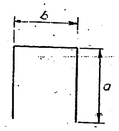
PIERS 201 & 202 DIAPHRAGM

BAR BENDING DIAGRAMS

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

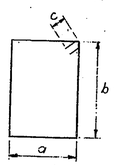
PIER DIAPHRAGM REINFORCEMENT

Bar	a	b
4D30(E)	3'-2"	3'-0½"
4D31	7'-4"	3'-2½"
4D32(E)	3'-2"	4'-8½"
4D33	7'-2"	4'-5½"
4D45	3'-5"	2'-4"
4D46	8'-0"	2'-4"
4D47	4'-10"	2'-4"
4D48(E)	3'-2"	5'-6"
4D49	7'-2"	5'-6"
4D51(E)	3'-2"	1'-6"
4D52	7'-2"	1'-6"
11D32	3'-0"	2'-3"

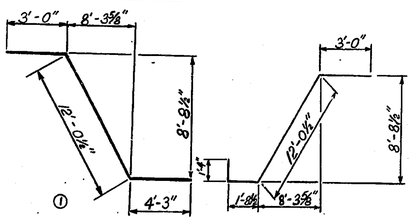


4D30(E), 4D31, 4D32(E), 4D33, 4D45 thru 4D47, 4D48(E), 4D49, 4D51(E), 4D52, 11D32

Bar	a	b	c	
4D34(E)	2'-3"	5'-10½"	4½"	
4D35(E)	2'-3"	4'-10"	4½"	
4D36(E)	2'-3"	3'-9"	4½"	
4D37(E)	2'-3"	2'-8½"	4½"	
4D38(E)	2'-3"	1'-13"	4½"	
4D39	8'-4"	2'-3"	4½"	②
4D40	7'-5"	2'-3"	4½"	②
4D41	6'-5½"	2'-3"	4½"	②
4D42	5'-6"	2'-3"	4½"	②
4D43	4'-6½"	2'-3"	4½"	②
4D44	3'-7"	2'-3"	4½"	②
4D50	5'-6½"	4'-10"	4½"	
5D30	3'-2"	4'-10"	5½"	



4D34(E) thru 4D38(E), 4D39 thru 4D44, 4D50, 5D30



8D31(E) 8D30(E) ①

BILL OF MATERIAL

	Bar	No.	Length	Bent	Str.
	4D30(E)	8	9'-3"	●	
	4D31	3	17'-11"	●	
	4D32(E)	2	11'-3"	●	
	4D33	2	19'-5"	●	
①	4D34(E)	4	18'-[illegible]"	●	
①	4D35(E)	4	17'-[illegible]"	●	
①	4D36(E)	4	[illegible]	●	
①	4D37(E)	4	[illegible]	●	
①	4D38(E)	4	[illegible]'-7"	●	
②	4D39	2	21'-11"	●	
②	4D40	2	20'-1"	●	
②	4D41	2	18'-2"	●	
②	4D42	2	16'-3"	●	
②	4D43	2	14'-4"	●	
②	4D44	2	12'-5"	●	
	4D45	4	18'-3"	●	
	4D46	4	16'-5"	●	
	4D47	4	12'-5"	●	
	4D48(E)	4	11'-9"	●	
	4D49	4	20'-[illegible]"	●	
	4D50	7	20'-6"	●	
	4D51(E)	4	7'-10"	●	
	4D52	4	18'-2"	●	
	4D53	106	5'-6"		●
	4D54	14	34'-10"		●
	4D55	4	7'-2"		●
	5D30	14	17'-[illegible]"	●	
	8D40	8	18'-1"	●	
	11D32	1	10'-3"	●	

ESTIMATED QUANTITIES

Item	Unit	Total	
Superstructure Concrete	Cu. Yd.	**	
Reinforcing Steel	Lb.	2907	①②
Reinforcing Steel (Epoxy Coated)	Lb.	1090.80	①

Note: All reinforcement bars shall conform to the requirements of ASTM Grade 60. Minimum compressive strength of Superstructure Conc. shall be 4,500 psi.

** Concrete quantities included in Bill of Materials Sheet No. 116 & 117.
Bill of Material is for one Pier Diaphram only

DESIGNED	M.M.	C'K'D.	M.M.
DRAWN	T.S.	C'K'D.	G.R.
TRACED	T.S.	C'K'D.	G.R.

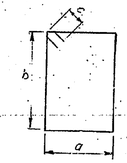
1-17-83 Revision ②
11-24-82 Revision ①
10-20-81 Revision - Estimate of Quantities

PIERS 205 & 206 DIAPHRAGM

BAR BENDING DIAGRAMS

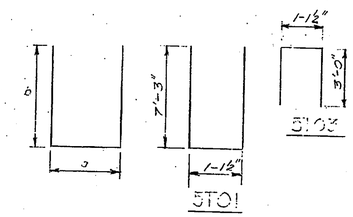
PIER DIAPHRAGM REINFORCEMENT

Bar	a	b	c
4D01	3'-3"	2'-4"	4½"
4D02	4'-0¼"	2'-4"	4½"
4D03	4'-10"	2'-4"	4½"
4D04	6'-7¾"	2'-4"	4½"
4D05	6'-5½"	2'-4"	4½"
4D06	[illegible]	[illegible]	[illegible]
4D07(E)	[illegible]	[illegible]	[illegible]
4D10(E)	[illegible]	[illegible]	[illegible]
11D10	[illegible]"	4'-[illegible]	[illegible]

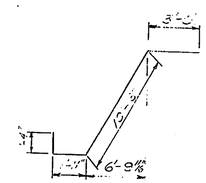


4D01 thru 4D06, 4D09(E), 4D10(E), 5D10

Bar	a	b
4D07(E)	4'-8½"	3'-0"
4D08(E)	2'-3"	3'-0"
4D11	[illegible]	[illegible]
4D12	[illegible]	[illegible]
4D13	[illegible]	[illegible]
4D14	[illegible]	5'-[illegible]
4D18	[illegible]	[illegible]
4D19	[illegible]	[illegible]
4D20	[illegible]	[illegible]
11D10	[illegible]	4'-[illegible]



4D07(E), 4D08(E), 4D11 thru 4D14, 4D18, 4D19, 4D20(E), 11D10



8D10

BILL OF MATERIAL

	Bar	No.	Length	Bent	Str.
	4D01	4	11'-11"	●	
	4D02	2	13'-6"	●	
	4D03	2	15'-1"	●	
	4D04	2	16'-8"	●	
	4D05	2	18'-4"	●	
	4D06	2	20'-0"	●	
	4D07(E)	6	10'-3"	●	
	4D08(E)	8	9'-3"	●	
	4D09(E)	2	10'-0"	●	
	4D10(E)	1	8'-3"	●	
	4D11	2	6'-9"	●	
	4D12	2	9'-3"	●	
	4D13	2	11'-7"	●	
	4D14	2	14'-1"	●	
①	4D16	14	16'-10"		●
	4D17	62	5'-6"		●
①	4D18	6	19'-3"	●	
	4D19	4	17'-8"	●	
	4D20(E)	4	9'-2"	●	
	5D10	14	17'-1"	●	
	5T01	14	15'-8"	●	
	5T03	14	7'-2"	●	
	8D10	8	16'-9"	●	
	11D10	2	11'-11"	●	
	11D11(E)	4	24'-0"		●
	11D12	4	5'-0"		●

ESTIMATED QUANTITIES

Item	Unit	Total
Superstructure Concrete	Cu. Yd.	**
① Reinforcing Steel	Lb.	1882.39
Reinforcing Steel (Epoxy Coated)	Lb.	640.59

Bill of Material is for one Pier Diaphram only.

APPROVED FOR CONSTRUCTION
W. B. Abbott
W. B. ABBOTT
Assistant Engineer of Bridge Design 9-17-81

Figg and Muller Engineers Inc.
Tallahassee, Florida 32301

INDIANA STATE HIGHWAY COMMISSION
LAKE COUNTY - RAMP:- A SECTION:-
SCALE:- N.T.S. DATE:- June 29, 1981
SUBMITTED FOR APPROVAL Eugene C. Figg
DRAWING:- OF SHEET:- 130A OF
PROJECT:- MM 220-1 (8)
CONTRACT NO. B-12752
BRIDGE FILE:- 912-45-2546 RWX