BAR BENDING DIAGRAMS

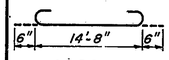
NOTE: Number preceding letter denotes bar size.
All dimensions are out to out.
All bar bending pin diameters shall be in accordance with A.C.I. Standards.

TYPICAL SECTION REINFORCEMENT

Bar	a	b
3S03	1'-1½"	6"
4S13	6"	3'-4"
4S24(E)	2'-3"	1'-8"
5S01	1'-1½"	7'-4"
5S03(E)	1'-1½"	3'-5"

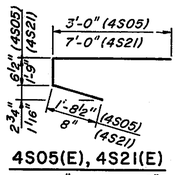
3S03 4S13 4S24(E) 5S01 5S03(E)

4S09

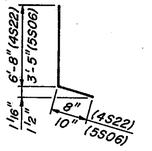


4S02

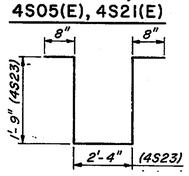
4S03(E)



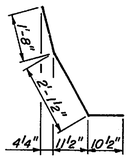
4S05(E), 4S21(E)



4S22(E), 5S06(E)



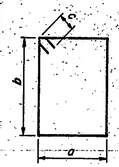
4S23(E)



5S07(E)

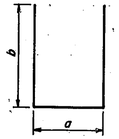
PIER DIAPHRAGM REINFORCEMENT

Bar	a	b	c
4S31	3'-3"	2'-4"	4½"
4S32	4'-0¼"	2'-4"	4½"
4S33	4'-10"	2'-4"	4½"
4S34	5'-7¾"	2'-4"	4½"
4S35	6'-5½"	2'-4"	4½"
4S36	7'-3¼"	2'-4"	4½"
4S39(E)	2'-3"	2'-4½"	4½"
4S40(E)	2'-3"	1'-6"	4½"
5S40	3'-3"	4'-10"	5½"

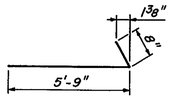


4S31 thru 4S36, 4S39(E), 4S40(E), 5S40

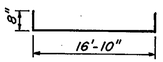
Bar	a	b
4S37(E)	4'-8½"	3'-0"
4S38(E)	2'-3"	3'-0"
4S41	2'-3"	2'-3"
4S42	2'-3"	3'-6"
4S43	2'-3"	4'-8"
4S44	2'-3"	5'-11"
4S46	4'-8½"	7'-3"
4S49	3'-1½"	7'-3"
4S50(E)	3'-1½"	3'-0"
5S41	6"	3'-4"
11S40	2'-2½"	4'-10"



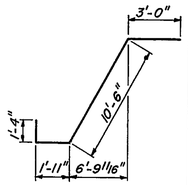
4S37(E), 4S38(E), 4S41 thru 4S44, 4S48, 4S49, 4S50(E), 5S41, 11S40



4S45(E)



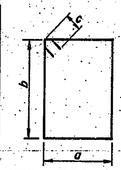
4S46



8S40

EXPANSION JOINT REINFORCEMENT

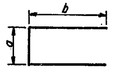
Bar	a	b	c
4S63(E)	4'-0½"	1'-5½"	4½"
4S64(E)	3'-2"	2'-9½"	4½"
6S60(E)	3'-4"	3'-7½"	6"
6S61(E)	3'-4"	8'-9½"	6"
6S63	3'-4"	2'-7"	6"
6S64(E)	3'-4"	2'-9½"	6"
9S63	8'-10"	1'-0"	11"



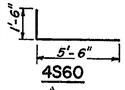
4S63, 4S64, 6S60, 6S61, 6S63, 6S64, 9S63

Bar	a	b
4S65(E)	9'-8"	1'-6"
4S69	2'-7"	1'-6"
4S70	3'-2"	1'-6"
6S62(E)	3'-3"	5'-8"
6S68	3'-2"	1'-6"
6S69	2'-7"	1'-6"
6S70	3'-3"	5'-8"
6S71(E)	3'-0"	5'-8"
6S72	3'-0"	5'-8"
6S73(E)	2'-9"	5'-8"
6S74	2'-9"	5'-8"

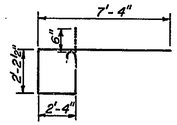
Bar	a	b
6S75(E)	2'-5"	5'-8"
6S76	2'-5"	5'-8"
6S77(E)	2'-2"	5'-8"
6S78	2'-2"	5'-8"
6S79(E)	1'-11"	5'-8"
6S80	1'-11"	5'-8"
6S81(E)	1'-8"	5'-8"
6S82	1'-8"	5'-8"
6S83(E)	1'-5"	5'-8"
6S84	1'-5"	5'-8"
4S73(E)	10'-0"	1'-6"



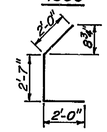
4S65, 4S69, 4S70, 4S73(E), 6S62(E), 6S68 thru 6S84



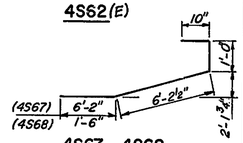
4S60



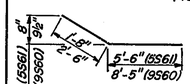
4S62(E)



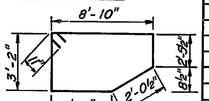
4S66



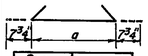
4S67, 4S68



5S61, 9S60

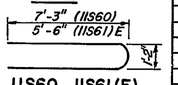


9S62



Bar	a
6S65	2'-9½"
6S66	3'-7½"
6S67	8'-9½"

6S65, 6S66, 6S67



11S60, 11S61(E)

BILL OF MATERIAL

Bar	No.	Length	Bent	Str.
3S03	576	2'-2"	●	
4S01	217	16'-10"		●
4S02	210	15'-8"	●	
4S03(E)	282	12'-8"	●	
4S04(E)	226	28'-2"		●
4S05(E)	458	5'-3"	●	
4S07	14	15'-3"	●	
4S08	8	11'-10"		●
4S09	390	3'-4"	●	
4S10	48	9'-0"	●	
4S12(E)	113	10'-8"		●
4S13	108	7'-2"	●	
4S15	124	60'-0"		●
4S15(E)	174	60'-0"		●
4S16	30	25'-4"		●
4S17	62	45'-11"		●
4S18	32	13'-11"		●
4S19(E)	58	17'-6"		●
4S21(E)	4	9'-5"	●	
4S22(E)	4	7'-4"	●	
4S23(E)	14	7'-2"	●	
4S24(E)	2	5'-7"	●	
4S30(E)	28	12'-6"		●
4S31	8	11'-11"	●	
4S32	4	13'-6"	●	
4S33	4	15'-1"	●	
4S34	4	16'-9"	●	
4S35	4	18'-4"	●	
4S36	4	20'-0"	●	
4S37(E)	6	10'-9"	●	
4S38(E)	8	8'-3"	●	
4S39(E)	2	10'-0"	●	
4S40(E)	1	8'-3"	●	
4S41	2	6'-9"	●	
4S42	2	9'-3"	●	
4S43	2	11'-7"	●	
4S44	2	14'-1"	●	
4S45(E)	340	6'-5"	●	
4S46	7	18'-2"	●	
4S47	62	5'-6"		●
4S48	6	19'-3"	●	
4S49	4	17'-8"	●	
4S50(E)	4	9'-2"	●	

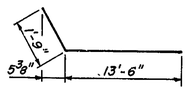
Bar	No.	Length	Bent	Str.
4S60(E)	6	7'-0"	●	
4S61(E)	2	28'-2"		●
4S62(E)	23	14'-7"	●	
4S63(E)	33	11'-9"	●	
4S64(E)	12	12'-8"	●	
4S65(E)	2	12'-8"	●	
4S66	10	6'-7"	●	
4S67	6	14'-3"	●	
4S68	8	9'-7"	●	
4S69	8	5'-7"	●	
4S70	28	6'-2"	●	
4S71	6	13'-1"		●
4S72	42	9'-4"		●
4S73(E)	1	13'-0"	●	
5S01	404	15'-10"	●	
5S02	30	16'-6"	●	
5S03(E)	404	8'-0"	●	
5S04(E)	113	10'-8"		●
5S05(E)	452	8'-0"		●
5S06(E)	458	4'-3"	●	
5S07(E)	458	4'-8"	●	
5S08(E)	30	9'-0"	●	
5S09	30	7'-9"		●
5S40	28	17'-1"	●	
5S60	16	16'-10"		●
5S61(E)	8	7'-2"	●	
5S62(E)	4	11'-0"		●
6S01	28	16'-6"	●	
6S02(E)	28	9'-10"	●	
6S03	24	3'-10"	●	

Bar	No.	Length	Bent	Str.
6S08	24	17'-0"		●
6S60(E)	6	14'-11"	●	
6S61(E)	4	25'-3"	●	
6S62(E)	2	14'-7"	●	
6S63	2	12'-10"	●	
6S64(E)	4	13'-3"	●	
6S65(E)	8	4'-1"	●	
6S66	12	4'-11"	●	
6S67(E)	32	10'-1"	●	
6S68	12	6'-2"	●	
6S69	8	5'-7"	●	
6S70	2	14'-7"	●	
6S71(E)	2	14'-4"	●	
6S72	2	14'-4"	●	
6S73(E)	2	14'-1"	●	
6S74	2	14'-1"	●	
6S75(E)	2	13'-9"	●	
6S76	2	13'-9"	●	
6S77(E)	2	13'-6"	●	
6S78	2	13'-6"	●	
6S79(E)	2	13'-3"	●	
6S80	2	13'-3"	●	
6S81(E)	2	13'-0"	●	
6S82	2	13'-0"	●	
6S83(E)	2	12'-9"	●	
6S84	2	12'-9"	●	
7S01	5	19'-2"	●	
7S02	5	14'-8"		●
7S03(E)	2	12'-4"		●
7S04(E)	2	28'-2"		●
7S60	6	16'-10"		●
8S40	8	16'-9"	●	
9S60(E)	8	10'-11"	●	
9S61(E)	4	28'-2"		●
9S62	4	25'-0"	●	
9S63	4	21'-6"	●	
11S40	2	11'-11"	●	
11S41(E)	4	24'-8"		●
11S42	2	16'-9"		●
11S60	8	15'-8"	●	
11S61(E)	8	12'-2"	●	

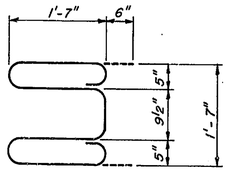
CONSTRUCTION JOINT REINFORCEMENT

Bar	a	b
5S02	1'-10"	7'-4"
5S08(E)	1'-10"	3'-7"
6S01	1'-10"	7'-4"
6S02(E)	1'-10"	4'-0"
6S03	1'-10"	1'-0"
7S01	16'-10"	1'-2"

5S02, 5S08, 6S01, 6S02(E) 7S01 6S03



4S07



4S10

ESTIMATED QUANTITIES

Item	Unit	Total
Superstructure Concrete	Cu.Yd.	451.4
Reinforcing Steel	Lb.	28,882
Reinforcing Steel (Epoxy Coated)	Lb.	35,893

NOTES: All reinforcement bars shall conform to the requirements of ASTM Grade 60.
Minimum compressive strength of Superstructure Conc. shall be 5,500 p.s.i.

Figg and Muller Engineers Inc.
424 North Calhoun Street
Tallahassee Florida 32301

BAR BENDING DIAGRAMS & BILL OF MATERIAL - UNIT II

INDIANA STATE HIGHWAY COMMISSION

LAKE COUNTY - RAMP:- C SECTION:-
SCALE:- N.T.S. DATE:- MAY 26, 1981
SUBMITTED FOR APPROVAL Eugene C. Figg Jr.
DRAWING:- OF SHEET:- 307 OF
PROJECT:- MM 220-1(8)
CONTRACT NO. B-12752
BRIDGE FILE:- 912-45-2546 REN

REGISTERED 18543 STATE OF INDIANA PROFESSIONAL ENGINEER

APPROVED FOR PUBLISHING
W. B. ABBOTT 7-30-81
Assistant Engineer of Bridge Design

DESIGNED MM C'K'D. MM
DRAWN R.E.T. C'K'D. GR
TRACED I.S. C'K'D. RET