

LAMPIRAN



TUGAS AKHIR

PERENCANAAN STRUKTUR GEDUNG

GRAHA JATINGALEH

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RASIO PENULANGAN (p) DAN FAKTOR TAHANAN (Rn)
 (f'c = 28,2 Mpa fy = 293 Mpa d'/d = 0,138)

Di ketahui p tulangan tarik , p tulangan tekan = 0,5 p tulangan tekan

p	Rn	p	Rn	p	Rn	p	Rn	p	Rn	p	Rn
0.0048	1040.3605	0.0104	2233.2571	0.0160	3403.6918	0.0216	4551.6647	0.0272	5677.1757	0.0328	6780.2248
0.0049	1061.8592	0.0105	2254.3547	0.0161	3424.3883	0.0217	4571.9600	0.0273	5697.0699	0.0329	6799.7180
0.0050	1083.3508	0.0106	2275.4451	0.0162	3445.0776	0.0218	4592.2483	0.0274	5716.9571	0.0330	6819.2040
0.0051	1104.8351	0.0107	2296.5284	0.0163	3465.7598	0.0219	4612.5293	0.0275	5736.8370	0.0331	6838.6829
0.0052	1126.3124	0.0108	2317.6045	0.0164	3486.4348	0.0220	4632.8032	0.0276	5756.7098	0.0332	6858.1545
0.0053	1147.7824	0.0109	2338.6734	0.0165	3507.1028	0.0221	4653.0699	0.0277	5776.5754	0.0333	6877.6191
0.0054	1169.2453	0.0110	2359.7352	0.0166	3527.7633	0.0222	4673.3295	0.0278	5796.4339	0.0334	6897.0764
0.0055	1190.7010	0.0111	2380.7898	0.0167	3548.4168	0.0223	4693.5819	0.0279	5816.2852	0.0335	6916.5266
0.0056	1212.1496	0.0112	2401.8373	0.0168	3569.0631	0.0224	4713.8272	0.0280	5836.1293	0.0336	6935.9697
0.0057	1233.5910	0.0113	2422.8776	0.0169	3589.7023	0.0225	4734.0652	0.0281	5855.9663	0.0337	6955.4055
0.0058	1255.0252	0.0114	2443.9107	0.0170	3610.3343	0.0226	4754.2962	0.0282	5875.7961	0.0338	6974.8342
0.0059	1276.4523	0.0115	2464.9367	0.0171	3630.9592	0.0227	4774.5199	0.0283	5895.6188	0.0339	6994.2558
0.0060	1297.8722	0.0116	2485.9555	0.0172	3651.5769	0.0228	4794.7365	0.0284	5915.4343	0.0340	7013.6702
0.0061	1319.2849	0.0117	2506.9671	0.0173	3672.1874	0.0229	4814.9459	0.0285	5935.2428	0.0341	7033.0774
0.0062	1340.6905	0.0118	2527.9716	0.0174	3692.7908	0.0230	4835.1482	0.0286	5955.0437	0.0342	7052.4775
0.0063	1362.0889	0.0119	2548.9689	0.0175	3713.3870	0.0231	4855.3433	0.0287	5974.8378	0.0343	7071.8703
0.0064	1383.4802	0.0120	2569.9590	0.0176	3733.9761	0.0232	4875.5313	0.0288	5994.6246	0.0344	7091.2561
0.0065	1404.8643	0.0121	2590.9420	0.0177	3754.5580	0.0233	4895.7120	0.0289	6014.4043	0.0345	7110.6347
0.0066	1426.2412	0.0122	2611.9179	0.0178	3775.1327	0.0234	4915.8856	0.0290	6034.1768	0.0346	7130.0061
0.0067	1447.6110	0.0123	2632.8885	0.0179	3795.7002	0.0235	4936.0521	0.0291	6053.9421	0.0347	7149.3703
0.0068	1468.9738	0.0124	2653.8480	0.0180	3816.2608	0.0236	4956.2114	0.0292	6073.7003	0.0348	7168.7274
0.0069	1490.3290	0.0125	2674.8024	0.0181	3836.8139	0.0237	4976.3635	0.0293	6093.4513	0.0349	7188.0773
0.0070	1511.6773	0.0126	2695.7495	0.0182	3857.3599	0.0238	4996.5085	0.0294	6113.1952	0.0350	7207.4201
0.0071	1533.0184	0.0127	2716.6895	0.0183	3877.8988	0.0239	5016.6463	0.0295	6132.9319		
0.0072	1554.3524	0.0128	2737.6224	0.0184	3898.4306	0.0240	5036.7769	0.0296	6152.6614		
0.0073	1575.6791	0.0129	2758.5481	0.0185	3918.9552	0.0241	5056.9004	0.0297	6172.3838		
0.0074	1596.9988	0.0130	2779.4666	0.0186	3939.4726	0.0242	5077.0167	0.0298	6192.0980		
0.0075	1618.3112	0.0131	2800.3780	0.0187	3959.9829	0.0243	5097.1259	0.0299	6211.8071		
0.0076	1639.6166	0.0132	2821.2822	0.0188	3980.4860	0.0244	5117.2279	0.0300	6231.5080		
0.0077	1660.9147	0.0133	2842.1792	0.0189	4000.9819	0.0245	5137.3227	0.0301	6251.2017		
0.0078	1682.2057	0.0134	2863.0691	0.0190	4021.4707	0.0246	5157.4104	0.0302	6270.8883		
0.0079	1703.4895	0.0135	2883.9518	0.0191	4041.9523	0.0247	5177.4909	0.0303	6290.5677		
0.0080	1724.7661	0.0136	2904.8274	0.0192	4062.4267	0.0248	5197.5642	0.0304	6310.2399		
0.0081	1746.0356	0.0137	2925.6957	0.0193	4082.8940	0.0249	5217.6304	0.0305	6329.9050		
0.0082	1767.2980	0.0138	2946.5570	0.0194	4103.3541	0.0250	5237.6894	0.0306	6349.5629		
0.0083	1788.5531	0.0139	2967.4110	0.0195	4123.8071	0.0251	5257.7413	0.0307	6369.2136		
0.0084	1809.8011	0.0140	2988.2579	0.0196	4144.2529	0.0252	5277.7860	0.0308	6388.8572		
0.0085	1831.0420	0.0141	3009.0977	0.0197	4164.6915	0.0253	5297.8235	0.0309	6408.4938		
0.0086	1852.2757	0.0142	3029.9302	0.0198	4185.1230	0.0254	5317.8539	0.0310	6428.1229		
0.0087	1873.5022	0.0143	3050.7557	0.0199	4205.5473	0.0255	5337.8771	0.0311	6447.7450		
0.0088	1894.7215	0.0144	3071.5739	0.0200	4225.9644	0.0256	5357.8931	0.0312	6467.3599		
0.0089	1915.9337	0.0145	3092.3850	0.0201	4246.3744	0.0257	5377.9020	0.0313	6486.9677		
0.0090	1937.1388	0.0146	3113.1889	0.0202	4266.7772	0.0258	5397.9037	0.0314	6506.5683		
0.0091	1958.3366	0.0147	3133.9857	0.0203	4287.1729	0.0259	5417.8983	0.0315	6526.1618		
0.0092	1979.5273	0.0148	3154.7753	0.0204	4307.5614	0.0260	5437.8857	0.0316	6545.7481		
0.0093	2000.7109	0.0149	3175.5577	0.0205	4327.9427	0.0261	5457.8659	0.0317	6565.3272		
0.0094	2021.8872	0.0150	3196.3330	0.0206	4348.3169	0.0262	5477.8389	0.0318	6584.8992		
0.0095	2043.0565	0.0151	3217.1011	0.0207	4368.6839	0.0263	5497.8048	0.0319	6604.4640		
0.0096	2064.2185	0.0152	3237.8621	0.0208	4389.0437	0.0264	5517.7638	0.0320	6624.0216		
0.0097	2085.3734	0.0153	3258.6158	0.0209	4409.3964	0.0265	5537.7152	0.0321	6643.5721		
0.0098	2106.5211	0.0154	3279.3625	0.0210	4429.7419	0.0266	5557.6596	0.0322	6663.1154		
0.0099	2127.6617	0.0155	3300.1019	0.0211	4450.0803	0.0267	5577.5968	0.0323	6682.6515		
0.0100	2148.7951	0.0156	3320.8342	0.0212	4470.4115	0.0268	5597.5269	0.0324	6702.1805		
0.0101	2169.9213	0.0157	3341.5594	0.0213	4490.7355	0.0269	5617.4489	0.0325	6721.7023		
0.0102	2191.0404	0.0158	3362.2773	0.0214	4511.0524	0.0270	5637.3656	0.0326	6741.2170		
0.0103	2212.1523	0.0159	3382.9881	0.0215	4531.3621	0.0271	5657.2742	0.0327	6760.7245		

$Rn = 0,5 \cdot p \cdot fy \cdot [(1 - 0,425 \cdot c/d) + (1 - d'/d)]$
 $c/d = 0,892 \cdot p \cdot fy / f'c$

RASIO PENULANGAN (p) DAN FAKTOR TAHANAN (Rn)
 ($f_c = 28,2 \text{ Mpa}$ $f_y = 293 \text{ Mpa}$ $d'/d = 0,176$)

Di ketahui p tulangan tarik, p tulangan tekan = 0,5 p tulangan tarik

p	Rn	p	Rn	p	Rn	p	Rn	p	Rn	p	Rn
0.0048	1017.8581	0.0104	2184.5019	0.0160	3328.6838	0.0216	4450.4039	0.0272	5549.6621	0.0328	6626.4584
0.0049	1038.8880	0.0105	2205.1307	0.0161	3348.9115	0.0217	4470.2304	0.0273	5589.0875	0.0329	6645.4628
0.0050	1059.9108	0.0106	2225.7523	0.0162	3369.1320	0.0218	4490.0499	0.0274	5588.5059	0.0330	6664.5000
0.0051	1080.9263	0.0107	2246.3668	0.0163	3389.3454	0.0219	4509.8621	0.0275	5607.9170	0.0331	6683.5101
0.0052	1101.9348	0.0108	2266.9741	0.0164	3409.5516	0.0220	4529.6672	0.0276	5627.3210	0.0332	6702.5129
0.0053	1122.9360	0.0109	2287.5742	0.0165	3429.7506	0.0221	4549.4651	0.0277	5646.7178	0.0333	6721.5087
0.0054	1143.9301	0.0110	2308.1672	0.0166	3449.9425	0.0222	4569.2559	0.0278	5666.1075	0.0334	6740.4972
0.0055	1164.9170	0.0111	2328.7530	0.0167	3470.1272	0.0223	4589.0395	0.0279	5685.4900	0.0335	6759.4786
0.0056	1185.8968	0.0112	2349.3317	0.0168	3490.3047	0.0224	4608.8160	0.0280	5704.8653	0.0336	6778.4529
0.0057	1206.8694	0.0113	2369.9032	0.0169	3510.4751	0.0225	4628.5852	0.0281	5724.2335	0.0337	6797.4199
0.0058	1227.8348	0.0114	2390.4675	0.0170	3530.6383	0.0226	4648.3474	0.0282	5743.5945	0.0338	6816.3798
0.0059	1248.7931	0.0115	2411.0247	0.0171	3550.7944	0.0227	4668.1023	0.0283	5762.9484	0.0339	6835.3326
0.0060	1269.7442	0.0116	2431.5747	0.0172	3570.9433	0.0228	4687.8501	0.0284	5782.2951	0.0340	6854.2782
0.0061	1290.6881	0.0117	2452.1175	0.0173	3591.0850	0.0229	4707.5907	0.0285	5801.6346	0.0341	6873.2168
0.0062	1311.6249	0.0118	2472.6532	0.0174	3611.2196	0.0230	4727.3242	0.0286	5820.9669	0.0342	6892.1479
0.0063	1332.5545	0.0119	2493.1817	0.0175	3631.3470	0.0231	4747.0505	0.0287	5840.2922	0.0343	6911.0719
0.0064	1353.4770	0.0120	2513.7030	0.0176	3651.4673	0.0232	4766.7697	0.0288	5859.6102	0.0344	6929.9869
0.0065	1374.3923	0.0121	2534.2172	0.0177	3671.5804	0.0233	4786.4816	0.0289	5878.9211	0.0345	6948.8987
0.0066	1395.3004	0.0122	2554.7243	0.0178	3691.6863	0.0234	4806.1864	0.0290	5898.2248	0.0346	6967.8013
0.0067	1416.2014	0.0123	2575.2241	0.0179	3711.7850	0.0235	4825.8841	0.0291	5917.5213	0.0347	6986.6967
0.0068	1437.0952	0.0124	2595.7168	0.0180	3731.8766	0.0236	4845.5745	0.0292	5936.8107	0.0348	7005.5850
0.0069	1457.9818	0.0125	2616.2024	0.0181	3751.9611	0.0237	4865.2579	0.0293	5956.0929	0.0349	7024.4661
0.0070	1478.8613	0.0126	2636.6807	0.0182	3772.0383	0.0238	4884.9341	0.0294	5975.3680	0.0350	7043.3401
0.0071	1499.7336	0.0127	2657.1519	0.0183	3792.1084	0.0239	4904.6031	0.0295	5994.6359		
0.0072	1520.5988	0.0128	2677.6160	0.0184	3812.1714	0.0240	4924.2649	0.0296	6013.8966		
0.0073	1541.4567	0.0129	2698.0729	0.0185	3832.2272	0.0241	4943.9196	0.0297	6033.1502		
0.0074	1562.3076	0.0130	2718.5226	0.0186	3852.2758	0.0242	4963.5671	0.0298	6052.3966		
0.0075	1583.1512	0.0131	2738.9652	0.0187	3872.3173	0.0243	4983.2075	0.0299	6071.6359		
0.0076	1603.9878	0.0132	2759.4006	0.0188	3892.3516	0.0244	5002.8407	0.0300	6090.8680		
0.0077	1624.8171	0.0133	2779.8288	0.0189	3912.3767	0.0245	5022.4667	0.0301	6110.0929		
0.0078	1645.6393	0.0134	2800.2499	0.0190	3932.3987	0.0246	5042.0856	0.0302	6129.3107		
0.0079	1666.4543	0.0135	2820.6638	0.0191	3952.4115	0.0247	5061.6973	0.0303	6148.5213		
0.0080	1687.2621	0.0136	2841.0706	0.0192	3972.4171	0.0248	5081.3018	0.0304	6167.7247		
0.0081	1708.0628	0.0137	2861.4701	0.0193	3992.4156	0.0249	5100.8992	0.0305	6186.9210		
0.0082	1728.8564	0.0138	2881.8626	0.0194	4012.4069	0.0250	5120.4894	0.0306	6206.1101		
0.0083	1749.6427	0.0139	2902.2478	0.0195	4032.3911	0.0251	5140.0725	0.0307	6225.2920		
0.0084	1770.4219	0.0140	2922.6259	0.0196	4052.3681	0.0252	5159.6484	0.0308	6244.4668		
0.0085	1791.1940	0.0141	2942.9965	0.0197	4072.3379	0.0253	5179.2171	0.0309	6263.6344		
0.0086	1811.9589	0.0142	2963.3606	0.0198	4092.3006	0.0254	5198.7787	0.0310	6282.7949		
0.0087	1832.7166	0.0143	2983.7173	0.0199	4112.2561	0.0255	5218.3331	0.0311	6301.9482		
0.0088	1853.4671	0.0144	3004.0667	0.0200	4132.2044	0.0256	5237.8803	0.0312	6321.0943		
0.0089	1874.2105	0.0145	3024.4090	0.0201	4152.1456	0.0257	5257.4204	0.0313	6340.2333		
0.0090	1894.9468	0.0146	3044.7441	0.0202	4172.0796	0.0258	5276.9533	0.0314	6359.3651		
0.0091	1915.6758	0.0147	3065.0721	0.0203	4192.0065	0.0259	5296.4791	0.0315	6378.4888		
0.0092	1936.3977	0.0148	3085.3929	0.0204	4211.9262	0.0260	5315.9977	0.0316	6397.6073		
0.0093	1957.1125	0.0149	3105.7065	0.0205	4231.8387	0.0261	5335.5091	0.0317	6416.7176		
0.0094	1977.8200	0.0150	3126.0130	0.0206	4251.7441	0.0262	5355.0133	0.0318	6435.8208		
0.0095	1998.5205	0.0151	3146.3123	0.0207	4271.6423	0.0263	5374.5104	0.0319	6454.9168		
0.0096	2019.2137	0.0152	3166.6045	0.0208	4291.5333	0.0264	5394.0004	0.0320	6474.0056		
0.0097	2039.8998	0.0153	3186.8894	0.0209	4311.4172	0.0265	5413.4832	0.0321	6493.0873		
0.0098	2060.5787	0.0154	3207.1673	0.0210	4331.2939	0.0266	5432.9588	0.0322	6512.1618		
0.0099	2081.2505	0.0155	3227.4379	0.0211	4351.1635	0.0267	5452.4272	0.0323	6531.2291		
0.0100	2101.9151	0.0156	3247.7014	0.0212	4371.0259	0.0268	5471.8885	0.0324	6550.2893		
0.0101	2122.5725	0.0157	3267.9578	0.0213	4390.8811	0.0269	5491.3427	0.0325	6569.3423		
0.0102	2143.2228	0.0158	3288.2069	0.0214	4410.7292	0.0270	5510.7896	0.0326	6588.3882		
0.0103	2163.8659	0.0159	3308.4489	0.0215	4430.5701	0.0271	5530.2294	0.0327	6607.4269		

$$Rn = 0,5 \cdot p \cdot fy' \cdot [(1 - 0,425 \cdot c/d) + (1 - d'/d)]$$

$$c/d = 0,692 \cdot p \cdot fy / f_c$$

RASIO PENULANGAN (p) DAN FAKTOR TAHANAN (Rn)
 ($f_c = 28,2 \text{ Mpa}$ $f_y = 293 \text{ Mpa}$)

Di ketahui p tulangan tarik = p tulangan tekan

p	Rn	p	Rn	p	Rn	p	Rn	p	Rn	p	Rn
0.0048	1092.1262	0.0104	2282.8722	0.0160	3383.8017	0.0216	4394.9146	0.0272	5316.2109	0.0328	6147.6806
0.0049	1114.1771	0.0105	2303.3193	0.0161	3402.6449	0.0217	4412.1539	0.0273	5331.8464	0.0329	6161.7222
0.0050	1136.1994	0.0106	2323.7377	0.0162	3421.4595	0.0218	4429.3646	0.0274	5347.4532	0.0330	6175.7252
0.0051	1158.1930	0.0107	2344.1275	0.0163	3440.2454	0.0219	4446.5467	0.0275	5363.0314	0.0331	6189.6995
0.0052	1180.1581	0.0108	2364.4886	0.0164	3459.0027	0.0220	4463.7001	0.0276	5378.5809	0.0332	6203.6452
0.0053	1202.0944	0.0109	2384.8212	0.0165	3477.7313	0.0221	4480.8249	0.0277	5394.1018	0.0333	6217.5622
0.0054	1224.0022	0.0110	2405.1250	0.0166	3496.4313	0.0222	4497.9210	0.0278	5409.5941	0.0334	6231.4506
0.0055	1245.8813	0.0111	2425.4002	0.0167	3515.1027	0.0223	4514.9885	0.0279	5425.0577	0.0335	6245.3104
0.0056	1267.7317	0.0112	2445.6468	0.0168	3533.7454	0.0224	4532.0273	0.0280	5440.4927	0.0336	6259.1415
0.0057	1289.5535	0.0113	2465.8648	0.0169	3552.3595	0.0225	4549.0375	0.0281	5455.8990	0.0337	6272.9440
0.0058	1311.3467	0.0114	2486.0541	0.0170	3570.9449	0.0226	4566.0191	0.0282	5471.2768	0.0338	6286.7178
0.0059	1333.1112	0.0115	2506.2147	0.0171	3589.5017	0.0227	4582.9720	0.0283	5486.6258	0.0339	6300.4630
0.0060	1354.8471	0.0116	2526.3468	0.0172	3608.0298	0.0228	4599.8963	0.0284	5501.9462	0.0340	6314.1796
0.0061	1376.5544	0.0117	2546.4502	0.0173	3626.5294	0.0229	4616.7920	0.0285	5517.2380	0.0341	6327.8675
0.0062	1398.2330	0.0118	2566.5249	0.0174	3645.0002	0.0230	4633.6590	0.0286	5532.5012	0.0342	6341.5267
0.0063	1419.8829	0.0119	2586.5710	0.0175	3663.4425	0.0231	4650.4973	0.0287	5547.7357	0.0343	6355.1574
0.0064	1441.5043	0.0120	2606.5885	0.0176	3681.8561	0.0232	4667.3071	0.0288	5562.9415	0.0344	6368.7594
0.0065	1463.0970	0.0121	2626.5773	0.0177	3700.2410	0.0233	4684.0882	0.0289	5578.1187	0.0345	6382.3327
0.0066	1484.6610	0.0122	2646.5375	0.0178	3718.5973	0.0234	4700.8406	0.0290	5593.2673	0.0346	6395.8774
0.0067	1506.1964	0.0123	2666.4690	0.0179	3736.9250	0.0235	4717.5644	0.0291	5608.3872	0.0347	6409.3935
0.0068	1527.7032	0.0124	2686.3719	0.0180	3755.2240	0.0236	4734.2595	0.0292	5623.4785	0.0348	6422.8809
0.0069	1549.1813	0.0125	2706.2462	0.0181	3773.4944	0.0237	4750.9261	0.0293	5638.5412	0.0349	6436.3397
0.0070	1570.6308	0.0126	2726.0918	0.0182	3791.7362	0.0238	4767.5640	0.0294	5653.5752	0.0350	6449.7699
0.0071	1592.0516	0.0127	2745.9088	0.0183	3809.9493	0.0239	4784.1732	0.0295	5668.5806		
0.0072	1613.4438	0.0128	2765.6971	0.0184	3828.1337	0.0240	4800.7538	0.0296	5683.5573		
0.0073	1634.8074	0.0129	2785.4568	0.0185	3846.2896	0.0241	4817.3058	0.0297	5698.5054		
0.0074	1656.1423	0.0130	2805.1878	0.0186	3864.4168	0.0242	4833.8291	0.0298	5713.4249		
0.0075	1677.4486	0.0131	2824.8903	0.0187	3882.5153	0.0243	4850.3238	0.0299	5728.3157		
0.0076	1698.7263	0.0132	2844.5640	0.0188	3900.5852	0.0244	4866.7898	0.0300	5743.1779		
0.0077	1719.9759	0.0133	2864.2092	0.0189	3918.6265	0.0245	4883.2272	0.0301	5758.0114		
0.0078	1741.1956	0.0134	2883.8257	0.0190	3936.6391	0.0246	4899.6360	0.0302	5772.8163		
0.0079	1762.3873	0.0135	2903.4135	0.0191	3954.6231	0.0247	4916.0161	0.0303	5787.5925		
0.0080	1783.5504	0.0136	2922.9727	0.0192	3972.5784	0.0248	4932.3676	0.0304	5802.3401		
0.0081	1804.6849	0.0137	2942.5033	0.0193	3990.5052	0.0249	4948.6904	0.0305	5817.0591		
0.0082	1825.7907	0.0138	2962.0052	0.0194	4008.4032	0.0250	4964.9846	0.0306	5831.7494		
0.0083	1846.8678	0.0139	2981.4785	0.0195	4026.2726	0.0251	4981.2502	0.0307	5846.4111		
0.0084	1867.9163	0.0140	3000.9232	0.0196	4044.1134	0.0252	4997.4871	0.0308	5861.0442		
0.0085	1888.9362	0.0141	3020.3392	0.0197	4061.9256	0.0253	5013.6954	0.0309	5875.6486		
0.0086	1909.9275	0.0142	3039.7266	0.0198	4079.7091	0.0254	5029.8750	0.0310	5890.2244		
0.0087	1930.8901	0.0143	3059.0853	0.0199	4097.4639	0.0255	5046.0260	0.0311	5904.7715		
0.0088	1951.8240	0.0144	3078.4154	0.0200	4115.1902	0.0256	5062.1484	0.0312	5919.2900		
0.0089	1972.7293	0.0145	3097.7168	0.0201	4132.8877	0.0257	5078.2421	0.0313	5933.7798		
0.0090	1993.6060	0.0146	3116.9896	0.0202	4150.5567	0.0258	5094.3071	0.0314	5948.2410		
0.0091	2014.4540	0.0147	3136.2336	0.0203	4168.1970	0.0259	5110.3436	0.0315	5962.6736		
0.0092	2035.2734	0.0148	3155.4493	0.0204	4185.8086	0.0260	5126.3514	0.0316	5977.0775		
0.0093	2056.0642	0.0149	3174.6362	0.0205	4203.3917	0.0261	5142.3305	0.0317	5991.4528		
0.0094	2076.8263	0.0150	3193.7945	0.0206	4220.9460	0.0262	5158.2810	0.0318	6005.7994		
0.0095	2097.5598	0.0151	3212.9241	0.0207	4238.4718	0.0263	5174.2029	0.0319	6020.1174		
0.0096	2118.2646	0.0152	3232.0250	0.0208	4255.9689	0.0264	5190.0961	0.0320	6034.4068		
0.0097	2138.9408	0.0153	3251.0974	0.0209	4273.4373	0.0265	5205.9607	0.0321	6048.6675		
0.0098	2159.5884	0.0154	3270.1410	0.0210	4290.8771	0.0266	5221.7967	0.0322	6062.8996		
0.0099	2180.2073	0.0155	3289.1561	0.0211	4308.2883	0.0267	5237.6040	0.0323	6077.1030		
0.0100	2200.7975	0.0156	3308.1425	0.0212	4325.6709	0.0268	5253.3826	0.0324	6091.2778		
0.0101	2221.3592	0.0157	3327.1003	0.0213	4343.0248	0.0269	5269.1327	0.0325	6105.4240		
0.0102	2241.8922	0.0158	3346.0294	0.0214	4360.3500	0.0270	5284.8541	0.0326	6119.5415		
0.0103	2262.3965	0.0159	3364.9299	0.0215	4377.6466	0.0271	5300.5468	0.0327	6133.6304		

$$Rn = p \cdot O' \cdot f_y \cdot (1 - 0,588 \cdot p \cdot f_y / f_c)$$

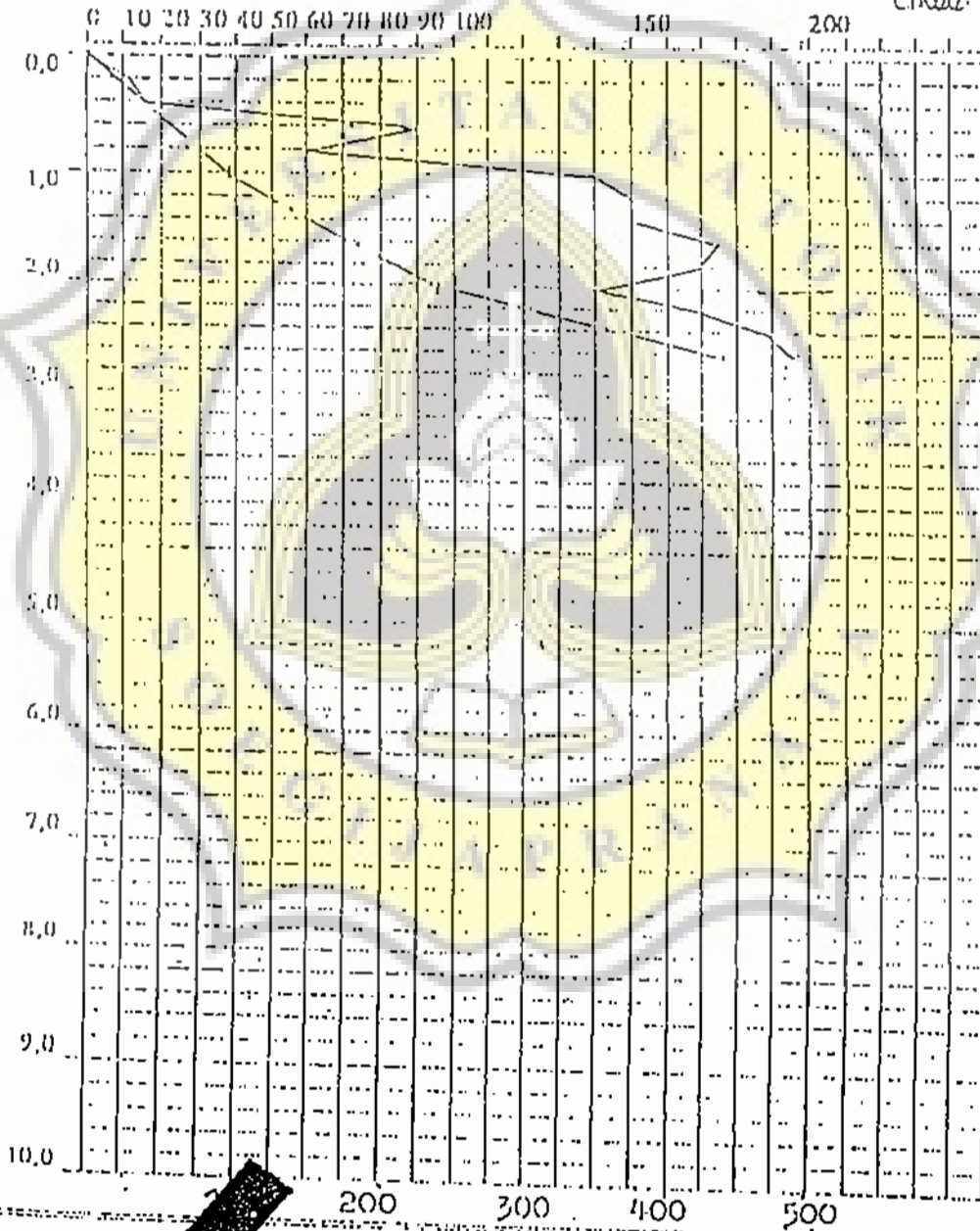
CONE PENETRATION

PROJECT : Perpustakaan Undip Point NO. : S-I
Location : Tembalong Test By : Sodjoko
Date : 13 April 1996

GRAFIS SONDERING

CONE PENETRATION in Kg/cm²
TOTAL FRICTION in Kg/cm

(nilai kritis)



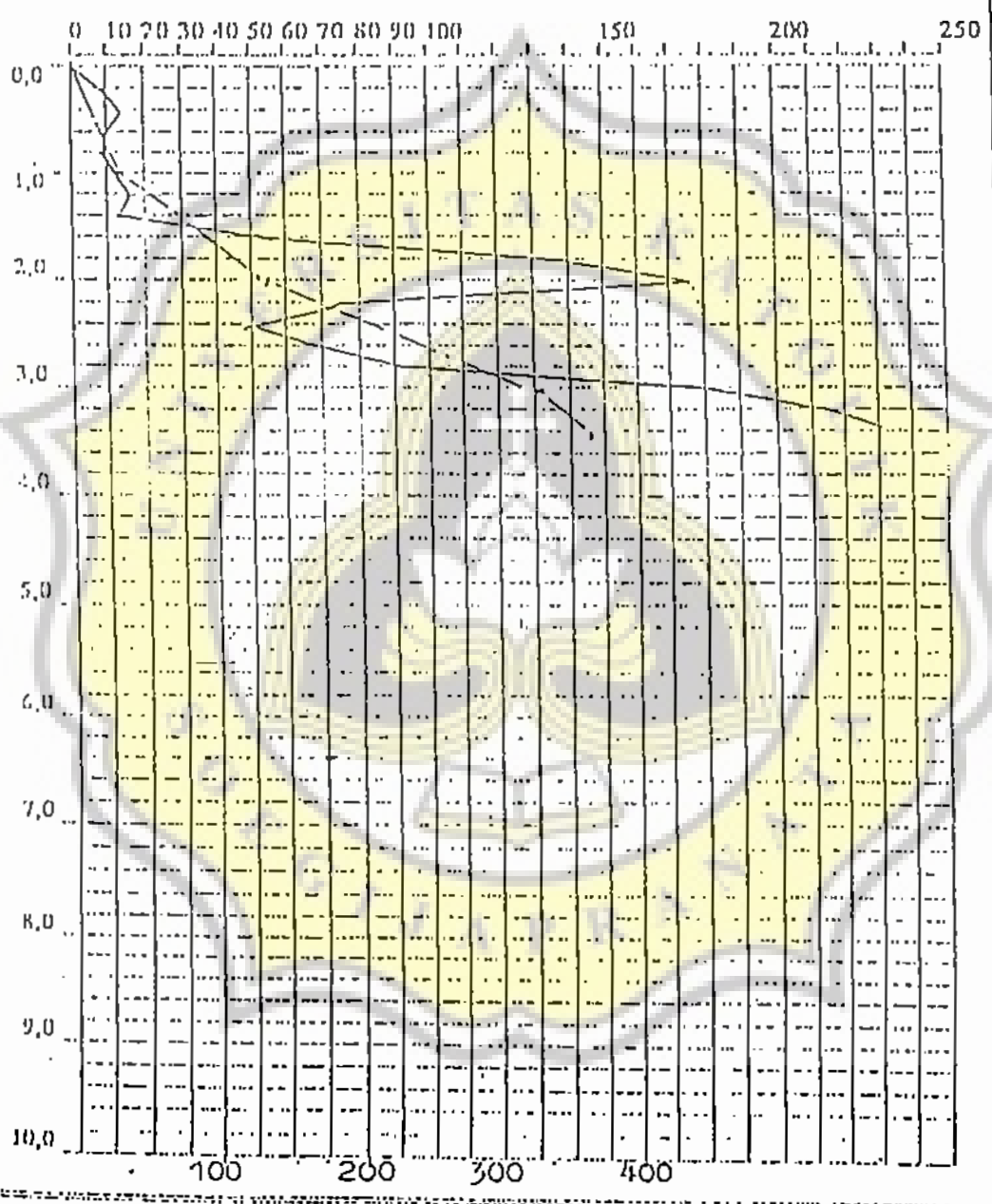
(total friction)

CONE PENETRATION

PROJECT : Perpustakaan Undip Point NO. : S-II
Location : Tembalang Test By : Sadjoko
Date : 13 April 1996

GRAFIC SONDERING

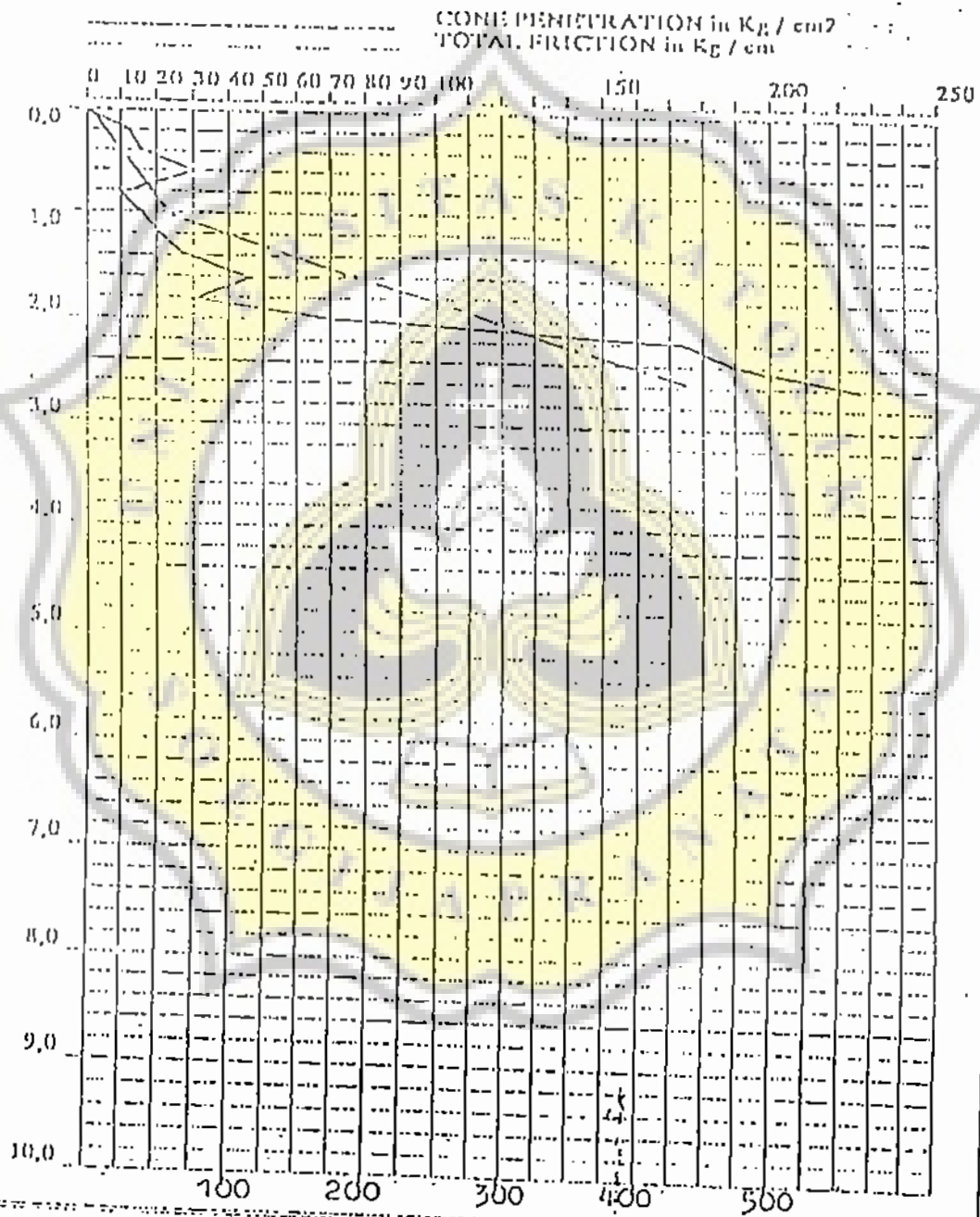
CONE PENETRATION in Kg / cm²
TOTAL FRICTION in Kg / cm



CONE PENETRATION

PROJECT : Perpustakaan Undip Point NO. : S-III
Location : Perbalong Test By : Sadjoko
Date : 13 April 1996

GRAFIC SONDERING

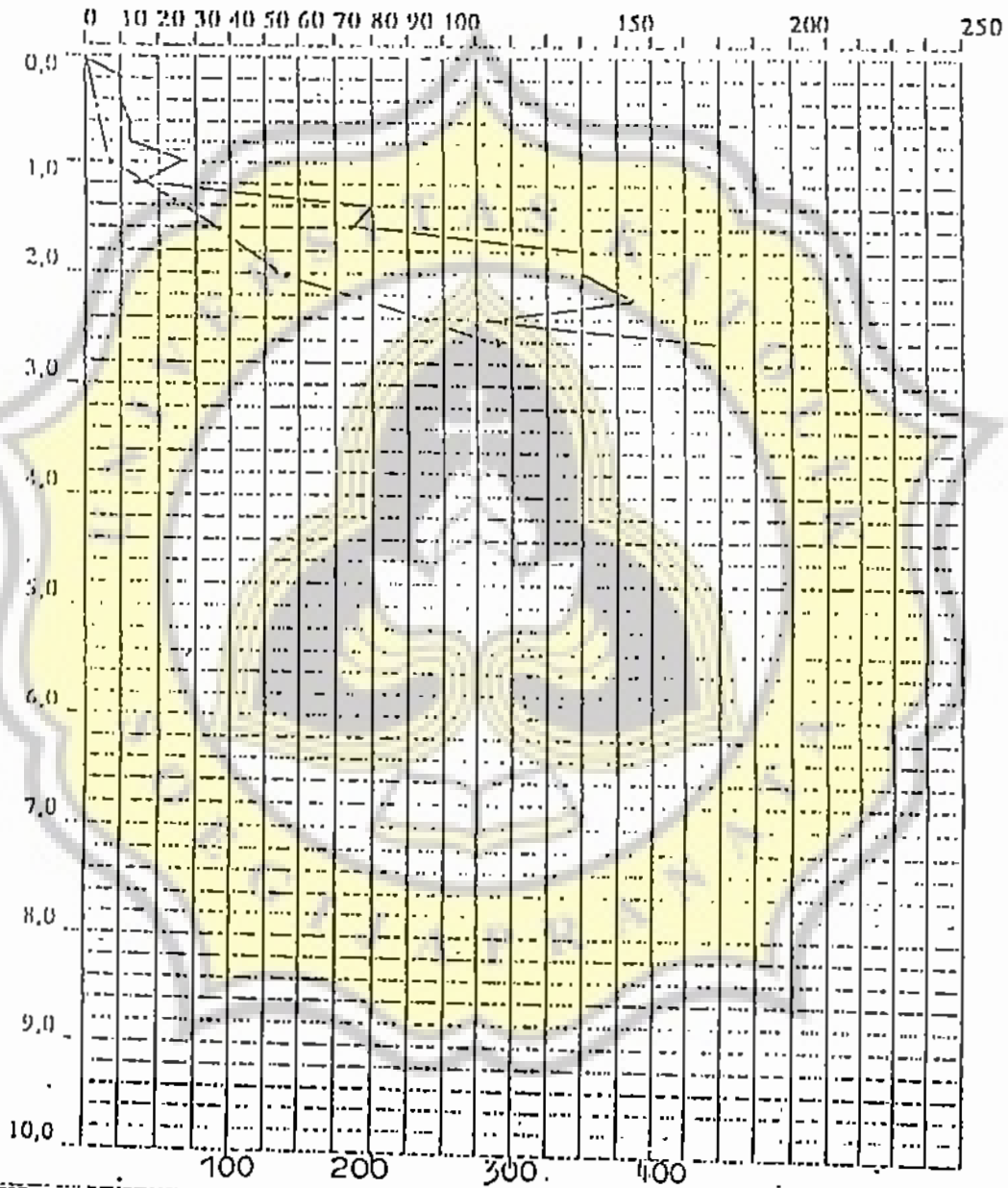


CONE PENETRATION

PROJECT : Perpustakaan Undip Point NO. : S-IV
 Location : Tembalang Test By : Sadjoko
 Date : 14 April 1996

GRAFIC SONDERING

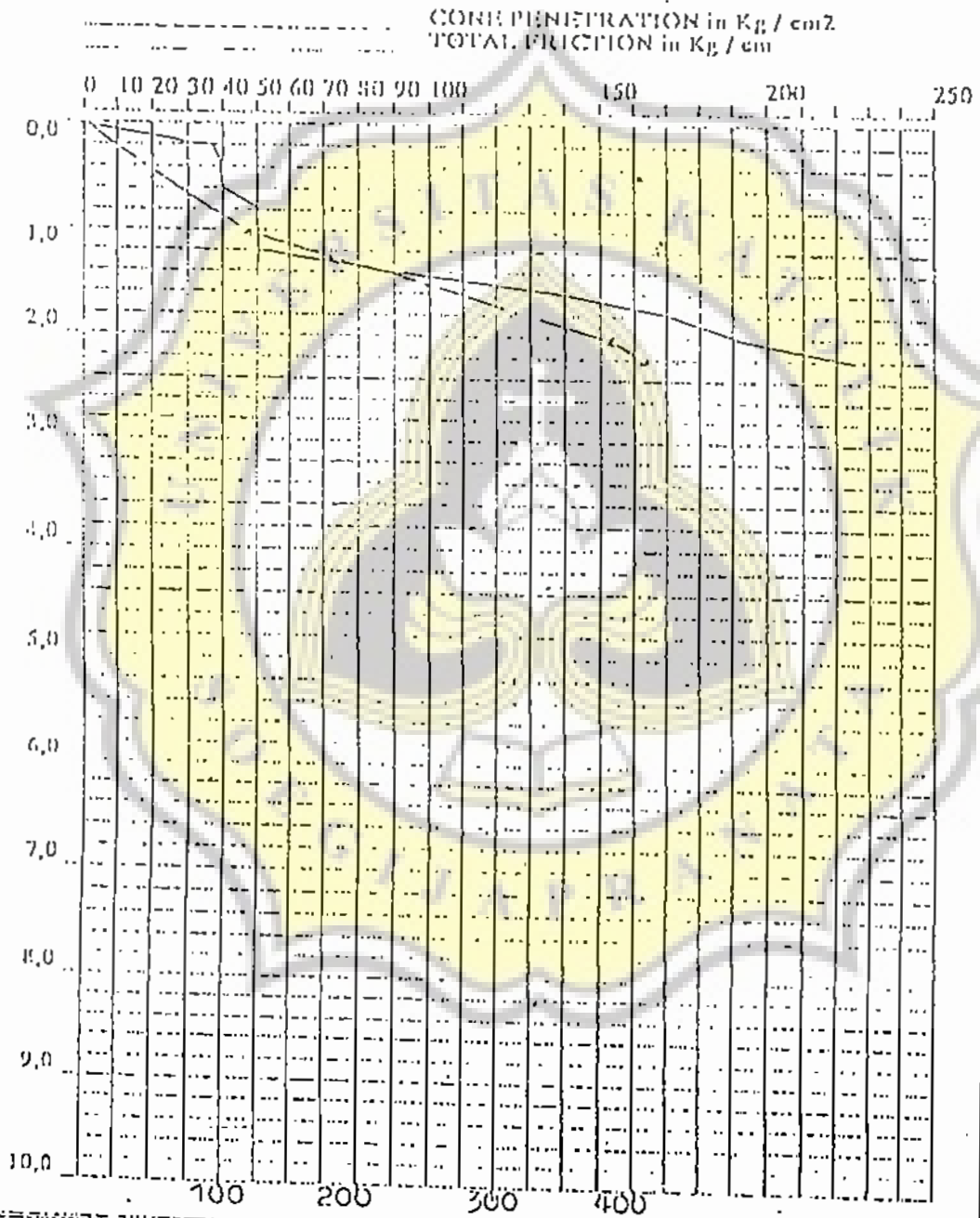
CONE PENETRATION in Kg/cm^2
 TOTAL FRICTION in Kg/cm



CONE PENETRATION

PROJECT : Perpustakaan Undip Point NO. : B-V
Location : Pombolang Test By : Sadjoko
Date : 14 April 1996

GRAFIC SONDERING





FAKULTAS TEKNIK
JURUSAN TEKNIK SIPIL
 UNIVERSITAS KATOLIK SOEGIJAPRANATA SEMARANG

KARTU ASISTENSI

Nama	: NURJUNA ARI SUSANTO. T	NIM	: 92.12.935 92.12.961
MT. Kuliah	:	Semester	:
Dosen	: Ir. Udiyanto	Ds. Wali	: Ir. Y. DARYANTO.
Asisten	: Ir. KIKI. S. MT.		
Dimulai	:		
Selesai	:	Nilai	:

NO.	TANGGAL	KETERANGAN	PARAP
01	01/Sept'97	Denah struktur ok! Teruskan ke pembebanan struktur	
02	23/09/97	Teruskan perhitungan pembebanan	
03	10/10/97	Diteruskan ke perhitungan beton	
04	25/11/97	Balok Portal → Reduksi dt. hidup - Lanjutkan ke perhitungan Beton - cek di SKSN.	
05	27/01/98	Nilai digambar struktur	
06	01/04/98	Gambar ditandatangani & dibenehkan	
07	16/04/98	Diteruskan selanjutnya & diperbaiki	
08	27/04/98	Ace ut. maju ke pembimbing W. Tama	Semarang, Dosen / Asisten (.....)



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JURUSAN TEKNIK SIPIL
 UNIVERSITAS KATOLIK SOEGIJAPRANATA SEMARANG

KARTU ASISTENSI

Nama : MURSICA ^{10.10.925} NIM :
ARI SUWANTO ^{10.12.941}
 MT. Kuliah : Semester :
 Dosen : Jr. Widjanto Ds. Wali :
 Asisten : Ir. Kiki S, MT
 Dimulai :
 Selesai : Nilai :

NO.	TANGGAL	KETERANGAN	PARAP
		<p>Ukuran balok tumpu</p> <p>$P_{max} \leq P_{max} \leq P_{max} \text{ tumpu}$</p> <p>Uk. tumpu double</p> <p>$P_s - P_s' \leq P_{max} \text{ tumpu}$</p> <p>b.d</p> <p>Balok tumpu</p> <p>seperti yang terlihat</p> <p>kolom</p>	

Semarang,
 Dosen / Asisten


(.....)



FAKULTAS TEKNIK
JURUSAN TEKNIK SIPIL
 UNIVERSITAS KATOLIK SOEGIJAPRANATA SEMARANG

KARTU ASISTENSI

Nama	: KUPREKA ARI GUSANTO T	NIM	: 92.12.993 92.12.041
MT. Kuliah	:	Semester	:
Dosen	: Ir. UDIYANTO	Ds. Wali	:
Asisten	: Ir. KIKI S. M.T.		
Dimulai	:		
Selesai	:	Nilai	:

NO.	TANGGAL	KETERANGAN	PARAP
		$d/d = 0,176$ $f_s = f_d$ } anuran di pinda: asuler & bel  d di/d bebul, es juga Geser lanta + penter balok Pchitung kolo → SNI.	ya/tiled ?


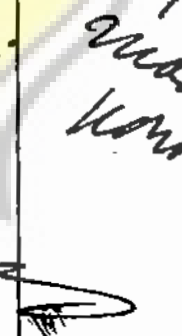
Semarang,
 Dosen / Asisten
Tasy Pub + sub?
 (.....)



FAKULTAS TEKNIK
JURUSAN TEKNIK SIPIL
 UNIVERSITAS KATOLIK SOEGIJAPRANATA SEMARANG

KARTU ASISTENSI

Nama	: NURSUKA : ARI SUSANTO T	NIM	: 92.12.935 : 92.12.941
MT. Kuliah	: -	Semester	:
Dosen	: IR. UDIYANTO	Ds. Wali	:
Asisten	: IR. KIKI.S, M.T.		
Dimulai	:		
Selesai	:	Nilai	:

NO.	TANGGAL	KETERANGAN	PARAP
		<p> <i>aspek</i> <i>struktur & kerangka</i> <i>besi</i> - <i>spiral ?</i> - <i>tbl. plat</i> <i>seal</i> <i>L</i> - <i>tbl. kolom</i> <i>L</i> <i>joint</i> <i>+</i> - <i>tekanan</i> <i>tegg</i> <i>Nilai</i>  </p>	<p> <i>mark</i> <i>Kontin?</i> </p> 

Semarang,
 Dosen / Asisten

(.....)