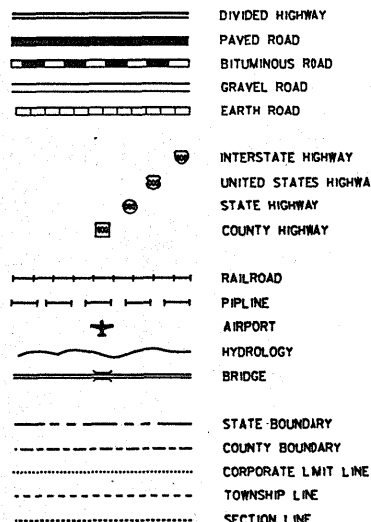
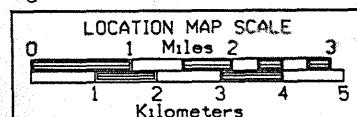
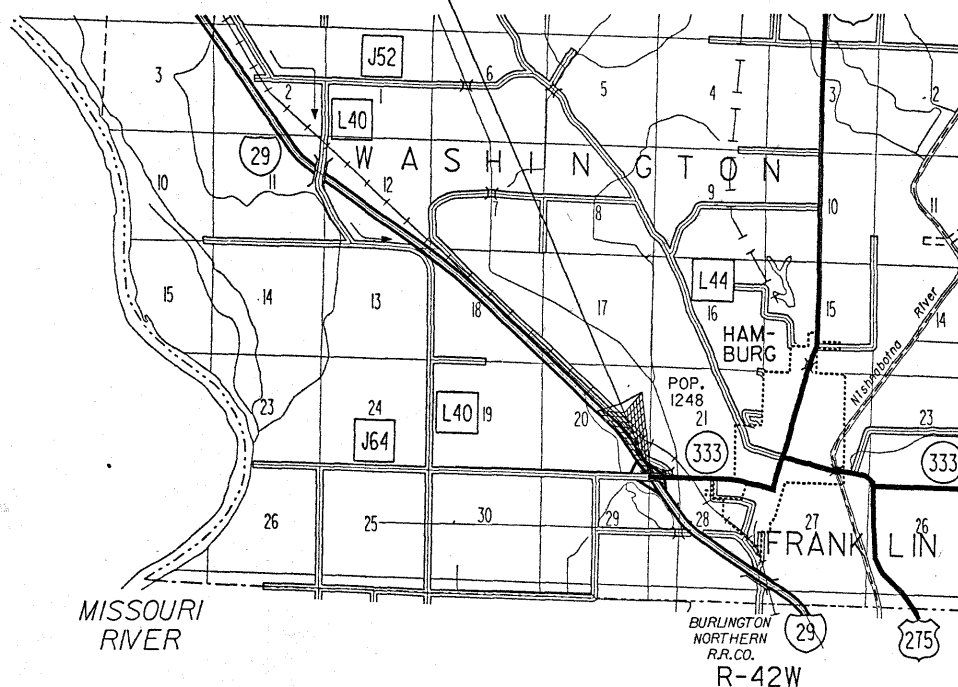


FREMONT COUNTY

CONVENTIONAL SIGNS



DESIGN NO. 295



IOWA

DEPARTMENT OF TRANSPORTATION

Project Development Division

PLANS OF PROPOSED IMPROVEMENTS ON THE

PRIMARY ROAD SYSTEM

FREMONT COUNTY

BRIDGE DECK OVERLAY

ON 1A 333

OVER 1-29

SCALES: 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)

101-4

DESIGN DATA RURAL

1995 AADT	<u>1740</u>	V.P.D.
201 AADT	<u> </u>	V.P.D.
201 DHV	<u> </u>	V.P.H.
TRUCKS	<u>7</u>	%
ESALs per day	<u> </u>	

VALUE ENGINEERING SAVES

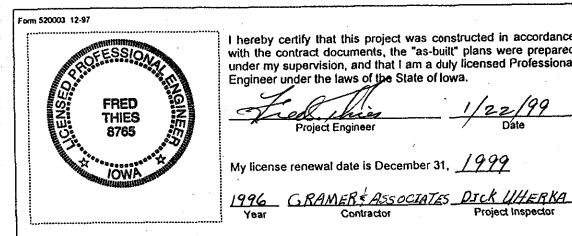
REFER TO THE GENERAL NOTES ON SHEET 4 OF 17

STANDARD ROAD PLANS

IDENT	DATE	IDENT	DATE
RE-2A	10-31-95	RH-50	3-26-96
RE-2B	10-22-93	RH-51	12-8-95
RE-7	12-8-95	RH-52	6-7-96
RE-12A	11-10-88	RL-14	3-26-96
RE-12B	1-9-90	RS-2	6-15-96
RE-47	11-10-87	RS-3	2-23-96
RE-48A	12-8-95	RS-5A	10-22-96
RE-65	10-31-95		
RE-68	8-8-89		
RE-69	10-22-93		
RE-70 (1)	3-26-96		
RG-1	11-10-92		
RG-8	11-10-92		
RK-17	11-10-92		
RE-70(2)	3-26-96		
RE-70(3)	10-31-95		

STANDARD BRIDGE
PLANS

STANDARD	ISSUED	REVISED



T-67N

REVISIONS



**Iowa Department
of Transportation**
PROJECT DEVELOPMENT DIVISION

AUTHORIZED FOR LETTING

William A. Zundt 1/9/90
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 12-28-93

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED

FOR THE DIVISION ADMINISTRATOR DATE

SHEET NO. 1

LETTING DATE 03-26-96

STATE CONTROL SECTION NUMBER 36-1610

FILE NO. 29029

FREMONT COUNTY PROJECT NO. BRFN-333-1(24)--39-36

3-26-96 GJP 295 FREMONT (ABRAMS)
CADD FILE:h360295.S00

ESTIMATED ROADWAY QUANTITIES					
100-0A 03-29-94					
CONSTRUCTION USE ONLY	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
22	2102-2625000	EMBANKMENT-IN-PLACE	CY	200	200.000
23	2121-7425020	GRANULAR SHOULDERS, TYPE B	TON	6	6.000
24	2122-7451000	SHOULDER STRENGTHENING, OPTIONAL A.C.C. OR P.C.C., 8 IN.	SY	267	266.800
25	2213-2713300	EXCAVATION, CLASS 13, FOR WIDENING	CY	60	60.000
26	2413-0698071	BRIDGE FLOOR OVERLAY	SY	374	434.668
27	2413-0698072	BRIDGE FLOOR REPAIR, CLASS A	SY	54	74.664
28	2505-4020170	GUARDRAIL, END ANCHORAGE, BEAM, RE-70	EACH	4	4.000
29	2505-4020250	GUARDRAIL, FORMED STEEL BEAM	LF	250	250.000
30	2505-4020251	GUARDRAIL, FORMED STEEL THRIE BEAM	LF	125	125.000
31	2505-4020400	GUARDRAIL, POSTS, BEAM	EACH	60	60.000
32	2505-4021690	GUARDRAIL, END ANCHORAGE, BEAM, RE-69	EACH	4	4.000
33	2505-6745740	REMOVAL OF GUARDRAIL END ANCHORAGE	EACH	4	4.000
34	2505-6745749	REMOVAL OF GUARDRAIL	LF	250	250.000
35	2505-6745855	REMOVAL OF POSTS	EACH	52	52.000
36	2524-9220020	OBJECT MARKER, TYPE 2	EACH	12	12.000
37	2524-9220030	OBJECT MARKER, TYPE 3	EACH	4	4.000
38	2527-9263110	PAINTED PAVEMENT MARKING	STA.	79	43.140
39	2527-9263130	REMOVABLE TAPE MARKING	STA.	4	5.170
40	2527-9263180	PAVEMENT MARKING REMOVED	STA.	19	14.440
41	2528-8400157	TEMPORARY FLOODLIGHTING LUMINAIRE	EACH	2	2.000
42	2528-8400256	TEMPORARY TRAFFIC SIGNALS	EACH	1	1.000
43	2528-8445110	TRAFFIC CONTROL	LS	1	2800.000
44	2528-8445112	FLAGGERS	DAY	5	4.000
8001		SPACER BLOCK ASSEMBLY FOR GUARDRAIL	EACH		12.000

03-28-95232-3

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.

108-2608-30-88

STAGING NOTES

Shoulder strengthening is intended to be placed only on one side of the road for the first stage. The other half of the shoulder strengthening is to be placed to the final elevation of the new pavement.

STANDARD ROAD PLANS					
105-4 06-17-77					
The following Standard Road Plans shall be considered applicable to construction work on this project.					
NUMBER	DATE	NUMBER	DATE	NUMBER	DATE
RE-2A	10-31-95	RE-65	10-31-95	RH-50	03-26-96
RE-2B	10-22-93	RE-68	08-08-89	RH-51	12-08-95
RE-7	12-08-95	RE-69	10-22-93	RH-52	06-07-94
RE-12A	10-11-88	RE-70 (1)	03-26-96	RL-14	3-26-96
RE-12B	01-09-90	RG-1	11-10-92	RS-2	06-15-93
RE-47	11-10-87	RG-8	11-10-92	RS-3	02-23-93
RE-48A	12-08-95	RK-17	11-10-92	RS-5A	10-22-93
		RE-70(2)	3-26-96		
		RE-70(3)	10-31-95		

10-31-95101-4	
DESIGN DATA RURAL	
1995 AADT	1740 V.P.D.
20 AADT	V.P.D.
20 DHV	V.P.H.
TRUCKS	7 %
ESALs per day	

DESIGN NO. 295
FILE NO. 29029

ESTIMATE REFERENCE INFORMATION	
100-4 03-29-94	
Data listed below is for informational purpose only and shall not constitute a basis for any extra work orders.	
ITEM CODE	DESCRIPTION
2102-2625000	A. See Tab. 107-23. B. Approved material to be obtained by the contractor outside of existing right-of-way. C. No payment for overhaul will be allowed.
2121-7425020	Item is for placement on 6' Shoulders adjacent to the RK-17 Bridge Approach pavement.
2122-7451000	A. See Tab. 106-5 for locations and dimensions. B. See Tab. 108-26 for suggested staging. C. See Standard Road Plans RG-1 and RG-8 for method of construction. D. This work will be measured and paid for at the contract price per square yard. Asphalt cement primer or tack coat bitumen, and joint construction shall be considered incidental to the price bid. Roughness pattern is not required. E. Any ACC material needed to match new elevation of the bridge approach will be incidental to the price bid.
2213-2713300	A. See Tab. 106-5 for locations. B. Dispose of excess excavated material as per Standard Notes 213-1 and 213-7.
2413-0698071	A. See Standard Road Plan RK-17.
2413-0698072	B. Special shaping required at existing shoulder drain intakes on all four corners.
2505-4020170	A. See Tab. 108-8A.
2505-4020250	
2505-4020251	
2505-4020400	
2505-4021690	
2505-6745740	See Tab. 110-7A. Dispose of as per Standard Note 213-1.
2505-6745749	
2505-6745855	
2524-9220020	A. See tab. 108-17.
2524-9220030	B. Removal of existing object markers and posts to be incidental. Dispose of as per Standard Note 213-1.
2527-9263110	See Tab. 108-22.
2527-9263130	
2527-9263180	
2528-8400157	See Tab. 108-27, Standard Road Plan RS-5A, and Detail Sheet 570-2.
2528-8400256	See Tab. 108-28 and Standard Road Plan RS-5A.

TRAFFIC CONTROL PLAN	
108-23 04-04-89	
- Through traffic will be maintained on the project at all times. - Traffic control on this project shall be found in accordance with the RS series of Standard Road Plans and/or appropriate Detail Sheets included in the plans. For additional complementary information, refer to Part VI of the Manual on Uniform Traffic Devices and current Standard Specifications. - All traffic control devices shall be furnished, erected, maintained and removed by the contractor. - Article 2528.12 of the Standard Specifications requires maintenance of all traffic control devices, including maintenance of the devices during nonworking hours, in order to assure proper operation. - Where possible, all post-mounted signs shall be placed at least 2 feet beyond the curb or edge of the shoulder. - The location for storage of equipment by the contractor during non-working hours shall be approved by the engineer in charge of construction. - The engineer may require modifications of pavement marking details shown. Conflicting permanent edge lines, center lines and lane lines shall be removed. As applicable, permanent edge lines, center lines, and lane lines shall be placed before the roadway is returned to traffic. The current Standard Specifications and supplemental specifications shall apply. - 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. - Permanent signing that conveys a message contrary to the message of the temporary signing and is not applicable to the working conditions shall be covered by the contractor when directed by the engineer. - Proposed changes in the traffic control plan shall be reviewed with the Office of Construction before changes are made. - The bid item 'Traffic Control' shall include the cost for all traffic control measures required of the contractor except for those which are separate bid items or are incidental to other bid items.	

ROADWAY DESIGN

JOHN R. ABRAMS
7229

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 John R. Abrams
Iowa Registration No. 7229 Date _____

GENERAL NOTES:

THIS DESIGN IS FOR REPAIR TO THE EXISTING 328'-0x32' CONTINUOUS WELDED GIRDER BRIDGE, ORIGINAL DESIGN 969 FREMONT COUNTY. PLAN DETAILS OF THE ORIGINAL STRUCTURE AND PREVIOUS REPAIRS NOT INCLUDED IN THESE PLANS MAY BE OBTAINED AT THE AMES OFFICE OF THE IOWA DEPARTMENT OF TRANSPORTATION-PROJECT DEVELOPEMENT DIVISION. REPAIRS SHALL CONSIST OF THE FOLLOWING:

1. BRIDGE FLOOR REPAIR
2. BRIDGE FLOOR OVERLAY
3. CONCRETE SEALER
4. ADD RAISE PLATES TO THE EXISTING EXPANSION DEVICE
5. PLACEMENT OF CAST-IN-PLACE BARRIER RAILS

PLAN QUANTITY OF FLOOR REPAIR IS BASED 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 8 $\frac{3}{8}$ INCHES. THE CONTRACTOR SHALL EXERCISE EXTREME CARE IN REMOVING CONCRETE IN ORDER TO PREVENT UNNECESSARY UNBONDING OF REINFORCING STEEL.

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

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.

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

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.

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 BY THE BRIDGE CONTRACTOR AT NO EXTRA COST TO THE STATE.

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 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. THIS WORK SHALL BE MEASURED AND PAID FOR AT THE CONTRACT UNIT PRICE PER LUMP SUM FOR THE BID ITEM "CLEANING AND PAINTING STRUCTURAL STEEL".

A SCRAPE SAMPLE WAS TAKEN FROM ONE AREA OF THIS BRIDGE TO GET AN INDICATION OF THE EXISTENCE OF THE LEVEL OF TOTAL CHROMIUM AND TOTAL LEAD. ANALYSIS OF TOTAL LEAD ON THIS SAMPLE WAS 3980 PARTS PER MILLION (PPM). ANALYSIS OF TOTAL CHROMIUM ON THIS SAMPLE WAS 1500 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 TESTING AND ANALYSIS FOR ANY PURPOSE OTHER THAN AS AN INDICATION OF THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS.

CONTAINMENT OF WASTE SHALL BE IN ACCORDANCE WITH CURRENT SUPPLEMENTAL SPECIFICATIONS FOR "ENVIRONMENTAL PROTECTION FOR REMOVAL OF NON HAZARDOUS PAINT".

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

PAINT REMOVAL WASTE MATERIAL SHALL BE DELIVERED TO THE DOT CENTRAL COMPLEX EAST OF THE SIGN SHOP ON SOUTH 4TH ST. 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 "CONTAINMENT". PREDELIVERY 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 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.

DESIGN FOR REPAIRS TO 35°16'19.32" SKEW R. A.

328'-0x32' CONTINUOUS WELDED GIRDER BRIDGE

56'-0 END SPANS 108'-0 INTERIOR SPANS

GENERAL NOTES

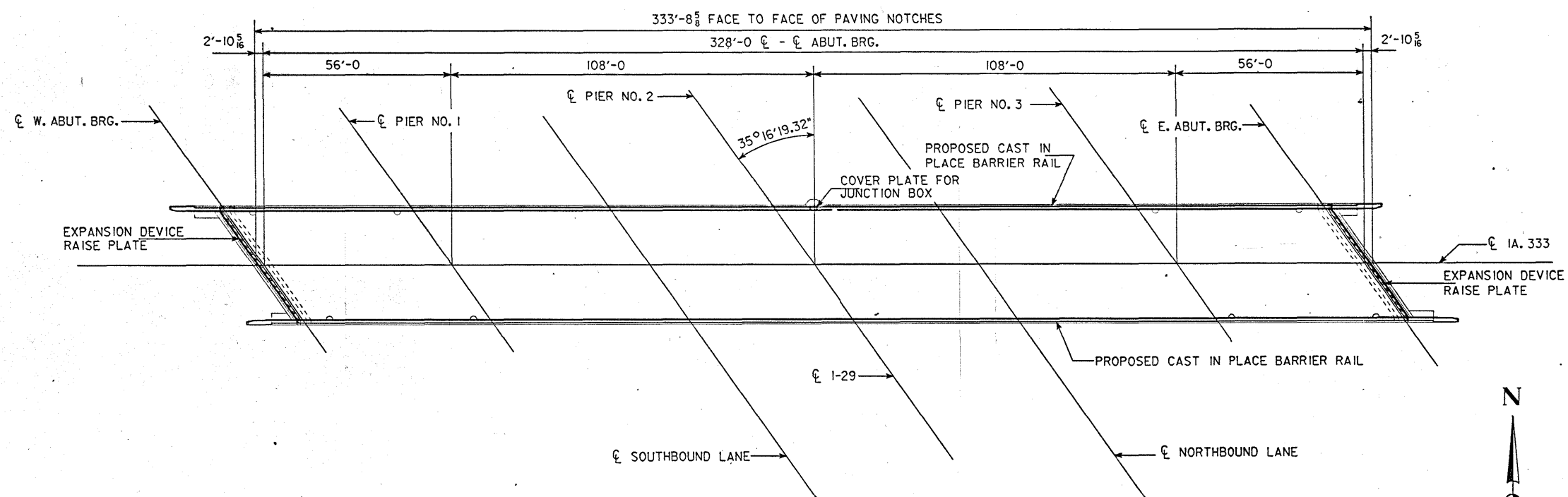
STATION: 105+33.04 1-29
STATION: 1105+29.74 1A. 333

NOVEMBER, 1995

FREMONT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION

DESIGN SHEET NO. 2 OF 12 FILE NO. 29029 DESIGN NO. 295



SITUATION PLAN

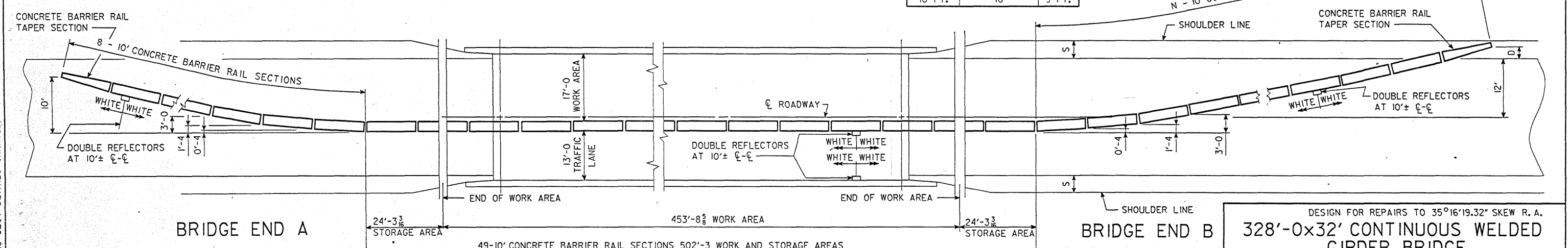
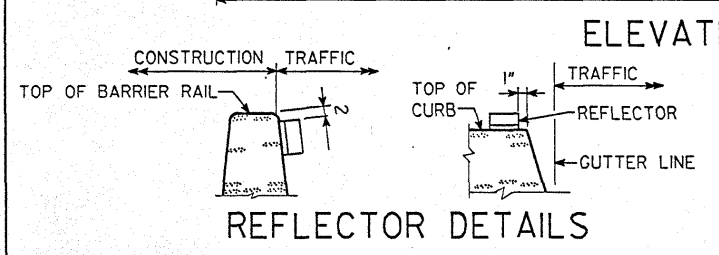
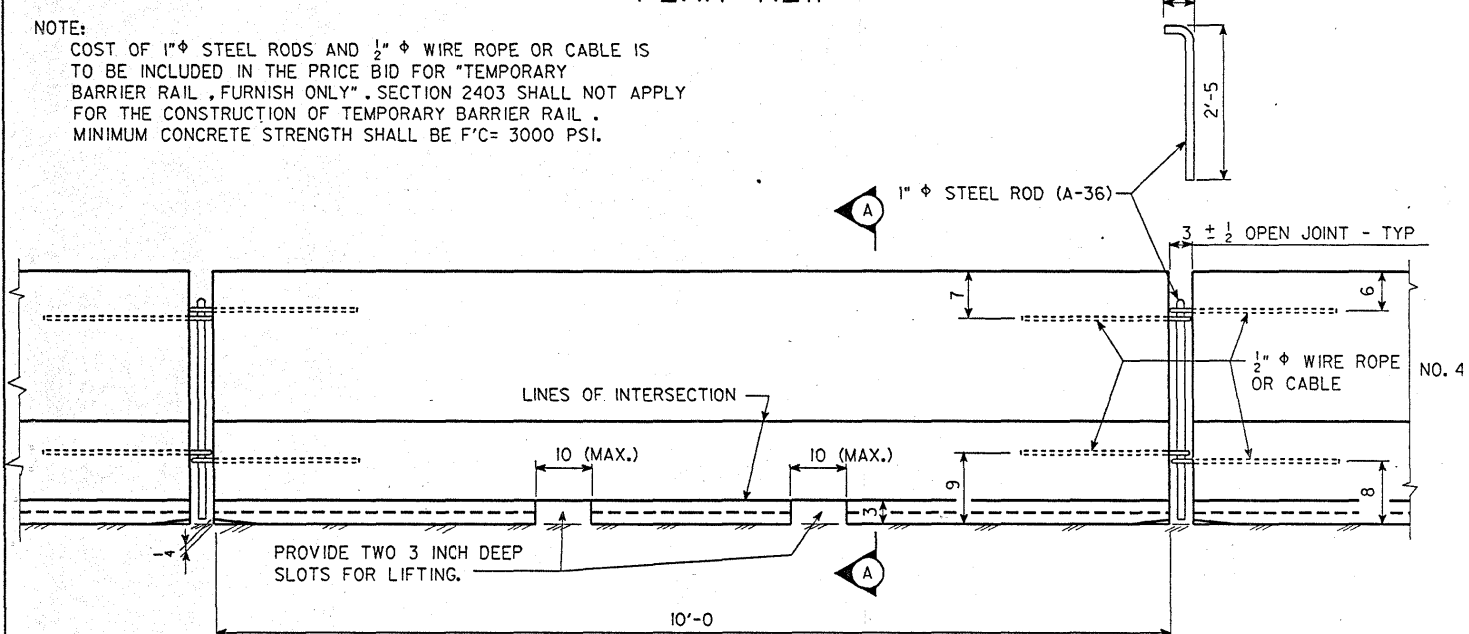
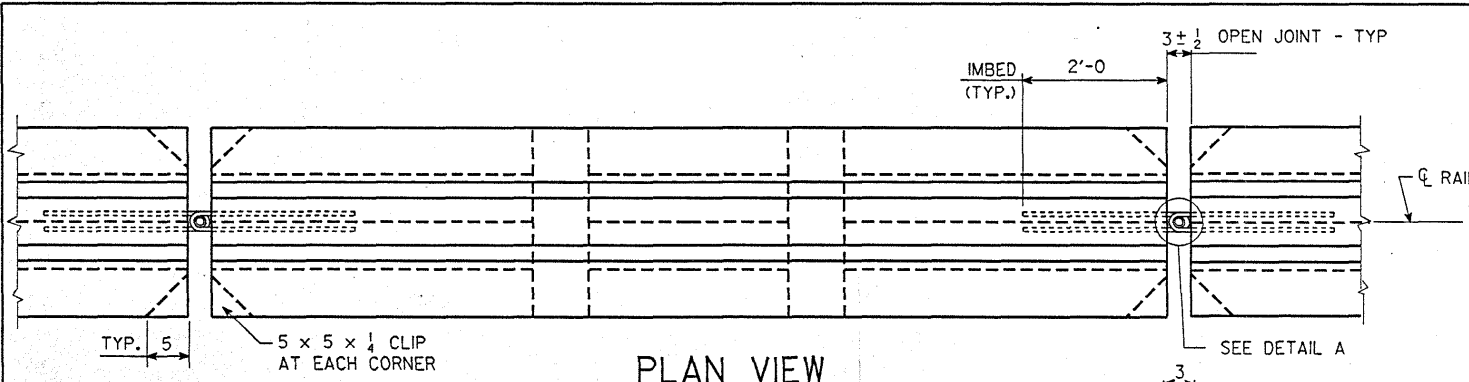
DESIGN FOR REPAIRS TO 35°16'19.32" SKEW R. A.
328'-0x32' CONTINUOUS WELDED GIRDER BRIDGE
 56'-0 END SPANS 108'-0 INTERIOR SPANS
SITUATION PLAN
 STATION: 105+33.04 I-29
 STATION: 1105+29.74 IA. 333
FREMONT COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION
 DESIGN SHEET NO. 3 OF 12 FILE NO. 29029 DESIGN NO. 295

DESIGNED BY R. J. MEYER CHECKED BY M. E. KHODA
 DETAILED BY E. W. OGAWA CADD FILE h360295.s03

FREMONT COUNTY

PROJECT NUMBER

STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		5	77



BRIDGE END A

24'-3 3/16 STORAGE AREA

453'-8 5/8 WORK AREA

24'-3 3/16 STORAGE AREA

BRIDGE END B

24'-3 3/16 STORAGE AREA

49'-10' CONCRETE BARRIER RAIL SECTIONS 502'-3 WORK AND STORAGE AREAS

TEMPORARY CONCRETE BARRIER RAIL LAYOUT FOR TWO WAY TRAFFIC

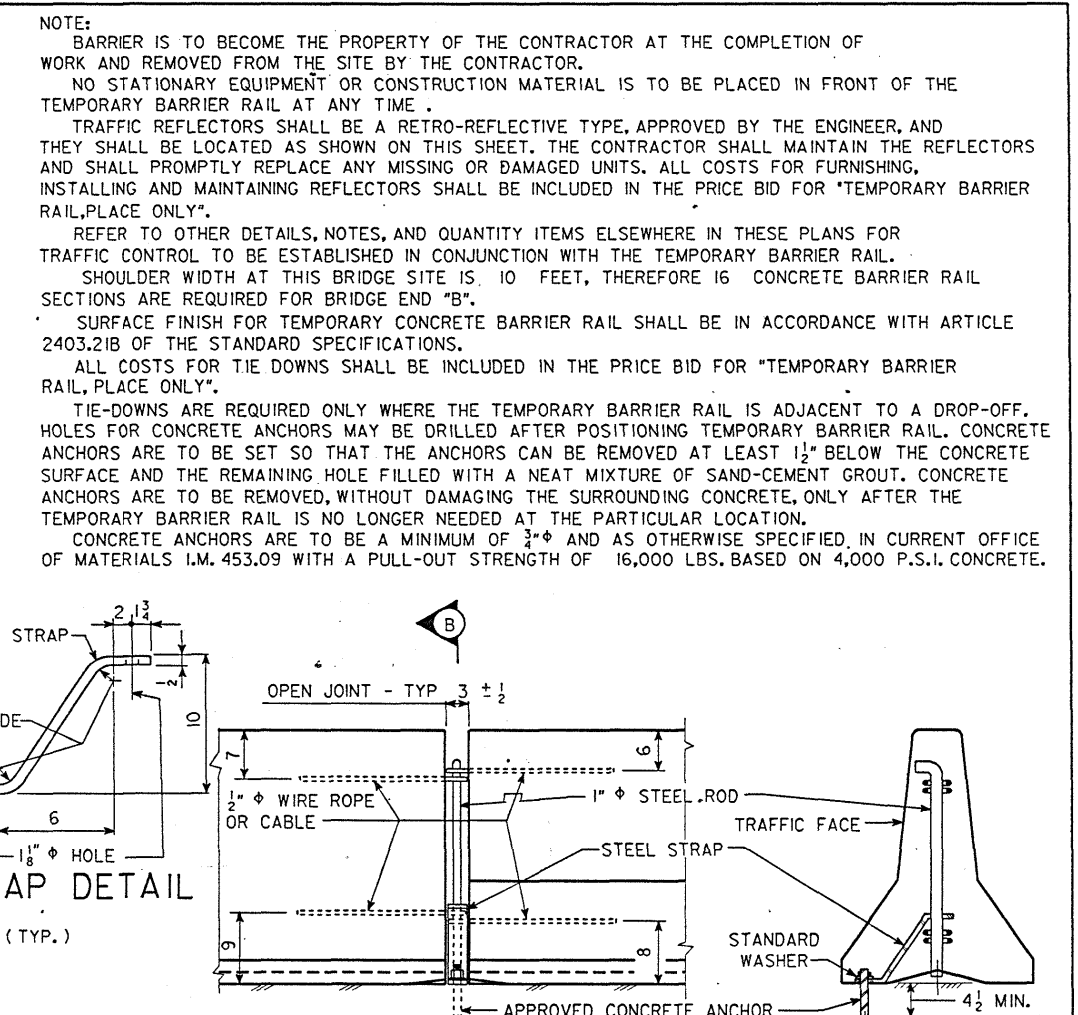
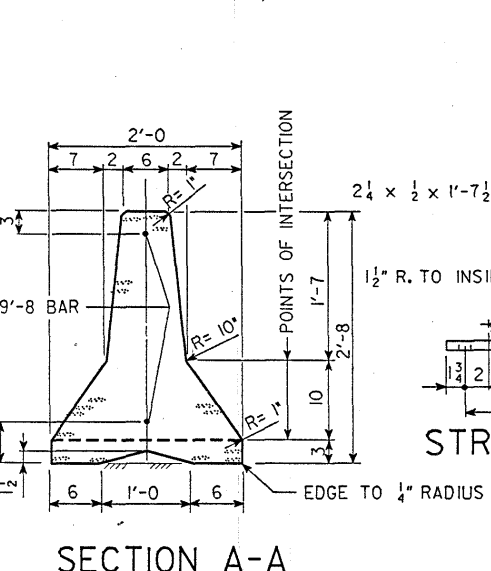
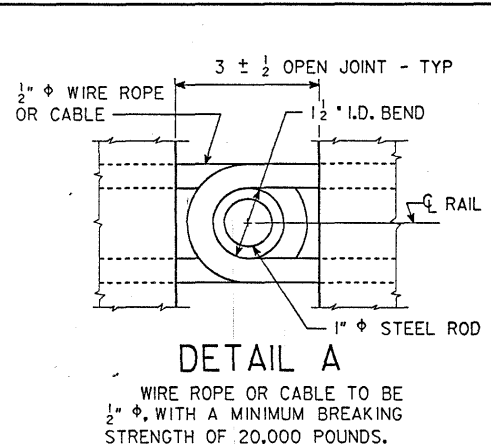
NOTE: THE LAYOUT SHOWN IS FOR ONE STAGE OF CONSTRUCTION AND WOULD BE THE SAME FOR THE OTHER STAGE BY ROTATING 180°.

DESIGNED BY R. J. MEYER
CHECKED BY M. E. KHODA
DETAILED BY E. W. OGAWA

TEMPORARY BARRIER RAIL, FURNISH ONLY 730 L.F.
TEMPORARY BARRIER RAIL, PLACE ONLY 1460 L.F.

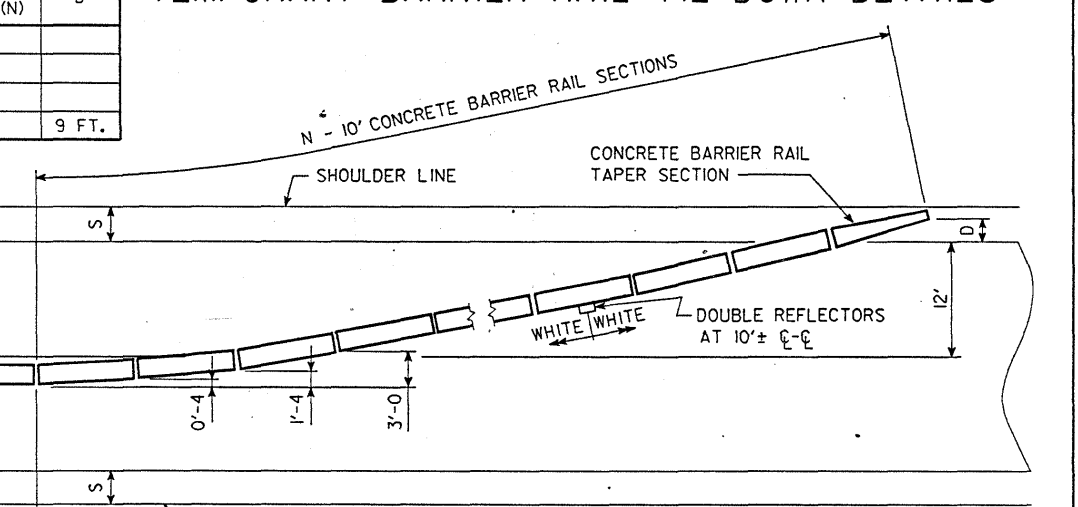
BR3
DESIGNED BY R. J. MEYER
CHECKED BY M. E. KHODA
DETAILED BY E. W. OGAWA

TEMPORARY BARRIER RAIL-CONCRETE
STANDARD 1033



TEMPORARY BARRIER RAIL TIE DOWN DETAILS

SHOULDER WIDTH (S)	NO. OF BARRIER RAIL SECT. (N)	D
10 FT.	16	9 FT.



ESTIMATED QUANTITIES

ITEM	AMOUNT
TEMPORARY BARRIER RAIL, FURNISH ONLY	730 L.F.
TEMPORARY BARRIER RAIL, PLACE ONLY	1460 L.F.

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

DESIGN FOR REPAIRS TO 35°16'19.32" SKEW R. A.
328'-0x32' CONTINUOUS WELDED GIRDER BRIDGE
56'-0 END SPANS 108'-0 INTERIOR SPANS
STATION: 105+33.04 1-29
STATION: 1105+29.74 1A. 333
NOVEMBER, 1995
FREMONT COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION
DESIGN SHEET NO. 4 OF 12 FILE NO. 29029 DESIGN NO. 295

STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		6	77

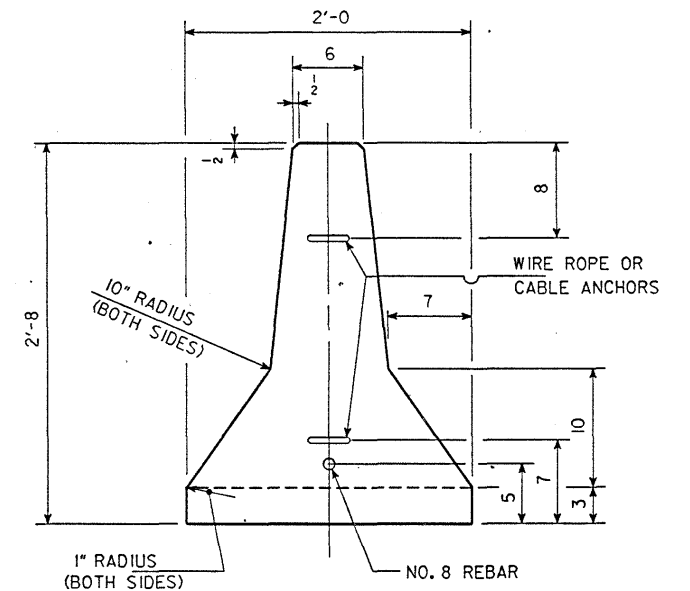
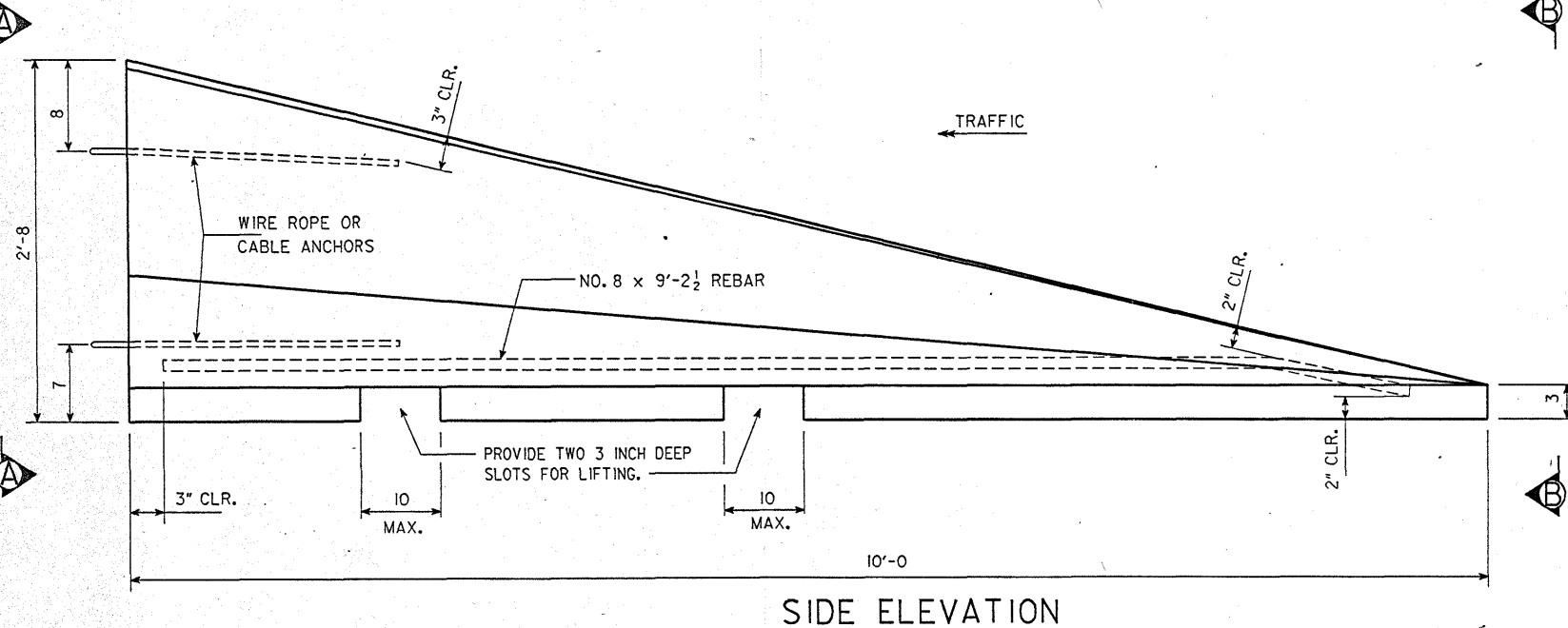
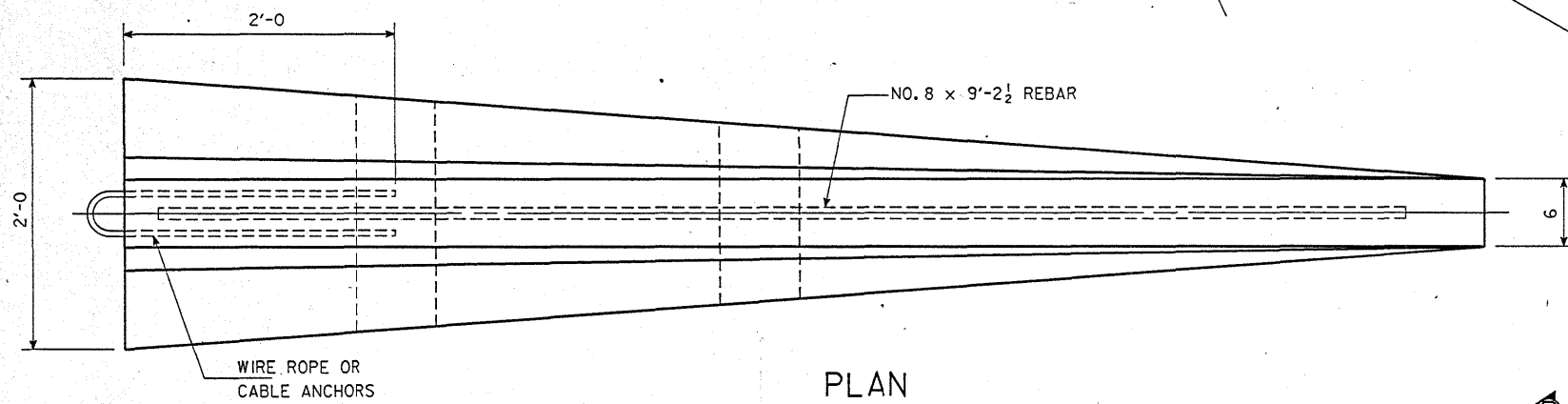
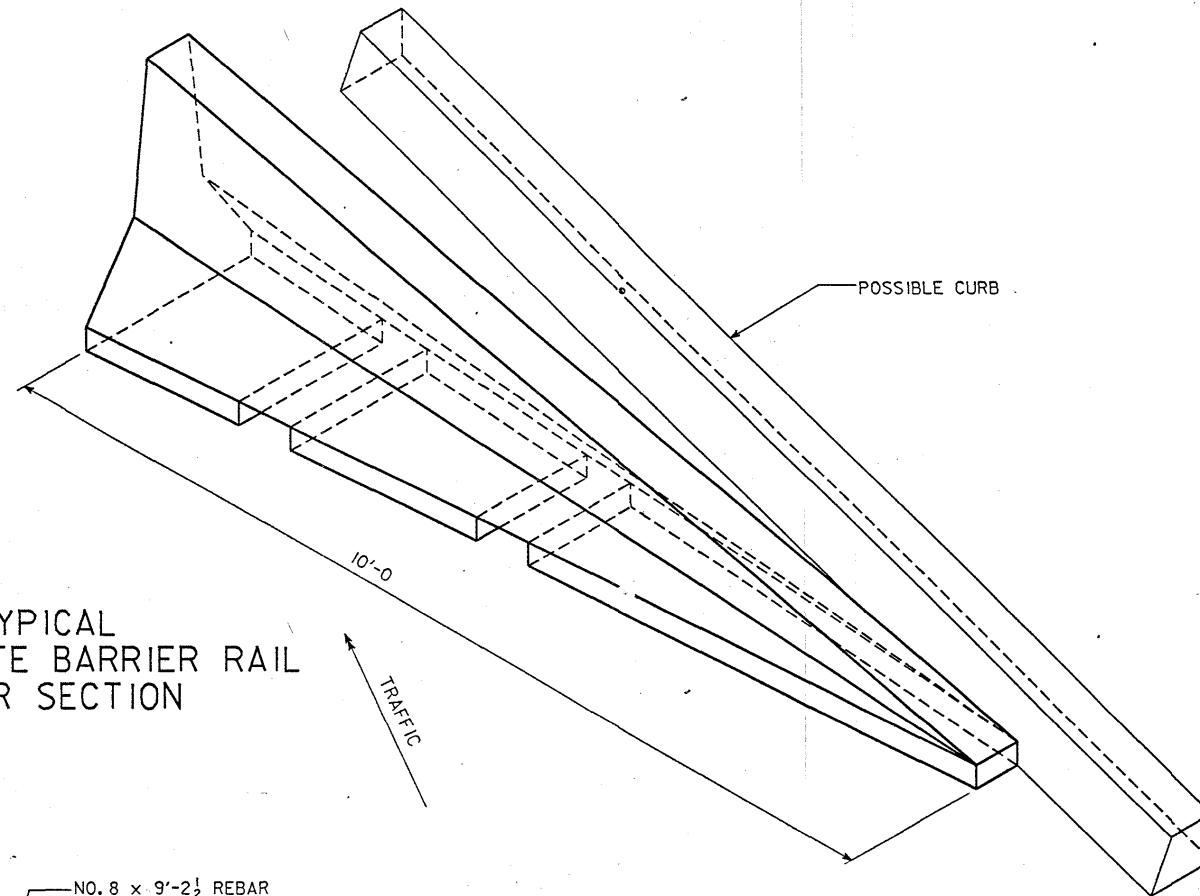
REVISION: DIMENSION 0 AND NO. OF BARRIER RAIL SECTIONS CHANGED. TAPE NO. 9 DATED 7-3-90
 HSTD01033.S01--LEP; THIS SHEET REDRAWN, DEVICEZHA01(200,004) ARCH. TAPE NO. 15 DATE 9-8-88
 REVISED: 6-21-93 - LIFTING SLOT DETAILS CHANGED.

GENERAL NOTES:

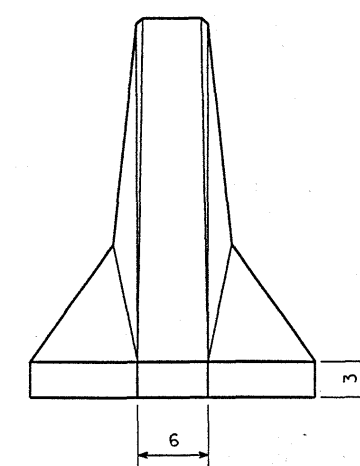
DETAILS SHOWN HEREON ARE FOR THE CONSTRUCTION OF A PRECAST CONCRETE BARRIER RAIL TAPER SECTION. DETAILS SHOWN ARE TYPICAL. ALTERNATE DESIGN DETAILS MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.

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



END VIEW A-A



DESIGN FOR REPAIRS TO 35°16'19.32" SKEW R. A.

328'-0x32' CONTINUOUS WELDED GIRDER BRIDGE

56'-0" END SPANS 108'-0" INTERIOR SPANS

CONCRETE BARRIER RAIL TAPER SECTION

STATION: 105+33.04 1-29

STATION: 1105+29.74 1A. 333

FREMONT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION

DESIGN SHEET NO. 5 OF 12 FILE NO. 29029 DESIGN NO. 295

HSTD1034B-GJP; THIS SHEET ISSUED, DEVICE : ZHA1200.51 ARCH TAPE NO. 9 DATE 10-12-89
REVISED: 6-21-93 - LIFTING SLOT DETAILS CHANGED.

DESIGNED BY R. J. MEYER CHECKED BY M. E. KHODA
DETAILED BY E. W. OGAWA CADD FILE h360295.s05

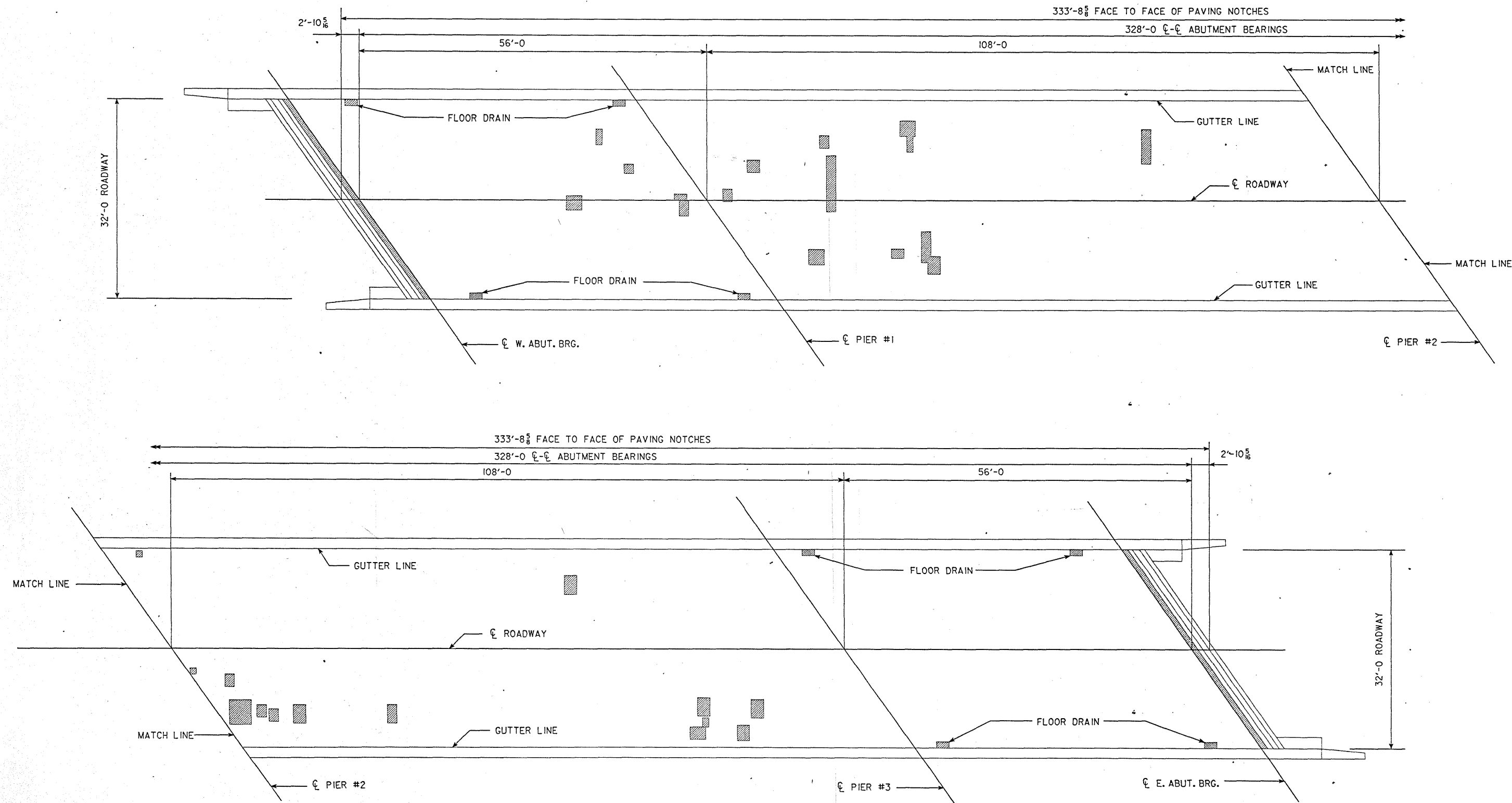
CONCRETE BARRIER RAIL TAPER SECTION

STANDARD 1034B

FREMONT COUNTY

PROJECT NUMBER

STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		7	17



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.



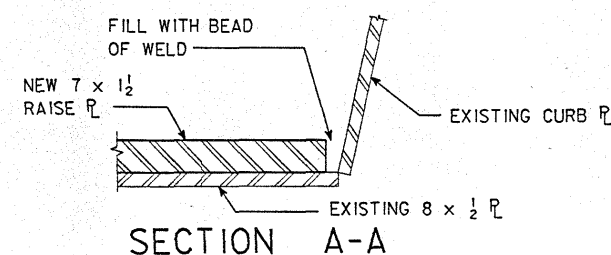
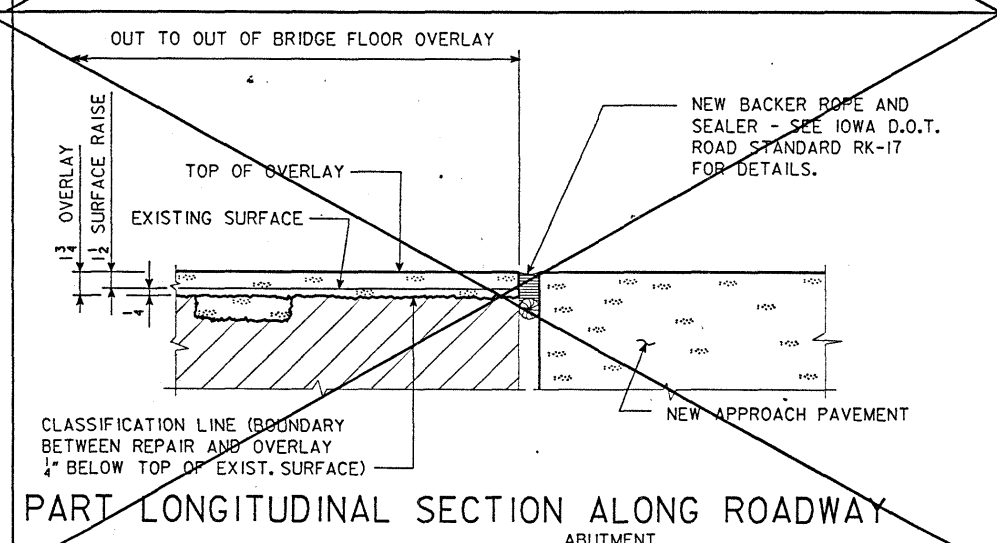
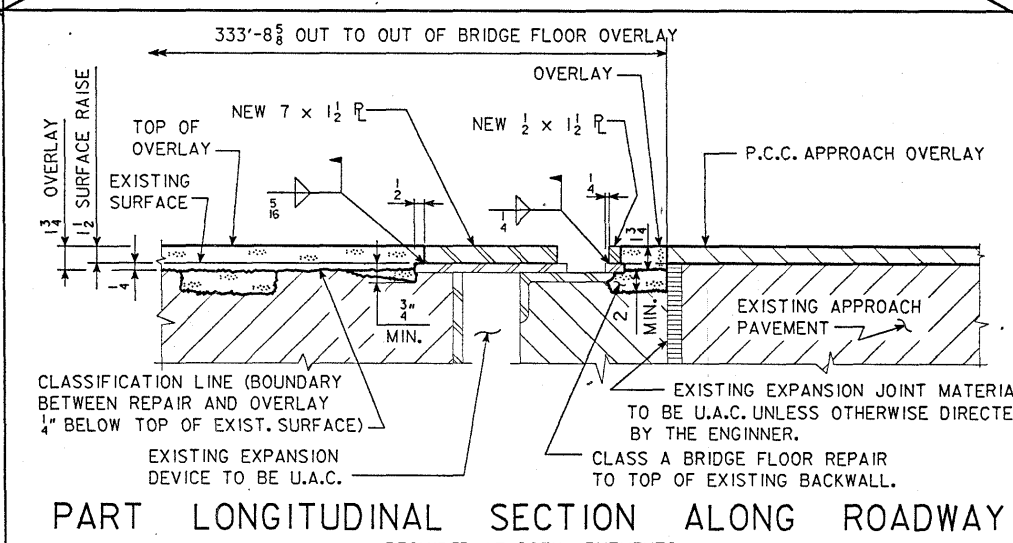
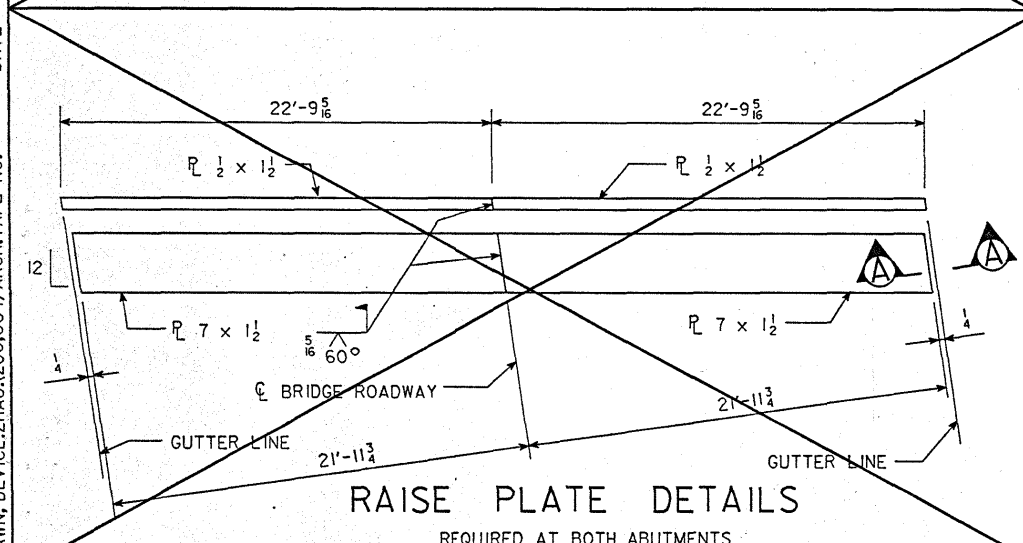
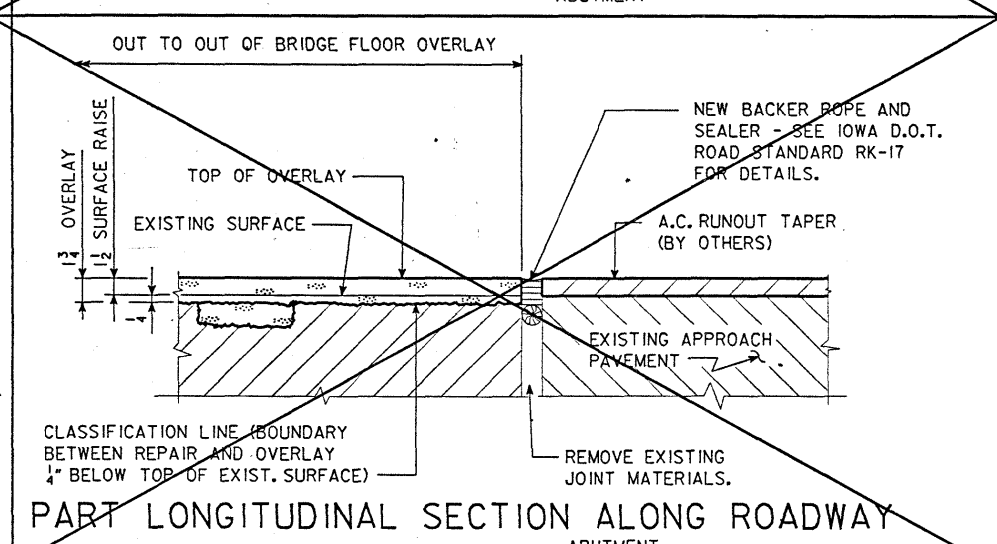
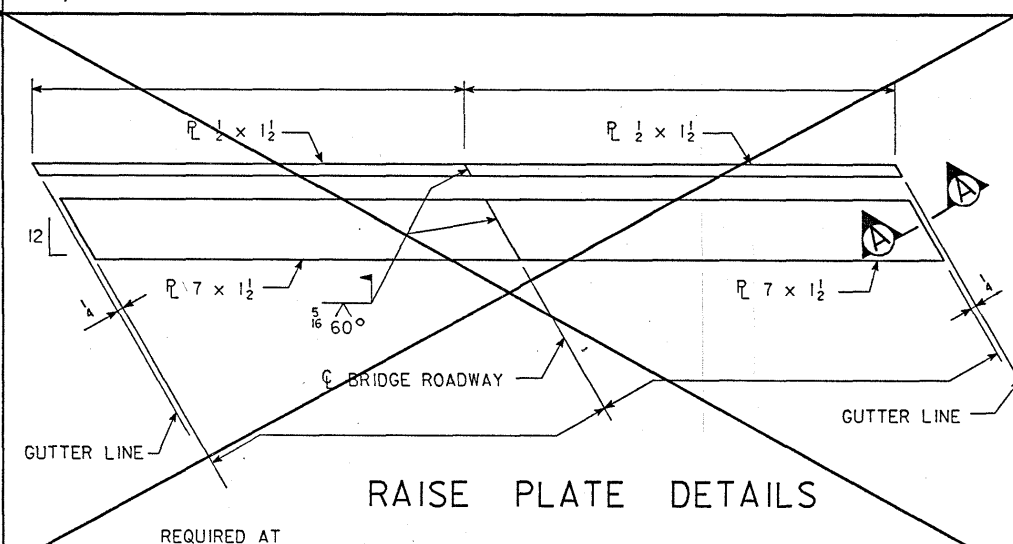
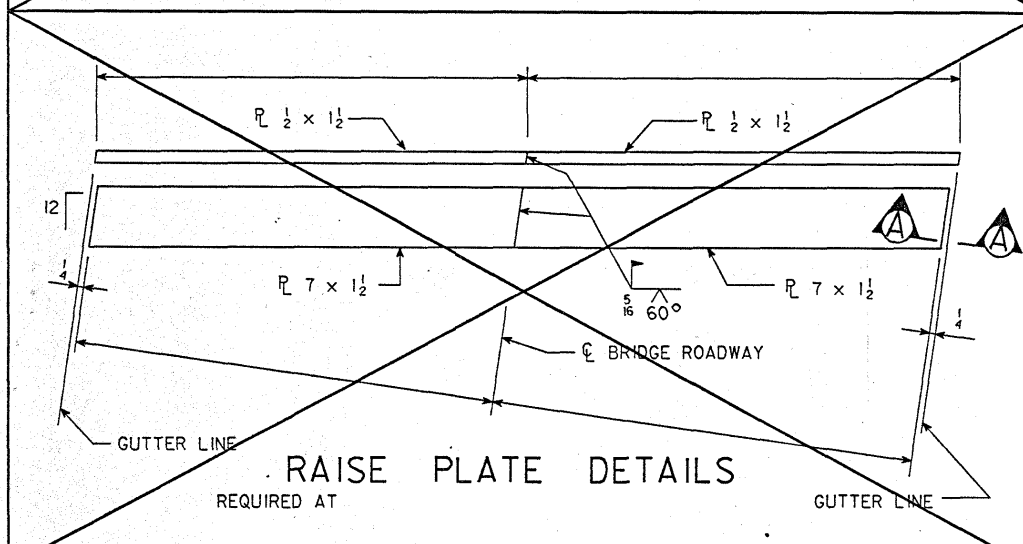
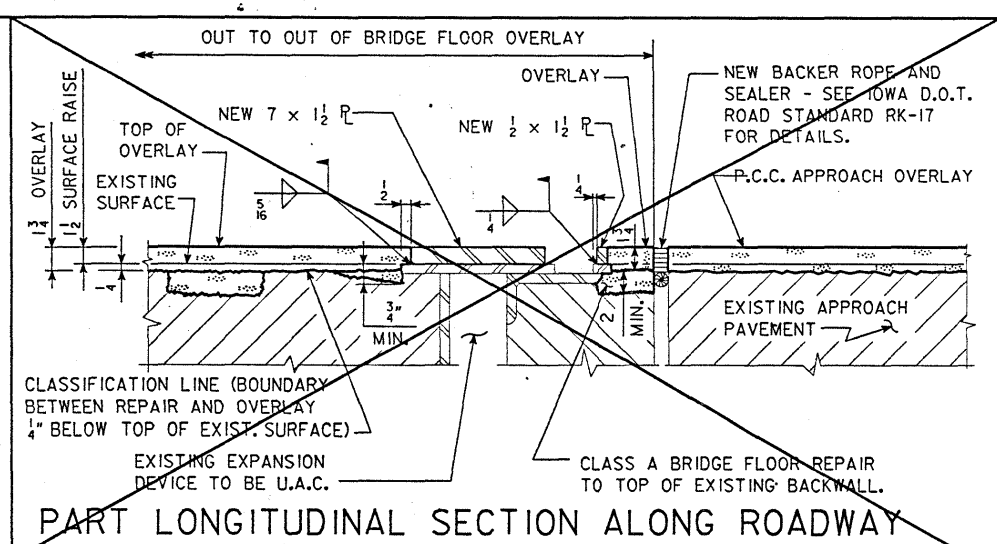
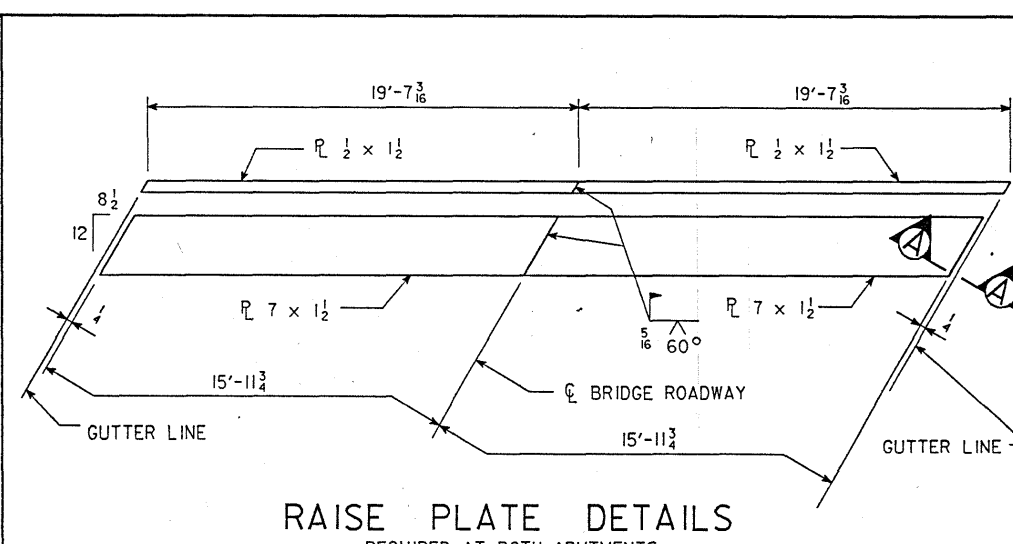
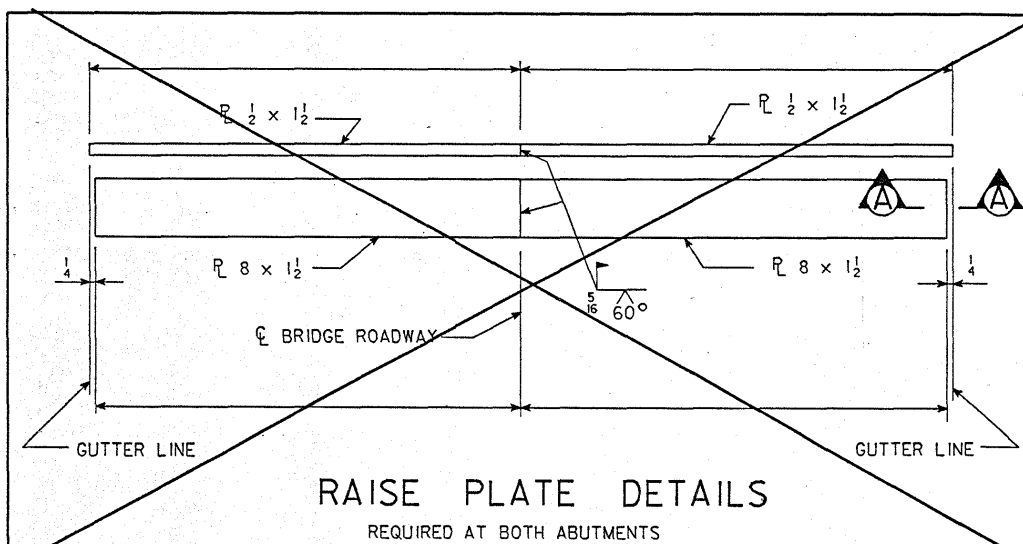
DESIGN FOR REPAIRS TO 35°16'19.32" SKEW R. A.
328'-0x32' CONTINUOUS WELDED GIRDER BRIDGE
 56'-0 END SPANS 108'-0 INTERIOR SPANS
SURVEY PLOT
 STATION: 105+33.04 1-29
 STATION: 1105+29.74 1A. 333
FREMONT COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION
 DESIGN SHEET NO. 6 OF 12 FILE NO. 29029 DESIGN NO. 295

DESIGNED BY R. J. MEYER CHECKED BY M. E. KHODA
 DETAILED BY E. W. OGAWA CADD FILE h360295.s07

FREMONT COUNTY

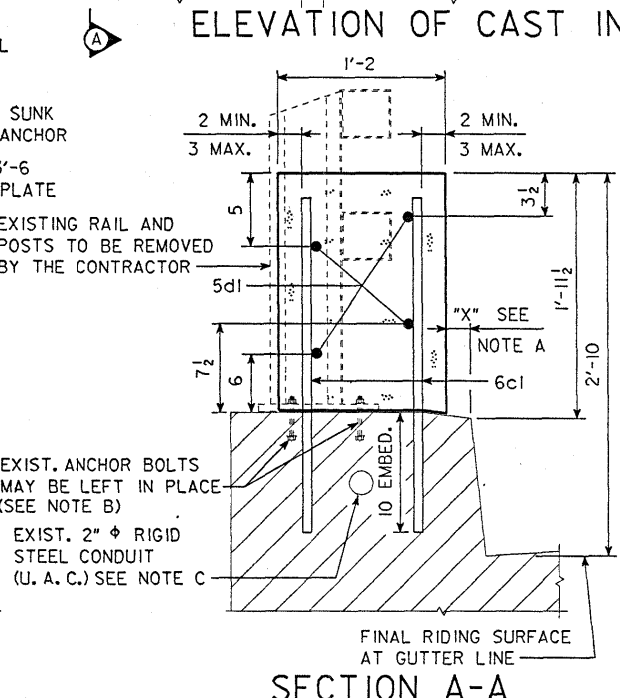
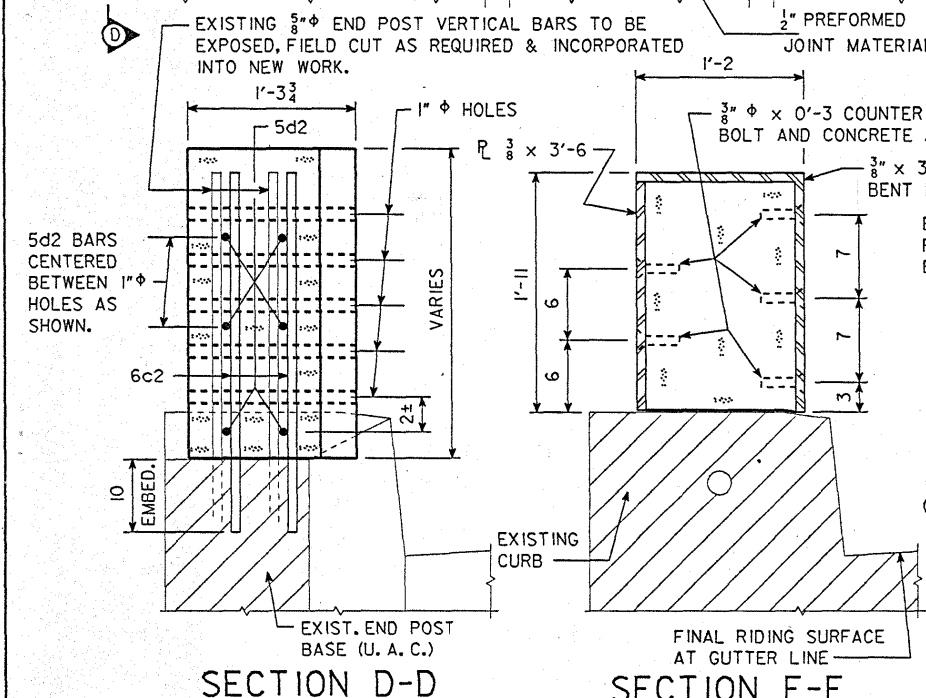
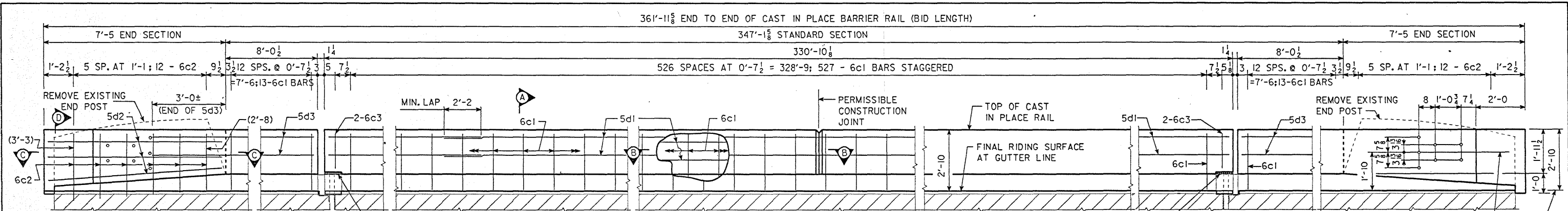
PROJECT NUMBER

STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		8	17



RAISE PLATE NOTES:
RAISE PLATES ARE TO BE INSTALLED IN STAGES OVER ONE HALF OF THE BRIDGE AT A TIME. RAISE PLATES FOR EACH STAGE ARE TO BE IN PLACE BEFORE THE NEW BRIDGE FLOOR OVERLAY FOR THAT STAGE IS PLACED.

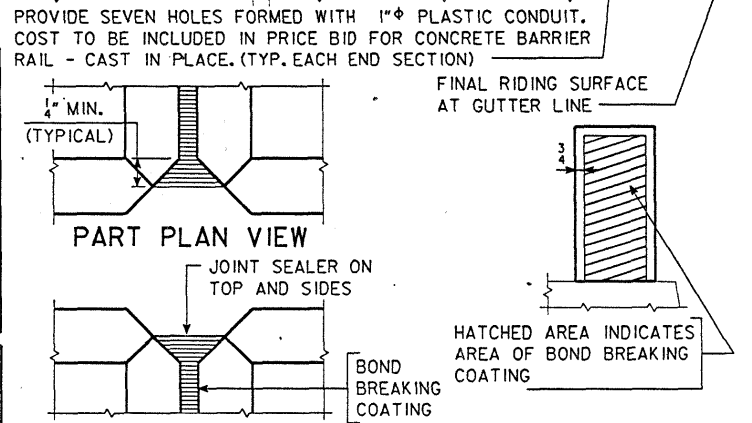
DESIGN FOR REPAIRS TO 35°16'19.32" SKEW R.A.
328'-0x32' CONTINUOUS WELDED
GIRDER BRIDGE
56'-0 END SPANS 108'-0 INTERIOR SPANS
REPAIR DETAILS
STATION: 105+33.04 I-29 NOVEMBER, 1995
STATION: 1105+29.74 I.A. 333
FREMONT COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION
DESIGN SHEET NO. 7 OF 12 FILE NO. 29029 DESIGN NO. 295



EPOXY REINFORCING STEEL-TWO RAILS					
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6c1	STANDARD RAIL, VERT.	—	1106	2'-7"	4291
6c2	END SECTION, VERTICAL	—	48	SHOWN	213
6c3	STANDARD RAIL, VERT. AT JOINT	—	8	1'-6"	18
5d1	STANDARD RAIL, LONGIT.	—	72	38'-8"	2904
5d2	END SECTION, LONGIT.	—	24	7'-1"	177
5d3	END SECTION, HORIZ.	—	16	10'-11"	182
TOTAL (LBS.)					7785

CONCRETE PLACEMENT SUMMARY			TOTAL
STANDARD SECTION *	692.3' AT 0.083 CU. YDS. PER LIN. FT.		57.5
END SECTIONS	4 AT 0.815 CU. YDS. PER SECTION		3.3
* OPENING AT JUNCT. BOX DEDUCTED.		TOTAL (CU. YDS.)	60.8

ESTIMATED QUANTITIES-TWO RAILS			QUANTITY
CONCRETE BARRIER RAIL, (CAST-IN-PLACE)	LIN. FT.		723.9
REMOVAL OF EXISTING HANDRAIL	L.S.		LUMP SUM



CAST IN PLACE BARRIER RAIL JOINT DETAILS

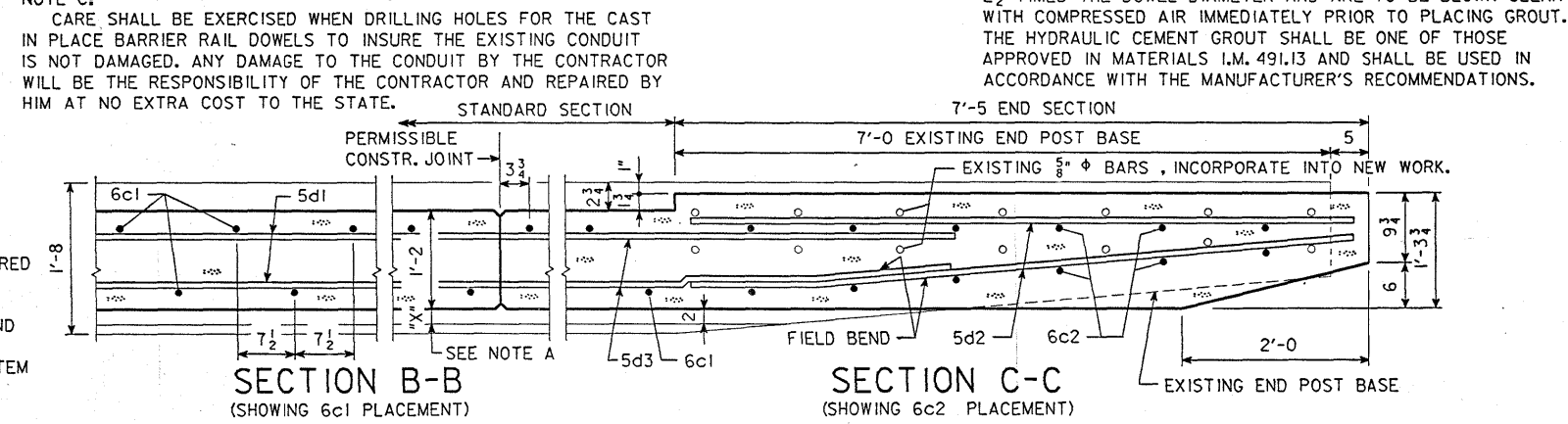
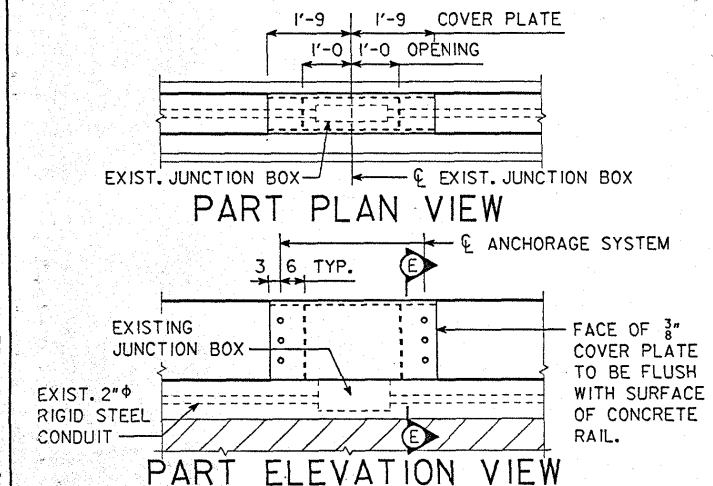
CAST IN PLACE BARRIER RAIL NOTES:

- 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" PLASTIC CONDUIT) PLUS ALL OF THE EQUIPMENT AND LABOR REQUIRED TO ERCT 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.
- EXISTING BRIDGE RAIL IS NOT TO BE REMOVED UNTIL AUTHORIZED BY THE ENGINEER.
- THE BID ITEM "REMOVAL OF EXISTING HANDRAIL" SHALL INCLUDE ALL COSTS ASSOCIATED WITH DISMANTLING THE EXISTING ALUMINUM HANDRAIL (APPROXIMATELY 696 L.F. AND 86 POSTS). THE HANDRAILS ARE TO BECOME THE PROPERTY OF THE CONTRACTOR.

DOWEL SETTING NOTE:

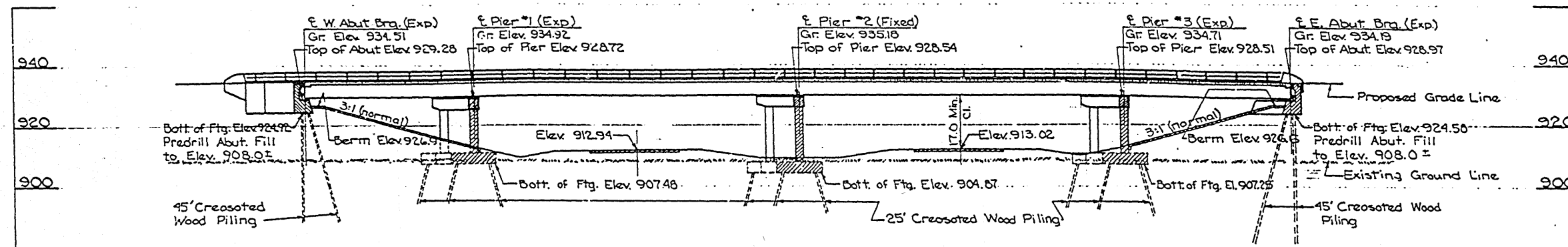
THE 6c BARS SHALL BE SET AS DOWELS IN DRILLED HOLES. HOLES ARE TO BE 10" DEEP. THE DOWELS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ONE OF THE FOLLOWING SYSTEMS SHALL BE USED AS A BONDING AGENT FOR THE DOWELS:

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



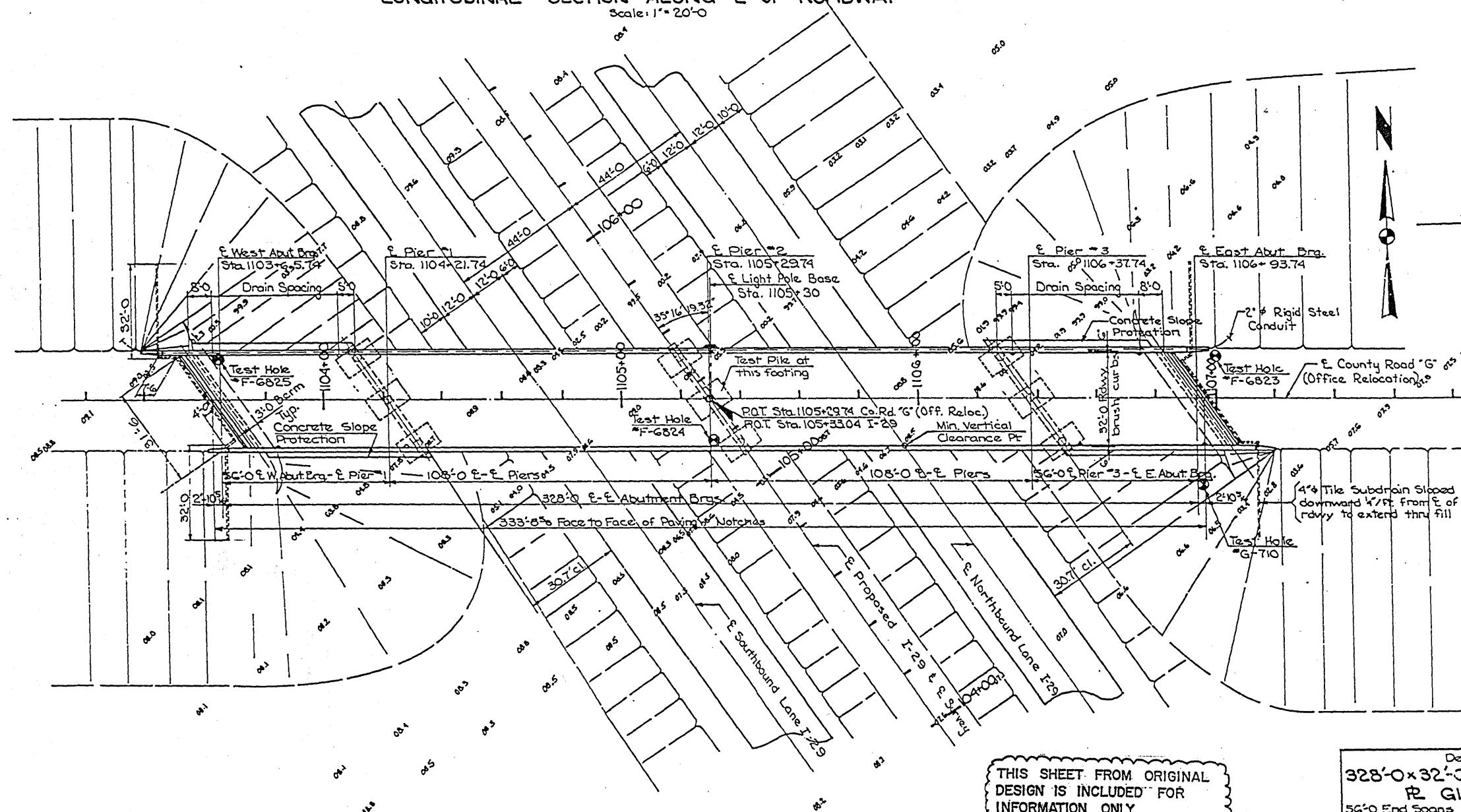
DESIGN FOR REPAIRS TO 35°16'19.32" SKEW R. A.
328'-0x32' CONTINUOUS WELDED GIRDER BRIDGE
 56'-0 END SPANS 108'-0 INTERIOR SPANS
CAST IN PLACE BARRIER RAIL DETAILS
 STATION: 105+33.04 1-29
 STATION: 1105+29.74 1A. 333
FREMONT COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - PROJECT DEVELOPMENT DIVISION
 DESIGN SHEET NO. 8 OF 12 FILE NO. 29029 DESIGN NO. 295

Bench Mark *10 Sta. 123+60, 563' Rt. Set R.R. Spk. in W. Side of Tel. Pole. Elev. 905.15



LONGITUDINAL SECTION ALONG E OF ROADWAY

Scale: 1" = 20'-0"



SITUATION PLAN

Scale: 1" = 20'-0"

THIS SHEET FROM ORIGINAL DESIGN IS INCLUDED FOR INFORMATION ONLY.

DESIGN NO. 295
FILE NO. 29029
DES. SH. NO. 9 OF 12

+3.17% -3.00%
M.O. = 7.71'
P.I. Sta. 1105+00
Elev. 942.89
V.C. = 1000'

PROPOSED LOCAL RD. GRADE

-0.13% 0.00%
P.I. Sta. 110+00
Elev. 912.37
V.C. = 800'

PROPOSED I-29 GRADE

TRAFFIC COUNT: 575 VPD (1988)

LOCATION:
TGTN R-42W
Sections 20, 21, 28 & 29
Washington Twp.
Fremont County
County Road 'G' over
Proposed I-29

Design for 35' 16" 19.32' Skew
328'-0" x 32'-0" CONTINUOUS WELDED
R GIRDER BRIDGE
56'-0" End Spans 108'-0" Interior Spans
SITUATION PLAN
Sta. 105+33.04, I-29
Sta. 1105+29.74, County Rd. 'G' (Off. Reloc.) July, 1970
FREMONT COUNTY
IOWA STATE HIGHWAY COMMISSION
Design Sheet No.: 1 Of 16 File No.: 22535 Design No.: 962

DESIGNED BY: B. Train
CHECKED BY: E. B. Train

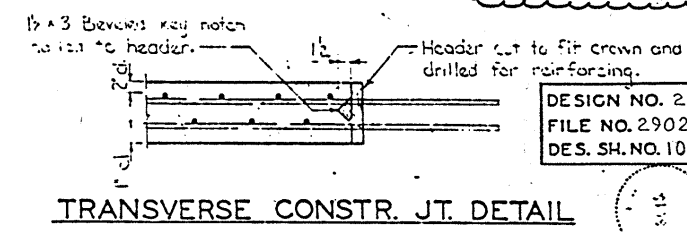
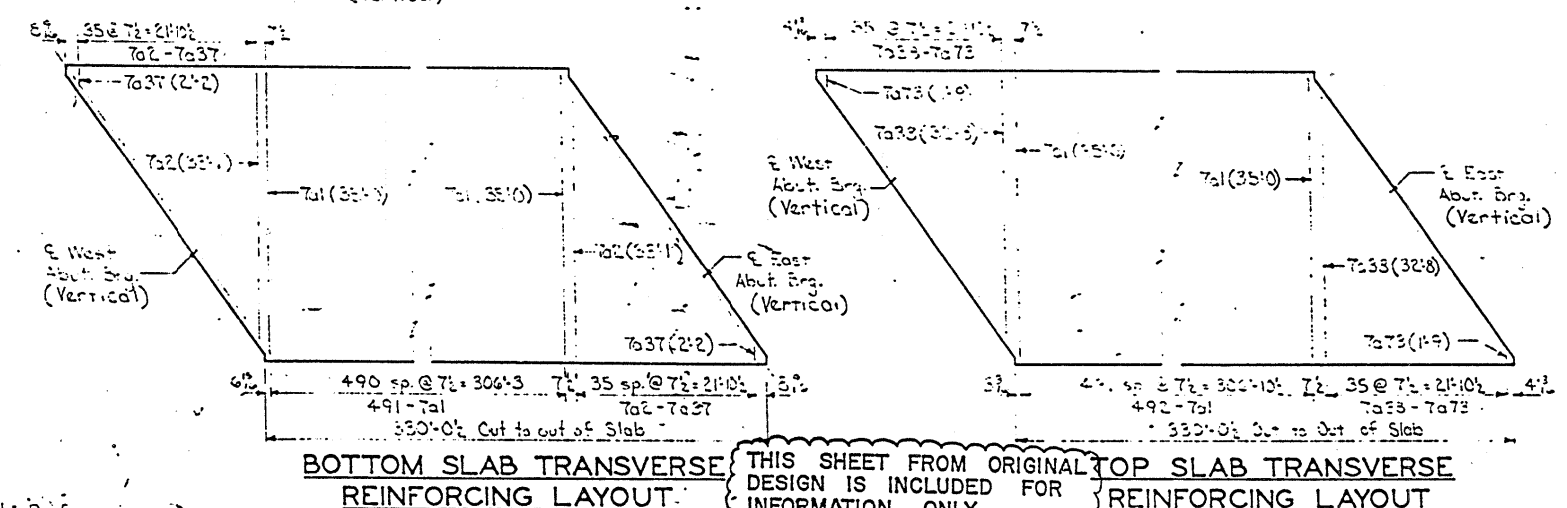
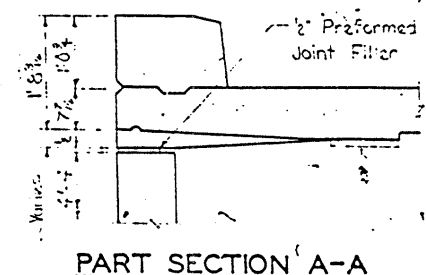
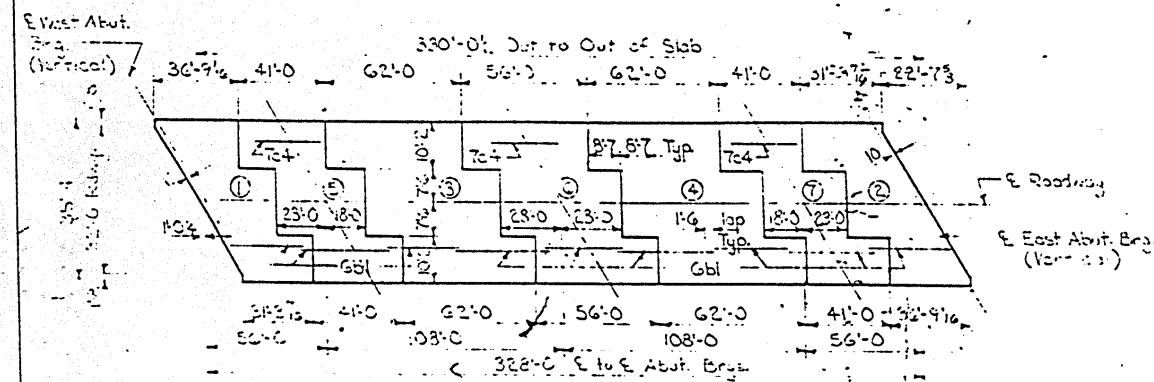
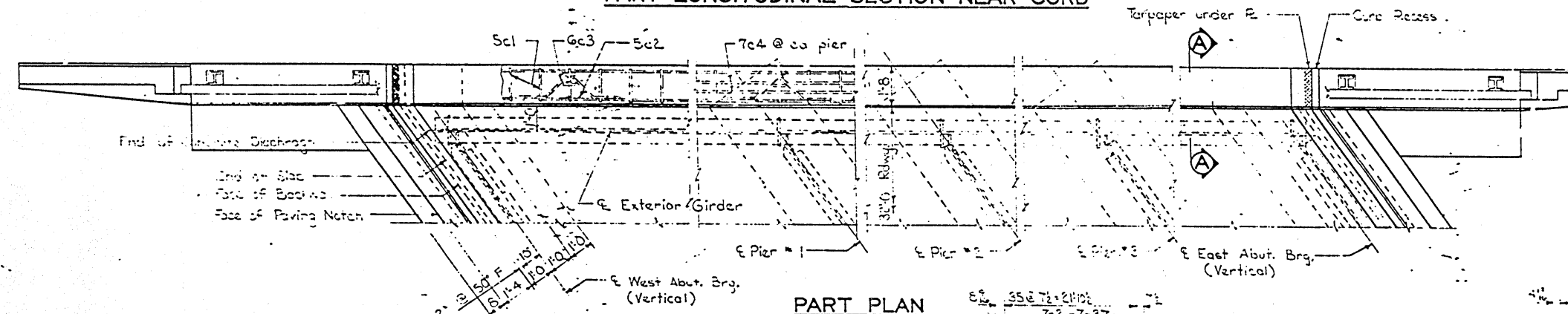
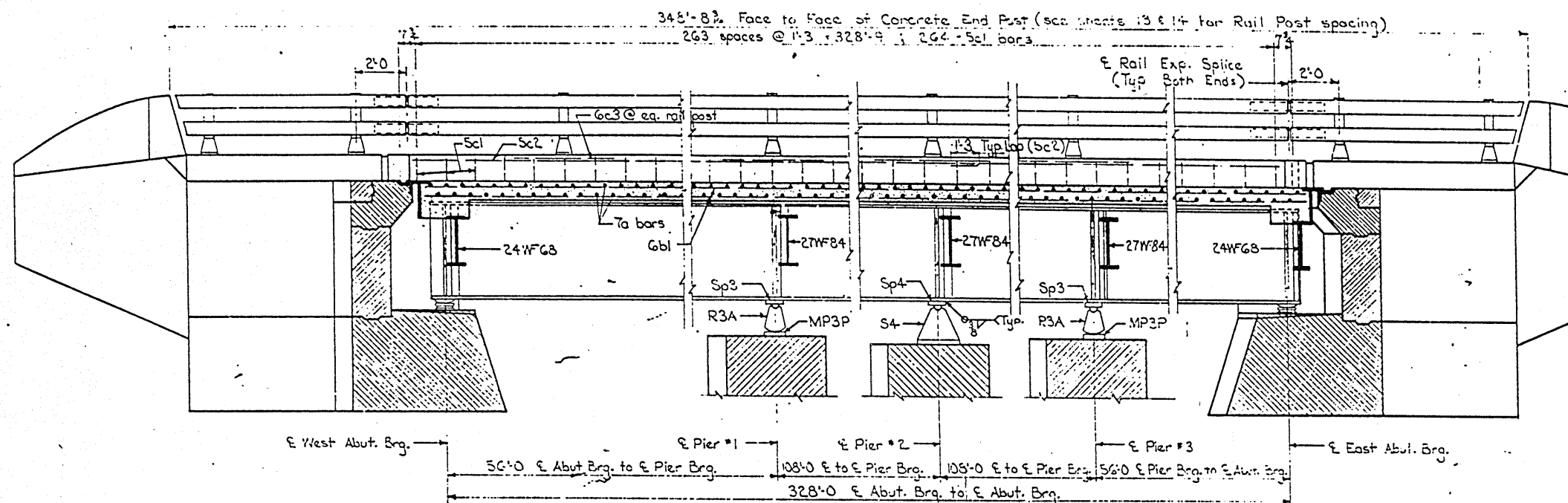
TRACED BY: E. B. Train
SECTION LEADER: E. B. Train

SECTION LEADER: E. B. Train

FREMONT COUNTY

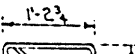
PROJECT NUMBER: I-IG-29-1 (14) 0-04-36
STATE: IOWA
FED. ROAD DIST. NO.: 1
FISCAL YEAR: 1970
SHEET NO.: 41
TOTAL SHEETS: 56

11/17



REINFORCING STEEL - SUPERSTRUCTURE					
Bar	Location	Shape	No.	Length	Weight
Tal	Slab Trans. - Top & Bottom	—	983	35.0	703.24
Ta2 - Ta37	" - Bottom Ends	—	72	Varies	25.94
Ta38 - Ta73	" - Top Ends	—	72	Varies	25.32
Gbl	Slab Longit. - Top & Bottom	—	513	38.0	292.80
Sc1	Curb Trans. Hoops	⌈	528	5.10	321.2
Sc2	" Longit.	—	36	37.9	141.7
Gc3	Rail Post Anchors	⌋	78	5.0	58.6
Tc4	Slab & Curb Longit. over Piers	—	84	40.0	686.8
Total				lbs.	116,813

BENT BAR DETAILS




NOTE: All dimensions are out to out.

CONCRETE PLACEMENT QUANTITIES		
Section ①	31.3	Cu. Yd.
Section ②	31.3	Cu. Yd.
Section ③	55.4	Cu. Yd.
Section ④	55.4	Cu. Yd.
Section ⑤	36.6	Cu. Yd.
Section ⑥	50.0	Cu. Yd.
Section ⑦	36.6	Cu. Yd.
Curbs 2 @ 20.0	41.2	Cu. Yd.
Total	337.8	

ESTIMATED QUANTITIES		
Structural Concrete Class D	* 338.7	Cu.Yd.
Reinforcing Steel	* 116,923	Lbs.
* Structural Steel	318,270	Lbs.

* Includes 33 ea. of bronze R.
 * Includes quantities for one Light Pole Base.

THIS SHEET FROM ORIGINAL TOP SLAB TRANSVERSE
DESIGN IS INCLUDED FOR REINFORCING LAYOUT
INFORMATION ONLY.

Design For 35' 10" 1932' Skew
328'-0" x 32'-0" CONTINUOUS WELDED
GIRDER BRIDGE
56'-0" End Spans 108'-0" Interior Spans
SUPERSTRUCTURE DETAILS
Station 105 + 33.04 I-29
105 + 29.74 County Rd. 3 (Off Road) July, 2
FREMONT COUNTY
IOWA STATE HIGHWAY COMMISSION
Design Sheet No: 5 Of 13 File No: 22535 Design: No: 76

SUPERSTRUCTURE NOTES:

This bridge is designed for HS20-44 loading, two lanes, plus 20 lb. per square foot of roadway for future wearing surface.

Minimum clear distance from edge of bar to face of concrete is to be 2" unless otherwise noted or shown.

The floor slab as shown includes 1/2" of wearing surface.

All field connections are to be bolted using "High Tensile Strength Bolts".

Unless otherwise noted, all open holes are to be 15/16" ϕ and all bolts are to be 7/8" ϕ .

Bottom flanges are to be perpendicular to webs at the reaction points.

All paint is to be omitted on tops of top flanges and on other steel surfaces in contact with concrete. Parts inaccessible after erection are to be given three coats of paint in the shop.

Forms for the slab and curb are to be supported by the girders.

Fill thicknesses shown on plans are based on nominal beam or girder dimensions. These thicknesses are to be verified or adjusted during fabrication to secure a close fit. Each fill plate shall fit to the nearest 1/16" in thickness and single plates are required at any fill location. Beams or girders are to be truly square at splice points with flanges perpendicular to webs.

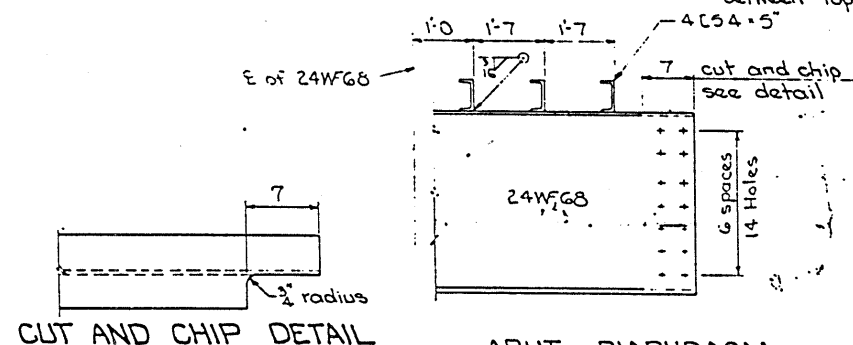
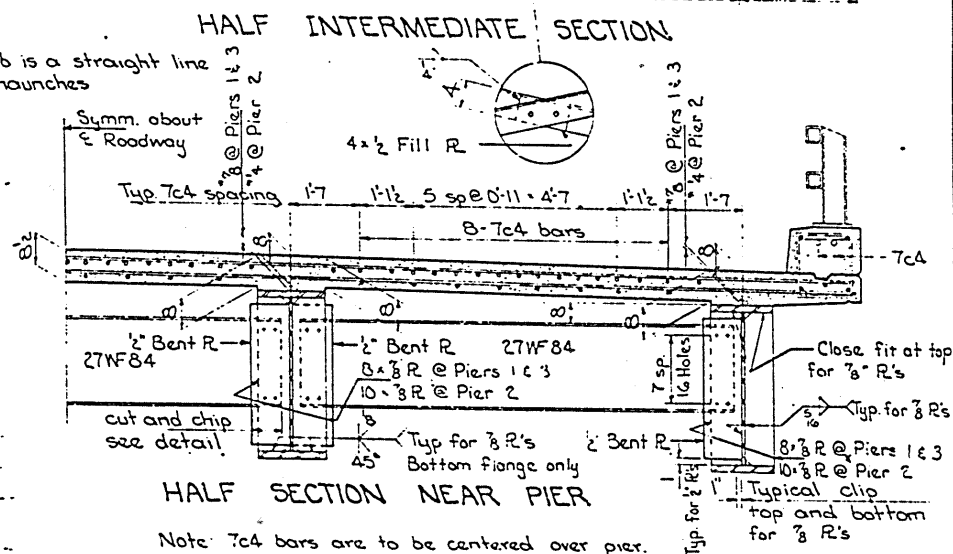
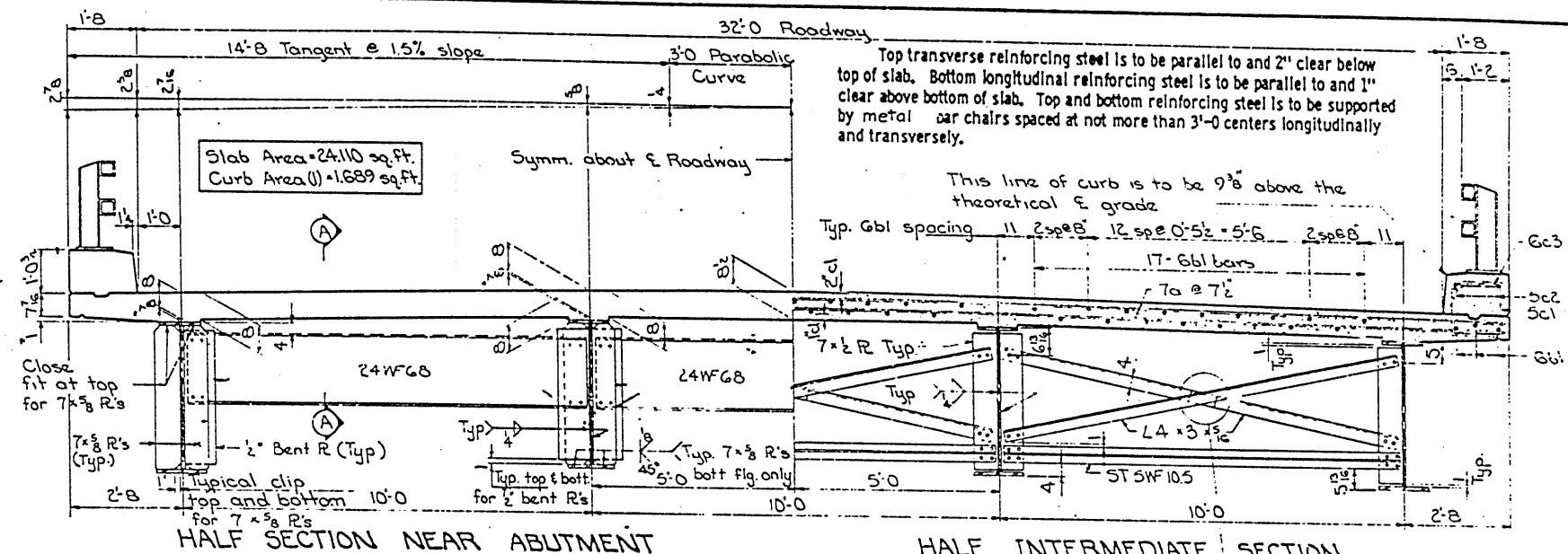
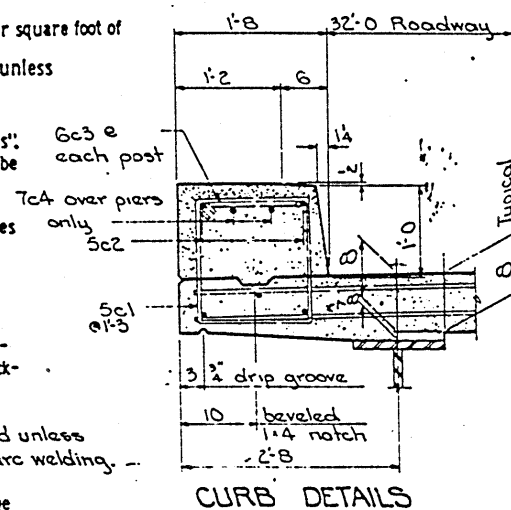
The design drawings indicate AWS prequalified welded joints, and unless otherwise noted the design joint details are for manual shielded metal-arc welding. Alternate joint details may be submitted for approval.

The stiffener to flange welds are not to intersect the longitudinal flange to web welds.

Magnetic particle inspection of welds, in accordance with Article 2408.15 of the Standard Specifications, will be required for the web to flange welds and the bearing stiffener welds of the girders.

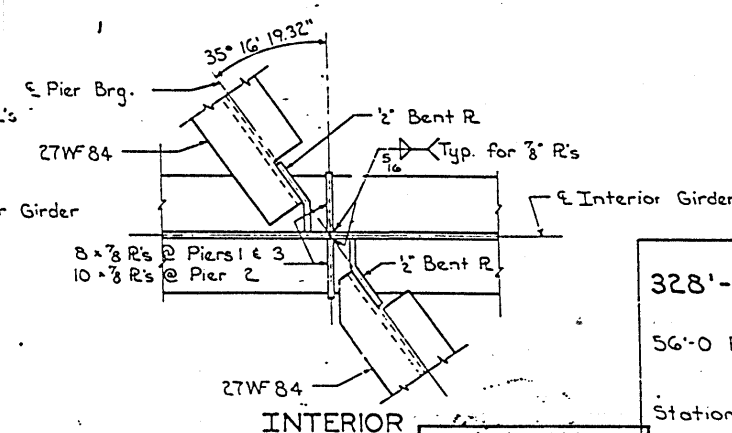
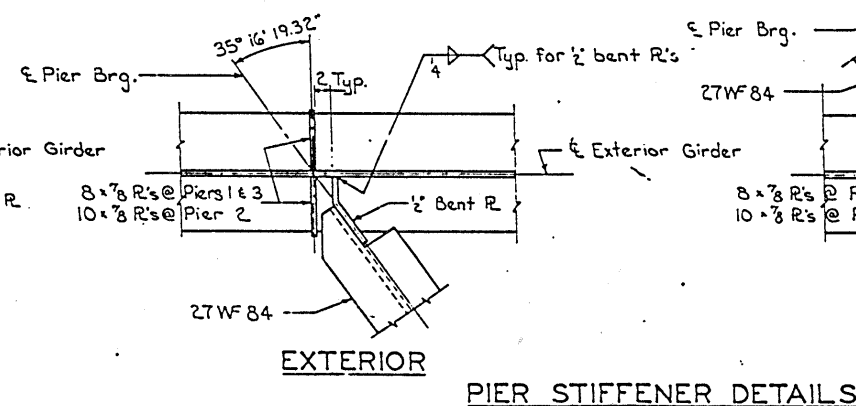
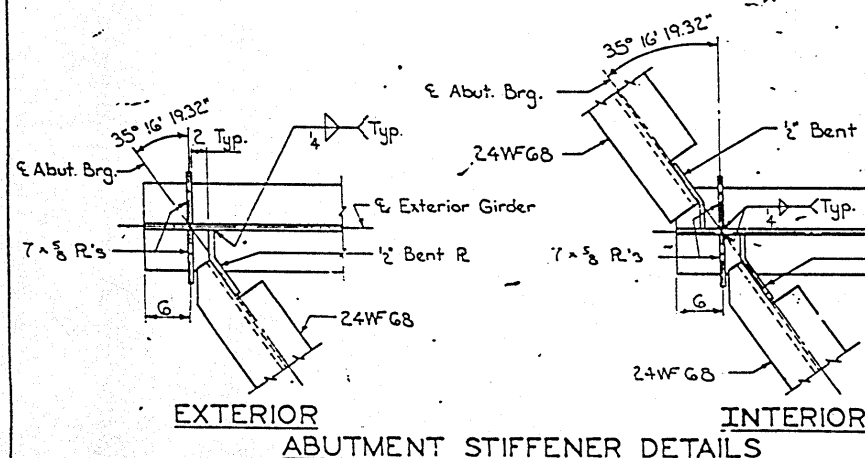
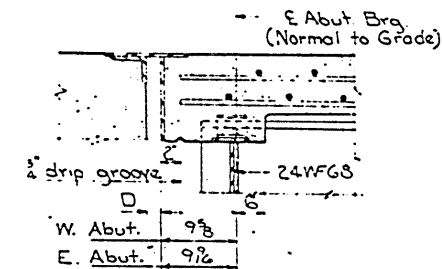
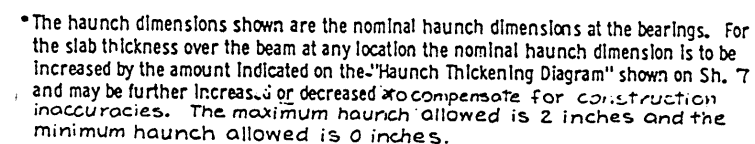
Faying surfaces at diaphragm connections are to be given the shop coat of paint.

Stud shear connectors are to be welded in the shop or in the field at the locations shown on the design plans or the approved shop drawings. Studs shall be furnished and installed in accordance with Part VI of the Eighth Edition of the "Specifications for Welded Highway and Railway Bridges" (AWS D2.0-69) of the American Welding Society.



ROCKER & EXPANSION PLATE SETTINGS							
	West	About	Pier 1	Pier 2	Pier 3	East	About
Temp at time of setting							
Normal	Normal			Fixed			Normal
10° F	2 1/2	2 1/2	2 1/2	0	2 1/2	2 1/2	2 1/2
50° F	2	0	0	0	0	0	2
90° F	1 1/2	0	0	0	0	0	1 1/2

Note: Tilt rockers in direction shown for temp. below 50°, and in the opposite direction for temp. above 50°. Settings for other temp. are proportional.



THIS SHEET FROM ORIGINAL
DESIGN IS INCLUDED FOR
INFORMATION ONLY.

Design For 35° 16' 19.32" Skew
328'-0" x 32'-0" CONTINUOUS WELDED
GIRDER BRIDGE

56'-0 End Spans 108'-0 Interior Spans

SUPERSTRUCTURE DETAILS

105-3304 I-29

Station 1105 + 29.74 County Rd 5 (Off R210c) July, 1971

FREMONT COUNTY

Iowa State Highway Commission

Design Sheet No 9 OF 10 File No 22535 Design No 90

STATE	FED ROAD DIST NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
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DESIGNED BY H. F. F. F. TRACED BY _____
 DETAILED BY Darwin Backous CHECKED BY E. W. Brown, Jr.

Steel Cross Section (B) 32'-0 Roadway

Standard Sheet 4059

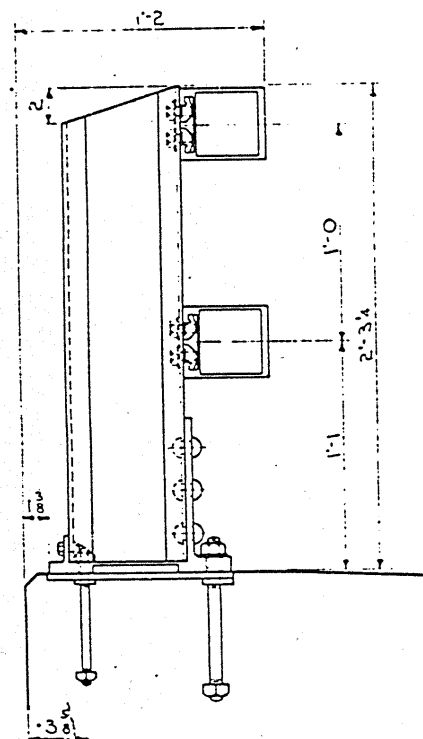
FREMONT COUNTY

1990年

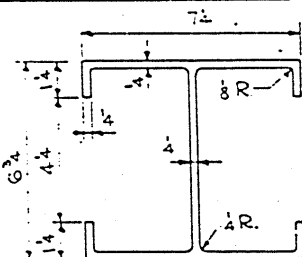
STATE	FED ROAD DIST NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
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50	50
17	18

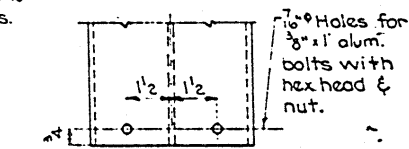
Revised 12-26-68 Added explanation for material for clamp bar bolt.
 Revised 1-1-71 Red lead shop coat paint note added.
 Revised 1-1-71 with Material Specifications for aluminum and stainless steel changed.
 Revised 10-12-72 Note concerning 2" drain holes added.
 Revised 3-14-73 Note concerning 1/2" drain holes added.
 Revised 8-19-76 Post base plate and Anchor Bolt Assembly Plate details changed.
 Revised 7-25-76 Caulking at posts eliminated.
 Revised 3-14-76 Minor changes made.



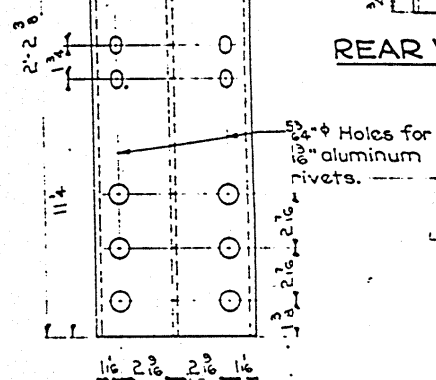
RAIL POST ASSEMBLY



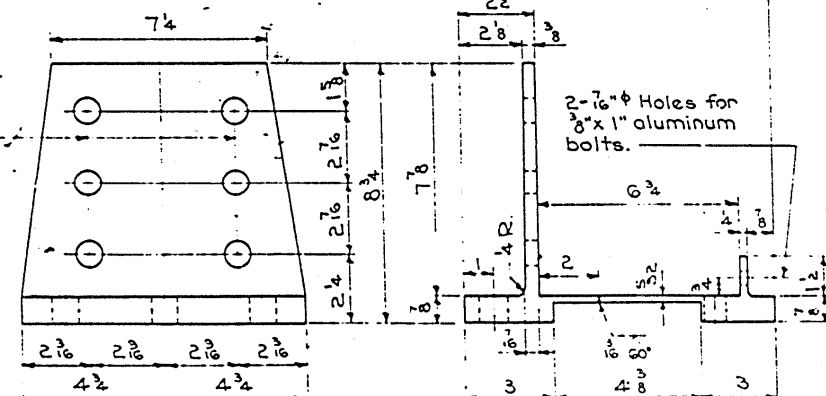
POST SECTION



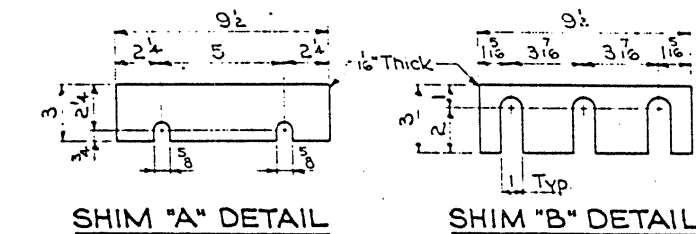
REAR VIEW OF POST



POST

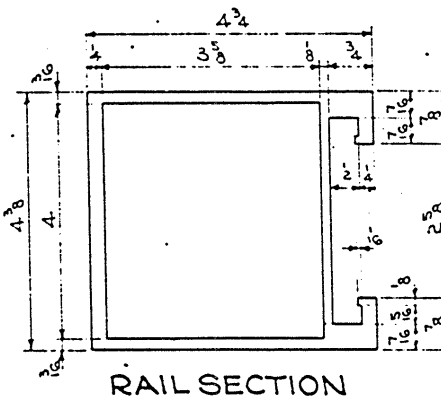


POST BASE PLATE DETAILS

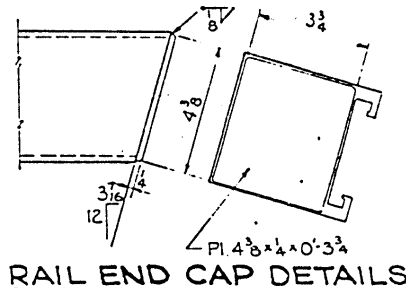


SHIM "A" DETAIL

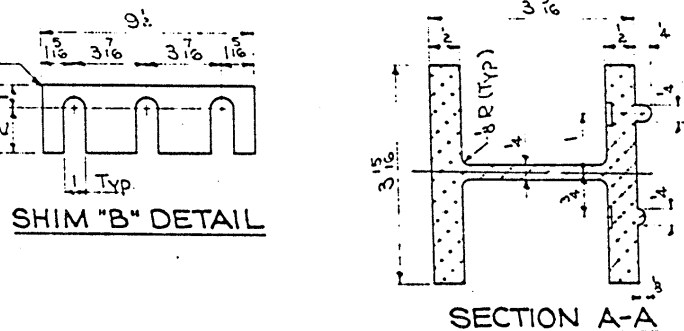
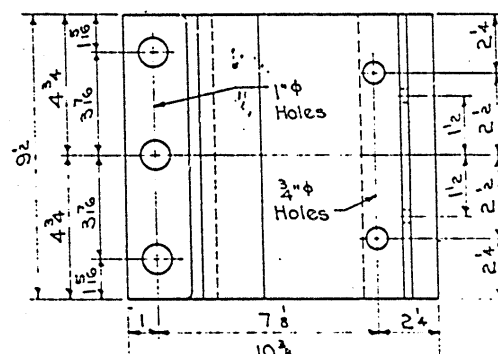
SHIM "B" DETAIL



RAIL SECTION

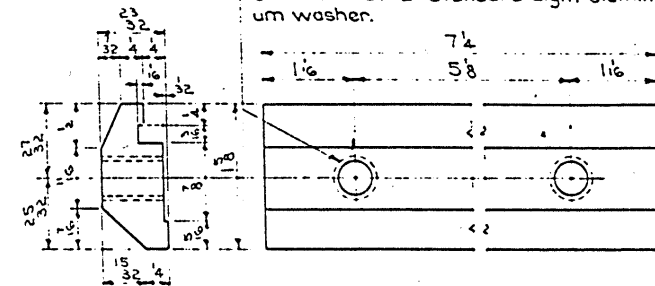


RAIL END CAP DETAILS

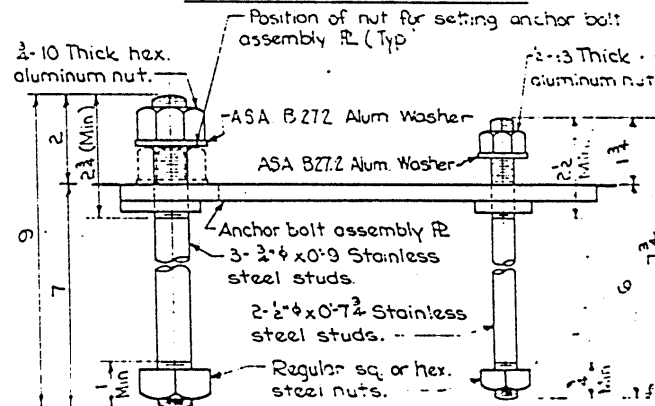


SECTION A-A

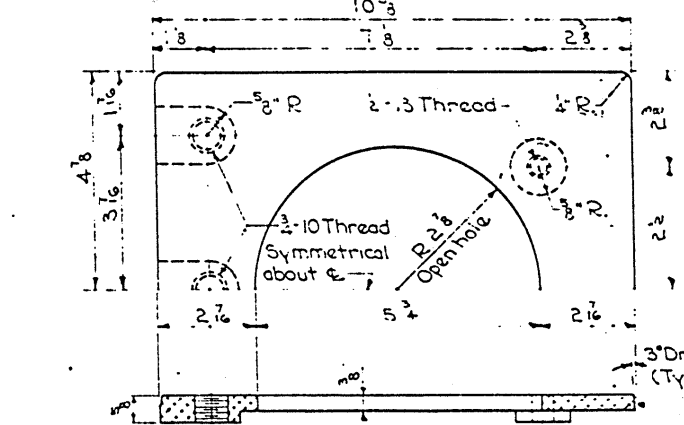
2-13-UNC-2B Thread for 2-13-UNC-2Axi stainless steel ASA B-18.2 hex head bolt with SAE Standard Light aluminum washer.



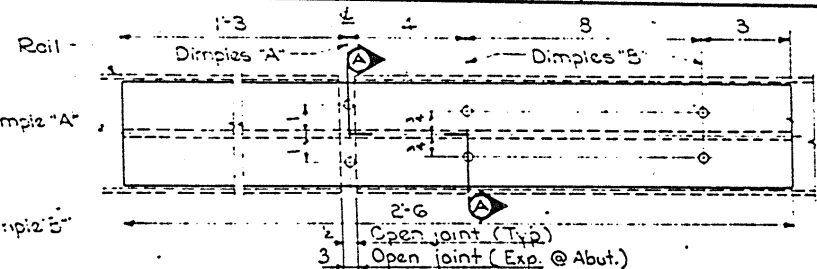
CLAMP BAR DETAILS



ANCHOR BOLT ASSEMBLY



NOTE: Maximum rail post spacing = 8'-0".
 TYPICAL ELEVATION OF RAILING AND RAIL POST LAYOUT



RAIL SPLICE DETAIL

ALUMINUM HANDRAIL NOTES:

The aluminum handrail is to be bid on a lineal foot basis measured from end to end of rail. The price bid for "Aluminum Handrail" shall be full compensation for furnishing all material including the anchor bolts and all of the equipment and labor required to erect the rail in accordance with these plans and specifications.

Each rail section must be attached to as many posts as possible but to at least three posts before being spliced, except at abutments.

Material for rails, post, post base plate, rail splice bar and clamp bar shall be ASTM B-221 Alloy 6061-T6. Material for aluminum nuts shall be ASTM B-211 Alloy 6061-T6 or 6262-T9. Material for the aluminum bolts shall be ASTM B-211 Alloy 2024 T4.

Material for aluminum washers and shims shall be ASTM B-209; Alloy Alclad 2024-T3 for washers and Alloy 1100-O for shims.

Material for anchor studs shall be an ASTM A276 Stainless steel with a minimum ultimate strength of 100,000 psi, a minimum elongation in two inches of 12% and a minimum reduction of area of 40%. Stud thread shall conform to ASA B-11 for UNC threads series, class 2A fit. Threads may be rolled or cut. Diameter of stud shall be not less than pitch diameter of threads. The aluminum nuts shall be thick, hexagonal, finished and shall comply with ASA B-18.2. Threads shall comply with ASA B-11 for UNC threads series, class 2B fit.

Material for steel nuts shall be ASTM A-307 Grade A, and shall conform to ASA B-18.2. Threads shall comply with ASA B-11 for UNC threads series, class 2B fit.

The anchor bolt assembly plate shall be a flat and true aluminum alloy permanent mold casting complying with ASTM B-108 Alloy SG70 A or B. Condition F is acceptable. Suitable alternates will be considered for approval.

The entire surfaces of anchor bolt assembly plate and the shims are to be given one shop coat of zinc chromate shop coat paint or red lead shop coat paint. One shim "A" and one shim "B" is to be furnished for each post, to be used as required.

Material for clamp bar bolt shall be stainless steel ASTM A-193, Grade B-8 (Carbide solution treated) or ASTM A-276 Type 430 (Annealed - hot or cold finished).

Ends of rail sections to be squared or milled. Cut ends to be true, smooth and free from burrs or ragged edges.

Handling, storage and installation of aluminum handrail shall be in accordance with Section 2414.06 of the Standard Specifications, except that no caulking will be required.

Material for aluminum rivets shall be ASTM B-316 or B-221 Alloy 6061-T6. Rivets shall be button head, cone point and cold driven.

A 2" drain hole is to be provided, 3 inches in from the end, at the bottom side of the end sections of all rails.

THIS SHEET FROM ORIGINAL DESIGN IS INCLUDED FOR INFORMATION ONLY.

DESIGN SPECIFICATIONS:

Designed in accordance with 1964 interim AASHTO Specifications.

ALUMINUM HANDRAIL QUANTITIES		
Aluminum Handrail	696.4	Lin Ft

Design For 35° 16' 19.32" Skew
 328'-0" x 32'-0" CONTINUOUS WELDED GIRDER BRIDGE
 56'-0" End Spans 108'-0" Interior Spans
 ALUMINUM HANDRAIL DETAILS
 105 + 33.04, I-29
 Station 1105 + 29.74, County Rd "G" (Off. Reloc.) July, 1970
 FREMONT COUNTY
 IOWA STATE HIGHWAY COMMISSION
 Design Sheet No. 13 of 16 File No. 22535 Design No. 969

DESIGN NO. 295
 FILE NO. 29029
 DES. SH. NO. 12 OF 12