

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

FEDERAL AID ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-74	10-4	Champaign	38	1

FAI ROUTE 74, SECTION 10-4-1 HB-1
CHAMPAIGN COUNTY
PROJECT 1-74-5(81)171

PLAN 1 INCH = 100 FT.
PROFILE 1 INCH = 100 FT.
SECTION 1 INCH = 100 FT.

FILE COPY
#50
10-7-69

CH-29 IMPROVEMENT
BEGINS AT STATION 442+30

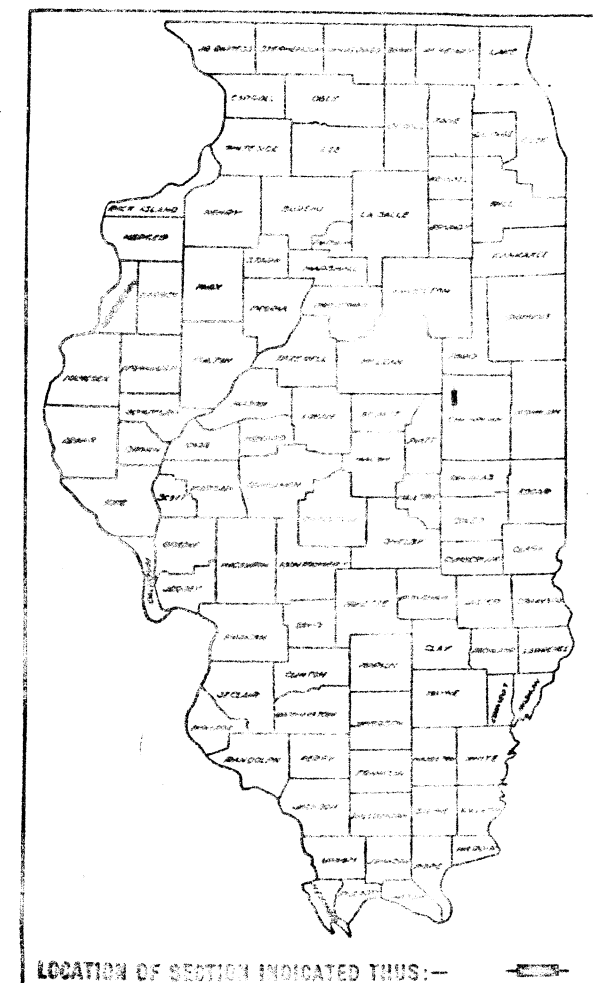
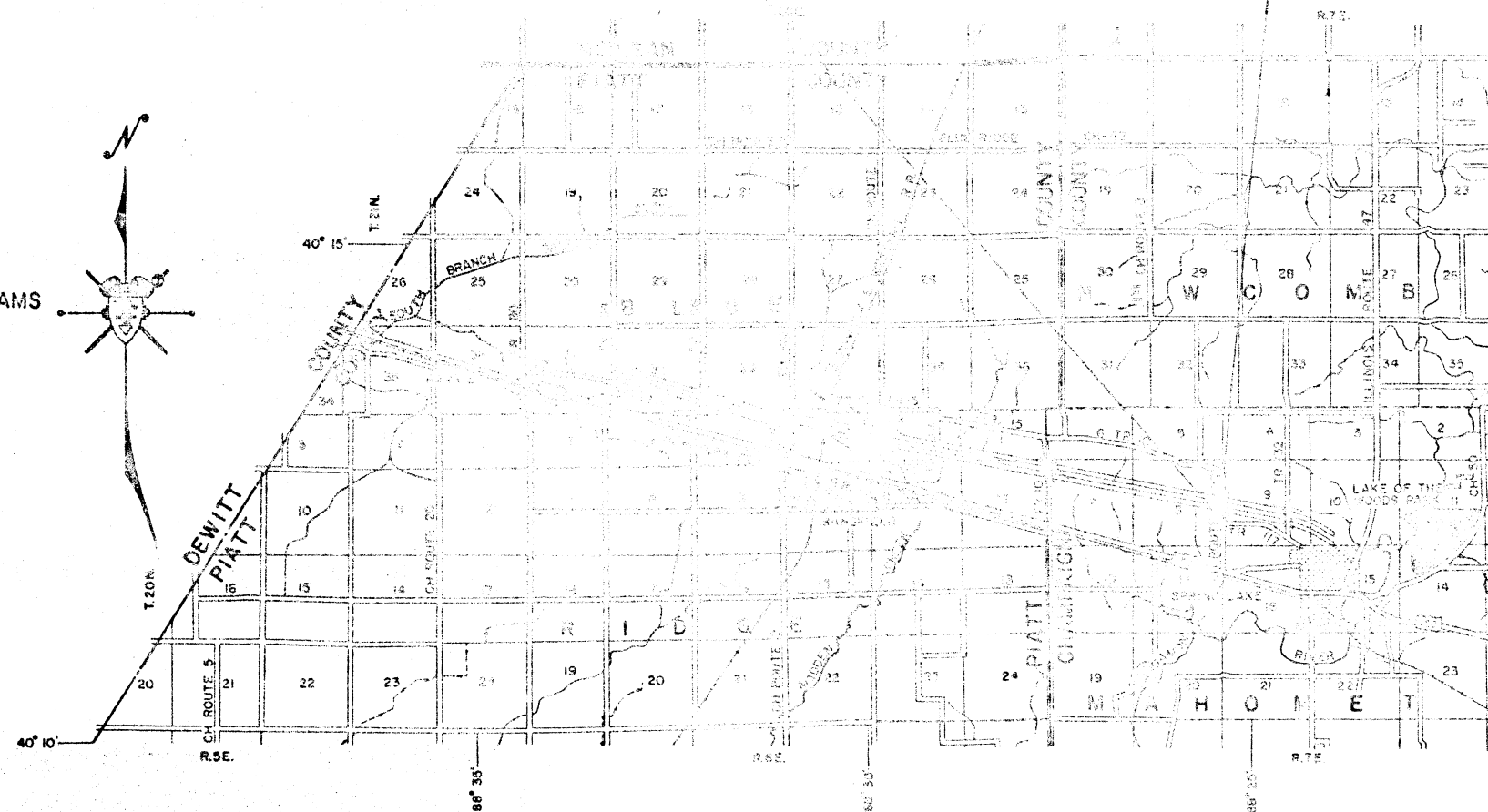
C-65-015-69

015-11

CH-29 IMPROVEMENT
ENDS AT STATION 456+65

SECTION 74, 10-4-1 HB-1 INCLUDES
SPECIAL BRIDGE DESIGN
REINFORCED CONCRETE DECK
2 MAIN SPANS USING WELDED PLATE
GIRDERS 91'-10" C-C OF BEARINGS
APPROACH SPANS 33'-4" LONG USING
PRECAST PRESTRESSED CONCRETE I BEAMS
26' 6" ROADWAY 10° 55' SKEW
STATION 1429+10.80

STRUCTURAL DESIGN TRAFFIC
ADT= 7300 YEAR 1979
PC = 79.5 %
SU = 12.0 %
MU = 8.5 %
CLASS I ROAD
CBR= 2
PERCENT OF SDT IN DESIGN LANE
Up = 32 %
Us = 45 %
Um = 45 %
TF = 3.0 %



LOCATION OF SECTION INDICATED THUS: —

PLANS PREPARED BY
JENKINS, MERCHANT & NANKIVIL
CONSULTING ENGINEERS
SPRINGFIELD, ILLINOIS

CARTER JENKINS
CONSULTING ENGINEER

Charles H. Merchant
CHARLES H. MERCHANT
STRUCTURAL ENGINEER

DECEASED
R. W. NANKIVIL
CONSULTING ENGINEER

DATE December 5, 1968

DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
SUBMITTED <i>[Signature]</i>
EXAMINED <i>[Signature]</i>
PREPARED <i>[Signature]</i>
APPROVED <i>[Signature]</i>
APPROVED <i>[Signature]</i>

DEPARTMENT OF TRANSPORTATION BUREAU OF PUBLIC ROADS	
APPROVED	DATE
DIVISION ENGINEER	DATE

10-0208

DESIGN DESIGNATION:
1462(89) B-13.0(CRPGC20)

NET LENGTH OF SECTION 10-4-1 HB-1
0.00 FEET = 0.000 MILES
0.00 FEET = 0.000 MILES

REEL 5-69

1429+10.80

SUMMARY OF QUANTITIES

PROJECT I-74-5(81)171

CODE NUMBER	ITEM	CONSTRUCTION TYPE CODE	BRIDGE		ROAD		EROSION CONTROL	
			LOCATION OF WORK	UNIT	LOCATION OF WORK	UNIT	LOCATION OF WORK	UNIT
			449+00.51 TO 451+26.82		442+30 TO 456+65		442+30 TO 456+65	
			X771		3210		Y005	
202001	EARTH EXCAVATION	CU.YD.	37,893		37,893			
410001	TOP SOIL	CU.YD.	1,446				1,446	
X30116	AGGREGATE BASE COURSE, TYPE B, 8"	SQ.YD.	2,657		2,657			
402001	AGGREGATE SURFACE COURSE, TYPE A	TON	1,162		1,162			
402001	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	1,000		1,000			
402001	BITUMINOUS MATERIALS (COVER AND SEAL COAT)	GALLON	1,920		1,920			
402001	COVER COAT AGGREGATE	TON	30		30			
402001	SEAL COAT AGGREGATE	TON	30		30			
503001	CLASS A EXCAVATION FOR STRUCTURES	CU.YD.	270		270			
503002	CLASS X CONCRETE HEADWALLS	CU.YD.	40		40			
503003	PROTECTIVE COAT	CU.YD.	40		40			
503003	CLASS X CONCRETE	CU.YD.	484.5		484.5		1.9	
503008	FURNISH & ERECT PRECAST PRESTRESSED CONCRETE I-BEAMS 36 IN.	LIN.FT.	267		267			
507005	STUD SHEAR CONNECTOR	EACH	1,224		1,224			
507001	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	146,270		146,270			
503005	ALUMINUM RAILING	LIN.FT.	467		467			
51024	PIPE CULVERTS, TYPE 1, 12"	LIN.FT.	36		36			
51024	PIPE CULVERTS, TYPE 1, 24"	LIN.FT.	102		102			
51025	PIPE CULVERTS, TYPE 2A, 36"	LIN.FT.	90		90			
51025	REINFORCEMENT BARS	POUND	76,720		76,720			
513001	FURNISHING CONCRETE PILES	LIN.FT.	296		296			
513027	DRIVING CONCRETE PILES	LIN.FT.	296		296			
513041	TEST PILE CONCRETE	EACH	1		1			
513001	NAME PLATES	EACH	1		1			
603003	STORM SEWERS, TYPE 1, 8"	LIN.FT.	100		100			
603004	STORM SEWERS, TYPE 1, 10"	LIN.FT.	100		100			
603005	STORM SEWERS, TYPE 1, 12"	LIN.FT.	100		100			
603028	STORM SEWERS, TYPE 2, 8"	LIN.FT.	280		280			
603029	STORM SEWERS, TYPE 2, 10"	LIN.FT.	100		100			
603030	STORM SEWERS, TYPE 2, 12"	LIN.FT.	100		100			
62053	CATCH BASINS, TYPE C, TYPE 1 FRAME, OPEN LID	EACH	3		3			
61117	PAVED DITCH 3 FEET	LIN.FT.	40		40			
613001	SLOPE WALL 4 INCH	SQ.YD.	190		190			
636002	AGGREGATE	TON	400		400			
637001	SINGLE PLATE BEAM GUARD RAIL, SINGLE RAIL	LIN.FT.	1,400		1,400			
637001	CALCIUM CHLORIDE APPLIED	TON	12.0		12.0			
637001	FURNISHING AND ERECTING RIGHT OF WAY MARKERS	EACH	4		4			
642003	SEEDING CLASS III	ACRE	5.3		5.3			
642005	PHOSPHOROUS FERTILIZER NUTRIENTS	POUND	530		530			
642006	POTASSIUM FERTILIZER NUTRIENTS	POUND	530		530			
643002	ASPHALT COATED MULCH	TON	10.6		10.6			
643005	EMULSIFIED ASPHALT	GALLON	1,060		1,060			
640002	ENGINEER'S FIELD OFFICE, TYPE B	EACH	1		1			
640003	ENGINEER'S FIELD LABORATORY	EACH	1		1			
640003	EXPLORATION TRENCH (50 IN. DEPTH)	LIN.FT.	220		220			
640004	PREPARED JOINT SEALER	LIN.FT.	61		61			
XZ1101	TRAFFIC CONTROL AND PROTECTION	L.SUM	1		1			

*CONSTRUCTION TYPE CODE C820

GENERAL NOTES

TREES AND HEDGE THAT INTERFERE WITH CONSTRUCTION OPERATIONS SHALL BE REMOVED AS DIRECTED BY THE ENGINEER. TREE AND HEDGE REMOVAL SHALL BE CONSIDERED AS INCIDENTAL TO EARTH EXCAVATION.

TOP SOIL 4 INCHES THICK SHALL BE PLACED AT LOCATIONS SHOWN ON THE TYPICAL CROSS SECTIONS AND AS DIRECTED BY THE ENGINEER.

ESTIMATED QUANTITIES:

1446 CU.YDS. TOP SOIL.

ALL AREAS HAVING INSUFFICIENT VEGETATION SHALL BE SEEDDED, WITH CLASS III SEEDING, AND FERTILIZED AS DIRECTED BY THE ENGINEER. ALL SEEDDED AREAS SHALL BE MULCHED.

ESTIMATED QUANTITIES:

5.3 ACRES CLASS III SEEDING
530 POUNDS PHOSPHOROUS FERTILIZER NUTRIENTS
530 POUNDS POTASSIUM FERTILIZER NUTRIENTS
10.6 TONS ASPHALT COATED MULCH
1,060 GALLONS EMULSIFIED ASPHALT

CH-29 SHALL BE CONSTRUCTED OF AGGREGATE BASE COURSE, TYPE B 8" WITH A BITUMINOUS SURFACE TREATMENT CLASS A-3 AS SHOWN IN THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.

ESTIMATED QUANTITIES:

2,657 SQ.YDS. AGGREGATE BASE COURSE, TYPE B
1,000 GALLONS BITUMINOUS MATERIALS (PRIME COAT)
1,920 GALLONS BITUMINOUS MATERIALS (COVER AND SEAL COAT)
30 TONS COVER COAT AGGREGATE
30 TONS SEAL COAT AGGREGATE

THE DETOUR AND ACCESS ROAD SHALL BE CONSTRUCTED OF AGGREGATE SURFACE COURSE, TYPE A, AS SHOWN IN THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.

ESTIMATED QUANTITIES:

1,162 TONS AGGREGATE SURFACE COURSE, TYPE A
400 TONS AGGREGATE (MAINTENANCE)
QUANTITIES OF STORM SEWERS, TYPE 1 AND 2, 8", 10" AND 12" ARE INCLUDED IN THE PROPOSAL FOR THE PURPOSE OF OBTAINING BID PRICES FOR THESE ITEMS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED DUE TO ADJUSTMENT OR DELETION OF THE QUANTITIES.

ESTIMATED QUANTITIES:

100 LIN.FT. STORM SEWERS, TYPE 1 8"
100 LIN.FT. STORM SEWERS, TYPE 1 10"
100 LIN.FT. STORM SEWERS, TYPE 1 12"
280 LIN.FT. STORM SEWERS, TYPE 2 8"
100 LIN.FT. STORM SEWERS, TYPE 2 10"
100 LIN.FT. STORM SEWERS, TYPE 2 12"

BEFORE ORDERING STORM SEWERS AND PIPE CULVERTS, THE CONTRACTOR SHALL CONSULT THE ENGINEER FOR EXACT LENGTHS.

ELEVATIONS SHOWN ON THE PLANS AND STATION CROSS SECTIONS ARE THE ELEVATIONS OF THE CENTERLINE AT THE FINISHED GRADE OF THE PROPOSED PAVEMENT.

ELEVATIONS SHOWN ON THE PLANS ARE THE ELEVATION ABOVE MEAN SEA LEVEL AS ESTABLISHED BY U.S.G.S.

THE MAXIMUM GRADE IS 5.00%.

THE MINIMUM STOPPING SIGHT DISTANCE IS 350 FEET FROM STATION 445+50 TO STATION 453+00.

■ INDICATES A RIGHT OF WAY MARKER TO BE SET AT THIS LOCATION.

WHERE SECTION OR SUB-SECTION MARKERS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR OR AGENT, HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

TWO SIGNS CONFORMING TO STANDARD NUMBER 255 SHALL BE ERECTED AT THE LOCATION SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

SPRING SEEDING SHALL BE ACCOMPLISHED BETWEEN MAY 1 AND JUNE 30
AND FALL SEEDING BETWEEN OCTOBER 1 AND DECEMBER 31.

INDEX OF SHEETS

- COVER SHEET.
- STANDARD 2235-2
- STANDARD 2237-3
- TYPICAL CROSS SECTION CH-29, DETOUR, CH-29
- GENERAL NOTES, INDEX OF SHEETS, SUMMARY OF QUANTITIES.
- PLAN & PROFILE CH-29.
- PLAN & PROFILE FAI-74.
- SPECIAL DESIGN FOR PAVED DITCH AND PAVED DITCH INLETS.
- DETAILS FOR TILE OUTLET HEADWALL INSPECTOR WELL
- BRIDGE PLANS.
- CROSS SECTIONS FAI-74.
- CROSS SECTIONS CH-29.
- 1744, 2113-1
- 2153, 2113-1
- 2208, 2231-2
- 2230-2
- 2213-2
- 1538-3
- 2300
- 2298
- 38A 2299
- 38B 2310

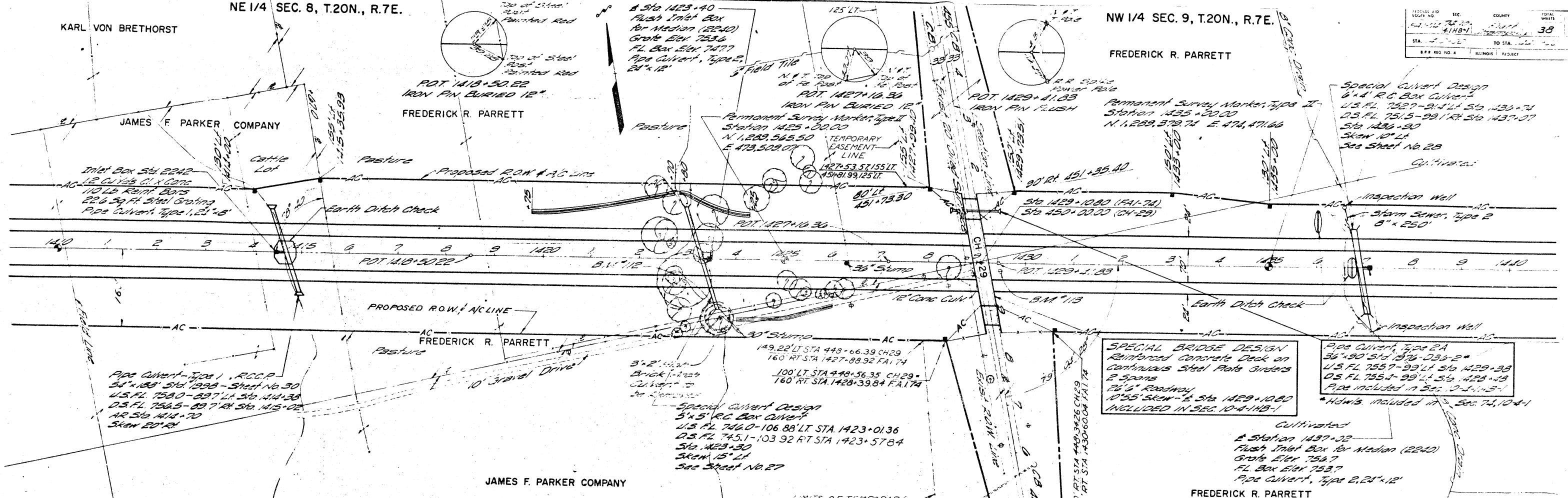
KARL VON BRETHORST

NE 1/4 SEC. 8, T.20N., R.7E.

NW 1/4 SEC. 9, T.20N., R.7E.

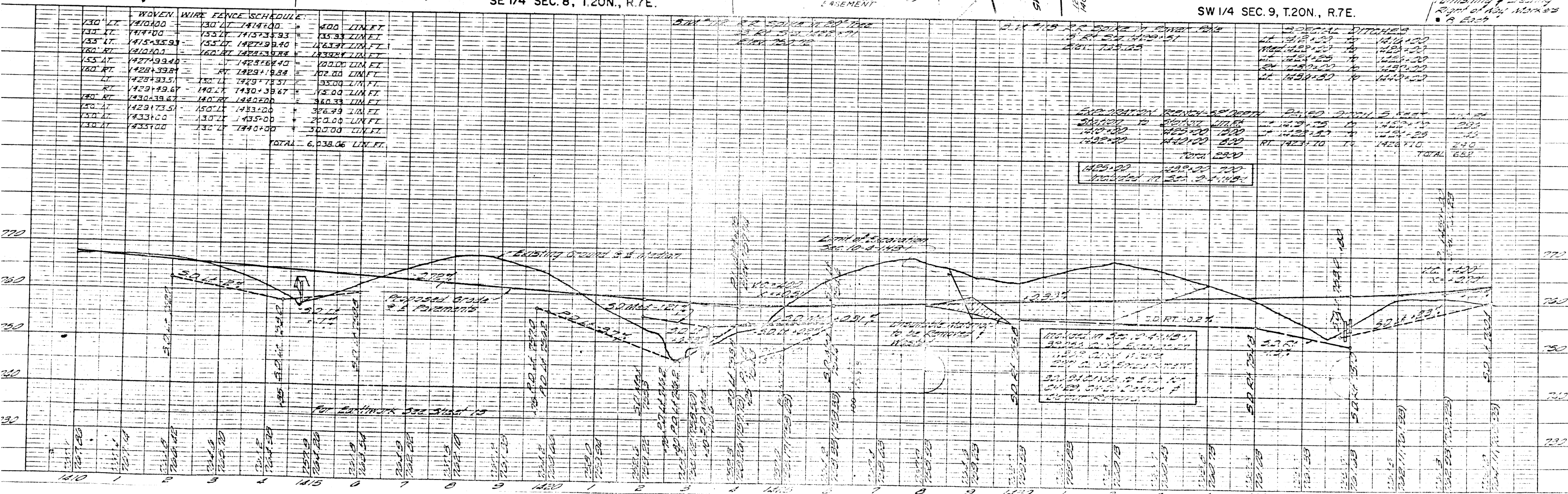
FREDERICK R. PARRETT

FEDERAL AID ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
41HB-1	1	ILLINOIS	38	7
STA.	TO STA.		PROJECT	
B.P.R. REG. NO. 4	ILLINOIS		PROJECT	



JAMES F. PARKER COMPANY
SE 1/4 SEC. 8, T.20N., R.7E.

FREDERICK R. PARRETT
SW 1/4 SEC. 9, T.20N., R.7E.



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

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
R.T. 74	14B-1	CHAMPAIGN	38	10
P.B. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 14 SHEETS

GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.

Field connections shall be bolted using high strength bolts. Bolts $\frac{3}{4}$ " open holes $\frac{13}{16}$ ", unless otherwise noted.

The concrete rail section above the mandatory construction joint at the top of the slab shall be constructed of Class X Concrete, except the aggregates shall conform to the requirements of Handrail Concrete.

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.

Field welding of construction accessories will not be permitted in the bottom of flange of beams or girders nor on the top flange for a distance equal to one-fourth the span length each way from the pier supports. Field welding in other areas will be permitted only when approved by the Engineer.

Anchor bolts shall be set before bolting cross frames over supports. Slope wall shall be reinforced with welded wire fabric 6"x6" mesh, weighing 56# per 100 sq. ft.

Class A Excavation for structures includes excavation for slope wall. The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.

The Contractor shall drive one concrete test pile in a permanent location at the North Approach Bent as directed by the Engineer before ordering the remainder of piles.

STA 1429+10.80
BUILT 19 BY
STATE OF ILLINOIS
F.A.I. RT 74 SEC 10-4-14B-1
F.A. PROJ. I-74-5(81)
LOADING HS15

NAME PLATE
See Std. 2113-1

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Class A Excavation for Struct.	Cu. Yds			870
Class X Concrete	Cu. Yds	217.6	237.0	454.6
Structural Steel	Lbs.	146,270		146,270
Aluminum Railing	Lin. Ft.	467		467
Reinforcement Bars	Lbs.	58,550	15,170	73,720
Concrete Piles	Lin. Ft.		296	296
Test Pile (Concrete)	Each		1	1
Name Plates	Each		1	1
Slope Wall 4"	Sq. Yds			190
Protective Coat	Sq. Yds	510		940
Preformed Joint Sealer	Lin. Ft.	61		61
Stud Shear Connectors	Each	1251		1251
Furnishing and Erecting Precast Prestressed I-Beams 36"	Lin. Ft.	267		267

PRECAST PRESTRESSED UNITS

f_c = 5,000 psi.
 f_{ci} = 4,000 psi.
 f_s = 248,000 psi. Strands
 f_{si} = 173,600 psi. Strands

DESIGN STRESSES FIELD UNITS

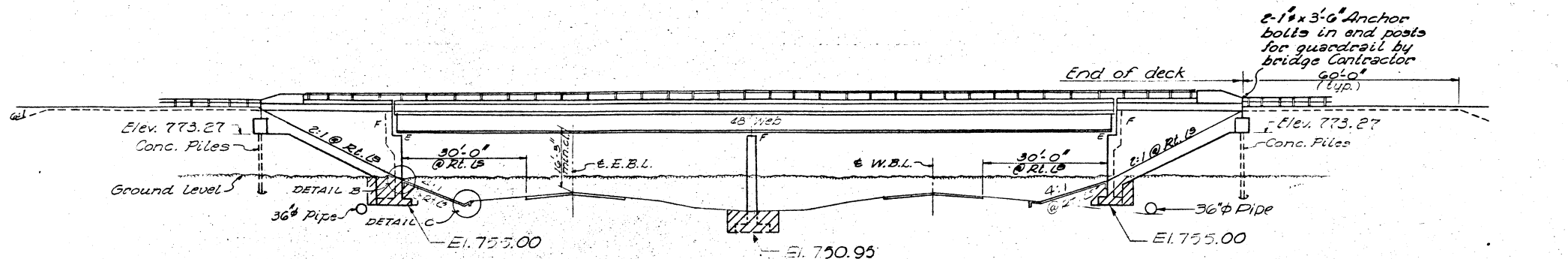
f_c = 1,200 psi. (Deck Slab) 1,400 psi. (Parapet, Curb & Sub.)
 f_s = 20,000 psi. (Reinf.)
 f_s = 20,000 psi. (Struct.)
 U_c = 75 psi. (Footings)

$n = 10$
Allowable ϵ & $\frac{L}{1000}$ non-composite
Allowable ϵ & $\frac{L}{1800}$ composite

LOADING HS15-44

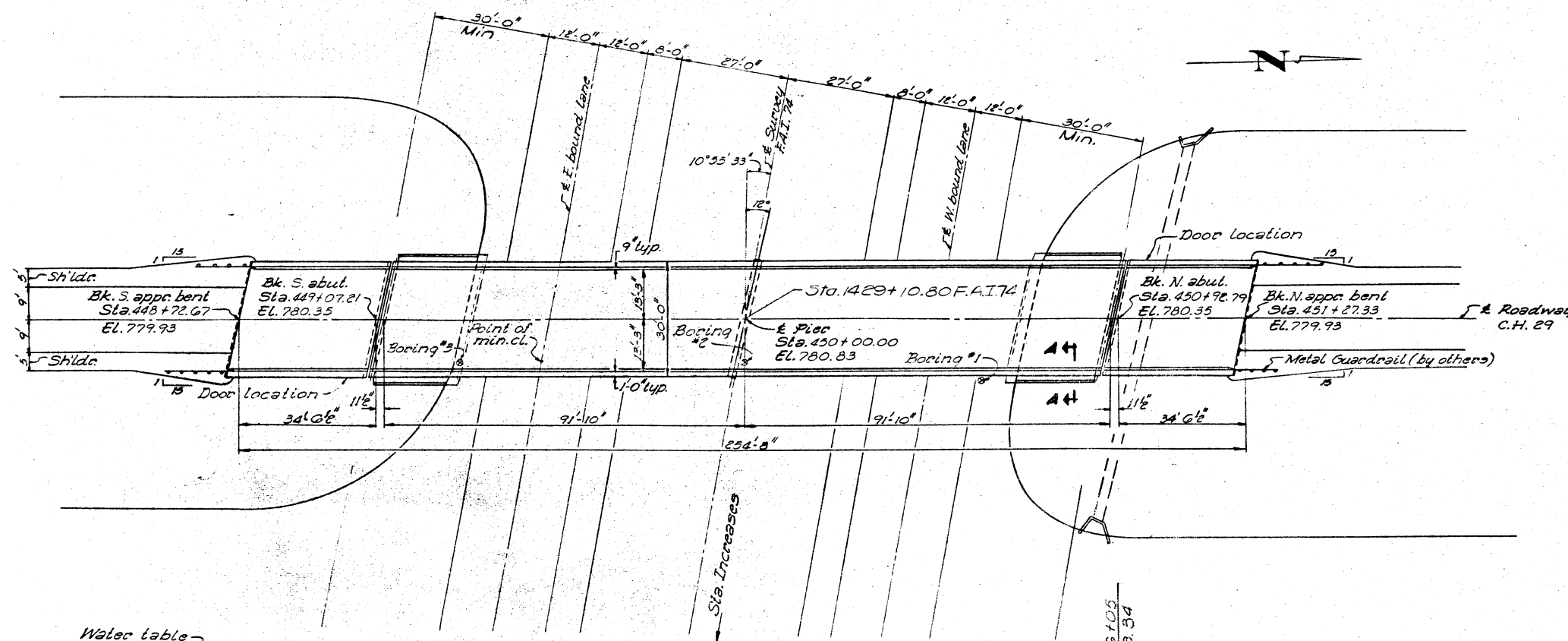
GENERAL PLAN & ELEVATION

PROJECT I-74-5 (81) 171
F.A.I. ROUTE 74
SECTION 10-4-14B-1
STA. 1429+10.80 (F.A.I. ROUTE 74)
STA. 450+00 (C.H. ROUTE 29)
CHAMPAIGN COUNTY

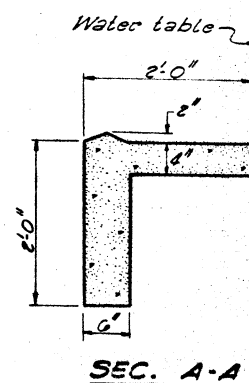


ELEVATION

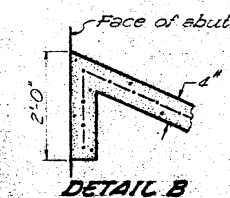
Note: Hatched area indicates Class A Excavation for Structures.



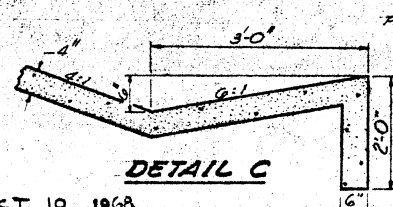
PLAN



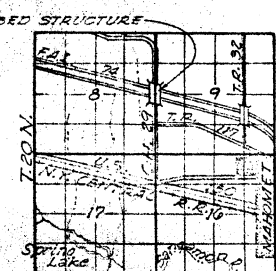
SEC. A-A



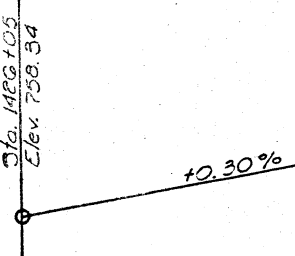
DETAIL B



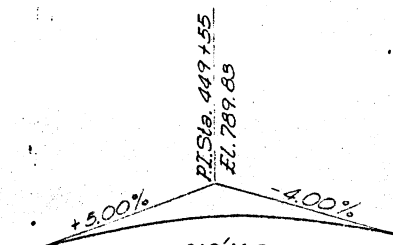
DETAIL C



LOCATION PLAN



PROFILE - F.A.I. 74



PROFILE - CH. 29

DESIGNED	
CHECKED	
DRAWN	JM
CHECKED	

EXAMINED	
PASSED	
APPROVED	

OCT. 10 1968

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
U.S.I. F.A.I. 74	10-4 1HB-1	Chompaig	38	11
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT:		

SHEET NO. 2
14 SHEETS

BORING #1

BORING #3

[illegible]

Boring No. <u>3</u>	Elevation	z	Qu / s.f.	s (in)	Surface Water El.	Groundwater El. at Completion	After _____ Hours	DRY
Station <u>449+28</u>								
Offset <u>12' RT.</u>								
Ground Surface	753.3	0						
STIFF BROWN & GRAY MOTTLED CLAY								
	760.3							
	-5	8	1.7B	14				
		16	3.1B	14				
STIFF TO HARD BROWN CLAY TILL								
	-10	21	4.9B	13				
	750.0	26	6.4B	12				
	-15	17	4.3B	11				
HARD GRAY CLAY LOAM TILL								
		27	7.4B	10				
SILT LENSE								
	-20	26	—	—				
SAND & SAND LOAM LENSES								
LIMIT OF BORING								
	740.3	20	5.0B	10				

11- Standard Penetration Test- Blows per foot to drive 2" G.O. Split Spoon Sampler 12" with 140# hammer falling 30".	Qu-Unconfined Compressive Strength-1/2 f w-Water Content-percentage of oven dry weight-%	Type failure B-Bulge Failure S-Shear Failure E-Estimated Value P-Penetrometer
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DESIGNED	JNP
CHECKED	
DRAWN	Jacobs
CHECKED	SFM

OCT 10 1968
 EXAMINED
 PASSED
 APPROVED
 W. E. Bannan
 ENGINEER OF DESIGN
 V. E. Hall

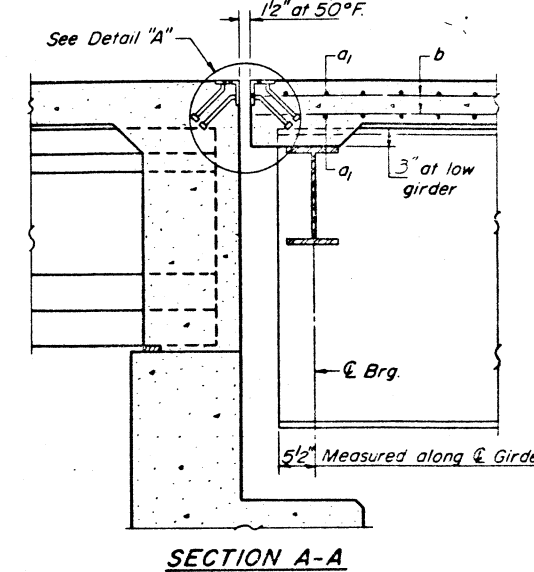
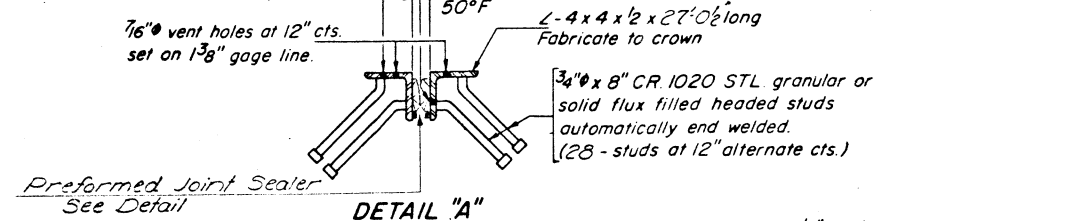
BORING
F.A.I.R.T. 74 SEC. 10-4-1HB-1
CHAMPAIGN COUNTY
STA. 1429+10.80

Bars indicated thus 20 x 3-#5 etc.
indicates 20 lines of bars with 3
lengths per line.
Min. bar laps = 24 dia.

7/16" holes at 12" cts. for 3/8" bolts set on 2 1/2" gage line. All bolts shall be burned, sawed or clipped off flush with back of angles after forms are removed.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S. B. 1. P. & T. 7d	10-4. 11B-1	Champaign.	38	12
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

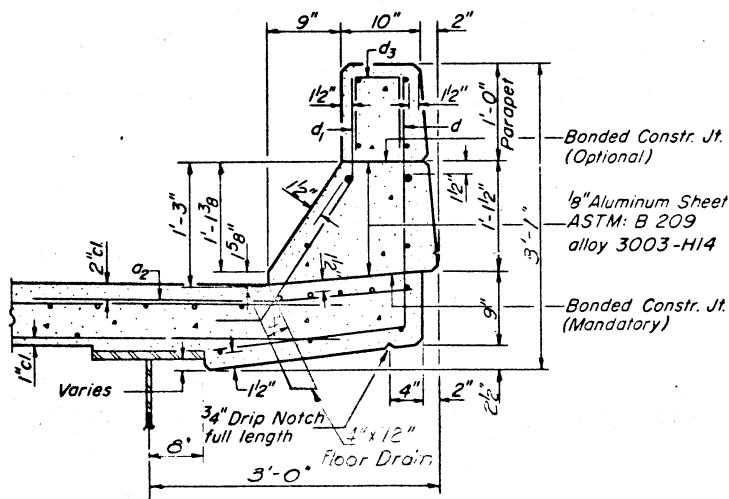
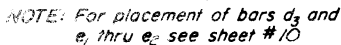
SHEET NO. 3
14 SHEETS



Bar	No	Size	Length	Shape
a	184	#0	23'-3"	~
a ₁	234	#0	23'-0"	—
a ₂	204	#6	4'-0"	—
b	483	#5	27'-2"	—
b ₁	30	#6	33'-0"	—
b ₂	10	#8	33'-6"	—
b ₃	24	#5	23'-0"	—
b ₄	6	#8	15'-5"	—
b ₅	8	#5	15'-5"	—
d	372	#4	4'-6"	J
d ₁	372	#5	3'-3"	J
Reinforcement Bars			Lbs.	408
Class X Concrete			Cu. Yds.	150
Structural Steel			Lbs.	1468
Preformed Jt. Scales			Lin. Ft.	0

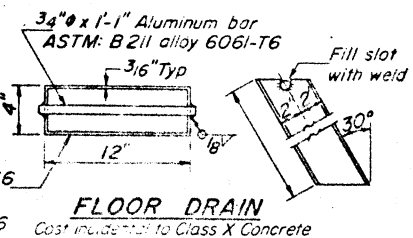
Weight of bearing assemblies with lead plates and anchor bolts are included as Structural Steel. Est. Wt. = 4200

Parapet Reinforcement and Class X
Concrete are billed on sheet # 10



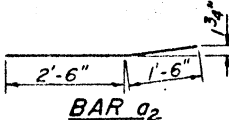
CURB SECTION

Cost of Aluminum Sheets and Drains
incidental to Class X Concrete.

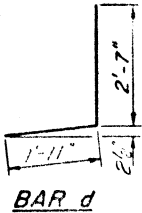


FLOOR DRAIN

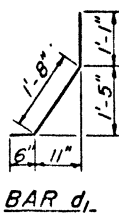
Cost incidental to Class X Concrete



BAR a_2



BAR d



BAR d, -

DESIGNED	<i>James P. King</i>
CHECKED	<i>W. H. King</i>
DRAWN	<i>J. C. King</i>
CHECKED	<i>W. H. King</i>

OCT 10 1969

EXAMINED *Carl Thurman*

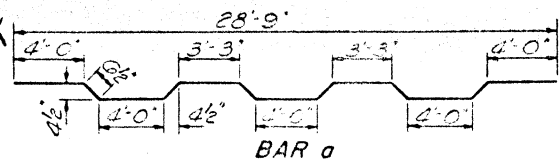
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES

PASSED

ENGINEER OF DESIGN

APPROVED

CHIEF HIGHWAY ENGINEER



BAR a

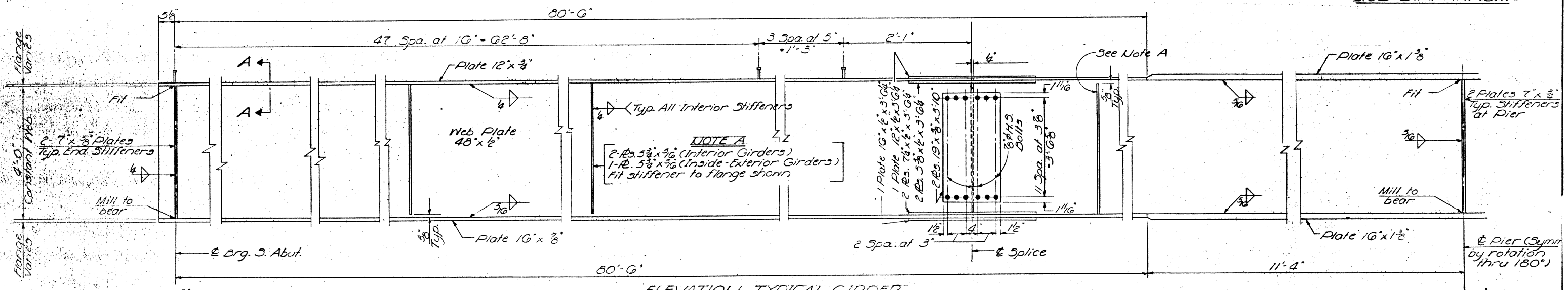
Aluminum Sheets Welded
ASTM: B209 alloy 6061-T6
or Aluminum Extrusions
ASTM: B221 alloy 6061-T6

MAIN SUPERSTRUCTURE
F.A.I. RT. 74 SEC. 10-4-T11B-1
CHAMPAIGN COUNTY
STA. 1429 + 10.60

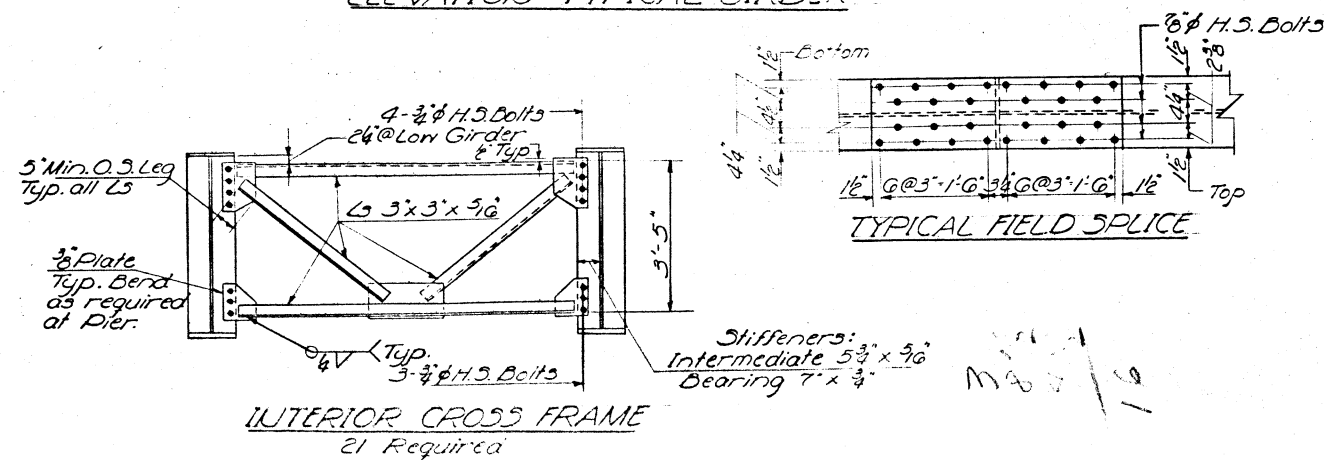
EVENTS NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
A.S.L. P.A. 74	10-4- 146-1	Champaign	38	13
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

Structural drawing of a bridge deck showing cross frames, diaphragms, and spans. The drawing includes dimensions for spans (66'-0", 51'-8", 66'-0"), cross frames (23'-0", 22'-10", 21'-1 5/8", 23'-0", 23'-0", 24'-8 3/8"), and diaphragms (183'-8" end to end). It also shows details for cross frames (3/4" x 4" CR 1020 STL) and diaphragms (5-3/4" H.S. Bolts).

END DIAPHRAGM



STIFFENER CUT
(All Stiffeners Top & Bottom.)



Girder Location	1 & 4	2 & 3
@ Brg. 50. Abut.	779.531	779.652
@ Splice 1	779.956	780.077
@ Pier	779.956	780.077
@ Splice 2	779.956	780.077
@ Brg. No. Abut.	779.531	779.652

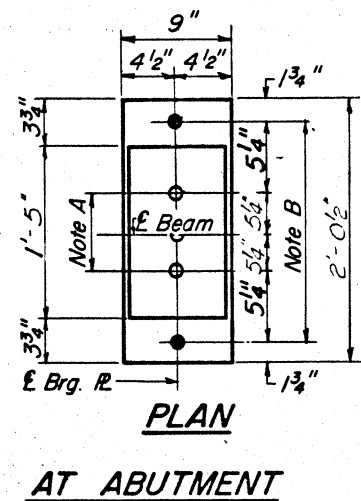
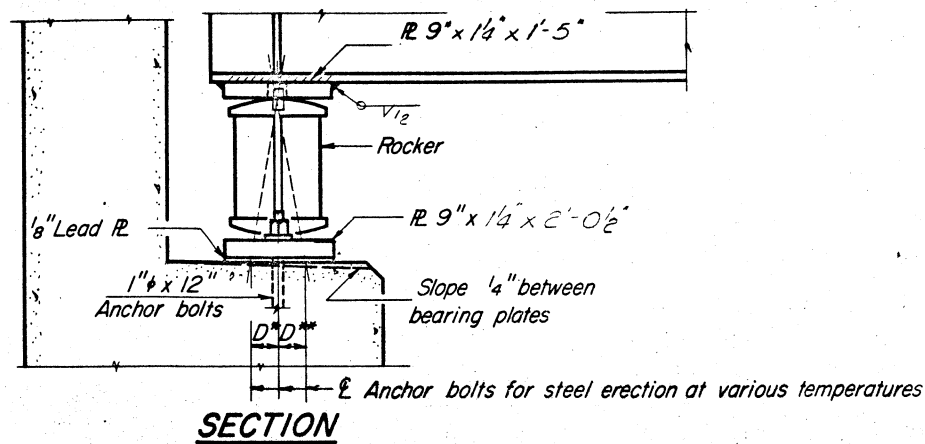
STRUCTURAL STEEL
F.A.I.R.T. 74 SEC. 10-4-1HB-1
CHAMPAIGN COUNTY
STA. 1429 + 10.80

DESIGNED	<i>Sam T. Pearce</i>
CHECKED	<i>Sam T. Pearce</i>
DRAWN	<i>JACOBS</i>
CHECKED	<i>SFM</i>

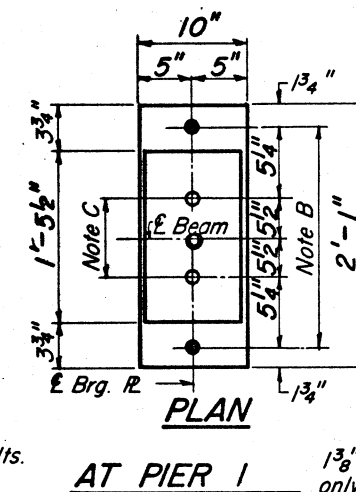
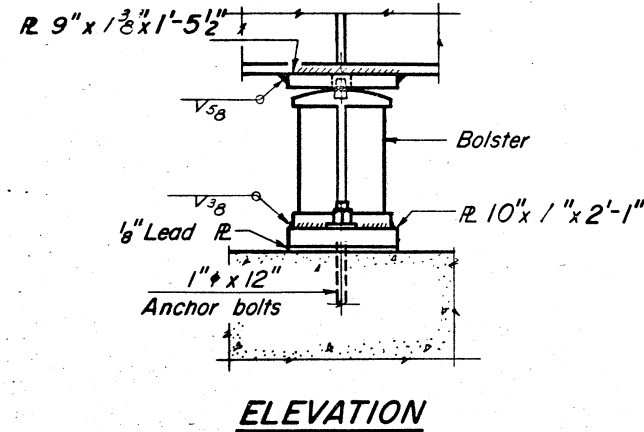
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	14B-1	Champaign	38	14
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

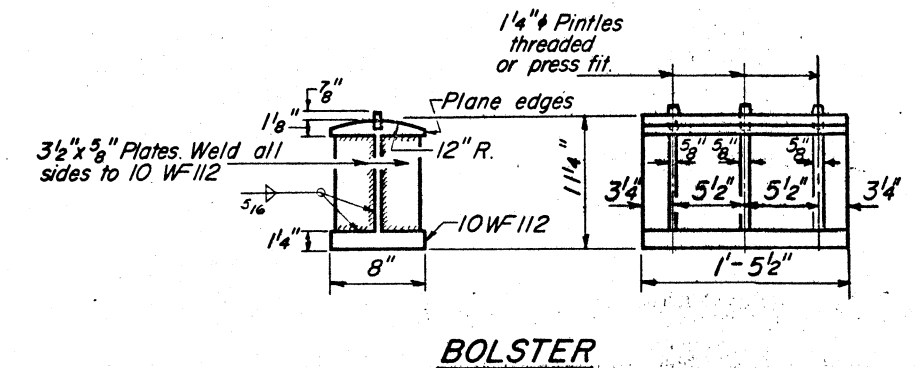
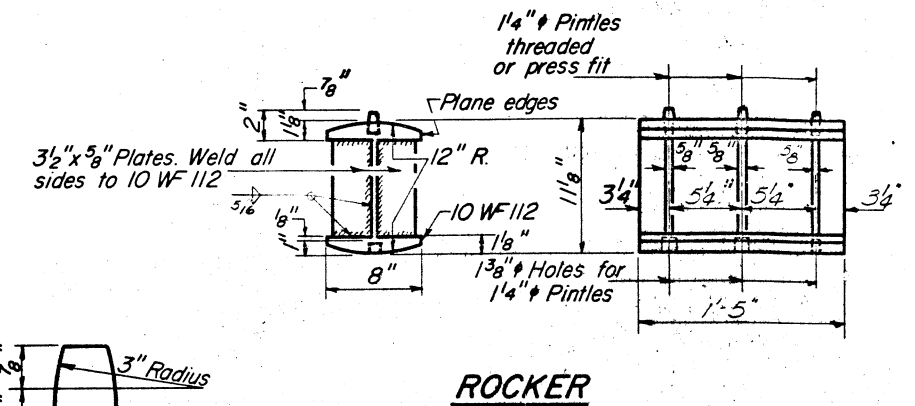
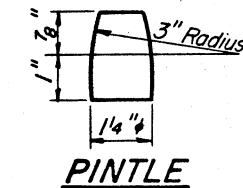
14 SHEETS



NOTE A
1 3/8" Holes - 1" deep in top R.
for pintles. Thread or press fit
pintles into bottom R.



NOTE B
1 1/2" Holes for 1" anchor bolts.
2 1/2" x 2 1/2" x 5/16" R. Washers
under nut.



NOTE C
1 3/8" Holes 1" deep in top R.
only for 1 1/4" pintles.

NOTES ON SETTING OF ANCHOR BOLTS AT EXP. BRGS.

- a) D^* (Side of brg. away from fixed brg.)
 $D^* = 1/8"$ per each 100' of expansion for
every 15° fall below the normal temp.
of 50°F.
- D^{**} (Side of brg. toward fixed brg.)
 $D^{**} = 1/8"$ per each 100' of expansion for
every 15° rise above the normal temp.
of 50°F.
- b) After beams have been erected and dimensions D^* or D^{**}
determined, holes shall be drilled and anchor bolts shall
be grouted in place. All fixed anchor bolts may be built
into the masonry.

BEARING ASSEMBLY DETAILS

TABLE OF MOMENTS, SHEARS & REACTIONS-INTERIOR BEAMS					
Moments			Reactions		
	4 Span 1		Pier	Abut.	Pier
D. L.	Steel Section	D. L.	1502.8	45.8	157.0
S. D. L.	Composite Section				
L. L.	687.0	L. L.	474.0	34.7	53.4
Imp.	145.4	Imp.	109.1	8.0	12.5
Total	1541.4	Total	2065.9	66.5	222.7
Shear					
	Abut.	1/4	1/2	3/4	
S. D. L.	13.9	5.0	5.9	12.3	
L. L.	34.7	23.3	18.4	25.7	
Imp.	8.0	5.3	4.2	6.0	
Total	56.6	33.6	28.5	43.9	

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

PROPERTIES	
Steel Section	
I_s	17566 in. ⁴
S_s	659 in. ³
S_{bs}	807 in. ³
Composite Section	
I_c	43045 in. ⁴
S_{rc}	2500 in. ³
S_{bc}	1092 in. ³

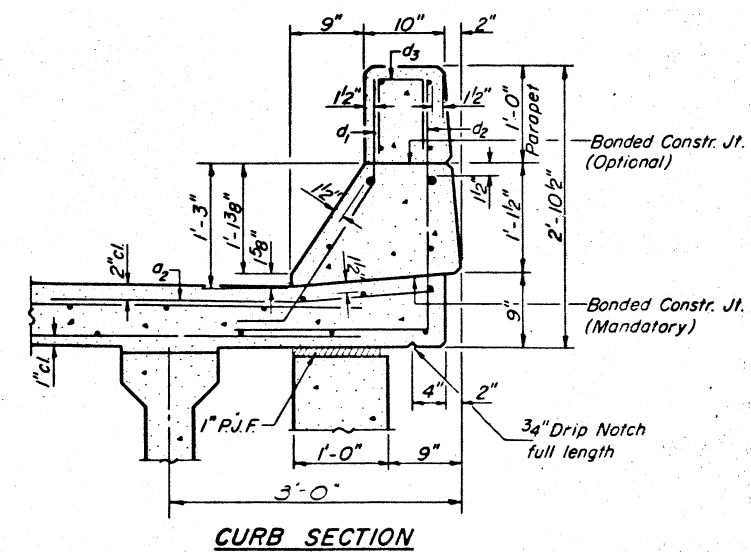
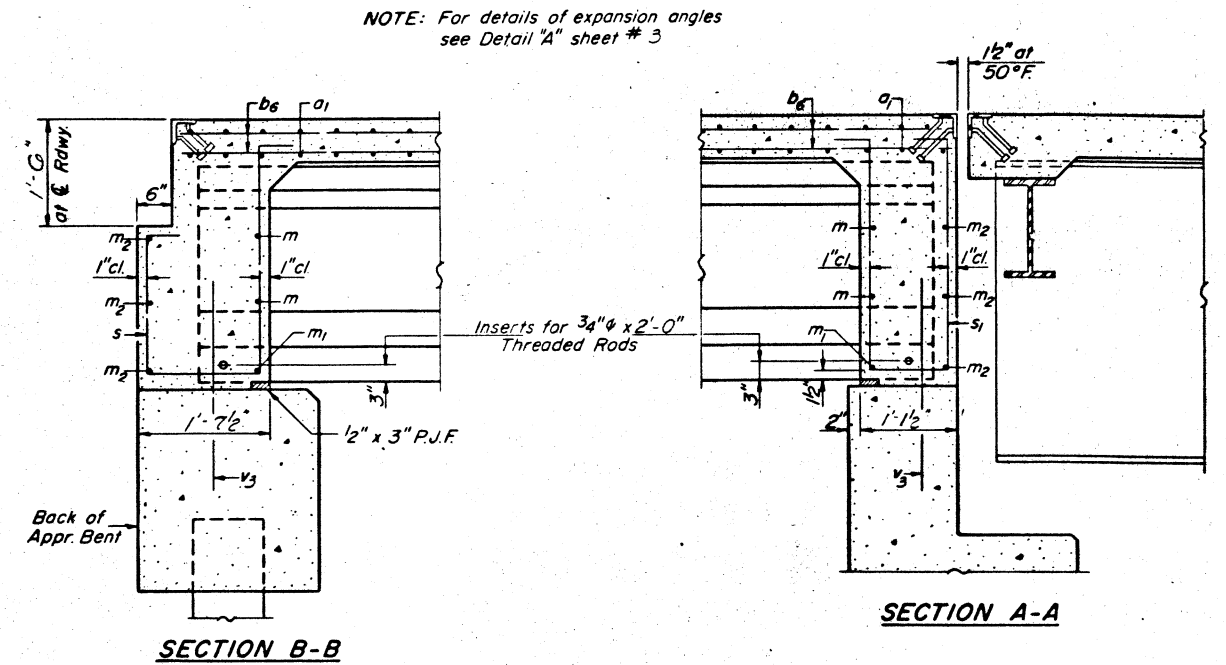
DESIGNED	S. J. H. H.
CHECKED	W. E. Barnett
DRAWN	P. G. Barnett J. R. Boice
CHECKED	SFM

EXAMINED	Oct 10 1965
PASSED	W. E. Barnett
APPROVED	V. E. Smith

BEARING DETAIL
P.A. RT 74-SEC. 10-4-14B-1
CHAMPAIGN COUNTY
STA. 10+10.60

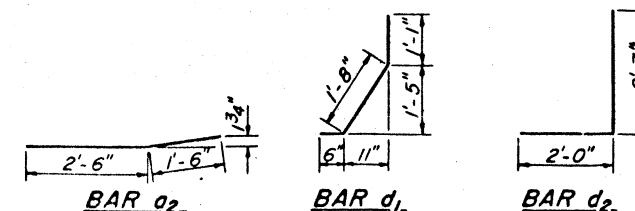
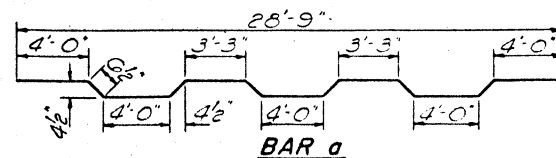
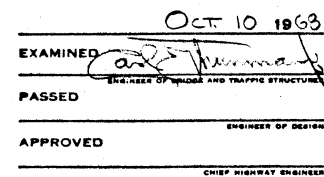
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 6
R. & F. 74	10-4-14B-1	Champaign	38	15	
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-		

14 SHEETS



Bar	No.	Size	Length	Shape
a	32	#6	29'-9"	
a ₁	15G	#6	28'-0"	
a ₂	9G	#6	4'-0"	
b ₆	14G	#5	33'-6"	
b ₇	8	#8	33'-6"	
d ₁	140	#5	3'-3"	
d ₂	140	#4	4'-7"	
m	24	#4	7'-6"	
m ₁	12	#5	6'-6"	
m ₂	12	#5	26'-9"	
m ₃	12	#4	7'-3"	
m ₄	12	#4	6'-3"	
s	3G	#4	7'-6"	
s ₁	3G	#4	8'-5"	
s ₂	3G	#4	7'-0"	
Reinforcement Bars			Lbs.	6,430
Class X Concrete			Cu.Yds.	72.7

Parapet Reinforcement and Class X Concrete are billed on sheet # 10
For placement and details of bars m thru m_4 and s thru s_2 see sheet # 7.

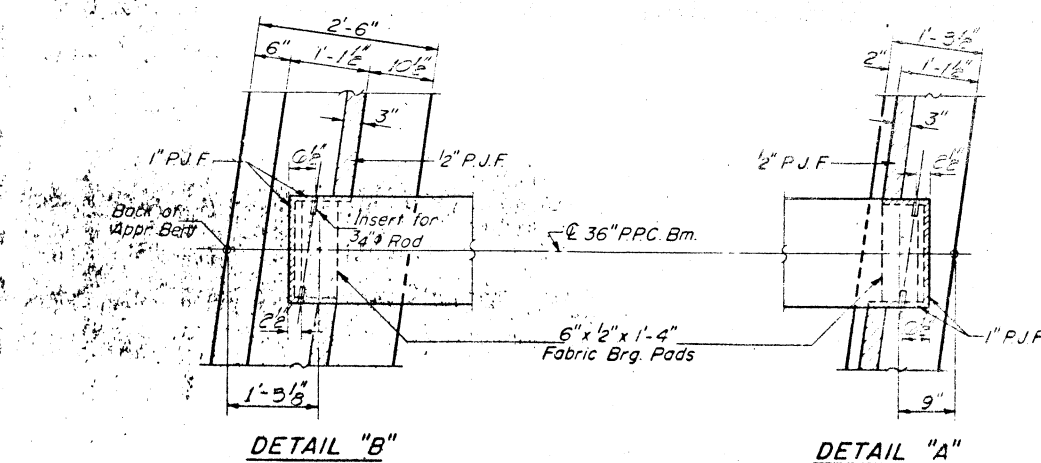
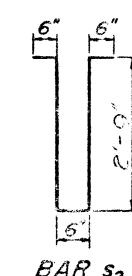
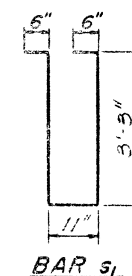
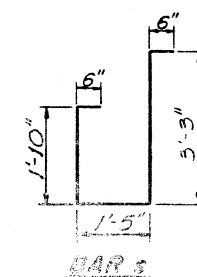
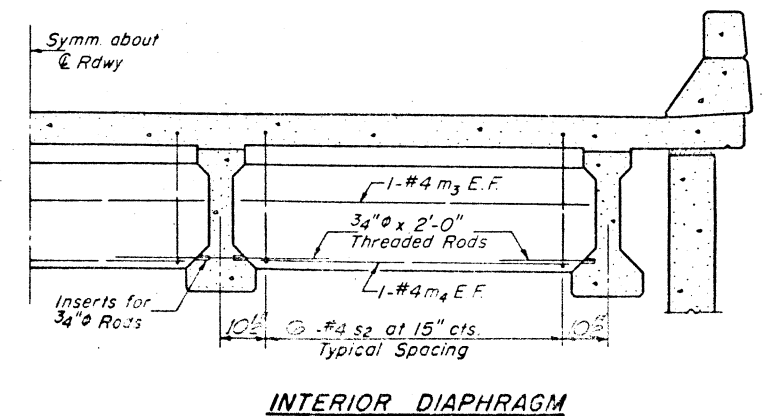
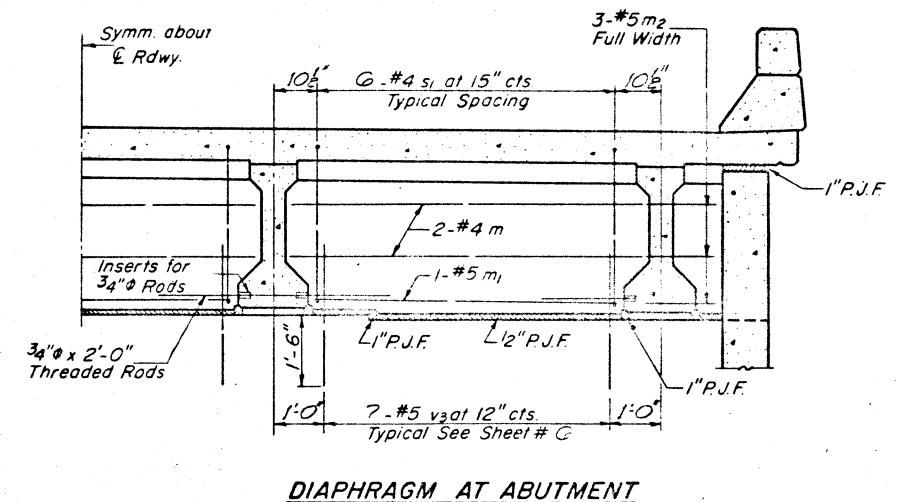
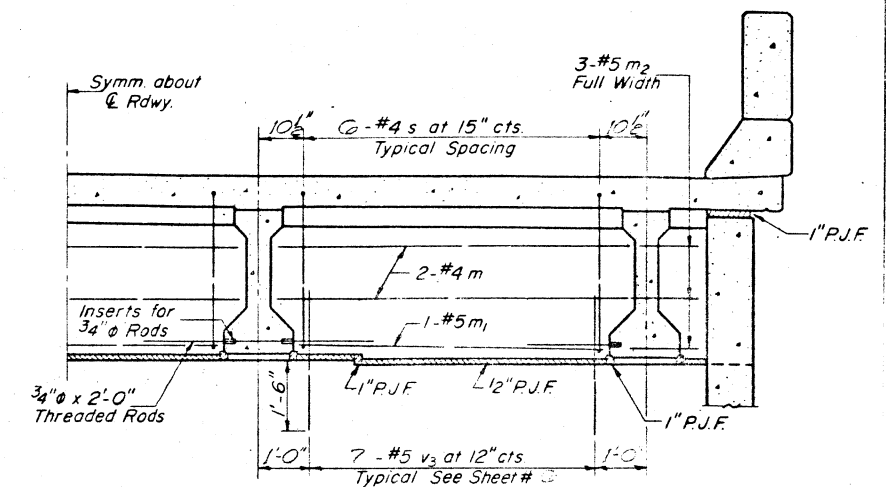
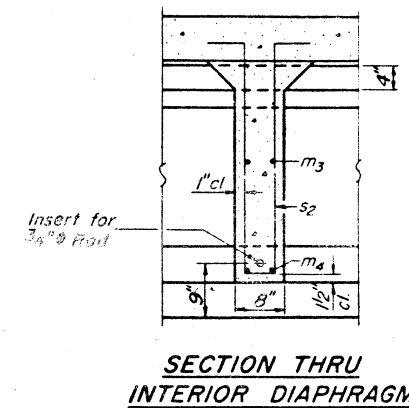
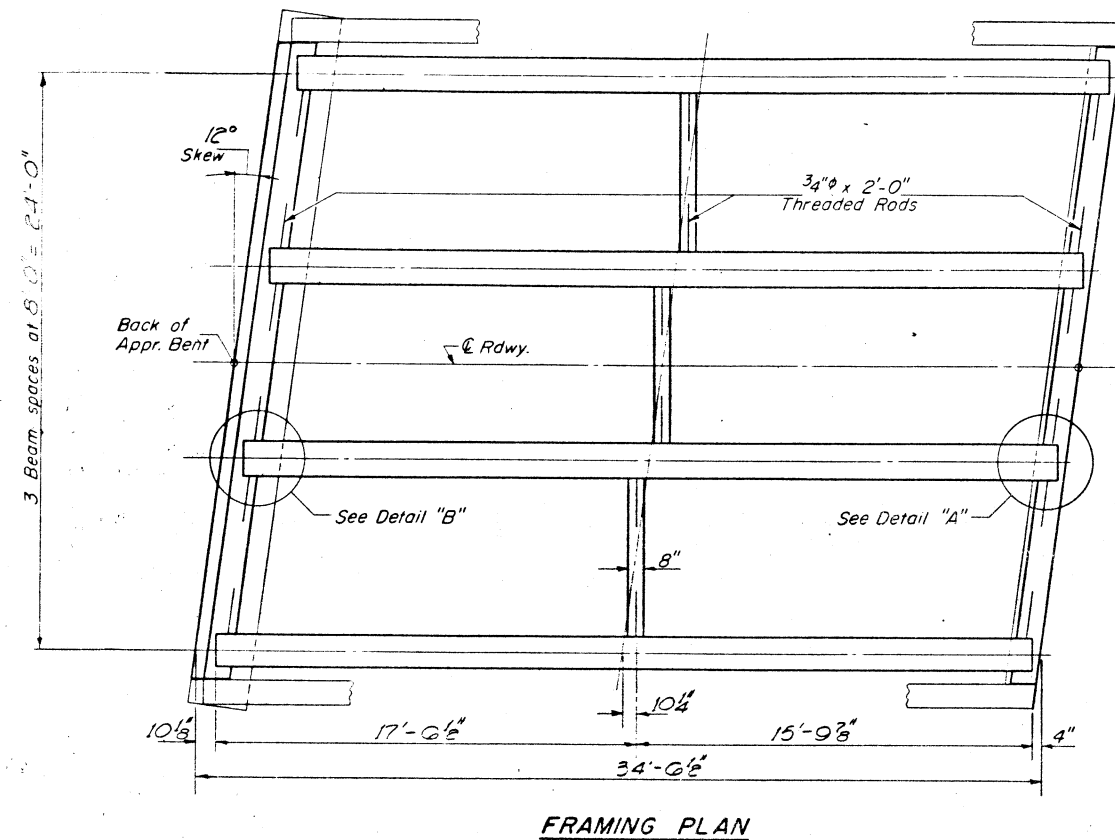


APPROACH SUPERSTRUCTURE
F.A.I.R.T. 74 SEC.10-4-1HB-1
CHAMPAIGN COUNTY
STA. 1429 + 10.60

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

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA 174	10-4-14B-1	Champaign	38	16
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 7
14 SHEETS



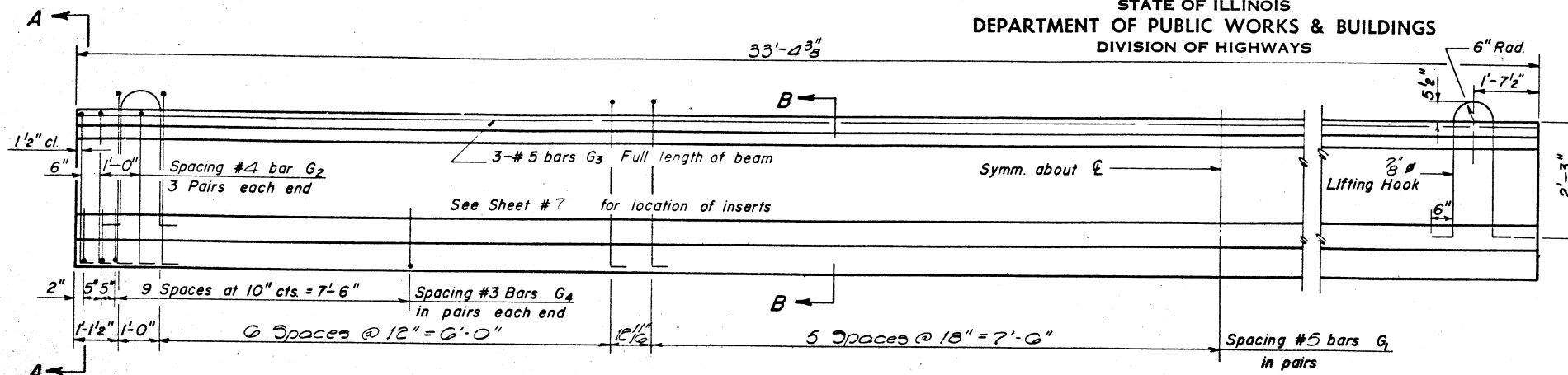
NOTES:
Bars s thru s₂ and m thru m₄ are billed with Approach Slab Bill of Material on sheet # 7
Bar v₃ is billed with Abutment Bill of Material on sheet # 11
See sheet # 7 for sections thru abutment and approach bent diaphragms.

DESIGNED	Oct 10 1963
CHECKED	
DRAWN J. Schneller	
CHECKED	

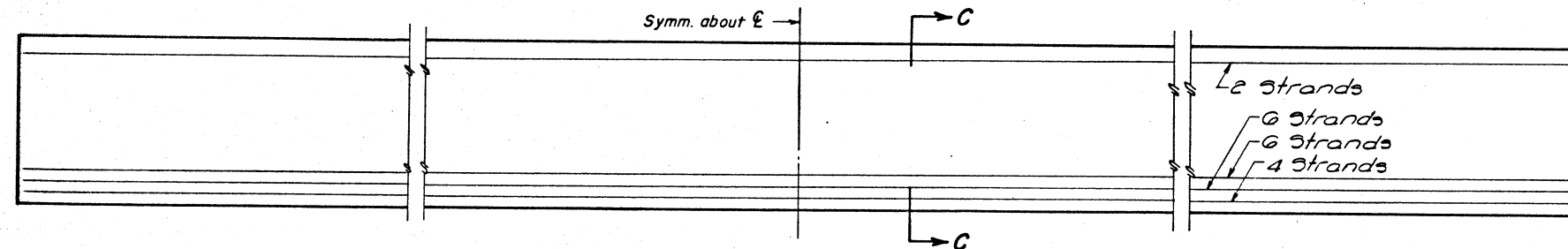
PRESTRESSED BEAMS FRAMING
DETAILS
FA 174 SEC. 10-4-14B-1
CHAMPAIGN COUNTY
STA. 1420+10.80

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

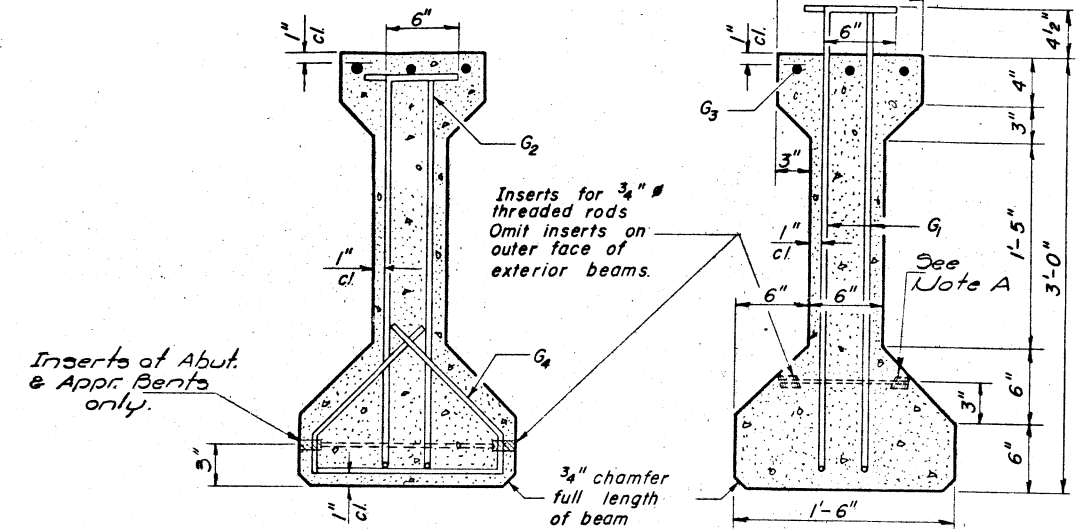
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO.
10-4-14B-1	10-4-14B-1	Champaign	38	17	14 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			



ELEVATION OF BEAMS-
Showing Reinforcement & Dimensions

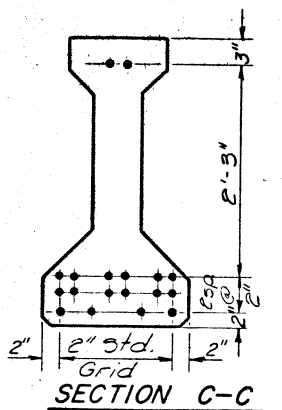


ELEVATION OF BEAMS-
Showing Prestressing Steel

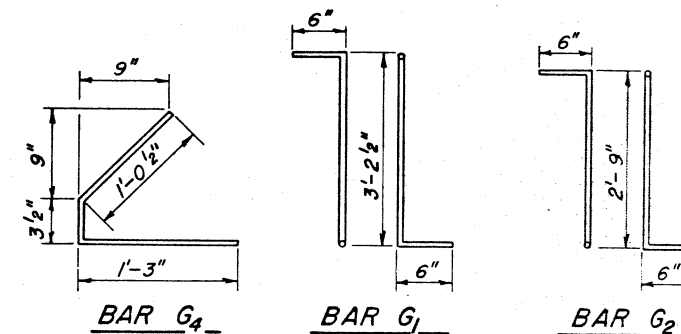


SECTION A-A

SECTION B-B
Note A: Inserts at Interior diaphragm only.



SECTION C-C



***BAR LIST**

Bar	No.	Size	Length	Shape
G1	54	#5	4'-2 1/2"	7L
G2	12	#4	3'-9"	7L
G3	3	#5	33'-0"	—
G4	48	#3	2'-7"	L

* For one beam only.

BILL OF MATERIAL

Item	Unit	Total
Furnishing & Erecting Precast Prestressed Concrete I-Beams, 36"	Lin. Ft.	267

NOTES

All inserts and threaded rods for inserts, reinforcing and Prestressing Steel, and other items which are cast into the Precast Concrete I-Beams shall be included in the contract unit price per lineal foot of "Furnishing And Erecting Precast Prestressed Concrete I-Beams, 36 In." An alternate strand pattern using Extra High Strength Prestressing Strand (270 KSI) is permitted. See Special Provisions.

Prestressing Steel shall have a nominal diameter of 7/16."

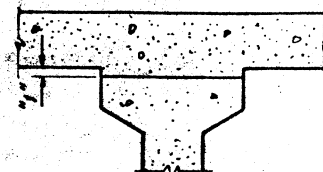
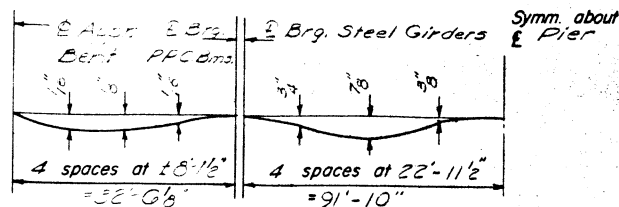
Inserts for 3/4" threaded rods are to be two strut, coil type for interior I-Beams and single coil, flared loop type for exterior I-Beams.

Steel for lifting hooks shall be non-deformed bars of structural or intermediate grade billet steel.

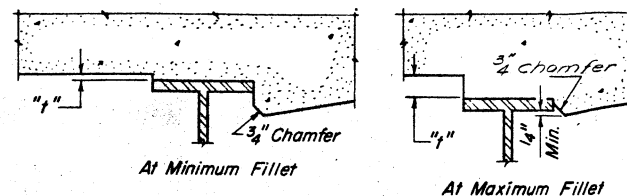
DESIGNED	James M. Rice
CHECKED	J. B. Sullivan
DRAWN	J. Schneller
CHECKED	J. B. Sullivan

EXAMINED	OCT. 10 1963
PASSED	ENGINEER OF PUBLIC WORKS AND TRAFFIC STRUCTURES
APPROVED	ENGINEER OF DESIGN
	CHIEF HIGHWAY ENGINEER

PRECAST PRESTRESSED
CONCRETE BEAMS
F.A.I. RT. 74 SEC. 10-4-14B-1
CHAMPAIGN COUNTY
STA. 1429+10.80



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



ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10-4-	14	Champaign	38	13
F.A.I. 74				
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 9
14 SHEETS

DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete 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.

To determine "t": After all precast prestressed beams have been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted algebraically from the "Theoretical Grade Elevations Adjusted for Dead Load Deflections" shown below, minus slab thickness, equals the fillet heights "t". A positive value of "t" equals the fillet height above the top of the beam. A negative value of "t", not to exceed 2", equals the embedment of the beam above the theoretical bottom of slab elevation.

FILLET HEIGHTS

To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown below, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

Location	Beam	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Appr. Bent	A	44870.119	12.000	779.776	779.776
		44871.820	4.000	779.904	779.904
		44872.670	.000	779.929	779.929
		44873.320	4.000	779.928	779.928
		44873.221	12.000	779.848	779.848
S. Appr. Bent	B	44871.397	12.000	779.795	779.795
		44872.098	4.000	779.922	779.922
		44873.348	.000	779.947	779.947
		44874.798	4.000	779.945	779.945
		44876.499	12.000	779.866	779.866
A	C	44879.526	12.000	779.907	779.912
		44881.226	4.000	780.033	780.038
		44882.076	.000	780.057	780.063
		44882.327	4.000	780.055	780.061
		44884.627	12.000	779.974	779.979
B	D	44887.654	12.000	780.012	780.020
		44889.355	4.000	780.137	780.144
		44890.203	.000	780.160	780.168
		44891.355	4.000	780.157	780.165
		44892.735	12.000	780.074	780.082
C	E	44893.733	12.000	780.110	780.115
		44897.183	4.000	780.233	780.238
		44898.333	.000	780.256	780.261
		44899.183	4.000	780.252	780.257
		44900.884	12.000	780.168	780.173
Brg. R.R.C. Beams S. Abut	F	44903.911	12.000	780.200	780.200
		44905.611	4.000	780.322	780.322
		44905.462	.000	780.344	780.344
		44907.312	4.000	780.339	780.339
		44909.012	12.000	780.253	780.253
Brg. Steel Girders S. Abut	G	44905.619	12.000	780.218	780.218
		44907.320	4.000	780.339	780.339
		44908.170	.000	780.362	780.362
		44909.020	4.000	780.357	780.357
		44910.721	12.000	780.271	780.271

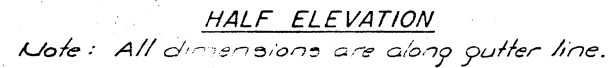
Location	Beam	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
D	H	44915.619	12.000	780.318	780.346
		44917.320	4.000	780.437	780.465
		44918.170	.000	780.458	780.486
		44919.020	4.000	780.452	780.480
		44920.721	12.000	780.364	780.392
E	I	44925.619	12.000	780.406	780.462
		44927.320	4.000	780.523	780.579
		44928.170	.000	780.543	780.599
		44929.020	4.000	780.537	780.592
		44930.721	12.000	780.447	780.502
F	J	44935.619	12.000	780.483	780.550
		44937.320	4.000	780.598	780.665
		44938.170	.000	780.618	780.684
		44939.020	4.000	780.610	780.677
		44940.721	12.000	780.518	780.585
G	K	44945.619	12.000	780.549	780.620
		44947.320	4.000	780.662	780.733
		44948.170	.000	780.681	780.751
		44949.020	4.000	780.672	780.743
		44950.721	12.000	780.578	780.649
H	L	44955.619	12.000	780.604	780.689
		44957.320	4.000	780.715	780.781
		44958.170	.000	780.733	780.793
		44959.020	4.000	780.723	780.789
		44960.721	12.000	780.628	780.693
I	M	44965.619	12.000	780.648	780.694
		44967.320	4.000	780.757	780.804
		44968.170	.000	780.774	780.820
		44969.020	4.000	780.763	780.810
		44970.721	12.000	780.666	780.712
J	N	44975.619	12.000	780.680	780.709
		44977.320	4.000	780.788	780.817
		44978.170	.000	780.804	780.832
		44979.020	4.000	780.792	780.821
		44980.721	12.000	780.693	780.721
K	O	44985.619	12.000	780.702	780.717
		44987.320	4.000	780.805	780.819
		44988.170	.000	780.822	780.836
		44989.020	4.000	780.810	780.824
		44990.721	12.000	780.709	780.724
Brg. Pier	P	44997.453	12.000	780.713	780.719
		44999.153	4.000	780.817	780.817
		45000.003	.000	780.830	780.830
		45000.854	4.000	780.817	780.817
		45002.554	12.000	780.713	780.713

Location	Beam	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
L	Q	45007.453	12.000	780.710	780.723
		45009.153	4.000	780.812	780.825
		45010.003	.000	780.824	780.838
		45010.854	4.000	780.810	780.823
		45012.554	12.000	780.705	780.718
M	R	45017.453	12.000	780.696	780.723
		45019.153	4.000	780.796	780.823
		45020.003	.000	780.808	780.834
		45020.854	4.000	780.793	780.819
		45022.554	12.000	780.685	780.711
N	S	45027.453	12.000	780.671	780.715
		45029.153	4.000	780.769	780.813
		45030.003	.000	780.780	780.823
		45030.854	4.000	780.764	780.807
		45032.554	12.000	780.654	780.698
O	T	45037.453	12.000	780.635	780.697
		45039.153	4.000	780.732	780.793
		45040.003	.000	780.741	780.803
		45040.854	4.000	780.724	780.786
		45042.554	12.000	780.613	780.674
P	U	45047.453	12.000	780.582	780.659
		45049.153	4.000	780.682	780.754
		45050.003	.000	780.691	780.762
		45050.854	4.000	780.673	780.744
		45052.554	12.000	780.560	780.631
Q	V	45057.453	12.000	780.530	780.597
		45059.153	4.000	780.622	780.680
		45060.003	.000	780.630	780.697
		45060.854	4.000	780.611	780.678
		45062.554	12.000	780.495	780.563
R	W	45067.453	12.000	780.461	780.522
		45069.153	4.000	780.551	780.612
		45070.003	.000	780.558	780.619
		45070.854	4.000	780.538	780.599
		45072.554	12.000	780.421	780.482
S	X	45077.453	12.000	780.380	780.413
		45079.153	4.000	780.469	780.502
		45080.003	.000	780.474	780.507
		45080.854	4.000	780.453	780.487
		45082.554	12.000	780.335	780.368

Location	Beam	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
E Brg. Steel Girders N. Abut.		45094.253	12.000	780.270	780.271
		45095.953	4.000	780.357	780.357
		45096.803	.000	780.361	780.362
		45097.653	4.000	780.339	780.339
		45098.503	12.000	780.218	780.219
E Brg. R.R.C. Beams N. Abut.		45099.934	12.000	780.253	780.253
		45092.635	4.000	780.339	780.339
		45093.545	.000	780.344	780.344
		45094.395	4.000	780.322	780.322
		45096.096	12.000	780.200	780.200
T		45099.123	12.000	780.168	780.173
		45100.823	4.000	780.252	780.257
		45101.673	.000	780.256	780.261
		45102.524	4.000	780.233	780.238
		45104.224	12.000	780.110	780.115
U		45107.251	12.000	780.074	780.082
		45108.952	4.000	780.157	780.165
		45109.802	.000	780.160	780.168
		45110.652	4.000	780.136	780.144
		45112.352	12.000	780.012	780.020
V		45115.380	12.000	779.974	779.979
		45117.080	4.000	780.055	780.061
		45117.930	.000	780.057	780.063
		45118.780	4.000	780.033	780.038
		45120.481	12.000	779.907	779.912
E Brg. N. Appr. Bent		45123.508	12.000	779.866	779.866
		45125.208	4.000	779.946	779.946
		45126.059	.000	779.947	779.947
		45126.909	4.000	779.922	779.922
		45128.609	12.000	779.794	779.794
Ok. N. Appr. Bent		45124.786	12.000	779.848	779.848
		45126.486	4.000	779.928	779.928
		45127.337	.000	779.929	779.929
		45128.187	4.000	779.904	779.904
		45129.887	12.000	779.776	779.776

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
001 P.A. 174	10-4- 1HB-1	Champaign	33	19
FED. ROAD DIST. NO. 2	ILLINOIS	FED. AID PROJECT:		

SHEET NO. 10
14 SHEETS

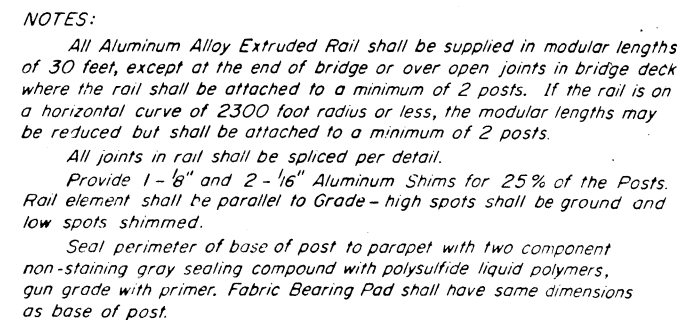


END POST DETAIL
(Inside View)

* d_1 bars at 12" cts. Inside Face
* d_2 bars at 12" cts. Outside Face

SECTION A-A

* d_1 & d_2 bars are billed with Approach.



<u>PARAPETS & RAILS</u>				
<u>BILL OF MATERIAL</u>				
<i>Bar</i>	<i>No.</i>	<i>Size</i>	<i>Length</i>	<i>Shape</i>
d ₃	10	#4	2'-1"	□
d ₄	12	#4	2'-8"	□
d ₅	12	#4	3'-2"	□
d ₆	10	#4	4'-8"	□
e	10	#4	23'-6"	=====
e ₁	64	#4	18'-10"	=====
e ₂	10	#4	15'-5"	=====
e ₃	24	#4	9'-9"	=====
<i>Reinforcement Bars</i>		<i>Lbs.</i>	1040	
<i>Class X Concrete</i>		<i>Cu Yds.</i>	17.6	
<i>Aluminum Railing</i>		<i>Lin Ft.</i>	467	

ALUMINUM RAILING
F.A.I. RT. 74 SEC. 10-4-1HB-1
CHAMPAIGN COUNTY
STA. 1429+10.80

DESIGNED	James Prince
CHECKED	J. B. H.
DRAWN	J. Schneller JP
CHECKED	J. B. H.

OCT. 10 1968

EXAMINED *Carl J. Thurnman*

PASSED

ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES

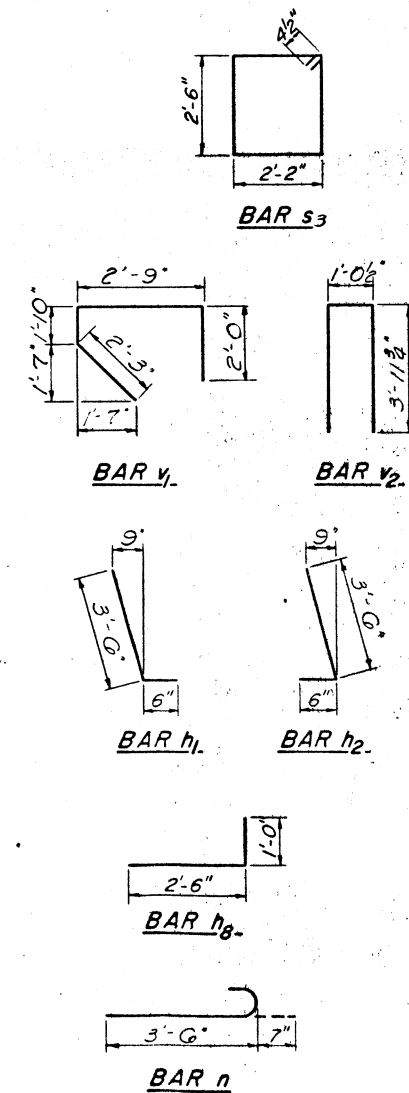
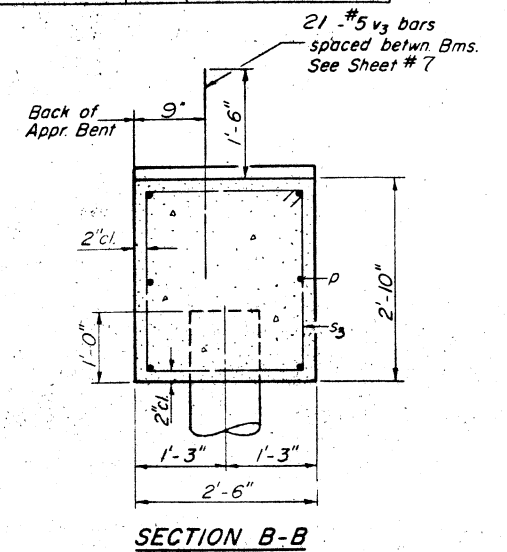
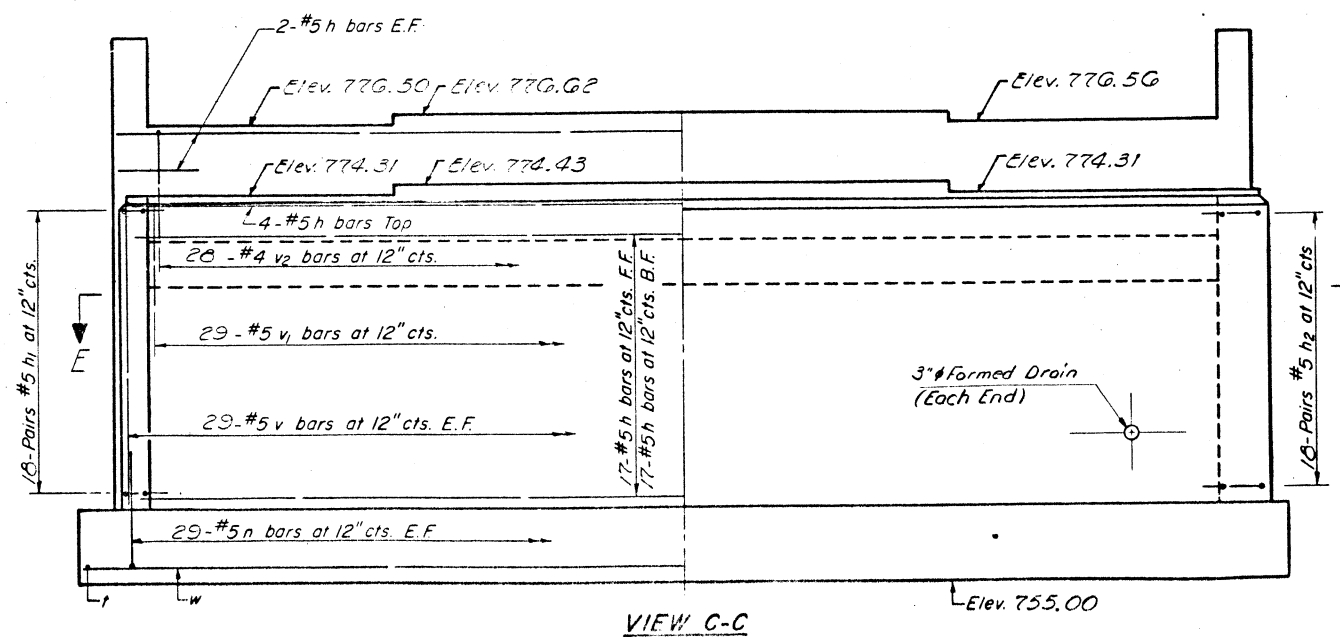
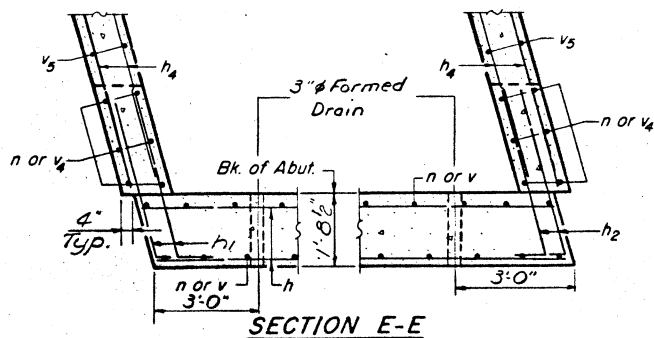
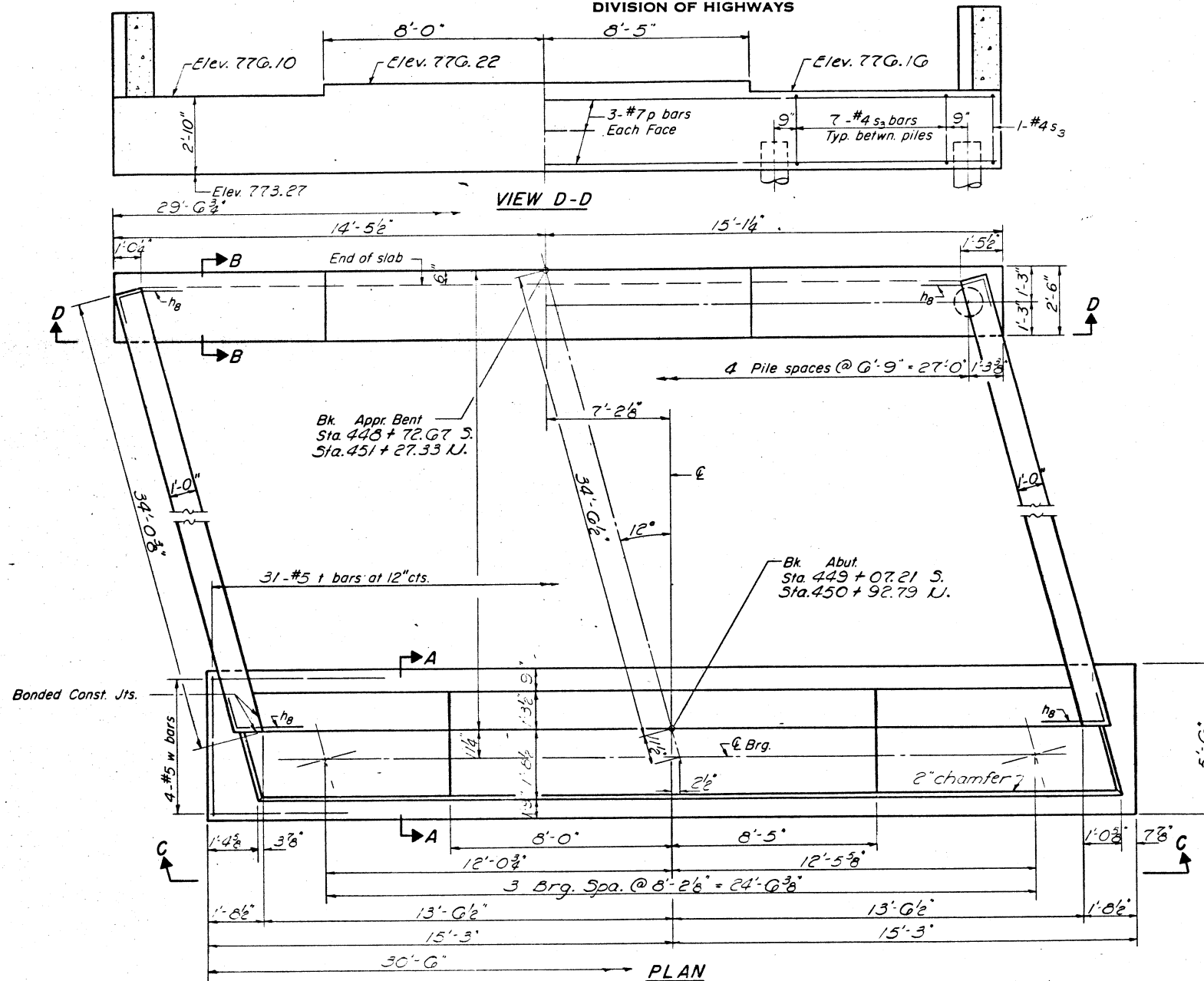
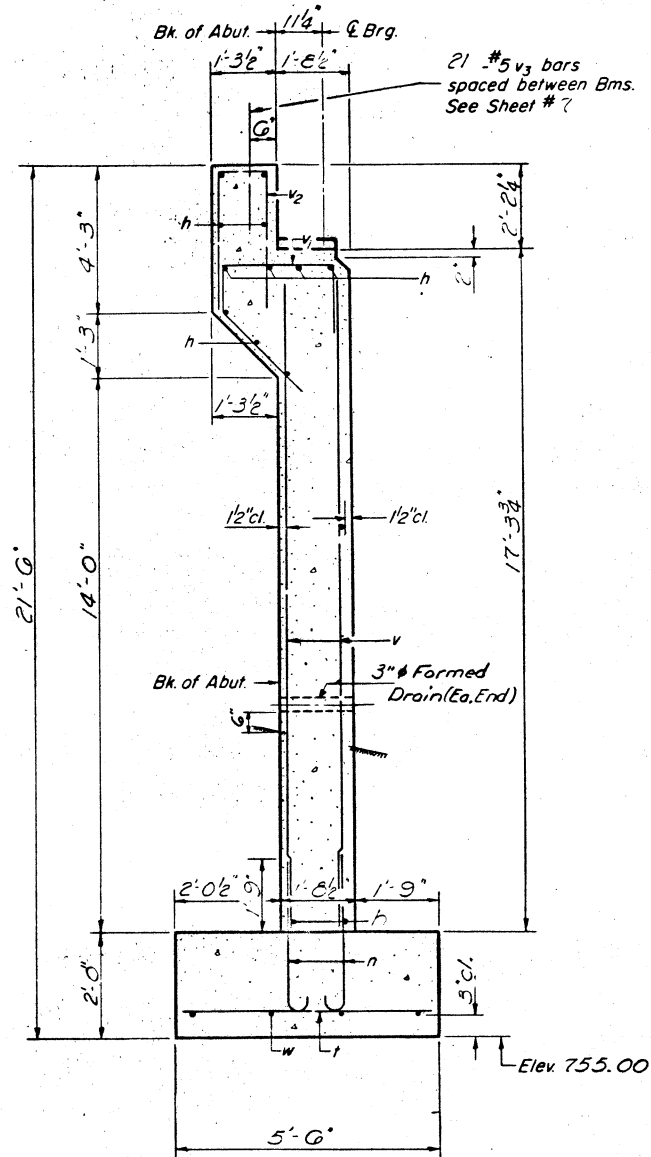
APPROVED

ENGINEER OF DESIGN

CIVIL HIGHWAY ENGINEER

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

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 11
10-4	14B-1	Champaign	38	20	14 SHEETS
F.A.I. 74					
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			



2 ABUTMENTS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	84	#5	28'-2"	—
h1	72	#5	4'-0"	—
h2	72	#5	4'-0"	—
h3	8	#6	10'-0"	—
h4	48	#4	28'-0"	—
h5	112	#4	17'-6"	—
h6	10	#4	4'-0"	—
h7	24	#4	4'-0"	—
h8	24	#4	3'-6"	—
n	140	#5	4'-1"	—
p	12	#7	29'-3"	—
s3	60	#4	10'-1"	—
v	62	#5	5'-3"	—
v1	58	#5	17'-0"	—
v2	50	#4	9'-0"	—
v3	32	#5	3'-0"	—
v4	24	#4	22'-4"	—
v5	96	#4	23'-0"	—
v6	48	#4	5'-0"	—
w	3	#5	30'-3"	—
Reinforcement Bars		Lbs.	13,190	
Class X Concrete		Cu. Yds.	17.2	
Concrete Piles		Lin. Ft.	296	
Test Pile (Conc.)		Each	1	

ABUTMENTS
F.A.I. RT. 74 SEC. 10-4-14B-1
CHAMPAIGN COUNTY
STA. 1429 + 10.80

DESIGNED: [Signature]
CHECKED: [Signature]
DRAWN: [Signature]
CHECKED: [Signature]

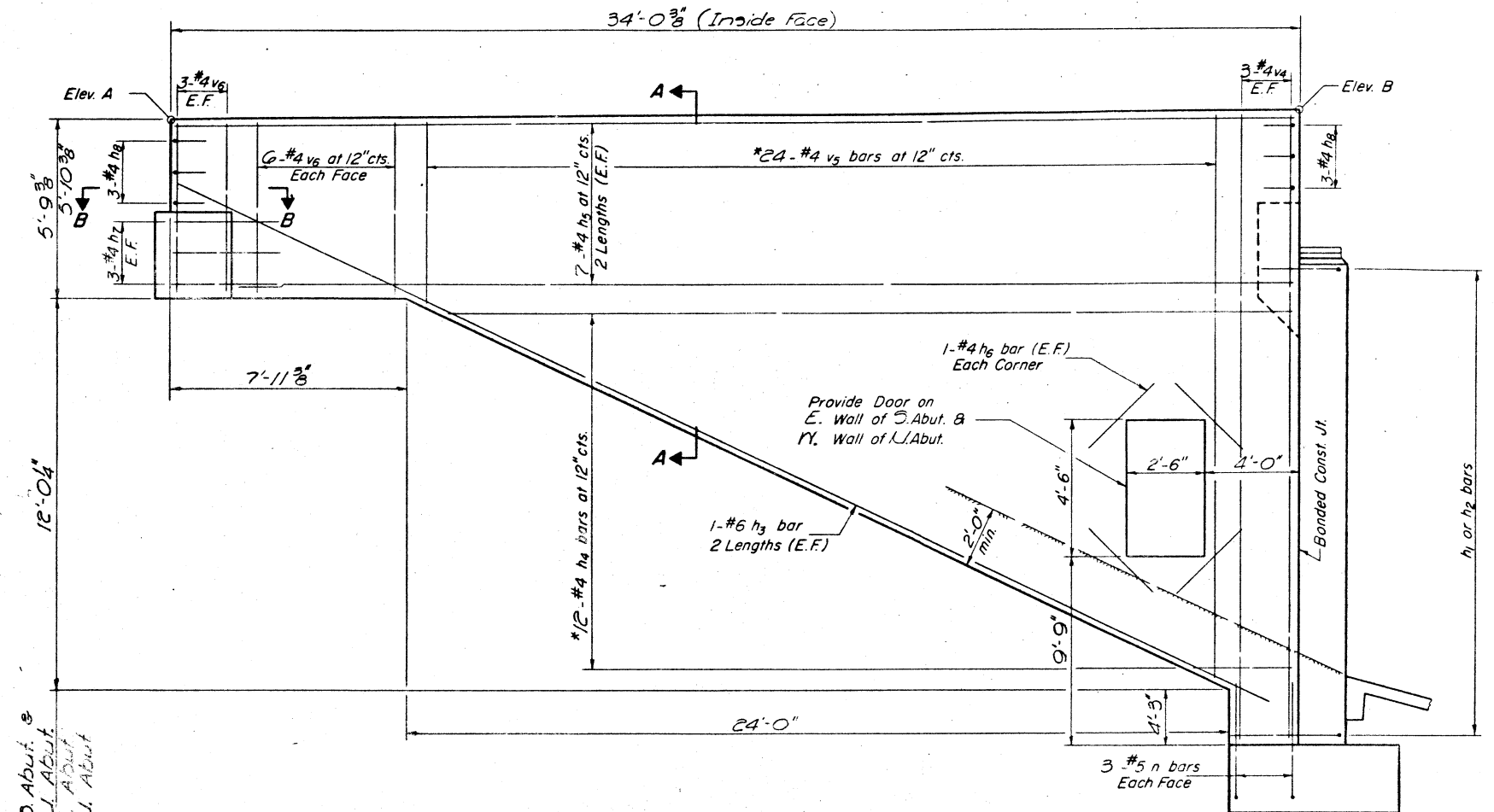
OCT 10 1968
EXAMINED: [Signature]
PASSED: [Signature]
APPROVED: [Signature]

CHIEF HIGHWAY ENGINEER

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

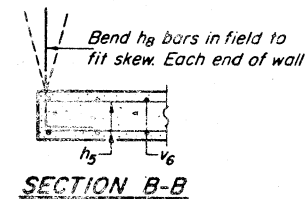
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10-4-14B-1	10-4-14B-1	Champaign	38	21
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

SHEET NO. 12
14 SHEETS



CURTAIN WALL ELEVATION

Max. Soil Pressure = 2.15 T/ft²



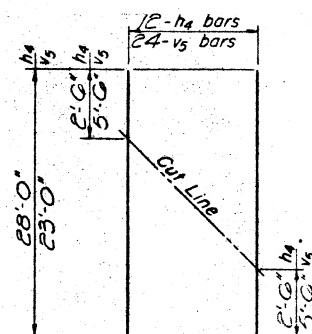
SECTION B-B

APPR. BENT - PILE DATA

Type Concrete
Capacity 30 Tons
Est. Length 32' S. Abut. 34' N. Abut.
No. Req'd. 9 plus one test pile
at N. Appr. Bent

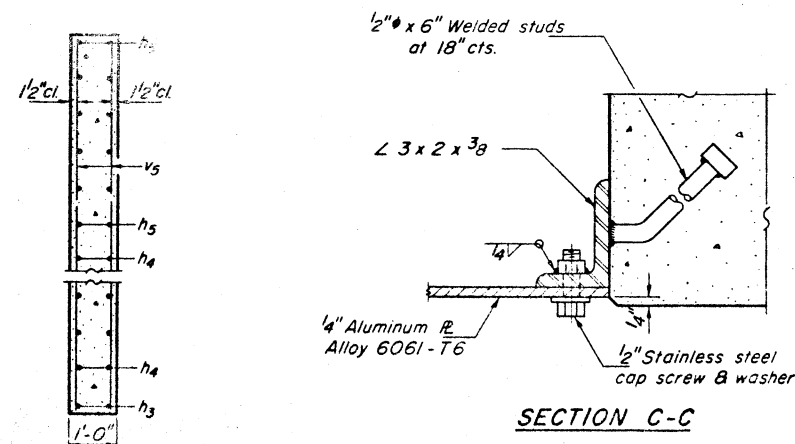
DESIGNED	James R. Jones
CHECKED	J. P. Schneller
DRAWN	J. P. Schneller
CHECKED	J. P. Schneller

EXAMINED	OCT 10 1968
PASSED	
APPROVED	



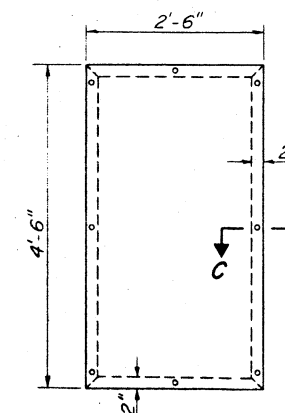
FIELD CUTTING DIAGRAM

* Order h4 & v5 bars full length.
Cut to fit as shown and use
remainder of bars in other face.



SECTION A-A

SECTION C-C



DOOR ELEVATION

(Cost of door and frame are incidental)

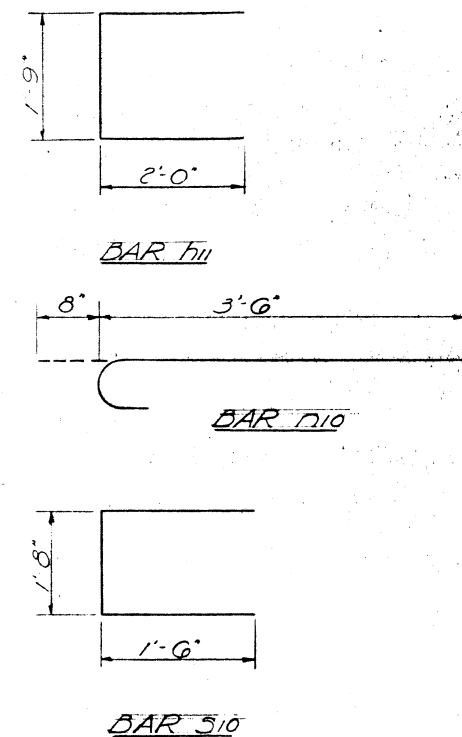
TOP OF CURTAIN WALL
ELEVATIONS

Location	Elev. A	Elev. B
E. Wall S. Abut.	779.05	779.43
N. Wall S. Abut.	779.13	779.54
E. Wall N. Abut.	779.05	779.43
E. Wall N. Abut.	779.13	779.54

CURTAIN WALLS
FAI. RT. 74 SEC. 10-4-14B-1
CHAMPAIGN COUNTY
STA. 1429+10.00

Note: All edges shall have standard $\frac{1}{4}$ " chamfer except the footing. Pour step monolithically with cap.

SHEET NO. 13
14 SHEETS

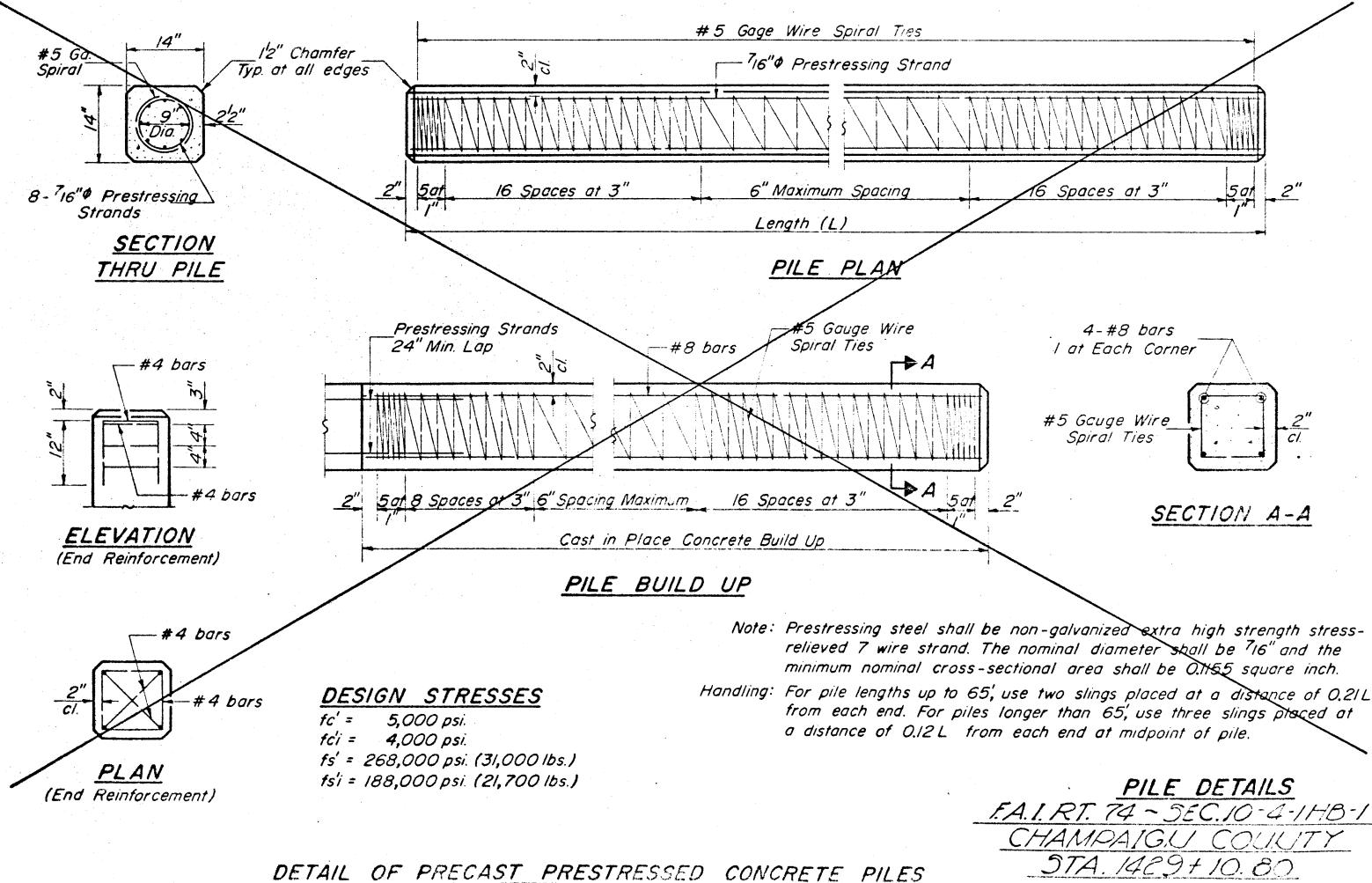
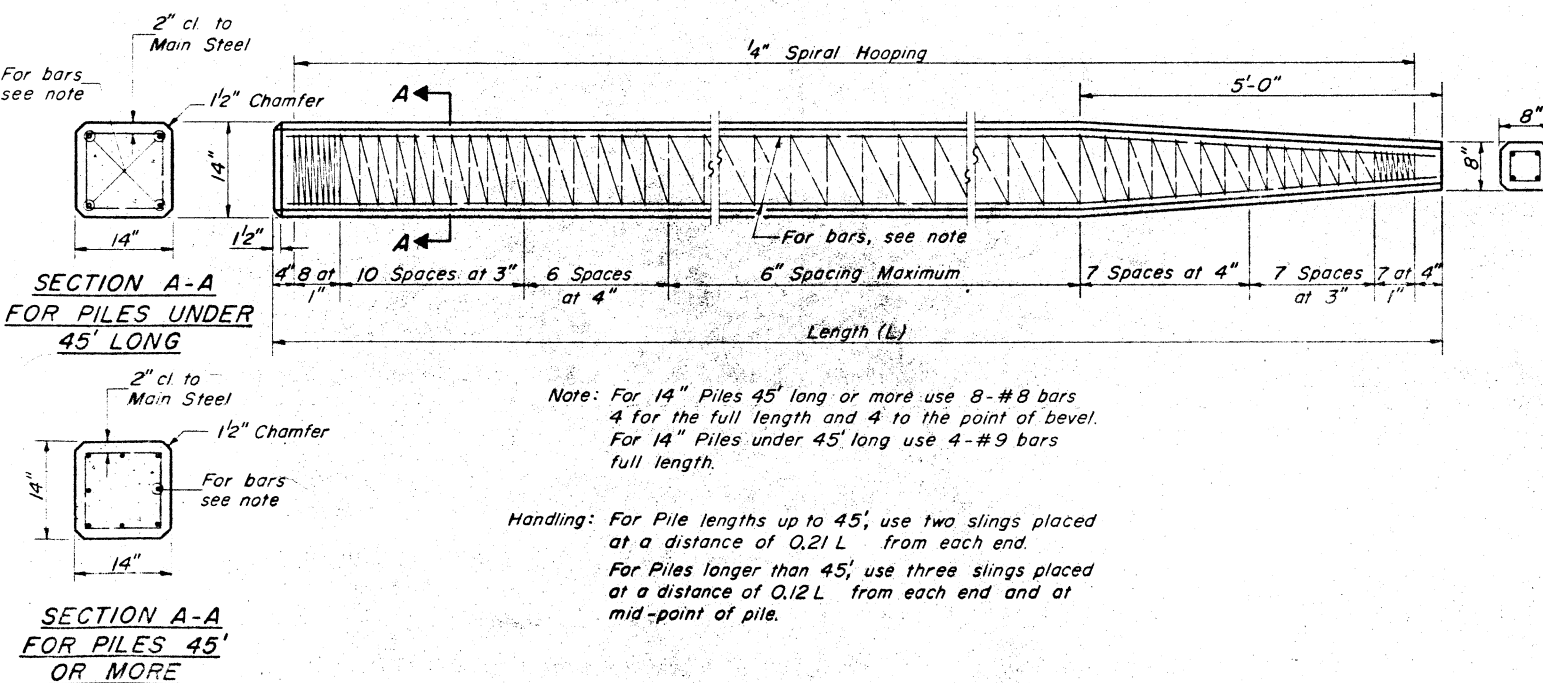
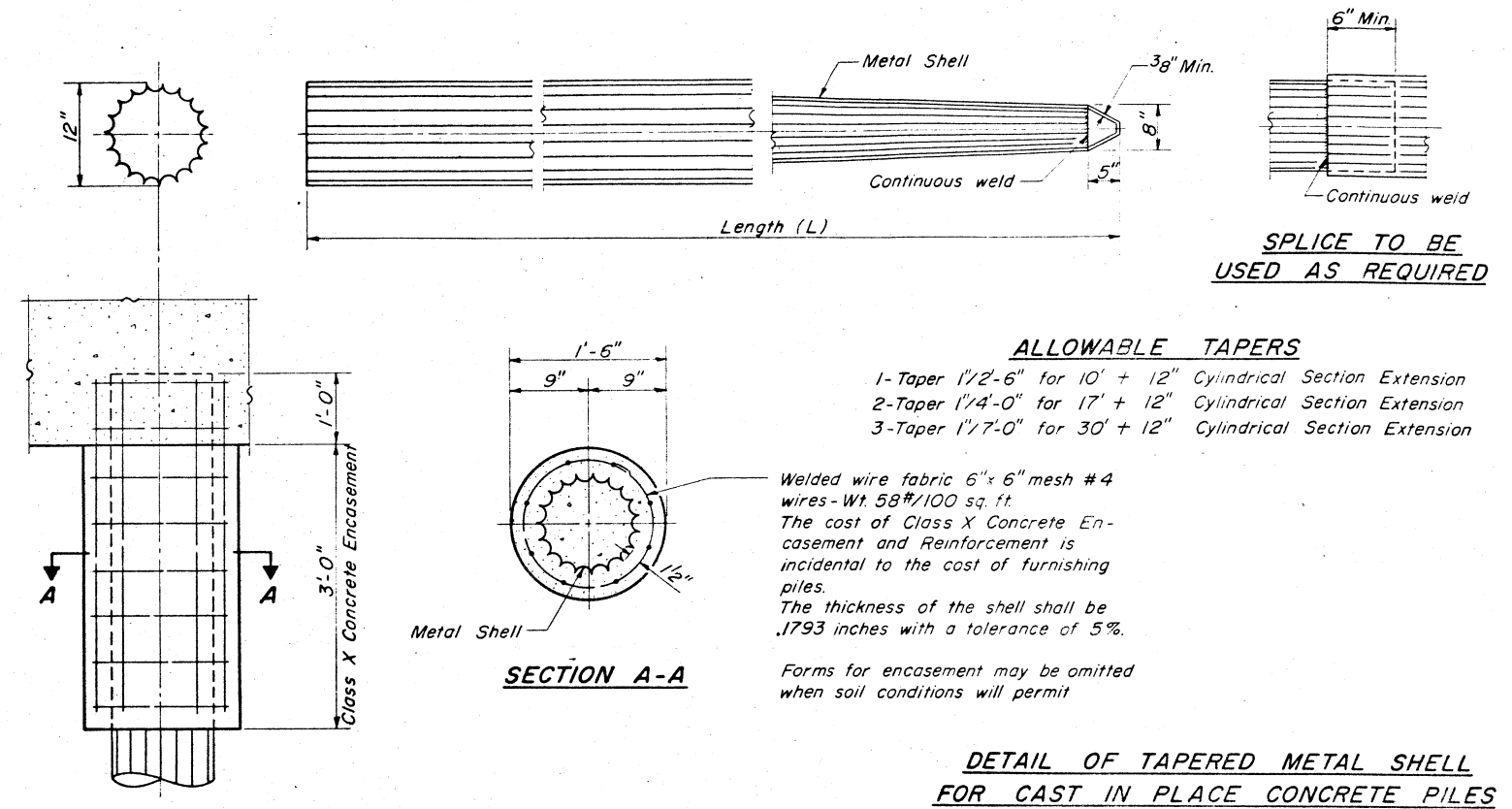
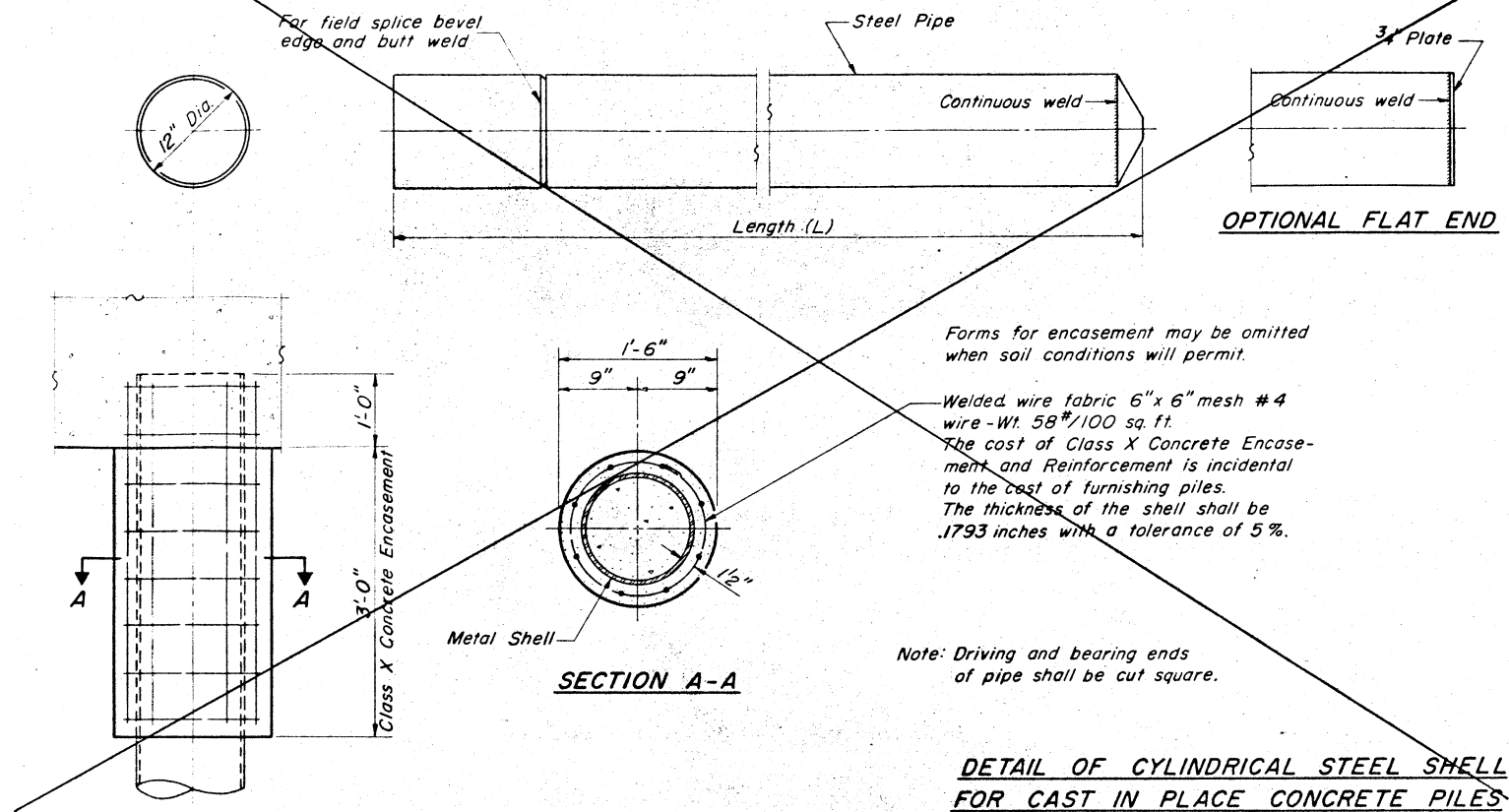


Bar	No.	Size	Length	Shape
n10	44	#5	28'-3"	—
n11	44	#5	3'-9"	□
n10	60	#6	4'-2"	C
310	29	#5	4'-8"	□
n10	43	#7	8'-0"	—
v10	60	#6	21'-5"	—
n10	9	#5	29'-9"	—
Class X Concrete			Cu.Yds	65.5
Reinforcement Bars			Lbs.	4990
Name Plates			Each	1

PIER
F.A.T. RT. 74 SEC. 10-4-11HB-1
CHAMPAIGN COUNTY
STA. 1129 + 10.00

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

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO.
R. & L. 14	10-4-1HB-1	Champaign	38	23	14 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			



DESIGNED	JNP
CHECKED	
DRAWN	
CHECKED	JNP

EXAMINED	
PASSED	
APPROVED	

DETAIL OF PRECAST CONCRETE PILES

DETAIL OF PRECAST PRESTRESSED CONCRETE PILES