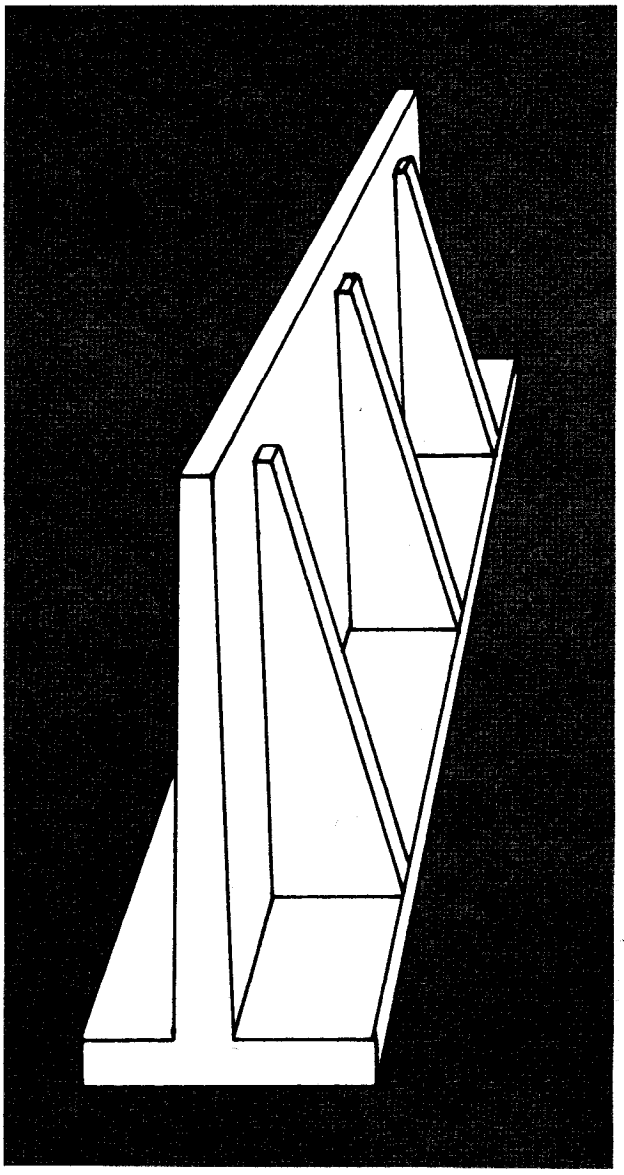
A WATER RESOURCES TECHNICAL PUBLICATION

ENGINEERING MONOGRAPH NO. 27



Moments and Reactions for Rectangular Plates

UNITED STATES DEPARTMENT
OF THE INTERIOR
BUREAU OF RECLAMATION

A WATER RESOURCES TECHNICAL PUBLICATION

Engineering Monograph No. 27

Moments and Reactions for Rectangular Plates

By W. T. MOODY

Division of Design

Denver, Colorado

United States Department of the Interior

BUREAU OF RECLAMATION

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. Administration.

First Printing: October 1963
Revised: July 1963
Reprinted: April 1966
Reprinted: July 1970
Reprinted: June 1975
Reprinted: December 1976
Reprinted: January 1978
Reprinted: April 1980
Reprinted: March 1983
Reprinted: June 1986
Reprinted: August 1990

U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON : 1978

Preface

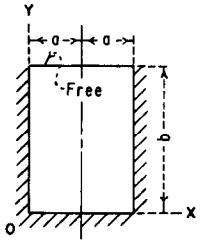
THIS MONOGRAPH presents a series of tables containing computed data for use in the design of components of structures which can be idealized as rectangular plates or slabs. Typical examples are wall and footing panels of counterfort retaining walls. The tables provide the designer with a rapid and economical means of analyzing the structures at representative points. The data presented, as indicated in the accompanying figure on the frontispiece, were computed for five sets of boundary conditions, nine ratios of lateral dimensions, and eleven loadings typical of those encountered in design.

As supplementary guides to the use and development of the data compiled in this monograph, two appendixes are included. The first appendix presents an example of application of the data to a typical structure. The second appendix explains the basic mathematical considerations and develops the application of the finite difference method to the solution of plate problems. A series of drawings in the appendixes presents basic relations which will aid in application of the method to other problems. Other drawings illustrate application of the method to one of the specific cases and lateral dimension ratios included in the monograph.

Acknowledgments

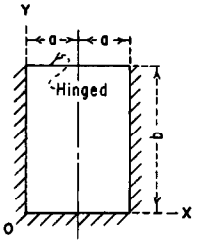
The writer was assisted in the numerical computations by W. S. Young, J. R. Brizzolara, and D. Misterek. H. J. Kahm assisted in the computations and in checking the results obtained. The figures were prepared by H. E. Willmann.

Solutions of the simultaneous equations were performed using an electronic calculator under the direction of F. E. Swain.



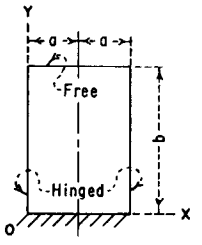
CASE 1

PLATE FIXED ALONG THREE EDGES AND FREE ALONG THE FOURTH EDGE



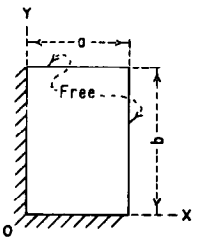
CASE 2

PLATE FIXED ALONG THREE EDGES AND HINGED ALONG THE FOURTH EDGE



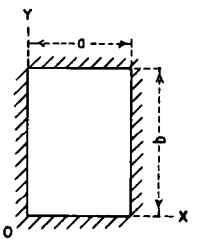
CASE 3

PLATE FIXED ALONG ONE EDGE, FREE ALONG THE OPPOSITE EDGE, AND HINGED ALONG THE OTHER TWO EDGES



CASE 4

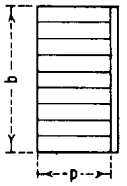
PLATE FIXED ALONG TWO ADJACENT EDGES AND FREE ALONG THE OTHER TWO EDGES



CASE 5

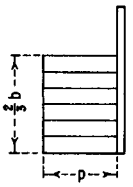
PLATE FIXED ALONG FOUR EDGES

BOUNDARY CONDITIONS



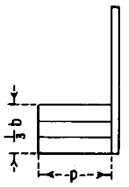
LOAD I

UNIFORM LOAD OVER THE FULL HEIGHT OF THE PLATE



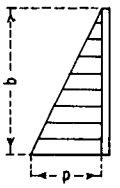
LOAD II

UNIFORM LOAD OVER 2/3 THE HEIGHT OF THE PLATE



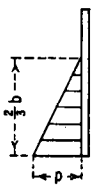
LOAD III

UNIFORM LOAD OVER 1/3 THE HEIGHT OF THE PLATE



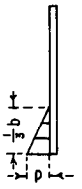
LOAD IV

UNIFORMLY VARYING LOAD OVER THE FULL HEIGHT OF THE PLATE



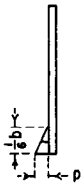
LOAD V

UNIFORMLY VARYING LOAD OVER 2/3 THE HEIGHT OF THE PLATE



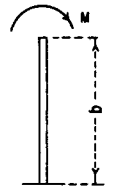
LOAD VI

UNIFORMLY VARYING LOAD OVER 1/3 THE HEIGHT OF THE PLATE



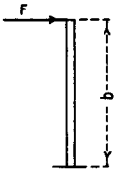
LOAD VII

UNIFORMLY VARYING LOAD OVER 1/6 THE HEIGHT OF THE PLATE



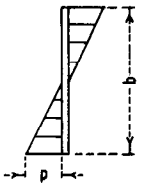
LOAD VIII

UNIFORM MOMENT ALONG THE EDGE y = b FOR CASES 1, 2, AND 3



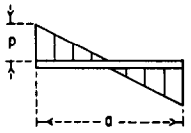
LOAD IX

UNIFORM LINE LOAD ALONG THE FREE EDGE FOR CASES 1 AND 3



LOAD X

UNIFORMLY VARYING LOAD p = 0 ALONG y = b/2



LOAD XI

UNIFORMLY VARYING LOAD p = 0 ALONG x = a/2

LOADING CONDITIONS

NOTES

The various cases are analyzed for the indicated ratios of a/b.

Cases 1, 2, and 3 : 1/8, 1/4, 3/8, 1/2, 3/4, 1, and 3/2.
Case 4 : 1/8, 1/4, 3/8, 1/2, 3/4, and 1.
Case 5 : 3/8, 1/2, 5/8, 3/4, 7/8, and 1.

All results are based on a Poisson's ratio of 0.2.

INDEX OF BOUNDARY AND LOADING CONDITIONS

—FRONTISPIECE

Contents

LIST OF FIGURES

CONTENTS

LIST OF TABLES

Introduction

CERTAIN COMPONENTS of many structures may be logically idealized as laterally loaded, rectangular plates or slabs having various conditions of edge support. This monograph presents tables of coefficients which can be used to determine moments and reactions in such structures for various loading conditions and for several ratios of lateral dimensions.

The finite difference method was used in the analysis of the structures and in the development of the tables. This method, described in Appendix II of this monograph, makes possible the analysis of rectangular plates for any of the usual types of edge conditions, and in addition it can readily take into account virtually all types of loading. An inherent disadvantage of the method lies in the great amount of work required in solution of the large number of simultaneous equations to which it gives rise. However, such equations can be readily systematized and solved by an electronic calculator, thus largely offsetting this disadvantage.

Method of Analysis

THE FINITE difference method is based on the usual approximate theory for the bending of thin plates subjected to lateral loads.[1]* The customary assumptions are made, therefore, with regard to homogeneity, isotropy, conformance with Hooke's law, and relative magnitudes of deflections, thickness, and lateral dimensions. (See Appendix II.)

Solution by finite differences provides a means of determining a set of deflections for discrete points of a plate subjected to given loading and edge conditions. The deflections are determined in such a manner that the deflection of any point, together with those of certain nearby points, satisfy finite difference relations which correspond to the differential expressions of the usual plate theory. These expressions relate coordinates and deflections to load and edge conditions.

*Numbers in superscript refer to publications in List of References on page 89.

In this study, for each load and ratio of lateral dimensions, deflections were determined at 30 or more grid points by solution of an equal number of simultaneous equations. A relatively closer spacing of points was used in some instances near fixed boundaries to attain the desired accuracy in this region of high curvature. For the a/b ratios 1/4 and 1/8, one and two additional sets, respectively, of five deflections were determined in the vicinity of the x axis. Owing to the limitations on computer capacity, these deflections were computed by solutions of supplementary sets of 20 equations whose right-hand members were functions of certain of the initially computed deflections as well as of the loads. In each case, the solution of the equations was made through the use of an electronic calculator.

Computations of moments and reactions were made using desk calculators and the appropriate finite difference relations. The finite difference relations used are discussed in Appendix II.

Results

FIGURES 1 through 36 present the results of these studies as tables of dimensionless coefficients for the rectangular components of bending moment and for reactions at the supports. The studies were carried out for the following edge, or boundary, conditions:

Case 1: Plate fixed along three edges and free along the fourth edge.

Case 2: Plate fixed along three edges and hinged along the fourth edge.

Case 3: Plate fixed along one edge, free along the opposite edge, and hinged along the other two edges.

Case 4: Plate fixed along two adjacent edges and free along the other two edges.

Case 5: Plate fixed along four edges.

The loads, selected because they are representative of conditions frequently encountered in structures, are:

Load I: Uniform load over the full height of the plate.

Load II: Uniform load over 2/3 the height of the plate.

Load III: Uniform load over 1/3 the height of the plate.

Load IV: Uniformly varying load over the full height of the plate.

Load V: Uniformly varying load over 2/3 the height of the plate.

Load VI: Uniformly varying load over 1/3 the height of the plate.

Load VII: Uniformly varying load over 1/6 the height of the plate.

Load VIII: Uniform moment along the edge $y=b$ of the plate for Cases 1, 2, and 3.

Load IX: Uniform line load along the free edge of the plate for Cases 1 and 3.

Load X: Uniformly varying load, $p=0$ along $y=b/2$.

Load XI: Uniformly varying load, $p=0$ along $x=a/2$.

Plates with the following ratios of lateral dimensions, a, to height b, were studied for the first four cases: 1/8, 1/4, 3/8, 1/2, 3/4, 1, 3/2. The analysis was carried out for these cases using Loads I through IX and all dimension ratios, except that Load IX was omitted from Case 2 for obvious reasons, and Loads VIII and IX and the ratio $a/b=3/2$ were omitted from Case 4. It will be noted that for the first three cases, which have symmetry about a vertical axis, the dimension a denotes one-half of the plate width, and for the fourth, unsymmetrical case, a denotes the full width. For Case 5, lateral

dimension ratios of 3/8, 1/2, 5/8, 3/4, 7/8 and 1 were studied, subjected to Loads I, X, and XI. For this case, a and b denote the full lateral dimensions. All numerical results are based on a value of Poisson's ratio of 0.2.

The arrangement of the tables is such that each coefficient, both for reaction and moment, appears in the tables at a point which corresponds geometrically to its location in the plate as shown in each accompanying sketch.

Effect of Poisson's Ratio

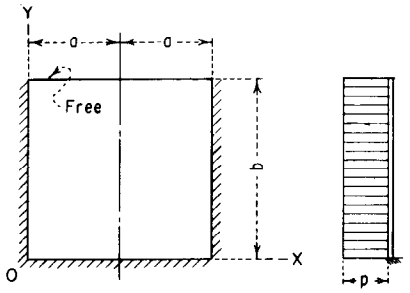
A question which frequently arises is: What effect does Poisson's ratio have on the bending moments in a plate? For the plate fixed along four sides, a clear understanding of this effect can be determined easily, since the deflections computed from finite difference theory are independent of Poisson's ratio. Futhermore, the bending moments at, and normal to, the fixed edges are unaffected by this factor. It is reasonable then to conclude that insofar as the moments which are most important in design are concerned, the maximum effect for this case will occur at the center of the slab.

Table 1 shows a comparison of maximum bending moment coefficients at the center of a uniformly loaded plate for several values of μ and for each ratio of a/b for which Case 5 was computed. For a change in Poisson's ratio from 0.2 to 0.3 it is noted that the maximum effect on the bending moment coefficient occurs at a/b=1, where the change in the coefficient is less than 8 percent.

TABLE 1.—*Effect of Poisson's Ratio (μ) on Coefficients of Maximum Bending Moment at the Center of a Uniformly Loaded Rectangular Plate Fixed Along Four Edges*

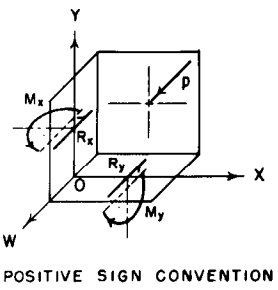
Values of M_x/pa^2				
a/b \ μ	0	0.1	0.2	0.3
0. 375	−0. 0423	−0. 0424	−0. 0424	−0. 0425
0. 5	−0. 0403	−0. 0407	−0. 0411	−0. 0415
0. 625	−0. 0358	−0. 0367	−0. 0376	−0. 0384
0. 75	−0. 0298	−0. 0311	−0. 0324	−0. 0337
0. 875	−0. 0235	−0. 0251	−0. 0267	−0. 0283
1. 0	−0. 0177	−0. 0195	−0. 0213	−0. 0230

			M_x						M_y					
	y/b	R_x \ x/a	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
a/b = 1/8	1.0	+.1249	+.0052	+.0024	+.0002	−.0014	−.0024	−.0027	0	0	0	0	0	0
	0.8	+.1248	+.0051	+.0023	+.0002	−.0014	−.0023	−.0026	+.0010	+.0005	+.0000	−.0003	−.0005	−.0005
	0.6	+.1247	+.0052	+.0023	+.0002	−.0014	−.0023	−.0027	+.0010	+.0005	+.0000	−.0003	−.0005	−.0005
	0.4	+.1250	+.0051	+.0023	+.0001	−.0014	−.0023	−.0027	+.0010	+.0005	+.0000	−.0003	−.0005	−.0006
	0.2	+.1185	+.0048	+.0021	+.0001	−.0013	−.0021	−.0024	+.0010	+.0004	−.0001	−.0004	−.0006	−.0007
	0	+.0504	0	+.0001	+.0003	+.0005	+.0006	+.0007	0	+.0006	+.0016	+.0025	+.0031	+.0033
		R_x \ R_y	+.0504	+.0116	+.0568	+.0893	+.1084	+.1141						
a/b = 1/4	1.0	+.2483	+.0209	+.0096	+.0007	−.0057	−.0096	−.0109	0	0	0	0	0	0
	0.8	+.2523	+.0206	+.0093	+.0006	−.0056	−.0093	−.0105	+.0041	+.0019	+.0002	−.0009	−.0016	−.0019
	0.6	+.2513	+.0205	+.0093	+.0006	−.0056	−.0093	−.0105	+.0041	+.0018	+.0000	−.0013	−.0021	−.0023
	0.4	+.2512	+.0196	+.0085	+.0003	−.0054	−.0088	−.0099	+.0039	+.0016	−.0004	−.0018	−.0027	−.0030
	0.2	+.1905	+.0137	+.0053	−.0003	−.0039	−.0059	−.0065	+.0027	+.0007	−.0011	−.0024	−.0032	−.0034
	0	+.0295	0	+.0005	+.0013	+.0020	+.0025	+.0027	0	+.0023	+.0063	+.0101	+.0126	+.0135
		R_x \ R_y	+.0295	+.0236	+.1131	+.1786	+.2174	+.2301						
a/b = 3/8	1.0	+.3711	+.0476	+.0219	+.0016	−.0130	−.0218	−.0247	0	0	0	0	0	0
	0.8	+.3896	+.0466	+.0208	+.0012	−.0126	−.0208	−.0235	+.0093	+.0042	+.0004	−.0022	−.0038	−.0043
	0.6	+.3757	+.0442	+.0193	+.0007	−.0122	−.0198	−.0223	+.0088	+.0036	−.0007	−.0039	−.0059	−.0065
	0.4	+.3541	+.0379	+.0155	−.0003	−.0107	−.0167	−.0186	+.0076	+.0024	−.0021	−.0054	−.0075	−.0082
	0.2	+.2133	+.0210	+.0075	−.0009	−.0059	−.0085	−.0093	+.0042	+.0009	−.0017	−.0034	−.0044	−.0047
	0	−.0015	0	+.0010	+.0027	+.0043	+.0054	+.0058	0	+.0050	+.0135	+.0215	+.0269	+.0288
		R_x \ R_y	−.0015	+.0303	+.1666	+.2644	+.3220	+.3410						
a/b = 1/2	1.0	+.5101	+.0852	+.0384	+.0022	−.0233	−.0383	−.0432	0	0	0	0	0	0
	0.8	+.5331	+.0807	+.0349	+.0013	−.0218	−.0353	−.0397	+.0161	+.0068	−.0001	−.0049	−.0077	−.0086
	0.6	+.4805	+.0712	+.0298	−.0000	−.0199	−.0313	−.0350	+.0142	+.0051	−.0026	−.0084	−.0120	−.0132
	0.4	+.4148	+.0545	+.0209	−.0014	−.0156	−.0233	−.0258	+.0109	+.0026	−.0043	−.0094	−.0125	−.0135
	0.2	+.1928	+.0250	+.0087	−.0009	−.0063	−.0089	−.0096	+.0050	+.0015	−.0003	−.0008	−.0008	−.0007
	0	−.0294	0	+.0019	+.0050	+.0080	+.0100	+.0107	0	+.0094	+.0252	+.0399	+.0499	+.0534
		R_x \ R_y	−.0294	+.0482	+.2263	+.3559	+.4322	+.4572						
a/b = 3/4	1.0	+.8592	+.1788	+.0716	−.0010	−.0471	−.0726	−.0807	0	0	0	0	0	0
	0.8	+.7864	+.1552	+.0607	−.0020	−.0414	−.0630	−.0698	+.0310	+.0112	−.0027	−.0119	−.0172	−.0190
	0.6	+.5989	+.1207	+.0460	−.0033	−.0336	−.0498	−.0549	+.0241	+.0071	−.0067	−.0166	−.0225	−.0245
	0.4	+.4378	+.0786	+.0280	−.0033	−.0214	−.0306	−.0333	+.0157	+.0036	−.0049	−.0100	−.0127	−.0135
	0.2	+.1185	+.0289	+.0109	+.0009	−.0034	−.0049	−.0053	+.0058	+.0060	+.0115	+.0186	+.0241	+.0262
	0	−.0694	0	+.0042	+.0115	+.0182	+.0227	+.0242	0	+.0212	+.0576	+.0911	+.1135	+.1212
		R_x \ R_y	−.0694	+.0806	+.3383	+.5271	+.6368	+.6725						
a/b = 1	1.0	+1.2115	+.2613	+.0883	−.0105	−.0654	−.0927	−.1008	0	0	0	0	0	0
	0.8	+.9558	+.2146	+.0727	−.0097	−.0551	−.0774	−.0840	+.0429	+.0134	−.0051	−.0164	−.0224	−.0243
	0.6	+.6250	+.1547	+.0525	−.0083	−.0411	−.0566	−.0611	+.0309	+.0090	−.0069	−.0169	−.0222	−.0238
	0.4	+.3984	+.0916	+.0305	−.0043	−.0216	−.0290	−.0310	+.0183	+.0069	+.0029	+.0030	+.0045	+.0053
	0.2	+.0434	+.0303	+.0127	+.0047	+.0033	+.0042	+.0048	+.0061	+.0149	+.0339	+.0542	+.0689	+.0742
	0	−.0939	0	+.0074	+.0199	+.0311	+.0384	+.0409	0	+.0369	+.0996	+.1556	+.1919	+.2043
		R_x \ R_y	−.0939	+.1167	+.4453	+.6760	+.8043	+.8450						
a/b = 3/2	1.0	+1.6267	+.3304	+.0700	−.0345	−.0730	−.0844	−.0865	0	0	0	0	0	0
	0.8	+1.0875	+.2609	+.0565	−.0286	−.0589	−.0670	−.0683	+.0522	+.0116	−.0069	−.0143	−.0165	−.0169
	0.6	+.5876	+.1778	+.0399	−.0195	−.0385	−.0422	−.0422	+.0356	+.0115	+.0017	+.0011	+.0035	+.0049
	0.4	+.3166	+.0981	+.0239	−.0056	−.0116	−.0101	−.0090	+.0196	+.0177	+.0315	+.0495	+.0634	+.0685
	0.2	−.0540	+.0302	+.0140	+.0140	+.0211	+.0273	+.0296	+.0060	+.0389	+.0912	+.1388	+.1699	+.1805
	0	−.1168	0	+.0159	+.0388	+.0565	+.0668	+.0702	0	+.0796	+.1939	+.2823	+.3340	+.3508
		R_y	−.1168	+.2429	+.6510	+.8793	+.9832	+1.0123						



Moment = (Coefficient) (pb^2)

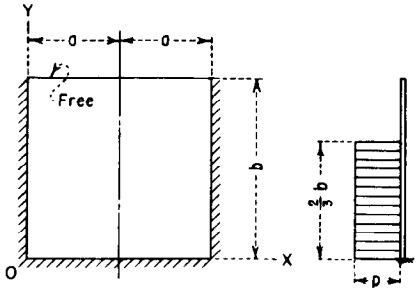
Reaction = (Coefficient) (pb)



POSITIVE SIGN CONVENTION

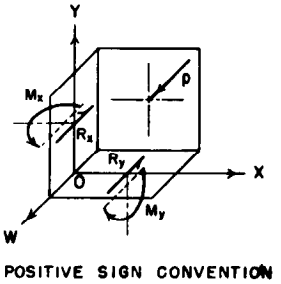
FIGURE 1.—*Plate fixed along three edges, moment and reaction coefficients, Load I, uniform load.*

			M_x						M_y					
	y/b	R_x \ x/a	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
a/b = 1/8	1.0	−.0005	+.0000	+.0000	+.0000	−.0000	−.0000	−.0000	0	0	0	0	0	0
	0.8	+.0074	+.0005	+.0003	+.0001	−.0001	−.0002	−.0003	+.0001	+.0001	+.0001	+.0001	+.0001	+.0001
	0.6	+.0965	+.0039	+.0017	+.0001	−.0011	−.0017	−.0020	+.0008	+.0003	−.0000	−.0003	−.0004	−.0005
	0.4	+.1252	+.0051	+.0023	+.0001	−.0014	−.0023	−.0026	+.0010	+.0004	−.0000	−.0003	−.0005	−.0006
	0.2	+.1185	+.0048	+.0021	+.0001	−.0013	−.0021	−.0024	+.0010	+.0004	−.0001	−.0004	−.0006	−.0007
	0	+.0503	0	+.0001	+.0003	+.0005	+.0006	+.0007	0	+.0006	+.0016	+.0025	+.0031	+.0033
		R_x \ R_y	+.0503	+.0116	+.0568	+.0893	+.1082	+.1149						
a/b = 1/4	1.0	−.0088	+.0005	+.0006	+.0002	−.0002	−.0005	−.0007	0	0	0	0	0	0
	0.8	+.0265	+.0039	+.0022	+.0005	−.0009	−.0019	−.0022	+.0008	+.0007	+.0007	+.0007	+.0007	+.0008
	0.6	+.1886	+.0142	+.0060	+.0001	−.0040	−.0064	−.0071	+.0028	+.0010	−.0005	−.0016	−.0022	−.0025
	0.4	+.2495	+.0184	+.0077	−.0000	−.0052	−.0082	−.0092	+.0037	+.0013	−.0008	−.0024	−.0034	−.0037
	0.2	+.1917	+.0136	+.0051	−.0004	−.0039	−.0059	−.0065	+.0027	+.0006	−.0012	−.0026	−.0034	−.0037
	0	+.0299	0	+.0005	+.0013	+.0020	+.0025	+.0027	0	+.0024	+.0063	+.0100	+.0126	+.0134
		R_x \ R_y	+.0299	+.0241	+.1138	+.1792	+.2177	+.2304						
a/b = 3/8	1.0	−.0257	+.0038	+.0035	+.0012	−.0014	−.0032	−.0039	0	0	0	0	0	0
	0.8	+.0694	+.0127	+.0068	+.0012	−.0033	−.0061	−.0071	+.0025	+.0018	+.0014	+.0011	+.0009	+.0008
	0.6	+.2724	+.0282	+.0113	−.0004	−.0081	−.0124	−.0138	+.0056	+.0015	−.0020	−.0047	−.0064	−.0070
	0.4	+.3440	+.0330	+.0123	−.0013	−.0097	−.0142	−.0156	+.0066	+.0013	−.0036	−.0073	−.0096	−.0104
	0.2	+.2181	+.0201	+.0067	−.0013	−.0058	−.0080	−.0087	+.0040	+.0005	−.0025	−.0046	−.0058	−.0062
	0	+.0016	0	+.0010	+.0026	+.0041	+.0051	+.0055	0	+.0050	+.0131	+.0206	+.0256	+.0274
		R_x \ R_y	+.0016	+.0367	+.1705	+.2632	+.3165	+.3338						
a/b = 1/2	1.0	−.0272	+.0130	+.0096	+.0025	−.0043	−.0089	−.0106	0	0	0	0	0	0
	0.8	+.1263	+.0257	+.0128	+.0015	−.0070	−.0122	−.0139	+.0051	+.0030	+.0013	−.0000	−.0009	−.0012
	0.6	+.3370	+.0419	+.0154	−.0017	−.0123	−.0181	−.0199	+.0084	+.0013	−.0049	−.0097	−.0126	−.0136
	0.4	+.3937	+.0433	+.0138	−.0034	−.0130	−.0178	−.0193	+.0086	+.0001	−.0075	−.0132	−.0167	−.0178
	0.2	+.2072	+.0227	+.0064	−.0021	−.0062	−.0078	−.0083	+.0045	+.0002	−.0027	−.0044	−.0052	−.0054
	0	−.0203	0	+.0018	+.0046	+.0071	+.0087	+.0092	0	+.0090	+.0230	+.0354	+.0434	+.0461
		R_x \ R_y	−.0203	+.0680	+.2337	+.3439	+.4048	+.4241						
a/b = 3/4	1.0	+.0479	+.0445	+.0243	+.0028	−.0134	−.0230	−.0261	0	0	0	0	0	0
	0.8	+.2273	+.0541	+.0232	+.0002	−.0150	−.0236	−.0263	+.0108	+.0046	−.0006	−.0046	−.0072	−.0080
	0.6	+.3991	+.0617	+.0190	−.0051	−.0185	−.0251	−.0271	+.0123	−.0007	−.0116	−.0194	−.0240	−.0255
	0.4	+.4133	+.0528	+.0124	−.0069	−.0158	−.0196	−.0206	+.0106	−.0030	−.0137	−.0206	−.0243	−.0254
	0.2	+.1705	+.0234	+.0048	−.0024	−.0044	−.0047	−.0046	+.0047	+.0008	+.0008	+.0027	+.0046	+.0054
	0	−.0441	0	+.0038	+.0090	+.0133	+.0158	+.0167	0	+.0191	+.0452	+.0663	+.0792	+.0835
		R_x \ R_y	−.0441	+.1382	+.3413	+.4628	+.5249	+.5438						
a/b = 1	1.0	+.1608	+.0753	+.0324	−.0005	−.0209	−.0314	−.0346	0	0	0	0	0	0
	0.8	+.2896	+.0757	+.0274	−.0032	−.0205	−.0290	−.0315	+.0151	+.0051	−.0027	−.0083	−.0115	−.0125
	0.6	+.4093	+.0722	+.0183	−.0083	−.0211	−.0267	−.0282	+.0144	−.0030	−.0160	−.0241	−.0284	−.0296
	0.4	+.3959	+.0548	+.0094	−.0086	−.0153	−.0175	−.0180	+.0110	−.0055	−.0155	−.0201	−.0217	−.0221
	0.2	+.1392	+.0222	+.0036	−.0011	−.0010	−.0001	+.0003	+.0044	+.0031	+.0086	+.0160	+.0217	+.0237
	0	−.0523	0	+.0061	+.0136	+.0192	+.0226	+.0237	0	+.0307	+.0680	+.0962	+.1129	+.1184
		R_x \ R_y	−.0523	+.2041	+.4214	+.5401	+.5977	+.6149						
a/b = 3/2	1.0	+.3060	+.1036	+.0271	−.0103	−.0247	−.0290	−.0298	0	0	0	0	0	0
	0.8	+.3324	+.0922	+.0204	−.0111	−.0221	−.0248	−.0252	+.0184	+.0035	−.0055	−.0099	−.0116	−.0120
	0.6	+.3934	+.0759	+.0100	−.0131	−.0194	−.0202	−.0200	+.0152	−.0071	−.0184	−.0221	−.0227	−.0226
	0.4	+.3615	+.0511	+.0028	−.0092	−.0104	−.0093	−.0087	+.0102	−.0075	−.0107	−.0073	−.0034	−.0018
	0.2	+.1087	+.0189	+.0026	+.0030	+.0064	+.0090	+.0099	+.0038	+.0105	+.0290	+.0465	+.0579	+.0617
	0	−.0489	0	+.0112	+.0220	+.0292	+.0331	+.0344	0	+.0558	+.1100	+.1460	+.1657	+.1719
		R_y	−.0489	+.3190	+.5306	+.6247	+.6632	+.6737						



Moment = (Coefficient)(pb^2)

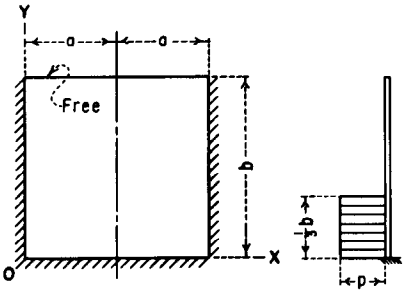
Reaction = (Coefficient)(pb)



POSITIVE SIGN CONVENTION

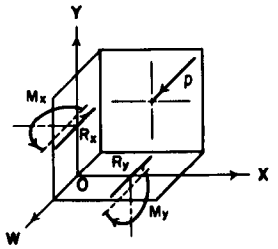
FIGURE 2.—*Plate fixed along three edges, moment and reaction coefficients, Load II, 2/3 uniform load.*

			M_x						M_y					
	y/b	R_x \ x/a	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
a/b = 1/8	1.0	−.0000	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	0	0	0	0	0	0
	0.8	−.0001	−.0000	+.0000	+.0000	+.0000	−.0000	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.6	−.0002	+.0001	+.0000	+.0000	−.0000	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000	+.0001
	0.4	+.0286	+.0013	+.0006	+.0001	−.0003	−.0006	−.0007	+.0003	+.0001	+.0001	−.0000	−.0000	−.0001
	0.2	+.1109	+.0044	+.0019	+.0000	−.0012	−.0019	−.0022	+.0009	+.0003	−.0001	−.0005	−.0007	−.0008
	0	+.0505	0	+.0001	+.0003	+.0005	+.0006	+.0007	0	+.0006	+.0016	+.0025	+.0031	+.0033
		R_x \ R_y	+.0505	+.0125	+.0570	+.0893	+.1083	+.1145						
a/b = 1/4	1.0	−.0013	−.0001	−.0000	+.0000	+.0000	+.0000	+.0000	0	0	0	0	0	0
	0.8	−.0009	+.0001	+.0001	+.0001	−.0000	−.0001	−.0001	+.0000	+.0000	+.0001	+.0001	+.0002	+.0002
	0.6	+.0039	+.0011	+.0007	+.0002	−.0003	−.0006	−.0007	+.0002	+.0002	+.0003	+.0004	+.0004	+.0004
	0.4	+.0653	+.0055	+.0025	+.0001	−.0015	−.0025	−.0028	+.0011	+.0005	+.0000	−.0004	−.0006	−.0007
	0.2	+.1703	+.0105	+.0034	−.0008	−.0032	−.0044	−.0047	+.0021	+.0001	−.0017	−.0032	−.0040	−.0043
	0	+.0354	0	+.0004	+.0011	+.0017	+.0021	+.0023	0	+.0022	+.0057	+.0087	+.0107	+.0114
		R_x \ R_y	+.0354	+.0344	+.1162	+.1704	+.2004	+.2099						
a/b = 3/8	1.0	−.0075	−.0001	+.0002	+.0002	−.0000	−.0002	−.0003	0	0	0	0	0	0
	0.8	+.0020	+.0012	+.0008	+.0003	−.0003	−.0006	−.0008	+.0002	+.0003	+.0004	+.0005	+.0005	+.0006
	0.6	+.0167	+.0039	+.0022	+.0004	−.0010	−.0019	−.0022	+.0008	+.0007	+.0006	+.0006	+.0005	+.0005
	0.4	+.0947	+.0103	+.0039	−.0004	−.0030	−.0044	−.0048	+.0021	+.0006	−.0008	−.0019	−.0027	−.0029
	0.2	+.1940	+.0140	+.0031	−.0025	−.0043	−.0049	−.0051	+.0028	−.0009	−.0042	−.0061	−.0072	−.0076
	0	+.0171	0	+.0008	+.0020	+.0029	+.0035	+.0037	0	+.0041	+.0099	+.0146	+.0175	+.0184
		R_x \ R_y	+.0171	+.0623	+.1653	+.2211	+.2485	+.2567						
a/b = 1/2	1.0	−.0135	+.0008	+.0011	+.0004	−.0004	−.0010	−.0012	0	0	0	0	0	0
	0.8	+.0103	+.0032	+.0019	+.0005	−.0008	−.0017	−.0020	+.0006	+.0005	+.0005	+.0005	+.0005	+.0005
	0.6	+.0305	+.0068	+.0033	+.0003	−.0019	−.0031	−.0035	+.0014	+.0009	+.0004	−.0001	−.0004	−.0005
	0.4	+.1090	+.0125	+.0039	−.0011	−.0038	−.0050	−.0053	+.0025	+.0002	−.0021	−.0039	−.0050	−.0054
	0.2	+.1846	+.0131	+.0015	−.0027	−.0040	−.0043	−.0043	+.0026	−.0019	−.0052	−.0071	−.0081	−.0083
	0	+.0093	0	+.0013	+.0029	+.0040	+.0047	+.0049	0	+.0066	+.0144	+.0202	+.0236	+.0247
		R_x \ R_y	+.0093	+.1028	+.2064	+.2593	+.2836	+.2905						
a/b = 3/4	1.0	−.0086	+.0053	+.0036	+.0007	−.0017	−.0033	−.0038	0	0	0	0	0	0
	0.8	+.0270	+.0079	+.0038	+.0003	−.0022	−.0036	−.0041	+.0016	+.0009	+.0004	−.0001	−.0005	−.0006
	0.6	+.0439	+.0107	+.0040	−.0006	−.0031	−.0043	−.0047	+.0021	+.0009	−.0006	−.0019	−.0028	−.0031
	0.4	+.1131	+.0140	+.0025	−.0024	−.0042	−.0048	−.0050	+.0028	−.0011	−.0044	−.0066	−.0078	−.0082
	0.2	+.1738	+.0114	−.0006	−.0030	−.0031	−.0029	−.0027	+.0023	−.0036	−.0063	−.0070	−.0070	−.0069
	0	+.0046	0	+.0024	+.0045	+.0058	+.0065	+.0067	0	+.0119	+.0225	+.0291	+.0326	+.0336
		R_x \ R_y	+.0046	+.1652	+.2588	+.2967	+.3116	+.3156						
a/b = 1	1.0	+.0066	+.0100	+.0050	+.0002	−.0030	−.0047	−.0052	0	0	0	0	0	0
	0.8	+.0374	+.0113	+.0046	−.0003	−.0031	−.0045	−.0049	+.0023	+.0011	+.0001	−.0008	−.0014	−.0015
	0.6	+.0459	+.0126	+.0035	−.0013	−.0035	−.0044	−.0046	+.0025	+.0006	−.0015	−.0031	−.0040	−.0043
	0.4	+.1081	+.0136	+.0010	−.0029	−.0039	−.0041	−.0041	+.0027	−.0022	−.0057	−.0074	−.0081	−.0082
	0.2	+.1696	+.0095	−.0016	−.0026	−.0021	−.0017	−.0016	+.0019	−.0046	−.0058	−.0051	−.0042	−.0039
	0	+.0083	0	+.0034	+.0058	+.0071	+.0078	+.0080	0	+.0168	+.0288	+.0355	+.0389	+.0399
		R_x \ R_y	+.0083	+.2073	+.2860	+.3134	+.3239	+.3267						
a/b = 3/2	1.0	+.0281	+.0146	+.0043	−.0014	−.0037	−.0043	−.0045	0	0	0	0	0	0
	0.8	+.0453	+.0140	+.0034	−.0017	−.0034	−.0038	−.0038	+.0028	+.0009	−.0005	−.0013	−.0016	−.0017
	0.6	+.0409	+.0130	+.0017	−.0023	−.0032	−.0032	−.0031	+.0026	−.0002	−.0023	−.0033	−.0035	−.0036
	0.4	+.0980	+.0116	−.0009	−.0029	−.0028	−.0025	−.0024	+.0023	−.0039	−.0060	−.0061	−.0056	−.0054
	0.2	+.1801	+.0067	−.0021	−.0015	−.0006	−.0001	+.0000	+.0013	−.0048	−.0030	−.0004	+.0014	+.0020
	0	+.0221	0	+.0049	+.0075	+.0088	+.0095	+.0097	0	+.0247	+.0375	+.0441	+.0473	+.0483
		\ R_y	+.0221	+.2561	+.3114	+.3277	+.3334	+.3349						



Moment = (Coefficient) (pb^2)

Reaction = (Coefficient) (pb)



POSITIVE SIGN CONVENTION

FIGURE 3.—*Plate fixed along three edges, moment and reaction coefficients, Load III, 1/3 uniform load.*

			M_x						M_y					
	y/b	R_x \ x/a	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
a/b = 1/8	1.0	+.0082	+.0004	+.0002	+.0000	−.0001	−.0002	−.0002	0	0	0	0	0	0
	0.8	+.0251	+.0011	+.0005	+.0000	−.0003	−.0005	−.0005	+.0002	+.0001	+.0000	−.0000	−.0001	−.0001
	0.6	+.0496	+.0021	+.0009	+.0001	−.0006	−.0009	−.0011	+.0004	+.0002	+.0000	−.0001	−.0002	−.0002
	0.4	+.0751	+.0031	+.0014	+.0001	−.0008	−.0014	−.0016	+.0006	+.0003	+.0000	−.0002	−.0003	−.0003
	0.2	+.0942	+.0038	+.0016	+.0000	−.0010	−.0017	−.0019	+.0008	+.0003	−.0000	−.0003	−.0005	−.0005
	0	+.0460	0	+.0001	+.0003	+.0005	+.0006	+.0006	0	+.0005	+.0014	+.0023	+.0028	+.0030
		R_x \ R_y	+.0460	+.0136	+.0543	+.0839	+.1004	+.1056						
a/b = 1/4	1.0	+.0147	+.0022	+.0012	+.0002	−.0006	−.0012	−.0014	0	0	0	0	0	0
	0.8	+.0523	+.0046	+.0022	+.0002	−.0012	−.0021	−.0024	+.0009	+.0005	+.0002	−.0000	−.0002	−.0002
	0.6	+.1015	+.0083	+.0037	+.0002	−.0023	−.0038	−.0042	+.0017	+.0007	−.0000	−.0005	−.0009	−.0010
	0.4	+.1514	+.0114	+.0049	+.0001	−.0032	−.0051	−.0057	+.0023	+.0008	−.0004	−.0013	−.0019	−.0021
	0.2	+.1494	+.0102	+.0037	−.0004	−.0030	−.0043	−.0047	+.0020	+.0004	−.0011	−.0022	−.0029	−.0031
	0	+.0304	0	+.0004	+.0010	+.0016	+.0020	+.0021	0	+.0020	+.0052	+.0081	+.0100	+.0107
		R_x \ R_y	+.0304	+.0309	+.1052	+.1563	+.1856	+.1950						
a/b = 3/8	1.0	+.0189	+.0066	+.0040	+.0008	−.0020	−.0039	−.0045	0	0	0	0	0	0
	0.8	+.0885	+.0117	+.0056	+.0006	−.0031	−.0054	−.0062	+.0023	+.0012	+.0004	−.0002	−.0005	−.0007
	0.6	+.1541	+.0176	+.0075	+.0001	−.0049	−.0079	−.0088	+.0035	+.0013	−.0006	−.0020	−.0029	−.0032
	0.4	+.2107	+.0208	+.0079	−.0007	−.0061	−.0090	−.0099	+.0042	+.0009	−.0019	−.0042	−.0056	−.0061
	0.2	+.1691	+.0145	+.0045	−.0012	−.0042	−.0057	−.0061	+.0029	+.0001	−.0022	−.0039	−.0048	−.0051
	0	+.0102	0	+.0008	+.0020	+.0030	+.0038	+.0040	0	+.0039	+.0099	+.0152	+.0188	+.0200
		R_x \ R_y	+.0102	+.0474	+.1488	+.2154	+.2526	+.2645						
a/b = 1/2	1.0	+.0326	+.0151	+.0088	+.0015	−.0046	−.0084	−.0097	0	0	0	0	0	0
	0.8	+.1315	+.0216	+.0099	+.0007	−.0059	−.0099	−.0112	+.0043	+.0020	+.0002	−.0011	−.0019	−.0022
	0.6	+.1972	+.0273	+.0108	−.0005	−.0079	−.0119	−.0132	+.0055	+.0015	−.0020	−.0047	−.0064	−.0070
	0.4	+.2421	+.0277	+.0092	−.0019	−.0082	−.0115	−.0125	+.0055	+.0004	−.0042	−.0076	−.0097	−.0104
	0.2	+.1607	+.0160	+.0041	−.0017	−.0044	−.0055	−.0058	+.0032	−.0002	−.0026	−.0039	−.0044	−.0046
	0	−.0045	0	+.0014	+.0033	+.0050	+.0061	+.0065	0	+.0068	+.0167	+.0252	+.0307	+.0325
		R_x \ R_y	−.0045	+.0744	+.1942	+.2699	+.3108	+.3236						
a/b = 3/4	1.0	+.1061	+.0406	+.0196	+.0013	−.0115	−.0190	−.0214	0	0	0	0	0	0
	0.8	+.2077	+.0433	+.0177	−.0003	−.0119	−.0184	−.0205	+.0087	+.0031	−.0012	−.0042	−.0061	−.0067
	0.6	+.2408	+.0426	+.0145	−.0026	−.0124	−.0174	−.0189	+.0085	+.0010	−.0055	−.0102	−.0130	−.0139
	0.4	+.2542	+.0349	+.0091	−.0039	−.0102	−.0130	−.0138	+.0070	−.0011	−.0075	−.0115	−.0137	−.0143
	0.2	+.1337	+.0163	+.0031	−.0017	−.0031	−.0033	−.0033	+.0033	+.0001	−.0000	+.0014	+.0029	+.0035
	0	−.0196	0	+.0028	+.0064	+.0093	+.0111	+.0117	0	+.0139	+.0320	+.0465	+.0554	+.0584
		R_x \ R_y	−.0196	+.1256	+.2666	+.3496	+.3923	+.4055						
a/b = 1	1.0	+.1985	+.0644	+.0253	−.0013	−.0172	−.0252	−.0276	0	0	0	0	0	0
	0.8	+.2564	+.0601	+.0210	−.0028	−.0161	−.0226	−.0245	+.0120	+.0034	−.0026	−.0065	−.0088	−.0095
	0.6	+.2485	+.0515	+.0149	−.0047	−.0145	−.0189	−.0201	+.0103	+.0003	−.0075	−.0125	−.0151	−.0159
	0.4	+.2411	+.0372	+.0078	−.0049	−.0100	−.0118	−.0122	+.0074	−.0021	−.0076	−.0099	−.0106	−.0107
	0.2	+.1108	+.0154	+.0025	−.0006	−.0006	−.0000	+.0003	+.0031	+.0018	+.0060	+.0116	+.0160	+.0175
	0	−.0241	0	+.0044	+.0096	+.0137	+.0161	+.0169	0	+.0220	+.0482	+.0683	+.0804	+.0845
		R_x \ R_y	−.0241	+.1691	+.3199	+.4038	+.4457	+.4584						
a/b = 3/2	1.0	+.3127	+.0857	+.0207	−.0087	−.0199	−.0232	−.0238	0	0	0	0	0	0
	0.8	+.2929	+.0730	+.0158	−.0086	−.0172	−.0194	−.0198	+.0146	+.0023	−.0042	−.0072	−.0082	−.0085
	0.6	+.2352	+.0560	+.0094	−.0083	−.0134	−.0142	−.0141	+.0112	−.0013	−.0077	−.0096	−.0096	−.0094
	0.4	+.2148	+.0359	+.0038	−.0053	−.0065	−.0057	−.0053	+.0072	−.0021	−.0023	+.0012	+.0046	+.0059
	0.2	+.0897	+.0132	+.0021	+.0025	+.0050	+.0069	+.0076	+.0026	+.0077	+.0220	+.0356	+.0444	+.0474
	0	−.0204	0	+.0079	+.0158	+.0212	+.0243	+.0252	0	+.0396	+.0791	+.1062	+.1214	+.1262
		R_y	−.0204	+.2452	+.3964	+.4668	+.4966	+.5047						

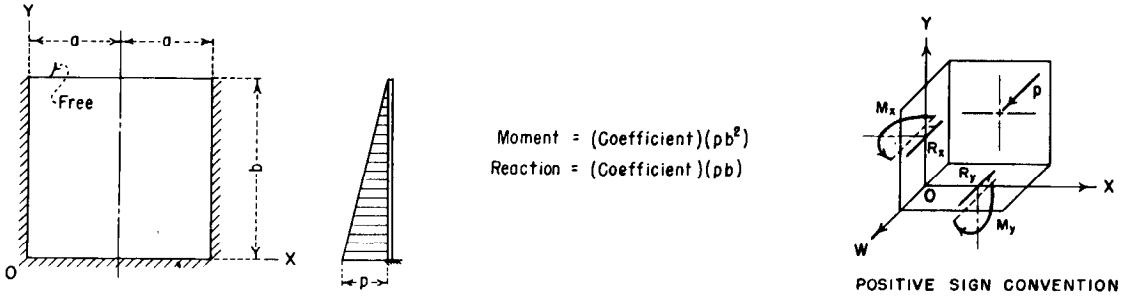


FIGURE 4.—*Plate fixed along three edges, moment and reaction coefficients, Load IV, uniformly varying load.*

			M_x						M_y					
	y/b	R_x \ x/a	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
a/b = 1/8	1.0	−.0000	+.0000	+.0000	+.0000	−.0000	−.0000	−.0000	0	0	0	0	0	0
	0.8	+.0002	+.0000	+.0000	+.0000	−.0000	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.6	+.0142	+.0006	+.0003	+.0000	−.0002	−.0003	−.0003	+.0001	+.0001	+.0000	−.0000	−.0000	−.0000
	0.4	+.0499	+.0021	+.0009	+.0001	−.0006	−.0009	−.0011	+.0004	+.0002	+.0000	−.0001	−.0002	−.0002
	0.2	+.0818	+.0032	+.0014	+.0000	−.0009	−.0014	−.0016	+.0006	+.0003	−.0001	−.0003	−.0004	−.0005
	0	+.0437	0	+.0001	+.0003	+.0004	+.0005	+.0006	0	+.0005	+.0014	+.0021	+.0026	+.0028
		R_x \ R_y	+.0437	+.0145	+.0537	+.0810	+.0959	+.1015						
a/b = 1/4	1.0	−.0026	+.0000	+.0001	+.0000	−.0000	−.0001	−.0001	0	0	0	0	0	0
	0.8	+.0019	+.0006	+.0004	+.0001	−.0001	−.0003	−.0004	+.0001	+.0001	+.0002	+.0002	+.0003	+.0003
	0.6	+.0323	+.0031	+.0015	+.0002	−.0008	−.0014	−.0017	+.0006	+.0004	+.0002	+.0001	−.0000	−.0000
	0.4	+.1011	+.0075	+.0031	−.0000	−.0021	−.0033	−.0037	+.0015	+.0005	−.0003	−.0010	−.0014	−.0015
	0.2	+.1286	+.0084	+.0030	−.0005	−.0025	−.0035	−.0038	+.0017	+.0002	−.0010	−.0020	−.0027	−.0029
	0	+.0308	0	+.0004	+.0009	+.0014	+.0018	+.0019	0	+.0019	+.0047	+.0071	+.0088	+.0093
		R_x \ R_y	+.0308	+.0345	+.1011	+.1450	+.1695	+.1773						
a/b = 3/8	1.0	−.0104	+.0005	+.0007	+.0003	−.0002	−.0006	−.0008	0	0	0	0	0	0
	0.8	+.0107	+.0027	+.0017	+.0004	−.0007	−.0014	−.0016	+.0005	+.0005	+.0005	+.0006	+.0006	+.0006
	0.6	+.0558	+.0074	+.0034	+.0002	−.0020	−.0034	−.0038	+.0015	+.0008	+.0001	−.0004	−.0007	−.0008
	0.4	+.1388	+.0131	+.0047	−.0006	−.0039	−.0056	−.0061	+.0026	+.0004	−.0015	−.0031	−.0041	−.0044
	0.2	+.1457	+.0114	+.0031	−.0012	−.0034	−.0043	−.0046	+.0023	−.0002	−.0023	−.0038	−.0047	−.0050
	0	+.0155	0	+.0007	+.0016	+.0024	+.0030	+.0032	0	+.0033	+.0081	+.0122	+.0149	+.0158
		R_x \ R_y	+.0155	+.0549	+.1389	+.1907	+.2183	+.2269						
a/b = 1/2	1.0	−.0155	+.0025	+.0023	+.0007	−.0009	−.0021	−.0025	0	0	0	0	0	0
	0.8	+.0258	+.0063	+.0034	+.0006	−.0017	−.0031	−.0036	+.0013	+.0009	+.0006	+.0005	+.0003	+.0003
	0.6	+.0763	+.0118	+.0049	−.0001	−.0034	−.0052	−.0058	+.0024	+.0009	−.0005	−.0016	−.0024	−.0026
	0.4	+.1567	+.0165	+.0049	−.0016	−.0050	−.0067	−.0072	+.0033	−.0001	−.0033	−.0056	−.0071	−.0075
	0.2	+.1409	+.0119	+.0023	−.0018	−.0034	−.0040	−.0041	+.0024	−.0008	−.0032	−.0045	−.0052	−.0054
	0	+.0062	0	+.0011	+.0026	+.0037	+.0045	+.0047	0	+.0056	+.0129	+.0187	+.0223	+.0235
		R_x \ R_y	+.0062	+.0833	+.1758	+.2283	+.2546	+.2625						
a/b = 3/4	1.0	−.0005	+.0108	+.0065	+.0010	−.0034	−.0060	−.0069	0	0	0	0	0	0
	0.8	+.0542	+.0143	+.0065	+.0003	−.0040	−.0064	−.0072	+.0029	+.0014	+.0002	−.0008	−.0014	−.0017
	0.6	+.0961	+.0178	+.0059	−.0013	−.0053	−.0072	−.0078	+.0036	+.0005	−.0024	−.0046	−.0060	−.0065
	0.4	+.1629	+.0190	+.0036	−.0031	−.0058	−.0068	−.0071	+.0038	−.0017	−.0061	−.0089	−.0104	−.0109
	0.2	+.1277	+.0111	+.0007	−.0021	−.0026	−.0025	−.0024	+.0022	−.0016	−.0031	−.0031	−.0028	−.0026
	0	−.0003	0	+.0021	+.0044	+.0060	+.0069	+.0072	0	+.0107	+.0220	+.0300	+.0345	+.0359
		R_x \ R_y	−.0003	+.1334	+.2277	+.2736	+.2945	+.3005						
a/b = 1	1.0	+.0284	+.0191	+.0088	+.0001	−.0055	−.0084	−.0093	0	0	0	0	0	0
	0.8	+.0718	+.0202	+.0077	−.0007	−.0055	−.0079	−.0086	+.0040	+.0016	−.0003	−.0019	−.0028	−.0031
	0.6	+.0990	+.0208	+.0055	−.0023	−.0060	−.0075	−.0079	+.0042	−.0001	−.0038	−.0063	−.0076	−.0081
	0.4	+.1570	+.0189	+.0021	−.0037	−.0055	−.0060	−.0061	+.0038	−.0031	−.0074	−.0094	−.0102	−.0104
	0.2	+.1191	+.0098	−.0002	−.0017	−.0014	−.0010	−.0008	+.0020	−.0017	−.0014	+.0004	+.0020	+.0026
	0	+.0011	0	+.0032	+.0060	+.0079	+.0089	+.0092	0	+.0158	+.0300	+.0393	+.0445	+.0461
		R_x \ R_y	+.0011	+.1712	+.2595	+.2983	+.3153	+.3202						
a/b = 3/2	1.0	+.0673	+.0270	+.0075	−.0026	−.0066	−.0078	−.0080	0	0	0	0	0	0
	0.8	+.0843	+.0249	+.0057	−.0030	−.0060	−.0067	−.0068	+.0050	+.0013	−.0012	−.0025	−.0030	−.0031
	0.6	+.0922	+.0217	+.0028	−.0038	−.0055	−.0056	−.0055	+.0043	−.0014	−.0048	−.0062	−.0064	−.0064
	0.4	+.1461	+.0168	−.0004	−.0038	−.0039	−.0035	−.0033	+.0034	−.0047	−.0069	−.0065	−.0055	−.0051
	0.2	+.1183	+.0075	−.0007	−.0003	+.0009	+.0016	+.0019	+.0015	−.0005	+.0040	+.0087	+.0118	+.0129
	0	+.0110	0	+.0051	+.0086	+.0107	+.0118	+.0122	0	+.0253	+.0430	+.0536	+.0591	+.0608
		R_y	+.0110	+.2226	+.2954	+.3224	+.3329	+.3356						

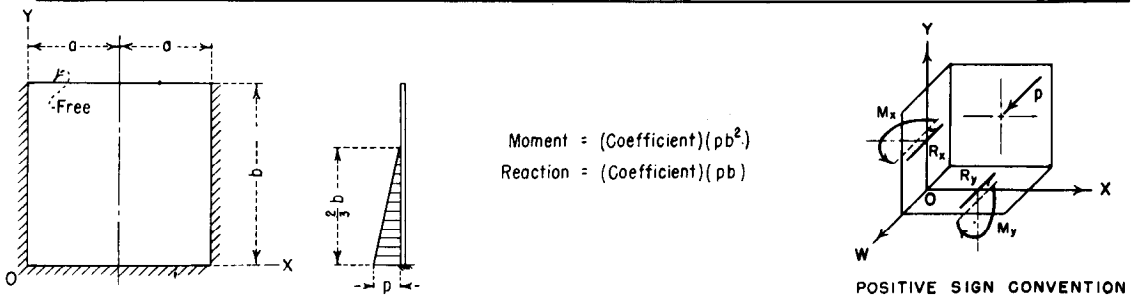
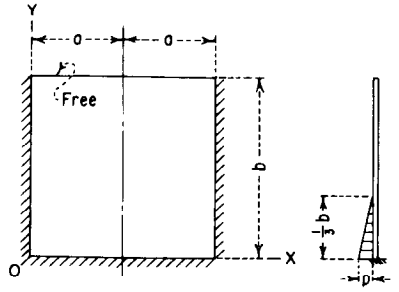


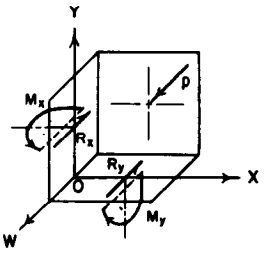
FIGURE 5.—*Plate fixed along three edges, moment and reaction coefficients, Load V, 2/3 uniformly varying load.*

			M_x						M_y					
	y/b	R_x \ x/a	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
a/b = 1/8	1.0	−.0000	−.0000	−.0000	−.0000	+.0000	+.0000	+.0000	0	0	0	0	0	0
	0.8	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.6	−.0003	+.0000	+.0000	+.0000	−.0000	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.4	+.0038	+.0002	+.0001	+.0000	−.0001	−.0001	−.0001	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.2	+.0458	+.0017	+.0007	+.0000	−.0005	−.0007	−.0008	+.0003	+.0001	−.0000	−.0001	−.0002	−.0002
	0	+.0370	0	+.0001	+.0002	+.0004	+.0004	+.0005	0	+.0005	+.0012	+.0018	+.0022	+.0023
		R_x \ R_y	+.0370	+.0173	+.0509	+.0719	+.0838	+.0883						
a/b = 1/4	1.0	−.0003	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	0	0	0	0	0	0
	0.8	−.0004	+.0000	+.0000	+.0000	+.0000	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.6	+.0004	+.0002	+.0002	+.0001	−.0001	−.0001	−.0002	+.0000	+.0001	+.0001	+.0001	+.0001	+.0001
	0.4	+.0127	+.0014	+.0007	+.0001	−.0004	−.0006	−.0007	+.0003	+.0002	+.0001	+.0001	+.0000	+.0000
	0.2	+.0693	+.0040	+.0013	−.0003	−.0012	−.0016	−.0018	+.0008	+.0001	−.0006	−.0012	−.0015	−.0016
	0	+.0297	0	+.0003	+.0006	+.0009	+.0011	+.0012	0	+.0014	+.0032	+.0046	+.0055	+.0058
		R_x \ R_y	+.0297	+.0415	+.0868	+.1127	+.1256	+.1296						
a/b = 3/8	1.0	−.0022	−.0000	+.0000	+.0000	+.0000	−.0000	−.0001	0	0	0	0	0	0
	0.8	+.0002	+.0003	+.0002	+.0001	−.0001	−.0002	−.0002	+.0001	+.0001	+.0001	+.0001	+.0002	+.0002
	0.6	+.0036	+.0010	+.0006	+.0001	−.0002	−.0005	−.0006	+.0002	+.0002	+.0002	+.0002	+.0002	+.0002
	0.4	+.0216	+.0028	+.0012	−.0000	−.0008	−.0012	−.0013	+.0006	+.0003	−.0000	−.0003	−.0005	−.0005
	0.2	+.0788	+.0051	+.0011	−.0008	−.0016	−.0018	−.0019	+.0010	−.0003	−.0014	−.0022	−.0027	−.0029
	0	+.0228	0	+.0004	+.0009	+.0013	+.0015	+.0016	0	+.0020	+.0044	+.0063	+.0075	+.0078
		R_x \ R_y	+.0228	+.0615	+.1076	+.1314	+.1428	+.1461						
a/b = 1/2	1.0	−.0041	+.0002	+.0003	+.0001	−.0001	−.0002	−.0003	0	0	0	0	0	0
	0.8	+.0024	+.0008	+.0005	+.0001	−.0002	−.0004	−.0005	+.0002	+.0001	+.0002	+.0002	+.0002	+.0002
	0.6	+.0074	+.0018	+.0009	+.0001	−.0005	−.0008	−.0009	+.0004	+.0003	+.0002	+.0001	−.0000	−.0000
	0.4	+.0258	+.0036	+.0012	−.0003	−.0010	−.0014	−.0015	+.0007	+.0002	−.0004	−.0008	−.0012	−.0013
	0.2	+.0769	+.0050	+.0004	−.0011	−.0015	−.0016	−.0015	+.0010	−.0007	−.0020	−.0028	−.0032	−.0033
	0	+.0203	0	+.0006	+.0013	+.0017	+.0019	+.0020	0	+.0031	+.0063	+.0085	+.0097	+.0101
		R_x \ R_y	+.0203	+.0811	+.1252	+.1449	+.1532	+.1555						
a/b = 3/4	1.0	−.0032	+.0013	+.0009	+.0002	−.0004	−.0009	−.0010	0	0	0	0	0	0
	0.8	+.0068	+.0021	+.0010	+.0001	−.0006	−.0010	−.0011	+.0004	+.0003	+.0001	−.0000	−.0001	−.0001
	0.6	+.0112	+.0029	+.0011	−.0001	−.0008	−.0012	−.0013	+.0005	+.0003	−.0001	−.0004	−.0007	−.0007
	0.4	+.0270	+.0040	+.0008	−.0007	−.0012	−.0013	−.0014	+.0008	−.0001	−.0010	−.0016	−.0020	−.0021
	0.2	+.0733	+.0042	−.0004	−.0012	−.0012	−.0010	−.0010	+.0008	−.0015	−.0026	−.0029	−.0030	−.0030
	0	+.0214	0	+.0010	+.0018	+.0023	+.0025	+.0025	0	+.0052	+.0092	+.0113	+.0124	+.0127
		R_x \ R_y	+.0214	+.1090	+.1446	+.1568	+.1612	+.1623						
a/b = 1	1.0	+.0007	+.0026	+.0013	+.0001	−.0008	−.0012	−.0014	0	0	0	0	0	0
	0.8	+.0096	+.0030	+.0012	−.0001	−.0008	−.0012	−.0013	+.0006	+.0003	+.0000	−.0002	−.0003	−.0004
	0.6	+.0119	+.0034	+.0010	−.0004	−.0010	−.0012	−.0012	+.0007	+.0002	−.0003	−.0008	−.0010	−.0011
	0.4	+.0254	+.0039	+.0003	−.0008	−.0011	−.0011	−.0011	+.0008	−.0004	−.0014	−.0019	−.0021	−.0021
	0.2	+.0726	+.0034	−.0008	−.0010	−.0008	−.0007	−.0007	+.0007	−.0019	−.0026	−.0025	−.0022	−.0022
	0	+.0257	0	+.0014	+.0022	+.0026	+.0028	+.0029	0	+.0071	+.0111	+.0132	+.0141	+.0144
		R_x \ R_y	+.0257	+.1258	+.1535	+.1615	+.1643	+.1651						
a/b = 3/2	1.0	+.0063	+.0038	+.0012	−.0004	−.0010	−.0011	−.0012	0	0	0	0	0	0
	0.8	+.0118	+.0037	+.0009	−.0004	−.0009	−.0010	−.0010	+.0007	+.0003	−.0001	−.0003	−.0004	−.0004
	0.6	+.0107	+.0035	+.0004	−.0006	−.0008	−.0008	−.0008	+.0007	+.0000	−.0006	−.0008	−.0009	−.0009
	0.4	+.0216	+.0033	−.0003	−.0008	−.0008	−.0007	−.0006	+.0007	−.0009	−.0015	−.0016	−.0015	−.0014
	0.2	+.0789	+.0023	−.0009	−.0007	−.0004	−.0003	−.0002	+.0005	−.0022	−.0019	−.0012	−.0008	−.0006
	0	+.0352	0	+.0019	+.0027	+.0031	+.0033	+.0033	0	+.0097	+.0137	+.0155	+.0164	+.0166
		R_y	+.0352	+.1434	+.1609	+.1653	+.1668	+.1671						



Moment = (Coefficient)(pb^2)

Reaction = (Coefficient)(pb)



POSITIVE SIGN CONVENTION

FIGURE 6.—*Plate fixed along three edges, moment and reaction coefficients, Load VI, 1/3 uniformly varying load.*

			M_x						M_y					
	y/b	R_x \ x/a	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
$a/b = 1/8$	1.0	−.0000	−.0000	−.0000	−.0000	+.0000	+.0000	+.0000	0	0	0	0	0	0
	0.8	−.0000	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000
	0.6	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.4	−.0003	+.0000	+.0000	+.0000	−.0000	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.2	+.0115	+.0004	+.0002	+.0000	−.0001	−.0002	−.0002	+.0001	+.0000	+.0000	+.0000	+.0000	+.0000
	0	+.0235	0	+.0001	+.0002	+.0002	+.0003	+.0003	0	+.0003	+.0008	+.0011	+.0014	+.0014
		R_x \ R_y	+.0235	+.0207	+.0430	+.0559	+.0624	+.0650						
$a/b = 1/4$	1.0	−.0000	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	0	0	0	0	0	0
	0.8	−.0001	−.0000	+.0000	+.0000	+.0000	−.0000	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.6	−.0001	+.0000	+.0000	+.0000	−.0000	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.4	+.0009	+.0002	+.0001	+.0000	−.0000	−.0001	−.0001	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.2	+.0174	+.0009	+.0003	−.0001	−.0002	−.0003	−.0004	+.0002	+.0001	−.0001	−.0001	−.0002	−.0002
	0	+.0214	0	+.0002	+.0003	+.0004	+.0005	+.0005	0	+.0008	+.0016	+.0021	+.0024	+.0025
		R_x \ R_y	+.0214	+.0406	+.0623	+.0720	+.0759	+.0771						
$a/b = 3/8$	1.0	−.0004	−.0000	+.0000	+.0000	+.0000	−.0000	−.0000	0	0	0	0	0	0
	0.8	−.0001	+.0000	+.0000	+.0000	−.0000	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.6	+.0004	+.0002	+.0001	+.0000	−.0000	−.0001	−.0001	+.0000	+.0000	+.0000	+.0001	+.0001	+.0001
	0.4	+.0028	+.0005	+.0002	+.0000	−.0001	−.0002	−.0003	+.0001	+.0001	+.0001	+.0000	−.0000	−.0000
	0.2	+.0215	+.0013	+.0003	−.0002	−.0004	−.0004	−.0004	+.0003	+.0000	−.0002	−.0004	−.0005	−.0006
	0	+.0196	0	+.0002	+.0003	+.0004	+.0005	+.0005	0	+.0008	+.0016	+.0022	+.0026	+.0027
		R_x \ R_y	+.0196	+.0516	+.0685	+.0758	+.0789	+.0797						
$a/b = 1/2$	1.0	−.0008	+.0000	+.0000	+.0000	−.0000	−.0000	−.0000	0	0	0	0	0	0
	0.8	+.0003	+.0001	+.0001	+.0000	−.0000	−.0001	−.0001	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.6	+.0010	+.0003	+.0002	+.0000	−.0001	−.0001	−.0002	+.0001	+.0001	+.0000	+.0000	+.0000	+.0000
	0.4	+.0036	+.0007	+.0003	−.0000	−.0002	−.0003	−.0003	+.0001	+.0001	−.0000	−.0001	−.0001	−.0002
	0.2	+.0214	+.0012	+.0001	−.0003	−.0003	−.0003	−.0003	+.0002	−.0001	−.0004	−.0006	−.0007	−.0007
	0	+.0202	0	+.0002	+.0004	+.0006	+.0006	+.0006	0	+.0011	+.0022	+.0028	+.0031	+.0032
		R_x \ R_y	+.0202	+.0594	+.0740	+.0792	+.0811	+.0816						
$a/b = 3/4$	1.0	−.0008	+.0002	+.0002	+.0000	−.0001	−.0001	−.0002	0	0	0	0	0	0
	0.8	+.0010	+.0003	+.0002	+.0000	−.0001	−.0002	−.0002	+.0001	+.0000	+.0000	+.0000	−.0000	−.0000
	0.6	+.0017	+.0005	+.0002	−.0000	−.0001	−.0002	−.0002	+.0001	+.0001	+.0000	−.0000	−.0001	−.0001
	0.4	+.0039	+.0008	+.0002	−.0001	−.0002	−.0002	−.0002	+.0002	+.0000	−.0001	−.0002	−.0003	−.0003
	0.2	+.0206	+.0010	−.0001	−.0003	−.0003	−.0002	−.0002	+.0002	−.0003	−.0005	−.0006	−.0007	−.0007
	0	+.0233	0	+.0004	+.0006	+.0007	+.0007	+.0007	0	+.0019	+.0029	+.0034	+.0036	+.0037
		R_x \ R_y	+.0233	+.0690	+.0791	+.0817	+.0825	+.0827						
$a/b = 1$	1.0	−.0002	+.0004	+.0002	+.0000	−.0001	−.0002	−.0002	0	0	0	0	0	0
	0.8	+.0015	+.0005	+.0002	−.0000	−.0001	−.0002	−.0002	+.0001	+.0001	+.0000	−.0000	−.0000	−.0001
	0.6	+.0019	+.0006	+.0002	−.0001	−.0002	−.0002	−.0002	+.0001	+.0001	−.0000	−.0001	−.0002	−.0002
	0.4	+.0036	+.0007	+.0001	−.0001	−.0002	−.0002	−.0002	+.0001	−.0000	−.0002	−.0003	−.0003	−.0003
	0.2	+.0206	+.0008	−.0002	−.0002	−.0002	−.0002	−.0001	+.0002	−.0004	−.0006	−.0006	−.0005	−.0005
	0	+.0270	0	+.0005	+.0007	+.0008	+.0008	+.0008	0	+.0023	+.0033	+.0038	+.0039	+.0040
		R_x \ R_y	+.0270	+.0740	+.0811	+.0826	+.0830	+.0831						
$a/b = 3/2$	1.0	+.0007	+.0006	+.0002	−.0001	−.0002	−.0002	−.0002	0	0	0	0	0	0
	0.8	+.0019	+.0006	+.0001	−.0001	−.0001	−.0002	−.0002	+.0001	+.0000	−.0000	−.0000	−.0001	−.0001
	0.6	+.0017	+.0006	+.0001	−.0001	−.0001	−.0001	−.0001	+.0001	+.0000	−.0001	−.0001	−.0001	−.0001
	0.4	+.0028	+.0006	−.0001	−.0001	−.0001	−.0001	−.0001	+.0001	−.0001	−.0002	−.0002	−.0002	−.0002
	0.2	+.0228	+.0005	−.0002	−.0002	−.0001	−.0001	−.0001	+.0001	−.0005	−.0005	−.0004	−.0003	−.0003
	0	+.0332	0	+.0006	+.0008	+.0008	+.0009	+.0009	0	+.0030	+.0038	+.0042	+.0043	+.0043
		R_y	+.0332	+.0786	+.0825	+.0831	+.0834	+.0834						

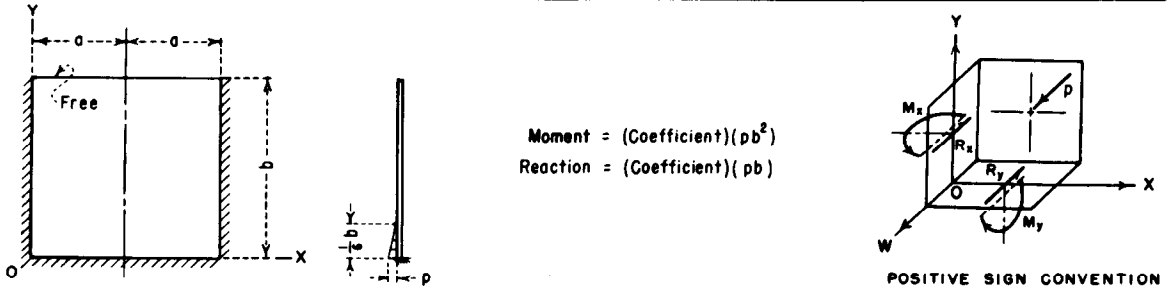
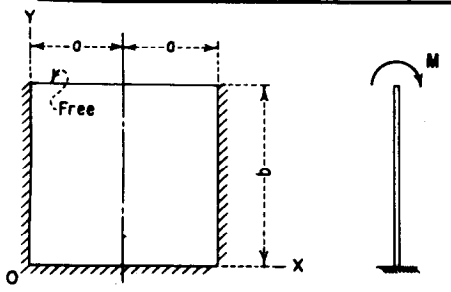


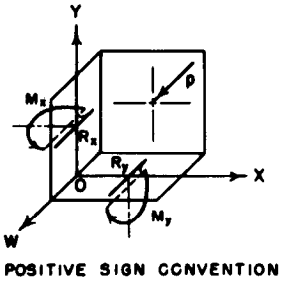
FIGURE 7.—*Plate fixed along three edges, moment and reaction coefficients, Load VII, 1/6 uniformly varying load.*

			M_x						M_y					
	y/b	R_x \ x/a	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
$a/b = 1/8$	1.0	+6.1755	+.4233	+.2932	+.2014	+.1406	+.1058	+.0947	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000
	0.8	−3.0424	−.1024	−.0398	+.0027	+.0299	+.0452	+.0500	−.0205	−.0047	+.0096	+.0208	+.0280	+.0304
	0.6	−.0473	−.0072	−.0047	+.0014	+.0016	+.0037	+.0044	−.0014	−.0016	−.0021	−.0026	−.0029	−.0030
	0.4	+.0069	−.0001	−.0002	−.0002	+.0000	+.0001	+.0002	−.0000	−.0001	−.0002	−.0003	−.0004	−.0004
	0.2	+.0006	+.0000	+.0000	−.0000	−.0000	−.0000	−.0000	+.0000	+.0000	−.0000	−.0000	−.0000	−.0000
	0	+.0000	0	+.0000	+.0000	+.0000	+.0000	+.0000	0	+.0000	+.0000	+.0000	+.0000	+.0000
		R_x \ R_y	+.0000	−.0000	−.0000	+.0001	+.0001	+.0001						
$a/b = 1/4$	1.0	+11.3102	+.8269	+.4129	+.1755	+.0432	−.0233	−.0435	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000
	0.8	−5.0373	−.2113	−.0432	+.0373	+.0733	+.0877	+.0914	−.0423	+.0215	+.0849	+.1351	+.1666	+.1773
	0.6	−.6075	−.0707	−.0357	−.0041	+.0193	+.0333	+.0379	−.0141	−.0096	−.0051	−.0007	+.0026	+.0038
	0.4	−.0291	−.0132	−.0092	−.0031	+.0028	+.0069	+.0084	−.0026	−.0032	−.0045	−.0057	−.0066	−.0069
	0.2	+.0114	−.0013	−.0014	−.0008	+.0000	+.0007	+.0010	−.0003	−.0007	−.0014	−.0021	−.0026	−.0028
	0	+.0051	0	+.0000	−.0000	−.0001	−.0001	−.0001	0	+.0001	−.0000	−.0003	−.0005	−.0006
		R_x \ R_y	+.0051	+.0061	+.0086	+.0058	+.0016	+.0010						
$a/b = 3/8$	1.0	+14.6908	+1.1461	+.4532	+.1309	−.0194	−.0856	−.1043	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000
	0.8	−5.6047	−.1840	+.0279	+.0825	+.0850	+.0767	+.0727	−.0368	+.0867	+.2039	+.2901	+.3411	+.3578
	0.6	−1.4017	−.1521	−.0544	+.0106	+.0481	+.0665	+.0720	−.0304	−.0070	+.0220	+.0490	+.0676	+.0743
	0.4	−.3181	−.0623	−.0331	−.0049	+.0167	+.0299	+.0343	−.0125	−.0094	−.0067	−.0037	−.0013	−.0003
	0.2	+.0070	−.0141	−.0107	−.0040	+.0026	+.0071	+.0086	−.0028	−.0044	−.0070	−.0093	−.0108	−.0113
	0	+.0423	0	−.0003	−.0014	−.0028	−.0039	−.0044	0	−.0016	−.0071	−.0141	−.0197	−.0218
		R_x \ R_y	+.0423	+.0795	+.0207	−.0593	−.1206	−.1433						
$a/b = 1/2$	1.0	+16.8462	+1.3643	+.4497	+.0934	−.0518	−.1103	−.1262	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000
	0.8	−5.5284	−.0776	+.1137	+.1119	+.0749	+.0463	+.0362	−.0155	+.1650	+.3201	+.4235	+.4805	+.4985
	0.6	−1.9016	−.1823	−.0325	+.0393	+.0667	+.0744	+.0757	−.0365	+.0150	+.0787	+.1345	+.1710	+.1835
	0.4	−.6544	−.1073	−.0424	+.0048	+.0332	+.0473	+.0515	−.0215	−.0082	+.0088	+.0259	+.0384	+.0429
	0.2	−.0091	−.0300	−.0187	−.0042	+.0065	+.0124	+.0142	−.0060	−.0088	−.0120	−.0139	−.0147	−.0149
	0	+.0985	0	−.0014	−.0056	−.0102	−.0136	−.0149	0	−.0072	−.0279	−.0511	−.0681	−.0743
		R_x \ R_y	+.0985	+.1413	−.0567	−.2627	−.4024	−.4506						
$a/b = 3/4$	1.0	+19.3123	+1.6292	+.4248	+.0554	−.0813	−.1371	−.1528	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000
	0.8	−4.9334	+.2073	+.2534	+.1309	+.0345	−.0193	−.0363	+.0415	+.3154	+.5006	+.6026	+.6521	+.6669
	0.6	−2.1142	−.0937	+.0767	+.0923	+.0631	+.0354	+.0250	−.0187	+.0936	+.2172	+.3097	+.3637	+.3811
	0.4	−.9946	−.1049	+.0052	+.0434	+.0449	+.0367	+.0326	−.0210	+.0219	+.0788	+.1296	+.1628	+.1741
	0.2	−.1100	−.0387	−.0073	+.0090	+.0117	+.0096	+.0083	−.0077	−.0061	+.0020	+.0130	+.0217	+.0249
	0	+.1491	0	−.0054	−.0138	−.0195	−.0222	−.0229	0	−.0271	−.0689	−.0977	−.1111	−.1145
		R_x \ R_y	+.1491	−.0424	−.4227	−.6344	−.7143	−.7315						
$a/b = 1$	1.0	+20.8157	+1.7779	+.2069	−.1598	−.2961	−.3543	−.3712	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000
	0.8	−4.4625	+.4653	+.3317	+.1241	−.0007	−.0631	−.0819	+.0931	+.4346	+.6176	+.7031	+.7408	+.7515
	0.6	−1.9908	+.0543	+.1755	+.1153	+.0420	−.0044	−.0196	+.0109	+.1828	+.3423	+.4443	+.4975	+.5138
	0.4	−1.1509	−.0490	+.0715	+.0727	+.0431	+.0193	+.0110	−.0098	+.0728	+.1714	+.2487	+.2949	+.3101
	0.2	−.2816	−.0306	+.0179	+.0262	+.0215	+.0172	+.0158	−.0061	+.0155	+.0568	+.1011	+.1338	+.1457
	0	+.1323	0	−.0096	−.0122	−.0064	+.0008	+.0039	0	−.0480	−.0610	−.0321	+.0040	+.0193
		R_x \ R_y	+.1323	−.4370	−.7216	−.6791	−.5624	−.5103						
$a/b = 3/2$	1.0	+22.7458	+1.7980	+.3202	+.0139	−.0768	−.1026	−.1074	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000
	0.8	−4.4642	+.7153	+.3297	+.0851	−.0108	−.0413	−.0474	+.1431	+.5856	+.7500	+.8133	+.8395	+.8469
	0.6	−1.7648	+.2470	+.2360	+.1043	+.0345	+.0109	+.0063	+.0494	+.3354	+.5308	+.6348	+.6857	+.7012
	0.4	−1.3017	+.0457	+.1333	+.0872	+.0573	+.0498	+.0494	+.0091	+.1882	+.3610	+.4819	+.5524	+.5757
	0.2	−.5548	−.0061	+.0486	+.0523	+.0618	+.0737	+.0787	−.0012	+.0852	+.2247	+.3596	+.4521	+.4846
	0	+.0256	0	−.0103	+.0169	+.0536	+.0801	+.0894	0	−.0515	+.0846	+.2679	+.4003	+.4469
		R_y	+.0256	−.9662	−.7706	−.3660	−.1029	−.0180						



Moment = (Coefficient)(M)

Reaction = (Coefficient)$(\frac{M}{b})$



POSITIVE SIGN CONVENTION

FIGURE 8.—*Plate fixed along three edges, moment and reaction coefficients, Load VIII, moment at free edge.*

			M_x						M_y					
	y/b	R_x \ x/0	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
a/b = 1/8	1.0	+1.2422	+.0471	+.0203	+.0007	-.0126	-.0204	-.0230	0	0	0	0	0	0
	0.8	+.0073	+.0025	+.0018	+.0006	-.0005	-.0013	-.0015	+.0005	+.0007	+.0011	+.0014	+.0017	+.0018
	0.6	-.0031	+.0000	+.0000	+.0001	-.0000	+.0000	-.0000	+.0000	+.0000	+.0001	+.0001	+.0001	+.0002
	0.4	+.0005	-.0000	-.0000	+.0000	-.0000	+.0000	+.0000	-.0000	-.0000	+.0000	-.0000	+.0000	+.0000
	0.2	+.0000	-.0000	-.0000	-.0000	-.0000	-.0000	-.0000	-.0000	-.0000	-.0000	-.0000	-.0000	-.0000
	0	+.0000	0	+.0000	-.0000	-.0000	-.0000	-.0000	0	+.0000	-.0000	-.0000	-.0000	-.0000
		R_x \ R_y	+.0000	+.0000	+.0000	+.0000	+.0000	-.0000						
a/b = 1/4	1.0	+2.3750	+.1522	+.0587	-.0018	-.0395	-.0601	-.0667	0	0	0	0	0	0
	0.8	+.1072	+.0278	+.0175	+.0050	-.0058	-.0129	-.0154	+.0056	+.0067	+.0091	+.0115	+.0131	+.0136
	0.6	-.0306	+.0024	+.0027	+.0015	-.0002	-.0015	-.0019	+.0005	+.0012	+.0024	+.0035	+.0043	+.0046
	0.4	-.0120	-.0003	+.0001	+.0002	+.0002	+.0001	+.0001	-.0001	+.0001	+.0004	+.0006	+.0008	+.0009
	0.2	-.0020	-.0002	-.0001	+.0000	+.0001	+.0001	+.0001	-.0000	-.0000	+.0000	+.0001	+.0001	+.0001
	0	+.0002	0	-.0000	-.0000	-.0000	-.0000	-.0000	0	-.0000	-.0001	-.0001	-.0001	-.0001
		R_x \ R_y	+.0002	+.0005	-.0004	-.0011	-.0013	-.0017						
a/b = 3/8	1.0	+3.3048	+.2723	+.0947	-.0084	-.0681	-.0996	-.1094	0	0	0	0	0	0
	0.8	+.3317	+.0857	+.0482	+.0103	-.0190	-.0370	-.0431	+.0171	+.0185	+.0226	+.0261	+.0284	+.0291
	0.6	-.0370	+.0189	+.0154	+.0064	-.0031	-.0099	-.0123	+.0038	+.0064	+.0107	+.0147	+.0174	+.0184
	0.4	-.0433	+.0020	+.0034	+.0023	+.0003	-.0015	-.0021	+.0004	+.0017	+.0036	+.0056	+.0070	+.0075
	0.2	-.0150	-.0004	+.0004	+.0006	+.0004	+.0001	-.0000	-.0001	+.0003	+.0010	+.0017	+.0022	+.0024
	0	-.0006	0	-.0000	-.0001	-.0001	-.0000	-.0000	0	-.0002	-.0003	-.0003	-.0002	-.0002
		R_x \ R_y	-.0006	-.0032	-.0087	-.0101	-.0095	-.0091						
a/b = 1/2	1.0	+4.0661	+.3938	+.1268	-.0162	-.0957	-.1369	-.1497	0	0	0	0	0	0
	0.8	+.6108	+.1656	+.0846	+.0132	-.0376	-.0672	-.0769	+.0331	+.0330	+.0366	+.0393	+.0407	+.0412
	0.6	+.0095	+.0555	+.0391	+.0130	-.0109	-.0268	-.0324	+.0111	+.0161	+.0238	+.0306	+.0349	+.0364
	0.4	-.0659	+.0139	+.0140	+.0071	-.0015	-.0079	-.0103	+.0028	+.0063	+.0117	+.0169	+.0205	+.0218
	0.2	-.0470	+.0012	+.0036	+.0028	+.0009	-.0008	-.0014	+.0002	+.0022	+.0053	+.0085	+.0107	+.0116
	0	-.0139	0	-.0001	+.0003	+.0009	+.0014	+.0016	0	-.0004	+.0013	+.0043	+.0071	+.0082
		R_x \ R_y	-.0139	-.0341	-.0344	-.0141	+.0069	+.0154						
a/b = 3/4	1.0	+5.2885	+.6266	+.1803	-.0331	-.1463	-.2036	-.2213	0	0	0	0	0	0
	0.8	+1.1657	+.3486	+.1514	+.0098	-.0788	-.1268	-.1420	+.0697	+.0618	+.0591	+.0568	+.0551	+.0544
	0.6	+.1509	+.1613	+.0957	+.0218	-.0346	-.0682	-.0791	+.0323	+.0421	+.0546	+.0633	+.0679	+.0694
	0.4	-.1083	+.0588	+.0481	+.0188	-.0088	-.0267	-.0327	+.0118	+.0240	+.0408	+.0548	+.0636	+.0666
	0.2	-.1770	+.0096	+.0170	+.0116	+.0050	+.0009	-.0005	+.0019	+.0146	+.0328	+.0503	+.0627	+.0672
	0	-.0495	0	+.0003	+.0050	+.0115	+.0168	+.0187	0	+.0013	+.0250	+.0577	+.0839	+.0937
		R_x \ R_y	-.0495	-.1823	-.0848	+.0815	+.2120	+.2598						
a/b = 1	1.0	+6.2523	+.8094	+.2040	-.0548	-.1818	-.2421	-.2601	0	0	0	0	0	0
	0.8	+1.5675	+.5022	+.1866	-.0041	-.1093	-.1611	-.1766	+.1004	+.0834	+.0746	+.0688	+.0655	+.0644
	0.6	+.2160	+.2571	+.1333	+.0199	-.0529	-.0906	-.1021	+.0514	+.0697	+.0873	+.0978	+.1030	+.1046
	0.4	-.1974	+.1018	+.0760	+.0255	-.0117	-.0314	-.0372	+.0204	+.0500	+.0848	+.1122	+.1291	+.1349
	0.2	-.3370	+.0189	+.0304	+.0218	+.0168	+.0158	+.0160	+.0038	+.0381	+.0860	+.1321	+.1647	+.1764
	0	-.1014	0	+.0020	+.0169	+.0346	+.0476	+.0523	0	+.0100	+.0843	+.1728	+.2379	+.2614
		R_x \ R_y	-.1014	-.3394	-.0539	+.2910	+.5246	+.6042						
a/b = 3/2	1.0	+7.3629	+.9388	+.1505	-.1029	-.1904	-.2162	-.2210	0	0	0	0	0	0
	0.8	+1.8569	+.6296	+.1579	-.0437	-.1174	-.1386	-.1423	+.1259	+.1034	+.0968	+.0968	+.0990	+.1001
	0.6	+.1702	+.3478	+.1299	-.0015	-.0515	-.0639	-.0654	+.0696	+.1150	+.1507	+.1765	+.1936	+.1997
	0.4	-.3603	+.1483	+.0862	+.0257	+.0062	+.0058	+.0075	+.0297	+.1080	+.1878	+.2516	+.2931	+.3076
	0.2	-.5823	+.0330	+.0427	+.0420	+.0546	+.0673	+.0722	+.0066	+.0996	+.2246	+.3374	+.4121	+.4378
	0	-.1985	0	+.0125	+.0532	+.0908	+.1144	+.1223	0	+.0623	+.2658	+.4538	+.5722	+.6117
		R_y	-.1985	-.3944	+.2295	+.7018	+.9426	+1.0130						

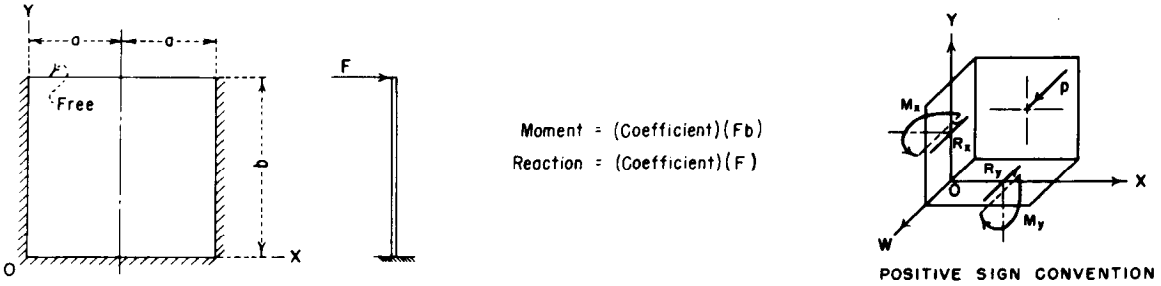


FIGURE 9.—*Plate fixed along three edges, moment and reaction coefficients, Load IX, line load at free edge.*

			M_x						M_y					
	y/b	$x/a \rightarrow$	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
$a/b = 1/8$		R_x / R_y	+.0063	+.0809	+.0996	+.1127	+.1204	+.1229						
	1.0	+.0063	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.1242	+.0049	+.0021	+.0001	−.0013	−.0022	−.0025	+.0010	+.0004	−.0001	−.0004	−.0006	−.0007
	0.6	+.1254	+.0052	+.0023	+.0002	−.0014	−.0023	−.0027	+.0010	+.0005	+.0000	−.0003	−.0005	−.0006
	0.4	+.1253	+.0051	+.0023	+.0002	−.0014	−.0023	−.0027	+.0010	+.0005	+.0000	−.0003	−.0005	−.0006
	0.2	+.1185	+.0048	+.0021	+.0001	−.0013	−.0021	−.0025	+.0010	+.0004	−.0001	−.0004	−.0006	−.0007
	0	+.0504	0	+.0001	+.0003	+.0005	+.0006	+.0007	0	+.0006	+.0016	+.0025	+.0031	+.0033
		$R_y \rightarrow$	+.0504	+.0120	+.0565	+.0891	+.1082	+.1146						
$a/b = 1/4$		R_x / R_y	−.0097	+.0412	+.1053	+.1482	+.1728	+.1808						
	1.0	−.0097	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.2366	+.0165	+.0067	−.0002	−.0047	−.0073	−.0081	+.0033	+.0009	−.0011	−.0026	−.0036	−.0039
	0.6	+.2557	+.0201	+.0088	+.0003	−.0056	−.0091	−.0102	+.0040	+.0016	−.0003	−.0018	−.0027	−.0030
	0.4	+.2530	+.0196	+.0085	+.0002	−.0055	−.0088	−.0099	+.0039	+.0015	−.0004	−.0019	−.0029	−.0032
	0.2	+.1908	+.0138	+.0053	−.0003	−.0039	−.0059	−.0066	+.0028	+.0007	−.0011	−.0024	−.0032	−.0035
	0	+.0295	0	+.0005	+.0013	+.0020	+.0025	+.0027	0	+.0024	+.0063	+.0101	+.0126	+.0135
		$R_y \rightarrow$	+.0295	+.0235	+.1131	+.1788	+.2176	+.2304						
$a/b = 3/8$		R_x / R_y	−.0466	+.0061	+.1237	+.1983	+.2397	+.2530						
	1.0	−.0466	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.3265	+.0301	+.0109	−.0013	−.0089	−.0130	−.0143	+.0060	+.0008	−.0038	−.0073	−.0095	−.0102
	0.6	+.3819	+.0403	+.0161	−.0007	−.0116	−.0177	−.0197	+.0081	+.0023	−.0028	−.0068	−.0094	−.0103
	0.4	+.3624	+.0374	+.0148	−.0008	−.0108	−.0163	−.0181	+.0075	+.0020	−.0028	−.0065	−.0089	−.0097
	0.2	+.2164	+.0211	+.0075	−.0010	−.0059	−.0085	−.0092	+.0042	+.0008	−.0019	−.0038	−.0048	−.0052
	0	−.0013	0	+.0010	+.0027	+.0043	+.0054	+.0058	0	+.0051	+.0135	+.0215	+.0269	+.0288
		$R_y \rightarrow$	−.0013	+.0310	+.1684	+.2663	+.3238	+.3427						
$a/b = 1/2$		R_x / R_y	−.0902	−.0050	+.1570	+.2529	+.3034	+.3192						
	1.0	−.0902	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.3904	+.0412	+.0128	−.0035	−.0126	−.0172	−.0186	+.0082	−.0005	−.0083	−.0143	−.0180	−.0192
	0.6	+.4751	+.0572	+.0197	−.0036	−.0172	−.0242	−.0263	+.0114	+.0013	−.0083	−.0159	−.0207	−.0224
	0.4	+.4302	+.0508	+.0173	−.0033	−.0152	−.0212	−.0230	+.0102	+.0011	−.0072	−.0137	−.0177	−.0191
	0.2	+.2047	+.0246	+.0078	−.0017	−.0065	−.0086	−.0092	+.0049	+.0009	−.0017	−.0030	−.0036	−.0037
	0	−.0270	0	+.0019	+.0050	+.0078	+.0096	+.0102	0	+.0094	+.0248	+.0388	+.0480	+.0512
		$R_y \rightarrow$	−.0270	+.0571	+.2350	+.3590	+.4297	+.4525						
$a/b = 3/4$		R_x / R_y	−.1465	+.0482	+.2410	+.3343	+.3758	+.3874						
	1.0	−.1465	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.4416	+.0490	+.0086	−.0090	−.0163	−.0189	−.0196	+.0098	−.0060	−.0197	−.0296	−.0354	−.0373
	0.6	+.5465	+.0695	+.0142	−.0116	−.0225	−.0265	−.0274	+.0139	−.0054	−.0233	−.0366	−.0447	−.0473
	0.4	+.4698	+.0594	+.0121	−.0097	−.0185	−.0214	−.0221	+.0119	−.0039	−.0177	−.0277	−.0334	−.0353
	0.2	+.1759	+.0257	+.0053	−.0029	−.0051	−.0052	−.0050	+.0051	+.0013	+.0009	+.0021	+.0034	+.0040
	0	−.0530	0	+.0041	+.0098	+.0144	+.0171	+.0180	0	+.0207	+.0492	+.0719	+.0854	+.0898
		$R_y \rightarrow$	−.0530	+.1403	+.3658	+.4989	+.5644	+.5837						
$a/b = 1$		R_x / R_y	−.1593	+.1304	+.3059	+.3709	+.3922	+.3969						
	1.0	−.1593	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.4456	+.0465	+.0014	−.0129	−.0164	−.0166	−.0164	+.0093	−.0125	−.0294	−.0403	−.0461	−.0479
	0.6	+.5491	+.0664	+.0037	−.0174	−.0225	−.0227	−.0224	+.0133	−.0137	−.0363	−.0512	−.0592	−.0617
	0.4	+.4658	+.0562	+.0031	−.0142	−.0176	−.0172	−.0168	+.0112	−.0101	−.0265	−.0367	−.0418	−.0434
	0.2	+.1622	+.0237	+.0018	−.0033	−.0027	−.0014	−.0008	+.0047	+.0015	+.0035	+.0069	+.0095	+.0104
	0	−.0584	0	+.0067	+.0139	+.0187	+.0211	+.0219	0	+.0334	+.0697	+.0934	+.1056	+.1093
		$R_y \rightarrow$	−.0584	+.2379	+.4659	+.5707	+.6115	+.6218						
$a/b = 3/2$		R_x / R_y	−.1387	+.2509	+.3666	+.3870	+.3870	+.3859						
	1.0	−.1387	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.4395	+.0368	−.0086	−.0152	−.0143	−.0129	−.0124	+.0074	−.0238	−.0420	−.0505	−.0538	−.0547
	0.6	+.5302	+.0531	−.0110	−.0207	−.0191	−.0169	−.0162	+.0106	−.0289	−.0533	−.0648	−.0693	−.0704
	0.4	+.4497	+.0447	−.0090	−.0160	−.0139	−.0118	−.0111	+.0089	−.0211	−.0376	−.0445	−.0468	−.0474
	0.2	+.1588	+.0184	−.0020	−.0018	+.0007	+.0021	+.0026	+.0037	+.0028	+.0082	+.0125	+.0147	+.0153
	0	−.0456	0	+.0115	+.0192	+.0225	+.0236	+.0239	0	+.0576	+.0959	+.1123	+.1180	+.1194
		$R_y \rightarrow$	−.0456	+.3937	+.5702	+.6160	+.6244	+.6252						

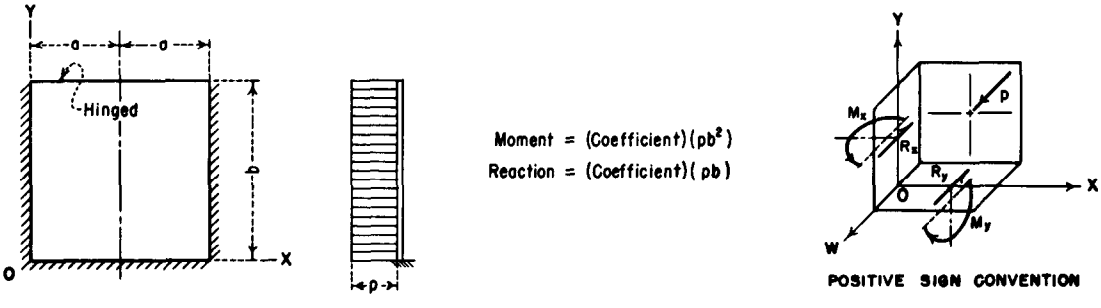
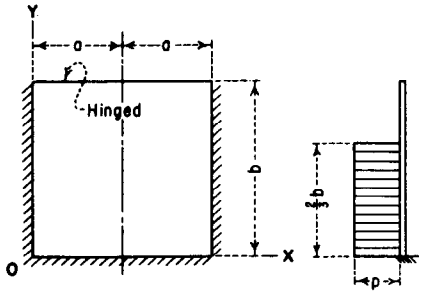


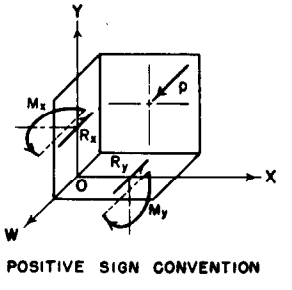
FIGURE 10.—*Plate fixed along three edges—Hinged along one edge, moment and reaction coefficients, Load I, uniform load.*

			M_x						M_y					
	y/b	$x/a \rightarrow$	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
$a/b = 1/8$		R_x / R_y	−.0005	−.0025	−.0007	+.0007	+.0017	+.0020						
	1.0	−.0005	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0076	+.0005	+.0003	+.0001	−.0001	−.0002	−.0003	+.0001	+.0001	+.0001	+.0001	+.0001	+.0001
	0.6	+.0967	+.0039	+.0017	+.0001	−.0011	−.0017	−.0020	+.0008	+.0003	−.0000	−.0003	−.0004	−.0005
	0.4	+.1252	+.0051	+.0023	+.0001	−.0014	−.0023	−.0026	+.0010	+.0004	−.0000	−.0003	−.0005	−.0006
	0.2	+.1186	+.0048	+.0021	+.0001	−.0013	−.0021	−.0024	+.0010	+.0004	−.0001	−.0004	−.0006	−.0007
	0	+.0504	0	+.0001	+.0003	+.0005	+.0006	+.0007	0	+.0006	+.0016	+.0025	+.0031	+.0033
		$R_y \rightarrow$	+.0504	+.0120	+.0566	+.0891	+.1083	+.1147						
$a/b = 1/4$		R_x / R_y	−.0067	−.0196	−.0058	+.0055	+.0128	+.0152						
	1.0	−.0067	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0259	+.0037	+.0021	+.0004	−.0009	−.0018	−.0021	+.0007	+.0006	+.0006	+.0006	+.0007	+.0007
	0.6	+.1889	+.0142	+.0060	+.0001	−.0040	−.0063	−.0071	+.0028	+.0010	−.0005	−.0016	−.0023	−.0026
	0.4	+.2496	+.0185	+.0077	−.0000	−.0052	−.0082	−.0092	+.0037	+.0013	−.0008	−.0024	−.0034	−.0037
	0.2	+.1917	+.0136	+.0052	−.0004	−.0039	−.0059	−.0065	+.0027	+.0006	−.0012	−.0026	−.0034	−.0037
	0	+.0299	0	+.0005	+.0013	+.0020	+.0025	+.0027	0	+.0024	+.0063	+.0100	+.0126	+.0134
		$R_y \rightarrow$	+.0299	+.0241	+.1138	+.1792	+.2177	+.2303						
$a/b = 3/8$		R_x / R_y	−.0266	−.0511	−.0094	+.0222	+.0415	+.0480						
	1.0	−.0266	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0626	+.0108	+.0055	+.0007	−.0029	−.0051	−.0058	+.0022	+.0015	+.0010	+.0005	+.0002	+.0001
	0.6	+.2728	+.0277	+.0109	−.0006	−.0080	−.0121	−.0135	+.0055	+.0014	−.0023	−.0051	−.0068	−.0074
	0.4	+.3450	+.0329	+.0122	−.0014	−.0097	−.0141	−.0156	+.0066	+.0012	−.0036	−.0074	−.0098	−.0106
	0.2	+.2185	+.0201	+.0067	−.0013	−.0058	−.0080	−.0087	+.0040	+.0005	−.0025	−.0046	−.0058	−.0062
	0	+.0016	0	+.0010	+.0026	+.0041	+.0051	+.0055	0	+.0050	+.0131	+.0206	+.0256	+.0274
		$R_y \rightarrow$	+.0016	+.0368	+.1707	+.2634	+.3167	+.3340						
$a/b = 1/2$		R_x / R_y	−.0552	−.0738	−.0008	+.0494	+.0782	+.0875						
	1.0	−.0552	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.1009	+.0184	+.0081	+.0001	−.0052	−.0082	−.0091	+.0037	+.0019	−.0000	−.0018	−.0030	−.0034
	0.6	+.3350	+.0390	+.0133	−.0025	−.0117	−.0165	−.0180	+.0078	+.0006	−.0060	−.0112	−.0144	−.0155
	0.4	+.3964	+.0425	+.0131	−.0038	−.0129	−.0173	−.0187	+.0085	−.0002	−.0081	−.0140	−.0177	−.0190
	0.2	+.2096	+.0226	+.0062	−.0023	−.0062	−.0078	−.0082	+.0045	+.0001	−.0030	−.0049	−.0058	−.0060
	0	−.0198	0	+.0018	+.0046	+.0070	+.0086	+.0091	0	+.0091	+.0229	+.0351	+.0429	+.0456
		$R_y \rightarrow$	−.0198	+.0699	+.2354	+.3444	+.4041	+.4229						
$a/b = 3/4$		R_x / R_y	−.0982	−.0626	+.0413	+.0980	+.1247	+.1324						
	1.0	−.0982	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.1376	+.0255	+.0073	−.0030	−.0080	−.0100	−.0105	+.0051	+.0005	−.0049	−.0095	−.0125	−.0135
	0.6	+.3830	+.0472	+.0096	−.0079	−.0153	−.0180	−.0187	+.0094	−.0040	−.0161	−.0250	−.0304	−.0322
	0.4	+.4217	+.0472	+.0077	−.0089	−.0150	−.0168	−.0172	+.0094	−.0051	−.0173	−.0256	−.0303	−.0318
	0.2	+.1871	+.0224	+.0032	−.0035	−.0049	−.0047	−.0045	+.0045	−.0005	−.0023	−.0022	−.0015	−.0012
	0	−.0393	0	+.0038	+.0085	+.0121	+.0142	+.0148	0	+.0190	+.0427	+.0605	+.0708	+.0741
		$R_y \rightarrow$	−.0393	+.1556	+.3492	+.4541	+.5029	+.5168						
$a/b = 1$		R_x / R_y	−.1143	−.0211	+.0802	+.1215	+.1357	+.1389						
	1.0	−.1143	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.1415	+.0254	+.0034	−.0057	−.0083	−.0086	−.0086	+.0051	−.0021	−.0098	−.0157	−.0191	−.0202
	0.6	+.3855	+.0451	+.0024	−.0119	−.0153	−.0154	−.0152	+.0090	−.0096	−.0248	−.0348	−.0402	−.0419
	0.4	+.4165	+.0438	+.0006	−.0120	−.0141	−.0136	−.0132	+.0088	−.0106	−.0245	−.0326	−.0365	−.0377
	0.2	+.1766	+.0201	+.0001	−.0037	−.0030	−.0018	−.0014	+.0040	−.0011	−.0010	+.0009	+.0026	+.0032
	0	−.0412	0	+.0059	+.0117	+.0152	+.0170	+.0175	0	+.0297	+.0585	+.0762	+.0850	+.0876
		$R_y \rightarrow$	−.0412	+.2427	+.4284	+.5063	+.5347	+.5416						
$a/b = 3/2$		R_x / R_y	−.1143	+.0484	+.1189	+.1322	+.1322	+.1314						
	1.0	−.1143	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.1308	+.0212	−.0029	−.0075	−.0071	−.0062	−.0059	+.0042	−.0074	−.0168	−.0219	−.0241	−.0246
	0.6	+.3762	+.0361	−.0075	−.0141	−.0129	−.0115	−.0110	+.0072	−.0198	−.0362	−.0439	−.0469	−.0477
	0.4	+.4052	+.0340	−.0083	−.0129	−.0112	−.0097	−.0092	+.0068	−.0199	−.0333	−.0384	−.0401	−.0405
	0.2	+.1778	+.0151	−.0028	−.0023	−.0004	+.0007	+.0010	+.0030	−.0011	+.0018	+.0046	+.0061	+.0065
	0	−.0262	0	+.0098	+.0156	+.0179	+.0187	+.0189	0	+.0489	+.0779	+.0896	+.0935	+.0944
		$R_y \rightarrow$	−.0262	+.3699	+.5053	+.5372	+.5425	+.5429						



Moment = (Coefficient)(pb^2)

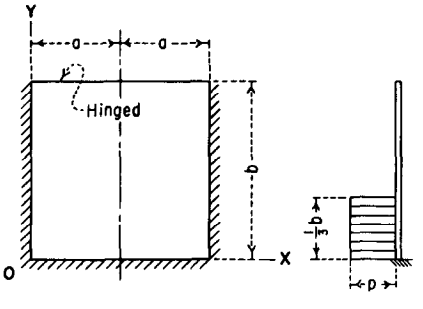
Reaction = (Coefficient)(pb)



POSITIVE SIGN CONVENTION

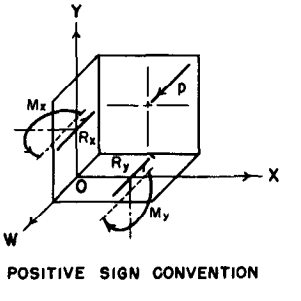
FIGURE 11.—*Plate fixed along three edges—Hinged along one edge, moment and reaction coefficients, Load 11, 2/3 uniform load.*

			M_x						M_y					
	y/b	$x/a \rightarrow$	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
$a/b = 1/8$		R_x \ R_y	−.0000	−.0000	−.0000	−.0000	−.0000	−.0000						
	1.0	−.0000	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	−.0001	+.0000	+.0000	+.0000	−.0000	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.6	+.0000	+.0001	+.0001	+.0000	−.0000	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.4	+.0286	+.0013	+.0006	+.0001	−.0003	−.0006	−.0007	+.0003	+.0001	+.0001	−.0000	−.0000	−.0001
	0.2	+.1108	+.0044	+.0019	+.0000	−.0012	−.0019	−.0022	+.0009	+.0003	−.0001	−.0005	−.0007	−.0008
	0	+.0507	0	+.0001	+.0003	+.0005	+.0006	+.0007	0	+.0006	+.0016	+.0025	+.0031	+.0033
		$R_y \rightarrow$	+.0507	+.0124	+.0570	+.0892	+.1081	+.1143						
$a/b = 1/4$		R_x \ R_y	−.0002	−.0012	−.0008	−.0003	+.0001	+.0002						
	1.0	−.0002	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	−.0008	+.0001	+.0001	+.0001	−.0000	−.0001	−.0001	+.0000	+.0001	+.0001	+.0001	+.0002	+.0002
	0.6	+.0040	+.0011	+.0007	+.0002	−.0003	−.0006	−.0007	+.0002	+.0002	+.0003	+.0004	+.0004	+.0005
	0.4	+.0652	+.0055	+.0025	+.0001	−.0015	−.0025	−.0028	+.0011	+.0005	+.0000	−.0004	−.0006	−.0007
	0.2	+.1703	+.0105	+.0034	−.0008	−.0032	−.0044	−.0047	+.0021	+.0001	−.0017	−.0032	−.0040	−.0043
	0	+.0354	0	+.0004	+.0011	+.0017	+.0021	+.0023	0	+.0022	+.0057	+.0087	+.0107	+.0114
		$R_y \rightarrow$	+.0354	+.0344	+.1161	+.1704	+.2004	+.2099						
$a/b = 3/8$		R_x \ R_y	−.0027	−.0071	−.0032	+.0005	+.0030	+.0039						
	1.0	−.0027	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0019	+.0011	+.0007	+.0002	−.0002	−.0006	−.0007	+.0002	+.0003	+.0004	+.0004	+.0005	+.0005
	0.6	+.0169	+.0038	+.0021	+.0004	−.0010	−.0018	−.0021	+.0008	+.0007	+.0006	+.0005	+.0005	+.0005
	0.4	+.0953	+.0100	+.0038	−.0003	−.0029	−.0043	−.0047	+.0020	+.0006	−.0008	−.0019	−.0026	−.0029
	0.2	+.1896	+.0132	+.0029	−.0019	−.0041	−.0049	−.0051	+.0026	−.0008	−.0037	−.0058	−.0070	−.0073
	0	+.0186	0	+.0008	+.0019	+.0028	+.0034	+.0036	0	+.0040	+.0095	+.0141	+.0170	+.0180
		$R_y \rightarrow$	+.0186	+.0642	+.1640	+.2221	+.2517	+.2608						
$a/b = 1/2$		R_x \ R_y	−.0077	−.0136	−.0037	+.0043	+.0093	+.0110						
	1.0	−.0077	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0082	+.0026	+.0015	+.0003	−.0007	−.0012	−.0014	+.0005	+.0005	+.0004	+.0004	+.0003	+.0003
	0.6	+.0302	+.0065	+.0031	+.0002	−.0018	−.0029	−.0033	+.0013	+.0008	+.0003	−.0002	−.0006	−.0007
	0.4	+.1092	+.0124	+.0038	−.0012	−.0038	−.0049	−.0053	+.0025	+.0001	−.0022	−.0040	−.0051	−.0055
	0.2	+.1849	+.0131	+.0015	−.0027	−.0040	−.0043	−.0043	+.0026	−.0019	−.0052	−.0072	−.0081	−.0084
	0	+.0094	0	+.0013	+.0029	+.0040	+.0047	+.0049	0	+.0066	+.0144	+.0202	+.0236	+.0246
		$R_y \rightarrow$	+.0094	+.1030	+.2066	+.2593	+.2835	+.2904						
$a/b = 3/4$		R_x \ R_y	−.0163	−.0152	+.0023	+.0130	+.0185	+.0201						
	1.0	−.0163	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0159	+.0042	+.0016	−.0002	−.0013	−.0017	−.0019	+.0008	+.0004	−.0001	−.0008	−.0012	−.0014
	0.6	+.0416	+.0088	+.0027	−.0010	−.0027	−.0033	−.0035	+.0018	+.0005	−.0012	−.0027	−.0037	−.0040
	0.4	+.1141	+.0132	+.0018	−.0027	−.0041	−.0044	−.0045	+.0026	−.0014	−.0049	−.0073	−.0086	−.0091
	0.2	+.1760	+.0113	−.0008	−.0032	−.0032	−.0029	−.0027	+.0023	−.0038	−.0067	−.0076	−.0078	−.0078
	0	+.0052	0	+.0024	+.0044	+.0057	+.0063	+.0065	0	+.0012	+.0222	+.0284	+.0314	+.0323
		$R_y \rightarrow$	+.0052	+.1676	+.2599	+.2954	+.3085	+.3118						
$a/b = 1$		R_x \ R_y	−.0199	−.0088	+.0095	+.0177	+.0206	+.0213						
	1.0	−.0199	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0176	+.0044	+.0010	−.0008	−.0014	−.0015	−.0015	+.0009	+.0002	−.0009	−.0018	−.0025	−.0027
	0.6	+.0425	+.0088	+.0012	−.0019	−.0027	−.0027	−.0027	+.0018	−.0003	−.0027	−.0046	−.0057	−.0060
	0.4	+.1110	+.0120	−.0003	−.0034	−.0038	−.0035	−.0034	+.0024	−.0030	−.0070	−.0092	−.0102	−.0105
	0.2	+.1749	+.0092	−.0021	−.0030	−.0024	−.0020	−.0019	+.0018	−.0051	−.0072	−.0073	−.0070	−.0068
	0	+.0099	0	+.0033	+.0055	+.0065	+.0070	+.0071	0	+.0167	+.0274	+.0326	+.0348	+.0354
		$R_y \rightarrow$	+.0099	+.2129	+.2870	+.3085	+.3147	+.3160						
$a/b = 3/2$		R_x \ R_y	−.0211	+.0038	+.0172	+.0198	+.0197	+.0195						
	1.0	−.0211	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0170	+.0039	−.0002	−.0012	−.0012	−.0010	−.0009	+.0008	−.0006	−.0021	−.0030	−.0034	−.0036
	0.6	+.0385	+.0073	−.0010	−.0024	−.0022	−.0019	−.0017	+.0015	−.0019	−.0049	−.0065	−.0071	−.0072
	0.4	+.1044	+.0091	−.0026	−.0035	−.0030	−.0026	−.0025	+.0018	−.0056	−.0093	−.0106	−.0110	−.0111
	0.2	+.1900	+.0062	−.0029	−.0023	−.0016	−.0014	−.0013	+.0012	−.0065	−.0070	−.0065	−.0062	−.0061
	0	+.0253	0	+.0047	+.0066	+.0072	+.0073	+.0074	0	+.0237	+.0329	+.0358	+.0367	+.0369
		$R_y \rightarrow$	+.0253	+.2636	+.3078	+.3148	+.3156	+.3156						



Moment = (Coefficient)(pb^2)

Reaction = (Coefficient)(pb)



POSITIVE SIGN CONVENTION

FIGURE 12.—*Plate fixed along three edges—Hinged along one edge, moment and reaction coefficients, Load III, 1/3 uniform load.*

			M_x						M_y					
	y/b	x/a →	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
a/b = 1/8		R_x \ R_y	−.0003	+.0024	+.0064	+.0092	+.0109	+.0114						
	1.0	−.0003	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0250	+.0010	+.0005	+.0000	−.0003	−.0005	−.0005	+.0002	+.0001	+.0000	−.0001	−.0001	−.0001
	0.6	+.0500	+.0021	+.0009	+.0001	−.0006	−.0009	−.0011	+.0004	+.0002	+.0000	−.0001	−.0002	−.0002
	0.4	+.0752	+.0031	+.0014	+.0001	−.0008	−.0014	−.0016	+.0006	+.0003	+.0000	−.0002	−.0003	−.0003
	0.2	+.0941	+.0038	+.0016	+.0000	−.0010	−.0017	−.0019	+.0008	+.0003	−.0001	−.0003	−.0005	−.0006
	0	+.0459	0	+.0001	+.0003	+.0005	+.0006	+.0006	0	+.0005	+.0014	+.0023	+.0028	+.0030
		R_y →	+.0459	+.0139	+.0546	+.0835	+.1003	+.1058						
a/b = 1/4		R_x \ R_y	−.0061	−.0102	+.0056	+.0169	+.0237	+.0260						
	1.0	−.0061	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0505	+.0042	+.0019	+.0001	−.0011	−.0018	−.0021	+.0008	+.0004	+.0000	−.0002	−.0004	−.0005
	0.6	+.1020	+.0082	+.0037	+.0002	−.0023	−.0037	−.0042	+.0016	+.0007	−.0000	−.0006	−.0010	−.0011
	0.4	+.1517	+.0114	+.0049	+.0000	−.0032	−.0051	−.0057	+.0023	+.0009	−.0004	−.0013	−.0019	−.0021
	0.2	+.1495	+.0102	+.0037	−.0004	−.0030	−.0043	−.0047	+.0020	+.0004	−.0011	−.0022	−.0029	−.0031
	0	+.0304	0	+.0004	+.0010	+.0016	+.0020	+.0021	0	+.0020	+.0052	+.0081	+.0100	+.0107
		R_y →	+.0304	+.0309	+.1052	+.1563	+.1856	+.1950						
a/b = 3/8		R_x \ R_y	−.0205	−.0283	+.0070	+.0313	+.0455	+.0502						
	1.0	−.0205	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0788	+.0091	+.0039	+.0001	−.0026	−.0041	−.0046	+.0018	+.0007	−.0003	−.0010	−.0015	−.0016
	0.6	+.1550	+.0170	+.0070	−.0001	−.0048	−.0075	−.0084	+.0034	+.0011	−.0009	−.0025	−.0035	−.0038
	0.4	+.2120	+.0207	+.0078	−.0008	−.0061	−.0089	−.0098	+.0041	+.0009	−.0021	−.0044	−.0058	−.0063
	0.2	+.1696	+.0145	+.0045	−.0012	−.0042	−.0057	−.0061	+.0029	+.0001	−.0023	−.0039	−.0049	−.0052
	0	+.0102	0	+.0008	+.0020	+.0030	+.0038	+.0040	0	+.0039	+.0099	+.0153	+.0188	+.0200
		R_y →	+.0102	+.0475	+.1490	+.2157	+.2528	+.2647						
a/b = 1/2		R_x \ R_y	−.0396	−.0396	+.0153	+.0508	+.0704	+.0767						
	1.0	−.0396	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.1042	+.0139	+.0053	−.0005	−.0041	−.0060	−.0067	+.0028	+.0006	−.0014	−.0030	−.0040	−.0044
	0.6	+.1956	+.0245	+.0087	−.0013	−.0073	−.0104	−.0114	+.0049	+.0008	−.0031	−.0062	−.0082	−.0089
	0.4	+.2450	+.0269	+.0085	−.0023	−.0081	−.0110	−.0119	+.0054	+.0001	−.0048	−.0085	−.0108	−.0116
	0.2	+.1632	+.0159	+.0039	−.0019	−.0044	−.0054	−.0057	+.0032	−.0003	−.0029	−.0043	−.0050	−.0052
	0	−.0040	0	+.0014	+.0033	+.0050	+.0060	+.0064	0	+.0068	+.0167	+.0250	+.0302	+.0320
		R_y →	−.0040	+.0762	+.1959	+.2705	+.3102	+.3225						
a/b = 3/4		R_x \ R_y	−.0671	−.0273	+.0454	+.0834	+.1010	+.1061						
	1.0	−.0671	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.1275	+.0181	+.0044	−.0026	−.0058	−.0071	−.0074	+.0036	−.0008	−.0051	−.0085	−.0106	−.0113
	0.6	+.2274	+.0301	+.0065	−.0048	−.0097	−.0115	−.0119	+.0060	−.0019	−.0094	−.0150	−.0185	−.0196
	0.4	+.2616	+.0302	+.0051	−.0055	−.0095	−.0107	−.0109	+.0060	−.0030	−.0106	−.0158	−.0188	−.0198
	0.2	+.1479	+.0155	+.0017	−.0027	−.0035	−.0033	−.0032	+.0031	−.0011	−.0027	−.0027	−.0023	−.0021
	0	−.0155	0	+.0028	+.0060	+.0083	+.0097	+.0101	0	+.0138	+.0299	+.0417	+.0484	+.0505
		R_y →	−.0155	+.1405	+.2734	+.3424	+.3739	+.3828						
a/b = 1		R_x \ R_y	−.0764	+.0024	+.0716	+.0989	+.1081	+.1102						
	1.0	−.0764	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.1300	+.0177	+.0016	−.0043	−.0060	−.0062	−.0061	+.0035	−.0028	−.0086	−.0127	−.0150	−.0158
	0.6	+.2289	+.0289	+.0019	−.0074	−.0097	−.0098	−.0096	+.0058	−.0054	−.0149	−.0213	−.0248	−.0259
	0.4	+.2583	+.0280	+.0006	−.0076	−.0089	−.0086	−.0084	+.0056	−.0064	−.0152	−.0203	−.0228	−.0235
	0.2	+.1417	+.0137	−.0003	−.0027	−.0022	−.0015	−.0012	+.0027	−.0016	−.0019	−.0008	+.0003	+.0007
	0	−.0149	0	+.0042	+.0081	+.0104	+.0115	+.0119	0	+.0211	+.0403	+.0519	+.0576	+.0593
		R_y →	−.0149	+.2009	+.3255	+.3761	+.3944	+.3988						
a/b = 3/2		R_x \ R_y	−.0743	+.0499	+.0971	+.1058	+.1058	+.1053						
	1.0	−.0743	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.1257	+.0145	−.0025	−.0055	−.0052	−.0046	−.0044	+.0029	−.0067	−.0134	−.0169	−.0183	−.0187
	0.6	+.2208	+.0232	−.0046	−.0089	−.0081	−.0072	−.0069	+.0046	−.0118	−.0223	−.0273	−.0292	−.0297
	0.4	+.2503	+.0219	−.0052	−.0082	−.0071	−.0061	−.0058	+.0044	−.0123	−.0207	−.0240	−.0251	−.0253
	0.2	+.1461	+.0101	−.0022	−.0018	−.0005	+.0002	+.0004	+.0020	−.0019	−.0002	+.0017	+.0026	+.0029
	0	−.0018	0	+.0068	+.0106	+.0121	+.0126	+.0127	0	+.0339	+.0530	+.0606	+.0631	+.0637
		R_y →	−.0018	+.2862	+.3754	+.3960	+.3994	+.3997						

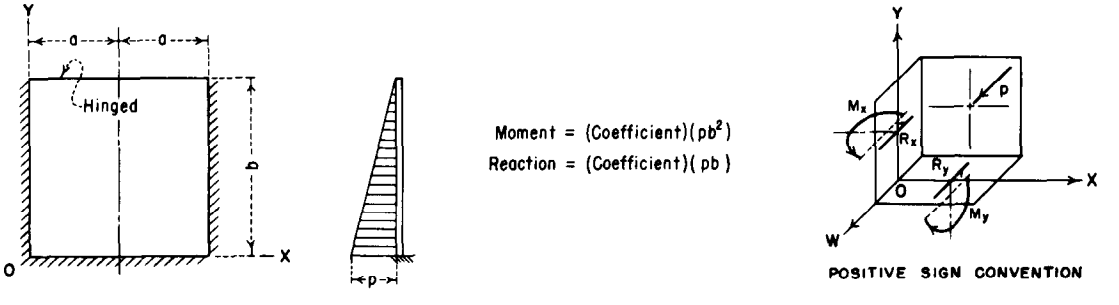
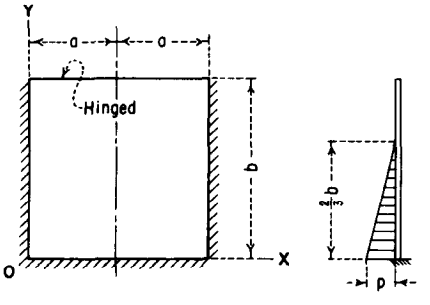


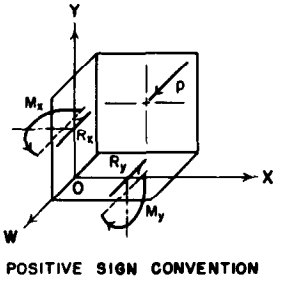
FIGURE 13.—*Plate fixed along three edges—Hinged along one edge, moment and reaction coefficients, Load IV, uniformly varying load.*

			M_x						M_y					
	y/b	$x/a \rightarrow$	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
$a/b = 1/8$		R_x / R_y	−.0000	−.0003	−.0001	+.0000	+.0001	+.0001						
	1.0	−.0000	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0003	+.0000	+.0000	+.0000	−.0000	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.6	+.0145	+.0006	+.0003	+.0000	−.0002	−.0003	−.0003	+.0001	+.0001	+.0000	−.0000	−.0000	−.0000
	0.4	+.0502	+.0021	+.0009	+.0001	−.0006	−.0009	−.0011	+.0004	+.0002	+.0000	−.0001	−.0002	−.0002
	0.2	+.0819	+.0032	+.0014	+.0000	−.0009	−.0014	−.0016	+.0006	+.0003	−.0001	−.0003	−.0004	−.0005
	0	+.0437	0	+.0001	+.0003	+.0004	+.0005	+.0006	0	+.0005	+.0014	+.0021	+.0026	+.0028
		$R_y \rightarrow$	+.0437	+.0148	+.0536	+.0807	+.0963	+.1014						
$a/b = 1/4$		R_x / R_y	−.0011	−.0038	−.0017	+.0003	+.0017	+.0021						
	1.0	−.0011	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0019	+.0006	+.0004	+.0001	−.0001	−.0003	−.0004	+.0001	+.0001	+.0002	+.0002	+.0003	+.0003
	0.6	+.0323	+.0031	+.0015	+.0002	−.0008	−.0014	−.0016	+.0006	+.0004	+.0002	+.0001	−.0000	−.0000
	0.4	+.1011	+.0075	+.0031	−.0000	−.0021	−.0033	−.0037	+.0015	+.0005	−.0003	−.0010	−.0014	−.0015
	0.2	+.1286	+.0084	+.0030	−.0005	−.0025	−.0035	−.0038	+.0017	+.0002	−.0010	−.0020	−.0027	−.0029
	0	+.0308	0	+.0004	+.0009	+.0014	+.0018	+.0019	0	+.0019	+.0047	+.0071	+.0088	+.0093
		$R_y \rightarrow$	+.0308	+.0345	+.1011	+.1451	+.1695	+.1773						
$a/b = 3/8$		R_x / R_y	−.0060	−.0134	−.0042	+.0034	+.0083	+.0100						
	1.0	−.0060	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0096	+.0024	+.0014	+.0003	−.0006	−.0012	−.0014	+.0005	+.0004	+.0005	+.0005	+.0005	+.0005
	0.6	+.0558	+.0073	+.0033	+.0002	−.0020	−.0033	−.0037	+.0015	+.0007	+.0001	−.0004	−.0007	−.0009
	0.4	+.1389	+.0131	+.0047	−.0006	−.0039	−.0056	−.0061	+.0026	+.0004	−.0015	−.0031	−.0041	−.0044
	0.2	+.1458	+.0114	+.0031	−.0012	−.0034	−.0043	−.0046	+.0023	−.0002	−.0023	−.0038	−.0047	−.0050
	0	+.0155	0	+.0007	+.0016	+.0024	+.0030	+.0032	0	+.0033	+.0081	+.0122	+.0149	+.0158
		$R_y \rightarrow$	+.0155	+.0549	+.1390	+.1907	+.2183	+.2269						
$a/b = 1/2$		R_x / R_y	−.0143	−.0221	−.0033	+.0105	+.0188	+.0216						
	1.0	−.0143	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0205	+.0048	+.0024	+.0002	−.0013	−.0022	−.0025	+.0010	+.0007	+.0004	+.0001	−.0001	−.0002
	0.6	+.0757	+.0112	+.0044	−.0003	−.0032	−.0048	−.0053	+.0022	+.0007	−.0007	−.0020	−.0028	−.0031
	0.4	+.1573	+.0163	+.0048	−.0016	−.0050	−.0066	−.0070	+.0033	−.0002	−.0034	−.0058	−.0073	−.0078
	0.2	+.1415	+.0119	+.0022	−.0019	−.0034	−.0039	−.0040	+.0024	−.0008	−.0032	−.0046	−.0054	−.0056
	0	+.0064	0	+.0011	+.0026	+.0037	+.0044	+.0047	0	+.0056	+.0129	+.0187	+.0222	+.0234
		$R_y \rightarrow$	+.0064	+.0837	+.1762	+.2284	+.2544	+.2622						
$a/b = 3/4$		R_x / R_y	−.0276	−.0216	+.0078	+.0249	+.0332	+.0356						
	1.0	−.0276	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0322	+.0072	+.0024	−.0006	−.0022	−.0029	−.0030	+.0014	+.0004	−.0008	−.0020	−.0028	−.0031
	0.6	+.0919	+.0142	+.0035	−.0020	−.0045	−.0054	−.0056	+.0028	−.0003	−.0035	−.0060	−.0077	−.0082
	0.4	+.1649	+.0176	+.0024	−.0036	−.0056	−.0061	−.0062	+.0035	−.0022	−.0070	−.0102	−.0119	−.0125
	0.2	+.1319	+.0109	+.0003	−.0024	−.0027	−.0025	−.0024	+.0022	−.0020	−.0039	−.0044	−.0043	−.0043
	0	+.0010	0	+.0021	+.0043	+.0057	+.0065	+.0067	0	+.0106	+.0214	+.0285	+.0323	+.0335
		$R_y \rightarrow$	+.0010	+.1378	+.2297	+.2714	+.2888	+.2935						
$a/b = 1$		R_x / R_y	−.0329	−.0104	+.0193	+.0321	+.0366	+.0376						
	1.0	−.0329	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0341	+.0073	+.0013	−.0015	−.0023	−.0025	−.0025	+.0015	−.0001	−.0021	−.0038	−.0048	−.0051
	0.6	+.0928	+.0138	+.0013	−.0033	−.0045	−.0045	−.0045	+.0028	−.0018	−.0060	−.0091	−.0107	−.0113
	0.4	+.1623	+.0161	−.0002	−.0046	−.0052	−.0049	−.0048	+.0032	−.0044	−.0097	−.0127	−.0141	−.0145
	0.2	+.1289	+.0093	−.0011	−.0024	−.0019	−.0014	−.0013	+.0019	−.0028	−.0039	−.0035	−.0031	−.0029
	0	+.0040	0	+.0031	+.0055	+.0068	+.0074	+.0076	0	+.0155	+.0275	+.0341	+.0371	+.0380
		$R_y \rightarrow$	+.0040	+.1813	+.2613	+.2894	+.2987	+.3008						
$a/b = 3/2$		R_x / R_y	−.0339	+.0100	+.0313	+.0354	+.0354	+.0351						
	1.0	−.0339	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0319	+.0063	−.0006	−.0021	−.0020	−.0017	−.0016	+.0013	−.0015	−.0042	−.0057	−.0063	−.0065
	0.6	+.0878	+.0112	−.0019	−.0041	−.0037	−.0032	−.0031	+.0022	−.0047	−.0095	−.0119	−.0129	−.0131
	0.4	+.1577	+.0123	−.0034	−.0048	−.0041	−.0036	−.0034	+.0025	−.0080	−.0129	−.0147	−.0153	−.0154
	0.2	+.1365	+.0065	−.0021	−.0017	−.0009	−.0006	−.0005	+.0013	−.0035	−.0032	−.0024	−.0019	−.0018
	0	+.0169	0	+.0047	+.0069	+.0077	+.0080	+.0080	0	+.0235	+.0346	+.0386	+.0399	+.0402
		$R_y \rightarrow$	+.0169	+.2361	+.2888	+.2992	+.3007	+.3008						



Moment = (Coefficient)(pb^2)

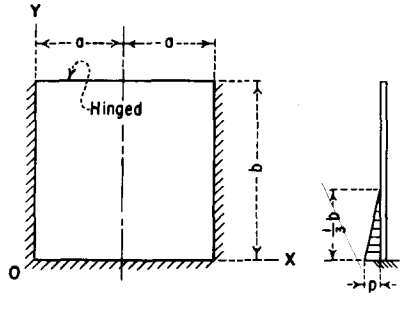
Reaction = (Coefficient)(pb)



POSITIVE SIGN CONVENTION

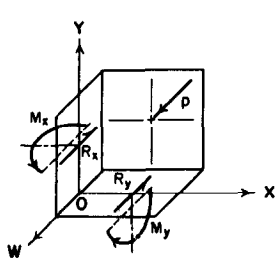
FIGURE 14.—*Plate fixed along three edges—Hinged along one edge, moment and reaction coefficients, Load V, 2/3 uniformly varying load.*

			M_x						M_y					
	y/b	$x/a \rightarrow$	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
$a/b = 1/8$		R_x \ R_y	+.0000	−.0000	−.0000	−.0000	−.0000	−.0000						
	1.0	+.0000	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	−.0000	−.0000	+.0000	+.0000	+.0000	−.0000	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.6	−.0001	+.0000	+.0000	+.0000	−.0000	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.4	+.0040	+.0002	+.0001	+.0000	−.0001	−.0001	−.0001	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.2	+.0459	+.0017	+.0007	+.0000	−.0005	−.0008	−.0008	+.0003	+.0001	−.0001	−.0001	−.0002	−.0002
	0	+.0369	0	+.0001	+.0002	+.0004	+.0004	+.0005	0	+.0005	+.0012	+.0018	+.0022	+.0023
		$R_y \rightarrow$	+.0369	+.0176	+.0505	+.0722	+.0841	+.0879						
$a/b = 1/4$		R_x \ R_y	−.0000	−.0003	−.0002	−.0001	−.0000	+.0000						
	1.0	−.0000	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	−.0003	+.0000	+.0000	+.0000	−.0000	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.6	+.0004	+.0002	+.0002	+.0001	−.0001	−.0001	−.0002	+.0001	+.0001	+.0001	+.0001	+.0001	+.0001
	0.4	+.0126	+.0014	+.0007	+.0001	−.0004	−.0006	−.0007	+.0003	+.0002	+.0001	+.0001	+.0000	+.0000
	0.2	+.0693	+.0040	+.0013	−.0003	−.0012	−.0016	−.0018	+.0008	+.0001	−.0006	−.0012	−.0015	−.0016
	0	+.0297	0	+.0003	+.0006	+.0009	+.0011	+.0012	0	+.0014	+.0032	+.0046	+.0055	+.0058
		$R_y \rightarrow$	+.0297	+.0415	+.0869	+.1126	+.1256	+.1295						
$a/b = 3/8$		R_x \ R_y	−.0007	−.0019	−.0009	+.0000	+.0007	+.0009						
	1.0	−.0007	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0002	+.0003	+.0002	+.0001	−.0001	−.0001	−.0002	+.0001	+.0001	+.0001	+.0001	+.0002	+.0002
	0.6	+.0036	+.0010	+.0006	+.0001	−.0002	−.0005	−.0006	+.0002	+.0002	+.0002	+.0002	+.0002	+.0002
	0.4	+.0216	+.0028	+.0012	−.0000	−.0009	−.0012	−.0013	+.0006	+.0003	−.0000	−.0003	−.0005	−.0005
	0.2	+.0788	+.0051	+.0010	−.0008	−.0016	−.0018	−.0019	+.0010	−.0003	−.0014	−.0022	−.0027	−.0029
	0	+.0228	0	+.0004	+.0009	+.0013	+.0015	+.0016	0	+.0020	+.0044	+.0063	+.0075	+.0078
		$R_y \rightarrow$	+.0228	+.0615	+.1076	+.1314	+.1428	+.1461						
$a/b = 1/2$		R_x \ R_y	−.0020	−.0037	−.0012	+.0010	+.0023	+.0028						
	1.0	−.0020	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0019	+.0007	+.0004	+.0001	−.0002	−.0003	−.0004	+.0001	+.0001	+.0001	+.0001	+.0001	+.0001
	0.6	+.0073	+.0018	+.0009	+.0001	−.0005	−.0008	−.0009	+.0004	+.0003	+.0002	+.0000	−.0000	−.0001
	0.4	+.0258	+.0035	+.0012	−.0003	−.0010	−.0014	−.0015	+.0007	+.0002	−.0004	−.0009	−.0012	−.0013
	0.2	+.0769	+.0050	+.0004	−.0013	−.0015	−.0016	−.0015	+.0010	−.0007	−.0020	−.0028	−.0032	−.0033
	0	+.0203	0	+.0006	+.0013	+.0017	+.0019	+.0020	0	+.0031	+.0063	+.0085	+.0097	+.0101
		$R_y \rightarrow$	+.0203	+.0812	+.1252	+.1449	+.1532	+.1554						
$a/b = 3/4$		R_x \ R_y	−.0044	−.0043	+.0004	+.0034	+.0049	+.0053						
	1.0	−.0044	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0040	+.0011	+.0005	−.0000	−.0003	−.0005	−.0005	+.0002	+.0001	−.0000	−.0002	−.0003	−.0003
	0.6	+.0106	+.0024	+.0008	−.0002	−.0007	−.0009	−.0010	+.0005	+.0002	−.0002	−.0006	−.0009	−.0010
	0.4	+.0273	+.0038	+.0006	−.0007	−.0012	−.0012	−.0012	+.0008	−.0002	−.0011	−.0018	−.0022	−.0023
	0.2	+.0739	+.0041	−.0005	−.0012	−.0012	−.0010	−.0010	+.0008	−.0015	−.0027	−.0031	−.0032	−.0032
	0	+.0216	0	+.0010	+.0018	+.0022	+.0024	+.0025	0	+.0052	+.0091	+.0111	+.0121	+.0124
		$R_y \rightarrow$	+.0216	+.1096	+.1449	+.1565	+.1604	+.1613						
$a/b = 1$		R_x \ R_y	−.0054	−.0026	+.0024	+.0046	+.0054	+.0056						
	1.0	−.0054	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0045	+.0012	+.0003	−.0002	−.0004	−.0004	−.0004	+.0002	+.0001	−.0002	−.0005	−.0006	−.0007
	0.6	+.0110	+.0024	+.0004	−.0005	−.0007	−.0007	−.0007	+.0005	−.0000	−.0006	−.0011	−.0015	−.0016
	0.4	+.0262	+.0035	−.0000	−.0010	−.0010	−.0010	−.0009	+.0007	−.0006	−.0017	−.0023	−.0026	−.0027
	0.2	+.0740	+.0033	−.0009	−.0011	−.0009	−.0008	−.0007	+.0007	−.0021	−.0029	−.0030	−.0030	−.0029
	0	+.0261	0	+.0014	+.0022	+.0025	+.0026	+.0026	0	+.0070	+.0108	+.0124	+.0131	+.0133
		$R_y \rightarrow$	+.0261	+.1273	+.1538	+.1603	+.1619	+.1623						
$a/b = 3/2$		R_x \ R_y	−.0058	+.0008	+.0045	+.0052	+.0052	+.0051						
	1.0	−.0058	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0044	+.0011	−.0000	−.0003	−.0003	−.0003	−.0002	+.0002	−.0001	−.0005	−.0008	−.0009	−.0009
	0.6	+.0101	+.0021	−.0002	−.0007	−.0006	−.0005	−.0005	+.0004	−.0004	−.0012	−.0017	−.0018	−.0019
	0.4	+.0232	+.0027	−.0007	−.0010	−.0008	−.0007	−.0006	+.0005	−.0014	−.0024	−.0028	−.0029	−.0029
	0.2	+.0815	+.0021	−.0011	−.0009	−.0007	−.0006	−.0006	+.0004	−.0026	−.0030	−.0028	−.0028	−.0027
	0	+.0360	0	+.0019	+.0025	+.0027	+.0027	+.0027	0	+.0095	+.0125	+.0135	+.0136	+.0136
		$R_y \rightarrow$	+.0360	+.1454	+.1600	+.1619	+.1621	+.1621						



Moment = (Coefficient)(pb^2)

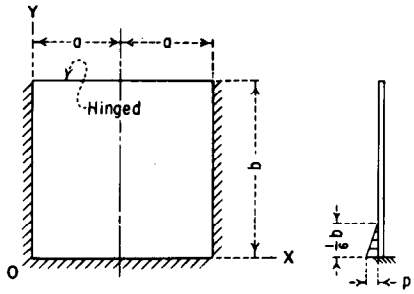
Reaction = (Coefficient)(pb)



POSITIVE SIGN CONVENTION

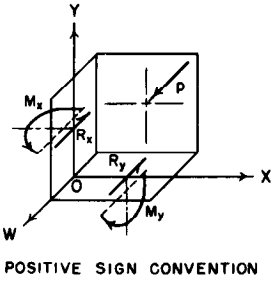
FIGURE 15.—*Plate fixed along three edges—Hinged along one edge, moment and reaction coefficients, Load VI, 1/3 uniformly varying load.*

			M_x						M_y					
	y/b	$x/a \rightarrow$	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
$a/b = 1/8$		R_x \ R_y	−.0000	+.0000	+.0000	−.0000	−.0000	−.0000						
	1.0	−.0000	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	−.0000	−.0000	−.0000	−.0000	+.0000	+.0000	+.0000	−.0000	−.0000	−.0000	+.0000	+.0000	+.0000
	0.6	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.4	−.0000	+.0000	+.0000	+.0000	−.0000	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.2	+.0119	+.0004	+.0002	+.0000	−.0001	−.0002	−.0002	+.0001	+.0000	+.0000	+.0000	+.0000	+.0000
	0	+.0237	0	+.0001	+.0002	+.0002	+.0003	+.0003	0	+.0003	+.0008	+.0012	+.0014	+.0014
		$R_y \rightarrow$	+.0237	+.0207	+.0435	+.0563	+.0628	+.0648						
$a/b = 1/4$		R_x \ R_y	−.0000	−.0000	−.0000	−.0000	−.0000	−.0000						
	1.0	−.0000	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	−.0001	+.0000	+.0000	+.0000	+.0000	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.6	−.0001	+.0000	+.0000	+.0000	−.0000	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.4	+.0010	+.0001	+.0001	+.0000	−.0000	−.0001	−.0001	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.2	+.0176	+.0009	+.0003	−.0001	−.0002	−.0003	−.0004	+.0002	+.0001	−.0001	−.0002	−.0002	−.0002
	0	+.0214	0	+.0002	+.0003	+.0004	+.0005	+.0005	0	+.0008	+.0016	+.0021	+.0024	+.0025
		$R_y \rightarrow$	+.0214	+.0405	+.0624	+.0721	+.0762	+.0773						
$a/b = 3/8$		R_x \ R_y	−.0001	−.0003	−.0002	−.0000	+.0001	+.0001						
	1.0	−.0001	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	−.0000	+.0000	+.0000	+.0000	−.0000	−.0000	−.0000	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.6	+.0004	+.0002	+.0001	+.0000	−.0000	−.0001	−.0001	+.0000	+.0000	+.0000	+.0001	+.0001	+.0001
	0.4	+.0028	+.0005	+.0002	+.0000	−.0001	−.0002	−.0002	+.0001	+.0001	+.0001	+.0000	−.0000	−.0000
	0.2	+.0219	+.0013	+.0003	−.0002	−.0004	−.0004	−.0004	+.0003	+.0000	−.0002	−.0004	−.0005	−.0006
	0	+.0196	0	+.0003	+.0003	+.0004	+.0005	+.0005	0	+.0008	+.0016	+.0022	+.0026	+.0027
		$R_y \rightarrow$	+.0196	+.0516	+.0685	+.0758	+.0789	+.0797						
$a/b = 1/2$		R_x \ R_y	−.0003	−.0007	−.0002	+.0001	+.0003	+.0004						
	1.0	−.0003	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0002	+.0001	+.0001	+.0000	−.0000	−.0001	−.0001	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.6	+.0010	+.0003	+.0002	+.0000	−.0001	−.0001	−.0002	+.0001	+.0001	+.0000	+.0000	+.0000	+.0000
	0.4	+.0036	+.0007	+.0003	−.0000	−.0002	−.0003	−.0003	+.0001	+.0001	−.0000	−.0001	−.0001	−.0002
	0.2	+.0214	+.0012	+.0001	−.0003	−.0003	−.0003	−.0003	+.0002	−.0001	−.0004	−.0006	−.0007	−.0007
	0	+.0202	0	+.0002	+.0004	+.0006	+.0006	+.0006	0	+.0012	+.0022	+.0028	+.0031	+.0032
		$R_y \rightarrow$	+.0202	+.0595	+.0740	+.0792	+.0811	+.0816						
$a/b = 3/4$		R_x \ R_y	−.0008	−.0008	+.0000	+.0005	+.0008	+.0009						
	1.0	−.0008	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0006	+.0002	+.0001	−.0000	−.0001	−.0001	−.0001	+.0000	+.0000	+.0000	−.0000	−.0000	−.0000
	0.6	+.0016	+.0004	+.0002	−.0000	−.0001	−.0002	−.0002	+.0001	+.0000	−.0000	−.0001	−.0001	−.0001
	0.4	+.0039	+.0007	+.0001	−.0001	−.0002	−.0002	−.0002	+.0001	+.0000	−.0001	−.0003	−.0003	−.0004
	0.2	+.0207	+.0010	−.0001	−.0003	−.0003	−.0002	−.0002	+.0002	−.0003	−.0006	−.0007	−.0007	−.0007
	0	+.0233	0	+.0004	+.0006	+.0007	+.0007	+.0007	0	+.0018	+.0029	+.0034	+.0036	+.0036
		$R_y \rightarrow$	+.0233	+.0691	+.0791	+.0817	+.0824	+.0826						
$a/b = 1$		R_x \ R_y	−.0009	−.0005	+.0003	+.0007	+.0009	+.0009						
	1.0	−.0009	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0007	+.0002	+.0001	−.0000	−.0001	−.0001	−.0001	+.0000	+.0000	−.0000	−.0001	−.0001	−.0001
	0.6	+.0017	+.0004	+.0001	−.0001	−.0001	−.0001	−.0001	+.0001	+.0000	−.0001	−.0002	−.0002	−.0002
	0.4	+.0037	+.0007	+.0000	−.0002	−.0002	−.0002	−.0002	+.0001	−.0000	−.0002	−.0004	−.0004	−.0004
	0.2	+.0209	+.0008	−.0002	−.0003	−.0002	−.0002	−.0002	+.0002	−.0004	−.0006	−.0007	−.0007	−.0007
	0	+.0270	0	+.0005	+.0007	+.0007	+.0008	+.0008	0	+.0023	+.0033	+.0036	+.0038	+.0038
		$R_y \rightarrow$	+.0270	+.0742	+.0811	+.0824	+.0826	+.0827						
$a/b = 3/2$		R_x \ R_y	−.0010	+.0001	+.0007	+.0008	+.0008	+.0008						
	1.0	−.0010	0	0	0	0	0	0	0	0	0	0	0	0
	0.8	+.0007	+.0002	−.0000	−.0001	−.0001	−.0000	−.0000	+.0000	−.0000	−.0001	−.0001	−.0001	−.0001
	0.6	+.0016	+.0004	−.0000	−.0001	−.0001	−.0001	−.0001	+.0001	−.0000	−.0002	−.0003	−.0003	−.0003
	0.4	+.0031	+.0005	−.0001	−.0002	−.0001	−.0001	−.0001	+.0001	−.0002	−.0004	−.0004	−.0005	−.0005
	0.2	+.0232	+.0005	−.0003	−.0002	−.0001	−.0001	−.0001	+.0001	−.0006	−.0007	−.0006	−.0006	−.0006
	0	+.0334	0	+.0006	+.0007	+.0008	+.0008	+.0008	0	+.0030	+.0036	+.0038	+.0039	+.0039
		$R_y \rightarrow$	+.0334	+.0789	+.0823	+.0826	+.0826	+.0826						



Moment = (Coefficient)(pb^2)

Reaction = (Coefficient)(pb)



POSITIVE SIGN CONVENTION

FIGURE 16.—*Plate fixed along three edges—Hinged along one edge, moment and reaction coefficients, Load VII, 1/6 uniformly varying load.*

			M_x						M_y					
	y/b	x/a →	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
a/b = 1/8		R_x \ R_y	+.6697	+5.4276	+4.9866	+4.6846	+4.5088	+4.4508						
	1.0	+.6697	+.2000	+.2000	+.2000	+.2000	+.2000	+.2000	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000
	0.8	−3.0788	−.1142	−.0481	−.0003	+.0322	+.0509	+.0571	−.0228	−.0080	+.0046	+.0142	+.0201	+.0221
	0.6	−.0357	−.0072	−.0050	−.0016	+.0015	+.0037	+.0045	−.0014	−.0017	−.0024	−.0031	−.0036	−.0038
	0.4	+.0069	−.0001	−.0002	−.0001	−.0000	−.0001	−.0001	−.0000	−.0001	−.0002	−.0003	−.0004	−.0004
	0.2	+.0007	+.0000	+.0000	−.0000	−.0000	−.0000	−.0000	+.0000	+.0000	−.0000	−.0000	−.0000	−.0000
	0	+.0001	0	+.0000	+.0000	+.0000	+.0000	+.0000	0	+.0000	+.0000	+.0000	+.0000	+.0000
		R_y →	+.0001	−.0000	−.0003	−.0003	−.0005	+.0015						
a/b = 1/4		R_x \ R_y	+1.5770	+5.9371	+4.6774	+3.8986	+3.4755	+3.3414						
	1.0	+1.5770	+.2000	+.2000	+.2000	+.2000	+.2000	+.2000	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000
	0.8	−5.4606	−.3206	−.1104	+.0193	+.0961	+.1366	+.1491	−.0641	−.0052	+.0485	+.0901	+.1160	+.1247
	0.6	−.4874	−.0780	−.0459	−.0097	+.0199	+.0387	+.0452	−.0160	−.0144	−.0143	−.0143	−.0141	−.0140
	0.4	+.0172	−.0119	−.0095	−.0039	+.0021	+.0065	+.0081	−.0024	−.0036	−.0059	−.0081	−.0097	−.0103
	0.2	+.0192	−.0006	−.0011	−.0009	−.0002	+.0004	+.0006	−.0001	−.0006	−.0015	−.0023	−.0030	−.0032
	0	+.0045	0	+.0000	+.0000	+.0000	−.0000	−.0000	0	+.0001	+.0002	+.0001	−.0001	−.0001
		R_y →	+.0045	+.0048	+.0095	+.0094	+.0079	+.0070						
a/b = 3/8		R_x \ R_y	+2.4931	+5.9109	+4.0989	+3.1001	+2.5998	+2.4478						
	1.0	+2.4931	+.2000	+.2000	+.2000	+.2000	+.2000	+.2000	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000
	0.8	−6.6847	−.4602	−.1190	+.0567	+.1456	+.1870	+.1991	−.0920	+.0241	+.1285	+.2060	+.2526	+.2680
	0.6	−1.2696	−.2103	−.1015	−.0084	+.0576	+.0960	+.1085	−.0421	−.0275	−.0122	+.0026	+.0132	+.0171
	0.4	−.1792	−.0677	−.0432	−.0119	+.0157	+.0341	+.0404	−.0135	−.0145	−.0179	−.0210	−.0229	−.0235
	0.2	+.0538	−.0126	−.0118	−.0057	+.0014	+.0066	+.0086	−.0025	−.0054	−.0099	−.0144	−.0175	−.0186
	0	+.0436	0	−.0002	−.0012	−.0026	−.0038	−.0042	0	−.0010	−.0060	−.0130	−.0188	−.0210
		R_y →	+.0436	+.0886	+.0472	−.0272	−.0896	−.1135						
a/b = 1/2		R_x \ R_y	+3.2446	+5.5489	+3.5023	+2.4919	+2.0237	+1.8871						
	1.0	+3.2446	+.2000	+.2000	+.2000	+.2000	+.2000	+.2000	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000
	0.8	−7.2146	−.5260	−.0934	+.0934	+.1737	+.2065	+.2153	−.1052	+.0687	+.2158	+.3181	+.3767	+.3956
	0.6	−1.8920	−.3238	−.1302	+.0090	+.0945	+.1392	+.1529	−.0648	−.0284	+.0146	+.0542	+.0814	+.0910
	0.4	−.4721	−.1411	−.0771	−.0128	+.0366	+.0663	+.0761	−.0282	−.0243	−.0215	−.0176	−.0139	−.0124
	0.2	+.1106	−.0326	−.0274	−.0113	+.0041	+.0140	+.0174	−.0065	−.0143	−.0254	−.0351	−.0415	−.0437
	0	+.1191	0	−.0012	−.0061	−.0122	−.0170	−.0187	0	−.0061	−.0306	−.0611	−.0848	−.0937
		R_y →	+.1191	+.2253	+.0313	−.2224	−.4123	−.4810						
a/b = 3/4		R_x \ R_y	+4.1774	+4.5223	+2.5688	+1.7997	+1.5009	+1.4223						
	1.0	+4.1774	+.2000	+.2000	+.2000	+.2000	+.2000	+.2000	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000
	0.8	−7.4798	−.5275	−.0110	+.1444	+.1893	+.2006	+.2025	−.1055	+.1707	+.3683	+.4868	+.5481	+.5670
	0.6	−2.3733	−.4145	−.1012	+.0607	+.1307	+.1565	+.1626	−.0829	+.0025	+.1016	+.1829	+.2333	+.2502
	0.4	−.7580	−.2174	−.0853	+.0102	+.0619	+.0842	+.0900	−.0435	−.0269	−.0030	+.0226	+.0413	+.0480
	0.2	+.2313	−.0565	−.0393	−.0124	+.0024	+.0074	+.0084	−.0113	−.0344	−.0609	−.0822	−.0959	−.1006
	0	+.2415	0	−.0058	−.0230	−.0408	−.0530	−.0573	0	−.0292	−.1151	−.2041	−.2651	−.2863
		R_y →	+.2415	+.3038	−.2583	−.7761	−1.0911	−1.1933						
a/b = 1		R_x \ R_y	+4.5863	+3.6124	+2.0176	+1.5352	+1.3940	+1.3645						
	1.0	+4.5863	+.2000	+.2000	+.2000	+.2000	+.2000	+.2000	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000
	0.8	−7.4825	−.4636	+.0610	+.1679	+.1824	+.1791	+.1768	−.0927	+.2639	+.4749	+.5836	+.6341	+.6487
	0.6	−2.3598	−.4029	−.0359	+.0984	+.1318	+.1340	+.1324	−.0806	+.0488	+.1822	+.2758	+.3272	+.3433
	0.4	−.7966	−.2255	−.0526	+.0361	+.0636	+.0666	+.0655	−.0451	−.0178	+.0229	+.0593	+.0819	+.0893
	0.2	+.2918	−.0632	−.0324	−.0086	−.0056	−.0097	−.0118	−.0126	−.0504	−.0885	−.1176	−.1355	−.1415
	0	+.3067	0	−.0131	−.0404	−.0631	−.0762	−.0804	0	−.0657	−.2021	−.3153	−.3811	−.4019
		R_y →	+.3067	+.1274	−.6419	−1.1518	−1.3912	−1.4576						
a/b = 3/2		R_x \ R_y	+4.8170	+2.5171	+1.5692	+1.4276	+1.4268	+1.4337						
	1.0	+4.8170	+.2000	+.2000	+.2000	+.2000	+.2000	+.2000	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000
	0.8	−7.6698	−.3365	+.1372	+.1743	+.1627	+.1526	+.1493	−.0673	+.4020	+.5934	+.6651	+.6905	+.6967
	0.6	−2.0746	−.3261	+.0566	+.1203	+.1114	+.0985	+.0939	−.0652	+.1391	+.2901	+.3639	+.3932	+.4006
	0.4	−.7384	−.1975	+.0076	+.0543	+.0475	+.0367	+.0328	−.0395	+.0103	+.0656	+.0969	+.1096	+.1127
	0.2	+.3738	−.0607	−.0163	−.0110	−.0213	−.0289	−.0313	−.0121	−.0757	−.1255	−.1550	−.1690	−.1729
	0	+.3532	0	−.0314	−.0664	−.0846	−.0917	−.0934	0	−.1570	−.3320	−.4231	−.4584	−.4670
		R_y →	+.3532	−.3898	−1.1608	−1.4315	−1.4935	−1.5015						

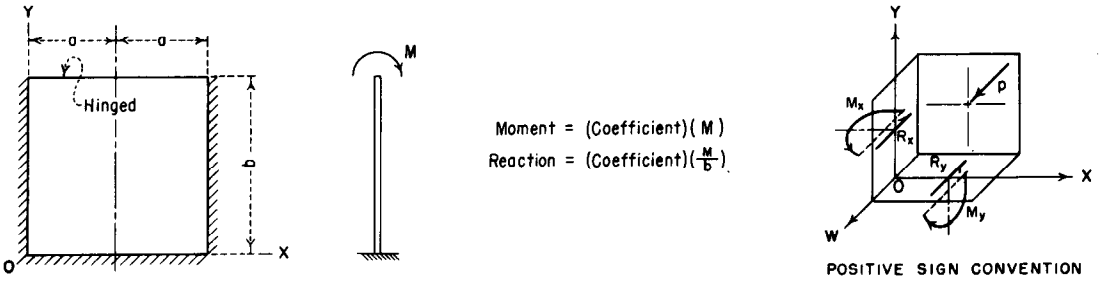
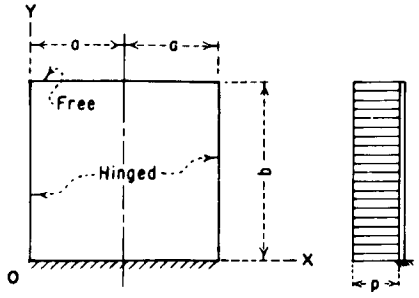


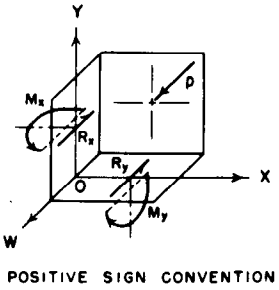
FIGURE 17.—*Plate fixed along three edges—Hinged along one edge, moment and reaction coefficients, Load VIII, moment at hinged edge.*

			M_x						M_y					
	y/b	R_x \ x/a	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
a/b = 1/8	1.0	+.1309	0	−.0029	−.0051	−.0067	−.0077	−.0080	0	0	0	0	0	0
	0.8	+.1222	0	−.0028	−.0050	−.0065	−.0074	−.0077	0	−.0005	−.0009	−.0012	−.0014	−.0015
	0.6	+.1250	0	−.0028	−.0050	−.0065	−.0074	−.0077	0	−.0006	−.0010	−.0013	−.0015	−.0016
	0.4	+.1260	0	−.0027	−.0048	−.0063	−.0072	−.0075	0	−.0006	−.0011	−.0015	−.0017	−.0017
	0.2	+.1057	0	−.0021	−.0037	−.0048	−.0055	−.0057	0	−.0007	−.0012	−.0016	−.0018	−.0019
	0	−.0003	0	+.0005	+.0009	+.0012	+.0014	+.0015	0	+.0025	+.0046	+.0061	+.0070	+.0073
		R_x \ R_y	−.0003	+.0869	+.1326	+.1619	+.1783	+.1831						
a/b = 1/4	1.0	+.2949	0	−.0114	−.0203	−.0266	−.0304	−.0317	0	0	0	0	0	0
	0.8	+.2347	0	−.0108	−.0191	−.0250	−.0285	−.0297	0	−.0020	−.0035	−.0046	−.0052	−.0054
	0.6	+.2476	0	−.0102	−.0180	−.0235	−.0267	−.0278	0	−.0026	−.0047	−.0062	−.0071	−.0074
	0.4	+.2347	0	−.0086	−.0150	−.0194	−.0219	−.0228	0	−.0028	−.0051	−.0068	−.0078	−.0082
	0.2	+.1211	0	−.0050	−.0081	−.0101	−.0011	−.0115	0	−.0019	−.0033	−.0043	−.0048	−.0050
	0	−.0971	0	+.0020	+.0037	+.0049	+.0056	+.0059	0	+.0101	+.0185	+.0245	+.0282	+.0294
		R_x \ R_y	−.0971	+.1737	+.2670	+.3251	+.3574	+.3677						
a/b = 3/8	1.0	+.5262	0	−.0236	−.0416	−.0543	−.0619	−.0644	0	0	0	0	0	0
	0.8	+.3276	0	−.0215	−.0378	−.0492	−.0560	−.0582	0	−.0044	−.0079	−.0103	−.0117	−.0122
	0.6	+.3389	0	−.0190	−.0330	−.0426	−.0482	−.0500	0	−.0060	−.0107	−.0142	−.0162	−.0169
	0.4	+.2910	0	−.0145	−.0245	−.0310	−.0346	−.0358	0	−.0056	−.0100	−.0131	−.0150	−.0156
	0.2	+.0752	0	−.0069	−.0105	−.0123	−.0130	−.0133	0	−.0009	−.0009	−.0006	−.0002	−.0001
	0	−.2069	0	+.0043	+.0079	+.0105	+.0121	+.0127	0	+.0215	+.0395	+.0527	+.0607	+.0634
		R_x \ R_y	−.2069	+.2568	+.3921	+.4779	+.5256	+.5410						
a/b = 1/2	1.0	+.8321	0	−.0356	−.0620	−.0801	−.0906	−.0941	0	0	0	0	0	0
	0.8	+.3840	0	−.0317	−.0548	−.0704	−.0794	−.0824	0	−.0073	−.0129	−.0169	−.0192	−.0200
	0.6	+.3852	0	−.0267	−.0452	−.0573	−.0641	−.0663	0	−.0094	−.0168	−.0220	−.0252	−.0262
	0.4	+.2928	0	−.0189	−.0307	−.0377	−.0413	−.0424	0	−.0070	−.0121	−.0154	−.0173	−.0179
	0.2	−.0161	0	−.0074	−.0099	−.0105	−.0105	−.0105	0	+.0036	+.0081	+.0124	+.0154	+.0165
	0	−.2870	0	+.0077	+.0140	+.0185	+.0213	+.0222	0	+.0385	+.0700	+.0927	+.1063	+.1108
		R_x \ R_y	−.2870	+.3368	+.5139	+.6225	+.6818	+.7007						
a/b = 3/4	1.0	+1.4911	0	−.0521	−.0863	−.1072	−.1182	−.1217	0	0	0	0	0	0
	0.8	+.4033	0	−.0451	−.0736	−.0904	−.0991	−.1017	0	−.0115	−.0196	−.0250	−.0281	−.0291
	0.6	+.3753	0	−.0359	−.0566	−.0677	−.0730	−.0745	0	−.0127	−.0213	−.0267	−.0295	−.0304
	0.4	+.2190	0	−.0230	−.0333	−.0375	−.0388	−.0391	0	−.0038	−.0041	−.0027	−.0011	−.0005
	0.2	−.1892	0	−.0054	−.0037	−.0007	+.0016	+.0024	0	+.0200	+.0405	+.0576	+.0687	+.0726
	0	−.3645	0	+.0155	+.0276	+.0361	+.0411	+.0427	0	+.0776	+.1382	+.1805	+.2054	+.2136
		R_x \ R_y	−.3645	+.4687	+.6982	+.8289	+.8973	+.9187						
a/b = 1	1.0	+1.9792	0	−.0600	−.0919	−.1070	−.1131	−.1146	0	0	0	0	0	0
	0.8	+.3776	0	−.0512	−.0768	−.0879	−.0918	−.0927	0	−.0128	−.0205	−.0246	−.0265	−.0271
	0.6	+.3266	0	−.0396	−.0562	−.0617	−.0627	−.0627	0	−.0114	−.0164	−.0177	−.0174	−.0171
	0.4	+.1419	0	−.0234	−.0288	−.0279	−.0259	−.0250	0	+.0043	+.0137	+.0237	+.0310	+.0337
	0.2	−.2923	0	−.0018	+.0049	+.0117	+.0161	+.0177	0	+.0397	+.0783	+.1089	+.1280	+.1345
	0	−.3642	0	+.0230	+.0401	+.0515	+.0580	+.0601	0	+.1150	+.2003	+.2574	+.2901	+.3007
		R_x \ R_y	−.3642	+.5636	+.8099	+.9373	+.9994	+1.0180						
a/b = 3/2	1.0	+2.4011	0	−.0670	−.0841	−.0814	−.0751	−.0723	0	0	0	0	0	0
	0.8	+.3458	0	−.0565	−.0685	−.0642	−.0578	−.0551	0	−.0126	−.0157	−.0142	−.0120	−.0111
	0.6	+.2741	0	−.0419	−.0460	−.0391	−.0323	−.0297	0	−.0056	+.0005	+.0103	+.0180	+.0208
	0.4	+.0773	0	−.0213	−.0161	−.0066	+.0003	+.0028	0	+.0216	+.0507	+.0763	+.0928	+.0985
	0.2	−.3443	0	+.0055	+.0202	+.0316	+.0384	+.0406	0	+.0754	+.1423	+.1898	+.2171	+.2260
	0	−.2922	0	+.0353	+.0583	+.0722	+.0794	+.0817	0	+.1765	+.2917	+.3608	+.3972	+.4084
		R_y	−.2922	+.6928	+.9244	+1.0146	+1.0474	+1.0554						



Moment = (Coefficient) (pb^2)

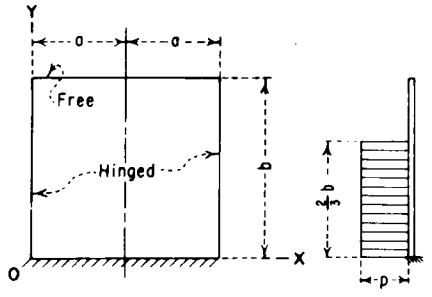
Reaction = (Coefficient) (pb)



POSITIVE SIGN CONVENTION

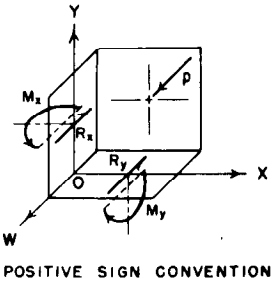
FIGURE 18.—*Plate fixed along one edge—Hinged along two opposite edges, moment and reaction coefficients, Load I, uniform load.*

			M_x						M_y					
	y/b	R_x \ x/a	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
$a/b = 1/8$	1.0	−.0005	0	−.0002	−.0003	−.0004	−.0005	−.0005	0	0	0	0	0	0
	0.8	+.0104	0	−.0005	−.0009	−.0012	−.0015	−.0014	0	+.0000	+.0001	+.0001	+.0001	+.0001
	0.6	+.0949	0	−.0020	−.0034	−.0045	−.0051	−.0053	0	−.0005	−.0009	−.0012	−.0013	−.0014
	0.4	+.1251	0	−.0026	−.0045	−.0059	−.0067	−.0070	0	−.0007	−.0012	−.0016	−.0018	−.0019
	0.2	+.1060	0	−.0021	−.0037	−.0048	−.0054	−.0056	0	−.0007	−.0012	−.0016	−.0019	−.0020
	0	+.0000	0	+.0005	+.0009	+.0012	+.0014	+.0015	0	+.0025	+.0046	+.0061	+.0070	+.0073
		R_x \ R_y	+.0000	+.0858	+.1332	+.1616	+.1779	+.1830						
$a/b = 1/4$	1.0	−.0012	0	−.0020	−.0039	−.0053	−.0062	−.0065	0	0	0	0	0	0
	0.8	+.0413	0	−.0031	−.0058	−.0078	−.0091	−.0095	0	+.0001	+.0001	+.0001	+.0001	+.0001
	0.6	+.1802	0	−.0063	−.0110	−.0142	−.0161	−.0167	0	−.0023	−.0041	−.0055	−.0063	−.0066
	0.4	+.2268	0	−.0072	−.0123	−.0157	−.0176	−.0183	0	−.0032	−.0058	−.0077	−.0088	−.0092
	0.2	+.1272	0	−.0046	−.0075	−.0091	−.0100	−.0103	0	−.0022	−.0039	−.0051	−.0058	−.0060
	0	−.0821	0	+.0019	+.0034	+.0045	+.0052	+.0054	0	+.0094	+.0170	+.0225	+.0258	+.0269
		R_x \ R_y	−.0821	+.1677	+.2555	+.3095	+.3389	+.3483						
$a/b = 3/8$	1.0	+.0280	0	−.0060	−.0113	−.0154	−.0179	−.0188	0	0	0	0	0	0
	0.8	+.0821	0	−.0073	−.0134	−.0178	−.0206	−.0215	0	−.0007	−.0014	−.0019	−.0023	−.0024
	0.6	+.2388	0	−.0108	−.0183	−.0232	−.0260	−.0269	0	−.0051	−.0092	−.0121	−.0139	−.0145
	0.4	+.2770	0	−.0109	−.0177	−.0218	−.0240	−.0246	0	−.0064	−.0115	−.0152	−.0174	−.0181
	0.2	+.1088	0	−.0060	−.0089	−.0101	−.0105	−.0106	0	−.0025	−.0041	−.0049	−.0052	−.0053
	0	−.1488	0	+.0035	+.0063	+.0083	+.0095	+.0099	0	+.0173	+.0314	+.0416	+.0477	+.0497
		R_x \ R_y	−.1488	+.2333	+.3475	+.4166	+.4538	+.4655						
$a/b = 1/2$	1.0	+.1033	0	−.0102	−.0190	−.0255	−.0296	−.0309	0	0	0	0	0	0
	0.8	+.1094	0	−.0112	−.0201	−.0265	−.0302	−.0315	0	−.0019	−.0037	−.0053	−.0063	−.0067
	0.6	+.2693	0	−.0143	−.0235	−.0291	−.0321	−.0330	0	−.0081	−.0144	−.0188	−.0215	−.0224
	0.4	+.2881	0	−.0133	−.0205	−.0241	−.0257	−.0262	0	−.0090	−.0157	−.0202	−.0228	−.0237
	0.2	+.0677	0	−.0065	−.0084	−.0085	−.0082	−.0081	0	−.0012	−.0009	+.0001	+.0010	+.0013
	0	−.1793	0	+.0055	+.0098	+.0128	+.0146	+.0151	0	+.0276	+.0492	+.0642	+.0729	+.0757
		R_x \ R_y	−.1793	+.2895	+.4246	+.5005	+.5392	+.5512						
$a/b = 3/4$	1.0	+.3075	0	−.0158	−.0281	−.0363	−.0409	−.0423	0	0	0	0	0	0
	0.8	+.1194	0	−.0161	−.0273	−.0341	−.0376	−.0386	0	−.0039	−.0076	−.0106	−.0124	−.0130
	0.6	+.2754	0	−.0185	−.0277	−.0320	−.0338	−.0343	0	−.0121	−.0206	−.0260	−.0290	−.0299
	0.4	+.2675	0	−.0158	−.0211	−.0223	−.0223	−.0222	0	−.0110	−.0175	−.0207	−.0220	−.0224
	0.2	+.0037	0	−.0060	−.0052	−.0031	−.0016	−.0011	0	+.0044	+.0111	+.0175	+.0219	+.0234
	0	−.1906	0	+.0096	+.0166	+.0210	+.0235	+.0243	0	+.0482	+.0828	+.1052	+.1176	+.1216
		R_x \ R_y	−.1906	+.3764	+.5274	+.6009	+.6352	+.6452						
$a/b = 1$	1.0	+.4673	0	−.0184	−.0304	−.0366	−.0392	−.0399	0	0	0	0	0	0
	0.8	+.1073	0	−.0184	−.0286	−.0329	−.0344	−.0346	0	−.0048	−.0091	−.0120	−.0137	−.0142
	0.6	+.2619	0	−.0203	−.0273	−.0288	−.0287	−.0285	0	−.0140	−.0220	−.0261	−.0277	−.0282
	0.4	+.2444	0	−.0165	−.0189	−.0175	−.0159	−.0154	0	−.0107	−.0142	−.0140	−.0128	−.0122
	0.2	−.0251	0	−.0047	−.0012	+.0024	+.0047	+.0054	0	+.0110	+.0248	+.0364	+.0438	+.0463
	0	−.1712	0	+.0133	+.0220	+.0273	+.0301	+.0310	0	+.0664	+.1101	+.1365	+.1507	+.1552
		R_x \ R_y	−.1712	+.4372	+.5845	+.6467	+.6731	+.6805						
$a/b = 3/2$	1.0	+.6045	0	−.0213	−.0285	−.0279	−.0257	−.0246	0	0	0	0	0	0
	0.8	+.0865	0	−.0209	−.0258	−.0241	−.0214	−.0204	0	−.0057	−.0092	−.0102	−.0102	−.0100
	0.6	+.2515	0	−.0217	−.0230	−.0196	−.0165	−.0154	0	−.0156	−.0200	−.0193	−.0177	−.0170
	0.4	+.2339	0	−.0161	−.0131	−.0085	−.0054	−.0043	0	−.0087	−.0048	+.0020	+.0071	+.0090
	0.2	−.0201	0	−.0016	+.0053	+.0104	+.0131	+.0140	0	+.0233	+.0477	+.0651	+.0750	+.0782
	0	−.1167	0	+.0190	+.0295	+.0350	+.0378	+.0386	0	+.0952	+.1474	+.1752	+.1888	+.1929
		R_y	−.1167	+.5160	+.6384	+.6754	+.6867	+.6891						



Moment = (Coefficient) (pb^2)

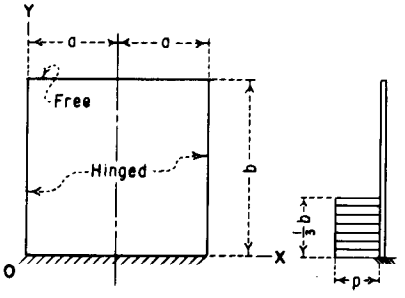
Reaction = (Coefficient) (pb)



POSITIVE SIGN CONVENTION

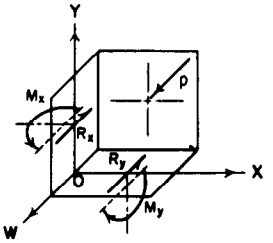
FIGURE 19.—*Plate fixed along one edge—Hinged along two opposite edges, moment and reaction coefficients, Load II, 2/3 uniform load.*

			M_x						M_y					
	y/b	R_x \ x/a	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
$a/b = 1/8$	1.0	−.0001	0	−.0000	−.0000	−.0000	−.0000	−.0000	0	0	0	0	0	0
	0.8	+.0001	0	−.0000	−.0000	−.0001	−.0001	−.0001	0	+.0000	+.0000	+.0000	+.0000	+.0000
	0.6	+.0011	0	−.0001	−.0003	−.0003	−.0004	−.0004	0	+.0000	+.0001	+.0001	+.0001	+.0001
	0.4	+.0304	0	−.0007	−.0013	−.0017	−.0020	−.0021	0	−.0001	−.0002	−.0003	−.0003	−.0003
	0.2	+.0966	0	−.0017	−.0030	−.0038	−.0043	−.0044	0	−.0007	−.0013	−.0017	−.0020	−.0021
	0	+.0059	0	+.0005	+.0008	+.0011	+.0013	+.0013	0	+.0023	+.0042	+.0055	+.0063	+.0066
		R_x \ R_y	+.0059	+.0830	+.1263	+.1528	+.1672	+.1717						
$a/b = 1/4$	1.0	−.0024	0	−.0002	−.0004	−.0006	−.0007	−.0008	0	0	0	0	0	0
	0.8	+.0019	0	−.0004	−.0007	−.0010	−.0012	−.0012	0	+.0001	+.0002	+.0002	+.0003	+.0003
	0.6	+.0099	0	−.0009	−.0016	−.0022	−.0025	−.0027	0	+.0000	+.0001	+.0001	+.0001	+.0001
	0.4	+.0614	0	−.0021	−.0036	−.0046	−.0052	−.0054	0	−.0008	−.0015	−.0021	−.0024	−.0025
	0.2	+.1193	0	−.0031	−.0047	−.0055	−.0059	−.0060	0	−.0024	−.0042	−.0054	−.0062	−.0064
	0	−.0327	0	+.0013	+.0023	+.0030	+.0034	+.0035	0	+.0065	+.0115	+.0150	+.0170	+.0177
		R_x \ R_y	−.0327	+.1414	+.2062	+.2421	+.2603	+.2659						
$a/b = 3/8$	1.0	−.0026	0	−.0009	−.0017	−.0023	−.0027	−.0028	0	0	0	0	0	0
	0.8	+.0080	0	−.0011	−.0021	−.0028	−.0033	−.0034	0	+.0001	+.0001	+.0002	+.0002	+.0002
	0.6	+.0207	0	−.0017	−.0031	−.0041	−.0047	−.0049	0	−.0003	−.0005	−.0008	−.0009	−.0010
	0.4	+.0759	0	−.0030	−.0050	−.0060	−.0066	−.0067	0	−.0018	−.0033	−.0045	−.0052	−.0054
	0.2	+.1236	0	−.0039	−.0052	−.0054	−.0054	−.0053	0	−.0034	−.0057	−.0071	−.0079	−.0081
	0	−.0496	0	+.0019	+.0033	+.0043	+.0048	+.0050	0	+.0094	+.0166	+.0214	+.0242	+.0250
		R_x \ R_y	−.0496	+.1783	+.2458	+.2806	+.2970	+.3018						
$a/b = 1/2$	1.0	+.0058	0	−.0015	−.0029	−.0039	−.0046	−.0048	0	0	0	0	0	0
	0.8	+.0128	0	−.0017	−.0032	−.0043	−.0050	−.0052	0	−.0001	−.0002	−.0003	−.0004	−.0004
	0.6	+.0263	0	−.0023	−.0040	−.0052	−.0058	−.0060	0	−.0007	−.0013	−.0019	−.0023	−.0024
	0.4	+.0788	0	−.0036	−.0054	−.0062	−.0065	−.0065	0	−.0026	−.0047	−.0062	−.0071	−.0073
	0.2	+.1174	0	−.0042	−.0048	−.0045	−.0041	−.0040	0	−.0039	−.0061	−.0070	−.0073	−.0074
	0	−.0477	0	+.0026	+.0045	+.0056	+.0062	+.0063	0	+.0131	+.0223	+.0279	+.0308	+.0317
		R_x \ R_y	−.0477	+.2064	+.2746	+.3043	+.3166	+.3200						
$a/b = 3/4$	1.0	+.0340	0	−.0024	−.0043	−.0056	−.0064	−.0066	0	0	0	0	0	0
	0.8	+.0148	0	−.0025	−.0043	−.0055	−.0061	−.0062	0	−.0003	−.0008	−.0012	−.0015	−.0016
	0.6	+.0267	0	−.0030	−.0047	−.0055	−.0058	−.0058	0	−.0012	−.0024	−.0034	−.0040	−.0042
	0.4	+.0752	0	−.0043	−.0054	−.0054	−.0052	−.0051	0	−.0036	−.0059	−.0073	−.0079	−.0080
	0.2	+.1134	0	−.0043	−.0037	−.0028	−.0022	−.0020	0	−.0042	−.0051	−.0046	−.0040	−.0038
	0	−.0337	0	+.0039	+.0062	+.0074	+.0080	+.0081	0	+.0196	+.0309	+.0369	+.0398	+.0406
		R_x \ R_y	−.0337	+.2458	+.3060	+.3256	+.3322	+.3338						
$a/b = 1$	1.0	+.0569	0	−.0027	−.0046	−.0056	−.0060	−.0061	0	0	0	0	0	0
	0.8	+.0131	0	−.0028	−.0045	−.0052	−.0054	−.0054	0	−.0004	−.0010	−.0015	−.0018	−.0019
	0.6	+.0233	0	−.0034	−.0046	−.0048	−.0047	−.0046	0	−.0014	−.0028	−.0036	−.0041	−.0042
	0.4	+.0711	0	−.0045	−.0048	−.0042	−.0038	−.0036	0	−.0041	−.0061	−.0067	−.0068	−.0067
	0.2	+.1190	0	−.0039	−.0026	−.0015	−.0009	−.0007	0	−.0040	−.0034	−.0017	−.0005	−.0001
	0	−.0171	0	+.0050	+.0074	+.0085	+.0091	+.0092	0	+.0248	+.0369	+.0426	+.0453	+.0461
		R_x \ R_y	−.0171	+.2705	+.3201	+.3328	+.3367	+.3376						
$a/b = 3/2$	1.0	+.0765	0	−.0032	−.0043	−.0042	−.0038	−.0036	0	0	0	0	0	0
	0.8	+.0102	0	−.0033	−.0041	−.0037	−.0032	−.0030	0	−.0005	−.0011	−.0014	−.0014	−.0014
	0.6	+.0180	0	−.0037	−.0039	−.0032	−.0026	−.0024	0	−.0018	−.0028	−.0029	−.0028	−.0027
	0.4	+.0688	0	−.0044	−.0036	−.0025	−.0019	−.0017	0	−.0046	−.0053	−.0047	−.0040	−.0037
	0.2	+.1465	0	−.0030	−.0011	+.0000	+.0005	+.0007	0	−.0030	−.0001	+.0026	+.0042	+.0046
	0	+.0106	0	+.0064	+.0088	+.0098	+.0102	+.0103	0	+.0321	+.0439	+.0488	+.0510	+.0516
		R_y	+.0106	+.2977	+.3305	+.3360	+.3372	+.3374						



Moment = (Coefficient) (pb^2)

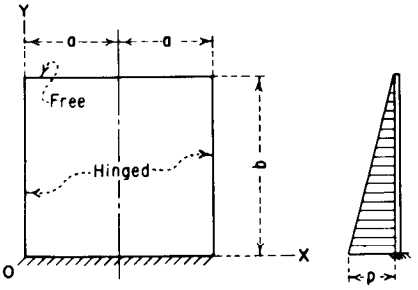
Reaction = (Coefficient) (pb)



POSITIVE SIGN CONVENTION

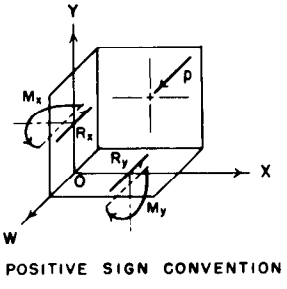
FIGURE 20.—*Plate fixed along one edge—Hinged along two opposite edges, moment and reaction coefficients, Load III, 1/3 uniform load.*

			M_x						M_y					
	y/b	R_x \ x/a	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
$a/b = 1/8$	1.0	+.0094	0	−.0003	−.0006	−.0008	−.0010	−.0010	0	0	0	0	0	0
	0.8	+.0253	0	−.0006	−.0011	−.0015	−.0017	−.0017	0	−.0001	−.0002	−.0002	−.0002	−.0003
	0.6	+.0500	0	−.0011	−.0020	−.0026	−.0030	−.0031	0	−.0002	−.0004	−.0005	−.0006	−.0006
	0.4	+.0758	0	−.0016	−.0028	−.0037	−.0042	−.0044	0	−.0004	−.0007	−.0009	−.0011	−.0011
	0.2	+.0833	0	−.0015	−.0028	−.0036	−.0041	−.0042	0	−.0006	−.0010	−.0013	−.0015	−.0016
	0	+.0043	0	+.0004	+.0008	+.0010	+.0012	+.0012	0	+.0021	+.0039	+.0051	+.0058	+.0061
		R_x \ R_y	+.0043	+.0775	+.1180	+.1417	+.1551	+.1591						
$a/b = 1/4$	1.0	+.0249	0	−.0022	−.0040	−.0054	−.0062	−.0065	0	0	0	0	0	0
	0.8	+.0548	0	−.0028	−.0051	−.0067	−.0077	−.0081	0	−.0004	−.0006	−.0008	−.0010	−.0010
	0.6	+.1014	0	−.0040	−.0070	−.0091	−.0104	−.0108	0	−.0012	−.0021	−.0028	−.0032	−.0033
	0.4	+.1388	0	−.0046	−.0078	−.0100	−.0113	−.0117	0	−.0019	−.0034	−.0046	−.0052	−.0055
	0.2	+.1003	0	−.0033	−.0053	−.0065	−.0071	−.0072	0	−.0018	−.0031	−.0041	−.0046	−.0048
	0	−.0513	0	+.0014	+.0025	+.0033	+.0038	+.0040	0	+.0071	+.0127	+.0167	+.0191	+.0199
		R_x \ R_y	−.0513	+.1404	+.2080	+.2476	+.2688	+.2754						
$a/b = 3/8$	1.0	+.0631	0	−.0054	−.0099	−.0133	−.0154	−.0160	0	0	0	0	0	0
	0.8	+.0852	0	−.0060	−.0108	−.0142	−.0163	−.0170	0	−.0011	−.0020	−.0026	−.0030	−.0031
	0.6	+.1388	0	−.0071	−.0122	−.0156	−.0176	−.0183	0	−.0027	−.0050	−.0066	−.0076	−.0079
	0.4	+.1701	0	−.0070	−.0116	−.0143	−.0158	−.0162	0	−.0038	−.0069	−.0091	−.0104	−.0108
	0.2	+.0890	0	−.0044	−.0064	−.0071	−.0074	−.0074	0	−.0021	−.0033	−.0040	−.0043	−.0044
	0	−.0960	0	+.0025	+.0045	+.0059	+.0068	+.0071	0	+.0124	+.0225	+.0296	+.0339	+.0353
		R_x \ R_y	−.0960	+.1886	+.2717	+.3203	+.3458	+.3538						
$a/b = 1/2$	1.0	+.1322	0	−.0087	−.0159	−.0210	−.0241	−.0252	0	0	0	0	0	0
	0.8	+.1049	0	−.0090	−.0159	−.0207	−.0235	−.0244	0	−.0021	−.0038	−.0050	−.0058	−.0061
	0.6	+.1584	0	−.0096	−.0161	−.0201	−.0224	−.0231	0	−.0045	−.0080	−.0106	−.0121	−.0127
	0.4	+.1757	0	−.0087	−.0136	−.0161	−.0173	−.0176	0	−.0053	−.0092	−.0119	−.0134	−.0139
	0.2	+.0595	0	−.0047	−.0060	−.0060	−.0058	−.0057	0	−.0011	−.0010	−.0004	+.0002	+.0005
	0	−.1169	0	+.0040	+.0070	+.0091	+.0103	+.0107	0	+.0198	+.0351	+.0455	+.0515	+.0535
		R_x \ R_y	−.1169	+.2296	+.3261	+.3786	+.4050	+.4130						
$a/b = 3/4$	1.0	+.3017	0	−.0132	−.0230	−.0292	−.0326	−.0337	0	0	0	0	0	0
	0.8	+.1125	0	−.0129	−.0214	−.0265	−.0291	−.0299	0	−.0036	−.0065	−.0086	−.0098	−.0102
	0.6	+.1595	0	−.0126	−.0194	−.0227	−.0242	−.0246	0	−.0066	−.0114	−.0145	−.0162	−.0168
	0.4	+.1576	0	−.0104	−.0142	−.0151	−.0152	−.0152	0	−.0060	−.0093	−.0109	−.0114	−.0115
	0.2	+.0115	0	−.0043	−.0036	−.0021	−.0011	−.0007	0	+.0030	+.0080	+.0128	+.0161	+.0172
	0	−.1259	0	+.0070	+.0119	+.0151	+.0168	+.0174	0	+.0348	+.0594	+.0753	+.0842	+.0871
		R_x \ R_y	−.1259	+.2925	+.3991	+.4504	+.4744	+.4816						
$a/b = 1$	1.0	+.4312	0	−.0154	−.0247	−.0293	−.0312	−.0317	0	0	0	0	0	0
	0.8	+.1046	0	−.0147	−.0224	−.0256	−.0268	−.0270	0	−.0043	−.0073	−.0093	−.0103	−.0106
	0.6	+.1468	0	−.0139	−.0191	−.0205	−.0205	−.0204	0	−.0073	−.0115	−.0135	−.0143	−.0145
	0.4	+.1380	0	−.0109	−.0125	−.0117	−.0107	−.0103	0	−.0050	−.0059	−.0048	−.0035	−.0029
	0.2	−.0109	0	−.0032	−.0006	+.0020	+.0036	+.0041	0	+.0082	+.0186	+.0275	+.0331	+.0350
	0	−.1123	0	+.0096	+.0159	+.0198	+.0219	+.0226	0	+.0482	+.0797	+.0990	+.1094	+.1128
		R_x \ R_y	−.1123	+.3359	+.4399	+.4841	+.5035	+.5090						
$a/b = 3/2$	1.0	+.5418	0	−.0175	−.0229	−.0223	−.0205	−.0197	0	0	0	0	0	0
	0.8	+.0931	0	−.0164	−.0201	−.0188	−.0168	−.0160	0	−.0048	−.0069	−.0073	−.0070	−.0069
	0.6	+.1335	0	−.0149	−.0160	−.0135	−.0113	−.0105	0	−.0073	−.0086	−.0073	−.0056	−.0050
	0.4	+.1257	0	−.0104	−.0083	−.0050	−.0027	−.0019	0	−.0023	+.0026	+.0086	+.0129	+.0144
	0.2	−.0072	0	−.0008	+.0043	+.0080	+.0101	+.0108	0	+.0178	+.0365	+.0501	+.0579	+.0604
	0	−.0724	0	+.0139	+.0216	+.0258	+.0279	+.0285	0	+.0694	+.1079	+.1289	+.1394	+.1426
		R_y	−.0724	+.3914	+.4785	+.5060	+.5149	+.5169						



Moment = (Coefficient) (pb^2)

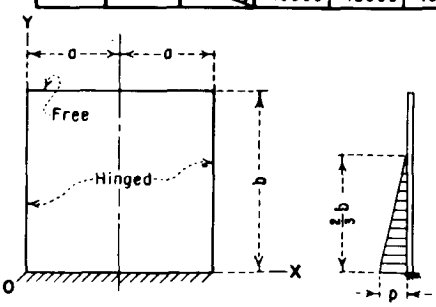
Reaction = (Coefficient) (pb)



POSITIVE SIGN CONVENTION

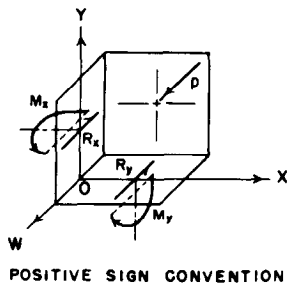
FIGURE 21.—*Plate fixed along one edge—Hinged along two opposite edges, moment and reaction coefficients, Load IV, uniformly varying load.*

			M_x						M_y					
	y/b	R_x \ x/a	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
a/b = 1/8	1.0	−.0004	0	−.0000	−.0000	−.0001	−.0001	−.0001	0	0	0	0	0	0
	0.8	+.0007	0	−.0001	−.0001	−.0002	−.0002	−.0002	0	+.0000	+.0000	+.0001	+.0001	+.0001
	0.6	+.0152	0	−.0004	−.0007	−.0010	−.0011	−.0012	0	−.0000	−.0001	−.0001	−.0001	−.0001
	0.4	+.0508	0	−.0011	−.0019	−.0024	−.0028	−.0029	0	−.0003	−.0005	−.0006	−.0007	−.0008
	0.2	+.0721	0	−.0013	−.0023	−.0030	−.0034	−.0035	0	−.0005	−.0009	−.0012	−.0013	−.0014
	0	+.0065	0	+.0004	+.0007	+.0009	+.0010	+.0011	0	+.0019	+.0035	+.0046	+.0052	+.0055
		R_x \ R_y	+.0065	+.0740	+.1100	+.1316	+.1436	+.1476						
a/b = 1/4	1.0	−.0025	0	−.0005	−.0009	−.0013	−.0015	−.0015	0	0	0	0	0	0
	0.8	+.0067	0	−.0008	−.0014	−.0019	−.0023	−.0024	0	+.0001	+.0002	+.0003	+.0003	+.0003
	0.6	+.0365	0	−.0017	−.0030	−.0039	−.0045	−.0047	0	−.0003	−.0006	−.0008	−.0010	−.0010
	0.4	+.0915	0	−.0028	−.0048	−.0061	−.0069	−.0071	0	−.0013	−.0024	−.0032	−.0037	−.0038
	0.2	+.0885	0	−.0026	−.0041	−.0049	−.0053	−.0054	0	−.0016	−.0029	−.0038	−.0043	−.0045
	0	−.0314	0	+.0011	+.0020	+.0026	+.0030	+.0031	0	+.0057	+.0102	+.0132	+.0150	+.0156
		R_x \ R_y	−.0314	+.1250	+.1807	+.2119	+.2282	+.2330						
a/b = 3/8	1.0	+.0015	0	−.0016	−.0030	−.0040	−.0047	−.0050	0	0	0	0	0	0
	0.8	+.0177	0	−.0019	−.0036	−.0048	−.0056	−.0059	0	−.0000	−.0001	−.0001	−.0001	−.0002
	0.6	+.0531	0	−.0030	−.0052	−.0067	−.0076	−.0079	0	−.0010	−.0019	−.0025	−.0029	−.0031
	0.4	+.1106	0	−.0041	−.0066	−.0081	−.0088	−.0090	0	−.0027	−.0048	−.0063	−.0072	−.0075
	0.2	+.0876	0	−.0033	−.0046	−.0050	−.0051	−.0051	0	−.0023	−.0038	−.0047	−.0052	−.0053
	0	−.0539	0	+.0018	+.0032	+.0041	+.0047	+.0049	0	+.0089	+.0158	+.0206	+.0234	+.0243
		R_x \ R_y	−.0539	+.1596	+.2213	+.2550	+.2718	+.2769						
a/b = 1/2	1.0	+.0192	0	−.0027	−.0051	−.0069	−.0080	−.0084	0	0	0	0	0	0
	0.8	+.0256	0	−.0030	−.0055	−.0073	−.0084	−.0088	0	−.0003	−.0007	−.0010	−.0012	−.0013
	0.6	+.0622	0	−.0040	−.0067	−.0085	−.0094	−.0097	0	−.0018	−.0033	−.0045	−.0052	−.0055
	0.4	+.1150	0	−.0049	−.0074	−.0086	−.0090	−.0091	0	−.0037	−.0065	−.0084	−.0095	−.0099
	0.2	+.0760	0	−.0036	−.0044	−.0042	−.0039	−.0038	0	−.0023	−.0033	−.0037	−.0037	−.0037
	0	−.0580	0	+.0026	+.0045	+.0058	+.0064	+.0067	0	+.0130	+.0226	+.0288	+.0322	+.0333
		R_x \ R_y	−.0580	+.1869	+.2529	+.2851	+.2999	+.3042						
a/b = 3/4	1.0	+.0720	0	−.0042	−.0076	−.0099	−.0111	−.0115	0	0	0	0	0	0
	0.8	+.0287	0	−.0043	−.0075	−.0094	−.0104	−.0107	0	−.0008	−.0017	−.0025	−.0030	−.0032
	0.6	+.0634	0	−.0052	−.0079	−.0092	−.0097	−.0098	0	−.0029	−.0052	−.0068	−.0077	−.0080
	0.4	+.1099	0	−.0058	−.0075	−.0077	−.0075	−.0074	0	−.0049	−.0078	−.0094	−.0101	−.0103
	0.2	+.0614	0	−.0036	−.0031	−.0022	−.0015	−.0013	0	−.0013	−.0005	+.0010	+.0021	+.0026
	0	−.0506	0	+.0042	+.0068	+.0084	+.0092	+.0094	0	+.0208	+.0340	+.0418	+.0459	+.0471
		R_x \ R_y	−.0506	+.2266	+.2910	+.3166	+.3271	+.3300						
a/b = 1	1.0	+.1140	0	−.0049	−.0082	−.0099	−.0106	−.0108	0	0	0	0	0	0
	0.8	+.0254	0	−.0050	−.0078	−.0090	−.0094	−.0095	0	−.0010	−.0021	−.0030	−.0035	−.0036
	0.6	+.0586	0	−.0057	−.0078	−.0082	−.0080	−.0080	0	−.0034	−.0057	−.0070	−.0076	−.0078
	0.4	+.1043	0	−.0061	−.0067	−.0061	−.0055	−.0053	0	−.0053	−.0075	−.0080	−.0078	−.0077
	0.2	+.0590	0	−.0031	−.0017	−.0004	+.0004	+.0007	0	+.0001	+.0030	+.0061	+.0082	+.0089
	0	−.0362	0	+.0054	+.0085	+.0102	+.0110	+.0113	0	+.0272	+.0426	+.0510	+.0552	+.0565
		R_x \ R_y	−.0362	+.2528	+.3102	+.3295	+.3367	+.3386						
a/b = 3/2	1.0	+.1502	0	−.0057	−.0077	−.0075	−.0069	−.0066	0	0	0	0	0	0
	0.8	+.0198	0	−.0057	−.0071	−.0065	−.0058	−.0054	0	−.0012	−.0022	−.0026	−.0026	−.0026
	0.6	+.0526	0	−.0062	−.0065	−.0055	−.0046	−.0042	0	−.0039	−.0054	−.0055	−.0051	−.0049
	0.4	+.1036	0	−.0060	−.0049	−.0034	−.0024	−.0021	0	−.0054	−.0055	−.0040	−.0027	−.0022
	0.2	+.0748	0	−.0020	+.0004	+.0020	+.0028	+.0030	0	+.0029	+.0091	+.0139	+.0166	−.0174
	0	−.0083	0	+.0074	+.0107	+.0123	+.0131	+.0133	0	+.0369	+.0537	+.0617	+.0654	+.0666
		R_y	−.0083	+.2838	+.3265	+.3366	+.3393	+.3398						



Moment = (Coefficient)(pb^2)

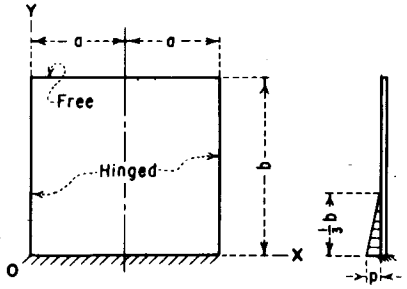
Reaction = (Coefficient)(pb)



POSITIVE SIGN CONVENTION

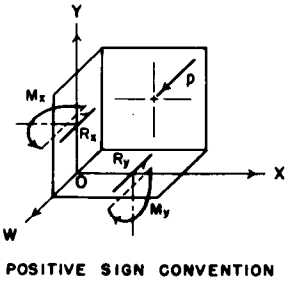
FIGURE 22.—*Plate fixed along one edge—Hinged along two opposite edges, moment and reaction coefficients, Load V, 2/3 uniformly varying load.*

			M_x						M_y					
	y/b	R_x \ x/a	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
$a/b = 1/8$	1.0	+.0000	0	−.0000	−.0000	−.0000	−.0000	−.0000	0	0	0	0	0	0
	0.8	−.0002	0	−.0000	−.0000	−.0000	−.0000	−.0000	0	+.0000	+.0000	+.0000	+.0000	+.0000
	0.6	+.0001	0	−.0000	−.0001	−.0001	−.0001	−.0001	0	+.0000	+.0000	+.0000	+.0000	+.0000
	0.4	+.0057	0	−.0002	−.0003	−.0005	−.0005	−.0006	0	−.0000	−.0000	−.0000	−.0000	−.0000
	0.2	+.0395	0	−.0007	−.0011	−.0015	−.0016	−.0017	0	−.0003	−.0005	−.0006	−.0007	−.0007
	0	+.0111	0	+.0003	+.0005	+.0006	+.0007	+.0008	0	+.0014	+.0025	+.0032	+.0037	+.0038
		R_x \ R_y	+.0111	+.0616	+.0896	+.1043	+.1125	+.1149						
$a/b = 1/4$	1.0	−.0008	0	−.0001	−.0001	−.0002	−.0002	−.0002	0	0	0	0	0	0
	0.8	+.0004	0	−.0001	−.0002	−.0003	−.0003	−.0003	0	+.0000	+.0001	+.0001	+.0001	+.0001
	0.6	+.0030	0	−.0002	−.0005	−.0006	−.0007	−.0008	0	+.0000	+.0000	+.0000	+.0000	+.0000
	0.4	+.0133	0	−.0006	−.0010	−.0013	−.0015	−.0015	0	−.0002	−.0003	−.0004	−.0005	−.0005
	0.2	+.0488	0	−.0012	−.0017	−.0020	−.0021	−.0022	0	−.0009	−.0015	−.0020	−.0023	−.0024
	0	−.0008	0	+.0006	+.0011	+.0014	+.0016	+.0016	0	+.0032	+.0055	+.0070	+.0078	+.0080
		R_x \ R_y	−.0008	+.0923	+.1244	+.1400	+.1472	+.1493						
$a/b = 3/8$	1.0	−.0010	0	−.0002	−.0004	−.0006	−.0007	−.0008	0	0	0	0	0	0
	0.8	+.0020	0	−.0003	−.0006	−.0008	−.0009	−.0010	0	+.0000	+.0001	+.0001	+.0001	+.0001
	0.6	+.0051	0	−.0005	−.0009	−.0012	−.0013	−.0014	0	−.0000	−.0001	−.0001	−.0002	−.0002
	0.4	+.0174	0	−.0008	−.0014	−.0017	−.0019	−.0019	0	−.0004	−.0008	−.0010	−.0012	−.0013
	0.2	+.0529	0	−.0015	−.0019	−.0020	−.0019	−.0019	0	−.0013	−.0022	−.0028	−.0031	−.0032
	0	−.0047	0	+.0008	+.0014	+.0018	+.0020	+.0020	0	+.0040	+.0069	+.0088	+.0098	+.0101
		R_x \ R_y	−.0047	+.1091	+.1384	+.1518	+.1577	+.1593						
$a/b = 1/2$	1.0	+.0010	0	−.0004	−.0008	−.0011	−.0012	−.0013	0	0	0	0	0	0
	0.8	+.0033	0	−.0005	−.0009	−.0012	−.0014	−.0014	0	−.0000	−.0000	−.0001	−.0001	−.0001
	0.6	+.0066	0	−.0006	−.0011	−.0014	−.0016	−.0017	0	−.0001	−.0003	−.0004	−.0005	−.0006
	0.4	+.0181	0	−.0010	−.0015	−.0018	−.0018	−.0018	0	−.0006	−.0011	−.0015	−.0018	−.0018
	0.2	+.0515	0	−.0016	−.0018	−.0016	−.0015	−.0014	0	−.0016	−.0024	−.0029	−.0030	−.0031
	0	−.0009	0	+.0011	+.0018	+.0022	+.0024	+.0024	0	+.0054	+.0089	+.0109	+.0119	+.0122
		R_x \ R_y	−.0009	+.1211	+.1488	+.1593	+.1632	+.1642						
$a/b = 3/4$	1.0	+.0083	0	−.0006	−.0012	−.0015	−.0017	−.0018	0	0	0	0	0	0
	0.8	+.0038	0	−.0007	−.0012	−.0015	−.0016	−.0017	0	−.0001	−.0002	−.0003	−.0004	−.0004
	0.6	+.0068	0	−.0008	−.0013	−.0015	−.0016	−.0016	0	−.0003	−.0006	−.0008	−.0010	−.0011
	0.4	+.0168	0	−.0012	−.0015	−.0015	−.0014	−.0014	0	−.0008	−.0015	−.0018	−.0020	−.0021
	0.2	+.0518	0	−.0016	−.0014	−.0011	−.0008	−.0008	0	−.0018	−.0023	−.0023	−.0022	−.0021
	0	+.0087	0	+.0015	+.0023	+.0027	+.0029	+.0029	0	+.0077	+.0117	+.0136	+.0144	+.0147
		R_x \ R_y	+.0087	+.1369	+.1593	+.1652	+.1669	+.1673						
$a/b = 1$	1.0	+.0142	0	−.0007	−.0012	−.0015	−.0016	−.0016	0	0	0	0	0	0
	0.8	+.0034	0	−.0008	−.0012	−.0014	−.0014	−.0014	0	−.0001	−.0002	−.0004	−.0005	−.0005
	0.6	+.0059	0	−.0009	−.0013	−.0013	−.0013	−.0012	0	−.0003	−.0007	−.0009	−.0010	−.0011
	0.4	+.0152	0	−.0013	−.0013	−.0012	−.0010	−.0010	0	−.0010	−.0015	−.0017	−.0017	−.0017
	0.2	+.0554	0	−.0015	−.0010	−.0007	−.0005	−.0004	0	−.0019	−.0020	−.0016	−.0013	−.0011
	0	+.0179	0	+.0019	+.0027	+.0030	+.0032	+.0032	0	+.0095	+.0135	+.0152	+.0159	+.0161
		R_x \ R_y	+.0179	+.1462	+.1635	+.1669	+.1678	+.1680						
$a/b = 3/2$	1.0	+.0193	0	−.0009	−.0012	−.0011	−.0010	−.0009	0	0	0	0	0	0
	0.8	+.0026	0	−.0009	−.0011	−.0010	−.0008	−.0008	0	−.0001	−.0003	−.0003	−.0004	−.0004
	0.6	+.0046	0	−.0010	−.0010	−.0008	−.0007	−.0006	0	−.0004	−.0007	−.0007	−.0007	−.0007
	0.4	+.0135	0	−.0013	−.0010	−.0007	−.0005	−.0004	0	−.0011	−.0014	−.0012	−.0010	−.0010
	0.2	+.0679	0	−.0012	−.0006	−.0002	−.0001	−.0000	0	−.0018	−.0011	−.0004	−.0000	+.0001
	0	+.0320	0	+.0024	+.0031	+.0034	+.0035	+.0035	0	+.0119	+.0155	+.0168	+.0174	+.0175
		R_y	+.0320	+.1557	+.1662	+.1675	+.1677	+.1678						



Moment = (Coefficient)(pb^2)

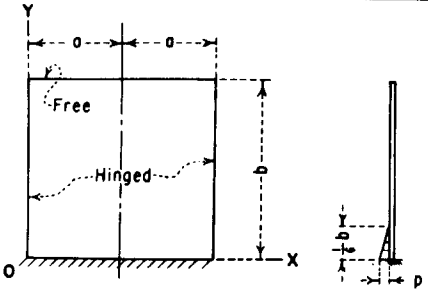
Reaction = (Coefficient)(pb)



POSITIVE SIGN CONVENTION

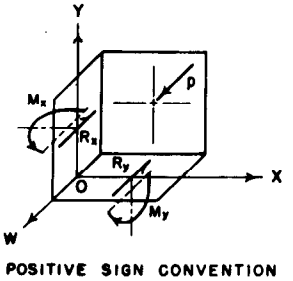
FIGURE 23.—*Plate fixed along one edge—Hinged along two opposite edges, moment and reaction coefficients, Load VI, 1/3 uniformly varying load.*

			M_x						M_y					
	y/b	R_x \ x/a	0	0.2	0.4	0.6	0.8	1.0	0	0 2	0.4	0.6	0.8	1.0
$a/b = 1/8$	1.0	−.0000	0	−.0000	−.0000	−.0000	−.0000	−.0000	0	0	0	0	0	0
	0.8	−.0000	0	−.0000	−.0000	−.0000	−.0000	−.0000	0	+.0000	+.0000	+.0000	+.0000	+.0000
	0.6	−.0000	0	−.0000	−.0000	−.0000	−.0000	−.0000	0	+.0000	+.0000	+.0000	+.0000	+.0000
	0.4	+.0002	0	−.0000	−.0001	−.0001	−.0001	−.0001	0	+.0000	+.0000	+.0000	+.0000	+.0000
	0.2	+.0134	0	−.0002	−.0003	−.0004	−.0004	−.0004	0	−.0001	−.0001	−.0001	−.0001	−.0001
	0	+.0103	0	+.0002	+.0003	+.0004	+.0004	+.0004	0	+.0008	+.0014	+.0018	+.0020	+.0020
		R_x \ R_y	+.0103	+.0459	+.0630	+.0699	+.0739	+.0750						
$a/b = 1/4$	1.0	−.0002	0	−.0000	−.0000	−.0000	−.0000	−.0000	0	0	0	0	0	0
	0.8	+.0000	0	−.0000	−.0000	−.0001	−.0001	−.0001	0	+.0000	+.0000	+.0000	+.0000	+.0000
	0.6	+.0007	0	−.0000	−.0001	−.0001	−.0001	−.0002	0	−.0000	−.0000	−.0000	−.0000	−.0000
	0.4	+.0015	0	−.0001	−.0002	−.0002	−.0003	−.0003	0	−.0000	−.0000	−.0000	−.0000	−.0000
	0.2	+.0124	0	−.0002	−.0004	−.0004	−.0004	−.0004	0	−.0001	−.0003	−.0003	−.0004	−.0004
	0	+.0101	0	+.0003	+.0004	+.0005	+.0006	+.0006	0	+.0013	+.0022	+.0027	+.0029	+.0030
		R_x \ R_y	+.0101	+.0603	+.0741	+.0792	+.0812	+.0815						
$a/b = 3/8$	1.0	−.0003	0	−.0000	−.0001	−.0001	−.0001	−.0001	0	0	0	0	0	0
	0.8	+.0003	0	−.0001	−.0001	−.0001	−.0002	−.0002	0	+.0000	+.0000	+.0000	+.0000	+.0000
	0.6	+.0007	0	−.0001	−.0002	−.0002	−.0002	−.0003	0	+.0000	−.0000	−.0000	−.0000	−.0000
	0.4	+.0023	0	−.0002	−.0003	−.0003	−.0004	−.0004	0	−.0000	−.0001	−.0001	−.0002	−.0002
	0.2	+.0149	0	−.0004	−.0005	−.0005	−.0004	−.0004	0	−.0002	−.0004	−.0006	−.0007	−.0007
	0	+.0108	0	+.0003	+.0005	+.0006	+.0006	+.0006	0	+.0014	+.0023	+.0028	+.0031	+.0032
		R_x \ R_y	+.0108	+.0669	+.0770	+.0808	+.0823	+.0826						
$a/b = 1/2$	1.0	+.0000	0	−.0001	−.0001	−.0002	−.0002	−.0002	0	0	0	0	0	0
	0.8	+.0005	0	−.0001	−.0002	−.0002	−.0002	−.0002	0	+.0000	+.0000	−.0000	−.0000	−.0000
	0.6	+.0010	0	−.0001	−.0002	−.0003	−.0003	−.0003	0	−.0000	−.0000	−.0001	−.0001	−.0001
	0.4	+.0024	0	−.0002	−.0003	−.0003	−.0003	−.0003	0	−.0001	−.0002	−.0002	−.0003	−.0003
	0.2	+.0148	0	−.0004	−.0004	−.0004	−.0003	−.0003	0	−.0003	−.0005	−.0006	−.0007	−.0007
	0	+.0140	0	+.0004	+.0006	+.0007	+.0007	+.0007	0	+.0018	+.0028	+.0033	+.0035	+.0036
		R_x \ R_y	+.0140	+.0710	+.0798	+.0824	+.0832	+.0833						
$a/b = 3/4$	1.0	+.0012	0	−.0001	−.0002	−.0003	−.0003	−.0003	0	0	0	0	0	0
	0.8	+.0006	0	−.0001	−.0002	−.0002	−.0003	−.0003	0	−.0000	−.0000	−.0000	−.0001	−.0001
	0.6	+.0010	0	−.0001	−.0002	−.0003	−.0003	−.0003	0	−.0000	−.0001	−.0001	−.0002	−.0002
	0.4	+.0022	0	−.0002	−.0003	−.0003	−.0002	−.0002	0	−.0001	−.0002	−.0003	−.0003	−.0003
	0.2	+.0153	0	−.0004	−.0003	−.0002	−.0002	−.0002	0	−.0004	−.0005	−.0005	−.0005	−.0005
	0	+.0202	0	+.0005	+.0007	+.0008	+.0008	+.0008	0	+.0024	+.0034	+.0038	+.0040	+.0040
		R_x \ R_y	+.0202	+.0760	+.0822	+.0833	+.0836	+.0836						
$a/b = 1$	1.0	+.0021	0	−.0001	−.0002	−.0002	−.0003	−.0003	0	0	0	0	0	0
	0.8	+.0005	0	−.0001	−.0002	−.0002	−.0002	−.0002	0	−.0000	−.0000	−.0001	−.0001	−.0001
	0.6	+.0009	0	−.0002	−.0002	−.0002	−.0002	−.0002	0	−.0000	−.0001	−.0001	−.0002	−.0002
	0.4	+.0018	0	−.0002	−.0002	−.0002	−.0002	−.0002	0	−.0001	−.0002	−.0003	−.0003	−.0003
	0.2	+.0166	0	−.0004	−.0002	−.0002	−.0001	−.0001	0	−.0004	−.0005	−.0004	−.0004	−.0004
	0	+.0252	0	+.0006	+.0008	+.0008	+.0008	+.0009	0	+.0028	+.0038	+.0041	+.0042	+.0043
		R_x \ R_y	+.0252	+.0786	+.0830	+.0835	+.0836	+.0836						
$a/b = 3/2$	1.0	+.0028	0	−.0001	−.0002	−.0002	−.0002	−.0001	0	0	0	0	0	0
	0.8	+.0004	0	−.0002	−.0002	−.0002	−.0001	−.0001	0	−.0000	−.0000	−.0001	−.0001	−.0001
	0.6	+.0007	0	−.0002	−.0002	−.0001	−.0001	−.0001	0	−.0001	−.0001	−.0001	−.0001	−.0001
	0.4	+.0014	0	−.0002	−.0002	−.0001	−.0001	−.0001	0	−.0002	−.0002	−.0002	−.0002	−.0001
	0.2	+.0204	0	−.0003	−.0001	−.0001	−.0000	−.0000	0	−.0004	−.0004	−.0002	−.0002	−.0002
	0	+.0327	0	+.0007	+.0008	+.0009	+.0009	+.0009	0	+.0034	+.0041	+.0044	+.0045	+.0045
		R_y	+.0327	+.0810	+.0834	+.0835	+.0835	+.0835						



Moment = (Coefficient)(pb^2)

Reaction = (Coefficient)(pb)



POSITIVE SIGN CONVENTION

FIGURE 24.—*Plate fixed along one edge—Hinged along two opposite edges, moment and reaction coefficients, Load VII, 1/6 uniformly varying load.*

			M_x						M_y					
	y/b	R_x \ x/a	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
$a/b = 1/8$	1.0	+5.9610	0	+.1162	+.0571	+.0179	−.0045	−.0118	0	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000
	0.8	−2.8341	0	+.0339	+.0564	+.0706	+.0784	+.0808	0	+.0243	+.0442	+.0589	+.0679	+.0709
	0.6	−.1464	0	+.0066	+.0124	+.0168	+.0196	+.0205	0	−.0004	−.0008	−.0010	−.0012	−.0012
	0.4	−.0022	0	+.0012	+.0022	+.0031	+.0036	+.0038	0	−.0004	−.0008	−.0011	−.0013	−.0014
	0.2	+.0016	0	+.0002	+.0003	+.0004	+.0005	+.0005	0	−.0001	−.0003	−.0003	−.0004	−.0004
	0	+.0030	0	−.0000	−.0000	−.0000	−.0000	−.0001	0	−.0001	−.0002	−.0002	−.0002	−.0003
		R_x \ R_y	+.0030	−.0011	−.0020	−.0028	−.0033	−.0035						
$a/b = 1/4$	1.0	+10.3797	0	+.0311	−.0653	−.1188	−.1457	−.1538	0	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000
	0.8	−4.3042	0	+.0467	+.0631	+.0665	+.0657	+.0651	0	+.0917	+.1644	+.2161	+.2470	+.2572
	0.6	−.7213	0	+.0212	+.0382	+.0501	+.0570	+.0592	0	+.0132	+.0255	+.0357	+.0423	+.0446
	0.4	−.1390	0	+.0090	+.0169	+.0230	+.0268	+.0281	0	+.0006	+.0012	+.0018	+.0022	+.0023
	0.2	+.0220	0	+.0024	+.0046	+.0063	+.0074	+.0078	0	−.0014	−.0026	−.0036	−.0042	−.0044
	0	+.0956	0	−.0010	−.0020	−.0027	−.0032	−.0033	0	−.0051	−.0098	−.0134	−.0158	−.0166
		R_x \ R_y	+.0956	−.0413	−.0800	−.1101	−.1302	−.1354						
$a/b = 3/8$	1.0	+13.4266	0	−.0276	−.1306	−.1774	−.1976	−.2033	0	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000
	0.8	−4.9000	0	+.0421	+.0370	+.0214	+.0090	+.0044	0	+.1615	+.2810	+.3607	+.4058	+.4204
	0.6	−1.1940	0	+.0251	+.0409	+.0487	+.0519	+.0526	0	+.0437	+.0839	+.1159	+.1363	+.1433
	0.4	−.3728	0	+.0134	+.0245	+.0323	+.0368	+.0383	0	+.0114	+.0221	+.0309	+.0368	+.0388
	0.2	+.0278	0	+.0038	+.0071	+.0095	+.0110	+.0115	0	−.0012	−.0022	−.0029	−.0032	−.0033
	0	+.1943	0	−.0031	−.0059	−.0081	−.0095	−.0100	0	−.0155	−.0294	−.0404	−.0474	−.0499
		R_x \ R_y	+.1943	−.1076	−.2039	−.2792	−.3269	−.3431						
$a/b = 1/2$	1.0	+15.7047	0	−.0725	−.1724	−.2109	−.2259	−.2298	0	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000
	0.8	−5.1848	0	+.0310	+.0035	−.0273	−.0473	−.0541	0	+.2237	+.3761	+.4702	+.5207	+.5365
	0.6	−1.4580	0	+.0221	+.0284	+.0257	+.0211	+.0192	0	+.0786	+.1492	+.2033	+.2367	+.2479
	0.4	−.5749	0	+.0129	+.0215	+.0257	+.0271	+.0274	0	+.0294	+.0567	+.0790	+.0935	+.0985
	0.2	−.0597	0	+.0039	+.0069	+.0086	+.0094	+.0096	0	+.0049	+.0096	+.0138	+.0166	+.0176
	0	+.1393	0	−.0036	−.0067	−.0090	−.0105	−.0110	0	−.0178	−.0334	−.0452	−.0525	−.0550
		R_x \ R_y	+.1393	−.1392	−.2596	−.3486	−.4023	−.4200						
$a/b = 3/4$	1.0	+19.0782	0	−.1285	−.2101	−.2343	−.2428	−.2451	0	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000
	0.8	−5.5535	0	+.0089	−.0465	−.0882	−.1110	−.1181	0	+.3275	+.5143	+.6138	+.6621	+.6765
	0.6	−1.7231	0	+.0175	+.0054	−.0141	−.0286	−.0337	0	+.1481	+.2712	+.3569	+.4059	+.4217
	0.4	−.9245	0	+.0142	+.0173	+.0136	+.0090	+.0071	0	+.0775	+.1480	+.2027	+.2368	+.2483
	0.2	−.4547	0	+.0090	+.0147	+.0173	+.0182	+.0184	0	+.0410	+.0794	+.1109	+.1315	+.1386
	0	−.1466	0	+.0030	+.0065	+.0101	+.0128	+.0138	0	+.0150	+.0323	+.0503	+.0640	+.0691
		R_x \ R_y	−.1466	−.1354	−.2227	−.2576	−.2627	−.2615						
$a/b = 1$	1.0	+21.4049	0	−.1478	−.2002	−.2064	−.2054	−.2046	0	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000
	0.8	−5.9317	0	−.0013	−.0588	−.0909	−.1048	−.1086	0	+.4123	+.6117	+.7060	+.7488	+.7612
	0.6	−1.8811	0	+.0218	+.0041	−.0159	−.0279	−.0317	0	+.2170	+.3816	+.4856	+.5414	+.5588
	0.4	−1.2060	0	+.0232	+.0275	+.0241	+.0207	+.0195	0	+.1354	+.2537	+.3405	+.3922	+.4093
	0.2	−.8257	0	+.0195	+.0326	+.0407	+.0455	+.0471	0	+.0951	+.1832	+.2540	+.2994	+.3150
	0	−.3387	0	+.0138	+.0285	+.0420	+.0516	+.0550	0	+.0690	+.1423	+.2101	+.2580	+.2751
		R_x \ R_y	−.3387	−.1330	−.1655	−.1250	−.0735	−.0517						
$a/b = 3/2$	1.0	+24.0577	0	−.1416	−.1333	−.0989	−.0729	−.0635	0	+1.0000	+1.0000	+1.0000	+1.0000	+1.0000
	0.8	−6.7445	0	−.0047	−.0329	−.0268	−.0139	−.0083	0	+.5409	+.7404	+.8224	+.8580	+.8683
	0.6	−1.9745	0	+.0346	+.0275	+.0305	+.0386	+.0425	0	+.3416	+.5577	+.6771	+.7370	+.7553
	0.4	−1.4705	0	+.0429	+.0577	+.0694	+.0795	+.0835	0	+.2475	+.4436	+.5744	+.6479	+.6716
	0.2	−1.1741	0	+.0402	+.0691	+.0915	+.1065	+.1118	0	+.1999	+.3789	+.5147	+.5976	+.6253
	0	−.4225	0	+.0337	+.0692	+.0992	+.1183	+.1248	0	+.1685	+.3461	+.4960	+.5917	+.6242
		R_y	−.4225	−.1575	−.1016	+.0130	+.0925	+.1189						

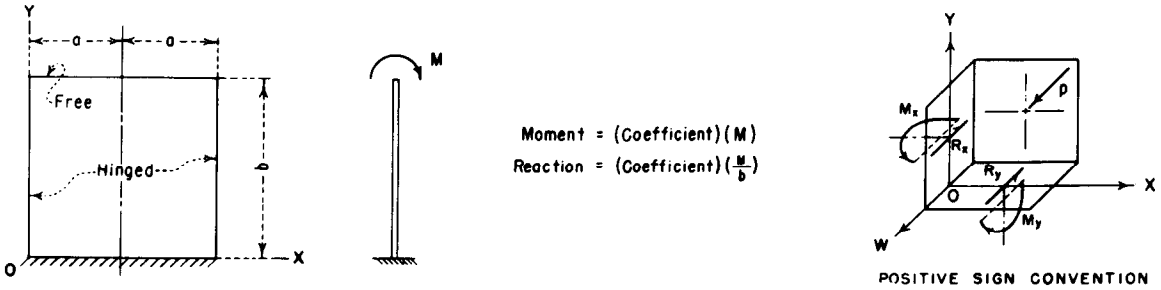
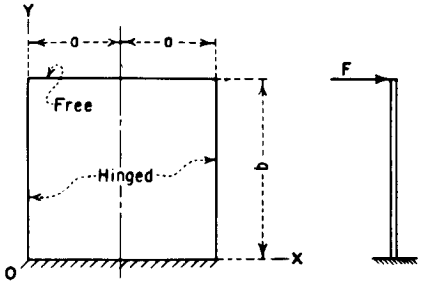


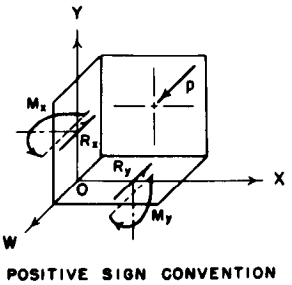
FIGURE 25.—*Plate fixed along one edge—Hinged along two opposite edges, moment and reaction coefficients, Load VIII, moment at free edge.*

			M_x						M_y					
	y/b	R_x \ x/a	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
$a/b = 1/8$	1.0	+1.2357	0	−.0203	−.0352	−.0455	−.0514	−.0534	0	0	0	0	0	0
	0.8	+.0124	0	−.0033	−.0062	−.0084	−.0099	−.0103	0	+.0011	+.0021	+.0029	+.0034	+.0035
	0.6	−.0039	0	−.0005	−.0010	−.0014	−.0017	−.0017	0	+.0003	+.0005	+.0007	+.0008	+.0009
	0.4	−.0012	0	−.0001	−.0002	−.0002	−.0003	−.0003	0	+.0001	+.0001	+.0001	+.0002	+.0002
	0.2	−.0002	0	−.0000	−.0000	−.0000	−.0000	−.0000	0	+.0000	+.0000	+.0000	+.0000	+.0000
	0	−.0002	0	+.0000	+.0000	+.0000	+.0000	+.0000	0	+.0000	+.0000	+.0000	+.0000	+.0000
		R_x \ R_y	−.0002	+.0001	+.0001	+.0001	+.0002	+.0002						
$a/b = 1/4$	1.0	+2.3808	0	−.0534	−.0894	−.1127	−.1257	−.1300	0	0	0	0	0	0
	0.8	+.0825	0	−.0186	−.0346	−.0465	−.0538	−.0563	0	+.0050	+.0091	+.0122	+.0140	+.0146
	0.6	−.0040	0	−.0069	−.0130	−.0178	−.0208	−.0219	0	+.0029	+.0054	+.0074	+.0086	+.0091
	0.4	−.0117	0	−.0024	−.0045	−.0062	−.0073	−.0077	0	+.0013	+.0025	+.0034	+.0040	+.0042
	0.2	−.0149	0	−.0006	−.0011	−.0015	−.0017	−.0018	0	+.0007	+.0013	+.0018	+.0021	+.0022
	0	−.0250	0	+.0002	+.0005	+.0006	+.0008	+.0008	0	+.0012	+.0023	+.0032	+.0038	+.0040
		R_x \ R_y	−.0250	+.0089	+.0168	+.0228	+.0273	+.0284						
$a/b = 3/8$	1.0	+3.4577	0	−.0873	−.1422	−.1761	−.1947	−.2007	0	0	0	0	0	0
	0.8	+.1637	0	−.0401	−.0730	−.0966	−.1107	−.1154	0	+.0087	+.0153	+.0198	+.0223	+.0231
	0.6	+.0175	0	−.0192	−.0361	−.0491	−.0572	−.0599	0	+.0069	+.0129	+.0174	+.0202	+.0212
	0.4	−.0344	0	−.0082	−.0156	−.0214	−.0251	−.0263	0	+.0048	+.0092	+.0126	+.0147	+.0155
	0.2	−.0967	0	−.0018	−.0034	−.0046	−.0054	−.0057	0	+.0047	+.0090	+.0124	+.0145	+.0153
	0	−.1369	0	+.0019	+.0037	+.0051	+.0060	+.0063	0	+.0097	+.0185	+.0254	+.0299	+.0314
		R_x \ R_y	−.1369	+.0494	+.0941	+.1295	+.1520	+.1599						
$a/b = 1/2$	1.0	+4.5104	0	−.1183	−.1878	−.2294	−.2519	−.2590	0	0	0	0	0	0
	0.8	+.2138	0	−.0614	−.1094	−.1423	−.1612	−.1674	0	+.0117	+.0199	+.0248	+.0274	+.0281
	0.6	+.0222	0	−.0322	−.0596	−.0800	−.0924	−.0965	0	+.0115	+.0212	+.0282	+.0323	+.0337
	0.4	−.0945	0	−.0141	−.0265	−.0360	−.0419	−.0439	0	+.0113	+.0213	+.0291	+.0339	+.0356
	0.2	−.2623	0	−.0018	−.0033	−.0045	−.0052	−.0054	0	+.0152	+.0288	+.0396	+.0464	+.0488
	0	−.2967	0	+.0059	+.0112	+.0154	+.0181	+.0190	0	+.0294	+.0560	+.0769	+.0904	+.0950
		R_x \ R_y	−.2967	+.1156	+.2193	+.3010	+.3530	+.3709						
$a/b = 3/4$	1.0	+6.4157	0	−.1605	−.2406	−.2834	−.3048	−.3114	0	0	0	0	0	0
	0.8	+.1940	0	−.0910	−.1525	−.1893	−.2084	−.2143	0	+.0190	+.0302	+.0362	+.0391	+.0400
	0.6	−.0730	0	−.0483	−.0853	−.1093	−.1223	−.1264	0	+.0259	+.0464	+.0605	+.0687	+.0713
	0.4	−.3103	0	−.0185	−.0332	−.0429	−.0481	−.0497	0	+.0353	+.0661	+.0894	+.1039	+.1087
	0.2	−.6568	0	+.0034	+.0070	+.0104	+.0128	+.0136	0	+.0538	+.1019	+.1394	+.1631	+.1712
	0	−.5452	0	+.0181	+.0342	+.0468	+.0548	+.0575	0	+.0905	+.1712	+.2342	+.2740	+.2876
		R_x \ R_y	−.5452	+.2510	+.4706	+.6371	+.7396	+.7741						
$a/b = 1$	1.0	+7.7716	0	−.1796	−.2494	−.2779	−.2885	−.2911	0	0	0	0	0	0
	0.8	+.1043	0	−.1042	−.1602	−.1855	−.1952	−.1976	0	+.0292	+.0459	+.0556	+.0609	+.0626
	0.6	−.2131	0	−.0532	−.0859	−.1012	−.1068	−.1081	0	+.0468	+.0830	+.1080	+.1227	+.1276
	0.4	−.5179	0	−.0161	−.0249	−.0271	−.0264	−.0258	0	+.0686	+.1272	+.1711	+.1981	+.2072
	0.2	−.9412	0	+.0120	+.0240	+.0348	+.0421	+.0447	0	+.1020	+.1917	+.2604	+.3032	+.3178
	0	−.6348	0	+.0314	+.0588	+.0796	+.0923	+.0966	0	+.1569	+.2940	+.3978	+.4617	+.4831
		R_x \ R_y	−.6348	+.3528	+.6445	+.8488	+.9658	+1.0036						
$a/b = 3/2$	1.0	+9.0313	0	−.1917	−.2216	−.2099	−.1933	−.1866	0	0	0	0	0	0
	0.8	−.0267	0	−.1133	−.1390	−.1302	−.1165	−.1108	0	+.0501	+.0796	+.0992	+.1112	+.1152
	0.6	−.3777	0	−.0541	−.0645	−.0536	−.0409	−.0358	0	+.0896	+.1563	+.2027	+.2305	+.2398
	0.4	−.7215	0	−.0081	+.0009	+.0172	+.0304	+.0353	0	+.1331	+.2416	+.3194	+.3658	+.3811
	0.2	−1.1699	0	+.0281	+.0562	+.0792	+.0937	+.0987	0	+.1898	+.3476	+.4604	+.5265	+.5482
	0	−.5965	0	+.0543	+.0981	+.1280	+.1449	+.1503	0	+.2714	+.4904	+.6400	+.7243	+.7513
		R_y	−.5965	+.5000	+.8389	+1.0190	+1.0977	+1.1190						



Moment = (Coefficient)(Fb)

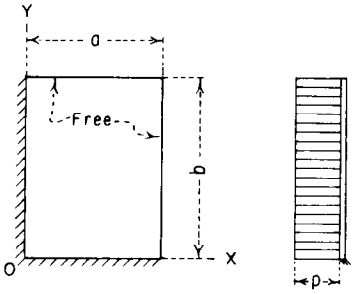
Reaction = (Coefficient)(F)



POSITIVE SIGN CONVENTION

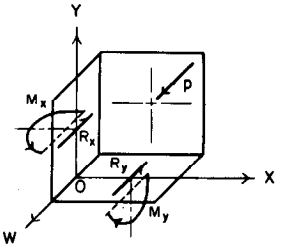
FIGURE 26.—*Plate fixed along one edge—Hinged along two opposite edges, moment and reaction coefficients, Load IX, line load at free edge.*

			M_x						M_y					
	y/b	R_x \ x/a	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
a/b = 1/8	1.0	+.1216	+.0077	+.0049	+.0028	+.0012	+.0003	0	0	0	0	0	0	0
	0.8	+.1267	+.0079	+.0050	+.0028	+.0013	+.0003	0	+.0016	+.0010	+.0006	+.0003	+.0001	+.0000
	0.6	+.1253	+.0078	+.0050	+.0028	+.0012	+.0003	0	+.0016	+.0010	+.0006	+.0002	+.0001	−.0000
	0.4	+.1256	+.0077	+.0049	+.0027	+.0012	+.0003	0	+.0015	+.0010	+.0005	+.0002	−.0000	−.0001
	0.2	+.1207	+.0068	+.0041	+.0021	+.0008	+.0001	0	+.0014	+.0008	+.0003	−.0001	−.0003	−.0004
	0	+.0041	0	+.0001	+.0005	+.0009	+.0013	0	0	+.0007	+.0023	+.0043	+.0064	+.0083
		R_x \ R_y	+.0041	−.0062	+.0503	+.1060	+.2029	+.3120						
a/b = 1/4	1.0	+.2265	+.0297	+.0192	+.0108	+.0047	+.0011	0	0	0	0	0	0	0
	0.8	+.2638	+.0313	+.0197	+.0108	+.0046	+.0011	0	+.0063	+.0039	+.0020	+.0007	−.0001	−.0005
	0.6	+.2539	+.0301	+.0188	+.0101	+.0042	+.0008	0	+.0060	+.0037	+.0018	+.0004	−.0006	−.0010
	0.4	+.2507	+.0270	+.0160	+.0081	+.0029	+.0002	0	+.0054	+.0030	+.0010	−.0006	−.0018	−.0024
	0.2	+.1832	+.0172	+.0092	+.0040	+.0010	−.0003	0	+.0034	+.0015	−.0002	−.0015	−.0024	−.0030
	0	−.0866	0	+.0006	+.0017	+.0032	+.0047	0	0	+.0028	+.0086	+.0158	+.0236	+.0304
		R_x \ R_y	−.0866	−.0058	+.0998	+.2009	+.3764	+.5716						
a/b = 3/8	1.0	+.3267	+.0642	+.0407	+.0218	+.0085	+.0012	0	0	0	0	0	0	0
	0.8	+.4129	+.0664	+.0399	+.0206	+.0078	+.0010	0	+.0133	+.0076	+.0031	−.0002	−.0025	−.0037
	0.6	+.3798	+.0604	+.0356	+.0176	+.0060	+.0002	0	+.0121	+.0067	+.0020	−.0018	−.0045	−.0060
	0.4	+.3439	+.0479	+.0265	+.0120	+.0032	−.0007	0	+.0096	+.0045	−.0000	−.0036	−.0062	−.0078
	0.2	+.1762	+.0232	+.0119	+.0051	+.0016	+.0001	0	+.0046	+.0020	+.0003	−.0007	−.0011	−.0012
	0	−.0155	0	+.0011	+.0034	+.0061	+.0092	0	0	+.0055	+.0168	+.0307	+.0458	+.0589
		R_x \ R_y	−.0155	−.0080	+.1135	+.2213	+.4296	+.6709						
a/b = 1/2	1.0	+.4597	+.1074	+.0638	+.0304	+.0085	−.0017	0	0	0	0	0	0	0
	0.8	+.5570	+.1052	+.0592	+.0275	+.0079	−.0010	0	+.0210	+.0108	+.0028	−.0032	−.0076	−.0105
	0.6	+.4774	+.0899	+.0495	+.0219	+.0053	−.0018	0	+.0180	+.0087	+.0004	−.0063	−.0113	−.0145
	0.4	+.3898	+.0645	+.0334	+.0137	+.0027	−.0016	0	+.0129	+.0051	−.0014	−.0065	−.0100	−.0122
	0.2	+.1422	+.0261	+.0134	+.0062	+.0031	+.0019	0	+.0052	+.0033	+.0035	+.0051	+.0071	+.0088
	0	−.0401	0	+.0019	+.0059	+.0108	+.0163	0	0	+.0096	+.0296	+.0541	+.0813	+.1051
		R_x \ R_y	−.0401	+.0011	+.1576	+.3024	+.5696	+.8739						
a/b = 3/4	1.0	+.8290	+.1977	+.0952	+.0298	−.0059	−.0162	0	0	0	0	0	0	0
	0.8	+.7827	+.1726	+.0817	+.0261	−.0032	−.0110	0	+.0345	+.0144	−.0001	−.0106	−.0186	−.0257
	0.6	+.5677	+.1318	+.0621	+.0194	−.0023	−.0079	0	+.0264	+.0102	−.0034	−.0139	−.0218	−.0279
	0.4	+.3914	+.0826	+.0377	+.0120	+.0001	−.0026	0	+.0165	+.0061	−.0005	−.0042	−.0063	−.0077
	0.2	+.0741	+.0282	+.0144	+.0077	+.0072	+.0081	0	+.0056	+.0084	+.0176	+.0296	+.0411	+.0501
	0	−.0698	0	+.0041	+.0125	+.0221	+.0326	0	0	+.0206	+.0623	+.1104	+.1630	+.2076
		R_x \ R_y	−.0698	+.0333	+.2595	+.4574	+.7928	+1.1288						
a/b = 1	1.0	+1.1828	+.2949	+.1046	+.0146	−.0268	−.0324	0	0	0	0	0	0	0
	0.8	+.9335	+.2421	+.0873	+.0129	−.0199	−.0227	0	+.0484	+.0159	−.0023	−.0141	−.0227	−.0324
	0.6	+.5948	+.1724	+.0643	+.0097	−.0132	−.0141	0	+.0345	+.0119	−.0032	−.0132	−.0199	−.0268
	0.4	+.3699	+.1033	+.0384	+.0069	−.0032	−.0023	0	+.0207	+.0090	+.0069	+.0097	+.0129	+.0146
	0.2	+.0548	+.0362	+.0152	+.0090	+.0119	+.0159	0	+.0072	+.0152	+.0384	+.0643	+.0873	+.1046
	0	−.0887	0	+.0072	+.0207	+.0345	+.0484	0	0	+.0362	+.1033	+.1724	+.2421	+.2949
		R_y	−.0887	+.0548	+.3699	+.5948	+.9335	+1.1828						



Moment = (Coefficient)(pb^2)

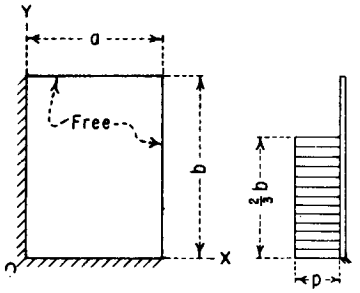
Reaction = (Coefficient)(pb)



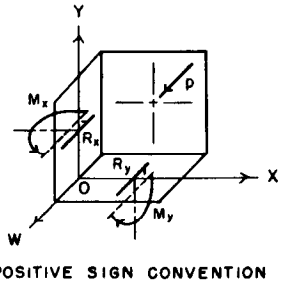
POSITIVE SIGN CONVENTION

FIGURE 27.—*Plate fixed along two adjacent edges, moment and reaction coefficients, Load I, uniform load.*

			M_x						M_y					
	y/b	R_x \ x/a	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
$a/b = 1/8$	1.0	−.0014	+.0002	+.0002	+.0002	+.0001	+.0001	0	0	0	0	0	0	0
	0.8	+.0075	+.0011	+.0008	+.0006	+.0004	+.0002	0	+.0002	+.0002	+.0002	+.0002	+.0003	+.0003
	0.6	+.0970	+.0056	+.0035	+.0019	+.0008	+.0001	0	+.0011	+.0007	+.0003	+.0000	−.0001	−.0002
	0.4	+.1258	+.0074	+.0046	+.0025	+.0010	+.0002	0	+.0015	+.0009	+.0004	+.0001	−.0002	−.0003
	0.2	+.1209	+.0067	+.0040	+.0021	+.0008	+.0001	0	+.0014	+.0008	+.0003	−.0001	−.0003	−.0005
	0	+.0046	0	+.0001	+.0005	+.0009	+.0013	0	0	+.0007	+.0023	+.0043	+.0064	+.0083
		R_x \ R_y	+.0046	−.0061	+.0505	+.1061	+.2028	+.3114						
$a/b = 1/4$	1.0	−.0187	+.0028	+.0031	+.0028	+.0020	+.0011	0	0	0	0	0	0	0
	0.8	+.0315	+.0079	+.0060	+.0041	+.0023	+.0009	0	+.0016	+.0014	+.0014	+.0014	+.0016	+.0018
	0.6	+.1899	+.0195	+.0114	+.0056	+.0019	+.0000	0	+.0039	+.0021	+.0005	−.0008	−.0017	−.0022
	0.4	+.2492	+.0238	+.0133	+.0060	+.0015	−.0005	0	+.0048	+.0023	+.0001	−.0017	−.0031	−.0040
	0.2	+.1869	+.0165	+.0085	+.0033	+.0005	−.0006	0	+.0033	+.0013	−.0005	−.0019	−.0030	−.0037
	0	−.0822	0	+.0006	+.0017	+.0031	+.0045	0	0	+.0028	+.0085	+.0153	+.0226	+.0289
		R_x \ R_y	−.0822	−.0012	+.1050	+.2030	+.3681	+.5432						
$a/b = 3/8$	1.0	−.0462	+.0102	+.0106	+.0085	+.0055	+.0026	0	0	0	0	0	0	0
	0.8	+.0819	+.0213	+.0149	+.0091	+.0046	+.0015	0	+.0043	+.0033	+.0025	+.0019	+.0016	+.0017
	.0.6	+.2733	+.0361	+.0193	+.0083	+.0017	−.0010	0	+.0072	+.0030	−.0008	−.0039	−.0061	−.0076
	0.4	+.3352	+.0384	+.0185	+.0063	−.0003	−.0022	0	+.0077	+.0024	−.0025	−.0066	−.0096	−.0118
	0.2	+.1928	+.0212	+.0094	+.0027	−.0003	−.0010	0	+.0042	+.0012	−.0013	−.0030	−.0042	−.0049
	0	−.0069	0	+.0011	+.0031	+.0055	+.0079	0	0	+.0055	+.0157	+.0274	+.0395	+.0495
		R_x \ R_y	−.0069	+.0125	+.1333	+.2285	+.3963	+.5629						
$a/b = 1/2$	1.0	−.0487	+.0223	+.0201	+.0137	+.0074	+.0028	0	0	0	0	0	0	0
	0.8	+.1390	+.0364	+.0233	+.0126	+.0051	+.0010	0	+.0073	+.0047	+.0025	+.0006	−.0009	−.0016
	0.6	+.3336	+.0502	+.0244	+.0086	+.0001	−.0026	0	+.0100	+.0029	−.0036	−.0089	−.0127	−.0154
	0.4	+.3772	+.0476	+.0198	+.0046	−.0025	−.0038	0	+.0095	+.0013	−.0061	−.0119	−.0161	−.0190
	0.2	+.1794	+.0229	+.0087	+.0018	−.0005	−.0005	0	+.0046	+.0011	−.0008	−.0015	−.0015	−.0014
	0	−.0250	0	+.0019	+.0053	+.0089	+.0125	0	0	+.0096	+.0263	+.0443	+.0625	+.0775
		R_x \ R_y	−.0250	+.0438	+.1939	+.3071	+.4893	+.6544						
$a/b = 3/4$	1.0	+.0368	+.0524	+.0341	+.0153	+.0028	−.0022	0	0	0	0	0	0	0
	0.8	+.2262	+.0612	+.0319	+.0118	+.0005	−.0029	0	+.0122	+.0059	+.0004	−.0042	−.0078	−.0106
	0.6	+.3844	+.0661	+.0257	+.0046	−.0047	−.0059	0	+.0132	+.0006	−.0102	−.0182	−.0238	−.0279
	0.4	+.3913	+.0541	+.0165	−.0002	−.0057	−.0052	0	+.0108	−.0019	−.0117	−.0180	−.0217	−.0244
	0.2	+.1509	+.0229	+.0063	+.0006	+.0006	+.0021	0	+.0046	+.0018	+.0034	+.0075	+.0119	+.0154
	0	−.0437	0	+.0040	+.0099	+.0155	+.0209	0	0	+.0200	+.0494	+.0773	+.1045	+.1262
		R_x \ R_y	−.0437	+.1178	+.3044	+.4261	+.6038	+.7410						
$a/b = 1$	1.0	+.1522	+.0776	+.0375	+.0086	−.0061	−.0088	0	0	0	0	0	0	0
	0.8	+.2785	+.0772	+.0318	+.0051	−.0067	−.0076	0	+.0154	+.0058	−.0018	−.0075	−.0117	−.0156
	0.6	+.3929	+.0725	+.0216	−.0016	−.0096	−.0085	0	+.0145	−.0022	−.0145	−.0224	−.0274	−.0316
	0.4	+.3794	+.0542	+.0113	−.0042	−.0074	−.0051	0	+.0108	−.0046	−.0136	−.0172	−.0182	−.0193
	0.2	+.1311	+.0216	+.0042	+.0007	+.0027	+.0054	0	+.0043	+.0036	+.0104	+.0201	+.0292	+.0360
	0	−.0499	0	+.0065	+.0145	+.0213	+.0275	0	0	+.0323	+.0725	+.1064	+.1375	+.1605
		R_y	−.0499	+.1916	+.3934	+.5067	+.6597	+.7476						



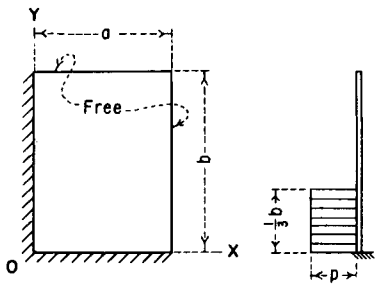
Moment = (Coefficient) (pb^2)
Reaction = (Coefficient) (pb)



POSITIVE SIGN CONVENTION

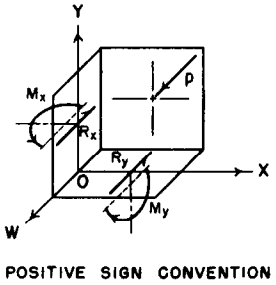
FIGURE 28.—*Plate fixed along two adjacent edges, moment and reaction coefficients, Load II, 2/3 uniform load.*

			M_x						M_y					
	y/b	R_x x/a	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
b/b = 1/8	1.0	−.0001	+.0000	+.0000	+.0000	+.0000	+.0000	0	0	0	0	0	0	0
	0.8	−.0002	+.0000	+.0000	+.0000	+.0000	+.0000	0	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.6	−.0001	+.0002	+.0002	+.0002	+.0001	+.0001	0	+.0000	+.0001	+.0001	+.0001	+.0001	+.0001
	0.4	+.0288	+.0021	+.0014	+.0008	+.0004	+.0001	0	+.0004	+.0003	+.0002	+.0001	+.0001	+.0001
	0.2	+.1089	+.0057	+.0032	+.0014	+.0004	−.0001	0	+.0011	+.0006	+.0001	−.0004	−.0007	−.0009
	0	+.0441	0	+.0001	+.0003	+.0006	+.0009	0	0	+.0006	+.0017	+.0030	+.0045	+.0057
		R_x / R_y	+.0441	+.0021	+.0412	+.0763	+.1395	+.2216						
b/b = 1/4	1.0	−.0034	+.0002	+.0003	+.0003	+.0003	+.0002	0	0	0	0	0	0	0
	0.8	−.0003	+.0007	+.0007	+.0006	+.0004	+.0002	0	+.0001	+.0002	+.0002	+.0003	+.0004	+.0004
	0.6	+.0049	+.0023	+.0019	+.0013	+.0008	+.0003	0	+.0005	+.0005	+.0005	+.0006	+.0006	+.0007
	0.4	+.0655	+.0071	+.0041	+.0019	+.0005	−.0001	0	+.0014	+.0008	+.0002	−.0002	−.0006	−.0009
	0.2	+.1620	+.0113	+.0046	+.0009	−.0008	−.0011	0	+.0023	+.0003	−.0015	−.0030	−.0041	−.0050
	0	+.0298	0	+.0004	+.0012	+.0019	+.0027	0	0	+.0021	+.0058	+.0096	+.0135	+.0165
		R_x / R_y	+.0298	+.0247	+.0989	+.1533	+.2384	+.3108						
b/b = 3/8	1.0	−.0120	+.0010	+.0014	+.0013	+.0010	+.0006	0	0	0	0	0	0	0
	0.8	+.0047	+.0028	+.0023	+.0017	+.0010	+.0005	0	+.0006	+.0005	+.0006	+.0006	+.0007	+.0009
	0.6	+.0178	+.0055	+.0038	+.0022	+.0010	+.0002	0	+.0011	+.0010	+.0008	+.0007	+.0006	+.0005
	0.4	+.0923	+.0112	+.0054	+.0016	−.0003	−.0008	0	+.0022	+.0008	−.0006	−.0018	−.0028	−.0035
	0.2	+.1803	+.0134	+.0037	−.0006	−.0020	−.0017	0	+.0027	−.0006	−.0034	−.0054	−.0067	−.0076
	0	+.0163	0	+.0008	+.0019	+.0030	+.0040	0	0	+.0039	+.0096	+.0151	+.0201	+.0238
		R_x / R_y	+.0163	+.0571	+.1501	+.2052	+.2857	+.3354						
b/b = 1/2	1.0	−.0177	+.0025	+.0029	+.0024	+.0015	+.0007	0	0	0	0	0	0	0
	0.8	+.0130	+.0052	+.0038	+.0024	+.0013	+.0004	0	+.0010	+.0008	+.0007	+.0006	+.0006	+.0006
	0.6	+.0299	+.0084	+.0050	+.0023	+.0006	−.0001	0	+.0017	+.0012	+.0007	+.0000	−.0005	−.0008
	0.4	+.1045	+.0133	+.0051	+.0006	−.0012	−.0014	0	+.0027	+.0004	−.0018	−.0037	−.0050	−.0060
	0.2	+.1774	+.0131	+.0020	−.0017	−.0024	−.0017	0	+.0026	−.0017	−.0047	−.0064	−.0073	−.0080
	0	+.0086	0	+.0013	+.0029	+.0042	+.0054	0	0	+.0064	+.0144	+.0211	+.0268	+.0310
		R_x / R_y	+.0086	+.0973	+.1953	+.2459	+.3116	+.3434						
b/b = 3/4	1.0	−.0104	+.0067	+.0053	+.0028	+.0009	+.0000	0	0	0	0	0	0	0
	0.8	+.0269	+.0091	+.0054	+.0023	+.0005	−.0002	0	+.0018	+.0011	+.0005	−.0001	−.0006	−.0010
	0.6	+.0411	+.0115	+.0051	+.0012	−.0006	−.0009	0	+.0023	+.0011	−.0003	−.0017	−.0028	−.0035
	0.4	+.1086	+.0141	+.0032	−.0012	−.0022	−.0017	0	+.0028	−.0009	−.0040	−.0061	−.0074	−.0083
	0.2	+.1701	+.0113	−.0003	−.0025	−.0020	−.0011	0	+.0023	−.0034	−.0058	−.0061	−.0056	−.0054
	0	+.0048	0	+.0023	+.0045	+.0060	+.0072	0	0	+.0117	+.0224	+.0299	+.0358	+.0402
		R_x / R_y	+.0048	+.1615	+.2512	+.2874	+.3312	+.3489						
b/b = 1	1.0	+.0052	+.0104	+.0059	+.0018	−.0006	−.0011	0	0	0	0	0	0	0
	0.8	+.0356	+.0116	+.0053	+.0011	−.0008	−.0010	0	+.0023	+.0012	+.0002	−.0007	−.0014	−.0020
	0.6	+.0430	+.0126	+.0041	−.0002	−.0016	−.0013	0	+.0025	+.0008	−.0012	−.0028	−.0038	−.0046
	0.4	+.1052	+.0135	+.0013	−.0022	−.0025	−.0017	0	+.0027	−.0021	−.0053	−.0069	−.0075	−.0080
	0.2	+.1682	+.0094	−.0015	−.0023	−.0015	−.0005	0	+.0019	−.0045	−.0055	−.0043	−.0029	−.0020
	0	+.0088	0	+.0033	+.0057	+.0072	+.0083	0	0	+.0166	+.0285	+.0358	+.0414	+.0456
		R_y	+.0088	+.2052	+.2808	+.3064	+.3372	+.3473						



Moment = (Coefficient) (pb^2)

Reaction = (Coefficient) (pb)



POSITIVE SIGN CONVENTION

FIGURE 29.—*Plate fixed along two adjacent edges, moment and reaction coefficients, Load III, 1/3 uniform load.*

			M_x						M_y					
	y/b	R_x \ x/a	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
a/b = 1/8	1.0	+.0075	+.0007	+.0006	+.0004	+.0002	+.0001	0	0	0	0	0	0	0
	0.8	+.0252	+.0017	+.0011	+.0006	+.0003	+.0001	0	+.0003	+.0002	+.0001	+.0001	+.0001	+.0001
	0.6	+.0501	+.0031	+.0020	+.0011	+.0005	+.0001	0	+.0006	+.0004	+.0002	+.0001	+.0000	-.0000
	0.4	+.0755	+.0046	+.0029	+.0016	+.0007	+.0001	0	+.0009	+.0006	+.0003	+.0001	-.0000	-.0001
	0.2	+.0964	+.0052	+.0031	+.0015	+.0005	+.0000	0	+.0010	+.0006	+.0002	-.0001	-.0003	-.0004
	0	+.0056	0	+.0001	+.0004	+.0008	+.0011	0	0	+.0007	+.0021	+.0038	+.0056	+.0072
		R_x \ R_y	+.0056	-.0008	+.0510	+.0996	+.1819	+.2706						
a/b = 1/4	1.0	+.0076	+.0043	+.0035	+.0026	+.0016	+.0007	0	0	0	0	0	0	0
	0.8	+.0557	+.0078	+.0052	+.0031	+.0015	+.0005	0	+.0016	+.0011	+.0007	+.0005	+.0004	+.0004
	0.6	+.1026	+.0119	+.0074	+.0039	+.0015	+.0003	0	+.0024	+.0014	+.0007	+.0001	-.0004	-.0006
	0.4	+.1513	+.0150	+.0085	+.0040	+.0011	-.0002	0	+.0030	+.0015	+.0002	-.0009	-.0017	-.0022
	0.2	+.1475	+.0122	+.0060	+.0022	+.0001	-.0006	0	+.0024	+.0008	-.0006	-.0017	-.0026	-.0032
	0	-.0598	0	+.0005	+.0014	+.0024	+.0035	0	0	+.0024	+.0069	+.0121	+.0175	+.0221
		R_x \ R_y	-.0598	+.0133	+.1020	+.1780	+.3009	+.4232						
a/b = 3/8	1.0	+.0040	+.0115	+.0095	+.0066	+.0037	+.0015	0	0	0	0	0	0	0
	0.8	+.0970	+.0180	+.0116	+.0066	+.0029	+.0008	0	+.0036	+.0023	+.0012	+.0004	-.0000	-.0002
	0.6	+.1553	+.0233	+.0133	+.0062	+.0018	-.0002	0	+.0047	+.0024	+.0003	-.0013	-.0026	-.0034
	0.4	+.2050	+.0246	+.0122	+.0045	+.0002	-.0012	0	+.0049	+.0017	-.0012	-.0037	-.0055	-.0067
	0.2	+.1517	+.0152	+.0063	+.0016	-.0005	-.0009	0	+.0030	+.0006	-.0014	-.0028	-.0037	-.0043
	0	+.0044	0	+.0009	+.0024	+.0040	+.0057	0	0	+.0044	+.0119	+.0202	+.0286	+.0354
		R_x \ R_y	+.0044	+.0309	+.1232	+.1911	+.3079	+.4185						
a/b = 1/2	1.0	+.0166	+.0221	+.0167	+.0100	+.0046	+.0013	0	0	0	0	0	0	0
	0.8	+.1402	+.0295	+.0177	+.0090	+.0032	+.0003	0	+.0059	+.0032	+.0010	-.0007	-.0019	-.0026
	0.6	+.1953	+.0334	+.0174	+.0069	+.0009	-.0013	0	+.0067	+.0027	-.0010	-.0041	-.0064	-.0079
	0.4	+.2311	+.0309	+.0135	+.0037	-.0011	-.0021	0	+.0062	+.0012	-.0032	-.0067	-.0092	-.0109
	0.2	+.1413	+.0162	+.0058	+.0010	-.0005	-.0004	0	+.0032	+.0004	-.0012	-.0018	-.0018	-.0017
	0	-.0079	0	+.0015	+.0039	+.0064	+.0089	0	0	+.0074	+.0193	+.0318	+.0443	+.0546
		R_x \ R_y	-.0079	+.0573	+.1665	+.2446	+.3698	+.4827						
a/b = 3/4	1.0	+.0974	+.0465	+.0269	+.0107	+.0008	-.0028	0	0	0	0	0	0	0
	0.8	+.2067	+.0487	+.0242	+.0084	-.0002	-.0027	0	+.0097	+.0040	-.0004	-.0039	-.0065	-.0087
	0.6	+.2303	+.0459	+.0195	+.0046	-.0023	-.0036	0	+.0092	+.0020	-.0044	-.0093	-.0129	-.0155
	0.4	+.2383	+.0360	+.0121	+.0010	-.0030	-.0029	0	+.0072	-.0003	-.0060	-.0096	-.0117	-.0132
	0.2	+.1193	+.0160	+.0042	+.0005	+.0006	+.0016	0	+.0032	+.0008	+.0019	+.0050	+.0083	+.0108
	0	-.0194	0	+.0029	+.0070	+.0110	+.0148	0	0	+.0147	+.0352	+.0548	+.0740	+.0896
		R_x \ R_y	-.0194	+.1105	+.2399	+.3236	+.4489	+.5505						
a/b = 1	1.0	+.1917	+.0662	+.0291	+.0056	-.0059	-.0077	0	0	0	0	0	0	0
	0.8	+.2481	+.0613	+.0243	+.0035	-.0056	-.0063	0	+.0123	+.0039	-.0019	-.0059	-.0089	-.0118
	0.6	+.2364	+.0518	+.0173	+.0004	-.0059	-.0054	0	+.0104	+.0009	-.0064	-.0112	-.0144	-.0172
	0.4	+.2289	+.0368	+.0092	-.0015	-.0041	-.0028	0	+.0074	-.0015	-.0062	-.0078	-.0080	-.0084
	0.2	+.1047	+.0150	+.0030	+.0007	+.0021	+.0040	0	+.0030	+.0022	+.0073	+.0148	+.0216	+.0268
	0	-.0224	0	+.0046	+.0103	+.0152	+.0197	0	0	+.0232	+.0515	+.0759	+.0987	+.1157
		R_y	-.0224	+.1598	+.2991	+.3794	+.4909	+.5586						

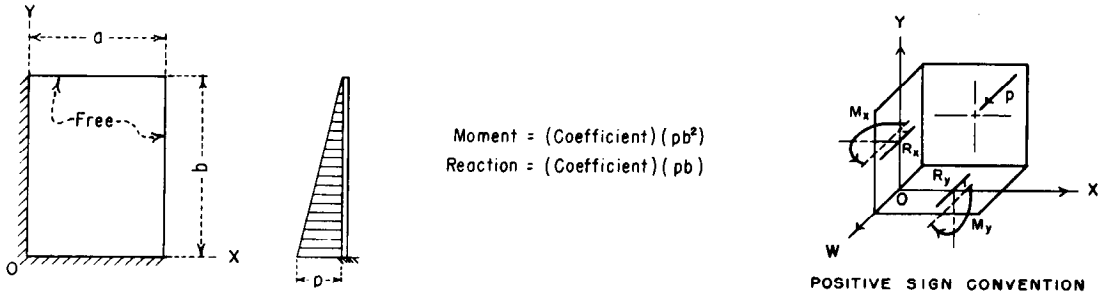


FIGURE 30.—*Plate fixed along two adjacent edges, moment and reaction coefficients, Load IV, uniformly varying load.*

			M_x						M_y					
	y/b	R_x \ x/a	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
a/b = 1/8	1.0	-.0003	+.0000	+.0000	+.0000	+.0000	+.0000	0	0	0	0	0	0	0
	0.8	+.0001	+.0001	+.0001	+.0001	+.0001	+.0000	0	+.0000	+.0000	+.0000	+.0001	+.0001	+.0001
	0.6	+.0144	+.0011	+.0007	+.0004	+.0002	+.0001	0	+.0002	+.0002	+.0001	+.0001	+.0001	+.0001
	0.4	+.0504	+.0030	+.0019	+.0010	+.0004	+.0001	0	+.0006	+.0004	+.0002	+.0001	-.0000	-.0001
	0.2	+.0843	+.0044	+.0026	+.0013	+.0004	+.0000	0	+.0009	+.0005	+.0002	-.0001	-.0003	-.0004
	0	+.0063	0	+.0001	+.0004	+.0007	+.0010	0	0	+.0007	+.0020	+.0035	+.0052	+.0066
		R_x \ R_y	+.0063	+.0019	+.0513	+.0964	+.1713	+.2500						
a/b = 1/4	1.0	-.0057	+.0005	+.0007	+.0007	+.0005	+.0003	0	0	0	0	0	0	0
	0.8	+.0031	+.0017	+.0014	+.0011	+.0007	+.0003	0	+.0003	+.0003	+.0004	+.0005	+.0006	+.0007
	0.6	+.0331	+.0048	+.0032	+.0019	+.0009	+.0002	0	+.0010	+.0007	+.0005	+.0004	+.0003	+.0002
	0.4	+.1010	+.0096	+.0053	+.0023	+.0005	-.0002	0	+.0019	+.0009	+.0000	-.0007	-.0013	-.0017
	0.2	+.1288	+.0098	+.0045	+.0014	-.0002	-.0006	0	+.0020	+.0006	-.0007	-.0018	-.0026	-.0032
	0	-.0472	0	+.0004	+.0012	+.0021	+.0029	0	0	+.0022	+.0061	+.0103	+.0146	+.0181
		R_x \ R_y	-.0472	+.0220	+.1021	+.1661	+.2646	+.3544						
a/b = 3/8	1.0	-.0169	+.0022	+.0027	+.0023	+.0016	+.0008	0	0	0	0	0	0	0
	0.8	+.0147	+.0053	+.0040	+.0027	+.0015	+.0006	0	+.0011	+.0009	+.0009	+.0008	+.0009	+.0010
	0.6	+.0565	+.0099	+.0059	+.0029	+.0010	-.0000	0	+.0020	+.0012	+.0005	-.0001	-.0006	-.0009
	0.4	+.1351	+.0148	+.0069	+.0020	-.0004	-.0011	0	+.0030	+.0008	-.0012	-.0029	-.0042	-.0051
	0.2	+.1353	+.0117	+.0040	+.0003	-.0011	-.0011	0	+.0023	+.0000	-.0019	-.0033	-.0042	-.0049
	0	+.0125	0	+.0008	+.0019	+.0031	+.0043	0	0	+.0038	+.0097	+.0156	+.0213	+.0257
		R_x \ R_y	+.0125	+.0460	+.1236	+.1740	+.2538	+.3159						
a/b = 1/2	1.0	-.0220	+.0052	+.0053	+.0039	+.0023	+.0010	0	0	0	0	0	0	0
	0.8	+.0298	+.0095	+.0065	+.0038	+.0018	+.0005	0	+.0019	+.0014	+.0010	+.0006	+.0004	+.0003
	0.6	+.0753	+.0143	+.0076	+.0030	+.0004	-.0005	0	+.0029	+.0014	-.0001	-.0014	-.0025	-.0031
	0.4	+.1508	+.0178	+.0068	+.0010	-.0015	-.0017	0	+.0036	+.0002	-.0028	-.0052	-.0070	-.0082
	0.2	+.1313	+.0119	+.0030	-.0005	-.0014	-.0010	0	+.0024	-.0005	-.0025	-.0036	-.0041	-.0044
	0	+.0050	0	+.0013	+.0030	+.0046	+.0060	0	0	+.0063	+.0148	+.0228	+.0301	+.0358
		R_x \ R_y	+.0050	+.0755	+.1616	+.2132	+.2873	+.3382						
a/b = 3/4	1.0	-.0036	+.0130	+.0092	+.0045	+.0012	-.0003	0	0	0	0	0	0	0
	0.8	+.0540	+.0163	+.0090	+.0036	+.0005	-.0006	0	+.0033	+.0018	+.0005	-.0007	-.0016	-.0023
	0.6	+.0917	+.0191	+.0079	+.0016	-.0012	-.0016	0	+.0038	+.0009	-.0020	-.0043	-.0060	-.0072
	0.4	+.1561	+.0193	+.0048	-.0011	-.0027	-.0022	0	+.0039	-.0014	-.0055	-.0081	-.0097	-.0108
	0.2	+.1218	+.0110	+.0011	-.0012	-.0010	-.0002	0	+.0022	-.0013	-.0023	-.0017	-.0006	+.0002
	0	-.0000	0	+.0024	+.0049	+.0070	+.0088	0	0	+.0118	+.0246	+.0348	+.0438	+.0507
		R_x \ R_y	-.0000	+.1274	+.2163	+.2612	+.3210	+.3569						
a/b = 1	1.0	+.0261	+.0198	+.0103	+.0027	-.0013	-.0022	0	0	0	0	0	0	0
	0.8	+.0687	+.0207	+.0089	+.0017	-.0016	-.0019	0	+.0041	+.0018	-.0001	-.0016	-.0028	-.0039
	0.6	+.0943	+.0209	+.0064	-.0004	-.0027	-.0023	0	+.0042	+.0002	-.0033	-.0058	-.0074	-.0086
	0.4	+.1522	+.0188	+.0026	-.0024	-.0032	-.0022	0	+.0038	-.0028	-.0068	-.0086	-.0092	-.0098
	0.2	+.1168	+.0096	+.0000	-.0012	-.0003	+.0008	0	+.0019	-.0016	-.0008	+.0016	+.0041	+.0059
	0	+.0018	0	+.0035	+.0066	+.0088	+.0107	0	0	+.0174	+.0329	+.0440	+.0534	+.0603
		R_y	+.0018	+.1676	+.2512	+.2879	+.3348	+.3567						

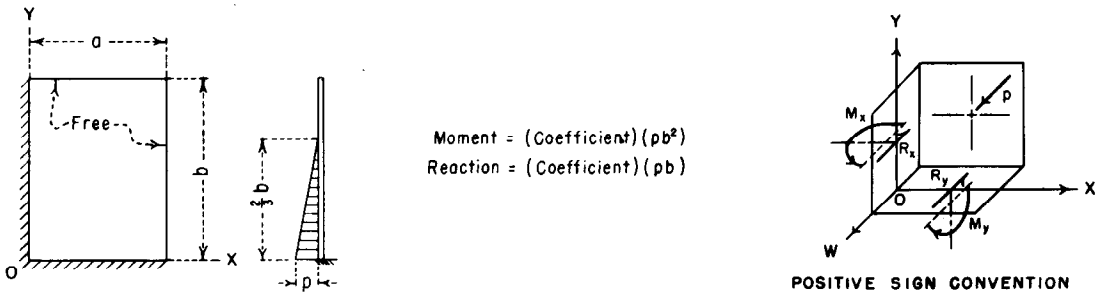
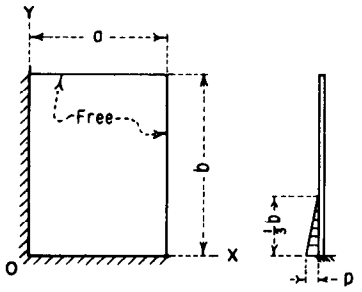
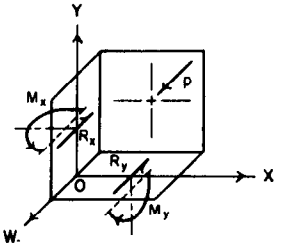


FIGURE 31.—*Plate fixed along two adjacent edges, moment and reaction coefficients, Load V, 2/3 uniformly varying load.*

			M_x						M_y					
	y/b	R_x \ x/a	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
a/b = 1/8	1.0	-.0000	+.0000	+.0000	+.0000	+.0000	+.0000	0	0	0	0	0	0	0
	0.8	-.0001	+.0000	+.0000	+.0000	+.0000	+.0000	0	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.6	-.0002	+.0001	+.0001	+.0000	+.0000	+.0000	0	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.4	+.0040	+.0005	+.0003	+.0002	+.0001	+.0001	0	+.0001	+.0001	+.0001	+.0001	+.0001	+.0001
	0.2	+.0482	+.0023	+.0013	+.0006	+.0002	-.0000	0	+.0005	+.0003	+.0001	-.0001	-.0002	-.0002
	0	+.0073	0	+.0001	+.0003	+.0006	+.0008	0	0	+.0006	+.0016	+.0028	+.0040	+.0041
		R_x \ R_y	+.0073	+.0091	+.0514	+.0864	+.1410	+.1925						
a/b = 1/4	1.0	-.0009	+.0001	+.0001	+.0001	+.0001	+.0000	0	0	0	0	0	0	0
	0.8	-.0002	+.0002	+.0002	+.0002	+.0001	+.0001	0	+.0000	+.0000	+.0001	+.0001	+.0001	+.0001
	0.6	+.0006	+.0006	+.0005	+.0004	+.0002	+.0001	0	+.0001	+.0001	+.0002	+.0002	+.0002	+.0003
	0.4	+.0129	+.0020	+.0013	+.0007	+.0003	+.0000	0	+.0004	+.0003	+.0002	+.0001	+.0001	+.0000
	0.2	+.0719	+.0047	+.0019	+.0004	-.0003	-.0004	0	+.0009	+.0002	-.0005	-.0011	-.0015	-.0019
	0	-.0212	0	+.0003	+.0007	+.0011	+.0015	0	0	+.0014	+.0037	+.0055	+.0073	+.0087
		R_x \ R_y	-.0212	+.0365	+.0923	+.1295	+.1807	+.2166						
a/b = 3/8	1.0	-.0035	+.0002	+.0004	+.0004	+.0003	+.0002	0	0	0	0	0	0	0
	0.8	+.0010	+.0007	+.0006	+.0005	+.0003	+.0001	0	+.0001	+.0001	+.0002	+.0002	+.0002	+.0003
	0.6	+.0039	+.0015	+.0011	+.0006	+.0003	+.0001	0	+.0003	+.0003	+.0003	+.0003	+.0002	+.0002
	0.4	+.0207	+.0032	+.0016	+.0006	-.0000	-.0002	0	+.0006	+.0004	+.0000	-.0003	-.0005	-.0007
	0.2	+.0756	+.0051	+.0013	-.0004	-.0008	-.0007	0	+.0010	-.0002	-.0013	-.0021	-.0026	-.0030
	0	+.0221	0	+.0005	+.0011	+.0016	+.0020	0	0	+.0023	+.0055	+.0080	+.0102	+.0118
		R_x \ R_y	+.0221	+.0592	+.1027	+.1249	+.1555	+.1699						
a/b = 1/2	1.0	-.0052	+.0006	+.0008	+.0007	+.0004	+.0002	0	0	0	0	0	0	0
	0.8	+.0032	+.0014	+.0010	+.0007	+.0004	+.0001	0	+.0003	+.0002	+.0002	+.0002	+.0002	+.0002
	0.6	+.0072	+.0023	+.0014	+.0007	+.0002	-.0000	0	+.0005	+.0004	+.0002	+.0001	-.0000	-.0001
	0.4	+.0244	+.0038	+.0016	+.0003	-.0003	-.0004	0	+.0008	+.0003	-.0003	-.0008	-.0012	-.0014
	0.2	+.0747	+.0049	+.0006	-.0008	-.0010	-.0007	0	+.0010	-.0007	-.0019	-.0026	-.0030	-.0032
	0	+.0201	0	+.0007	+.0015	+.0020	+.0025	0	0	+.0037	+.0074	+.0102	+.0124	+.0140
		R_x \ R_y	+.0201	+.0795	+.1217	+.1402	+.1629	+.1705						
a/b = 3/4	1.0	-.0037	+.0017	+.0014	+.0008	+.0003	+.0000	0	0	0	0	0	0	0
	0.8	+.0068	+.0024	+.0014	+.0006	+.0001	-.0001	0	+.0005	+.0003	+.0002	+.0000	-.0001	-.0002
	0.6	+.0104	+.0031	+.0014	+.0003	-.0002	-.0002	0	+.0006	+.0004	-.0000	-.0004	-.0007	-.0009
	0.4	+.0258	+.0041	+.0010	-.0003	-.0006	-.0005	0	+.0008	-.0000	-.0009	-.0015	-.0019	-.0021
	0.2	+.0723	+.0041	-.0003	-.0010	-.0008	-.0005	0	+.0008	-.0014	-.0024	-.0027	-.0026	-.0026
	0	+.0215	0	+.0012	+.0021	+.0027	+.0030	0	0	+.0061	+.0106	+.0133	+.0152	+.0167
		R_x \ R_y	+.0215	+.1079	+.1424	+.1539	+.1673	+.1710						
a/b = 1	1.0	+.0003	+.0027	+.0016	+.0005	-.0001	-.0003	0	0	0	0	0	0	0
	0.8	+.0091	+.0031	+.0014	+.0003	-.0002	-.0003	0	+.0006	+.0003	+.0001	-.0002	-.0003	-.0005
	0.6	+.0111	+.0034	+.0011	-.0000	-.0004	-.0003	0	+.0007	+.0003	-.0003	-.0007	-.0010	-.0012
	0.4	+.0246	+.0039	+.0004	-.0006	-.0007	-.0004	0	+.0008	-.0004	-.0013	-.0017	-.0019	-.0021
	0.2	+.0723	+.0034	-.0008	-.0010	-.0006	-.0003	0	+.0007	-.0019	-.0025	-.0023	-.0019	-.0017
	0	+.0258	0	+.0016	+.0026	+.0030	+.0034	0	0	+.0082	+.0128	+.0151	+.0168	+.0181
		R_y	+.0258	+.1252	+.1521	+.1595	+.1683	+.1704						



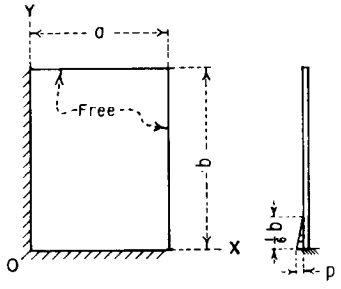
Moment = (Coefficient)(pb²)
Reaction = (Coefficient)(pb)



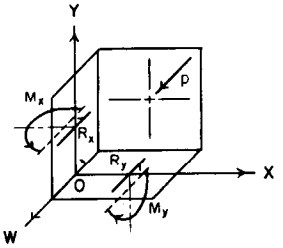
POSITIVE SIGN CONVENTION

FIGURE 32.—*Plate fixed along two adjacent edges, moment and reaction coefficients, Load VI, 1/3 uniformly varying load.*

			M_x						M_y					
	y/b	R_x \ x/a	0	0.2	0.4	0.6	0.8	1.0	0	0.2	0.4	0.6	0.8	1.0
a/b = 1/8	1.0	-.0000	+.0000	+.0000	+.0000	+.0000	+.0000	0	0	0	0	0	0	0
	0.8	-.0000	+.0000	+.0000	+.0000	+.0000	+.0000	0	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.6	-.0001	+.0000	+.0000	+.0000	+.0000	+.0000	0	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.4	-.0001	+.0001	+.0001	+.0000	+.0000	+.0000	0	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.2	+.0137	+.0006	+.0004	+.0002	+.0001	+.0000	0	+.0001	+.0001	+.0001	+.0000	+.0000	+.0000
	0	+.0050	0	+.0001	+.0002	+.0003	+.0004	0	0	+.0004	+.0010	+.0016	+.0022	+.0027
		R_x \ R_y	+.0050	+.0169	+.0463	+.0669	+.0961	+.1185						
a/b = 1/4	1.0	-.0002	+.0000	+.0000	+.0000	+.0000	+.0000	0	0	0	0	0	0	0
	0.8	-.0001	+.0000	+.0000	+.0000	+.0000	+.0000	0	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.6	-.0001	+.0001	+.0001	+.0001	+.0000	+.0000	0	+.0000	+.0000	+.0000	+.0000	+.0001	+.0001
	0.4	+.0011	+.0003	+.0003	+.0002	+.0001	+.0000	0	+.0001	+.0001	+.0001	+.0001	+.0001	+.0001
	0.2	+.0202	+.0012	+.0005	+.0001	-.0001	-.0001	0	+.0002	+.0001	-.0000	-.0001	-.0002	-.0003
	0	-.0036	0	+.0002	+.0003	+.0005	+.0006	0	0	+.0008	+.0017	+.0025	+.0031	+.0036
		R_x \ R_y	-.0036	+.0391	+.0667	+.0815	+.0997	+.1086						
a/b = 3/8	1.0	-.0007	+.0000	+.0001	+.0001	+.0001	+.0000	0	0	0	0	0	0	0
	0.8	+.0001	+.0001	+.0001	+.0001	+.0001	+.0000	0	+.0000	+.0000	+.0000	+.0000	+.0000	+.0001
	0.6	+.0004	+.0003	+.0002	+.0001	+.0001	+.0000	0	+.0001	+.0001	+.0001	+.0001	+.0001	+.0001
	0.4	+.0026	+.0006	+.0003	+.0001	+.0000	-.0000	0	+.0001	+.0001	+.0001	+.0000	-.0000	-.0000
	0.2	+.0212	+.0013	+.0003	-.0001	-.0002	-.0001	0	+.0003	+.0000	-.0002	-.0004	-.0005	-.0006
	0	+.0194	0	+.0002	+.0004	+.0006	+.0007	0	0	+.0011	+.0022	+.0030	+.0035	+.0038
		R_x \ R_y	+.0194	+.0511	+.0673	+.0740	+.0825	+.0846						
a/b = 1/2	1.0	-.0010	+.0001	+.0001	+.0001	+.0001	+.0000	0	0	0	0	0	0	0
	0.8	+.0004	+.0002	+.0002	+.0001	+.0001	+.0000	0	+.0000	+.0000	+.0000	+.0000	+.0000	+.0000
	0.6	+.0010	+.0004	+.0003	+.0001	+.0000	+.0000	0	+.0001	+.0001	+.0001	+.0000	+.0000	+.0000
	0.4	+.0033	+.0007	+.0003	+.0001	-.0000	-.0001	0	+.0001	+.0001	+.0000	-.0001	-.0001	-.0002
	0.2	+.0209	+.0012	+.0001	-.0002	-.0002	-.0001	0	+.0002	-.0001	-.0004	-.0005	-.0006	-.0007
	0	+.0202	0	+.0003	+.0005	+.0007	+.0008	0	0	+.0015	+.0027	+.0034	+.0039	+.0043
		R_x \ R_y	+.0202	+.0591	+.0732	+.0780	+.0835	+.0843						
a/b = 3/4	1.0	-.0009	+.0003	+.0002	+.0001	+.0001	+.0000	0	0	0	0	0	0	0
	0.8	+.0010	+.0004	+.0002	+.0001	+.0000	-.0000	0	+.0001	+.0001	+.0000	+.0000	-.0000	-.0000
	0.6	+.0016	+.0005	+.0003	+.0001	-.0000	-.0000	0	+.0001	+.0001	+.0000	-.0000	-.0001	-.0001
	0.4	+.0037	+.0008	+.0002	-.0001	-.0001	-.0001	0	+.0002	+.0000	-.0001	-.0002	-.0003	-.0003
	0.2	+.0204	+.0010	-.0001	-.0003	-.0002	-.0001	0	+.0002	-.0003	-.0005	-.0006	-.0006	-.0006
	0	+.0233	0	+.0005	+.0007	+.0008	+.0009	0	0	+.0023	+.0035	+.0041	+.0045	+.0048
		R_x \ R_y	+.0233	+.0688	+.0787	+.0811	+.0838	+.0841						
a/b = 1	1.0	-.0003	+.0004	+.0003	+.0001	-.0000	-.0000	0	0	0	0	0	0	0
	0.8	+.0014	+.0005	+.0002	+.0001	-.0000	-.0000	0	+.0001	+.0001	+.0000	-.0000	-.0000	-.0001
	0.6	+.0017	+.0006	+.0002	-.0000	-.0001	-.0001	0	+.0001	+.0001	-.0000	-.0001	-.0001	-.0002
	0.4	+.0035	+.0007	+.0001	-.0001	-.0001	-.0001	0	+.0001	-.0000	-.0002	-.0003	-.0003	-.0003
	0.2	+.0206	+.0008	-.0002	-.0002	-.0002	-.0001	0	+.0002	-.0004	-.0006	-.0005	-.0005	-.0005
	0	+.0270	0	+.0006	+.0008	+.0009	+.0010	0	0	+.0028	+.0040	+.0045	+.0048	+.0050
		R_y	+.0270	+.0739	+.0808	+.0822	+.0838	+.0839						



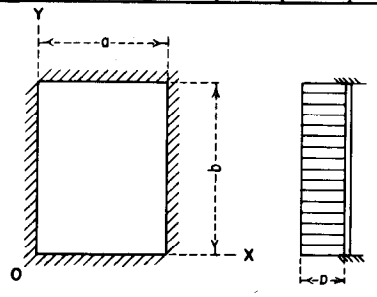
Moment = (Coefficient)(pb^2)
Reaction = (Coefficient)(pb)



POSITIVE SIGN CONVENTION

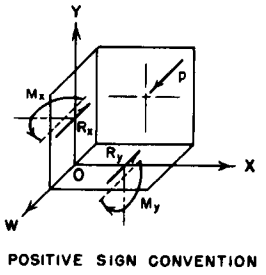
FIGURE 33.—*Plate fixed along two adjacent edges, moment and reaction coefficients, Load VII, 1/6 uniformly varying load.*

			M_x							M_y						
	y/b	R_x \ x/a	0	0.05	0.1	0.2	0.3	0.4	0.5	0	0.05	0.1	0.2	0.3	0.4	0.5
$a/b = 3/8$	0.5	+.5055	+.0830	+.0590	+.0376	+.0024	−.0226	−.0375	−.0424	+.0166	+.0113	+.0074	+.0002	−.0050	−.0082	−.0093
	0.4	+.5068	+.0825	+.0585	+.0371	+.0022	−.0225	−.0372	−.0420	+.0165	+.0117	+.0073	−.0001	−.0055	−.0088	−.0099
	0.3	+.5060	+.0796	+.0558	+.0348	+.0013	−.0219	−.0355	−.0400	+.0159	+.0110	+.0065	−.0013	−.0071	−.0108	−.0120
	0.2	+.4778	+.0690	+.0470	+.0282	−.0004	−.0192	−.0299	−.0334	+.0138	+.0091	+.0046	−.0034	−.0095	−.0132	−.0145
	0.1	+.3316	+.0400	+.0254	+.0139	−.0017	−.0108	−.0155	−.0170	+.0080	+.0047	+.0017	−.0033	−.0066	−.0084	−.0090
	0.05	+.1331	+.0170	+.0108	+.0060	+.0001	−.0026	−.0037	−.0039	+.0034	+.0026	+.0026	+.0044	+.0071	+.0094	+.0102
	0	−.0513	0	+.0005	+.0016	+.0047	+.0076	+.0096	+.0103	0	+.0024	+.0078	+.0234	+.0381	+.0481	+.0516
		R_x \ R_y	−.0513	−.0797	+.0291	+.2203	+.3559	+.4352	+.4612							
$a/b = 1/2$	0.5	+.5142	+.0815	+.0573	+.0359	+.0015	−.0224	−.0365	−.0411	+.0163	+.0113	+.0068	−.0012	−.0071	−.0108	−.0121
	0.4	+.5111	+.0797	+.0557	+.0346	+.0011	−.0220	−.0355	−.0399	+.0159	+.0110	+.0064	−.0017	−.0078	−.0116	−.0129
	0.3	+.4928	+.0728	+.0499	+.0303	−.0000	−.0203	−.0319	−.0356	+.0146	+.0097	+.0051	−.0031	−.0093	−.0132	−.0145
	0.2	+.4260	+.0568	+.0375	+.0217	−.0014	−.0159	−.0238	−.0263	+.0114	+.0071	+.0030	−.0042	−.0096	−.0128	−.0139
	0.1	+.2350	+.0270	+.0168	+.0090	−.0011	−.0066	−.0092	−.0100	+.0054	+.0032	+.0014	−.0006	−.0013	−.0013	−.0012
	0.05	+.0591	+.0099	+.0066	+.0039	+.0011	+.0003	+.0003	+.0003	+.0020	+.0022	+.0034	+.0082	+.0135	+.0174	+.0188
	0	−.0496	0	+.0005	+.0016	+.0049	+.0080	+.0100	+.0108	0	+.0025	+.0082	+.0247	+.0399	+.0502	+.0538
		R_x \ R_y	−.0496	−.0631	+.0371	+.2253	+.3598	+.4382	+.4638							
$a/b = 5/8$	0.5	+.5143	+.0765	+.0526	+.0319	−.0001	−.0214	−.0336	−.0376	+.0153	+.0102	+.0054	−.0033	−.0101	−.0144	−.0159
	0.4	+.5045	+.0736	+.0502	+.0302	−.0004	−.0207	−.0321	−.0358	+.0147	+.0097	+.0050	−.0037	−.0104	−.0147	−.0161
	0.3	+.4660	+.0642	+.0429	+.0251	−.0012	−.0181	−.0274	−.0304	+.0128	+.0082	+.0037	−.0045	−.0107	−.0146	−.0159
	0.2	+.3697	+.0462	+.0297	+.0166	−.0017	−.0127	−.0186	−.0204	+.0092	+.0055	+.0020	−.0039	−.0082	−.0106	−.0114
	0.1	+.1635	+.0191	+.0119	+.0065	−.0004	−.0037	−.0052	−.0056	+.0038	+.0025	+.0018	+.0022	+.0036	+.0050	+.0056
	0.05	+.0150	+.0063	+.0046	+.0030	+.0018	+.0020	+.0025	+.0028	+.0013	+.0021	+.0042	+.0110	+.0180	+.0231	+.0249
	0	−.0454	0	+.0005	+.0017	+.0050	+.0082	+.0102	+.0109	0	+.0025	+.0083	+.0252	+.0408	+.0511	+.0547
		R_x \ R_y	−.0454	−.0527	+.0410	+.2277	+.3616	+.4394	+.4648							
$a/b = 3/4$	0.5	+.4999	+.0686	+.0457	+.0265	−.0017	−.0196	−.0293	−.0324	+.0137	+.0087	+.0037	−.0055	−.0128	−.0175	−.0191
	0.4	+.4845	+.0653	+.0432	+.0248	−.0019	−.0186	−.0277	−.0306	+.0131	+.0082	+.0034	−.0056	−.0126	−.0171	−.0186
	0.3	+.4311	+.0550	+.0357	+.0200	−.0022	−.0156	−.0227	−.0249	+.0110	+.0066	+.0024	−.0054	−.0113	−.0150	−.0162
	0.2	+.3179	+.0374	+.0235	+.0126	−.0019	−.0101	−.0142	−.0155	+.0075	+.0043	+.0014	−.0033	−.0064	−.0081	−.0086
	0.1	+.1133	+.0140	+.0089	+.0049	+.0001	−.0018	−.0025	−.0026	+.0028	+.0021	+.0023	+.0045	+.0074	+.0098	+.0107
	0.05	−.0109	+.0043	+.0034	+.0024	+.0022	+.0031	+.0039	+.0043	+.0009	+.0021	+.0048	+.0129	+.0210	+.0268	+.0288
	0	−.0412	0	+.0005	+.0017	+.0051	+.0082	+.0102	+.0109	0	+.0024	+.0083	+.0254	+.0409	+.0511	+.0546
		R_x \ R_y	−.0412	−.0457	+.0445	+.2305	+.3626	+.4384	+.4629							
$a/b = 7/8$	0.5	+.4730	+.0592	+.0380	+.0208	−.0031	−.0172	−.0245	−.0267	+.0118	+.0070	+.0021	−.0072	−.0146	−.0193	−.0209
	0.4	+.4542	+.0560	+.0356	+.0193	−.0031	−.0162	−.0229	−.0250	+.0112	+.0065	+.0018	−.0070	−.0139	−.0183	−.0198
	0.3	+.3928	+.0462	+.0288	+.0153	−.0029	−.0131	−.0183	−.0198	+.0092	+.0052	+.0012	−.0059	−.0113	−.0146	−.0157
	0.2	+.2736	+.0302	+.0184	+.0094	−.0020	−.0079	−.0107	−.0114	+.0060	+.0033	+.0010	−.0026	−.0047	−.0057	−.0061
	0.1	+.0798	+.0106	+.0068	+.0037	+.0005	−.0005	−.0006	−.0006	+.0021	+.0019	+.0027	+.0060	+.0099	+.0129	+.0139
	0.05	−.0250	+.0031	+.0026	+.0021	+.0025	+.0037	+.0047	+.0051	+.0006	+.0021	+.0051	+.0140	+.0226	+.0285	+.0306
	0	−.0377	0	+.0005	+.0017	+.0050	+.0080	+.0099	+.0106	0	+.0024	+.0083	+.0251	+.0400	+.0497	+.0530
		R_x \ R_y	−.0377	−.0391	+.0503	+.2341	+.3608	+.4319	+.4546							
$a/b = 1$	0.5	+.4389	+.0500	+.0306	+.0156	−.0040	−.0147	−.0198	−.0213	+.0100	+.0054	+.0007	−.0082	−.0153	−.0197	−.0213
	0.4	+.4189	+.0470	+.0286	+.0144	−.0039	−.0137	−.0184	−.0197	+.0094	+.0050	+.0006	−.0078	−.0143	−.0184	−.0198
	0.3	+.3551	+.0382	+.0229	+.0112	−.0033	−.0109	−.0143	−.0153	+.0076	+.0040	+.0003	−.0061	−.0109	−.0137	−.0147
	0.2	+.2373	+.0244	+.0143	+.0068	−.0020	−.0061	−.0078	−.0082	+.0049	+.0026	+.0007	−.0020	−.0033	−.0039	−.0040
	0.1	+.0585	+.0082	+.0052	+.0028	+.0007	+.0003	+.0006	+.0007	+.0016	+.0018	+.0028	+.0068	+.0112	+.0144	+.0156
	0.05	−.0316	+.0024	+.0021	+.0018	+.0026	+.0040	+.0050	+.0054	+.0005	+.0021	+.0052	+.0143	+.0229	+.0286	+.0306
	0	−.0351	0	+.0005	+.0016	+.0049	+.0076	+.0094	+.0100	0	+.0024	+.0082	+.0244	+.0382	+.0470	+.0500
		R_y	−.0351	−.0316	+.0585	+.2373	+.3551	+.4189	+.4389							



Moment = (Coefficient)(pa^2)

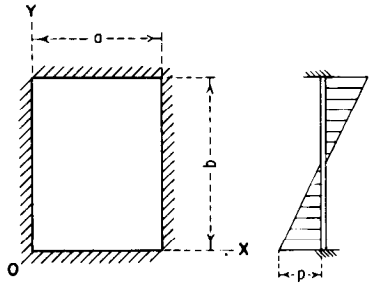
Reaction = (Coefficient)(pa)



POSITIVE SIGN CONVENTION

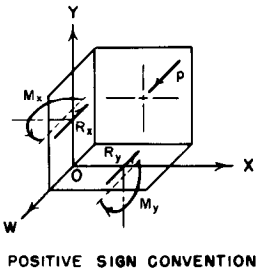
FIGURE 34.—*Plate fixed along four edges, moment and reaction coefficients, Load I, uniform load.*

			M_x							M_y						
	y/b	R_x \ x/a	0	0.05	0.1	0.2	0.3	0.4	0.5	0	0.05	0.1	0.2	0.3	0.4	0.5
$b/b = 3/8$	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0.4	+.1047	+.0162	+.0113	+.0070	+.0002	−.0045	−.0072	−.0081	+.0032	+.0022	+.0013	−.0004	−.0017	−.0026	−.0028
	0.3	+.2066	+.0305	+.0209	+.0126	−.0001	−.0086	−.0134	−.0149	+.0061	+.0041	+.0021	−.0014	−.0042	−.0060	−.0066
	0.2	+.2851	+.0379	+.0249	+.0142	−.0012	−.0108	−.0160	−.0176	+.0076	+.0047	+.0018	−.0034	−.0076	−.0102	−.0111
	0.1	+.2574	+.0278	+.0167	+.0083	−.0022	−.0078	−.0103	−.0111	+.0056	+.0029	+.0004	−.0041	−.0072	−.0089	−.0095
	0.05	+.1363	+.0135	+.0077	+.0036	−.0007	−.0024	−.0029	−.0030	+.0027	+.0016	+.0010	+.0013	+.0024	+.0035	+.0039
	0	−.0376	0	+.0004	+.0012	+.0034	+.0054	+.0067	+.0071	0	+.0019	+.0059	+.0170	+.0269	+.0334	+.0356
		R_x \ R_y	−.0376	−.0368	+.0540	+.1962	+.2885	+.3395	+.3557							
$b/b = 1/2$	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0.4	+.1041	+.0142	+.0094	+.0054	−.0004	−.0041	−.0060	−.0067	+.0028	+.0018	+.0007	−.0013	−.0029	−.0039	−.0043
	0.3	+.1963	+.0251	+.0162	+.0090	−.0012	−.0073	−.0105	−.0114	+.0050	+.0030	+.0010	−.0029	−.0060	−.0080	−.0087
	0.2	+.2490	+.0282	+.0173	+.0088	−.0022	−.0082	−.0111	−.0120	+.0056	+.0030	+.0004	−.0045	−.0083	−.0107	−.0114
	0.1	+.1921	+.0176	+.0096	+.0041	−.0020	−.0046	−.0055	−.0058	+.0035	+.0016	−.0002	−.0029	−.0045	−.0052	−.0054
	0.05	+.0860	+.0077	+.0041	+.0017	−.0002	−.0005	−.0003	−.0002	+.0016	+.0011	+.0012	+.0030	+.0053	+.0070	+.0076
	0	−.0355	0	+.0004	+.0012	+.0032	+.0049	+.0060	+.0064	0	+.0019	+.0059	+.0161	+.0247	+.0301	+.0319
		R_x \ R_y	−.0355	−.0159	+.0675	+.1938	+.2707	+.3111	+.3236							
$b/b = 5/8$	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0.4	+.0965	+.0112	+.0069	+.0035	−.0009	−.0033	−.0045	−.0048	+.0022	+.0012	+.0002	−.0019	−.0035	−.0046	−.0050
	0.3	+.1763	+.0192	+.0115	+.0056	−.0019	−.0057	−.0075	−.0080	+.0038	+.0020	+.0000	−.0037	−.0067	−.0086	−.0092
	0.2	+.2120	+.0204	+.0115	+.0049	−.0025	−.0060	−.0074	−.0077	+.0041	+.0018	−.0005	−.0047	−.0078	−.0097	−.0103
	0.1	+.1495	+.0117	+.0058	+.0019	−.0016	−.0027	−.0029	−.0030	+.0023	+.0008	−.0004	−.0019	−.0025	−.0026	−.0026
	0.05	+.0601	+.0049	+.0024	+.0009	+.0001	+.0004	+.0007	+.0009	+.0010	+.0008	+.0013	+.0037	+.0063	+.0080	+.0086
	0	−.0324	0	+.0004	+.0011	+.0029	+.0043	+.0051	+.0054	0	+.0019	+.0056	+.0146	+.0215	+.0257	+.0271
		R_x \ R_y	−.0324	+.0006	+.0781	+.1882	+.2497	+.2798	+.2888							
$b/b = 3/4$	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0.4	+.0860	+.0085	+.0048	+.0021	−.0011	−.0026	−.0032	−.0033	+.0017	+.0008	−.0002	−.0021	−.0037	−.0046	−.0049
	0.3	+.1545	+.0144	+.0078	+.0031	−.0021	−.0043	−.0052	−.0053	+.0029	+.0012	−.0005	−.0039	−.0065	−.0081	−.0086
	0.2	+.1807	+.0149	+.0075	+.0025	−.0025	−.0043	−.0048	−.0049	+.0030	+.0010	−.0010	−.0045	−.0069	−.0083	−.0087
	0.1	+.1218	+.0082	+.0035	+.0008	−.0013	−.0016	−.0015	−.0015	+.0016	+.0004	−.0005	−.0013	−.0013	−.0011	−.0010
	0.05	+.0459	+.0034	+.0014	+.0005	+.0003	+.0007	+.0011	+.0012	+.0007	+.0007	+.0014	+.0038	+.0062	+.0077	+.0082
	0	−.0294	0	+.0004	+.0011	+.0026	+.0037	+.0043	+.0045	0	+.0019	+.0053	+.0129	+.0183	+.0213	+.0223
		R_x \ R_y	−.0294	+.0134	+.0861	+.1804	+.2278	+.2491	+.2551							
$b/b = 7/8$	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0.4	+.0758	+.0065	+.0033	+.0011	−.0011	−.0020	−.0022	−.0023	+.0013	+.0005	−.0004	−.0021	−.0034	−.0042	−.0045
	0.3	+.1350	+.0108	+.0053	+.0016	−.0020	−.0033	−.0035	−.0036	+.0022	+.0007	−.0009	−.0038	−.0059	−.0071	−.0075
	0.2	+.1560	+.0111	+.0049	+.0011	−.0022	−.0031	−.0032	−.0032	+.0022	+.0005	−.0012	−.0041	−.0059	−.0069	−.0072
	0.1	+.1028	+.0060	+.0022	+.0002	−.0010	−.0010	−.0008	−.0007	+.0012	+.0002	−.0005	−.0008	−.0006	−.0003	−.0002
	0.05	+.0371	+.0024	+.0009	+.0003	+.0004	+.0008	+.0011	+.0012	+.0005	+.0006	+.0013	+.0037	+.0057	+.0069	+.0073
	0	−.0266	0	+.0004	+.0010	+.0022	+.0031	+.0035	+.0036	0	+.0019	+.0050	+.0112	+.0153	+.0175	+.0181
		R_x \ R_y	−.0266	+.0234	+.0916	+.1712	+.2068	+.2212	+.2250							
$b/b = 1$	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0.4	+.0670	+.0050	+.0023	+.0005	−.0011	−.0015	−.0016	−.0016	+.0010	+.0003	−.0005	−.0020	−.0031	−.0037	−.0039
	0.3	+.1190	+.0083	+.0036	+.0006	−.0019	−.0025	−.0025	−.0024	+.0017	+.0003	−.0011	−.0035	−.0052	−.0061	−.0064
	0.2	+.1366	+.0084	+.0033	+.0002	−.0019	−.0023	−.0022	−.0021	+.0017	+.0002	−.0013	−.0036	−.0050	−.0057	−.0059
	0.1	+.0889	+.0045	+.0014	−.0001	−.0007	−.0006	−.0004	−.0003	+.0009	+.0001	−.0005	−.0006	−.0003	+.0000	+.0001
	0.05	+.0310	+.0018	+.0006	+.0002	+.0004	+.0008	+.0011	+.0011	+.0004	+.0005	+.0013	+.0034	+.0050	+.0059	+.0062
	0	−.0241	0	+.0004	+.0009	+.0020	+.0026	+.0029	+.0030	0	+.0018	+.0046	+.0098	+.0128	+.0143	+.0148
		R_y	−.0241	+.0311	+.0948	+.1614	+.1877	+.1971	+.1994							



Moment = (Coefficient)(pa^2)

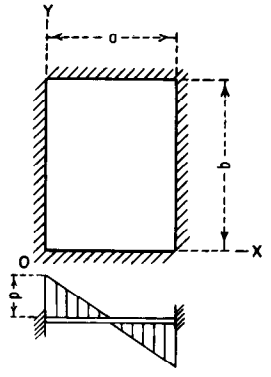
Reaction = (Coefficient)(pa)



POSITIVE SIGN CONVENTION

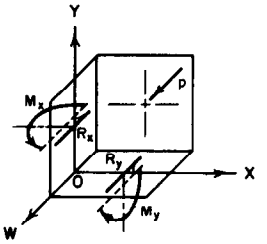
FIGURE 35.—*Plate fixed along four edges, moment and reaction coefficients, Load X, uniformly varying load, p=0 along y=b/2.*

			M_x							M_y						
	y/b	R_x \ x/a	0	0.05	0.1	0.2	0.3	0.4	0.5	0	0.05	0.1	0.2	0.3	0.4	0.5
$a/b = 3/8$	0.5	+.1988	+.0161	+.0073	+.0008	−.0064	−.0076	−.0048	0	+.0032	+.0015	+.0002	−.0013	−.0015	−.0010	0
	0.4	+.1989	+.0160	+.0073	+.0008	−.0064	−.0076	−.0048	0	+.0032	+.0015	+.0002	−.0013	−.0015	−.0010	0
	0.3	+.1991	+.0160	+.0073	+.0008	−.0064	−.0075	−.0047	0	+.0032	+.0014	+.0001	−.0013	−.0016	−.0010	0
	0.2	+.1989	+.0156	+.0069	+.0006	−.0062	−.0071	−.0045	0	+.0031	+.0013	−.0000	−.0016	−.0019	−.0012	0
	0.1	+.1858	+.0128	+.0051	−.0002	−.0050	−.0053	−.0032	0	+.0026	+.0008	−.0005	−.0021	−.0023	−.0014	0
	0.05	+.1327	+.0077	+.0025	−.0005	−.0027	−.0025	−.0014	0	+.0015	+.0003	−.0004	−.0009	−.0007	−.0003	0
	0	−.0137	0	+.0002	+.0006	+.0012	+.0013	+.0008	0	0	+.0011	+.0029	+.0061	+.0065	+.0040	0
		R_x \ R_y	−.0137	+.0307	+.0816	+.1278	+.1137	+.0649	0							
$a/b = 1/2$	0.5	+.1991	+.0160	+.0073	+.0008	−.0064	−.0076	−.0048	0	+.0032	+.0015	+.0002	−.0013	−.0016	−.0010	0
	0.4	+.1992	+.0160	+.0073	+.0008	−.0064	−.0075	−.0047	0	+.0032	+.0014	+.0001	−.0013	−.0016	−.0010	0
	0.3	+.1994	+.0158	+.0071	+.0007	−.0063	−.0073	−.0046	0	+.0032	+.0014	+.0000	−.0015	−.0018	−.0011	0
	0.2	+.1960	+.0147	+.0062	+.0003	−.0058	−.0065	−.0040	0	+.0029	+.0012	−.0002	−.0019	−.0021	−.0014	0
	0.1	+.1673	+.0104	+.0037	−.0005	−.0039	−.0039	−.0022	0	+.0021	+.0005	−.0007	−.0020	−.0020	−.0012	0
	0.05	+.1019	+.0054	+.0016	−.0004	−.0016	−.0014	−.0007	0	+.0011	+.0003	−.0001	+.0002	+.0005	+.0004	0
	0	−.0201	0	+.0003	+.0007	+.0014	+.0015	+.0009	0	0	+.0014	+.0035	+.0072	+.0075	+.0046	0
		R_x \ R_y	−.0201	+.0262	+.0823	+.1319	+.1174	+.0668	0							
$a/b = 5/8$	0.5	+.1997	+.0160	+.0072	+.0008	−.0063	−.0075	−.0047	0	+.0032	+.0014	+.0001	−.0014	−.0017	−.0011	0
	0.4	+.1997	+.0159	+.0071	+.0007	−.0063	−.0074	−.0046	0	+.0032	+.0014	+.0001	−.0015	−.0018	−.0011	0
	0.3	+.1986	+.0153	+.0067	+.0005	−.0061	−.0069	−.0043	0	+.0031	+.0013	−.0001	−.0017	−.0020	−.0013	0
	0.2	+.1899	+.0134	+.0054	−.0000	−.0053	−.0057	−.0034	0	+.0027	+.0009	−.0004	−.0021	−.0023	−.0014	0
	0.1	+.1469	+.0084	+.0027	−.0006	−.0030	−.0028	−.0016	0	+.0017	+.0003	−.0007	−.0015	−.0014	−.0007	0
	0.05	+.0773	+.0040	+.0011	−.0003	−.0009	−.0007	−.0003	0	+.0008	+.0003	+.0004	+.0012	+.0016	+.0011	0
	0	−.0232	0	+.0003	+.0008	+.0016	+.0016	+.0010	0	0	+.0015	+.0040	+.0078	+.0079	+.0048	0
		R_x \ R_y	−.0232	+.0266	+.0845	+.1345	+.1188	+.0674	0							
$a/b = 3/4$	0.5	+.2002	+.0158	+.0070	+.0006	−.0063	−.0073	−.0045	0	+.0032	+.0014	+.0000	−.0016	−.0019	−.0012	0
	0.4	+.1997	+.0155	+.0068	+.0005	−.0062	−.0071	−.0044	0	+.0031	+.0013	−.0001	−.0017	−.0020	−.0013	0
	0.3	+.1963	+.0146	+.0062	+.0002	−.0058	−.0064	−.0039	0	+.0029	+.0011	−.0003	−.0020	−.0022	−.0014	0
	0.2	+.1814	+.0122	+.0047	−.0003	−.0047	−.0049	−.0029	0	+.0024	+.0007	−.0006	−.0021	−.0023	−.0014	0
	0.1	+.1274	+.0068	+.0021	−.0006	−.0023	−.0020	−.0011	0	+.0014	+.0002	−.0006	−.0010	−.0007	−.0003	0
	0.05	+.0581	+.0030	+.0008	−.0002	−.0004	−.0002	−.0000	0	+.0006	+.0004	+.0007	+.0020	+.0024	+.0016	0
	0	−.0243	0	+.0003	+.0008	+.0016	+.0016	+.0010	0	0	+.0017	+.0042	+.0082	+.0082	+.0049	0
		R_x \ R_y	−.0243	+.0281	+.0865	+.1358	+.1193	+.0674	0							
$a/b = 7/8$	0.5	+.2003	+.0154	+.0067	+.0004	−.0061	−.0069	−.0043	0	+.0031	+.0013	−.0001	−.0018	−.0022	−.0014	0
	0.4	+.1989	+.0150	+.0064	+.0003	−.0060	−.0067	−.0041	0	+.0030	+.0012	−.0002	−.0019	−.0022	−.0014	0
	0.3	+.1926	+.0138	+.0056	−.0000	−.0054	−.0058	−.0035	0	+.0028	+.0010	−.0004	−.0021	−.0024	−.0015	0
	0.2	+.1716	+.0109	+.0040	−.0005	−.0042	−.0042	−.0024	0	+.0022	+.0006	−.0007	−.0021	−.0021	−.0012	0
	0.1	+.1100	+.0056	+.0016	−.0005	−.0017	−.0015	−.0008	0	+.0011	+.0002	−.0004	−.0003	+.0000	+.0001	0
	0.05	+.0430	+.0023	+.0006	−.0000	−.0001	+.0001	+.0001	0	+.0005	+.0005	+.0011	+.0027	+.0031	+.0020	0
	0	−.0245	0	+.0004	+.0009	+.0017	+.0017	+.0010	0	0	+.0018	+.0044	+.0083	+.0083	+.0050	0
		R_x \ R_y	−.0245	+.0297	+.0879	+.1364	+.1193	+.0673	0							
$a/b = 1$	0.5	+.1994	+.0148	+.0062	+.0001	−.0059	−.0064	−.0039	0	+.0030	+.0011	−.0003	−.0021	−.0024	−.0016	0
	0.4	+.1971	+.0143	+.0059	+.0000	−.0057	−.0061	−.0037	0	+.0029	+.0011	−.0004	−.0022	−.0025	−.0016	0
	0.3	+.1877	+.0128	+.0050	−.0003	−.0050	−.0052	−.0031	0	+.0026	+.0008	−.0006	−.0023	−.0025	−.0015	0
	0.2	+.1614	+.0098	+.0034	−.0006	−.0036	−.0035	−.0020	0	+.0020	+.0004	−.0007	−.0019	−.0019	−.0011	0
	0.1	+.0948	+.0046	+.0013	−.0005	−.0013	−.0011	−.0005	0	+.0009	+.0002	−.0001	+.0002	+.0006	+.0005	0
	0.05	+.0311	+.0018	+.0005	+.0001	+.0002	+.0003	+.0003	0	+.0004	+.0006	+.0014	+.0033	+.0036	+.0023	0
	0	−.0241	0	+.0004	+.0009	+.0017	+.0017	+.0010	0	0	+.0018	+.0045	+.0084	+.0083	+.0050	0
		R_y	−.0241	+.0310	+.0889	+.1366	+.1190	+.0670	0							



Moment = (Coefficient)(pa^2)

Reaction = (Coefficient)(pa)



POSITIVE SIGN CONVENTION

FIGURE 36.—*Plate fixed along four edges, moment and reaction coefficients, Load XI, uniformly varying load, $p=0$ along $x=a/2$.*

Accuracy of Method of Analysis

THE FINITE difference method is inherently approximate. A factor directly affecting its accuracy is the closeness of spacing, hence the number, of grid points. In obtaining the solutions presented in this monograph, a maximum number of points was used, consistent with the objectives of the study and the capacity of the available electronic calculator.

A few instances may be found where there appear to be irregularities in the orderly progression of the coefficients as the ratio a/b changes. Such instances are most likely to occur in the low values of the ratio where, to gain accuracy, the number of points used in the analysis was increased as a/b decreased. Although these inconsistencies are undesirable from an academic standpoint, they are not of sufficient magnitude to affect materially the usefulness of the results.

As a general check on the finite difference method, problems for which "exact" solutions are known have been computed. The results indicate that for spacings comparable to those used in this study, errors in the maximum moments may be of the order of five percent. Such accuracy is considered to be satisfactory for design purposes. Percentage errors for small numerical values of the coefficients may, of course, be somewhat higher.

For Case 5 a comparison is given in Table 2

TABLE 2.—*Comparison of Coefficients of Maximum Bending Moment at the Center of a Uniformly Loaded Rectangular Plate Fixed Along Four Edges*

b/a	Values of M_x/pa^2 from	
	Timoshenko [1]	Method of this Monograph [2]
1.1	−0.0264	−0.0269
1.2	−0.0299	−0.0301
1.3	−0.0327	−0.0329
1.4	−0.0349	−0.0352
1.6	−0.0381	−0.0384
1.7	−0.0392	−0.0395
1.8	−0.0401	−0.0404
1.9	−0.0407	−0.0410

[1] These values taken directly from page 228, Reference 1, with due regard for difference in sign conventions.
[2] These values interpolated from the column for $\mu=0.3$ of the preceding table.

between values found on page 228 of Reference 1 and directly equivalent values obtained by the method of this monograph. In this particular case, the relative differences are, for the most part, less than one percent.

Comparisons have also been made with other existing results [2] for full uniformly varying load and certain ratios of a/b. These indicated very good agreement.

All coefficients have been computed to four decimal places for consistency and to indicate significant figures for many conditions which would have no significance to three decimal places. This should not be taken as an indication that the percentage accuracy is greater than noted above.

Appendix I

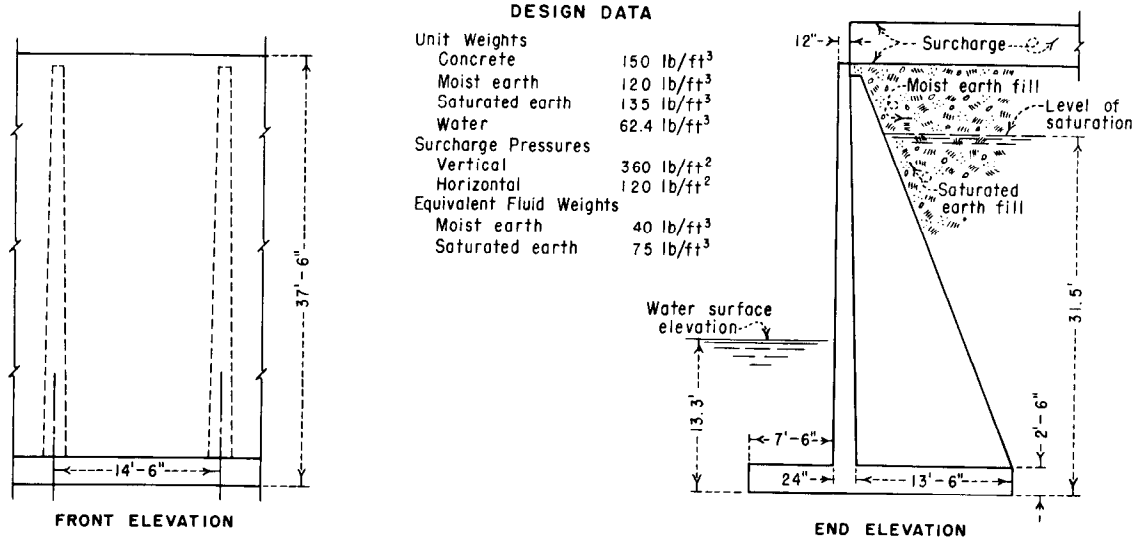
An Application to a Design Problem

THIS appendix illustrates use of the tabulated coefficients by an application to a typical design problem. Figure 37 shows essential dimensions and typical loads acting on an interior panel of a counterfort retaining wall. Both wall and heel slabs approximate the condition of a plate fixed along three edges and free along the fourth. The variations in thickness of the wall slab and the relatively great thickness of the heel slab compared with its lesser lateral dimension are both, perhaps to some degree, in violation of basic assumptions. Ignoring these, however, is done with the conviction that results obtained in this manner are more nearly correct than what might be determined by other available methods.

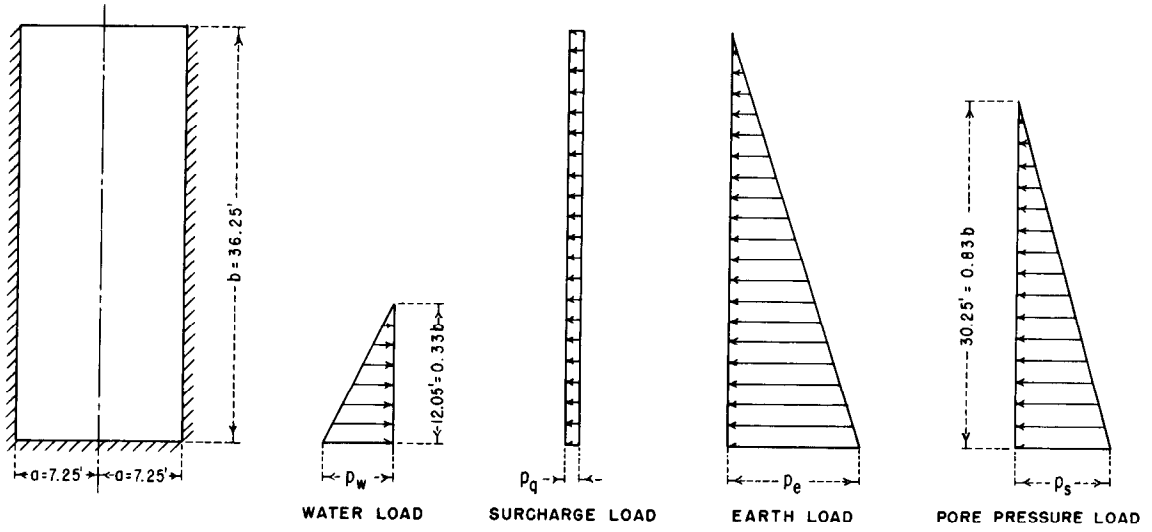
Center line dimensions have been used for both slabs. The net loads, as determined from equilibrium conditions, have been broken into components similar to certain of the typical Loads I through XI. These are illustrated together with a table of their numerical values in Figure 37.

It will be noted that for the wall slab, $r=a/b=0.2$. This requires interpolation on r for the various loads and in the case of p_s, interpolation both on r and the load. For the heel slab, $r=a/b=1/2$, and since both component loads act over the full area, no interpolation is required.

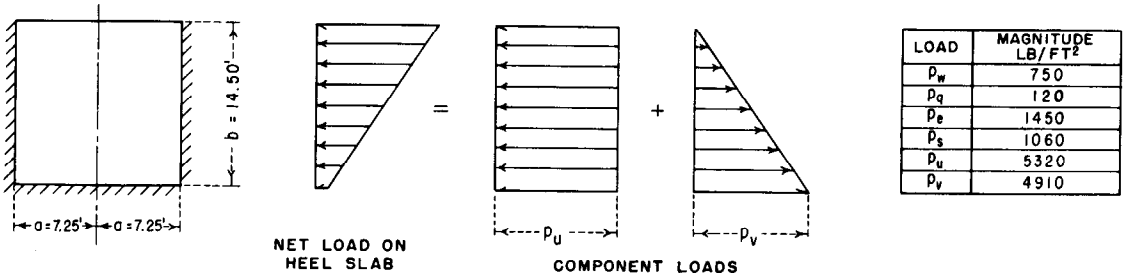
For illustrative purposes, moments have been computed along the assumed lines of support for both the wall and heel slabs. Where interpolation was required to obtain the moment coefficients, second degree interpolation was used. The moment coefficients and actual computed moments are given in Tables 3 through 6.



COUNTERFORT RETAINING WALL
DIMENSIONS AND TYPICAL DESIGN LOADS



COUNTERFORT WALL SLAB — INTERIOR PANEL
IDEALIZED DIMENSIONS AND COMPONENT LOADS



LOAD	MAGNITUDE LB/FT²
p_w	750
p_q	120
p_e	1450
p_s	1060
p_u	5320
p_v	4910

COUNTERFORT HEEL SLAB — INTERIOR PANEL
IDEALIZED DIMENSIONS AND COMPONENT LOADS

FIGURE 37.—*Counterfort wall, design example.*

TABLE 3.—M_x *for Heel Slab at Supports*

Values of $pb^2 \rightarrow$		Moment coefficients		Moments (foot-kips)		Total moment (foot-kips)
		1118.5	−1032.3			
$\frac{x}{a}$	$\frac{y}{b}$	p_u	p_v	M_u	M_v	
0	1.0	+0.0852	+0.0151	+95.30	−15.59	+79.7
0	0.8	+0.0807	+0.0216	+90.26	−22.30	+68.0
0	0.6	+0.0712	+0.0273	+79.64	−28.18	+51.5
0	0.4	+0.0545	+0.0277	+60.96	−28.59	+32.4
0	0.2	+0.0250	+0.0160	+27.96	−16.52	+11.4
0	0	0	0	0	0	0
0.2	0	+0.0019	+0.0014	+2.13	−1.45	+0.7
0.4	0	+0.0050	+0.0033	+5.59	−3.41	+2.2
0.6	0	+0.0080	+0.0050	+8.95	−5.16	+3.8
0.8	0	+0.0100	+0.0061	+11.18	−6.30	+4.9
1.0	0	+0.0107	+0.0065	+11.97	−6.71	+5.3

TABLE 4.—M_y *for Heel Slab at Supports*

Values of $pb^2 \rightarrow$		Moment coefficients		Moments (foot-kips)		Total moment (foot-kips)
		1118.5	−1032.3			
$\frac{x}{a}$	$\frac{y}{b}$	p_u	p_v	M_u	M_v	
0	1.0	0	0	0	0	0
0	0.8	+0.0161	+0.0043	+18.01	−4.44	+13.6
0	0.6	+0.0142	+0.0055	+15.88	−5.68	+10.2
0	0.4	+0.0109	+0.0055	+12.19	−5.68	+6.5
0	0.2	+0.0050	+0.0032	+5.59	−3.30	+2.3
0	0	0	0	0	0	0
0.2	0	+0.0094	+0.0068	+10.51	−7.02	+3.5
0.4	0	+0.0252	+0.0167	+28.19	−17.24	+11.0
0.6	0	+0.0399	+0.0252	+44.63	−26.01	+18.6
0.8	0	+0.0499	+0.0307	+55.81	−31.69	+24.1
1.0	0	+0.0534	+0.0325	+59.73	−33.55	+26.2

TABLE 5.—M_x *for Wall Slab at Supports*

Values of $pb^2\rightarrow$		Moment coefficients				Moments (foot-kips)				Total moment (foot-kips)
		−985.5	157.7	1905.4	1392.9					
$\frac{x}{a}$	$\frac{y}{b}$	p_w	p_q	p_e	p_s	M_w	M_q	M_e	M_s	
0	1.0	−0.0000	+0.0133	+0.0012	+0.0004	+0.00	+2.10	+2.29	+0.56	+5.0
0	0.8	+0.0000	+0.0131	+0.0028	+0.0012	−0.00	+2.07	+5.34	+1.67	+9.1
0	0.6	+0.0000	+0.0134	+0.0054	+0.0034	−0.00	+2.11	+10.29	+4.74	+17.1
0	0.4	+0.0009	+0.0133	+0.0079	+0.0068	−0.89	+2.10	+15.05	+9.47	+25.7
0	0.2	+0.0032	+0.0103	+0.0079	+0.0075	−3.15	+1.62	+15.05	+10.45	+24.0
0	0	0	0	0	0	0	0	0	0	0
0.2	0	+0.0002	+0.0003	+0.0003	+0.0003	−0.20	+0.05	+0.57	+0.42	+0.8
0.4	0	+0.0005	+0.0009	+0.0007	+0.0006	−0.49	+0.14	+1.33	+0.84	+1.8
0.6	0	+0.0007	+0.0013	+0.0011	+0.0011	−0.69	+0.21	+2.10	+1.53	+3.2
0.8	0	+0.0009	+0.0016	+0.0014	+0.0014	−0.89	+0.25	+2.67	+1.95	+4.0
1.0	0	+0.0010	+0.0018	+0.0015	+0.0015	−0.99	+0.28	+2.86	+2.09	+4.2

TABLE 6.—M_y *for Wall Slab at Supports*

Values of $pb^2\rightarrow$		Moment coefficients				Moments (foot-kips)				Total moment (foot-kips)
		−985.5	157.7	1905.4	1392.9					
$\frac{x}{a}$	$\frac{y}{b}$	p_w	p_q	p_e	p_s	M_w	M_q	M_e	M_s	
0	1.0	0	0	0	0	0	0	0	0	0
0	0.8	−0.0000	+0.0026	+0.0005	+0.0002	+0.00	+0.41	+0.95	+0.28	+1.6
0	0.6	+0.0000	+0.0027	+0.0011	+0.0007	−0.00	+0.43	+2.10	+0.98	+3.5
0	0.4	+0.0002	+0.0026	+0.0016	+0.0014	−0.20	+0.41	+3.05	+1.95	+5.2
0	0.2	+0.0006	+0.0020	+0.0016	+0.0015	−0.59	+0.32	+3.05	+2.09	+4.9
0	0	0	0	0	0	0	0	0	0	0
0.2	0	+0.0011	+0.0015	+0.0014	+0.0014	−1.08	+0.24	+2.67	+1.95	+3.8
0.4	0	+0.0025	+0.0041	+0.0036	+0.0036	−2.46	+0.65	+6.86	+5.01	+10.1
0.6	0	+0.0036	+0.0066	+0.0056	+0.0055	−3.55	+1.04	+10.67	+7.66	+15.8
0.8	0	+0.0043	+0.0082	+0.0069	+0.0068	−4.24	+1.29	+13.15	+9.47	+19.7
1.0	0	+0.0046	+0.0088	+0.0074	+0.0072	−4.53	+1.39	+14.10	+10.03	+21.0

Appendix II

The Finite Difference Method

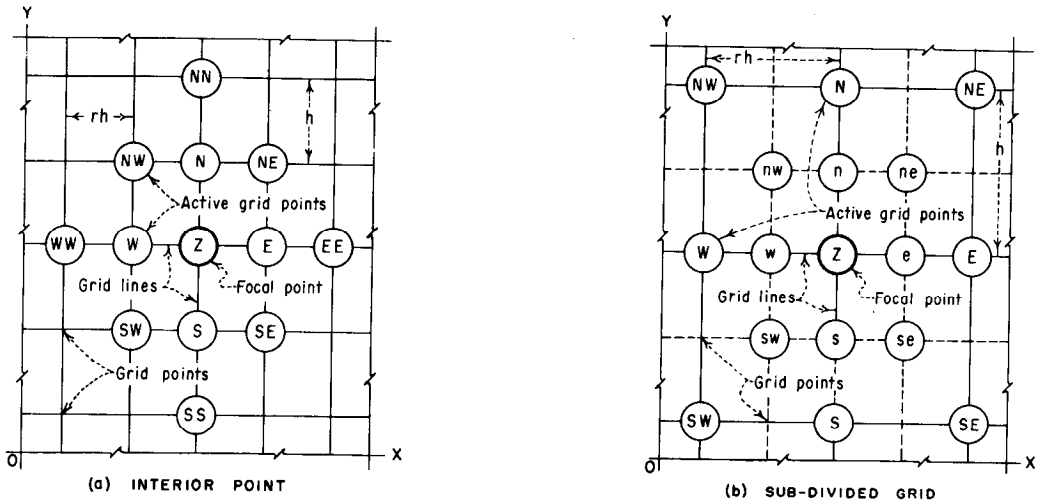
Introduction

The bending of thin elastic plates or slabs subjected to loads normal to their surfaces has been studied by many investigators.[1 through 9] A large number of specific problems have been solved by exact or approximate means, and these results are available. (See, for instance,[3].) Exact and certain approximate methods are frequently difficult to apply except to structures where some symmetry exists and where a simple loading is used. The finite difference method, however, is readily adaptable to rectangular plates having any of the usual edge conditions and subjected to any loading.

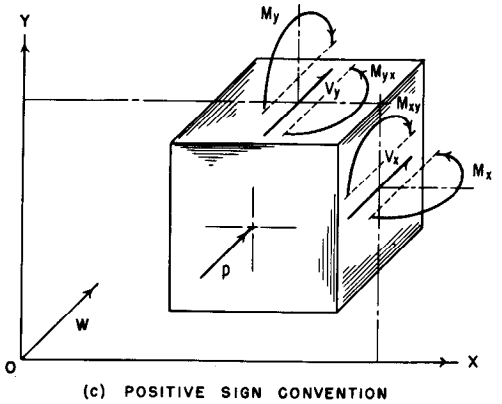
In Denmark, as early as 1918, N. J. Nielsen applied the finite difference method to the solution of plate problems. In his book [4] he has analyzed the problem in considerable detail and has given numerical solutions for a number of cases. H. Marcus published an excellent book [5] in Germany in 1924 on this subject in which he included numerous examples. In the United States, Wise, Holl, and Barton [6,7,8] have contributed to the literature of finite difference solutions for rectangular plates, and Jensen [9] has extended the method to provide a useful tool in the analysis of skew slabs.

General Mathematical Relations

The partial differential equation, frequently called Lagrange's equation, which relates the rectangular coordinates, the load, the deflections, and the physical and elastic constants of a laterally loaded plate, is well known. Its application to the solution of problems of bending of plates or slabs is justified if the following conditions are met: (a) the plate or slab is composed of material which may be assumed to be homogeneous, isotropic, and elastic; (b) the plate is of a uniform thickness which is small as compared with its lateral dimensions; (c) the deflections of the loaded plate are small as compared with its thickness. The additional differential expressions relating the deflections to the boundary conditions, moments, and shears are perhaps equally well known. (See, for instance,[1].) They will therefore only be stated here, using the notation and sign convention shown in Figure 38.



GRID POINT DESIGNATION SYSTEM



p	Intensity of pressure, normal to the plane of the plate.
a, b	Lateral dimensions of the plate.
h	Lateral dimension in the y direction of the grid elements of the plate.
r	Ratio of lateral dimensions of the grid elements.
w	Deflection of the middle surface of the plate, normal to the XOY plane.
x, y	Rectangular coordinates in the plane of the plate.
Z, N, E, ...NE, NN	Designation of active grid points. Also used to represent the value of the deflection of the plate at the point so lettered.
n, e, s, ...sw, nw	Designation of additional points on sub-divided grid.
n, t	Subscripts used to indicate directions normal and tangential to an edge.
M_x, M_y	Bending moment per unit length acting on planes perpendicular to the x and y axes respectively.
M_{xy}, M_{yx}	Twisting moment per unit length in planes perpendicular to the x and y axes respectively.
V_x, V_y	Shearing force per unit length acting normal to the plane of the plate, in planes normal to the x and y axes respectively.
R_x, R_y	Shearing reactions per unit length acting normal to the plane of the plate, in planes normal to the x and y axes respectively.
P	Concentrated load acting at a grid point; positive in the same direction as p.
R	Concentrated reaction acting at a supported grid point; positive direction opposite to that of p.
E	Young's modulus for the material of the plate.
I	Moment of inertia per unit length of a section of the plate.
μ	Poisson's ratio for the material of the plate.
D	Flexural rigidity per unit length of the plate; $D = EI/(1-\mu^2)$.
∇^4	Difference quotient operator: $\nabla^4 w = \frac{\Delta^4 w}{\Delta x^4} + 2\frac{\Delta^4 w}{\Delta x^2 \Delta y^2} + \frac{\Delta^4 w}{\Delta y^4}$.

NOTATION

FIGURE 38.—*Grid point designation system and notation.*

Partial differential equation:

$$\frac{\partial^4 w}{\partial x^4}+2\frac{\partial^4 w}{\partial x^2\partial y^2}+\frac{\partial^4 w}{\partial y^4}=\frac{p(x,y)}{D}. \quad (1)$$

Fixed edge conditions:

$$w=0, \quad (2.01)$$

$$\frac{\partial w}{\partial n}=0. \quad (2.02)$$

Hinged edge conditions:

$$w=0, \quad (3.01)$$

$$\frac{\partial^2 w}{\partial n^2}+\mu\frac{\partial^2 w}{\partial t^2}=0. \quad (3.02)$$

Free edge conditions:

$$\frac{\partial^2 w}{\partial n^2}+\mu\frac{\partial^2 w}{\partial t^2}=0, \quad (4.01)$$

$$\frac{\partial^3 w}{\partial n^3}+(2-\mu)\frac{\partial^3 w}{\partial n\partial t^2}=0. \quad (4.02)$$

Free corner conditions:

$$\frac{\partial^2 w}{\partial n^2}=0 \text{ (both directions)}, \quad (5.01)$$

$$\frac{\partial^3 w}{\partial n^3}+(2-\mu)\frac{\partial^3 w}{\partial n\partial t^2}=0 \text{ (both directions)}, \quad (5.02)$$

$$\frac{\partial^2 w}{\partial n\partial t}=0. \quad (5.03)$$

Bending moments:

$$M_x=D\left[\frac{\partial^2 w}{\partial x^2}+\mu\frac{\partial^2 w}{\partial y^2}\right], \quad (6.01)$$

$$M_y=D\left[\frac{\partial^2 w}{\partial y^2}+\mu\frac{\partial^2 w}{\partial x^2}\right]. \quad (6.02)$$

Twisting moments:

$$M_{xy}=M_{yx}=D(1-\mu)\frac{\partial^2 w}{\partial x\partial y}. \quad (7)$$

Shears:

$$V_x=-D\left[\frac{\partial^3 w}{\partial x^3}+\frac{\partial^3 w}{\partial x\partial y^2}\right], \quad (8.01)$$

$$V_y=-D\left[\frac{\partial^3 w}{\partial y^3}+\frac{\partial^3 w}{\partial x^2\partial y}\right]. \quad (8.02)$$

In the above expressions the partial derivatives with respect to n indicate rates of change in a direction normal to the edge, and those with respect to t indicate rates of change tangential to the edge.

A solution to any specific problem consists of determining a deflection surface which satisfies the basic equation (1), and the appropriate sets of boundary conditions (2.01) through (5.03). The moments and shears required for design purposes may then be computed from (6.01) through (8.02).

In general, it is difficult to obtain an analytical expression for a deflection surface which satisfies all of these conditions. If, however, an approximate solution is acceptable, it is always possible in analyzing a rectangular plate to determine a set of deflections for a finite number of discrete points such that approximate relations corresponding to (1) through (5.03) are satisfied. From these deflections it is possible to compute moments, reactions, and shears at the selected points, using relations similar to (6.01) through (8.02).

The approximate relations referred to above are obtained by replacing the partial derivatives by corresponding finite difference quotients. Such relations are simplest if the discrete points determined by values of the independent variables are equally spaced with respect to both variables. However, in this application it will be advantageous for the relations to be developed on the more general basis of having the equal spacing in one coordinate direction bear a given ratio to the spacing in the perpendicular direction.

Figure 38(a) represents a portion of the interior of a plate subdivided by grid lines into rectangular grid elements. The grid lines are spaced h units apart in the y direction and rh units apart in the x direction. The intersections of the grid lines will be referred to as grid points. Certain of these, lettered for identification, will be spoken of as active points, and the central point of the active group will be called the focal point. For simplicity in writing the equations, the identifying letters for each active point will also be used to represent the value of the deflection, w, of the middle surface of the plate at that point. The double letters refer in every case to the deflection at the individual point so lettered; they do not indicate products of deflections at points designated by only one letter.

Based on the usual methods of finite differences,[10] the difference quotient relations required in this development can be written directly and are given below. All of the difference quotients are given with reference to the focal point, lettered Z.

$$\frac{\Delta w}{\Delta x}=\frac{1}{2rh}(E-W), \tag{9.01}$$

$$\frac{\Delta^2 w}{\Delta x^2}=\frac{1}{r^2h^2}(E-2Z+W), \tag{9.02}$$

$$\frac{\Delta^3 w}{\Delta x^3}=\frac{1}{2r^3h^3}(EE-2E+2W-WW), \tag{9.03}$$

$$\frac{\Delta^4 w}{\Delta x^4}=\frac{1}{r^4h^4}(EE-4E+6Z-4W+WW), \tag{9.04}$$

$$\frac{\Delta w}{\Delta y}=\frac{1}{2h}(N-S), \tag{9.05}$$

$$\frac{\Delta^2 w}{\Delta y^2}=\frac{1}{h^2}(N-2Z+S), \tag{9.06}$$

$$\frac{\Delta^3 w}{\Delta y^3}=\frac{1}{2h^3}(NN-2N+2S-SS), \tag{9.07}$$

$$\frac{\Delta^4 w}{\Delta y^4}=\frac{1}{h^4}(NN-4N+6Z-4S+SS), \tag{9.08}$$

$$\frac{\Delta^2 w}{\Delta x\Delta y}=\frac{1}{4rh^2}(NE-NW+SW-SE), \tag{9.09}$$

$$\frac{\Delta^3 w}{\Delta x^2\Delta y}=\frac{1}{2r^2h^3}(NE-2N+NW-SE+2S-SW), \tag{9.10}$$

$$\frac{\Delta^3 w}{\Delta x\Delta y^2}=\frac{1}{2rh^3}(NE-2E+SE-NW+2W-SW), \tag{9.11}$$

$$\frac{\Delta^4 w}{\Delta x^2\Delta y^2}=\frac{1}{r^2h^4}(NE-2E+SE-2N+4Z-2S+NW-2W+SW). \tag{9.12}$$

The approximate counterparts of the basic relations (1) through (8.02) may now be written. For instance if $\nabla^4 w$ is used to represent the difference quotient equivalent to the left-hand member of equation (1), and the partial derivatives are replaced by their corresponding difference quotients, (9.04), (9.08), and (9.12), there results:

$$\nabla^4 w=\frac{1}{r^4h^4}[EE+WW+r^4(NN+SS)+2r^2(NE+SE+SW+NW)-4(1+r^2)(E+W)-4r^2(1+r^2)(N+S)+2(3+4r^2+3r^4)Z]. \tag{10}$$

This may be considered as an operator, and the portion within the brackets can be conveniently portrayed as an array of coefficients. This expression, multiplied by h^4, is shown in array form at (a) of Figure 39. Each element of the array represents the coefficient of the deflection of one of the active grid points in a group similar to that shown at (a) of Figure 38. The location of the coefficients in the array is congruent to the physical locations of the points and the heavily outlined coefficient applies at the focal point—the point for which the relation is to be determined.

Since the solution deals with discrete points, the distributed load intensity p in the right-hand member of (1) is replaced by an average intensity P/rh^2 at each of the interior grid points. Here P represents a concentrated load whose magnitude at any grid point is a function of the distribution of p on the four adjoining grid elements. If each of these elements is considered as an infinitely rigid plate supported at its four corners, then the force P_z, at the focal point, is equal in magnitude and opposite in direction to the sum of the reactions at all corners common to Z. This can be expressed mathematically as:

$$P_z=P_{zNE}+P_{zSE}+P_{zSW}+P_{zNW} \tag{11}$$

in which P_{zNE} represents the contribution from the grid element Z-N-NE-E and similarly for the other right-hand members. Thus it is seen that the concentrated loads P_z are the static equivalent of p.

It can be shown, if p varies linearly—a usual condition for structures—and if this variation is constant over the four grid elements adjoining any focal point Z, that the magnitude of the statically equivalent average load is:

$$P_z/rh^2=(1/6)(p_N+p_E+p_S+p_W+2p_z), \tag{12}$$

where p_N represents the intensity of p at point N, etc.

The approximate counterpart of (1) may now be written:

$$\nabla^4 w=\frac{P_z}{Drh^2}. \tag{13}$$

Multiplying both sides of (13) by h^4 and replacing $\nabla^4 w$ by the deflections as given by (10) leads to:

$$\frac{1}{r^4}[EE+WW+r^4(NN+SS)+2r^2(NE+SE+SW+NW)-4(1+r^2)(E+W)-4r^2(1+r^2)(N+S)+2(3+4r^2+3r^4)Z]=\frac{P_z}{rh^2}\frac{h^4}{D}. \quad (14)$$

This is the general load-deflection relation for an interior point. It is written at (a) of Figure 39 in the convenient array form previously described. This general form of the equations has been used for the special cases which include the boundary conditions and, in fact, for all of the relations connecting the deflections with load, moments, reactions, and shears. These load-deflection equations establish a linear relation between the load at the focal point and the unknown deflections of the plate at that and the other active grid points. It is these linear equations which are to be solved simultaneously to determine the approximate deflections of the plate at the grid points.

Equation (14) may be derived directly by a second method which considers equilibrium of certain elements of the plate. Referring to the subdivided grid of Figure 38(b), consider the rectangular element ne-se-sw-nw with center at Z. Equilibrium of forces normal to the plate requires that

$$(V_{x_e}-V_{x_w})h+(V_{y_n}-V_{y_s})rh+P_z=0. \quad (15)$$

For the similar element with center at e, equilibrium of moments about the center line ne-se requires that

$$(M_{x_E}-M_{x_Z})h+(M_{yx_{ne}}-M_{yx_{se}})rh+(V_{x_E}+V_{x_Z})\frac{rh^2}{2}=0.$$

However, if the elements are sufficiently small,

$$\frac{1}{2}(V_{x_E}+V_{x_Z})$$

may be replaced with V_{x_e} so that

$$(M_{x_E}-M_{x_Z})h+(M_{yx_{ne}}-M_{yx_{se}})rh+V_{x_e}rh^2=0. \quad (16.01)$$

In like manner for elements with centers at w, n, and s:

$$(M_{x_Z}-M_{x_W})h+(M_{yx_{nw}}-M_{yx_{sw}})rh+V_{x_w}rh^2=0, \quad (16.02)$$

$$(M_{y_N}-M_{y_Z})rh+(M_{xy_{ne}}-M_{xy_{nw}})h+V_{y_n}rh^2=0, \quad (16.03)$$

$$(M_{y_Z}-M_{y_S})rh+(M_{xy_{se}}-M_{xy_{sw}})h+V_{y_s}rh^2=0. \quad (16.04)$$

If equations (15) and (16.01) through (16.04) are combined to eliminate the shears, noting at the same time that $M_{xy}=M_{yx}$, there results

$$\frac{1}{r}(M_{x_E}-2M_{x_Z}+M_{x_W})+2(M_{xy_{ne}}-M_{xy_{nw}}+M_{xy_{sw}}-M_{xy_{se}})+r(M_{y_N}-2M_{y_Z}+M_{y_S})=P_Z. \quad (17)$$

An approximation to each moment in terms of deflections is obtained if the partial differentials of the definitions (6.01), (6.02), and (7) are replaced by their proper difference quotients corresponding to (9.02), (9.06), and (9.09). For instance,

$$M_{x_Z}=\frac{D}{r^2h^2}[E-2Z+W+\mu r^2(N-2Z+S)] \quad (18)$$

and

$$M_{xy_{ne}}=\frac{D(1-\mu)}{rh^2}[NE-N+Z-E]. \quad (19)$$

Substituting these and corresponding relations for the other moments into (17), and multiplying both sides by h^2/rD gives

$$\frac{1}{r^4}(WW-4W+6Z-4E+EE)+\frac{2}{r^2}(NW-2N+NE-2W+4Z-2E+SW-2S+SE)+(NN-4N+6Z-4S+SS)=\frac{P_Zh^2}{rD}$$

which, with some rearrangement, is the same as (14).

This second method is easily adapted to deriving expressions involving nonuniform spacings, moment-free boundaries, etc. It was applied to obtain all of the load-deflection arrays shown in Figures 39 through 59, which were required in the solution of the problems covered by this monograph.

Where boundary conditions involve a reaction, the load P may be replaced by the net load, (P−R), which is the difference between load and reaction. Note that R represents a concentrated force whose positive direction is opposite to that of p. R_x and R_y, on the other hand, represent intensities of shearing reactions whose positive directions conform to V_x and V_y.

Relations connecting the deflections with moments and with shears are given in Figures 60 through 64. It should be noted that shears computed by finite difference methods are inherently less accurate than moments. This is because the shears are functions of odd numbered difference quotients which are determined by a grid spacing double the value found in the even numbered quotients which define the moments.

Application to Plate Fixed Along Three Edges and Free Along the Fourth

As an example of the use of this general method, its application to the problem of a plate fixed along three edges and free along the fourth is given below. The a/b ratio of 1/4 has been used to illustrate use of the 20 supplementary equations. Loads I, II, and IV only are included.

The plate is divided into grid elements and the grid points numbered systematically for identification. Layout of Plate, Figure 66, shows the method used in this case. Because of symmetry of the plate and loading about the line x=a, points which are symmetrical about this line will have equal deflections and are, therefore, numbered alike. This reduces considerably the number of unknown deflections to be determined.

With r=1/4 and μ=0.2, the left-hand side of each of the load-deflection relations yields an array of numerical coefficients corresponding to the type of point it represents. These values have been computed for typical points and they are shown in Figure 65. They are used in writing the left-hand members of the simultaneous equations. Solution of these equations determines the deflections.

One equation must be written for each grid point having an unknown deflection. The equation corresponding to any point is formed as follows:

a. Select the array of load-deflection coefficients having edge conditions and spacings which correspond to those of the given point.
b. Orient the focal point of this array at the given point.
c. Multiply the unknown which represents the deflection of each active grid point by the corresponding coefficient.
d. Equate the sum of these products to the load term for the given point.

For example, for Point 45 the array at (b) of Figure 65 must be used in order that the free edges correspond properly. Then, following the procedure outlined above, the left-hand member of the equation for Point 45 is

$$+256w_{25}+32w_{34}-1088w_{35}+28.8w_{36}+w_{43}$$
$$-68w_{44}+(1669+256)w_{45}-59.6w_{46}$$
$$+32w_{54}-1088w_{55}+28.8w_{56}.$$

Noting that $R_Z=0$ along the free edge it is seen that in this case the general expression for the right-hand terms is always $(P_Z/rh^2)(h^4/D)$. Since these load terms are to be expressed as coefficients of ph^4/D, it remains to evaluate the P_Z/rh^2 in terms of p for each point and each loading. At Point 45 the right-hand members for Loads I and IV may be obtained by direct application of (12). However, a discontinuity occurs in the magnitude of Load II within the grid elements adjoining Point 45. For this reason, the more general method expressed by (11) must be employed.

In particular for Load II, the elements 45–35–36–46 and 45–46–56–55 carry no load, and accordingly they make no contribution to P_{45}. The elements 45–44–34–35 and 45–55–54–44 each carry an equal portion of the uniform load. Under the assumptions leading to (11) it is found, by statics, that the contribution of each of these elements to P_{45} is $ph^2/144$. Hence, $P_{45}=ph^2/72$ and $P_{45}/rh^2=p/18$.

The complete set of 30 equations and the right-hand (load) terms are shown as two matrices in Figure 66. Simultaneous solution of the equations establishes a set of deflections for each of the 30 grid points, corresponding to each load. These results are tabulated in the upper portion of Figure 67.

The 20 supplementary equations used to determine the deflections of the row of points at $y=\frac{1}{4}h$ are set up in a similar manner. Equations are

written for each point of the 3-, 2-, 1-, and 7-rows (see Figure 68). However, in writing equations for the 3- and 2-rows use is made of the previously computed deflections for the 4- and 5-rows. In addition, the solution of the 20 equations gives new and improved values of deflections for the 3-, 2-, and 1-rows. For Point 42, for example, the array (f) of Figure 65 is used to conform with the spacing of the grid points involved. The equation for Load I is

$$-28w_{21}+210w_{22}+10w_{23}+176w_{31}-936w_{32}$$
$$-8w_{33}+\frac{64}{3}w_{47}-364w_{41}+\frac{5057}{3}w_{42}$$
$$+176w_{51}-936w_{52}-8w_{53}=\frac{3}{4}\frac{ph^4}{D}-w_{44}.$$

Substituting for Point 44, its deflection as determined from the 30 equations gives, for the right-hand member

$$(0.75-0.100572)\frac{ph^4}{D}=0.649428\frac{ph^4}{D}.$$

The complete set of 20 equations for Loads I, II, and IV is given in Figure 68. Solution of these gives the deflections shown on the lower portion of Figure 67. Where improved values of the deflection were obtained, the former ones have been discarded as indicated in the figure. Comparison of old and new values shows that they approach closely for the points where y/b=0.4.

Having determined the deflections, reactions and moments may be computed by operating upon the deflections with the appropriate relations, typical samples of which are given in Figure 69. These numerical arrays were obtained similarly to those for the load-deflection relations, by inserting numerical values for r and μ in the proper general expressions of the referenced figures.

To illustrate the method of computation of reactions and moments, an example of each (Load I, a/b=1/4) is given below. At Point 30, for instance, using array (f) of Figure 69, the reaction is:

$$R_{30}=P_{30}+\frac{D}{h^2}(-32w_{27}-16w_{31}+128w_{37}-32w_{47}).$$

Substituting numerical values for P_{30} and the various deflections, this becomes

$$R_{30}=0.03125ph^2+\left(\frac{D}{h^2}\right)\left(\frac{ph^4}{D}\right)$$
$$[-(32)(0.004944)-(16)(0.021325)$$
$$+(128)(0.007860)-(32)(0.009833)]$$
$$=(0.03125+0.192016)ph^2=0.223266ph^2.$$

This represents a concentrated force acting at Point 30. Assuming that it is uniformly distributed over a distance rh, it can be expressed as an average shearing reaction per unit length

$$R_{y_{30}}=R_{30}/rh=0.893064ph,$$

or in terms of b

$$R_{y_{30}}=0.178613pb,$$

which is in the units used in Figures 1 through 33.

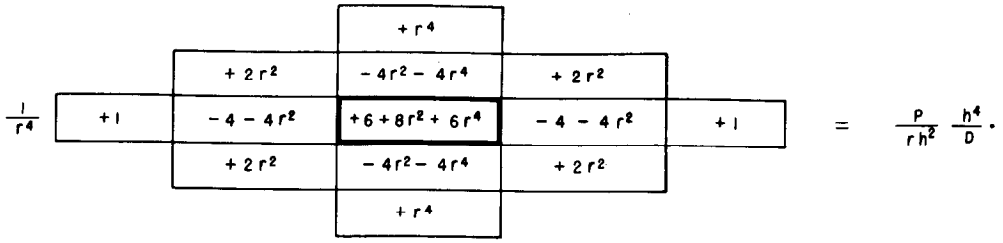
Similarly, for example, the bending moment M_x at Point 23 is computed using array (g) of Figure 69. Thus

$$M_{x_{23}}=\frac{D}{h^2}(16w_{13}+0.2w_{22}-32.4w_{23}+0.2w_{24}+16w_{33}).$$

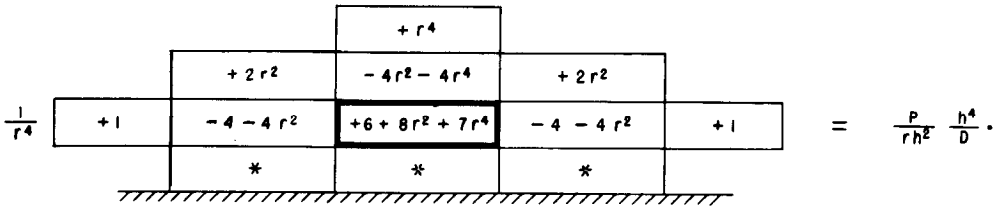
Again inserting numerical values

$$M_{x_{23}}=\left(\frac{D}{h^2}\right)\left(\frac{ph^4}{D}\right)[(16)(0.015283)$$
$$+(0.2)(0.029914)-(32.4)(0.043935)$$
$$+(0.2)(0.046526)+(16)(0.073156)]$$
$$=0.006818ph^2=0.000273pb^2.$$

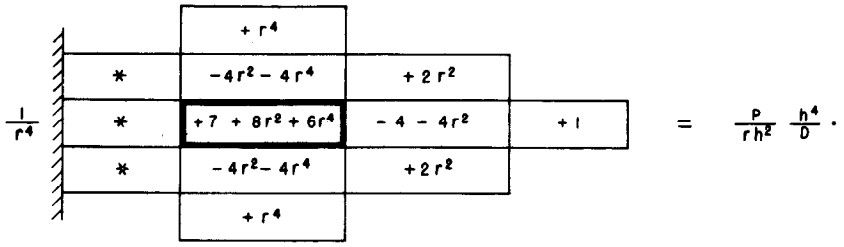
Upon completion of computation of the reactions, a partial check of the solution may be obtained from equilibrium considerations. For Load I, a/b=1/4, the total load on one-half of the plate is $p(5h)(5h/4)=6.25\ ph^2$. The summation of the R/ph^2 column of Figure 70 should agree with this, and it is seen to be in error by something less than 0.015 percent.



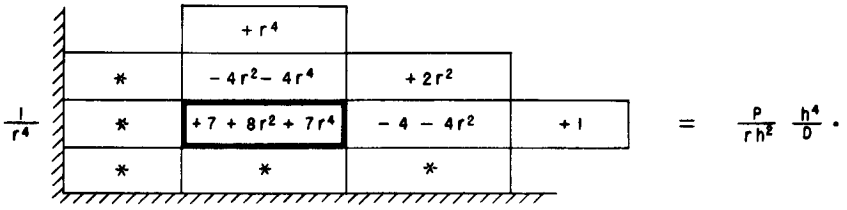
(a) INTERIOR POINT



(b) POINT ADJACENT TO A FIXED X-EDGE



(c) POINT ADJACENT TO A FIXED Y-EDGE



(d) POINT ADJACENT TO A FIXED CORNER

NOTES

Except where otherwise indicated horizontal spacing of grid points is rh units and vertical spacing h units.

An asterisk (*) indicates that no coefficient is required because the fixed-edge deflection at that point is zero.

An edge parallel to the X-Axis is designated as an X-Edge.

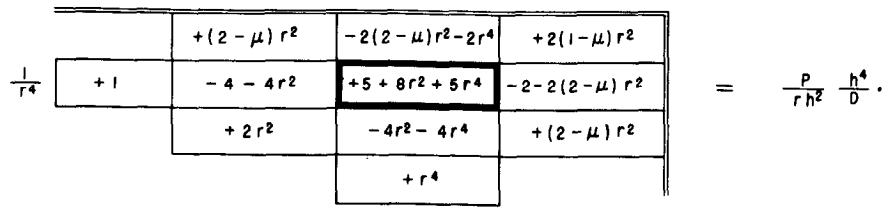
An edge parallel to the Y-Axis is designated as a Y-Edge.

A fixed edge is indicated thus: ////////////

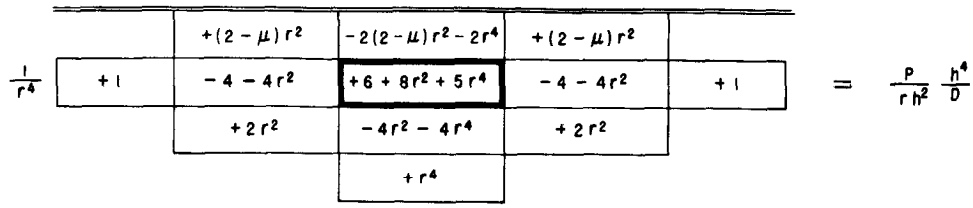
A moment-free edge is indicated thus: ═══════

Any factor preceding an array of coefficients is a multiplier of each element of the array.

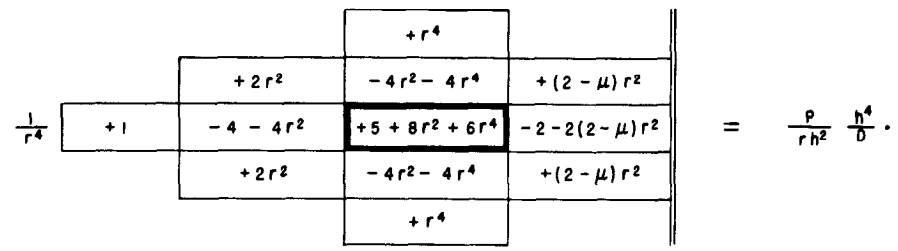
FIGURE 39.—*Load-deflection relations, Sheet I.*



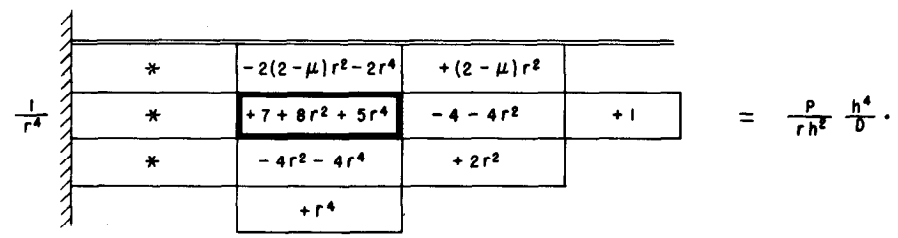
(a) POINT ADJACENT TO A MOMENT-FREE CORNER



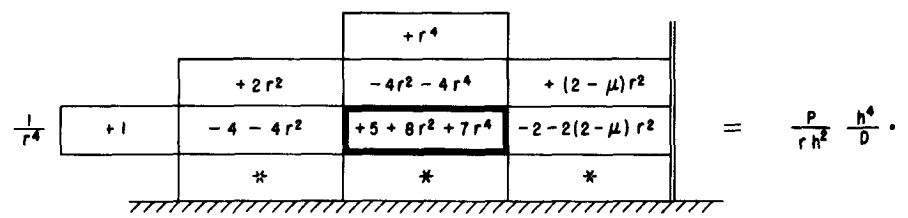
(b) POINT ADJACENT TO A MOMENT-FREE X-EDGE



(c) POINT ADJACENT TO A MOMENT-FREE Y-EDGE



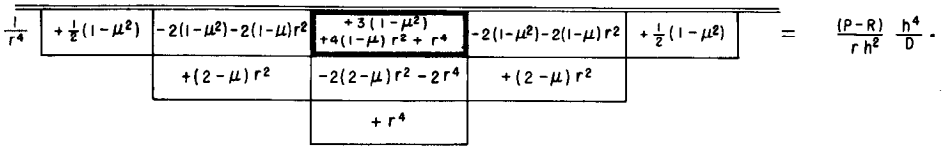
(d) POINT ADJACENT TO A MOMENT-FREE X-EDGE AND A FIXED Y-EDGE



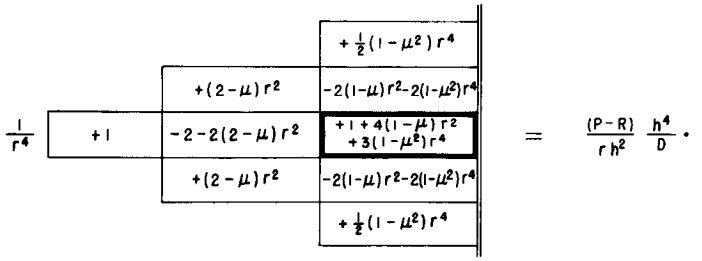
(e) POINT ADJACENT TO A MOMENT-FREE Y-EDGE AND A FIXED X-EDGE

NOTE.—For general notes see Figure 39.

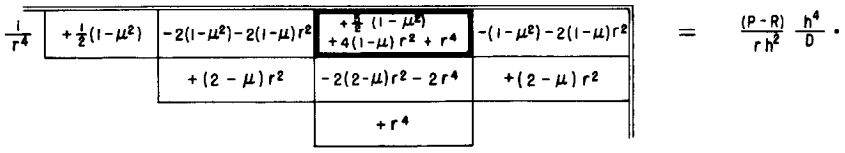
FIGURE 40.—*Load-deflection relations, Sheet II.*



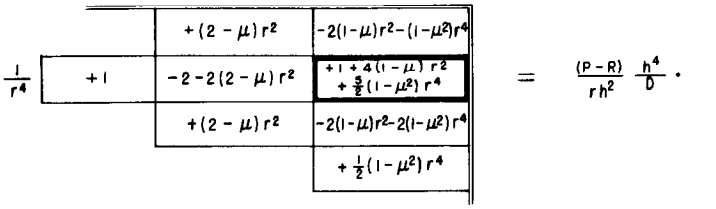
(a) POINT ON A MOMENT-FREE X-EDGE



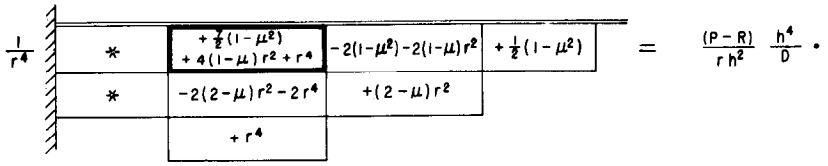
(b) POINT ON A MOMENT-FREE Y-EDGE



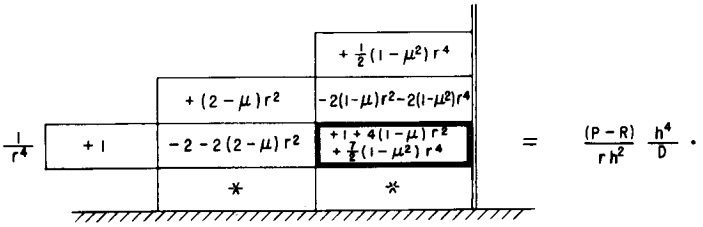
(c) POINT ON A MOMENT-FREE X-EDGE ADJACENT TO A MOMENT-FREE Y-EDGE



(d) POINT ON A MOMENT-FREE Y-EDGE ADJACENT TO A MOMENT-FREE X-EDGE



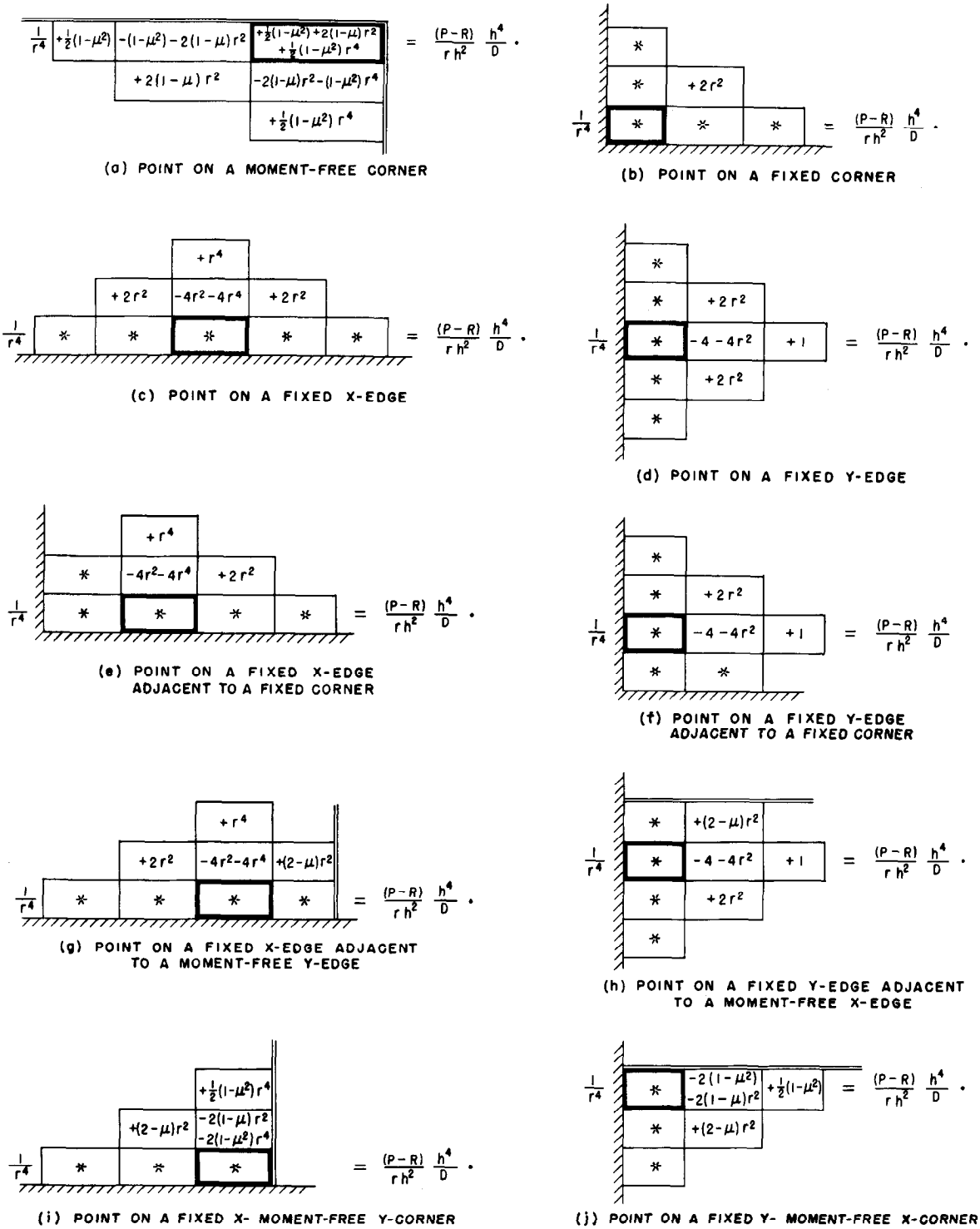
(e) POINT ON A MOMENT-FREE X-EDGE ADJACENT TO A FIXED Y-EDGE



(f) POINT ON A MOMENT-FREE Y-EDGE ADJACENT TO A FIXED X-EDGE

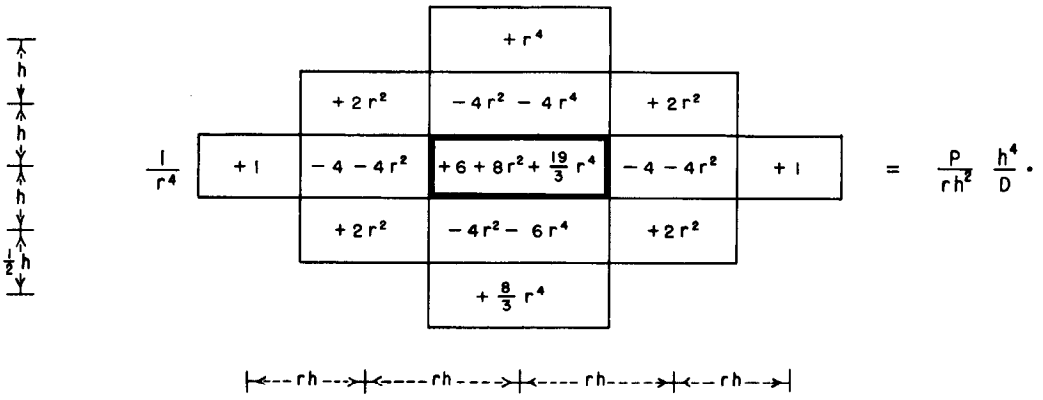
NOTE.—For general notes see Figure 39.

FIGURE 41.—*Load-deflection relations, Sheet III.*



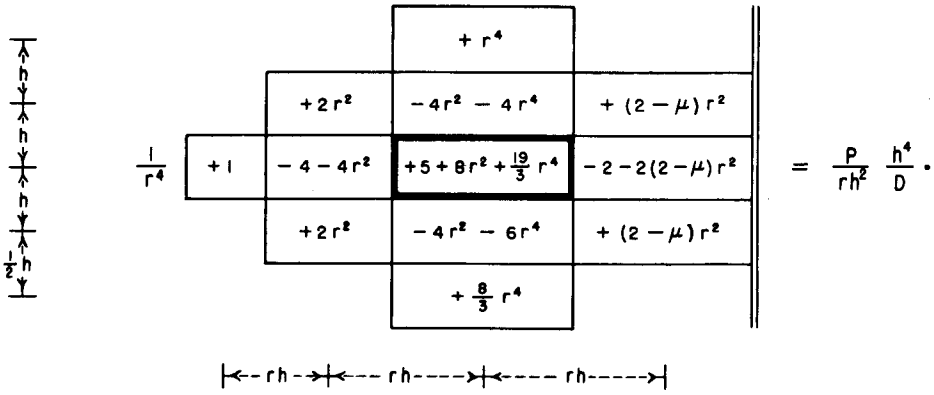
NOTE.—For general notes see Figure 39.

FIGURE 42.—*Load-deflection relations, Sheet IV.*



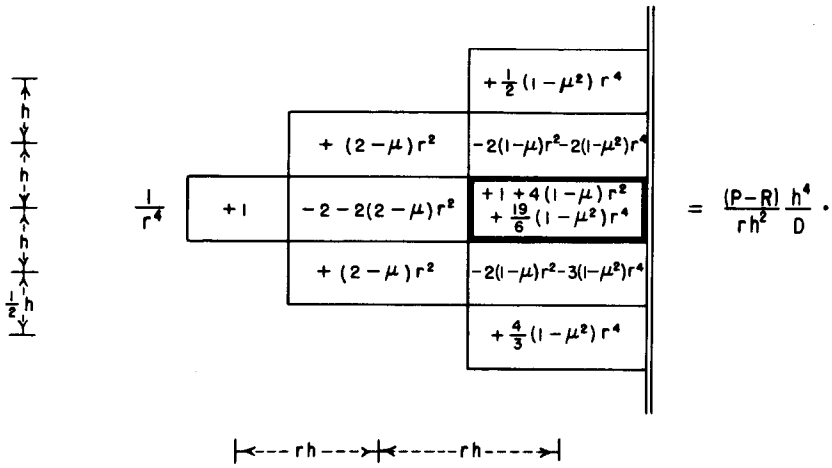
$= \frac{P}{rh^2}\frac{h^4}{D}$.

(a) INTERIOR POINT



$= \frac{P}{rh^2}\frac{h^4}{D}$.

(b) POINT ADJACENT TO A MOMENT-FREE Y-EDGE

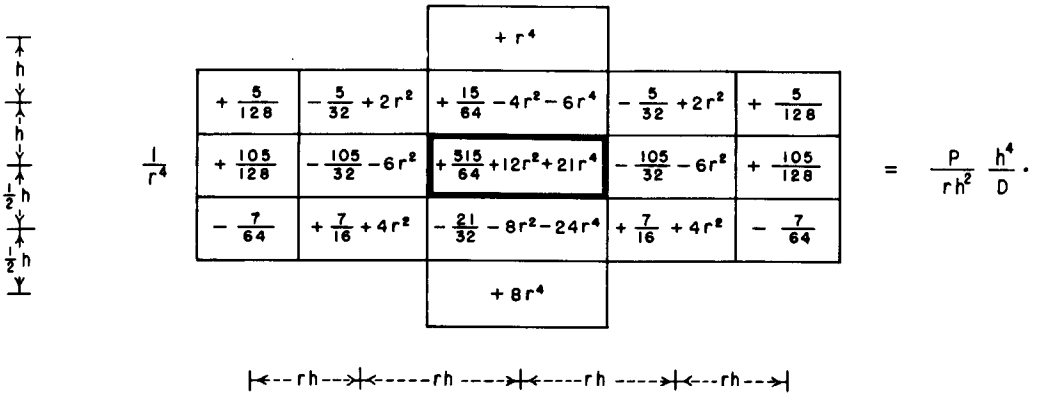


$= \frac{(P-R)}{rh^2}\frac{h^4}{D}$.

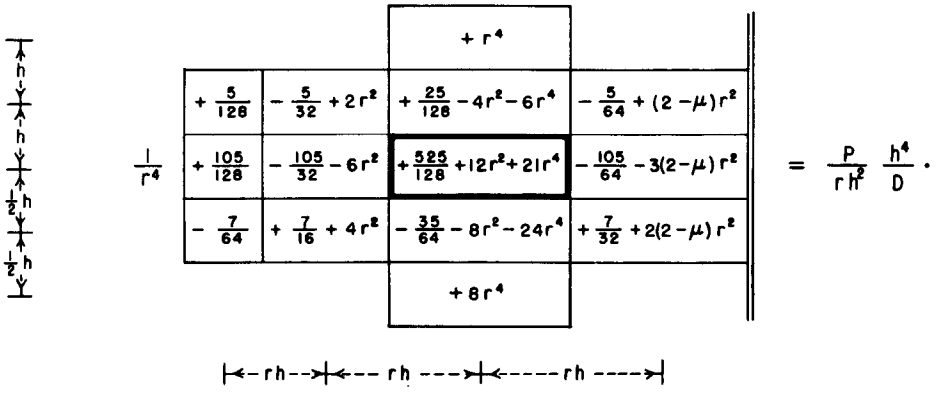
(c) POINT ON A MOMENT-FREE Y-EDGE

NOTE.—For general notes see Figure 39.

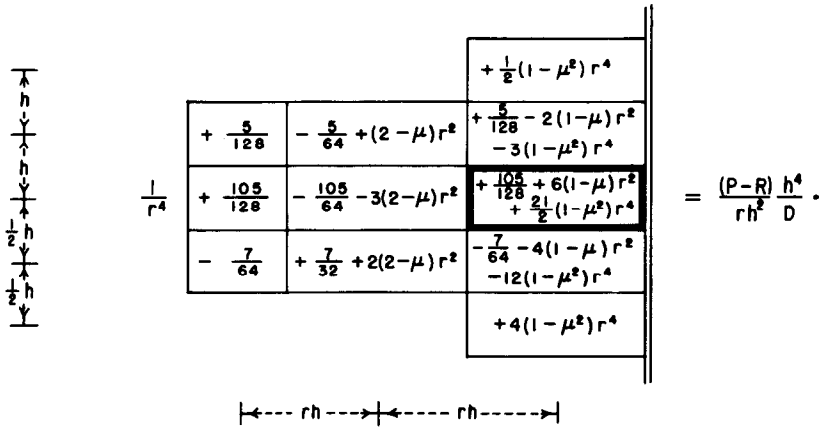
FIGURE 43.—*Load-deflection relations, vertical spacing: 3 at h; 1 at h/2, Sheet V.*



(a) INTERIOR POINT



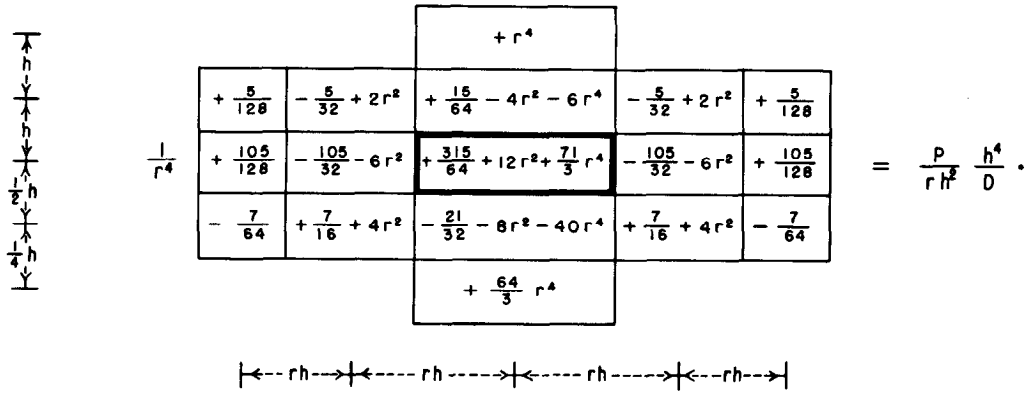
(b) POINT ADJACENT TO A MOMENT-FREE Y-EDGE



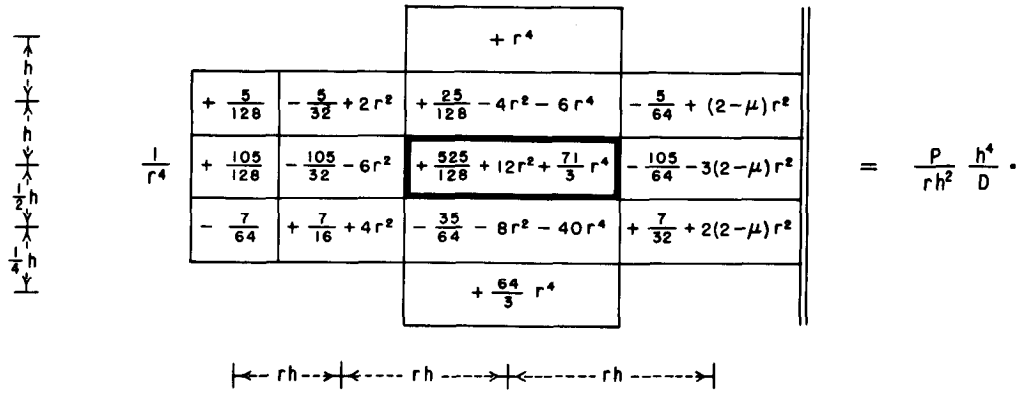
(c) POINT ON A MOMENT-FREE Y-EDGE

NOTE.—For general notes see Figure 39.

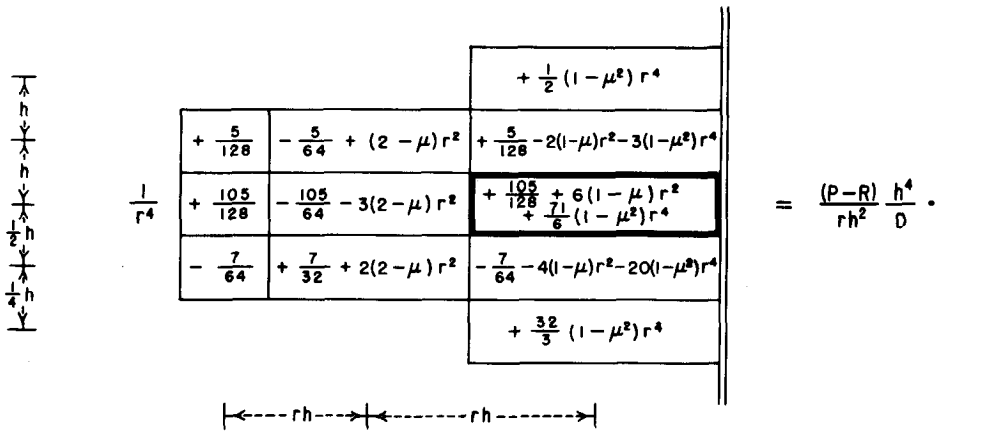
FIGURE 44.—*Load-deflection relations, vertical spacing: 2 at h; 2 at h/2; Sheet VI.*



(a) INTERIOR POINT



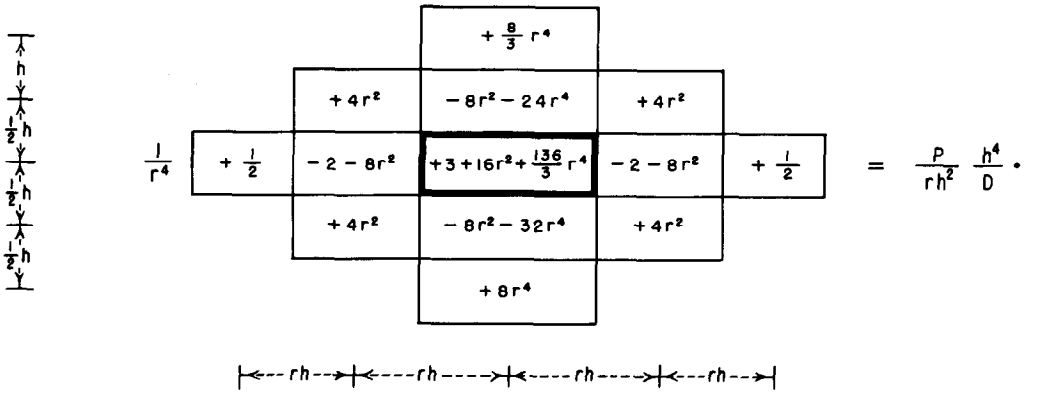
(b) POINT ADJACENT TO A MOMENT-FREE Y-EDGE



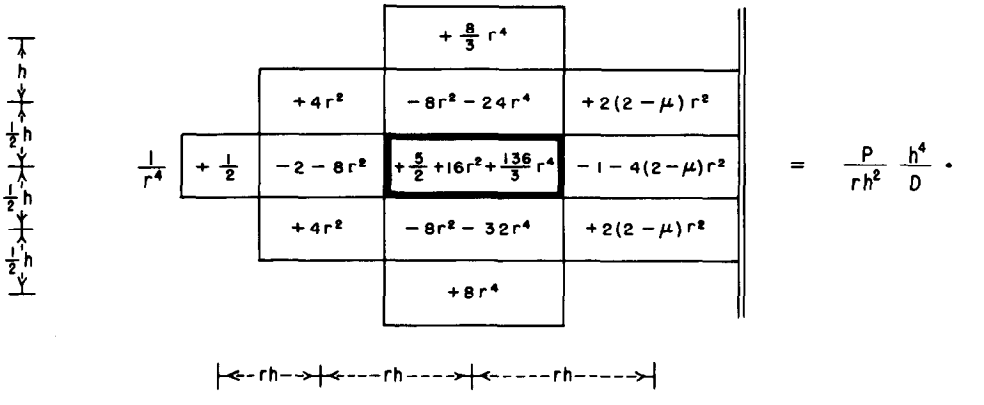
(c) POINT ON A MOMENT-FREE Y-EDGE

NOTE.—For general notes see Figure 39.

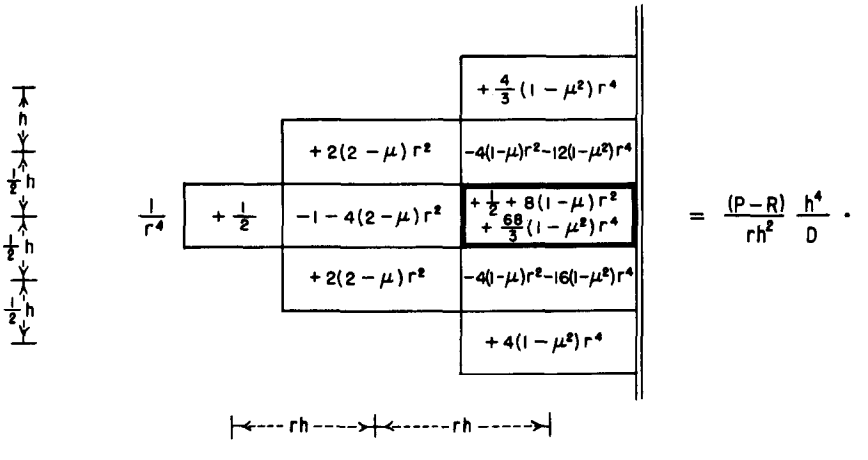
FIGURE 45.—*Load-deflection relations, vertical spacing: 2 at h; 1 at h/2; 1 at h/4, Sheet VII.*



(a) INTERIOR POINT



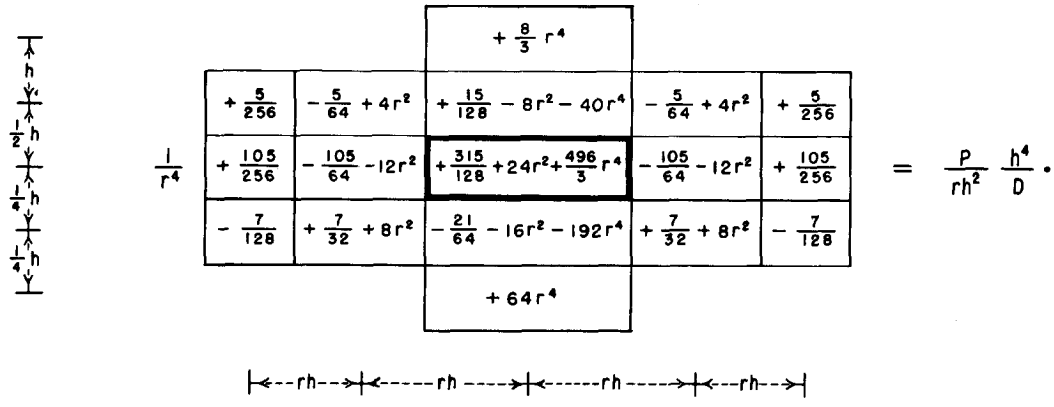
(b) POINT ADJACENT TO A MOMENT-FREE Y-EDGE



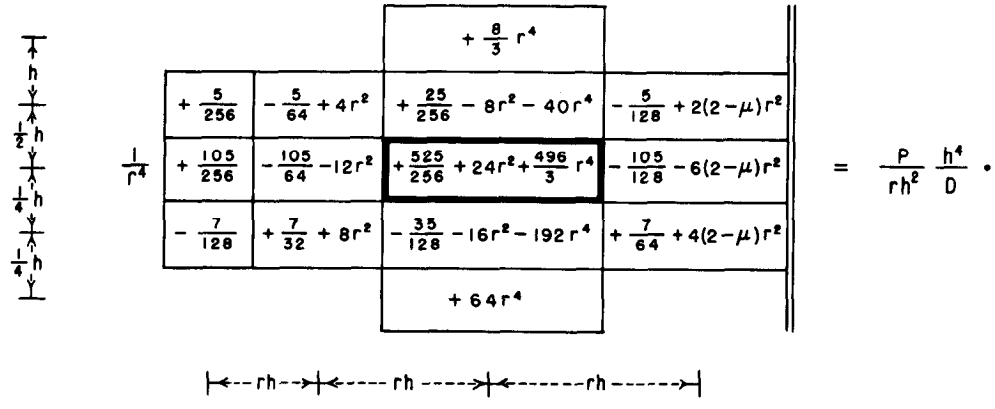
(c) POINT ON A MOMENT-FREE Y-EDGE

NOTE.—For general notes see Figure 39.

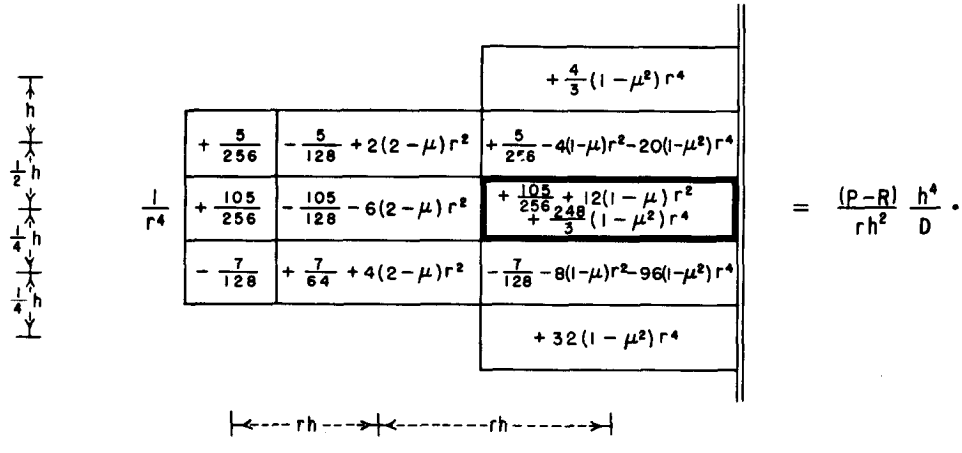
FIGURE 46.—*Load-deflection relations, vertical spacing: 1 at h; 3 at h/2, Sheet VIII.*



(a) INTERIOR POINT



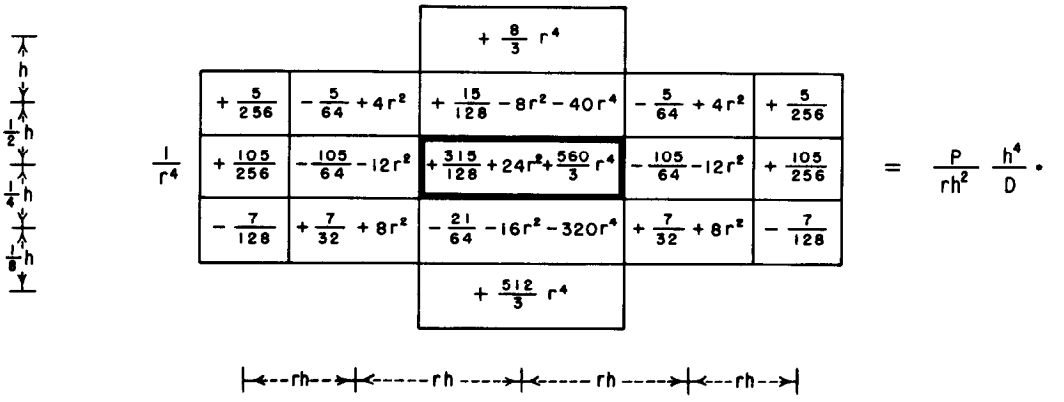
(b) POINT ADJACENT TO A MOMENT-FREE Y-EDGE



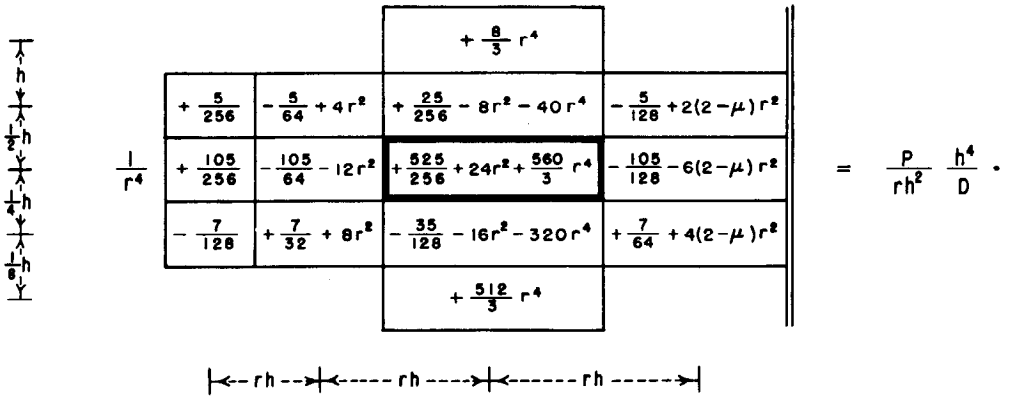
(c) POINT ON A MOMENT-FREE Y-EDGE

NOTE.—For general notes see Figure 39.

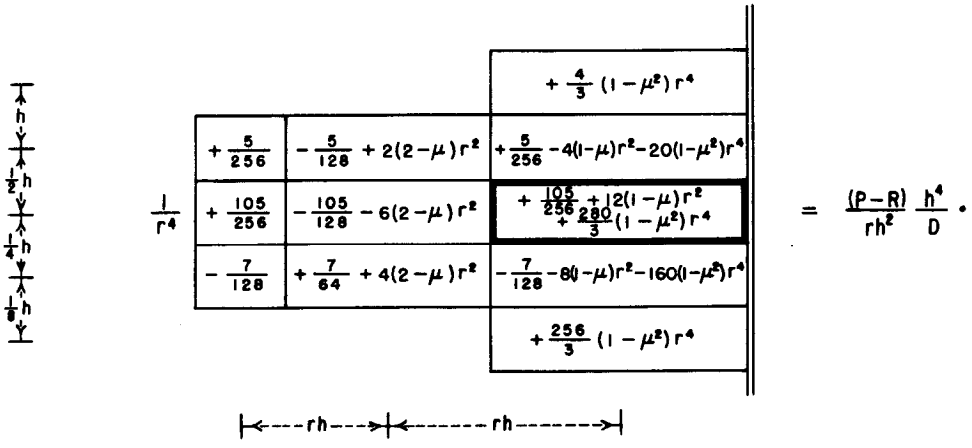
FIGURE 47.—*Load-deflection relations, vertical spacing: 1 at h; 1 at h/2; 2 at h/4, Sheet IX.*



(a) INTERIOR POINT



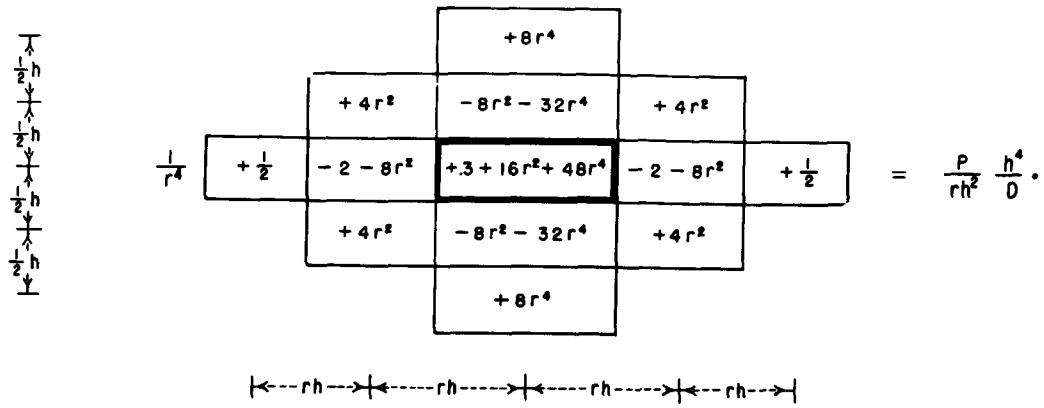
(b) POINT ADJACENT TO A MOMENT-FREE Y-EDGE



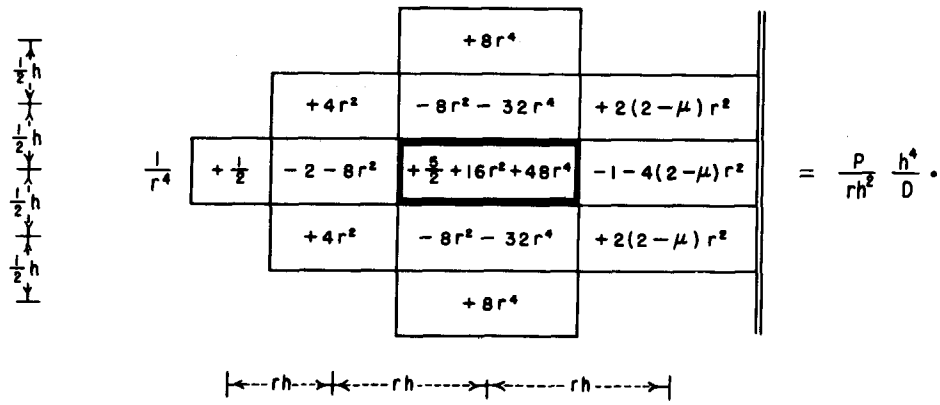
(c) POINT ON A MOMENT-FREE Y-EDGE

NOTE.—For general notes see Figure 39.

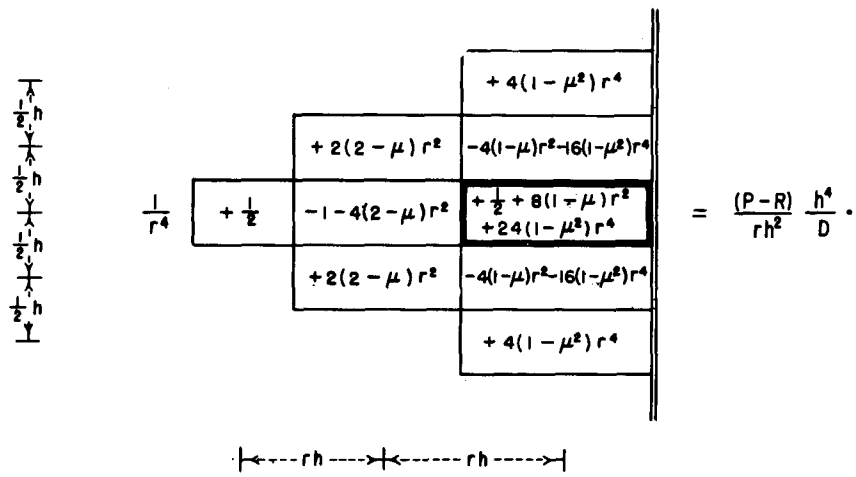
FIGURE 48.—*Load-deflection relations, vertical spacing: 1 each at h, h/2, h/4, and h/8, Sheet X.*



(a) INTERIOR POINT



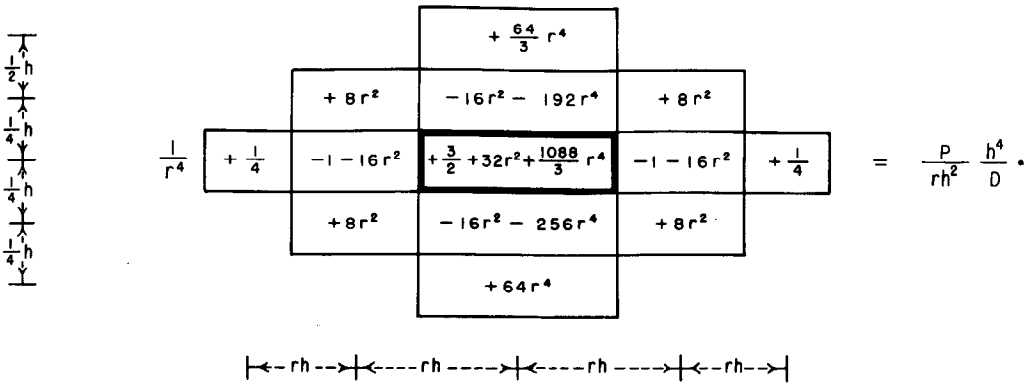
(b) POINT ADJACENT TO A MOMENT-FREE Y-EDGE



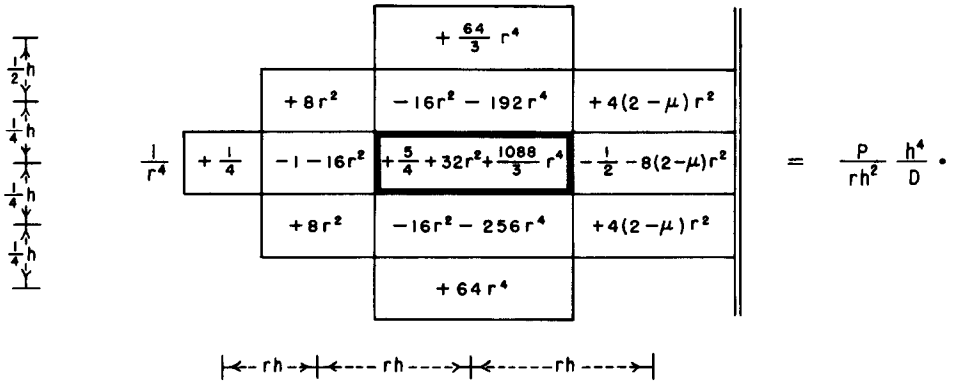
(c) POINT ON A MOMENT-FREE Y-EDGE

NOTE.—For general notes see Figure 39.

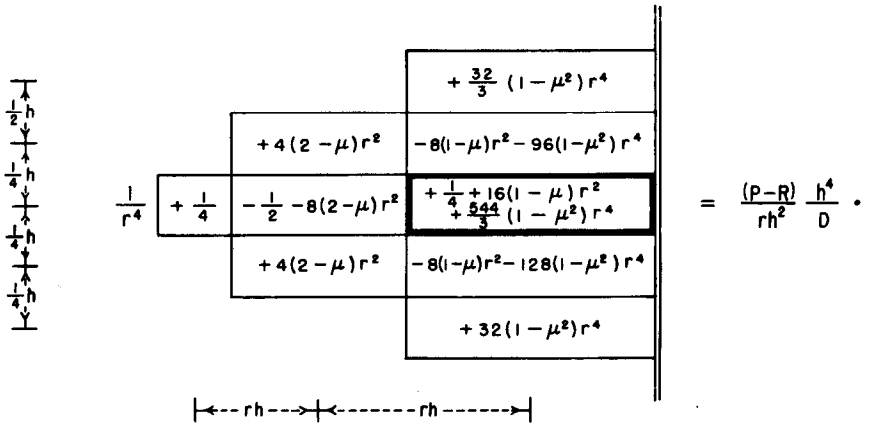
FIGURE 49.—*Load-deflection relations, vertical spacing: 4 at h/2, Sheet XI.*



(a) INTERIOR POINT



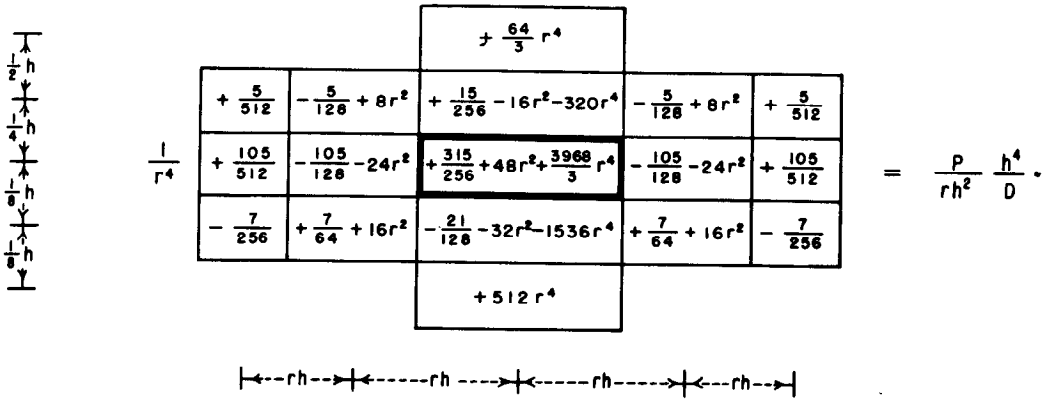
(b) POINT ADJACENT TO A MOMENT-FREE Y-EDGE



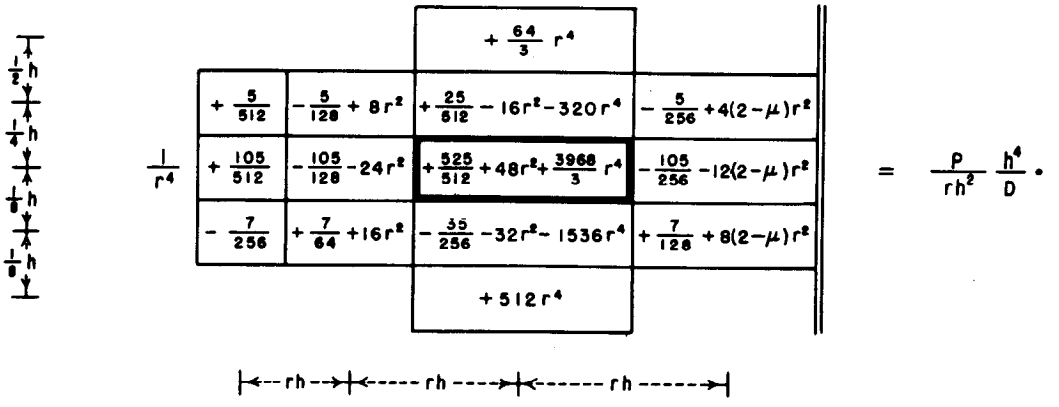
(c) POINT ON A MOMENT-FREE Y-EDGE

NOTE.—For general notes see Figure 39.

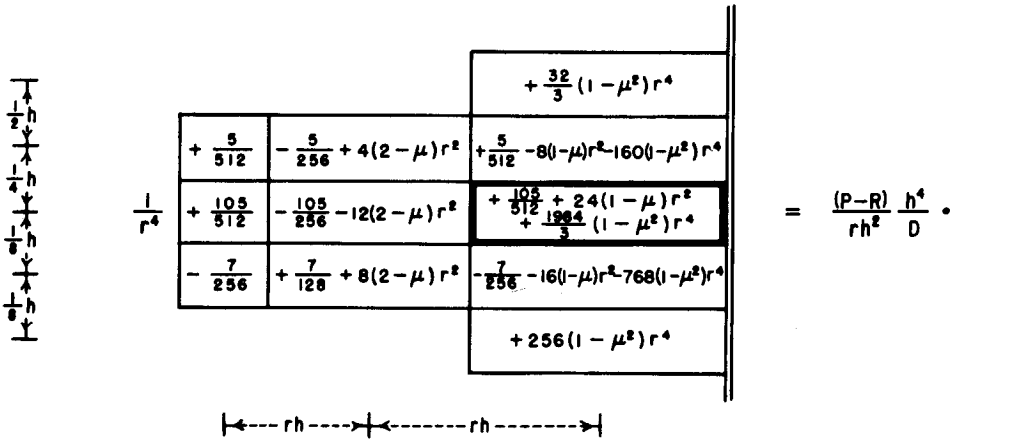
FIGURE 50.—*Load-deflection relations, vertical spacing: 1 at h/2; 3 at h/4, Sheet XII.*



(a) INTERIOR POINT



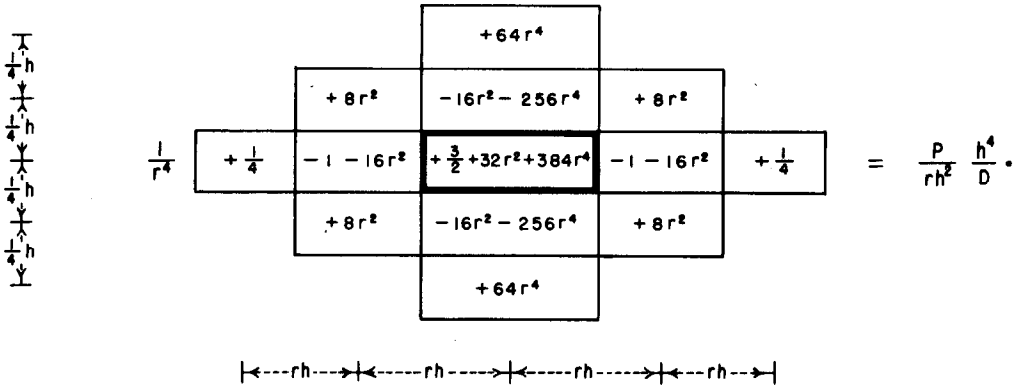
(b) POINT ADJACENT TO A MOMENT-FREE Y-EDGE



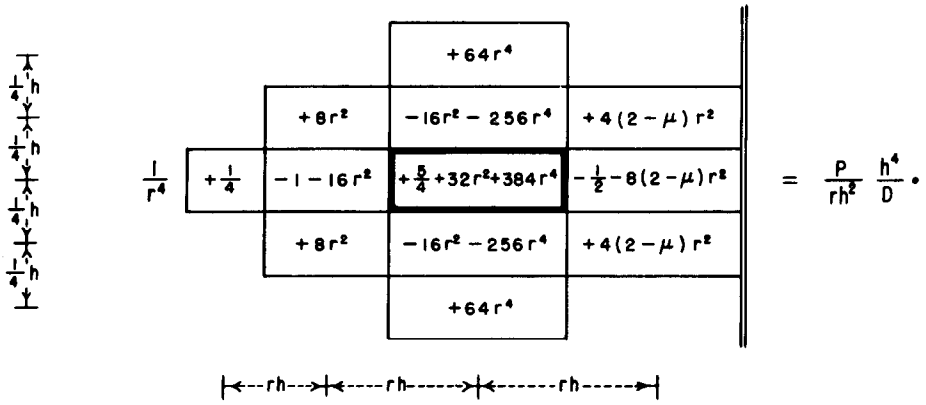
(c) POINT ON A MOMENT-FREE Y-EDGE

NOTE.—For general notes see Figure 39.

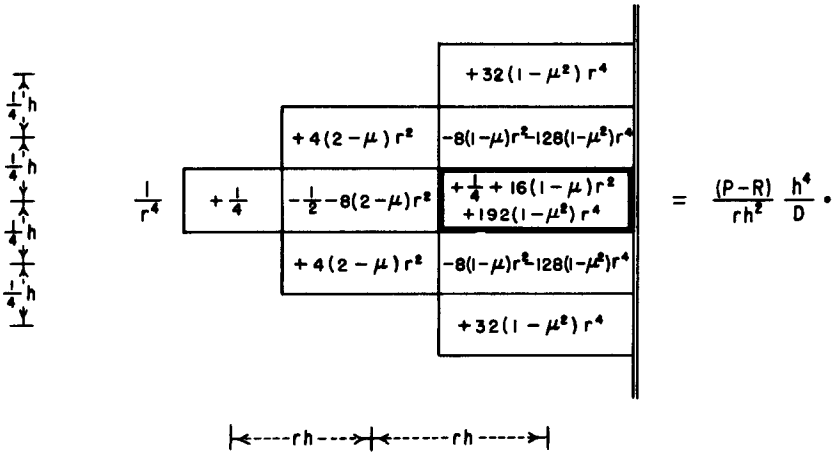
FIGURE 51.—*Load-deflection relations, vertical spacing: 1 at h/2; 1 at h/4; 2 at h/8, Sheet XIII.*



(a) INTERIOR POINT



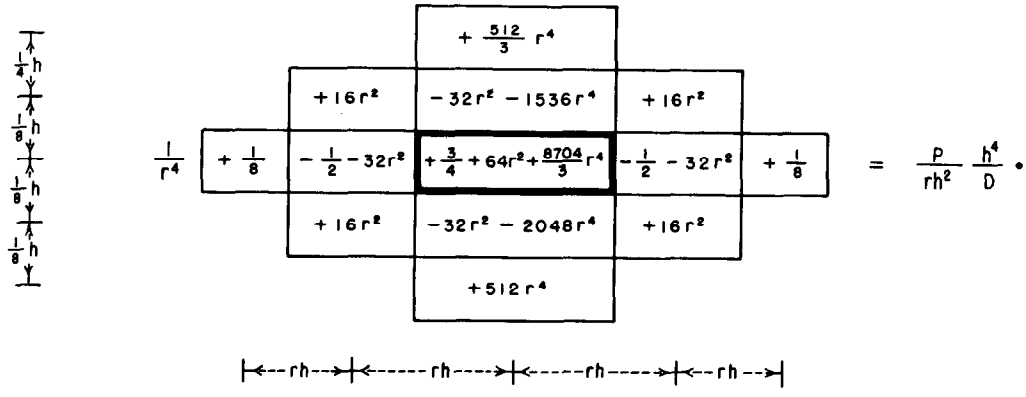
(b) POINT ADJACENT TO A MOMENT-FREE Y-EDGE



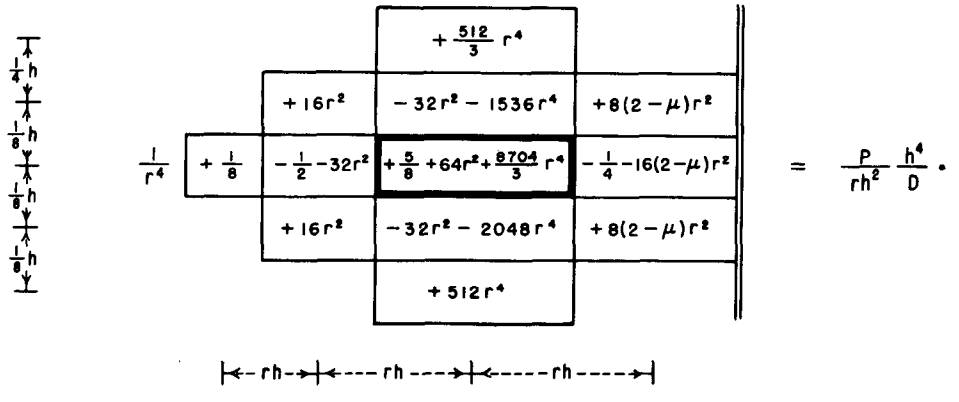
(c) POINT ON A MOMENT-FREE Y-EDGE

NOTE.—For general notes see Figure 39.

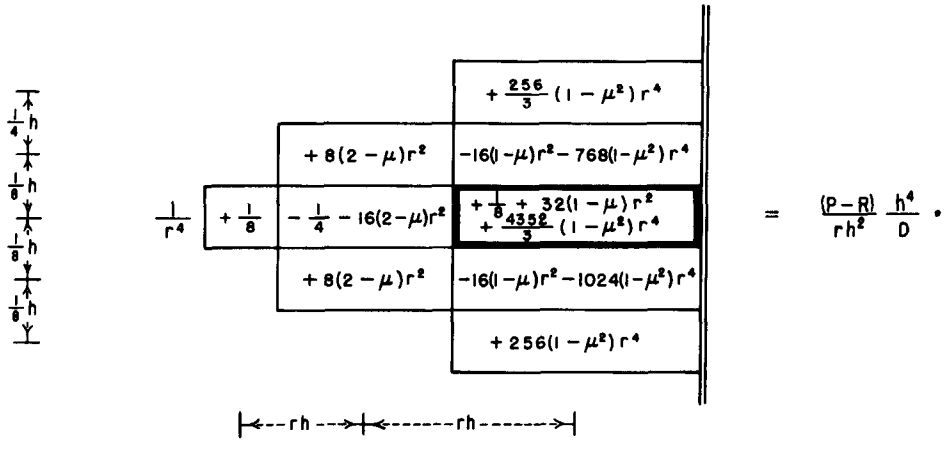
FIGURE 52.—*Load-deflection relations, vertical spacing: 4 at h/4, Sheet XIV.*



(a) INTERIOR POINT



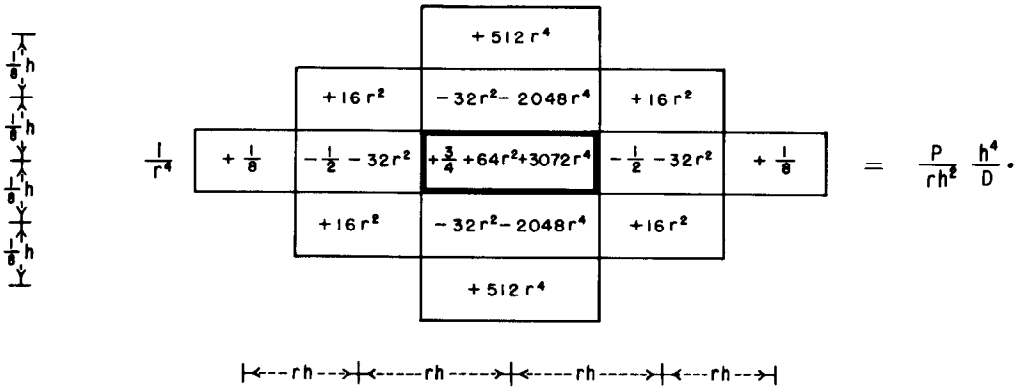
(b) POINT ADJACENT TO A MOMENT-FREE Y-EDGE



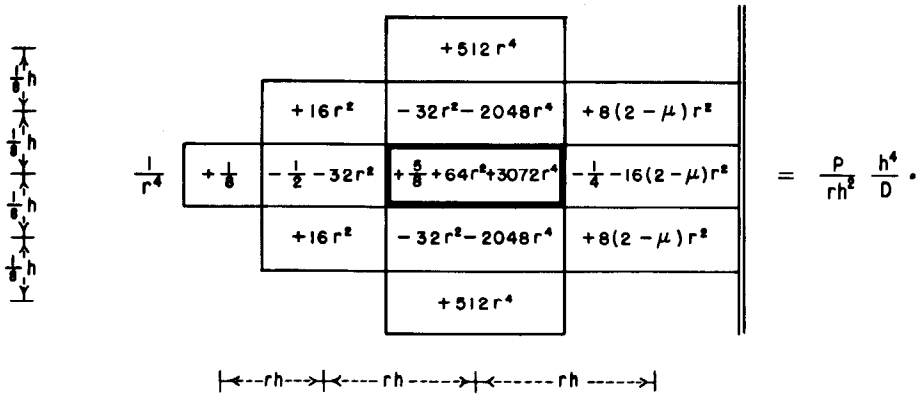
(c) POINT ON A MOMENT-FREE Y-EDGE

NOTE.—For general notes see Figure 39.

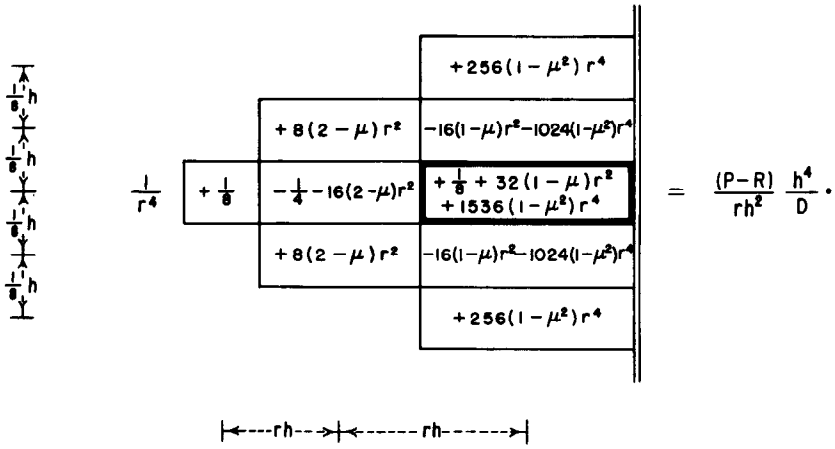
FIGURE 53.—*Load-deflection relations, vertical spacing: 1 at h/4; 3 at h/8, Sheet XV.*



(a) INTERIOR POINT



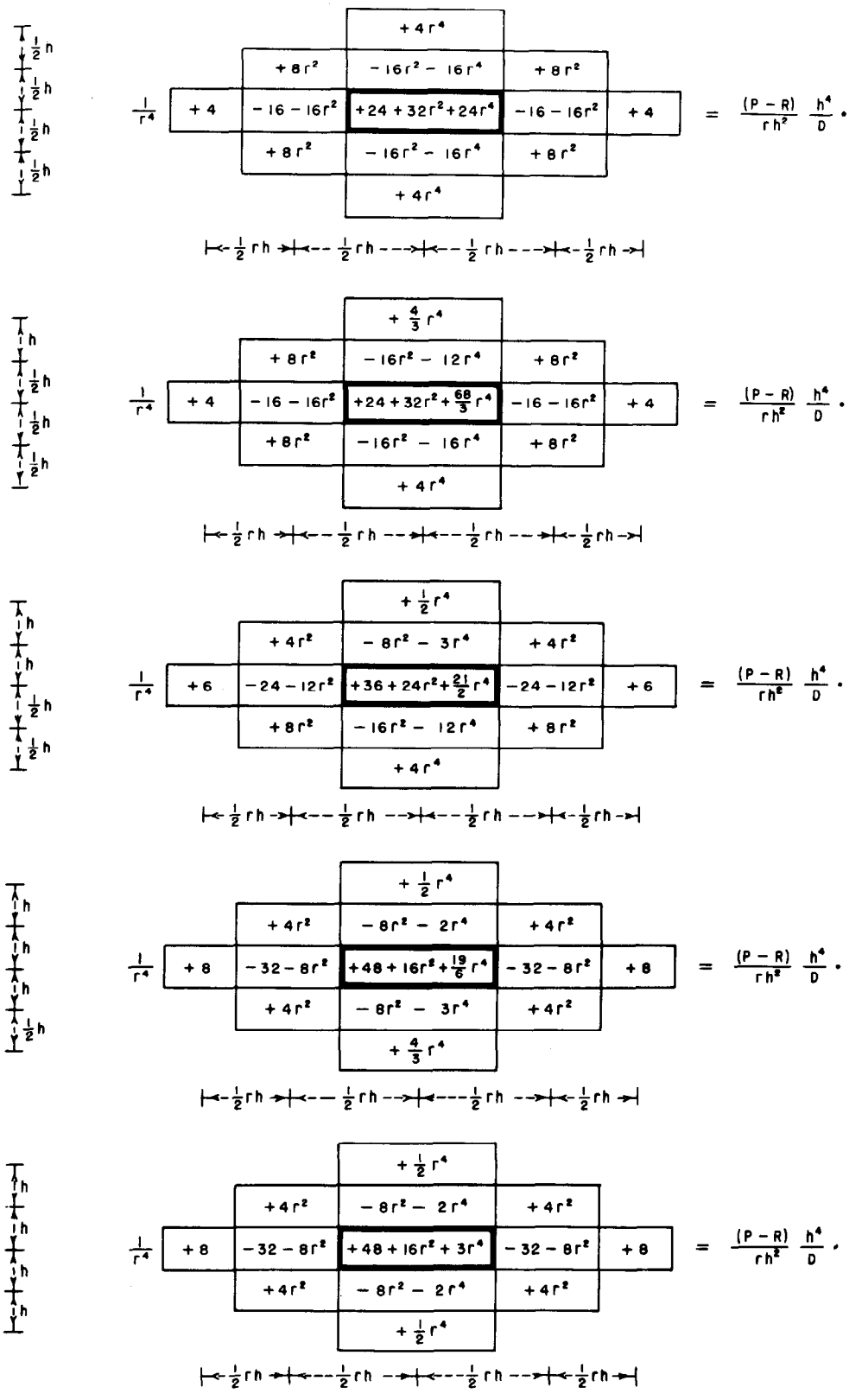
(b) POINT ADJACENT TO A MOMENT-FREE Y-EDGE



(c) POINT ON A MOMENT-FREE Y-EDGE

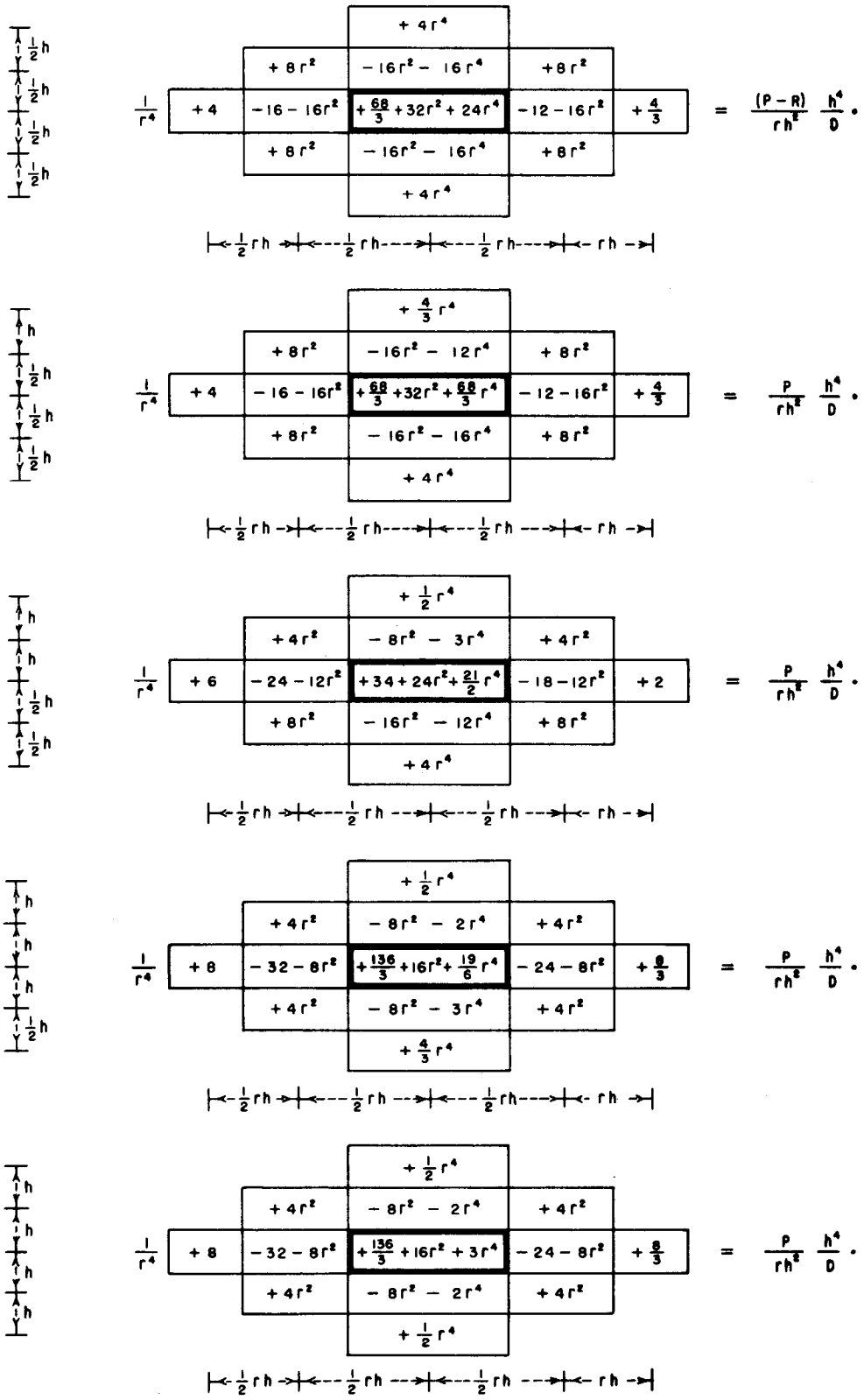
NOTE.—For general notes see Figure 39.

FIGURE 54.—*Load-deflection relations, vertical spacing: 4 at h/8, Sheet XVI.*



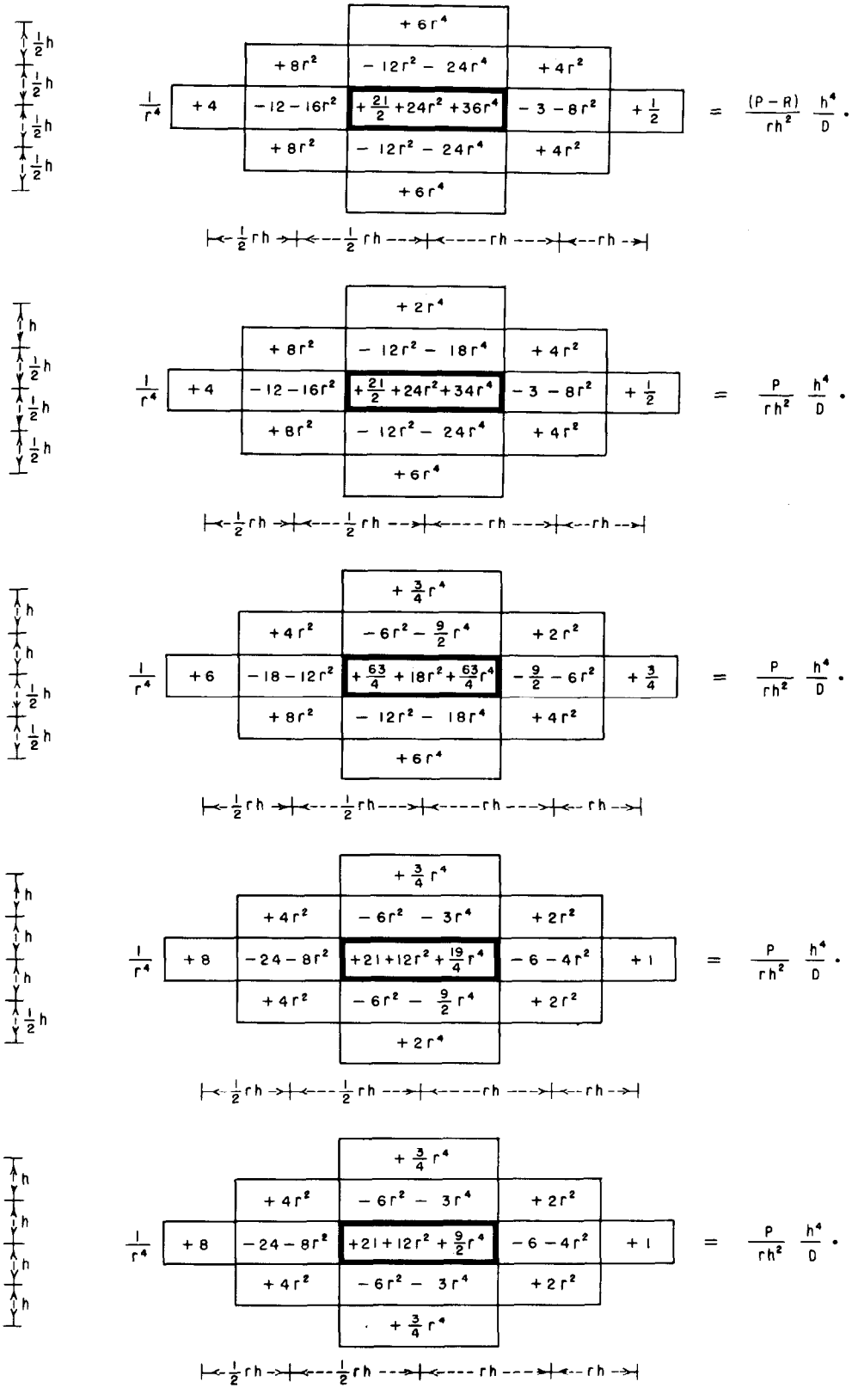
NOTE.—For general notes see Figure 39.

FIGURE 55.—*Load-deflection relations, horizontal spacing: 4 at rh/2, Sheet XVII.*



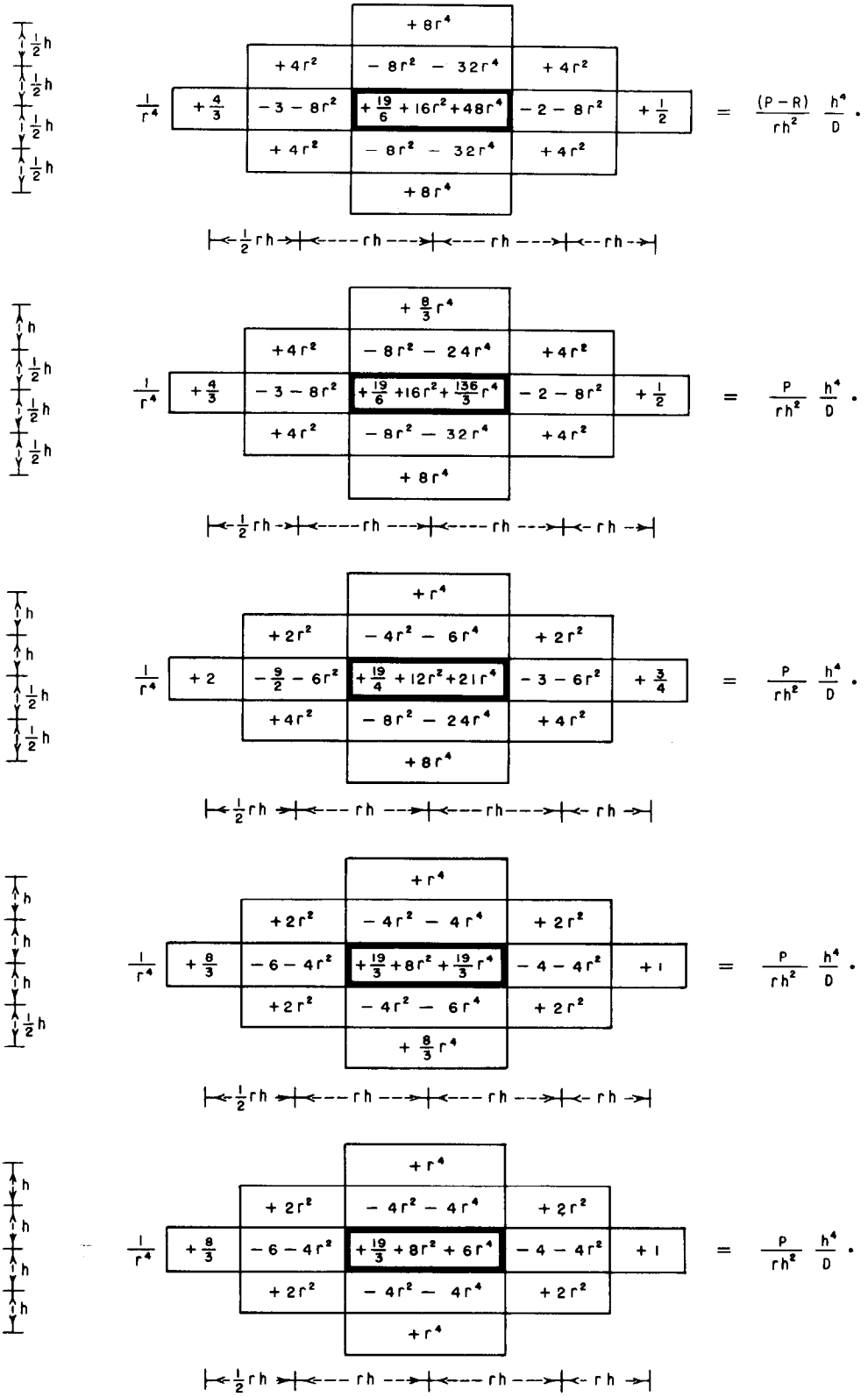
NOTE.—For general notes see Figure 39.

FIGURE 56.—*Load-deflection relations, horizontal spacing: 3 at rh/2; 1 at rh, Sheet XVIII.*



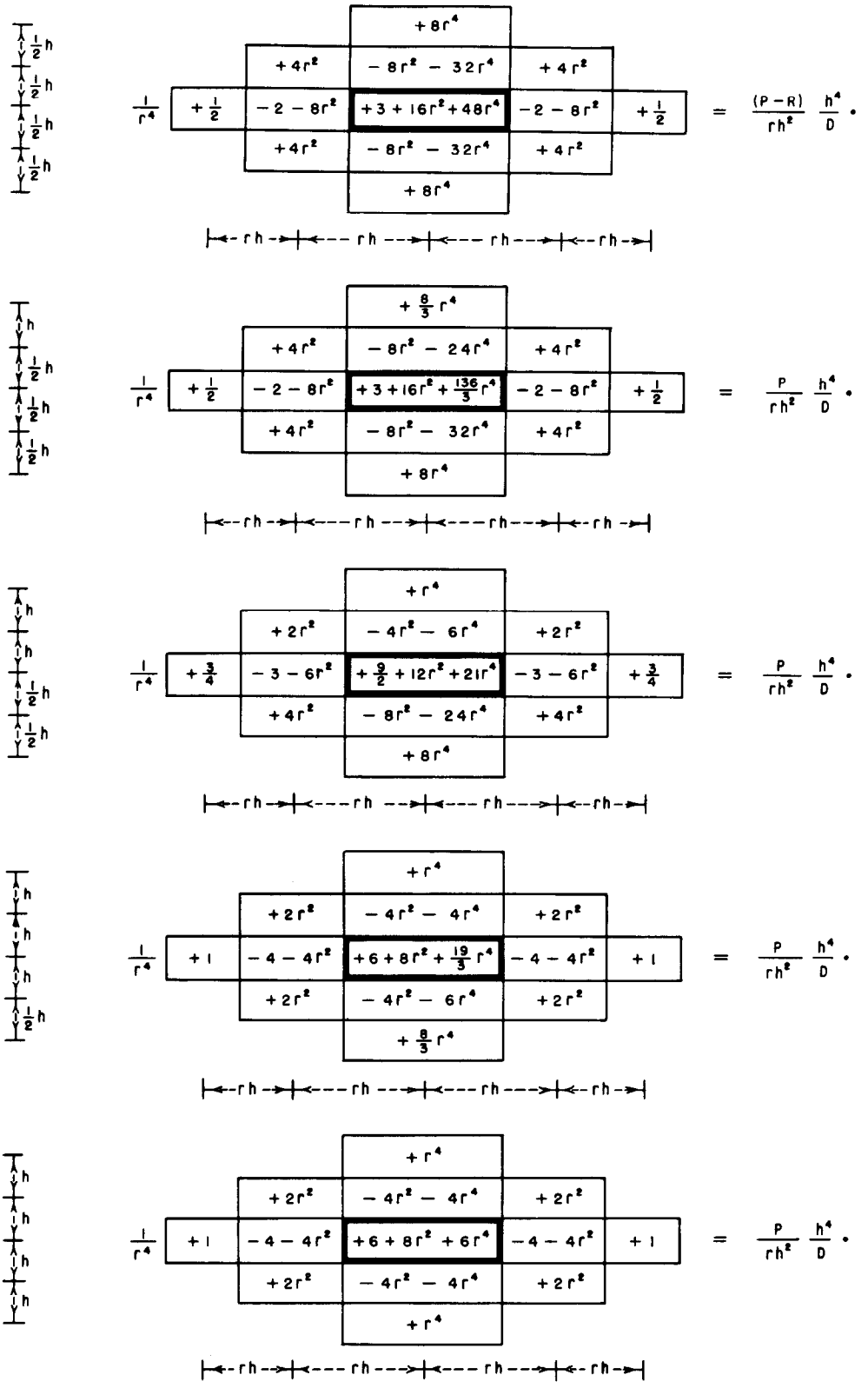
NOTE.—For general notes see Figure 39.

FIGURE 57.—*Load-deflection relations, horizontal spacing: 2 at rh/2; 2 at rh, Sheet XIX.*



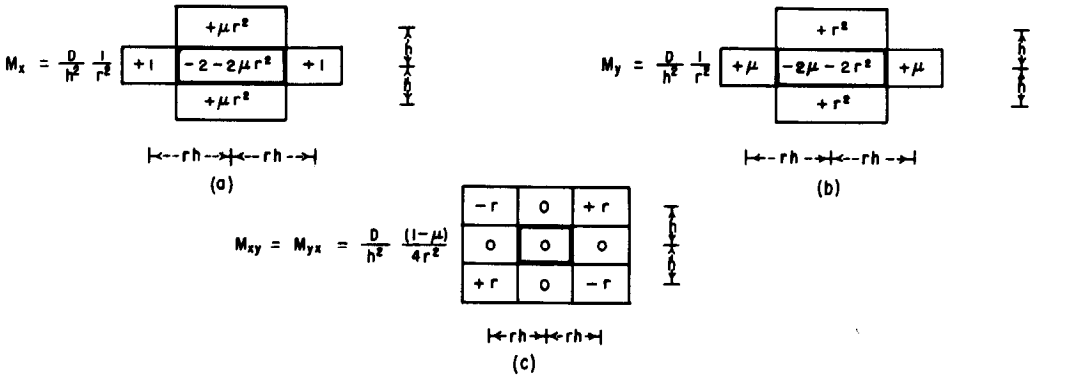
NOTE.—For general notes see Figure 39.

FIGURE 58.—*Load-deflection relations, horizontal spacing: 1 at rh/2; 3 at rh, Sheet XX.*

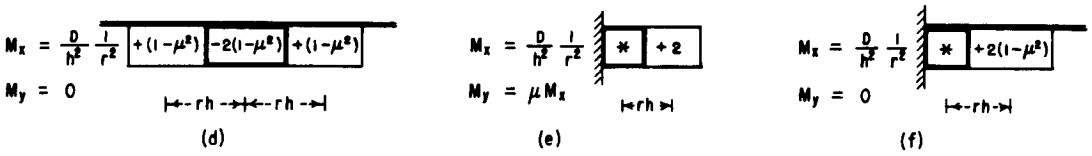


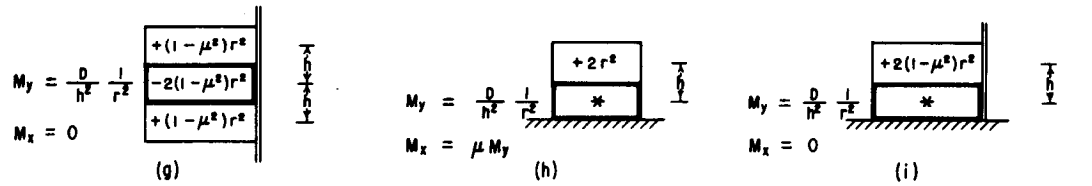
NOTE.—For general notes see Figure 39.

FIGURE 59.—*Load deflection relations, horizontal spacing: 4 at rh, Sheet XXI.*

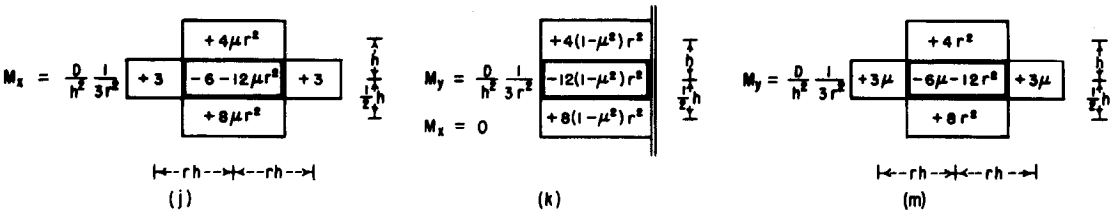


INTERIOR POINT

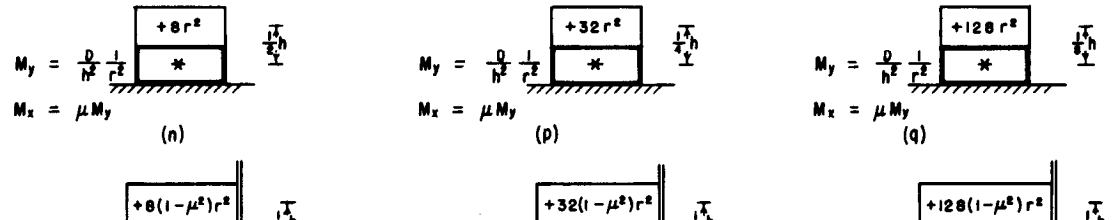




EDGE AND CORNER POINTS



INTERIOR AND EDGE POINTS – NONUNIFORM SPACING



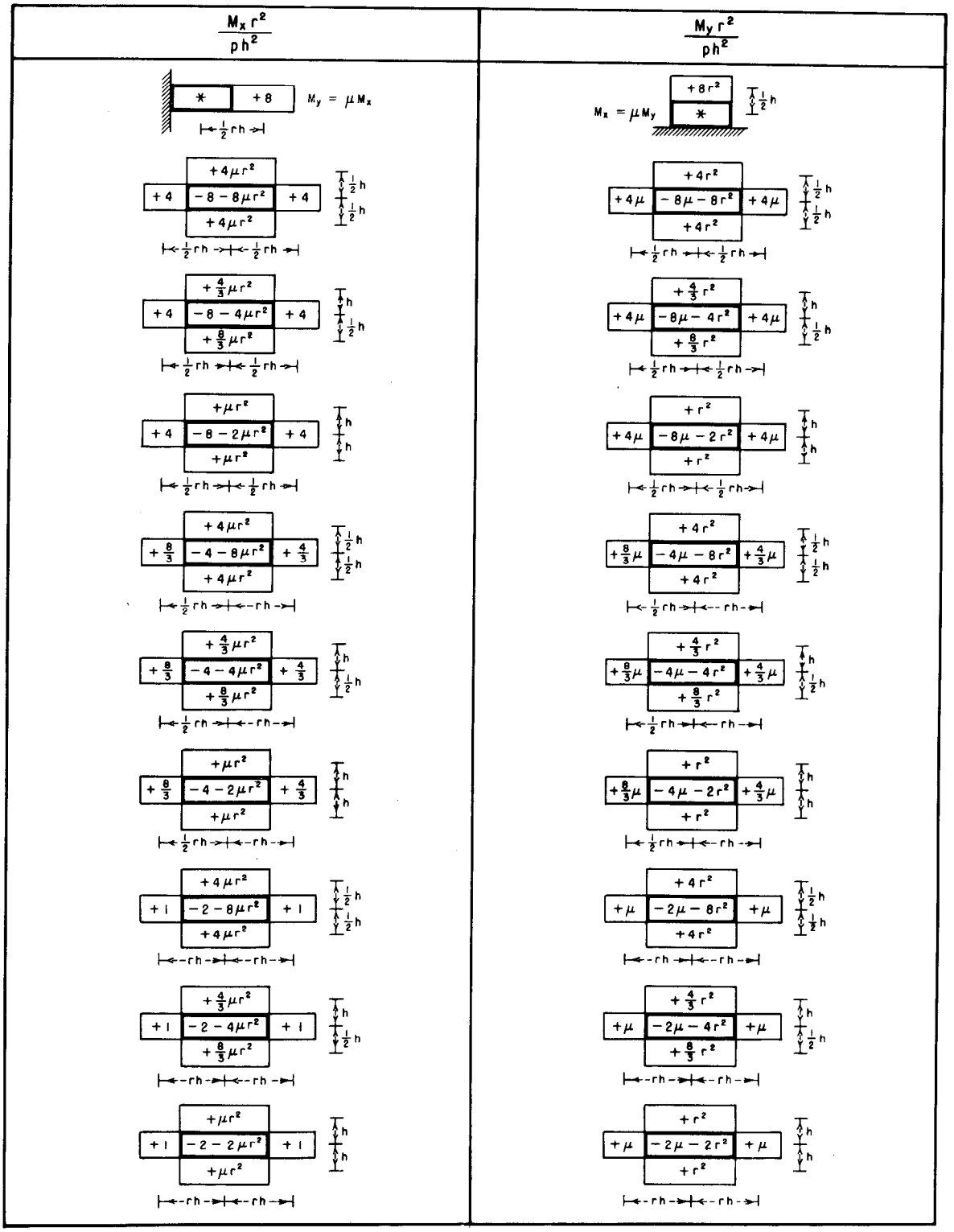
EDGE AND CORNER POINTS – FRACTIONAL VERTICAL SPACING

NOTES

$M_x = M_y = 0$ at either a fixed or moment-free corner.
$M_{xy} = M_{yx} = 0$ at any point on a fixed edge.

NOTE.—For general notes see Figure 39.

FIGURE 60.—*Moment-deflection relations.*



NOTE.—For general notes see Figure 39.

FIGURE 61.—*Moment-deflection relations, various point spacings.*

$V_x = \frac{D}{h^3}\frac{1}{2r^3}$

	$+r^2$	0	$-r^2$	
$+1$	$-2(1+r^2)$	0	$+2(1+r^2)$	-1
	$+r^2$	0	$-r^2$	

(a)

$V_y = \frac{D}{h^3}\frac{1}{2r^2}$

	$-r^2$	
-1	$+2(1+r^2)$	-1
0	0	0
$+1$	$-2(1+r^2)$	$+1$
	$+r^2$	

(b)

INTERIOR POINT

$V_x = \frac{D}{h^3}\frac{1}{2r^3}$

	$+r^2$	0	$-r^2(1-\mu)$
$+1$	$-2(1+r^2)$	$+1$	$+2r^2(1-\mu)$
	$+r^2$	0	$-r^2(1-\mu)$

(c)

$V_y = \frac{D}{h^3}\frac{1}{2r^2}$

$-(1-\mu)$	$+2(1-\mu)$	$-(1-\mu)$
0	$+r^2$	0
$+1$	$-2(1+r^2)$	$+1$
	$+r^2$	

(d)

POINT ADJACENT TO A MOMENT-FREE EDGE

$V_x = \frac{D}{h^3}\frac{1}{2r^3}$

$+(1-\mu)$	$-2(1-\mu)$	0	$+2(1-\mu)$	$-(1-\mu)$

(e)

$V_y = \frac{D}{h^3}\frac{1}{2r^2}$

$-r^2(1-\mu)$
$+2r^2(1-\mu)$
0
$-2r^2(1-\mu)$
$+r^2(1-\mu)$

(f)

POINT ON A MOMENT-FREE EDGE

$V_x = \frac{D}{h^3}\frac{1}{2r^3}$

$+(1-\mu)$	$-2(1-\mu)$	$+(1-\mu)$	0

(g)

$V_y = \frac{D}{h^3}\frac{1}{2r^2}$

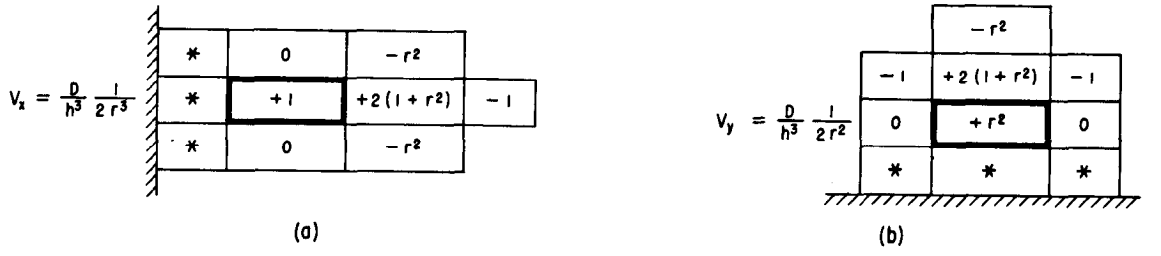
0
$+r^2(1-\mu)$
$-2r^2(1-\mu)$
$+r^2(1-\mu)$

(h)

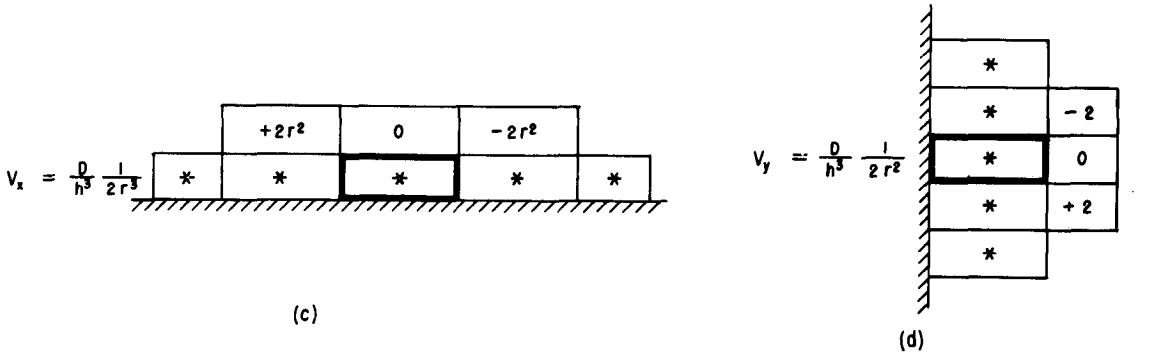
POINT ON A MOMENT-FREE EDGE ADJACENT TO A MOMENT-FREE CORNER

NOTE.—For general notes see Figure 39.

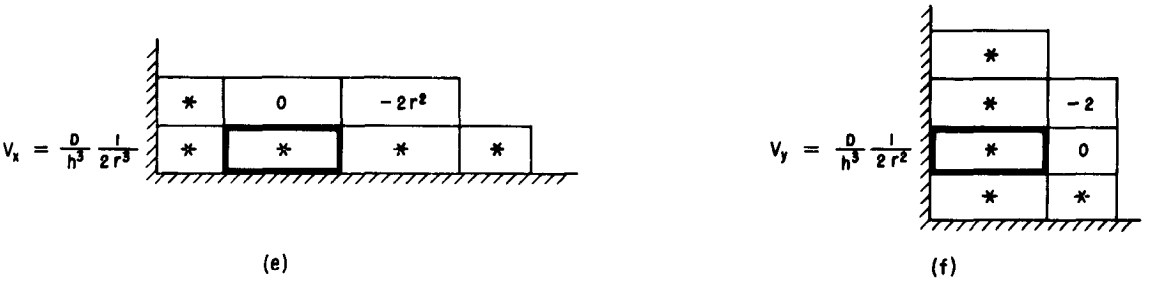
FIGURE 62.—*Shear-deflection relations, Sheet I.*



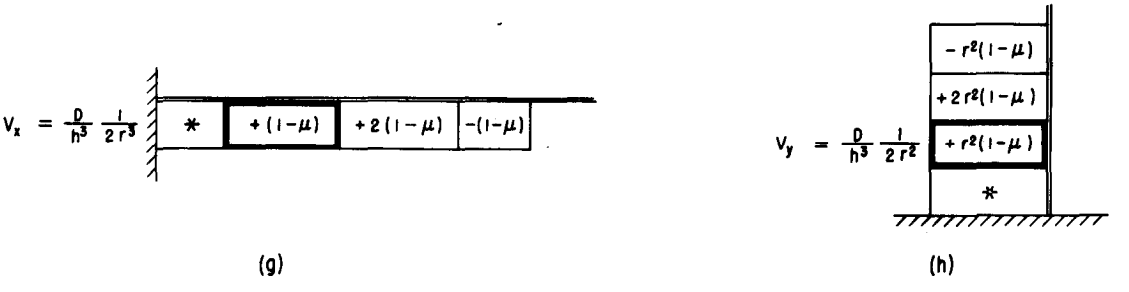
POINT ADJACENT TO A FIXED EDGE



POINT ON A FIXED EDGE



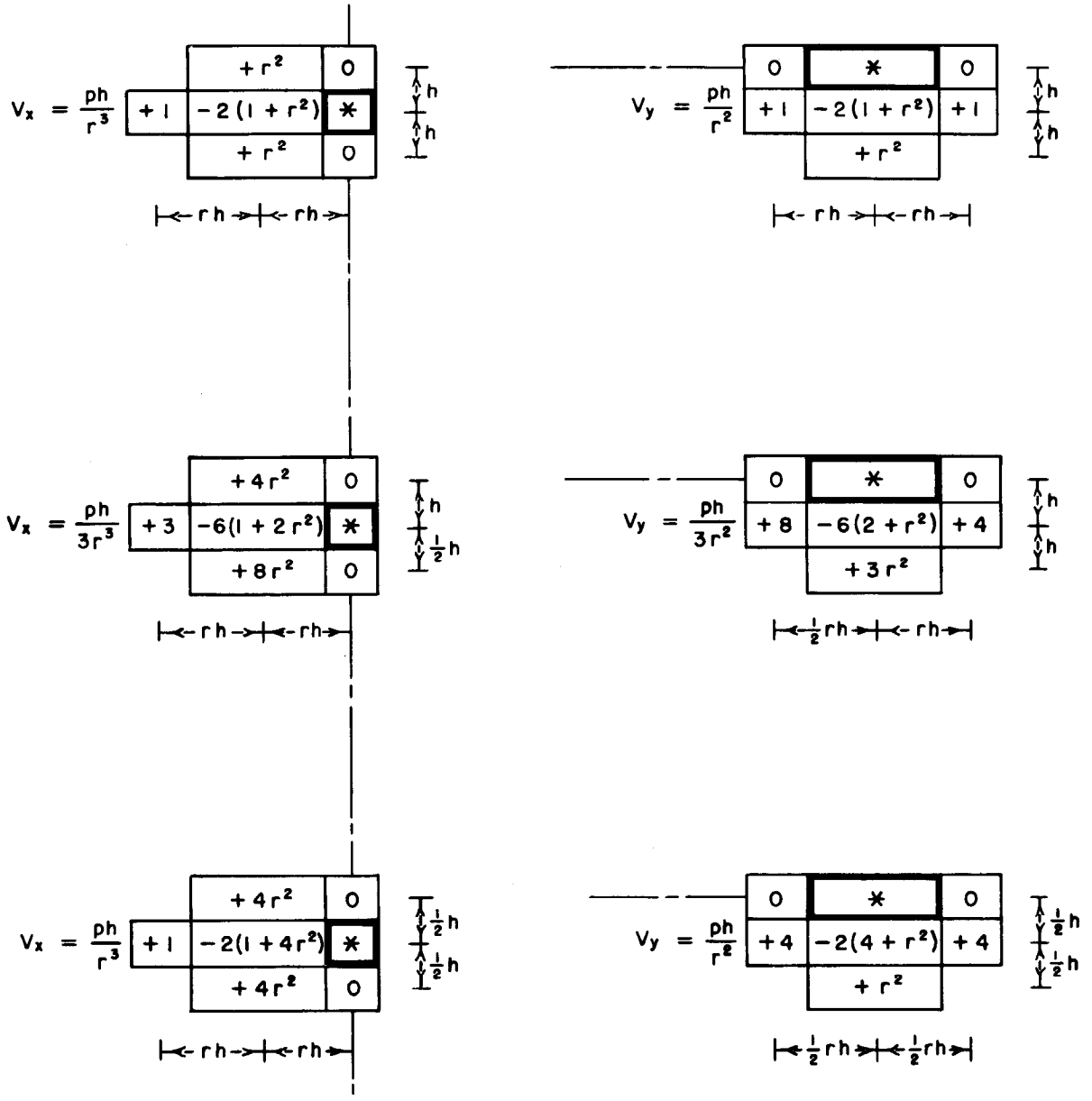
POINT ON A FIXED EDGE ADJACENT TO A FIXED CORNER



POINT ON A MOMENT-FREE EDGE ADJACENT TO A FIXED EDGE

NOTE.—For general notes see Figure 39.

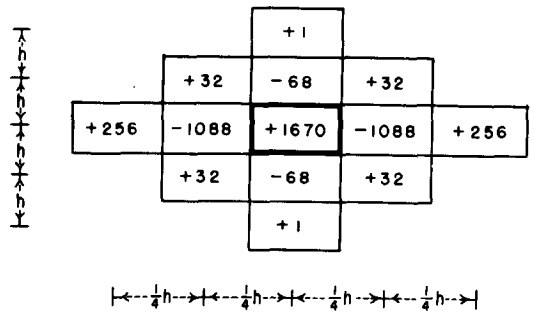
FIGURE 63.—*Shear-deflection relations, Sheet II.*



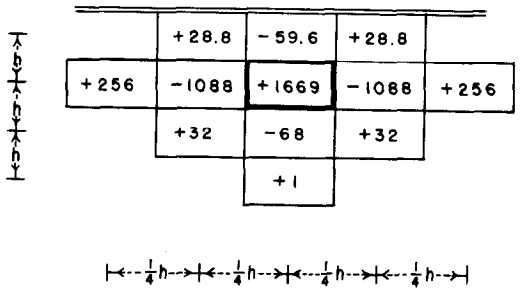
Note: These arrays apply only where the load at corresponding points on opposite sides of the centerline is equal in magnitude but opposite in direction.

NOTE.—For general notes see Figure 39.

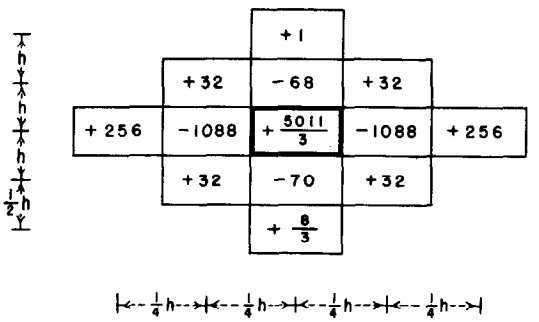
FIGURE 64.—*Shear-deflection relations, Sheet III.*



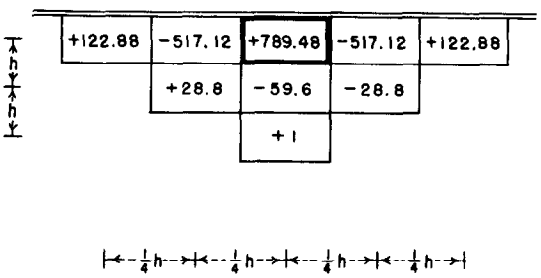
(a) INTERIOR POINT



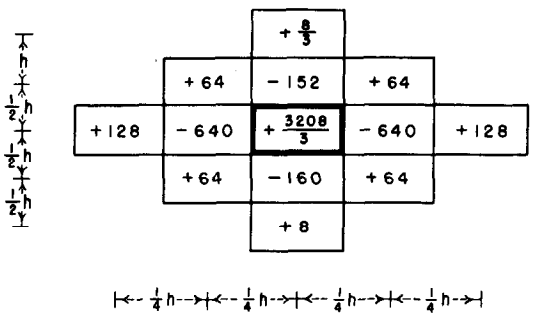
(b) POINT ADJACENT TO A FREE X-EDGE



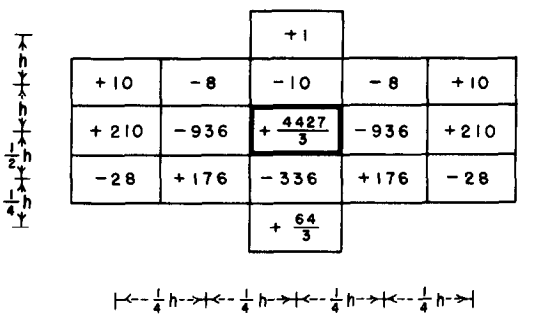
(c) INTERIOR POINT
VERTICAL SPACING: 3 AT h; 1 AT ½h



(d) POINT ON A FREE X-EDGE



(e) INTERIOR POINT
VERTICAL SPACING: 1 AT h; 3 AT ½h



(f) INTERIOR POINT
VERTICAL SPACING: 2 AT h; 1 AT ½h; 1 AT ¼h

FIGURE 65.—*Load-deflection coefficients, $r=1/4$, $\mu=0.2$.*

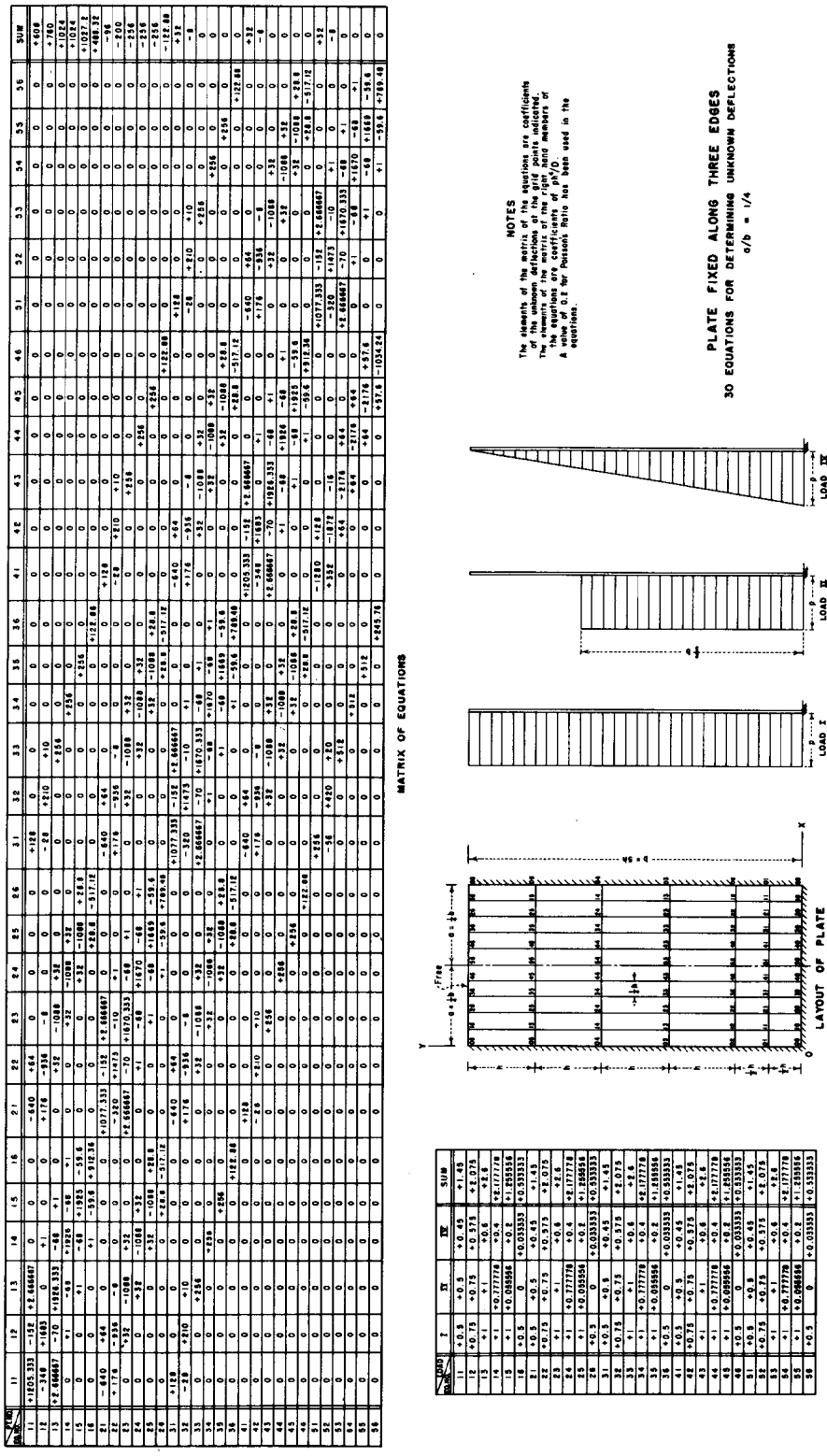
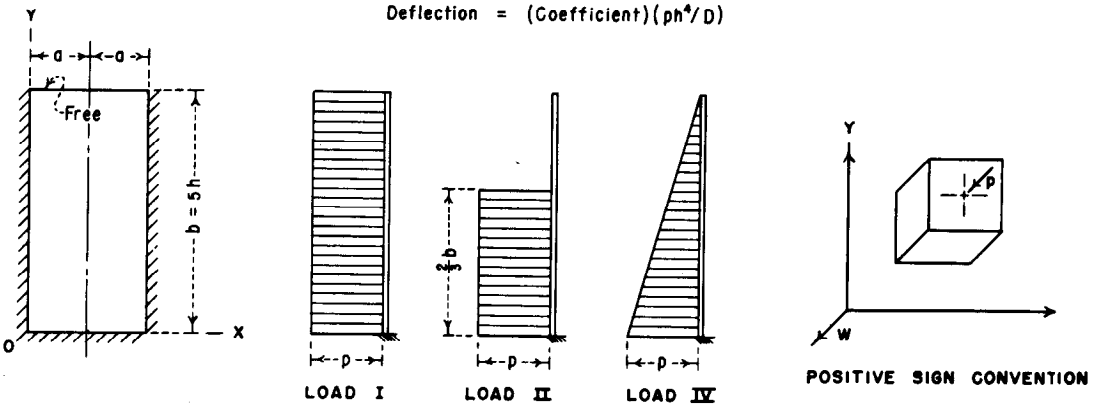


FIGURE 66.—*Plate fixed along three edges—30 equations for determining unknown deflections.* $a/b=\frac{1}{4}$.

	x/a / y/b	DEFLECTION COEFFICIENTS — 30 EQUATIONS				
		0.2	0.4	0.6	0.8	1.0
LOAD I	1.0	+.017022	+.049680	+.083466	+.107935	+.116792
	0.8	+.016122	+.046840	+.078499	+.101377	+.109650
	0.6	+.016030	+.046526	+.077914	+.100572	+.108761
	0.4	+.015353 *	+.044177 *	+.073597 *	+.094719 *	+.102331 *
	0.2	+.011196 *	+.031304 *	+.051265 *	+.065339 *	+.070366 *
	0.1	+.005859 *	+.015907 *	+.025588 *	+.032283 *	+.034651 *
LOAD II	1.0	+.000426	+.001800	+.003572	+.005018	+.005570
	0.8	+.003026	+.009459	+.016489	+.021746	+.023678
	0.6	+.011081	+.031691	+.052629	+.067621	+.073018
	0.4	+.014484 *	+.041246 *	+.068290 *	+.087579 *	+.094508 *
	0.2	+.011123 *	+.030992 *	+.050636 *	+.064448 *	+.069374 *
	0.1	+.005866 *	+.015887 *	+.025515 *	+.032518 *	+.034506 *
LOAD IV	1.0	+.001780	+.005582	+.009748	+.012870	+.014019
	0.8	+.003614	+.010653	+.018006	+.023367	+.025313
	0.6	+.006462	+.018748	+.031388	+.040509	+.043804
	0.4	+.008999 *	+.025735 *	+.042710 *	+.054845 *	+.059210 *
	0.2	+.008349 *	+.023051 *	+.037455 *	+.047522 *	+.051102 *
	0.1	+.004804 *	+.012753 *	+.020243 *	+.025348 *	+.027141 *

Deflection = (Coefficient)(ph^4/D)



	x/a / y/b	DEFLECTION COEFFICIENTS — 20 EQUATIONS				
		0.2	0.4	0.6	0.8	1.0
LOAD I	0.4	+.015283	+.043935	+.073156	+.094124	+.101678
	0.2	+.010730	+.029914	+.048903	+.062267	+.067035
	0.1	+.004899	+.013281	+.021325	+.026868	+.028824
	0.05	+.001835	+.004944	+.007860	+.009833	+.010522
LOAD II	0.4	+.014414	+.041004	+.067848	+.086983	+.093855
	0.2	+.010657	+.029598	+.048268	+.061367	+.066034
	0.1	+.004900	+.013246	+.021229	+.026715	+.028649
	0.05	+.001840	+.004945	+.007847	+.009805	+.010489
LOAD IV	0.4	+.008937	+.025523	+.042324	+.054326	+.058641
	0.2	+.007946	+.021849	+.035416	+.044873	+.048232
	0.1	+.003980	+.010505	+.016603	+.020734	+.022181
	0.05	+.001579	+.004080	+.006341	+.007838	+.008356

Deflection = (Coefficient)(ph^4/D)

NOTE

Starred values computed from 30 equations are discarded when the corresponding improved value is obtained from the 20 equations.

FIGURE 67.—*Plate fixed along three edges, deflection coefficients.* $a/b=1/4$. *Various loadings.*

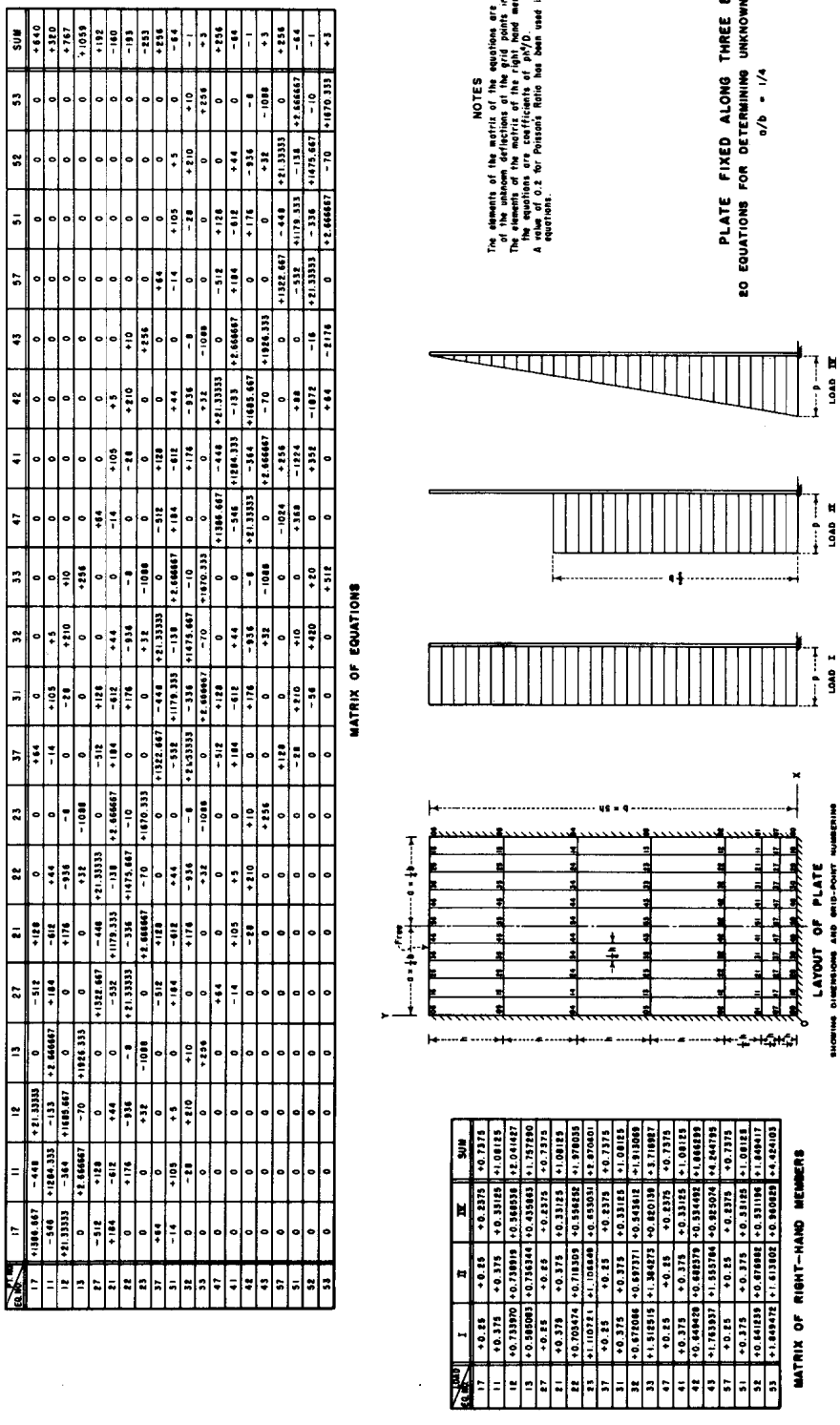
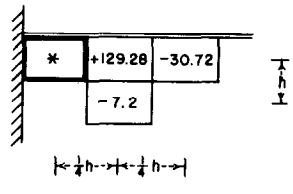
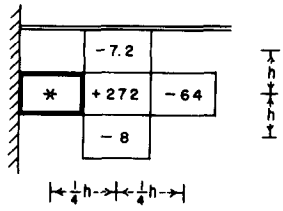


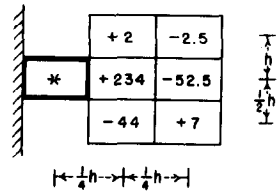
FIGURE 68.—*Plate fixed along three edges—20 equations for determining unknown deflections.* $a/b = \frac{1}{4}$.



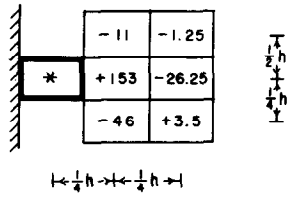
(a) POINT ON A FIXED Y-FREE X-CORNER
[FIGURE 39 (j)]



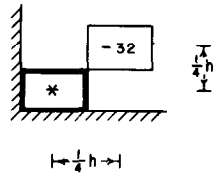
(b) POINT ON A FIXED Y-EDGE ADJACENT TO A MOMENT-FREE X-EDGE
[FIGURE 39 (h)]



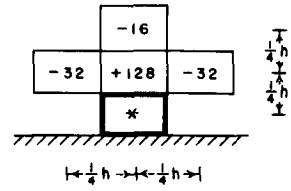
(c) POINT ON A FIXED Y-EDGE
VERTICAL SPACING: h AND $\frac{1}{2}$ h
[FIGURE 42 (a)]



(d) POINT ON A FIXED Y-EDGE
VERTICAL SPACING: $\frac{1}{2}$ h AND $\frac{1}{4}$ h
[FIGURE 44 (a)]

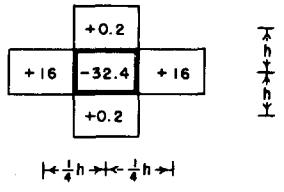


(e) POINT ON A FIXED CORNER
[FIGURE 49 (a)]

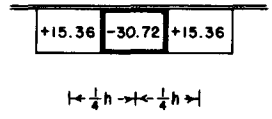


(f) POINT ON A FIXED X-EDGE
[FIGURE 49 (a)]

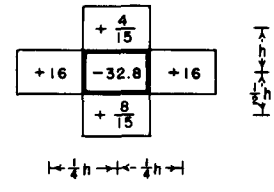
REACTION-DEFLECTION COEFFICIENTS
r = 1/4 μ = 0.2



(g) INTERIOR POINT
[FIGURE 52 (a)]

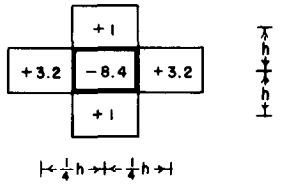


(h) POINT ON A FREE EDGE
[FIGURE 52 (d)]

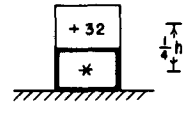


(i) INTERIOR POINT
VERTICAL SPACING: h AND $\frac{1}{2}$ h
[FIGURE 52 (j)]

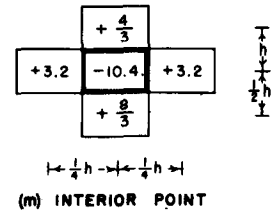
BENDING MOMENT-DEFLECTION COEFFICIENTS (M_x)
r = 1/4 μ = 0.2



(j) INTERIOR POINT
[FIGURE 52 (b)]



(k) POINT ON A FIXED EDGE
[FIGURE 52 (p)]



(m) INTERIOR POINT
VERTICAL SPACING: h AND $\frac{1}{2}$ h
[FIGURE 52 (m)]

BENDING MOMENT-DEFLECTION COEFFICIENTS (M_y)
r = 1/4 μ = 0.2

NOTES

To find the net reaction or the bending moment at any focal point, compute the products of the coefficients of the appropiate array by the deflection of the corresponding points and multiply their sum by (D/h^2).

Figure numbers in brackets refer to general expressions from which these numerical arrays were computed.

FIGURE 69.—*Numerical values of typical moment and reaction arrays, $r=\frac{1}{4}$, $\mu=0.2$.*

POINT NO.	DEFLECTIONS − $w/(ph^4/D)$					
TENS / UNITS	0	1	2	3	4	5
6	0	+.017022	+.049680	+.083466	+.107935	+.116792
5	0	+.016122	+.046840	+.078499	+.101377	+.109650
4	0	+.016030	+.046526	+.077914	+.100572	+.108761
3	0	+.015283	+.043935	+.073156	+.094124	+.101678
2	0	+.010730	+.029914	+.048903	+.062267	+.067035
1	0	+.004899	+.013281	+.021325	+.026868	+.028824
7	0	+.001835	+.004944	+.007860	+.009833	+.010522
0	0	0	0	0	0	0

POINT NO.	REACTIONS			
	P/ph^2	DEFL. TERM	R/ph^2	R_t/ph
06	+.0625	+.558356	+.620856	+.248342
05	+.125	+1.136626	+1.261626	+.252325
04	+.125	+1.131256	+1.256256	+.251251
03	+.125	+1.131056	+1.256056	+.251211
02	+.09375	+.738474	+.832224	+.190484
01	+.046875	+.178392	+.225267	—
07	+.03125	−.000992	+.030258	—
00	+.015625	−.058720	−.043095	+.029514
10	+.03125	−.001712	+.029538	+.023630
20	+.03125	+.110096	+.141346	+.113077
30	+.03125	+.192016	+.223266	+.178613
40	+.03125	+.240512	+.271762	+.217410
50	+.03125	+.256320	+.287570	+.230056
		Σ^*	+6.249145	

* Includes only $\frac{1}{2}$ of R_{50}.

POINT NO.	BENDING MOMENT − M_x/pb^2					
TENS / UNITS	0	1	2	3	4	5
6	+.020917	+.009607	+.000693	−.005724	−.009592	−.010883
5	+.020636	+.009348	+.000622	−.005585	−.009301	−.010539
4	+.020518	+.009253	+.000553	−.005621	−.009305	−.010531
3	+.019562	+.008526	+.000273	−.005438	−.008788	−.009890
2	+.013734	+.005335	−.000330	−.003930	−.005917	−.006549
0	0	+.000470	+.001266	+.002012	+.002517	+.002694

POINT NO.	BENDING MOMENT − M_y/pb^2					
TENS / UNITS	0	1	2	3	4	5
6	0	0	0	0	0	0
5	+.004127	+.001901	+.000221	−.000949	−.001639	−.001868
4	+.004104	+.001825	+.000023	−.001284	−.002078	−.002344
3	+.003912	+.001559	−.000384	−.001836	−.002734	−.003036
2	+.002747	+.000703	−.001051	−.002368	−.003177	−.003449
0	0	+.002349	+.006328	+.010061	+.012586	+.013468

FIGURE 70.—*Plate fixed along three edges, deflections—reactions—bending moments, Load I.* $a/b=\frac{1}{4}$, $\mu=0.2$.

List of References

1. Timoshenko, S., *Theory of Plates and Shells*, McGraw-Hill, New York, 1940.
2. Anonymous, "Rectangular Concrete Tanks," *Concrete Information Bulletin No. ST63*, Portland Cement Association, 1947.
3. Westergaard, H. M., and Slater, W. A., "Moments and Stresses in Slabs," *Proceedings*, American Concrete Institute, Vol. XVII, page 415, 1921.
4. Nielsen, N. J., *Bestemmelse af Spaendinger i Plader*, Jørgenson, Copenhagen, 1920.
5. Marcus, H., *Die Theorie elastischer Gewebe, 2nd Edition*, Julius Springer, Berlin, 1932.
6. Wise, J. A., "The Calculation of Flat Plates by the Elastic Web Method," *Proceedings*, American Concrete Institute, Vol. XXIV, page 408, 1928.
7. Holl, D. L., "Analysis of Plate Examples by Difference Methods and the Superposition Principle," *Journal of Applied Mechanics*, Vol. 58, page A–81, 1936.
8. Barton, M. V., *Finite Difference Equations for the Analysis of Thin Rectangular Plates*, University of Texas, 1948.
9. Jensen, V. P., "Analyses of Skew Slabs," *Bulletin Series No. 332*, University of Illinois, Engineering Experiment Station, 1941.
10. Scarborough, J. B., *Numerical Mathematical Analysis*, John Hopkins Press, Baltimore, 1950.

Mission of the Bureau of Reclamation

The Bureau of Reclamation of the U.S. Department of the Interior is responsible for the development and conservation of the Nation's water resources in the Western United States.

The Bureau's original purpose "to provide for the reclamation of arid and semiarid lands in the West" today covers a wide range of interrelated functions. These include providing municipal and industrial water supplies; hydroelectric power generation; irrigation water for agriculture; water quality improvement; flood control; river navigation; river regulation and control; fish and wildlife enhancement; outdoor recreation; and research on water-related design, construction, materials, atmospheric management, and wind and solar power.

Bureau programs most frequently are the result of close cooperation with the U.S. Congress, other Federal agencies, States, local governments, academic institutions, water-user organizations, and other concerned groups.

A free pamphlet is available from the Bureau entitled "Publications for Sale." It describes some of the technical publications currently available, their cost, and how to order them. The pamphlet can be obtained upon request from the Bureau of Reclamation, Attn D-7923A, PO Box 25007, Denver Federal Center, Denver CO 80225-0007.