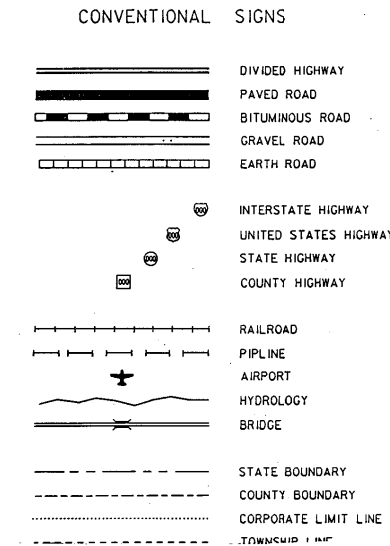


BRIDGE DECK REPAIR & RETROFIT RAIL
IR-35-2(233)74--12-77

POLK COUNTY

1-7-92 GAN 392 & 1592



IOWA
DEPARTMENT OF TRANSPORTATION
Highway Division
PLANS OF PROPOSED IMPROVEMENTS ON THE
INTERSTATE ROAD SYSTEM
POLK COUNTY
BRIDGE DECK REPAIR-W.B. LANE
AND
RETROFIT RAIL-E.B. LANE
OVER I-35 AT WEST INTERCHANGE OF I-80/I-235
IN CITY OF CLIVE

SCALE: As Noted

CONSTRUCTION "AS BUILT" PLANS

As-Built Preparation Supervised By: Mitch Dillavou
(Project Engineer)

Date: 2-15-94

REVIEWED AND FORWARDED TO AMES

Robert Yaurie
(Transportation Center Construction Engineer)

Date: 3/6/95

AFTER MICROFILMING RETURN ORIGINAL,
One 50% Reduced Print, and Two Full-Size Prints To:
Central Iowa Transportation Center

The standard specifications, series of 1984 of the Iowa Department
of Transportation, shall apply to construction work on this project.

(PLUS CURRENT SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS)

Form 52006
12-88

YEAR	WORK	CONTRACTOR	PROJ. INSPECTOR
92	BRIDGE FLOOR REPAIR	CRAMER & ASSOC.	EUGENE SIMMONS

101-4
DESIGN DATA RURAL

1991	AADT	18,100	V.P.D.
201	AADT		V.P.D.
201	DHV		V.P.H.
TRUCKS			%

COMPLETED BY: STEVE HUBLER

CHECKED BY: Debbie Fink

175

CITY MAP NOT TO SCALE

T-78N R-25W
SECTION 6
WALNUT TWP.
PART OF CITY OF CLIVE

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 Wendal Johnston
Iowa Registration No. 4346 Date 11/30/91



AUTHORIZED FOR LETTING
George F. Lissner 11-6-91
DEPUTY CHIEF ENGINEER DATE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED

FOR THE DIVISION ADMINISTRATOR DATE

STATE	FHWA REGION	F.Y.	SHEET	TOTAL
IOWA	7		1	31
PROJECT NUMBER				
IR-35-2(233)74--12-77				
R.O.W. PROJECT NUMBER				
PIN				
91-77-020-1				

INDEX OF SHEETS

NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATE SHEET
3-18	BRIDGE DESIGN NO. 392 (DECK REPAIR)
19-25	BRIDGE DESIGN NO. 1592 (RETROFIT RAIL)
26-31	ROAD SHEETS

STANDARD ROAD
PLANS

IDENT	DATE	IDENT	DATE
RE-2A	2-17-87	RH-50	1-7-92
RE-2B	10-2-90	RH-51	1-7-92
RE-7	10-2-90	RH-52	1-7-92
RE-12A	10-11-88	RK-17	1-9-90
RE-12B	1-9-90	RK-19A	8-8-89
RE-47	11-10-87	RL-11	10-11-88
RE-48A	8-20-85	RL-12	4-4-89
RE-52	8-8-89	RS-62	10-11-88
RE-53	10-11-88	RS-63A	8-8-89
RE-65	1-7-92	RS-63B	8-8-89
RE-67	7-16-91		
RE-68	8-8-89		
RE-69	8-8-89		

STANDARD BRIDGE
PLANS

STANDARD	ISSUED	REVISED

REVISIONS

DESIGN NO. 392

~~DESIGN NO. 1592~~

920 111
008 644
008 645
008 646
041
STL

LETTING DATE 1-7-92

STATE CONTROL SECTION NUMBER 77-0500

FILE NO. 28388

POLK COUNTY

PROJECT NO. IR-35-2(233)74--12-77

SHEET NO. 1

** INCLUDES BOTH ROAD AND BRIDGE QUANTITIES

DESIGN NO. 392	OVER INTERSTATE 35	STATION 1329+51.00 (I-235)	
POLK COUNTY	MAINTENANCE NO. 7700.0L235	STATION 336+58.00 (I-35)	
SECTION 6	T-78N	R-25W	
		WALNUT TWP.	
DESIGN FOR REPAIR TO WESTBOUND			
DUAL 256'-0 & 259'-8 X VARIABLE ROADWAY			
PPC BEAM BRIDGE			
ESTIMATE OF QUANTITIES			
NO.	ITEM	UNIT	TOTAL
**1	CLASS A BRIDGE FLOOR REPAIR	SO.YD.	75 ##
**2	BRIDGE FLOOR OVERLAY	SO.YD.	1970.4 ##
3	TEMPORARY BARRIER RAIL-FURNISH ONLY	L.F.	610
4	TEMPORARY BARRIER RAIL-PLACE ONLY	L.F.	1200
5	CONCRETE SEALER AS PER PLAN	SO.FT.	1265
6	CONCRETE BARRIER RAIL-CAST IN PLACE	L.F.	534.2
7	REMOVAL OF EXISTING HANDRAIL	L.S.	2000.00
8	CURB DRAIN MODIFICATION	L.S.	5000.00
9	Type 'B' ACC Base Course, Class I	Tons	8 ##
10	MOBILIZATION	L.S.	6000.00
8001	P.C.CONC. MATERIAL OVERLAY	L. S.	4714.78
8999	STOCKPILED MATERIALS	L. S.	0

ESTIMATE REFERENCE INFORMATION FOR DESIGN NO. 392	
DATA LISTED BELOW IS FOR INFORMATIONAL PURPOSES ONLY AND SHALL NOT CONSTITUTE A BASIS FOR ANY EXTRA WORK ORDERS	
ITEM NO.	DESCRIPTION
1-2	SEE STANDARD ROAD PLAN RK-17.
3-4	ALL TEMPORARY BARRIER RAIL SHALL BE NOMINAL 10' LONG CONCRETE UNITS.
5	INCLUDES 276 SQ.FT. FOR BRIDGE SEATS.
6	INCLUDES 33.3 CU.YD. OF CLASS D STRUCTURAL CONCRETE AND 5899 LBS. OF EPOXY COATED REINFORCING STEEL (COMPRISED OF 2366 L.F. OF #5 BAR AND 2285 L.F. OF #6 BAR).
8	INCLUDES 8.6 CU.YD. OF CLASS D STRUCTURAL CONCRETE AND 332 LBS. OF EPOXY COATED REINFORCING STEEL (COMPRISED OF 318 L.F. OF #5 BAR). INCLUDES 18.5' L.F. OF 10" I.D. PVC DRAIN PIPE. INCLUDES CURB REPAIR AS NOTED ON DESIGN SHEET 2.
9.	To raise the shoulder to match the PCC overlay on the approaches. See Standard Road Plan RK-17.

203-2 6-22-84
DURING CONSTRUCTION OF THIS PROJECT THE CONTRACTOR WILL BE REQUIRED TO COORDINATE HIS OPERATIONS WITH THOSE OF OTHER CONTRACTORS WORKING WITHIN THE SAME AREA. OTHER WORK IN PROGRESS DURING THE SAME PERIOD OF TIME WILL INCLUDE CONSTRUCTION OF THE FOLLOWING PROJECTS:
DESIGNER TO LIST PROJECTS
IR-35-2(240)74--12-77
I-35 PCC CONSTRUCTION
THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A SCHEDULE FOR PERFORM- MANCE OF WORK ITEMS, THE COMPLETION OF WHICH IS DEPENDENT ON COMPLETION OF PRIOR WORK BY OTHER CONTRACTORS, AT THE TIME WORK BEGINS. THIS SCHEDULE WILL BE COORDINATED WITH THE SCHEDULES OF OTHERS BY THE ENGINEER TO OBTAIN A SCHEDULE THAT IS MUTUALLY ACCEPTA- BLE. THE CONTRACTOR SHALL THEN PERFORM THE WORK AS TO CONFORM TO THE ACCEPTED SCHEDULE.

DESIGN NO. I592	OVER INTERSTATE 35	STATION 1329+51.00 (I-235)	
POLK COUNTY	MAINTENANCE NO. 7700.0R235	STATION 336+58.00 (I-35)	
SECTION 6	T-78N	R-25W	
		WALNUT TWP.	
DESIGN FOR REPAIR TO EASTBOUND			
DUAL 256'-0 & 259'-8 X VARIABLE ROADWAY			
PPC BEAM BRIDGE			
ESTIMATE OF QUANTITIES			
NO.	ITEM	UNIT	TOTAL
11	CONCRETE BARRIER RAIL-CAST IN PLACE	L.F.	525.3
12	REMOVAL OF EXISTING HANDRAIL	L.S.	2500.00
13	CURB DRAIN MODIFICATION	L.S.	8000.00
14	TEMPORARY BARRIER RAIL-FURNISH ONLY	L.F.	450
15	TEMPORARY BARRIER RAIL-PLACE ONLY	L.F.	900
16	MOBILIZATION	L.S.	6000.00
8999	STOCKPILED MATERIALS	L.S.	0

ESTIMATE REFERENCE INFORMATION FOR DESIGN NO. I592	
DATA LISTED BELOW IS FOR INFORMATIONAL PURPOSES ONLY AND SHALL NOT CONSTITUTE A BASIS FOR ANY EXTRA WORK ORDERS	
ITEM NO.	DESCRIPTION
11	INCLUDES 31.2 CU.YD. OF CLASS D STRUCTURAL CONCRETE AND 5705 LBS. OF EPOXY-COATED REINFORCING STEEL (COMPRISED OF 2329 L.F. OF NO. 5 BAR AND 2181 L.F. OF NO. 6 BAR).
13	INCLUDES 3.4 CU.YD OF CLASS D STRUCTURAL CONCRETE AND 314 LBS. OF EPOXY-COATED REINFORCING STEEL (COMPRISED OF 301 L.F. OF NO. 5 BAR). INCLUDES 18.0 L.F. OF 10" I.D. PVC DRAIN PIPE.

ESTIMATED ROADWAY QUANTITIES			100-00 01-20-84
NO.	ITEM	UNIT	TOTAL
17	EMBANKMENT-IN-PLACE	CU.YD.	170
18	PAVEMENT MARKINGS	STA.	285.3
19	FORMED STEEL BEAM GUARDRAIL	LIN.FT.	412.5 ##
20	FORMED STEEL THRIE BEAM GUARDRAIL	LIN.FT.	187.5
21	BEAM GUARDRAIL POSTS	NO.	100.0 ##
22	RE-69 BEAM GUARDRAIL END ANCHORAGE	NO.	6
23	RE-52 BEAM GUARDRAIL END ANCHORAGE	NO.	2
24	REMOVAL OF GUARDRAIL	LIN.FT.	500
25	RE-53 BEAM GUARDRAIL END ANCHORAGE	NO.	2
26	TYPE 3 OBJECT MARKER	NO.	4
27	TRIPLE YELLOW OBJECT MARKER, AS PER PLAN	NO.	10
28	TRAFFIC CONTROL	LUMP SUM	
29	TEMPORARY FLOODLIGHTING	LUMP SUM	
30	FLAGGERS	DAYS	5.5
31	MOBILIZATION	L.S.	2500.00
8002	BRIDGE APPR. CURB MODIFICATION	L.S.	626.87
8003	CONC. MODIFICATION FOR GUARDRAIL	L.S.	373.51
8999	STOCKPILED MATERIALS	L.S.	0

ESTIMATE REFERENCE INFORMATION	
DATA LISTED BELOW IS FOR INFORMATIONAL PURPOSES ONLY AND SHALL NOT CONSTITUTE A BASIS FOR ANY EXTRA WORK ORDERS	
ITEM NO.	DESCRIPTION
17	FOR GUARDRAIL INSTALLATIONS, MATERIAL TO BE FURNISHED BY THE CONTRACTOR. SEE TAB.107-23
18	SEE TAB.108-22, DETAIL 9001 AND DETAIL 9303.
19-25	SEE TABS.108-8A, 108-19 AND 110-7. THE EXISTING GUARDRAIL AND POSTS ARE TO BECOME THE PROPERTY OF THE CONTRACTOR.
26-27	SEE TAB.108-17. EXISTING MARKERS TO BECOME THE PROPERTY OF THE CONTRACTOR.
28	SEE TAB.108-23
29	SEE DETAIL SHEET 570-2.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA
DATE 10/29/91
GARY A. NOVEY
REG. NO. 8704

ESTIMATE SHEET

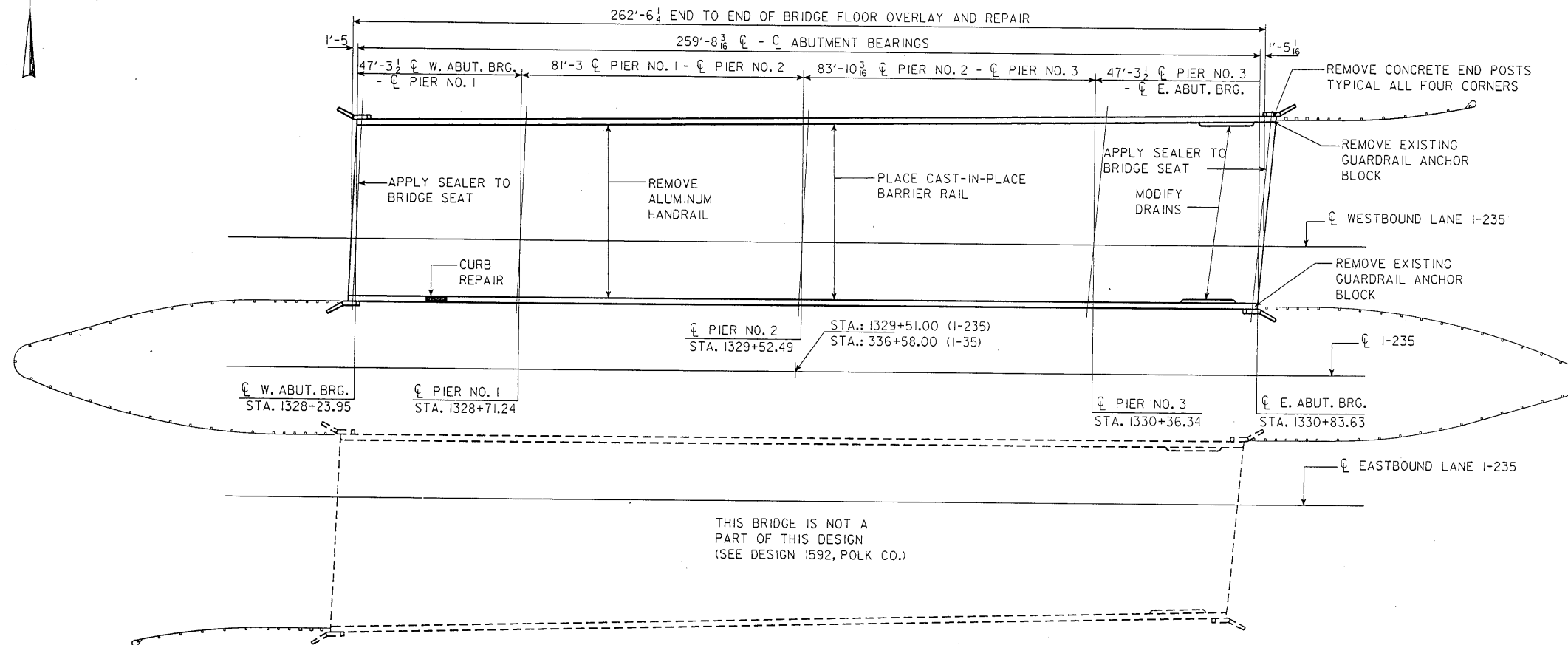


TOTAL ESTIMATED BRIDGE QUANTITIE

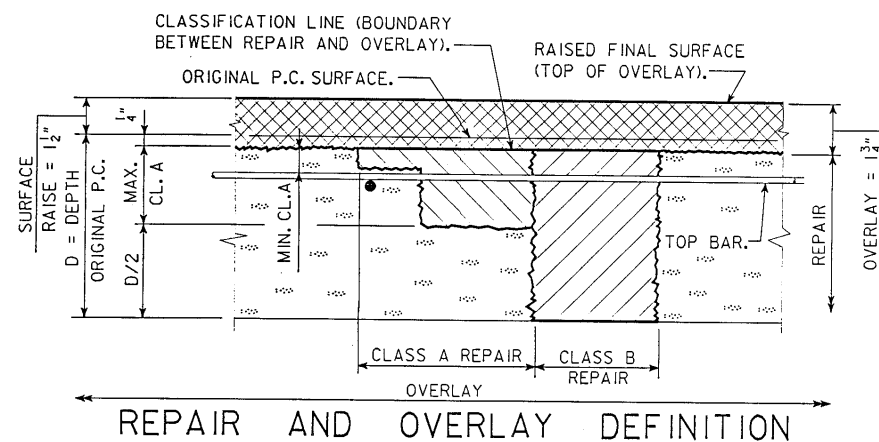
ITEM NO.	ITEM	UNIT	QUANTITY
1	CLASS A BRIDGE FLOOR REPAIR	SQ. YD.	33
2	BRIDGE FLOOR OVERLAY	SQ. YD.	1377
3	TEMPORARY BARRIER RAIL - FURNISH ONLY	L. F.	610
4	TEMPORARY BARRIER RAIL - PLACE ONLY	L. F.	1200
5	CONCRETE SEALER AS PER PLAN	SQ. FT.	1265
6	CONCRETE BARRIER RAIL - CAST IN PLACE	L. F.	534.2
7	REMOVAL OF EXISTING HANDRAIL	L. S.	LUMP SUM
8	CURB DRAIN MODIFICATION	L. S.	LUMP SUM

ESTIMATE REFERENCE INFORMATION

ITEM NO.	
3 & 4	ALL TEMPORARY BARRIER RAIL SHALL BE NOMINAL 10' LONG CONCRETE UNITS.
5	INCLUDES 276 SQ. FT. FOR BRIDGE SEATS.
6	INCLUDES 33.3 CU. YDS. OF CLASS D STRUCTURAL CONCRETE AND 5899 LBS. OF EPOXY-COATED REINFORCING STEEL (COMPRISED OF 2366 L.F. OF #5 BAR AND 2285 L.F. OF #6 BAR).
8	INCLUDES 8.6 CU. YDS. OF CLASS D STRUCTURAL CONCRETE AND 332 LBS. OF EPOXY-COATED REINFORCING STEEL (COMPRISED OF 318 L.F. OF #5 BAR). INCLUDES 18.5 L.F. OF 10" I.D. PVC DRAIN PIPE. INCLUDES CURB REPAIR AS NOTED ON DESIGN SHEET 2.



SITUATION PLAN



REPAIR AND OVERLAY DEFINITION

SPECIFICATIONS:

CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION SPECIFICATION, SERIES OF 1984, 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 1989. REINFORCING STEEL IN ACCORDANCE WITH SECTION 8, GRADE 60. CONCRETE IN ACCORDANCE WITH SECTION 8, $f'_c = 3,500$ PSI.

LOCATION:

MAINTENANCE NO. 7700.0L235
POLK COUNTY
T 78N R 25W
WALNUT TWP.
SECTION 6
I-235 OVER I-35

NOTE:
ROADWAY QUANTITIES SHOWN
ELSEWHERE IN THESE PLANS.

DESIGN HISTORY
AT THIS SITE

DES. NO.	TYPE OF WORK
865	ORIGINAL DESIGN
392	OVERLAY & REPAIR

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA
DATE 10/19/91
GARY NOVEY
REG. NO. 8704

DESIGN FOR REPAIR TO WESTBOUND
DUAL 256'-0 & 259'-8 x VARIABLE ROADWAY
PRETENSIONED PRESTRESSED CONCRETE
BEAM BRIDGES

47'-3 1/2' END SPANS 81'-3 & VARIABLE INTERIOR SPANS

SITUATION PLAN

STATION: 1329+51.00 (I-235)
STATION: 336+58.00 (I-35)

AUGUST, 1991

POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 1 OF 16 FILE NO. 28388 DESIGN NO. 392

DESIGNED BY H.B. McPHAIL TRACED BY C.E. COLE
DETAILED BY C.E. COLE CHECKED BY S.K. GUPTA

SECTION LEADER: GARY NOVEY

DECK REPAIR - QUANTITIES

STANDARD SHEET 1038

POLK COUNTY

PROJECT NUMBER

IR-35-2(233)74--12-77

STATE	REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		3	31

GENERAL NOTES:

THIS DESIGN IS FOR THE REPAIR OF THE EXISTING WESTBOUND BRIDGE OF THE DUAL 256'-0 & 259'-8 x VARIABLE ROADWAY PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES ON I-235 OVER I-35. THE BRIDGES WERE ORIGINALLY BUILT UNDER DESIGN 865 POLK COUNTY. PLANS OF THE EXISTING STRUCTURES MAY BE OBTAINED AT THE AMES OFFICE OF THE IOWA D.O.T. - HIGHWAY DIVISION.

BRIDGE WORK SHALL CONSIST OF THE FOLLOWING:

1. CLASS A BRIDGE FLOOR REPAIR.
2. BRIDGE FLOOR OVERLAY.
3. REMOVING ALUMINUM HANDRAILS.
4. REMOVING CONCRETE END POSTS AT ALL FOUR CORNERS ON THIS BRIDGE.
5. PLACING CAST-IN-PLACE BARRIER RAILS.
6. MODIFICATION OF CURB DRAINS (INCLUDING REPAIR OF DAMAGED CURB).
7. APPLICATION OF CONCRETE SEALER.
8. REMOVING GUARDRAIL ANCHOR BLOCKS.

IN ADDITION TO THE REQUIREMENTS OF ARTICLE 2413.09, CONCRETE SEALER IS TO BE APPLIED TO THE BRIDGE SEAT SURFACE OF THE ABUTMENTS. THE BRIDGE SEAT SURFACE IS TO INCLUDE ALL SURFACES OF THE BRIDGE SEAT STEPS. THE WASH BETWEEN THE STEPS AND THE EDGE FILLETS. CONCRETE SEALER SHALL ALSO BE APPLIED TO ALL OF THE INSIDE SURFACES OF THE BRIDGE DRIAN REPAIRS. THE SEALER MATERIAL, SURFACE PREPARATION AND APPLICATION SHALL BE IN ACCORDANCE WITH IOWA D.O.T. STANDARD SPECIFICATIONS, ARTICLE 2403.23(D).

PLAN QUANTITY OF FLOOR REPAIR IS BASED ON THE "DELAMINATION & SURVEY PLOT" AS SHOWN IN THESE PLANS. DARK AREAS AND BOXED-IN AREAS REPRESENT CLASS A 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 6 3/4 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 MAINTAINED AT ALL TIMES IN ACCORDANCE WITH "TRAFFIC CONTROL PLAN".

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.

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.

QUANTITY OF "CONCRETE SEALER, AS PER PLAN" IS BASED ON P.C. CONCRETE FLOOR OVERLAY.

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 HIM AT NO EXTRA COST TO THE STATE.

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

THE BID ITEM "REMOVAL OF EXISTING HANDRAIL" SHALL INCLUDE ALL COSTS ASSOCIATED WITH REMOVING CONCRETE END POSTS, CONCRETE GUARDRAIL ANCHOR BLOCKS, CONCRETE AT CURB REPAIR AREA AND CONCRETE AREAS AT ENDS OF CURB AS DESIGNATED.

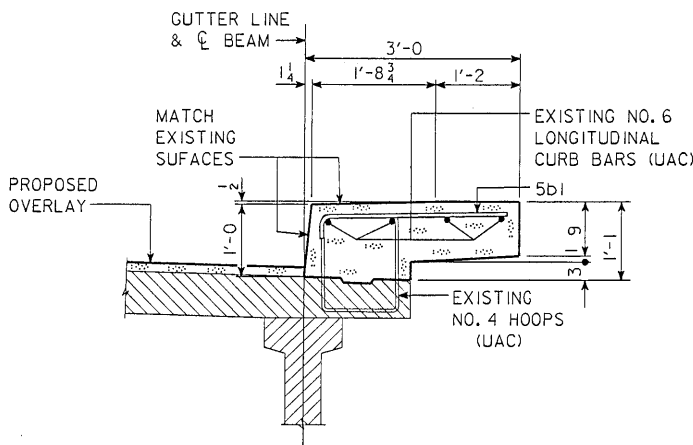
THE BID ITEM "REMOVAL OF EXISTING HANDRAIL" SHALL INCLUDE ALL COSTS ASSOCIATED WITH DISMANTLING THE EXISTING HANDRAIL (APPROXIMATELY 510 L.F. AND 62 POSTS). THE HANDRAILS ARE TO BECOME THE PROPERTY OF THE CONTRACTOR.

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 TO THESE SITES.

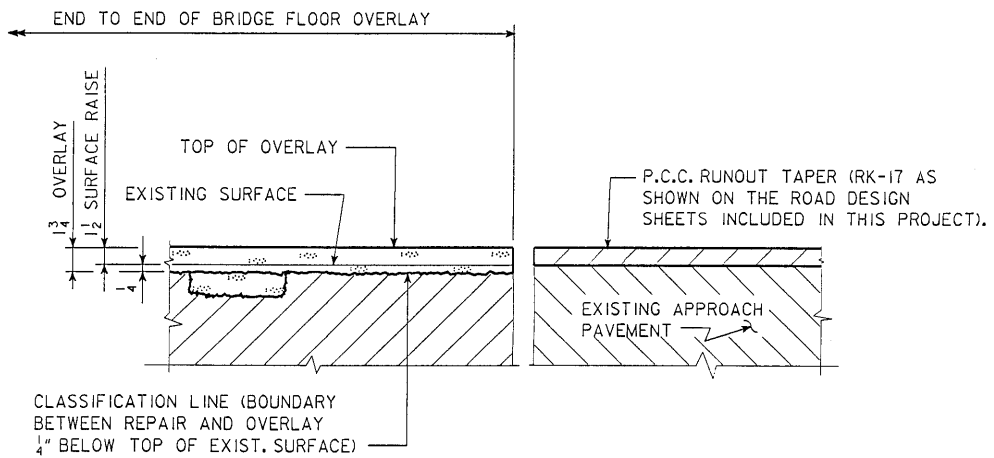
UTILITY COMPANIES WHOSE FACILITIES ARE KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS, SHALL BE NOTIFIED BY THE BRIDGE CONTRACTOR OF THE CONSTRUCTION STARTING DATE.

ALL REINFORCEMENT SUPPLIED FOR THIS STRUCTURE IS TO BE GRADE 60.

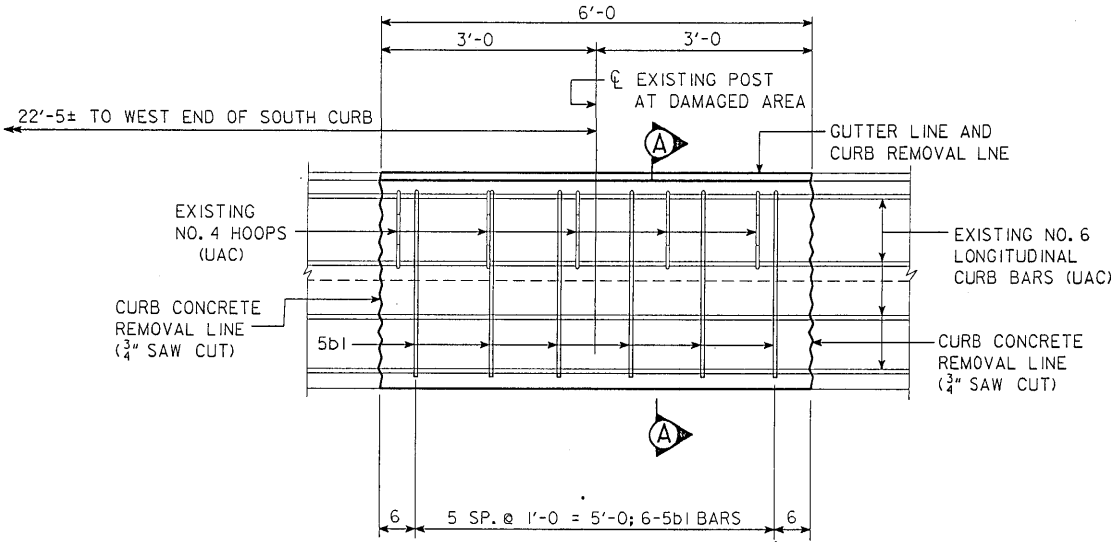
REINFORCING STEEL IS TO BE SECURELY WIRED IN PLACE BEFORE CONCRETE IS POURED.



PART SECTION A-A



PART LONGITUDINAL SECTION ALONG ROADWAY BOTH ABUTMENTS



PART PLAN OF SOUTH CURB AT CURB REPAIR AREA

EXISTING HANDRAIL AND PROPOSED CIP BARRIER RAIL ARE NOT SHOWN

NOTE:

CAREFULLY EXPOSE THE NO. 6 LONGITUDINAL CURB BARS AND THE NO. 4 SLAB TO CURB HOOP BARS AND INCORPORATE THEM INTO NEW WORK. DISCARD EXISTING TRANVERSE CURB BARS.

CURB REPAIR IS TO BE INCLUDED IN THE LUMP SUM BID ITEM "CURB DRAIN MODIFICATION".

DESIGN FOR REPAIR TO WESTBOUND
DUAL 256'-0 & 259'-8 x VARIABLE ROADWAY
PRETENSIONED PRESTRESSED CONCRETE
BEAM BRIDGES
47'-3 1/2' END SPANS 81'-3 & VARIABLE INTERIOR SPANS
GENERAL NOTES
STATION: 1329+51.00 (I-235) AUGUST, 1991
STATION: 336+58.00 (I-35)
POLK COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 2 OF 16 FILE NO. 28388 DESIGN NO. 392

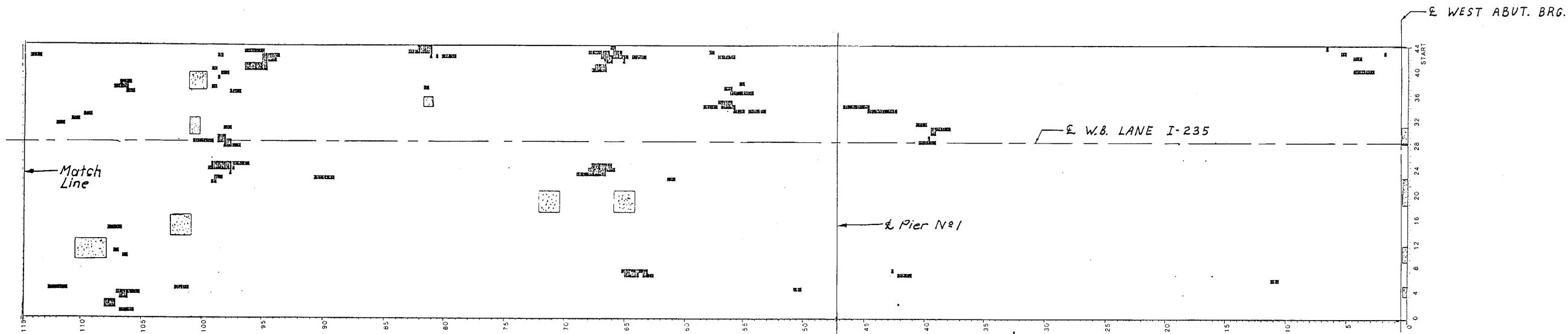
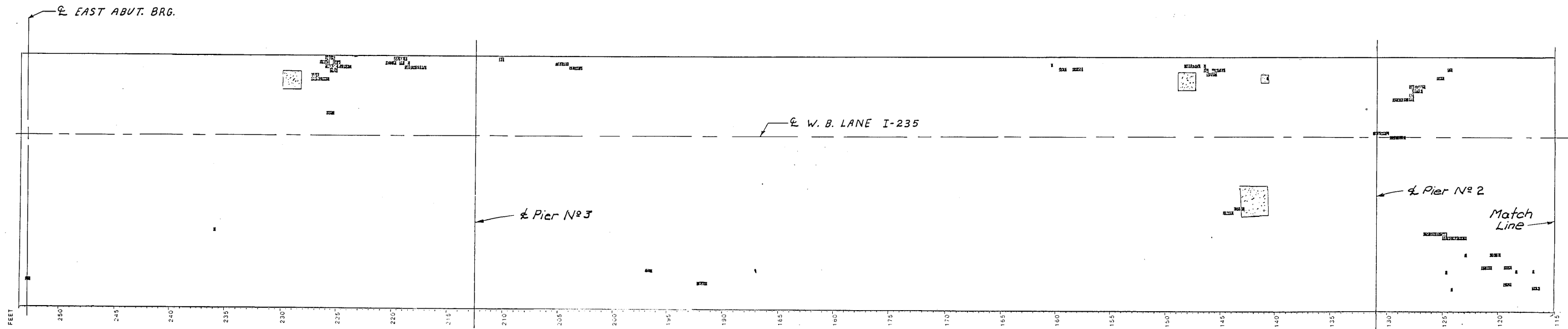
DESIGNED BY H.B.MSPHAIL TRACED BY C.E.COLE
DETAILED BY C.E.COLE CHECKED BY S.K.GUPTA

POLK COUNTY

PROJECT NUMBER

STATE IOWA FHW REGION 7 FISCAL YEAR SHEET NO. 4 TOTAL SHEETS 31

IOWA D.O.T.
Fri Sep 06 09:05:44 1991
Bridge : 7700.0235
Data Collected : Mon Jul 08 13:59:54 1991
Overall Length = 253 Feet 3 Inches Overall Width = 45 Feet 0 Inches
60788 Samples Taken 11397.750 Square Feet Measured
Delamination At = 400 Millivolts
613 Samples Delaminated 114.938 (1.008x) Square Feet Bad



DELAMINATION & SURVEY PLOT

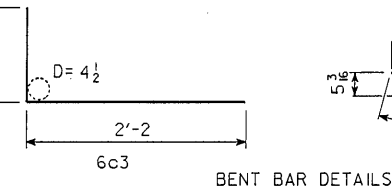
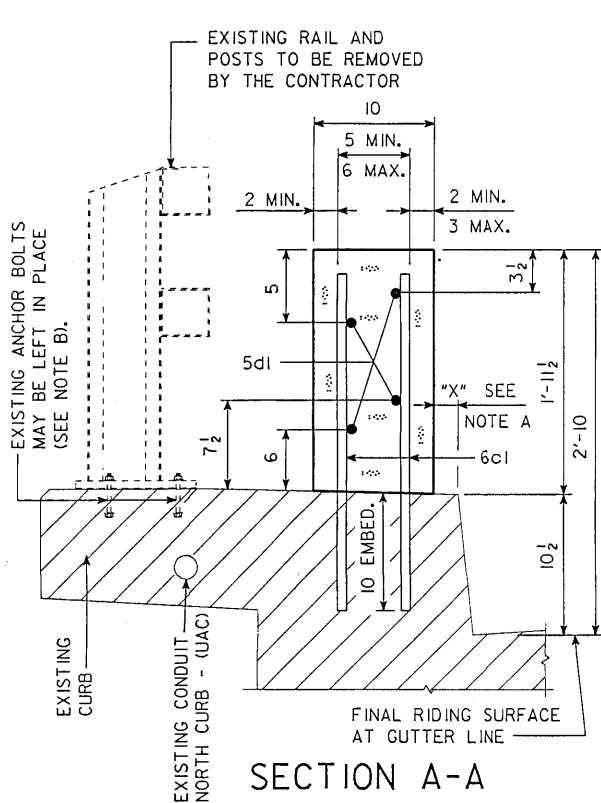
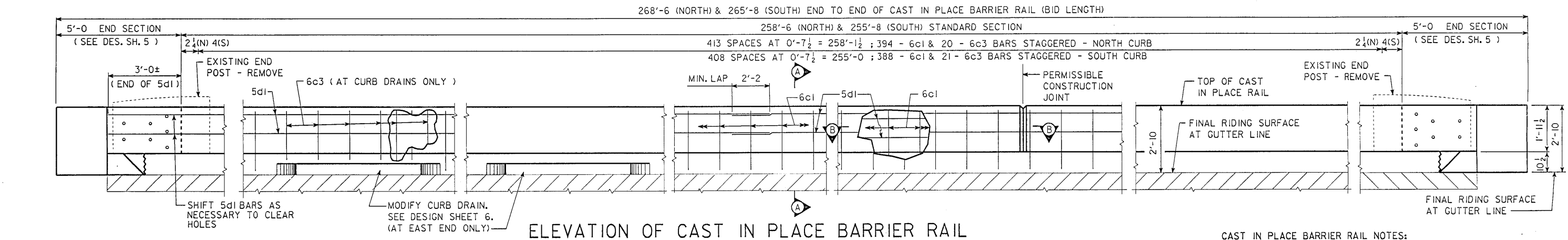
DARK AREAS REPRESENT SPALLS AND DELAMINATIONS AS DETECTED BY THE DELAMTECT MACHINE. BOXED IN AREAS, WITH SPECKLING, REPRESENT UNSOUND AREAS AS FOUND BY FIELD (HAND) SURVEY.

DESIGN FOR REPAIR TO WESTBOUND				
DUAL 256'-0 & 259'-8 x VARIABLE ROADWAY				
PRETENSIONED PRESTRESSED CONCRETE				
BEAM BRIDGES				
47'-3 1/2 END SPANS		81'-3 & VARIABLE INTERIOR SPANS		
DELAMINATION & SURVEY PLOT				
STATION: 1329+51.00 (I-235)				
STATION: 336+58.00 (I-35)				
AUGUST, 1991				
POLK COUNTY				
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION				
DESIGN SHEET NO. 3 OF 16 FILE NO. 28388 DESIGN NO. 392				
STATE	PRWA Region	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		5	31

DESIGNED BY: H.B. McPhail
DETAILED BY: C.E. Cole
TRACED BY: C.E. Cole
CHECKED BY: S.K. Gupta

POLK COUNTY

PROJECT NUMBER



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

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 STD. RAIL SECTION SHALL BE TRANSITIONED TO 2" TO MATCH THE 5'-0 END SECTION. SEE DESIGN SHEET 5.

NOTE B:
EXISTING RAIL IS TO BE REMOVED. ANY ANCHOR BOLTS THAT WILL HAVE AT LEAST 2" OF CONCRETE COVER WHEN ENCOMPASSED BY THE NEW BARRIER RAIL MAY BE LEFT IN PLACE AT THE CONTRACTOR'S OPTION SUBJECT TO THE APPROVAL OF THE ENGINEER. ANY ANCHOR BOLTS NOT HAVING THE 2" MIN. COVER SHALL BE CUT OFF FLUSH WITH OR SLIGHTLY BELOW THE TOP OF CURB AND ENDS OF NON STAINLESS STEEL BOLTS PAINTED WITH TWO COATS OF ZINC RICH PAINT. STAINLESS STEEL ANCHOR BOLTS OUTSIDE THE AREA OF NEW BARRIER RAIL MAY BE LEFT IN PLACE AT CONTRACTOR'S OPTION SUBJECT TO APPROVAL OF THE ENGINEER. STAINLESS STEEL BOLTS NEED NOT BE PAINTED. NON STAINLESS STEEL ANCHOR BOLTS OUTSIDE THE AREA OF NEW BARRIER RAIL SHALL BE CUT OFF FLUSH WITH OR SLIGHTLY BELOW TOP OF CURB SURFACE AND THE REMAINING EXPOSED ENDS PAINTED WITH TWO COATS OF ZINC RICH PAINT.

EPOXY REINFORCING STEEL-TWO RAILS						
BAR	LOCATION	SHAPE	NO.	LENGTH	LIN. FT.	WEIGHT
6c1	STANDARD RAIL, VERT.	—	798	2'-7	2062	3096
6c2	END SECTION, VERTICAL	—	40	2'-6	100	150
6c3	RAIL, VERTICAL @ DRAINS	L	41	3'-0	123	185
5d1	STANDARD RAIL, LONGIT.	—	56	39'-8	2221	2317
5d2	END SECTION, LONGIT.	—	12	4'-8	56	58
5d3	END SECTION, LONGIT.	—	12	4'-8	56	58
5d4	CURB, LONGITUDINAL	—	8	4'-2	33	35
TOTAL (LBS.)						5899
CONCRETE PLACEMENT SUMMARY						
SECTION					TOTAL	
STANDARD SECTION					514.2' AT 0.06 CU. YDS. PER LIN. FT.	30.9
END SECTIONS					4 AT 0.6 CU. YDS. PER SECTION	2.4
					TOTAL (CU. YDS.)	33.3
ESTIMATED QUANTITIES- TWO RAILS						
ITEM				UNITS	QUANTITY	
CONCRETE BARRIER RAIL, (CAST-IN-PLACE)				LIN. FT.	534.2	

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.

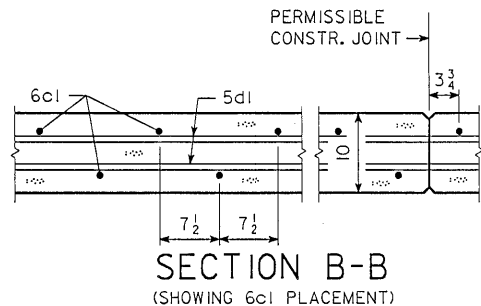
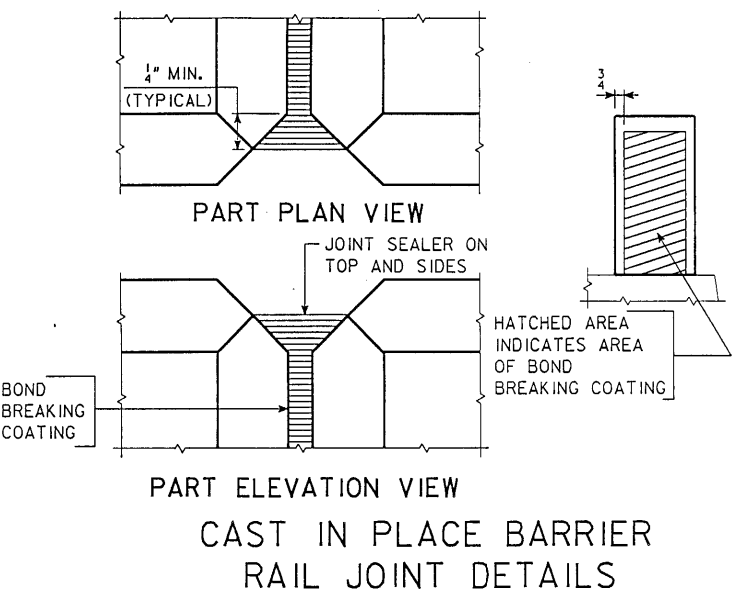
ALL REINFORCING STEEL IS TO BE GRADE 60 AND EPOXY COATED.

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 HIM AT NO COST TO THE STATE.

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

THE PRICE BID FOR "REMOVAL OF EXISTING HANDRAIL" SHALL INCLUDE ALL COSTS ASSOCIATED WITH DISMANTLING THE EXISTING ALUMINUM HANDRAIL (APPROX. 510 L.F. AND 62 POSTS). THE RAILS AND POSTS ARE TO BECOME THE PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE SITE BY HIM. THE BID ITEM SHALL ALSO INCLUDE ALL COSTS ASSOCIATED WITH THE REMOVAL OF THE EXISTING CONCRETE END POSTS, GUARDRAIL ANCHOR BLOCKS AND THE CUTTING OFF AND PAINTING OF THE EXISTING RAIL POST ANCHOR BOLTS IF REQUIRED.



DOWEL SETTING NOTE:

ALL 6c1 & 5d4 SHALL BE SET AS DOWELS IN DRILLED HOLES. DEPTH OF HOLES TO BE 10" FOR 6c1 & 5d4 BARS. 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 6c1:

A. EPOXY GROUT SYSTEM IN ACCORDANCE WITH STANDARD SPECIFICATIONS ARTICLE 2301.15 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.

5d4 BARS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR THE EPOXY GROUT SYSTEM AS NOTED IN PARAGRAPH "A" AS NOTED ABOVE.

DESIGN FOR REPAIR TO WESTBOUND

DUAL 256'-0 & 259'-8 x VARIABLE ROADWAY PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES

47'-3 1/2 END SPANS 81'-3 & VARIABLE INTERIOR SPANS

CAST-IN-PLACE BARRIER RAIL DETAILS

STATION: 1329+51.00 (I-235)
STATION: 336+58.00 (I-35)

AUGUST, 1991

POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

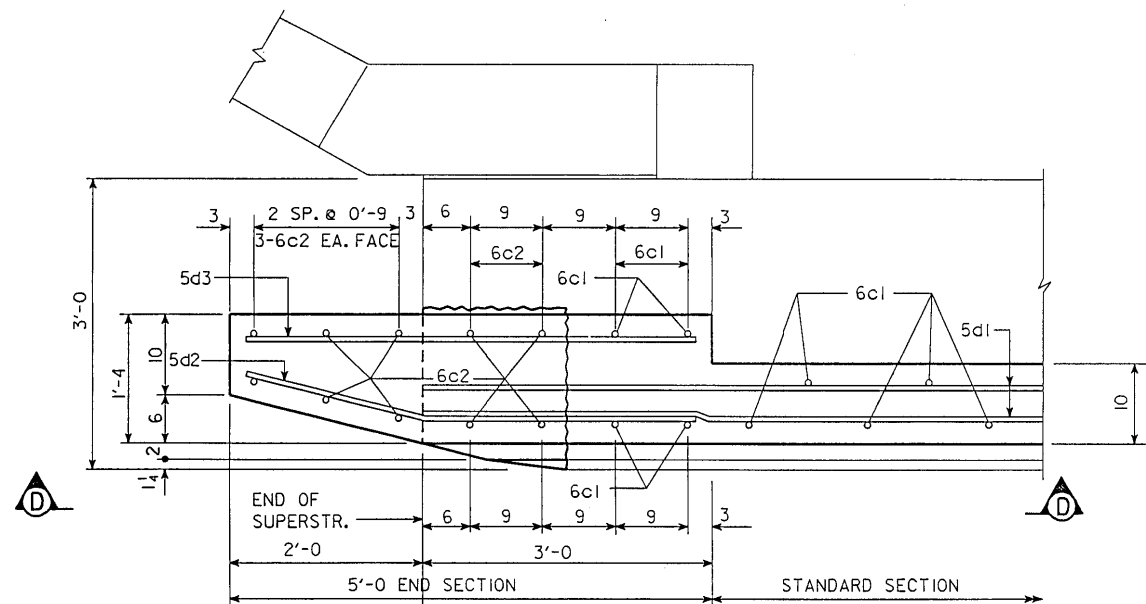
DESIGN SHEET NO. 4 OF 16 FILE NO. 28388 DESIGN NO. 392

DESIGNED BY H.B.MCPHAIL TRACED BY C.E.COLE
DETAILED BY C.E.COLE CHECKED BY S.K.GUPTA

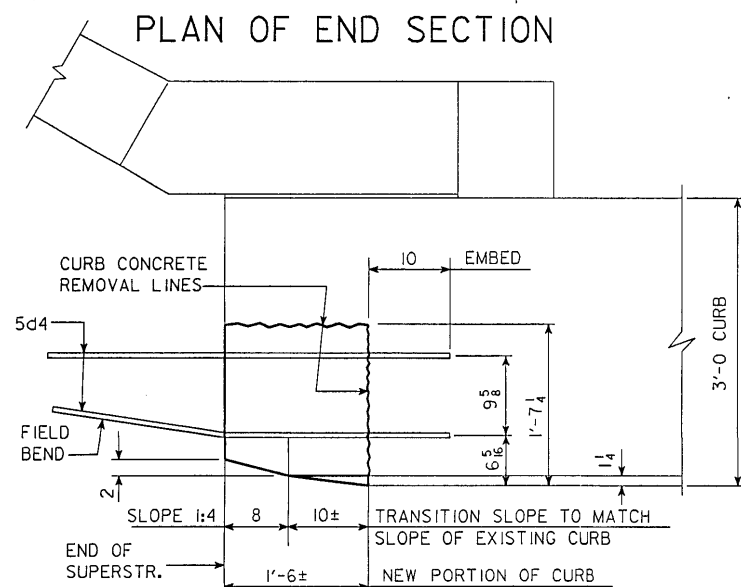
POLK COUNTY

PROJECT NUMBER

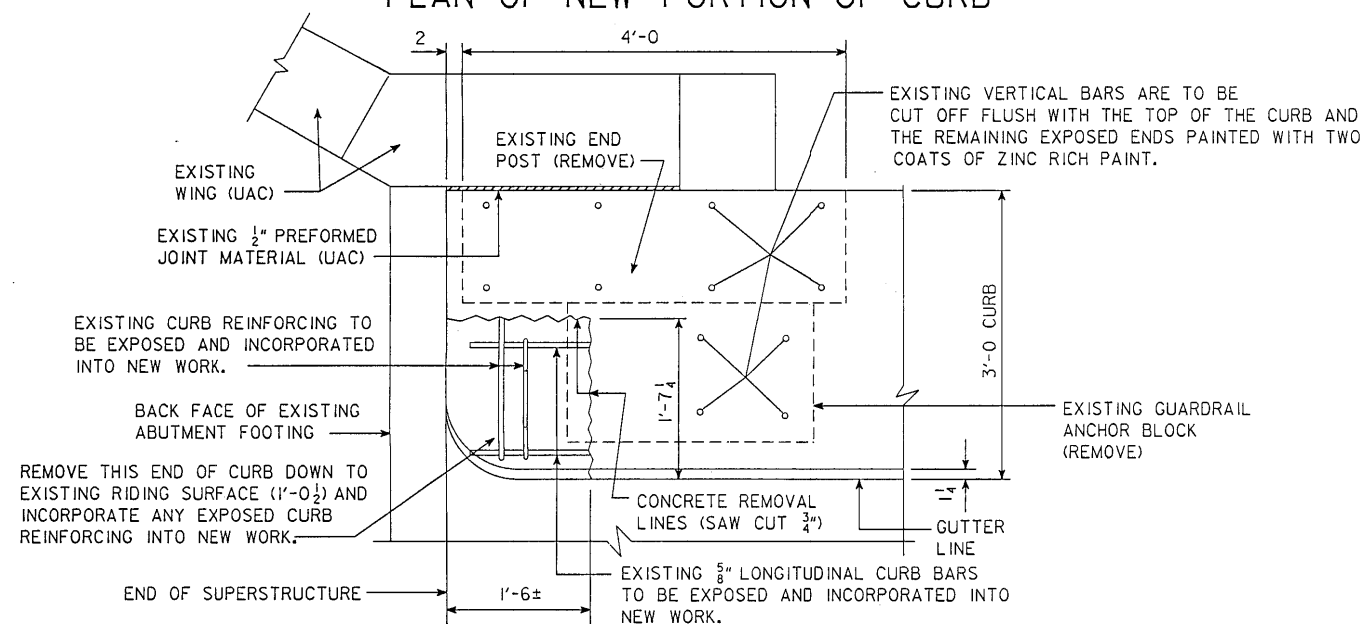
STATE IOWA REGION 7 FISCAL YEAR SHEET NO. 6 TOTAL SHEETS 31



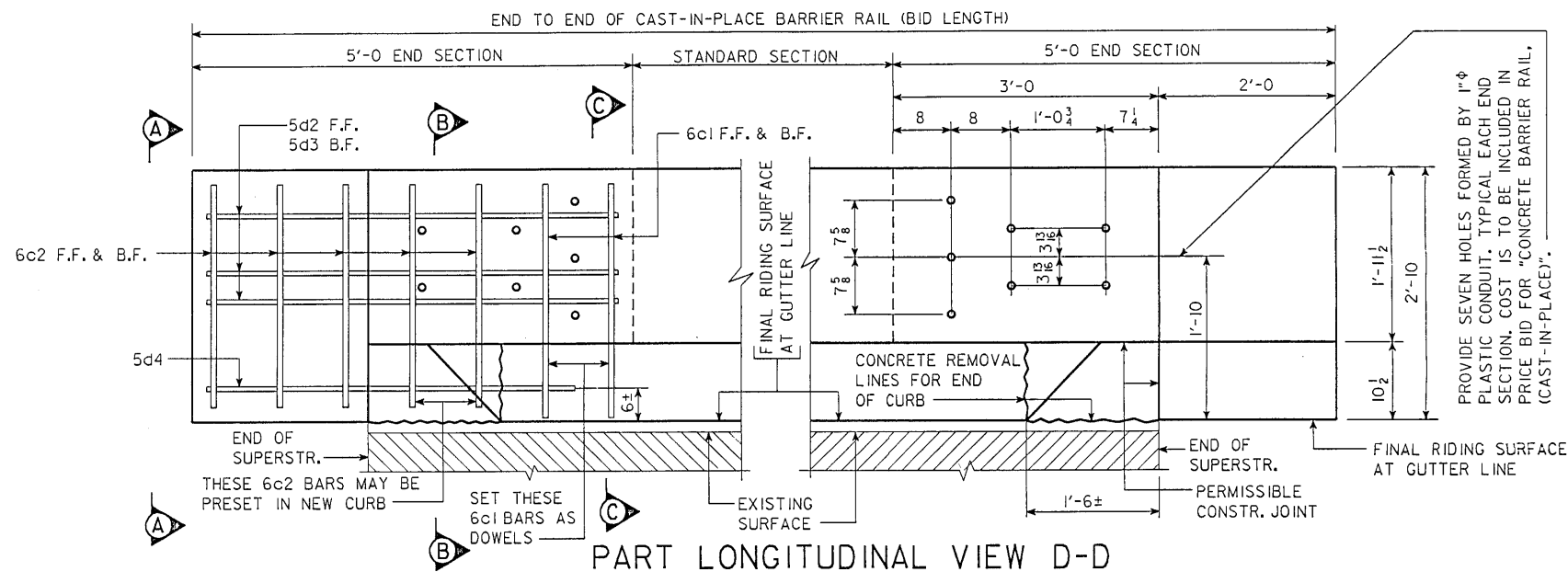
PLAN OF END SECTION



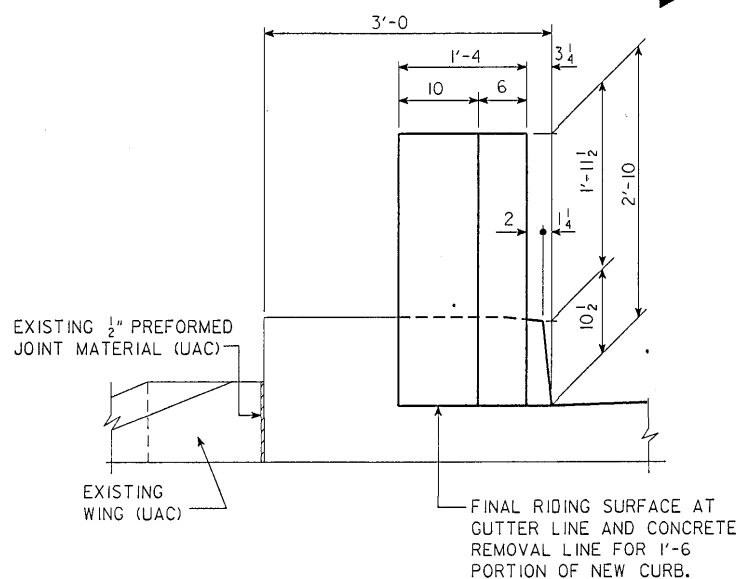
PLAN OF NEW PORTION OF CURB



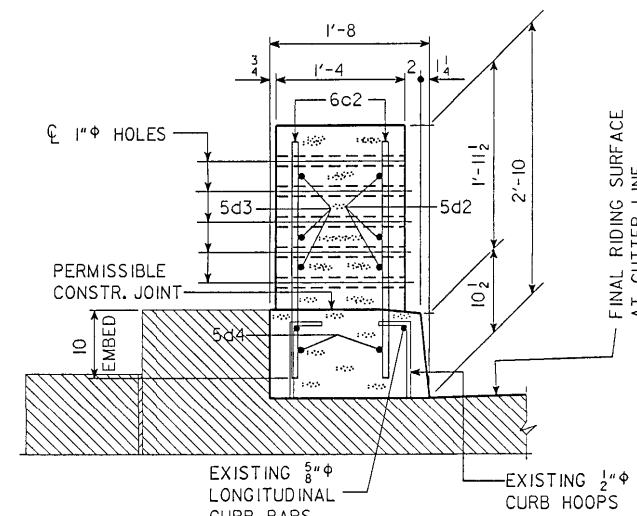
PLAN VIEW AT CORNERS OF BRIDGE
(SHOWING EXISTING CONDITIONS AND REMOVAL DETAILS)



PART LONGITUDINAL VIEW D-D

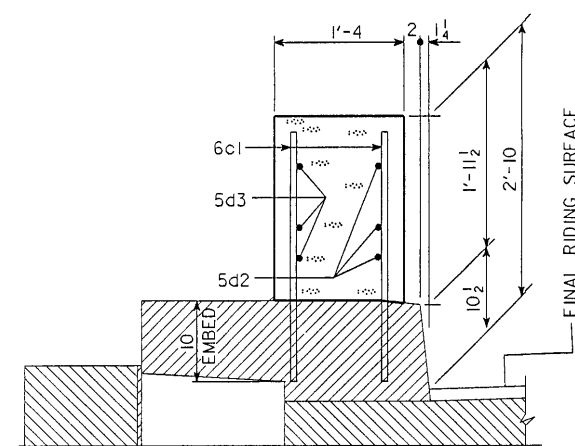


VIEW A-A



SECTION B-B

NOTE:
5d2 & 5d3 BARS ARE TO
BE CENTERED BETWEEN 1" HOLES
AS SHOWN.



SECTION C-C

NOTE: DETAILS SHOWN ON THIS SHEET ARE TYPICAL
AT ALL FOUR CORNERS OF THIS BRIDGE.

DESIGN FOR REPAIR TO WESTBOUND
DUAL 256'-0 & 259'-8 x VARIABLE ROADWAY
PRETENSIONED PRESTRESSED CONCRETE
BEAM BRIDGES

47'-3 1/2' END SPANS 81'-3 & VARIABLE INTERIOR SPANS

5'-0' END SECTION DETAILS

STATION: 1329+51.00 (1-235)

STATION: 336+58.00 (1-35)

AUGUST, 1991

POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 5 OF 16 FILE NO. 28388 DESIGN NO. 392

DESIGNED BY H.B. McPHAIL TRACED BY C.E. COLE
DETAILED BY C.E. COLE CHECKED BY S.K. GUPTA

POLK COUNTY

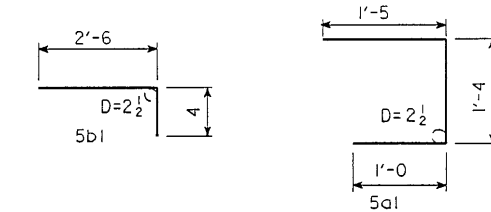
PROJECT NUMBER

STATE	FHWA REGION	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		7	31

EPOXY REINF. BAR LIST - TWO DRAIN MODIFICATION

BAR	LOCATION	SHAPE	NO.	LENGTH	LIN. FT.	WEIGHT
5a1	SLAB TO CURB TRANSVERSE	□	32	3'-9"	120	125
5b1	CURB, TRANSVERSE	□	64	2'-10"	181	189
5b1	CURB REPAIR, TRANSVERSE	□	6	2'-10"	17	18
TOTAL LBS.						332

BENT BAR DETAILS



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

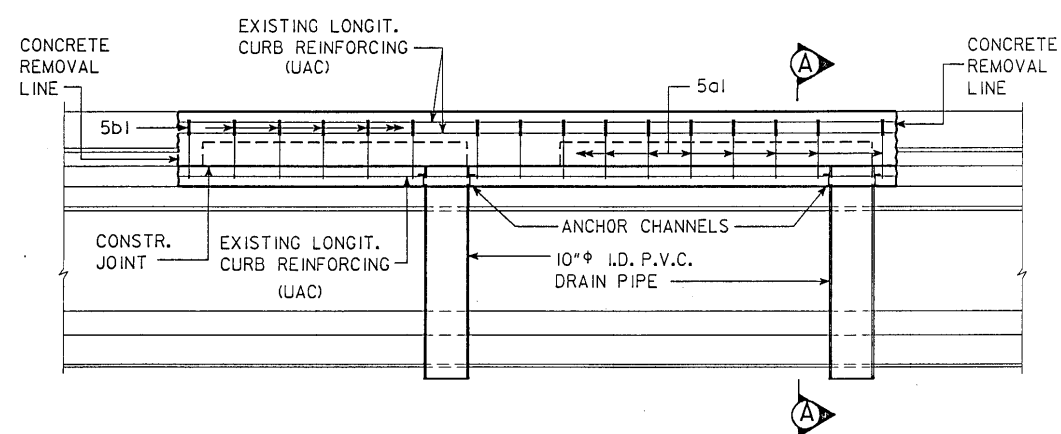
CONCRETE PLACEMENT QUANTITIES

LOCATION	UNIT	QUANTITY
* CURB DRAIN MODIFICATION	CU. YD.	4.0

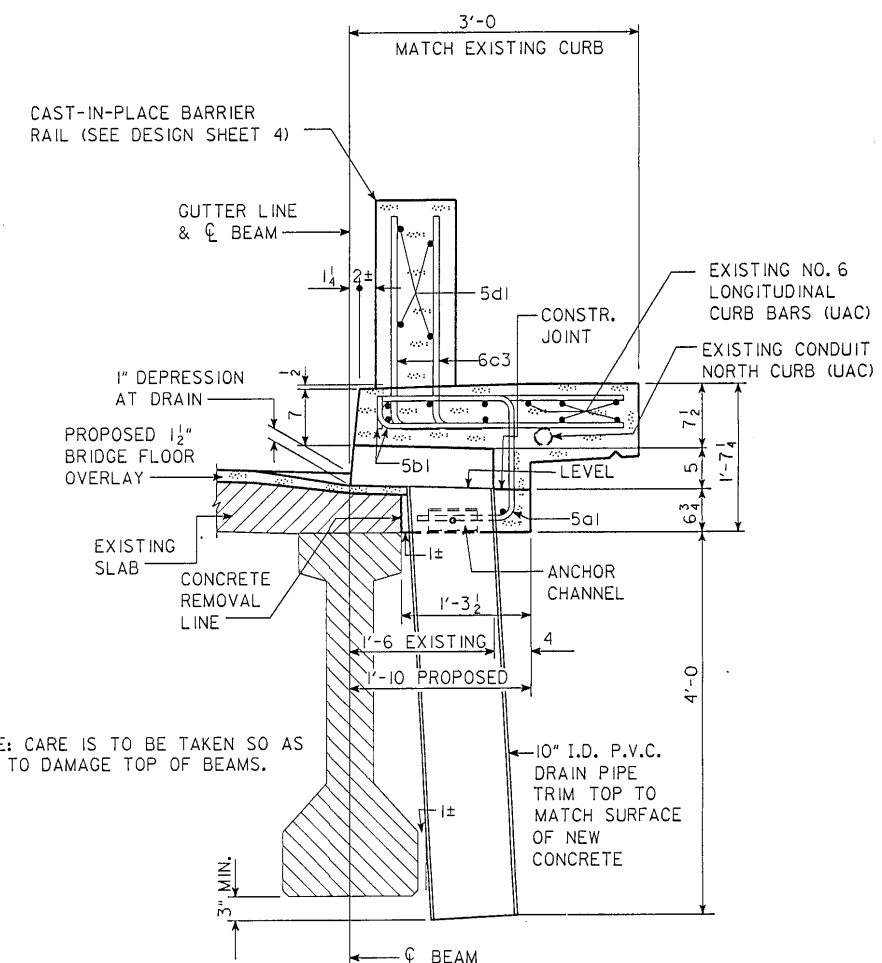
* INCLUDES 1.3 CU.YD. FOR CURB AND 0.4 CU.YD. FOR SLAB PER DRAIN.
INCLUDES 0.6 CU.YD. FOR CURB REPAIR AREA.

DRAIN MODIFICATION NOTES:

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 1 1/2" (2" WHERE POSSIBLE).
ALL CURB DRAIN MODIFICATION CONCRETE IS TO BE CLASS D.
ALL REINFORCING IS TO BE EPOXY COATED.
REMOVALS SHALL BE IN ACCORDANCE WITH SECTION 2401 OF THE STANDARD SPECIFICATIONS.
P.C.V. DRAIN PIPE SHALL BE NONPERFORATED PIPE MEETING THE REQUIREMENTS OF ARTICLE 4143.01C OF THE STANDARD SPECIFICATIONS.
THE LUMP SUM BID FOR "CURB DRAIN MODIFICATION" IS TO INCLUDE ALL COSTS INVOLVED IN REMOVING THE EXISTING CONCRETE AS SHOWN ON THIS SHEET. IT SHALL ALSO INCLUDE THE COST OF FURNISHING NEW REINFORCING STEEL, STRUCTURAL CONCRETE, 10" I.D. PVC DRAIN PIPE PLUS ANCHORS, AND ALL LABOR TO CONSTRUCT THE DRAIN INTAKE AND DRAIN EXTENSION AS SHOWN ON THIS SHEET.



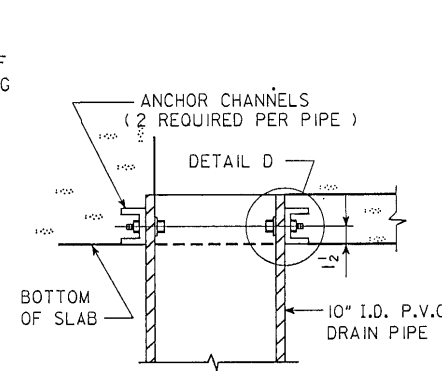
PART ELEVATION



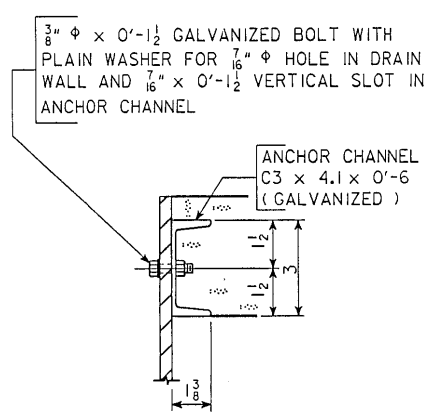
NOTE: CARE IS TO BE TAKEN SO AS NOT TO DAMAGE TOP OF BEAMS.

SECTION A-A

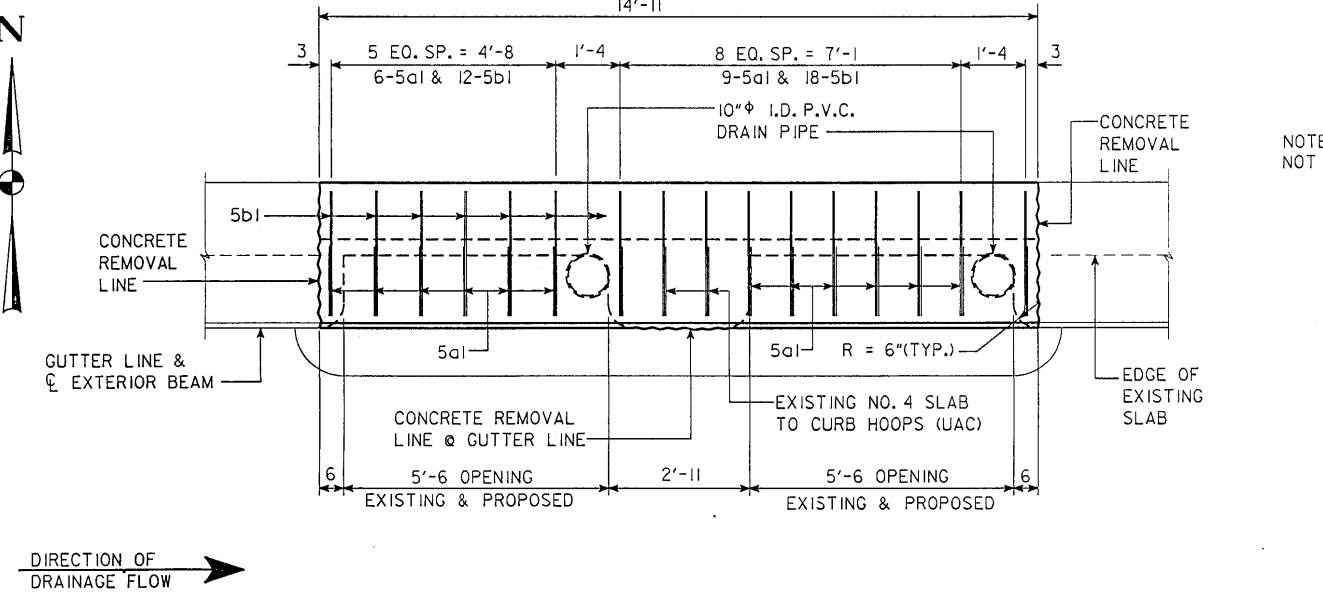
NOTE: EXISTING LONGITUDINAL CURB REINFORCING IS TO BE CAREFULLY EXPOSED AND INCORPORATED INTO NEW WORK. EXISTING SLAB BARS ARE TO BE CUT AND/OR BENT AS NECESSARY TO INSTALL DRAIN PIPE. ALL SLAB STEEL IS TO BE INCORPORATED INTO NEW WORK, IF POSSIBLE. DISCARD EXISTING TRANSVERSE CURB BARS.
SEE CAST-IN-PLACE BARRIER RAIL DETAIL SHEET FOR 6c3 BAR DETAILS. 6c1 BARS MAY BE SET IN THE CONCRETE AREAS BETWEEN THE OPENINGS.



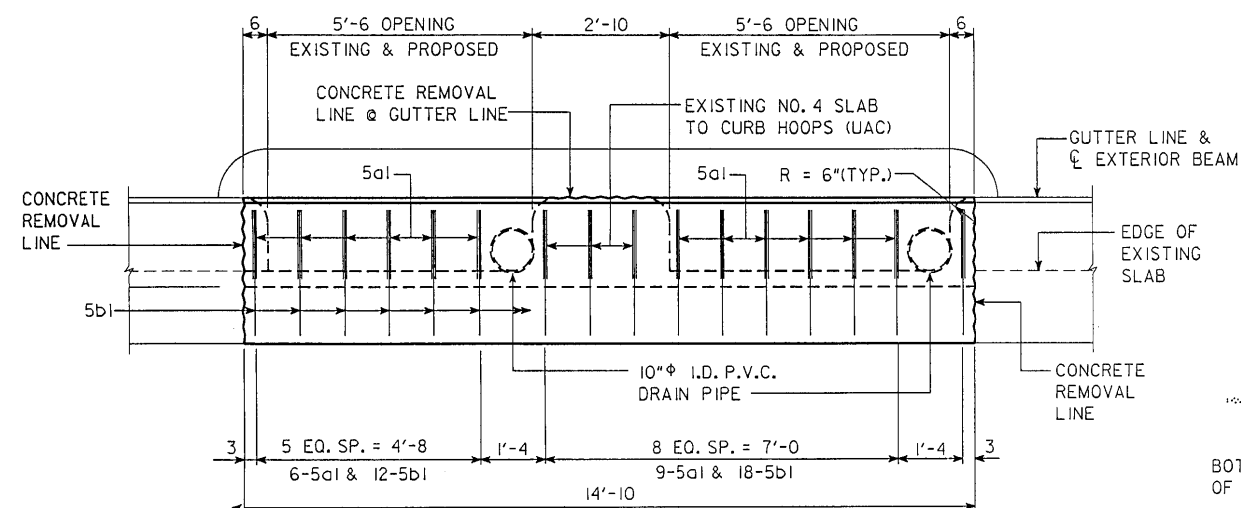
DRAIN TOP DETAIL



DETAIL D



DIRECTION OF DRAINAGE FLOW



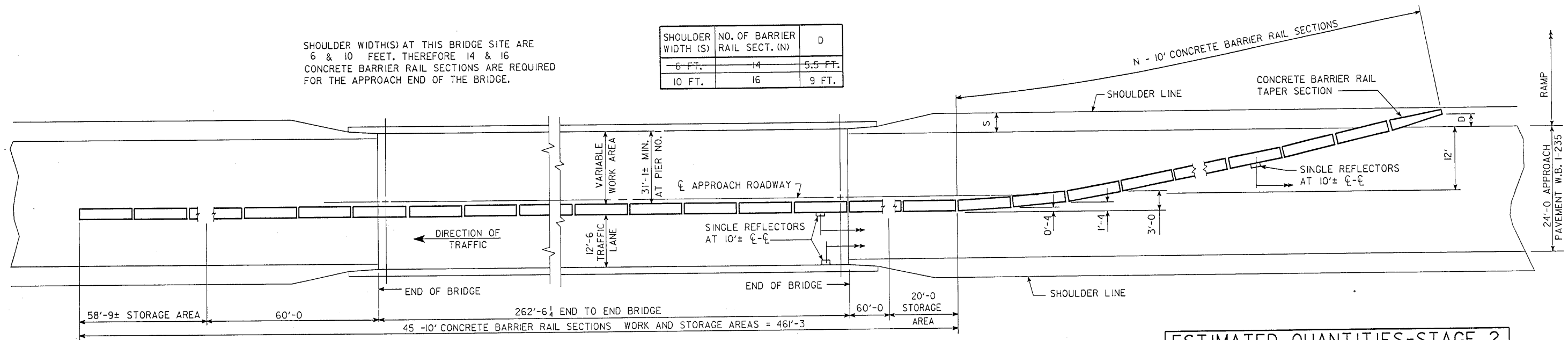
PART PLAN

EXISTING LONGITUDINAL CURB REINFORCING NOT SHOWN

DESIGN FOR REPAIR TO WESTBOUND
DUAL 256'-0 & 259'-8 x VARIABLE ROADWAY
PRETENSIONED PRESTRESSED CONCRETE
BEAM BRIDGES
47'-3 1/2 END SPANS 81'-3 & VARIABLE INTERIOR SPANS
DRAIN MODIFICATION DETAILS
STATION: 1329+51.00 (1-235)
STATION: 336+58.00 (1-35)
AUGUST, 1991
POLK COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 6 OF 16 FILE NO. 28388 DESIGN NO. 392

SHOULDER WIDTH(S) AT THIS BRIDGE SITE ARE
6 & 10 FEET. THEREFORE 14 & 16
CONCRETE BARRIER RAIL SECTIONS ARE REQUIRED
FOR THE APPROACH END OF THE BRIDGE.

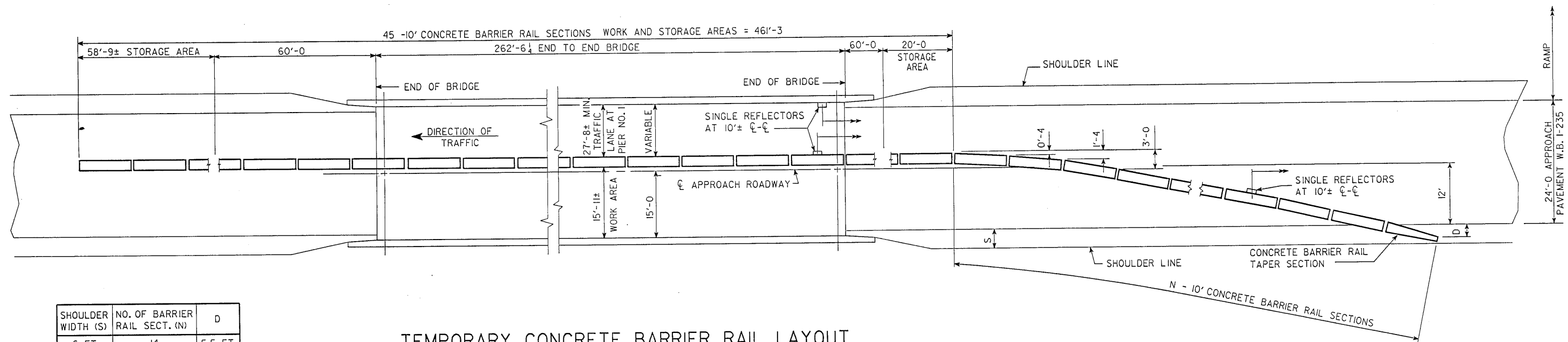
SHOULDER WIDTH (S)	NO. OF BARRIER RAIL SECT. (N)	D
6 FT.	14	5.5 FT.
10 FT.	16	9 FT.



TEMPORARY CONCRETE BARRIER RAIL LAYOUT
FOR ONE WAY TRAFFIC
STAGE 2

ESTIMATED QUANTITIES-STAGE 2	
ITEM	AMOUNT
TEMPORARY BARRIER RAIL, PLACE ONLY	610 L.F.

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



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

SHOULDER WIDTH(S) AT THIS BRIDGE SITE ARE
6 & 10 FEET. THEREFORE 14 & 16
CONCRETE BARRIER RAIL SECTIONS ARE REQUIRED
FOR THE APPROACH END OF THE BRIDGE.

TEMPORARY CONCRETE BARRIER RAIL LAYOUT
FOR ONE WAY TRAFFIC
STAGE 1

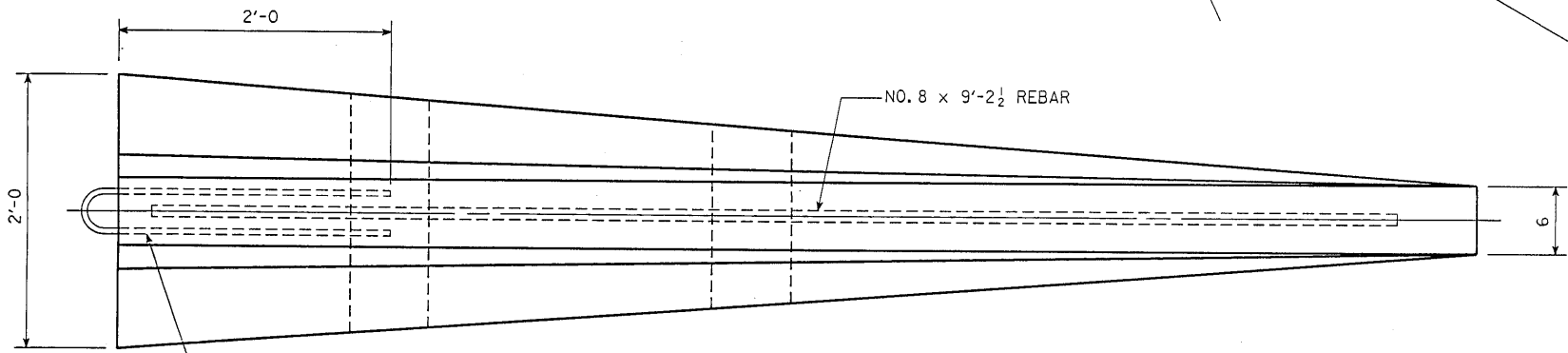
ESTIMATED QUANTITIES-STAGE 1	
ITEM	AMOUNT
TEMPORARY BARRIER RAIL, FURNISH ONLY	610 L.F.
TEMPORARY BARRIER RAIL, PLACE ONLY	590 L.F.

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

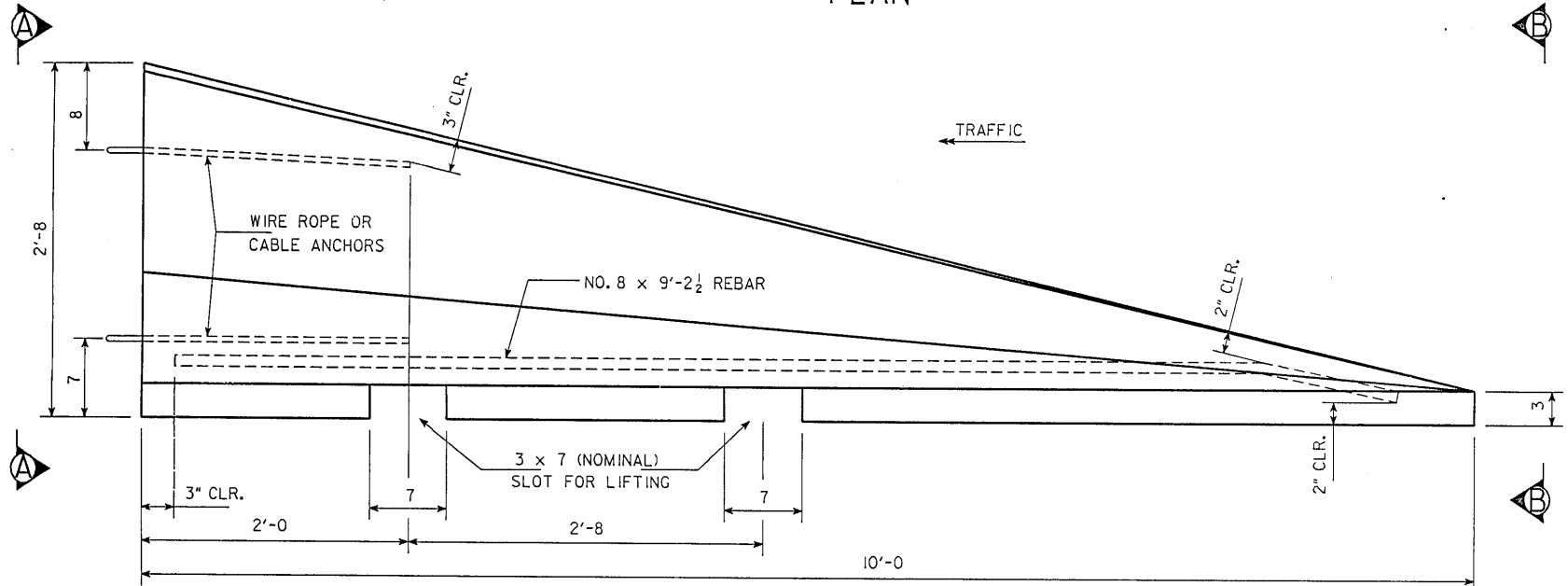
DESIGN FOR REPAIR TO WESTBOUND
DUAL 256'-0 & 259'-8 x VARIABLE ROADWAY
PRETENSIONED PRESTRESSED CONCRETE
BEAM BRIDGES
47'-3 1/2' END SPANS 81'-3 & VARIABLE INTERIOR SPANS
STAGING DETAILS
STATION: 1329+51.00 (1-235)
STATION: 336+58.00 (1-35)
AUGUST, 1991
POLK COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 7 OF 16 FILE NO. 28388 DESIGN NO. 392

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.

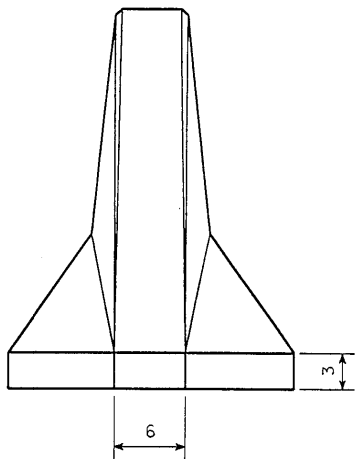
TYPICAL
CONCRETE BARRIER RAIL
TAPER SECTION



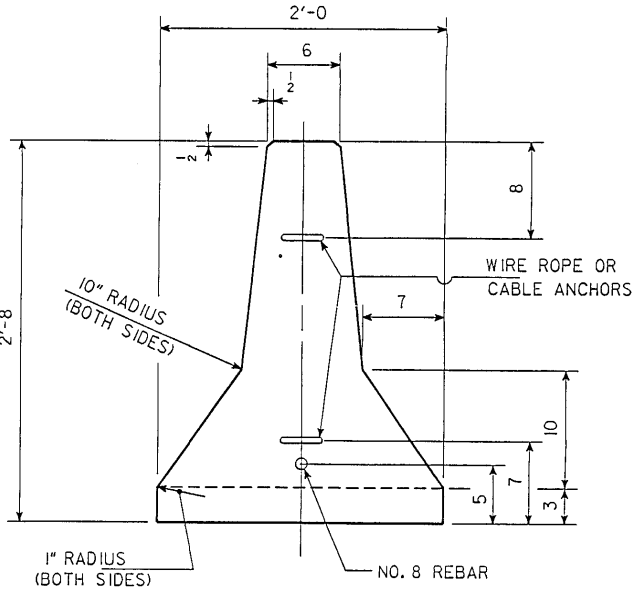
PLAN



SIDE ELEVATION

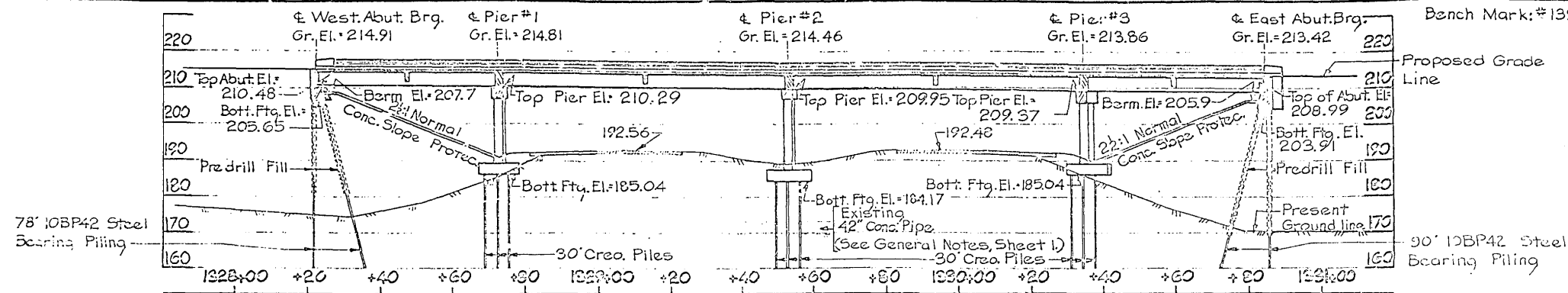


FRONT VIEW B-B



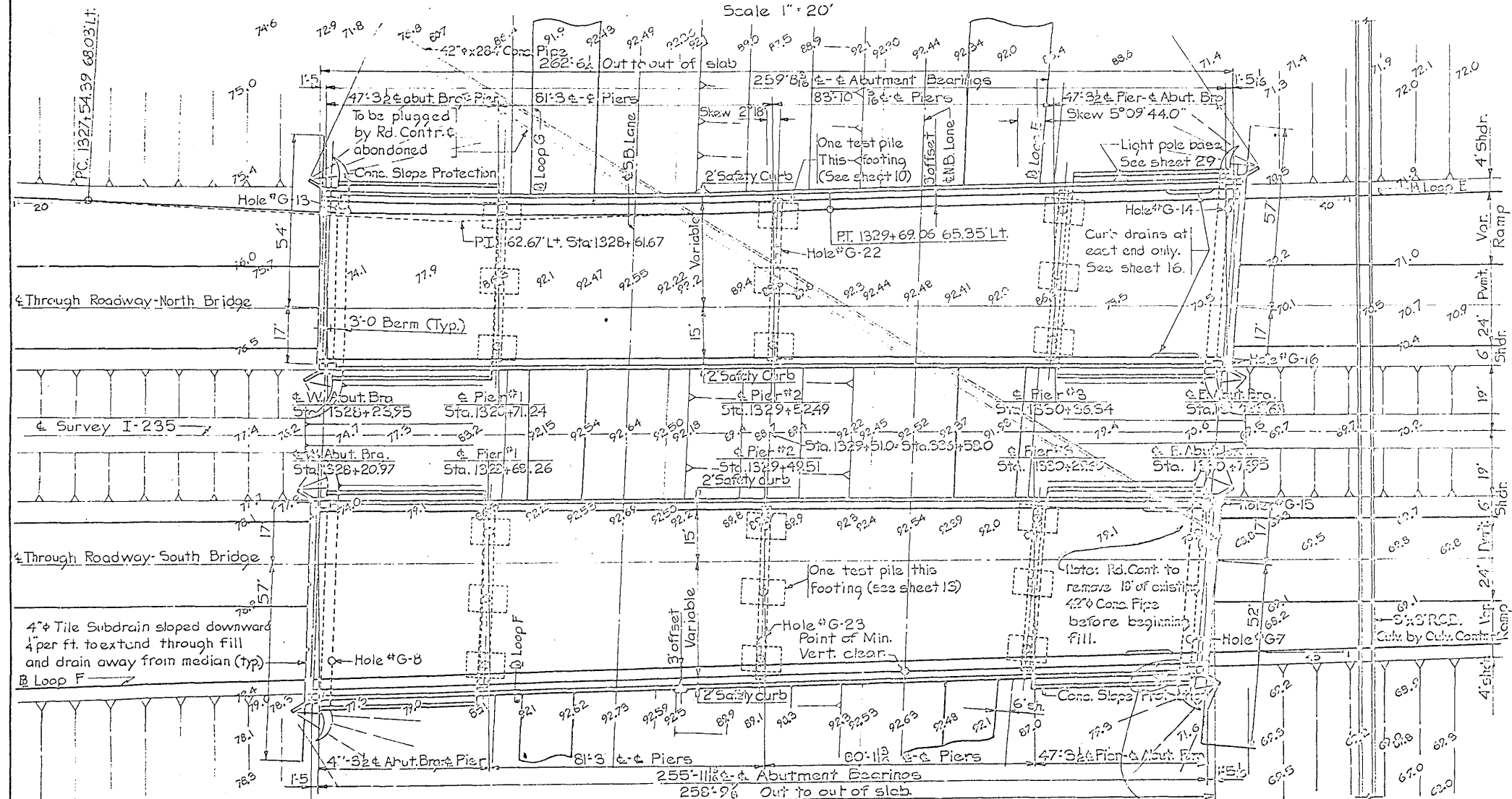
END VIEW A-A

DESIGN FOR REPAIR TO WESTBOUND
DUAL 256'-0 & 259'-8 x VARIABLE ROADWAY
PRETENSIONED PRESTRESSED CONCRETE
BEAM BRIDGES
47'-3 1/2 END SPANS 81'-3 & VARIABLE INTERIOR SPANS
CONCRETE BARRIER RAIL TAPER SECTION
STATION: 1329+51.00 (1-235)
STATION: 336+58.00 (1-35)
AUGUST, 1991
POLK COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 9 OF 16 FILE NO. 28388 DESIGN NO. 392



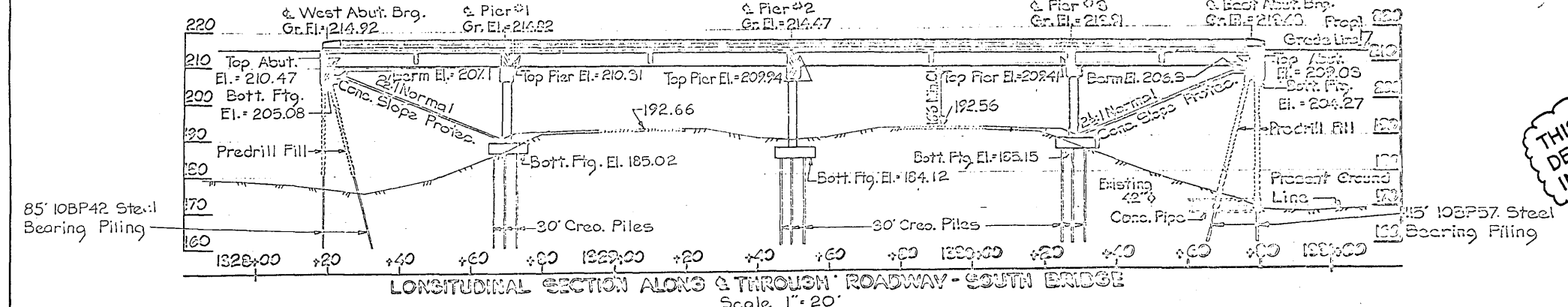
LONGITUDINAL SECTION ALONG & THROUGH ROADWAY-NORTH BRIDGE

Scale 1" = 20'



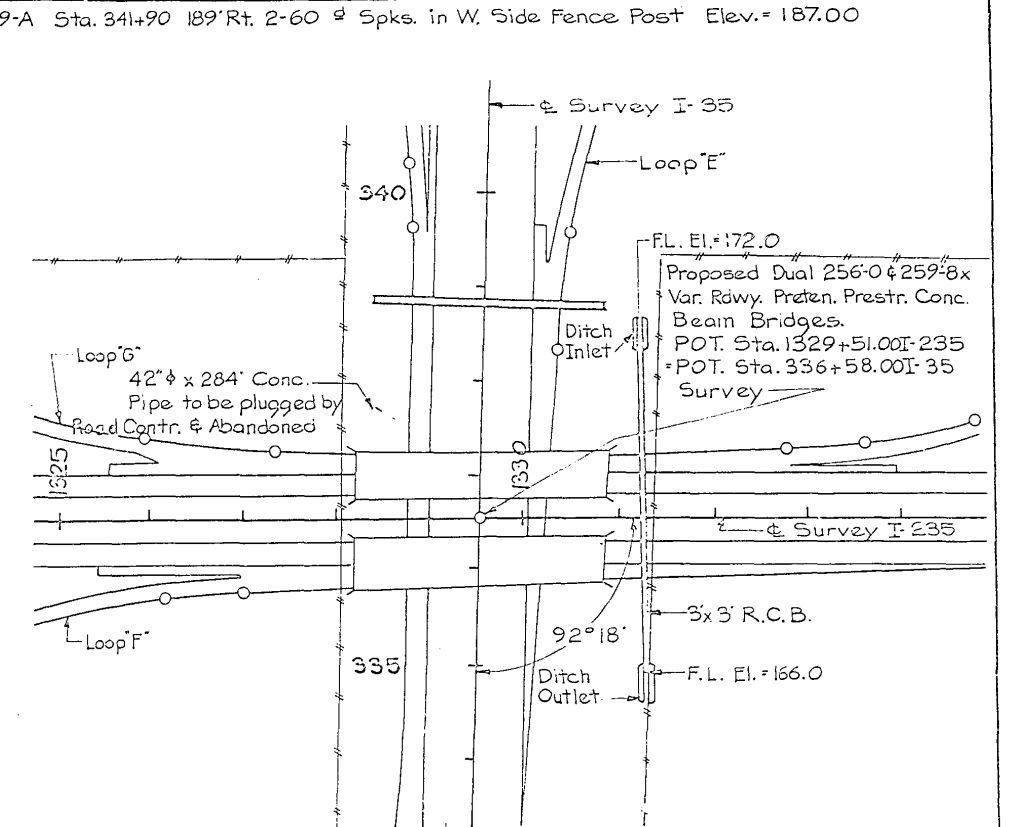
SITUATION PLAN

Scale 1" = 20'



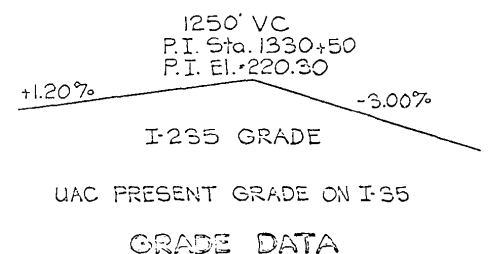
LONGITUDINAL SECTION ALONG & THROUGH ROADWAY-SOUTH BRIDGE

Scale 1" = 20'



GENERAL PLAN

Scale 1" = 100'



GRADE DATA

LOCATION
Section 6
T-78N R-25W
Walnut Twp.
Dallas-Polk Counties
On I-235
Over I-35

Design for 2°15'09"09'44" Skew
DUAL 256'-0" & 259'-8" VARIABLE ROADWAY
PRETENSIONED PRESTRESSED CONCRETE
BEAM BRIDGES
47'-3 1/2' End Spans 81'-3' Variable Interior Spans

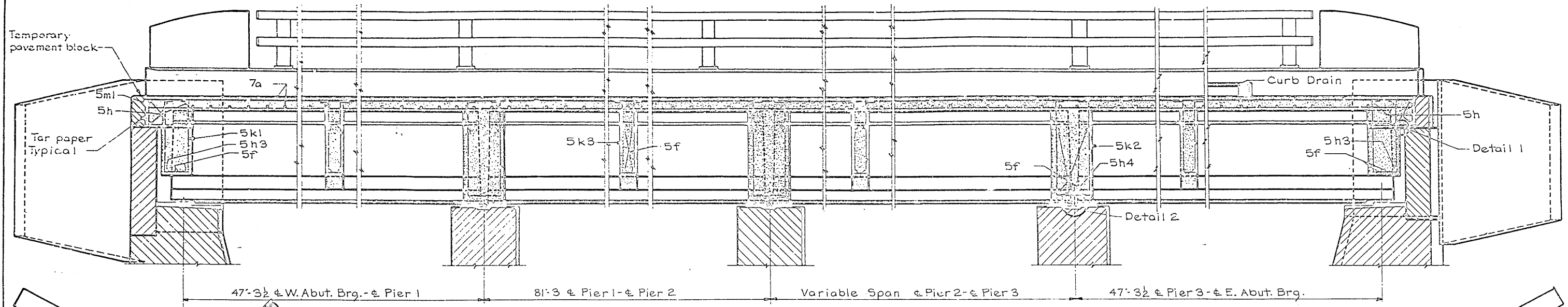
SITUATION PLAN

Sta: 1329+51.00 on I-235
Sta: 336+58.00 on I-35
December 1965

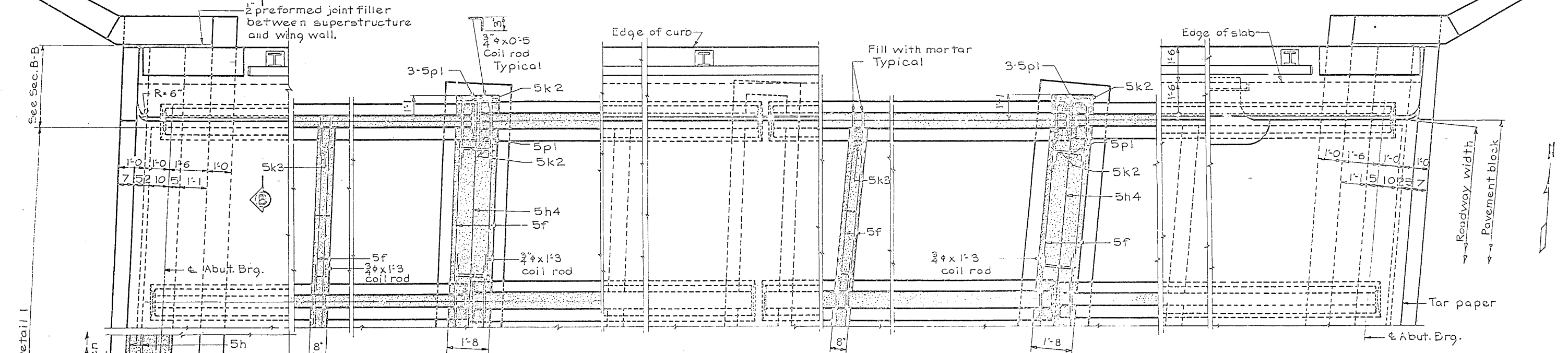
(DALLAS) POLK COUNTY
IOWA STATE HIGHWAY
DESIGN NO. 392
FILE NO. 28388
DES. SH. NO. 100F/16

THIS SHEET FROM ORIGINAL
DESIGN IS INCLUDED FOR
INFORMATION ONLY.

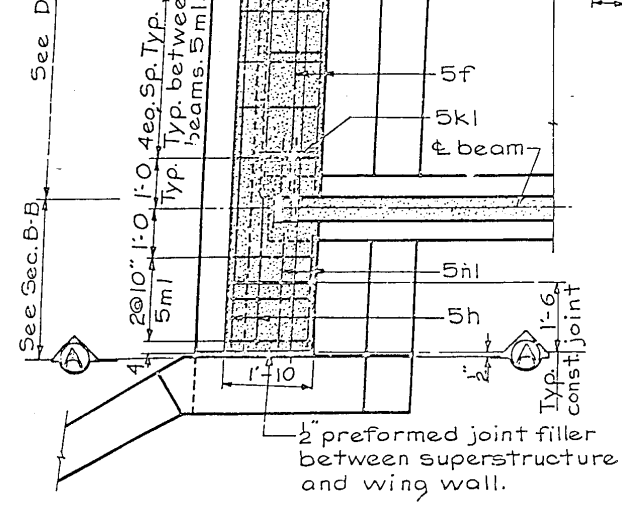
Note: See Sheet 26 or 27 for rail post spacing and details.
See Sheet 16 for curb reinforcing and curb drain details.



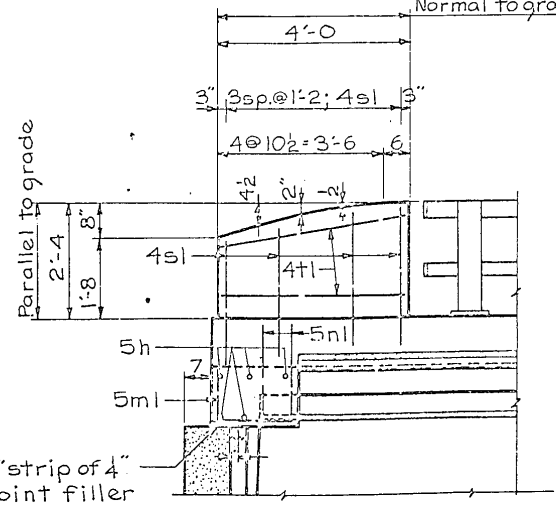
PART LONGITUDINAL SECTION NEAR CURB



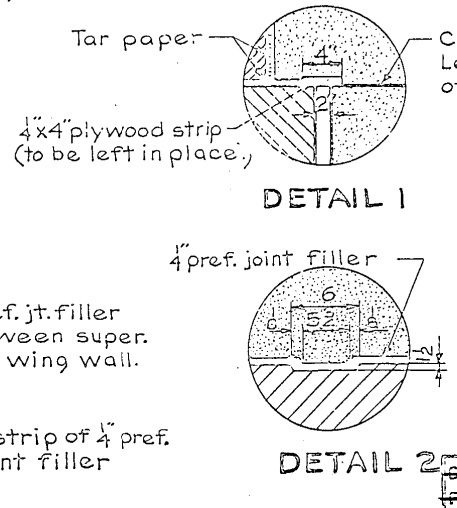
PART PLAN
(Shown for South Bridge - Similar for North Bridge)



SECTION A-A



SECTION B-B



DETAIL 1

DETAIL 2

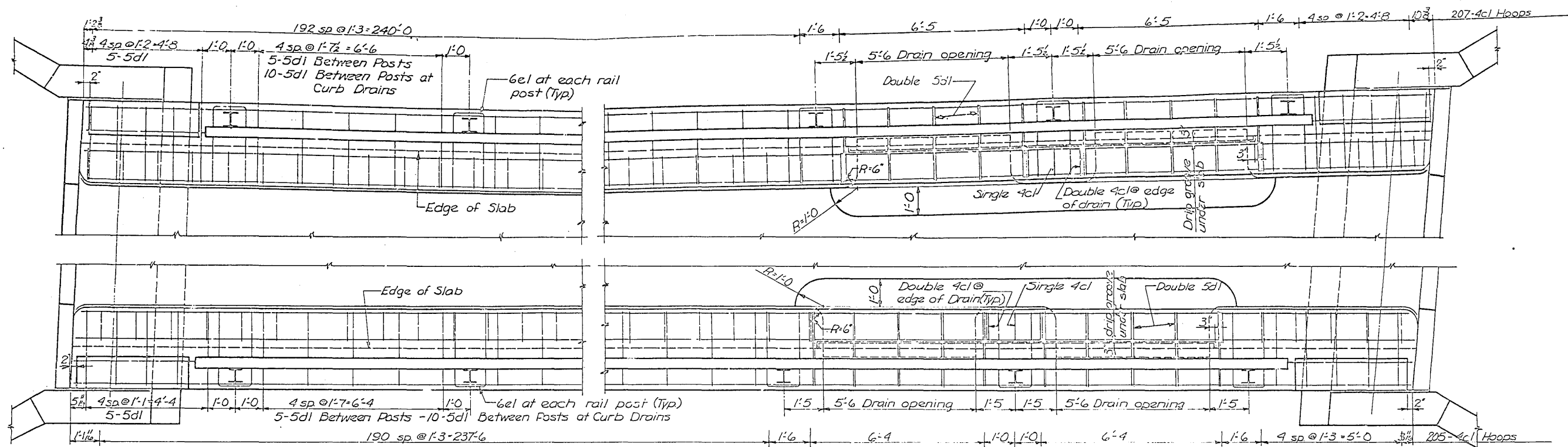
THIS SHEET FROM ORIGINAL DESIGN IS INCLUDED FOR INFORMATION ONLY.

Design for 2°18'5"09'44"5 skew
DUAL 255-00 259-8 VARIABLE ROADWAY
PRETENSIONED PRESTRESSED CONCRETE
BEAM BRIDGES
47'-3 1/2' End Spans 81'-3' Variable Interior Spans

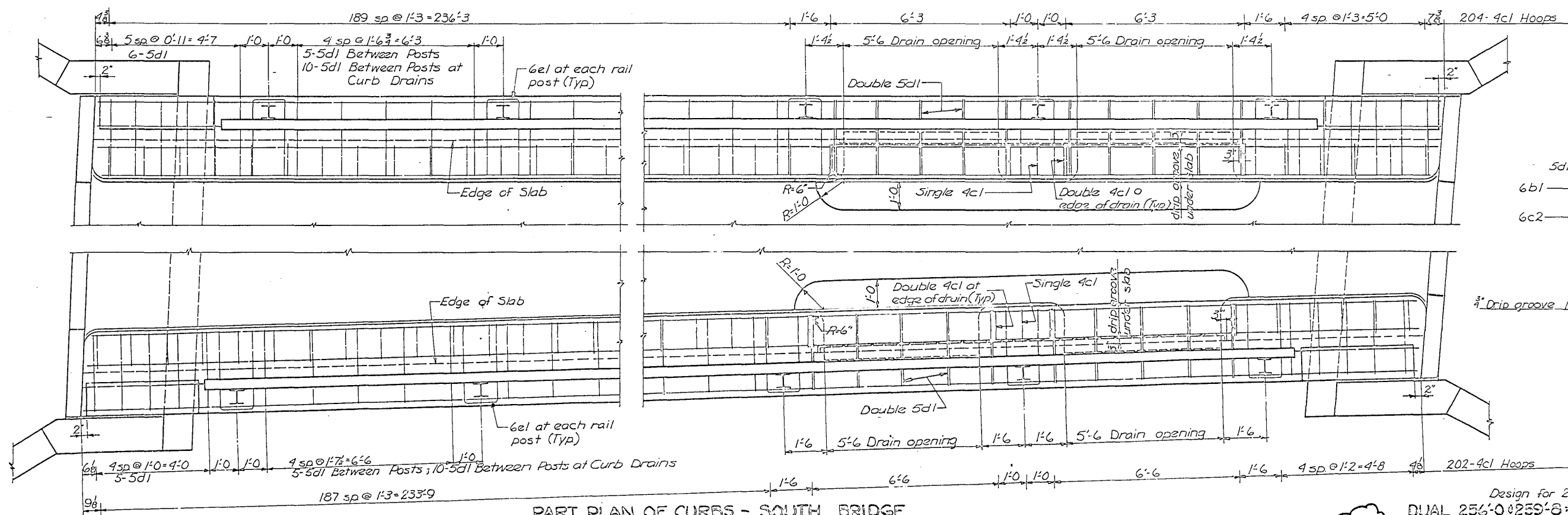
SUPERSTRUCTURE DETAILS

Sta: 1329+51.00 on I-235
Sta: 336+58.00 on I-35

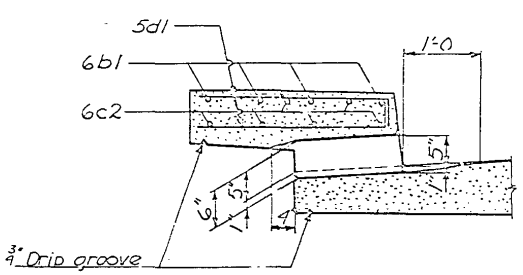
(DALLAS) POLK COUNTY
IOWA STATE HIGHWAY
DESIGN NO. 392
FILE NO. 28388
DES. SH. NO. 12 OF 16



PART PLAN OF CURBS - NORTH BRIDGE



PART PLAN OF CURBS - SOUTH BRIDGE



TYPICAL SECTION AT CURB DRAIN

THIS SHEET FROM ORIGINAL
DESIGN IS INCLUDED FOR
INFORMATION ONLY.

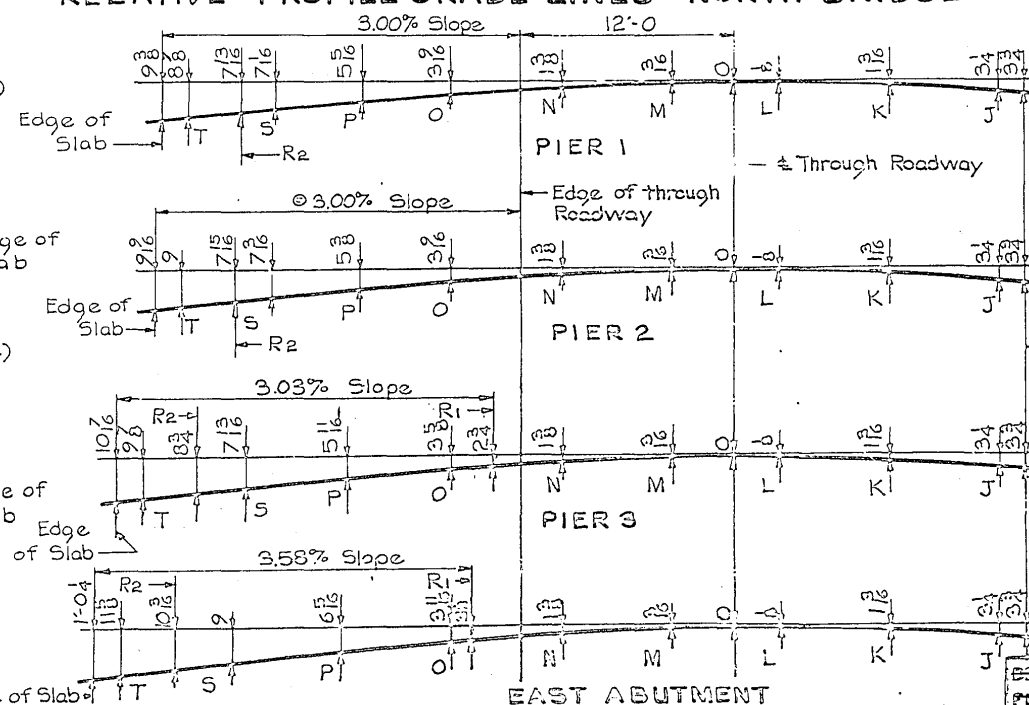
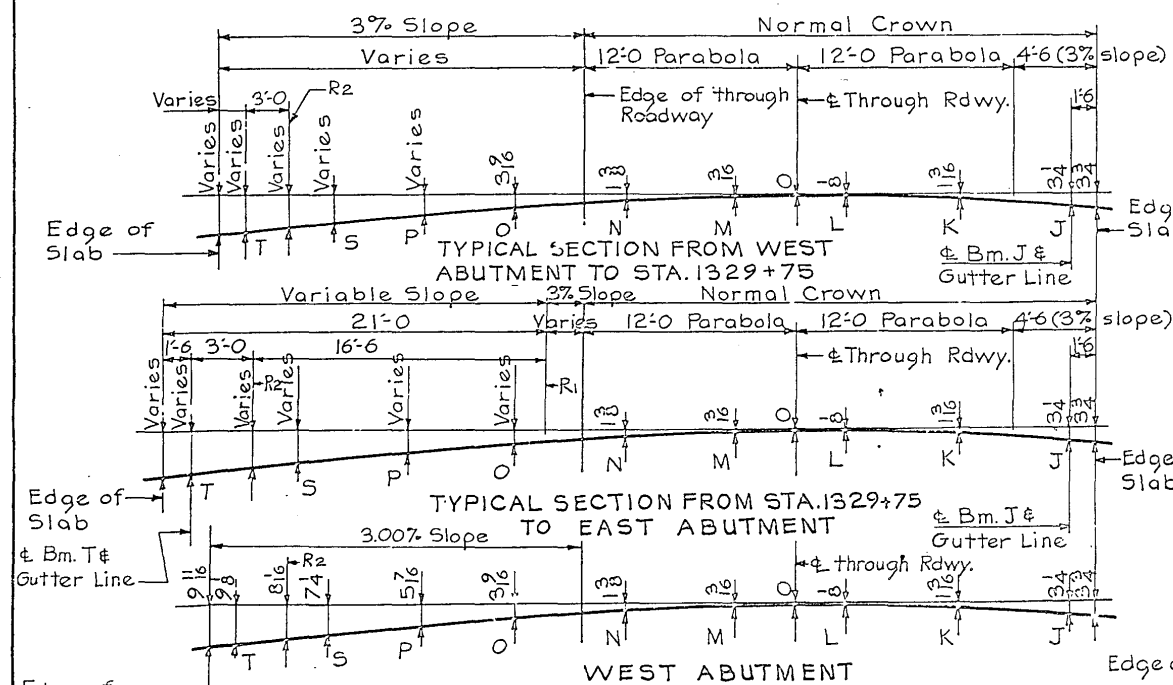
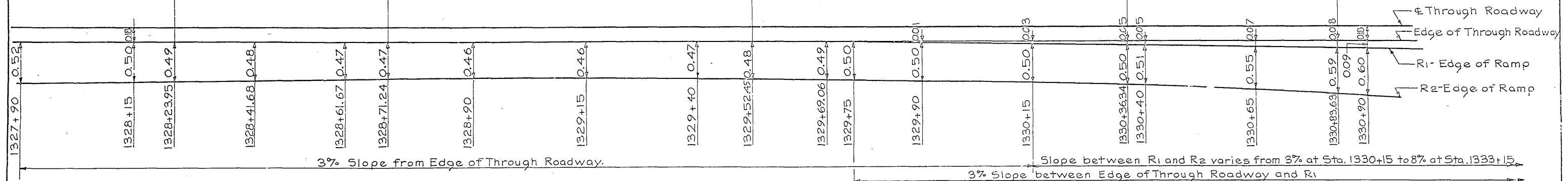
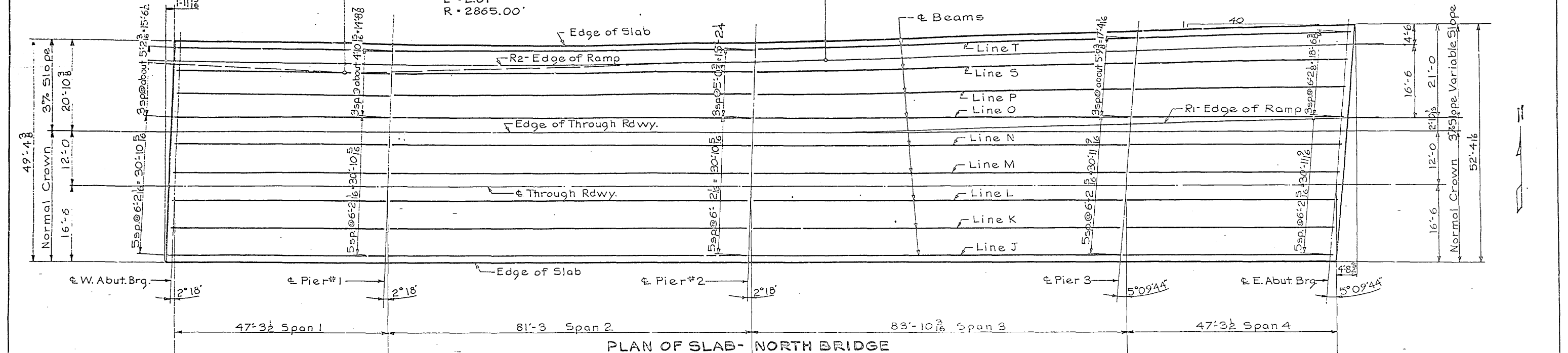
Design for 2'8" x 5'09" x 44" Skew
DUAL 256'-0" x 259'-8" = VARIABLE ROADWAY
PRETENSIONED PRESTRESSED CONCRETE
BEAM BRIDGES
47'-3 1/2' End Spans
81'-3" Variable Interior Spans

SUPERSTRUCTURE DETAILS
Station: 1329+51.00 on I-235
Station: 336+58.00 on I-35
(DALLAS) POLK COUNTY
Iowa State Highway
DESIGN NO. 392
FILE NO. 28388
DES. SH. NO. 130F/6

$\Delta = 4^\circ 17' 40.21''$
 $D = 2^\circ 00'$
 $T = 107.42'$
 $L = 214.73'$
 $E = 2.01'$
 $R = 2865.00'$

P.I. Sta. 1328+61.67
 62.67' Lt. of E Survey

P.T. Sta. 1329+69.06
 65.35' Lt. of E Survey

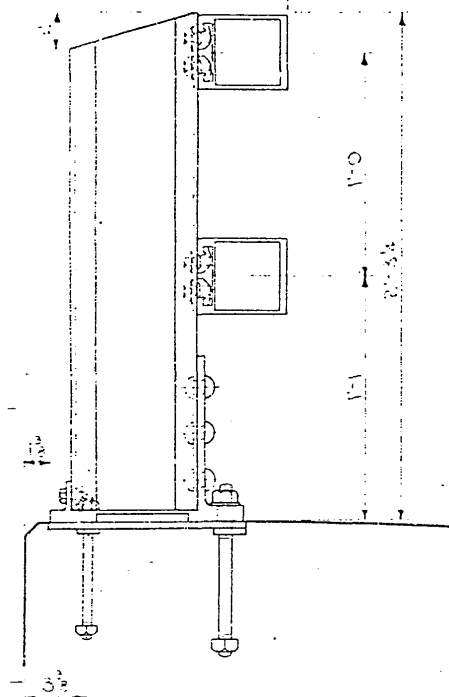


Note: Grade data shown for ramp was obtained from sheet 35 of I.S.H.C. road plans for Dallas-Polk Counties, Project No. I-80-3(18)125**77-2.

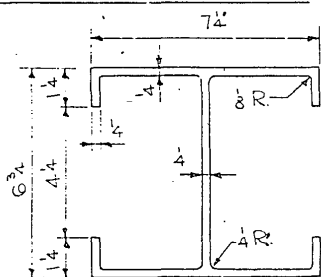
THIS SHEET FROM ORIGINAL DESIGN IS INCLUDED FOR INFORMATION ONLY.

Design for $2^\circ 16' 44''$ Skew
 DUAL 256-00 259-8 VARIABLE ROADWAY
 PRETENSIONED PRESTRESSED CONCRETE
 BEAM BRIDGES
 47'-3 1/2' End Spans 81'-3' Variable Interior Spans

SUPERSTRUCTURE DETAILS - NORTH BRIDGE
 Sta: 1329+51.00 on I-235
 Sta: 336+58.00 on I-35
 (DALLAS) POLK COUNTY
 IOWA STATE HIGHWAY
 DESIGN NO. 392
 FILE NO. 28388
 DES. SH. NO. 140F16

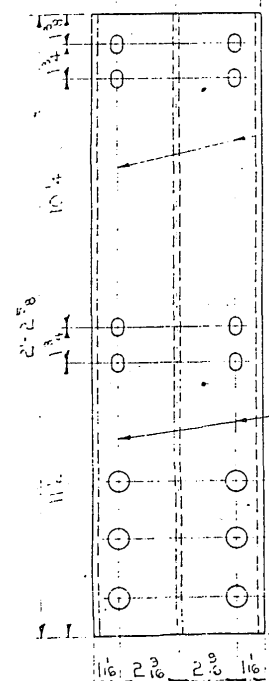


RAIL POST ASSEMBLY

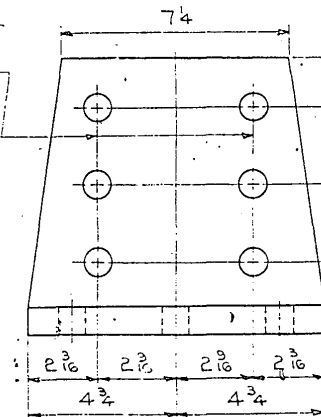


POST SECTION

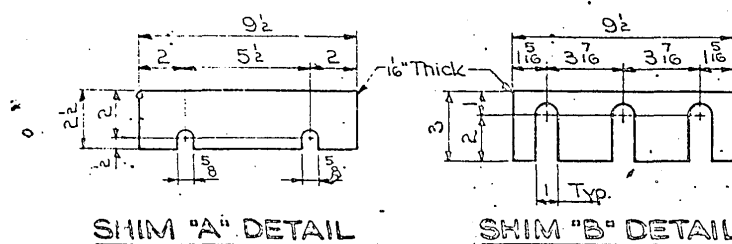
REAR VIEW OF POST



POST

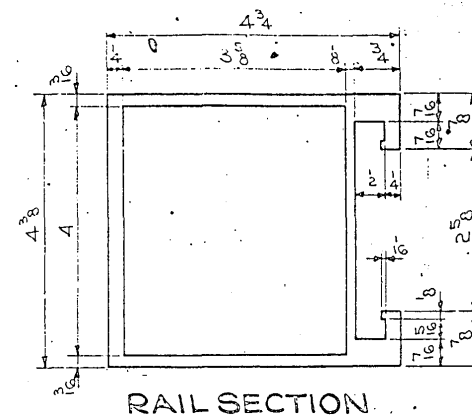


POST BASE PLATE DETAILS

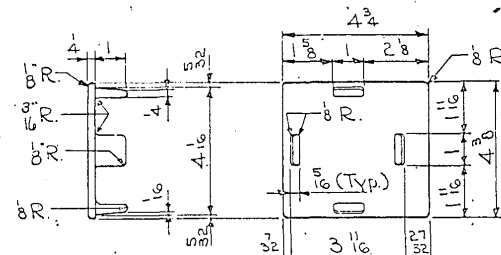


SHIM "A" DETAIL

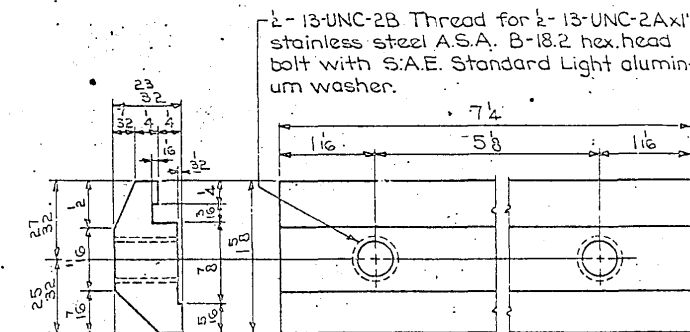
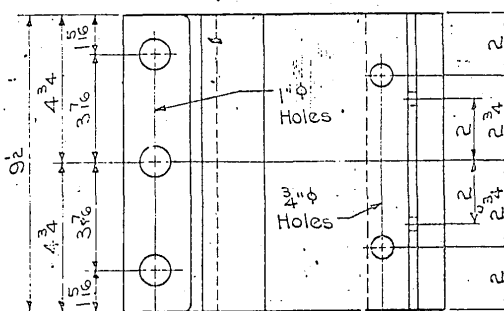
SHIM "B" DETAIL



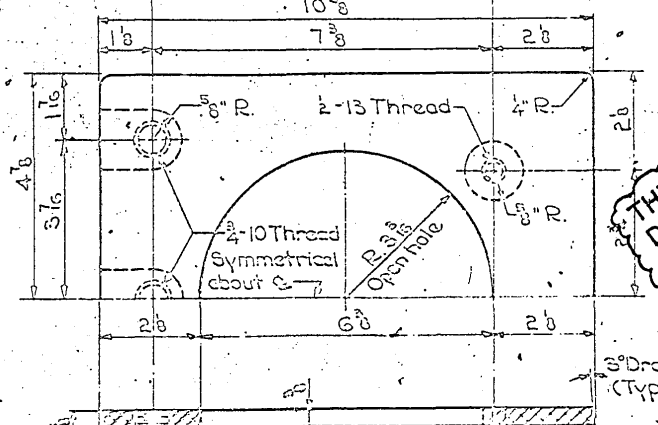
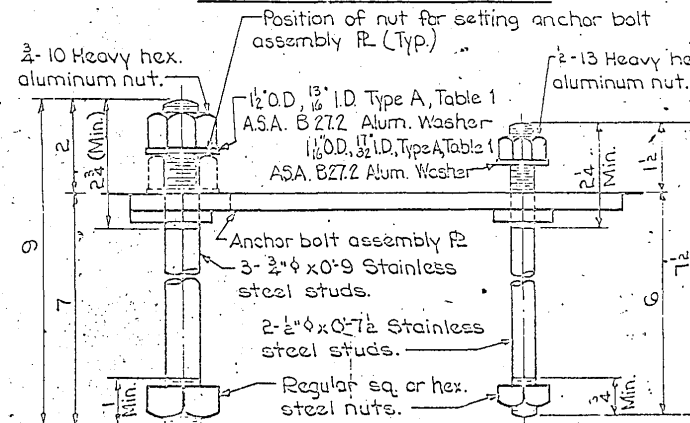
RAIL SECTION



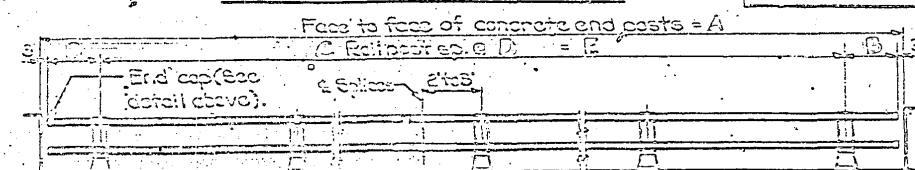
RAIL END CAP DETAILS



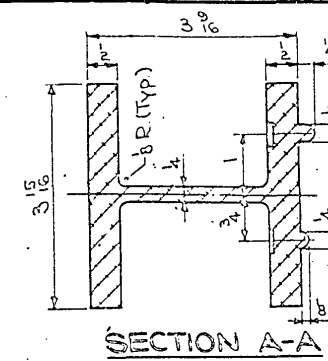
CLAMP BAR DETAILS



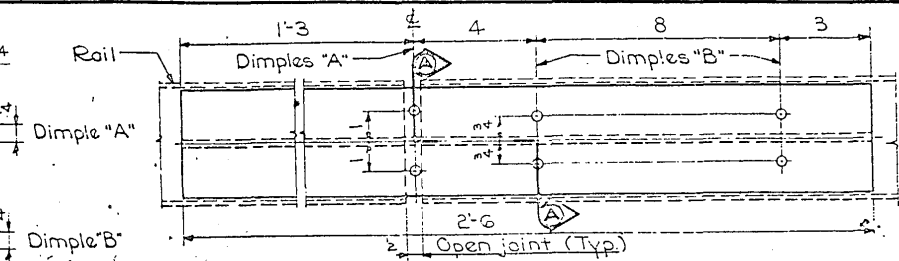
ANCHOR BOLT ASSEMBLY



NOTE: Maximum rail post spacing = 8'-0".



SECTION A-A



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.

Material for rails, post, post base plate, rail splice bar, clamp bar, the aluminum bolts and aluminum nuts shall be A.S.T.M. B-221 Alloy 6061-T6 or 6062-T6.

Material for aluminum washers and shims shall be A.S.T.M. B-209; Alloy Alclad 2024-T3 for washers and Alloy 1100-0 for shims.

Material for aluminum rivets shall be A.S.T.M. B-316 or B-221 Alloy 6061-T6 or 6062-T6. Rivets shall be button head, cone point and cold driven.

Material for stainless steel anchor studs shall conform to A.S.T.M. A-276 Type 430, except with a minimum of 100,000 psi ultimate strength. Stud thread shall conform to A.S.A. 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 A.S.A. B-18.2. Threads shall comply with A.S.A. B-11 for UNC threads series, class 2B fit.

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

Material for anchor bolt assembly plate shall be aluminum alloy permanent mold casting complying with A.S.T.M. B-108 Alloy SG70A-T6 (AA Alloy 356-T6).

The entire surfaces of anchor bolt assembly plate and the shims are to be coated with zinc chromate.

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 A.S.T.M. A-193, Grade B8.

Rail end caps may be either aluminum alloy permanent mold casting or sand mold casting.

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

All surfaces including zinc chromate shall be given one shop coat of zinc chromate.

Handling and installation of aluminum handrail shall be in accordance with Section 24-14.06 of the Standard Specifications.

THIS SHEET FROM ORIGINAL DESIGN IS INCLUDED FOR INFORMATION ONLY.

DIMENSIONS FOR RAILING			
Span	End Span	Span	End Span
10'-0"	10'-0"	10'-0"	10'-0"
12'-0"	12'-0"	12'-0"	12'-0"
14'-0"	14'-0"	14'-0"	14'-0"
16'-0"	16'-0"	16'-0"	16'-0"
18'-0"	18'-0"	18'-0"	18'-0"
20'-0"	20'-0"	20'-0"	20'-0"
22'-0"	22'-0"	22'-0"	22'-0"
24'-0"	24'-0"	24'-0"	24'-0"
26'-0"	26'-0"	26'-0"	26'-0"
28'-0"	28'-0"	28'-0"	28'-0"
30'-0"	30'-0"	30'-0"	30'-0"

DESIGN SPECIFICATIONS:

Designed in accordance with 1964 Interim A.A.S.H.O. Specifications.

ALUMINUM HANDRAIL QUANTITIES	
Aluminum Handrail (Type Bridge)	1000.1 Lin Ft
Design for 2'-0" x 5'-0" x 7'-4" Skew	
DUAL 25'-0" x 0'-0" x 0'-0" VARIABLE ROADWAY	
PRESTRESSED PRESTRESSED CONCRETE	
BEAM BRIDGES	
47'-2 1/2' End Span	0'-0" Variable Interior Span

ALUMINUM HANDRAIL DETAILS	
Sta: 1329+00 to 1330+00	
Sta: 1330+00 to 1331+00	

(DALLAS) POLK COUNTY	
IOWA STATE HIGHWAY	
DESIGN NO. 392	
FILE NO. 28388	
DES. SH. NO. 150F/16	

LIGHTING NOTES:

Construction shall conform with the current Iowa State Highway Commission Standard Specifications plus current Special Provisions and current Supplemental Specifications for Highway Lighting.

Anchor bolts shall be corrosive resistant type as specified. Stainless steel stud shall not be less than six inches in length. After conduit runs have been installed a stiff, oversize wire brush or mandrel shall be pulled through the conduit to make certain that no appreciable foreign material remains in the conduit, and that the conduit has not been flattened or otherwise blocked during construction. Each open end of the conduit shall be threaded. Threads shall be protected with an approved bituminous compound. Temporary caps or plugs shall be installed to exclude dirt and moisture.

Expansion fittings shall be as specified or as approved by the Engineer. Typical details are shown on this sheet.

All entrance holes in junction boxes except for drain pipes shall be tapped for the specified conduit size. Grounding buttons shall be located approximately 3" from the inside surface of the box wall, and not closer than 3" to the edge of any hole in the box floor. Holes for drain pipe shall be placed in the low corner of the box, with a minimum clearance of 1" between the edge of the hole and the inside surface of the box wall. Typical details are shown on this sheet.

Location of the E of light pole may be shifted $\pm 1'-0"$ so that the location of the junction box does not interfere with the rail post anchor bolts.

The contract unit price per linear foot of conduit shall be full compensation for furnishing all material (including junction boxes and fittings), labor and any work incidental to the installation. The concrete and weight of reinforcing steel is included in the Superstructure Estimated Quantities.

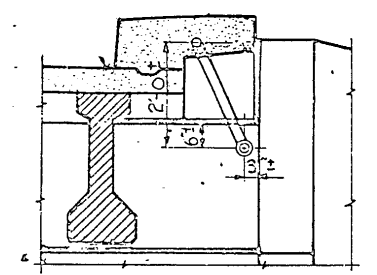
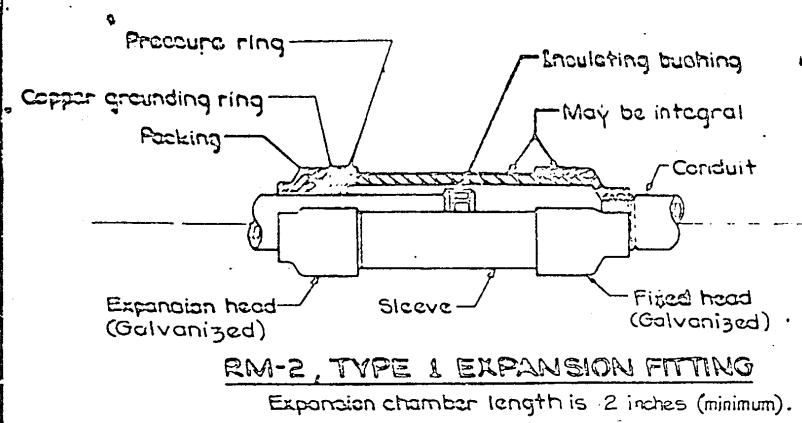
The length of conduit installed shall be measured in feet by the Engineer.

Cost of furnishing and installing poles, lights and lighting conductor is not a part of this estimate.

REINFORCING BAR LIST - ONE BASE

Bar	Location	Shape	Qty	Length	Weight
4x1	Pole Anchors	U	2	9'-6"	51
8x1	Curb Anchors	U	2	13'-8"	73
Total lb.					124

NOTE: Dimensions are cut to out of bar. Radii to E of bar.

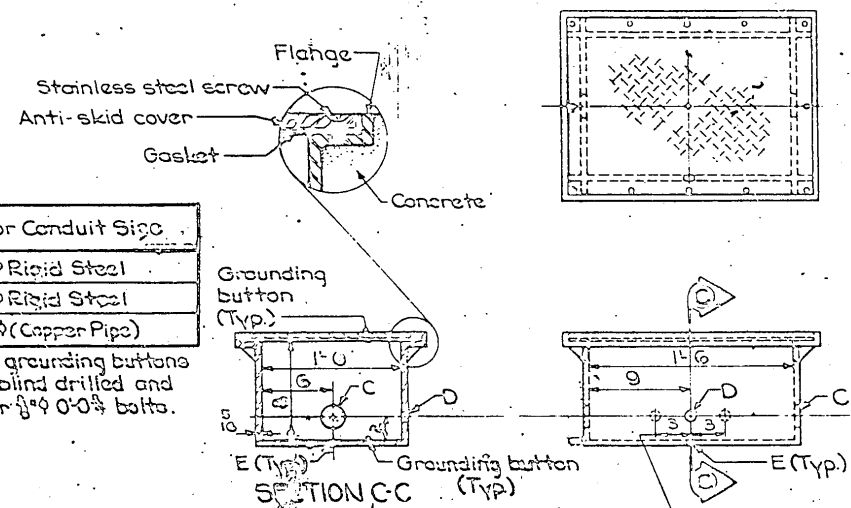


SECTION B-B

Note: Extend 2" conduit along abutment wing a sufficient amount to clear the shoulder line. End of conduit is 1'-6" below ground surface.

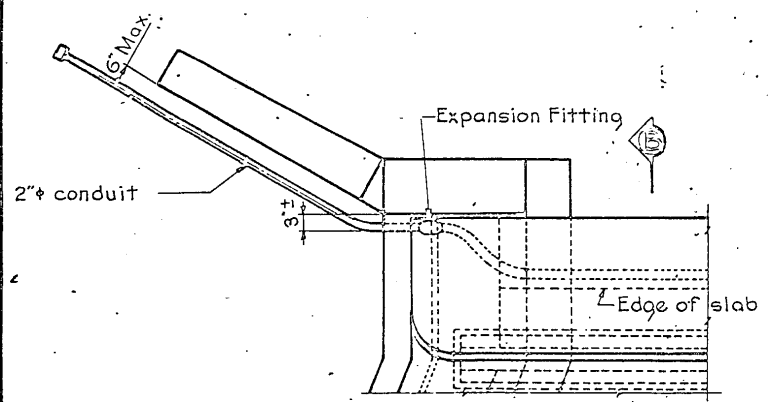
Based For	Hole	For Conduit Size
5 threads	C	2" Rigid Steel
None	D	1" Rigid Steel
None	E	1" (Copper Pipe)

NOTE: The grounding buttons are to be blind drilled and tapped for 1/4" 0-0 1/2 bolts.

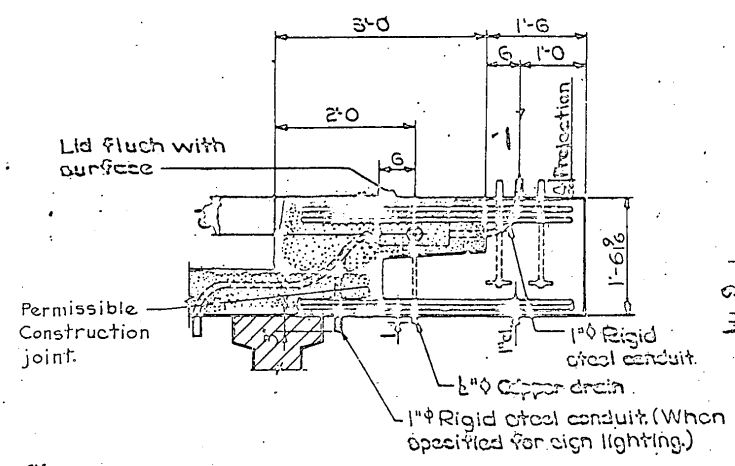


SECTION C-C
RAINTIGHT, CAST IRON - FLUSH MOUNT

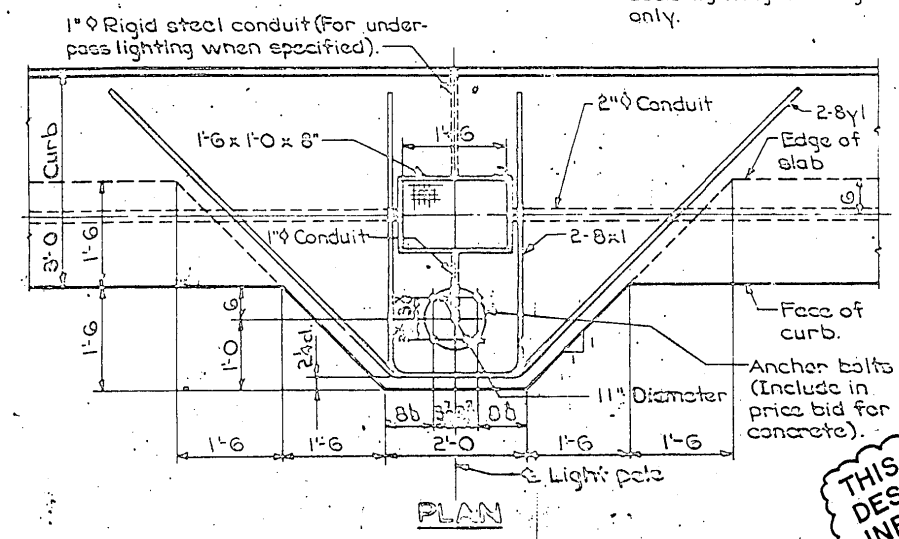
Alternate location for "D" holes, to be used with combined under-deck lighting and sign lighting only.



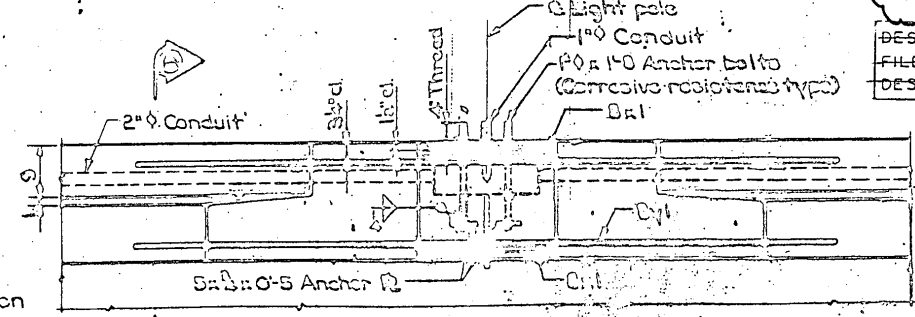
PART PLAN
(End Post Removed)



SECTION A-A



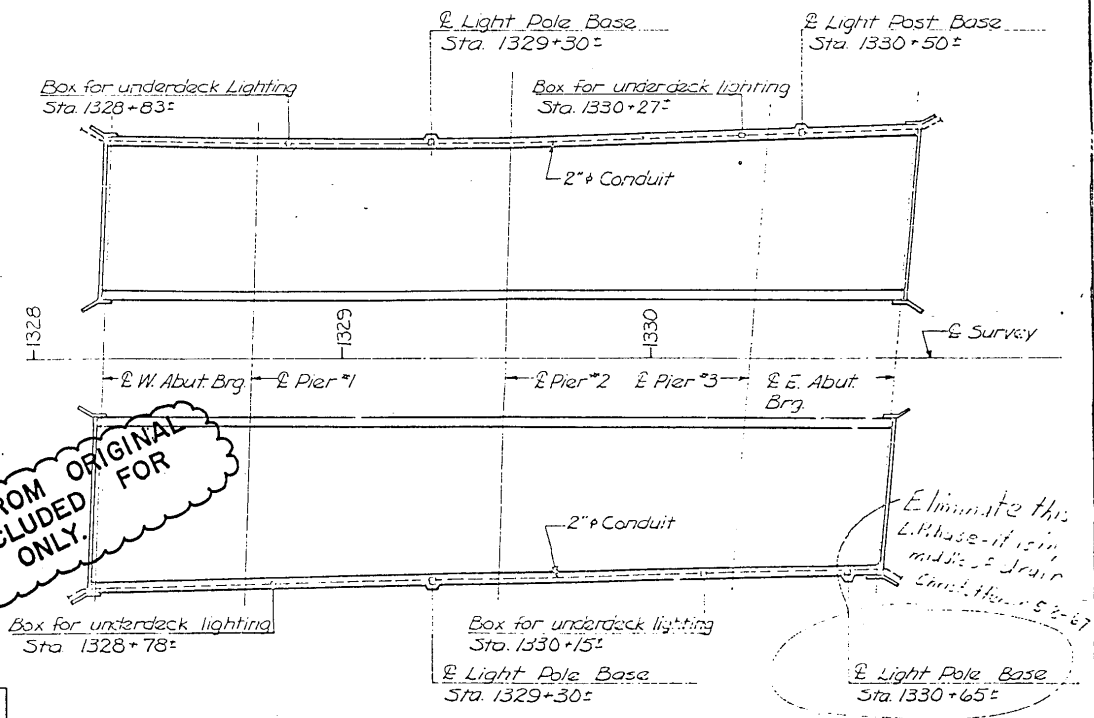
PLAN



ELEVATION

THIS SHEET FROM ORIGINAL DESIGN IS INCLUDED INFORMATION ONLY.

DESIGN NO. 392
FILE NO. 28388
DES. SH. NO. 29 OF 30



LOCATION OF LIGHT POLE BASES AND JUNCTION BOXES

TOTAL ESTIMATED QUANTITIES

Item	Amount
2" Rigid Steel Conduit	585 LF

Quantity includes 55% LF of 2" conduit and 32 LF of 1" conduit.

Design for 2'6" x 5'09"44" Skew
DUAL 256'00" 259'8" VARIABLE ROADWAY PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES
47'-3 1/2' End Spans 81'3 1/2' Variable Interior Spans
LIGHTING DETAILS

Sta. 1329+51.00 on I-235
Sta. 336+58.00 on I-35
(DALLAS) POLK CO.
Iowa State Highway
DESIGN NO. 392
FILE NO. 28388
DES. SH. NO. 16 OF 16

Revised 3-0-65: Sheet Redrawn.
Revised 5-12-65: Boss for holes added.
Revised 9-3-65: Alternate location for "D" holes added.