28-Sheets

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

IN LETTING OF JANUARY 30, 1962

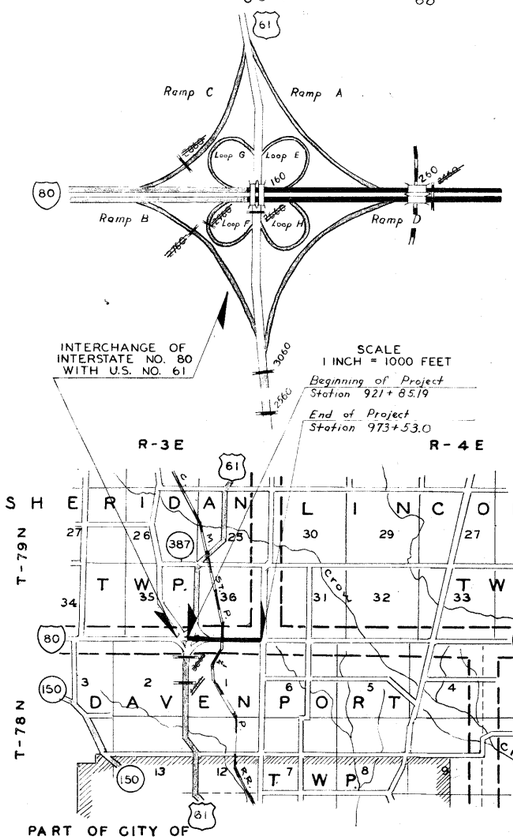
DESIGN NO. 160 — SO. LANE - STA. 314 + 65.40; NO. LANE - STA. 414 + 48.32 ON U.S. 61
SECTIONS 1 & 36 — OVER INTERSTATE NO. 80, DAVENPORT & SHERIDAN TWPS.

DUAL 248'-9"X 40' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES- 2°49'02" SKEW

ESTIMATE OF QUANTITIES

ITEM		TOTAL	
Concrete		1084.4	Cu.Yds
Reinforcing Steel		233,568	Lbs.
Pretensioned Prestressed Concrete Beams	46'-8"(SC1)	36	Beams
	75'-10"(CG)	36	Beams
Aluminum Handrail		960	Lin.Ft.
Granular Backfill Material		460	Tons
Excavation Class 20		790	Cu.Yds
Creosoted Piling *		11,160 ~~7860~~	Lin.Ft.
Concrete Slope Protection		130	Sq.Yds
Rigid Steel Conduit		542	Lin.Ft.
4"ϕ Tile Drain		272	Lin.Ft.

* Abutment piling: 76 piles @ 60'
Pier Piling: ~~44~~ 88 piles @ 35' & ~~44~~ 88 piles @ 40'



STATE OF IOWA
STATE HIGHWAY COMMISSION
DESIGN FOR
BRIDGES AND CULVERTS
INTERSTATE ROAD SYSTEM
PROJECT NO. I-IG-80-8-(16)300
SCOTT COUNTY
DECEMBER 1961

CONSTRUCTION PLANS SHOWING PROJECT AS BUILT
ONE COPY PREPARED BY James W. Edgerton (RESIDENT CONST. ENGR.) DATE 4-8-65
ONE COPY APPROVED AND FORWARDED TO AMES
(DISTRICT) (ENGINEER) DATE
TWO COPIES TO BE MADE AND RETURNED TO
VAN R. SNYDER, DISTRICT ENGINEER
PAUL H. FERLEMAN RESIDENT MAINT. ENGINEER

IN LETTING OF JANUARY 30, 1962

DESIGN NO. 260 — STATION 942 + 55.45 INTERSTATE #80 OVER C.M.ST.P.&P.R.R.
SECTION 1 — DAVENPORT TWP.

DUAL 146'-8" VARIED WIDTH PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES - SKEWED

ESTIMATE OF QUANTITIES

ITEM	TOTAL	
Concrete	778.7	C.Y.
Reinforcing Steel	145,801	LBS.
46'-8" (A-5) Preten. Prestressed Conc. Beams	38	Beam
50'-10" (A-6) Preten. Prestressed Conc. Beams	19	Beam
Aluminum Handrail	558	L.F.
① Creosoted Piling - Furnish & Drive ~~34 @ 30' 29 @ 55' 6 @ 35' 27 @ 60'~~	4480.15 ~~4515~~	L.F.
② Creosoted Piling - Haul & Drive ~~14 @ 30' 3 @ 55' 40 @ 35' 3 @ 60'~~	2278.05 ~~2165~~	L.F.
Granular Backfill Material	360	Tons
4"ϕ Tile Drain	290 ~~270~~	L.F.
Class 20 Excavation	805	C.Y.
2"ϕ Rigid Steel Conduit	330	L.F.

①,② Test Pile required for South footing - North Lane - West Pier, See Sheet 9 of 19
The piling under item ① are to be furnished by the Contractor. The piling under item ② will be available to the Contractor free of cost at the maintenance yard 2 miles north of De Witt, Iowa and at the maintenance yard in Davenport, Iowa. At De Witt, Iowa (7@36', 2@38', 4@40', 10@42', 5@44', 5@46', 3@58', 3@60', 5@30', 8@32', 1@34'). At Davenport, Iowa (7@35').

IN LETTING OF JANUARY 30, 1962

DESIGN	LOCATION SECTION	TOWNSHIP	STATION	DESCRIPTION SIZE AND TYPE	ESTIMATE OF QUANTITIES CONCRETE C.Y.	REINFORCING LBS.	EXCAVATION CL. 20	EXCAVATION CL. 24	C.Y. F-1 CONC. PIPE 30"	L.F. CONCRETE APRONS 30"	REMOVALS
~~2460~~	1	Davenport	~~943+50~~	~~5'x5'x276' Reinforced Concrete Box Culvert~~	~~259.4~~	~~22,699~~	~~257~~				
~~2560~~	1&2	Davenport	~~285+09.7~~ E. Lane	~~30"ϕ F-1 Pipe Extension~~	~~1.4~~	~~66~~	~~10~~	~~10~~	~~82~~		As Per Plan
~~2660~~	1	Sheridan	~~412+20~~	~~4'x4'x 296' Reinforced Concrete Box Culvert~~	~~190.3~~ 193.8 ~~204.4~~	~~20,065~~ ~~19,825~~	~~870~~ ~~874~~				
~~2760~~	1	Sheridan	~~2913+25~~	~~5'x5'x 147' Reinforced Concrete Box Culvert~~ 30° Skew	~~115.9~~	~~12,205~~	~~250~~				
~~2860~~	1	Sheridan	~~3913+60~~	~~2'x3'x113' Reinforced Concrete Box Culvert~~	~~40.9~~	~~2,371~~	~~32~~				
~~2960~~	1	Sheridan	~~6914+25~~	~~4'x5'x131' Reinforced Concrete Box Culvert~~	~~83.9~~	~~7,192~~	~~135~~				
~~3060~~	2	Davenport	~~292+46~~	~~30"ϕ F-1 Pipe Extension~~	~~0.9~~	~~47~~	~~37~~		~~100~~	~~1 outlet~~	
				VOID							
				Total	~~695.6~~ ~~695.3~~ ~~710.3~~	~~65,245~~ ~~65,005~~	~~1597~~ ~~1581~~	~~10~~	~~182~~	~~1 outlet~~	

Specifications:
All materials and construction to be in accordance with Iowa State Highway Commission Standard Specifications Series 1960, plus current supplemental specifications and special provisions.

These bridges will require Bridge Sign Assemblies, furnished and placed by others, as specified under Classification No. 5 in Traffic and Highway Planning Instruction No. 11, Revised October 1, 1961.

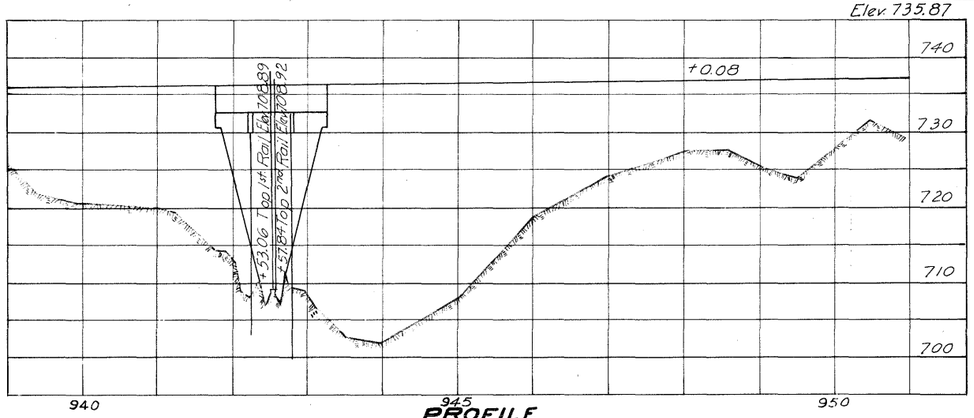
Mileage Summary:
Bridge at Sta. 942+55.45 - 149.516' = 0.028 mi.

APPROVED
R. M. Tuttle DEC 1 1961
DEPUTY CHIEF ENGINEER DATE
IOWA HIGHWAY COMMISSION

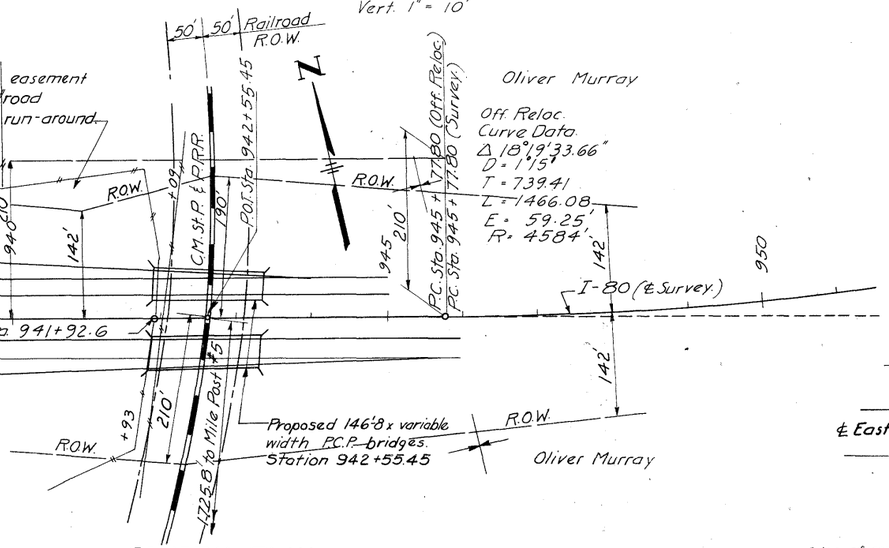
DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
APPROVED
DIVISION ENGINEER DATE

Revised 8-8-62 Design Nº 160 Spacing of intermediate diaphragms of interior spans changed.
~~Revised 5-4-62 Design Nº 2660 Right shoulder elevation changed, Culvert lengthened and quantities changed according~~
~~Revised 3-15-62 Design Nº 2960 Flowline elevations & lengths corrected.~~
Revised 3-16-62 Design Nº 260 Length of 4"ϕ Tile Drain corrected.
~~Revised 3-8-62 Design Nº 2460 Weepholes, weephole & excavation details added.~~
Revised 2-19-62 Design No. 260 Dimension of hoop 3h1 changed
~~Revised 2-15-62 Design No. 2660 Concrete quantity Corrected.~~
Revised 2-1-62 Design 160, 260 Aluminum handrail made continuous through three posts.
Revised 12|26|61 Design 160 Number and lineal feet of creosoted piling corrected.

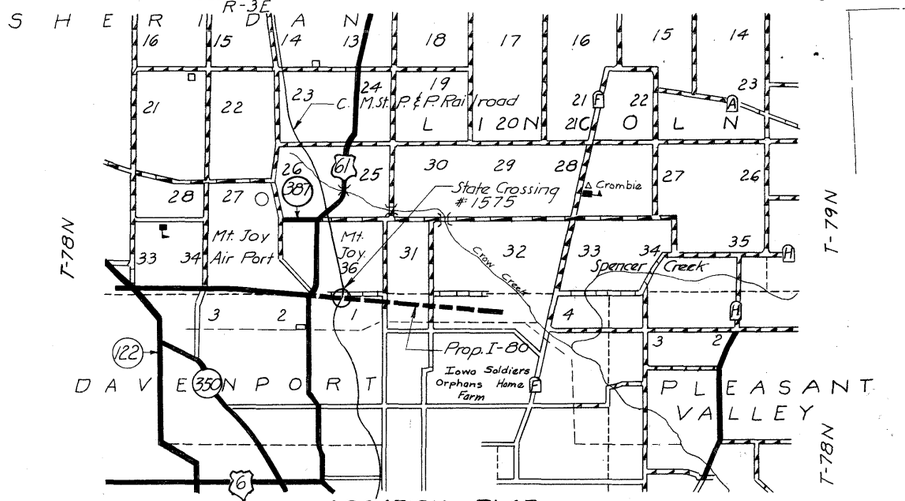
SCOTT COUNTY PROJECT NO. I-IG-80-8-(16)300 FILE NO. 21070



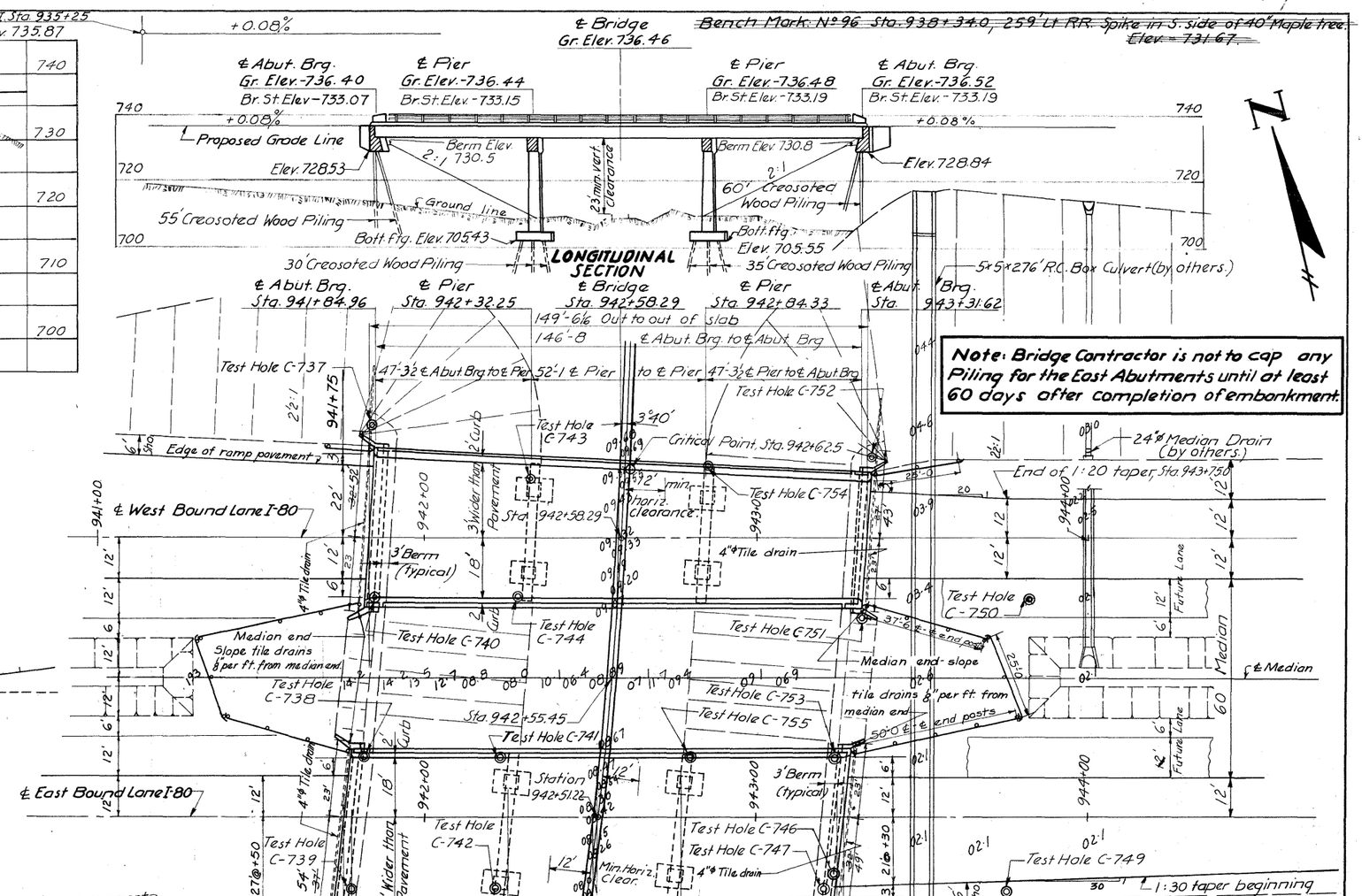
PROFILE
Horiz. 1" = 100'
Vert. 1" = 10'



GENERAL PLAN
Scale: 1" = 100'



LOCATION PLAT
1" = 1 Mile



Note: Bridge Contractor is not to cap any Piling for the East Abutments until at least 60 days after completion of embankment.

LOCATION.
I-80 over C.M.St.P.&P. R.R.
Section 1
T 78 N R 3 E
DAVENPORT Twp.
Scott County, Iowa

Note: See sheet 2 of 19 for General Notes & Total Estimated Quantities.

STATE CROSSING Nº 1575

Design for Skewed

DUAL 146'-8 × VAR. WIDTH PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES

47'-3½ End Spans 52'-1 Center Span
Concrete Floor & Substructure - Aluminum Handrail

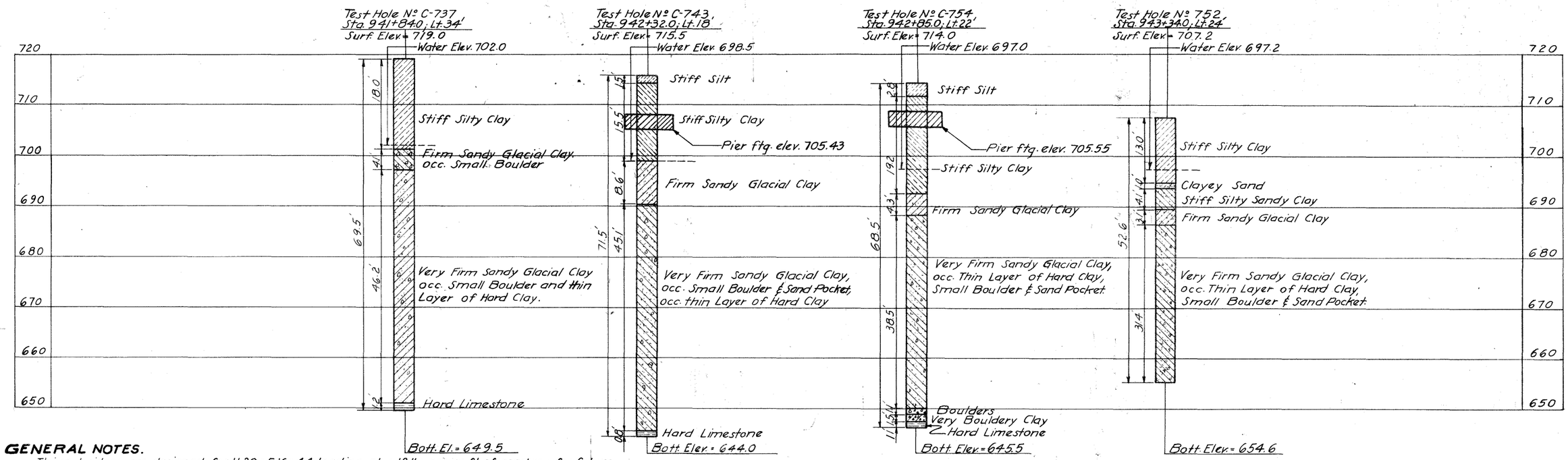
GENERAL & SITUATION PLAN

Station 942+55.45 Project Nº I-IG 80-8(16)300
Interstate 80 over C.M.St.P.&P. Rail Road

SCOTT COUNTY

Iowa State Highway Commission
February 1961 Sheet 1 of 19
Design Nº 260 Scott County File Nº 21070

Revised on 3-16-62 - Length of 4" tile drain on South and North Lanes corrected.



GENERAL NOTES.

These bridges are designed for H 20-S16-44 loading plus 19 lbs. per sq. ft. of roadway for future wearing surface and for alternate loading designated B.P.R. P.P.M-20-4, section 4-C.

The approach fills are not a part of this contract, but they are to be in place before abutment piles are driven. The Bridge Contractor is to level and shape the berms to the elevations shown. The approach fills for the east abutments of both bridges shall be in place 60 days prior to placing abutment footings.

Abutment piling are to be driven in oversize holes drilled through the fill to elevation 710.0. The minimum diameter of the drilled holes is to be 4 inches greater than the diameter of the pile 3 feet from the butt. Voids around the piling 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 piling.

Formed steel beam rail and treated posts are not a part of this contract and will be furnished by others.

Design stresses for the following materials are in accordance with A.A.S.H.O. Standard Specifications for Highway Bridges, Series of 1957.

Structural steel in accordance with Section 1.4.2 "Structural Carbon Steel".

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

Concrete in accordance with Section 1.4.11., f'_c = 3500 psi. for cast in place concrete.

SPECIFICATIONS.

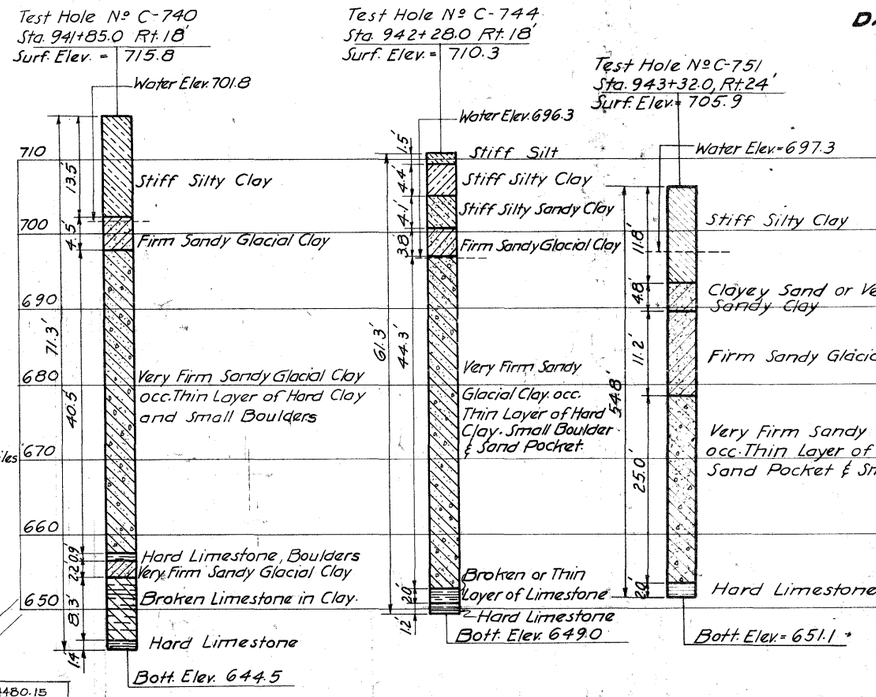
Design: A.A.S.H.O., Series of 1957, T1 (58) U.S.B.P.R. Design Criteria for Prestressed Bridges, Series of 1955.
Construction: Standard Specifications, I.S.H.C., Series of 1960 plus current special provisions applicable.

①, ② Test pile required for South footing - North Lane - West Pier, See sheet 9 of 19.
The piling under item ① are to be furnished by the Contractor.
The piling under item ② will be available to the Contractor free of cost at the maintenance yard 2 miles north of De Witt, Iowa and at the maintenance yard in Davenport, Iowa.
At De Witt, Iowa (7@36', 2@38', 4@40', 10@42', 5@44', 5@46', 3@58', 3@60', 5@30', 8@32', 1@34') At Davenport, Iowa (7@35')

TOTAL ESTIMATED QUANTITIES

Item	Unit	Superstructure		Abutments		Piers		
		North Lane	South Lane	North Lane	South Lane	North Lane	South Lane	Total
Concrete	cu. yd	178.6	198.8	65.2	73.8	122.6	139.7	778.7
Reinforcing Steel	lbs.	48,976	55,032	5,633	6,448	14,291	15,421	145,801
46'-8 (A-5) Pretan. Prestressed Conc. Beams	beam	18	20	———	———	———	———	38
50'-10 (A-6) Pretan. Prestressed Conc. Beams	beam	9	10	———	———	———	———	19
Aluminum Handrail	lin. ft.	279.0	279.0	———	———	———	———	558.0
① Creosoted Piling - Furnish & Drive	lin. ft	———	———	~~12 @ 60'~~ ~~12 @ 55'~~	~~12 @ 55'~~ ~~12 @ 60'~~	~~10 @ 30'~~	~~25 @ 30'~~ ~~15 @ 35'~~	~~451.5~~ 4480.15
② Creosoted Piling - Haul & Drive	lin. ft.	———	———	~~3 @ 55'~~ ~~3 @ 60'~~	———	~~14 @ 30'~~ ~~24 @ 35'~~	~~16 @ 35'~~	~~276.5~~ 2278.05
Granular Backfill Material	tons	———	———	170	190	———	———	360
4"ø Tile Drain	lin. ft.	———	———	~~105.141~~	~~115.149~~	———	———	~~290220~~
Class 20 Excavation	cu. yd.	———	———	210	225	185	185	805
2"ø Rigid Steel Conduit	lin. ft.	165	165	———	———	———	———	330

Revised 3-16-62 - Length of 4"ø Tile Drain on South and North Lanes corrected.



SOUNDING DATA.
Scale: 1" = 10'-0"

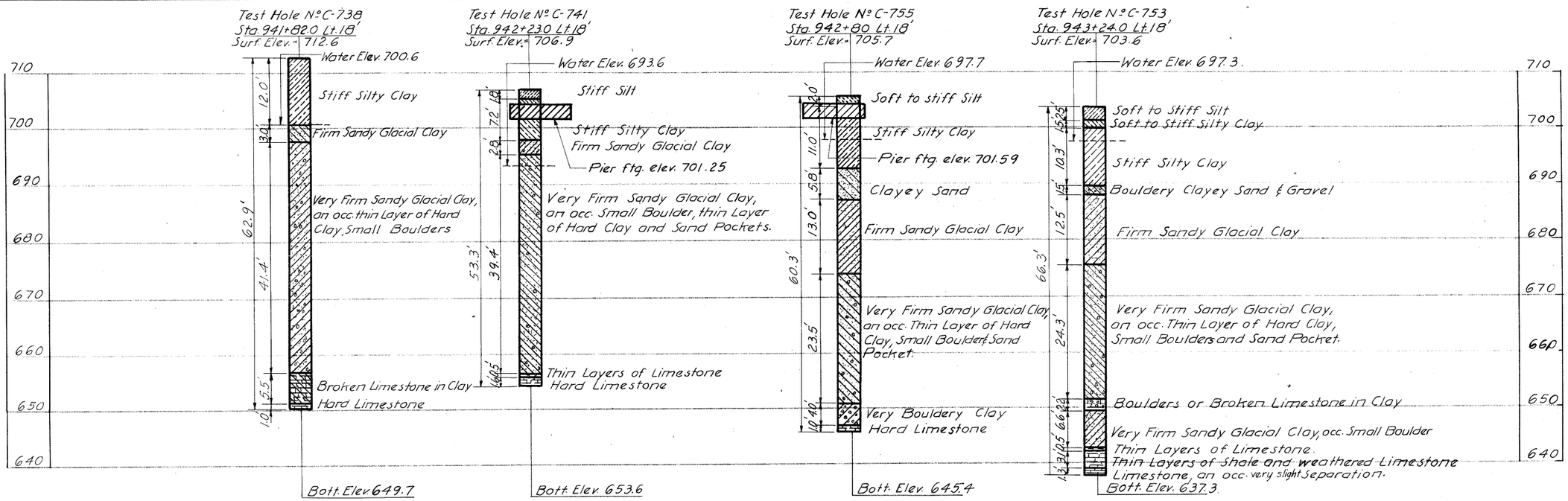
TEST PILE NOTE.

A test pile is to be driven at the West pier of the North Lane. See sheet 9 of 19. The Contractor is to cooperate with the Engineer in the prosecution of the testing and is to assist in setting and removing the test beam. The cost of this work is to be included in the price bid for other items and no separate payment will be made for this work or for delays caused by testing.

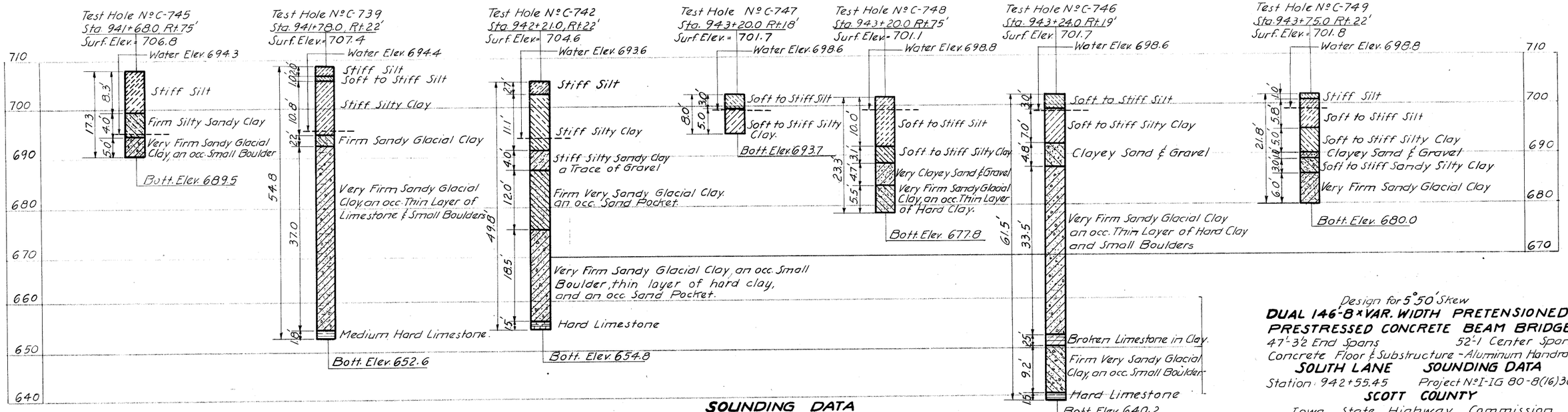
DATE OF THE REPORT: 12-7-60

Design for 3°40' Skew
DUAL 146'-8" x VAR. WIDTH PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES
47'-3½" End Spans 52'-1 Center Span
Concrete Floor & Substructure Aluminum Handrail
NORTH LANE — SOUNDING DATA GENERAL NOTES & TOTAL QUANTITIES
Station 942+55.45 Project Nº I-IG-80-8(16)300
SCOTT COUNTY
Iowa State Highway Commission
February 1961 Sheet 2 of 19
Design Nº 260 Scott County File Nº 21070

Traced by: TG Checked by: AJH



DATE OF THE REPORT: 12-7-60

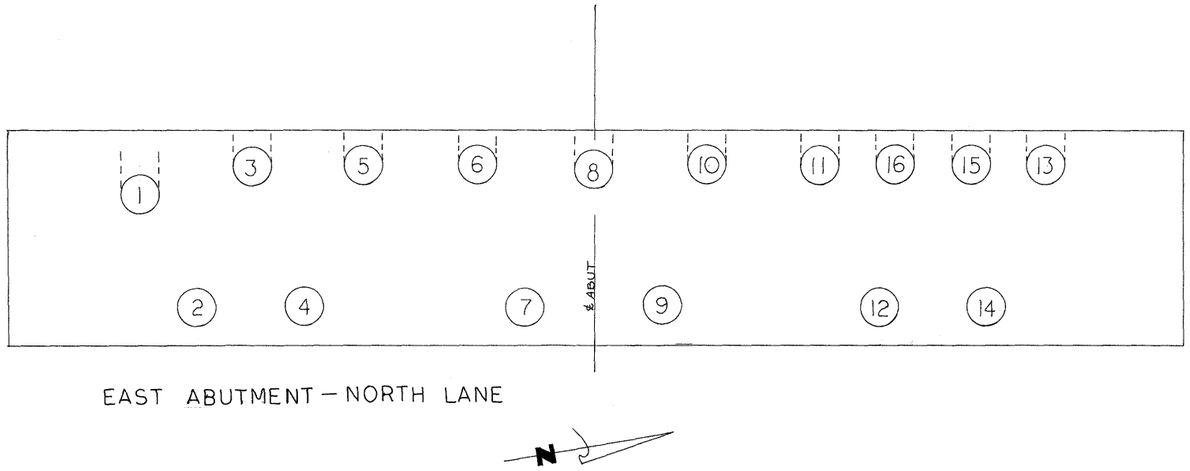


SOUNDING DATA
Scale: 1"=10'

Design for 5°50' Skew
DUAL 146'-8" × VAR. WIDTH PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES
47'-3½" End Spans 52'-1" Center Span
Concrete Floor & Substructure - Aluminum Handrail
SOUTH LANE SOUNDING DATA
Station 942+55.45 Project N°I-IG 80-8(16)300
SCOTT COUNTY
Iowa State Highway Commission
February 1961 Sheet 30 of 19
Design N° 260 Scott County File N° 21070

Scott Co
I-IG-80-8(16)30--
Des. 260
3 of 19

BATTER 1:4 ON PILE

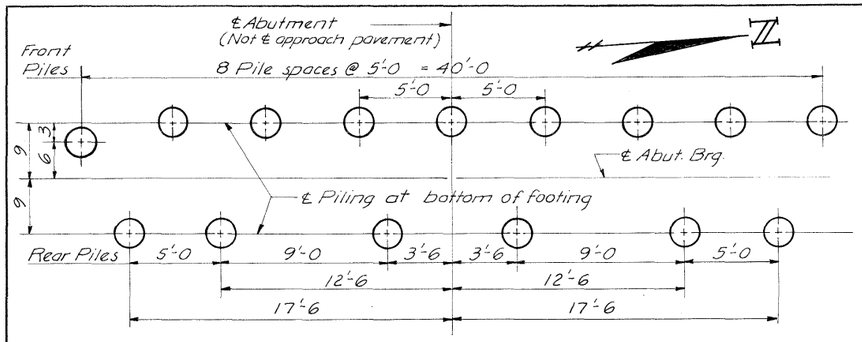


EAST ABUTMENT — NORTH LANE

PILE Nº	LENGTH	BEARING
1	59.0	23.3
2	59.4	24.6
3	58.8	26.4
4	59.3	27.9
5	58.8	26.4
6	58.8	25.4
7	59.5	24.6
8	58.9	22.0
9	59.2	20.9
10	58.8	19.8
11	55.0	REFUSE
12	59.1	15.5
13	59.5	12.0
14	59.2	22.0
15	47.5	REFUSE
16	51.6	REFUSE

Larry Barrett

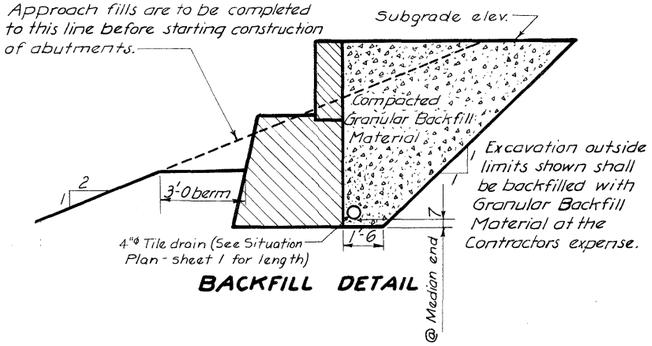
~~Bench Mark N°96 Sta 938+34.0, 259'Lt. R.R. Spike in S. side 40" Maple Elev. 731.67~~



PILING LAYOUT
(Not to scale.)

CONCRETE PLACEMENT QUANTITIES	
Footing	22.2 c.y.
Backwall	4.2 c.y.
Wings	3.0 c.y.
Paving Block	0.5 c.y.
Total	29.9 c.y.

NOTE: ℄ BETWEEN GUTTER LINES IS NOT THE SAME AS ℄ OF APPROACH PAVEMENT.

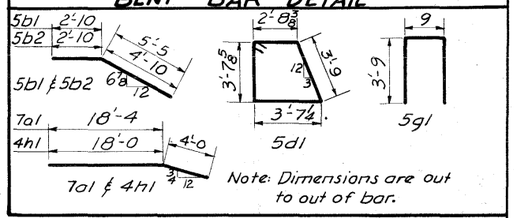


BACKFILL DETAIL

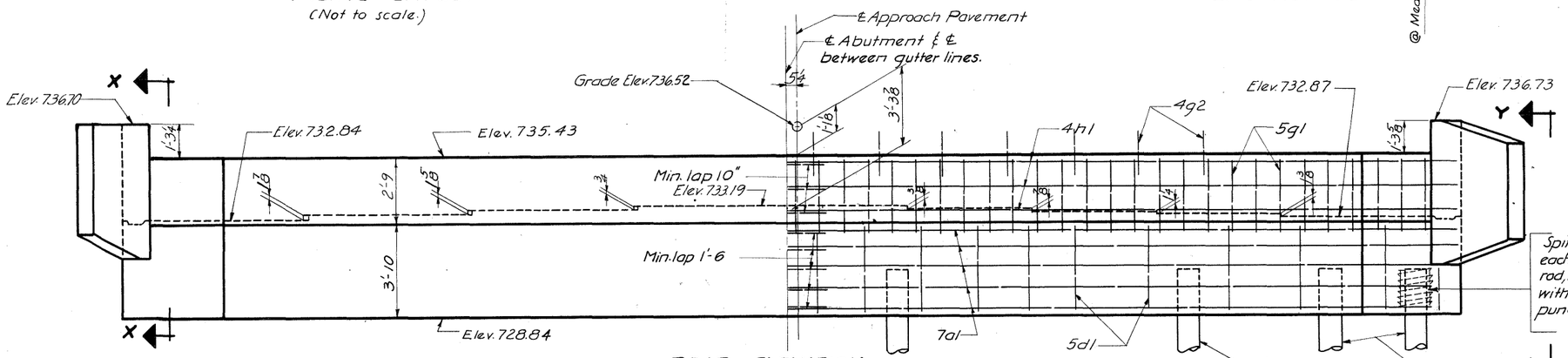
REINFORCING BAR LIST

Bar	Location	Shape	N°	Length	Weight	
7a1	Footing Longit.		24	22'-4	1096	✓
5b1	Wing Horiz. B.F.		12	8'-3	103	✓
5b2	" " F.F.		12	7'-8	96	✓
5c1	" Vert. F.F.		8	5'-6	46	✓
8c2	" " B.F.		14	5'-6	206	✓
5c3-7	" " B.F. & F.F.		10	Varies	49	✓
5c8-12	" " " " "		10	Varies	48	✓
5d1	Footing Hoops		20	14'-5	301	✓
5g1	Backwall Vert.		40	8'-1	337	✓
4g2	Paving Dowels (Structural Grade)		13	2'-0	17	✓
4h1	Backwall Horiz. B.F. & F.F.		12	22'-0	176	✓
	Pile Spirals Complete 16		~~15~~	9 lbs ea.	~~135~~	14
				Total	~~2610~~	2611

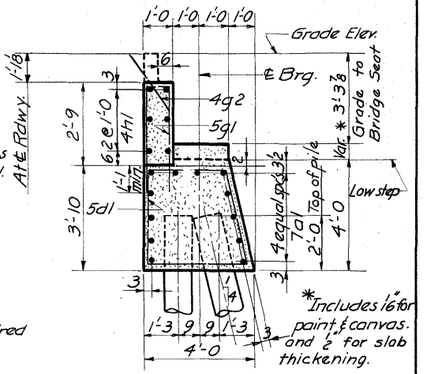
BENT BAR DETAIL

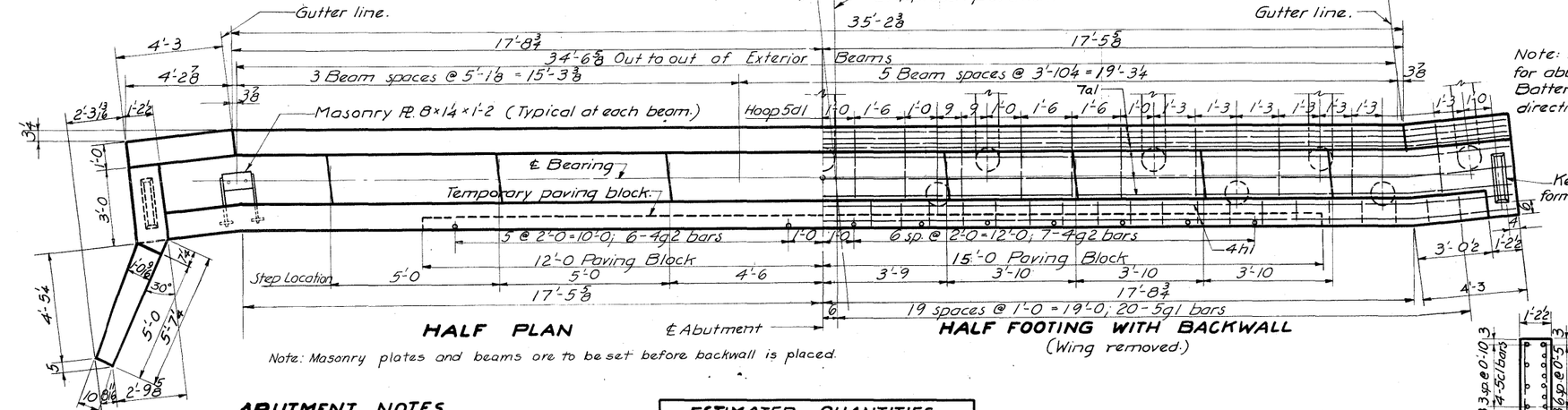


Note: Dimensions are out to out of bar.



REAR ELEVATION

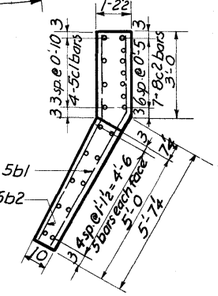


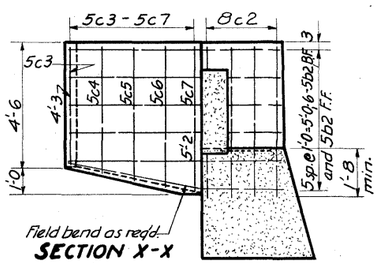


HALF PLAN **HALF FOOTING WITH BACKWALL**
(Wing removed.)

Note: Masonry plates and beams are to be set before backwall is placed.

Note: 15 Creosoted piles required for abutment. Batter front piles 1:4 in the direction shown.

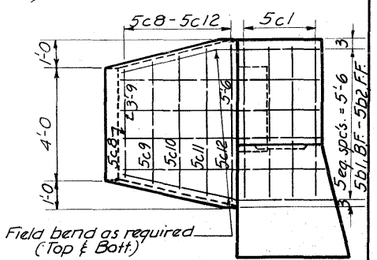




SECTION X-X

WING PLAN
Showing Wing Reinforcing

Before placing temporary paving block, bend all 4g2 bars and cover the top of the backwall with tar paper to prevent bond. Paving dowels (4g2) are to be made of structural grade reinforcing steel.



VIEW Y-Y

ESTIMATED QUANTITIES ONE ABUTMENT

Item		Quantity
Concrete		29.9 c.y.
Reinforcing Steel	2619	~~2610~~ lbs
Creosoted Piling	~~50 @ 60'~~	~~900~~ lin.ft.
Class 20 Excavation		100 c.y.
Granular Backfill Material		80 tons
4" ℄ Tile drain		~~665~~ 670 lin.ft.
Creosoted Piling	Furnish & Drive	891.25 lin.ft.
Creosoted Piling	Haul & Drive	55.80 lin.ft.

ABUTMENT NOTES.

All exposed corners of concrete 90° or sharper shall be formed with a ¾" dressed and beveled fillet.

Reinforcing steel shall be securely wired in place before concrete is poured.

Clear distance from face of concrete to near reinforcing bar shall be 12" unless otherwise noted or shown.

Piling are to be driven to full penetration if practicable, but to at least 20 ton minimum but no more than 40 ton maximum bearing value.

Bridge Contractor is to backfill abutments between wings to subgrade elevation with Granular Backfill Material complying with Section 4133 of the specifications.

Oversize holes are to be drilled through fill for piling.

Revised on 3-16-62 - Length of 4" ℄ tile drain corrected.

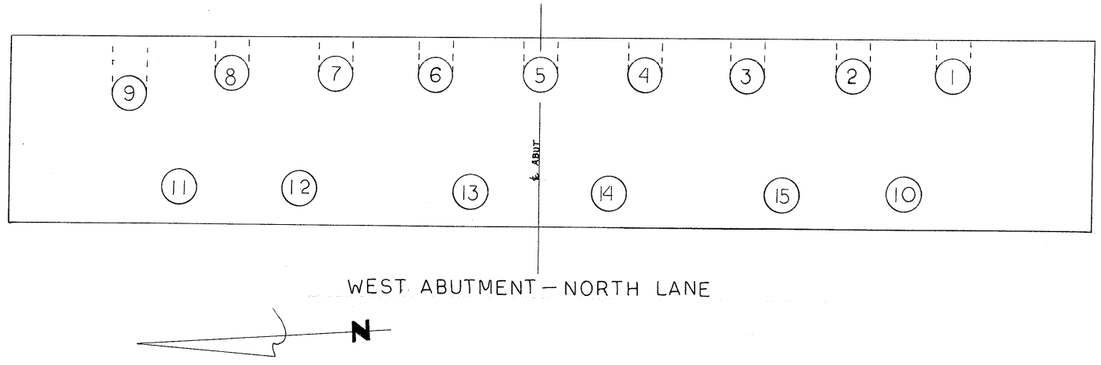
Design for 3°40' Skew
DUAL 146'-8 x VAR. WIDTH PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES
47'-3½ End Spans 52'-1 Center Span
Concrete Floor & Substructure Aluminum Handrail
ABUTMENT DETAILS
NORTH-LANE EAST-ABUTMENT
Station 942+55.45 Project N° I-IG 80-8(16)300
SCOTT COUNTY
Iowa State Highway Commission
February 1961 Sheet 4 of 19
Design N° 260 Scott County File N° 21070

Designed by: A.G.L. Traced by: J.F. Checked by: W.H.

Over

Scott
I-IG-80-8(16)300
Dec. 260
4 of 19

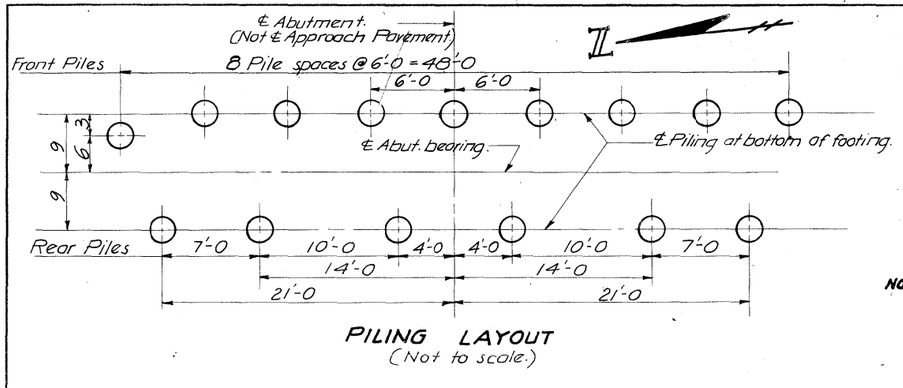
BATTER 1:4 ON PILE



PILE No	LENGTH	BEARING
1	53.9	20.6
2	53.7	26.1
3	50.0	21.7
4	53.4	REFUSE
5	53.8	30.1
6	51.1	24.4
7	53.8	21.7
8	53.6	24.4
9	53.6	23.0
10	53.9	12.5
11	53.4	27.5
12	53.8	25.8
13	53.7	27.5
14	54.0	27.5
15	54.5	21.7

Larry Ruckle

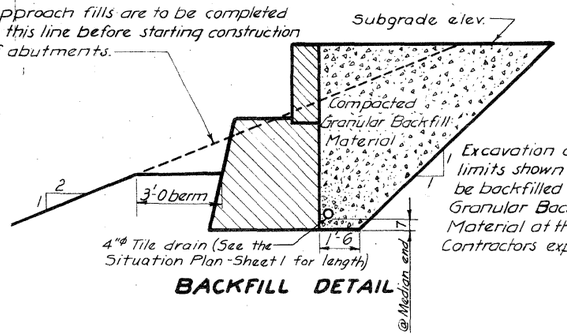
~~Bench Mark N°96 Sta 938+34.0, 259' Lt. R.R. spike in S. side 40" Maple Elev. 731.67.~~



PILING LAYOUT
(Not to scale.)

CONCRETE PLACEMENT QUANTITIES	
Footing	26.6 c.y.
Backwall	4.9 c.y.
Wings	2.9 c.y.
Paving Block	0.9 c.y.
Total	35.3 c.y.

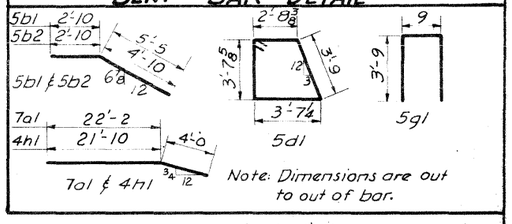
NOTE: ℄ BETWEEN GUTTER LINES IS NOT THE SAME AS ℄ OF APPROACH PAVEMENT.



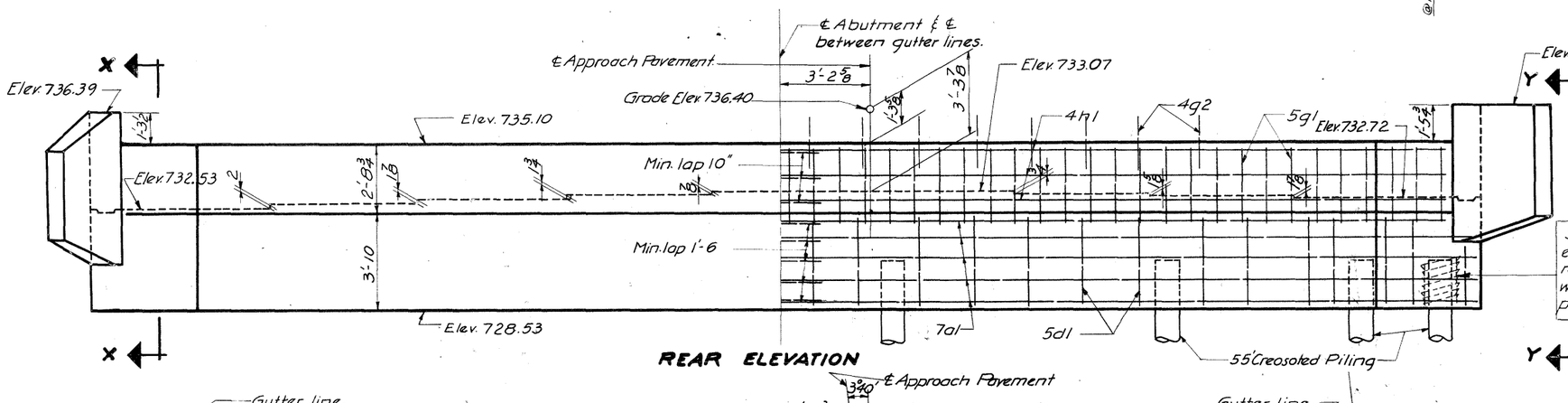
BACKFILL DETAIL

REINFORCING BAR LIST					
Bar	Location	Shape	N°	Length	Weight
7a1	Footing Longit.		24	26'-2	1284
5b1	Wing Horiz. B.F.		12	8'-3	103
5b2	" " F.F.		12	7'-8	96
5c1	" Vert. F.F.		8	5'-6	46
8c2	" " B.F.		14	5'-6	206
5c3-7	" " B.F. & F.F.		10	Varies	49
5c8-12	" " " " "		10	Varies	47
5d1	Footing Hoops		28	14'-5	421
5g1	Backwall Vert.		48	8'-1	405
4g2	Paving Dowels (Structural Grade)		18	2'-0	24
4h1	Backwall Horiz. B.F. & F.F.		12	25'-10	207
	Pile Spirals Complete		15	9 lbs. ea	135
				Total	3023

BENT BAR DETAIL

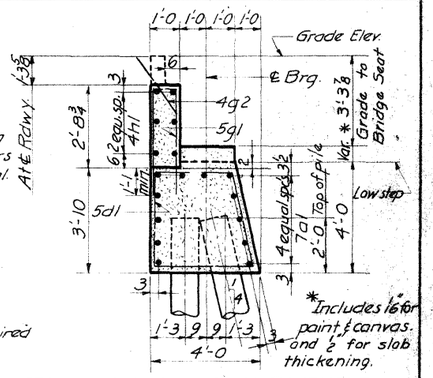


Note: Dimensions are out to out of bar.



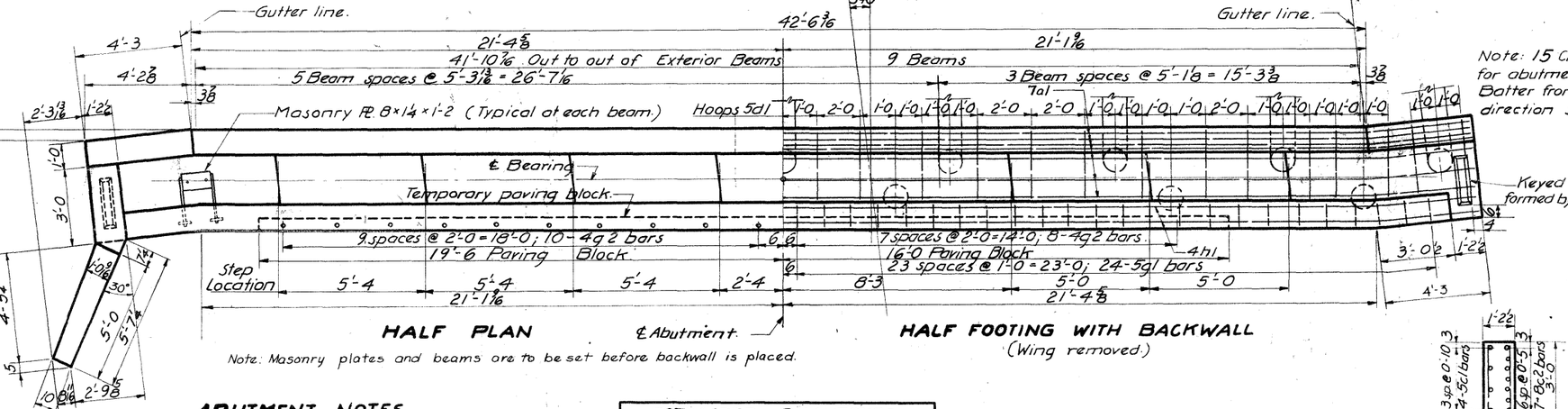
REAR ELEVATION

Spirals at the top of each pile. 7 turns of 4" ϕ rod, 21 diameter 3 pitch with 2-3/8" L 0.69 spacers punched to hold spiral.



SECTION at ℄ APPROACH PAVEMENT

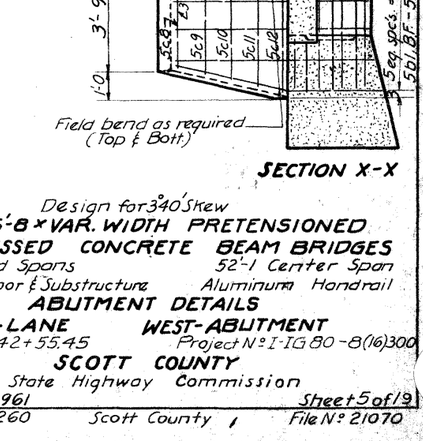
Before placing temporary paving block, bend all 4g2 bars and cover the top of the backwall with tar paper to prevent bond. Paving dowels (4g2) are to be made of structural grade reinforcing steel.



HALF PLAN **HALF FOOTING WITH BACKWALL** (Wing removed.)

Note: Masonry plates and beams are to be set before backwall is placed.

Note: 15 Creosoted piles required for abutment. Batter front piles 1:4 in the direction shown.



SECTION X-X

ABUTMENT NOTES.

All exposed corners of concrete 90° or sharper shall be formed with a 3/4" dressed and beveled fillet.

Reinforcing steel shall be securely wired in place before concrete is poured.

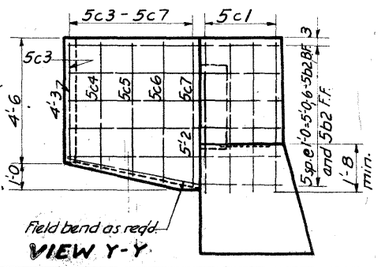
Clear distance from face of concrete to near reinforcing bar shall be 1 1/2" unless otherwise noted or shown.

Piling are to be driven to full penetration if practicable, but to at least 20 ton minimum but no more than 40 ton maximum bearing value.

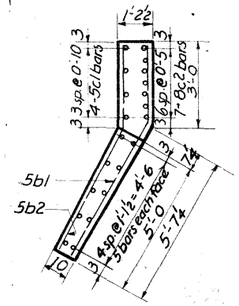
Bridge Contractor is to backfill abutments between wings to subgrade elevation with Granular Backfill Material complying with Section 4133 of the specifications.

Oversize holes are to be drilled through fill for piling.

ESTIMATED QUANTITIES ONE ABUTMENT	
Item	Quantity
Concrete	35.3 c.y.
Reinforcing Steel	3023 lbs
Creosoted Piling ~~15@55'~~	~~825~~ lin.ft.
Class 20 Excavation	110 c.y.
Granular Backfill Material	90 tons
4" ϕ Tile Drain	7555 lin.ft.
Creosoted Piling Furnish & Drive	819.75 lin.ft.



VIEW Y-Y



WING PLAN
Showing Wing Reinforcing

Design for 30° Skew
DUAL 146'-8" x VAR. WIDTH PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES
47'-3 1/2 End Spans 52'-1 Center Span
Concrete Floor & Substructure Aluminum Handrail

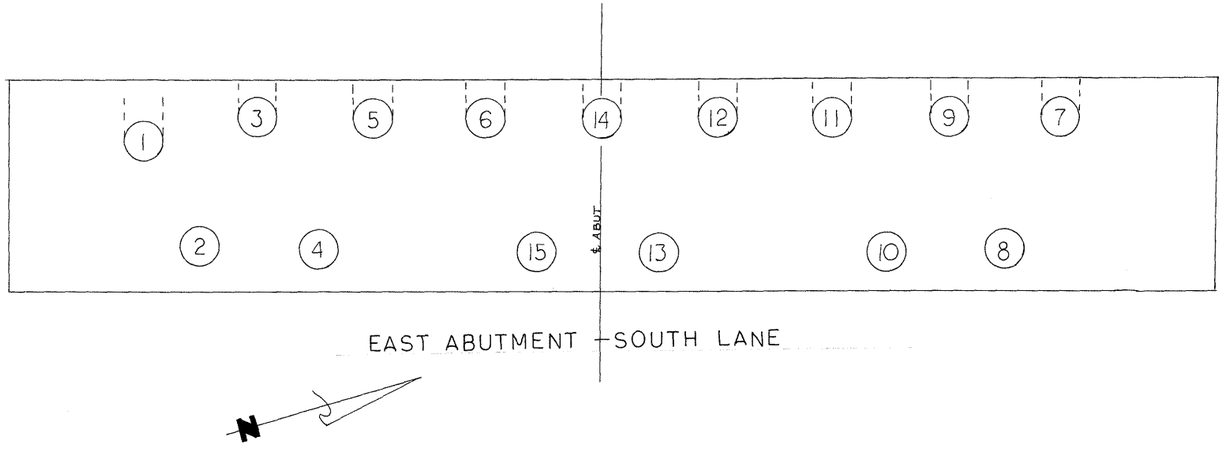
ABUTMENT DETAILS
NORTH-LANE **WEST-ABUTMENT**
Station 942+55.45 Project N° I-IG 80-8(16)300 11
SCOTT COUNTY
Iowa State Highway Commission
February 1961 Sheet 5 of 19
Design N° 260 Scott County File N° 21070

Designed by: A.G.L. Traced by: J.F. Checked by: W.H.

Revised on 3-16-62 - Length of 4" Tile Drain corrected.

Scott
I-IE-80-8(16)30
Des. 260
5 of 19

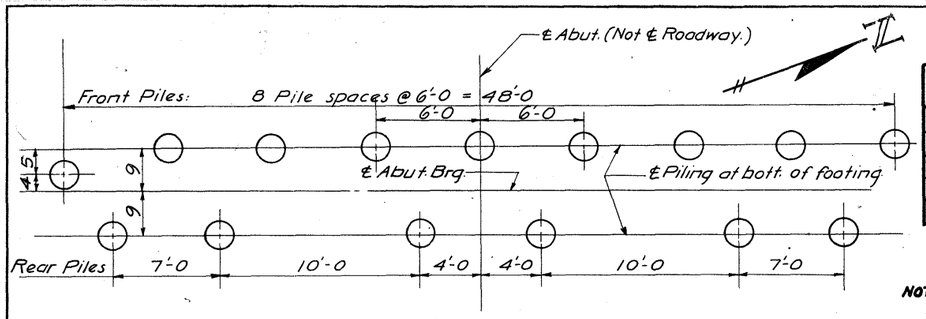
BATTER 1:4 ON PILE



PILE Nº	LENGTH	BEARING	
1	50.4	REFUSE	
2	58.6	26.2	
3	59.0	30.4	
4	58.5	32.2	
5	59.6	23.3	
6	59.5	18.8	
7	58.8	28.3	
8	58.0	38.0	SPLITTING
9	58.6	33.0	SPLITTING
10	54.2	REFUSE	
11	43.5	REFUSE	
12	56.9	33.0	SPLITTING
13	40.5	REFUSE	
14	58.8	24.7	
15	58.0	38.0	SPLITTING

Larry Russell

~~Bench Mark N°96 Sta 938+34.0, 259' Lt. R.R. spike in S side 40" Maple Elev. 731.67.~~

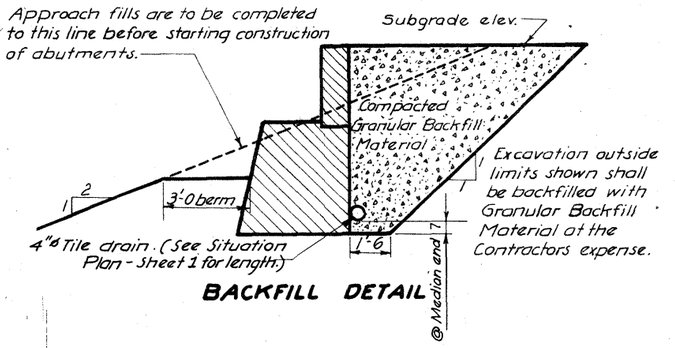


PILING LAYOUT

Not to Scale.

CONCRETE PLACEMENT QUANTITIES	
Footing	26.5 c.y.
Backwall	5.0 c.y.
Wings	2.9 c.y.
Paving Block	0.7 c.y.
Total	35.1 c.y.

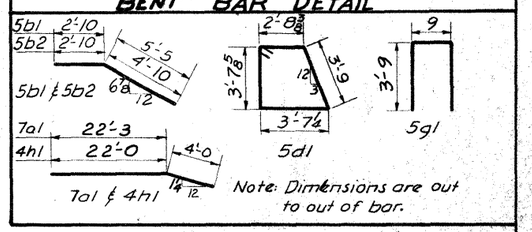
NOTE: ℄ BETWEEN GUTTER LINES IS NOT THE SAME AS ℄ OF APPROACH PAVEMENT.



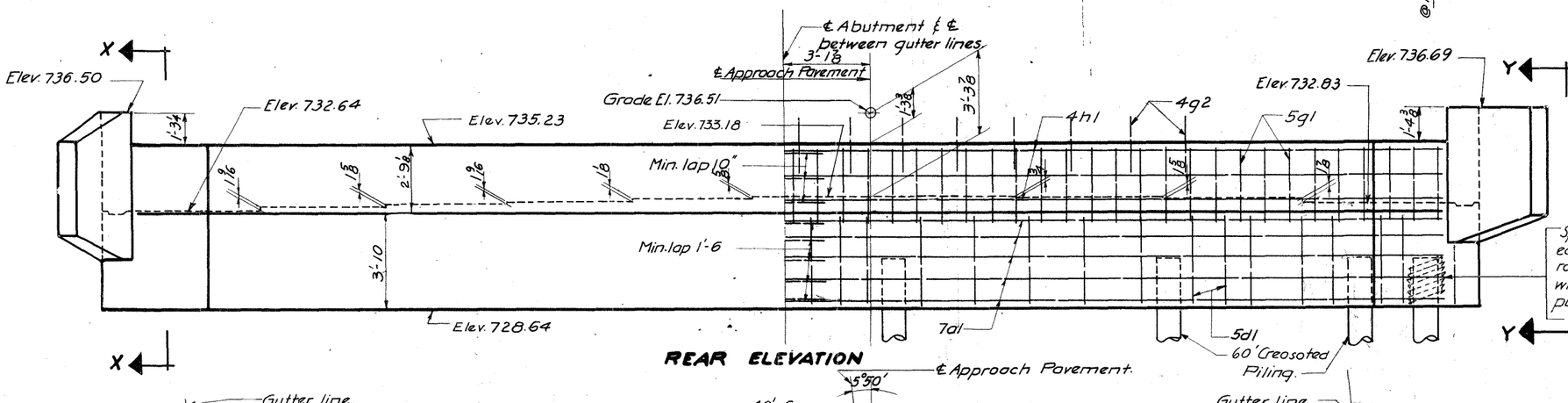
BACKFILL DETAIL

REINFORCING BAR LIST					
Bar	Location	Shape	N°	Length	Weight
7a1	Footing Longit.		24	26'-3	1288
5b1	Wing Horiz. B.F.		12	8'-3	103
5b2	" " F.F.		12	7'-8	96
5c1	" Vert. F.F.		8	5'-6	46
8c2	" " B.F.		14	5'-6	206
5c3-7	" " B.F. & F.F.		10	Varies	49
5c8-12	" " " " "		10	Varies	48
5d1	Footing Hoops		32	14'-5	481
5g1	Backwall Vert.		48	8'-1	405
4g2	Paving Dowels (Structural Grade)		17	2'-0	23
4h1	Backwall Horiz. B.F. & F.F.		12	26'-0	208
	Pile Spirals Complete		15	9lbs.ea.	135
				Total	3088

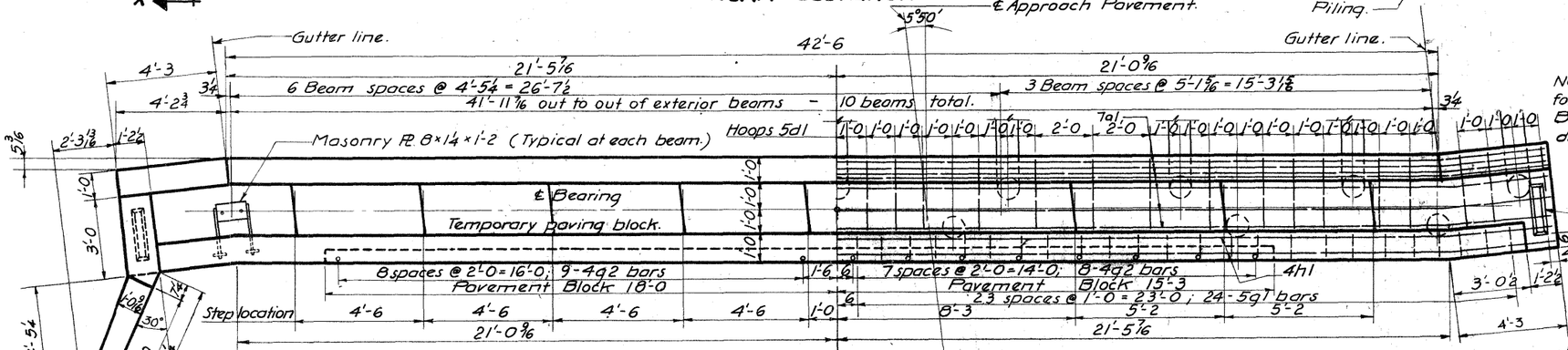
BENT BAR DETAIL



Note: Dimensions are out to out of bar.



REAR ELEVATION

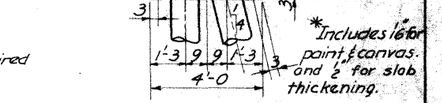


HALF PLAN

HALF FOOTING WITH BACKWALL
(Wing removed.)

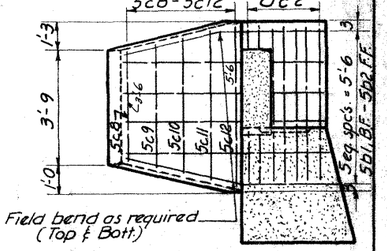
Note: Masonry plates and beams are to be set before backwall is placed.

Note: 15 Creosoted piles required for abutment. Batter front piles 1:4 in the direction shown.

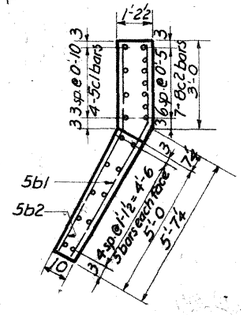


SECTION at ℄ APPROACH PAVEMENT

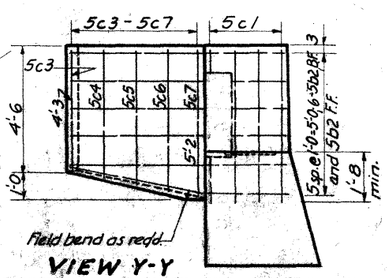
Before placing temporary paving block, bend all 4g2 bars and cover the top of the backwall with tar paper to prevent bond. Paving dowels, (4g2) are to be made of structural grade reinforcing steel.



SECTION X - X



WING PLAN
Showing Wing Reinforcing



VIEW Y-Y

ESTIMATED QUANTITIES ONE ABUTMENT	
Item	Quantity
Concrete	35.1 c.y.
Reinforcing Steel	3088 lbs
Creosoted Piling ~~15@60'~~	~~900~~ lin.ft
Class 20 Excavation	110 c.y.
Granular Backfill Material	90 tons
4"ø Tile Drain	7255 lin.ft.
Creosoted Piling Furnish & Drive	703.45 lin.ft
Creosoted Piling Haul & Drive	167.30 lin.ft

ABUTMENT NOTES.

All exposed corners of concrete 90° or sharper shall be formed with a 3/4" dressed and beveled fillet.

Reinforcing steel shall be securely wired in place before concrete is poured.

Clear distance from face of concrete to near reinforcing bar shall be 12" unless otherwise noted or shown.

Piling are to be driven to full penetration if practicable, but to at least 20 ton minimum but no more than 40 ton maximum bearing value.

Bridge Contractor is to backfill abutments between wings to subgrade elevation with Granular Backfill Material complying with Section 4133 of the specifications.

Oversize holes are to be drilled through fill for piling.

Revised 3-16-62 - Length of 4"ø Tile Drain corrected.

Design for 5°30' Skew

DUAL 146'-8" x VAR. WIDTH PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES

47'-3 1/2 End Spans — 52'-1 Center Span

Concrete Floor & Substructure — Aluminum Handrail

ABUTMENT DETAILS

SOUTH-LANE — EAST-ABUTMENT

Station 942+55.45 — Project N° I-IG 80-8(16)300

SCOTT COUNTY

Iowa State Highway Commission

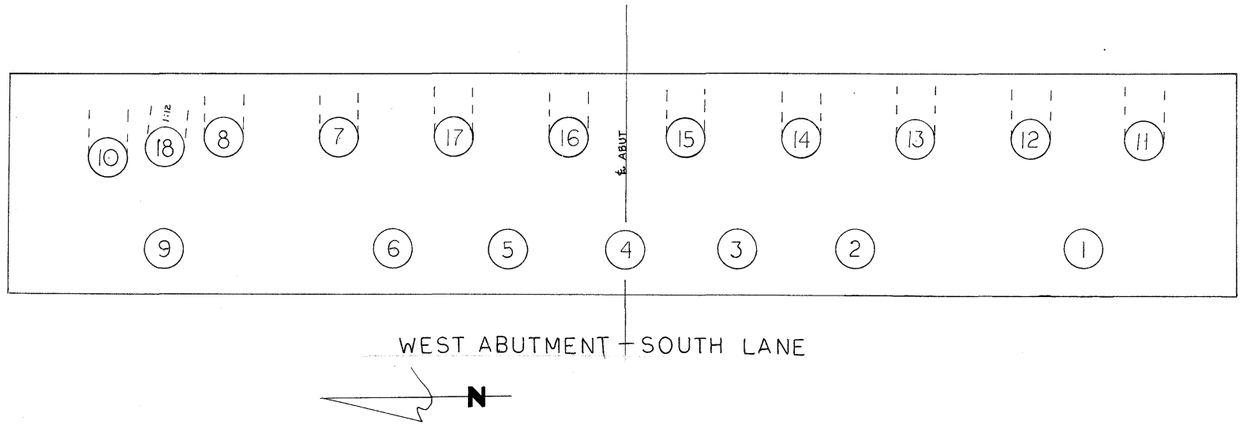
February 1961 — Sheet 6 of 13

Design N° 260 — Scott County — File N° 21070

Designed by: A.G.L. — Traced by: [illegible] — Checked by: [illegible]

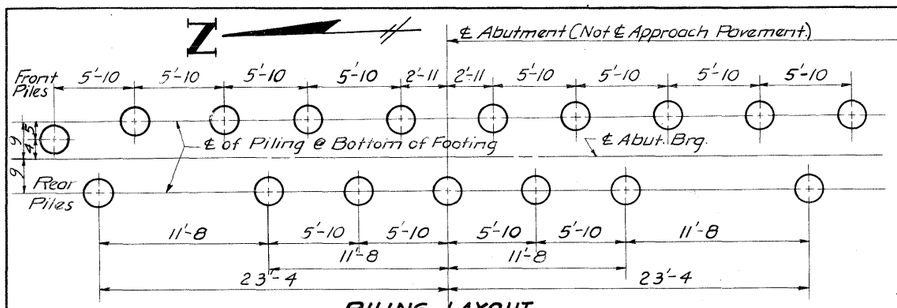
Scott
IIG-80-8(16)300
Des. 260
6 of 19

BATTER 1:4 ON PILE



PILE Nº	LENGTH	BEARING	
1	51.4	28.3	SPLITTING
2	45.4	29.7	
3	46.6	27.4	SPLITTING
4	53.6	23.0	
5	54.2	22.5	
6	54.6	20.7	
7	54.2	21.7	
8	54.4	20.6	
9	53.8	23.0	
10	54.0	8.5	
11	53.6	27.1	
12	53.8	27.9	
13	53.8	30.1	
14	53.7	23.0	
15	53.9	21.7	
16	53.6	27.9	
17	49.4	REFUSE	
18	56.6	33.7	

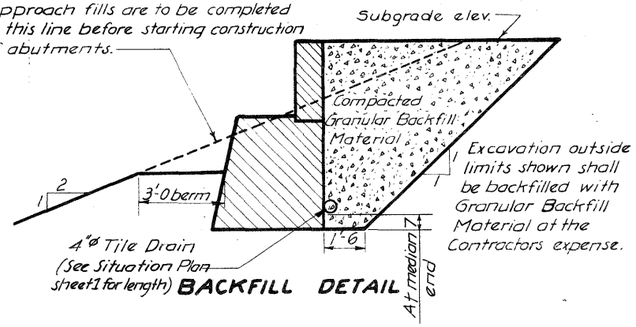
~~Bench Mark No 96 Sta 938+34.0, 259' Lt. R.R. spike in S. side 40" Maple Elev. 731.67~~



PILING LAYOUT
Not to scale.

CONCRETE PLACEMENT QUANTITIES	
Footing	29.4 c.y.
Backwall	5.5 c.y.
Wings	2.9 c.y.
Paving Block	0.9 c.y.
Total	38.7 c.y.

Approach fills are to be completed to this line before starting construction of abutments.



BACKFILL DETAIL

NOTE: ℄ BETWEEN GUTTER LINES IS NOT THE SAME AS ℄ OF APPROACH PAVEMENT.

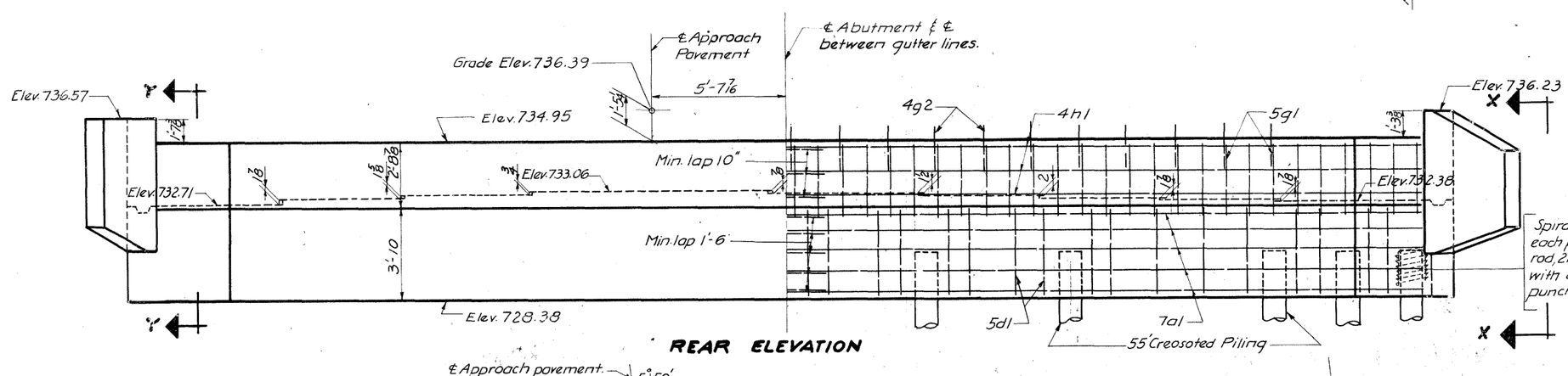
REINFORCING BAR LIST

Bar	Location	Shape	No	Length	Weight
7a1	Footing Longit.		24	28'-9	1410
5b1	Wing Horiz. B.F.		12	8'-3	103
5b2	" " F.F.		12	7'-8	96
5c1	" Vert. F.F.		8	5'-6	46
8c2	" " B.F.		14	5'-6	206
5c3-7	" " B.F. & F.F.		10	Varies	49
5c8-12	" " " " "		10	Varies	48
5d1	Footing Hoops		36	14'-5	541
5g1	Backwall Vert.		54	8'-1	455
4g2	Paving Dowels (Structural Grade)		20	2'-0	27
4h1	Backwall Horiz. B.F. & F.F.		12	28'-3	226
	Pile Spirals Complete 18		~~17~~	9 lbs ea.	~~153~~ 162
				Total	3360 ~~3369~~

BENT BAR DETAIL

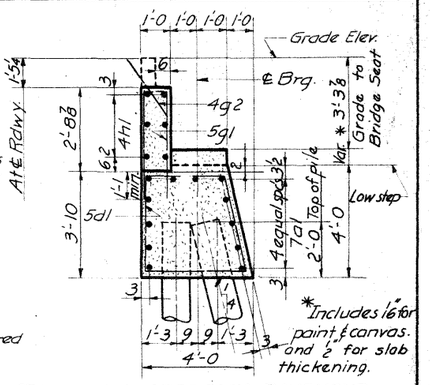


Note: Dimensions are out to out of bar.



REAR ELEVATION

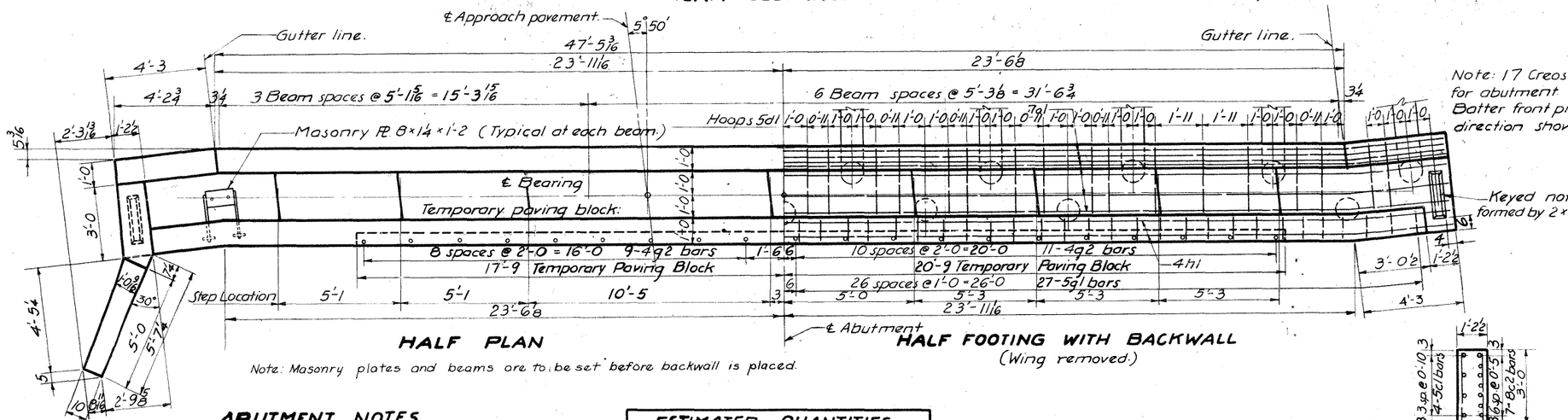
Spirals at the top of each pile. 7 turns of ¼" rod, 21" diameter 3" pitch with 2-⅜ L 0 6 9 spacers punched to hold spiral.



*Includes 1/16" for paint & canvas. and 2" for slab thickening.

SECTION AT ℄ APPROACH PAVEMENT

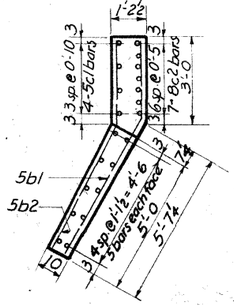
Before placing temporary paving block, bend all 4g2 bars and cover the top of the backwall with tar paper to prevent bond. Paving dowels (4g2) are to be made of structural grade reinforcing steel.



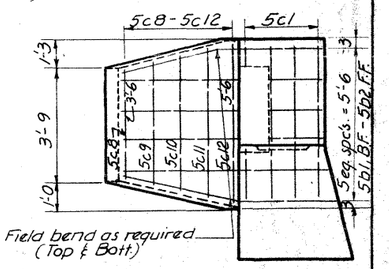
HALF PLAN **HALF FOOTING WITH BACKWALL** (Wing removed.)

Note: Masonry plates and beams are to be set before backwall is placed.

Note: 17 Creosoted piles required for abutment. Batter front piles 1:4 in the direction shown.



WING PLAN
Showing Wing Reinforcing

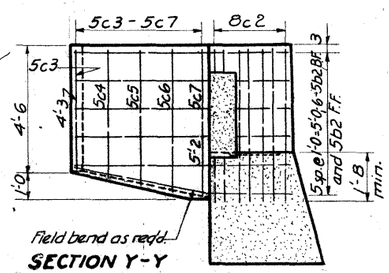


Field bend as required (Top & Bott)

VIEW X-X

ESTIMATED QUANTITIES ONE ABUTMENT

Item		Quantity
Concrete		38.7 c.y.
Reinforcing Steel	3360	~~3360~~ lbs
Creosoted Piling	~~11 @ 55'~~	~~935~~ lin.ft.
Class 20 Excavation		115 c.y.
Granular Backfill Material		100 tons
4" ø Tile Drain		~~7760~~ lin.ft.
Creosoted Piling	Furnish & Drive	768.20 lin.ft.
Creosoted Piling	Haul & Drive	210.50 lin.ft.



Field bend as reqd.

SECTION Y-Y

ABUTMENT NOTES.

All exposed corners of concrete 90° or sharper shall be formed with a ¾" dressed and beveled fillet.

Reinforcing steel shall be securely wired in place before concrete is poured.

Clear distance from face of concrete to near reinforcing bar shall be 12" unless otherwise noted or shown.

Piling are to be driven to full penetration if practicable, but to at least 20 ton minimum but no more than 40 ton maximum bearing value.

Bridge Contractor is to backfill abutments between wings to subgrade elevation with Granular Backfill Material complying with Section 4133 of the specifications.

Oversize holes are to be drilled through fill for piling.

Revised on 3-16-62 - Length of 4" ø Tile Drain corrected.

Design for 5°30' Skew

DUAL 146'-8" x VAR. WIDTH PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES

47'-3½ End Spans — 52'-1 Center Span

Concrete Floor & Substructure — Aluminum Handrail

ABUTMENT DETAILS

SOUTH-LANE WEST-ABUTMENT

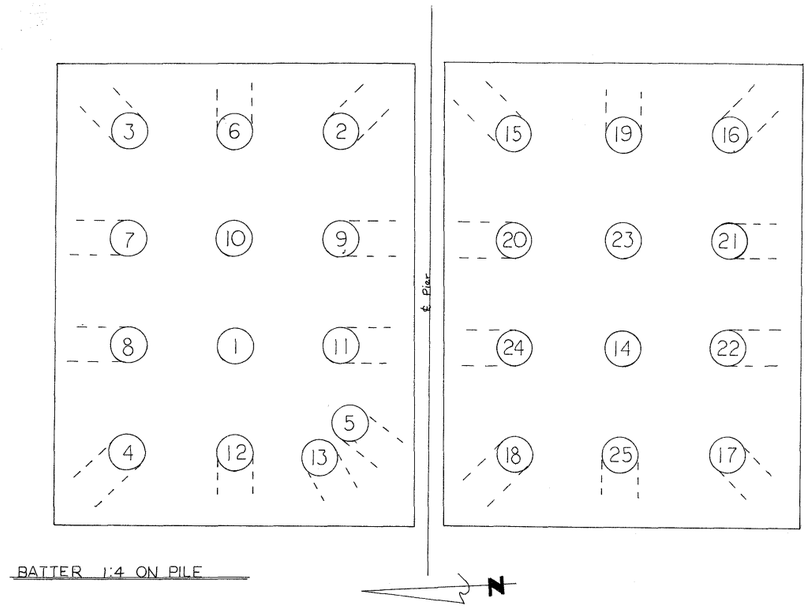
Station 942+55.45 — Project No. I-IG 80-8(16)300

SCOTT COUNTY

Iowa State Highway Commission

February 1961 — Sheet 7 of 19

Design No. 260 — Scott County — File No. 21070

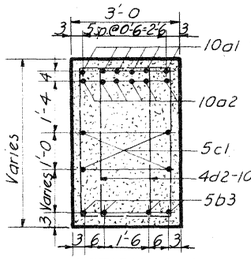


EAST PIER – NORTH LANE

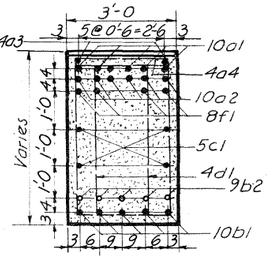
PILE No.	LENGTH	BEARING	
1	31.1	37.8	
2	33.2	36.8	
3	33.9	31.9	
4	33.9	20.8	
5	34.5	6.9	
6	30.6	39.8	SPLITTING
7	30.5	35.8	
8	32.3	30.3	
9	31.9	REFUSE	
10	29.0	REFUSE	
11	28.2	35.8	
12	33.9	25.2	
13	29.4	30.3	
14	33.7	34.7	
15	29.5	31.9	SPLITTING
16	33.7	25.2	
17	33.8	29.9	
18	33.8	19.1	
19	29.8	26.2	
20	30.5	39.3	
21	33.5	24.6	
22	33.5	24.6	
23	30.0	22.0	
24	31.0	39.3	
25	33.7	25.2	

Scott
I-I 6-80-8(16)300
Des. 260
7 of 19

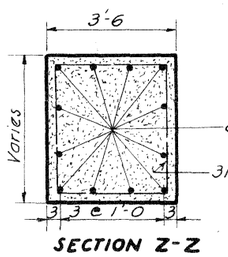
~~Bench Mark: N°96 Sta. 938+340, 259' Lt. R.R. spike in South side of 40" Maple tree, Elev. 731.67~~



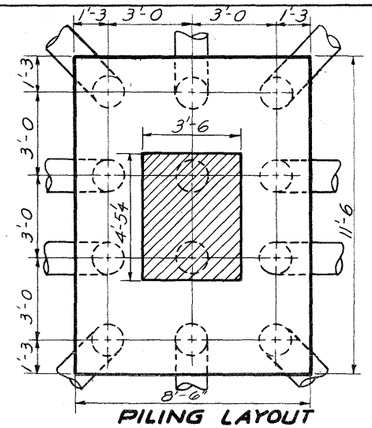
SECTION Y-Y



SECTION X-X



SECTION Z-Z



PILING LAYOUT

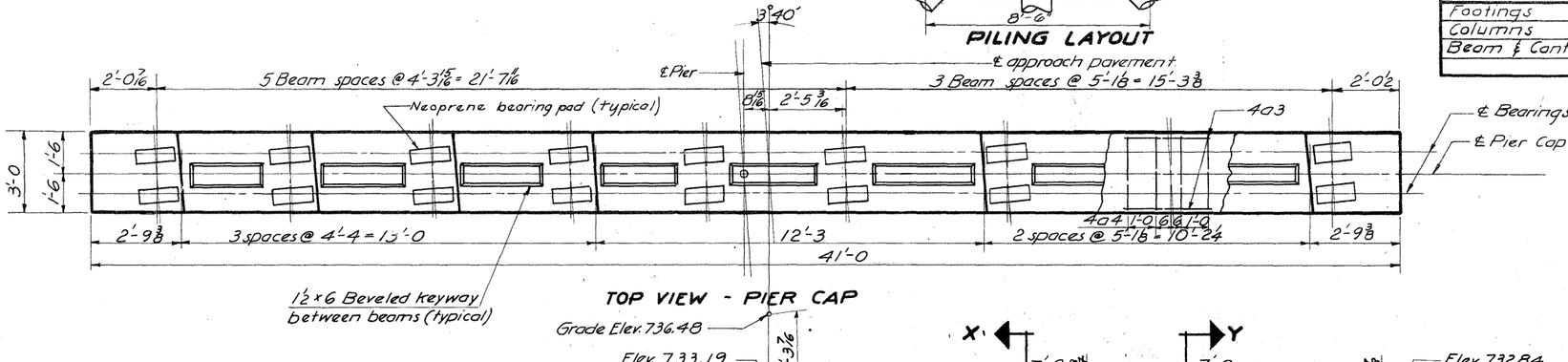
Note: Pile dimensions shown are at the bottom of the footing. 12 creosoted piles are required for each footing. Batter piles 1:4 in the direction indicated.

REINFORCING BAR LIST

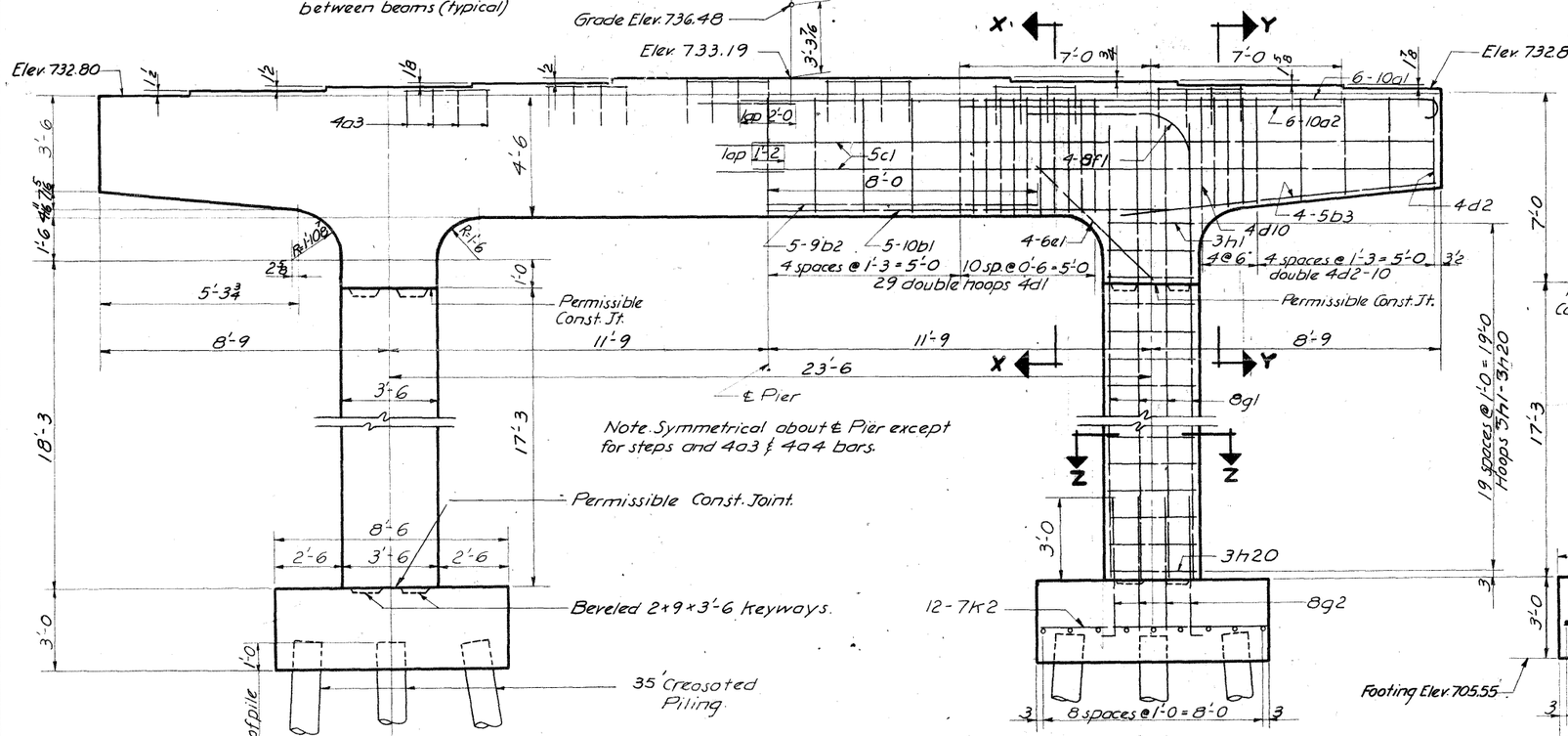
Bar	Location	Shape	N°	Length	Weight
10a1	Beam & Cantilever Longit. Top		12	22'-9	1175
10a2	Cantilever Longit. Top		12	14'-0	723
4a3	Cross Cap (under beams.)		12	3'-6	28
4a4	" " Ties		24	5'-7	90
10b1	Beam Longit. Bott.		5	25'-6	549
9b2	" " "		5	16'-0	272
5b3	Cantilever " "		8	9'-9	81
5c1	Beam & Cantilever Longit. Sides		8	20'-10	174
4d1	Beam Hoops		58	13'-3	513
4d2-10	Cantilever Hoops		36	Varies	310
6e1	Beam Fillet Diagonal		8	6'-0	72
8f1	Column to Beam		8	11'-2	239
8g1	" Vertical		24	23'-0	1474
8g2	" " Dowels		24	6'-0	384
3h1-20	" Hoops		40	Varies	203
7K1	Footing Longit.		18	11'-2	411
7K2	" Transverse		24	8'-2	401
				Total	7099 lb

CONCRETE PLACEMENT QUANTITIES - ONE PIER

Footings	21.0 cy
Columns	16.6 cy
Beam & Cantilevers	22.9 cy
Total	60.5 cy

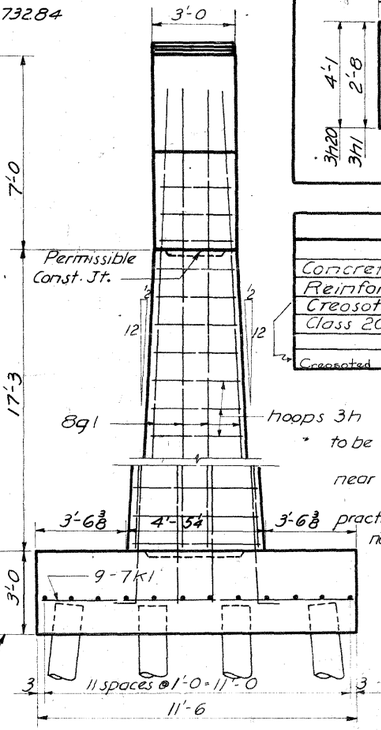


TOP VIEW - PIER CAP



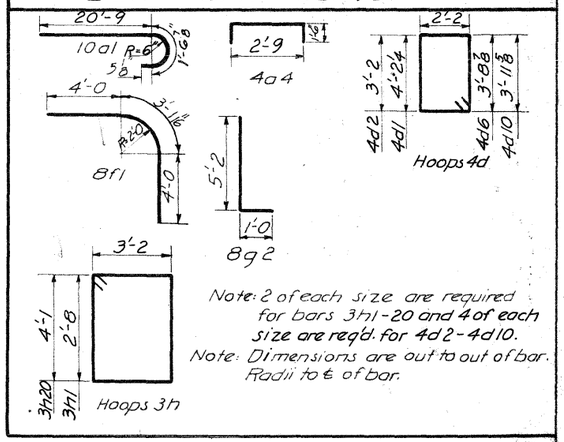
PIER ELEVATION (Looking East.)

Scale: 3/8" = 1'-0



END VIEW

BENT BAR DETAILS



Note: 2 of each size are required for bars 3h1-20 and 4 of each size are req'd. for 4d2-4d10.
Note: Dimensions are out to out of bar. Radii to ℄ of bar.

ESTIMATED QUANTITIES

Item	Quantity.
Concrete	60.5 c.y.
Reinforcing Steel	7099 lbs.
Creosoted Piling ~~24 @ 35'~~	~~840 L.F.~~
Class 20 Excavation	100 c.y.
Creosoted Piling Haul & Drive	838.6 lin ft

PIER NOTES.

All exposed corners of concrete 90° or sharper are to be formed with 3/4" dressed and beveled fillet. Minimum clear distance from face of concrete to near reinforcing bar shall be 2" unless shown otherwise. Piling are to be driven to full penetration if practicable, but to at least 20 ton minimum but no more than 40 ton maximum bearing value.

Design for 3°40' Skew

DUAL 146'-8" x VAR. WIDTH PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES

47'-3 1/2 End Spans 52'-1 Center Span

Concrete Floor & Substructure Aluminum Handrail

PIER DETAILS

NORTH LANE - EAST PIER

Station 942+55.45 Project N° I-IG-80-8(16)300

SCOTT COUNTY

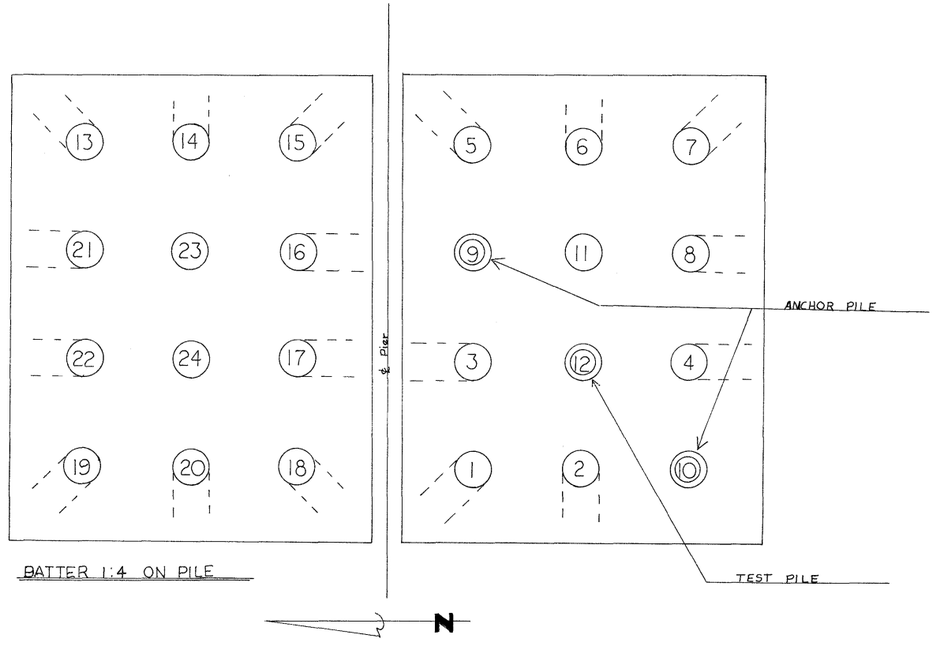
Iowa State Highway Commission

February 1961 Sheet 8 of 19

Design N° 260 Scott County File N° 21070

Designed by: B.F. Traced by: JJP Checked by: AJ

Scott
I-16-80-8(16)300
Des # 260
8 of 19

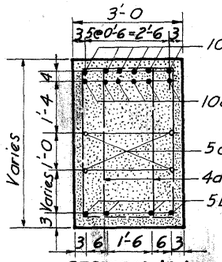


WEST PIER - NORTH LANE

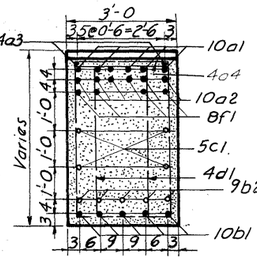
PILE Nº	LENGTH	BEARING
1	28.9	24.7
2	28.8	33.9
3	28.8	26.4
4	29.3	22.1
5	28.8	28.6
6	28.8	31.9
7	28.8	25.8
8	28.8	41.8
9	29.1	26.1
10	28.8	23.3
11	29.0	27.3
12	26.8	20.1
13	29.1	27.1
14	29.1	28.6
15	28.6	26.4
16	28.8	28.6
17	28.2	38.8
18	28.6	25.8
19	29.0	30.2
20	29.0	30.8
21	29.0	31.9
22	29.2	31.9
23	28.8	33.8
24	28.8	22.9

Larry Burkett

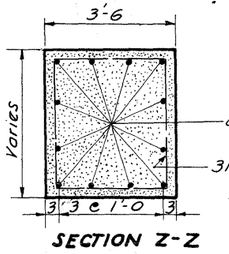
Bench Mark: N° 96 Sta 938+340, 259'Lt RR spike in South side of 40" Maple tree, Elev 731.67



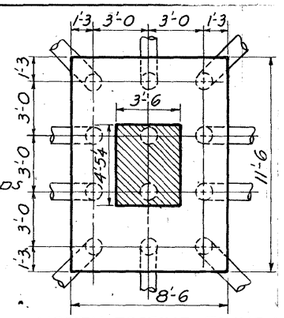
SECTION Y-Y



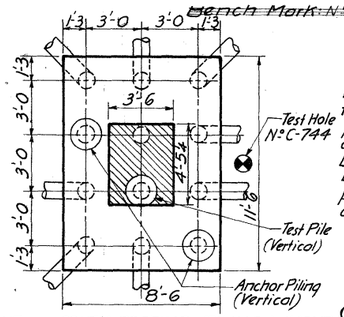
SECTION X-X



SECTION Z-Z



NORTH FOOTING - PILING LAYOUT



SOUTH FOOTING - PILING LAYOUT

CONCRETE PLACEMENT QUANT. ONE PIER	
Footings	21.0 c.y.
Columns	16.6 c.y.
Beam and Cantilevers	24.5 c.y.
Total	62.1 c.y.

PILE INFORMATION:

Pile dimensions shown are at the bottom of the footing. 12 creosoted piles are required for each footing. Test pile and anchor piling are to be driven vertical. Except for anchor piling, perimeter piling are to be battered 1:4 in the direction indicated. Bottom footing elevation 705.43. Test pile and anchor piling shall be left in acceptable condition for footing support.

PILE TESTING PROCEEDURE:

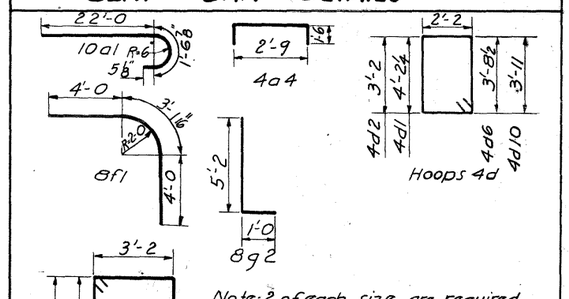
(Refer to South Footing - Piling Layout)

1. Drive all footing piling as shown
2. Then drive Test Pile to 20±1 Tons.
3. The Resident Construction Engineer will notify the Materials Engineer in Ames when the Test Pile is ready for loading.
4. Statically load the test pile to yield.
5. Complete driving of the Test Pile to cut-off elevation. Anchor Piling shall be cut-off after test has been completed.

REINFORCING BAR LIST

Bar	Location	Shape	N°	Length	Weight
10a1	Beam & Cantilever Longit. Top	⊃	12	24'-0	1239
10a2	Cantilever Longit. Top	—	12	14'-0	723
4a3	Cross Cap (under beams.)	—	12	3'-6	28
4a4	" " Ties	⊓	24	5'-7	90
10b1	Beam Longit. Bott.	—	5	27'-0	581
9b2	" " "	—	5	16'-0	272
5b3	Cantilever " "	—	8	10'-3	86
5c1	Beam & Cantilever Longit. Sides	—	8	22'-2	185
4d1	Beam Hoops	▭	58	13'-3	513
4d2-10	Cantilever Hoops	▭	36	Varies	293
6e1	Beam Fillet Diagonal	—	8	6'-0	72
8f1	Column to Beam	—	8	11'-2	239
8g1	" Vertical	—	24	23'-0	1474
8g2	" " Dowels	⊓	24	6'-0	384
3h1-20	" Hoops	▭	40	Varies	201
7K1	Footing Longit.	—	18	11'-2	411
7K2	" Transverse	—	24	8'-2	401
				Total	7192

BENT BAR DETAILS

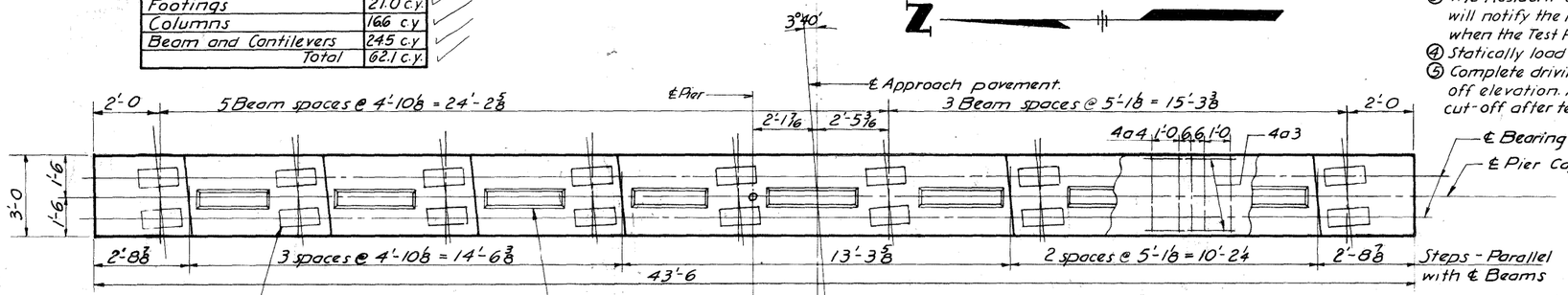


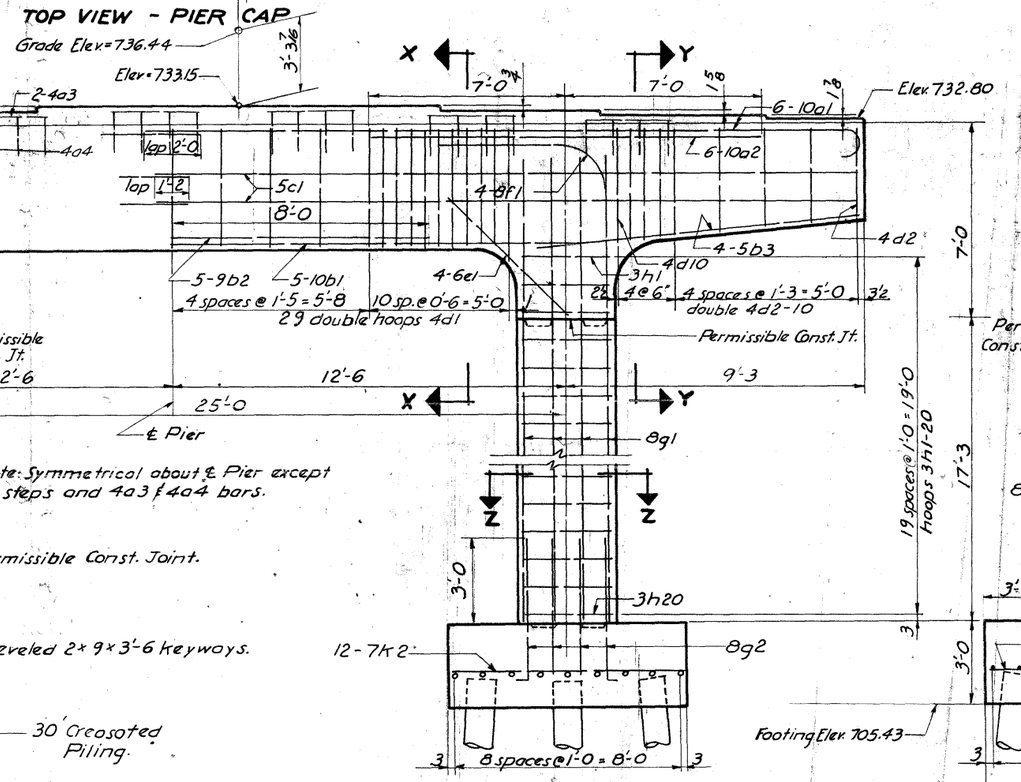
Note: 2 of each size are required for bars 3h1 - 3h20 and 4 of each are required for bars 4d2-10.

Note: Dimensions are out to out of bar. Radii to ℄ of bar.

ESTIMATED QUANTITIES

Item		Quantity
Concrete		62.1 c.y.
Reinforcing Steel		7192 lbs.
Creosoted Piling	~~24@30~~	~~720~~ L.F.
Class 20 Excavation		85 c.y.
Creosoted Piling	Furnish & Drive	717.50 lin. ft.





Note: Symmetrical about ℄ Pier except for steps and 4a3 & 4a4 bars.

Note: Test Pile on the above footing.

PIER ELEVATION (Looking East.)

Scale: ⅜" = 1'-0

END VIEW

Revised 2-19-62 Dimension of hoop 3h1 changed

PIER NOTES.

All exposed corners of concrete 90° or sharper are to be formed with ¾" dressed and beveled fillet.

Minimum clear distance from face of concrete to near reinforcing bar shall be 2" unless shown otherwise.

Piling shall be driven to full penetration if practicable, but to at least 20 ton min. but no more than 40 ton maximum bearing value.

TEST PILE NOTE: The Contractor is to cooperate with the Engineer in the prosecution of the testing and is to assist in setting and removing the test beam. The cost of this work is to be included in the price bid for other items and no separate payment will be made for this work or for delays caused by testing.

Design for 3°40' Skew

DUAL 146'-8" + VAR. WIDTH PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES

47'-3½ End Spans — 52'-1 Center Span

Concrete Floor & Substructure — Aluminum Handrail

PIER DETAILS

NORTH LANE — WEST PIER

Station 942+55.45 — Project N° I-IG-80-8(16)300

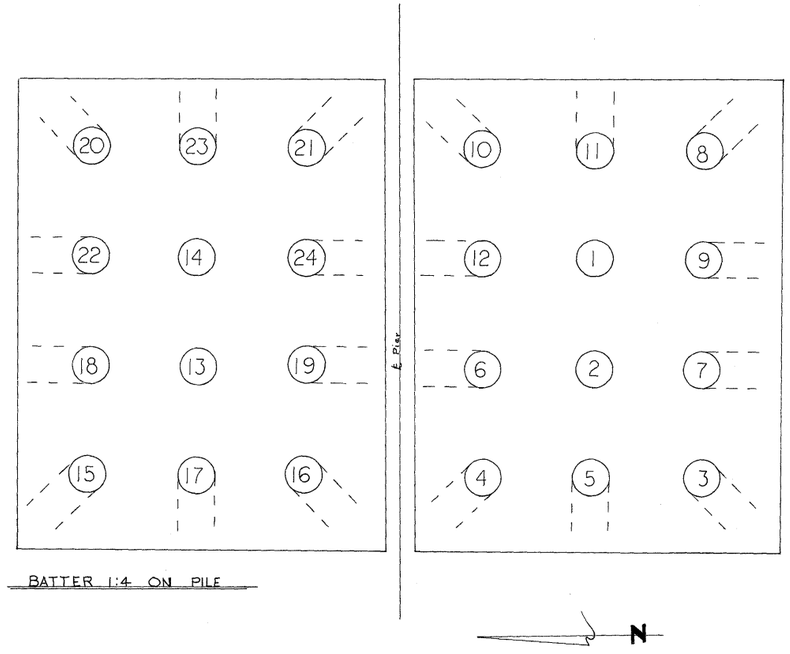
SCOTT COUNTY

Iowa State Highway Commission

February 1961 — Sheet 9 of 19

Design N° 260 — Scott County — File N° 21070

Designed by: B.F. — Traced by: [illegible] — Checked by: [illegible]

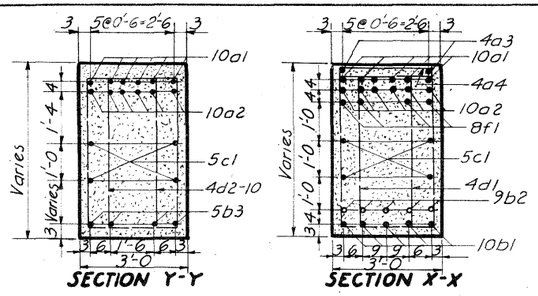


EAST PIER – SOUTH LANE

PILE Nº	LENGTH	BEARING
1	33.8	28.8
2	33.8	38.4
3	33.8	29.2
4	34.0	20.2
5	34.0	27.2
6	33.6	31.1
7	33.6	33.5
8	33.7	40.4
9	33.8	29.0
10	33.8	27.6
11	32.0	39.6
12	33.7	29.0
13	33.7	35.4
14	33.8	27.1
15	33.5	25.0
16	33.6	25.0
17	33.6	25.0
18	33.8	21.8
19	33.5	31.1
20	33.7	25.0
21	33.8	27.1
22	34.2	25.6
23	33.6	25.6
24	33.7	31.1

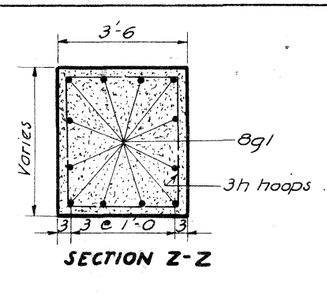
Scott
I-IG-80-8(16)300
Des. 260
9 of 19

~~Bench Mark: No 96 Sta. 938+340, 259' Lt. RR spike in South side of 40" Maple tree, Elev. 731.67~~

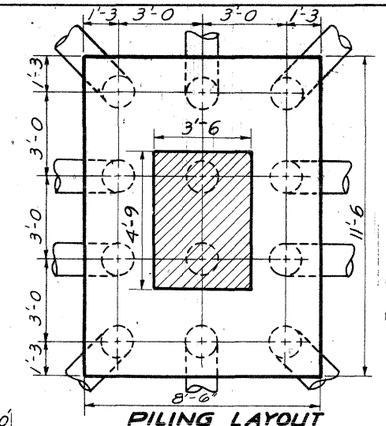


SECTION Y'-Y

SECTION X'-X



SECTION Z-Z



PILING LAYOUT

Note: Pile dimensions shown are at the bottom of the footing. 12 creosoted piles are required for each footing. Batter piles 1:4 in the direction indicated.

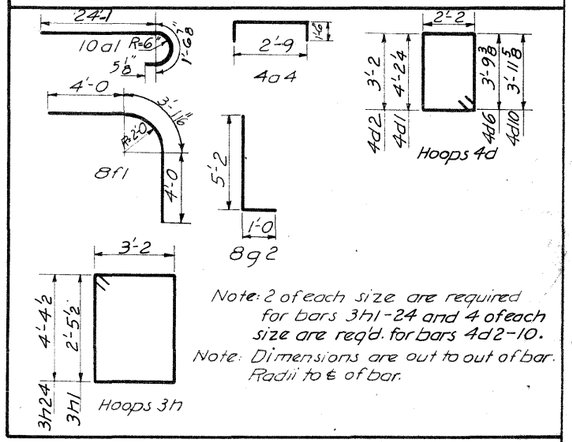
CONCRETE PLACEMENT QUANTITIES - ONE PIER

Footings	21.0 c.y.
Columns	21.1 c.y.
Beam & Cantilevers	27.0 c.y.
Total	69.1 c.y.

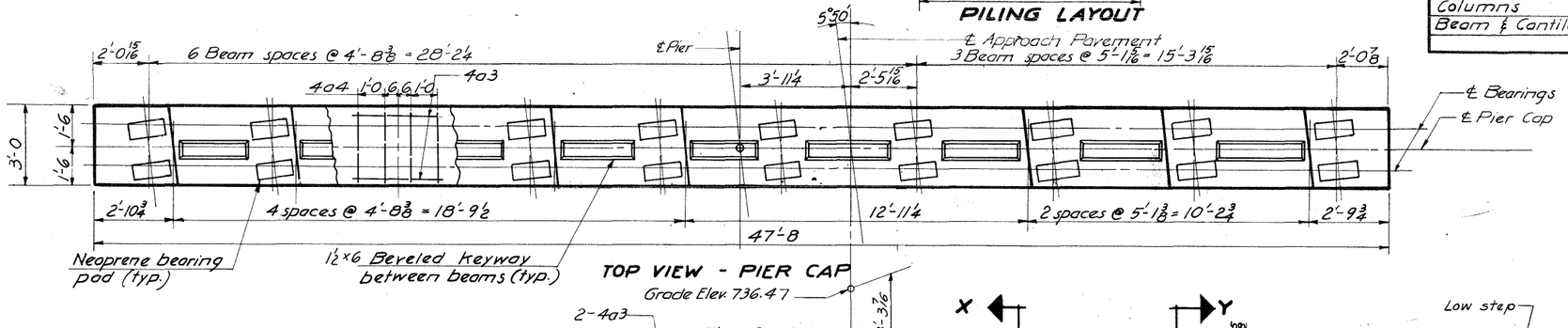
REINFORCING BAR LIST

Bar	Location	Shape	No	Length	Weight
10a1	Beam & Cantilever Longit. Top		12	26'-1	1347
10a2	Cantilever Longit. Top		12	14'-0	723
4a3	Cross Cap (under beams.)		12	3'-6	28
4a4	" " Ties		24	5'-7	90
10b1	Beam Longit. Bott.		5	29'-0	624
9b2	" " "		5	16'-0	272
5b3	Cantilever " "		8	11'-4	95
5c1	Beam & Cantilever Longit. Sides		8	24'-3	202
4d1	Beam Hoops.		58	13'-3	513
4d2-10	Cantilever Hoops		36	Varies	294
6e1	Beam Fillet Diagonal		8	6'-0	72
8f1	Column to Beam		8	11'-2	239
8g1	" Vertical		24	27'-0	1730
8g2	" " Dowels		24	6'-0	384
3h1-24	" Hoops		48	Varies	245
7K1	Footing Longit.		18	11'-2	411
7K2	" Transverse		24	8'-2	401
				Total	7670

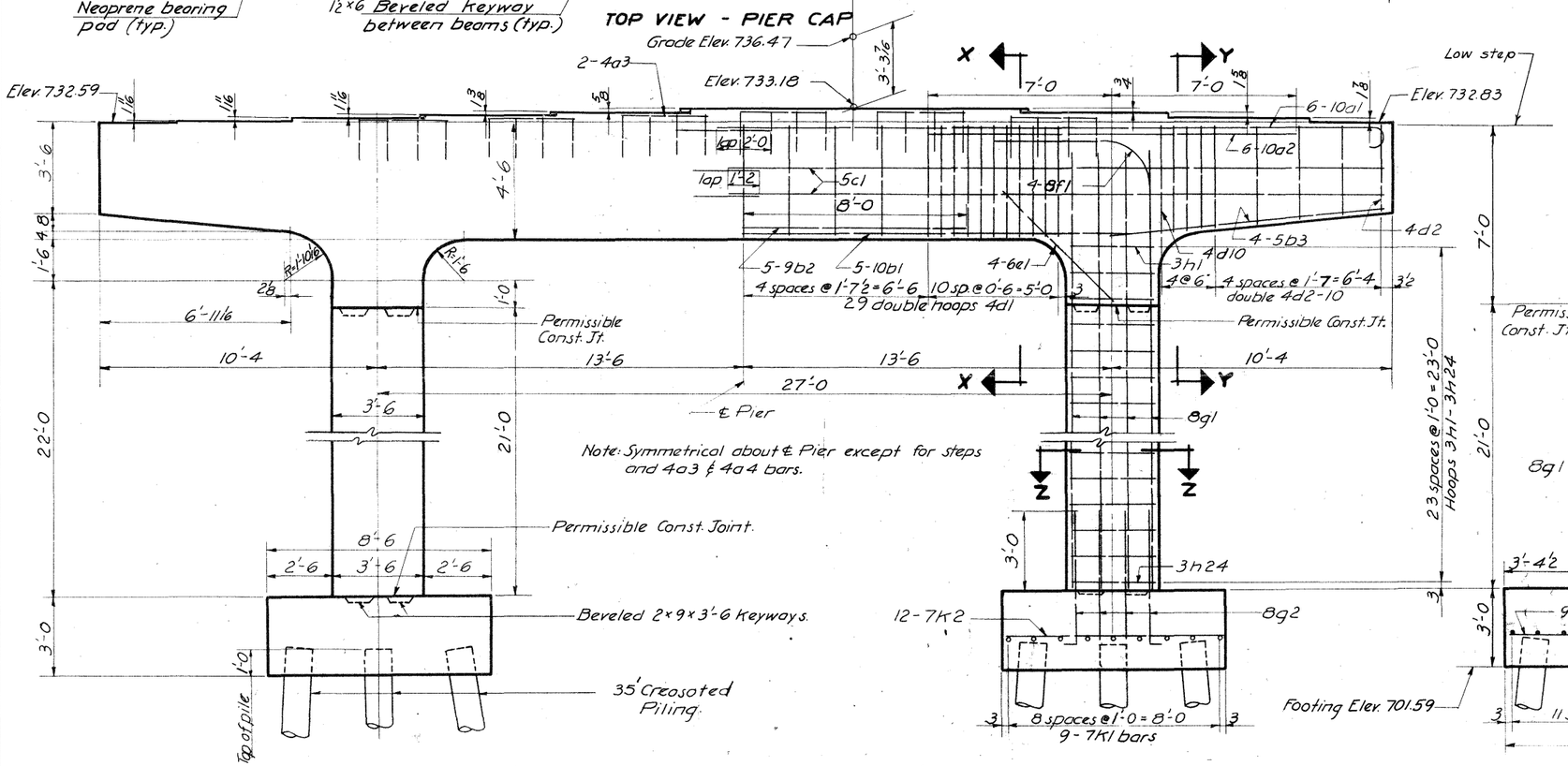
BENT BAR DETAILS



Note: 2 of each size are required for bars 3h1-24 and 4 of each size are req'd. for bars 4d2-10.
Note: Dimensions are out to out of bar. Radii to ℄ of bar.



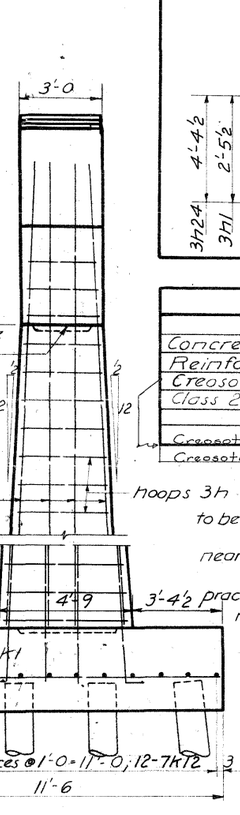
TOP VIEW - PIER CAP



Note: Symmetrical about ℄ Pier except for steps and 4a3 & 4a4 bars.

PIER ELEVATION (Looking West)

Scale: 3/8" = 1'-0



END VIEW

ESTIMATED QUANTITIES

Item		Quantity
Concrete		69.1 c.y. ✓
Reinforcing Steel		7670 lbs. ✓
Creosoted Piling	~~24 @ 35'~~	~~840 L.F.~~
Class 20 Excavation		100 c.y.
Creosoted Piling	Furnish & Drive	280.0 lin.ft.
Creosoted Piling	Haul & Drive	558.6 lin.ft.

PIER NOTES.

All exposed corners of concrete 90° or sharper are to be formed with ¾" dressed and beveled fillet.
Minimum clear distance from face of concrete to near reinforcing bar shall be 2" unless shown otherwise.
Piling are to be driven to full penetration if practicable, but to at least 20 ton minimum but no more than 40 ton maximum bearing value.

Over

Design for 5°50' Skew

DUAL 146'-8" x VAR. WIDTH PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES

47'-3½ End Spans 52'-1 Center Span
Concrete Floor & Substructure Aluminum Handrail

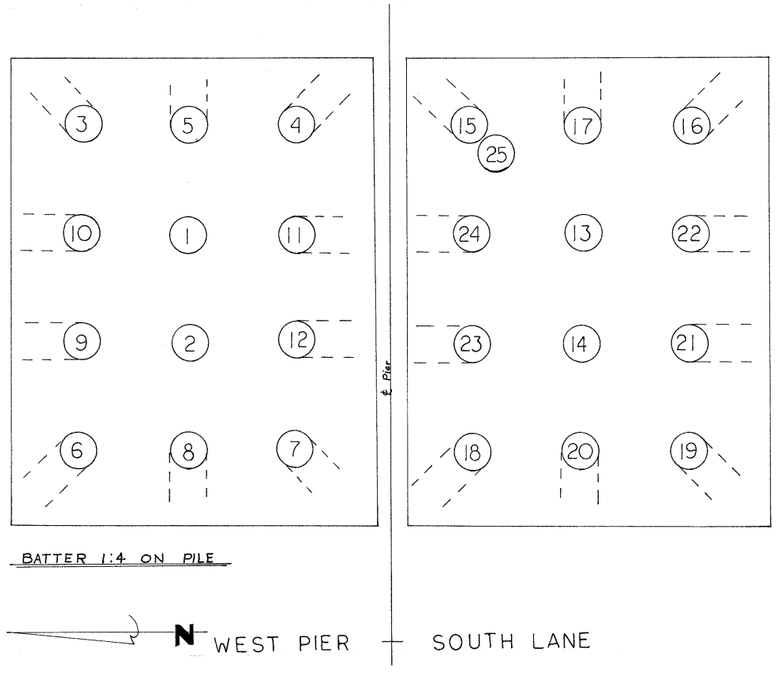
PIER DETAILS

SOUTH - LANE EAST - PIER
Station 942+55.45 Project No I-IG-80-8(16)300

SCOTT COUNTY

Iowa State Highway Commission
February 1961 Sheet 10 of 19
Design No 260 Scott County File No 21070

Designed by: B.F. Traced by: JJP Checked by: [illegible]



BATTER 1:4 ON PILE

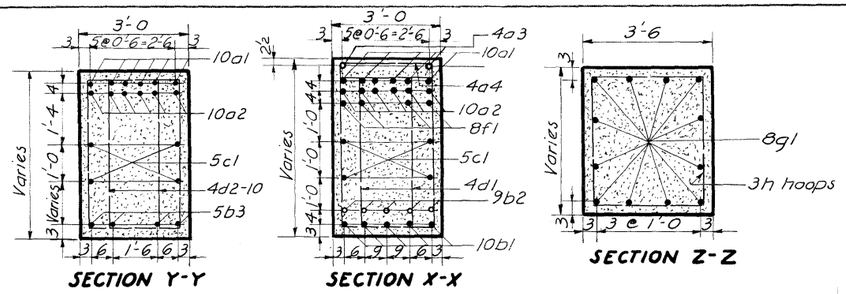
N

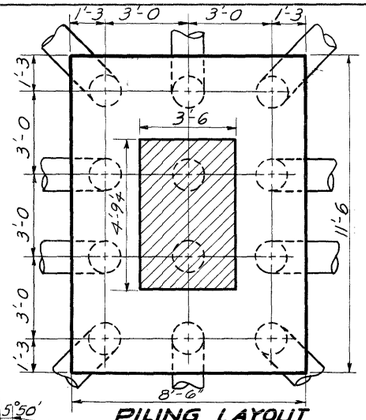
WEST PIER — SOUTH LANE

PILE Nº	LENGTH	BEARING
1	29.0	28.6
2	28.6	34.7
3	29.2	20.9
4	29.5	20.9
5	28.8	20.6
6	28.8	25.8
7	28.9	27.1
8	29.0	32.9
9	29.0	28.8
10	29.0	30.7
11	28.7	24.2
12	28.6	25.6
13	28.3	24.3
14	28.9	25.6
15	29.2	13.9
16	28.0	23.0
17	28.7	18.4
18	28.7	21.7
19	28.6	24.7
20	28.7	23.6
21	28.6	20.1
22	28.4	27.1
23	28.7	24.2
24	28.6	23.5
25	29.0	22.8

Scott
I-IG-80-8(16)300
Des- 260
10 - of 19

~~Bench Mark N° 96 Sta 938+340, 25.9' Lt. RR spike in South side of 40" Maple tree, Elev. 731.67~~





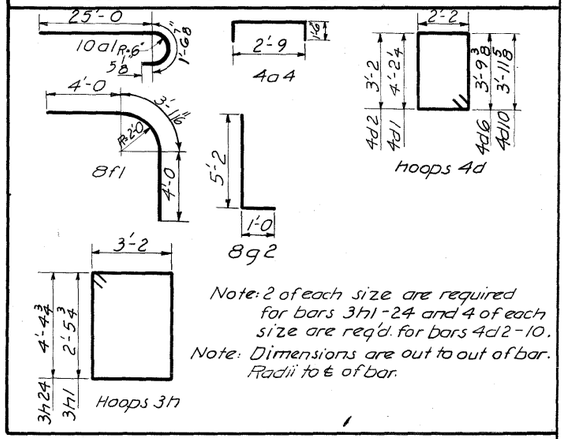
Note: Pile dimensions shown are at the bottom of the footing. 12 creosoted piles are required for each footing. Batter piles 1:4 in the direction indicated.

CONCRETE PLACEMENT QUANTITIES - ONE PIER	
Footings	21.0 c.y.
Columns	21.4 c.y.
Beam & Cantilevers	28.2 c.y.
Total	70.6 c.y.

REINFORCING BAR LIST

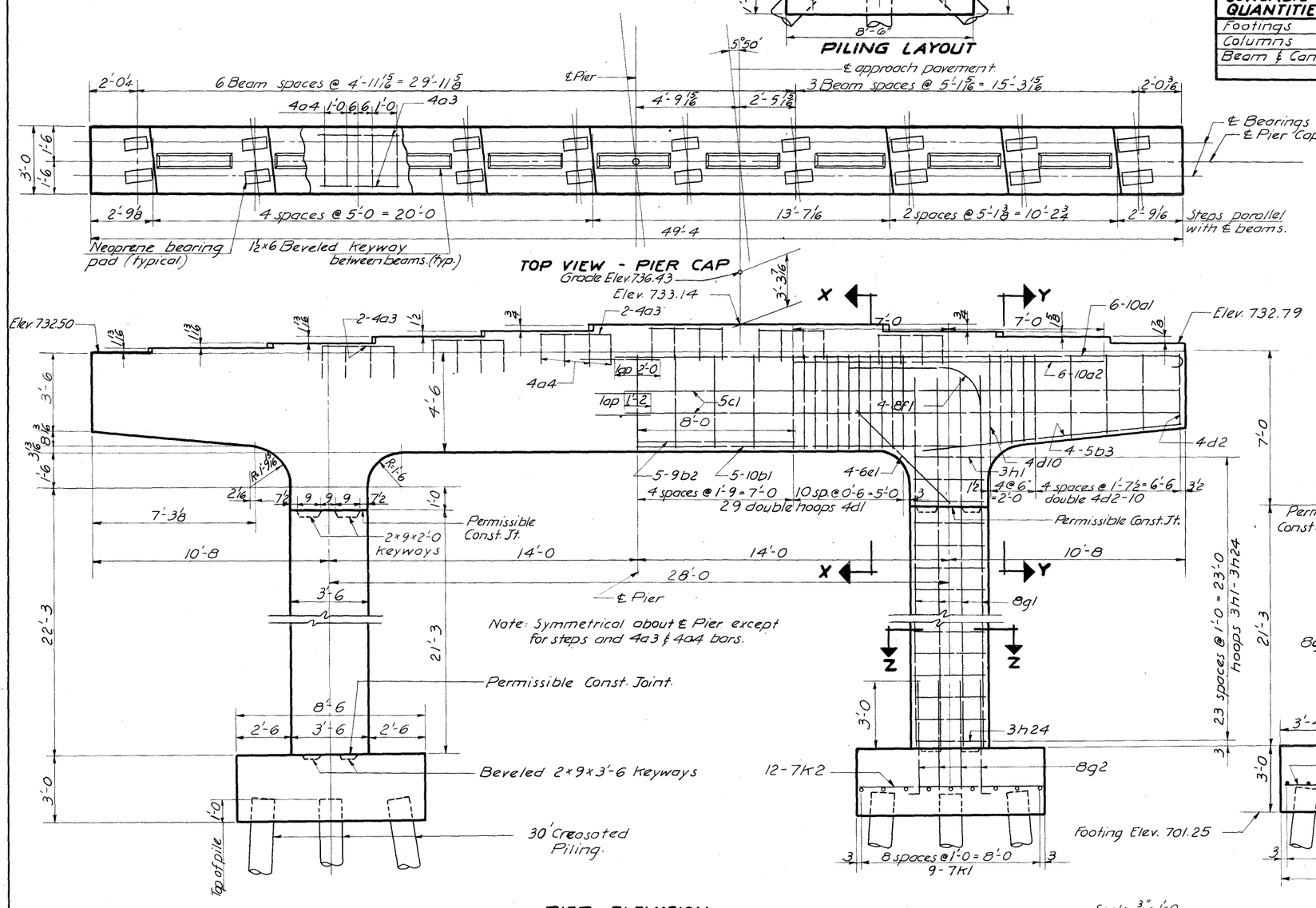
Bar	Location	Shape	N°	Length	Weight
10a1	Beam & Cantilever Longit. Top		12	27'-0	1394
10a2	Cantilever Longit. Top		12	14'-0	723
4a3	Cross Cap (under beams.)		12	3'-6	28
4a4	" " Ties		24	5'-7	90
10b1	Beam Longit. Bott.		5	30'-0	645
9b2	" " "		5	16'-0	272
5b3	Cantilever " "		8	11'-6	96
5c1	Beam & Cantilever Longit. Sides		8	25'-0	209
4d1	Beam Hoops.		58	13'-3	513
4d2-10	Cantilever Hoops		36	Varies	294
6e1	Beam Fillet Diagonal		8	6'-0	72
8f1	Column to Beam		8	11'-2	239
8g1	" Vertical		24	27'-0	1730
8g2	" " Dowels		24	6'-0	384
3h1-24	" Hoops		48	Varies	250
7k1	Footing Longit.		18	11'-2	411
7k2	" Transverse		24	8'-2	401
			Total		7751 lb

BENT BAR DETAILS



Note: 2 of each size are required for bars 3h1-24 and 4 of each size are req'd. for bars 4d2-10.

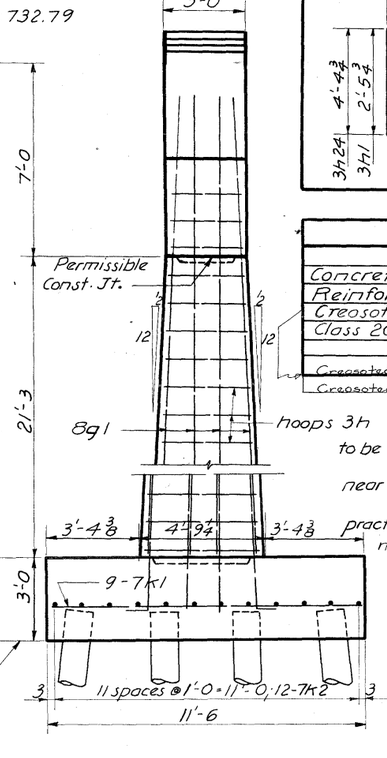
Note: Dimensions are out to out of bar. Radii to ℄ of bar.



Note: Symmetrical about ℄ Pier except for steps and 4a3 & 4a4 bars.

PIER ELEVATION
(Looking West.)

Scale: ⅜" = 1'-0



END VIEW

ESTIMATED QUANTITIES

Item		Quantity.
Concrete		70.6 c.y.
Reinforcing Steel		7751 lbs.
Creosoted Piling	~~24@30'~~	~~720 L.F.~~
Class 20 Excavation		85 c.y.
Creosoted Piling	Furnish & Drive	30000 lin.ft.
Creosoted Piling	Haul & Drive	44735 lin.ft.

PIER NOTES.

All exposed corners of concrete 90° or sharper are to be formed with ¾" dressed and beveled fillet. Minimum clear distance from face of concrete to near reinforcing bar shall be 2" unless shown otherwise. Piling are to be driven to full penetration if practicable, but to at least 20 ton minimum. but no more than 40 ton maximum bearing value.

Design for 5°50' Skew

DUAL 146'-8" x VAR. WIDTH PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES

47'-3½ End Spans 52'-1 Center Span

Concrete Floor & Substructure Aluminum Handrail

PIER DETAILS

SOUTH-LANE WEST-PIER

Station 942+55.45 Project N° I-IG-80-8(16)300

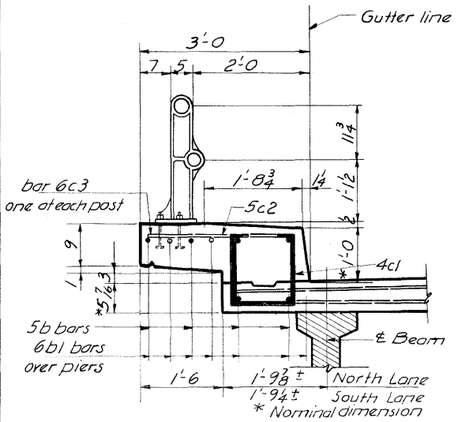
SCOTT COUNTY

Iowa State Highway Commission

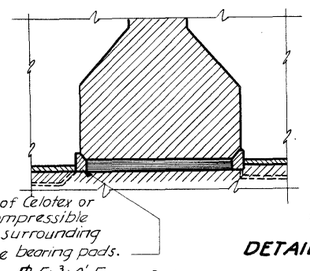
February 1961 Sheet 11 of 19

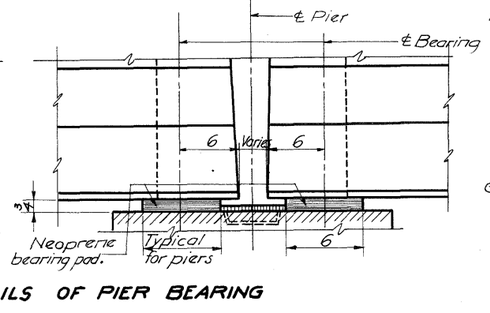
Design N° 260 Scott County File N° 21070

Designed by: B.F. Traced by: ~~TG~~ Checked by: ~~M~~

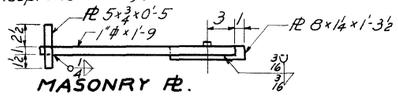


CURB & RAIL DETAIL
Scale: 3/4" = 1'-0

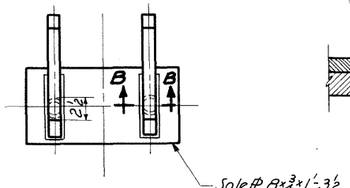




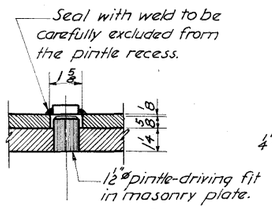
DETAILS OF PIER BEARING



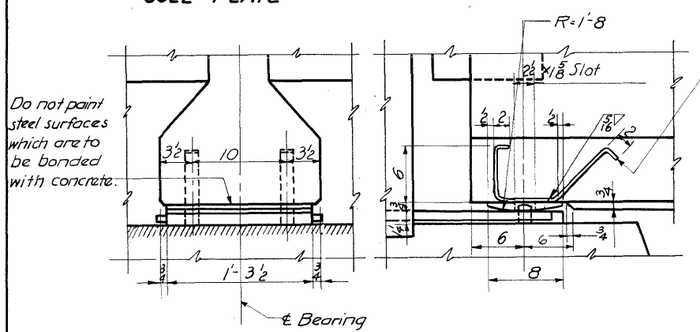
MASONRY PL.



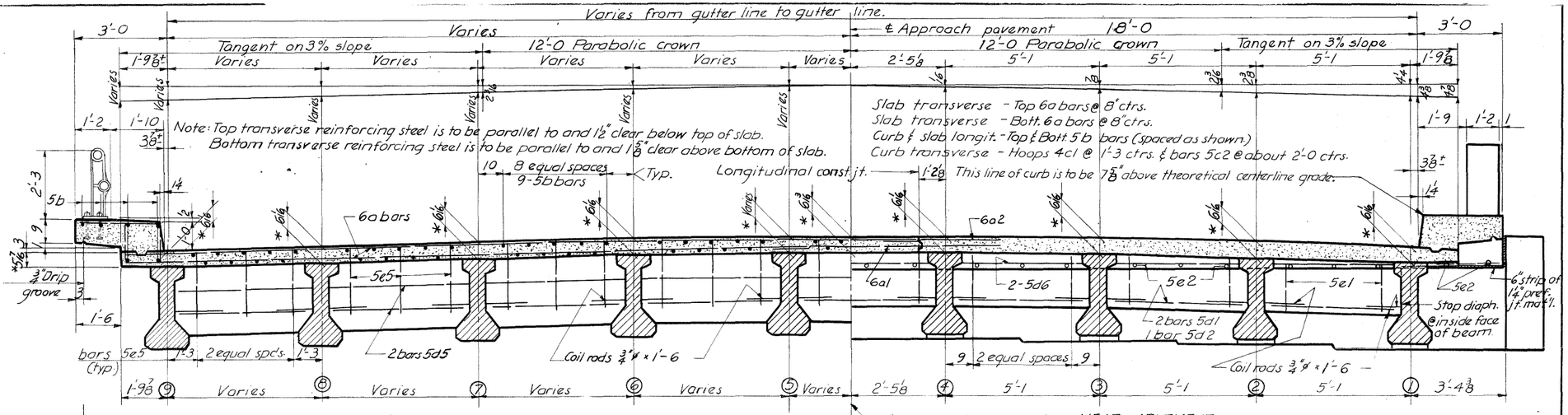
SOLE PLATE



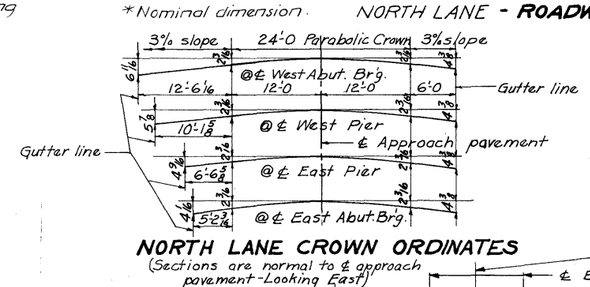
SECTION B-B



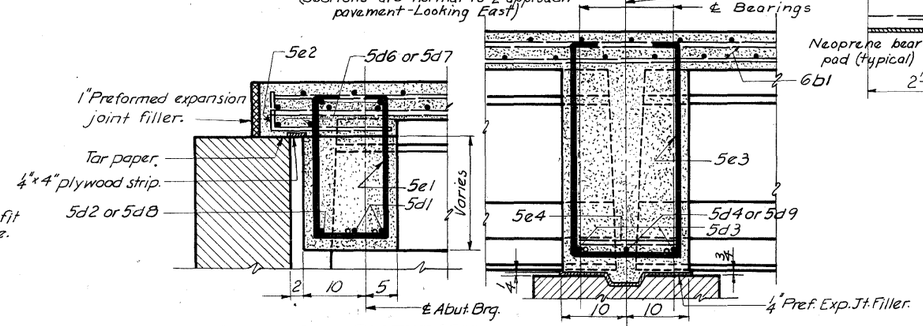
DETAILS OF CONCRETE ABUTMENT BEARING



*Nominal dimension. NORTH LANE - **ROADWAY SECTION** - LOOKING EAST

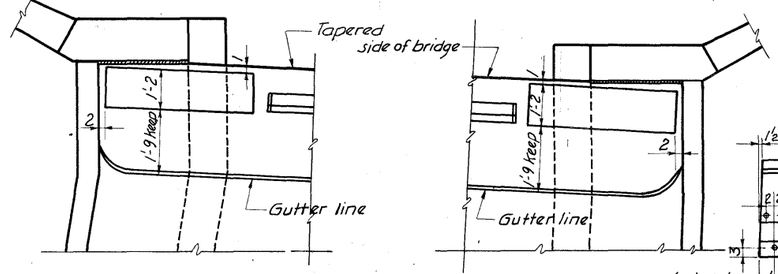


NORTH LANE CROWN ORDINATES
(Sections are normal to ℄ approach pavement - Looking East)

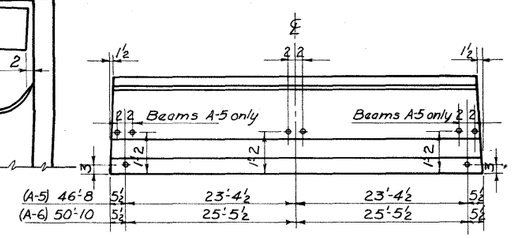


ABUTMENT DIAPHRAGM
(Section normal to ℄ abut. brg.)

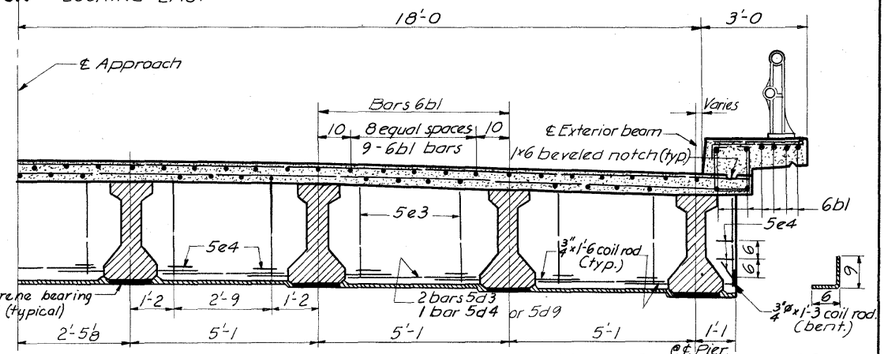
PIER DIAPHRAGM
Scale: 3/4" = 1'-0 (Section normal to ℄ Pier)



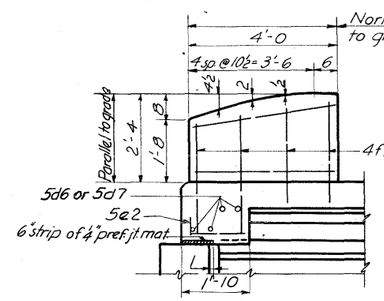
PLAN VIEW - END POST LAYOUT
Scale: 1/2" = 1'-0



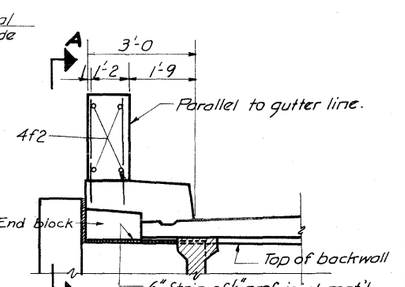
LOCATION OF BEAM COIL TIES



PART ROADWAY SECTION NEAR PIER - TYPICAL FOR BOTH LANES



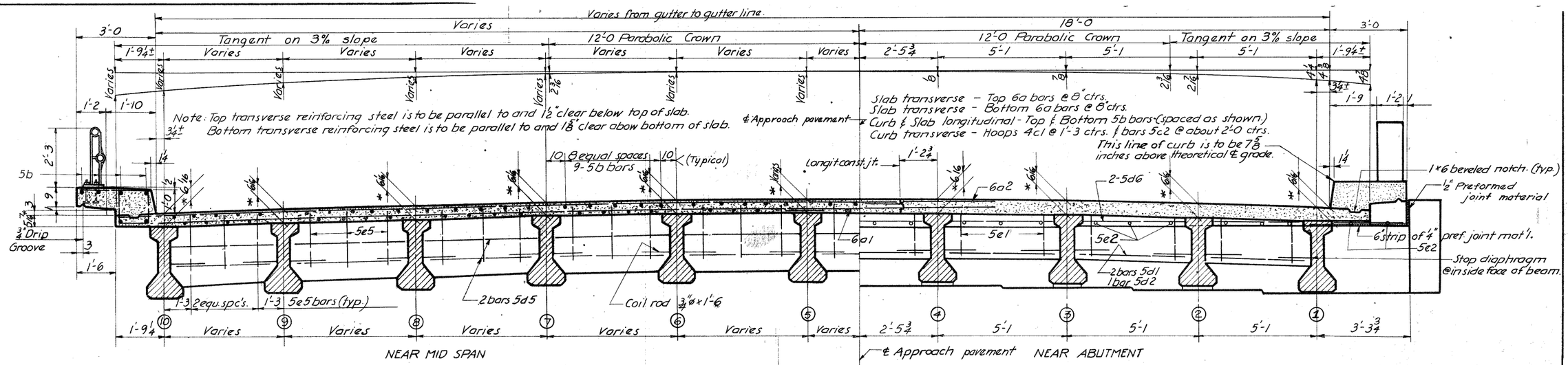
VIEW A-A
(Wing not shown.)



END POST DETAILS

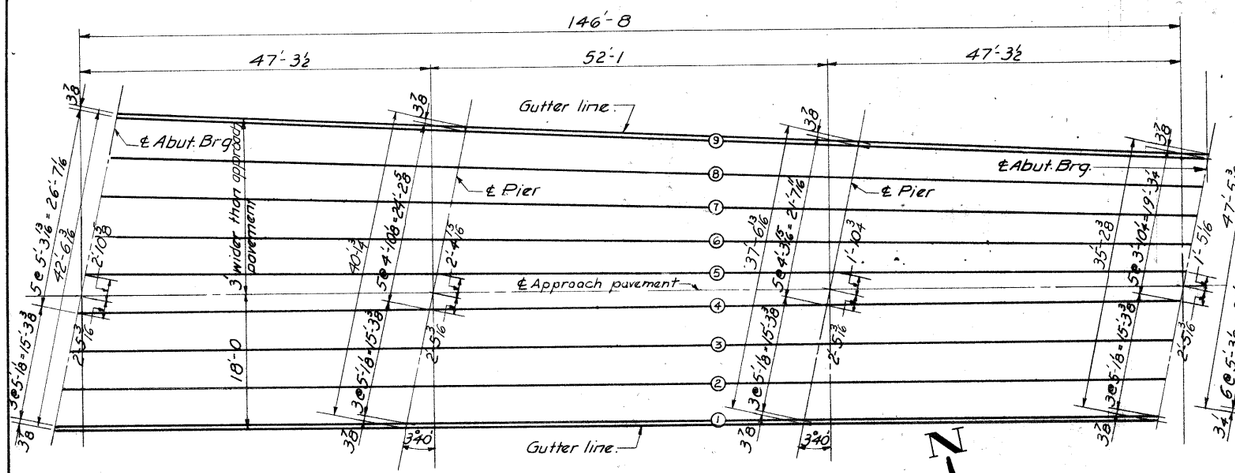
Design for Skewed
DUAL 146'-8 × VAR. WIDTH PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES
47'-3 1/2 End Spans 52'-1 Center Span
Concrete Floor & Substructure Aluminum Handrail
SUPERSTRUCTURE DETAILS
Station: 942 + 55.45 Project No. I-IG-80-8(16)300
SCOTT COUNTY
Iowa State Highway Commission
February 1961 Sheet 12 of 19
Design 260 Scott County File No. 21070

Designed by: B. F Traced by: [illegible] Checked by: [illegible]

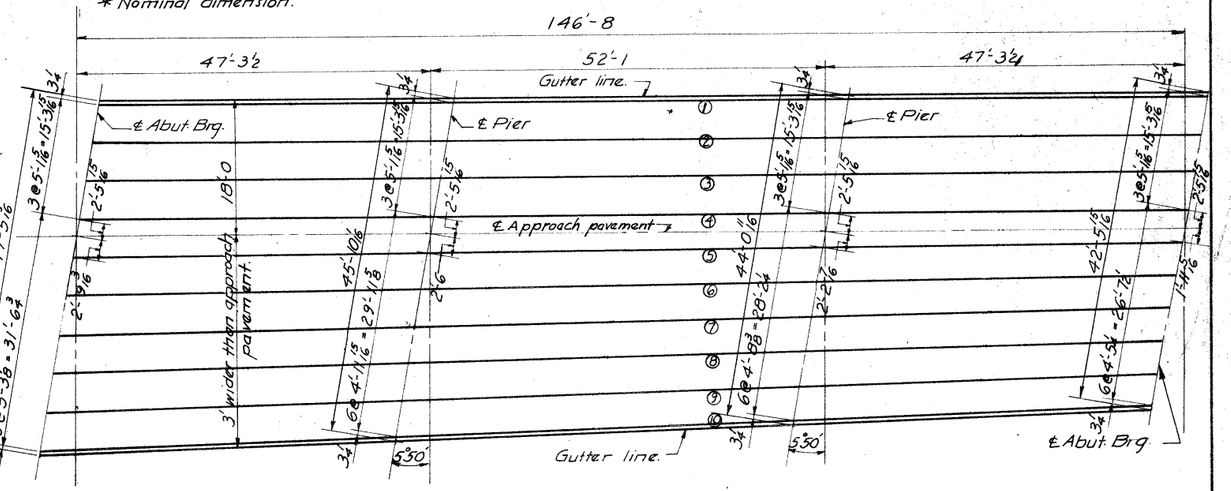


SOUTH LANE - **ROADWAY SECTION** - LOOKING WEST

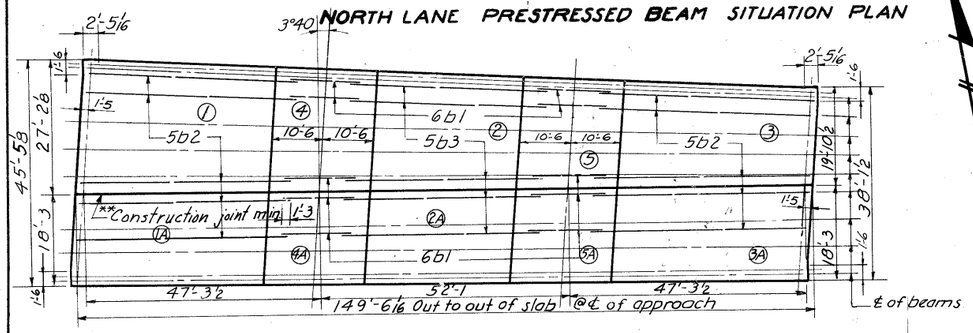
* Nominal dimension.



SOUTH LANE PRESTRESSED BEAM SITUATION PLAN



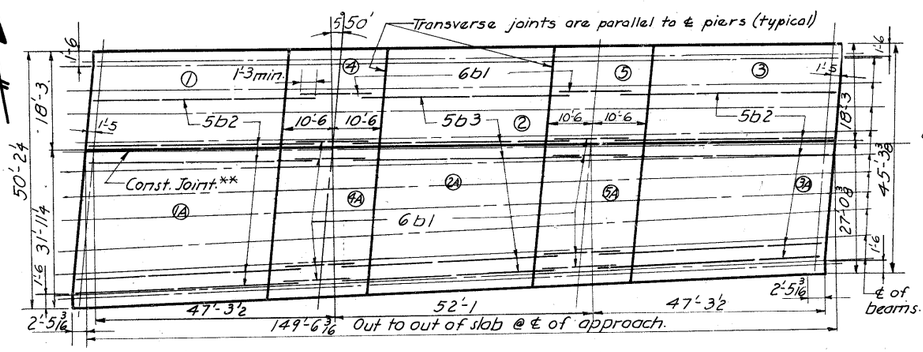
NORTH LANE PRESTRESSED BEAM SITUATION PLAN



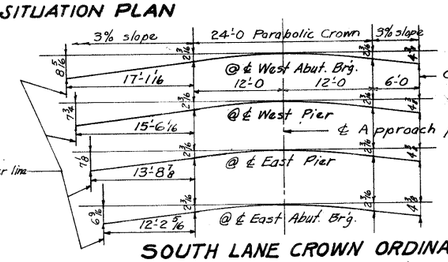
NORTH-LANE **LONGITUDINAL REINFORCING LAYOUT & CONCRETE SLAB PLACEMENT**

** Longitudinal construction joints are parallel to ℄ approach pavement.

N



SOUTH-LANE **LONGITUDINAL REINFORCING LAYOUT & CONCRETE SLAB PLACEMENT**



SOUTH LANE CROWN ORDINATES
(Sections are normal to ℄ approach pavement)
(Looking West)

Note: Encircled numbers indicate slab placement sequence. Pier diaphragms are to be placed with slab sections. Curb may be placed continuously. Alternate procedures for placing 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.

Design for Skewed

DUAL 146'-8 × VAR. WIDTH PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES

47'-3½ End Spans — 52'-1 Center Span

Concrete Floor & Substructure — Aluminum Handrail

SUPERSTRUCTURE DETAILS

Station 942+55.45 — Project No. I-IG-80-8(16)300

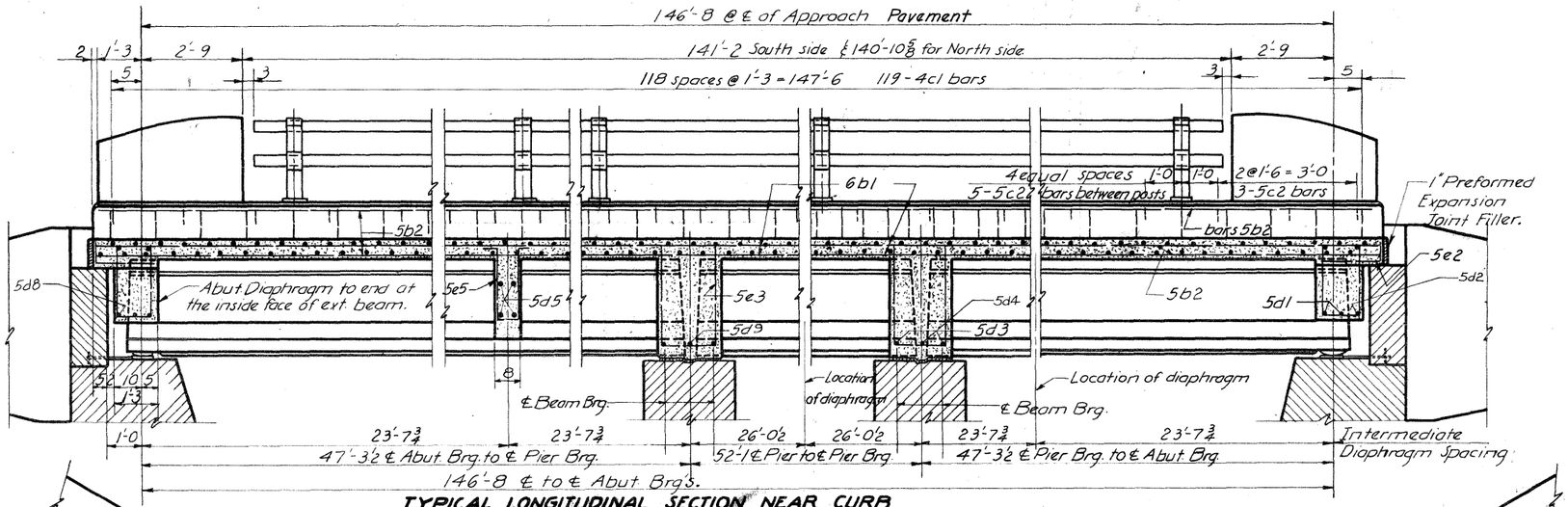
SCOTT COUNTY

Iowa State Highway Commission

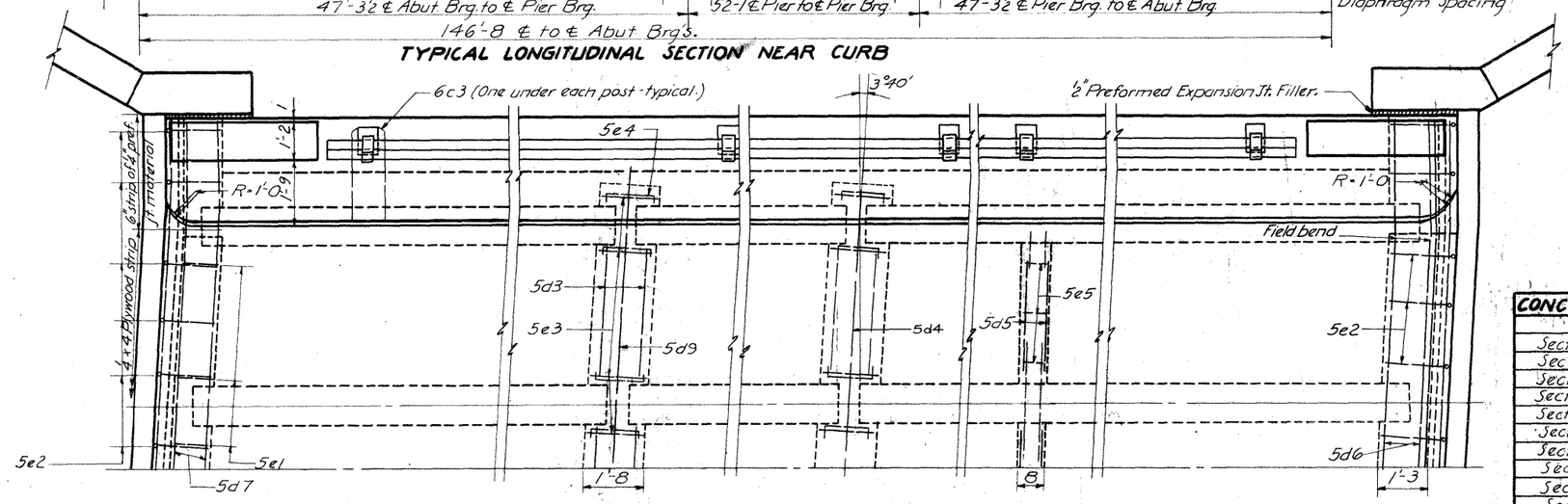
February 1961 — Sheet 3 of 19

Design No. 260 — Scott County — File No. 21070

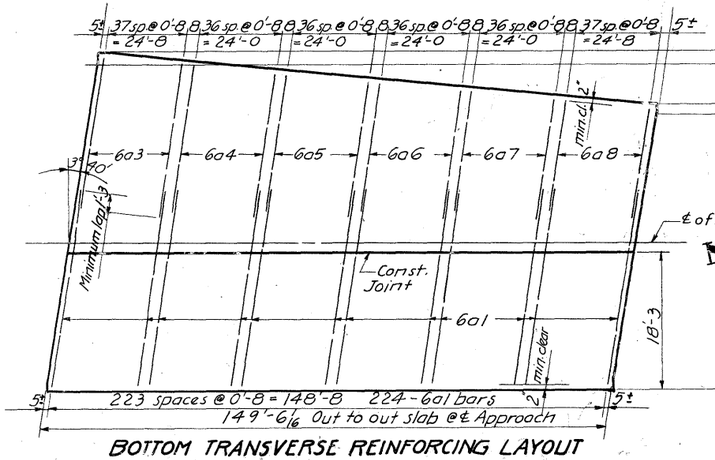
Designed by R.E. — Traced by RC — Checked by W.W.



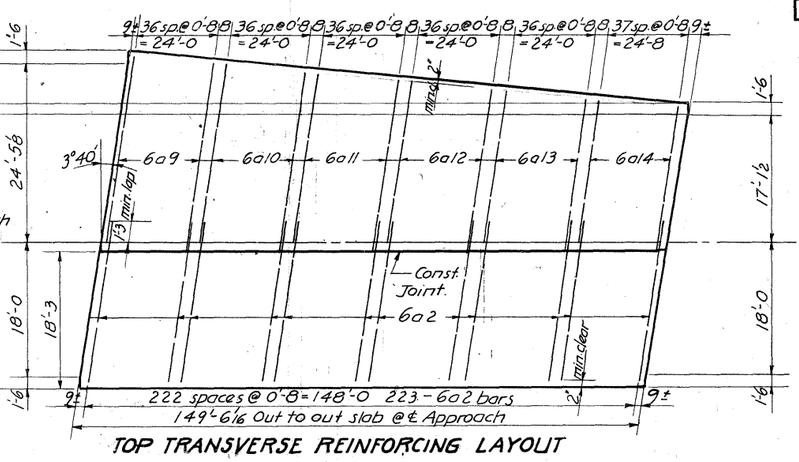
TYPICAL LONGITUDINAL SECTION NEAR CURB



PART PLAN

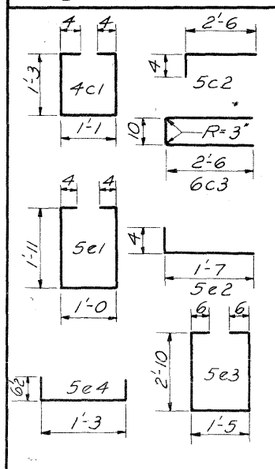


BOTTOM TRANSVERSE REINFORCING LAYOUT



TOP TRANSVERSE REINFORCING LAYOUT

BAR DETAILS



REINFORCING STEEL - SUPERSTRUCTURE

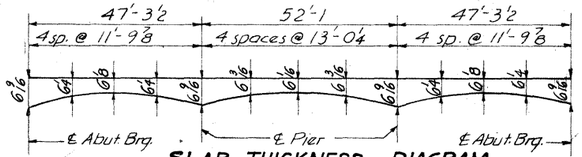
Bar	Location	Shape	No	Length	Weight
6a1	Slab Transv. Bott.	—	224	22'-9	7654
6a2	" " Top	L	223	21'-0	7034
6a3	" " Bott.	—	38	24'-3	1384
6a4	" " "	—	37	23'-0	1278
6a5	" " "	—	37	21'-9	1209
6a6	" " "	—	37	20'-6	1139
6a7	" " "	—	37	19'-3	1070
6a8	" " "	—	38	18'-0	1027
6a9	" " Top	—	37	25'-6	1417
6a10	" " "	—	37	24'-2	1343
6a11	" " "	—	37	23'-0	1278
6a12	" " "	—	37	21'-10	1213
6a13	" " "	—	37	20'-8	1149
6a14	" " "	—	38	19'-6	1113
6b1	Slab & Curb Longit. (Over Piers)	—	194	20'-8	6022
5b2	" " "	—	168	40'-0	7009
5b3	" " "	—	84	34'-0	2979
4c1	Curb Hoops	□	238	3'-11	623
5c2	" Transv.	—	192	2'-9	551
6c3	Rail Post Anchors	□	38	5'-6	314
5d1	Abut. Diaphragm - Horiz.	—	32	3'-2	106
5d2	" " East "	—	1	33'-6	35
5d3	Pier " "	—	32	2'-9	92
5d4	" " East "	—	1	38'-3	40
5d5	Intermediate " "	—	96	3'-3	325
5d6	Abut. " East "	—	8	27'-0	175
5d7	" " West "	—	8	24'-9	207
5d8	" " West "	—	2	21'-3	44
5d9	Pier " West "	—	2	21'-3	44
5e1	Abut. Diaphragm Hoops	□	32	5'-2	172
5e2	" " Top	L	56	1'-10	107
5e3	Pier " Hoops	□	36	7'-9	291
5e4	" " Ties	—	44	2'-2	99
5e5	Intermediate Diaph. Ties	—	72	4'-5	332
4f1	End Post Vert.	—	32	2'-10	61
4f2	" " Horiz.	—	16	3'-9	40
				Total	48976

CONCRETE PLACEMENT QUANT.

Item	Quantity
Section 1	23.7 c.y.
Section 1A	16.0
Section 2	14.9
Section 2A	11.5
Section 3	18.1
Section 3A	16.0
Section 4	13.9
Section 4A	10.3
Section 5	12.4
Section 5A	10.3
Curbs (Includes end blocks @ abuts)	30.0
End Posts	1.5
Total	178.6 c.y.

ESTIMATED QUANTITIES - SUPERSTR.

Item	Quantity
Concrete	178.6 c.y.
Reinforcing Steel	48,976 lbs.
46'-8 (A-5) Preten. Prestressed Conc. Beam	18 bm.
50'-10 (A-6) Preten. Prestressed Conc. Beam	9 bm.
Aluminum Handrail (℄ to ℄ End Posts)	279.0 lin ft.



SLAB THICKNESS DIAGRAM

Note: The slab thicknesses shown are based on the anticipated beam camber remaining after placing slab and are not guaranteed for construction. To meet final grade line, slab is to be thickened to compensate for deficient beam camber and thinned a max. of '8" for excess beam camber.

Design for 3°40' Skew

DUAL 146'-8" x VAR. WIDTH PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES

47'-3½ End Spans 52'-1 Center Span

Concrete Floor & Substructure - Aluminum Handrail

NORTH LANE SUPERSTRUCTURE DETAILS

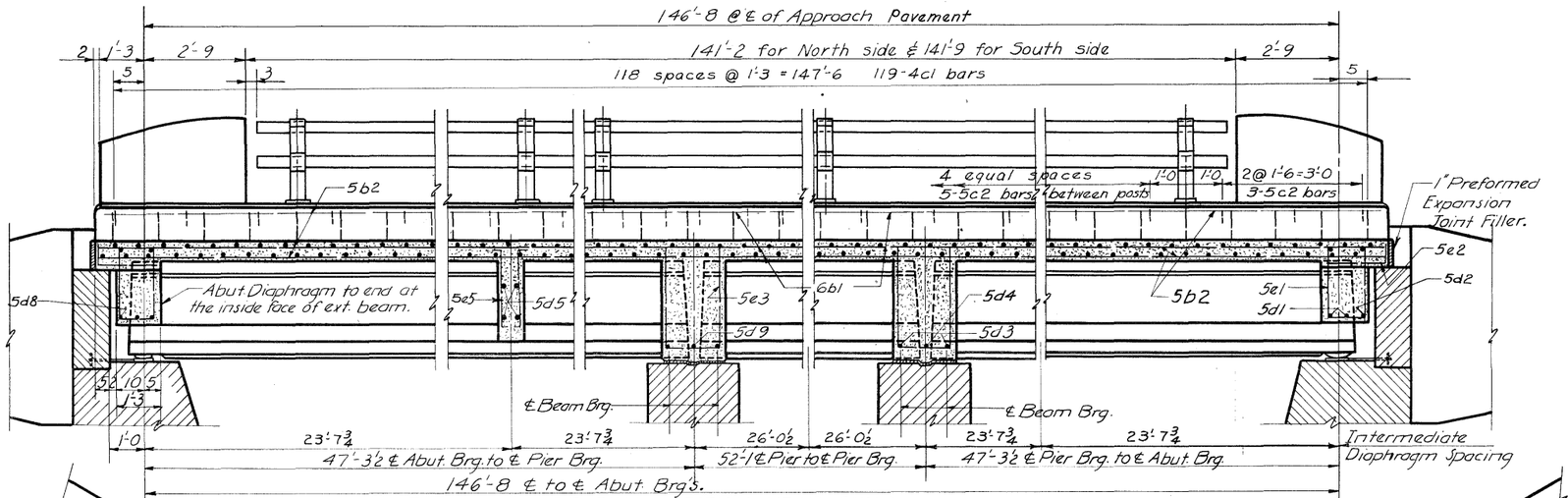
Station: 942 + 55.45 Project No. I-IG-80-8(16)300

SCOTT COUNTY

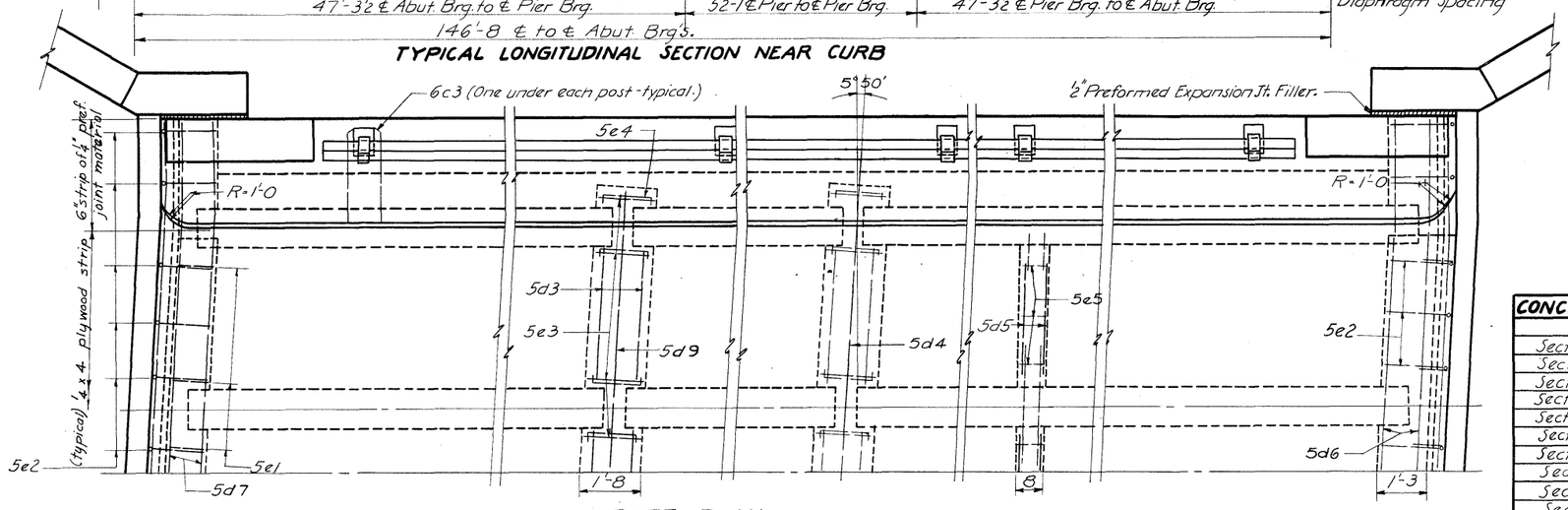
Iowa State Highway Commission

February 1961 Sheet 140 of 19

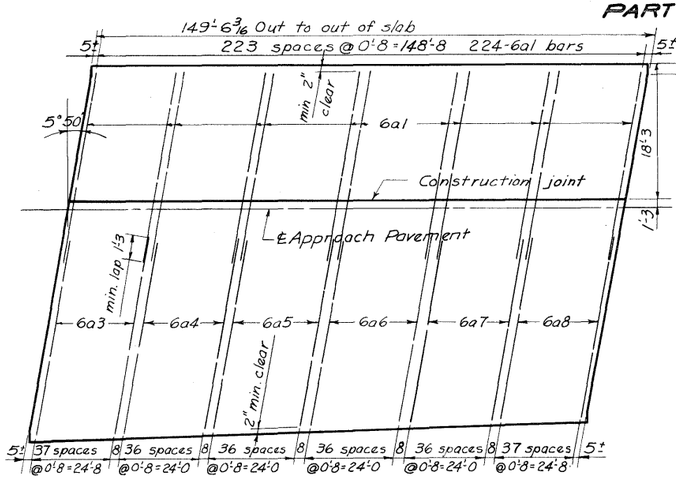
Design No. 260 Scott County File No. 21070



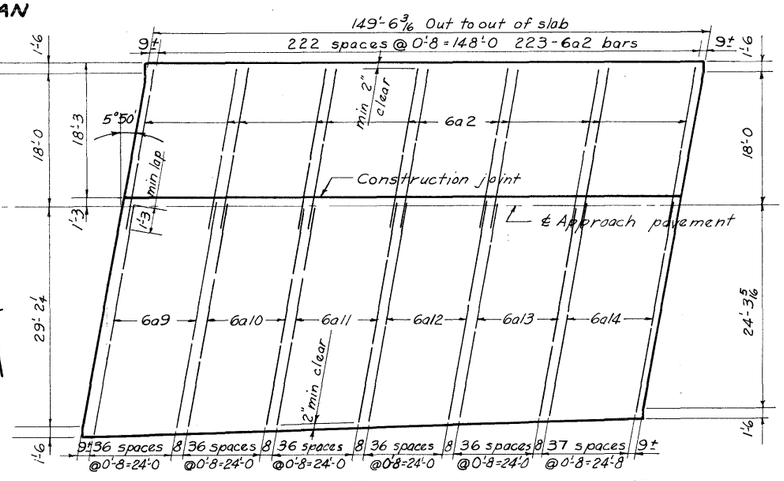
TYPICAL LONGITUDINAL SECTION NEAR CURB



PART PLAN

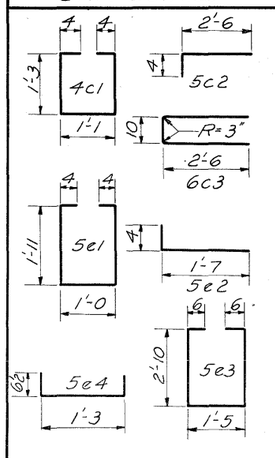


BOTTOM TRANSVERSE REINFORCING LAYOUT



TOP TRANSVERSE REINFORCING LAYOUT

BAR DETAILS



Note: Dimensions are out to out of bar. Radii to ℄ of bar.

REINFORCING STEEL - SUPERSTRUCTURE

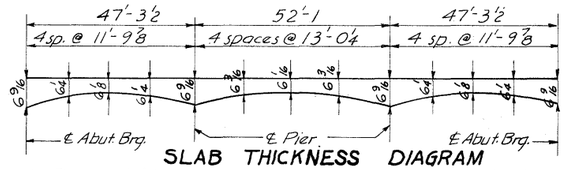
Bar	Location	Shape	Nº	Length	Weight
6a1	Slab Transv. Bott.	—	224	23'-9	7991
6a2	" " Top	—	223	20'-9	6950
6a3	" " Bott.	—	38	27'-10	1589
6a4	" " "	—	37	27'-1	1505
6a5	" " "	—	37	26'-3	1459
6a6	" " "	—	37	25'-5	1413
6a7	" " "	—	37	24'-7	1366
6a8	" " "	—	38	23'-9	1356
6a9	" " Top	—	37	31'-0	1723
6a10	" " "	—	37	30'-0	1667
6a11	" " "	—	37	29'-3	1626
6a12	" " "	—	37	28'-6	1582
6a13	" " "	—	37	27'-9	1542
6a14	" " "	—	38	26'-9	1527
6b1	Slab ℄ Curb Longit. (Over Piers)	—	214	20'-8	6643
5b2	" " "	—	186	40'-0	7760
5b3	" " "	—	93	34'-3	3322
4c1	Curb Hoops	□	238	3'-11	623
5c2	" Transv.	□	192	2'-9	551
6c3	Rail Post Anchors	□	38	5'-6	314
5d1	Abut. Diaphragm - Horiz.	—	36	3'-9	141
5d2	" " East "	—	2	21'-0	44
5d3	Pier " "	—	36	3'-0	113
5d4	" " East "	—	2	23'-0	48
5d5	Intermediate " "	—	108	3'-9	422
5d6	Abut. " East "	—	8	24'-9	209
5d7	" " West "	—	8	27'-3	227
5d8	" " West "	⊥	2	24'-0	50
5d9	Pier " West "	—	2	24'-3	51
5e1	Abut. Diaphragm Hoops	□	36	5'-2	194
5e2	" " Top	⌊	62	1'-10	119
5e3	Pier " Hoops	□	40	7'-9	323
5e4	" " Ties	□	48	2'-2	108
5e5	Intermediate Diaph. hoops	⊏	81	4'-5	373
4f1	End post Vertical	—	32	2'-10	61
4f2	" " Horizontal	—	16	3'-9	40
				Total	55,032

CONCRETE PLACEMENT QUANT.

Item	Quantity
Section 1	16.0 c.y.
Section 1A	27.8
Section 2	11.5
Section 2A	18.7
Section 3	16.0
Section 3A	24.1
Section 4	10.1
Section 4A	17.0
Section 5	10.1
Section 5A	15.9
Curbs (Includes end blocks@abut)	30.1
End Posts	1.5
Total	198.8 c.y.

ESTIMATED QUANTITIES - SUPERSTR.

Item	Quantity
Concrete	198.8 c.y.
Reinforcing Steel	55,032 lb.
46'-8 (A-5) Preten. Prestressed Conc. Beam	20 bm.
50'-10 (A-6) Preten. Prestressed Conc. Beam	10 bm.
Aluminum Handrail (℄ to ℄ End Posts)	279.0 lin.ft.



SLAB THICKNESS DIAGRAM

Note: The slab thicknesses shown are based on the anticipated beam camber remaining after placing slab and are not guaranteed for construction. To meet final grade line, slab is to be thickened to compensate for deficient beam camber and thinned a max. of 6" for excess beam camber.

Design for 5°50' Skew

DUAL 146'-8" x VAR. WIDTH PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES

47'-3½ End Spans 52'-1 Center Span

Concrete Floor ℄ Substructure - Aluminum Handrail

SOUTH LANE - SUPERSTRUCTURE DETAILS

Station: 942 + 55.45 Project Nº I-IG-80-8(16)300

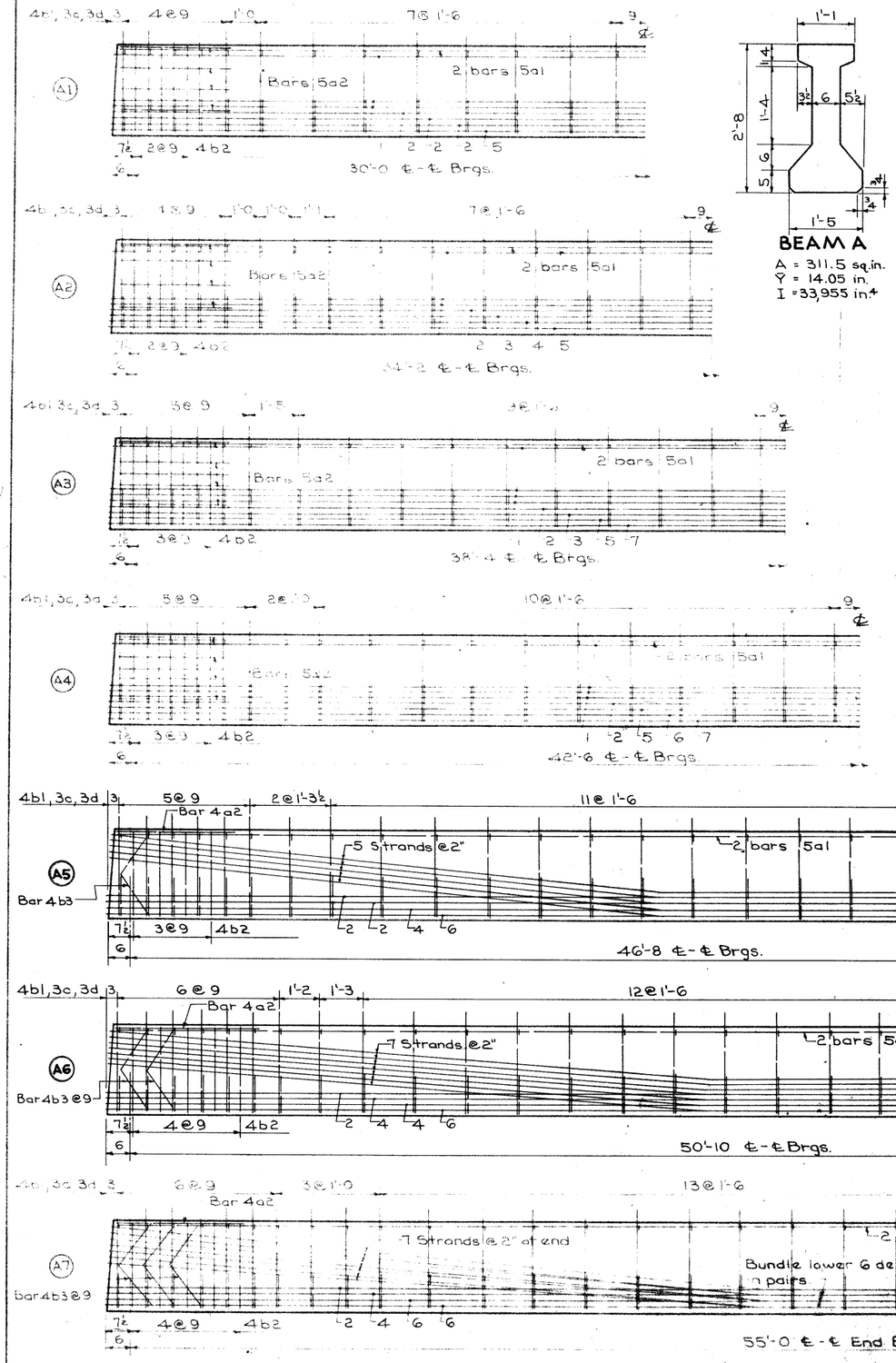
SCOTT COUNTY

Iowa State Highway Commission

February 1961 Sheet 15 of 19

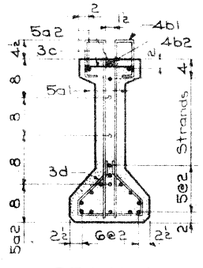
Design Nº 260 Scott County File Nº 21070

Designed by: B.F. Traced by: [illegible] Checked by: DH

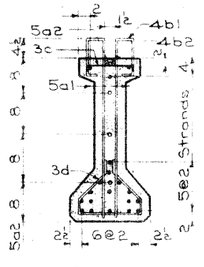


BEAM A

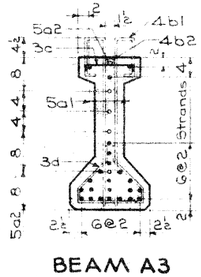
A = 311.5 sq.in.
ȳ = 14.05 in.
I = 33,955 in.⁴



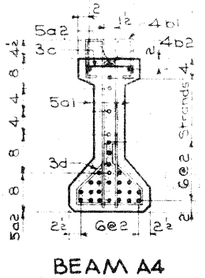
BEAM A1



BEAM A2

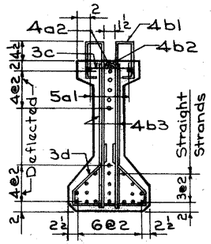


BEAM A3

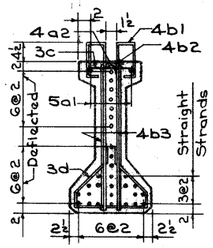


BEAM A4

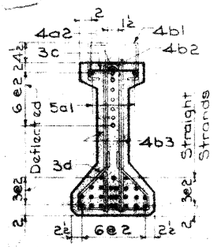
NOTE: Bars 4b1, 4b3, and 3d are to be placed in pairs.



BEAM A5



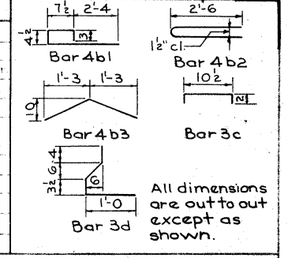
BEAM A6



BEAM A7

REINFORCING BAR LIST

Beam		A1		A2		A3		A4		A5		A6		A7	
Span		30'-0		34'-2		38'-4		42'-6		46'-8		50'-10		55'-0	
Bar	Shape	№	Length	№	Length	№	Length	№	Length	№	Length	№	Length	№	Length
5a1	—	2	30'-7	2	34'-9	2	38'-11	4	22'-6	4	24'-7	4	26'-8	4	28'-9
4a2	—	—	—	—	—	—	—	—	—	2	3'-0	2	3'-9	2	4'-3
5a2	—	8	5'-0	8	5'-3	10	5'-6	10	5'-6	—	—	—	—	—	—
4b1	□	52	4'-0	60	4'-0	64	4'-0	72	4'-0	76	4'-0	84	4'-0	92	4'-0
4b2	⊏⊐	6	5'-0	6	5'-0	8	5'-0	8	5'-0	8	5'-0	10	5'-0	10	5'-0
4b3	⌒	—	—	—	—	—	—	—	—	4	3'-1	8	3'-1	8	3'-1
3c	⌐	26	1'-2	30	1'-2	32	1'-2	36	1'-2	38	1'-2	42	1'-2	46	1'-2
3d	∠	52	2'-2	60	2'-2	64	2'-2	72	2'-2	76	2'-2	84	2'-2	92	2'-3



All dimensions are out to out except as shown.

BEAM DATA

	Beam		A1	A2	A3	A4	A5	A6	A7
	Span		30'-0	34'-2	38'-4	42'-6	46'-8	50'-10	55'-0
①	Initial Prestress	Kips	136	238	294	336	359	435	473
	Size Strands		½	½	½	½	7/16	7/16	7/16
	Straight Strands		14	17	21	24	14	16	18
	Deflected Strands		—	—	—	—	5	7	7
	Hold Down Stress	Kips	—	—	—	—	10.40	10.81	12.00
	Camber	in.	.11	.26	.42	.58	.85	1.04	1.21
②	D.L. Deflection in. (5'-0 Spcg.)		.06	.10	.16	.26	.38	.53	.71
②	D.L. Deflection in. (6'-6 Spcg.)		.08	.13	.21	.34	.50	.70	.94
	Reinforcing Steel	lb.	318	358	403	446	425	475	524
	Concrete	c.y.	2.49	2.82	3.15	3.48	3.82	4.15	4.49

① Increase 5% if artificial curing is to be used. ② Due to weight of slab.

NOTES:

Unless otherwise specified an allowance of .000 5 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 beam 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 ¼" deep.*

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

Bearing details will be as detailed on Sheet 12 of 18.

Unless otherwise noted, the cost of bearing details, including masonry plates and/or neoprene pads, coil ties, coil rods, and lifting loops are 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 four strands at the pier end of 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 1957 and T1(58):

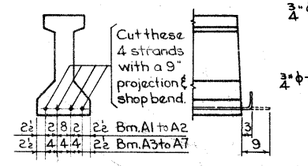
Reinforcing steel in accordance with Section 1.4.12. "Reinforcement" for Intermediate, Hard or Rail Steel Grade. Concrete in accordance with T1(58) 1.13.7. f'_c = 5000 psi.

Prestressing steel in accordance with T1(58) 1.13.7. f's = 250,000 psi.

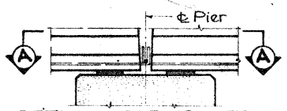
SPECIFICATIONS:

DESIGN: A.A.S.H.O. T1(58).

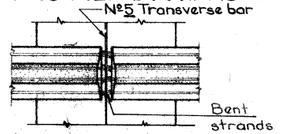
CONSTRUCTION: Standard Specifications of the Iowa State Highway Commission, current series, plus current Special Provisions.



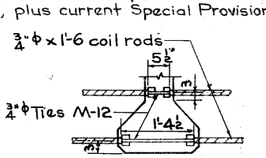
BEAM END DETAIL AT PIER



DETAILS AT PIER BEFORE PLACING PIER DIAPHRAGM



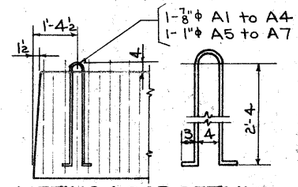
SECTION A-A



COIL TIE DETAIL

Number and location of coil ties to be as detailed on Sheet 12 of 19.

Coil ties and anchors are to be as manufactured by the Superior Concrete Products Co., Richmond Screw Anchor Co. or an approved equal.



LIFTING LOOP DETAILS

Lifting loops are to be structural grade steel. Alternate types may be substituted with approval of the Engineer.

Design for 3°40' & 5°50' Skew

DUAL 146-8 x VAR. WIDTH PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES

47'-3½ End Spans 52'-1 Center Span

Concrete Floor & Substructure Aluminum Handrail

BEAM DETAILS

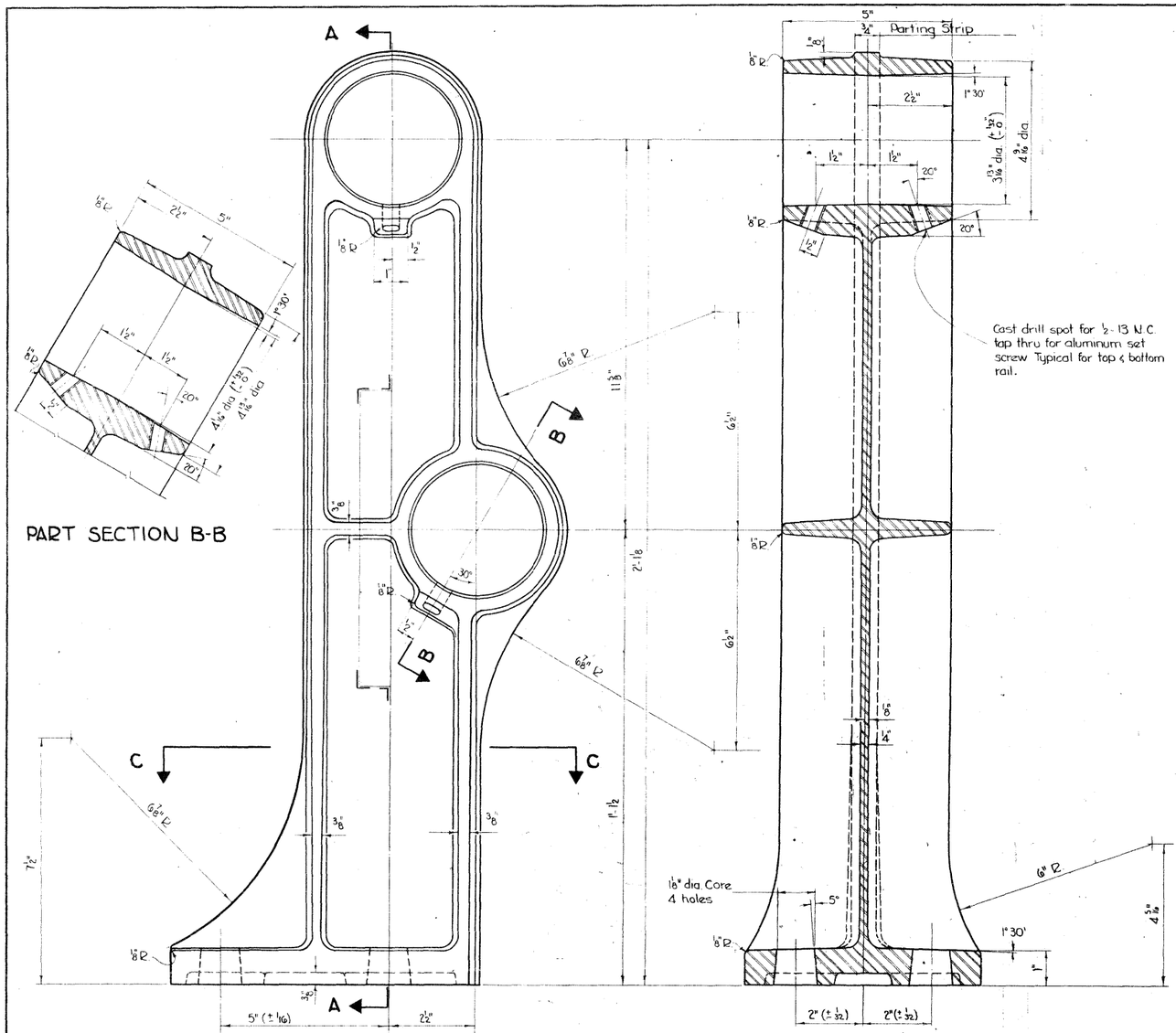
Station: 942+55.45 Project №I-IG-80-8(16)300

SCOTT COUNTY

Iowa State Highway Commission

February 1961 *Sheet 16 of 19*

Design № 260 *Scott County* *File № 21070*



PART SECTION B-B

SECTION A-A

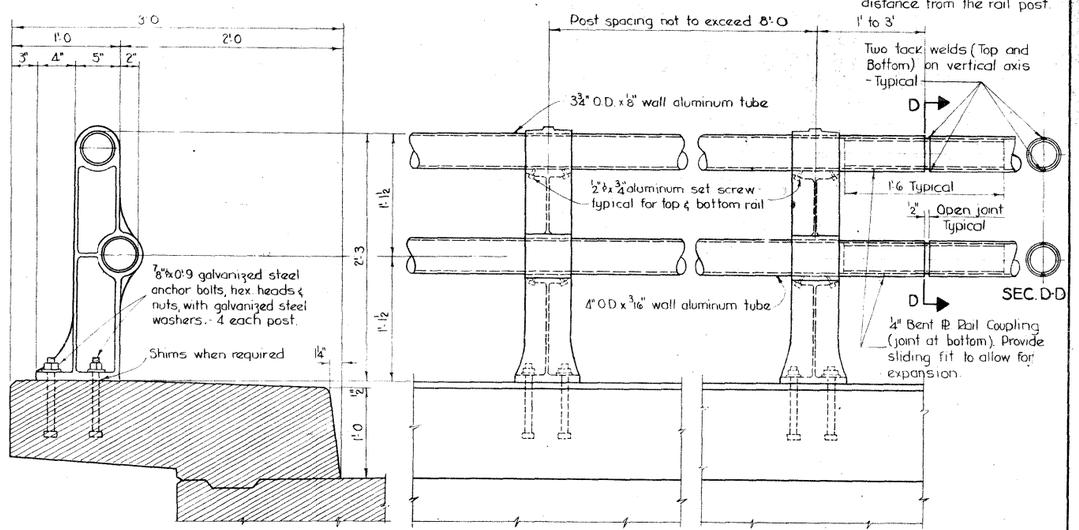
SECTION C-C

RAIL POST CASTING DETAILS

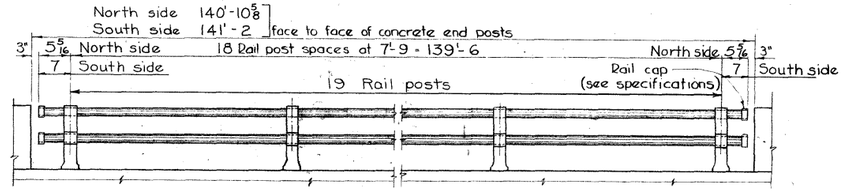
Scale 6" = 1'-0

Note: All draft angles not shown are to be 3°
All unmarked fillets are to be ⅜"
All gates, risers, and seams are to be trimmed flush.

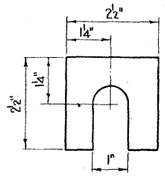
Unless otherwise specified { Casting tolerance ± 1/16" / Wall thickness ± 1/32" }



SECTION THRU CURB



RAIL POST LAYOUT



ALUMINUM SHIM DETAIL

Note: Provide 4-1/16" thick shims at each post

SPECIFICATIONS:

1. DESCRIPTION OF BID ITEM

A. Aluminum handrail is to be bid on a linear foot basis measured from center to center of end posts. The price bid for "Aluminum Handrail" shall consist of furnishing, fabricating, erecting, and cleaning all metal handrail and shall include the furnishing and installation of anchor bolts and all other incidental items in accordance with these plans and specifications.

2. COMPONENT PARTS AND MATERIALS

A. Aluminum Bridge Rail Tubing

1. Aluminum tubing shall comply with the A.S.T.M. Specification B 235 - * alloy 6S11A condition T6 (commercial designation 6061-T6). The rail tubing is to be fabricated from random length tubing and joined as indicated. Each rail section must pass thru at least ~~two~~ three posts before being spliced. ~~(For random length tubing)~~
2. The aluminum rail tubing shall be closed at the ends next to the concrete end posts, as detailed, by means of cast caps or plugs or by means of welded end plates. The cast caps or plugs shall comply with the material specifications as outlined for post castings or with A.S.T.M. Spec. B 26 alloy 355A condition F.

B. Aluminum Rail Post Castings

1. Aluminum post castings shall comply with:
   (a) The A.S.T.M. Specification B108 - * alloy 356 T6 condition T6 for aluminum-alloy permanent mold castings (commercial designation - A 356-T6)
2. The post castings shall have smooth and even surfaces, free from shrinkage cracks, oxide inclusions, and other defects.
3. The post castings shall follow the outlines and dimensions as detailed. Minor changes, such as draft angles and radii for fillets and corners, shall be permitted. Draft on front and back face of post may be omitted providing minimum wall thicknesses as detailed are maintained. Shop drawings for post castings must be submitted and approved by the Engineer before castings are made.
4. The ¼" parting strip is to be finished with a 120 grit finish or an approved equal. All other surfaces are to have a uniformly polished or burnished finish.
5. Before setting posts, the entire base of the post casting shall be coated with an aluminum impregnated caulking compound ⅛" thick. The caulking compound shall comply with Federal Specifications TT-C-598 for knife grade to which shall be added aluminum paste complying with Paragraph 4135.03 A in proportion to one pound of aluminum to 5 pound of caulking compound.

C. Aluminum Set Screws for Posts

1. Aluminum set screws shall comply with the A.S.T.M. Specification B211 * alloy CG 42 A (commercial designation 2024-T4 with № 205 alumilite finish). The finished set screws shall be supplied in the T-4 temper and shall be given an anodic coating at least 0.0002" in thickness and chromate sealed. The set screws shall have a hexagon socket head and oval point.

D. Aluminum Shims

1. Aluminum shims shall comply with the A.S.T.M. Specification B-209 - * alloy 990A condition O (commercial designation - 1100-0).

* Current tentative A.S.T.M. Standard Specifications.

3. CONSTRUCTION

A. The specifications for construction shall be the Standard Specifications of the Iowa State Highway Commission, Series of 1960, plus current Special Provisions with the added provisions.

1. The anchor bolts for the aluminum posts shall be set at the line and elevations shown on the plans. They shall be firmly held in place by suitable templates that will assure their correct position during the placement of concrete. Aluminum shims, as detailed, shall be used if necessary to insure the correct elevation of the rails.
2. The cast aluminum posts and the aluminum tube rails shall be carefully handled during their unloading, handling, and erection. Members that are marred, disfigured or damaged to the extent that they impair their usefulness or appearance shall be rejected and replaced at the contractor's expense.
3. The aluminum handrail shall be stored above ground upon suitable platforms and kept free from dirt, grease, and contact with dissimilar metals. The stored aluminum handrail shall be protected from moisture as far as practical.
4. After anchor bolts have been tightened, the excess caulking compound shall be removed and all openings around the base of the post pointed full and flush with caulking compound.
5. After erection, rails and posts and the concrete around the post bases shall be thoroughly cleaned of all dirt, grease, caulking compound and other foreign material by an approved means as directed by the Engineer.
6. Set screws are to be tightened to prevent rails from rattling, but they are not to be tightened so as to prevent movement due to rail expansion.

ALUMINUM HANDRAIL QUANTITIES		
Aluminum Handrail (c-c End Posts)	North side	139.5 lin. ft.
	South side	139.5 lin. ft.
	Total	279.0 lin. ft.

Revised 2-1-62 Rail made continuous thru three posts.
Revised 7-8-60 Post casting material and railing splice details changed.
Revised 8-6-59 Alternate material for Rail Caps added (Specs.: Par 2A Item 2)
Revised 12-10-58 Post casting finish changed. (Specifications: Par 2B Item 4)
Revised 10-6-58 Post casting base dished out and other minor changes.

DUAL 146'-8 x VARIABLE WIDTH PRESTRESSED CONCRETE BEAM BRIDGES

47'-3½ End Spans — 52'-1 Center Span
Concrete Floor & Substructure — Aluminum Handrail

NORTH LANE

ALUMINUM HANDRAIL DETAILS

Station 942+55.45 — Project № I-IG-80-8(16)300

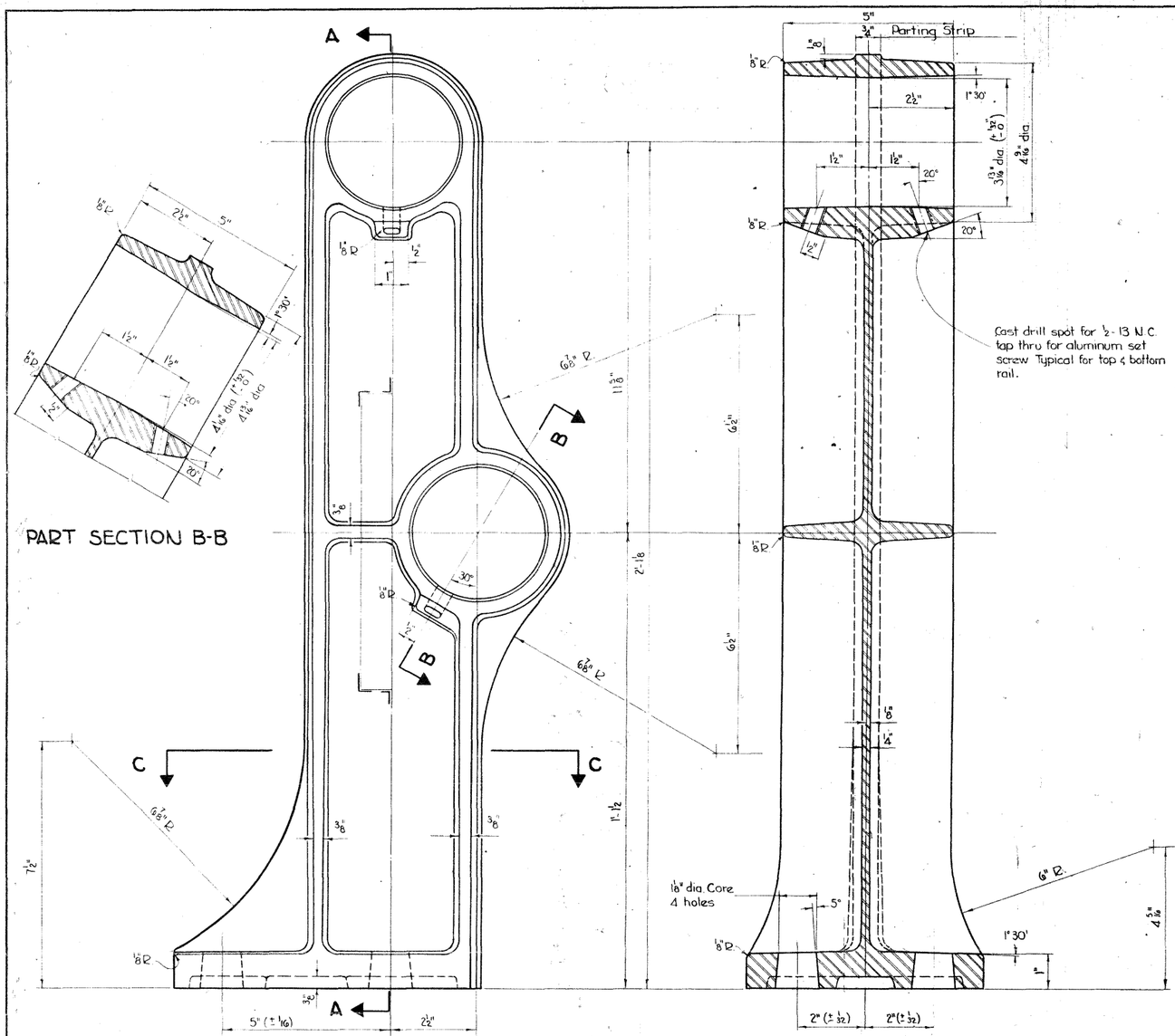
SCOTT COUNTY

Iowa State Highway Commission

February 1961 — Sheet 17 of 19

Design 260 — Scott County — File № 21070

Detailed by: — Checked by:

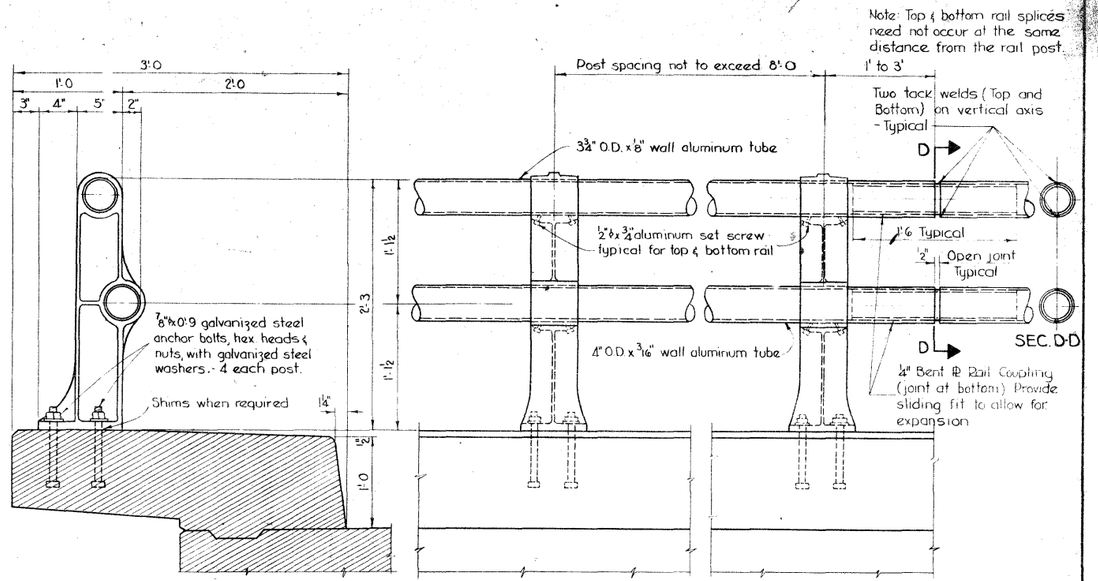


RAIL POST CASTING DETAILS

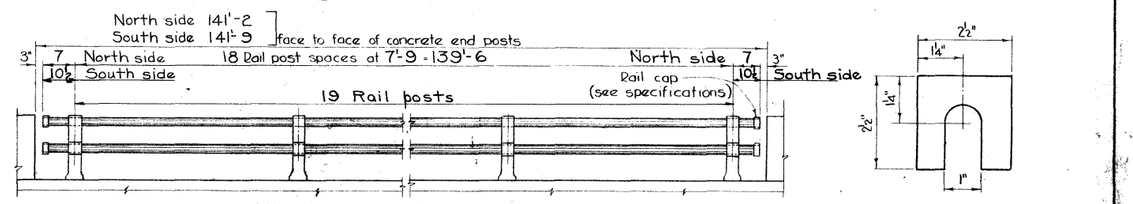
Scale 6" = 1'-0

Note: All draft angles not shown are to be 3°
All unmarked fillets are to be ⅜"
All gates, risers, and seams are to be trimmed flush.
Unless otherwise specified { Casting tolerance ± 1/16" / Wall thickness ± 1/32"

Revised 7-8-60 Post casting material and railing splice details changed.
Revised 8-6-59 Alternate material for Rail Caps added (Specs.: Par 2A Item 2)
Revised 12-10-58 Post casting finish changed (Specifications: Par 2B Item 4)
Revised 10-6-58 Post casting base dished out and other minor changes.



SECTION THRU CURB



RAIL POST LAYOUT

ALUMINUM SHIM DETAIL

Note: Provide 4-1/16" thick shims at each post

SPECIFICATIONS:

1. **DESCRIPTION OF BID ITEM**
   A. Aluminum handrail is to be bid on a linear foot basis measured from center to center of end posts. The price bid for "Aluminum Handrail" shall consist of furnishing, fabricating, erecting, and cleaning all metal handrail and shall include the furnishing and installation of anchor bolts and all other incidental items in accordance with these plans and specifications.
2. **COMPONENT PARTS AND MATERIALS**
   A. Aluminum Bridge Rail Tubing
      1. Aluminum tubing shall comply with the A.S.T.M. Specification B 235 - * alloy 6S11 A condition T6 (commercial designation 6061; T6). The rail tubing is to be fabricated from random length tubing and joined as indicated. Each rail section must pass thru at least 3 posts before being spliced.
      2. The aluminum rail tubing shall be closed at the ends next to the concrete end posts, as detailed, by means of cast caps or plugs or by means of welded end plates. The cast caps or plugs shall comply with the material specifications as outlined for post castings or with A.S.T.M. Spec. B 26 alloy S5A condition F.
   B. Aluminum Rail Post Castings
      1. Aluminum post castings shall comply with:
         (a) The A.S.T.M. Specification B 108 - * alloy SG70B condition T6 for aluminum alloy permanent mold castings (commercial designation - A 356-T6)
      2. The post castings shall have smooth and even surfaces, free from shrinkage cracks, oxide inclusions, and other defects.
      3. The post castings shall follow the outlines and dimensions as detailed. Minor changes, such as draft angles and radii for fillets and corners, shall be permitted. Draft on front and back face of post may be omitted providing minimum wall thicknesses as detailed are maintained. Shop drawings for post castings must be submitted and approved by the Engineer before castings are made.
      4. The ⅜" parting strip is to be finished with a 120 grit finish or an approved equal. All other surfaces are to have a uniformly polished or burnished finish.
      5. Before setting posts, the entire base of the post casting shall be coated with an aluminum impregnated caulking compound ⅛" thick. The caulking compound shall comply with Federal Specifications TT-C-598 for knife grade to which shall be added aluminum paste complying with Paragraph 4135.03 A in proportion to one pound of aluminum to 5 pound of caulking compound.
   C. Aluminum Set Screws for Posts
      1. Aluminum set screws shall comply with the A.S.T.M. Specification B 211 * alloy C6 42 A (commercial designation 2024-T4 with № 205 alumilite finish). The finished set screws shall be supplied in the T-4 temper and shall be given an anodic coating at least 0.0002" in thickness and chromate sealed. The set screws shall have a hexagon socket head and oval point.
   D. Aluminum Shims
      1. Aluminum shims shall comply with the A.S.T.M. Specification B-209-* alloy 990A condition O (commercial designation-1100-0).

* Current tentative A.S.T.M. Standard Specifications.

3. **CONSTRUCTION**
   A. The specifications for construction shall be the Standard Specifications of the Iowa State Highway Commission, Series of 1960, plus current Special Provisions with the added provisions.
      1. The anchor bolts for the aluminum posts shall be set at the line and elevations shown on the plans. They shall be firmly held in place by suitable templates that will assure their correct position during the placement of concrete. Aluminum shims, as detailed, shall be used if necessary to insure the correct elevation of the rails.
      2. The cast aluminum posts and the aluminum tube rails shall be carefully handled during their unloading, handling, and erection. Members that are marred, disfigured or damaged to the extent that they impair their usefulness or appearance shall be rejected and replaced at the contractor's expense.
      3. The aluminum handrail shall be stored above ground upon suitable platforms and kept free from dirt, grease, and contact with dissimilar metals. The stored aluminum handrail shall be protected from moisture as far as practical.
      4. After anchor bolts have been tightened, the excess caulking compound shall be removed and all openings around the base of the post pointed full and flush with caulking compound.
      5. After erection, rails and posts and the concrete around the post bases shall be thoroughly cleaned of all dirt, grease, caulking compound and other foreign material by an approved means as directed by the Engineer.
      6. Set screws are to be tightened to prevent rails from rattling, but they are not to be tightened so as to prevent movement due to rail expansion.

ALUMINUM HANDRAIL QUANTITIES		
Aluminum Handrail (℄-℄ End Posts)	North side	139.5 lin. ft.
	South side	139.5 lin.ft.
	Total	279.0 lin.ft.

DUAL 146'-8 x VARIABLE WIDTH PRESTRESSED CONCRETE BEAM BRIDGES

47'-3½ End Spans — 52'-1 Center Span
Concrete Floor & Substructure — Aluminum Handrail

SOUTH LANE

ALUMINUM HANDRAIL DETAILS

Station 942+55.45 — Project № I-IG-80-8(16)300

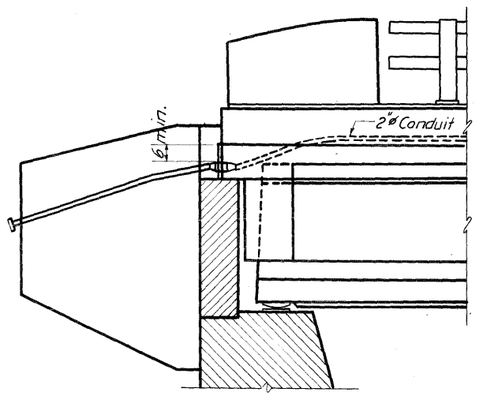
SCOTT COUNTY

Iowa State Highway Commission

February 1961 — Sheet 18 of 19

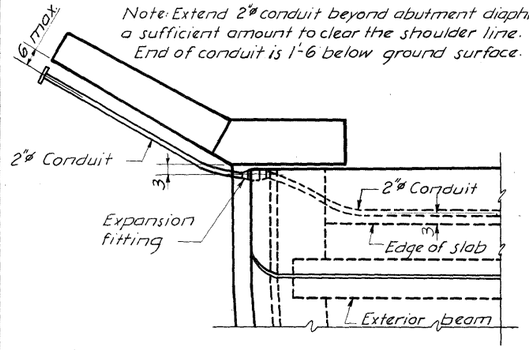
Design 260 — Scott County — File № 21070

Detailed by: — Checked by:

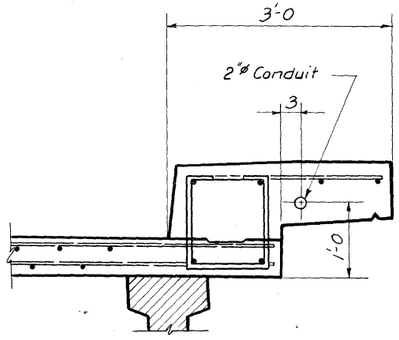


ABUTMENT ELEVATION

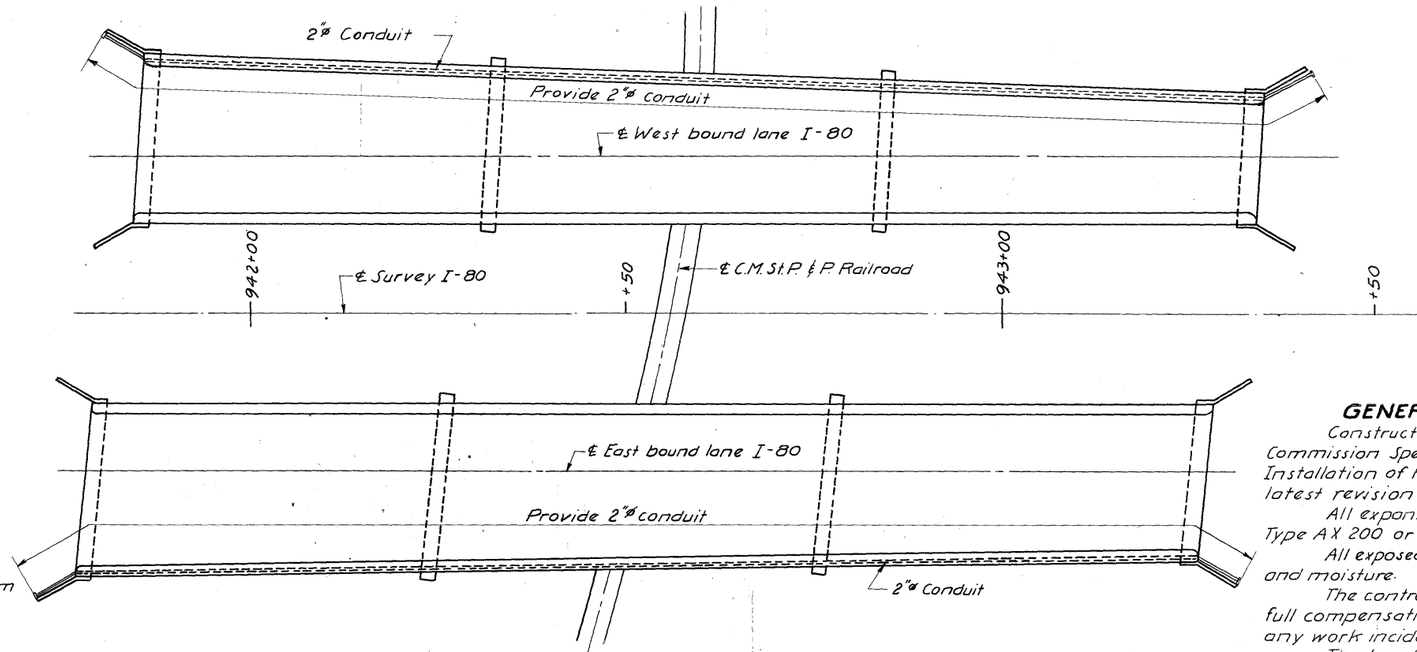
Note: Extend 2"ø conduit beyond abutment diaphragm a sufficient amount to clear the shoulder line. End of conduit is 1'-6 below ground surface.



PART PLAN AT ABUTMENT
Scale: ½"=1'-0



SECTION A-A



LOCATION PLAN LAYOUT
(Not to scale.)

GENERAL NOTES.

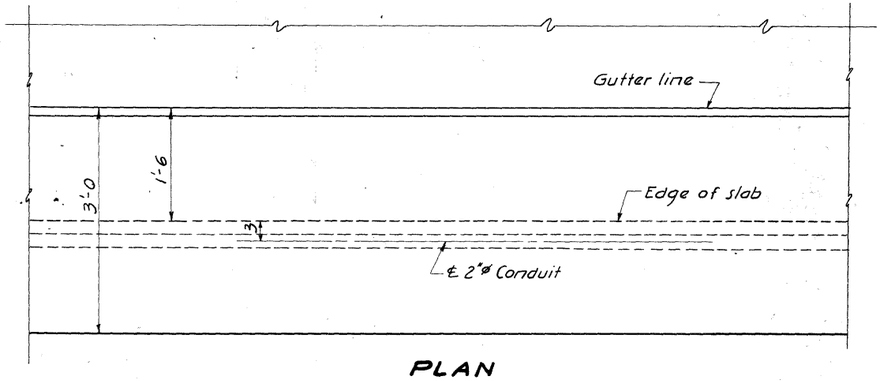
Construction will conform with Iowa State Highway Commission Specifications and Special Provisions for Installation of Highway Lighting, dated August 19, 1958 or latest revision thereof.

All expansion fittings shall be O. Z. Expansion Fitting, Type AX 200 or an approved equivalent.

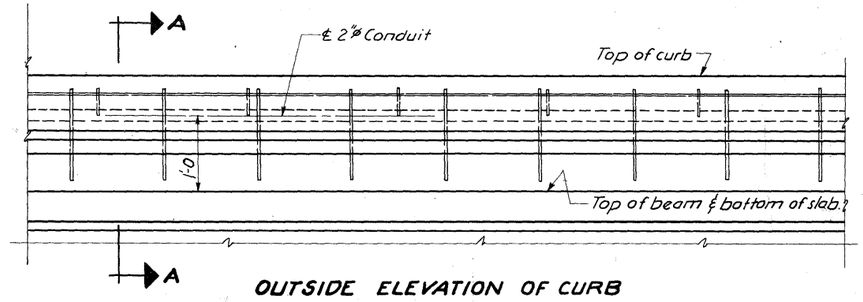
All exposed conduit ends are to be capped to exclude dirt and moisture.

The contract unit price per linear foot of conduit shall be full compensation for furnishing all material, incl. labor, and any work incidental to the installation.

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



PLAN



OUTSIDE ELEVATION OF CURB

TOTAL ESTIMATED QUANTITIES

Item	Amount
Rigid Steel Conduit - 2"ø	330 lin.ft.

Design for Skewed
DUAL 146'-8" x VAR. WIDTH PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES
47'-3½ End Spans 52'-1 Center Span
Concrete Floor & Substructure Aluminum Handrail
CONDUIT LOCATION DETAILS
Station 942+55.45 Project No. I-IG-80-8(16)300
Interstate 80 over C.M. ST. P. & P. Rail Road
SCOTT COUNTY
Iowa State Highway Commission
February 1961 Sheet 19 of 19
Design No. 260 Scott County File No. 21070