BRFN-34-6(63)--39-59
BRIDGE OVERLAY

CADD FILE: H590198.S00
02-16-99 DGB 198 LUCAS TONY J. GUSTAFSON

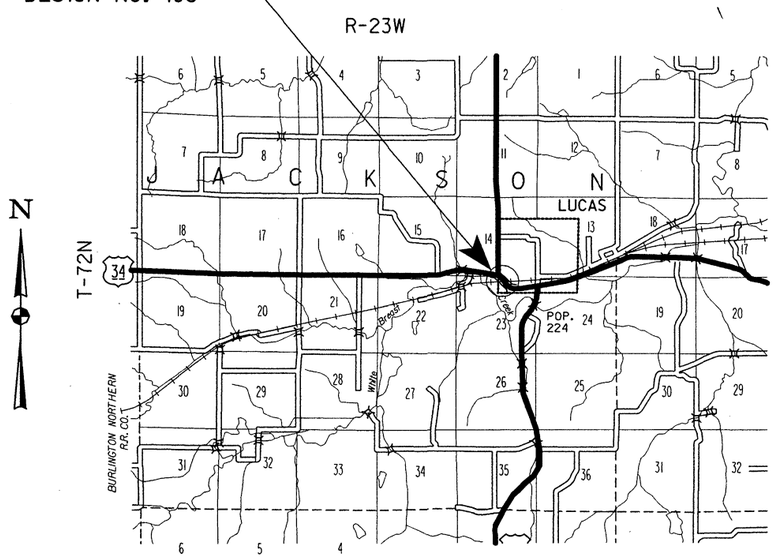
LUCAS COUNTY

LUCAS 198

CONVENTIONAL SIGNS

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

DESIGN NO. 198



LOCATION MAP

425

LOCATION MAP SCALE
0 1 Miles 2 3
1 2 3 4 5 Kilometers

IOWA
DEPARTMENT OF TRANSPORTATION
Project Development Division
PLANS OF PROPOSED IMPROVEMENTS ON THE

PRIMARY ROAD SYSTEM
LUCAS COUNTY

BRIDGE OVERLAY
ON US34 & US65 OVER BNSF RR AT WCL OF LUCAS
0.1 MI E OF W JCT US65

SCALES: As Noted

The standard specifications, series of 1997 of the Iowa Department of Transportation, shall apply to construction work on this project.
(PLUS CURRENT SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS)

Form 520003 12-97

PETER A. TOLLENAERE 08177 LICENSED PROFESSIONAL ENGINEER 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.

Project Engineer — Date: 12-17-09

PETE TOLLENAERE
My license renewal date is December 31, 2011

1999 — Year
CRAMER & ASSOC. — Contractor
C. CULBERTSON — Project Inspector

STATE	FHWA REGION	F.Y.	SHEET	TOTAL
IOWA	7		1	35

PROJECT NUMBER
BRFN-34-6(63)--39-59
R.O.W. PROJECT NUMBER

PIN
95-59-010-1

INDEX OF SHEETS

NO.	DESCRIPTION
1	TITLE SHEET
2	BRIDGE ESTIMATE SHEET
2-18	BRIDGE DESIGN NO. 198
19	ROAD ESTIMATE AND SIGNATURE SHEET
19-35	ROAD SHEETS

VALUE ENGINEERING SAVES
REFER TO THE GENERAL NOTES ON SHEET 2 OF 35

STANDARD ROAD PLANS

IDENT	DATE	IDENT	DATE
RE-2A	01-12-99	RG-1	01-12-99
RE-2B	10-22-93	RG-8	10-28-97
RE-12A	12-03-96	RH-50	08-20-96
RE-12B	12-03-96	RH-51	10-27-98
RE-47	10-28-97	RH-52	08-20-96
RE-48A	12-08-95	RK-19A	10-27-98
RE-65A	01-12-99	RK-19F	10-27-98
RE-68	12-03-96	RL-14	01-12-99
RE-69	12-03-96	RS-1	10-27-98
RE-76	01-12-99	RS-2	10-27-98
RF-19E	07-15-97	RS-3	12-03-96

STANDARD BRIDGE PLANS

STANDARD	ISSUED	REVISED

REVISIONS

150

INDEX OF SEALS

SHEET NO.	NAME
1	DEAN G. BIERWAGEN - STRUCTURAL DESIGN
19	TONY J. GUSTAFSON - ROAD DESIGN

STRUCTURAL DESIGN

LICENSED PROFESSIONAL ENGINEER Dean G. Bierwagen 11506 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 — Date: 1-7-99

Dean G. Bierwagen
Printed or Typed Name

My license renewal date is December 31, _____

Pages or sheets covered by this seal: SHEETS 1 THRU 18 OF 35

02-16-99 DGB DEAN BIERWAGEN

LETTING DATE 5-28-99 | PROJECT DIRECTORY NAME: 59034010A95 | FILE NO. 29293 | LUCAS COUNTY | PROJECT NO. BRFN-34-6(63)--39-59 | SHEET NO. 1 | CADD FILE: H590198.S00

07-JAN-1999 13:53 dbackou s:\projects\59034010a95\brfinal\h590198.s00

GENERAL NOTES:

THIS DESIGN IS FOR REPAIRS TO THE EXISTING 210' x 48' CONTINUOUS I - BEAM BRIDGE. COPIES OF ORIGINAL DESIGN PLANS AND SHOP DRAWINGS WILL BE MADE AVAILABLE TO THE CONTRACTOR. CONTACT THE OFFICE OF CONTRACTS - PROJECT DEVELOPMENT DIVISION - IOWA D.O.T. - AMES.

REPAIRS SHALL CONSIST OF:

1. INSTALLING EXPANSION DEVICE AT MEDIAN OF SOUTH ABUT. ONLY
2. INSTALLING RAISE PLATES AT SOUTH ABUT.
3. BRIDGE FLOOR OVERLAY AND CLASS A BRIDGE FLOOR REPAIR
4. CONCRETE REPAIR OF CURB
5. REMODELING OF CAST-IN-PLACE BARRIER RAIL END SECTIONS
6. INSTALLING 1" PREFORMED ELASTIC NEOPRENE JOINT AT NORTH ABUT.

PRESENT FLOOR THICKNESS IS ABOUT 8 INCHES. THE CONTRACTOR SHALL EXERCISE CARE IN REMOVING CONCRETE IN ORDER TO PREVENT UNNECESSARY UNBONDING OF REINFORCING STEEL.

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

AREAS OF CURB INDICATED ON THE "SURVEY PLOT" 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 $\frac{1}{2}$" MORE THAN SHOWN ON THE PLANS. PROFILE MAY BE ADJUSTED TO THE EXTENT POSSIBLE WITHIN THESE LIMITS.

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

ALL DIMENSIONS REQUIRED TO FABRICATE NEW STRUCTURAL STEEL SHALL BE FIELD VERIFIED BY THE CONTRACTOR.

THE BRIDGE 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.

THE TOP OF ABUTMENT BACKWALLS BETWEEN GUTTER LINES AS SHOWN SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIFICATIONS FOR CLASS A BRIDGE FLOOR REPAIR AND BRIDGE FLOOR OVERLAY WITH THE FOLLOWING EXCEPTIONS:

1. THE LOWER LIMIT FOR CLASS A BRIDGE FLOOR REPAIR SHALL BE TO SUITABLE EXISTING CONCRETE, AS DETERMINED BY THE ENGINEER, BUT TO AT LEAST 2 INCHES BELOW THE BOTTOM LIMIT FOR BRIDGE FLOOR OVERLAY.
2. IF MACHINE FINISHING FOR THE TOP OF BACKWALL IS NOT PRACTICABLE, A MANUAL TYPE SCREED OR METAL PLATE, WITH APPROVED VIBRATORS ATTACHED, SHALL BE USED.

THE EXPOSED TOP OF BACKWALL AREAS AS SHOWN HAVE BEEN INCLUDED IN THE QUANTITIES SHOWN FOR CLASS A BRIDGE FLOOR REPAIR AND FOR BRIDGE FLOOR OVERLAY.

CROSS-SLOPES OF NORTHBOUND AND SOUTHBOUND TRAFFIC LANES VARY THROUGHOUT LENGTH OF BRIDGE. THE INTERSECTION OF OVERLAYS FOR NORTHBOUND AND SOUTHBOUND LANES SHALL APPROXIMATELY FOLLOW THE ℄ OF THE MEDIAN. THE ENGINEER MAY REQUIRE ADDITIONAL VIBRATION OR SPECIAL FINISHING PROCEDURES ADJACENT TO LONGITUDINAL CONSTRUCTION JOINT.

FAINT LINES ON PLANS INDICATE EXISTING PORTIONS OF THE BRIDGE.

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

"REMOVALS AS PER PLAN" INCLUDE ALL COSTS ASSOCIATED WITH REMOVING THE BRIDGE MEDIAN, PORTIONS OF EXISTING CAST-IN-PLACE BARRIER AT EACH CORNER OF THE BRIDGE AND PORTIONS OF THE EXPANSION DEVICE AT THE MEDIAN. REMOVALS 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 BRIDGE CONTRACTOR AND SHALL BE REPAIRED AT NO EXTRA COST TO THE STATE.

THE BRIDGE CONTRACTOR IS TO PROVIDE A METHOD OF REMOVAL THAT WILL PREVENT FEATHER EDGING AT THE BOTTOM OF THE EXISTING SLAB. CARE SHALL BE TAKEN WHEN EXPOSING EXISTING REINFORCING SO THE BOND TO EXISTING CONCRETE IS NOT BROKEN AT THE CONCRETE BREAK LINES.

ESTIMATED PROJECT QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUANTITY
1	2401-6750001	REMOVALS, AS PER PLAN	LS	1.000	$13500.000
2	2403-0100000	STRUCTURAL CONCRETE (MISCELLANEOUS)	CY	4.300	4.300
3	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	523.000	523.000
4	2408-7800000	STRUCTURAL STEEL	LB	2920.000	2920.000
5	2413-0698071	BRIDGE FLOOR OVERLAY	SY	1160.000	1160.000
6	2413-0698072	BRIDGE FLOOR REPAIR, CLASS A	SY	51.000	115.575
7	2413-1100000	PREFORMED ELASTIC NEOPRENE JOINT	L.F.	60.000	60.000
8	2426-6772016	CONCRETE REPAIR	SF	20.000	97.000
9	2508-0810000	CLEANING AND PAINTING STRUCTURAL STEEL	LS	1.000	$1000.000
10	2508-0970000	CONTAINMENT	LS	1.000	$300.000
11	2528-8400047	TEMPORARY BARRIER RAIL	LF	1112.500	1180.000
12	2533-4980005	MOBILIZATION	LS	1.000	$17400.000

ESTIMATE REFERENCE INFORMATION

ITEM CODE: 2413-0698071

INCLUDES COST OF FURNISHING AND PLACING CONCRETE SEALER.

GENERAL NOTES: (CONTINUED)

PLAN QUANTITY OF FLOOR REPAIR IS BASED ON 160% OF THE SHADED AREAS SHOWN ON THE "SURVEY PLOT" IN THESE PLANS. SHADED AREAS REPRESENT CLASS A BRIDGE FLOOR REPAIR FOUND BY THE DELAMTECT PLOT. ACTUAL SPALLED AND HOLLOW AREAS AS DETERMINED BY THE ENGINEER AT THE TIME OF CONSTRUCTION, SHALL BE REPAIRED.

THE BRIDGE CONTRACTOR SHALL WORK IN SUCH A MANNER THAT EQUIPMENT AND MATERIALS SHALL NOT BE ALLOWED TO INTERFERE WITH TRAIN TRAFFIC OR BE ALLOWED TO FALL ON THE RAILROAD TRACKS. INTERFERENCE ABOVE THE RAILROAD TRACK AREA SHALL BE COORDINATED WITH THE RAILROAD.

THE BRIDGE CONTRACTOR WILL BE THE ONLY CONTRACTOR AT THE SITE AND IS RESPONSIBLE FOR THE COMPLETION OF ALL WORK AS DETAILED AND NOTED IN THESE PLANS.

SURFACES OF EXISTING EXPANSION DEVICE ARE TO BE CLEANED OF EXISTING CORROSION AND PAINT IN PREPARATION FOR FIELD WELDING. THE 1$\frac{1}{2}$" THICK RAISE PLATES FOR THE EXPANSION DEVICE ARE TO BE CLEANED AND PAINTED AFTER FIELD WELDING TO THE EXISTING EXPANSION DEVICE. THE CLEANING IS TO BE BY VACUUM BLAST OR BY A NON-BLASTING METHOD AND IS TO COMPLY WITH THE STEEL STRUCTURES PAINTING COUNCIL SPECIFICATIONS SSPC-SP3. THE EXPOSED TOP SURFACES OF THE COMPLETED EXPANSION DEVICE ARE TO BE GIVEN ONE COAT OF RUST-OLEUM PRIMER AND ONE COAT OF RUST-OLEUM FINAL COAT OR AN APPROVED EQUAL PRIMER AND FINAL COAT. THE COLOR OF THE DRY PAINT SHOULD APPROXIMATE THE COLOR OF CONCRETE. ONLY THE EXPOSED SURFACES OF THE EXPANSION DEVICE AND RAISE PLATES ARE TO BE PAINTED. NO PAINTING OF OTHER STEEL IS REQUIRED. ALL COST ASSOCIATED WITH CLEANING AND PAINTING OF THE EXPANSION DEVICE AS NOTED IS TO BE INCLUDED IN THE BID ITEM "CLEANING AND PAINTING STRUCTURAL STEEL".

CONTAINMENT AND DISPOSAL OF WASTE SHALL BE IN ACCORDANCE WITH CURRENT SUPPLEMENTAL SPECIFICATIONS FOR "ENVIRONMENTAL PROTECTION FOR REMOVAL OF NON HAZARDOUS PAINT". WASTE MATERIAL SHALL BE DELIVERED TO THE D.O.T. CENTRAL COMPLEX EAST OF THE SIGN SHOP ON SOUTH 4th STREET IN AMES. ALL COSTS ASSOCIATED WITH HAULING AND DEPOSITING OF WASTE AT THE DESIGNATED SITE/FACILITY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND INCLUDED IN THE CONTRACT PRICE BID FOR THE "CONTAINMENT" ITEM. PRIOR TO DELIVERY ARRANGEMENTS SHALL BE MADE WITH THE IOWA D.O.T. ENVIRONMENTAL ENGINEER AT TELEPHONE NUMBER 515-239-1798. THE CONTRACTOR IS NOT RESPONSIBLE FOR DISPOSAL OF WASTE AFTER IT HAS BEEN DELIVERED AND DEPOSITED AT THE DESIGNATED FACILITY IN AMES.

THE BID ITEM "STRUCTURAL STEEL" SHALL INCLUDE ALL COSTS ASSOCIATED WITH FURNISHING AND INSTALLING RAISE PLATES ON EXPANSION DEVICE AND THE NEW JOINT IN THE MEDIAN AREA AS SHOWN EXCEPT ITEMS INCLUDED IN THE BID ITEM "CLEANING AND PAINTING STRUCTURAL STEEL" AND THE BID ITEM "CONTAINMENT".

A SCRAPE SAMPLE WAS TAKEN FROM AN AREA OF THIS BRIDGE TO GET AN INDICATION OF THE EXISTENCE OF AND LEVEL OF TOTAL CHROMIUM AND TOTAL LEAD. ANALYSIS OF TOTAL LEAD ON THIS SAMPLE WAS 1500 PARTS PER MILLION (PPM). ANALYSIS OF TOTAL CHROMIUM ON THIS SAMPLE WAS <50 PPM. THESE ANALYSES SHOW THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS. LEVELS INDICATED BY THESE TESTS COULD CREATE CONDITIONS ABOVE REGULATORY LIMITS FOR HEALTH AND SAFETY REQUIREMENTS. NO OTHER CONSTITUENTS WERE ANALYZED. THE BIDDER SHOULD NOT RELY ON THE DEPARTMENT'S TESTING AND ANALYSIS FOR ANY PURPOSE OTHER THAN AS AN INDICATION OF THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS.

SPECIFICATIONS:

CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, CURRENT SERIES, 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.
CONCRETE IN ACCORDANCE WITH SECTION 8, f'c = 3,500 PSI.
STRUCTURAL STEEL IN ACCORDANCE WITH SECTION 10. ASTM A709 GRADE 36.

NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

TRAFFIC CONTROL PLAN

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

LOCATION:

US 34 OVER BNSF RR
X-ING NO. 884
JACKSON TWP
T72N R23W
SECTION 23
LUCAS COUNTY
MAINTENANCE NO. 5932.3S034
FHWA NO. 034221

DESIGN HISTORY AT THIS SITE

DES. NO.	TYPE OF WORK
173	ORIGINAL DESIGN
390	BRIDGE REPAIRS
386	RETROFIT RAIL
198	DECK OVERLAY

DESIGN FOR REPAIRS TO 35°5'30" SKEW

210'-0 x 48' CONTINUOUS I- BEAM BRIDGE

64'-0 END SPANS 82'-0 CENTER SPAN

GENERAL NOTES AND QUANTITIES

STATION: 807+91.96 (℄ US34) RR X-ING NO. 884 FEBRUARY 1999

LUCAS COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION

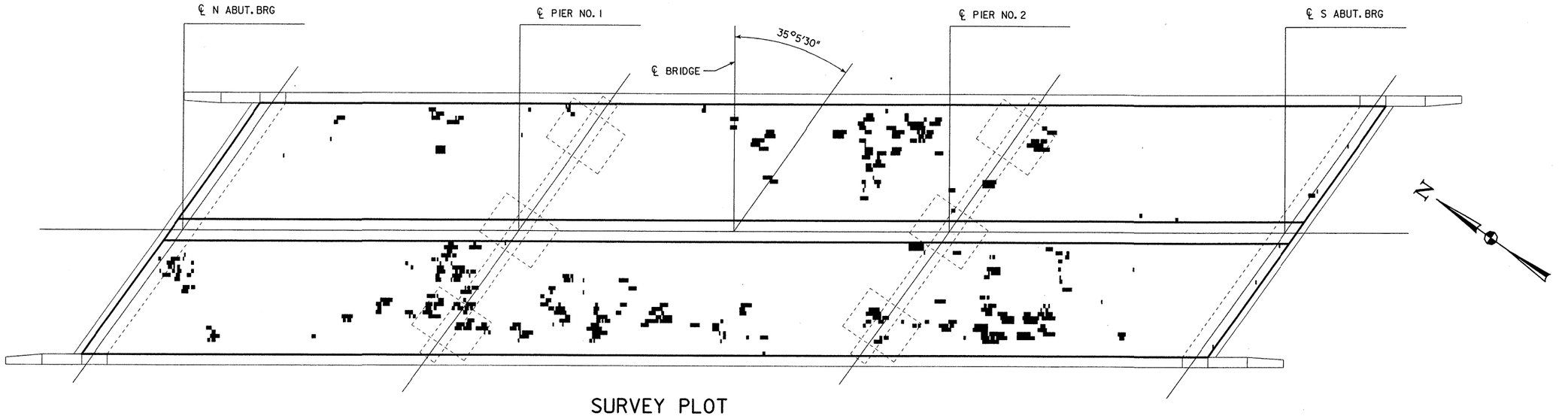
DESIGN SHEET NO. 1 OF 17 FILE NO. 29293 DESIGN NO. 198

DESIGNED BY DEAN BIERWAGEN CHECKED BY GEORGE KOTLERS
DETAILED BY DARWIN BACKOUS CADD FILE H590198.S01
SECTION LEADER:

DECK REPAIR - QUANTITIES | STANDARD SHEET 1038 | LUCAS COUNTY | PROJECT NUMBER BRFN-34-6(63)--39-59

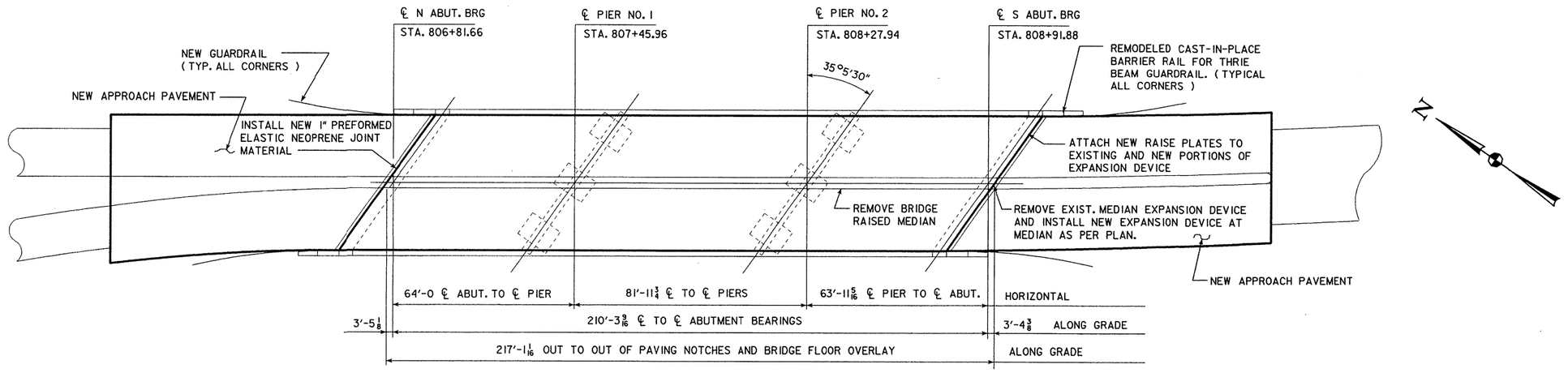
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IOWA	7		2	35

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SURVEY PLOT

DELAMINATIONS AT 400 MILLIVOLTS 285.9 FT.²



SITUATION PLAN

(REPAIR CURB AREAS AS DIRECTED BY ENGINEER)

DESIGN FOR REPAIRS TO 35°5'30" SKEW

210'-0 x 48' CONTINUOUS I- BEAM BRIDGE

64'-0 END SPANS — 82'-0 CENTER SPAN

SITUATION PLAN AND SURVEY PLOTS

STATION: 807+91.96 (℄ US34) RR X-ING NO. 884 FEBRUARY 1999

LUCAS COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION

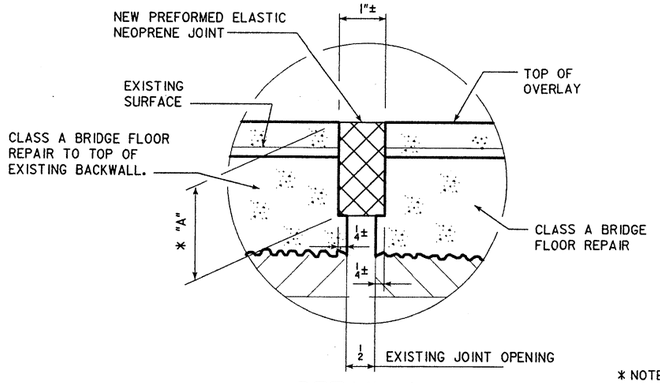
DESIGN SHEET NO. 2 OF 17 FILE NO. 29293 DESIGN NO. 198

RR DESIGNED BY DEAN BIERWAGEN CHECKED BY GEORGE KOTLERS
DETAILED BY DARWIN BACKOUS CADD FILE H590198.S02

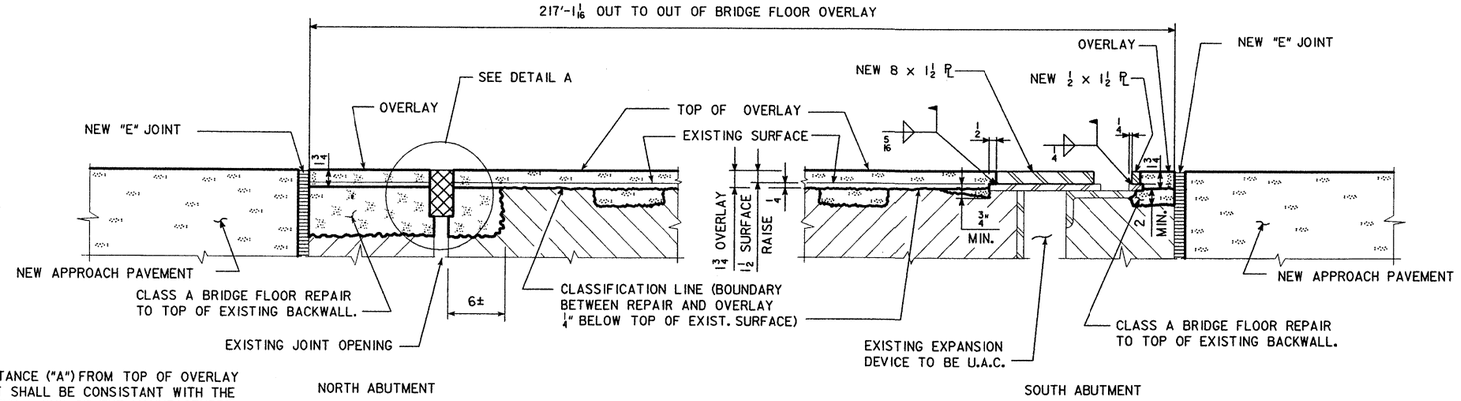
LUCAS COUNTY | PROJECT NUMBER

STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		3	35

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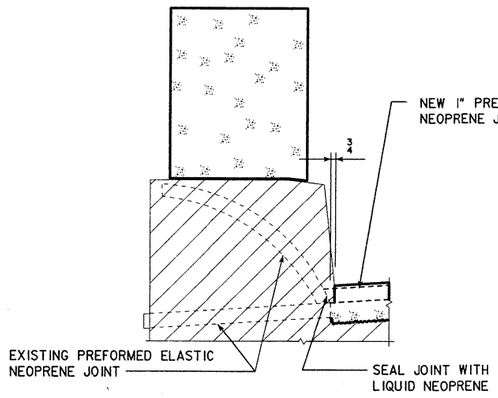


DETAIL A



PART LONGITUDINAL SECTION ALONG ROADWAY

* NOTE:
THE DISTANCE ("A") FROM TOP OF OVERLAY TO SEAT SHALL BE CONSISTANT WITH THE RECOMMENDATIONS OF THE MANUFACTURER FURNISHING THE SEAL.



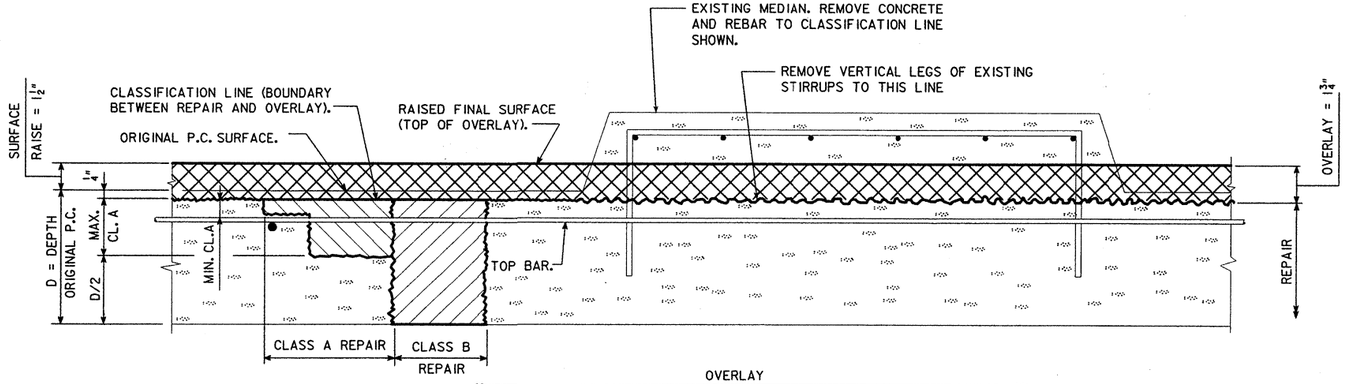
SECTION THRU CURB
(SHOWING JOINT MATERIAL)

TABLE OF APPROVED NEOPRENE JOINTS	
MANUFACTURER	NEOPRENE JOINT
WATSON-BOWMAN & ACME CORP.	WA 175
D.S. BROWN CO.	CV 1250
APPROVED EQUAL	

NOTES:
CONTRACTOR SHALL COMPLETELY REMOVE EXISTING 1" NEOPRENE JOINT MATERIAL BETWEEN GUTTER LINES.

INSTALLATION WIDTHS SHOWN FOR NEOPRENE JOINT ARE FOR ILLUSTRATIVE PURPOSED ONLY. ACTUAL DIMENSIONS SHALL BE CONSISTENT WITH THE RECOMMENDATIONS OF THE MANUFACTURER FURNISHING THE SEAL.

PRIOR TO INSTALLATION OF NEOPRENE JOINT MATERIAL, CONTRACTOR SHALL REMOVE ALL ACCUMULATED FOREIGN MATERIAL FROM NEW NEOPRENE JOINT SEAT USING COMPRESSED AIR AND/OR WATER UNDER PRESSURE.



REPAIR AND OVERLAY DEFINITION
(GUTTER LINE TO GUTTER LINE)

DESIGN FOR REPAIRS TO 35°5'30" SKEW

210'-0 x 48' CONTINUOUS I- BEAM BRIDGE

64'-0 END SPANS 82'-0 CENTER SPAN

REPAIR DETAILS

STATION: 807+91.96 (℄ US34) RR X-ING NO. 884 FEBRUARY 1999

LUCAS COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION

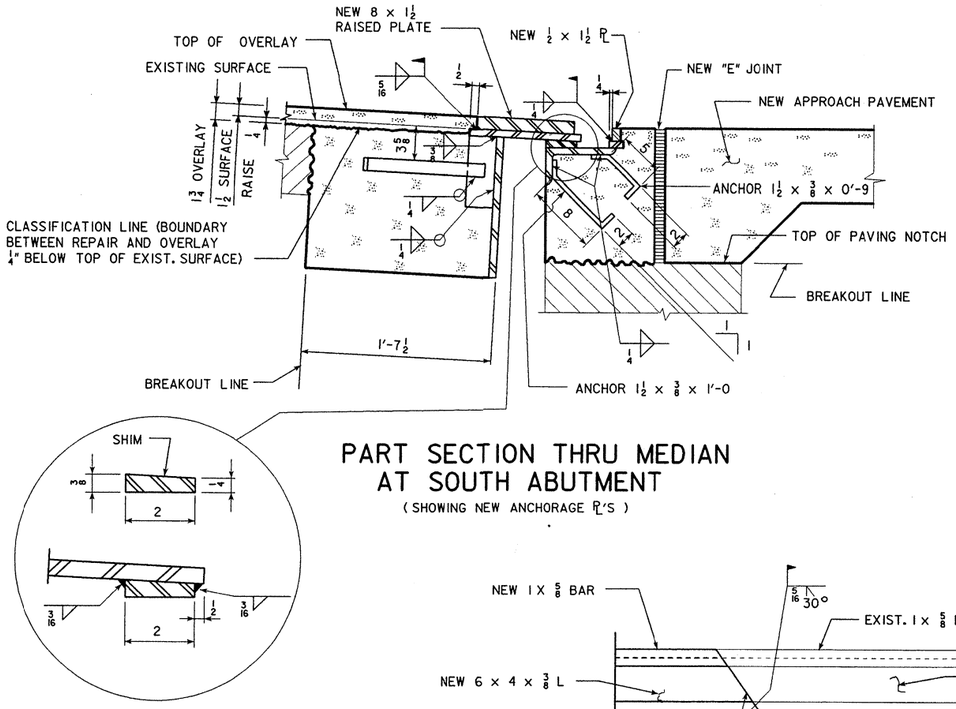
DESIGN SHEET NO. 3 OF 17 FILE NO. 29293 DESIGN NO. 198

DESIGNED BY	DEAN BIERWAGEN	CHECKED BY	GEORGE KOTLERS
DETAILED BY	DARWIN BACKOUS	CADD FILE	H590198.S03

LUCAS COUNTY	PROJECT NUMBER

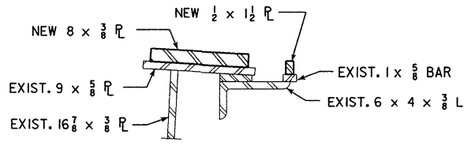
STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		4	35

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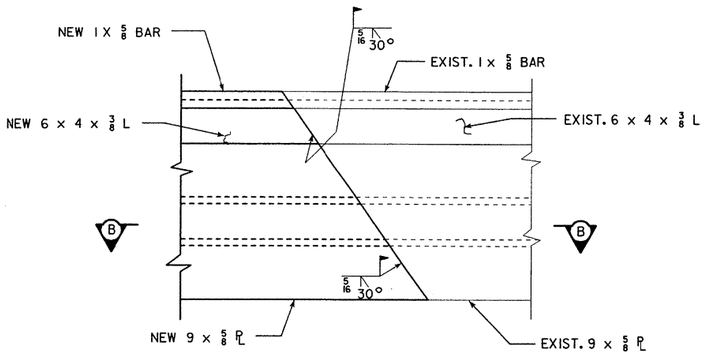


PART SECTION THRU MEDIAN AT SOUTH ABUTMENT

(SHOWING NEW ANCHORAGE PL'S)

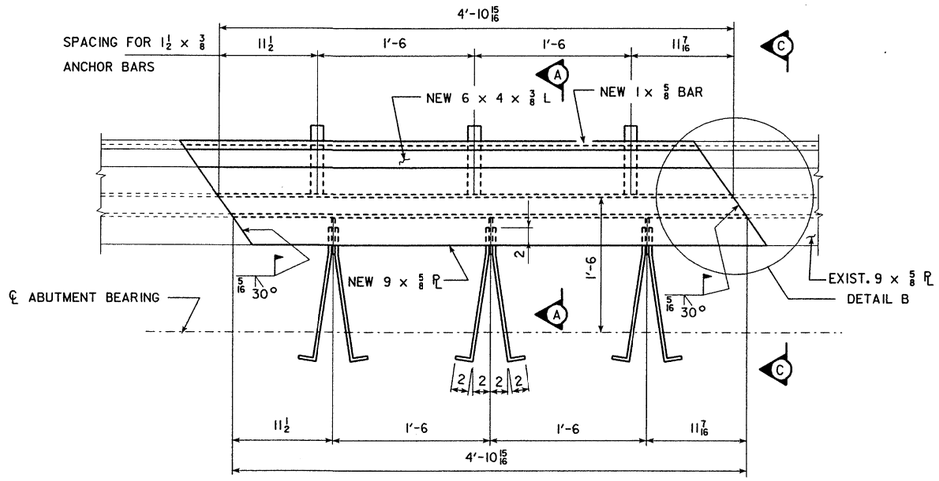


SECTION C-C



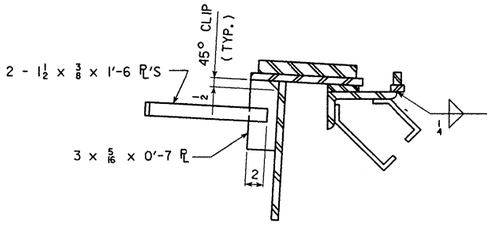
DETAIL B

RAISE PLATES NOT SHOWN

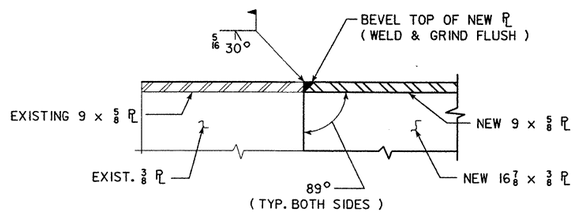


PART MEDIAN PLAN AT SOUTH ABUTMENT

RAISE PLATES NOT SHOWN



SECTION A-A



SECTION B-B

(RAISE PLATES NOT SHOWN)

NOTES:
DETAILS SHOWN WITH RAISED MEDIAN REMOVED.

SEE DESIGN SHEET 6 FOR RAISE PLATE DETAILS.

SEE DESIGN SHEET 5 FOR REMOVAL DETAILS.

DESIGN FOR REPAIRS TO 35°5'30" SKEW

210'-0 x 48' CONTINUOUS I- BEAM BRIDGE

64'-0 END SPANS 82'-0 CENTER SPAN

MEDIAN REPAIR DETAILS

STATION: 807+91.96 (℄ US34) RR X-ING NO. 884 FEBRUARY 1999

LUCAS COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION

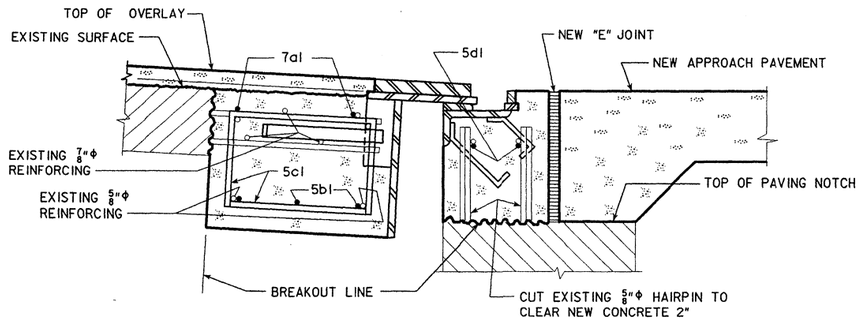
DESIGN SHEET NO. 4 OF 17 FILE NO. 29293 DESIGN NO. 198

DESIGNED BY DEAN BIERWAGEN CHECKED BY GEORGE KOTLERS
DETAILED BY DARWIN BACKOUS CADD FILE H590198.S07

STANDARD SHEET 1041 | LUCAS COUNTY | PROJECT NUMBER

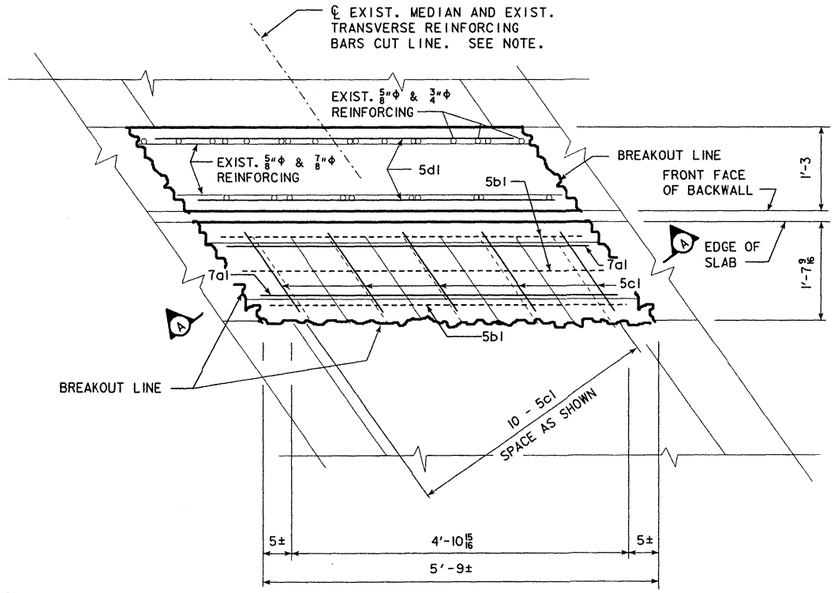
STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		5	35

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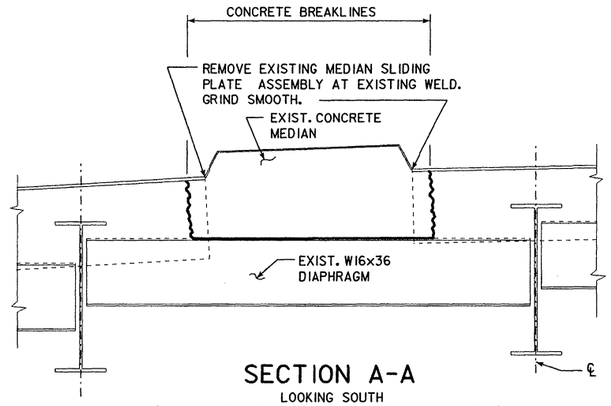


PART SECTION THRU MEDIAN AT SOUTH ABUTMENT

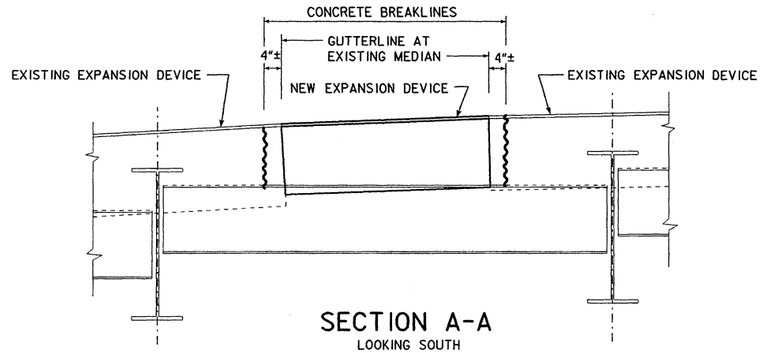
NOTE:
EXISTING TRANSVERSE REINFORCING BARS MAY BE CUT NEAR MIDDLE OF REPAIR AREA AND BENT OUT OT THE WAY TO FACILITATE REMOVAL OF CONCRETE. STRAIGHTEN BARS BACK TO THEIR ORIGINAL POSITION AND INCORPORATE INTO NEW WORK.



PART MEDIAN PLAN VIEW
(EXPANSION PLATES NOT SHOWN)



SECTION A-A
LOOKING SOUTH
(SHOWING EXISTING MEDIAN AND REMOVAL LIMITS)

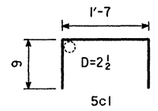


SECTION A-A
LOOKING SOUTH
(SHOWING NEW JOINT)
RAISE PLATE NOT SHOWN

EPOXY REINF. STEEL-SOUTH ABUT./MEDIAN

BAR	LOCATION	SHAPE	NO.	LENGTH	QUANTITY
7a1	TOP OF MEDIAN - LONGITUDINAL	——	2	5'-4	22
5b1	BOTTOM OF MEDIAN - LONGITUDINAL	——	3	5'-4	17
5c1	MEDIAN - TRANSVERSE	⌐¬	10	3'-1	32
5d1	MEDIAN BACKWALL - LONGITUDINAL	——	2	5'-4	11
				TOTAL LBS.	82

BENT BAR DETAILS



NOTE: ALL DIMENSIONS ARE OUT TO OUT. D = PIN DIAMETER.

CONCR. PLACEMENT SUMMARY - MEDIAN

LOCATION	UNIT	SOUTH ABUTMENT
DIAPHRAGM REPAIR	CU. YD.	0.4
BACKWALL REPAIR	CU. YD.	0.4
TOTAL CU. YDS.		0.8

DESIGN FOR REPAIRS TO 35°5'30" SKEW

210'-0 x 48' CONTINUOUS I- BEAM BRIDGE

64'-0 END SPANS 82'-0 CENTER SPAN

MEDIAN REPAIR DETAILS

STATION: 807+91.96 (℄ US34) RR X-ING NO. 884 FEBRUARY 1999

LUCAS COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION

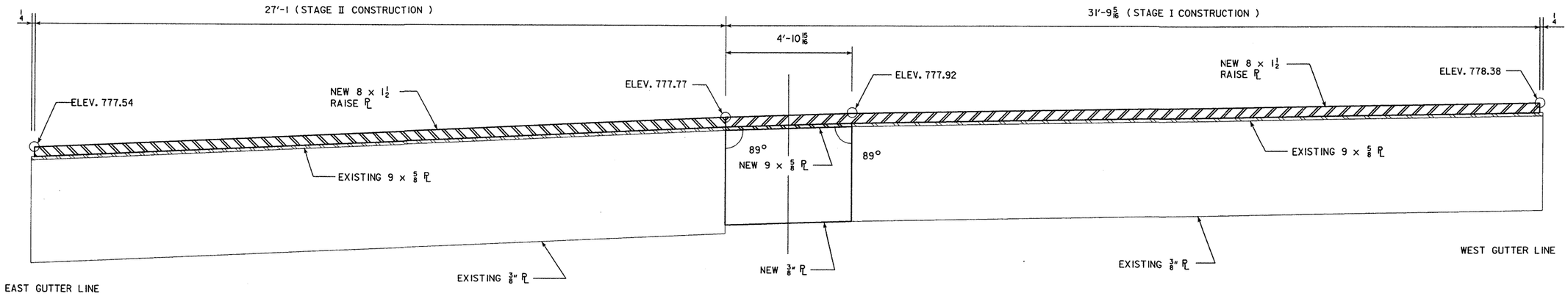
DESIGN SHEET NO. 5 OF 17 FILE NO. 29293 DESIGN NO. 198

DESIGNED BY DEAN BIERWAGEN CHECKED BY GEORGE KOTLERS
DETAILED BY DARWIN BACKOUS CADD FILE H590198.S08

LUCAS COUNTY | PROJECT NUMBER

STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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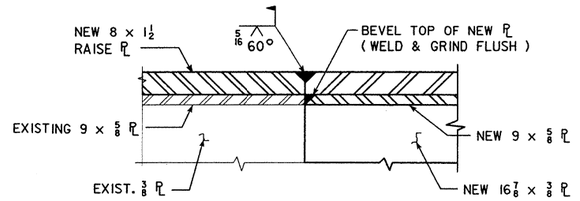
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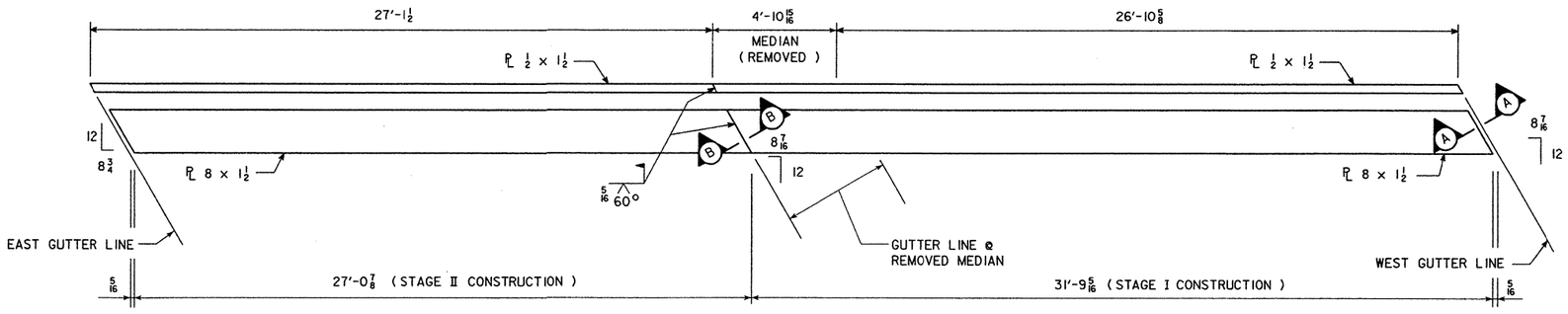
RAISE PLATE ELEVATION VIEW

(LOOKING SOUTH)

NOTE:
ELEVATIONS SHOWN ARE FOR FINAL RIDING SURFACE AND BASED ON EXISTING PLANS.



SECTION B-B

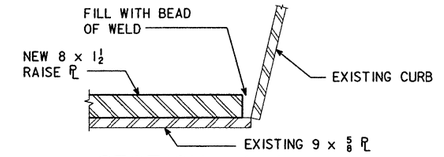


RAISE PLATE DETAILS

(REQUIRED AT SOUTH ABUTMENT ONLY)

RAISE PLATE NOTES:
RAISE PLATES ARE TO BE INSTALLED IN STAGES AS SHOWN. RAISE PLATES FOR EACH STAGE ARE TO BE IN PLACE BEFORE THE NEW BRIDGE FLOOR OVERLAY FOR THAT STAGE IS PLACED.

NOTE:
SEE DESIGN SHEETS 3, 4 AND 5 FOR DETAILS OF MEDIAN, REMOVAL AND NEW JOINT.



SECTION A-A

DESIGN FOR REPAIRS TO 35°5'30" SKEW

210'-0 x 48' CONTINUOUS I- BEAM BRIDGE

64'-0 END SPANS 82'-0 CENTER SPAN

RAISE PLATE REPAIR DETAILS

STATION: 807+91.96 (℄ US34) RR X-ING NO. 884 FEBRUARY 1999

LUCAS COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION

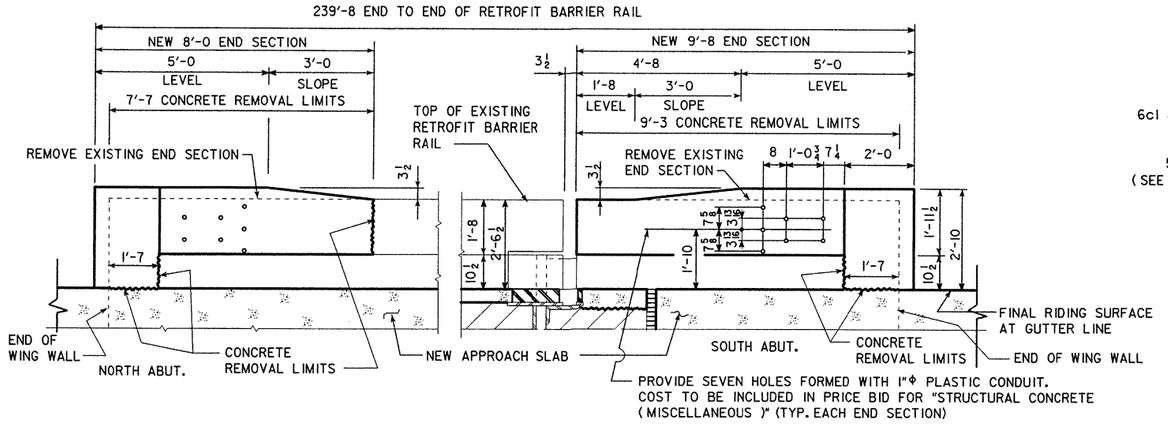
DESIGN SHEET NO. 6 OF 17 FILE NO. 29293 DESIGN NO. 198

DESIGNED BY DEAN BIERWAGEN CHECKED BY GEORGE KOTLERS
DETAILED BY DARWIN BACKOUS CADD FILE H590198.S06

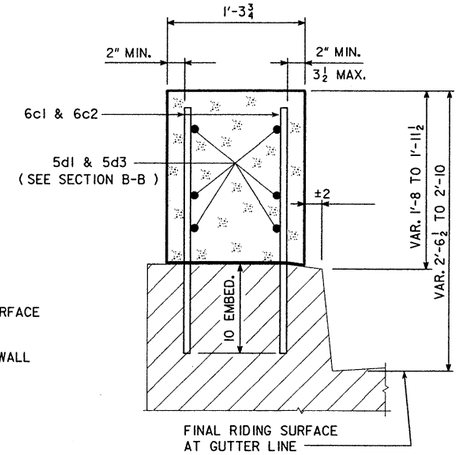
LUCAS COUNTY

PROJECT NUMBER	STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	IOWA	7		7	35

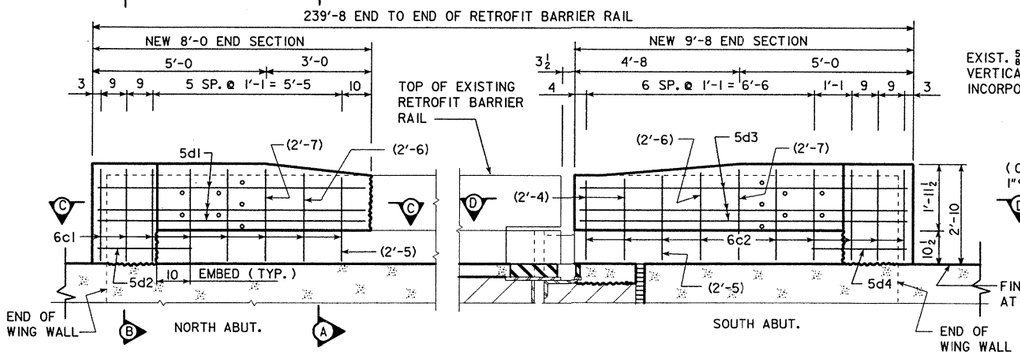
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ELEVATION OF RETROFIT BARRIER RAIL - EAST RAIL



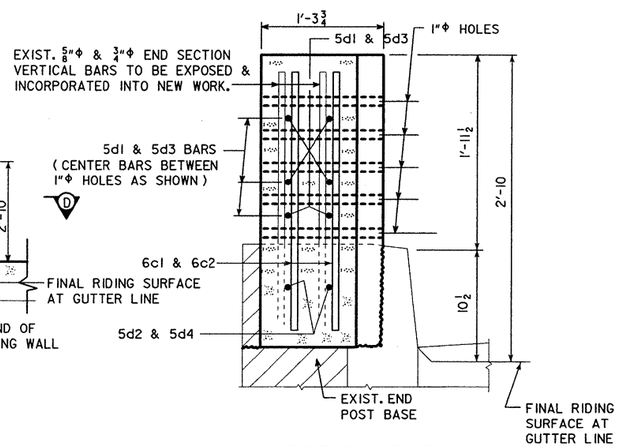
SECTION A-A



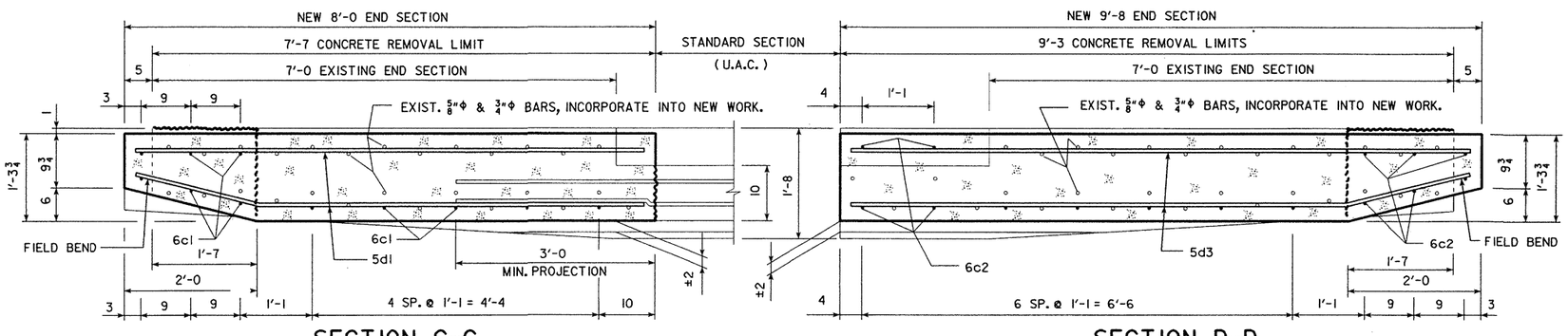
ELEVATION OF RETROFIT BARRIER RAIL - EAST RAIL

(LOOKING EAST)

EXPOSE EXISTING LONGITUDINAL AND VERTICAL BARS. CUT EXISTING 5/8"Φ HORIZONTAL BARS WHICH PROTRUDE FROM THE CONCRETE BREAK LINE (AS SHOWN IN SECTION C-C) AND INCORPORATE INTO NEW WORK. EXISTING VERTICAL BARS ARE TO BE BENT AS REQUIRED TO CLEAR HOLES AND INCORPORATED INTO NEW WORK. EXISTING BARS NOT SHOWN.



SECTION B-B



SECTION C-C

SECTION D-D

EPOXY REINFORCING STEEL-EAST RAIL

BAR	LOCATION	SHAPE	NO.	LENGTH	QUANTITY
6c1	NORTHEAST CORNER - VERTICAL	——	11	LISTED	42
6c2	SOUTHEAST CORNER - VERTICAL	——	15	LISTED	56
5d1	NORTHEAST CORNER - HORIZONTAL	——	6	7'-8	48
5d2	NORTHEAST CORNER - HORIZONTAL	——	2	2'-8	6
5d3	SOUTHEAST CORNER - HORIZONTAL	——	6	9'-4	58
5d4	SOUTHEAST CORNER - HORIZONTAL	——	2	2'-8	6
				TOTAL (LBS.)	210

CONCRETE PLACEMENT SUMMARY

EAST RAIL	TOTAL
8'-0 NORTHEAST CORNER END SECTION	0.8
9'-8 SOUTHEAST CORNER END SECTION	0.9
TOTAL (CU. YD.)	1.7

BARRIER RAILING REMODELING NOTES:
IT IS THE INTENT OF THIS DESIGN TO REMOVE THE OUTDATED END SECTIONS OF THE EXISTING CAST IN PLACE CONCRETE BARRIER RAIL AND TO REBUILD ALLOWING ATTACHMENT OF THRIE BEAM GUARDRAIL.

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 CONCRETE IS TO BE CLASS D.

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

REMOVALS 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.

ALL DAMAGED EPOXY COATING ON BARS (EXISTING AND NEW) SHALL BE REPAIRED PRIOR TO CONCRETE PLACEMENT.

DOWEL SETTING NOTE :
THE "c", d2 & d4 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. THE FOLLOWING SYSTEM SHALL BE USED AS A BONDING AGENT FOR THE DOWELS :
EPOXY GROUT SYSTEM IN ACCORDANCE WITH STANDARD SPECIFICATIONS ARTICLE 2301.12 AND CURRENT SUPPLEMENTAL SPECIFICATIONS.

LISTED BAR DETAILS:

6c1	6c2
1 @ 2'-5	4 @ 2'-4
1 @ 2'-6	1 @ 2'-5
9 @ 2'-7	1 @ 2'-6
	9 @ 2'-7

NOTE:
EXISTING VERTICAL BARS WITH LESS THAN 2" OF CLEAR COVER SHALL BE CUT OFF FLUSH WITH OR SLIGHTLLY BELOW THE CONCRETE SURFACE AND THE REMAINING EXPOSED ENDS PAINTED WITH TWO COATS OF ZINC RICH PAINT.

DESIGN FOR REPAIRS TO 35°5'30" SKEW

210'-0 x 48' CONTINUOUS I- BEAM BRIDGE

64'-0 END SPANS — 82'-0 CENTER SPAN

BARRIER RAIL REMODELING DETAILS

STATION: 807+91.96 (℄ US34) RR X-ING NO. 884 FEBRUARY 1999

LUCAS COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION

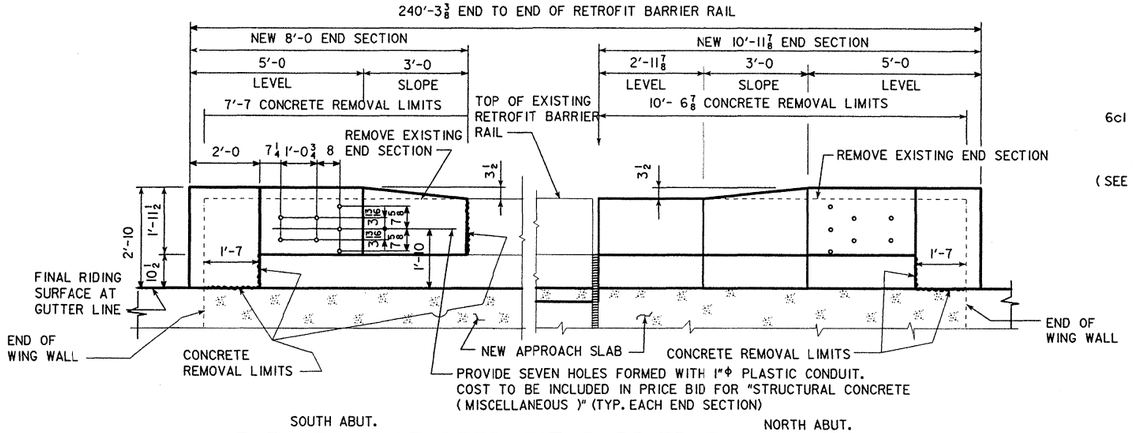
DESIGN SHEET NO. 7 OF 17 FILE NO. 29293 DESIGN NO. 198

DESIGNED BY DEAN BIERWAGEN CHECKED BY GEORGE KOTLERS
DETAILED BY DARWIN BACKOUS CADD FILE H590198.S09

LUCAS COUNTY — PROJECT NUMBER

STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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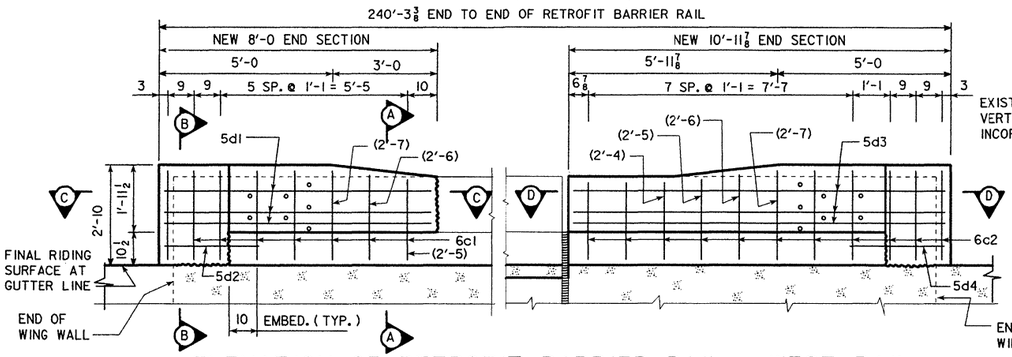
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SOUTH ABUT. NORTH ABUT.

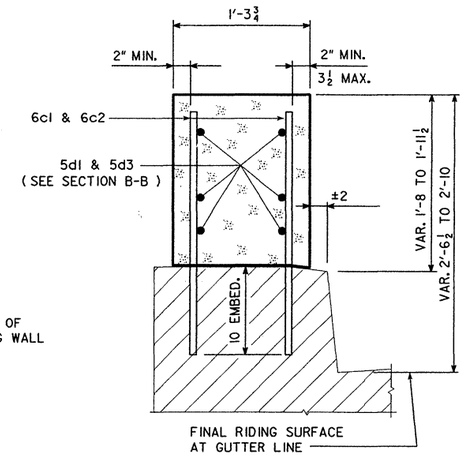
ELEVATION OF RETROFIT BARRIER RAIL - WEST RAIL

(LOOKING WEST)

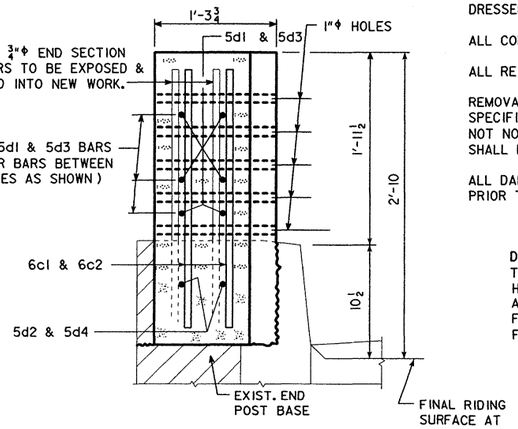


ELEVATION OF RETROFIT BARRIER RAIL - WEST RAIL

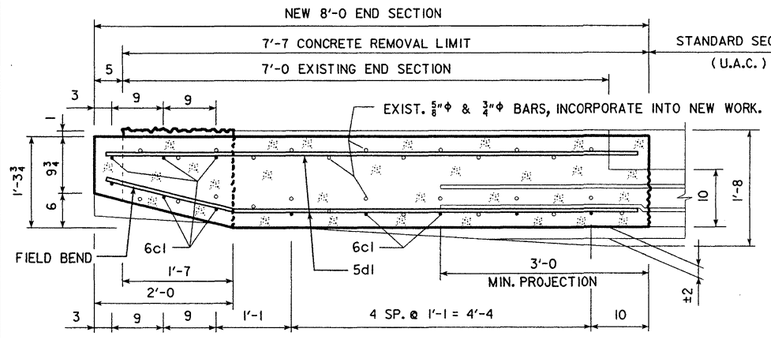
EXPOSE EXISTING LONGITUDINAL AND VERTICAL BARS. CUT EXISTING ⅝"Φ HORIZONTAL BARS WHICH PROTRUDE FROM THE CONCRETE BREAK LINE (AS SHOWN IN SECTION C-C) AND INCORPORATE INTO NEW WORK. EXISTING VERTICAL BARS ARE TO BE BENT AS REQUIRED TO CLEAR HOLES AND INCORPORATED INTO NEW WORK. EXISTING BARS NOT SHOWN.



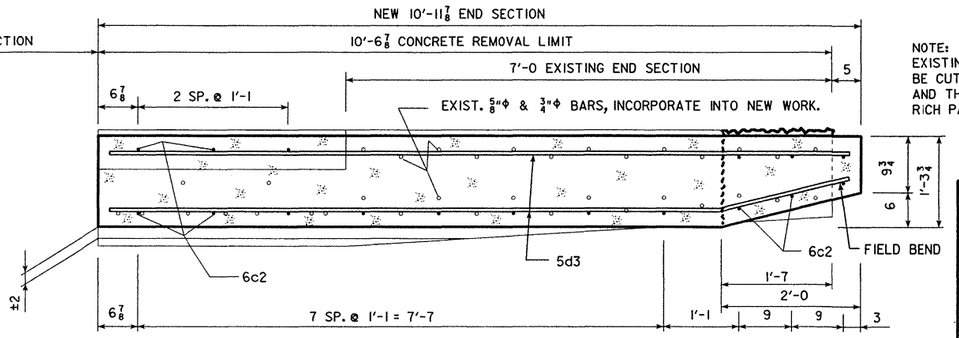
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

EPOXY REINFORCING STEEL-WEST RAIL

BAR	LOCATION	SHAPE	NO.	LENGTH	QUANTITY
6c1	SOUTHWEST CORNER - VERTICAL	——	11	LISTED	42
6c2	NORTHWEST CORNER - VERTICAL	——	17	LISTED	63
5d1	SOUTHWEST CORNER - HORIZONTAL	——	6	7'-8	48
5d2	SOUTHWEST CORNER - HORIZONTAL	——	2	2'-8	6
5d3	NORTHWEST CORNER - HORIZONTAL	——	6	10'-7	66
5d4	NORTHWEST CORNER - HORIZONTAL	——	2	2'-8	6
				TOTAL (LBS.)	231

CONCRETE PLACEMENT SUMMARY

EAST RAIL	TOTAL
8'-0 SOUTHWEST CORNER SECTION	0.8
10'-11⅞ NORTHWEST CORNER SECTION	1.0
TOTAL (CU. YD.)	1.8

BARRIER RAILING REMODELING NOTES:

IT IS THE INTENT OF THIS DESIGN TO REMOVE THE OUTDATED END SECTIONS OF THE EXISTING CAST IN PLACE CONCRETE BARRIER RAIL AND TO REBUILD ALLOWING ATTACHMENT OF THRIE BEAM GUARDRAIL.

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ALL EXPOSED CORNERS 90° OR SHARPER ARE TO BE FILLETED WITH A ¾" DRESSED AND BEVELED STRIP.

ALL CONCRETE IS TO BE CLASS D.

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

REMOVALS 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.

ALL DAMAGED EPOXY COATING ON BARS (EXISTING AND NEW) SHALL BE REPAIRED PRIOR TO CONCRETE PLACEMENT.

DOWEL SETTING NOTE :

THE "c", d2 & d4 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. THE FOLLOWING SYSTEM SHALL BE USED AS A BONDING AGENT FOR THE DOWELS :

EPOXY GROUT SYSTEM IN ACCORDANCE WITH STANDARD SPECIFICATIONS ARTICLE 2301.12 AND CURRENT SUPPLEMENTAL SPECIFICATIONS.

LISTED BAR DETAILS:

6c1	6c2
1 @ 2'-5	6 @ 2'-4
1 @ 2'-6	1 @ 2'-5
9 @ 2'-7	1 @ 2'-6
	9 @ 2'-7

NOTE:

EXISTING VERTICAL BARS WITH LESS THAN 2" OF CLEAR COVER SHALL BE CUT OFF FLUSH WITH OR SLIGHTLLY BELOW THE CONCRETE SURFACE AND THE REMAINING EXPOSED ENDS PAINTED WITH TWO COATS OF ZINC RICH PAINT.

DESIGN FOR REPAIRS TO 35°5'30" SKEW

210'-0 x 48' CONTINUOUS I- BEAM BRIDGE

64'-0 END SPANS — 82'-0 CENTER SPAN

BARRIER RAIL REMODELING DETAILS

STATION: 807+91.96 (℄ US34) RR X-ING NO. 884 FEBRUARY 1999

LUCAS COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION

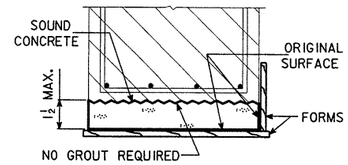
DESIGN SHEET NO. 8 OF 17 FILE NO. 29293 DESIGN NO. 198

DESIGNED BY DEAN BIERWAGEN CHECKED BY GEORGE KOTLERS
DETAILED BY DARWIN BACKOUS CADD FILE H590198.S10

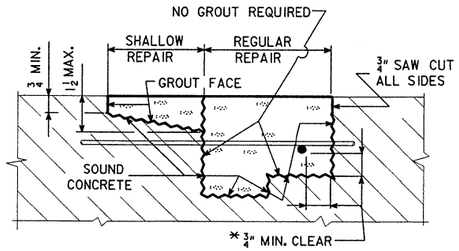
LUCAS COUNTY | PROJECT NUMBER

STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		9	35

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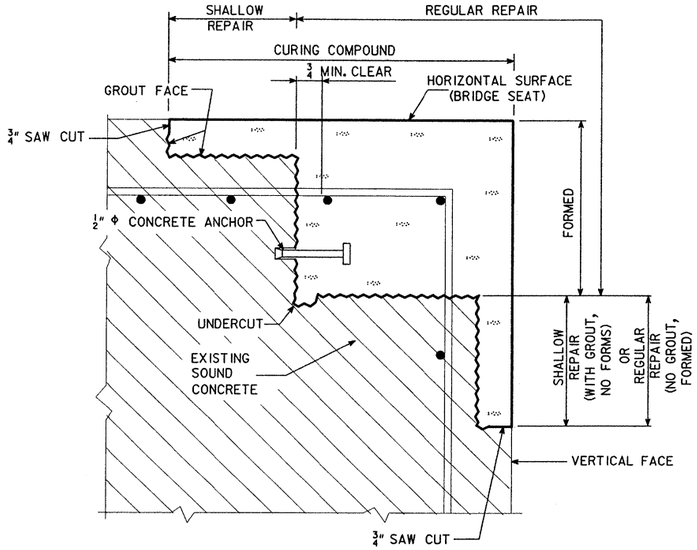


SHALLOW REPAIR BOTTOM SURFACE

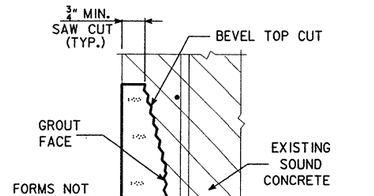


REPAIR DEFINITION

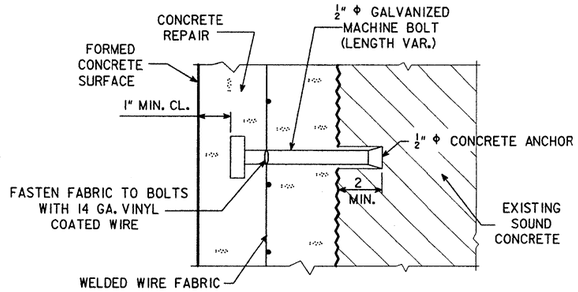
* INDICATES CLEARANCE FOR AN UN-BONDED REBAR.



CORNER REPAIR

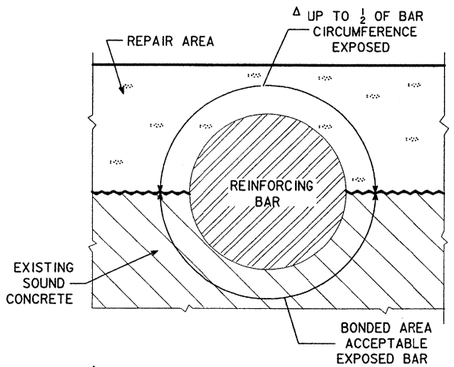


SHALLOW REPAIR VERTICAL FACE

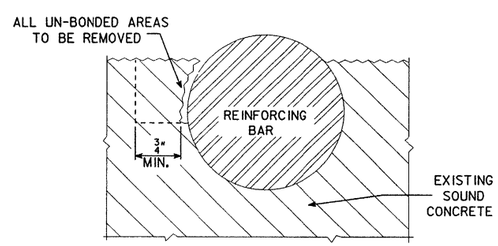


ANCHOR DETAIL

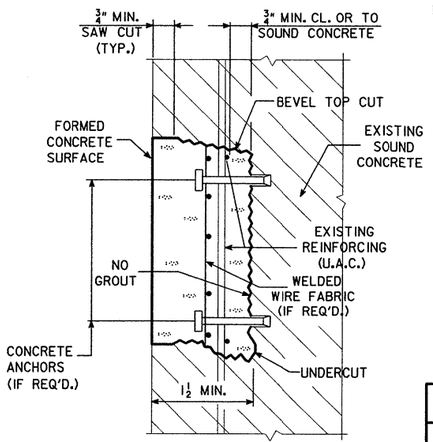
FOR SPACING AND USE OF CONCRETE ANCHORS AND WWF SEE THE STANDARD NOTES.



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



CONCRETE REMOVAL ADJACENT TO REINFORCING



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.

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.	0
②	REGULAR REPAIR	SQ. FT.	97.40
		TOTAL (SQ. FT.)	97.40

ESTIMATED CONCRETE REPAIR QUANTITIES

DESCRIPTION	UNITS	AMOUNT
CONCRETE REPAIR	SQ. FT.	97.40

DESIGN FOR REPAIRS TO 35°5'30" SKEW

210'-0 x 48' CONTINUOUS I- BEAM BRIDGE

64'-0 END SPANS 82'-0 CENTER SPAN

CONCRETE REPAIRS

STATION: 807+91.96 (℄ US34) RR X-ING NO. 884 FEBRUARY 1999

LUCAS COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION

DESIGN SHEET NO. 9 OF 17 FILE NO. 29293 DESIGN NO. 198

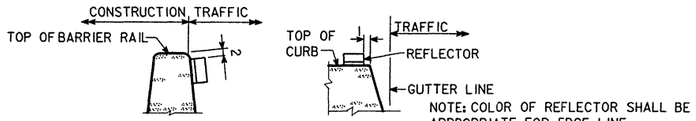
REVISED: MINOR CHANGES MADE IN "STANDARD NOTES", TAPE NO. 19, DATED 11-9-92
HEI045.SOI (HSTD0I045.SOI)-- LEP ; THIS SHEET ISSUED. TAPE NO.__, DATE 9-27-90)

BR2 DESIGNED BY DEAN BIERWAGEN CHECKED BY GEORGE KOTLERS
DETAILED BY DARWIN BACKOUS CADD FILE H590198.S14

STANDARD SHEET 1045 | LUCAS COUNTY | PROJECT NUMBER

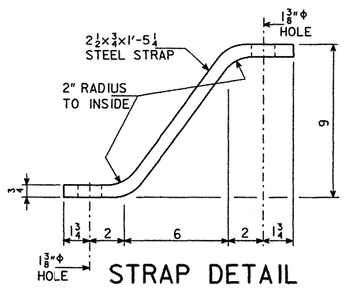
STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		10	35

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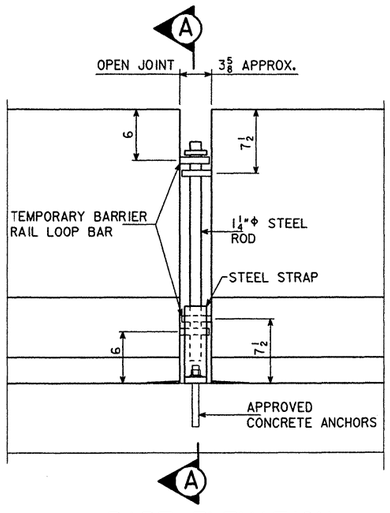


NOTE: COLOR OF REFLECTOR SHALL BE APPROPRIATE FOR EDGE LINE.

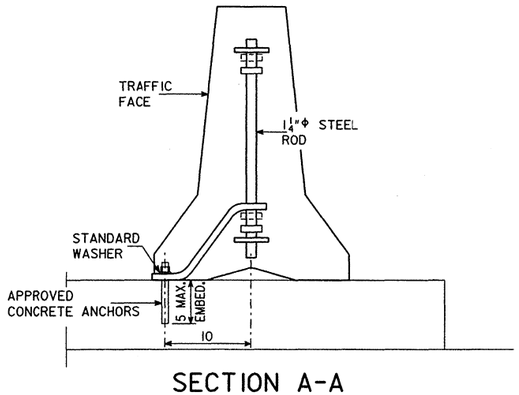
REFLECTOR DETAILS



STRAP DETAIL



PART ELEVATION



SECTION A-A

TEMPORARY BARRIER RAIL TIE DOWN DETAILS

NOTE:
CONCRETE TEMPORARY BARRIER RAIL SHALL BE CONSTRUCTED AS DETAILED AND NOTED ELSEWHERE IN THESE PLANS.

NO STATIONARY EQUIPMENT OR CONSTRUCTION MATERIAL IS TO BE PLACED IN FRONT OF THE TEMPORARY BARRIER RAIL AT ANY TIME.

TRAFFIC REFLECTORS SHALL BE A RETRO-REFLECTIVE TYPE, APPROVED BY THE ENGINEER, AND THEY SHALL BE LOCATED AS SHOWN ON DES. SHTS. 11 & 12. 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 "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.

TIE-DOWNS 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. THE CONCRETE ANCHORS ARE TO BE SET SO THAT THE ANCHORS CAN BE REMOVED AT LEAST 1½ INCHES BELOW THE CONCRETE SURFACE AND THE REMAINING HOLE FILLED WITH A NEAT MIXTURE OF SAND-CEMENT GROUT. THE CONCRETE ANCHORS ARE TO BE REMOVED, WITHOUT DAMAGING THE SURROUNDING CONCRETE, 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".

ESTIMATED QUANTITIES	
ITEM	AMOUNT
TEMPORARY BARRIER RAIL	1180.00 LF
	—

DESIGN FOR REPAIRS TO 35°5'30" SKEW

210'-0 x 48' CONTINUOUS I- BEAM BRIDGE

64'-0 END SPANS 82'-0 CENTER SPAN

F-SHAPE TEMPORARY BARRIER RAIL-CONCRETE

STATION: 807+91.96 (℄ US34) RR X-ING NO. 884 FEBRUARY 1999

LUCAS COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION

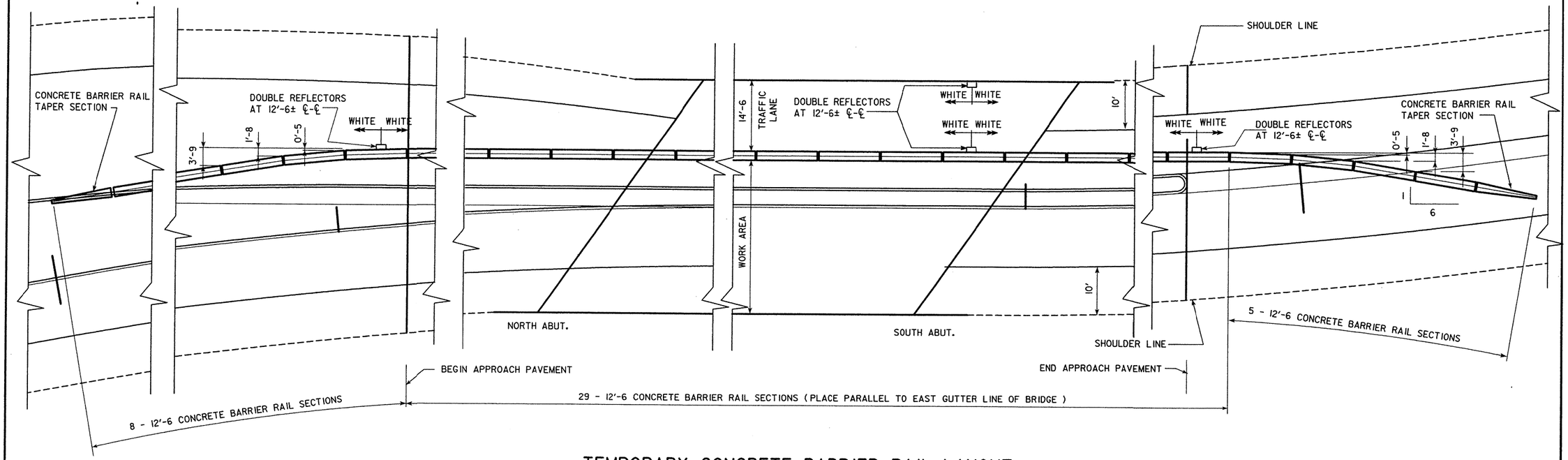
DESIGN SHEET NO. 10 OF 17 FILE NO. 29293 DESIGN NO. 198

DESIGNED BY DEAN BIERWAGEN CHECKED BY GEORGE KOTLERS
DETAILED BY DARWIN BACKOUS CADD FILE H590198.S13

LUCAS COUNTY | PROJECT NUMBER

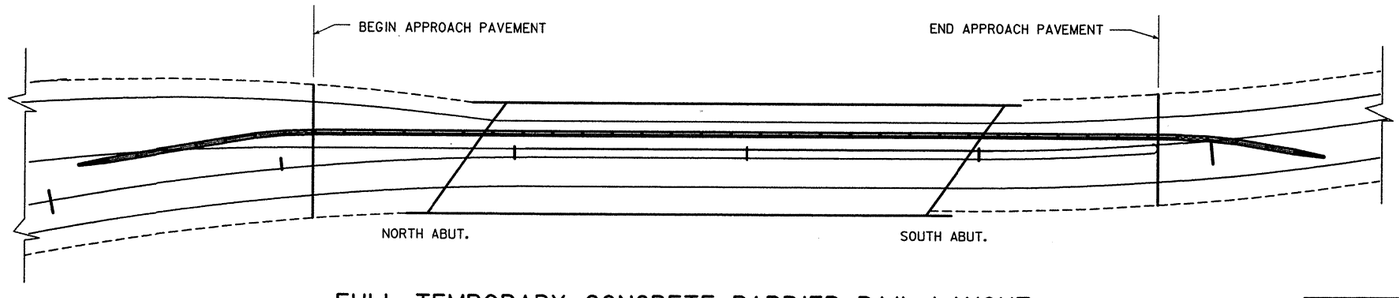
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IOWA	7		11	35

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TEMPORARY CONCRETE BARRIER RAIL LAYOUT FOR TWO WAY TRAFFIC

NOTE:
THIS LAYOUT IS FOR STAGE I CONSTRUCTION. FOR STAGE II CONSTRUCTION SEE DESIGN SHEET 12.



FULL TEMPORARY CONCRETE BARRIER RAIL LAYOUT FOR TWO WAY TRAFFIC

NOTE:
THIS LAYOUT IS FOR STAGE I CONSTRUCTION. FOR STAGE II CONSTRUCTION SEE DESIGN SHEET 12.

DESIGN FOR REPAIRS TO 35°5'30" SKEW

210'-0 x 48' CONTINUOUS I- BEAM BRIDGE

64'-0 END SPANS — 82'-0 CENTER SPAN

F-SHAPE TEMPORARY BARRIER RAIL-CONCRETE

STATION: 807+91.96 (℄ US34) RR X-ING NO. 884 FEBRUARY 1999

LUCAS COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION

DESIGN SHEET NO. 11 OF 17 FILE NO. 29293 DESIGN NO. 198

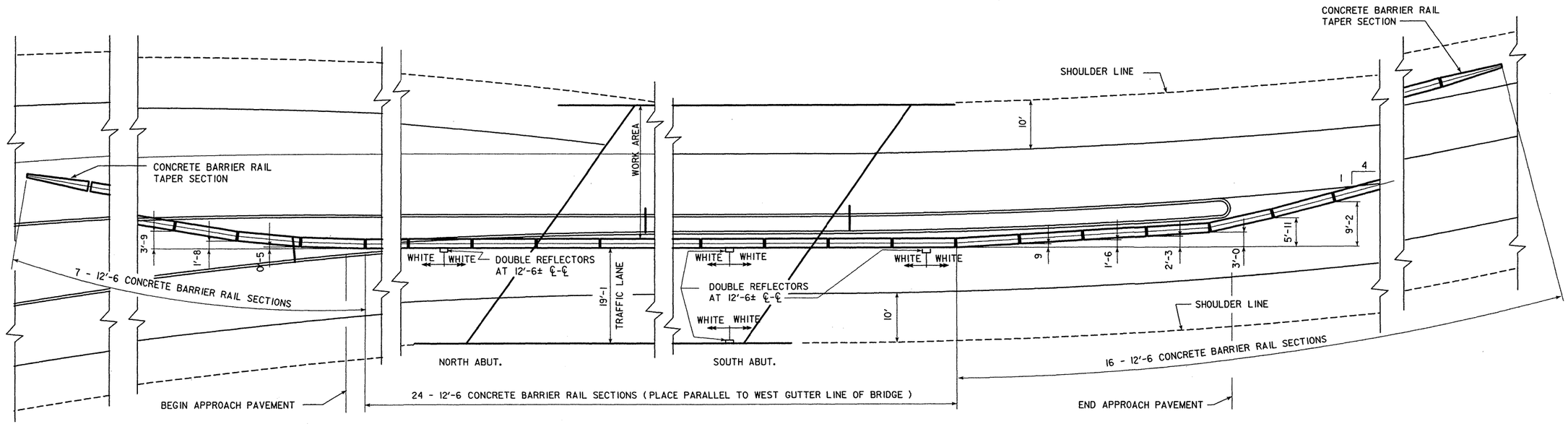
DESIGNED BY DEAN BIERWAGEN CHECKED BY GEORGE KOTLERS
DETAILED BY DARWIN BACKOUS CADD FILE H590198.S11

LUCAS COUNTY

PROJECT NUMBER

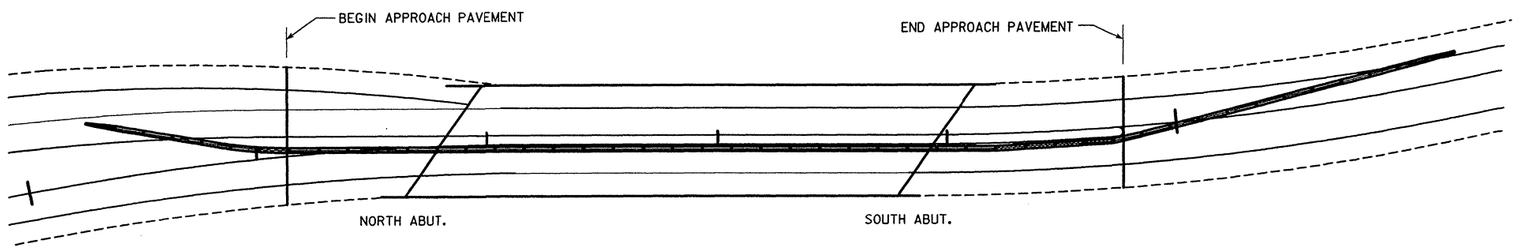
STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		12	35

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TEMPORARY CONCRETE BARRIER RAIL LAYOUT FOR TWO WAY TRAFFIC

NOTE:
THIS LAYOUT IS FOR STAGE II CONSTRUCTION. FOR STAGE I CONSTRUCTION SEE DESIGN SHEET 11.



FULL TEMPORARY CONCRETE BARRIER RAIL LAYOUT FOR TWO WAY TRAFFIC

NOTE:
THIS LAYOUT IS FOR STAGE II CONSTRUCTION. FOR STAGE I CONSTRUCTION SEE DESIGN SHEET 11.

N

DESIGN FOR REPAIRS TO 35°5'30" SKEW

210'-0 x 48' CONTINUOUS I- BEAM BRIDGE

64'-0 END SPANS — 82'-0 CENTER SPAN

F-SHAPE TEMPORARY BARRIER RAIL-CONCRETE

STATION: 807+91.96 (℄ US34) RR X-ING NO. 884 FEBRUARY 1999

LUCAS COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION

DESIGN SHEET NO. 12 OF 17 FILE NO. 29293 DESIGN NO. 198

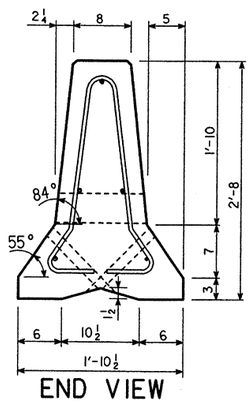
DESIGNED BY DEAN BIERWAGEN CHECKED BY GEORGE KOTLERS
DETAILED BY DARWIN BACKOUS CADD FILE H590198.S12

LUCAS COUNTY

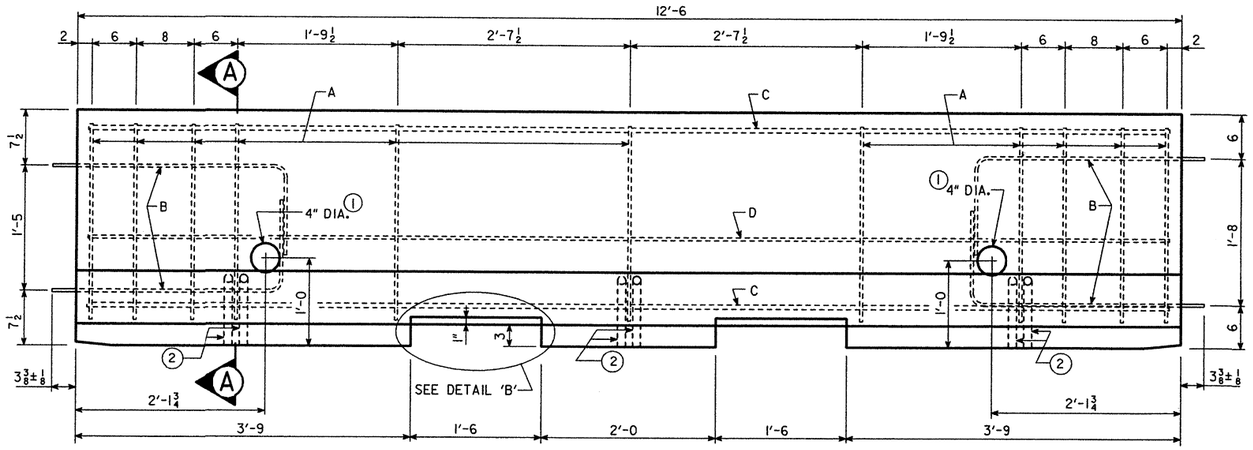
PROJECT NUMBER

STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		13	35

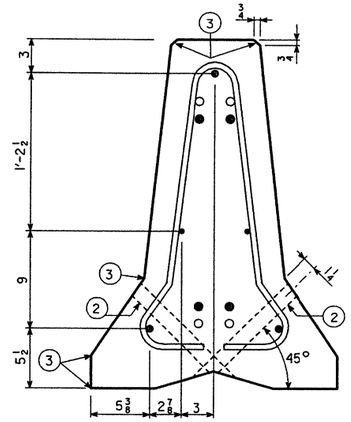
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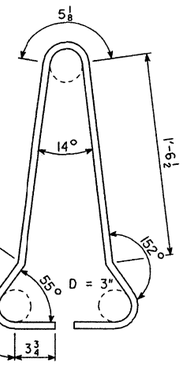
END VIEW



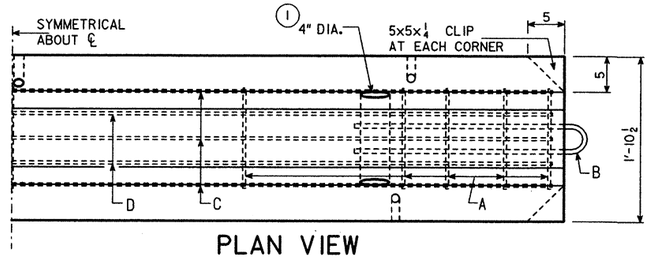
ELEVATION VIEW



SECTION A-A
TYPICAL SECTION
STIRRUP PLACEMENT



BAR 'A' DETAIL
D = PIN DIAMETER.

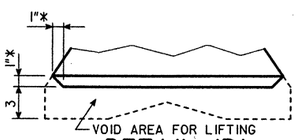


PLAN VIEW

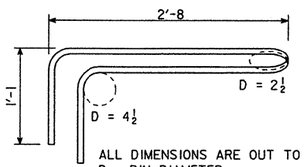
① 4 INCH DIAMETER 11 GAUGE STEEL ROUND MECHANICAL TUBING SLEEVE.

② SLEEVES FOR THE FUTURE TIE-DOWN SYSTEM ARE TO BE CONSTRUCTED OUT OF 1.25 INCH NOMINAL, (1.38 INCH ACTUAL INSIDE DIAMETER) EMT (ELECTRICAL METALLIC TUBING). EMT TO BE TIED TO STIRRUP FOR SUPPORT.

③ 1" RADIUS ALLOWED.

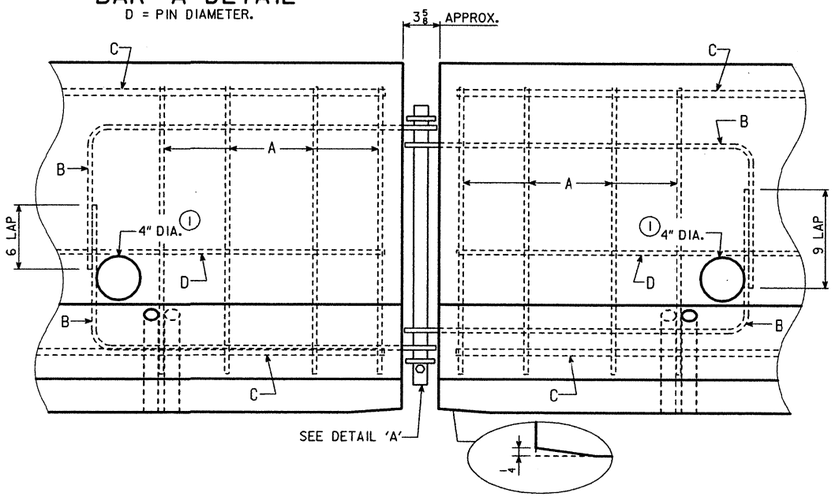


DETAIL 'B'
LIFTING SLOT DETAIL
* 1" CHAMFER TO PREVENT SPALLING

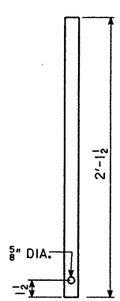


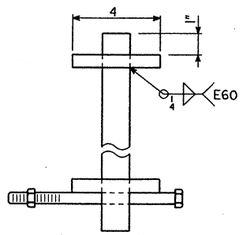
ALL DIMENSIONS ARE OUT TO OUT.
D = PIN DIAMETER.

BAR 'B' DETAIL

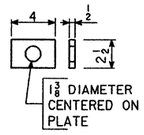


DETAILS OF BARRIER SECTION CONNECTION



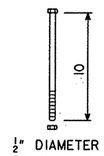


ENLARGED PIN DETAIL



TOP & BOTTOM PLATE (A36)

DETAIL 'A'



½" DIAMETER BOLT & NUT (ASTM A490, GRADE 8)

GENERAL NOTES :

THESE DETAILS ARE FOR THE FABRICATION AND INSTALLATION OF TEMPORARY CONCRETE BARRIER RAIL. DETAILS SHOWN ARE TYPICAL. BARRIER SHALL BE CONSTRUCTED AS SPECIFIED IN SECTION 2513 OF THE CURRENT SPECIFICATIONS. EACH RAIL SHALL BE STAMPED ACCORDING TO MATERIALS I.M. 571.

MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS. ALL REINFORCEMENT IS GRADE 60 ASTM A 615.

THE CONTRACTOR SHALL PROVIDE FOR AN APPROVED MONITORING SCHEDULE WITH A PERSON ON CALL AND AVAILABLE 24 HOURS A DAY, EACH DAY OF THE WEEK, TO REALIGN BARRIER RAIL WHICH HAS BEEN STRUCK. INITIATION OF SERVICE SHALL BE WITHIN ONE HOUR OF NOTIFICATION OF NEED.

UNLESS STATED OTHERWISE IN THE PLANS, THE BARRIER RAIL SECTIONS SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AND AT THE COMPLETION OF THE WORK SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR.

THE PRICE BID FOR "TEMPORARY BARRIER RAIL", IN LINEAR FEET, SHALL BE FULL COMPENSATION FOR TEMPORARY BARRIER RAIL AS DETAILED AND MEASURED IN THESE PLANS.

REINFORCING BARS
PER 12'-6 BARRIER SECTION

MARK	SIZE	NO.	SHAPE	LENGTH	WEIGHT
A	#4	11	SEE DETAIL	5'-5	40
B	#6	4	SEE DETAIL	7'-10	47
C	#5	3	———	12'-2	38
D	#4	2	———	12'-2	16

MINIMUM 2" CLEARANCE BETWEEN ALL BARS AND OUTSIDE SURFACE OF TEMPORARY BARRIER RAIL. APPROXIMATE WEIGHT = 5170 LBS. CONCRETE VOLUME = 1.3 CU.YDS.

DESIGN FOR REPAIRS TO 35°5'30" SKEW

210'-0 x 48' CONTINUOUS I- BEAM BRIDGE

64'-0 END SPANS — 82'-0 CENTER SPAN

F-SHAPE TEMPORARY BARRIER RAIL-CONCRETE

STATION: 807+91.96 (℄ US34) RR X-ING NO. 884 FEBRUARY 1999

LUCAS COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION

DESIGN SHEET NO. 13 OF 17 FILE NO. 29293 DESIGN NO. 198

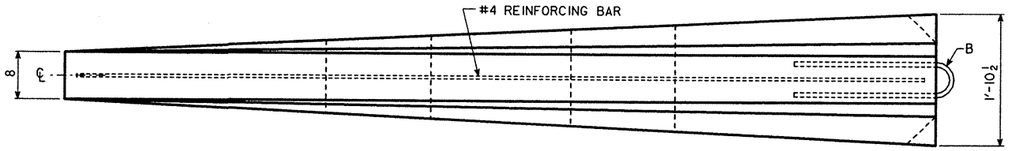
HE1047.S01--GAN; 9-97, THIS SHEET REDRAWN.

DESIGNED BY DEAN BIERWAGEN CHECKED BY GEORGE KOTLERS
DETAILED BY DARWIN BACKOUS CADD FILE H590198.S04

TEMPORARY BARRIER RAIL-CONCRETE	STANDARD 1047	LUCAS COUNTY	PROJECT NUMBER

STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		14	35

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PLAN VIEW

GENERAL NOTES

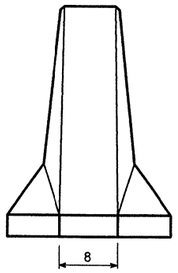
DETAILS SHOWN HEREON ARE FOR THE CONSTRUCTION OF A PRECAST CONCRETE BARRIER RAIL TAPER SECTION. ALTERNATE DESIGN DETAILS MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.

MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS.

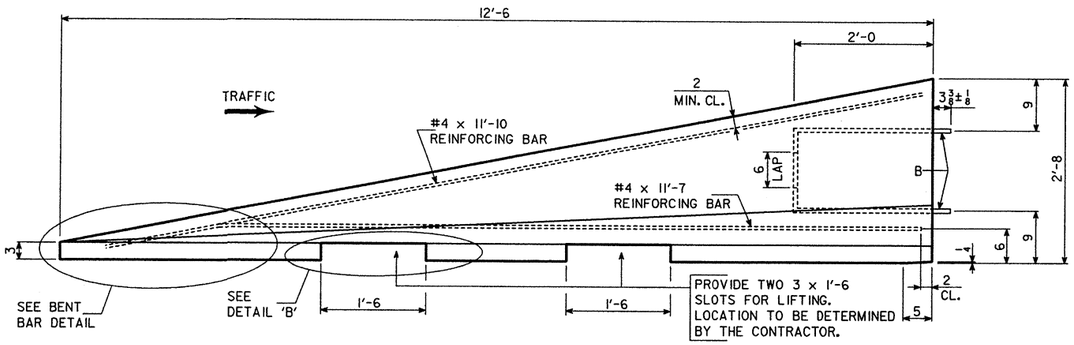
BARRIER SHALL BE CONSTRUCTED AS SPECIFIED IN SECTION 2513 OF THE CURRENT STANDARD SPECIFICATIONS.

ESTIMATED QUANTITY FOR ONE TAPER SECTION IS 0.7 CU.YDS. OF CONCRETE.

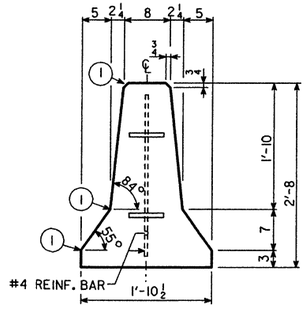
(1) 1" RADIUS ALLOWED.



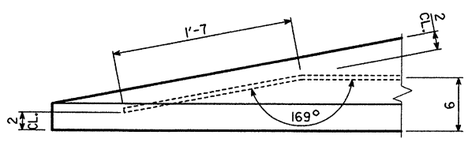
FRONT ELEVATION



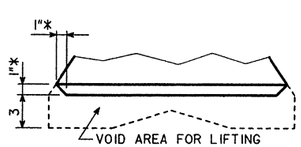
SIDE ELEVATION



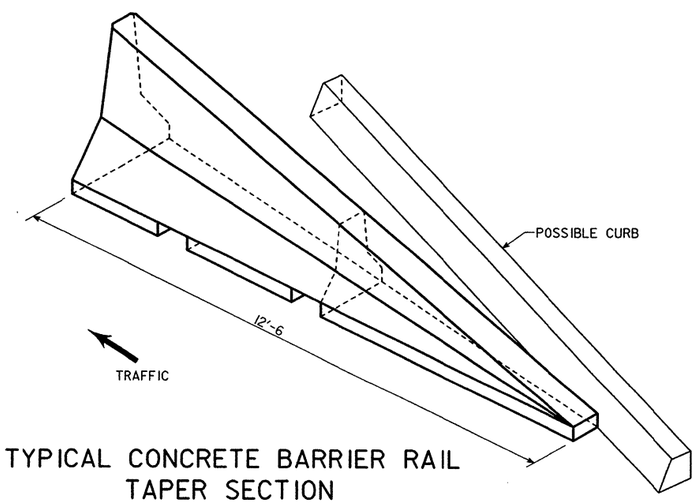
END SECTION



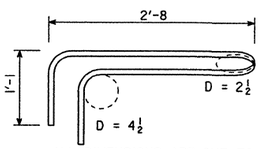
BENT BAR DETAIL



DETAIL 'B'
LIFTING SLOT DETAIL
* 1" CHAMFER TO PREVENT SPALLING



TYPICAL CONCRETE BARRIER RAIL
TAPER SECTION
PERSPECTIVE VIEW



ALL DIMENSIONS ARE OUT TO OUT. D = PIN DIAMETER

BAR 'B' DETAIL
#6 BAR - 7'-10 LENGTH
2 BARS PER SECTION

DESIGN FOR REPAIRS TO 35°5'30" SKEW

210'-0 x 48' CONTINUOUS I- BEAM BRIDGE

64'-0 END SPANS 82'-0 CENTER SPAN

F-SHAPE TAPER SECTION TEMPORARY BARRIER RAIL-CONCRETE

STATION: 807+91.96 (℄ US34) RR X-ING NO. 884 FEBRUARY 1999

LUCAS COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION

DESIGN SHEET NO. 14 OF 17 FILE NO. 29293 DESIGN NO. 198

DESIGNED BY DEAN BIERWAGEN CHECKED BY GEORGE KOTLERS
DETAILED BY DARWIN BACKOUS CADD FILE H590198.S05

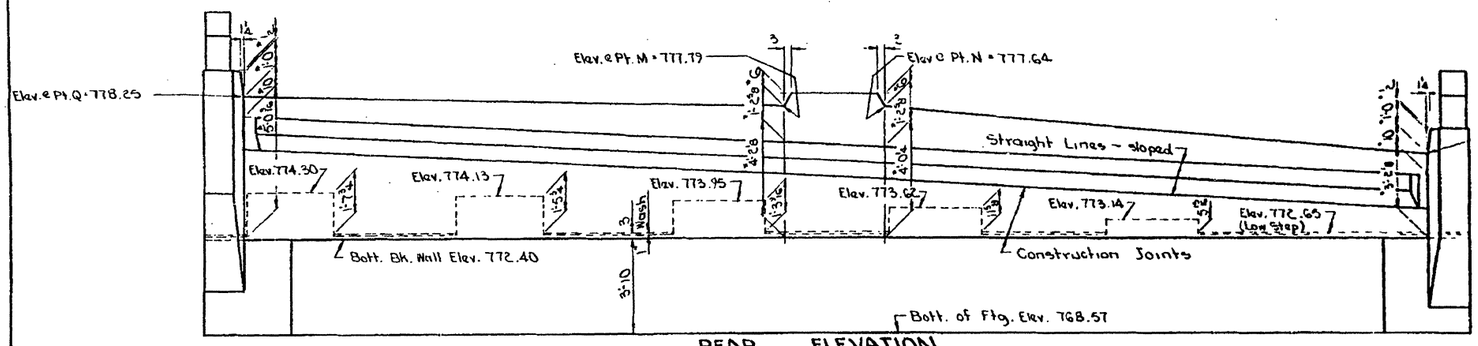
TEMPORARY BARRIER RAIL-CONCRETE	STANDARD 1048	LUCAS COUNTY	PROJECT NUMBER

STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		15	35

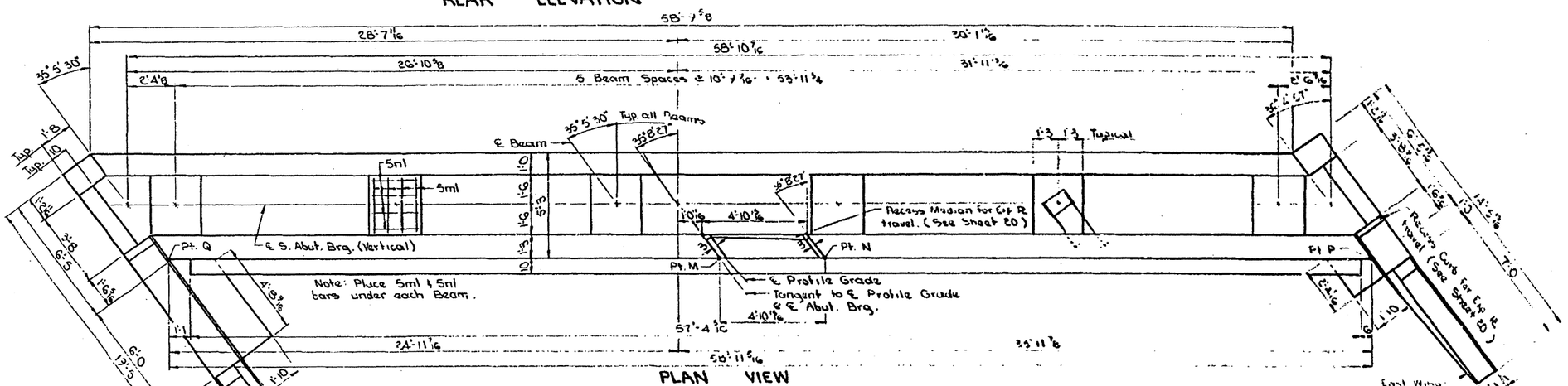
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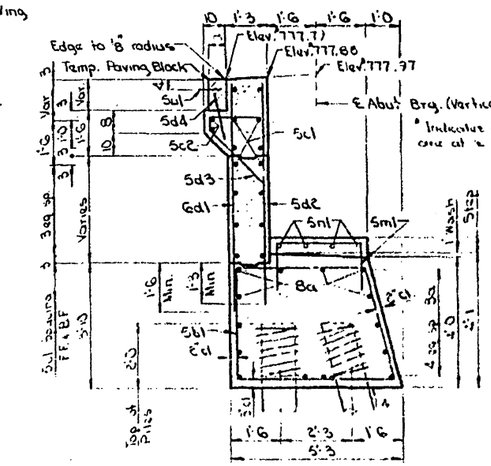
Bench Mark - N° 4 'x' At base of hdrl. on N.E. Cor. of R.R. Overpass, 15' Lt Sta. 807+15 El. 780.73.



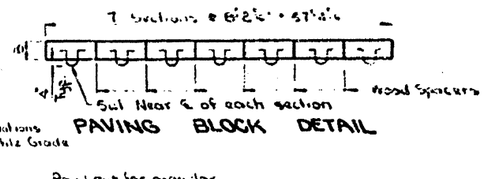
REAR ELEVATION



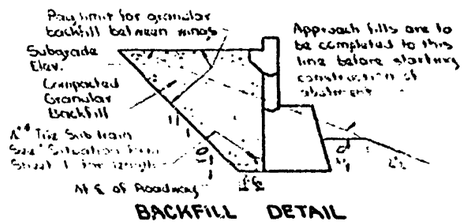
PLAN VIEW



SECTION THRU ABUTMENT



PAVING BLOCK DETAIL



BACKFILL DETAIL

Note: Spirals at top of each pile are made up of 7 turns of 1/4" rod, 21" diameter, 3" pitch, with 2-#6 EQ 6" spacers punched to hold spiral.

THIS SHEET FROM ORIGINAL DESIGN PLANS IS INCLUDED FOR INFORMATION ONLY.

DESIGN NO. 198
FILE NO. 29293
DESIGN SHEET NO. 15 OF 17

Design for 30° to 90° Skew

210'-0" x 48'-0" CONTINUOUS I-BEAM BRIDGE

B'-0" End Spans 80'-0" Center Span

SOUTH ABUTMENT DETAILS

Sta. 807+11.76 P.I. Ahead Bkd Ahd 1775

LUCAS COUNTY

IOWA HIGHWAY COMMISSION

Designed Hdl 8 04 25 File N° 59034-10-95 Revised 11-25-98

DESIGNED BY: R.A. Manning TRACED BY: Doug Hennig
DETAILED BY: Doug Hennig CHECKED BY: R.A. Manning

COUNTY

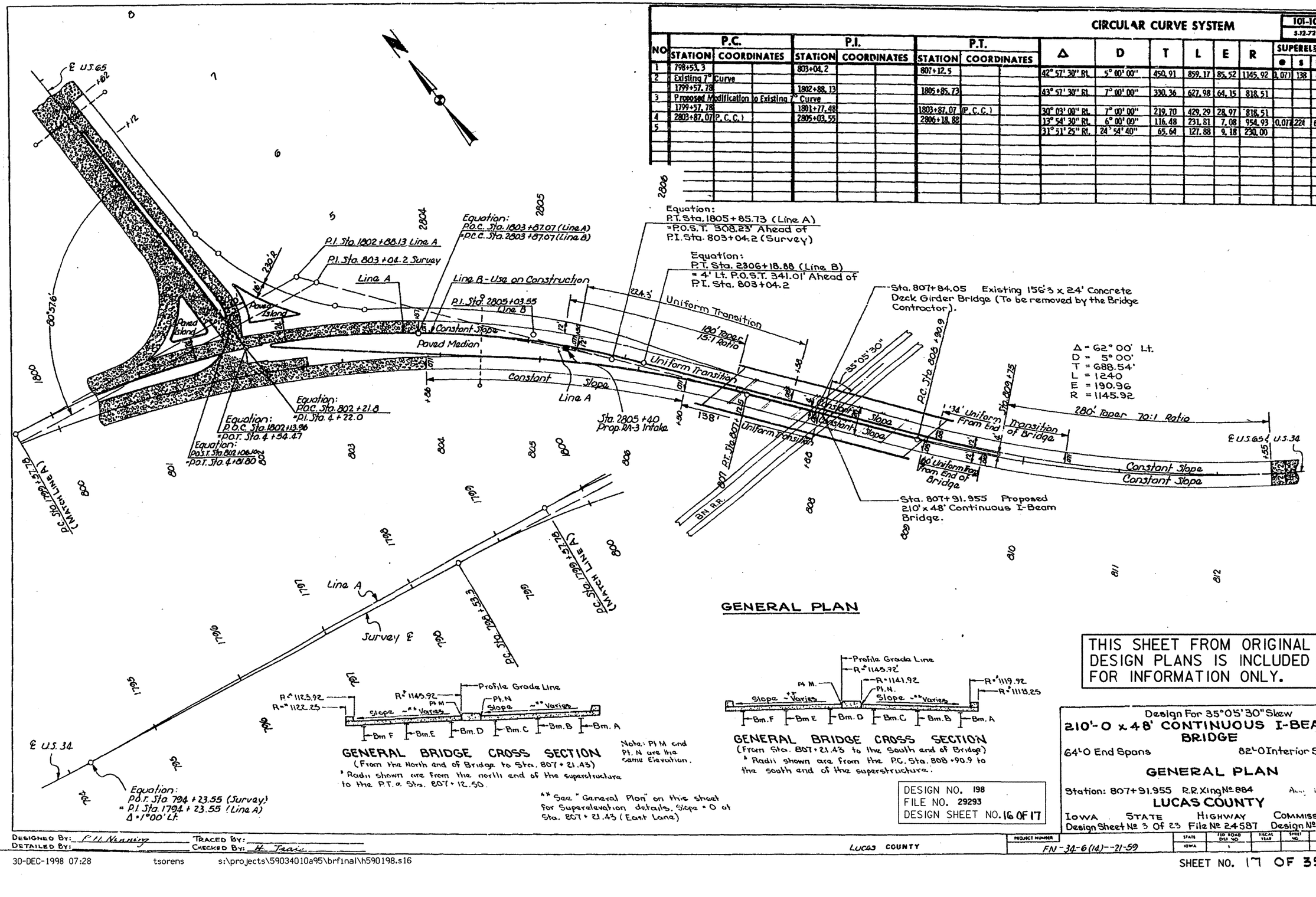
PROJECT NUMBER						
FN 59034-10-95	STATE IOWA	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	

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CIRCULAR CURVE SYSTEM

101-10
5-12-72

NO	P.C. STATION	P.C. COORDINATES	P.I. STATION	P.I. COORDINATES	P.T. STATION	P.T. COORDINATES	Δ	D	T	L	E	R	SUPERELEV. ●	s	m
1	798+53.3		803+04.2		807+12.5		42° 57' 30" Rt.	5° 00' 00"	450.91	859.17	85.52	1145.92	0.07	138	42
2	Existing 7° Curve														
	1799+57.78		1802+88.13		1805+85.73		43° 57' 30" Rt.	7° 00' 00"	330.36	627.98	64.15	818.51			
3	Proposed Modification to Existing 7° Curve														
	1799+57.78		1801+77.48		1803+87.07 (P.C.C.)		30° 03' 00" Rt.	7° 00' 00"	219.70	429.29	28.97	818.51			
4	2803+87.07 (P.C.C.)		2805+03.55		2806+18.88		13° 54' 30" Rt.	6° 00' 00"	116.48	231.81	7.08	954.93	0.07	224	69
5							31° 51' 25" Rt.	24° 54' 40"	65.64	127.88	9.18	230.00			



GENERAL PLAN

GENERAL BRIDGE CROSS SECTION
(From the North end of Bridge to Sta. 807+21.43)
* Radii shown are from the north end of the superstructure to the P.T.'s Sta. 807+12.50.

Note: Pl M and Pl N are the same Elevation.

** See "General Plan" on this sheet for Superelevation details, Slope = 0 at Sta. 807+21.43 (East Lane)

GENERAL BRIDGE CROSS SECTION
(From Sta. 807+21.43 to the South end of Bridge)
* Radii shown are from the P.C. Sta. 808+90.9 to the south end of the superstructure.

THIS SHEET FROM ORIGINAL DESIGN PLANS IS INCLUDED FOR INFORMATION ONLY.

DESIGN NO. 198
FILE NO. 29293
DESIGN SHEET NO. 16 OF 17

Design For 35°05'30" Skew
210'-0 x 48' CONTINUOUS I-BEAM BRIDGE
64'-0 End Spans 82'-0 Interior Span

GENERAL PLAN

Station: 807+91.955 R.R. Xing № 884 Aug. 1973
LUCAS COUNTY
Iowa State Highway Commission
Design Sheet № 3 Of 23 File № 24587 Design № 173

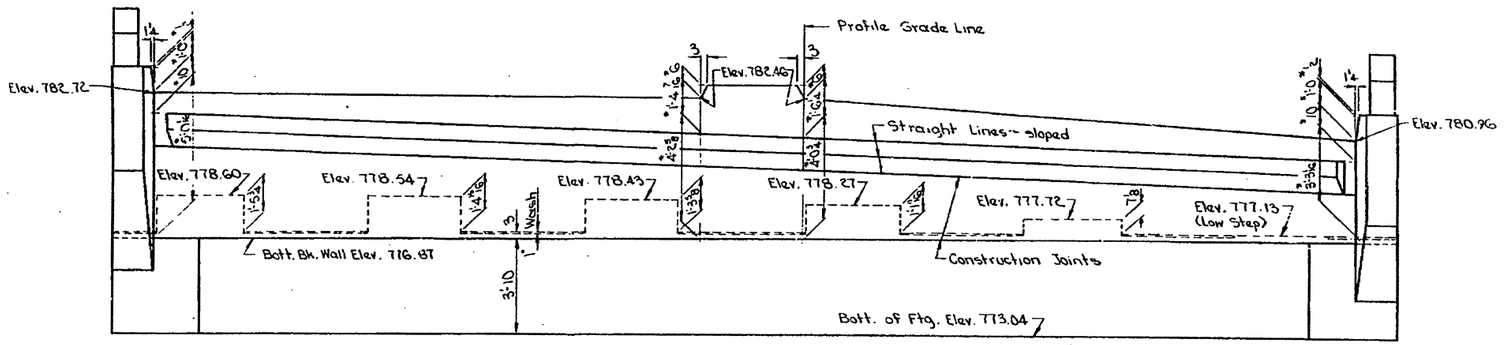
DESIGNED BY: P.H. Nanning TRACED BY:
DETAILED BY: CHECKED BY: H. Traxler

LUCAS COUNTY

PROJECT NUMBER	STATE	FED ROAD DIST NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
FN-34-6(14)--21-59	IOWA	7			

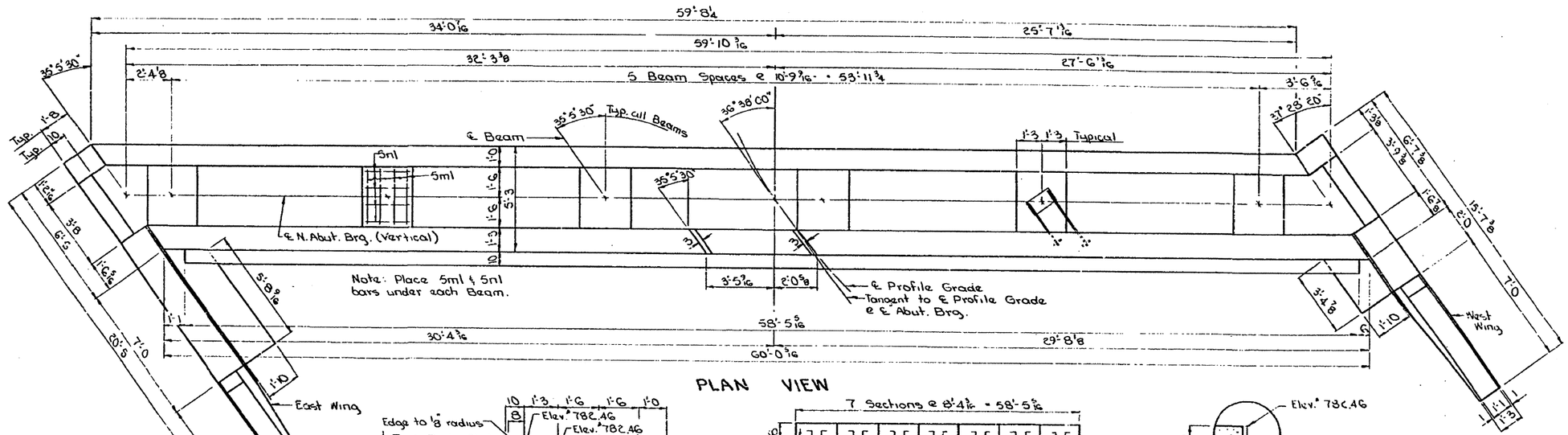
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Bench Mark: N° 4 "x" At base of hdrl. on N.E. Cor. of R.R. Overpass, 15' Lt. Sta. 807+15 El. 780.73

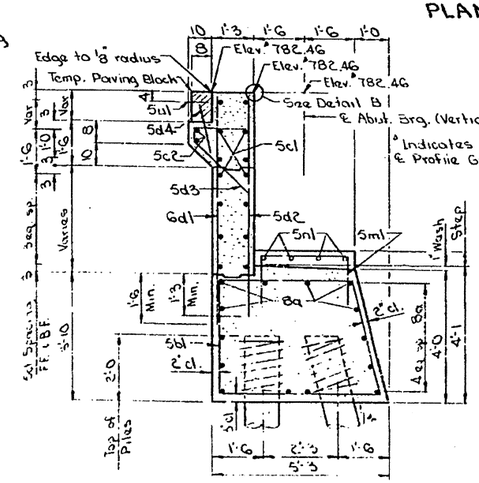


REAR ELEVATION

* Dimensions are at the face of paving notch

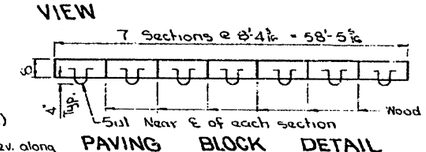


PLAN VIEW

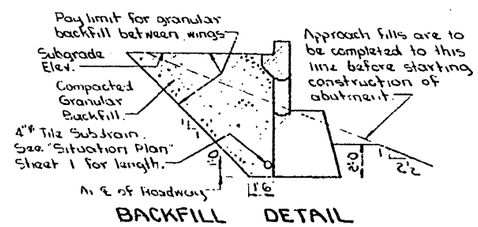


SECTION THRU ABUTMENT

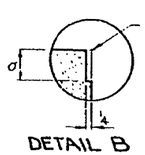
Note: Spirals at top of each pile are made up of 1 turns of 4" rod, 21" diameter, 3" pitch with 2 7/16 O.C. of spacers punched to hold spiral



PAVING BLOCK DETAIL



BACKFILL DETAIL



DETAIL B

Note The dimension "a" from top of backwall to compression seal seat shall be consistant with the recommendations of the manufacturer furnishing the seal.

THIS SHEET FROM ORIGINAL DESIGN PLANS IS INCLUDED FOR INFORMATION ONLY.

DESIGN NO. 198
FILE NO. 29293
DESIGN SHEET NO. 17 OF 17

Design for 35° 5' 30" Skew

210'-0 × 48'-0 CONTINUOUS I-BEAM BRIDGE

64'-0 End Spans 80'-0 Center Span

NORTH ABUTMENT DETAILS

Sta. 807+91.96 R.R. Xing* Skd Aug 1975

LUCAS COUNTY

IOWA STATE HIGHWAY COMMISSION

Design Sheet N° 5 of 23 File N° 61-57 Design N° 198

DESIGNED BY R.A. Henning CHECKED BY H. Trail

PROJECT NUMBER	STATE	FED ROAD DIST NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
FN 29-6(14)--11-57	IOWA	7		18	35

SHEET NO. 18 OF 35

ESTIMATED ROADWAY QUANTITIES

100-0A
10-28-97

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
	2102-2625000	EMBANKMENT-IN-PLACE	CY	300	300.000
	2122-7451000	SHOULDER STRENGTHENING, OPTIONAL ACC OR PCC, 8 IN.	SY	311	570.111
	2212-5070310	PATCHES, FULL DEPTH REPAIR	SY	1120	1120.000
	2212-5070330	PATCHES BY COUNT (REPAIR)	EACH	2	2.000
	2213-2713300	EXCAVATION, CLASS 13, FOR WIDENING	CY	70	82.385
	2301-0685100	BRIDGE APPROACH SECTION	SY	640	640.000
	2401-6745650	REMOVAL OF EXISTING STRUCTURES	LS	1	$1100.000
	2505-4020251	GUARDRAIL, FORMED STEEL THRIE BEAM	LF	125	125.000
	2505-4020400	GUARDRAIL, POSTS, BEAM	EACH	24	24.000
	2505-4021690	GUARDRAIL, END ANCHORAGE, BEAM, RE-69	EACH	4	4.000
	2505-4021760	GUARDRAIL TERMINAL, BEAM, RE-76	EACH	4	4.000
	2505-5110300	OBJECT MARKER, TYPE 3	EACH	4	4.000
	2505-6745740	REMOVAL OF GUARDRAIL END ANCHORAGE	EACH	4	4.000
	2505-6745749	REMOVAL OF GUARDRAIL	LF	250	250.000
	2505-6745855	REMOVAL OF POSTS	EACH	52	52.000
	2510-6745850	REMOVAL OF PAVEMENT	SY	640	640.000
	2518-6910000	SAFETY CLOSURE	EACH	2	2.000
	2527-9263007	PLOWABLE PAVEMENT MARKERS	EACH	80	80.000
	2527-9263110	PAINTED PAVEMENT MARKING	STA	91	119.620
	2527-9263130	REMOVABLE TAPE MARKING	STA	4	2.970
	2527-9263140	PAINTED SYMBOLS AND LEGEND	EACH	4	4.000
	2527-9263180	PAVEMENT MARKING REMOVED	STA	26	24.030
	2528-8400157	TEMPORARY FLOODLIGHTING LUMINAIRE	EACH	2	2.000
	2528-8400256	TEMPORARY TRAFFIC SIGNALS	EACH	1	1.000
	2528-8445110	TRAFFIC CONTROL	LS	1	$8500.000
	2528-8445112	FLAGGERS	DAY	10	18.000
	2529-0400056	ASPHALT CEMENT CONCRETE (COMPOSITE SECTIONS)	TON	183	242.000
	2529-8530800	RUMBLE STRIP PANEL	EACH	19	19.000
	WO#0405	PILOT CAR	DAY	0	6.000

STANDARD ROAD PLANS

105-4
12-03-96

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

NUMBER	DATE	NUMBER	DATE	NUMBER	DATE
RE-2A	01-12-99	RH-51	10-27-98		
RE-2B	10-22-93	RH-52	08-20-96		
RE-12A	12-03-96	RK-19A	10-27-98		
RE-12B	12-03-96	RK-19F	10-27-98		
RE-47	10-28-97	RL-14	01-12-99		
RE-48A	12-08-95	RS-1	10-27-98		
RE-65A	01-12-99	RS-2	10-27-98		
RE-68	12-03-96	RS-3	12-03-96		
RE-69	12-03-96				
RE-76	01-12-99				
RF-19E	07-15-97				
RG-1	01-12-99				
RG-8	10-28-97				
RH-50	08-20-96				

ESTIMATE REFERENCE INFORMATION

100-4
07-15-97

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

ITEM NO.	ITEM CODE	DESCRIPTION
	2527-9263140	Painted Symbols and Legend Item is for 4 Turn Arrows, refer to Design Sheet No. U.05.
	2528-8400157	Temporary Floodlighting Luminaires Refer to Tab. 108-27, Detail Sheets TCP-1, TCP-2, and Detail Sheet 570-2.
	2528-8400256	Temporary Traffic Signals Refer to Tab. 108-28, Detail Sheets TCP-1, TCP-2, and Detail Sheet 570-3.
	2529-8530800	Rumble Strip Panel Refer to Tab. 102-6C and Detail Sheet RP-1, Sheet No. U.04. Item is for removing the raised earth and paved medians.

12-03-96 101-4

DESIGN DATA RURAL

1997	AADT	4510	V.P.D.
20	AADT		V.P.D.
20	DHV		V.P.H.
TRUCKS		14	%
Daily Design Year ESALs			

ESTIMATE REFERENCE INFORMATION

100-4
07-15-97

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

ITEM NO.	ITEM CODE	DESCRIPTION
	2102-2625000	Embankment-in-place A. Refer to Tab. 107-23. B. Approved material to be obtained by the contractor outside of existing right-of-way.
	2122-7451000	8" Optional ACC/PCC Shoulder Strengthening A. Refer to Tab. SS-1 and Design Sheet No. U.07 for locations and dimensions. B. See Standard Road Plans RG-1 and RG-8 for method of construction. C. This work will be measured and paid for at the contract price per square yard. Asphalt cement, tack coat bitumen, and joint construction shall be considered incidental to the price bid. Roughness pattern is not required.
	2212-5070310 2212-5070330 2529-0400056	Full Depth Patching Refer to Tab. 102-6C. Items are for removing the raised earth and paved medians.
	2213-2713300	Class 13 Excavation for widening A. Refer to Tab. SS-1 for locations. B. Dispose of excess excavated material as per Standard Notes 213-1 and 213-7.
	2301-0685100	Bridge Approach Section See Standard Road Plans RK-19A, RK-19F and Tab. 112-6.
	2401-6745650	Removal of Existing Structures Item is for the abandonment of the raised median curb intake located at Sta. 798+60±. Contractor to remove curb opening, fill and abandon intake.
	2505-4020153 2505-4020250 2505-4020251 2505-4020400 2505-4021690 2505-4021760	Guardrail Items Refer to Tab. 108-8A.
	2505-5110300	Object Markers A. Refer to Tab. 108-17. B. Removal of existing object markers and posts to be incidental. Dispose of as per Standard Note 213-1.
	2505-6745740 2505-6745749 2505-6745855	Guardrail Removal Items Refer to Tab. 110-7A.
	2510-6745850	Removal of Pavement Refer to Tab. 110-1. Disposal as per Standard Notes 213-1 and 213-7.
	2518-6910000	Safety Closures Item is to be installed at the west end of bridge at the tapered end barrier rail section, refer to Detail Sheets TCP-1 and TCP-2.
	2527-9263007	Plowable Pavement Markers Item includes 76 Amber/Amber Reflectors and 4 White/Red reflectors. Refer to Detail Sheet TCPM-1, Sheet No. U.05.
	2527-9263110 2527-9263130 2527-9263180	Pavement Marking Items Refer to Tab. 108-22.

TRAFFIC CONTROL PLAN

108-23
04-04-89

1. Through traffic will be maintained on the project at all times.
2. Traffic control on this project shall be found in accordance with the RS series of Standard Road Plans found in Tab. 105-4 on the Title Sheet and/or appropriate Detail Sheets included in the plans. For additional complementary information, refer to Part VI of the Manual on Uniform Traffic Control Devices and the current Standard Specifications.
3. All traffic control devices shall be furnished, erected, maintained, and removed by the contractor.
4. Where possible, all post mounted signs shall be placed at least 2 feet beyond the curb or edge of shoulder.
5. The location for storage of equipment by the contractor during non-working hours shall be as approved by the engineer in charge of construction.
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 is returned to normal traffic. The current Standard Specifications and supplemental specifications shall apply.
7. 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.
8. 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.
9. Proposed changes in the traffic control plan shall be reviewed with the Office of Construction before changes are made.

For Stage Construction Notes
Refer to Design Sheet No. C.02

Design No. 198
File No. 29293
Design Sheet No. C.01

ROADWAY DESIGN

LICENSED PROFESSIONAL ENGINEER
Tony J. Gustafson
12851
IOWA

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 3/17/99
Date

Tony J. Gustafson
Printed or Typed Name

My license renewal date is December 31, 1999

Pages or sheets covered by this seal: C.01-C.04, U.01-U.13

OFFICE OF DESIGN • CADD • PRODUCED	STATE OF IOWA	FHWA REGION 7	FISCAL YEAR	LUCAS COUNTY	PROJECT NUMBER BRFN-34-6(63)--39-59	SHEET NUMBER 19 Of 35

17-MAR-1999 07:33 gmackey s:\PROJECTS\59034010A95\Design\k59034063.c01

Gustafson/Mackey/Babcock

10-31-95 204-1

The installation of each continuous piece of guardrail shall be completely functional within five consecutive working days. The following shall apply unless modified by the engineer:

Grading work, if necessary, shall be completed prior to the removal of any existing guardrail or the installation of new guardrail.

Removal of any existing guardrail and installation of new posts and beam rail except for the approach end section, shall be completed on the same working day. Beam rail shall be fully connected to all posts and protected with a Type E terminal section plus Type II barricade with Type A warning light.

Not later than the next working day, concrete for the end anchorage (RE-53) shall be poured.

01-20-84 204-2

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.

10-22-93 204-4

All guardrail materials that are removed and not reused on this project shall become the property of the contractor. Any material to be used on this project that is damaged due to the carelessness of the contractor shall be replaced at the contractor's expense without cost to the State of Iowa.

04-04-89 213-1

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. 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.

09-27-94 213-7

Unless otherwise directed or authorized, all asphaltic cement concrete 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.

01-20-84 221-4

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.

03-28-95 232-3

EROSION CONTROL:

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

SEEDING:

3 lbs. of Fescue, Kentucky 31 or Fawn per 1000 sq. ft.

FERTILIZER:

17 lbs. of 13-13-13 (or equivalent) chemically combined fertilizer per 1000 sq. ft.

MULCH:

70 lbs. of dry cereal straw per 1000 sq. ft. All mulch to be consolidated into the soil with the mulch stabilizer.

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.

01-20-84 232-5

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 area(s) will be subject to the approval of the resident engineer.

06-07-94 232-8

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.

06-22-84 251-2

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.

10-31-95 251-4

The centerline pavement marking shall always be placed on one side of the roadway except where a "No Passing Zone" line is used, at which point it is placed on the opposite side of the roadway. The centerline shall be placed on the same side of the roadway as to match existing markings near the project.

STAGING NOTES

108-26
08-30-88

Stage 1
Phase A: Full depth patch existing raised earth and paved medians and paint portion of median (refer to Design Sheet No. U.04).
Phase B: Install bridge approach pavement, overlay deck to bridge, and guardrail (U.S. 34 Eastbound Lane).

Stage 2
Install bridge approach pavement, overlay deck to bridge, and guardrail (U.S. 34 West bound Lane).

Stage 3
Cut rumble strip pattern to median patch pavement, refer to Design Sheet U.04, final pavement markings, erosion control, and any other remaining work.

TABULATION OF TEMPORARY FLOODLIGHTING LUMINAIRES

108-27
04-30-96

NO.	LOCATION STATION	TYPE	NUMBER LUMIN.	REMARKS
1	807+91.5	570-2	2	

TABULATION OF TEMPORARY TRAFFIC SIGNALS

108-28
04-30-96

NO.	LOCATION STATION	NUMBER SET-UPS	TYPE			REMARKS
			One Lane Traffic	Haul Road	Intersection	
1	807+91.5	1	TCP-1 & 2			

REMOVAL OF PAVEMENT

110-1
04-30-96

* Not a bid item.

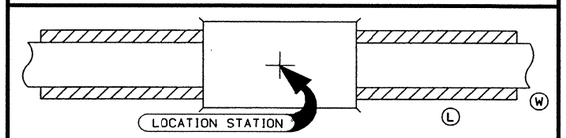
STATION TO STATION		AREA Sq. Yds.	SAW CUT Lin. Ft.*	REMARKS
806+13	806+83	340 (A)	129	
809+00	809+77	300 (B)	124	

(A) Includes removal of raised paved median and curb of the roadway.
(B) Includes removal of raised paved median and curb of the roadway.

AREAS OF SHOULDER STRENGTHENING

SS-1

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



Location Station	Length (L) ft	Width (W) ft	Depth Inches	Cl. 13 Excav. cu. yds.	Remarks
807+91.5	100	10	8	25	NE Corner (A)
807+91.5	232	10	8	82	SE Corner (A)

(A) Refer to Design Sheet No. U.07

TABULATION OF BRIDGE APPROACH SECTION

(Refer to Standard Road Plan RF-19E, RK-16, RK-19A, RK-19B, RK-19C, RK-19D, RK-19E, RK-19F, RK-19G, RK-19H, or RK-19J)

ⓘ Not a bid item

112-6
10-27-98

LOCATION		APPROACH PAVEMENT						Fixed or Movable Abutment	SUBDRAIN					APPROACH SUBGRADE		REMARKS
Bridge Station	End	Case	(PN) for Case "2"	(T) Thickness Inches	Pay Length Feet	Non-Reinf. Pavement Area Sq. Yds.	Reinforced Pavement Area Sq. Yds.	F or M	Perforated Subdrain ⓘ 4" Lin. Ft.	Subdrain Outlet ⓘ Station	Side	Porous ⓘ Backfill Cu. Yds.	Class 'A' Crushed Stone ⓘ Backfill Cu. Yds.	Special Backfill ⓘ Tons	Polymer Grid ⓘ Sq. Yds.	
807+91.5	N	1		8	70	182 (A)	158 (B)	F	60	806+24	Rt.	3	0.5	79	376	
807+91.5	S	1		8	77	152 (C)	148 (D)	F	48	809+68	Rt.	2	0.5	71	337	

(A) Length = 43', Width = 38'
(B) Length = 27', Width = 49'
(C) Length = 49', Width = 28'
(D) Length = 28', Width = 49'

Design No. 198
File No. 29293
Design Sheet No. C.02

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