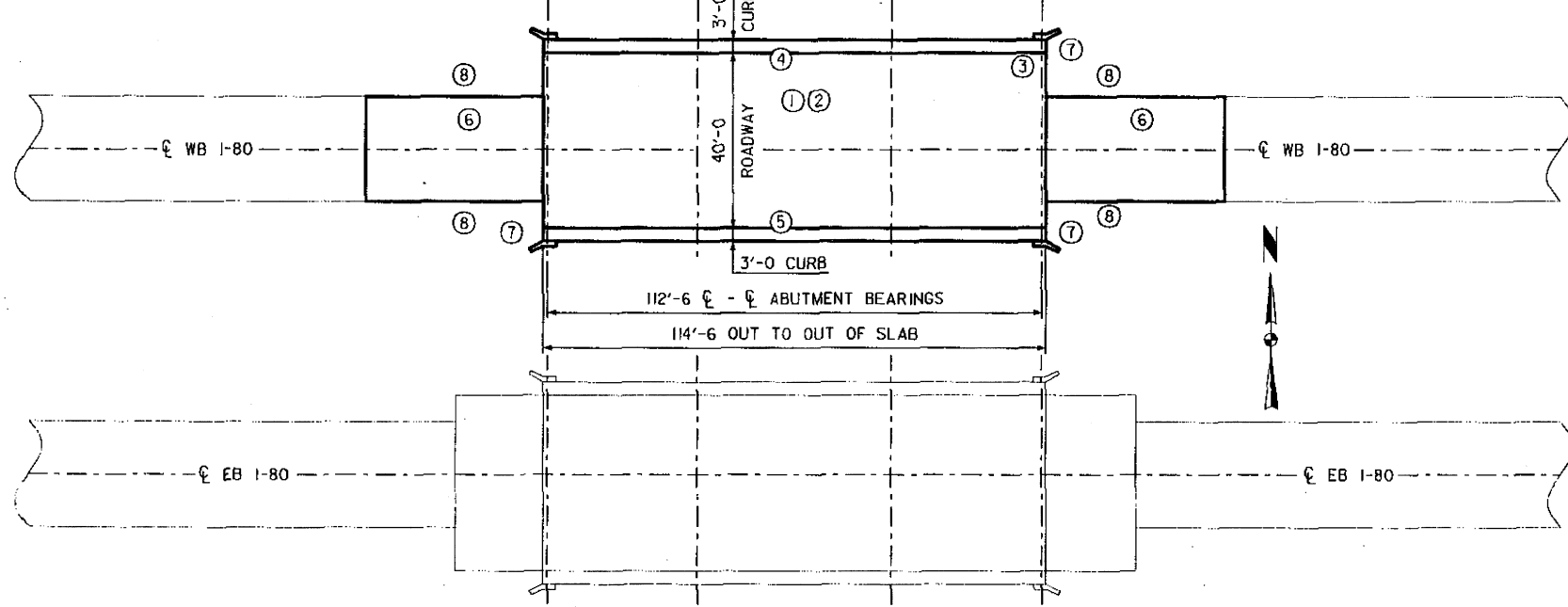
WHKS & CO.

ENGINEERS, ARCHITECTS, AND SURVEYORS

MASON CITY, IA DUBUQUE, IA AMES, IA ROCHESTER, MN

PROJECT DIRECTORY NAME: 7908002099

W. ABUT. BRG STA. 212+85.05
PIER NO. 1 STA. 213+19.30
PIER NO. 2 STA. 213+63.30
E. ABUT. BRG STA. 213+97.55



SITUATION PLAN

GENERAL NOTES:

THIS DESIGN IS FOR REPAIRS TO A 112'-6 x 40' CONTINUOUS CONCRETE SLAB BRIDGE ON WB I-80 OVER A LOCAL ROAD. THE BRIDGE HAS PREVIOUSLY HAD RETROFIT BARRIER RAILS INSTALLED. COPIES OF THE ORIGINAL DESIGN PLANS AND REPAIR PLANS WILL BE MADE AVAILABLE TO THE CONTRACTOR. CONTACT THE OFFICE OF CONTRACTS - HIGHWAY DIVISION - IOWA D.O.T. - AMES.

REPAIR SHALL CONSIST OF:

- 1 BRIDGE FLOOR REPAIR, CLASS 'A'
- 2 BRIDGE FLOOR OVERLAY
- 3 MODIFICATION OF BARRIER RAIL END SECTION AT NE CORNER
- 4 REMOVING EXISTING HANDRAILS AND ENDPOTS
- 5 REPLACING RETROFIT BARRIER RAIL ON SOUTH CURB
- 6 APPROACH OVERLAY AT BOTH ENDS OF BRIDGE
- 7 REPLACING THE GUARDRAIL
- 8 SHOULDER STRENGTHENING

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

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.

PLAN QUANTITY OF FLOOR REPAIR IS BASED ON TWO TIMES THE SHADED AREAS SHOWN ON THE 'DELAMTECT LAYOUT' IN THESE PLANS. SHADED AREAS REPRESENT CLASS A BRIDGE FLOOR REPAIR FOUND BY THE DELAMTECT. ACTUAL SPALLED AND HOLLOW AREAS AS DETERMINED BY THE ENGINEER AT THE TIME OF CONSTRUCTION SHALL BE REPAIRED.

PRESENT FLOOR THICKNESS IS ABOUT 1 FEET 4 INCHES. THE CONTRACTOR SHALL EXERCISE CARE IN REMOVING CONCRETE IN ORDER TO PREVENT UNNECESSARY UNBONDING OF REINFORCING STEEL. THE ENERGY OF HAND TOOLS SHALL BE RESTRICTED NEAR THE BOTTOM OF THE DESIGNATED CLASS A REPAIR AREAS IN ORDER TO PREVENT UNBONDING OF REINFORCING. NO CONCRETE SHALL BE REMOVED BELOW THE TOP OF THE TOP LONGITUDINAL REINFORCING WITHOUT PRIOR PERMISSION FROM THE BRIDGE ENGINEER.

AREAS OF CURB INDICATED ON THE 'DELAMTECT LAYOUT' OR DESIGNATED BY THE ENGINEER ARE TO BE REPAIRED USING CONCRETE REPAIR NOTES AND DETAILS INCLUDED IN THESE PLANS.

SURFACE RAISE, AS SHOWN ON THE PLANS, SHALL BE CONSIDERED A MINIMUM. IN ORDER TO LIMIT THE ADDITIONAL DEAD LOAD, SURFACE RAISE SHALL BE RESTRICTED TO A MAXIMUM OF 1/2 INCH MORE THAN SHOWN ON THE PLANS. PROFILE MAY BE ADJUSTED TO THE EXTENT POSSIBLE WITHIN THESE LIMITS.

IN ADDITION TO THE REQUIREMENTS OF ARTICLE 2413.09, THE VERTICAL, ROADWAY FACE AND THE TOP OF THE EXISTING CONCRETE BARRIER RAILS, INSIDE FACE OF CURB AND I-O OF ROADWAY SURFACE AT GUTTERLINE SHALL HAVE AN APPLICATION OF CONCRETE SEALER IN ACCORDANCE WITH SUB-ARTICLE 2403.2(KD).

THE PRICE BID FOR 'REMOVAL OF EXISTING HANDRAIL AND END POSTS' SHALL INCLUDE ALL COSTS ASSOCIATED WITH DISMANTLING THE EXISTING ALUMINUM HANDRAIL (APPROX. 104 L.F. AND 14 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 AND EXISTING VERTICAL END POST REINFORCING, IF REQUIRED.

EXISTING REINFORCING BARS THAT ARE EXPOSED BY CONCRETE REMOVAL SHALL BE CLEANED AND CAREFULLY INCORPORATED INTO THE NEW WORK WHERE NOTED OR SHOWN. REINFORCING BARS WHICH ARE DAMAGED OR RENDERED UNSERVICEABLE BY REMOVAL OPERATIONS SHALL BE REPLACED AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE STATE.

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

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

SPECIFICATIONS:
CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION ENGLISH STANDARD SPECIFICATIONS, SERIES OF 2001, PLUS CURRENT SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

DESIGN STRESSES:
DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES OF 1996, PLUS CURRENT INTERIM SPECIFICATIONS.
CONCRETE IN ACCORDANCE WITH SECTION 8, f'c = 3,500 PSI.
REINFORCING STEEL IN ACCORDANCE WITH SECTION 8, GRADE 60.

TRAFFIC CONTROL PLAN:
THE ROADWAY WILL BE OPEN TO THRU TRAFFIC. REFER TO THE TRAFFIC CONTROL PLAN SHOWN ELSEWHERE IN THESE PLANS.

THE CONTRACTOR IS ENCOURAGED TO TAKE FULL ADVANTAGE OF SPECIFICATION 1105.15 -- VALUE ENGINEERING INCENTIVE PROPOSAL. A PAMPHLET AND CONCEPTUAL PROPOSAL FORM WILL BE AVAILABLE AT THE PRECONSTRUCTION CONFERENCE.

AS BUILT BRIDGE QUANTITIES

Prop. Line	Item Code	Item Description	Units	Quantity Placed
260	2401-6745636	RMVL OF EXIST HANDRAIL+END POST	LS	1
270	2413-0698071	BRIDGE FLOOR OVERLAY	SY	508.889
280	2413-0698072	BRIDGE FLOOR REPAIR, CL A	SY	67.583
290	2414-6431100	RETROFIT CONC BARRIER RAIL	LF	133.3
300	2426-6772016	CONC REPAIR	SF	21
310	2528-8400047	TEMP BARRIER RAIL	LF	1,000.00
320	2533-4980005	MOBILIZATION	LS	1.0

REFERENCE INFORMATION

DATA LISTED BELOW IS FOR INFORMATIONAL PURPOSES ONLY AND SHALL NOT CONSTITUTE A BASIS FOR ANY EXTRA WORK ORDERS.

ITEM NO.	DESCRIPTION
26	INCLUDES COST OF REMOVING EXISTING ALUMINUM HANDRAILS, END POSTS AND ENDS OF EXISTING CONCRETE BARRIER RAIL.
27	DOES NOT INCLUDE APPROACH OVERLAY. APPROACH OVERLAY QUANTITY INCLUDED IN 'ESTIMATED ROADWAY QUANTITIES.' INCLUDES COST OF FURNISHING AND PLACING CONCRETE SEALER.
29	INCLUDES COST OF REPLACING RETROFIT BARRIER RAIL ON S. CURB AND MODIFYING END SECTION ON NE CURB. INCLUDES 8.3 CY OF CLASS D STRUCTURAL CONCRETE AND 1262 LB OF EPOXY COATED REINFORCING STEEL
30	INCLUDES REPAIRS TO BOTH CURBS.
31	ALL TEMPORARY BARRIER RAIL SHALL BE NOMINAL 12'-6 LONG CONCRETE UNITS.

DESIGN HISTORY AT THIS SITE

DES. NO.	TYPE OF WORK
5861	ORIGINAL DESIGN
477	RETRO BARRIER RAIL
201	OVERLAY & REPAIR

LOCATION:

MAINTENANCE NO. 7984.7L080
ON WESTBOUND I-80
OVER LOCAL ROAD
T-BON, R-16W
SECTION 34 & 35
GRANT TOWNSHIP
POWESHIEK COUNTY
FWHA # 046110

DESIGN FOR REPAIRS TO A 0° SKEW
DUAL 112'-6 x 40' CONTINUOUS
CONCRETE SLAB BRIDGE
OVER LOCAL ROAD

34'-3 END SPANS 44'-0 CENTER SPAN
SITUATION PLAN & QUANTITIES
STATION: 213+41.3 JULY 2001

POWESHIEK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 8 OF 8 FILE NO. 29697 DESIGN NO. 201

WHKS & CO.

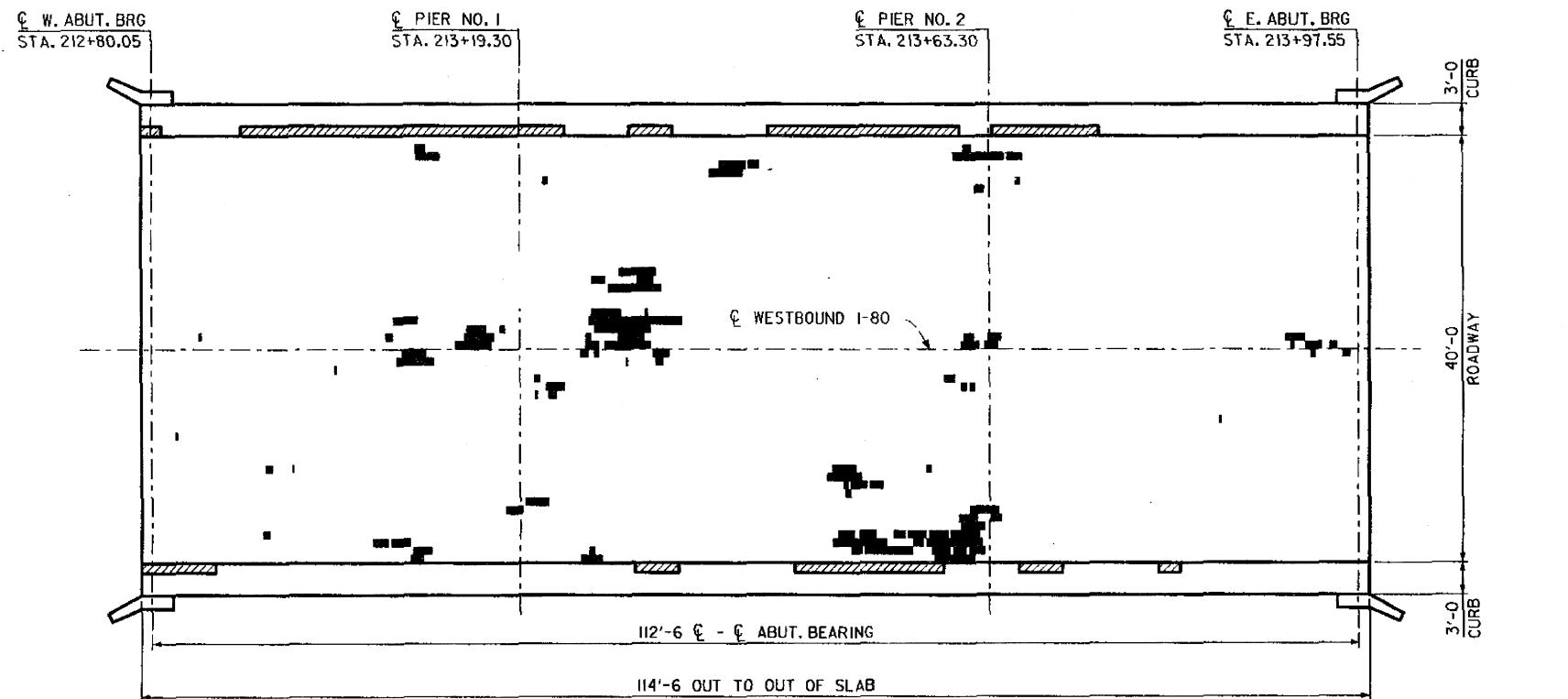
NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

DESIGNED BY S.T.S. CHECKED BY S.K.G.
DETAILED BY M.A.F. CADD FILE H790201.S01

POWESHIEK COUNTY

PROJECT NUMBER IMN-80-5(217)184--0E-79

SHEET NUMBER 12/26



DELAMTECT LAYOUT

SHADED AREAS = DELAMINATIONS > 400 mV = 120.4 SQ. FT. 2.71% DELAMINATED

[Hatched Box] INDICATES AREAS OF CURBS TO BE REPAIRED.
SEE CONCRETE REPAIR DETAILS ON DES. SH. 7.



DESIGNED BY S.T.S. CHECKED BY S.K.G.
DETAILED BY M.A.F. CADD FILE H790201.S02

POWESHIEK COUNTY

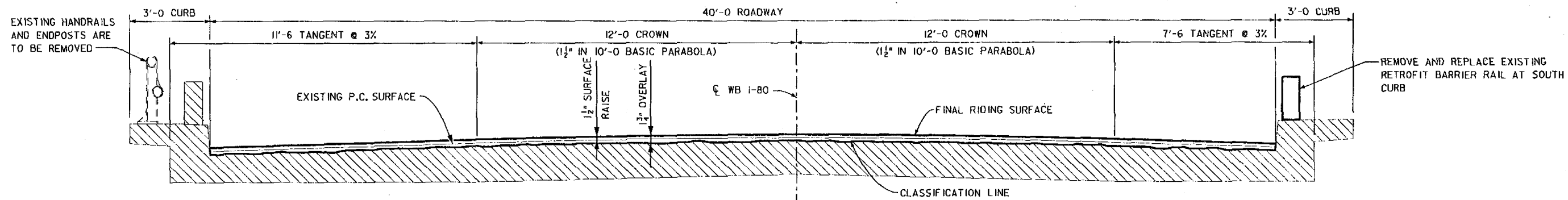
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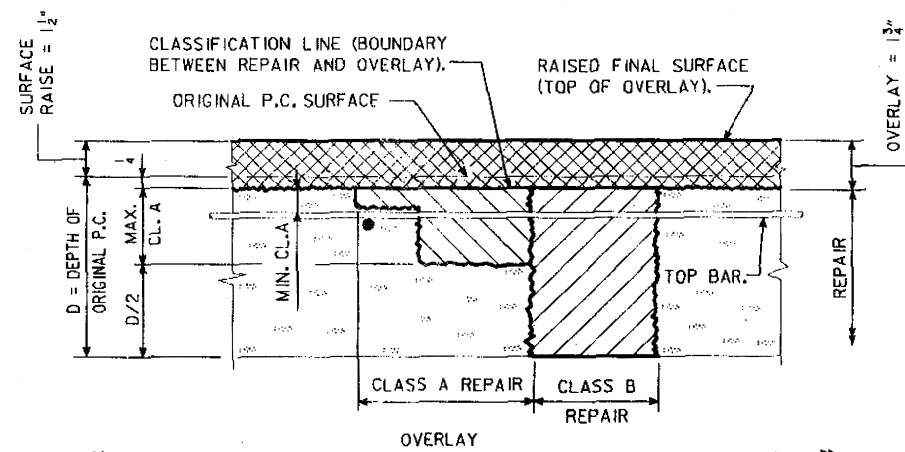
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13/26

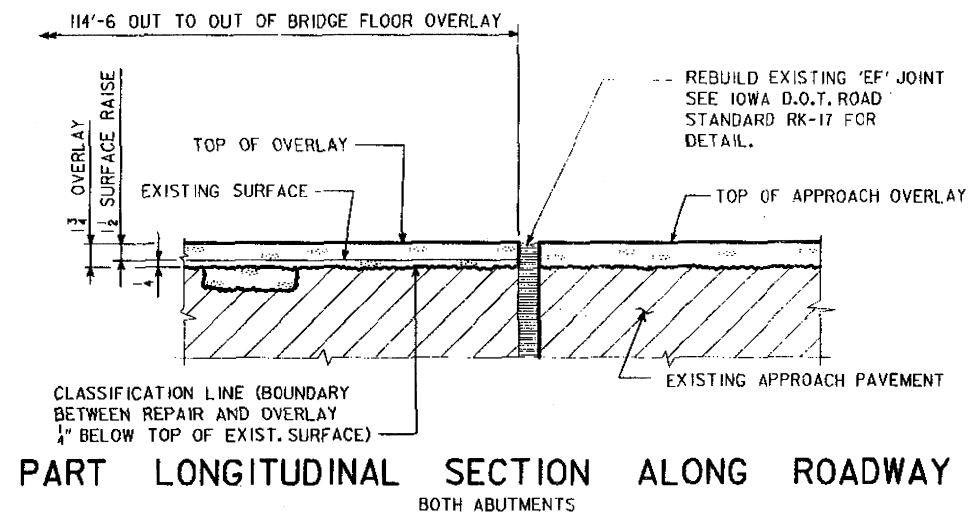
DESIGN FOR REPAIRS TO A 0° SKEW
**DUAL 112'-6" x 40' CONTINUOUS
CONCRETE SLAB BRIDGE**
OVER LOCAL ROAD
34'-3" END SPANS 44'-0" CENTER SPAN
DELAMTECT LAYOUT
STATION: 213+41.3 JULY 2001
POWESHIEK COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 2 OF 8 FILE NO. 29697 DESIGN NO. 201



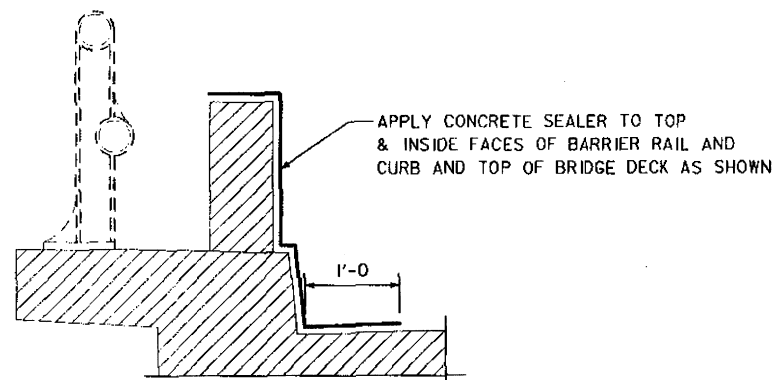
TYPICAL CROSS SECTION
(LOOKING EAST)



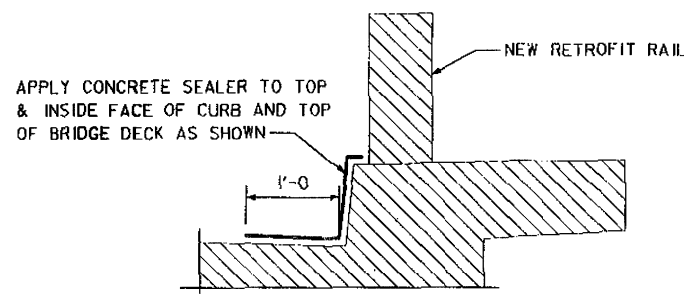
REPAIR AND OVERLAY DEFINITION



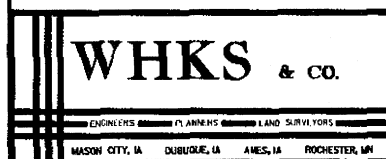
PART LONGITUDINAL SECTION ALONG ROADWAY
BOTH ABUTMENTS



CONCRETE SEALER PLACEMENT
(REQUIRED NORTH CURB)



CONCRETE SEALER PLACEMENT
(REQUIRED SOUTH CURB)



DESIGNED BY S.T.S. CHECKED BY S.K.G.
DETAILED BY M.A.E. CADD FILE H790201.S03

POWESHIEK COUNTY

PROJECT NUMBER

IMN-80-5(217)184--0E-79

SHEET NUMBER

14/26

DESIGN FOR REPAIRS TO A 0° SKEW
DUAL 112'-6" x 40' CONTINUOUS
CONCRETE SLAB BRIDGE
OVER LOCAL ROAD

34'-3" END SPANS 44'-0" CENTER SPAN

DECK REPAIR DETAILS

STATION: 213+41.3

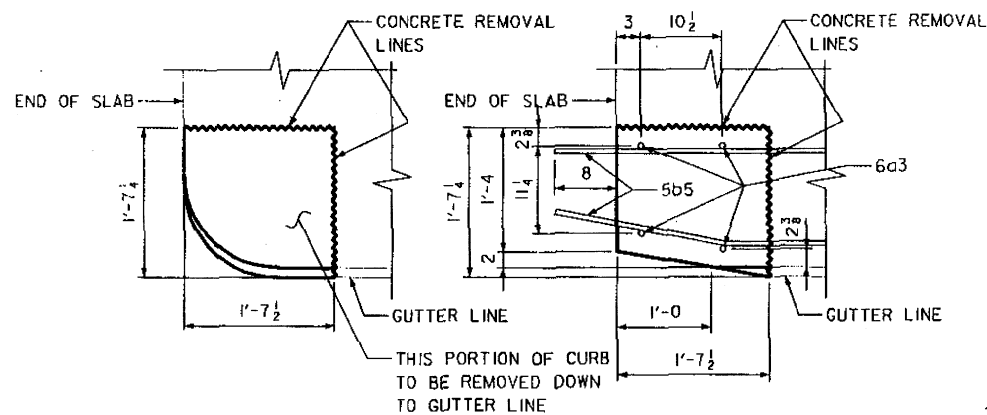
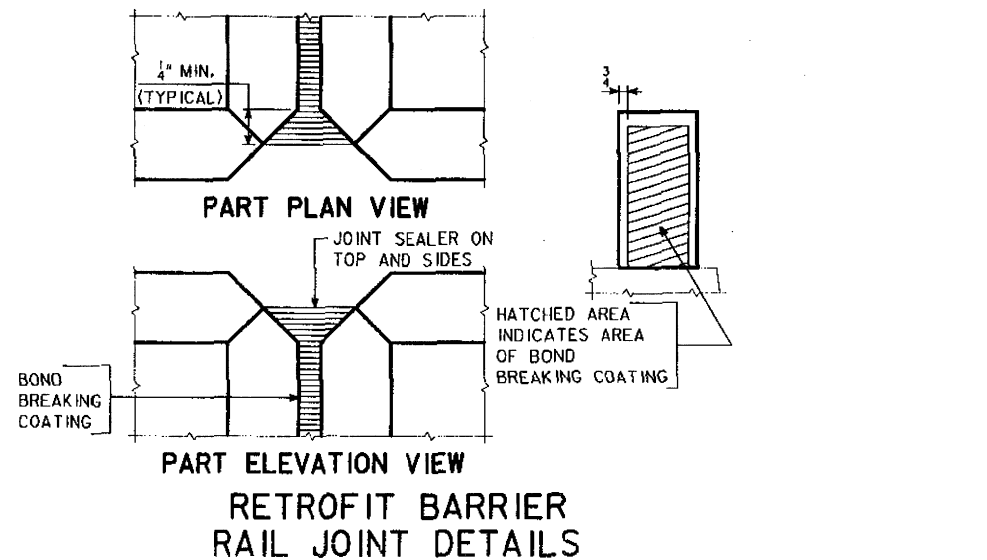
JULY 2001

POWESHIEK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 3 OF 8 FILE NO. 29697 DESIGN NO. 201

10/01/02
I:\1031T\1031T-01-01 THIS SHEET ISSUED.
I:\1031T\1031T-01-01 THIS SHEET ISSUED.
I:\1031T\1031T-01-01 THIS SHEET ISSUED.



DOWEL SETTING NOTE:

THE 5b5, 6a2, 6a3 & 6a5 BARS SHALL BE SET AS DOWELS IN DRILLED HOLES. HOLES ARE TO BE 10 INCHES DEEP, UNLESS OTHERWISE NOTED OR SHOWN. THE DOWELS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS. ONE OF THE FOLLOWING SYSTEMS SHALL BE USED:

A. EPOXY GROUT SYSTEM IN ACCORDANCE WITH STANDARD SPECIFICATIONS ARTICLE 2301.12 AND CURRENT SUPPLEMENTAL SPECIFICATIONS OF THE IOWA D.O.T. HIGHWAY DIVISION.

B. 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 3 AND SHALL BE USED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

NOTE A: (SEE SECTION B-B ON DESIGN SHEET 5)

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.

RETROFIT BARRIER RAILING 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 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" PLASTIC CONDUIT) PLUS ALL OF THE EQUIPMENT AND LABOR REQUIRED TO ERECT THE RAIL IN ACCORDANCE WITH THESE PLANS AND CURRENT SPECIFICATIONS.

ALL RETROFIT BARRIER RAIL CONCRETE IS TO BE CLASS D. ALL REINFORCING STEEL IS TO BE GRADE 60 AND EPOXY COATED. THE JOINT SEALER SHALL BE LIGHT GRAY NONSAC LATEX CAULKING SEALER MARKETING 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. 104 L.F. AND 14 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 AND EXISTING VERTICAL END POST REINFORCING 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.

CONCRETE PLACEMENT SUMMARY

SECTION	TOTAL
4 END SECTIONS @ 0.5 CY PER SECTION	2.0
106.5 LF STD. SECTION @ 0.06 CY PER LF	6.4
TAPER SECTION	0.1
4 CURB ENDS @ 0.09 CY PER SECTION	0.4
TOTAL (CU. YDS.)	8.9

ESTIMATED QUANTITIES - 1 RAIL

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL
1	2401-6745636	REMOVAL OF EXISTING HANDRAIL AND END POSTS	LS	1.000
2	2414-6431100	RETROFIT CONCRETE BARRIER RAILING	LF	124.800

ITEM NO.

ESTIMATE REFERENCE INFORMATION

2

INCLUDES COST OF REPLACING RETROFIT BARRIER RAIL ON S. CURB AND MODIFYING END SECTION ON NE CURB AND NW CURB. INCLUDES 8.9 CY OF CLASS D STRUCTURAL CONCRETE AND 1404 LB OF EPOXY COATED REINFORCING STEEL

DESIGN FOR REPAIRS TO A 0° SKEW
DUAL 112'-6" x 40' CONTINUOUS
CONCRETE SLAB BRIDGE
OVER LOCAL ROAD

34'-3" END SPANS 44'-0" CENTER SPAN

RETROFIT BARRIER RAIL

STATION: 213+41.3

JULY 2001

POWESHIEK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 4 OF 8 FILE NO. 29697 DESIGN NO. 201

DESIGNED BY S.T.S. CHECKED BY S.K.G.
DETAILED BY M.A.E. CAAD FILE H790201.S04

STANDARD SHEET 1031T

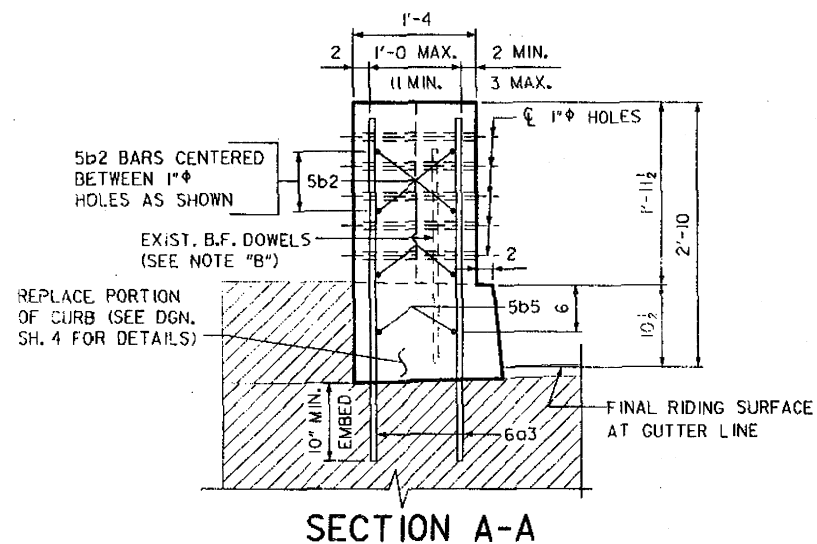
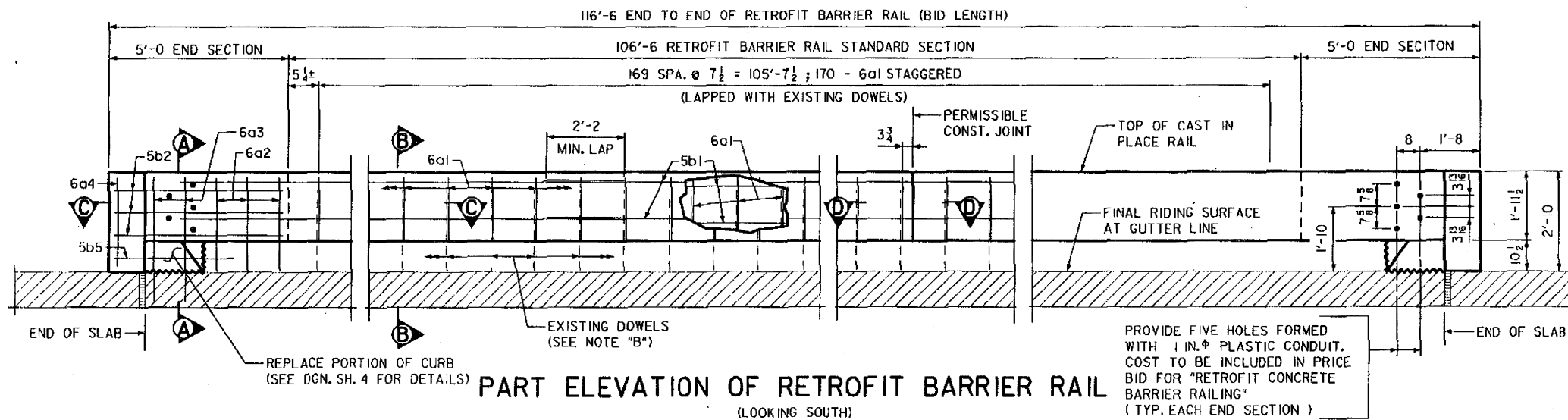
POWESHIEK COUNTY

PROJECT NUMBER

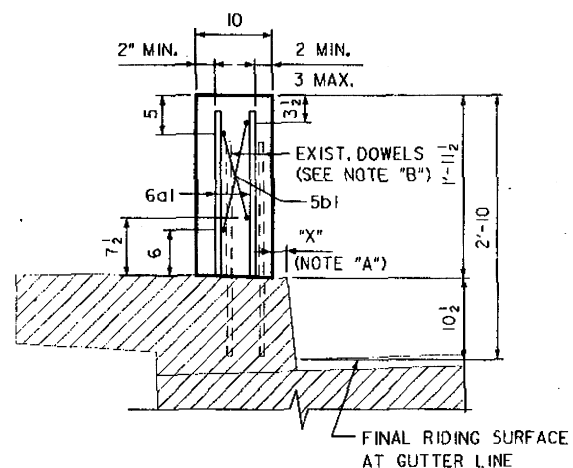
IMN-80-5(217)184--OE-79

SHEET NUMBER

15/26

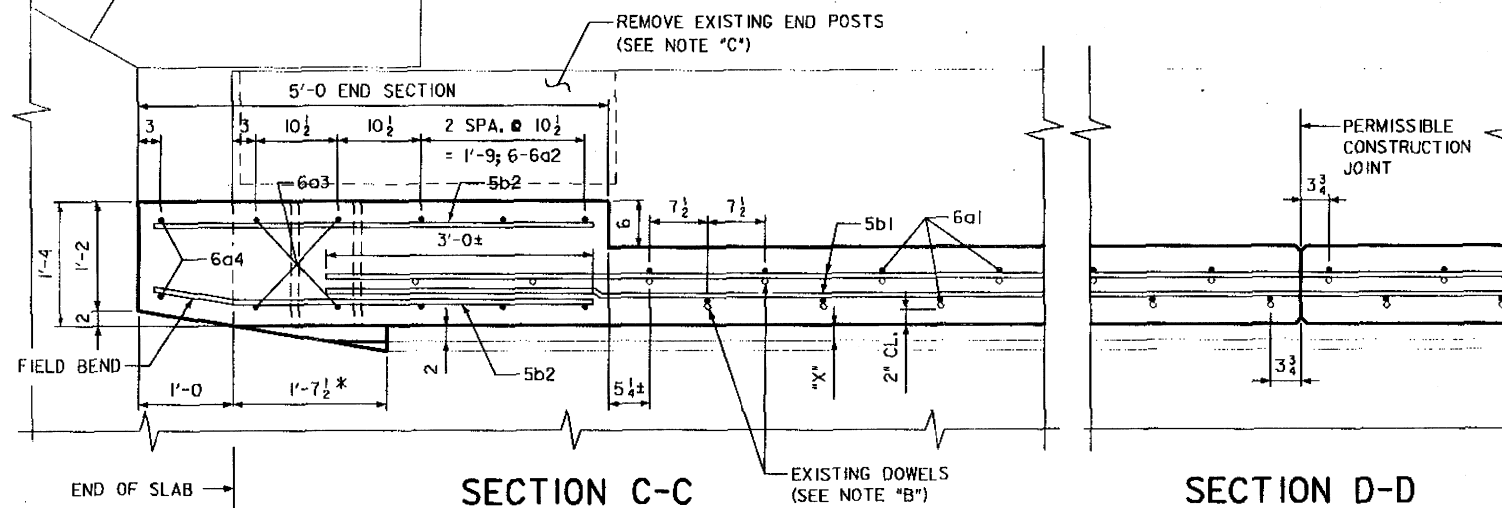


NOTE "B":
EXISTING $\frac{3}{4}$ " ϕ BARRIER RAIL DOWELS ARE TO BE EXPOSED, FIELD CUT AS REQUIRED & INCORPORATED INTO NEW WORK.



(SEE DGN. SH. 4 FOR NOTE "A")

NOTE "C":
EXISTING VERTICAL REINFORCING BARS THAT ARE EXPOSED DURING END POST REMOVAL SHALL BE CUT OFF FLUSH WITH OR SLIGHTLY BELOW THE TOP OF THE CURB SURFACE AND THE REMAINING EXPOSED ENDS PAINTED WITH TWO COATS OF ZINC RICH PAINT.



* SEE 'CURB END REPLACEMENT DETAILS' ON DGN. SH. 4.



DESIGNED BY S.T.S. CHECKED BY S.K.G. CADD FILE H790201.S05

DETAILED BY M.A.F. CADD FILE

POWESHIEK COUNTY

PROJECT NUMBER

IMN-80-5(217)184--0E-79

SHEET NUMBER

16/26

DESIGN FOR REPAIRS TO A 0° SKEW
DUAL 112'-6" x 40' CONTINUOUS CONCRETE SLAB BRIDGE
OVER LOCAL ROAD

34'-3" END SPANS 44'-0" CENTER SPAN

RETROFIT BARRIER RAIL

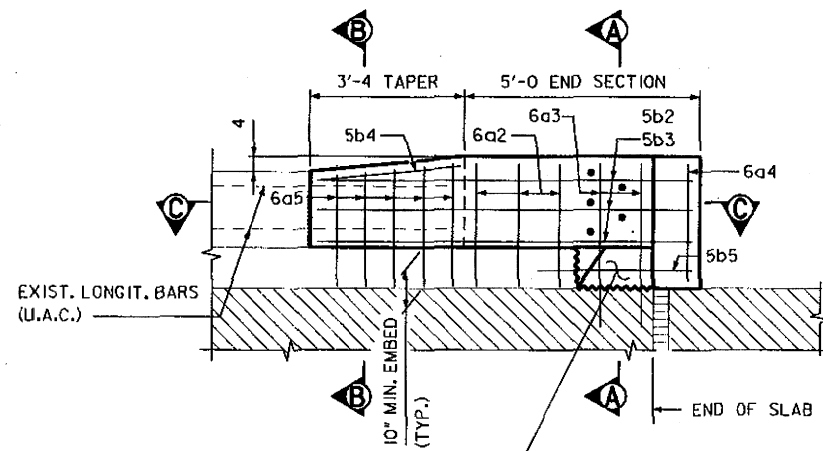
STATION: 213+41.3 JULY 2001

POWESHIEK COUNTY

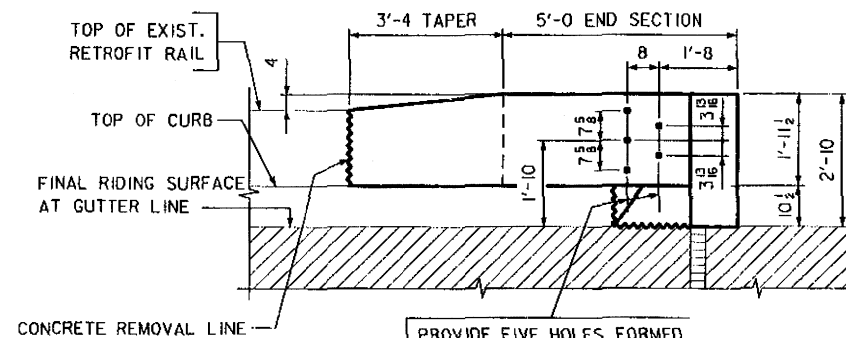
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 5 OF 8 FILE NO. 29697 DESIGN NO. 201

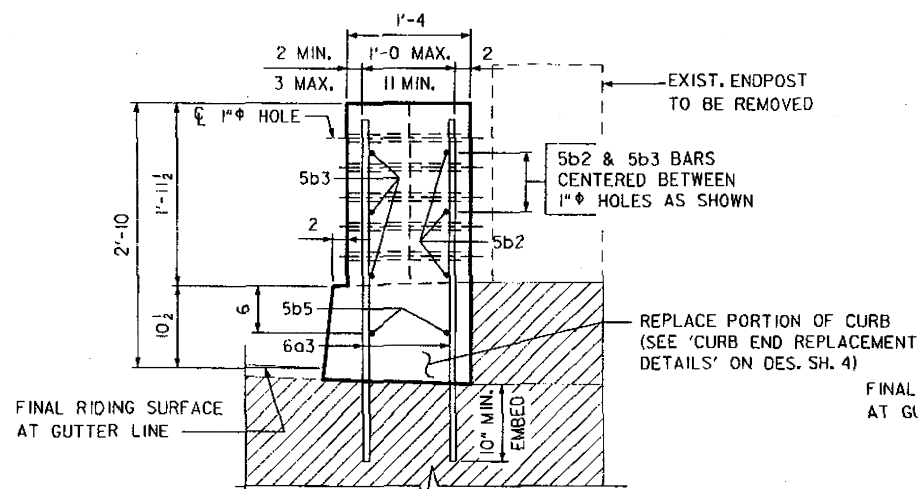
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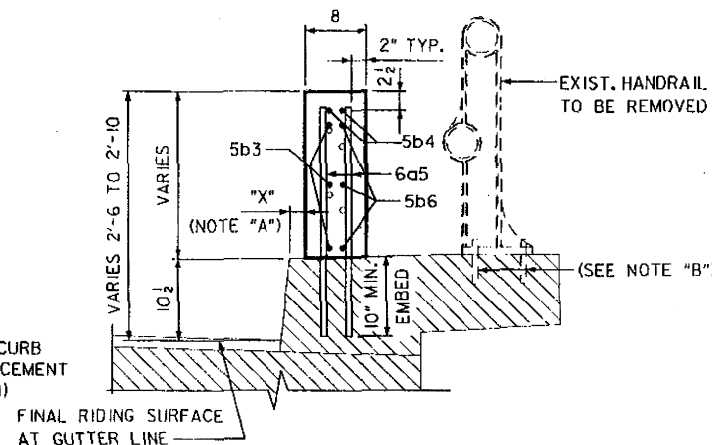
PART ELEVATION
AT NE CORNER



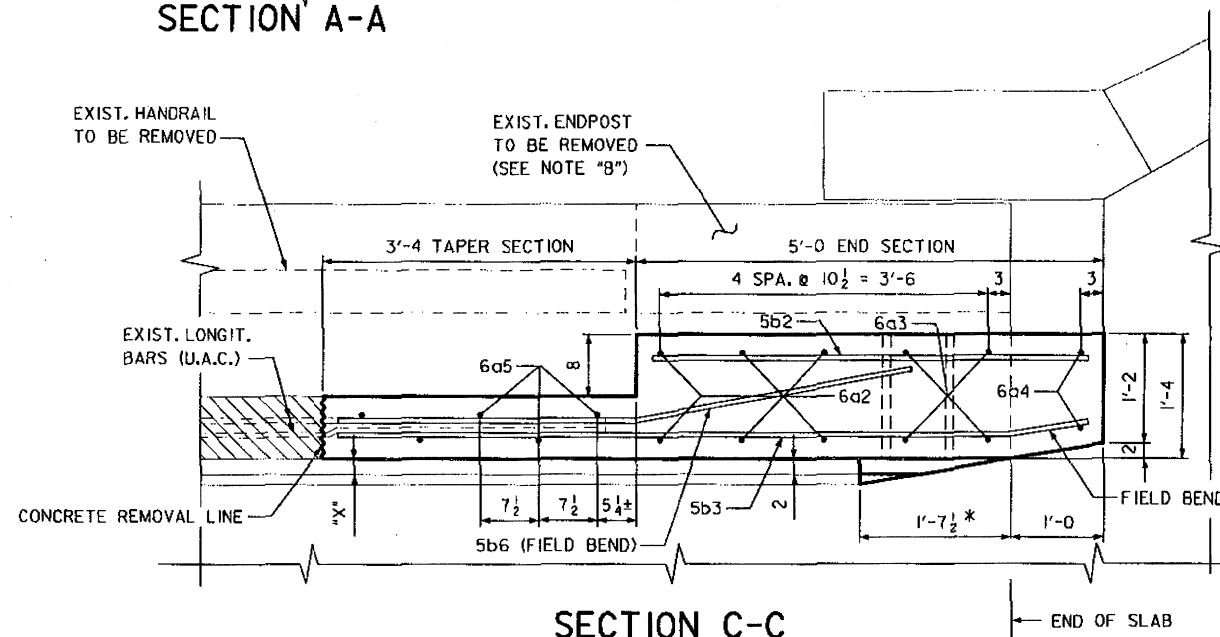
PART ELEVATION VIEW
SHOWING BOLT HOLE PLACEMENT



SECTION A-A



SECTION B-B



SECTION C-C

* SEE 'CURB END REPLACEMENT
DETAILS' ON DES. SH. 4.

* EPOXY COATED REINFORCING STEEL

MARK	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6a1	VERT., STANDARD SECTION	---	170	1'-9"	447
6a2	VERT. DOWEL, END SECTION	---	24	2'-8"	96
6a3	VERT. DOWEL, END SECTION	---	16	3'-6"	84
6a4	VERT. END SECTION	---	8	2'-6"	31
6a5	VERT. DOWEL, TAPER SECTION	---	7	VARIES	35
5b1	LONGIT., STANDARD SECTION	---	12	39'-0"	488
5b2	LONGIT., END SECTION, B.F. & F.F.	---	18	4'-8"	88
5b3	LONGIT., END & TAPER SECTIONS, F.F.	---	6	8'-0"	50
5b4	LONGIT., TAPER SECTION	---	4	3'-0"	12
5b5	LONGIT., END SECTION & CURB, DOWEL	---	8	3'-4"	28
5b6	LONGIT., END SECTION & CURB, B.F.	---	6	5'-10"	36
				TOTAL (lbs)	1395

* QUANTITIES ARE FOR RETROFIT RAIL INCLUDING TWO END
SECTIONS ON THE SOUTH CURB AND THE MODIFIED END
SECTION AT THE NORTHEAST BARRIER RAIL END.

NOTE "A":
FRONT FACE OF TAPER SECTION SHALL MATCH FRONT
FACE OF EXISTING RAIL AND BE TRANSITIONED TO 2" AT
END SECTION AS SHOWN.

NOTE "B":
EXISTING RAIL IS TO BE REMOVED. ANCHOR BOLTS WHICH ARE
NOT STAINLESS STEEL SHALL BE CUT OFF FLUSH WITH OR SLIGHTLY
BELOW CURB SURFACE AND THE REMAINING EXPOSED ENDS PAINTED
WITH TWO COATS OF ZINC RICH PAINT. IF THE EXISTING ANCHOR BOLTS
ARE STAINLESS STEEL THEY MAY BE LEFT IN POSITION AT THE
CONTRACTOR'S OPTION SUBJECT TO THE APPROVAL OF THE ENGINEER.
EXISTING REINFORCING BARS THAT ARE EXPOSED BY CONCRETE
REMOVAL SHALL BE CLEANED AND CAREFULLY INCORPORATED INTO
THE NEW WORK WHERE NOTED OR SHOWN. REINFORCING BARS
WHICH ARE DAMAGED OR RENDERED UNSERVICEABLE BY REMOVAL
OPERATIONS SHALL BE REPLACED AS DIRECTED BY THE ENGINEER
AT NO ADDITIONAL COST TO THE STATE.
EXISTING VERTICAL REINFORCING BARS THAT ARE EXPOSED DURING
END POST REMOVAL SHALL BE CUT OFF FLUSH WITH OR SLIGHTLY
BELOW THE TOP OF THE CURB SURFACE AND THE REMAINING EXPOSED
ENDS PAINTED WITH TWO COATS OF ZINC RICH PAINT.

WHKS & CO.

ENGINEERS ARCHITECTS LAND SURVEYORS
MASON CITY, IA DUBUQUE, IA AMES, IA ROCHESTER, MN

DESIGNED BY S.T.S. CHECKED BY S.K.G.
DETAILED BY M.A.F. CADD FILE H79020LS06

POWESHIEK COUNTY

PROJECT NUMBER

IMN-80-5(217)184--0E-79

SHEET NUMBER

17/26

DESIGN FOR REPAIRS TO A 0° SKEW
DUAL 112'-6" x 40' CONTINUOUS
CONCRETE SLAB BRIDGE
OVER LOCAL ROAD

34'-3" END SPANS 44'-0" CENTER SPAN

RETROFIT BARRIER RAIL

STATION: 213+41.3

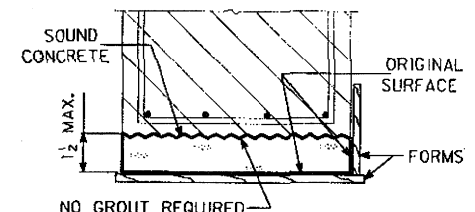
JULY 2001

POWESHIEK COUNTY

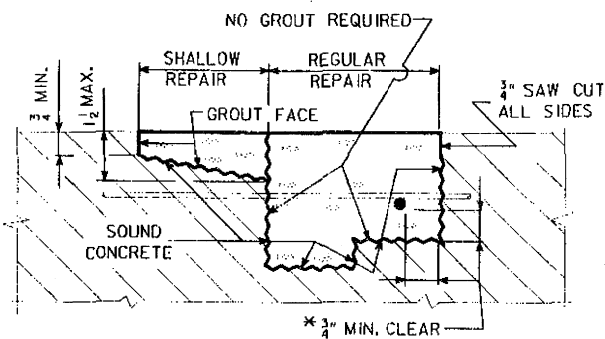
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 6 OF 8 FILE NO. 29697 DESIGN NO. 201

10/01/00
REVISED: MINOR CHANGES MADE IN "STANDARD NOTES", TAPE NO. 19, DATED 11-9-92.
HE1045.S01 (HSTD01045.S01) -- LEP: THIS SHEET ISSUED, TAPE NO. 11, DATED 9-27-90

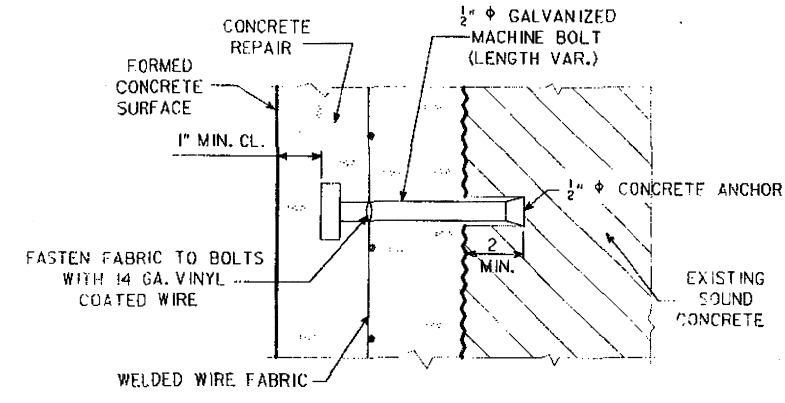


SHALLOW REPAIR
BOTTOM SURFACE



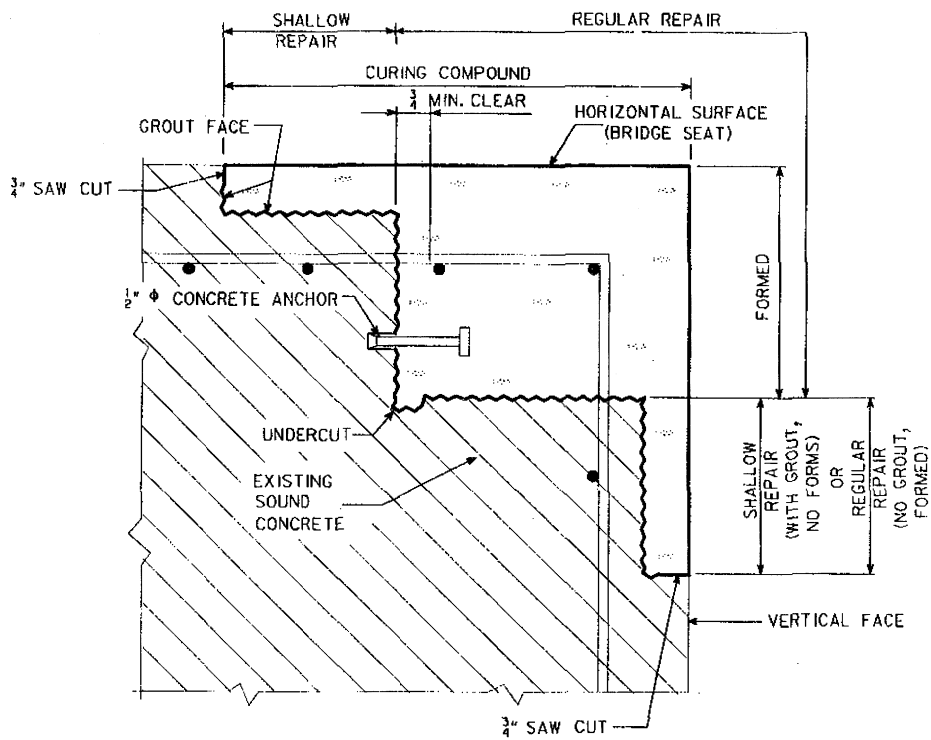
REPAIR DEFINITION

* INDICATES CLEARANCE FOR AN UN-BONDED REBAR.

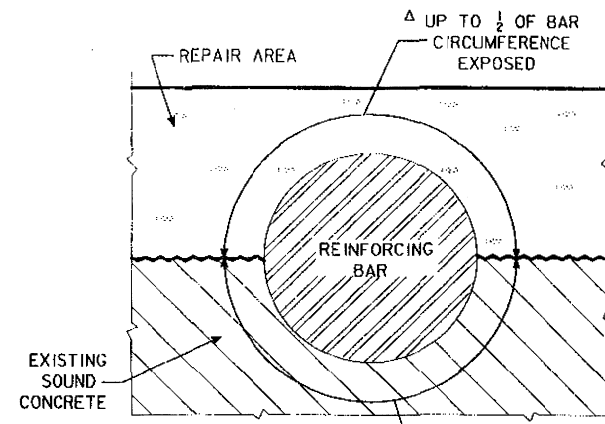


ANCHOR DETAIL

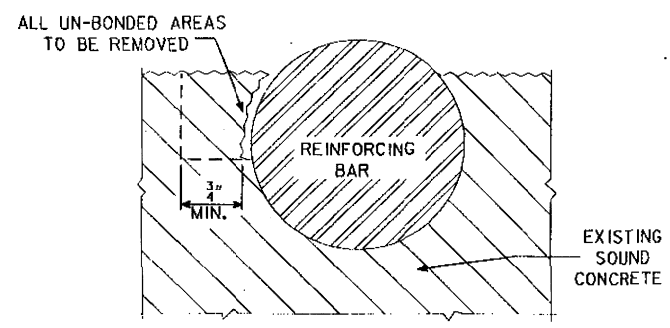
FOR SPACING AND USE OF CONCRETE ANCHORS
AND WWF SEE THE STANDARD NOTES.



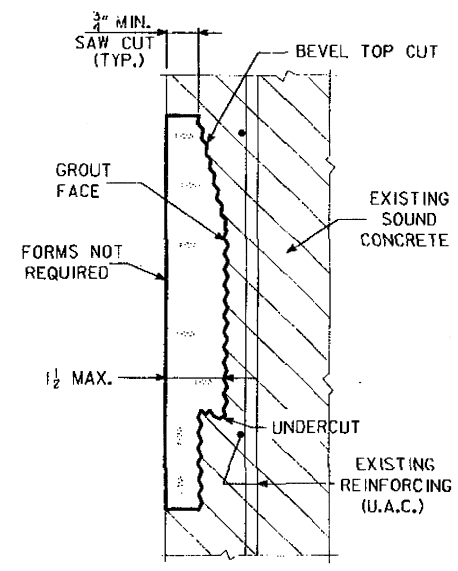
CORNER REPAIR



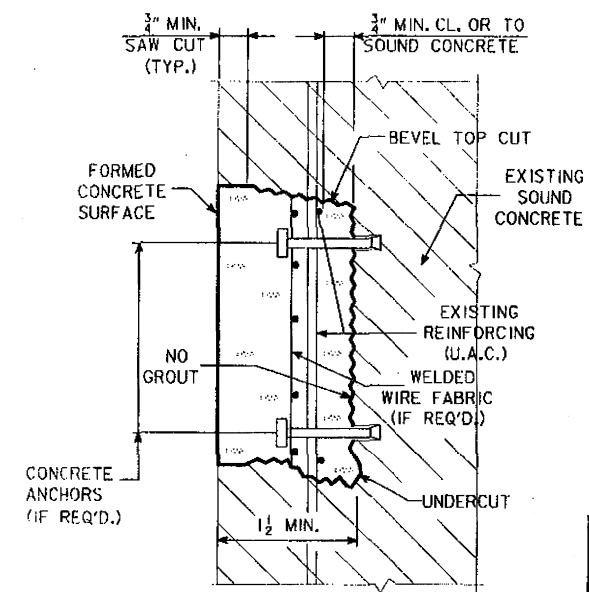
Δ IF MORE THAN 1/2 OF THE REBAR IS EXPOSED IT
SHALL BE TREATED AS AN UN-BONDED REBAR.



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 1/2" 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.
SEE "STRUCTURAL CONCRETE REPAIR" IN CURRENT STANDARD SPECIFICATIONS FOR MORE INFORMATION CONCERNING THIS WORK.

CONCRETE PLACEMENT QUANTITIES

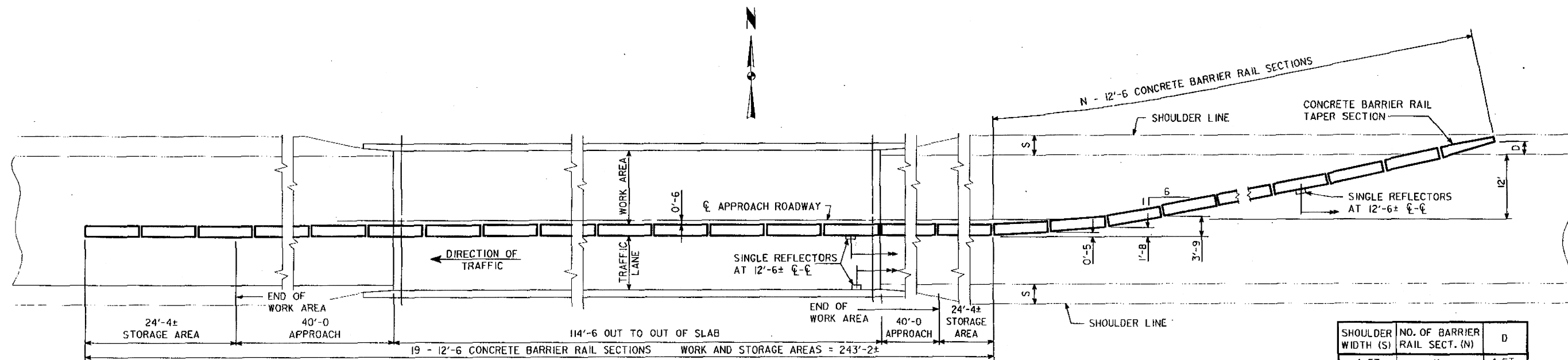
MARK	TYPE	UNITS	QUANTITY
①	SHALLOW REPAIR	SQ. FT.	21
②	REGULAR REPAIR	SQ. FT.	0.0
TOTAL (SQ. FT.)			21

CONCRETE REPAIR QUANTITIES

DESCRIPTION	UNITS	AMOUNT
*CONCRETE REPAIR	SQ. FT.	21

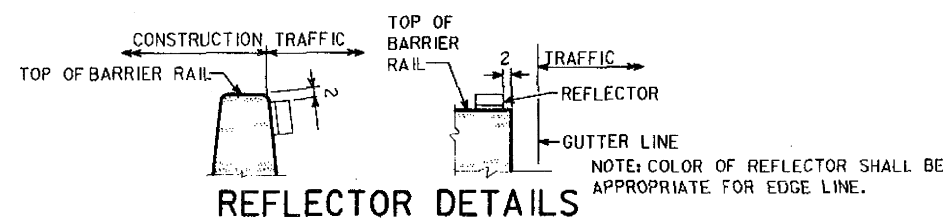
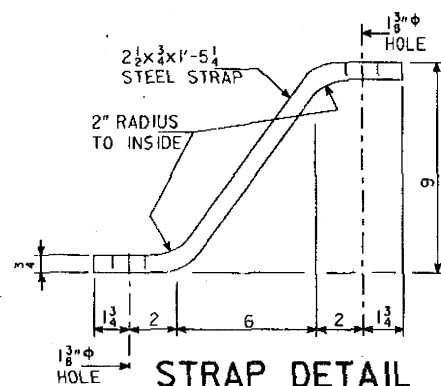
* FOR LOCATION OF AREAS OF CURB
TO BE REPAIRED, SEE DES. SH. 2.

DESIGN FOR REPAIRS TO A 0° SKEW
**DUAL 112'-6" X 40' CONTINUOUS
CONCRETE SLAB BRIDGE**
OVER LOCAL ROAD
34'-3" END SPANS 44'-0" CENTER SPAN
CONCRETE REPAIRS
STATION: 213+41.3 JULY 2001
POWESHIEK COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 7 OF 8 FILE NO. 29697 DESIGN NO. 201



SHOULDER WIDTH (S)	NO. OF BARRIER RAIL SECT. (N)	D
4 FT.	11	4 FT.
6 FT.	12	5.5 FT.
8 FT.	12	7 FT.
10 FT.	13	9 FT.

SHOULDER WIDTH(S) AT THIS BRIDGE SITE ARE
10 & 6 FEET. THEREFORE 13 & 12 CONCRETE BARRIER
RAIL SECTIONS ARE REQUIRED FOR THE
APPROACH END OF THE BRIDGE.



CONCRETE TEMPORARY BARRIER RAIL NOTES:

CONCRETE TEMPORARY BARRIER RAIL SHALL BE CONSTRUCTED AS DETAILED AND NOTED ON THE ENGLISH RE-71(1), RE-71(2) AND RE-72 STANDARD ROAD PLANS.

A 12'-6 LANE SHALL BE AVAILABLE FOR TRAFFIC. SCREED EXTENSION OR OVERLAP BEYOND THE LONGITUDINAL CONSTRUCTION JOINT MAY BE LESS THAN THE 6 INCHES REQUIRED BY SUB-ARTICLE 2413.03C.1. THE ENGINEER MAY REQUIRE ADDITIONAL VIBRATION OR SPECIAL FINISHING PROCEDURES ADJACENT TO THE LONGITUDINAL CONSTRUCTION JOINT.

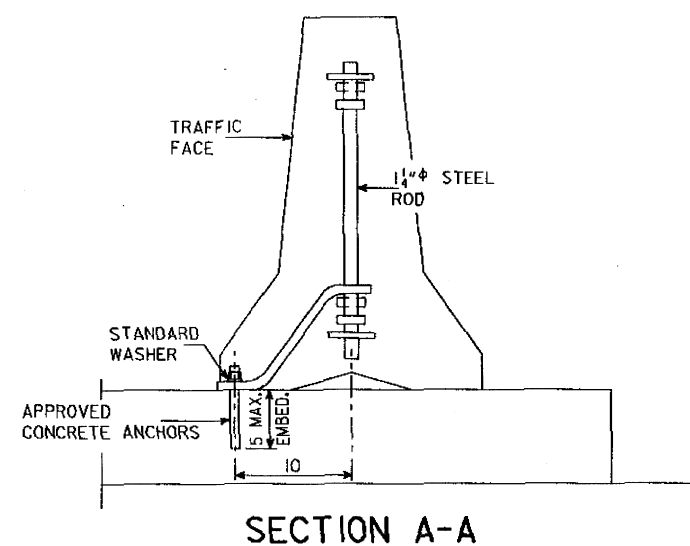
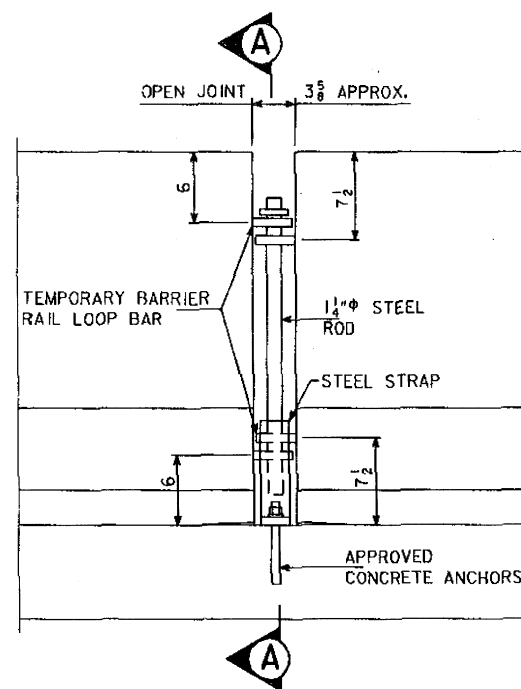
TRAFFIC REFLECTORS SHALL BE A RETRO-REFLECTIVE TYPE, APPROVED BY THE ENGINEER, AND THEY SHALL BE LOCATED AS SHOWN ON THIS SHEET. THE CONTRACTOR SHALL MAINTAIN THE REFLECTORS AND SHALL PROMPTLY REPLACE ANY MISSING OR DAMAGED UNITS. ALL COSTS FOR FURNISHING, INSTALLING AND MAINTAINING REFLECTORS SHALL BE INCLUDED IN THE PRICE BID FOR THE TEMPORARY BARRIER RAIL.

REFER TO OTHER DETAILS, NOTES, AND QUANTITY ITEMS ELSEWHERE IN THESE PLANS FOR TRAFFIC CONTROL TO BE ESTABLISHED IN CONJUNCTION WITH THE TEMPORARY BARRIER RAIL. NO STATIONARY EQUIPMENT OR CONSTRUCTION MATERIAL IS TO BE PLACED IN FRONT OF THE TEMPORARY BARRIER RAIL AT ANY TIME.

TIE-DOWNS WITH CONCRETE ANCHORS ARE REQUIRED ONLY WHERE THE TEMPORARY BARRIER RAIL IS ADJACENT TO A DROP-OFF. HOLES FOR CONCRETE ANCHORS MAY BE DRILLED AFTER POSITIONING THE TEMPORARY BARRIER RAIL. IF CONCRETE ANCHORS ARE THE TYPE WHICH CAN BE SET AND REMOVED AT LEAST 1/2 INCHES BELOW THE CONCRETE SURFACE WITHOUT DAMAGING THE CONCRETE (PREFERRED ANCHOR TYPE), THE REMAINING HOLES, AFTER REMOVALS, SHALL BE FILLED WITH A NEAT MIXTURE OF SAND/CEMENT GROUT. OTHER ANCHOR TYPES MAY REQUIRE COMPLETE REMOVAL OF THE ANCHOR INCLUDING CONCRETE SURROUNDING THE ANCHOR. IF THIS IS NECESSARY, THE CONCRETE SHALL BE CORED OUT WITH A 2 INCH DIAMETER CORE BIT AND THE HOLE FILLED WITH NEAT MIXTURE OF SAND/CEMENT GROUT. COST FOR THE REMOVAL OF THE CONCRETE ANCHORS INCLUDING ANY CONCRETE REMOVAL NECESSARY, AND PLACEMENT OF THE SAND/CEMENT GROUT, WILL BE INCIDENTAL TO THE COST OF THE TEMPORARY BARRIER RAIL. THE CONCRETE ANCHORS ARE TO BE REMOVED ONLY AFTER THE TEMPORARY BARRIER RAIL IS NO LONGER NEEDED AT THE PARTICULAR LOCATION.

CONCRETE ANCHORS ARE TO BE A MINIMUM OF 1" DIAMETER AND AS OTHERWISE SPECIFIED IN THE CURRENT MATERIALS I.M. 453.09, WITH A PULL-OUT STRENGTH OF 22 KIPS BASED ON 4000 PSI CONCRETE.

ALL COSTS FOR TIE DOWNS SHALL BE INCLUDED IN THE PRICE BID FOR TEMPORARY BARRIER RAIL.



QUANTITIES	
ITEM	AMOUNT
TEMPORARY BARRIER RAIL	1000.0

DESIGN FOR REPAIRS TO A 0° SKEW
DUAL 112'-6" x 40' CONTINUOUS
CONCRETE SLAB BRIDGE

34'-3 END SPANS 44'-0 CENTER SPAN

TEMPORARY BARRIER RAIL

STATION: 213+41.3

JULY 2001

POWESHIEK COUNTY

DESIGN SHEET NO. 8 OF 8 FILE NO. 29697 DESIGN NO. 20

AS BUILT ROADWAY QUANTITIES

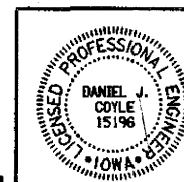
Prop. Line	Item Code	Item Description	Units	Quantity Placed
330	2102-2625000	EMBANKMENT-IN-PLACE	CY	25
340	2213-2713300	EXCAVATION, CL 13, WIDEN	CY	0
350	2214-5145150	PAV'T, SCARIFICATION	SY	0
360	2303-0042500	HMA (3M ESAL) INTERMEDIATE, 1/2"	TON	0
370	2413-0698071	BRIDGE FLOOR OVERLAY	SY	0
380	2413-0698072	BRIDGE FLOOR REPAIR, CL A	SY	0
390	2505-4008100	RMV G'RAIL	LF	317
400	2505-4008200	INSTALL OF G'RAIL	LF	256.25
410	2505-4020153	G'RAIL, END ANCHOR, BEAM, RE-53	EACH	1
420	2505-4021690	G'RAIL, END ANCHOR, BEAM, RE-69	EACH	3
430	2505-4021761	G'RAIL TERMINAL, BEAM, RE-76	EACH	1
440	2510-6745850	RMV OF PAV'T	SY	1,404.45
450	2527-9263111	PAINTED PAV'T MARK, WATERBORNE	STA	49.843
460	2527-9263130	REMOVABLE TAPE MARK	STA	18.02
470	2527-9263180	PAV'T MARK RMVD	STA	41.11
480	2528-8400157	TEMP FLOODLIGHTING LUMINAIRE	EACH	1
490	2528-8445110	TRAFFIC CONTROL	LS	1
500	2528-8445112	FLAGGER	DAY	0
510	2529-5070110	PATCH, FULL-DEPTH FINISH, BY AREA	SY	0
520	2529-5070120	PATCH, FULL-DEPTH FINISH, BY COUNT	EACH	0
530	2529-8201000	JOINT, ASS'Y, EF	EACH	0
540	2599-9999018	('SQUARE YARDS' ITEM) SHOULDER STRENGT	SY	0
550	2602-0000020	SILT FENCE	LF	0
560	2602-0000030	SILT FENCE-DITCH CHECKS	LF	0
570	2301-0685100	BRIDGE APPROACH SECTION	SY	500
580	2599-9999018	('SQUARE YARDS' ITEM) Shoulder Strengthening	SY	951.111
600	2524-9700000	SIGN, INSTALL ONLY Advance Warning Signs	EACH	4

REFERENCE INFORMATION

100-48
07-15-97

Data listed below is for informational purposes only and shall not constitute a basis for any extra work orders.

ITEM NO.	ITEM CODE	DESCRIPTION
33	2102-2625000	See Tabulation 107-23 on Sheet 22. Approved material shall be obtained by the contractor outside of the existing right-of-way. Seeding, fertilizing and mulching shall furnished as per Standard Notation 232-11. Item includes a 118' x 20' area on the outside approach corner.
34	2213-2713300	See Tabulation SS-1 on Sheet 22.
35	2214-5145150	See Tabulation BAS-OL on Sheet 22. Item includes scarifying the paved shoulders to accept overlay adjacent to new bridge approach overlay.
36	2303-0042500	See Tabulation BAS-OL on Sheet 22 and Tabulation 108-26 on Sheet 21. Item is for overlaying the shoulder. Liquid Asphalt Binder, PG 64-22 not measured for separate payment.
37 38	2413-0698071 2413-0698072	See Standard Road Plan RK-17 and Tabulation BAS-OL on Sheet 22. Requires 210.7 SY of Pavement Scarification <i>Replaced by Item # 575</i> which shall be considered incidental to this bid item. The east approach is approximately 1-1/4" higher than the bridge deck, therefore scarify the east approach 1/4" and overlay to match the new bridge deck overlay elevation. <i>page 7</i>
39	2505-4008100	See Tabulation 110-7A on Sheet 22. Stockpile existing guardrail and posts on site for pick up by IDOT maintenance personnel. Removal of posts, nested guardrail, end anchorage, terminals, and object markers not measured for separate payment.
40 41 42 43	2505-4008200 2505-4020153 2505-4021690 2505-4021761	See Tabulation 108-8A, 108-19 and 108-17 on Sheet 22. Installation of posts, nested guardrail, delineators, and object markers not measured for separate payment.
44	2510-6745850	See Tabulation 110-1 on Sheet 22. Pavement thickness may vary from that estimated. No additional payment shall be considered due to varying thicknesses. Disposal shall be as per Standard Notes 213-1 and 213-7.
45 46 47	2527-9263111 2527-9263130 2527-9263180	See Tabulation 108-22 on Sheet 23.
48	2528-8400157	See Tabulation 108-27 on Sheet 23, Standard Road Plan RS-80, and Detail Sheet 570-2 for locations.
49 50	2528-8445110 2528-8445112	See Tabulation 108-23 on Sheet 21 for Traffic Control Plan.
51 52 53	2529-5070110 2529-5070120 2529-8201000	See Tabulation 102-6C on Sheet 23 and Detail Sheets 532-9 and 532-4 for locations. Items are for two 6'x12' Full Depth Patches with EF Joint Assembly, located west of, and adjacent to, the west scarification limit and for two 6'x12' Full Depth Patches with EF Joint Assembly, located east of, and adjacent to, the east scarification limit. Requires 39.0 L.F. of 3" P.E. Subdrain Outlet Pipe, 16.4 CY of Porous Backfill, 11.7 SY of paved shoulder removal, 28 L.F. of saw cut and 0.4 tons of Type B ACC Base, Class 1 for replacing the paved shoulder which all shall be incidental to Full Depth Patch.
54	2599-9999018	See Tabulation SS-1 on Sheet 22 for locations. Refer to Section 2122.07 for method of measurement and Section 2122.08 for basis of payment. <i>Transferred to Item # 58 Price Adjustment</i>
55	2602-0000020	See Tabulation 100-17 on Sheet 23. Silt fence shall be used to protect and restore areas disturbed by necessary construction activities, as directed by the engineer. Item includes 118 linear feet at the outside approach corner of bridge. Contractor parking and staging areas shall be restored by the contractor at no expense to the Department.
56	2602-0000030	See Tabulation 110-18 on Sheet 23. Silt fence shall be used to protect and restore areas disturbed by necessary construction activities, as directed by the engineer. Item includes 35 linear feet (nominal) to be placed in the median to the east of the bridges. Contractor parking and staging areas shall be restored by the contractor at no expense to the Department.
57 58 60	2301-0685100 2599-9999018 2524-9700000	SEE TAB 112-6 ON PAGE 22 SEE ITEM # 54 PRICE ADJUSTMENT FOR ITEM ADDITIONAL TRAFFIC CONTROL SIGNS FOR ADVANCED WARNING

DESIGN NO. 201
FILE NO. 29697

I hereby certify that this plan 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: *Daniel J. Coyle* Date: *22 OCT 01*
Printed or Typed Name: Daniel J. Coyle

My license renewal date is December 31, 2001

Pages or sheets covered by this seal: 20 thru 26

DESIGN TEAM

WHKS & CO.

IOWA DOT • OFFICE OF DESIGN

POWESHIEK

COUNTY

PROJECT NUMBER

IMN-80-5(217)184--OE-79

SHEET NUMBER

20/26

10/22/01 c:\dotbrdg\580.0.12\Poweshiek\9\201\hghva\H079201.s51

04-03-01203-2

During construction of this project, the contractor will be required to coordinate his operations with those of other contractors working within the same area. Other work in progress during the same period of the time will include construction of the following projects:

ProjectType of Work

NONE ANTICIPATED

VERIFY AT TIME OF CONSTRUCTION

01-20-84204-2

All holes resulting from operations of the contractor, including removal of guardrail posts, fence posts, utility poles, or foundation studies, shall be filled and consolidated to finished grade as directed by the engineer to prevent future settlement. The voids shall be filled as soon as practical - preferably the day created and not later than the following day. Any portion of the right-of-way or project limits (including borrow areas and operation sites) disturbed by any such operations shall be restored to an acceptable condition. This operation shall be considered incidental to other bid items in project.

05-10-88204-5

This project requires that existing formed steel beam guardrail be incorporated into the new work. When additional holes in the existing rail sections are required to accommodate new or modified hardware, these holes shall be punched. Payment for punching additional holes shall be considered incidental to other bid items in the project.

10-02-01213-1

It shall be the contractor's responsibility to provide waste areas or disposal sites for excess material (excavated material or broken concrete) which is not desirable to be incorporated into the work involved on this project. These areas shall not impact wetlands or "Waters Of The U.S." No payment for overhaul will be allowed for material hauled to these sites. No material shall be placed within the right-of-way, unless specifically stated in the plans or approved by the engineer.

10-02-01213-7

Unless otherwise directed or authorized, all hot mix asphalt and other bituminous materials which are not specifically addressed or described in the plans shall become the property of the contractor.

The contractor, in accordance with current rules and regulations of the Iowa Department of Natural Resources, may:

1. With the approval of the Engineer, blend or otherwise process the material for use with shoulder or special backfill aggregate, for use on the project.

2. With the approval of the Engineer, place with material in areas designated by the Engineer as Soil Aggregate Subbase without extra charge.

3. Remove the material from the project and stockpile for the contractor's future use.

01-20-84221-4

In order to avoid any unnecessary surface breaks or premature spalling, the contractor is cautioned to exercise extreme care when performing any of the necessary saw cutting operations for the proposed pavement removal.

01-20-84232-5

The contractor shall not disturb desirable grass areas and desirable trees outside the construction limits. The contractor will not be permitted to park or service vehicles and equipment or use these areas for storage of materials. Storage, parking and service areas) will be subject to the approval of the resident engineer.

06-07-94232-8

The top six (6) inches of the disturbed areas shall be free of rock and debris and shall be suitable for the establishment of vegetation, subject to the approval of the Engineer.

10-28-97232-10

The contractor is expected to have materials, equipment, and labor available on a daily basis to install and maintain erosion control features on the project. This may involve seeding, silt fence, rock ditch checks, silt basins, or silt dikes.

10-02-01232-11

EROSION CONTROL (Incidental)

Following the completion of work on this project stabilizing crop seeding and fertilizing, and mulching of all disturbed areas shall be done as directed by the Engineer.

SEEDING:

Seed Mixture (Rural)

Spring--March 1 to May 20

Oats2 bu. per acre

Winter Rye1 bu. per acre

Red Clover5 lbs. per acre

Timothy5 lbs. per acre

Summer--May 21 to July 20

Oats3 bu. per acre

Annual Ryegrass35 lbs. per acre

Red Clover5 lbs. per acre

Timothy5 lbs. per acre

Fall--July 21 to September 30

Oats2 bu. per acre

Winter Rye2 bu. per acre

Red Clover5 lbs. per acre

Timothy5 lbs. per acre

Fertilizer: Rate--450 lbs. of 13-13-13 or equivalent chemically combined commercial fertilizer per acre.

MULCH:

Areas disturbed but not seeded with stabilizing crop by September 30 shall be scarified to a 3 in. depth and mulched. All mulch to be consolidated into the soil with the mulch stabilizer. Areas seeded with stabilizing crop in highly erosive soils may be mulched as directed by the Engineer.

Mulch: Rate--1½ tons of dry cereal straw per acre.

The preparation of the seedbed, furnishing and application of seed, fertilizer, and mulch to all disturbed areas on this project shall be considered incidental to work on this project and no extra compensation will be allowed.

06-22-84251-2

The contractor is hereby notified that removal of any existing traffic markers, warning devices or guardrail barriers shall be scheduled subject to the approval of the Engineer. The contractor may be required to place temporary warning devices at certain locations where replacement features are not installed the same day during which any such removals take place.

01-20-84253-1

Contractor is prohibited from using any established or other type median crossover on this project unless specifically designated for the contractor's use by this plan.

09-21-99262-3

BEFORE YOU DIG:
IOWA 1-CALL# 1-800-292-8989

W-1

Where public utility fixtures are shown as existing on the plans or encountered within the construction area, it shall be the responsibility of the contractor to notify the owners of those utilities prior to the beginning of any construction. The contractor shall afford access to these facilities for necessary modification of services. Underground facilities, structures and utilities have been plotted from available surveys and records, and therefore their locations must be considered approximate only. It is possible there may be others, the existence of which is presently not known or shown. It is the contractor's responsibility to determine their existence and exact location and to avoid damage thereto. No claims for additional compensation will be allowed to the contractor for any interference or delay caused by such work.

108-2608-30-88

STAGING NOTES

Shoulder strengthening on Right side is intended to be placed for the first stage. The shoulder strengthening on Left side is to be placed during the second stage.

Contractor shall place shoulder strengthening prior to any lane closure. Match existing pavement elevations.

Upon completing the approach work in each lane closure, ACC resurfacing of the full shoulder shall be placed adjacent to the new construction. Match new pavement elevations.

108-2304-04-89

TRAFFIC CONTROL PLAN

1 Through traffic will be maintained on the project at all times.

2 Traffic control on this project shall be in accordance with Standard Road Plan RS-80. For additional complementary information, refer to Part VI of the Manual on Traffic Control Devices and the current Standard Specifications.

3 The contractor shall coordinate traffic control with other projects in the area.

4 All traffic control devices shall be furnished, erected, maintained and removed by the contractor.

5 Where possible, all post-mounted signs shall be placed at least 2 feet beyond the curb or edge of shoulder.

6 The Engineer may require modifications to the pavement marking details shown. Conflicting permanent edge lines, center lines, or lane lines shall be removed. As applicable, permanent edge lines, center lines, and lane lines shall be placed before the roadway returned to normal traffic. The current Standard Specifications and supplemental specifications shall apply.

7 The location for storage of equipment by the contractor during nonworking hours shall be as approved by the Engineer in charge of construction.

8 Proposed sign spacing may be modified as approved by the Engineer to meet existing field conditions or to prevent obstruction of the motorist's view of permanent signing.

9 Permanent signing that conveys a message contrary to the message of the temporary signing and not applicable to the working conditions shall be covered by the contractor when directed by the Engineer.

10 Proposed changes in the traffic control plan shall be reviewed with the Office of Construction before changes are made.

105-412-03-96

STANDARD ROAD PLANS

The following Standard Road Plans shall be considered applicable to construction work on this project.

NUMBER	DATE	NUMBER	DATE	NUMBER	DATE
RC-16A	10-27-98	RG-1	09-21-99	RL-14	01-12-99
RC-16B	09-21-99	RG-8	10-02-01		
				RS-61	10-27-98
RE-2B	04-03-01	RH-50	04-27-99	RS-62	01-12-99
RE-12A	10-02-01	RH-51	10-03-00	RS-72	04-30-96
RE-12B	10-02-01	RH-52	08-20-96	RS-73	09-21-99
RE-47	04-03-01			RS-80	08-20-96
RE-48A	04-03-01	RK-17	10-02-01		
RE-53	10-02-01				
RE-65A	10-02-01				
RE-67	10-02-01				
RE-68	10-02-01				
RE-69B	10-02-01				
RE-71(1)	10-02-01				
RE-71(2)	10-02-01				
RE-72	10-02-01				
RE-76	10-02-01				

DESIGN NO. 201
FILE NO. 29697

04/24/01

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DESIGN TEAM

WHKS & CO.

IOWA DOT • OFFICE OF DESIGN

POWESHIEK

COUNTY

PROJECT NUMBER

IMN-80-5(217)184--0E-79

SHEET NUMBER

21/26

TABULATION OF STEEL BEAM GUARDRAIL AT BRIDGE END POST, CONCRETE BARRIER AND RAILROAD SIGNALS

Refer to Standard Road Plans RE-63, RE-65A and RE-65B

108-8A
10-02-01

LOCATION				STANDARD ROAD PLAN	CASE	② L2	LAYOUT LENGTHS				MATERIALS REQUIRED						BID ITEMS				REMARKS		
No.	① Direction of Traffic	End A=Approach T=Trailing	Side O = Outside M = Median				Station	STS (18.75')	VT (18.75')	VF (18.75')	ET Terminal (37.5')	STS		VT+VF+ET 'W' Beam ③	Posts ④ 6"x 8"x 7' with 6"x 8" Spacer Blocks (7)	Posts ⑤ 6"x 8"x 6' with 6"x 8" Spacer Blocks	CRT Posts 6"x 8"x 6' with 6"x 8" Spacer Blocks (5)	Installation of Guardrail ③+④+⑤+⑥	Anchorage and Terminal Systems				
												Thrie Beam (25.0')	Transition Section (6.25')						RE-33B	RE-69A		RE-69B	RE-76
1	WB	A	O	213+41.3	RE-65A	F		18.75	----	----	37.5	25.0	6.25	37.5	7	2	5	56.25	----	----	1	1	

- 1 Lane(s) to which the obstacle is adjacent.
- 2 Applies to Standard Road Plan RE-63 only.
- 3 Includes (2) special 12.5' sections of 'W' Beam, see Standard Road Plan RE-76.
- 4 (6) 6"x 8"x 7' posts required when Standard Road Plan RE-63 is specified.
- 5 The last two posts of the RE-76 Terminal section are included as part of that bid item.

TABULATION OF STEEL BEAM GUARDRAIL FOR STANDARD ROAD PLAN RE-67

108-19
10-02-01

LOCATION			(A) APPROACH SIDE LAYOUT LENGTHS				(T) TRAILING SIDE LAYOUT LENGTHS					MATERIALS REQUIRED							BID ITEMS				<div>① Lane(s) to which the obstacle is adjacent. ② Excess rail has been supplied for field adjustment at this point. This section will be divisible by 6.25'. ③ Includes (1) 12.5' long 5' radius section.</div>		
No.	Direction of Traffic	STATION	(STS) (18.75')	Section for Skewed Bridge	Curve # 1	RE-53 Section (12.5')	Tangent Section	Curve # 2	Section for Skewed Bridge	Adjustment Section ②	(STS) (18.75')	STS		'W' Beam ③ (A + T) -37.5'	Posts				Installation of Guardrail (A + T)	Anchorage and Terminal Systems					
												Thrie Beam (50.0')	Transition Section (2) @ (6.25')		6"x 8"x 7' with 6"x 8" Spacer Blocks (14)	6"x 8"x 6' with 6"x 8" Spacer Blocks (2)	6"x 8"x 6' without Spacer Blocks (2)	6"x 6"x 6' without Spacer Blocks (1)		RE-53	RE-69A	RE-69B			
												Lin. Ft.	Lin. Ft.		Lin. Ft.	No.	No.	No.		No.	Lin. Ft.	No.		No.	No.
												Lin. Ft.	Lin. Ft.		Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.		Lin. Ft.	Lin. Ft.	Lin. Ft.		Lin. Ft.	Lin. Ft.
1	WB	213+41.3	18.75	----	75	12.5	12.5	43.75	----	18.75	18.75	50	12.5	162.5	14	28	2	1	200	1	----	2	REMARKS East side of dual bridges.		

- 1 Lane(s) to which the obstacle is adjacent.
- 2 Excess rail has been supplied for field adjustment at this point. This section will be divisible by 6.25'.
- 3 Includes (1) 12.5' long 5' radius section.

REMOVE BEAM GUARDRAIL

110-7A
10-02-01

① Lane(s) to which the installation is adjacent.

10-02-01

LOCATION				STEEL BEAM GUARDRAIL	POSTS	END ANCHORAGE		REMARKS
No.	① Direction of Traffic	Station	Side	Remove Lin. Ft.	Remove No.	Remove No.	Type	
1	WB	213+41.3	A-O	62.50	13	1	RE-52	
2	WB		M	192.0	35			
3	WB		T-O	62.50	13	1	RE-52	

TABULATION OF GRADING FOR GUARDRAIL INSTALLATIONS

107-23
04-27-99

① Lane(s) to which the installation is adjacent.

② Refer to Standard Road Plans RL-12, RL-14, and Typical 4303 or 4306.

04-27-99

LOCATION POINT				TYPE	DIMENSIONS ②				CLASS 10 EXCAV. Cu. Yds.	EMBANK. IN PLACE Cu. Yds.	PIPE			REMARKS
No.	① Direction of Traffic	Station	SIDE		BY		Z				Size Inches	Type	Length Lin. Ft.	
					Feet		Feet							
					A	T	A	T						
1	WB	213+41.3	0	1	9		49.86			25				

TABULATION OF BRIDGE APPROACH SECTION

(Refer to Standard Road Plan RK-18, RK-20(1), RK-20(2), RK-20(3), RK-21, RK-22, or RK-23)

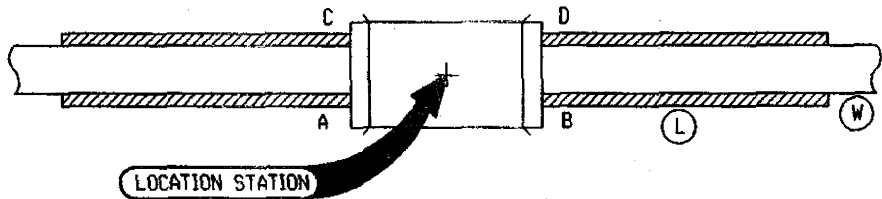
112-6
10-03-00

LOCATION		APPROACH PAVEMENT				Fixed or Movable Abutment F or M	Perforated Subdrain ^① 4" Lin. Ft.	SUBDRAIN				APPROACH SUBGRADE		REMARKS
Bridge Station	End	Ⓣ Thickness Inches	Pay Length Feet	Non-Reinf. Pavement Area Sq. Yds.	Reinforced Pavement Area Sq. Yds.			Subdrain Outlet ^①		Porous Backfill ^① Cu. Yds.	Class 'A' Crushed Stone ^① Backfill Cu. Yds.	Modified Subbase ^① Tons	Polymer Grid ^① Sq. Yds.	
								Station	Side					
213+41.3	west	12	80	160	90									
				(24x60)	(40.5x20)									
213+41.3	east	12	80	160	90									
				(24x60)	(40.5x20)									

AREAS OF SHOULDER STRENGTHENING

Refer to Standard Road Plan RG-1 or RG-8.

SS-1



REMOVAL OF PAVEMENT

110-1
04-27-99

* Not a bid item.

STATION TO STATION		PAVEMENT TYPE	AREA Sq. Yds.	SAW CUT Lin. Ft.*	REMARKS
213+41.3		◆	226.667	48	West Bridge Approach
		◆	226.667	48	East Bridge Approach
		◆	228.887	273.25	O-A Shoulder
		◆	222.222	274.25	O-T Shoulder
		◆	184.667	273.25	M-A Shoulder
		◆	185.333	274.25	M-T Shoulder

◆ Plans indicate that pavement thickness is 14" PCC
Thickness may vary.
◆ ACC Shoulder

TABULATION OF DELINEATORS AND OBJECT MARKERS

Refer to Standard Plans RE-48A-B* and RE-29C

108-17
04-28-98

LOCATION		DELINEATOR	OBJECT MARKER			REMARKS
Station	Type*	Single White D-W	Type 2	Type 3		
		Number	OM2-31V	OM-3L	OM-3R	
			Number	Number	Number	
213+41.3	3			0	1	
	4			1	0	

Location Station	Length L Feet	Width W Feet	Depth Inches	Cl. 13 Excav. Cu. Yds.	Side	REMARKS
213+41.3	278	6	10	25.02	A	Median Approach
	277	6	10	25.12	B	Median Trailing
	263	10	10	25.02	C	Outside Approach
	260	10	10	25.12	D	Outside Trailing

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