AS BUILT PLANS

FOR INDEX OF SHEETS, SEE SHEET NO.2
FOR SUMMARY OF QUANTITIES, SEE SHEET NO.3-4

SCALE IN FEET

PLAN	50'	0	25'	50'
HORIZ.	50'	0	25'	50'
PROFILES VERT.	5'	0	2.5'	5'
CROSS SECTIONS	5'	0	2.5'	5'

SUMMARY OF PLAN CHANGES

SEE BACK of SHEET NO.S

GUN CREEK	25
MARCUM BRANCH	51
MO-PAC RR	70
MIDDLE FORK CREEK	88
C.E.I RR	113
POND CREEK	128

PROJECT ENGINEER: ED SI
SQUAD LEADER: CENTREX 7.

CONTRACT NO. 98149

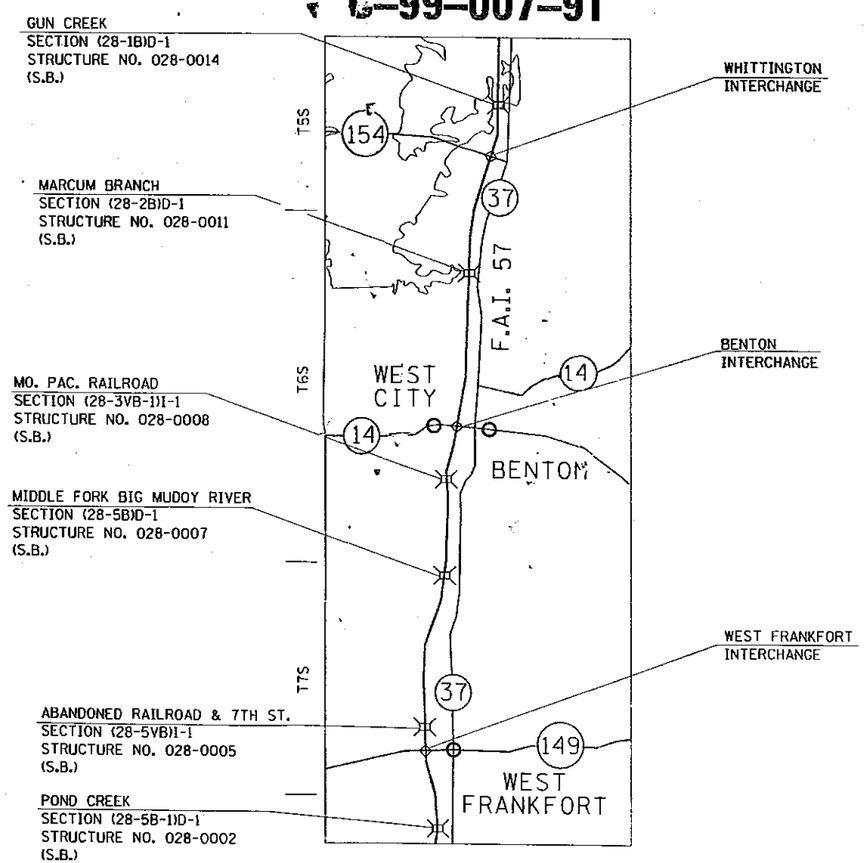
Sheets 1 Thru 100 (Set 1 of 2)

COUNTY: FRANKLIN SECTION: 28(5B-1,5B,2B,1B)D-1; 28(5VB,3VB-1)I-1 ROUTE: F.A.I. RTE. 57

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED FEDERAL AID HIGHWAY

F.A.I. ROUTE 57
SECTION 28(5B-1,5B,2B,1B)D-1; 28(5VB,3VB-1)I-1
FRANKLIN COUNTY
PROJECT NO. IM-57-2(133)63
C-99-007-91

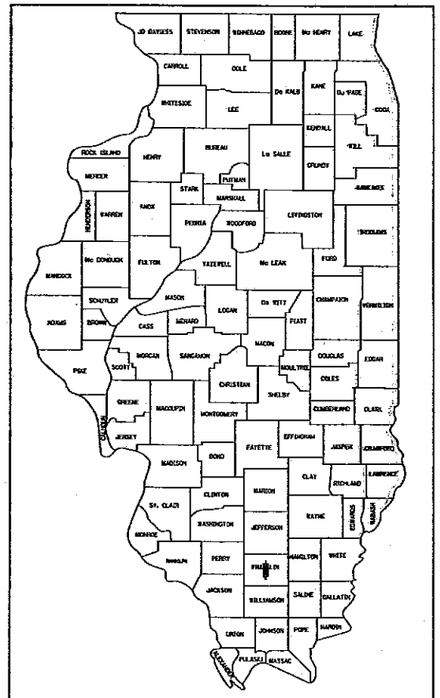


F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	*	FRANKLIN	145	1

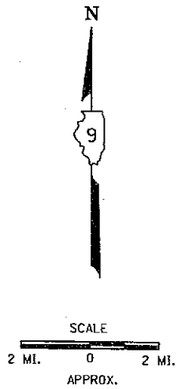
F.A.I.R. REG. ILLINOIS PROJECT IM-57-2(133)63

* 28(5B-1,5B,2B,1B)D-1;28(5VB,3VB-1)I-1

D-99-036-90



LOCATION OF SECTION INDICATED THUS:



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED March 25 19 93
DISTRICT ENGINEER

EXAMINED _____ 19 _____
ENGINEER OF PLANS AND CONTRACTS

PASSED JUNE 4 19 93
ENGINEER OF DESIGN AND ENVIRONMENT

APPROVED JUNE 4 19 93
DIRECTOR, DIVISION OF HIGHWAYS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	*	FRANKLIN	145	2
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

* 28(5B-1,5B,2B,1B)D-1;28(5VB,3VB-1)I-1

GENERAL NOTES

THE THICKNESS OF BITUMINOUS MIXTURE SHOWN ON THE PLANS IS THE NOMINAL THICKNESS. DEVIATIONS FROM THE NOMINAL THICKNESS WILL BE PERMITTED WHEN SUCH DEVIATIONS OCCUR DUE TO IRREGULARITIES IN THE EXISTING SURFACE OR BASE ON WHICH THE BITUMINOUS MIXTURE IS PLACED.

FACTORS USED FOR QUANTITY CALCULATIONS ARE AS FOLLOWS:
ALL BITUMINOUS CONCRETE - - - - - - - - - 2.016 TONS/CU. YD.

AT ALL LOCATIONS WHERE BITUMINOUS OR CONCRETE PAVEMENT JOINS AN EXISTING BITUMINOUS OR CONCRETE PAVEMENT, A SAWED JOINT SHALL BE CONSTRUCTED. THE COST OF THIS JOINT WILL BE INCIDENTAL TO THE TYPE OF PAVEMENT BEING CONSTRUCTED.

EXISTING PIPE UNDERDRAIN OUTLETS IN THE MEDIAN SHALL BE PRESERVED AND PROTECTED DURING CONSTRUCTION. ANY DAMAGE TO AN UNDERDRAIN OUTLET RESULTING FROM CONSTRUCTION ACTIVITY SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. IN AREAS WHERE MEDIAN SLOPES ARE TO BE FLATTENED, IT MAY BE NECESSARY TO LENGTHEN EXISTING PIPE DRAINS. IF THIS OCCURS, THE WORK SHALL BE DONE AS DIRECTED BY THE ENGINEER AND PAID FOR IN ACCORDANCE WITH ARTICLE 109.04 OF THE STANDARD SPECIFICATIONS.

UNLESS OTHERWISE NOTED IN THE PLANS, PROPOSED GUARDRAIL WILL BE TAPERED FROM THE BRIDGE PARAPETS AT A RATIO OF 30:1.

THE QUANTITIES FOR BITUMINOUS SHOULDER REMOVAL AND BITUMINOUS SHOULDERS SHOWN IN THE PLANS ARE ONLY ESTIMATES. THE ACTUAL QUANTITIES REQUIRED FOR REPAIR OF SHOULDERS DAMAGED DURING REMOVAL OF THE MEDIAN CROSS-OVER PAVEMENT, AND FOR REPAIR OF DAMAGE TO THE OUTSIDE SOUTHBOUND SHOULDER CAUSED BY TRAFFIC TO THE EXIT RAMP AT THE REST AREA NEAR GUN CREEK, SHALL BE AS DETERMINED BY THE ENGINEER.

A 4' WIDE STRIP OF CROSS-OVER PAVEMENT ADJACENT TO THE EXISTING MAINLINE PAVEMENT SHALL REMAIN IN PLACE AS BITUMINOUS SHOULDER AT EACH END OF EACH MEDIAN CROSS-OVER. SEE THE SPECIAL PROVISION FOR "CROSS-OVER PAVEMENT TO BE USED AS BITUMINOUS SHOULDER".

FOR THE PURPOSE OF THIS CONTRACT, EARTHWORK COMPACTION WILL BE TO THE SATISFACTION OF THE ENGINEER.

THERE ARE NO STUD SHEAR CONNECTORS IN THE EXISTING BRIDGE DECKS.

THE QUANTITY SHOWN IN THE PLANS FOR WOVEN WIRE FENCE TO BE REMOVED AND RE-ERECTED IS BASED ON AN ESTIMATED 5 LINEAL FEET AT EACH OF THE WEST WINGWALLS AT EACH OF THE FOUR BRIDGE DECK REPLACEMENT LOCATIONS. THE ACTUAL QUANTITY WILL BE AS DIRECTED BY THE ENGINEER.

INDEX OF SHEETS

STANDARDS

2230-16	2326-3
2298-9	2336-4
2299-13	2337-2
2300-3	2339-2
2307-7	2340-4
2308-6	2341-5
2314-6	2383-3
2315-8	2396
2316-13	2417-2
2324-8	2361

Prepared By: [signature] DISTRICT STUDIES & PLANS ENGINEER
Examined By: [signature] DISTRICT LAND ACQUISITION ENGINEER
Examined By: [signature] DISTRICT PROGRAM DEVELOPMENT ENGINEER
Examined By: Bill Stout Jr. DISTRICT OPERATIONS ENGINEER
Examined By: Bob Zielba DISTRICT CONSTRUCTION ENGINEER
Examined By: [signature] DISTRICT MATERIALS ENGINEER
Examined By: [signature] DISTRICT PROJECT IMPLEMENTATION ENGINEER
Approved By: [signature] DISTRICT ENGINEER

March 25 1993
DATE

Tue Feb 09 14:27:46 1993
/usr/project/jimkey/d90369001.dgn (V11-63)
VIEW = INDEX2 (SOUTH)

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	*	FRANKLIN	145	3
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

* 28(5B-1,5B,2B,1B)D-1;28(5VB,3VB-1)I-1

SUMMARY OF QUANTITIES

			CONSTRUCTION TYPE CODE		SFTY-3Q	SFTY-2o	X071-2A	S.B. STRUCTURE NUMBER AND NAME					
	CODE NUMBER	ITEM	UNIT	PROJECT TOTAL QUANTITY	BRIDGE APPROACHES	STRUCTURES: 028-0005 028-0008	STRUCTURES: 028-0002 028-0007 028-0011 028-0014	028-0014 GUN CREEK	028-0011 MARCUM BRANCH	028-0008 MO. PAC. R.R.	028-0007 MIDDLE FORK OF BIG MUDDY RIVER	028-0005 C. & E.I. R.R. & 7TH ST.	028-0002 POND CREEK
	20200100	EARTH EXCAVATION	CU. YD.	7,746	7,746	-	-	2,471	2,102	-	1,821	-	1,352
	21901000	BITUMINOUS SHOULDERS	TON	300	300	-	-	150	50	-	50	-	50
	40801500	P.C. CONCRETE BRIDGE APPROACH SHOULDER PAVEMENT	SQ. YD.	29	29	-	-	-	-	-	29	-	-
△	50102400	CONCRETE REMOVAL	CU. YD.	70.6	-	31.6	39	9	9	21.4	12	10.2	9
	50104720	REMOVAL OF EXISTING CONCRETE DECK	EACH	4	-	-	4	1	1	-	1	-	1
	50200100	STRUCTURE EXCAVATION	CU. YD.	150	-	-	150	23	22	-	83	-	22
	50200300	COFFERDAM EXCAVATION	CU. YD.	52	-	-	52	-	-	-	52	-	-
	50200500	COFFERDAMS	EACH	2	-	-	2	-	-	-	2	-	-
	50300100	FLOOR DRAINS	EACH	61	-	-	61	18	12	-	17	-	14
	50300120	PREFORMED JOINT SEAL 2 1/2"	LIN. FT.	136	-	-	136	43	49	-	-	-	44
△	50300130	PREFORMED JOINT SEAL 4"	LIN. FT.	219	-	83	136	43	49	-	-	83	44
△	50300150	NEOPRENE EXPANSION JOINT 2"	LIN. FT.	167	-	125	42	-	-	125	42	-	-
	50300160	NEOPRENE EXPANSION JOINT 4"	LIN. FT.	42	-	-	42	-	-	-	42	-	-
	50300250	CLASS X CONCRETE SUPERSTRUCTURE	CU. YD.	1,044.1	-	-	1,044.1	215.4	177.6	-	464.0	-	187.1
	50300300	PROTECTIVE COAT	SQ. YD.	3,864	-	-	3,864	852	672	-	1,920	-	690
	50300310	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	70	-	-	70	21	14	-	21	-	14
	50300320	ELASTOMERIC BEARING ASSEMBLY, TYPE II	EACH	28	-	-	28	-	7	-	14	-	7
△	50400300	CLASS X CONCRETE	CU. YD.	98.6	-	30.7	67.9	-	-	20.75	67.9	9.95	-
	50700100	FURNISHING AND ERECTING STRUCTURAL STEEL	L. SUM	1	-	-	1	-	-	-	1	-	-
△	50700400	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	32240	-	3180	29,060	10,300	9,230	-	-	3180	9,530
	50700500	STUD SHEAR CONNECTORS	EACH	16,555	-	-	16,555	3,094	3,255	-	7,056	-	3,150
	50700705	JACK AND REMOVE EXISTING BEARINGS	EACH	120	-	-	120	28	28	-	36	-	28
△	51200200	REINFORCEMENT BARS, EPOXY COATED	POUND	259,975	-	5,335	254,640	51,380	41,660	3930	117,450	1405	44,150
	51301600	FURNISHING STEEL PILES HP 12X53	LIN. FT.	208	-	-	208	-	-	-	208	-	-
	51301700	FURNISHING STEEL PILES HP 12X74	LIN. FT.	230	-	-	230	-	-	-	230	-	-
	51302700	DRIVING STEEL PILES	LIN. FT.	438	-	-	438	-	-	-	438	-	-
	51303600	TEST PILE STEEL HP 12X53	EACH	2	-	-	2	-	-	-	2	-	-
	51400100	NAME PLATES	EACH	4	-	-	4	1	1	-	1	-	1
	61701430	BITUMINOUS SHOULDER REMOVAL	SQ. YD.	697	697	-	-	305	152	-	112	-	128
	61704800	SLOPE WALL REMOVAL	SQ. YD.	14	-	-	14	-	-	-	14	-	-

△ Rev. [illegible]

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	*	FRANKLIN	145	4

STA. TO STA.

FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

*28(5B-1,5B,2B,1B)D-1;28(5VB,3VB-1)I-1

SUMMARY OF QUANTITIES

		CONSTRUCTION TYPE CODE		SFTY-3Q	SFTY-20	X071-2A	S.B. STRUCTURE NUMBER AND NAME					
CODE NUMBER	ITEM	UNIT	PROJECT TOTAL QUANTITY	BRIDGE APPROACHES	STRUCTURES: 028-0005 028-0008	STRUCTURES: 028-0002 028-0007 028-0011 028-0014	028-0014 GUN CREEK	028-0011 MARCUM BRANCH	028-0008 MO. PAC. R.R.	028-0007 MIDDLE FORK OF BIG MUDDY RIVER	028-0005 C. & E.I. R.R. & 7TH ST.	028-0002 POND CREEK
61800300	SLOPE WALL 6 INCH	SQ. YD.	8	-	-	8	-	-	-	8	-	-
62800000	STEEL PLATE BEAM GUARD RAIL, TYPE A	LIN. FT.	2,900	2,900	-	-	200	512.5	437.5	787.5	312.5	650
62800035	TRAFFIC BARRIER TERMINAL, TYPE 1	EACH	8	8	-	-	-	1	2	2	1	2
62800045	TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	3	3	-	-	1	1	1	-	-	-
62800065	TRAFFIC BARRIER TERMINAL, TYPE 4	EACH	2	2	-	-	1	1	-	-	-	-
62800070	TRAFFIC BARRIER TERMINAL, TYPE 5	EACH	3	3	-	-	1	1	-	1	-	-
62800085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	8	8	-	-	2	2	-	2	-	2
62800090	TRAFFIC BARRIER TERMINAL, TYPE 7	EACH	4	4	-	-	-	-	2	-	2	-
62800105	TRAFFIC BARRIER TERMINAL, TYPE 10	EACH	1	1	-	-	-	-	1	-	-	-
62802800	TEMPORARY GUARD RAIL	LIN. FT.	537.5	537.5	-	-	150	137.5	-	137.5	-	112.5
63002400	WOVEN WIRE FENCE TO BE REMOVED AND RE ERECTED	LIN. FT.	40	40	-	-	10	10	-	10	-	10
63300300	STEEL PLATE BEAM GUARD RAIL REMOVAL	LIN. FT.	4,100	4,100	-	-	675	325	975	325	862.5	937.5
64200200	SEEDING CLASS 2	ACRE	11.8	11.8	-	-	3.2	3.2	-	3.0	-	2.4
64200400	NITROGEN FERTILIZER NUTRIENT	POUND	944	944	-	-	256	256	-	240	-	192
64200500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	3,776	3,776	-	-	1,024	1,024	-	960	-	768
64200600	POTASSIUM FERTILIZER NUTRIENT	POUND	1,888	1,888	-	-	512	512	-	480	-	384
64200700	AGRICULTURAL GROUND LIMESTONE	TON	23.6	23.6	-	-	6.4	6.4	-	6	-	4.8
64300130	MULCH, METHOD 3	TON	23.6	23.6	-	-	6.4	6.4	-	6	-	4.8
64600401	ENGINEER'S FIELD OFFICE, TYPE A 1	CAL. MO.	14	14	-	-	3	3	1	3	1	3
64800410	TRAFFIC CONTROL AND PROTECTION STANDARD 2417	EACH	4	4	-	-	1	1	-	1	-	1
64800700	TRAFFIC CONTROL AND PROTECTION STANDARD 2315	L. SUM	1	1	-	-	-	-	-	1	-	-
64800800	TRAFFIC CONTROL AND PROTECTION STANDARD 2316	L. SUM	1	1	-	-	0.1	0.1	0.3	0.1	0.3	0.1
65601000	TEMPORARY CONCRETE BARRIER (STATE FURNISHED)	LIN. FT.	5,010	-	-	5,010	1,080	1,240	-	1,520	-	1,170
67100100	TEMPORARY LIGHTING SYSTEM	L. SUM	1	1	-	-	0.25	0.25	-	0.25	-	0.25
Z0006070	BRIDGE DECK GROOVING	SQ. YD.	3281	-	-	3281	678	527	-	1521	-	555
X0557700	BRIDGE SEAT SEALER	SQ FT.	680	-	-	680	147	189	-	167	-	177
Z0017900	DRAINAGE SCUPPERS	EACH	4	-	-	4	-	-	-	4	-	-
Z0048665	RAILROAD PROTECTIVE LIABILITY INSURANCE	L. SUM	1	-	1	-	-	-	1	-	-	-
⊙ Z0076600	TRAINEES	HOUR	500	-	100	400	100	100	50	100	50	100
* T5020200	PAINT PAVEMENT MARKING - LINE 4"	LIN. FT.	1,779	-	-	1,779	367	287	-	827	-	298
TX003900	PORTABLE CHANGEABLE MESSAGE SIGN	EACH	4	-	0.8	3.2	0.8	0.8	0.4	0.8	0.4	0.8

⊙ CONSTRUCTION TYPE CODE - Y080

*Specialty items

EARTHWORK

BALANCE NO.	LOCATION	EARTH EXCAVATION	FILL	EXCESS
		CU. YDS.	CU. YDS.	CU. YDS.
	GUN CREEK			
1	NORTH CROSS-OVER REMOVAL	1,382	150	1,181
2	SOUTH CROSS-OVER REMOVAL	1,089	257	740
	MARCUM BRANCH			
3	NORTH CROSS-OVER REMOVAL	1,072	126	904
4	SOUTH CROSS-OVER REMOVAL	1,030	115	877
	MIDDLE FORK OF BIG MUDDY RIVER			
5	NORTH CROSS-OVER REMOVAL	852	155	643
6	SOUTH CROSS-OVER REMOVAL	969	130	792
	POND CREEK			
7	NORTH CROSS-OVER REMOVAL	559	143	363
8	SOUTH CROSS-OVER REMOVAL	793	93	668
	TOTALS	7,746	1,169	6,168

NOTE: REMOVAL OF CROSS-OVER PAVEMENT IS INCLUDED IN THE QUANTITIES FOR EARTH EXCAVATION. FOR DISPOSAL OF THIS MATERIAL SEE SPECIAL PROVISION. THE EXCESS EARTH SHALL BE USED TO FLATTEN THE MEDIAN SLOPES, WITHOUT INTERRUPTING DRAINAGE, AS DIRECTED BY THE ENGINEER.

SEEDING & MULCHING

LOCATION	CLASS II SEEDING	NITROGEN FERTILIZER NUTRIENT	PHOSPHOROUS FERTILIZER NUTRIENT	POTASSIUM FERTILIZER NUTRIENT	AGRICULTURAL GROUND LIMESTONE	MULCH METHOD 3
	ACRE	POUND	POUND	POUND	TON	TON
GUN CREEK						
NORTH CROSS-OVER REMOVAL	0.80	64	256	128	1.6	1.6
SOUTH CROSS-OVER REMOVAL	0.80	64	256	128	1.6	1.6
MARCUM BRANCH						
NORTH CROSS-OVER REMOVAL	0.80	64	256	128	1.6	1.6
SOUTH CROSS-OVER REMOVAL	0.80	64	256	128	1.6	1.6
MIDDLE FORK OF BIG MUDDY RIVER						
NORTH CROSS-OVER REMOVAL	0.70	56	224	112	1.4	1.4
SOUTH CROSS-OVER REMOVAL	0.80	64	256	128	1.6	1.6
POND CREEK						
NORTH CROSS-OVER REMOVAL	0.60	48	192	96	1.2	1.2
SOUTH CROSS-OVER REMOVAL	0.60	48	192	96	1.2	1.2
SUB-TOTAL	5.9	472	1,888	944	11.8	11.8
SUB-TOTAL -- ADDITIONAL	5.9 *	472 *	1,888 *	944 *	11.8 *	11.8 *
QUANTITIES TO BE USED FOR						
FLATTENING MEDIAN SLOPES						
TOTAL	11.8	944	3,776	1,888	23.6	23.6

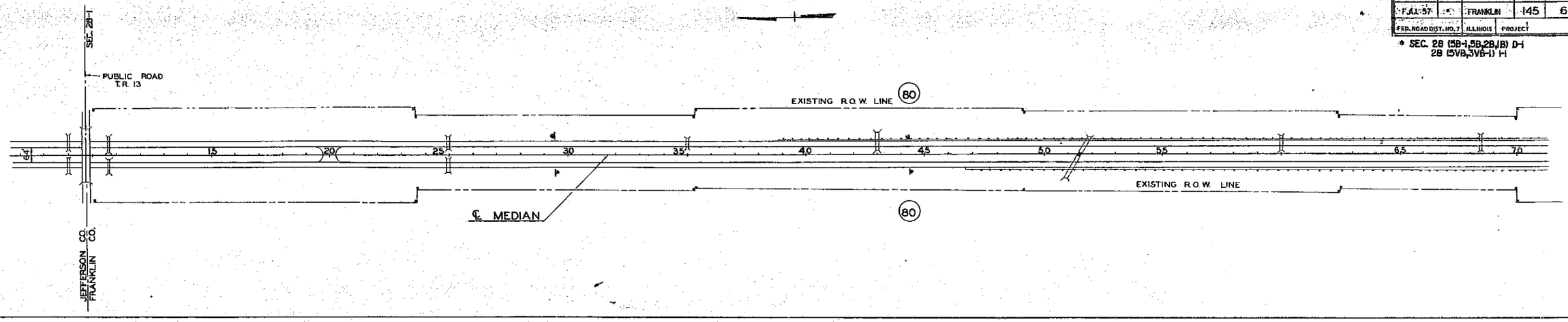
* ESTIMATED QUANTITIES; ACTUAL AMOUNT SHALL BE AS DETERMINED BY THE ENGINEER.

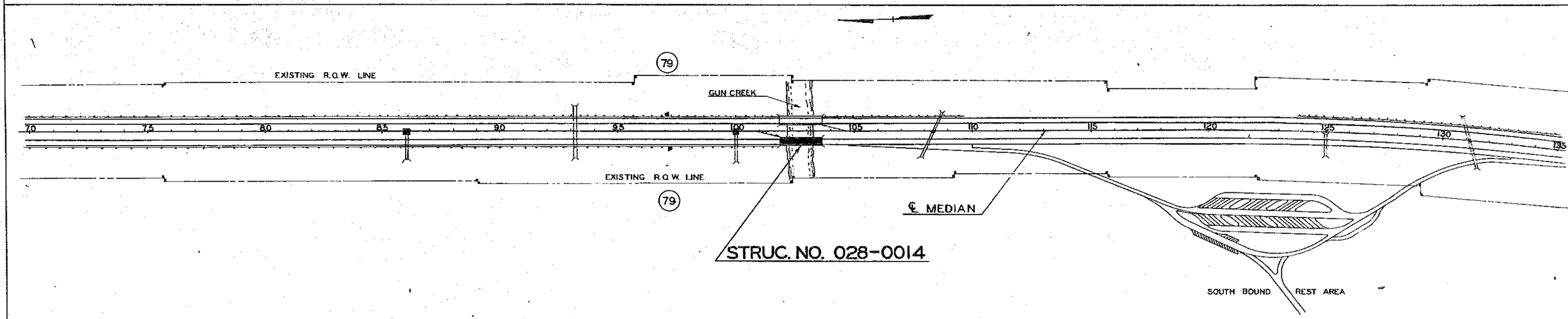
GUARDRAIL

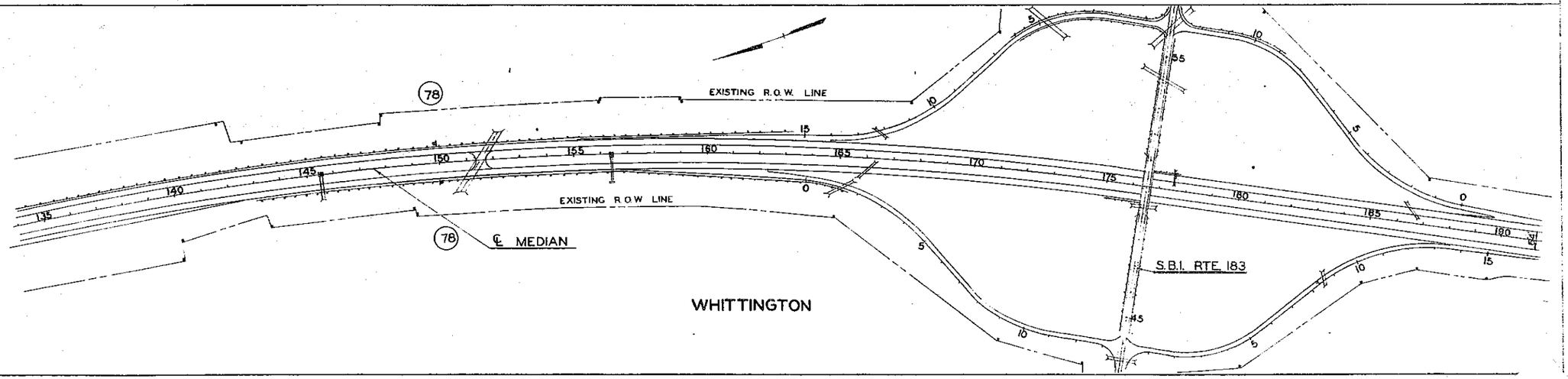
LOCATION	QUAD.	S.P.B.G.R. REMOVAL	S.P.B.G.R. TYPE A	TRAFFIC BARRIER TERMINAL							TEMPORARY GUARDRAIL
				TYPE 1	TYPE 2	TYPE 4	TYPE 5	TYPE 6	TYPE 7	TYPE 10	
		LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	EACH	EACH	EACH	LIN. FT.
STRUCTURE NO.	N.E.	150	100	--	--	1	--	1	--	--	150
028-0014	S.E.	337.5	--	--	--	--	--	--	--	--	--
GUN CREEK	S.W.	112.5	50	--	1	--	1	--	--	--	--
	N.W.	75	50	--	--	--	--	1	--	--	--
TOTALS		675	200	--	1	1	1	2	--	--	150
STRUCTURE NO.	N.E.	137.5	125	--	--	1	--	1	--	--	137.5
028-0011	S.E.	--	--	--	--	--	--	--	--	--	--
MARCUM BRANCH	S.W.	87.5	50	--	1	--	1	--	--	--	--
	N.W.	100	337.5	1	--	--	--	1	--	--	--
TOTALS		325	512.5	1	1	1	1	2	--	--	137.5
STRUCTURE NO.	N.E.	137.5	300	1	--	--	--	--	1	--	--
028-0006	S.E.	--	--	--	--	--	--	--	--	--	--
MOPAC RAILROAD	S.W.	150	75	--	1	--	--	--	--	1	--
	N.W.	687.5	62.5	1	--	--	--	--	1	--	--
TOTALS		975	437.5	2	1	--	--	--	2	1	--
STRUCTURE NO.	N.E.	137.5	262.5	1	--	--	--	1	--	--	137.5
028-0007	S.E.	--	--	--	--	--	--	--	--	--	--
MIDDLE FORK	S.W.	75	62.5	--	--	--	1	--	--	--	--
BIG MUDDY RIVER	N.W.	112.5	462.5	1	--	--	--	1	--	--	--
TOTALS		325	787.5	2	--	--	1	2	--	--	137.5
STRUCTURE NO.	N.E.	137.5	262.5	1	--	--	--	--	1	--	--
028-0005	S.E.	--	--	--	--	--	--	--	--	--	--
C&EI RAILROAD	S.W.	650	--	--	--	--	--	--	--	--	--
	N.W.	75	50	--	--	--	--	--	1	--	--
TOTALS		862.5	312.5	1	--	--	--	--	2	--	--
STRUCTURE NO.	N.E.	112.5	275	1	--	--	--	1	--	--	112.5
028-0002	S.E.	--	--	--	--	--	--	--	--	--	--
POND CREEK	S.W.	600	--	--	--	--	--	--	--	--	--
	N.W.	225	375	1	--	--	--	1	--	--	--
TOTALS		937.5	650	2	--	--	--	2	--	--	112.5
PROJECT TOTALS		4,100	2,900	8	3	2	3	8	4	1	537.5

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57		FRANKLIN	145	6
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

SEC. 28 (5B-1,5B,2B,JB) D-1
28 (5VB,3VB-1) H



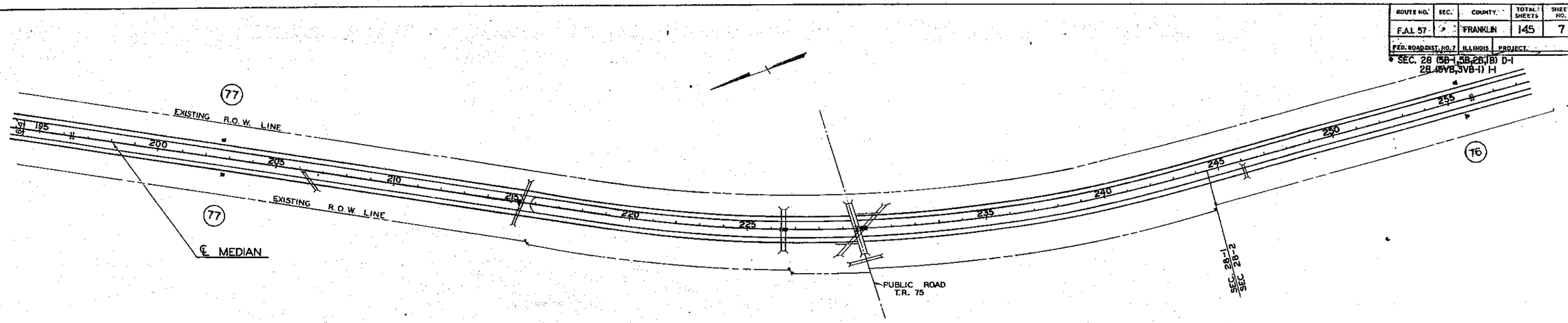


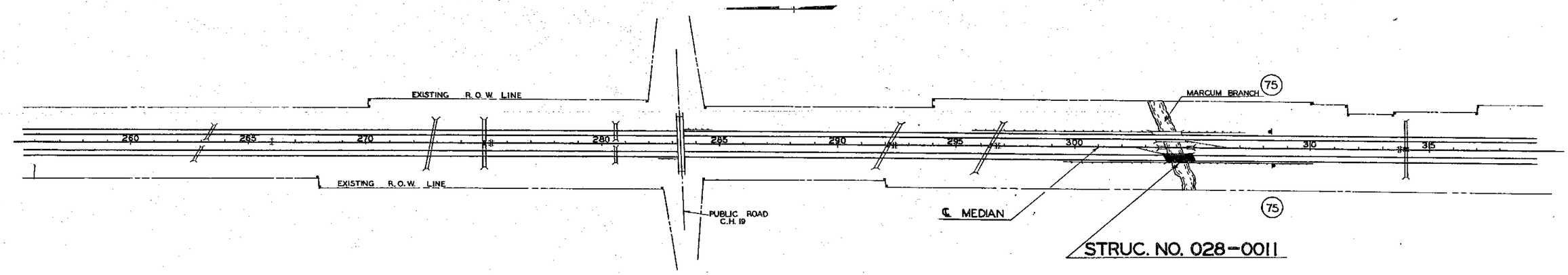


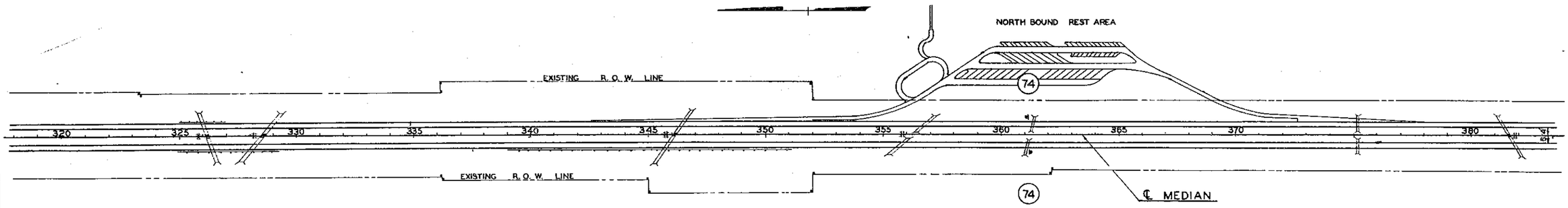
FA.I RTE. 57 STA. 7+00 TO STA. 191+00 FRANKLIN CO.

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57		FRANKLIN	145	7
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT.		

SEC. 28 (5B-1,5B-2,1B) D-1
28 (5VB,3VB-1) H

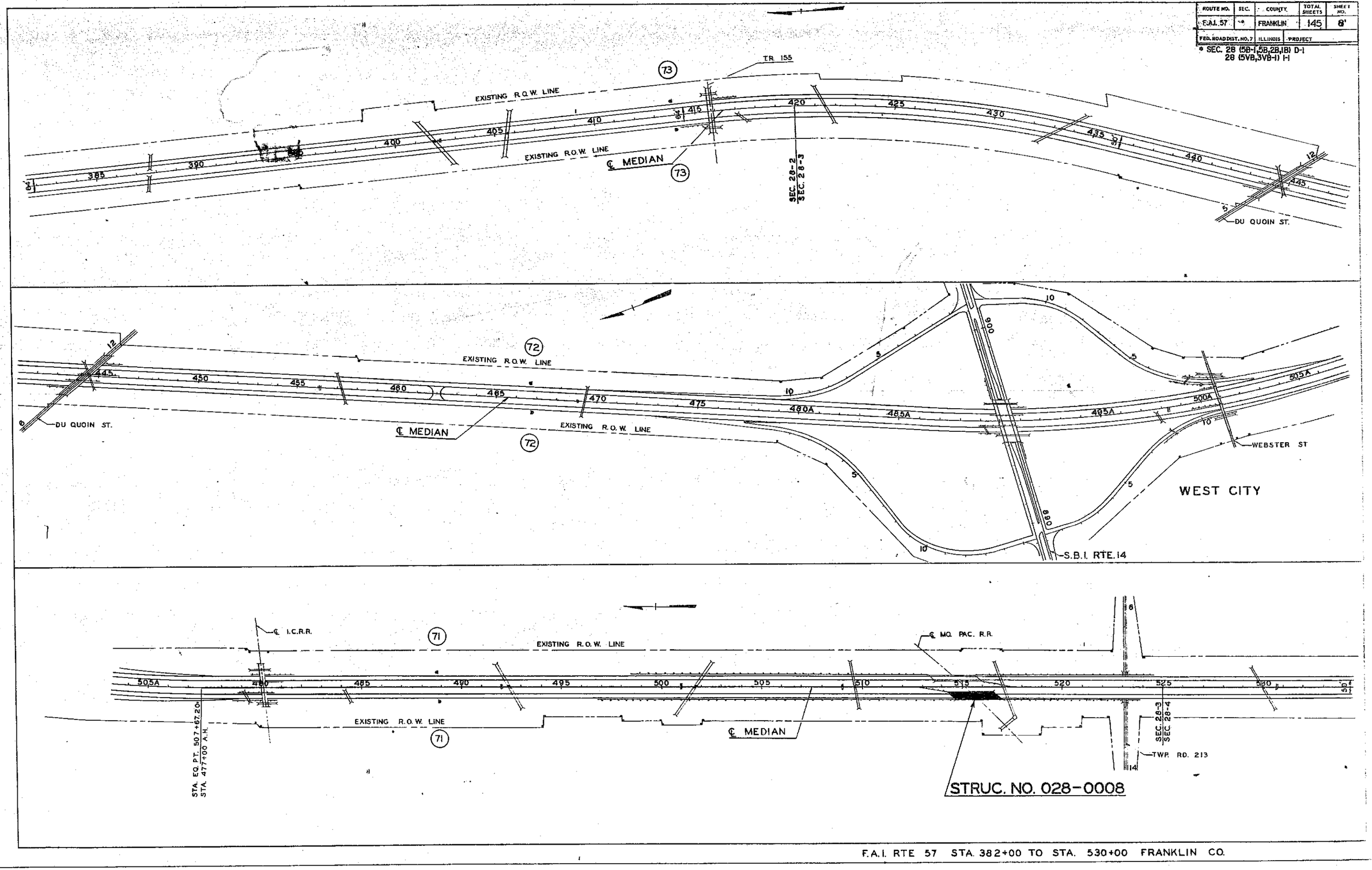






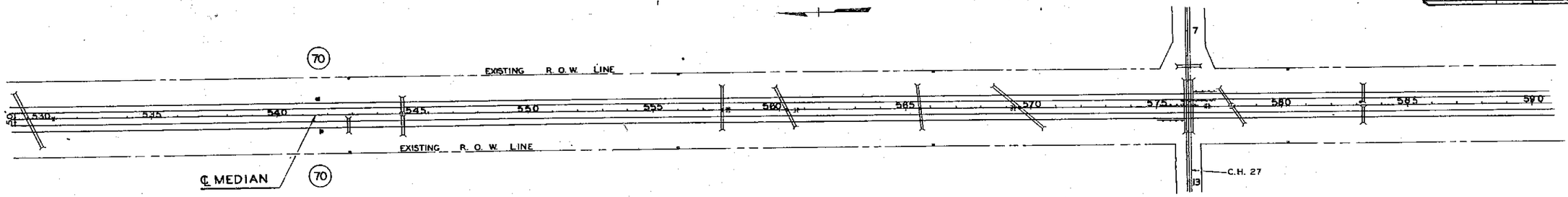
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	8
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

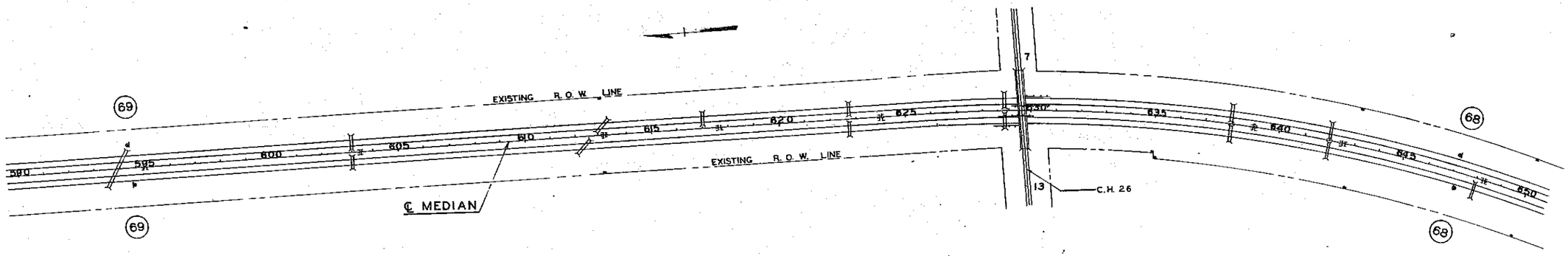
* SEC. 28 (5B-1,5B,2B,1B) D-1
28 (5VB,3VB-1) I-1

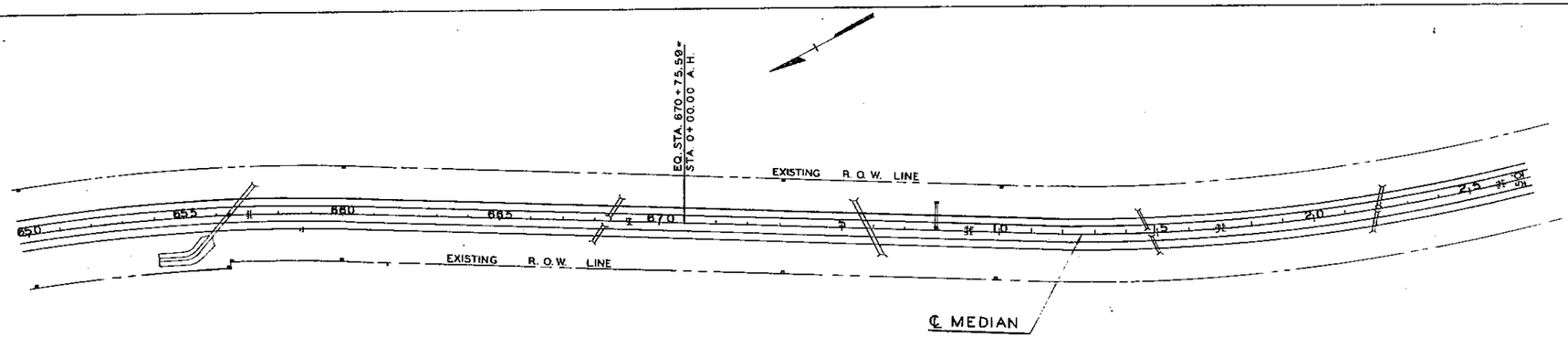


F.A.I. RTE 57 STA. 382+00 TO STA. 530+00 FRANKLIN CO.

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	9
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		



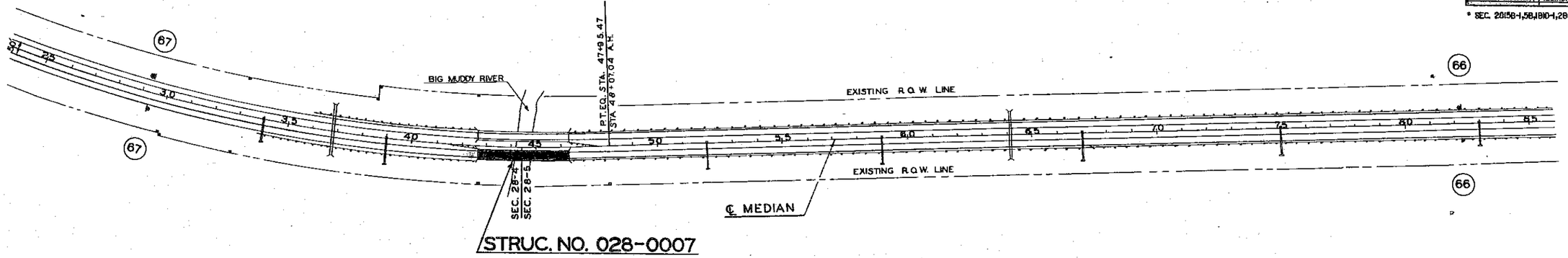


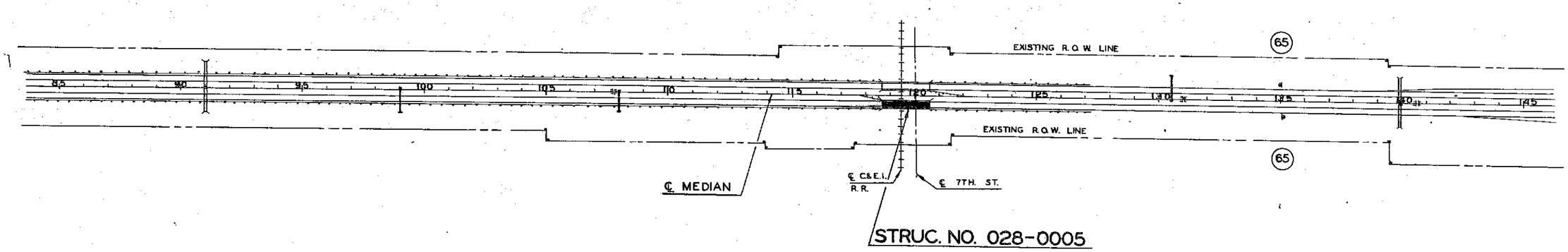


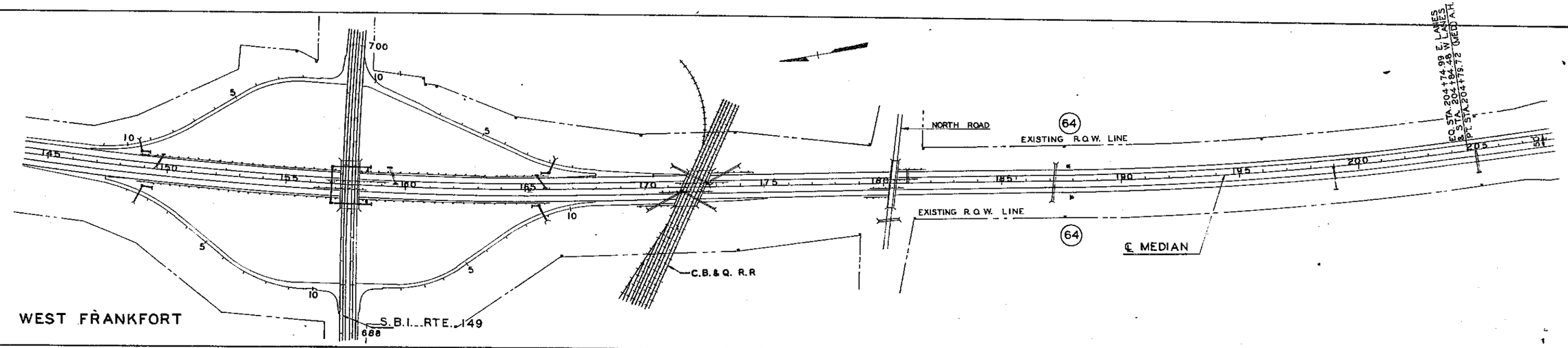
F.A.I. RTE. 57 STA. 530+00 TO STA. 25+00 FRANKLIN CO.

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	10
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

* SEC. 20(58-1,58,1810-1,28(5VB,3VB-1)-I

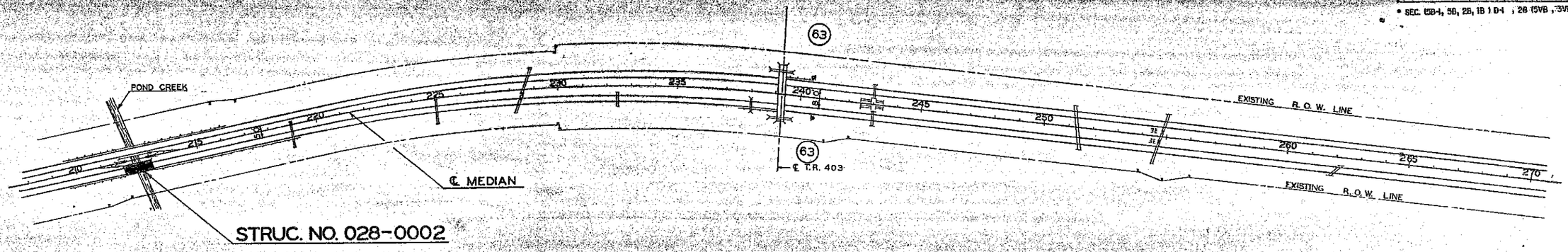


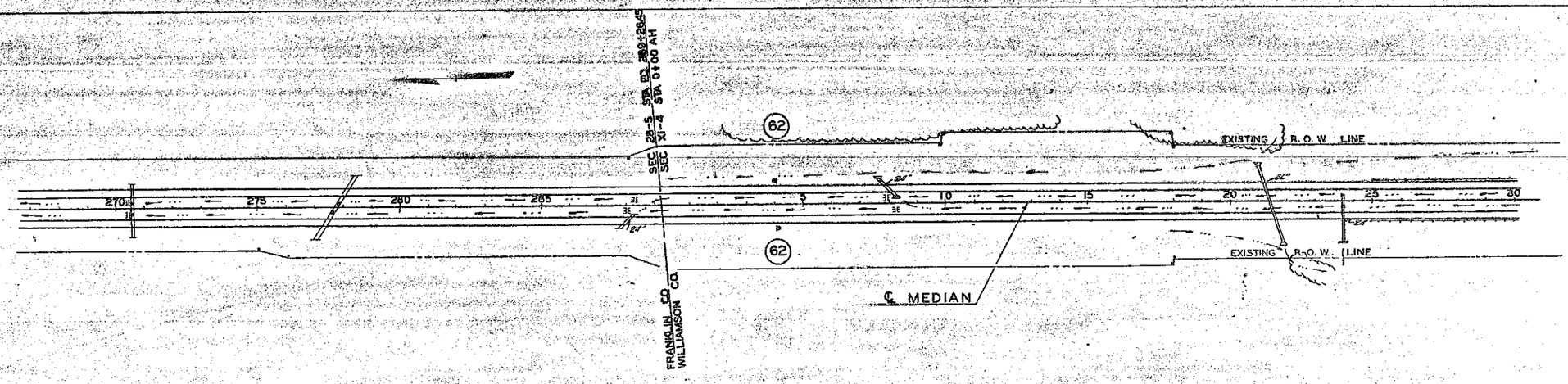


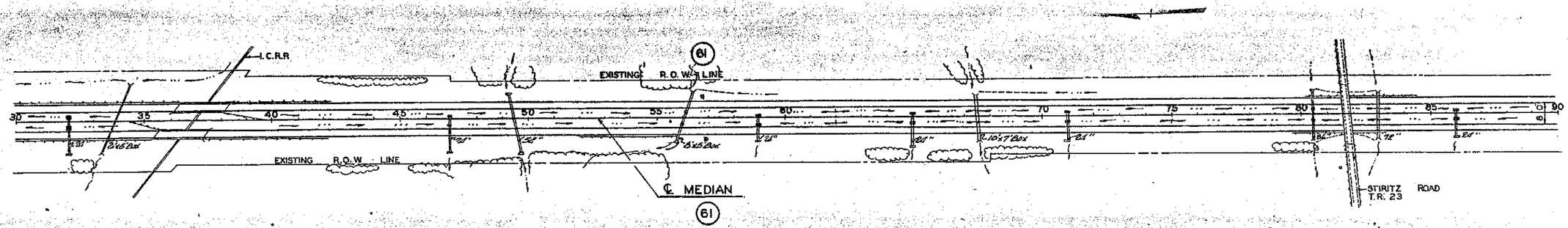


ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57		FRANKLIN	145	11
FED. ROAD DIST. NO. 2	ILLINOIS	PROJECT		

* SEC. (5B-1, 5B, 2B, 1B) D-1 , 2B (5VB , 3VB-11-1)



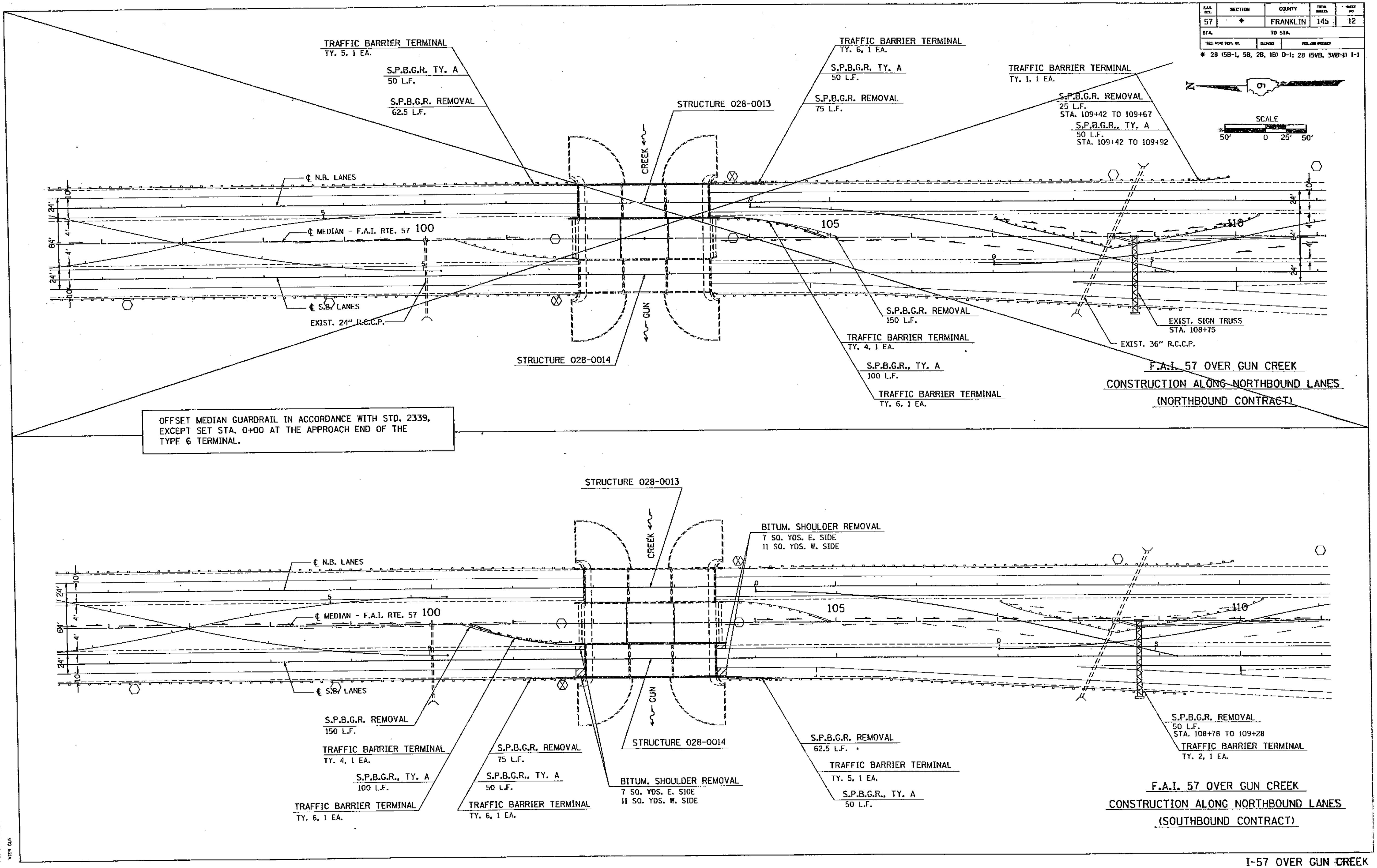




F.A.I. RTE. 57 STA 208+00 TO 290+00 FRANKLIN – WILLIAMSON COUNTIES

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	*	FRANKLIN	145	12

* 28 (5B-1, 5B, 2B, 1B) D-1; 28 (5VB, 3VB-1) I-1



TRAFFIC BARRIER TERMINAL
TY. 5, 1 EA.
S.P.B.G.R. TY. A
50 L.F.
S.P.B.G.R. REMOVAL
62.5 L.F.
STRUCTURE 028-0013
TRAFFIC BARRIER TERMINAL
TY. 6, 1 EA.
S.P.B.G.R. TY. A
50 L.F.
S.P.B.G.R. REMOVAL
75 L.F.
TRAFFIC BARRIER TERMINAL
TY. 1, 1 EA.
S.P.B.G.R. REMOVAL
25 L.F.
STA. 109+42 TO 109+67
S.P.B.G.R., TY. A
50 L.F.
STA. 109+42 TO 109+92
SCALE
50' 0 25' 50'
CREEK
GUN
℄ N.B. LANES
℄ MEDIAN - F.A.I. RTE. 57
℄ S.B. LANES
100
105
110
24'
4'
64'
EXIST. 24" R.C.C.P.
STRUCTURE 028-0014
S.P.B.G.R. REMOVAL
150 L.F.
TRAFFIC BARRIER TERMINAL
TY. 4, 1 EA.
S.P.B.G.R., TY. A
100 L.F.
TRAFFIC BARRIER TERMINAL
TY. 6, 1 EA.
EXIST. SIGN TRUSS
STA. 108+75
EXIST. 36" R.C.C.P.
F.A.I. 57 OVER GUN CREEK
CONSTRUCTION ALONG NORTHBOUND LANES
(NORTHBOUND CONTRACT)
OFFSET MEDIAN GUARDRAIL IN ACCORDANCE WITH STD. 2339, EXCEPT SET STA. 0+00 AT THE APPROACH END OF THE TYPE 6 TERMINAL.
STRUCTURE 028-0013
BITUM. SHOULDER REMOVAL
7 SQ. YDS. E. SIDE
11 SQ. YDS. W. SIDE
S.P.B.G.R. REMOVAL
150 L.F.
TRAFFIC BARRIER TERMINAL
TY. 4, 1 EA.
S.P.B.G.R., TY. A
100 L.F.
TRAFFIC BARRIER TERMINAL
TY. 6, 1 EA.
S.P.B.G.R. REMOVAL
75 L.F.
S.P.B.G.R., TY. A
50 L.F.
TRAFFIC BARRIER TERMINAL
TY. 6, 1 EA.
STRUCTURE 028-0014
BITUM. SHOULDER REMOVAL
7 SQ. YDS. E. SIDE
11 SQ. YDS. W. SIDE
S.P.B.G.R. REMOVAL
62.5 L.F.
TRAFFIC BARRIER TERMINAL
TY. 5, 1 EA.
S.P.B.G.R., TY. A
50 L.F.
S.P.B.G.R. REMOVAL
50 L.F.
STA. 108+78 TO 109+28
TRAFFIC BARRIER TERMINAL
TY. 2, 1 EA.
F.A.I. 57 OVER GUN CREEK
CONSTRUCTION ALONG NORTHBOUND LANES
(SOUTHBOUND CONTRACT)

I-57 OVER GUN CREEK

FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	*	FRANKLIN	145	13
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS			

* 28 (SB-1, SB, 2B, 1B) 0-1; 28 (SWB, SWB-1) I-1

N

SCALE
50' 0 25' 50'

EQ. P.T. STA. 6+43.63 BK. ℄ CROSSOVER NO. 3) =
34' LT. STA. 100+18.50 AH. (℄ I-57)

EXIST. 18" P-CULV.

TEMP. GUARDRAIL
150 LIN. FT.
(INCLUDES ONE TY. 4 TERMINAL
& ONE TY. 5 TERMINAL)

℄ CROSSOVER NO. 3
(S.B. CLOSED)

EQ. STA. 95+04.42 BK. (42.55' LT. ℄ I-57) =
STA. 0+00 AH. (℄ CROSSOVER NO. 2)

℄ N.B. LANES

CREEK

90 95 100

℄ MEDIAN - F.A.I. RTE. 57

GUN

℄ S.B. LANES

EXIST. 84" R.C.C.P.

EXIST. 24" R.C.C.P.

EQ. STA. 93+80.27 BK. (38' RT. ℄ I-57) =
P.C. STA. 0+00 AH. (℄ CROSSOVER NO. 3)

℄ CROSSOVER NO. 2
(N.B. CLOSED)

EQ. P.T. STA. 5+21.83 BK. (℄ CROSSOVER NO. 2) =
38' RT. STA. 100+18.50 AH. (℄ I-57)

LEGEND
(TEMPORARY LIGHTING SYSTEM)

⬡ EXISTING WOODEN POLE WITH 250 WATT LUMINAIRE

⊗ EXISTING WOODEN POLE

CURVE DATA
CROSSOVER NO. 3

P.I. STA= 1+61.59
Δ= 12° 52' 22"
D= 4° 00' 00"
R= 1432.39'
T= 161.59'
L= 321.82'
E= 9.09'
P.C. STA= 0+00.00
P.T. STA= 3+21.82

P.I. STA= 4+83.41
Δ= 12° 52' 22"
D= 4° 00' 00"
R= 1432.39'
T= 161.59'
L= 321.82'
E= 9.09'
P.C. STA= 3+21.82
P.T. STA= 6+43.64

CURVE DATA
CROSSOVER NO. 2

P.I. STA= 3+61.59
Δ= 12° 52' 22"
D= 4° 00' 00"
R= 1432.39'
T= 161.59'
L= 321.82'
E= 9.09'
P.C. STA= 2+00.00
P.T. STA= 5+21.82

PLAN
SURVEYED
PLOTTED
CHECKED
NOTE BOOK
NO.
DATE
BY
CHECKED
PLOT MAY CHECKED
PLOT FILE NAME

PROFILE
SURVEYED
PLOTTED
CHECKED
NOTE BOOK
NO.
DATE
BY
CHECKED
PLOT MAY CHECKED
PLOT FILE NAME

B.M.: TOP OF IRON PIN
AND CAP, 25.0' LT. ℄
S.B. LANES, STA. 95+05
ELEV. 416.21

EQ. STA. 95+04.42 BK. (42.55' LT. ℄ I-57) =
STA. 0+00 AH. (℄ CROSSOVER NO. 2)

EXIST. PROFILE ALONG MEDIAN
EDGE OF N.B. PAVEMENT

PROFILE OF ORIGINAL GROUND LINE
ALONG ℄ CROSSOVER NO. 2

PROFILE ALONG
℄ CROSSOVER NO. 2

EXIST. BITUMINOUS
MIXTURE COMPLETE, 14"

EQ. P.T. STA. 5+21.83 BK. (℄ CROSSOVER NO. 2) =
38' RT. STA. 100+18.50 AH. (℄ I-57)

EXIST. PROFILE ALONG MEDIAN
EDGE OF S.B. PAVEMENT

EQ. STA. 93+80.27 BK. (38' RT. ℄ I-57) =
P.C. STA. 0+00 AH. (℄ CROSSOVER NO. 3)

EXIST. PROFILE ALONG MEDIAN
EDGE OF S.B. PAVEMENT

PROFILE OF ORIGINAL GROUND LINE
ALONG ℄ CROSSOVER NO. 3

PROFILE ALONG
℄ CROSSOVER NO. 3

EXIST. BITUMINOUS
MIXTURE COMPLETE, 14"

EQ. P.T. STA. 6+43.63 BK. ℄ CROSSOVER NO. 3) =
34' LT. STA. 100+18.50 AH. (℄ I-57)

EXIST. PROFILE ALONG MEDIAN
EDGE OF N.B. PAVEMENT

+0.003%

-0.004%

+0.005%

420
415

92 93 0 1 2 3 4 5 6 101

VIEW PTGUN SOUTH
Fri Mar 19 07:50:30 1993
/usr/projects/jmiley/d0036900d.dgn LV=2,3,10,13,15,17,20,21,28,31,37-40,42,43,50,57-60,63,65
/d0036900c.dgn PTGUN LV=2,3,10,13,15,17,20,21,28,31,37-40,42,43,50,57-60,63,65

F.A.I. RTE. 57 OVER GUN CREEK

FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	*	FRANKLIN	145	14
STA.		TO STA.		
STD. ROAD DIST. NO.	ILLINOIS			

* 28 (SB-1, SB, 2B, 1B) D-1; 2B (SVE, SWB-1) 1-1

EQ. STA. 104+01.50 BK. (38' LT. ℄ I-57) =
P.C. STA. 0+00 AH. (℄ CROSSOVER NO. 4)

CURVE DATA
CROSSOVER NO. 4
P.I. STA= 1+61.59
Δ= 12° 52' 22"
D= 4° 00' 00"
R= 1432.39'
T= 161.59'
L= 321.82'
E= 9.09'
P.C. STA= 0+00.00
P.T. STA= 3+21.82

EXIST. 24" R.C.C.P.
TO REMAIN IN PLACE

* EXISTING GUARDRAIL ALONG X-OVERS IS TO BE REMOVED ONLY AFTER THE MAINLINE SOUTH BOUND LANES ARE RE-OPENED TO TRAFFIC.

EQ. P.T. STA. 6+43.64 BK. (℄ CROSSOVER NO. 1) =
38' LT. STA. 113+39.73 (℄ I-57)

SCALE
50' 0 25' 50'

CREEK

S.P.B.G.R. REMOVAL *
337.5 LIN. FT.

℄ CROSSOVER NO. 1
(N.B. CLOSED)

105 110 115

℄ MEDIAN - F.A.I. RTE. 57

EXIST. 24" R.C.C.P.

GUN

EXIST. 36" R.C.C.P.

EQ. P.I. STA. 5+28.29 BK. (℄ CROSSOVER NO. 4) =
44' RT. STA. 109+21.91 AH. (℄ I-57)

℄ CROSSOVER NO. 4
(S.B. CLOSED)

CURVE DATA
CROSSOVER NO. 1

P.I. STA= 1+61.59
Δ= 12° 52' 22"
D= 4° 00' 00"
R= 1432.39'
T= 161.59'
L= 321.82'
E= 9.09'
P.C. STA= 0+00.00
P.T. STA= 3+21.82

P.I. STA= 4+83.41
Δ= 12° 52' 22"
D= 4° 00' 00"
R= 1432.39'
T= 161.59'
L= 321.82'
E= 9.09'
P.C. STA= 3+21.82
P.T. STA= 6+43.64

EQ. STA. 107+01.5 BK. (34' RT. ℄ I-57) =
P.C. STA. 0+00 AH. (℄ CROSSOVER NO. 1)

B.M.:
TOP OF ½" BOLT
EMBEDDED IN S.E. CORNER
OF EAST HANDRAIL OF
S.B. BRIDGE.
ELEV. 419.91

EQ. STA. 107+01.5 BK. (34' RT. ℄ I-57) =
P.C. STA. 0+00 AH. (℄ CROSSOVER NO. 1)

EXIST. PROFILE ALONG MEDIAN
EDGE OF S.B. PAVEMENT

PROFILE OF ORIGINAL GROUND LINE
ALONG ℄ CROSSOVER NO. 1

PROFILE ALONG
℄ CROSSOVER NO. 1

EXIST. BITUMINOUS
MIXTURE COMPLETE, 14"

EQ. P.T. STA. 6+43.64 BK. (℄ CROSSOVER NO. 1) =
38' LT. STA. 113+39.73 (℄ I-57)

EXIST. PROFILE ALONG MEDIAN
EDGE OF N.B. PAVEMENT

0.018%

B.M.:
TOP OF IRON PIN
AND CAP, 25.0' LT. ℄
S.B. LANES, STA. 117+55
ELEV. 416.23

EXIST. PROFILE ALONG MEDIAN
EDGE OF N.B. PAVEMENT

EQ. STA. 104+01.50 BK. (38' LT. ℄ I-57) =
P.C. STA. 0+00 AH. (℄ CROSSOVER NO. 4)

PROFILE OF ORIGINAL GROUND LINE
ALONG ℄ CROSSOVER NO. 4

PROFILE ALONG
℄ CROSSOVER NO. 4

EXIST. BITUMINOUS
MIXTURE COMPLETE, 14"

EQ. P.I. STA. 5+28.29 BK. (℄ CROSSOVER NO. 4) =
44' RT. STA. 109+21.91 AH. (℄ I-57)

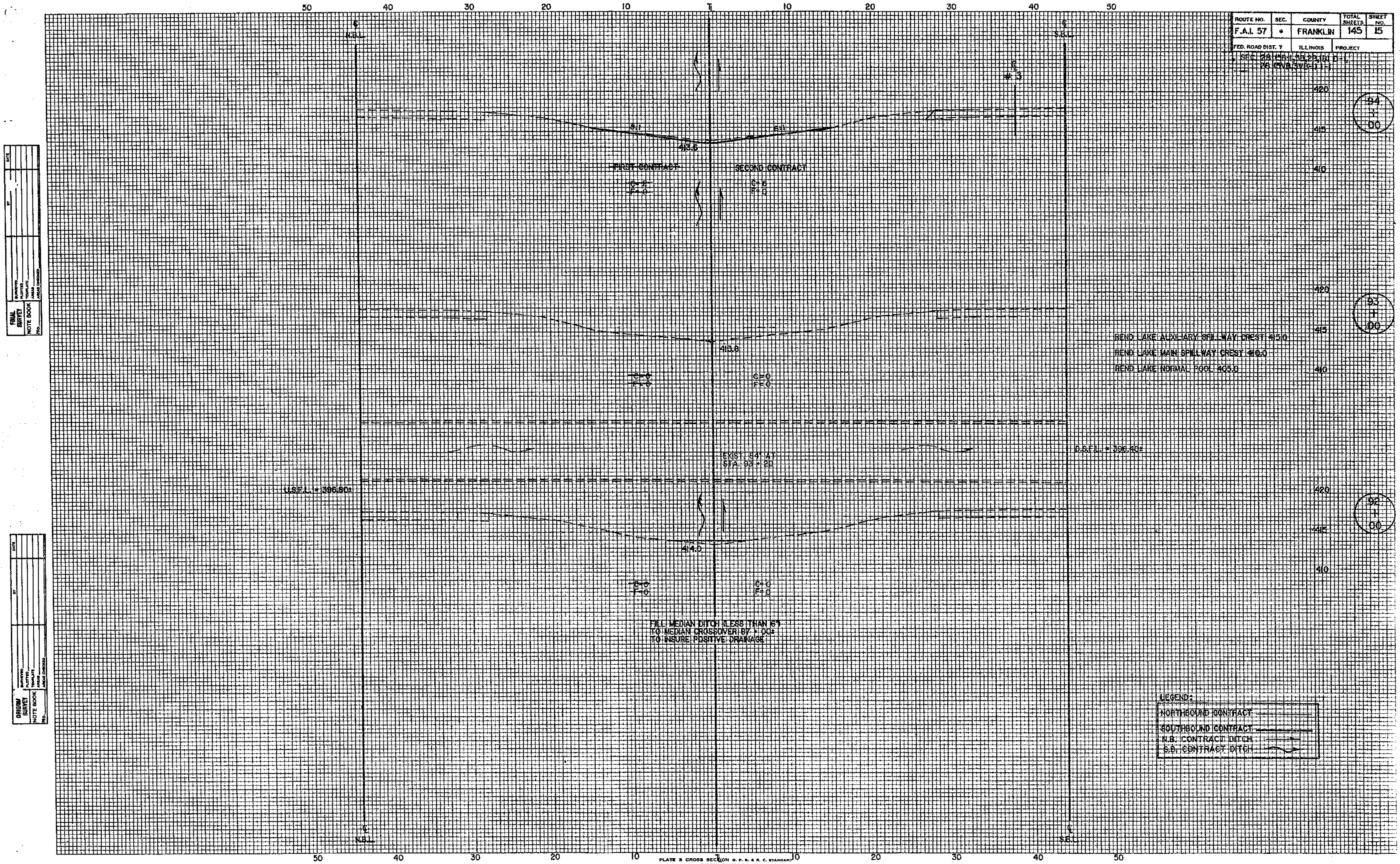
EXIST. PROFILE ALONG MEDIAN
EDGE OF S.B. PAVEMENT

*0.069%

-0.024%

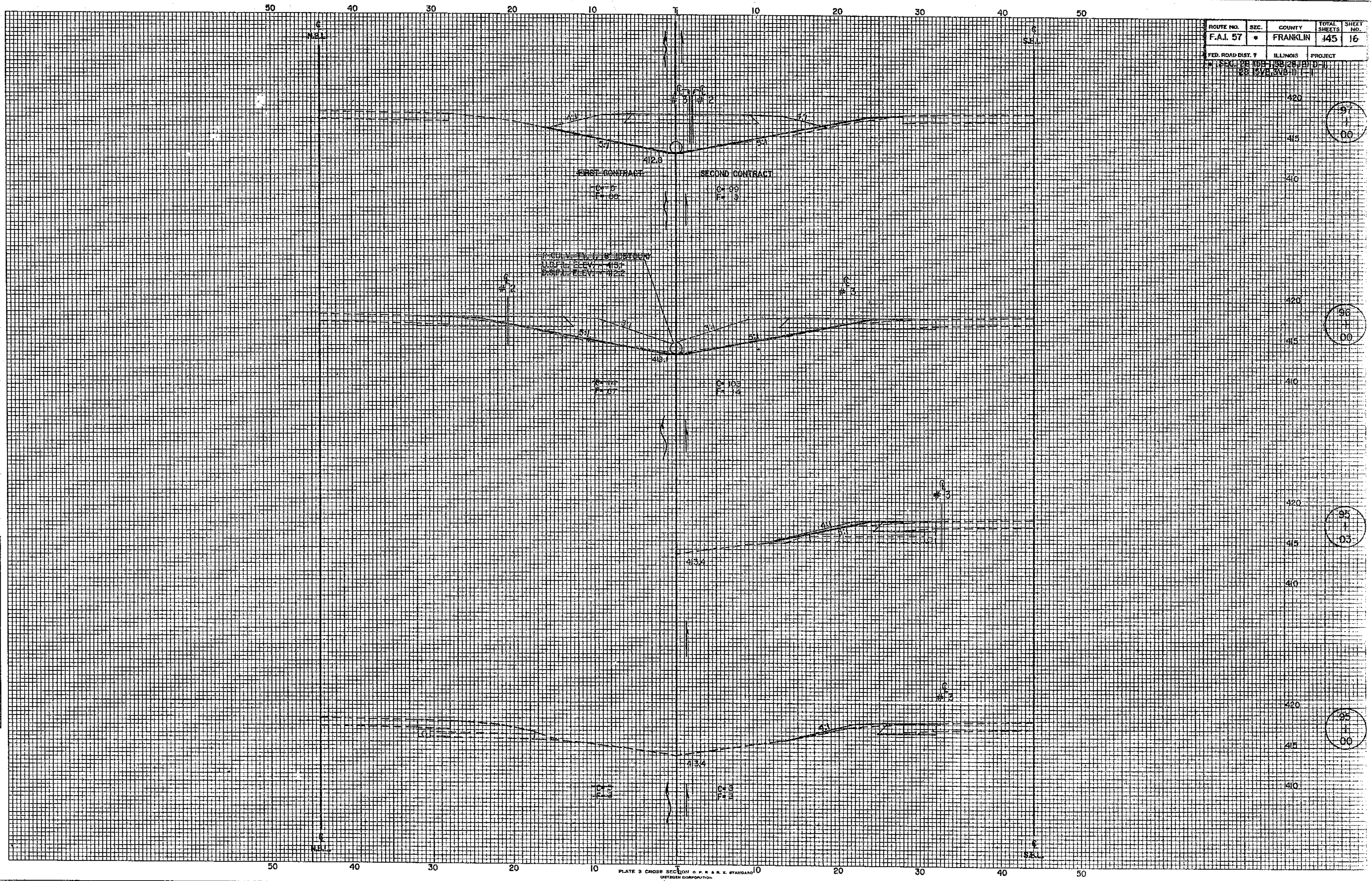
F.A.I. RTE. 57 OVER GUN CREEK

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	15
FED. ROAD DIST. 7		ILLINOIS	PROJECT	



* SEC. 2B (CR-1,3B,2B,(B) D-1,
2B (SVB,3VB-1) 1-)
N.B.L.
S.B.L.
#3
413.6
FIRST CONTRACT
SECOND CONTRACT
C=0
F=0
94 + 00
93 + 00
92 + 00
420
415
410
REND LAKE AUXILIARY SPILLWAY CREST 415.0
REND LAKE MAIN SPILLWAY CREST 410.0
REND LAKE NORMAL POOL 405.0
EXIST. 84' AT
STA. 93 + 20
D.S.F.L. = 396.40±
U.S.F.L. = 396.80±
414.0
FILL MEDIAN DITCH (LESS THAN 6")
TO MEDIAN CROSSOVER 87 + 00±
TO INSURE POSITIVE DRAINAGE
LEGEND:
NORTHBOUND CONTRACT
SOUTHBOUND CONTRACT
N.B. CONTRACT DITCH
S.B. CONTRACT DITCH
FINAL SURVEY NOTE BOOK NO.
ORIGINAL SURVEY NOTE BOOK NO.
PLATE 3 CROSS SECTION

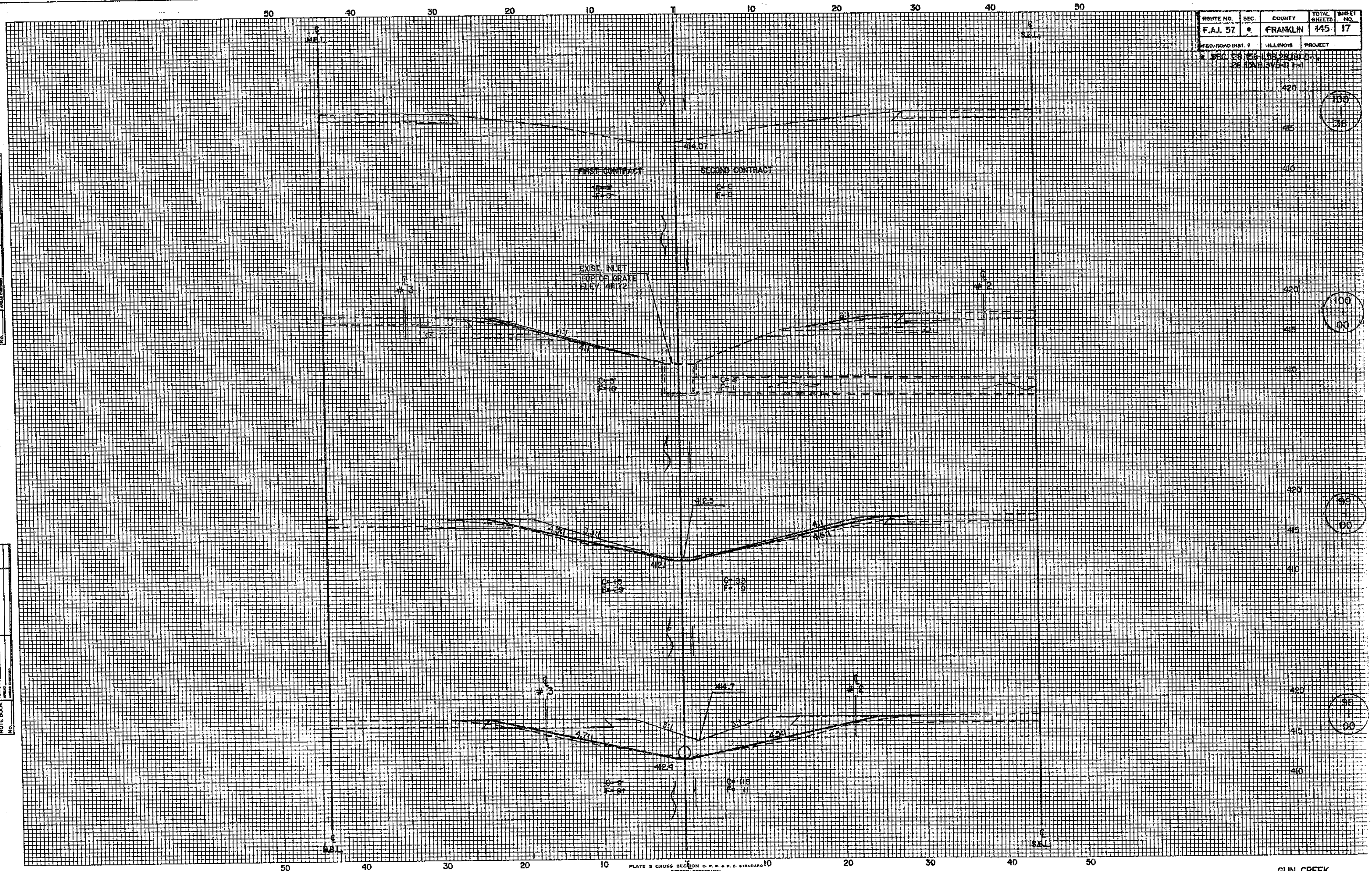
GUN CREEK



ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	16
FED. ROAD DIST. 7		ILLINOIS	PROJECT	

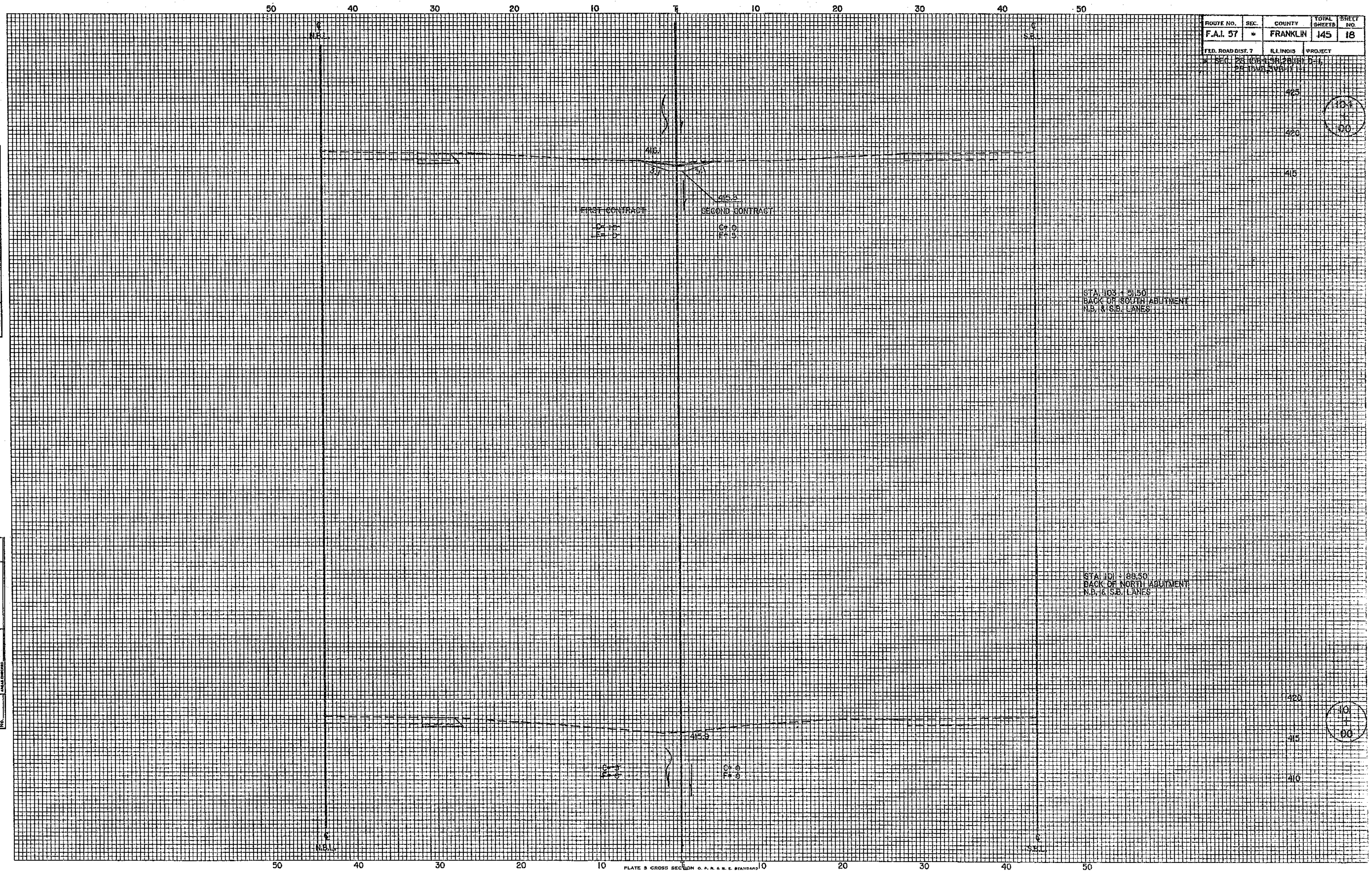
GUN CREEK

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	17
FED. ROAD DIST. 9		ILLINOIS	PROJECT	



ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	18
FED. ROAD DIST. 7		ILLINOIS	PROJECT	

* SEC. 25 (OB-1,5B,28(B)) D-1, 28 (SVB,SVS-1) I-1

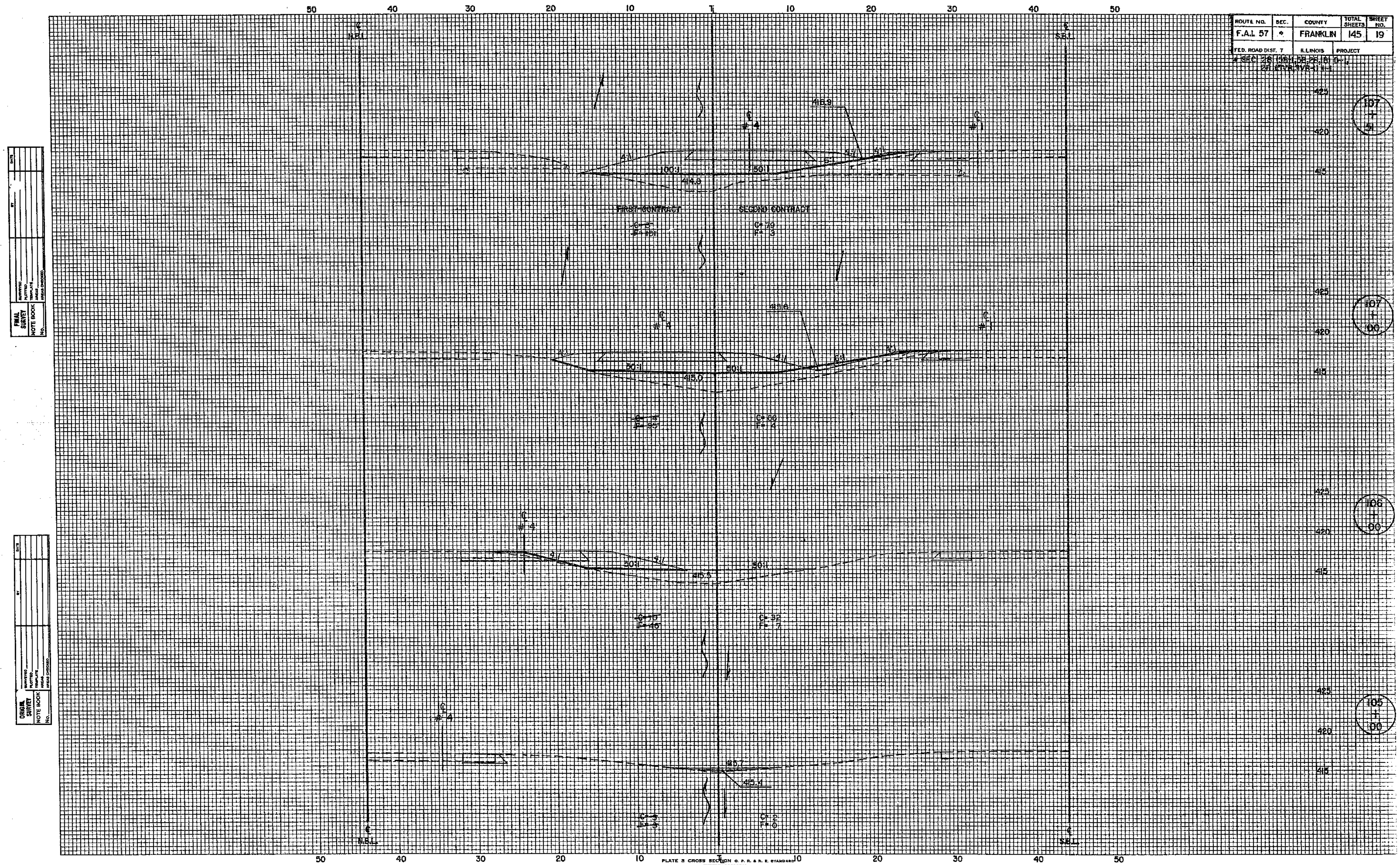


FINAL SURVEY NOTE BOOK No.

ORIGINAL SURVEY NOTE BOOK No.

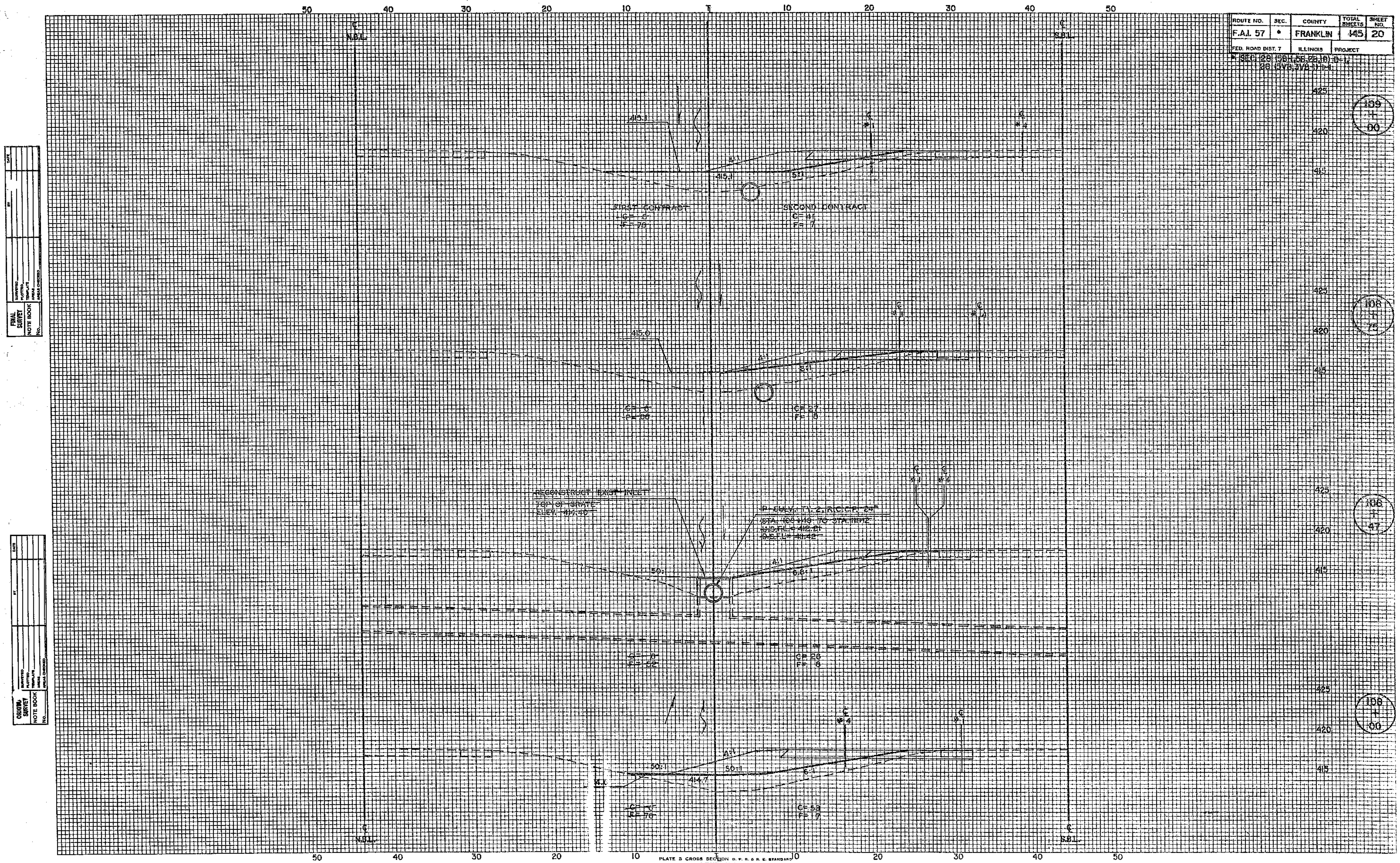
GUN CREEK

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	19
FED. ROAD DIST. 7		ILLINOIS	PROJECT	



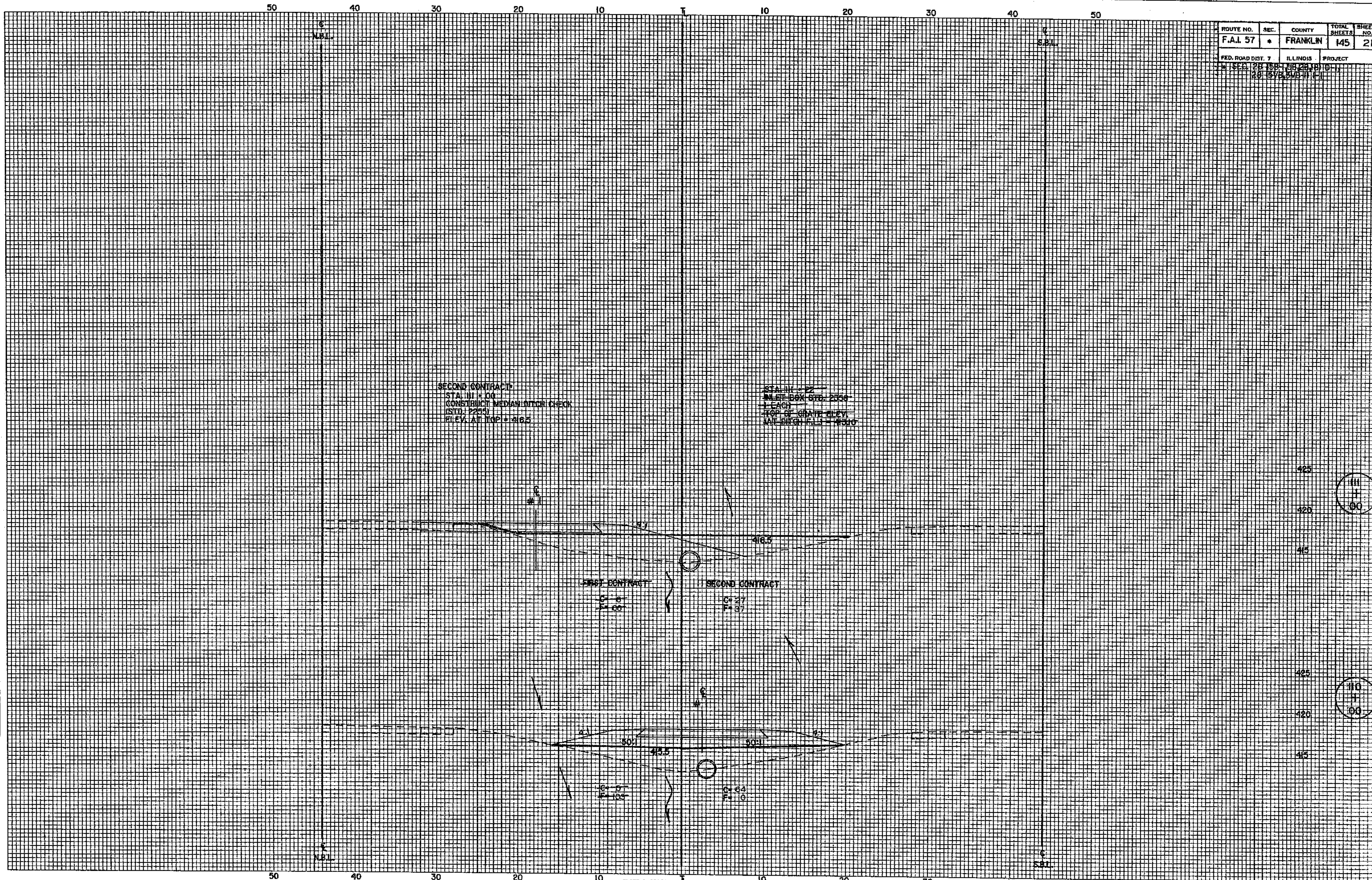
GUN CREEK

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	20
FED. ROAD DIST. 7		ILLINOIS	PROJECT	



GUN CREEK

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	21
FED. ROAD DIST. 7		ILLINOIS	PROJECT	



GUN CREEK

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	22
FED. ROAD DIST. 7		ILLINOIS	PROJECT	

* SEC. 28 (5B-1,5B,2B,1B) D-1
28 (5VB,3VB-1) I-1

FINAL SURVEY NOTE BOOK No. ___ SURVEYED ___ PLOTTED ___ TEMPLATE ___ AREAS CHECKED ___ BY ___ DATE ___

ORIGINAL SURVEY NOTE BOOK No. ___ SURVEYED ___ PLOTTED ___ TEMPLATE ___ AREAS ___ AREAS CHECKED ___ BY ___ DATE ___

PLATE 3 CROSS SECTION C. P. R. & R. E. STANDARD
DIETZGEN CORPORATION

GUN CREEK

Bench Mark: Top of ½" bolt imbedded in the S.E. corner of the east handrail on the southbound lane of the Gun Creek Bridge. Elev. 419.91

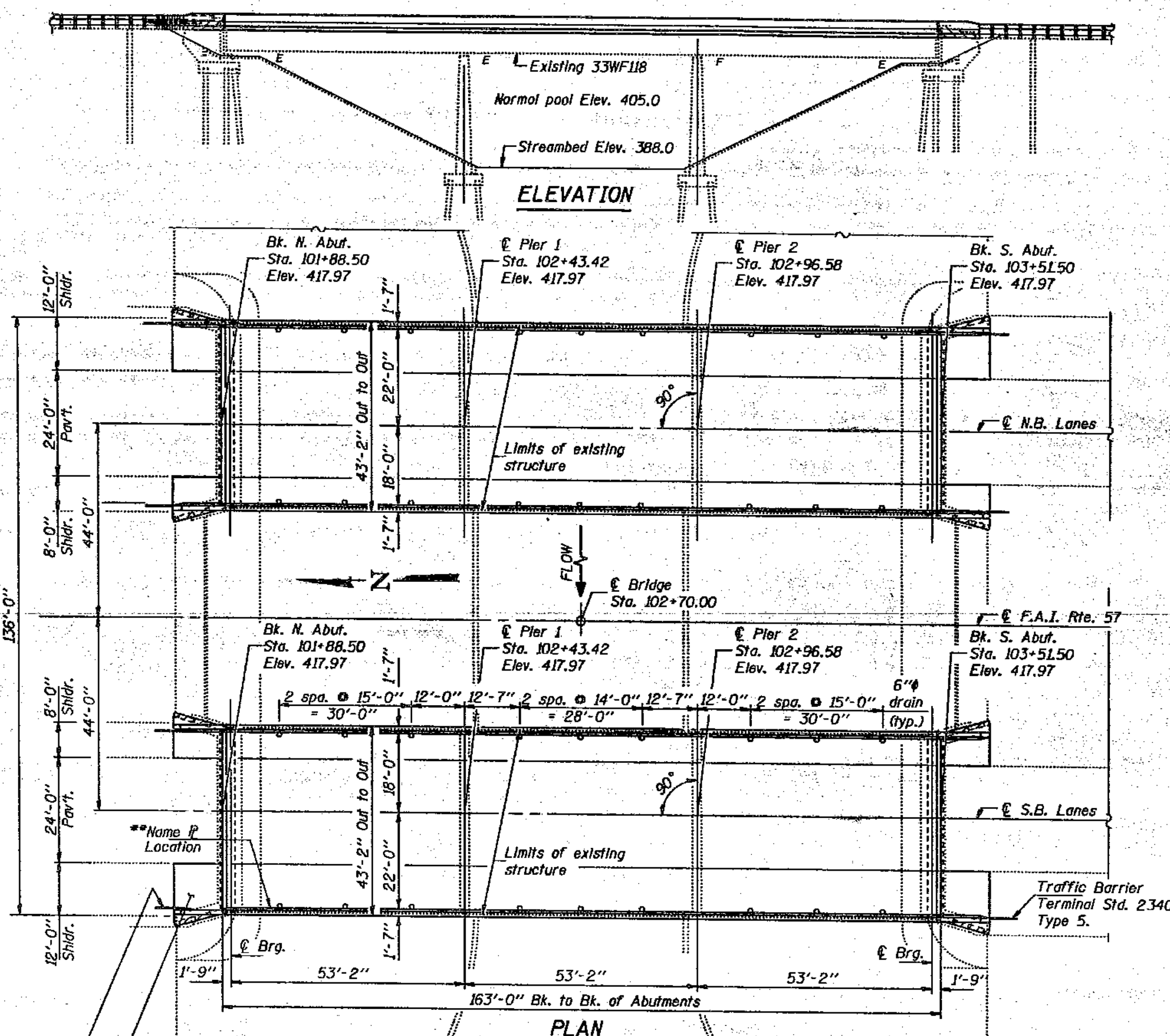
Existing structure: 028-0014 S.B. Built as F.A.I. Route 57 28-1B-F in 1962.
The superstructure consists of R.C. deck supported on 3 span continuous W.F. beams.
Temporary median cross-overs shall be utilized to divert traffic over adjacent bridge (028-0013 N.B.) during reconstruction.

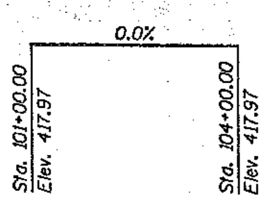
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN		23

*(28-1B)D-1

SHEET NO. 1
16 SHEETS





PROFILE GRADE
(F.A.I. 57 along ℄ pavement)

Traffic Barrier Terminal Std. 2341 Type 6 (typ. - approach end only)

Removal of Existing Bit. Appr. Shldr.Pav't. included in Rdwy. Plan. (Typ. all locations)

NOTE: Only the Southbound Structure is included in the Contract.

GENERAL NOTES

Fasteners shall be high strength bolts. Bolts ¾"φ. Open holes ⅞"φ, unless otherwise noted.

Field welding of construction accessories will not be permitted to the bottom flange of beams nor to 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.

Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53 Grade 60.

Plan dimensions and details relative to existing structure have been taken from existing plans and Field Survey Elevations and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the contractor will be paid for the quantity actually furnished of the unit price bid for the work.

The Contractor will be required to mark on top of the concrete deck, the locations of the top flange of all the steel beams, prior to any removal of the bridge concrete deck. Saw cutting directly over the top of the beam flanges is not permitted.

All top surfaces of the abutment seat area shall receive "Bridge Seat Sealer."

The Zinc-Silicate Primer Paint System shall be used for shop painting of new structural steel. The color of the vinyl finish coat shall be Munsell Std. 10Y 7/1 light grey.

Prior to pouring the new concrete for the deck, all loose rust, loose mill scale, and all other foreign material shall be removed from the embedded portions of flanges of stringers. The removal shall be accomplished in accordance with the requirements of the SSPC Surface Preparation Specifications SP-3 for power tool cleaning or SP-2 for hand tool cleaning. Cost shall be incidental to Removal of Existing Concrete Deck.

STATION 102 + 70.00
BUILT 199 BY
STATE OF ILLINOIS
F.A.I. RT.57 SEC.(28-1B)D-1
F.A. PROJ. *
LOADING HS20
STR. NO. 028-0014

*I M-57-2(133)63

NAME PLATE

See Std. 2113

**Existing Name Plate to be cleaned and relocated next to the new Name Plate on the New Parapet. Cost incidental to "Name Plates."

TOTAL BILL OF MATERIAL

	ITEM	UNIT	SUPER	SUB	TOTAL
	Concrete Removal	Cu. Yd.		9	9
*	Removal of Existing Concrete Deck	Each	1		1
	Structure Excavation	Cu. Yd.		23	23
	Floor Drains	Each	18		18
	Preformed Joint Seal 2½"	Lin. Ft.	43		43
	Preformed Joint Seal 4"	Lin. Ft.	43		43
	Class X Concrete Superstructure	Cu. Yd.	215.4		215.4
***	Protective Coat	Sq. Yd.	852		852
	Elastomeric Bearing Assembly, Type I	Each	21		21
	Structural Steel	Lbs.	10,300		10,300
	Stud Shear Connectors	Each	3094		3094
	Reinforcement Bars, Epoxy Coated	Pound	51,380		51,380
	Name Plates	Each	1		1
	Bridge Seat Sealer	Sq. Ft.		147	147
	Jack and Remove Existing Brgs.	Each	28		28
	Bridge Deck Grooving	Sq. Yd.	678		678

*** Includes deck & top and inside face of parapet.
* Includes removal of existing railing and expansion plates.

DESIGN SPECIFICATIONS

1989 AASHTO, 1990 & 1991 Interim Specifications & Seismic Retrofitting Guidelines for Highway Bridges.

LOADING HS 20-44 & ALT.

Allow 25#/ sq. ft. for future wearing surface.

DESIGN STRESSES

FIELD UNITS

New Construction

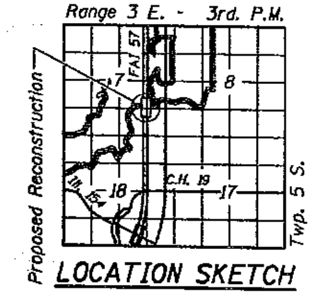
f'_c = 3,500 psi

f_y = 60,000 psi (Reinf.)

f_y = 36,000 psi (Str. Steel - M270 Gr. 36)

Old Construction

f_s = 20,000 psi (Exist. Structural Steel)



LOCATION SKETCH

DESIGNED	Michael A. Stephenson
CHECKED	George A. Horak
DRAWN	E. Vern Taylor
CHECKED	MAS GAG TAC

May 20 1993

EXAMINED: [signature] ENGINEER OF BRIDGE DESIGN
PASSED: Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES
APPROVED: DIRECTOR OF HIGHWAYS

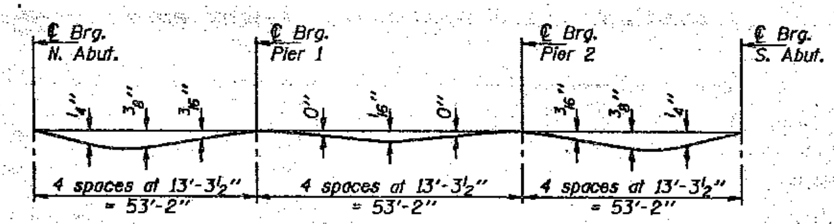
GENERAL PLAN
F.A.I. ROUTE 57 OVER
GUN CREEK
F.A.I. ROUTE 57 SECTION (28-1B)D-1
FRANKLIN COUNTY
STATION 102+70.00
STRUCTURE NUMBER 028-0014 (S.B.)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN		2A

*(28-1B)D-1

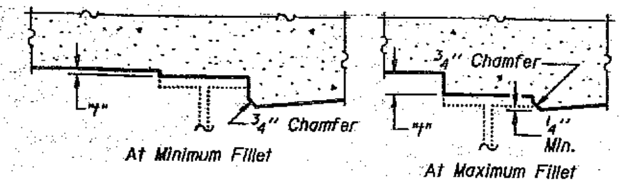
SHEET NO. 2
16 SHEETS



DEAD LOAD DEFLECTION DIAGRAM

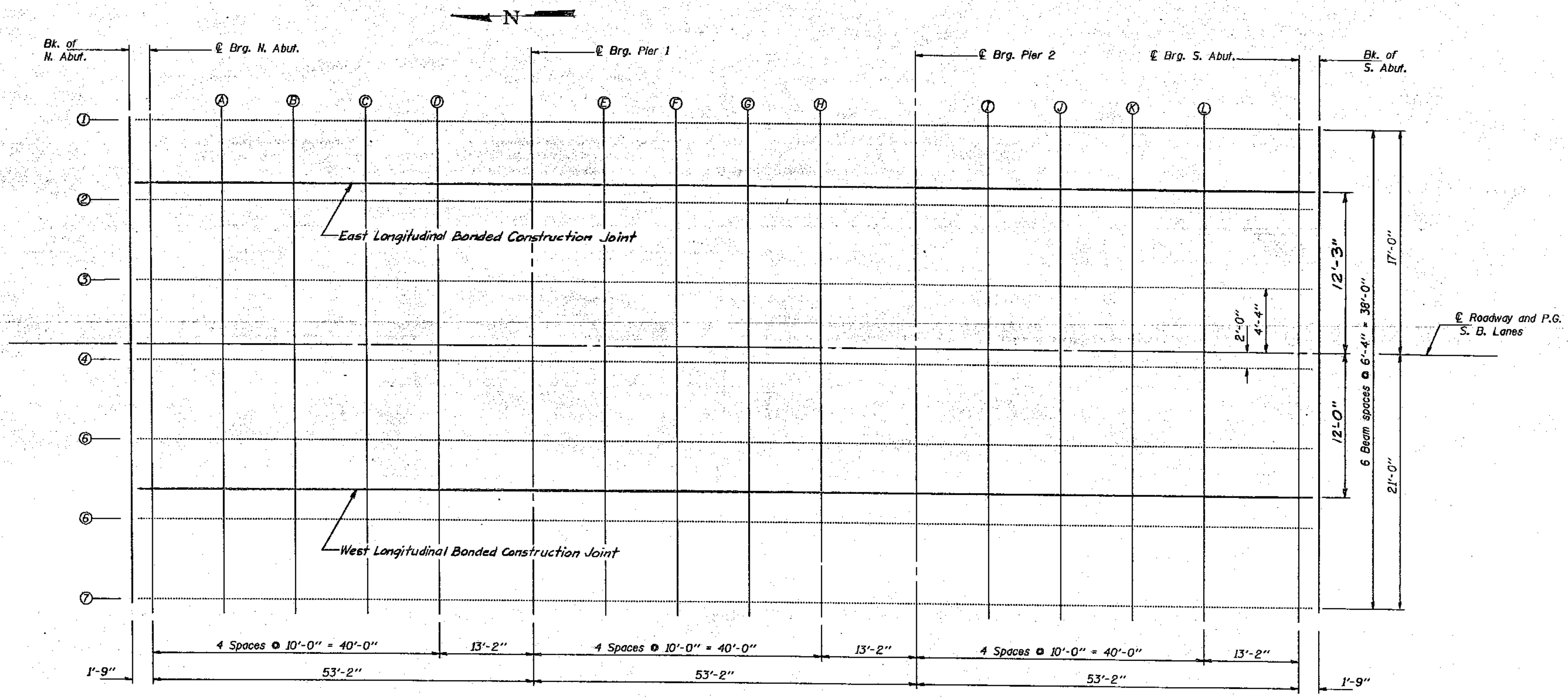
(Includes weight of concrete only)

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 on Sheet #3 of 16.



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 on Sheet #3 of 16, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS



PLAN

DESIGNED	Michael A. Stephenson / George H. [illegible]	
CHECKED	[illegible]	
DRAWN	E. Vern Taylor	
CHECKED	MAS GAS TAC	

May 20 1993
EXAMINED: [signature] ENGINEER OF BRIDGE DESIGN
PASSED: Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES
APPROVED: DIRECTOR OF HIGHWAYS

TOP OF SLAB ELEVATIONS
F.A.I. RT. 57 SEC. (28-1B)D-1
FRANKLIN COUNTY
STATION 102+70.00

STATE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN		25
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

*(28-1B)D-1

SHEET NO. 3
16 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

℄ BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	10188.500	-17.000	417.741	417.741
℄ BRG. N. ABUT.	10190.250	-17.000	417.741	417.741
A	10200.250	-17.000	417.741	417.759
B	10210.250	-17.000	417.741	417.768
C	10220.250	-17.000	417.741	417.768
D	10230.250	-17.000	417.741	417.758
℄ BRG. PIER 1	10243.417	-17.000	417.741	417.741
E	10253.417	-17.000	417.741	417.741
F	10263.417	-17.000	417.741	417.743
G	10273.417	-17.000	417.741	417.743
H	10283.417	-17.000	417.741	417.741
℄ BRG. PIER 2	10296.583	-17.000	417.741	417.741
I	10306.583	-17.000	417.741	417.754
J	10316.583	-17.000	417.741	417.765
K	10326.583	-17.000	417.741	417.759
L	10336.583	-17.000	417.741	417.764
℄ BRG. S. ABUT.	10349.750	-17.000	417.741	417.741
BK. S. ABUT.	10351.500	-17.000	417.741	417.741

E. LONGITUDINAL BONDED CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	10188.500	-12.250	417.840	417.840
℄ BRG. N. ABUT.	10190.250	-12.250	417.840	417.840
A	10200.250	-12.250	417.840	417.857
B	10210.250	-12.250	417.840	417.867
C	10220.250	-12.250	417.840	417.866
D	10230.250	-12.250	417.840	417.857
℄ BRG. PIER 1	10243.417	-12.250	417.840	417.840
E	10253.417	-12.250	417.840	417.840
F	10263.417	-12.250	417.840	417.841
G	10273.417	-12.250	417.840	417.842
H	10283.417	-12.250	417.840	417.840
℄ BRG. PIER 2	10296.583	-12.250	417.840	417.840
I	10306.583	-12.250	417.840	417.853
J	10316.583	-12.250	417.840	417.863
K	10326.583	-12.250	417.840	417.868
L	10336.583	-12.250	417.840	417.863
℄ BRG. S. ABUT.	10349.750	-12.250	417.840	417.840
BK. S. ABUT.	10351.500	-12.250	417.840	417.840

℄ BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	10188.500	-10.667	417.871	417.871
℄ BRG. N. ABUT.	10190.250	-10.667	417.871	417.871
A	10200.250	-10.667	417.871	417.889
B	10210.250	-10.667	417.871	417.898
C	10220.250	-10.667	417.871	417.898
D	10230.250	-10.667	417.871	417.888
℄ BRG. PIER 1	10243.417	-10.667	417.871	417.871
E	10253.417	-10.667	417.871	417.871
F	10263.417	-10.667	417.871	417.873
G	10273.417	-10.667	417.871	417.874
H	10283.417	-10.667	417.871	417.871
℄ BRG. PIER 2	10296.583	-10.667	417.871	417.871
I	10306.583	-10.667	417.871	417.884
J	10316.583	-10.667	417.871	417.895
K	10326.583	-10.667	417.871	417.900
L	10336.583	-10.667	417.871	417.894
℄ BRG. S. ABUT.	10349.750	-10.667	417.871	417.871
BK. S. ABUT.	10351.500	-10.667	417.871	417.871

℄ BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	10188.500	-4.333	417.954	41T.954
℄ BRG. N. ABUT.	10190.250	-4.333	417.954	417.954
A	10200.250	-4.333	417.954	417.971
B	10210.250	-4.333	417.954	417.980
C	10220.250	-4.333	417.954	417.980
D	10230.250	-4.333	417.954	417.970
℄ BRG. PIER 1	10243.417	-4.333	417.954	417.954
E	10253.417	-4.333	417.954	417.954
F	10263.417	-4.333	417.954	417.955
G	10273.417	-4.333	417.954	417.956
H	10283.417	-4.333	417.954	417.954
℄ BRG. PIER 2	10296.583	-4.333	417.954	417.954
I	10306.583	-4.333	417.954	417.966
J	10316.583	-4.333	417.954	417.977
K	10326.583	-4.333	417.954	417.982
L	10336.583	-4.333	417.954	417.977
℄ BRG. S. ABUT.	10349.750	-4.333	417.954	41T.954
BK. S. ABUT.	10351.500	-4.333	417.954	417.954

℄ ROADWAY AND P. G.

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	10188.500	0.000	417.970	417.970
℄ BRG. N. ABUT.	10190.250	0.000	417.970	417.970
A	10200.250	0.000	417.970	417.988
B	10210.250	0.000	417.970	417.997
C	10220.250	0.000	417.970	417.997
D	10230.250	0.000	417.970	417.987
℄ BRG. PIER 1	10243.417	0.000	417.970	417.970
E	10253.417	0.000	417.970	417.970
F	10263.417	0.000	417.970	417.972
G	10273.417	0.000	417.970	417.972
H	10283.417	0.000	417.970	417.970
℄ BRG. PIER 2	10296.583	0.000	417.970	417.970
I	10306.583	0.000	417.970	417.983
J	10316.583	0.000	417.970	417.994
K	10326.583	0.000	417.970	417.998
L	10336.583	0.000	417.970	417.993
℄ BRG. S. ABUT.	10349.750	0.000	417.970	417.970
BK. S. ABUT.	10351.500	0.000	417.970	417.970

℄ BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	10188.500	2.000	417.967	417.967
℄ BRG. N. ABUT.	10190.250	2.000	417.967	417.967
A	10200.250	2.000	417.967	417.984
B	10210.250	2.000	417.967	417.993
C	10220.250	2.000	417.967	417.993
D	10230.250	2.000	417.967	417.983
℄ DRG. PIER 1	10243.417	2.000	417.967	417.967
E	10253.417	2.000	417.967	417.967
F	10263.417	2.000	417.967	417.968
G	10273.417	2.000	417.967	417.969
H	10283.417	2.000	417.967	417.967
℄ BRG. PIER 2	10296.583	2.000	417.967	417.967
I	10306.583	2.000	417.967	417.979
J	10316.583	2.000	417.967	417.990
K	10326.583	2.000	417.967	417.995
L	10336.583	2.000	417.967	417.990
℄ BRG. S. ABUT.	10349.750	2.000	417.967	417.967
BK. S. ABUT.	10351.500	2.000	417.967	417.967

℄ BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	10188.500	8.333	417.910	417.910
℄ BRG. N. ABUT.	10190.250	8.333	417.910	417.910
A	10200.250	8.333	417.910	417.927
B	10210.250	8.333	417.910	417.936
C	10220.250	8.333	417.910	417.936
D	10230.250	8.333	417.910	417.926
℄ BRG. PIER 1	10243.417	8.333	417.910	417.910
E	10253.417	8.333	417.910	417.910
F	10263.417	8.333	417.910	417.911
G	10273.417	8.333	417.910	417.912
H	10283.417	8.333	417.910	417.910
℄ BRG. PIER 2	10296.583	8.333	417.910	417.910
I	10306.583	8.333	417.910	417.922
J	10316.583	8.333	417.910	417.933
K	10326.583	8.333	417.910	417.938
L	10336.583	8.333	417.910	417.933
℄ BRG. S. ABUT.	10349.750	8.333	417.910	417.910
BK. S. ABUT.	10351.500	8.333	417.910	417.910

W. LONGITUDINAL BONDED CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	10188.500	12.000	417.845	417.845
℄ BRG. N. ABUT.	10190.250	12.000	417.845	417.845
A	10200.250	12.000	417.845	417.863
B	10210.250	12.000	417.845	417.872
C	10220.250	12.000	417.845	417.872
D	10230.250	12.000	417.845	417.862
℄ BRG. PIER 1	10243.417	12.000	417.845	417.845
E	10253.417	12.000	417.845	417.845
F	10263.417	12.000	417.845	417.847
G	10273.417	12.000	417.845	417.847
H	10283.417	12.000	417.845	417.845
℄ BRG. PIER 2	10296.583	12.000	417.845	417.845
I	10306.583	12.000	417.845	417.858
J	10316.583	12.000	417.845	417.869
K	10326.583	12.000	417.845	417.873
L	10336.583	12.000	417.845	417.858
℄ BRG. S. ABUT.	10349.750	12.000	417.845	417.845
BK. S. ABUT.	10351.500	12.000	417.845	417.845

℄ BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	10188.500	14.666	417.790	417.790
℄ BRG. N. ABUT.	10190.250	14.666	417.790	417.790
A	10200.250	14.666	417.790	417.807
B	10210.250	14.666	417.790	417.816
C	10220.250	14.666	417.790	417.816
D	10230.250	14.666	417.790	417.806
℄ BRG. PIER 1	10243.417	14.666	417.790	417.790
E	10253.417	14.666	417.790	417.790
F	10263.417	14.666	417.790	417.791
G	10273.417	14.666	417.790	417.792
H	10283.417	14.666	417.790	417.790
℄ BRG. PIER 2	10296.583	14.666	417.790	417.790
I	10306.583	14.666	417.790	417.802
J	10316.583	14.666	417.790	417.813
K	10326.583	14.666	417.790	417.818
L	10336.583	14.666	417.790	417.813
℄ BRG. S. ABUT.	10349.750	14.666	417.790	417.790
BK. S. ABUT.	10351.500	14.666	417.790	417.790

℄ BEAM 7

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	10188.500	21.000	417.658	417.658
℄ BRG. N. ABUT.	10190.250	21.000	417.658	417.658
A	10200.250	21.000	417.658	417.675
B	10210.250	21.000	417.658	417.685
C	10220.250	21.000	417.658	417.685
D	10230.250	21.000	417.658	417.675
℄ BRG. PIER 1	10243.417	21.000	417.658	417.658
E	10253.417	21.000	417.658	417.658
F	10263.417	21.000	417.658	417.659
G	10273.417	21.000	417.658	417.660
H	10283.417	21.000	417.658	417.658
℄ BRG. PIER 2	10296.583	21.000	417.658	417.658
I	10306.583	21.000	417.658	417.671
J	10316.583	21.000	417.658	417.681
K	10326.583	21.000	417.658	417.686
L	10336.583	21.000	417.658	417.681
℄ BRG. S. ABUT.	10349.750	21.000	417.658	417.658
BK. S. ABUT.	10351.500	21.000	417.658	417.658

Note: Work this sheet with sheet #2 of 16.

DESIGNED	Michael A. Stephenson
CHECKED	George S. Sharpe / Timothy A. Carson
DRAWN	E. Vern Taylor
CHECKED	MAS GAG TAC

E-S 1-6-82

May 20 1993

EXAMINED Oraj I. Kaspar
ENGINEER OF BRIDGE DESIGN

PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

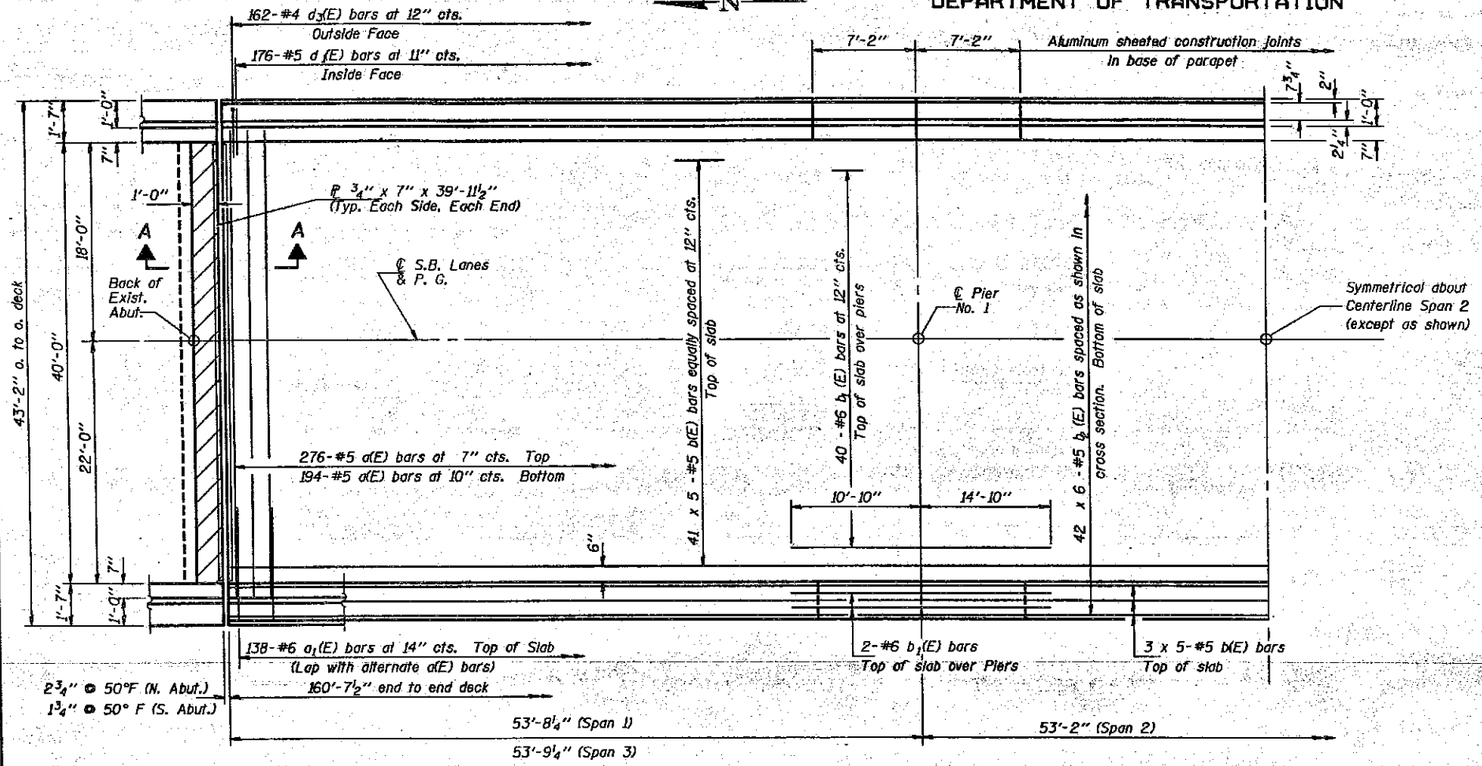
APPROVED
DIRECTOR OF HIGHWAYS

TOP OF SLAB ELEVATIONS
F.A.I. RT. 57 SEC. (28-1B)D-1
FRANKLIN COUNTY
STATION 102+70.00

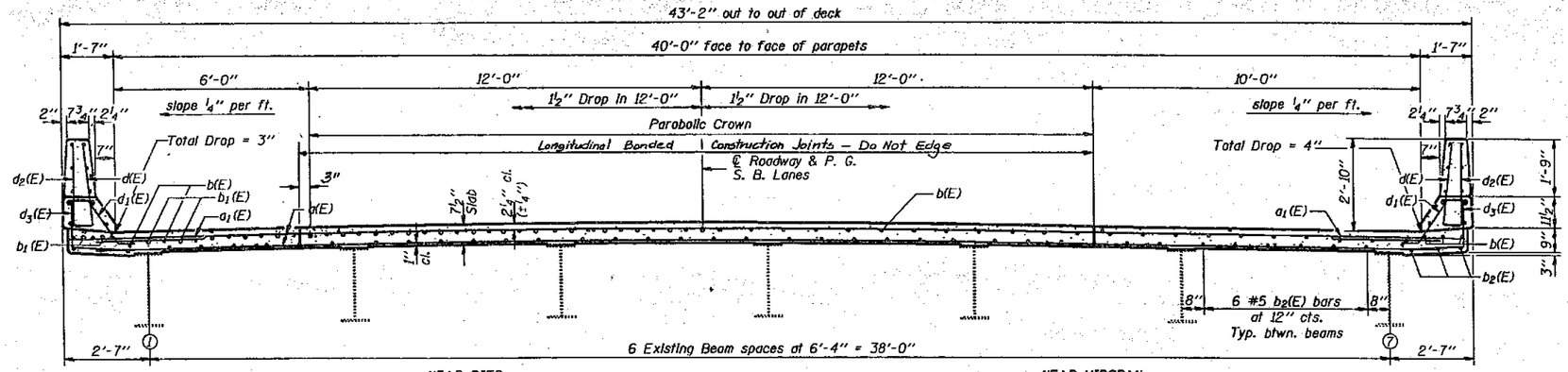
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	FRANKLIN	26	SHEET NO. 4
			16 SHEETS

(28-1B)D-1



HALF PLAN



NEAR PIER NEAR MIDSPAN

CROSS SECTION
(Looking South)

Notes: See sheets #5 and #6 of 16 for superstructure details.
parapet reinforcement and Bill of Material.
Reinforcement bars designated (E) shall be epoxy coated.
Reinforcement bars indicated thus 40 x 4 #5 etc. indicates
40 lines of bars with 4 lengths per line.
See sheet #1 of 16 for drain locations and sheet #5 of 16 for details.
Hatched area to be poured after superstructure forms have
been removed. Quantity of concrete to be included with Class X
Concrete Superstructure.
For Sec. A-A See Sht. 6 of 16.

MIN. BAR LAPS
#5 bars = 1'-8"

DESIGNED	Michael A. Stephenson
CHECKED	Timothy A. Craven
DRAWN	E. Vern Taylor
CHECKED	MAS GMG TAC

May 20 1993

EXAMINED Greg O. Kaspar
ENGINEER OF BRIDGE DESIGN

PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

APPROVED
DIRECTOR OF HIGHWAYS

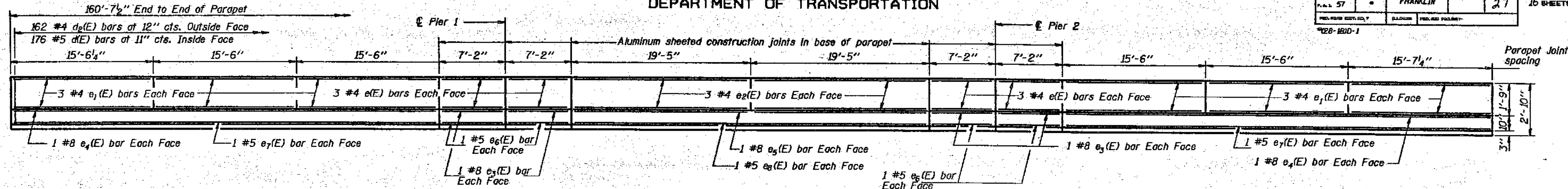
S-1-0 12-31-87

SUPERSTRUCTURE
F.A.I. RT. 57 SEC. (28-1B)D-1
FRANKLIN COUNTY
STATION 102+70.00

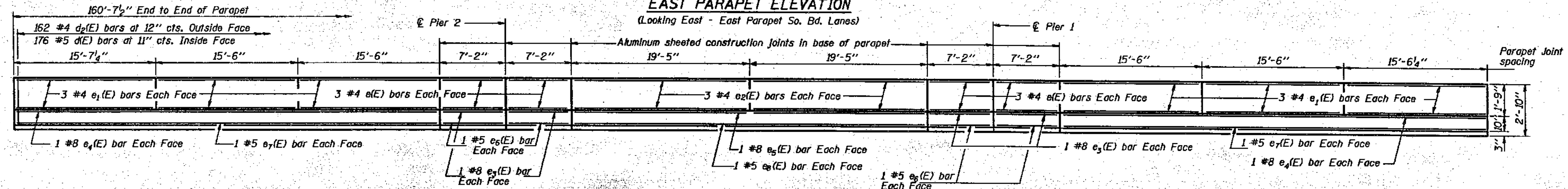
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN		27

SHEET NO. 5 — 16 SHEETS

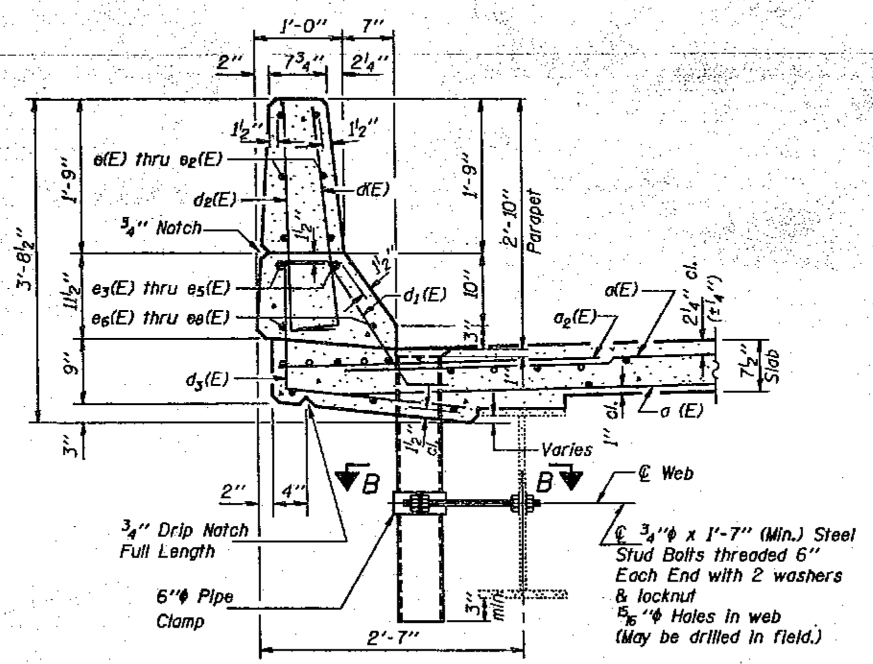
*(28-1B)D-1



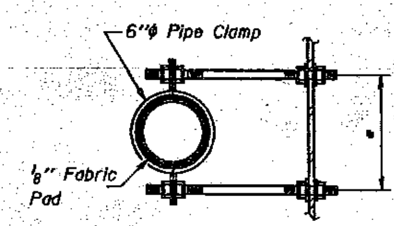
EAST PARAPET ELEVATION
(Looking East - East Parapet So. Bd. Lanes)



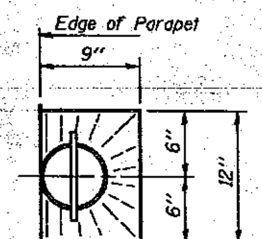
WEST PARAPET ELEVATION
(Looking West - West Parapet So. Bd. Lanes)



SECTION THRU PARAPET
See Plan view for Location of 6"ϕ drain.

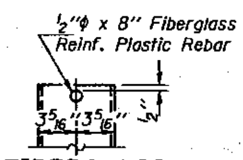


SECTION B-B

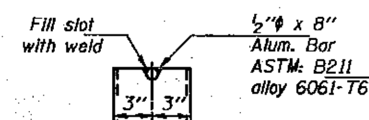


TOP PLAN

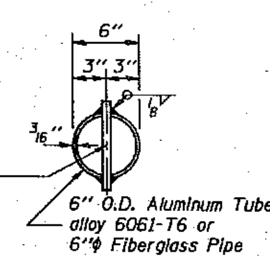
* Dimension as required by Pipe Clamp



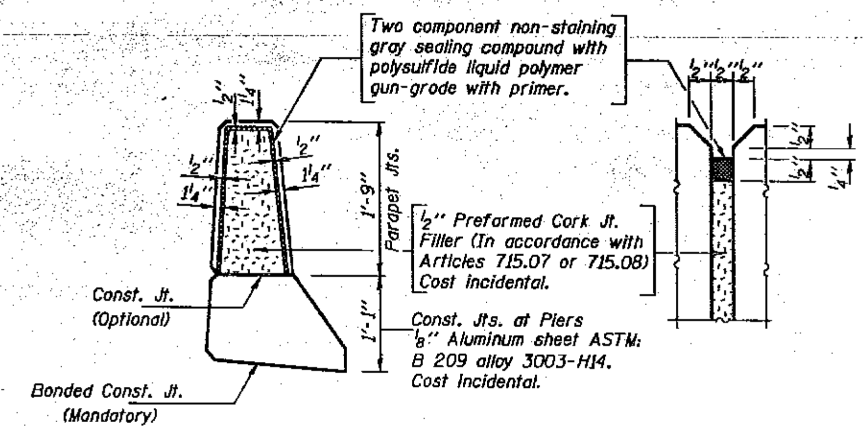
FIBERGLASS PIPE



ALUMINUM TUBE



TOP PLAN
(Showing Aluminum Tube)



PARAPET JOINT DETAILS

Notes:

The exterior surfaces of the Floor Drain shall be painted with the vinyl enamel paint as specified in the Standard Specifications. The exterior surface of the drain shall be cleaned and given a washcoat pretreatment in accordance with Steel Structural Painting Council's Spec. SSPC-SP1 & SSPC-Paint 27 prior to painting.

Fiberglass pipe shall conform to ASTM: D2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum. The surface of the Fiberglass pipe shall be free of bond inhibiting agents.

DESIGNED	Michael A. Stephenson
CHECKED	George A. Sharrett / Timothy A. Craven
DRAWN	E. Vern Taylor
CHECKED	MAS GAG TAC

May 20 1993

EXAMINED: Oraj J. Kaspar — ENGINEER OF BRIDGE DESIGN

PASSED: Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES

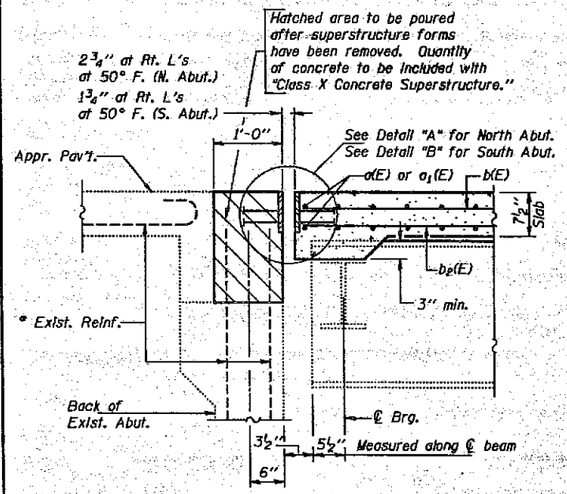
APPROVED: ______ — DIRECTOR OF HIGHWAYS

SOUTH BOUND LANES
SUPERSTRUCTURE DETAILS
F.A.I. RT. 57 SEC. (28-1B)D-1
FRANKLIN COUNTY
STATION 102+70.00

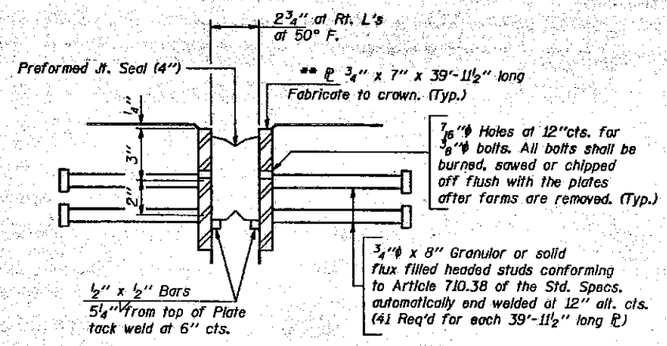
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTR. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	-	FRANKLIN	28	SHEET NO. 6
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT-		16 SHEETS

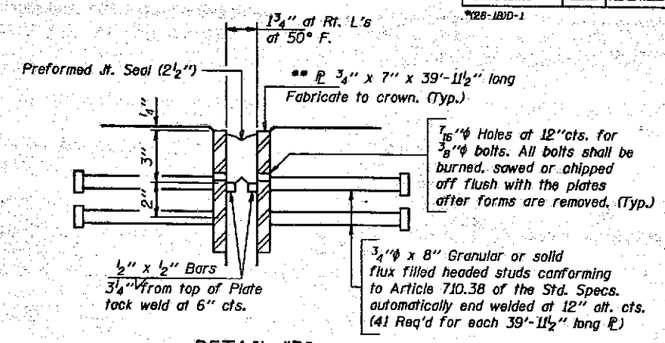
*(28-1B)D-1



SECTION A-A



DETAIL "A"

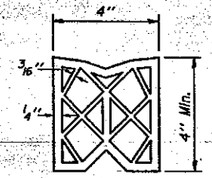


DETAIL "B"

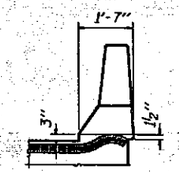
** Furnish in segments of 20 ft. maximum length. Maximum space between installed segments shall be ½". Seal space with Silicone Sealant suitable for Structural Steel.

Notes: After fabrication all surfaces of the steel plates shall be given one shop coat of paint specified for Structural Steel. No field painting required.

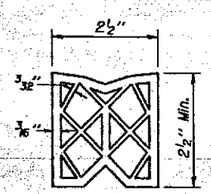
* Existing vertical Reinforcement in the back wall and the longitudinal reinforcement in the approach slab shall be cleaned and straightened and incorporated into new construction. Cost incidental to "Concrete Removal."



PREFORMED JOINT SEAL (4")
North Abutment



END TREATMENT
Typ. for (4") and (2½").



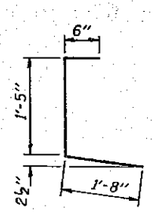
PREFORMED JOINT SEAL (2½")
South Abutment

SUPERSTRUCTURE BILL OF MATERIAL

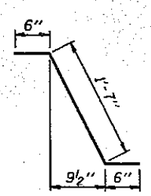
Bar	No.	Size	Length	Shape
a(E)	470	#5	41'-2"	
a1(E)	276	#6	4'-0"	
b(E)	235	#5	33'-5"	
b1(E)	88	#6	25'-8"	
b2(E)	252	#5	28'-2"	
d(E)	352	#5	3'-0"	L
d1(E)	352	#5	2'-7"	
d2(E)	324	#4	3'-0"	L
d3(E)	324	#4	3'-7"	
e(E)	48	#4	6'-11"	
e1(E)	72	#4	15'-3"	
e2(E)	24	#4	19'-2"	
e3(E)	16	#8	6'-11"	
e4(E)	8	#8	46'-3"	
e5(E)	4	#8	38'-7"	
e6(E)	16	#5	6'-11"	
e7(E)	8	#5	46'-3"	
e8(E)	4	#5	38'-7"	
Reinforcement Bars, Epoxy Coated		Lbs.	47,920	
*** Class X Concrete Superstructure		Cu. Yd.	215.4	

Reinforcement bars designated (E) shall be epoxy coated.

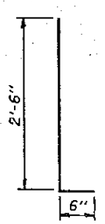
*** Includes 17.2 cu. yds. for Abutments and approaches.



BAR d3(E)



BAR d1(E)



BARS d(E) & d2(E)

DESIGNED	Michael A. Stephenson
CHECKED	George A. Adams
CHECKED	Timothy A. Craven
DRAWN	E. Vern Taylor
CHECKED	MAS GAG TAC

May 20 1993

EXAMINED Engineer of Bridge Design

PASSED Engineer of Bridges and Structures

APPROVED Director of Highways

SUPERSTRUCTURE DETAILS
F.A.I. RT. 57 SEC. (28-1B)D-1
FRANKLIN COUNTY
STATION 102+70.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* INTERIOR BEAM MOMENT TABLE		0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or Pier 2	0.5 Sp. 2
Is	(In⁴)	5900	5900	5900
Ic	(In⁴)	15782	—	15782
Ss	(In³)	359	359	359
Sc	(In³)	530	—	530
DL	(K/ft.)	.75	1.03	.75
M_{DL}	('K)	169	271	53
fs_{DL} non-comp	(k.s.i.)	5.6	9.1	1.8
s_{DL}	(K/ft.)	.276	—	.276
Ms_{DL}	('K)	69	—	37
M_{LL}	('K)	329	160	267
M (Imp)	('K)	92	45	75
M (Total)		490	205	379
fs (Comp)	(k.s.i.)	11.1	6.9	8.6
fs (Total)	(k.s.i.)	16.7	16.0	10.4
VR	(K)	41	—	40

* INTERIOR BEAM REACTION TABLE		Abuts.	Piers
R_{DL}	(K)	22.2	59.7
R_{LL}	(K)	32.8	38.4
Imp.	(K)	9.2	10.8
R (Total)	(K)	64.2	108.9

* Service Load Values.

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total).

Ic and Sc are the moment of inertia and section modulus of the composite section used in computing fs (Total).

VR is the maximum live Load + Impact shear range in span.

M (Total) = $Ms_{DL} + (M_{LL} + I)$

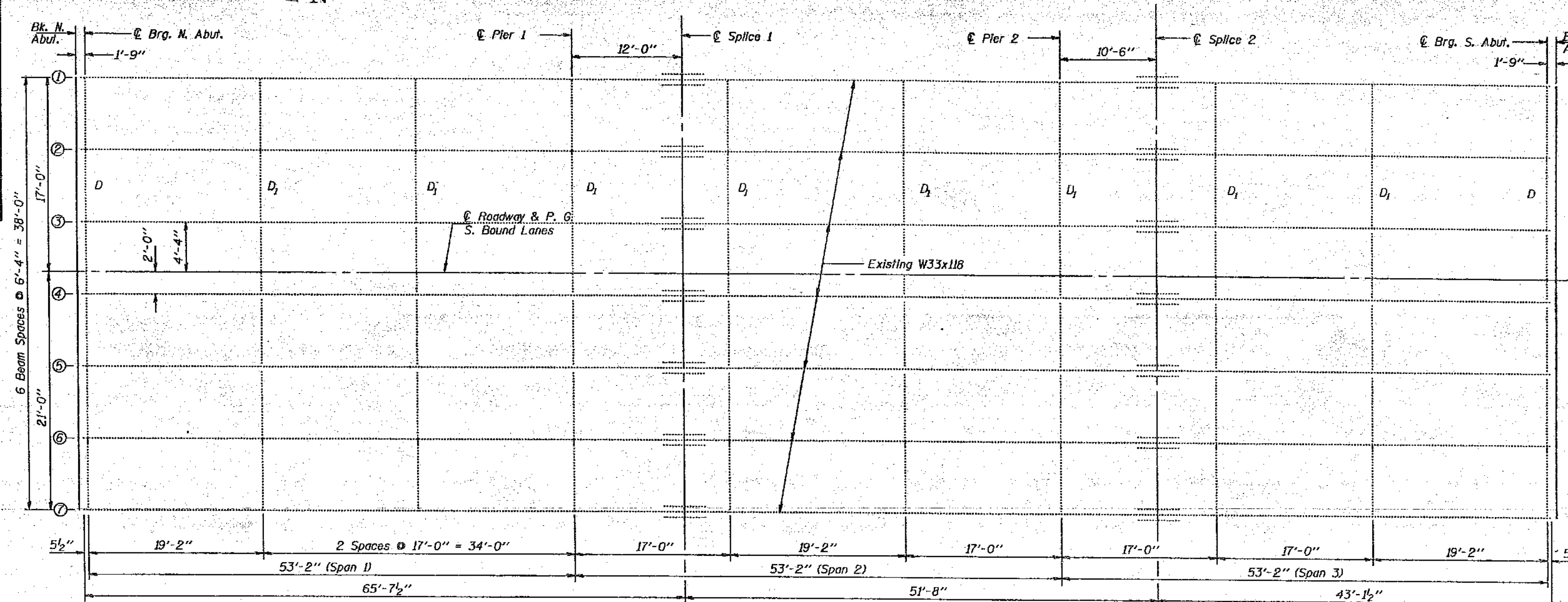
fs (Total) is the sum of the stresses due to $[M_{DL} + Ms_{DL} + (M_{LL} + I)]$.

M_{DL} is the Moment due to Dead Loads on non-composite section.

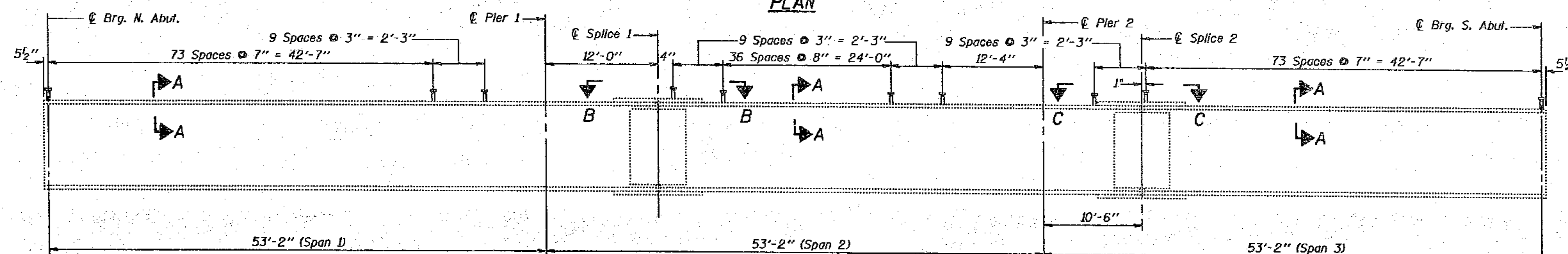
Ms_{DL} is the Moment due to Dead Loads on composite section.

M_{LL} is the Moment due to Live Loads on non-composite or composite section.

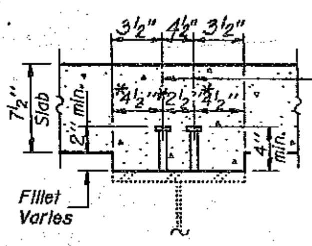
I is the Live Load Impact.



PLAN



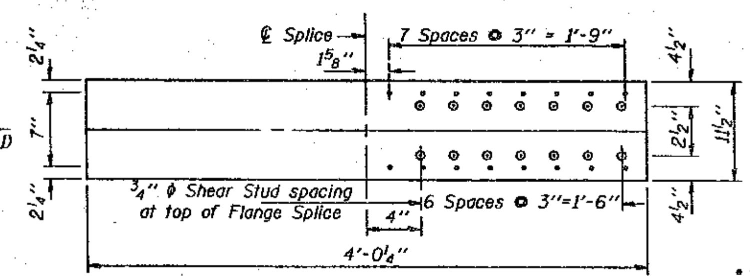
ELEVATION
(Typ. Stud Shear Connector spacing for all Beams)



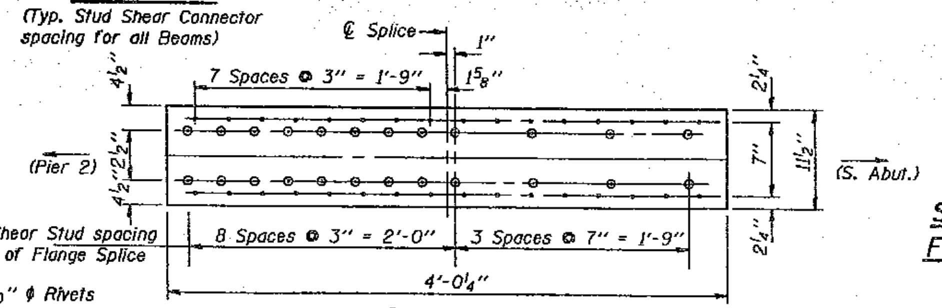
SECTION A-A

¾" Granular or solid flux filled headed studs, conforming to the requirements of Art. 710.38 of the Std. Specs. Automatically end welded to flange. (3094 Required)

* @ Splice only



VIEW B-B



VIEW C-C

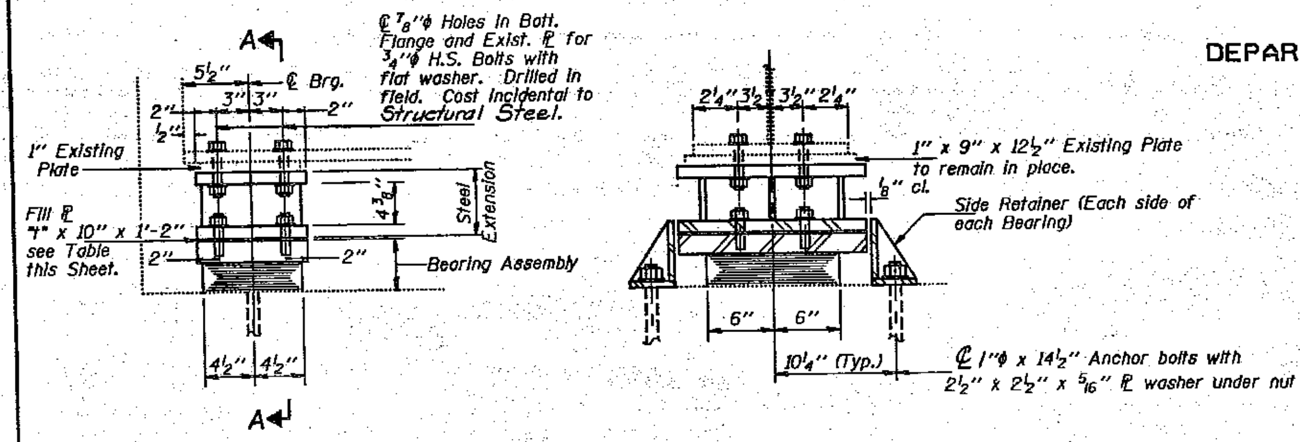
• - Existing ⅞" ϕ Rivets
⊖ - ¾" ϕ Shear Studs

DESIGNED	Michael A. Stephenson
CHECKED	Timothy A. Craven
DRAWN	E. Vern Taylor
CHECKED	MAS GAG TAC

May 20 1993
EXAMINED Izaj D. Kaspar — ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

STRUCTURAL STEEL DETAILS
F.A.I. RT. 57 SEC. (28-1B)D-1
FRANKLIN COUNTY
STATION 102+70.00

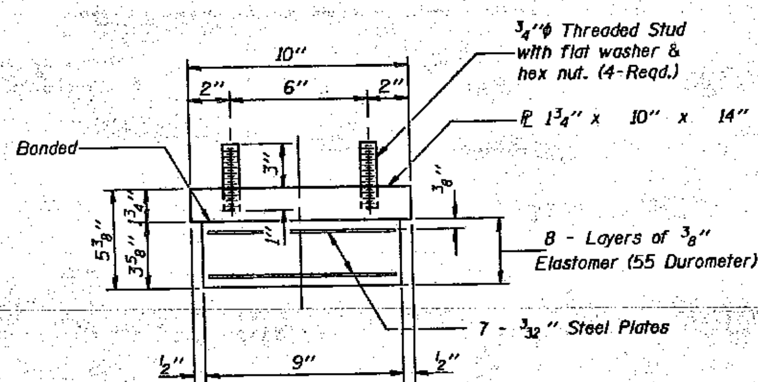
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION AT NORTH ABUT.

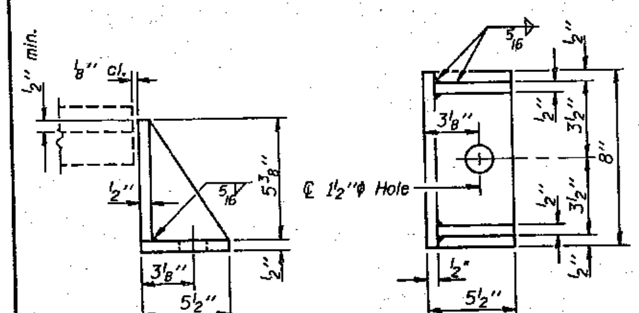
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.



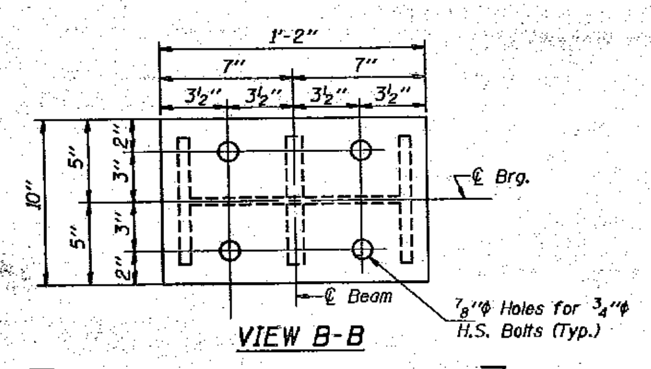
BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly.

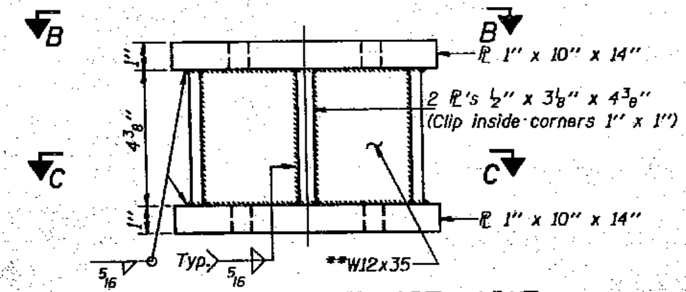


SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

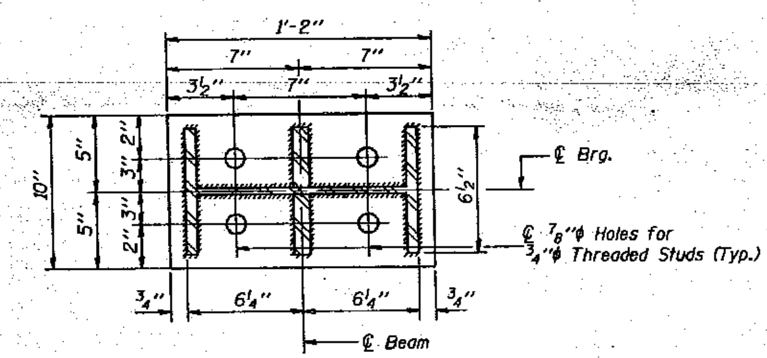


VIEW B-B



STEEL EXTENSION AT NORTH ABUT.

**Equivalent welded plates will be allowed in lieu of W12x35 section.



SECTION C-C

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	7
*** Jack and Remove Existing Bearings	Each	7

*** See Sheet 11 of 16 for the Jacking locations.

* Based on the existing elevations shown on sheet #11 of 16. The Contractor shall verify these elevations and make adjustments if necessary.

Dimension / Location	Bm. #2	Bm. #3	Bm. #4	Bm. #5	Bm. #6	Bm. #7
* Dim. "Y"	9/16"	9/16"	7/8"	3/8"	7/16"	3/8"

Beam #1, No Fill ℞ Required.

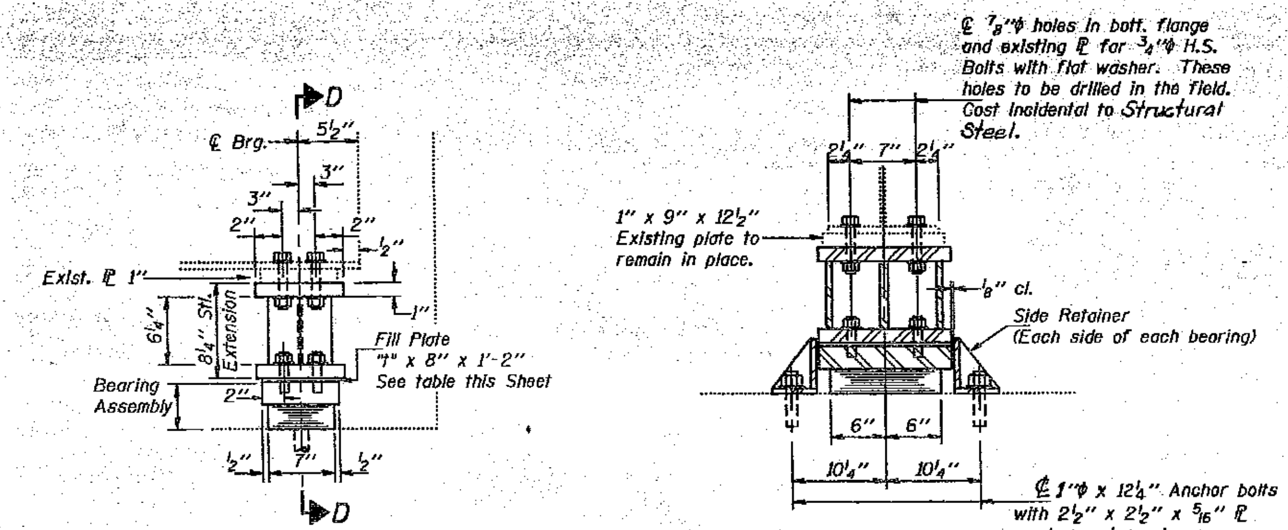
For anchor bolt installation details see sheet #12 of 16.
Existing anchor bolts which are not under side retainer shall be covered with a 2" thick layer of cement mortar. Cost incidental to "Jack and Remove Existing Bearing".
For anchor bolt location see sheets #13 and 14 of 16.

DESIGNED Michael A. Stephenson / George A. Shaw
CHECKED Timothy A. Cowen
DRAWN E. Vern Taylor
CHECKED MAS GAG TAC

May 20 1993
EXAMINED Oraj J. Kaspar — ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

NORTH ABUTMENT
BEARING DETAILS
F.A.I. RT. 57 SEC. (28-1B)D-1
FRANKLIN COUNTY
STATION 102+70.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION AT SOUTH ABUT.

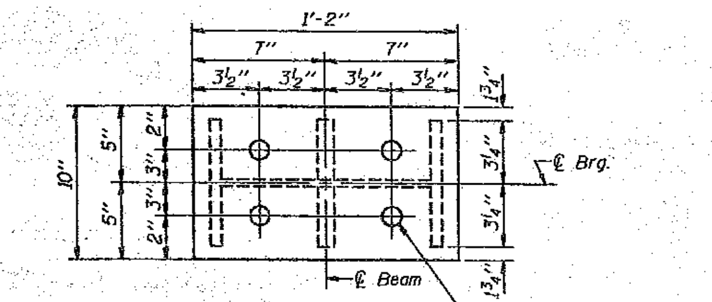
SECTION D-D

TYPE I ELASTOMERIC EXP. BRG.

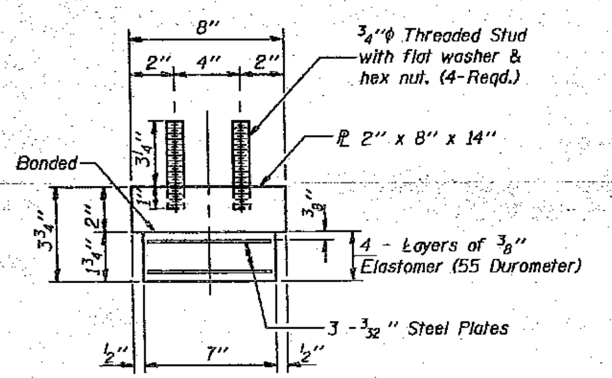
* Based on the existing elevations shown on sheet #11 of 16. The Contractor shall verify these elevations and make adjustments if necessary.

Dimension / Location	Bm. #1	Bm. #2	Bm. #3	Bm. #4	Bm. #6
* Dim. "T"	⅜"	15/16"	⅞"	⅞"	1/16"

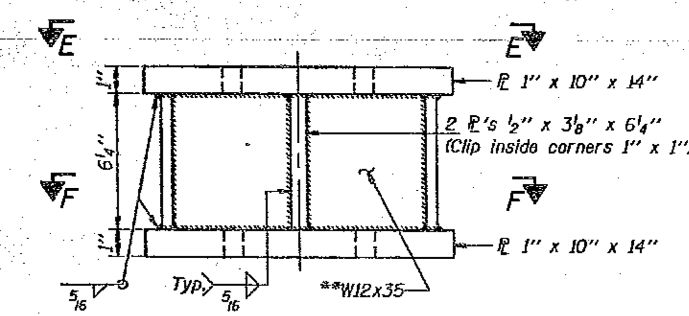
Beams #5 & #7, No Fill ℗ Required.



VIEW E-E



BEARING ASSEMBLY



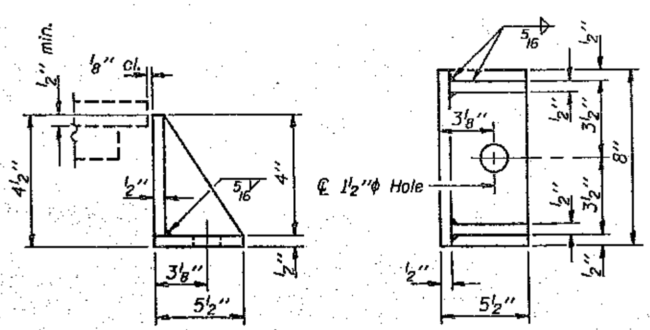
STEEL EXTENSION AT SOUTH ABUT.

**Equivalent welded plates will be allowed in lieu of W12x35 section.

BILL OF MATERIAL

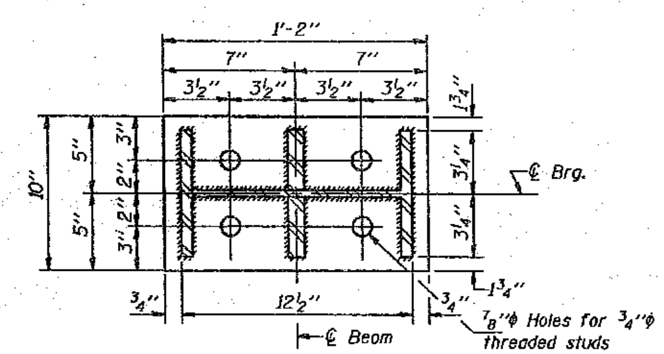
	Item	Unit	Total
	Elastomeric Bearing Assembly Type I	Each	7
***	Jack and Remove Existing Bearings	Each	7

***See Sheet #11 of 16 for the Jacking locations.



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



SECTION F-F

Notes: For anchor bolt installation details see sheet #12 of 16.
Existing anchor bolts which are not under side retainer shall be covered with a 2" thick layer of cement mortar. Cost incidental to "Jack and Remove Existing Bearing".
For anchor bolt location see sheets #13 and #14 of 16.

May 20 1993

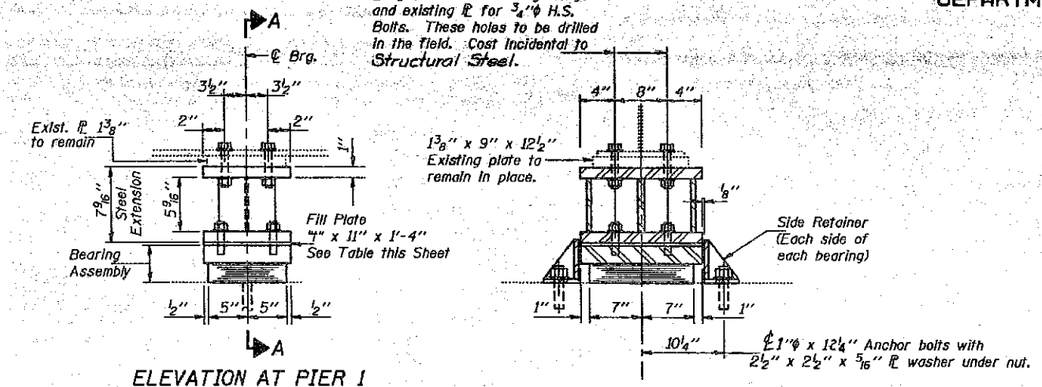
DESIGNED	Michael A. Stephenson / George A. Chaney
CHECKED	Timothy A. Cramer
DRAWN	E. Vern Taylor
CHECKED	MAS GAC TAC

EXAMINED — ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

SOUTH ABUTMENT
BEARING DETAILS
F.A.I. RT. 57 SEC. (28-1B)D-1
FRANKLIN COUNTY
STATION 102+70.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

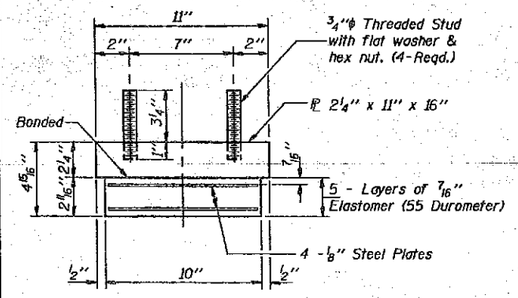
ROUTE SEC.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-1B)D-1	FRANKLIN	32	SHEET NO. 10 16 SHEETS
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT		



ELEVATION AT PIER 1

SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.



BEARING ASSEMBLY

Note: Shim Plates shall not be placed under Bearing Assembly.

* Based on the existing elevations shown on Sheet #11 of 16. The Contractor shall verify these elevations and make adjustments if necessary.

Dimension / Location	Bm. #2	Bm. #3	Bm. #4	Bm. #5	Bm. #6	Bm. #7
* Dim. "A"	9/16"	½"	13/16"	3/16"	¼"	3/16"

Beam #1, No Fill ℄ Required.

BILL OF MATERIAL

	Item	Unit	Total
	Elastomeric Bearing Assembly Type I	Each	7
***	Jack and Remove Existing Bearings	Each	7

*** See Sheet #11 of 16 for the Jacking locations.

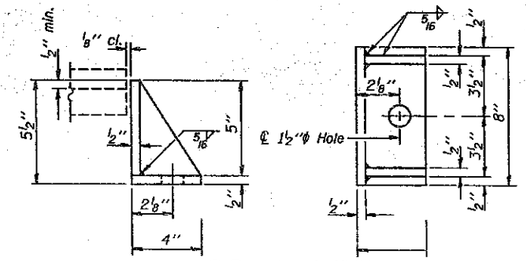
DESIGNED	Michael A. Stephenson, George F. Shaw
CHECKED	Timothy A. Crane
DRAWN	E. Vern Taylor
CHECKED	MAS Date TAC

May 20 1993

EXAMINED Engineer of Bridge Design

PASSED Ralph E. Anderson, Engineer of Bridges and Structures

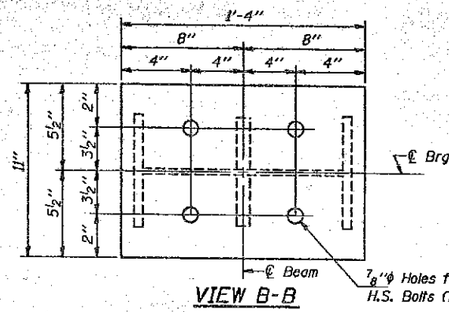
APPROVED Director of Highways



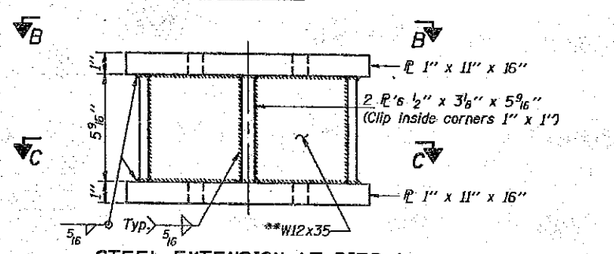
SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

Notes: For anchor bolt installation details see sheet #12 of 16.
Existing anchor bolts which are not under side retainer shall be covered with a 2" thick layer of cement mortar. Cost incidental to "Jack and Remove Existing Bearing".
For anchor bolt location see sheets #13 and #14 of 16.

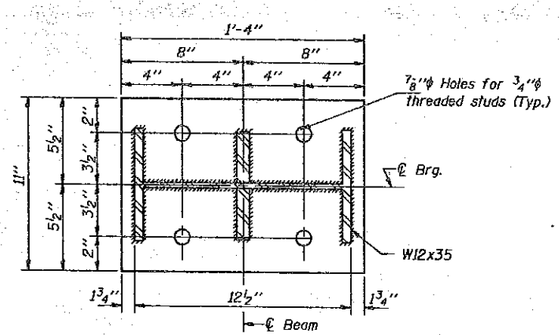


VIEW B-B



STEEL EXTENSION AT PIER 1

**Equivolent welded plates will be allowed in lieu of W12x35 section.

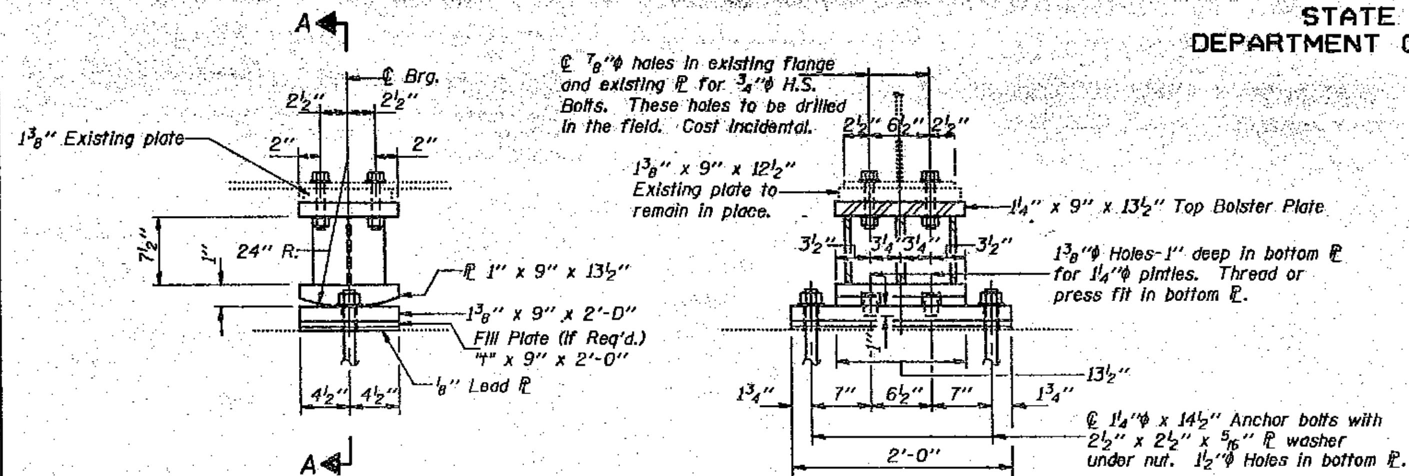


SECTION C-C

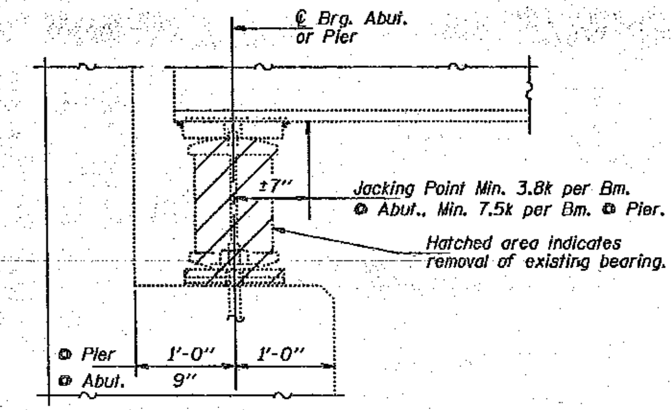
PIER 1
BEARING DETAILS
F.A.I. RT. 57 SEC. (28-1B)D-1
FRANKLIN COUNTY
STATION 102+70.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.I. RTE. 57	SECTION (28-1B)D-1	COUNTY FRANKLIN		33	SHEET NO. 11 — 16 SHEETS



FIXED BEARING

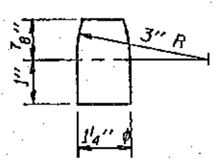


JACK AND REMOVE EXISTING BEARINGS
(Dimensions are at Rt. ∟'s)

* EXISTING SEAT ELEVATIONS

Location	N. Abut.	Pier #1	Pier #2	S. Abut.
Beam #1	413.27	413.18	413.28	413.22
Beam #2	413.35	413.26	413.36	413.30
Beam #3	413.44	413.35	413.45	413.39
Beam #4	413.42	413.34	413.45	413.40
Beam #5	413.41	413.33	413.45	413.42
Beam #6	413.28	413.20	413.32	413.29
Beam #7	413.16	413.08	413.20	413.17

* From Field Survey



PINTLE

Notes:

For anchor bolt installation details see sheet #12 of 16.

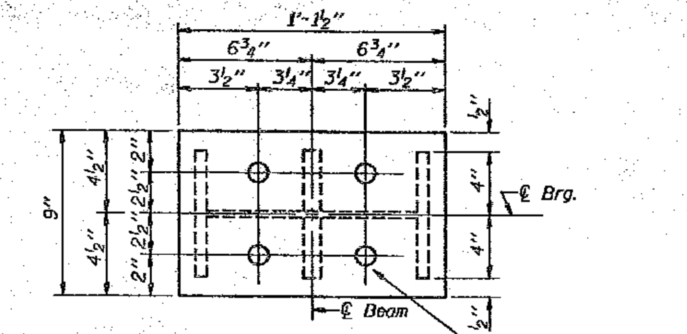
Existing anchor bolts which are not under side retainer shall be covered with a 2" thick layer of cement mortar. Cost incidental to "Jack and Remove Existing Bearing."

For anchor bolt Location see Sheets #13 and #14 of 16.

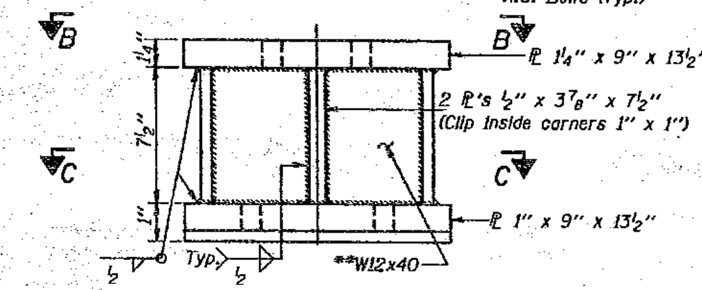
Dimension / Location	Bm. #1	Bm. #2	Bm. #3	Bm. #4	Bm. #6
* Dim. "t"	1/16"	9/16"	9/16"	11/16"	1/16"

Beams #5 & #7, No Fill ℞ Required.

* Based of the existing elevations shown in table on this sheet. The Contractor shall verify these elevations and make adjustments if necessary.

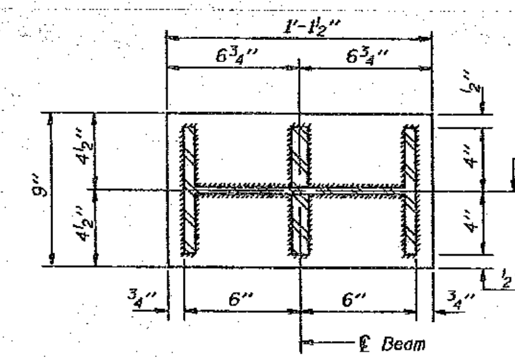


VIEW B-B



STEEL EXTENSION AT PIER 2

** Equivalent welded plates will be allowed in lieu of W12x40 section.



SECTION C-C

JACK AND REMOVE EXISTING BEARING PROCEDURE

1. The Contractor shall submit for approval by the Engineer, plans for jacking prior to commencing any work at the bearings. Dead Load = 3.8K at each beam at abutments and 7.5K at each beam at piers without concrete deck. Jack Capacity = 8 Tons min.
2. Jacking and removing existing bearings shall be done after deck removal is completed and before the new deck is poured.
3. All beams at one abutment or at one pier shall be lifted simultaneously.
4. Jacking shall be limited to a maximum of ¼" lift.
5. The existing anchor bolts shall be removed or cut off flush and ground smooth with the bridge seat. The rockers and bottom plates shall be removed leaving the existing top plate intact. The existing holes shall be filled with concrete and new holes drilled at locations specified.
6. The new elastomeric bearings and steel extensions shall be placed and the jacks shall be lowered before the new deck is poured.

BILL OF MATERIAL

Item	Unit	Total
Jack and Remove Existing Bearings	Each	7

DESIGNED Michael A. Stechmann, George A. Haacke
CHECKED Timothy A. Crane
DRAWN E. Vern Taylor
CHECKED MAS GAG TAC

May 20 1993
EXAMINED Ivan J. Kaspar — ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

PIER 2
BEARING DETAILS
F.A.I. RT. 57 SEC. (28-1B)D-1
FRANKLIN COUNTY
STATION 102+70.00

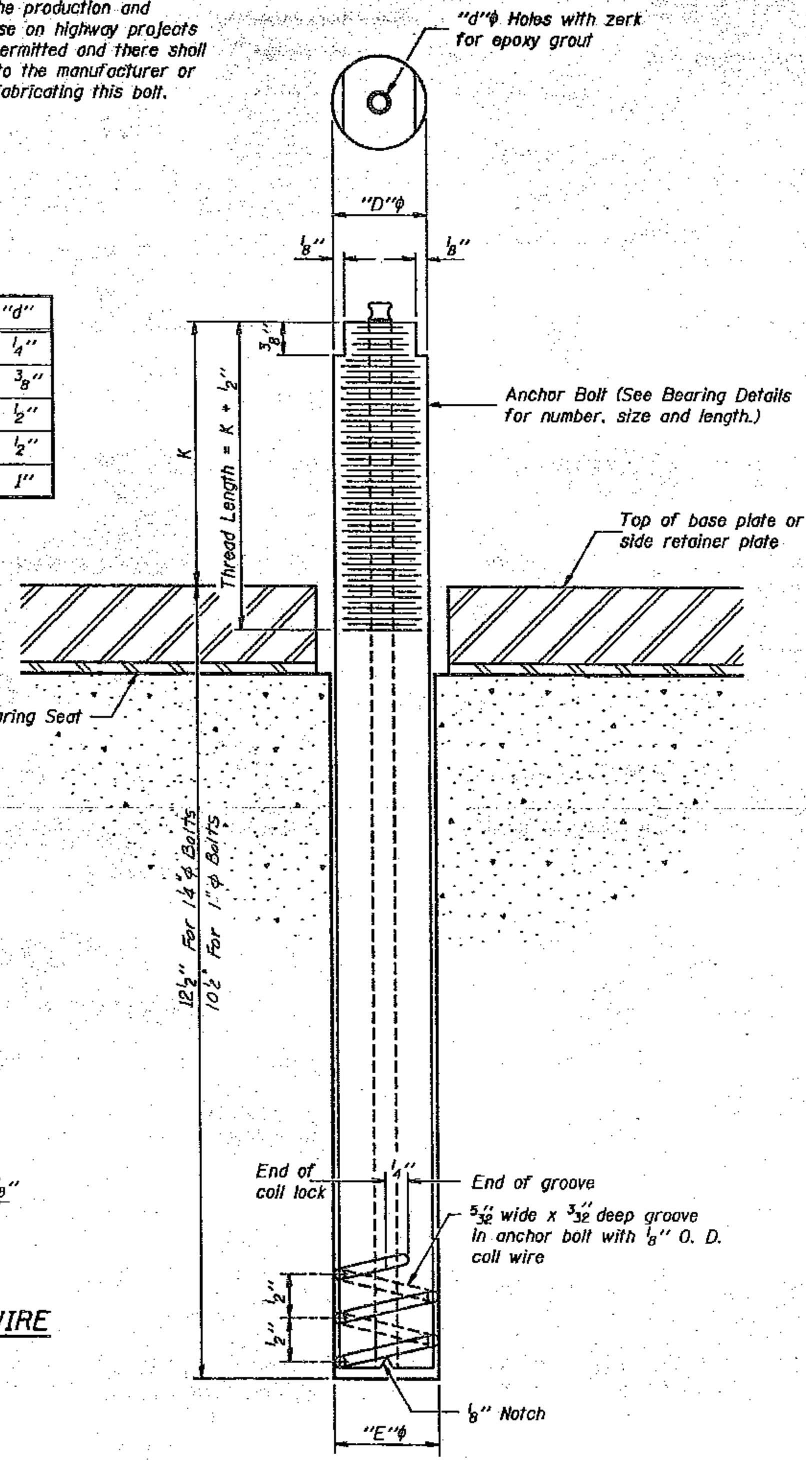
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN		34
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

*(28-1B)D-1

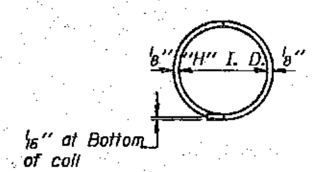
SHEET NO. 12
16 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

D	E	H	K	"d"
1"	1 1/8"	13/16"	1 3/4"	1/4"
1 1/4"	1 3/8"	1 1/16"	2"	3/8"
1 1/2"	1 5/8"	1 5/16"	2 1/8"	1/2"
2"	2 1/8"	1 13/16"	2 7/8"	1/2"
2 1/2"	2 5/8"	2 5/16"	3 3/8"	1"



ILLINOIS COIL-LOCK ANCHOR BOLT



PLAN-COIL WIRE

MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A519, Grade 1026 and supplied with hexagonal nuts and cut washers.
The coil wire shall be made of any suitable soft steel wire.
The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.
The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes in accordance with the manufacturer's recommendations and procedures.
The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:
1. A threaded rod stud with nut and washer conforming to ASTM A307.
2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or in accordance with the manufacturer's recommendation after beams or girders have been erected and adjusted.
Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.
The anchor bolts, furnished and installed and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for "Furnishing and Erecting Structural Steel".

DESIGNED Michael A. Stephenson
CHECKED George A. Howell / Timothy R. Craven
DRAWN E. Vern Taylor
CHECKED MAS GAG TRC
ABB-1 12-1-83

May 20 1993
EXAMINED Graj D. Kaspar — ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

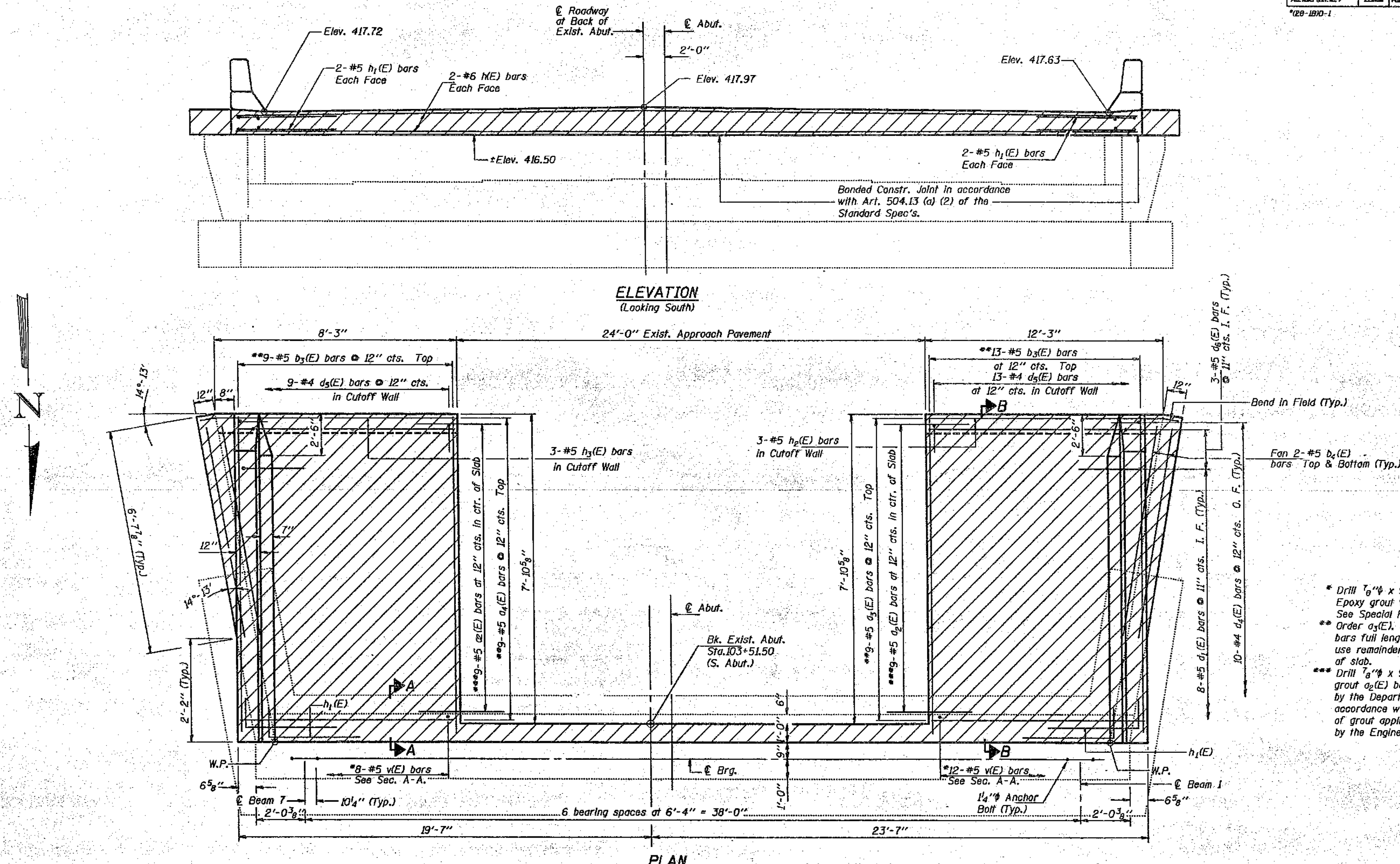
ANCHOR BOLT DETAILS
FOR BEARINGS
F.A.I. RT. 57 SEC. (28-1B)D-1
FRANKLIN COUNTY
STATION 102+70.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN		35

SHEET NO. 13
16 SHEETS

*(28-1B)D-1



* Drill ⅞"φ x 9" Min. hole. Epoxy grout v(E) bars. See Special Provisions.
** Order a_3(E), a_4(E) and b_3(E) bars full length. Cut to fit and use remainder of bars in bottom of slab.
*** Drill ⅞"φ x 9" Min. hole. Epoxy grout a_2(E) bars. Use a grout approved by the Department or epoxy grout in accordance with BSP-11. The method of grout application shall be approved by the Engineer. See Special Provisions.

Notes: Hatched area to be poured after superstructure forms have been removed. Quantity of concrete included with "Class X Concrete Superstructure" on sheet #6 of 16. Quantity for End Post is billed with "Class X Conc. Superstr."
Existing reinforcement extending into removed area shall be cleaned, straightened and incorporated into the new construction.
Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 2 x 2-#6 etc. indicates 2 lines of bars with 2 lengths per line.
For anchor bolt installation details see sheet #12 of 16.
All edges Shall have Standard ¾" chamfer.
Work this sheet with sheet #15 of 16.

DESIGNED	Michael A. Stephenson / George A. Sharp
CHECKED	Timothy A. Crane
DRAWN	E. Vern Taylor
CHECKED	MAS GAG TAC

May 20 1993
EXAMINED Orazi J. Kaspar — ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

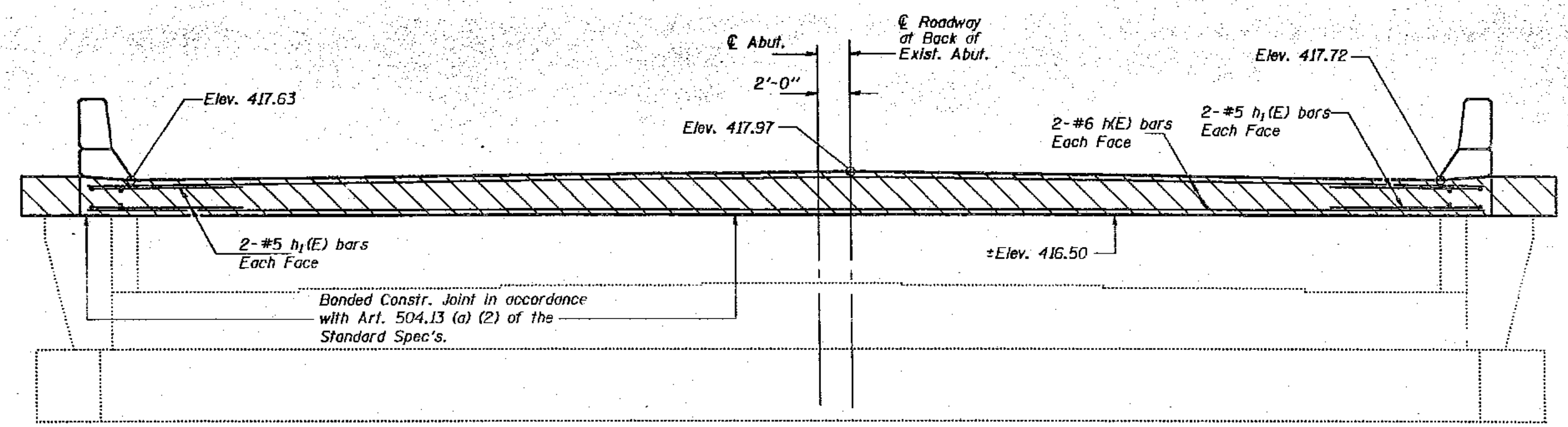
SOUTH ABUTMENT
F.A.I. RT. 57 SEC. (28-1B)D-1
FRANKLIN COUNTY
STATION 102+70.00

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN		36

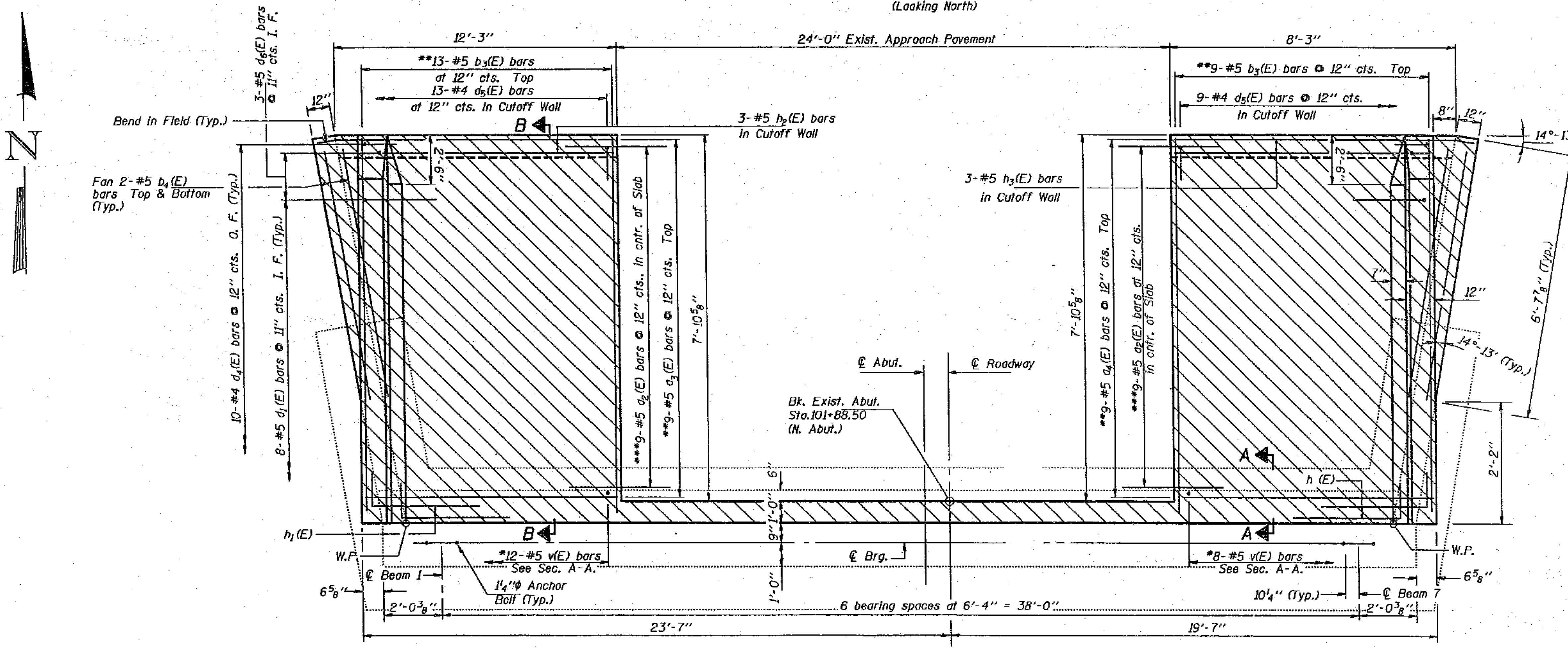
SHEET NO. 14
16 SHEETS

*028-1B)D-1

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION
(Looking North)



PLAN

Notes: Hatched area to be poured after superstructure forms have been removed.
Quantity of concrete included with "Class X Concrete Superstructure" on sheet #6 of 16. Quantity for End Post is billed with "Class X Conc. Superstr."
Existing reinforcement extending into removed area shall be cleaned, straightened and incorporated into the new construction.
Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 2 x 2-#6 etc. indicates 2 lines of bars with 2 lengths per line.
For anchor bolt installation details see sheet #12 of 16.
All edges Shall have Standard ¾" chamfer.
Work this sheet with sheet #15 of 16.

* Drill ⅞"φ x 9" Min. hole. Epoxy grout v(E) bars. See Special Provisions.
** Order $a_3(E)$, $a_4(E)$ and $b_3(E)$ bars full length. Cut to fit and use remainder of bars in bottom of slab.
*** Drill ⅞"φ x 9" Min. hole. Epoxy grout $a_2(E)$ bars. Use a grout approved by the Department or epoxy grout in accordance with BSP-11. The method of grout application shall be approved by the Engineer. See Special Provisions.

DESIGNED	Michael A. Stahmann / George A. Shaw
CHECKED	Timothy A. Crawford
DRAWN	E. Vern Taylor
CHECKED	MAS GAG TAC

May 20 1993
EXAMINED Ivan J. Kaspar — ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

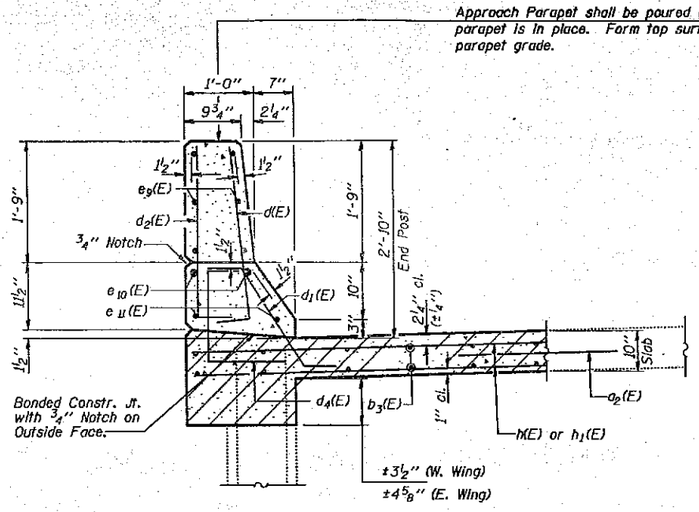
NORTH ABUTMENT
F.A.I. RT. 57 SEC. (28-1B)D-1
FRANKLIN COUNTY
STATION 102+70.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

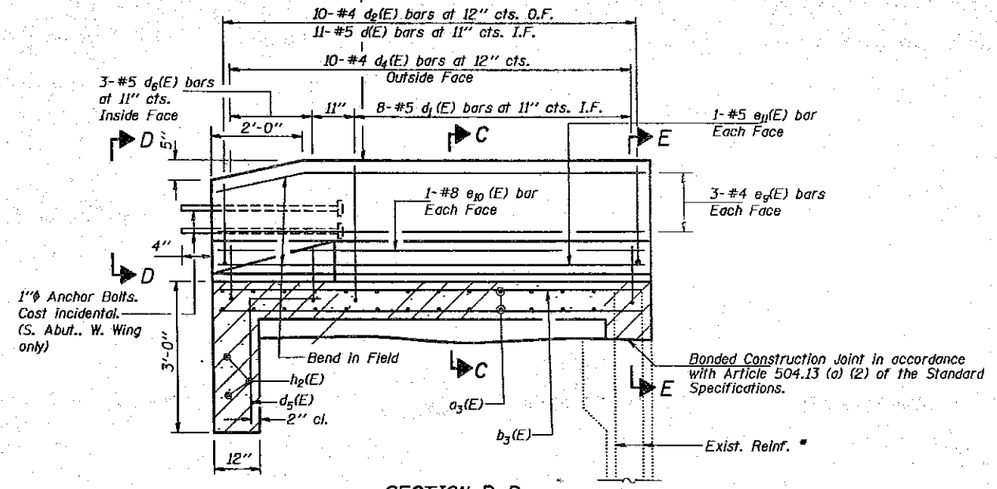
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	e	FRANKLIN	37	SHEET NO. 15
				16 SHEETS

*(28-1B)D-1

Approach Parapet shall be poured after bridge parapet is in place. Form top surface to match parapet grade.

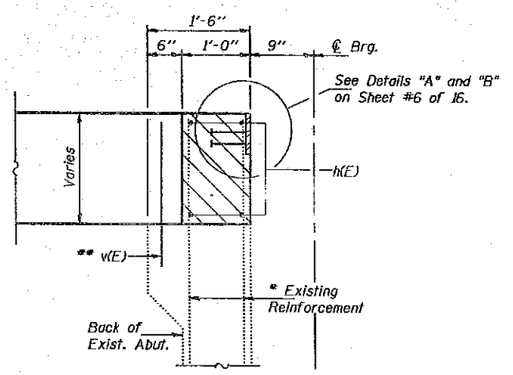


SECTION E-E



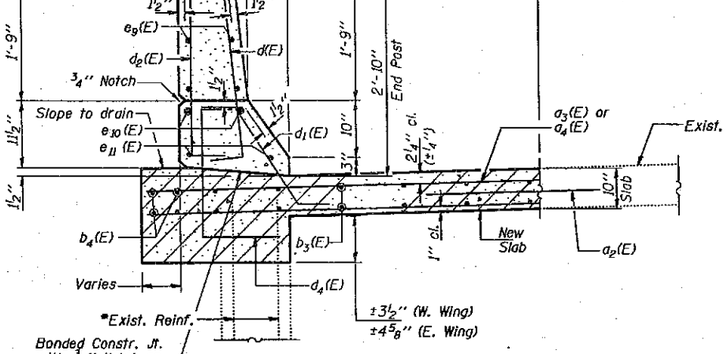
SECTION B-B

* Existing Reinforcement extending into new Construction shall be cleaned, straightened and incorporated into new Construction. Cost is incidental to "Concrete Removal."



SECTION A-A

** Drill ⅞"ϕ x 9" min. holes and epoxy grout v(E) bars in accordance with Special Provision BSP-11 or grout approved by the Department. Cost shall be incidental to "Reinforcement Bars (Epoxy Coated)".



SECTION C-C

Notes: Area to be poured after Superstructure forms have been removed.
Concrete quantity to be billed with "Class X Concrete Superstructure." See Sheet #6 of 16.
Reinforcement bars designated (E) shall be Epoxy coated.

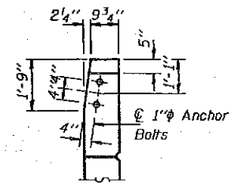
DESIGNED	Michael A. Stephenson
CHECKED	Timothy A. Clement
DRAWN	E. Vern Taylor
CHECKED	MAS GAG TAC

May 20 1993

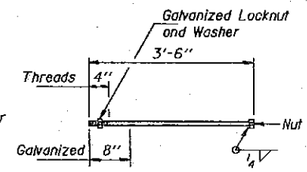
EXAMINED Raj D. Kaspar — ENGINEER OF BRIDGE DESIGN

PASSED Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES

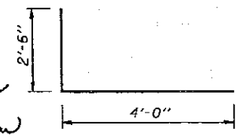
APPROVED — DIRECTOR OF HIGHWAYS



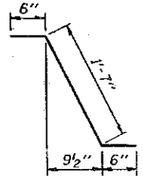
VIEW D-D



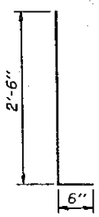
1"ϕ ANCHOR BOLT
(S. Abut., W. Wing only)



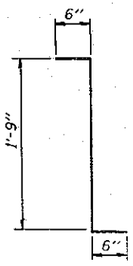
BAR $h_1(E)$



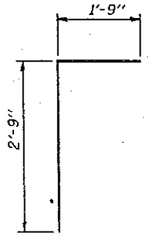
BAR $d_1(E)$



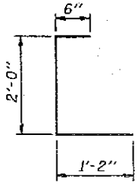
BARS $d(E)$ & $d_2(E)$



BAR $d_6(E)$



BAR $d_5(E)$



BAR $d_4(E)$

ABUTMENTS & APPROACHES
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$a_2(E)$	36	#5	3'-0"	—
$a_3(E)$	18	#5	26'-0"	——
$a_4(E)$	18	#5	18'-0"	——
$b_3(E)$	44	#5	17'-2"	——
$b_4(E)$	16	#5	7'-6"	——
d(E)	44	#5	3'-0"	L
$d_1(E)$	32	#5	2'-7"	⌐
$d_2(E)$	40	#4	3'-0"	L
$d_4(E)$	40	#4	3'-8"	⌐
$d_5(E)$	44	#4	4'-6"	⌐
$d_6(E)$	12	#5	2'-9"	⌐
$e_9(E)$	24	#4	8'-7"	——
$e_{10}(E)$	8	#8	8'-7"	——
$e_{11}(E)$	8	#5	8'-7"	——
h(E)	8	#6	39'-9"	——
$h_1(E)$	16	#5	6'-6"	L
$h_2(E)$	6	#5	12'-0"	——
$h_3(E)$	6	#5	8'-0"	——
v(E)	40	#5	2'-0"	—
Reinforcement Bars, Epoxy Coated			Lbs.	3,460

Reinforcement bars designated (E) shall be epoxy coated.

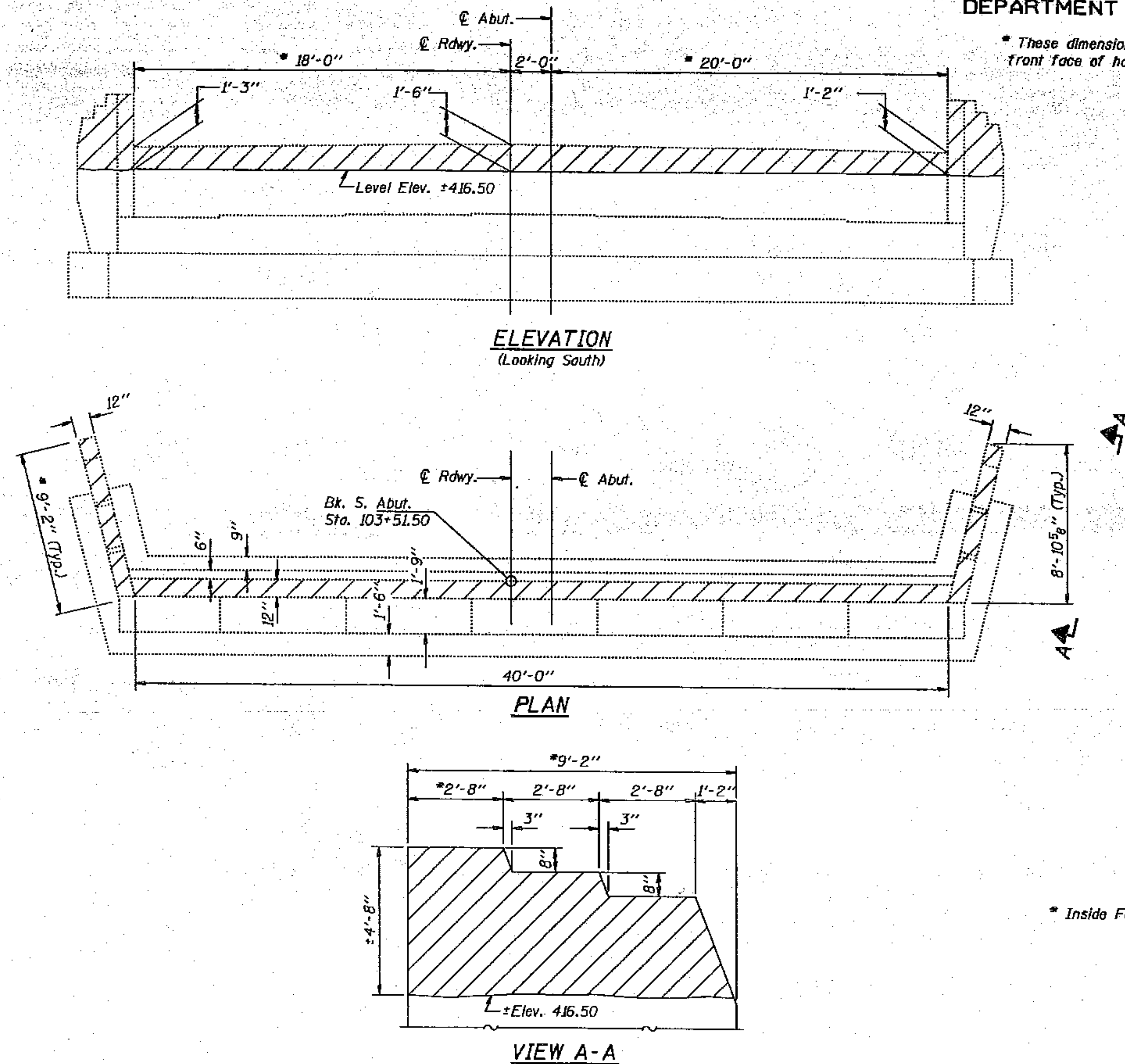
Notes: Work this sheet with Sheets #13 & #14 of 16.

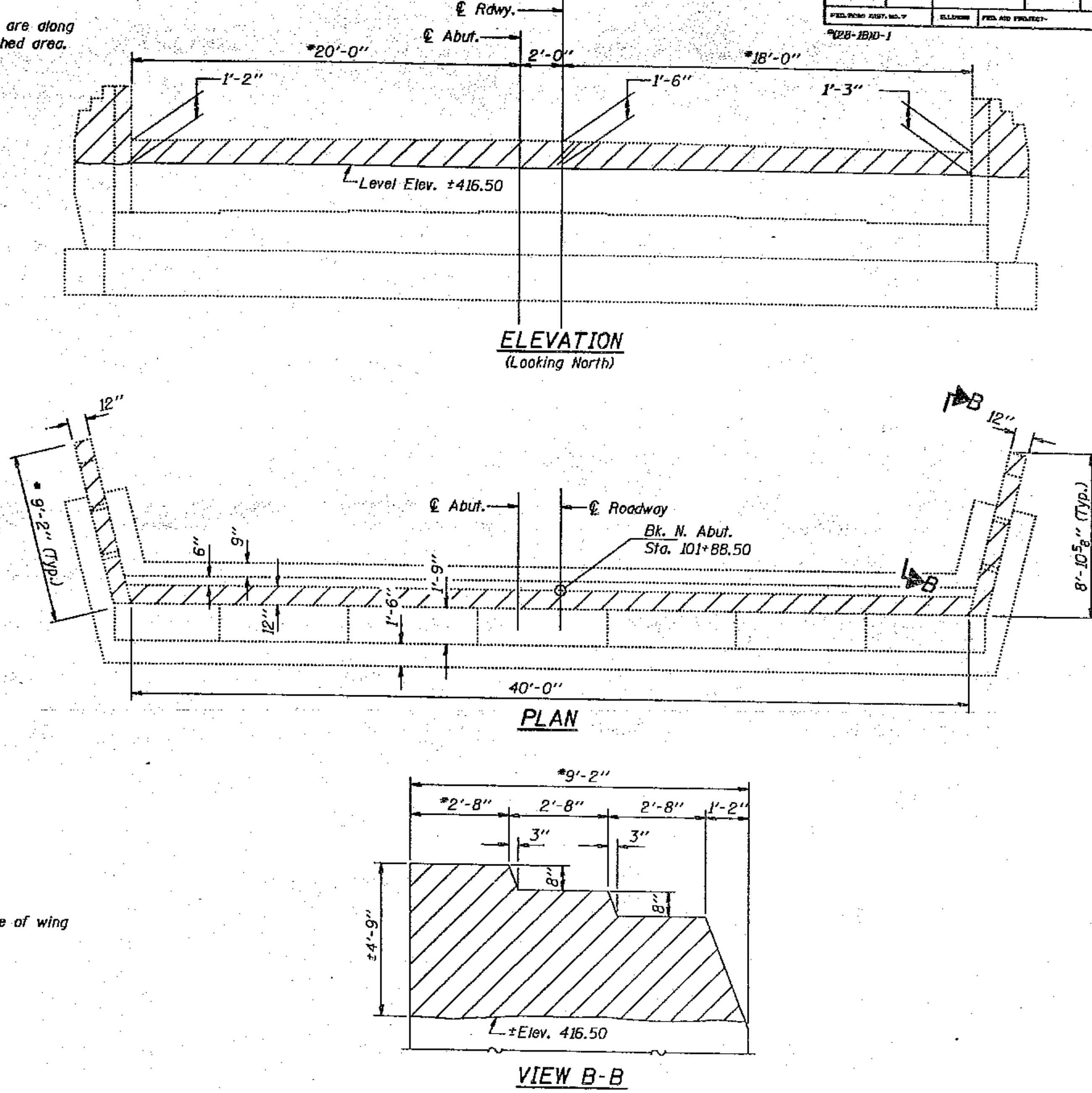
NORTH AND SOUTH ABUTMENT DETAILS
F.A.I. RT. 57 SEC. (28-1B)D-1
FRANKLIN COUNTY
STATION 102+70.00

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-1B)D-1	FRANKLIN		38

SHEET NO. 16
16 SHEETS

* These dimensions are along front face of hatched area.





* Inside Face of wing

Notes: Hatched area indicates Concrete Removal.
For existing shoulder pavement removal see Roadway Plans.

TWO ABUTMENTS
BILL OF MATERIAL

Item	Unit	Total
Concrete Removal	Cu. Yd.	9

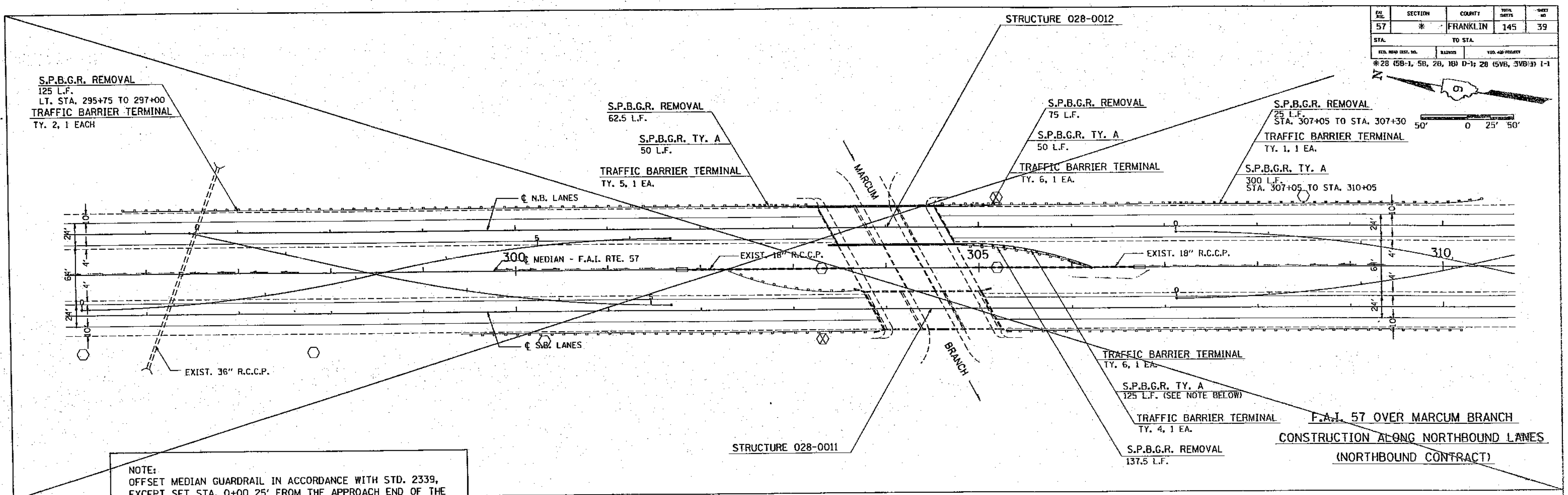
DESIGNED	Michael A. Stephenson
CHECKED	George A. [illegible] / Timothy A. [illegible]
DRAWN	E. Vern Taylor
CHECKED	MAS GAG TAC

May 20 1993
EXAMINED Ivaj J. Kaspar — ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

CONCRETE REMOVAL DETAILS
FOR EXISTING ABUTMENTS
F.A.I. RT. 57 SEC. (28-1B)D-1
FRANKLIN COUNTY
STATION 102+70.00

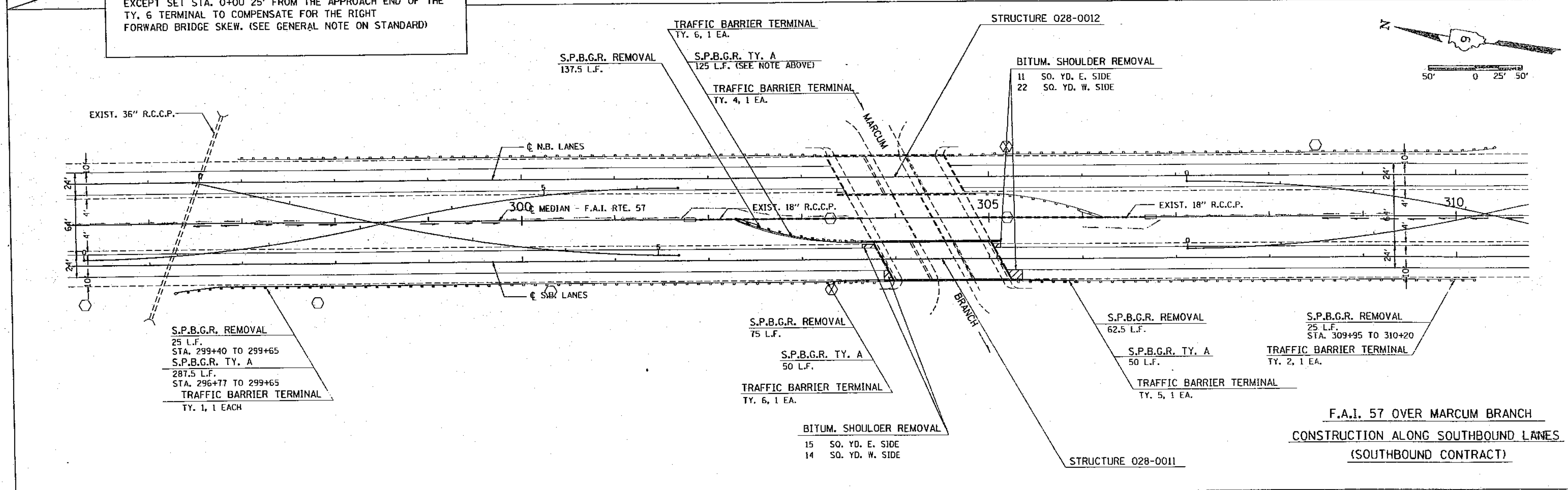
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	*	FRANKLIN	145	39

*28 (SB-1, 5B, 2B, 1B) D-1; 28 (5VB, 3VB-3) I-1



STRUCTURE 028-0012
S.P.B.G.R. REMOVAL
125 L.F.
LT. STA. 295+75 TO 297+00
TRAFFIC BARRIER TERMINAL
TY. 2, 1 EACH
S.P.B.G.R. REMOVAL
62.5 L.F.
S.P.B.G.R. TY. A
50 L.F.
TRAFFIC BARRIER TERMINAL
TY. 5, 1 EA.
S.P.B.G.R. REMOVAL
75 L.F.
S.P.B.G.R. TY. A
50 L.F.
TRAFFIC BARRIER TERMINAL
TY. 6, 1 EA.
S.P.B.G.R. REMOVAL
25 L.F.
STA. 307+05 TO STA. 307+30
TRAFFIC BARRIER TERMINAL
TY. 1, 1 EA.
S.P.B.G.R. TY. A
300 L.F.
STA. 307+05 TO STA. 310+05
50' 0 25' 50'
MARCUM
BRANCH
℄ N.B. LANES
℄ MEDIAN - F.A.I. RTE. 57
℄ S.B. LANES
300
305
310
EXIST. 18" R.C.C.P.
EXIST. 36" R.C.C.P.
TRAFFIC BARRIER TERMINAL
TY. 6, 1 EA.
S.P.B.G.R. TY. A
125 L.F. (SEE NOTE BELOW)
TRAFFIC BARRIER TERMINAL
TY. 4, 1 EA.
S.P.B.G.R. REMOVAL
137.5 L.F.
STRUCTURE 028-0011
F.A.I. 57 OVER MARCUM BRANCH
CONSTRUCTION ALONG NORTHBOUND LANES
(NORTHBOUND CONTRACT)

NOTE:
OFFSET MEDIAN GUARDRAIL IN ACCORDANCE WITH STD. 2339, EXCEPT SET STA. 0+00 25' FROM THE APPROACH END OF THE TY. 6 TERMINAL TO COMPENSATE FOR THE RIGHT FORWARD BRIDGE SKEW. (SEE GENERAL NOTE ON STANDARD)



TRAFFIC BARRIER TERMINAL
TY. 6, 1 EA.
S.P.B.G.R. TY. A
125 L.F. (SEE NOTE ABOVE)
TRAFFIC BARRIER TERMINAL
TY. 4, 1 EA.
S.P.B.G.R. REMOVAL
137.5 L.F.
STRUCTURE 028-0012
BITUM. SHOULDER REMOVAL
11 SQ. YD. E. SIDE
22 SQ. YD. W. SIDE
50' 0 25' 50'
EXIST. 36" R.C.C.P.
℄ N.B. LANES
℄ MEDIAN - F.A.I. RTE. 57
℄ S.B. LANES
EXIST. 18" R.C.C.P.
MARCUM
BRANCH
300
305
310
S.P.B.G.R. REMOVAL
25 L.F.
STA. 299+40 TO 299+65
S.P.B.G.R. TY. A
287.5 L.F.
STA. 296+77 TO 299+65
TRAFFIC BARRIER TERMINAL
TY. 1, 1 EACH
S.P.B.G.R. REMOVAL
75 L.F.
S.P.B.G.R. TY. A
50 L.F.
TRAFFIC BARRIER TERMINAL
TY. 6, 1 EA.
BITUM. SHOULDER REMOVAL
15 SQ. YD. E. SIDE
14 SQ. YD. W. SIDE
STRUCTURE 028-0011
S.P.B.G.R. REMOVAL
62.5 L.F.
S.P.B.G.R. TY. A
50 L.F.
TRAFFIC BARRIER TERMINAL
TY. 5, 1 EA.
S.P.B.G.R. REMOVAL
25 L.F.
STA. 309+95 TO 310+20
TRAFFIC BARRIER TERMINAL
TY. 2, 1 EA.
F.A.I. 57 OVER MARCUM BRANCH
CONSTRUCTION ALONG SOUTHBOUND LANES
(SOUTHBOUND CONTRACT)

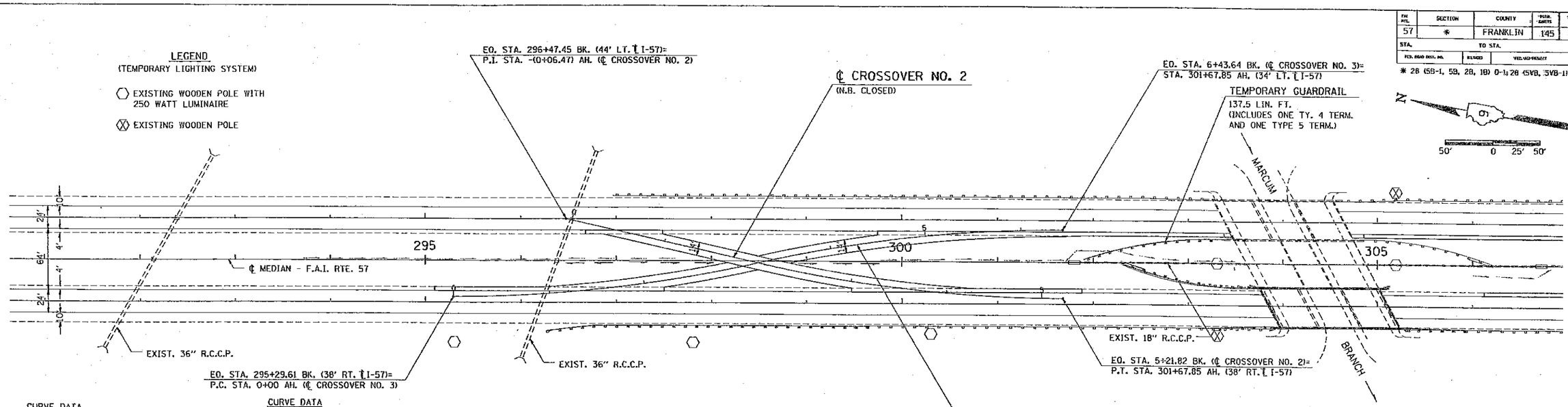
F.A.I. RTE. 57 OVER MARCUM BRANCH

FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	*	FRANKLIN	145	40
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS			

* 28 (SB-1, SB, 2B, 1B) 0-1½ 2B (SVB, 3VB-1) 1-1

LEGEND
(TEMPORARY LIGHTING SYSTEM)

- ◯ EXISTING WOODEN POLE WITH 250 WATT LUMINAIRE
- ⓧ EXISTING WOODEN POLE



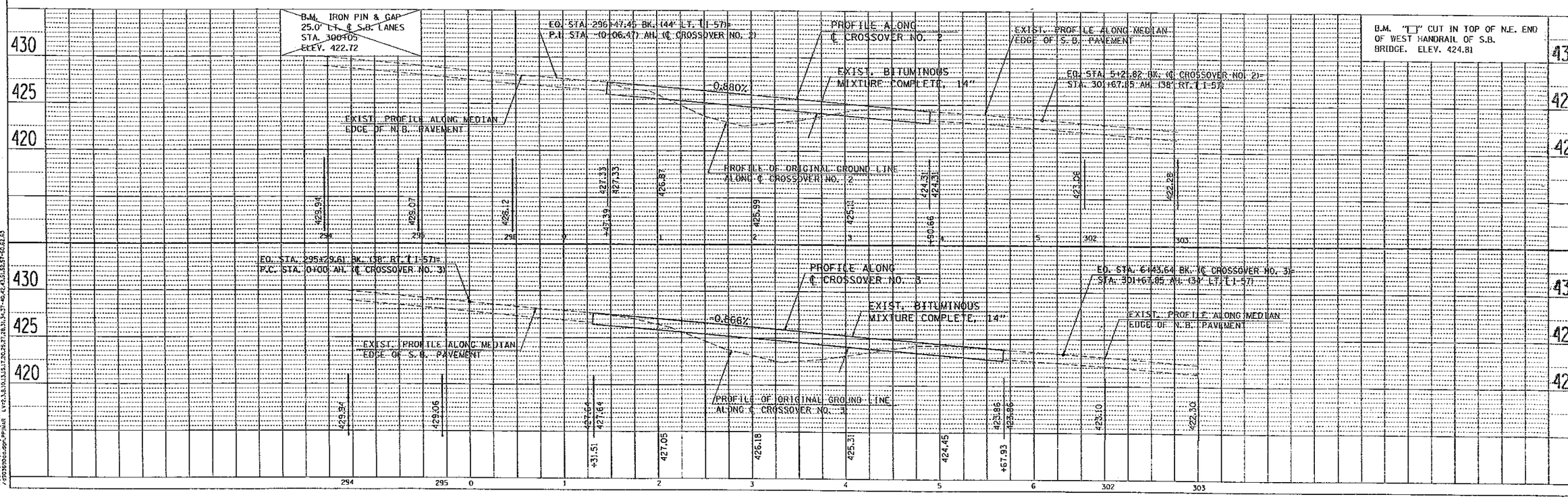
CURVE DATA
CROSSOVER NO. 2

P.I. STA= 3+61.59
Δ= 12°-52'-22"
D= 4°-00'-00"
R= 1432.39'
T= 161.59'
L= 321.82'
E= 9.09'
P.C. STA= 2+00.00
P.T. STA= 5+21.82

CURVE DATA
CROSSOVER NO. 3

P.I. STA= 1+61.59
Δ= 12°-52'-22"
D= 4°-00'-00"
R= 1432.39'
T= 161.59'
L= 321.82'
E= 9.09'
P.C. STA= 0+00.00
P.T. STA= 3+21.82

P.I. STA= 4+83.41
Δ= 12°-52'-22"
D= 4°-00'-00"
R= 1432.39'
T= 161.59'
L= 321.82'
E= 9.09'
P.C. STA= 3+21.82
P.T. STA= 6+43.64



F.A.I. RTE. 57 OVER MARCUM BRANCH

FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	*	FRANKLIN	145	41
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

* 28 (5B-1, 5B, 2B, 1B) 0-1½ 28 (5VB, 3VB-1) I-1

N S

50' 0 25' 50'

EQ. STA. 307+12.15 BK. (38' LT. ℄ I-57)=
P.C. STA. 0+00 AH. (℄ CROSSOVER NO. 4)

℄ CROSSOVER NO. 1
(N.B. CLOSED)

EQ. P.T. STA. 6+43.25 BK. (℄ CROSSOVER NO. 1)=
38' LT. STA. 313+50.00 AH. (℄ I-57)

CURVE DATA
CROSSOVER NO. 4
P.I. STA= 1+61.59
Δ= 12°-52'-22"
D= 4°-00'-00"
R= 1432.39'
T= 161.59'
L= 321.82'
E= 9.09'
P.C. STA= 0+00.00
P.T. STA= 3+21.82

MARCUM BRANCH

305 310 315

EXIST. 18" R.C.C.P.

℄ MEDIAN - F.A.I. RTE. 57

EXIST. 36" R.C.C.P.

EQ. STA. 307+12.15 BK. (34' RT. ℄ I-57)=
P.C. STA. 0+00 AH. (℄ CROSSOVER NO. 1)

℄ CROSSOVER NO. 4
(S.B. CLOSED)

EQ. STA. 5+28.29 BK. (℄ CROSSOVER NO. 4)=
44' RT. STA. 312+32.55 AH. (℄ I-57)

CURVE DATA
CROSSOVER NO. 1

P.I. STA= 1+61.59	P.I. STA= 4+83.41
Δ= 12°-52'-22"	Δ= 12°-52'-22"
D= 4°-00'-00"	D= 4°-00'-00"
R= 1432.39'	R= 1432.39'
T= 161.59'	T= 161.59'
L= 321.82'	L= 321.82'
E= 9.09'	E= 9.09'
P.C. STA= 0+00.00	P.C. STA= 3+21.82
P.T. STA= 3+21.82	P.T. STA= 6+43.64

PLAN
SURVEYED
PLOTTED
PLOT CHECKED
GRADES CHECKED
RT.-OF-WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
STRUCTURE NO(S)/NAME(S) CHKD
NOTE BOOK
NO.
BY
DATE

EQ. STA. 307+12.15 BK. (34' RT. ℄ I-57)=
P.C. STA. 0+00 AH. (℄ CROSSOVER NO. 1)

EXIST. PROFILE ALONG MEDIAN EDGE OF S.B. PAVEMENT

PROFILE OF ORIGINAL GROUND LINE ALONG ℄ CROSSOVER NO. 1

PROFILE ALONG ℄ CROSSOVER NO. 1

EXIST. BITUMINOUS MIXTURE COMPLETE, 14"

+0.417%

EQ. P.T. STA. 6+43.25 BK. (℄ CROSSOVER NO. 1)=
38' LT. STA. 313+50.00 AH. (℄ I-57)

EXIST. PROFILE ALONG MEDIAN EDGE OF N.B. PAVEMENT

B.M. IRON PIN & CAP 25' LT. ℄ S.B. LANES
STA. 330+00, ELEV. 429.23

EQ. STA. 307+12.15 BK. (38' LT. ℄ I-57)=
P.C. STA. 0+00 AH. (℄ CROSSOVER NO. 4)

EXIST. PROFILE ALONG MEDIAN EDGE OF N.B. PAVEMENT

PROFILE ALONG ℄ CROSSOVER NO. 4

EXIST. BITUMINOUS MIXTURE COMPLETE, 14"

+0.315%

+0.422%

EQ. STA. 5+28.29 BK. (℄ CROSSOVER NO. 4)=
44' RT. STA. 312+32.55 AH. (℄ I-57)

EXIST. PROFILE ALONG MEDIAN EDGE OF S.B. PAVEMENT

PROFILE OF ORIGINAL GROUND LINE ALONG ℄ CROSSOVER NO. 4

425 420

306 307 0 1 2 3 4 5 313 314

VIEW PP2MAR SOUTH

Fri Mar 19 09:40:40 1993
/usr/projects/mikey/p9236bp2.dgn LV=2,3,10,13,15,17,25,27,28,33,34,37,40,43,45,47,60,63
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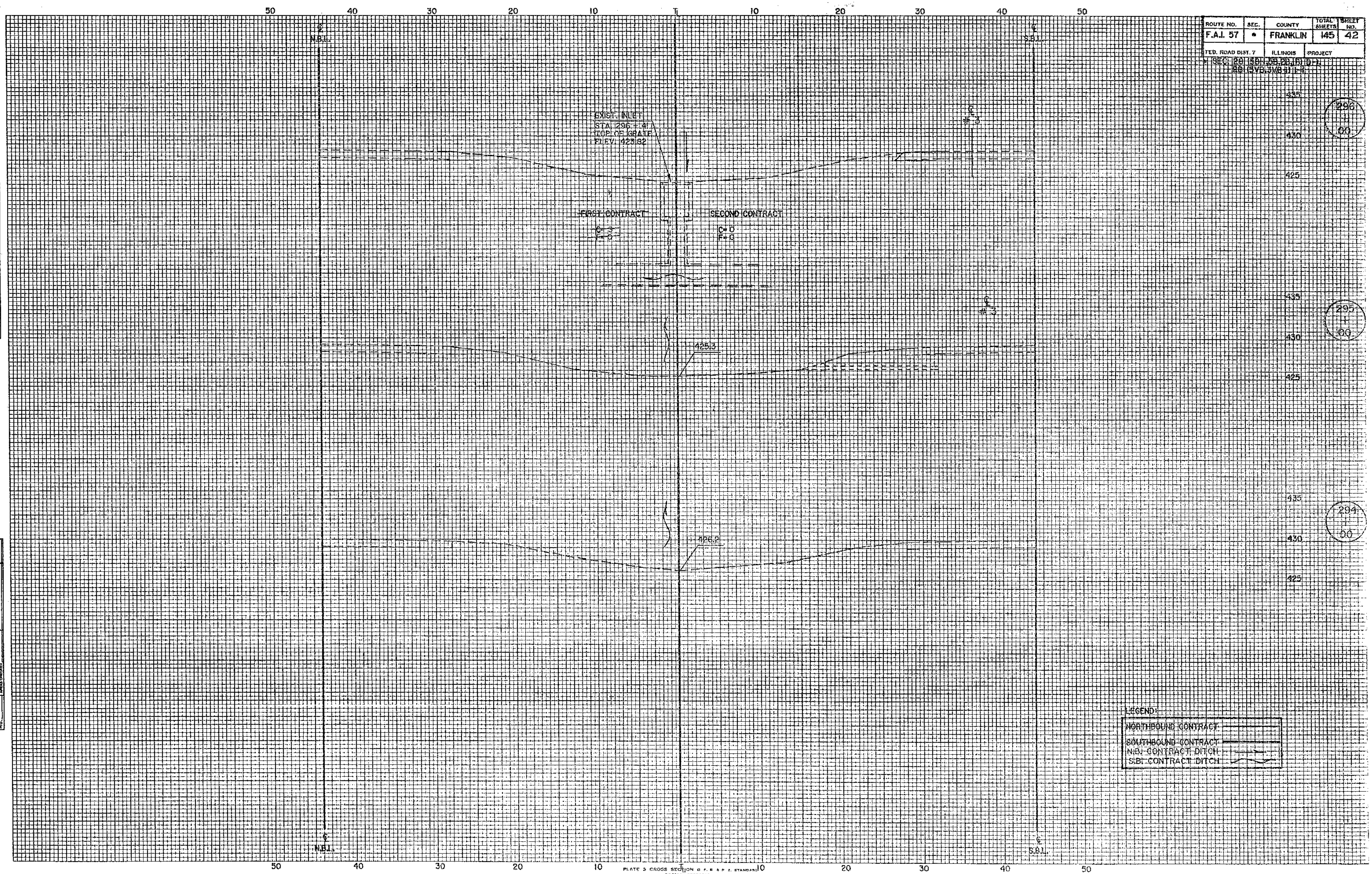
F.A.I. RTE. 57 OVER MARCUM BRANCH

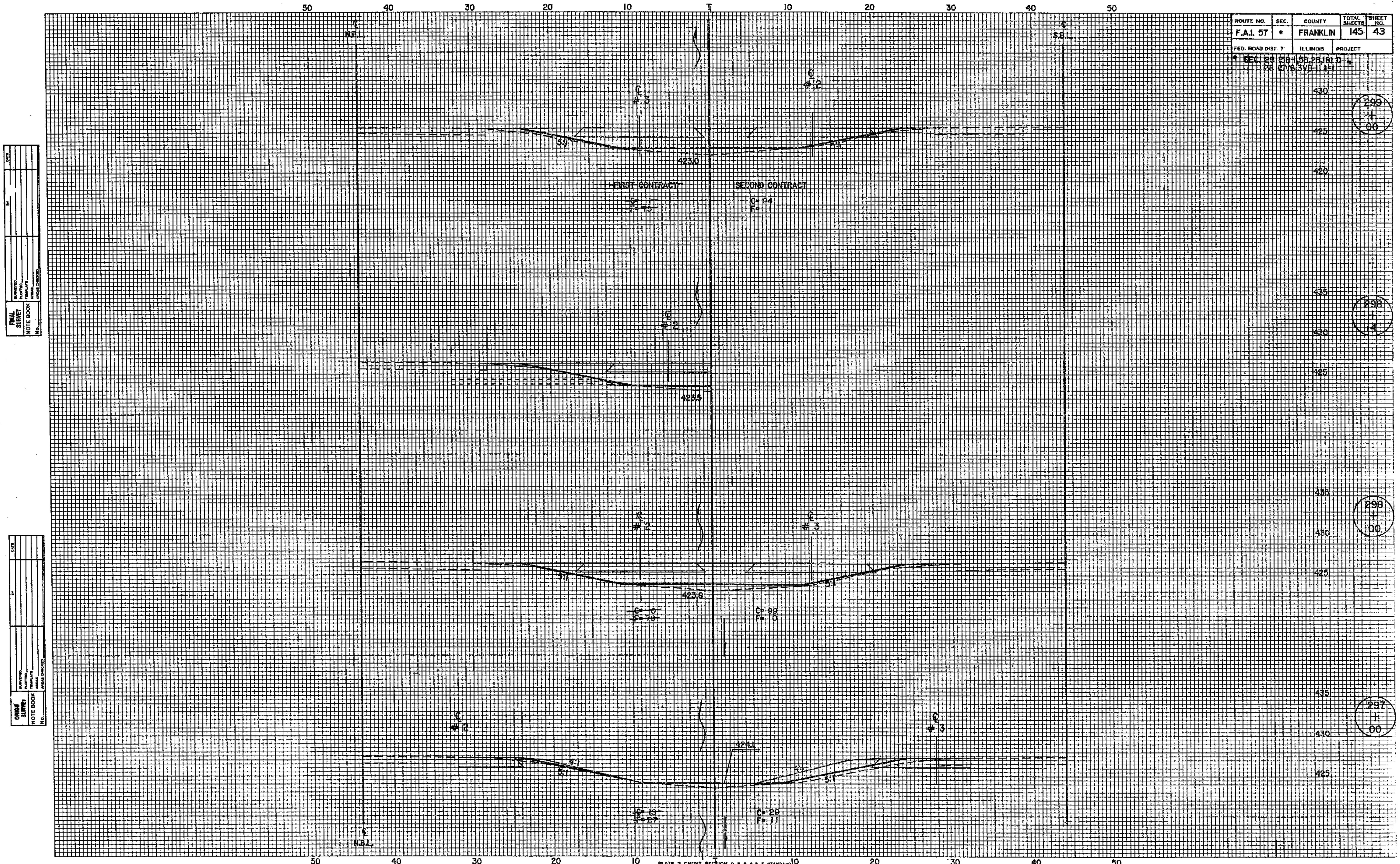
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	42
FED. ROAD DIST. 7		ILLINOIS	PROJECT	



FINAL SURVEY NOTE BOOK No.

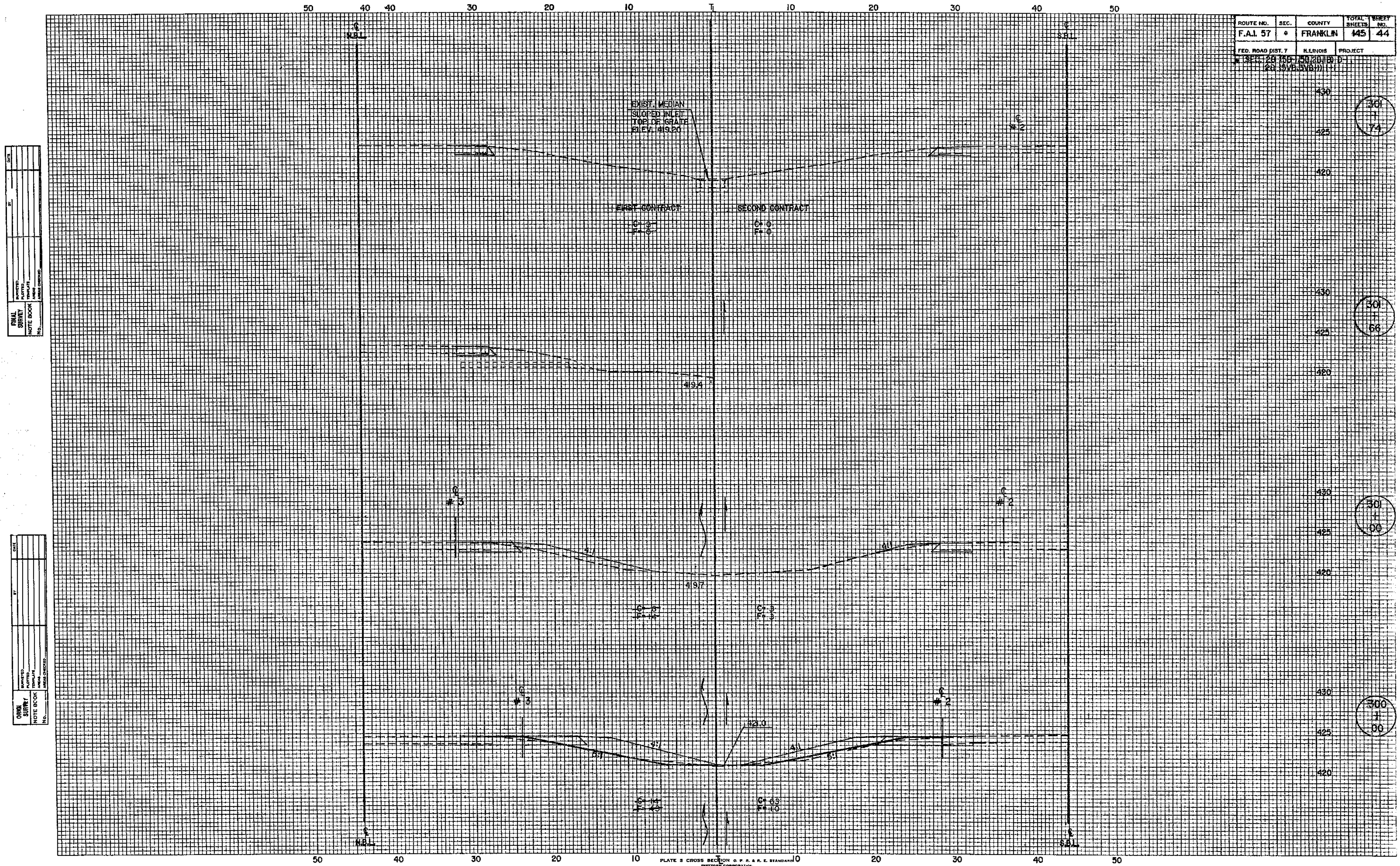
ORIGINAL SURVEY NOTE BOOK No.

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	43
FED. ROAD DIST. 7		ILLINOIS	PROJECT	



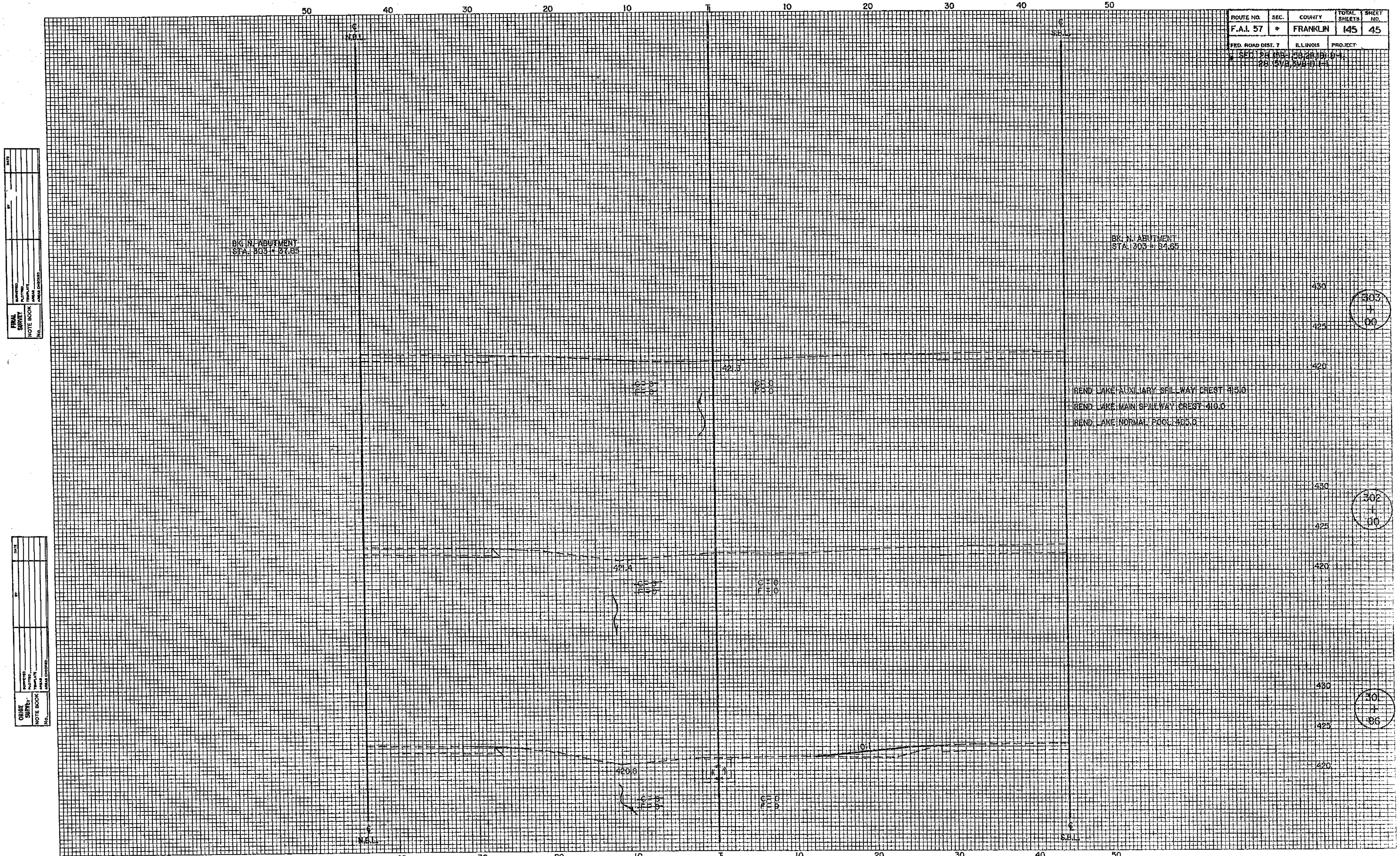
MARCUM BRANCH

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	44
FED. ROAD DIST. 7		ILLINOIS	PROJECT	



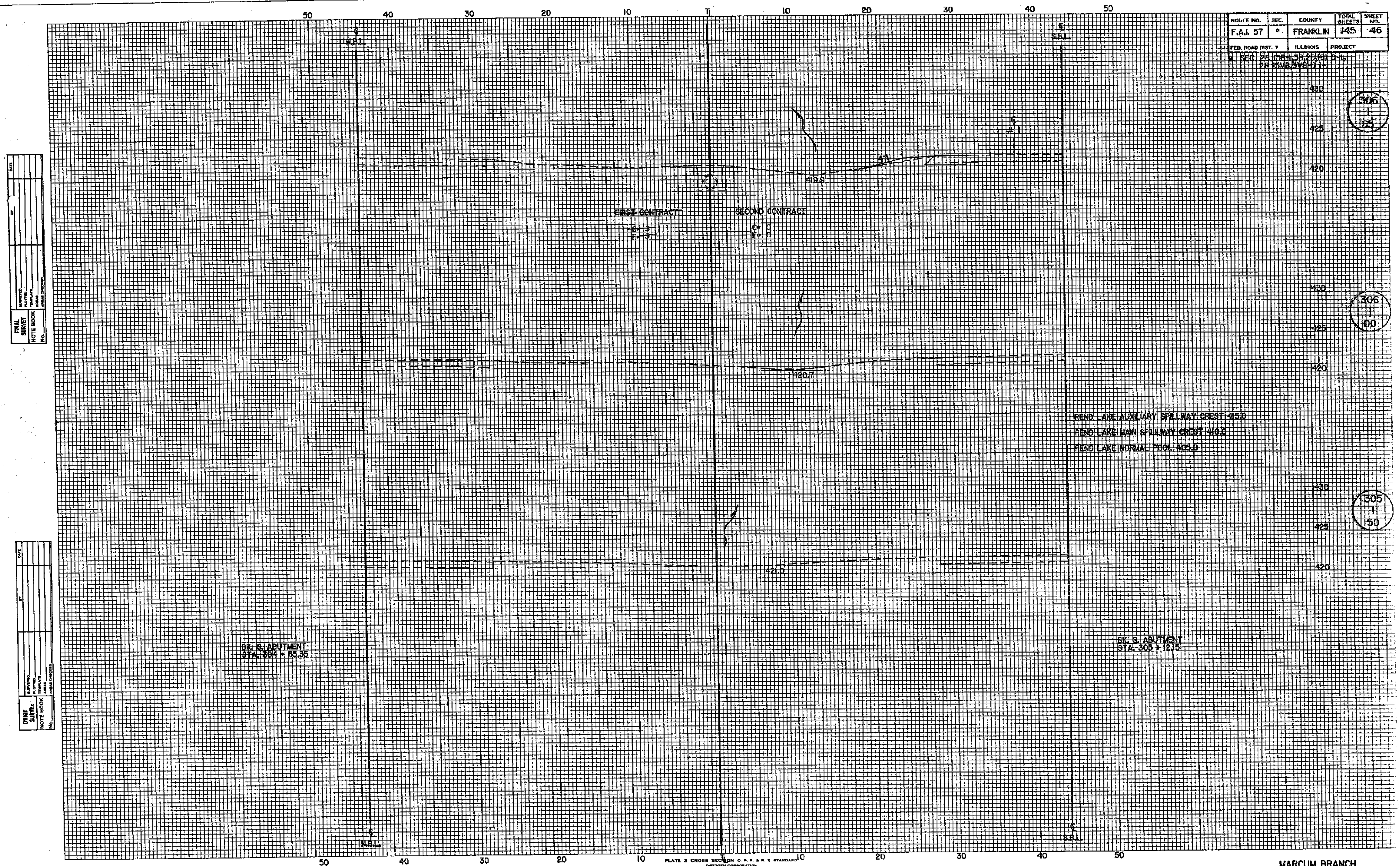
MARCUM BRANCH

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	45
FED. ROAD DIST. 7		ILLINOIS	PROJECT	



MARCUM BRANCH

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	46
FED. ROAD DIST. 7		ILLINOIS	PROJECT	



ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	47
FED. ROAD DIST. 7		ILLINOIS	PROJECT	

* SEC. 28 (5B-1,5B,2B,1B) D-1
28 (3VB,3VB-1) I-1

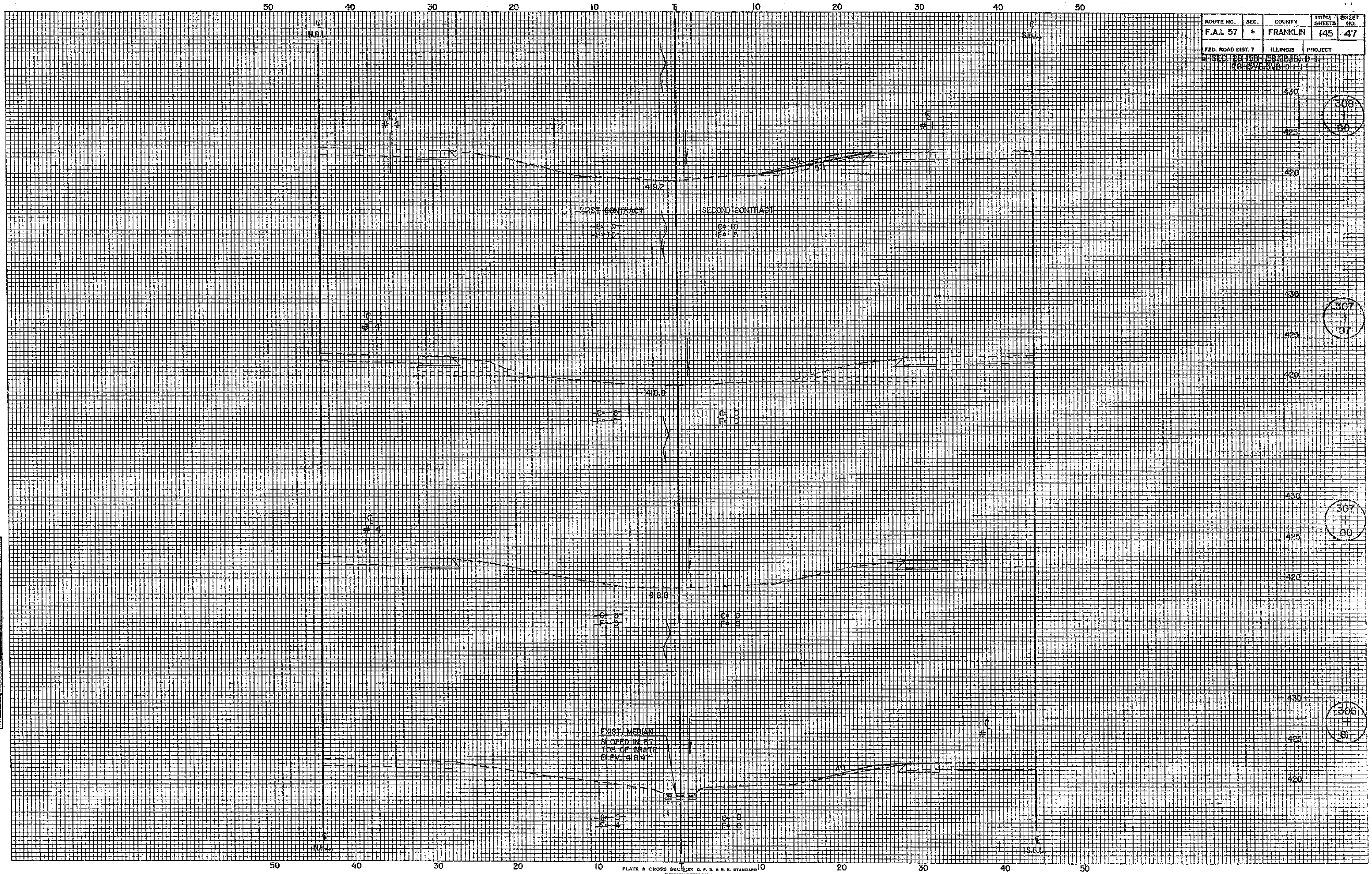


PLATE 3 CROSS SECTION

MARCUM BRANCH

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	48

FED. ROAD DIST. 5	ILLINOIS	PROJECT

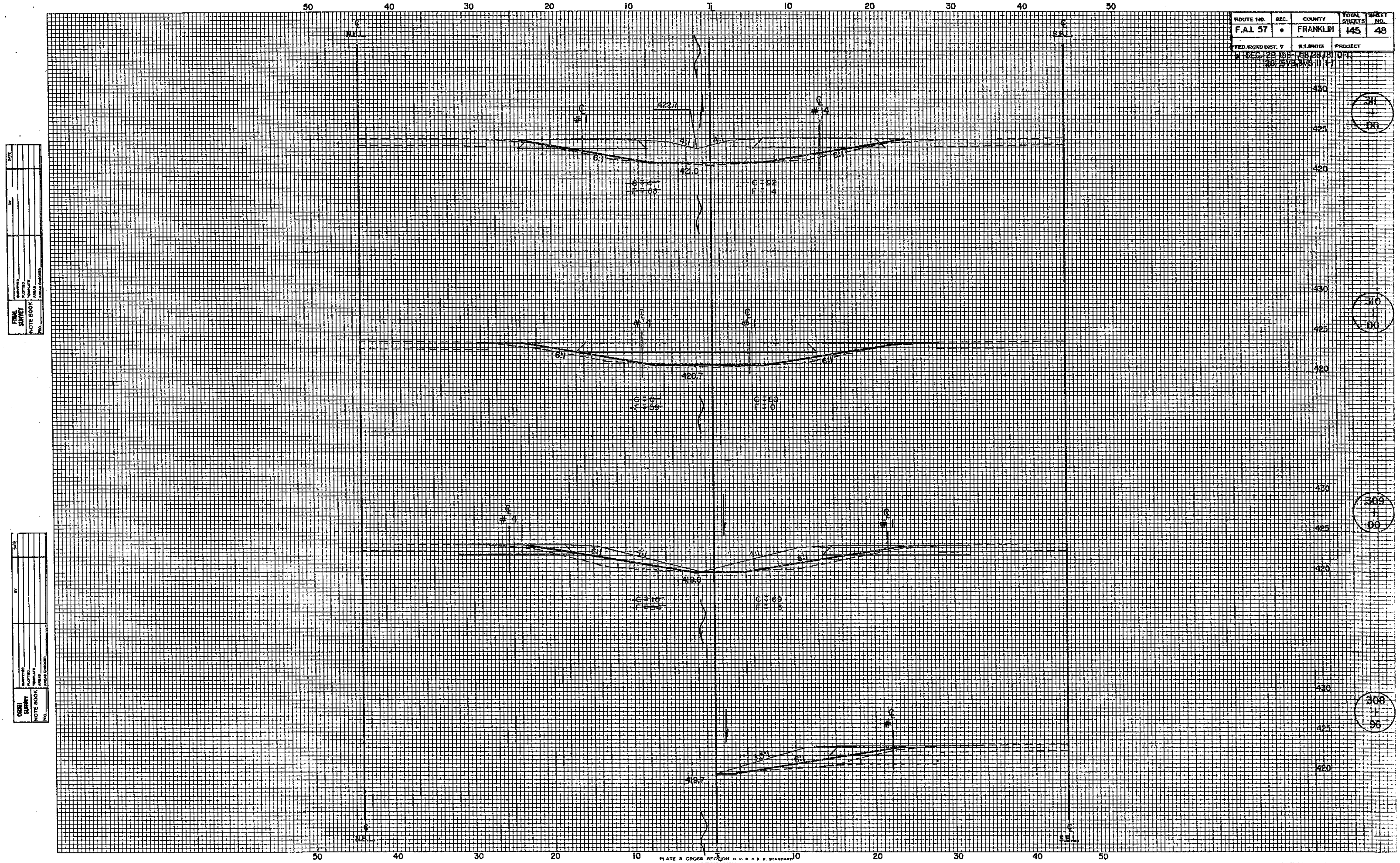
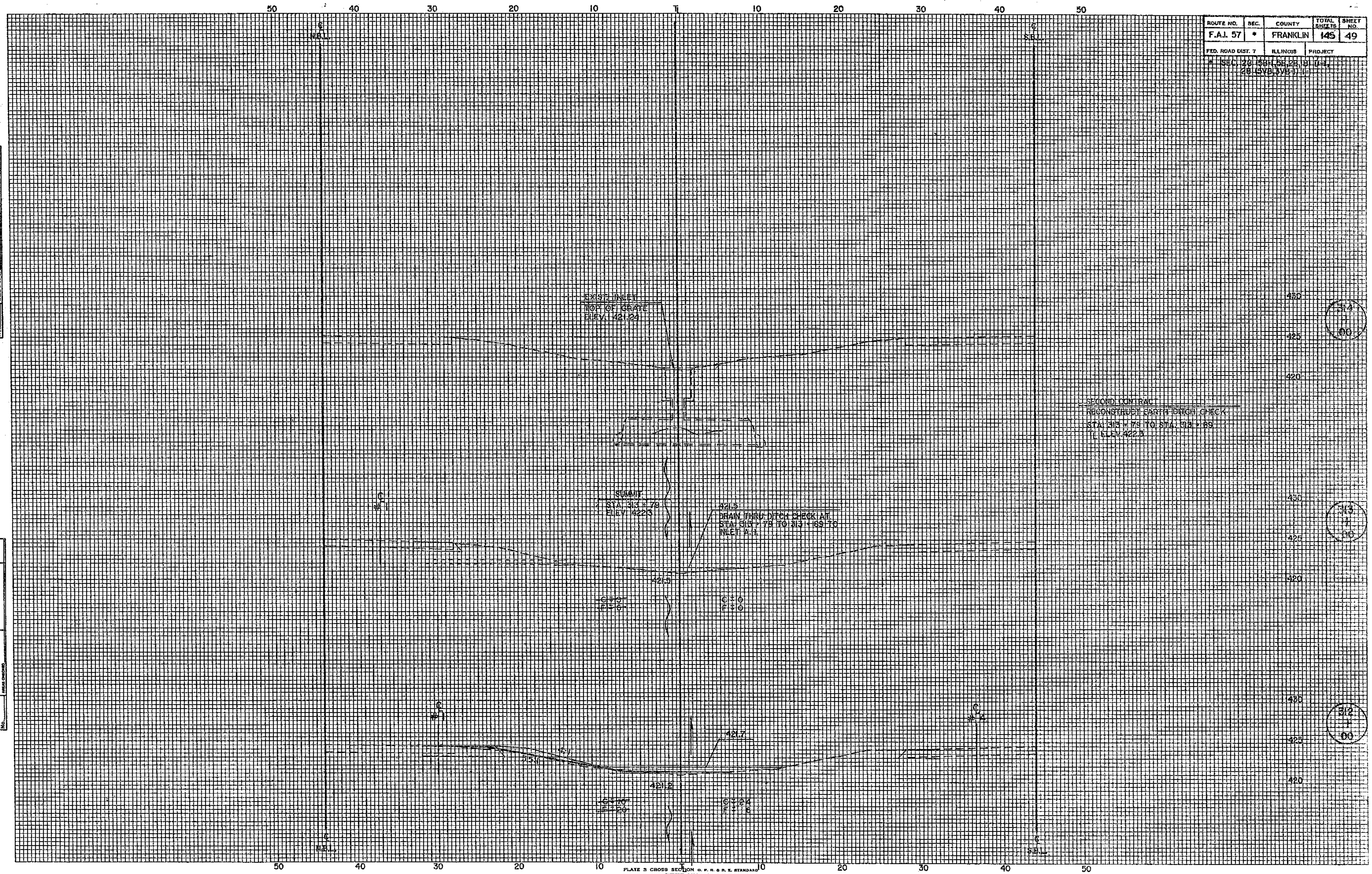


PLATE 3 CROSS SECTION

MARCUM BRANCH

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	49
FED. ROAD DIST. 7		ILLINOIS	PROJECT	

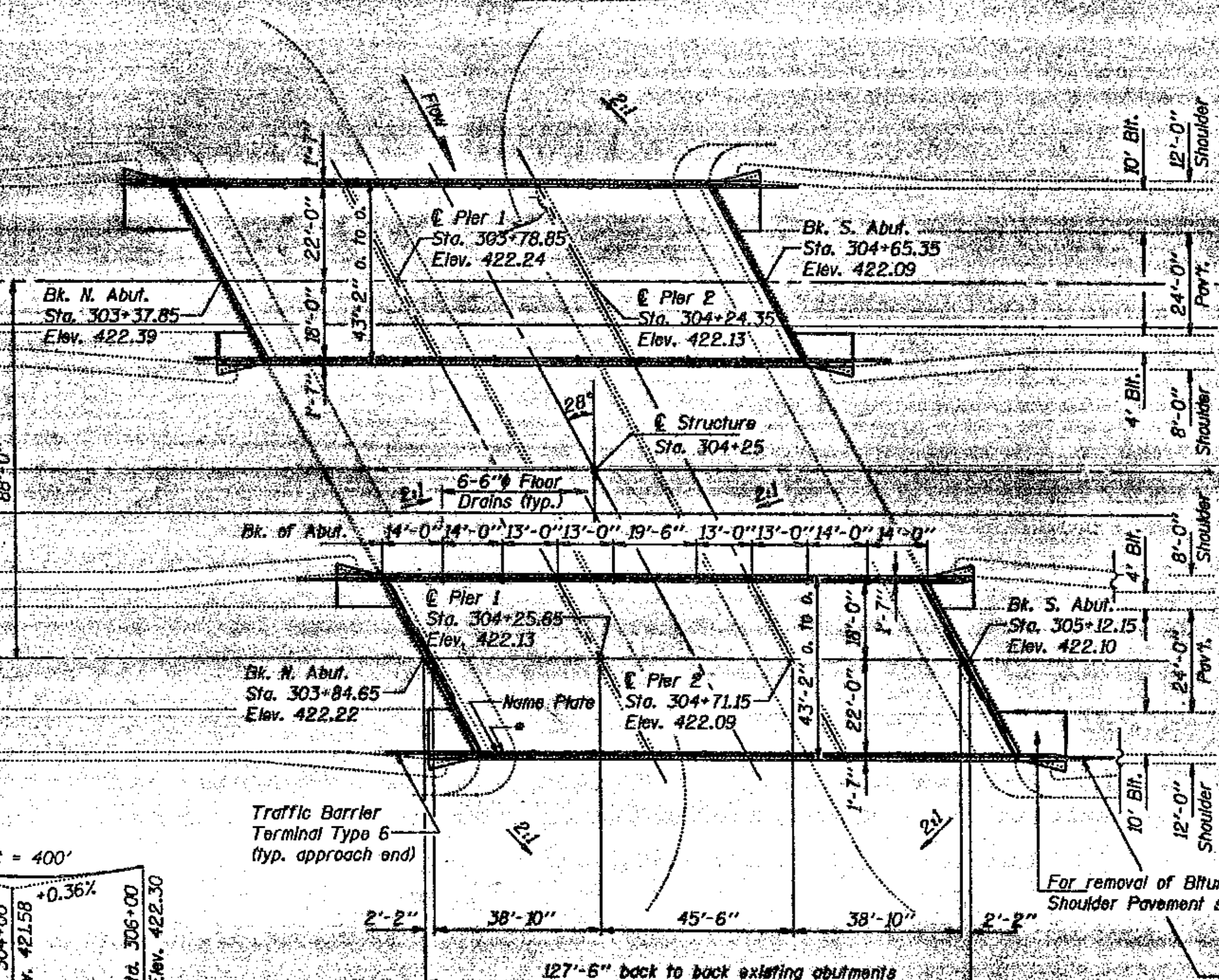


MARCUM BRANCH

Existing Structures: #028-0011 (S.B.) & #028-0012 (N.B.) are each 127'-6" long and 42'-0" wide. Built as F.A.I. Rte. 57, Section 28-2B at Sta. 304+25 in 1962 consists of RC Deck supported on 3 span continuous wide flange beams.
Temporary median crossovers shall be utilized to divert traffic over adjacent bridge during reconstruction.
Bench Mark: Cut on top of N.E. end of West handrail of Southbound Lane of bridge over Marcum Branch. Elevation 424.81.
No Salvage.

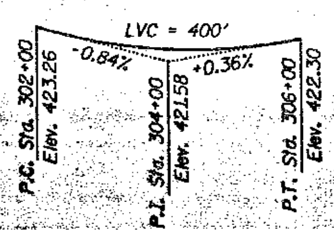
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ELEVATION



PLAN

Note: Only the Southbound structure is included in this contract.



PROFILE GRADE

F.A. Route 57 (along ℄ pavement)

STATION 304+25.00
REBUILT 19 BY
STATE OF ILLINOIS
F.A.I. RT. 57 SEC. (28-2B)D-1
F.A. PROJECT IM-57-2(157)65
LOADING HS20 & ALT.
STR. NO. 028-0011

NAME PLATE

See Std. 2113

SHEET NO. 1 / 16 SHEETS

GENERAL NOTES

Fasteners shall be high strength bolts. Bolts ⅞"ϕ, open holes $^{15}/_{16}$"ϕ, unless otherwise noted.

Field welding of construction accessories will not be permitted to the bottom flange of beams nor to 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.

Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53 Grade 60.

Plan dimensions and details relative to existing structure have been taken from existing plans and field survey and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Two ⅛" adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims. For Type I Elastomeric Bearings, shims of the dimensions of the top plate shall be provided and placed as detailed.

The Contractor will be required to mark, on top of the concrete deck, the locations of the top flange of all the steel beams, prior to any removal of the bridge concrete deck. Saw cutting directly over the top of the beam flanges is not permitted.

Bearing seat surfaces of the abutments shall receive Bridge Seat Sealer.

The zinc-silicate primer shall be used for shop painting of new structural steel.

Prior to pouring the new concrete for the deck, all loose rust, loose mill scale and all other foreign material shall be removed from the embedded portions of flanges of stringers. The removal shall be accomplished in accordance with the requirements of the SSPC Surface Preparation Specifications SP-3 for power tool cleaning or SP-2 for hand tool cleaning. Cost shall be incidental to "Removal of Existing Concrete Deck"

For cantilever forming brackets see Special Provisions.

TOTAL BILL OF MATERIAL

	ITEM	UNIT	SUPER	SUB	TOTAL
	Concrete Removal	Cu. Yd.		9	9
	Structure Excavation	Cu. Yd.		22	22
**	Removal of Existing Concrete Deck	Each	1		1
	Floor Drains	Each	12		12
	Preformed Joint Seal 2½"	Lin. Ft.	49		49
	Preformed Joint Seal 4"	Lin. Ft.	49		49
	Class X Concrete Superstructure	Cu. Yd.	177.6		177.6
***	Protective Coat	Sq. Yd.	672		672
	Elastomeric Bearing Assembly, Type I	Each	14		14
	Elastomeric Bearing Assembly, Type II	Each	7		7
	Structural Steel	Lbs.	9230		9230
	Stud Shear Connectors	Each	3255		3255
	Reinforcement Bars, Epoxy Coated	Pound	38060	3600	41660
	Name Plates	Each	1		1
	Bridge Seat Sealer	Sq. Ft.		169	169
	Jack and Remove Existing Bearings	Each	28		28
	Bridge Deck Grooving	Sq. Yd.	527		527

** Includes the removal of existing steel railing.
*** Quantity includes bridge deck surface.

DESIGN SPECIFICATIONS

1989 AASHTO, 1990 & 1991 Interim Specifications and Seismic Retrofitting Guidelines for Highway Bridges

LOADING HS 20-44 & Alt.

Allow 25#/ sq. ft. for future wearing surface.

DESIGN STRESSES

FIELD UNITS

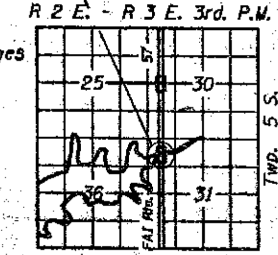
New Construction

f'_c = 3,500 psi
f_y = 60,000 psi (Reinf.)
f_y = 36,000 psi (M270 Gr. 36)

Old Construction

f_s = 20,000 psi (Structural Steel)

Proposed Reconstruction



LOCATION SKETCH

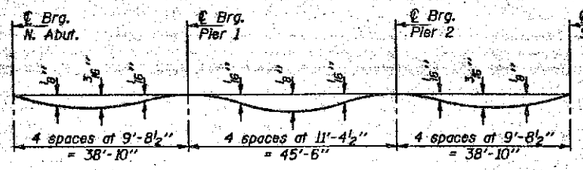
* Existing Name Plate to be cleaned and relocated. Cost incidental to "Name Plates".

DESIGNED	John Cimone
CHECKED	Anthony J. Vimer
DRAWN	Paul W. Sweet RD
CHECKED	JLC AYY

May 20 1992
EXAMINED — ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

STATE OF ILLINOIS — RALPH E. ANDERSON — 081-004470 — LICENSED STRUCTURAL ENGINEER

GENERAL PLAN
F.A.I. ROUTE 57 OVER
MARCUM BRANCH
F.A.I. ROUTE 57 SECTION (28-2B)D-1
FRANKLIN COUNTY
STATION 304+25.00
STRUCTURE NUMBER 028-0011 (S.B.)

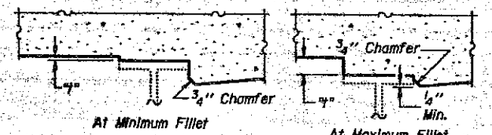


DEAD LOAD DEFLECTION DIAGRAM

(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.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STATE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I.B.R.S.				51
F.A.I. RT.	SEC. (28-2B)D-1	FRANKLIN		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 2
16 SHEETS

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

℄ BEAM 8

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	30375.611	-17.000	422.018	422.018
℄ Brg. N. Abut.	30377.778	-17.000	422.012	422.012
A	30387.778	-17.000	421.983	421.993
B	30397.778	-17.000	421.956	421.970
C	30407.778	-17.000	421.933	421.939
℄ Brg. Pier 1	30416.611	-17.000	421.915	421.915
D	30426.611	-17.000	421.898	421.902
E	30436.611	-17.000	421.883	421.892
F	30446.611	-17.000	421.872	421.879
G	30456.611	-17.000	421.863	421.866
℄ Brg. Pier 2	30462.111	-17.000	421.860	421.860
H	30472.111	-17.000	421.856	421.863
I	30482.111	-17.000	421.855	421.868
J	30492.111	-17.000	421.857	421.867
℄ Brg. S. Abut.	30500.944	-17.000	421.862	421.862
Bk. S. Abut.	30503.111	-17.000	421.863	421.863

EAST LONGITUDINAL BONDED CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	30378.137	-12.250	422.109	422.109
℄ Brg. N. Abut.	30380.303	-12.250	422.103	422.103
A	30390.303	-12.250	422.074	422.085
B	30400.303	-12.250	422.049	422.062
C	30410.303	-12.250	422.027	422.033
℄ Brg. Pier 1	30419.137	-12.250	422.009	422.009
D	30429.137	-12.250	421.993	421.997
E	30439.137	-12.250	421.979	421.988
F	30449.137	-12.250	421.968	421.975
G	30459.137	-12.250	421.960	421.963
℄ Brg. Pier 2	30464.637	-12.250	421.957	421.957
H	30474.637	-12.250	421.954	421.961
I	30484.637	-12.250	421.954	421.987
J	30494.637	-12.250	421.957	421.967
℄ Brg. S. Abut.	30503.470	-12.250	421.962	421.962
Bk. S. Abut.	30505.637	-12.250	421.964	421.964

℄ BEAM 9

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	30376.978	-10.667	422.138	422.138
℄ Brg. N. Abut.	30381.145	-10.667	422.132	422.132
A	30381.145	-10.667	422.104	422.114
B	30401.145	-10.667	422.078	422.092
C	30411.145	-10.667	422.056	422.062
℄ Brg. Pier 1	30419.978	-10.667	422.039	422.039
D	30429.978	-10.667	422.023	422.027
E	30439.978	-10.667	422.009	422.018
F	30449.978	-10.667	421.999	422.006
G	30459.978	-10.667	421.991	421.994
℄ Brg. Pier 2	30465.478	-10.667	421.988	421.988
H	30475.478	-10.667	421.986	421.992
I	30485.478	-10.667	421.986	421.999
J	30495.478	-10.667	421.989	421.999
℄ Brg. S. Abut.	30504.312	-10.667	421.994	421.994
Bk. S. Abut.	30506.478	-10.667	421.996	421.996

℄ BEAM 10

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	30382.346	-4.333	422.211	422.211
℄ Brg. N. Abut.	30384.513	-4.333	422.204	422.204
A	30394.513	-4.333	422.177	422.188
B	30404.513	-4.333	422.153	422.165
C	30414.513	-4.333	422.132	422.138
℄ Brg. Pier 1	30423.346	-4.333	422.116	422.116
D	30433.346	-4.333	422.100	422.105
E	30443.346	-4.333	422.088	422.097
F	30453.346	-4.333	422.078	422.085
G	30463.346	-4.333	422.072	422.074
℄ Brg. Pier 2	30468.846	-4.333	422.069	422.069
H	30478.846	-4.333	422.068	422.075
I	30488.846	-4.333	422.069	422.082
J	30498.846	-4.333	422.073	422.083
℄ Brg. S. Abut.	30507.679	-4.333	422.079	422.079
Bk. S. Abut.	30509.846	-4.333	422.081	422.081

℄ ROADWAY AND P. G.

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	30384.650	0.000	422.220	422.220
℄ Brg. N. Abut.	30386.817	0.000	422.214	422.214
A	30396.817	0.000	422.188	422.199
B	30406.817	0.000	422.164	422.178
C	30416.817	0.000	422.144	422.150
℄ Brg. Pier 1	30425.850	0.000	422.128	422.128
D	30435.650	0.000	422.114	422.118
E	30445.650	0.000	422.102	422.111
F	30455.650	0.000	422.093	422.100
G	30465.650	0.000	422.087	422.090
℄ Brg. Pier 2	30471.150	0.000	422.085	422.085
H	30481.150	0.000	422.084	422.091
I	30491.150	0.000	422.086	422.099
J	30501.150	0.000	422.091	422.100
℄ Brg. S. Abut.	30509.983	0.000	422.097	422.097
Bk. S. Abut.	30512.150	0.000	422.100	422.100

℄ BEAM 11

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	30385.713	2.000	422.214	422.214
℄ Brg. N. Abut.	30387.880	2.000	422.208	422.208
A	30397.880	2.000	422.182	422.193
B	30407.880	2.000	422.159	422.172
C	30417.880	2.000	422.138	422.145
℄ Brg. Pier 1	30428.713	2.000	422.123	422.123
D	30436.713	2.000	422.109	422.113
E	30446.713	2.000	422.097	422.106
F	30456.713	2.000	422.089	422.096
G	30466.713	2.000	422.083	422.086
℄ Brg. Pier 2	30472.213	2.000	422.082	422.082
H	30482.213	2.000	422.081	422.088
I	30492.213	2.000	422.083	422.096
J	30502.213	2.000	422.088	422.098
℄ Brg. S. Abut.	30511.047	2.000	422.095	422.095
Bk. S. Abut.	30513.213	2.000	422.097	422.097

℄ BEAM 12

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	30389.081	8.333	422.148	422.148
℄ Brg. N. Abut.	30391.248	8.333	422.142	422.142
A	30401.248	8.333	422.117	422.127
B	30411.248	8.333	422.095	422.108
C	30421.248	8.333	422.075	422.082
℄ Brg. Pier 1	30430.081	8.333	422.061	422.061
D	30440.081	8.333	422.048	422.052
E	30450.081	8.333	422.037	422.046
F	30460.081	8.333	422.030	422.037
G	30470.081	8.333	422.025	422.028
℄ Brg. Pier 2	30475.581	8.333	422.024	422.024
H	30485.581	8.333	422.024	422.031
I	30495.581	8.333	422.027	422.041
J	30505.581	8.333	422.033	422.043
℄ Brg. S. Abut.	30514.414	8.333	422.041	422.041
Bk. S. Abut.	30516.581	8.333	422.044	422.044

WEST LONGITUDINAL BONDED CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	30391.030	12.000	422.077	422.077
℄ Brg. N. Abut.	30393.197	12.000	422.072	422.072
A	30403.197	12.000	422.047	422.058
B	30413.197	12.000	422.026	422.039
C	30423.197	12.000	422.007	422.013
℄ Brg. Pier 1	30432.030	12.000	421.993	421.993
D	30442.030	12.000	421.980	421.985
E	30452.030	12.000	421.970	421.979
F	30462.030	12.000	421.964	421.971
G	30472.030	12.000	421.960	421.962
℄ Brg. Pier 2	30477.530	12.000	421.959	421.959
H	30487.530	12.000	421.960	421.967
I	30497.530	12.000	421.963	421.977
J	30507.530	12.000	421.970	421.980
℄ Brg. S. Abut.	30516.364	12.000	421.979	421.979
Bk. S. Abut.	30518.530	12.000	421.981	421.981

℄ BEAM 13

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	30392.448	14.667	422.018	422.018
℄ Brg. N. Abut.	30394.615	14.667	422.013	422.013
A	30404.615	14.667	421.988	421.998
B	30414.615	14.667	421.967	421.981
C	30424.615	14.667	421.949	421.955
℄ Brg. Pier 1	30433.448	14.667	421.936	421.936
D	30443.448	14.667	421.923	421.928
E	30453.448	14.667	421.914	421.923
F	30463.448	14.667	421.907	421.914
G	30473.448	14.667	421.904	421.906
℄ Brg. Pier 2	30478.948	14.667	421.903	421.903
H	30488.948	14.667	421.904	421.911
I	30498.948	14.667	421.909	421.922
J	30508.948	14.667	421.916	421.926
℄ Brg. S. Abut.	30517.782	14.667	421.925	421.925
Bk. S. Abut.	30519.948	14.667	421.927	421.927

℄ BEAM 14

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	30395.816	21.000	421.878	421.878
℄ Brg. N. Abut.	30397.983	21.000	421.872	421.872
A	30407.983	21.000	421.848	421.860
B	30417.983	21.000	421.829	421.842
C	30427.983	21.000	421.812	421.818
℄ Brg. Pier 1	30436.816	21.000	421.799	421.799
D	30446.816	21.000	421.788	421.793
E	30456.816	21.000	421.780	421.788
F	30466.816	21.000	421.774	421.781
G	30476.816	21.000	421.772	421.774
℄ Brg. Pier 2	30482.316	21.000	421.772	421.772
H	30492.316	21.000	421.774	421.781
I	30502.316	21.000	421.779	421.792
J	30512.316	21.000	421.787	421.797
℄ Brg. S. Abut.	30521.149	21.000	421.797	421.797
Bk. S. Abut.	30523.316	21.000	421.800	421.800

Note: Work this sheet with sheet #3 of 16.

TOP OF SLAB ELEVATIONS
F.A.I. RT. 57 SEC. (28-2B)D-1
FRANKLIN COUNTY
STATION 304+25.00

DESIGNED	John Cicone
CHECKED	Anthony J. Voycheck
DRAWN	R. Doty
CHECKED	JLC, AYV

May 20 1993

EXAMINED Engr. D. Kaspar
ENGINEER OF BRIDGE DESIGN

PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

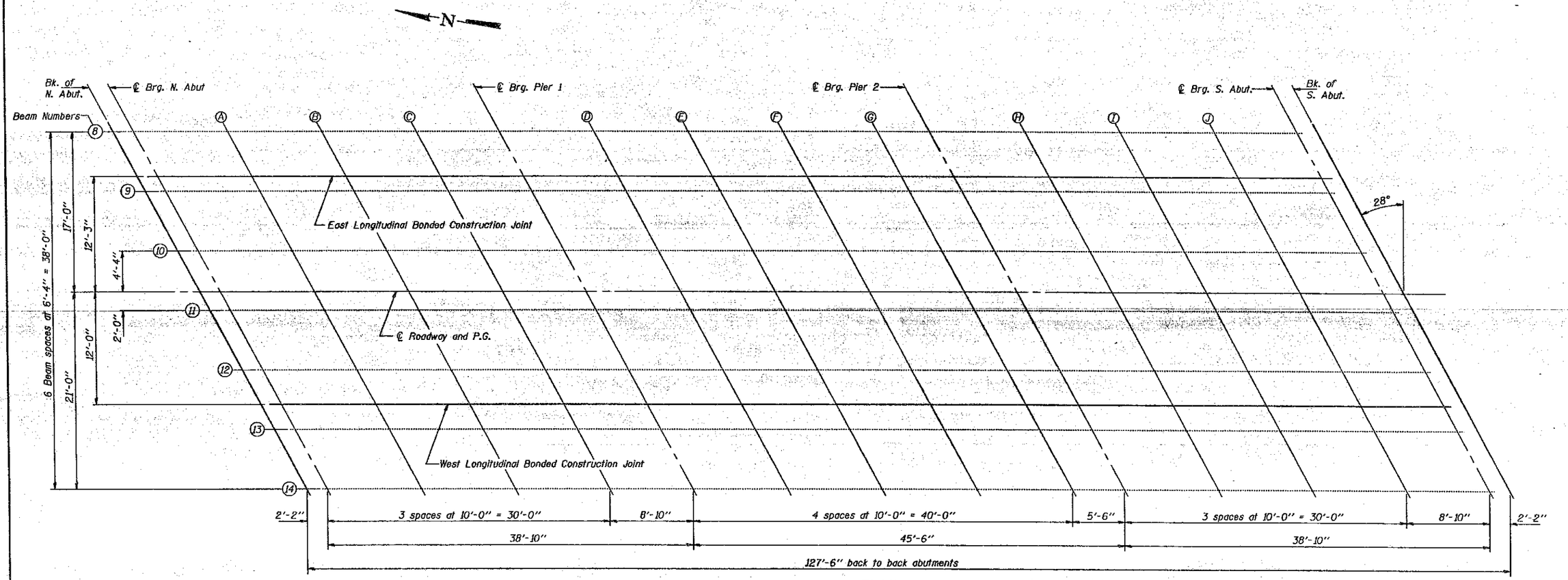
APPROVED
DIRECTOR OF HIGHWAYS

E-S 1-6-82

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-2B)D-1	FRANKLIN		52
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 3
16 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN

DESIGNED	John Cicero
CHECKED	Anthony G. Wilson
DRAWN	R. Doty
CHECKED	JLC, A.P.V.

May 20 1993

EXAMINED Engineer of Bridge Design

PASSED Ralph E. Anderson
Engineer of Bridges and Structures

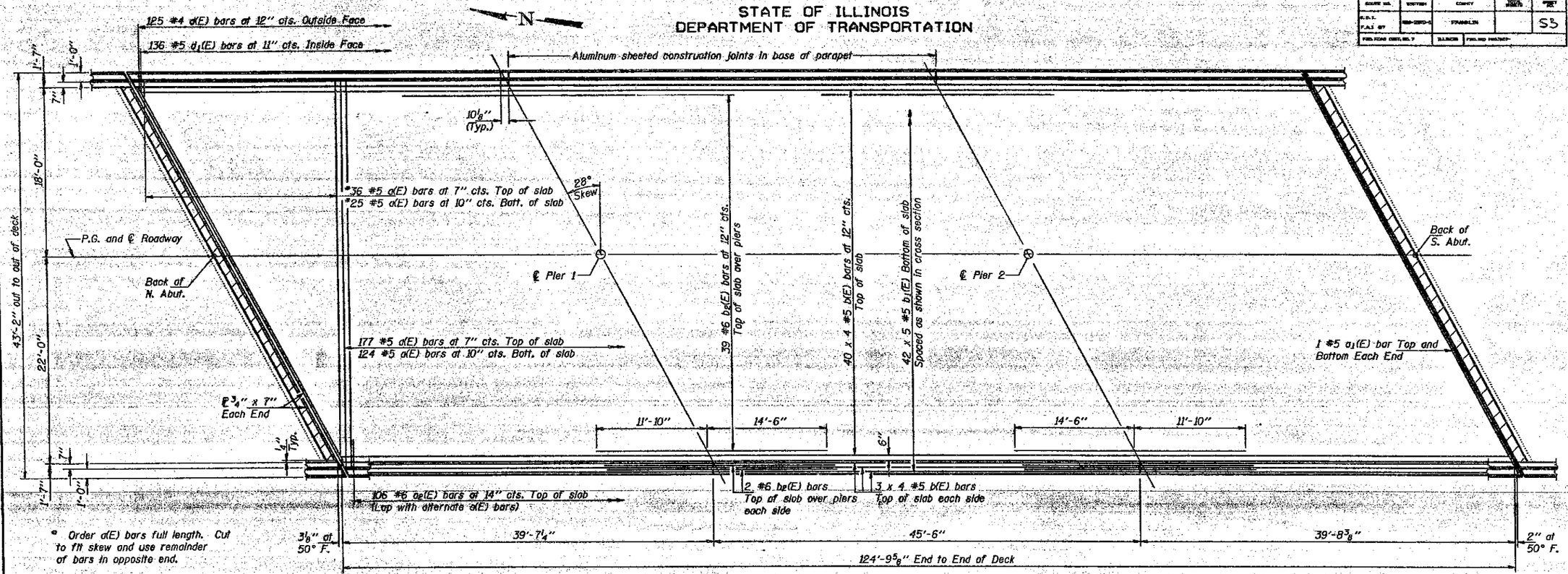
APPROVED
Director of Highways

TOP OF SLAB ELEVATIONS
F.A.I. RT. 57 SEC. (28-2B)D-1
FRANKLIN COUNTY
STATION 304+25.00

ROUTE	SECTION	COUNTY	DISTRICT	SHEET
F.A.I. 57	(28-2B)D-1	FRANKLIN		53
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

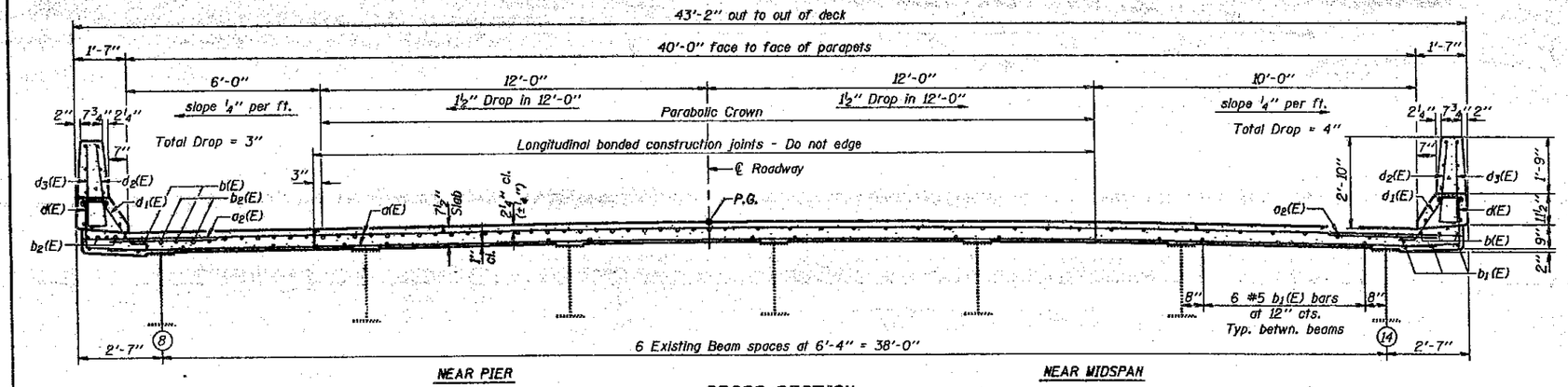
SHEET NO. 4
16 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



* Order a(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.

PLAN



CROSS SECTION
(Looking South)

Notes: See sheets #5 and #6 of 16 for superstructure details, parapet reinforcement and Bill of Material.
Reinforcement bars designated (E) shall be epoxy coated.
Reinforcement bars indicated thus 40 x 4 #5 etc. indicates 40 lines of bars with 4 lengths per line.
See sheet #1 of 16 for drain locations and sheet #5 of 16 for details.
Hatched area to be poured after superstructure forms have been removed. Quantity of concrete to be included with Class X Concrete Superstructure.

MIN. BAR LAPS
#5 bars = 1'-8"

DESIGNED	John Cirone
CHECKED	Anthony J. Hanson
DRAWN	R. Doty
CHECKED	JLC, AV.V

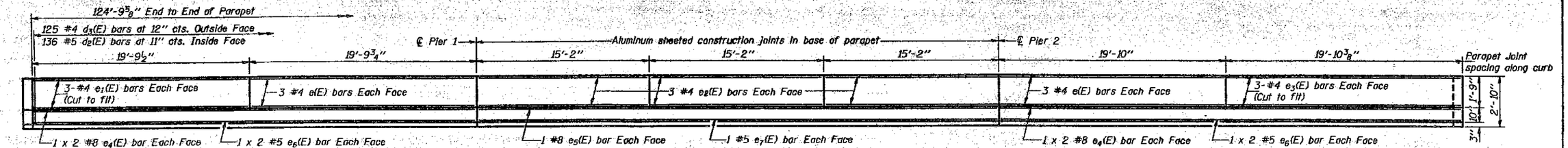
May 20 1993
EXAMINED Engineer of Bridge Design
PASSED Engineer of Bridges and Structures
APPROVED Director of Highways

SUPERSTRUCTURE
F.A.I. RT. 57 SEC. (28-2B)D-1
FRANKLIN COUNTY
STATION 304+25.00

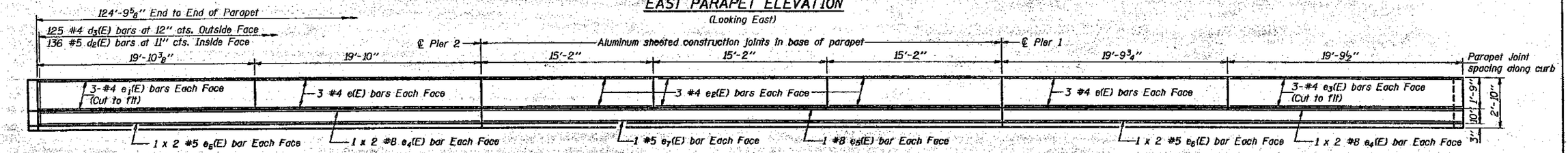
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. RT. 57	(28-2B)D-1	FRANKLIN		54
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 5
16 SHEETS

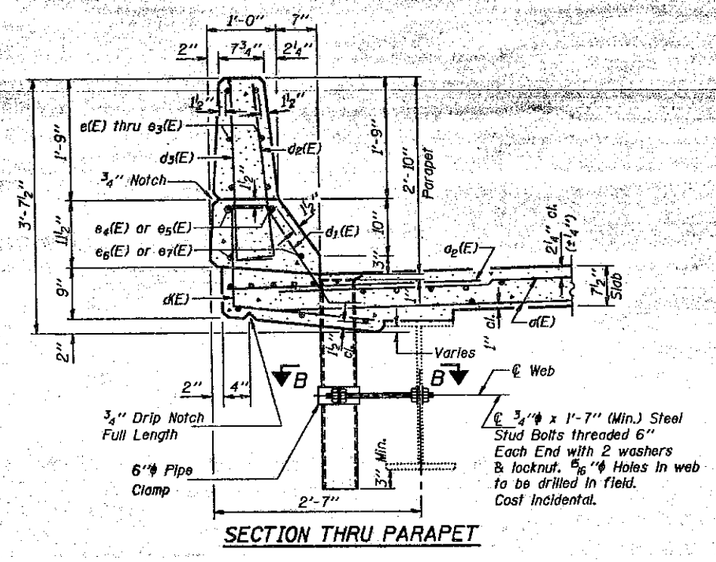
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



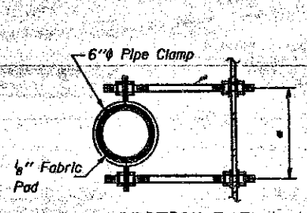
EAST PARAPET ELEVATION
(Looking East)



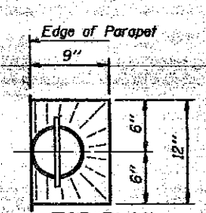
WEST PARAPET ELEVATION
(Looking West)



SECTION THRU PARAPET



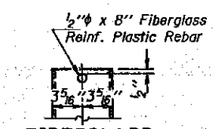
SECTION B-B



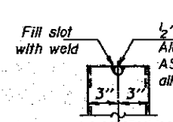
TOP PLAN

* Dimension as required by Pipe Clamp

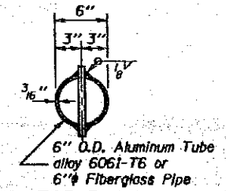
MIN. BAR LAPS
#5 bars = 2'-2"
#8 bars = 4'-6"



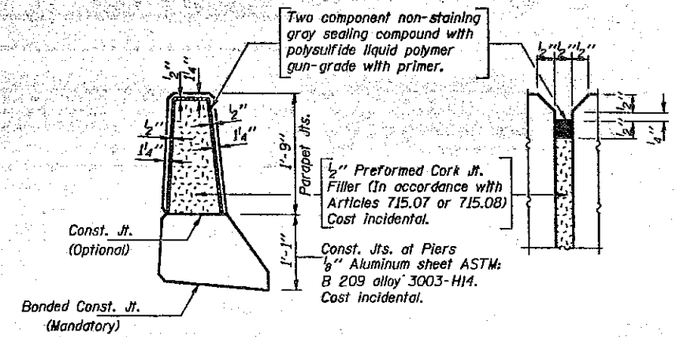
FIBERGLASS PIPE



ALUMINUM TUBE



TOP PLAN
(Showing Aluminum Tube)



PARAPET JOINT DETAILS

Notes:
The exterior surfaces of the Floor Drain shall be painted with the vinyl enamel paint as specified in the Standard Specs. The exterior surfaces of the drain shall be cleaned and given a washcoat pretreatment in accordance with Steel Structures Painting Council's Spec. SSPC-SP1 & SSPC-Paint 27 prior to painting.

Fiberglass pipe shall conform to ASTM: D2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum. The surface of the Fiberglass pipe shall be free of bond inhibiting agents.

DESIGNED	John Cicone
CHECKED	Anthony J. Virag
DRAWN	R. Doty
CHECKED	JLC, AJV.

May 20 1993

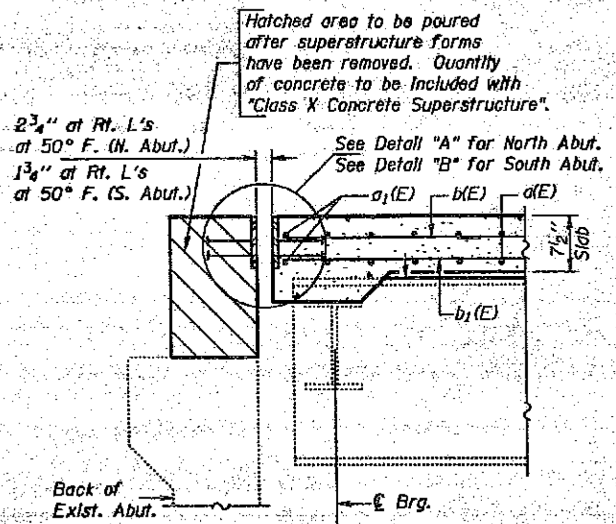
EXAMINED Engineer of Bridge Design

PASSED Ralph E. Anderson, Engineer of Bridges and Structures

APPROVED Director of Highways

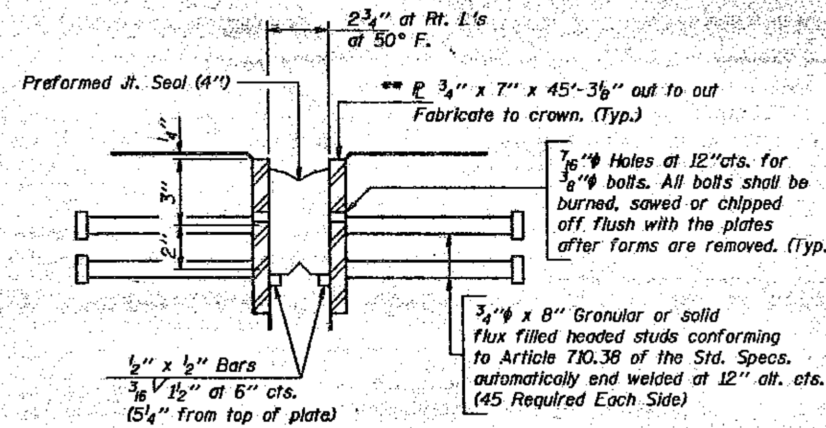
SUPERSTRUCTURE DETAILS
F.A.I. RT. 57 SEC. (28-2B)D-1
FRANKLIN COUNTY
STATION 304+25.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

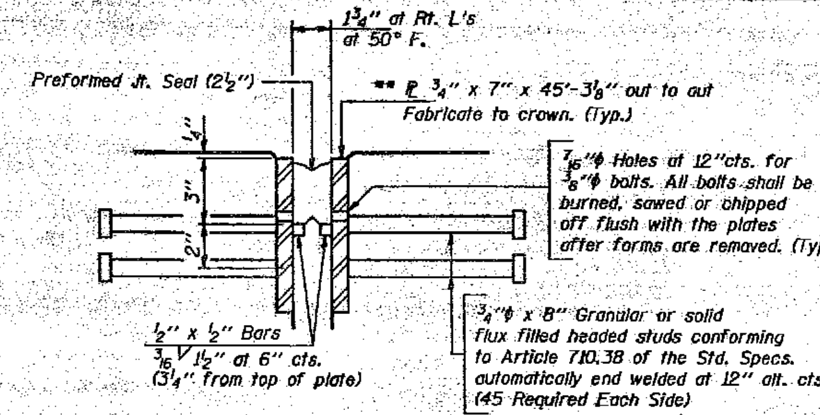


SECTION THRU ABUTMENTS

North Abut. Looking East
South Abut. Looking West



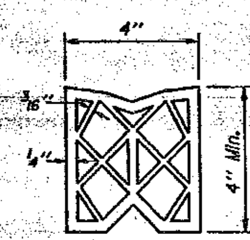
DETAIL "A"



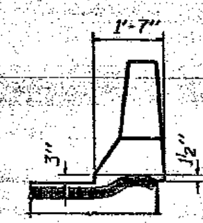
DETAIL "B"

** Furnish in segments of 20 ft. maximum length. Maximum space between installed segments shall be $\frac{1}{16}$". Seal space with Silicone Sealant suitable for Structural Steel.

Note: After fabrication all surfaces of the steel plates shall be given one shop coat of paint specified for Structural Steel. No field painting required.

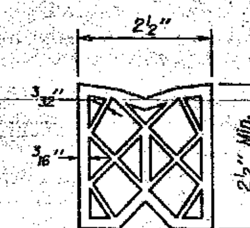


PREFORMED JOINT SEAL (4")



END TREATMENT

Typ. for (4") and ($2\frac{1}{2}$").

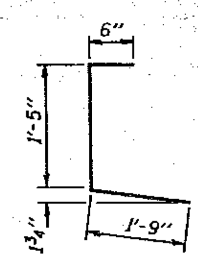


PREFORMED JOINT SEAL ($2\frac{1}{2}$")

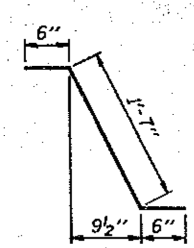
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	362	#5	41'-2"	straight
a_1(E)	4	#5	48'-2"	straight
a_2(E)	212	#6	4'-0"	straight
b(E)	184	#5	32'-5"	straight
b_1(E)	210	#5	26'-3"	straight
b_2(E)	86	#6	26'-4"	straight
d(E)	250	#4	3'-8"	
d_1(E)	272	#5	2'-7"	
d_2(E)	272	#5	3'-0"	
d_3(E)	250	#4	3'-0"	
e(E)	24	#4	19'-7"	straight
e_1(E)	12	#4	20'-4"	straight
e_2(E)	36	#4	14'-11"	straight
e_3(E)	12	#4	19'-3"	straight
e_4(E)	16	#8	22'-4"	straight
e_5(E)	4	#8	45'-3"	straight
e_6(E)	16	#5	21'-2"	straight
e_7(E)	4	#5	45'-3"	straight
Reinforcement Bars, Epoxy Coated		Lbs.	38060	
Class X Concrete Superstructure		Cu. Yd.	177.6	

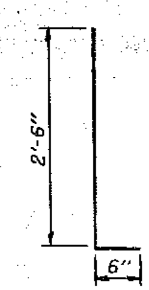
Reinforcement bars designated (E) shall be epoxy coated.



BAR a(E)



BAR d_1(E)



BARS d_2(E) & d_3(E)

DESIGNED	John Cicione
CHECKED	Anthony J. Viersen
DRAWN	R. Doty
CHECKED	JLC RVV

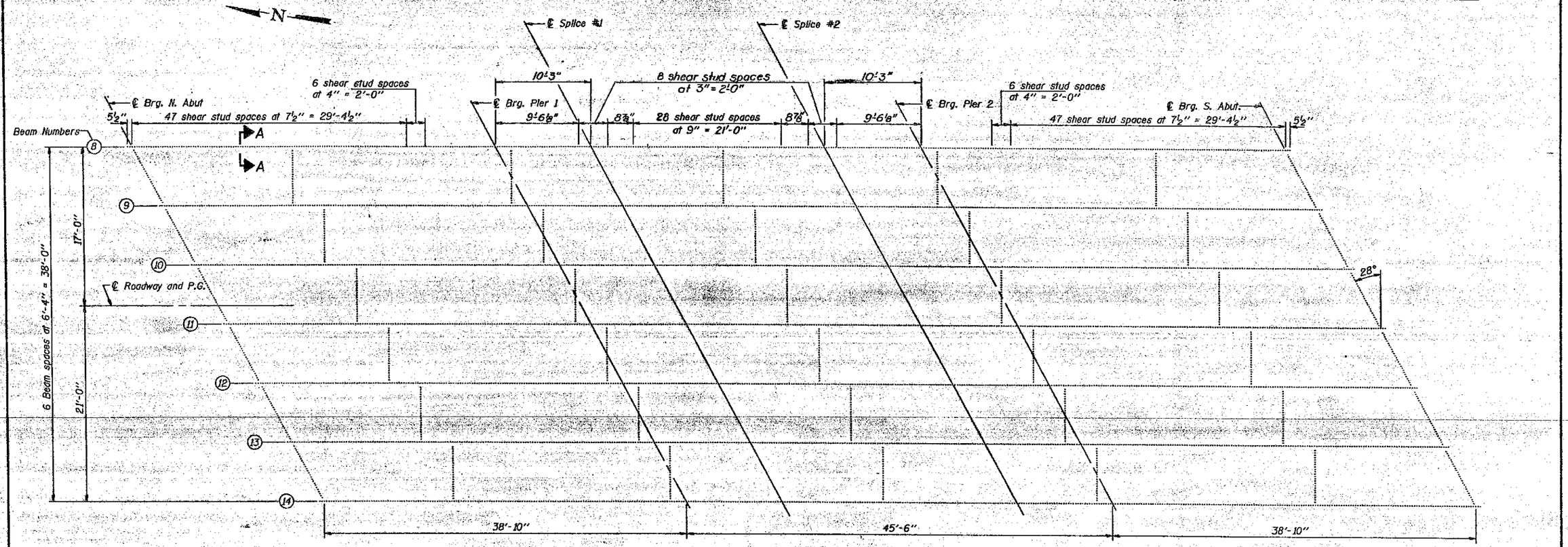
May 20 1993
EXAMINED Iraj I. Kaspar — ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

SUPERSTRUCTURE DETAILS
F.A.I. RT. 57 SEC. (28-2B)D-1
FRANKLIN COUNTY
STATION 304+25.00

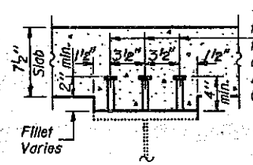
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. RT. 57	(28-2B)D-1	FRANKLIN		56
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 7
16 SHEETS



PLAN
(Shear Studs Typ. All Beams)



¾"ϕ Granular or solid flux filled headed studs, conforming to the requirements of Art. 710.38 of the Std. Specs. Automatically and welded to flange. (3255 Required)

SECTION A-A

DESIGNED	John Cicero
CHECKED	Anthony J. Yunker
DRAWN	R. Doty
CHECKED	JLC, AJY

May 20 1993

EXAMINED Engineer of Bridge Design

PASSED Ralph E. Anderson Engineer of Bridges and Structures

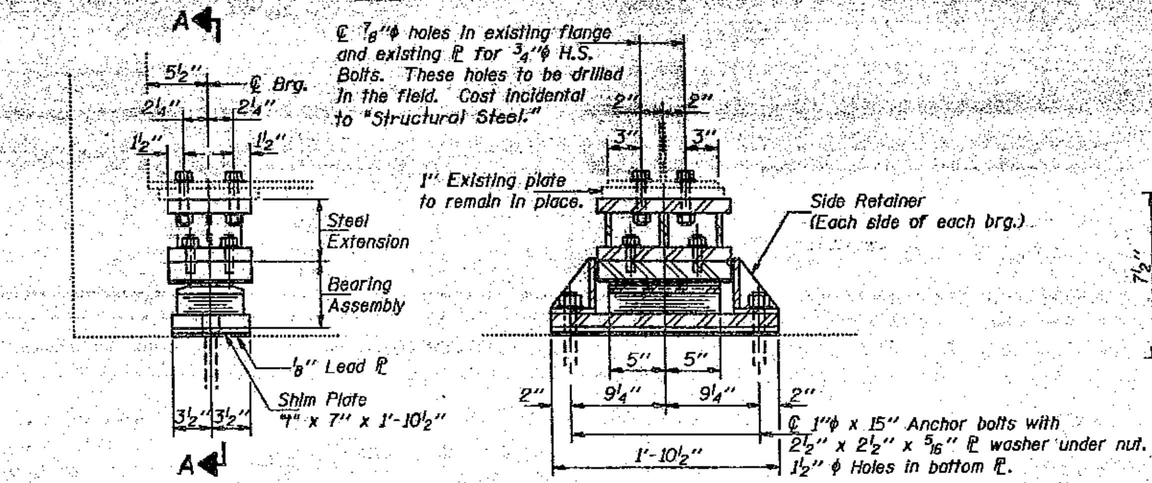
APPROVED Director of Highways

STRUCTURAL STEEL DETAILS
F.A.I. RT. 57 SEC. (28-2B)D-1
FRANKLIN COUNTY
STATION 304+25.00

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-2B)D-1	FRANKLIN		57

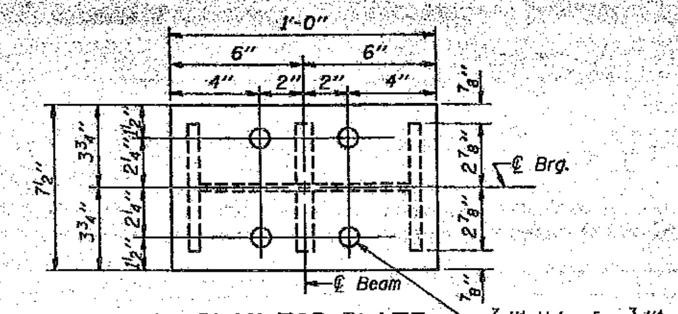
SHEET NO. 8 / 16 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

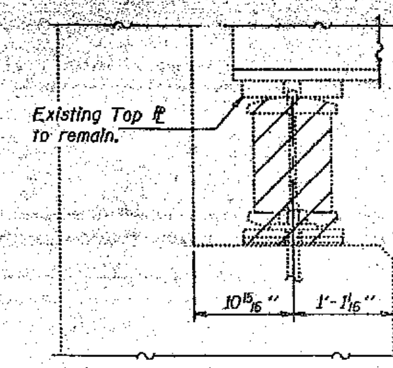


ELEVATION AT NORTH ABUT. SECTION A-A

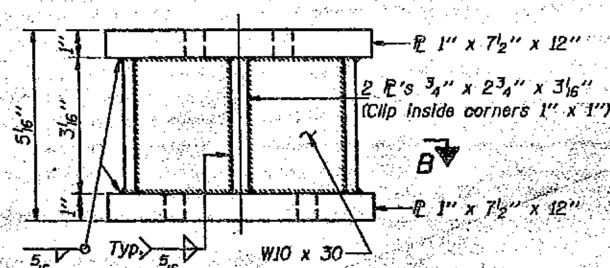
TYPE II TFE ELASTOMERIC EXP. BRG.



PLAN-TOP PLATE

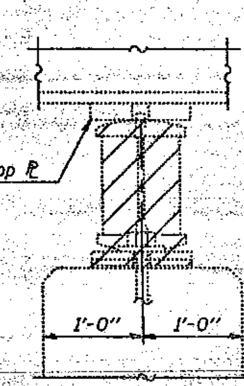


AT ABUTMENT

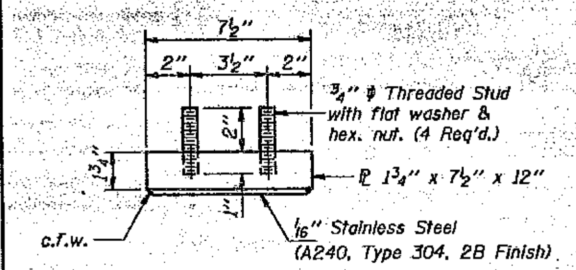


STEEL EXTENSION AT NORTH ABUT.

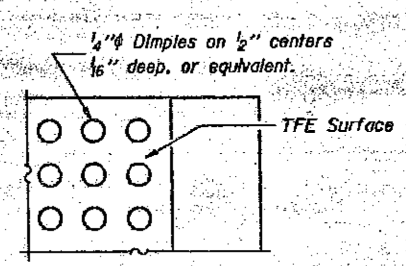
Equivalent welded plates will be allowed in lieu of W10x30 section.



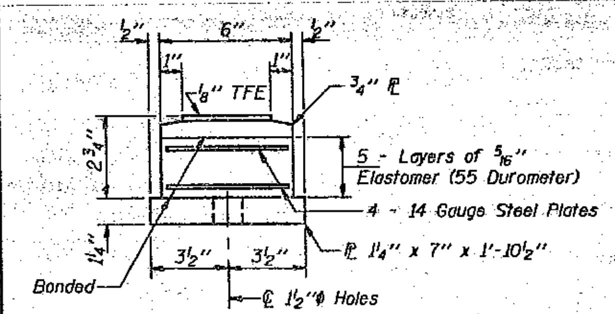
AT PIER



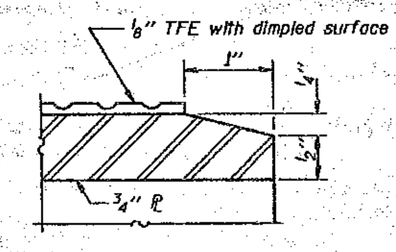
TOP BEARING ASSEMBLY



PLAN-TFE SURFACE



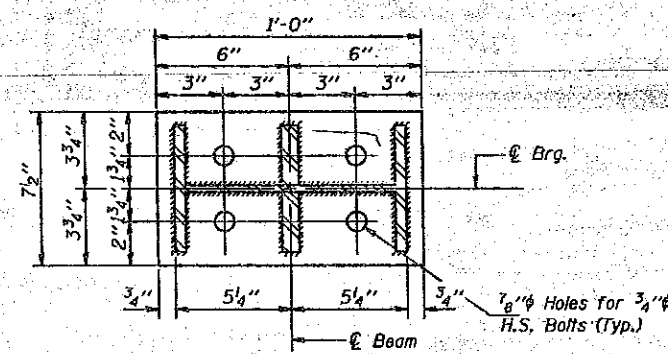
BOTTOM BEARING ASSEMBLY



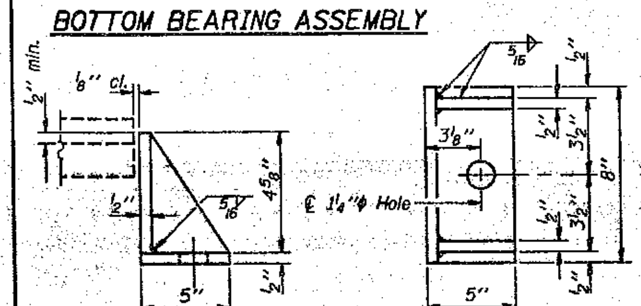
SECTION THRU TFE

Note: The ⅛" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of ⅛" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

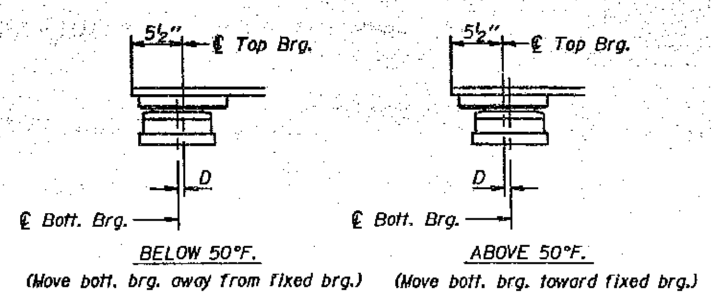


SECTION B-B



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.



SETTING ANCHOR BOLTS AT EXP. BRG.

D=⅛" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

INTERIOR BEAM MOMENT TABLE		0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or Pier 2	0.5 Sp. 2
Is	(In⁴)	2850	2850	2850
Ic (n=9)	(In⁴)	8361	——	8361
Ic (n=27)	(In⁴)	6285	——	6285
Ss	(In³)	213	213	213
Sc (n=9)	(In³)	326	——	326
Sc (n=27)	(In³)	296	——	296
D℄	(K/ft.)	.705	.980	.705
MD℄	('K)	77.3	163	56.7
fsD℄ non-comp	(k.s.i.)	4.4	9.2	3.2
sD℄	(K/ft.)	.275	——	.275
MsD℄	('K)	34.8	——	33.9
** fsD℄ (comp)	(k.s.i.)	1.4	——	1.4
ML℄	('K)	213	110	219.7
M (Imp)	('K)	63.2	32.6	65.2
(Total)	('K)	276.2	142.6	284.9
fs (L+I)	(k.s.i.)	10.2	8.0	10.5
fs (Total)	(k.s.i.)	16.0	17.2	15.1
VR	(K)	43.2	——	45.9

** For n = 27.

INTERIOR BEAM REACTION TABLE		Abuts.	Piers
RD℄	(K)	10.5	33.0
RL℄	(K)	30.3	37.3
Imp.	(K)	9.0	11.1
R (Total)	(K)	49.8	81.4

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total).

Ic and Sc are the moment of inertia and section modulus of the composite section used in computing fs (Total).

VR is the maximum live Load + Impact shear range in span.

JACK AND REMOVE EXISTING BEARING

Hatched areas indicate Removal of Existing Bearing.
See sheets #8, #9 & #10 of 16 for new brg. details.

JACK AND REMOVE EXISTING BEARING PROCEDURE

1. The Contractor shall submit for approval by the Engineer, plans for jacking prior to commencing any work at the bearings. Dead Load = 3.0K at each beam at abutments and 6.0K at each beam at piers without concrete. Min. Jack Capacity at each beam shall be 5 Tons.
2. Jacking and removing existing bearings shall be done after deck removal is completed and before the new deck is poured.
3. All beams at one abutment or at one pier shall be lifted simultaneously.
4. Jacking shall be limited to a maximum of ¼".
5. Remove the existing anchor bolts flush with the concrete surface and grind smooth. The rockers and bottom plates shall be removed, leaving the existing top plate intact.
6. The new bearings and steel extensions shall be installed in place and the jacks shall be lowered before the new deck is poured.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	7
Jack and Remove Existing Bearings	Each	7

Notes: For anchor bolt installation details see sheet #16 of 16.
For anchor bolt location see sheet #10 of 16.
For shim plate thickness see sheet #10 of 16.

DESIGNED	John Cirone
CHECKED	Anthony J. Vinson
DRAWN	Joe Sutherland R.D.
CHECKED	JLC, AJV

May 20 1993

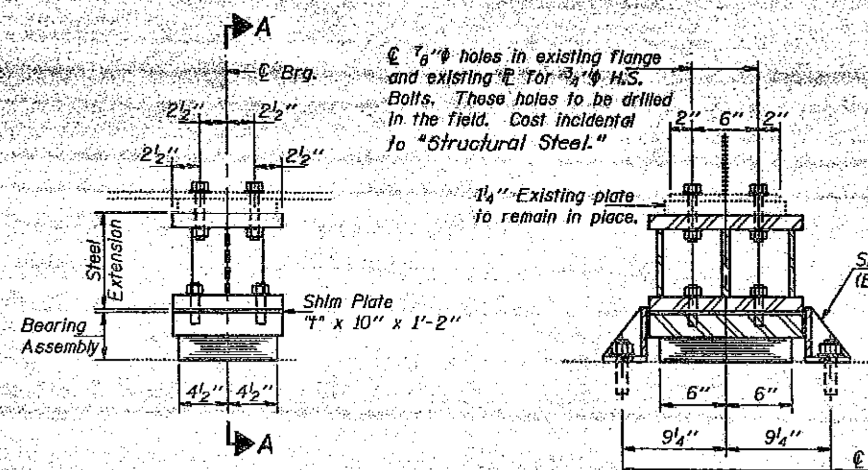
EXAMINED: Eraj J. Kaspar, ENGINEER OF BRIDGE DESIGN
PASSED: Ralph E. Anderson, ENGINEER OF BRIDGES AND STRUCTURES
APPROVED: DIRECTOR OF HIGHWAYS

NORTH ABUTMENT
BEARING DETAILS
F.A.I. RT. 57 SEC. (28-2B)D-1
FRANKLIN COUNTY
STATION 304+25.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-2B)D-1	FRANKLIN		58

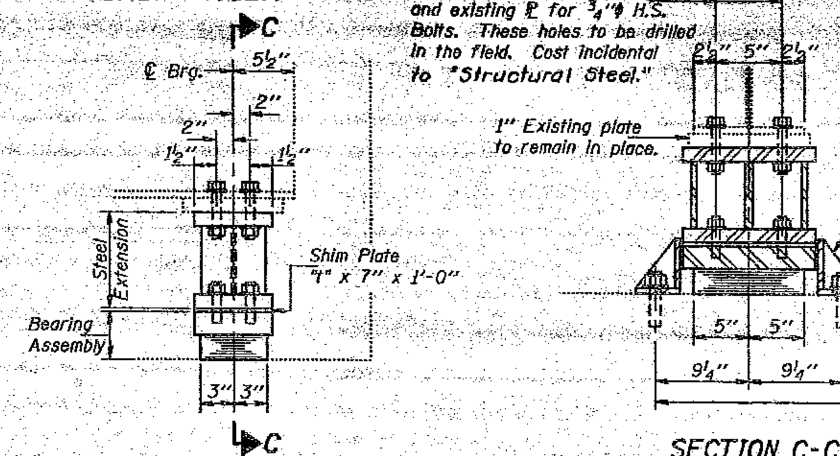
SHEET NO. 9 OF 16 SHEETS



ELEVATION AT PIER 1

SECTION A-A

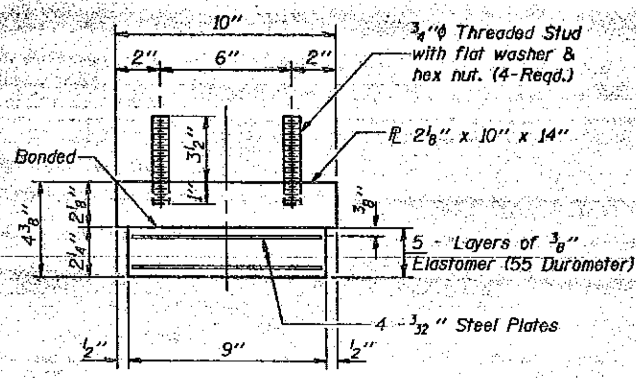
TYPE I ELASTOMERIC EXP. BRG.



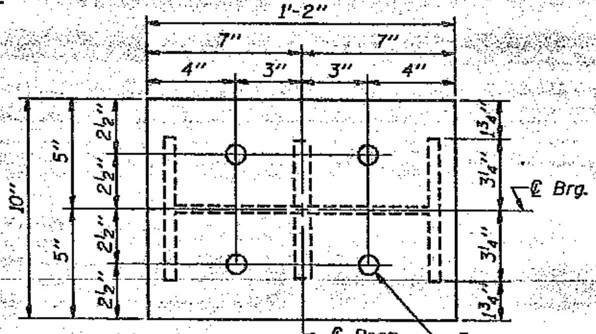
ELEVATION AT SOUTH ABUT.

SECTION C-C

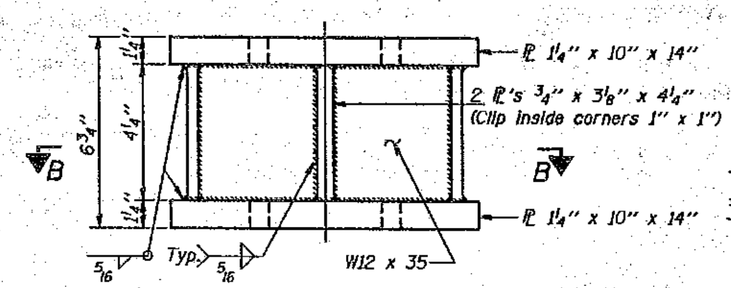
TYPE I ELASTOMERIC EXP. BRG.



BEARING ASSEMBLY

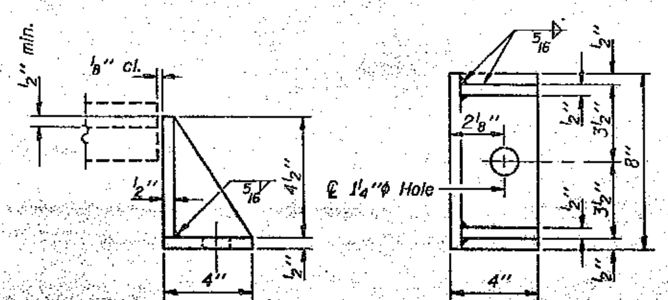


PLAN-TOP PLATE



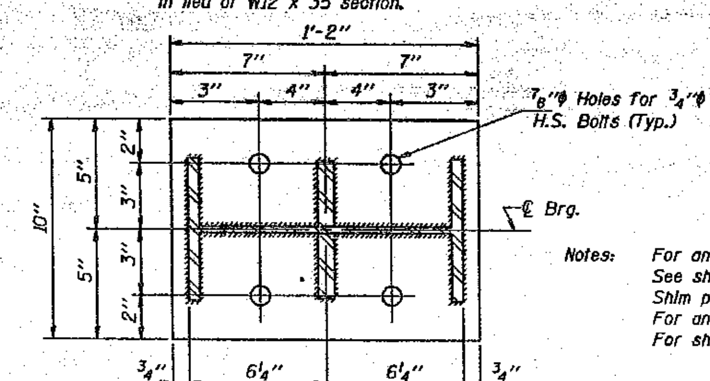
STEEL EXTENSION AT PIER 1

Equivalent welded plates will be allowed in lieu of W12 x 35 section.

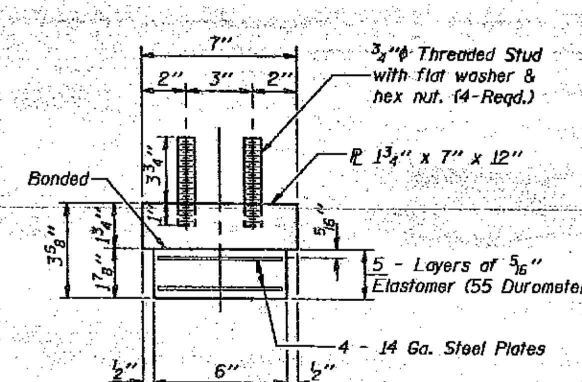


SIDE RETAINER

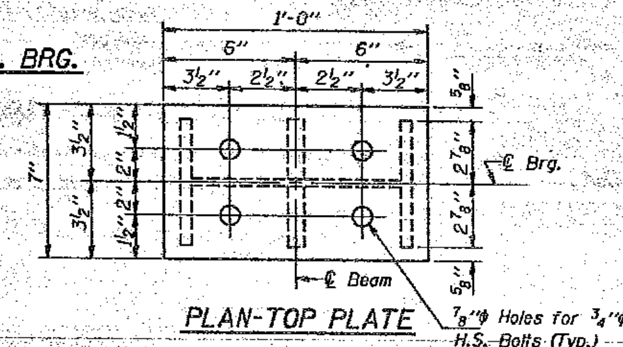
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.



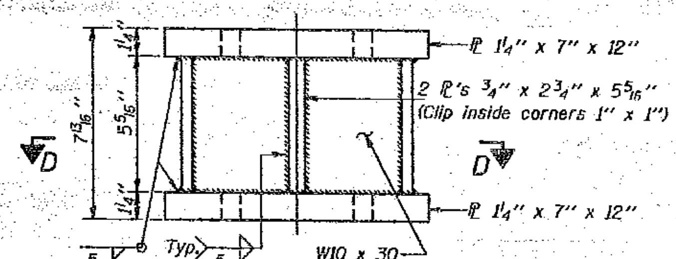
SECTION B-B



BEARING ASSEMBLY

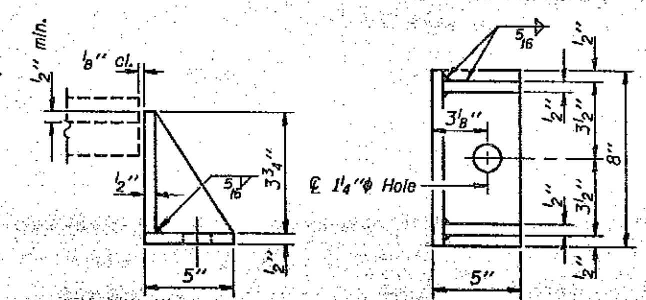


PLAN-TOP PLATE



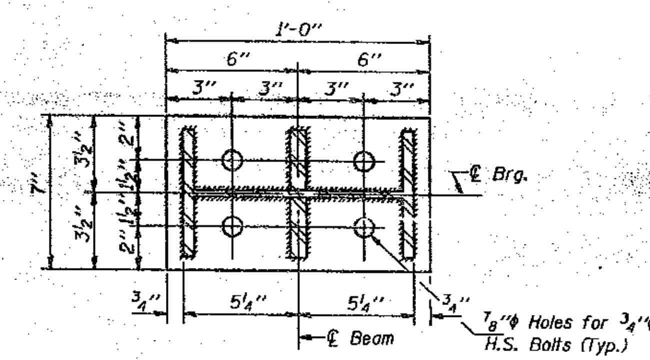
STEEL EXTENSION AT SOUTH ABUT.

Equivalent welded plates will be allowed in lieu of W10x30 section.



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.



SECTION D-D

Notes: For anchor bolt installation details see sheet #16 of 16.
See sheet #8 of 16 for Jack and Remove Existing Bearing Procedure.
Shim plates shall not be placed under Bearing Assembly.
For anchor bolt location see sheet #10 of 16.
For shim plate thickness see sheet #10 of 16.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	14
Jack and Remove Existing Bearings	Each	14

DESIGNED John Cicone
CHECKED Anthony Y. Vinso
DRAWN Joe Sutherland R.D.
CHECKED JCC, RYV

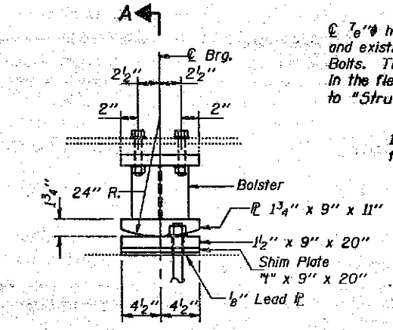
May 20 1993
EXAMINED — ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

PIER 1 AND SOUTH ABUTMENT BEARING DETAILS
F.A.I. RT. 57 SEC. (28-2B)D-1
FRANKLIN COUNTY
STATION 304+25.00

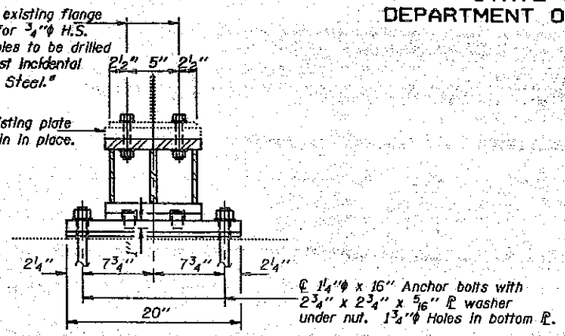
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-2B)D-1	FRANKLIN		59
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 10
16 SHEETS

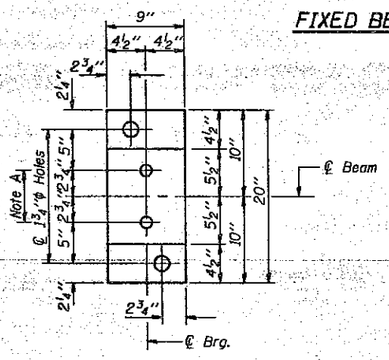


ELEVATION AT PIER 2

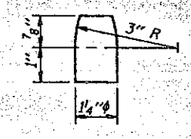


SECTION A-A

FIXED BEARING

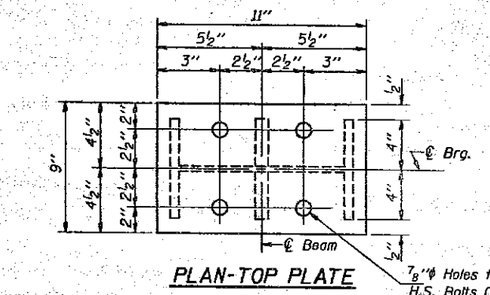


PLAN

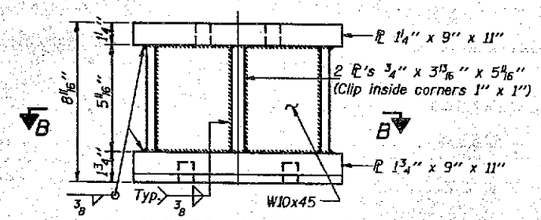


PINTLE

Note A:
1⅜"ϕ Holes-1" deep in bolster for 1¼"ϕ pintles. Thread or press fit in bottom ℄.

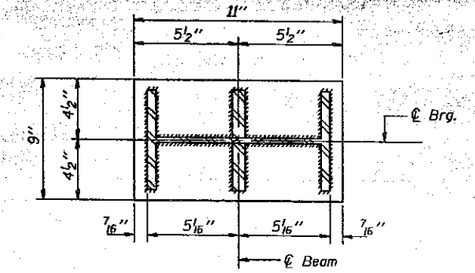


PLAN-TOP PLATE



BOLSTER AT PIER #2

Equivalent welded plates will be allowed in lieu of W10x45 section.



SECTION B-B

Notes: For anchor bolt installation details see sheet #16 of 16.
See sheet #8 of 16 for Jack and Remove Existing Bearing Procedure.

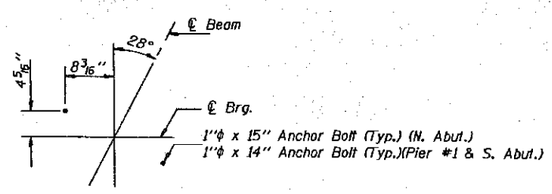
* TABLE OF "Y" DIMENSIONS

Location	N. Abut.	Pier #1	Pier #2	S. Abut.
Beam #8	½"	½"	½"	½"
Beam #9	13/16"	¾"	13/16"	⅞"
Beam #10	1"	⅞"	1"	15/16"
Beam #11	1⅛"	15/16"	1⅛"	1⅛"
Beam #12	1 1/16"	1⅛"	1¼"	1⅜"
Beam #13	1 1/16"	⅞"	1"	1 1/16"
Beam #14	1 5/16"	⅞"	1⅛"	1 5/16"

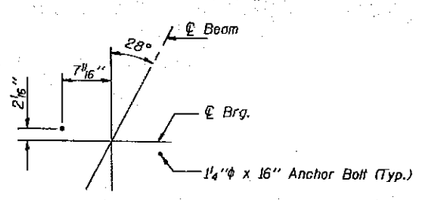
* Based on the field survey seat elevations shown on this sheet. The Contractor shall verify these elevations in the field and make adjustments if necessary.

FIELD SURVEY SEAT ELEVATIONS

Location	N. Abut.	Pier #1	Pier #2	S. Abut.
Beam #8	418.08	417.91	417.92	417.89
Beam #9	418.17	418.01	418.02	417.99
Beam #10	418.23	418.08	418.09	418.07
Beam #11	418.22	418.08	418.09	418.07
Beam #12	418.13	418.00	418.02	418.00
Beam #13	418.02	417.90	417.92	417.91
Beam #14	417.87	417.76	417.78	417.77



PLAN AT N. ABUT.
S. ABUT. & PIER #1



PLAN AT PIER #2

DESIGNED	John Cicero
CHECKED	Anthony G. Vinson
DRAWN	Joe Sutherland R.D.
CHECKED	JCC, AV.V.

May 20 1993
EXAMINED — ENGINEER OF BRIDGE DESIGN
PASSED — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

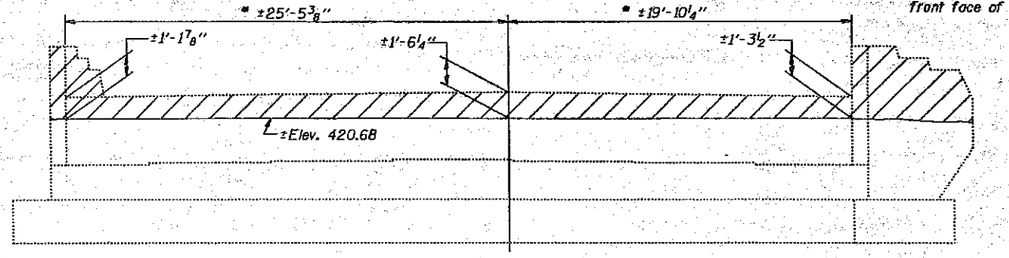
PIER 2
BEARING DETAILS
F.A.I. RT. 57 SEC. (28-2B)D-1
FRANKLIN COUNTY
STATION 304+25.00

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	28B-2BRD-1	FRANKLIN	60	11
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT-		

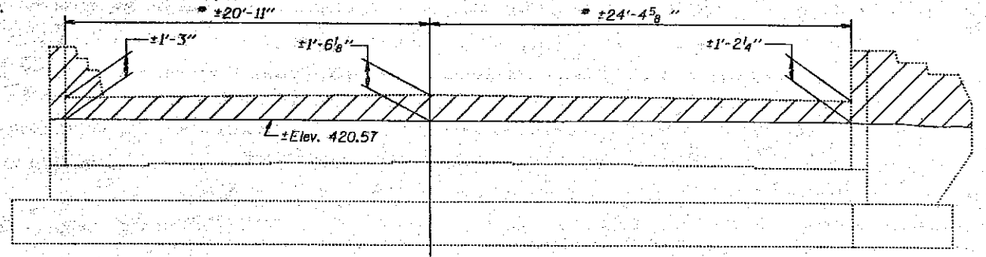
16 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

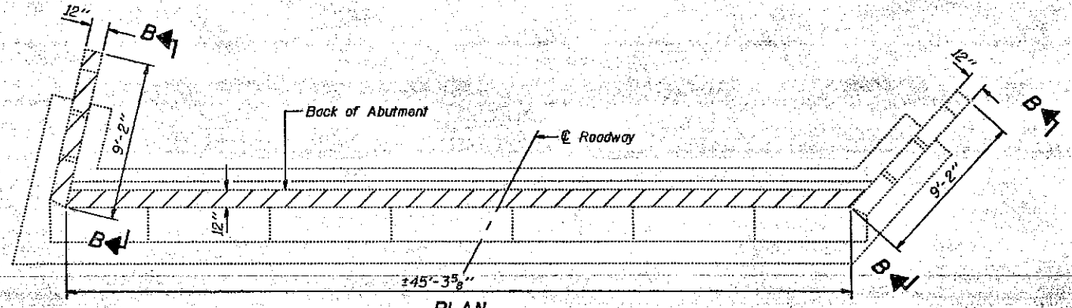
* These dimensions are along front face of hatched area.



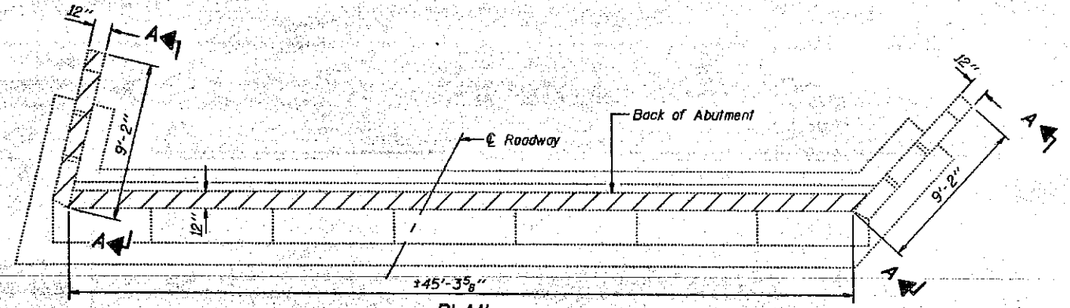
ELEVATION
(Looking North)



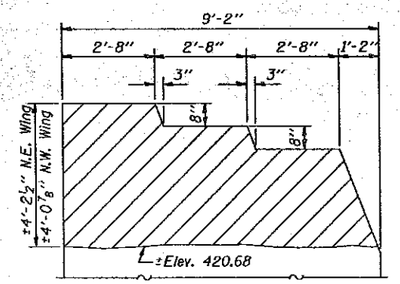
ELEVATION
(Looking South)



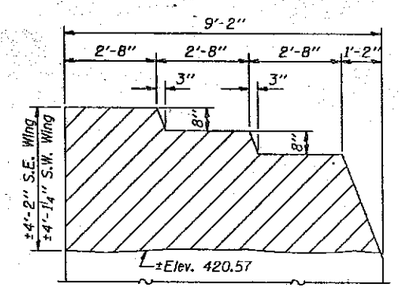
PLAN



PLAN



VIEW B-B



VIEW A-A

NORTH ABUTMENT DETAILS

SOUTH ABUTMENT DETAILS

Notes: Hatched area indicates Concrete Removal.
For existing shoulder pavement removal see Roadway Plans.
Existing reinforcement extending into removed area shall be cleaned, straightened and incorporated into the new construction.

TWO ABUTMENTS BILL OF MATERIAL

Item	Unit	Total
Concrete Removal	Cu. Yd.	9

CONCRETE REMOVAL DETAILS FOR EXISTING ABUTMENTS F.A.I. RT. 57 SEC. (28-2B)D-1 FRANKLIN COUNTY STATION 304+25.00

DESIGNED	John Cimone
CHECKED	Anthony J. Quinn
DRAWN	R. Doty
CHECKED	JLC, AJQ

May 20 1993

EXAMINED Greg S. Kasper
ENGINEER OF BRIDGE DESIGN

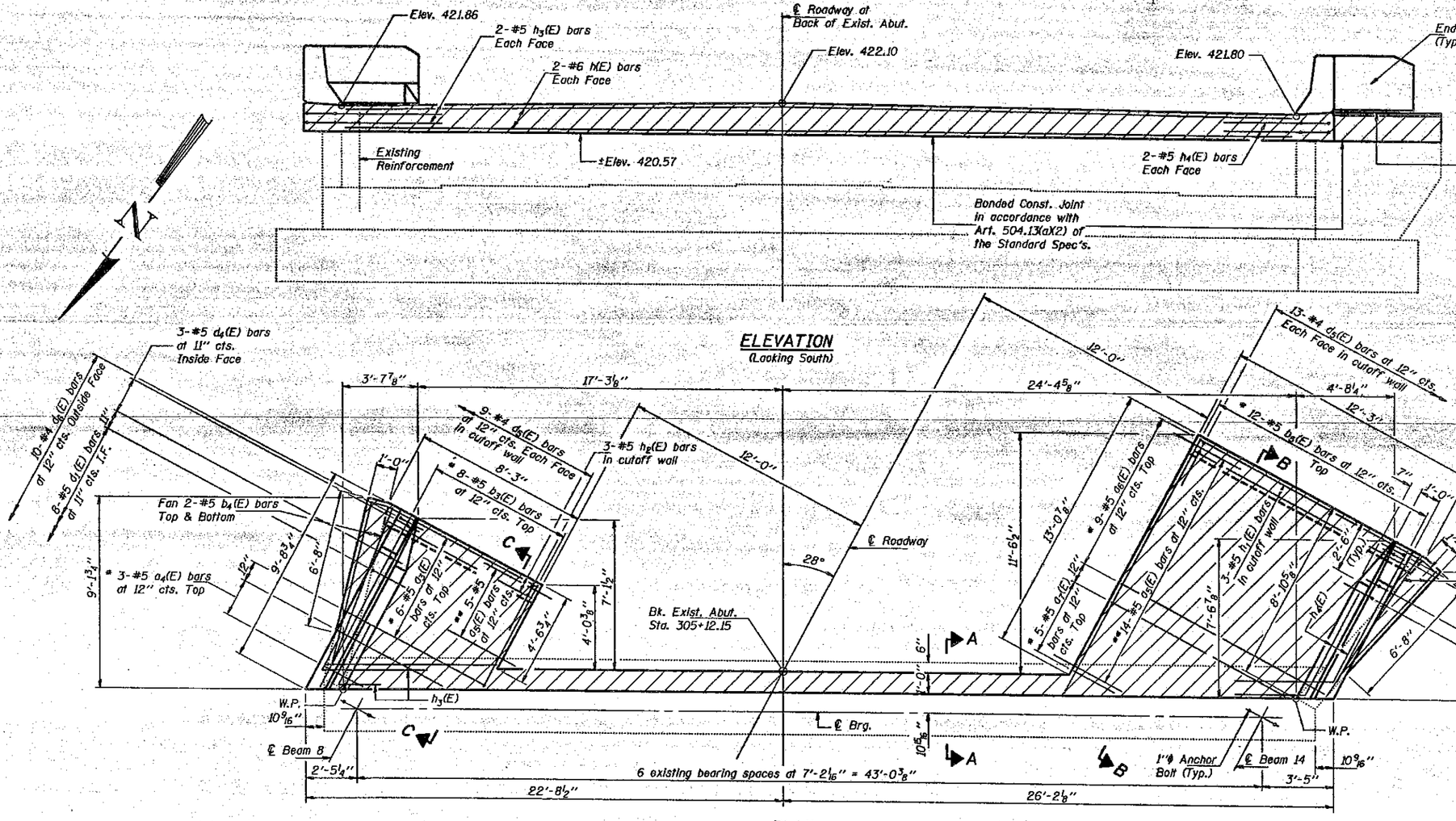
PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

APPROVED
DIRECTOR OF HIGHWAYS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-2B)D-1	FRANKLIN	61	12

16 SHEETS



PLAN

* Order $a_3(E)$, $a_4(E)$, $a_5(E)$, $a_7E)$, $b_3(E)$ and $b_5(E)$ bars full length. Cut to fit and use remainder of bars in bottom of slab.

** Drill 7/8"ϕ x 9" Min. hole. Epoxy grout $a_5(E)$ bars. Use a grout approved by the Department or epoxy grout in accordance with BSP-11. The method of grout application shall be approved by the Engineer. See Special Provisions.

Notes: Hatched area to be poured after superstructure forms have been removed. Quantity of concrete for hatched area and end post is included with "Class X Concrete Superstructure" on sheet #6 of 16.
Existing reinforcement extending into removed area shall be cleaned, straightened and incorporated into the new construction.
Reinforcement bars designated (E) shall be epoxy coated.
For anchor bolt installation details see sheet #16 of 16.
For anchor bolt location detail see sheet #10 of 16.
All edges shall have standard 3/4" chamfer.
Work this sheet with sheet #13 of 16.

DESIGNED	John Cicora
CHECKED	Anthony J. Voras
DRAWN	R. Doty
CHECKED	JCC, RVV

May 20 1993

EXAMINED Engineer of Bridge Design

PASSED Ralph E. Anderson, Engineer of Bridges and Structures

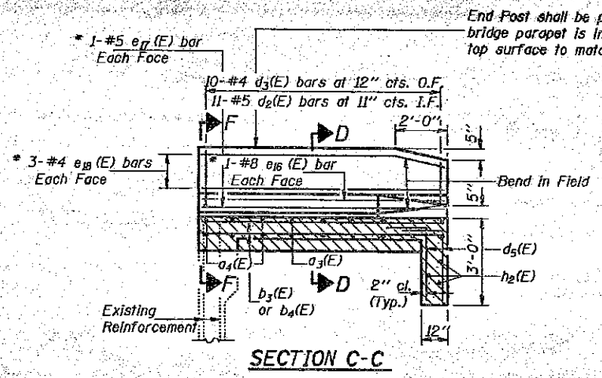
APPROVED Director of Highways

SOUTH ABUTMENT
F.A.I. RT. 57 SEC. (28-2B)D-1
FRANKLIN COUNTY
STATION 304+25.00

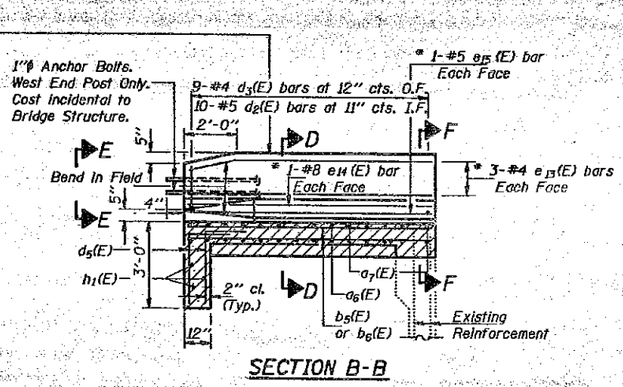
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I.	(28-2B)D-1	FRANKLIN		62
F.A.I. 57				
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 13
16 SHEETS



SECTION C-C



SECTION B-B

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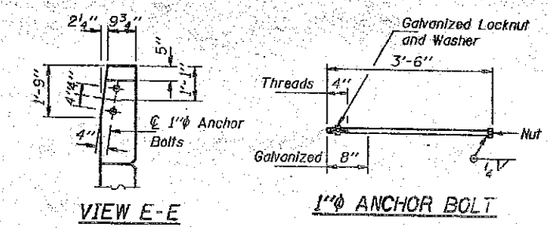
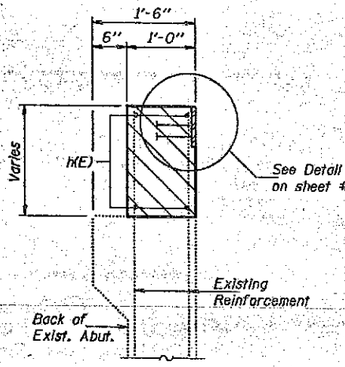
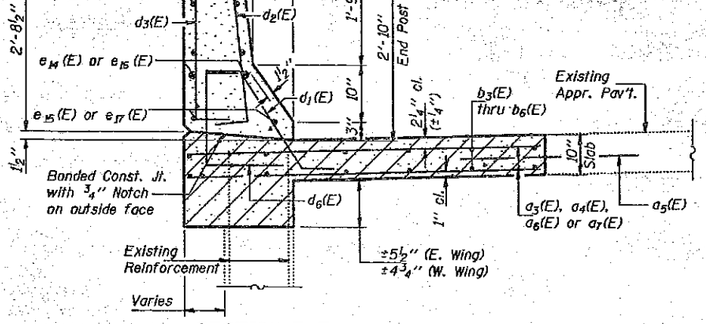


VIEW E-E

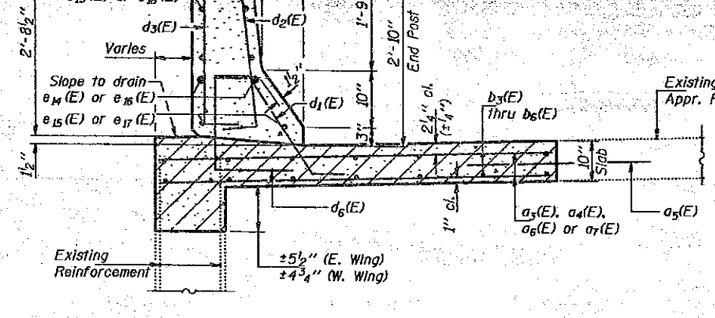
1"ϕ ANCHOR BOLT



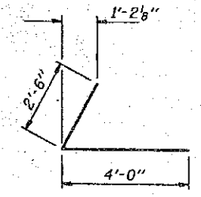
SECTION A-A



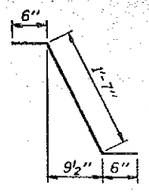
SECTION F-F



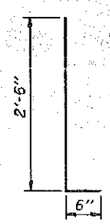
SECTION D-D



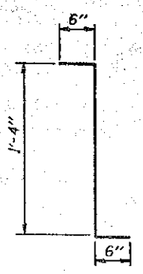
BAR h3(E)



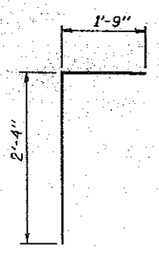
BAR d1(E)



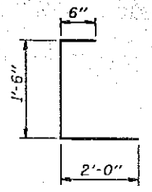
BARS d2(E) & d3(E)



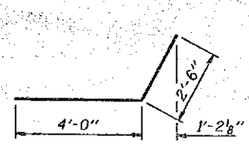
BAR d4(E)



BAR d5(E)



BAR d6(E)



BAR h4(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a3(E)	6	#5	16'-4"	
a4(E)	3	#5	7'-4"	
a5(E)	19	#5	3'-0"	
a6(E)	9	#5	24'-2"	
a7(E)	5	#5	10'-4"	
b3(E)	8	#5	14'-10"	
b4(E)	4	#5	8'-2"	
b5(E)	12	#5	21'-9"	
b6(E)	4	#5	7'-9"	
d1(E)	15	#5	2'-7"	
d2(E)	21	#5	3'-0"	
d3(E)	19	#4	3'-0"	
d4(E)	6	#5	2'-4"	
d5(E)	44	#4	4'-1"	
d6(E)	19	#4	4'-0"	
e13 (E)	6	#4	8'-3"	
e14 (E)	2	#8	8'-3"	
e15 (E)	2	#5	8'-6"	
e16 (E)	2	#8	9'-5"	
e17 (E)	2	#5	9'-5"	
e18 (E)	6	#4	9'-5"	
h(E)	4	#6	48'-7"	
h1(E)	3	#5	11'-9"	
h2(E)	3	#5	7'-9"	
h3(E)	4	#5	6'-6"	
h4(E)	4	#5	6'-6"	
Reinforcement Bars, Epoxy Coated		Lbs.	1870	
Structure Excavation		Cu. Yd.	11	

Reinforcement bars designated (E) shall be epoxy coated.

DESIGNED	John Cicero
CHECKED	Anthony J. Warsaw
DRAWN	R. Doty
CHECKED	JCC, AJW

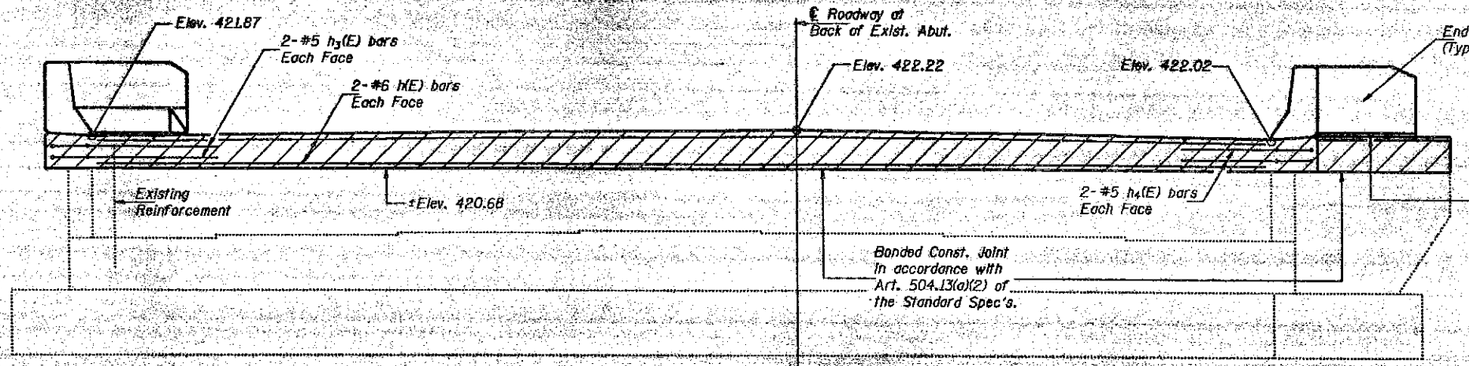
May 20 1993
EXAMINED Raj D. Kapoor
ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

SOUTH ABUTMENT DETAILS
F.A.I. RT. 57 SEC. (28-2B)D-1
FRANKLIN COUNTY
STATION 304+25.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

				63

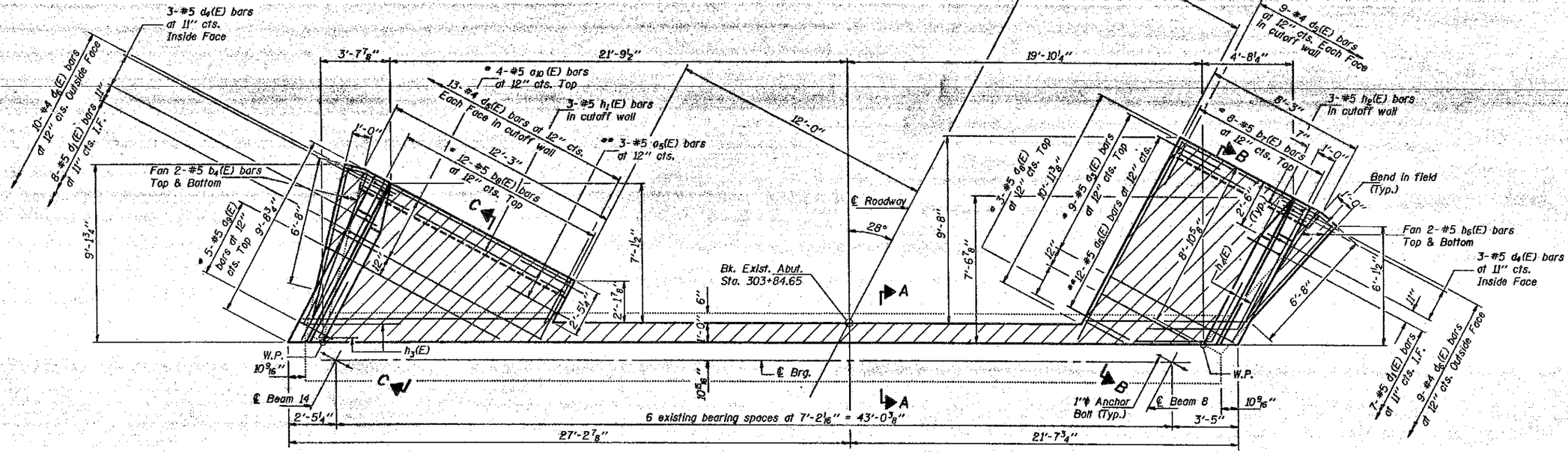
SHEET NO. 14
16 SHEETS



ELEVATION
(Looking North)

* Order a_3(E), a_8(E), a_9(E), a_{10}(E), b_7(E) and b_8(E) bars full length. Cut to fit and use remainder of bars in bottom of slab.

** Drill 7/8"ϕ x 9" Min. hole. Epoxy grout a_5(E) bars. Use a grout approved by the Department or epoxy grout in accordance with BSP-11. The method of grout application shall be approved by the Engineer. See Special Provisions.



PLAN

Notes: Hatched area to be poured after superstructure forms have been removed. Quantity of concrete for hatched area and end post is included with "Class X Concrete Superstructure" on sheet #6 of 16. Existing reinforcement extending into removed area shall be cleaned, straightened and incorporated into the new construction. Reinforcement bars designated (E) shall be epoxy coated. For anchor bolt installation details see sheet #16 of 16. For anchor bolt location detail see sheet #10 of 16. All edges shall have standard 3/4" chamfer. Work this sheet with sheet #15 of 16.

DESIGNED	John Ciesore
CHECKED	Anthony J. Vinson
DRAWN	R. Doty
CHECKED	JCC, AJV

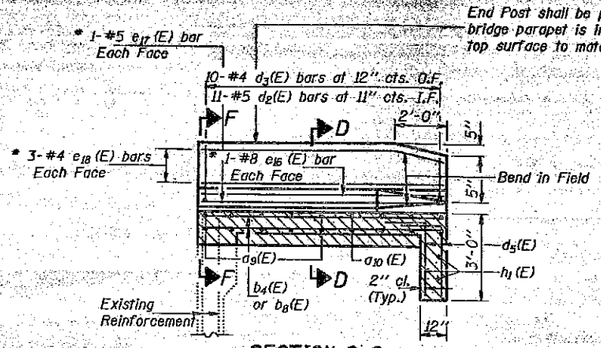
May 20 1993
EXAMINED Raj S. Kaspar ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES
APPROVED DIRECTOR OF HIGHWAYS

NORTH ABUTMENT
F.A.I. RT. 57 SEC. (28-2B)D-1
FRANKLIN COUNTY
STATION 304+25.00

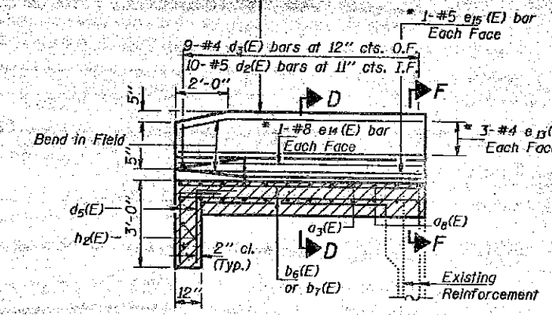
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FED. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-2B)D-	FRANKLIN	64	
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT		

SHEET NO. 15
16 SHEETS

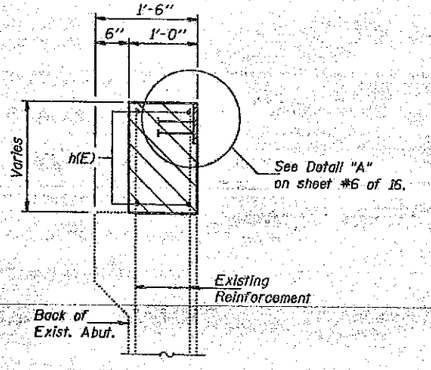


SECTION C-C

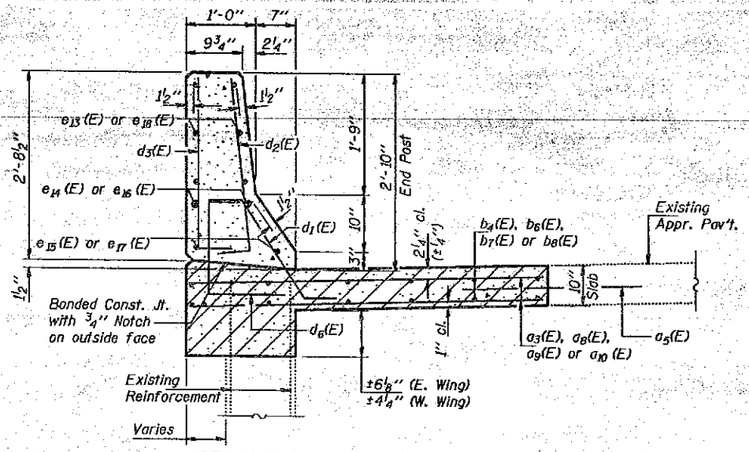


SECTION B-B

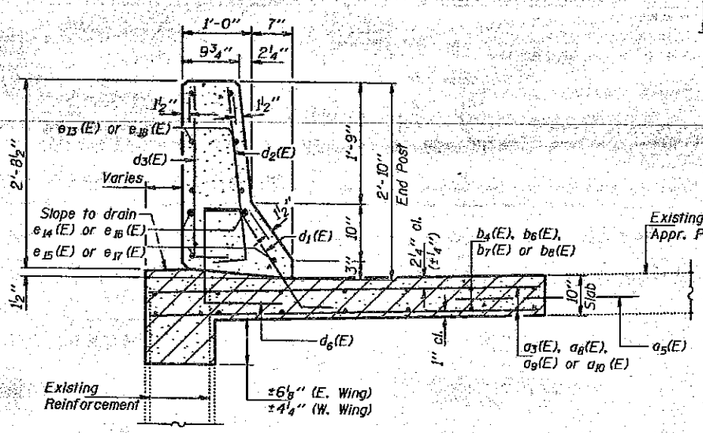
* Cut to fit. Cost Incidental.



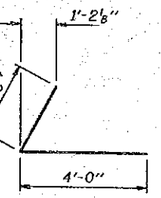
SECTION A-A



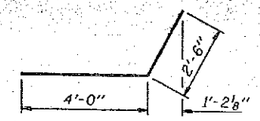
SECTION F-F



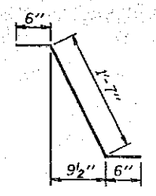
SECTION D-D



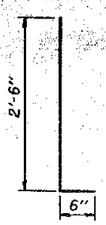
BAR h3(E)



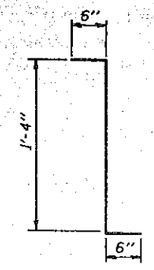
BAR h4(E)



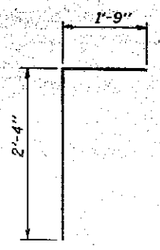
BAR d1(E)



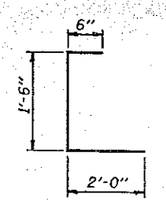
BARS d2(E) & d3(E)



BAR d4(E)



BAR d5(E)



BAR d6(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a3(E)	9	#5	16'-4"	
a5(E)	15	#5	3'-0"	
a8(E)	3	#5	7'-0"	
a9(E)	5	#5	13'-6"	
a10(E)	4	#5	25'-2"	
b4(E)	4	#5	8'-2"	
b6(E)	4	#5	7'-9"	
b7(E)	8	#5	19'-6"	
b8(E)	12	#5	12'-9"	
d1(E)	15	#5	2'-7"	
d2(E)	21	#5	3'-0"	
d3(E)	19	#4	3'-0"	
d4(E)	6	#5	2'-4"	
d5(E)	44	#4	4'-1"	
d6(E)	19	#4	4'-0"	
e13(E)	6	#4	8'-3"	
e14(E)	2	#8	8'-3"	
e15(E)	2	#5	8'-6"	
e16(E)	2	#8	9'-5"	
e17(E)	2	#5	9'-5"	
e18(E)	6	#4	9'-5"	
h(E)	4	#6	48'-7"	
h1(E)	3	#5	11'-9"	
h2(E)	3	#5	7'-9"	
h3(E)	4	#5	6'-6"	
h4(E)	4	#5	6'-6"	
Reinforcement Bars, Epoxy Coated		Lbs.	1730	
Structure Excavation		Cu. Yd.	11	

Reinforcement bars designated (E) shall be epoxy coated.

DESIGNED	John Ciccone
CHECKED	Anthony J. Vivero
DRAWN	R. Doty
CHECKED	JLC, AJV

May 20 1993

EXAMINED Raj. D. Kapur
ENGINEER OF BRIDGE DESIGN

PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

APPROVED
DIRECTOR OF HIGHWAYS

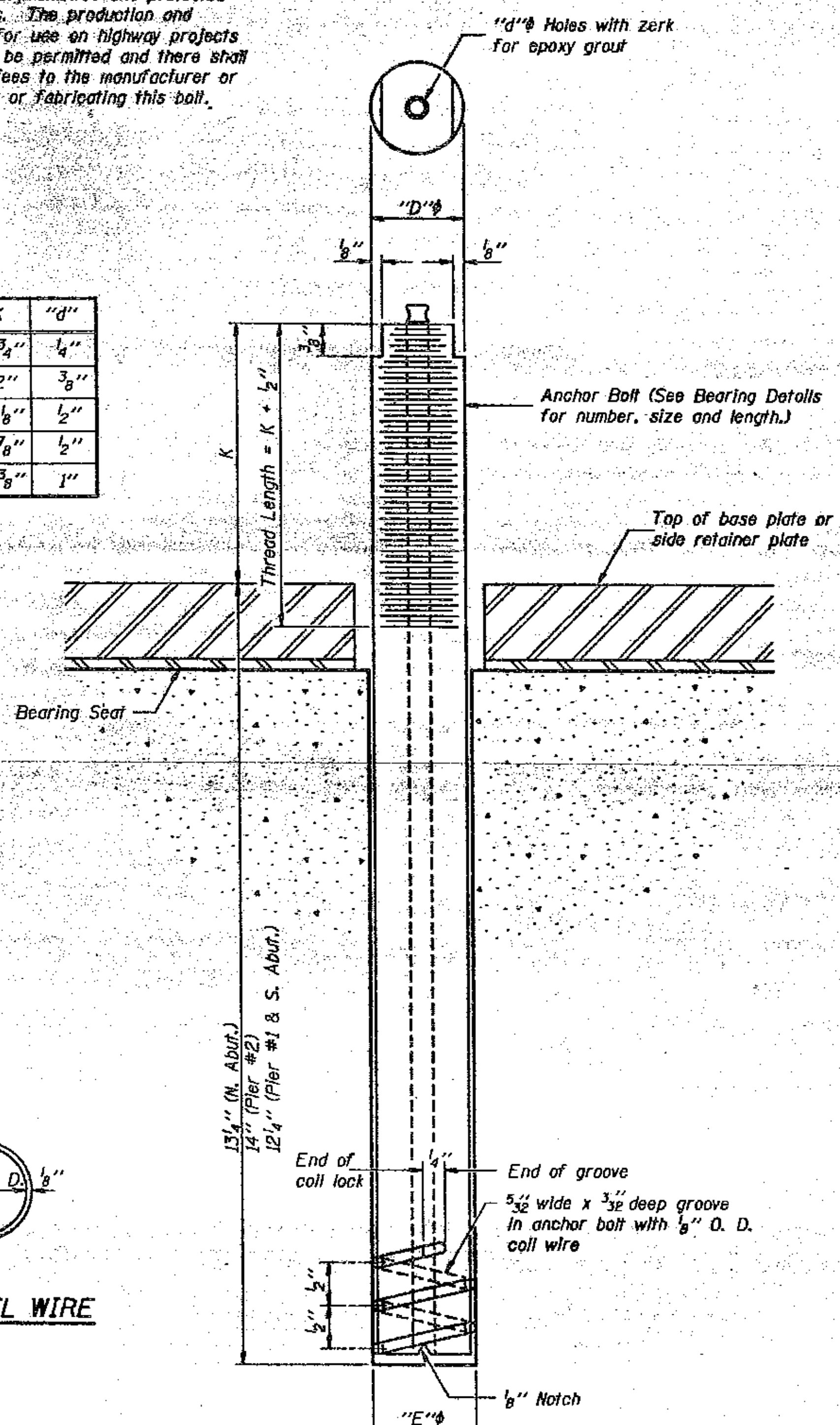
NORTH ABUTMENT DETAILS
F.A.I. RT. 57 SEC. (28-2B)D-1
FRANKLIN COUNTY
STATION 304+25.00

The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

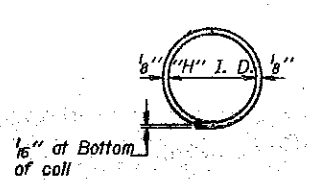
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 16
16 SHEETS
65

D	E	H	K	"d"
1"	$1\frac{1}{8}$"	$\frac{13}{16}$"	$1\frac{3}{4}$"	$\frac{1}{4}$"
$1\frac{1}{4}$"	$1\frac{3}{8}$"	$1\frac{1}{16}$"	2"	$\frac{3}{8}$"
$1\frac{1}{2}$"	$1\frac{5}{8}$"	$1\frac{5}{16}$"	$2\frac{1}{8}$"	$\frac{1}{2}$"
2"	$2\frac{1}{8}$"	$1\frac{13}{16}$"	$2\frac{7}{8}$"	$\frac{1}{2}$"
$2\frac{1}{2}$"	$2\frac{5}{8}$"	$2\frac{5}{16}$"	$3\frac{3}{8}$"	1"



ILLINOIS COIL-LOCK ANCHOR BOLT



PLAN-COIL WIRE

MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A519, Grade 1026 and supplied with hexagonal nuts and cut washers.

The coil wire shall be made of any suitable soft steel wire.

The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.

The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes in accordance with the manufacturer's recommendations and procedures.

The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:

1. A threaded rod stud with nut and washer conforming to ASTM A307.
2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or in accordance with the manufacturer's recommendation after beams or girders have been erected and adjusted.

Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.

The anchor bolts, furnished and installed and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for "Furnishing and Erecting Structural Steel".

DESIGNED John Ciccone
CHECKED Anthony G. Vinson
DRAWN R. Doty
CHECKED JLC, AVV.

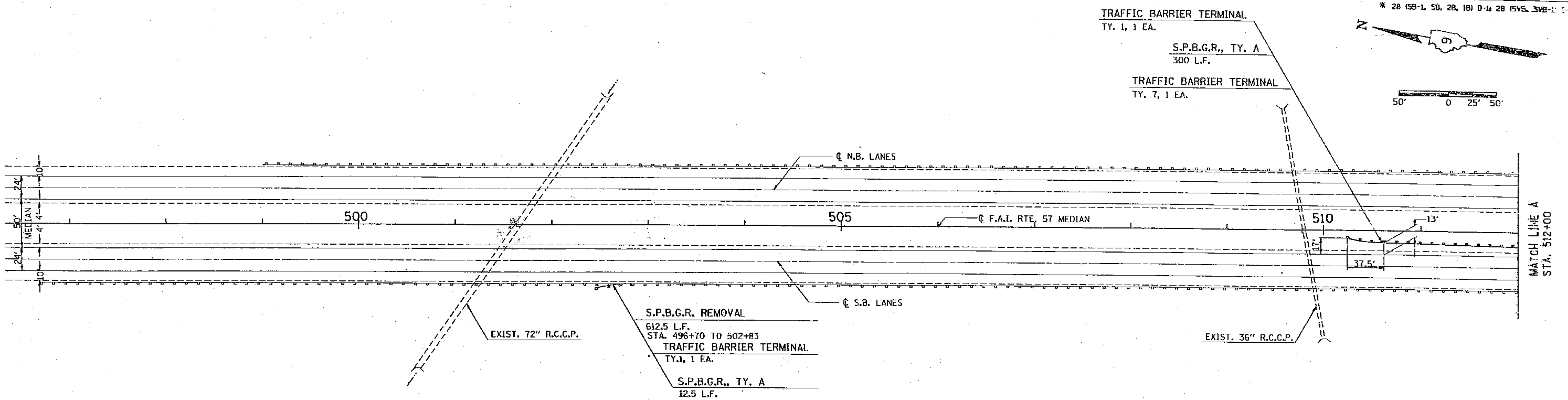
ABB-1 12-1-83

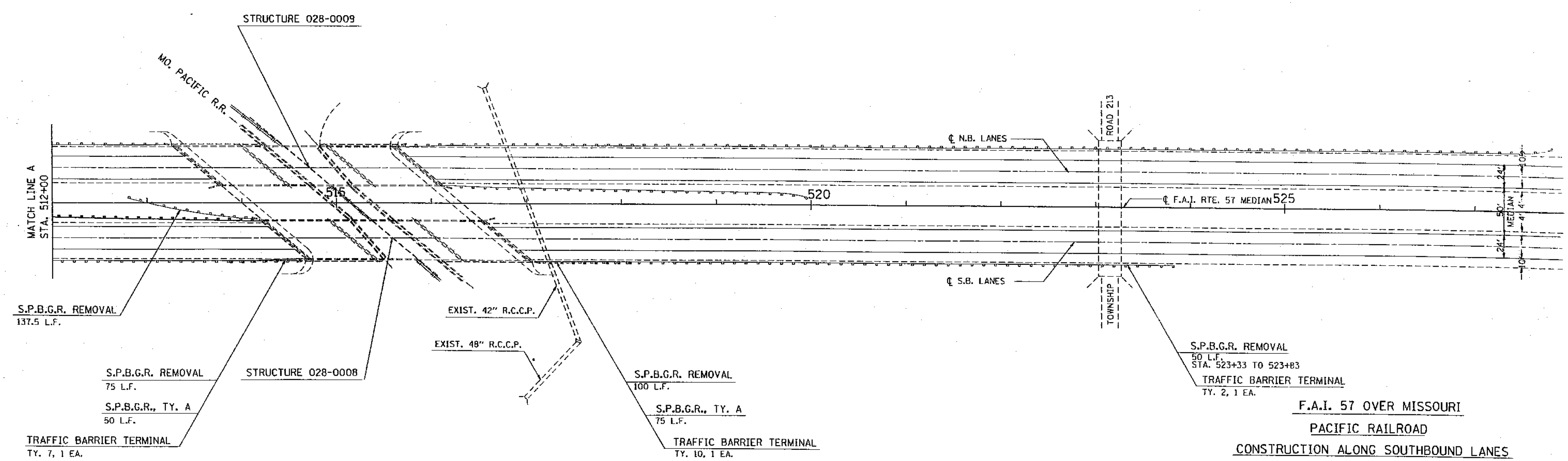
May 10 1993
EXAMINED Craig O. Kaspar — ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

ANCHOR BOLT DETAILS
FOR BEARINGS
F.A.I. RT. 57 SEC. (28-2B)D-1
FRANKLIN COUNTY
STATION 304+25.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	*	FRANKLIN	145	66
STA.		TO STA.		

* 28 (5B-1, 5B, 2B, 1B) D-1; 28 (5YS, 3VB-1 [illegible]





F.A.I. 57 OVER MISSOURI PACIFIC RAILROAD

CONSTRUCTION ALONG SOUTHBOUND LANES

(SOUTHBOUND CONTRACT)

ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	67
FED. ROAD DIST. 7		ILLINOIS	PROJECT	

* SEC. 28 (SB-1, SB-2, SB-3) D-1, 28 (SVB-1, SVB-11)-I

FINAL SURVEY — NOTE BOOK No. — SURVEYED — PLOTTED — TRIPLATE — AREAS — AREAS CHECKED — BY — DATE

ORIG. SURVEY — NOTE BOOK No. — SURVEYED — PLOTTED — TRIPLATE — AREAS — AREAS CHECKED — BY — DATE

BK. N. ABUTMENT
STA. 513+55.65

BK. N. ABUTMENT
STA. 514+42.00

℄ N.B.L.

℄ S.B.L.

475.8

473.5

469.3

471.1

10:1

FIRST CONTRACT
C = 0
F = 0

SECOND CONTRACT
C = 0
F = 0

C = 0
F = 0

C = 0
F = 0

C = 0
F = 0

C = 0
F = 0

513 + 00

512 + 00

511 + 00

510 + 00

480

475

470

LEGEND:
NORTHBOUND CONTRACT
SOUTHBOUND CONTRACT
N.B. CONTRACT DITCH
S.B. CONTRACT DITCH

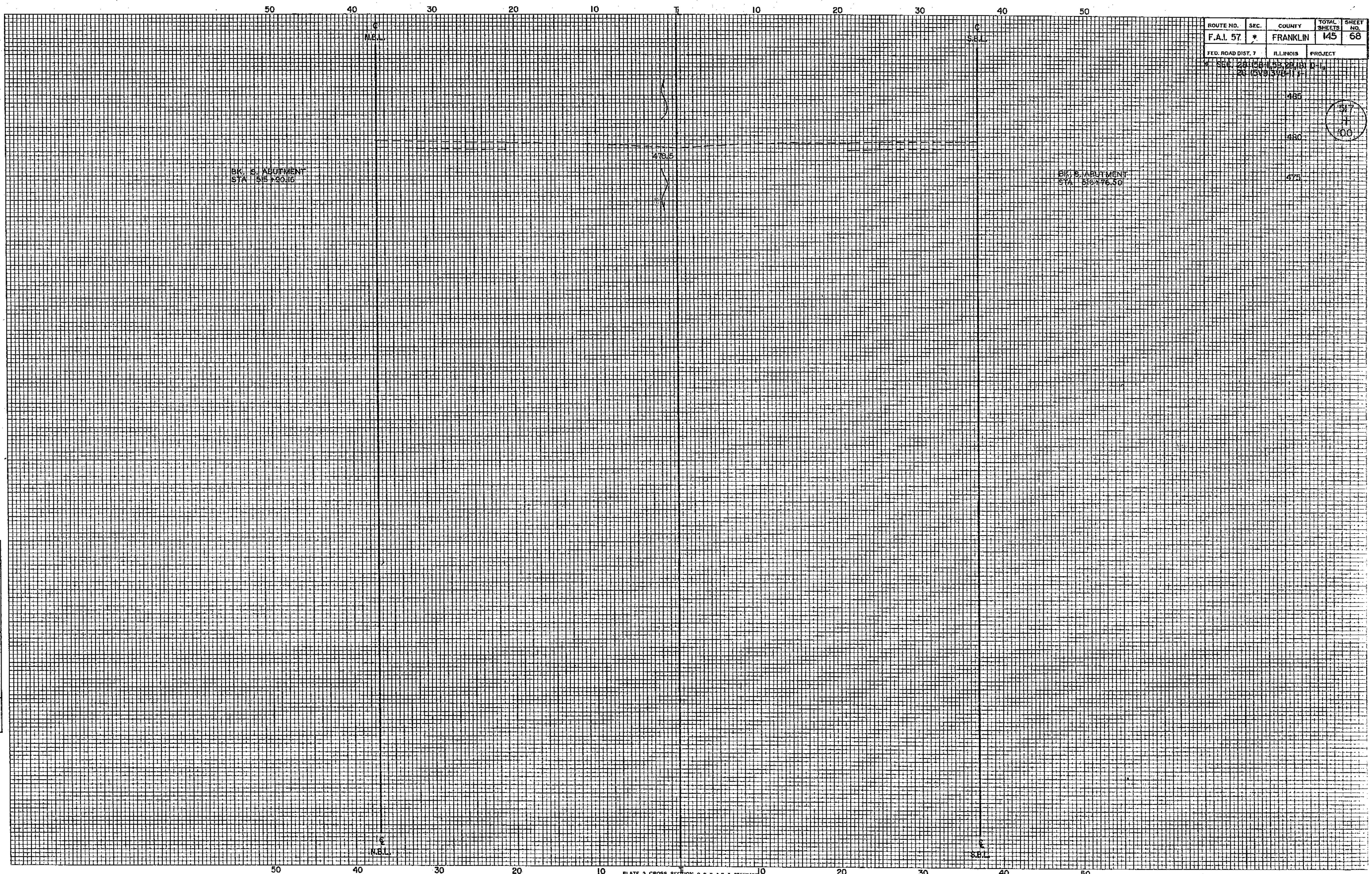
50 40 30 20 10 ℄ 10 20 30 40 50

PLATE 3 CROSS SECTION G A R A G E STANDARD
DIETZGEN CORPORATION

MOPAC R.R.

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	68
FED. ROAD DIST. 7		ILLINOIS	PROJECT	

* SEC. 28 (5B-1,5B,2B,(B) D-1,
25 (5V8,3VB-1) 1-1



MOPAC R.R.

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	69
FED. ROAD DIST. 7		ILLINOIS	PROJECT	

* SEC 20 (50-1,50,20,10) 0-1
20 (5VB,3VB-1) I-1

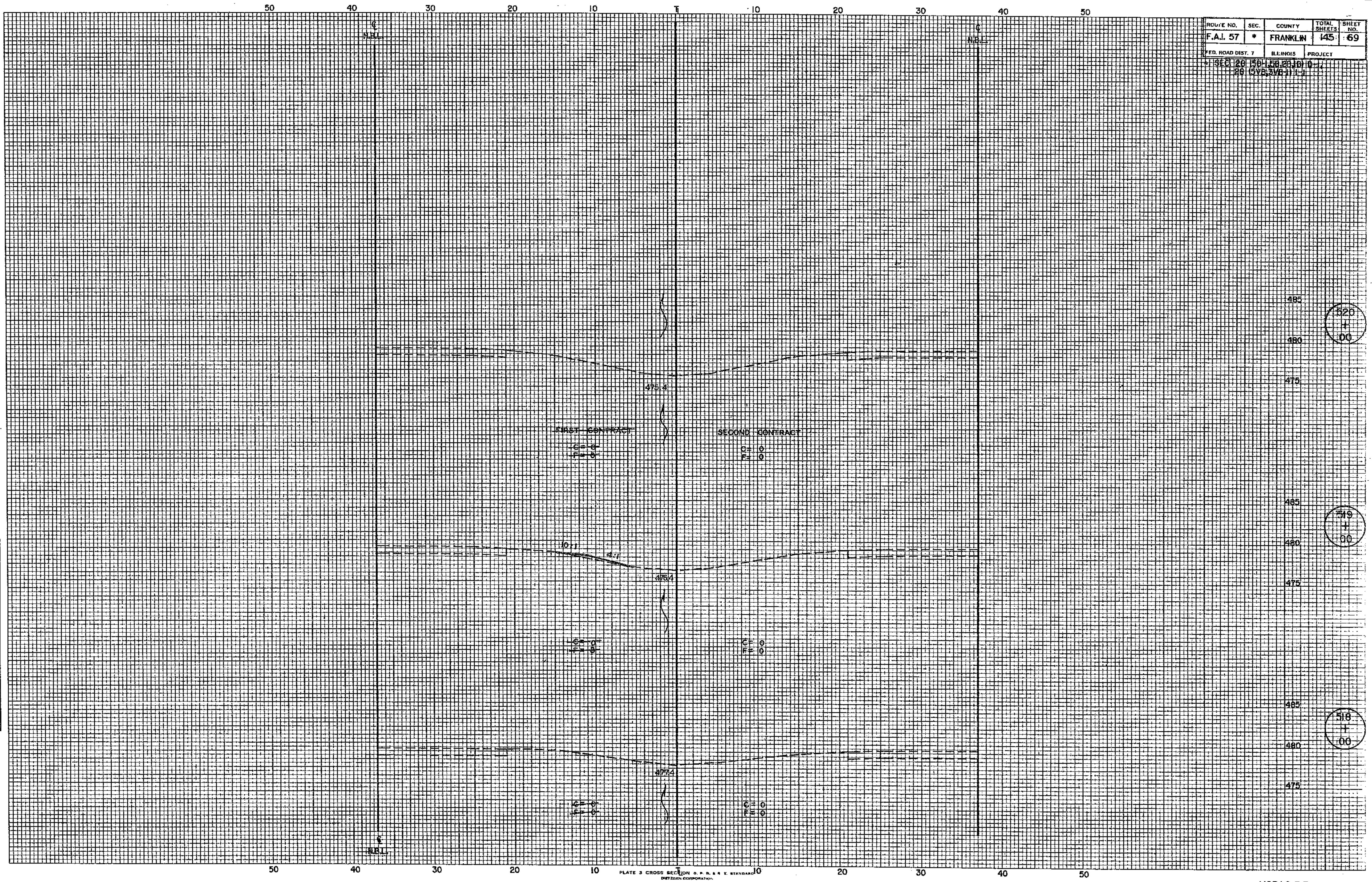


PLATE 3 CROSS SECTION
DIETZGEN CORPORATION

MOPAC R.R.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57		FRANKLIN	145	70
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 1
4 SHEETS

GENERAL NOTES

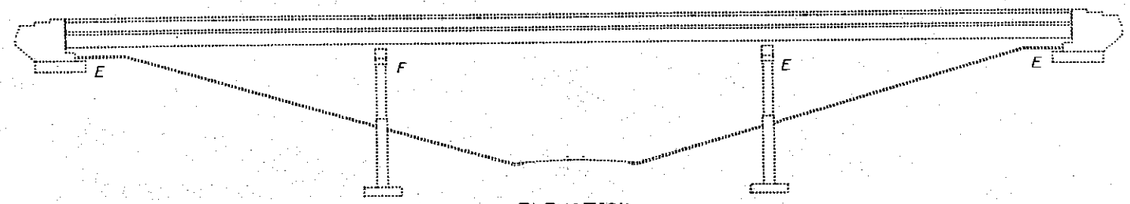
Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53 Grade 60.

Traffic control shall be determined by the District.

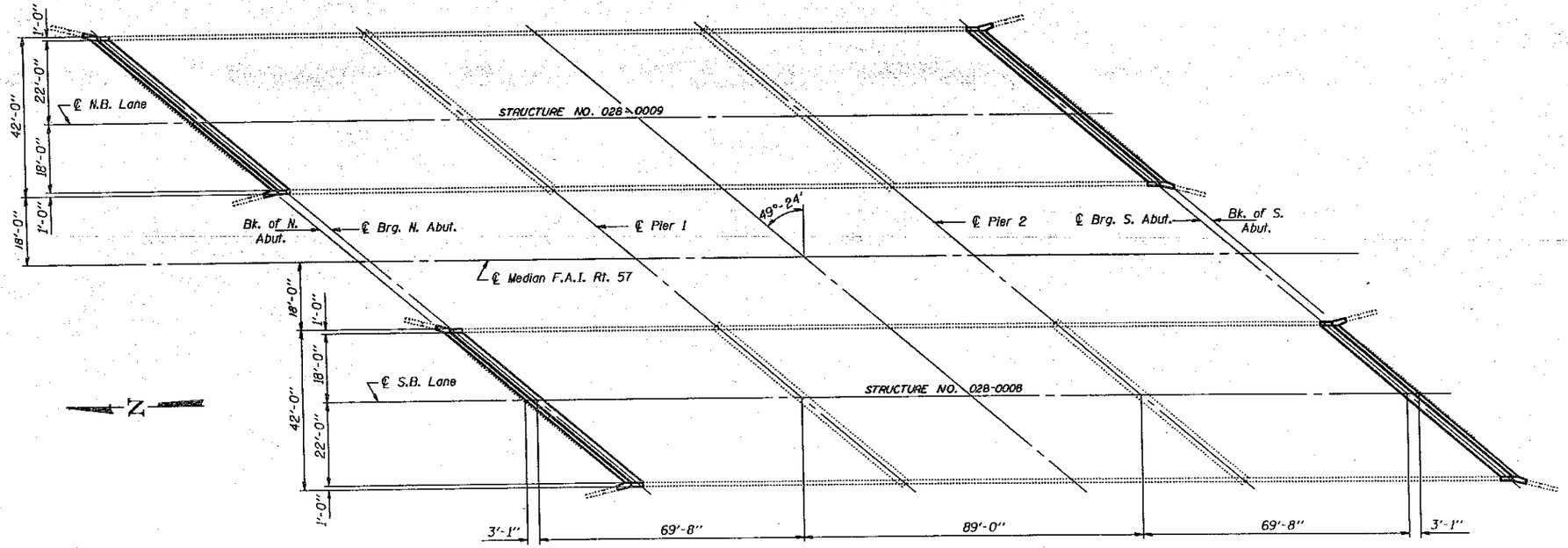
Prior to pouring the new concrete for the deck, all loose rust, loose mill scale, and all other foreign material shall be removed from the embedded portions of flanges of girders. The removal shall be accomplished in accordance with the requirements of the SSPC Surface Preparation Specifications SP3 for Power Tool Cleaning or SP2 for Hand Tool Cleaning. Cost shall be incidental to Concrete Removal.

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

The first bridge Post and Insert at each corner shall be removed, cleaned and reinstalled in new construction. Cost incidental to "Concrete Removal".



ELEVATION



PLAN

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANITY
Concrete Removal	Cu. Yd.	42.8
Class X Concrete	Cu. Yd.	41.5
Reinforcement Bars, Epoxy Coated	Pound	7860
Neoprene Expansion Joint 2"	Lin. Ft.	250

NOTE: QUANTITIES IN THE ABOVE BILL OF MATERIAL ARE FOR BOTH BRIDGES.

DESIGNED Paul Summer
CHECKED BRT
DRAWN Paul Summer
CHECKED BRT

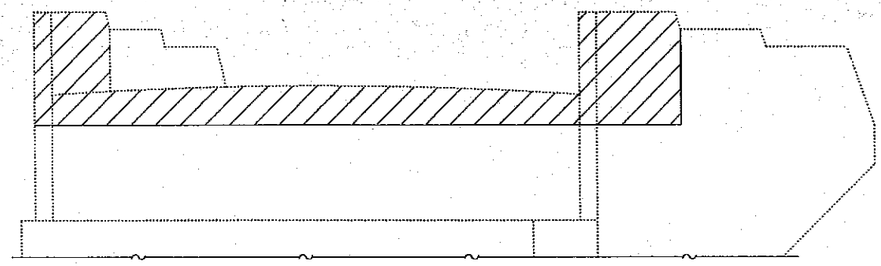
February 7 1992
EXAMINED _____ ENGINEER OF STRUCTURAL SERVICES
PASSED _____
APPROVED _____ ENGINEER OF BRIDGES AND STRUCTURES
DIRECTOR OF HIGHWAYS

JOINT REPLACEMENT DETAILS
F.A.I. RT. 57 SEC. (28-3VB-1) I-1
FRANKLIN COUNTY
STA. 515+16.08
STR. No. 028-0008 ~~& 028-0009~~

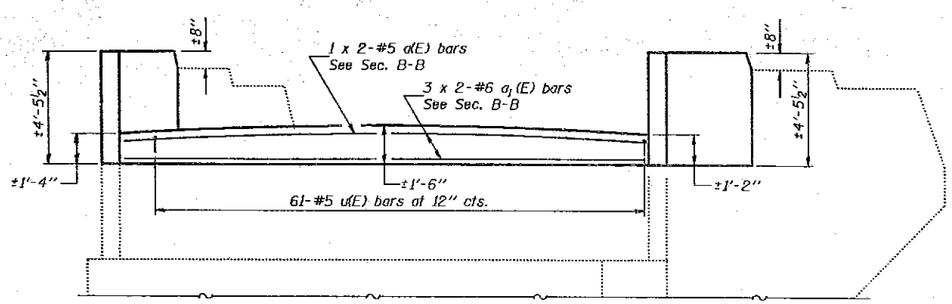
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57		FRANKLIN	145	71
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT-		

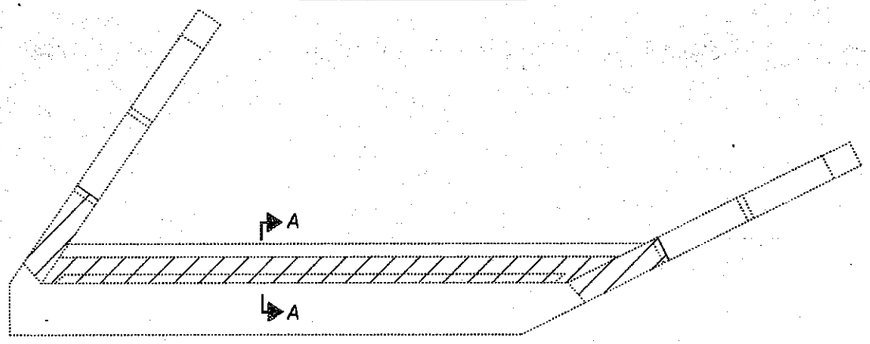
SHEET NO. 2
4 SHEETS



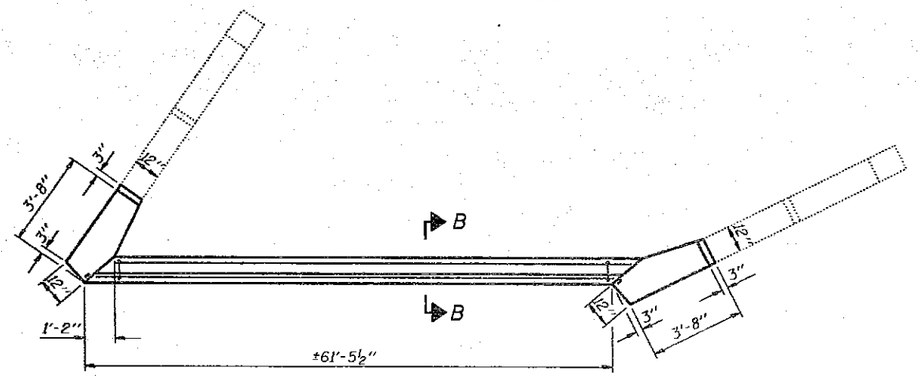
EXISTING ELEVATION



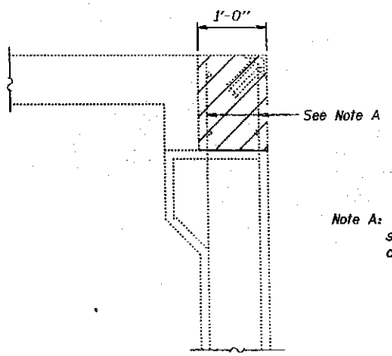
PROPOSED ELEVATION



EXISTING PLAN

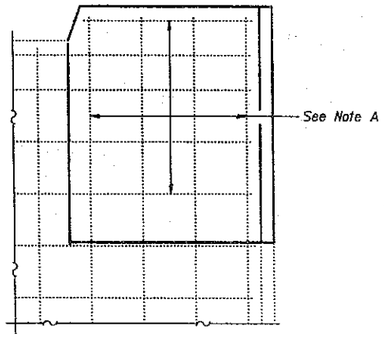


PROPOSED PLAN



SECTION A-A

Note A: Existing Reinforcement shall be cleaned, straightened and incorporated into the new construction. Cost incidental to "Concrete Removal.



WING WALL ELEVATION

Notes: For Section A-A and B-B see Sheet 3.
For bar details and Bill of Material see Sheet 3.
Bars indicated thus 3 x 2-#6 ect. indicates 3 lines of bars with 2 lengths per line.
Reinforcement bars designated (E) shall be epoxy coated.
Hatched area indicates Concrete Removal.

DESIGNED	Paul Summer
CHECKED	BRT
DRAWN	Paul Summer
CHECKED	BRT

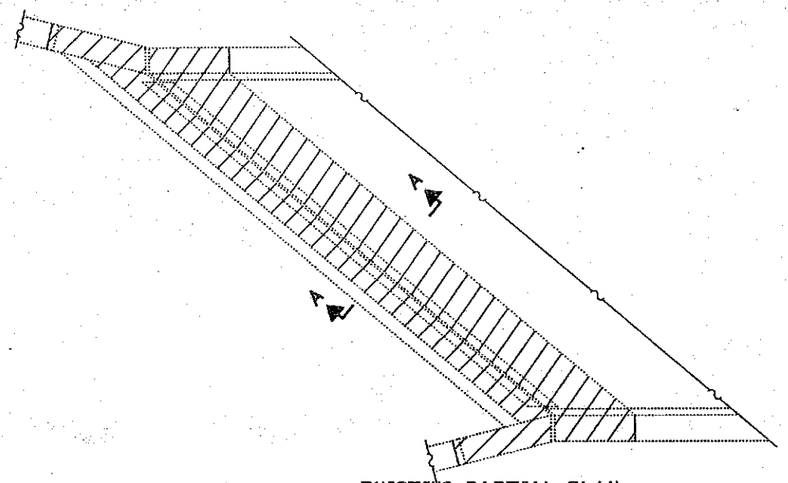
February 7 19 92
EXAMINED Todd E. Adrean
ENGINEER OF STRUCTURAL SERVICES
PASSED
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

JOINT REPLACEMENT DETAILS
F.A.I. RT. 57 SEC. (28-3VB-1) I-1
FRANKLIN COUNTY
STA. 515+16.08
STR. No. 028-0008 ~~& 028-0009~~

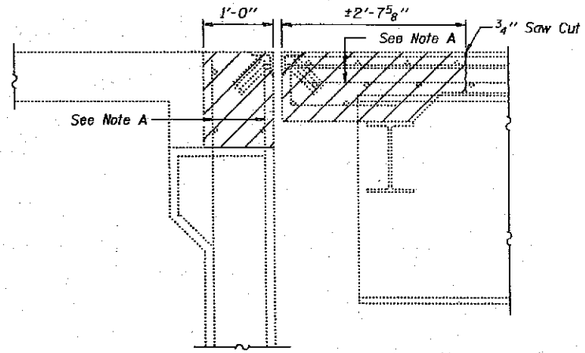
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57		FRANKLIN	145	72
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 3
4 SHEETS



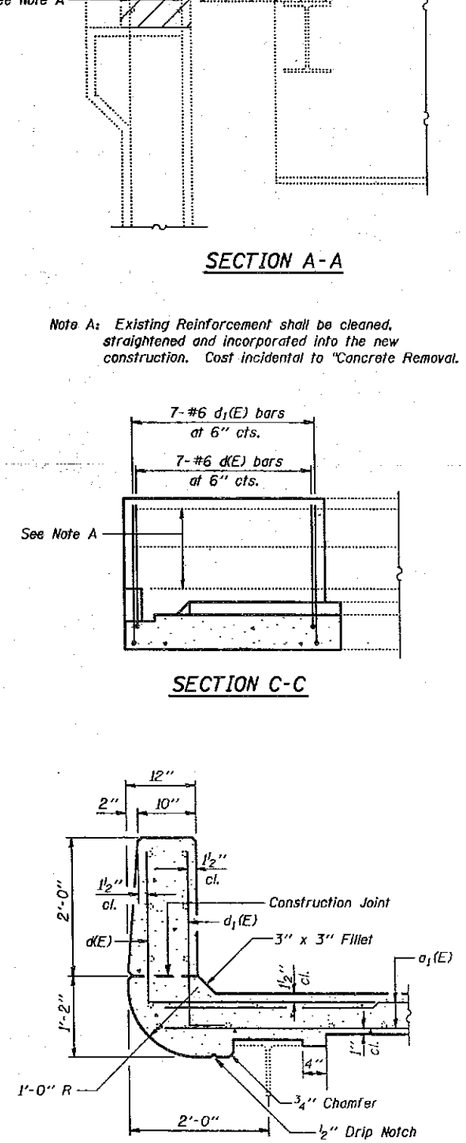
EXISTING PARTIAL PLAN



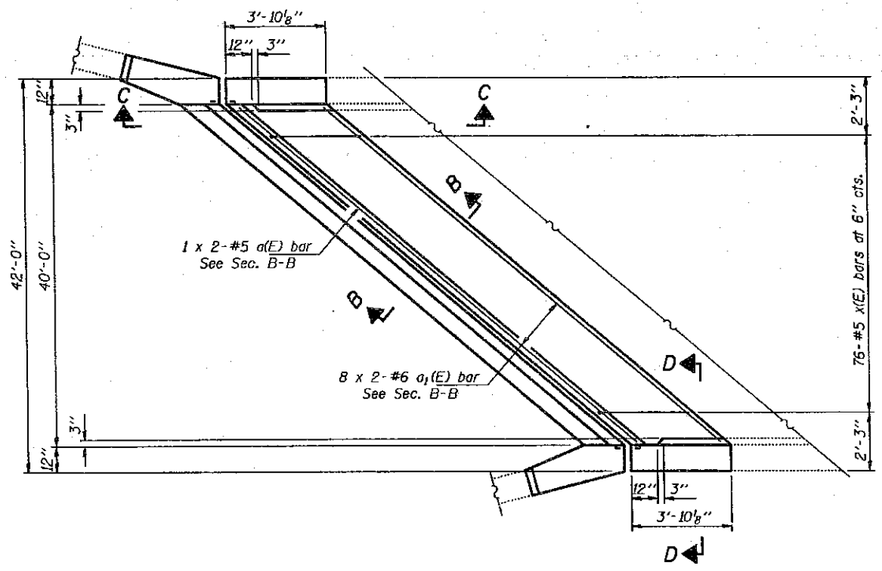
SECTION A-A

Note A: Existing Reinforcement shall be cleaned, straightened and incorporated into the new construction. Cost incidental to "Concrete Removal.

SECTION C-C

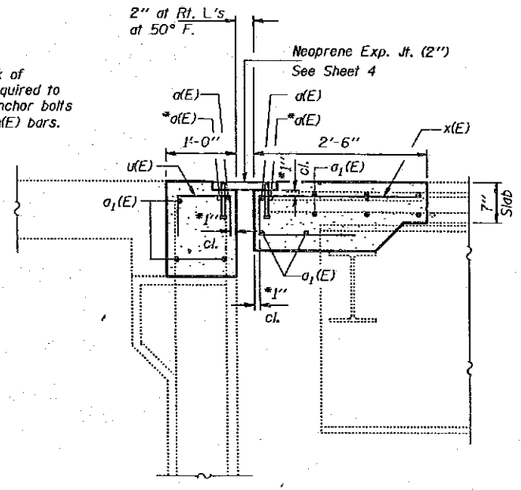


SECTION D-D

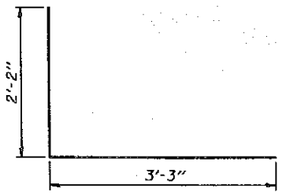


PROPOSED PARTIAL PLAN

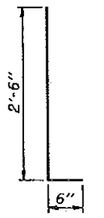
*Place a(E) bars in back of anchor bolts as shown if required to maintain 1" cl. (+0-⅛"). Anchor bolts should be tied to a(E) and h(E) bars.



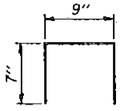
SECTION B-B



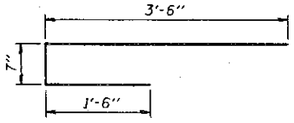
BAR d(E)



BAR d1(E)



BAR u(E)



BAR x(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	16	#5	32'-7"	
a1(E)	88	#6	32'-10"	
d(E)	56	#6	5'-6"	
d1(E)	56	#6	3'-0"	
u(E)	244	#5	1'-11"	
x(E)	304	#5	5'-7"	
Concrete Removal			Cu. Yd.	42.8
Class X Concrete			Cu. Yd.	41.5
Reinforcement Bars, Epoxy Coated			Lbs.	7860

Notes: Bars indicated thus 3 x 2-#6 ect. indicates 3 lines of bars with 2 lengths per line.
Reinforcement bars designated (E) shall be epoxy coated.
Hatched area indicates Concrete Removal.
QUANTITIES IN THE ABOVE BILL OF MATERIAL ARE FOR BOTH BRIDGES.

DESIGNED	Paul Summer	February 7 1992
CHECKED	BRT	EXAMINED Todd E. Hilburn, ENGINEER OF STRUCTURAL SERVICES
DRAWN	Paul Summer	PASSED ENGINEER OF BRIDGES AND STRUCTURES
CHECKED	BRT	APPROVED DIRECTOR OF HIGHWAYS

JOINT REPLACEMENT DETAILS
F.A.I. RT. 57 SEC. (28-3VB-1) I-1
FRANKLIN COUNTY
STA. 515+16.08
STR. No. 028-0008 ~~& 028-0009~~

ROUTE NO.	SECTION	COUNTY	JOINT SHEETS	SHEET NO.	SHEET NO. 4
F.A.I. 57		FRANKLIN	145	73	4 SHEETS
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT-			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Joint Size	"C" at 50°F	"D" at 50°F
2"	2"	1½" Min.
2½"	2½"	1¾" Min.
4"	3"	2½" Min.

INSTALLATION NOTES

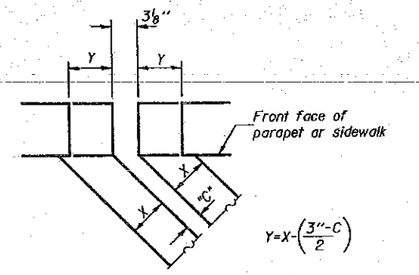
1. Install sponge mandrels into positions shown to form flap convolution.
2. Install parapet or sidewalk piece (trim roadway flap to fit before applying epoxy).
3. Install continuous seal in roadway.
4. Install anchor blocks as indicated.

NOTE A: Maximum spacing of anchor bolts shall be 12" centers.

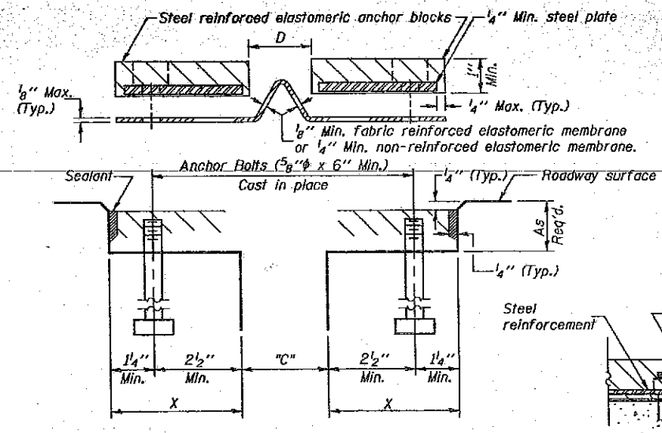
SKEW LIMITATIONS

The details of the anchor blocks and the elastomeric membrane in the parapet, as shown, are for up to 50° skews.

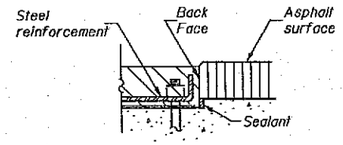
For skews greater than 50°, the anchor blocks and the elastomeric membrane, installed in accordance with dimension "D", might require modifications to insure a minimum clearance of 1½" from centerline of anchor studs to edge of parapet opening. The anchor blocks and the elastomeric membrane shall also be installed to the top of the parapet with the anchor studs spaced at ±12" cts.



FORMING BLOCKOUT SKETCH



CROSS SECTION



ANCHOR BLOCK REINFORCEMENT WITH ASPHALT SURFACE

GENERAL NOTES

Continuous Seal Neoprene Expansion Joint shall consist of molded anchor blocks of elastomer and steel, field assembled over continuous lengths of elastomeric membrane.

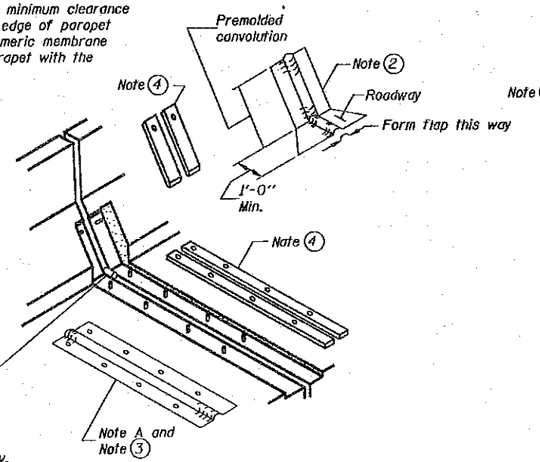
The elastomeric membrane shall be premolded with a single or a double upward convolution that will have a "memory" to return to its molded position upon joint closure.

The steel reinforcement must extend up the back face of anchor blocks when asphalt surfaces are used but is optional in concrete blockout.

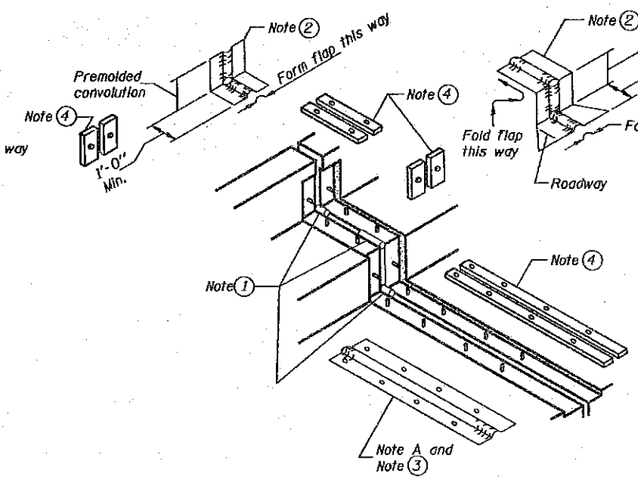
The convolution length shall be such that the extended length will not be greater than the manufactured length when the joint is fully expanded in its design range and will not protrude above the anchor blocks when the joint is fully compressed.

Joint openings shall be adjusted in accordance with Article 503.07(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50° F.

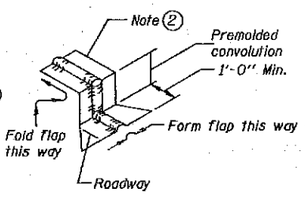
The parapet and sidewalk flaps may be furnished factory vulcanized to the roadway membrane provided the centerline of the convolution is maintained and the process and method meet the approval of the Engineer.

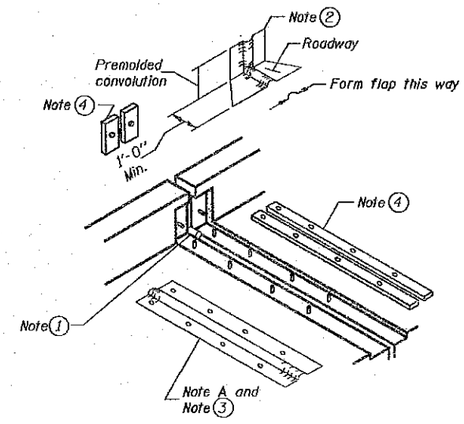


AT PARAPET

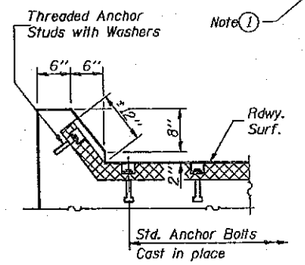


AT SIDEWALK OR MEDIAN

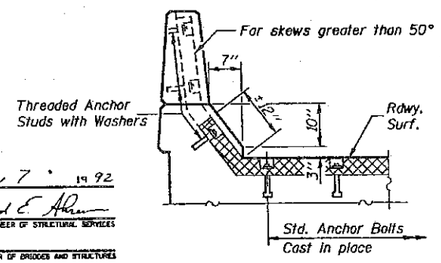




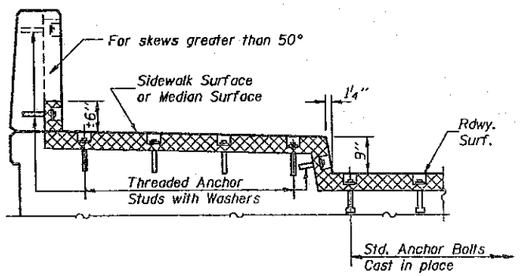
AT WALL



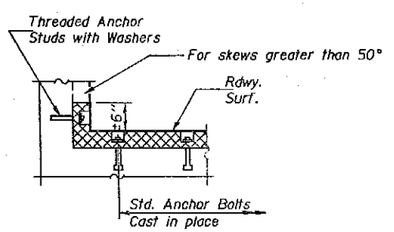
AT CURB



AT PARAPET



AT SIDEWALK OR MEDIAN
TYPICAL END TREATMENTS



AT WALL

DESIGNED	Paul Summer
CHECKED	BRT
DRAWN	Paul Summer
CHECKED	BRT

February 7, 1992

EXAMINED Jerold E. Ahrens
ENGINEER OF STRUCTURAL SERVICES

PASSED
ENGINEER OF BRIDGES AND STRUCTURES

APPROVED
DIRECTOR OF HIGHWAYS

EJ-CS 6-1-89

CONTINUOUS SEAL TYPE
NEOPRENE EXPANSION JOINTS
For 2", 2½" and 4" Movement

JOINT REPLACEMENT DETAILS
F.A.I. RT. 57 SEC. (28-3VB-1) I-1
FRANKLIN COUNTY
STA. 515+16.08
STR. No. 028-0008 ~~& 028-0009~~

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
57	*	FRANKLIN	145	74
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

* 28 (5B-1, 5B, 2B, 1B) D-1; 28 (5VB, 3VB-1) I-1

S.P.B.G.R. REMOVAL
25 L.F.
STA. 35+70 TO 35+95

S.P.B.G.R., TY. A
25 L.F.
STA. 35+70 TO 35+95

TRAFFIC BARRIER TERMINAL
TY. 2, 1 EA.

MATCH LINE A
STA. 33+90

EXIST. 24" R.C.C.P.

℄ N.B. LANES

℄ F.A.I. RTE. 57 MEDIAN

EXIST. DBL.
9'X8' BOX CULV.

℄ S.B. LANES

EXIST. 24" R.C.C.P.

S.P.B.G.R. REMOVAL
100 L.F.

S.P.B.G.R., TY. A
87.5 L.F.

TRAFFIC BARRIER TERMINAL
TY. 5, 1 EA.

℄ MEDIAN CURVE DATA
Δ= 34°-04'-30
R= 6366.26'
L= 3786.11'
P.I. STA= 29+60.28
S.E.= 0.02%
D= 0°-54'-00"
T= 1950.92'
E= 292.22'

STRUCTURE 028-0007

STRUCTURE 028-0006

S.P.B.G.R. REMOVAL
100 L.F.

S.P.B.G.R., TY. A
75 L.F.

TRAFFIC BARRIER TERMINAL
TY. 6, 1 EA.

EQ. STA. 47+95.51 BK =
STA. 48+07.04 AH

S.P.B.G.R. REMOVAL
137.5 L.F.

TRAFFIC BARRIER TERMINAL
TY.6, 1 EA.

S.P.B.G.R., TY. A
262.5 L.F.

TRAFFIC BARRIER TERMINAL
TY.1, 1 EA.

N

50' 0 25' 50'

F.A.I. 57 OVER MIDDLE FORK OF BIG MUDDY RIVER
CONSTRUCTION ALONG NORTHBOUND LANES
(NORTHBOUND CONTRACT)

TRAFFIC BARRIER TERMINAL
TY. 1, 1 EA.

S.P.B.G.R., TY. A
262.5 L.F.

TRAFFIC BARRIER TERMINAL
TY. 6, 1 EA.

S.P.B.G.R. REMOVAL
137.5 L.F.

STRUCTURE 028-0006

MATCH LINE B
STA. 33+90

EXIST. 24" R.C.C.P.

EXIST. DBL.
9'X8' BOX CULV.

EXIST. 24" R.C.C.P.

℄ N.B. LANES

℄ F.A.I. RTE. 57 MEDIAN

℄ S.B. LANES

S.P.B.G.R. REMOVAL
25 L.F.
STA. 33+75 TO 34+00

S.P.B.G.R. REMOVAL
87.5 L.F.

S.P.B.G.R., TY. A
62.5 L.F.

TRAFFIC BARRIER TERMINAL
TY. 6, 1 EA.

SLOPEWALL REMOVAL, 7 SQ. YD.
REPLACE WITH SLOPEWALL, 6"
4 SQ. YD.
SEE DETAIL, SHT. NO. 75

STRUCTURE 028-0007

P.C. CONCRETE BRIDGE APPROACH
SHOULDER PAVEMENT, 14.5 SQ. YDS.
(WEST SHOULDER ONLY)

BITUM. SHOULDER REMOVAL
4 SQ. YD. E. SIDE
7 SQ. YD. W. SIDE

SLOPEWALL REMOVAL, 7 SQ. YD.
REPLACE WITH SLOPEWALL, 6"
4 SQ. YD.
SEE DETAIL, SHT. NO. 75

BITUM. SHOULDER REMOVAL
4 SQ. YD. E. SIDE
7 SQ. YD. W. SIDE

S.P.B.G.R. REMOVAL
75 L.F.

S.P.B.G.R., TY. A
62.5 L.F.

TRAFFIC BARRIER TERMINAL
TY. 5, 1 EA.

P.C. CONCRETE BRIDGE APPROACH
SHOULDER PAVEMENT, 14.5 SQ. YDS.
(WEST SHOULDER ONLY)

TRAFFIC BARRIER TERMINAL
TY. 1, 1 EA.

S.P.B.G.R., TY. A
400 L.F.
STA. 30+00 TO 34+00

MATCH LINE B
STA. 33+90

N

50' 0 25' 50'

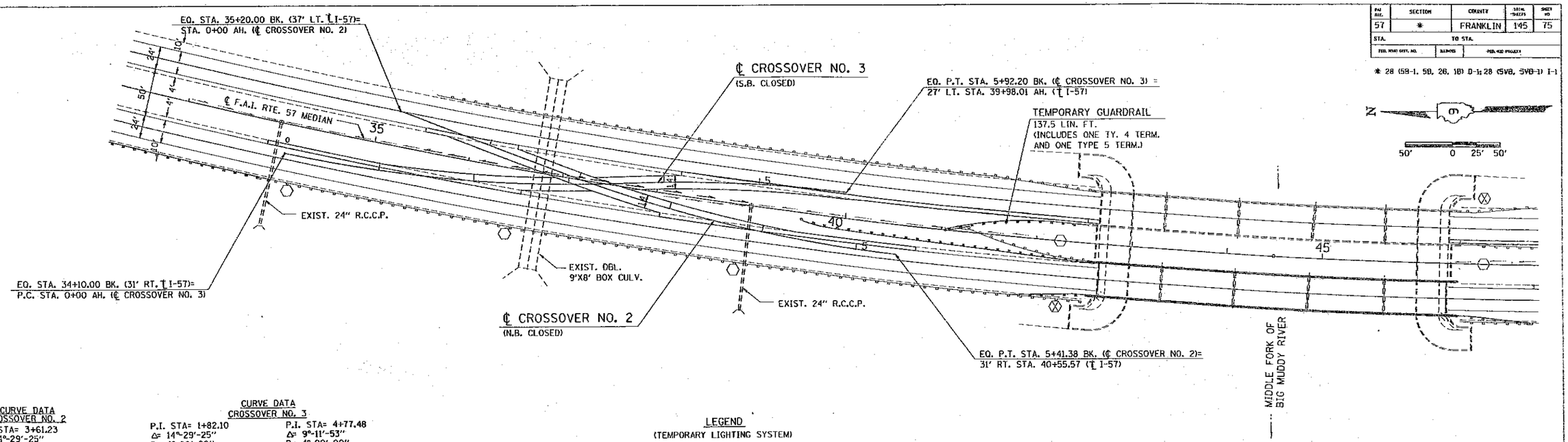
F.A.I. 57 OVER MIDDLE FORK OF BIG MUDDY RIVER
CONSTRUCTION ALONG SOUTHBOUND LANES
(SOUTHBOUND CONTRACT)

VIEW BIGMUD
Fri Mar 19 09:56:11 1993

F.A.I. RTE. 57 OVER MIDDLE FORK BIG MUDDY RIVER

FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	*	FRANKLIN	145	75
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

* 28 (SB-1, SB, 2B, 1B) D-1½ 28 (SVB, SVB-1) I-1



CURVE DATA
CROSSOVER NO. 2

P.I. STA= 3+61.23
Δ= 14°-29'-25"
D= 4°-00'-00"
R= 1432.39'
T= 182.10'
L= 362.26'
E= 11.53'
P.C. STA= 1+79.13
P.T. STA= 5+41.38

CURVE DATA
CROSSOVER NO. 3

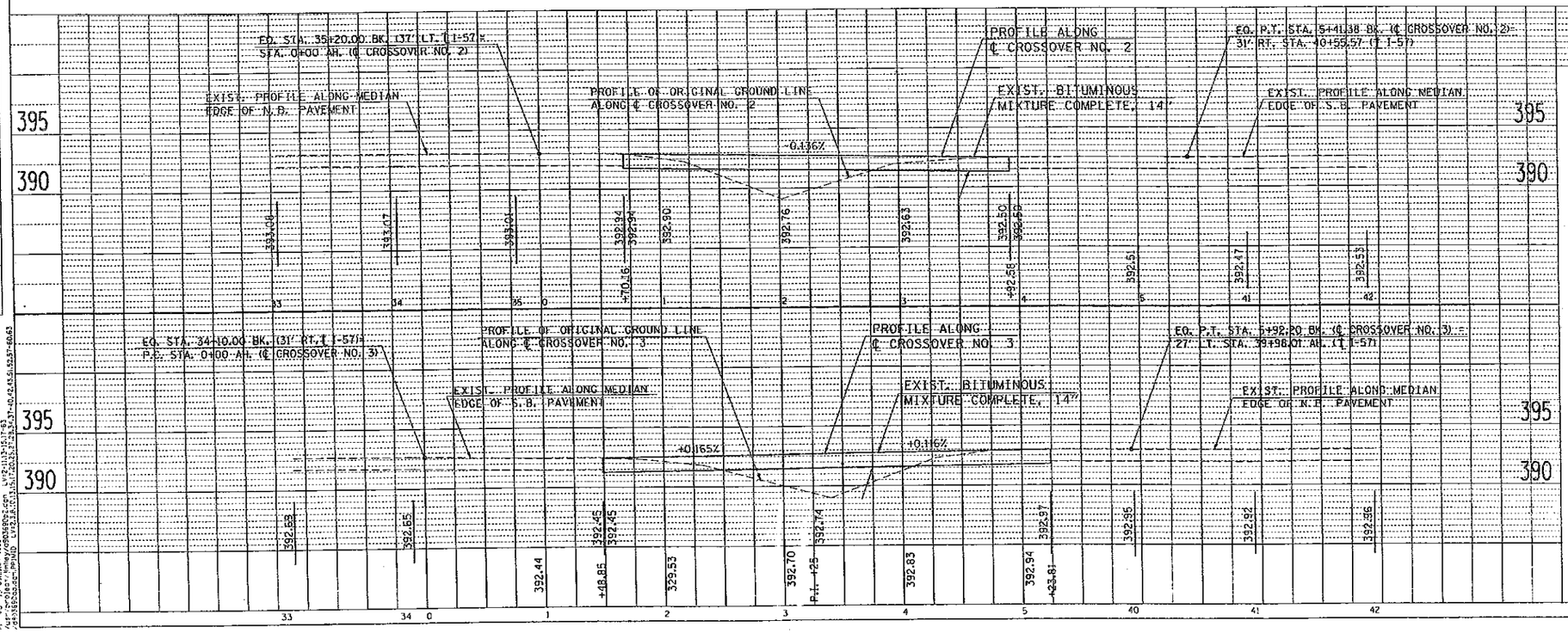
P.I. STA= 1+82.10
Δ= 14°-29'-25"
D= 4°-00'-00"
R= 1432.39'
T= 182.10'
L= 362.26'
E= 11.53'
P.C. STA= 0+00.00
P.T. STA= 3+62.25

P.I. STA= 4+77.48
Δ= 9°-11'-53"
D= 4°-00'-00"
R= 1432.39'
T= 115.22'
L= 229.95'
E= 4.63'
P.C. STA= 3+62.25
P.T. STA= 5+92.21

LEGEND
(TEMPORARY LIGHTING SYSTEM)

⬡ EXISTING WOODEN POLE WITH 250 WATT LUMINAIRE

⊗ EXISTING WOODEN POLE



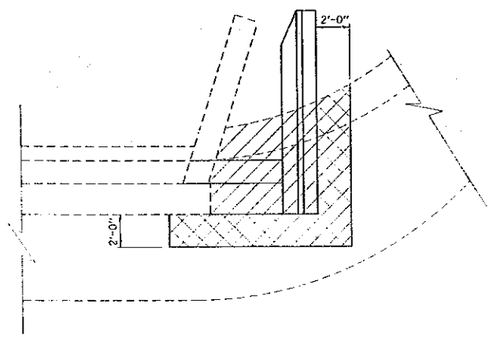
DETAIL OF SLOPEWALL REMOVAL AND REPLACEMENT

(TO BE USED AT WEST CORNERS OF MIDDLE FORK BIG MUDDY RIVER BRIDGE)

LEGEND

SLOPEWALL REMOVAL

PROPOSED SLOPEWALL, 6"



F.A.I. RTE. 57 OVER MIDDLE FORK BIG MUDDY RIVER

FED. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	*	FRANKLIN	145	76
STA.	TO STA.			
FED. ROAD DIST. NO.	STATE	FED. AID PROJECT		

* 28 (5B-1, 5B, 2B, 1B) 0-1; 2B (5VB, 3VB-1) 1-1

N

50' 0 25' 50'

EQ. STA. 48+49.41 BK. (31' LT. ℄ I-57)=
P.C. STA. 0+00 AH. (℄ CROSSOVER NO. 4)

EQ. STA. 47+95.51 BK. =
STA. 48+07.04 AH

℄ CROSSOVER NO. 1
(N.B. CLOSED)

EQ. P.T. STA. 5+77.44 BK. (℄ CROSSOVER NO. 1)=
31' LT. STA. 54+07.39 (℄ I-57)

45 50 55

℄ F.A.I. RTE. 57 MEDIAN

MIDDLE FORK OF
BIG MUDDY RIVER

AFTER REMOVAL OF CROSSOVER EMBANKMENT, INLET SHALL BE CLEANED AND RETURNED TO ITS ORIGINAL CONDITION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OF ANY DAMAGE TO THE INLET INCURRED DURING THE EMBANKMENT REMOVAL OPERATION. THE COST OF THIS WORK SHALL BE INCLUDED IN THE OTHER ITEMS OF CONSTRUCTION.

EXIST. 24" R.C.C.P.

EQ. STA. 4+86.92 BK. (℄ CROSSOVER NO. 4)=
37' RT. STA. 53+30.62 AH. (℄ I-57)

EQ. STA. 48+33.85 BK. (27' RT. ℄ I-57)=
P.C. STA. 0+00 AH. (℄ CROSSOVER NO. 1)

℄ CROSSOVER NO. 4
(S.B. CLOSED)

CURVE DATA
CROSSOVER NO. 1

P.I. STA= 1+44.85	P.I. STA= 4+33.57
Δ= 11°-32'-56"	Δ= 11-32'-56"
D= 4°-00'-00"	D= 4°-00'-00"
R= 1432.39'	R= 1432.39'
T= 144.85'	T= 144.85'
L= 288.72'	L= 288.72'
E= 7.31'	E= 7.31'
P.C. STA= 0+00.00	P.C. STA= 2+88.72
P.T. STA= 2+88.72	P.T. STA= 5+77.44

CURVE DATA
CROSSOVER NO. 4

P.I. STA= 1+35.14
Δ= 11°-05'-45"
D= 4°-00'-00"
R= 1432.39'
T= 135.14'
L= 269.41'
E= 6.74'
P.C. STA= 0+00.00
P.T. STA= 2+69.41

B.M. "D" CUT IN N.E. HANDRAIL AT N.E. CORNER OF WEST BRIDGE, STA. 44+49 ELEV. 395.13

EQ. STA. 48+33.85 BK. (27' RT. ℄ I-57)=
P.C. STA. 0+00 AH. (℄ CROSSOVER NO. 1)

EQ. STA. 47+95.47 BK. =
STA. 48+07.04 AH.

EXIST. PROFILE ALONG MEDIAN
EDGE OF S.B. PAVEMENT

PROFILE OF ORIGINAL GROUND LINE
ALONG ℄ CROSSOVER NO. 1

-0.10%

PROFILE ALONG
℄ CROSSOVER NO. 1

EXIST. BITUMINOUS
MIXTURE COMPLETE, 14'

EQ. P.T. STA. 5+77.44 BK. (℄ CROSSOVER NO. 1)=
31' LT. STA. 54+07.39 (℄ I-57)

EXIST. PROFILE ALONG MEDIAN
EDGE OF N.B. PAVEMENT

395
390

EQ. STA. 48+49.41 BK. (31' LT. ℄ I-57)=
P.C. STA. 0+00 AH. (℄ CROSSOVER NO. 4)

EQ. STA. 47+95.47 BK. =
STA. 48+07.04 AH.

EXIST. PROFILE ALONG MEDIAN
EDGE OF N.B. PAVEMENT

PROFILE OF ORIGINAL GROUND LINE
ALONG ℄ CROSSOVER NO. 4

0.08%

PROFILE ALONG
℄ CROSSOVER NO. 4

EXIST. BITUMINOUS
MIXTURE COMPLETE, 14'

EQ. STA. 4+86.92 BK. (℄ CROSSOVER NO. 4)=
37' RT. STA. 53+30.62 AH. (℄ I-57)

EXIST. PROFILE ALONG MEDIAN
EDGE OF S.B. PAVEMENT

395
390

47 0 1 2 3 4 54 55 56

F.A.I. RTE. 57 OVER MIDDLE FORK BIG MUDDY RIVER

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57		FRANKLIN	145	77
FED. ROAD DIST. 7	ILLINOIS	PROJECT		

SEC. 28 (SB) I.5R, 2R, 3R) D-1,
28 (SVB, 3VB-1) T-1

50 40 30 20 10 T 10 20 30 40 50

℄ N.B.L.

℄ S.B.L.

℄ #2

389.2

389.3

FIRST CONTRACT

SECOND CONTRACT

C+ 0
F- 4

C+ 0
F- 0

EXIST. INLET
TOP OF GRATE
ELEV. 388.95

C+ 3
F- 7

C+ 0
F- 0

385
390
395

35 + 00

34 + 00

33 + 00

LEGEND:

NORTHBOUND CONTRACT

SOUTHBOUND CONTRACT

N.B. CONTRACT DITCH

S.B. CONTRACT DITCH

ORIG. SURVEY
NOTE BOOK
No.
DRAWN
PLOTTED
PLOTTED
TEMPLATE
AREAS CHECKED
BY
DATE

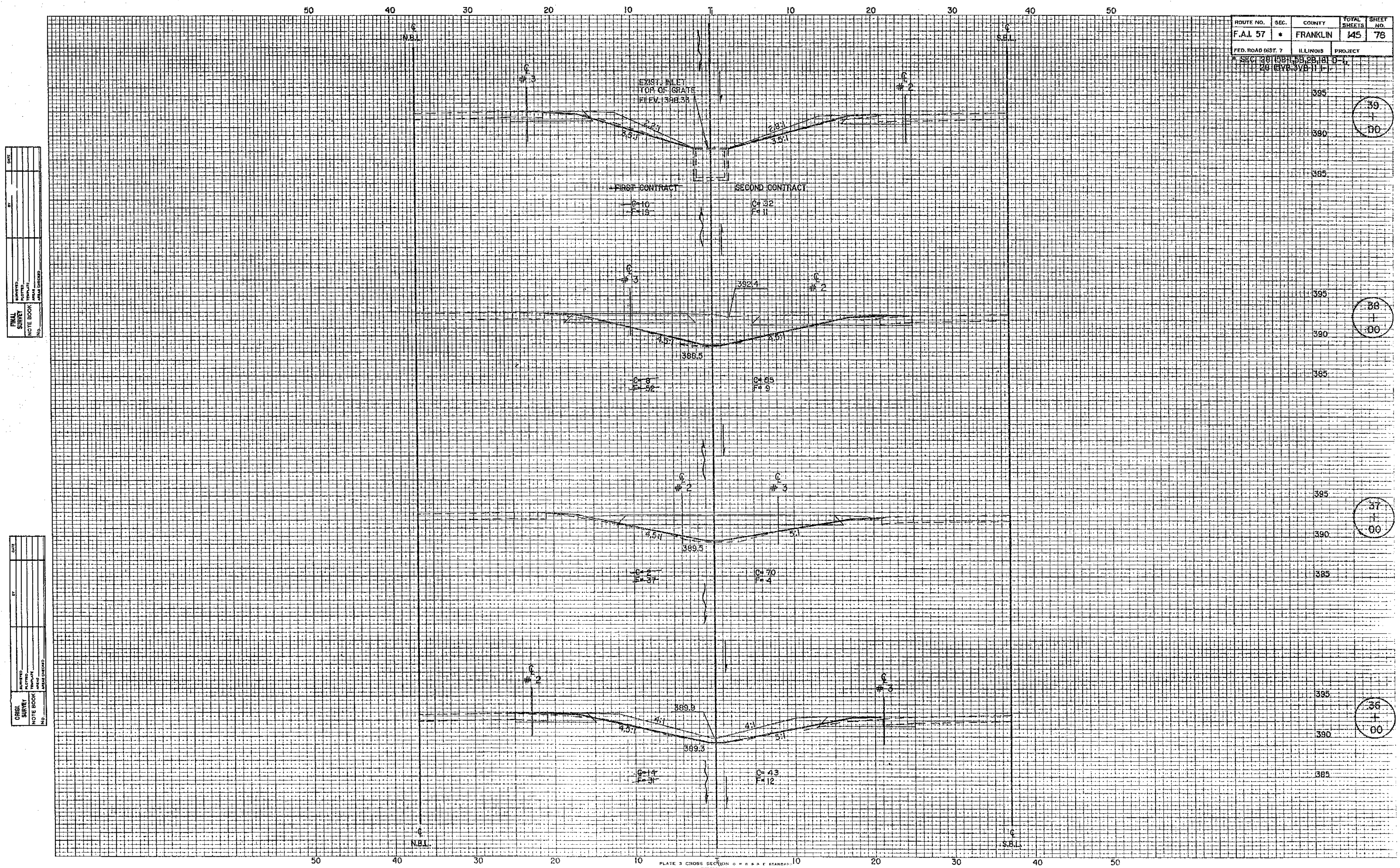
FINAL SURVEY
NOTE BOOK
No.
DRAWN
PLOTTED
PLOTTED
TEMPLATE
AREAS CHECKED
BY
DATE

PLATE 3 CROSS SECTION O P R R E STANDARD
DIETZGEN CORPORATION

MIDDLE FORK BIG MUDDY RIVER

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	78
FED. ROAD DIST. 7		ILLINOIS	PROJECT	

* SEC. 28 (5B-1,5B,2B,1B) D-L, 29 (5VB,3VB-1) F



MIDDLE FORK BIG MUDDY RIVER

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	79
FED. ROAD DIST. 7	ILLINOIS	PROJECT		

* SEC. 28 (5B,15B,25B,3B) 0-11
28 (5VB,3VB-1) 1-1

FINAL SURVEY
NOTE BOOK
NO.
DATE
BY
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED

ORIGI SURVEY
NOTE BOOK
NO.
DATE
BY
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED

BK. N. ABUTMENT
STA. 42 + 64.15

BK. N. ABUTMENT
STA. 42 + 66.29

℄ N.B.L.

℄ S.B.L.

391.9

390.9

389.8

4:1

FIRST CONTRACT
C= 3
F= 2

SECOND CONTRACT
C= 0
F= 0

C= 8
F= 8

C= 0
F= 6

395
390
385

42 + 00

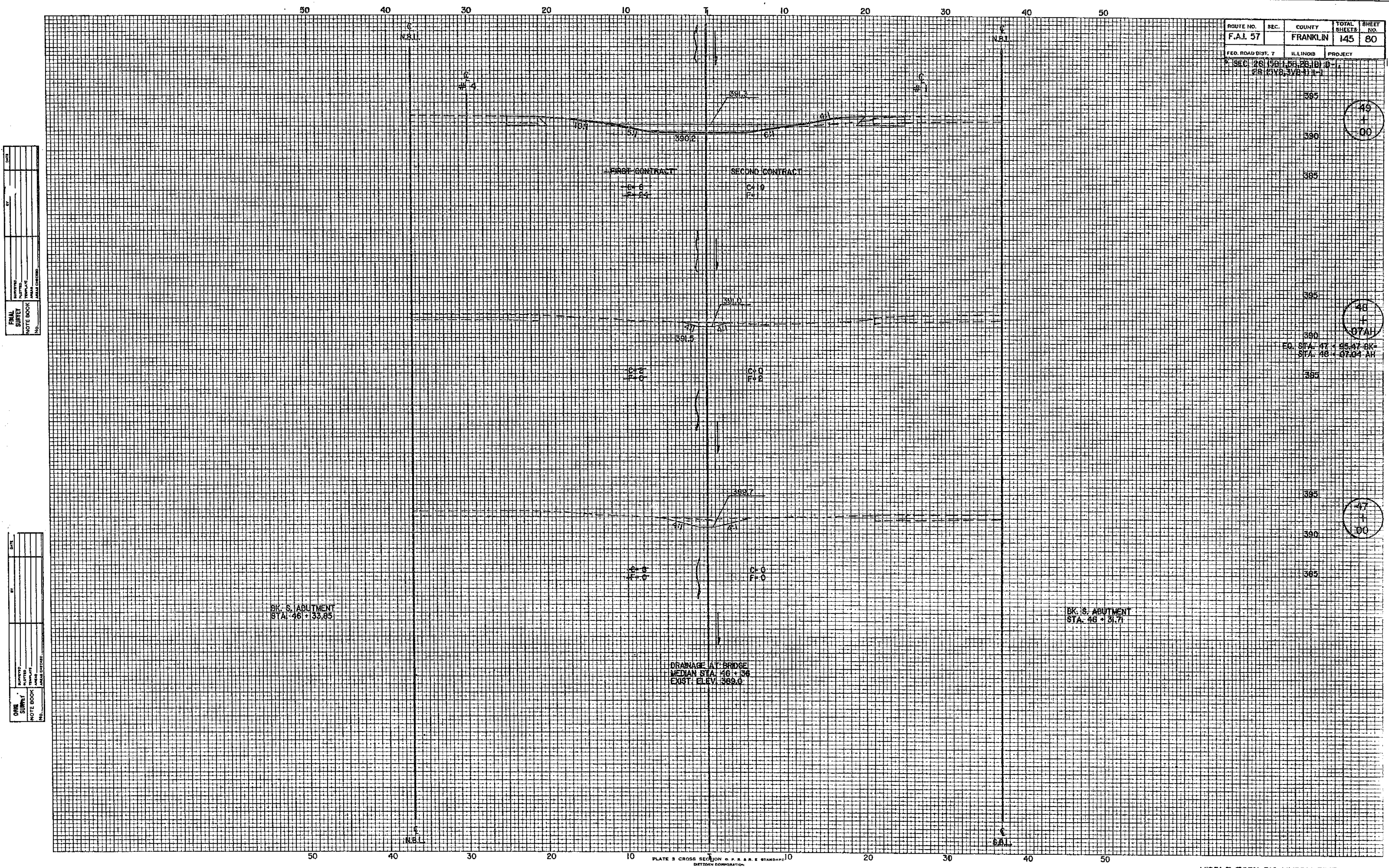
41 + 00

40 + 00

PLATE 3 CROSS SECTION O A R B R E STANDARD
DIETZGEN CORPORATION

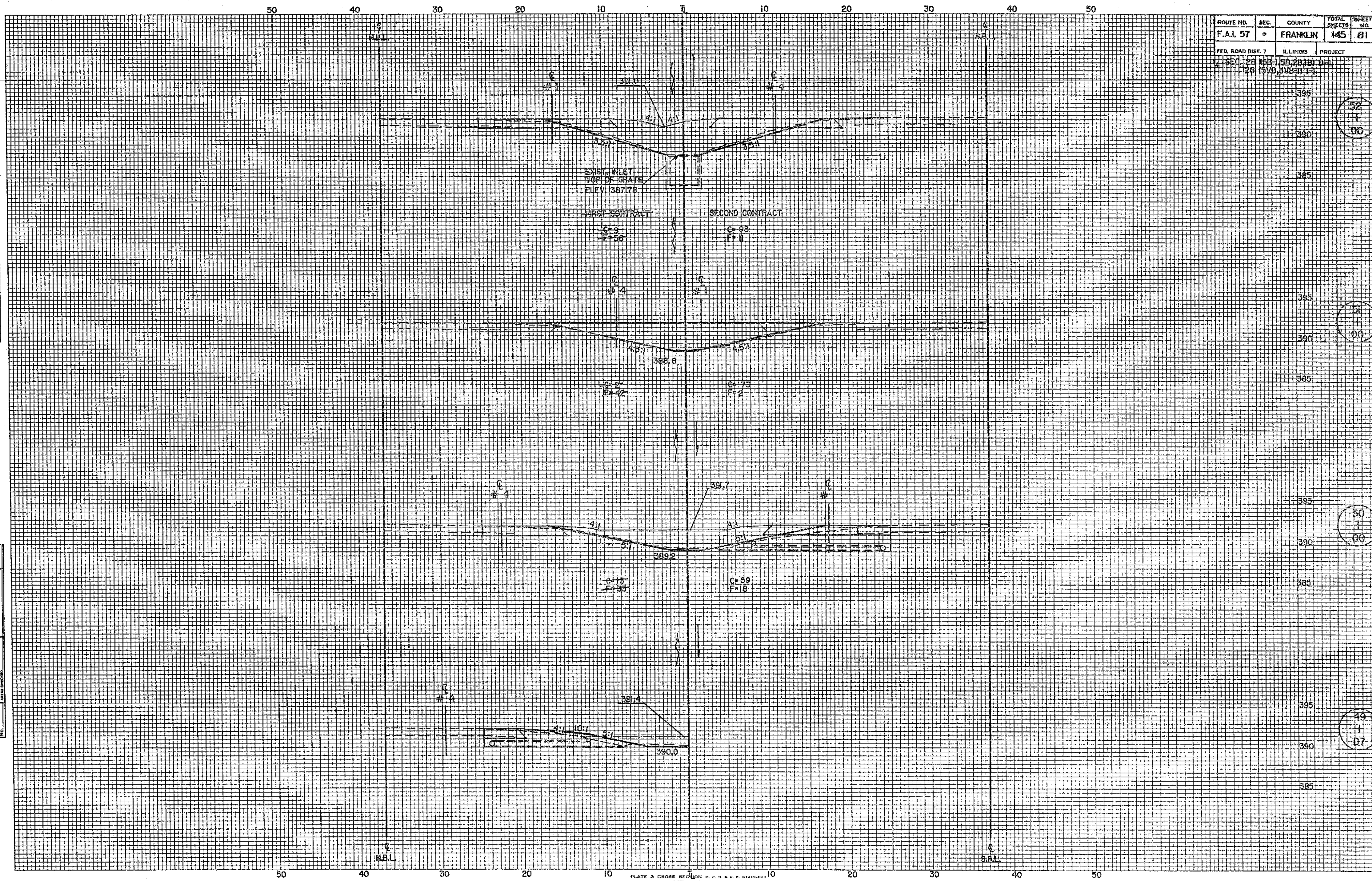
MIDDLE FORK BIG MUDDY RIVER

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57		FRANKLIN	145	80
FED. ROAD DIST. 7		ILLINOIS	PROJECT	



MIDDLE FORK BIG MUDDY RIVER

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	81
FED. ROAD DIST. 7		ILLINOIS	PROJECT	



MIDDLE FORK BIG MUDDY RIVER

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	82
FED. ROAD DIST. 7		ILLINOIS	PROJECT	

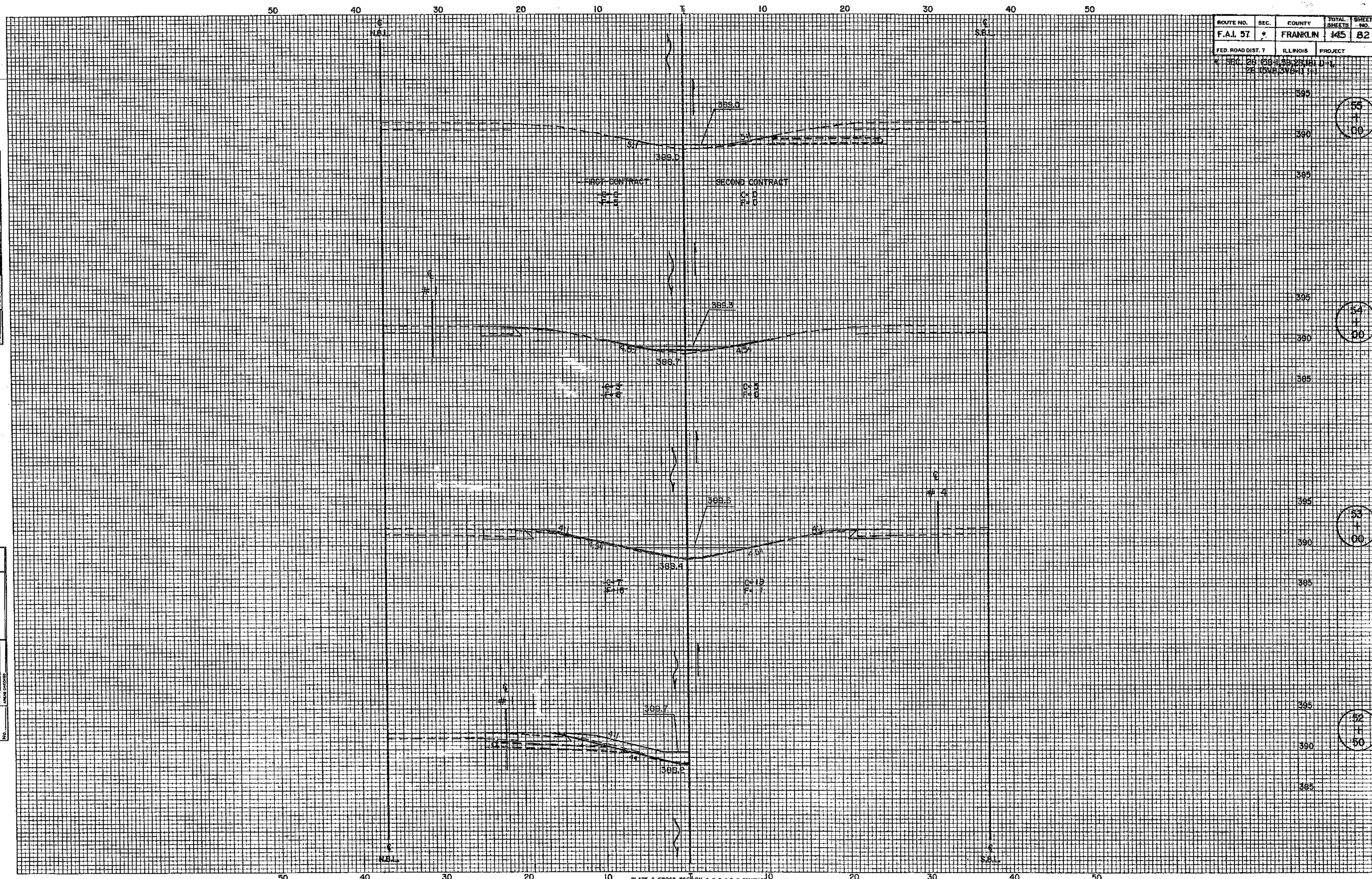


PLATE 3 CROSS SECTION G. P. R. & R. E. STANDARD DIETZGEN CORPORATION

MIDDLE FORK BIG MUDDY RIVER

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	83
FED. ROAD DIST. 7		ILLINOIS	PROJECT	

* SEC. 28 (5B-1,29,28)B,D-1, 28 (3VB,3VB-1)1-1

PLATE 3 CROSS SECTION

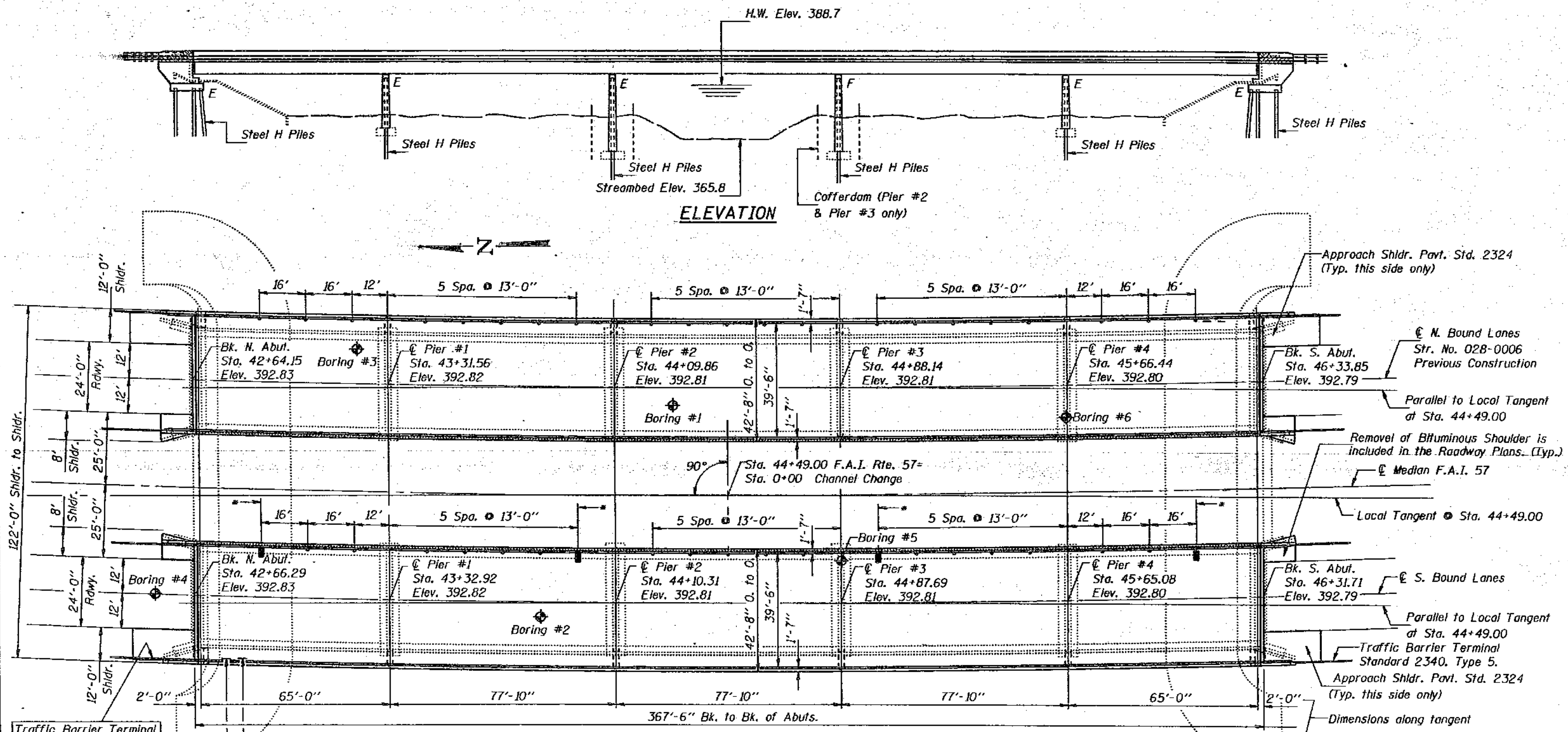
MIDDLE FORK BIG MUDDY RIVER

Bench Mark: "□" Cut in N.E. handrail on the N.E. corner of Middle Fork of Big Middy River bridge - Southbound Lanes. Sta. 44+49.00 Elevation 395.13.
Existing Structure: 028-0007 (SB). Built as FAI Route 57, Sec. 28-5(B-F) in 1962. The superstructure consists of 5 spans of continuous WF beams with an R.C. deck. The bridge will be rehabilitated in accordance with the scope of work shown below.
Temporary median crossovers shall be utilized to divert traffic over adjacent bridge (028-0006 N.B.) during reconstruction. No salvage.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-5B) D-1	FRANKLIN		84

SHEET NO. 1
25 SHEETS



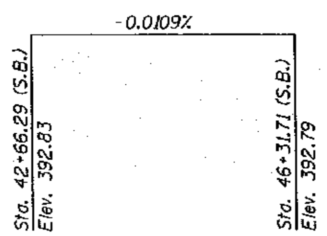
Existing Name Plate to be cleaned and relocated. Cast is incidental to "Name Plates".
Name Plate location

* Indicates specific locations of Drainage Scupper. (All other locations shall be 6"ϕ Drains.)

For quantities of Slopewall Removal and Replacement see Roadway Plans

PLAN

Notes:
Only the South Bound Structure is included in the Contract.



PROPOSED PROFILE GRADE
F.A. Route 57 (along ℄ pavement)

CURVE DATA
Δ = 34°-04'-30"
D = 0°-54'
T = 1950.92'
L = 3786.11'
E = 292.22'
R = 6366.26'
S.E. = 0.020'

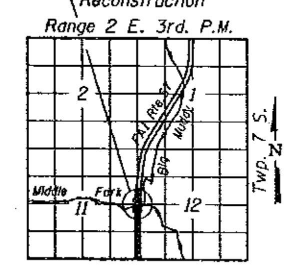
STATION 44+49.00
REBUILT 199 BY
STATE OF ILLINOIS
F.A.I. RT. 57 SEC. (28-5B)D-1
F.A. PROJ.
LOADING HS20 & ALT.
STR. NO. 028-0007

NAME PLATE
(South Bound Lanes)
See Std. 2113

DESIGN SPECIFICATIONS
1989 AASHTO. 1990. 1991 Interim Specifications & Seismic Retrofitting Guidelines for Highway Bridges

LOADING HS 20-44 & Alt.
Allow 25#/ sq. ft. for future wearing surface.

DESIGN STRESSES
FIELD UNITS
New Construction
f'c = 3,500 psi
fy = 60,000 psi (Reinf.)
fs = 27,000 psi (Structural Steel M270 Gr. 50)
fs = 20,000 psi (Structural Steel M270 Gr. 36)
Old Construction
fs = 20,000 psi (Structural Steel)



LOCATION SKETCH

GENERAL PLAN
F.A.I. ROUTE 57 OVER
MIDDLE FORK OF BIG MUDDY RIVER
F.A.I. ROUTE 57 SECTION (28-5B)D-1
FRANKLIN COUNTY
STATION 44+49.00
STRUCTURE NUMBER 028-0007 (S.B.)

DESIGNED Steven Nagengast
CHECKED
Paul W. Sweet, W.D.C.
DRAWN John F. Schneller Jr.
CHECKED SPN

May 20 1993
EXAMINED Engineer of Bridge Design
PASSED Ralph E. Anderson Engineer of Bridges and Structures
APPROVED Director of Highways

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FEDERAL NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-5B) D-1	FRANKLIN	85	
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT		

SHEET NO. 2
25 SHEETS

GENERAL NOTES

Fasteners shall be high strength bolts . Bolts $\frac{7}{8}$"ϕ. open holes $\frac{15}{16}$"ϕ. unless otherwise noted.

Calculated weight of Structural Steel M270 Gr. 50 = 51,230 Lbs.

Calculated weight of Structural Steel M270 Gr. 36 = 18,210 Lbs.

Field welding of construction accessories will not be permitted to the bottom flange of beams nor to 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 diaphragms over supports.

The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These Components are the wide flange beams and all splice plate material of the wide flange beams.

Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53 Grade 60.

All top surfaces of the Abutments shall receive "Bridge Seat Sealer".

The contractor shall drive 2 (two) Steel HP12 x 53 test piles in permanent locations 1 (one) at the North Abutment and 1 (one) at South Abutment as directed by the Engineer before ordering the remainder of the piles.

The Zinc-silicate and vinyl paint system shall be used for shop and field painting of New Structural Steel. The color of the vinyl finish coat shall be Munsell No. 7.5 G 4/8. Interstate Green.

Plan dimensions and details relative to existing structure have been taken from existing plans and field survey elevations and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the contractor will be paid for the quantity actually furnished at the unit price bid for the work.

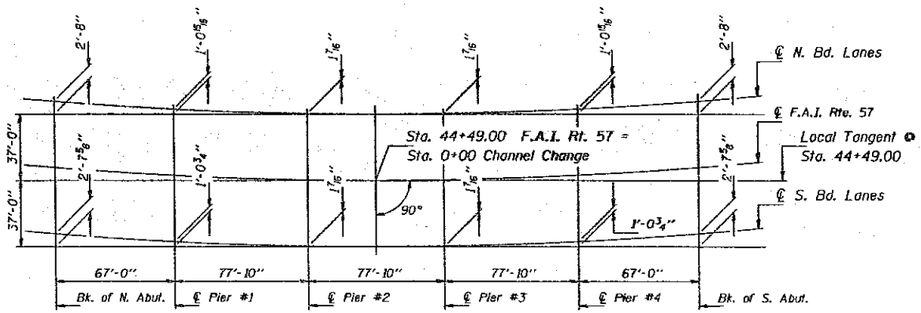
Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $\frac{1}{8}$ inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two $\frac{1}{8}$" adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims. For Type I Elastomeric Bearings, shims of the dimensions of top plate shall be provided and placed as detailed.

The Contractor will be required to mark, on top of the concrete deck, the locations of the top flange of all the steel beams, prior to any removal of the bridge concrete deck. Saw cutting directly over the top of the beam flanges is not permitted.

Prior to pouring the new concrete for the deck, all loose rust, loose mill scale and all other foreign material shall be removed from the embedded portions of flanges of stringers. The removal shall be accomplished in accordance with the requirements of the SSPC Surface Preparation Specifications SP-3 for Power Tool Cleaning or SP-2 for hand tool cleaning. Cost shall be incidental to "Removal of Existing Concrete Deck".

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.		12	12
Removal of Existing Concrete Deck	Each	1		1
Structure Excavation	Cu. Yd.		83	83
Floor Drains	Each	17		17
Class X Concrete Superstructure	Cu. Yd.	464.0		464.0
Protective Coat	Sq. Yd.	1,920		1,920
Elastomeric Bearing Assembly Type I	Each		21	21
Elastomeric Bearing Assembly Type II	Each		14	14
Class X Concrete	Cu. Yd.		67.9	67.9
Structural Steel	L.S.	1		1
Stud Shear Connectors	Each	7,056		7,056
Reinforcement Bars, Epoxy Coated	Pound	109,380	8,070	117,450
Steel Piles HP12 x 53	Lin. Ft.		208	208
Steel Piles HP12 x 74	Lin. Ft.		230	230
Test Pile Steel HP12 x 53	Each		2	2
Name Plates	Each	1		1
Bridge Seat Sealer	Sq. Ft.		167	167
Neoprene Expansion Joint 2"	Lin. Ft.	42		42
Neoprene Expansion Joint 4"	Lin. Ft.	42		42
Jack and Remove Existing Bearings	Each		36	36
Cofferdams	Each		2	2
Cofferdam Excavation	Cu. Yd.		52	52
Bridge Deck Grooving	Sq. Yd.	1,521		1,521
Drainage Scuppers	Each	4		4



OFFSET SKETCH

DESIGNED Steven Negangard
CHECKED [illegible]
DRAWN John F. Schneller Jr.
CHECKED [illegible]

May 20 1993
EXAMINED Staj O Kaspar
ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

GENERAL PLAN DETAILS
F.A.I. RT 57 SEC. (28-5B)D-1
FRANKLIN COUNTY
STATION 44+49.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ISSUE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-5B) D-1	FRANKLIN	86	SHEET NO. 3
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		25 SHEETS

BEAM #1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. No. Abut.	4265.830	-15.977	392.510	392.510
℄ Brg. No. Abut.	4267.824	-15.982	392.510	392.510
A	4277.794	-15.996	392.509	392.527
B	4287.765	-15.996	392.508	392.538
C	4297.735	-15.979	392.507	392.539
D	4307.706	-15.946	392.506	392.532
E	4317.676	-15.897	392.506	392.520
F	4327.646	-15.834	392.506	392.509
℄ Pier #1	4332.631	-15.797	392.507	392.507
G	4342.601	-15.709	392.508	392.514
H	4349.580	-15.639	392.508	392.522
I	4362.535	-15.828	392.503	392.528
J	4372.501	-15.956	392.499	392.530
K	4382.468	-16.068	392.496	392.519
L	4392.434	-16.165	392.493	392.509
M	4402.401	-16.246	392.490	392.497
℄ Pier #2	4410.209	-16.298	392.488	392.488
N	4420.177	-16.351	392.486	392.496
O	4430.144	-16.389	392.484	392.503
P	4440.112	-16.410	392.483	392.509
Q	4450.080	-16.417	392.482	392.513
R	4460.048	-16.407	392.481	392.505
S	4470.015	-16.382	392.480	392.497
T	4479.983	-16.341	392.480	392.487
℄ Pier #3	4487.791	-16.298	392.480	392.480
U	4497.758	-16.229	392.480	392.489
V	4507.725	-16.145	392.481	392.499
W	4517.692	-16.045	392.482	392.507
X	4527.658	-15.929	392.483	392.513
Y	4537.624	-15.798	392.484	392.508
Z	4548.420	-15.639	392.486	392.500
A1	4555.399	-15.709	392.484	392.490
℄ Pier #4	4565.369	-15.797	392.481	392.481
B1	4570.354	-15.834	392.480	392.483
C1	4580.324	-15.897	392.478	392.492
D1	4590.294	-15.946	392.476	392.502
E1	4600.265	-15.979	392.474	392.506
F1	4610.235	-15.996	392.473	392.503
G1	4620.206	-15.996	392.471	392.489
℄ Brg. So. Abut.	4630.176	-15.982	392.470	392.470
Bk. So. Abut.	4632.170	-15.977	392.470	392.470

EAST LONGITUDINAL BONDED CONSTRUCTION JOINT

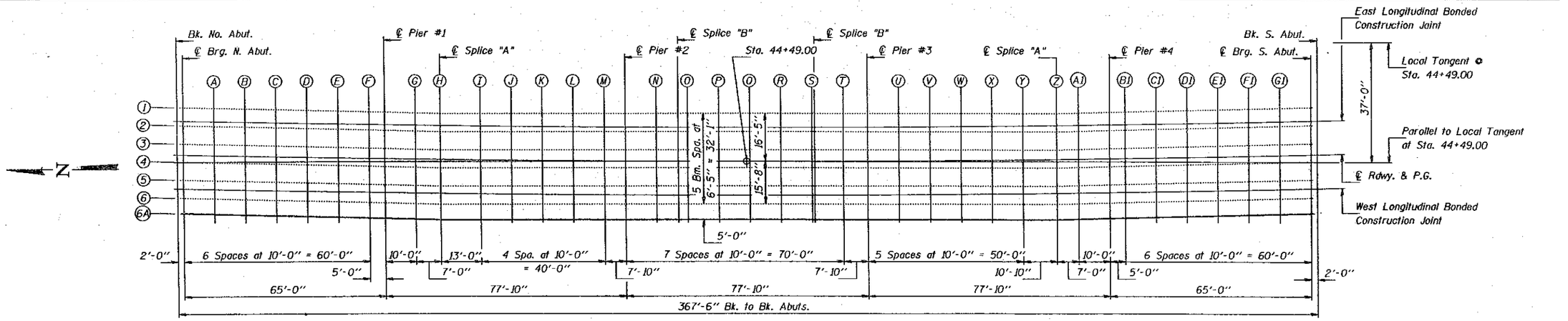
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. No. Abut.	4265.944	-12.000	392.590	392.590
℄ Brg. No. Abut.	4267.937	-12.000	392.590	392.590
A	4277.897	-12.000	392.589	392.605
B	4287.858	-12.000	392.588	392.615
C	4297.819	-12.000	392.587	392.617
D	4307.780	-12.000	392.585	392.609
E	4317.741	-12.000	392.584	392.599
F	4327.702	-12.000	392.583	392.588
℄ Pier #1	4332.700	-12.000	392.583	392.583
G	4342.661	-12.000	392.582	392.591
H	4349.636	-12.000	392.581	392.596
I	4362.583	-12.000	392.580	392.604
J	4372.544	-12.000	392.578	392.609
K	4382.505	-12.000	392.577	392.601
L	4392.466	-12.000	392.576	392.592
M	4402.426	-12.000	392.575	392.582
℄ Pier #2	4410.235	-12.000	392.574	392.574
N	4420.196	-12.000	392.573	392.583
O	4430.157	-12.000	392.572	392.591
P	4440.118	-12.000	392.571	392.597
Q	4450.079	-12.000	392.570	392.601
R	4460.040	-12.000	392.569	392.593
S	4470.001	-12.000	392.568	392.585
T	4479.961	-12.000	392.567	392.574
℄ Pier #3	4487.765	-12.000	392.566	392.566
U	4497.725	-12.000	392.565	392.574
V	4507.686	-12.000	392.564	392.582
W	4517.647	-12.000	392.563	392.588
X	4527.608	-12.000	392.562	392.592
Y	4537.569	-12.000	392.560	392.584
Z	4548.364	-12.000	392.559	392.575
A1	4555.337	-12.000	392.558	392.565
℄ Pier #4	4565.300	-12.000	392.557	392.557
B1	4570.281	-12.000	392.556	392.561
C1	4580.244	-12.000	392.555	392.570
D1	4590.207	-12.000	392.554	392.579
E1	4600.171	-12.000	392.553	392.584
F1	4610.135	-12.000	392.552	392.579
G1	4620.099	-12.000	392.551	392.567
℄ Brg. So. Abut.	4630.063	-12.000	392.550	392.550
Bk. So. Abut.	4632.056	-12.000	392.550	392.550

BEAM #2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. No. Abut.	4266.013	-9.561	392.639	392.639
℄ Brg. No. Abut.	4268.006	-9.566	392.639	392.639
A	4277.966	-9.580	392.637	392.655
B	4287.927	-9.580	392.636	392.666
C	4297.887	-9.563	392.636	392.668
D	4307.847	-9.530	392.634	392.660
E	4317.808	-9.481	392.634	392.648
F	4327.768	-9.418	392.635	392.638
℄ Pier #1	4332.748	-9.381	392.635	392.635
G	4342.708	-9.293	392.636	392.642
H	4349.679	-9.223	392.637	392.651
I	4362.622	-9.411	392.631	392.656
J	4372.578	-9.539	392.628	392.658
K	4382.534	-9.658	392.624	392.648
L	4392.491	-9.748	392.621	392.637
M	4402.448	-9.829	392.619	392.626
℄ Pier #2	4410.248	-9.882	392.617	392.617
N	4420.206	-9.935	392.615	392.624
O	4430.163	-9.972	392.613	392.632
P	4440.121	-9.994	392.611	392.637
Q	4450.079	-10.000	392.610	392.641
R	4460.036	-9.990	392.609	392.633
S	4469.994	-9.965	392.608	392.625
T	4479.952	-9.924	392.608	392.616
℄ Pier #3	4487.752	-9.882	392.608	392.608
U	4497.709	-9.813	392.609	392.618
V	4507.666	-9.729	392.609	392.627
W	4517.623	-9.629	392.610	392.635
X	4527.579	-9.513	392.611	392.642
Y	4537.535	-9.382	392.613	392.636
Z	4548.321	-9.223	392.615	392.629
A1	4555.292	-9.293	392.612	392.618
℄ Pier #4	4565.252	-9.381	392.609	392.609
B1	4570.232	-9.418	392.609	392.612
C1	4580.192	-9.481	392.606	392.620
D1	4590.153	-9.530	392.604	392.630
E1	4600.113	-9.563	392.603	392.635
F1	4610.073	-9.580	392.601	392.631
G1	4620.034	-9.580	392.599	392.617
℄ Brg. So. Abut.	4629.994	-9.566	392.599	392.599
Bk. So. Abut.	4631.987	-9.561	392.599	392.599

BEAM #3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. No. Abut.	4266.197	-3.144	392.767	392.767
℄ Brg. No. Abut.	4268.187	-3.149	392.767	392.767
A	4278.138	-3.163	392.766	392.784
B	4288.088	-3.163	392.765	392.795
C	4298.039	-3.146	392.764	392.796
D	4307.989	-3.113	392.763	392.789
E	4317.939	-3.064	392.763	392.777
F	4327.889	-3.001	392.763	392.766
℄ Pier #1	4332.864	-2.964	392.764	392.764
G	4342.814	-2.874	392.765	392.771
H	4349.779	-2.806	392.765	392.779
I	4362.708	-2.995	392.760	392.784
J	4372.654	-3.123	392.756	392.786
K	4382.601	-3.235	392.753	392.776
L	4392.548	-3.332	392.750	392.766
M	4402.495	-3.413	392.747	392.754
℄ Pier #2	4410.287	-3.465	392.745	392.745
N	4420.234	-3.518	392.743	392.752
O	4430.182	-3.555	392.741	392.760
P	4440.130	-3.577	392.740	392.765
Q	4450.078	-3.583	392.738	392.770
R	4460.025	-3.574	392.737	392.762
S	4469.973	-3.549	392.737	392.754
T	4479.921	-3.508	392.737	392.744
℄ Pier #3	4487.713	-3.465	392.737	392.737
U	4497.660	-3.396	392.737	392.746
V	4507.607	-3.312	392.737	392.755
W	4517.554	-3.212	392.738	392.763
X	4527.501	-3.097	392.740	392.770
Y	4537.447	-2.966	392.741	392.764
Z	4548.221	-2.806	392.743	392.757
A1	4555.186	-2.874	392.742	392.748
℄ Pier #4	4565.136	-2.964	392.738	392.738
B1	4570.111	-3.001	392.737	392.740
C1	4580.061	-3.064	392.735	392.749
D1	4590.011	-3.113	392.733	392.759
E1	4599.961	-3.146	392.731	392.763
F1	4609.912	-3.163	392.730	392.760
G1	4619.862	-3.163	392.728	392.746
℄ Brg. So. Abut.	4629.813	-3.149	392.727	392.727
Bk. So. Abut.	4631.803	-3.144	392.727	392.727



PLAN

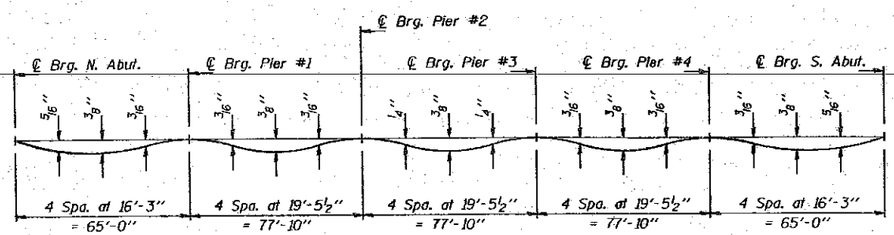
NOTE:
Work this sheet with sheets #4 & #5 of 25.

DESIGNED Steven Nagengast
CHECKED [illegible]
DRAWN John F. Schneller Jr.
CHECKED JFM BM

May 20 1993
EXAMINED Greg J. Haspar
ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

TOP OF SLAB ELEVATIONS
F.A.I. RT 57 SEC. (28-5B)D-1
FRANKLIN COUNTY
STATION 44+49.00

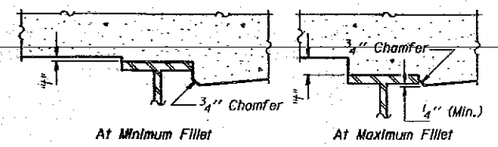
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



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 and on sheets #3 & #5 of 25.



To determine "I": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown on sheets #3, #4 & #5 of 25. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheets #3, #4 & #5 of 25, minus slab thickness, equals the fillet heights "I" above top flange of beams.

FILLET HEIGHTS

℄ RDWY. & P.G.

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. No. Abut.	4266.287	0.000	392.830	392.830
℄ Brg. No. Abut.	4268.276	0.000	392.830	392.830
A	4278.222	0.000	392.829	392.847
B	4288.168	0.000	392.827	392.857
C	4298.113	0.000	392.826	392.858
D	4308.058	0.000	392.825	392.851
E	4318.002	0.000	392.824	392.838
F	4327.946	0.000	392.823	392.826
℄ Pier #1	4332.918	0.000	392.823	392.823
G	4342.862	0.000	392.821	392.827
H	4349.822	0.000	392.821	392.835
I	4362.749	0.000	392.819	392.844
J	4372.692	0.000	392.818	392.848
K	4382.634	0.000	392.817	392.840
L	4392.577	0.000	392.816	392.832
M	4402.520	0.000	392.815	392.823
℄ Pier #2	4410.308	0.000	392.814	392.814
N	4420.250	0.000	392.813	392.823
O	4430.193	0.000	392.812	392.831
P	4440.135	0.000	392.811	392.837
Q	4450.077	0.000	392.810	392.841
R	4460.019	0.000	392.809	392.833
S	4469.962	0.000	392.807	392.825
T	4479.904	0.000	392.806	392.813
℄ Pier #3	4487.692	0.000	392.805	392.805
U	4497.634	0.000	392.804	392.813
V	4507.577	0.000	392.803	392.821
W	4517.520	0.000	392.802	392.826
X	4527.463	0.000	392.801	392.831
Y	4537.406	0.000	392.800	392.823
Z	4547.178	0.000	392.799	392.813
A1	4556.138	0.000	392.798	392.804
℄ Pier #4	4565.082	0.000	392.797	392.797
B1	4570.054	0.000	392.796	392.800
C1	4579.998	0.000	392.795	392.809
D1	4589.942	0.000	392.794	392.820
E1	4599.887	0.000	392.793	392.825
F1	4609.832	0.000	392.792	392.822
G1	4619.778	0.000	392.791	392.809
℄ Brg. So. Abut.	4629.724	0.000	392.790	392.790
Bk. So. Abut.	4631.713	0.000	392.790	392.790

BEAM #4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. No. Abut.	4266.380	3.273	392.895	392.895
℄ Brg. No. Abut.	4268.368	3.268	392.895	392.895
A	4278.309	3.254	392.894	392.912
B	4288.249	3.254	392.893	392.923
C	4298.190	3.271	392.892	392.924
D	4308.130	3.304	392.891	392.917
E	4318.071	3.353	392.891	392.905
F	4328.011	3.416	392.891	392.894
℄ Pier #1	4332.981	3.453	392.892	392.892
G	4342.921	3.541	392.893	392.899
H	4349.878	3.611	392.893	392.907
I	4362.795	3.421	392.888	392.913
J	4372.731	3.293	392.884	392.915
K	4382.667	3.181	392.881	392.904
L	4392.604	3.085	392.878	392.894
M	4402.542	3.004	392.875	392.882
℄ Pier #2	4410.326	2.952	392.873	392.873
N	4420.263	2.899	392.871	392.881
O	4430.201	2.861	392.869	392.868
P	4440.139	2.840	392.868	392.894
Q	4450.077	2.833	392.867	392.898
R	4460.014	2.843	392.866	392.890
S	4469.952	2.868	392.865	392.882
T	4479.890	2.909	392.865	392.872
℄ Pier #3	4487.674	2.952	392.865	392.865
U	4497.611	3.020	392.865	392.874
V	4507.549	3.104	392.866	392.884
W	4517.485	3.204	392.867	392.892
X	4527.422	3.319	392.868	392.898
Y	4537.358	3.450	392.869	392.893
Z	4548.122	3.611	392.871	392.891
A1	4555.079	3.541	392.870	392.876
℄ Pier #4	4565.019	3.453	392.866	392.866
B1	4569.989	3.416	392.865	392.868
C1	4579.929	3.353	392.863	392.877
D1	4589.870	3.304	392.861	392.887
E1	4599.810	3.271	392.859	392.891
F1	4609.751	3.254	392.858	392.888
G1	4619.691	3.254	392.856	392.874
℄ Brg. So. Abut.	4629.632	3.268	392.855	392.855
Bk. So. Abut.	4631.620	3.273	392.855	392.855

BEAM #5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. No. Abut.	4266.563	9.689	393.024	393.024
℄ Brg. No. Abut.	4268.549	9.684	393.024	393.024
A	4278.479	9.670	393.022	393.040
B	4288.410	9.670	393.021	393.051
C	4298.341	9.687	393.021	393.053
D	4308.271	9.720	393.019	393.045
E	4318.202	9.769	393.019	393.033
F	4328.132	9.832	393.020	393.023
℄ Pier #1	4333.097	9.869	393.020	393.020
G	4343.027	9.957	393.021	393.027
H	4349.977	10.027	393.022	393.036
I	4362.881	9.837	393.016	393.041
J	4372.807	9.709	393.013	393.043
K	4382.734	9.598	393.009	393.033
L	4392.661	9.501	393.006	393.022
M	4402.588	9.421	393.004	393.011
℄ Pier #2	4410.364	9.368	393.002	393.002
N	4420.292	9.315	393.000	393.009
O	4430.220	9.278	392.998	393.017
P	4440.148	9.256	392.996	393.022
Q	4450.075	9.250	392.995	393.026
R	4460.003	9.260	392.994	393.018
S	4469.931	9.285	392.993	393.010
T	4479.859	9.325	392.993	393.001
℄ Pier #3	4487.635	9.368	392.993	392.993
U	4497.563	9.437	392.994	393.003
V	4507.490	9.521	392.994	393.012
W	4517.417	9.620	392.995	393.020
X	4527.343	9.736	392.996	393.027
Y	4537.270	9.867	392.998	393.021
Z	4548.020	10.027	393.000	393.014
A1	4554.970	9.957	392.998	393.004
℄ Pier #4	4564.900	9.869	392.994	392.994
B1	4569.870	9.832	392.994	392.997
C1	4579.800	9.769	392.991	393.005
D1	4589.730	9.720	392.989	393.015
E1	4599.660	9.687	392.988	393.020
F1	4609.590	9.670	392.986	393.016
G1	4619.520	9.670	392.984	393.002
℄ Brg. So. Abut.	4629.450	9.684	392.984	392.984
Bk. So. Abut.	4631.440	9.689	392.984	392.984

WEST LONGITUDINAL BONDED CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. No. Abut.	4266.629	12.000	393.070	393.070
℄ Brg. No. Abut.	4268.614	12.000	393.070	393.070
A	4278.538	12.000	393.069	393.085
B	4288.461	12.000	393.068	393.095
C	4298.385	12.000	393.067	393.097
D	4308.309	12.000	393.065	393.089
E	4318.232	12.000	393.064	393.079
F	4328.156	12.000	393.063	393.068
℄ Pier #1	4333.135	12.000	393.063	393.063
G	4343.059	12.000	393.062	393.070
H	4350.008	12.000	393.061	393.078
I	4362.906	12.000	393.059	393.084
J	4372.830	12.000	393.058	393.089
K	4382.753	12.000	393.057	393.081
L	4392.677	12.000	393.056	393.072
M	4402.601	12.000	393.055	393.062
℄ Pier #2	4410.380	12.000	393.054	393.054
N	4420.304	12.000	393.053	393.063
O	4430.228	12.000	393.052	393.071
P	4440.151	12.000	393.051	393.077
Q	4450.075	12.000	393.050	393.081
R	4459.998	12.000	393.049	393.073
S	4469.922	12.000	393.048	393.065
T	4479.846	12.000	393.047	393.054
℄ Pier #3	4487.620	12.000	393.046	393.046
U	4497.543	12.000	393.045	393.054
V	4507.467	12.000	393.044	393.062
W	4517.390	12.000	393.043	393.068
X	4527.314	12.000	393.042	393.072
Y	4537.238	12.000	393.040	393.064
Z	4547.992	12.000	393.039	393.054
A1	4554.940	12.000	393.038	393.047
℄ Pier #4	4564.865	12.000	393.037	393.037
B1	4569.827	12.000	393.036	393.041
C1	4579.753	12.000	393.035	393.050
D1	4589.679	12.000	393.034	393.059
E1	4599.605	12.000	393.033	393.064
F1	4609.532	12.000	393.032	393.059
G1	4619.459	12.000	393.031	393.047
℄ Brg. So. Abut.	4629.386	12.000	393.030	393.030
Bk. So. Abut.	4631.371	12.000	393.030	393.030

DESIGNED Steven Neyman
CHECKED [illegible]
DRAWN John F. Schneller Jr.
CHECKED [illegible]

May 20 1993
EXAMINED Raj D. Kaspar
ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

NOTE:
Work this sheet with sheets #3 & #5 of 25.

TOP OF SLAB ELEVATIONS
F.A.I. RT 57 SEC. (28-5B)D-1
FRANKLIN COUNTY
STATION 44+49.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-5B) D-1	FRANKLIN	88	25 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 5

BEAM #6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. No. Abut.	4266.745	16.106	393.152	393.152
℄ Brg. No. Abut.	4268.729	16.101	393.152	393.152
A	4278.650	16.087	393.151	393.169
B	4288.571	16.087	393.150	393.180
C	4298.491	16.104	393.148	393.180
D	4308.412	16.137	393.148	393.174
E	4318.332	16.186	393.148	393.162
F	4328.253	16.249	393.146	393.151
℄ Pier #1	4333.213	16.286	393.149	393.149
G	4343.133	16.374	393.149	393.155
H	4350.076	16.444	393.150	393.164
I	4362.967	16.253	393.145	393.169
J	4372.883	16.126	393.141	393.171
K	4382.800	16.014	393.138	393.161
L	4392.717	15.918	393.135	393.151
M	4402.634	15.837	393.132	393.139
℄ Pier #2	4410.403	15.785	393.130	393.130
N	4420.321	15.732	393.128	393.137
O	4430.239	15.695	393.126	393.145
P	4440.156	15.673	393.125	393.150
Q	4450.074	15.667	393.123	393.155
R	4459.992	15.676	393.122	393.147
S	4469.910	15.701	393.122	393.139
T	4479.828	15.742	393.122	393.129
℄ Pier #3	4487.597	15.785	393.122	393.122
U	4497.514	15.853	393.122	393.131
V	4507.432	15.937	393.122	393.140
W	4517.349	16.037	393.123	393.148
X	4527.265	16.152	393.125	393.155
Y	4537.181	16.283	393.126	393.149
Z	4547.920	16.444	393.128	393.142
A1	4554.870	16.374	393.126	393.132
℄ Pier #4	4564.790	16.286	393.123	393.123
B1	4569.750	16.249	393.122	393.125
C1	4579.670	16.186	393.120	393.134
D1	4589.590	16.137	393.118	393.144
E1	4599.510	16.104	393.116	393.148
F1	4609.430	16.087	393.115	393.145
G1	4619.350	16.087	393.114	393.132
℄ Brg. So. Abut.	4629.270	16.101	393.112	393.112
Bk. So. Abut.	4631.260	16.106	393.112	393.112

BEAM #6A

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. No. Abut.	4266.885	21.106	393.252	393.252
℄ Brg. No. Abut.	4268.867	21.101	393.252	393.252
A	4278.780	21.087	393.251	393.269
B	4288.693	21.087	393.250	393.280
C	4298.606	21.104	393.248	393.280
D	4308.519	21.137	393.248	393.274
E	4318.432	21.186	393.248	393.262
F	4328.345	21.249	393.248	393.251
℄ Pier #1	4333.301	21.286	393.249	393.249
G	4343.214	21.374	393.249	393.255
H	4350.152	21.444	393.250	393.264
I	4363.034	21.253	393.245	393.269
J	4372.943	21.125	393.241	393.271
K	4382.852	21.014	393.238	393.261
L	4392.761	20.917	393.235	393.251
M	4402.670	20.837	393.232	393.239
℄ Pier #2	4410.433	20.785	393.230	393.230
N	4420.343	20.732	393.228	393.237
O	4430.253	20.695	393.226	393.245
P	4440.163	20.673	393.225	393.250
Q	4450.074	20.667	393.223	393.255
R	4459.984	20.676	393.222	393.247
S	4469.894	20.701	393.222	393.239
T	4479.804	20.742	393.222	393.229
℄ Pier #3	4487.567	20.785	393.222	393.222
U	4497.477	20.853	393.222	393.231
V	4507.386	20.937	393.222	393.240
W	4517.295	21.036	393.223	393.248
X	4527.204	21.152	393.225	393.255
Y	4537.113	21.282	393.226	393.249
Z	4547.848	21.444	393.228	393.242
A1	4554.786	21.374	393.226	393.232
℄ Pier #4	4564.699	21.286	393.223	393.223
B1	4569.655	21.249	393.222	393.225
C1	4579.568	21.186	393.222	393.234
D1	4589.481	21.137	393.218	393.244
E1	4599.394	21.104	393.216	393.248
F1	4609.307	21.087	393.215	393.245
G1	4619.220	21.087	393.214	393.232
℄ Brg. So. Abut.	4629.130	21.101	393.212	393.212
Bk. So. Abut.	4631.120	21.106	393.212	393.212

DESIGNED Steven Nygaard
CHECKED [illegible]
DRAWN John F. Schneller Jr.
CHECKED [illegible]

May 20 1993
EXAMINED Greg A. Kaspar
ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

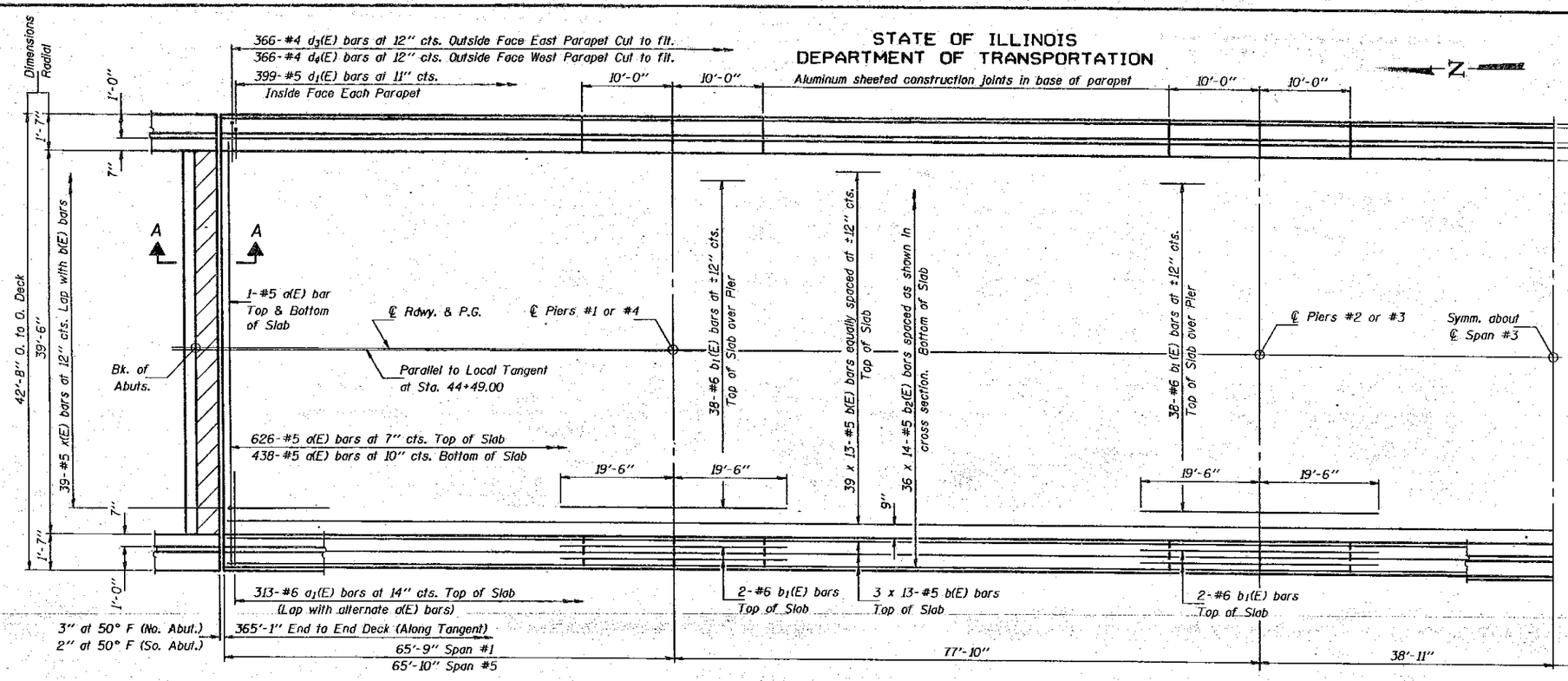
NOTE:
Work this sheet with sheets #3 & #4 of 25.

TOP OF SLAB ELEVATIONS
F.A.I. RT 57 SEC. (28-5B)D-1
FRANKLIN COUNTY
STATION 44+49.00

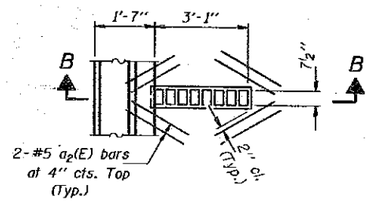
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-5B) D-1	FRANKLIN		99
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 5
25 SHEETS

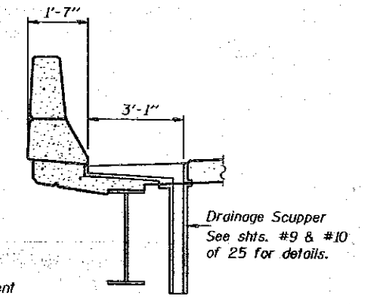
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



HALF PLAN



PLAN

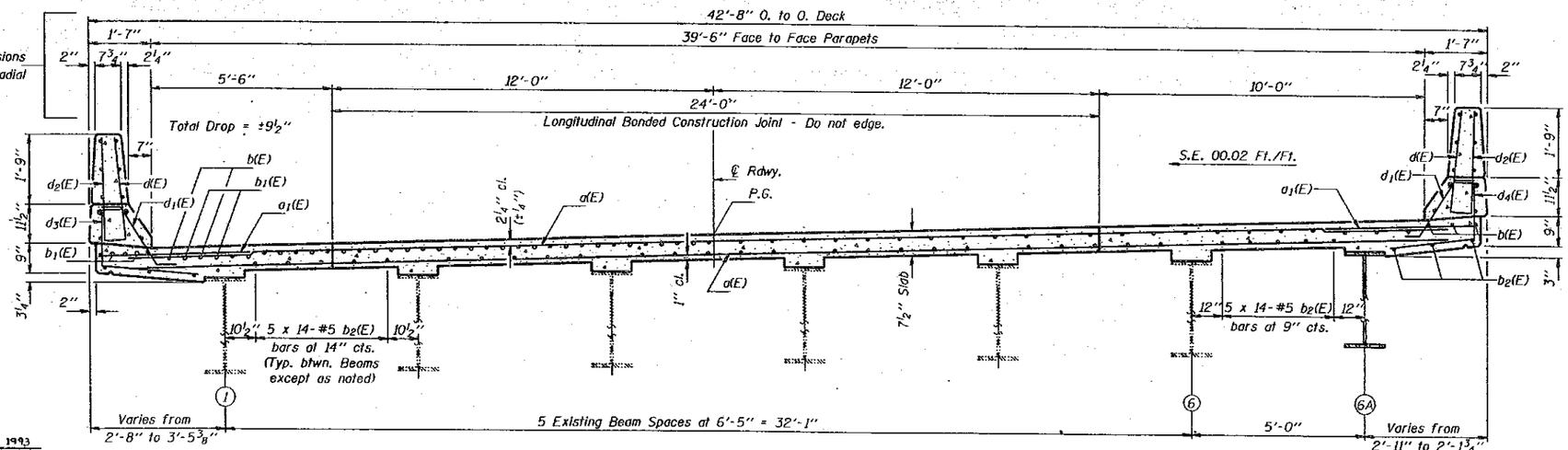


SECTION B-B

MIN. BAR LAPS

#5 (E) bar = 2'-2"

Notes: See Sheet #7 of 25 for superstructure details and Bill of Material.
Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
See Sheet #7 of 25 for parapet reinforcement.



NEAR PIER — NEAR MIDSPAN

CROSS SECTION

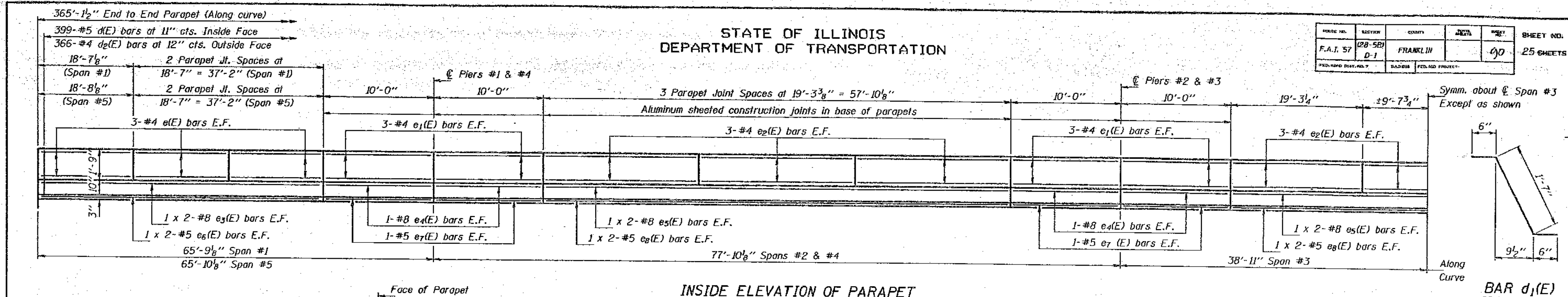
(Looking South)

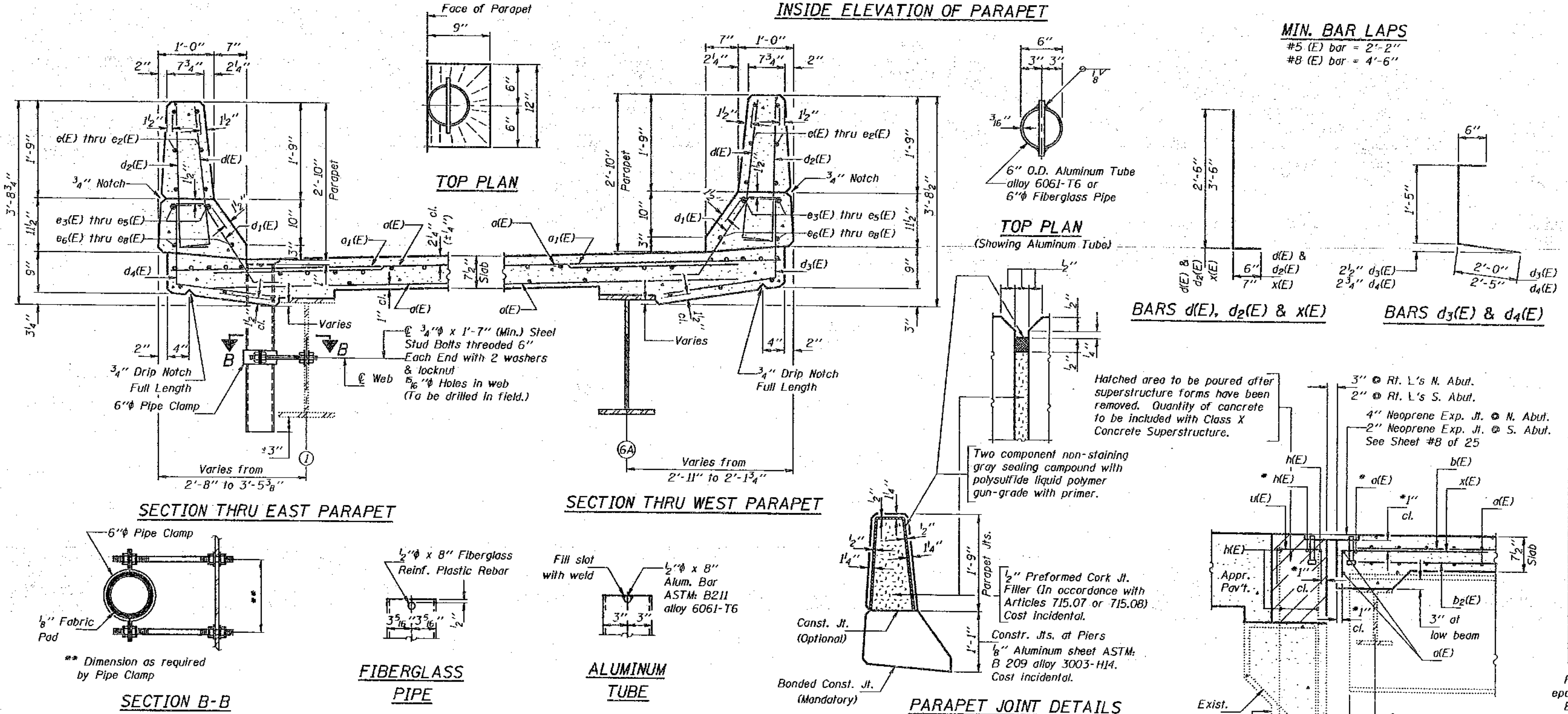
DESIGNED	Steven Nagengast	May 20 1993
CHECKED	[illegible]	EXAMINED Graj D. Kaspar, ENGINEER OF BRIDGE DESIGN
DRAWN	John F. Schneller Jr.	PASSED Ralph E. Anderson, ENGINEER OF BRIDGES AND STRUCTURES
CHECKED	[illegible]	APPROVED, DIRECTOR OF HIGHWAYS

SUPERSTRUCTURE
F.A.I. RT. 57 SEC. (28-5B)D-1
FRANKLIN COUNTY
STA. 44+49.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-5B) D-1	FRANKLIN		90

SHEET NO. 7
25 SHEETS





* Place a(E) bars and h(E) bars in back of anchor bolts as shown if required to maintain 1" cl. (+0-⅛"). Anchor bolts should be tied to a(E) and h(E)

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	1068	#5	40'-6"	——
a1(E)	626	#6	4'-6"	——
a2(E)	32	#5	2'-0"	——
b(E)	585	#5	30'-1"	——
b1(E)	168	#6	39'-0"	——
b2(E)	504	#5	28'-1"	——
d(E)	798	#5	3'-0"	
d1(E)	798	#5	2'-7"	
d2(E)	732	#4	3'-0"	
d3(E)	366	#4	3'-11"	
d4(E)	366	#4	4'-4"	
e(E)	72	#4	18'-4"	——
e1(E)	96	#4	9'-9"	——
e2(E)	108	#4	19'-0"	——
e3(E)	16	#8	30'-0"	——
e4(E)	32	#8	9'-9"	——
e5(E)	24	#8	31'-1"	——
e6(E)	16	#5	28'-10"	——
e7(E)	32	#5	9'-9"	——
e8(E)	24	#5	30'-0"	——
x(E)	78	#5	4'-1"	
Reinforcement Bars (Epoxy Coated)			Lbs.	109.380
Class X Concrete Superstructure			Cu. Yds.	464.0

Reinforcement bars designated (E) shall be epoxy coated.

Bars indicated thus 1 x 2-#5 etc. indicates 1 line of bars with 2 lengths per line.

Notes:

The exterior surfaces of the Floor Drain shall be painted with the vinyl enamel coat painting specified for Structural Steel. The exterior surfaces of the Drain shall be cleaned and given a washcoat pretreatment in accordance with Steel Structures Painting Council's Spec. SSPC-SP1 & SSPC-Paint 27 prior to painting.

Fiberglass pipe shall conform to ASTM: D2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum. The surface of the Fiberglass pipe shall be free of bond inhibiting agents.

DESIGNED Steve Nagy
CHECKED
DRAWN John F. Schneller Jr.
CHECKED

May 20 1993
EXAMINED Ozzie O. Kaspar — ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

SUPERSTRUCTURE
F.A.I. RT. 57 SEC. (28-5B)D-1
FRANKLIN COUNTY
STA. 44+49.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-5B) D-1	FRANKLIN		91
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 8
25 SHEETS

Joint Size	"C" at 50°F	"D" at 50°F
2"	2"	1½" Min.
2½"	2½"	1¾" Min.
4"	3"	2½" Min.

INSTALLATION NOTES

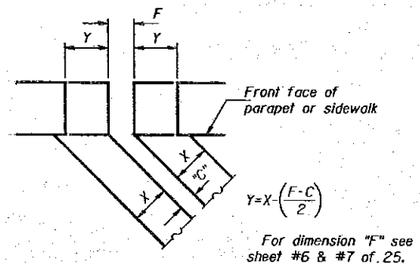
1. Install sponge mandrels into positions shown to form flap convolution.
2. Install parapet or sidewalk piece (trim roadway flap to fit before applying epoxy).
3. Install continuous seal in roadway.
4. Install anchor blocks as indicated.

NOTE A: Maximum spacing of anchor bolts shall be 12" centers.

SKEW LIMITATIONS

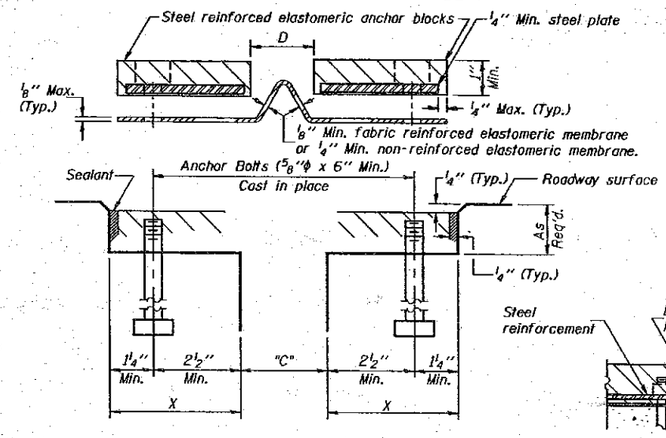
The details of the anchor blocks and the elastomeric membrane in the parapet, as shown, are for up to 50° skews.

For skews greater than 50°, the anchor blocks and the elastomeric membrane, installed in accordance with dimension "D", might require modifications to insure a minimum clearance of 1½" from centerline of anchor studs to edge of parapet opening. The anchor blocks and the elastomeric membrane shall also be installed to the top of the parapet with the anchor studs spaced at ±12" cts.

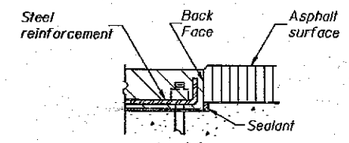


For dimension "F" see sheet #6 & #7 of 25.

FORMING BLOCKOUT SKETCH



CROSS SECTION



ANCHOR BLOCK REINFORCEMENT WITH ASPHALT SURFACE

GENERAL NOTES

Continuous Seal Neoprene Expansion Joint shall consist of molded anchor blocks of elastomer and steel, field assembled over continuous lengths of elastomeric membrane.

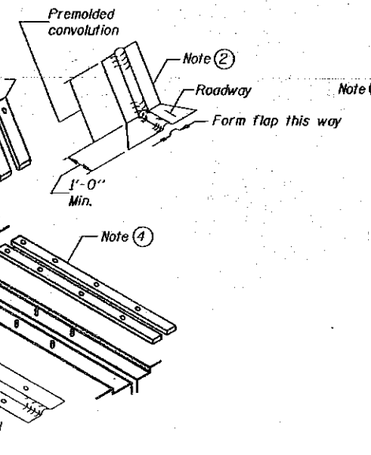
The elastomeric membrane shall be premolded with a single or a double upward convolution that will have a "memory" to return to its molded position upon joint closure.

The steel reinforcement must extend up the back face of anchor blocks when asphalt surfaces are used but is optional in concrete blockout.

The convolution length shall be such that the extended length will not be greater than the manufactured length when the joint is fully expanded in its design range and will not protrude above the anchor blocks when the joint is fully compressed.

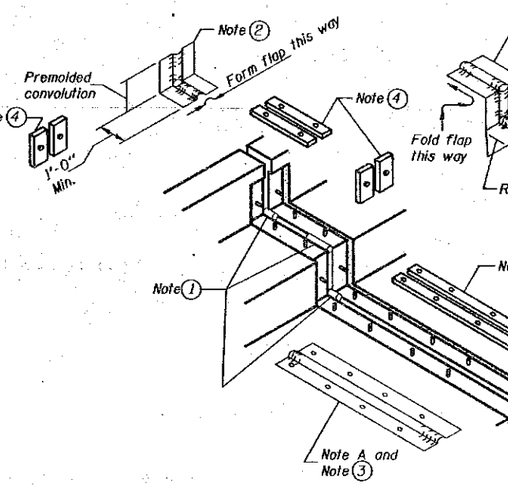
Joint openings shall be adjusted in accordance with Article 503.07(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50° F.

The parapet and sidewalk flaps may be furnished factory vulcanized to the roadway membrane provided the centerline of the convolution is maintained and the process and method meet the approval of the Engineer.

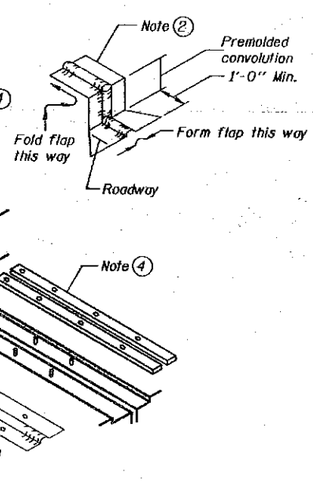


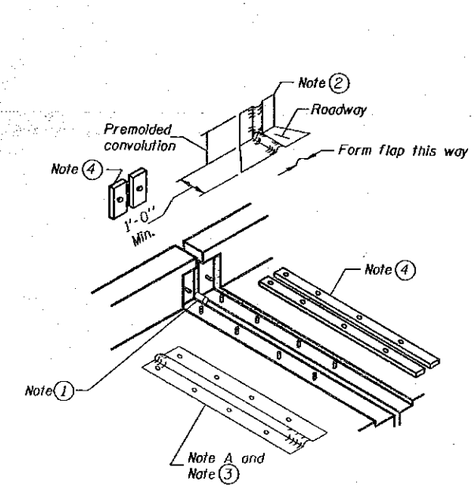
AT PARAPET

AT CURB

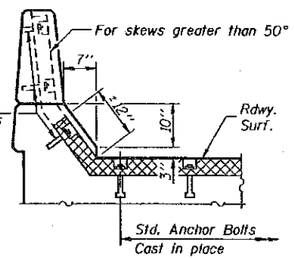


AT SIDEWALK OR MEDIAN

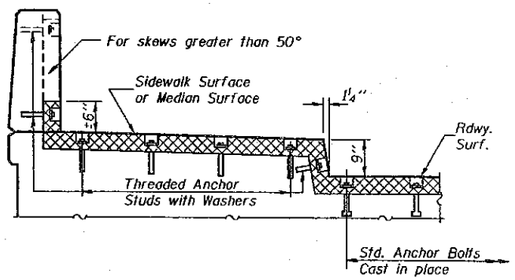




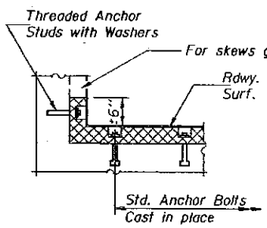
AT WALL



AT PARAPET



AT SIDEWALK OR MEDIAN



AT WALL

TYPICAL END TREATMENTS

DESIGNED	Steve Nagengast
CHECKED	SN
DRAWN	John F. Schneller Jr.
CHECKED	JFS

EJ-CS

May 20 1993

EXAMINED Raj S. Kaspar
ENGINEER OF BRIDGE DESIGN

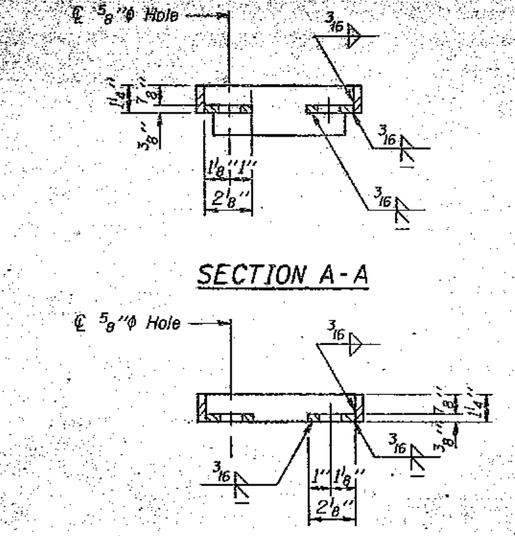
PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

APPROVED
DIRECTOR OF HIGHWAYS

CONTINUOUS SEAL TYPE
NEOPRENE EXPANSION JOINTS
For 2", 2½" and 4" Movement

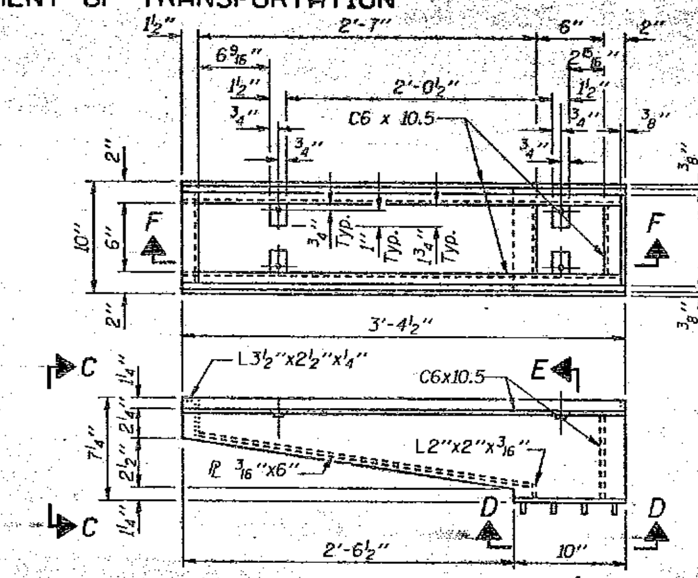
F.A.I. RT. 57 SEC. (28-5B)D-1
FRANKLIN COUNTY
STA. 44+49.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SECTION A-A

SECTION B-B



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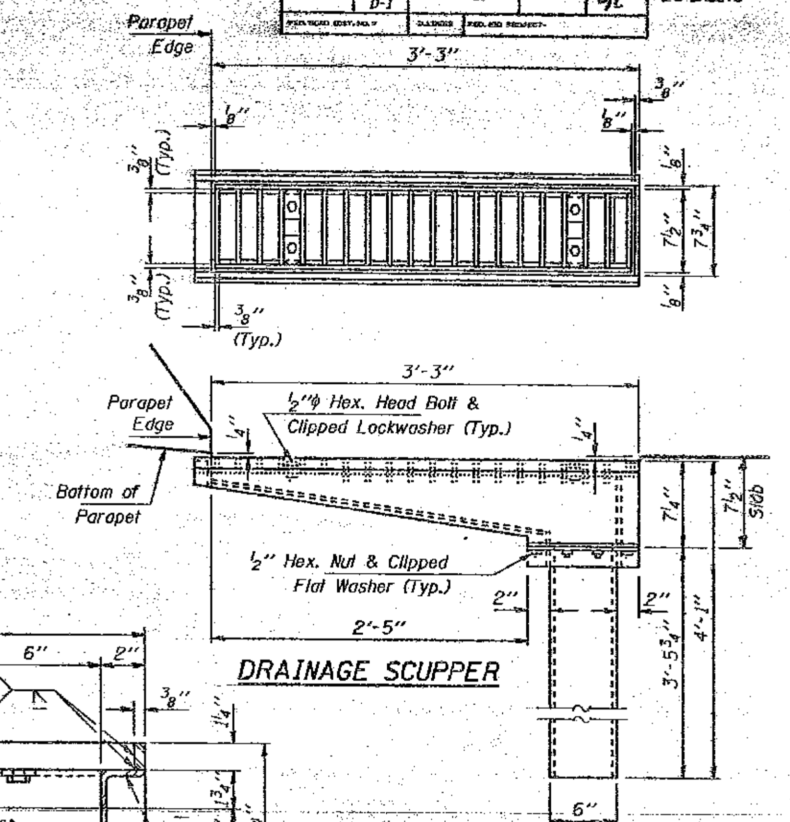
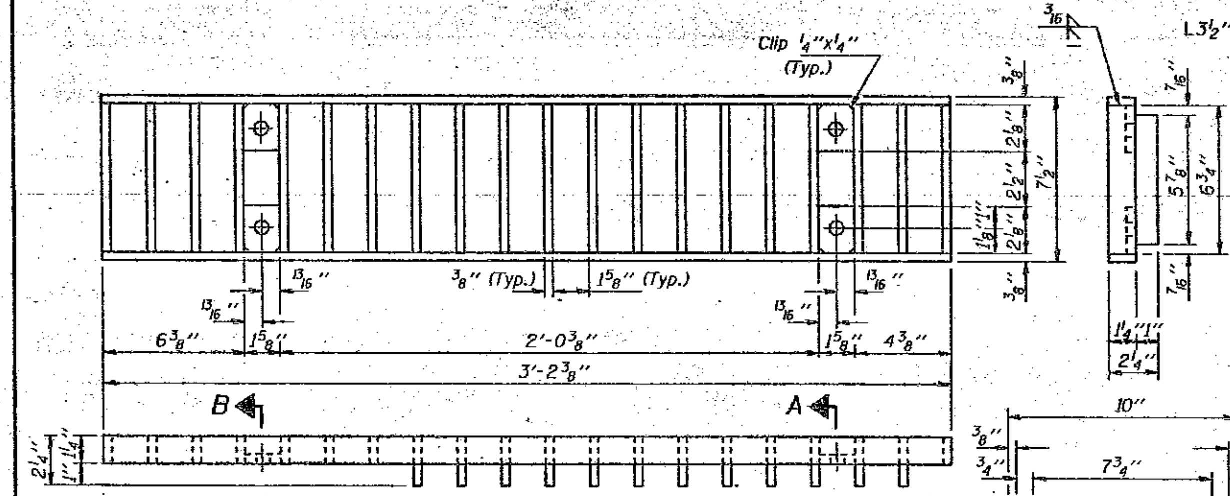
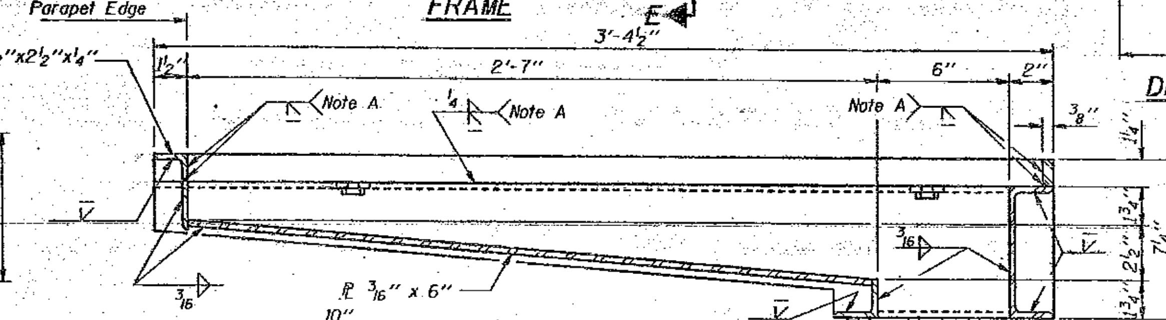


DRAINAGE SCUPPER

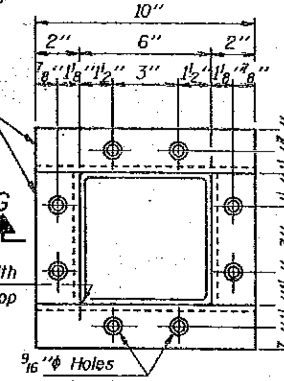


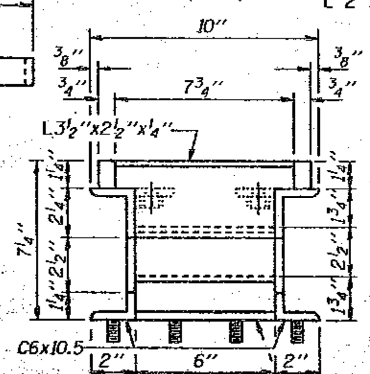
GRATE



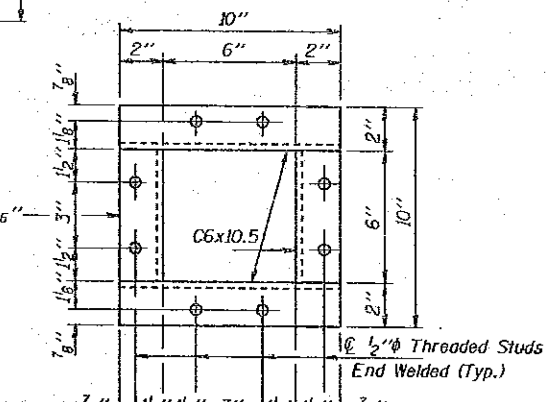
SECTION F-F

Note A: Surface of welds shall be recessed 1/16" Max. or placed flush with inside face of bars to provide clearance for Grate.



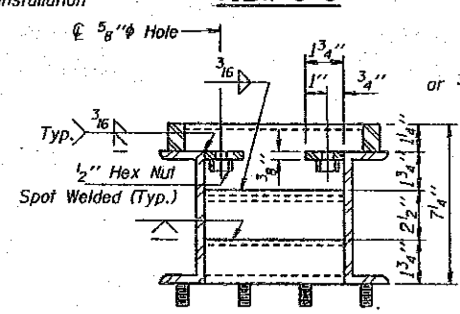


VIEW C-C

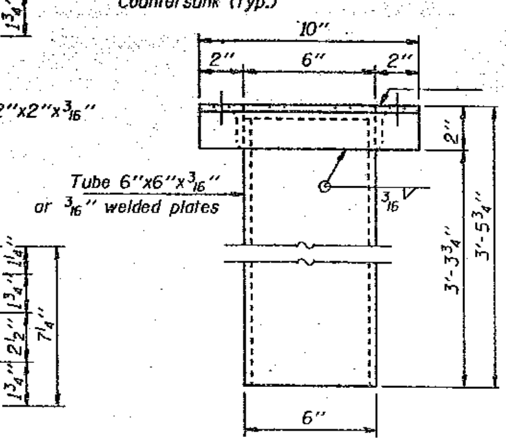


VIEW D-D

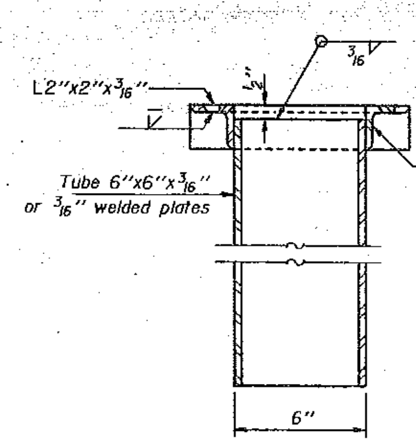
Notes: Hollow structural steel tubing shall conform to the requirements of ASTM designation A500 Grade B, or A501 Structural Steel Tubing.
All other shapes, plates and bars shall conform to the requirements of AASHTO M183.
Bolts, studs, washers and nuts shall conform to the requirements of ASTM A307.
The Grate, Frame and Downspout shall be galvanized after shop fabrication in accordance with AASHTO M111 & ASTM A385.
All bolts, washers and nuts shall be galvanized in accordance with AASHTO M232.
Cost of the Grate, Frame, Downspout, Bolts, Washers and Nuts including complete installation of Scupper will be paid for at the unit bid price for "DRAINAGE SCUPPERS."



SECTION E-E



DOWNSPOUT



SECTION G-G

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper	Each	4

(Sheet 1 of 2)

STEEL DRAINAGE SCUPPER
F.A.I. RT. 57 SEC. (28-5B)D-1
FRANKLIN COUNTY
STA. 44+49.00

May 20 1993

DESIGNED	Steven Nezzond
CHECKED	[signature]
DRAWN	John F. Schueller Jr.
CHECKED	[signature]

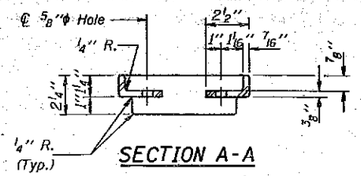
EXAMINED Craig I. Kaspar — ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

DS-3 12-1-83 (W.T. to inside of exterior stringer flange shall not be >3'-11")

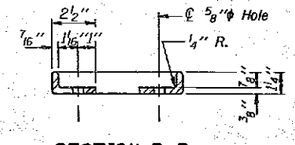
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-5B) D-1	FRANKLIN		93
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT -		

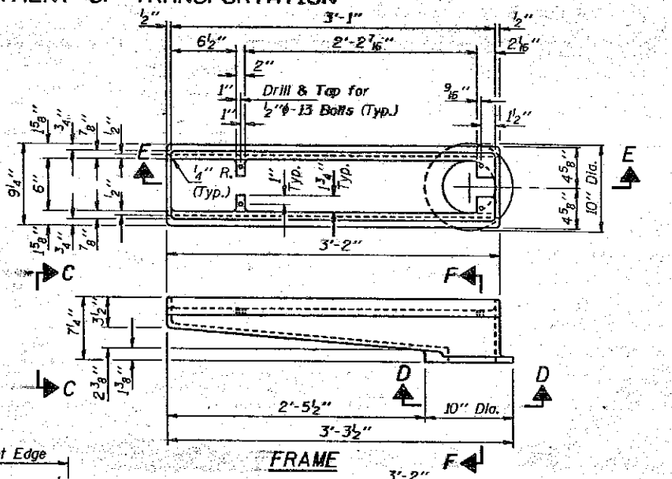
SHEET NO. 10
25 SHEETS



SECTION A-A



SECTION B-B



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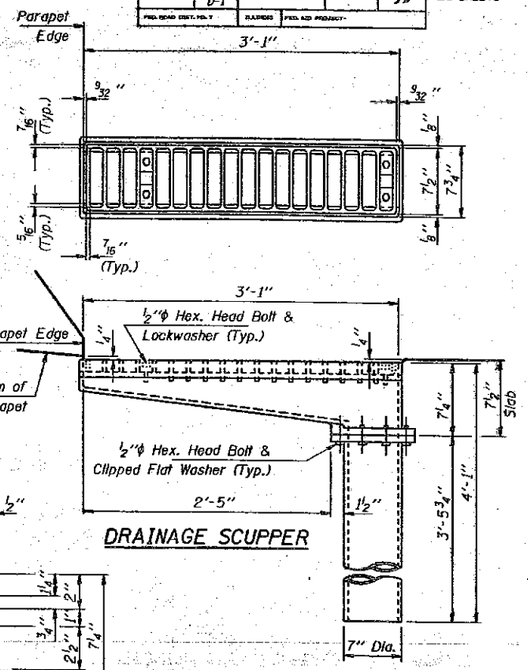
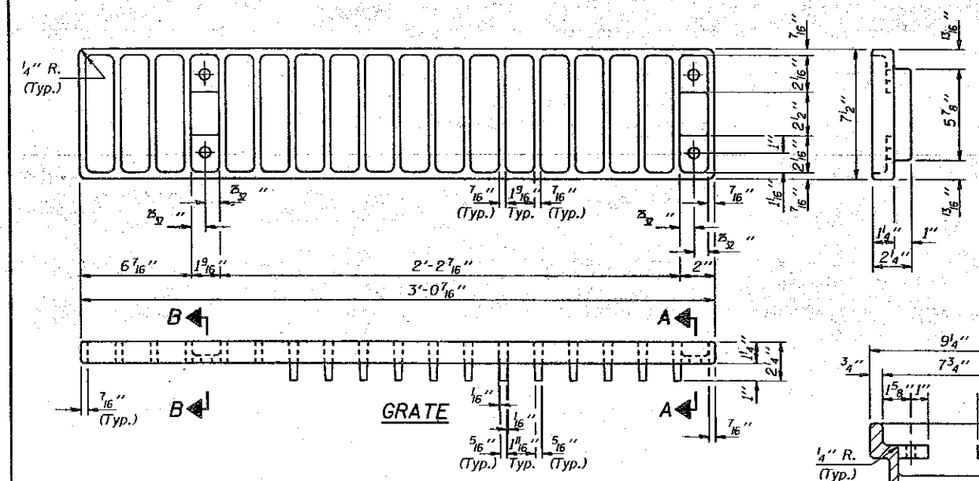
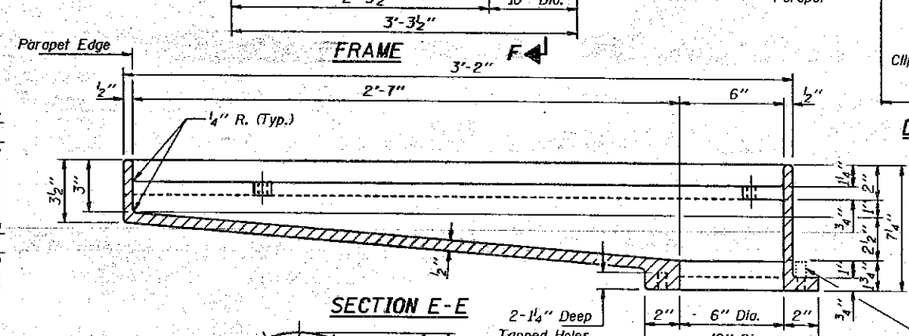


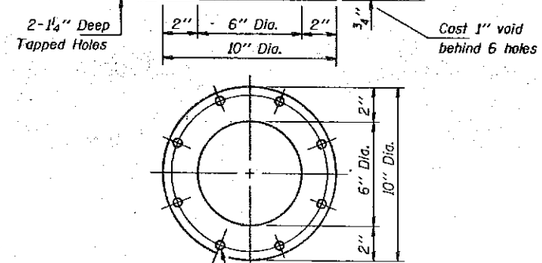
DRAINAGE SCUPPER

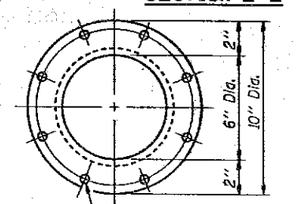


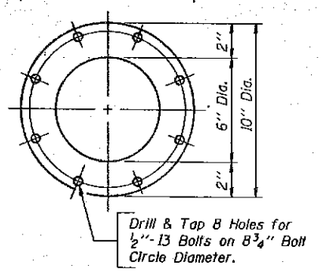
GRATE



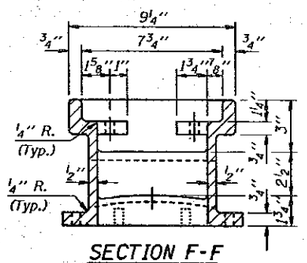
SECTION E-E



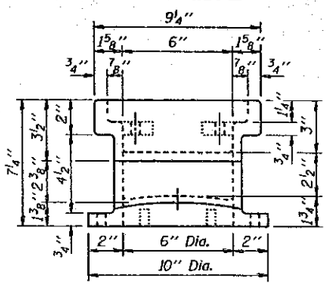




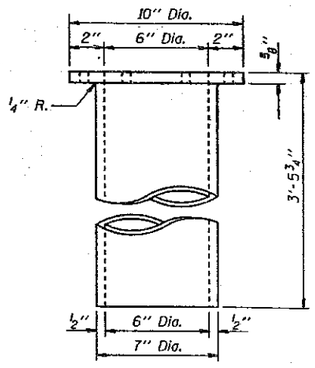
VIEW D-D



SECTION F-F



VIEW C-C



DOWNSPOUT

Notes: All cast iron parts shall be gray iron conforming to the requirements of AASHTO M105, Class 30.
Bolts and washers shall conform to the requirements of ASTM A307.
All bolts and washers shall be galvanized in accordance with AASHTO M232.
As an alternate bolts and washers may be stainless steel conforming to the requirements of ASTM A193, Type 304.
Cost of the Grate, Frame, Downspout, bolts and washers including complete installation of Scupper will be paid for at the unit bid price for "DRAINAGE SCUPPERS."
The Contractor may use at his option steel drainage scuppers or cast iron drainage scuppers.

DESIGNED	Steve Nyenyard
CHECKED	[illegible]
DRAWN	John F. Schneller Jr.
CHECKED	[illegible]

May 20 1993
EXAMINED Iraj O. Kaspar, ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson, ENGINEER OF BRIDGES AND STRUCTURES
APPROVED [illegible], DIRECTOR OF HIGHWAYS

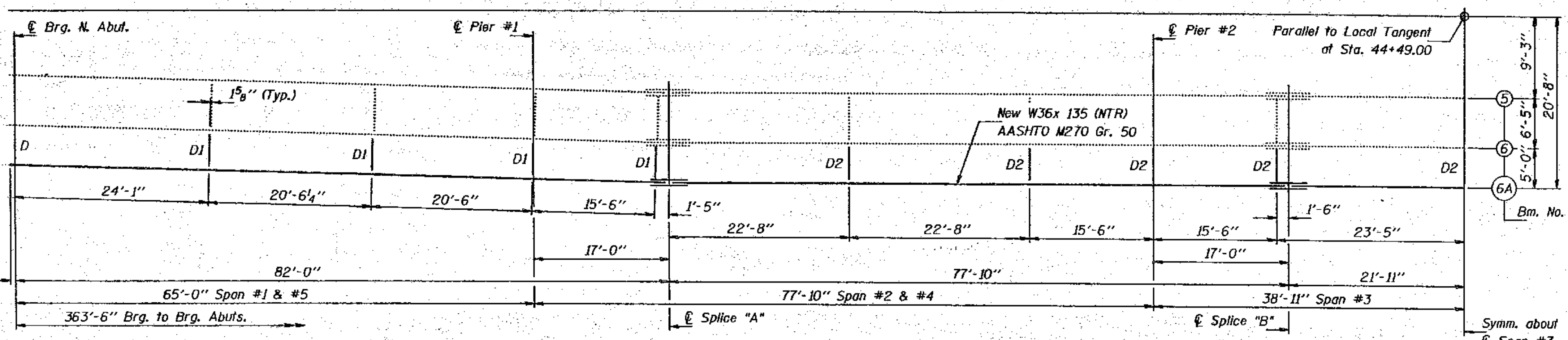
DS-4 6-1-89 (W.T. to inside of exterior stringer flange shall not be >3'-11")

(Sheet 2 of 2)
ALTERNATE - CAST IRON
DRAINAGE SCUPPER
F.A.I. RT. 57 SEC. (28-5B)D-1
FRANKLIN COUNTY
STA. 44+49.00

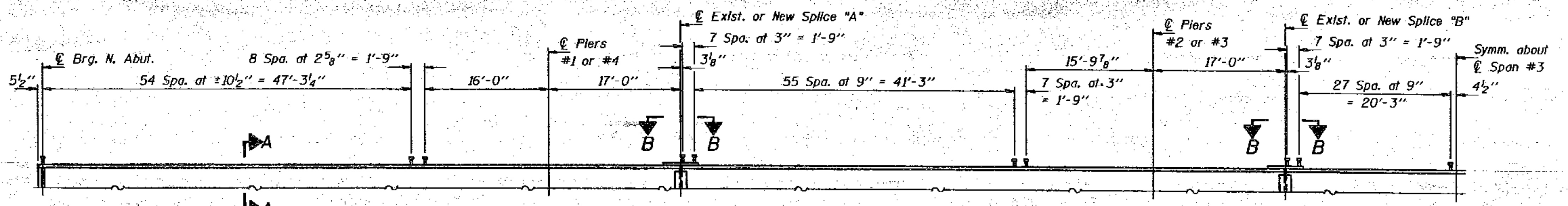
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-5B) D-1	FRANKLIN		94

SHEET NO. 11
25 SHEETS

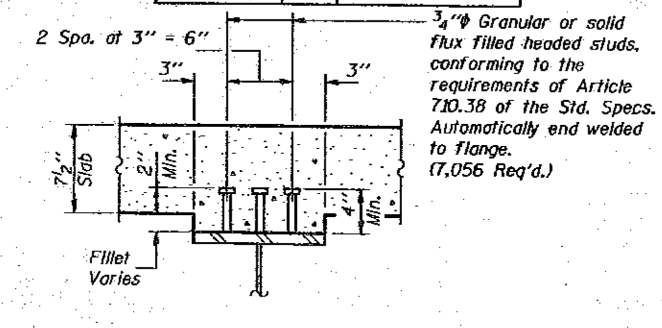
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



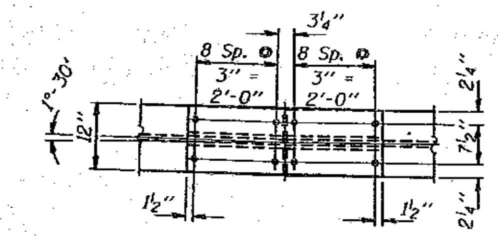
HALF PLAN - SOUTH BD. LANES



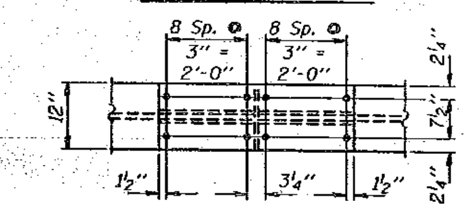
HALF BEAM ELEVATION
(Stud Shear Connector Spacing for all Beams)



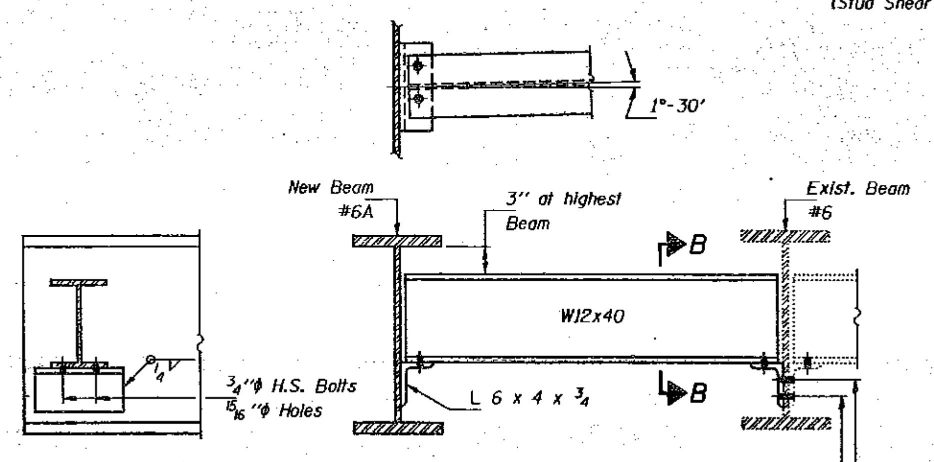
SECTION A-A



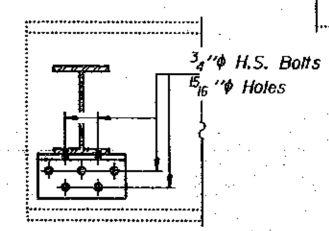
PLAN-SPLICE "A"



PLAN-SPLICE "B"

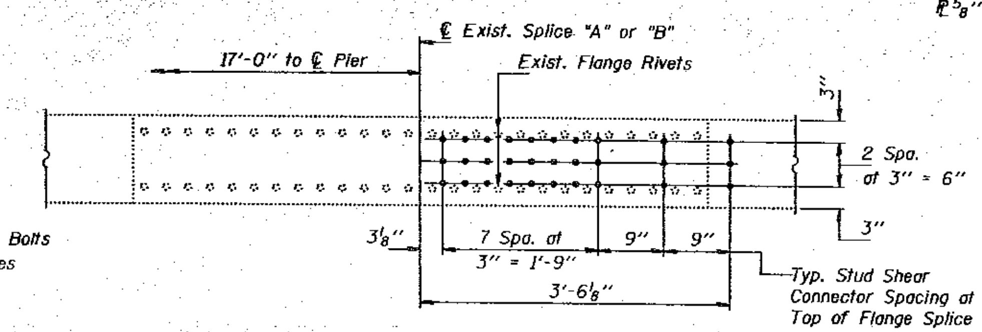


DIAPHRAGM D
(D = 2 Required)

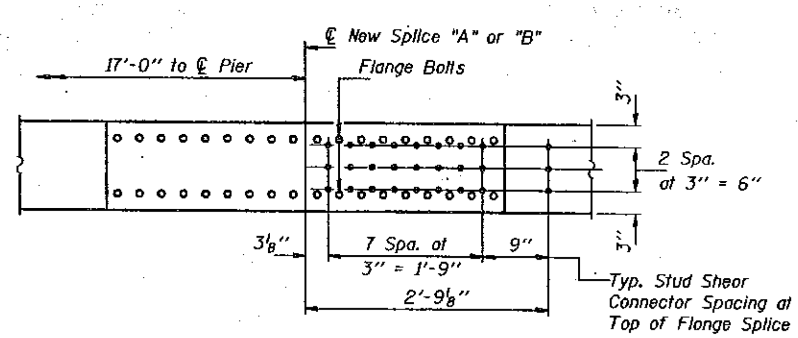


SECTION B-B

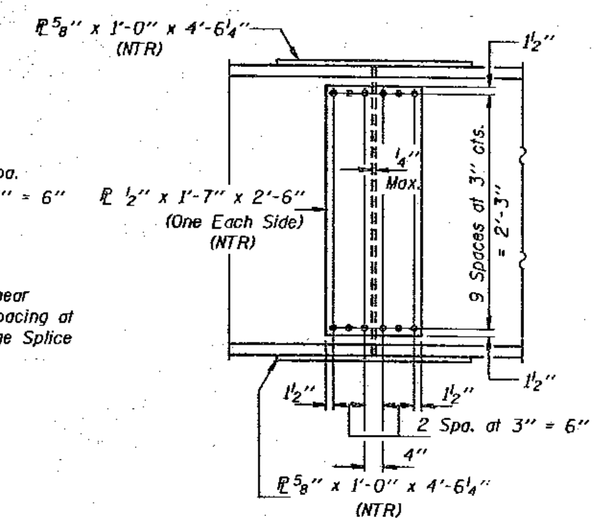
Remove existing rivets or bolts. Field drill 15/16"ϕ holes in new angles using holes in existing beams as a template. Existing bolts and rivets are to be replaced by ¾"ϕ H.S. Bolt. Cost of Rivet and Bolt Removal and Field Drilling is incidental to "Structural Steel".



VIEW B-B
(At Existing Beams #1 thru #6)



VIEW B-B
(At New Beam #6A)



FIELD SPLICE DETAIL
(Use ⅞"ϕ H.S. Bolts)
All new splice plate material shall be AASHTO M270 Gr. 50.

Note: Two hardened washers shall be required over all 15/16"ϕ holes. "NTR" denotes Notch Toughness Requirements.

DESIGNED Steve Hazergard
CHECKED [signature]
DRAWN John F. Schneller Jr.
CHECKED [signature]

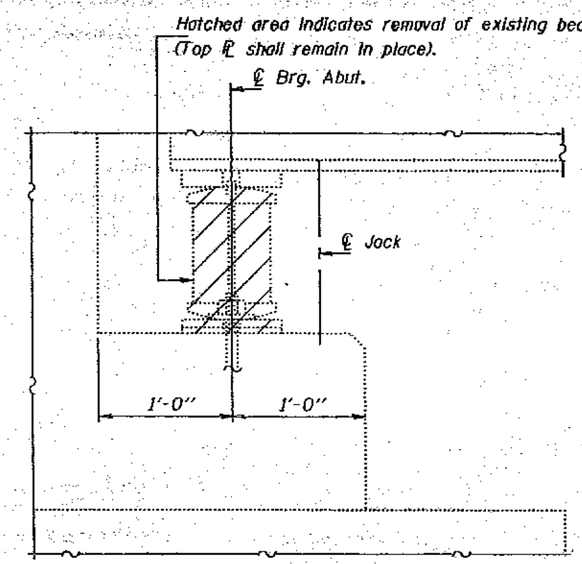
May 20 1993
EXAMINED Orai J. Kaspar — ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

STRUCTURAL STEEL
F.A.I. RT. 57 SEC. (28-5B)D-1
FRANKLIN COUNTY
STA. 44+49.00

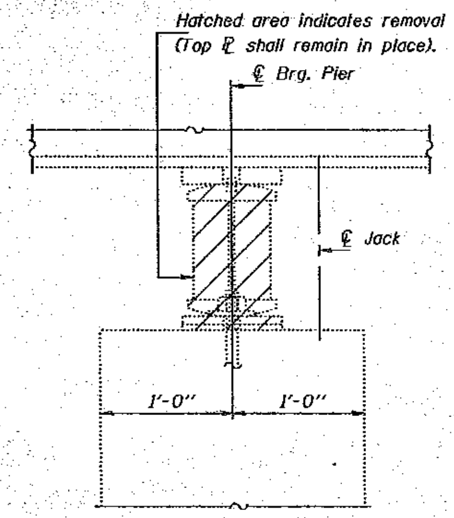
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-5B) D-1	FRANKLIN		95

SHEET NO. 12
25 SHEETS



JACK AND REMOVE EXISTING BEARINGS
(Dimensions are at Rt. L's)
(Typ. for all Abutments)



JACK AND REMOVE EXISTING BEARINGS
(Dimensions are at Rt. L's)
(Typ. for all Piers)

EXIST. BEAM MOMENT TABLE		0.4 Sp. #1 or 0.6 Sp. #5	Pier #1 or Pier #4	0.5 Sp. #2 or 0.5 Sp. #4	Pier #2 or Pier #3	0.5 Sp. #3
Is	(in4)	10500	10500	10500	10500	10500
Ic	(in4)	24819		24819		24819
Ss	(in3)	580	580	580	580	580
Sc	(in3)	810		810		810
℘	(K/ft.)	.82	1.116	.82	1.116	.82
M℘	('K)	247	545	203	537	209
fs-non-comp	(k.s.i.)	5.1	11.3	4.2	11.1	4.3
s℘	(K/ft.)	.296		.296		.296
Ms℘	('K)	102		101		99
M⅃	('K)	447	276	469	296	472
M (Imp)	('K)	118	70	115	73	116
Total	('K)	667	346	685	369	687
fs-(comp)	(k.s.i.)	9.9	7.2	10.1	7.6	10.2
fs (Total)	(k.s.i.)	15.0	18.5	14.3	18.7	14.5
VR	(K)	48.3		41.4		41.2

NEW BEAM MOMENT TABLE		0.4 Sp. #1 or 0.6 Sp. #5	Pier #1 or Pier #4	0.5 Sp. #2 or 0.5 Sp. #4	Pier #2 or Pier #3	0.5 Sp. #3
Is	(in4)	7800	7800	7800	7800	7800
Ic	(in4)	19426		19426		19426
Ss	(in3)	439	439	439	439	439
Sc	(in3)	631		631		631
℘	(K/ft.)	.82	1.116	.82	1.116	.82
M℘	('K)	247	543	203	536	209
fs-non-comp	(k.s.i.)	6.8	14.8	5.5	14.6	5.7
s℘	(K/ft.)	.296		.296		.296
Ms℘	('K)	102		102		101
M⅃	('K)	449	271	470	291	475
M (Imp)	('K)	117	69	118	72	117
Total	('K)	668	340	690	363	693
fs-(comp)	(k.s.i.)	12.7	9.3	13.1	9.9	13.2
fs (Total)	(k.s.i.)	19.5	24.1	18.6	24.5	18.9
VR	(K)	48.3		41.4		41.2

NEW & EXIST. BEAM REACTION TABLE		Abutments	Pier #1 & #4	Pier #2 & #3
R℘	(K)	27.9	88.1	86.8
R⅃	(K)	35.1	45.9	47.3
Imp.	(K)	9.3	11.7	11.7
R (Total)	(K)	72.3	145.7	145.8

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total).
Ic and Sc are the moment of inertia and section modulus of the composite section used in computing fs (Total).
VR is the maximum live Load + Impact shear range in span.

PROCEDURE FOR JACKING AND REMOVING OF EXISTING BEARINGS

The Contractor shall submit plans for Jacking and Cribbing, to the Engineer for approval, prior to commencing any work at the Bearings.

Jacking and Removing Existing Bearings shall be done after existing deck removal is completed and before new deck is poured.

All Beams all locations to be lifted simultaneously

The maximum dead load reaction with deck removed (per bearing) at each Abutment is 5.0 kips and 16.5 kips at each Pier.

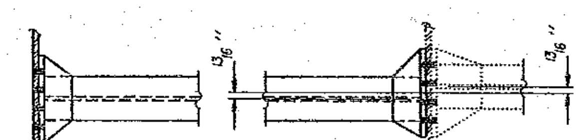
Jacking shall be limited to a maximum $\frac{1}{4}$" lift to remove the Existing Bearing Assembly.

The Jack capacity for each beam is 5 Tons at Abutments and 20 Tons at Piers. Set Jacks so that Beams can be lowered up to 2" from original position.

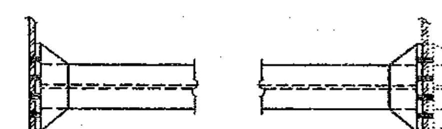
The bottom flange area of the Beam and Existing Top Plate shall be cleaned and painted as required and specified for Structural Steel.

The new Bearings and Steel Extensions shall be in place and the Jacks shall be lowered before the new concrete Deck is poured. Lower all Beams simultaneously in $\frac{1}{4}$" increments.

The new Beam shall be installed after the replacement of the existing bearings.

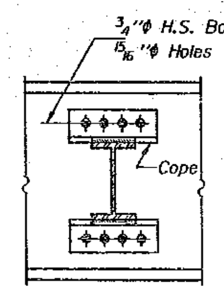


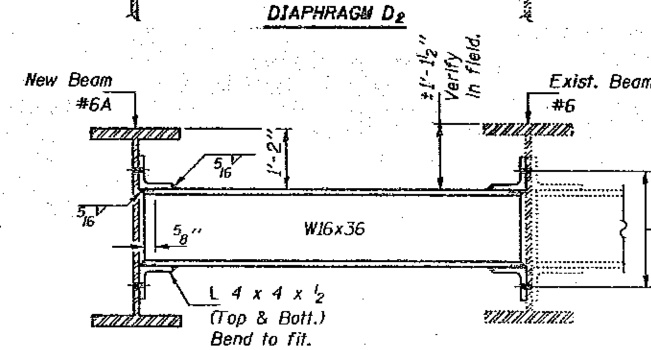
DIAPHRAGM D_1



DIAPHRAGM D_2

Note: Two hardened washers shall be required over all $\frac{15}{16}$"ϕ holes.





Remove existing rivets or bolts. Field drill $\frac{15}{16}$"ϕ holes in new angles using holes in existing beams as a template. Existing bolts and rivets are to be replaced by $\frac{3}{4}$"ϕ H.S. Bolt. Cost of Rivet and Bolt Removal and Field Drilling is incidental to "Structural Steel".

DIAPHRAGM D_1 & D_2
(D_1 = 8 Required)
(D_2 = 9 Required)

* TOP OF BEAM ELEVATIONS

Loc. \ Gir.	Beam #6A
℄ Brg. N. Abut.	392.53
℄ Brg. Pier #1	392.53
℄ Splice "A"	392.53
℄ Brg. Pier #2	392.51
℄ Splice "B"	392.51
℄ Splice "B"	392.50
℄ Brg. Pier #3	392.50
℄ Splice "A"	392.50
℄ Brg. Pier #4	392.50
℄ Brg. S. Abut.	392.49

* For Fabrication only.

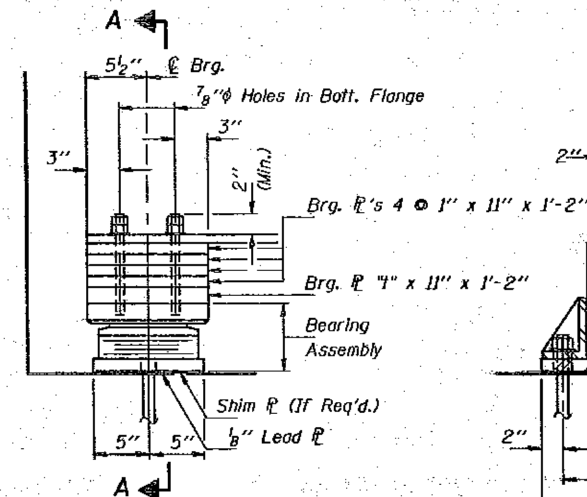
DESIGNED	Steve Neyer
CHECKED	
DRAWN	John F. Schneller Jr.
CHECKED	

May 20 1993
EXAMINED — ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

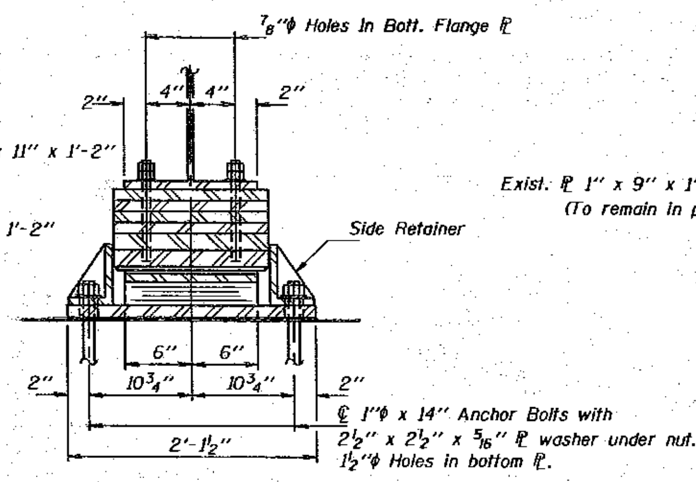
STRUCTURAL STEEL
F.A.I. RT. 57 SEC. (28-5B)D-1
FRANKLIN COUNTY
STA. 44+49.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* Cost of drilling holes in existing bottom flanges and existing 1" plate in field is incidental to "Structural Steel".

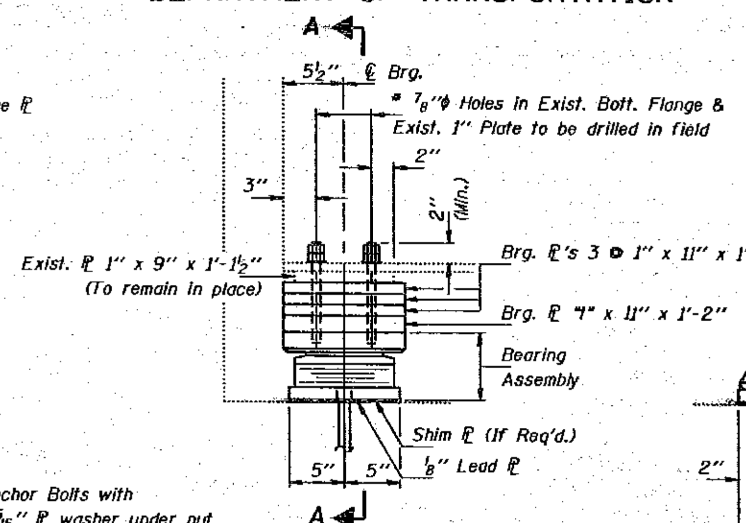


ELEVATION AT N. ABUT.

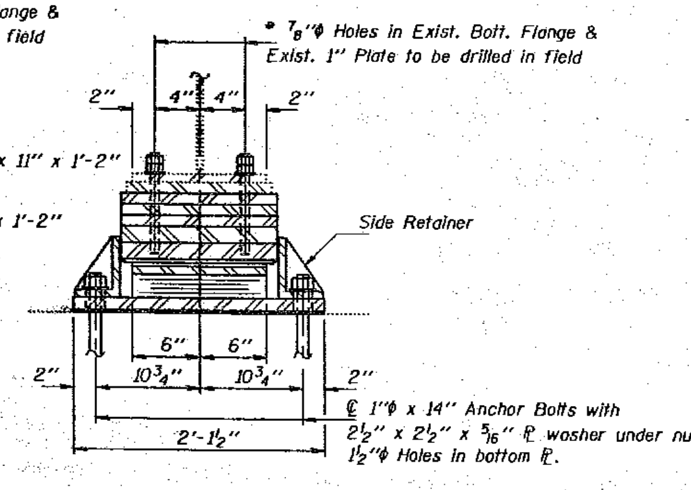


SECTION A-A

TYPE II TFE ELASTOMERIC EXP. BRG. BEAM #6A
(1 Required)

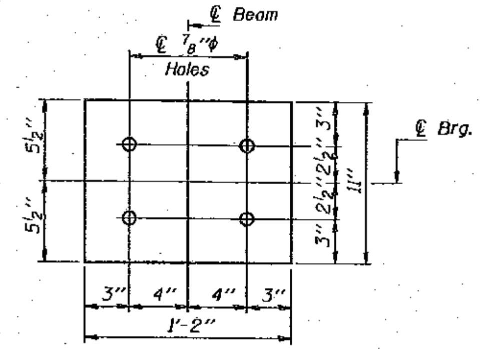


ELEVATION AT N. ABUT.



SECTION A-A

TYPE II TFE ELASTOMERIC EXP. BRG. BEAMS #1 THRU #6
(6 Required)



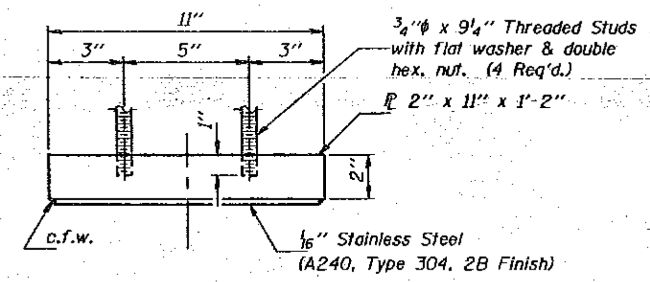
BEARING PLATE

** BEARING PLATE "t" DIMENSIONS

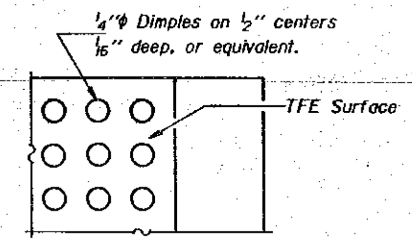
Dim. \ Bm	#1	#2	#3	#4	#5	#6	#6A
"t"	⅞"	⅞"	⅞"	¾"	¾"	¾"	⅝"

** Based on the survey elevations. The contractor shall verify and make adjustments if necessary.

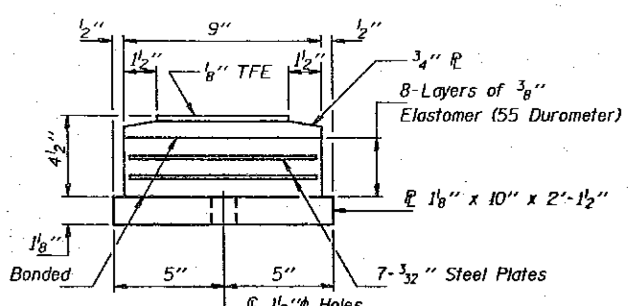
Notes: See sheet #19 of 25 for Anchor Bolt installation.
Existing Anchor Bolts to be cut off flush with top of cap and ground smooth. Cost incidental to "Jack and Remove Existing Bearing."
Weight of Steel Shim Plates, Lead Plates, Anchor Bolts, nuts and washers and Side Retainers is included in "Structural Steel".



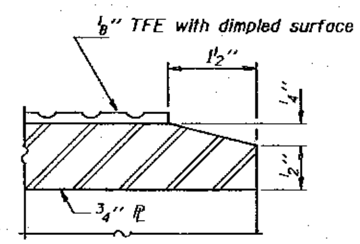
TOP BEARING ASSEMBLY



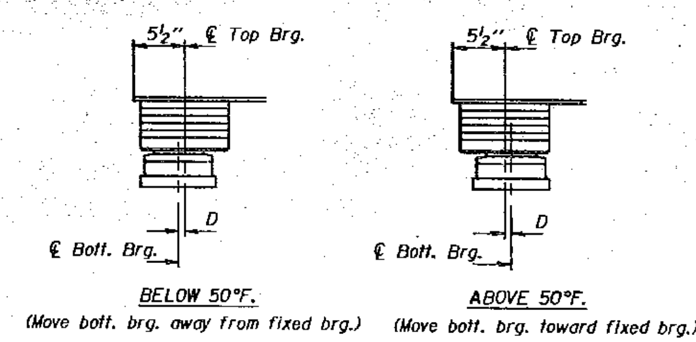
PLAN-TFE SURFACE



BOTTOM BEARING ASSEMBLY



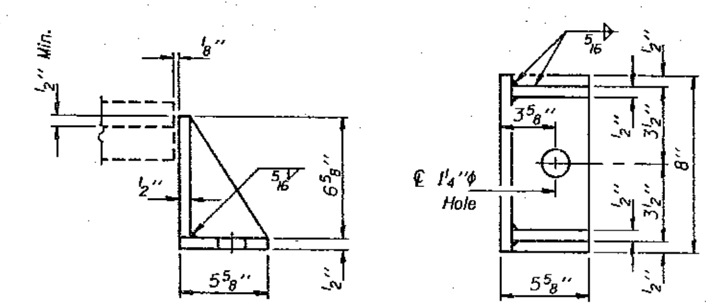
SECTION THRU TFE



SETTING ANCHOR BOLTS AT EXP. BRG.

D=⅛" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

Note: The ⅛" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces. Bonding of ⅛" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



SIDE RETAINER-N. ABUT.

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	7
Jack and Remove Existing Bearings	Each	6

DESIGNED	[signature]
CHECKED	[signature]
DRAWN	John F. Schneller Jr.
CHECKED	[signature]

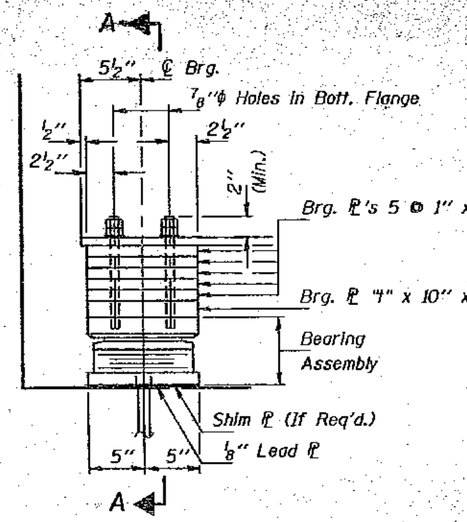
May 20 1993
EXAMINED [signature] ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES
APPROVED DIRECTOR OF HIGHWAYS

BEARING DETAILS
NORTH ABUTMENT
F.A.I. RT. 57 SEC. (28-5B)D-1
FRANKLIN COUNTY
STA. 44+49.00

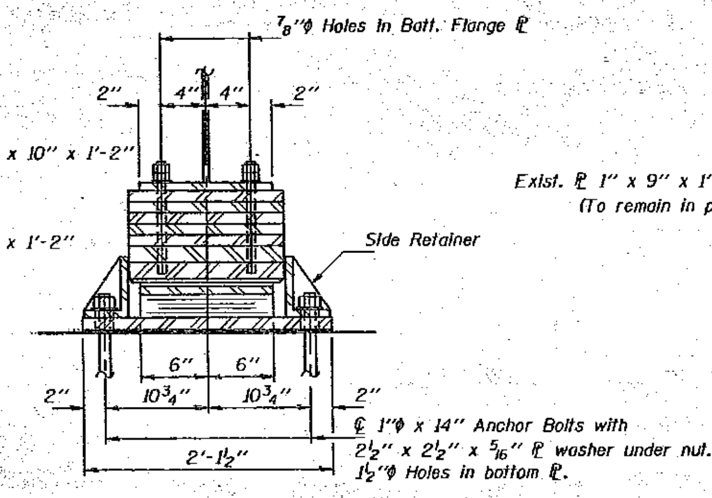
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
F.A.I. 57	(28-5B) D-1	FRANKLIN		97	SHEET NO. 14 / 25 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* Cost of drilling holes in existing bottom flanges and existing 1" plate in field is incidental to "Structural Steel".

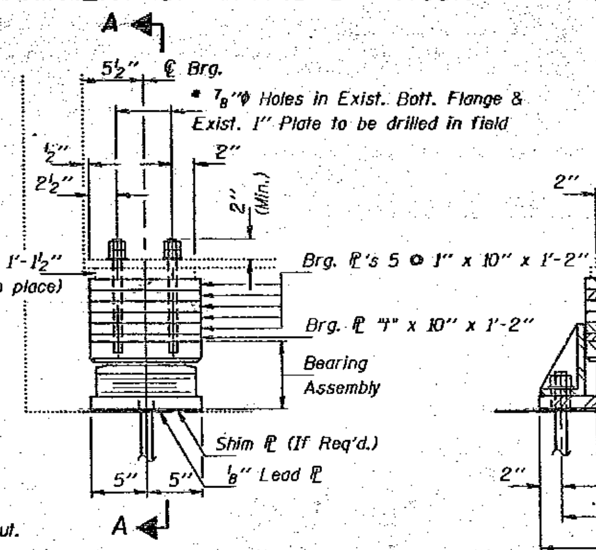


ELEVATION AT S. ABUT.

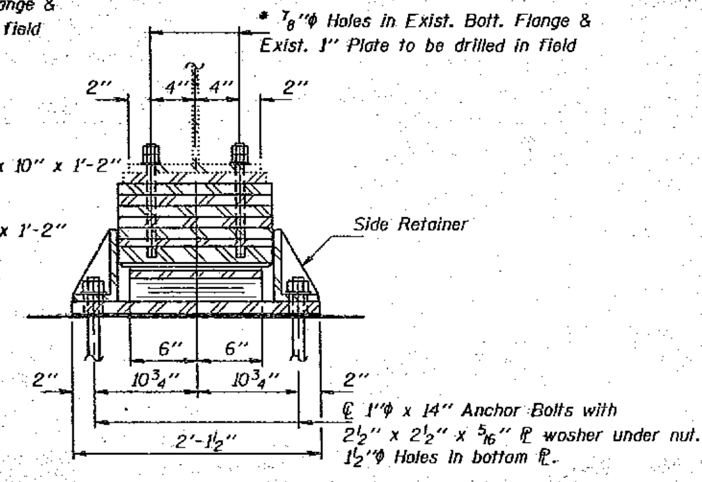


SECTION A-A

TYPE II TFE ELASTOMERIC EXP. BRG. BEAM #6A
(1 Required)

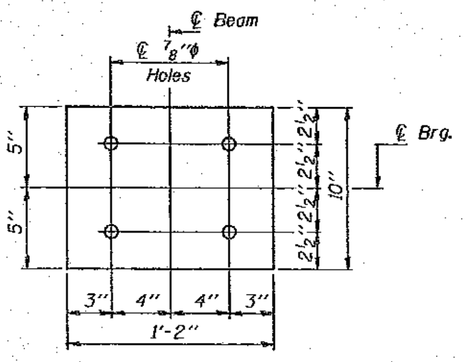


ELEVATION AT S. ABUT.



SECTION A-A

TYPE II TFE ELASTOMERIC EXP. BRG. BEAMS #1 THRU #6
(6 Required)

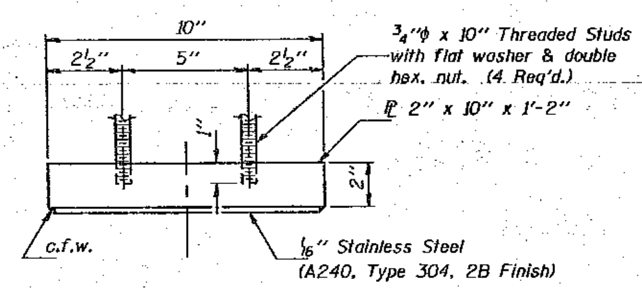


BEARING PLATE

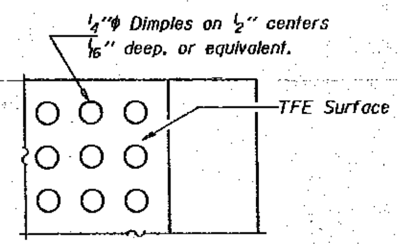
** BEARING PLATE "T" DIMENSIONS

Dim. \ Brg.	#1	#2	#3	#4	#5	#6	#6A
"T"	0	0	0	⅛"	⅛"	⅛"	⅝"

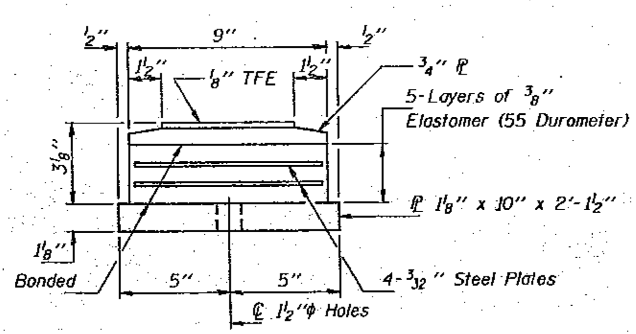
** Based on the survey elevations. The contractor shall verify and make adjustments if necessary.



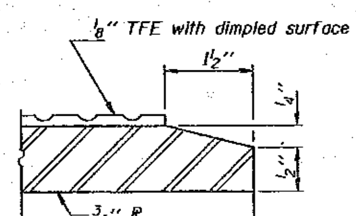
TOP BEARING ASSEMBLY



PLAN-TFE SURFACE

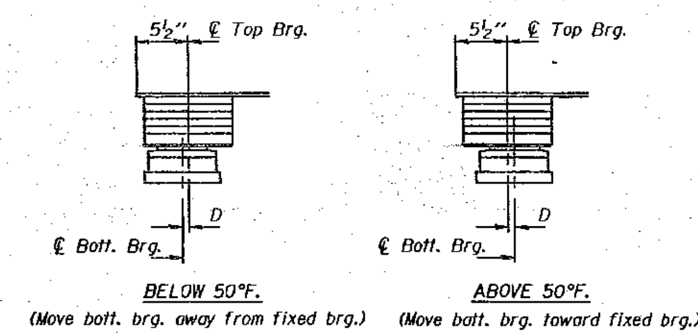


BOTTOM BEARING ASSEMBLY



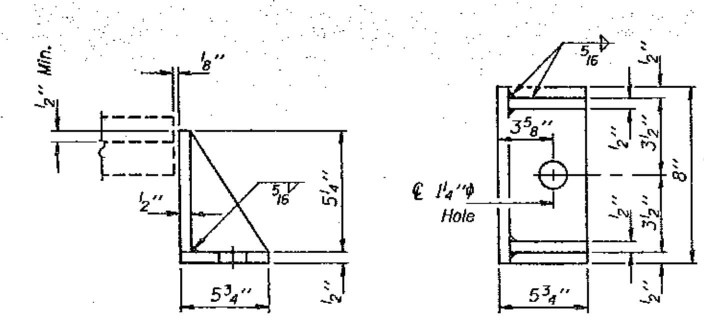
SECTION THRU TFE

Notes: See sheet #19 of 25 for Anchor Bolt installation.
Existing Anchor Bolts to be cut off flush with top of cap and ground smooth. Cost incidental to "Jack and Remove Existing Bearing."
Weight of Steel Shim Plates, Lead Plates, Anchor Bolts, nuts and washers and Side Retainers is included in "Structural Steel".



SETTING ANCHOR BOLTS AT EXP. BRG.

D=⅛" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.



SIDE RETAINER-S. ABUT.

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	7
Jack and Remove Existing Bearings	Each	6

Note: The ⅛" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces. Bonding of ⅛" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

DESIGNED	[signature]
CHECKED	[signature]
DRAWN	John F. Schneller Jr.
CHECKED	[signature]

May 20 1993
EXAMINED [signature] ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES
APPROVED DIRECTOR OF HIGHWAYS

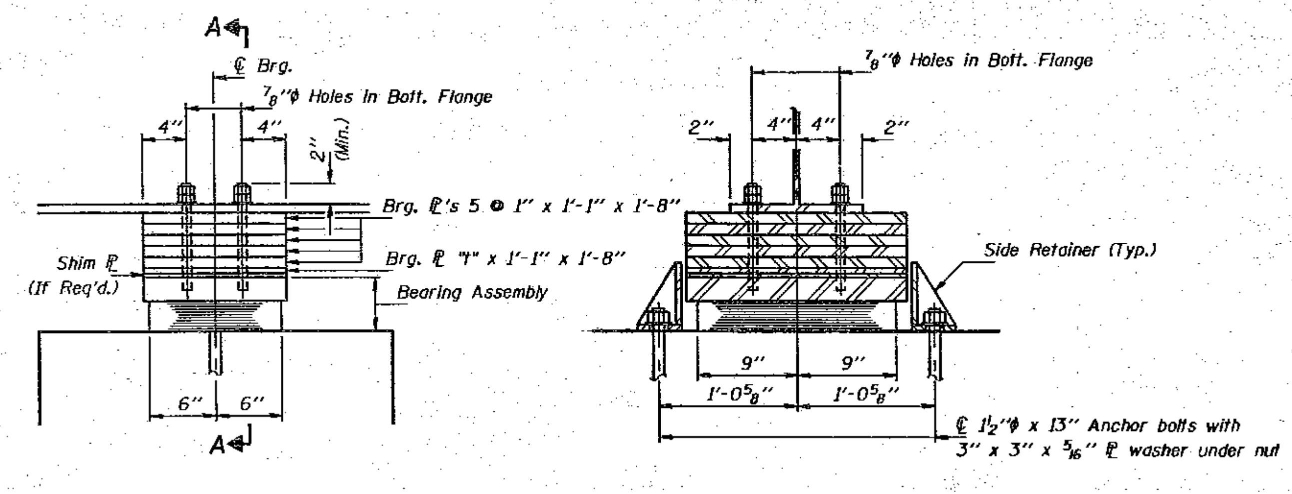
BEARING DETAILS
SOUTH ABUTMENT
F.A.I. RT. 57 SEC. (28-5B)D-1
FRANKLIN COUNTY
STA. 44+49.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-5B) D-1	FRANKLIN		98

SHEET NO. 15
25 SHEETS

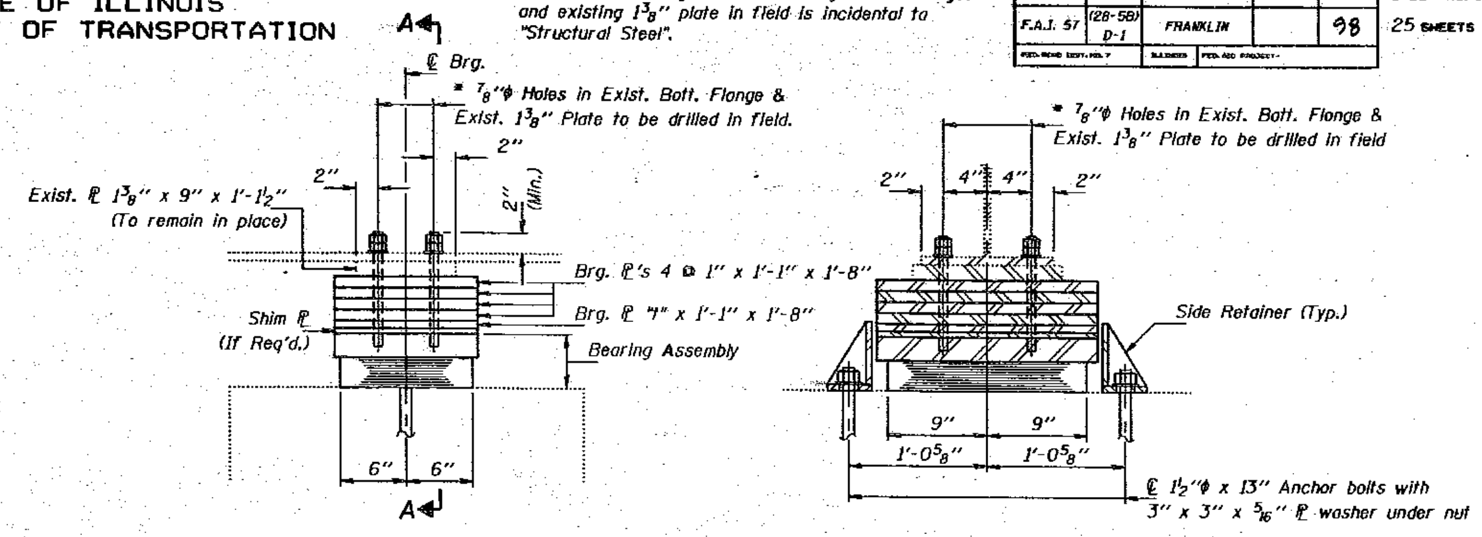
* Cost of drilling holes in existing bottom flanges and existing $1\frac{3}{8}$" plate in field is incidental to "Structural Steel".



ELEVATION AT PIER #1

SECTION A-A

TYPE I ELASTOMERIC EXP. BRG. BEAM #6A
(1 Required)



ELEVATION AT PIER #1

SECTION A-A

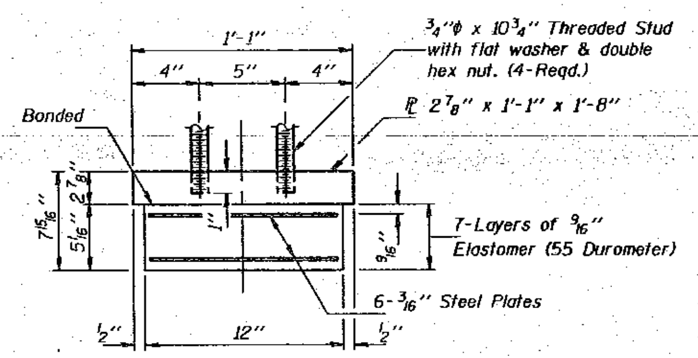
TYPE I ELASTOMERIC EXP. BRG. BEAMS #1 THRU #6
(6 Required)

** BEARING PLATE "t" DIMENSIONS

Dim. \ Bm	#1	#2	#3	#4	#5	#6	#6A
"t"	½"	3/8"	¼"	1/8"	0	0	1 1/8"

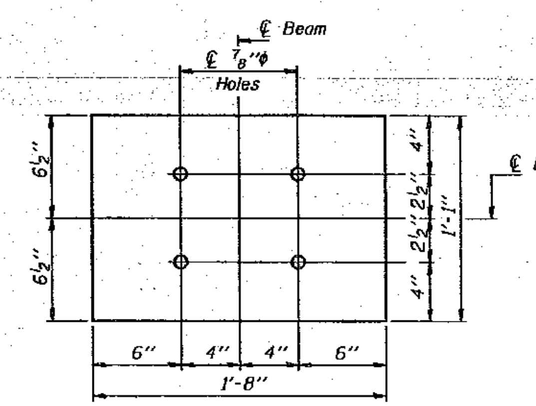
** Based on the survey elevations. The contractor shall verify and make adjustments if necessary.

Notes: See sheet #19 of 25 for Anchor Bolt Installation.
Existing Anchor Bolts to be cut off flush with top of cap and ground smooth. Cost incidental to "Jack and Remove Existing Bearing."
Weight of Steel Shim Plates, Anchor Bolts, nuts and washers and Side Retainers is included in "Structural Steel".

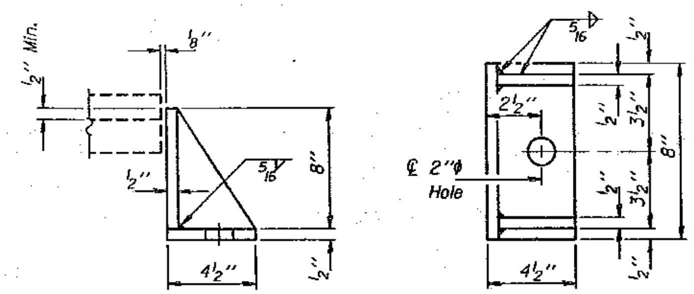


BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly.



BEARING PLATE



SIDE RETAINER-PIER #1

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	7
Jack and Remove Existing Bearings	Each	6

DESIGNED	[signature]
CHECKED	[signature]
DRAWN	John F. Schneller Jr.
CHECKED	SPW [initials]

May 20 1993
EXAMINED [signature] ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES
APPROVED DIRECTOR OF HIGHWAYS

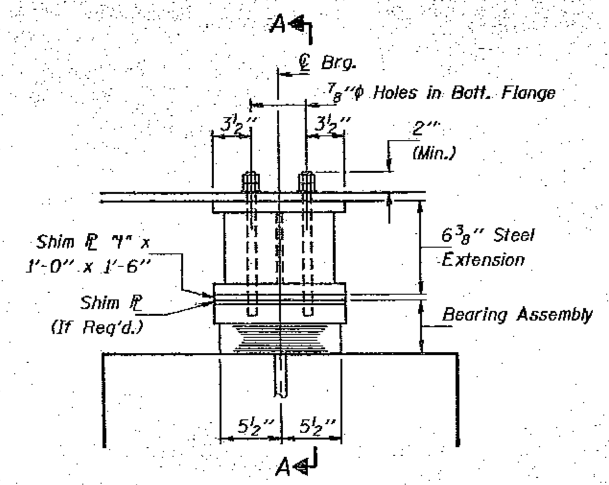
BEARING DETAILS - PIER #1
F.A.I. RT. 57 SEC. (28-5B)D-1
FRANKLIN COUNTY
STA. 44+49.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

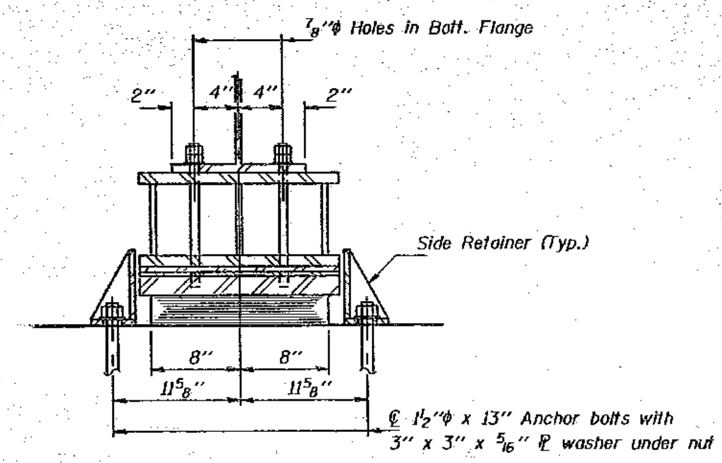
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-5B) D-1	FRANKLIN		99

SHEET NO. 16
25 SHEETS

* Cost of drilling holes in existing bottom flanges and existing 1 3/8" plate in field is incidental to "Structural Steel".

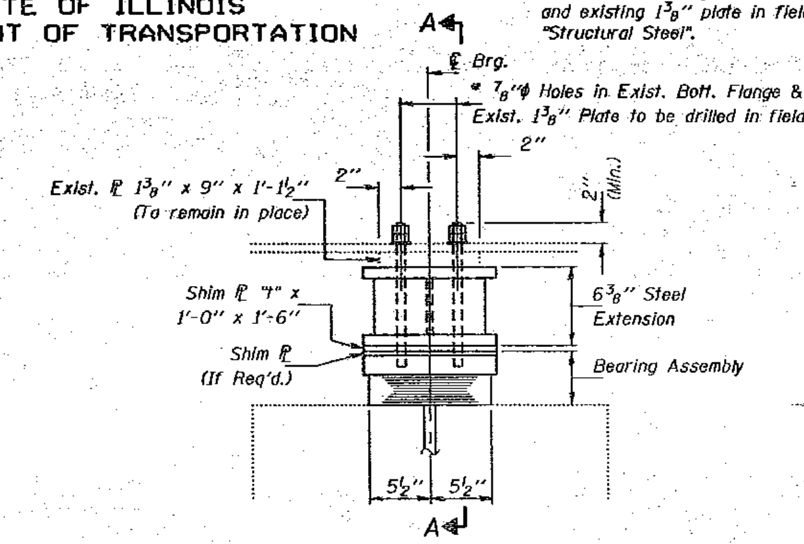


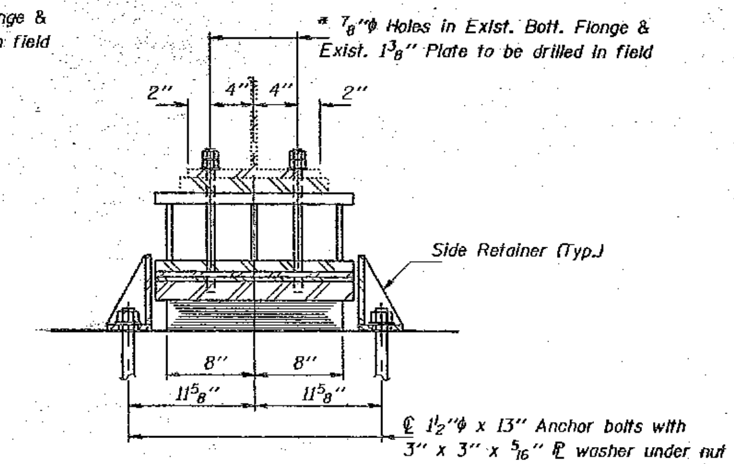
ELEVATION AT PIER #2



SECTION A-A

TYPE I ELASTOMERIC EXP. BRG. BEAM #6A
(1 Required)





ELEVATION AT PIER #2

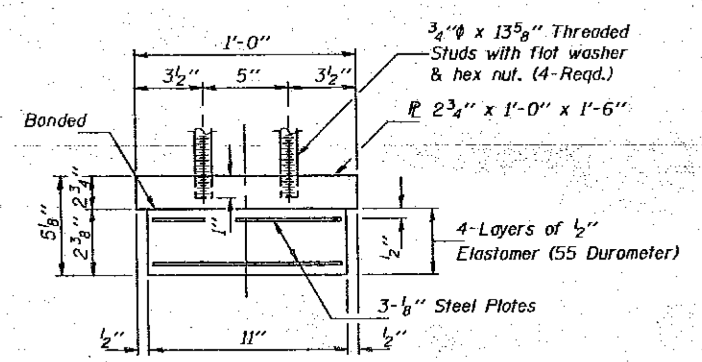
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG. BEAMS #1 THRU #6
(6 Required)

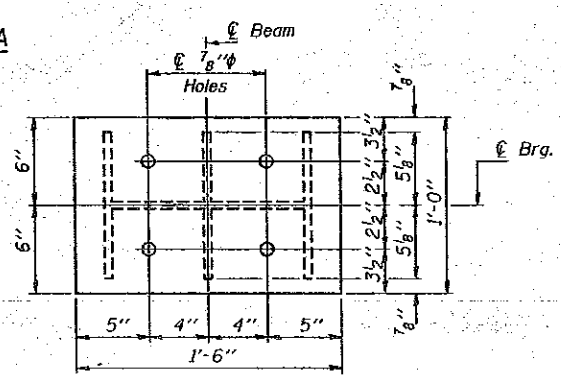
** SHIM PLATE "t" DIMENSIONS

Dim. / Bm.	#1	#2	#3	#4	#5	#6	#6A
"t"	0	3/8"	5/8"	1"	1¼"	1 5/8"	2 5/8"

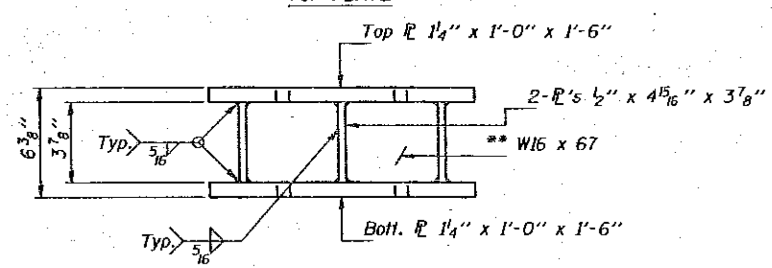
** Based on the survey elevations. The contractor shall verify and make adjustments if necessary.



BEARING ASSEMBLY
Note: Shim plates shall not be placed under Bearing Assembly.

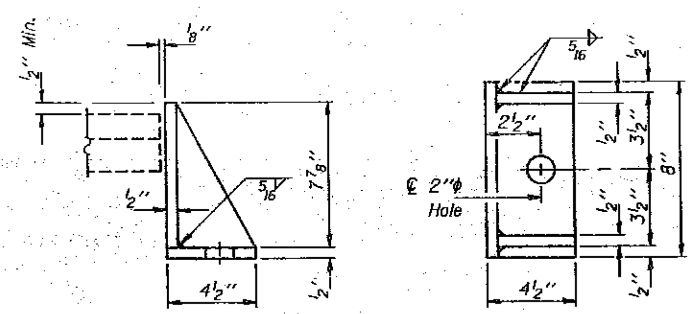


TOP PLATE

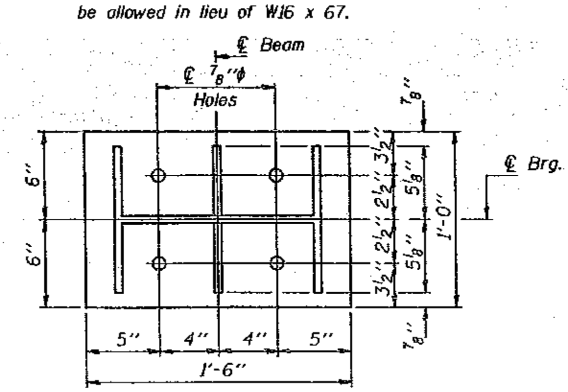


ELEVATION

** Equivalent welded plates will be allowed in lieu of W16 x 67.



SIDE RETAINER-PIER #2
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



BOTTOM PLATE

STEEL EXTENSION

Notes: See sheet #19 of 25 for Anchor Bolt installation.
Existing Anchor Bolts to be cut off flush with top of cap and ground smooth. Cost incidental to "Jack and Remove Existing Bearing."
Weight of Steel Shim Plates, Steel Extensions, Anchor Bolts, nuts and washers and Side Retainers is included in "Structural Steel".

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	7
Jack and Remove Existing Bearings	Each	6

May 20 1993

DESIGNED [signature]
CHECKED [signature]
DRAWN John F. Schneller Jr.
CHECKED [signature]

EXAMINED [signature] ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES
APPROVED DIRECTOR OF HIGHWAYS

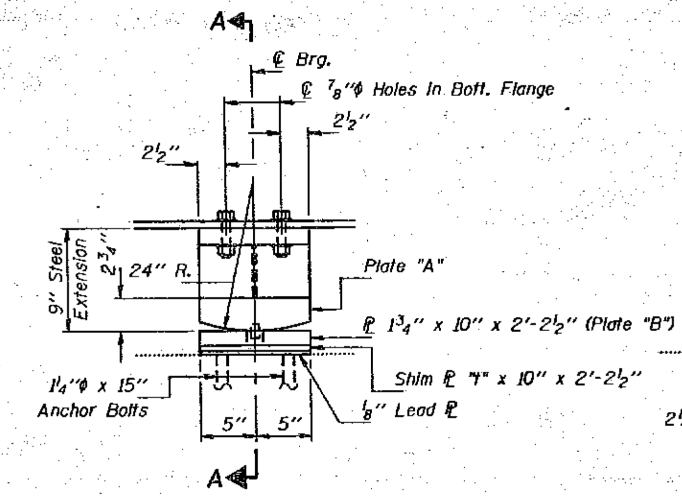
BEARING DETAILS - PIER #2
F.A.I. RT. 57 SEC. (28-5B)D-1
FRANKLIN COUNTY
STA. 44+49.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

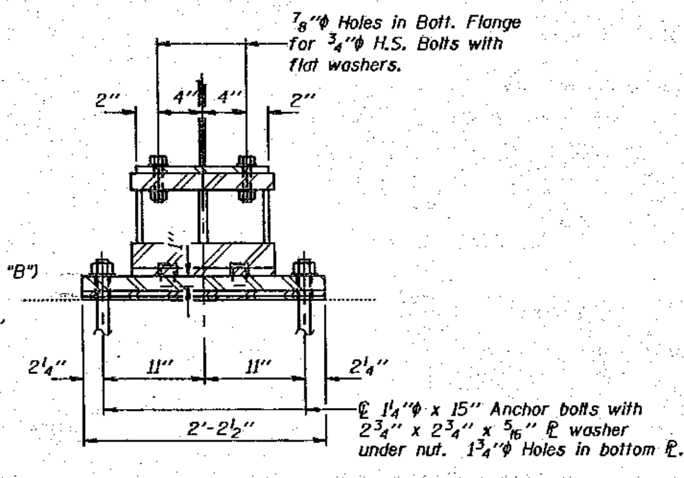
*** Cost of drilling holes in existing bottom flanges and existing 1 3/8" plate in field is incidental to "Structural Steel".

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-5B) D-1	FRANKLIN		100

SHEET NO. 17
25 SHEETS

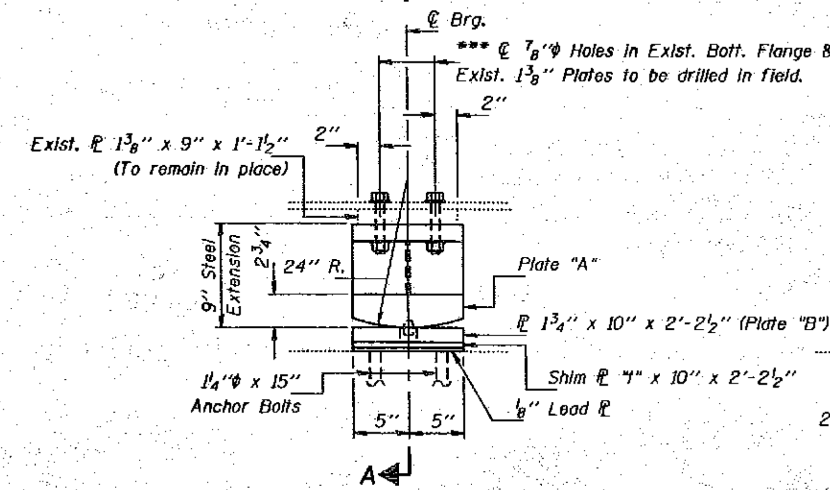


ELEVATION AT PIER 3

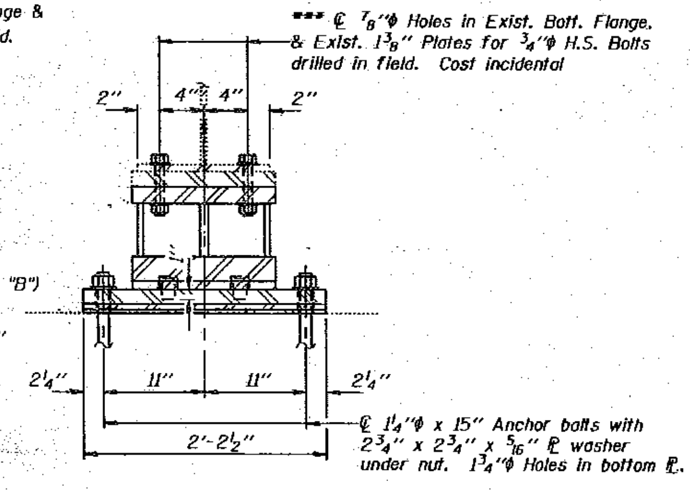


SECTION A-A

FIXED BEARING BEAM #6A
(1 Required)

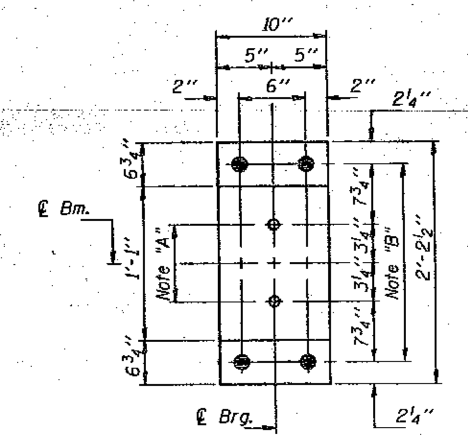


ELEVATION AT PIER 3



SECTION A-A

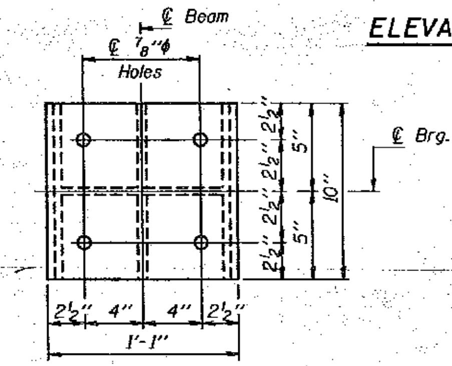
FIXED BEARING BEAMS #1 THRU #6
(6 Required)



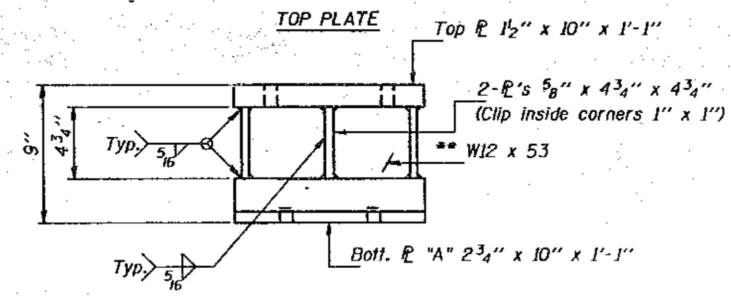
Note "A"
1 5/8"φ Holes 1" deep in Bottom of Plate "A" for 1 1/2"φ Pintles. Thread or press fit pintles in Top of Plate "B".

Note "B"
1 3/4"φ Holes for 1 1/4"φ Anchor Bolts 2 3/4" x 2 3/4" x 5/16" ℄ washer under nut.

PLAN-BOTTOM PLATE "B"

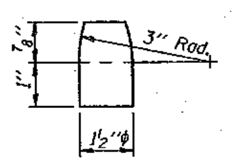


TOP PLATE

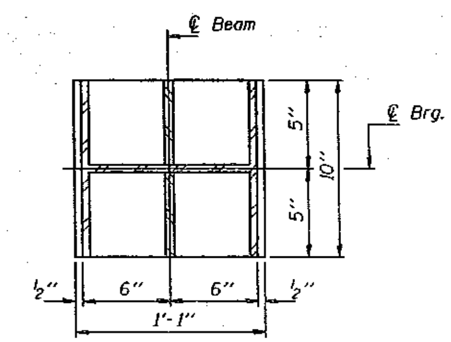


ELEVATION

** Equivalent welded plates will be allowed in lieu of W12 x 53.



PINTLE



BOTTOM PLATE "A"

STEEL EXTENSION

* SHIM PLATE "t" DIMENSIONS

Dim. / Bm	#1	#2	#3	#4	#5	#6	#6A
"t"	0	1/4"	1/2"	3/4"	7/8"	1 1/8"	1 3/4"

* Based on the survey elevations. The contractor shall verify and make adjustments if necessary.

Notes: See sheet #19 of 25 for Anchor Bolt Installation.
Existing Anchor Bolts to be cut off flush with top of cap and ground smooth. Cost incidental to "Jack and Remove Existing Bearing."
Weight of Steel Shim Plates, Lead Plates, Anchor Bolts, nuts and washers, 3/4"φ H.S. Bolts, nuts and flat washers and Steel Extensions is included in "Structural Steel".

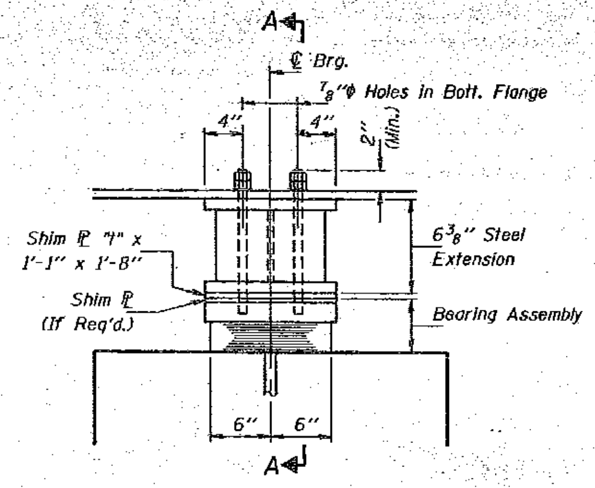
DESIGNED [signature]
CHECKED [signature]
DRAWN John F. Schneller Jr.
CHECKED [signature]

May 20 1993
EXAMINED [signature] ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES
APPROVED DIRECTOR OF HIGHWAYS

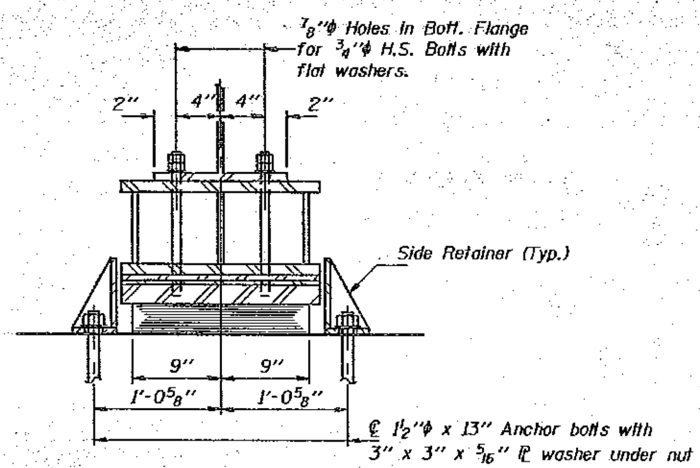
BEARING DETAILS - PIER #3
F.A.I. RT. 57 SEC. (28-5B)D-1
FRANKLIN COUNTY
STA. 44+49.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* Cost of drilling holes in existing bottom flanges and existing $1\frac{3}{8}''$ plate in field is incidental to "Structural Steel".



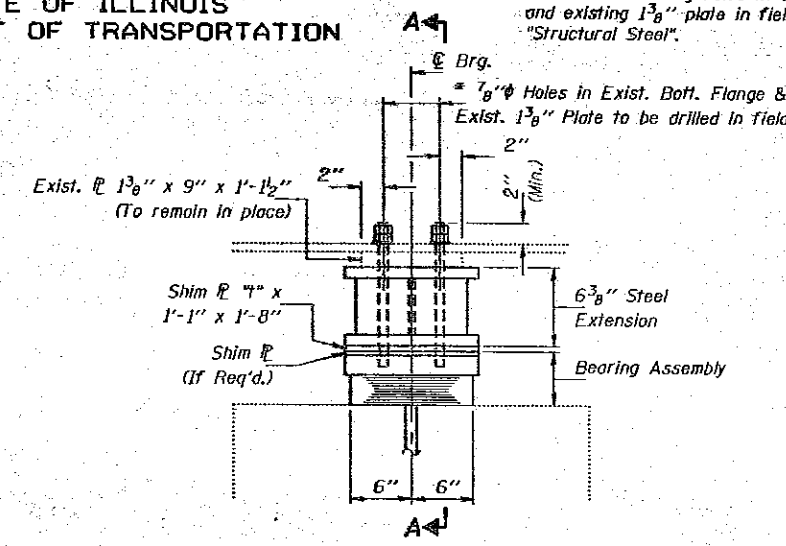
ELEVATION AT PIER #4



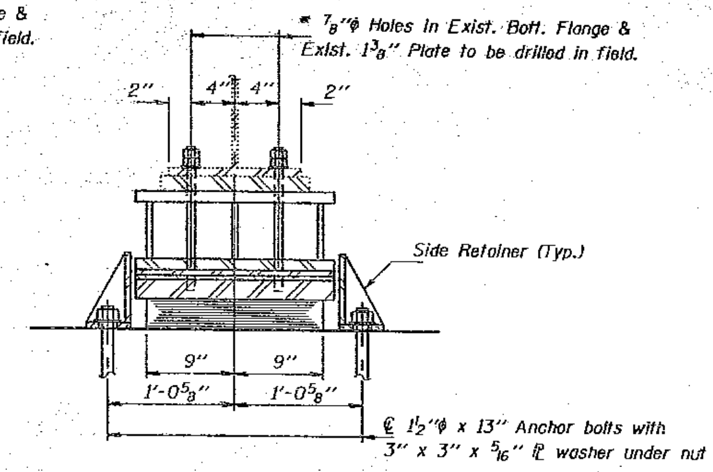
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG. BEAM #6A

(1 Required)



ELEVATION AT PIER #4



SECTION A-A

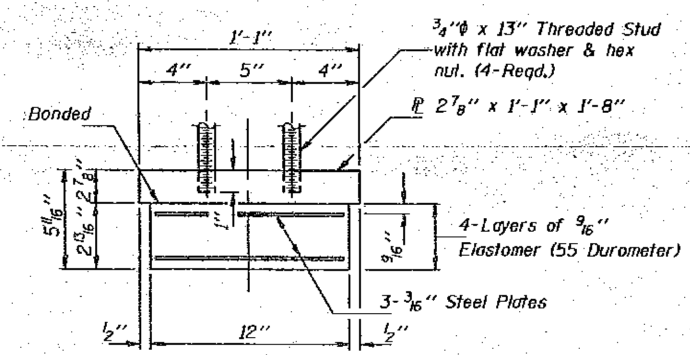
TYPE I ELASTOMERIC EXP. BRG. BEAMS #1 THRU #6

(6 Required)

** SHIM PLATE "t" DIMENSIONS

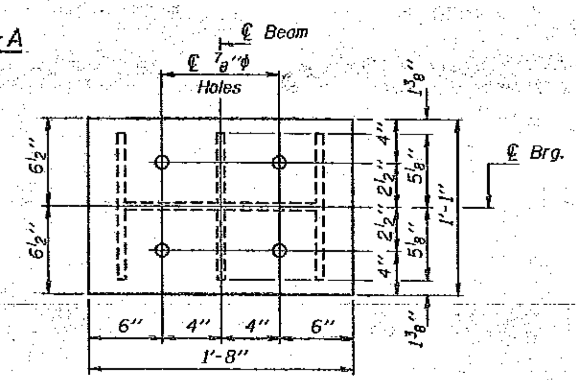
Dim. \ Bm	#1	#2	#3	#4	#5	#6	#6A
"t"	1"	7/8"	5/8"	3/8"	1/4"	0	2 1/8"

** Based on the survey elevations. The contractor shall verify and make adjustments if necessary.

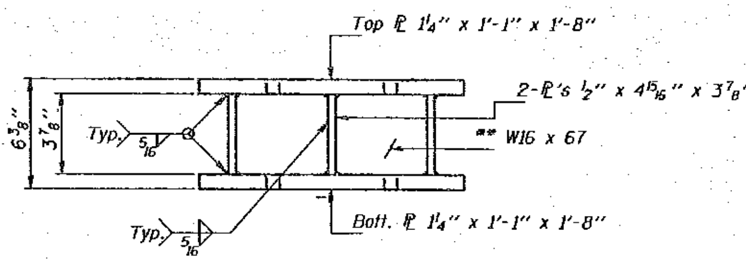


BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly.

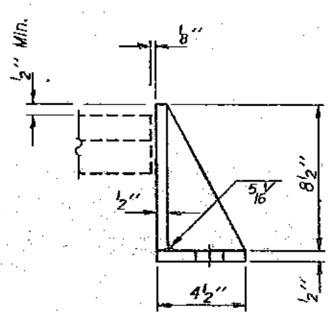


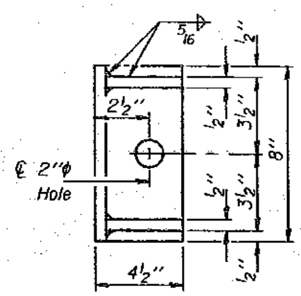
TOP PLATE



ELEVATION

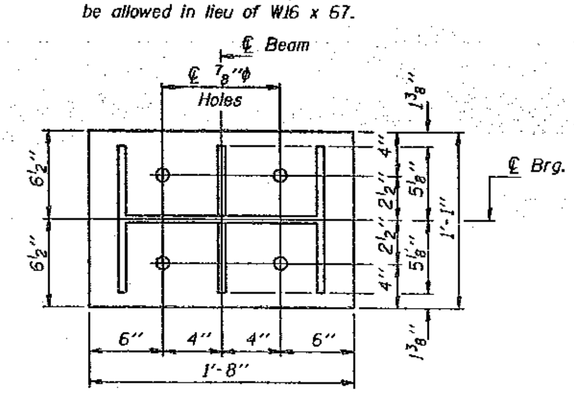
** Equivalent welded plates will be allowed in lieu of W16 x 67.





SIDE RETAINER-PIER #4

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



BOTTOM PLATE

STEEL EXTENSION

Notes: See sheet #19 of 25 for Anchor Bolt installation.
Existing Anchor Bolts to be cut off flush with top of cap and ground smooth. Cost incidental to "Jack and Remove Existing Bearing."
Weight of Steel Shim Plates, Steel Extensions, Anchor Bolts, nuts and washers and Side Retainers is included in "Structural Steel".

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	7
Jack and Remove Existing Bearings	Each	6

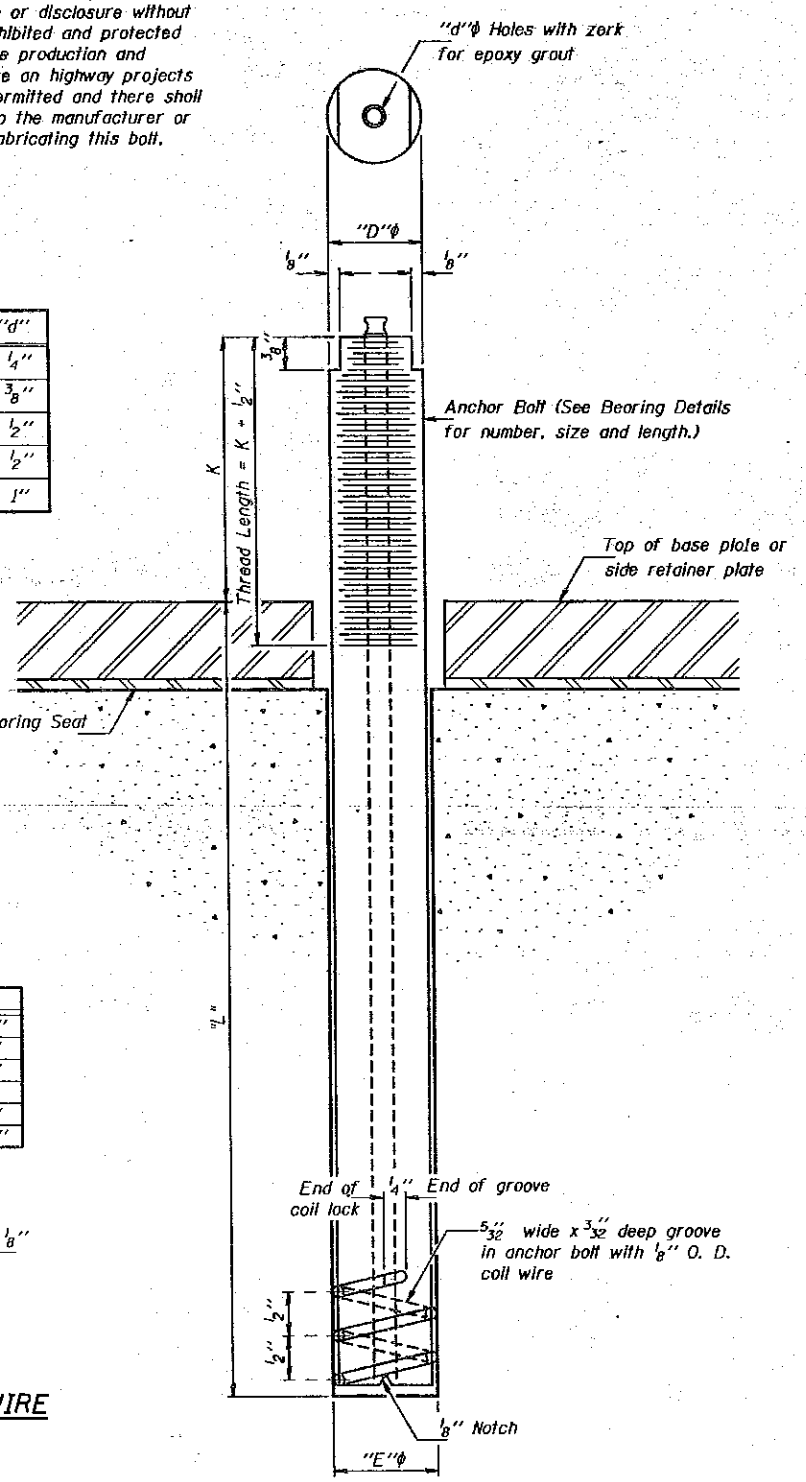
DESIGNED Steven Nagymoil
CHECKED S.D. Mem
DRAWN John F. Schneller Jr.
CHECKED DPM 6/13

May 20 1993
EXAMINED Oraj J. Kaspar — ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

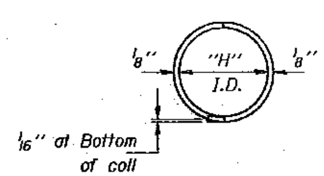
BEARING DETAILS - PIER #4
F.A.I. RT. 57 SEC. (28-5B)D-1
FRANKLIN COUNTY
STA. 44+49.00

The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

D	E	H	K	"d"
1"	1⅛"	13/16"	1¾"	¼"
1¼"	1⅜"	1 1/16"	2"	⅜"
1½"	1⅝"	1 5/16"	2⅛"	½"
2"	2⅛"	1 13/16"	2⅞"	½"
2½"	2⅝"	2 5/16"	3⅜"	1"



LOCATION	"L"
No. Abutment	1'-0¼"
Pier #1	10⅞"
Pier #2	10⅞"
Pier #3	1'-1"
Pier #4	10⅞"
So. Abutment	1'-0¼"



PLAN-COIL WIRE

ILLINOIS COIL-LOCK ANCHOR BOLT

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A519, Grade 1026 and supplied with hexagonal nuts and cut washers.

The coil wire shall be made of any suitable soft steel wire.

The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.

The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place,the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes in accordance with the manufacturer's recommendations and procedures.

The capsule or the adhesive cartridge type anchor rods shall be a two-part system composed of:

1. A threaded rod stud with nut and washer conforming to ASTM A307.
2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-5B) D-1	FRANKLIN		102

SHEET NO. 19
25 SHEETS

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or in accordance with the manufacturer's recommendation after beams or girders have been erected and adjusted.

Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.

The anchor bolts, furnished and installed and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for "Furnishing and Erecting Structural Steel".

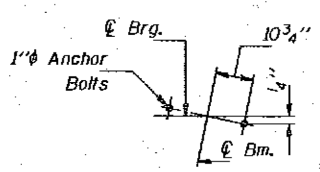
DESIGNED [signature]
CHECKED [signature]
DRAWN John F. Schneller Jr.
CHECKED [signature]

May 20 1993
EXAMINED [signature] ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES
APPROVED DIRECTOR OF HIGHWAYS

ABB-1 12-1-83 Sheets 101 Thru 145 (Set 2 of 2)

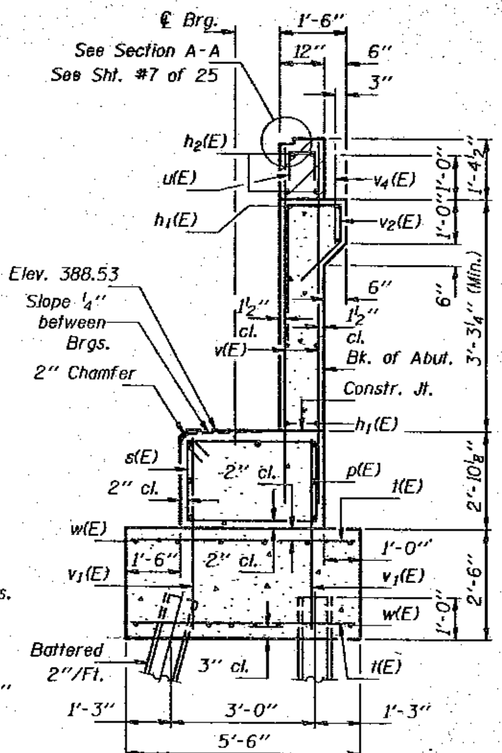
ANCHOR BOLT DETAILS
FOR BEARINGS
F.A.I. RT. 57 SEC. (28-5B)D-1
FRANKLIN COUNTY
STA. 44+49.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

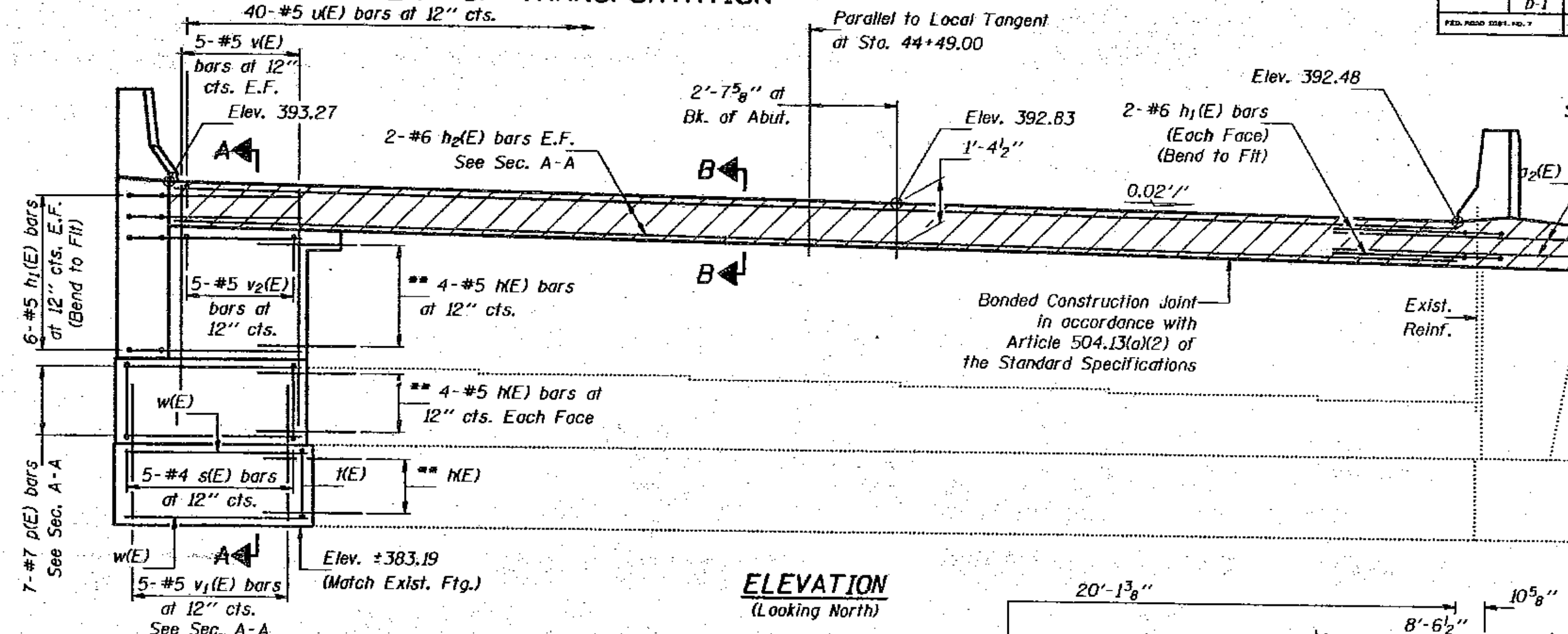


DETAIL "A"

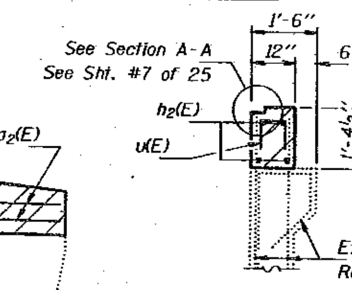
* Order $a_2(E)$ bars full length. Cut to fit and use remainder of bars in bottom of slab.
** Drill ⅞"ϕ x 9" Min. hole. Epoxy grout h(E) bars. Use a grout approved by the Department or epoxy grout in accordance with BSP-11. The method of grout application shall be approved by the Engineer. See Special Provisions.



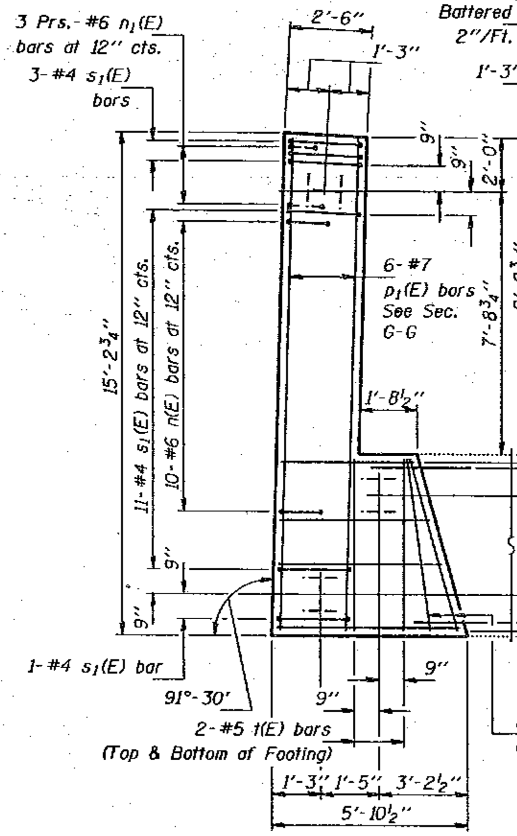
SECTION A-A



ELEVATION
(Looking North)

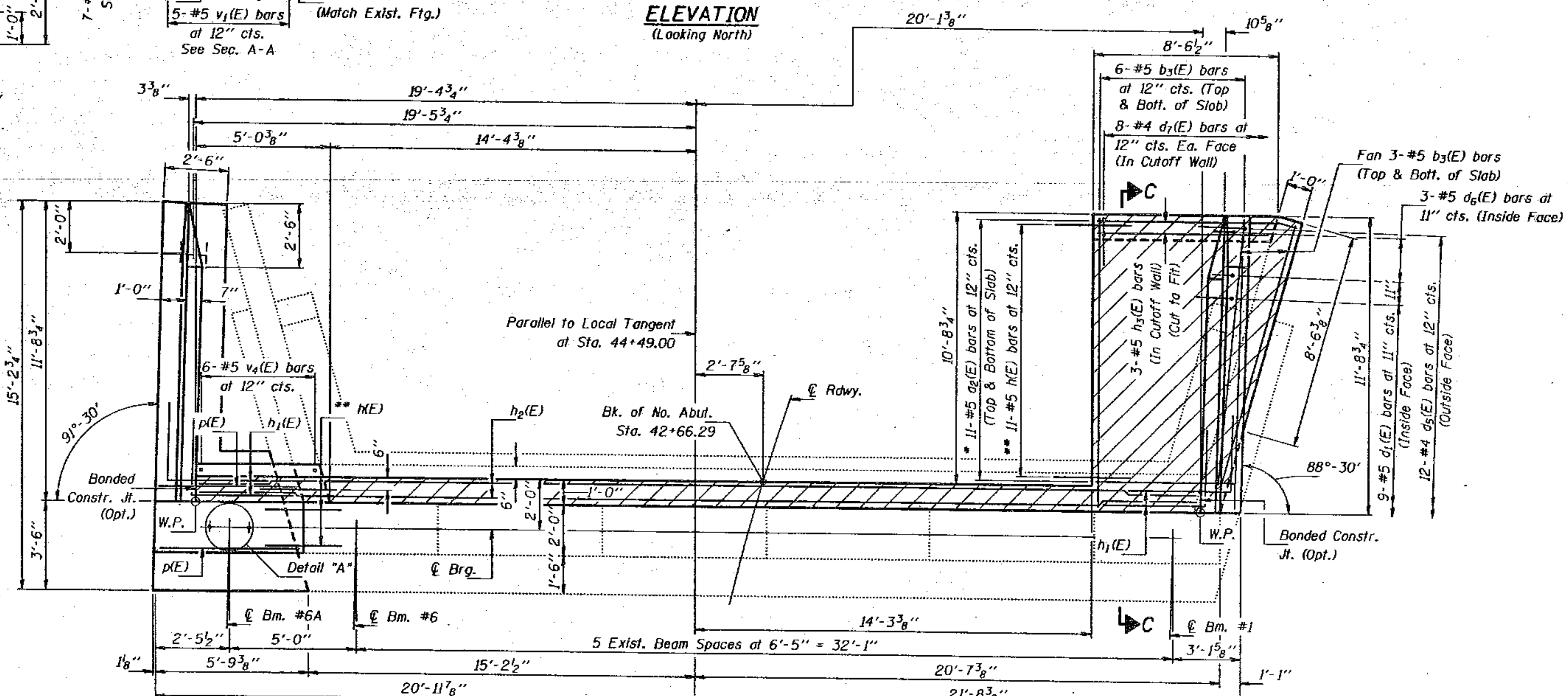


SECTION B-B



*** Order w(E) bars full length. Cut to fit and use remainder of bar in bottom of footing.

FOOTING PLAN



PLAN

Notes:
Hatched area to be poured after Superstructure forms have been removed. Form top surface to match superstructure.
Concrete quantity is billed with "Class X Concrete Superstructure" see sheet #7 of 25.
Concrete quantity for End Posts is billed with "Class X Concrete Superstructure" see sheet #7 of 25.
Existing vertical reinforcement extending into new construction shall be cleaned, straightened, and incorporated into new construction. Cost is incidental to "Concrete Removal".

Notes:
Space reinforcement in cap to miss anchor bolts.
Existing reinforcement not extending into new construction shall be cut off and covered with a 2" layer of cement grout. Cost incidental to "Concrete Removal".
Reinforcement bars designated (E) shall be epoxy coated.
For Wingwall Details and Bill of Material see sheet #22 of 25.
For Anchor Bolt installation details see sheet #19 of 25.
All edges shall have standard ¾" chamfer except as noted.
See sheet #25 of 25 for locations of Concrete Removal.

PILE DATA

Type: Steel HP12 x 53
Capacity: Drive to Refusal
Est. Length: 44 Ft.
No. Required: 2 + 1 Test Pile

MIN. BAR LAPS

#5 (E) bars = 2'-2"

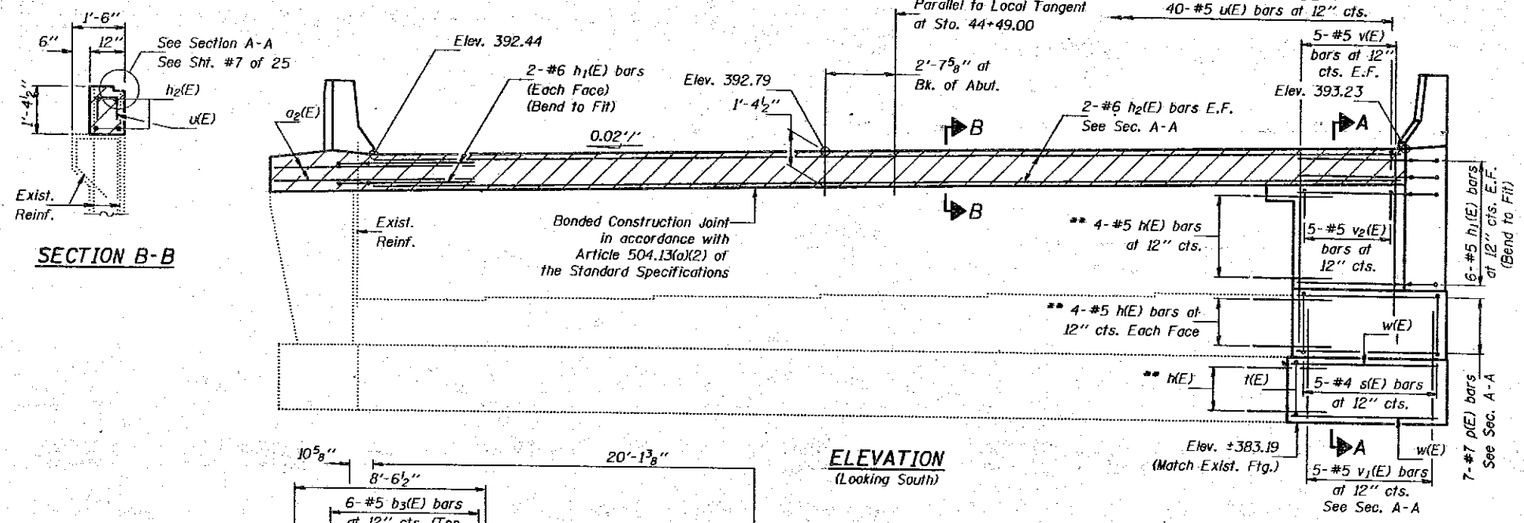
DESIGNED Steven [signature]
CHECKED [signature]
DRAWN John F. Schneller Jr.
CHECKED [signature]

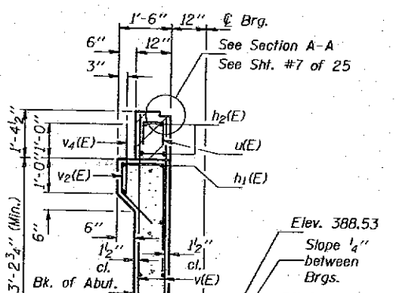
May 20 1993
EXAMINED [signature] ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES
APPROVED DIRECTOR OF HIGHWAYS

NORTH ABUTMENT
F.A.I. RT. 57 SEC. (28-5B)D-1
FRANKLIN COUNTY
STA. 44+49.00

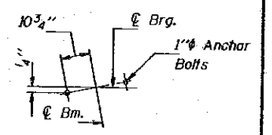
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-5B) D-1	FRANKLIN	104	SHEET NO. 21 25 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		





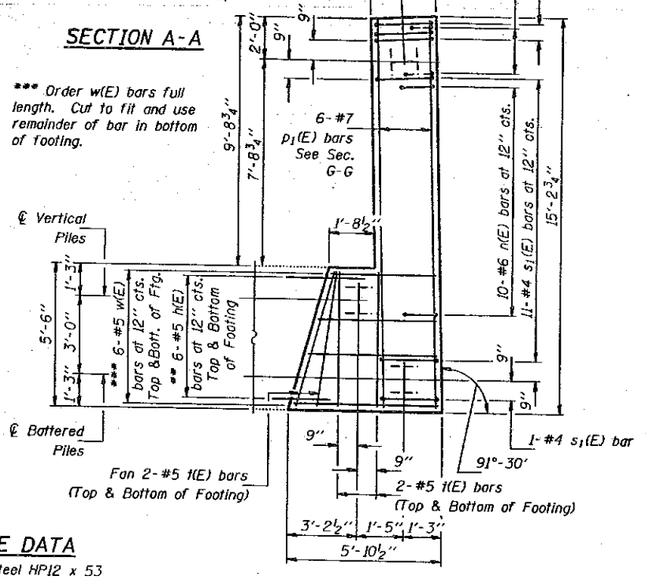
SECTION A-A



DETAIL "A"

* Order $a_2(E)$ bars full length. Cut to fit and use remainder of bars in bottom of slab.
** Drill ⅞"ϕ x 9" Min. hole. Epoxy grout h(E) bars. Use a grout approved by the Department or epoxy grout in accordance with BSP-11. The method of grout application shall be approved by the Engineer. See Special Provisions.

*** Order w(E) bars full length. Cut to fit and use remainder of bar in bottom of footing.



FOOTING PLAN

PILE DATA

Type: Steel HP12 x 53
Capacity: Drive to Refusal
Est. Length: 60 Ft.
No. Required: 2 + 1 Test Pile

MIN. BAR LAPS

#5 (E) bars = 2'-2"

PLAN

Notes:
Hatched area to be poured after Superstructure forms have been removed. Form top surface to match superstructure. Concrete quantity is billed with "Class X Concrete Superstructure" see sheet #7 of 25.
Concrete quantity for End Posts is billed with "Class X Concrete Superstructure" see sheet #7 of 25.
Existing vertical reinforcement extending into new construction shall be cleaned, straightened, and incorporated into new construction. Cost is incidental to "Concrete Removal".

Notes:
See sheet #25 of 25 for locations of Concrete Removal.
Existing reinforcement not extending into new construction shall be cut off and covered with a 2" layer of cement grout. Cost incidental to "Concrete Removal".
Space reinforcement in cap to miss anchor bolts.
Reinforcement bars designated (E) shall be epoxy coated.
For Wingwall Details and Bill of Material see sheet #22 of 25.
For Anchor Bolt installation details see sheet #19 of 25.
All edges shall have standard ¾" chamfer except as noted.

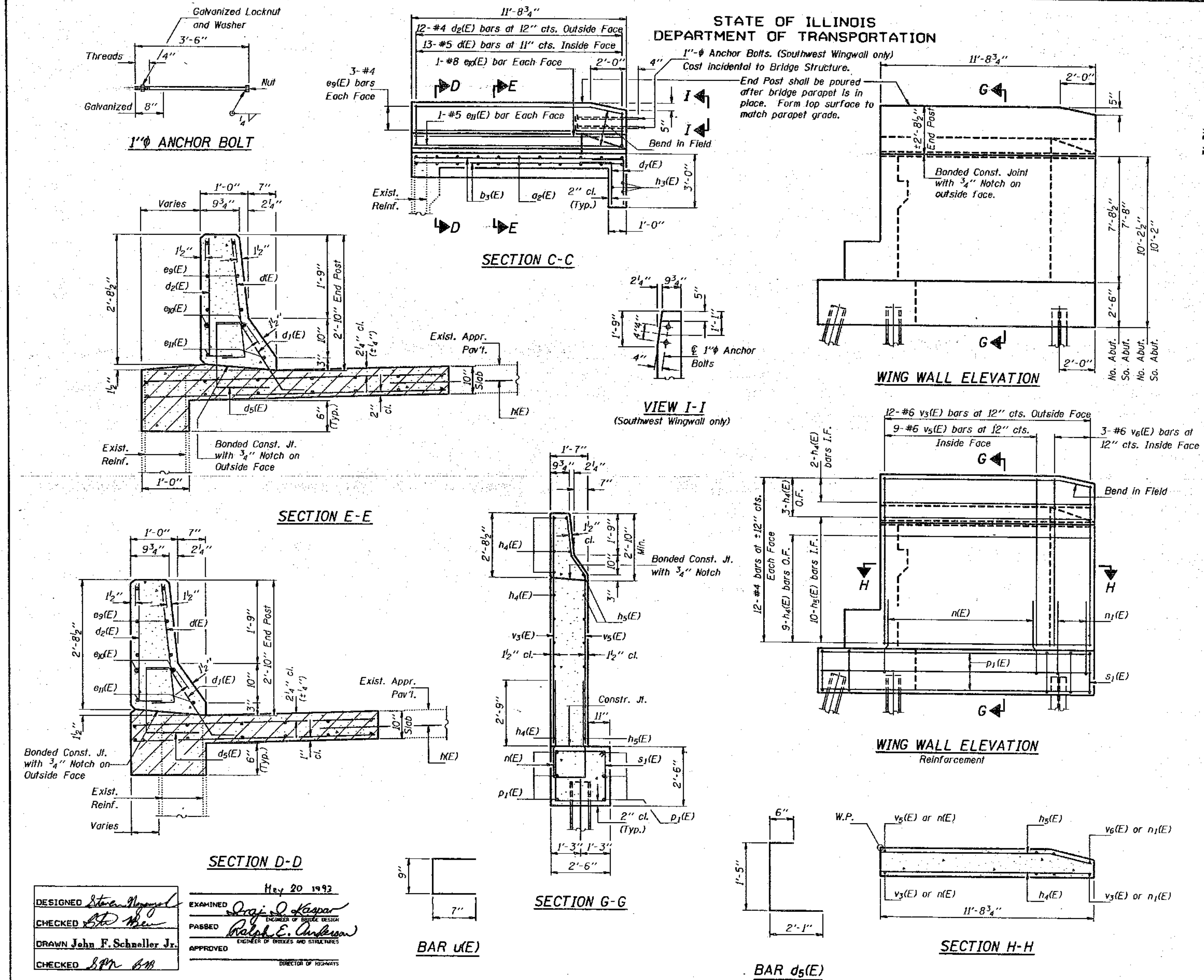
DESIGNED Steve Nagengast
CHECKED Steve Nagengast
DRAWN John F. Schneller Jr.
CHECKED John Gill

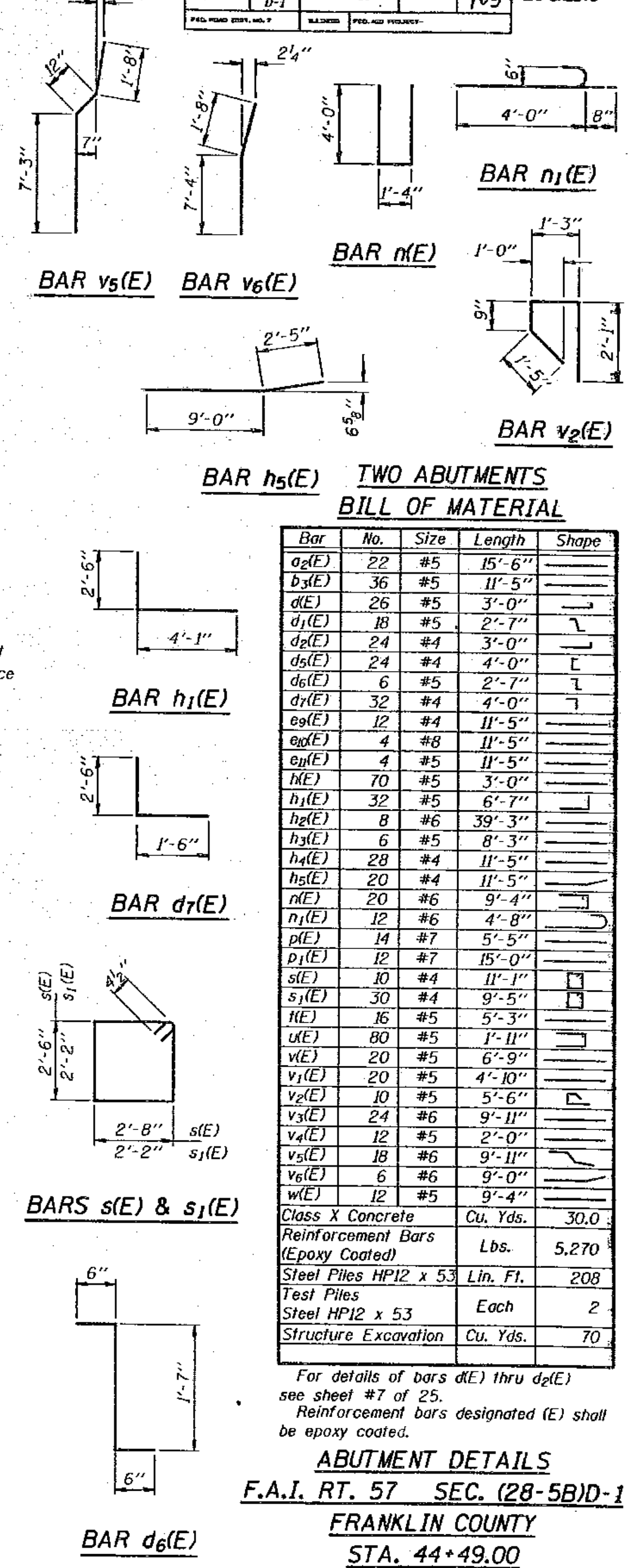
May 20 1993
EXAMINED Engineer of Bridge Design
PASSED Engineer of Bridges and Structures
APPROVED Director of Highways

FOOTING PLAN

SOUTH ABUTMENT
F.A.I. RT. 57 SEC. (28-5B)D-1
FRANKLIN COUNTY
STA. 44+49.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION





TWO ABUTMENTS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_2(E)	22	#5	15'-6"	
b_3(E)	36	#5	11'-5"	
d(E)	26	#5	3'-0"	
d_1(E)	18	#5	2'-7"	
d_2(E)	24	#4	3'-0"	
d_5(E)	24	#4	4'-0"	
d_6(E)	6	#5	2'-7"	
d_7(E)	32	#4	4'-0"	
e_9(E)	12	#4	11'-5"	
e_{10}(E)	4	#8	11'-5"	
e_{11}(E)	4	#5	11'-5"	
h(E)	70	#5	3'-0"	
h_1(E)	32	#5	6'-7"	
h_2(E)	8	#6	39'-3"	
h_3(E)	6	#5	8'-3"	
h_4(E)	28	#4	11'-5"	
h_5(E)	20	#4	11'-5"	
n(E)	20	#6	9'-4"	
n_1(E)	12	#6	4'-8"	
p(E)	14	#7	5'-5"	
p_1(E)	12	#7	15'-0"	
s(E)	10	#4	11'-1"	
s_1(E)	30	#4	9'-5"	
t(E)	16	#5	5'-3"	
u(E)	80	#5	1'-11"	
v(E)	20	#5	6'-9"	
v_1(E)	20	#5	4'-10"	
v_2(E)	10	#5	5'-6"	
v_3(E)	24	#6	9'-11"	
v_4(E)	12	#5	2'-0"	
v_5(E)	18	#6	9'-11"	
v_6(E)	6	#6	9'-0"	
w(E)	12	#5	9'-4"	
Class X Concrete			Cu. Yds.	30.0
Reinforcement Bars (Epoxy Coated)			Lbs.	5,270
Steel Piles HP12 x 53			Lin. Ft.	208
Test Piles Steel HP12 x 53			Each	2
Structure Excavation			Cu. Yds.	70

For details of bars d(E) thru d_2(E) see sheet #7 of 25.

Reinforcement bars designated (E) shall be epoxy coated.

DESIGNED [signature]
CHECKED [signature]
DRAWN John F. Schneller Jr.
CHECKED [signature]

May 20 1993
EXAMINED [signature] ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES
APPROVED DIRECTOR OF HIGHWAYS

ABUTMENT DETAILS
F.A.I. RT. 57 SEC. (28-5B)D-1
FRANKLIN COUNTY
STA. 44+49.00

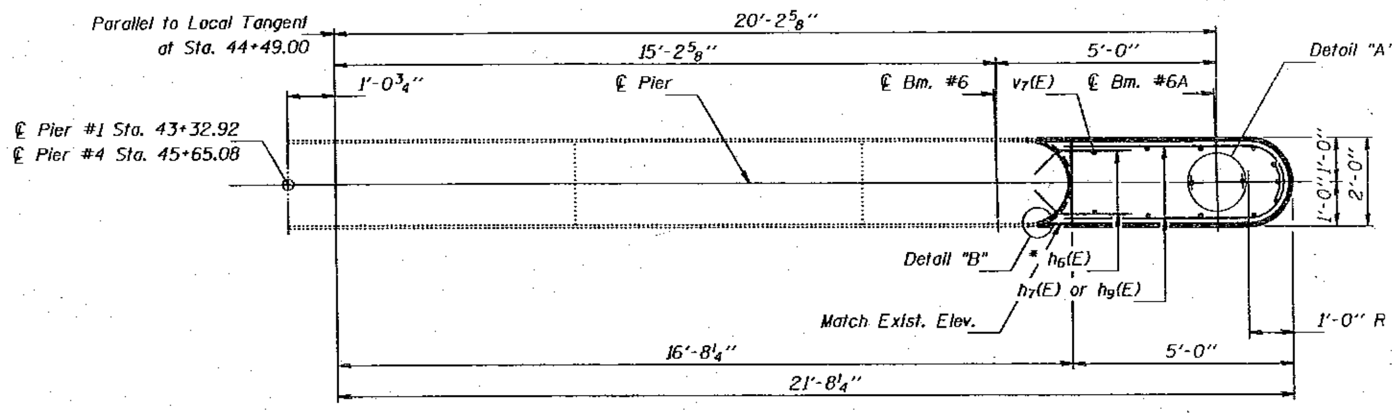
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-5B) D-1	FRANKLIN		106
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 23
25 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Notes: For Anchor Bolt installation details see sheet #19 of 25.

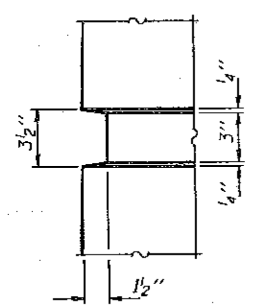
* Drill $\frac{7}{8}''\phi$ x 9'' Min. hole. Epoxy grout $h_6(E)$ bars. Use a grout approved by the Department or epoxy grout in accordance with BSP-11. The method of grout application shall be approved by the Engineer. See Special Provisions.



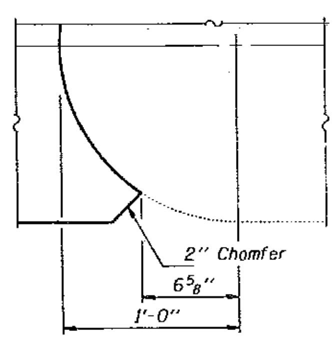
PLAN

PILE DATA

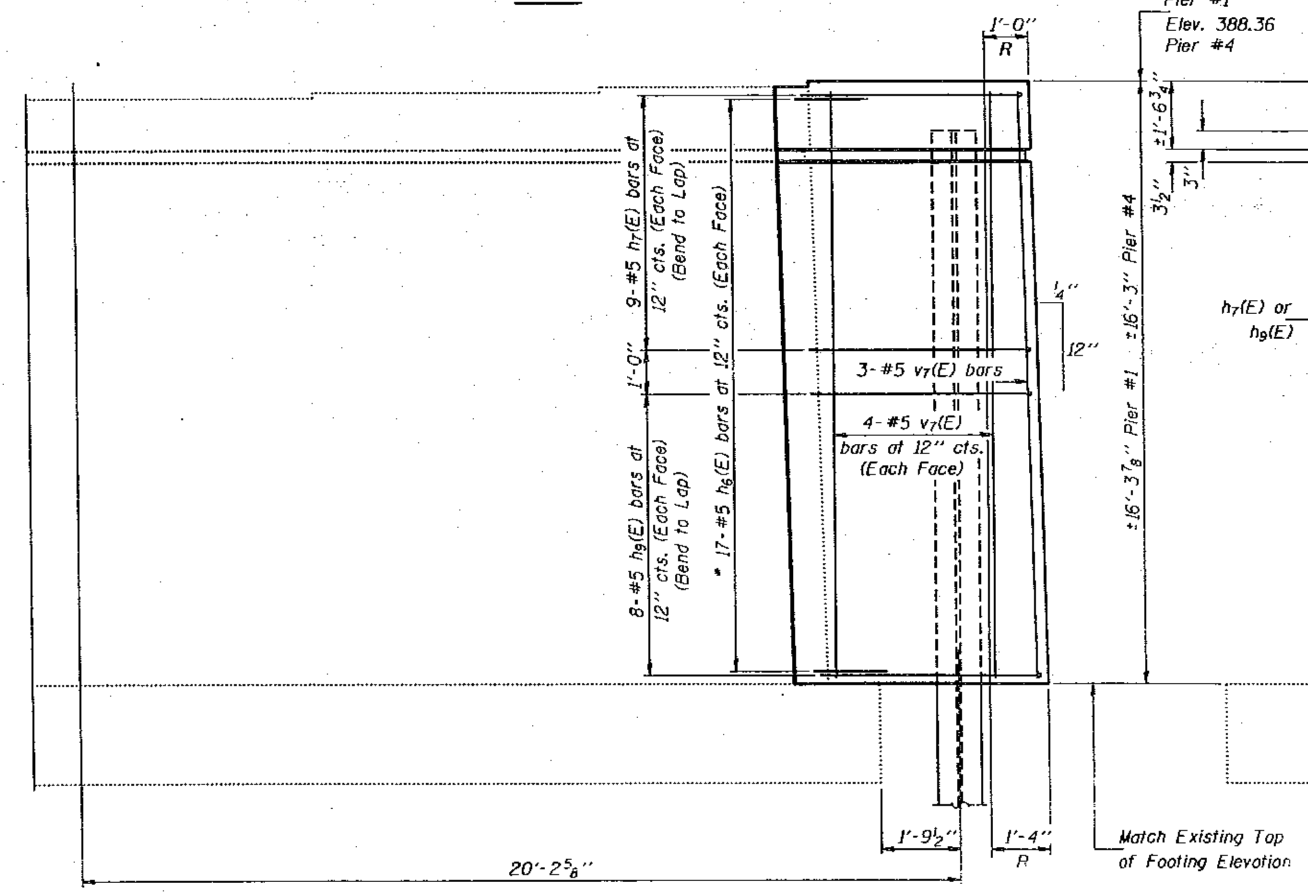
Type:	Steel (HP12 x 74)
Capacity:	Drive to Refusal
Est. Length:	47 Ft. Pier #1
Est. Length:	61 Ft. Pier #4
No. Req'd:	1 Each Pier



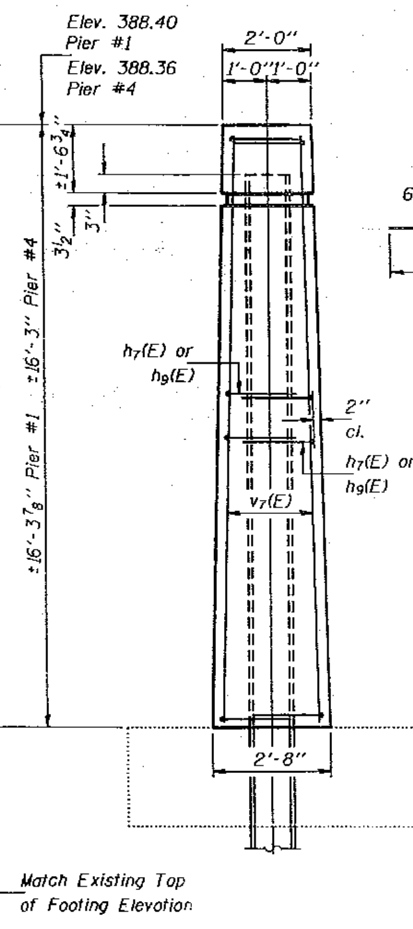
NOTCH DETAIL



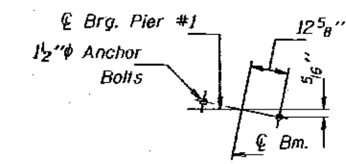
DETAIL "B"



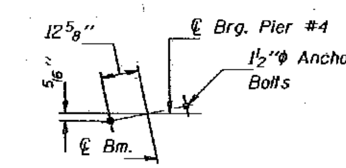
ELEVATION
(Looking South)



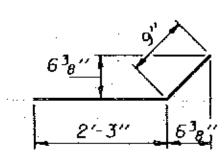
END VIEW



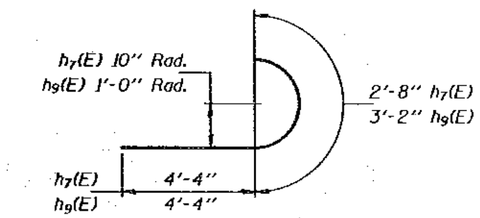
DETAIL "A"
(Pier #1)



DETAIL "A"
(Pier #4)



BAR $h_6(E)$



BARS $h_7(E)$ & $h_9(E)$

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h_6(E)$	68	#5	3'-0''	⌐
$h_7(E)$	36	#5	7'-0''	⊃
$h_9(E)$	32	#5	7'-6''	⊃
$v_7(E)$	22	#5	15'-11''	—
Class X Concrete			Cu. Yd.	14.1
Reinforcement Bars, Epoxy Coated			Lbs.	1,090
Structure Excavation			Cu. Yd.	13
Steel Piles HP12 x 74			Lin. Ft.	108

Reinforcement Bars designated (E) shall be epoxy coated.

DESIGNED	Steve Nyamgoo
CHECKED	[signature]
DRAWN	John F. Schneller Jr.
CHECKED	[initials]

May 20 1993

EXAMINED: Oraj J. Kaspar — ENGINEER OF BRIDGE DESIGN
PASSED: Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED: — DIRECTOR OF HIGHWAYS

PIERS #1 & #4
F.A.I. RT. 57 SEC. (28-5B)D-1
FRANKLIN COUNTY
STA. 44+49.00

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-5B) D-1	FRANKLIN		107

SHEET NO. 24
25 SHEETS

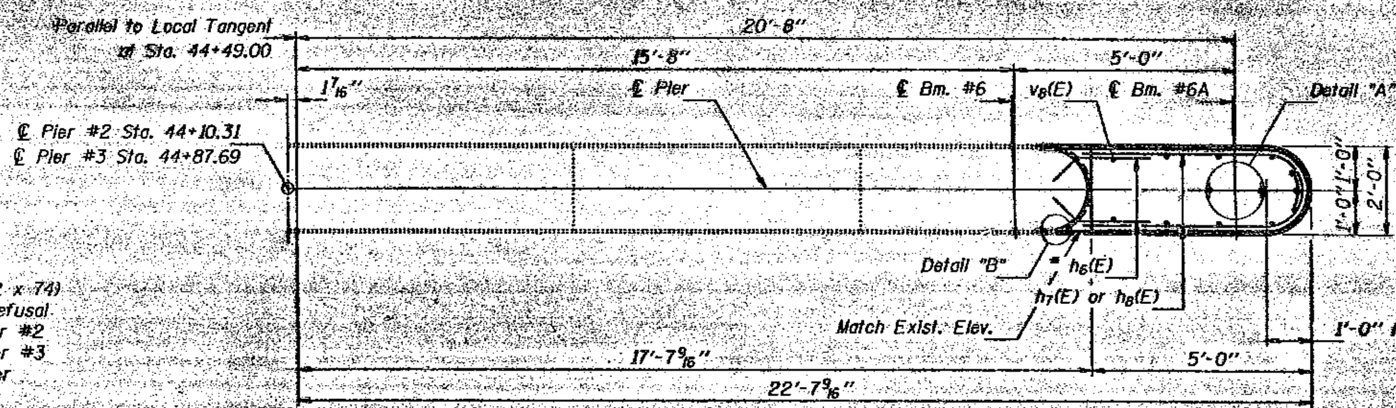
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Notes: For Anchor Bolt installation details see sheet #19 of 25.

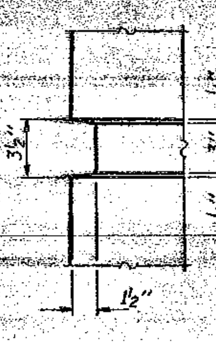
* Drill 7/8"φ x 9" Min. hole. Epoxy grout h6(E) bars. Use a grout approved by the Department or epoxy grout in accordance with BSP-11. The method of grout application shall be approved by the Engineer. See Special Provisions.

PILE DATA

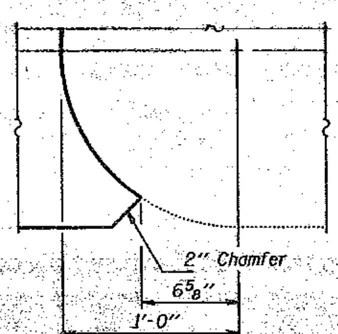
Type: Steel (HP12 x 74)
Capacity: Drive to Refusal
Est. Length: 60 Ft. Pier #2
Est. Length: 62 Ft. Pier #3
No. Req'd: 1 Each Pier



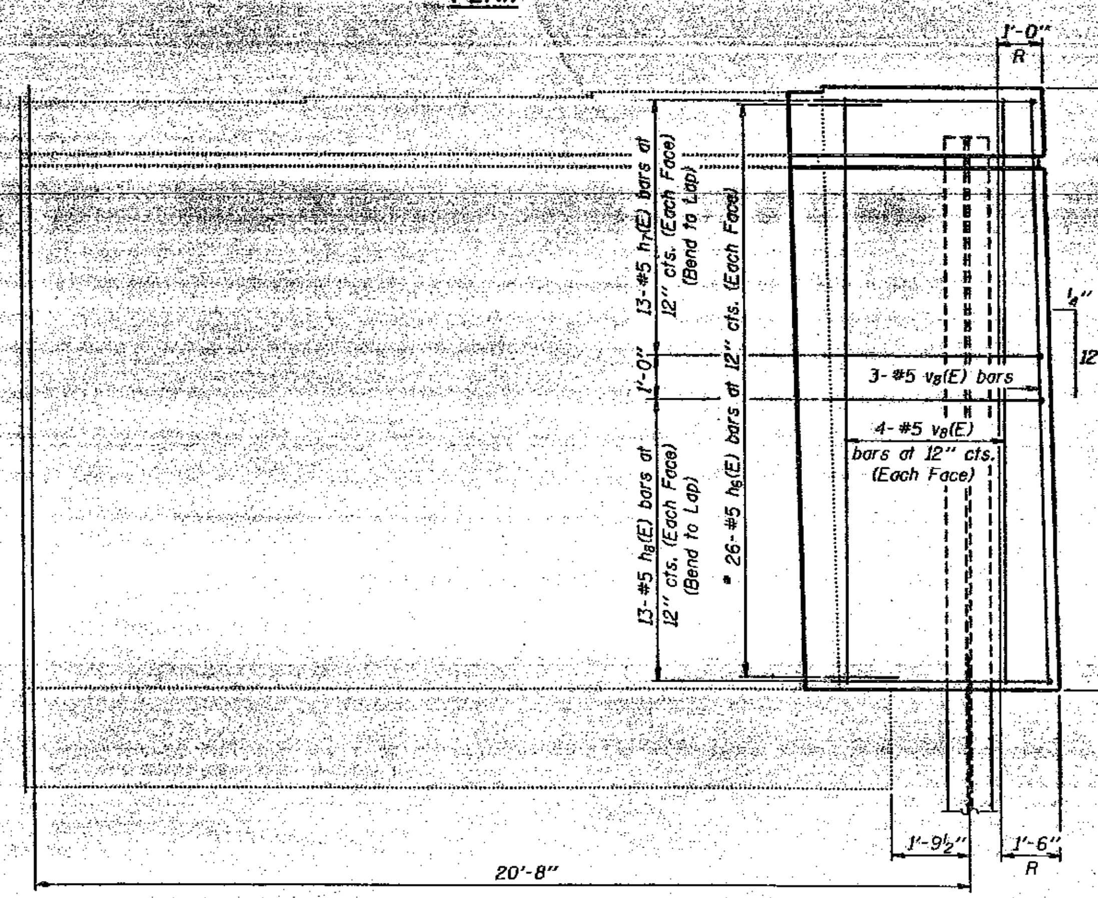
PLAN



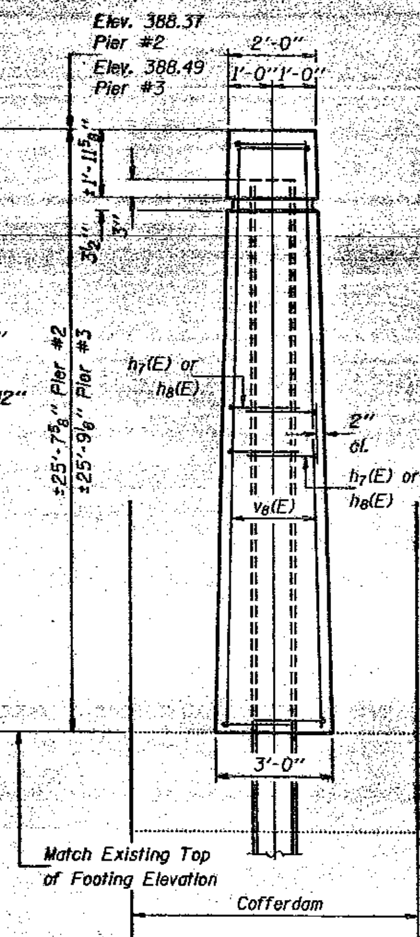
NOTCH DETAIL



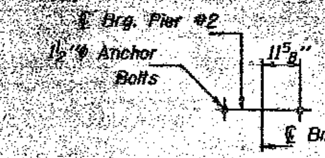
DETAIL "B"



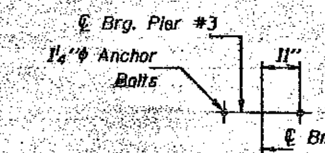
ELEVATION
(Looking South)



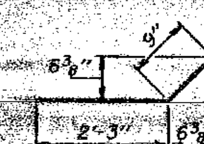
END VIEW



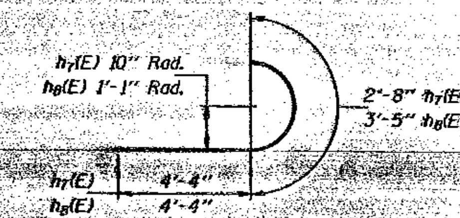
DETAIL "A"
(Pier #2)



DETAIL "A"
(Pier #3)



BAR h6(E)



BARS h7(E) & h8(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h6(E)	104	#5	3'-0"	
h7(E)	52	#5	7'-0"	
h8(E)	52	#5	7'-9"	
v8(E)	22	#5	25'-4"	

Item	Unit	Quantity
Class X Concrete	Cu. Yd.	23.8
Reinforcement Bars, Epoxy Coated	Lbs.	1,710
Cofferdams	Each	2
Cofferdam Excavation	Cu. Yd.	52
Steel Piles HP12 x 74	Lin. Ft.	122

Reinforcement Bars designated (E) shall be epoxy coated.

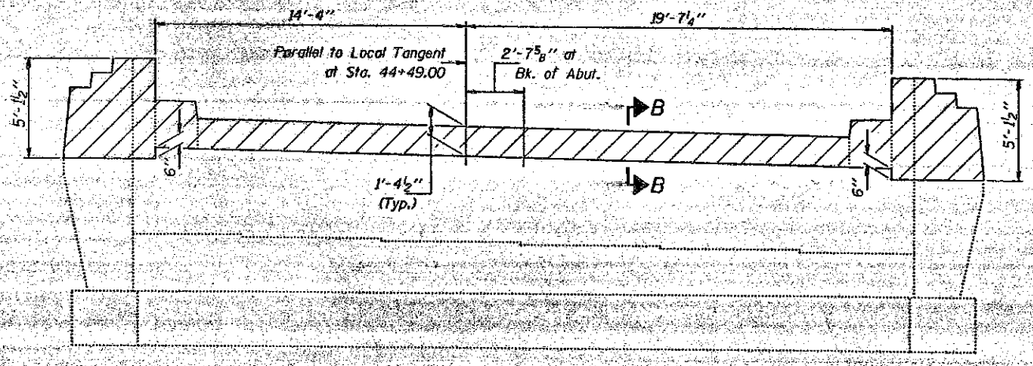
DESIGNED Steven Nagy...
CHECKED B.D. ...
DRAWN John F. Schneller Jr.
CHECKED ...

May 20 1993
EXAMINED ... ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES
APPROVED ... DIRECTOR OF HIGHWAYS

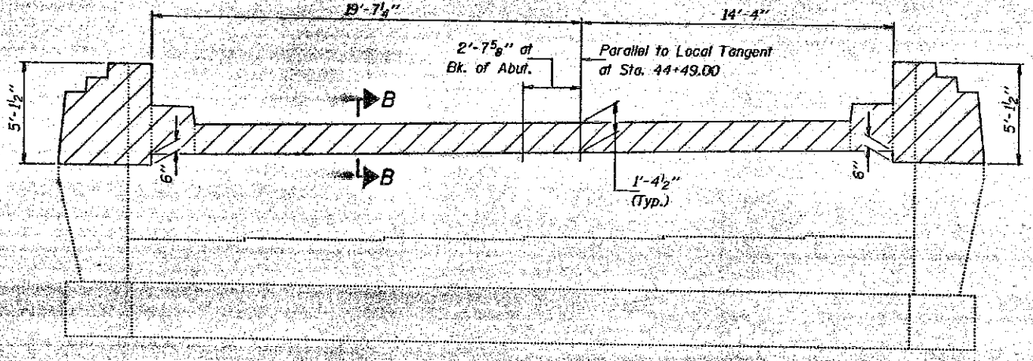
PIERS #2 & #3
F.A.I. RT. 57 SEC. (28-5B)D-1
FRANKLIN COUNTY
STA. 44+49.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

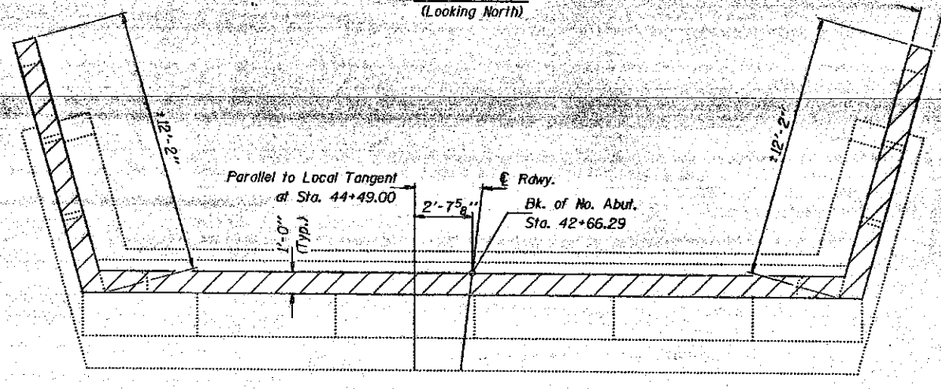
FED. ROAD DIST. NO.	SECTION	COUNTY	TOTAL SHEET NO.	SHEET NO.
F.A.I. 57	(28-5B) D-1	FRANKLIN		106
ILLINOIS FED. AID PROJ.				25 SHEETS



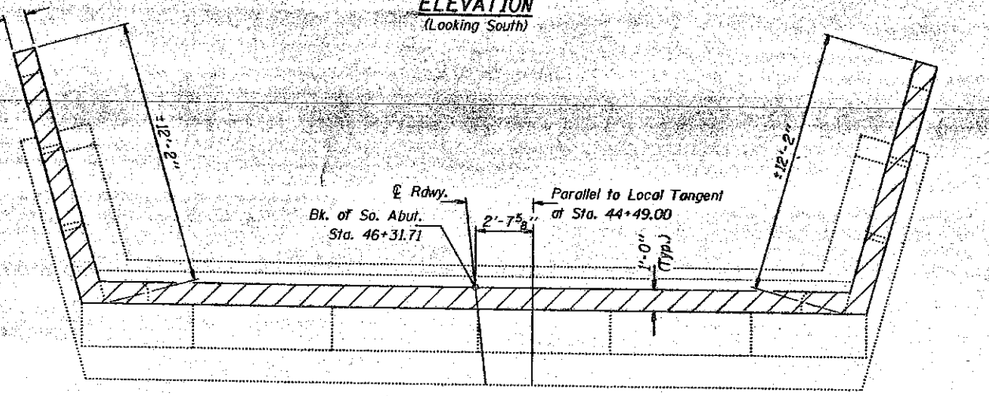
ELEVATION
(Looking North)



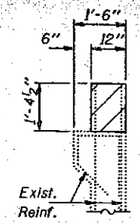
ELEVATION
(Looking South)



PLAN
(North Abutment)



PLAN
(South Abutment)



SECTION B-B

Notes: Hatched area indicates "Concrete Removal".
Existing reinforcement extending into new construction shall be cleaned, straightened, and incorporated into new construction. Cost Incidental to "Concrete Removal".
Existing reinforcement not extending into new construction shall be cut off flush and covered with a 2" layer of cement grout. Cost incidental to "Concrete Removal".
For existing shoulder pavement removal see Roadway Plans.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Concrete Removal	Cu. Yd.	12

DESIGNED Steven Nagengast
CHECKED [illegible]
DRAWN John F. Schneller Jr.
CHECKED [illegible]

May 20 1993
EXAMINED Engineer of Bridge Design
PASSED Rafael E. Anderson Engineer of Bridges and Structures
APPROVED
Director of Highways

CONCRETE REMOVAL
F.A.I. RT. 57 SEC. (28-5B)D-1
FRANKLIN COUNTY
STA. 44+49.00

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

F.A.I. Rte.	Section	County	Total Sheets	Sheet No.
FAI 57	28-5B	Franklin	145	108A

Boring No. 1
Station 44+35
Offset 37' Left

Description	Elevation	N	Qu (t/sf)	Type Failure	w (%)
Ground Surface	374.6 0				
Soft and very moist brown silty clay to silty clay-loam A-6(10)		–	–	–	28
Medium to stiff and moist tan clay A-7-6(15)	370.6 -5	5	1.0	S	31
Stiff and moist tan mottled brown clay A-7-6(13-14)	367.6	9	2.0	B	28
	-10	11	1.3	S	30
Stiff and moist grey mottled brown silty clay to silty clay loam A-6(9-10)	363.6	10	1.4	B	28
Stiff and moist grey mottled brown silty clay to clay A-6(11-12)	360.1 -15	7	1.5	B	31
Medium to stiff and moist grey silty clay A66(10)	357.6	6	1.0	B	28
Medium and moist grey silt loam A-4(8)	355.1 -20	6	0.6	B	35
(See next column)	353.6				
Stiff and moist grey silty clay to clay A-6(12)		9	1.7	B	23
Very stiff and moist brown clay A-7-6(14-15)	350.1 -25	13	3.6	B	21
		10	2.5	B	26
Stiff and moist brown clay A-7-6(14-15)	345.1 -30	8	2.2	S	30
Medium to stiff and moist brown silty clay to clay A-6(10-11)	342.6	5	1.2	B	26
Medium and moist grey clay loam A-6(8)	341.1 -35	8	1.4	B	18
Soft and moist grey sandy loam	338.6	13	0.8	P	17
Loose and very moist grey medium graded fine sand	336.1 -40	14	0.3	P	18
([redacted])	332.6 -45				

Boring No. 1 Cont.

Description	Elevation	N	Qu (t/sf)	Type Failure	w (%)
(See previous column)					
Loose and wet grey medium graded fine sand	332.6	15	0.8	P	18
	-45	5	–	–	23
Medium to hard and dry clay shale	328.6	100 Blows in 6"			11
	-50	100 Blows in 9"			10
Medium to hard and dry black bituminous coal	323.1 / 322.1	100 Blows in 3"			17
Bottom of Hole = 52.5 feet					

During drilling operations it appeared that free water was encountered at 10.5 feet. The hole was washed to obtain the sample from 45.5 feet to 46.5 feet

Boring No. 2
Station 43+75
Offset 44' Right

Description	Elevation	N	Qu (t/sf)	Type Failure	w (%)
Ground Surface	375.2 0				
Stiff and moist tan silty clay loam A-6(10-11)		–	–	–	22
Very stiff and moist tan clay A-7-6(14-15)	370.7 -5				
Very stiff and moist tan mottled brown and black clay A-7-6(14)	369.2	18	4.0	S	19
		14	2.7	S	23
Very stiff and moist tan mottled brown and black clay A-7-6(13)	365.2 -10	11	2.9	S	24
Stiff and moist tan mottled brown and black clay A-7-6(13-14)	362.7	8	1.9	S	27
	-15	7	1.6	B	28
Stiff and moist red with grey & black streak silty clay A-6(11-12)	357.7 / 356.2	8	1.8	S	27
Soft and wet brown sandy clay loam	355.2 -20				
Stiff and very moist brown silty clay A-6(12-13)	354.2	4	1.6	B	20
([redacted])					
Stiff and moist brown silty clay A-7-6(13-14)		6	1.7	S	20
Very stiff and moist brown silty clay A-7-6(13-14)	350.7 -25	10	2.7	B	23
Stiff and moist brown clay to clay loam A-6(10)	348.2	10	1.8	B	16
Medium to stiff and moist tan mottled grey clay to clay loam A-6(10)	345.2 -30	7	1.1	B	17
Stiff and moist greenish grey clay to clay loam A-6(10)	342.7	6	1.2	B	17
Stiff and moist greenish grey clay to clay loam A-6(11-12)	340.2 -35 / 338.7	34	1.5	B	17
Hard and dry grey clay shale		100 Blows in 7"	5.2	S	9
	-40	100 Blows in 7"	2.9	S	9
Bottom of Hole 43.6 feet	331.6 -45	100 Blows in 7"			11

During drilling operations, it appeared that free water was encountered at 15.0 feet

Boring No. 3
Station 43+23
Offset 45' Left

Description	Elevation	N	Qu (t/sf)	Type Failure	w (%)
Ground Surface	374.4 0				
Medium and moist tan silty clay A-6(11-12)		–	–	–	24
Hard and moist grey mottled tan silty clay to clay A-7-6(13)	369.9 -5	19	4.8	S	19
Stiff and moist tan clay A-7-6(15+)	366.9	6	1.6	S	26
Stiff and moist grey mottled brown silty clay A-6(11-12)	365.4 -10	9	1.8	S	27
Very stiff and moist grey mottled brown silty clay A-7-6(13)	362.9	13	2.5	B	23
	-15	7	2.4	B	31
Medium and moist brown clay loam A-6(11-12)	357.9	9	0.6	S	20
Medium and wet brown sandy loam to sand	355.4 -20	11	0.8	P	20
([redacted])		–	–	–	25
Medium and wet brown medium graded fine sand	349.4 -25	17	–	–	30
Medium and wet brown gravelly sand	345.9 -30	4	Lost Sample		
		14	–	–	18
Hard and dry grey clay shale	342.9	100 Blows in 7"			9
	-35	100 Blows in 7"			9
		100 Blows in 6"			10
Bottom of Hole 40.1 feet	334.3 -40	100 Blows in 7"			11

32.

During drilling operations, it appeared that free water was encountered at 15.5 feet. Hole was washed to obtain samples between 25.0 feet and 31.5 feet.

Boring No. 4
Station 42+58
Offset 37' Right

Description	Elevation	N	Qu (t/sf)	Type Failure	w (%)
Ground Surface	374.0 0				
Medium and moist tan silty clay loam to silty clay A-6(10-11)		–	–	–	28
Medium and moist tan silty clay to clay (13) A-7-6(13)	370.0 -5	8	1.2	B	27
Stiff and moist tan clay A-7-6(15+)	368.0	9	1.8	S	26
Stiff and moist tan mottled grey clay A-7-6(15+)	364.5 -10	9	1.7	B	30
Stiff and moist grey mottled tan silty clay A-6(12-13)		7	2.1	B	24
Medium to stiff and moist grey mottled tan silty clay A-6(12-13)	359.5 -15	8	1.1	S	26
Stiff and moist grey mottled tan clay A-7-6(15)	357.0	10	2.0	B	31
Medium to stiff and moist tan silty clay (11-12)	354.5 -20	14	1.6	B	31
([redacted])	353.0				
Medium and moist grey silt loam A-4(8)		18	1.5	P	23
	-25	14	2.0	P	26
Loose and wet brown medium graded medium sand	348.0	4	–	–	11
Medium and very moist grey clay to clay loam A-6(10-11)	344.0 -30	7	1.4	P	19
Very stiff and moist grey clay to clay loam A-6(10-11)	342.0	23	3.3	B	15
Hard and moist grey clay shale	340.5 -35	100 Blows in 3"			8
Hard and dry grey clay shale	337.0	100 Blows in 8"			4
Bottom of Hole 39.7 feet	334.3 -40	100 Blows in 8"			6

During drilling operations, it appeared that free water was encountered at 15.0 feet. Hole was washed to obtain sample from 28.0 feet to 30.0 feet

Boring No. 5
Station 44+88
Offset 30' Rt.

Description	Elevation	N	Qu (t/sf)	w (%)
Ground Surface	375.2 0			
Soft and very moist tan silty loam A-4(8)		Augered Sample		
	-5	3	0.4B	22
Medium and very moist grey mottled brown silty clay A-6(10-11)	368.2	2	0.7P	27
Medium and very moist grey mottled brown clay A-7-6(15-17)	366.2 -10	5	0.9B	29
Stiff and moist bluish grey clay A-7-6(20)	364.2	3	1.1S	33
Soft to medium and moist bluish grey silty clay A-6(11-12)	361.7 -15	3	0.8B	36
Soft to medium and moist bluish grey silty clay A-6(9-10)	358.2	3	0.4B	31
([redacted])	354.7 -20	3	0.6B	36
Stiff and moist bluish grey clay A-7-6(15)		7	1.2B	32
Very stiff and moist brown clay A-7-6(20)	351.2 -25	12	2.2B	26
		12	1.7S	31
Stiff and moist grey mottled brown clay A-7-6(20)	347.2 -30	8	1.2S	33
		10	1.9B	30
Stiff and moist bluish grey clay A-7-6(20)	342.2 -35	6	1.1B	29
Medium and wet grey sandy clay loam	339.2	10	0.4S	21
	-40	9	0.7S	27
Medium and wet grey clay loam A-6(6-7)	332.7	7	0.5P	27
	-45	16	0.1P	22
Medium and wet well graded medium sand	329.7	26	4.5P	19
Hard and moist grey clay A-7-6(15) near clay shale	327.7 -50	90	4.5P	13
		53	2.1S	13
Medium and dry grey clay shale	321.2 -55	100 Blows in 12 inches		
Bottom of Hole = 57.5 feet	317.7	100 Blows in 5 inches		

Boring No. 6
Station 45+66
Offset 30' Lt.

Description	Elevation	N	Qu (t/sf)	w (%)
Ground Surface	375.6 0			
Medium and very moist grey mottled brown silty clay loam A-6(9-10)		Augered Sample		
Medium and very moist grey mottled brown silty clay A-6(11-12)	371.1 -5	4	0.7P	27
Stiff and moist grey mottled brown silty loam A-4(8)	369.6	18	1.5S	21
Medium and very moist grey mottled brown silty clay A-6(11-12)	365.6 -10	9	0.7B	26
Medium to stiff and moist grey mottled brown and black clay A-7-6(15-17)	363.6	5	1.1B	21
	-15	5	0.9S	31
Soft and very moist bluish grey silty clay A-6(10)	359.6	4	0.4B	32
	-20	4	0.5B	29
Soft and very moist bluish grey clay A-7-6(15)	354.6			
([redacted])				
Medium and moist grey clay A-7-6(17-20)	352.1 -25	4	0.5B	32
Stiff to very stiff and moist brown mottled grey clay A-7-6(20)	349.6	8	0.8B	28
		11	2.2B	28
	-30	10	2.4B	27
Stiff and moist grey clay A-7-6(17-20)	342.1 -35	9	1.9B	3?
		6	1.2B	3?
Medium and wet grey sandy clay loam	337.1 -40	8	0.9S	3?
		8	0.5P	2?
		5	1.4P	22
(See top sheet)	331.1 -45			

Boring No. 6 Cont.

Description	Elevation	N	Qu (t/sf)	w (%)
Loose and wet grey poorly graded fine sand	331.1 -45			
Medium and wet grey well graded coarse sand	330.1	22	–	17
Stiff to hard and slightly moist to moist grey clay A-7-6(15) near clay shale	329.1	26	1.9S	15
	-50	96	4.4S	11
Medium and slightly moist grey clay shale	324.6	100 Blows in 8 inches		
Medium and wet black soft coal	321.6 -55			
Medium and slightly moist grey clay shale	320.1 / 319.6	100 Blows in 6 inches		
Bottom of Hole = 56.0 feet	-60			

DESIGNED	R Kavert
CHECKED	
DRAWN	
CHECKED	

AUG 14 1961
EXAMINED W.E. Baumann — ENGINEER OF BRIDGES AND TRAFFIC STRUCTURES
PASSED E.L. Stuart — ENGINEER OF DESIGN
APPROVED [signature] — CHIEF HIGHWAY ENGINEER

N - Standard Penetration Test - Blows per foot to drive 2" O.D. Split Spoon Sampler with 140# hammer.

Qu - Unconfined Compressive Strength - t/sf

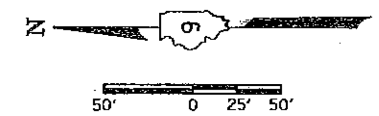
w - Water Content - percentage of oven dry weight %.

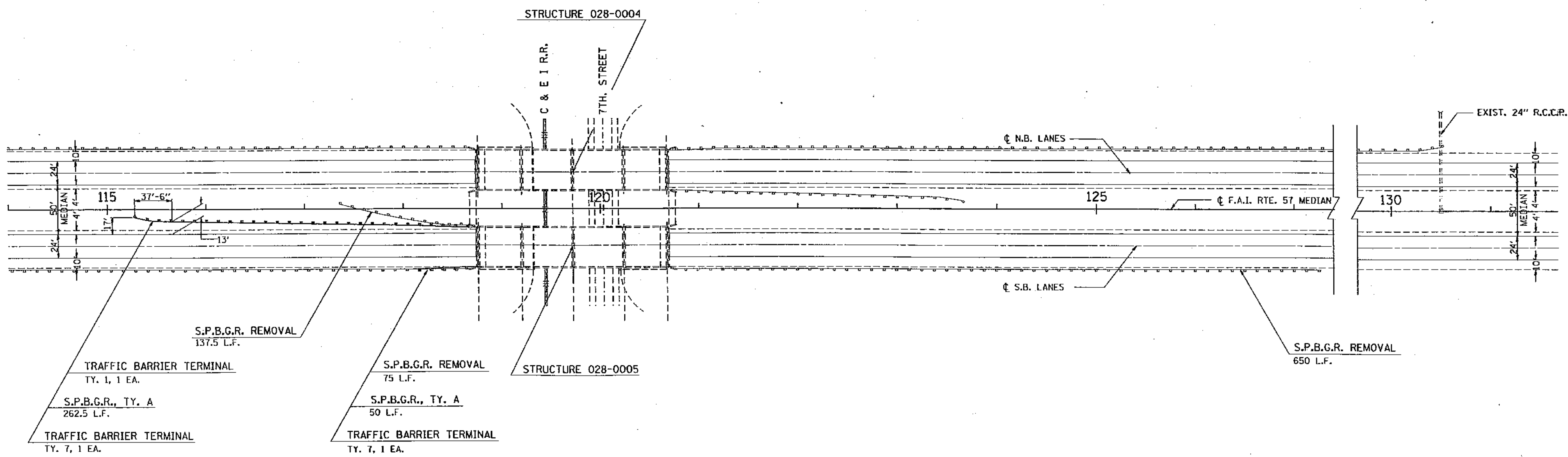
Type failure
B - Bulge Failure
S - Shear Failure
E - Estimated Value
P - Penetrometer Value

BORINGS
FAI RT 57 SEC 28-5B
FRANKLIN CO.
STATION 44+49

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	*	FRANKLIN	145	109
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

* 28 (5B-1, 5B, 2B, 1B) D-1;28 (5VB, 3VB-1) I-1





F.A.I. 57 OVER C & E I RAILROAD

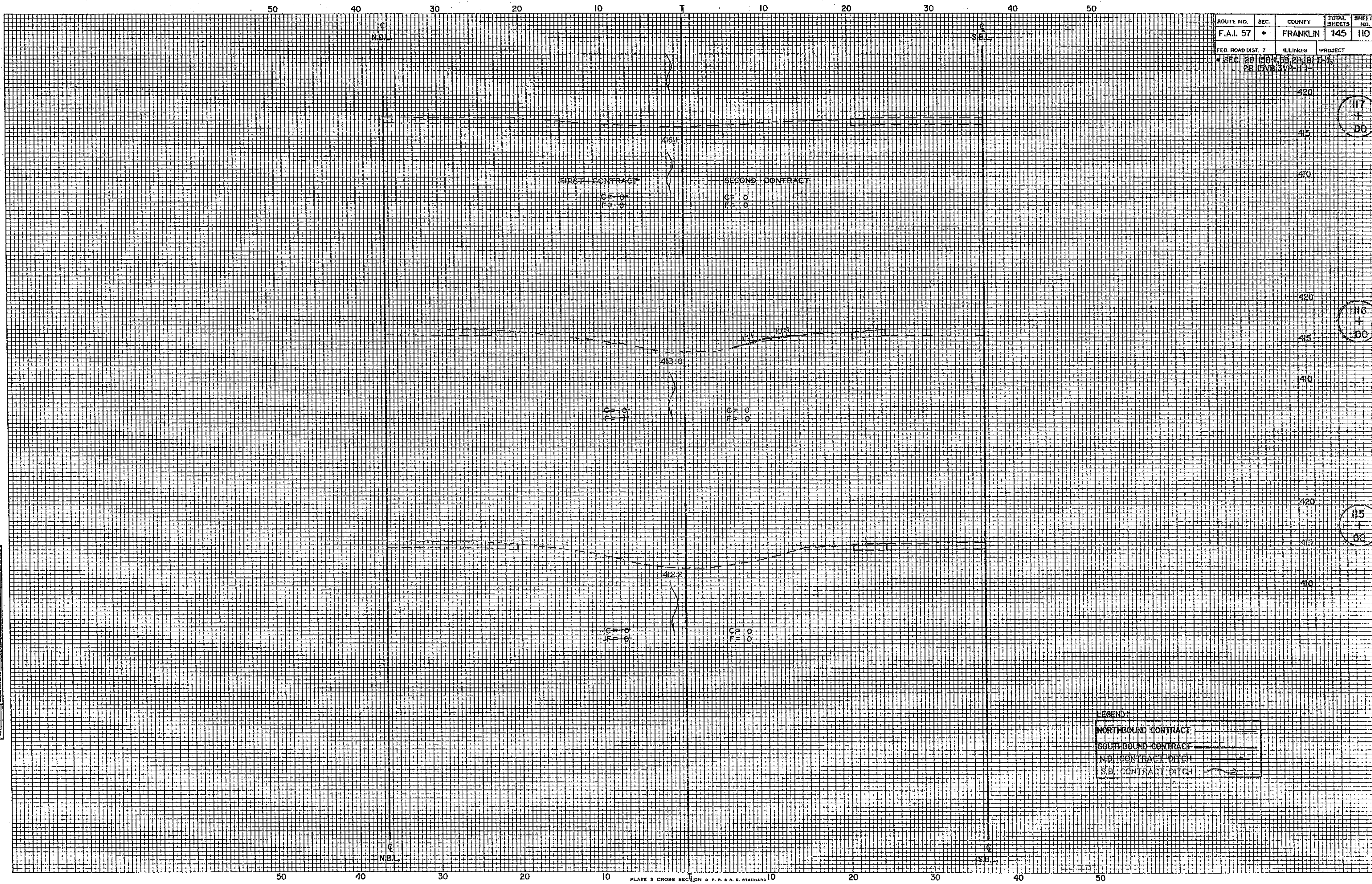
AND 7TH STREET

CONSTRUCTION ALONG SOUTHBOUND LANES

(SOUTHBOUND CONTRACT)

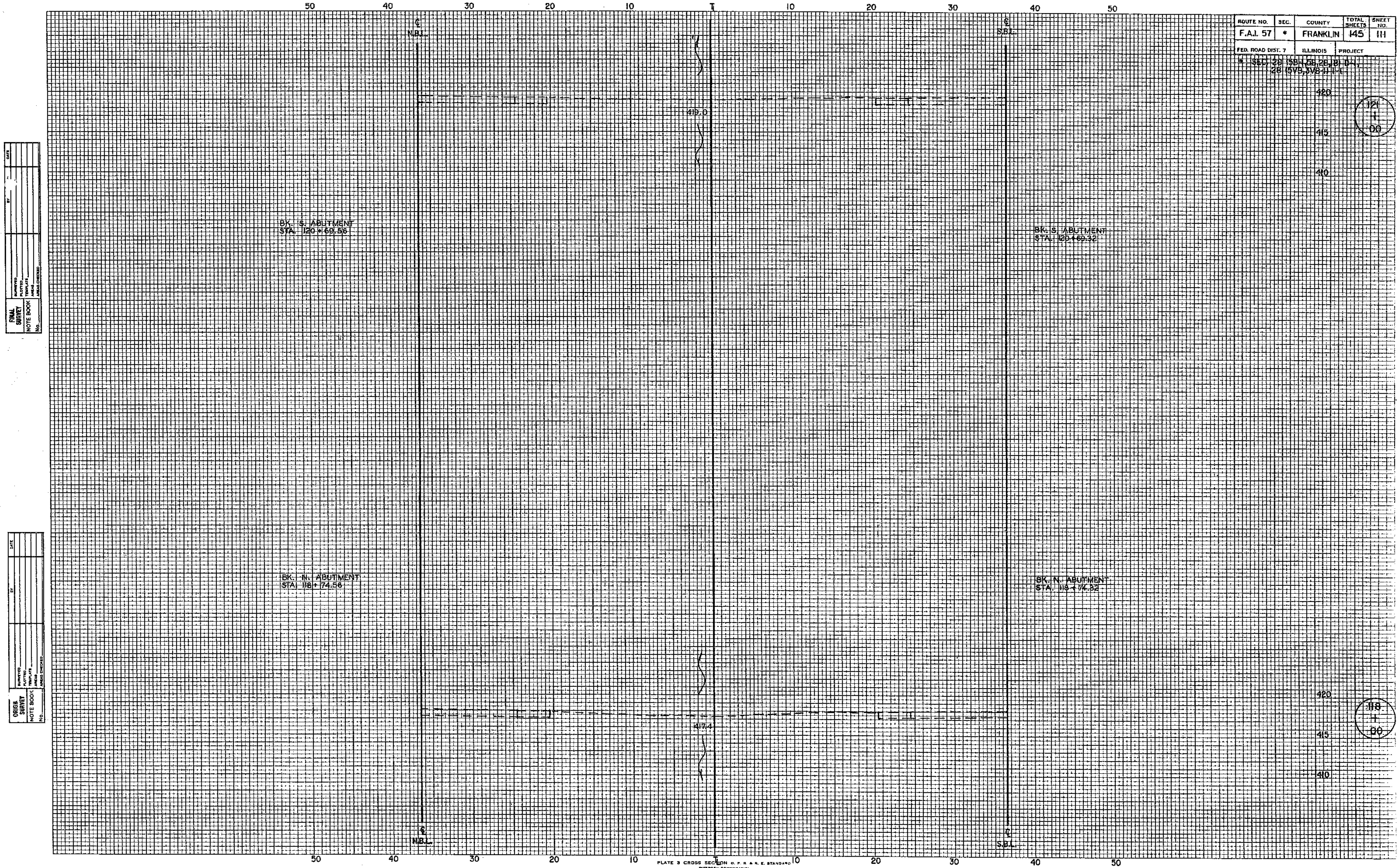
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	110
FED. ROAD DIST. 7		ILLINOIS	PROJECT	

* SEC. 28 (58-1,58,2R,(A) I-1, 28 (5VB,3VB-1) I-



C.& E.I. R.R. & 7TH ST.

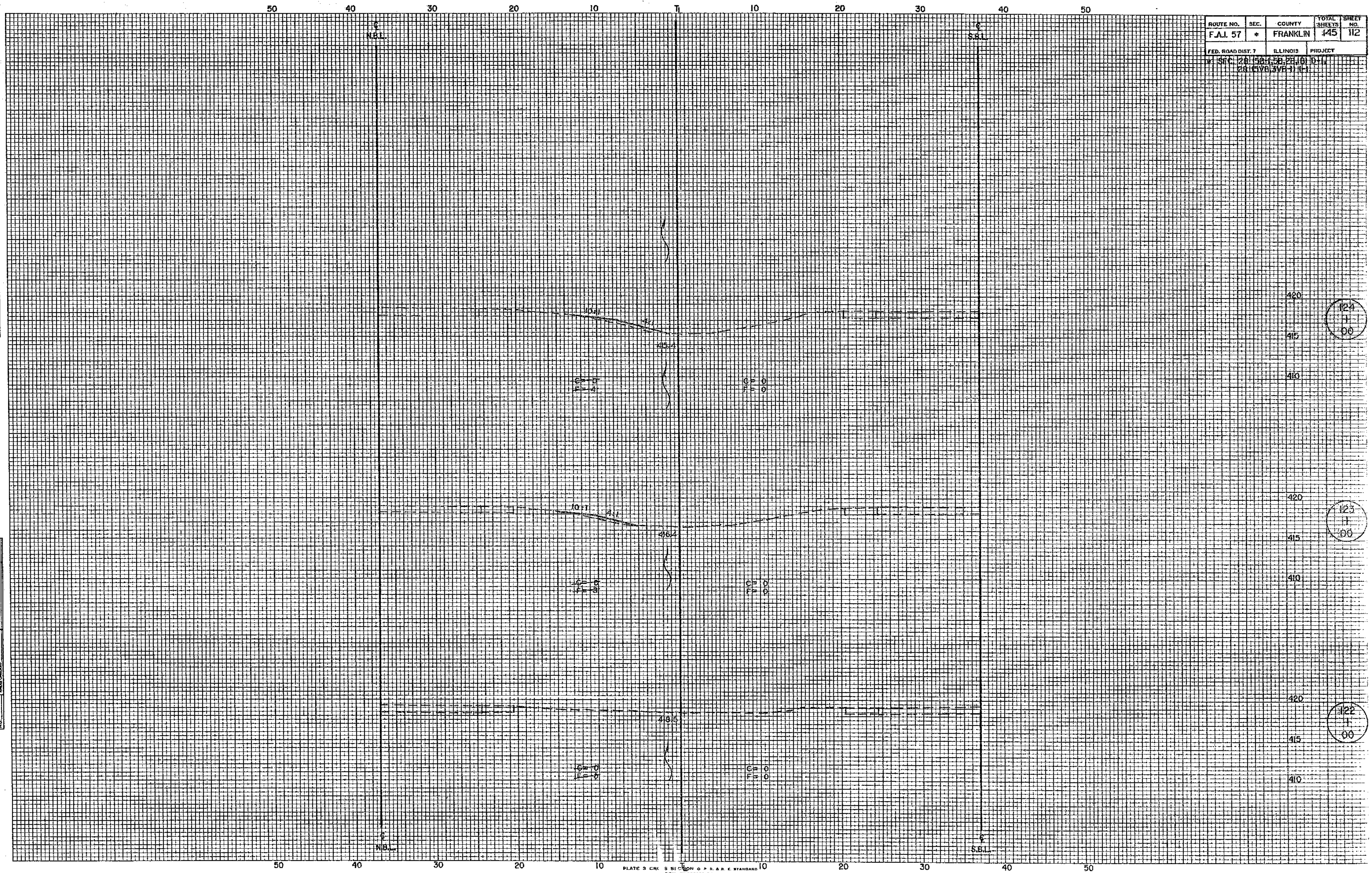
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	111
FED. ROAD DIST. 7		ILLINOIS	PROJECT	



C.& E.I. R.R. & 7TH ST.

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	112
FED. ROAD DIST. 7		ILLINOIS	PROJECT	

* SEC. 28 (5B-1,5B,2B,18) D-1,
28 (5VB,3VB-1) (I-1)

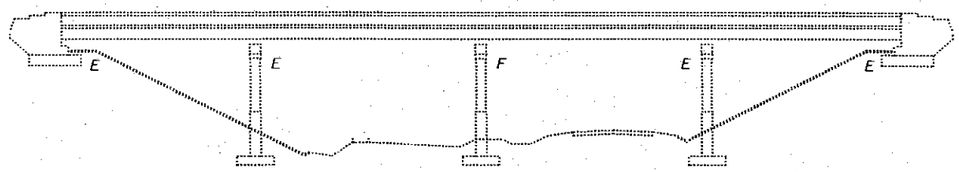


C.& E.I. R.R. & 7TH ST.

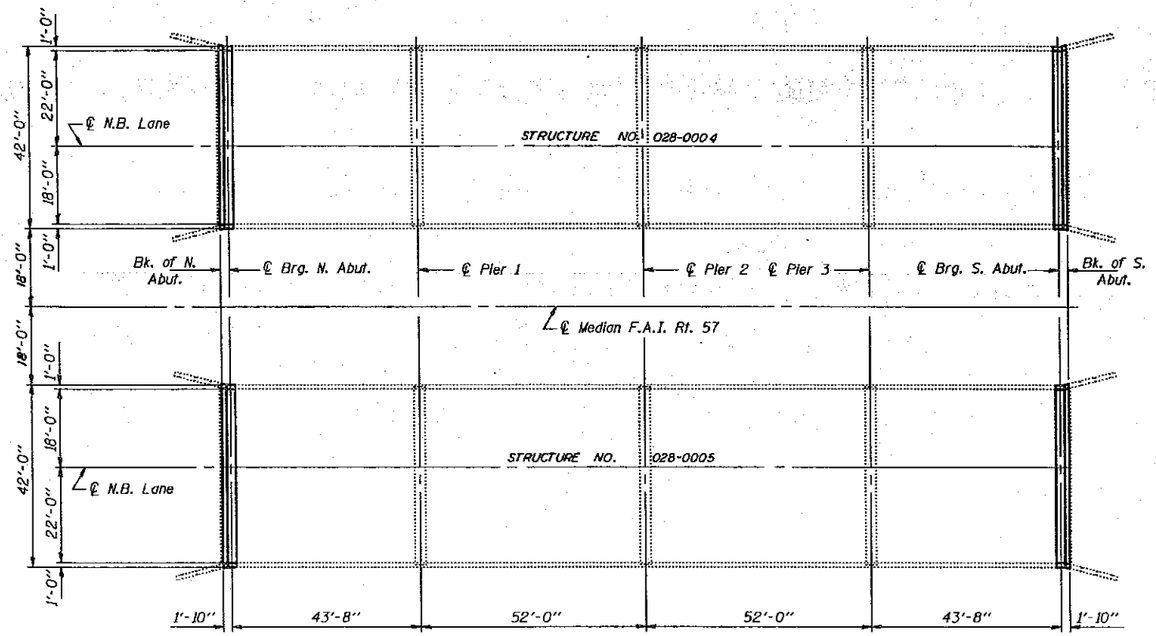
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57		FRANKLIN	145	113
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 1
2 SHEETS



ELEVATION



PLAN

GENERAL NOTES

Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53 Grade 60.

Traffic control shall be determined by the District.

Prior to pouring the new concrete for the deck, all loose rust, loose mill scale, and all other foreign material shall be removed from the embedded portions of flanges of girders. The removal shall be accomplished in accordance with the requirements of the SSPC Surface Preparation Specifications SP 3 for Power Tool Cleaning or SP2 for Hand Tool Cleaning. Cost shall be incidental to Concrete Removal.

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

The first bridge Post and Insert at each corner shall be removed, cleaned and reinstalled in new construction. Cost incidental to "Concrete Removal".

After fabrication all surfaces of the steel plates shall be given one shop coat of the zinc-silicate and vinyl paint system. Cost incidental to "Furnishing and Erecting Structural Steel".

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANITY
Concrete Removal	Cu. Yd.	20.4
Class X Concrete	Cu. Yd.	19.9
Reinforcement Bars, Epoxy Coated	Pound	2810
Preformed Joint Seal 4"	Lin. Ft.	165
Furnishing and Erecting Structural Steel	Pound	6360

NOTE: QUANTITIES IN THE ABOVE BILL OF MATERIAL ARE FOR BOTH BRIDGES.

DESIGNED	Paul Summer
CHECKED	BRT
DRAWN	Paul Summer
CHECKED	BRT

February 7 1992

EXAMINED _____ ENGINEER OF STRUCTURAL SERVICES

PASSED _____ ENGINEER OF BRIDGES AND STRUCTURES

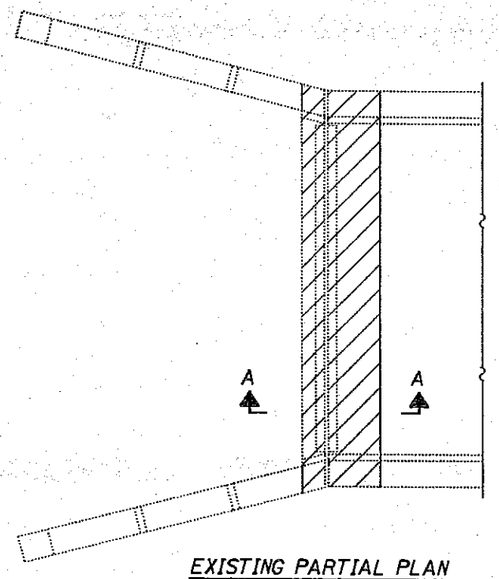
APPROVED _____ DIRECTOR OF HIGHWAYS

JOINT REPLACEMENT DETAILS
F.A.I. RT. 57 SEC. (28-5VB) I-1
FRANKLIN COUNTY
STA. 119+71.94
STR. No. ~~028-0004 &~~ 028-0005

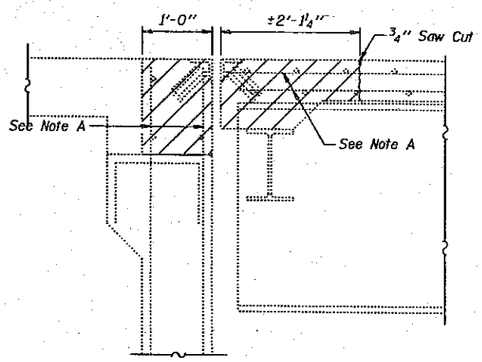
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57		FRANKLIN	145	114
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 2
2 SHEETS

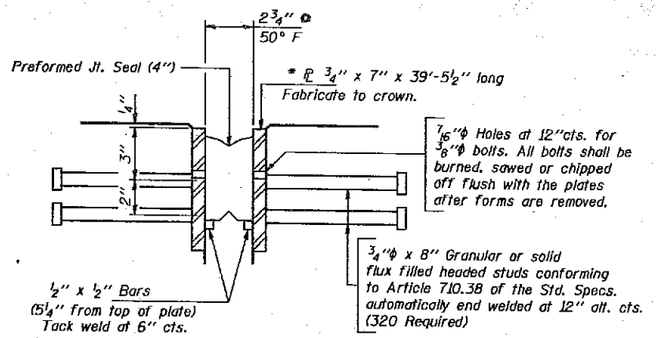


EXISTING PARTIAL PLAN



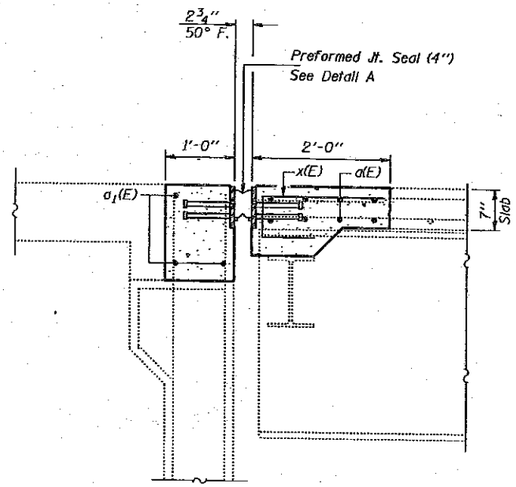
SECTION A-A

Note A: Existing Reinforcement shall be cleaned, straightened and incorporated into the new construction. Cost Incidental to "Concrete Removal.

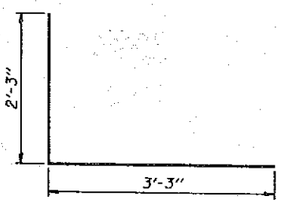


DETAIL A

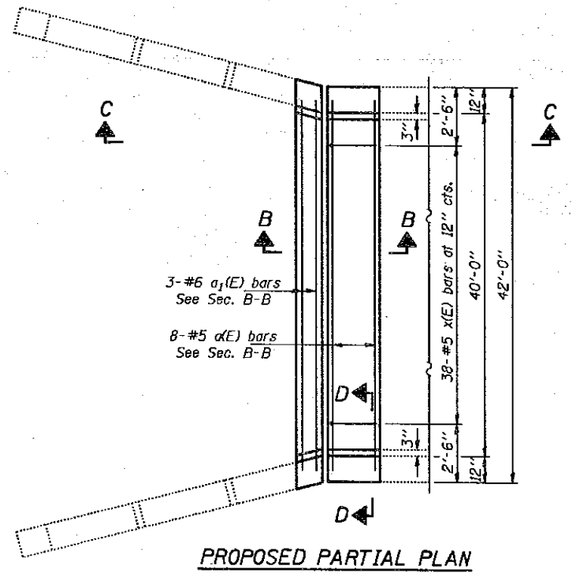
* Furnish in segments of 20 ft. moximum length. Maximum space between installed segments shall be 3/16". Seal space with Silicone Sealant suitable for Structural Steel.



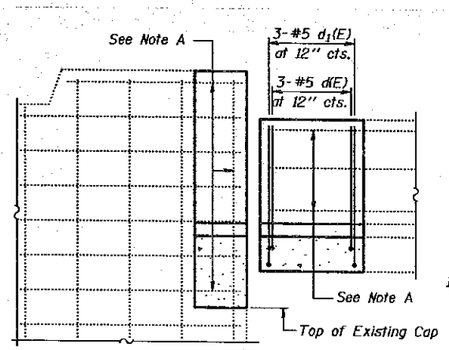
SECTION B-B



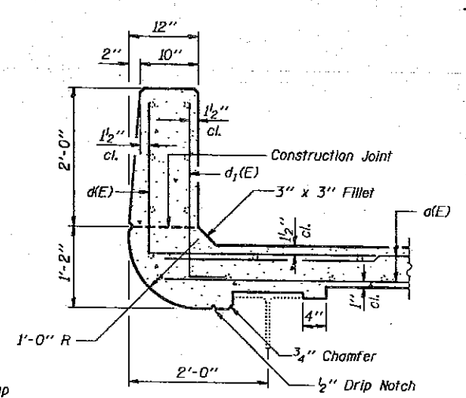
BAR d(E)



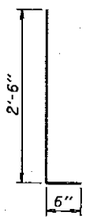
PROPOSED PARTIAL PLAN



SECTION C-C



SECTION D-D



BAR d1(E)

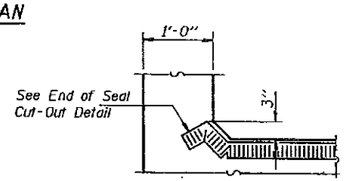
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	32	#5	41'-0"	
d1(E)	12	#6	41'-0"	
d(E)	24	#5	5'-6"	
d1(E)	24	#5	3'-0"	
x(E)	152	#5	3'-1"	
Concrete Removal			Cu. Yd.	20.4
Class X Concrete			Cu. Yd.	19.9
Reinforcement Bars, Epoxy Coated			Lbs.	2810

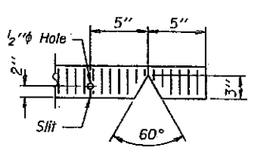
Notes: Reinforcment bars designated (E) shall be epoxy coated.
Hatched area indicates Concrete Removal.
QUANTITIES IN ABOVE BILL OF MATERIAL ARE FOR BOTH BRIDGES.

DESIGNED	Paul Summer
CHECKED	BRT
DRAWN	Paul Summer
CHECKED	BRT

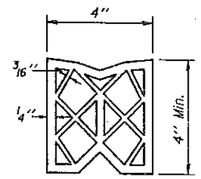
February 7 1992
EXAMINED Todd E. Ahrens
ENGINEER OF STRUCTURAL SERVICES
PASSED
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS



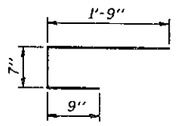
TYPICAL END OF SEAL TREATMENT



SEAL CUT-OUT



PREFORMED JOINT SEAL (4")

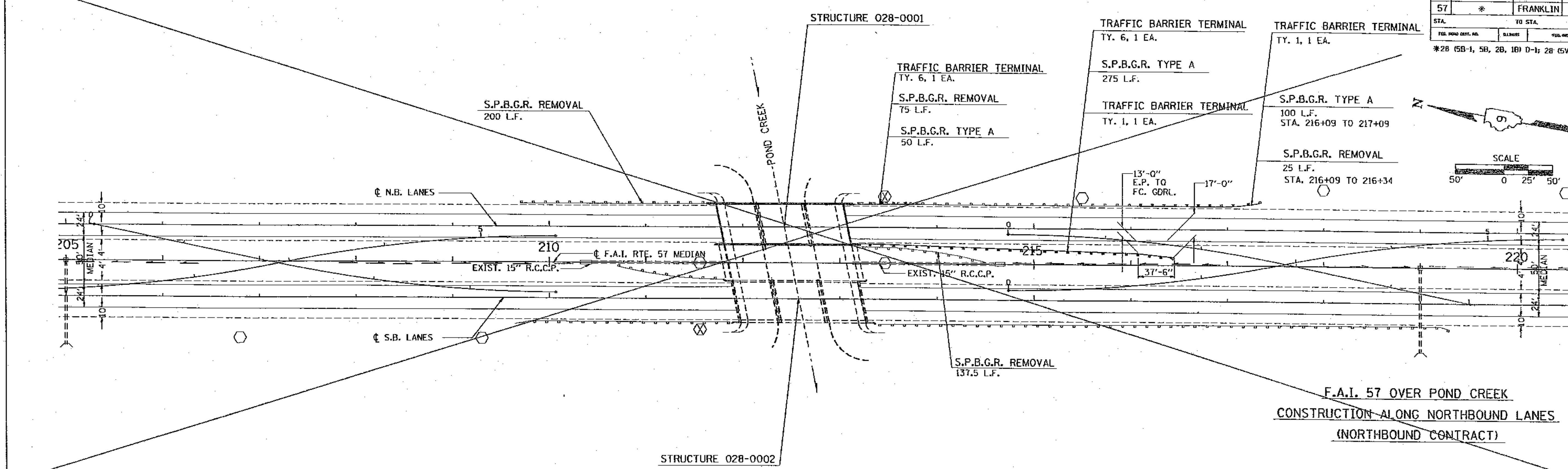


BAR x(E)

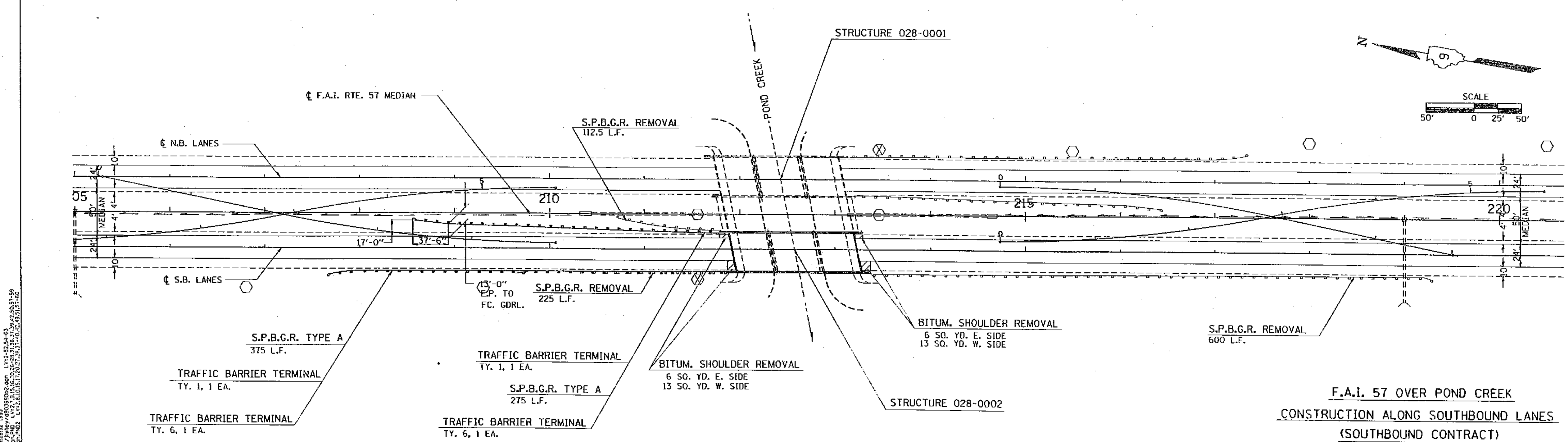
JOINT REPLACEMENT DETAILS
F.A.I. RT. 57 SEC. (28-5VB) I-1
FRANKLIN COUNTY
STA. 119+71.94
STR. No. ~~028-0004 &~~ 028-0005

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	*	FRANKLIN	145	115

*28 (5B-1, 5B, 2B, 1B) D-1; 28 (5VB, 3VB-1) I-1



F.A.I. 57 OVER POND CREEK
CONSTRUCTION ALONG NORTHBOUND LANES
(NORTHBOUND CONTRACT)



F.A.I. 57 OVER POND CREEK
CONSTRUCTION ALONG SOUTHBOUND LANES
(SOUTHBOUND CONTRACT)

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	*	FRANKLIN	145	116
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

* 28 (5B-1, 5B, 2B, 1B) 0-1; 28 (5VB, 3VB-1) 1-1

CURVE DATA
CROSSOVER NO. 2
P.I. STA= 3+44.85
Δ= 11° 32′ 56″
D= 4° 00′ 00″
R= 1432.39′
T= 144.85′
L= 288.72′
E= 7.31′
P.C. STA= 2+00.00
P.T. STA= 4+88.72

LEGEND
(TEMPORARY LIGHTING SYSTEM)

⬡ EXISTING WOODEN POLE WITH 250 WATT LUMINAIRE

⊗ EXISTING WOODEN POLE

CURVE DATA
CROSSOVER NO. 3

P.I. STA= 1+44.85	P.I. STA= 4+33.57
Δ= 11° 32′ 56″	Δ= 11° 32′ 56″
D= 4° 00′ 00″	D= 4° 00′ 00″
R= 1432.39′	R= 1432.39′
T= 144.85′	T= 144.85′
L= 288.72′	L= 288.72′
E= 7.31′	E= 7.31′
P.C. STA= 0+00.00	P.C. STA= 2+88.72
P.T. STA= 2+88.72	P.T. STA= 5+77.44

PLAN
NOTE BOOK
NO.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
R.O.W. CHECKED
CADD FILE NAME
BY
DATE

PROFILE
NOTE BOOK
NO.
SURVEYED
PLOTTED
GRADE CHECKED
B.M. NOTED
STRUCTURE NOTATIONS CHKD
BY
DATE

F.A.I. RTE. 57 OVER POND CREEK

FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	*	FRANKLIN	145	117
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

* 28 (5B-1, 5B, 2B, 1B) D-1; 28 (5VB, 3VB-1) I-1

N

SCALE
50' 0 25' 50'

PLAN
SURVEYED BY
PLOTTED DATE
DRAWN BY
CHECKED BY
NOTE BOOK
NO.

POND CREEK

EQ. STA. 214+73.47 BK. (31' LT. ℄ I-57) =
P.C. STA. 0+00 AH. (℄ CROSSOVER NO. 4)

CURVE DATA
CROSSOVER NO. 4
P.I. STA= 1+44.85
Δ= 11° 32' 56"
D= 4° 00' 00"
R= 1432.39'
T= 144.85'
L= 288.72'
E= 7.31'
P.C. STA= 0+00.00
P.T. STA= 2+88.72

℄ CROSSOVER NO. 1
(N.B. CLOSED)

EQ. P.T. STA. 5+77.44 BK. (℄ CROSSOVER NO. 1) =
31' LT. STA. 220+47.01 AH. (℄ I-57)

EXIST. 15" R.C.C.P.

℄ F.A.I. RTE. 57 MEDIAN

EXIST. 24" R.C.C.P.

EQ. P.I. STA. 4+83.50 BK. (℄ CROSSOVER NO. 4) =
37' RT. STA. 219+51.08 AH. (℄ I-57)

EXIST. 24" R.C.C.P.

EQ. STA. 214+73.47 BK. (27' RT. ℄ I-57) =
P.C. STA. 0+00 AH. (℄ CROSSOVER NO. 1)

CURVE DATA
CROSSOVER NO. 1
P.I. STA= 1+44.85
Δ= 11° 32' 56"
D= 4° 00' 00"
R= 1432.39'
T= 144.85'
L= 288.72'
E= 7.31'
P.C. STA= 0+00.00
P.T. STA= 2+88.72

P.I. STA= 4+33.57
Δ= 11° 32' 56"
D= 4° 00' 00"
R= 1432.39'
T= 144.85'
L= 288.72'
E= 7.31'
P.C. STA= 2+88.72
P.T. STA= 5+77.44

℄ CROSSOVER NO. 4
(S.B. CLOSED)

PROFILE
SURVEYED BY
PLOTTED DATE
DRAWN BY
CHECKED BY
NOTE BOOK
NO.
STRUCTURE NOTEBOOKS

EXIST. PROFILE ALONG MEDIAN EDGE OF S.B. PAVEMENT

PROFILE ALONG ℄ CROSSOVER NO. 1

EXIST. PROFILE ALONG MEDIAN EDGE OF N.B. PAVEMENT

EQ. STA. 214+73.47 BK. (27' RT. ℄ I-57) =
P.C. STA. 0+00 AH. (℄ CROSSOVER NO. 1)

PROFILE OF ORIGINAL GROUND LINE ALONG ℄ CROSSOVER NO. 1

EXIST. BITUMINOUS MIXTURE COMPLETE, 14"

+0.04%

EQ. P.T. STA. 5+77.44 BK. (℄ CROSSOVER NO. 1) =
31' LT. STA. 220+47.01 AH. (℄ I-57)

EQ. STA. 214+73.47 BK. (31' LT. ℄ I-57) =
P.C. STA. 0+00 AH. (℄ CROSSOVER NO. 4)

EXIST. PROFILE ALONG MEDIAN EDGE OF N.B. PAVEMENT

PROFILE ALONG ℄ CROSSOVER NO. 4

EXIST. BITUMINOUS MIXTURE COMPLETE, 14"

+0.05%

EQ. P.I. STA. 4+83.50 BK. (℄ CROSSOVER NO. 4) =
37' RT. STA. 219+51.08 AH. (℄ I-57)

EXIST. PROFILE ALONG MEDIAN EDGE OF S.B. PAVEMENT

PROFILE OF ORIGINAL GROUND LINE ALONG ℄ CROSSOVER NO. 4

400
395

214 0 1 2 3 4 220 221

398.61 398.56 398.55 398.59 398.65 398.71 398.72 398.92 398.69

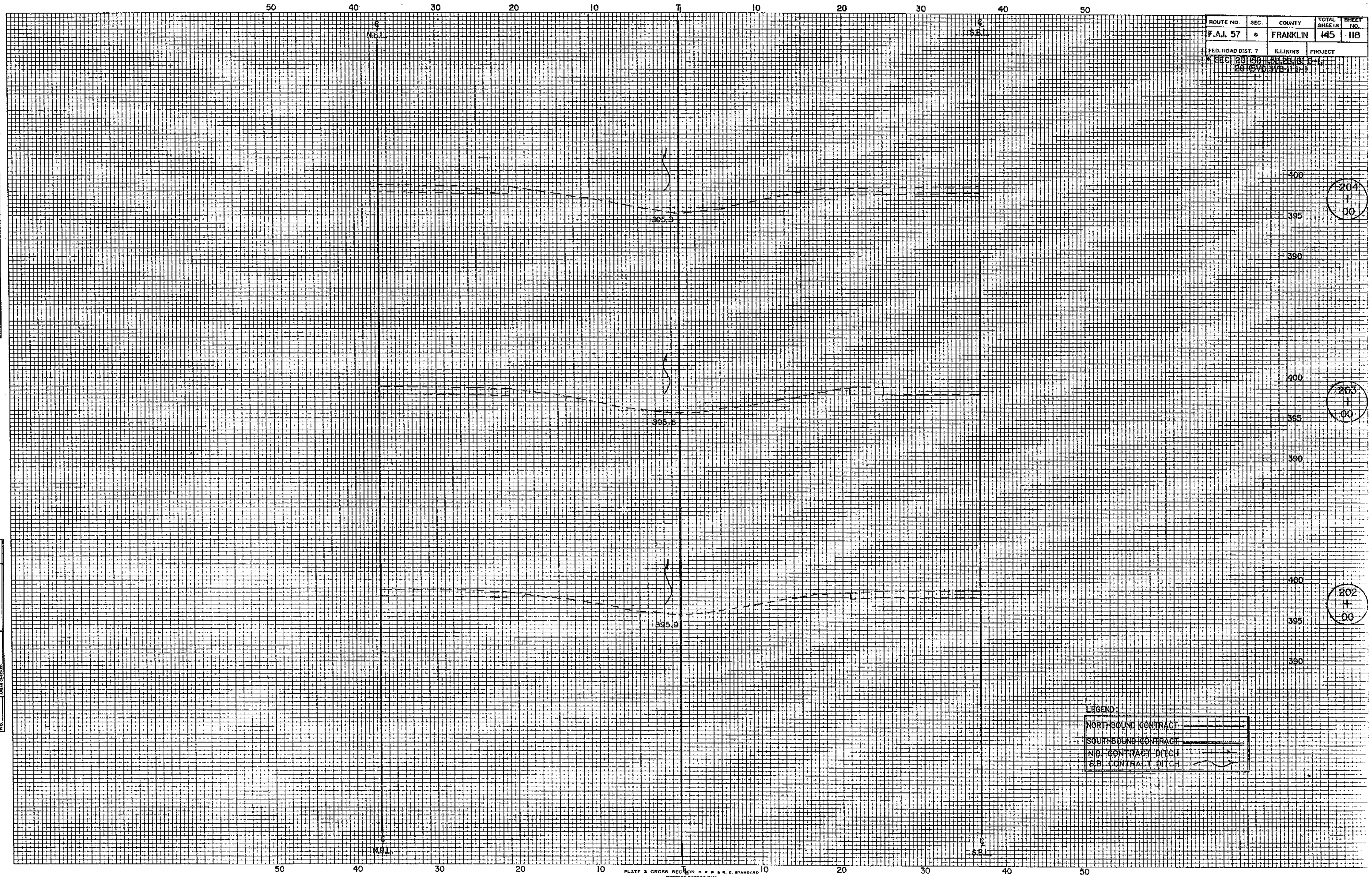
+31.51 +23.58

VIEW PP2PND
Fri Mar 19 09:25:51 1993
/usr/projects/rt57/pp2pnd/sheets/pp2pnd.sht LVP=1:1,3=15:17=53
/usr/projects/rt57/pp2pnd/sheets/pp2pnd.sht LVP=1:1,3=1:1,7:20,25:27,28,34,37=40,42,43,51,57=60,63

F.A.I. RTE. 57 OVER POND CREEK

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	118
FED. ROAD DIST. 7		ILLINOIS	PROJECT	

* SEC. 28 (5B-1, 5B-2B, 6) D-1, 29 (6VB, 3VB-1) I-1



FINAL SURVEY — NOTE BOOK No. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

ORIGIN. SURVEY — NOTE BOOK No. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

PLATE 3 CROSS SECTION O. P. R. & R. C. STANDARD DIETZGEN CORPORATION

POND CREEK

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	119
FED. ROAD DIST. 7		ILLINOIS	PROJECT	

* SEC. 28 (5B-1,5B,2B,1B) D-1, 28 (5VB,3VB-1) I-1

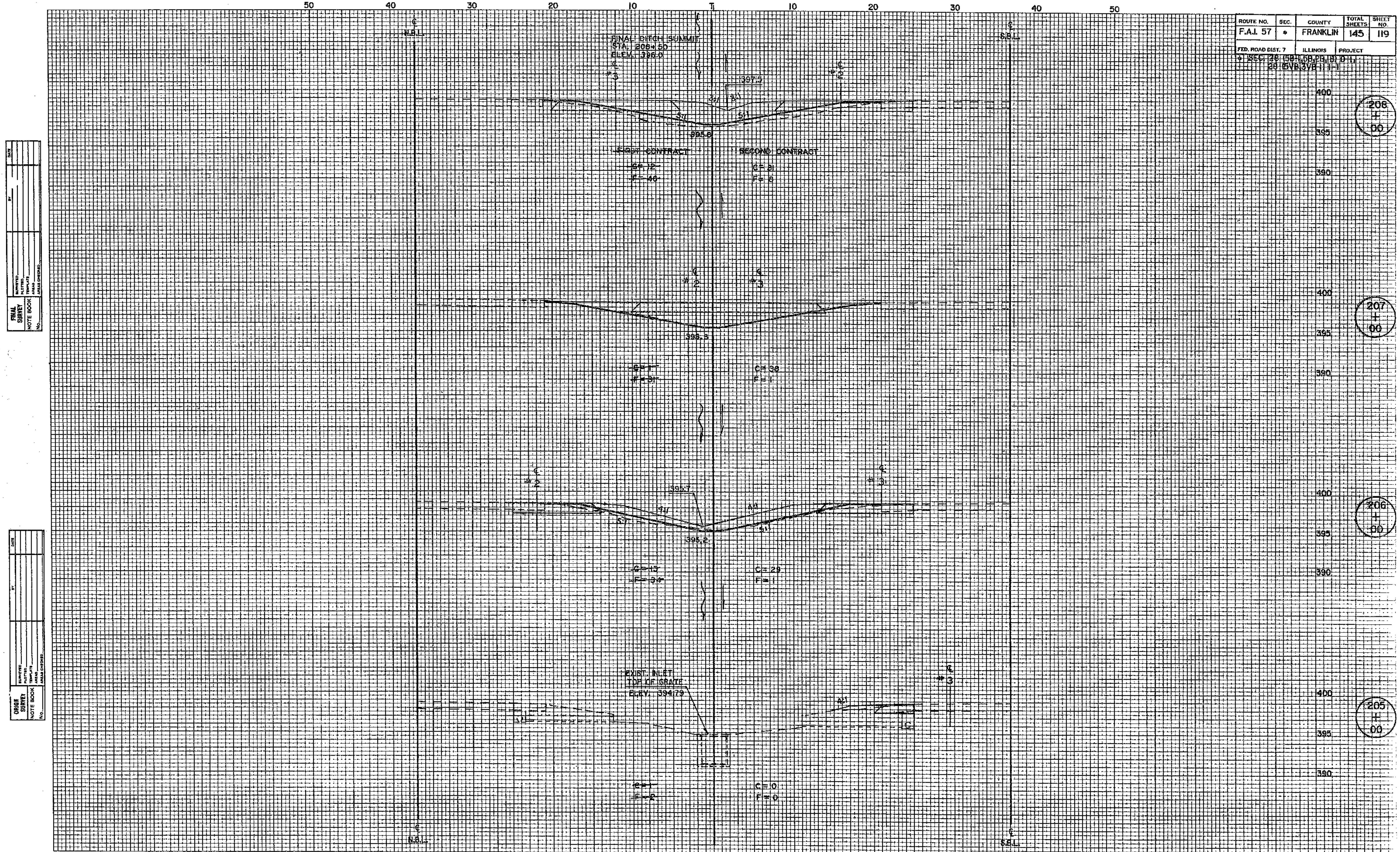
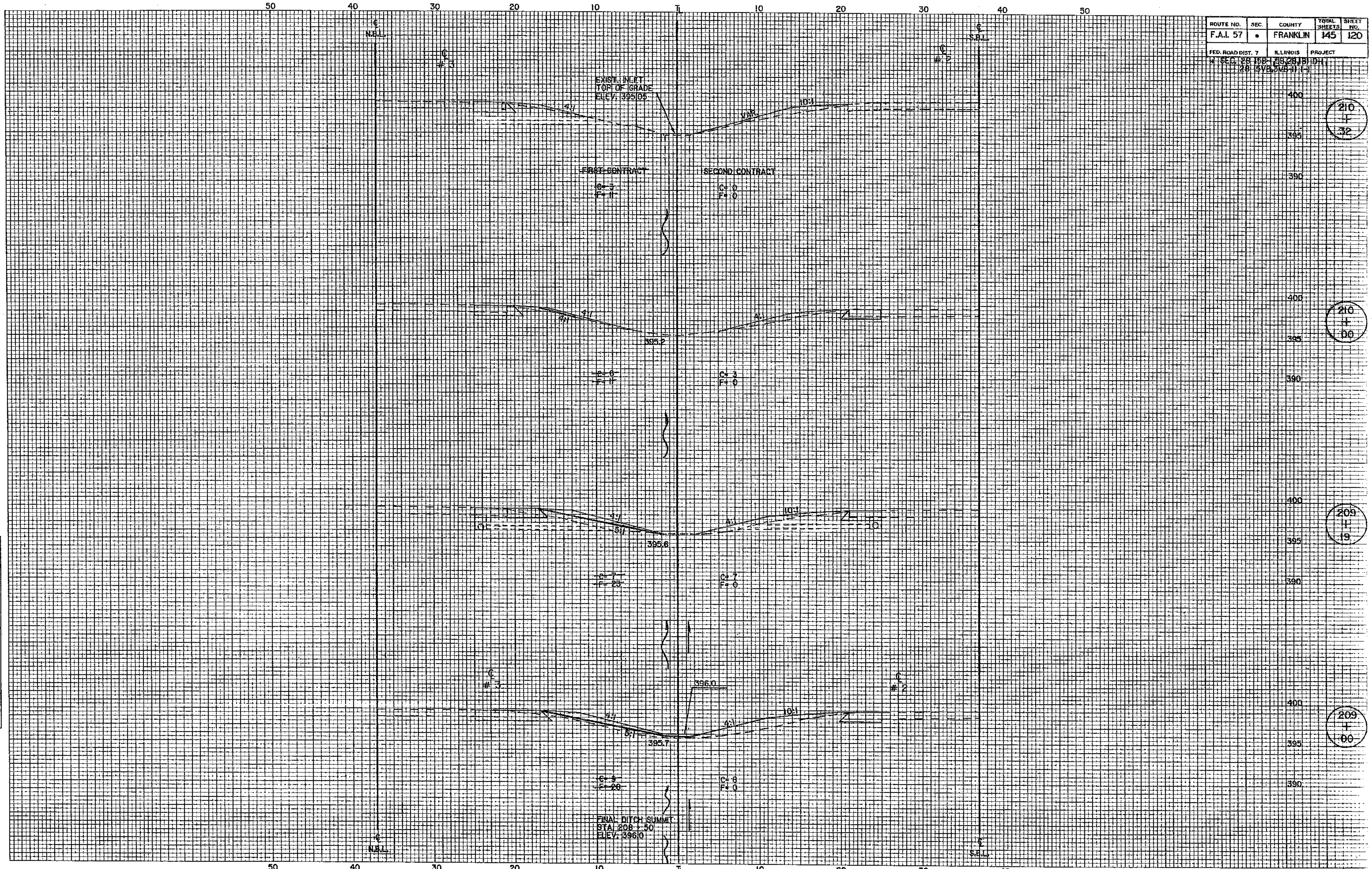


PLATE 3 CROSS SECTION O. P. R. & R. R. STANDARD
DIETZGEN CORPORATION

POND CREEK

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	120
FED. ROAD DIST. 7		ILLINOIS	PROJECT	

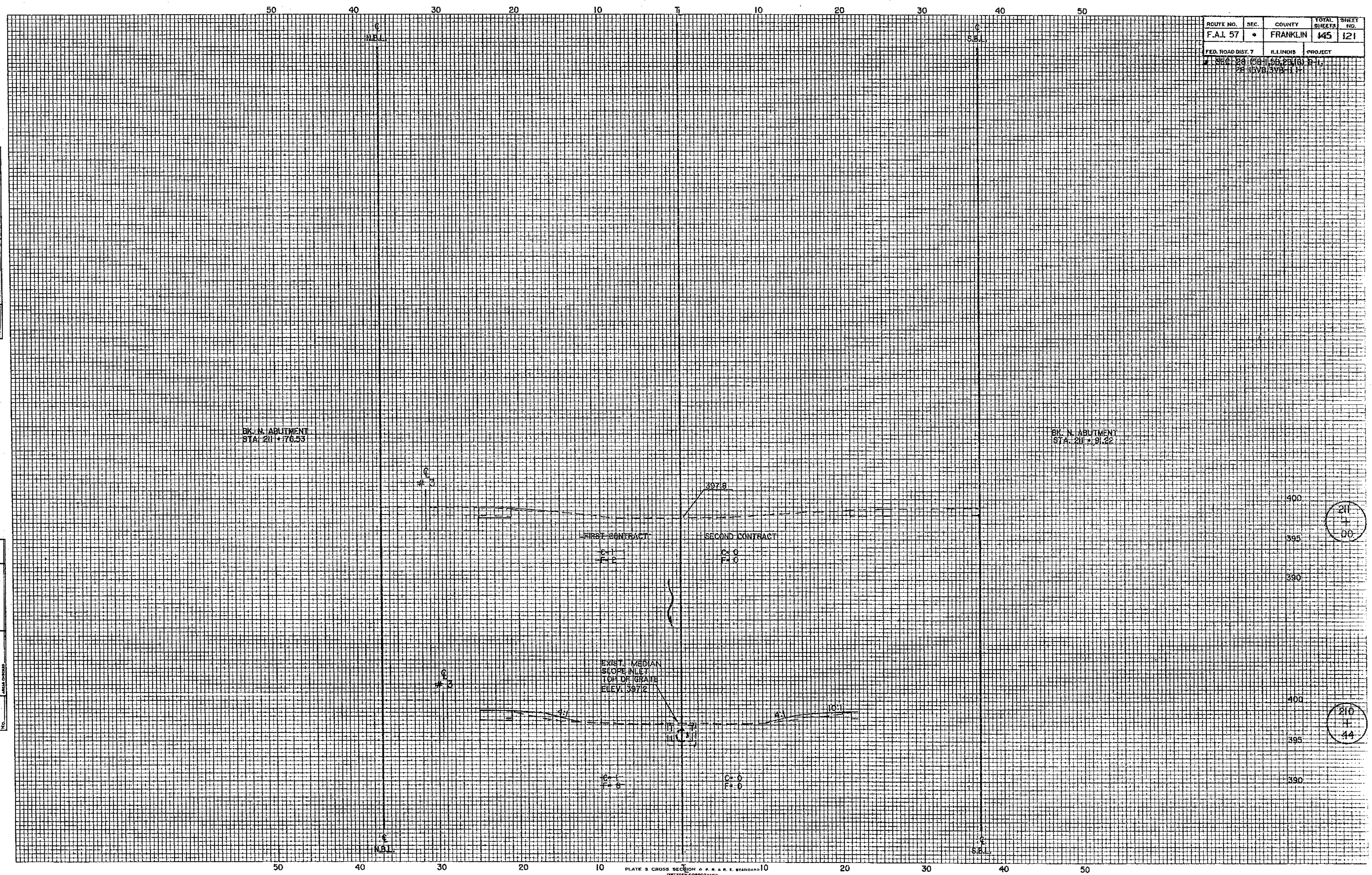


FINAL SURVEY NOTE BOOK No.

ORIGIN SURVEY NOTE BOOK No.

POND CREEK

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	121
FED. ROAD DIST. 7		ILLINOIS	PROJECT	



FINAL SURVEY NOTE BOOK No. SURVEYED PLOTTED TEMPLATE AREAS AREAS CHECKED BY DATE

ORIGINAL SURVEY NOTE BOOK No. SURVEYED PLOTTED TEMPLATE AREAS AREAS CHECKED BY DATE

POND CREEK

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	122
FED. ROAD DIST. 7		ILLINOIS	PROJECT	

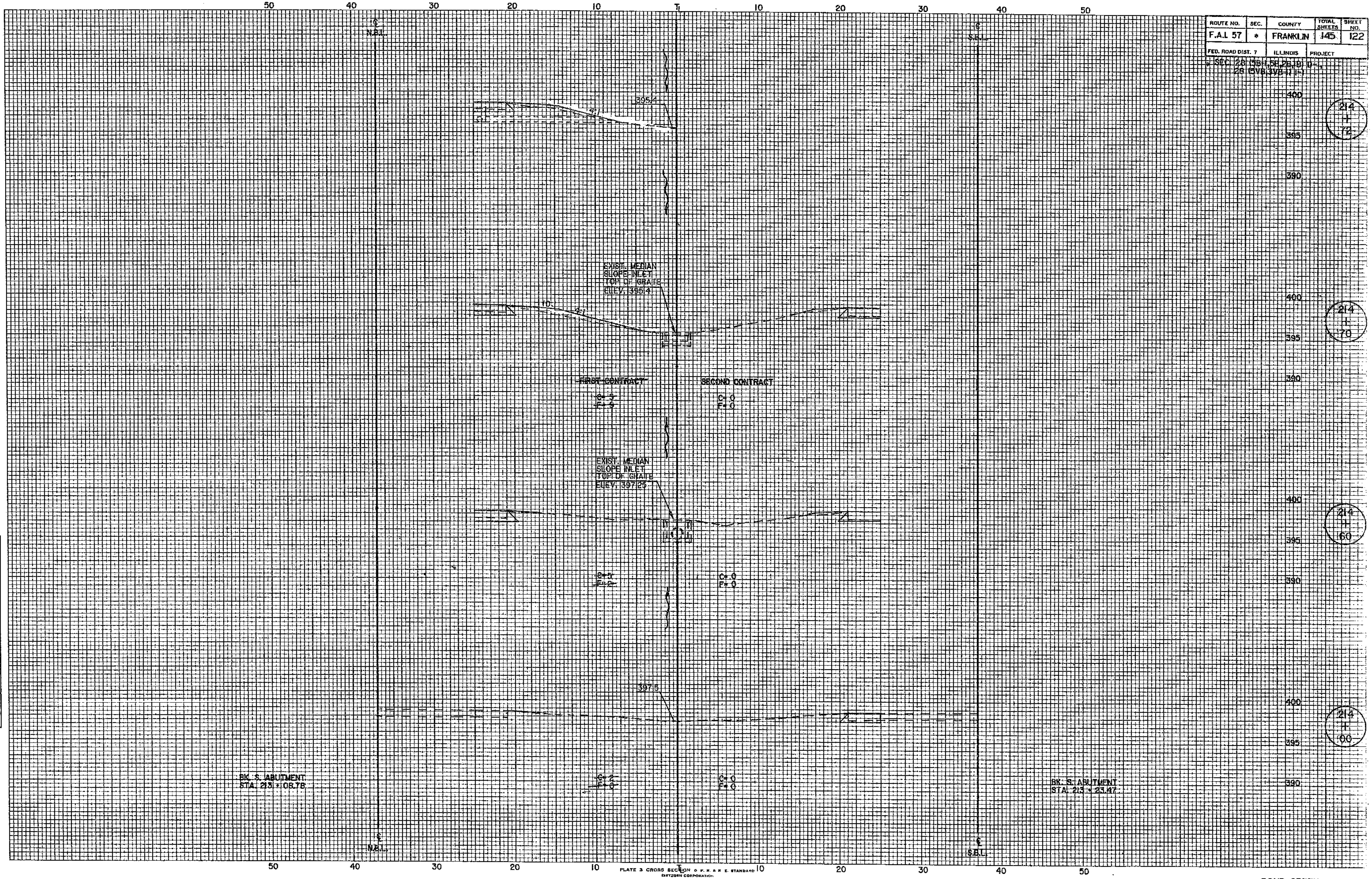
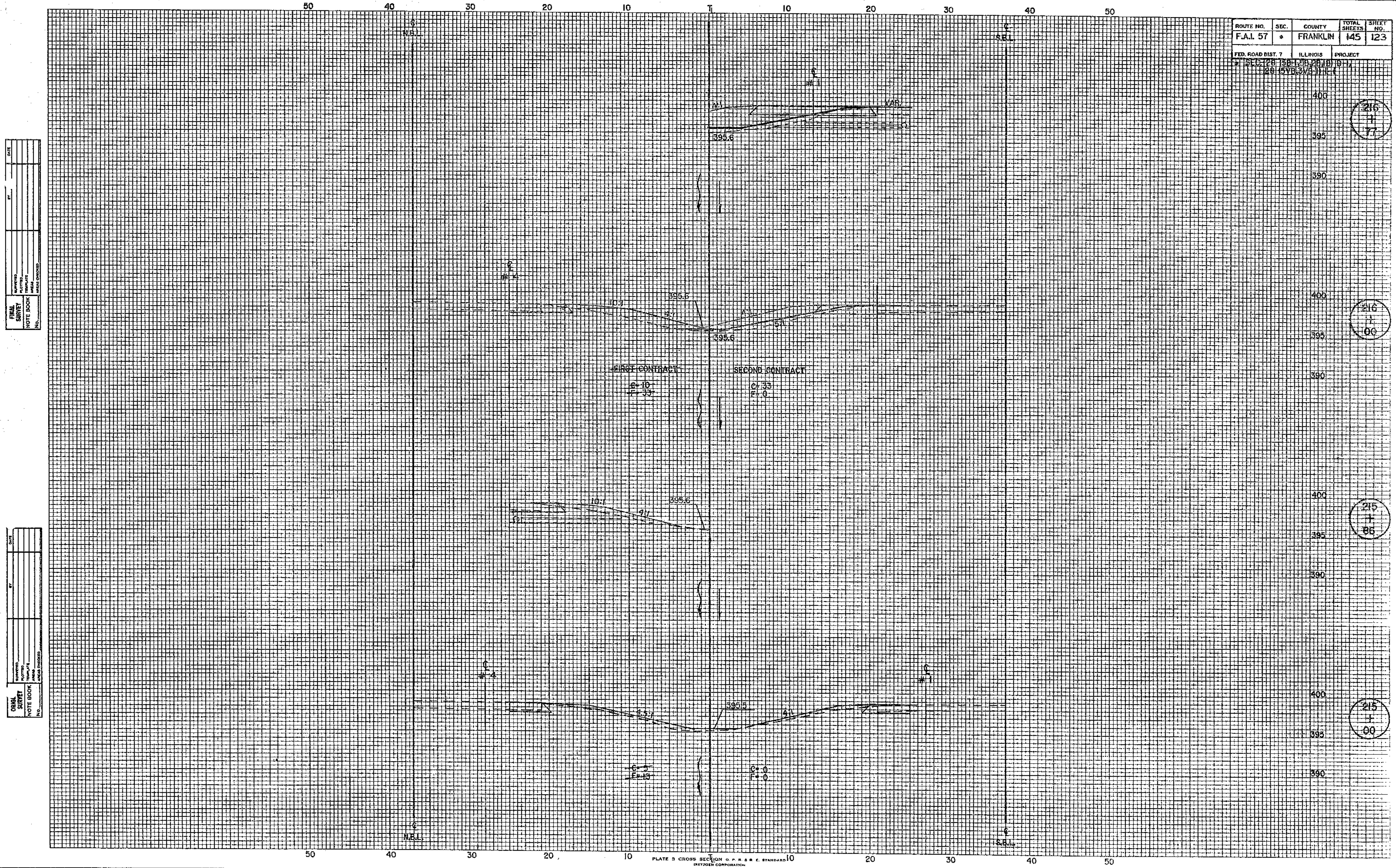


PLATE 3 CROSS SECTION

POND CREEK

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	123
FED. ROAD DIST. 7		ILLINOIS	PROJECT	



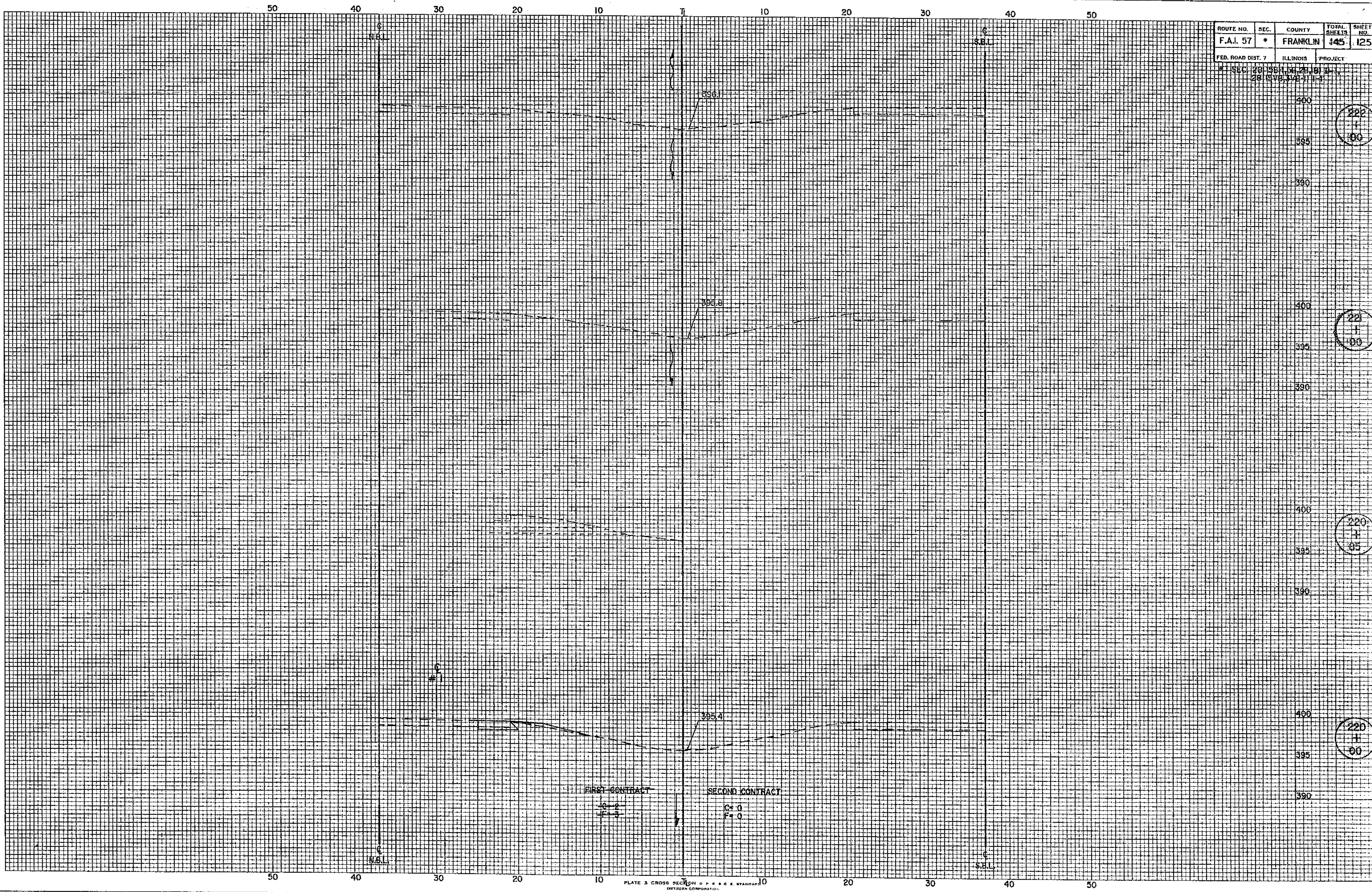
POND CREEK

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	124
FED. ROAD DIST. 7		ILLINOIS	PROJECT	

PLATE 3 CROSS SECTION D. P. R. & R. E. STANDARD DIETZGEN CORPORATION

POND CREEK

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	125
FED. ROAD DIST. 7		ILLINOIS	PROJECT	



FINAL SURVEY | NOTE BOOK No. | SURVEYED | PLOTTED | TEMPLATE | AREAS | AREAS CHECKED | BY | DATE

ORIGIN. SURVEY | NOTE BOOK No. | SURVEYED | PLOTTED | TEMPLATE | AREAS | AREAS CHECKED | BY | DATE

POND CREEK

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	*	FRANKLIN	145	126
FED. ROAD DIST. 7		ILLINOIS	PROJECT	

* SEC. 28 (5B-1,5B,2B,1B) D-1,
28 (5VB,3VB-1)-

FINAL SURVEY	SURVEYED		
NOTE BOOK	PLOTTED		
No.	TEMPLATE		
	AREAS		
	AREAS CHECKED	BY	DATE

ORIG. SURVEY	SURVEYED		
NOTE BOOK	PLOTTED		
No.	TEMPLATE		
	AREAS		
	AREAS CHECKED	BY	DATE

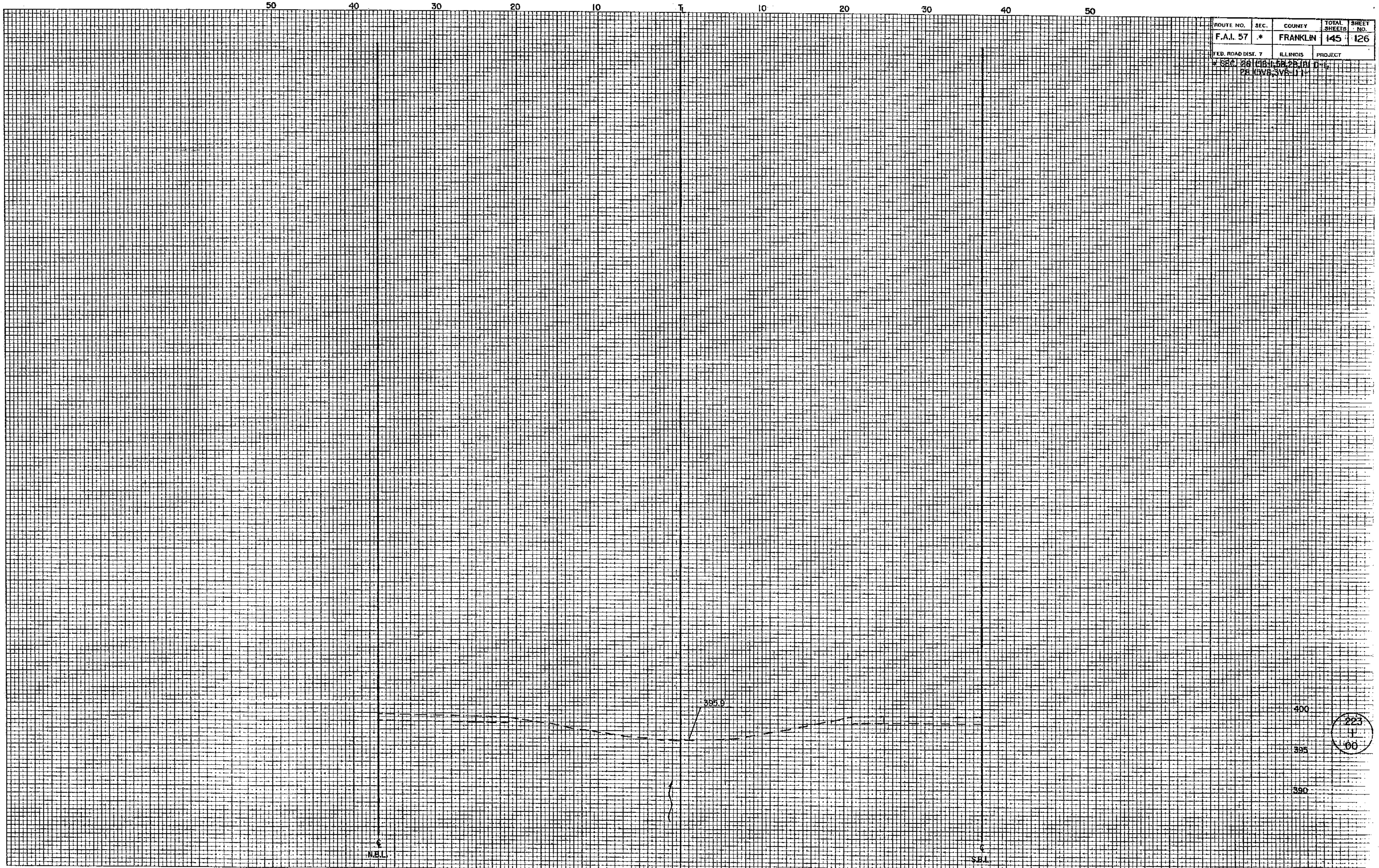


PLATE 3 CROSS SECTION O. P. R. & N. Z. STANDARD
DIETZGEN CORPORATION

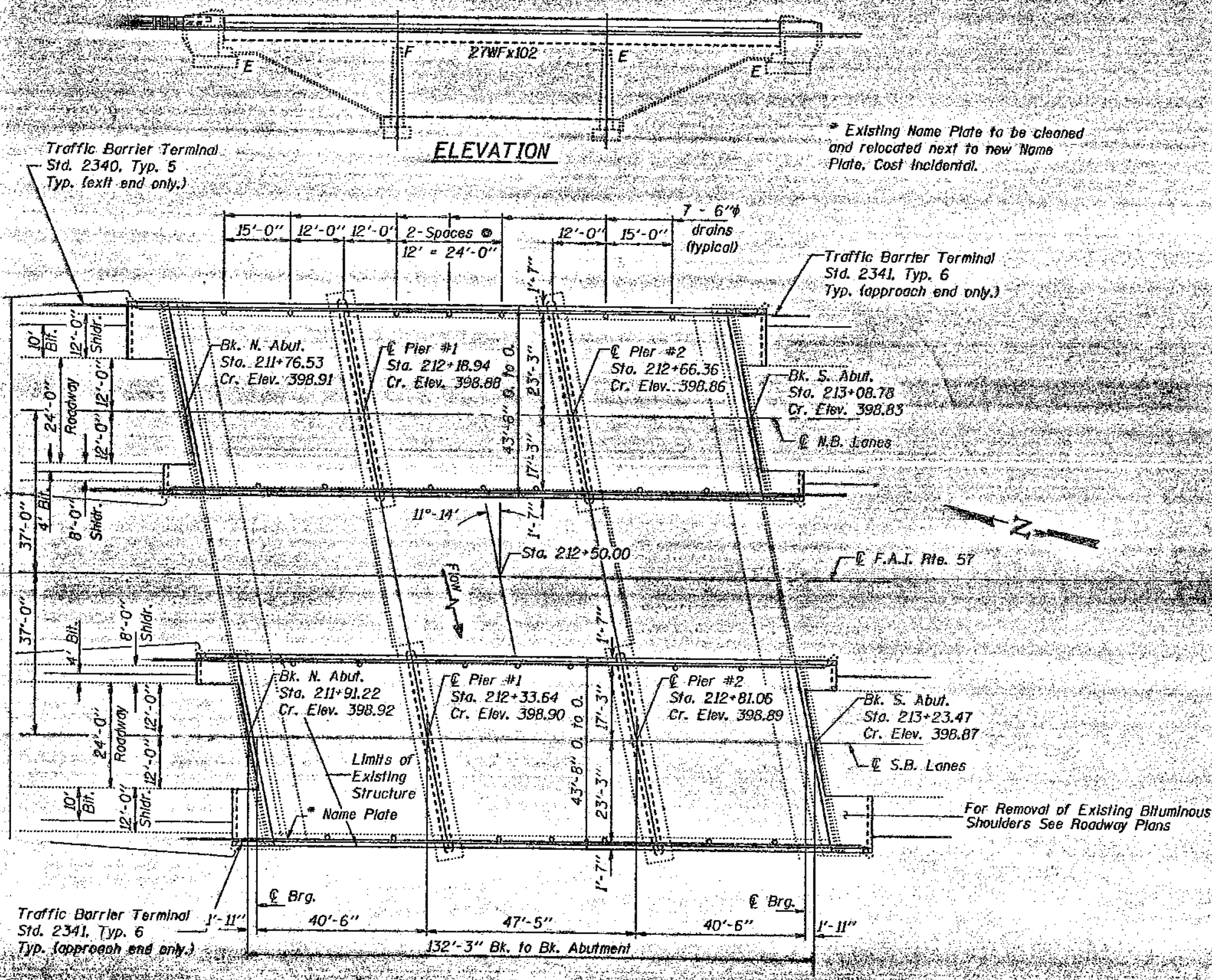
POND CREEK

Bench Mark: "□" Cut in S.W. corner of East hubguard of Pond Creek Bridge - Northbound Lane, Sta. 212+50 - Elevation 399.40
Existing Structure: 028-0002 (S.B.) Built as FAI Route 57, Sec. 28-5B-1 in 1961. Superstructure consists of R.C. deck supported on a 3 span continuous W.F. beams. Temporary median cross-overs shall be utilized to divert traffic over adjacent bridge 028-0001 (N.B.) during reconstruction.

No Salvage

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 — 16 SHEETS



* Existing Name Plate to be cleaned and relocated next to new Name Plate. Cost incidental.

STATION 212+50.00
REBUILT 19 BY
STATE OF ILLINOIS
F.A.I. RT. 57 SEC. (28-5B-DD-1)
F.A. PROJECT: IM-57-2(193)...
LOADING HS20 & ALT.
STR. NO. 028-0002

NAME PLATE
See Std. 2113

GENERAL NOTES

Field welding of construction accessories will not be permitted to the bottom flange of beams nor to 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.

For cantilever forming bracket, See Special Provisions.

Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53 Grade 60.

Plan dimensions and details relative to existing structure have been taken from existing plans and field survey and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

All beams shall be lowered $2\frac{1}{8}$" from original position. (See Sht. #8 of 16)

Two $\frac{1}{8}$" adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims. For Type I Elastomeric Bearings, shims of the dimensions of top plate shall be provided and placed as detailed.

The Contractor will be required to mark, on top of the concrete deck, the locations of the top flange of all the steel beams, prior to any removal of the bridge concrete deck. Saw cutting directly over the top of the beam flanges is not permitted.

All top surfaces of the abutments shall receive Bridge Seat Sealer.

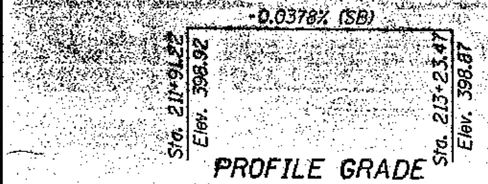
The zinc-silicate primer shall be used for shop painting of new Structural Steel.

Prior to Welding Studs and pouring the new concrete for the deck, all loose rust, loose mill scale and all other foreign material shall be removed from the embedded portions of flanges of stringers. The removal shall be accomplished in accordance with the requirements of the SSPC Surface Preparation Specifications SP-3 for power tool cleaning or SP-2 for hand tool cleaning. Cost shall be incidental to "Removal of Existing Concrete Deck".

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUB	SUPER	TOTAL
Concrete Removal	Cu. Yd.		9	9
** Removal of Existing Concrete Deck	Each	1		1
Floor Drains	Each	14		14
Preformed Joint Seal $2\frac{1}{2}$"	Lin. Ft.	44		44
Preformed Joint Seal 4"	Lin. Ft.	44		44
Class X Concrete Superstructure	Cu. Yd.	187.1		187.1
*** Protective Coat	Sq. Yd.	690		690
Elastomeric Bearing Assembly, Type I	Each	14		14
Elastomeric Bearing Assembly, Type II	Each	7		7
Structural Steel	Lbs.	9,530		9,530
Stud Shear Connectors	Each	3,150		3,150
Reinforcement Bars, Epoxy Coated	Pound	44,150		44,150
Name Plates	Each	1		1
Bridge Seat Sealer	Sq. Ft.	177		177
Jack and Remove Existing Bearings	Each	28		28
Bridge Deck Grooving	Sq. Yd.	555		555
Structure Excavation	Cu. Yd.		22.0	22.0

** Cost includes removal of existing railing.
*** Quantity includes bridge deck surface.



PROFILE GRADE
F.A. Route 57 (along ℄ pavement) (South Bound Structure)

Note:
Only the South bound structure is included in this contract. North bound structure shown for information only.

DESIGN SPECIFICATIONS

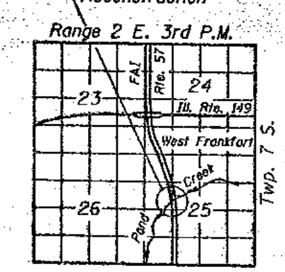
1989 AASHTO with 1990 & 1991 Interims & Seismic Retrofitting Guidelines for Highway Bridges.

LOADING HS 20-44 & Alt.

Allow 25#/ sq. ft. for future wearing surface.

DESIGN STRESSES

FIELD UNITS
New Construction
f'_c = 3,500 psi
f_y = 60,000 psi (Reinf.)
f_y = 33,000 psi (Existing Structural Steel)
f_y = 36,000 psi (New Structural Steel)



LOCATION SKETCH

DESIGNED	Richard J. Gilbert
CHECKED	[signature]
DRAWN	Paul W. Sweet
CHECKED	RJC RTB DSV

May 20 1993
EXAMINED [signature] ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES
APPROVED DIRECTOR OF HIGHWAYS

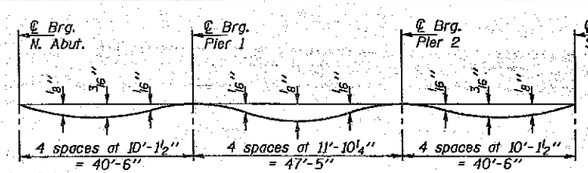
STATE OF ILLINOIS LICENSED STRUCTURAL ENGINEER 081-004625

GENERAL PLAN
F.A.I. ROUTE 57 OVER
POND CREEK
F.A.I. ROUTE 57 SECTION (28-5B-DD-1)
FRANKLIN COUNTY
STATION 212+50.00
STRUCTURE NUMBER 028-0002 (S.B.)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-5B-1)D-1	FRANKLIN		128
F.A.S. 817	C-1			
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 2
16 SHEETS



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only)

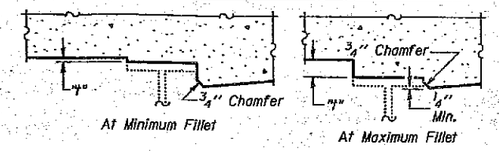
Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown below.

℄ BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. OF N. ABUT.	21187.868	-16.875	398.695	398.695
℄ BRG. N. ABUT.	21189.785	-16.875	398.694	398.694
A	21199.785	-16.875	398.690	398.702
B	21209.785	-16.875	398.687	398.701
C	21219.785	-16.875	398.683	398.690
℄ BRG. PIER 1	21230.285	-16.875	398.679	398.679
D	21240.285	-16.875	398.675	398.680
E	21250.285	-16.875	398.671	398.681
F	21260.285	-16.875	398.667	398.676
G	21270.285	-16.875	398.664	398.668
℄ BRG. PIER 2	21277.702	-16.875	398.661	398.661
H	21287.702	-16.875	398.657	398.664
I	21297.702	-16.875	398.653	398.668
J	21307.702	-16.875	398.650	398.681
℄ BRG. S. ABUT.	21318.202	-16.875	398.646	398.646
BK. OF S. ABUT.	21320.119	-16.875	398.645	398.645

EAST LONGITUDINAL BONDED CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. OF N. ABUT.	21188.837	-12.000	398.796	398.796
℄ BRG. N. ABUT.	21190.754	-12.000	398.795	398.795
A	21200.754	-12.000	398.791	398.803
B	21210.754	-12.000	398.788	398.802
C	21220.754	-12.000	398.784	398.791
℄ BRG. PIER 1	21231.254	-12.000	398.780	398.780
D	21241.254	-12.000	398.776	398.781
E	21251.254	-12.000	398.772	398.782
F	21261.254	-12.000	398.769	398.777
G	21271.254	-12.000	398.765	398.769
℄ BRG. PIER 2	21278.671	-12.000	398.762	398.762
H	21288.671	-12.000	398.758	398.765
I	21298.671	-12.000	398.754	398.769
J	21308.671	-12.000	398.751	398.762
℄ BRG. S. ABUT.	21319.171	-12.000	398.747	398.747
BK. OF S. ABUT.	21321.088	-12.000	398.746	398.746



To determine "I": 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 "I" above top flange of beams.

FILLET HEIGHTS

℄ BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. OF N. ABUT.	21189.184	-10.250	398.830	398.830
℄ BRG. N. ABUT.	21191.101	-10.250	398.829	398.829
A	21201.101	-10.250	398.825	398.836
B	21211.101	-10.250	398.821	398.836
C	21221.101	-10.250	398.818	398.825
℄ BRG. PIER 1	21231.601	-10.250	398.814	398.814
D	21241.601	-10.250	398.810	398.815
E	21251.601	-10.250	398.806	398.815
F	21261.601	-10.250	399.802	398.811
G	21271.601	-10.250	398.798	398.802
℄ BRG. PIER 2	21279.018	-10.250	398.796	398.796
H	21289.018	-10.250	398.792	398.799
I	21299.018	-10.250	398.788	398.802
J	21309.018	-10.250	398.784	398.796
℄ BRG. S. ABUT.	21319.518	-10.250	398.780	398.780
BK. OF S. ABUT.	21321.435	-10.250	398.780	398.780

℄ BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. OF N. ABUT.	21190.500	-3.625	398.909	398.909
℄ BRG. N. ABUT.	21192.417	-3.625	398.908	398.908
A	21202.417	-3.625	398.904	398.916
B	21212.417	-3.625	398.901	398.915
C	21222.417	-3.625	398.897	398.904
℄ BRG. PIER 1	21232.917	-3.625	398.893	398.893
D	21242.917	-3.625	398.889	398.894
E	21252.917	-3.625	398.885	398.895
F	21262.917	-3.625	398.881	398.890
G	21272.917	-3.625	398.878	398.882
℄ BRG. PIER 2	21280.334	-3.625	398.875	398.875
H	21290.334	-3.625	398.871	398.878
I	21300.334	-3.625	398.867	398.882
J	21310.334	-3.625	398.864	398.875
℄ BRG. S. ABUT.	21320.834	-3.625	398.860	398.860
BK. OF S. ABUT.	21322.751	-3.625	398.859	398.859

℄ ROADWAY AND P. G.

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. OF N. ABUT.	21191.220	0.000	398.920	398.920
℄ BRG. N. ABUT.	21193.137	0.000	398.919	398.919
A	21203.137	0.000	398.915	398.927
B	21213.137	0.000	398.912	398.926
C	21223.137	0.000	398.908	398.915
℄ BRG. PIER 1	21233.637	0.000	398.904	398.904
D	21243.637	0.000	398.900	398.905
E	21253.637	0.000	398.896	398.906
F	21263.637	0.000	398.893	398.901
G	21273.637	0.000	398.889	398.893
℄ BRG. PIER 2	21281.054	0.000	398.886	398.886
H	21291.054	0.000	398.882	398.889
I	21301.054	0.000	398.878	398.893
J	21311.054	0.000	398.875	398.886
℄ BRG. S. ABUT.	21321.554	0.000	398.871	398.871
BK. OF S. ABUT.	21323.471	0.000	398.870	398.870

℄ BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. OF N. ABUT.	21191.816	3.000	398.912	398.912
℄ BRG. N. ABUT.	21193.733	3.000	398.911	398.911
A	21203.733	3.000	398.907	398.919
B	21213.733	3.000	398.904	398.918
C	21223.733	3.000	398.900	398.907
℄ BRG. PIER 1	21234.233	3.000	398.896	398.896
D	21244.233	3.000	398.892	398.897
E	21254.233	3.000	398.888	398.898
F	21264.233	3.000	398.885	398.893
G	21274.233	3.000	398.881	398.885
℄ BRG. PIER 2	21281.650	3.000	398.878	398.878
H	21291.650	3.000	398.874	398.881
I	21301.650	3.000	398.870	398.885
J	21311.650	3.000	398.867	398.878
℄ BRG. S. ABUT.	21322.150	3.000	398.863	398.863
BK. OF S. ABUT.	21324.067	3.000	398.862	398.862

℄ BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. OF N. ABUT.	21193.132	9.625	398.839	398.839
℄ BRG. N. ABUT.	21195.049	9.625	398.838	398.838
A	21205.049	9.625	398.834	398.846
B	21215.049	9.625	398.831	398.845
C	21225.049	9.625	398.827	398.834
℄ BRG. PIER 1	21235.549	9.625	398.823	398.823
D	21245.549	9.625	398.819	398.824
E	21255.549	9.625	398.815	398.825
F	21265.549	9.625	398.811	398.820
G	21275.549	9.625	398.808	398.812
℄ BRG. PIER 2	21282.966	9.625	398.805	398.805
H	21292.966	9.625	398.801	398.808
I	21302.966	9.625	398.797	398.811
J	21312.966	9.625	398.794	398.805
℄ BRG. S. ABUT.	21323.486	9.625	398.790	398.790
BK. OF S. ABUT.	21325.383	9.625	398.789	398.789

WEST LONGITUDINAL BONDED CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. OF N. ABUT.	21193.603	12.000	398.794	398.794
℄ BRG. N. ABUT.	21195.520	12.000	398.793	398.793
A	21205.520	12.000	398.790	398.801
B	21215.520	12.000	398.786	398.800
C	21225.520	12.000	398.782	398.789
℄ BRG. PIER 1	21236.020	12.000	398.778	398.778
D	21246.020	12.000	398.774	398.779
E	21256.020	12.000	398.771	398.780
F	21266.020	12.000	398.767	398.775
G	21276.020	12.000	398.763	398.767
℄ BRG. PIER 2	21283.437	12.000	398.760	398.760
H	21293.437	12.000	398.756	398.763
I	21303.437	12.000	398.753	398.767
J	21313.437	12.000	398.749	398.760
℄ BRG. S. ABUT.	21323.937	12.000	398.745	398.745
BK. OF S. ABUT.	21325.854	12.000	398.744	398.744

℄ BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. OF N. ABUT.	21194.447	16.250	398.705	398.705
℄ BRG. N. ABUT.	21196.364	16.250	398.705	398.705
A	21206.364	16.250	398.701	398.712
B	21216.364	16.250	398.697	398.711
C	21226.364	16.250	398.693	398.701
℄ BRG. PIER 1	21236.864	16.250	398.689	398.689
D	21246.864	16.250	398.686	398.691
E	21256.864	16.250	398.682	398.691
F	21266.864	16.250	398.678	398.686
G	21276.864	16.250	398.674	398.678
℄ BRG. PIER 2	21284.281	16.250	398.671	398.671
H	21294.281	16.250	398.668	398.675
I	21304.281	16.250	398.664	398.678
J	21314.281	16.250	398.660	398.672
℄ BRG. S. ABUT.	21324.781	16.250	398.656	398.656
BK. OF S. ABUT.	21326.698	16.250	398.655	398.655

℄ BEAM 7

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. OF N. ABUT.	21195.763	22.875	398.567	398.567
℄ BRG. N. ABUT.	21197.680	22.875	398.566	398.566
A	21207.680	22.875	398.563	398.574
B	21217.680	22.875	398.559	398.573
C	21227.680	22.875	398.555	398.562
℄ BRG. PIER 1	21238.180	22.875	398.551	398.551
D	21248.180	22.875	398.547	398.552
E	21258.180	22.875	398.543	398.553
F	21268.180	22.875	398.540	398.548
G	21278.180	22.875	398.536	398.540
℄ BRG. PIER 2	21285.597	22.875	398.533	398.533
H	21295.597	22.875	398.529	398.536
I	21305.597	22.875	398.526	398.540
J	21315.597	22.875	398.522	398.533
℄ BRG. S. ABUT.	21326.097	22.875	398.518	398.518
BK. OF S. ABUT.	21328.014	22.875	398.517	398.517

Note: Work this sheet with sheet #3 of 16.

TOP OF SLAB ELEVATIONS
F.A.I. RT. 57 SEC. (28-5B-1)D-1
FRANKLIN COUNTY
STATION 212+50.00

DESIGNED Derek Verhulst
CHECKED Richard J. Chaput
DRAWN Paul W. Sweet
CHECKED RJC DGV RTB

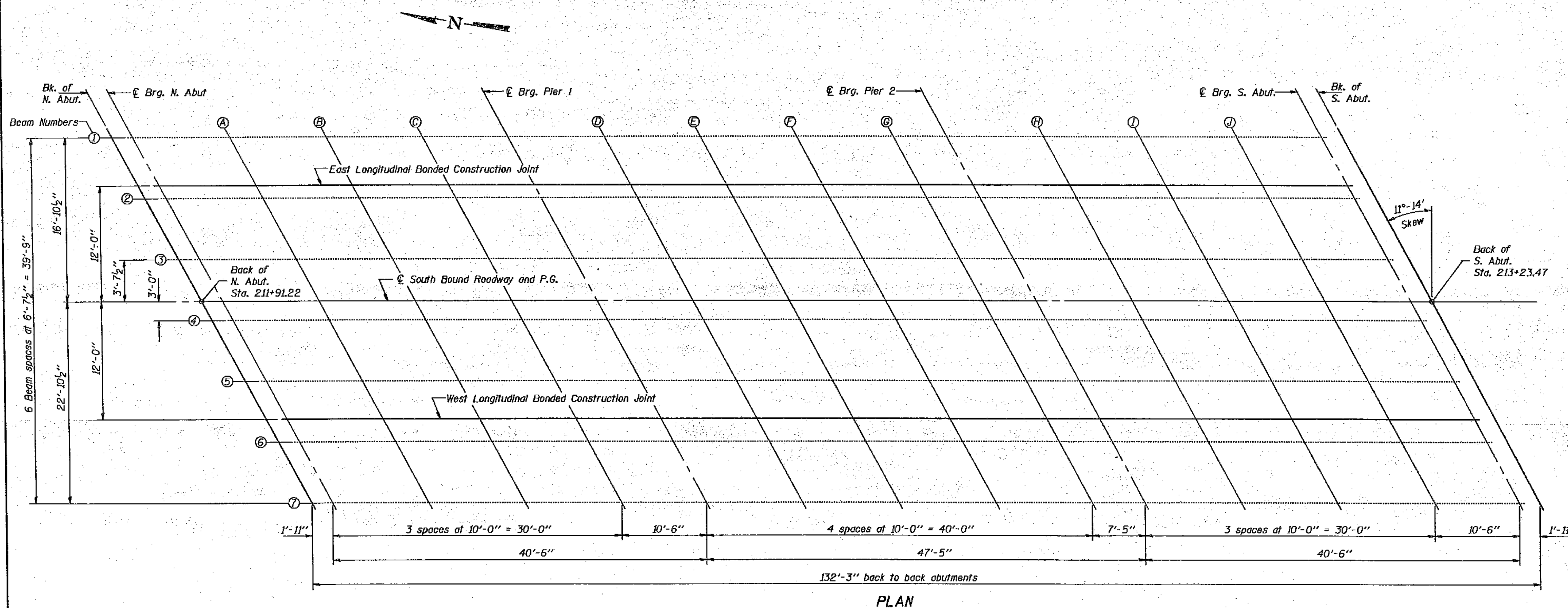
May 20 1993
EXAMINED Iraj D. Kaspar
ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

E-S 1-6-82

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-5B-1) D-1	FRANKLIN		129

SHEET NO. 3
16 SHEETS



PLAN

Work this sheet with sheet #2 of 16.

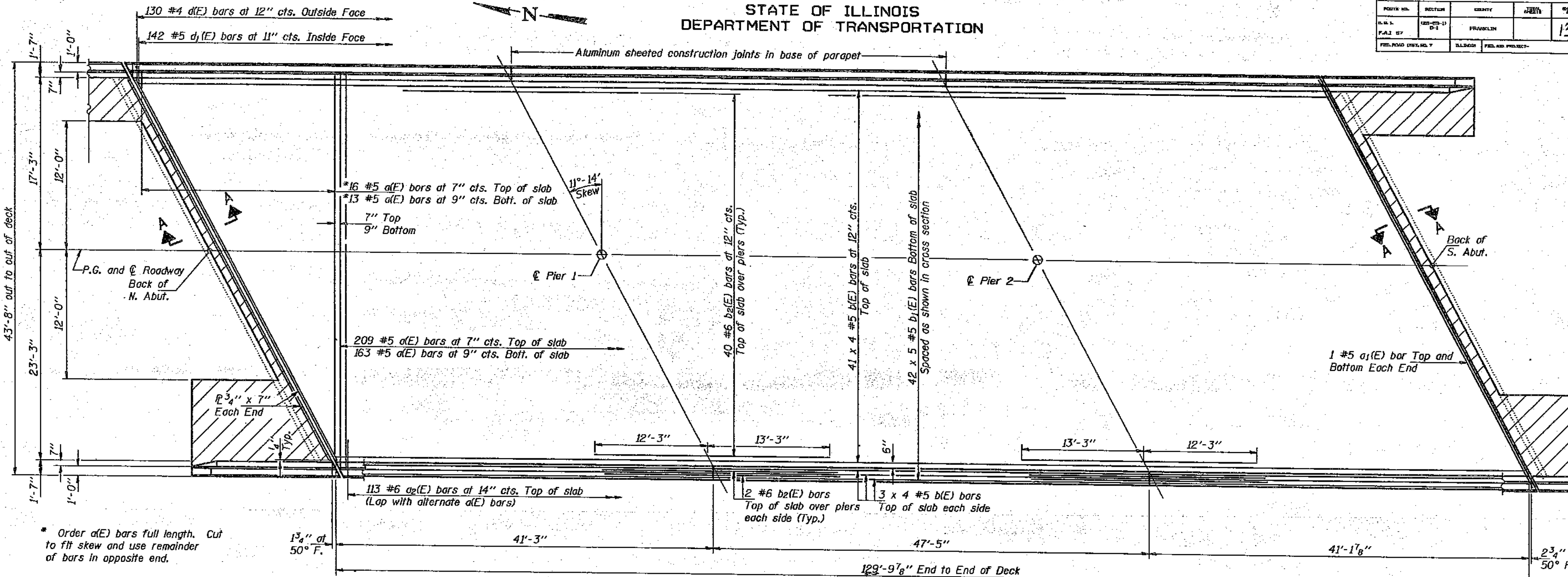
DESIGNED Richard J. Chap...	EXAMINED May 20 1993 ... Engineer of Bridge Design
CHECKED ...	PASSED Ralph E. Anderson, Engineer of Bridges and Structures
DRAWN Paul W. Sweet	APPROVED Director of Highways
CHECKED RJC DGV RTB	

TOP OF SLAB ELEVATIONS
F.A.I. RT. 57 SEC. (28-5B-1)D-1
FRANKLIN COUNTY
STATION 212+50.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

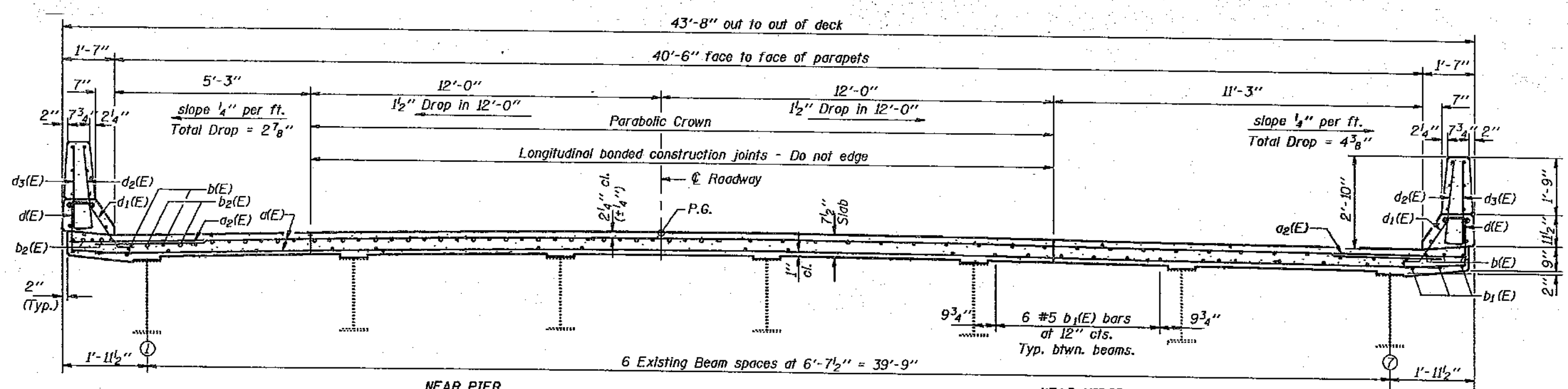
F.A.I. RTE. 57	(28-5B-1) D-1	FRANKLIN	130

SHEET NO. 4
16 SHEETS



* Order a(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.

PLAN



CROSS SECTION
(Looking South)

Notes: See sheets #5 and #6 of 16 for superstructure details, parapet reinforcement and Bill of Material.
Reinforcement bars designated (E) shall be epoxy coated.
Reinforcement bars indicated thus 40 x 4 #5 etc. indicates 40 lines of bars with 4 lengths per line.
See sheet #1 of 16 for drain locations and sheet #5 of 16 for details.
See sheets #13 & 15 of 16 for Approach shoulder details.

MIN. BAR LAPS
#5 bars = 1'-9"

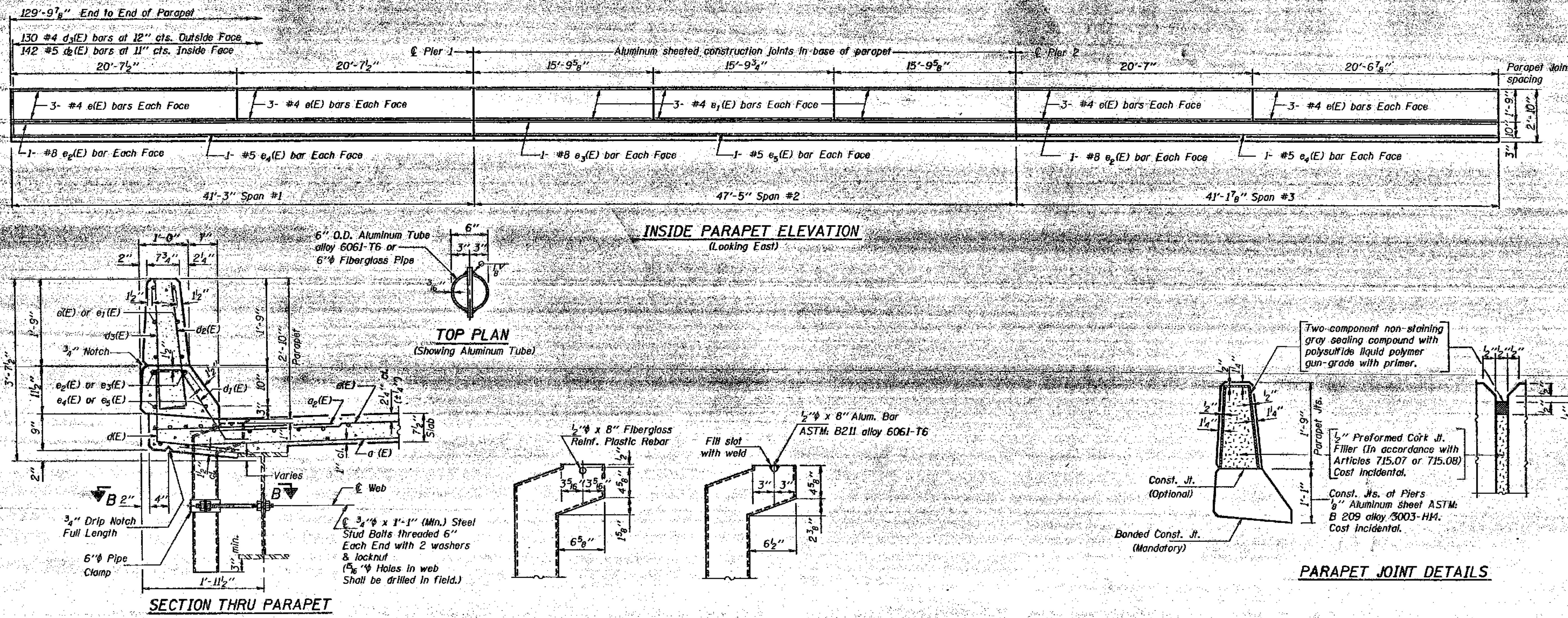
DESIGNED	Richard J. Chest
CHECKED	[signature]
DRAWN	Paul W. Sweet
CHECKED	RJC DGV RTB

May 20 1993
EXAMINED [signature] ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES
APPROVED DIRECTOR OF HIGHWAYS

SUPERSTRUCTURE
F.A.I. RT. 57 SEC. (28-5B-1)D-1
FRANKLIN COUNTY
STATION 212+50.00

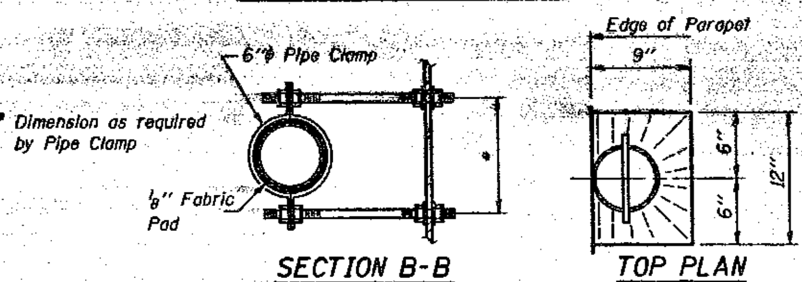
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 5 | 131



FIBERGLASS PIPE

ALUMINUM PIPE



Notes:
The exterior surfaces of the floor drain shall be painted with the vinyl enamel paint as specified in the Standard Specifications. The exterior surfaces of the drain shall be cleaned and given a washcoat pretreatment in accordance with Steel Structures Painting Council's Spec. SSPC-SP1 & SSPC-Paint 27 prior to painting.
Fiberglass pipe shall conform to ASTM: D2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum. The surface of the Fiberglass pipe shall be free of bond inhibiting agents.

DESIGNED	Richard J. Chapel
CHECKED	Shaun P. Abialusola
DRAWN	Paul W. Sweet
CHECKED	RSC RTB DSV

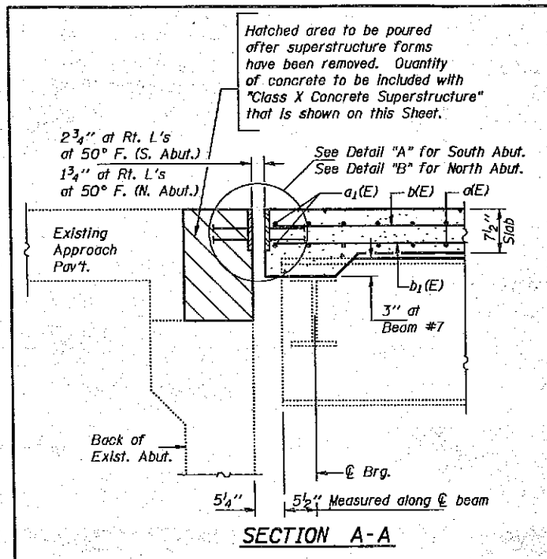
May 20 1993
EXAMINED — Engineer of Bridge Design
PASSED — Ralph E. Anderson — Engineer of Bridges and Structures
APPROVED — Director of Highways

SUPERSTRUCTURE DETAILS
F.A.I. RT. 57 SEC. (28-5B-1)D-1
FRANKLIN COUNTY
STATION 212+50.00

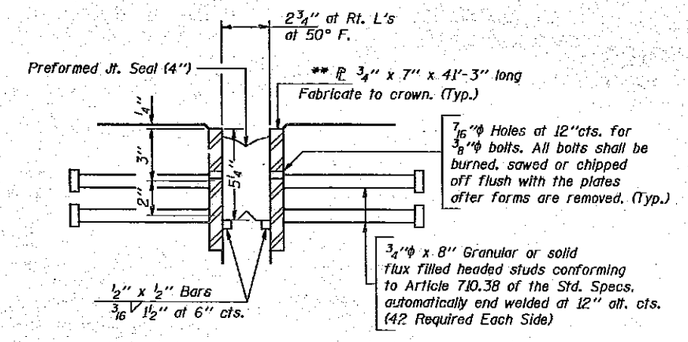
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
E.B.S. F.A.I. 57	(28-5B-1) D-1	FRANKLIN	132	
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 6
16 SHEETS

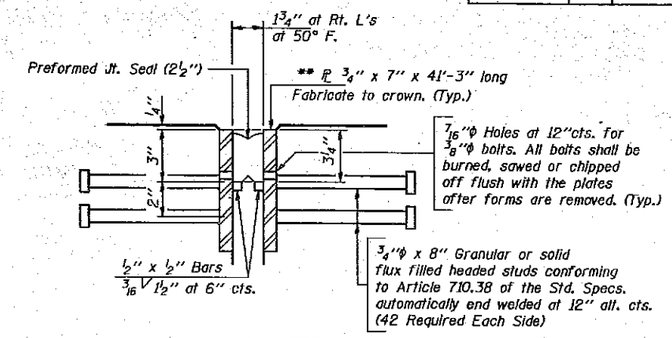
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SECTION A-A

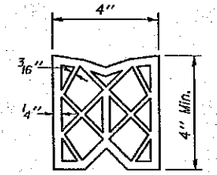


DETAIL "A"

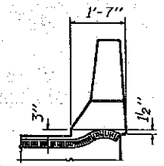


DETAIL "B"

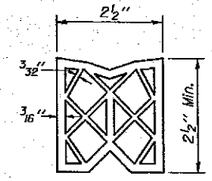
** Furnish in segments of 20 ft. maximum length. Maximum space between installed segments shall be 3/16". Seal space with Silicone Sealant suitable for Structural Steel. After fabrication all surfaces of the steel plates shall be given one shop coat of paint specified for New Structural Steel. No field painting required.



PREFORMED JOINT SEAL (4")



END TREATMENT
Typ. for (4") and (2 1/2").

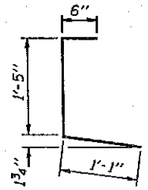


PREFORMED JOINT SEAL (2 1/2")

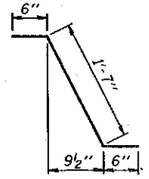
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	401	#5	41'-8"	
a1(E)	4	#5	42'-6"	
a2(E)	226	#6	4'-0"	
b(E)	188	#5	33'-8"	
b1(E)	210	#5	27'-3"	
b2(E)	88	#6	25'-6"	
d(E)	260	#4	3'-0"	⊏
d1(E)	284	#5	2'-7"	⌐
d2(E)	284	#5	3'-0"	L
d3(E)	260	#4	3'-0"	L
e(E)	48	#4	20'-4"	
e1(E)	36	#4	15'-6"	
e2(E)	8	#8	40'-10"	
e3(E)	4	#8	47'-1"	
e4(E)	8	#5	40'-10"	
e5(E)	4	#5	47'-1"	
Reinforcement Bars, Epoxy Coated		Lbs.	40,540	
Class X Concrete Superstructure		Cu. Yd.	187.1	

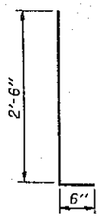
Reinforcement bars designated (E) shall be epoxy coated.



BAR d(E)



BAR d1(E)



BARS d2(E) & d3(E)

DESIGNED	Richard T. Christ
CHECKED	Thomas P. Davidson
DRAWN	Paul W. Sweet
CHECKED	RJC DGV RTB

May 20 1993

EXAMINED Engineer of Bridge Design

PASSED Ralph E. Anderson, Engineer of Bridges and Structures

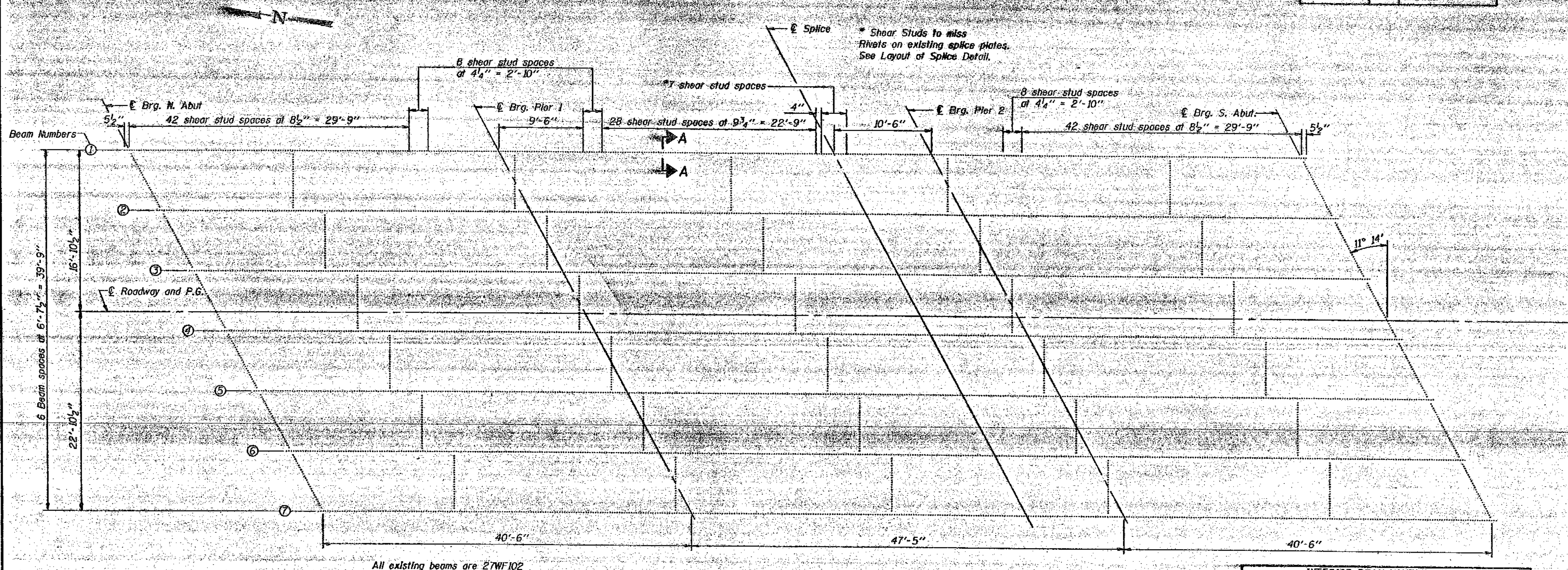
APPROVED

Director of Highways

SUPERSTRUCTURE DETAILS
F.A.I. RT. 57 SEC. (28-5B-1)D-1
FRANKLIN COUNTY
STATION 212+50.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(28-5B-1)D-1	FRANKLIN		133

SHEET NO. 7
16 SHEETS



PLAN

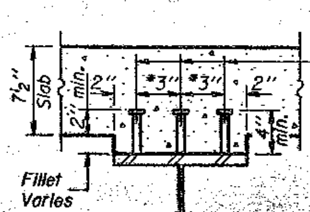
INTERIOR BEAM REACTION TABLE			
		Abuts.	Piers
R_{DL}	(K)	15.9	49.0
R_{LL}	(K)	32.2	39.3
Imp.	(K)	9.7	11.6
R (Total)	(K)	57.8	99.9

Is and Ss are the moment of inertia and section modulus of the steel section used in computing f_s (Total and Overload).
Ic and Sc are the moment of inertia and section modulus of the composite section used in computing f_s (Total and Overload).
VR is the maximum Live Load + Impact shear range in span.

Ma (Applied Moment) = $1.3\,[M_{DL} + Ms_{DL} + \frac{5}{3}(M_{LL} + I)]$
fs (Overload) is the sum of the stresses due to to $[M_{DL} + Ms_{DL} + \frac{5}{3}(M_{LL} + I)]$
fs (Total) is the sum of the stresses due to $1.3\,[M_{DL} + Ms_{DL} + \frac{5}{3}(M_{LL} + I)]$. at unbraced, Non-compact, section.
M_{DL} - Moment due to dead load on non-composite section.
Ms_{DL} - Moment due to dead load on composite section.
M_{LL} - Moment due to live load on non-composite section.
I - Live load impact.

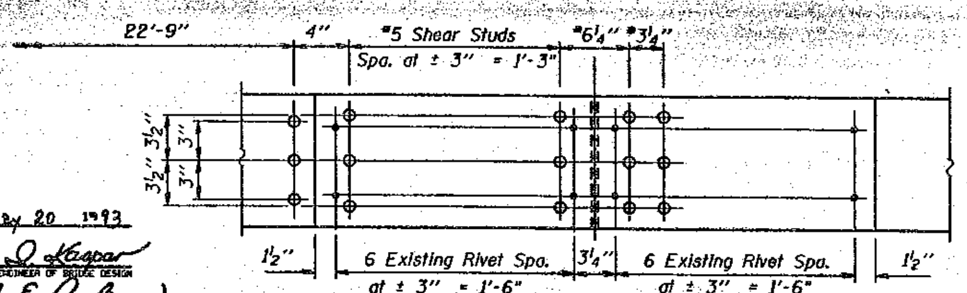
INTERIOR BEAM MOMENT TABLE				
		0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or Pier 2	0.5 Sp. 2
Is	(in⁴)	3604	3604	3604
Ic (n=9)	(in⁴)	10448	—	10448
Ic (n=27)	(in⁴)	7732	—	7732
Ss	(in³)	266	266	266
Sc (n=9)	(in³)	405	—	405
Sc (n=27)	(in³)	367	—	367
DL	(K/ft.)	.748	1.01	.748
M_{DL}	('K)	89.3	183.6	65.3
fs_{DL} non-comp	(k.s.i.)	4.0	8.3	2.9
s_{DL}	(K/ft.)	.262	—	.262
Ms_{DL}	('K)	36.1	—	34.9
** fs_{DL} (comp)	(k.s.i.)	1.2	—	1.1
M_{LL}	('K)	237.3	122.9	245.1
M (Imp)	('K)	71.2	36.2	70.8
$\frac{5}{3}(M_{LL}+I)$	('K)	514.2	265.2	526.5
fs $\frac{5}{3}(LL+I)$	(k.s.i.)	15.2	11.9	15.6
Ma	('k)	831.0	583.0	815.0
fs (Overload)	(k.s.i.)	20.4	20.2	19.6
fs (Total)	(k.s.i.)	26.5	26.3	25.5
VR	(K)	45.4	—	48.5

** For n = 27.



¾"φ Granular or solid flux filled headed studs, conforming to the requirements of Art. 710.38 of the Std. Specs. Automatically end welded to flange. (3150 Required)

SECTION A-A



LAYOUT AT SPLICE

DESIGNED	Richard J. Chapt
CHECKED	Thomas P. Nandurals
DRAWN	Paul W. Sweet
CHECKED	RSK RTB DGY

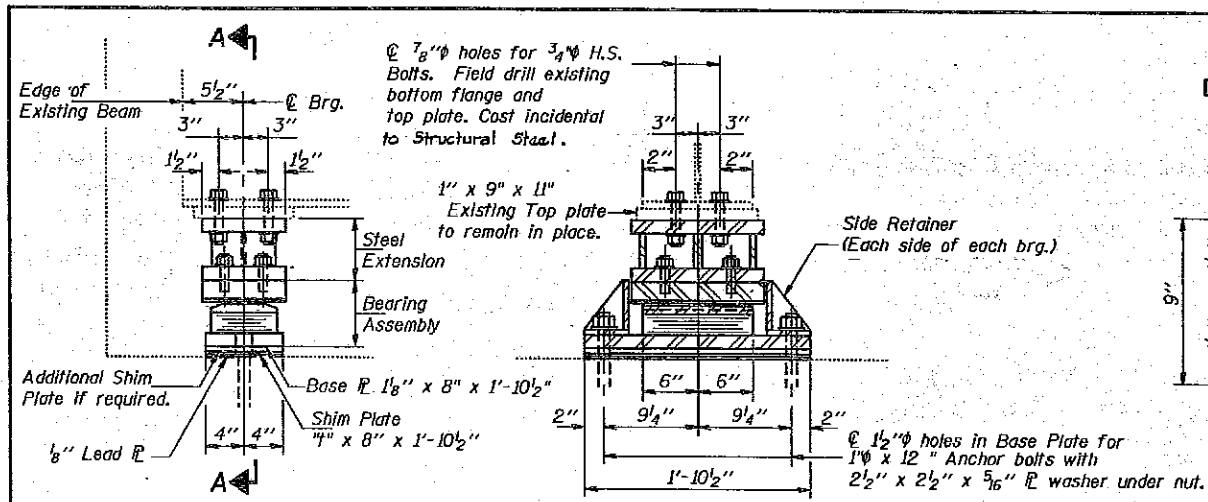
May 20 1993
EXAMINED Draj J. Kagar — ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

STRUCTURAL STEEL DETAILS
F.A.I. RT. 57 SEC. (28-5B-1)D-1
FRANKLIN COUNTY
STATION 212+50.00

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-5B-1)D-1	FRANKLIN		134

SHEET NO. 8
16 SHEETS

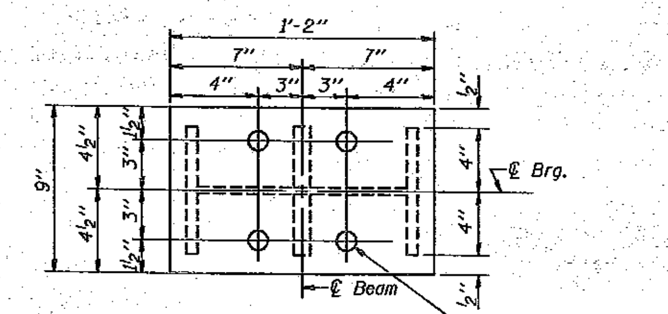
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



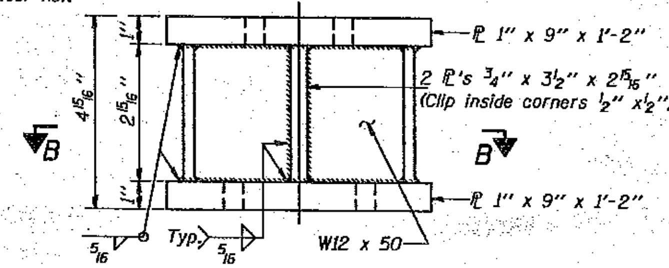
ELEVATION AT SOUTH ABUT.

SECTION A-A

TYPE II TFE ELASTOMERIC EXP. BRG.

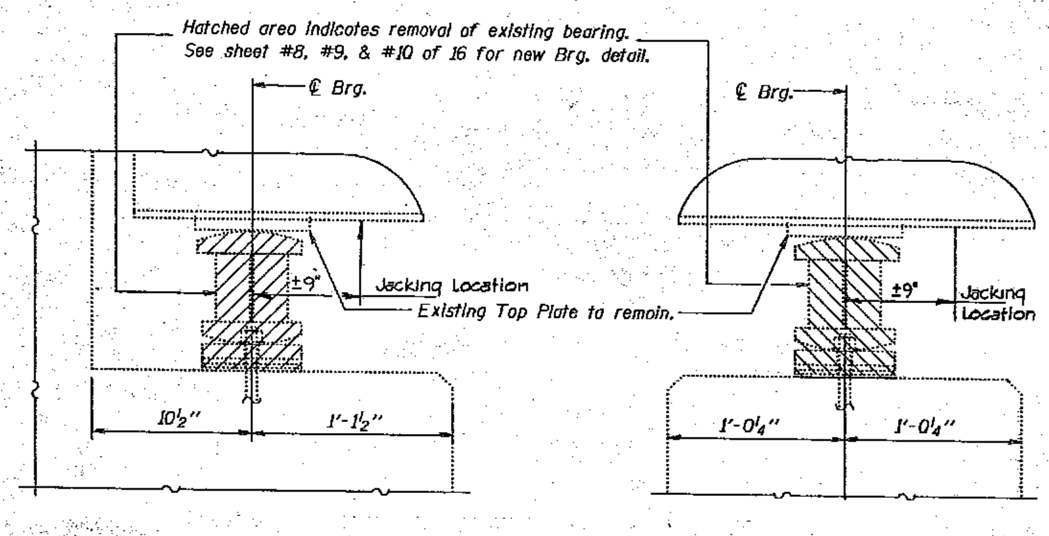


PLAN-TOP PLATE



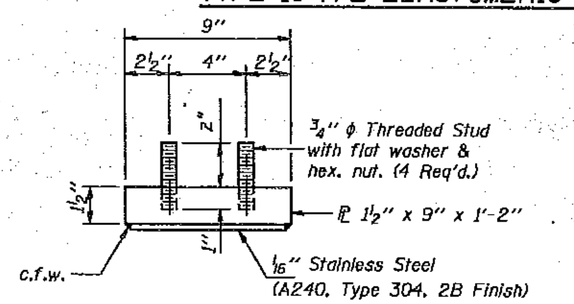
STEEL EXTENSION AT SOUTH ABUT.

Equivalent welded plates will be allowed in lieu of W12 x 50 section.

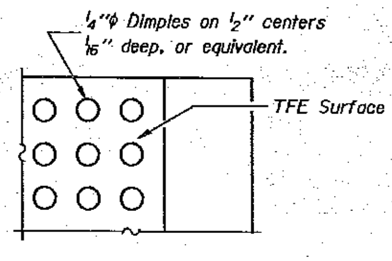


JACK AND REMOVE EXISTING BEARING

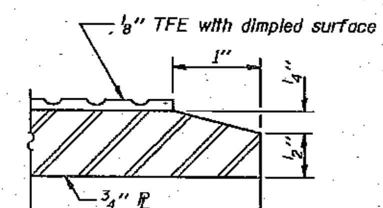
(Dimension are at Rt. L's)



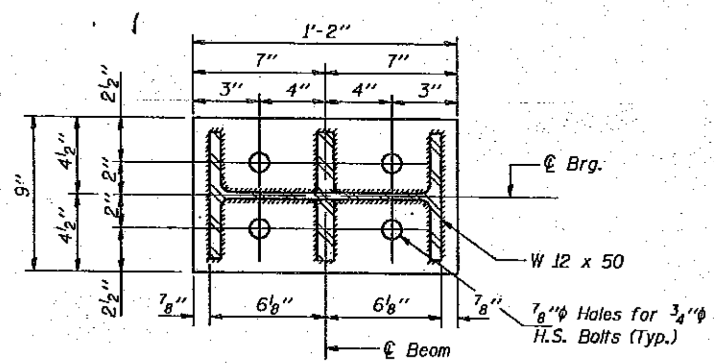
TOP BEARING ASSEMBLY



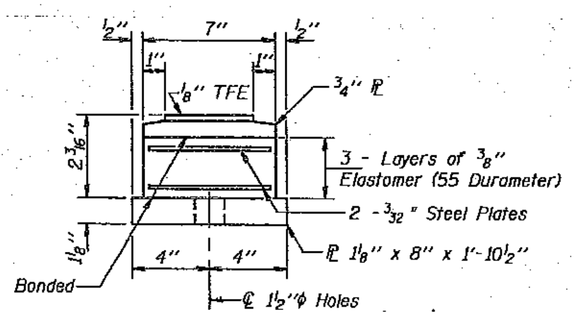
PLAN-TFE SURFACE



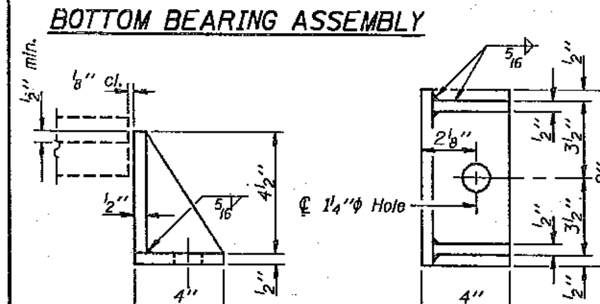
SECTION THRU TFE



SECTION B-B



BOTTOM BEARING ASSEMBLY

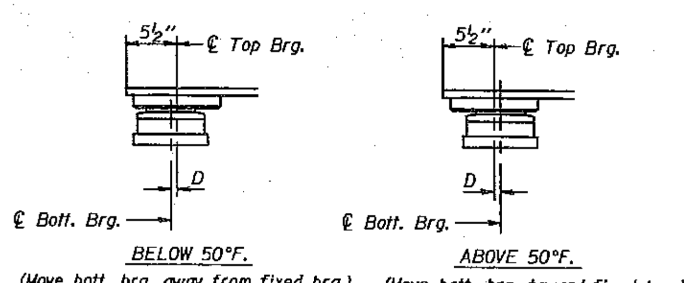


SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

Note: The ⅛" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of ⅛" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



SETTING ANCHOR BOLTS AT EXP. BRG.

D=⅛" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

JACK AND REMOVE EXISTING BEARING PROCEDURE

1. The Contractor shall submit for approval by the Engineer, plans for jacking & cribbing prior to commencing any work at the bearings.
2. Jacking and removing existing bearings shall be done after deck removal is completed and before the new deck is poured.
3. All beams, all locations shall be lifted simultaneously.
4. Jacking shall be limited to a maximum of ¼" lift to remove the existing bearing assembly, utilizing a jack or series of jacks. The max. dead load reaction at each beam with the deck removed is 6.0K at Piers and 1.9K at Abutments. The Minimum Jack Capacity for each beam is 5 Ton at Piers and 2 Ton at Abutments. Set jacks so that beams can be lowered approximately 2⅛" from original position.
5. Remove the existing anchor bolts flush with the concrete surface and grind smooth. The rocker and bottom plates shall be removed leaving the existing top plate intact.
6. The new bearings and steel extensions shall be in place and the jacks shall be lowered before the new deck is poured. Lower all Beams simultaneously in ¼" increments.

Notes: For anchor bolt installation details see sheet #16 of 16.
- For table of Shim Plate "t" Dimensions see sheet #10 of 16.
- Anchor Bolts, Side Retainers, Shim Plates, Lead Plates, and Steel Extension Assemblies are included in the "Structural Steel" Quantity.
- See sheet #12 of 16 for anchor bolt layout at South Abutment.

BILL OF MATERIAL

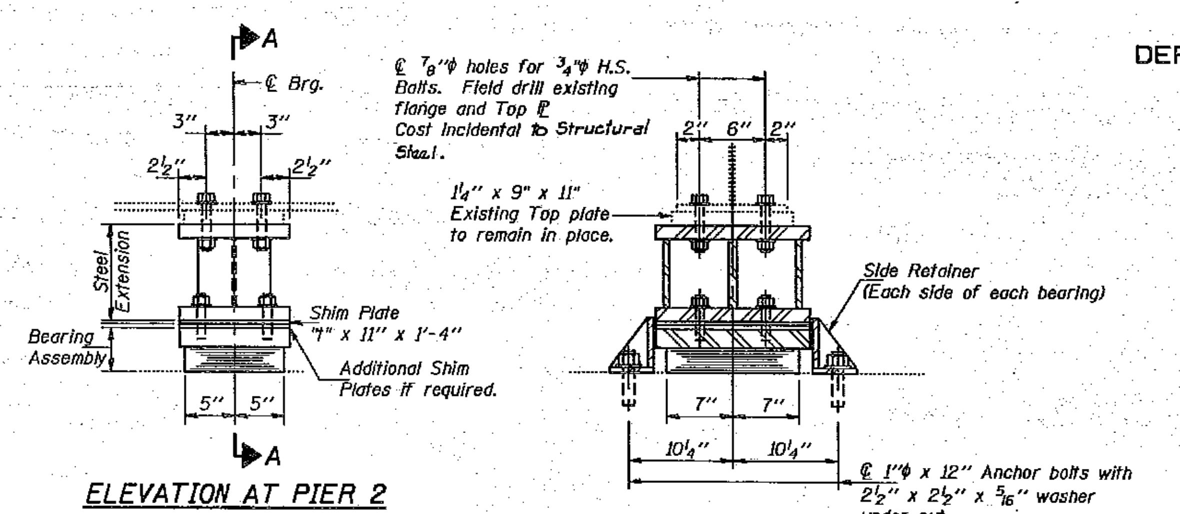
Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	7
Jack and Remove Existing Bearings	Each	7

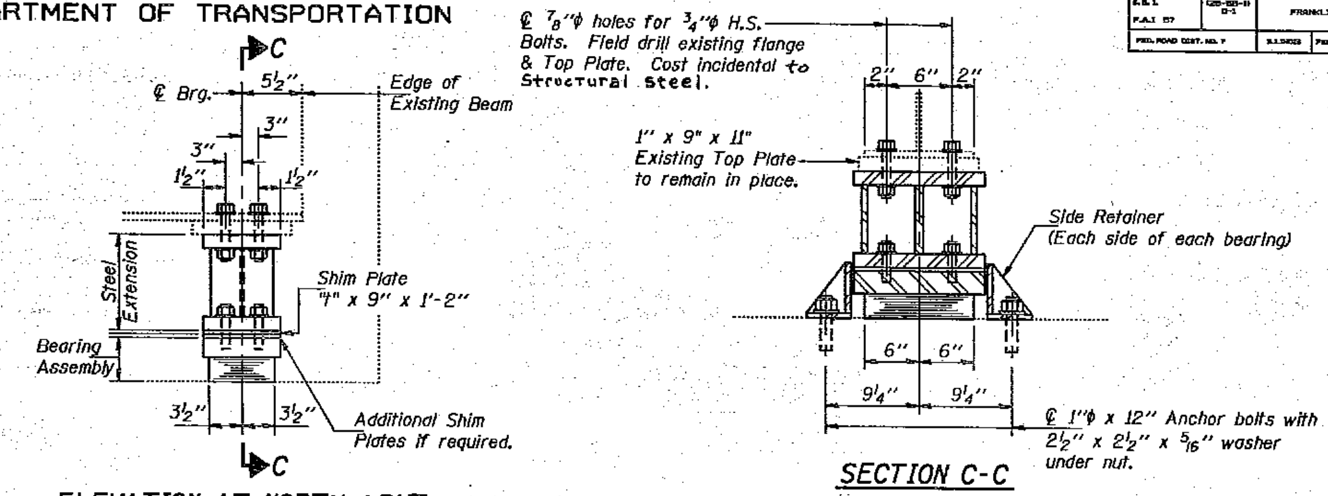
SOUTH ABUTMENT
BEARING DETAILS
F.A.I. RT. 57 SEC. (28-5B-1)D-1
FRANKLIN COUNTY
STATION 212+50.00

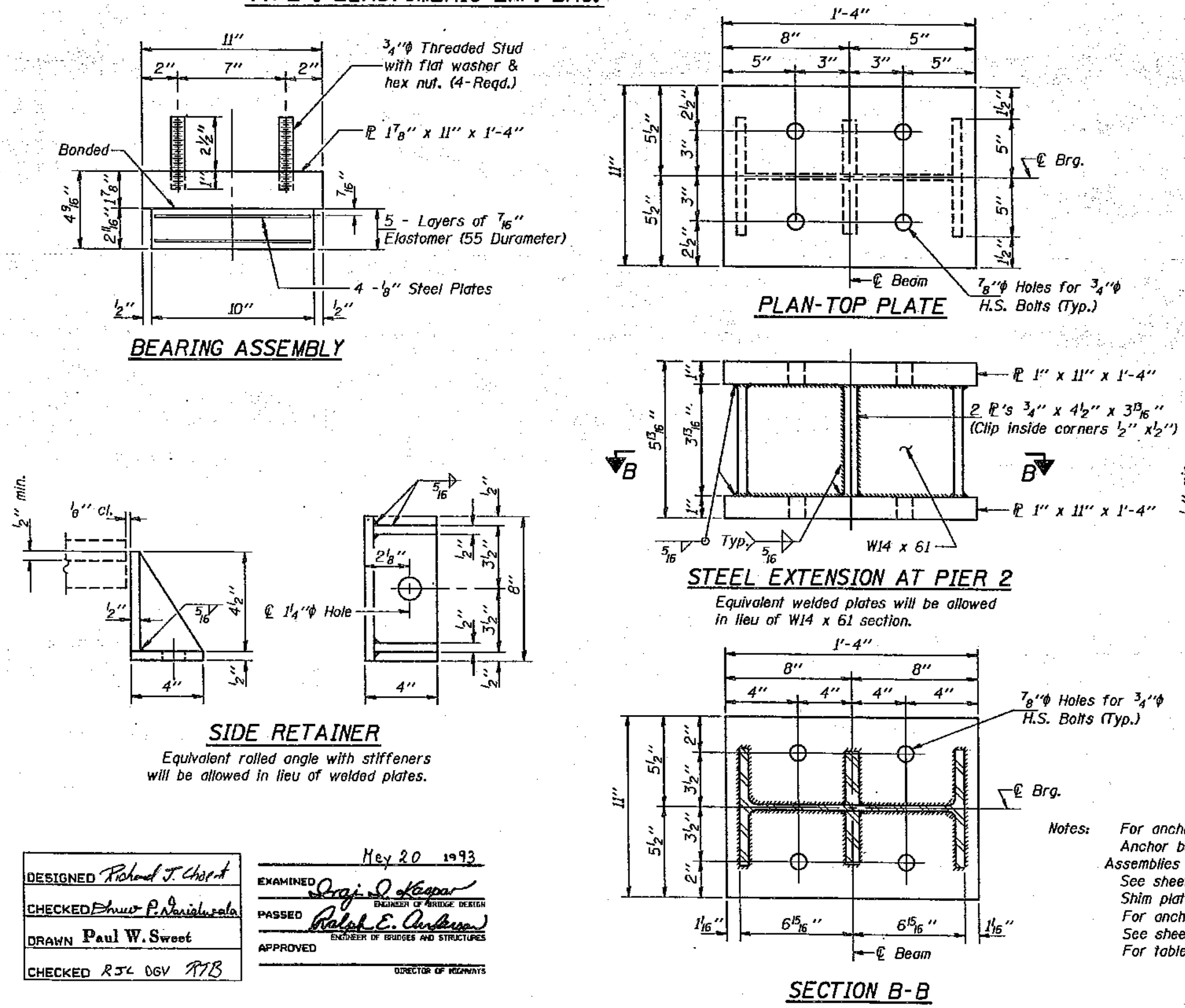
DESIGNED Richard J. Chapot	EXAMINED Oraj. J. Kaspar — ENGINEER OF BRIDGE DESIGN
CHECKED Dhiru P. Dasiulwala	PASSED Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES
DRAWN Paul W. Sweet	APPROVED — DIRECTOR OF HIGHWAYS
CHECKED RJC DGV RTB	

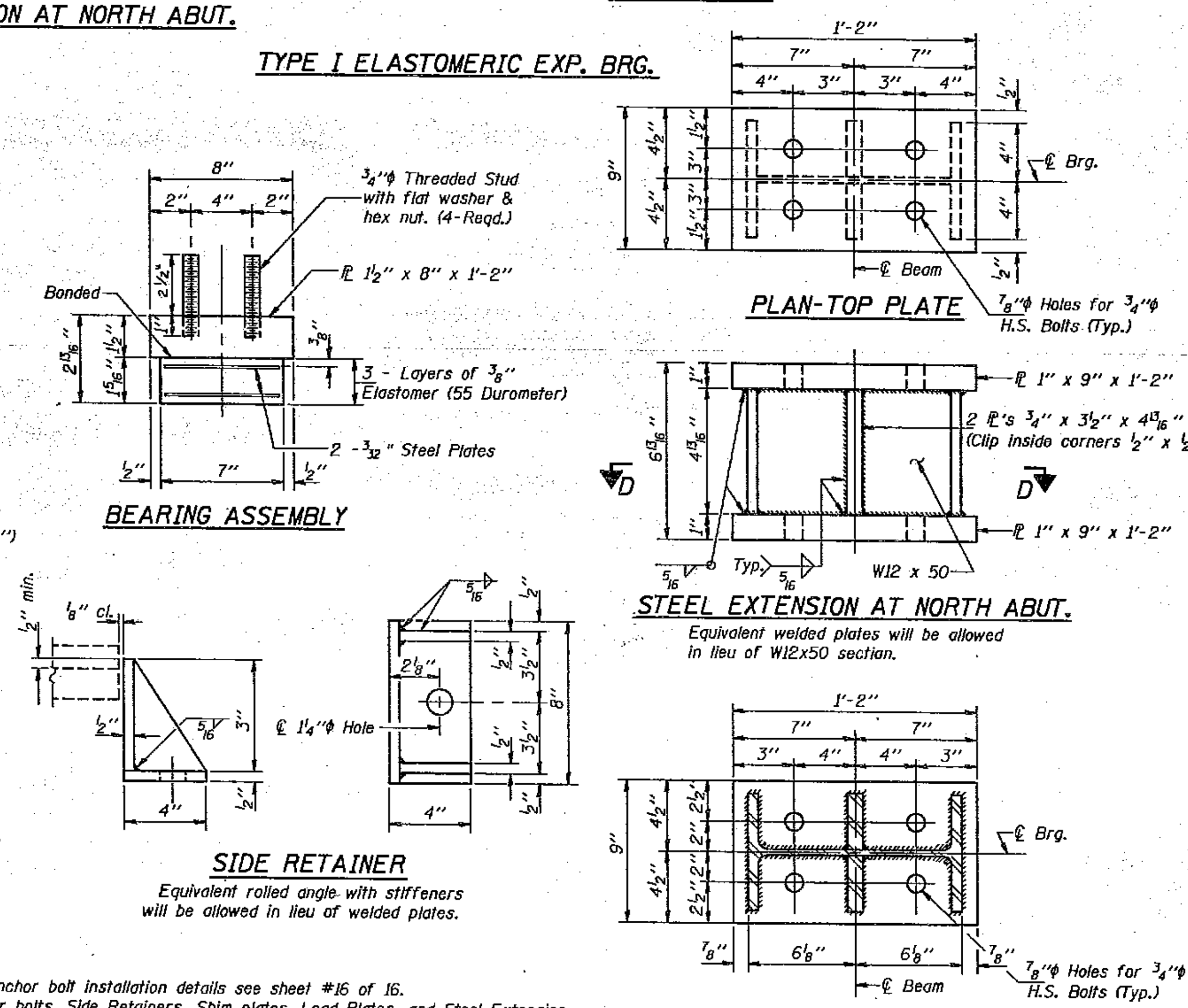
May 20 1993

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION









Notes: For anchor bolt installation details see sheet #16 of 16.
Anchor bolts, Side Retainers, Shim plates, Lead Plates, and Steel Extension Assemblies included in "Structural Steel" Quantity.
See sheet #8 of 16 for Jack and Remove Existing Bearing Procedure.
Shim plates shall not be placed under Bearing Assembly.
For anchor bolt location at Pier #2 See sheet #10 of 16.
See sheet #14 of 16 for anchor bolt layout at North Abutment.
For table of Shim Plate "T" Dimensions see sheet #10 of 16.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	14
Jack and Remove Existing Bearings	Each	14

DESIGNED Richard J. Chert
CHECKED Bhuw P. Daniels
DRAWN Paul W. Sweet
CHECKED RJC DGV RTB

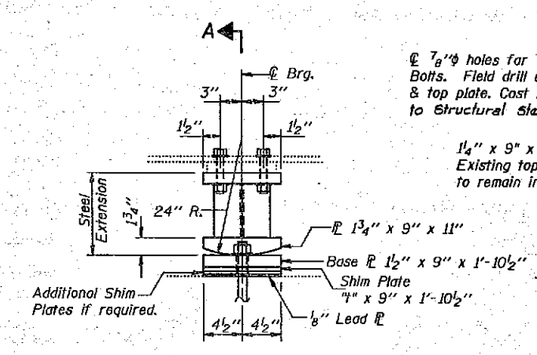
May 20 1993
EXAMINED Engineer of Bridge Design
PASSED Ralph E. Anderson, Engineer of Bridges and Structures
APPROVED Director of Highways

PIER 2 AND NORTH ABUTMENT
BEARING DETAILS
F.A.I. RT. 57 SEC. (28-5B-1)D-1
FRANKLIN COUNTY
STATION 212+50.00

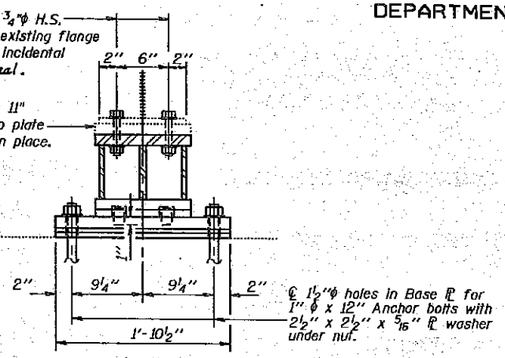
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-5B-1) D-1	FRANKLIN		136
PROJ. ROAD DIST. NO. 7	ILLINOIS	PED. AND PROJECT-		

SHEET NO. 10
16 SHEETS

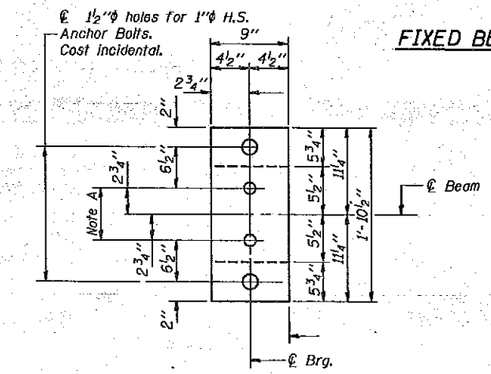


ELEVATION AT PIER 1

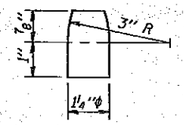


SECTION A-A

FIXED BEARING

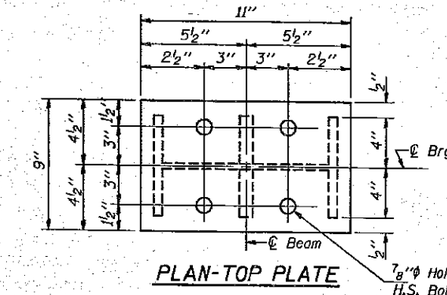


PLAN-BASE PLATE

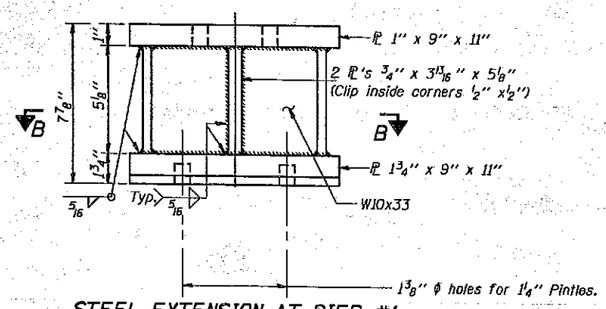


PINTLE

Note A:
$1\frac{3}{8}$"ϕ Holes-1" deep in bottom ℄ of Steel Extentsion for $1\frac{1}{4}$"ϕ pintles. Thread or press fit Pintles in Base ℄.

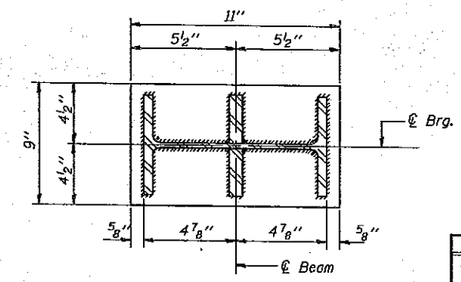


PLAN-TOP PLATE



STEEL EXTENSION AT PIER #1

Equivalent welded plates will be allowed in lieu of W10x33 section.



SECTION B-B

* TABLE OF "t" DIMENSIONS

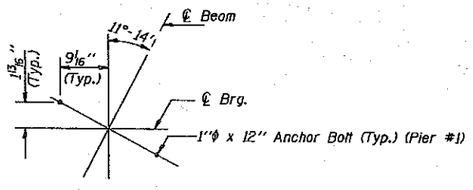
Location	N. Abut.	Pier #1	Pier #2	S. Abut.
Beam #1	2⅜"	2⅛"	2⅛"	2"
Beam #2	¾"	½"	½"	½"
Beam #3	1¾"	1⅜"	1¼"	1½"
Beam #4	1⅝"	1⅜"	1¼"	1⅝"
Beam #5	½"	1"	¾"	½"
Beam #6	2¼"	2⅝"	2⅜"	2¼"
Beam #7	⅝"	⅞"	⅝"	⅝"

* Dimensions are based on Field survey. The contractor shall verify & make adjustments as necessary.

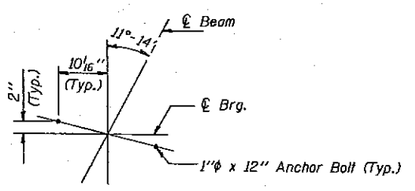
BILL OF MATERIAL

Item	Unit	Total
Jack and Remove Existing Bearings	Each	7

Notes: For anchor bolt installation details see sheet #16 of 16.
See sheet #8 of 16 for Jack and Removal Existing Bearing Procedure.



ANCHOR BOLT SETTING DETAILS
(PIER #1 ONLY)



ANCHOR BOLT SETTING DETAIL
(PIER #2 ONLY)

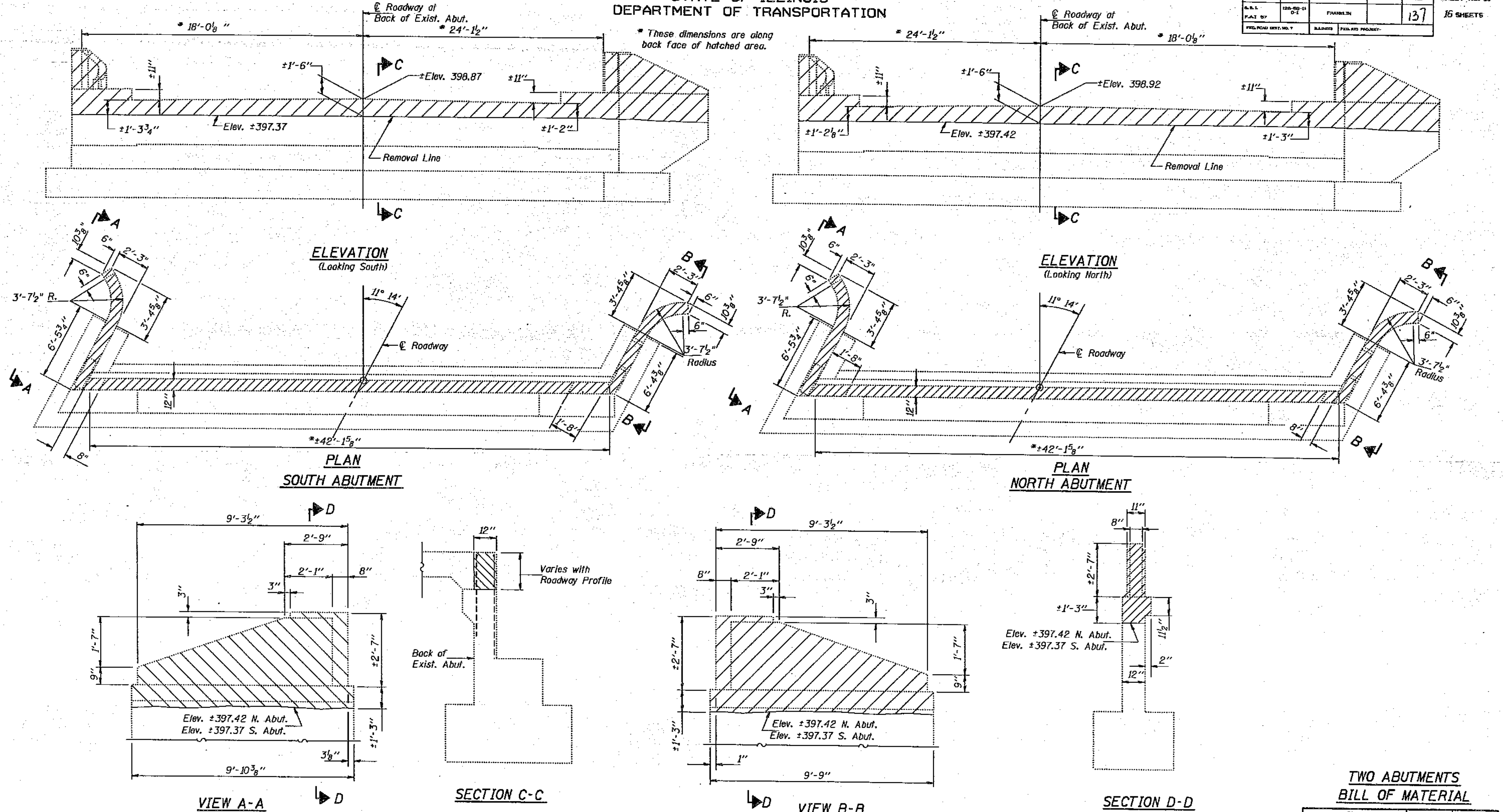
DESIGNED	Richard T. Shepard
CHECKED	Bruce P. Davidson
DRAWN	Paul W. Sweet
CHECKED	RJC DGV RTB

May 20 1993
EXAMINED Oraj O. Kaspar ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

PIER 1
BEARING DETAILS
F.A.I. RT. 57 SEC. (28-5B-1)D-1
FRANKLIN COUNTY
STATION 212+50.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.I. 57		FRANKLIN		137	SHEET NO. 11 / 16 SHEETS



Notes: Hatched area indicates "Concrete Removal".
For existing shoulder pavement removal see Roadway Plans.
Existing vertical reinforcement shall be cleaned, straightened and incorporated into the new construction
Cost incidental to "Concrete Removal".

DESIGNED	Richard J. Chapat
CHECKED	Shrut P. Navichwala
DRAWN	Paul W. Sweet
CHECKED	RJC DGV RTB

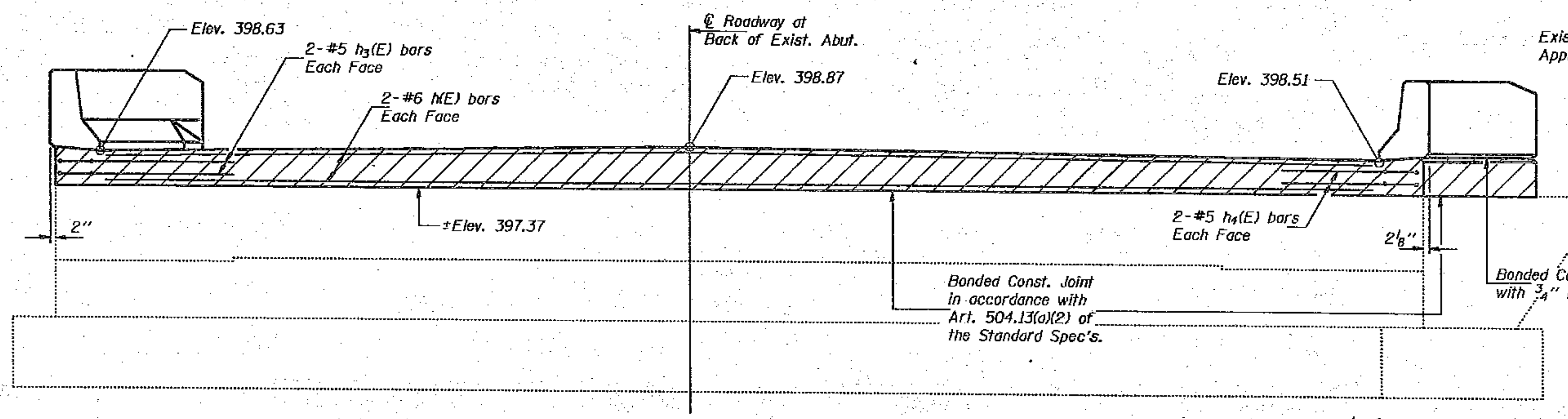
May 20 1993
EXAMINED Graj S. Kaspar — ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

TWO ABUTMENTS
BILL OF MATERIAL

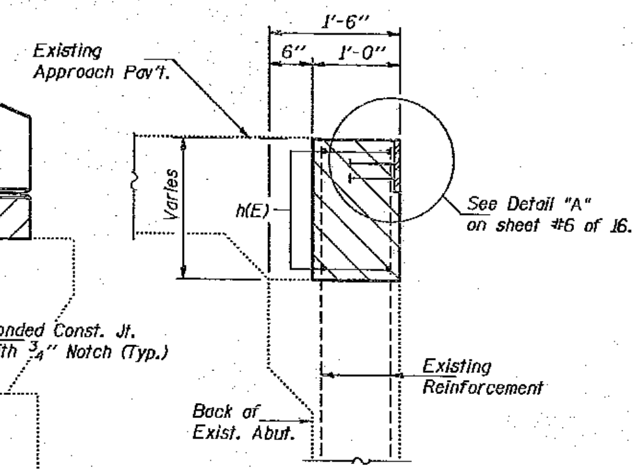
Item	Unit	Total
Concrete Removal	Cu. Yd.	9

CONCRETE REMOVAL DETAILS
FOR EXISTING ABUTMENTS
F.A.I. RT. 57 SEC. (28-5B-1)D-1
FRANKLIN COUNTY
STATION 212+50.00

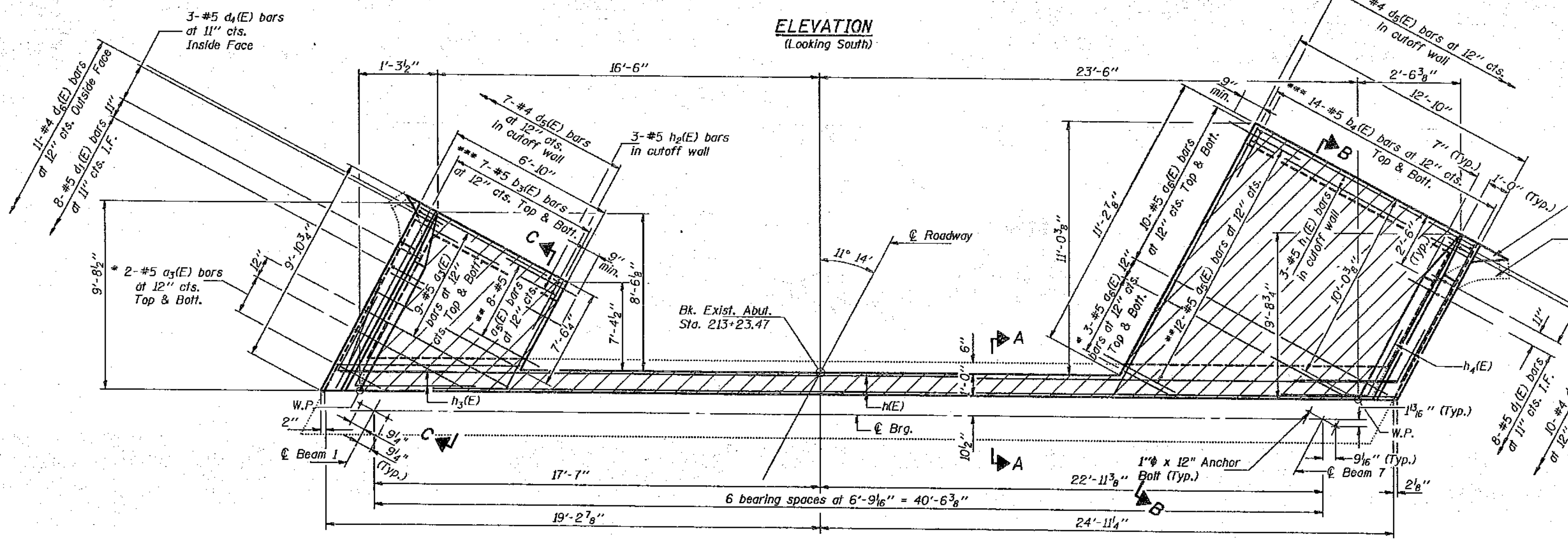
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION
(Looking South)



SECTION A-A



PLAN

* Order a_3(E), and a_6(E), bars full length. Cut to fit and use remainder of bars in bottom of slab.

** Drill ⅞"ϕ x 9" Min. hole in existing approach Pavement. Epoxy grout a_5(E) bars. Use a grout approved by the Department or epoxy grout in accordance with BSP-11. The method of grout application shall be approved by the Engineer. See Special Provisions.

*** Order b_3(E) and b_4(E) bars full length. Cut to fit as shown in Field Cutting Diagram on sheet #13 of 16 and use remainder of bars in bottom of slab directly below top bars.

Notes: Hatched area to be poured after superstructure forms have been removed. Quantity of concrete included with "Class X Concrete Superstructure" on sheet #6 of 16.
Existing reinforcement extending into new construction shall be cleaned, straightened and incorporated into the new construction.
Reinforcement bars designated (E) shall be epoxy coated.
For anchor bolt installation details see sheet #16 of 16.
Concrete Quantity for End Posts is included in "Class X Concrete Superstructure".
All edges shall have standard ¾" chamfer, Except as Noted.

DESIGNED	Richard J. Chopek
CHECKED	Shawn P. Rasidasalu
DRAWN	Paul W. Sweet
CHECKED	RJC DGV R.J.B.

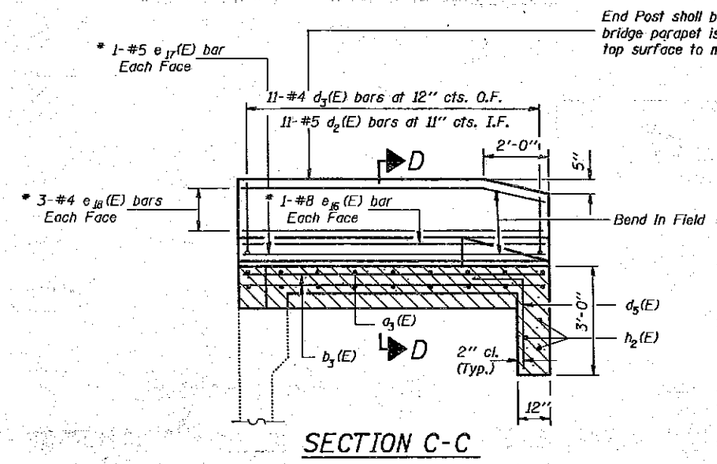
May 20 1993
EXAMINED Oraj O. Kaspar — ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

SOUTH ABUTMENT
F.A.I. RT. 57 SEC. (28-5B-1)D-1
FRANKLIN COUNTY
STATION 212+50.00

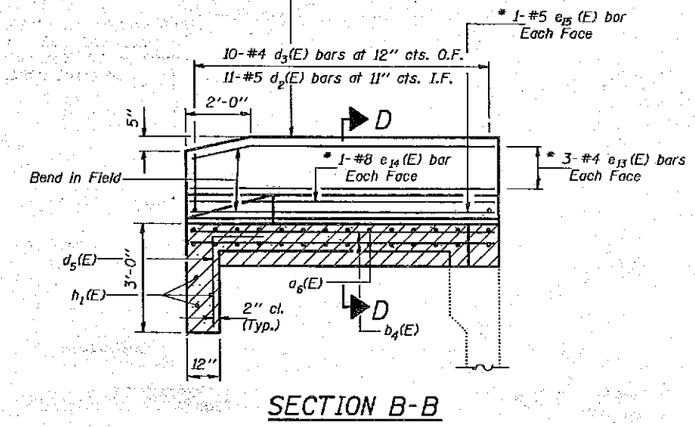
POLTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I.	120-5B-1) D-1	FRANKLIN		139
F.A.I. 57				
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 13
16 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

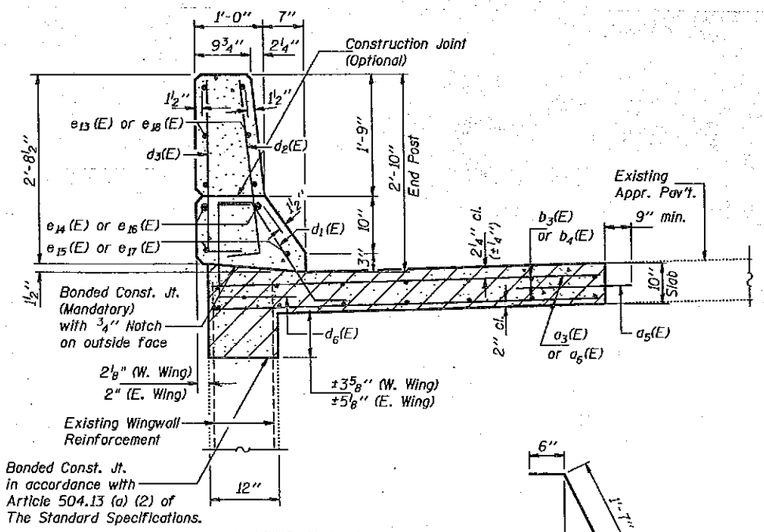


SECTION C-C

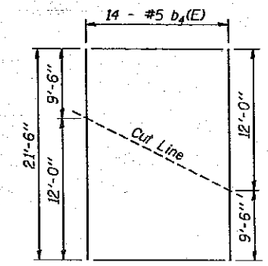


SECTION B-B

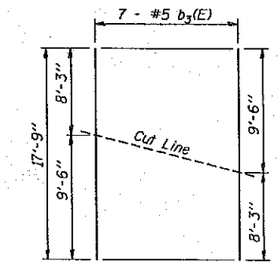
* Order End Post $e_{13}(E)$ thru $e_{18}(E)$ bars full length, cut to fit skew in the field.



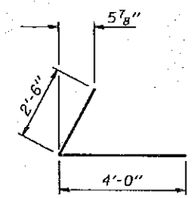
SECTION D-D



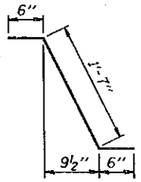
FIELD CUTTING DIAGRAM
BAR $b_4(E)$



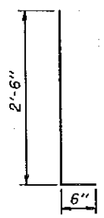
FIELD CUTTING DIAGRAM
BAR $b_3(E)$



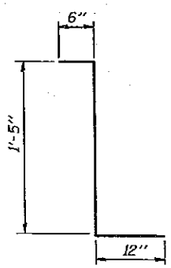
BAR $h_3(E)$



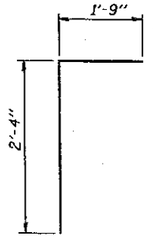
BAR $d_1(E)$



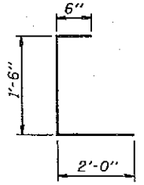
BARS $d_2(E)$ & $d_3(E)$



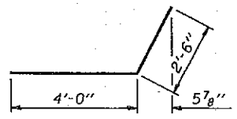
BAR $d_4(E)$



BAR $d_5(E)$



BAR $d_6(E)$



BAR $h_4(E)$

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$a_3(E)$	20	#5	6'-7"	
$a_5(E)$	20	#5	3'-0"	
$a_6(E)$	23	#5	12'-7"	
$b_3(E)$	7	#5	17'-9"	
$b_4(E)$	14	#5	21'-6"	
$d_1(E)$	16	#5	2'-7"	
$d_2(E)$	22	#5	3'-0"	
$d_3(E)$	21	#4	3'-0"	
$d_4(E)$	6	#5	2'-11"	
$d_5(E)$	21	#4	4'-1"	
$d_6(E)$	21	#4	4'-0"	
$e_{13}(E)$	6	#4	9'-9"	
$e_{14}(E)$	2	#8	9'-9"	
$e_{15}(E)$	2	#5	9'-9"	
$e_{16}(E)$	2	#8	9'-7"	
$e_{17}(E)$	2	#5	9'-7"	
$e_{18}(E)$	6	#4	9'-7"	
$h(E)$	4	#6	43'-6"	
$h_1(E)$	3	#5	12'-7"	
$h_2(E)$	3	#5	6'-7"	
$h_3(E)$	4	#5	6'-6"	
$h_4(E)$	4	#5	6'-6"	
Reinforcement Bars, Epoxy Coated			Lbs.	1,870
Structure Excavation			Cu. Yd.	11.0

Reinforcement bars designated (E) shall be epoxy coated.

DESIGNED	Richard T. Chapt
CHECKED	Thomas P. Maichaels
DRAWN	Paul W. Sweet
CHECKED	RJC DGV RTB

May 20 1993

EXAMINED Engineer of Bridge Design

PASSED Ralph E. Anderson
Engineer of Bridges and Structures

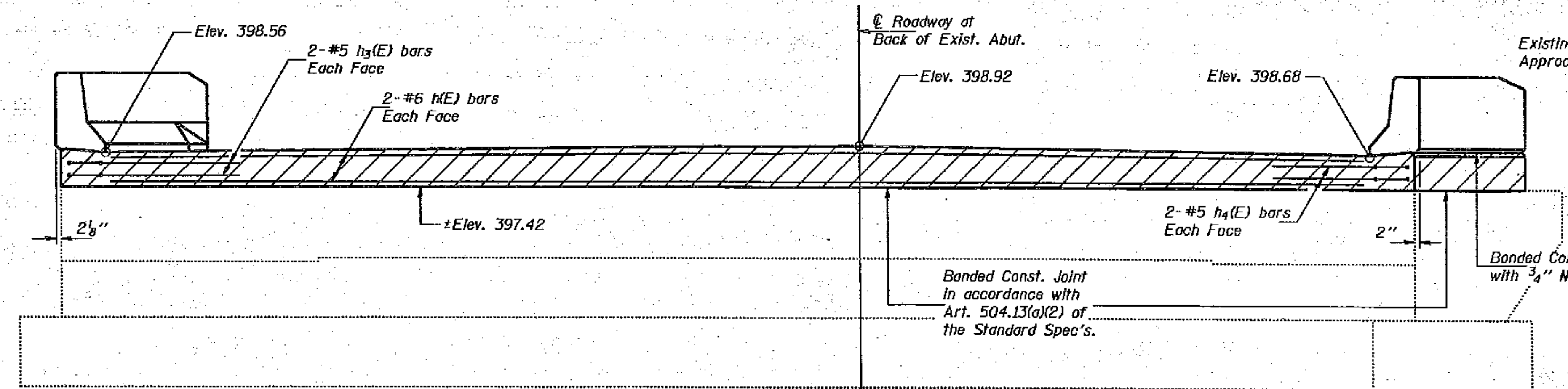
APPROVED
Director of Highways

SOUTH ABUTMENT DETAILS
F.A.I. RT. 57 SEC. (28-5B-1)D-1
FRANKLIN COUNTY
STATION 212+50.00

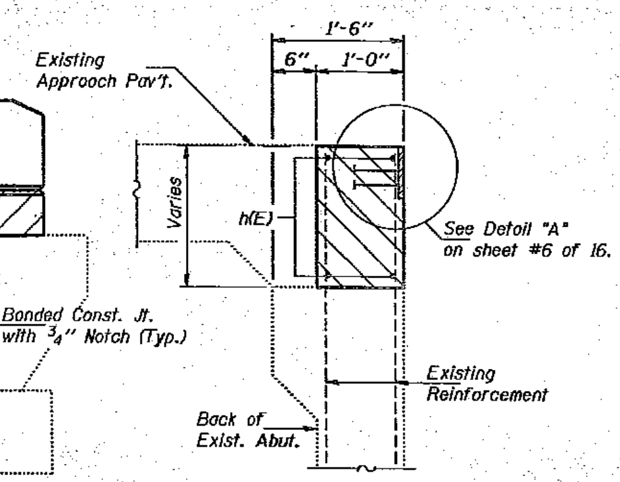
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-5B-1)D-1	FRANKLIN		140

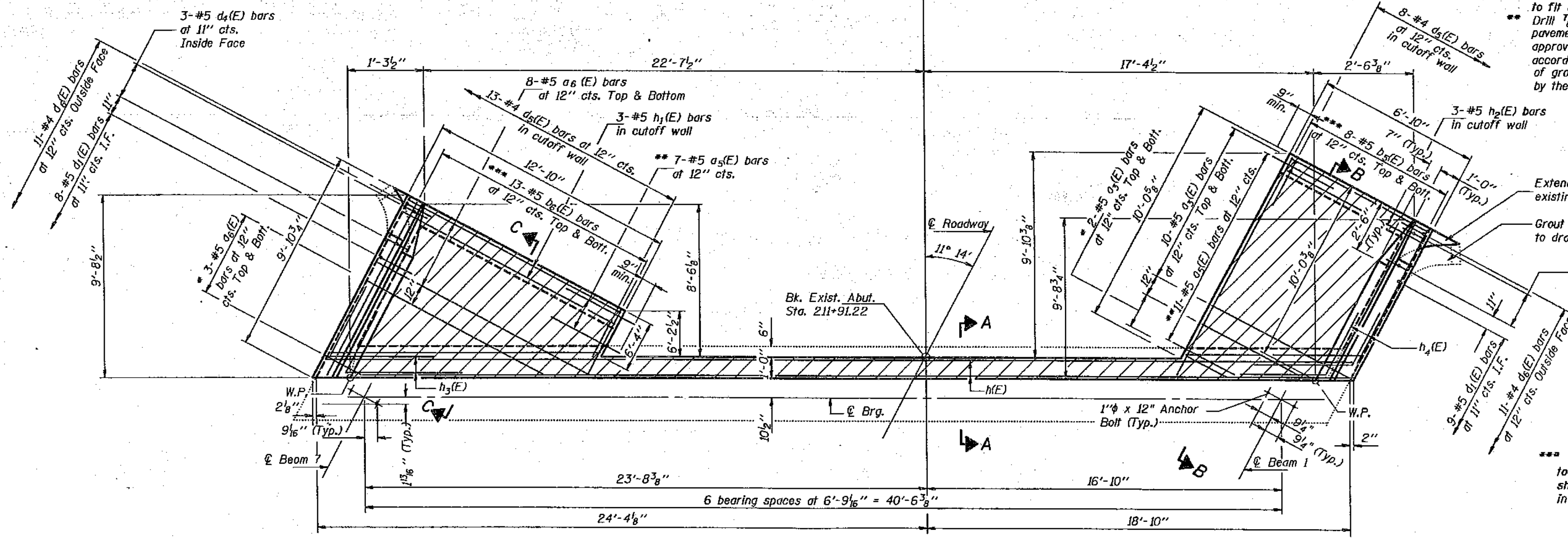
SHEET NO. 14 / 16 SHEETS



ELEVATION
(Looking North)



SECTION A-A



PLAN

* Order a3(E), and a6(E), bars full length. Cut to fit and use remainder of bars in bottom of slab.

** Drill ⅞"ϕ x 9" Min. hole in existing approach pavement epoxy grout a5(E) bars. Use a grout approved by the Department or epoxy grout in accordance with BSP-11. The method of grout application shall be approved by the Engineer. See Special Provisions.

*** Order b5(E) and b6(E) bars full length. Cut to fit as shown in Field Cutting Diagram on sheet #15 of 16 and use remainder of bars in bottom of slab directly below top bars.

Notes: Hatched area to be poured after superstructure forms have been removed. Quantity of concrete included with "Class X Concrete Superstructure" on sheet #6 of 16.
Existing reinforcement extending into removed area shall be cleaned, straightened and incorporated into the new construction.
Reinforcement bars designated (E) shall be epoxy coated.
For anchor bolt installation details see sheet #16 of 16.
Concrete Quantity for End Posts is included in "Class X Concrete Superstructutre".
All edges shall have standard ¾" chamfer.

DESIGNED	Richard J. Chapat
CHECKED	Bhuw P. Narichank
DRAWN	Paul W. Sweet
CHECKED	RJC DGV RTB

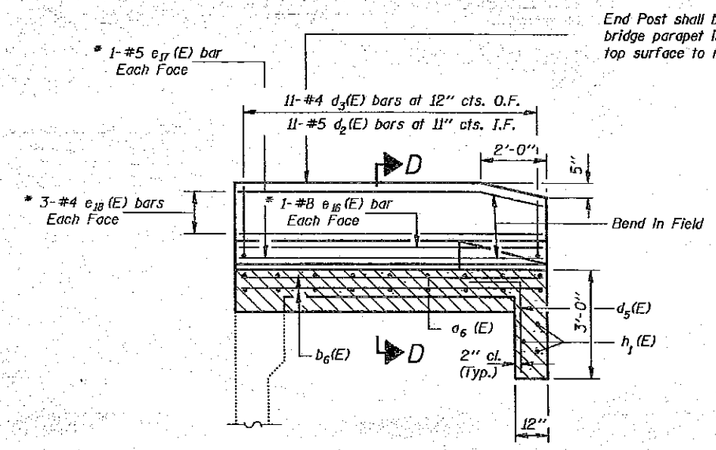
May 20 1993
EXAMINED Oraj J. Kaspar — ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

NORTH ABUTMENT
F.A.I. RT. 57 SEC. (28-5B-1)D-1
FRANKLIN COUNTY
STATION 212+50.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

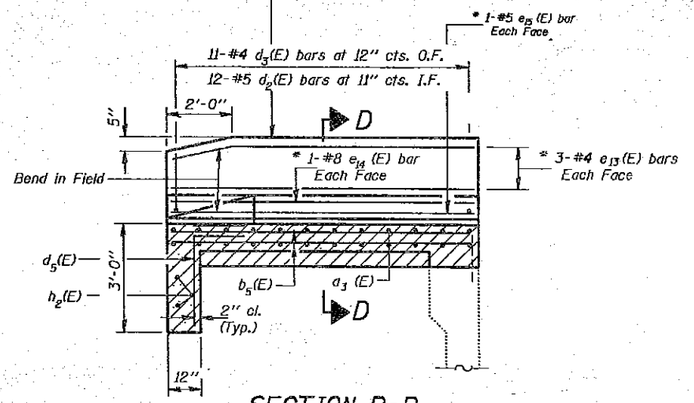
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-5B-1) D-1	FRANKLIN		141
FED.ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 15
16 SHEETS



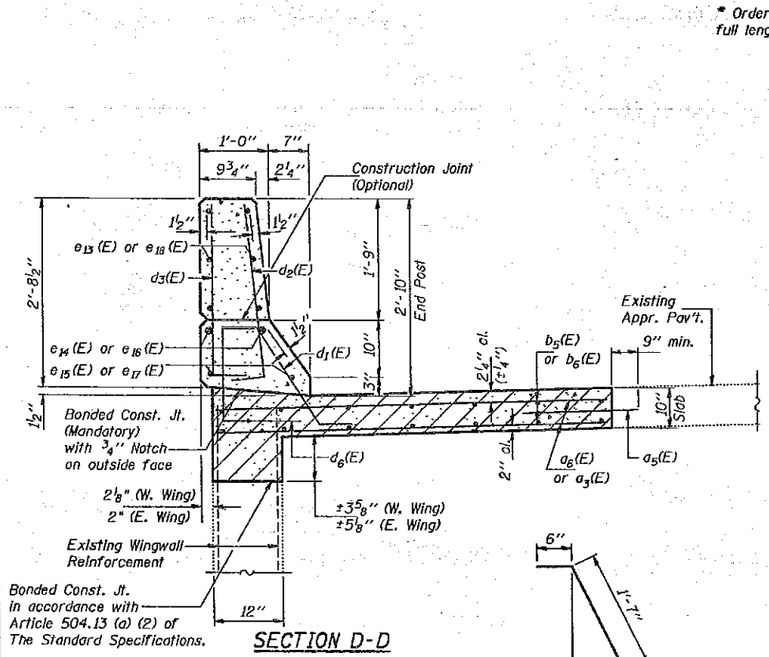
SECTION C-C

End Post shall be poured after bridge parapet is in place. Form top surface to match parapet grade.

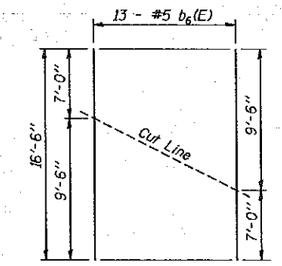


SECTION B-B

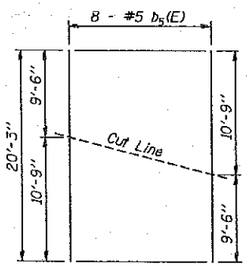
* Order End Post e_{13}(E) thru e_{18}(E) bars full length, cut to fit skew in the field.



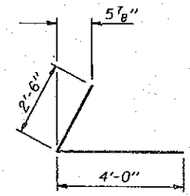
SECTION D-D



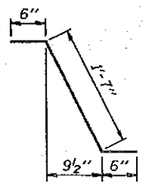
FIELD CUTTING DIAGRAM
BAR b_6(E)



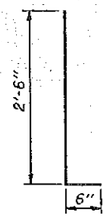
FIELD CUTTING DIAGRAM
BAR b_5(E)



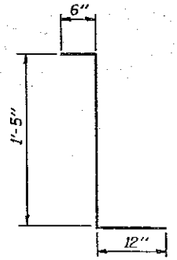
BAR h_3(E)



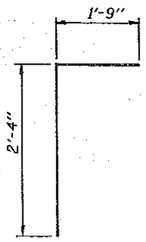
BAR d_1(E)



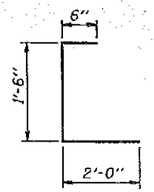
BARS d_2(E) & d_3(E)



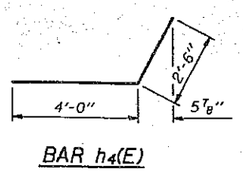
BAR d_4(E)



BAR d_5(E)



BAR d_6(E)



BAR h_4(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_3(E)	22	#5	6'-7"	
a_5(E)	18	#5	3'-0"	
a_6(E)	19	#5	12'-7"	
b_5(E)	8	#5	20'-3"	
b_6(E)	13	#5	16'-6"	
d_1(E)	17	#5	2'-7"	
d_2(E)	23	#5	3'-0"	
d_3(E)	22	#4	3'-0"	
d_4(E)	6	#5	2'-11"	
d_5(E)	21	#4	4'-1"	
d_6(E)	22	#4	4'-0"	
e_{13}(E)	6	#4	9'-9"	
e_{14}(E)	2	#8	9'-9"	
e_{15}(E)	2	#5	9'-9"	
e_{16}(E)	2	#8	9'-7"	
e_{17}(E)	2	#5	9'-7"	
e_{18}(E)	6	#4	9'-7"	
h(E)	4	#6	43'-6"	
h_1(E)	3	#5	12'-7"	
h_2(E)	3	#5	6'-7"	
h_3(E)	4	#5	6'-6"	
h_4(E)	4	#5	6'-6"	
Reinforcement Bars, Epoxy Coated			Lbs.	1,740
Structure Excavation			Cu. Yd.	11.0

Reinforcement bars designated (E) shall be epoxy coated.

DESIGNED	Richard J. Chipot
CHECKED	Bruce P. Nowlewski
DRAWN	Paul W. Sweet
CHECKED	RJC DGV RTB

May 20 1993

EXAMINED Draj D. Kaspar
ENGINEER OF BRIDGE DESIGN

PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

APPROVED
DIRECTOR OF HIGHWAYS

NORTH ABUTMENT DETAILS
F.A.I. RT. 57 SEC. (28-5B-1)D-1
FRANKLIN COUNTY
STATION 212+50.00

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(28-5B-1) D-1	FRANKLIN		142
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

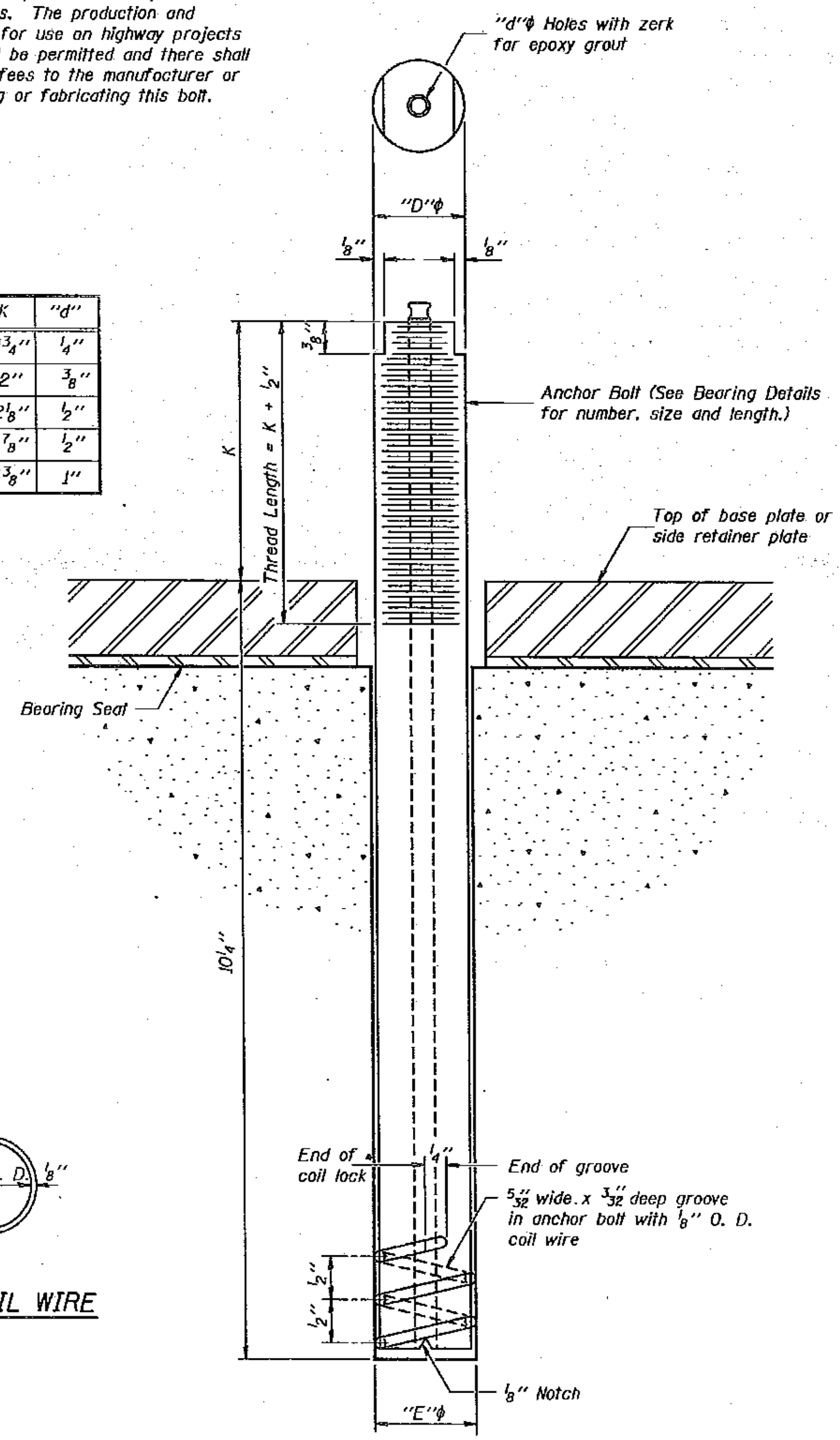
SHEET NO. 16

16 SHEETS

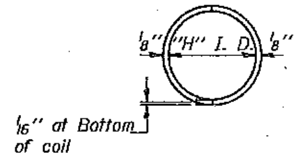
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

D	E	H	K	"d"
1"	1⅛"	13/16"	1¾"	¼"
1¼"	1⅜"	1 1/16"	2"	⅜"
1½"	1⅝"	1 5/16"	2⅛"	½"
2"	2⅛"	1 13/16"	2⅞"	½"
2½"	2⅝"	2 5/16"	3⅜"	1"



ILLINOIS COIL-LOCK ANCHOR BOLT



PLAN-COIL WIRE

MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A519, Grade 1026 and supplied with hexagonal nuts and cut washers.

The coil wire shall be made of any suitable soft steel wire.

The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.

The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C881, Type I, Grade 1 and of a Class suitable for the temperature of installation.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes in accordance with the manufacturer's recommendations and procedures.

The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:

1. A threaded rod stud with nut and washer conforming to ASTM A307.
2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or in accordance with the manufacturer's recommendation after beams or girders have been erected and adjusted.

Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.

The anchor bolts, furnished and installed and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for "Furnishing and Erecting Structural Steel".

DESIGNED	Richard L. Chast
CHECKED	Dhruv P. Nautiyal
DRAWN	Paul W. Sweet
CHECKED	RJC DGV RTB

ABB-1 12-1-83

May 20 1993

EXAMINED Oraj J. Kaspar
ENGINEER OF BRIDGE DESIGN

PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

APPROVED
DIRECTOR OF HIGHWAYS

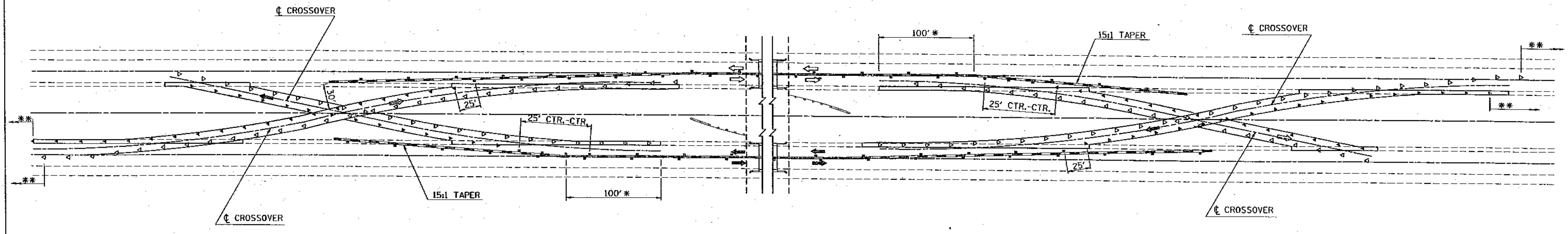
ANCHOR BOLT DETAILS
FOR BEARINGS
F.A.I. RT. 57 SEC. (28-5B-1)D-1
FRANKLIN COUNTY
STATION 212+50.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	*	FRANKLIN	145	143
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

* 28(5B-1,5B,2B,1B)D-1;28(5VB,3VB-1)I-1

DETAILS OF MEDIAN CROSSOVERS

(USE SOUTH BOUND CROSSOVERS FOR THIS CONTRACT)



PLAN VIEW

* THE CONCRETE BARRIER SHALL CONTINUE ALONG THE CENTERLINE OF THE MAINLINE PAVEMENT FOR 100' BEYOND THE END OF THE CROSSOVER BEFORE BEGINNING THE TAPER UNLESS OTHERWISE NOTED IN THE PLANS.

** CONTINUE TEMPORARY RAISED PAVEMENT MARKERS THRU LIMITS OF TEMPORARY PAVEMENT MARKING TAPE SHOWN ON STANDARD 2417.

NOTE: WHEN NOT IN USE MEDIAN CROSSOVERS SHALL BE CLOSED TO TRAFFIC BY PLACING TYPE III BARRICADES AT EACH END OF THE CROSSOVER.

LEGEND

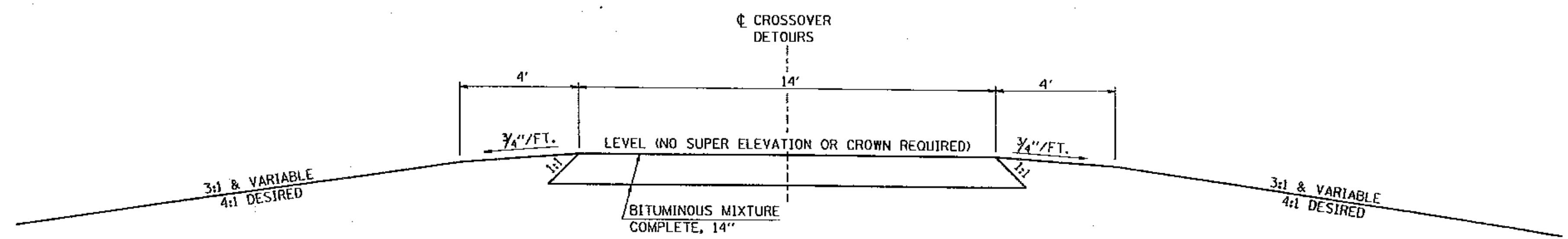
- TEMPORARY CONCRETE BARRIER
- ◁ ONE-WAY CRYSTAL TEMPORARY RAISED REFLECTIVE PAVEMENT MARKERS AT 25' CENTER TO CENTER
- ◀ ONE-WAY AMBER TEMPORARY RAISED REFLECTIVE PAVEMENT MARKERS AT 25' CENTER TO CENTER
- ■ AMBER MONODIRECTIONAL PRISMATIC BARRIER REFLECTORS. TO BE SPACED 50' CENTER TO CENTER EXCEPT WHERE OTHERWISE SHOWN ON DETAIL.

GENERAL NOTES

THIS DETAIL SHALL BE USED IN CONJUNCTION WITH STANDARD 2417.

THE PRISMATIC BARRIER REFLECTORS SHALL BE MOUNTED HALF-WAY UP THE NEARLY VERTICAL FACE OF THE TEMPORARY CONCRETE BARRIER, OR 1'-10½" FROM THE PAVEMENT TO THE CENTER OF THE REFLECTOR.

THE COST TO PROVIDE, INSTALL, AND MAINTAIN TEMPORARY RAISED REFLECTIVE PAVEMENT MARKERS AND PRISMATIC BARRIER REFLECTORS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE EACH FOR TRAFFIC CONTROL AND PROTECTION, STANDARD 2417.

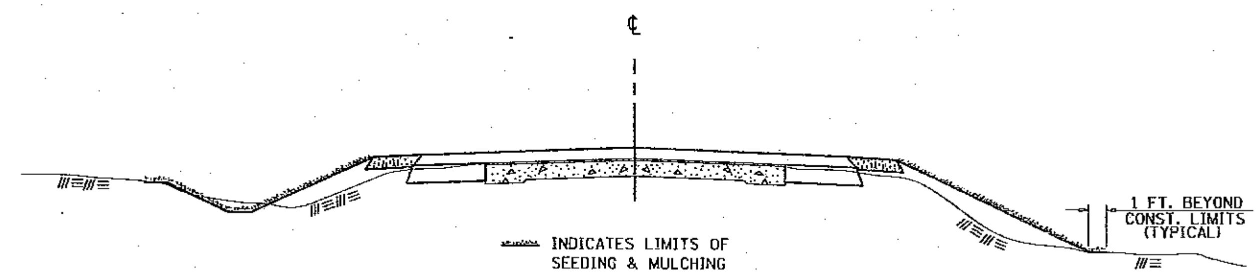


TYPICAL SECTION MEDIAN CROSSOVER DETOURS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	*	FRANKLIN	145	144
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

* 28(5B-1,5B,2B,1B)D-1;28(5VB,3VB-1)I-1

SEEDING & MULCHING



GENERAL NOTES

IN GENERAL, ALL EARTH SURFACES DISTURBED DURING CONSTRUCTION OPERATIONS SHALL BE SEEDED AND MULCHED UPON COMPLETION OF ALL GRADING OPERATIONS.

FERTILIZER NUTRIENTS AND LIMESTONE SHALL BE APPLIED TO ALL SEEDED AREAS.

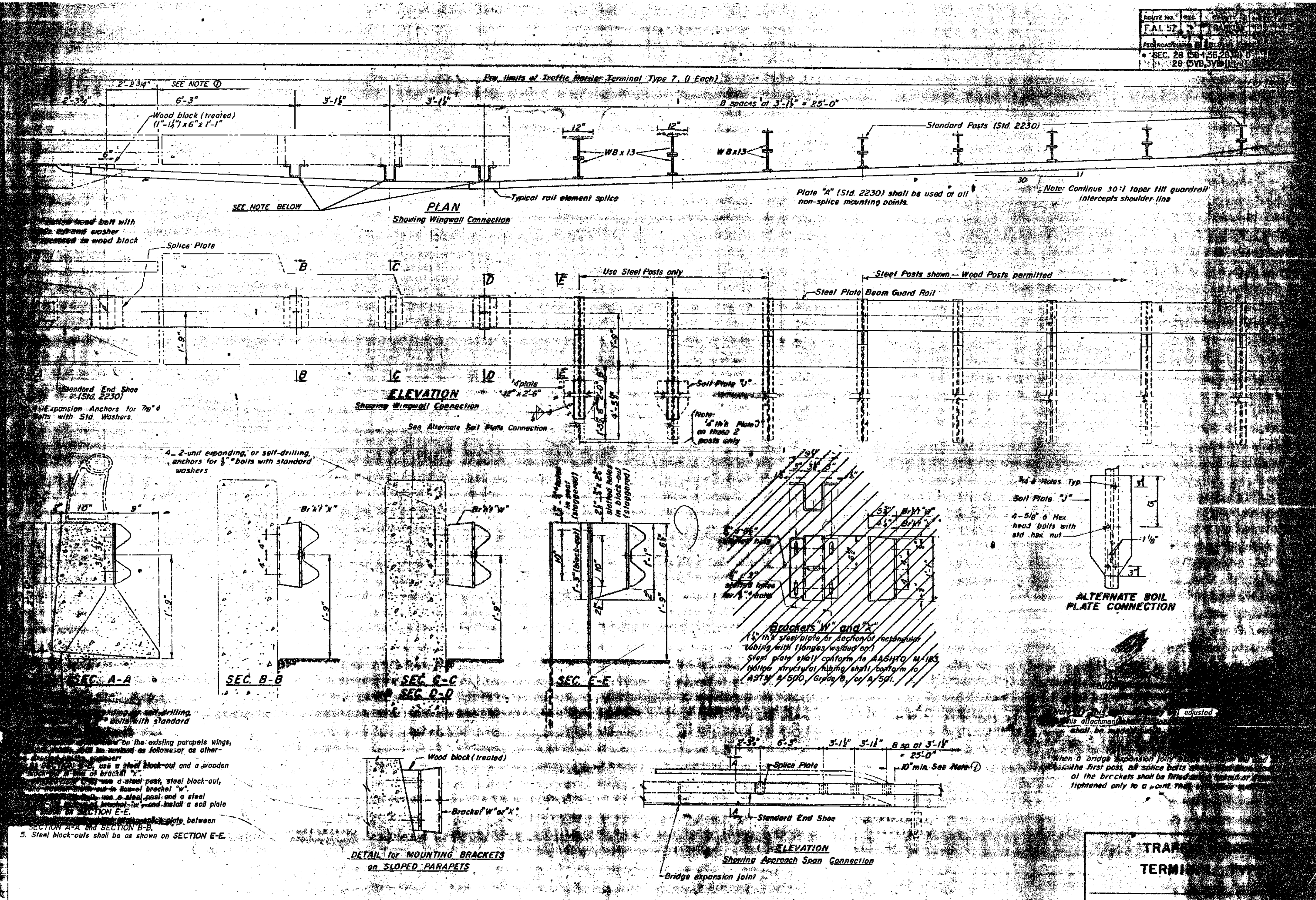
THE RATES OF APPLICATION OF FERTILIZER, MULCH AND LIMESTONE SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS.

SECTIONS 642 AND 643 OF THE STANDARD SPECIFICATIONS SHALL GOVERN THIS WORK EXCEPT AS SPECIFIED HEREIN OR AS NOTED IN THE SPECIAL PROVISIONS.

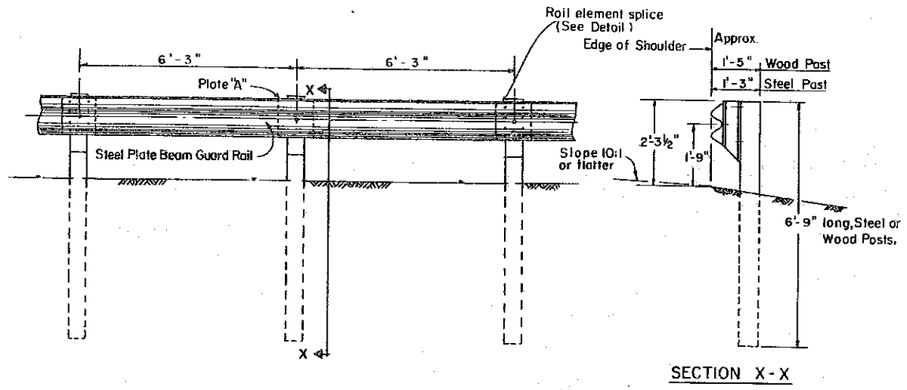
REVISIONS	
REDRAWN	2-15-89

STD. 9-12

Tue Feb 09 15:02:44 1993
/usr/project/jimlloy/d90369Qb3.dgn 1Vx1-63
VIEW • DTL2 (SOUTH)

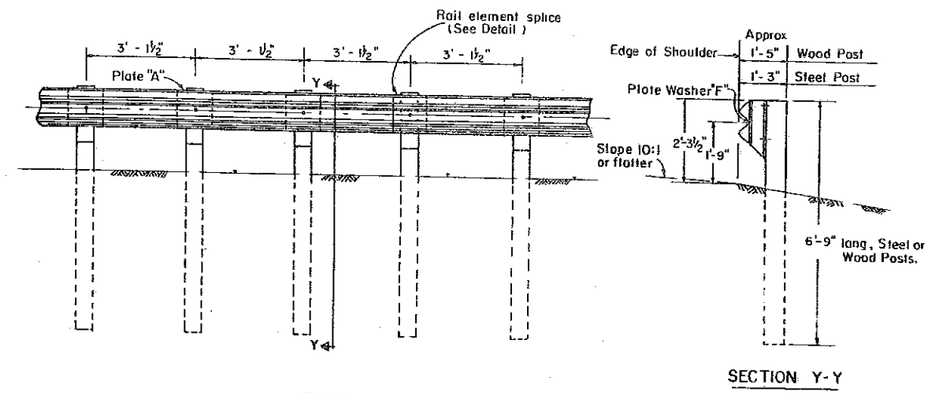


F.A.I. 57
SEC. 28 (58-1-58-2B)
Pay limits of Traffic Barrier Terminal Type 7, (1 Each)
2'-2 3/4"
SEE NOTE ①
2'-3 3/4"
6'-3"
3'-1 1/2"
3'-1 1/2"
8 spaces at 3'-1 1/2" = 25'-0"
Wood block (treated) (1"-1 1/4") x 6" x 1'-1"
12"
12"
W8 x 13
W8 x 13
Standard Posts (Std. 2230)
6"
30
1
SEE NOTE BELOW
Typical rail element splice
Plate "A" (Std. 2230) shall be used at all non-splice mounting points
Note: Continue 30:1 taper till guardrail intercepts shoulder line
PLAN
Showing Wingwall Connection
Splice Plate
Use Steel Posts only
Steel Posts shown — Wood Posts permitted
Steel Plate Beam Guard Rail
1'-9"
Standard End Shoe (Std. 2230)
Expansion Anchors for 7/8" ϕ Bolts with Std. Washers.
ELEVATION
Showing Wingwall Connection
See Alternate Soil Plate Connection
Soil Plate "J"
Note: 1/4" th'k Plate J on these 2 posts only
4 - 2-unit expanding, or self-drilling, anchors for 5/8" ϕ bolts with standard washers
Br'k't "X"
Br'k't "W"
10"
9"
1'-9"
1'-9"
1'-9"
1'-9"
SEC. A-A
SEC. B-B
SEC. C-C
SEC. D-D
SEC. E-E
Brackets "W" and "X"
(1/4" th'k steel plate or section of rectangular tubing with flanges welded on)
Steel plate shall conform to AASHTO M-183. Hollow structural tubing shall conform to ASTM A-500, Grade B, or A 501.
3/4" ϕ Holes Typ.
Soil Plate "J"
4 - 5/8" ϕ Hex head bolts with std hex nut
15"
1 1/8"
ALTERNATE SOIL PLATE CONNECTION
Wood block (treated)
Bracket "W" or "X"
DETAIL for MOUNTING BRACKETS on SLOPED PARAPETS
2'-3 3/4"
6'-3"
3'-1 1/2"
3'-1 1/2"
8 sp. at 3'-1 1/2" = 25'-0"
Splice Plate
10" min. See Note ④
Standard End Shoe
ELEVATION
Showing Approach Span Connection
Bridge expansion joint
When a bridge expansion joint ... the first post, all splice bolts ... at the brackets shall be fitted ... tightened only to a point ...
SECTION A-A and SECTION B-B.
5. Steel block-outs shall be as shown on SECTION E-E.
TRA
TERMI



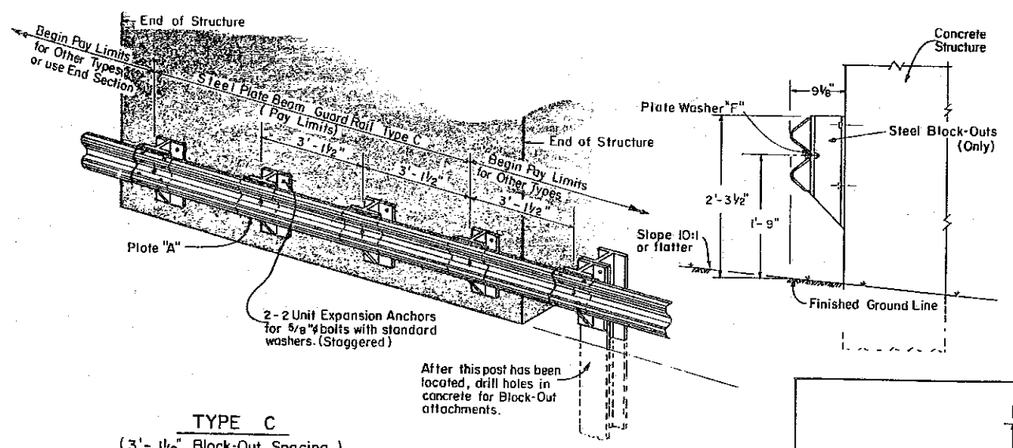
TYPE A

(6'-3" Typical Post Spacing)



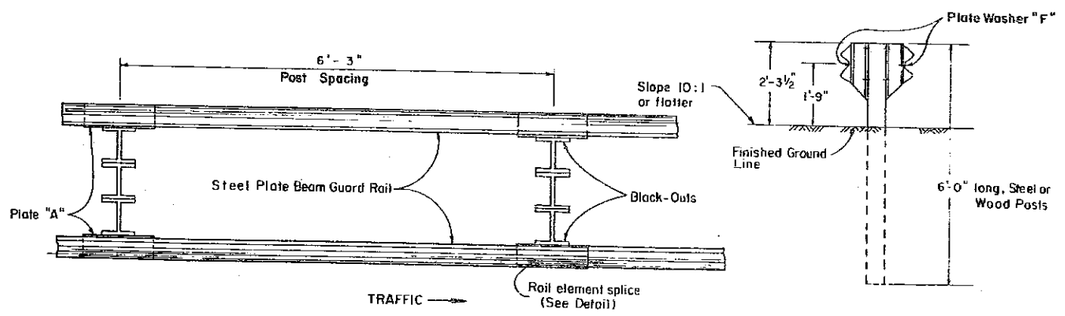
TYPE B

(3'-1½" Closed Post Spacing)



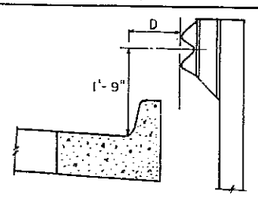
TYPE C

(3'-1½" Block-Out Spacing)



TYPE D

(Double Steel Plate Beam Guard Rail, with 6'-3" Typical Post Spacing)



GUARD RAIL PLACED BEHIND CURB

D = 0'-0" desirable to 1'-0" maximum.

If it is necessary for D to be more than one foot and less than ten feet, Type M2 curb and gutter (Std. 2130) shall be used in front of and in advance of the guardrail.

NOTE: Rail element lap in direction of traffic of the adjacent lane for all types

Illinois Department of Transportation

PASSED April 9, 1990
Engineer of Policy and Procedures

APPROVED April 9, 1990
Engineer of Design

ISSUED 2-11-66

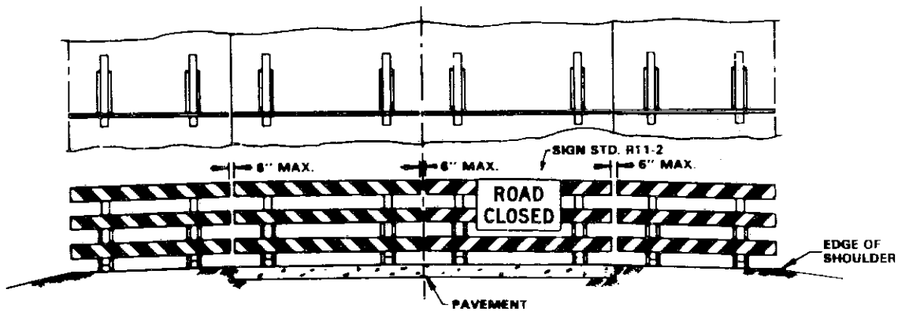
STEEL PLATE BEAM GUARD RAIL TYPES A, B, C & D

Sheet 1 of 2 Sheets

STANDARD 2230-16

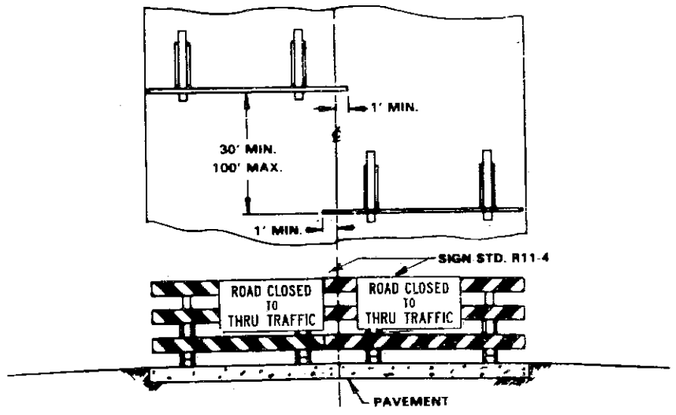
F-3.01n

TYPICAL APPLICATIONS OF TYPE III BARRICADES CLOSING A ROAD



ROAD CLOSED TO ALL TRAFFIC

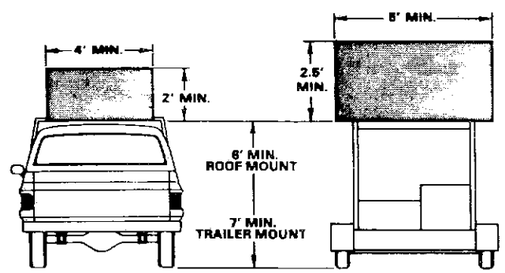
Reflectorized striping may be omitted on the back side of the barricades. The barricades shall be to the edge of the shoulders except when otherwise directed by the Engineer or shown on the detailed construction plans.



ROAD CLOSED TO ALL THRU TRAFFIC

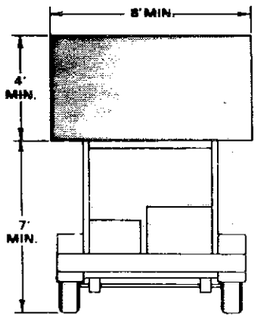
Reflectorized striping shall appear on both sides of barricades. The barricades shall be to the edge of the pavement, except when otherwise directed by the Engineer or shown on the detailed construction plans.

ARROW BOARDS



TYPE A
ROOF MOUNTED

TYPE B
ROOF OR TRAILER MOUNTED



TYPE C
TRAILER MOUNTED

Arrow boards shall conform to Article 718.22 of the Standard Specifications. On roads with speeds of 45 miles per hour and above, Type C units are to be used for all operations 24 hours or more in duration and Type B units may be used for operations less than 24 hours in duration. Type A, B or C units may be used for all operations on roads with speeds less than 45 miles per hour. Arrow boards shall not be used to direct passing moves into lanes used by opposing traffic.

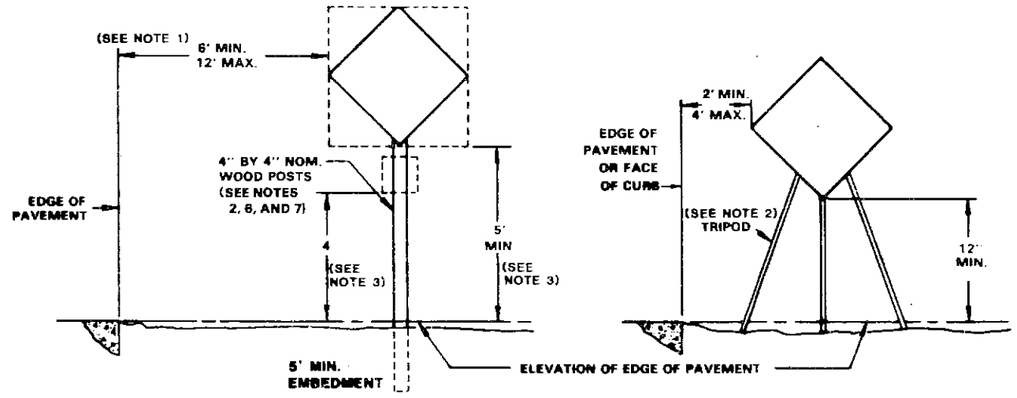
WORK LIMIT SIGNING

W7-3a(O)

G20-2(0)-6024

The NEXT X MILES supplemental plate shall be installed below the first warning sign in the series of all projects over two miles in length. The END CONSTRUCTION sign shall also be erected near the end of these projects, unless another project is within 2 miles beyond the end of the job.

TYPICAL SIGN INSTALLATIONS



1. 2 ft. minimum to face of curb.
2. Alternate designs and or materials may be permitted when authorized by the Engineer. All materials shall be substantial and durable.
3. Add 2 ft. if parking exists within 200 ft. in advance of the sign location or if pedestrian movement is likely to occur at any time during the project.
4. Signs on temporary supports shall be within 20° of a vertical position.
5. Weights of concrete, stone, or brick will not be allowed and all weights used to stabilize signs other than sandbags must be rigidly attached to the sign support as close to the ground as possible.
6. Two posts shall be used for signs greater than 16 sq. ft. in area or where the height between the sign and the ground exceeds 7 ft. Bracing no heavier than 2" x 4" wood may be used for added support. Any brace placed parallel to the road shall be sloped down toward approaching traffic.
7. If approved by the Engineer, skids may be used to support signs where posts are impractical. If used, they shall not exceed the structural design of Type III barricades and shall be no greater than 4 ft. in length.

Illinois Department of Transportation

Approved 2/4/92

Engineer of Traffic

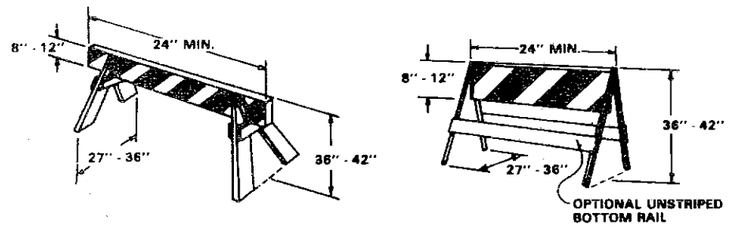
88/E/7 panel

TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES HIGHWAY CONSTRUCTION AND CONTRACT MAINTENANCE

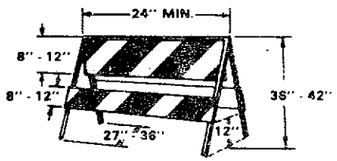
SHEET 1 OF 2

STANDARD 2298-9

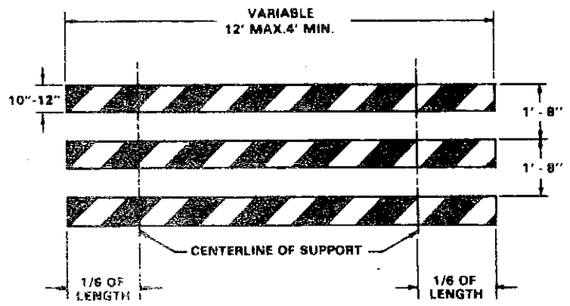
TYPE I BARRICADES

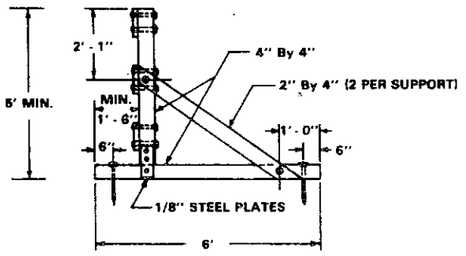


TYPE II BARRICADES

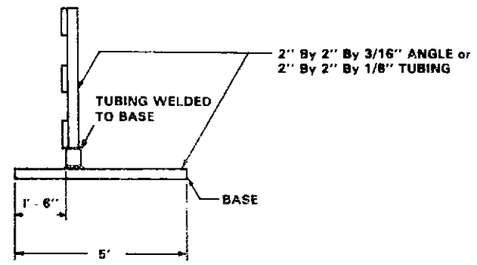


TYPE III BARRICADES



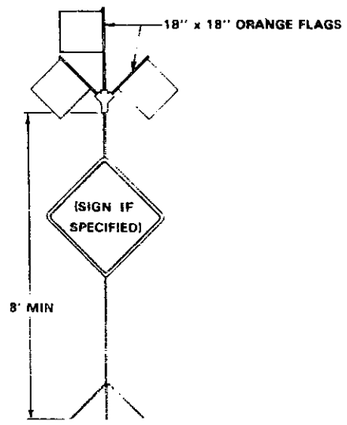


TYPICAL WOOD SUPPORT

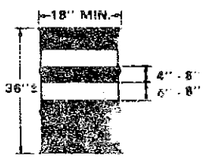


TYPICAL STEEL SUPPORT

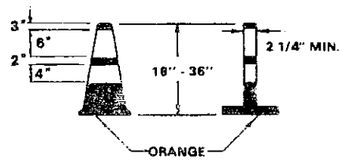
HIGH LEVEL WARNING DEVICE



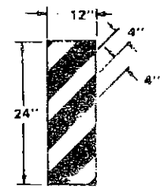
DRUMS



CONES



VERTICAL PANELS



SEE NOTE 14 FOR SUPPORT OR MOUNTING REQUIREMENTS

GENERAL NOTES

1. Type I Barricades are intended for use on lower speed roads and shall not be used where normal speeds are greater than 40 MPH unless the reflective area of the upper rail is at least 288 square inches.

2. Type I and Type II Barricades shall not be intermixed within an individual string of barricades.

3. Type III Barricades are intended for road and lane closures and shall not be used for channelization or delineation.

4. All heights shown shall be measured above the pavement surface.

5. Unless otherwise noted, the reflective sheeting used for barricades, drums, and vertical panels shall meet the requirements of Article 718.17 and 718.18 of the Standard Specifications for Road and Bridge Construction.

6. All barricades and vertical panels shall have alternating reflectorized white and reflectorized orange stripes sloping downward at 45° toward the side on which traffic will pass. Barricade stripes shall be 6 inches in width on barricades 36 inches or greater in length and 4 inches in width on barricades less than 36 inches in length. Type I and Type II Barricades shall be striped on both sides. Type III Barricades shall be striped on both sides where traffic approaches from either direction. Vertical panels placed on the outside of curves shall be striped on both sides. The predominant color for other barricade components shall be white or silver, except that painted galvanized metal or aluminum components may be used.

7. Drums shall be non-metallic and have alternating reflectorized orange and reflectorized white horizontal, circumferential stripes 4 inches to 8 inches in width. There shall be at least two orange and at least two white stripes on each drum. If nonreflective spaces are left between the orange and white stripes, they shall be no more than 2 inches in width. All nonreflectorized portions of the drums shall be orange or white. Drums may be slightly conical in shape and may have one or more flat surfaces to minimize rolling when hit.

8. Frames for Type I and Type II Barricades shall be designed so as to provide a stable support and should be constructed of light weight steel or aluminum angles or tubing, wood, plastic, or rubber and have no rigid stay bracing for "A" frame designs. As Type III Barricades are only used at closures, they may be constructed of heavier materials than Type I or Type II Barricades. However, they should not have any vertical or sloping supports heavier than 4-inch by 4-inch lumber, 2-inch by 2-inch by 1/8-inch steel tubing, or 2-inch by 2-inch by 3/16-inch steel angles.

9. Barricade rails shall be no heavier than 1-inch thick lumber or plywood except for the "sawhorse" design Type I Barricade which may have a rail no heavier than 2-inch thick lumber. Other light weight weather resistant materials such as plastic, fiberglass or sheet aluminum may be used. Barricade rails may be sloping or vertical. Nominal lumber dimensions may be used to satisfy wooden barricade component dimensions.

10. The name and phone number only of an agency, contractor, or supplier may be shown on the nonreflective surface of the face part of a barricade. Such identification shall be in one color and nonreflective with letters not to exceed 1-inch in height.

11. When used, warning lights on barricades, drums, or vertical panels shall be mounted above the top of the device to the side on which traffic will pass and shall not obscure any reflectorized portion of the device.

12. Weights of concrete, stone, or brick will not be allowed and all weights used to stabilize barricades other than sandbags must be rigidly attatched to the legs of the barricades as close to the ground as possible. No sandbags will be allowed on the top rail of barricades. Sandbags may be placed on barricade legs, over striped bottom rails not facing traffic, over unstriped bottom rails, or suspended from the barricade rail or frame in such a manner so that the bulk of the sand is at least 18 inches below the top of the barricade. Drums may be weighted internally with just enough sand, water, or other material to provide stability.

13. Cones shall be constructed of durable material able to withstand abuse by vehicular traffic. Minimum weights shall be 4 pounds for 18 inch, 7 pounds for 28 inch, and 10 pounds for 36 inch cones with a minimum of 60 percent of the total weight in the base. On fully access-controlled facilities, cones shall be a minimum of 28 inches in height. Reflectorized cones shall only be used as specified on the plans or as approved by the Engineer. When used, reflectorized cones shall be a minimum 28 inches in height and shall have two reflective bands: one a minimum of six inches wide placed three inches from the top of the cone and the other a minimum of four inches placed two inches below the six inch band.

14. Vertical panels may be either post mounted, frame supported or attached to the top of a barrier. Post mounted vertical panels shall be firmly attached to light weight wood or metal posts with the top a minimum height of 48 inches above the pavement surface. Frame supported vertical panels shall conform to General Notes 8, 9, 10 and 12 of this Standard and shall only be used where normal speeds are 40 MPH or less, with the top a minimum height of 36 inches above the pavement surface.

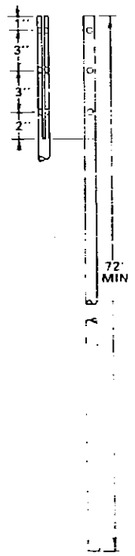
Illinois Department of Transportation

Approved: 2/4/13

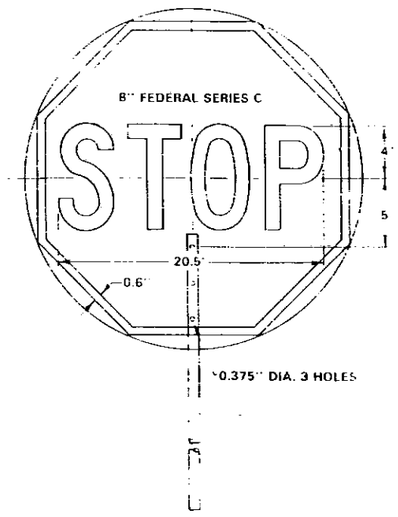
Engineer of Traffic

DESIGN OF TRAFFIC CONTROL DEVICES FOR HIGHWAY CONSTRUCTION AND CONTRACT MAINTENANCE

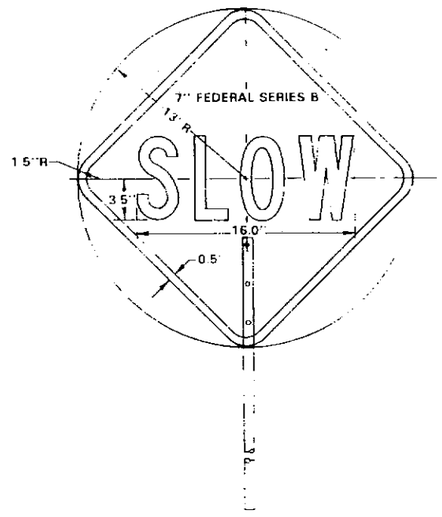
STANDARD 2299-13



STAFF



FRONT SIDE



REVERSE SIDE

GENERAL NOTES

1. The "STOP" face shall consist of white letters and border on a red reflectorized background.
2. The "SLOW" face shall consist of black letters and border on an orange reflectorized background.
3. Areas outside sign borders shall be light blue or black.
4. The sign blank may be octagonal in shape in lieu of circular.
5. The portion of the staff within the sign face shall match the sign colors.
6. All colors and letters shall meet applicable federal standards.
7. The staff shall consist of two sections joined by a coupling located 60 in. from the bottom of the staff. Alternate designs may be used when approved by the Engineer. All materials shall be substantial and durable.
8. This sign shall be furnished by the contractor and shall be used by the flagger in lieu of flags or other signaling devices. The cost of furnishing and maintaining the sign shall be considered incidental to the contract and no additional compensation will be allowed.

Illinois Department of Transportation

Approved October 21, 1983

Engineer of Traffic

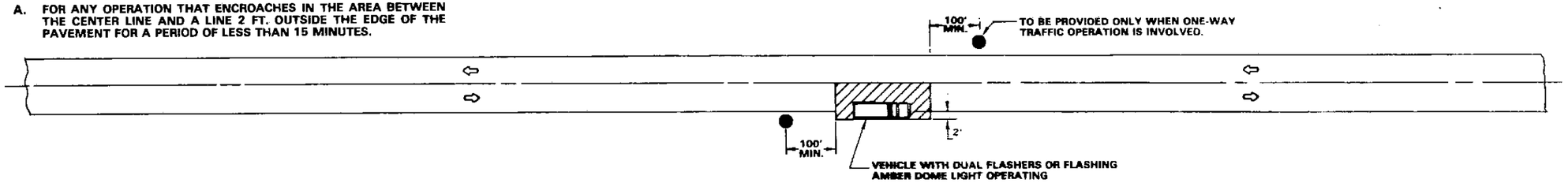
Issued 4-5-11

FLAGGER TRAFFIC CONTROL SIGN

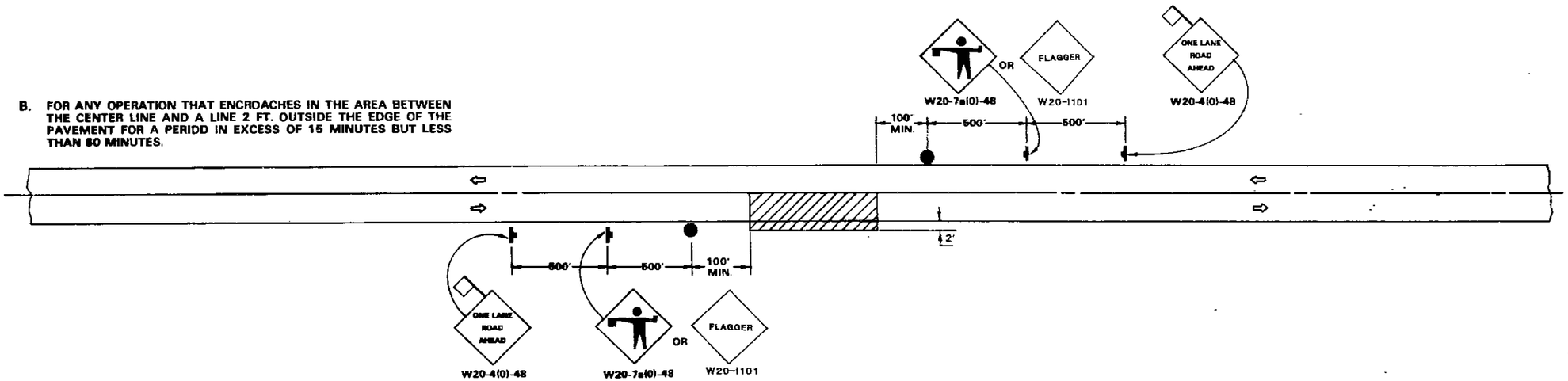
STANDARD 2300-3

F-6 030

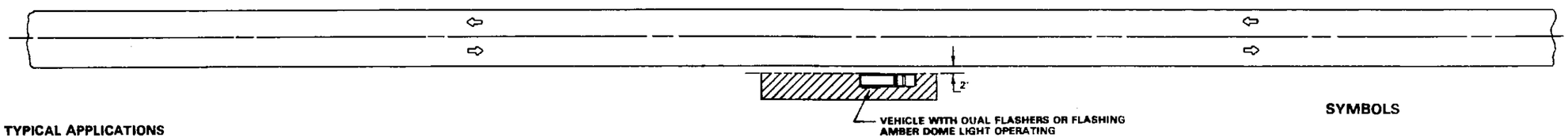
A. FOR ANY OPERATION THAT ENCROACHES IN THE AREA BETWEEN THE CENTER LINE AND A LINE 2 FT. OUTSIDE THE EDGE OF THE PAVEMENT FOR A PERIOD OF LESS THAN 15 MINUTES.



B. FOR ANY OPERATION THAT ENCROACHES IN THE AREA BETWEEN THE CENTER LINE AND A LINE 2 FT. OUTSIDE THE EDGE OF THE PAVEMENT FOR A PERIDD IN EXCESS OF 15 MINUTES BUT LESS THAN 60 MINUTES.



C. FOR ANY OPERATION THAT IS MORE THAN 2 FT. OUTSIDE THE EDGE OF THE PAVEMENT FOR A PERIOD OF LESS THAN 60 MINUTES.



TYPICAL APPLICATIONS

Marking Petches

Field Survey

String Line

Utility Operation

Cleaning Up Debris on Pavement

GENERAL NOTES

1. Construction operations shall be confined to one traffic lane. On two-lane roads, at least 500 ft. of both traffic lanes shall be available for traffic movement at intervals not greater than 1,000 ft. and a complete traffic control plan must be approved for any project expected to exceed 1,000 ft. in length.
2. The flaggers shall be in sight of each other or in direct communication at all times.
3. All signs are to be removed at completion of each operation.
4. For multilane roadways the flagger shown for traffic approaching from the opposite direction will be positioned as directed by the Engineer, the advance warning signs for traffic approaching from the opposite direction omitted, and the ONE LANE ROAD AHEAD sign changed to RIGHT (LEFT) LANE CLOSED AHEAD.
5. Longitudinal dimensions may be adjusted to fit field conditions. The lateral placement of the flaggers may be varied from that shown.

SYMBOLS

- Work Area
- 18 in. X 18 in. (minimum) Orange Flag
- Sign on Portable or Permanent Support
- Flagger with Traffic Control Sign

Illinois Department of Transportation

Approved 8/4/92

R.W. Jones

Engineer of Traffic

Issued 8/3/89

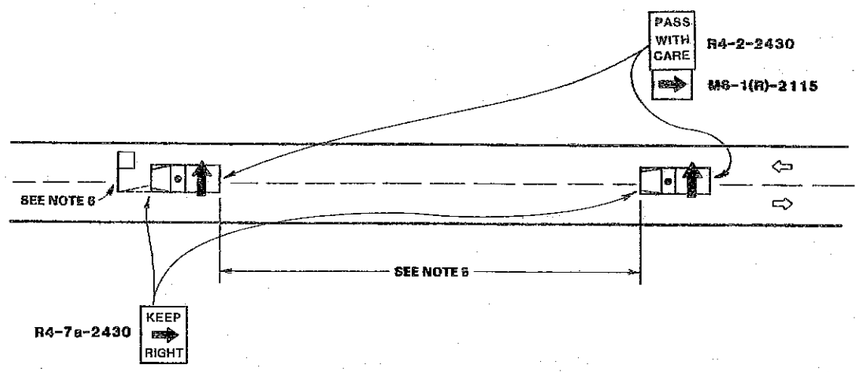
TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES HIGHWAY CONSTRUCTION AND CONTRACT MAINTENANCE

SHORT-TIME OPERATIONS DAY OR NIGHT OPERATIONS

STANDARD 2307-7

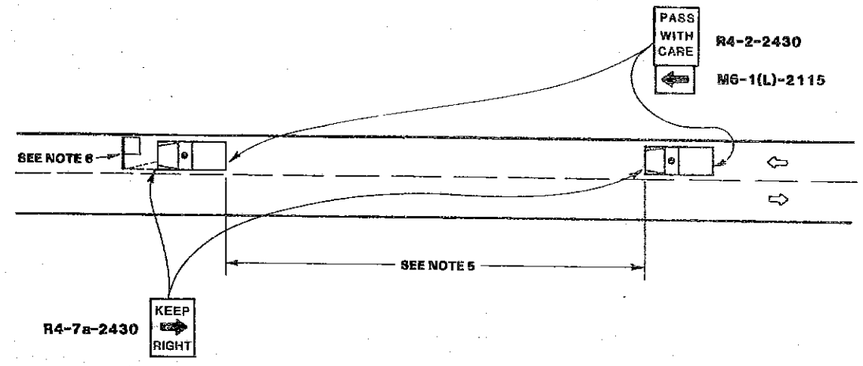
T-10-12a

DETAIL A



G20-1101-2430
SEE NOTE 2

DETAIL B



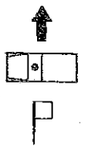
GENERAL NOTES

1. For shoulder operations not encroaching on the pavement, use DETAIL A, Sheet 2.
2. During pavement marking operations, WET PAINT signs with appropriate arrow(s) shall be mounted on the back of the striper and following vehicle where necessary to reduce tracking.
3. In areas where the shoulder is inadequate for motorists to pass the convoy, the arrow boards shall be changed from the flashing arrow mode to a flashing hazard mode. In no case shall the arrow boards be visible to traffic approaching the front of the convoy in the open lane. Arrow boards shall never flash to indicate passing on the left on a two-lane, two-way roadway.
4. All vehicles shall have headlights and emergency flashers operating and shall display an amber colored oscillating, rotating or flashing light(s). At least one amber light is to be visible from any direction.
5. Trailing vehicles shall be at least 200 feet behind the lead vehicles with the distance varying depending upon the terrain and susceptibility of any pavement marking to wheel tracking.
6. If a guide wheel is used in pavement marking operations, it shall be equipped with a flag as shown.

TYPICAL APPLICATIONS

- Landscaping work
- Utility work
- Pavement marking
- Weed spraying
- Roadometer measurements
- Debris clean-up
- Crack pouring

SYMBOLS



Arrow Board

Truck with Flashing Amber Light

18 in. X 18 in. (minimum) Orange Flag

Illinois Department of Transportation

Approved 8/4/82

R.W. Lang

Engineer of Traffic

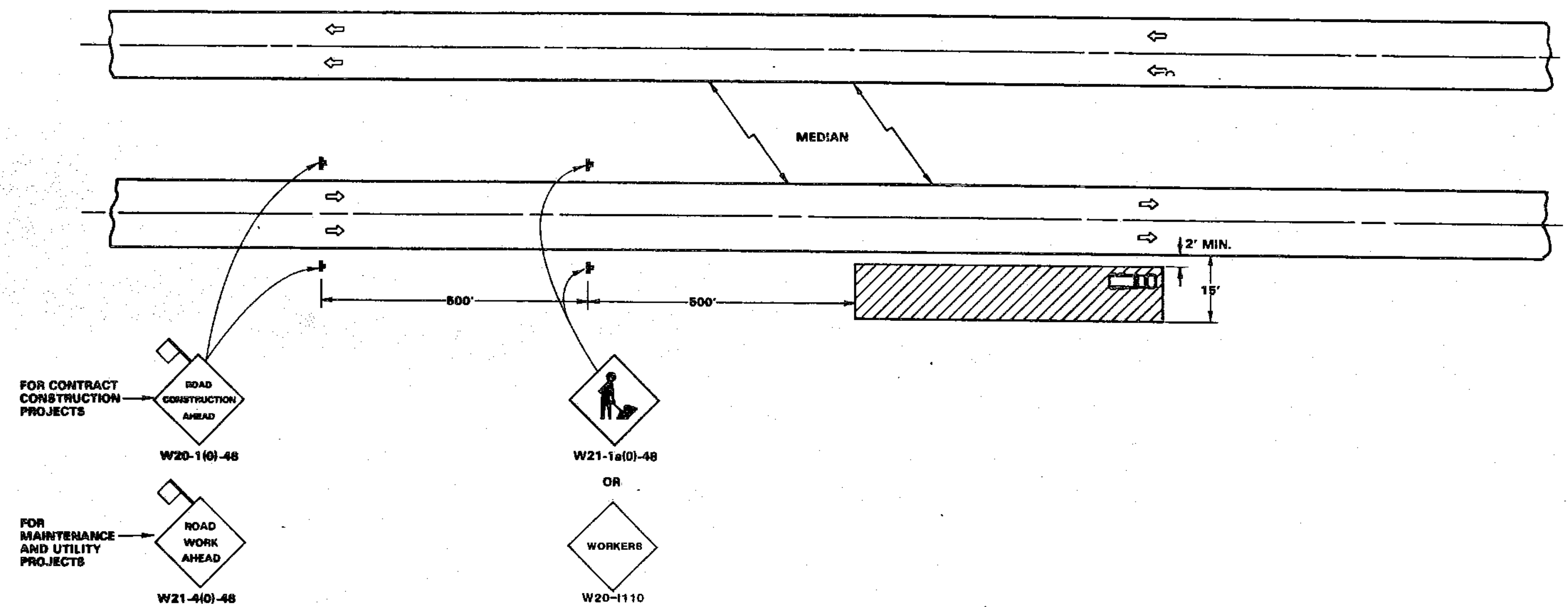
Issued 6/1/88

TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES HIGHWAY CONSTRUCTION AND CONTRACT MAINTENANCE

RURAL, DAY OR NIGHT MOVING OPERATIONS

Where, at any time, any vehicle, equipment, workers or their activities will require a continuous or intermittant moving operation where the average speed of movement is greater than 1 MPH.

STANDARD 2308-6



SYMBOLS

- Work Area
- 18 in. X 18 in. (minimum) Orange Flag
- Sign on Portable or Permanent Support

TYPICAL APPLICATIONS

Utility Operations

Culvert Extensions

Side Slope Changes

Guard Rail Installation and Maintenance

Delineator Installation

Landscaping Operations

Sign Installation and Maintenance

Shoulder Repair

GENERAL NOTES

1. If the work operation does not exceed 60 minutes, traffic control may be in conformance with STANDARD 2307.
2. Worker signs are to be removed when no work is being performed. Any unattended obstacle or excavation in the work area which in the opinion of the Engineer constitutes a hazard shall be protected by barricades at 50 ft. centers, with flashing lights at night. If the hazard exceeds 100 ft. in length, steady burning lights shall be substituted for flashing lights. When the distance is greater than 250 ft., barricade spacing may be increased to 100 ft.
3. If the work operation requires that four or more work vehicles enter through traffic lanes in a one hour period, a flagger shall be provided and a Flagger sign shall be substituted for the Worker sign.
4. Signs mounted in the median may be omitted when the median is less than 10 feet wide.
5. This standard also applies when work is being performed on a multilane undivided highway. Under these conditions the signs normally mounted in the median shall be omitted.
6. Longitudinal dimensions may be adjusted to fit field conditions.

Illinois Department of Transportation

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Engineer of Traffic

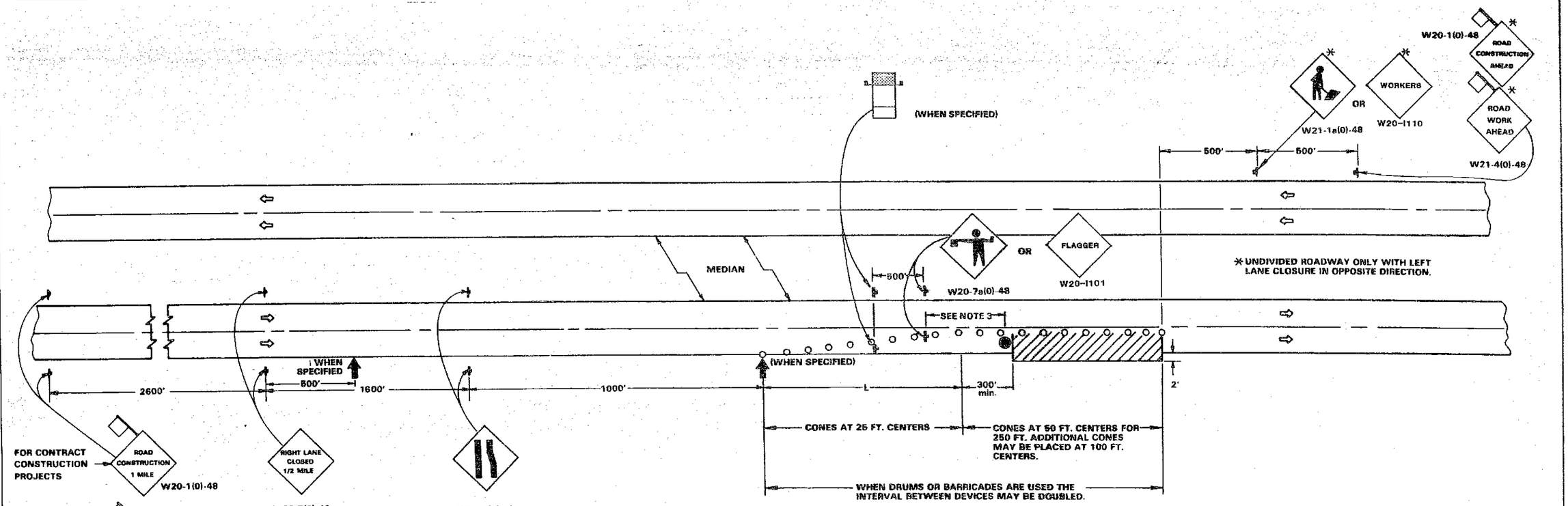
Issued 6/3/88

TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES HIGHWAY CONSTRUCTION AND CONTRACT MAINTENANCE

MULTILANE, DIVIDED AND UNDIVIDED, RURAL DAY OR NIGHT OPERATIONS.

Where at any time, any vehicle, equipment, workers or their activities will encroach in the area closer than 15 ft. but not closer than 2 ft. to the edge of pavement.

STANDARD 2314-6



TYPICAL APPLICATIONS

Pavement Patch

Utility Operations

Bituminous Resurfacing

GENERAL NOTES

1. The "L" distance equals the lane width times the taper ratio.

Normal Posted Speed m.p.h.	Taper Ratio ft./ft.
65	65/1
60	60/1
55	55/1
50	50/1
45 or less	45/1

2. When no work is being performed, the flagger will not be required. If the flagger is not present, the Flagger and Worker signs shall be removed or covered.
3. The Construction Speed Limit signs (when specified) and the Flagger signs shall be moved as necessary to maintain a spacing of 500 feet to 1.5 miles between the Flagger and Flagger signs.
4. This standard also applies when work is being performed in the left lane. Under these conditions, LEFT LANE CLOSED signs shall be substituted for RIGHT LANE CLOSED signs. On undivided highways, signs shall be added in the opposite direction as shown and cones shall be placed along the center line throughout the taper and work area. On left lane closures with narrow medians, the arrow board at the beginning of the lane closure (when specified) shall be relocated behind the taper as necessary so that a clearance of at least 4 ft. can be maintained from the opposing traffic.
5. The speed limit to be shown on the Construction Speed Limit signs and Advisory Speed plates shall be 10 miles per hour less than the normal posted speed limit or 45 MPH, whichever is less. The signs shall not be used where the normal posted speed limit is below 45 miles per hour.
6. The flashing lights on the Construction Speed Limit signs shall be activated only when workers are present in a lane adjacent to one open to traffic. At all other times, the flashing lights shall be turned off and the signs may be removed.
7. All signs, cones, barricades and drums are to be removed at completion of the day's operations and the work area opened to traffic.
8. Median signs may be omitted when the median is less than 10 feet wide.
9. This standard does not apply when work is being performed in the middle lane(s) of a six or more lane highway. Special plans approved by the Engineer will be required.
10. On fully access-controlled facilities, cones shall be a minimum of 28 in. in height.
11. Longitudinal dimensions may be adjusted to fit field conditions. The lateral placement of the flagger may be varied from that shown. The flagger shown at the beginning of the work area shall be stationed approximately 200 feet in advance of the work party.
12. At all times when workers are present, a flagger shall be positioned in advance of the first work operation as shown. (See Note 2) An additional flagger, as required by Paragraph 10 of Article 107.14 of the Standard Specifications, shall be positioned in advance of each separate activity of the operation that requires frequent encroachment into a lane open to traffic.
13. Form BT 725 may be required.

SYMBOLS

- Arrow Board
- Work Area
- 18 in. X 18 in. (minimum) Orange Flag
- Cone, Drum or Barricade
- Sign on Portable or Permanent Support
- Flagger with Traffic Control Sign (Note 12)
- Construction Speed Limit Sign

Illinois Department of Transportation

Approved 2/4/92

Engineer of Traffic

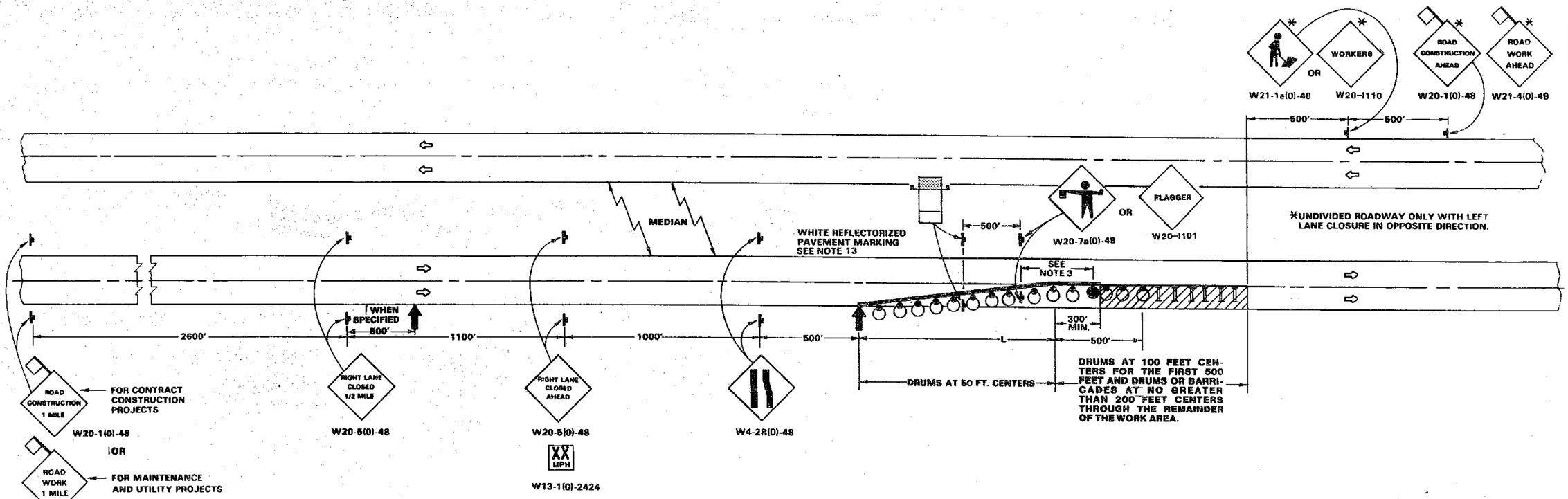
Issued 4/3/89

TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES HIGHWAY CONSTRUCTION AND CONTRACT MAINTENANCE

MULTILANE, DIVIDED AND UNDIVIDED, RURAL DAY OPERATIONS ONLY

Where, at any time, any vehicle, equipment, workers or their activities will encroach on any portion of the lane immediately adjacent to the shoulder or on the shoulder within 2 ft. of the edge of pavement.

STANDARD 2315-8



GENERAL NOTES

1. The "L" distance equals the lane width times the taper ratio.

Normal Posted Speed m.p.h.	Taper Ratio ft./ft.
65	65/1
60	60/1
55	55/1
50	50/1
45 or less	45/1

2. When no work is being performed, the flagger will not be required. If the flagger is not present, the Flagger and Worker signs shall be removed or covered.
3. The Construction Speed Limit sign and the Flagger sign shall be moved as necessary to maintain a spacing of 500 feet to 1.5 miles between the flagger and the Flagger sign.
4. This standard also applies when work is being performed in the left lane. Under these conditions, LEFT LANE CLOSED signs shall be substituted for RIGHT LANE CLOSED signs. On undivided highways, signs shall be added in the opposite direction as shown. On left lane closures with narrow medians, the arrow board at the beginning of the lane closure shall be relocated behind the taper as necessary so that a clearance of at least 4 ft. can be maintained from the opposing traffic.
5. The speed limit to be shown on the Construction Speed Limit signs and Advisory Speed plates shall be 10 miles per hour less than the normal posted speed limit or 45 MPH, whichever is less. The signs shall not be used where the normal posted speed limit is below 45 miles per hour.
6. The flashing lights on the Construction Speed Limit signs shall be activated only when workers are present in a lane adjacent to one open to traffic. At all other times, the flashing lights shall be turned off and the signs may be removed.
7. Median signs may be omitted when the median is less than 10 feet wide.
8. This standard does not apply when work is being performed in the middle lane(s) of a six or more lane highway. Special plans approved by the Engineer will be required.
9. Cones may be substituted for barricades or drums at half the spacing during day operations. On fully access-controlled facilities, cones shall be a minimum of 28 in. in height.
10. Steady burning lights will not be required on drums for day operations. All drum lights shall be monodirectional.
11. All signs shall be post-mounted if the closure time exceeds four days.
12. Flashing lights shall be used on each approach in advance of the work area during hours of darkness and installed above the first two signs in each series.
13. Reflectorized temporary pavement marking tape shall be placed throughout the taper and for 300 feet along-side the work area where the closure time is greater than fourteen days. The edge line shall be yellow for left lane closures. Raised reflectorized pavement markers at 25 ft. centers may be used to supplement the pavement marking tape.
14. Longitudinal dimensions may be adjusted to fit field conditions. The lateral placement of the flagger may be varied from that shown. The flagger shown at the beginning of the work area shall be stationed approximately 200 feet in advance of the work party.
15. At all times when workers are present, a flagger shall be positioned in advance of the first work operation as shown. (See Note 2) An additional flagger, as required by Paragraph 10 of Article 107.14 of the Standard Specifications, shall be positioned in advance of each separate activity of the operation that requires frequent encroachment into a lane open to traffic.
16. Form BT 725 is required.

SYMBOLS

- Construction Speed Limit Sign
- Work Area
- Arrow Board
- Sign on Portable or Permanent Support
- Flagger with Traffic Control Sign (Note 15)
- Barricade or Drum
- Drum with Steady Burning Light
- 18 in. X 18 in. (minimum) Orange Flag

Illinois Department of Transportation

Approved 2/4/92

R W Jones
Engineer of Traffic

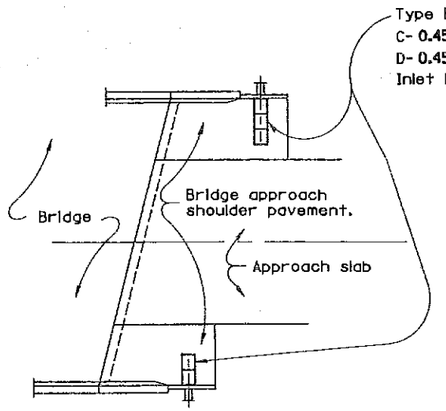
Issued 4/3/89

TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES HIGHWAY CONSTRUCTION AND CONTRACT MAINTENANCE

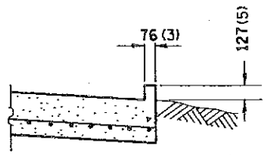
MULTILANE, DIVIDED AND UNDIVIDED, RURAL OPERATIONS EXCEEDING ONE DAYLIGHT OPERATION

Where, at any time, any vehicle, equipment, workers or their activities will encroach on any portion of the lane immediately adjacent to the shoulder or on the shoulder within 2 feet of the edge of pavement.

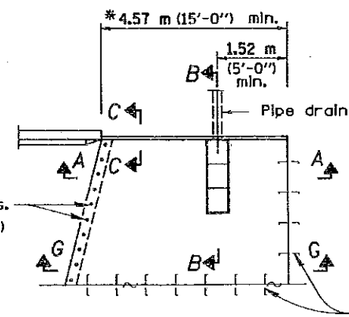
STANDARD 2316-13



GENERAL PLAN



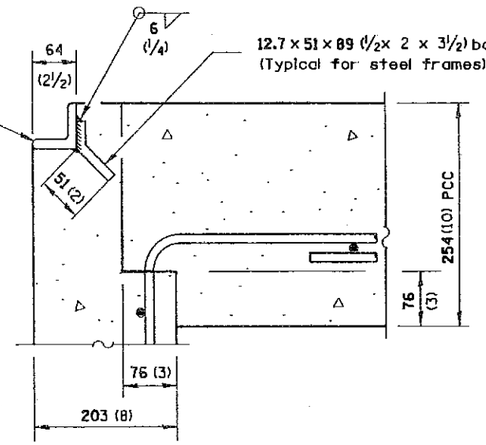
SEC. C-C



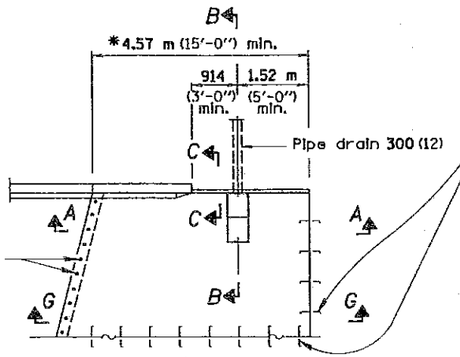
TYPICAL DETAIL PLAN (W/O Wingwall)

* Increase this dimension as needed to position the Inlet Box and Pipe Drain between the proposed approach guardrail posts.

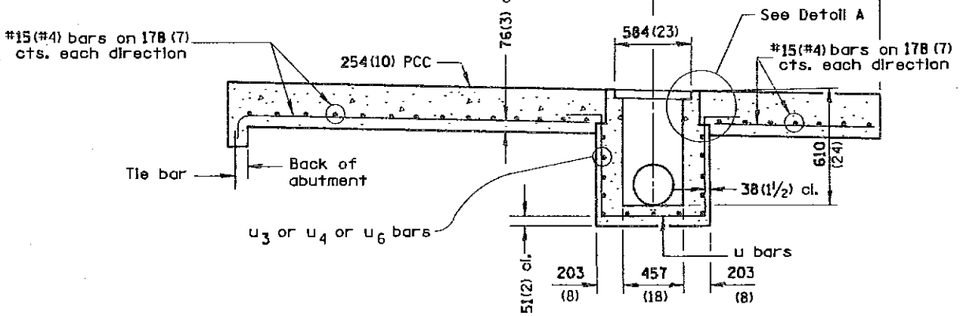
#15 (#5) tie bars as detailed for Bulkhead Construction Joint on Standard 2323 (typ.).



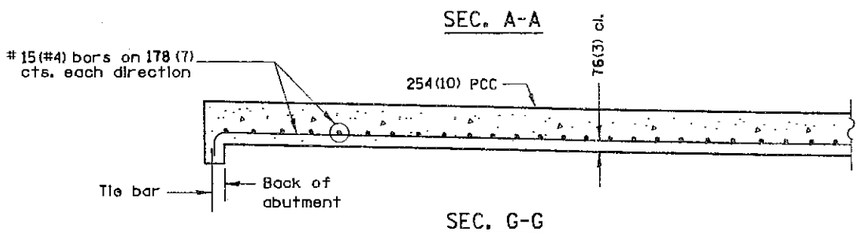
DETAIL A



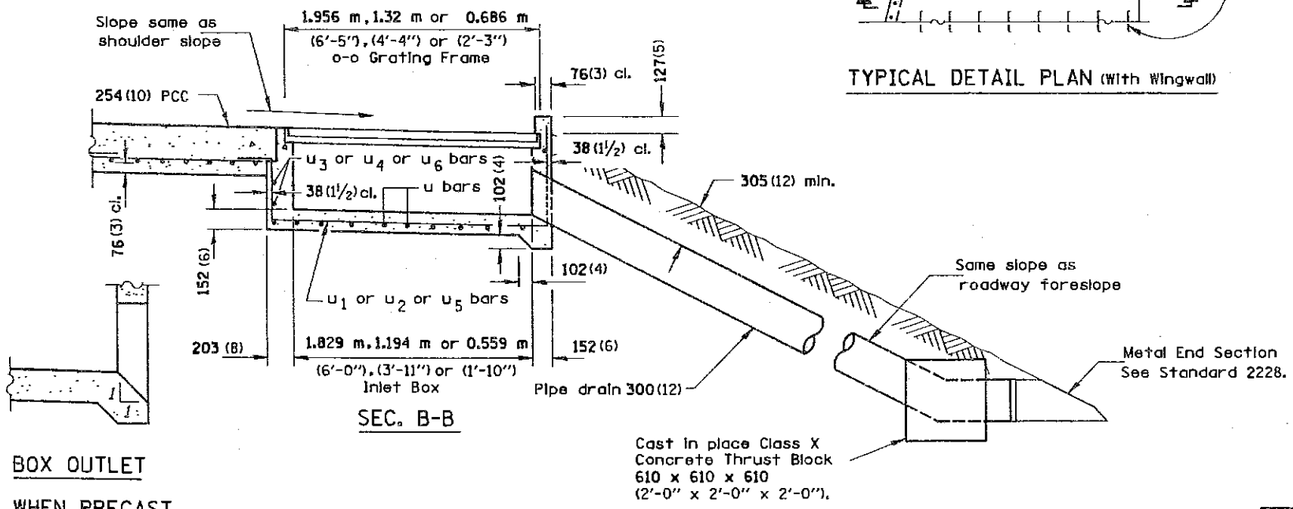
TYPICAL DETAIL PLAN (With Wingwall)



SEC. A-A



SEC. G-G



SEC. B-B

BOX OUTLET

WHEN PRECAST

INLET TYPE	SHOULDER WIDTH
Type B	Less than 1.52 m (5')
Type C	1.52 m (5') 1.83 m (6')
Type D	Greater than 1.83 m (6')

GENERAL NOTES

All exposed edges of the inlet, except the upper perimeter, shall be beveled 19 mm (¾).

For placement of approach shoulder pavement on existing construction substitute expansion anchor ties for tie bars. Omit tie bars for flexible approaches or Bridge Approach Shoulder Pavement constructed monolithically with shoulder pavement.

Illinois Department of Transportation

PASSED August 17 1992
ENGINEER OF POLICY AND PROCEDURES
APPROVED August 13 1992
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 12-1-89

All dimensions are in millimeters (inches) unless otherwise shown.

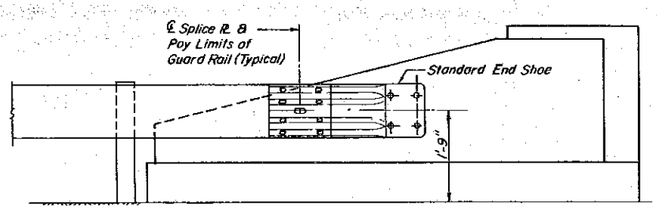
BRIDGE APPROACH SHOULDER PAVEMENT AND DRAIN

Sheet 1 of 2

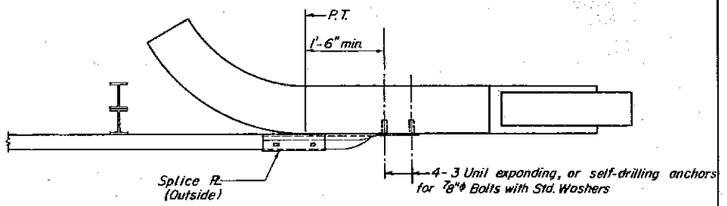
STANDARD 2324-8

(FULL SIZE) D.W.W. Sr.

H-1.25 h

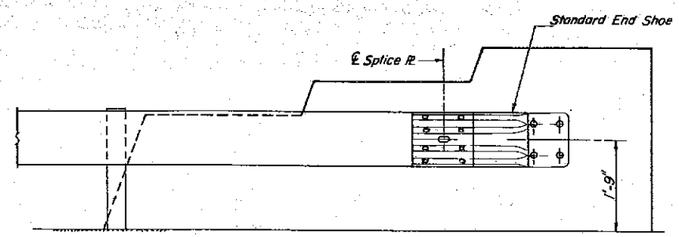


ELEVATION

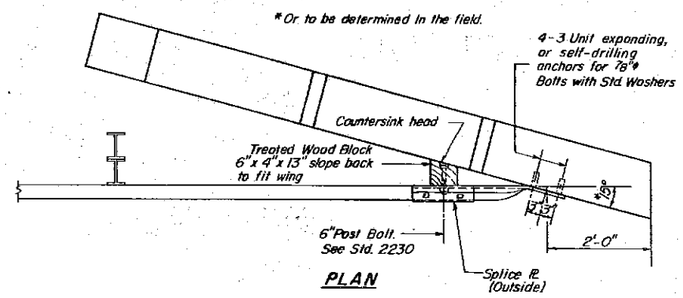


PLAN

CURVED WING

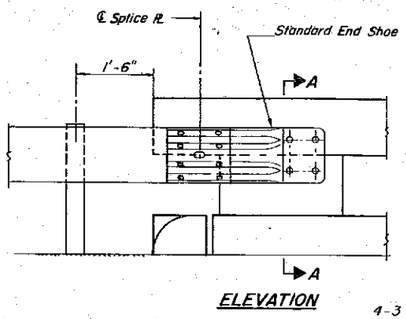


ELEVATION

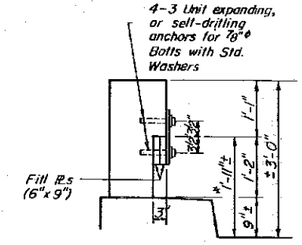


PLAN

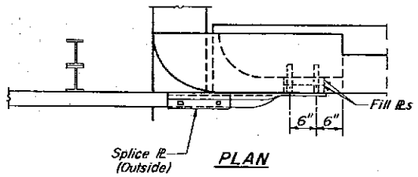
FLARED WING



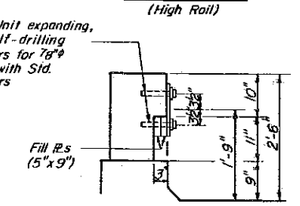
ELEVATION



SECTION A-A
(High Rail)

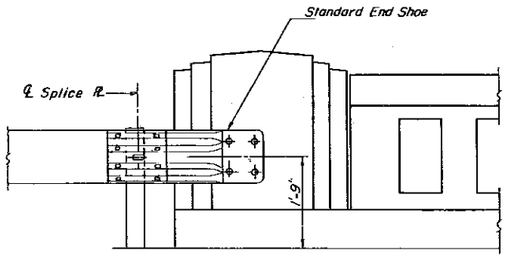


PLAN

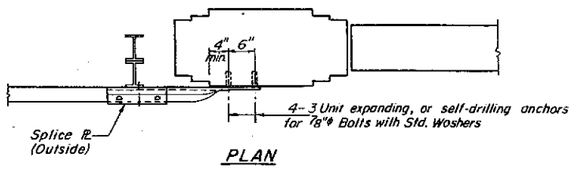


SECTION A-A
(Low Rail)

R.C. HANDRAIL



ELEVATION



PLAN

CONCRETE HANDRAIL

NOTES

For details of guardrail not shown see Standard 2230.

The Standard End Shoe shall be attached to the existing concrete with Pre-drilled or Self-drilling anchor bolts. The anchor cone shall be set flush with the surface of the concrete. Externally threaded studs protruding from the surface of the concrete will not be permitted.

The Standard End Shoe shall be placed between the splice plate and the rail element.

The minimum edge distance (distance from any anchor to edge of existing concrete) shall be six (6) inches unless otherwise shown.

If the existing name plate is covered completely or partially by the end shoe, the name plate shall be moved to an adjacent area along the rail or end post. The cost of moving the name plate shall be included in the cost of TRAFFIC BARRIER TERMINAL, TYPE 10.

Pay limits of guardrail shall be at ℄ of end shoe splice.

The cost of the Standard End Shoes, Splice Plate, any required blocks and plates, and all fasteners shall be included in the cost of TRAFFIC BARRIER TERMINAL, TYPE 10 (One Each).

When a bridge expansion joint exists between the End Shoe and the first post, all splice bolts at the End Shoe shall be fitted with a locknut or double nuts tightened only to a point that will allow guardrail movement.

Illinois Department of Transportation

PASSED Aug. 31, 1979
Engineer of Bridge and Traffic Structures

APPROVED Aug. 31, 1979
Engineer of Design

ISSUED 9-25-70

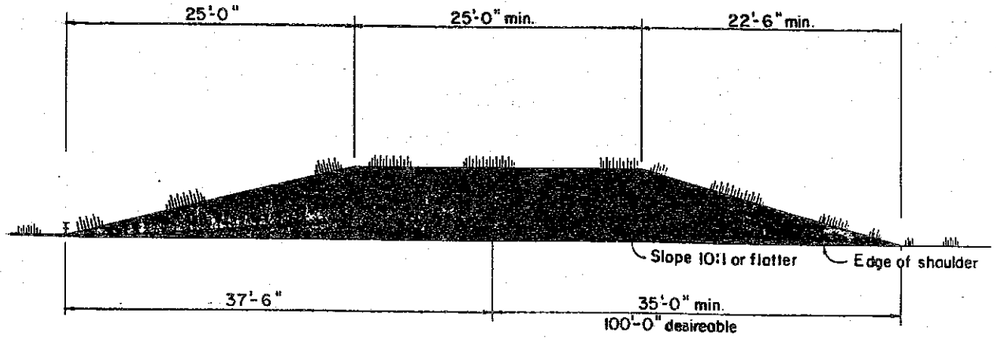
TRAFFIC BARRIER TERMINAL TYPE 10

STANDARD 2326-3

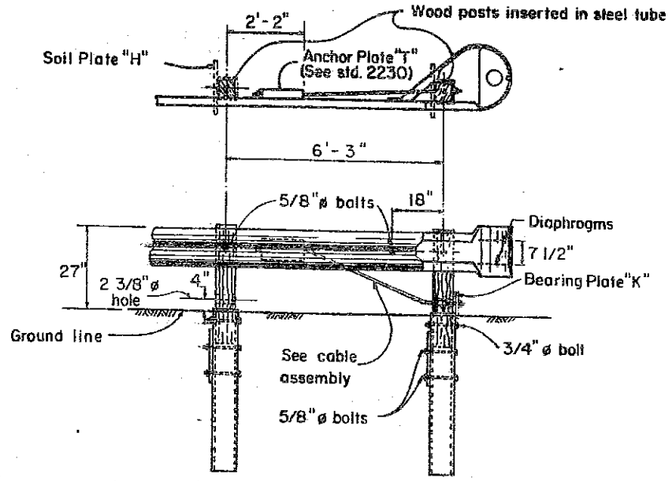
Full Size

F.C.2126

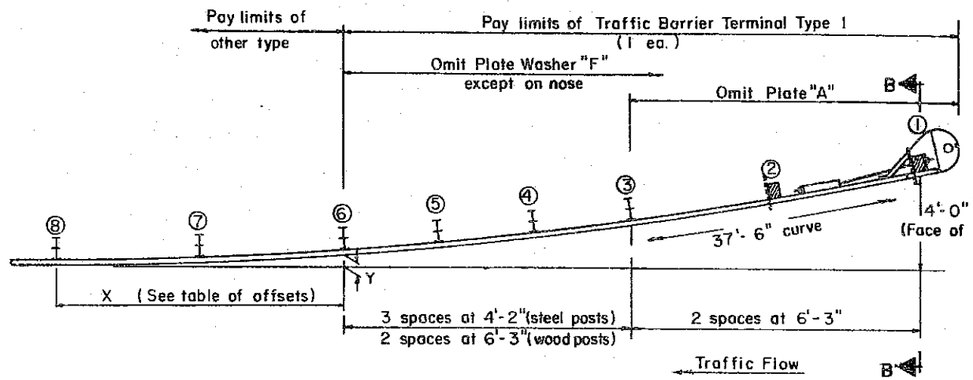
OFFSETS TO FACE OF RAIL (Feet)				
		TYPE 1	TYPE 1A	
Post	X	Y (4')	Y (3')	Y (2')
①	37.22	4.00	3.00	2.00
②	31.09	2.79	2.09	1.40
③	24.92	1.79	1.34	0.90
④	20.79	1.25	0.94	0.62
⑤	16.64	0.80	0.60	0.40
⑥	12.49	0.45	0.34	0.23
⑦	6.25	0.11	0.08	0.06
⑧	0.00	0.00	0.00	0.00



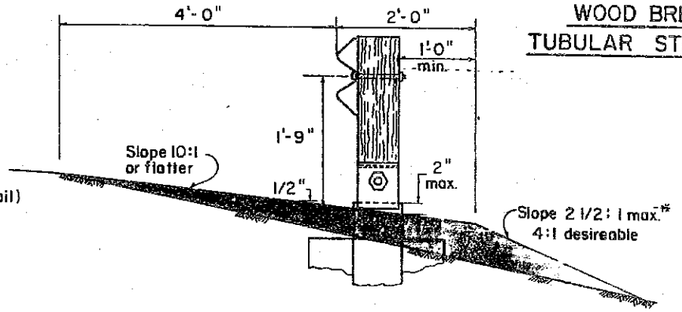
SHOULDER WIDENING TRANSITION



WOOD BREAKAWAY POSTS
TUBULAR STEEL FOUNDATIONS

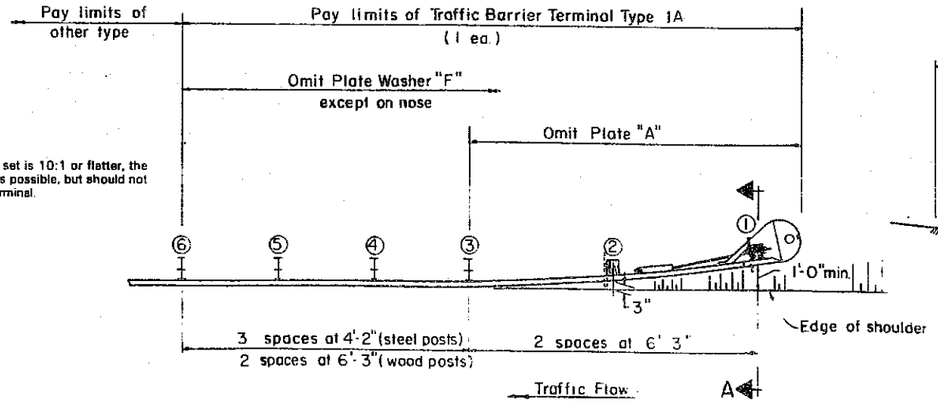


PLAN TYPE 1

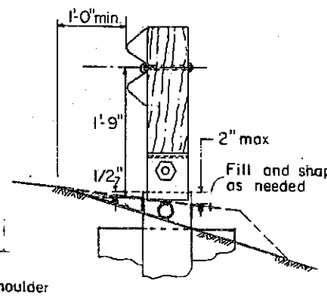


SECTION B-B

* If fill height exceeds 5'-0", use 3:1 max.



PLAN TYPE 1A



SECTION A-A

NOTE

If the surface upon which the barrier is to be set is 10:1 or flatter, the Type 1A Terminal should be flared as much as possible, but should not exceed the offsets provided for the Type 1 Terminal.

GENERAL NOTES

See Standard 2230 for details of guard rail not shown.

All steel parts shall be galvanized after fabrication.

Posts at locations 1 & 2 shall be wood breakaway posts. Posts other than 1 & 2 may be either standard wood posts or steel posts, at the option of the Contractor. If standard wood posts are used, one post shall be located midway between and in lieu of posts 4 & 5. For Terminal Type 1, the offset (Y) for this post shall be 1.00 foot.

The wood breakaway posts shall be treated and conform to the requirements of Art. 711.06 of the Standard Specifications.

A two-piece assembly may be substituted for the one-piece nose shown above

Hollow structural tubing shall conform to the requirements of ASTM A-500 grade B or A-501.

The Bearing Plate "K" shall be held in position by (2) two eightpenny nails driven into the post and bent over the top of the plate

Illinois Department of Transportation

PASSED Mar 30 1987
Engineer of Policy and Procedures

APPROVED Mar 30 1987
Engineer of Design

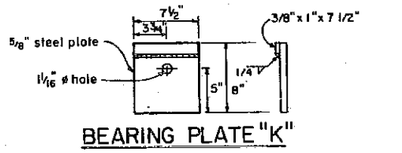
ISSUED 4-3-78

TRAFFIC BARRIER TERMINAL TYPE 1 & 1A

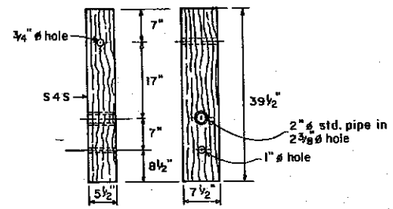
(Sheet 1 of 2)

STANDARD 2336-4

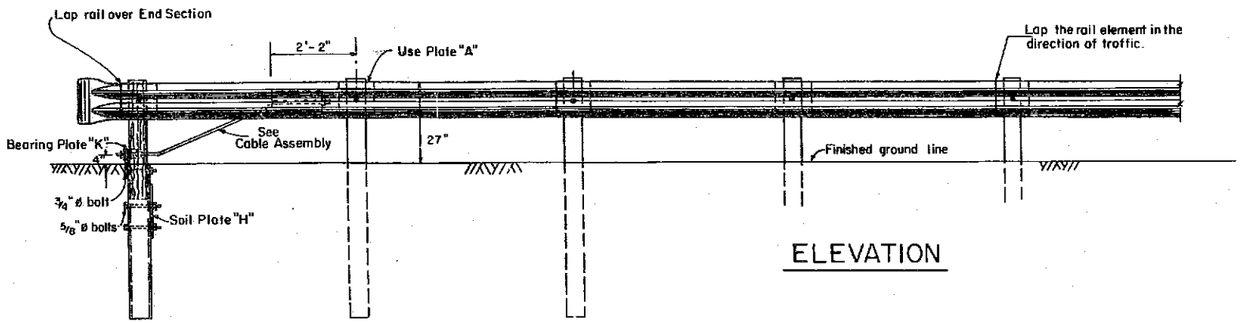
(Full Size) DWN ED



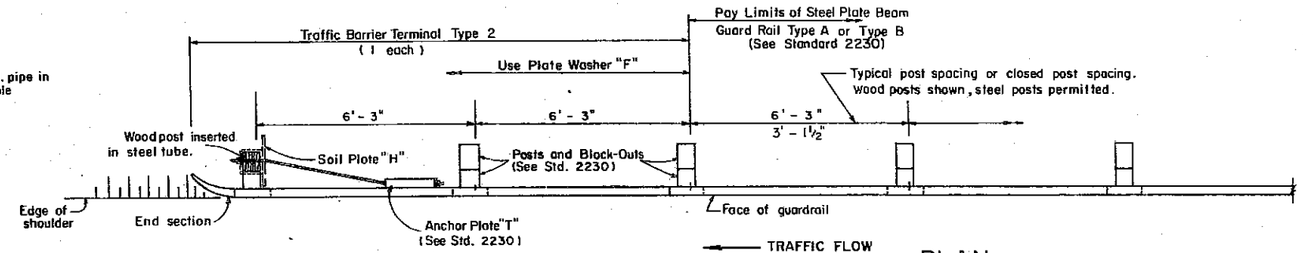
BEARING PLATE "K"



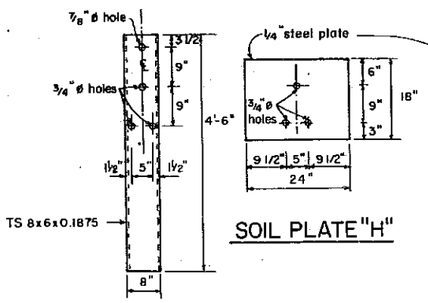
WOOD POST



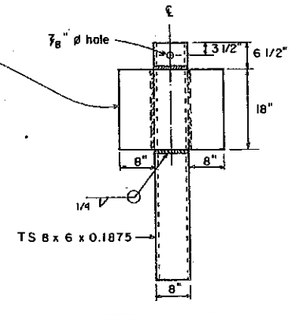
ELEVATION



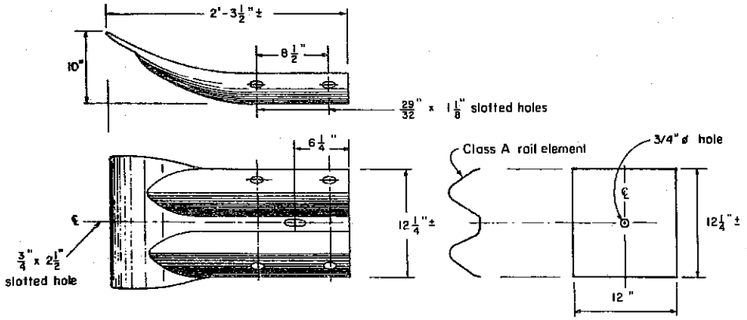
PLAN



STEEL TUBE

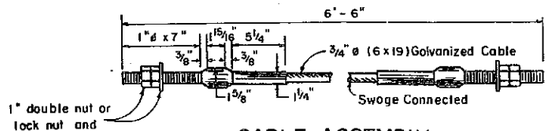


ALTERNATE SOIL PLATE CONNECTION



END SECTION

PLATE A



CABLE ASSEMBLY

(40,000 lbs. min. breaking strength)

Tighten cable to taut tension.

NOTES:

See Standard 2230 for details of Guardrail not shown.

The wood posts shall be treated and conform to the requirements of Article 711.06 of the Standard Specifications.

All steel parts shall be galvanized after fabrication.

Use Plate Washer "F" at all posts (See Std. 2230)

Illinois Department of Transportation

PASSED Feb. 3, 1981
Engineer of Design Operations

APPROVED Feb. 3, 1981
Engineer of Design

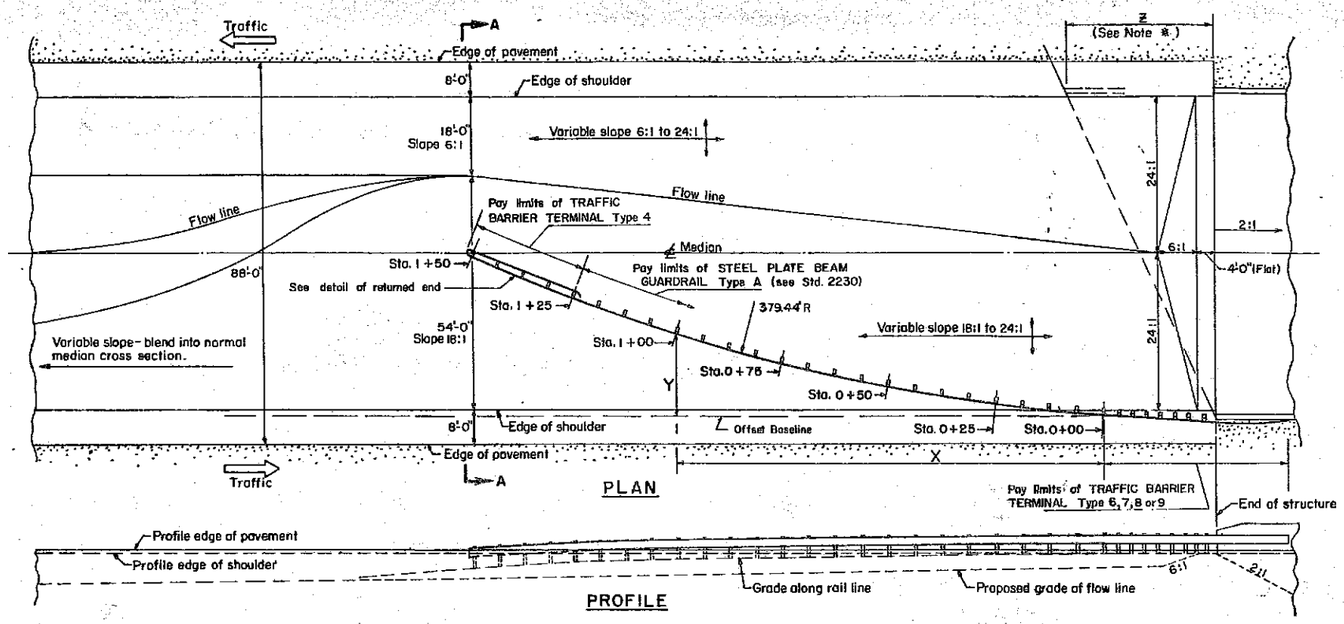
ISSUED 8-1-77

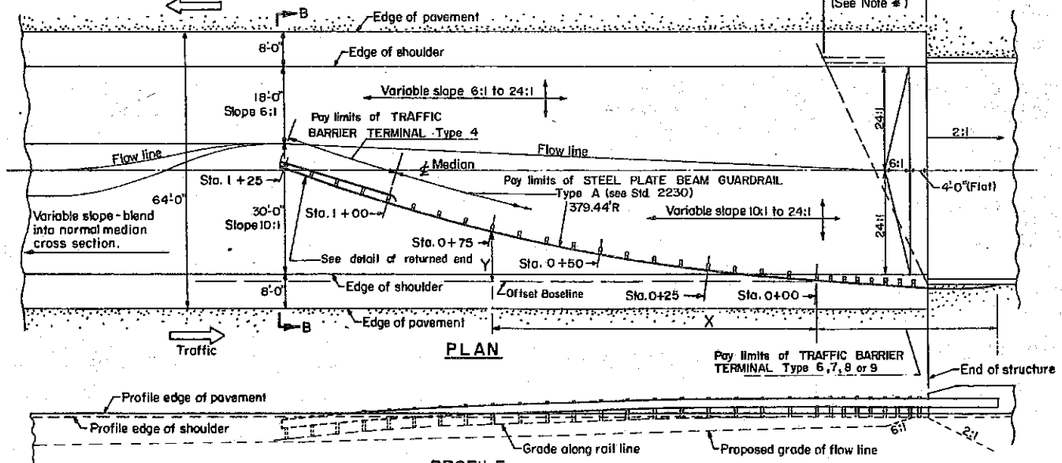
TRAFFIC BARRIER TERMINAL TYPE 2

STANDARD 2337-2

F-3.26 b

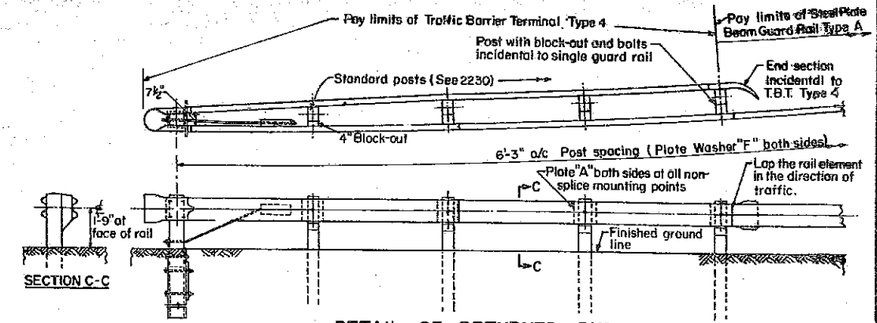
Full Size



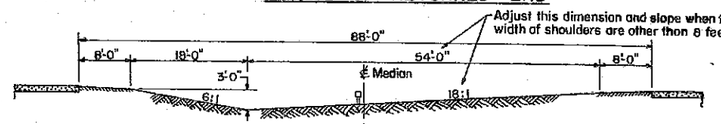


OFFSETS TO FACE OF RAIL		
STATION	Distance X	Offset Y
0+00	0.00'	0.00'
0+25	24.93'	1.83'
0+50	49.68'	5.28'
0+75	74.16'	10.37'
1+00	98.24'	17.05'
1+25	121.83'	25.30'
1+50	144.83'	35.09'

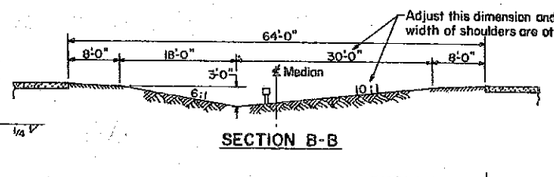
Offsets (Y) are measured between the face of rail and the Offset Baseline, which is parallel to the pavement edge and passes through Sta. 0+00. The location of Sta. 0+00 will vary, being dependent on structure details and the type of Traffic Barrier Terminal utilized.



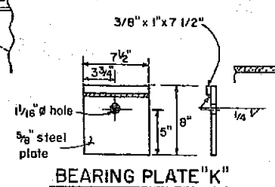
DETAIL OF RETURNED END



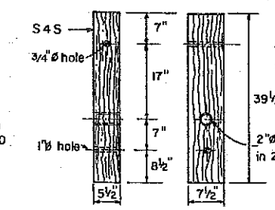
SECTION A-A



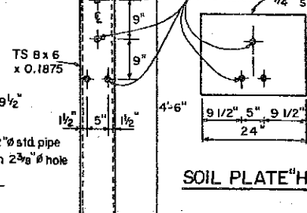
SECTION B-B



BEARING PLATE "K"



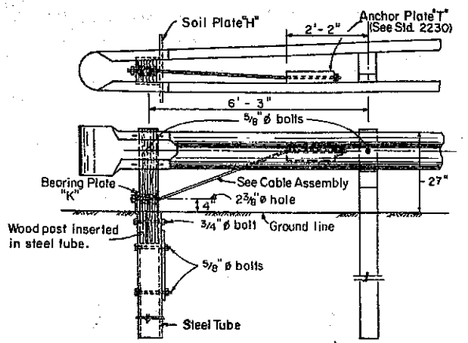
WOOD POST



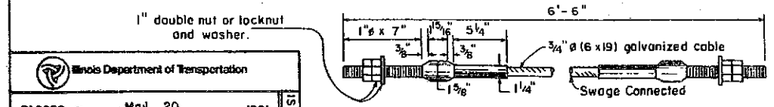
STEEL TUBE

SOIL PLATE "H"

ALTERNATE SOIL PLATE CONNECTION

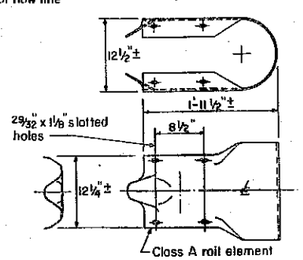


WOOD POST TUBULAR STEEL FOUNDATION



CABLE ASSEMBLY

(40,000 lbs. min. breaking strength)
Tighten cable to taut tension.



RETURN END SECTION

GENERAL NOTES

For details of Guardrail not shown, see Standard 2230.

When pavement is on a curved alignment, guardrail shall be approximately curved to match the alignment.

For dual structures that are 90°, or skewed left forward, the length of guardrail shown is appropriate.

* For dual structures skewed right forward the nose of the Type 4 Terminal shall be positioned longitudinally away from the structures for a distance equal to dimension Z. Appropriate adjustments to the length of the Type A Guardrail and its offsets (Y) shall be calculated and used. All additional lengths of guardrail shall be in increments of 12'-6".

All steel parts shall be galvanized after fabrication.

The wood posts shall be treated and conform to the requirements of Article 711.06 of the Standard Specifications.

Illinois Department of Transportation

PASSED May 20, 1981
Engineer of Design Operations

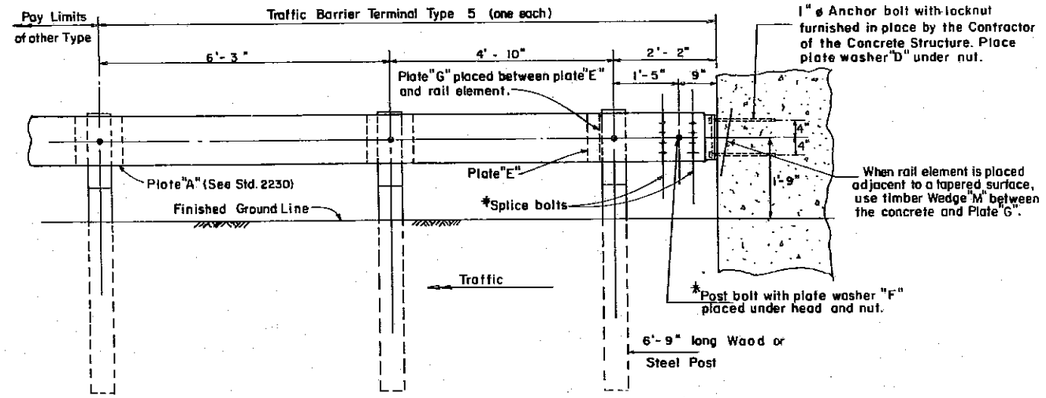
APPROVED May 20, 1981
Engineer of Design

ISSUED 8-18-67

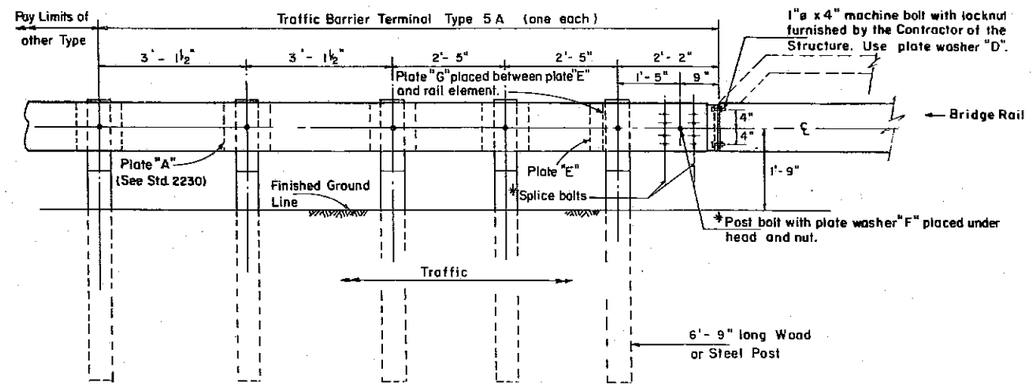
TRAFFIC BARRIER TERMINAL TYPE 4

STANDARD 2339-2

(Full Size) W.F.



TRAFFIC BARRIER TERMINAL TYPE 5
ANCHORING RAIL ELEMENT TO CONCRETE BRIDGE PARAPET



TRAFFIC BARRIER TERMINAL TYPE 5A
ANCHORING RAIL ELEMENT TO TYPE "S", "S-I", "T" or "T-I" BRIDGE RAIL

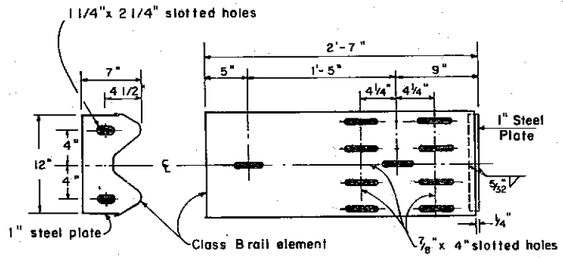


PLATE "G"

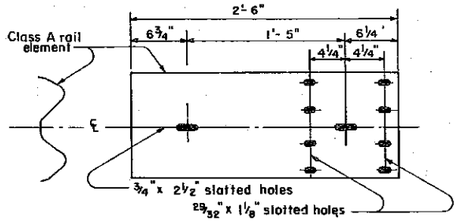
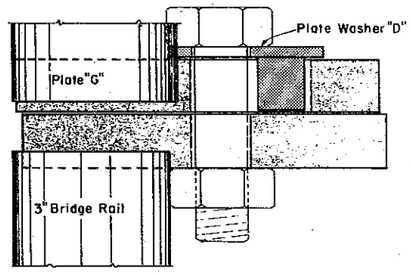
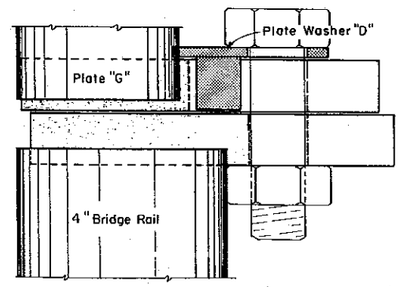


PLATE "E"





ORIENTATION OF PLATE WASHER "D"
(Top View)

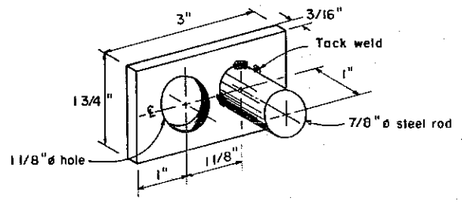
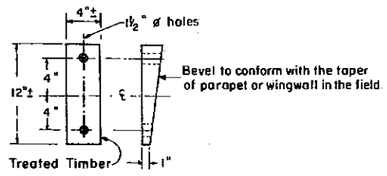


PLATE WASHER "D"



WEDGE "M"

NOTES:

Install the face of the guardrail flush with the face of the bridge rail or parapet. Install plate washer "D" so that the 1" projection fills the remainder of the slotted holes in the 1" end plate on plate "G" after the 1" Ø bolts are in place.

*Bolts shall be provided with lock nut or double nut and shall be tightened only to a point that will allow plate "G" to be free to move when an expansion joint exists below the connector.

See Standard 2230 for details of guardrail not shown.

Illinois Department of Transportation

PASSED June 20, 1984
John Eberle
Engineer of Policy and Procedures

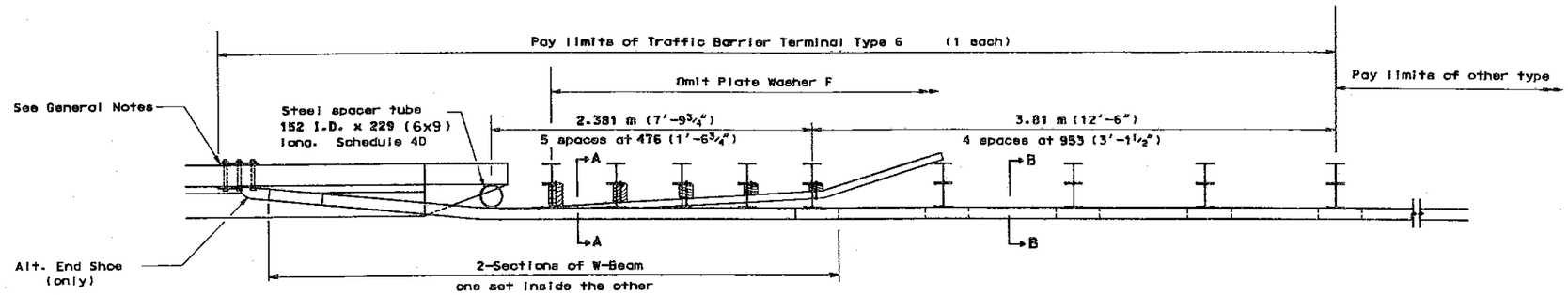
APPROVED June 20, 1984
Engineer of Design

ISSUED 6-30-77

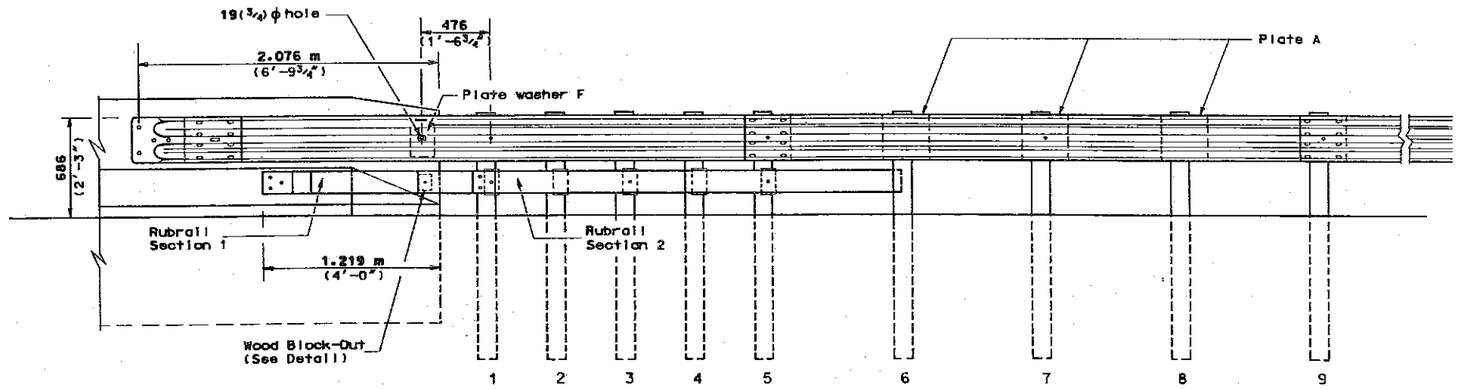
TRAFFIC BARRIER TERMINAL TYPE 5 & 5A

STANDARD 2340 - 4

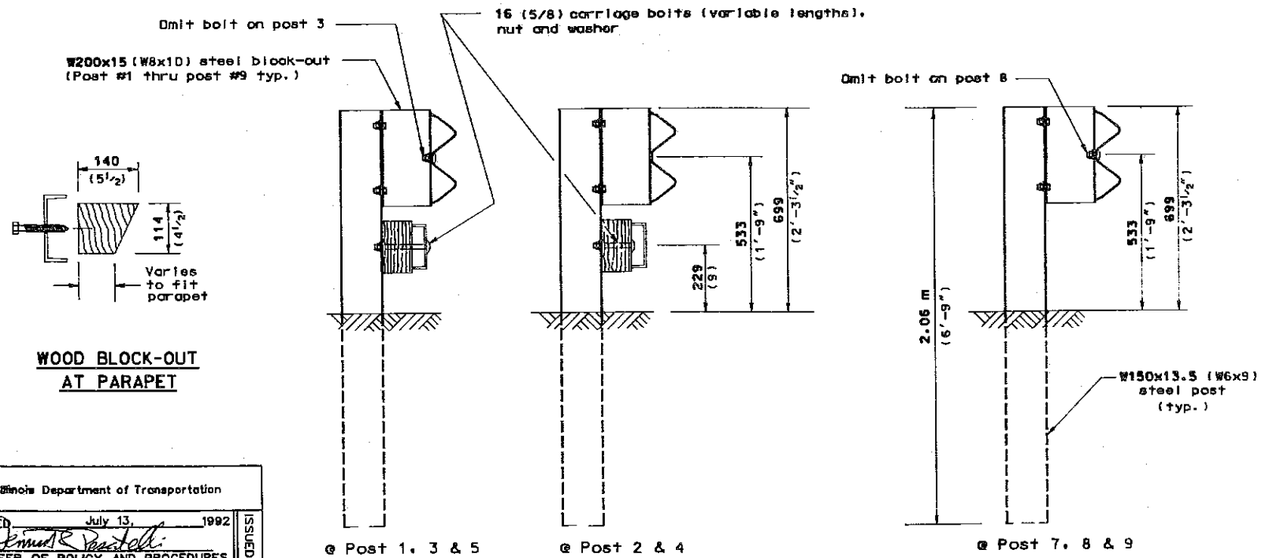
(Full Size) D.W.W. Sr.



PLAN



ELEVATION



WOOD BLOCK-OUT
AT PARAPET

SECTION A-A

SECTION B-B

GENERAL NOTES

See Standard 2230 for details of guardrail not shown.

Rubrail Sections and the Bearing Plate shall conform to the requirements of AASHTO M-183. They shall be galvanized after fabrication in accordance with AASHTO M-111.

The Rubrail shall be fastened to the parapet/support by three 16x152 mm (5/8"x6") long hex bolts with 16 mm (5/8") expansion anchors or other approved cast-in-place insert devices.

The End Shoe shall be fastened to the parapet/support by four 22x152 mm (7/8"x6") long hex bolts conforming to AASHTO M164M or M164 with approved 22 mm (7/8") cast-in-place insert devices. An alternate method which uses thru-drilled holes with 16 mm (5/8") bearing plate may also be used.

Steel Spacer Tube shall be galvanized in accordance with Article 710.33(b)(1) of the Standard Specifications.

The Wood Block-Out shall be treated in accordance with Article 711.12 of the Standard Specifications.

All dimensions are in millimeters (inches) unless otherwise noted.

Illinois Department of Transportation

PASSED July 13, 1992
ENGINEER OF POLICY AND PROCEDURES
APPROVED July 13, 1992
ENGINEER OF DESIGN AND ENVIRONMENT

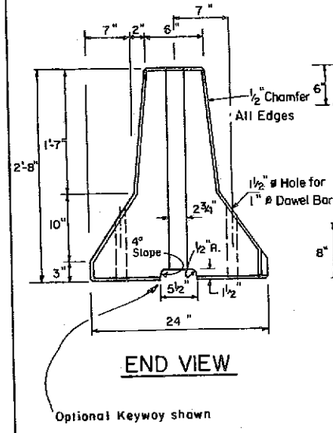
ISSUED 8-1-77

TRAFFIC BARRIER TERMINAL TYPE 6

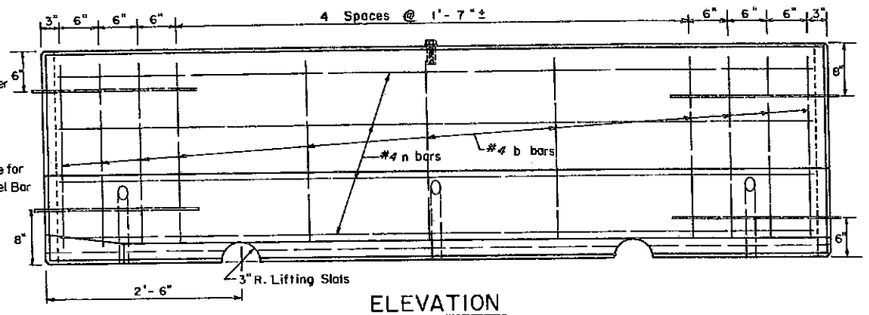
Sheet 1 of 2

STANDARD 2341-5

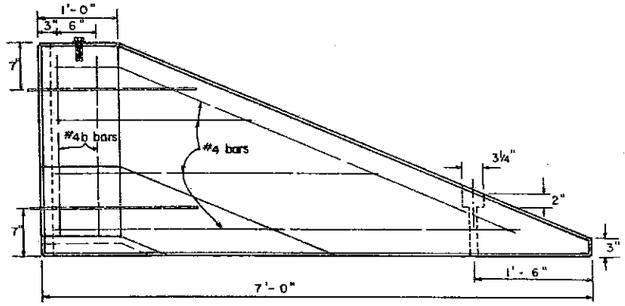
(FULL SIZE) D.W.W. Sr.

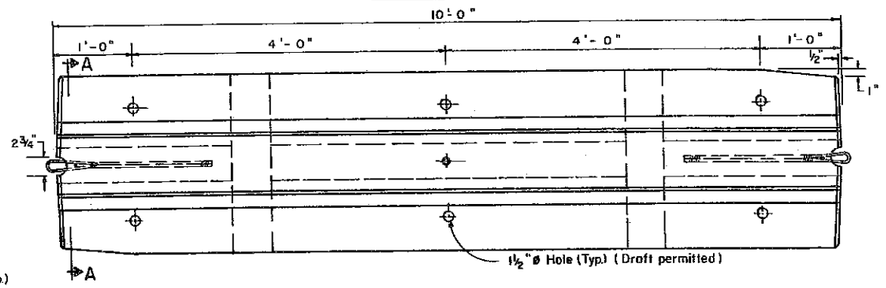


END VIEW

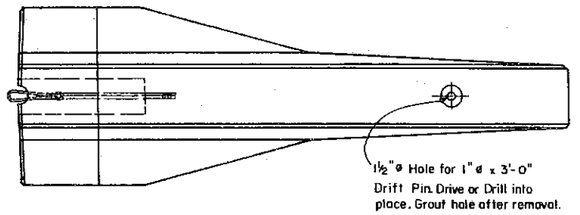


ELEVATION

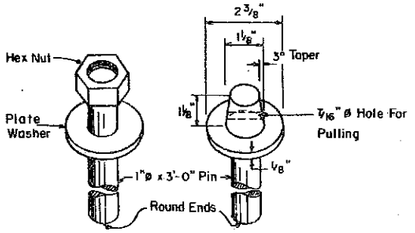




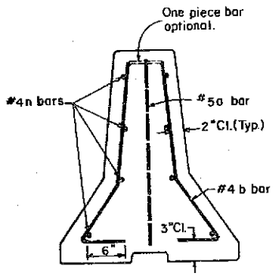
PLAN



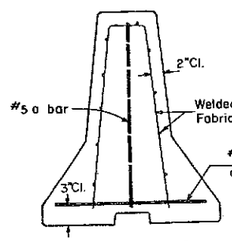
TERMINAL SECTION



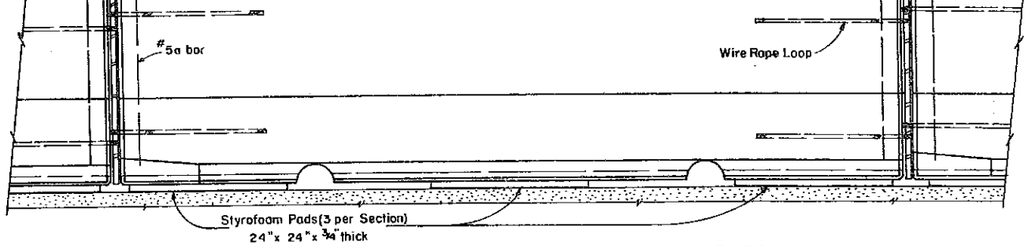
ALTERNATE DRIFT PINS



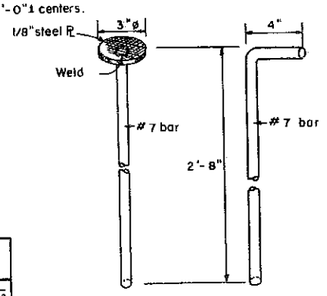
SECTION A-A
(Showing Bar Reinforcement)



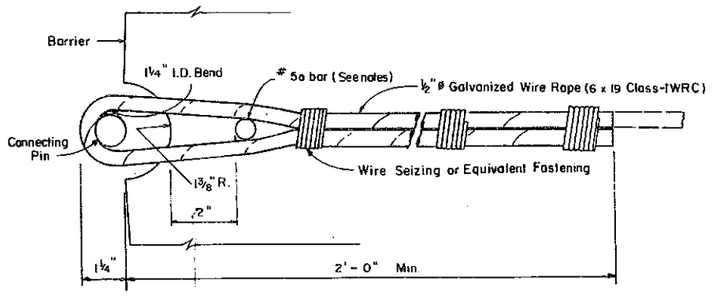
SECTION A-A
(Showing Alternate Welded Wire Reinforcement)



TYPICAL INSTALLATION WITH STYROFOAM PADS



ALTERNATE CONNECTING PINS



WIRE ROPE LOOP DETAIL
(20,000 lbs. min. breaking strength)

Not to scale

Design Notes will not appear in the contract plans.

GENERAL NOTES

Barrier units shall be pinned one to another in continuous smooth line at the exact locations provided by the Engineer.

The wall units shall be reinforced with either bar reinforcement or welded wire fabric. Welded Wire Fabric shall be 6x6-W4x W4, weighing approximately 58lbs. per 100 sq.ft., conforming to the requirements of AASHTO M-55.

Barrier units placed on rigid pavement or median surfaces shall be seated with styrofoam pads. Units placed on flexible pavement or shoulders shall be secured with dowel bars. Dowel bars shall be one inch in diameter, at least 12 inches long, shall be embedded at least 6 inches into base material, and shall not project above the outer surface of the barrier. After pin removal all holes in the base shall be grout filled.

Alternate lifting devices meeting the approval of the Engineer may be substituted for the lifting slots shown.

When the Terminal Section is used, the hex nut on the drift pin shall be threaded half way onto the pin and tack welded, or a coupling nut tightened sufficiently to prevent loosening may be used. Fill nut with grease to exclude contaminants.

Inserts for ½" ø bolts shall be capable of 3000 lbs. pull out strength and shall be furnished with a galvanized bolt and washer.

The #5 bar may be omitted if 2 continuous wire ropes are substituted for the 4 wire rope loops shown. The continuous ropes shall be looped and fastened on each end as shown in the wire rope loop detail.

The Contractor shall have the option to furnish Barrier with or without the longitudinal keyway unless otherwise specified.

Illinois Department of Transportation

PASSED Oct 22 1991
Engineer of Policy and Procedures

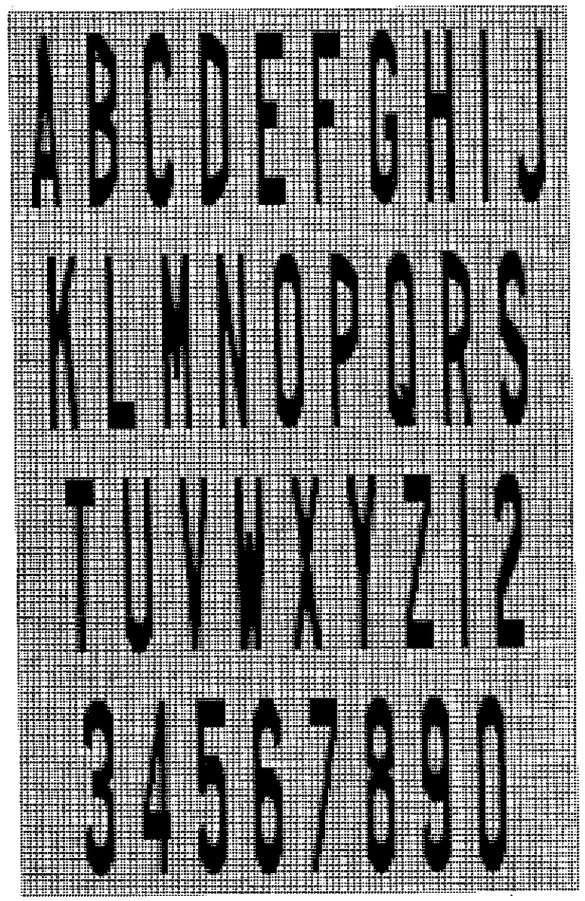
APPROVED Oct 22 1991
Engineer of Design

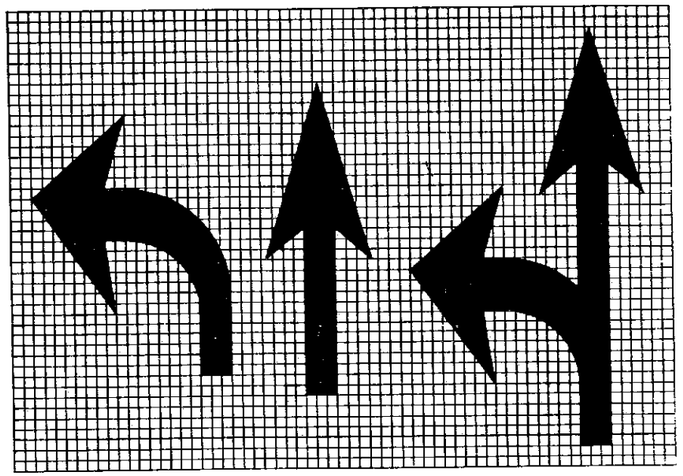
ISSUED 6-18-79

TEMPORARY CONCRETE BARRIER

STANDARD 2383-3

(Full Size) D.W.W. Sr.

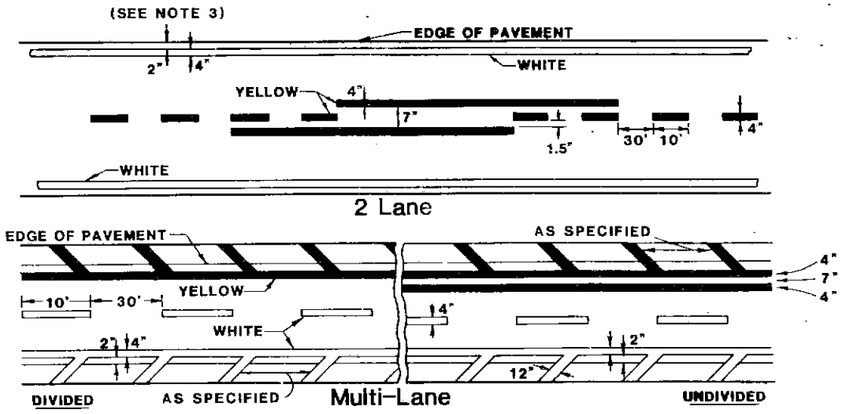




Legend Height	Arrow Size	a
6'	Small	2.9"
8'	Large	3.8"

The space between adjacent letters or numerials should be approximately 3 inches for 6 foot legend and 4 inches for 8 foot legend.

LETTER AND ARROW GRID SCALE

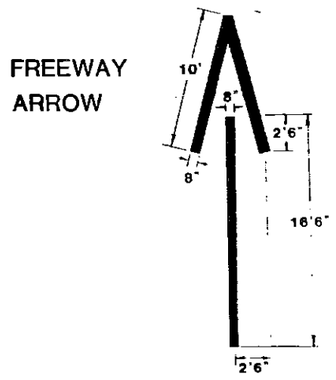


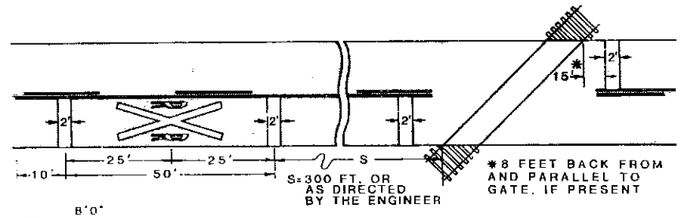
TYPICAL LANE AND EDGE LINES

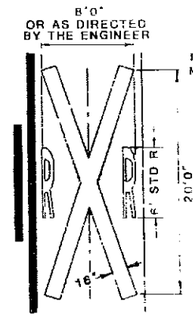
NOTES:

1. Diagonals shall be used only where specified in the plans.
2. Unless directed by the Engineer, lines shall not be laid directly over a longitudinal crack or joint nor over a tar or asphalt painted line. The edge of a center line or lane line shall be offset a minimum of two inches from a longitudinal crack or joint.
3. Edge lines shall be placed on the shoulder, 2 inches from the edge of pavement when specified in the plans.

TYPICAL WORD AND ARROW LAYOUT







THE TRANVERSE SPREAD OF THE 'X' MAY VARY ACCORDING TO LANE WIDTH.

On multi-lane roads, the stop lines shall extend across the right-hand lanes only to the center line and separate RXR symbols shall be placed adjacent to each other in each lane.

STANDARD PAVEMENT MARKINGS AT RAILROAD-HIGHWAY GRADE CROSSING

Illinois Department of Transportation

Approved 4-3-85

R. W. Jones

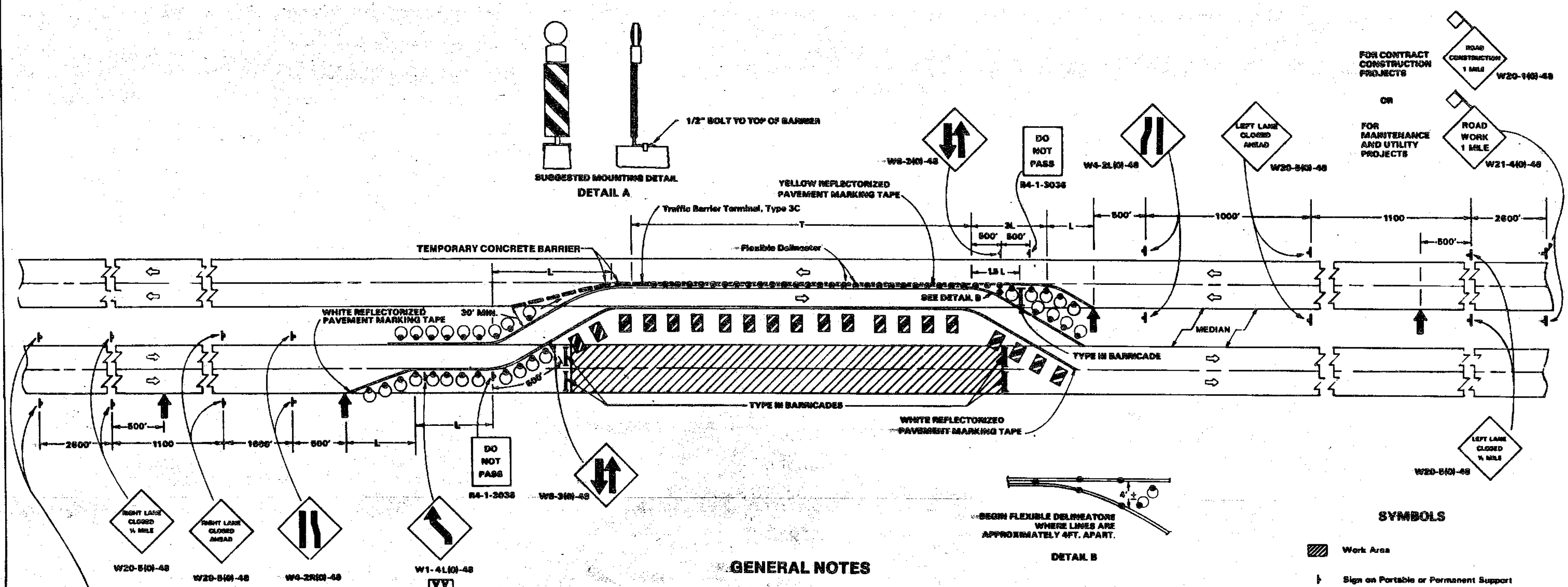
Engineer of Traffic

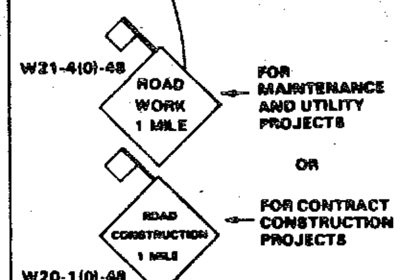
Issued 4-3-85

TYPICAL PAVEMENT MARKINGS

STANDARD 2396

F-6.04





SYMBOLS

- Work Area
- Sign on Portable or Permanent Support
- Barricade
- Drum with Steady Burning Light
- Vertical Panel
- Arrow Board
- 18 in. X 18 in. (minimum) Orange Flag
- Flexible Delineator
- Temporary Concrete Barrier

GENERAL NOTES

1. Reflective, solid edge lines and a double yellow centerline shall be used when the closure time exceeds four days or when the normal posted speed outside the area of operations exceeds 50 miles per hour. Reflectorized pavement marking tape shall be used for marking the edge lines and center line on existing pavement. Either tape or reflectorized pavement marking paint may be used for markings on the paved crossovers. Raised reflective pavement markers at 25 ft. centers shall also be installed to provide additional delineation. All existing pavement markings which conflict with the revised traffic pattern shall be removed.

2. Two-Way Traffic sign(s) shall be repeated every one-quarter mile in each direction through the tangent distance.

3. All drums and vertical panels shall be at 50 ft. centers. Where the tangent distance "T" on the temporary runaround exceeds 600 ft., clear delineators at 50 ft. centers may be substituted for the vertical panels, or spacing between vertical panels may be increased to 100 ft. within the limits of the tangent.

4. Cones may be substituted for drums or flexible delineators at half the spacing during day operations. On fully access-controlled facilities, cones shall be a minimum of 28 in. in height.

5. Reflectorized flexible delineators are to be attached to the pavement at 50 ft. centers for the first 250 feet at each end of "T", and at 100 ft. centers throughout the remainder of "T".

6. The impact attenuator shall be positioned so as not to encroach onto the outer lane. Vertical panels (See detail A) shall be attached to the concrete barriers where available space prohibits use of drums.

7. The speed limit to be shown on the advisory speed plate shall be 10 miles per hour below the normal posted speed limit or 45 MPH, whichever is less. The signs shall not be used where the normal posted speed limit is less than 45 miles per hour.

8. A curve sign will be required 500 ft. in advance of the exit end of the runarounds if "T" is equal to or greater than 1,000 feet.

9. The "L" distance equals the lane width times the taper ratio.

Normal Posted Speed m.p.h.	Taper Ratio ft./ft.
65	65/1
55	55/1
50	50/1
45 or less	45/1

10. Signs mounted in the median may be omitted when the median is less than 10 feet wide. Arrow boards mounted in the median may be omitted when the median is less than 20 feet wide.

11. Steady burning lights will not be required on drums for day operations. All drum lights shall be monodirectional.

12. All signs shall be post mounted if the closure time exceeds four days.

13. Flashing lights shall be used on each approach in advance of the work area during hours of darkness and installed above the first two signs in each series.

14. Longitudinal dimensions may be adjusted to fit field conditions.

15. Form BT 725 is required.

Illinois Department of Transportation

Approved 21 March 1989

R. W. Jones
Engineer of Traffic

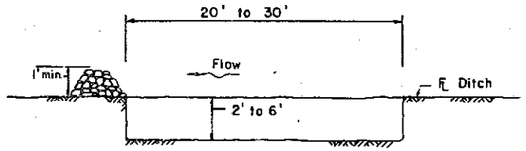
TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES HIGHWAY CONSTRUCTION AND CONTRACT MAINTENANCE

MULTILANE, DIVIDED. RURAL DAY OR NIGHT OPERATIONS

Where at any time, any vehicle, equipment, workers or their activities require the closure of two adjacent lanes and a temporary crossover is provided by making use of one lane of pavement normally used by the opposing flow of traffic and positive barrier is used in the transition to separate the opposing traffic.

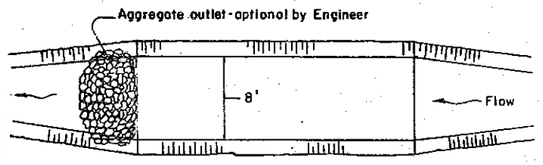
STANDARD 2417-2

SEDIMENT BASIN



SECTION THRU ELEVATION

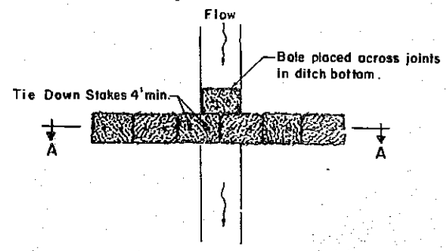
The performance of the basin will improve if put into a series.

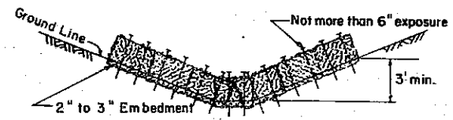


PLAN VIEW

The long dimension should be parallel with the direction of the flow. Accumulated silt shall be removed anytime the basins become 75% filled.

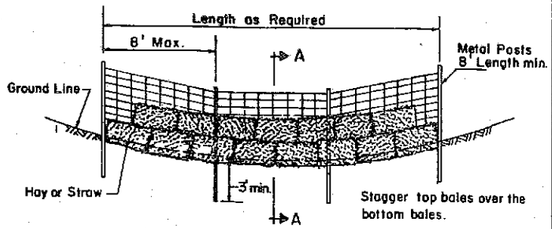
HAY OR STRAW DITCH CHECK



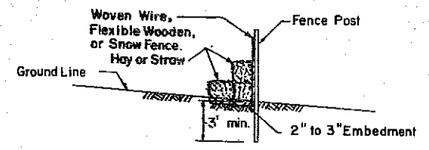


SECTION A-A

HAY OR STRAW DITCH CHECK- TWO BALES HIGH

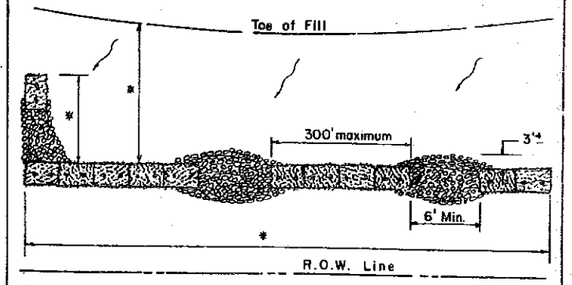


ELEVATION VIEW



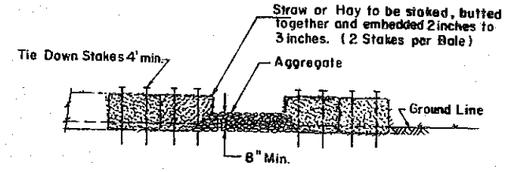
SECTION A-A

HAY OR STRAW EROSION CHECK STONE OUTLETS



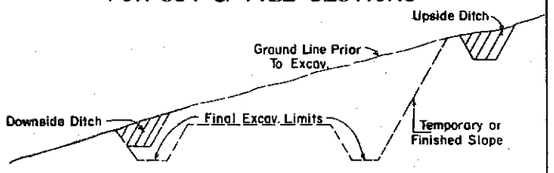
*To be constructed as required

PLAN VIEW

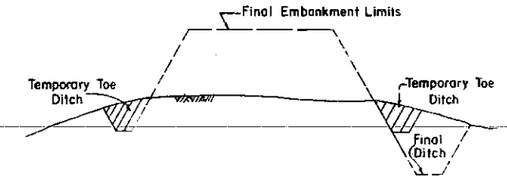


ELEVATION

TEMPORARY DITCHES FOR CUT & FILL SECTIONS



TYPICAL CUT CROSS SECTION



TYPICAL FILL CROSS SECTION

Temporary Ditches or the final ditch grades included in the plans shall be excavated at the earliest opportunity during construction in order to control runoff from the embankment or cut section per Art. 202.06 of the Standard Specifications. Some means of trapping siltation should be provided at the outflow of these ditch systems

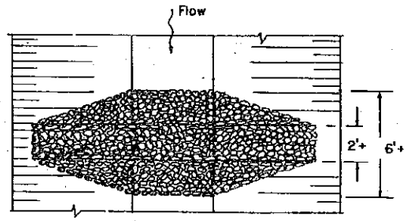
Illinois Department of Transportation

PASSED Mar. 6, 1979
Engineer of Design Operations

APPROVED Mar. 6, 1979
Engineer of Design

ISSUED 3-6-79

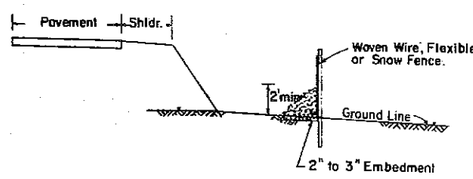
AGGREGATE DITCH CHECK



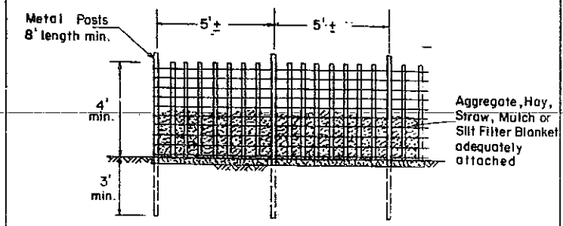
To be constructed by depositing material and shaping in a manner approved by the Engineer.

If the ditch check is within the clear zone and the road is open to traffic, the traffic approach slope of the aggregate shall be graded to 4:1.

MULCH BARRIER



SIDE ELEVATION VIEW



FRONT ELEVATION VIEW

GENERAL NOTES

Actual configuration and location of Temporary Erosion Control Systems shall be as shown on the plans or as directed by the Engineer.

Ditch Checks and Sediment Basins should be constructed at appropriate intervals along the waterway to be effective.

Where more than one row of bales are used, stagger bales to cover joints.

Where bales are shown staked, a minimum of two stakes per bale shall be used.

The Temporary Erosion Control Systems installed by the Contractor shall be properly maintained as directed by the Engineer to control siltation at all times during the life of the contract.

All salvageable temporary erosion control items shall be removed and become the property of the Contractor at the completion of the contract.

Existing R.O.W. fence may be utilized if such location is desired with use of Mulch Barrier or Hay or Straw Ditch Check - Two Bales High.

TEMPORARY EROSION CONTROL SYSTEMS

STANDARD 2381

A-12.25