

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
BUREAU OF DESIGN

CONSTRUCTION PLAN INDEX

REEL 0-94

ROUTE	SECTION	COUNTY	NO.OF EXP.	REMARKS
	MAY 23, 1969 LETTING			
FAI-90	0305-302K 0404-313HB 0404-316HB	COOK	310	
FAI-94	066-1414-4-Z-1	COOK	11	
FAI-94	X-310-1969-10-1 & BR	COOK	87	
CHS-031	3091-W & RS	COOK	18	
Various	Dist. 10 Tr. Sig. 1969-10	COOK	19	
Various	Dist. 10 Thermo Pav't Marking 1969-2	COOK	9	



STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
FEDERAL AID HIGHWAY

F.A.I. ROUTE 90
PROJECT SECTION

I-FI-90-3(76) 72

0305-302 K
0404-313 HB
0404-316 HB

GRADING, PAVING AND GRADE SEPARATION
SCHAUMBURG ROAD TO SOUTH OF GOLF ROAD
COOK COUNTY
C-90-795-68

FEDERAL AID ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
90	0305-302 K	COOK	306	1
ILLINOIS PROJECT I-FI-90-3(76) 72				

P-91-121-63 (043)



LOCATION OF SECTION INDICATED THUS:—

SECTION	BEGINNING STATION TO STATION	OMISSION	NET LENGTH
0305-302K	515+00.00 - 611+80.97	560+50.83 - 562+89.17 583+12.73 - 584+80.99	9,274.37 FT. = 1.756 MI.
0404-316HB	583+12.73 - 584+80.99		168.26 FT. = 0.032 MI.
0404-313HB	560+50.83 - 562+89.17		2,38.34 FT. = 0.0451 MI.
HIGGINS RD. IMPROVEMENT	136+00.00 - 175+43.46		3,943.46 FT. = 0.747 MI.

PROJECT I-FI-90-3(76) 72
ENDS STA. 611+80.97

OMISSION
STA. 583+12.73 - STA. 584+80.99

OMISSION
STA. 560+50.83 - STA. 562+89.17

PROJECT I-FI-90-3(76) 72
BEGINS STA. 515+00

BEGIN I PORTION

END I-FI PORTION
STATION 611+80.97

FI PORTION BEGINS (MAIN LINE ONLY)
S.B. LANE STA. 587+26.06
N.B. LANE STA. 592+81.00

SECTION 0305-302K INCLUDES THE EXCAVATION AND FINAL GRADING FOR PAVING, THE CONSTRUCTION OF EMBANKMENT, THE CONSTRUCTION OF C.R.P.C.C. PAVEMENT, THE CONSTRUCTION OF P.C.C. PAVEMENT, THE CONSTRUCTION OF STABILIZED SUB-BASE AND STABILIZED SHOULDERS, THE CONSTRUCTION OF DRAINAGE FACILITIES AND ALL INCIDENTAL WORK AS SHOWN ON THE PLANS AND SPECIAL PROVISIONS.

SECTION 0404-316HB INCLUDES TWO (2) PARALLEL 3 SPAN WIDE FLANGE GIRDER BRIDGES CARRYING F.A.I. ROUTE 90 OVER WOODFIELD DRIVE AT STA. 583+97.56 & F.A.I. ROUTE 90, WHICH EQUALS STA. 10+00.00 @ WOODFIELD DRIVE.

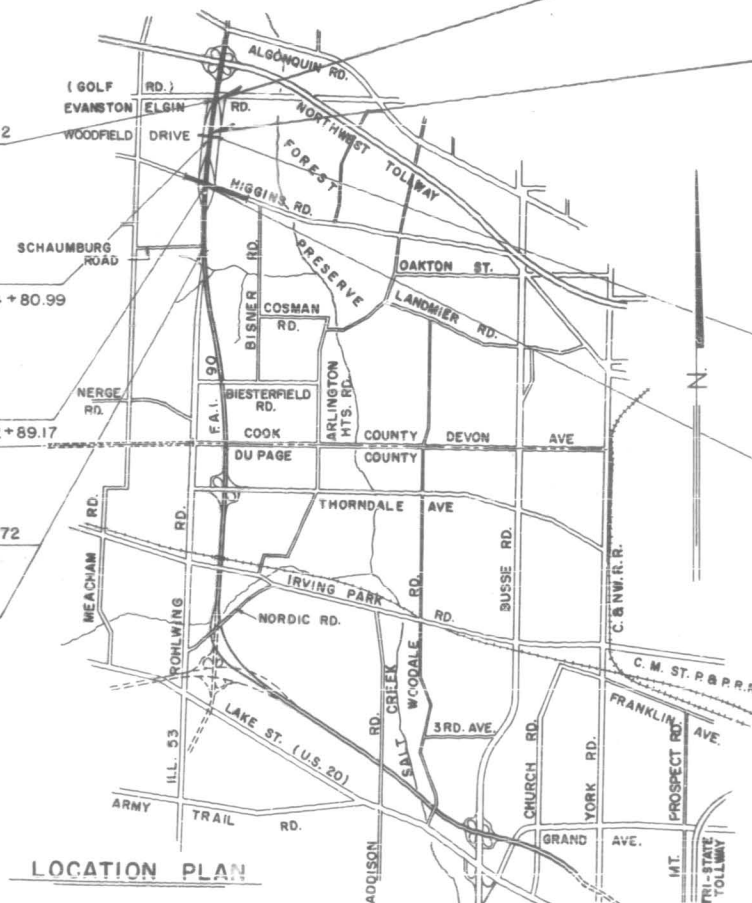
SECTION 0404-313HB INCLUDES TWO (2) PARALLEL 3 SPAN WELDED GIRDER BRIDGES CARRYING F.A.I. ROUTE 90 OVER HIGGINS RD. AT STA. 561+70.00 @ F.A.I. ROUTE 90, WHICH EQUALS STA. 150+00 @ HIGGINS RD.; ALSO INCLUDES THE RECONSTRUCTION OF HIGGINS RD. FROM STA. 136+00 TO STA. 175+43.46.

DESIGN DESIGNATION

F.A.I.-90 - 10,858 (87) - FR-1 (MOD)* 24 (P.C.C.-20)
HIGGINS ROAD - 3,909 (87) - EX-1 - 14.14 (P.C.C.-20)
WOODFIELD DRIVE - 1,240 (87) - TS-4 - 2.7 (P.C.C.-20)

* DESIGN SPEED 70 M.P.H.

LENGTH OF PROJECT = 9,680.97 FT. = 1.834 MI.



LOCATION PLAN

STATE OF ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS DIVISION OF HIGHWAYS	
SUBMITTER	<i>[Signature]</i>
DESIGNED BY	<i>[Signature]</i>
DRAWN BY	<i>[Signature]</i>
APPROVED	<i>[Signature]</i>
DATE	<i>[Signature]</i>

DEPARTMENT OF COMMERCE BUREAU OF PUBLIC WORKS	
APPROVED	
DIVISION ENGINEER	DATE

CONTRACT NO. 25822

COOK COUNTY SECTION 0305-302K F.A.I. ROUTE 90
0404-313HB
0404-316HB

F.A.I. RTE.	SECTION	EXPRESSWAYS	TOTAL SHEETS	SHEET NO.
90	0305-302K	COOK CO	108	2
STA.		TO STA.		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		

INDEX OF SHEETS

SHEET NO.

1	TITLE SHEET
2	INDEX SHEET
3	LOCATION PLAN
4-10	SUMMARY OF QUANTITIES
11-18	TYPICAL CROSS SECTION
19-21	STAGES OF CONSTRUCTION
22-31	ALIGNMENT AND TIES
32-42	EXISTING TOPOGRAPHY
43-44	SUMMARY OF LENGTH AND PAVING
45	SUPERELEVATION TABLE
46-59	PLAN, PROFILE AND DETAILS
60	PLAN AND PROFILE (WOODFIELD DRIVE)
61-67	PLAN, PROFILE AND DETAILS (HIGGINS RD.)
68-73	PROFILE (RAMP A,B,C,D,E & F)
74-76	PROFILE (FRONTAGE RD. I,II,III)
77	PLAN AND PROFILE (DETOUR NO. I)
78	GOLF RD. AND DETOUR INTERSECTION DETAIL
79	PLAN AND PROFILE (DETOUR NO. 2)
80	PLAN AND PROFILE (SHOPPING CENTER AND FOREST PRESERVE DR.)
81	PLAN AND PROFILE (FRONTAGE RD. TO THE NURSERY)
82-84	APPROACH SLABS
85-92	PAVEMENT JOINTS, GUARD RAILS, FENCES, DELINEATORS AND ROW MARKERS
93-106	DRAINAGE AND UTILITIES
107-107A	BOX CULVERT STA. 525 + 85
108-113	PIPE PROFILE
114-115	BRIDGE APPROACH SHOULDER
116-122	TRAFFIC CONTROL PLANS
123-143	BRIDGE F.A.I.-90 OVER HIGGINS RD.
144-165	BRIDGE F.A.I.-90 OVER WOODFIELD DR.
166-176	SOIL PROFILES
176A THRU 176Y	ALGONQUIN ROAD INTERCHANGE (INFIELD GRADING) SH. I TO 24 OF 24) *
177-269	CROSS SECTIONS

SHEET NO.

270,A	10-SS-539, 10-SS-506 B, DETAIL OF STEEL PLATE BEAM GUARD RAIL (SPECIAL)
271	NAME PLATE DETAILS, REINFORCED CONCRETE HEADWALL
272	DETAILS OF TYPE 37M GRATE, CONCRETE END SECTION, DETAIL FOR EXPANSION JOINT WITH SLEEPER SLAB, MEDIAN DRAIN DETAIL.
273	RESTRICTED DEPTH CATCH BASIN
274	END TRANSITION FOR TYPE B-6.24 CURB & GUTTER, DROP MANHOLE DETAILS
275	10-TS-3, 10-TS-17A, 10-TS-20, 10-TS-21
276	10-TS-15B

* THE CONTRACTOR IS ADVISED THAT IN THE EVENT THE FILL BY OTHERS SHOWN ON THE CROSS-SECTIONS NORTH OF ALGONQUIN ROAD IN THE NORTH EAST LOOP HAS NOT BEEN PLACED, HE SHALL USE EXTREME CARE IN MAINTAINING A DISTANCE OF 90 FEET FROM THE TOE OF THE EXISTING EMBANKMENT ALONG NORTH-BOUND ROUTE 53 TO THE TOE OF THE SURPLUS TOP SOIL. THE QUANTITY OF TOP SOIL THAT CANNOT BE PLACED ON THE SLOPES OF THE FILL BY OTHERS SHALL BE STORED WITHIN THE CONFINES OF THE NORTHEAST LOOP RAMP. THIS WORK SHALL BE INCIDENTAL TO THE PAY ITEM OF SPECIAL EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

SHEET NO.	STANDARD NO.	SHEET NO.	STANDARD NO.
277	1514-5	296	2213-2
278	1527-4	297	2224-6
279	1683-2	298	2225-2
280	1686-3	299	2226-2
281	1744-2	300	2230-2
282	1766-4	301,A	2231-2
283	2102	302	2233-3
284	2114	303	2237-3
285	2115-2	304	2240-1
286	2122-3	305	2244-2
287	2130-2	306	2253-1
288	2138-7	306A	2261-1
289	2149-6	306B	2321-1
290	2163-6		
291	2168-2		
292	2179-3		
293	2189-3		
294	2208-2		
295	2209-2		

PREPARED BY [Signature] 8-9-68
DESIGN ENGINEER
EXAMINED BY [Signature] 8-9-68
TRAFFIC ENGINEER
EXAMINED BY _____
CONSTRUCTION ENGINEER
EXAMINED BY G.L. Medel 8-9-68
MAINTENANCE ENGINEER
EXAMINED BY [Signature] 8-9-68
ASST. DIST. ENGR. ENGINEERING

REVISIONS	
NAME	DATE

ILLINOIS DIVISION OF HIGHWAYS

F.A.I.-90

INDEX OF SHEETS

SCALE: HORIZ. _____
VERT. _____
DATE: 16 DEC., 1968
DRAWN BY S.E.B.
CHECKED BY _____

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. /
S. S. 1. F. A. I. 90	0404- 313HB	COOK	306	123	21 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT I-FI-90-30672			

Slope wall shall be reinforced with welded wire fabric 6"x6" mesh 4wires, weighing 58# per 100 sq. ft. All reinforcement bars shall be lapped 24 diameters unless otherwise shown.

Rivets $\frac{3}{4}"$, open holes $1\frac{1}{8}"$, unless otherwise noted.

Anchor bolts shall be set before riveting diaphragms over supports.

Roadway expansion guards shall be assembled in the shop in proper position with the ends in place and shall be left assembled for shop inspection.

The exposed surfaces of the expansion guard shall be given two shop coats of red lead paint, the contact surfaces shall be given one coat of red lead paint. Anchor studs shall not be painted.

Field connections shall be bolted using high strength bolts. Bolts $\frac{3}{4}"$, open holes $1\frac{1}{8}"$ unless otherwise noted.

Except as otherwise provided, all structural steel shall receive one shop coat of red lead paint and two field coats of paint. See Special Provisions for field paint.

The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.

The Contractor shall drive one (1) concrete test pile in a permanent location at the South Abut. South Bd. Lanes, and the North Abut. North Bd. Lanes, and one (1) timber test pile shall be driven in the vicinity of Pier 1 North Bd. Lanes, and Pier 2 South Bd. Lanes, as directed by the Engineer before ordering the remainder of piles.

Concrete piles at abutments shall be driven in holes precored through the embankment in accordance with Art. 513.09(c) of the Standard Specifications.

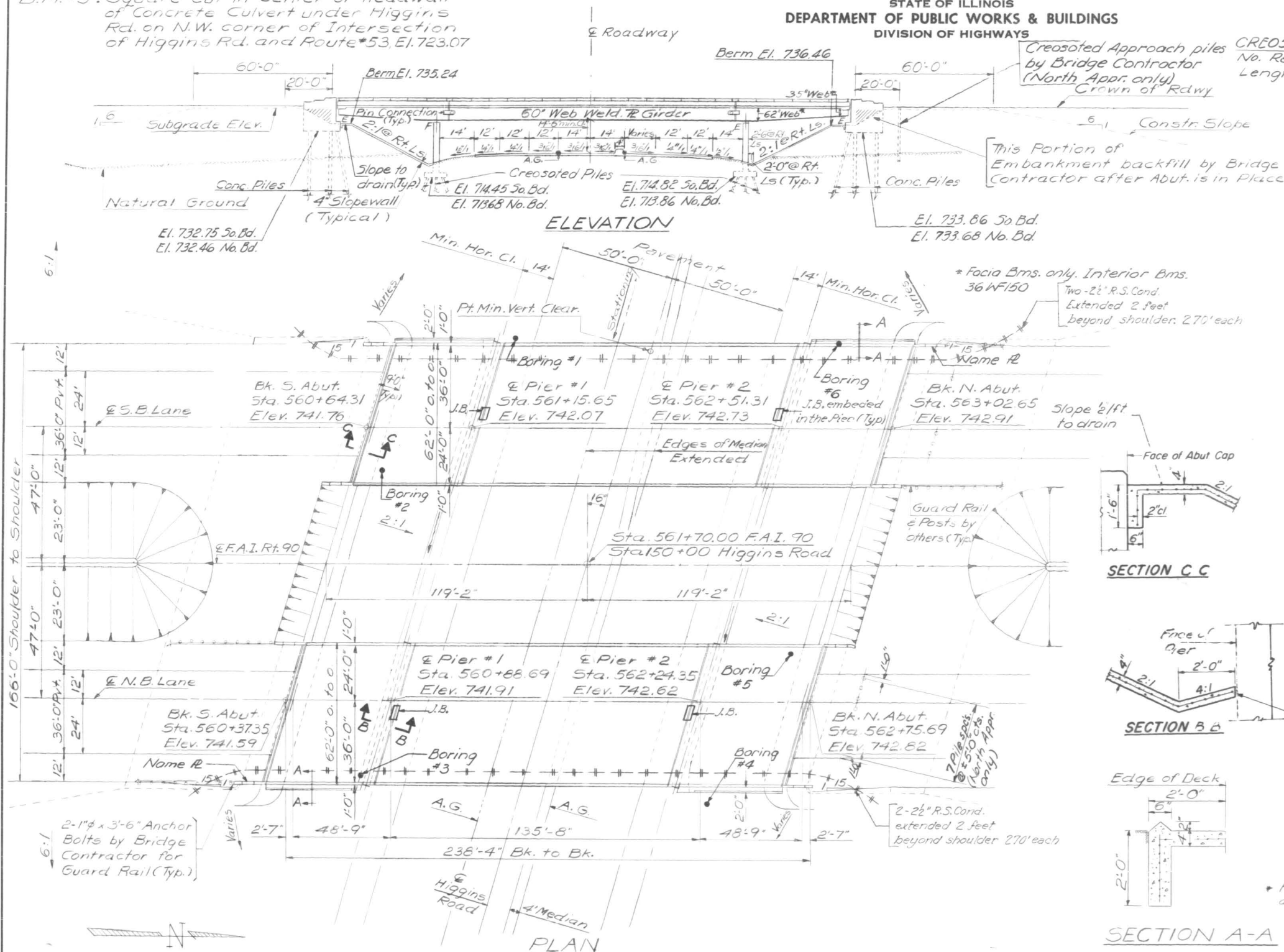
Field welding of construction accessories to the bottom flanges or for a distance of $\frac{1}{4}$ of the span each way from pier supports on the top flanges of beams or girders will not be permitted. Field welding in other areas will be permitted only when approved by the Engineer.

TOTAL BILL OF MATERIAL

Item	Super.	Sub.	Total
Class X Concrete Cu. Yds.	828.3	686.6	1514.9
Reinforcement Bars Lbs.	209,980	7,040	281,020
Structural Steel Lbs.	1225,720		1225,720
Aluminum Railing Lin. Ft.	940		940
Name Plates Ea.	2		2
Slope Wall Sq. Yds.		2000	2000
Coal Tar Imperv. & Protective Coat Sq. Yds.	3,050		3,050
Stud Shear Connectors Ea.	5,616		5,616
Class A' Excav. for Struc. Cu. Yds.		558	558
Concrete Piles Lin. Ft.		3,524	3,524
Test Piles (Concrete) Ea.		2	2
Creasoted Piles (20.1'-38') Lin. Ft.		5,463	5,463
Test Piles (Timber) Ea.		2	2
Creasoted Piles (Up to 20') Lin. Ft.		272	272
* Protective Coat Sq. Yds.	404		404
Bitum. Conc Surface Course-Class I Tons	247		247
Preformed Joint Sealer Lin. Ft.	125		125
Conduit Attached to Structure 3/4" Dia. Galv. Steel Lin. Ft.			108.5

GENERAL PLAN & ELEVATION
PROJ. I-FI-90-3(16)72

FA.I. RT. 90 SEC. 0404-3/3-HB
COOK COUNTY
STA. 561+70 (FA.I. RT. 90)
STA. 150+00 (HIGGINS RD.)



SECTION A-A

DESIGN STRESSES

$f_c = 1,200 \text{ p.s.i. Deck}$
 $f_c = 1,400 \text{ p.s.i. Curb, Parapet}$
 $\quad \quad \quad \& \text{ Sub.}$
 $f_s = 20,000 \text{ p.s.i. Reinf. \& Struc}$
 $\quad \quad \quad \text{Steel}$
 $V_c = 75 \text{ p.s.i. Ftgs.}$
 $n = 10$

Loading: HS-20-44 & Alternate



LOCATION PLAN

DESIGNED	<i>Dan Chilton</i>
CHECKED	<i>James M Barker</i>
DRAWN	<i>A. Borrozo</i>
CHECKED	<i>B</i>

EXAMINED Charles E. Th...
ENGINEER OF DESIGN AND TRAFFIC STRUCTURE

PASSED V. E. Bangman
ENGINEER OF DESIGN

APPROVED V. E. Hall
CHIEF HIGHWAY ENGINEER

PROFILE ALONG HIGGINS RD. PROFILE ALONG F.A.I 90

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 2
001 P. 1	0409- 90 31348	COOK	306	122	21 SHEETS
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT		

$\frac{3}{8}$ " ϕ holes at 12" cts. for $\frac{3}{8}$ " bolts
 set on 22" gage line. All bolts
 shall be burned, sawed or
 clipped off flush with back of
 angles after forms are removed

$\frac{3}{8}$ " ϕ vent holes at 12" cts.
 set on 18" gage line

granular or solid flux filled
 headed studs automatically
 end welded. (62 - studs at
 12" alt cts. each angle)
 L-4" $\times$ 4" $\times$ $\frac{1}{2}$ " $\times$ 60" - 104" long
 Fabricate to crown
 a, or a₃

Appr.
 Part.

Hatched area to be poured
 after superstructure forms
 have been removed.
 Quantity of Class X Concrete
 included with superstructure

Back of
 Abut.

Detail B-see Sheet # 7

63' 5 1/2" Measured along E. Beam
 E. Brg.

At South Abutments only.
See Sheet # 8 for Section & details @ No. Abut's

Note A
27-each = 6 bars at 30s
@ 8 cts. Top 6 Botts of
slab. Order a 6 1/2"
bars full length cut
to fit skew & use
remainder of bars in
opposite end.

Sawed Jt. 4 1/2" with Elastic joint filler See Special Prov.

a1 or a3 a2 a1 or a3

b1 or b2 b3

Top of deck surface

3" min.

Diaphragm D

Measured along & Beam 1" 2"

1' 5"

C1 3" min.

Measured along & Em.

SECTION B-B

Technical drawing of a bridge deck cross-section showing dimensions and reinforcement details. The drawing includes the following dimensions and labels:

- Top width: 9" and 10"
- Top reinforcement: d_2
- Side reinforcement: d_1 and d
- Vertical dimensions: 12", 1'-0", 1'-3", 1'-5", 1'-3", 58", 9", 2", 2"
- Reinforcement spacing: 12", 12", 12"
- Labels: "Top of deck", "Surfacing", "ASTM alloy 3", "Bonded (Optional)", "Bonded (Mandatory)", "Varies", "34" Drip Notch full length", "4"x12" drain"
- Reference: "e₄ see sheet # 9"

STATION 561+70

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

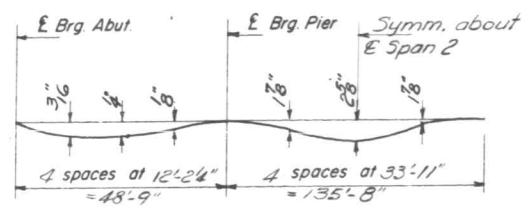
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
RT. 90	0404-313-HB	Cook	306	125
SHEET NO. 3				
21 SHEETS				

Location	Beam	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
E Brg. South Abut.	10	56030.181	34.000	740.893	740.893
	11	56032.188	27.000	741.052	741.052
	12	56034.195	20.000	741.211	741.211
	13	56036.202	13.000	741.371	741.371
	14	56038.210	6.000	741.499	741.499
	15	56039.930	.000	741.605	741.605
	16	56040.217	1.000	741.591	741.591
	17	56042.224	8.000	741.495	741.495
	18	56044.231	15.000	741.383	741.383
	19	56046.238	22.000	741.251	741.251
A	10	56040.181	34.000	740.961	740.975
	11	56042.188	27.000	741.120	741.134
	12	56044.195	20.000	741.279	741.293
	13	56046.202	13.000	741.438	741.452
	14	56048.210	6.000	741.566	741.580
	15	56049.930	.000	741.671	741.685
	16	56050.217	1.000	741.657	741.671
	17	56052.224	8.000	741.561	741.575
	18	56054.231	15.000	741.449	741.463
	19	56056.238	22.000	741.316	741.330
B	10	56050.181	34.000	741.027	741.047
	11	56052.188	27.000	741.186	741.205
	12	56054.195	20.000	741.345	741.364
	13	56056.202	13.000	741.503	741.523
	14	56058.210	6.000	741.631	741.651
	15	56059.930	.000	741.736	741.756
	16	56060.217	1.000	741.722	741.742
	17	56062.224	8.000	741.626	741.645
	18	56064.231	15.000	741.513	741.533
	19	56066.238	22.000	741.381	741.400
C	10	56060.181	34.000	741.092	741.110
	11	56062.188	27.000	741.251	741.268
	12	56064.195	20.000	741.409	741.426
	13	56066.202	13.000	741.568	741.585
	14	56068.210	6.000	741.695	741.712
	15	56069.930	.000	741.800	741.817
	16	56070.217	1.000	741.786	741.803
	17	56072.224	8.000	741.689	741.706
	18	56074.231	15.000	741.577	741.594
	19	56076.238	22.000	741.444	741.461
D	10	56070.181	34.000	741.156	741.165
	11	56072.188	27.000	741.314	741.324
	12	56074.195	20.000	741.472	741.482
	13	56076.202	13.000	741.631	741.640
	14	56078.210	6.000	741.758	741.767
	15	56079.930	.000	741.863	741.872
	16	56080.217	1.000	741.849	741.858
	17	56082.224	8.000	741.751	741.761
	18	56084.231	15.000	741.639	741.648
	19	56086.238	22.000	741.505	741.515
E of Pier 1	10	56078.931	34.000	741.211	741.211
	11	56080.938	27.000	741.369	741.369
	12	56082.945	20.000	741.527	741.527
	13	56084.952	13.000	741.685	741.685
	14	56086.960	6.000	741.812	741.812
	15	56088.680	.000	741.916	741.916
	16	56088.967	1.000	741.902	741.902
	17	56090.974	8.000	741.805	741.805
	18	56092.981	15.000	741.692	741.692
	19	56094.988	22.000	741.558	741.558
E Connection	10	56081.931	34.000	741.229	741.242
	11	56083.938	27.000	741.387	741.400
	12	56085.945	20.000	741.545	741.558
	13	56087.952	13.000	741.703	741.716
	14	56089.960	6.000	741.830	741.843
	15	56091.680	.000	741.934	741.947
	16	56091.967	1.000	741.920	741.933
	17	56093.974	8.000	741.823	741.836
	18	56095.981	15.000	741.710	741.723
	19	56097.988	22.000	741.576	741.589
E	10	56091.931	34.000	741.290	741.347
	11	56093.938	27.000	741.448	741.504
	12	56095.945	20.000	741.605	741.662
	13	56097.952	13.000	741.763	741.820
	14	56099.960	6.000	741.890	741.946
	15	56101.680	.000	741.994	742.050
	16	56101.967	1.000	741.980	742.036
	17	56103.974	8.000	741.882	741.939
	18	56105.981	15.000	741.769	741.825
	19	56107.988	22.000	741.635	741.691

Location	Beam	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
F	10	56101.931	34.000	741.350	741.450
	11	56103.938	27.000	741.507	741.607
	12	56105.945	20.000	741.665	741.765
	13	56107.952	13.000	741.822	741.922
	14	56109.960	6.000	741.948	742.048
	15	56111.680	.000	742.052	742.152
	16	56111.967	1.000	742.038	742.138
	17	56113.974	8.000	741.940	742.040
	18	56115.981	15.000	741.827	741.925
	19	56117.988	22.000	741.692	741.792
G	10	56111.931	34.000	741.408	741.552
	11	56113.938	27.000	741.565	741.709
	12	56115.945	20.000	741.722	741.866
	13	56117.952	13.000	741.879	742.023
	14	56119.960	6.000	742.006	742.149
	15	56121.680	.000	742.109	742.253
	16	56121.967	1.000	742.095	742.239
	17	56123.974	8.000	741.997	742.140
	18	56125.981	15.000	741.883	742.025
	19	56127.988	22.000	741.749	741.892
H	10	56121.931	34.000	741.465	741.634
	11	56123.938	27.000	741.622	741.791
	12	56125.945	20.000	741.779	741.948
	13	56127.952	13.000	741.936	742.105
	14	56129.960	6.000	742.061	742.231
	15	56131.680	.000	742.165	742.334
	16	56131.967	1.000	742.151	742.320
	17	56133.974	8.000	742.052	742.222
	18	56135.981	15.000	741.938	742.107
	19	56137.988	22.000	741.803	741.973
I	10	56131.931	34.000	741.521	741.710
	11	56133.938	27.000	741.677	741.867
	12	56135.945	20.000	741.834	742.024
	13	56137.952	13.000	741.990	742.180
	14	56139.960	6.000	742.116	742.306
	15	56141.680	.000	742.219	742.409
	16	56141.967	1.000	742.205	742.395
	17	56143.974	8.000	742.106	742.296
	18	56145.981	15.000	741.992	742.182
	19	56147.988	22.000	741.857	742.047
J	10	56141.931	34.000	741.575	741.785
	11	56143.938	27.000	741.731	741.941
	12	56145.945	20.000	741.888	742.098
	13	56147.952	13.000	742.044	742.254
	14	56149.960	6.000	742.169	742.379
	15	56151.680	.000	742.272	742.482
	16	56151.967	1.000	742.258	742.468
	17	56153.974	8.000	742.159	742.369
	18	56155.981	15.000	742.044	742.254
	19	56157.988	22.000	741.909	742.119
K	10	56151.931	34.000	741.628	741.838
	11	56153.938	27.000	741.784	741.994
	12	56155.945	20.000	741.940	742.150
	13	56157.952	13.000	742.096	742.306
	14	56159.960	6.000	742.221	742.431
	15	56161.680	.000	742.324	742.534
	16	56161.967	1.000	742.310	742.519
	17	56163.974	8.000	742.210	742.420
	18	56165.981	15.000	742.095	742.305
	19	56167.988	22.000	741.960	742.169

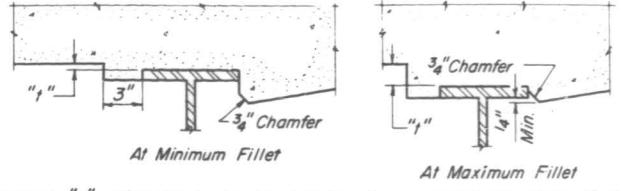
Location	Beam	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
L	10	56161.931	34.000	741.680	741.869
	11	56163.938	27.000	741.836	742.025
	12	56165.945	20.000	741.991	742.180
	13	56167.952	13.000	742.147	742.336
	14	56169.960	6.000	742.272	742.461
	15	56171.680	.000	742.374	742.564
	16	56171.967	1.000	742.360	742.549
	17	56173.974	8.000	742.260	742.450
	18	56175.981	15.000	742.145	742.334
	19	56177.988	22.000	742.010	742.199
M	10	56171.931	34.000	741.730	741.899
	11	56173.938	27.000	741.886	742.054
	12	56175.945	20.000	742.041	742.210
	13	56177.952	13.000	742.197	742.365
	14	56179.960	6.000	742.321	742.490
	15	56181.680	.000	742.424	742.592
	16	56181.967	1.000	742.409	742.578
	17	56183.974	8.000	742.309	742.478
	18	56185.981	15.000	742.194	742.363
	19	56187.988	22.000	742.058	742.227
N	10	56181.931	34.000	741.779	741.921
	11	56183.938	27.000	741.934	742.077
	12	56185.945	20.000	742.090	742.232
	13	56187.952	13.000	742.245	742.387
	14	56189.960	6.000	742.369	742.511
	15	56191.680	.000	742.471	742.613
	16	56191.967	1.000	742.457	742.599
	17	56193.974	8.000	742.357	742.499
	18	56195.981	15.000	742.241	742.383
	19	56197.988	22.000	742.105	742.247
O	10	56191.931	34.000	741.827	741.926
	11	56193.938	27.000	741.982	742.081
	12	56195.945	20.000	742.137	742.236
	13	56197.952	13.000	742.292	742.390
	14	56199.960	6.000	742.416	742.514
	15	56201.680	.000	742.518	742.616
	16	56201.967	1.000	742.503	742.602
	17	56203.974	8.000	742.403	742.502
	18	56205.981	15.000	742.287	742.386
	19	56207.988	22.000	742.150	742.249
P	10	56201.931	34.000	741.873	741.928
	11	56203.938	27.000	742.028	742.083
	12	56205.945	20.000	742.183	742.238
	13	56207.952	13.000	742.337	742.393
	14	56209.960	6.000	742.461	742.516
	15	56211.680	.000	742.563	742.618
	16	56211.967	1.000	742.548	742.604
	17	56213.974	8.000	742.448	742.503
	18	56215.981	15.000	742.331	742.387
	19	56217.988	22.000	742.195	742.250

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete & I-11 only)
Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown below.



FILLET HEIGHTS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	0404-313 HB	Cook	306	126
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 4
21 SHEETS

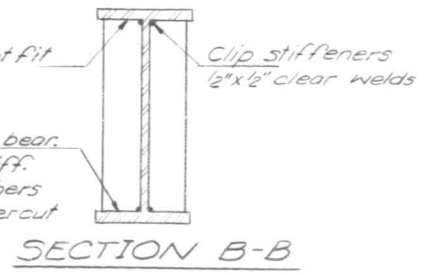
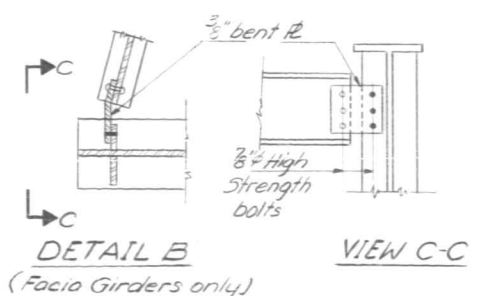
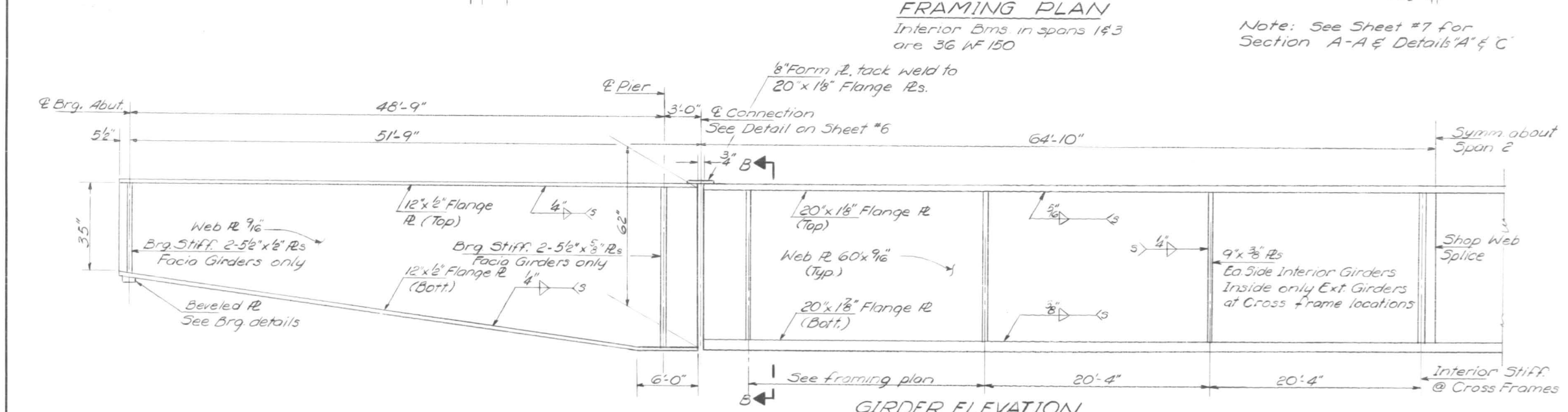
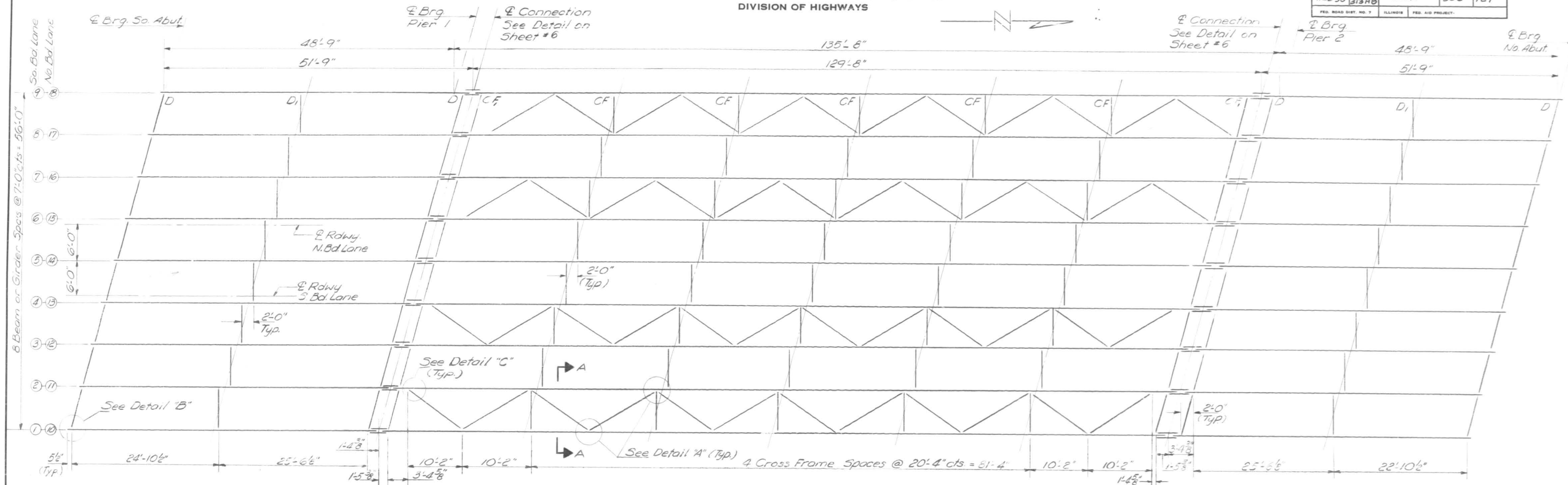
Location	Beam	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
E Brg. South Abut.	1	56060.582	22.000	741.344	741.344
	2	56062.589	15.000	741.503	741.503
	3	56064.596	8.000	741.641	741.641
	4	56066.603	1.000	741.763	741.763
	5	56068.610	.000	741.781	741.781
	6	56070.618	13.000	741.698	741.698
	7	56072.625	20.000	741.596	741.596
	8	56074.632	27.000	741.463	741.463
	9	56076.639	34.000	741.330	741.330
A	1	56070.582	22.000	741.408	741.422
	2	56072.589	15.000	741.566	741.580
	3	56074.596	8.000	741.704	741.718
	4	56076.603	1.000	741.826	741.840
	5	56078.610	.000	741.844	741.858
	6	56080.618	13.000	741.760	741.774
	7	56082.625	20.000	741.658	741.672
	8	56084.632	27.000	741.525	741.539
	9	56086.639	34.000	741.391	741.405
B	1	56090.582	22.000	741.471	741.490
	2	56092.589	15.000	741.629	741.648
	3	56094.596	8.000	741.766	741.785
	4	56096.603	1.000	741.888	741.907
	5	56098.610	.000	741.905	741.925
	6	56090.618	13.000	741.822	741.841
	7	56092.625	20.000	741.719	741.739
	8	56094.632	27.000	741.586	741.605
	9	56096.639	34.000	741.452	741.472
C	1	56090.582	22.000	741.532	741.549
	2	56092.589	15.000	741.689	741.707
	3	56094.596	8.000	741.826	741.844
	4	56096.603	1.000	741.948	741.965
	5	56098.610	.000	741.966	741.983
	6	56090.618	13.000	741.882	741.899
	7	56092.625	20.000	741.779	741.796
	8	56094.632	27.000	741.645	741.662
	9	56096.639	34.000	741.511	741.529
D	1	56100.582	22.000	741.591	741.601
	2	56102.589	15.000	741.749	741.758
	3	56104.596	8.000	741.886	741.895
	4	56106.603	1.000	742.007	742.016
	5	56108.610	.000	742.024	742.034
	6	56100.618	13.000	741.940	741.950
	7	56102.625	20.000	741.837	741.847
	8	56104.632	27.000	741.703	741.713
	9	56106.639	34.000	741.569	741.579
E of Pier 1	1	56100.582	22.000	741.601	741.601
	2	56102.589	15.000	741.749	741.758
	3	56104.596	8.000	741.886	741.895
	4	56106.603	1.000	742.007	742.016
	5	56108.610	.000	742.024	742.034
	6	56100.618	13.000	741.940	741.950
	7	56102.625	20.000	741.837	741.847
	8	56104.632	27.000	741.703	741.713
	9	56106.639	34.000	741.569	741.579

Location	Beam	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
E Connection	1	56112.332	22.000	741.650	741.673
	2	56114.339	15.000	741.817	741.830
	3	56116.346	8.000	741.954	741.967
	4	56118.353	1.000	742.075	742.088
	5	56120.360	.000	742.092	742.105
	6	56122.368	13.000	742.008	742.021
	7	56124.375	20.000	741.904	741.917
	8	56126.382	27.000	741.770	741.783
	9	56128.389	34.000	741.636	741.649
E	1	56122.332	22.000	741.717	741.773
	2	56124.339	15.000	741.874	741.930
	3	56126.346	8.000	742.010	742.067
	4	56128.353	1.000	742.131	742.187
	5	56130.360	.000	742.148	742.205
	6	56132.368	13.000	742.064	742.120
	7	56134.375	20.000	741.960	742.016
	8	56136.382	27.000	741.825	741.882
	9	56138.389	34.000	741.691	741.747
F	1	56132.332	22.000	741.773	741.872
	2	56134.339	15.000	741.929	742.029
	3	56136.346	8.000	742.065	742.165
	4	56138.353	1.000	742.186	742.286
	5	56140.360	.000	742.203	742.303
	6	56142.368	13.000	742.118	742.218
	7	56144.375	20.000	742.014	742.114
	8	56146.382	27.000	741.879	741.979
	9	56148.389	34.000	741.744	741.844
G	1	56142.332	22.000	741.827	741.970
	2	56144.339	15.000	741.983	742.127
	3	56146.346	8.000	742.119	742.262
	4	56148.353	1.000	742.239	742.363
	5	56150.360	.000	742.256	742.400
	6	56152.368	13.000	742.171	742.315
	7	56154.375	20.000	742.067	742.211
	8	56156.382	27.000	741.932	742.075
	9	56158.389	34.000	741.797	741.940
H	1	56152.332	22.000	741.880	742.049
	2	56154.339	15.000	742.036	742.205
	3	56156.346	8.000	742.171	742.341
	4	56158.353	1.000	742.291	742.461
	5	56160.360	.000	742.308	742.478
	6	56162.368	13.000	742.223	742.393
	7	56164.375	20.000	742.119	742.288
	8	56166.382	27.000	741.983	742.153
	9	56168.389	34.000	741.848	742.017
I	1	56162.332	22.000	741.931	742.121
	2	56164.339	15.000	742.087	742.277
	3	56166.346	8.000	742.222	742.412
	4	56168.353	1.000	742.342	742.532
	5	56170.360	.000	742.359	742.549
	6	56172.368	13.000	742.274	742.464
	7	56174.375	20.000	742.169	742.359
	8	56176.382	27.000	742.033	742.223
	9	56178.389	34.000	741.898	742.087
J	1	56172.332	22.000	741.982	742.192
	2	56174.339	15.000	742.137	742.347
	3	56176.346	8.000	742.272	742.482
	4	56178.353	1.000	742.392	742.602
	5	56180.360	.000	742.409	742.619
	6	56182.368	13.000	742.323	742.533
	7	56184.375	20.000	742.218	742.428
	8	56186.382	27.000	742.082	742.292
	9	56188.389	34.000	741.946	742.156
K	1	56182.332	22.000	742.031	742.240
	2	56184.339	15.000	742.186	742.395
	3	56186.346	8.000	742.321	742.530
	4	56188.353	1.000	742.440	742.649
	5	56190.360	.000	742.457	742.666
	6	56192.368	13.000	742.371	742.581
	7	56194.375	20.000	742.266	742.475
	8	56196.382	27.000	742.130	742.339
	9	56198.389	34.000	741.993	742.203

Location	Beam	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
L	1	56192.332	22.000	742.077	742.267
	2	56194.339	15.000	742.233	742.423
	3	56196.346	8.000	742.368	742.557
	4	56198.353	1.000	742.487	742.676
	5	56198.640	.000	742.504	742.693
	6	56200.360	-	742.418	742.607
	7	56202.368	-	742.312	742.501
	8	56204.375	-	742.176	742.365
	9	56206.382	-	742.039	742.228
M	1	56206.389	-	741.903	742.092
	2	56202.332	22.000	742.125	742.293
	3	56204.339	15.000	742.279	742.448
	4	56206.346	8.000	742.414	742.582
	5	56208.353	1.000	742.532	742.701
	6	56208.640	.000	742.549	742.718
	7	56210.360	-	742.463	742.632
	8	56212.368	-	742.357	742.526
	9	56214.375	-	742.220	742.389
N	1	56216.382	-	742.084	742.252
	2	56218.389	-	741.947	742.116
	3	56212.332	22.000	742.170	742.312
	4	56214.339	15.000	742.324	742.466
	5	56216.346	8.000	742.458	742.600
	6	56218.353	1.000	742.577	742.719
	7	56218.640	.000	742.593	742.736
	8	56220.360	-	742.507	742.649
	9	56222.368	-	742.401	742.543
O	1	56224.375	-	742.264	742.406
	2	56226.382	-	742.127	742.269
	3	56228.389	-	741.990	742.132
	4	56222.332	22.000	742.213	742.312
	5	56224.339	15.000	742.368	742.466
	6	56226.346	8.000	742.501	742.600
	7	56228.353	1.000	742.619	742.718
	8	56228.640	.000	742.636	742.735
	9	56230.360	-	742.550	742.648
P	1	56232.368	13.000	742.443	742.542
	2	56234.375	-	742.306	742.405
	3	56236.382	-	742.169	742.267
	4	56238.389	-	742.031	742.130
	5	56232.332	22.000	742.256	742.311
	6	56234.339	15.000	742.410	742.465
	7	56236.346	8.000	742.543	742.598
	8	56238.353	1.000	742.661	742.716
	9	56238.640	.000	742.678	742.733
Connection	1	56240.360	-	742.591	742.646
	2	56242.368	-	742.484	742.539
	3	56244.375	-	742.347	742.402
	4	56246.382	-	742.209	742.264
	5	56248.389	-	742.072	742.127
	6	56242.002	22.000	742.296	742.309
	7	56244.009	15.000	742.449	742.462
	8	56246.016	8.000	742.582	742.596
	9	56248.023	1.000	742.700	742.713
Connection	1	56248.310	.000	742.717	742.730
	2	56250.030	-	742.630	742.643
	3	56252.038	-	742.523	742.536
	4	56254.045	-	742.385	742.398
	5	56256.052	-	742.247	742.260
	6	56258.059	-	742.109	742.122
	7	56242.002	22.000	742.296	742.309
	8	56244.009	15.000	742.449	742.462
	9	56246.016	8.000	742.582	742.596
Connection	1	56248.023	1.000	742.700	742.713
	2	56248.310	.000	742.717	742.730
	3	56250.030	-	742.630	742.643
	4	56252.038	-	742.523	742.536
	5	56254.045	-	742.385	742.398
	6	56256.052	-	742.247	742.260
	7	56258.059	-	742.109	742.122

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 5
R. & L. 90	0404-313HB	Cook	306	127	21 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT:			

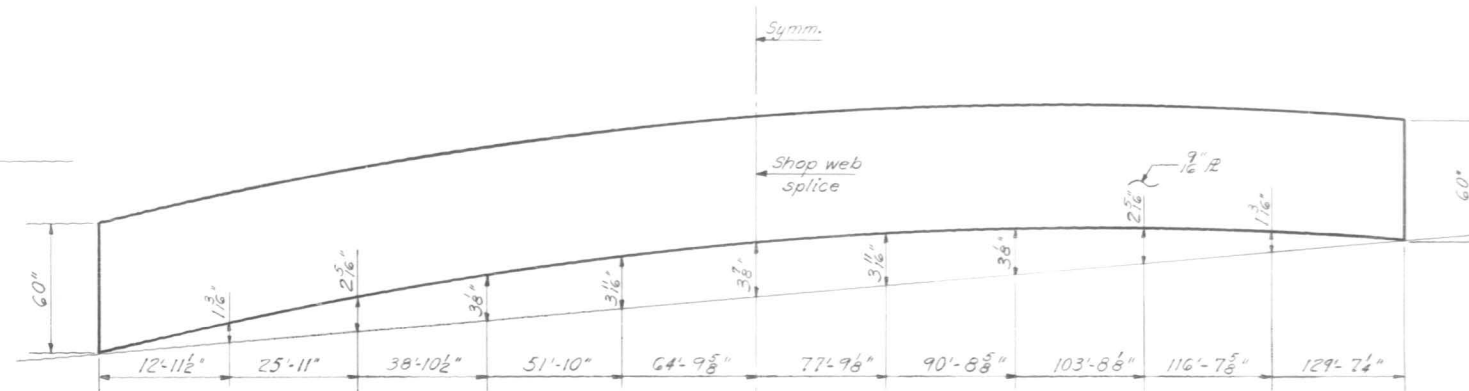


DESIGNED *Dan Chilton*
CHECKED *James M. Barker*
DRAWN *A. Borraza*
CHECKED *JB*

EXAMINED *June 24 1968*
PASSED *W.E. Baumann*
APPROVED *J.E. [Signature]*
CHIEF HIGHWAY ENGINEER

STRUCTURAL STEEL DETAILS
F.A.I. RT. 90 SEC. 0404-313-HB
COOK COUNTY
STA. 561+70

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 6 21 SHEETS
S. B. L. F. A. I. 90	0404- 313HB	COOK	306	128	
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT.		



CAMBER DIAGRAM

(For Girders in Span 2)

Location	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5	Beam 6	Beam 7	Beam 8	Beam 9
E Brg. South Abut.	740.59	740.75	740.88	741.01	740.94	740.83	740.70	740.57	740.43
E Pier 1	740.89	741.05	741.18	741.31	741.24	741.13	741.00	740.87	740.73
E Connection 1	740.91	741.07	741.20	741.33	741.26	741.15	741.02	740.89	740.75
E Connection 2	741.52	741.68	741.81	741.94	741.87	741.76	741.63	741.50	741.36
E Pier 2	741.53	741.69	741.82	741.95	741.88	741.77	741.64	741.51	741.37
E Brg. No. Abut.	741.70	741.86	741.99	742.12	742.05	741.94	741.81	741.68	741.54

TOP BEAM OR GIRDER ELEV. SO. BD. LANE
(For Fabrication only)

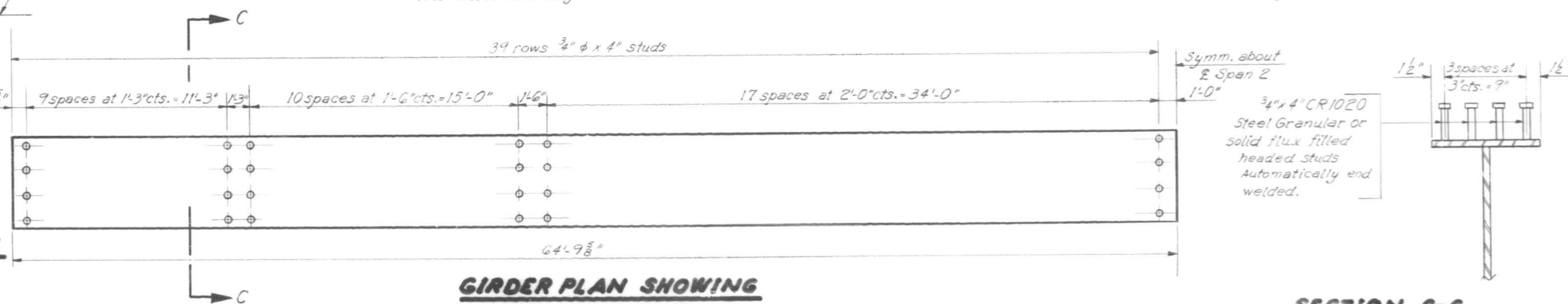
Location	Beam 10	Beam 11	Beam 12	Beam 13	Beam 14	Beam 15	Beam 16	Beam 17	Beam 18
E.Brg. So.Abut.	740.14	740.30	740.45	740.61	740.74	740.83	740.73	740.61	740.48
E.Brg. Pier 1	740.46	740.62	740.77	740.93	741.06	741.15	741.05	740.93	740.81
E.Connection 1	740.48	740.64	740.79	740.95	741.08	741.17	741.07	740.95	740.81
E.Connection 2	741.15	741.31	741.46	741.62	741.75	741.84	741.74	741.62	741.47
E.Brg. Pier 2	741.16	741.32	741.47	741.63	741.76	741.85	741.75	741.63	741.50
E.Brg. No.Abut.	741.36	741.52	741.67	741.83	741.96	742.05	741.95	741.83	741.70

TOP BEAM OR GIRDER ELEV. NO. BD. LANE
(For Fabrication only)

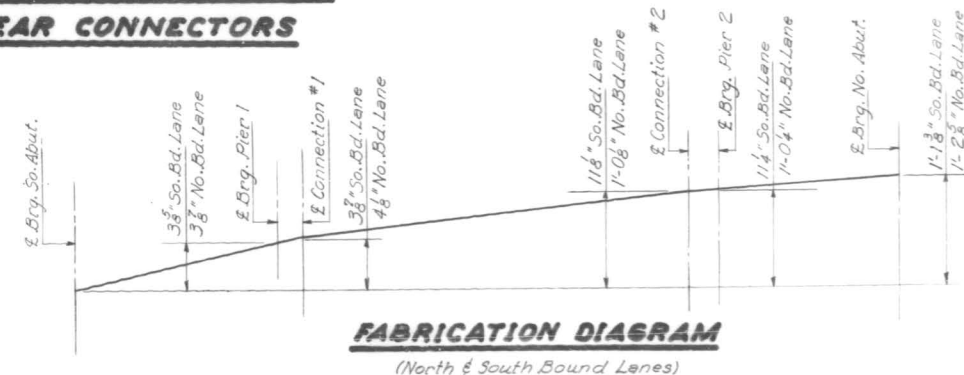


CONNECTION DETAILS

(Fascia Girders)



GIRDER PLAN SHOWING
SHEAR CONNECTORS



SECTION C-C

DESIGNED	Dan Chilton
CHECKED	Jamie M. Barker
DRAWN	S. Usterik
CHECKED	B

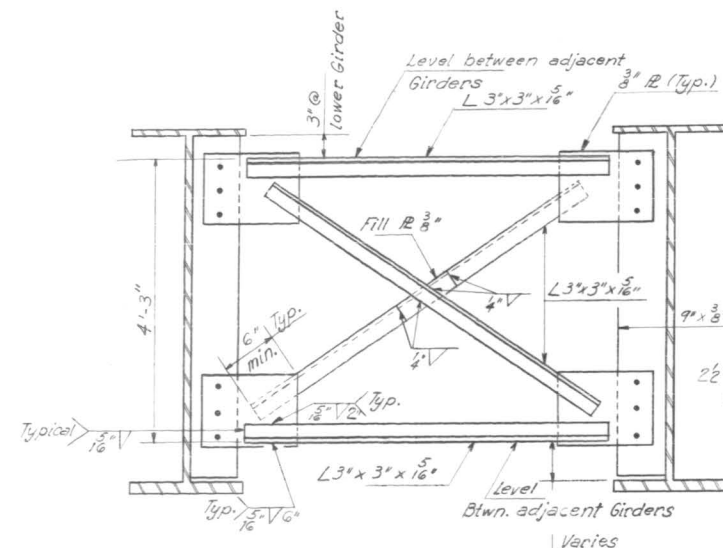
EXAMINED *Paul E. T...*
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED *H.E. Baumann*
ENGINEER OF DESIGN
APPROVED *H.E. Baumann*
CHIEF ENGINEER

STRUCTURAL STEEL
F.A.I. RT. 90-SEC. 0104-313-HB
COOK COUNTY
STATION 561+70

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

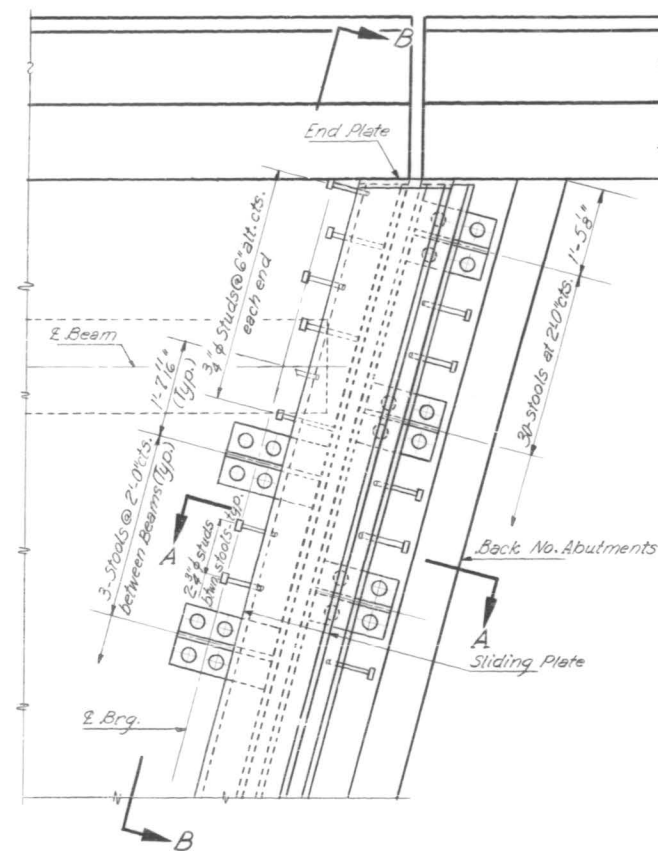
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
U.S. 90	0404-313-HB	Cook	306	129
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 7
21 SHEETS



STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO.
R. & L. 90	0404-313	Cook	306	130	21 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

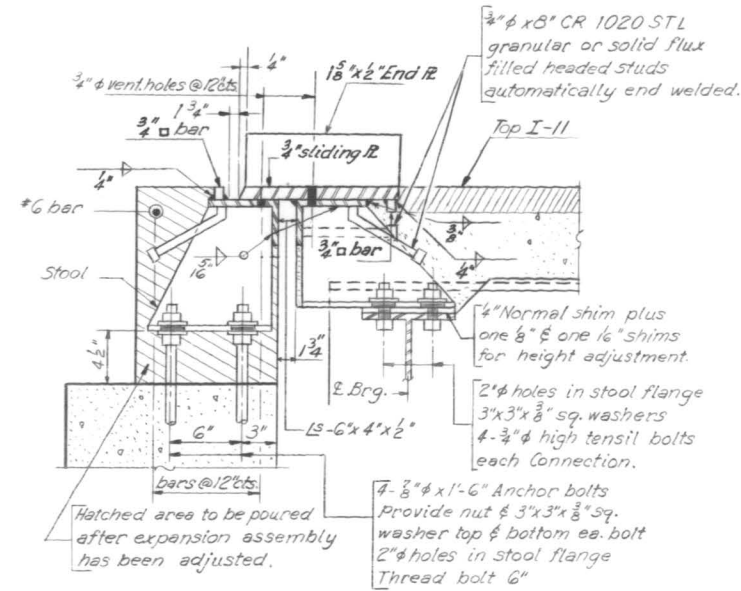


**PLAN OF SLIDING PLATE EXPANSION
DEVICE AT NORTH ABUTMENTS**

TABLE OF MOMENTS & REACTIONS-INTERIOR BEAMS				
	MOMENTS		REACTIONS	
	Span I	Pier I	Abutment	Pier I
D.L.	199.0	262.0	21.6	121.3
L.L.	378.0	117.0	37.0	57.8
Imp.	110.0	34.1	10.8	10.9
Total	687.0	413.1	69.4	190.0

Properties: 36 WF 150 Spans 1 & 3
I-Moment of Inertia = 9012.1 in⁴
S-Sec. Modulus = 502.9 in³

SPANS 1 & 3-36 WF 150



SECTION A-A

SPAN 2-R GIRDER

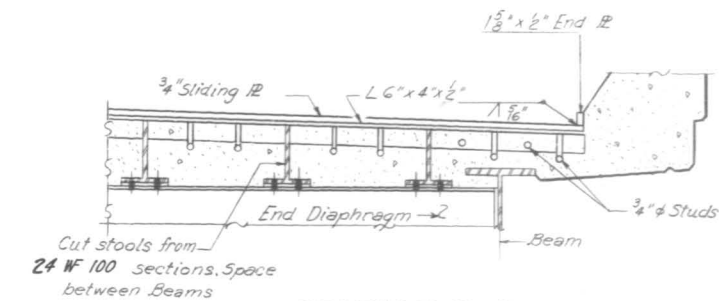
TABLE OF MOMENTS & SHEARS INTERIOR BEAMS			
D.L.	Steel Section Maximum Moment		
	2,220		
	Composite Section Max. Moment		
	541.0		
S.D.L.	1320.0		
	248.0		
	2109.0		
	Total		
S.D.L.	Suppt.	4 pt.	1/2 pt.
	16.7	8.4	0
	L.L.	43.0	25.5
	Imp.	8.2	4.9
Total	67.9	38.8	14.0

D.L. = Dead Load
S.D.L. = Super imposed dead load acting on Composite Section
L.L. = Live Load
Imp. = Impact
I.S. = Moment of inertia Steel Sec.
S.T.S. = Sec. Modulus top Steel Sec.
S.B.S. = Sec. Mod. bottom Steel Sec.
I.C. = Moment of Inertia Comp. Sec.
S.T.C. = Sec. Mod. top Comp. Sec.
S.B.C. = Sec. Mod. bottom Comp. Sec.

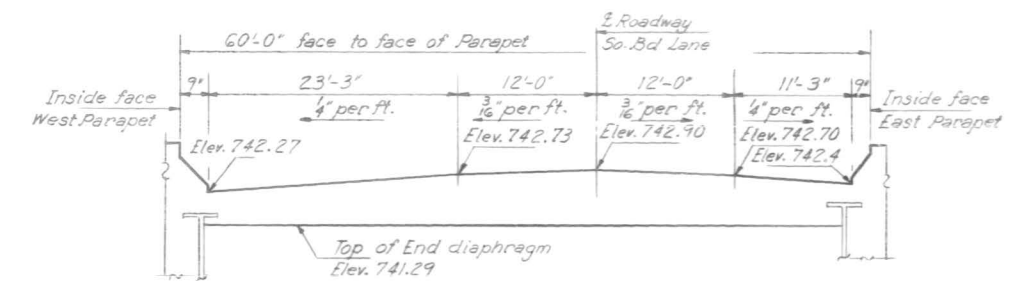
Moments are in Ft.-Kips
Reactions & Shears are in Kips

PROPERTIES-SPAN 2

Steel Section	
IS	64,656 in ⁴
STS	1,788 in ³
SBS	2,409 in ³
Composite Section	
IC	121,746 in ⁴
STC	5830.7 in ⁴
SBC	2890.4 in ⁴

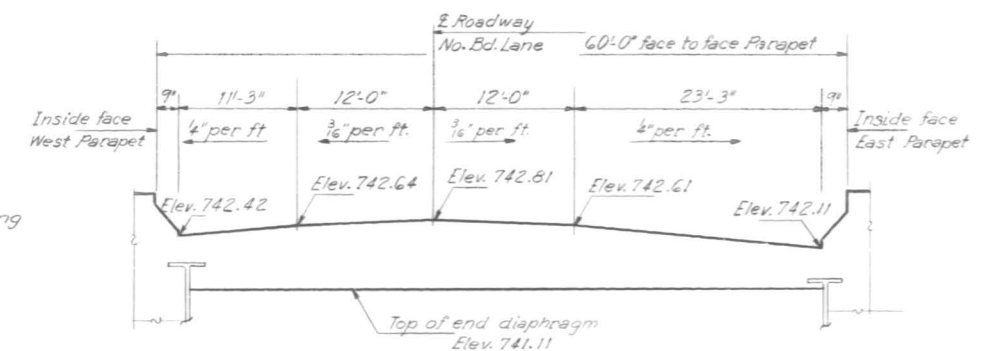


SECTION B-B



**SHOWING ELEVATIONS AT TOP OF I-II
BRG. NO. ABUT.-SO. BD. LANE**

(Looking North)



**SHOWING ELEVATIONS AT TOP OF I-II
BRG. NO. ABUT.-NO. BD. LANE**

(Looking North)

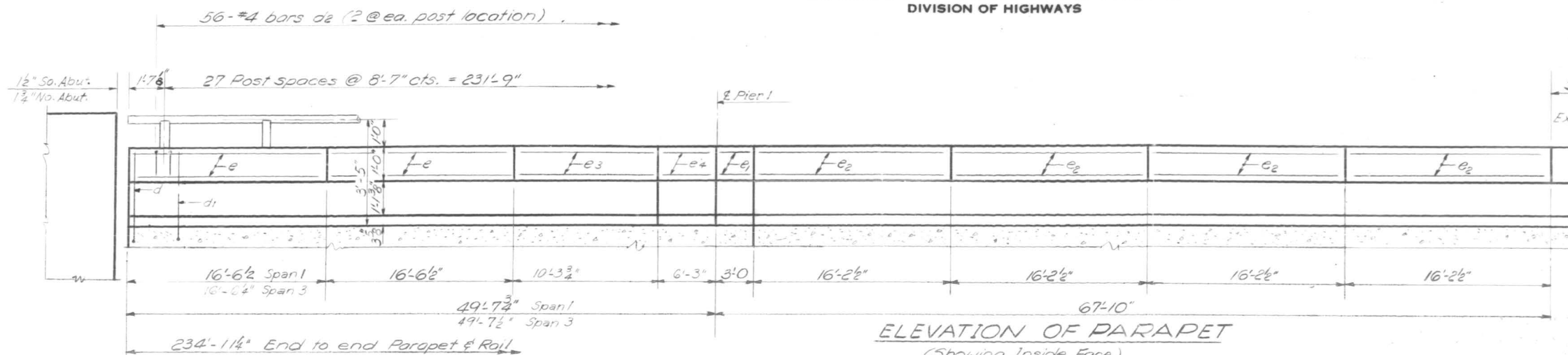
DESIGNED	Don Chilton
CHECKED	James M. Baskin
DRAWN	sustenik DdC
CHECKED	JB

EXAMINED
PASSED
APPROVED
CHIEF HIGHWAY ENGINEER

SLIDING PLATE DETAIL
R.A.L. RT. 90-SEC. 0404-313-HB
COOK COUNTY
STATION 561+70

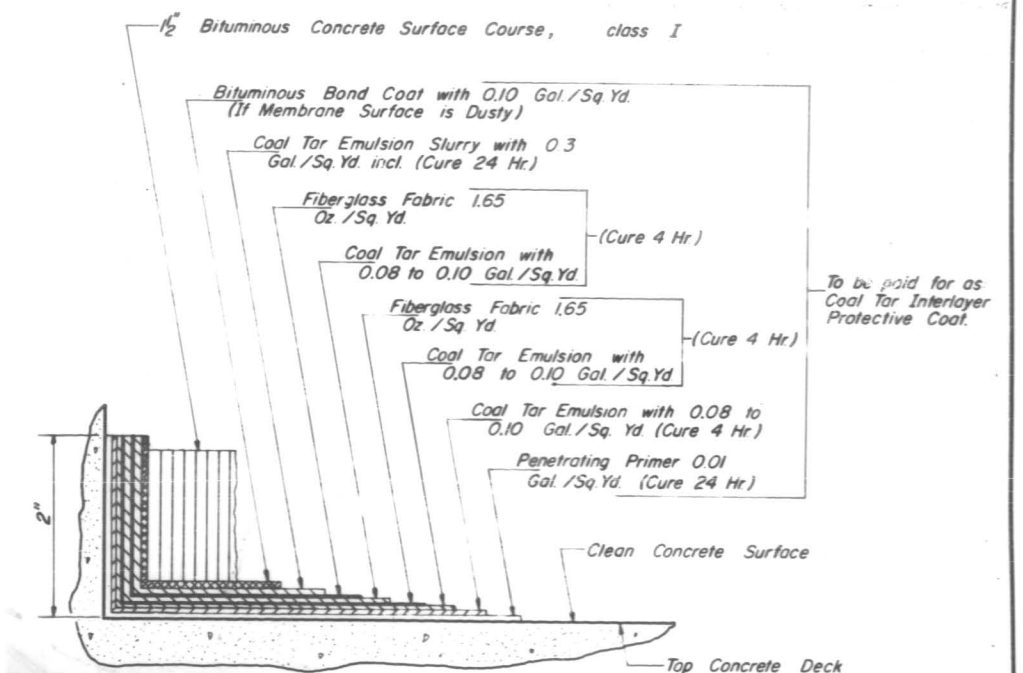
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	0404	Cook	306	131
SHEET NO. 9				
21 SHEETS				

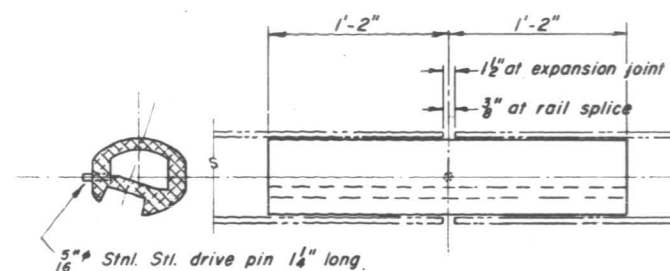


DECK SURFACING

- Note:
- 1) e thru e4 bars are #4. Provide 2 Ea. Face
 - 2) d thru d4 bars are billed & detailed on Sheet #2



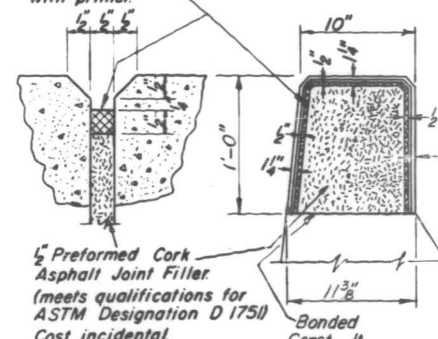
RAIL SPLICE



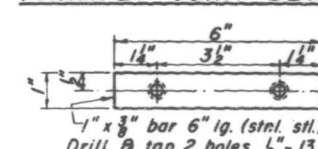
NOTES:

- All Posts shall be normal to parapet.
- All Aluminum Alloy Extruded Rail shall conform to ASTM specification B-221 alloy 6061-T6 and shall be supplied in modular lengths of 30 feet, except at the end of bridge or over open joints in bridge deck where the rail shall be attached to a minimum of 2 posts. If the rail is on a horizontal curve of 2300 foot radius or less, the modular lengths may be reduced but shall be attached to a minimum of 2 posts.
- All joints in rail shall be spliced per detail.

Two component non-staining gray sealing compound with polysulfide liquid polymers - gun grade with primer.

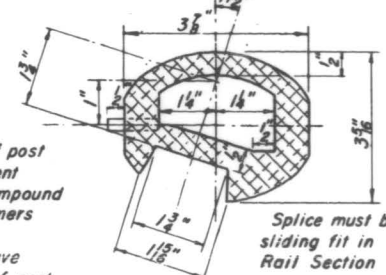


PARAPET JOINT DETAIL

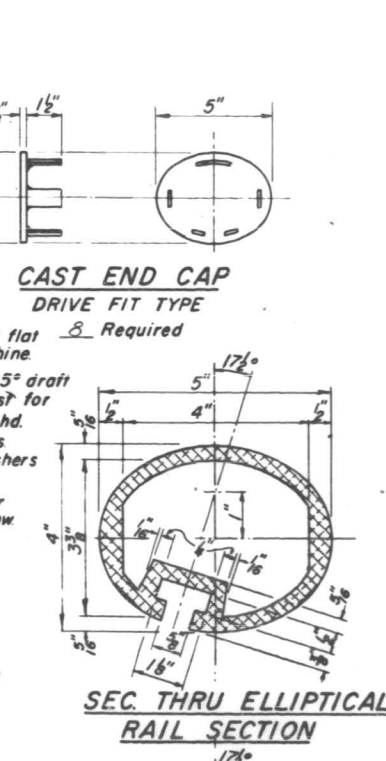


CLAMP BAR

SEC. THRU ELLIPTICAL RAIL SECTION



SEC. THRU SPLICE



RAIL POST DETAILS

DESIGNED	Don Chilton
CHECKED	James M. Becker
DRAWN	Wm. M. Best
CHECKED	B

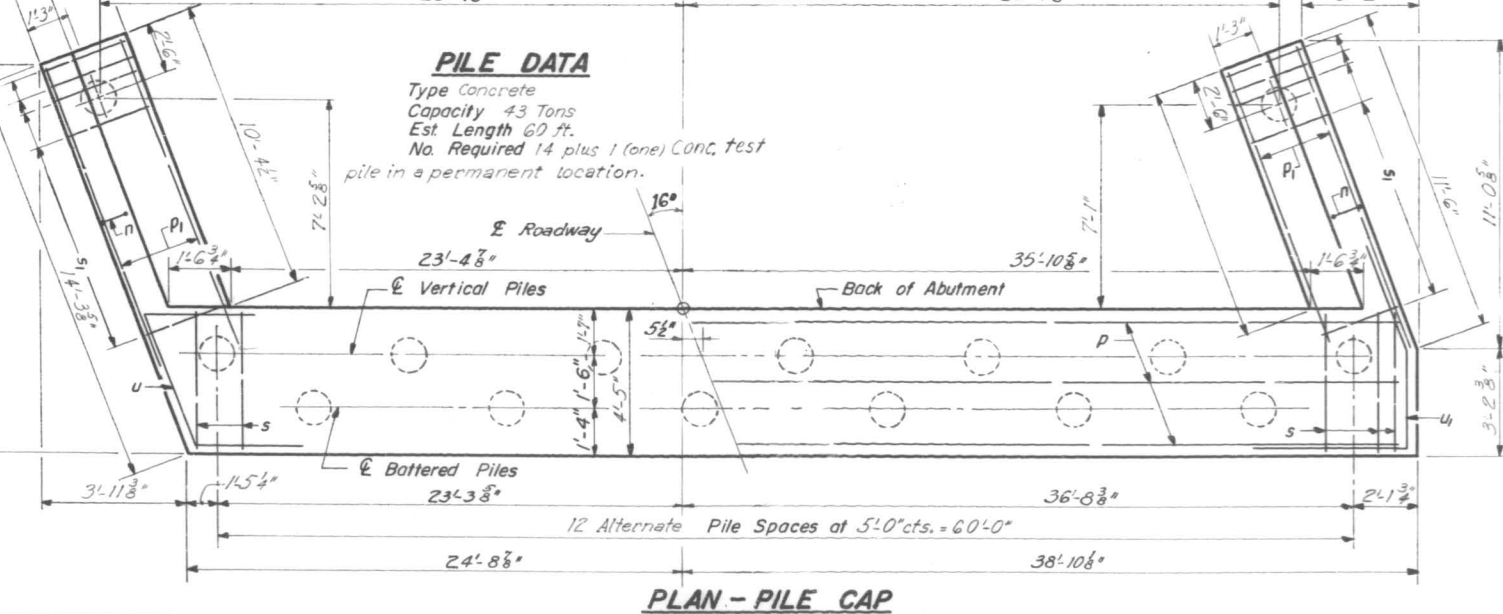
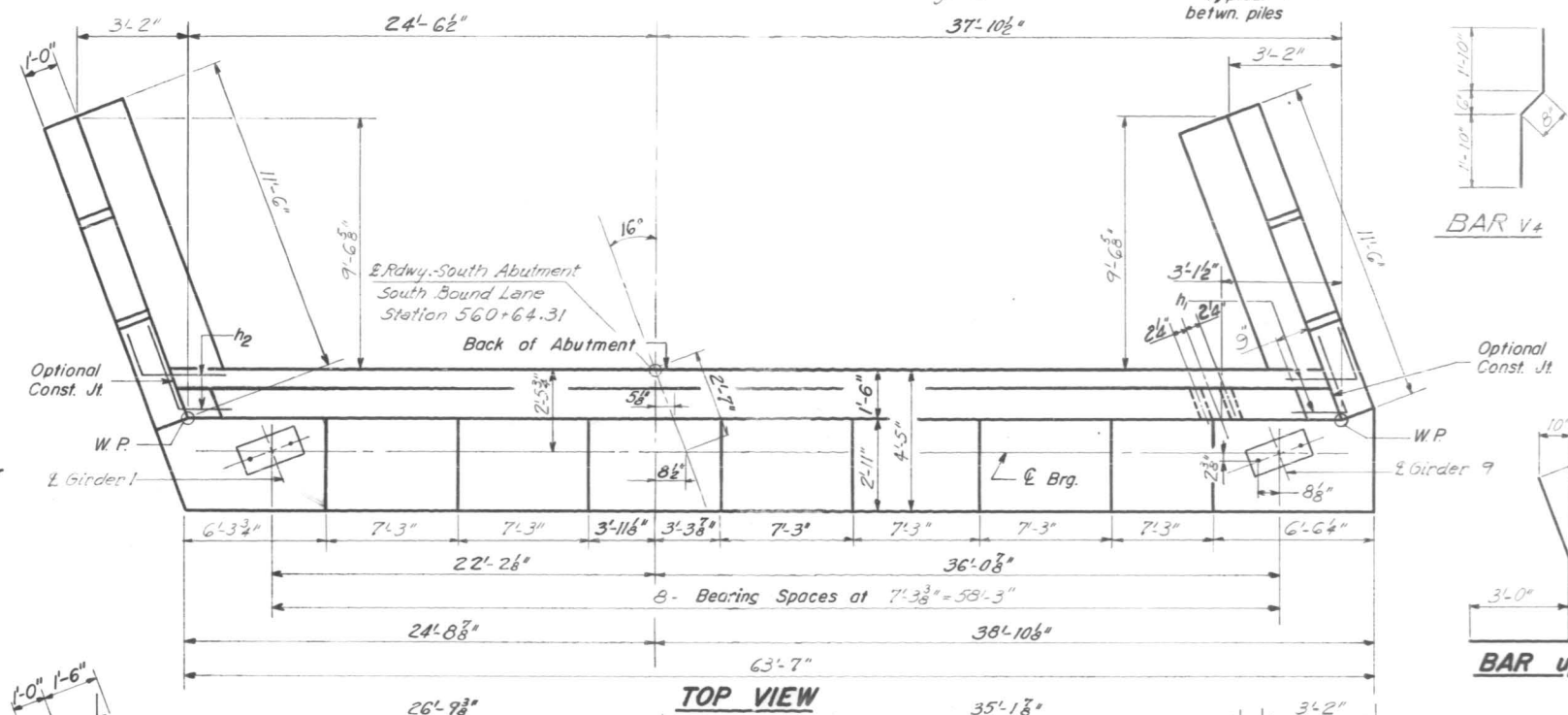
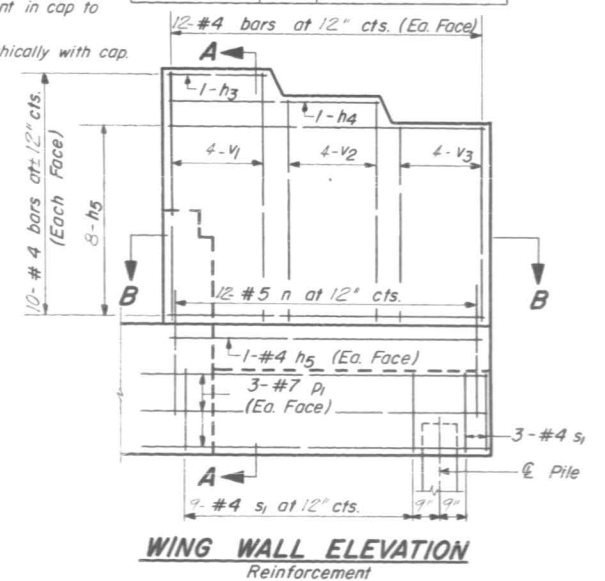
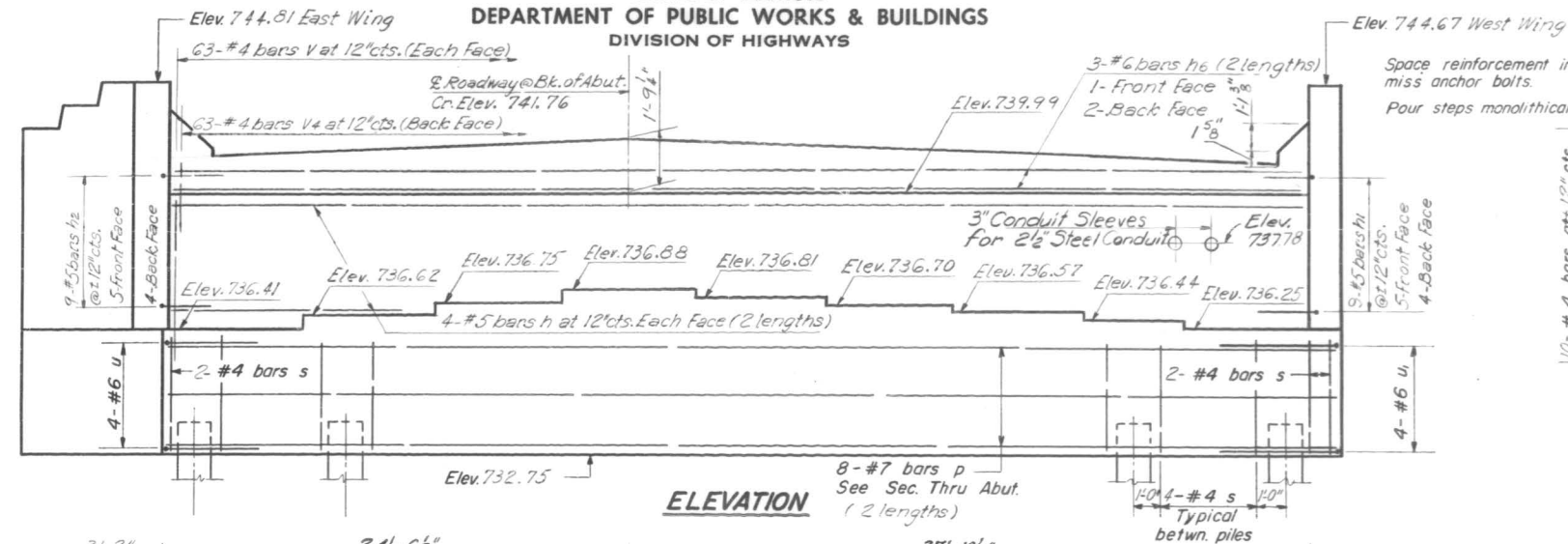
EXAMINED	June 24, 1968
PASSED	W.E. Beermann
APPROVED	J.E. Staff

Note: Seal perimeter of base of post to parapet with two component non-staining gray sealing compound with polysulfide liquid polymers - gun grade with primer. Fabric Bearing Pad shall have same dimensions as base of post.

TWO STRUCTURES
PARAPETS & RAILS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
e	64	#4	16'-3"	—
e1	32	#4	2'-9"	—
e2	128	#4	15'-11"	—
e3	32	#4	10'-0"	—
e4	32	#4	6'-0"	—
Class X Concrete				Cu. Yds. 301
Reinforcement Bars				Lbs. 2460
Aluminum Railing				Lin. Ft. 940

ALUMINUM RAILING
F.A.I. RT. 90 SEC. 0404313-HB
COOK COUNTY
STA. 561+70

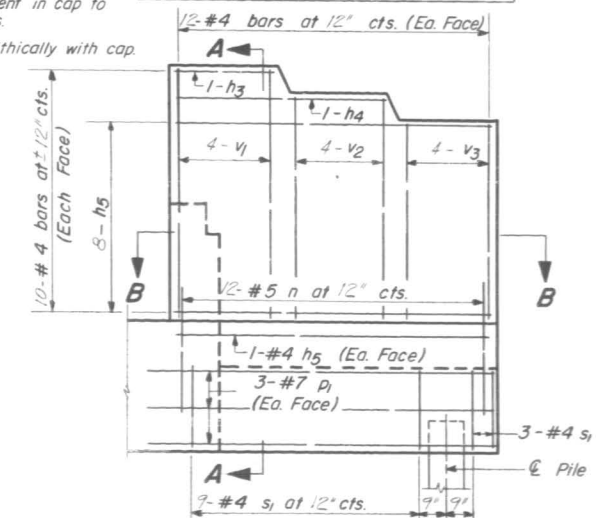
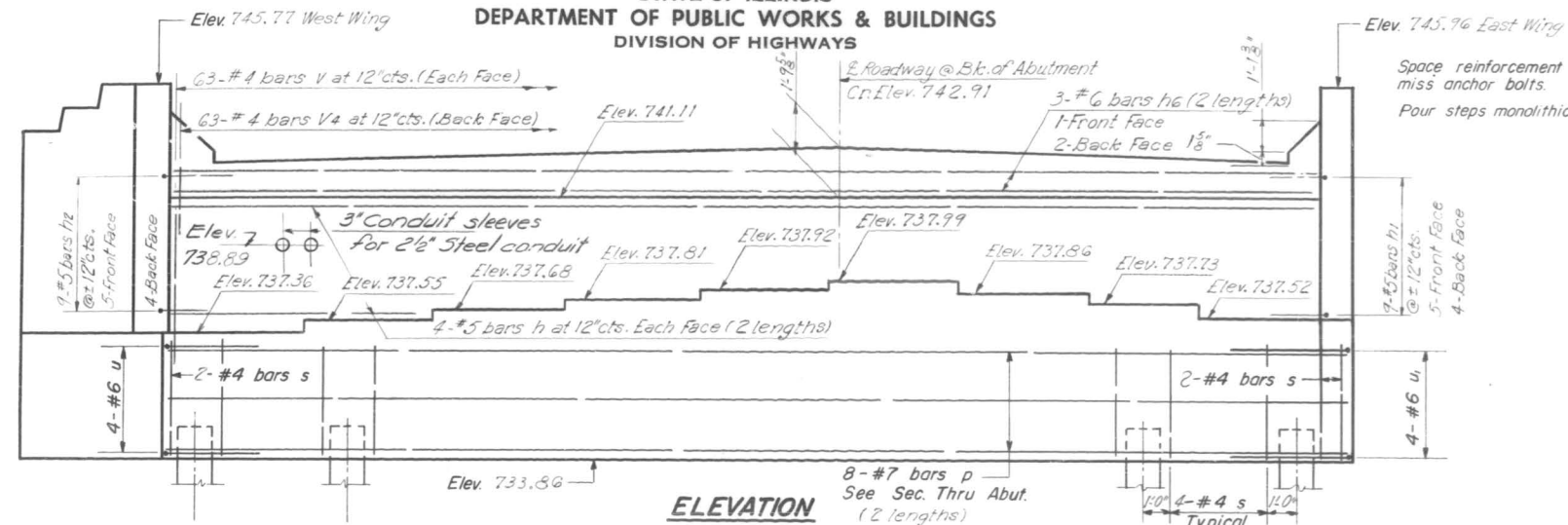


ONE ABUTMENT				
BILL OF MATERIAL				
Bar	No.	Size	Length	Shape
h	16	#5	31'-9"	—
h ₁	9	#5	6'-0"	J
h ₂	9	#5	6'-0"	L
h ₃	4	#4	3'-6"	—
h ₄	4	#4	7'-3"	—
h ₅	36	#4	11'-3"	—
h ₆	6	#6	32'-0	—
n	24	#5	7'-9"	U
p	16	#7	32'-9"	—
p ₁	12	#7	11'-6"	—
s	52	#4	15'-4"	□
s ₁	24	#4	9'-6"	□
u	4	#6	10'-2"	—
u ₁	4	#6	9'-0"	J
v	126	#4	6'-0	—
v ₁	16	#4	8'-0"	—
v ₂	16	#4	7'-6"	—
v ₃	16	#4	6'-9	—
v ₄	63	#4	4'-4"	—
Class X Concrete			Cu. Yds.	64.2
Reinforcement Bars			Lbs.	4500
Concrete Piles			Lin. Ft.	5-0
Test Piles (Concrete)			Ea	1

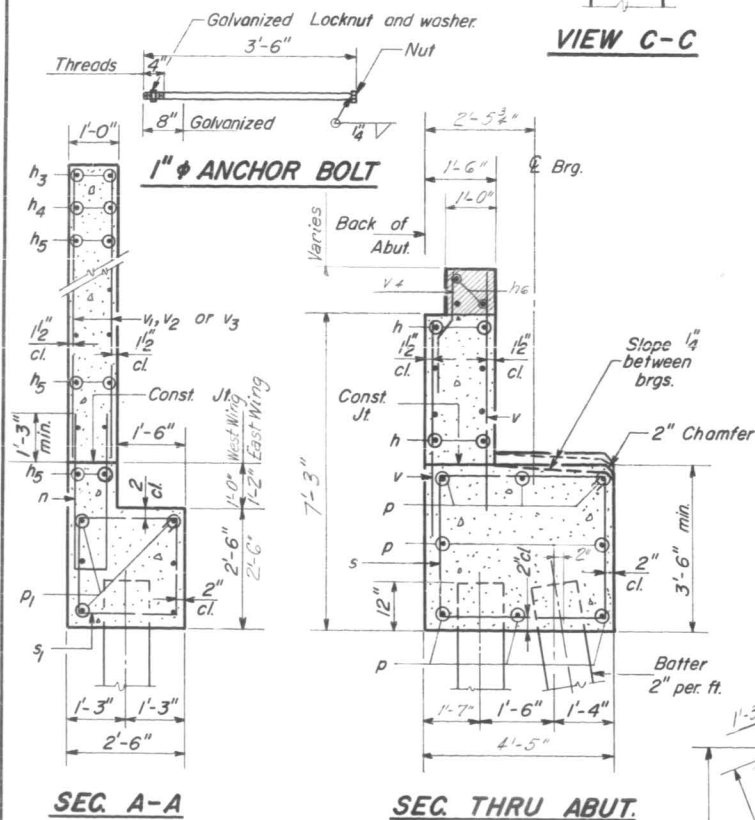
SOUTH ABUT. SOUTH BD. LANE
F.A.I. RT. 90-SEC. 0404-313-HB
COOK COUNTY
STA. 561+70

DESIGNED	<i>Dan Schulten</i>	DATE	<i>June 24</i>	19 <i>88</i>
CHECKED	<i>James M. Backus</i>	EXAMINED	<i>Paul E. Thurman</i>	
	<i>D.S.</i>		ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES	
DRAWN	<i>J. SCHNELLER - U.</i>	PASSED	<i>W.E. Burman</i>	
			REGISTERED ENGINEER OF BRIDGE	
CHECKED	<i>B</i>	APPROVED	<i>V.E. Hoff</i>	
			CHIEF HIGHWAY ENGINEER	

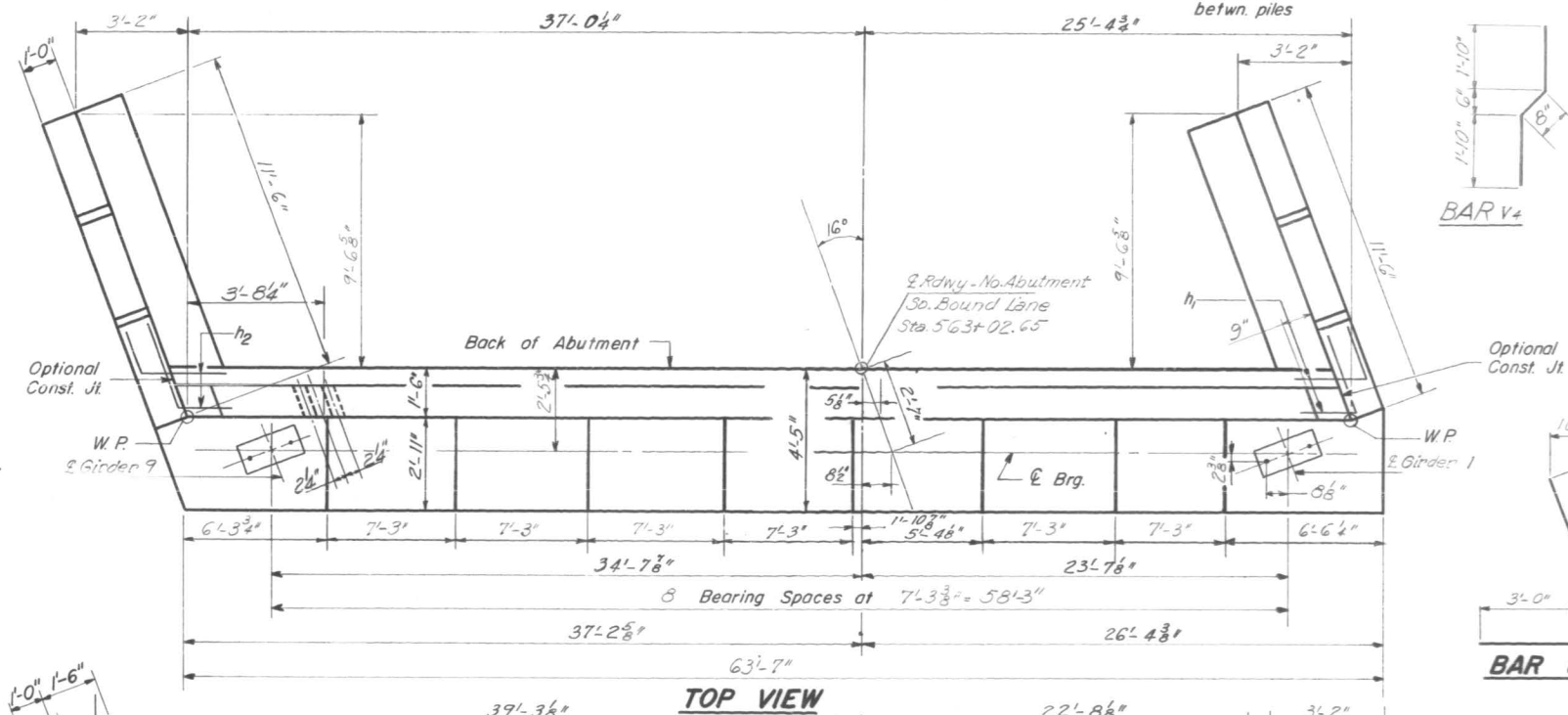
A-9-L (15°-34°) 2-1-66



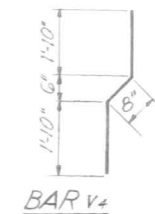
WING WALL ELEVATION
Reinforcement



VIEW C-C



TOP VIEW

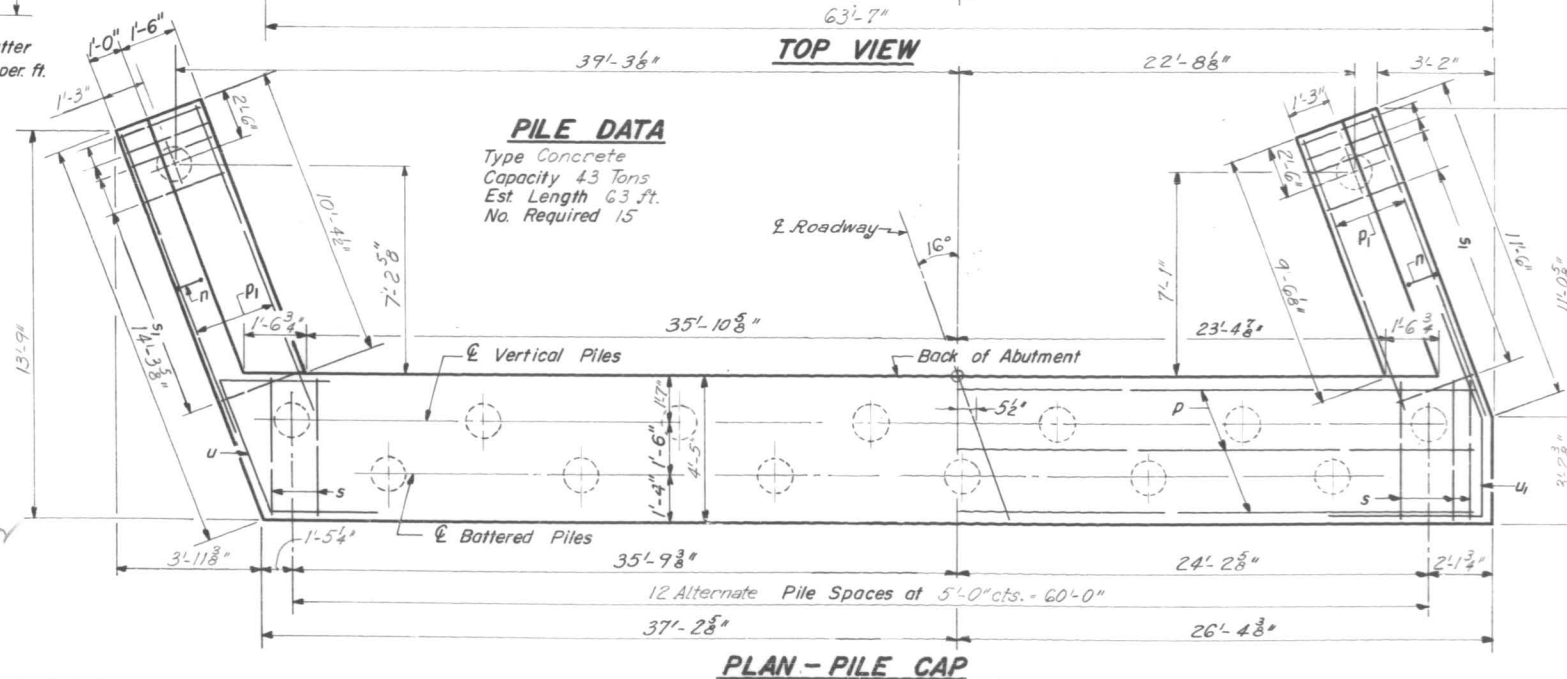


SEC. B-B

ONE ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	16	#5	31'-9"	—
h ₁	9	#5	6'-0"	J
h ₂	9	#5	6'-0"	L
h ₃	4	#4	3'-6"	—
h ₄	4	#4	7'-3"	—
h ₅	36	#4	11'-3"	—
h ₆	6	#6	32'-0"	—
n	24	#5	7'-9"	U
p	16	#7	32'-9"	—
p ₁	12	#7	11'-6"	—
s	52	#4	15'-4"	□
s ₁	24	#4	7'-6"	□
u	4	#6	10'-2"	—
u ₁	4	#6	9'-0"	J
v	126	#4	6'-0"	—
v ₁	16	#4	8'-0"	—
v ₂	16	#4	7'-6"	—
v ₃	16	#4	6'-9"	—
v ₄	63	#4	2'-4"	—
Class X Concrete			Cu. Yds.	64.2
Reinforcement Bars			Lbs.	4500
Concrete Piles			Lin. Ft.	345

NORTH ABUT.-SOUTH BD. LANE
F.A.I. RT. 90-SEC. 0404-313-HB
COOK COUNTY
STATION 561+70



PLAN - PILE CAP

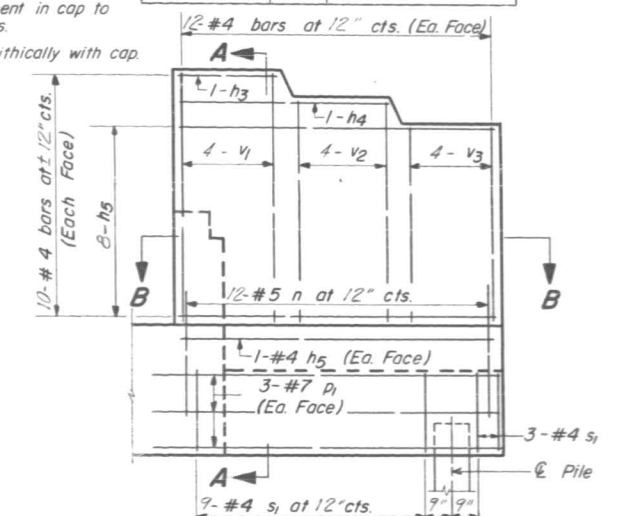
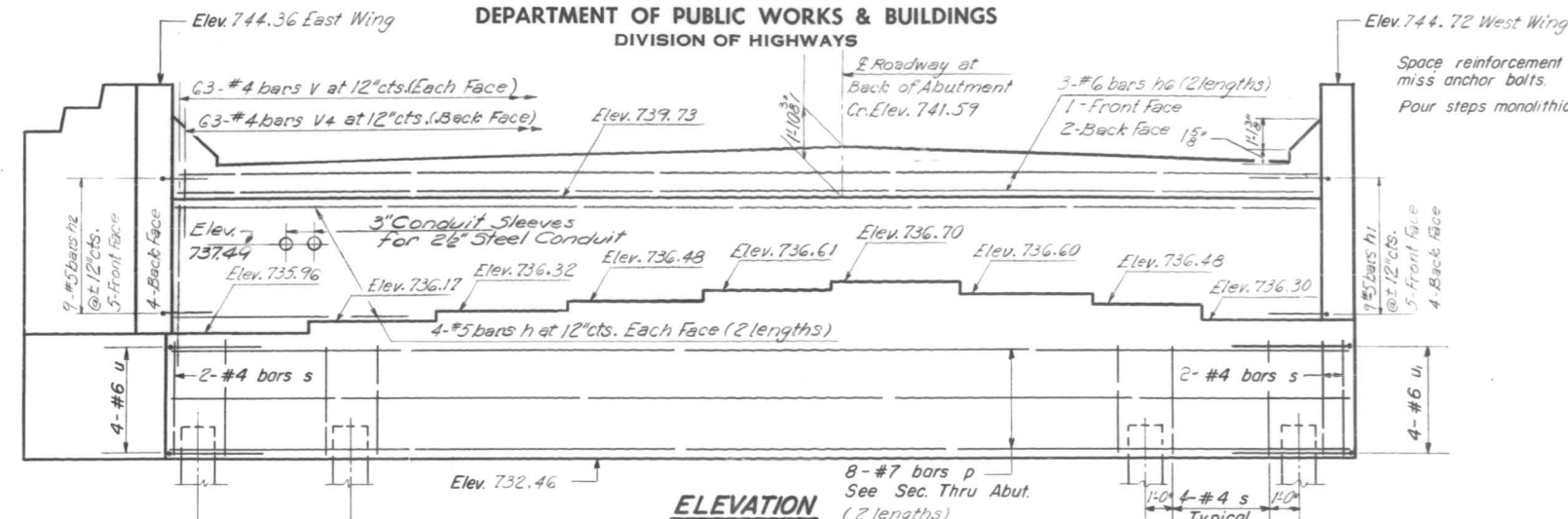
PILE DATA

Type Concrete
Capacity 43 Tons
Est. Length 63 ft.
No. Required 15

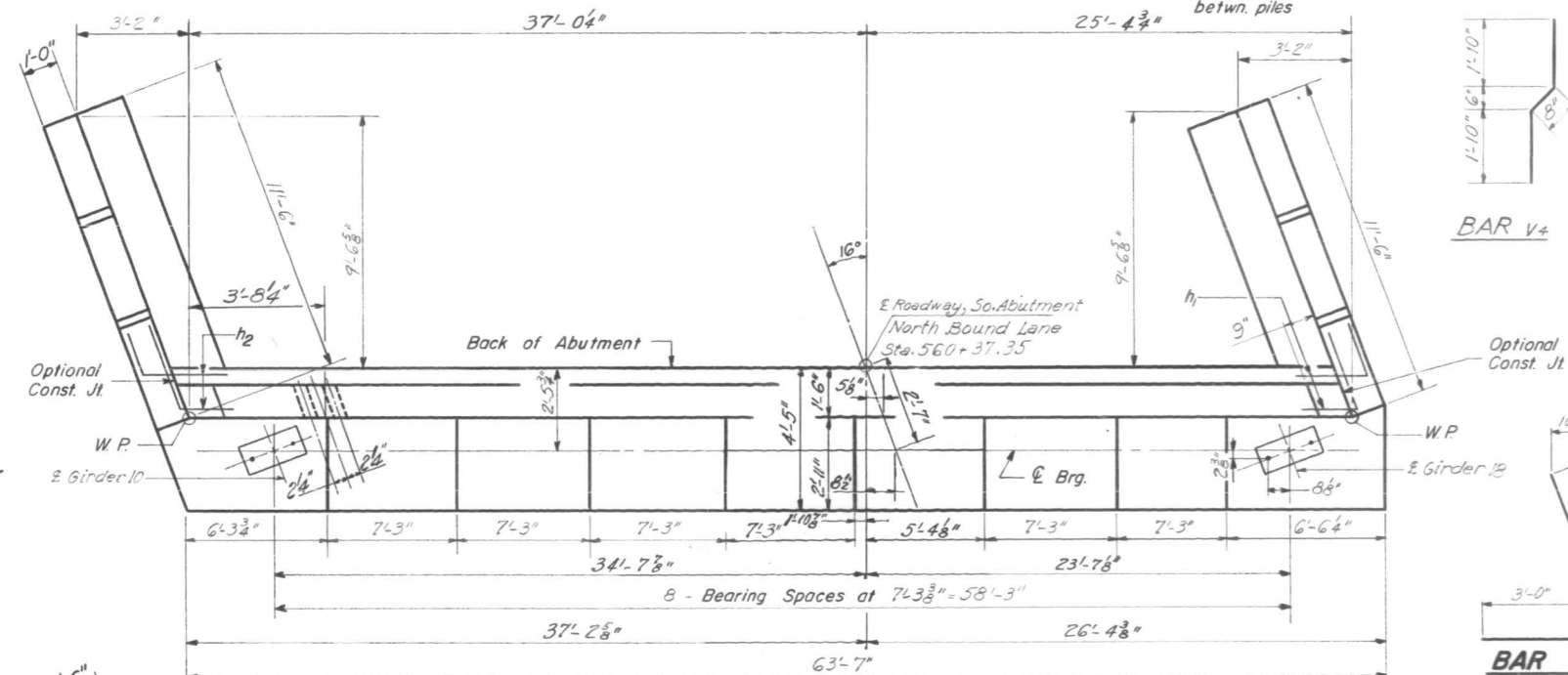
DESIGNED	<i>Sam Chilton</i>
CHECKED	<i>James M. Barker</i>
DRAWN	<i>J. SCHNELLER</i> <i>S.4.</i>
CHECKED	<i>B</i>

EXAMINED Paul E. Thompson
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED H.E. Baumann
ENGINEER OF DESIGN
APPROVED V.E. Slatt

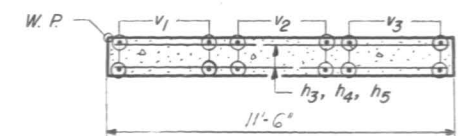
A-9-L (15°-34°) 2-1-66



VIEW C-C



WING WALL ELEVATION
Reinforcement



SEC. B-B

ONE ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	16	#5	31'-9"	—
h ₁	9	#5	6'-0"	J
h ₂	9	#5	6'-0"	L
h ₃	4	#4	3'-6"	—
h ₄	4	#4	7'-3"	—
h ₅	36	#4	11'-3"	—
h ₆	6	#6	32'-0"	—
n	24	#5	7'-9"	U
p	16	#7	32'-9"	—
p ₁	12	#7	11'-6"	—
s	52	#4	15'-4"	□
s ₁	24	#4	9'-6"	□
u	4	#6	10'-2	┐
u ₁	4	#6	9'-0"	J
v	126	#4	6'-0"	—
v ₁	16	#4	8'-0"	—
v ₂	16	#4	7'-6"	—
v ₃	16	#4	6'-9"	—
v ₄	63	#4	4'-4"	┐
Class X Concrete			Cu. Yds.	64.2
Reinforcement Bars			Lbs.	4500
Concrete Piles			Lin. Ft.	335

SOUTH ABUT. NORTH BD. 1 ANE
F.A.I. RT. 90 - SEC. 0404 - 313-HB
COOK COUNTY
STA. 561+70

SEC A-A

SEC. THRU ABUT.

See Sheet #10 for Detail
of Conduit under Bridge

DESIGNED	<i>Ann Chilton</i>
CHECKED	<i>Jessie M. Barker</i>
DRAWN	<i>J. SCHNELLER S.U.</i>
CHECKED	<i>B</i>

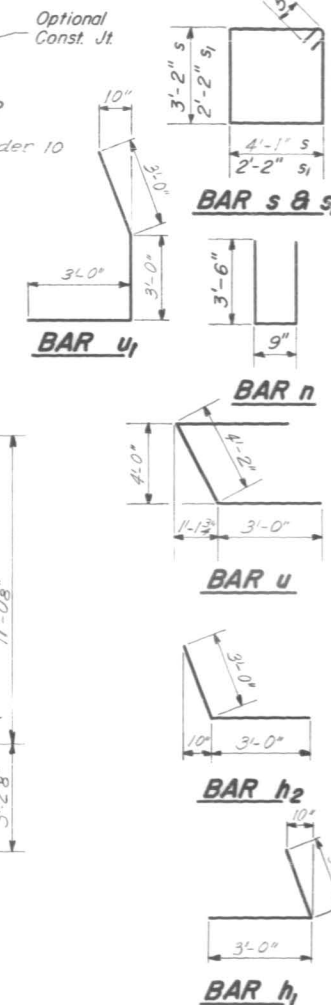
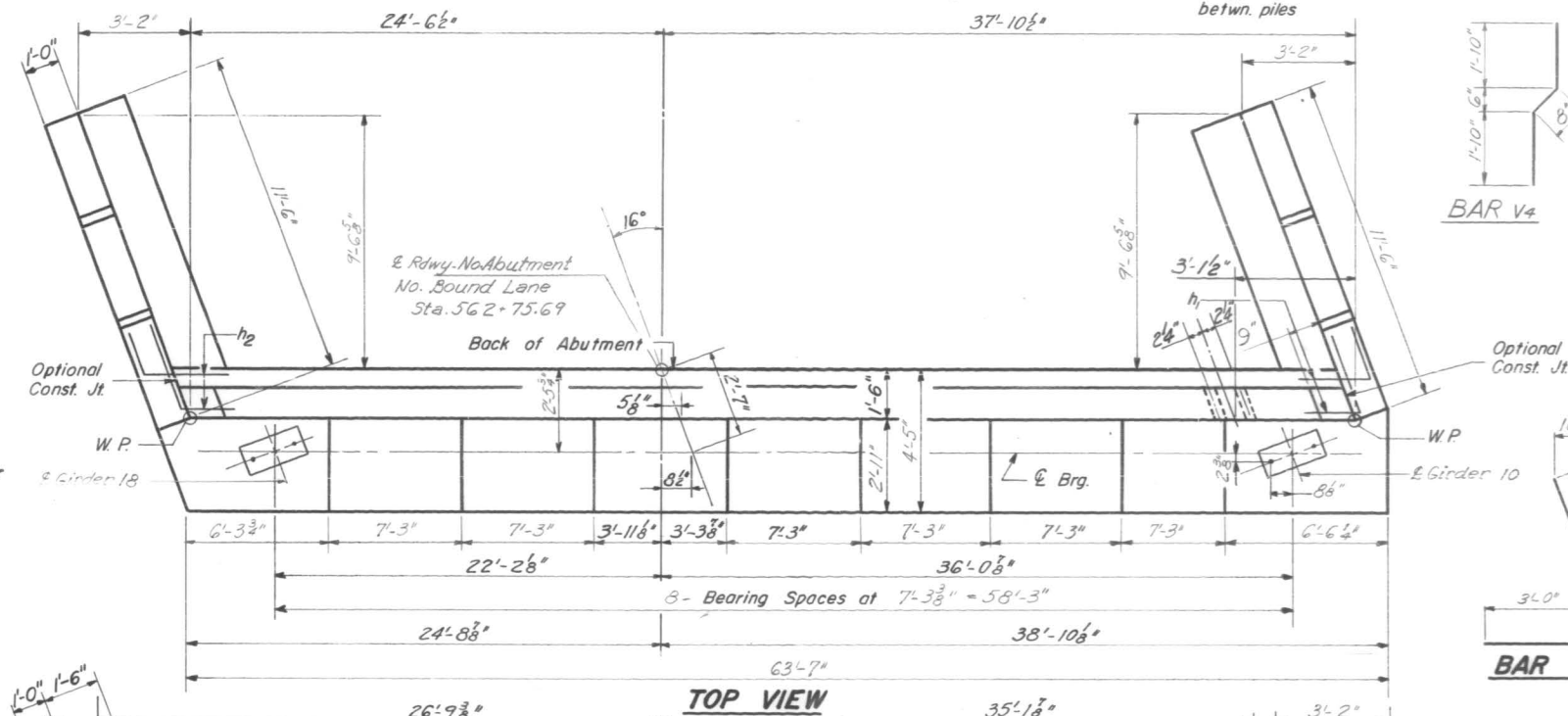
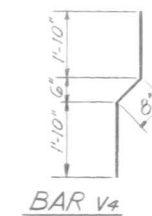
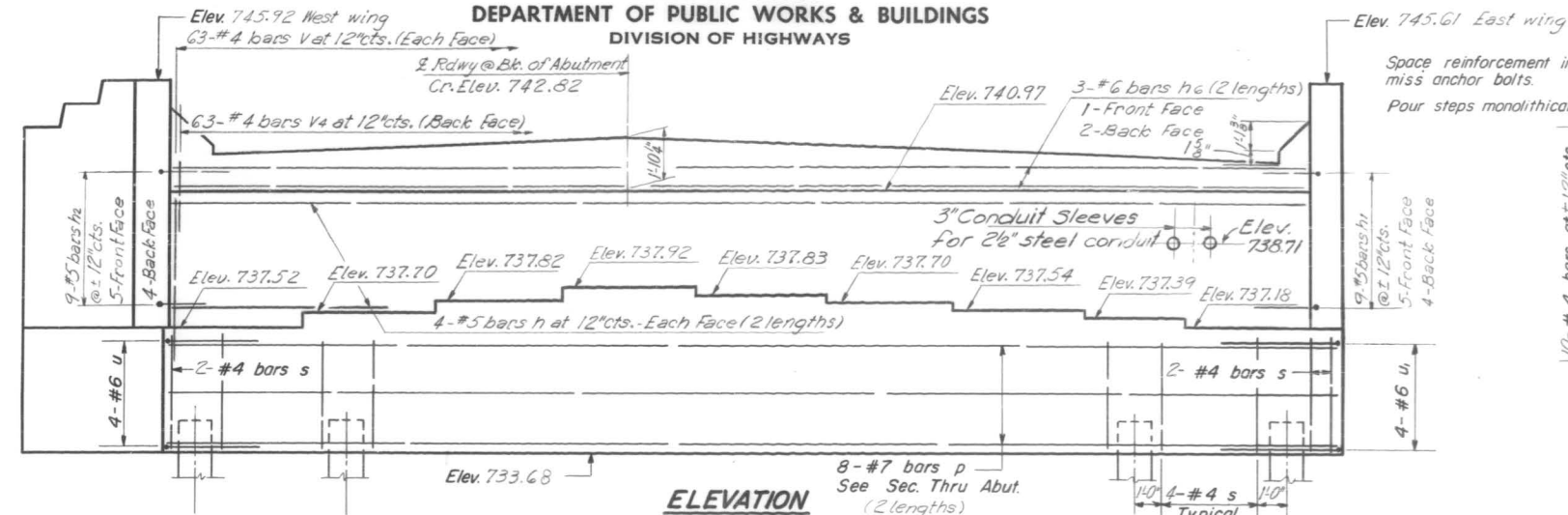
June 24 1968
EXAMINED *Paul E. Thompson*
ENGINEER OF HIGHWAY AND TRAFFIC STRUCTURES
PASSED *W.E. Benner*
LICENSED BY BOARD
APPROVED *V.E. Hest*
CHIEF HIGHWAY ENGINEER

PILE DATA

Type Concrete
Capacity 43 Tons
Est. Length 59 ft.
No. Required 15

TOP VIEW

PLAN - PILE CAP



ONE ABUTMENT				
<u>BILL OF MATERIAL</u>				
Bar	No.	Size	Length	Shape
h	16	#5	31'-9"	—
h ₁	9	#5	6'-0"	J
h ₂	9	#5	6'-0"	L
h ₃	4	#4	34'-6"	—
h ₄	4	#4	7'-3"	—
h ₅	36	#4	11'-3"	—
h ₆	6	#6	32'-0"	—
n	24	#5	7'-9"	U
p	16	#7	32'-9"	—
p ₁	12	#7	11'-6"	—
s	52	#3	15'-4"	□
s ₁	24	#4	9'-6"	□
u	4	#6	10'-2"	U
u ₁	4	#6	9'-0"	J
v	126	#4	6'-0"	—
v ₁	16	#4	8'-0"	—
v ₂	16	#4	7'-6"	—
v ₃	16	#4	6'-9"	—
v ₄	63	#4	4'-4"	J
Class X Concrete			Cu. Yds.	64.2
Reinforcement Bars			Lbs.	4500
Concrete Piles			Lin. Ft.	854
Test Pile (Concrete)			Ea.	1

NORTH ABUT.-NORTH BD. LANE
FA.I. RT. 90 - SEC. 0404-313-HB
COOK COUNTY
STA. 561+70

See Sheet #10 for Detail
of Conduit under Bridge

DESIGNED	<i>Don Schulten</i>
CHECKED	<i>James M. Barker</i>
DRAWN	<i>J. SCHNELLER</i>
CHECKED	<i>B</i>

EXAMINED *Carl E. T. [Signature]*
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED *W.E. Baumann*
ENGINEER OF DESIGN
APPROVED *V.E. Staff*

A-9-L (15°-34°) 2-1-66

PLAN - PILE CAP

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 15 21 SHEETS
S. & L. F. & E. 90	0404- 313 HB	COOK	306	137	
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-		

lengths per line.

South
Face

Beam 9-South Bd. Lane

8 Brg. spaces @ $7' 3 \frac{3}{8}" = 58' 1.3"$

35'-4 $\frac{3}{8}"$

38'-5 $\frac{3}{8}"$

6'-2 $\frac{3}{8}"$

E. Roadway-So. Bd. Lane
Sta. 562+51.31
Cr. Elev. 742.73

26'-0 $\frac{1}{8}"$

E Pier

2'-6"

1'-3" 1'-3"

8' 3"

2' 8"

7'-0"

7'-2"

7'-2"

7'-2"

7'-6"

2'-5 $\frac{7}{8}"$

4'-8 $\frac{1}{8}"$

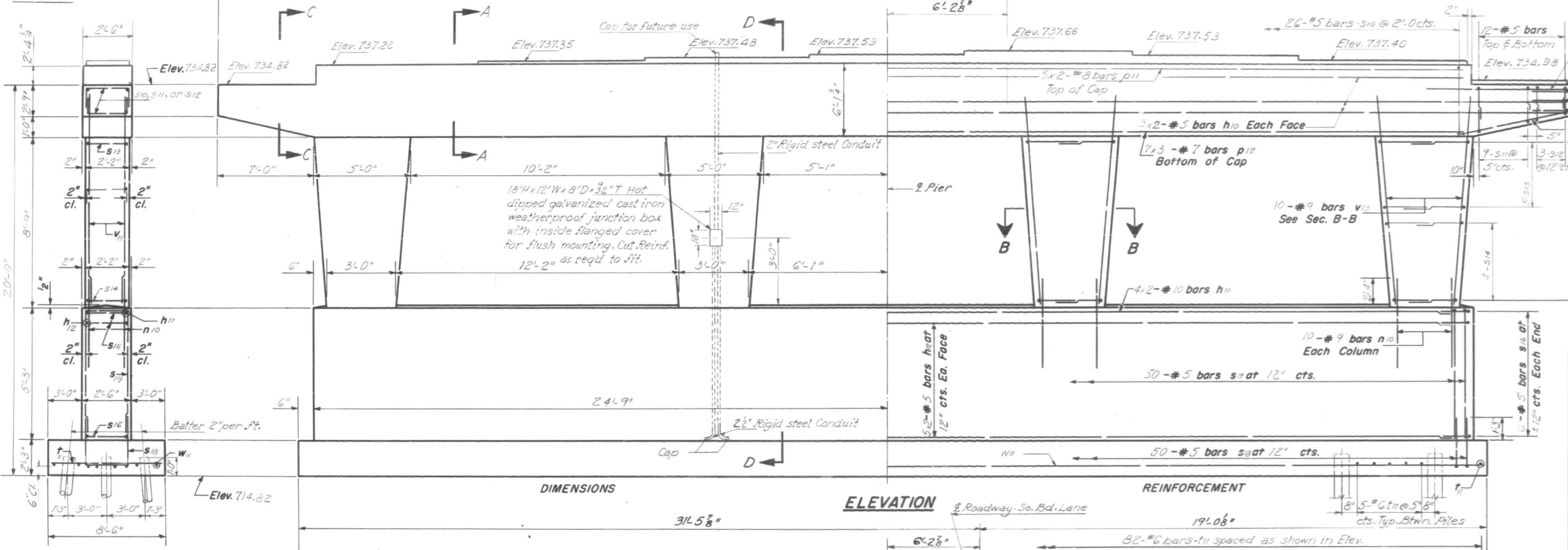
7'-2"

7'-2"

7'-0"

TOP PLAN

SEC. D-D



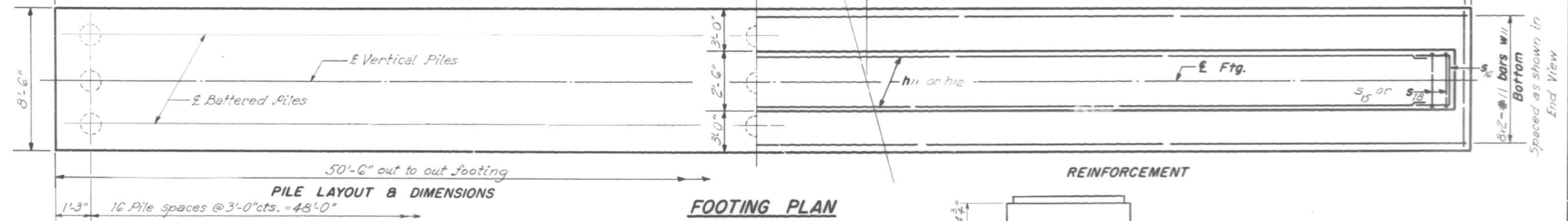
Type - Creosoted
Capacity - 20 Tons
Est. Length - 25'
No. Req'd. - 51
Test Piles - 1

DESIGNED	<i>Don Chilton</i>
CHECKED	<i>James M. Barker</i>
DRAWN	<i>W. A. Sausaman Jr.</i>
CHECKED	<i>B</i>

EXAMINED June 24 1968
Carl E. Beumann Jr.
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES

PASSED W.E. Beumann
ENGINEER OF DESIGN

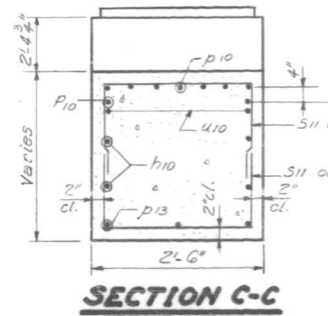
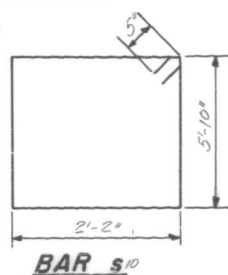
APPROVED W.E. Beumann
CHIEF HIGHWAY ENGINEER



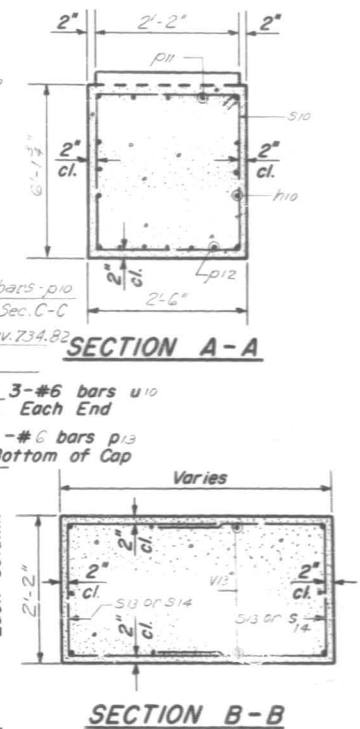
A & B DIMENSIONS

Bar	A	B
S11	2'-2"	2'-8"
S12	2'-2"	2'-3"
S13	1'-10"	2'-11"
S14	1'-10"	2'-4"
S16	2'-0"	1'-3"
S18	2'-2"	3'-0"
S19	2'-2"	4'-11"

S11 thru S14, S16, S18 & S19



Note:
Space reinforcement in cap to miss anchor bolts.
Min. bar laps = 24 dia. unless otherwise noted.
All edges shall have standard $\frac{3}{4}$ " chamfers except as noted.
Four steps monolithically with cap.



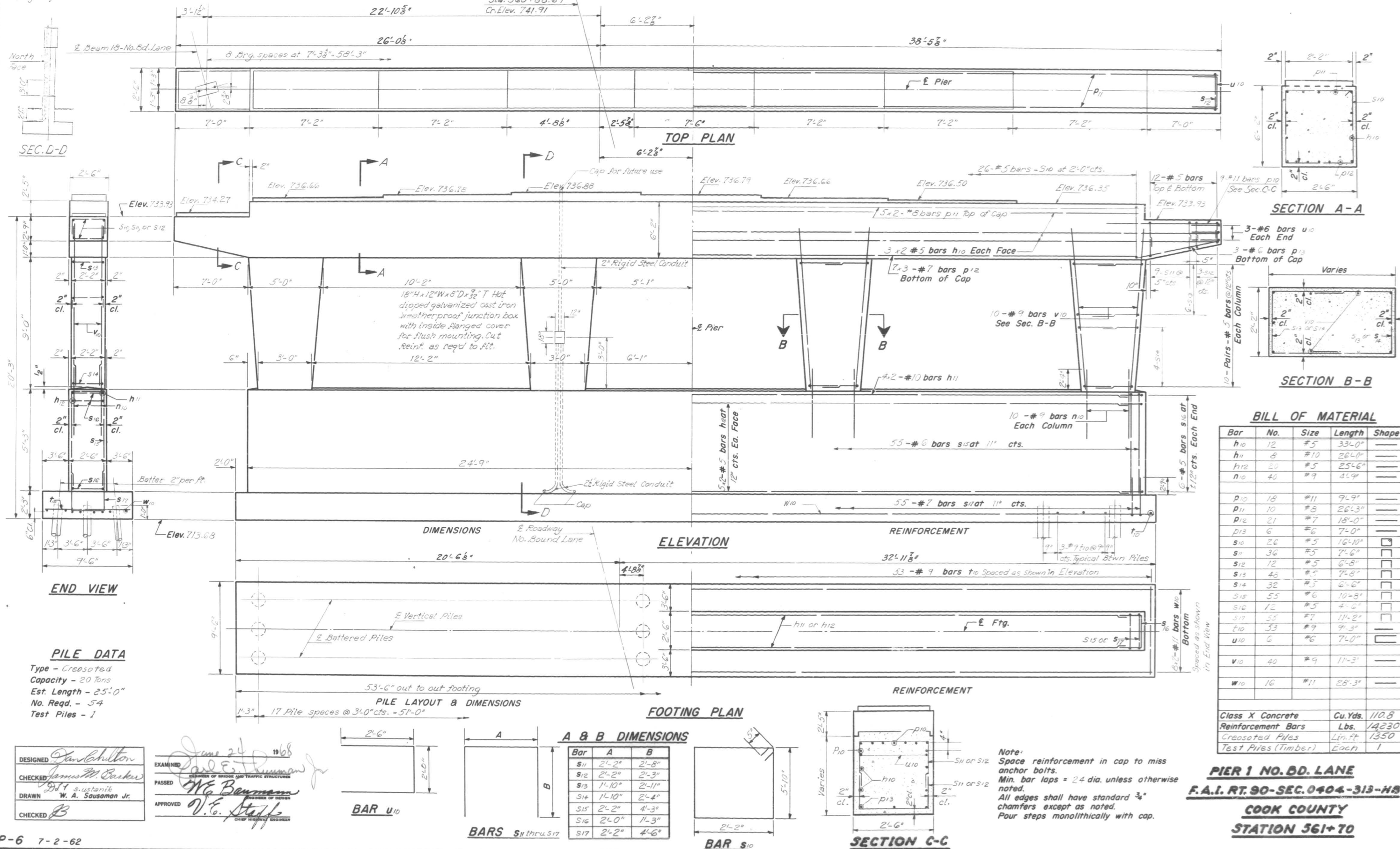
734.82 SECTION A-A

SECTION B-B

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
<i>h</i> ₁₀	12	#5	33'-0"	—
<i>h</i> ₁₁	8	#10	26'-0"	—
<i>h</i> ₁₂	20	#5	25'-6"	—
<i>n</i> ₁₀	40	#9	4'-9"	—
<i>p</i> ₁₀	18	#11	9'-9"	—
<i>p</i> ₁₁	10	#8	26'-3"	—
<i>p</i> ₁₂	21	#7	18'-0"	—
<i>p</i> ₁₃	6	#6	7'-0"	—
<i>s</i> ₁₀	26	#5	16'-10"	□
<i>s</i> ₁₁	36	#5	7'-6"	□
<i>s</i> ₁₂	12	#5	6'-8"	□
<i>s</i> ₁₃	40	#5	7'-8"	□
<i>s</i> ₁₄	32	#5	6'-8"	□
<i>s</i> ₁₆	12	#5	4'-6"	□
<i>s</i> ₁₈	50	#5	8'-2"	□
<i>s</i> ₁₉	50	#5	12'-0"	□
<i>t</i> ₁₁	82	#6	8'-3"	—
<i>u</i> ₁₀	6	#6	7'-0"	—
<i>v</i> ₁₃	40	#9	11'-0"	—
<i>w</i> ₁₁	16	#11	26'-9"	—
Class X Concrete			Cu. Yds.	103.8
Reinforcement Bars			Lbs.	12,270
Crested Piles			Lin. ft.	1275
Test Piles (Timber)			Each	1

PIER 2 SO. BD. LANE
F.A.I.R.T.90-SEC.0404-313-H3
COOK COUNTY
STATION 561+70

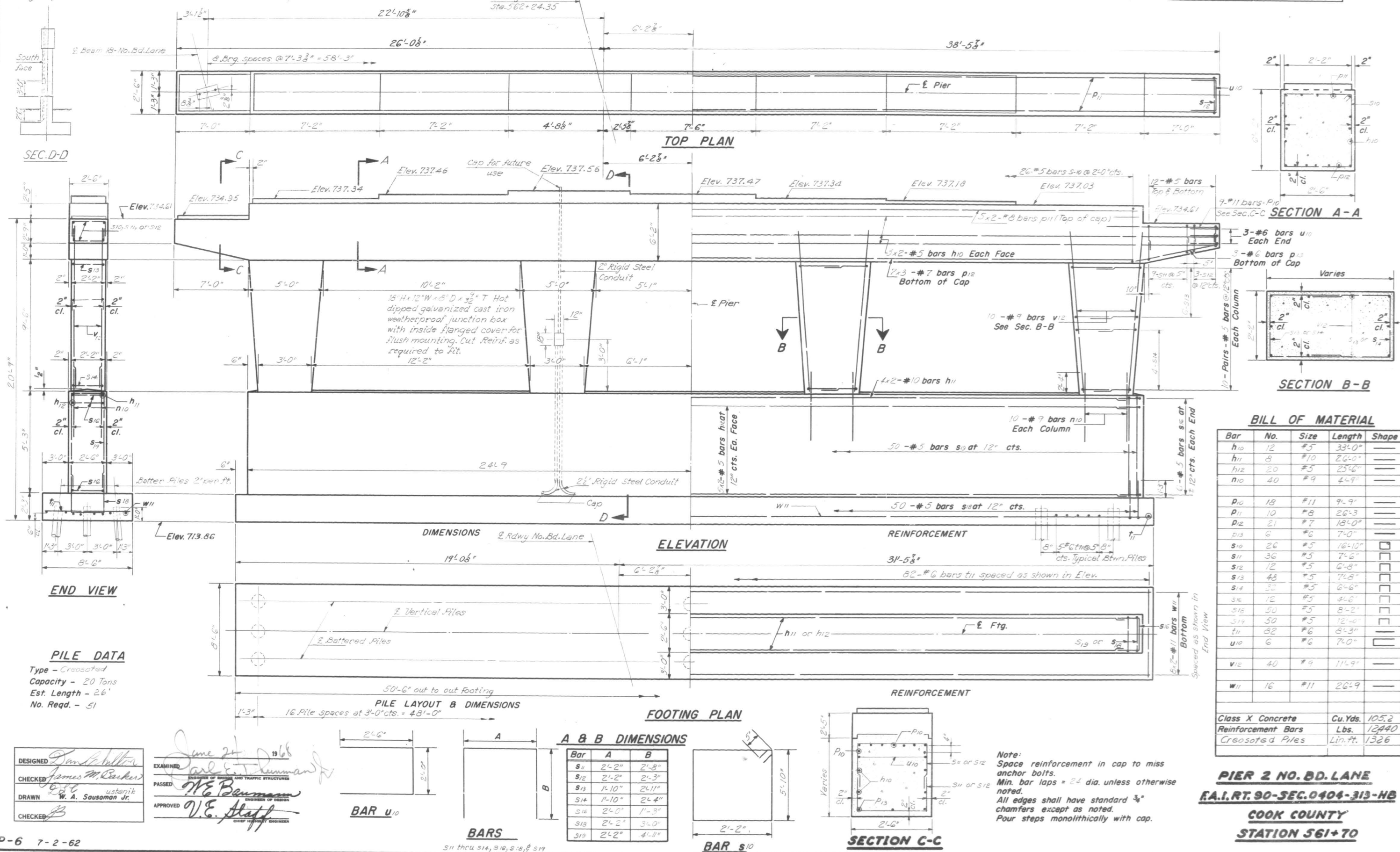


Note:
Space reinforcement in cap to miss anchor bolts.
Min. bar laps = 24 dia. unless otherwise noted.
All edges shall have standard 3/4" chamfers except as noted.
Pour steps monolithically with cap.

PIER 1 NO. BD. LANE
F.A.I. RT. 90-SEC. 0404-313-HS
COOK COUNTY
STATION 361+70

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 17 21 SHEETS
S. R. L. F. A. I. 90	0404- 313HB	COOK	306	139	
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-		

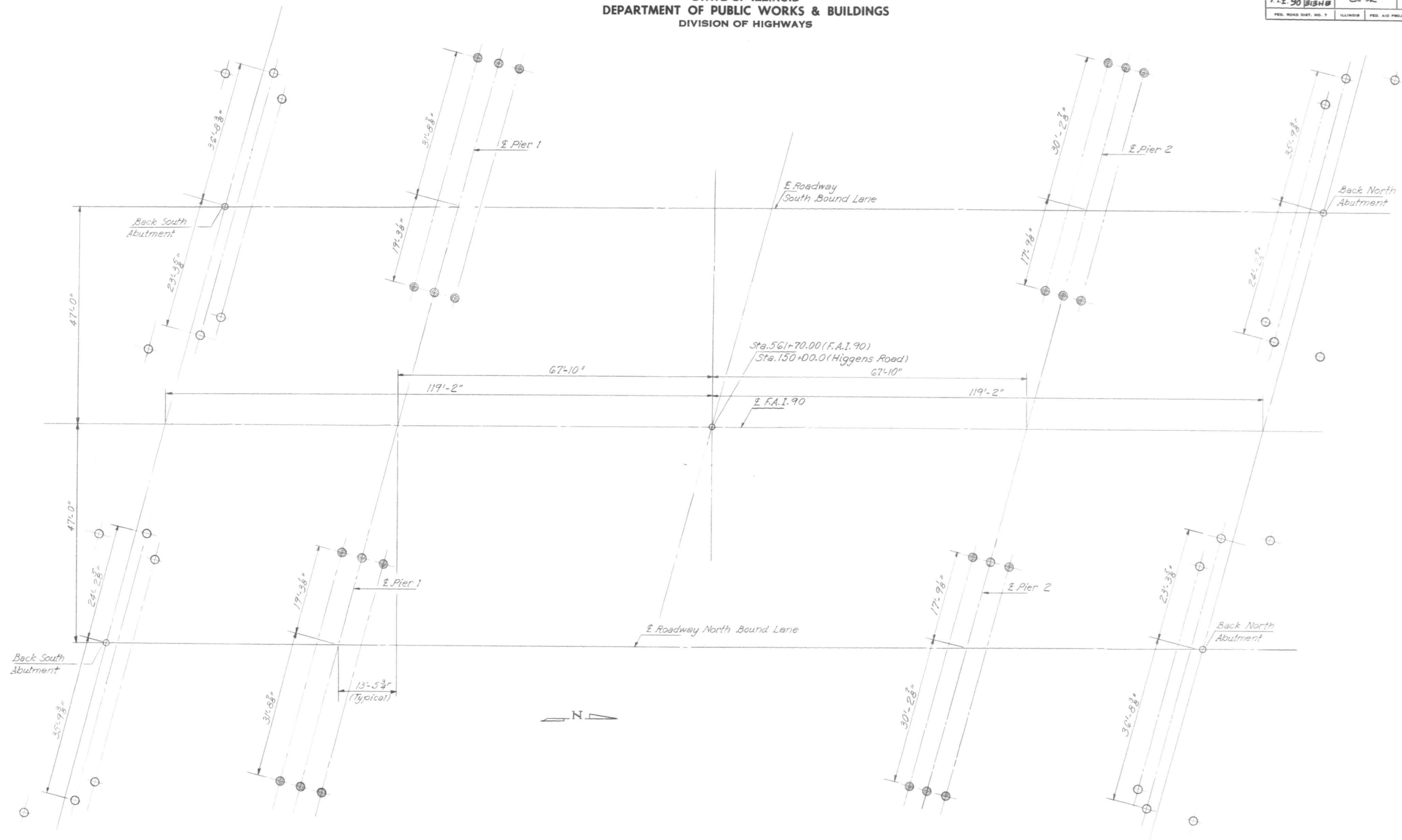


PIER 2 NO. BD. LANE
F.A.I.R.T. 90-SEC. 0404-313-HB
COOK COUNTY
STATION 561+70

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 90	0404-313-HB	Cook	300	140
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 18
21 SHEETS



DESIGNED *Don Ahlton*
CHECKED *James M. Becker*
DRAWN *ustanik*
CHECKED *B*

EXAMINED *Paul E. Hammond Jr.*
PASSED *W.E. Bauman*
APPROVED *V.E. Atay*

PILE LAYOUT SHEET
F.A.I. RT. 90-SEC. 0404-313-HB
COOK COUNTY
STATION 561+70

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0404-313HB	COOL	COOK	300	141

SHEET NO. 19
21 SHEETS

BORING-1

BORING NO. S1-1
SHEET 1 OF 3
STRUCTURE Higgins Rd.
LINE & STA 1-90:561+29
OFFSET 82' L
SURFACE ELEV. 724.0
DATE START 1/2/68
DATE FINISH 1/5/68

GROUND WATER OBSERVATIONS				CASING SAMPLER		TYPE		SIZE I.D.		SIZE O.D.	
AT	FT. ELEV.	DURING DRILLING	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE
AT 4.2	FT. ELEV. 719.8	AFTER 100 HRS.	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE
AT	FT. ELEV.	AFTER HRS.	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE

DEPTH BELOW SURFACE	DEPTHS FROM-TO	REC. NO. & TYPE	ELEV.	SOIL DESCRIPTION AND REMARKS	N	qu est. tsf	qu tsf	wc %
	1.0-2.5	S-1	721.0	Silty Clay A-7-6 Hard Blk ORGANIC Silty CLAY, trace c-f Sand, trace f Gravel	14	4.0		26
	3.5-5.0	S-2		Silty Clay A-6 Very Stiff to Stiff Br & Gr Silty CLAY, trace c-f Sand, trace m-f Gravel	7	2.7	20	
	6.0-7.5	S-3	716.0	Clay A-6 Hard Br Gr Silty CLAY, little c-f Sand, trace f Gravel	6	1.6	23	
	8.5-10.0	S-4	713.0	Clay A-6	15	4.9	14	
	11.0-12.5	S-5		Clay A-6	9	2.3	18	
	13.5-15.0	S-6		Clay A-6	10	2.1	17	
	16.0-17.5	S-7		Clay A-6	8	1.9	27	
	18.5-20.0	S-8		Clay A-6	9	3.1	17	
	21.0-22.5	S-9		Clay A-6	9	3.1	18	
	23.5-25.0	S-10		Clay A-6	9	1.9	21	
	26.0-27.5	S-11		Clay A-6	11	2.5	20	
	28.5-30.0	S-12		Clay A-6	10	3.1	21	
	31.0-32.5	S-13		Clay A-6	11	2.1	22	
	33.5-35.0	S-14		Clay A-6	13	2.3	21	
	36.0-37.5	S-15		Clay A-6	11	2.1	23	
	38.5-40.0	S-16		Clay A-6	8	1.8	23	
	41.0-42.5	S-17		Clay A-6	8	1.0	23	
	43.5-45.0	S-18	678.5	Sand A-1-a Very Dense to Medium Gr m-f GRAVEL, some c-f Sand, trace Silt; Fractured Limestone noted; Losing pump water	58			
	46.0-47.5	S-19	672.0	Silty Loam A-4 Dense Gr Br SILT, some c-f Sand, trace m-f Gravel	22			
	48.5-50.0	S-20	668.0	Silty Loam A-4 Medium Gr Br SILT and c-f SAND, trace m-f Gravel; Gr Clayey Silt seams noted	39			
	50.5-52.0	S-21	663.0	Clay A-6 Very Stiff Gr Silty CLAY, little c-f Sand, trace m-f Gravel	16			
	52.5-54.0	S-22	660.0	Clay A-6 Stiff Gr Br Clayey SILT, trace c-f Sand; Silt and Sand seams noted at El 657.3	26			
	54.5-56.0	S-23	657.3	Clay A-6 Very Stiff Gr Silty CLAY, little c-f Sand, trace m-f Gravel	18	2.4	12	
	56.5-58.0	S-24	655.5	Clay A-6 Stiff Gr Br Clayey SILT, trace c-f Sand; Silt and Sand seams noted at El 657.3	23	1.2	18	
	58.5-60.0	S-25	655.5	Clay A-6 Hard Gr Br Clayey SILT, trace c-f Sand; 4" Gravel seam noted at El 657.3	30	5.3	14	
	60.5-62.0	S-26	655.5	Clay A-6 Very Stiff Gr Silty CLAY, little c-f Sand, trace f Gravel	25	3.5	13	
	62.5-64.0	S-27	655.5	Clay A-6 Very Stiff Gr Silty CLAY, little c-f Sand, trace f Gravel	21	2.9	16	
	64.5-66.0	S-28	645.0	Sand A-3 Very Dense Br m-f SAND, trace Silt; Silt seams noted	53			
	66.5-68.0	S-29	642.0	Sand A-4 Dense Br Gr SILT, trace f Sand; Clayey Silt seam noted	42			
	68.5-70.0	S-30	637.0	Sand A-1-b Dense Br Gr c-f SAND, some m-f Gravel, trace Silt	33			
	70.5-72.0	S-31	637.0	Sand A-1-b Dense Br Gr c-f SAND, some m-f Gravel, trace Silt	33			

DEPTH BELOW SURFACE	DEPTHS FROM-TO	REC. NO. & TYPE	ELEV.	SOIL DESCRIPTION AND REMARKS	N	qu est. tsf	qu tsf	wc %
	93.5-95.0	S-32	633.5	Silty Loam A-4 Very Dense Br Gr SILT, some c-f Sand, trace m-f Gravel; Fractured Limestone noted	59			
	98.5-100.0	S-33	623.0	Silty Loam A-4 Extremely Dense Br Gr SILT, little c-f Sand, little m-f Gravel; Fractured Limestone noted	53			
	103.5-104.5	S-34	619.0	Sand A-1-a Very Dense Gr m-f GRAVEL, some c-f Sand, trace Silt; Fractured Limestone noted	174			
	108.5-110.0	S-35	614.0	Sand A-1-a Very Dense Gr m-f GRAVEL, some c-f Sand, trace Silt; Fractured Limestone noted	78			

BORING-2

BORING NO. S1-2
SHEET 1 OF 2
STRUCTURE Higgins Rd.
LINE & STA 1-90:560+78
OFFSET 32' L
SURFACE ELEV. 724.3
DATE START 1/10/68
DATE FINISH 1/11/68

GROUND WATER OBSERVATIONS				CASING SAMPLER		TYPE		SIZE I.D.		SIZE O.D.	
AT	FT. ELEV.	DURING DRILLING	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE
AT 4.8	FT. ELEV. 719.5	AFTER 100 HRS.	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE
AT	FT. ELEV.	AFTER HRS.	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE

DEPTH BELOW SURFACE	DEPTHS FROM-TO	REC. NO. & TYPE	ELEV.	SOIL DESCRIPTION AND REMARKS	N	qu est. tsf	qu tsf	wc %
	1.0-2.5	S-1	721.8	Silty Clay A-7-6 Stiff Blk ORGANIC Silty CLAY, trace c-f Sand, trace f Gravel	45	1.5	24	
	3.5-5.0	S-2		Silty Clay A-6 Very Stiff Br & Gr Silty CLAY, trace c-f Sand, trace m-f Gravel; 6" seam of Gravel noted at El 721.8	9	2.5	20	
	6.0-7.5	S-3		Silty Clay A-6	10	2.5	23	
	8.5-10.0	S-4	713.8	Silty Clay Loam A-6 Very Stiff Gr Clayey SILT, little c-f Sand, trace m-f Gravel; sand seams noted	12	3.1	18	
	11.0-12.5	S-5	711.3	Clay A-6 Stiff to very Stiff Gr Silty CLAY, little c-f Sand, trace f Gravel	18	3.5	13	
	13.5-15.0	S-6		Clay A-6	9	1.4	19	
	16.0-17.5	S-7		Clay A-6	15	2.1	18	
	18.5-20.0	S-8		Clay A-6	14	2.1	15	
	21.0-22.5	S-9		Clay A-6	12	1.8	20	
	23.5-25.0	S-10		Clay A-6	12	1.1	0.7	22
	26.0-27.5	S-11		Clay A-6	15	2.1	20	
	28.5-30.0	S-12		Clay A-6	15	2.9	20	
	31.0-32.5	S-13		Clay A-6	15	2.1	21	
	33.5-35.0	S-14		Clay A-6	15	2.8	22	
	36.0-37.5	S-15		Clay A-6	14	1.8	23	
	38.5-40.0	S-16		Clay A-6	14	2.1	22	
	41.0-42.5	S-17		Clay A-6	11	1.4	23	
	43.5-45.0	S-18		Clay A-6	11	2.3	23	
	46.0-47.5	S-19	677.8	Sand A-3 Medium Br Gr c-f SAND, trace f Gravel, trace Silt	23	1.6	25	
	48.5-50.0	S-20	676.3	Sand A-1-a Extremely Dense Gr m-f Gravel, little c-f Sand, little Silt; Limestone noted	82			
	51.0-52.5	S-21	673.8	Clay A-6 Hard Gr Silty CLAY, little c-f Sand, trace m-f Gravel	38	7.2	17	
	53.5-55.0	S-22	668.8	Silty Loam A-4 Medium Gr SILT, trace Clay, some c-f Sand, trace m-f Gravel; Limestone fragments noted	53			
	56.0-57.5	S-23		Silty Loam A-4	29		10	
	58.5-60.0	S-24		Silty Loam A-4	28		10	
	63.5-65.0	S-25	59.3	Boring Completed at 65'	33	5.7	11	

DESIGNED *John Chilton*
CHECKED *James M. Barker*
DRAWN *ABarroza*
CHECKED *B*

EXAMINED *June 24 1968*
PASSED *W.E. Bauman*
APPROVED *V.E. Stapp*

BORINGS
F.A.I. RT. 90 SEC. 0404-313-HB
COOK COUNTY
STA. 561+70

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO. 0404-313HB
SECTION COOK
COUNTY 306
SHEET NO. 142
SHEETS 21

BORING-3

BORING NO. S1-3
SHEET 1 OF 2
STRUCTURE Higgins Rd.
LINE & STA. 1-90:560+83

GROUND WATER OBSERVATIONS
AT 5.4 FT. ELEV. 718.3 AFTER 24 HRS.
AT 4.8 FT. ELEV. 718.7 AFTER 100 HRS.

DEPTH BELOW SURFACE	DEPTHS FROM-TO	REC. NO. & TYPE	ELEV.	SOIL DESCRIPTION AND REMARKS	N	QU EST. TSF	QV TSF	WC %
5	1.0-2.5	S-1	721.5	Silty Clay A-7-6 Hard Brk ORGANIC Silty CLAY, trace c-f Sand, trace f Gravel	28	4.0		24
5	3.5-5.0	S-2		Silty Clay A-6 Very Stiff Br & Gr Silty CLAY, trace c-f Sand, trace f Gravel	20	3.7	18	
10	6.0-7.5	S-3	715.5	Clay A-6 Hard Br Gr Silty CLAY, little c-f Sand, trace m-f Gravel; Sand seams noted	21	2.9	18	
10	8.5-10.0	S-4	712.5	Clay A-6 Very Stiff to Stiff Gr Silty CLAY, little c-f Sand, trace m-f Gravel; Sand and Silt seams noted at 20'	23	4.6	16	
15	11.0-12.5	S-5		Clay A-6	11	3.1	19	
15	13.5-15.0	S-6		Very Stiff to Stiff Gr Silty CLAY, little c-f Sand, trace m-f Gravel; Sand and Silt seams noted at 20'	13	3.7	17	
20	16.0-17.5	S-7		Clay A-6	11	2.7	19	
20	18.5-20.0	S-8	702.5	Clay A-6 Hard Gr Silty CLAY, little c-f Sand, trace m-f Gravel	12	1.4	19	
25	21.0-22.5	S-9		Clay A-6	17	4.0	3.7	16
25	23.5-25.0	S-10		Clay A-6	24	4.1	18	
30	26.0-27.5	S-11	695.0	Clay A-6	19	4.1	19	
30	28.5-30.0	S-12		Very Stiff to Stiff Gr Silty CLAY, little c-f Sand, trace m-f Gravel	17	2.7	20	
35	31.0-32.5	S-13		Clay A-6	24	3.1	21	
35	33.5-35.0	S-14		Clay A-6	24	2.1	21	
40	36.0-37.5	S-15		Clay A-6	14	2.5	22	
40	38.5-40.0	S-16		Clay A-6	15	3.2	20	
45	41.0-42.5	S-17		Clay A-6	11	1.4	23	
45	43.5-45.0	S-18	678.0	Clay A-6	12	1.3	24	
50	46.0-47.5	S-19		Sand A-1-a Dense Gr m-f GRAVEL, some c-f Sand, trace Silt; Fractured Limestone noted	33			
50	48.5-50.0	S-20	673.0	Clay A-6 Very Stiff Gr Br Silty CLAY, little c-f Sand, trace m-f Gravel	38			
55	51.0-52.5	S-21	670.5	Silty Clay Loam A-6 Hard Gr Br Clayey SILT, little c-f Sand, trace m-f Gravel; Sand; Limestone fragments noted	21	3.9	14	
60	53.5-55.0	S-22		Silty Clay Loam A-6	26	6.0	12	
60	58.5-60.0	S-23	663.5	Boring Completed at 60'	35	9.1	9	

BORING-4

BORING NO. S1-4
SHEET 1 OF 2
STRUCTURE Higgins Rd.
LINE & STA. 1-90:562+32

GROUND WATER OBSERVATIONS
AT 5.9 FT. ELEV. 717.5 AFTER 24 HRS.
AT 4.8 FT. ELEV. 718.6 AFTER 36 HRS.

DEPTH BELOW SURFACE	DEPTHS FROM-TO	REC. NO. & TYPE	ELEV.	SOIL DESCRIPTION AND REMARKS	N	QU EST. TSF	QV TSF	WC %
5	1.0-2.5	S-1	720.9	Silty Clay Loam A-7-6 SILT: Very Stiff Gr Br Silty CLAY, little c-f Sand, trace m-f Gravel	13	2.5	16	
5	3.5-5.0	S-2		Silty Clay A-7-6 Very Stiff Br & Gr Silty CLAY, trace c-f Sand, trace f Gravel; Sand seams noted at 10'	14	3.3	21	
10	6.0-7.5	S-3		Clay A-6	14	3.5	19	
10	8.5-10.0	S-4	712.9	Clay A-6	20	2.1	18	
15	11.0-12.5	S-5		Clay A-6	11	2.3	17	
15	13.5-15.0	S-6		Very Stiff Gr Silty CLAY, little c-f Sand, trace f Gravel	10			
20	15.0-16.5	S-7	705.4	Sand A-2-4 Medium Gr c-f SAND, little m-f Gravel, trace Silt; Silty Clay seam noted	11	3.5	19	
20	18.5-20.0	S-8	703.4	Clay A-6	12	0.8		
25	21.0-22.5	S-9		Clay A-6	15	2.5	18	
25	23.5-25.0	S-10		Clay A-6	17	2.1	20	
30	26.0-27.5	S-11		Clay A-6	18	2.7	19	
30	28.5-30.0	S-12		Very Stiff to Stiff Gr Silty CLAY, little c-f Sand, trace f Gravel	15	1.9	22	
35	31.0-32.5	S-13		Clay A-6	16	2.9	19	
35	33.5-35.0	S-14		Clay A-6	15	2.7	22	
40	36.0-37.5	S-15		Clay A-6	11	1.2	30	
40	38.5-40.0	S-16		Clay A-6	14	2.3	22	
45	41.0-42.5	S-17	678.4	Clay A-6	13	1.8	22	
45	43.5-45.0	S-18	676.4	Sand A-1-a Very Dense Red Br & m-f GRAVEL, little c-f Sand, trace Silt; Limestone fragment noted	14	1.5	24	
50	46.0-47.5	S-19	673.9	Sand A-2-4 Dense Gr Br c-f SAND, little m-f Gravel, little Silt; Silt seams noted	60			
50	48.5-50.0	S-20	670.9	Sand A-1-a Extremely Dense Gr m-f GRAVEL, some c-f Sand, trace Silt; Limestone fragments noted	38			
55	51.0-52.5	S-21	665.4	Silty Clay Loam A-6 Medium Gr Br SILT, trace Clay, trace c-f Sand; trace m-f Gravel	116			
55	53.5-55.0	S-22		Silty Clay Loam A-6	16	6.0	11	
60	56.0-57.5	S-23	663.4	Boring Completed at 80'	16	6.0	11	
60	58.5-60.0	S-24		Boring Completed at 80'	24	4.3	13	
65	63.5-65.0	S-25		Boring Completed at 80'	42			
70	66.0-67.5	S-26		Boring Completed at 80'	38	4.3	13	
75	68.5-70.0	S-27		Boring Completed at 80'	27	7.4	11	
80	73.5-75.0	S-28		Boring Completed at 80'	45	6.0	11	
80	78.5-80.0	S-29	643.4	Boring Completed at 80'	57	8.0	10	

BORING-5

BORING NO. S1-5
SHEET 1 OF 2
STRUCTURE Higgins Rd.
LINE & STA. 1-90:562+69

GROUND WATER OBSERVATIONS
AT 5.9 FT. ELEV. 716.3 AFTER 24 HRS.
AT 4.8 FT. ELEV. 716.3 AFTER 24 HRS.

DEPTH BELOW SURFACE	DEPTHS FROM-TO	REC. NO. & TYPE	ELEV.	SOIL DESCRIPTION AND REMARKS	N	QU EST. TSF	QV TSF	WC %
5	1.0-2.5	S-1	722.1	Asphaltic Concrete				
5	3.5-5.0	S-2	719.9	Silty Clay A-7-6 Stiff Brk ORGANIC Silty CLAY trace c-f Sand, trace m-f Gravel	50	1.5	28	
10	6.0-7.5	S-3	714.4	Silty Clay A-7-6 Hard Br & Gr Silty CLAY, trace c-f Sand, trace f Gravel	27	4.7	15	
10	8.5-10.0	S-4	711.4	Clay A-6 Very Stiff Br & Gr Silty CLAY, little c-f Sand, trace f Gravel	18	4.1	17	
15	11.0-12.5	S-5		Clay A-6	14	3.1	21	
15	13.5-15.0	S-6		Clay A-6 Very Stiff to Stiff Gr Silty CLAY, little c-f Sand, trace m-f Gravel	15	2.4	17	
20	16.0-17.5	S-7	704.4	Clay A-6	11	1.4	27	
20	18.5-20.0	S-8		Silty Clay Loam A-6 Very Stiff Gr Br Clayey SILT, trace c-f Sand, trace f Gravel	10	2.2	17	
25	21.0-22.5	S-9	699.4	Clay A-6	11	2.3	17	
25	23.5-25.0	S-10		Clay A-6	11	1.2	22	
30	26.0-27.5	S-11		Clay A-6	13	2.1	21	
30	28.5-30.0	S-12		Clay A-6	18	3.1	21	
35	31.0-32.5	S-13		Clay A-6	19	2.9	21	
35	33.5-35.0	S-14		Clay A-6	15	1.2	20	
40	36.0-37.5	S-15		Clay A-6	11	2.1	21	
40	38.5-40.0	S-16		Clay A-6	11	1.9	22	
45	41.0-42.5	S-17	679.4	Sand A-1-a Very Dense Gr m-f GRAVEL, little c-f Sand, trace Silt; Limestone noted	14	1.9	21	
45	43.5-45.0	S-18	676.4	Sand A-2-4 Dense Gr c-f SAND, little m-f Gravel, little Silt; Limestone fragments noted	59			
50	46.0-47.5	S-19	673.9	Clay A-6 Very Stiff Gr Silty CLAY, little c-f Sand, trace f Gravel; Sand seam noted	44	2.5	25	
50	48.5-50.0	S-20	669.4	Silty Clay Loam A-6 Hard Gr Clayey SILT, little c-f Sand; trace m-f Gravel	35			
55	51.0-52.5	S-21		Silty Clay Loam A-6	31	8.8	15	
60	53.5-55.0	S-22	662.4	Boring Completed at 60'	34		10	
60	58.5-60.0	S-23		Boring Completed at 60'	33	4.5	12	

BORING-6

BORING NO. S1-6
SHEET 1 OF 2
STRUCTURE Higgins Rd.
LINE & STA. 1-90:562+74

GROUND WATER OBSERVATIONS
AT 5.5 FT. ELEV. 719.1 AFTER 24 HRS.
AT 4.7 FT. ELEV. 719.9 AFTER 24 HRS.
AT 3.2 FT. ELEV. 721.4 AFTER 100 HRS.

DEPTH BELOW SURFACE	DEPTHS FROM-TO	REC. NO. & TYPE	ELEV.	SOIL DESCRIPTION AND REMARKS	N	QU EST. TSF	QV TSF	WC %
5	1.0-2.5	S-1	721.6	Silty Clay A-7-6 Stiff Brk ORGANIC Silty CLAY, trace c-f Sand, trace f Gravel	17	1.5	27	
5	3.5-5.0	S-2	719.1	Clay Loam A-6 Stiff Br & Gr Silty CLAY, some c-f Sand, trace f Gravel	9	1.1	18	
10	6.0-7.5	S-3	717.6	Silt A-4 Very Loose Br SILT, little c-f Sand	7			
10	8.5-10.0	S-4	714.1	Sand A-2-4 Loose to Medium Gr Br c-f SAND, little Silt	20			
15	11.0-12.5	S-5		Clay A-6	15	3.7	16	
15	13.5-15.0	S-6		Very Stiff Gr Silty CLAY, little c-f Sand, trace f Gravel	21	3.4	20	
20	16.0-17.5	S-7		Clay A-6	16	2.1	26	
20	18.5-20.0	S-8	704.1	Sand A-2-4 Loose Gr c-f SAND, little Silt	16	2.3	26	
25	21.0-22.5	S-9	701.6	Silty Clay A-6 Stiff Gr Silty CLAY, trace c-f Sand	11	1.5	22	
25	23.5-25.0	S-10		Clay A-6	20	4.5	18	
30	26.0-27.5	S-11		Clay A-6	20	2.1	20	
30	28.5-30.0	S-12		Clay A-6	20	3.9	19	
35	31.0-32.5	S-13		Hard to Very Stiff Gr Silty CLAY, little c-f Sand, trace m-f Gravel	24	4.8	19	
35	33.5-35.0	S-14		Clay A-6	21	2.7	21	
40	36.0-37.5	S-15		Clay A-6	17	3.2	21	
40	38.5-40.0	S-16		Clay A-6	19	2.5	21	
45	41.0-42.5	S-17		Clay A-6	16	2.6	22	
45	43.5-45.0	S-18	679.6	Silty Clay Loam A-6 Very Stiff Gr Clayey SILT, trace f Sand; Silt seams noted	17	2.1	23	
50	46.0-47.5	S-19	674.6	Silty Clay Loam A-6 Stiff Gr Br Clayey SILT, trace c-f Sand	9	2.5	21	
50	48.5-50.0	S-20	671.6	Silty Clay A-6 Very Stiff Gr Silty CLAY, trace c-f Sand	26	2.1	22	
55	51.0-52.5	S-21	669.8	Sand A-3 Medium Br c-f SAND, trace Silt; Silty Clay Loam A-6	16	1.9	13	
60	53.5-55.0	S-22	667.1	Hard Gr Clayey SILT, little c-f Sand; trace m-f Gravel	49	2.6	20	
60	56.0-57.5	S-23	664.6	Boring Completed at 60'	16			
60	58.5-60.0	S-24		Boring Completed at 60'	36	4.9	12	

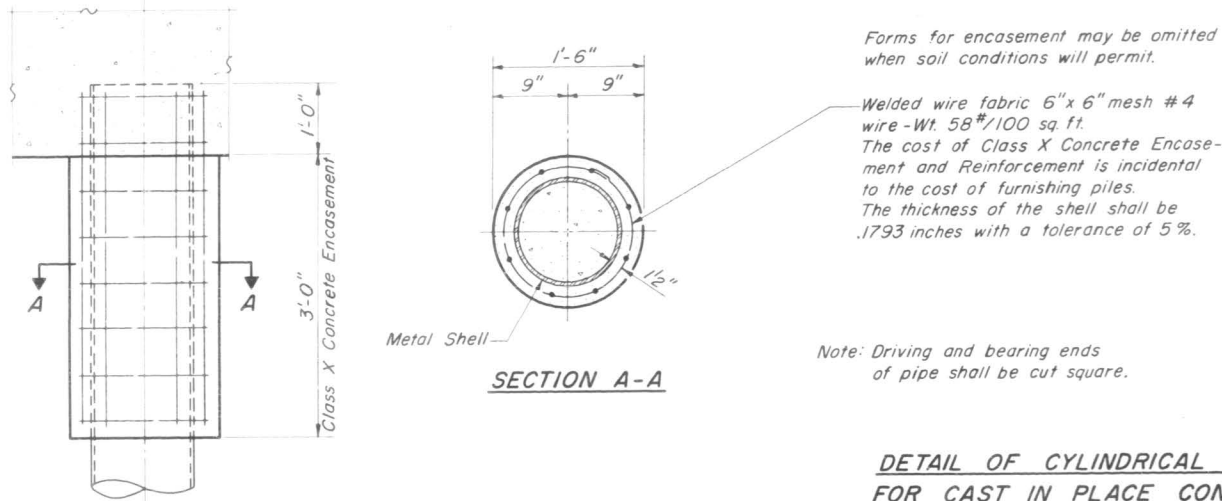
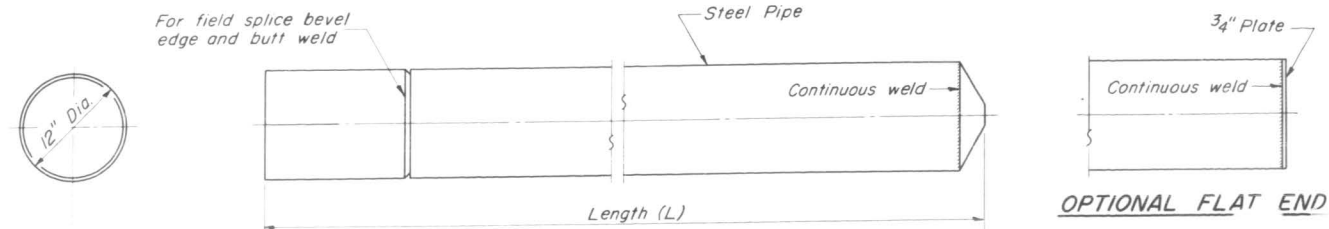
DESIGNED *John L. Sullivan*
CHECKED *James M. Backe*
DRAWN *A. Borroza*
CHECKED *AB*

EXAMINED *Paul E. Thompson*
PASSED *W.E. Bauman*
APPROVED *V.E. Staff*

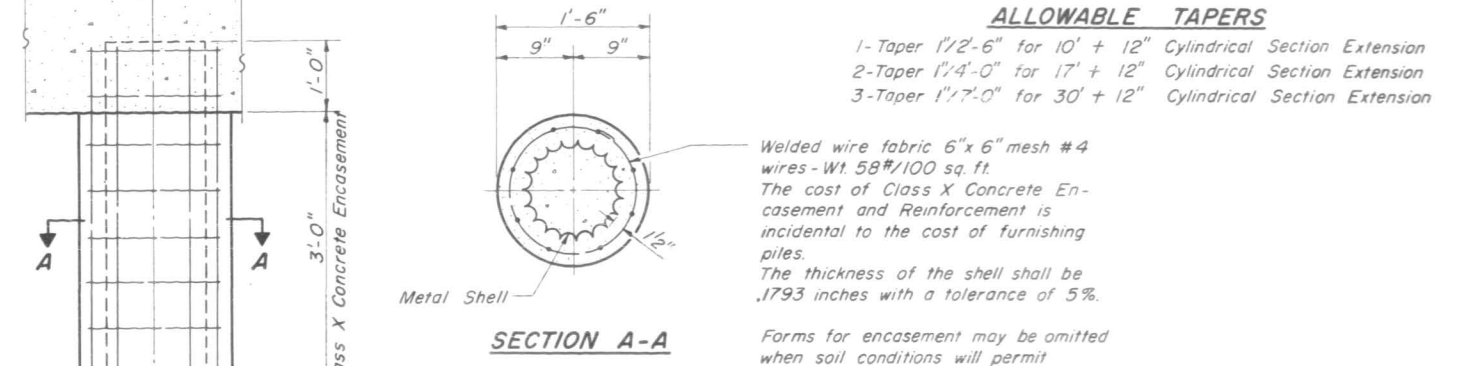
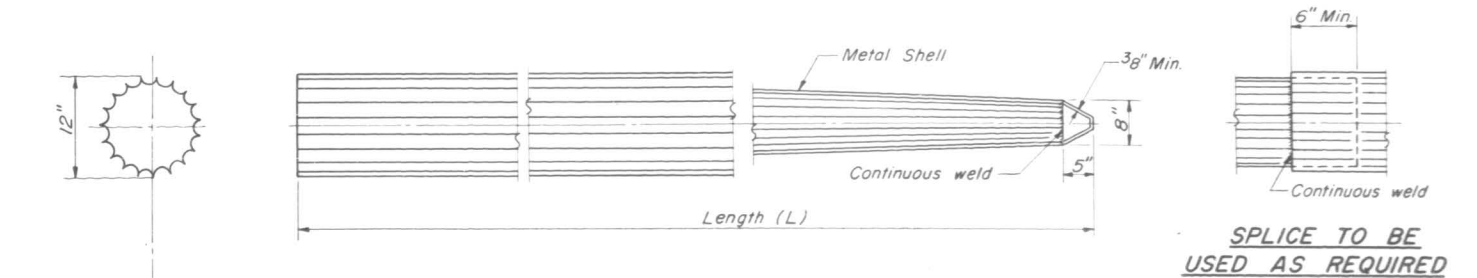
BORINGS
FA.I. RT. 90 SEC. 0404-313-HB
COOK COUNTY
STA. 561+70

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

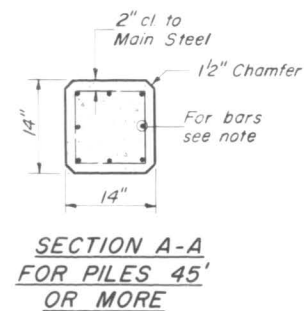
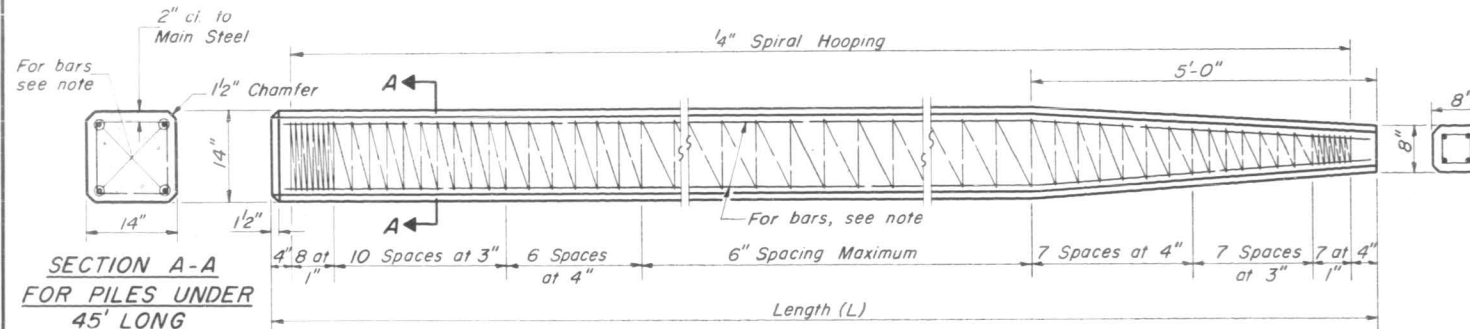
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO.
R. 1. L.	0404-313HB	Cook	306	143	21 SHEETS
F. A. L. 90					
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			



DETAIL OF CYLINDRICAL STEEL SHELL
FOR CAST IN PLACE CONCRETE PILES



DETAIL OF TAPERED METAL SHELL
FOR CAST IN PLACE CONCRETE PILES



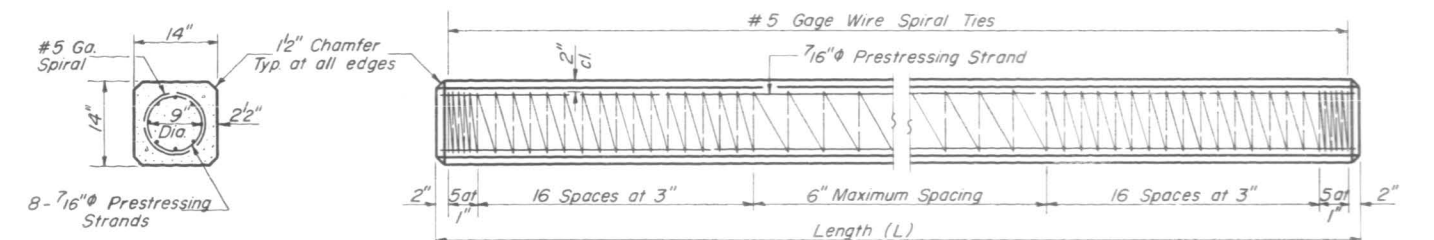
Note: For 14" Piles 45' long or more use 8-#8 bars 4 for the full length and 4 to the point of bevel. For 14" Piles under 45' long use 4-#9 bars full length.

Handling: For Pile lengths up to 45', use two slings placed at a distance of 0.21 L from each end. For Piles longer than 45', use three slings placed at a distance of 0.12 L from each end and at mid-point of pile.

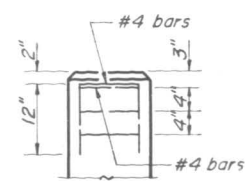
DESIGNED	James M. Barker
CHECKED	James M. Barker
DRAWN	James M. Barker
CHECKED	James M. Barker

EXAMINED	James M. Barker
PASSED	James M. Barker
APPROVED	James M. Barker

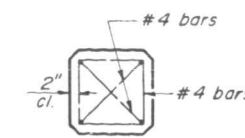
DETAIL OF PRECAST CONCRETE PILES



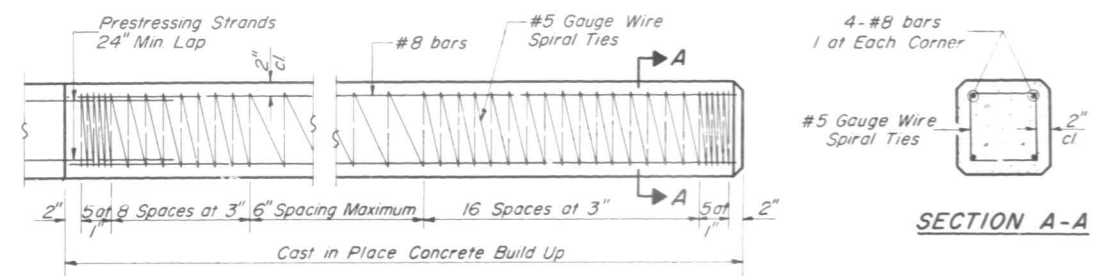
SECTION THRU PILE



ELEVATION (End Reinforcement)



PLAN (End Reinforcement)



PILE BUILD UP

DESIGN STRESSES
f_c' = 5,000 psi.
f_ci = 4,000 psi.
f_s' = 268,000 psi. (31,000 lbs.)
f_si = 188,000 psi. (21,700 lbs.)

Note: Prestressing steel shall be non-galvanized extra high strength stress-relieved 7 wire strand. The nominal diameter shall be 7/16" and the minimum nominal cross-sectional area shall be 0.1155 square inch. Handling: For pile lengths up to 65', use two slings placed at a distance of 0.21 L from each end. For piles longer than 65', use three slings placed at a distance of 0.12 L from each end at midpoint of pile.

PILE DETAILS
R.A.I. RT. 90-SEC. 0404-313-HB
COOK COUNTY
STATION 561+70

DETAIL OF PRECAST PRESTRESSED CONCRETE PILES