BAB VII

BAB VII

KESIMPULAN DAN SARAN

7.1. Kesimpulan

Dari perencanaan yang telah dilakukan, dapat ditarik kesimpulan:

1. Ketebalan dengan metoda CBR sebesar 64 cm, metoda LCN sebesar 58 cm dan FAA sebesar 33,57 cm. Perbedaan hasil tebal lapis keras dipengaruhi pada anggapan/asumsi dan parameter yang digunakan dalam menganalisis beban lalu lintas, beban pesawat, ketebalan minimum yang disyaratkan, dan anggapan-anggapan lain yang timbul karena kondisi lingkungan, misalnya pengaruh kondisi tanah dan pengaruh cuaca (pada metoda CBR, FAA).
2. Tegangan vertikal, tegangan horisontal, dan lendutan terkecil dihasilkan oleh metoda CBR masing-masing sebesar 8,5247 Psi, 0,183 Psi dan 0,0342 Psi. sedangkan metoda LCN menghasilkan tegangan vertikal sebesar 10,0421 psi, tegangan horisontal sebesar 0,2516 Psi dan lendutan sebesar 0,0370 Psi dan metoda FAA menghasilkan tegangan vertikal sebesar 19,0778 Psi, tegangan horisontal sebesar 0,9607 Psi dan lendutan sebesar 0,0516 Psi, perbedaan tegangan yang terjadi pada masing-masing metode karena pengaruh ketebalan, makin tebal lapis keras maka tegangan yang terjadi semakin kecil yang berarti konstruksi tersebut semakin kuat dan aman.
3. Metoda CBR menghasilkan tebal paling tebal dan metoda FAA paling tipis. Gaya terbesar terjadi pada metoda FAA dan terkecil pada metoda CBR.
4. Tersedianya lahan yang cukup di wilayah Kabupaten Pemalang untuk perencanaan dan pengembangan bandar udara di masa mendatang.

5. Bandar udara tersebut digunakan untuk operasi penerbangan jarak dekat dan menengah.
6. Bandar udara ini dapat dioperasikan untuk *take off* dan *landing* pesawat berbadan kecil dan sedang seperti BAE 146-100, CN 235, N 250, *Twin Otter*, ATP dan lain-lain

7.2. Saran

1. Penelitian guna merencanakan tebal perkeraksan landasan pacu lapangan terbang khusus untuk Indonesia, perlu mempertimbangkan kondisi alam Indonesia.
2. Penelitian tentang pengaruh cuaca yang terjadi di Indonesia diperlukan dalam proses perencanaan perkerasan landasan pacu dan keawetannya selama umur rencana karena metoda internasional yang ada hanya meneliti pengaruh salju saja.
3. Penelitian lebih lanjut tentang gaya-gaya yang bekerja pada landas pacu sistem tiga lapis masih diperlukan (misal tegangan vertikal, tegangan horisontal, dan lendutan) agar mudah dilaksanakan di lapangan.
4. Penelitian lebih lanjut mengenai nilai CBR yang didapat dari konversi nilai daya dukung tanah yang didapat dari tes triaksial masih diperlukan dengan menambah tekanan sel untuk mendapatkan tekanan σ_1 maksimum, sehingga nantinya akan didapat nilai CBR yang lebih akurat.

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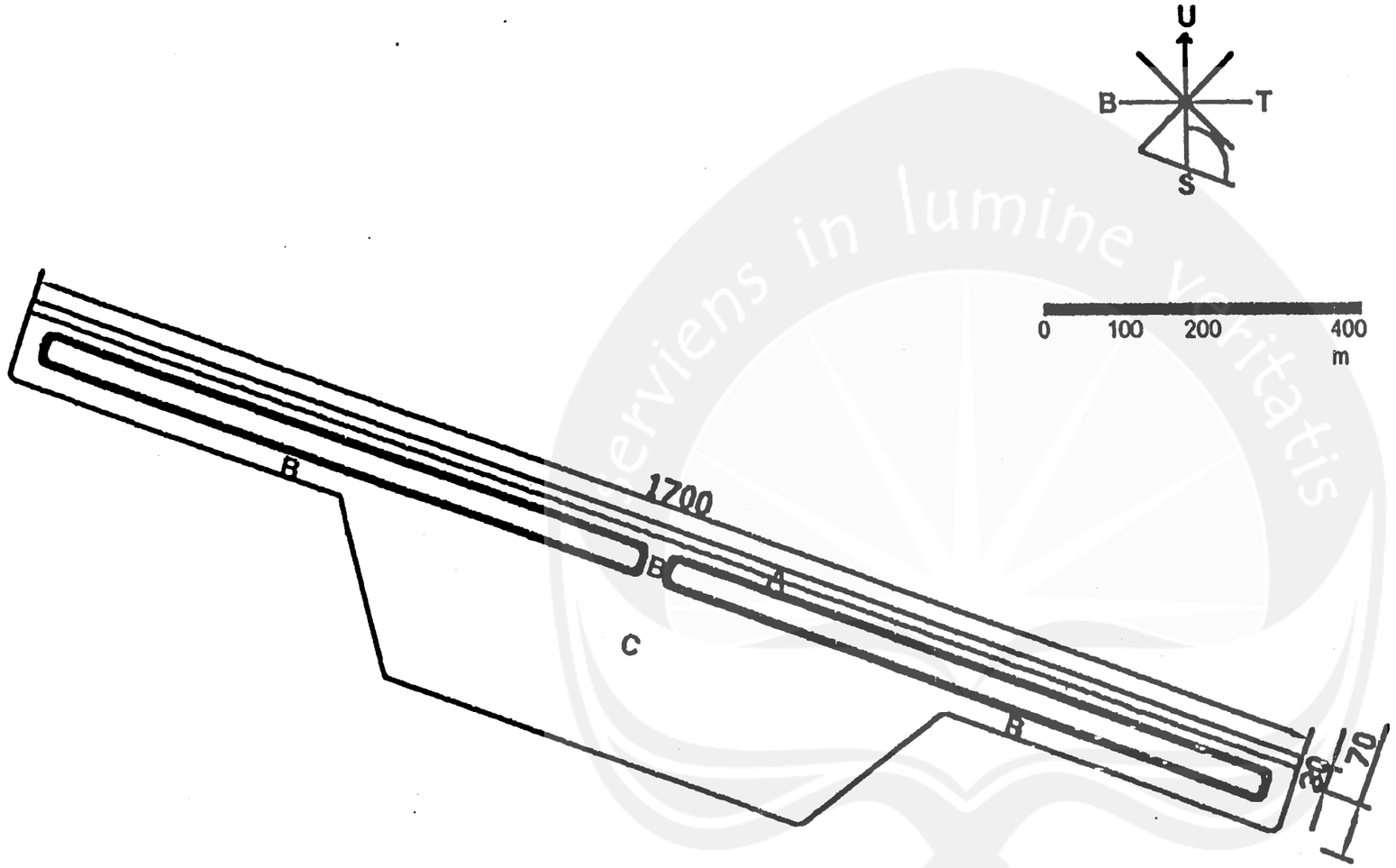

KETERANGAN :

A = RUNWAY

B = TAXIWAY

C = APRON (PARKIR PESAWAT)

JUDUL

RENCANA DIMENSI PERKERASAN LAPANGAN TERBANG DI PEMALANG JAWA TENGAH

DIBUAT OLEH :

BENY KURNIAWAN
TS 970208714

DOSEN PEMBIMBING :

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FAKULTAS TEKNIK
PROGRAM STUDI
TEKNIK SIPIL
UNIVERSITAS ATMA JAYA
YOGYAKARTA
2004

Lampiran 2	Halaman 129
Lokasi Wilayah Kabupaten Pemalang	

KABUPATEN

PEMALANG

SKALA 1 : 357.000

PEMALANG
IKHLAS

KABUPATEN TEGAL

PETUNJUK LETAK PETA

PROP. JAWA TENGAH

KE TEGAL

KE JATINEGARA/TEGAL

KE GUCI/TEGAL

KE PURBALINGGA

KE BATURADEN

KE PEKALONGAN

KE KESESI/PEKALONGAN

KE KANDANG SERANG

KE SRAGI/KEDUNGWUNI

KABUPATEN PEKALONGAN

KABUPATEN PURBALINGGA

KEC. PEMALANG

KEC. TAMAN

KEC. PETARUKAN

KEC. ULUJAMI

KEC. COMAL

KEC. AMPELGADING

KEC. BODEH

KEC. BANTARBOLANG

KEC. RANDUDONGKAL

KEC. WARUNGPRING

KEC. MOGA

KEC. PULOSARI

KEC. BELIK

KEC. WATUKUMPUL

LEGENDA

WARNA KETINGGIAN DIATAS PERMUKAAN LAUT

AM AN AO AP AQ AR AS AT AU AV AW

EE EF EG EH EI EJ EK EL EM EN EO EP EQ ER ES ET EU EV EW EX EY EZ FA FB FC FD FE FF FG FH FI FJ FK FL FM FN FO FP FQ FR FS FT FU FV FW FX FY FZ GA GB GC GD

72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115

97 98 99 100 101 102 103 104 105

TABLE 2.2. One-Layer Elastic Function Values (after Ahlvin and Ulery)

	Function A																	
Depth (z) in Radii	Offset (r) in Radii																	
	0	0.2	0.4	0.6	0.8	1	1.2	1.5	2	3	4	5	6	8	10	12	14	
0	1.0	1.0	1.0	1.0	1.0	.5	0	0	0	0	0	0	0	0	0	0	0	
0.1	.90050	.89749	.88679	.86125	.78797	.43015	.09645	.02787	.00856	.00211	.00084	.00042						
0.2	.80388	.79824	.77884	.73483	.63014	.38269	.15433	.05251	.01680	.00419	.00167	.00083	.00048	.00020				
0.3	.71265	.70518	.68316	.62690	.52081	.34375	.17964	.07199	.02440	.00622	.00250							
0.4	.62861	.62015	.59241	.53767	.44329	.31048	.18709	.08593	.03118									
0.5	.55279	.54403	.51622	.46448	.38390	.28156	.18556	.09499	.03701	.01013	.00407	.00209	.00118	.00053	.00025	.00014	.00009	
0.6	.48550	.47691	.45078	.40427	.33676	.25588	.17952	.10010										
0.7	.42654	.41874	.39491	.35428	.29833	.21727	.17124	.10228	.04558									
0.8	.37531	.36832	.34729	.31243	.26581	.21297	.16206	.10236										
0.9	.33104	.32492	.30669	.27707	.23832	.19428	.15253	.10094										
1	.29299	.28763	.27005	.24697	.21469	.17868	14329	.09849	.05185	.01742	.00761	.00393	.00226	.00097	.00050	.00029	.00018	
1.2	.23178	.22795	.21662	.19890	.17626	.15101	.12570	.09192	.05260	.01935	.00871	.00459	.00269	.00115				
1.5	.16795	.16552	.15877	.14804	.13436	.11892	.10296	.08010	.05116	.02142	.01013	.00548	.00325	.00141	.00073	.00043	.00027	
2	.10557	.10453	.10140	.09647	.09011	.08269	.07471	.06275	.04496	.02221	.01160	.00659	.00399	.00180	.00094	.00056	.00036	
2.5	.07152	.07098	.06947	.06698	.06373	.05974	.05555	.04890	.03707	.02143	.01221	.00732	.00463	.00214	.00115	.00068	.00043	
3	.05132	.05101	.05022	.04886	.04707	.04487	.04241	.03839	.03150	.01980	.01220	.00770	.00505	.00242	.00132	.00079	.00051	
4	.02986	.02976	.02997	.02832	.02802	.02749	.02651	.02490	.02193	.01592	.01109	.00768	.00536	.00282	.00160	.00099	.00065	
5	.01942	.01938				.01835			.01573	.01249	.00949	.00708	.00527	.00298	.00179	.00113	.00075	
6	.01361					.01307			.01168	.00983	.00795	.00628	.00492	.00299	.00188	.00124	.00084	
7	.01005					.00976			.00893	.00784	.00661	.00548	.00445	.00291	.00193	.00130	.00091	
8	.00772					.00755			.00709	.00635	.00554	.00472	.00298	.00276	.00189	.00134	.00094	
9	.00612					.00600			.00566	.00520	.00465	.00409	.00353	.00256	.00184	.00133	.00096	
10								.00477	.00465	.00438	.00397	.00352	.00326	.00241				

Function B

Depth (z) in Radii	Offset (r) in Radii																
	0	0.2	0.4	0.6	0.8	1	1.2	1.5	2	3	4	5	6	8	10	12	14
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.1	.09852	.10140	.11138	.13424	.18796	.05388	-.07899	-.02672	-.03845	-.00210	-.00084	-.00042					
0.2	.18857	.19306	.20772	.23524	.25983	.08513	-.07759	-.04448	-.01593	-.00412	-.00166	-.00083	-.00024	-.00010			
0.3	.28362	.26787	.29018	.29483	.27257	.10757	-.04316	-.04999	-.02166	-.00599	-.00245						
0.4	.32016	.32259	.32748	.32273	.26925	.12404	-.00765	-.04535	-.02522								
0.5	.35777	.35752	.35323	.33106	.25235	.13591	.02165	-.03455	-.02651	-.00991	-.00388	-.00199	-.00116	-.00049	-.00025	-.00014	-.00009
0.6	.37831	.37531	.36306	.32822	.25411	.14440	.04457	-.02101									
0.7	.38487	.37962	.36072	.31929	.24638	.14986	.06209	-.00702	-.02329								
0.8	.38091	.37406	.35133	.30699	.23779	.15292	.07530	.00614									
0.9	.36962	.36275	.33734	.29299	.22891	.15404	.08507	.01795									
1	.35355	.34553	.32075	.27819	.21978	.15355	.09210	.02814	-.01005	-.01115	-.00608	-.00344	-.00210	-.00092	-.00048	-.00028	-.00018
1.2	.31485	.30730	.28481	.24836	.20113	.14915	.10002	.04378	.00023	-.00995	-.00632	-.00378	-.00236	-.00107			
1.5	.25602	.25025	.23338	.20694	.17368	.13732	.10193	.05745	.01385	-.00669	-.00600	-.00401	-.00265	-.00126	-.00068	-.00040	-.00026
2	.17889	.18144	.16644	.15198	.13375	.11331	.09254	.06371	.02836	.00028	-.00410	-.00371	-.00278	-.00148	-.00084	-.00050	-.00033
2.5	.12807	.12693	.12126	.11327	.10298	.09130	.07869	.06022	.03429	.00661	-.00130	-.00271	-.00250	-.00156	-.00094	-.00059	-.00039
3	.09487	.09194	.09099	.08635	.08033	.07325	.06551	.05354	.03511	.01112	.00157	-.00134	-.00192	-.00151	-.00099	-.00065	-.00046
4	.05707	.05666	.05567	.05303	.05145	.04773	[illegible]	[illegible]	[illegible]	.01515	.00595	.00155	-.00029	-.00109	-.00094	-.00068	-.00050
5	.03772	.03760				.03384			.02474	.01522	.00810	.00371	.00132	-.00042	-.00070	-.00058	-.00049
6	.02656					.02468			.01968	.01380	.00867	.00496	.00254	.00028	-.00037	-.00017	-.00045
7	.01980					.01868			.01577	.01204	.00842	.00547	.00332	.00093	-.00002	-.00029	.00037
8	.01526					.01459			.01279	.01034	.00779	.00554	.00372	.00141	.00035	-.00005	-.00025
9	.01212					.01170			.01054	.00888	.00705	.00533	.00306	.00178	.00066	.00012	-.00012
10								.00924	.00879	.00764	.00631	.00501	.00302	.00199			

TABLE 2.2. (continued)

Function C

Depth (z) in Radii	Offset (r) in Radii: 0	0.2	0.4	0.6	0.8	1	1.2	1.5	2	3	4	5	6	8	10	12	14
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.1	-.04926	-.05142	-.05903	-.07708	-.12108	.02247	.12097	.04475	.01536	.00403	.00164	.00082					
0.2	-.09429	-.09755	-.10072	-.12977	-.14552	.02419	.14896	.07892	.02951	.00796	.00325	.00164	.00094	.00039			
0.3	-.13181	-.13484	-.14415	-.15023	-.12990	.01988	.13391	.09816	.01148	.01169	.00183						
0.4	-.16008	-.16180	-.16519	-.15985	-.11168	.01292	.11014	.10422	.05067								
0.5	-.17889	-.17835	-.17497	-.15625	-.09833	.00483	.08730	.10125	.05690	.01624	.00778	.00399	.00231	.00098	.00050	.00029	.00018
0.6	-.18915	-.18663	-.17336	-.14934	-.08967	-.00304	.06731	.09313									
0.7	-.19244	-.18831	-.17393	-.14147	-.08409	-.01061	.05028	.08253	.06129								
0.8	-.19046	-.18481	-.16784	-.13395	-.08066	-.01744	.03582	.07114									
0.9	-.18401	-.17841	-.16024	-.12664	-.07828	-.02337	.02359	.05993									
1	-.17678	-.17050	-.15108	-.11995	-.07634	-.02843	.01331	.04939	.05429	.02726	.01333	.00726	.00433	.00180	.00098	.00057	.00036
1.2	-.15742	-.15117	-.13467	-.10763	-.07289	-.03575	-.00245	.03107	.01522	.02791	.01467	.00624	.00501	.00271			
1.5	-.12801	-.12277	-.11101	-.09145	-.06711	-.04124	-.01722	.01088	.03154	.02652	.01570	.00933	.00585	.00266	.00141	.00083	.00039
2	-.08944	-.08491	-.07976	-.06925	-.05560	-.04144	-.02687	-.00782	.01267	.02070	.01527	.01012	.00321	.00327	.00179	.00107	.00069
2.5	-.06403	-.06068	-.05839	-.05259	-.04522	-.03605	-.02890	-.01536	.00163	.01384	.01314	.00987	.00707	.00569	.00209	.00128	.00083
3	-.04744	-.04560	-.04339	-.04089	-.03642	-.03130	-.02587	-.01748	-.00528	.00792	.01030	.00888	.00689	.00392	.00232	.00145	.00096
4	.02854	.02737	-.02562	-.02585	-.02421	-.02112	-.01964	-.01506	-.00956	.00038	.00492	.00602	.00561	.00309	.00254	.00168	.00115
5	.01865	.01810				-.01558			-.00939	-.00293	-.00128	.00329	.00391	.00341	.00250	.00177	.00127
6	-.01333					-.01118			-.00819	-.00105	-.00079	.00129	.00254	.00272	.00227	.00173	.00139
7	.00983					-.00962			-.00678	-.00417	-.00100	-.00004	.00113	.00200	.00193	.00161	.00128
8	.00761					-.00699			-.00552	-.00393	-.00225	-.00077	.00029	.00134	.00157	.00143	.00120
9	.00617					.00423			-.00452	-.00353	-.00235	-.00118	-.00027	.00082	.00124	.00122	.00110
10								-.00381	-.00373	-.00314	-.00233	-.00137	-.00063	.00040			

Harga – harga Fungsi Untuk Sistem Satu Lapis (Fungsi D)

Function *D*

Depth (s) in Radii	Offset (r) in Radii																	
	0	0.2	0.4	0.6	0.8	1	1.2	1.5	2	3	4	5	6	8	10	12	14	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0.1	.04926	.04998	.05235	.05716	.06687	.07635	.04108	.01401	.00691	.00193	.00080	.00041						
0.2	.09429	.09552	.09900	.10546	.11431	.10932	.07139	.03444	.01359	.00386	.00159	.00081	.00047	.00020				
0.3	.13181	.13305	.14051	.14062	.14267	.12745	.09078	.04817	.01982	.00927	.00238							
0.4	.16038	.16070	.16229	.15288	.15756	.12596	.10240	.05907	.02545									
0.5	.17889	.17917	.17826	.17481	.16403	.14074	.10894	.06670	.03039	.00921	.00340	.00200	.00116	.00049	.00025	.00015	.00009	
0.6	.18915	.18867	.18573	.17887	.16489	.14137	.11106	.07212										
0.7	.19244	.19132	.18679	.17782	.16229	.13226	.11237	.07551	.03863									
0.8	.19046	.18927	.18348	.17306	.15711	.13548	.11115	.07728										
0.9	.18481	.18349	.17709	.16635	.15563	.13067	.10866	.07738										
1	.17678	.17503	.16886	.15824	.14344	.12513	.10340	.07753	.04456	.01611	.00725	.00382	.00224	.00096	.00050	.00029	.00018	
1.2	.15742	.15610	.15014	.14073	.12823	.11340	.09757	.07484	.04575	.01796	.00835	.00446	.00264	.00114				
1.5	.12001	.12754	.12237	.11549	.10537	.09600	.08491	.06833	.04539	.01903	.00970	.00532	.00320	.00140	.00073	.00043	.00027	
2	.08944	.09080	.08668	.08273	.07814	.07187	.06566	.05589	.04103	.02098	.01117	.00643	.00398	.00179	.00095	.00056	.00036	
2.5	.06403	.06565	.06284	.06068	.05777	.05525	.05069	.04486	.03532	.02045	.01183	.00717	.00457	.00213	.00115	.00068	.00044	
3	.04744	.04834	.04760	.04548	.04391	.04195	.03963	.03606	.02983	.01904	.01187	.00755	.00497	.00242	.00133	.00080	.00052	
4	.02854	.02928	.02996	.02798	.02724	.02661	.02561	.02408	.02110	.01552	.01087	.00757	.00533	.00280	.00160	.00100	.00065	
5	.01806	.01950				.01816			.01535	.01230	.00939	.00700	.00523	.00299	.00180	.00114	.00077	
6	.01333					.01351			.01149	.00976	.00788	.00625	.00488	.00301	.00190	.00124	.00086	
7	.00990					.00966			.00899	.00787	.00662	.00542	.00445	.00292	.00182	.00130	.00092	
8	.00763					.00759			.00727	.00641	.00554	.00477	.00402	.00275	.00192	.00131	.00096	
9	.00607					.00746			.00601	.00533	.00470	.00415	.00358	.00260	.00187	.00133	.00099	
10								.00542	.00506	.00456	.00393	.00364	.00319	.00239				

TABLE 4.2. (continued)

Function E

Depth (z) in Radii	Offset (r) in Radii 0	0.2	0.4	0.6	0.8	1	1.2	1.5	2	3	4	5	6	8	10	12	14
0	.5	.5	.5	.5	.5	.5	.34722	.22222	.12500	.05556	.03125	.02000	.01389	.00781	.00500	.00347	.00255
0.1	.45025	.44949	.44698	.44173	.43008	.39198	.30445	.20399	.11806	.05362	.03045	.01959					
0.2	.40194	.40043	.39591	.38660	.36798	.32802	.26690	.18633	.11121	.05170	.02965	.01919	.01342	.00762			
0.3	.35633	.35428	.33809	.33674	.31578	.28003	.23311	.16967	.10450	.04979	.02806						
0.4	.31431	.31214	.30541	.29298	.27243	.24200	.20526	.15428	.09801								
0.5	.27639	.27407	.26732	.25511	.23639	.21119	.18168	.14028	.09180	.04608	.02727	.01800	.01272	.00734	.00475	.00332	.00246
0.6	.24275	.24247	.23411	.22289	.20634	.18520	.16155	.12759									
0.7	.21327	.21112	.20535	.19525	.18093	.16356	.14421	.11620	.08027								
0.8	.18765	.18550	.18049	.17190	.15977	.14523	.12928	.10602									
0.9	.16552	.16337	.15921	.15179	.14168	.12954	.11634	.09686									
1	.14645	.14483	.14610	.13472	.12618	.11611	.10510	.08865	.06552	.03736	.02352	.01602	.01157	.00683	.00450	.00318	.00237
1.2	.11589	.11435	.11201	.10741	.10140	.09431	.08657	.07476	.05728	.03425	.02208	.01527	.01113	.00664			
1.5	.08398	.08356	.08159	.07885	.07517	.07088	.06511	.05871	.04703	.03003	.02008	.01419	.01049	.00636	.00425	.00304	.00228
2	.05279	.05105	.05146	.05034	.04850	.04675	.04442	.04078	.03454	.02410	.01706	.01248	.00943	.00590	.00401	.00290	.00219
2.5	.03576	.03426	.03489	.03435	.03360	.03211	.03150	.02553	.02599	.01915	.01447	.01096	.00850	.00546	.00378	.00276	.00210
3	.02566	.02519	.02470	.02491	.02444	.02389	.02330	.02216	.02007	.01585	.01230	.00962	.00763	.00505	.00355	.00263	.00201
4	.01493	.01452	.01495	.01525	.01446	.01418	.01395	.01356	.01281	.01084	.00900	.00742	.00612	.00431	.00313	.00237	.00185
5	.00971	.00927				.00929			.00873	.00774	.00673	.00579	.00495	.00364	.00275	.00213	.00168
6	.00689					.00632			.00629	.00574	.00517	.00457	.00404	.00309	.00241	.00192	.00154
7	.00503					.00493			.00466	.00438	.00404	.00370	.00330	.00264	.00213	.00172	.00140
8	.00386					.00377			.00354	.00344	.00325	.00297	.00273	.00228	.00185	.00155	.00127
9	.00306					.00227			.00275	.00273	.00264	.00246	.00225	.00194	.00163	.00139	.00116
10								.00210	.00220	.00225	.00221	.00203	.00200	.00171			

Harga – harga Fungsi Untuk Sistem Satu Lapis (Fungsi F)

Function F

Depth (z) in Radii	Offset (r) in Radii																
	0	0.2	0.4	0.6	0.8	1	1.2	1.5	2	3	4	5	6	8	10	12	14
0	.5	.5	.5	.5	.5	0	-.34722	-.27272	-.12500	-.05556	-.03125	-.02000	-.01389	-.00781	-.00500	-.00347	-.00255
0.1	.45025	.44794	.43981	.41954	.35769	.03817	-.20800	-.17612	-.10950	-.05151	-.02951	-.01917					
0.2	.40194	.39781	.38294	.34823	.26215	.05466	-.11165	-.13381	-.09441	-.04750	-.02798	-.01835	-.01295	-.00742			
0.3	.35633	.35094	.34508	.29016	.20503	.06372	-.05346	-.09769	-.08010	-.04356	-.02636						
0.4	.31431	.30801	.28681	.24469	.17086	.06848	-.01818	-.06835	-.06684								
0.5	.27639	.26997	.24690	.20922	.14752	.07037	.00388	-.04529	-.05479	-.03595	-.02320	-.01590	-.01154	-.00681	-.00450	-.00318	-.00237
0.6	.24275	.23444	.21667	.18138	.13042	.07068	.01797	-.02749									
0.7	.21327	.20762	.18956	.15903	.11740	.06963	.02704	-.01392	-.03469								
0.8	.18763	.18287	.16679	.14053	.10604	.06774	.03277	-.00365									
0.9	.16552	.16159	.14747	.12520	.09664	.06533	.03619	.00406									
1	.14645	.14280	.12995	.11225	.08850	.06256	.03819	.00984	-.01367	-.01934	-.01591	-.01209	-.00931	-.00587	-.00400	-.00289	-.00219
1.2	.11589	.11360	.10460	.09449	.07486	.05670	.03913	.01716	-.00452	-.01491	-.01337	-.01068	-.00844	-.00550			
1.5	.08398	.08196	.07719	.06918	.05919	.04804	.03686	.02177	.00113	-.00879	-.00995	-.00870	-.00723	-.00495	-.00353	-.00261	-.00201
2	.05279	.05348	.04994	.04614	.04162	.03593	.03029	.02197	.01043	-.00189	-.00546	-.00589	-.00544	-.00410	-.00307	-.00233	-.00183
2.5	.03576	.03673	.03459	.03263	.03014	.02762	.02406	.01927	.01188	.00198	-.00226	-.00364	-.00386	-.00332	-.00263	-.00208	-.00166
3	.02566	.02706	.02555	.02395	.02263	.02097	.01971	.01623	.01144	.00396	-.00010	-.00192	-.00258	-.00263	-.00223	-.00183	-.00150
4	.01493	.01536	.01417	.01259	.01306	.01331	.01256	.01134	.00912	.00508	.00209	.00026	-.00076	-.00148	-.00125	-.00137	-.00120
5	.00971	.01011				.00905			.00700	.00475	.00277	.00129	.00031	-.00066	-.00096	-.00099	-.00093
6	.00680					.00675			.00538	.00409	.00278	.00170	.00088	-.00010	-.00053	-.00066	-.00070
7	.00503					.00483			.00428	.00346	.00258	.00178	.00114	.00027	-.00020	-.00041	-.00049
8	.00386					.00380			.00350	.00291	.00229	.00174	.00125	.00048	.00003	-.00020	-.00033
9	.00306					.00374			.00291	.00247	.00203	.00163	.00124	.00062	.00020	-.00005	-.00019
10								.00267	.00246	.00213	.00176	.00149	.00126	.00070			

TABLE 2.3. (continued)

Function G

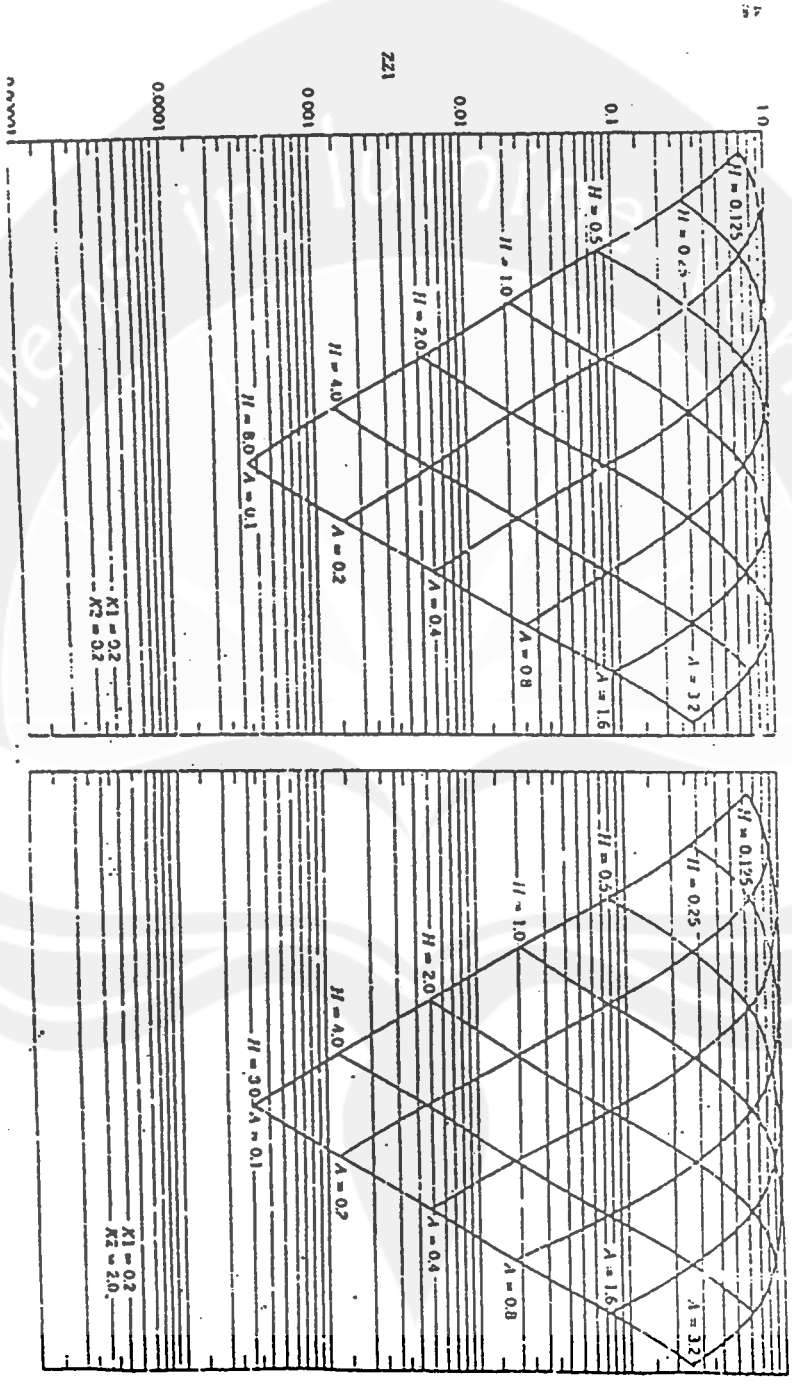
Depth (z) in Radii	Offset (r) in Radii																
	0	0.2	0.4	0.6	0.8	1	1.2	1.5	2	3	4	5	6	8	10	12	14
0	0	0	0	0	0	.31831	0	0	0	0	0	0	0	0	0	0	0
0.1	0	.00315	.00802	.01951	.06682	.31405	.05555	.00065	.00159	.00023	.00007	.00003					
0.2	0	.01163	.02877	.06441	.16214	.30474	.13592	.03060	.00614	.00091	.00026	.00010	.00005	.00002			
0.3	0	.02301	.05475	.11072	.21465	.29228	.18216	.05747	.01302	.00201	.00059						
0.4	0	.03460	.07883	.14477	.23442	.27779	.20195	.08233	.02138								
0.5	0	.04429	.09618	.16426	.23652	.26216	.20731	.10185	.03033	.00528	.00158	.00063	.00030	.00009	.00004	.00002	.00001
0.6	0	.04966	.10729	.17192	.22949	.24574	.20496	.11541									
0.7	0	.05484	.11256	.17126	.21772	.22924	.19840	.12373	.04718								
0.8	0	.05590	.11225	.16534	.20301	.21295	.18953	.12855									
0.9	0	.05496	.10856	.15628	.18904	.19712	.17945	.29091									
1	0	.05266	.10274	.14566	.17419	.18198	.16804	.12745	.06434	.01646	.00555	.00233	.00113	.00036	.00015	.00007	.00004
1.2	0	.04585	.08831	.12323	.14615	.15408	.14755	.12032	.06967	.02077	.00743	.00320	.00159	.00051			
1.5	0	.03483	.06688	.09293	.11071	.11904	.11830	.10477	.07075	.02599	.01021	.00460	.00233	.00078	.00033	.00016	.00009
2	0	.02102	.04069	.05721	.06948	.07730	.08067	.07304	.06275	.03062	.01409	.00692	.00369	.00129	.00055	.00027	.00015
2.5	0	.01293	.02534	.03611	.04484	.05119	.05509	.05660	.05117	.03099	.01650	.00886	.00499	.00185	.00082	.00041	.00023
3	0	.00840	.01638	.02376	.02994	.03405	.03843	.04124	.01039	.02886	.01745	.01022	.00610	.00241	.00110	.00057	.00032
4	0	.00382	.00772	.01149	.01480	.01764	.02004	.02271	.02475	.02215	.01639	.01118	.00745	.00340	.00167	.00090	.00052
5	0	.00214				.00992		.01343	.01551	.01601	.01364	.01105	.00762	.00404	.00216	.00122	.00073
6	0					.00602		.00845	.01014	.01143	.01082	.00917	.00733	.00432	.00243	.00150	.00092
7	0					.00396			.00687	.00830	.00842	.00770	.00556	.00132	.00272	.00171	.00110
8	0					.00270			.00481	.00612	.00656	.00531	.00568	.00413	.00273	.00185	.00124
9	0					.00177			.00347	.00459	.00513	.00515	.00405	.00381	.00274	.00192	.00133
10	0							.00199	.00258	.00351	.00407	.00420	.00411	.00346			

Harga – harga Fungsi Untuk Sistem Satu Lapis (Fungsi H)

Function H

Depth (z) in Radii	Offset (r) in Radii: 0	0.2	0.4	0.6	0.8	1	1.2	1.5	2	3	4	5	6	8	10	12	14
0	2.0	1.97987	1.91751	1.80575	1.62553	1.27319	.93676	.71185	.51671	.33815	.25200	.20045	.16626	.12576	.09918	.08346	.07023
0.1	1.80998	1.79018	1.72886	1.61961	1.44711	1.18107	.92670	.70888	.51627	.33794	.25184	.20081					
0.2	1.63961	1.62068	1.56242	1.46001	1.30614	1.09996	.90098	.70074	.51382	.33726	.25162	.20072	.16688	.12512			
0.3	1.48806	1.47044	1.40979	1.32442	1.19210	1.02740	.86726	.68823	.50966	.33638	.25124						
0.4	1.35407	1.33802	1.28963	1.20822	1.09555	.96202	.83042	.67238	.50412								
0.5	1.23607	1.22176	1.17894	1.10830	1.01312	.90298	.79308	.65429	.49728	.33293	.24996	.19982	.16668	.12493	.09996	.08295	.07123
0.6	1.13238	1.11998	1.08350	1.02154	.94120	.84917	.75653	.63469									
0.7	1.04131	1.03037	.99794	.91049	.87742	.80030	.72143	.61442	.48061								
0.8	.96125	.95175	.92386	.87928	.82136	.75571	.68009	.59398									
0.9	.89072	.88251	.85856	.82616	.77950	.71495	.65677	.57361									
1	.82843	.85005	.80465	.76809	.72587	.67769	.62701	.55364	.45122	.31877	.24386	.19673	.16516	.12394	.09952	.08292	.07104
1.2	.72410	.71882	.70370	.67937	.64814	.61187	.57329	.51552	.43013	.31162	.24070	.19520	.16369	.12330			
1.5	.60555	.60233	.57246	.57633	.55559	.53138	.50496	.46375	.39872	.29945	.23495	.19053	.16199	.12281	.09876	.08270	.07064
2	.47214	.47022	.44512	.45656	.44502	.43202	.41702	.39242	.35054	.27740	.22418	.18618	.15846	.12124	.09792	.08196	.07026
2.5	.38518	.38403	.38098	.37640	.36940	.36155	.35243	.33698	.30913	.25550	.21208	.17898	.15395	.11928	.09700	.08115	.06980
3	.32457	.32403	.32184	.31887	.31464	.30969	.30381	.29364	.27453	.23487	.19977	.17154	.14919	.11694	.09558	.08061	.06897
4	.24620	.24588	.24820	.25128	.24168	.23932	.23668	.23164	.22158	.19908	.17640	.15596	.13864	.11172	.09300	.07864	.06848
5	.19805	.19785				.19455			.18450	.17080	.15575	.14130	.12785	.10585	.09515	.07675	.06695
6	.16554					.16326			.15750	.14868	.13842	.12792	.11778	.09990	.09562	.07452	.06522
7	.14217					.14077			.13699	.13097	.12404	.11620	.10843	.09387	.08197	.07210	.06377
8	.12444					.12352			.12112	.11688	.11176	.10600	.09976	.08848	.07800	.06928	.06200
9	.11079					.10989			.10854	.10540	.10161	.09702	.09234	.08298	.07407	.06678	.05976
10								.09900	.09820	.09510	.09290	.08980	.08300	.07710			

Lampiran 11	Halaman 138
Faktor – faktor Tegangan Vertikal Sistem Tiga Lapis ZZ1; K1 = 0,2 ; K2 = 0,2 sampai 2,0	



Faktor – faktor Tegangan Vertikal Sistem Tiga Lapis
ZZ1; K1 = 0,2 ; K2 = 20 sampai 200,0

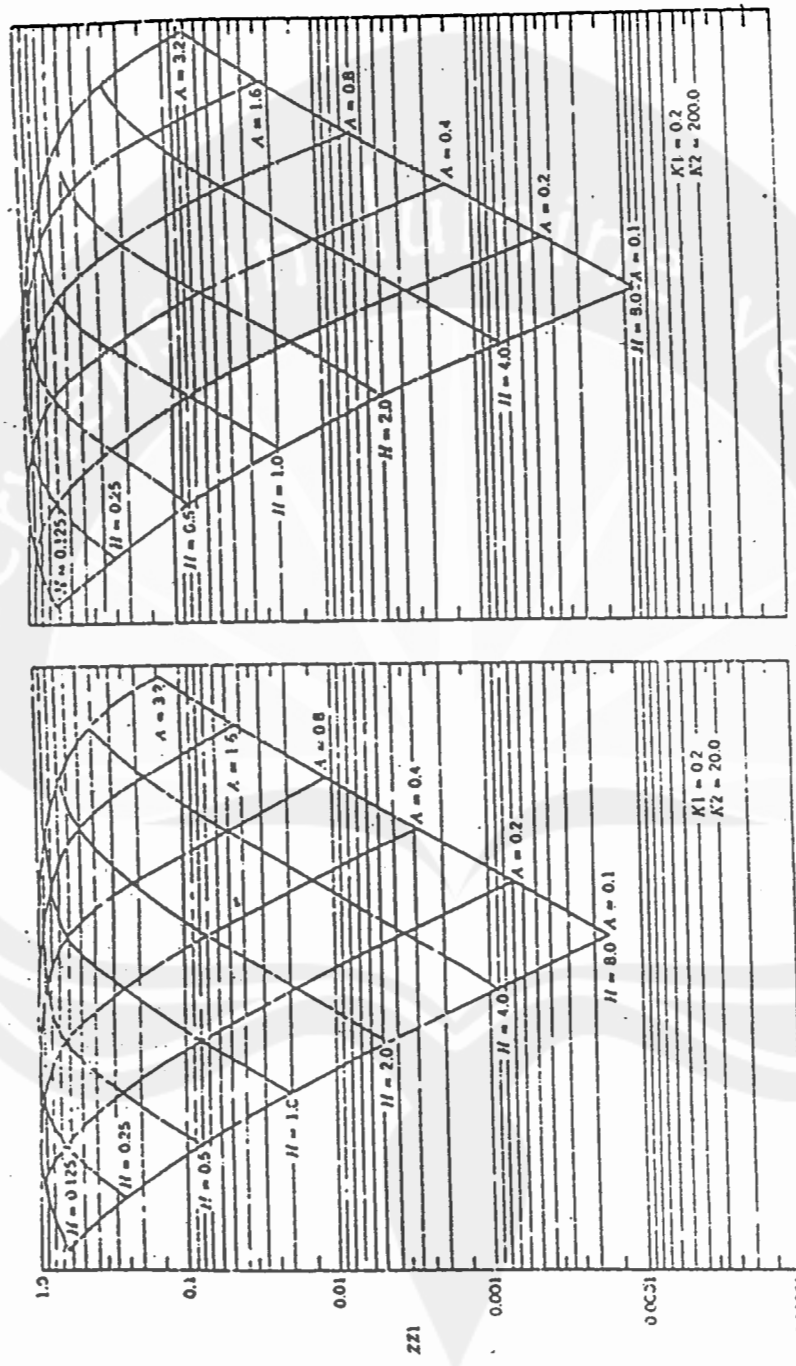
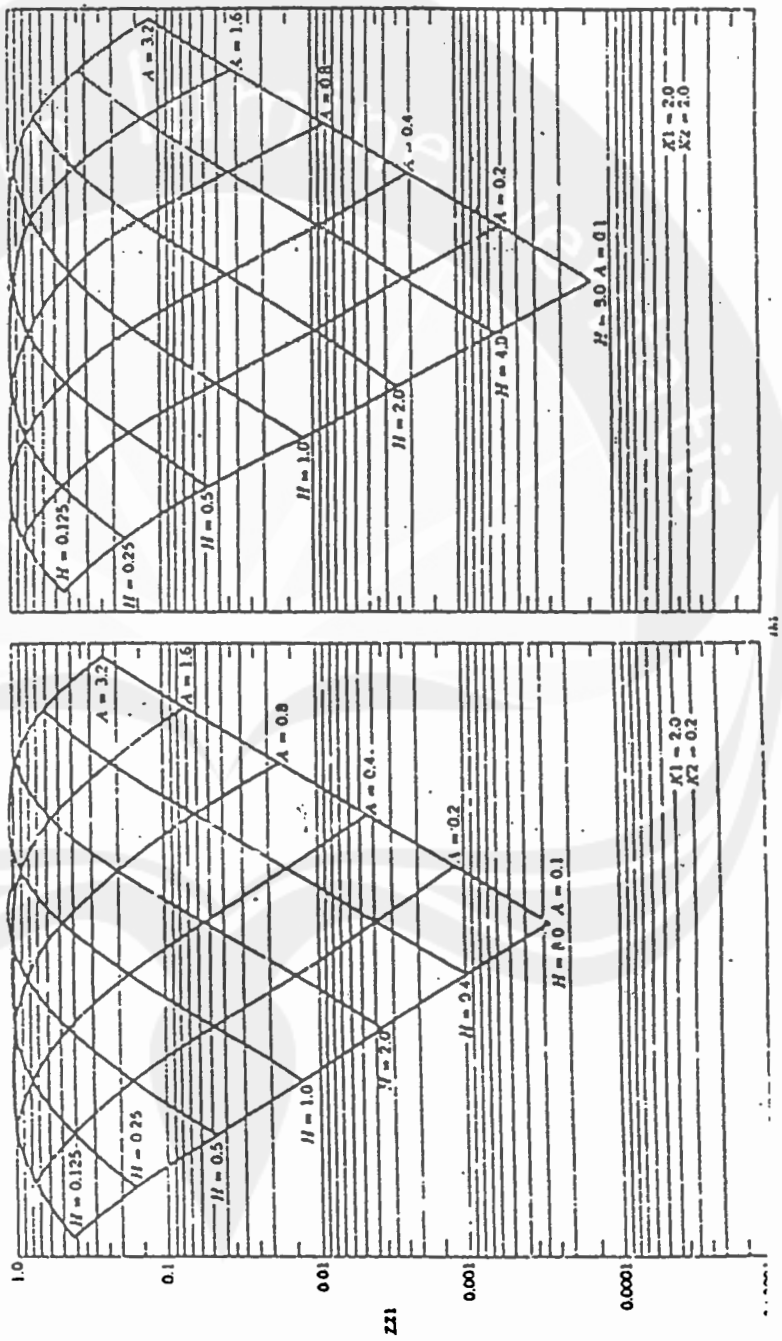


Figure 3.10. Three-layer stress factors. (From Peattie.) (a) Vertical stress, ZZ1, K1 = 0.2, K2 = 0.2 to 200.0.

Lampiran 13	Halaman 140
Faktor – faktor Tegangan Vertikal Sistem Tiga Lapis ZZ1; K1 = 2,0 ; K2 = 0,2 sampai 2,0	



Lampiran 14	Halaman 141
Faktor – faktor Tegangan Vertikal Sistem Tiga Lapis ZZ1; K1 = 2,0 ; K2 = 20 sampai 200,0	

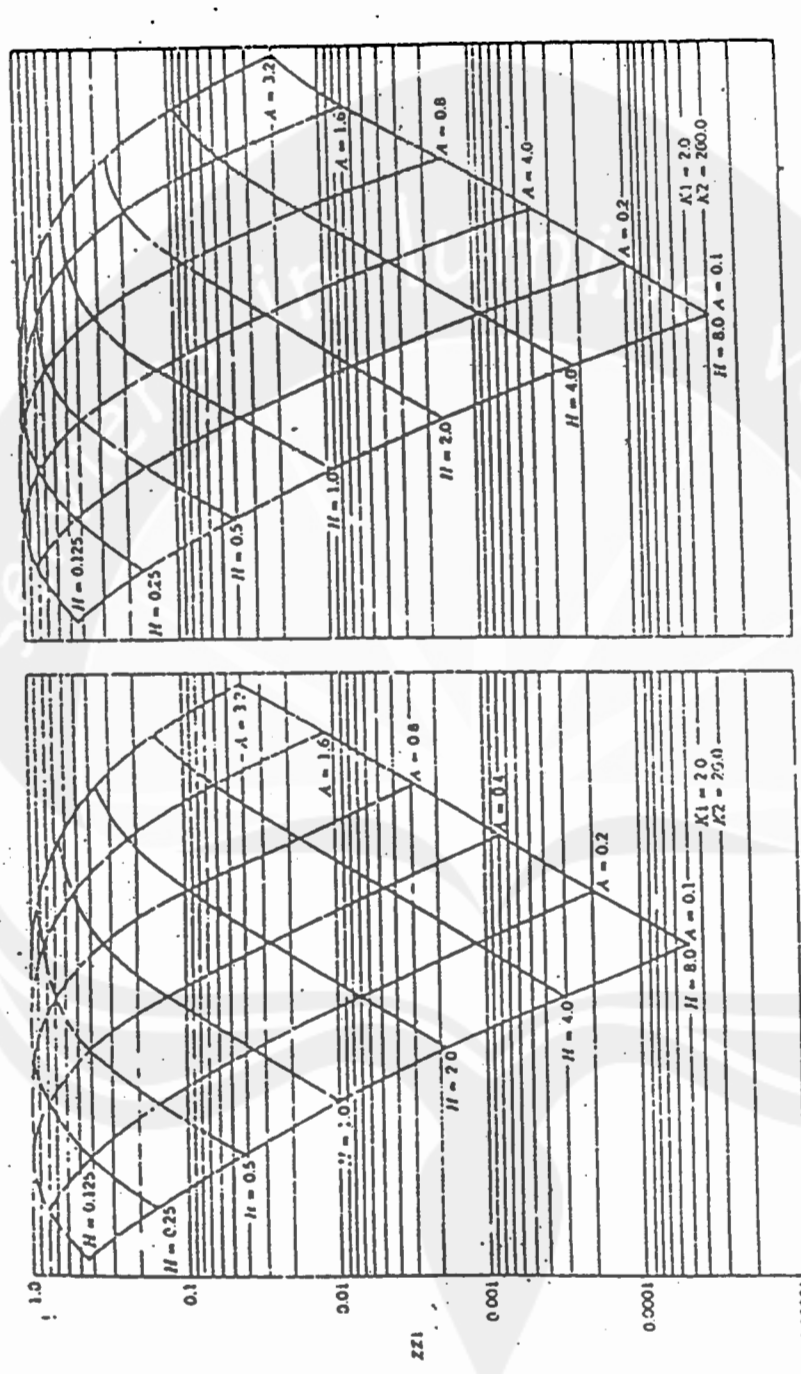
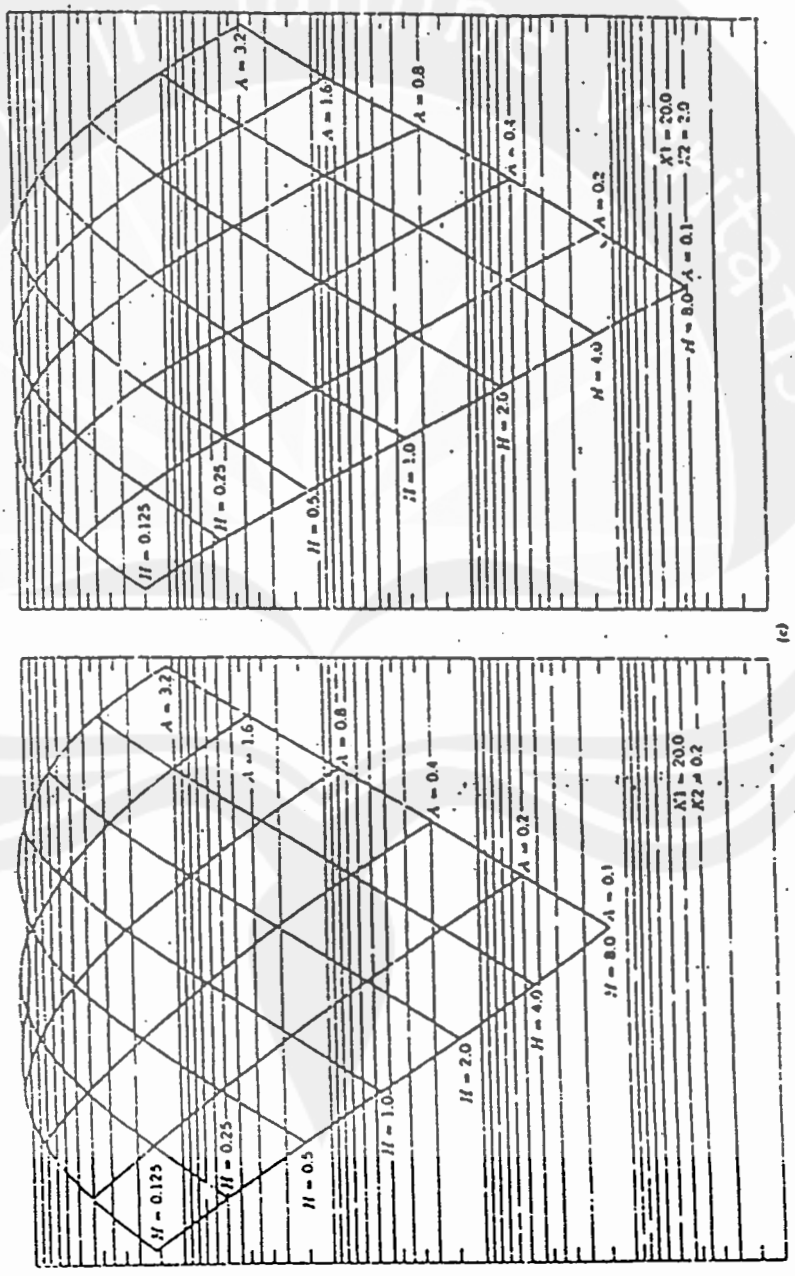


Figure 2.10. Three-layer stress factors. (From Peattie.) (b) Vertical stress, ZZ1, $K1 = 2.0$, $K2 = 0.2$ to 200.0.

Lampiran 15	Halaman 142
Faktor – faktor Tegangan Vertikal Sistem Tiga Lapis ZZ1; K1 = 20,0 ; K2 = 0,2 sampai 2,0	



Lampiran 16	Halaman 143
Faktor – faktor Tegangan Vertikal Sistem Tiga Lapis ZZ1; K1 = 20,0 ; K2 = 20 sampai 200,0	

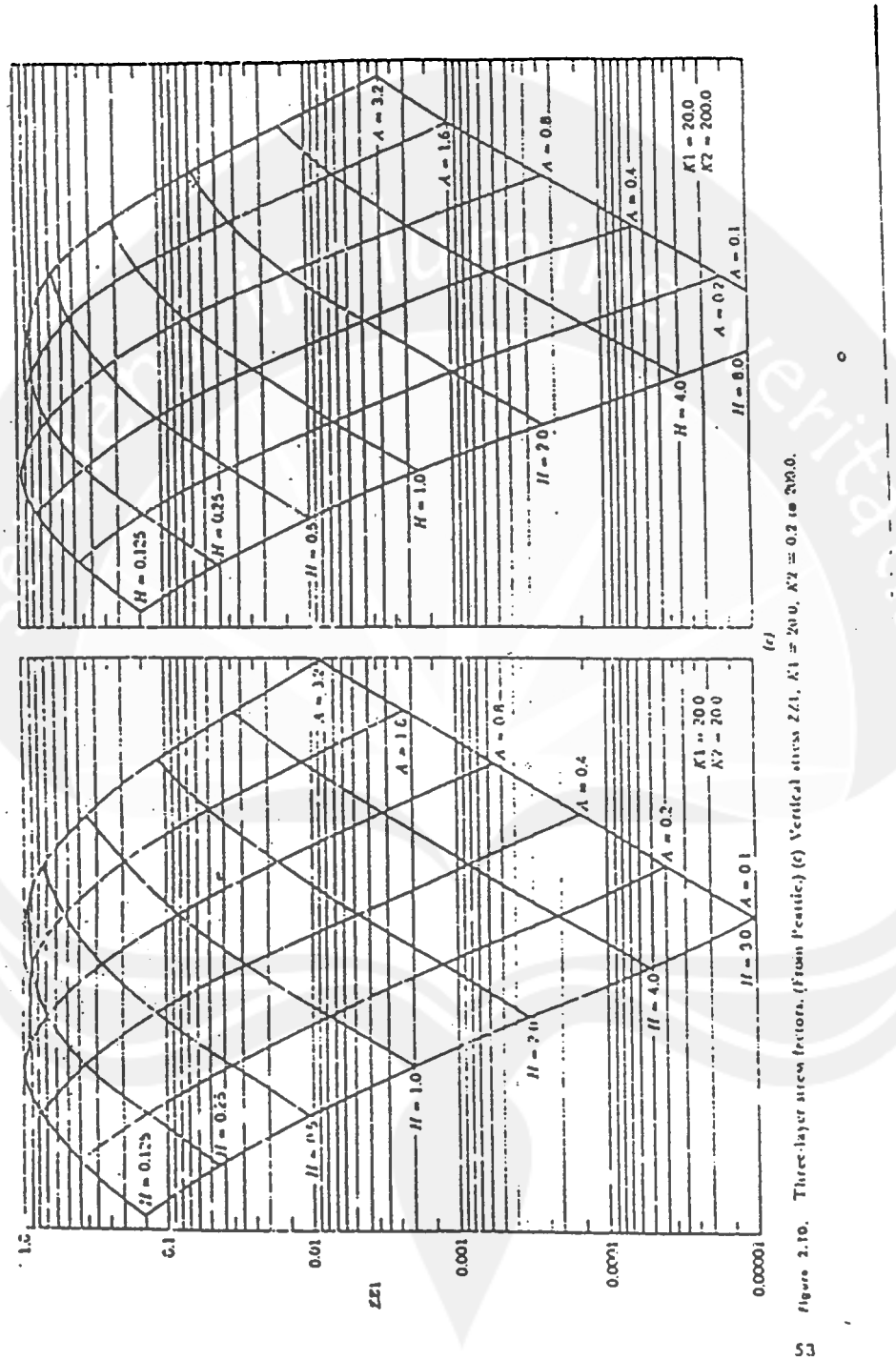
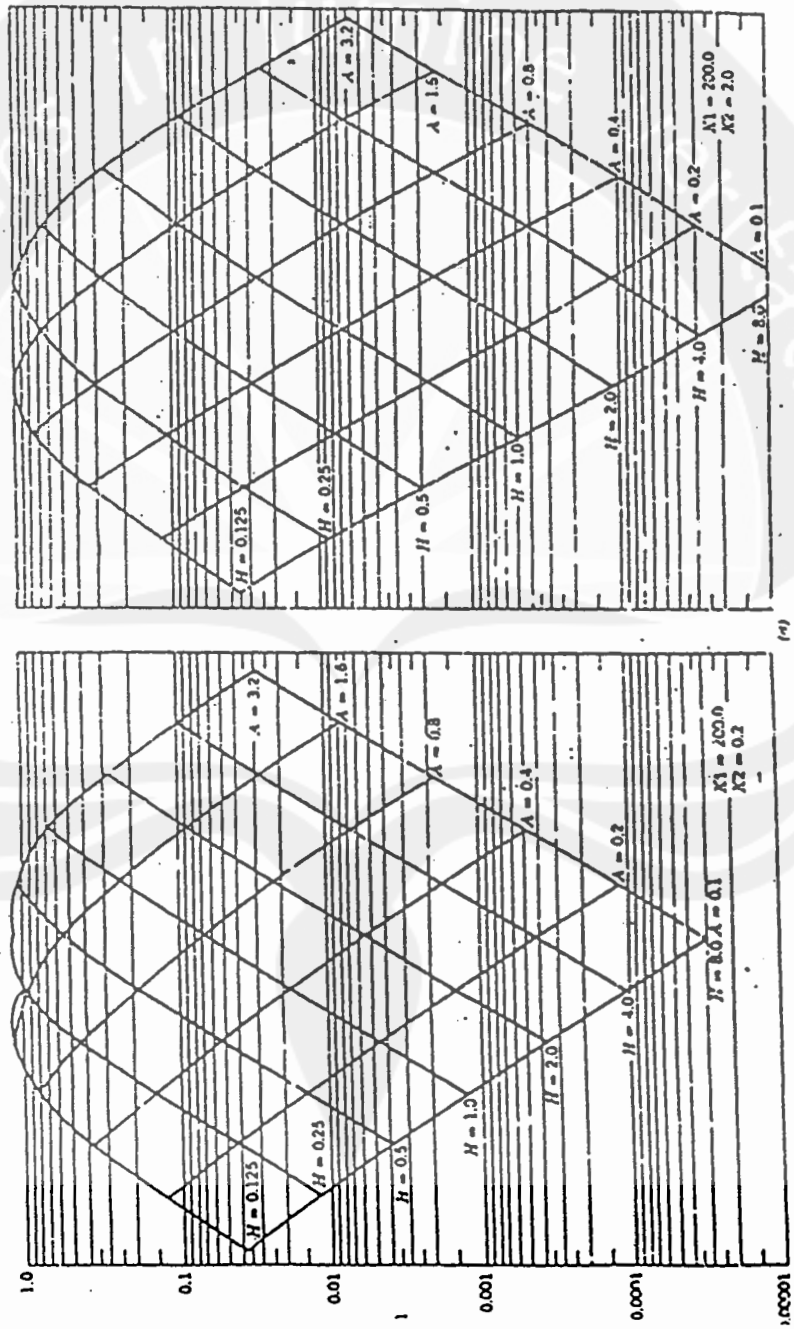


Figure 2.10. Three-layer stress factors. (From Peattie.) (c) Vertical stress ZZ1, K1 = 200, K2 = 0.2 to 200.0.

Lampiran 17	Halaman 144
Faktor – faktor Tegangan Vertikal Sistem Tiga Lapis ZZ1; K1 = 200,0 ; K2 = 0,2 sampai 2,0	



Lampiran 18	Halaman 145
Faktor – faktor Tegangan Vertikal Sistem Tiga Lapis ZZ1; K1 = 200,0 ; K2 = 20 sampai 200,0	

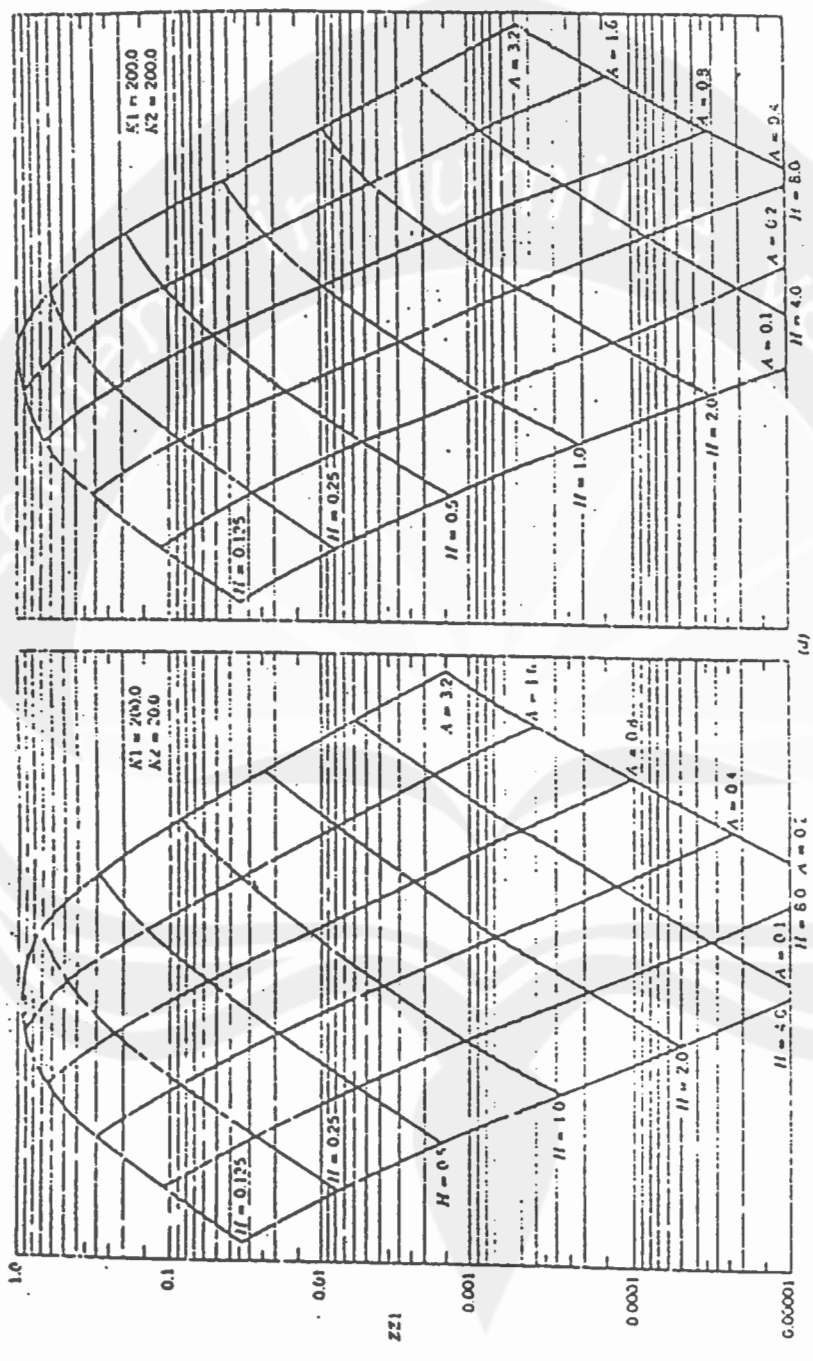
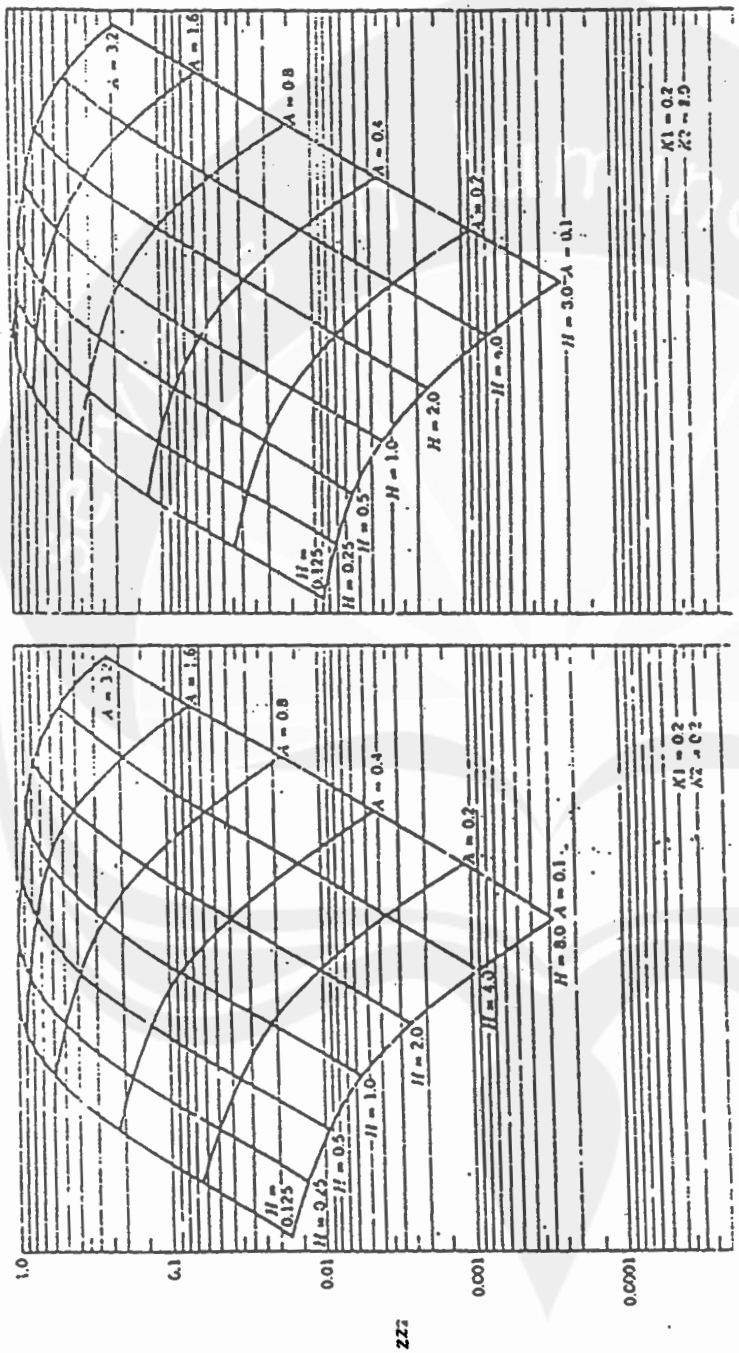


Figure 3.10. Three-layer stress factors. (From Peattie.) (d) Vertical stress, ZZ1, K1 = 200.0, K2 = 0.2 to 200.0.

Lampiran 19	Halaman 146
Faktor – faktor Tegangan Vertikal Sistem Tiga Lapis ZZ2; K1 = 0,2 ; K2 = 0,2 sampai 2,0	



Lampiran 20	Halaman 147

Faktor – faktor Tegangan Vertikal Sistem Tiga Lapis
ZZ2; K1 = 0,2 ; K2 = 20 sampai 200,0

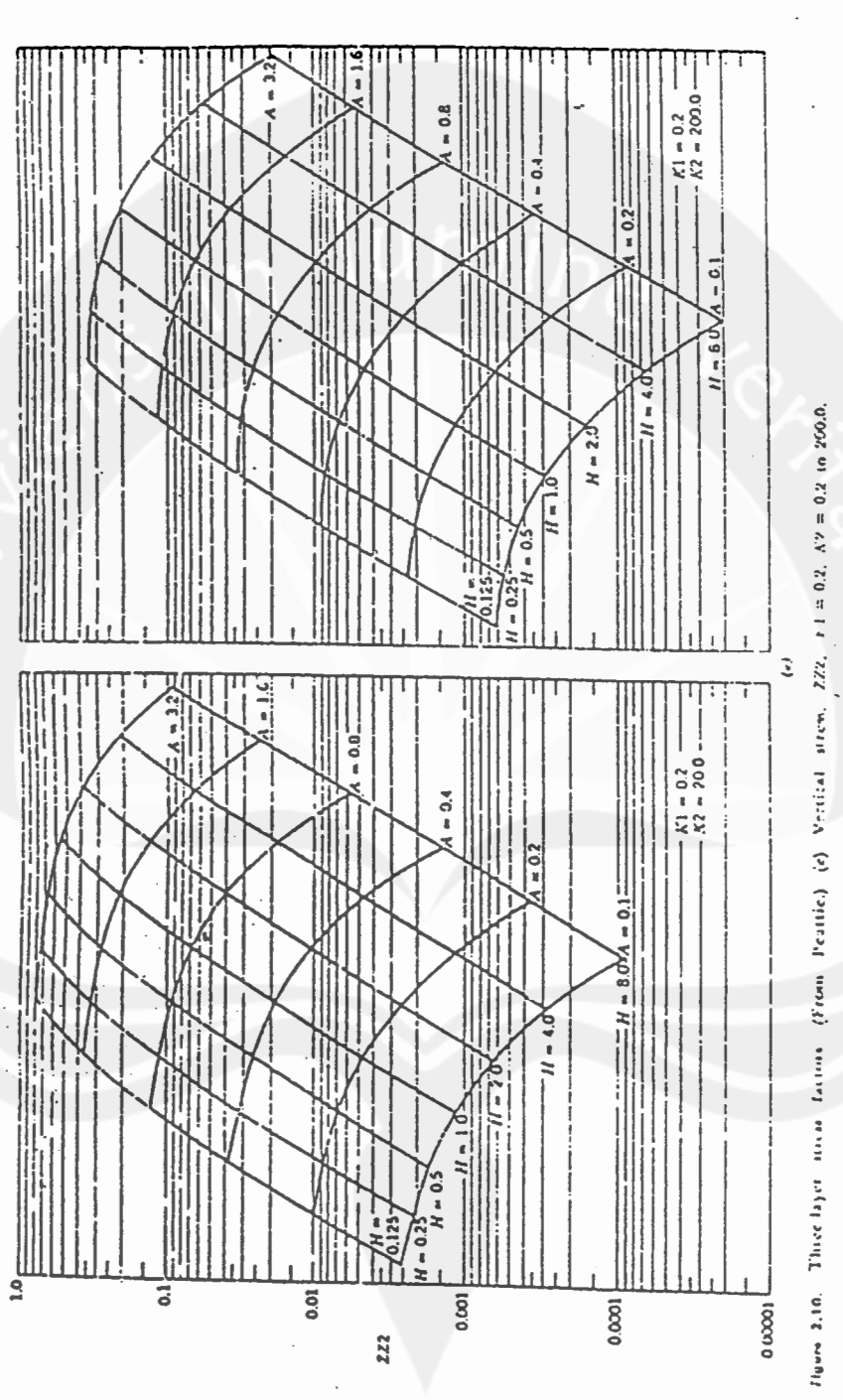
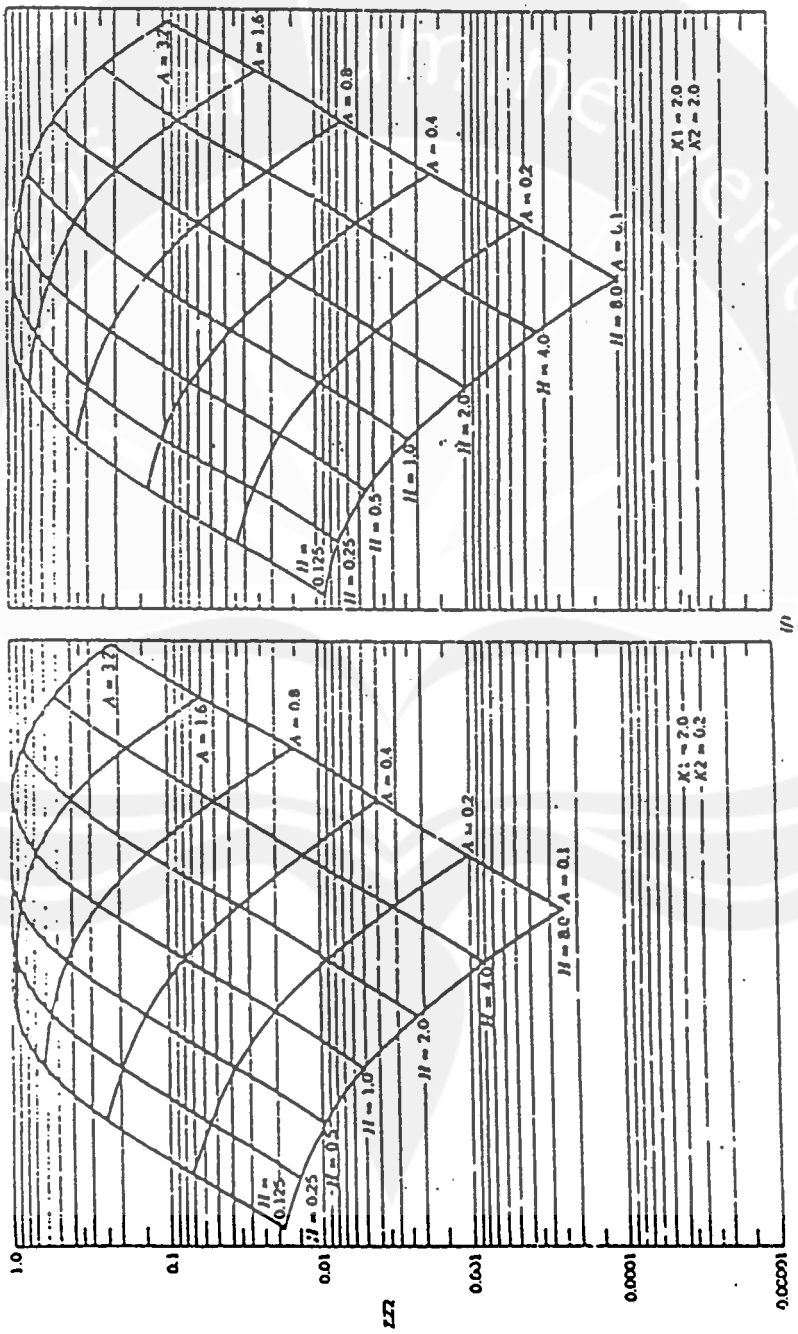


Figure 2.10. Three layer stress factors (From Peattie) (c) Vertical stress, ZZ2, K1 = 0.2, K2 = 0.2 to 200.0.

Lampiran 21	Halaman 148
Faktor – faktor Tegangan Vertikal Sistem Tiga Lapis ZZ2; K1 = 2,0 ; K2 = 0,2 sampai 2,0	



Lampiran 22	Halaman 149

Faktor – faktor Tegangan Vertikal Sistem Tiga Lapis
ZZ2; K1 = 2,0 ; K2 = 20 sampai 200,0

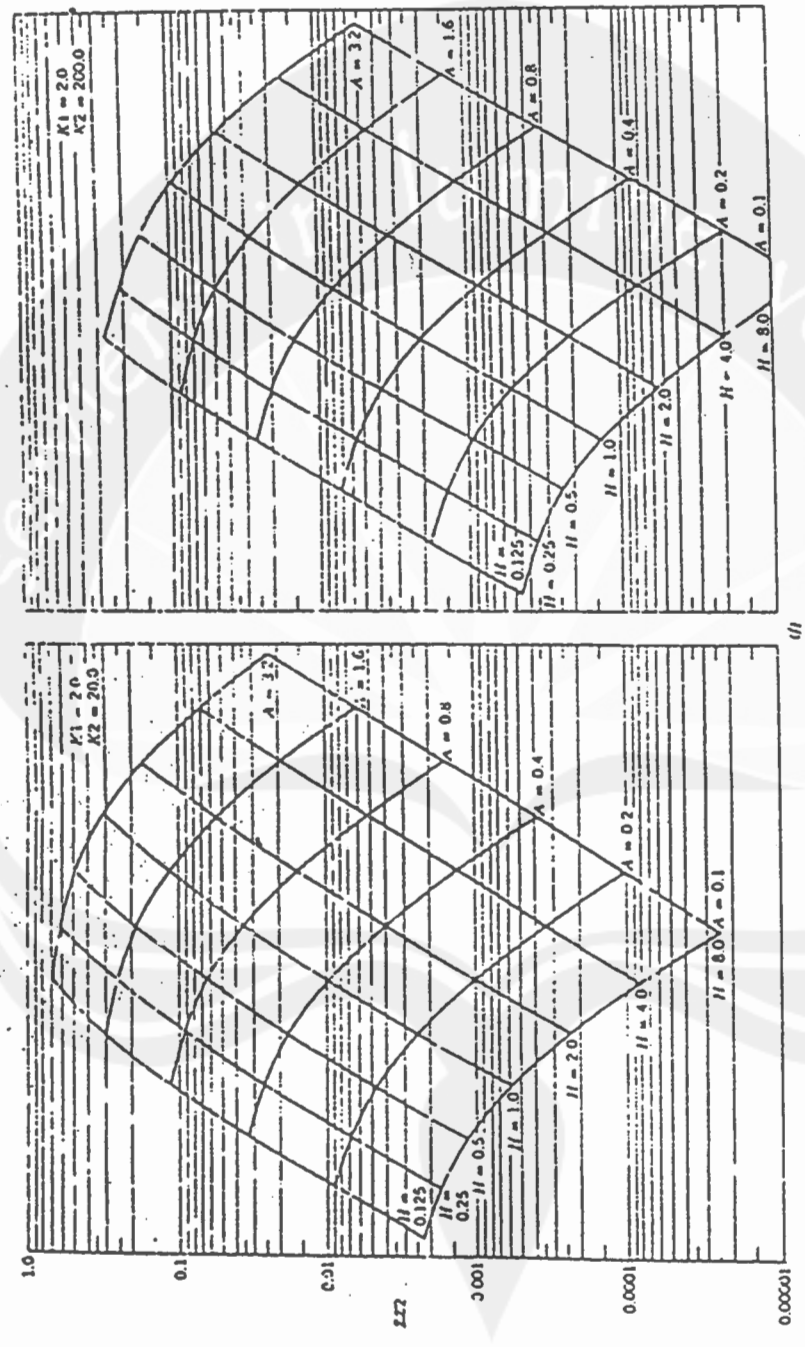
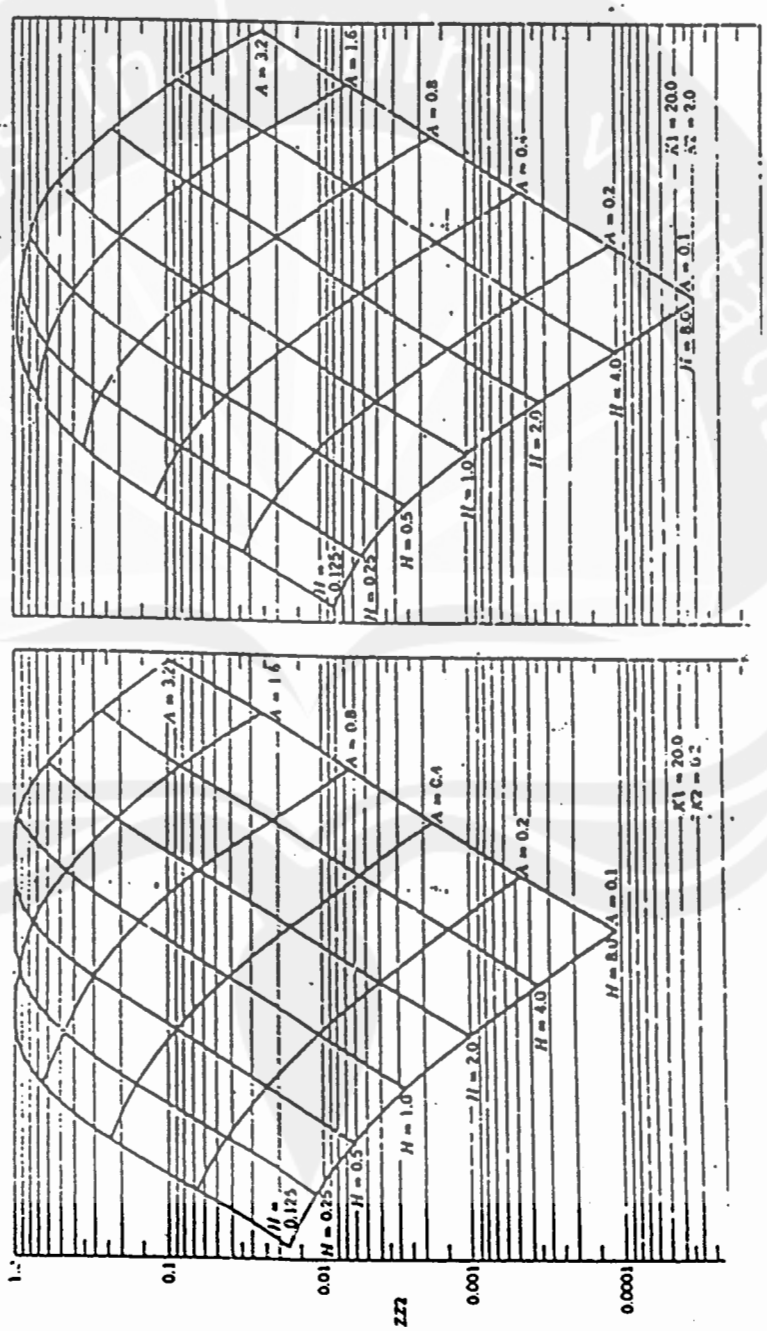
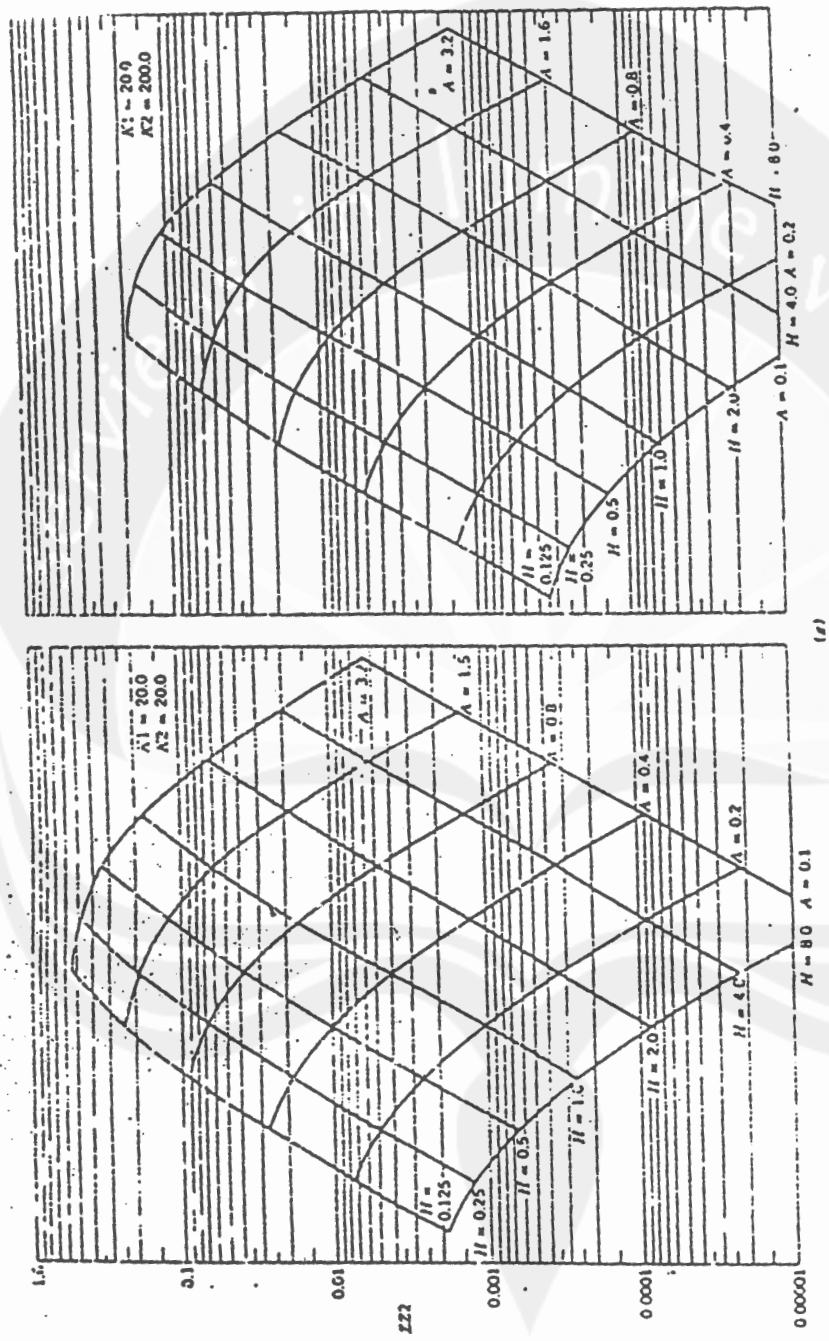


Figure 2.10. Three-layer stress factors. (From Peattie.) (f) Vertical stress, ZZ2, K1 = 2.0, K2 = 0.2 to 200.0.

Lampiran 23	Halaman 150
Faktor – faktor Tegangan Vertikal Sistem Tiga Lapis ZZ2; K1 = 20,0 ; K2 = 0,2 sampai 2,0	



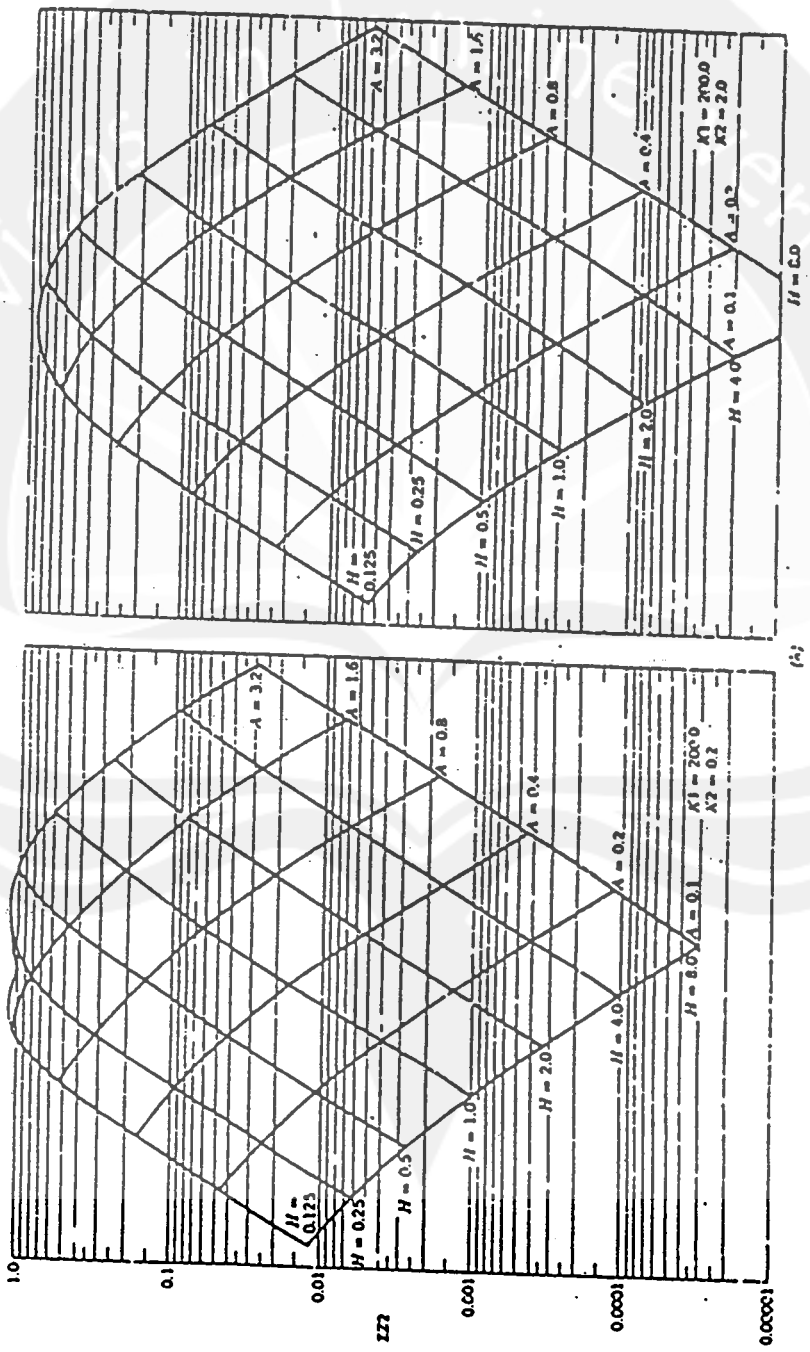
Lampiran 24	Halaman 151
Faktor – faktor Tegangan Vertikal Sistem Tiga Lapis ZZ2; K1 = 20,0 ; K2 = 20 sampai 200,0	



(a)

Figure 8.10. Three layer stress factors. (From Peattie.) (a) Vertical stress, ZZ2, K1 = 20.0, K2 = 0.2 to 200.0.

Lampiran 25	Halaman 152
Faktor – faktor Tegangan Vertikal Sistem Tiga Lapis ZZ2; K1 = 200 ; K2 = 0,2 sampai 2,0	



Faktor – faktor Tegangan Vertikal Sistem Tiga Lapis ZZ2; K1 = 200 ; K2 = 20 sampai 200

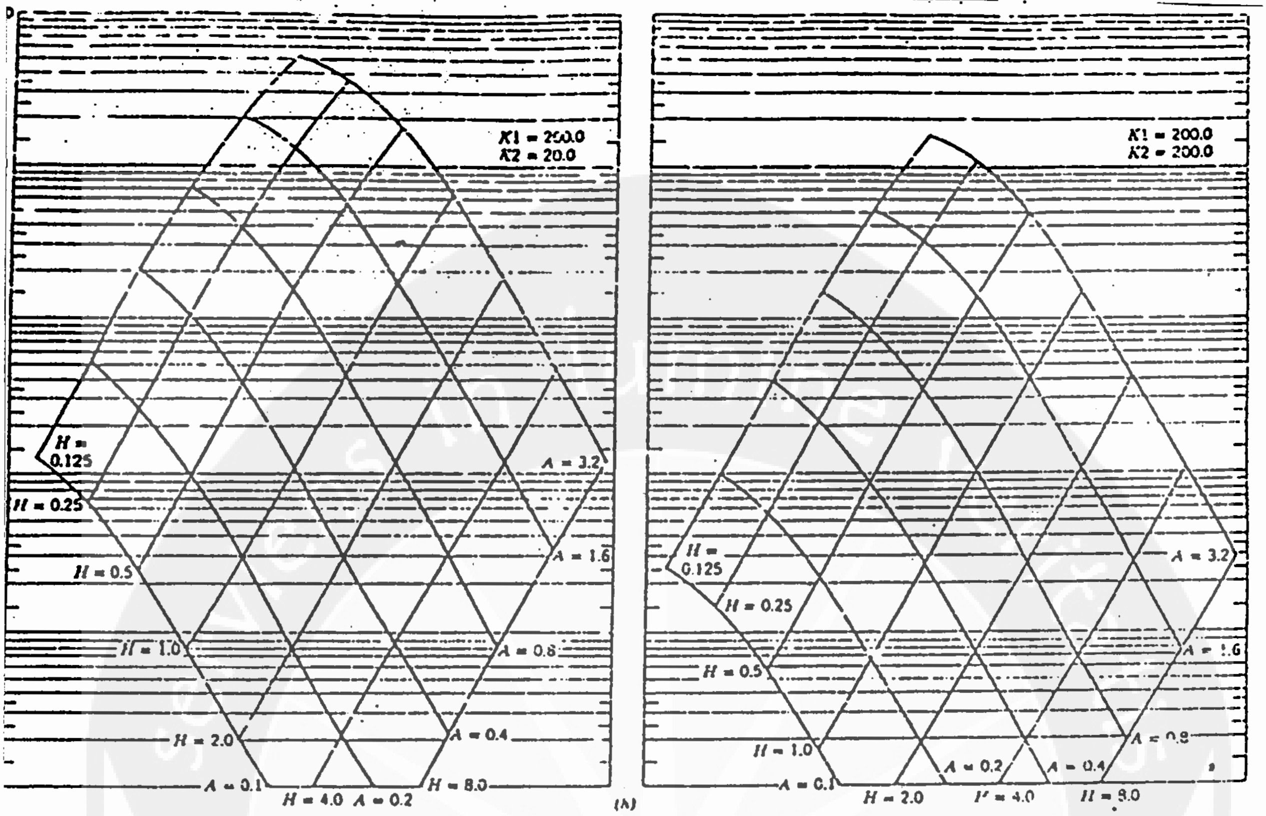
[illegible] vertical stress, ZZ2, K1 = 200.0, K2 = 0.2 to 200.0.

TABLE 2.3. Three-Layer Stress Factors (after Jones)

	H = 0.125, k_1 = 0.2			H = 0.125, k_1 = 2.0			H = 0.125, k_1 = 20.0			H = 0.125, k_1 = 200.0		
a_1	(ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)	(ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)	(ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)	(ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)
			k_2 = 0.2			k_2 = 0.2			k_2 = 0.2			k_2 = 0.2
0.1	0.12438	0.00333	0.01889	0.71014	[illegible]	0.01750	1.80808	0.00329	0.01811	2.87564	0.00201	0.01003
0.2	0.13848	0.01278	0.06391	1.01541	0.01348	0.06741	3.78440	0.01249	0.06244	7.44283	0.00788	0.03940
0.4	0.10128	0.04430	0.22150	0.83924	0.04669	0.23310	5.11847	0.04421	0.22105	18.41021	0.02918	0.14588
0.8	0.04011	0.10978	0.54877	0.83961	0.11484	0.57418	3.38000	0.11468	0.57343	9.76291	0.08714	0.43568
1.6	0.08777	0.13755	0.68777	0.63728	0.13726	0.68630	1.81603	0.13637	0.68136	7.03380	0.13705	0.68524
3.2	0.01129	0.10147	0.50736	0.38168	0.09467	0.47336	1.78101	0.07378	0.37890	2.35480	0.06894	0.23071
			k_2 = 2.0			k_2 = 2.0			k_2 = 2.0			k_2 = 2.0
0.1	0.12283	0.01098	0.00849	0.70073	0.01718	0.00858	1.91178	0.01542	0.00771	3.02259	0.00969	0.00485
0.2	0.13016	0.06368	0.03379	0.97056	0.06367	0.03324	3.76886	0.06003	0.03002	8.02463	0.03812	0.01906
0.4	0.08118	0.22257	0.11039	0.70970	0.23531	0.11766	6.18717	0.21640	0.10820	17.84178	0.14288	0.07143
0.8	0.01933	0.62863	0.31439	0.22319	0.63003	0.31801	3.43631	0.60493	0.30247	27.27701	0.45208	0.22604
1.6	−0.04136	0.98754	0.49377	−0.19082	0.97707	0.48853	1.18211	0.97118	0.48573	23.38638	0.90861	0.45430
3.2	−0.03804	0.82102	0.41051	−0.28916	0.84030	0.42015	−0.06894	0.88358	0.44179	11.87014	0.91469	0.45738
			k_2 = 20.0			k_2 = 20.0			k_2 = 20.0			k_2 = 20.0
0.1	0.17033	0.03667	0.00183	0.69333	0.03187	0.00173	1.80844	0.02985	0.00149	3.17763	0.01980	0.00099
0.2	0.11787	0.14336	0.00717	0.97086	0.13541	0.00677	3.74873	0.11697	0.00585	8.66097	0.07827	0.00391
0.4	0.03074	0.52091	0.02605	0.46183	0.46523	0.02326	5.05489	0.42253	0.02103	20.11204	0.29887	0.01494
0.8	−0.14872	1.61727	0.08086	−0.86334	1.49612	0.07481	3.92533	1.33736	0.06687	36.29943	1.01694	0.05085
1.6	−0.50533	3.58944	0.17947	−3.02850	3.28512	0.16426	−1.37003	2.99218	0.14961	49.40857	2.84213	0.13918
3.2	−0.80000	8.15400	0.35770	−3.37909	8.05952	0.35298	−7.38384	8.08480	0.38334	37.84380	4.80808	0.24098
			k_2 = 200.0			k_2 = 200.0			k_2 = 200.0			k_2 = 200.0
0.1	0.11720	0.05413	0.00027	0.87458	0.04813	0.00024	1.78941	0.04017	0.00020	3.26087	0.02800	0.00014
0.2	0.10123	0.21316	0.00170	0.88397	0.19062	0.00095	3.08097	0.15781	0.00078	9.02669	0.11239	0.00058
0.4	−0.01706	0.80100	0.00400	0.31184	0.71221	0.00356	4.80711	0.59391	0.00297	21.52183	0.43035	0.00215
0.8	−0.34437	2.67934	0.01316	−1.65061	2.37252	0.01186	1.00825	1.95700	0.00979	41.89873	1.53070	0.00765
1.6	−1.21129	7.35978	0.03680	−6.47707	6.26238	0.03133	−6.28673	3.96710	0.02523	80.83187	4.56707	0.02284
3.2	−3.87293	10.22830	0.05114	−10.07370	11.25071	0.07126	−21.82444	13.46058	0.06733	130.84835	11.02048	0.05510

Lampiran 27	Halaman 154

Faktor – faktor Tegangan Horisontal Sistem Tiga Lapis Untuk H = 0,125



.0. Three-layer stress factors. (From Peattie.) (b) Vertical stress, ZZ2, K1 = 200.0, K2 = 0.2 to 200.0.

TABLE 2.3. Three-Layer Stress Factors (after Jones)

	H = 0.125, k_1 = 0.2			H = 0.125, k_1 = 2.0			H = 0.125, k_1 = 20.0			H = 0.125, k_1 = 200.0		
	(ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)	(ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)	(ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR2)	(ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)
			k_2 = 0.2			k_2 = 0.2			k_2 = 0.8			k_2 = 0.2
1	0.13438	0.00333	0.01669	0.71614	[illegible]	0.01750	1.80808	0.00329	0.01611	2.87364	0.00301	0.01005
2	0.13846	0.01278	0.06361	1.01541	0.01348	0.06741	3.78440	0.01249	0.06244	7.44235	0.00788	0.03940
4	0.10428	0.04430	0.22150	0.83924	0.04660	0.23316	5.11847	0.04421	0.22105	18.41021	0.02013	0.14006
8	0.09011	0.10976	0.54877	0.83041	0.11484	0.57418	3.38000	0.11408	0.57342	9.70291	0.08714	0.43568
6	0.08777	0.13735	0.68777	0.65728	0.13736	0.68030	1.81603	0.13637	0.68436	7.02380	0.13703	0.68494
2	0.04129	0.10147	0.50736	0.38168	0.09407	0.47336	1.75101	0.07578	0.37800	2.35450	0.06694	0.23071
			k_2 = 2.0			k_2 = 2.0			k_2 = 2.0			k_2 = 2.0
.1	0.12283	0.01698	0.00848	0.70622	0.01716	0.00858	1.81178	0.01642	0.00771	3.02250	0.00969	0.00488
.2	0.12910	0.06368	0.03279	0.97956	0.06347	0.03324	3.76886	0.06003	0.03002	8.02463	0.03812	0.01906
1	0.08116	0.23257	0.11629	0.70970	0.23531	0.11706	8.16717	0.21640	0.10820	17.04178	0.14298	0.07148
8	0.01823	0.62863	0.31432	0.22319	0.63003	0.31501	3.43631	0.60493	0.30247	27.27701	0.45208	0.22604
.6	−0.04136	0.98754	0.49377	−0.19092	0.97707	0.48853	1.16211	0.97146	0.48573	23.38638	0.90861	0.45430
.2	−0.03804	0.82109	0.41031	−0.28916	0.84030	0.42015	−0.00894	0.86358	0.44179	11.87014	0.91469	0.45734
			k_2 = 20.0			k_2 = 20.0			k_2 = 20.0			k_2 = 20.0
0.1	0.12033	0.03667	0.00183	0.89233	0.03467	0.00173	1.80654	0.02985	0.00149	8.17763	0.01980	0.00099
0.2	0.11787	0.14336	0.00717	0.97066	0.13511	0.00677	3.74673	0.11697	0.00585	8.66097	0.07637	0.00381
0.4	0.03474	0.53891	0.02695	0.46183	0.46523	0.02476	3.05480	0.43253	0.02163	20.17289	0.29887	0.01494
0.8	−0.11873	1.61727	0.08086	−0.86538	1.49612	0.07481	3.92333	1.33734	0.06687	36.29943	1.01694	0.05068
1.6	−0.30333	3.58944	0.17947	−2.82850	3.28512	0.16428	−1.27003	2.99218	0.14961	49.40857	2.64223	0.13216
3.2	−0.60000	8.15400	0.25770	−5.27006	6.05052	0.25206	−7.36384	6.08489	0.28374	57.64309	4.80808	0.24406
			k_2 = 200.0			k_2 = 200.0			k_2 = 200.0			k_2 = 200.0
0.1	0.11720	0.05413	0.00027	0.87456	0.04813	0.00024	1.78942	0.04010	0.00020	3.26087	0.02309	0.00014
0.2	0.10823	0.21216	0.00170	0.84307	0.19043	0.00095	3.38097	0.15781	0.00079	9.02600	0.11236	0.00056
0.4	−0.01704	0.80400	0.00409	0.31164	0.71221	0.00356	4.80711	0.59391	0.00297	21.25483	0.49035	0.00218
0.8	−0.34127	2.67934	0.01316	−1.65941	2.32232	0.01165	1.00825	1.95700	0.00979	41.89873	1.53070	0.00768
1.6	−1.31130	7.35974	0.04680	−6.47707	6.26238	0.03133	−6.28603	5.26110	0.02623	68.83167	2.56707	0.02284
3.2	−2.87203	16.27830	0.08114	−18.07378	14.25031	0.07128	−21.42646	13.48098	0.06735	130.94631	11.42046	0.04710

TABLE 2.3. (continued)

	H = 0.25, k_1 = 0.2			H = 0.25, k_1 = 2.0			H = 0.25, k_1 = 20.0			H = 0.25, k_1 = 200.0		
a_1	(ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)	(ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)	(ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)	(ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)
			k_2 = 0.2			k_2 = 0.2			k_2 = 0.2			k_2 = 0.2
0.1	0.05508	0.00271	0.01370	0.38664	0.00277	0.01184	0.01450	0.00263	0.01011	0.80044	0.00000	0.00481
0.2	0.12428	0.01000	0.05302	0.73476	0.01075	0.05477	1.74875	0.00203	0.03664	2.21334	0.00367	0.01784
0.4	0.14210	0.03744	0.18733	1.03476	0.03865	0.16711	3.39850	0.07031	0.14622	6.83071	0.01385	0.06824
0.8	0.12300	0.08830	0.40196	0.86633	0.10337	0.31287	4.58443	0.08771	0.42534	13.10064	0.04674	0.23114
1.6	0.10534	0.12917	0.59566	0.84436	0.14103	0.76230	2.31185	0.14030	9.70194	13.70134	0.10791	0.03055
3.2	0.02003	0.11114	0.54560	0.41820	0.00601	0.44030	1.24418	0.07587	0.37034	3.73031	0.08408	0.48037
			k_2 = 2.0			k_2 = 2.0			k_2 = 2.0			k_2 = 2.0
0.1	0.05477	0.01400	0.00704	0.38387	0.01355	0.00477	0.03215	0.00962	0.06181	0.90553	0.00407	0.00293
0.2	0.12136	0.05484	0.02742	0.70335	0.05278	0.02030	1.83706	0.03781	0.01801	3.10703	0.01611	0.00906
0.4	0.12300	0.19780	0.09800	0.90634	0.18576	0.06530	3.86779	0.14180	0.07070	6.37852	0.06721	0.03110
0.8	0.06182	0.50030	0.28010	0.66066	0.56211	0.27004	5.41708	0.44710	0.22345	18.03534	0.31800	0.10030
1.6	−0.00510	0.96218	0.48198	0.12334	0.92000	0.47540	4.21281	0.90118	0.46358	31.18002	0.68553	0.30277
3.2	−0.02416	0.87231	0.43610	−0.05681	0.86300	0.41005	1.07404	0.93334	0.48027	28.08500	0.80101	0.44505
			k_2 = 20.0			k_2 = 20.0			k_2 = 20.0			k_2 = 20
0.1	0.05193	0.03118	0.00184	0.27380	0.02728	0.00136	0.03004	0.01030	0.00000	1.08730	0.00801	0.0004[illegible]
0.2	0.11260	0.12227	0.00611	0.87118	0.10710	0.00534	1.00003	0.07023	0.00381	3.30448	0.03421	0.0017[illegible]
0.4	0.09422	0.45504	0.02278	0.84182	0.30016	0.01906	4.13076	0.20072	0.01454	10.30023	0.13395	0.0060[illegible]
0.8	−0.07351	1.44485	0.07214	0.21031	1.20555	0.05328	6.48046	0.08508	0.04938	20.41442	0.40135	0.0245[illegible]
1.6	−0.40234	3.37001	0.16850	−1.22411	2.94560	0.14743	8.05636	2.55721	0.19702	37.40400	1.33933	0.0769[illegible]
3.2	−0.71191	5.10000	0.25503	−3.04320	4.86874	0.24101	8.05454	4.76734	0.23812	99.20024	3.00054	0.1504[illegible]
			k_2 = 200.0			k_2 = 200.0			k_2 = 200.0			k_2 = 200
0.1	0.04956	0.04704	0.00024	0.20776	0.03514	0.00019	0.05732	0.02711	0.00014	1.10000	0.01311	0.0000[illegible]
0.2	0.10908	0.18557	0.00093	0.63673	0.13049	0.00074	1.03781	0.10741	0.00054	4.00008	0.05223	0.0002[illegible]
0.4	0.01240	0.70574	0.00353	0.71020	0.37040	0.00285	4.20401	0.41450	0.00207	11.90405	0.20551	0.0010[illegible]
0.8	−0.24071	2.45565	0.01203	−0.28230	1.02630	0.00063	8.01871	1.40667	0.00735	32.07301	0.77564	0.0035[illegible]
1.6	−1.00733	6.82481	0.03412	−3.00856	5.39336	0.02063	8.33770	4.30521	0.02183	83.77097	2.03002	0.0117[illegible]
3.2	−2.54201	15.65031	0.07730	−6.18214	12.64115	0.06222	10.03614	10.03370	0.05165	184.37430	7.00287	0.0352[illegible]

TABLE 2.3. (continued)

H = 0.8   H = 0.8, k_1 = 20.0   H = 0.8, k_1 = 200.0

TABLE 2.2. (continued)

	$H = 0.5$, $k_1 = 0.2$			$H = 0.5$, $k_1 = 2.0$			$H = 0.5$, $k_1 = 20.0$			$H = 0.5$, $k_1 = 200.0$		
a_1	(ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)	(ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)	(ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)	(ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)
			$k_2 = 0.2$			$k_2 = 0.2$			$k_2 = 0.2$			$k_2 = 0.2$
0.1	0.01705	0.00200	0.01030	0.08398	0.00181	0.00906	0.18026	0.00098	0.00488	0.23388	0.00038	0.00163
0.2	0.06724	0.00804	0.04020	0.28004	0.00711	0.03644	0.68018	0.00386	0.01939	0.81903	0.00150	0.00648
0.4	0.13089	0.02934	0.14022	0.73318	0.02834	0.13172	1.08749	0.01474	0.07369	2.52058	0.00600	0.02679
0.8	0.13314	0.08363	0.41843	1.03603	0.07962	0.39062	3.23121	0.04987	0.24834	6.11429	0.01814	0.09221
1.6	0.12250	0.17720	0.68647	0.83475	0.13973	0.69863	3.54963	0.11279	0.55398	10.02705	0.05309	0.26993
3.2	0.00976	0.13674	0.63371	0.45119	0.10567	0.53336	1.27334	0.09537	0.47637	8.34713	0.08074	0.43133
			$k_2 = 2.0$			$k_2 = 2.0$			$k_2 = 2.0$			$k_2 = 2.0$
0.1	0.01817	0.01074	0.00537	0.08960	0.00870	0.00439	0.17997	0.00440	0.00220	0.20029	0.00128	0.00064
0.2	0.05375	0.04208	0.02103	0.38318	0.03484	0.01737	0.61779	0.01764	0.00873	0.98773	0.00509	0.00254
0.4	0.11770	0.15334	0.07707	0.70119	0.12984	0.06477	1.80817	0.06722	0.03381	3.19380	0.01996	0.00998
0.8	0.11253	0.47048	0.23523	0.80681	0.41187	0.20594	4.05392	0.22478	0.11738	8.71973	0.07434	0.03717
1.6	0.04827	0.90072	0.45036	0.70739	0.85030	0.42588	8.22652	0.62046	0.31023	20.14755	0.22838	0.11019
3.2	0.01380	0.94388	0.47192	0.33878	0.96353	0.13176	5.41878	0.93831	0.46918	24.28329	0.54031	0.27406
			$k_2 = 20.0$			$k_2 = 20.0$			$k_2 = 20.0$			$k_2 = 20.0$
0.1	0.01130	0.02418	0.00121	0.08044	0.01778	0.00089	0.19373	0.00911	0.00046	0.31947	0.00287	0.00013
0.2	0.01662	0.09519	0.00476	0.27874	0.07027	0.00351	0.72264	0.03620	0.00181	1.19428	0.01028	0.00052
0.4	0.00318	0.36204	0.01800	0.87174	0.26817	0.01341	2.19620	0.14118	0.00706	1.02739	0.04017	0.00202
0.8	0.01260	1.10131	0.05538	0.88101	0.91168	0.04558	5.34736	0.51458	0.02570	12.08085	0.15482	0.00772
1.6	−0.24236	2.55400	0.14770	0.38584	2.38377	0.11919	10.30219	1.30241	0.07567	32.77028	0.53836	0.02692
3.2	−0.33320	4.86189	0.24330	−0.41078	4.77044	0.23351	16.30520	3.00106	0.18404	77.02913	1.86130	0.07920
			$k_2 = 200.0$			$k_2 = 200.0$			$k_2 = 200.0$			$k_2 = 200.0$
0.1	0.01241	0.03697	0.00019	0.07584	0.02818	0.00013	0.21440	0.01368	0.00007	0.37004	0.00387	0.00002
0.2	0.03619	0.14870	0.00073	0.26832	0.09444	0.00050	0.78193	0.05396	0.00027	1.40493	0.01544	0.00008
0.4	0.00063	0.62001	0.00280	0.84303	0.34187	0.00193	2.44430	0.21390	0.00108	4.82318	0.00118	0.00031
0.8	−0.30147	1.90751	0.00984	0.24947	1.34764	0.00684	6.23426	0.79088	0.00390	14.39902	0.23869	0.00118
1.6	−2.67134	3.77469	0.02048	−0.03161	4.08637	0.02045	14.11493	3.07878	0.01338	45.63034	0.84343	0.00482
3.2	−1.46173	13.63432	0.06817	−1.85546	10.23631	0.05129	29.95818	7.81487	0.03807	138.13021	2.84377	0.01504

TABLE 2.3. (continued)

	H = 1.0, k_1 = 0.2			H = 1.0, k_1 = 2.0			H = 1.0, k_1 = 20.0			H = 1.0, k_1 = 200.0		
a_1	(ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)	(ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)	(ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)	(ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − R
			k_2 = 0.2			k_2 = 0.2			k_2 = 0.2			k_2 = 0
0.1	0.00184	0.00128	0.00658	0.03162	0.00006	0.00472	0.04050	0.00030	0.00184	0.08607	0.00010	0.000
0.2	0.01773	0.04508	0.03618	0.06326	0.00276	0.01803	0.16476	0.00188	0.00777	0.21107	0.00041	0.002
0.4	0.05078	0.21033	0.09318	0.26058	0.01448	0.07341	0.53348	0.00808	0.03030	0.78101	0.00160	0.006
0.8	0.13818	0.08102	0.30640	0.71646	0.04324	0.24020	1.83607	0.02198	0.10001	2.38055	0.00607	0.030
1.6	0.15078	0.15002	0.65040	0.87206	0.11556	0.47790	2.77380	0.04227	0.31635	6.57045	0.02028	0.192
3.2	0.00733	0.14248	0.74749	0.00091	0.13537	0.52831	3.35196	0.00006	0.48538	9.29820	0.04047	0.242
			k_2 = 2.0			k_2 = 2.0			k_2 = 2.0			k_2 = 2.
0.1	0.00410	0.00687	0.03343	0.02178	0.00153	0.00237	0.04781	0.00100	0.00080	0.05883	0.00035	0.0001
0.2	0.01561	0.02718	0.01357	0.06337	0.21727	0.00890	0.18401	0.00037	0.00310	0.26066	0.00126	0.0006
0.4	0.06104	0.10381	0.06178	0.28481	0.00834	0.03447	0.60727	0.02408	0.01240	1.00131	0.00548	0.0027
0.8	0.11111	0.34104	0.17351	0.71341	0.24350	0.12128	1.07428	0.09208	0.04434	2.24071	0.02009	0.0104
1.6	0.10334	0.70086	0.39008	1.03650	0.83631	0.31618	4.37407	6.29283	0.14678	6.02447	0.07333	0.0366
3.2	0.00057	0.00737	0.40878	0.00482	0.07500	0.48754	8.97098	0.08446	0.32798	30.83387	0.31288	0.1064
			k_2 = 20.0			k_2 = 20.0			k_2 = 20.0			k_2 = 20
0.1	0.00306	0.01801	0.00080	0.02349	0.00030	0.00066	0.03737	0.00333	0.00016	0.08408	0.00002	0.0000
0.2	0.01143	0.08310	0.00318	0.09618	0.03684	0.00183	0.22418	0.01283	0.00064	0.33312	0.00248	0.0001
0.4	0.03540	0.24398	0.01220	0.29640	0.14341	0.00712	0.82430	0.05083	0.00253	1.25496	0.00883	0.0004
0.8	0.05103	0.80114	0.04308	0.78293	0.51078	0.02501	2.50072	0.19367	0.00982	4.20100	0.03825	[illegible]
1.6	−0.07218	2.30054	0.11903	1.25168	1.56503	0.07625	8.77014	0.66328	0.03318	13.01800	0.13980	0.006
3.2	−0.35560	4.28180	0.21408	1.70723	3.31128	0.17550	15.23253	1.88034	0.09413	38.04201	0.48344	0.02277
			k_2 = 200.0			k_2 = 200.0			k_2 = 200.0			k_2 = 200
0.1	0.00214	0.01412	0.00012	0.02339	0.01319	0.00007	0.00733	0.00478	0.00003	0.10075	0.00087	0.00000
0.2	0.00777	0.06547	0.00046	0.09018	0.05253	0.00026	0.28401	0.01908	0.00010	0.39743	0.00347	0.00002
0.4	0.02076	0.37411	0.00187	0.31470	0.20100	0.00103	0.98346	0.07537	0.00038	1.31234	0.01381	0.00007
0.8	−0.00525	1.30640	0.00685	0.53274	0.70853	0.00365	2.23104	0.29104	0.00148	6.28030	0.05103	0.00027
1.6	−0.28026	4.23803	0.02119	1.53521	2.33102	0.01205	9.28145	1.05385	0.00537	17.01872	0.30250	0.00101
3.2	[illegible]	10.30307	0.05133	2.76420	6.99785	0.03408	24.85236	2.37605	0.01884	32.23618	0.70048	0.00380

TABLE 2.3. (continued)

TABLE 2.2. (continued)

	H = 2.0, k_1 = 0.2			H = 2.0, k_1 = 2.0			H = 2.0, k_1 = 20.0			H = 2.0, k_1 = 200.0	
Z1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)	(ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)	(ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)	(ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)
		k_2 = 0.2			k_2 = 0.2			k_2 = 0.2			k_2 = 0.2
0.00121	0.00000	0.00302	0.00543	0.00041	0.00203	0.01068	0.00016	0.00068	0.01360	0.00003	0.00018
0.00417	0.00240	0.01202	0.02188	0.00163	0.00809	0.03839	0.00066	0.00276	0.05308	0.00013	0.00060
0.01831	0.00928	0.04698	0.08266	0.00634	0.03172	0.14848	0.00218	0.01078	0.20911	0.00048	0.00232
0.06100	0.03422	0.17112	0.28226	0.02319	0.11764	0.53414	0.00820	0.04101	0.70038	0.00183	0.00901
0.13660	0.08826	0.40131	0.67344	0.07108	0.38648	1.41720	0.02740	0.13608	3.79698	0.00649	0.03244
0.12899	0.15706	0.78523	0.70392	0.13683	0.67915	2.38288	0.08884	0.31919	8.38869	0.01913	0.09863
		k_2 = 2.0			k_2 = 2.0			k_2 = 2.0			k_2 = 2.0
0.00798	0.00339	0.00170	0.00666	0.00188	0.00094	0.01219	0.00031	0.00026	0.01737	0.00009	0.00004
0.00389	0.01353	0.00678	0.02192	0.00720	0.00373	0.04843	0.00203	0.00101	0.06913	0.00038	0.00018
0.01488	0.05368	0.02844	0.06488	0.02920	0.01476	0.18867	0.00803	0.00401	0.27103	0.00143	0.00071
0.04977	0.18481	0.09733	0.29363	0.11080	0.05840	0.68382	0.03003	0.01847	1.00808	0.00563	0.00277
0.10926	0.37811	0.28906	0.75087	0.35613	0.17737	2.01124	0.10964	0.05432	3.37890	0.02342	0.01021
0.12254	1.00199	[illegible]	1.17294	0.77434	0.38717	4.60428	0.30700	0.18334	9.02198	0.06638	0.03319
		k_2 = 20.0			k_2 = 20.0			k_2 = 20.0			k_2 = 20.0
0.00036	0.00038	0.00041	0.00483	0.00370	0.00018	0.01863	0.00096	0.00063	0.02100	0.00014	0.00001
0.00231	0.03788	0.00184	0.02384	0.01807	0.00078	0.06336	0.00371	0.00019	0.08604	0.00048	0.00003
0.00819	0.12988	0.00647	0.10017	0.05964	0.00298	0.24028	0.01108	0.00074	0.33838	0.00229	0.00011
0.02431	0.48498	0.02430	0.35811	0.22793	0.01140	0.90094	0.03789	0.00288	1.27833	0.00901	0.00048
0.03070	1.83804	0.07390	1.00788	0.78347	0.03917	2.91994	0.21190	0.01090	4.38311	0.03390	0.00170
−0.00926	3.39883	0.10994	2.10033	3.13313	0.10001	7.98104	0.07432	0.00287	15.28873	0.11006	0.00683
		k_2 = 200.0			k_2 = 200.0			k_2 = 200.0			k_2 = 200.0
0.00033	0.01334	0.00006	0.00778	0.00543	0.00033	0.01937	0.00131	0.00001	0.02087	0.00014	0.00000
0.00134	0.04923	0.00023	0.03090	0.02162	0.00311	0.07678	0.00524	0.00003	0.10320	0.00073	0.00000
0.00436	0.19430	0.00097	0.12030	0.08578	0.00042	0.33192	0.02034	0.00010	0.40678	0.00300	0.00002
0.00533	0.74238	0.00371	0.43698	0.33314	0.00166	1.13838	0.08183	0.00041	1.56951	0.01183	0.00006
−0.02173	2.33847	0.01384	1.33870	1.19193	0.00596	3.83344	0.30873	0.00153	5.43705	0.01513	0.00023
−0.16880	6.80638	0.03340	3.40064	3.07888	0.01838	11.38433	1.04791	0.06624	27.88810	0.10107	0.00081

Faktor – faktor Tegangan Horisontal Sistem Tiga Lapis Untuk H = 4,0

TABLE 2.1. (continued)

a_1	H = 4.0, k_1 = 0.2 (ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)	H = 4.0, k_1 = 2.0 (ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)	H = 4.0, k_1 = 20.0 (ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)	H = 4.0, k_1 = 200.0 (ZZ1 − RR1)	(ZZ2 − RR2)	(ZZ2 − RR3)
			k_2 = 0.2			k_2 = 0.2			k_2 = 0.2			k_2 = 0.2
0.1	0.00078	0.00023	0.00114	0.00174	0.00014	0.00071	0.00733	0.00004	0.00021	0.00134	0.00001	0.00004
0.2	0.00112	0.00091	0.00454	0.00541	0.00053	0.00284	0.00032	0.00017	0.00085	0.01333	0.00023	0.00018
0.4	0.00134	0.00360	[illegible]	0.02062	0.00278	0.01120	0.00052	0.00068	0.00340	0.05765	0.00013	0.00066
0.8	0.01010	[illegible]	[illegible]	[illegible]	0.00477	0.01384	0.11242	0.00200	0.01331	0.30721	0.00051	0.00254
1.6	0.05520	0.01072	0.24546	[illegible]	0.01133	0.15000	0.40870	0.00003	0.01914	0.74424	0.00193	0.00015
3.2	0.11376	0.12070	0.63352	0.58791	0.08200	0.42201	1.31027	0.02000	0.14051	2.75046	0.00000	0.03208
			k_2 = 2.0			k_2 = 2.0			k_2 = 2.0			k_2 = 2.0
0.1	0.00396	0.00130	[illegible]	0.00147	0.00065	0.00032	0.00312	0.00015	0.00007	0.00137	0.00032	0.00001
0.2	0.00101	0.00535	0.00259	0.00527	0.02200	0.00130	0.01215	0.00070	0.00029	0.01746	0.00700	0.00005
0.4	0.00312	0.02027	0.01078	0.02724	0.01032	0.00516	0.04944	0.00225	0.00117	0.06047	0.00136	0.00018
0.8	0.01514	[illegible]	0.01060	0.08057	0.06031	0.07015	0.19247	0.00974	0.00492	0.27721	0.00144	0.00073
1.6	0.05011	0.20057	0.14170	0.31213	0.11735	0.07508	0.60740	0.02108	0.01744	1.01140	0.00553	0.00277
3.2	0.12524	0.27151	0.37828	0.81094	0.41032	0.21816	2.00062	0.11653	0.05770	3.28013	0.01051	0.00076
			k_2 = 20.0			k_2 = 20.0			k_2 = 20.0			k_2 = 20.0
0.1	0.00018	0.00325	0.00018	0.00201	0.00126	0.00006	0.10413	0.00025	0.00001	0.00545	0.00003	0.00000
0.2	0.00072	0.01202	0.00015	0.00802	0.00510	0.00020	0.01651	0.00099	0.00005	0.02178	0.00014	0.00001
0.4	0.00263	0.05120	0.00258	0.03121	0.02032	0.00107	0.06509	0.00396	0.00020	0.08673	0.00054	0.00003
0.8	0.01059	0.20134	0.01007	0.12427	0.07931	0.00100	0.25730	0.01505	0.00078	0.34131	0.00215	0.00011
1.6	0.03700	0.73322	0.03604	0.45100	0.29901	0.01500	0.05922	0.05893	0.00300	1.28773	0.00833	0.00042
3.2	0.10541	2.13000	0.10093	1.38127	0.97701	0.04888	3.10060	0.20006	0.01048	4.38674	0.03010	0.00130
			k_2 = 200.0			k_2 = 200.0			k_2 = 200.0			k_2 = 200.0
0.1	0.00019	0.00187	0.00002	0.00263	0.00180	0.00001	0.00515	0.00033	0.00000	0.00652	0.00004	0.00000
0.2	0.00078	0.01947	0.00010	0.01050	0.00720	0.00001	0.02056	0.00131	0.00001	0.02606	0.00017	0.00000
0.4	0.00309	0.07752	0.00040	0.04170	0.02870	0.00014	0.08101	0.00524	0.00003	0.10380	0.00068	0.00000
0.8	0.01100	0.30132	0.00152	0.16380	0.11334	0.00057	0.32231	0.02077	0.00010	0.40607	0.00269	0.00001
1.6	0.01352	1.13353	0.00567	0.60008	0.43731	0.00216	1.21567	0.08034	0.00040	1.50281	0.01040	0.00005
3.2	0.14445	2.50008	0.01708	1.88400	1.40376	0.00747	1.14395	0.28081	0.00145	3.48870	0.03808	0.00019

Lampiran 33	Halaman 160
Faktor – faktor Tegangan Horisontal Sistem Tiga Lapis Untuk H = 8,0	