

## LAMPIRAN I

**Tabel 1 Berat jenis air ( $G_T$ )**

$G_T$ $^{\circ}\text{C}$	0	1	2	3	4	5	6	7	8	9
0	0,9999	0,9999	1,0000	1,0000	1,0000	1,0000	1,0000	0,9999	0,9999	0,9999
10	0,9997	0,9996	0,9995	0,9994	0,9993	0,9991	0,9990	0,9988	0,9986	0,9984
20	0,9982	0,9980	0,9978	0,9976	0,9973	0,9971	0,9968	0,9965	0,9963	0,9960
30	0,9957	0,9954	0,9951	0,9947	0,9944	0,9941	0,9937	0,9934	0,9930	0,9926
40	0,9922	0,9919	0,9915	0,9911	0,9907	0,9902	0,9898	0,9894	0,9890	0,9885
50	0,9881	0,9876	0,9872	0,9867	0,9862	0,9857	0,9852	0,9848	0,9842	0,9838
60	0,9832	0,9827	0,9822	0,9817	0,9811	0,9806	0,9800	0,9795	0,9789	0,9784
70	0,9778	0,9772	0,9767	0,9761	0,9755	0,9749	0,9743	0,9737	0,9731	0,9724
80	0,9718	0,9712	0,9606	0,9699	0,9693	0,9686	0,9680	0,9673	0,9667	0,9660
90	0,9653	0,9647	0,9640	0,9633	0,9626	0,9619	0,9612	0,9605	0,9598	0,9591

## LAMPIRAN II

**Tabel Berat jenis butir (Bowles, 1996)**

<b>Soil</b>	<b>Gs</b>
Gravel	2,65 – 2,68
Sand	2,65 – 2,68
Silt, inorganic	2,62 – 2,68
Clay, organic	2,58 – 2,65
Clay, inorganic	2,68 – 2,75

# LAMPIRAN III

Tabel klasifikasi tanah

D 2487

TABLE 1 Soil Classification Chart

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests <sup>d</sup>		Soil Classification	
		Group Symbol	Group Name <sup>a</sup>
Course-Grained Soils More than 50 % retained on No. 200 sieve	Gravels More than 50 % of coarse fraction retained on No. 4 sieve	Cu ≥ 4 and I ≤ Cc ≤ 3 <sup>f</sup>	GW Well-graded gravel <sup>g</sup>
		Cu < 4 and/or I > Cc > 3 <sup>f</sup>	GP Poorly graded gravel <sup>g</sup>
	Gravels with Fines More than 12 % fines <sup>c</sup>	Fines classify as ML or MH	GM Silty gravel <sup>g,ML</sup>
		Fines classify as CL or CH	GC Clayey gravel <sup>g,CL</sup>
	Sands 50 % or more of coarse fraction passes No. 4 sieve	Cu ≥ 6 and I ≤ Cc ≤ 3 <sup>f</sup>	SW Well-graded sand <sup>h</sup>
		Cu < 6 and/or I > Cc > 3 <sup>f</sup>	SP Poorly graded sand <sup>h</sup>
Fine-Grained Soils 50 % or more passes the No. 200 sieve	Sands with Fines More than 12 % fines <sup>c</sup>	Fines classify as ML or MH	SM Silty sand <sup>g,ML</sup>
		Fines classify as CL or CH	SC Clayey sand <sup>g,CL</sup>
	Sils and Clays Liquid limit less than 50	inorganic	CL Lean clay <sup>CL,M</sup>
		organic	OL Organic clay <sup>CL,M,O</sup>
	Sils and Clays Liquid limit 50 or more	inorganic	CH Fat clay <sup>CL,M</sup>
		organic	MH Elastic silt <sup>CL,M</sup>
Highly organic soils	Primarily organic matter, dark in color, and organic odor	OH Organic clay <sup>CL,M,O</sup>	
		PT Peat	

<sup>d</sup> Based on the material passing the 3-in. (75-mm) sieve.  
<sup>e</sup> If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.  
<sup>f</sup> Gravels with 5 to 12 % fines require dual symbols:  
 GW-GM well-graded gravel with silt  
 GP-GC poorly graded gravel with silt  
 GP-GC poorly graded gravel with clay  
<sup>g</sup> Sands with 5 to 12 % fines require dual symbols:  
 SW-SM well-graded sand with silt  
 SW-SC well-graded sand with clay  
 SP-SM poorly graded sand with silt  
 SP-SC poorly graded sand with clay  
<sup>h</sup> If soil contains 15 to 29 % plus No. 200, add "with sand" or "with gravel," whichever is predominant.  
<sup>i</sup> If soil contains ≥ 30 % plus No. 200, predominantly sand, add "sandy" to group name.  
<sup>j</sup> If soil contains ≥ 30 % plus No. 200, predominantly gravel, add "gravelly" to group name.  
<sup>k</sup> PI ≥ 4 and plots on or above "A" line.  
<sup>l</sup> PI < 4 or plots below "A" line.  
<sup>m</sup> PI plots on or above "A" line.  
<sup>n</sup> PI plots below "A" line.

## **SURAT KETERANGAN TUGAS AKHIR**

Sesuai dengan persetujuan dari Ketua Jurusan Teknik Sipil, Fakultas Teknik, Universitas Kristen Maranatha, melalui surat No. 1324/TA/FTS/UKM/III/2012 tanggal 10 Maret 2012, dengan ini saya selaku Pembimbing Tugas Akhir memberikan tugas kepada:

**Nama : Bramantyo Herawanto**

**N R P : 1021060**

untuk membuat Tugas Akhir bidang Struktur dengan judul:

### **STUDI PERENCANAAN HIDRAULIK BENDUNG TIPE GERGAJI DENGAN UJI MODEL FISIK DUA DIMENSI**

Pokok pembahasan Tugas Akhir adalah sebagai berikut:

1. Pendahuluan
2. Tinjauan Literatur
3. Studi Kasus dan Pembahasan
4. Kesimpulan dan Saran

Hal-hal lain yang dianggap perlu dapat disertakan untuk melengkapi penulisan Tugas Akhir ini.

Bandung, 10 Maret 2012



Ir. Endang Ariani, Dipl., HE  
Pembimbing

## **SURAT KETERANGAN SELESAI TUGAS AKHIR**

Yang bertanda tangan di bawah ini selaku Dosen Pembimbing Tugas Akhir dari mahasiswa:

**Nama : Bramantyo Herawanto**

**N R P : 1021060**

Menyatakan bahwa Tugas Akhir dari mahasiswa tersebut di atas dengan judul:

### **STUDI PERENCANAAN HIDRAULIK BENDUNG TIPE GERGAJI DENGAN UJI MODEL FISIK DUA DIMENSI**

dinyatakan selesai dan dapat diajukan pada Ujian Sidang Tugas Akhir (USTA).

Bandung, Desember 2012



Ir. Endang Ariani, Dipl., HE  
Pembimbing