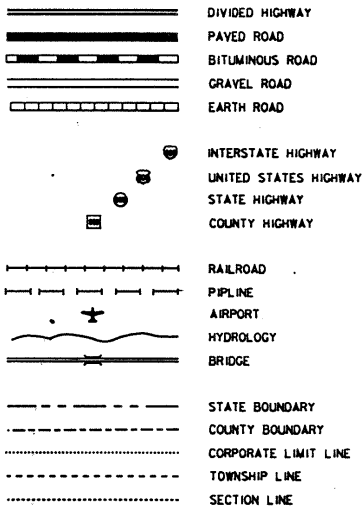


CONVENTIONAL SIGNS



IOWA
DEPARTMENT OF TRANSPORTATION

Project Development Division

PLANS OF PROPOSED IMPROVEMENTS ON THE

PRIMARY ROAD SYSTEM
POTTAWATTAMIE COUNTY

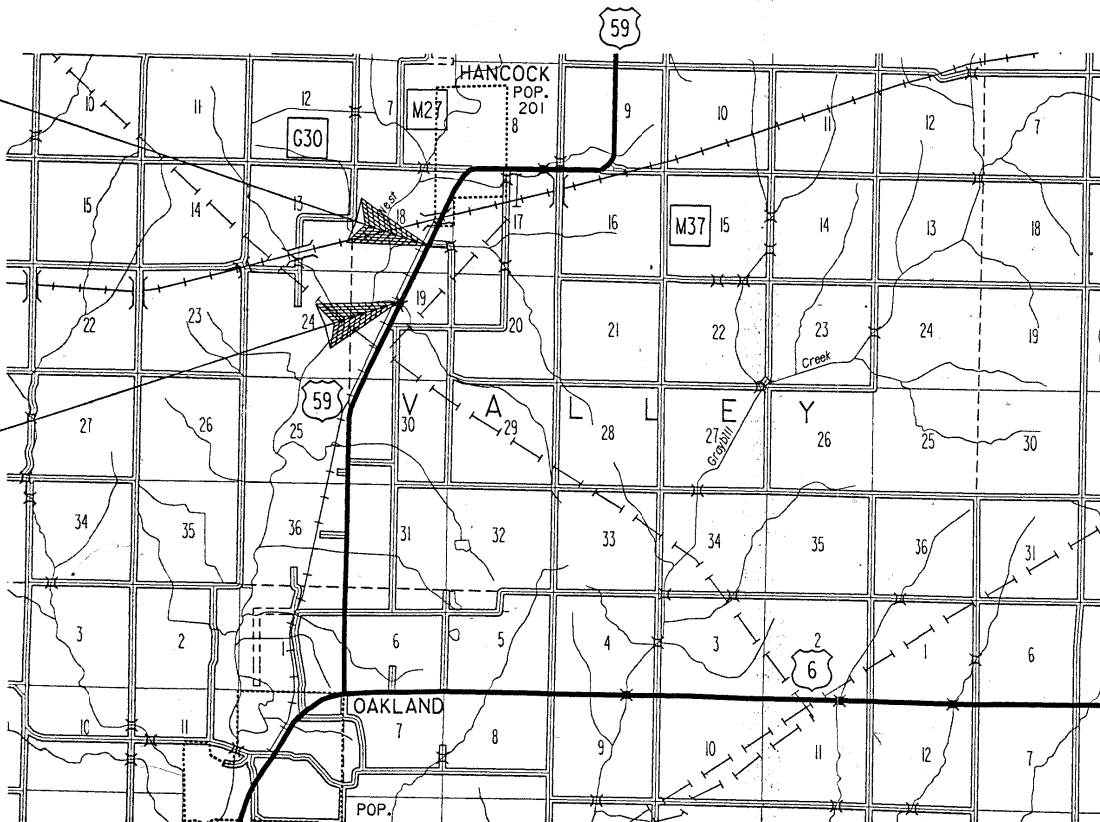
BRIDGE DECK REPAIR
AT TWO LOCATIONS ON U.S.59
SOUTH OF HANCOCK

SCALE: As Noted

The standard specifications, series of 1992 of the Iowa Department of Transportation, shall apply to construction work on this project.
(PLUS CURRENT SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS)

DESIGN NO. 2494

~~DESIGN NO. 1494~~



R-39W

YEAR	WORK	CONTRACTOR	PROJ. INSPECTOR
1995	Bridge Deck Repair	Cramer & Assoc.	Steve Swanson
			Jerome Tibbs

MICROFILMED

DESIGN DATA RURAL			
1994	AADT	1400	V.P.D.
201	AADT		V.P.D.
201	DHV		V.P.H.
TRUCKS			%

After microfilming, return original copy, 1 50% reduced prints and 2 full-size print(s) to: SEA/TC Iowa Transportation Center

1995 Cramer & Associates Steve Tibbs SEA/TC
Year Contractor Project Inspector

Alan E. Miller May 05 1997
Transportation Center Engineer Date

Reviewed and forwarded to Ames: May 05 1997

My license renewal date is December 31, 1997.

I hereby certify that this project was constructed in accordance with the plans and specifications of the Iowa Department of Transportation. I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Alan E. Miller May 05 1997
Project Engineer Date

VALUE ENGINEERING SAVES
REFER TO THE GENERAL NOTES ON SHEET 410 OF 23

STANDARD ROAD PLANS				STANDARD BRIDGE PLANS		
IDENT	DATE	IDENT	DATE	STANDARD	ISSUED	REVISED
RE-2A	2-17-87	RG-1	11-10-92			
RE-2B	10-22-93	RG-8	11-10-92			
RE-7	4-28-92	RH-50	9-27-94			
RE-12A	10-11-88	RH-51	9-27-94			
RE-12B	1-9-90	RH-52	6-7-94			
RE-47	11-10-87	RK-19A	9-29-92			
RE-48A	6-15-93	RK-19F	2-23-93			
RE-52	10-22-93	RL-7	7-16-91			
RE-65	1-7-92	RL-11	10-11-88			
RE-68	8-8-89	RS-2	6-15-93			
RE-69	10-22-93	RS-3	2-23-93			
RF-19E	3-29-94	RS-5A	10-22-93			

REVISIONS

Iowa Department of Transportation
PROJECT DEVELOPMENT DIVISION
AUTHORIZED FOR LETTING

Wm. B. Zundt 8/15/94
BRIDGE ENGINEER DATE

I hereby certify that this plan was prepared under my supervision and that engineering decisions with regard to the design were made by me or by other duly Registered Professional Engineers under the laws of the State of Iowa.

Name Gene J. Pollmann
Iowa Registration No. 4060 Date 8-11-94

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED

FOR THE DIVISION ADMINISTRATOR DATE

INDEX OF SHEETS	
NO.	DESCRIPTION
1	TITLE SHEET
2	ROAD ESTIMATE SHEET
~~3~~	~~BRIDGE ESTIMATE SHEET FOR DESIGN NO. 1494~~
~~4-8~~	~~BRIDGE DESIGN NO. 1494~~
9	BRIDGE ESTIMATE SHEET FOR DESIGN NO. 2494
10-17	BRIDGE DESIGN NO. 2494
18-23	ROAD SHEETS

STATE	FHWA REGION	F.Y.	SHEET	TOTAL
IOWA	7		1	23
PROJECT NUMBER				
BRFN-59-3(25)--39-78				
R.O.W. PROJECT NUMBER				
PIN				
93-78-020-1				

LETTING DATE 11-1-94

STATE CONTROL SECTION NUMBER 78-3300

FILE NO. 28892

POTTAWATTAMIE COUNTY

PROJECT NO. BRFN-59-3(25)--39-78

SHEET NO. 1

11-1-94 GJP 1194 & 2494 POTTAWATTAMIE (ABRAMS)

100-1B
03-29-94

00-4
8-29-94

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

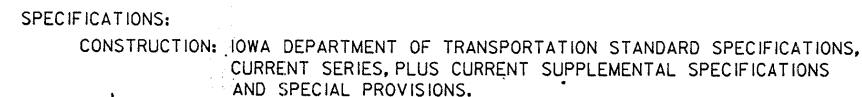
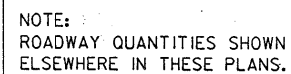
105-4
06-17-77

100-4
03-29-94

SHEET NUMBER 2 of 23

REVISED: "TOTAL ESTIMATED BRIDGE QUANTITIES" TABLE CHANGED, AASHTO SERIES CHANGED TO 1992. TAPE NO. 19. DATED 11-9-92.
REVISED: IDOT STANDARD SPECIFICATIONS, UPDATE; ARCH.TAPE NO. 12. DATE 4-20-92
HSTSD101038.S01-1-93; THIS SHEET REDRAWN, DEVICE:ZHAOC(200,004) ARCH.TAPE NO. 15. DATE 9-8-88.
REVISED: 6-21-93 - ESTIMATE REFERENCE INFORMATION CHANGED FOR " CONCRETE BARRIER RAIL - CAST IN PLACE".

<u>ITEM CODE</u>	<u>ESTIMATE REFERENCE INFORMATION</u>
2413-0698071	INCLUDES COST OF FURNISHING AND PLACING SEALER
2528-8400051	ALL TEMPORY BARRIER RAIL SHALL BE NOMINAL 10' LONG CONCRETE UNITS
2528-8400052	ALL TEMPORY BARRIER RAIL SHALL BE NOMINAL 10' LONG CONCRETE UNITS



LOCATION:
MAINTENANCE NO. 7856.OS059
U.S. 59 OVER SMALL CREEK
SECTION 18
T-76 N R-39 W
VALLEY TWP.
POTTAWATTAMIE COUNTY

DESIGN HISTORY AT THIS SITE	
DES. NO.	TYPE OF WORK
4550	ORIGINAL DESIGN

DESIGN FOR REPAIRS TO 30° SKEW

80'-0" x 30' CONTINUOUS CONCRETE
SLAB BRIDGE

24'-6" END SPANS 31'-0" CENTER SPAN

GENERAL NOTES & QUANTITIES

STATION: 236+40.00 JULY, 1994

POTTAWATTAMIE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION

DESIGN SHEET NO. 1 OF 9 FILE NO. 28892 DESIGN NO. 2494

SAVE SET _____ DATE _____

GENERAL NOTES:

THIS DESIGN IS FOR REPAIR OF THE EXISTING 80'-0 x 30' CONTINUOUS CONCRETE SLAB BRIDGE ORIGINAL DESIGN NUMBER 4550 POTTAWATTAMIE COUNTY. PLANS OF THE EXISTING STRUCTURE MAY BE OBTAINED AT THE AMES OFFICE OF THE D.O.T.-PROJECT DEVELOPMENT DIVISION.

REPAIRS SHALL CONSIST OF THE FOLLOWING:

1. CLASS A REPAIR.
2. REMOVAL OF EXISTING HANDRAIL AND ENDPOSTS.
3. PLACEMENT OF CONCRETE SEALER
4. BRIDGE FLOOR OVERLAY.
5. PLACEMENT OF CAST IN PLACE BARRIER RAIL.
6. PLACEMENT OF P.C.C. APPROACH SECTIONS.

PLAN QUANTITY OF FLOOR REPAIR IS BASED ON 2x THE AREA SHOWN ON THE "SURVEY PLOT" AS SHOWN IN THESE PLANS. HATCHED PORTIONS REPRESENT CLASS A BRIDGE FLOOR REPAIR. CROSS HATCHED PORTIONS, IF SHOWN, REPRESENT CLASS B BRIDGE FLOOR REPAIR. ACTUAL SPALLED AND HOLLOW AREAS, AS DETERMINED BY THE ENGINEER AT THE TIME OF CONSTRUCTION, SHALL BE REPAIRED. THE ENTIRE CONCRETE SURFACE OF THE BRIDGE FLOOR, INCLUDING AREAS OVER BRIDGE FLOOR REPAIR, SHALL HAVE BRIDGE FLOOR OVERLAY.

PRESENT FLOOR THICKNESS IS ABOUT 17 INCHES. THE CONTRACTOR SHALL EXERCISE EXTREME CARE IN REMOVING CONCRETE IN ORDER TO PREVENT UNNECESSARY UNBONDING OF REINFORCING STEEL.

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" 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.

BEFORE PROCEEDING WITH BRIDGE FLOOR OVERLAY AND BRIDGE FLOOR REPAIR THE CONTRACTOR MAY COMPLETE ALL STAGES OF OTHER CONSTRUCTION. ANY CONSTRUCTION SHALL HAVE STAGE LIMITS, TEMPORARY BARRIER RAIL AND TRAFFIC CONTROL AS DETAILED ON THESE PLANS. TEMPORARY BARRIER RAIL AND TRAFFIC CONTROL MAY BE ADJUSTED TO FIT THE ACTUAL WORK AND STORAGE AREA. WHEN BACKWALLS AND/OR APPROACH SECTIONS ARE TO BE REBUILT TO A RAISED SURFACE, AND WHEN FLOOR OVERLAY IS NOT A PART OF THE SAME STAGE, THE CONTRACTOR SHALL PROVIDE FOR PROFILE TRANSITION WITH A.C. SURFACING. PROFILE TRANSITION SHALL BE TAPERED AT A RATE OF 25' FOR 1 1/2 INCHES OF RAISE. THE A.C. TRANSITION MATERIAL SHALL BE A COMMERCIAL GRADE HOT SURFACING MIX OR A MIX APPROVED BY THE ENGINEER. A.C. MAY BE PLACED BY HAND METHODS AND MAY BE COMPACTED BY ANY APPROVED METHOD. ALL COSTS FOR ADDITIONAL TRAFFIC CONTROL, REPOSITIONING OF BARRIER AND A.C. SURFACING SHALL BE BORNE BY THE CONTRACTOR.

FAINT LINES ON PRINTS AND ON TRACINGS INDICATE EXISTING PORTION OF THE BRIDGE.

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

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

REMOVALS AND DISPOSALS OF ITEMS SCHEDULED FOR REMOVAL SHALL BE IN ACCORDANCE WITH SECTION 2401 OF THE SPECIFICATIONS. ANY DAMAGE TO ANY STEEL OR CONCRETE NOT TO BE REMOVED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND REPAIRED BY THE CONTRACTOR AT NO EXTRA COST TO THE STATE.

AREAS OF CURB INDICATED ON THE "SURVEY PLOT" OR DESIGNATED BY THE ENGINEER, ARE TO BE REPAIRED AS CLASS A BRIDGE FLOOR REPAIR EXCEPT THAT THE UPPER OR OUTER LIMIT SHALL BE THE ORIGINAL SURFACE. NO OVERLAY QUANTITY WILL BE INCLUDED FOR THE CURB AREA. THE REPAIR AREAS WITHOUT OVERLAY SHALL RECEIVE A SURFACE FINISH PER ART. 2403.21, AND THEY SHALL RECEIVE A CURE AS SPECIFIED FOR BRIDGE FLOOR OVERLAY. THE ENGINEER MAY RELAX THE SLUMP REQUIREMENTS OF STIFF MIX TO A MAXIMUM OF 2 1/2 INCHES IN FORMING THE BATTER FACE. A MANUAL TYPE SCREED OR METAL PLATE WITH APPROVED VIBRATORS ATTACHED WILL BE REQUIRED FOR HORIZONTAL CURB SURFACES.

THE CONTRACTORS ATTENTION IS DIRECTED TO THE FACT THAT ALL OF THE CAST IN PLACE BARRIER RAIL REINFORCING BARS ARE TO BE EPOXY COATED. SEE THE EPOXY COATED REINFORCING BAR LIST IN THESE PLANS.

THE LUMP SUM BID FOR "REMOVAL OF EXISTING HANDRAIL AND END POSTS" SHALL INCLUDE ALL COSTS ASSOCIATED WITH THE REMOVAL AND DISPOSAL OF ALL EXISTING CONCRETE RAILS AND POSTS. THE BID ITEM SHALL ALSO INCLUDE ALL COSTS ASSOCIATED WITH THE REMOVAL OF THE EXISTING CONCRETE END POSTS.

THE MINIMUM DEPTH FOR CLASS A REPAIR IS TO BE 1 1/2 INCHES IN AREAS WHERE TOP REINFORCING IS NOT PRESENT.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE WASTE AREAS OR DISPOSAL SITES FOR EXCESS MATERIAL WHICH IS NOT DESIRABLE TO BE INCORPORATED IN THE WORK INVOLVED ON THIS PROJECT (EXCAVATION OR BROKEN CONCRETE). NO PAYMENT FOR OVERHAUL WILL BE ALLOWED FOR MATERIAL HAULED TO THESE SITES.

THE BRIDGE CONTRACTOR IS ENCOURAGED TO TAKE FULL ADVANTAGE OF SPECIFICATION 105.15 -- VALUE ENGINEERING INCENTIVE PROPOSAL. A PAMPHLET AND CONCEPTUAL PROPOSAL FORM WILL BE AVAILABLE AT THE PRECONSTRUCTION CONFERENCE.

SCREED EXTENSION OR OVERLAY 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.

DESIGN FOR REPAIRS TO 30° SKEW

80'-0 x 30' CONTINUOUS CONCRETE

SLAB BRIDGE

24'-6 END SPANS 31'-0 CENTER SPAN

GENERAL NOTES

STATION: 236+40.00 JULY, 1994

POTTAWATTAMIE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION

DESIGN SHEET NO. 2 OF 9 FILE NO. 28892 DESIGN NO. 2494

STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		10	23

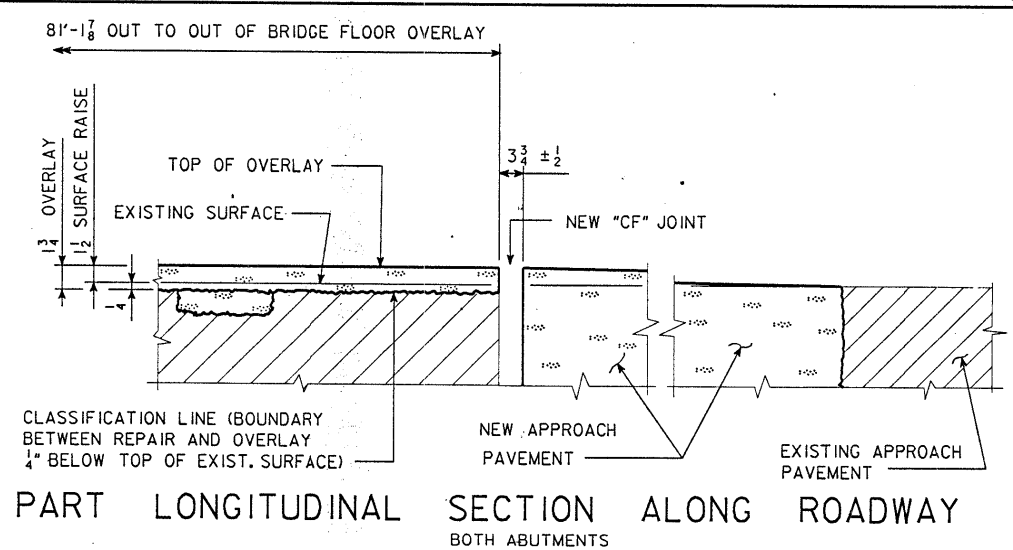
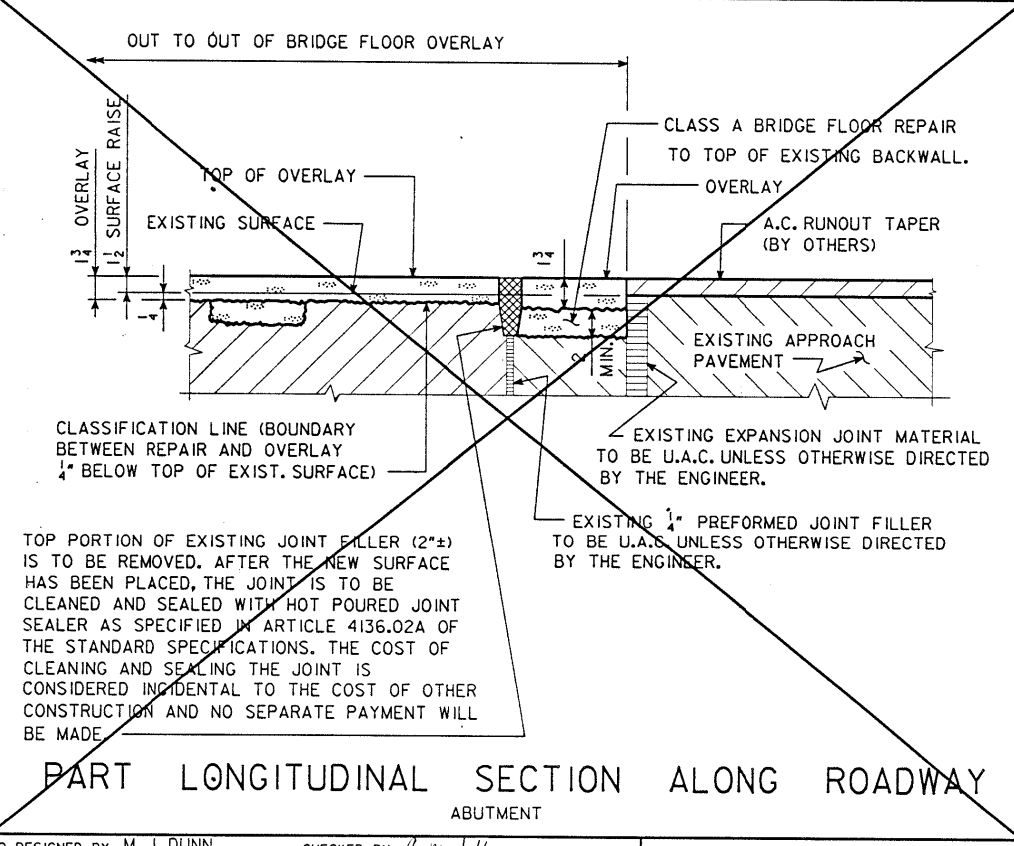
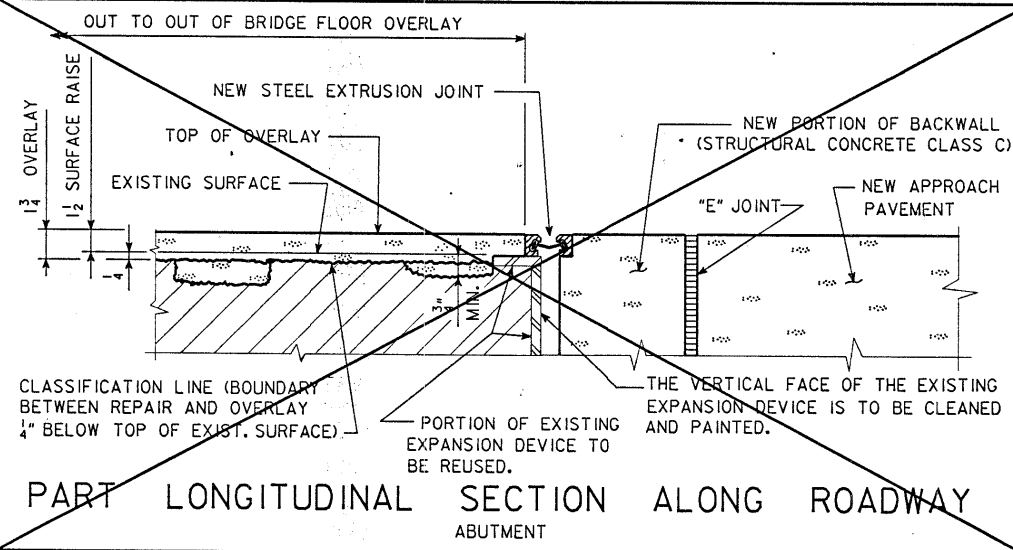
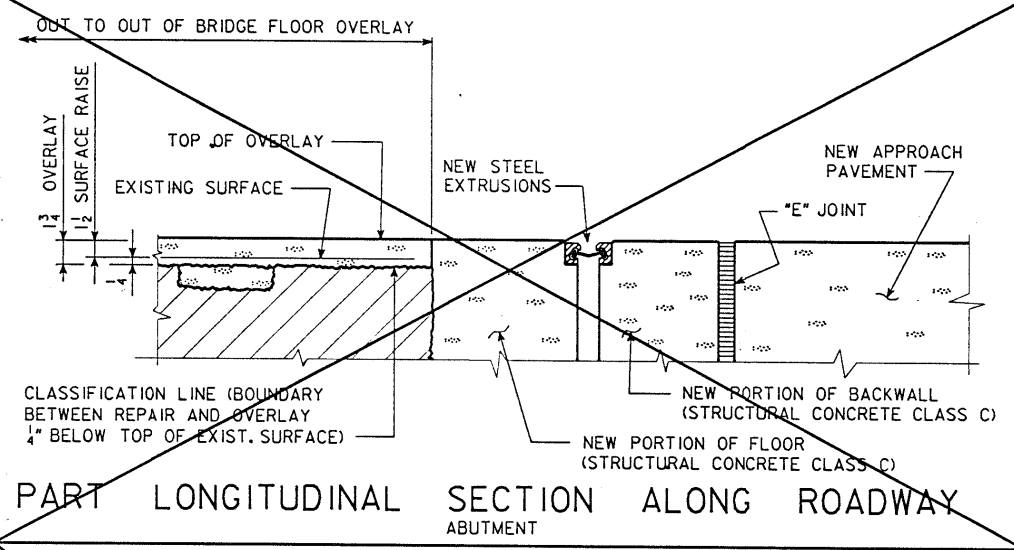
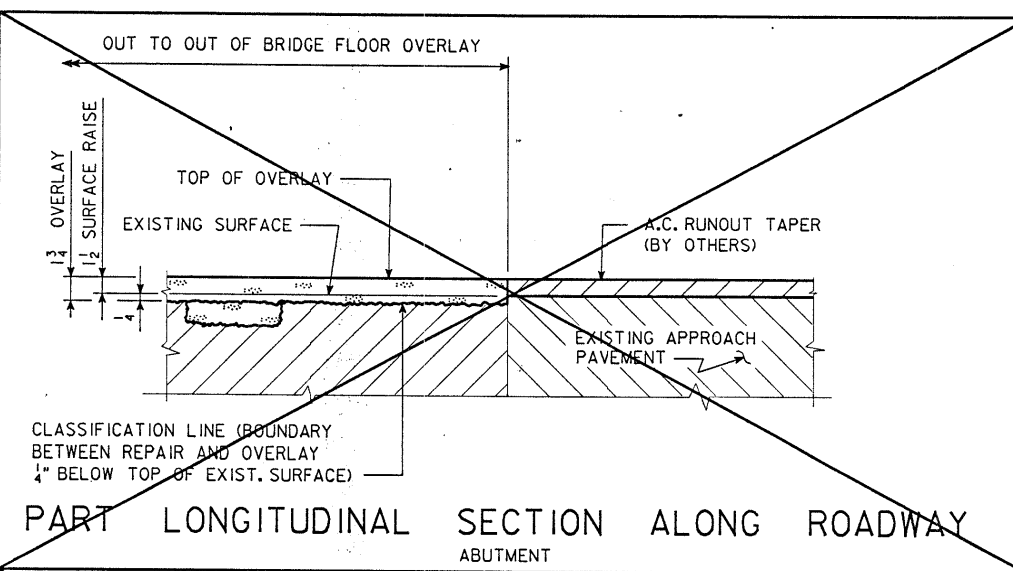
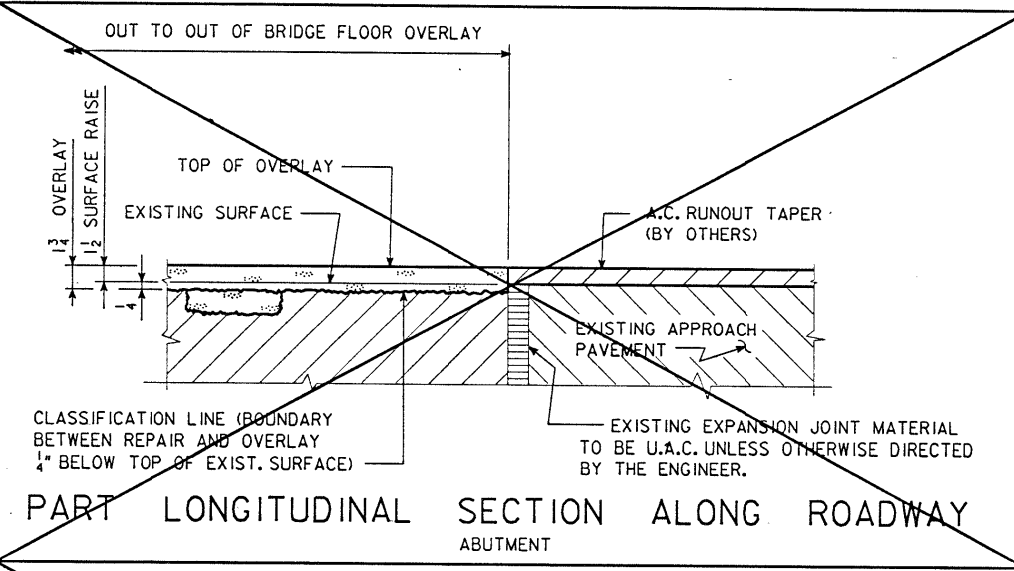
DESIGNED BY M. J. DUNN CHECKED BY D. M. J. WRIGHT
DETAILED BY D. A. WRIGHT CADD FILE h782494.s02

POTAWATTAMIE COUNTY

PROJECT NUMBER

SAVE SET DATE

REVISED: STRUCTURAL CONCRETE CHANGED TO CLASS "C" AND CONCRETE SEALER DETAILS DELETED. TAPE NO. 12 DATED 9-26-91.
HSTD01040.S01--LEP: THIS SHEET REDRAWN, DEVICE: ZHA04200.0041 ARCH. TAPE NO. 15 DATE 9-8-88



DESIGN FOR REPAIRS TO 30° SKEW
80'-0 x 30' CONTINUOUS CONCRETE SLAB BRIDGE
24'-6 END SPANS 31'-0 CENTER SPAN
GENERAL NOTES & QUANTITIES
STATION: 236+40.00 JULY, 1994
POTTAWATTAMIE COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION
DESIGN SHEET NO. 3 OF 9 FILE NO. 28892 DESIGN NO. 2494

STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		11	23

DESIGNED BY M. J. DUNN CHECKED BY D. M. JEFFERS
DETAILED BY D. A. WRIGHT CADD FILE H782494.S03

DECK REPAIR - EXPANSION PLATES - SHEET 1

STANDARD SHEET 1040

POTAWATTAMIE COUNTY

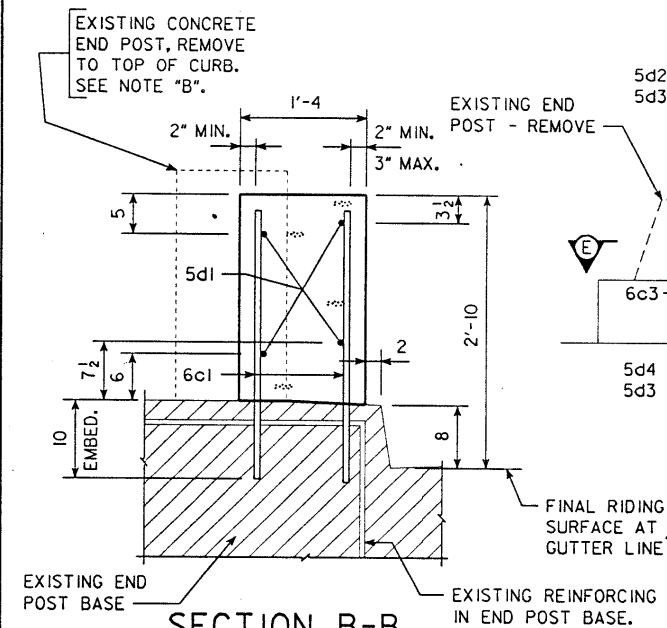
PROJECT NUMBER

SAVE SET DATE

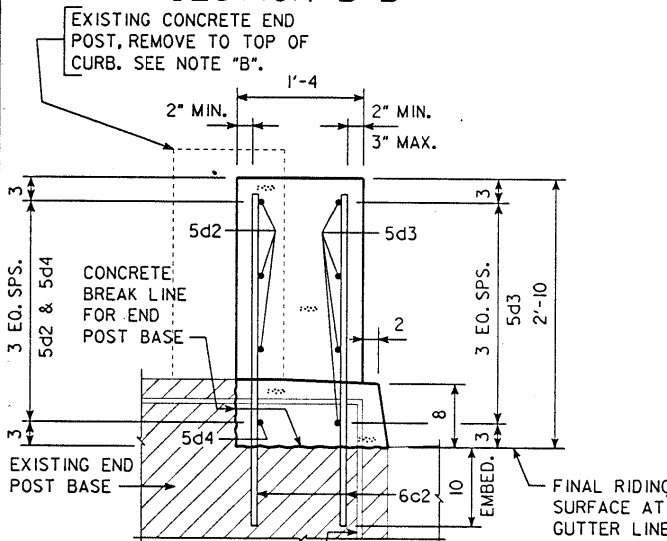
REVISED: SPECIFICATION ARTICLE NUMBER CHANGED, TAPE NO. 19, DATED 11-9-92.
HS1D1031.S01--LEP; THIS SHEET REDRAWN, DEVICE:ZHAQ:200,004) ARCH. TAPE NO. 9
REVISID: 6-21-93 - "LIN. FT." COLUMN DELETED FROM REINFORCING BAR LIST.

DATE 2-26-90

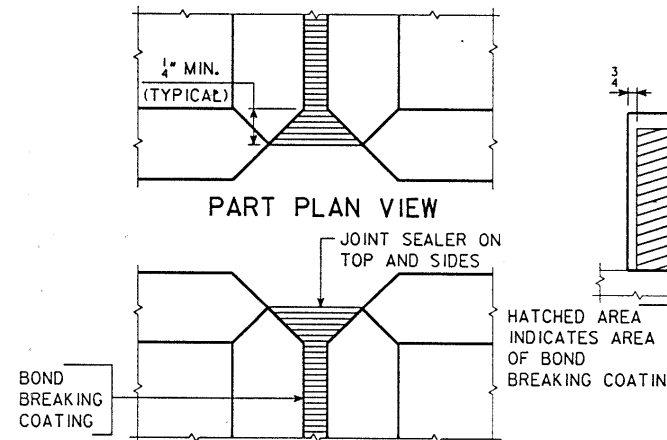
9



SECTION B-B

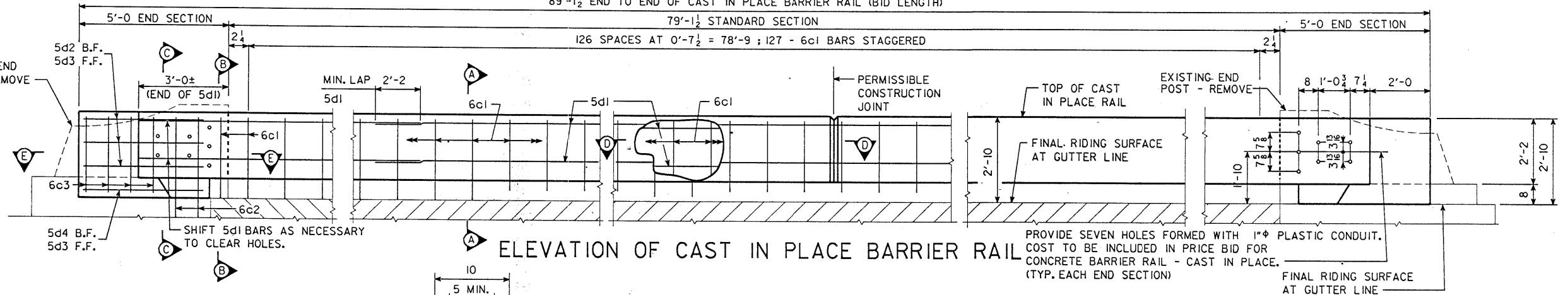


SECTION C-C



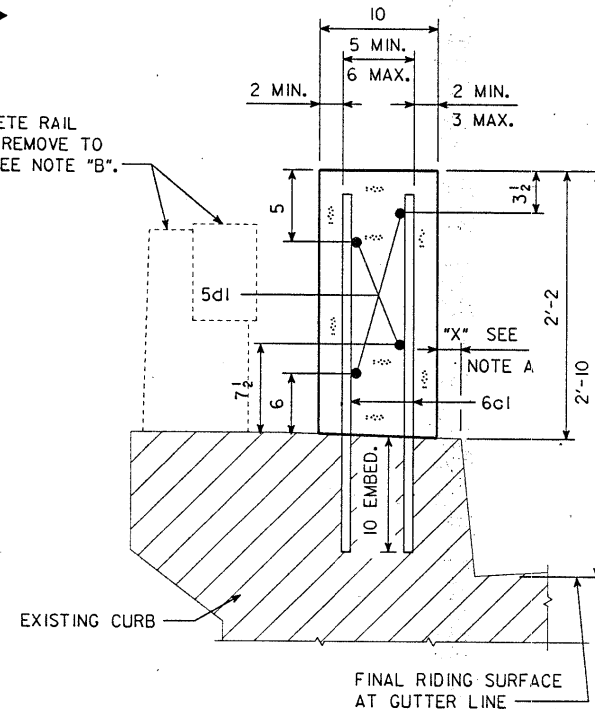
PART ELEVATION VIEW

CAST IN PLACE BARRIER RAIL JOINT DETAILS



ELEVATION OF CAST IN PLACE BARRIER RAIL

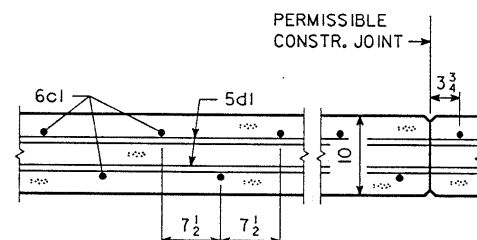
EXISTING CONCRETE RAIL POST AND RAIL, REMOVE TO TOP OF CURB. SEE NOTE "B".



SECTION A-A

NOTE A :
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 LINEAL FEET AT EITHER END OF STANDARD RAIL SECTION SHALL BE TRANSITIONED TO 2" AT END SECTION AS SHOWN.

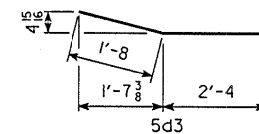
NOTE B:
EXISTING VERTICAL REINFORCING SHALL BE CUT OFF FLUSH WITH OR SLIGHTLY BELOW CONCRETE BREAK LINE AND THE REMAINING EXPOSED ENDS WHICH ARE OUTSIDE THE LIMITS OF THE NEW CAST IN PLACE BARRIER RAIL PAINTED WITH TWO COATS OF ZINC RICH PAINT. THE COST OF THE REMOVALS AND CUTTING OFF, AND PAINTING OF REINFORCING SHALL BE INCLUDED IN THE BID ITEM "REMOVAL OF EXISTING HANDRAIL AND END POSTS".



SECTION D-D (SHOWING 6c1 PLACEMENT)

EPOXY REINFORCING STEEL - TWO RAIL					
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6c1	STANDARD RAIL, VERT.	—	262	2'-10	1,115
6c2	END SECTION, VERT.	—	24	3'-6	126
6c3	END SECTION, VERT.	—	24	2'-6	90
5d1	STANDARD RAIL, LONGIT.	—	24	29'-10	747
5d2	END SECTION, HORIZONTAL B.F.	—	12	4'-8	58
5d3	END SECTION, HORIZONTAL F.F.	—	16	4'-0	67
5d4	END SECTION, HORIZONTAL B.F.	—	4	4'-0	17
TOTAL (LBS.)					2,220

BENT BAR DETAILS



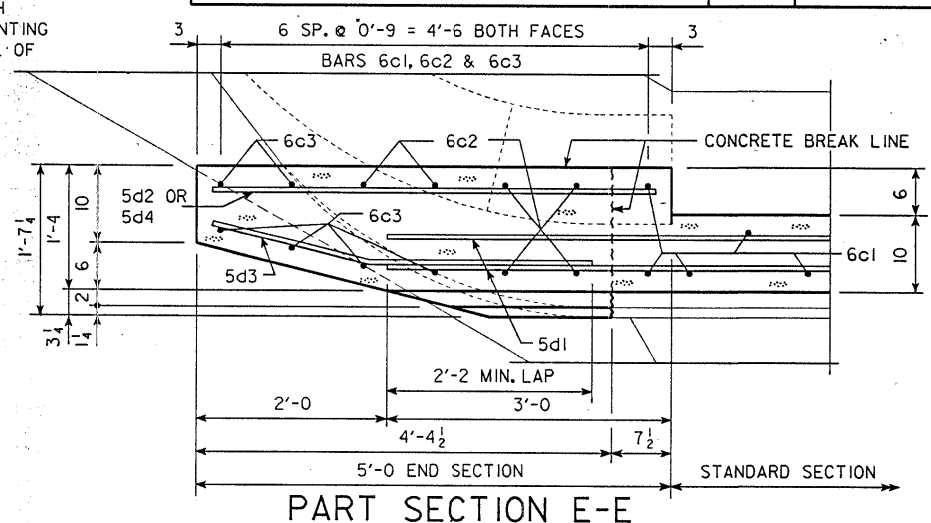
NOTE: ALL DIMENSIONS ARE OUT TO OUT. D=PIN DIMETER.

CONCRETE PLACEMENT SUMMARY

SECTION	TOTAL
STANDARD SECTION 162.3 AT 0.06 CU. YDS. PER LIN. FT.	10.2
END SECTIONS 4 AT 0.63 CU. YDS. PER SECTION	2.5
TOTAL (CU. YDS.)	12.7

ESTIMATED QUANTITIES - TWO RAIL

ITEM	UNITS	QUANTITY
CONCRETE BARRIER RAIL, (CAST-IN-PLACE)	LIN. FT.	178.3
REMOVAL OF EXISTING HANDRAIL & END POSTS	L.S.	LUMP SUM



PART SECTION E-E

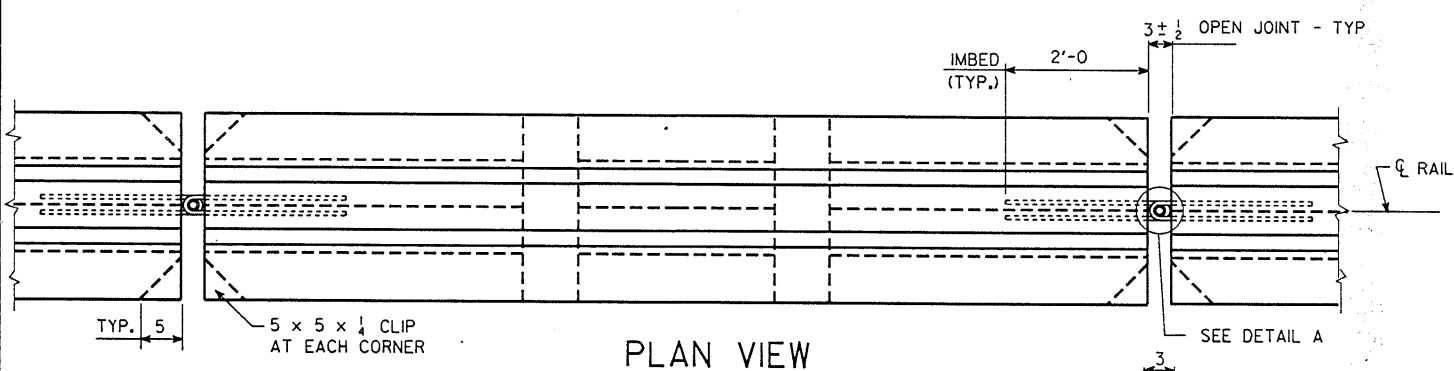
CAST IN PLACE BARRIER RAIL NOTES:
MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.
ALL EXPOSED CORNERS 90° OR SHARPER ARE TO BE FILLETED WITH A 3/4" DRESSED AND BEVELED STRIP.
THE PERMISSIBLE CONSTRUCTION JOINTS ARE TO BE PLACED BETWEEN 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 CAST IN PLACE BARRIER RAIL IS TO BE BID ON A LINEAL FOOT BASIS MEASURED FROM END TO END OF RAIL. THE NUMBER OF LINEAL FEET OF CAST IN PLACE BARRIER RAIL INSTALLED WILL BE PAID FOR AT THE CONTRACT PRICE PER LINEAL FOOT BASED ON PLAN QUANTITIES. PRICE BID FOR CAST IN PLACE BARRIER RAIL SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL (INCLUDING REINF. STEEL & 1" ϕ PLASTIC CONDUIT) PLUS ALL OF THE EQUIPMENT AND LABOR REQUIRED TO ERECT THE RAIL IN ACCORDANCE WITH THESE PLANS AND CURRENT SPECIFICATIONS.
ALL CAST IN PLACE BARRIER RAIL CONCRETE IS TO BE CLASS D.
ALL REINFORCING STEEL IS TO BE GRADE 60 AND EPOXY COATED.
THE JOINT SEALER SHALL CONFORM TO FED. SPEC. TT-S00230 OR TT-S00227 FOR TYPE II, CLASS A OR B.
ANY REMOVALS AND DISPOSALS 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.

DOWEL SETTING NOTE :
THE 6c1 & 6c2 BARS SHALL BE SET AS DOWELS IN DRILLED HOLES. HOLES ARE TO BE 10" DEEP. THE DOWELS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ONE OF THE FOLLOWING SYSTEMS SHALL BE USED AS A BONDING AGENT FOR THE DOWELS :
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. 491.13 AND SHALL BE USED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

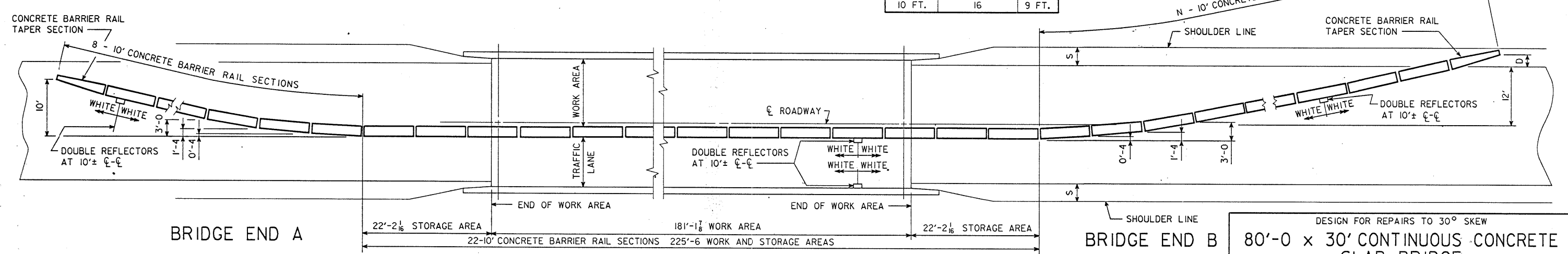
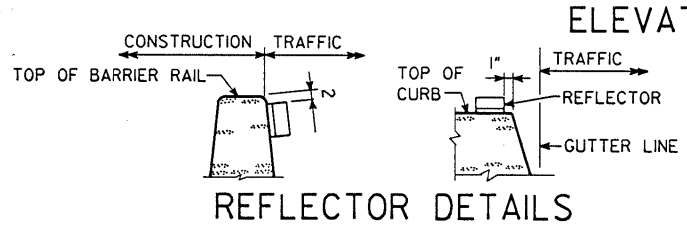
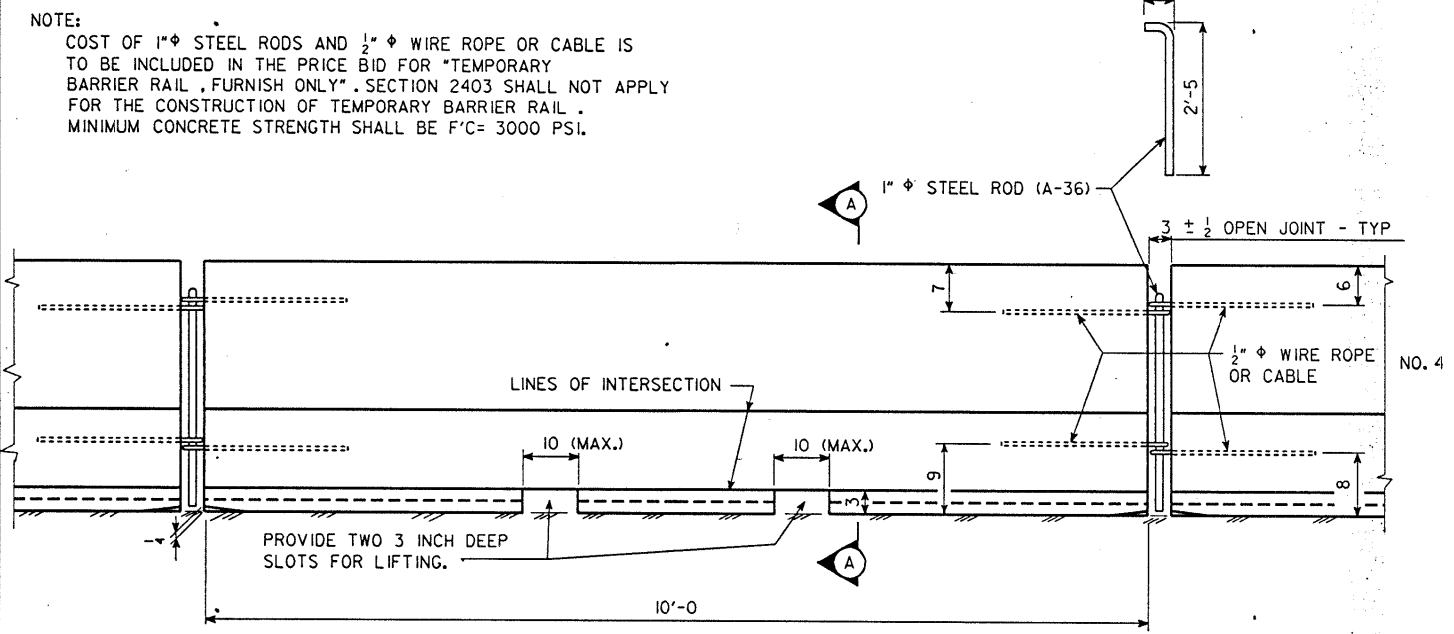
DESIGN FOR REPAIRS TO 30° SKEW
80'-0 x 30' CONTINUOUS CONCRETE SLAB BRIDGE
24'-6 END SPANS 31'-0 CENTER SPAN
CAST IN PLACE BARRIER RAIL DETAILS
STATION: 236+40.00 JULY, 1994
POTTAWATTAMIE COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION
DESIGN SHEET NO. 4 OF 9 FILE NO. 28892 DESIGN NO. 2494
STATE IOWA FHW REGION 7 FISCAL YEAR 12 SHEET NO. 23 TOTAL SHEETS 23

SAVE SET DATE

REVISED: SPECIFICATION ARTICLE NUMBER CHANGED. TAPE NO. 19, DATED 11-9-92, DATED 7-3-90.
REVISED: DIMENSION D AND NO. OF BARRIER RAIL SECTIONS CHANGED. TAPE NO. 19, DATED 7-3-90.
HST001033.S01 --LEP: THIS SHEET REDRAWN, DEVICE:ZHAQ:(200.004) ARCH. TAPE NO. 19, DATED 7-3-90.
REVISED: 6-21-93 - LIFTING SLOT DETAILS CHANGED.



NOTE:
COST OF 1" ϕ STEEL RODS AND 1/2" ϕ WIRE ROPE OR CABLE IS TO BE INCLUDED IN THE PRICE BID FOR "TEMPORARY BARRIER RAIL, FURNISH ONLY". SECTION 2403 SHALL NOT APPLY FOR THE CONSTRUCTION OF TEMPORARY BARRIER RAIL. MINIMUM CONCRETE STRENGTH SHALL BE F'C= 3000 PSI.

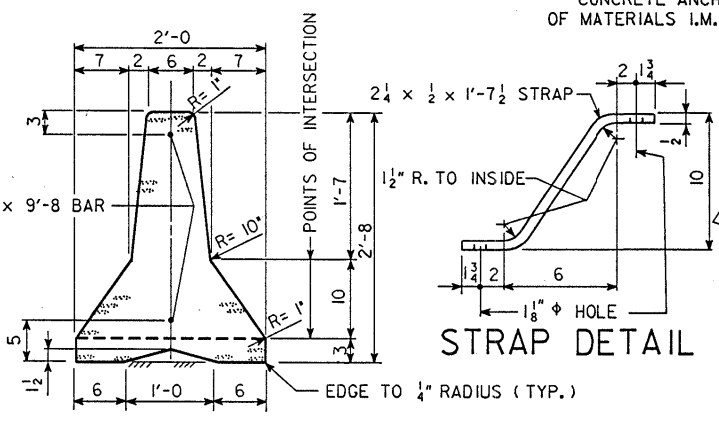
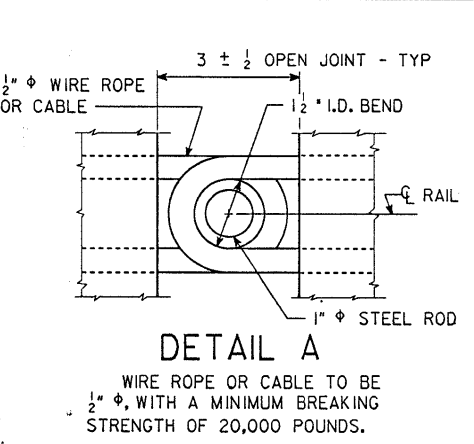


TEMPORARY CONCRETE BARRIER RAIL LAYOUT FOR TWO WAY TRAFFIC

NOTE: THE LAYOUT SHOWN IS FOR ONE STAGE OF CONSTRUCTION AND WOULD BE THE SAME FOR THE OTHER STAGE BY ROTATING 180°.

ESTIMATED QUANTITIES	
ITEM	AMOUNT
TEMPORARY BARRIER RAIL, FURNISH ONLY	460 L.F.
TEMPORARY BARRIER RAIL, PLACE ONLY	920 L.F.

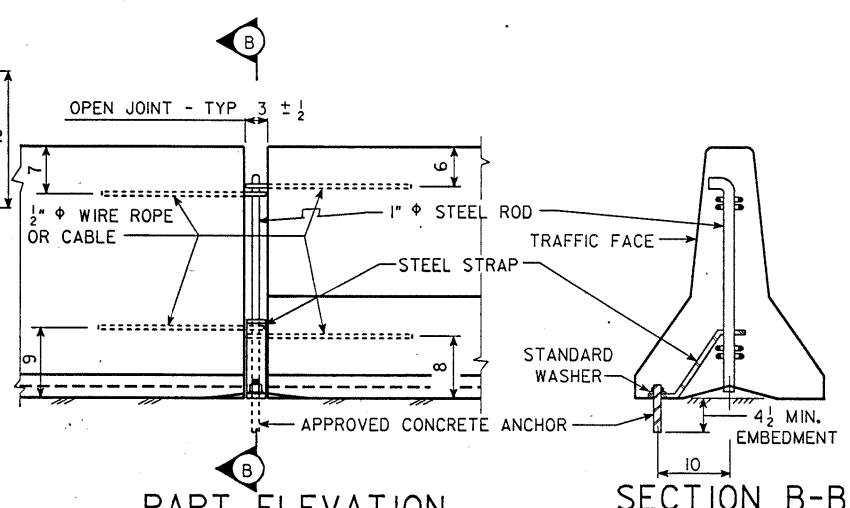
ITEM REFERENCE:
ALL TEMPORARY BARRIER RAIL SHALL BE NOMINAL 10' LONG CONCRETE UNITS.



SECTION A-A
CONTRACTOR MAY ADD EXTRA REINFORCING BARS TO INCREASE THE SERVICE LIFE OF THE RAIL SECTIONS.

SHOULDER WIDTH (S)	NO. OF BARRIER RAIL SECT. (N)	D
4 FT.	13	4 FT.
6 FT.	14	5.5 FT.
8 FT.	15	7 FT.
10 FT.	16	9 FT.

NOTE:
BARRIER IS TO BECOME THE PROPERTY OF THE CONTRACTOR AT THE COMPLETION OF WORK AND REMOVED FROM THE SITE BY THE CONTRACTOR.
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 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 "TEMPORARY BARRIER RAIL, PLACE ONLY".
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.
SHOULDER WIDTH AT THIS BRIDGE SITE IS 10 FEET, THEREFORE 16 CONCRETE BARRIER RAIL SECTIONS ARE REQUIRED FOR BRIDGE END "B".
SURFACE FINISH FOR TEMPORARY CONCRETE BARRIER RAIL SHALL BE IN ACCORDANCE WITH ARTICLE 2403.21B OF THE STANDARD SPECIFICATIONS.
ALL COSTS FOR TIE DOWNS SHALL BE INCLUDED IN THE PRICE BID FOR "TEMPORARY BARRIER RAIL, PLACE ONLY".
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 TEMPORARY BARRIER RAIL. CONCRETE ANCHORS ARE TO BE SET SO THAT THE ANCHORS CAN BE REMOVED AT LEAST 1 1/2" BELOW THE CONCRETE SURFACE AND THE REMAINING HOLE FILLED WITH A NEAT MIXTURE OF SAND-CEMENT GROUT. 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 3/4" ϕ AND AS OTHERWISE SPECIFIED IN CURRENT OFFICE OF MATERIALS I.M. 453.09 WITH A PULL-OUT STRENGTH OF 16,000 LBS. BASED ON 4,000 P.S.I. CONCRETE.



TEMPORARY BARRIER RAIL TIE DOWN DETAILS

DESIGN FOR REPAIRS TO 30° SKEW
80'-0" x 30' CONTINUOUS CONCRETE SLAB BRIDGE
24'-6" END SPANS 31'-0" CENTER SPAN
TEMPORARY BARRIER RAIL-CONCRETE
STATION: 236+40.00 JULY, 1994
POTTAWATTAMIE COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION
DESIGN SHEET NO. 5 OF 9 FILE NO. 28892 DESIGN NO. 2494

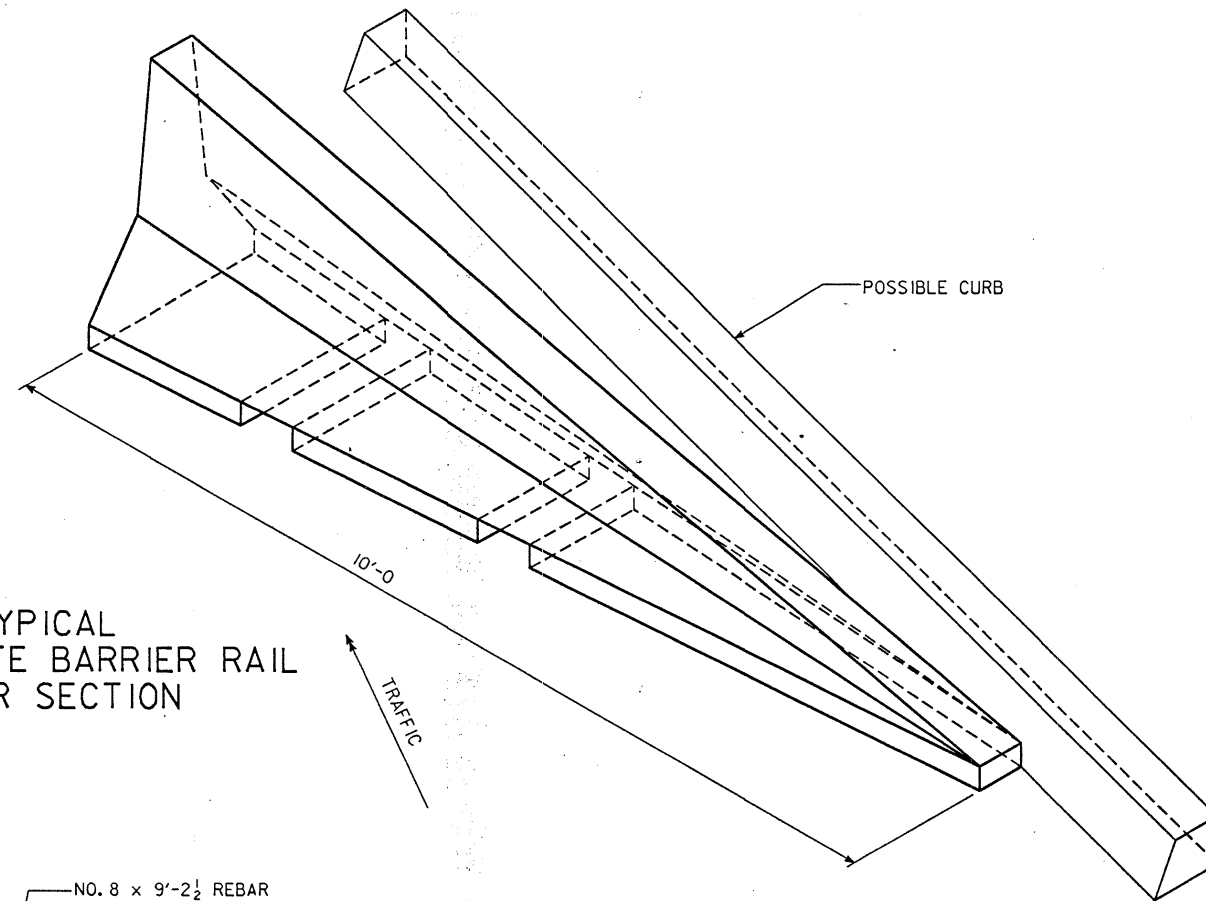
STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		13	23

GENERAL NOTES:

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

CONCRETE SHALL BE CLASS "D" STRUCTURAL CONCRETE PLACED AND FINISHED IN CONFORMANCE WITH CURRENT STANDARD SPECIFICATIONS FOR "STRUCTURAL CONCRETE". APPROXIMATELY 0.486 CU. YDS. OF CLASS "D" STRUCTURAL CONCRETE WILL BE REQUIRED FOR EACH TAPER SECTION.

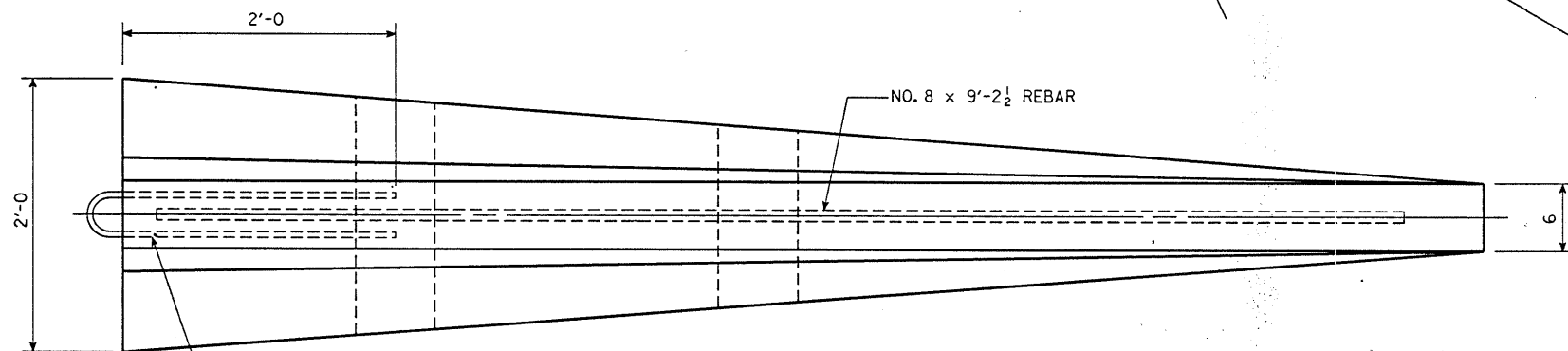
TYPICAL CONCRETE BARRIER RAIL TAPER SECTION



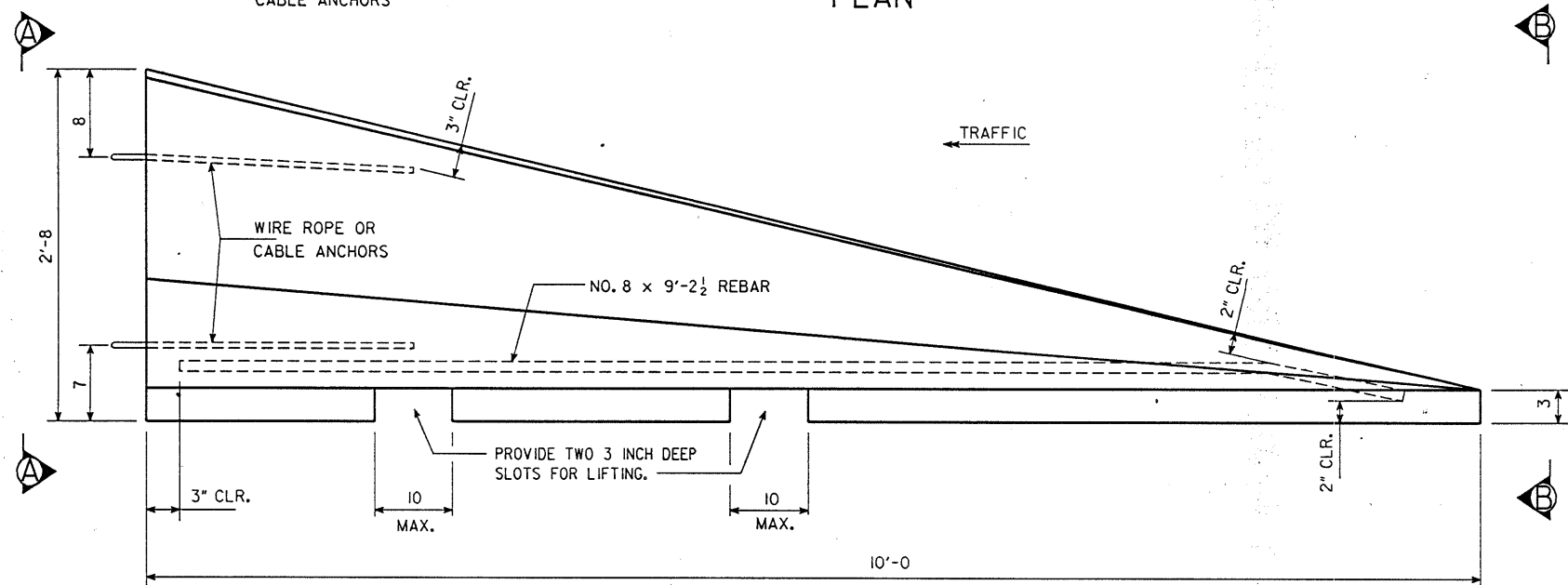
POSSIBLE CURB

10'-0"

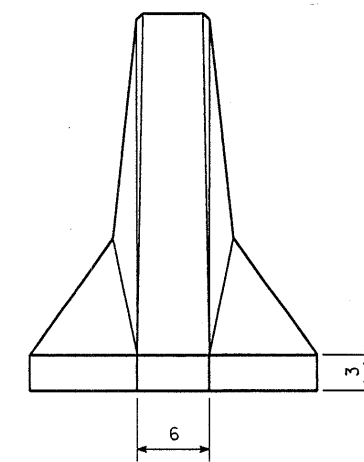
TRAFFIC



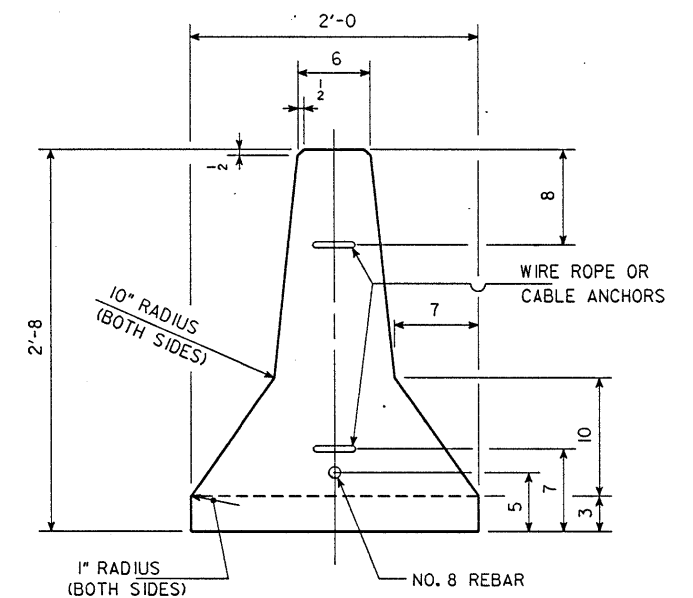
PLAN



SIDE ELEVATION



FRONT VIEW B-B



END VIEW A-A

DESIGN FOR REPAIRS TO 30° SKEW
80'-0" x 30' CONTINUOUS CONCRETE
SLAB BRIDGE
24'-6" END SPANS 31'-0" CENTER SPAN
CONCRETE BARRIER RAIL TAPER SECTION
STATION: 236+40.00 JULY, 1994
POTTAWATTAMIE COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION
DESIGN SHEET NO. 6 OF 9 FILE NO. 28892 DESIGN NO. 2494

HSTD1034B--GJP; THIS SHEET ISSUED, DEVICE: ZHAI200.5J ARCH. TAPE NO. 9 DATE 10-12-89
REVISED: 6-21-93 - LIFTING SLOT DETAILS CHANGED.

DESIGNED BY M. J. DUNN
CHECKED BY D. A. WRIGHT
DETAILED BY D. A. WRIGHT
CADD FILE h782494.s06

CONCRETE BARRIER RAIL TAPER SECTION

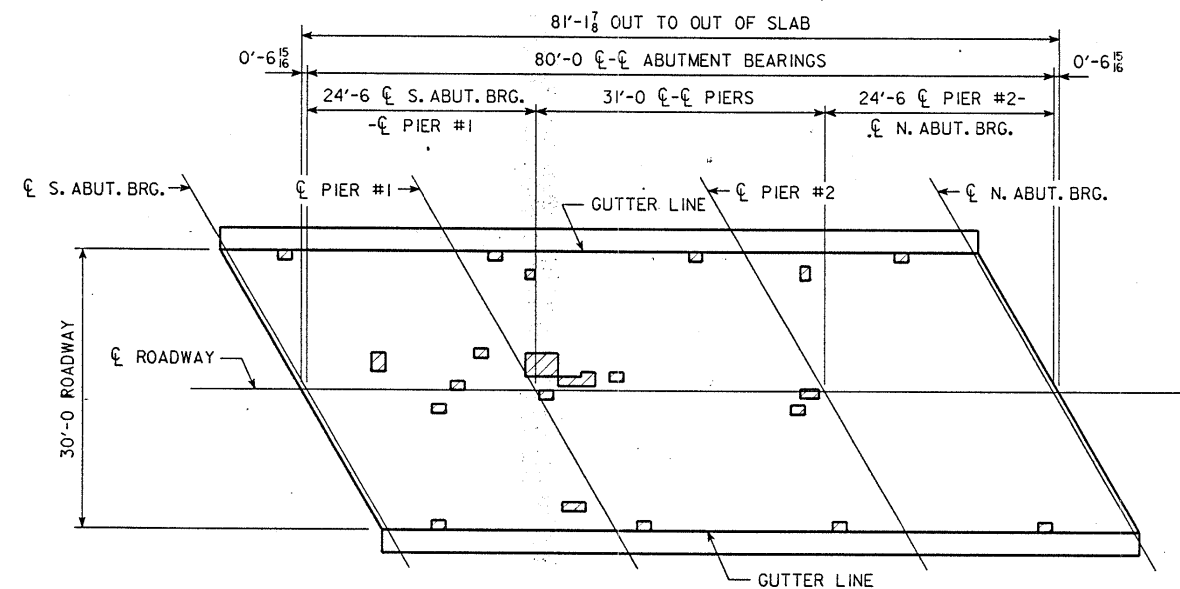
STANDARD 1034B

POTTAWATTAMIE COUNTY

PROJECT NUMBER

STATE	REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		14	23

SAVE SET DATE



SURVEY PLOT

NOTE: HATCHED PORTIONS REPRESENT AREAS WHICH HAVE SPALLS AND DELAMINATIONS. PLAN QUANTITY FOR CLASS "A" BRIDGE FLOOR REPAIR IS BASED ON THESE AREAS



DESIGN FOR REPAIRS TO 30° SKEW				
80'-0" x 30' CONTINUOUS CONCRETE SLAB BRIDGE				
24'-6" END SPANS		31'-0" CENTER SPAN		
SURVEY DATA				
STATION: 236+40.00		JULY, 1994		
POTTAWATTAMIE COUNTY				
IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION				
DESIGN SHEET NO. 7 OF 9		FILE NO. 28892		DESIGN NO. 2494
STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		15	23

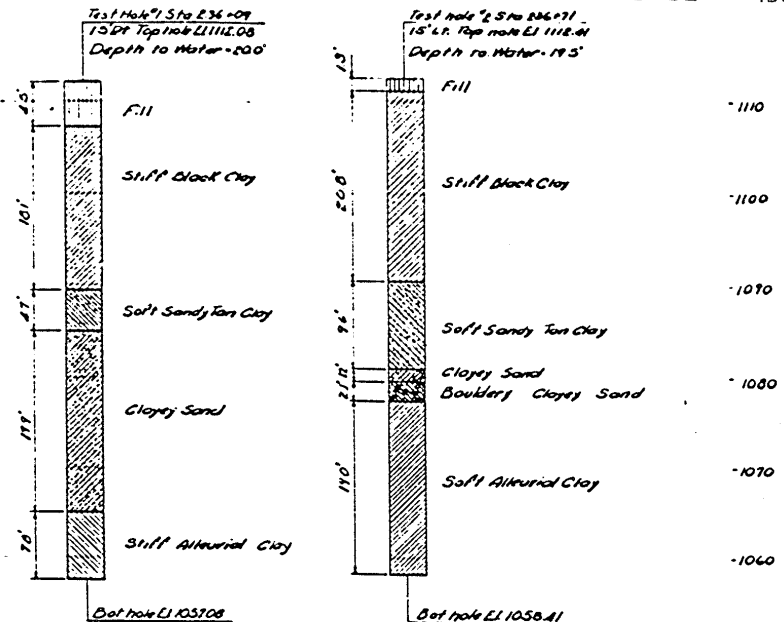
DESIGNED BY M. J. DUNN
 CHECKED BY *A. M. J. Dunn*
 DETAILED BY D. A. WRIGHT
 CADD FILE 1782494.S07

POTAWATTAMIE COUNTY

PROJECT NUMBER

SAVE SET DATE

BM #19A DOT BM in SE wing of bridge
Sta. 236+02 16.25 ft of E. Elev. --- 1115.630

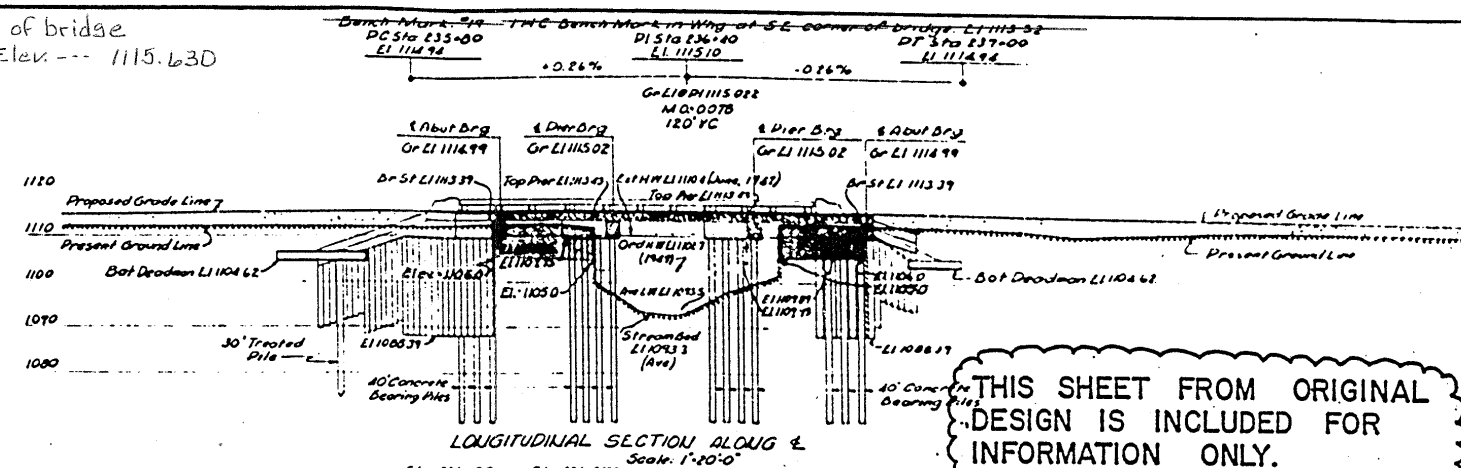


GENERAL NOTES

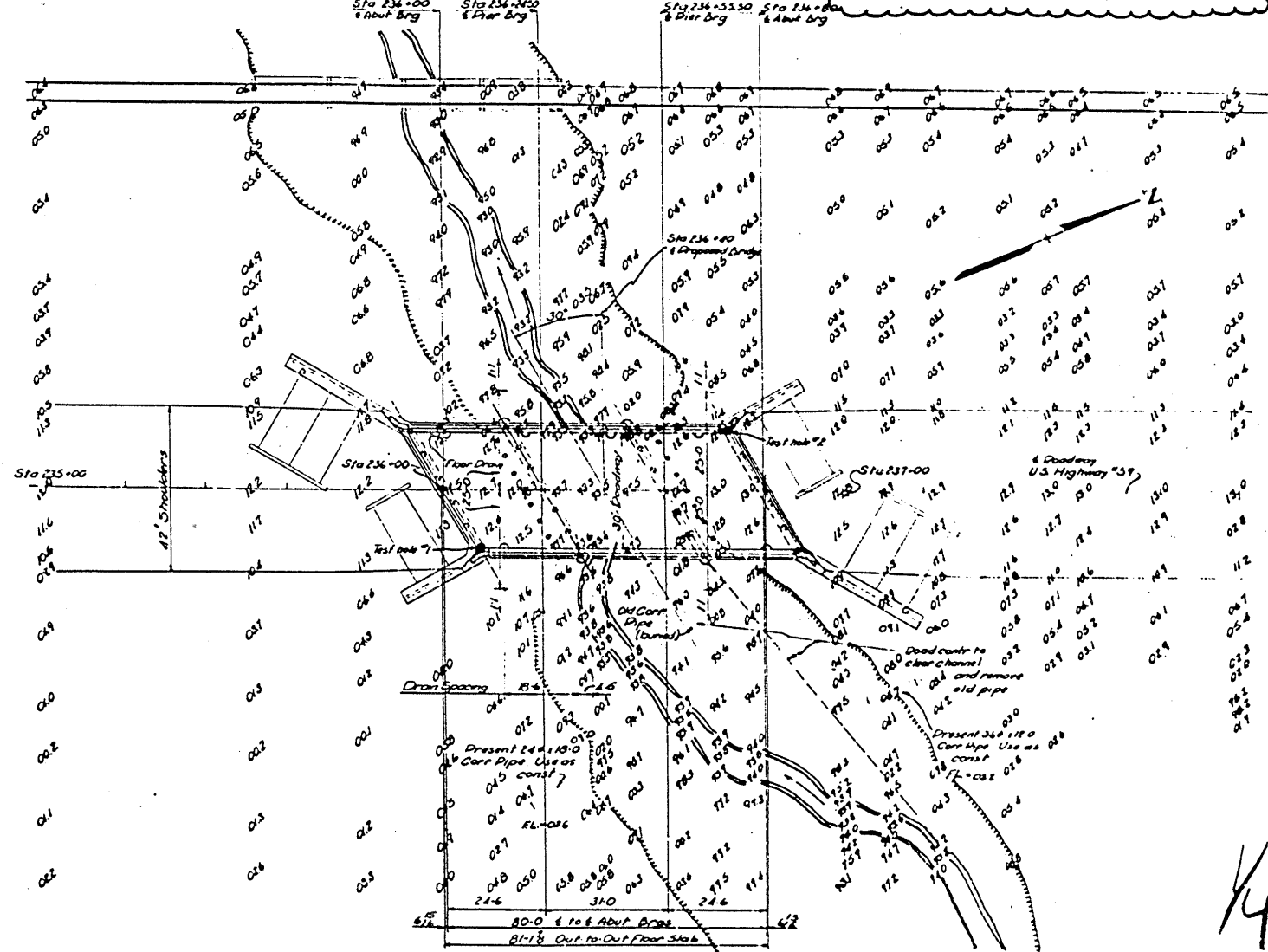
This bridge is designed for H20 loading plus an allowance of 17' of roadway for future wearing surface.
Bridge Contractor is to clear channel for a distance of 25' each side of roadway as shown in Situation Plan and by shaded areas in Longitudinal Section on 2.
Bridge Contractor to remove present bridge and pile material nearby, within 200' of site. Broken concrete to be dumped as bank protection at site as directed by Engineer. Superstructure to be removed for future erection as per Section 2401 of the Specifications. Wood Abutments to be removed to about EL 1094.0.
Dashed lines on tracing and faint lines on print indicate existing construction.
Deadman Backfill to be thoroughly tamped before any fill is placed against Abutment. Abutment not to be backfilled until Superstructure has attained required strength.

SPECIFICATIONS

Design: AASHO Specifications (1957) for H20-44 loading with modifications as noted on Sheet 4 of 4.
Construction: Standard Specifications of the Iowa State Highway Commission, Series of 1960.



THIS SHEET FROM ORIGINAL DESIGN IS INCLUDED FOR INFORMATION ONLY.



TOTAL ESTIMATED QUANTITIES				
Part	Super	2 Piers	2 Abut.	Total
Concrete	1699	22.8	64.4	2571 cu yd
Reinforcing steel	26515	1100	3750	31365 lbs
Structural Steel			1486	1486 lbs
Precast Concrete or Union Metal Arch Piles			14840'	14840'
Concrete Sheet Piles			3790	3790 cu yd
Treated Piles			2030	60 LF
Cl. 20 Lacer			193	193 cu yd
Cl. 20 Lacer (Channel Excav)				576 cu yd
Removal of old Bridge				Lump Sum

DESIGN NO. 2474
FILE NO. 78892
DES. SH. NO. 8 OF 9

Location
Over a Creek
Section 10
Hobby Township
Pottawattamie County

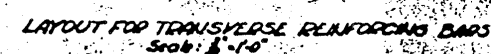
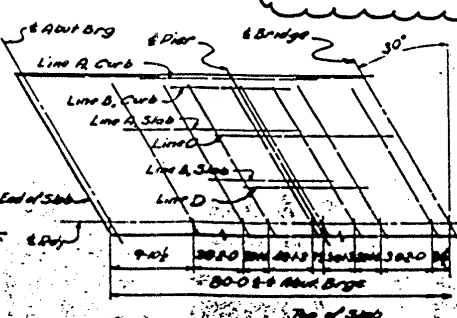
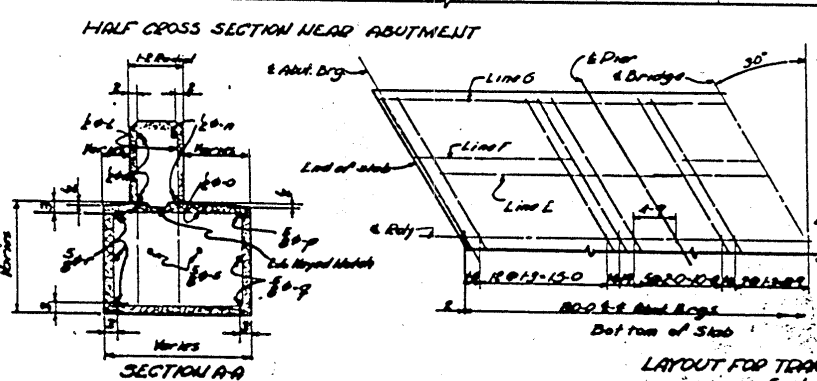
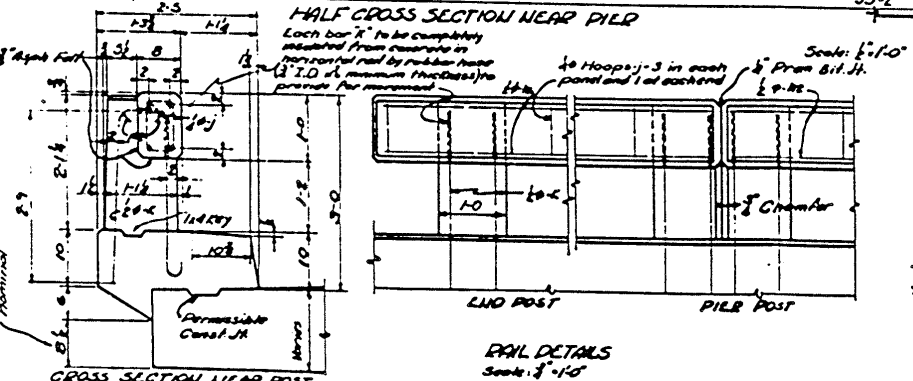
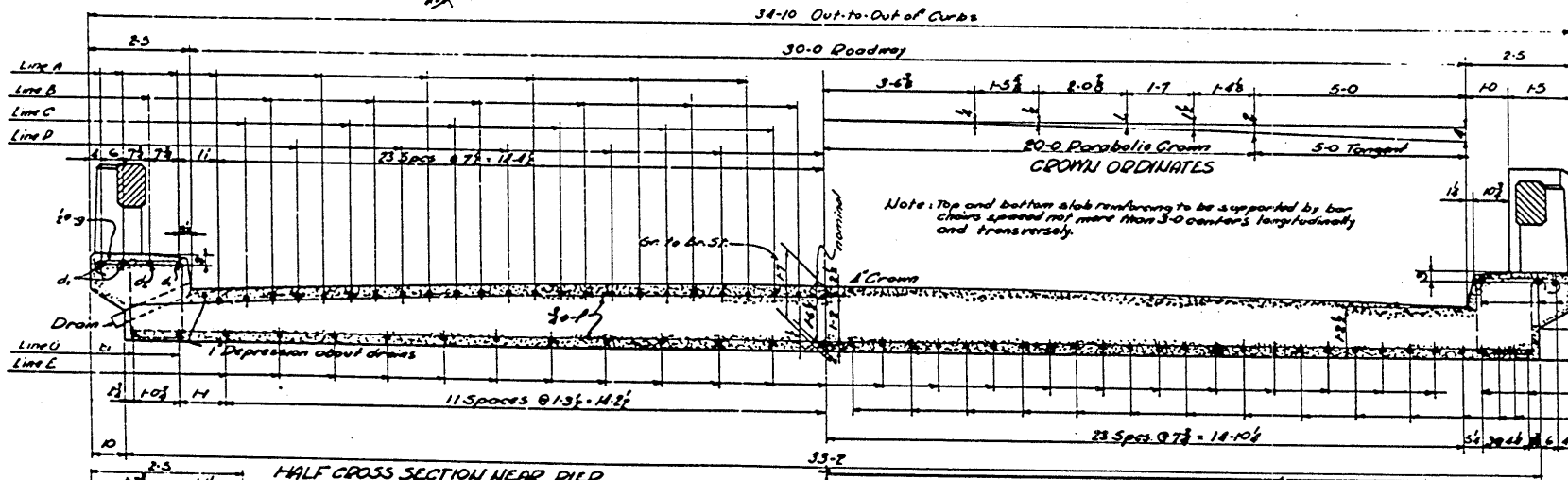
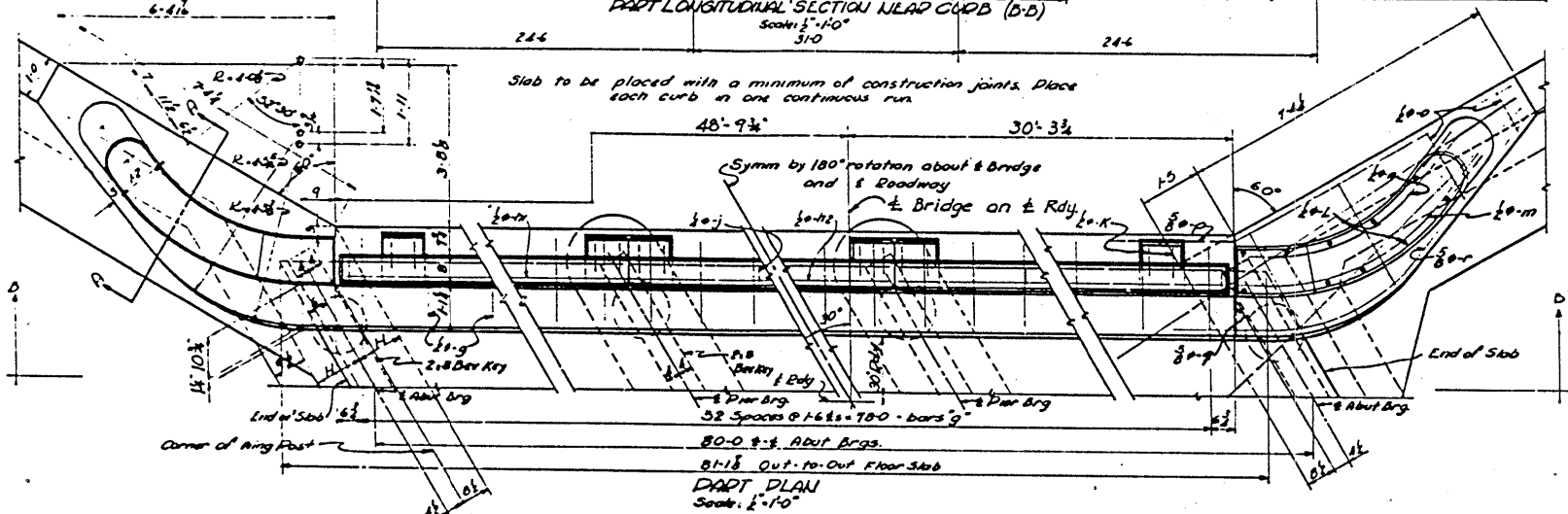
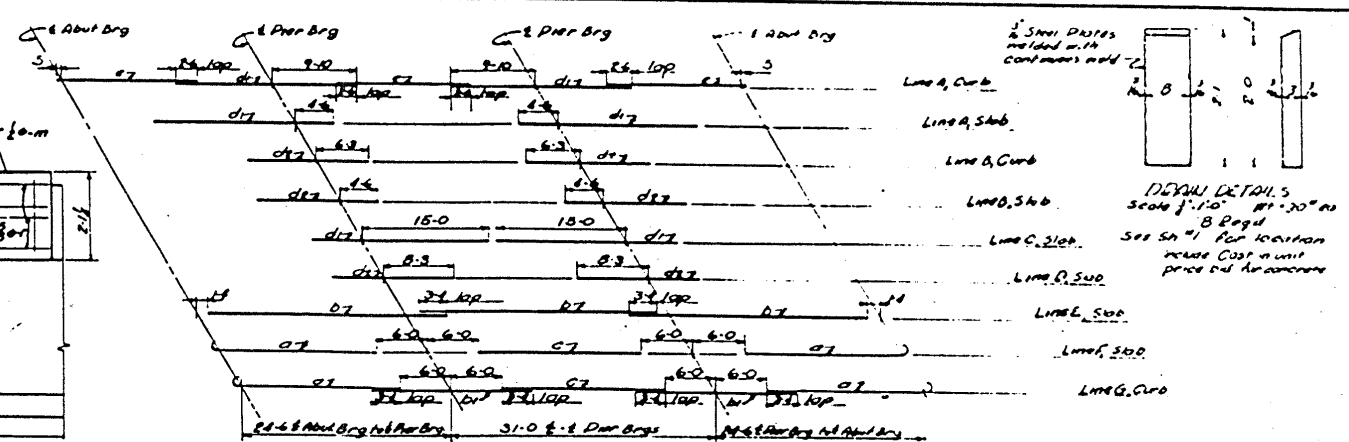
Design for 30' Skew
80'x30' CONTINUOUS CONCRETE SLAB BRIDGE

340 Center Span
Concrete Floor and Substructure
244 End Spans
Concrete Pile
GENERAL AND SITUATION PLANS
Station 236+00
POTTAWATTAMIE COUNTY
Project F-554
October 1950
State Highway Commission
Sheet 1 of 4

Design 4550 Pottawattamie County File 14712

All Quantities by Nilling and Pickett

Designed by J.W.P. Checked by: E.J. 12-50.



REINFORCING STEEL		SCHEDULE				
Location	Shape	More	No	Size	Length	Weight
Slab Bottom Long		a	68	#8	17.0	1380
Do		b	64	#8	28.0	6569
Do		c	52	#8	19.0	1623
Slab and Curb Top Long		d	60	#8	21.0	2204
Do		e	50	#8	14.3	2423
Curbs Top Long		f	18	#8	10.4	4482
Slab Trans Top and Burt		g	95	#8	38.0	3422
Curb Hoops		h	100	#8	7.7	537
Do Long. End Spans		i	16	#8	23.8	253
Do Corner Spans		j	8	#8	30.8	164
Doil Hoops		k	64	#8	2.9	29
Doil Doils		L	52	#8	7.4	253
Wing Post Bent		M	48	#8	3.6	112
Do BFN		n	8	#8	6.4	34
Do CFN		o	8	#8	5.7	30
Doil Base Hoops		p	16	#8	Varies	46
Do Horiz		q	4	#8	10.0	42
Do		r	8	#8	9.3	77
Do		s	12	#8	10.6	151
Do		t	8	#8	4.8	97
Curb Bottom		u	8	#8	18.8	508
Total						26,515 lb

CONCRETE PLACEMENT QUANTITIES	
Slab	1435 cuyd
Curbs and End Post Bases	18 cuyd
Rail Posts and Wing Posts	22 cuyd
Rails	36 cuyd

ESTIMATED QUANTITIES - SUPER	
Reinforcing Steel	26,215 lbs
Concrete (CY @')	1619 cu yd
Concrete (CY @')	80 cu yd

THIS SHEET FROM ORIGINAL
DESIGN IS INCLUDED FOR
INFORMATION ONLY.

DESIGN NO. 2494
FILE NO. 28892
DES. SH. NO. 9 OF 9

80'.30' CONTINUOUS CONCRETE SLAB
BRIDGE

3-0 Center Span
Concrete Floor and Substructure
24-6 End Spans
Concrete Deck

SUPERSTRUCTURE DETAILS

Stationing 026+00 Project F-534

DOT/DARTMOUTH COUNTY

Issued State Highway Commission
October 1980 Sheet 2 of 2

Drakon 4530 - DeKalb County File 14712

Original by JAW Enclosed by F. J. [unclear]

108-8A
01-07-92

01-07-92

107-23

10-22-93

① Not a bid item

112-6

06-07-94

108-17

04-28-92

108-27

Modified

REMOVAL OF PAVEMENT

110-1

07-21-87

108-28

Modified

AREAS OF SHOULDER STRENGTHENING ☐

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

106-5

Modified

DESIGN NO. 1494
FILE NO. 28892

DESIGN NO. 2494
FILE NO. 28892