

POLK COUNTY

PROJECT NO. 1-80-3(18)125**77-2

BRIDGE

LETTING DATE

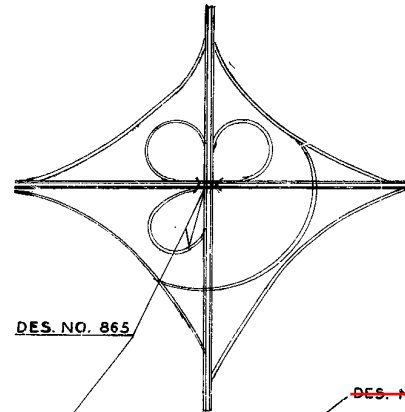
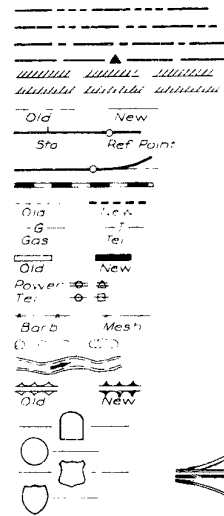
May 27, 1966

State Line
Co. Line
Twp. Line
Sec. Line
Corp. Line
Urban Bdry.
R.O.W. Lines
Survey Line

Profile Grade
Railroad
Field Tile
Underground Lines
Culverts
Utility Poles
Fences
Trees Or Brush
Stream
Dike

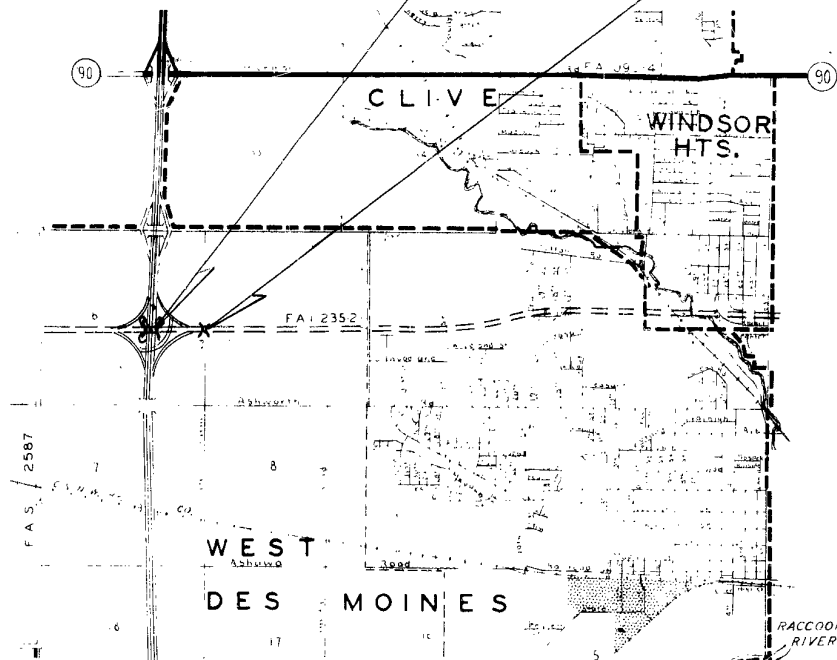
County Road No.
Primary Road No.
U. S. Road No.
Interstate Road No.

CONVENTIONAL SIGNS



DES. NO. 865

DES. NO. 1165



PART OF CITY OF
DES MOINES
T-78 N R-25 W
WALNUT TWP
LAYOUT NO SCALE

STATE OF IOWA
STATE HIGHWAY COMMISSION
PLAN & PROFILE OF PROPOSED IMPROVEMENT
ON THE
BRIDGE
INTERSTATE ROAD SYSTEM
POLK COUNTY

ON I-235 OVER I-35

THE IOWA STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS
FOR CONSTRUCTION WORK, SERIES OF 1964 SHALL
APPLY TO WORK ON THIS PROJECT
(Plus current Supplement Specifications and Special Provisions)

DESIGN STRESSES for the following materials are in accordance with
A. A. S. H. O. Standard Specifications for Highway Bridges, Series of
1961.

Concrete in accordance with Section 1.4.11 $f'_c = 3500$ psi.
Reinforcing Steel in accordance with Section 1.4.12
"Reinforcement" for Intermediate, Hard, or Rail
Steel Grade.

Prestressing Steel in accordance with Section 1.13.7
 $f'_s = 270,000$ psi and strand requirements
noted on sheet 27 & sheet 32(a)

Prestressed Concrete in accordance with Section 1.13.7
 $f'_c = 5000$ psi, except f_c tension = 250 psi.

MILEAGE SUMMARY			
105-1			
DIV.	LOCATION	LN. FT.	MILES
	BRIDGE AT STA. 1329+51.00	260.671	.049

IOWA ACCOUNT NUMBER	PROJECT NUMBER
01-77 0200 018	1-80-3(18)125**77-2

INDEX OF SHEETS	
105-3	
NO.	DESCRIPTION
1	TITLE SHEET
2	REVISION SHEET
	ESTIMATE
3-32	BRIDGE DESIGN NO. 865
32A-32B	ADDED TO DES. 865
32C-32U	BRIDGE DESIGN NO. 1165
32A & 32B	ADDED TO DESIGN NO. 1165

REVISED: See Following Sheet 1A.

DE. McLean
DIRECTOR OF ENGINEERING
IOWA HIGHWAY COMMISSION

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
APPROVED:
DATE:

POLK CO., COUNTY

PROJECT NO. 1-80-3(18)125**77-2

FILE NO. 22281

SHEET NO. 1 of 32

1-A f 32

LISTING OF PROJECT REVISIONS

DATE	SHEET NUMBER	DESCRIPTION OF REVISIONS	DATE	SHEET NUMBER	DESCRIPTION OF REVISIONS
March 10 '66	32	This sheet superceded by sheets 32A and 32B.			
	32A & 32B	These sheets added to project and supercede sheet 32.			
	1A	This sheet added to project (Revision sheet)			
April 12 '66	32C -- 32U	Bridge Design No. 1165 Added to Project (For May 24, Letting.)			
	1	Bridge Design No. 1165 (Added to Index of Sheets) Sheets 32C - 32U.			
	2	Quantities for Bridge Design No. 1165 added to Project.			
MAY 4, '66	32 K	NEOPRENE JT. SPEC. NOTE ADDED.			
Sept. 20, '66		Design 1165			
	Sheet 32h of 32	Due to construction error, the pier footings and columns were constructed symmetrically about the C of roadway. See design sheet number 6A of 19 (Project number 32ha of 32) for revised cap details and additional reinforcing steel required.			
	Sheet 32ha of 32	This sheet added to show modification of cap details required due to construction error in location of pier footings and columns.			
	Sheet 32g of 32	Due to construction error, the pier footings and columns were constructed symmetrically about the C of roadway. See design sheet number 5A of 19 (Project sheet number 32ga of 32) for revised cap details and additional reinforcing steel required.			
	Sheet 32ga of 32	This sheet added to show modification of cap details required due to construction error in location of pier footings and columns.			
	Sheet 1 of 32	Sheets 32ga and 32ha added to "Index of Sheets".			

F

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 April 18, 1966 James R. Sassaman REG. NO. 2663

DESIGN 1165 ON STATE FARM ROAD STA. 4346+31.60 ST. FM. RD.
OVER I-235 STA. 1346+31.60 I-80 SURVEY
SECTION 5 & 6 T-78N R-25W WALNUT TOWNSHIP

DESIGN FOR VARIABLE SKEW
344'-7" X 30' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

ESTIMATE OF QUANTITIES

ITEM	UNIT	TOTAL
Structural Concrete	Cu. Yds.	705.1
Reinforcing Steel	Lbs.	140,724
Structural Steel	Lbs.	2,230
Pretensioned	No.	16
Prestressed	No.	1
Concrete	No.	1
Beams	No.	8
B Special (As Per Plan)	No.	22
Class 20 Excavation	Cu. Yds.	480
Granular Backfill	Cu. Yds.	107
Concrete Slope Protection	Sq. Yds.	450
4" Tile Subdrain	Lin. Ft.	122
2" Rigid Steel Conduit	Lin. Ft.	755
Preformed Elastic Neoprene Joint, 3 in.	Lin. Ft.	85
Aluminum Handrail	Lin. Ft.	347.0
Steel Handrail	Lin. Ft.	328.7
Aluminum Sidewalk Handrail	Lin. Ft.	4,375
Creosoted Piling	Lin. Ft.	70
Creosoted Test Piling	Lin. Ft.	

BPR
sig

(1) Includes 418.0 cu. yds. of Class "D" in Superstructure and 287.1 cu. yds. of Class "C" in Substructure.

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 Feb 18, 1966 James R. Sassaman REG. NO. 2663

DESIGN 865 ON I-235 STA. 1329+51.00 ON I-235
OVER I-35 STA. 336+58.00 ON I-35
SECTION 6 T-78N R-25W WALNUT TOWNSHIP

DESIGN FOR 2°18' & 5°09'44" SKEW
DUAL 256'-0" & 259'-8" X VARIABLE ROADWAY PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES

ESTIMATE OF QUANTITIES

ITEM	UNIT	TOTAL
Structural Concrete	Cu. Yds.	1,411.4
Reinforcing Steel	Lbs.	335,799
Pretensioned Prestressed Concrete Beams, C Special As Per Plan	No.	68
Aluminum Handrail	Lin. Ft.	1,008.1
Steel Handrail	Lin. Ft.	1,008.1
Class 20 Excavation	Cu. Yds.	821
Granular Backfill	Cu. Yds.	409
4" Tile Subdrain	Lin. Ft.	288
2" Rigid Steel Conduit	Lin. Ft.	583
Concrete Slope Protection	Sq. Yds.	1,219
Creosoted Piling	Lin. Ft.	6,780
Creosoted Test Piling	1 S.	LUMP SUM
10 BP42 Steel	Furnish	Lin. Ft. 3,289
Bearing Piling	Drive	Lin. Ft. 3,289
10 BP57 Steel	Furnish	Lin. Ft. 1,495
Bearing Piling	Drive	Lin. Ft. 1,495

(1) The Floor, curbs & end posts, 821.0 c. y. is to be Class "D" Concrete. The remainder, 590.4 c. y. is to be Class "C" Concrete.

BPR
sig

THIS BRIDGE WILL REQUIRE BRIDGE SIGN ASSEMBLIES, FURNISHED AND PLACED BY OTHERS, AS SPECIFIED IN SECTION 2 C-5 OF THE I. S. H. C. MANUAL ON "UNIFORM TRAFFIC CONTROL DEVICES", DATED JANUARY 1963.

Revised: 9-12-66 Quantities for Bridge Design 1165 Added

POLK CO

JULY

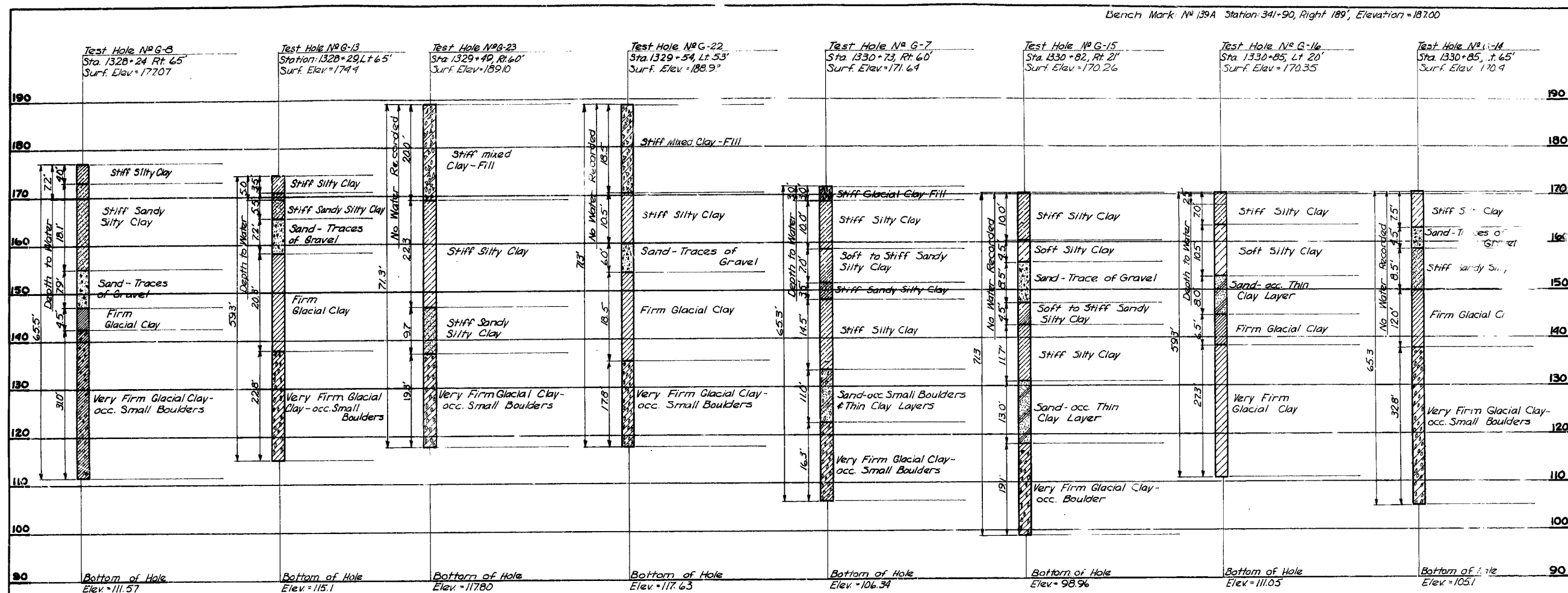
PROJECT NO

1-80-3(18)125**77-2

FILE NO. 22281

SHEET NO 2 of 32

F



SOUNDING DATA

Scale: 1"=10'
Dated: 6-3-65

GENERAL NOTES:

These bridges are designed for HS20-44 loading and alternate designated in B. & R. P. P. M. 20-4, Section 4c, plus an allowance of 19 lbs. per square foot of roadway for future wearing surface.

The approach fills are not a part of this estimate but are to be in place at least 45 days before abutment piles are driven. Abutment piles are to be driven in oversize holes drilled through the fill to elevation 160.5 for west abutments and to elevation 169.0 for east abutments. The minimum diameter of the drilled hole is to be 16" ϕ . Voids around piles are to be filled with dry sand. No separate payment will be made for drilling holes or filling voids since it is considered incidental to driving piles.

As shown, on the "Situation Plan" sheet 2, an abandoned 42-inch diameter concrete pipe lies beneath the center pier of the north bridge. The Contractor shall "break-up" or remove enough of this pipe so that the pier piling may be driven at their plan location without being damaged. The cost of all extra work caused by the presence of this 42" ϕ pipe shall be included in the unit price bid for caissons piling.

The Bridge Contractor is to install the tile subdrain behind each abutment as shown and noted on sheets 2 and 8. The price bid for "4" Tile Subdrain" is to include all the labor and excavation necessary for installation.

The Bridge Contractor is to level off and shape the berms to the elevations shown.

The Bridge Contractor is to construct these bridges while maintaining two-way traffic on Interstate 35. The Bridge Contractor's cost for signing as noted or shown on sheet 30 is considered incidental to the cost of construction.

The abutment piles are to be driven with a diesel hammer of adequate capacity based on design load and plan pile lengths.

TOTAL ESTIMATED QUANTITIES

Item	Units	NORTH BRIDGE			SOUTH BRIDGE			Total
		2 Abuts.	3 Piers	Superstr.	2 Abuts.	3 Piers	Superstr.	
*Structural Concrete	Cu Yds	98.7	193.0	402.4	99.8	198.9	418.6	1411.4
Reinforcing Steel	Lbs.	9003	43,060	114,946	9016	42,956	116,818	335,779
Prestensioned Prestressed Concrete Beams, C Special As per plan	No.			36			32	68
Aluminum Handrail or Steel Handrail	Lin. Ft.							1008.1
Class 20 Excavation	Cu Yds	130	276		129	286		821
Granular Backfill	Cu Yds	202			207			409
4" Tile Subdrain	Lin. Ft.							288
2" Rigid Steel Corrugated Concrete Slope Protection	Sq Yds							583
Creasoted Piling	Lin. Ft.		116 @ 30'		110 @ 30'			1219
Creasoted Test Piling	L.S.		1 @ 40'		1 @ 40'			6780
10BP42 Steel Bearing Piling	Lin. Ft.	13 @ 25'			13 @ 25'			3269
10BP57 Steel Bearing Piling	Lin. Ft.	13 @ 25'			13 @ 25'			3289
10BP57 Steel Bearing Piling	Lin. Ft.	13 @ 15'			13 @ 15'			1495
10BP57 Steel Bearing Piling	Lin. Ft.	13 @ 15'			13 @ 15'			1495

*The floor, curbs & end posts, 821.0 c.y. is to be Class "D" Concrete. The remainder, 590.4 c.y. is to be Class "C" Concrete.

Designed by: LEP Traced by: J.D.C. Checked by: J.D.C.

SPECIFICATIONS:

DESIGN: A. A. S. H. O., Series of 1961.

CONSTRUCTION: Standard Specifications of the Iowa State Highway Commission, Series of 1964, plus current Supplemental Specifications and Special Provisions.

DESIGN STRESSES:

DESIGN STRESSES for the following materials are in accordance with A. A. S. H. O. Standard Specifications for Highway Bridges, Series of 1961.

Reinforcing Steel in accordance with Section 1.4.12 "Reinforcement" for "Intermediate, Hard, or Rail Steel Grade."

Concrete in accordance with Section 1.4.11 "Concrete" P.S.I.

See sheet 24 for design stresses for prestressed beams.

Design for 2"18' x 5"9'44" Skew DUAL 256'-0" x 259'-8" x VARIABLE ROADWAY PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES

47'-3 1/2' End Spans 81'-3" Variable Interior Spans

SOUNDING DATA

Sta: 1329+51.00 on I-235

February, 1966

Sta: 336+58.00 on I-35

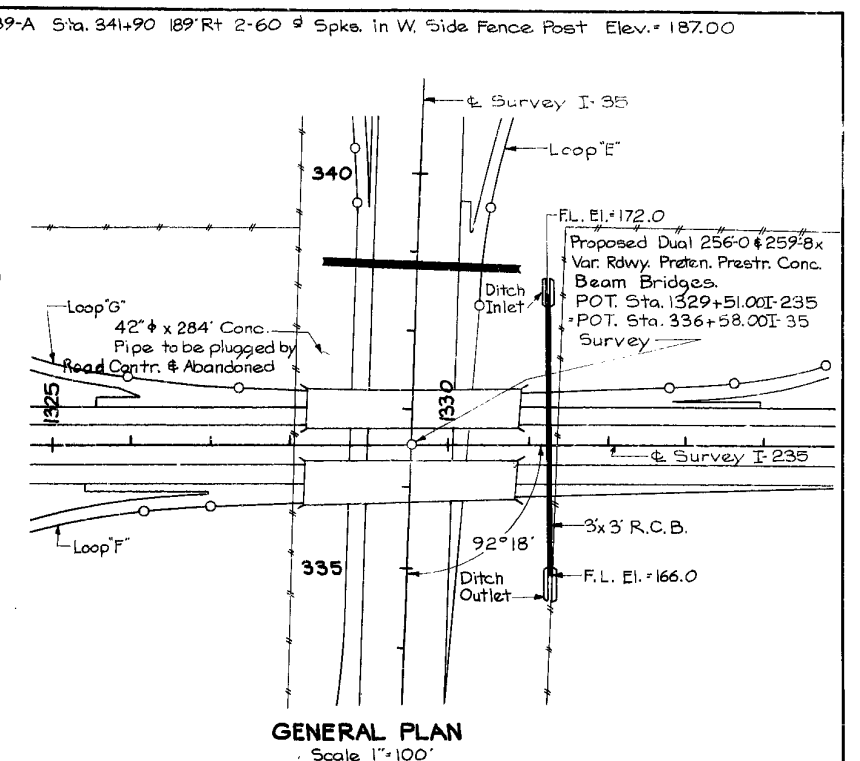
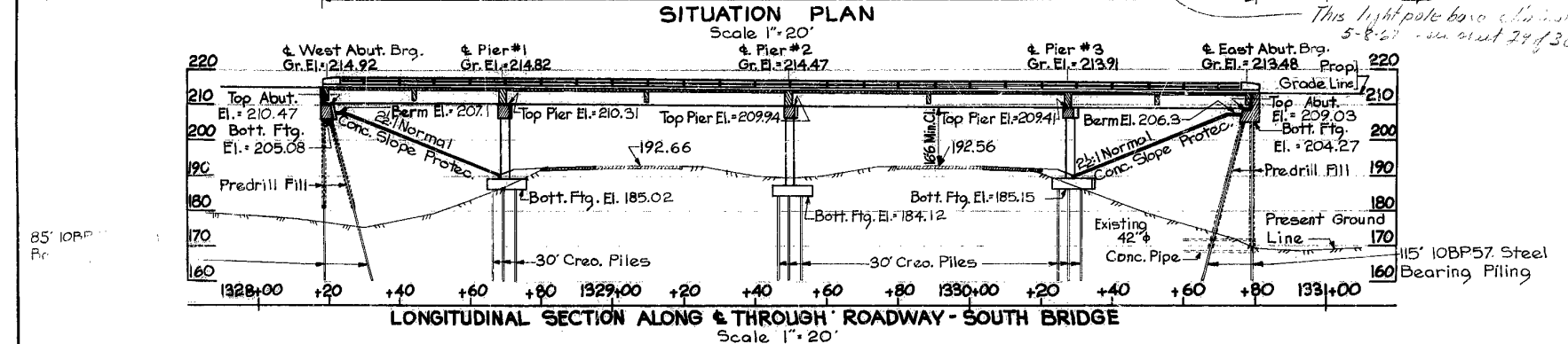
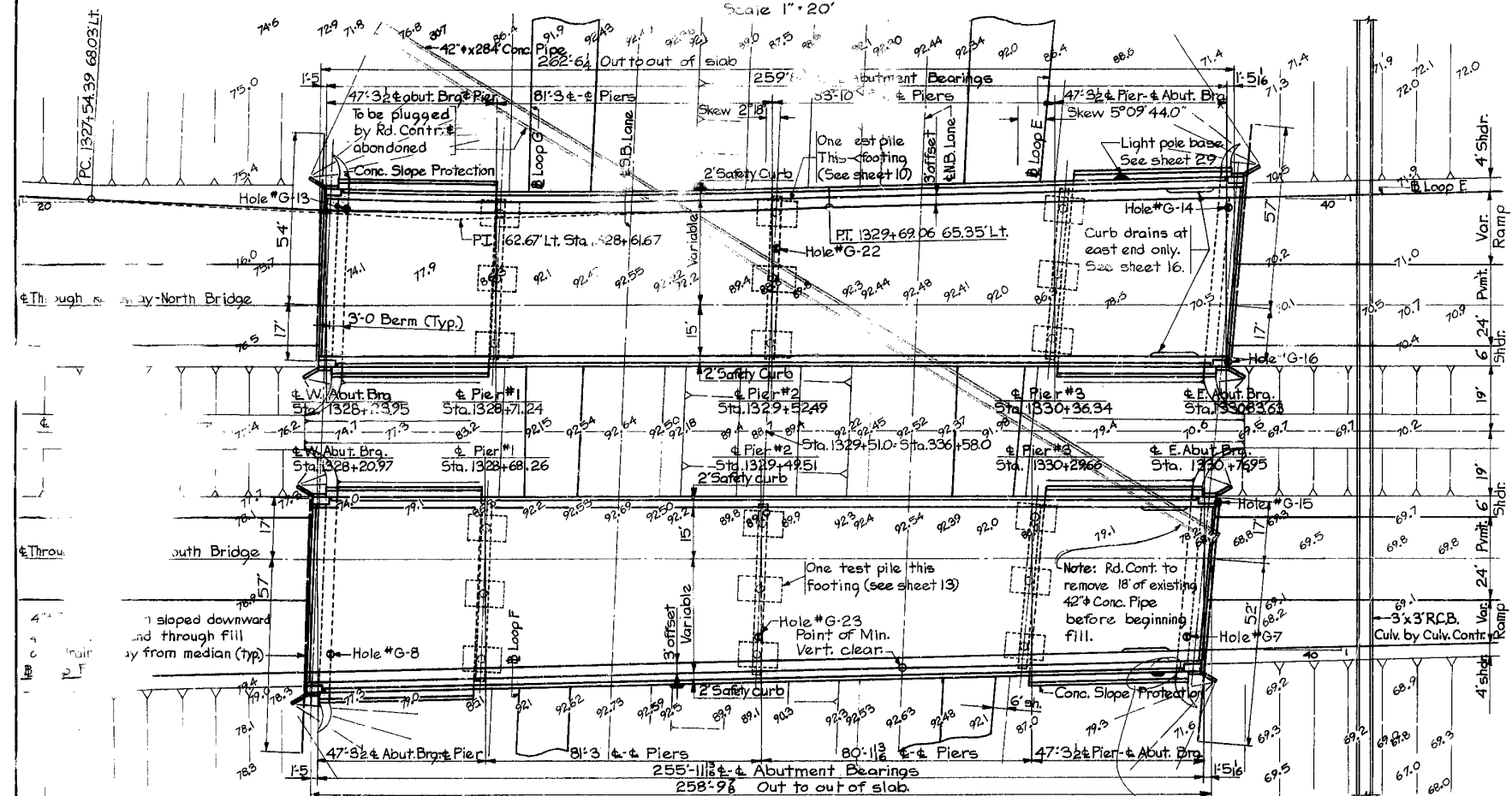
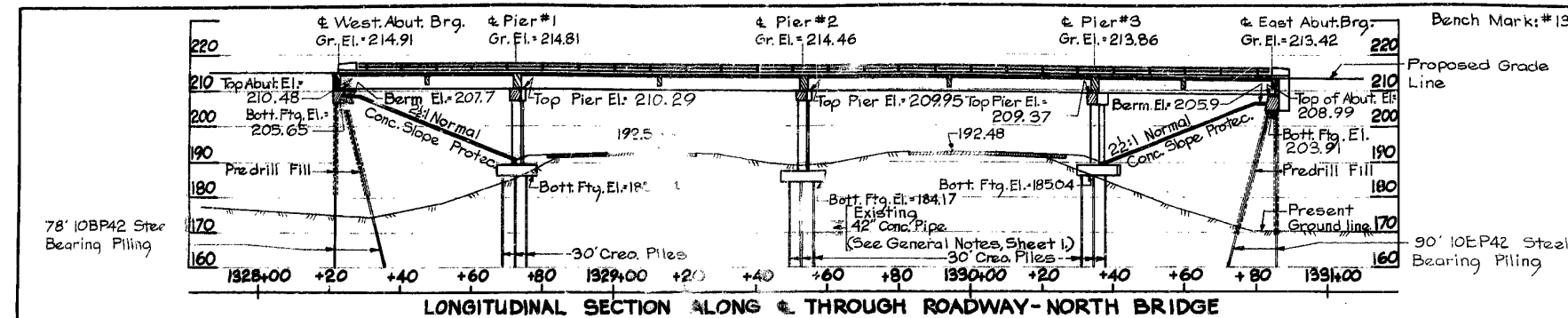
(DALLAS) POLK COUNTY

IOWA STATE HIGHWAY COMMISSION

DESIGN NO. 865
FILE NO. 22281
DES. SH. NO. 1 OF 30

(Dallas) Polk COUNTY

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	3		3	32



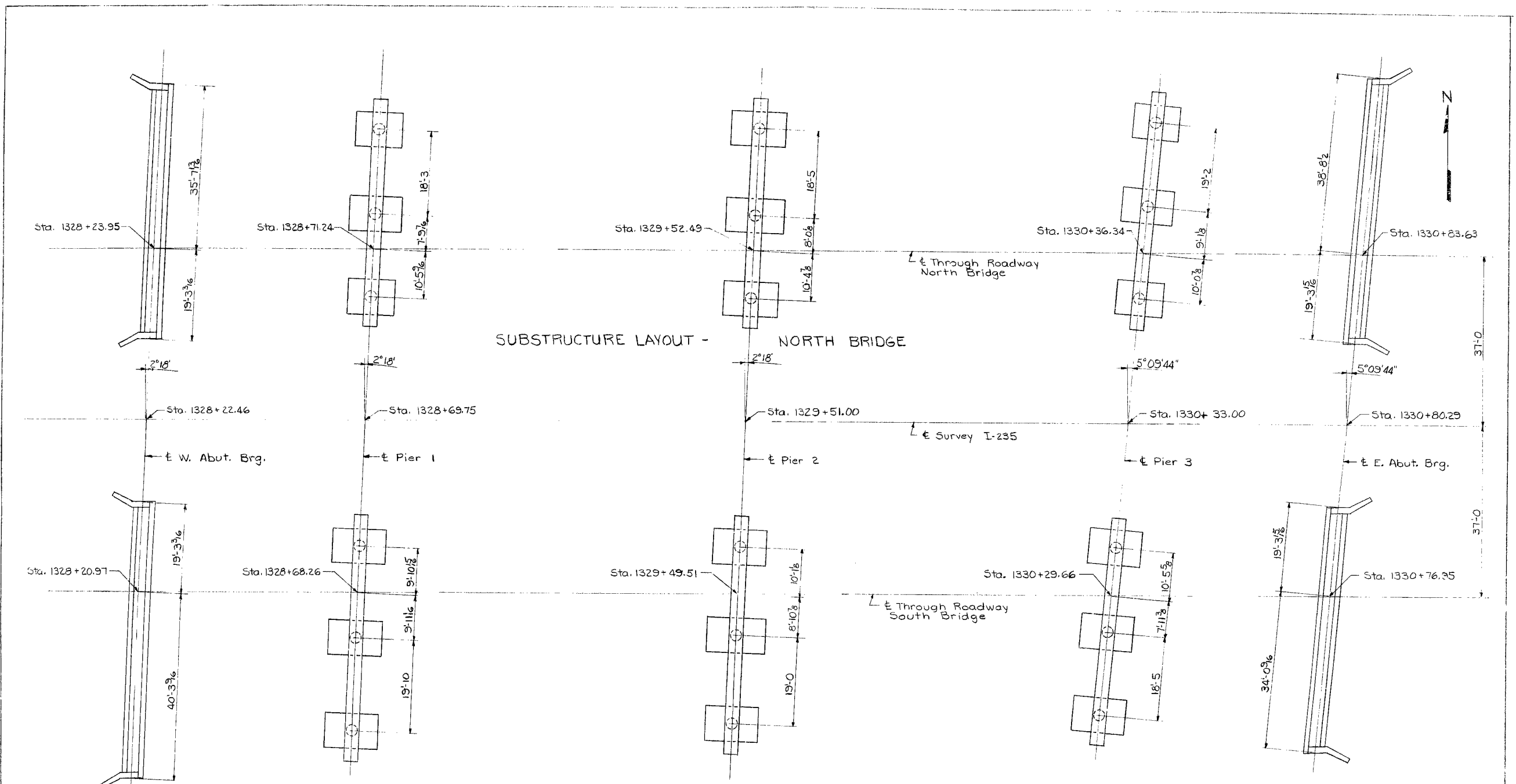
1250' VC
P.I. Sta. 1330+50
P.I. El. 220.30
+1.20%
-3.00%
I-235 GRADE
UAC PRESENT GRADE ON I-35
GRADE DATA

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

Design for 2° 18' 50" 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. 1336+58.00 on I-35
(DALLAS) POLK COUNTY
IOWA STATE HIGHWAY COMMISSION

DESIGN NO. 865
FILE NO. 2-2281
DES. SH. NO. 2 OF 30



SUBSTRUCTURE LAYOUT - NORTH BRIDGE

SUBSTRUCTURE LAYOUT - SOUTH BRIDGE

Design for 2° 18' & 5° 09' 44" Skew
DUAL 256'-0" & 259'-8" x VARIABLE ROADWAY
PRETENSIONED PRESTRESSED CONCRETE
BEAM BRIDGES
47'-3 1/2" End Spans 81'-3" & Variable Interior Spans
SUBSTRUCTURE LAYOUT

Station: 1329+51.00 on I-235
Station: 336+58.00 on I-35
February 1966
(DALLAS) POLK COUNTY
Iowa State Highway Commission

DESIGN NO. 865
FILE NO. 22281
DES. SH. NO. 3 OF 30

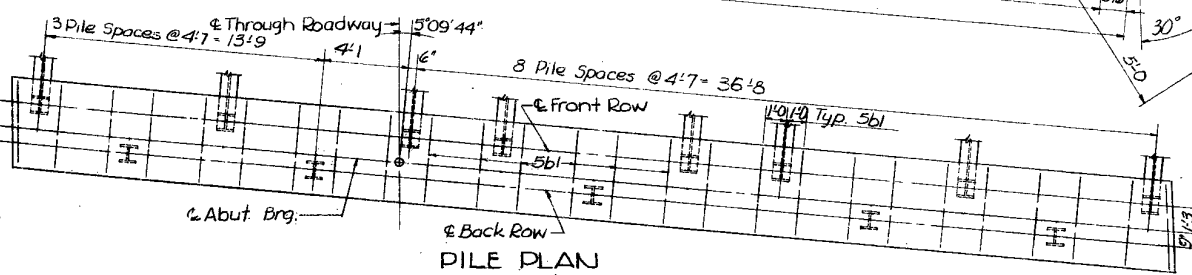
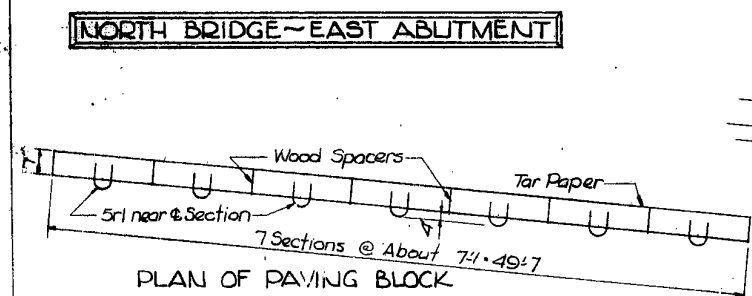
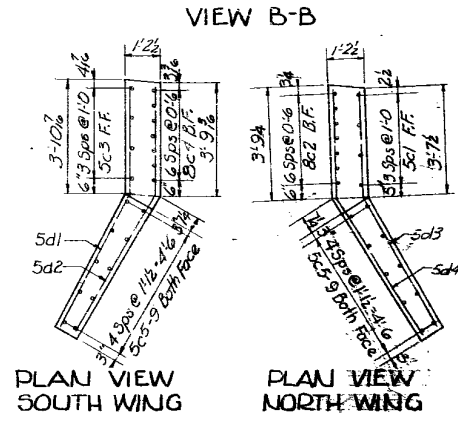
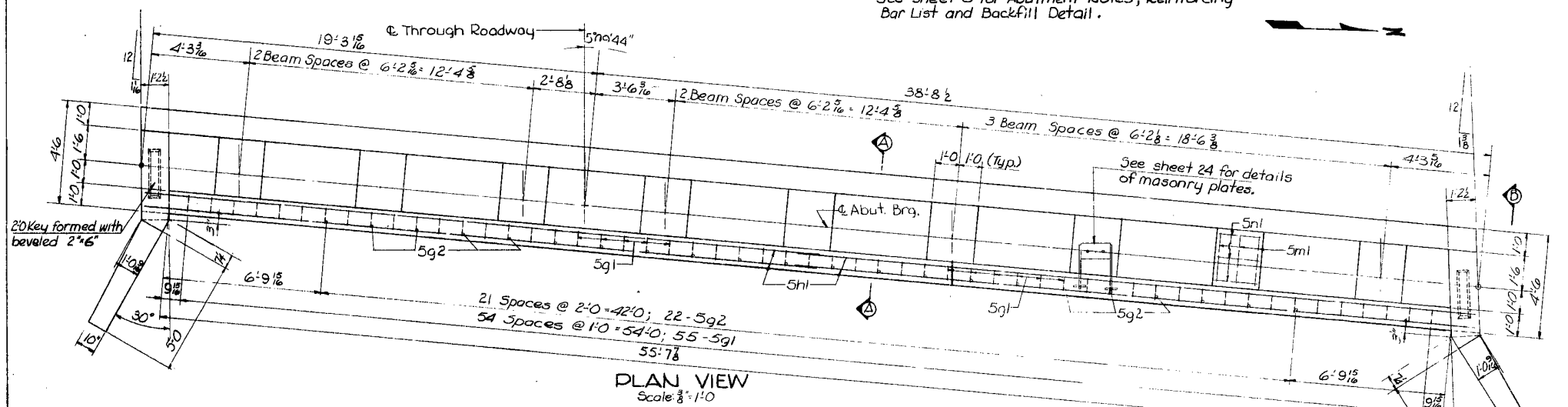
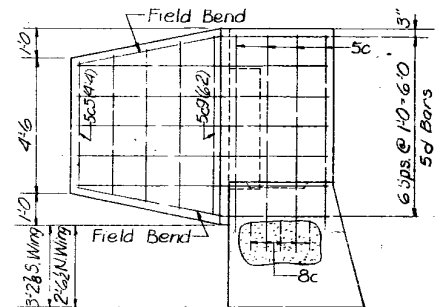
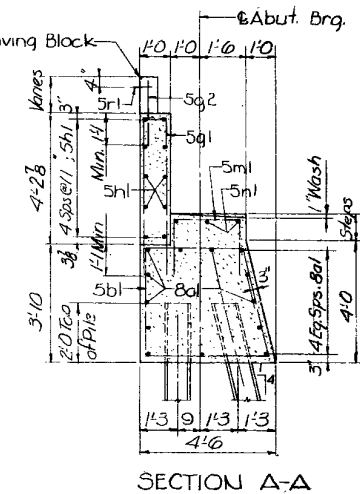
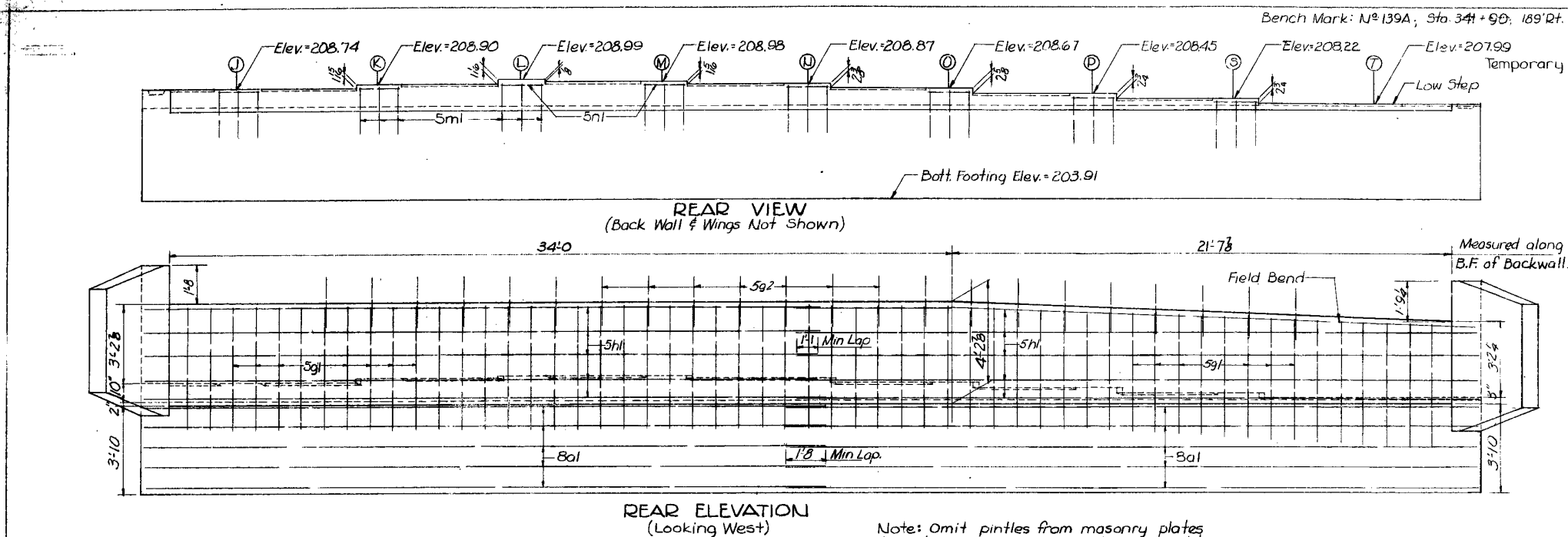
Detailed by: LEP

Checked by: J.D.C.

(Dallas) Polk COUNTY

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	3		5	32

F



Design for 2°18' & 5°09'-44" Skew
DUAL 256'-0" & 259'-8" VARIABLE ROADWAY
PRETENSIONED PRESTRESSED CONCRETE
BEAM BRIDGES
47'-3½" End Spans 81'-3" Variable Interior Spans

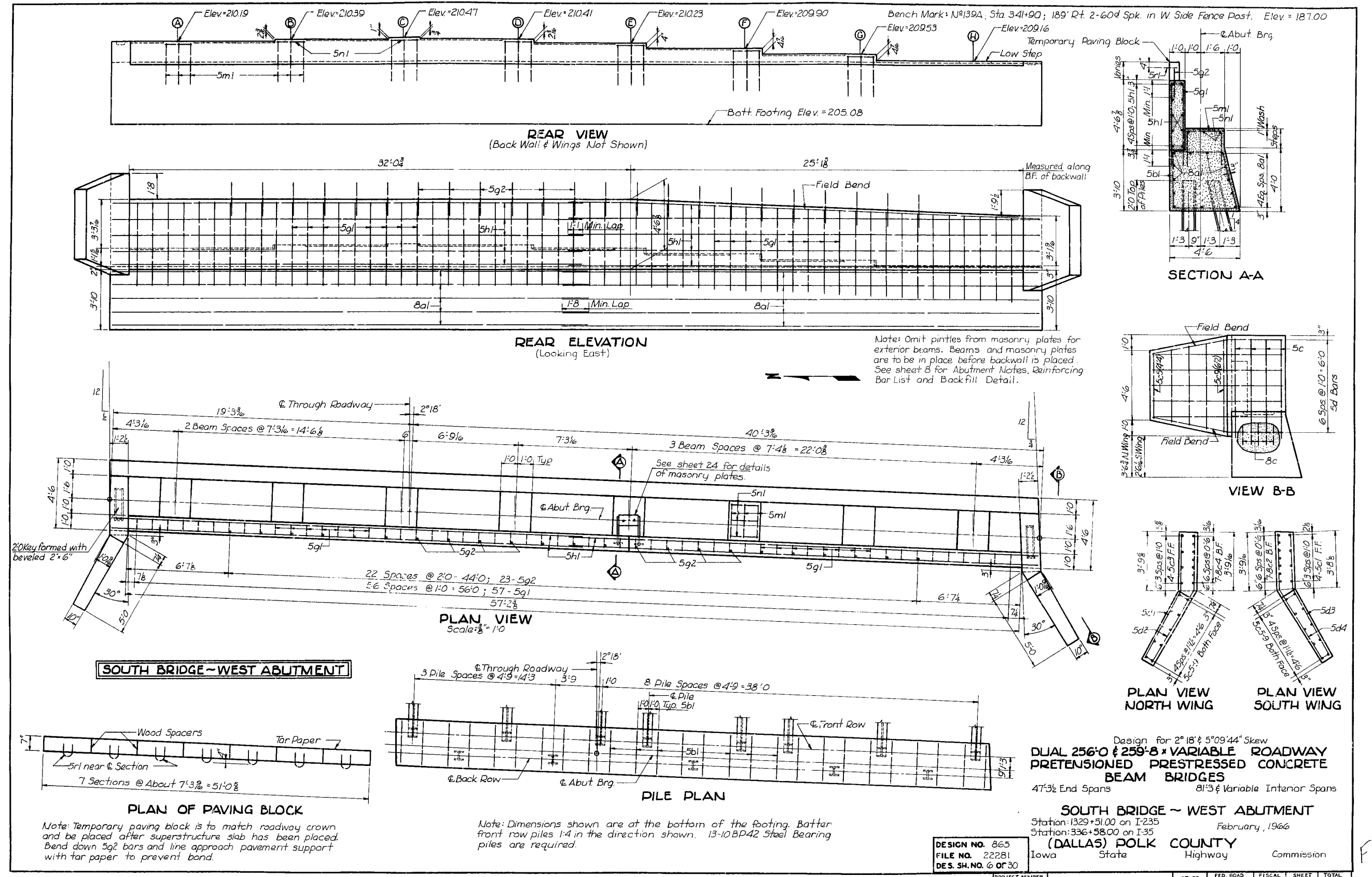
NORTH BRIDGE~ EAST ABUTMENT
Station: 1329 + 51.00 on I-235
Station: 336 + 58.00 on I-35
February, 1966
(DALLAS) POLK COUNTY
Iowa State Highway Commission

DESIGN NO. 865
FILE NO. 22281
DES. SH. NO. 5 OF 30

Designed & Traced by: EWO Checked by: LEP

(Dallas) Polk COUNTY PROJECT NUMBER I-80 -3(18)25^{xx}77-2

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		7	32

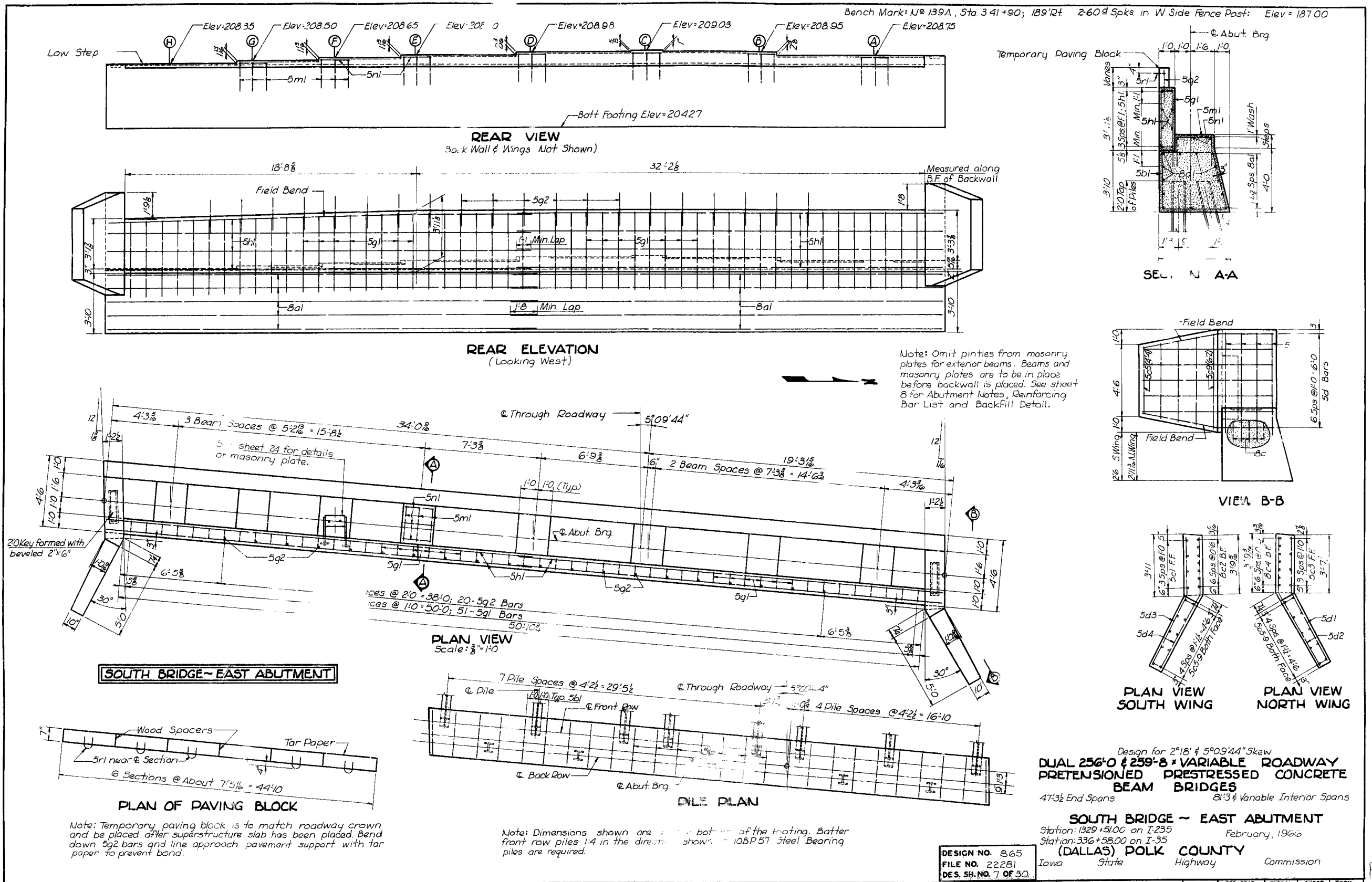


Designed & Traced by: E.A.O.

Checked by: LEP

(DALLAS) POLK COUNTY PROJECT NUMBER I-80-3(18) 125 XX77-2

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		8	32



Designed & Traced by: E.W.O.

Checked by: LEP

(DALLAS) POLK COUNTY

DESIGN NO. 865	FILE NO. 22281	DES. SH. NO. 7 OF 30	PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
			I-80-3(18)125 **77-2	IOWA	5		9	32

NORTH BRIDGE ~ WEST ABUTMENT						NORTH BRIDGE ~ EAST ABUTMENT						SOUTH BRIDGE ~ WEST ABUTMENT						SOUTH BRIDGE ~ EAST ABUTMENT																													
REINFORCING BAR LIST						REINFORCING BAR LIST						REINFORCING BAR LIST						REINFORCING BAR LIST																													
Bar	Location	Shape	N ^o	Length	Weight	Bar	Location	Shape	N ^o	Length	Weight	Bar	Location	Shape	N ^o	Length	Weight	Bar	Location	Shape	N ^o	Length	Weight																								
8a1	Footings Longitudinal	—	26	28'2"	1955	8a1	Footings Longitudinal	—	26	29'9"	2065	8a1	Footings Longitudinal	—	26	30'6"	2117	8a1	Footings Longitudinal	—	26	27'5"	1903																								
5b1	Footings Hoops	□	26	15'4"	416	5b1	Footings Hoops	□	26	15'4"	416	5b1	Footings Hoops	□	26	15'4"	416	5b1	Footings Hoops	□	26	15'4"	416																								
5c1	North End Wall Vert. F.F.	—	4	6'1"	25	5c1	North End Wall Vert. F.F.	—	4	6'2"	26	5c1	South End Wall Vert. F.F.	—	4	6'1"	25	5c1	South End Wall Vert. F.F.	—	4	6'1"	25																								
5c2	North End Wall Vert. B.F.	—	7	6'8"	125	5c2	North End Wall Vert. B.F.	—	7	6'9"	126	5c2	South End Wall Vert. B.F.	—	7	6'8"	125	5c2	South End Wall Vert. B.F.	—	7	6'8"	125																								
5c3	South End Wall Vert. F.F.	—	4	6'7"	27	5c3	South End Wall Vert. F.F.	—	4	6'9"	28	5c3	North End Wall Vert. F.F.	—	4	7'2"	30	5c3	North End Wall Vert. F.F.	—	4	6'6"	27																								
5c4	South End Wall Vert. B.F.	—	7	7'2"	134	5c4	South End Wall Vert. B.F.	—	7	7'4"	137	5c4	North End Wall Vert. B.F.	—	7	7'9"	145	5c4	North End Wall Vert. B.F.	—	7	7'1"	132																								
5c5-9	Wings Vert. Both Face	—	20	Varies	110	5c5-9	Wings Vert. Both Face	—	20	Varies	110	5c5-9	Wings Vert. Both Face	—	20	Varies	110	5c5-9	Wings Vert. Both Face	—	20	Varies	110																								
5d1	South Wing Horiz. F.F.	—	7	8'5"	62	5d1	South Wing Horiz. F.F.	—	7	8'7"	63	5d1	North Wing Horiz. F.F.	—	7	8'6"	62	5d1	North Wing Horiz. F.F.	—	7	8'4"	61																								
5d2	South Wing Horiz. B.F.	—	7	9'0"	66	5d2	South Wing Horiz. B.F.	—	7	9'0"	66	5d2	North Wing Horiz. B.F.	—	7	9'0"	66	5d2	North Wing Horiz. B.F.	—	7	9'0"	66																								
5d3	North Wing Horiz. F.F.	—	7	8'5"	62	5d3	North Wing Horiz. F.F.	—	7	8'4"	61	5d3	South Wing Horiz. F.F.	—	7	8'5"	62	5d3	South Wing Horiz. F.F.	—	7	8'7"	63																								
5d4	North Wing Horiz. B.F.	—	7	9'0"	66	5d4	North Wing Horiz. B.F.	—	7	9'0"	66	5d4	South Wing Horiz. B.F.	—	7	9'0"	66	5d4	South Wing Horiz. B.F.	—	7	9'0"	66																								
5g1	Back Wall Vertical	—	53	10'4"	621	5g1	Back Wall Vertical	—	53	10'10"	621	5g1	Back Wall Vertical	—	53	11'6"	684	5g1	Back Wall Vertical	—	53	10'2"	541																								
*5g2	Paving Dowels	—	22	2'2"	50	*5g2	Paving Dowels	—	22	2'2"	50	*5g2	Paving Dowels	—	23	2'2"	52	*5g2	Paving Dowels	—	20	2'2"	45																								
5h1	Back Wall Horizontal	—	16	27'11"	466	5h1	Back Wall Horizontal	—	20	29'6"	615	5h1	Back Wall Horizontal	—	20	30'3"	631	5h1	Back Wall Horizontal	—	16	27'11"	452																								
5m1	Beam Seat Trans.	—	24	5'11"	148	5m1	Beam Steps Trans.	—	24	6'3"	156	5m1	Beam Steps Trans.	—	21	7'3"	159	5m1	Beam Steps Trans.	—	21	5'11"	130																								
5n1	Beam Seat Longit.	—	24	1'9"	44	5n1	Beam Steps Longit.	—	24	1'9"	44	5n1	Beam Steps Longit.	—	21	1'9"	38	5n1	Beam Steps Longit.	—	21	1'9"	38																								
5r1	Paving Block	—	6	2'1"	13	5r1	Paving Block	—	7	2'1"	15	5r1	Paving Block	—	7	2'1"	15	5r1	Paving Block	—	6	2'1"	13																								
* Structural Grade						* Structural Grade						* Structural Grade						* Structural Grade																													
Total (lbs.)						4338						Total (lbs.)						4665						Total (lbs.)						4803						Total (lbs.)						4213					
BENT BAR DETAILS						BENT BAR DETAILS						BENT BAR DETAILS						BENT BAR DETAILS																													
Note: All dimensions are out to out. Radii to ϕ bar.						Note: All dimensions are out to out. Radii to ϕ bar.						Note: All dimensions are out to out. Radii to ϕ bar.						Note: All dimensions are out to out. Radii to ϕ bar.																													
CONCRETE PLACEMENT QUANT.-ONE ABUT.						CONCRETE PLACEMENT QUANT.-ONE ABUT.						CONCRETE PLACEMENT QUANT.-ONE ABUT.						CONCRETE PLACEMENT QUANT.-ONE ABUT.																													
Item	Quantity	Item	Quantity	Item	Quantity	Item	Quantity	Item	Quantity	Item	Quantity	Item	Quantity	Item	Quantity	Item	Quantity	Item	Quantity	Item	Quantity	Item	Quantity																								
Footings	34.8	Footings	37.6	Footings	39.7	Footings	33.5	Footings	33.5	Footings	33.5	Footings	33.5	Footings	33.5	Footings	33.5	Footings	33.5	Footings	33.5	Footings	33.5																								
Backwall	7.6	Backwall	8.4	Backwall	9.1	Backwall	7.2	Backwall	7.2	Backwall	7.2	Backwall	7.2	Backwall	7.2	Backwall	7.2	Backwall	7.2	Backwall	7.2	Backwall	7.2																								
Wings Including End Walls	3.8	Wings Including End Walls	3.8	Wings Including End Walls	3.8	Wings Including End Walls	3.8	Wings Including End Walls	3.8	Wings Including End Walls	3.8	Wings Including End Walls	3.8	Wings Including End Walls	3.8	Wings Including End Walls	3.8	Wings Including End Walls	3.8	Wings Including End Walls	3.8	Wings Including End Walls	3.8																								
Paving Block	1.3	Paving Block	1.4	Paving Block	1.4	Paving Block	1.3	Paving Block	1.3	Paving Block	1.3	Paving Block	1.3	Paving Block	1.3	Paving Block	1.3	Paving Block	1.3	Paving Block	1.3	Paving Block	1.3																								
Total (Cu. Yds.)	47.5	Total (Cu. Yds.)	51.2	Total (Cu. Yds.)	54.0	Total (Cu. Yds.)	45.8	Total (Cu. Yds.)	45.8	Total (Cu. Yds.)	45.8	Total (Cu. Yds.)	45.8	Total (Cu. Yds.)	45.8	Total (Cu. Yds.)	45.8	Total (Cu. Yds.)	45.8	Total (Cu. Yds.)	45.8	Total (Cu. Yds.)	45.8																								

ABUTMENT NOTES:

Minimum clear distance from face of concrete to near reinforcing bar is to be 2" unless otherwise noted or shown. All exposed corners of 90° or sharper are to be filleted with a 4" dressed and beveled strip.

Reinforcing steel is to be securely wired in place before the concrete is placed.

Bridge Contractor is to backfill abutments between wingwalls to subgrade elevation with granular backfill. The remainder of the abutment is to be backfilled with soil.

Top of backfill is to be finished per 11e1 to ϕ of roadway.

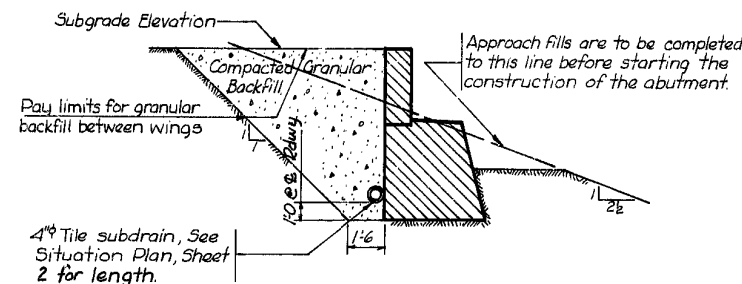
Design load for piling is 115 tons. Yield bearing (includes drag load) is shown below. shall be obtained and is to be determined by either the pile driving formula, bearing multiplied by the appropriate correlation factor for the foundation soil, or by test load.

The abutment piles are to be driven with a diesel hammer of adequate capacity based on design load and pile lengths.

YIELD BEARING FOR PILES

North Bridge		South Bridge	
West Abut.	East Abut.	West Abut.	East Abut.
115 tons	114 tons	123 tons	166 tons

ESTIMATED QUANTITIES ~ FOUR ABUTMENTS						
Item	Unit	Quantity				Total
		North Bridge West Abut.	North Bridge East Abut.	South Bridge West Abut.	South Bridge East Abut.	
Structural Concrete Class C	Cu. Yds.	47.5	51.2	54.0	45.8	198.5
Reinforcing Steel	lbs.	4338	4665	4803	4213	18,019
Class 20 Excavation	Cu. Yds.	63	67	68	61	199
Granular Backfill	Cu. Yds.	96	106	115	92	409
10B P42 Steel Bearing Piling Drive	Lin. Ft.	13@78'	13@90'	13@85'		3289
10B P51 Steel Bearing Piling Drive	Lin. Ft.	13@78'	13@90'	13@85'		3289
					13@115'	1495
					13@115'	1495



BACKFILL DETAIL

Design for 2°18' & 5°09'44" Skews
DUAL 256'-0" & 259'-8" VARIABLE ROADWAY
PRETENSIONED PRESTRESSED CONCRETE
BEAM BRIDGES
 47'3 1/2' End Spans 81'3" & Variable Interior Spans

ABUTMENT DETAILS

Station: 1329+51.00 on I-235 February, 1966
 Station: 336+58.00 on I-35

(DALLAS) POLK COUNTY

Iowa State Highway Commission

DESIGN NO. 865
 FILE NO. 22281
 DES. SH. NO. 8 OF 30

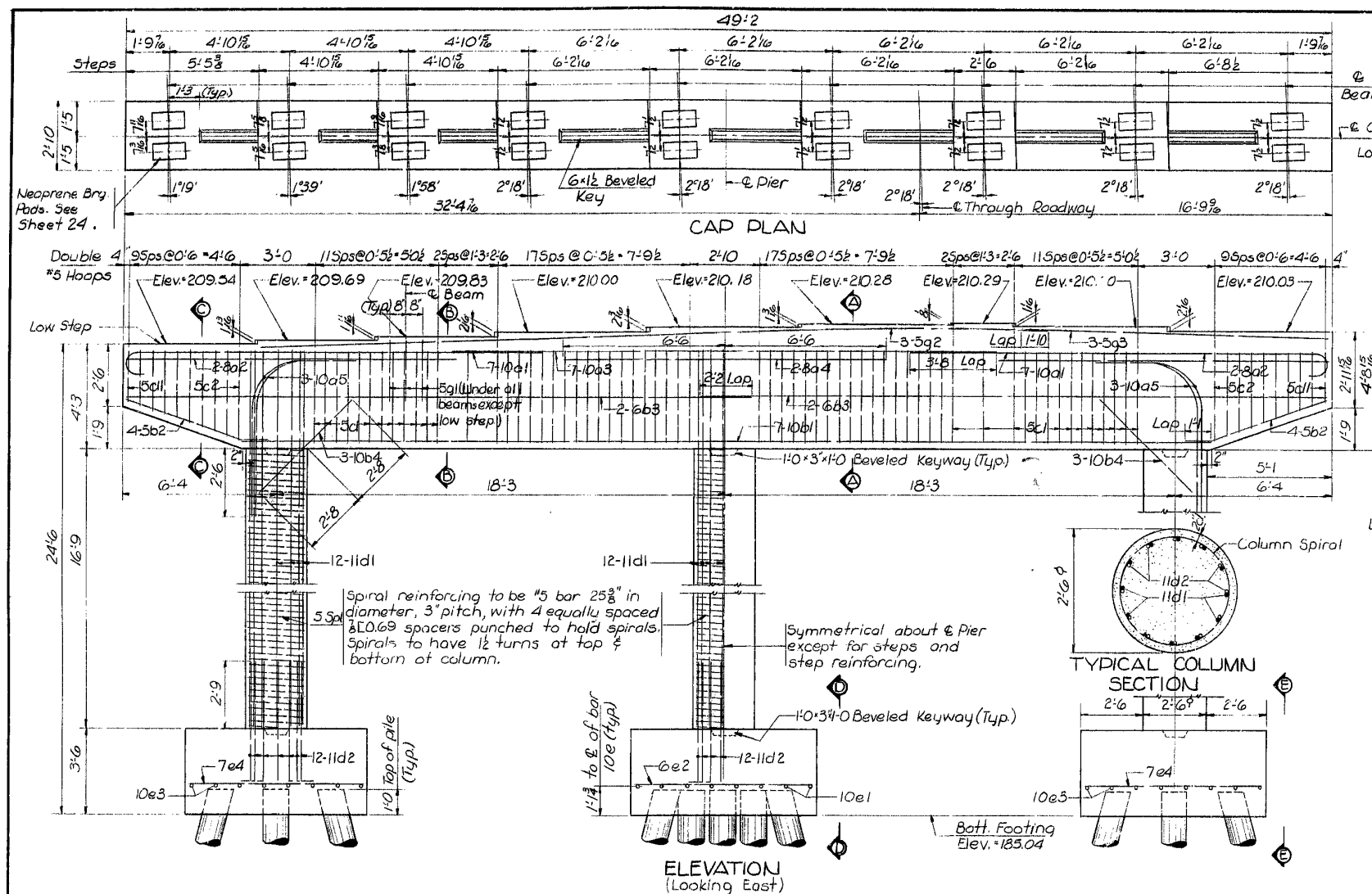
(DALLAS) POLK COUNTY

PROJECT NUMBER
 I-80-3(18)125 **77-2

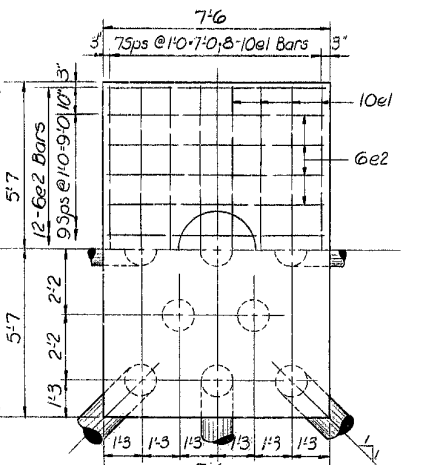
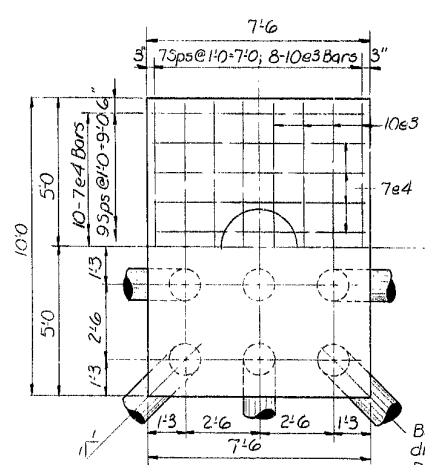
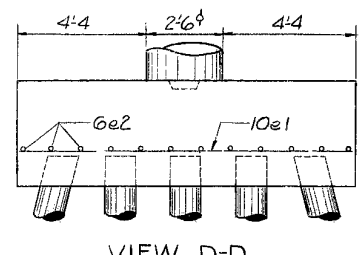
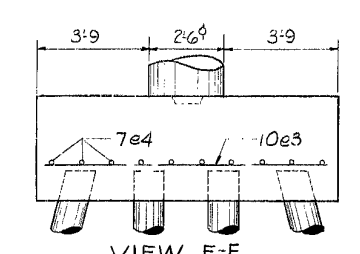
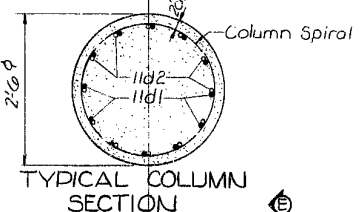
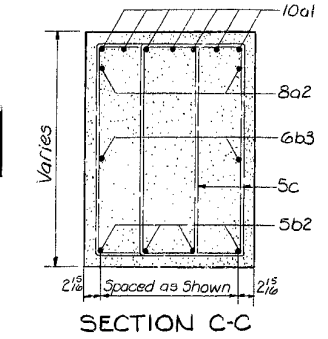
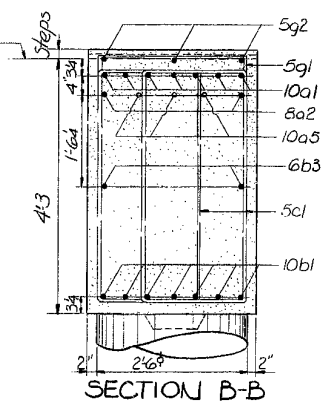
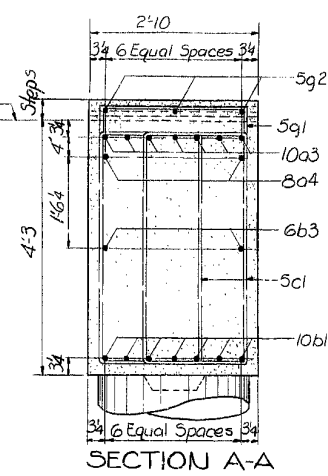
STATE FED. ROAD DIST. NO. FISCAL YEAR SHEET NO. SHEETS

Designed & Traced by: E.A.O.

Checked by: LEP



Bench Mark: N+139A, Sta 341+90, 189' R/L. 2-60d Spts. in W. Side Fence Post: Elev. 187.00



REINFORCING BAR LIST				
Bar	Location	Shape	Size	Length/Weight
10a1	Cap, Top Longitudinal	U	14	18'7" 1119
10a2	Cap, Top Longitudinal	U	14	13'2" 141
10a3	Cap, Top Longitudinal	U	7	22'0" 663
10a4	Cap, Top Longitudinal	U	2	13'0" 69
10a5	Column Corners	U	6	11'6" 297
10b1	Cap, Bottom Longitudinal	U	7	39'4" 1185
5b2	Cap, Bottom Cantilever	U	8	6'2" 51
6b3	Cap, Sides Longitudinal	U	4	25'6" 153
10b4	Column Corners	U	6	5'4" 138
5c1	Cap, Hoops	U	124	12'0" 1552
5c2	Cap, Hoops Cantilever	U	40	Varies 433
11d1	Column, Vertical	U	36	20'10" 3985
11d2	Footing Dowel, Vertical	U	36	5'4" 1020
10e1	Center Footing, Longit.	U	8	10'10" 313
6e2	Center Footing, Transv.	U	12	7'2" 129
10e3	Exterior Footing, Longit.	U	16	9'8" 666
7e4	Exterior Footing, Transv.	U	20	7'2" 293
5g1	Cap, Under Beams Transv.	U	24	6'4" 159
5g2	Cap, Under Beams Longit.	U	3	32'8" 102
5g3	Cap, Under Beams Longit.	U	3	12'6" 39
5sp1	Column Spirals	U	2000	3 45'4" 1430
5sp2	Spiral Spacers	U	12	16'9" 139

* See Pier Notes (Sheet 13) Total (lbs.) 14,136

BENT BAR DETAILS		
10a1	10a2	10a3
10a4	10a5	10b1
5b2	5c1	5c2
5g1	5g2	5g3
5sp1	5sp2	5sp3

Note: All dimensions are cut to out. Radii to E bar.

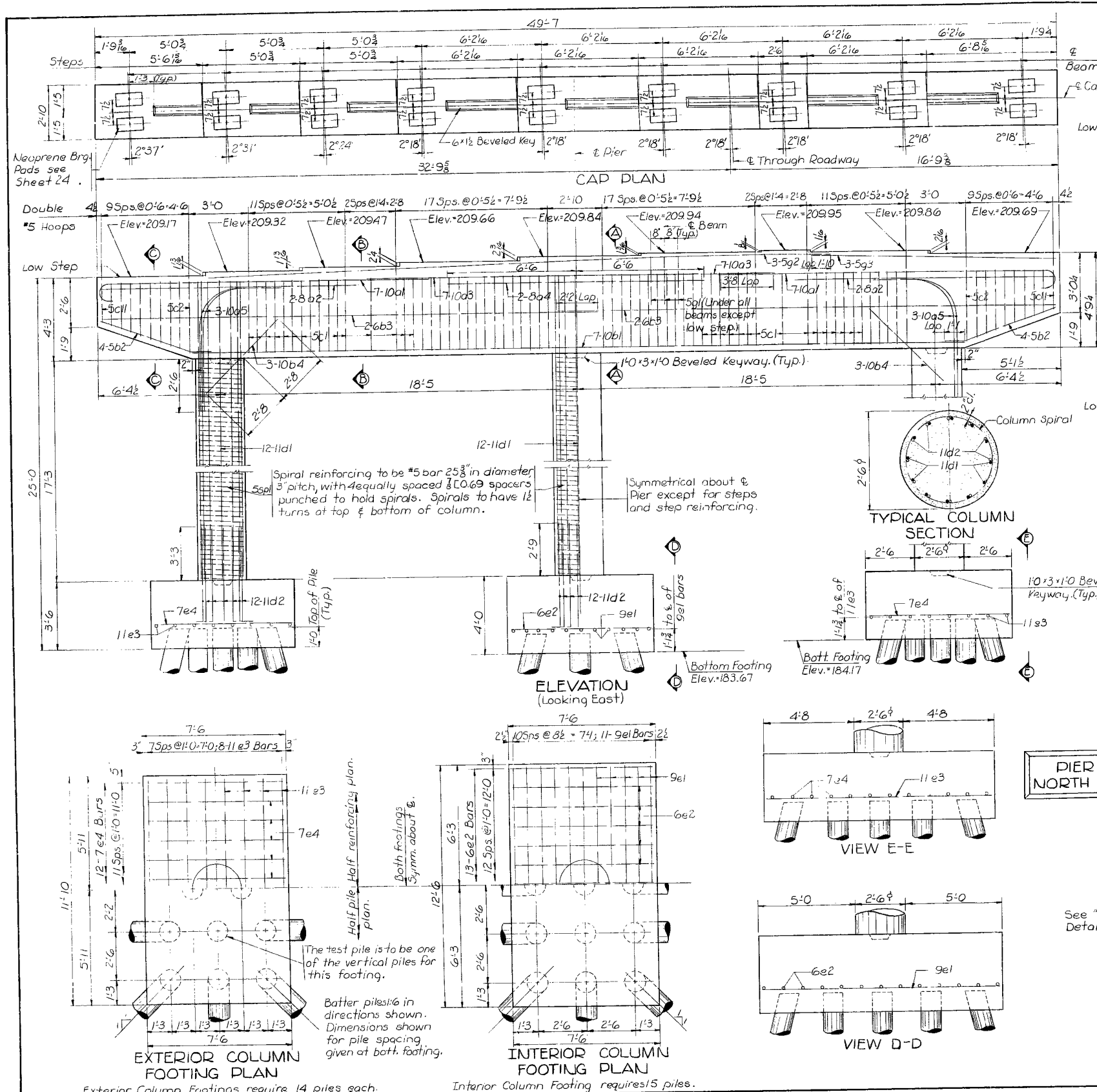
CONCRETE PLACEMENT QUANTITIES		
Location	Quantity	
Footings	29.2	
Columns	9.1	
Cap	23.4	
Total (Cu. Yds.)	61.7	
TOTAL ESTIMATED QUANTITIES		
Item	Unit	Quantity
Structural Concrete Class "C"	Cu.Yds	61.7
Reinforcing Steel	lbs	14,136
Cresosoted Piling 37 @ 30'	Lin.Ft.	1110
Excavation Class 20	Cu.Yds	54

Design for 2°18'±5°09'44" Skew
 DUAL 256'0"±259'8" VARIABLE ROADWAY
 PRETENSIONED PRESTRESSED CONCRETE
 BEAM BRIDGES
 47'± End Spans 81'± Variable Interior Spans
 NORTH BRIDGE - PIER 1 DETAILS
 Station: 1329+51.00 on I-235 February, 1966
 Station: 336+58.00 on I-35
 (DALLAS) POLK COUNTY
 State Highway Commission

DESIGN NO. 865
 FILE NO. 22281
 DES. SH. NO. 7 OF 30

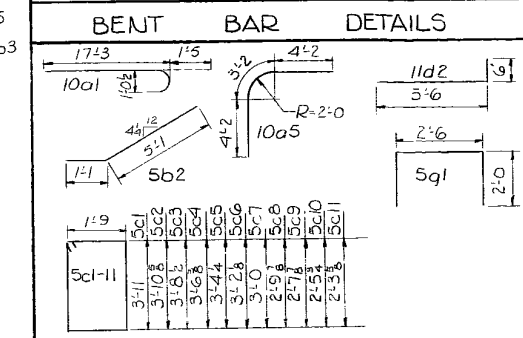
Designed by: J.D.C. Detailed by: E.W.D. Checked by: LEP

(DALLAS) POLK COUNTY PROJECT NUMBER 7-80-5(18)125 XX77-2 STATE IOWA DIST. NO. 5 FISCAL YEAR SHEET NO. 11 TOTAL SHEETS 32



Bench Mark: N^o 139A, Sta. 341+90, 189' Rt. 2-60' Spks. in W. Side Fence Post: Elev. = 187.00

REINFORCING BAR LIST					
Bar	Location	Shape	N ^o	Length	Weight
10a1	Cap, Top Longitudinal	U	14	18'-8"	1125
8a2	Cap, Top Longitudinal	U	4	13'-3"	142
10a3	Cap, Top Longitudinal	U	7	22'-2"	668
8a4	Cap, Top Longitudinal	U	2	13'-0"	69
10a5	Column Corners	U	6	11'-6"	297
10b1	Cap, Bottom Longitudinal	U	7	39'-8"	1195
5b2	Cap, Bottom Cantilever	U	8	6'-2"	51
6b3	Cap, Sides Longitudinal	U	4	25'-8"	154
10b4	Column Corners	U	6	5'-4"	138
5c1	Cap, Hoops	U	124	12'-0"	1552
5c2	Cap, Hoops Cantilever	U	40	Varies	434
11d1	Column, Vertical	U	36	21'-4"	4080
11d2	Footing, Dowel Vertical	U	36	5'-10"	1116
9e1	Center Footing, Longit.	U	11	12'-2"	455
6e2	Center Footing, Transv.	U	13	7'-2"	140
11e3	Exterior Footing, Longit.	U	16	11'-6"	978
7e4	Exterior Footing, Transv.	U	24	7'-2"	352
5g1	Cap, Under Beams, Transv.	U	24	6'-4"	159
5g2	Cap, Under Beams, Longit.	U	3	33'-0"	103
5g3	Cap, Under Beams, Longit.	U	3	12'-6"	39
5sp1	Column Spiral	2000	3	470'-0"	1471
50a5	Spiral Spacers	U	12	17'-3"	143
* See Pier Notes, (Sheet 13.) Total (lbs.)					14,861



Note: All dimensions are out to out. Radii to 3/8 bar.

CONCRETE PLACEMENT QUANTITIES	
Location	Quantity
Footings	35.6
Columns	9.4
Cap	23.7
Total (Cu. Yds.)	68.7

TOTAL ESTIMATED QUANTITIES		
Item	Unit	Quantity
Structural Concrete Class C ^o	Cu. Yds.	68.7
Reinforcing Steel	lbs.	14,861
Crested Piling 42 @ 30'	Lin. Ft.	1260
Excavation Class 20	Cu. Yds.	88
Crested Test Piling 1 @ 40'	L.S.	Lump Sum

Design for 2°18' ± 5°09'44" Skew
 DUAL 25'6"0 ± 25'9"8 × VARIABLE ROADWAY
 PRETENSIONED PRESTRESSED CONCRETE
 BEAM BRIDGES

47'-3 1/2 End Spans 81'-3 1/2 Variable Interior Spans
 NORTH BRIDGE - PIER 2 DETAILS

Station: 1329+51.00 on I-235 February, 1966
 Station: 336+58.00 on I-35

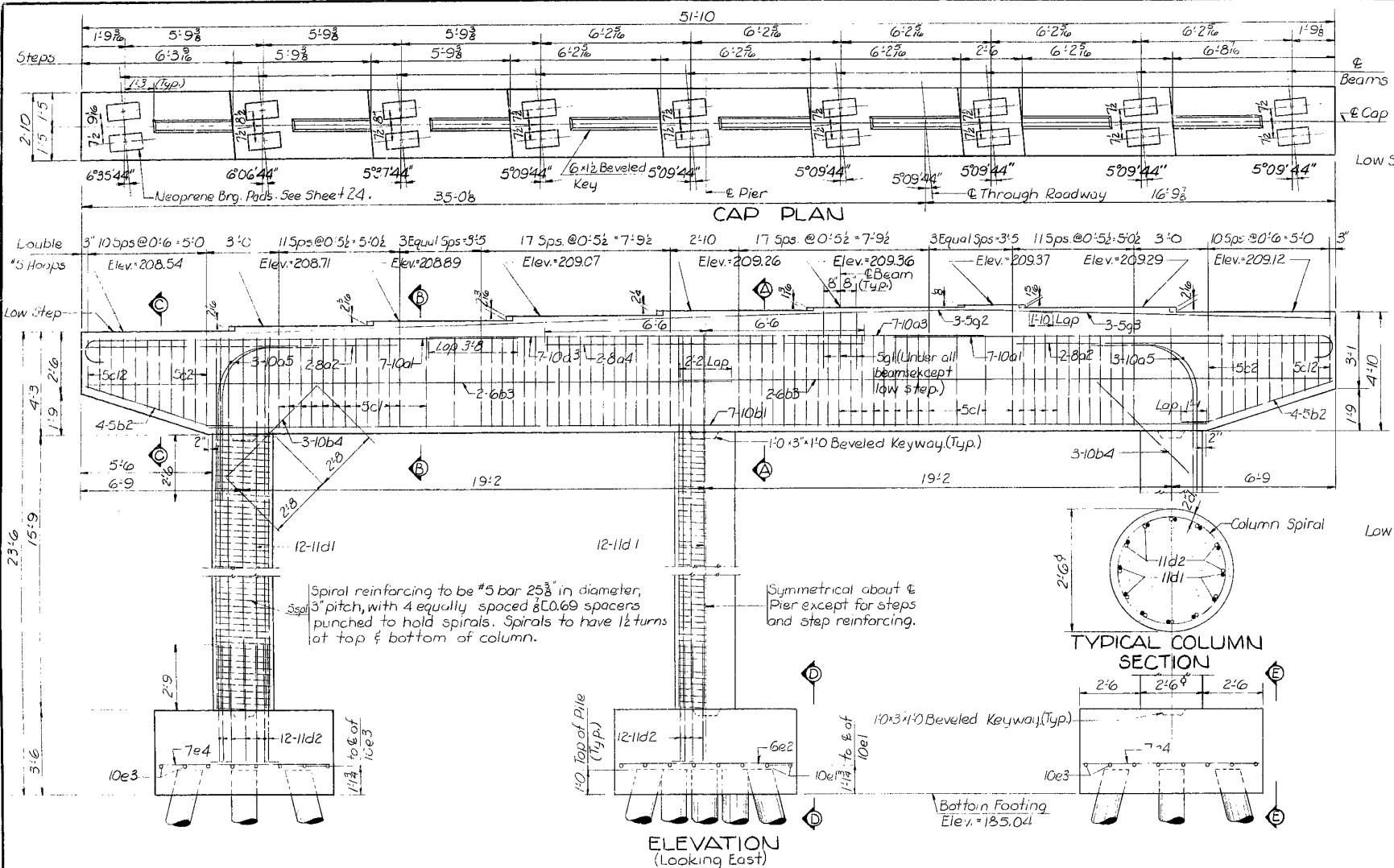
(DALLAS) POLK COUNTY
 Iowa State Highway Commission

DESIGN NO. 865
 FILE NO. 22281
 DES. SH. NO. 100F30

(DALLAS) POLK COUNTY PROJECT NUMBER T-80 -3(8)125 **77-2

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		12	32

Designed by: J.D.C. Detailed by: G.W.C. Checked by: LEP

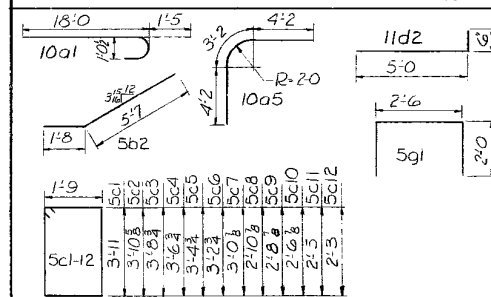


Bench Mark: N^o 139A, Sta. 34+90, 189' Rt. 2-60' Spks in W. Side Fence Post: Elev. 187.00

REINFORCING BAR LIST

Bar	Location	Shape	N ^o	Length	Weight
10a1	Cap, Top Longitudinal	—	14	19'5"	1170
8a2	Cap, Top Longitudinal	—	4	13'3"	142
10a3	Cap, Top Longitudinal	—	7	22'10"	688
8a4	Cap, Top Longitudinal	—	2	13'0"	69
10a5	Column, Corners	—	6	11'6"	297
10b1	Cap, Bottom Longitudinal	—	7	40'0"	1203
5b2	Cap, Bottom Cantilever	—	8	7'3"	60
6b3	Cap, Sides Longitudinal	—	4	26'10"	161
10b4	Column, Corners	—	6	5'4"	138
5c1	Cap, Hoops	—	128	12'0"	1602
5c2	Cap, Hoops Cantilever	—	44	Varies	476
11d1	Column, Vertical	—	36	19'10"	3793
11d2	Footings, Dowel Vertical	—	36	5'4"	1020
10e1	Center Footing, Longit.	—	8	10'10"	373
6e2	Center Footing, Transverse	—	12	7'2"	129
10e3	Exterior Footing, Longit.	—	16	9'8"	666
7e4	Exterior Footing, Transverse	—	20	7'2"	293
5g1	Cap, Under Beams, Transv.	—	24	6'4"	159
5g2	Cap, Under Beams, Longit.	—	3	34'5"	108
5g3	Cap, Under Beams, Longit.	—	3	12'6"	39
5sp1	Column Spiral	—	3	430'0"	1345
10sp1	Spiral Spacers	—	2	15'9"	130
* See Pier Notes (Sheet 13.) Total (lbs.)					14,063

BENT BAR DETAILS



Note: All dimensions are out to out. Radii to & bar.

CONCRETE PLACEMENT QUANTITIES

Location	Quantity
Footings	292
Columns	8.6
Cap	24.8
Total (Cu. Yds.)	62.6

TOTAL ESTIMATED QUANTITIES

Item	Unit	Quantity
Structural Concrete Class C	Cu. Yds.	62.6
Reinforcing Steel	lbs.	14,063
Creosoted Piling 37 @ 30'	lin. ft.	1110
Excavation Class 20	Cu. Yds.	94

PIER 3 NORTH BRIDGE

See "South Bridge - Pier N^o 2 Details", sheet 13 for pier notes.

Design for 2'18" x 5'09'44" 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
NORTH BRIDGE - PIER 3 DETAILS

Station: 1329+51.00 on I-235
Station: 336+58.00 on I-35 February, 1966

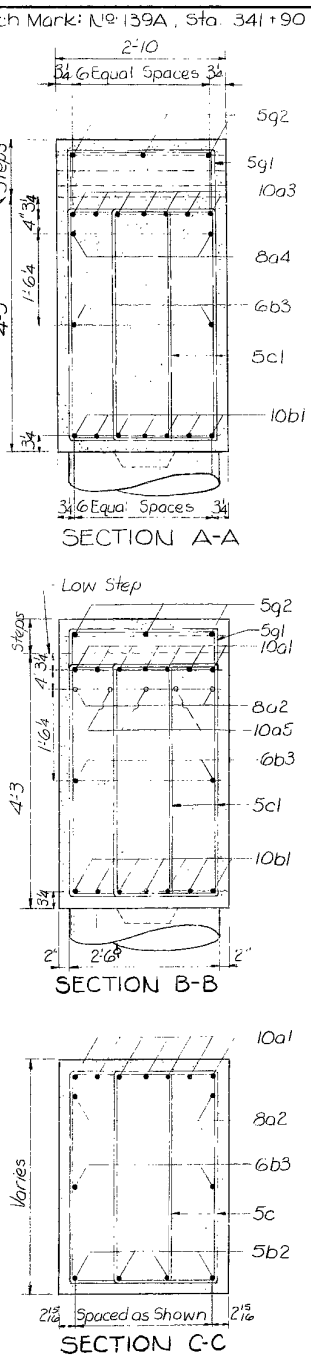
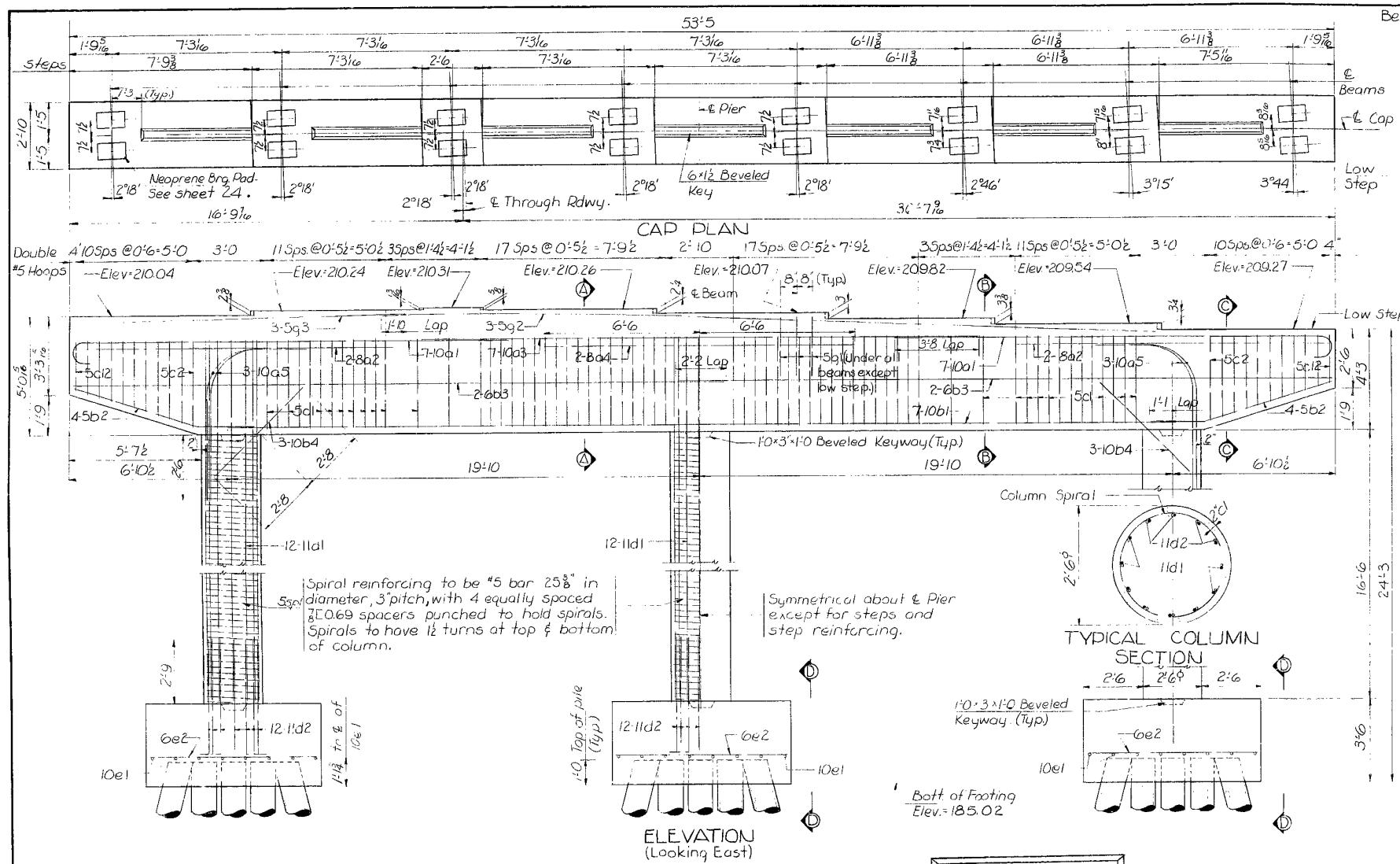
(DALLAS) POLK COUNTY
Iowa State Highway Commission

DESIGN NO. 865
FILE NO. 22281
DES. SH. NO. 11 OF 30

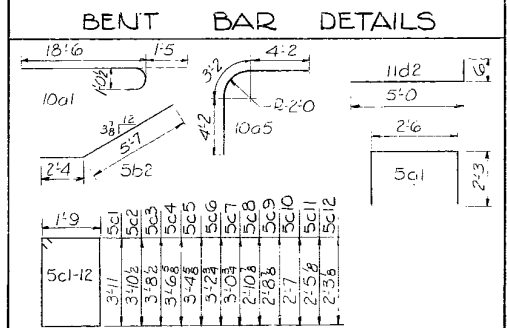
Designed by: J.D.C. Detailed by: E.W.C. Checked by: LEP

(DALLAS) POLK COUNTY

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		13	32



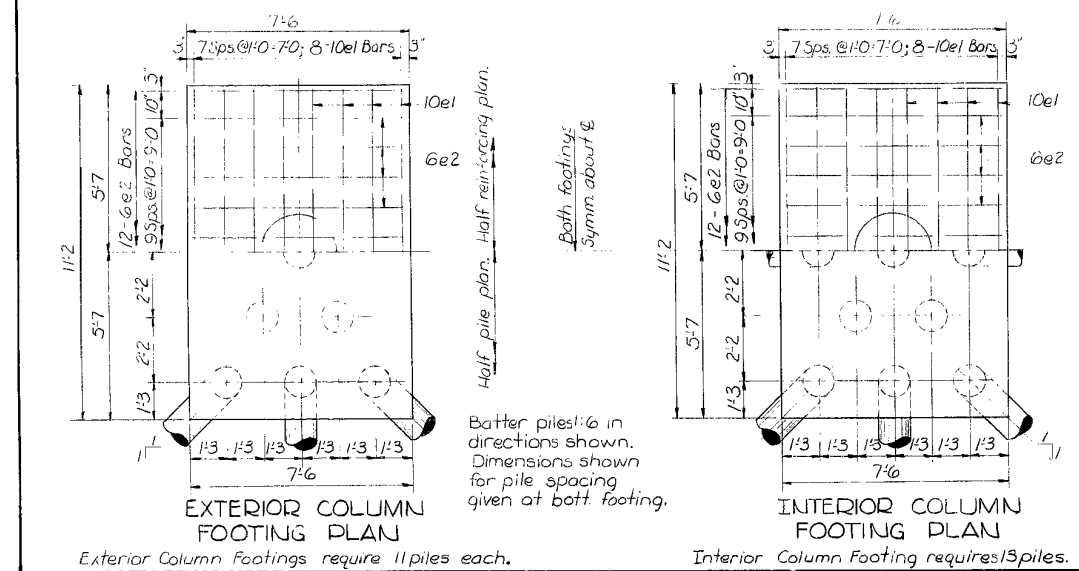
REINFORCING BAR LIST					
Bar	Location	Shape	Nº	Length	Weight
10a1	Cap, Top Longitudinal	U	14	19'11"	1200
8a2	Cap, Top Longitudinal	U	4	13'9"	147
10a3	Cap, Top Longitudinal	U	7	23'6"	708
8a4	Cap, Top Longitudinal	U	2	13'0"	69
10a5	Column, Corners	U	6	11'6"	297
10b1	Cap, Bottom Longitudinal	U	7	40'0"	1205
5b2	Cap, Bottom Longitudinal	U	8	7'11"	66
6b3	Cap, Sides Longitudinal	U	4	27'8"	166
10b4	Column, Corners	U	6	3'4"	138
5c1	Cap, Hoops	U	128	12'0"	1602
5c2	Cap, Hoops Cantilever	U	44	Varies	474
11d1	Column, Vertical	U	36	20'7"	3937
11d2	Footings, Dowels Vertical	U	36	5'4"	1020
10e1	Footings, Longitudinal	U	24	10'10"	1119
6e2	Footings, Transverse	U	36	7'2"	388
5g1	Cap, Under Beams, Transv.	U	21	6'10"	150
5g2	Cap, Under Beams, Longit.	U	3	32'7"	102
5g3	Cap, Under Beams, Longit.	U	3	14'10"	46
*5sp1	Column Spirals	U	3	450'0"	1408
10069	Spiral Spacers	U	12	16'6"	137
* See Pier Notes (Sheet 13)					Total (lbs)
					14,379



Note: All dimensions are out to out. Radii to $\frac{1}{4}$ " bar.

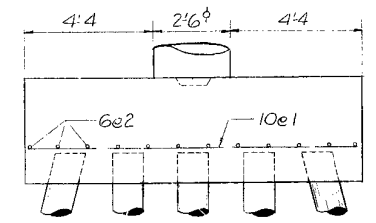
CONCRETE PLACEMENT QUANTITIES	
Location	Quantity
Footings	31.5
Columns	9.0
Cap	26.4
Total (Cu Yds.)	66.9

TOTAL ESTIMATED QUANTITIES	
Item	Quantity
Structural Concrete Class C	Cu Yds 66.9
Reinforcing Steel	lbs. 14,379
Cresosoted Piling 3.5@30'	Lin Ft. 1050
Excavation Class 20	Cu Yds 10.3



PIER 1 SOUTH BRIDGE

See "South Bridge-Pier No. 2 Details", sheet 13 for pier notes.



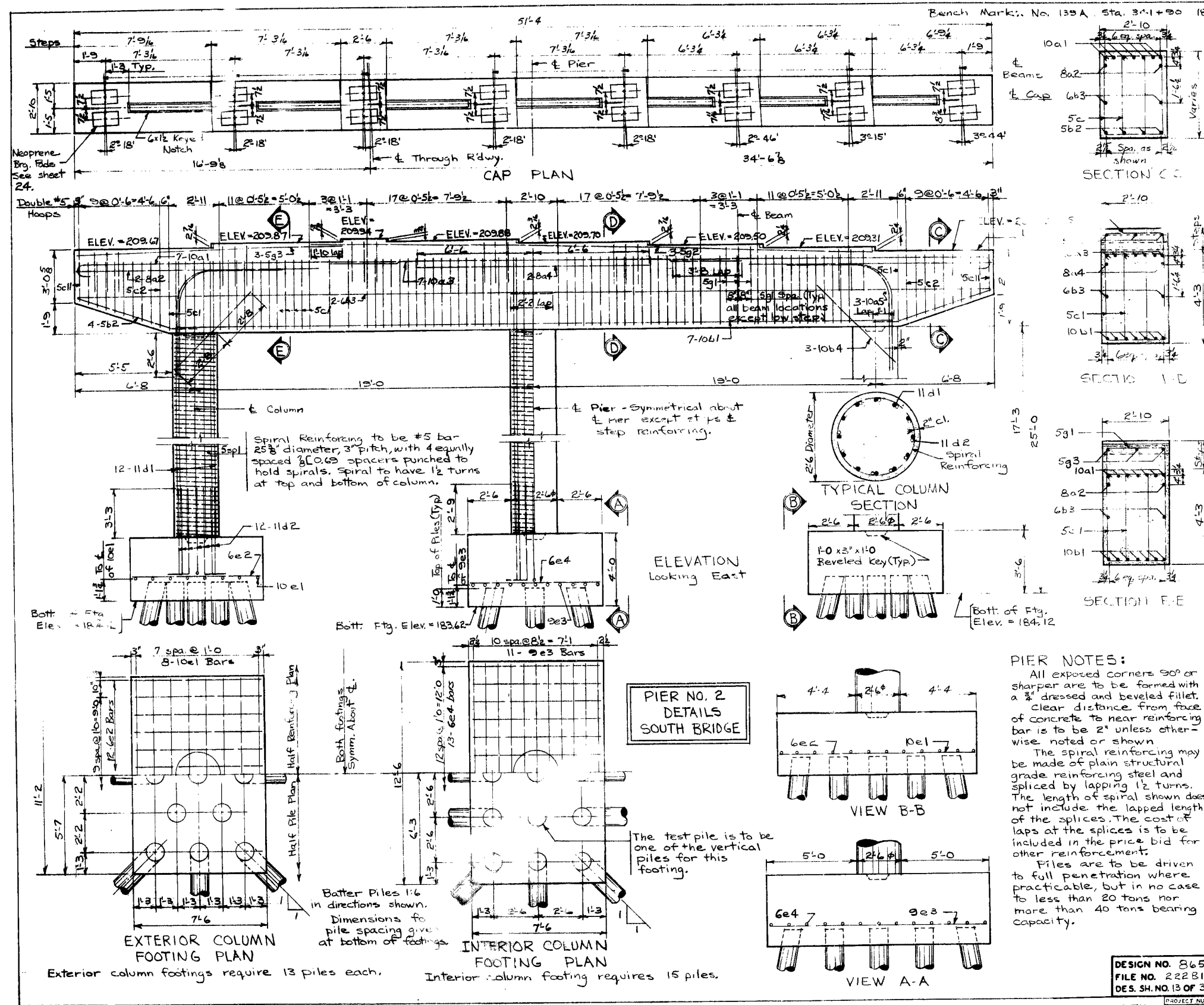
Design for 2°18' & 5°09'44" Skew
 DUAL 256'-0" & 259'-8" x VARIABLE ROADWAY
 PRETENSIONED PRESTRESSED CONCRETE
 BEAM BRIDGES

47'3 1/2' End Spans 81'3 1/2' Variable Interior Spans
 SOUTH BRIDGE-PIER 1 DETAILS
 Station: 1329+51.00 on I-235
 Station: 336+58.00 on I-35
 February, 1966

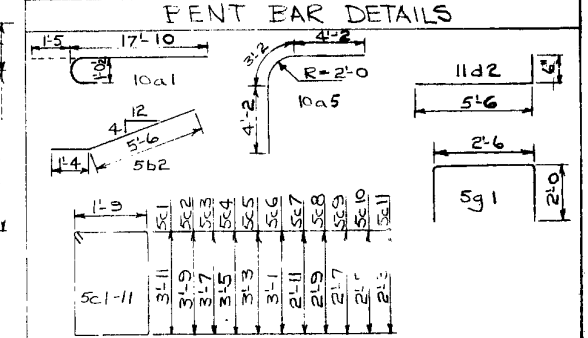
DESIGN NO. 865
 FILE NO. 22281
 DES. SH. NO. 120F30

(DALLAS) POLK COUNTY
 Iowa State Highway Commission

Designed by: J.B.C. Detailed by: E.W.Q. Checked by: LEP



REINFORCING BAR LIST				
Bar	Location	Shape	No.	Weight
10a1	Top Pier Cap-Longitudinal	C	14	1160
8a2	" " " "	C	4	144
10a3	" " " "	C	7	683
8a4	" " " "	C	2	69
10a5	Beam Corners	C	6	297
10b1	Bottom Pier Cap-Longit	C	7	1203
5b2	" " " "	C	8	57
6b3	Sides Pier Cap-Longit	C	4	160
10b4	Column to Beam	C	6	138
5c1	Pier Cap-Hoops	C	132	1652
5c2-11	" " " "	C	40	424
11d1	Column Vertical	C	36	4080
11d2	" Dowels	C	36	1116
10e1	Exterior Footings-Longit	C	16	746
6e2	" " " " -Transv.	C	24	258
9e3	Center Footing-Longit	C	11	453
6e4	" " " " -Transv.	C	13	140
5g1	Beneath Beam Bearings-Transv	C	21	139
5g2	" " " " -Longit	C	3	98
5g3	" " " " " "	C	3	46
5spl	Column Spirals	C	3	1471
5pac3	Spiral Spacers	C	12	143
* See Pier Notes			Total, lbs.	14681



NOTE: All dimensions are out to out. Radii to & bar.

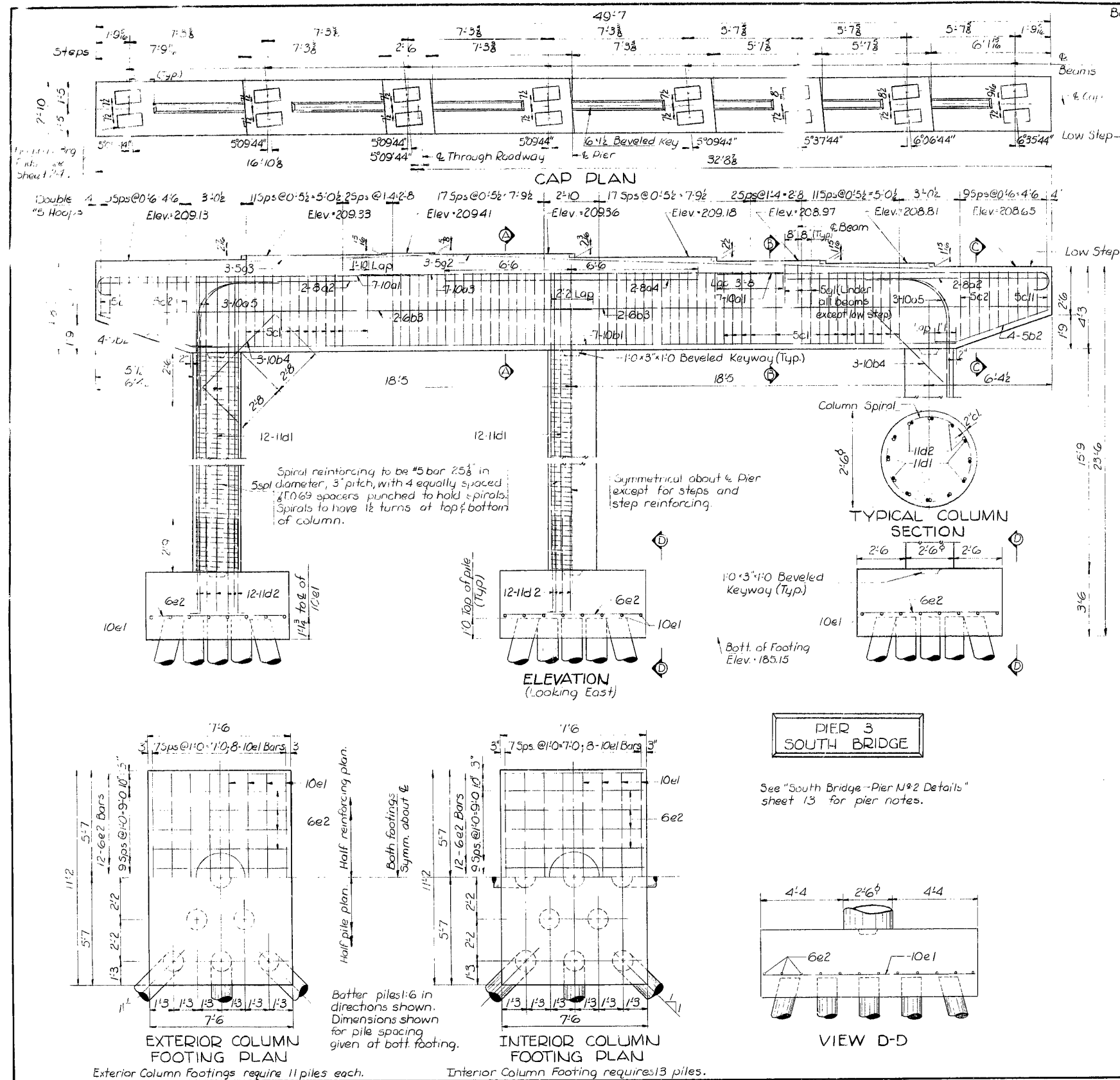
CONCRETE PLACEMENT QUANTITIES	
Item	Quantity
Footings	34.4
Columns	9.4
Cap	24.6
Total, C.Y.	68.4
TOTAL ESTIMATED QUANTITIES	
Item	Quantity
Structural Concrete "Class C"	68.4 C.Y.
Reinforcing Steel	14681 lbs.
Crested Piling 40 @ 30'	1200 Lin. Ft.
Class 20 Excavation	83 C.Y.
Crested Test Piling 1 @ 40'	Lump Sum

Design for 2'-18" & 5'-09"-44" Skew
 DUAL 25'-0" & 25'-8" VARIABLE ROADWAY
 PRETENSIONED PRESTRESSED CONCRETE
 BEAM BRIDGES
 47'-82' End Spans 9'-3" Variable Interior Spans
SOUTH BRIDGE - PIER 2 DETAILS
 Sta. 1329+51.00 on I-235 February 1966
 Sta. 336+58.00 on I-35
 (DALLAS) POLK COUNTY
 IOWA STATE HIGHWAY COMMISSION

DESIGN NO. 865
 FILE NO. 22281
 DES. SH. NO. 13 OF 30

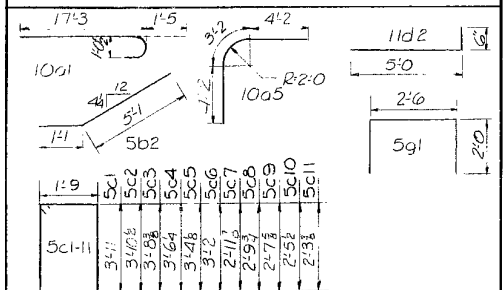
(DALLAS) POLK COUNTY	PROJECT NUMBER	STATE	FED. ROAD	FISCAL	SHEET	TOTAL
	I-80 - 3(18) 125'x77'-	IOWA	5	15	32	

Designed by: J.D.C. Traced by: J.D.C. Checked by: LEP



Bar	Location	Shape	Nº	Length	Weight
10a1	Cap, Top Longitudinal	□	14	18'-8"	1125
8a2	Cap, Top Longitudinal	□	4	13'-3"	142
10a3	Cap, Top Longitudinal	□	7	22'-1"	663
8a4	Cap, Top Longitudinal	□	2	13'-0"	69
10a5	Column, Corners	□	6	11'-6"	297
10b1	Cap, Bottom Longitudinal	□	7	39'-8"	1125
5b2	Cap, Bottom Cantilever	□	8	6'-2"	51
6b3	Cap, Sides Longitudinal	□	4	25'-9"	55
10b4	Column, Corners	□	6	5'-4"	138
5c1	Cap, Hoops	□	124	12'-0"	1552
5c2	Cap, Hoops Cantilever	□	40	Varies	433
11d1	Column, Vertical	□	36	19'-10"	3793
11d2	Footing, Dowels Vertical	□	36	5'-4"	1020
10e1	Footing, Longitudinal	□	24	10'-10"	1119
6e2	Footing, Transverse	□	36	7'-2"	388
5g1	Cap, Under Beams, Transv.	□	21	6'-4"	139
5g2	Cap, Under Beams, Longit.	□	3	30'-1"	94
5g3	Cap, Under Beams, Longit.	□	3	14'-10"	46
5spl	Column Spirals	□	3	43'-0"	1345
5069	Spiral Spacers	□	12	15'-9"	130
* See Pier Notes, m.s. 13. Total (lbs.)					13,896

BENT BAR DETAILS



Note: All dimensions are out to out. Radii to center of bar.

CONCRETE PLACEMENT QUANTITIES

Location	Quantity
Footings	31.5
Columns	8.6
Cap	23.5
Total (Cu Yds.)	63.6

TOTAL ESTIMATED QUANTITIES

Item	Unit	Quantity
Structural Concrete Class "C"	Cu Yds.	63.6
Reinforcing Steel	lbs.	13,896
Crossed Piling 35 @ 30'	Lin. Ft.	1050
Excavation Class 20	Cu Yds.	100

Design for 2'-18" x 5'-09" x 4'-5" skew
 DUAL 256'-0" x 259'-8" x VARIABLE ROADWAY
 PRETENSIONED PRESTRESSED CONCRETE
 BEAM BRIDGES

47'-3 1/2" End Spans 8'-13" Variable Interior Spans
 SOUTH BRIDGE - PIER 3 DETAILS

Station: 1329+51.00 on I-235 February, 1966
 Station: 336+58.00 on I-35

(DALLAS) POLK COUNTY
 Iowa State Highway Commission

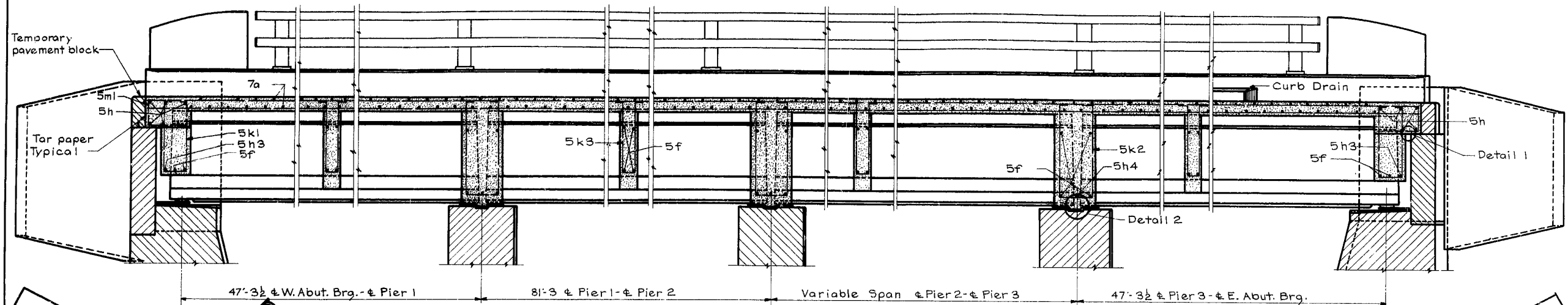
DESIGN NO. 865
 FILE NO. 22281
 DES. SH. NO. 140F 30

(DALLAS) POLK COUNTY PROJECT NUMBER I-80-3(18)125 **77-2

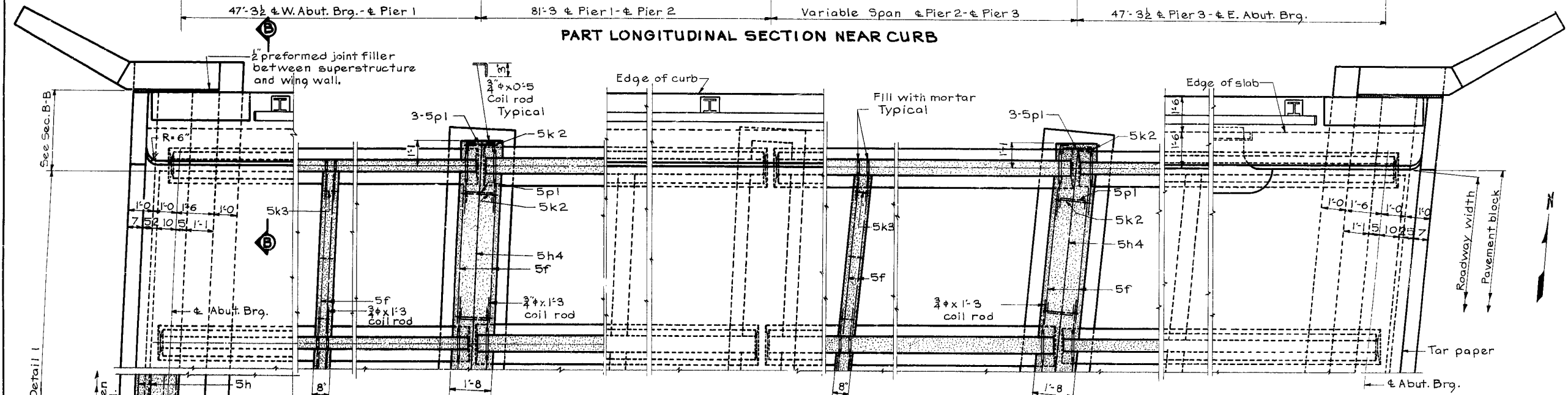
STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		16	32

Designed by: J.D.C. Detailed by: E.W.D. Checked by: L.F.P.

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

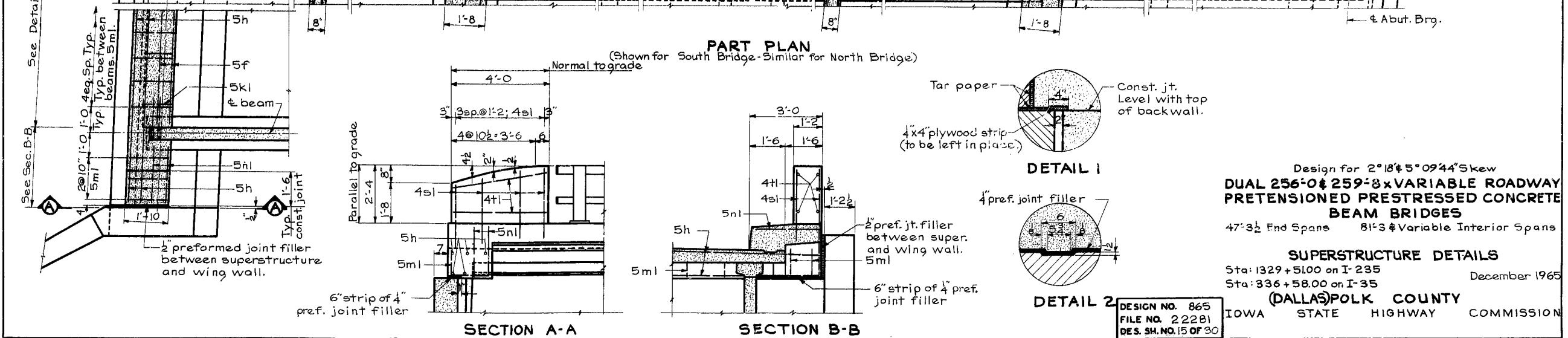


PART LONGITUDINAL SECTION NEAR CURB



PART PLAN

(Shown for South Bridge - Similar for North Bridge)



Design for 2°18'±5°09'44" S skew
DUAL 256'-0" ± 259'-8" x VARIABLE ROADWAY
PRETENSIONED PRESTRESSED CONCRETE
BEAM BRIDGES

47'-3½ End Spans 81'-3" Variable Interior Spans

SUPERSTRUCTURE DETAILS

Sta: 1329 + 51.00 on I-235 December 1965

Sta: 336 + 58.00 on I-35

(DALLAS)POLK COUNTY

IOWA	STATE	HIGHWAY	COMMISSION
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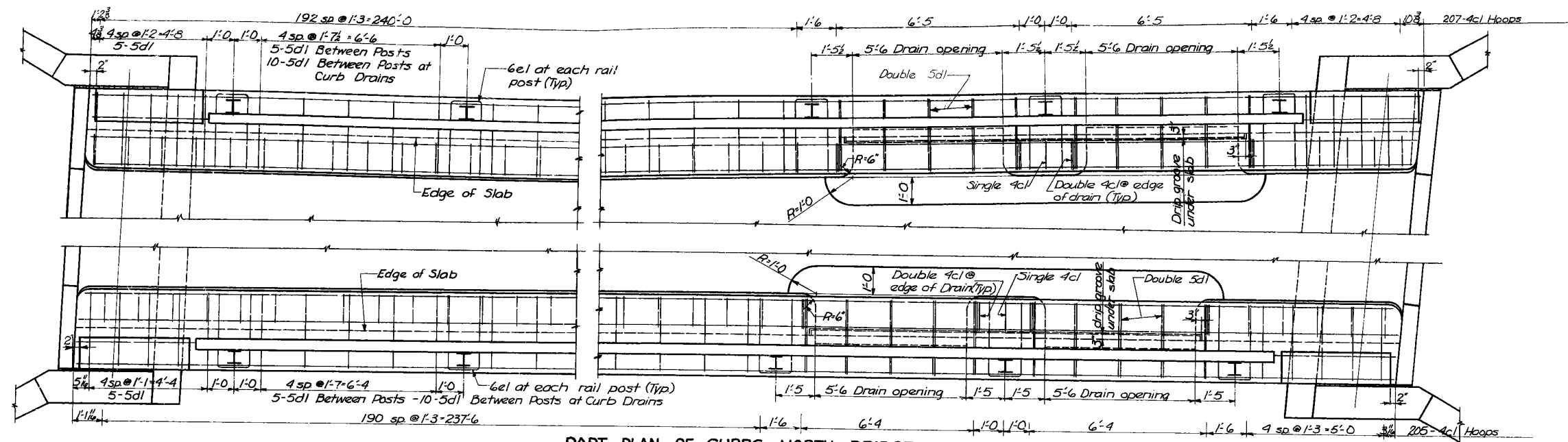
DESIGN NO. 865
FILE NO. 22281
DES. SH. NO. 15 OF 30

(Dallas) Polk COUNTY

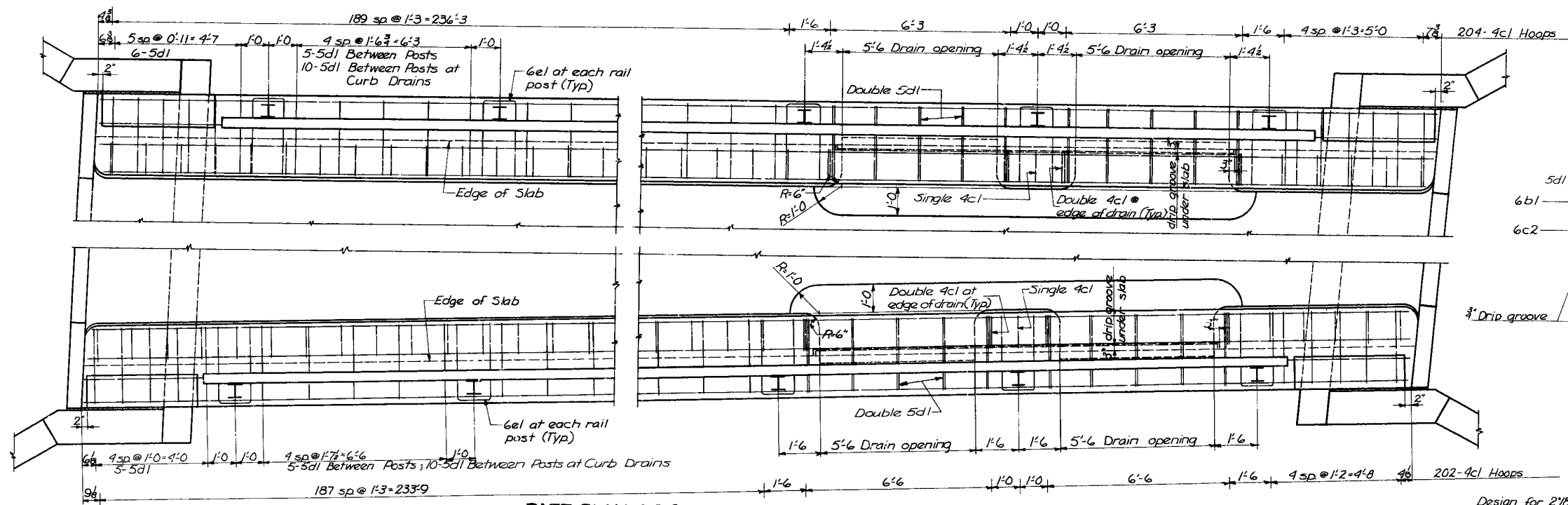
I-80 -3(18)125**77-2

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		17	32

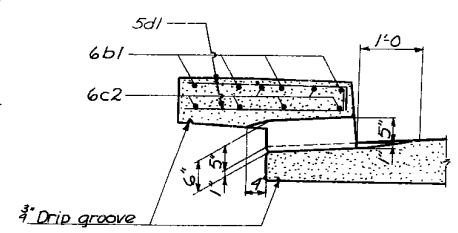
Designed by: LEP Traced by: JK Checked by: J.D.C.



PART PLAN OF CURBS-NORTH BRIDGE



PART PLAN OF CURBS-SOUTH BRIDGE



TYPICAL SECTION AT CURB DRAIN

Design for 2'18" 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

February, 1966

(DALLAS) POLK COUNTY

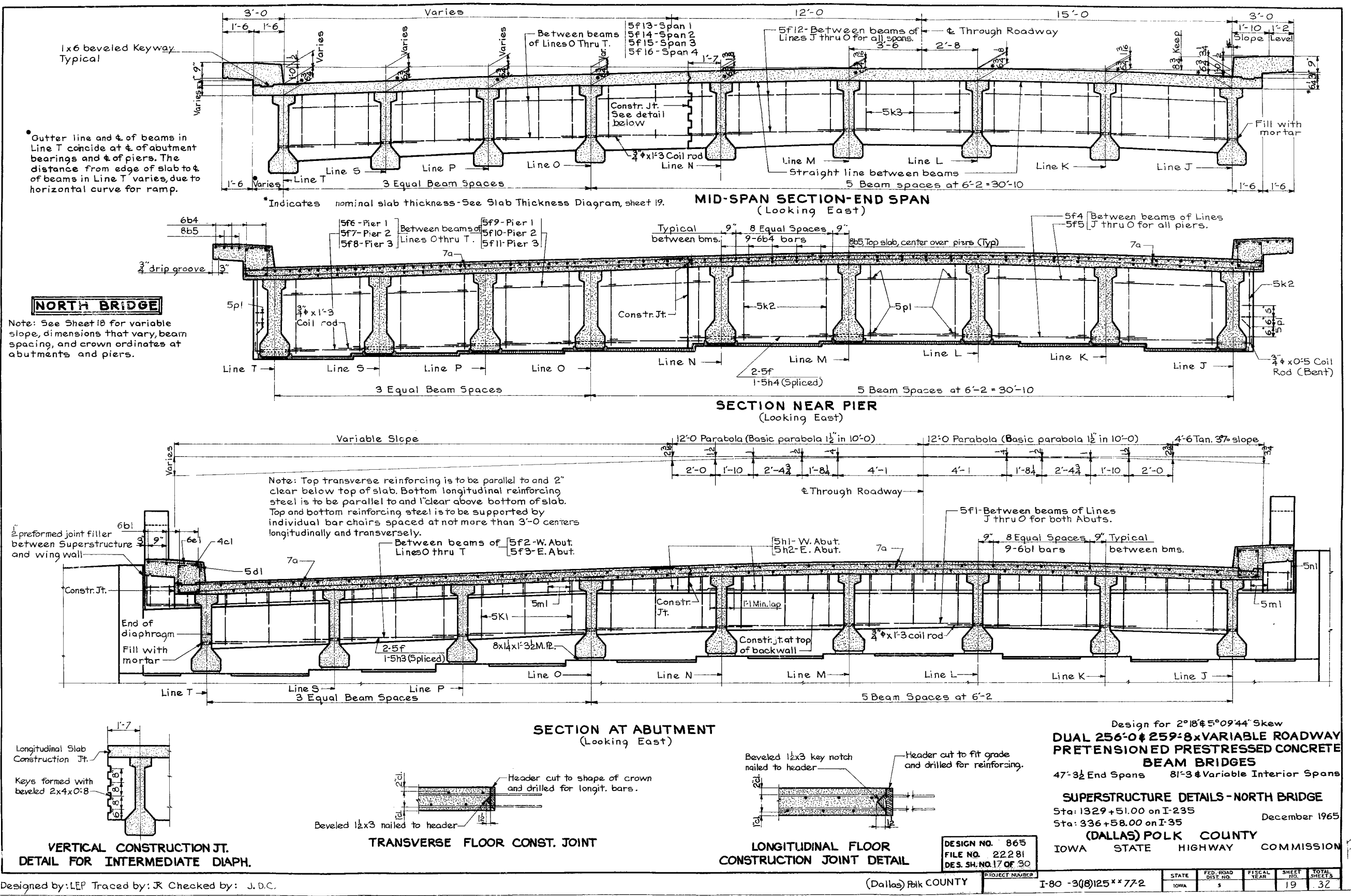
Iowa State Highway Commission

DESIGN NO. 865
FILE NO. 22281
DES. SH. NO. 16 OF 30

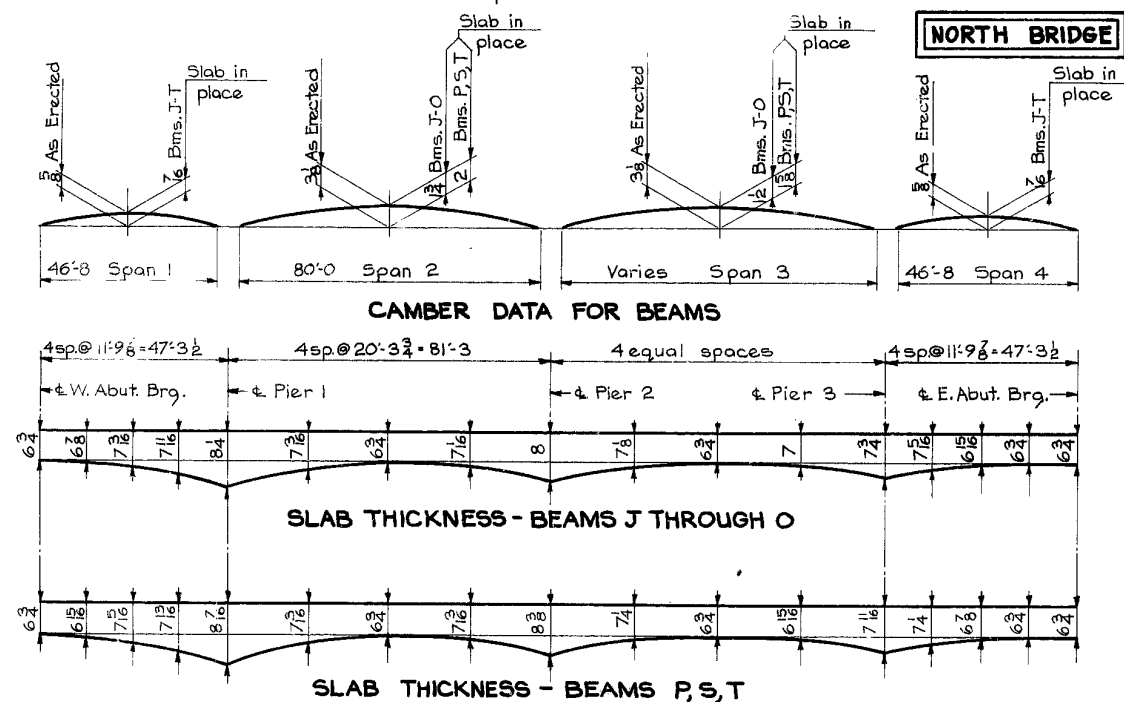
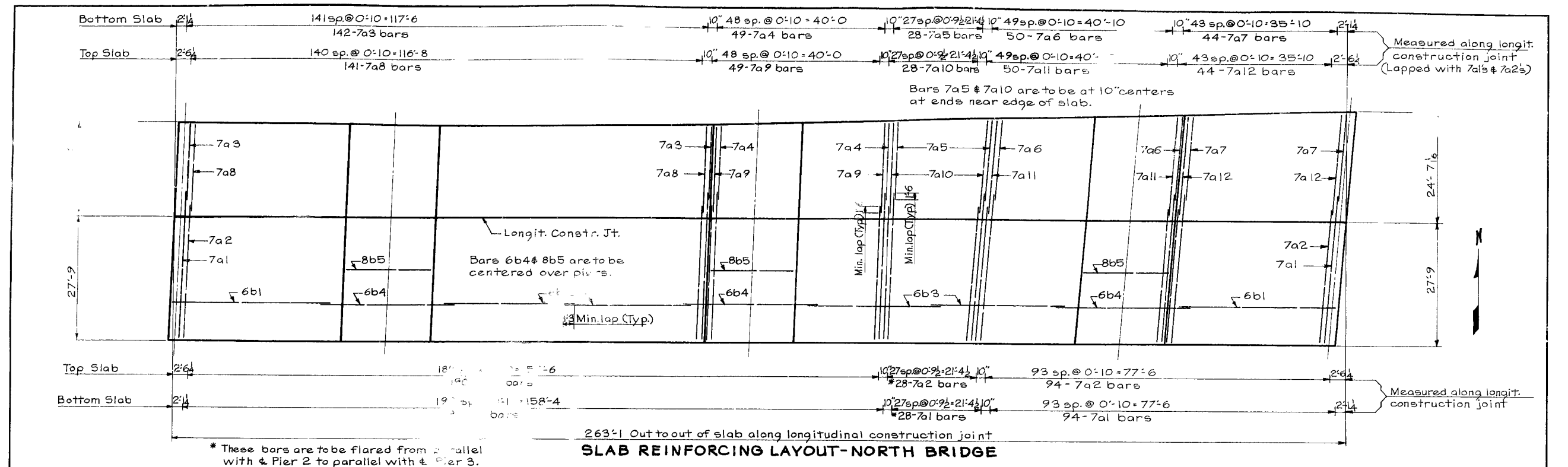
(Dallas) Polk COUNTY PROJECT NUMBER I-80-3(18)/25 "K" 77-2

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		10	32

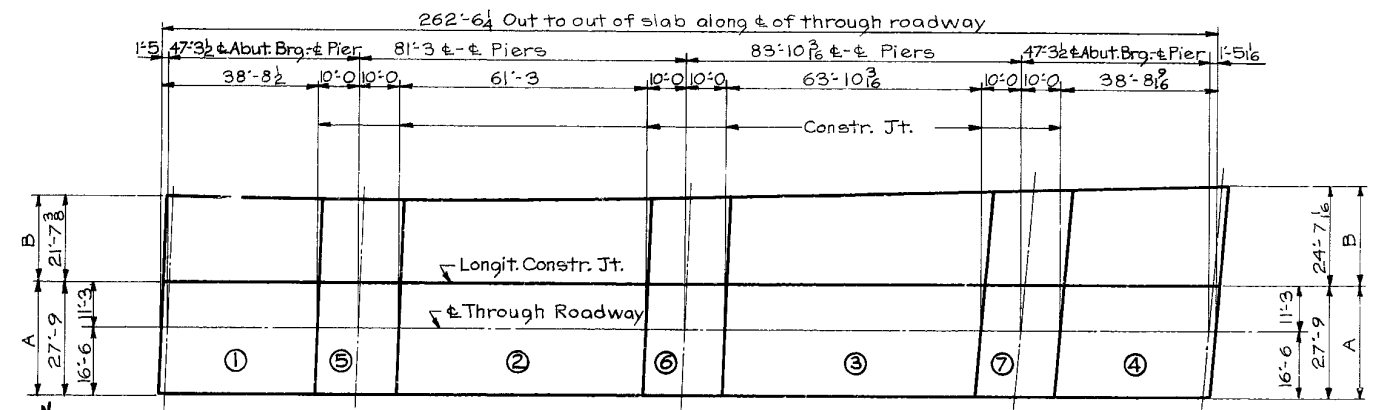
Designed by: LEP Traced by: J.C. Checked by: J.D.C.



Designed by: LEP Traced by: JK Checked by: J.D.C.



The slab thicknesses shown are based on the anticipated Beam Camber remaining after placing the Slab and are not guaranteed for construction. Slab is to be thickened or thinned to meet final grade. Maximum thinning not to exceed 8".



CONCRETE PLACEMENT DIAGRAM

Place "A" portion of slab prior to placing "B" portion.

Note: Roadway slab shall be placed in sections and in the sequence shown by the encircled figures and preferably at intervals not exceeding 24 hours. Alternate procedures for placing slab concrete may be submitted for approval, together with a statement of the proposed method and evidence that the Contractor possesses the necessary equipment and facilities to accomplish the required result. Curbs may be placed continuously. The use of a finishing machine will not be required on the "B" portion of the slab.

Design for 2°18' & 5°09'44" Skew
**DUAL 256'-0" & 259'-8" x VARIABLE ROADWAY
 PRETENSIONED PRESTRESSED CONCRETE
 BEAM BRIDGES**

47'-3½ 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 December, 1965

(DALLAS) POLK COUNTY

IOWA	STATE	HIGHWAY	COMMISSION
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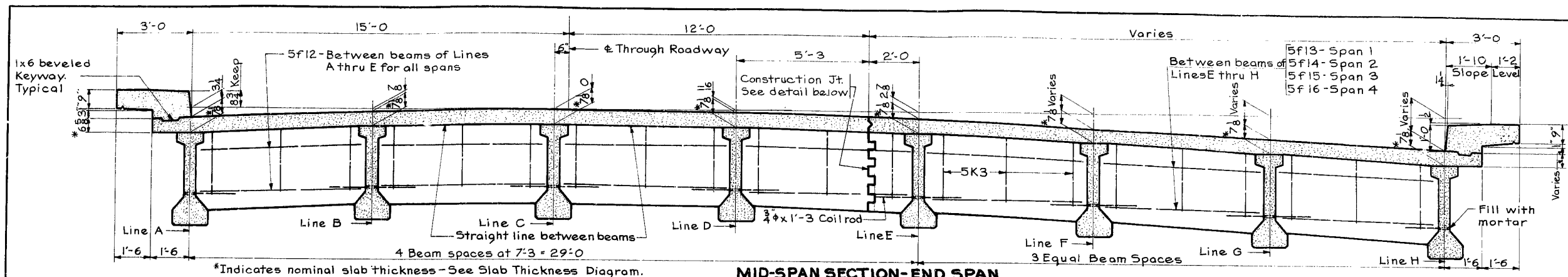
DESIGN NO. 865
FILE NO. 22281
DES. SH. NO. 19 OF 30

Designed by: LEP Traced by: JK Checked by: J.D.C.

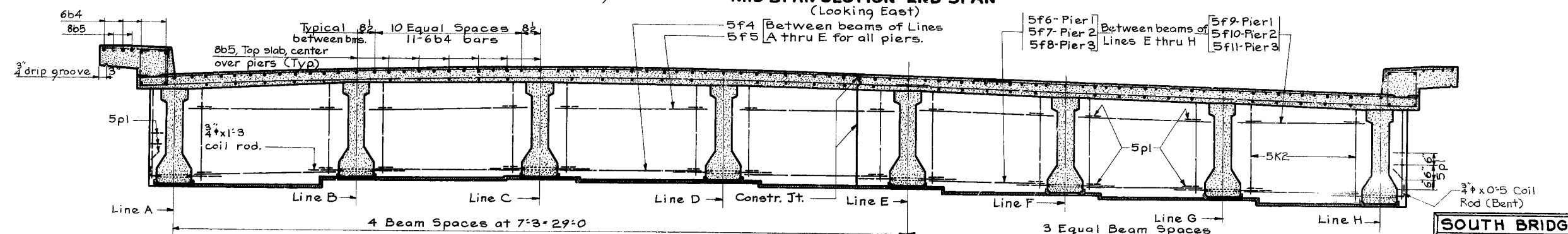
(Dallas) Polk COUNTY

I-80 -3(18)125 ** 77-2

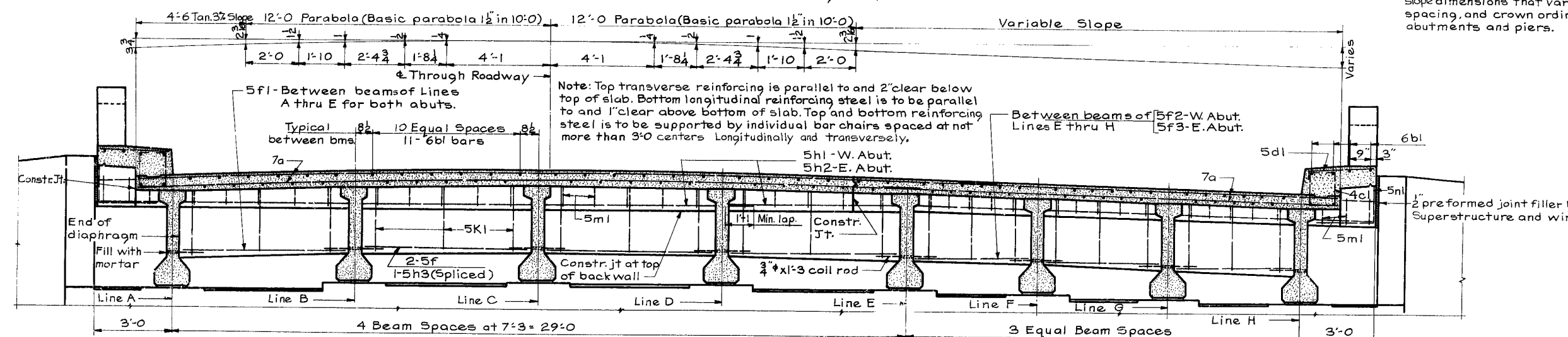
STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		21	32



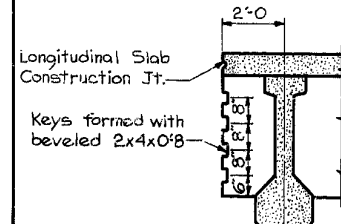
MID-SPAN SECTION-END SPAN
(Looking East)



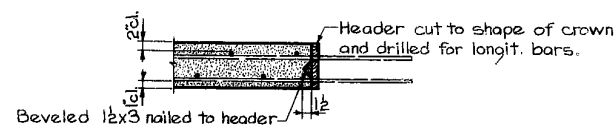
SECTION NEAR PIER
(Looking East)



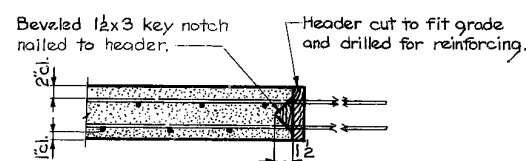
SECTION AT ABUTMENT
(Looking East)



VERTICAL CONSTRUCTION JT.
DETAIL FOR INTERMEDIATE DIAPH.



TRANSVERSE FLOOR CONST. JOINT



LONGITUDINAL FLOOR
CONSTRUCTION JOINT DETAIL

Design for 2°18'±5°09'44" skew
DUAL 256'-0" ± 259'-8" VARIABLE ROADWAY
PRETENSIONED PRESTRESSED CONCRETE
BEAM BRIDGES

47'-3½ End Spans 81'-3½ Variable Interior Spans

SUPERSTRUCTURE DETAILS - SOUTH BRIDGE

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

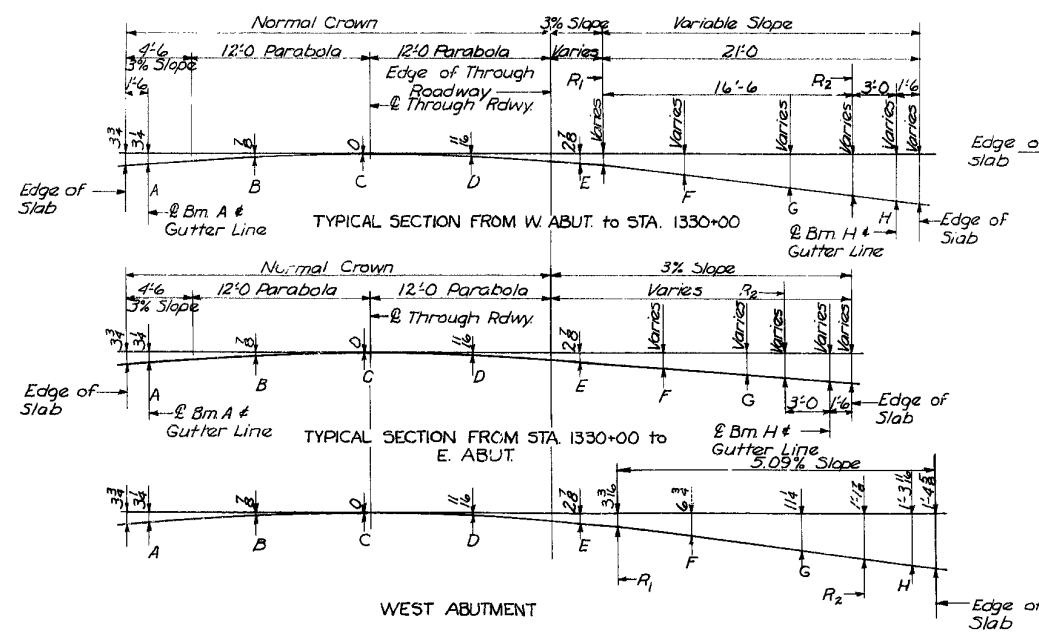
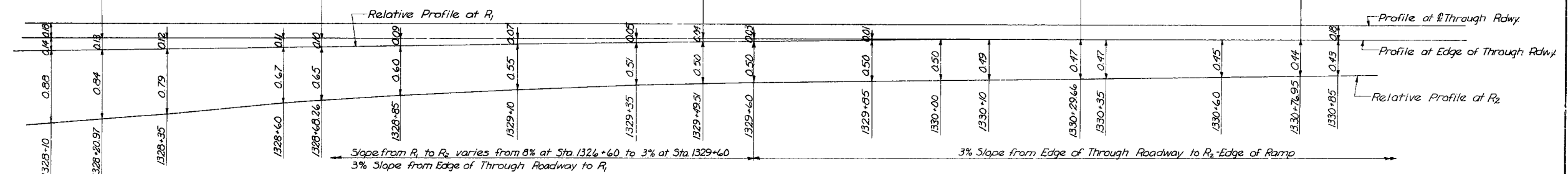
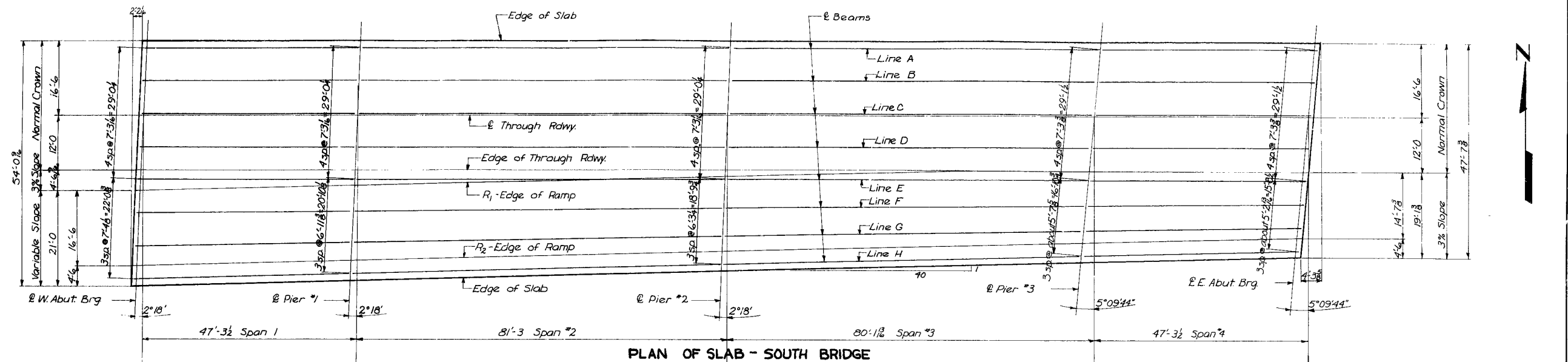
(DALLAS) POLK COUNTY
IOWA STATE HIGHWAY COMMISSION

Designed by: LEP Traced by: JK Checked by: J.D.C.

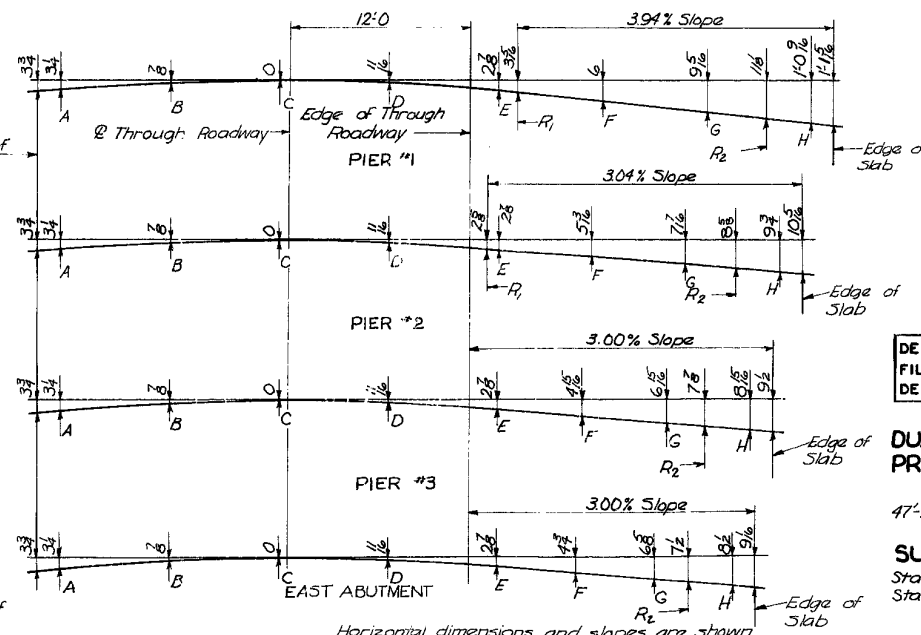
(Dallas) Polk COUNTY

DESIGN NO. 865
FILE NO. 22281
DES. SH. NO. 20 OF 30

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
I-80 -3(18)125 **77-2	IOWA	5		22	32



RELATIVE PROFILE GRADE LINES - SOUTH BRIDGE



Note: Grade data shown for ramp was obtained from I.S.H.C. Standard Road Plan RW-2

DESIGN NO. 865
FILE NO. 22281
DES. SH. NO. 21 OF 30

Design for 2'8" x 5'09'44" Skew
DUAL 256'-0" x 259'-8" VARIABLE ROADWAY
PRETENSIONED CONCRETE
BEAM BRIDGES

47'-3 1/2" End Spans 81'-3" Variable Interior Spans

SUPERSTRUCTURE DETAILS - SOUTH BRIDGE

Station: 1329+51.00 on I-235 February, 1966

Station: 336+58.00 on I-35

(DALLAS) POLK COUNTY

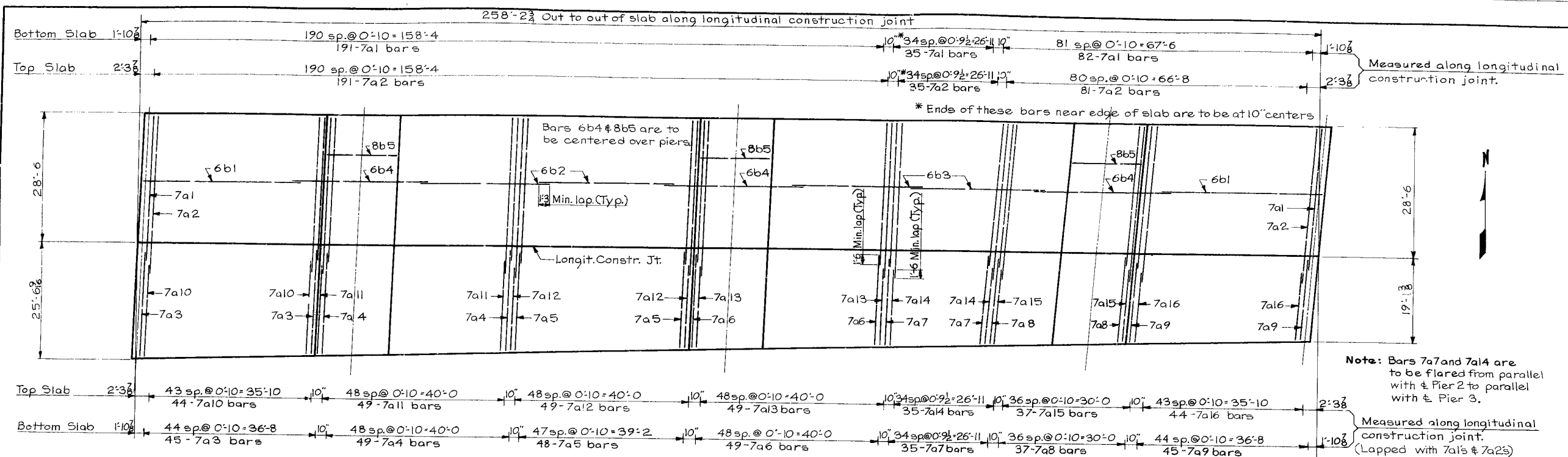
Iowa State Highway Commission

Horizontal dimensions and slopes are shown normal to centerline of roadway. Crown ordinates shown are at centerline of substructure.

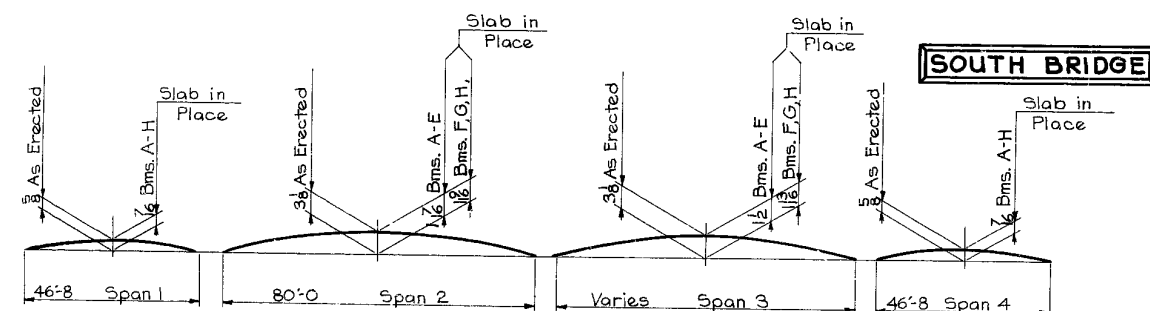
Designed by: LEPT Traced by: J.D.C. checked by: J.D.C.

(Dallas) Polk COUNTY

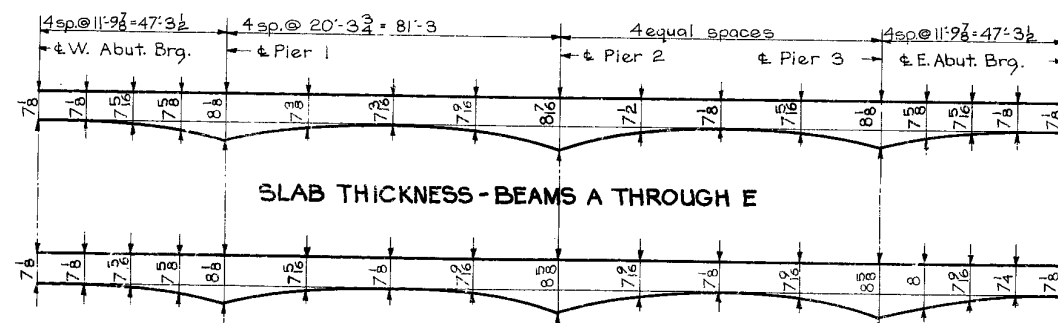
PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
I-80-3(18) 125 **77-2	IOWA	5		23	32



SLAB REINFORCING LAYOUT-SOUTH BRIDGE

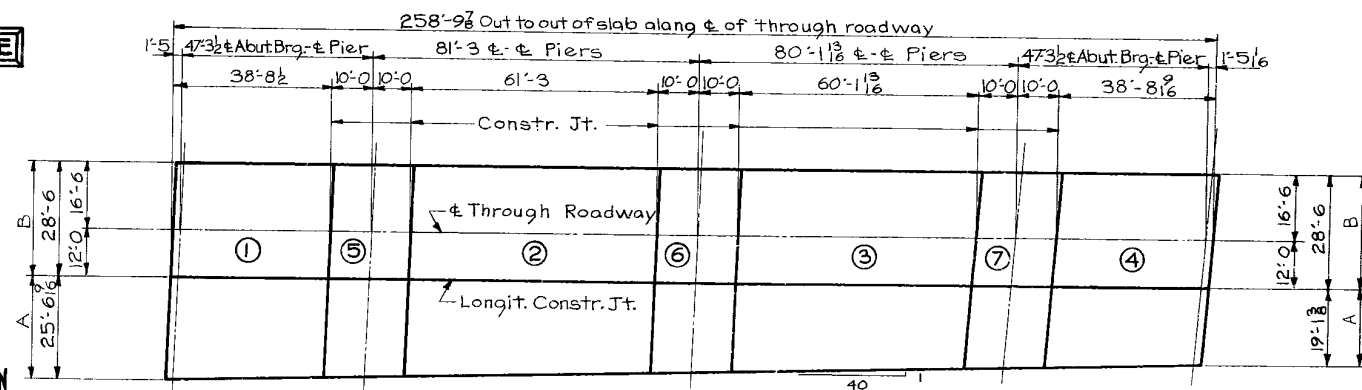


CAMBER DATA FOR BEAMS



SLAB THICKNESS-BEAMS F,G,H

The slab thicknesses shown are based on the anticipated Beam camber remaining after placing the slab and are not guaranteed for construction. Slab is to be thickened or thinned to meet final grade. Maximum thinning not to exceed 1".



CONCRETE PLACEMENT DIAGRAM

Place "A" portion of slab prior to placing "B" portion.

Note: Roadway slab shall be placed in sections and in the sequence shown by the encircled figures and preferably at intervals not exceeding 24 hours. Alternate procedures for placing slab concrete may be submitted for approval, together with a statement of the proposed method and evidence that the Contractor possesses the necessary equipment and facilities to accomplish the required results. Curbs may be placed continuously. The use of a finishing machine will not be required on the "A" portion of the slab.

Design for 2°18' & 5°09'44" Skew
DUAL 256'-0" & 259'-8" VARIABLE ROADWAY
PRETENSIONED PRESTRESSED CONCRETE
BEAM BRIDGES

47'-3½ End Spans 81'-3" Variable Interior Spans

SUPERSTRUCTURE DETAILS - SOUTH BRIDGE

Sta: 1329+51.00 on I-235

Sta: 336 +58.00 on I- 35

(DALLAS) POLK COUNTY

IOWA STATE HIGHWAY COMMISSION

DESIGN NO. 865
FILE NO. 22281
DES. SH. NO. 220F 30

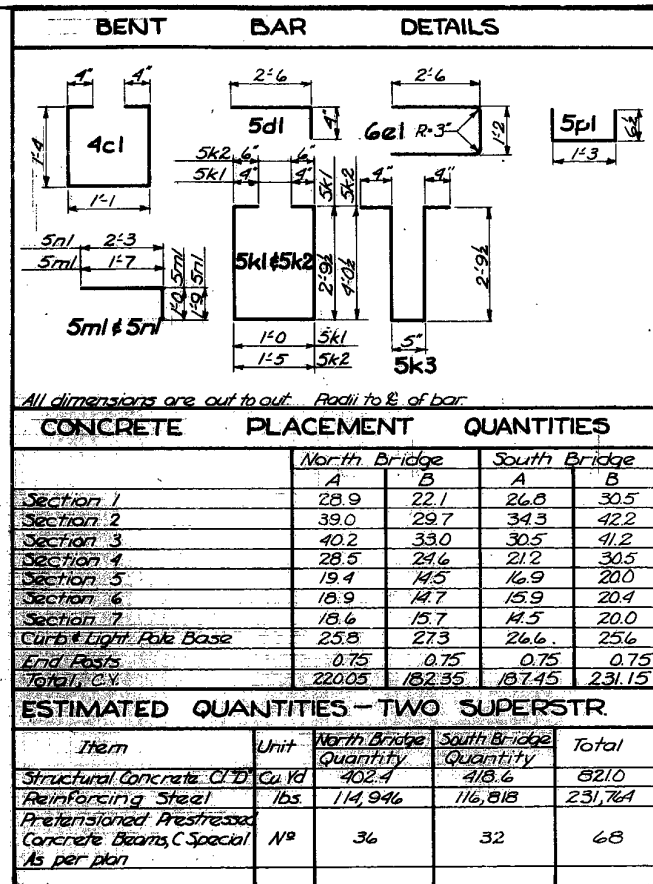
(Dallas) Polk COUNTY

I-80 -3(18)25**77-2

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		24	37

REINFORCING STEEL -- NORTH BRIDGE					
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
7a1	Slab Transverse Bottom	—	313	33'-5	21.379
7a2	Slab Transverse Top	—	312	30'-4	19.344
7a3	Slab Transverse Bottom	—	142	17'-2	4.983
7a4	Slab Transverse Bottom	—	49	17'-7	1.761
7a5	Slab Transverse Bottom	—	28	18'-2	1.040
7a6	Slab Transverse Bottom	—	50	19'-2	1.959
7a7	Slab Transverse Bottom	—	44	20'-1	1.806
7a8	Slab Transverse Top	—	141	20'-3	5.836
7a9	Slab Transverse Top	—	49	20'-8	2.070
7a10	Slab Transverse Top	—	28	21'-3	1.216
7a11	Slab Transverse Top	—	50	22'-3	2.274
7a12	Slab Transverse Top	—	44	23'-2	2.084
6b1	Slab & Curb, Longit., End Spans	—	168	33'-10	8.537
6b2	Slab & Curb, Longit., Span 2	—	168	26'-6	6.687
6b3	Slab & Curb, Longit., Span 3	—	168	28'-8	7.234
6b4	Slab & Curb, Longit., Over Piers	—	252	32'-0	12.112
6b5	Slab & Curb, Longit., Over Piers	—	135	19'-8	7.774
4c1	Curb, Hoops	□	412	4'-2	2.497
6c2	Curb Drains, Longit.	—	12	16'-6	2.497
5d1	Curb, Transverse	—	340	2'-9	975
6e1	Rail Post Anchors	—	62	5'-10	543
5f1	Abut. Diaph. - Between Bms. J-O	—	20	5'-5	113
5f2	W. Abut. Diaph. - Between Bms. O-T	—	6	4'-5	28
5f3	E. Abut. Diaph. - Between Bms. O-T	—	6	5'-5	34
5f4	Pier Diaph. - Bott. Between Bms. J-O	—	30	4'-5	138
5f5	Pier Diaph. Top Between Bms. J-O	—	30	5'-4	167
5f6	Pier #1 Diaph. - Bott. Between Bms. O-T	—	6	3'-2	20
5f7	Pier #2 Diaph. - Bott. Between Bms. O-T	—	6	3'-4	21
5f8	Pier #3 Diaph. - Bott. Between Bms. O-T	—	6	4'-0	25
5f9	Pier #1 Diaph. Top Between Bms. O-T	—	6	4'-1	26
5f10	Pier #2 Diaph. Top Between Bms. O-T	—	6	4'-3	27
5f11	Pier #3 Diaph. Top Between Bms. O-T	—	6	4'-11	31
5f12	Interm. Diaph. - Between Bms. J-O	—	80	5'-4	445
5f13	Interm. Diaph. Span 1 Between Bms. O-T	—	12	4'-4	54
5f14	Interm. Diaph. Span 2 Between Bms. O-T	—	12	4'-1	51
5f15	Interm. Diaph. Span 3 Between Bms. O-T	—	12	4'-6	56
5f16	Interm. Diaph. Span 4 Between Bms. O-T	—	12	5'-3	66
5h1	W. Abut. Diaph., Longit.	—	10	26'-8	278
5h2	E. Abut. Diaph., Longit.	—	10	28'-3	295
5h3	Abut. Diaph., Longit.	—	4	25'-2	105
5h4	Pier Diaph., Longit.	—	6	25'-8	161
5k1	Abut. Diaph., Hoops	□	48	6'-11	346
5k2	Pier Diaph., Hoops	□	54	10'-2	573
5k3	Interm., Diaph., Hoops	□	96	6'-4	634
5m1	Abut. Diaph., Transverse	—	92	2'-6	240
5n1	Curb, Transverse, Ends	—	8	3'-11	33
5p1	Pier Diaph.	—	114	2'-2	258
4s1	End Post, Vertical	—	32	2'-10	61
4t1	End Post, Horizontal	—	16	3'-8	39
	2 Light Post Bases (See Sh. 29)				248
	TOTAL (LBS.)				114,946

REINFORCING STEEL -- SOUTH BRIDGE					
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
7a1	Slab, Transverse, Bottom	---	308	31'-7	19.883
7a2	Slab, Transverse, Top	---	307	34'-7	21.701
7a3	Slab, Transverse, Bottom	---	45	23'-7	2.169
7a4	Slab, Transverse, Bottom	---	49	22'-8	2.270
7a5	Slab, Transverse, Bottom	---	48	21'-8	2.126
7a6	Slab, Transverse, Bottom	---	49	20'-8	2.070
7a7	Slab, Transverse, Bottom	---	35	19'-8	1.407
7a8	Slab, Transverse, Bottom	---	37	18'-11	1.431
7a9	Slab, Transverse, Bottom	---	45	18'-2	1.671
7a10	Slab, Transverse, Top	---	44	20'-7	1.851
7a11	Slab, Transverse, Top	---	49	19'-8	1.970
7a12	Slab, Transverse, Top	---	49	18'-8	1.870
7a13	Slab, Transverse, Top	---	49	17'-8	1.769
7a14	Slab, Transverse, Top	---	35	16'-8	1.192
7a15	Slab, Transverse, Top	---	37	15'-11	1.204
7a16	Slab, Transverse, Top	---	44	15'-2	1.364
6b1	Slab & Curb, Longit., End Spans	---	178	33'-10	9.046
6b2	Slab & Curb, Longit., Span 2	---	178	26'-6	7.085
6b3	Slab & Curb, Longit., Span 3	---	178	26'-10	7.174
6b4	Slab & Curb, Longit., Over Piers	---	267	32'-0	12.833
8b5	Slab & Curb, Longit., Over Piers	---	141	19'-8	7.404
4c1	Curb, Hoops	□	406	4'-2	1.190
6c2	Curb Drains, Longit.	---	12	16'-6	.297
5d1	Curb, Transverse	---	337	2'-9	.967
6d1	Rail Post Anchors	□	61	5'-10	.534
5f1	Abut. Diaph. - Between Bms. A-E	---	16	6'-6	108
5f2	W. Abut. Diaph. - Between Bms. E-H	---	6	6'-7	41
5f3	E. Abut. Diaph. - Between Bms. E-H	---	6	4'-6	28
5f4	Pier Diaph. - Bottom Between Bms. A-E	---	24	5'-6	138
5f5	Pier Diaph. - Top Between Bms. A-E	---	24	6'-5	161
5f6	Pier #1 Diaph. - Bottom Between Bms. E-H	---	6	5'-2	32
5f7	Pier #2 Diaph. - Bottom Between Bms. E-H	---	6	4'-6	28
5f8	Pier #3 Diaph. - Bottom Between Bms. E-H	---	6	3'-11	25
5f9	Pier #1 Diaph. - Top Between Bms. E-H	---	6	6'-1	38
5f10	Pier #2 Diaph. - Top Between Bms. E-H	---	6	5'-5	34
5f11	Pier #3 Diaph. - Top Between Bms. E-H	---	6	4'-10	30
5f12	Interm. Diaph. - Between Bms. A-E	---	64	6'-5	428
5f13	Interm. Diaph. - Span 1 Between Bms. E-H	---	12	6'-4	79
5f14	Interm. Diaph. - Span 2 Between Bms. E-H	---	12	5'-8	71
5f15	Interm. Diaph. - Span 3 Between Bms. E-H	---	12	5'-1	64
5f16	Interm. Diaph. - Span 4 Between Bms. E-H	---	12	4'-8	58
5h1	W. Abut. Diaph., Longit.	---	10	29'-0	302
5h2	E. Abut. Diaph., Longit.	---	10	25'-11	270
5h3	Abut. Diaph., Longit.	---	4	25'-9	107
5h4	Pier Diaph., Longit.	---	6	26'-5	165
5k1	Abut. Diaph., Hoops	□	42	6'-11	303
5k2	Pier Diaph., Hoops	□	48	10'-2	509
5k3	Interm. Diaph., Hoops	□	84	6'-4	555
5m1	Abut. Diaph., Transverse	L	82	2'-6	214
5n1	Curb, Transverse, Ends	L	8	3'-11	33
5p1	Pier Diaph.	L	102	2'-2	231
4s1	End Post, Vertical	---	32	2'-10	61
4t1	End Post, Horizontal	---	16	3'-8	39
	2 Light Post Bases (See Sh. 29)				248
	TOTAL (LBS.)				116,818



SUPERSTRUCTURE NOTES:

These bridges are designed for HS20-44 Loading, plus 19 lbs. per sq. ft. of roadway for future wearing surface and alternate loading designated in B. P. R. P. P. M. 20-4, Section 4c.

Concrete in slab is to have a 28 day crushing strength of 3500 p.s.i. and is to contain no Class "M" aggregate. It is to be placed as dry as practicable to reduce shrinkage to a minimum and special precaution is to be taken to secure complete bond between beams and slab. All exposed corners of 90° or sharper are to be filleted 3/4".

Clear distance from face of concrete to near reinforcing bar is to be 1 1/2" unless otherwise noted or shown.

All reinforcing is to be securely wired in place and adequately supported on metal bar chairs before placing concrete.

Cost of all bearing material is to be included in price bid for the beams.
Cost of all preformed joint material is to be included in price bid for concrete.

Slab as shown includes 1/2" of wearing surface.

Forms for slab and curbs are to be supported by the beams.

The beams are to be not less than 45 days old when slab is

For Prestensioned Prestressed Concrete Beam Details see Sheets 24

For Prestressed Posttensioned Concrete Beam Subjected to Fire and Load

CONCRETE	PLACEMENT QUANTITIES			
	North Bridge		South Bridge	
	A	B	A	B
Section 1	28.9	22.1	26.8	30.5
Section 2	39.0	29.7	34.3	42.2
Section 3	40.2	33.0	30.5	41.2
Section 4	28.5	24.6	21.2	30.5
Section 5	19.4	14.5	16.9	20.0
Section 6	18.9	14.7	15.9	20.4
Section 7	18.6	15.7	14.5	20.0
Curb & Light Pole Base	25.8	27.3	26.6	25.6
End Posts	0.75	0.75	0.75	0.75
Total, C.Y.	220.05	182.35	187.45	231.15

ESTIMATED QUANTITIES - TWO SUPERSTR.				
Item	Unit	North Bridge Quantity	South Bridge Quantity	Total
Structural Concrete, C12	Cu Yd	402.4	418.6	821.0
Reinforcing Steel	lbs	114,946	116,818	231,764
Pretensioned Prestressed Concrete Beams, C Special As per plan	Nº	36	32	68

Design for 2"18'5"09"44" Skew
DUAL 256'-0"259'-8" * VARIABLE ROADWAY
PRETENSIONED PRESTRESSED CONCRETE
BEAM BRIDGES

47'-3½ End Spans 81'-3½ Variable Interior Spans

SUPERSTRUCTURE DETAILS

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

(DALLAS) POLK COUNTY

Towa	State	Highway	Commission
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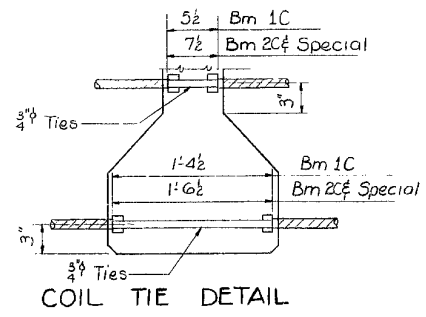
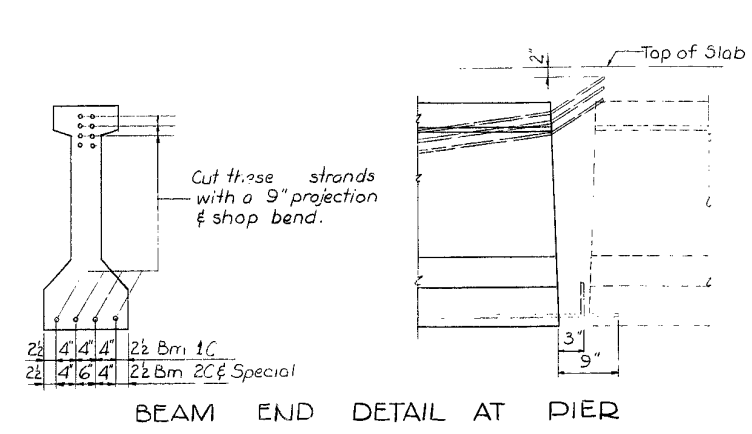
PROJECT NUMBER	STATE	FED. ROAD DIST NO.	FISCAL YEAR	SHEET NO.
I-80-3(18) 125**77-2	IOWA	5		25

Designed by: LEP Traced by: MD Checked by: J.D.C.

(Dallas) POLK COUNTY

PROJECT NUMBER	STATE	FED. ROAD DIST NO.	FISCAL YEAR	SHEET NO.
I-80-3(18) 125**77-2	IOWA	5		25

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IOWA			26	32



NOTES:

Unless otherwise specified an allowance of .0005 L is to be made on all beams for shrinkage and elastic shortening.

All deflected strands are to be held down at the third points of the beams except that the hold down point may be moved toward the center of the beam a distance not to exceed .05 span at the producer's option.

Tops of beams are to be scored transversely at about 3" centers with a pointed tool. Scores are to be 1/8" deep.

Hold down devices and procedure for tension and detensioning must be approved by the Engineer.

Bearing details will be as detailed.

Unless otherwise noted, the cost of bearing details, including masonry plates and neoprene pads, coil ties, coil rods and lifting loops, is to be included in the price bid for prestressed concrete beams.

Strand ends which will be encased in concrete in the finished structure are to be cut with a 1" projection with the exception of strands noted at the pier end of the beam which are to be cut with a 9" projection and bent as detailed. Strand ends which will be exposed in the finished structure are to be cut flush and painted with two coats of red lead at the plant.

DESIGN STRESSES: Design stresses for the following materials are in accordance with A. A. S. H. O. Standard Specifications for Highway Bridges, Series of 1961:

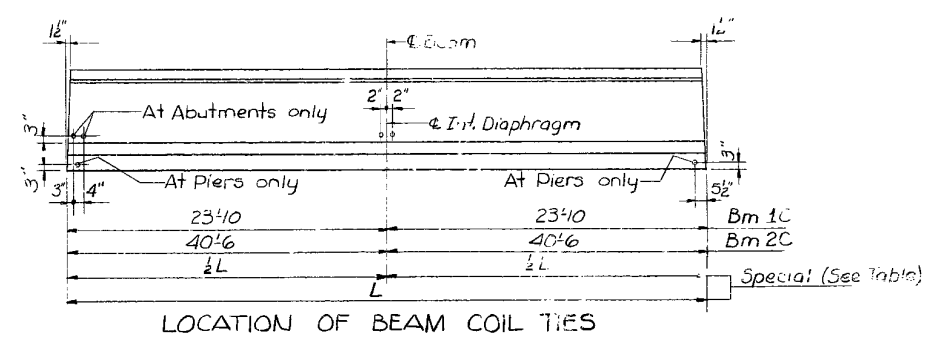
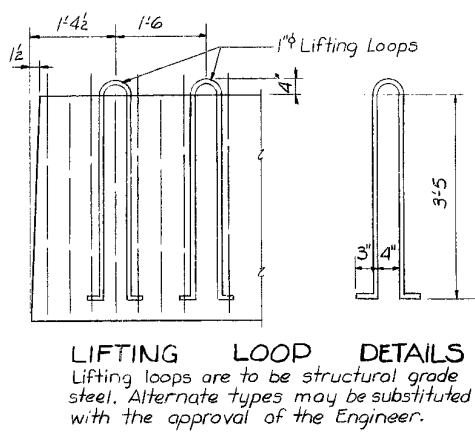
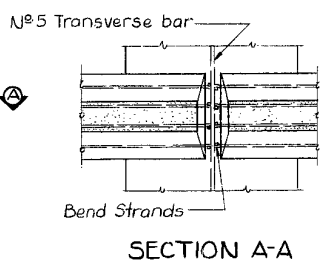
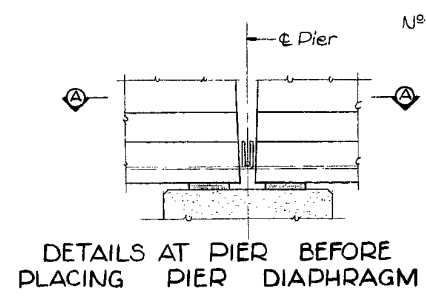
Reinforcing steel in accordance with Section 1.4.12. "Reinforcement" for Intermediate, Hard or Rail Steel Grade.

Concrete in accordance with 1.13.7. f'c = 5000 p. s. i. except f'c tension = 250 p. s. i. Prestressing steel in accordance with 1.13.7 f's = 270,000 p. s. i. and Strand Requirements noted on sheet 25.

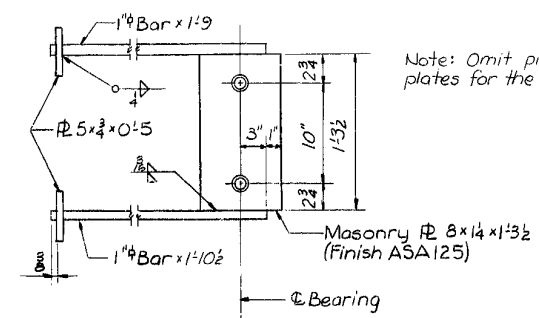
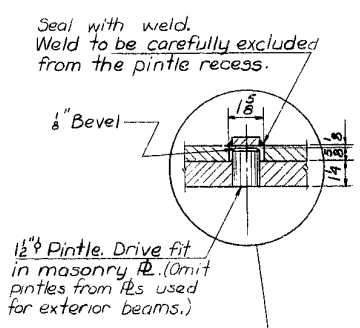
SPECIFICATIONS:

DESIGN: A. A. S. H. O. Series 1961.

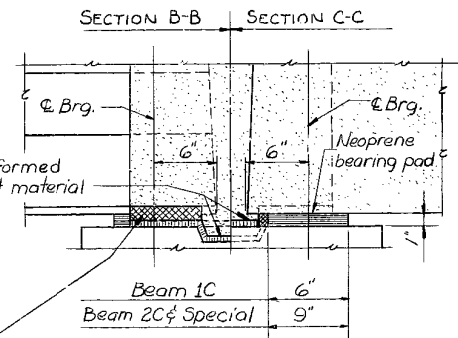
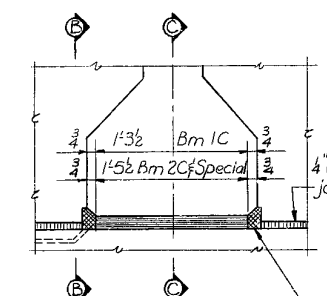
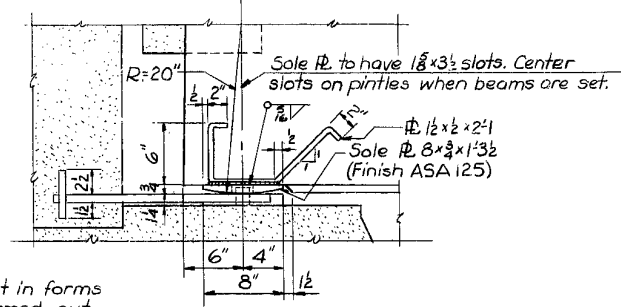
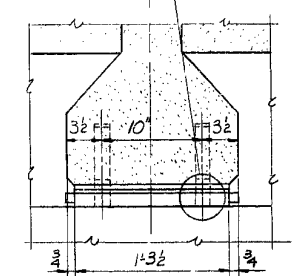
CONSTRUCTION: Standard Specifications of the Iowa State Highway Commission, current series, plus current Special Provisions and current Supplemental Specifications.



SOUTH BRIDGE			NORTH BRIDGE		
Line	L	1/2 L	Line	L	1/2 L
A	80'7 1/2	40'3 3/4	J	82'10 1/4	41'5 1/2
B	80'5 1/2	40'2 3/4	K	83'1 1/4	41'6 1/4
C	79'11 1/4	39'11 1/8	L	83'5 1/4	41'8 1/4
D	79'6 3/4	39'9 3/8	M	83'9 3/4	41'10 1/4
E	79'2 3/4	39'7 3/8	N	84'1	42'0 1/2
F	78'11 1/4	39'5 3/8	O	84'4 3/4	42'2 3/8
G	78'8 3/4	39'4 3/8	P	84'8 3/4	42'4 3/8
H	78'5 1/2	39'2 3/4	S	85'0 1/2	42'6 1/4
			T	85'4 1/2	42'8 1/4



Note: Omit pintles from 8 masonry plates for the exterior beams.



Design for 2°18' & 5°09'44" Skew

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

47'3 1/2 End Spans 81'3 1/2 Variable Interior Spans

PRESTRESSED BEAM DETAILS

Station: 1329+51.00 on I-235 February, 1966

Station: 336+58.00 on I-35

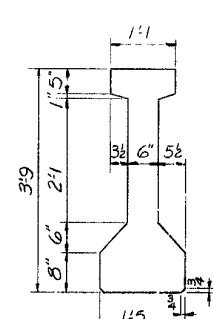
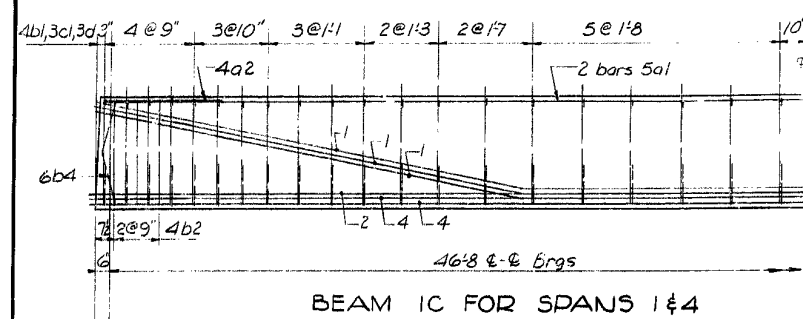
(DALLAS) POLK COUNTY

Iowa State Highway Commission

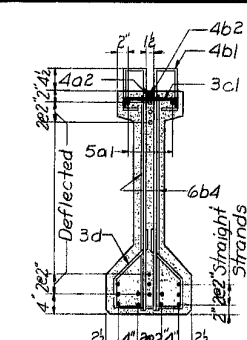
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(Dallas) POLK COUNTY I-80-3(18)125 x 77-2

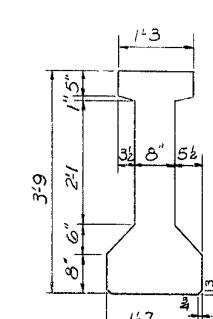
STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		26	32



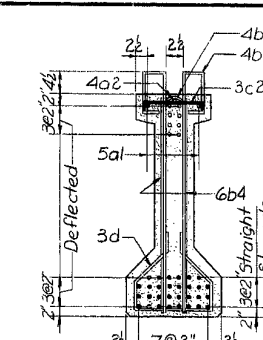
BEAM 1C
A = 429.5 in²
Y_c = 19.52 in.
I = 9347.4 in⁴



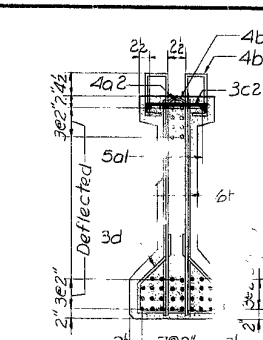
BEAM 1C



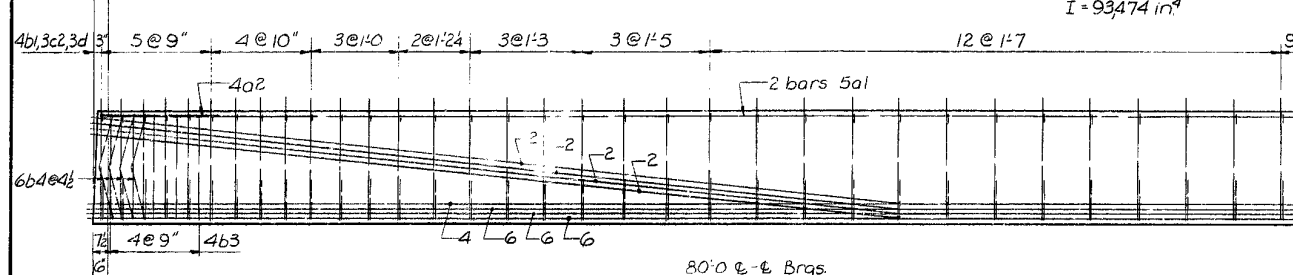
BEAM 2C & SPECIAL
A = 519.5 in²
Y_c = 20.03 in.
I = 108,512 in⁴



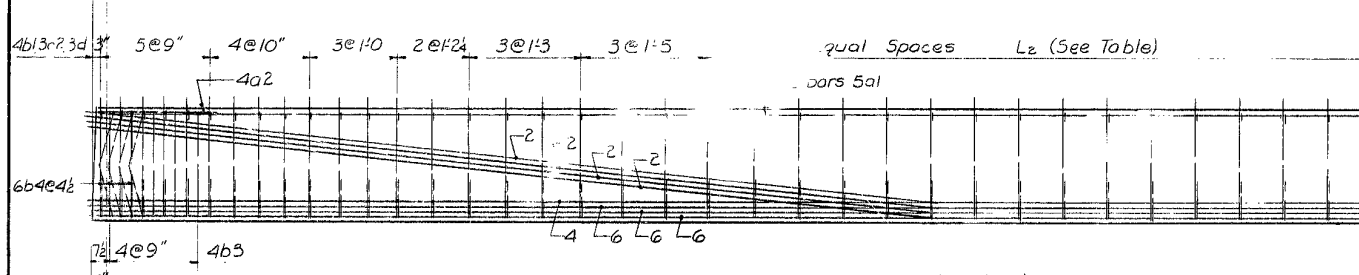
BEAM 2C



SPECIAL

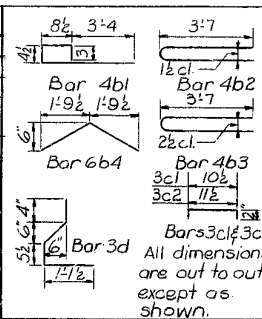


BEAM 2C FOR SPAN 2



SPECIAL BEAM FOR SPAN 3

REINFORCING BAR LIST									
Beam	1C	2C	Special	Beam	1C	2C	Special	Beam	1C
Span	46'8"	80'0"	Varies	Span	46'8"	80'0"	Varies	Span	46'8"
Bar Shape	N ^o	Length	N ^o	Length	N ^o	Length	N ^o	Length	N ^o
5a1	4	24'7"	4	41'3"	4	43'5"	4	43'5"	4
4a2	2	4'0"	2	4'0"	2	4'0"	2	4'0"	2
4b1	80	5'2"	132	5'2"	142	5'2"	142	5'2"	80
4b2	6	7'2"	10	7'1"	10	7'1"	10	7'1"	6
4b3	4	3'9"	16	3'9"	16	3'9"	16	3'9"	4
6b4	4	3'9"	16	3'9"	16	3'9"	16	3'9"	4
3c1	40	1'2"	66	1'3"	71	1'3"	71	1'3"	40
3c2	80	2'7"	132	2'7"	142	2'7"	142	2'7"	80
3d	80	2'7"	132	2'7"	142	2'7"	142	2'7"	80



BEAM DATA				
Beam	1C	2C	Special	
Span	46'8"	80'0"	Varies	
Initial Prestress	kips	376	866	866
Size Strand		5/8"	5/8"	5/8"
Straight Strands		10	22	22
Deflected Strands		3	8	8
Hold Down Stress	kips	16.5	25.2	26.1
Camber *	in.	0.38	0.65	1.86
D.L. Deflection** in. A thru E		0.17	0.06	1.25
D.L. Deflection** in. F, G, H		0.17	0.06	1.14
D.L. Deflection** in. J thru O		0.13	0.05	1.01
D.L. Deflection** in. P, S, T		0.14	0.05	0.86
Reinforcing Steel	lbs.	532	929	984
Concrete	Cu. Yds Per Ft.	0.1105	0.1337	0.1337

① Modify for temperature variation as per specification.
② Due to weight of slab and diaphragm.
* Upper figure is the Beam Camber at release.
Lower figure is Camber when Slab is placed.
** Upper figure is the Elastic deflection of beam due to slab. Lower figure is the plastic deflection of beam due to creep under weight of slab.

DIMENSIONS FOR SPECIAL BEAM FOR SPAN 3		
Line	L ₁	L ₂
A	79'7 1/8"	19'7 1/8"
B	79'3 3/8"	19'5 3/8"
C	78'11 1/8"	19'3 3/8"
D	78'6 3/8"	19'0 3/8"
E	78'2 3/8"	18'10 3/8"
F	77'11 1/8"	18'9 3/8"
G	77'8 3/8"	18'7 3/8"
H	77'5 3/8"	18'6 3/8"

NORTH BRIDGE		
Line	L ₁	L ₂
J	81'10 1/4"	20'8 3/8"
K	82'1 1/8"	20'10 1/8"
L	82'5 3/8"	21'0 3/8"
M	82'9 3/8"	21'2 3/8"
N	83'4 1/8"	21'4 3/8"
O	83'8 3/8"	21'5 3/8"
P	83'12 3/8"	21'7 3/8"
S	84'0 3/8"	21'9 3/8"
T	84'4 3/8"	21'11 3/8"

Note: Beams are to be not less than 45 days old when slab is placed.

STRAND REQUIREMENTS:
Nominal Size 5/8"
Area 0.153 sq. in.
Load at 1% extension 35,100 lbs.
Breaking Strength 41,500 lbs.
Weight per 1000 L.F. 525 lbs.

Design for 2'18" ± 5'09'44" Skew
DUAL 256'0" ± 259'8" VARIABLE ROADWAY
PRETENSIONED PRESTRESSED CONCRETE
BEAM BRIDGES
47'3 1/2" End Spans 81'3 1/2" Variable Interior Spans

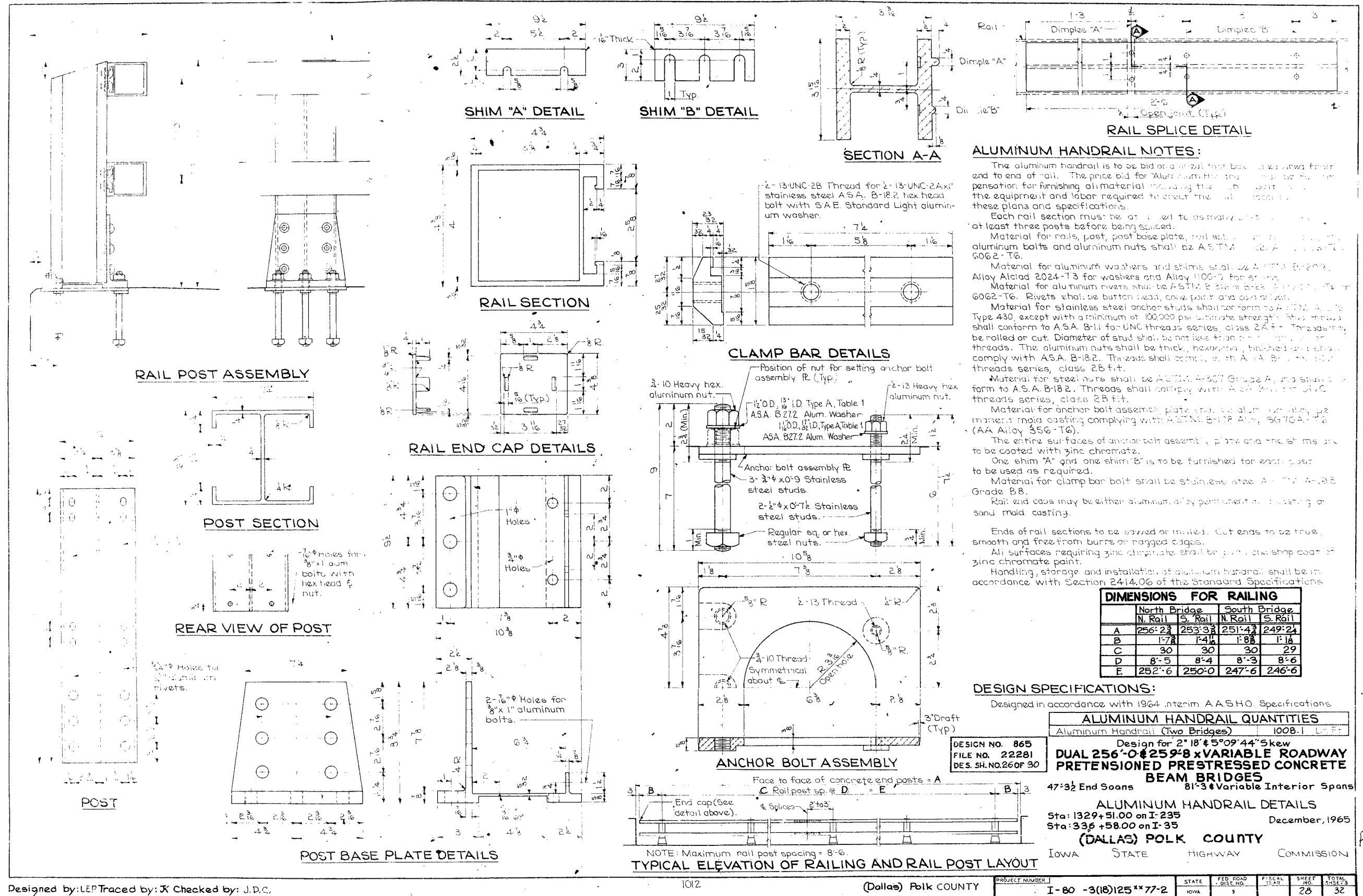
PRESTRESSED BEAM DETAILS
Station: 1329+51.00 on I-235 February, 1966
Station: 336+58.00 on I-35
(DALLAS) POLK COUNTY
Iowa State Highway Commission

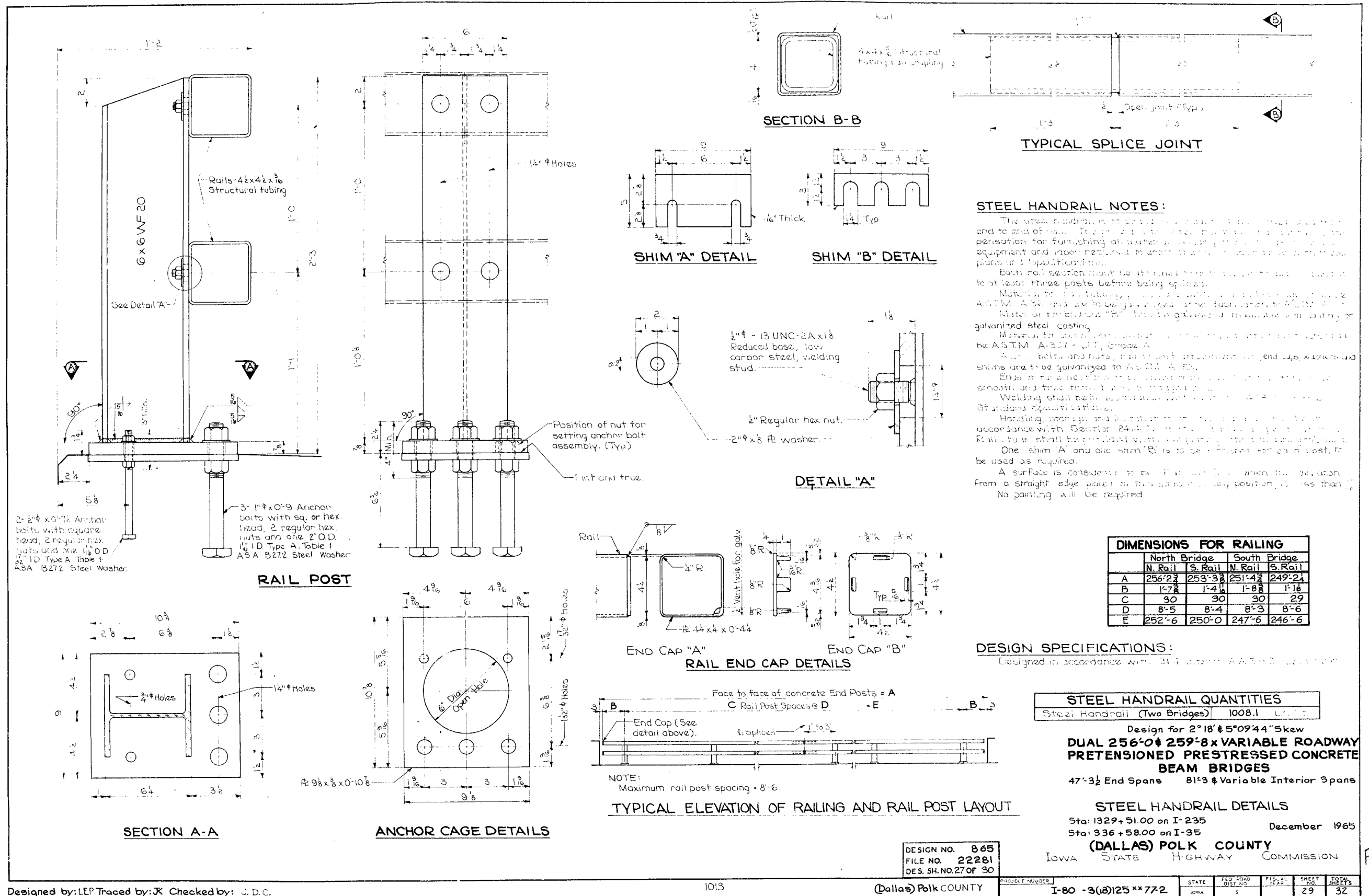
DESIGN NO. 865
FILE NO. 22281
DES. SH. NO. 250F 50

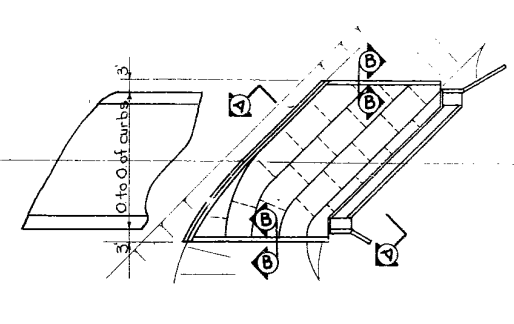
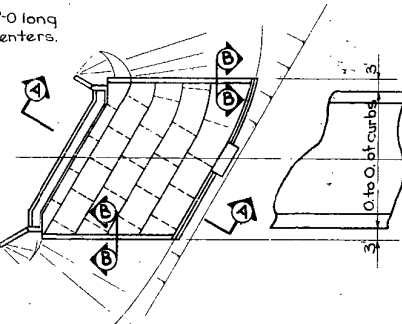
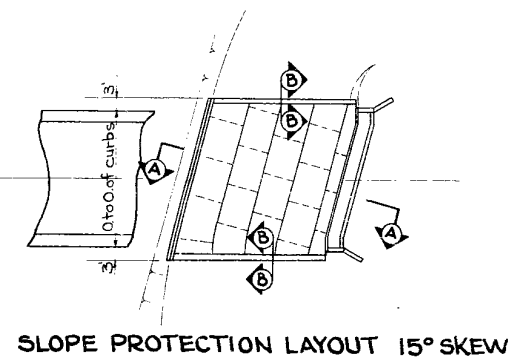
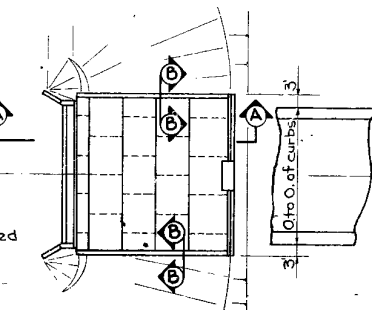
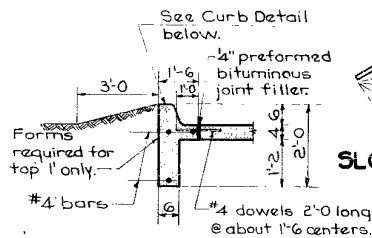
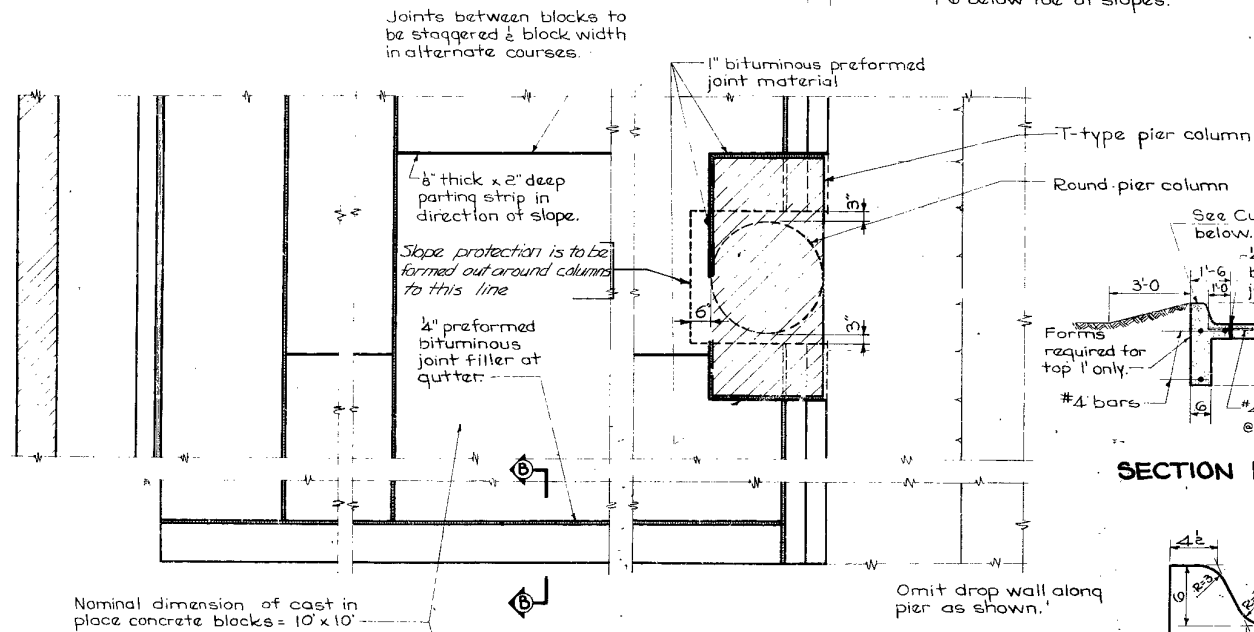
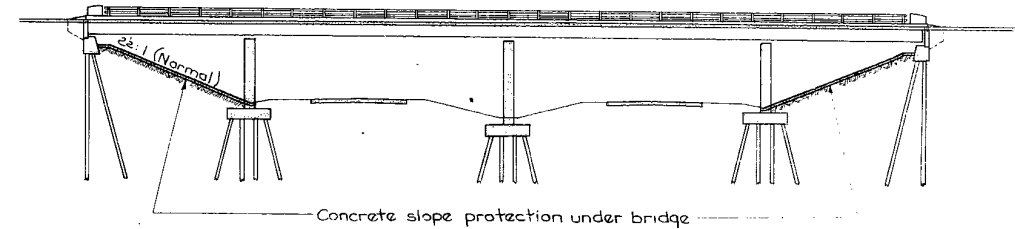
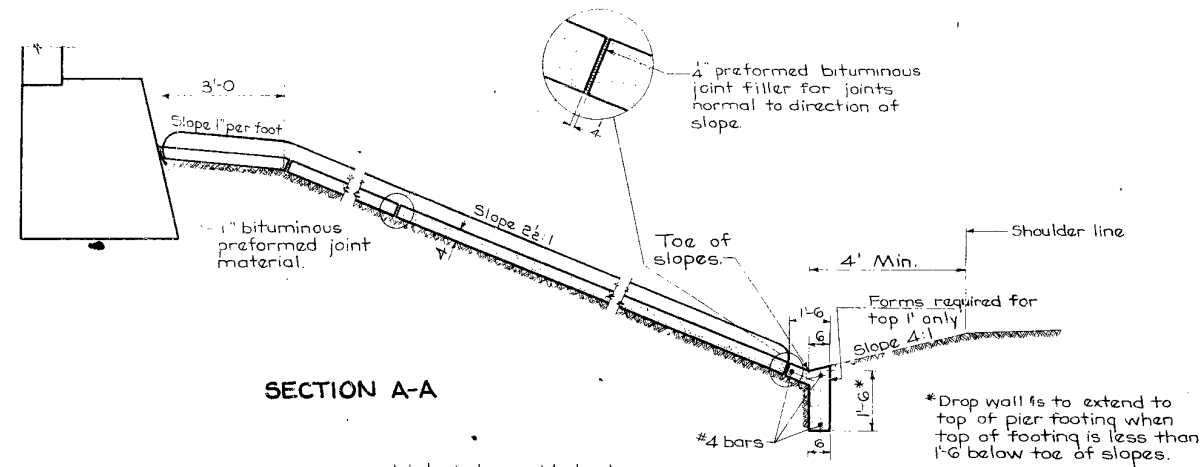
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(DALLAS) POLK COUNTY PROJECT NUMBER I-80-3(8)125 XX77-2

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		27	32







GENERAL NOTES:

This sheet shows details for placing portland cement concrete slope protection under overhead structures.

The current specifications of the Iowa Highway Commission shall apply with modifications or additions listed below:

Concrete - Class "C" Structural.

Finish - Class 1, Floated Surface Finish.

Cure - Cure as per current specifications.

Subgrade Preparation - The subgrade is to be shaped and compacted so that finished slope protection will be similar to examples shown on this sheet. The subgrade shall be firm when concrete is placed. Sprinkling required shall be done early enough so that concrete is not placed on a muddy subgrade. No subgrade paper will be required.

The cast in place concrete is to be poured in approximately 10' wide courses, but all courses on one slope should have approximately equal widths. Adjacent courses shall not be poured within 15 hours of one

another. The joints in the direction of the slope are to be staggered about 1/2 block width.

Basis of payment: Payment will be made on a square yard basis for slope protection constructed. The unit price bid per square yard is to include costs of all materials and labor required to construct this protection as shown or intended by these plans. The subgrade preparation including any necessary excavation or filling required to shape the slope to the lines shown on the plans and disposal of excess earth excavated as directed by the Engineer, are considered incidental to placing the concrete slope protection.

Where erosion control work is completed the Contractor shall be responsible for any plant materials destroyed adjacent to slope protection area. The Contractor shall replant, reseed and mulch all areas disturbed adjacent to slope protection areas in accordance with section 2601 of Standard Specifications, Series of 1964, at his expense.

SLOPE PROTECTION QUANTITIES	
North Bridge - West Slope	313
North Bridge - East Slope	300
South Bridge - West Slope	322
South Bridge - East Slope	284
Total (sq yds)	1219

Design for 2'18" x 5'0" 9'44" Skew
CONCRETE SLOPE PROTECTION
(DALLAS) POLK COUNTY

December, 1965

DESIGN NO. 865
FILE NO. 22281
DES. SH. NO. 280F 30

IOWA STATE HIGHWAY COMMISSION

Designed by: LEP Traced by: J. Checked by: J.D.C.

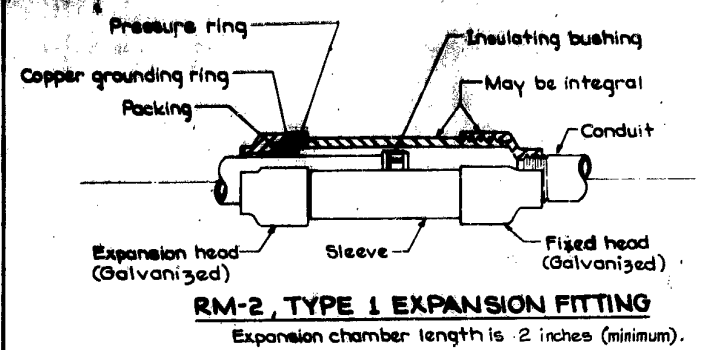
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(Dallas) Polk COUNTY

I-80 - 3(18)125 **77-2

SHEET NO. 30 TOTAL SHEETS 32

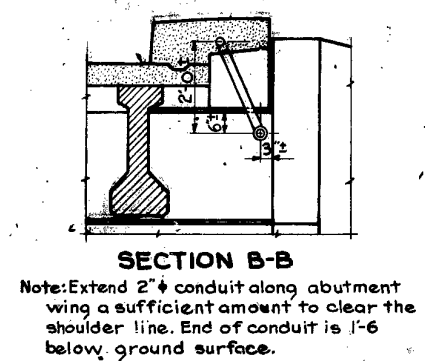
Revised 10-29-64: Revised for 1964 Standard Specs.
Revised 1-19-61: Curb dowel bars added
Revised 7-21-60: Corrected for 1960 Standard Specifications.
Revised 2-15-60: Precast block construction deleted. Curb added to sides.
Revised 9-15-59: Statement concerning erosion control added.
Revised 9-4-59: Statement concerning disposal of excess earth added.



REINFORCING BAR LIST - ONE BASE

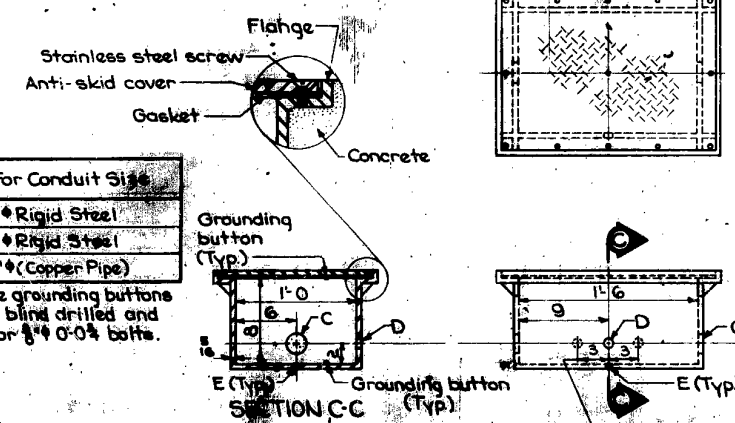
Bar	Location	Shape	#	Length	Weight
8x1	Pole Anchors		2	9'-6"	51
8y1	Curb Anchors		2	13'-8"	73
Total lb.					124

NOTE: Dimensions are out-to-out of bar. Radii to 1/2" of bar.

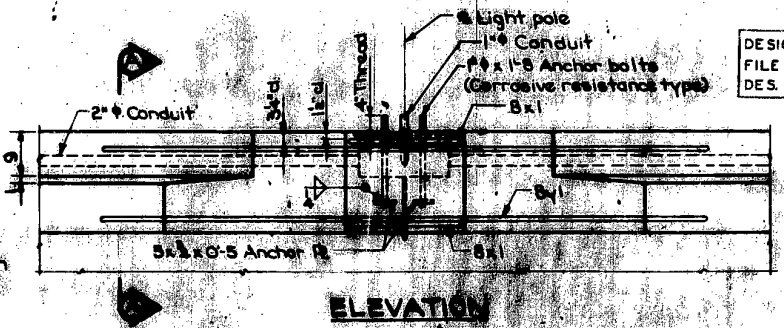
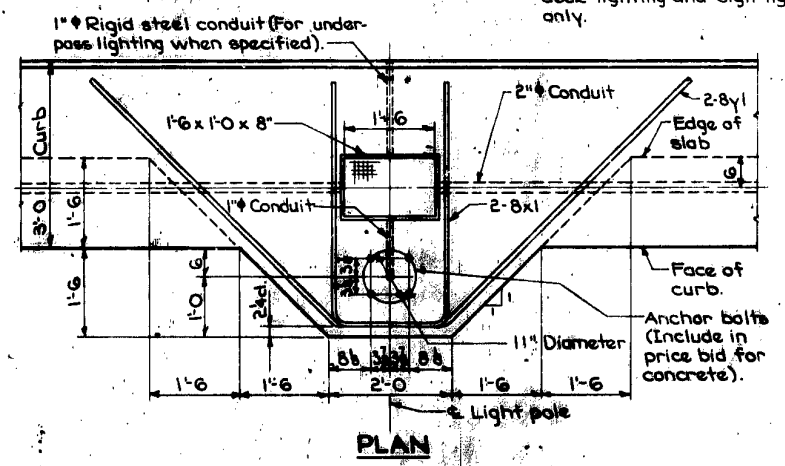


Based For	Note	For Conduit Size
3 threads	C	2" Rigid Steel
None	D	1" Rigid Steel
None	E	1/2" (Copper Pipe)

NOTE: The grounding buttons are to be blind drilled and tapped for 3/8" 0-0 1/2 bolts.



RM-2, TYPE 1 JUNCTION BOX
RAINTIGHT, CAST IRON - FLUSH MOUNT



DESIGN NO. 845
FILE NO. 222/1
DES. SH. NO. 29 OF 30

TOTAL ESTIMATED QUANTITIES FOUR BASES

Item	Amount
2" Rigid Steel Conduit *	583 LF

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

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 corrosion 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.

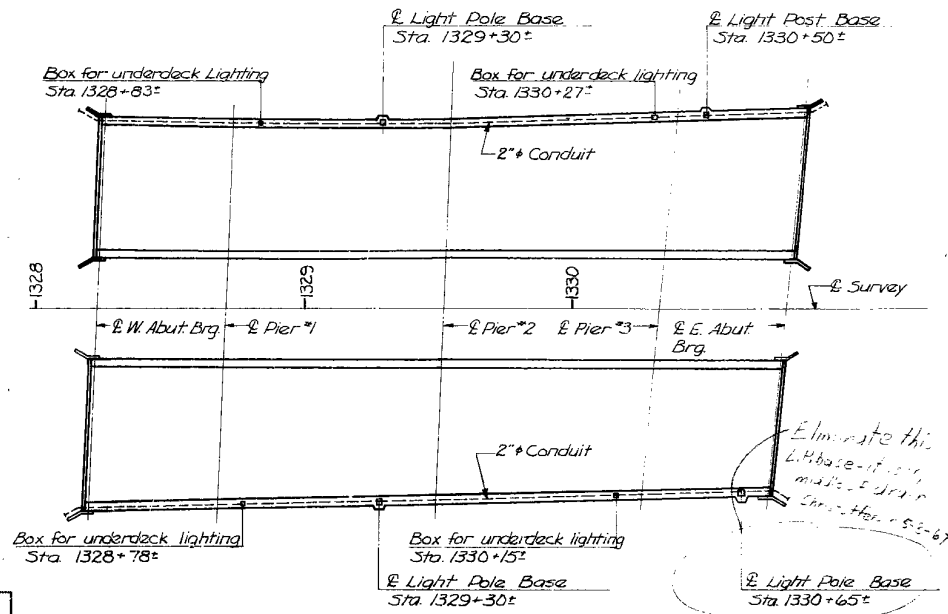
All entrance holes in junction boxes except for drain pipes shall be tapped for the specified conduit size. Grounding buttons shall be located approximately 3" from the inside surface of the box wall, and not closer than 3" to the edge of any hole in the box floor. Holes for drain pipe shall be placed 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 1/2" 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 lineal 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.



Design for 2'10" x 5'09"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
LIGHTING DETAILS

Sta. 1329+51.00 on I-235
Sta. 1336+58.00 on I-35
February, 1966
(DALLAS) POLK COUNTY

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		31	32

Revised 3-8-65: Sheet Redrawn.
Revised 5-12-65: Box for bases added.
Revised 9-3-65: Alternate location for "D" holes added.

Designed by TEP Traced by JJC Checked by JJC

(Dallas) Polk COUNTY PROJECT NUMBER 1-80-3(18) 125 31-7-2