

המחלקה

ภาคผนวก ก.

ตารางแสดงค่า

MAXIMUM MOMENTS , SHEARS AND REACTIONS.- SIMPLE SPANS , ONE LANE

LOADING—H 15-44 (M13.5)

TABLE OF MAXIMUM MOMENTS, SHEARS AND REACTIONS.—SIMPLE SPANS, ONE LANE

Spans in feet (m); moments in thousands of foot-pounds (kNm); shears and reactions in thousands of pounds (kN).

These values are subject to specification reduction for loading of multiple lanes.

Impact not included.

Span	Moment	End shear and end reaction (a)	Span	Moment	End shear and end reaction (a)
1(.305)	6.0(b)(3.13)	24.0(b)(106.75)	42(12.802)	274.4(b)(372.04)	29.6(131.66)
2(.610)	12.0(b)(16.27)	24.0(b)(106.75)	44(13.411)	289.3(b)(392.24)	30.1(133.86)
3(.914)	18.0(b)(24.40)	24.0(b)(106.75)	46(14.021)	304.3(b)(412.58)	30.5(135.66)
4(1.219)	24.0(b)(32.54)	24.0(b)(106.75)	48(14.630)	319.2(b)(432.77)	31.0(137.89)
5(1.524)	30.0(b)(40.67)	24.0(b)(106.75)	50(15.240)	334.2(b)(453.11)	31.5(140.11)
6(1.829)	36.0(b)(48.81)	24.0(b)(106.75)	52(15.850)	349.1(b)(473.32)	32.0(142.34)
7(2.134)	42.0(b)(56.94)	24.0(b)(106.75)	54(16.459)	364.1(b)(493.55)	32.5(144.56)
8(2.438)	48.0(b)(65.08)	24.0(b)(106.75)	56(17.069)	379.1(b)(513.99)	32.9(146.34)
9(2.743)	54.0(b)(73.21)	24.0(b)(106.75)	58(17.678)	397.6 (539.07)	33.4(148.56)
10(3.048)	60.0(b)(81.35)	24.0(b)(106.75)	60(18.288)	418.5 (567.41)	33.9(150.79)
11(3.353)	66.0(b)(89.48)	24.0(b)(106.75)	62(18.898)	439.9 (596.42)	34.4(153.01)
12(3.658)	72.0(b)(97.62)	24.0(b)(106.75)	64(19.507)	461.9 (626.12)	34.9(155.24)
13(3.962)	78.0(b)(105.75)	24.0(b)(106.75)	66(20.117)	484.1 (656.35)	35.3(157.01)
14(4.267)	84.0(b)(113.89)	24.0(b)(106.75)	68(20.726)	506.9 (687.27)	35.8(159.24)
15(4.572)	90.0(b)(122.02)	24.0(b)(106.75)	70(21.336)	530.3 (719.00)	36.3(161.46)
16(4.877)	96.0(b)(130.16)	24.8(b)(110.31)	72(21.945)	550.6 (800.74)	37.3(166.80)
17(5.182)	102.0(b)(138.29)	25.1(b)(111.65)	80(23.384)	654.0 (886.70)	38.7(172.14)
18(5.486)	108.0(b)(146.43)	25.3(b)(112.53)	85(25.008)	720.4 (976.73)	39.9(177.48)
19(5.791)	114.0(b)(154.56)	25.6(b)(113.87)	90(27.432)	789.8 (1070.83)	41.1(182.91)
20(6.096)	120.0(b)(162.70)	25.8(b)(114.76)	95(28.956)	862.1 (1168.95)	42.3(188.15)
21(6.401)	126.0(b)(170.83)	26.0(b)(115.60)	100(30.480)	937.5 (1271.08)	43.5(193.49)
22(6.706)	132.0(b)(178.97)	26.2(b)(116.54)	110(32.528)	1,097.3 (1487.74)	45.2(204.16)
23(7.010)	138.0(b)(187.10)	26.3(b)(116.38)	120(36.576)	1,259.0 (1720.53)	48.3(214.84)
24(7.315)	144.0(b)(195.23)	26.5(b)(117.27)	130(39.624)	1,452.8 (1969.72)	50.7(225.31)
25(7.620)	150.0(b)(203.37)	26.6(b)(118.32)	140(42.672)	1,648.5 (2235.07)	53.1(236.10)
26(7.925)	156.0(b)(211.50)	26.8(b)(119.21)	150(45.720)	1,856.3 (2516.81)	55.5(246.86)
27(8.230)	162.7(b)(220.60)	26.9(b)(119.65)	160(48.768)	2,076.0 (2814.88)	57.9(257.54)
28(8.534)	170.1(b)(230.63)	27.0(b)(120.19)	170(51.816)	2,307.3 (3128.95)	60.3(268.21)
29(8.839)	177.5(b)(240.66)	27.1(b)(120.54)	180(54.864)	2,551.6 (3459.37)	62.7(278.89)
30(9.144)	185.0(b)(250.80)	27.2(b)(120.99)	190(57.912)	2,807.3 (3806.19)	65.1(289.56)
31(9.449)	192.4(b)(260.86)	27.3(b)(121.43)	200(60.960)	3,075.0 (4159.14)	67.5(300.24)
32(9.754)	199.8(b)(270.90)	27.4(b)(121.86)	220(67.088)	3,546.3 (4842.09)	72.0(321.59)
33(10.058)	207.3(b)(281.06)	27.5(b)(122.30)	240(73.162)	4,056.0 (5555.31)	77.1(342.64)
34(10.363)	214.7(b)(291.09)	27.7 (123.21)	250(79.243)	4,322.5 (5888.93)	81.3(354.29)
35(10.668)	222.2(b)(301.26)	27.9 (124.01)	260(85.324)	4,649.0 (6359.02)	86.7(385.64)
36(10.973)	229.6(b)(311.30)	28.1 (124.99)	300(91.440)	5,412.5 (8694.18)	91.5(406.89)
37(11.278)	237.1(b)(321.47)	28.4 (126.32)			
38(11.582)	244.5(b)(331.50)	28.6 (127.21)			
39(11.887)	252.0(b)(341.66)	28.9 (128.55)			
40(12.192)	259.5(b)(351.33)	29.1 (129.44)			

(a) Concentrated load is considered placed at the support. Loads used are those stipulated for shear.

(b) Maximum value determined by Standard Truck Loading. Otherwise the Standard Lane Loading governs.

ЗАДАНИЕ № 1

LOADING—H15-44(M13.5)

TABLE OF MAXIMUM MOMENTS, SHEARS AND REACTIONS.—SIMPLE SPANS, ONE LANE

Spans in feet (m); moments in thousands of foot-pounds (kNm); shears and reactions in thousands of pounds (kN).

These values are subject to specification reduction for loading of multiple lanes.

Impact not included.

Span	Moment	End shear and end reaction (a)	Span	Moment	End shear and end reaction (a)
1(.305)	6.0(b)(8.13)	24.0(b)(108.75)	42(12.802)	384.0(b)(493.51)	42.0(b)(186.82)
2(.610)	12.0(b)(16.27)	24.0(b)(108.75)	44(13.411)	390.7(b)(529.72)	42.5(b)(189.04)
3(.914)	18.0(b)(24.40)	24.0(b)(108.75)	46(14.021)	417.4(b)(565.92)	43.0(b)(191.26)
4(1.219)	24.0(b)(32.54)	24.0(b)(108.75)	48(14.630)	444.1(b)(602.12)	43.5(b)(193.48)
5(1.524)	30.0(b)(40.67)	24.0(b)(108.75)	50(15.240)	470.9(b)(638.45)	43.9(b)(195.27)
6(1.829)	36.0(b)(48.81)	24.0(b)(108.75)	52(15.850)	497.7(b)(674.79)	44.3(b)(197.05)
7(2.134)	42.0(b)(56.94)	24.0(b)(108.75)	54(16.469)	524.5(b)(711.13)	44.7(b)(198.83)
8(2.438)	48.0(b)(65.08)	24.0(b)(108.75)	56(17.089)	551.3(b)(747.46)	45.0(b)(200.16)
9(2.743)	54.0(b)(73.21)	24.0(b)(108.75)	58(17.678)	578.1(b)(783.80)	45.3(b)(201.49)
10(3.048)	60.0(b)(81.35)	24.0(b)(108.75)	60(18.288)	604.9(b)(820.13)	45.6(b)(202.83)
11(3.353)	66.0(b)(89.48)	24.0(b)(108.75)	62(18.898)	631.8(b)(856.61)	45.9(b)(204.18)
12(3.658)	72.0(b)(97.62)	24.0(b)(108.75)	64(19.507)	658.6(b)(892.94)	46.1(b)(205.05)
13(3.962)	78.0(b)(105.75)	24.0(b)(108.75)	66(20.117)	685.5(b)(929.42)	46.4(b)(206.39)
14(4.267)	84.0(b)(113.89)	24.0(b)(108.75)	68(20.726)	712.3(b)(965.75)	46.6(b)(207.28)
15(4.572)	90.0(b)(122.02)	25.6(b)(113.87)	70(21.336)	739.2(b)(1002.22)	46.8(b)(208.17)
16(4.877)	96.0(b)(130.16)	27.0(b)(120.10)	75(22.860)	806.3(b)(1093.19)	47.3(b)(210.39)
17(5.182)	102.0(b)(138.29)	28.2(b)(125.43)	80(24.384)	873.7(b)(1184.58)	47.7(b)(212.17)
18(5.486)	108.0(b)(146.43)	29.3(b)(130.33)	85(25.908)	941.0(b)(1275.83)	48.1(b)(213.95)
19(5.791)	114.0(b)(154.56)	30.3(b)(134.77)	90(27.432)	1,008.3(b)(1367.07)	48.4(b)(215.28)
20(6.096)	120.0(b)(162.70)	31.2(b)(138.78)	95(28.956)	1,074.9(b)(1457.37)	48.7(b)(216.82)
21(6.401)	126.0(b)(170.83)	32.0(b)(142.34)	100(30.480)	1,143.0(b)(1549.70)	49.0(b)(217.95)
22(6.706)	132.0(b)(178.97)	32.7(b)(146.45)	110(33.528)	1,277.7(b)(1732.33)	49.4(b)(219.73)
23(7.010)	138.0(b)(187.10)	33.4(b)(148.56)	120(36.576)	1,412.5(b)(1915.10)	49.8(b)(221.51)
24(7.315)	144.5(b)(195.91)	34.0(b)(151.23)	130(39.624)	1,547.3(b)(2097.86)	50.7 (225.51)
25(7.620)	155.5(b)(210.83)	34.8(b)(153.90)	140(42.672)	1,682.1(b)(2280.63)	53.1 (236.19)
26(7.925)	166.6(b)(225.88)	35.1(b)(156.12)	150(45.720)	1,856.3 (2516.81)	55.5 (246.86)
27(8.230)	177.8(b)(241.07)	35.6(b)(158.35)	160(48.768)	2,076.0 (2814.88)	57.9 (257.54)
28(8.534)	189.0(b)(256.25)	36.0(b)(160.13)	170(51.816)	2,307.8 (3128.96)	60.3 (268.21)
29(8.839)	200.3(b)(271.57)	36.6(b)(162.80)	180(54.864)	2,551.5 (3459.37)	62.7 (278.89)
30(9.144)	211.6(b)(286.89)	37.2(b)(165.47)	190(57.912)	2,807.3 (3806.19)	65.1 (289.56)
31(9.449)	223.0(b)(302.35)	37.7(b)(167.69)	200(60.960)	3,075.0 (4169.14)	67.5 (300.24)
32(9.754)	234.4(b)(317.81)	38.3(b)(170.38)	220(67.056)	3,646.5 (4943.88)	72.3 (321.59)
33(10.058)	245.8(b)(333.26)	38.7(b)(172.14)	240(73.152)	4,266.0 (5783.91)	77.1 (342.94)
34(10.363)	257.7(b)(349.39)	39.2(b)(174.36)	260(79.248)	4,933.5 (6688.93)	81.9 (364.29)
35(10.668)	270.9(b)(367.29)	39.8(b)(176.14)	280(85.344)	5,649.0 (7659.02)	86.7 (385.64)
36(10.973)	284.2(b)(385.32)	40.0(b)(177.92)	300(91.440)	6,412.5 (8694.18)	91.5 (406.99)
37(11.278)	297.5(b)(403.36)	40.4(b)(179.70)			
38(11.582)	310.7(b)(421.25)	40.7(b)(181.03)			
39(11.887)	324.0(b)(439.38)	41.1(b)(182.81)			
40(12.193)	337.4(b)(457.45)	41.4(b)(184.15)			

(a) Concentrated load is considered placed at the support. Loads used are those stipulated for shear.

(b) Maximum values determined by Standard Truck Loading. Otherwise the Standard Lane Loading governs.

ЗАДАНИЕ П.2

LOADING-HS15-44(M13.5)

TABLE OF MAXIMUM MOMENTS, SHEARS AND REACTIONS.—SIMPLE SPANS, ONE LANE

Spans in feet (m); moments in thousands of foot-pounds (kNm); shears and reactions in thousands of pounds (kN).

These values are subject to specification reduction for loading of multiple lanes.

Impact not included.

Span	Moment	End shear and end reaction (a)	Span	Moment	End shear and end reaction (a)
1(.305)	3.0(b)(10.85)	32.0(b)(142.34)	42(12.802)	365.9(b)(496.09)	39.4(175.25)
2(.610)	16.0(b)(21.70)	32.0(b)(142.34)	44(13.411)	385.8(b)(523.07)	40.1(178.38)
3(.914)	24.0(b)(32.56)	32.0(b)(142.34)	46(14.021)	405.7(b)(550.06)	40.7(181.03)
4(1.219)	32.0(b)(43.40)	32.0(b)(142.34)	48(14.630)	425.6(b)(577.03)	41.4(184.15)
5(1.524)	40.0(b)(54.25)	32.0(b)(142.34)	50(15.240)	445.6(b)(604.15)	42.0(186.32)
6(1.829)	48.0(b)(65.08)	32.0(b)(142.34)	52(15.850)	465.5(b)(631.14)	42.6(189.48)
7(2.134)	56.0(b)(75.93)	32.0(b)(142.34)	54(16.459)	485.5(b)(658.25)	43.3(192.60)
8(2.438)	64.0(b)(86.77)	32.0(b)(142.34)	56(17.069)	505.4(b)(685.23)	43.9(195.27)
9(2.743)	72.0(b)(97.62)	32.0(b)(142.34)	58(17.678)	530.1 (718.72)	44.5(198.38)
10(3.048)	80.0(b)(108.47)	32.0(b)(142.34)	60(18.288)	558.0 (756.56)	45.2(201.05)
11(3.353)	88.0(b)(119.31)	32.0(b)(142.34)	62(18.898)	586.5 (795.18)	45.8(203.72)
12(3.658)	96.0(b)(130.16)	32.0(b)(142.34)	64(19.507)	615.7 (834.78)	46.5(206.83)
13(3.962)	104.0(b)(141.00)	32.0(b)(142.34)	66(20.117)	645.5 (875.18)	47.1(209.50)
14(4.267)	112.0(b)(151.85)	32.0(b)(142.34)	68(20.726)	675.9 (916.40)	47.8(212.61)
15(4.572)	120.0(b)(162.70)	32.5(b)(144.58)	70(21.336)	707.0 (958.56)	48.4(215.23)
16(4.877)	128.0(b)(173.55)	33.0(b)(146.73)	75(22.850)	787.5 (1067.71)	50.0(222.40)
17(5.182)	136.0(b)(184.39)	33.4(b)(148.56)	80(24.384)	872.0 (1182.27)	51.6(229.52)
18(5.486)	144.0(b)(195.23)	33.8(b)(150.34)	85(25.908)	960.5 (1302.27)	53.2(236.83)
19(5.791)	152.0(b)(206.08)	34.2(b)(151.68)	90(27.432)	1,053.9 (1427.88)	54.8(243.75)
20(6.096)	160.0(b)(216.93)	34.4(b)(153.01)	95(28.956)	1,149.5 (1558.52)	56.4(250.87)
21(6.401)	168.0(b)(227.78)	34.7(b)(154.35)	100(30.480)	1,250.0 (1694.77)	58.0(257.98)
22(6.706)	176.0(b)(238.62)	34.9(b)(155.21)	110(33.528)	1,463.0 (1983.56)	61.2(272.22)
23(7.010)	184.0(b)(249.47)	35.1(b)(156.12)	120(36.576)	1,692.0 (2294.05)	64.4(286.45)
24(7.315)	192.0(b)(260.32)	35.3(b)(157.01)	130(39.624)	1,937.0 (2626.22)	67.6(300.68)
25(7.620)	200.0(b)(271.15)	35.5(b)(157.90)	140(42.672)	2,198.0 (2980.09)	70.8(314.92)
26(7.925)	208.0(b)(282.03)	35.7(b)(158.79)	150(45.720)	2,475.0 (3355.65)	74.0(329.15)
27(8.230)	216.0(b)(292.08)	35.9(b)(159.68)	160(48.768)	2,768.0 (3752.91)	77.2(343.39)
28(8.534)	225.0(b)(307.50)	36.0(b)(160.13)	170(51.816)	3,077.0 (4171.35)	80.4(357.62)
29(8.839)	236.7(b)(320.92)	36.1(b)(160.57)	180(54.864)	3,402.0 (4612.49)	83.6(371.85)
30(9.144)	246.6(b)(334.35)	36.3(b)(161.46)	190(57.912)	3,743.0 (5074.83)	86.8(386.09)
31(9.449)	256.5(b)(347.78)	36.4(b)(161.91)	200(60.960)	4,100.0 (5558.85)	90.0(400.32)
32(9.754)	266.5(b)(361.32)	36.5(b)(162.35)	220(67.056)	4,862.0 (6591.99)	96.4(428.79)
33(10.058)	276.4(b)(374.75)	36.6(b)(162.80)	240(73.152)	5,688.0 (7711.39)	102.8(457.25)
34(10.363)	286.3(b)(388.17)	36.9 (164.13)	260(79.246)	6,578.0 (8918.57)	109.2(485.72)
35(10.668)	296.2(b)(401.60)	37.2 (165.47)	280(85.344)	7,532.0 (10212.02)	115.6(514.19)
36(10.973)	306.2(b)(415.15)	37.5 (166.80)	300(91.440)	8,550.0 (11592.24)	122.0(542.66)
37(11.278)	316.1(b)(428.57)	37.8 (168.13)			
38(11.582)	326.1(b)(442.13)	38.2 (169.91)			
39(11.887)	336.0(b)(455.55)	38.5 (171.24)			
40(12.192)	346.0(b)(469.11)	38.8 (172.57)			

(a) Concentrated load is considered placed at the support. Loads used are those stipulated for shear.

(b) Maximum value determined by Standard Truck Loading. Otherwise the Standard Lane Loading governs.

LOADING-H20-44 (M18)

LOADING-H20-44 (M18)

TABLE OF MAXIMUM MOMENTS, SHEARS AND REACTIONS.—SIMPLE SPANS, ONE LANE

Spans in feet (m); moments in thousands of foot-pounds (kNm); shears and reactions in thousands of pounds (kN).

These values are subject to specification reduction for loading of multiple lanes.

Impact not included.

Span	Moment	End Shear and end reaction (a)	Span	Moment	End shear and end reaction (a)
1(306)	8.0(b)(10.86)	32.0(b)(142.34)	42(12.802)	485.3(b)(657.99)	58.0(b)(249.09)
2(610)	16.0(b)(21.70)	32.0(b)(142.34)	44(13.411)	520.9(b)(706.25)	58.7(b)(252.20)
3(914)	24.0(b)(32.56)	32.0(b)(142.34)	46(14.021)	558.5(b)(754.51)	57.3(b)(254.87)
4(1,219)	32.0(b)(43.40)	32.0(b)(142.34)	48(14.630)	592.1(b)(802.78)	58.0(b)(257.98)
5(1,524)	40.0(b)(54.26)	32.0(b)(142.34)	50(15.240)	627.9(b)(851.32)	58.6(b)(260.21)
6(1,829)	48.0(b)(65.08)	32.0(b)(142.34)	52(15.850)	663.6(b)(899.72)	59.1(b)(262.88)
7(2,134)	56.0(b)(75.93)	32.0(b)(142.34)	54(16.459)	699.3(b)(948.12)	59.6(b)(265.10)
8(2,438)	64.0(b)(86.77)	32.0(b)(142.34)	56(17.069)	735.1(b)(996.67)	60.0(b)(266.88)
9(2,743)	72.0(b)(97.62)	32.0(b)(142.34)	58(17.678)	770.8(b)(1045.06)	60.4(b)(268.66)
10(3,048)	80.0(b)(108.47)	32.0(b)(142.34)	60(18.288)	806.5(b)(1093.48)	60.8(b)(270.44)
11(3,353)	88.0(b)(119.31)	32.0(b)(142.34)	62(18.898)	842.4(b)(1142.14)	61.2(b)(272.22)
12(3,658)	96.0(b)(130.16)	32.0(b)(142.34)	64(19.507)	878.1(b)(1190.54)	61.5(b)(273.58)
13(3,962)	104.0(b)(141.00)	32.0(b)(142.34)	66(20.117)	914.0(b)(1239.21)	61.9(b)(275.33)
14(4,267)	112.0(b)(151.85)	32.0(b)(142.34)	68(20.726)	949.7(b)(1287.82)	62.1(b)(276.72)
15(4,572)	120.0(b)(162.70)	34.1(b)(151.85)	70(21.336)	985.8(b)(1336.29)	62.4(b)(277.56)
16(4,877)	128.0(b)(173.55)	36.0(b)(160.13)	75(22.860)	1,075.1(b)(1457.55)	63.1(b)(280.67)
17(5,182)	136.0(b)(184.39)	37.7(b)(167.69)	80(24.384)	1,164.9(b)(1579.39)	63.6(b)(282.89)
18(5,486)	144.0(b)(195.23)	39.1(b)(173.92)	85(25.908)	1,254.7(b)(1701.14)	64.1(b)(285.12)
19(5,791)	152.0(b)(206.08)	40.4(b)(179.70)	90(27.432)	1,344.4(b)(1822.76)	64.5(b)(286.90)
20(6,096)	160.0(b)(216.93)	41.6(b)(186.04)	95(28.956)	1,434.1(b)(1944.38)	64.9(b)(288.68)
21(6,401)	168.0(b)(227.78)	42.7(b)(189.93)	100(30.480)	1,524.0(b)(2066.27)	65.3(b)(290.45)
22(6,706)	176.0(b)(238.62)	43.6(b)(193.93)	110(33.528)	1,703.6(b)(2309.77)	65.9(b)(293.12)
23(7,010)	184.0(b)(249.47)	44.5(b)(197.94)	120(36.576)	1,883.3(b)(2553.41)	66.4(b)(295.35)
24(7,315)	192.7(b)(261.27)	45.3(b)(201.49)	130(39.624)	2,063.1(b)(2797.20)	67.6 (300.68)
25(7,620)	207.4(b)(281.19)	46.1(b)(205.06)	140(42.672)	2,242.8(b)(3040.82)	70.8 (314.92)
26(7,925)	222.2(b)(301.26)	46.8(b)(208.17)	150(45.720)	2,475.1 (3355.79)	74.0 (329.15)
27(8,230)	237.0(b)(321.33)	47.4(b)(210.84)	160(48.768)	2,768.0 (3752.91)	77.2 (343.39)
28(8,534)	252.0(b)(341.68)	48.0(b)(213.50)	170(51.816)	3,077.1 (4171.99)	80.4 (357.62)
29(8,839)	267.0(b)(362.00)	48.8(b)(217.06)	180(54.864)	3,402.1 (4612.83)	83.6 (371.85)
30(9,144)	282.1(b)(382.48)	49.6(b)(220.22)	190(57.912)	3,743.1 (5074.97)	86.8 (386.09)
31(9,449)	297.3(b)(403.09)	50.3(b)(223.73)	200(60.960)	4,100.0 (5558.85)	90.0 (400.32)
32(9,754)	312.5(b)(423.69)	51.0(b)(226.85)	220(67.066)	4,862.0 (6581.99)	96.4 (428.79)
33(10,058)	327.8(b)(444.44)	51.6(b)(229.52)	240(73.152)	5,684.0 (7711.89)	102.8 (457.25)
34(10,363)	343.5(b)(465.73)	52.2(b)(232.19)	260(79.248)	6,578.0 (8918.67)	109.2 (485.72)
35(10,668)	361.2(b)(489.72)	52.8(b)(234.86)	280(85.344)	7,532.0 (10212.02)	115.6 (514.19)
36(10,973)	378.9(b)(513.72)	53.3(b)(237.08)	300(91.440)	8,550.0 (11582.24)	122.0 (542.68)
37(11,278)	396.8(b)(537.72)	53.8(b)(239.30)			
38(11,582)	414.3(b)(561.72)	54.3(b)(241.53)			
39(11,887)	432.1(b)(585.85)	54.8(b)(243.75)			
40(12,192)	449.8(b)(609.85)	55.2(b)(246.53)			

(a) Concentrated load is considered placed at the support. Loads used are those stipulated for shear.

(b) Maximum value determined by Standard Truck Loading. Otherwise the Standard Lane Loading governs.

ЗАДАНИЕ П. 4

LOADING-HS20-44 (M18)

ภาคผนวก ข.

รูปแสดง

standard AASHTO-PCI

prestressed concrete for highway bridges

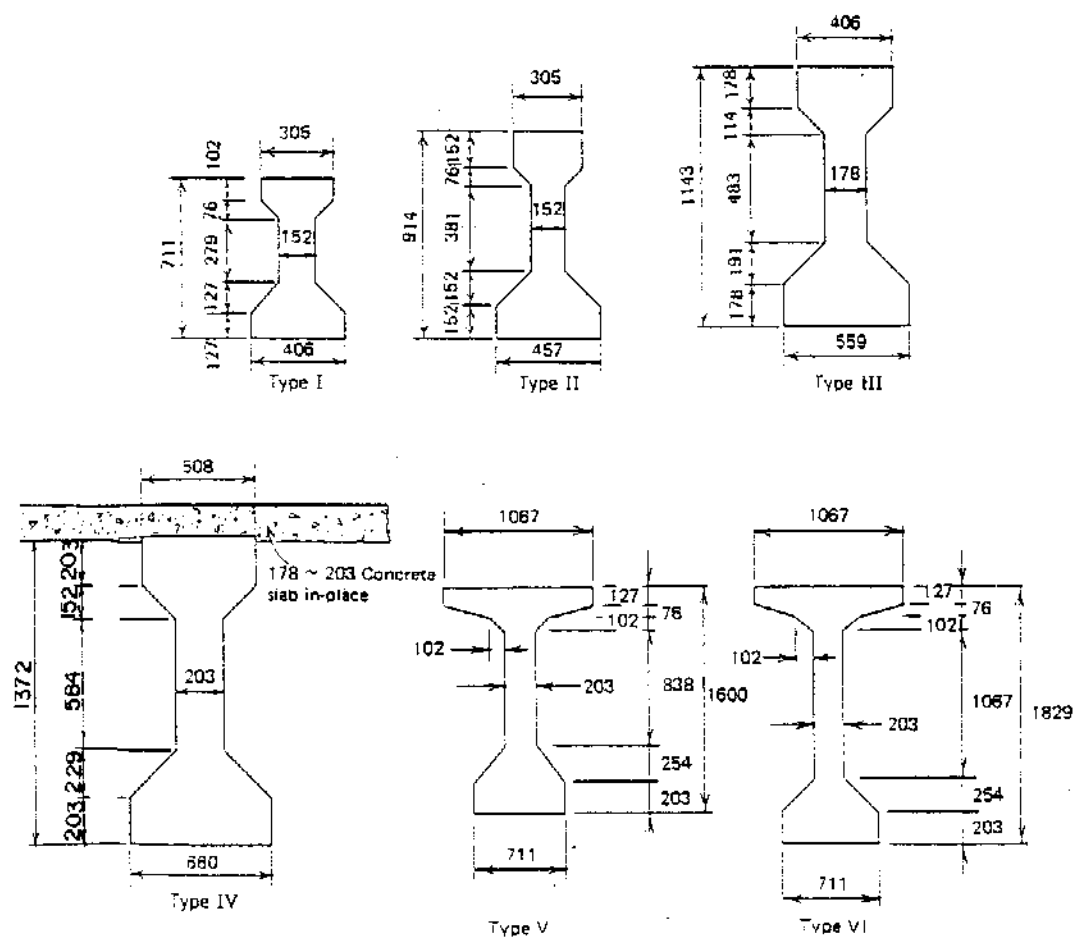
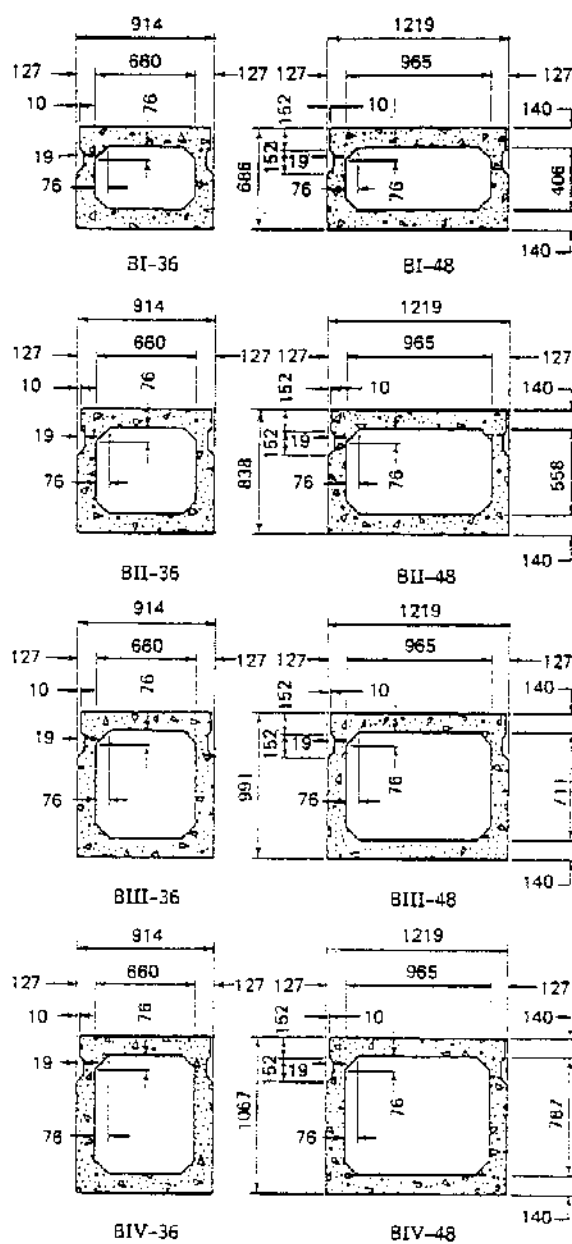


Table of Properties
(Without in-place slab)

Beam Type	Area, $\times 10^4 \text{ mm}^2$	$I, \times 10^8 \text{ mm}^4$	$c_b, \text{ mm}$	Recommended Span Limits, m
I	17.81	95	320	9.1 ~ 13.7
II	23.81	212	402	12.2 ~ 18.3
III	36.13	522	515	16.8 ~ 24.4
IV	50.90	1085	628	21.3 ~ 30.5
V	65.35	2169	812	27.4 ~ 36.6
VI	70.00	3052	924	33.5 ~ 42.7

តារាង ៧.១

Standard AASHTO-PCI prestressed I-beams for Highway Bridges.



2.2 תרשים

Standard AASHTO-PCI prestressed box beams for Highway Bridges.

ภาคผนวก จ.

ตารางค่าเปรียบเทียบหน่วยและปรับเบี่ยงสูตร

ตารางที่ ก.1
ตารางเปรียบเทียบหน่วย

น้ำหนัก			
1	นิวตัน	=	0.10197 กิโลกรัม
1	ปอนด์	=	0.4536 กิโลกรัม
ความยาว			
1	นิ้ว	=	0.0254 เมตร
1	ฟุต	=	0.3047 เมตร
พื้นที่			
1	ตารางนิ้ว	=	6.4516 ตารางเซนติเมตร
1	ตารางฟุต	=	0.0929 ตารางเมตร
รวมเมตร			
1	ปอนด์-ฟุต	=	0.13826 กิโลกรัม-เมตร
1	นิวตัน-เมตร	=	0.10197 กิโลกรัม-เมตร
แรงต่อหน่วยพื้นที่			
1	ปอนด์/ตารางนิ้ว	=	0.07031 กิโลกรัม/ตารางเซนติเมตร
1	ปอนด์/ตารางฟุต	=	4.8824 กิโลกรัม/ตารางเมตร
ความหนาแน่น			
1	ปอนด์/ลูกบาศก์นิ้ว	=	27.68 กิโลกรัม/ลูกบาศก์เซนติเมตร
1	ปอนด์/ลูกบาศก์ฟุต	=	16.0184 กิโลกรัม/ลูกบาศก์เมตร
1	นิวตัน/ลูกบาศก์เมตร	=	0.10197 กิโลกรัม/ลูกบาศก์เมตร

ตารางที่ ก.2
ตารางแสดงค่าปรับเบี่ยงเบน

AASHTO 3.8.2.1	
$I = \frac{50}{L + 125}$ I = Impact factor L = Span Length (ft)	$I = \frac{15.24}{L + 38}$ I = Impact factor L = Span Length (m)
AASHTO 3.14.1.1	
$P = \frac{(30+3000)(55-w)}{L \quad 50}$ p = Live Load (lb/sq.ft) L = Loaded Length of sidewalk(ft) w = Width of sidewalk (ft)	$P = \frac{4.883(30+9842)(55-w)}{L \quad 50}$ p = Live Load (kg/sq.m) L = Loaded Length of sidewalk (m) w = Width of sidewalk (m)
AASHTO 3.23.3.2 (Distribution of Wheel Load in Longitudinal Beams)	
I-Beam 1 lane >1 lane = S/7.0 = S/5.5 T-Beam 1 lane >1 lane = S/6.5 = S/6.0 S = effective Span Length (ft)	I-Beam 1 lane >1 lane = S/2.134 = S/1.676 T-Beam 1 lane >1 lane = S/1.981 = S/1.828 S = effective Span Length (m)

ตารางที่ ค.3
ตารางแสดงค่ารับเบี่ยงสูตร

AASHTO 3.24.3.1	
Span up to and including 50 ft. $Ml = 900 S$ Span 50 ft. to 100 ft. $Ml = 1000 (1.30L - 20.0)$ Ml = Live Load moment (lb-ft) S = Effective Span Length (ft)	Span up to and including 15.25 m $Ml = 1400 S$ Span 15.25 m. to 30.5 m. $Ml = 1490 (1.30L - 6.094)$ Ml = Live Load moment (kg-m) S = Effective Span Length (m)
AASHTO 3.24.3.2	
For H20-44, HS20-44 Loading $ml = 16000 \left(\frac{l+2}{32} \right)$ For H15-44, HS15-44 Loading $ml = 12000 \left(\frac{l+2}{32} \right)$ ml = Live Load moment (lb-ft) l = Effective Span Length (ft)	For H20-44, HS20-44 Loading $ml = 7342 \left(\frac{l+0.61}{9.74} \right)$ For H15-44, HS15-44 Loading $ml = 5506 \left(\frac{l+0.61}{9.74} \right)$ ml = Live Load moment (kg-m) l = Effective Span Length (m)

ตารางที่ ก.4
ตารางแสดงค่าปรับเปลี่ยนสูตร

AASHTO 3.24.10.2 (Distribution of reinforcement)	
For main reinforcement parallel to traffic	
$= 100 / L$	$= 55.21 / L$
For main reinforcement perpendicular to traffic	
$= 220 / L$	$= 121.5 / L$
L = Effective Span Length (ft)	L = Effective Span Length (m)
AASHTO 8.7.1	
$E_c = 57000 f_c'$ E_c = Modulus of Elasticity (psi) f_c' = Compressive strength (psi)	$E_c = 15114 f_c'$ E_c = Modulus of Elasticity (ksc) f_c' = Compressive strength (ksc)
AASHTO 8.9.2	
$t = \frac{L + 10}{30}$ t = minimum depth of slab (ft) L = Effective Span Length (ft)	$t = \frac{L + 3.047}{30}$ t = minimum depth of slab (m) L = Effective Span Length (m)

ตารางที่ ค.5
ตารางแสดงค่ารับเบี่ยงสูตร

AASHTO 8.15.5.2	
$v_c = 0.95 f_c'$ v_c = Shear strng.cr.by concrete f_c' = compressive strength (psi)	$v_c = 0.252 f_c'$ v_c = Shear strng.cr.by concrete f_c' = compressive strength (ksc)
AASHTO 9.15.2.2	
$f_{ct} = 6 f_c'$ f_{ct} = Allow. tensile stress (psi) f_c' = compressive strength (psi)	$f_{ct} = 1.591 f_c'$ f_{ct} = Allow. tensile stress(ksc) f_c' = compressive strength (ksc)
AASHTO 9.15.2.3	
$f_{ct} = 7.5 f_{ci}'$ f_{ct} = Cracking stress (psi) f_{ci}' = ini.compressive strength(psi)	$f_{ct} = 1.988 f_{ci}'$ f_{ct} = Cracking stress (ksc) f_{ci}' = ini.compressive strength

ตารางที่ ค.6
ตารางแสดงค่ารับเบี่ยงเบน

AASHTO 9.16.2.4 (Loss of prestress)	
SH = 17000 - 150 RH	SH = 1195 - 10.5 RH
For low Relaxation strand	
CRs = 20000-0.4Es-0.2(SH+CRc)	CRs = 1406-0.4Es-0.2(SH+CRc)
For Stress releived strand	
CRs = 5000-0.1Es-0.05(SH+CRc)	CRs = 351.5-0.1Es-0.05(SH+CRc)
psi	ksc
SH = Loss of prestress due to Shrinkage Es = Loss of prestress due to elastic shortenning CRc = Loss of prestress due to creep of concrete CRs = Loss of prestress due ro Relaxation of prestresing steel	