Lampiran A
Penyelidikan Tanah

A.1 Hasil Uji CPT di Jl. H. Subeno, BSB

FAKULTAS TEKNIK
PROGRAM STUDI TEKNIK SIPIL
LABORATORIUM MEKANIKA TANAH
Jl. Pawiyatan Luhur IV/1 Bendan Duwur Semarang 50234
Telp. (024) 8441555,8505003 (hunting) Fax.(024) 8415429 - 8445265
e-mail:unika@unika.ac.id http://www.unika.ac.id

Unika SOEGIJAPRANATA

CPT V.2.0
Cone Penetration Test
Project : KAMPUS UNIKA II
Location : BSB - .SEMARANG
Job No : 1
Point : 1
Test No : 1
Test By : Andi
Test Date : 10 APRIL 2018

No.	Depth (m)	R1	R2	LF	LFF	TF	FR
0	0.0	0.00	0.00	0.00	0.00	0.00	0.00
1	0.2	0.00	0.00	0.00	0.00	0.00	0.00
2	0.4	10.00	17.00	0.70	14.00	14.00	7.00
3	0.6	15.00	23.00	0.80	16.00	30.00	5.33
4	0.8	17.00	25.00	0.80	16.00	46.00	4.71
5	1.0	20.00	27.00	0.70	14.00	60.00	3.50
6	1.2	25.00	25.00	0.00	0.00	60.00	0.00
7	1.4	25.00	35.00	1.00	20.00	80.00	4.00
8	1.6	25.00	35.00	1.00	20.00	100.00	4.00
9	1.8	25.00	35.00	1.00	20.00	120.00	4.00
10	2.0	20.00	30.00	1.00	20.00	140.00	5.00
11	2.2	20.00	30.00	1.00	20.00	160.00	5.00
12	2.4	20.00	30.00	1.00	20.00	180.00	5.00
13	2.6	20.00	30.00	1.00	20.00	200.00	5.00
14	2.8	19.00	30.00	1.10	22.00	222.00	5.79
15	3.0	19.00	30.00	1.10	22.00	244.00	5.79
16	3.2	20.00	30.00	1.00	20.00	264.00	5.00
17	3.4	22.00	30.00	0.80	16.00	280.00	3.64
18	3.6	22.00	30.00	0.80	16.00	296.00	3.64
19	3.8	20.00	30.00	1.00	20.00	316.00	5.00
20	4.0	20.00	30.00	1.00	20.00	336.00	5.00
21	4.2	25.00	35.00	1.00	20.00	356.00	4.00
22	4.4	27.00	35.00	0.80	16.00	372.00	2.96
23	4.6	27.00	35.00	0.80	16.00	388.00	2.96
24	4.8	27.00	35.00	0.80	16.00	404.00	2.96
25	5.0	27.00	35.00	0.80	16.00	420.00	2.96
26	5.2	25.00	35.00	1.00	20.00	440.00	4.00
27	5.4	20.00	30.00	1.00	20.00	460.00	5.00
28	5.6	20.00	30.00	1.00	20.00	480.00	5.00
29	5.8	20.00	30.00	1.00	20.00	500.00	5.00
30	6.0	30.00	30.00	0.00	0.00	500.00	0.00
31	6.2	30.00	40.00	1.00	20.00	520.00	3.33
32	6.4	25.00	35.00	1.00	20.00	540.00	4.00
33	6.6	25.00	35.00	1.00	20.00	560.00	4.00
34	6.8	20.00	30.00	1.00	20.00	580.00	5.00
35	7.0	20.00	30.00	1.00	20.00	600.00	5.00
36	7.2	15.00	23.00	0.80	16.00	616.00	5.33
37	7.4	15.00	23.00	0.80	16.00	632.00	5.33
38	7.6	15.00	23.00	0.80	16.00	648.00	5.33
39	7.8	15.00	23.00	0.80	16.00	664.00	5.33

A.1 Hasil Uji CPT di Jl. H. Subeno, BSB (Lanjutan)

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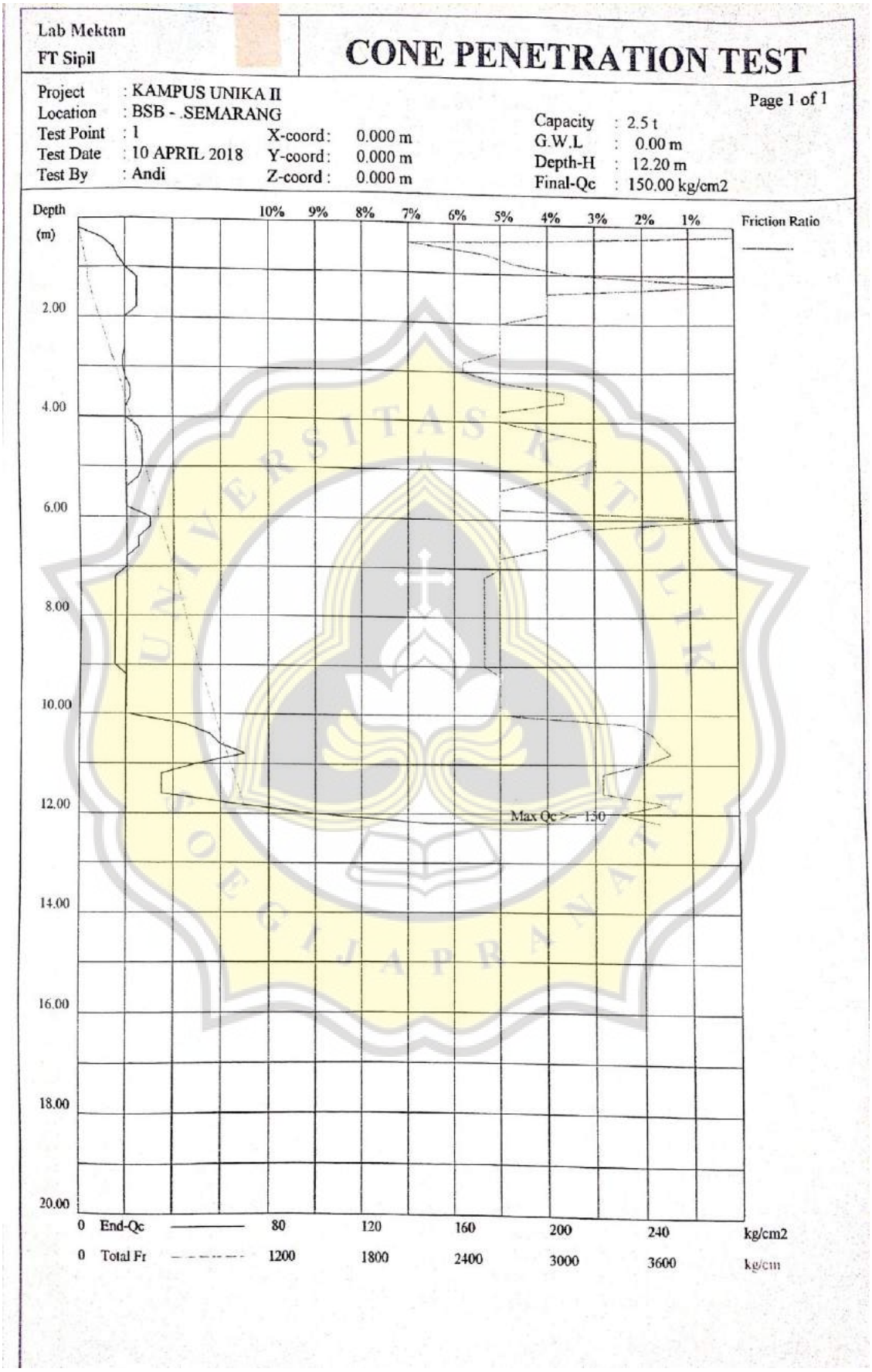
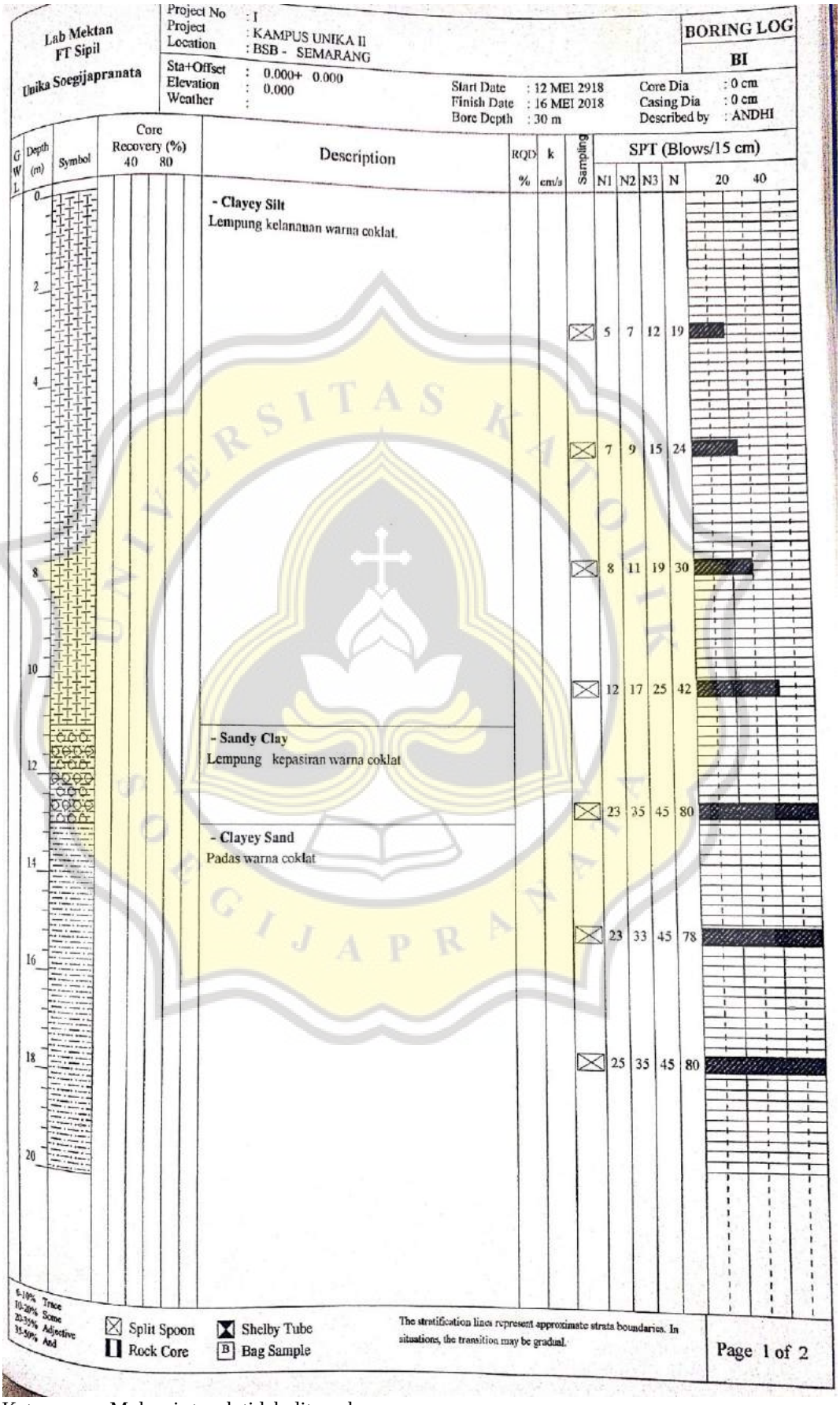
Unika SOEGIJAPRANATA

40	8.0	15.00	23.00	0.80	16.00	680.00	5.33
41	8.2	15.00	23.00	0.80	16.00	696.00	5.33
42	8.4	15.00	23.00	0.80	16.00	712.00	5.33
43	8.6	15.00	23.00	0.80	16.00	728.00	5.33
44	8.8	15.00	23.00	0.80	16.00	744.00	5.33
45	9.0	15.00	23.00	0.80	16.00	760.00	5.33
46	9.2	20.00	30.00	1.00	20.00	780.00	5.00
47	9.4	20.00	30.00	1.00	20.00	800.00	5.00
48	9.6	20.00	30.00	1.00	20.00	820.00	5.00
49	9.8	20.00	30.00	1.00	20.00	840.00	5.00
50	10.0	20.00	30.00	1.00	20.00	860.00	5.00
51	10.2	45.00	55.00	1.00	20.00	880.00	2.22
52	10.4	55.00	65.00	1.00	20.00	900.00	1.82
53	10.6	60.00	70.00	1.00	20.00	920.00	1.67
54	10.8	70.00	80.00	1.00	20.00	940.00	1.43
55	11.0	50.00	60.00	1.00	20.00	960.00	2.00
56	11.2	35.00	45.00	1.00	20.00	980.00	2.86
57	11.4	35.00	45.00	1.00	20.00	1000.00	2.86
58	11.6	35.00	45.00	1.00	20.00	1020.00	2.86
59	11.8	65.00	75.00	1.00	20.00	1040.00	1.54
60	12.0	100.00	125.00	2.50	50.00	1090.00	2.50
61	12.2	150.00	175.00	2.50	50.00	1140.00	1.67

A.1 Hasil Uji CPT di Jl. H. Subeno, BSB (Lanjutan)

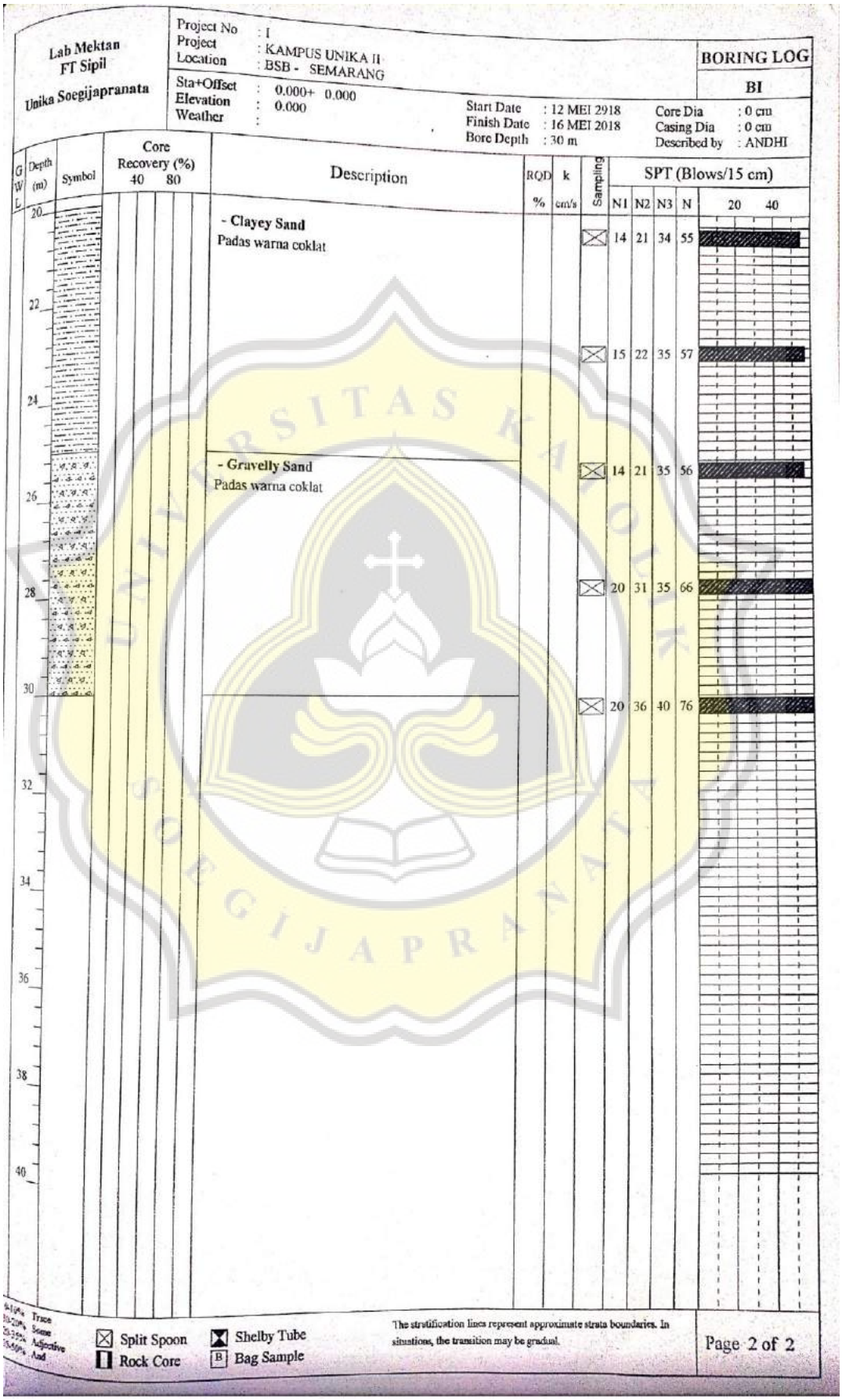


A.2 Hasil Uji SPT di Jl. H. Subeno, BSB Semarang



Keterangan: Muka air tanah tidak ditemukan.

A.2 Hasil Uji SPT di Jl. H. Subeno, BSB Semarang (Lanjutan)



Keterangan: Muka air tanah tidak ditemukan.

A.3 Data Tanah IPC Unika Soegijapranata

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Unika SOEGIJAPRANATA

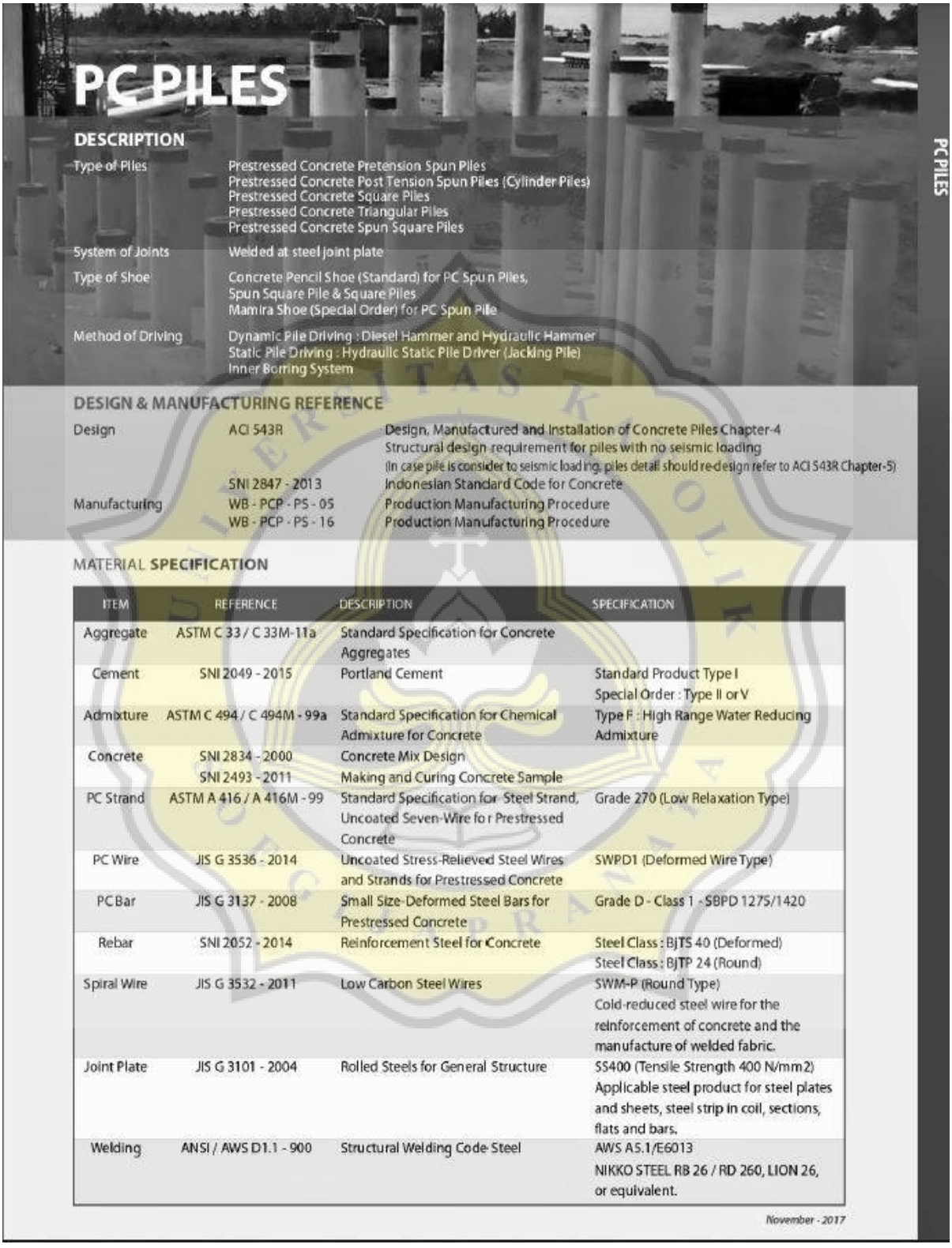
HASIL UJI LABORATORIUM

Resume Hasil Test Laboratorium
KAMPUS UNIKA II
BSB
SEMARANG

BOR	B1 - 5	B1 - 10	B1 - 15	B1 - 20	B1 - 25	B1 - 30
Test Laboratorium						
Index Properties						
Water content, wn (%)	45,078	39,938	39,639	44,461	41,281	35,991
Specific Gravity, Gs	2,350	2,520	2,550	2,610	2,400	2,380
γ_b (t/m^3)	1,656	1,758	1,771	1,745	1,703	1,743
γ_{dry} (t/m^3)	1,141	1,256	1,268	1,208	1,206	1,282
Porosity, n	0,514	0,502	0,503	0,537	0,498	0,461
Void ratio, e	1,059	1,006	1,011	1,160	0,991	0,857
DIRECT SHEAR						
c kg/cm2	0,360	0,234	0,252	0,252	0,243	0,468
ø°	34,378	43,744	50,132	27,165	56,993	27,165
ATTERBERG LIMIT						
LL	50,929	72,468	60,691		79,831	80,445
PL	28,680	37,205	37,200		53,260	53,210
PI	22,249	35,263	23,491		26,571	27,235
Pasticity chart	MH	MH	MH		MH	MH
GRAIN SIZE						
D60	0,005	0,061	0,086	0,179	0,022	0,022
Cu	3,647	47,154	66,016	148,906	18,175	16,776
Gravel	0,000	0,000	0,000	0,000	0,000	0,000
Sand	17,18	37,98	40,96	50,25	23,30	23,39
Clay	47,94	24,61	24,69	24,56	26,67	28,16
Silt	34,88	37,41	34,35	25,20	50,03	48,46

Lampiran B
Brosur Pondasi Tiang Pancang PT. Wijaya Karya Beton Tbk

B.1 *Pile Materials and Pile Specification*



PC PILES

PC PILES

DESCRIPTION

Type of Piles	Prestressed Concrete Pretension Spun Piles Prestressed Concrete Post Tension Spun Piles (Cylinder Piles) Prestressed Concrete Square Piles Prestressed Concrete Triangular Piles Prestressed Concrete Spun Square Piles
System of Joints	Welded at steel joint plate
Type of Shoe	Concrete Pencil Shoe (Standard) for PC Spun Piles, Spun Square Pile & Square Piles Mamira Shoe (Special Order) for PC Spun Pile
Method of Driving	Dynamic Pile Driving : Diesel Hammer and Hydraulic Hammer Static Pile Driving : Hydraulic Static Pile Driver (Jacking Pile) Inner Boring System

DESIGN & MANUFACTURING REFERENCE

Design	ACI 543R	Design, Manufactured and Installation of Concrete Piles Chapter-4 Structural design requirement for piles with no seismic loading (In case pile is consider to seismic loading, piles detail should re-design refer to ACI 543R Chapter-5)
	SNI 2847 - 2013	Indonesian Standard Code for Concrete
Manufacturing	WB - PCP - PS - 05	Production Manufacturing Procedure
	WB - PCP - PS - 16	Production Manufacturing Procedure

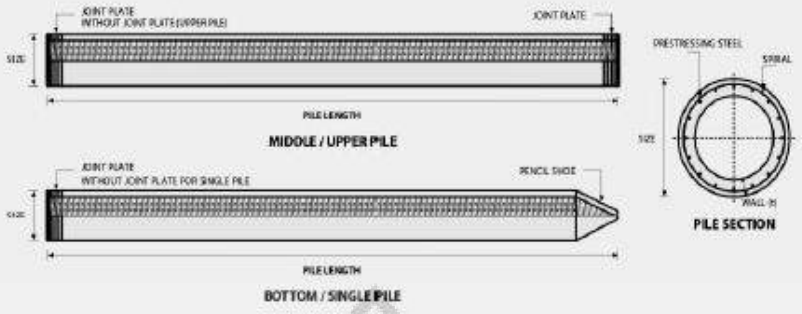
MATERIAL SPECIFICATION

ITEM	REFERENCE	DESCRIPTION	SPECIFICATION
Aggregate	ASTM C 33 / C 33M-11a	Standard Specification for Concrete Aggregates	
Cement	SNI 2049 - 2015	Portland Cement	Standard Product Type I Special Order : Type II or V
Admixture	ASTM C 494 / C 494M - 99a	Standard Specification for Chemical Admixture for Concrete	Type F : High Range Water Reducing Admixture
Concrete	SNI 2834 - 2000	Concrete Mix Design	
	SNI 2493 - 2011	Making and Curing Concrete Sample	
PC Strand	ASTM A 416 / A 416M - 99	Standard Specification for Steel Strand, Uncoated Seven-Wire for Prestressed Concrete	Grade 270 (Low Relaxation Type)
PC Wire	JIS G 3536 - 2014	Uncoated Stress-Relieved Steel Wires and Strands for Prestressed Concrete	SWPD1 (Deformed Wire Type)
PC Bar	JIS G 3137 - 2008	Small Size-Deformed Steel Bars for Prestressed Concrete	Grade D - Class 1 - SBPD 1275/1420
Rebar	SNI 2052 - 2014	Reinforcement Steel for Concrete	Steel Class : BjTS 40 (Deformed) Steel Class : BjTP 24 (Round)
Spiral Wire	JIS G 3532 - 2011	Low Carbon Steel Wires	SWM-P (Round Type) Cold-reduced steel wire for the reinforcement of concrete and the manufacture of welded fabric.
Joint Plate	JIS G 3101 - 2004	Rolled Steels for General Structure	SS400 (Tensile Strength 400 N/mm2) Applicable steel product for steel plates and sheets, steel strip in coil, sections, flats and bars.
Welding	ANSI / AWS D1.1 - 900	Structural Welding Code-Steel	AWS A5.1/E6013 NIKKO STEEL RB 26 / RD 260, LION 26, or equivalent.

November - 2017

B.1 *Pile Materials and Pile Specification* (Lanjutan)

PILE SHAPE & SPECIFICATION | PRESTRESSED CONCRETE PRETENSION SPUN PILES



PRESTRESSED CONCRETE PRETENSION SPUN PILES SPECIFICATION

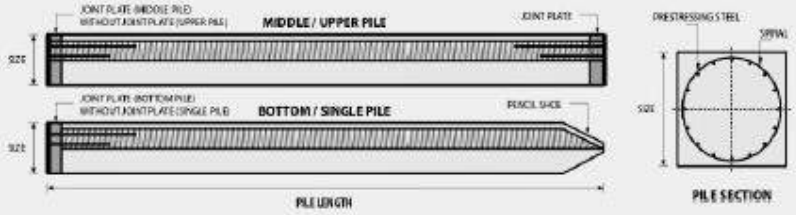
Concrete Compressive Strength f'c = 52 MPa (Cube 600 kg/cm²)

Size (mm)	Thickness Wall (t)	Cross Section (cm²)	Section Inertia (cm⁴)	Unit Weight (kg/m)	Class	Bending Moment		Allowable Compression (ton)	Decompression Tension (ton)	Length of Pile ** (m)
						Crack * (ton.m)	Break (ton.m)			
300	60	452.39	34,607.78	113	A2	2.50	3.75	72.60	23.11	6 - 12
					A3	3.00	4.50	70.75	29.86	6 - 13
					B	3.50	6.30	67.50	41.96	6 - 14
					C	4.00	8.00	65.40	49.66	6 - 15
350	65	581.98	62,162.74	145	A1	3.50	5.25	93.10	30.74	6 - 13
					A3	4.20	6.30	89.50	37.50	6 - 14
					B	5.00	9.00	86.40	49.93	6 - 15
					C	6.00	12.00	85.00	60.87	6 - 16
400	75	765.76	106,488.95	191	A2	5.50	8.25	121.10	38.62	6 - 14
					A3	6.50	9.75	117.60	45.51	6 - 15
					B	7.50	13.50	114.40	70.27	6 - 16
					C	9.00	18.00	111.50	80.94	6 - 17
450	80	929.91	166,570.38	232	A1	7.50	11.25	149.50	39.28	6 - 14
					A2	8.50	12.75	145.80	53.39	6 - 15
					A3	10.00	15.00	143.80	66.57	6 - 16
					B	11.00	19.80	139.10	78.84	6 - 17
					C	12.50	25.00	134.90	100.45	6 - 18
500	90	1,159.25	255,324.30	290	A1	10.50	15.75	185.30	54.56	6 - 15
					A2	12.50	18.75	181.70	68.49	6 - 16
					A3	14.00	21.00	178.20	88.00	6 - 17
					B	15.00	27.00	174.90	94.13	6 - 18
					C	17.00	34.00	169.00	122.04	6 - 19
600	100	1,570.80	510,508.81	393	A1	17.00	25.50	252.70	70.52	6 - 16
					A2	19.00	28.50	249.00	77.68	6 - 17
					A3	22.00	33.00	243.20	104.94	6 - 18
					B	25.00	45.00	238.30	131.10	6 - 19
					C	29.00	58.00	229.50	163.67	6 - 20
800	120	2,563.54	1,527,869.60	641	A1	40.00	60.00	415.00	119.34	6 - 20
					A2	46.00	69.00	406.10	151.02	6 - 21
					A3	51.00	76.50	399.17	171.18	6 - 22
					B	55.00	99.00	388.61	215.80	6 - 23
					C	65.00	130.00	368.17	290.82	6 - 24
1000 ***	140	3,782.48	3,589,571.20	946	A1	75.00	112.50	613.52	169.81	6 - 22
					A2	82.00	123.00	601.27	215.16	6 - 23
					A3	93.00	139.50	589.66	258.19	6 - 24
					B	105.00	189.00	575.33	311.26	6 - 24
					C	120.00	240.00	555.23	385.70	6 - 24
1200 ***	150	4,948.01	6,958,136.85	1,237	A1	120.00	180.00	802.80	221.30	6 - 24
					A2	130.00	195.00	794.50	252.10	6 - 24
					A3	145.00	217.50	778.60	311.00	6 - 24
					B	170.00	306.00	751.90	409.60	6 - 24
					C	200.00	400.00	721.50	522.20	6 - 24

Unit Conversion : 1 ton = 9.8060 kN

*Note : *) Crack Moment Based on JIS A 5335-1987 (Prestressed Spun Concrete Piles)*
***) Length of pile may exceed usual standard whenever lifted in certain position*
****) Type of Shoe for Bottom Pile is Mamira Shoe*

PILE SHAPE & SPECIFICATION | PRESTRESSED CONCRETE SQUARE PILES



PRESTRESSED CONCRETE SQUARE PILES **SPECIFICATION**

Concrete Compressive Strength fc' = 42 MPa (Cube 500 kg/cm²) — *Unit Conversion : 1 ton = 9.8060 kN*

Size (mm)	Cross Section (cm²)	Section Inertia (cm⁴)	Unit Weight (kg/m)	Class	Bending Moment Crack (ton.m)	Bending Moment Ultimate (ton.m)	Allowable Compression (ton)	Decompression Tension (ton)	Length of Pile * (m)	Splice Class Compatible to Body M_{crack}	Splice Class Optional
200 x 200	400	13,333	100	A	1.55	2.65	49.08	27.47	6 - 9	I	II
250 x 250	625	32,552	156	A	2.29	3.46	81.40	28.10	6 - 10	III	IV
				B	2.52	4.33	79.62	34.80	6 - 11	II	-
				C	2.78	5.19	77.92	41.30	6 - 11	I	II
300 x 300	900	67,500	225	A	3.64	5.19	118.59	35.40	6 - 11	IV	V
				B	3.98	6.23	116.76	42.20	6 - 11	III	IV/V
				C	4.48	7.47	114.66	50.20	6 - 12	II	-
				D	4.92	9.34	111.60	61.90	6 - 12	I	III/IV/V
350 x 350	1,225	125,052	306	A	5.33	6.57	163.98	38.60	6 - 11	III	IV
				B	6.07	8.72	160.68	50.90	6 - 12	II	-
				C	6.63	10.90	157.45	63.10	6 - 12	I	IV
				D	7.30	13.08	154.32	75.00	6 - 13	I	III/IV
400 x 400	1,600	213,333	400	A	7.89	9.96	213.96	51.40	6 - 12	IV	V
				B	8.71	12.45	210.60	63.80	6 - 12	III	IV/V
				C	9.51	14.95	207.32	76.00	6 - 13	II	III/IV/V
				D	11.82	22.42	198.01	111.60	6 - 14	I	II/III/IV/V
450 x 450	2,025	341,719	506	A	11.17	14.01	270.98	64.30	6 - 12	III	IV
				B	12.10	16.81	267.61	76.80	6 - 13	III	IV
				C	13.01	19.62	264.30	89.10	6 - 13	II	III/IV
				D	14.78	25.22	257.88	113.30	6 - 14	I	II/III/IV
500 x 500	2,500	520,833	625	A	15.16	18.68	335.12	77.30	6 - 13	III	IV
				B	16.19	21.79	331.72	89.90	6 - 13	II	III/IV
				C	17.21	24.91	328.38	102.20	6 - 14	I	II/III/IV
				D	18.22	28.02	325.09	114.50	6 - 14	I	II/III/IV

*Note : *) Length of pile may exceed usual standard whenever lifted in certain position*

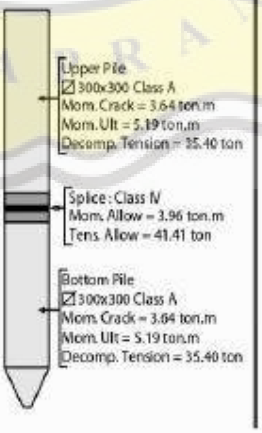
TYPICAL SPLICE **SPECIFICATION**

Size (mm)	Class	Bending Moment Allowable (ton.m)	Bending Moment Ultimate (ton.m)	Tension Allowable (ton)	Tension Ultimate (ton)
200 x 200	I	1.56	2.11	41.82	47.05
	II	0.76	1.02	16.34	18.38
250 x 250	I	3.17	4.28	55.22	62.12
	II	2.99	4.03	41.41	46.59
	III	2.34	3.17	41.41	46.59
	IV	1.29	1.74	24.50	27.57
300 x 300	I	5.96	8.05	83.64	94.10
	II	4.53	6.12	62.73	70.57
	III	4.28	5.78	55.22	62.12
	IV	3.96	5.35	41.41	46.59
	V	2.34	3.16	24.50	27.57
350 x 350	I	7.67	10.35	83.64	94.10
	II	6.81	9.19	83.64	94.10
	III	5.71	7.71	55.22	62.12
	IV	3.30	4.45	27.61	31.06
400 x 400	I	12.20	16.47	117.95	132.69
	II	11.28	15.23	88.46	99.52
	III	9.41	12.71	83.64	94.10
	IV	8.58	11.58	62.73	70.57
	V	3.97	5.36	27.61	31.06
450 x 450	I	15.80	21.33	147.43	165.89
	II	14.07	19.00	117.95	132.69
	III	13.02	17.57	88.46	99.52
	IV	6.55	8.84	41.82	47.05
500 x 500	I	19.72	26.63	118.60	133.43
	II	16.51	22.29	117.95	132.69
	III	15.14	20.43	88.46	99.52
	IV	7.56	10.21	41.82	47.05

EXAMPLES OF SPLICE **SELECTION**

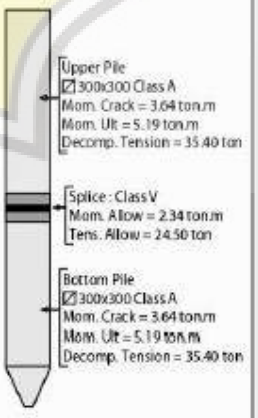
Case 1 : Compatible to Body Moment Crack

Splice of PC Piles having equivalent performance to the crack bending moment of the main body.

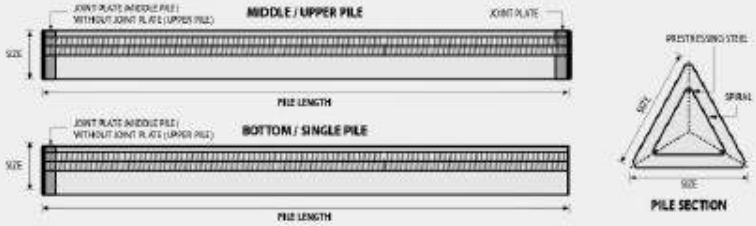


Case 2 : Optional Splice

Application of optional splices should be approved by structure designer.



PILE SHAPE & SPECIFICATION | PRESTRESSED CONCRETE TRIANGULAR PILES



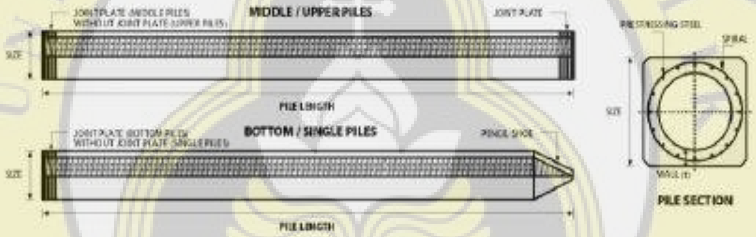
PRESTRESSED CONCRETE TRIANGULAR PILES **SPECIFICATION**

Concrete Compressive Strength fc' = 42 MPa (Cube 500 kg/cm²)

Size (mm)	Cross Section (cm²)	Section Inertia (cm⁴)	Unit Weight (kg/m)	Class	Bending Moment Crack (ton.m)	Bending Moment Ultimate (ton.m)	Allowable Compression (ton)	Length of Pile * (m)
280	318.7	9,080.50	79.7	A	0.66	0.92	42.26	6 - 8
				B	0.90	1.77	39.50	6 - 9
320	422.6	16,188.90	105.7	A	0.89	1.11	57.02	6 - 8
				B	1.20	2.15	54.10	6 - 9

Unit Conversion : 1 ton = 9.8060 kN

PILE SHAPE & SPECIFICATION | PRESTRESSED CONCRETE SPUN SQUARE PILES



PRESTRESSED CONCRETE SPUN SQUARE PILES **SPECIFICATION**

Concrete Compressive Strength fc' = 52 MPa (Cube 600 kg/cm²)

Size (mm)	Thickness Wall (t)	Cross Section (cm²)	Section Inertia (cm⁴)	Unit Weight (kg/m)	Class	Bending Moment Crack (ton.m)	Bending Moment Ultimate (ton.m)	Allowable Compression (ton)	Decompression Tension (ton)	Length of Pile * (m)
400 X 400	75	1109.13	194,159	277	A2	6.50	10.00	182.63	38.00	6 - 13
					A3	8.00	12.00	180.62	45.30	6 - 14
					B	10.00	18.00	173.15	73.10	6 - 15
					C	11.00	22.00	169.49	91.70	6 - 16
450 X 450	80	1364.48	307,000	341	A1	8.50	12.50	227.01	38.20	6 - 13
					A2	11.00	17.00	222.95	52.90	6 - 15
					A3	13.00	20.90	219.05	67.10	6 - 16
					B	13.50	24.00	215.32	80.90	6 - 16
					C	15.50	31.00	208.10	114.00	6 - 16

*Note : *) Length of pile may exceed usual standard whenever lifted in certain position* *Unit Conversion : 1 ton = 9.8060 kN*

PRODUCT APPLICATION

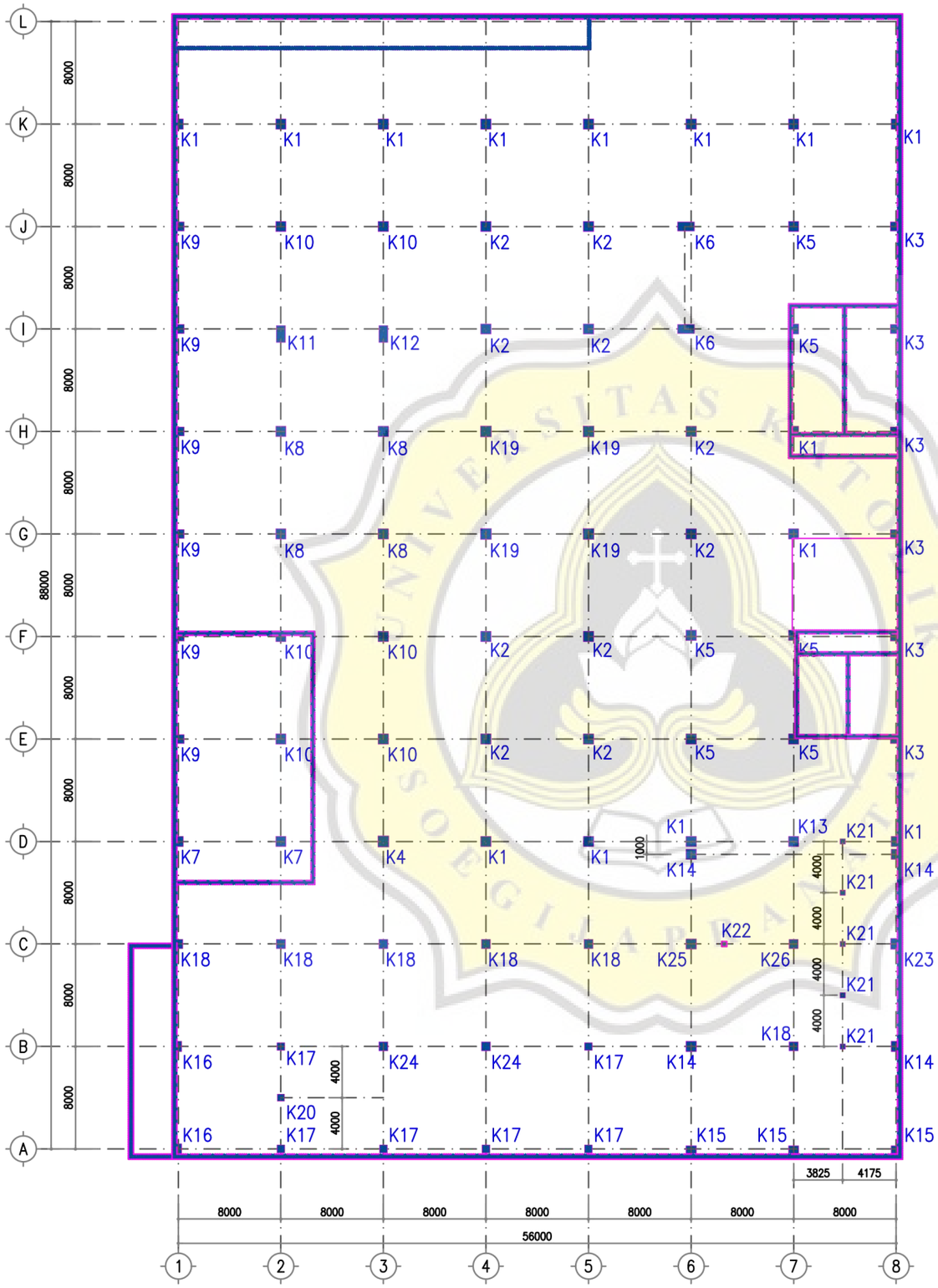
Piles foundation for Power Plant or Industrial Factory

Piles for Marine Structurer

Piles Foundation for Building

Piles Foundation for Bridges

Lampiran C
Gambar *For Construction* IPC Unika Soegijapranata



DENAH KOLOM

SKALA 1 : 200

UNIKA SOEGIJAPRANATA

Jl. Pawiyatan Luhur IV/1 Bendan Dhuwur

Telp. 024-8441555 , Semarang 50234

JUDUL PEKERJAAN

PROYEK PEMBANGUNAN
GEDUNG *INNOVATIVE PROGRAM CLUSTER*
UNIKA SOEGIJAPRANATA
BSB, Kota Semarang

JUDUL GAMBAR	SKALA
C.1 DENAH KOLOM	1 :200

DIGAMBAR OLEH :

PT. ADHI PERSADA GEDUNG

SUMBER

PT. ADHI PERSADA GEDUNG

DIIZINKAN OLEH:

PT. ADHI PERSADA GEDUNG

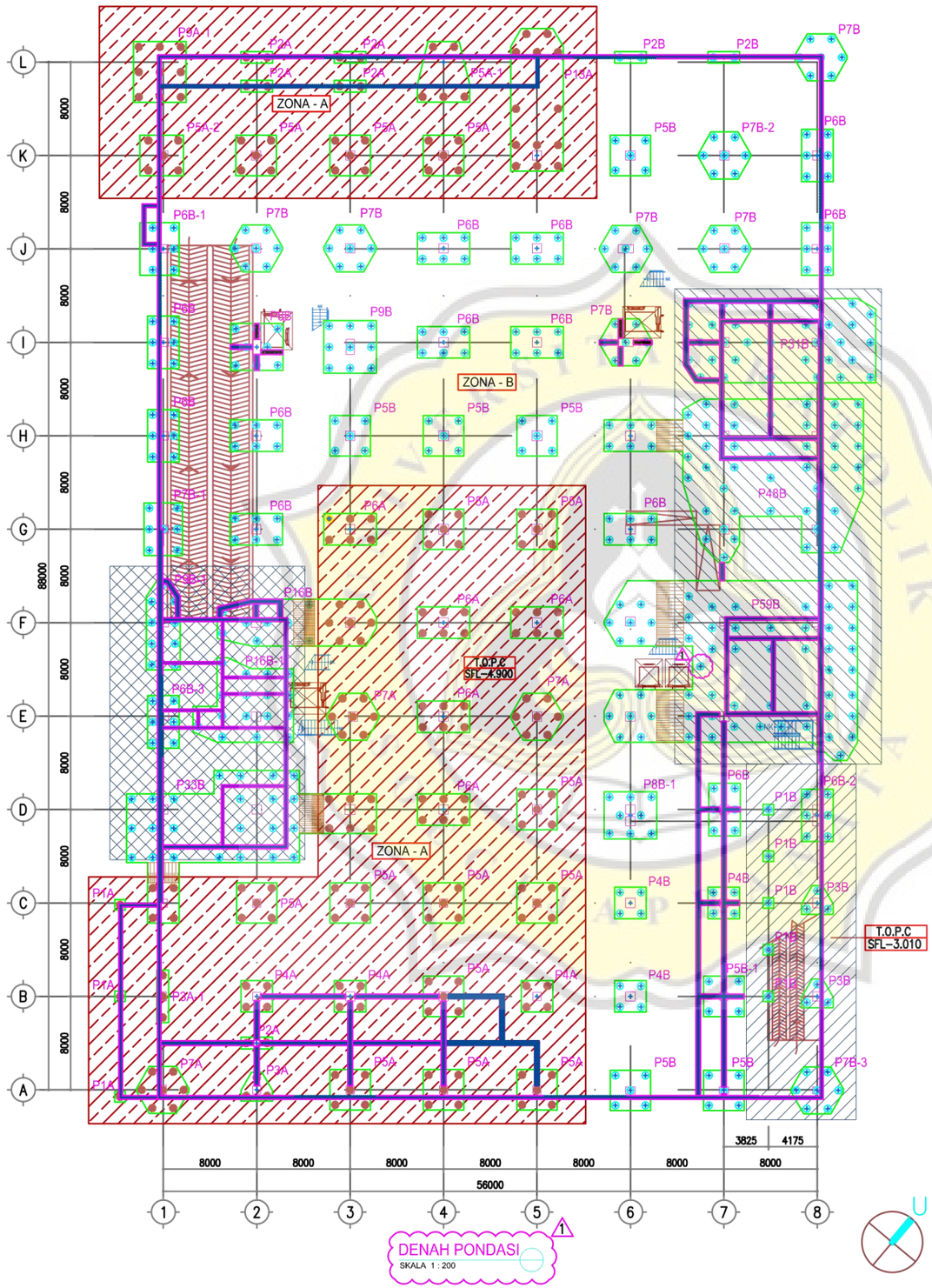
DOSEN PEMBIMBING 1

Daniel Hartanto, ST., MT.

DOSEN PEMBIMBING 2

Ir. Budi Santosa, MT.

NAMA		LEMBAR
Christian Widiatmo	16.B1.0004	L-11
Aldo Febriyan W	16.B1.0026	



UNIKA SOEGIJAPRANATA

Jl. Pawiyatan Luhur IV/1 Bendan Dhuwur
Telp. 024-8441555 , Semarang 50234

JUDUL PEKERJAAN

PROYEK PEMBANGUNAN
GEDUNG *INNOVATIVE PROGRAM CLUSTER*
UNIKA SOEGIJAPRANATA
BSB, Kota Semarang

JUDUL GAMBAR	SKALA
C.2 DENAH PONDASI	1 :200

DIGAMBAR OLEH :

PT. ADHI PERSADA GEDUNG

SUMBER

PT. ADHI PERSADA GEDUNG

DIIZINKAN OLEH:

PT. ADHI PERSADA GEDUNG

DOSEN PEMBIMBING 1

Daniel Hartanto, ST., MT.

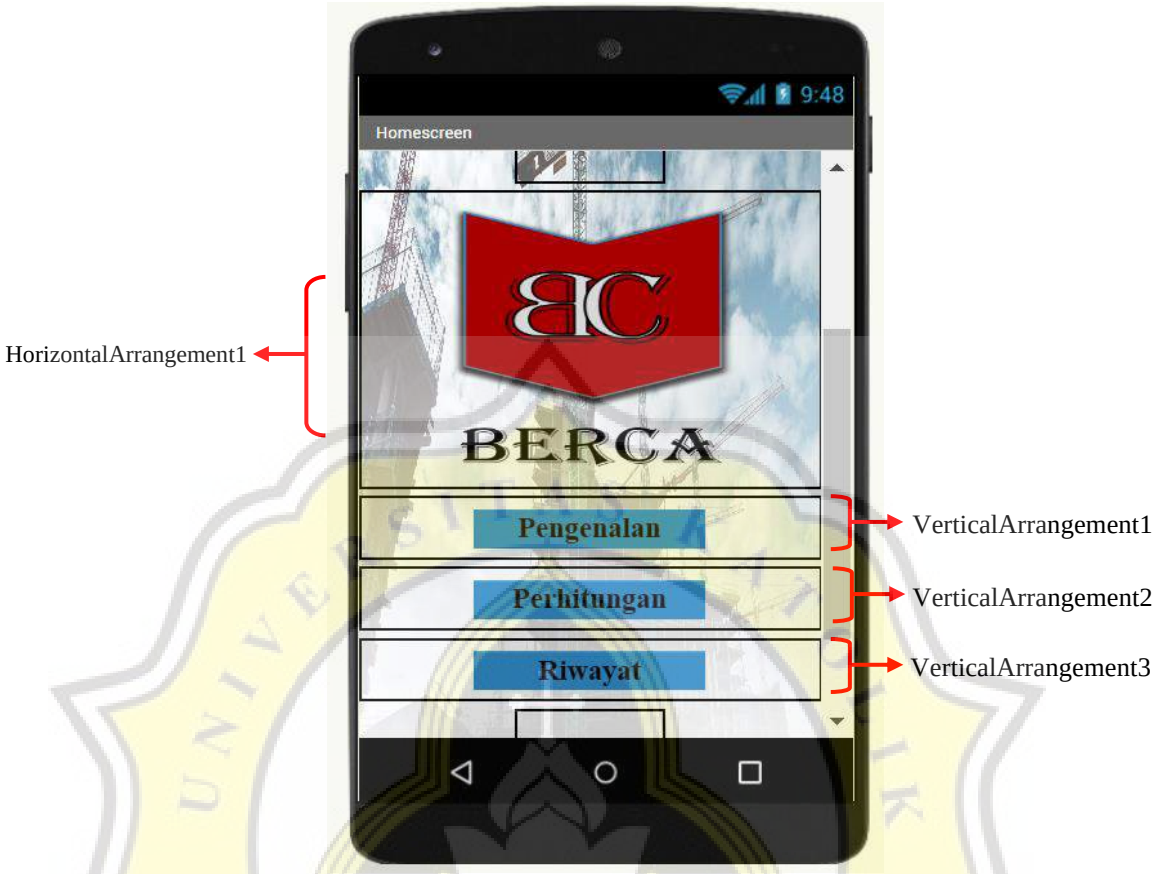
DOSEN PEMBIMBING 2

Ir. Budi Santosa, MT.

NAMA		LEMBAR
Christian Widiatmo	16.B1.0004	L-12
Aldo Febriyan W	16.B1.0026	

Lampiran D
Pemodelan Tampilan (*Interface*) Aplikasi

D.1 Pengaturan Tampilan Halaman Utama



Gambar LD.1 Pemodelan Tampilan *Screen*1

Tabel LD.1 Pengaturan Properti dan Isi Komponen *Screen*1

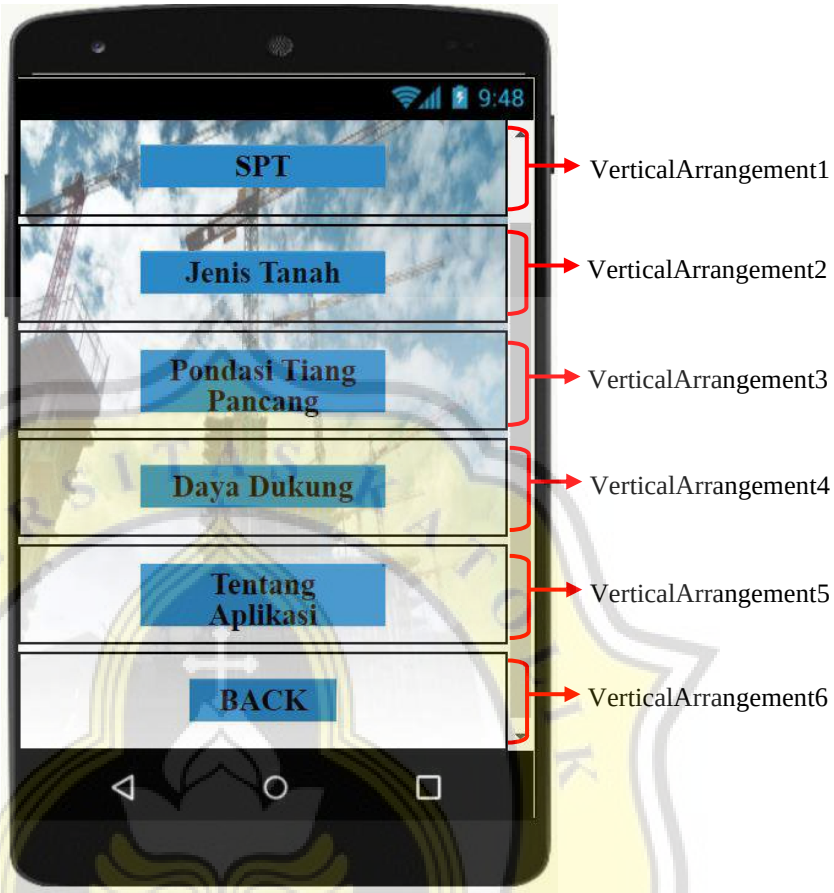
Komponen	Properti	Isi
Screen1	Alig Horizontal	Center : 3
	AlignVertical	Top : 1
	BackgroundImage	backgroundapp.png
	Title	Homescreen
HorizontalArrangement1	AlignHorizontal	Center : 3
	AlignVertical	Top : 1
	Height	50 percent
	Width	Fill Parent
VerticalArrangement1	AlignHorizontal	Center : 3
	AlignVertical	Center : 2
	Height	10 percent
	Width	Fill Parent

D.1 Pengaturan Tampilan Halaman Utama (Lanjutan)

Tabel LD.1 Pengaturan Properti dan Isi Komponen *Screen*1

Komponen	Properti	Isi
VerticalArrangement2	AlignHorizontal	Center : 3
	AlignVertical	Center : 2
	Height	10 percent
	Width	Fill Parent
VerticalArrangement3	AlignHorizontal	Center : 3
	AlignVertical	Center : 2
	Height	10 percent
	Width	Fill Parent
Button_Pengenalan	FontSize	23
	FontTypeface	Serif
	Height	7 percent
	Width	50 percent
	Image	WARNATOMBOL.png
	Text	Pengenalan
	TextAlignment	center : 1
Button_Perhitungan	FontSize	23
	FontTypeface	Serif
	Height	7 percent
	Width	50 percent
	Image	WARNATOMBOL.png
	Text	Perhitungan
	TextAlignment	center : 1
Button_Riwayat	FontSize	23
	FontTypeface	Serif
	Height	7 percent
	Width	50 percent
	Image	WARNATOMBOL.png
	Text	Riwayat
	TextAlignment	center : 1

D.2 Pengaturan Tampilan Halaman Pengenalan



Gambar LD.2 Pemodelan Tampilan *Screen2*

Tabel LD.2 Pengaturan Properti dan Isi Komponen *Screen2*

Komponen	Properti	Isi
Screen2	Align Horizontal	Center : 3
	AlignVertical	Center : 2
	BackgroundImage	backgroundapp.png
	Title	Pengenalan
VerticalArrangement1 – VerticalArrangement6	AlignHorizontal	Center : 3
	AlignVertical	Center : 2
	Height	15 percent
	Width	Fill Parent

D.2 Pengaturan Tampilan Halaman Pengenalan (Lanjutan)

Tabel LD.2 Pengaturan Properti dan Isi Komponen *Screen2*

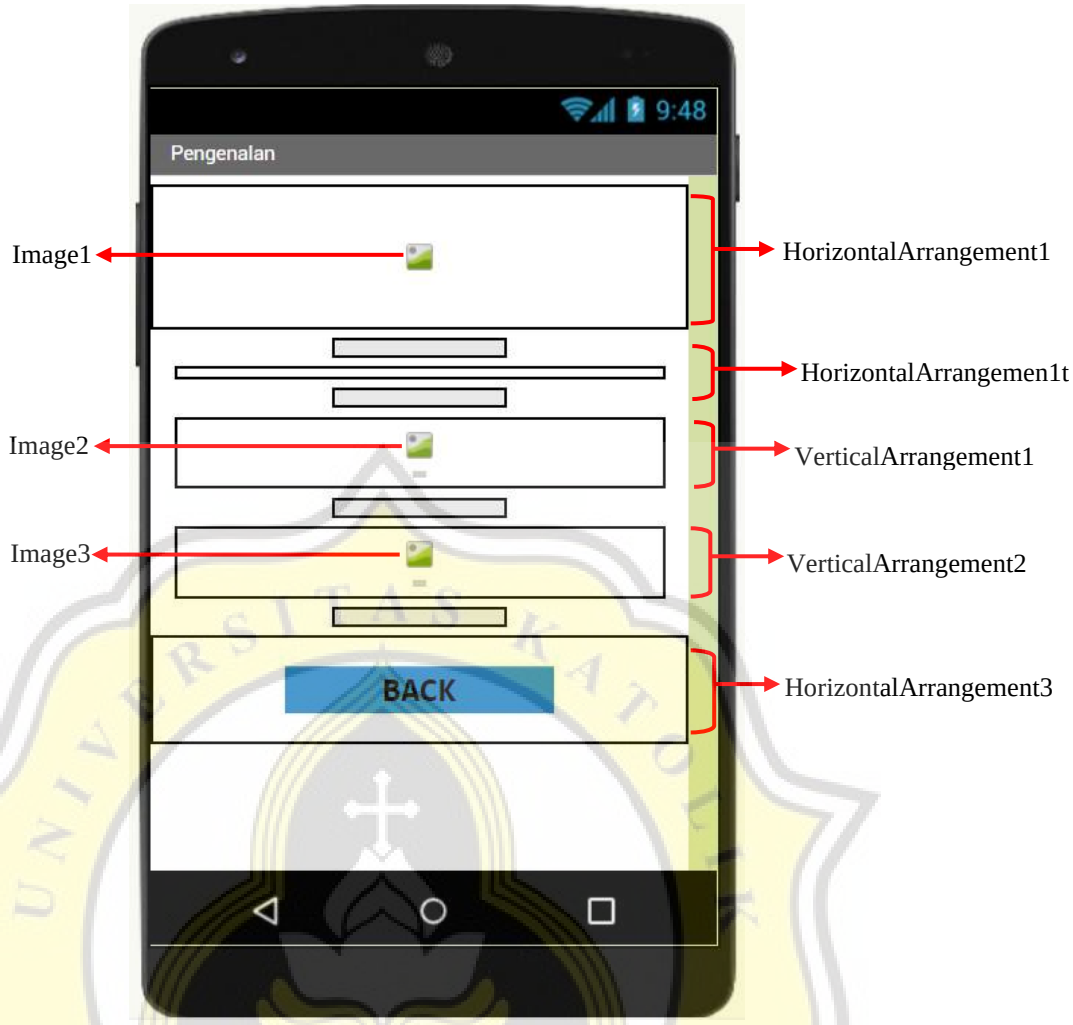
Komponen	Properti	Isi
Button_spt	FontSize	23
	FontTypeface	Serif
	Height	7 percent
	Width	50 percent
	Image	WARNATOMBOL.png
	Shape	rectangular
	Text	SPT
	TextAlignment	center : 1
	TextColor	Black
Button_jenis_tanah	FontSize	23
	FontTypeface	Serif
	Height	7 percent
	Width	50 percent
	Image	WARNATOMBOL.png
	Shape	rectangular
	Text	Jenis Tanah
	TextAlignment	center : 1
Button_pondasi_tiang_pancang	FontSize	23
	FontTypeface	Serif
	Height	10 percent
	Width	50 percent
	Image	WARNATOMBOL.png
	Shape	rectangular
	Text	Pondasi Tiang Pancang
	TextAlignment	center : 1
Button_daya_dukung	FontSize	23
	FontTypeface	Serif
	Height	7 percent
	Width	50 percent
	Image	WARNATOMBOL.png
	Shape	rectangular
	Text	Daya Dukung
	TextAlignment	center : 1

D.2 Pengaturan Tampilan Halaman Pengenalan (Lanjutan)

Tabel LD.2 Pengaturan Properti dan Isi Komponen *Screen2*

Komponen	Properti	Isi
Button_tentang_aplikasi	FontSize	23
	FontTypeface	Serif
	Height	10 percent
	Width	50 percent
	Image	WARNATOMBOL.png
	Shape	rectangular
	Text	Tentang Aplikasi
	TextAlignment	center : 1
	TextColor	Black
Button_kembali	FontSize	23
	FontTypeface	Serif
	Height	10 percent
	Width	50 percent
	Image	WARNATOMBOL.png
	Shape	rectangular
	Text	BACK
	TextAlignment	center : 1

D.2 Pengaturan Tampilan Halaman Pengenalan (Lanjutan)



Gambar LD.3 Pemodelan Tampilan *Screen*3

Tabel LD.3 Pengaturan Properti dan Isi Komponen *Screen*3

Komponen	Properti	Isi
Screen3	Align Horizontal	Center : 3
	AlignVertical	Top : 1
	Title	Pengenalan
HorizontalArrangement1	AlignHorizontal	Center : 3
	AlignVertical	Center : 2
	Height	20 percent
	Width	Filll Parent
HorizontalArrangement2	AlignHorizontal	Left : 1
	AlignVertical	Top : 1
	Height	*Automatic*
	Width	90 percent

D.2 Pengaturan Tampilan Halaman Pengenalan (Lanjutan)

Tabel LD.3 Pengaturan Properti dan Isi Komponen *Screen*3

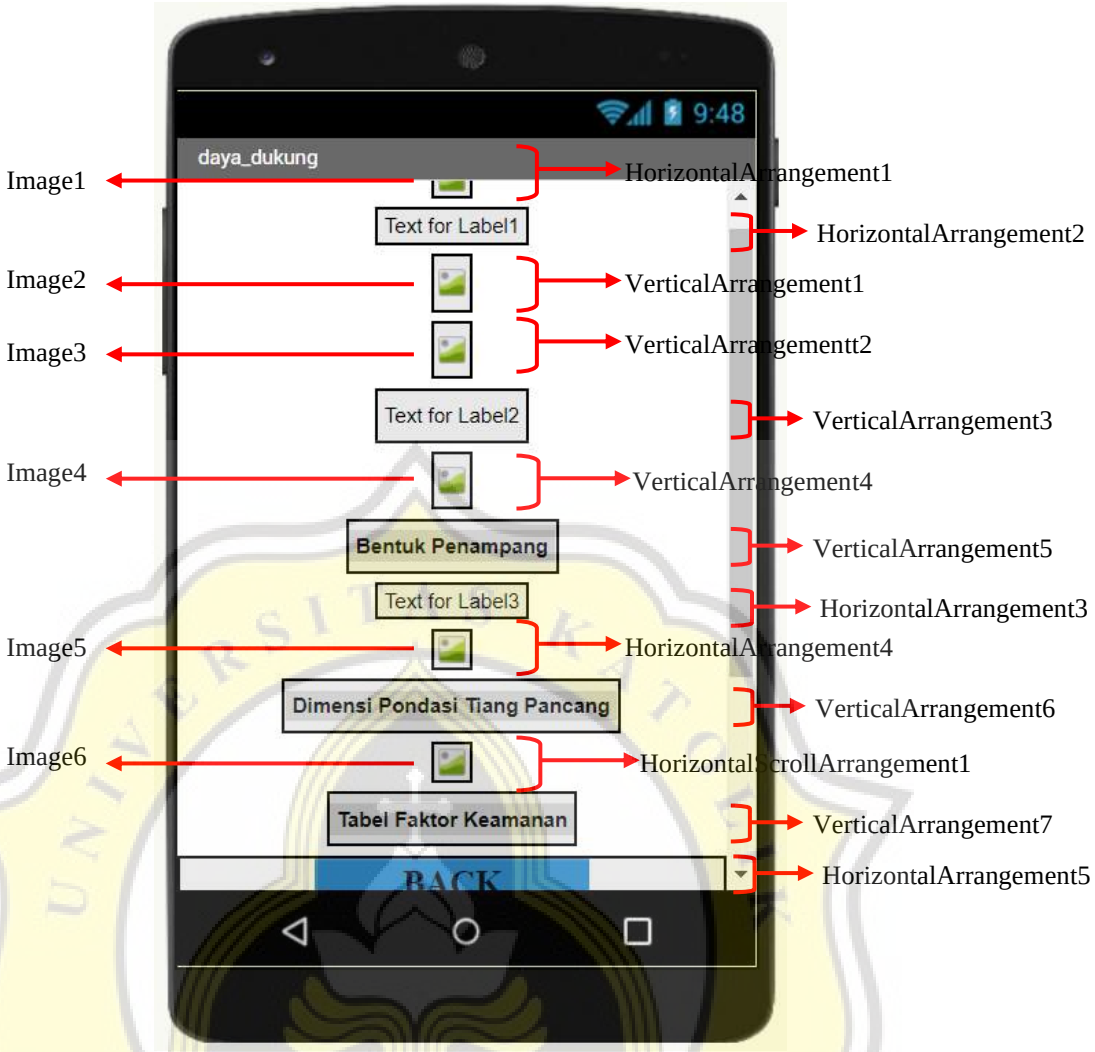
Komponen	Properti	Isi
HorizontalArrangement3	AlignHorizontal	Center : 3
	AlignVertical	Center : 2
	Height	15 percent
	Width	Fill Parent
VerticalArrangement1	AlignHorizontal	Center : 3
	AlignVertical	Center : 2
	Height	*Automatic*
	Width	90 percent
VerticalArrangement2	AlignHorizontal	Center : 3
	AlignVertical	Center : 2
	Height	*Automatic*
	Width	90 percent
Label_Materi	FontSize	14.0
	FontTypeface	Sans serif
	Height	60 percent
	Width	90 percent
	Text	(seperti dalam gambar)
	TextAlignment	Left : 0
	TextColor	Black
Label_Image1 – Label_Image2	FontSize	14.0
	FontTypeface	Sans serif
	Height	60 percent
	Width	90 percent
	Text	(seperti dalam gambar)
	TextAlignment	Left : 0
	TextColor	Black
Image_Judul	Picture	
	Height	20 percent
	Width	Fill Parent
Image_1	Picture	
	Height	Automatic
	Width	Fill Parent

D.2 Pengaturan Tampilan Halaman Pengenalan (Lanjutan)

Tabel LD.3 Pengaturan Properti dan Isi Komponen *Screen*3

Komponen	Properti	Isi
Image_2	Picture	
	Height	Automatic
	Width	Fill Parent
Button1	FontSize	23
	FontTypeface	Serif
	Height	50 pixels
	Width	125 pixels
	Image	WARNATOMBOL.png
	Text	BACK
	TextAlignment	center : 1
	TextColor	Black

D.2 Pengaturan Tampilan Halaman Pengenalan (Lanjutan)



Gambar LD.4 Pemodelan Tampilan *Screen* daya_dukung.

Tabel LD.4 Pengaturan Properti dan Isi Komponen *Screen* daya_dukung.

Komponen	Properti	Isi
Screen daya_dukung	Align Horizontal	Center : 3
	AlignVertical	Top : 1
	Title	Daya Dukung
HorizontalArrangement1-HorizontalArrangement4	AlignHorizontal	Left : 1
	AlignVertical	Top : 1
	Height	*Automatic*
	Width	*Automatic*
HorizontalArrangement5	AlignHorizontal	Center : 3
	AlignVertical	Center : 2
	Height	50 pixels
	Width	125 pixels

D.2 Pengaturan Tampilan Halaman Pengenalan (Lanjutan)

Tabel LD.4 Pengaturan Properti dan Isi Komponen *Screen* daya_dukung.

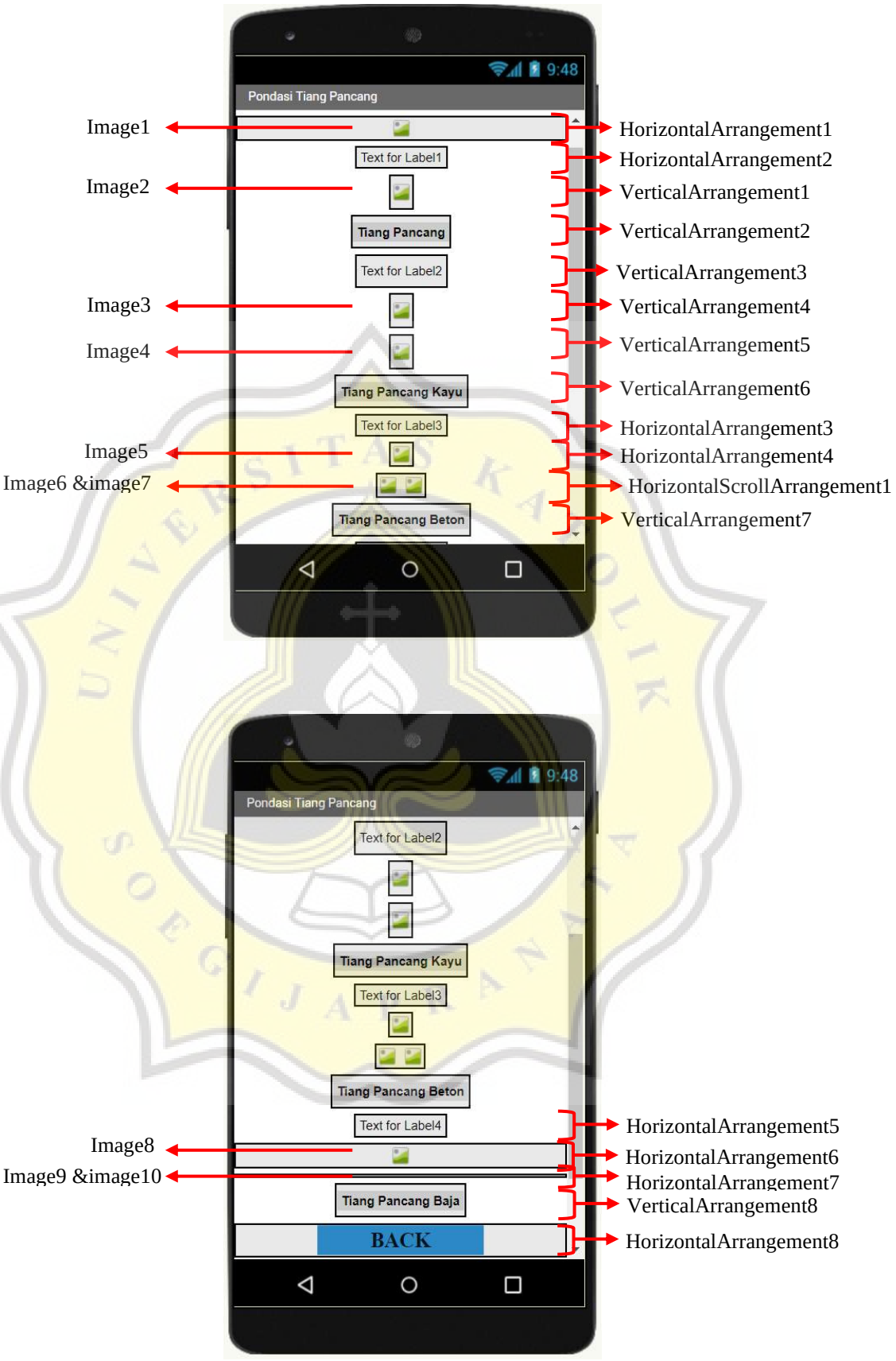
Komponen	Properti	Isi
VerticalArrangement1 – VerticalArrangement7	AlignHorizontal	Left : 1
	AlignVertical	Top : 1
	Height	*Automatic*
	Width	*Automatic*
HorizontalScrollArrangement1	AlignHorizontal	Left : 1
	AlignVertical	Top : 1
	Height	*Automatic*
	Width	*Automatic*
Label1 – Label3	FontSize	14.0
	FontTypeface	*Default*
	Height	*Automatic*
	Width	*Automatic*
	Text	(seperti dalam gambar)
	TextAlignment	Center : 1
	TextColor	Black
Label bentuk_penampang	FontSize	14.0
	FontTypeface	*Default*
	Height	*Automatic*
	Width	*Automatic*
	Text	Bentuk Penampang
	TextAlignment	Center : 1
	TextColor	Black
Label dimensi_tiang_pancang	FontSize	14.0
	FontTypeface	*Default*
	Height	*Automatic*
	Width	*Automatic*
	Text	Dimensi Pondasi Tiang Pancang
	TextAlignment	Center : 1
	TextColor	Black
Label tabel_fk	FontSize	14.0
	FontTypeface	*Default*
	Height	*Automatic*
	Width	*Automatic*
	Text	Tabel Faktor Keamanan
	TextAlignment	Center : 1
	TextColor	Black

D.2 Pengaturan Tampilan Halaman Pengenalan (Lanjutan)

Tabel LD.4 Pengaturan Properti dan Isi Komponen *Screen* daya_dukung.

Komponen	Properti	Isi
Image1 – Image6	Picture	
	Height	*Automatic*
	Width	*Automatic*
Button1	FontSize	23
	FontTypeface	Serif
	Height	50 pixels
	Width	125 pixels
	Image	WARNATOMBOL.png
	Text	BACK
	TextAlignment	center : 1
	TextColor	Black

D.2 Pengaturan Tampilan Halaman Pengenalan (Lanjutan)



Gambar LD.5 Pemodelan Tampilan *Screen* Pondasi Tiang Pancang

D.2 Pengaturan Tampilan Halaman Pengenalan (Lanjutan)

Tabel LD.5 Pengaturan Properti dan Isi Komponen *Screen* pondasi_tiang_pancang.

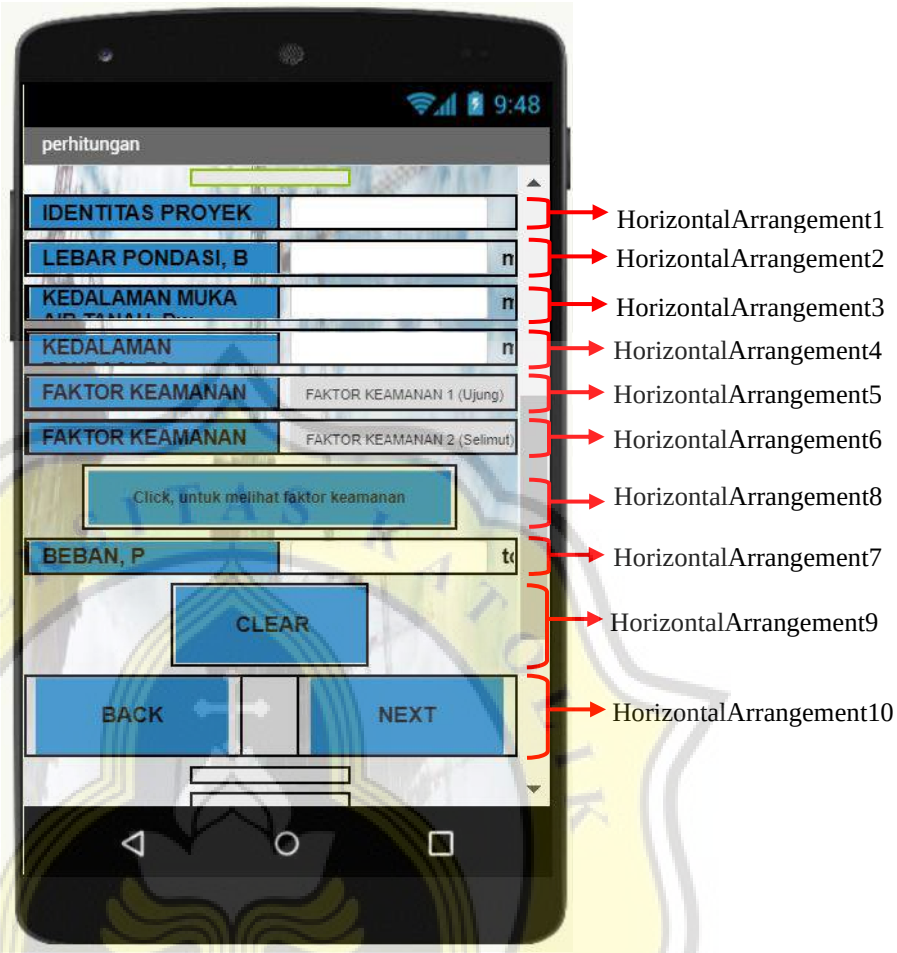
Komponen	Properti	Isi
Screen pondasi_tiang_pancang	Align Horizontal	Center : 3
	AlignVertical	Top : 1
	Title	Pondasi Tiang Pancang
HorizontalArrangement1-HorizontalArrangement4	AlignHorizontal	Left : 1
	AlignVertical	Top : 1
	Height	*Automatic*
	Width	*Automatic*
HorizontalArrangement5 – HorizontalArrangement7	AlignHorizontal	Center : 3
	AlignVertical	Top : 1
	Height	*Automatic*
	Width	*Automatic*
HorizontalArrangement8	AlignHorizontal	Center : 3
	AlignVertical	Center :2
	Height	7 percent
	Width	*Fill Parent*
VerticalArrangement1 – VerticalArrangement7	AlignHorizontal	Left : 1
	AlignVertical	Top : 1
	Height	*Automatic*
	Width	*Automatic*
VerticalArrangement8	AlignHorizontal	Center : 1
	AlignVertical	Top : 1
	Height	*Automatic*
	Width	*Automatic*
Label1 – Label4	FontSize	14.0
	Height	*Automatic*
	Width	*Automatic*
	Text	(seperti dalam gambar)
	TextAlignment	Center : 1
	TextColor	Black
Label tiang_pancang	FontSize	14.0
	Height	*Automatic*
	Width	*Automatic*
	Text	Tiang Pancang
	TextAlignment	Center : 1
	TextColor	Black

D.2 Pengaturan Tampilan Halaman Pengenalan (Lanjutan)

Tabel LD.5 Pengaturan Properti dan Isi Komponen *Screen* pondasi_tiang_pancang.

Label tiang_pancang_kayu	FontSize	14.0
	Height	*Automatic*
	Width	*Automatic*
	Text	Tiang Pancang Kayu
	TextAlignment	Center : 1
	TextColor	Black
Label tiang_pancang_beton	FontSize	14.0
	Height	*Automatic*
	Width	*Automatic*
	Text	Tiang Pancang Beton
	TextAlignment	Center : 1
	TextColor	Black
Label tiang_pancang_baja	FontSize	14.0
	Height	*Automatic*
	Width	*Automatic*
	Text	Tiang Pancang Baja
	TextAlignment	Center : 1
	TextColor	Black
Image1 – Image8	Picture	
	Height	*Automatic*
	Width	*Automatic*
Image9 – Image10	Picture	
	Height	23 percent
	Width	*Automatic*
Button1	FontSize	23
	FontTypeface	Serif
	Height	50 pixels
	Width	125 pixels
	Image	WARNATOMBOL.png
	Text	BACK
	TextAlignment	center : 1
	TextColor	Black

D.3 Pengaturan Tampilan Halaman Perhitungan



Gambar LD.6 Pemodelan Tampilan *Screen* perhitungan.

Tabel LD.6 Pengaturan Properti dan Isi Komponen *Screen* perhitungan.

Komponen	Properti	Isi
Screen perhitungan	Align Horizontal	Center : 3
	AlignVertical	Top : 1
	BackgroundImage	Backgroundapp.png
	Title	Perhitungan
Horizontal Arrangement1 – HorizontalArrangement7	AlignHorizontal	Left : 1
	AlignVertical	Center : 2
	Height	5 percent
	Width	*Fill Parent*
HorizontalArrangement8	AlignHorizontal	Left : 1
	AlignVertical	Center : 2
	Height	*Automatic*
	Width	*Automatic*

D.3 Pengaturan Tampilan Halaman Perhitungan (Lanjutan)

Tabel LD.6 Pengaturan Properti dan Isi Komponen *Screen* perhitungan.

Komponen	Properti	Isi
HorizontalArrangement9	AlignHorizontal	Center : 3
	AlignVertical	Center : 2
	Height	50 pixels
	Width	125 pixels
HorizontalArrangement10	AlignHorizontal	Center : 3
	AlignVertical	Center : 2
	Height	50 pixels
	Width	*Fill Parent*
Label1	FontSize	16
	FontTypeface	*Default*
	Height	*Automatic*
	Width	45 percent
	Text	IDENTITAS PROYEK
	TextAlignment	Left : 0
	TextColor	Black
Label2	FontSize	16
	FontTypeface	*Default*
	Height	*Automatic*
	Width	45 percent
	Text	LEBAR PONDASI, B
	TextAlignment	Left : 0
	TextColor	Black
Label3	FontSize	16
	FontTypeface	*Default*
	Height	*Automatic*
	Width	45 percent
	Text	KEDALAMAN MUKA AIR TANAH, Dw
	TextAlignment	Left : 0
	TextColor	Black

D.3 Pengaturan Tampilan Halaman Perhitungan (Lanjutan)

Tabel LD.6 Pengaturan Properti dan Isi Komponen *Screen* perhitungan.

Label4	FontSize	16
	FontTypeface	*Default*
	Height	*Automatic*
	Width	45 percent
	Text	KEDALAMAN PONDASI, Df
	TextAlignment	Left : 0
	TextColor	Black
Label5	FontSize	16
	FontTypeface	*Default*
	Height	*Automatic*
	Width	45 percent
	Text	LEBAR PONDASI, B
	TextAlignment	Left : 0
	TextColor	Black
Label6	FontSize	16
	FontTypeface	*Default*
	Height	*Automatic*
	Width	45 percent
	Text	FAKTOR KEAMANAN UJUNG, FK1
	TextAlignment	Left : 0
	TextColor	Black
Label7	FontSize	16
	FontTypeface	*Default*
	Height	*Automatic*
	Width	45 percent
	Text	FAKTOR KEAMANAN SELIMUT, FK2
	TextAlignment	Left : 0
	TextColor	Black
TextBox IDENTITAS_PROYEK	FontSize	14
	FontTypeface	*Default*
	Height	6 percent
	Width	40 percent
	TextAlignment	Left : 0

D.3 Pengaturan Tampilan Halaman Perhitungan (Lanjutan)

Tabel LD.6 Pengaturan Properti dan Isi Komponen *Screen* perhitungan.

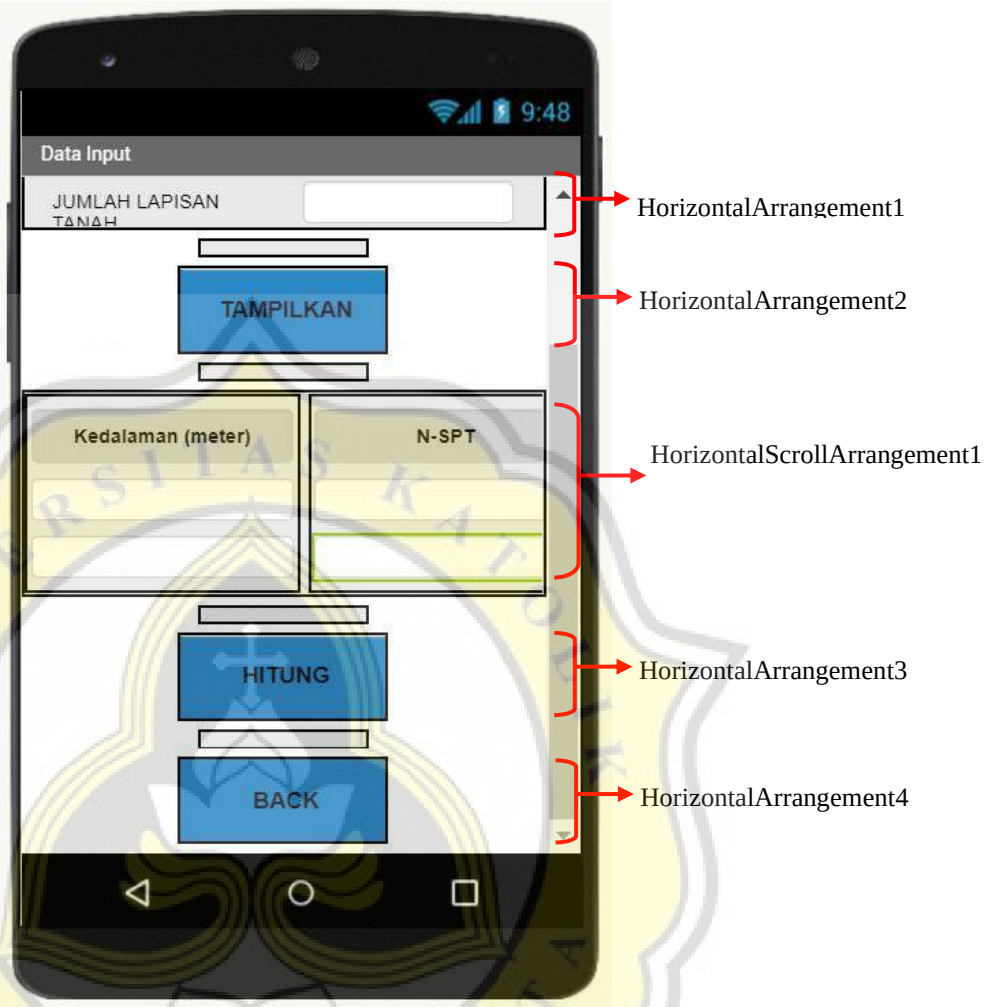
TextBox LEBAR_PONDASI	FontSize	14
	FontTypeface	*Default*
	Height	6 percent
	Width	40 percent
	TextAlignment	Left : 0
TextBox KEDALAMAN_MAT	FontSize	14
	FontTypeface	Default
	Height	6 percent
	Width	40 percent
	TextAlignment	Left : 0
TextBox KEDALAMAN_PONDASI	FontSize	14
	FontTypeface	Default
	Height	6 percent
	Width	40 percent
	TextAlignment	Left : 0
TextBox BEBAN_KOLOM	FontSize	14
	FontTypeface	Default
	Height	6 percent
	Width	40 percent
	TextAlignment	Left : 0
ListPicker_FK1	ElementFromString	1.4, 2, 2.3, 2.5, 2.8, 3, 3.4, 3.5, 4
	FontSize	14
	FontTypeface	Default
	Height	Automatic
	Text	FAKTOR KEAMANAN UJUNG
	TextAlignment	Center : 1
ListPicker_FK2	ElementFromString	1.4, 2, 2.3, 2.5, 2.8, 3, 3.4, 3.5, 4
	FontSize	14
	FontTypeface	Default
	Height	Automatic
	Text	FAKTOR KEAMANAN SELIMUT
	TextAlignment	Center : 1

D.3 Pengaturan Tampilan Halaman Perhitungan (Lanjutan)

Tabel LD.6 Pengaturan Properti dan Isi Komponen *Screen* perhitungan.

Button_CLEAR	FontSize	16
	Height	50 pixels
	Width	125 pixels
	Image	WARNATOMBOL.png
	Text	CLEAR
	TextAlignment	center : 1
	TextColor	Black
Button_Click	FontSize	16
	Height	50 pixels
	Width	125 pixels
	Image	WARNATOMBOL.png
	Text	Click, untuk melihat faktor keamanan
	TextAlignment	center : 1
	TextColor	Black
Button_BACK	FontSize	16
	Height	50 pixels
	Width	125 pixels
	Image	WARNATOMBOL.png
	Text	BACK
	TextAlignment	center : 1
	TextColor	Black
Button_NEXT	FontSize	16
	Height	50 pixels
	Width	125 pixels
	Image	WARNATOMBOL.png
	Text	NEXT
	TextAlignment	center : 1
	TextColor	Black

D.4 Pengaturan Tampilan Halaman *Input* Data



Gambar LD.7 Pemodelan Tampilan *Screen* DATA_INPUT.

Tabel LD.7 Pengaturan Properti dan Isi Komponen *Screen* DATA_INPUT.

Komponen	Properti	Isi
Screen DATA_INPUT	Align Horizontal	Center : 3
	AlignVertical	Top : 1
	ScreenOrientation	Potrait
	Title	Data Input
HorizontalArrangement1	AlignHorizontal	Center : 3
	AlignVertical	Center : 2
	Height	Automatic
	Width	Fill Parent

D.4 Pengaturan Tampilan Halaman *Input* Data (Lanjutan)

Tabel LD.7 Pengaturan Properti dan Isi Komponen *Screen* DATA_INPUT.

Komponen	Properti	Isi
HorizontalArrangement2 – HorizontalArrangement4	AlignHorizontal	Center : 3
	AlignVertical	Center : 2
	Height	50 pixels
	Width	125 pixels
HorizontalScrollArrangement1	AlignHorizontal	Left : 1
	AlignVertical	Top : 1
	Height	*Automatic*
	Width	Fill Parent
Layout h	AlignHorizontal	Left : 1
	AlignVertical	Top : 1
	Height	*Automatic*
	Width	*Automatic*
Layout NSPT	AlignHorizontal	Left : 1
	AlignVertical	Top : 1
	Height	*Automatic*
	Width	*Automatic*
Layout Jenis Tanah	AlignHorizontal	Left : 1
	AlignVertical	Top : 1
	Height	*Automatic*
	Width	*Automatic*
Layout Gamma_Dry	AlignHorizontal	Left : 1
	AlignVertical	Top : 1
	Height	*Automatic*
	Width	*Automatic*
Layout w	AlignHorizontal	Left : 1
	AlignVertical	Top : 1
	Height	*Automatic*
	Width	*Automatic*
Layout Gamma_Sat	AlignHorizontal	Left : 1
	AlignVertical	Top : 1
	Height	*Automatic*
	Width	*Automatic*

D.4 Pengaturan Tampilan Halaman *Input* Data (Lanjutan)

Tabel LD.7 Pengaturan Properti dan Isi Komponen *Screen* DATA_INPUT.

Komponen	Properti	Isi
Label1	FontSize	14
	FontTypeface	monospace
	Height	Automatic
	Width	45 percent
	Text	JUMLAH LAPISAN TANAH
	TextAlignment	Left : 0
Label Judul_1	FontSize	14
	FontTypeface	default
	Height	34 pixels
	Width	*Automatic*
	Text	Kedalaman (meter)
	TextAlignment	Center : 1
Label Judul_2	FontSize	14
	FontTypeface	default
	Height	34 pixels
	Width	*Automatic*
	Text	N-SPT
	TextAlignment	Center : 1
Label Judul_3	FontSize	14
	FontTypeface	default
	Height	34 pixels
	Width	*Automatic*
	Text	Jenis Tanah / Daya Dukung
	TextAlignment	Center : 1
Label Judul_4	FontSize	14
	FontTypeface	default
	Height	34 pixels
	Width	*Automatic*
	Text	Gamma Dry (ton/m3)
	TextAlignment	Center : 1

D.4 Pengaturan Tampilan Halaman *Input* Data (Lanjutan)

Tabel LD.7 Pengaturan Properti dan Isi Komponen *Screen* DATA_INPUT.

Komponen	Properti	Isi
Label Judul_5	FontSize	14
	FontTypeface	default
	Height	34 pixels
	Width	*Automatic*
	Text	Kadar Air (%)
	TextAlignment	Center : 1
Label Judul_6	FontSize	14
	FontTypeface	default
	Height	34 pixels
	Width	*Automatic*
	Text	Gamma Saturated (ton/m3)
	TextAlignment	Center : 1
Label h1 – Label h15	FontSize	14
	FontTypeface	monospace
	Height	*Automatic*
	Width	*Automatic*
	TextAlignment	Left : 0
	TextColor	Black
Label n1- Label n15	FontSize	14
	FontTypeface	monospace
	Height	*Automatic*
	Width	*Automatic*
	TextAlignment	Left : 0
	TextColor	Black
Label d1 – Label d15	FontSize	14
	FontTypeface	monospace
	Height	*Automatic*
	Width	*Automatic*
	TextAlignment	Left : 0
	TextColor	Black

D.4 Pengaturan Tampilan Halaman *Input* Data (Lanjutan)

Tabel LD.7 Pengaturan Properti dan Isi Komponen *Screen* DATA_INPUT.

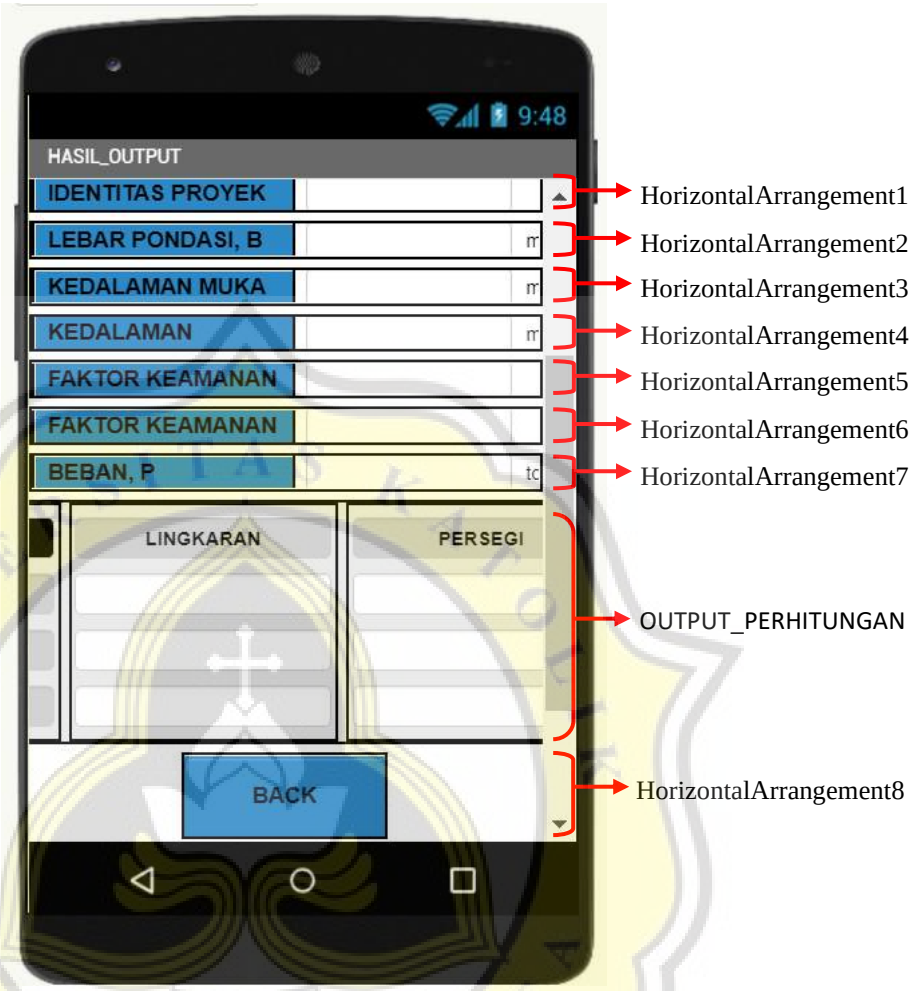
Komponen	Properti	Isi
Label w1 – Label w15	FontSize	14
	FontTypeface	monospace
	Height	*Automatic*
	Width	*Automatic*
	TextAlignment	Left : 0
	TextColor	Black
Label gs1 – Label gs15	FontSize	14
	FontTypeface	monospace
	Height	*Automatic*
	Width	*Automatic*
	TextAlignment	Left : 0
	TextColor	Black
ListPicker JT 1 – ListPickerJT 15	ElementFromString	Silt / Selimut, Clay / Selimut, Gravel / Selimut, Silt / Selimut - Ujung, Clay / Selimut - Ujung, Gravel / Selimut - Ujung
	FontSize	14
	FontTypeface	Default
	Height	Automatic
TextBox DATA_Jumlah_Lapisan_Tanah	FontSize	14
	FontTypeface	*Default*
	Height	*Automatic*
	Width	40 percent
	TextAlignment	Left : 0
Button TAMPILKAN	FontSize	16
	FontTypeface	Default
	Height	50 pixels
	Width	125 pixels
	Image	WARNATOMBOL.png
	Shape	Default
	Text	TAMPILKAN
	TextAlignment	center : 1
	TextColor	Black

D.4 Pengaturan Tampilan Halaman *Input* Data (Lanjutan)

Tabel LD.7 Pengaturan Properti dan Isi Komponen *Screen* DATA_INPUT.

Button HITUNG	FontSize	16
	FontTypeface	Default
	Height	50 pixels
	Width	125 pixels
	Image	WARNATOMBOL.png
	Shape	Default
	Text	HITUNG
	TextAlignment	center : 1
	TextColor	Black
Button BACK	FontSize	16
	FontTypeface	Default
	Height	50 pixels
	Width	125 pixels
	Image	WARNATOMBOL.png
	Shape	Default
	Text	BACK
	TextAlignment	center : 1
	TextColor	Black

D.5 Pengaturan Tampilan Halaman Hasil *Output*



Gambar LD.8 Pemodelan Tampilan *Screen* HASIL_OUTPUT.

Tabel LD.8 Pengaturan Properti dan Isi Komponen *Screen* HASIL_OUTPUT.

Komponen	Properti	Isi
Screen HASIL_OUTPUT	Align Horizontal	Center : 3
	AlignVertical	Top : 1
	ScreenOrientation	Potrait
	Title	HASIL OUTPUT
HorizontalArrangement1 – HorizontalArrangement7	AlignHorizontal	Left : 1
	AlignVertical	Center : 2
	Height	5 percent
	Width	Fill Parent

D.5 Pengaturan Tampilan Halaman Hasil *Output* (Lanjutan)

Tabel LD.8 Pengaturan Properti dan Isi Komponen *Screen* HASIL_OUTPUT.

Komponen	Properti	Isi
HorizontalArrangement8	AlignHorizontal	Center : 3
	AlignVertical	Center : 2
	Height	50 pixels
	Width	125 pixels
Layout OUTPUT_PERHITUNGAN	AlignHorizontal	Left : 1
	AlignVertical	Top : 1
	Height	Automatic
	Width	Automatic
Layout HASIL	AlignHorizontal	Left : 1
	AlignVertical	Top : 1
	Height	Automatic
	Width	Automatic
Layout Bentuk_1 – Layout Bentuk_2	AlignHorizontal	Left : 1
	AlignVertical	Top : 1
	Height	Automatic
	Width	Automatic
Label1	FontSize	16
	FontTypeface	Default
	Height	Automatic
	Width	45 percent
	Text	IDENTITAS PROYEK
	TextAlignment	Left : 0
	TextColor	Black
Label2	FontSize	16
	FontTypeface	Default
	Height	Automatic
	Width	45 percent
	Text	LEBAR PONDASI, B
	TextAlignment	Left : 0
	TextColor	Black

D.5 Pengaturan Tampilan Halaman Hasil *Output* (Lanjutan)

Tabel LD.8 Pengaturan Properti dan Isi Komponen *Screen* HASIL_OUTPUT.

Label3	FontSize	16
	FontTypeface	Default
	Height	Automatic
	Width	45 percent
	Text	KEDALAMAN MUKA AIR TANAH, Dw
	TextAlignment	Left : 0
	TextColor	Black
Label4	FontSize	16
	FontTypeface	Default
	Height	Automatic
	Width	45 percent
	Text	KEDALAMAN PONDASI, Df
	TextAlignment	Left : 0
	TextColor	Black
Label5	FontSize	16
	FontTypeface	Default
	Height	Automatic
	Width	45 percent
	Text	FAKTOR KEAMANAN UJUNG
	TextAlignment	Left : 0
	TextColor	Black
Label6	FontSize	16
	FontTypeface	Default
	Height	Automatic
	Width	45 percent
	Text	FAKTOR KEAMANAN SELIMUT
	TextAlignment	Left : 0
	TextColor	Black

D.5 Pengaturan Tampilan Halaman Hasil *Output* (Lanjutan)

Tabel LD.8 Pengaturan Properti dan Isi Komponen *Screen* HASIL_OUTPUT.

Label7	FontSize	16
	FontTypeface	Default
	Height	Automatic
	Width	45 percent
	Text	BEBAN, P
	TextAlignment	Left : 0
	TextColor	Black
Label8	FontSize	14
	FontTypeface	Default
	Height	Automatic
	Width	10 pixels
	TextAlignment	Left : 0
	TextColor	Black
Label9 – Label11	FontSize	14
	FontTypeface	Default
	Height	Automatic
	Width	15 pixels
	Text	m
	TextAlignment	Left : 0
	TextColor	Black
Label 12 – Label 13	FontSize	14
	FontTypeface	Default
	Height	Automatic
	Width	10 pixels
	TextAlignment	Left : 0
	TextColor	Black
Label14	FontSize	14
	FontTypeface	Default
	Height	Automatic
	Width	30 pixels
	Text	ton
	TextAlignment	Left : 0
	TextColor	Black

D.5 Pengaturan Tampilan Halaman Hasil *Output* (Lanjutan)

Tabel LD.8 Pengaturan Properti dan Isi Komponen *Screen* HASIL_OUTPUT.

Textbox OUTPUT_IDENTITAS_PROYEK	FontSize	16
	FontTypeface	*Default*
	Height	6 percent
	Width	40 percent
	TextAlignment	Left : 0
Textbox OUTPUT_LEBAR_PONDASI	FontSize	16
	FontTypeface	*Default*
	Height	6 percent
	Width	40 percent
	TextAlignment	Left : 0
Textbox OUTPUT_KEDALAMAN_MAT	FontSize	16
	FontTypeface	*Default*
	Height	6 percent
	Width	40 percent
	TextAlignment	Left : 0
Textbox OUTPUT_KEDALAMAN_ PONDASI	FontSize	16
	FontTypeface	*Default*
	Height	6 percent
	Width	40 percent
	TextAlignment	Left : 0
Textbox OUTPUT_LEBAR_PONDASI	FontSize	16
	FontTypeface	*Default*
	Height	6 percent
	Width	40 percent
	TextAlignment	Left : 0
Textbox OUTPUT_FK1	FontSize	16
	FontTypeface	*Default*
	Height	6 percent
	Width	40 percent
	TextAlignment	Left : 0

D.5 Pengaturan Tampilan Halaman Hasil *Output* (Lanjutan)

Tabel LD.8 Pengaturan Properti dan Isi Komponen *Screen* HASIL_OUTPUT.

Textbox OUTPUT_FK2	FontSize	16
	FontTypeface	*Default*
	Height	6 percent
	Width	40 percent
	TextAlignment	Left : 0
Textbox OUTPUT_BEBAN_KOLOM	FontSize	16
	FontTypeface	*Default*
	Height	6 percent
	Width	40 percent
	TextAlignment	Left : 0
Textbox cop	FontSize	14
	FontTypeface	*Default*
	Height	*Automatic*
	Width	40 percent
	TextAlignment	Left : 0
Textbox Qu	FontSize	14
	FontTypeface	*Default*
	Height	*Automatic*
	Width	230 pixels
	Text	DAYA DUKUNG ULTIMIT, Qu (ton)
	TextAlignment	Left : 0
Textbox Qa	FontSize	14
	FontTypeface	*Default*
	Height	*Automatic*
	Width	230 pixels
	Text	DAYA DUKUNG IJIN, Qa (ton)
	TextAlignment	Left : 0

D.5 Pengaturan Tampilan Halaman Hasil *Output* (Lanjutan)

Tabel LD.8 Pengaturan Properti dan Isi Komponen *Screen* HASIL_OUTPUT.

Textbox JUMLAH_GROUP_PILE	FontSize	14
	FontTypeface	*Default*
	Height	*Automatic*
	Width	230 pixels
	Text	JUMLAH PONDASI (GROUP PILE)
	TextAlignment	Left : 0
Textbox Judul_27	FontSize	14
	FontTypeface	*Default*
	Height	*Automatic*
	Width	*Automatic*
	Text	LINGKARAN
	TextAlignment	Center : 1
Textbox Qu_LINGKARAN	FontSize	14
	FontTypeface	*Default*
	Height	*Automatic*
	Width	*Automatic*
	Numbersonly	On
	TextAlignment	Center : 1
Textbox Qa_LINGKARAN	FontSize	14
	FontTypeface	*Default*
	Height	*Automatic*
	Width	*Automatic*
	Numbersonly	On
	TextAlignment	Center : 1
Textbox JUMLAH_PONDASI _LINGKARAN	FontSize	14
	FontTypeface	*Default*
	Height	*Automatic*
	Width	*Automatic*
	Numbersonly	On
	TextAlignment	Center : 1

D.5 Pengaturan Tampilan Halaman Hasil *Output* (Lanjutan)

Tabel LD.8 Pengaturan Properti dan Isi Komponen *Screen* HASIL_OUTPUT.

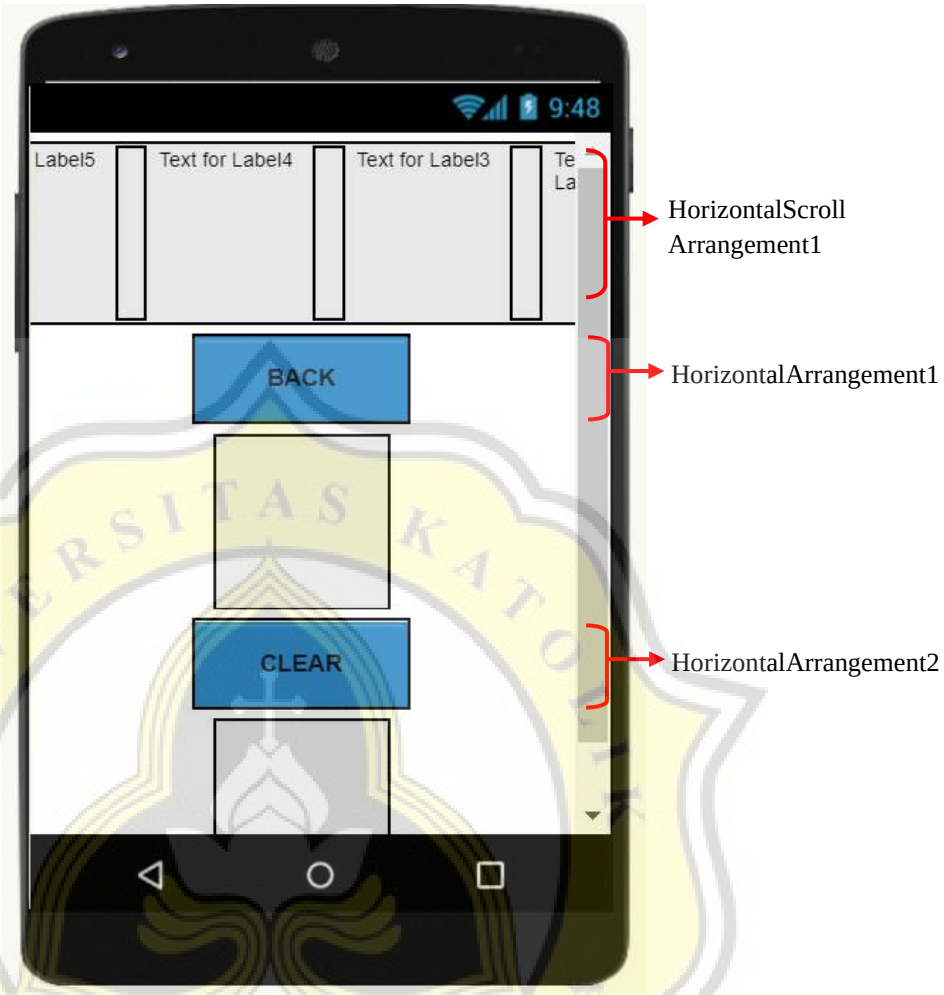
Textbox Judul_28	FontSize	14
	FontTypeface	*Default*
	Height	*Automatic*
	Width	*Automatic*
	Text	PERSEGI
	TextAlignment	Center : 1
Textbox Qu_PERSEGI	FontSize	14
	FontTypeface	*Default*
	Height	*Automatic*
	Width	*Automatic*
	Numbersonly	On
	TextAlignment	Center : 1
Textbox Qa_PERSEGI	FontSize	14
	FontTypeface	*Default*
	Height	*Automatic*
	Width	*Automatic*
	Numbersonly	On
	TextAlignment	Center : 1
Textbox JUMLAH_PONDASI _PERSEGI	FontSize	14
	FontTypeface	*Default*
	Height	*Automatic*
	Width	*Automatic*
	Numbersonly	On
	TextAlignment	Center : 1
Textbox Judul_29	FontSize	14
	FontTypeface	*Default*
	Height	*Automatic*
	Width	*Automatic*
	Text	SEGITIGA
	TextAlignment	Center : 1

D.5 Pengaturan Tampilan Halaman Hasil *Output* (Lanjutan)

Tabel LD.8 Pengaturan Properti dan Isi Komponen *Screen* HASIL_OUTPUT.

Textbox Qu_SEGITIGA	FontSize	14
	FontTypeface	*Default*
	Height	*Automatic*
	Width	*Automatic*
	Numbersonly	On
	TextAlignment	Center : 1
Textbox Qa_SEGITIGA	FontSize	14
	FontTypeface	*Default*
	Height	*Automatic*
	Width	*Automatic*
	Numbersonly	On
	TextAlignment	Center : 1
Textbox JUMLAH_PONDASI _SEGITIGA	FontSize	14
	FontTypeface	*Default*
	Height	*Automatic*
	Width	*Automatic*
	Numbersonly	On
	TextAlignment	Center : 1
Button BACK	FontSize	16.0
	FontTypeface	monospace
	Height	50 pixels
	Width	125 pixels
	Image	WARNATOMBOL.png
	Text	BACK
	TextAlignment	center : 1
	TextColor	Black

D.6 Pengaturan Tampilan Riwayat



Gambar LD.9 Pemodelan Tampilan *Screen* TAMPILKAN.

Tabel LD.9 Pengaturan Properti dan Isi Komponen *Screen* TAMPILKAN.

Komponen	Properti	Isi
Screen TAMPILKAN	Align Horizontal	Center : 3
	AlignVertical	Top : 1
	Title	RIWAYAT
HorizontalScrollArrangement1	AlignHorizontal	Left : 1
	AlignVertical	Top : 1
	Height	*Automatic*
	Width	*Automatic*
HorizontalArrangement1 – HorizontalArrangement2	AlignHorizontal	Center : 3
	AlignVertical	Center : 2
	Height	50 pixels
	Width	125 pixels

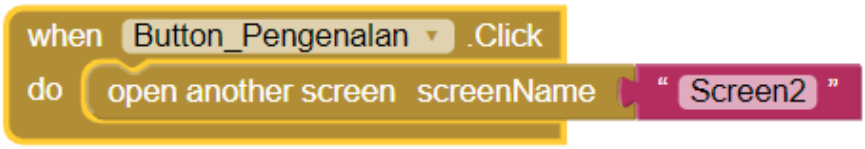
D.6 Pengaturan Tampilan Riwayat (Lanjutan)

Tabel LD.9 Pengaturan Properti dan Isi Komponen *Screen* TAMPILKAN.

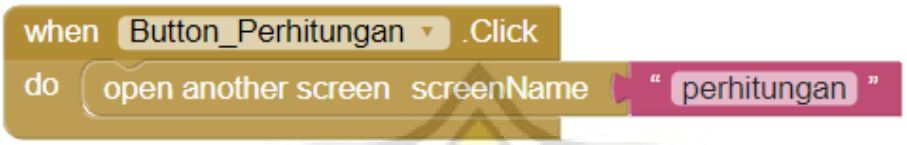
Komponen	Properti	Isi
Button BACK	FontSize	16
	FontTypeface	Default
	Height	50 pixels
	Width	125 pixels
	Image	WARNATOMBOL.png
	Text	BACK
	TextAlignment	center : 1
	TextColor	Black
Button CLEAR	FontSize	16
	FontTypeface	Default
	Height	50 pixels
	Width	125 pixels
	Image	WARNATOMBOL.png
	Text	CLEAR
	TextAlignment	center : 1
	TextColor	Black

Lampiran E
Blok Program Aplikasi

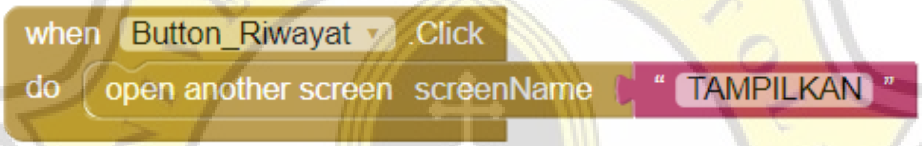
E.1 Blok Program Halaman Utama



Gambar LE.1 Blok Program Untuk Tombol Pengenalan.

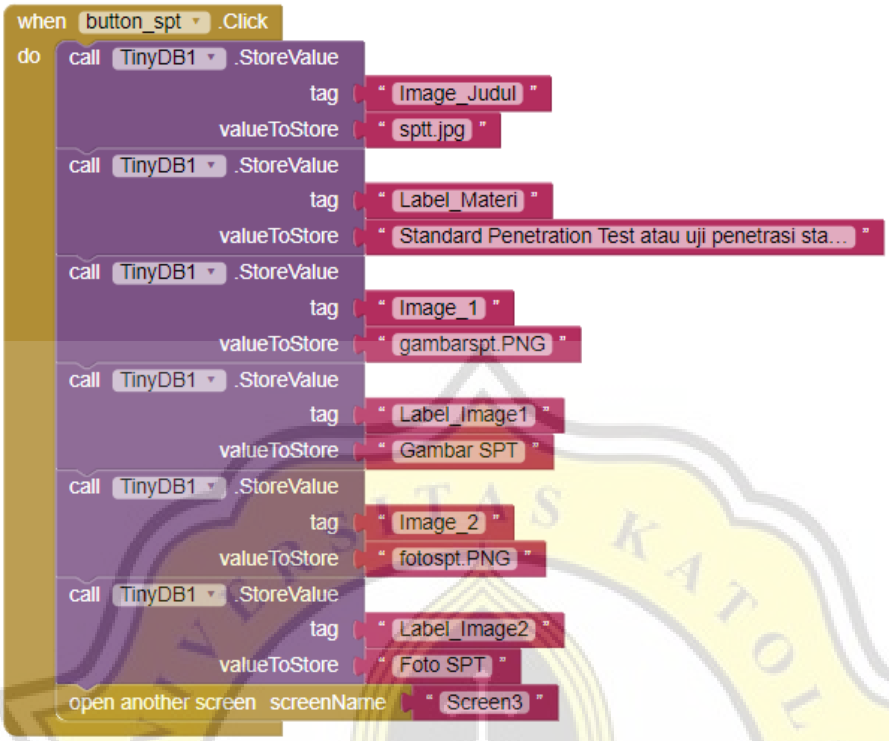


Gambar LE.2 Blok Program Untuk Tombol Perhitungan.

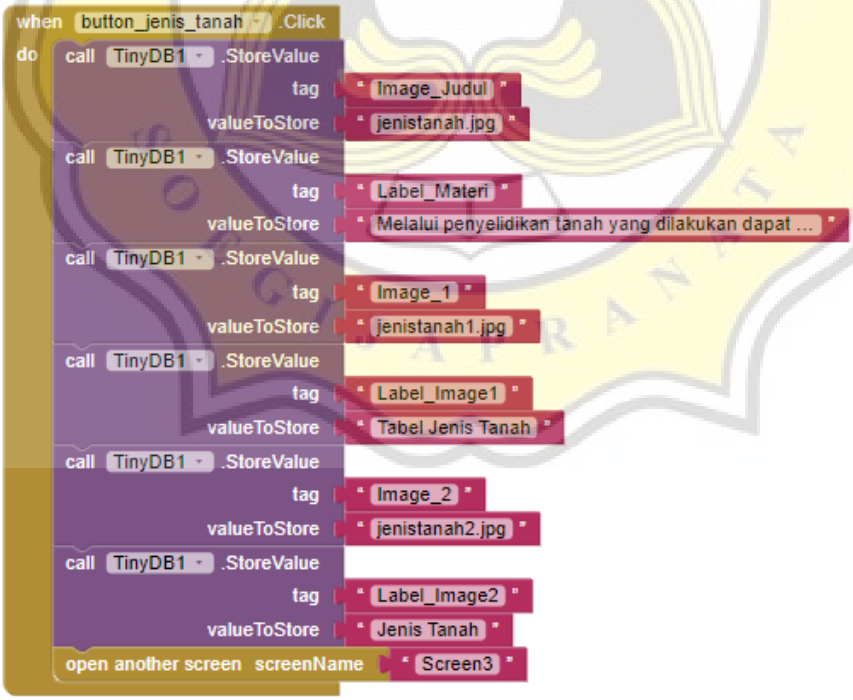


Gambar LE.3 Blok Program Untuk Tombol Riwayat.

E.2 Blok Program Halaman Pengenalan

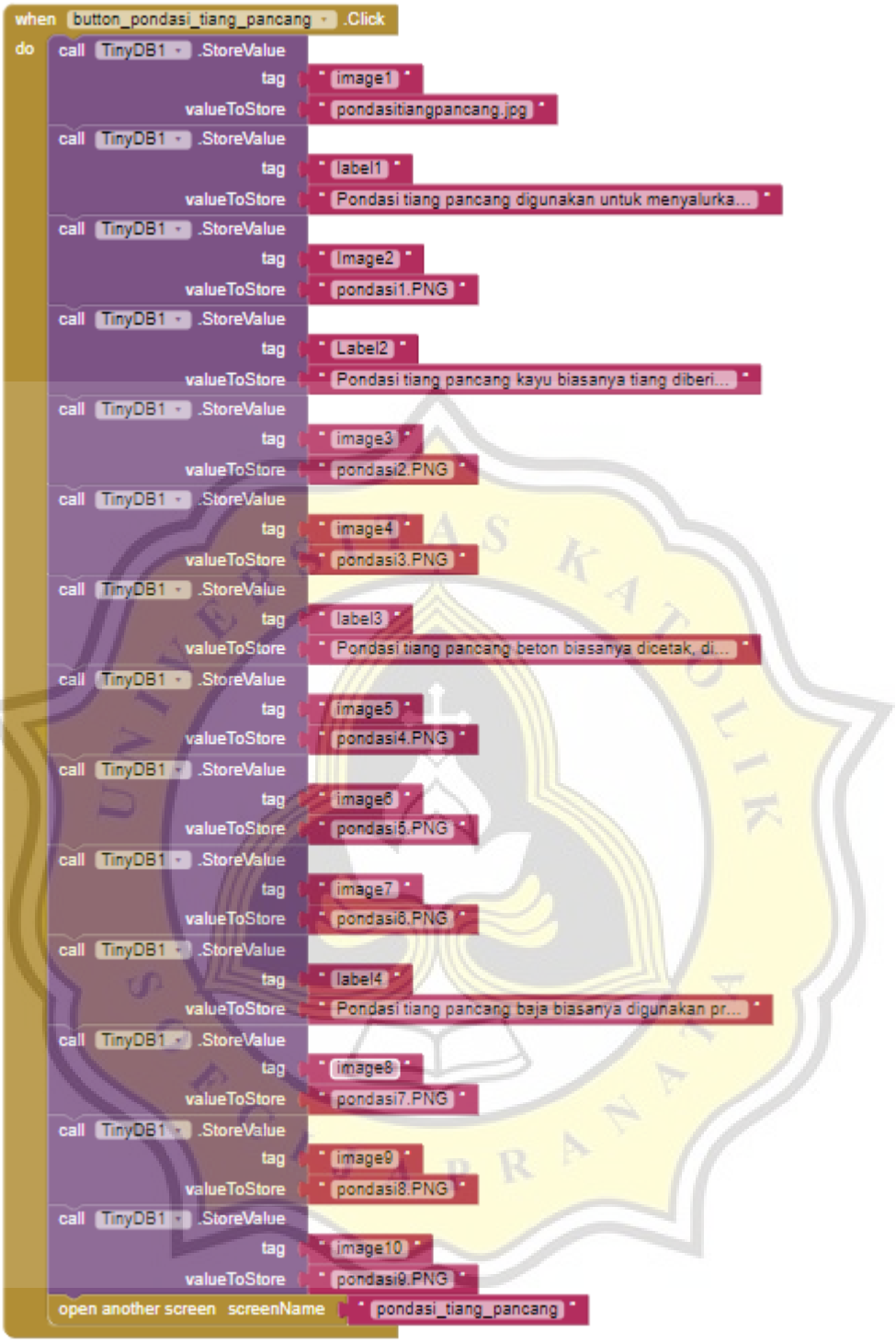


Gambar LE.4 Blok Untuk Tombol SPT.



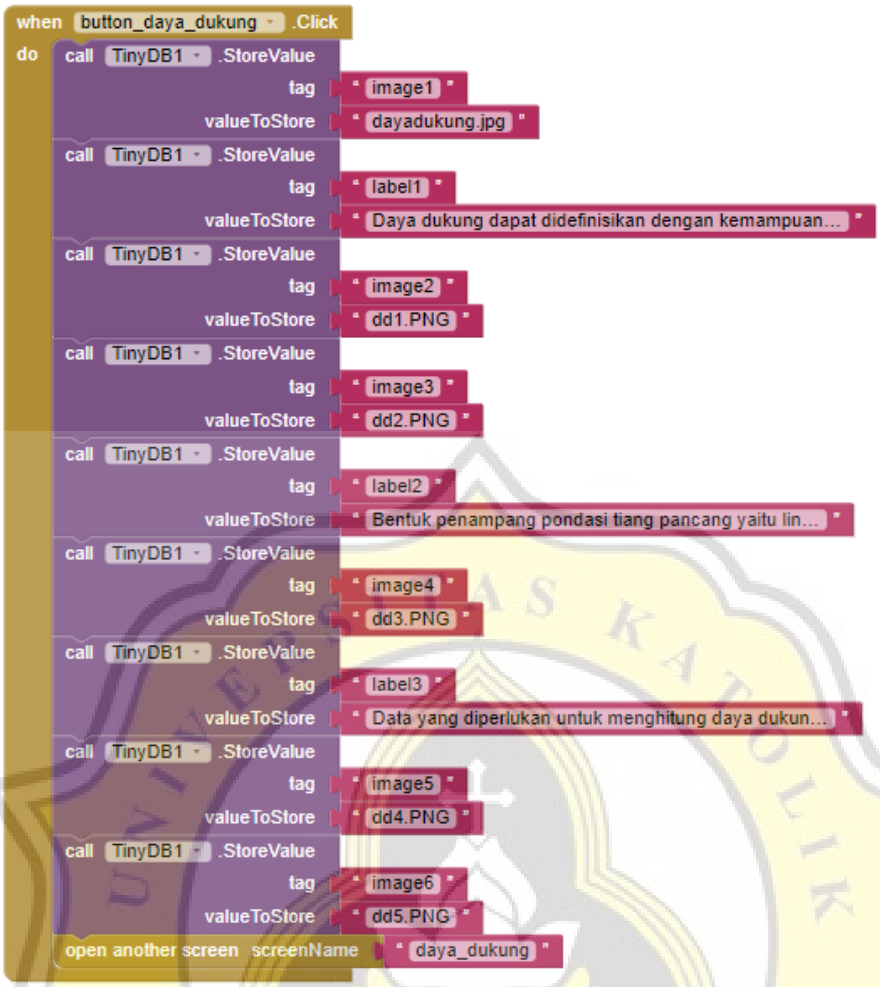
Gambar LE.5 Blok Untuk Tombol Jenis Tanah.

E.2 Blok Program Halaman Pengenalan (Lanjutan)



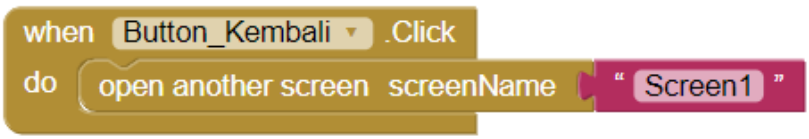
Gambar LE.6 Blok Untuk Tombol Pondasi Tiang Pancang.

E.2 Blok Program Halaman Pengenalan (Lanjutan)



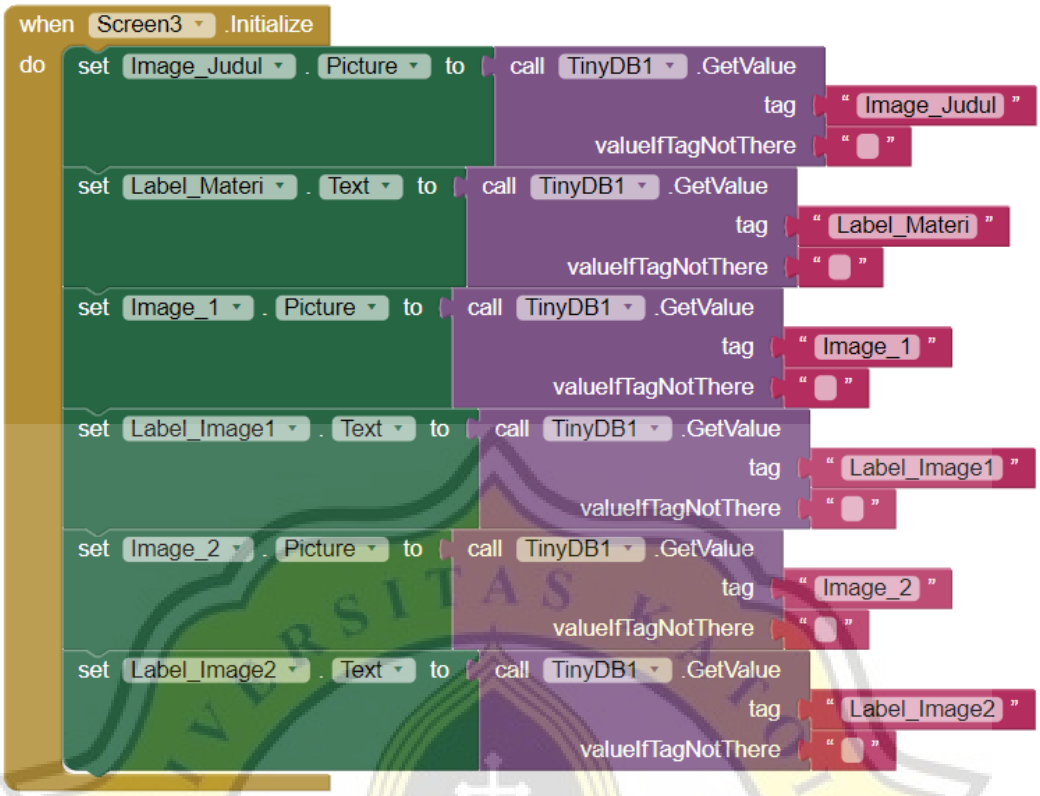
Gambar LE.7 Blok Untuk Tombol Daya Dukung.

Gambar LE.8 Blok Untuk Tombol Tentang Aplikasi.



Gambar LE.9 Blok Untuk Tombol Kembali.

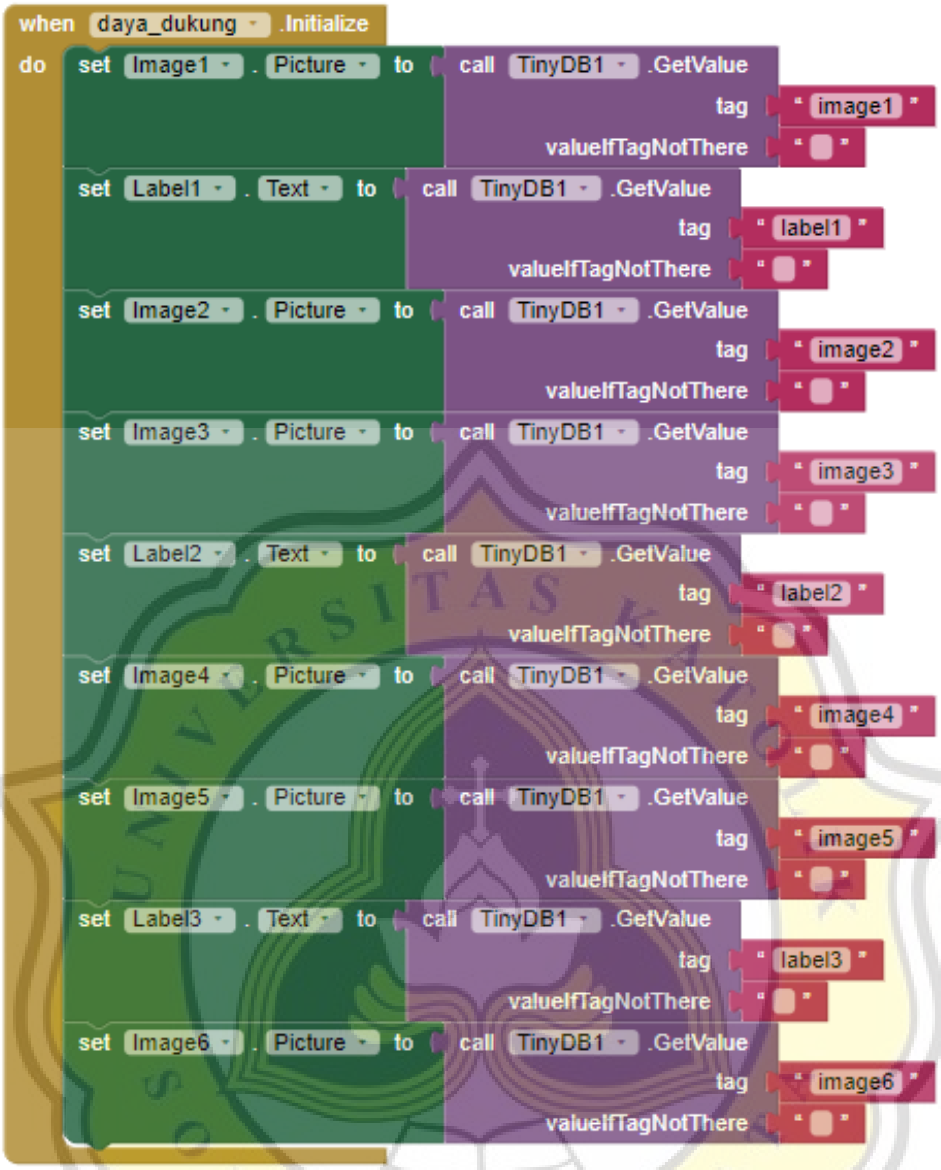
E.2 Blok Program Halaman Pengenalan (Lanjutan)



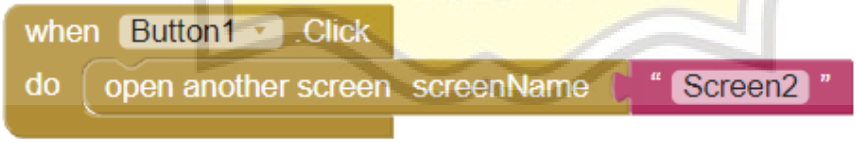
Gambar LE.10 Blok Untuk *Screen*3 Atau Halaman Teori.

Gambar LE.11 Blok Untuk Tombol Kembali.

E.2 Blok Program Halaman Pengenalan (Lanjutan)

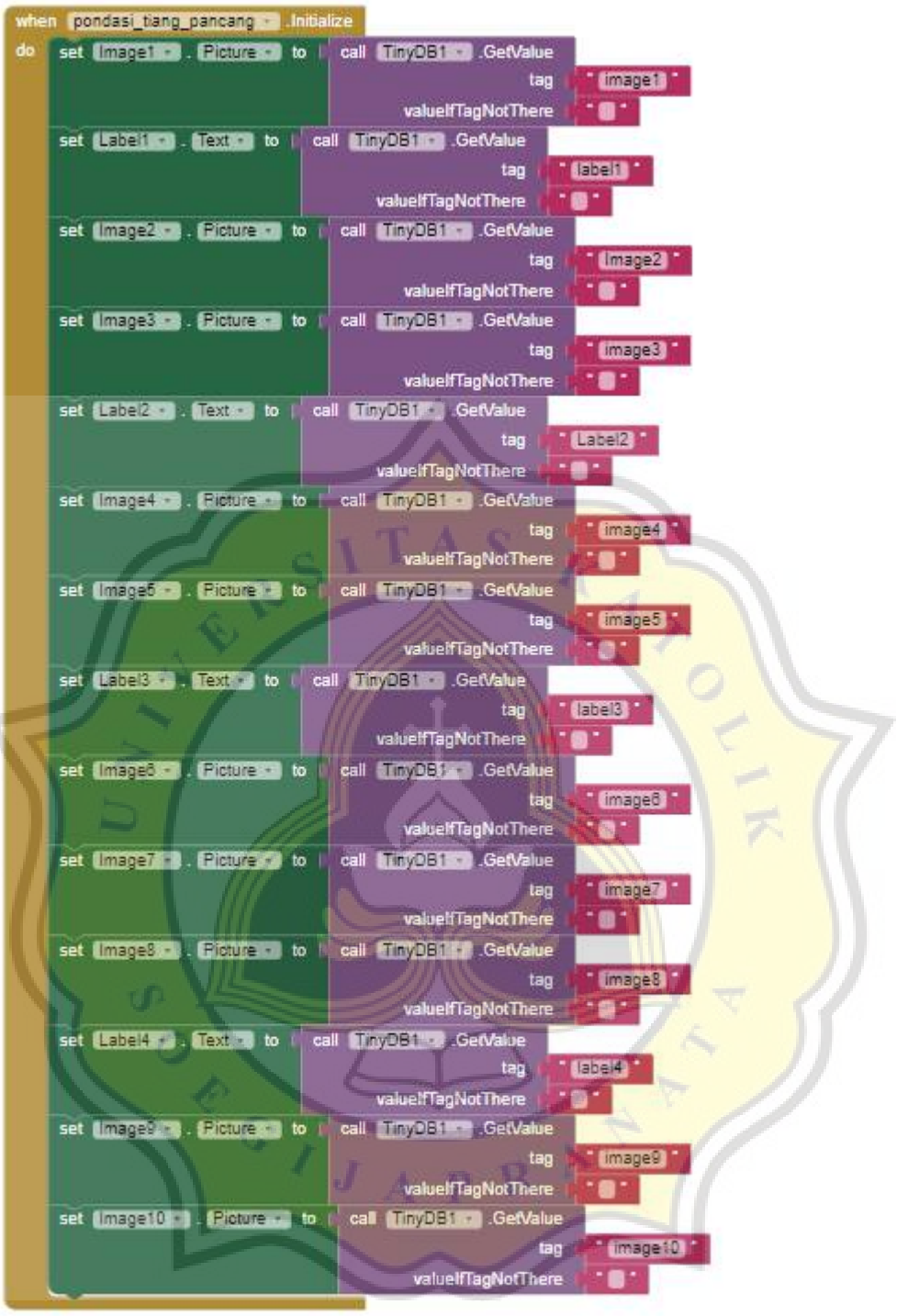


Gambar LE.12 Blok Untuk *Screen* Daya Dukung.

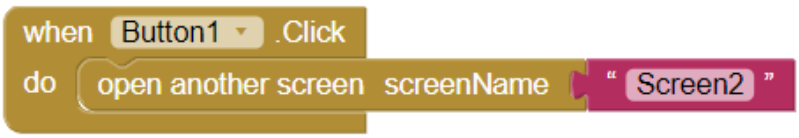


Gambar LE.13 Blok Untuk Tombol Kembali.

E.2 Blok Program Halaman Pengenalan (Lanjutan)



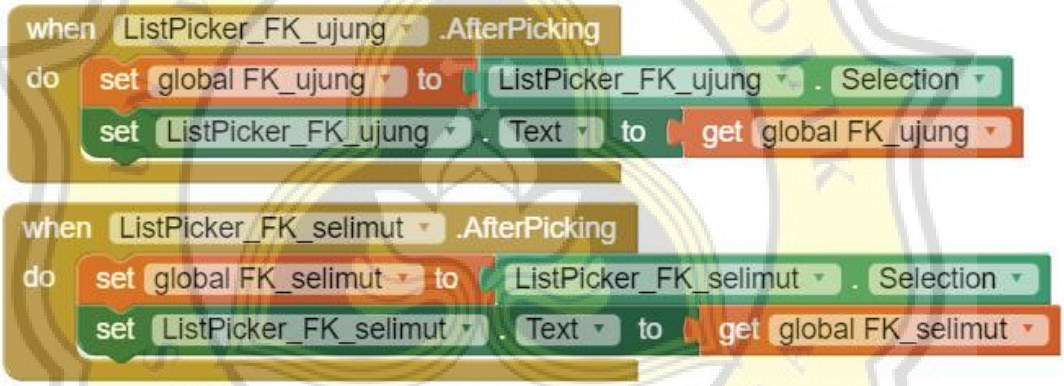
Gambar LE.14 Blok Untuk *Screen* Pondasi Tiang Pancang.



Gambar LE.15 Blok Untuk Tombol Kembali.

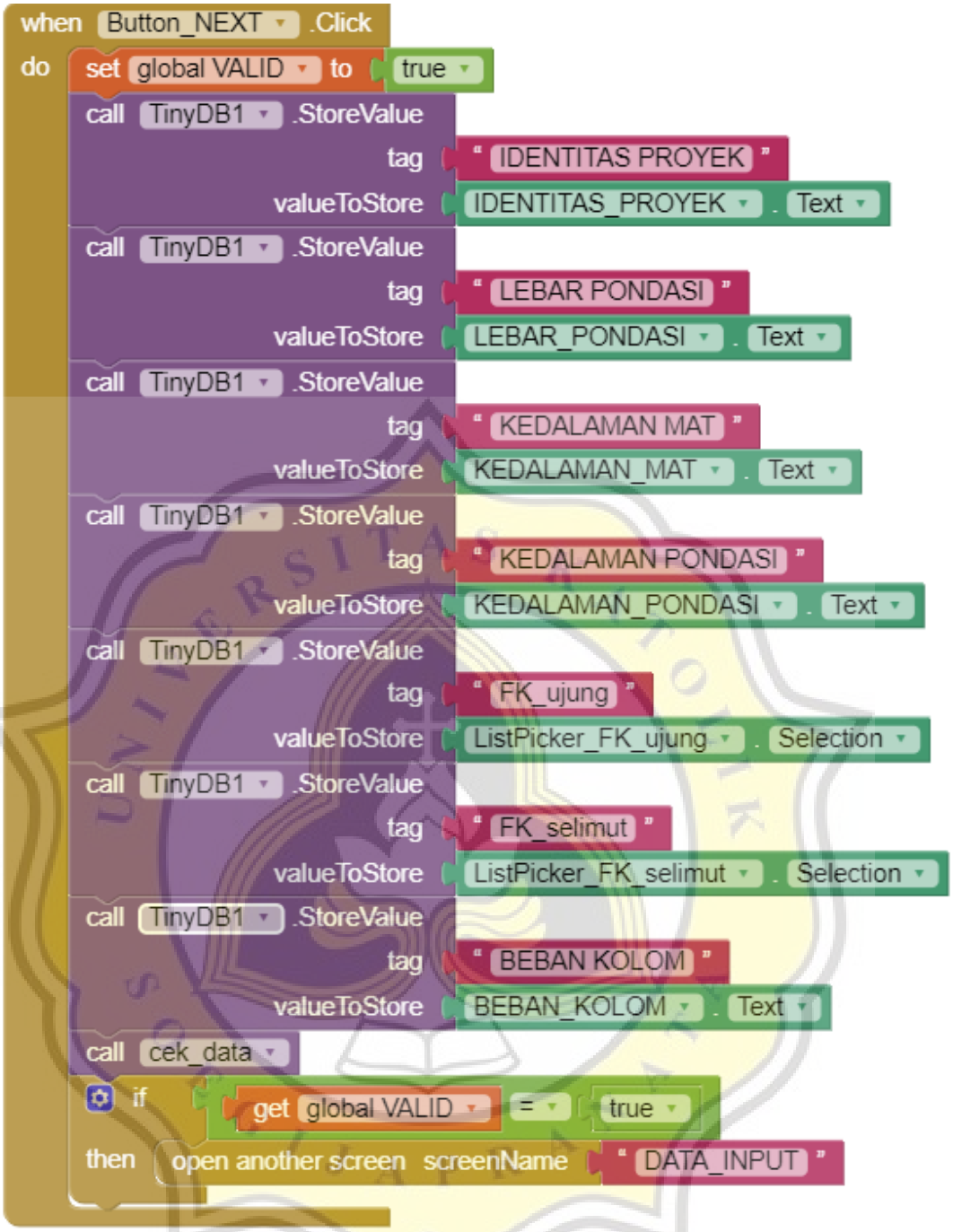
E.3 Blok Program Halaman Perhitungan

Gambar LE.16 Blok Untuk Membuat Variabel.



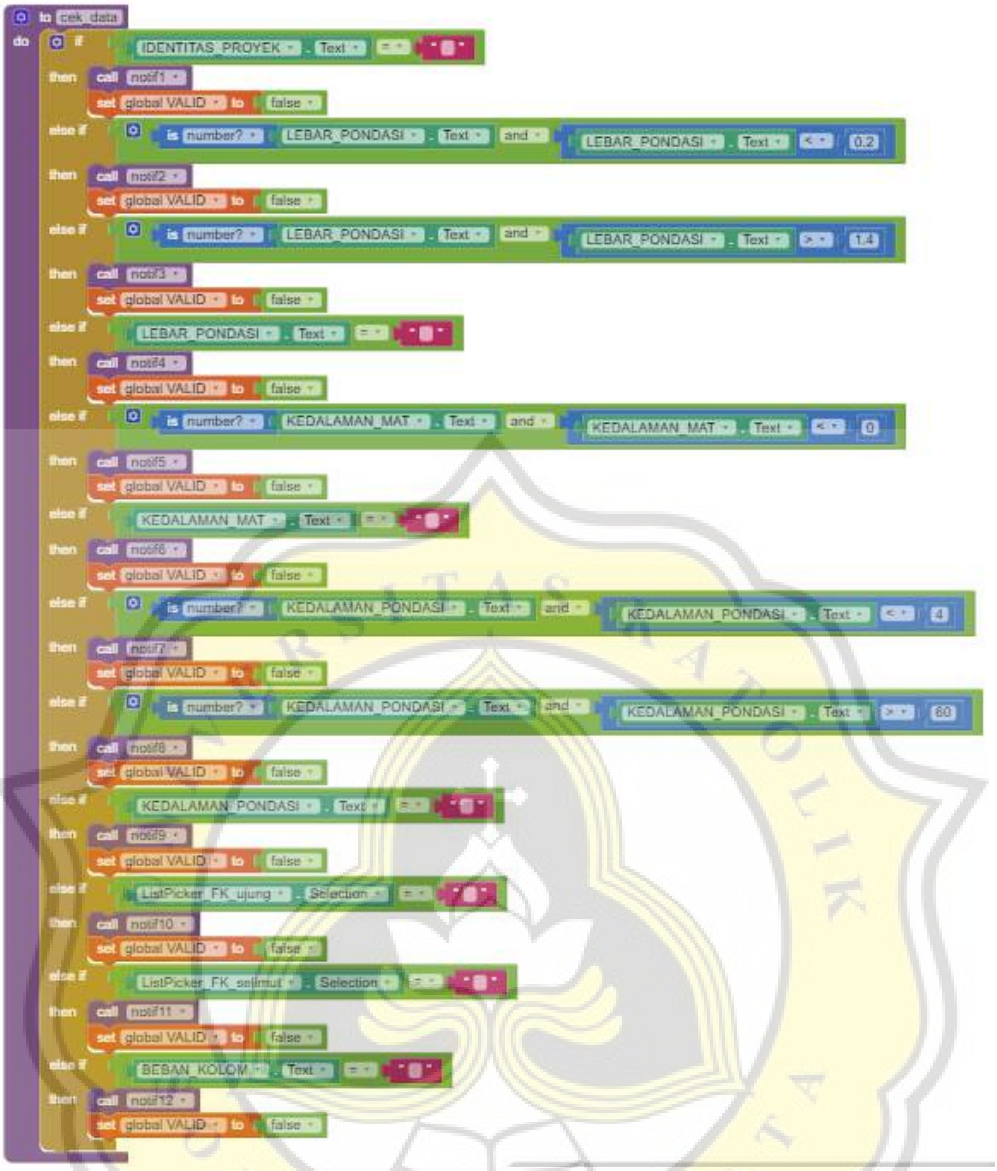
Gambar LE.17 Blok Untuk Pengaturan *Listpicker*.

E.3 Blok Program Halaman Perhitungan (Lanjutan)

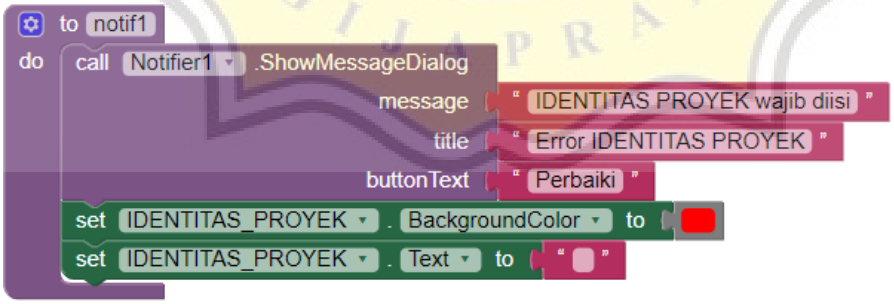


Gambar LE.18 Blok Untuk Tombol *Next*.

E.3 Blok Program Halaman Perhitungan (Lanjutan)

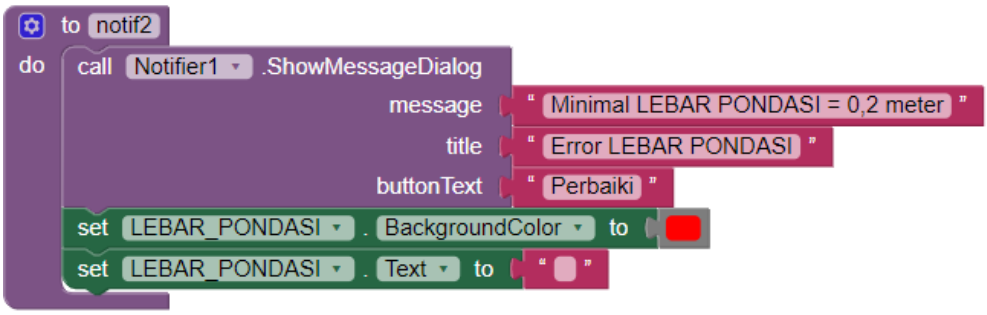


Gambar LE.19 Susunan Blok *Procedure* : Cek Data.



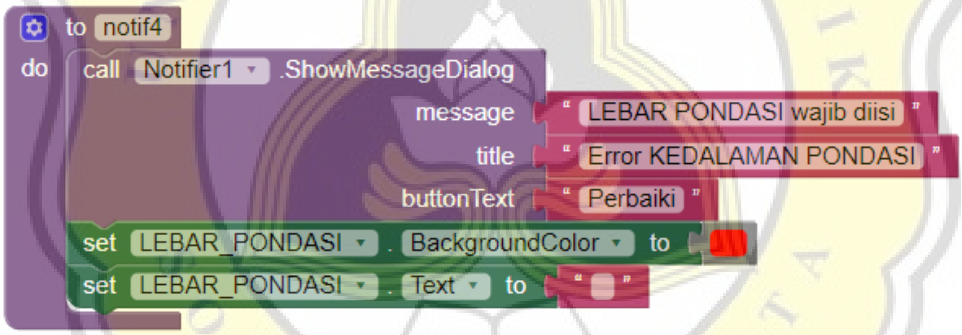
Gambar LE.20 Notif1.

E.3 Blok Program Halaman Perhitungan (Lanjutan)

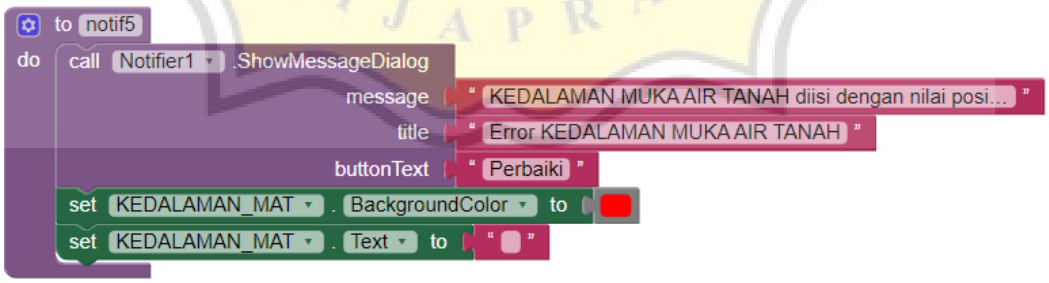


Gambar LE.21 Notif2.

Gambar LE.22 Notif3.

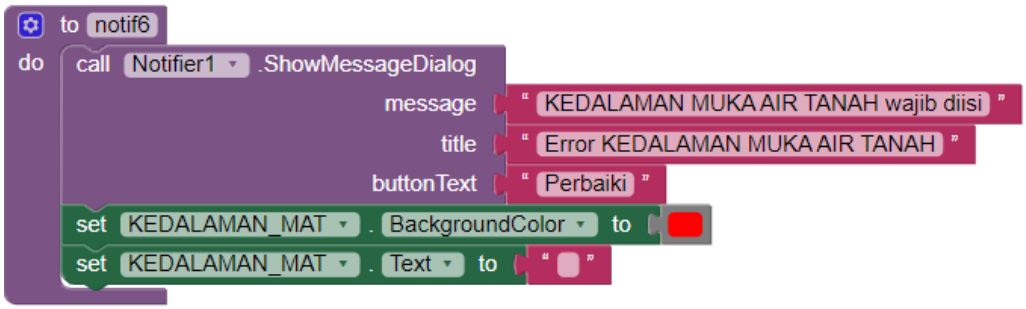


Gambar LE.23 Notif4.

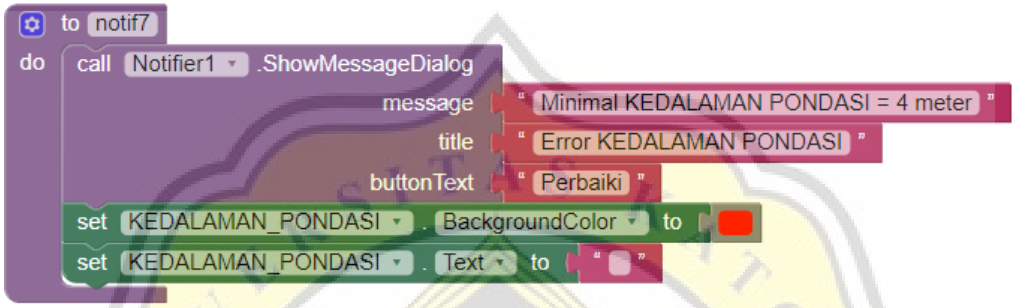


Gambar LE.24 Notif5.

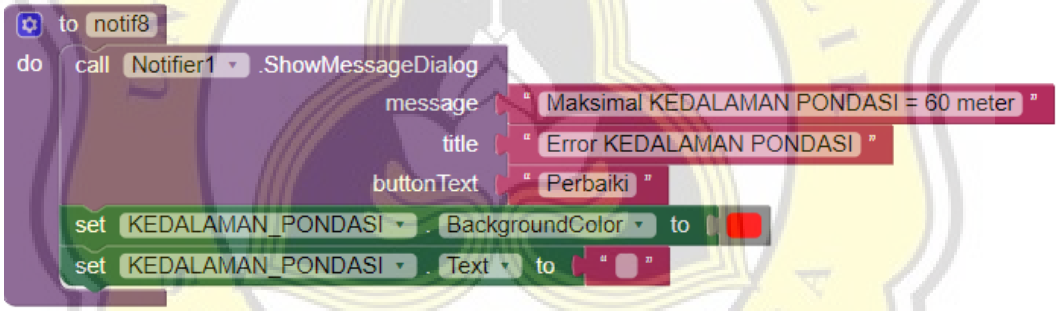
E.3 Blok Program Halaman Perhitungan (Lanjutan)



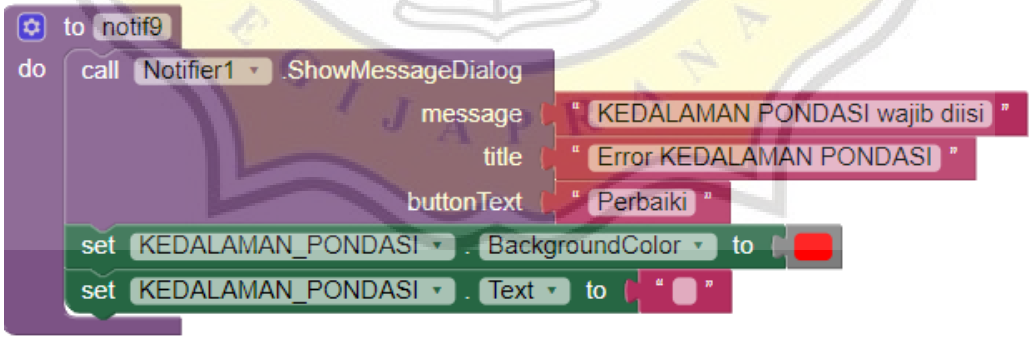
Gambar LE.25 Notif6.



Gambar LE.26 Notif7.

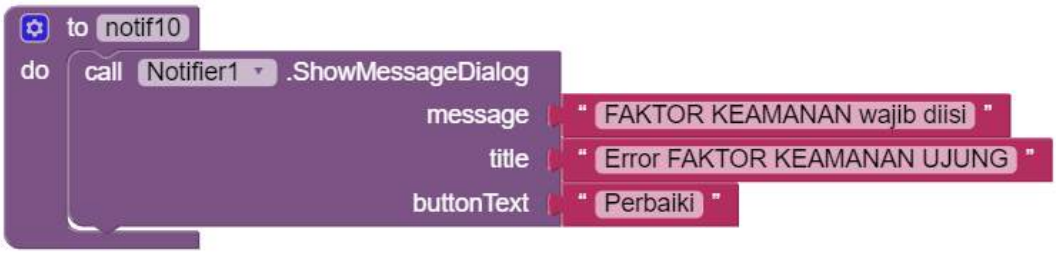


Gambar LE.27 Notif8.

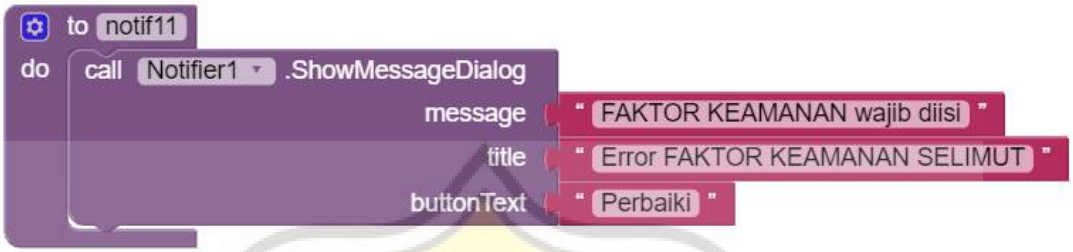


Gambar LE.28 Notif9.

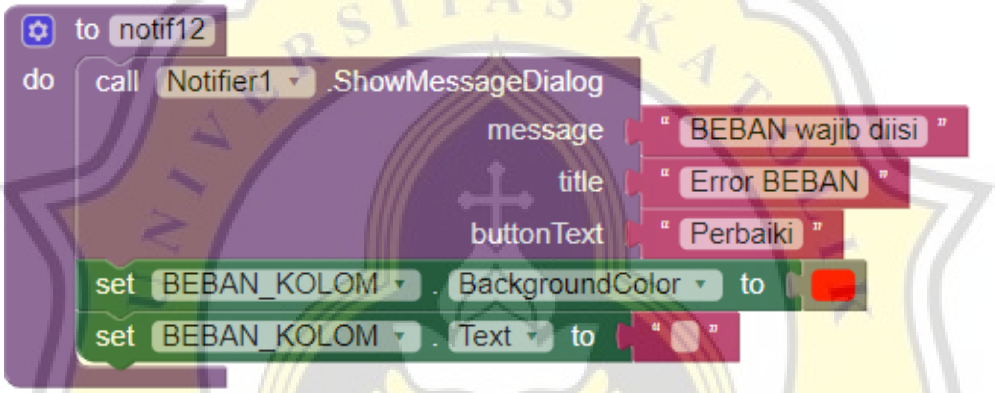
E.3 Blok Program Halaman Perhitungan (Lanjutan)



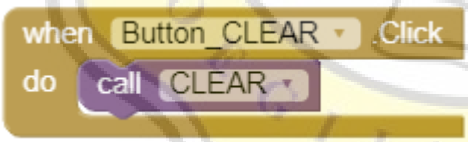
Gambar LE.29 Notif10.



Gambar LE.30 Notif11.

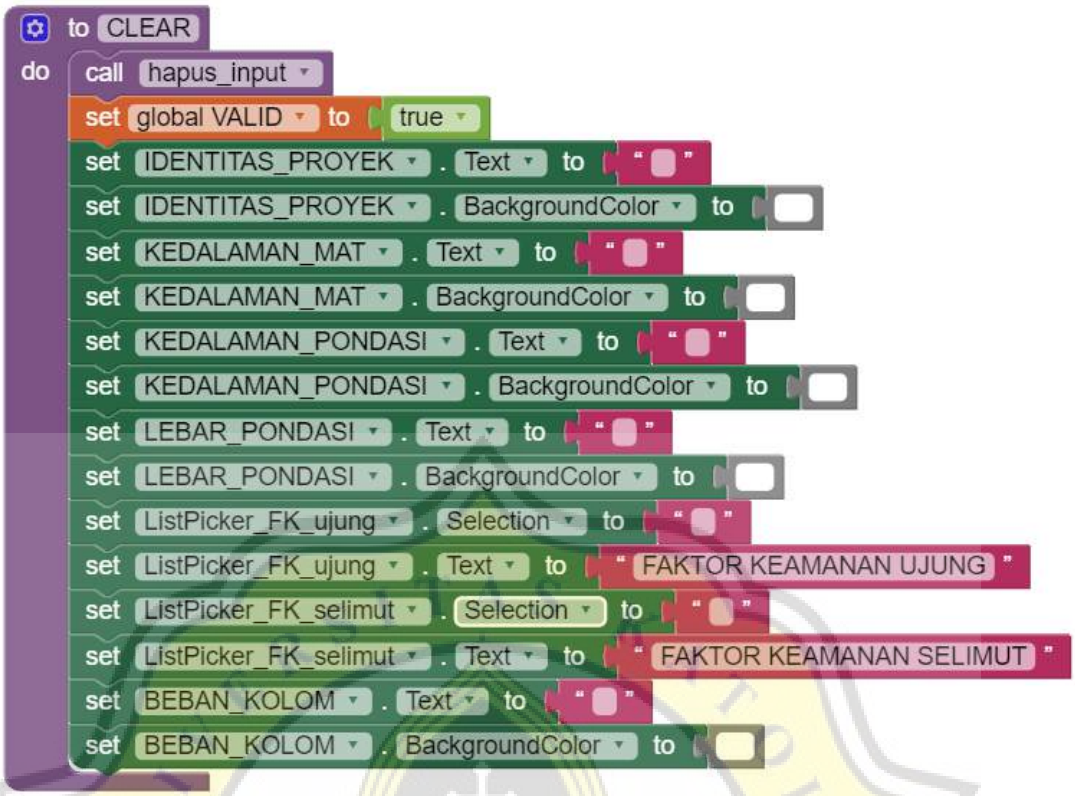


Gambar LE.31 Notif12.



Gambar LE.32 Blok Untuk Tombol *CLEAR*.

E.3 Blok Program Halaman Perhitungan (Lanjutan)

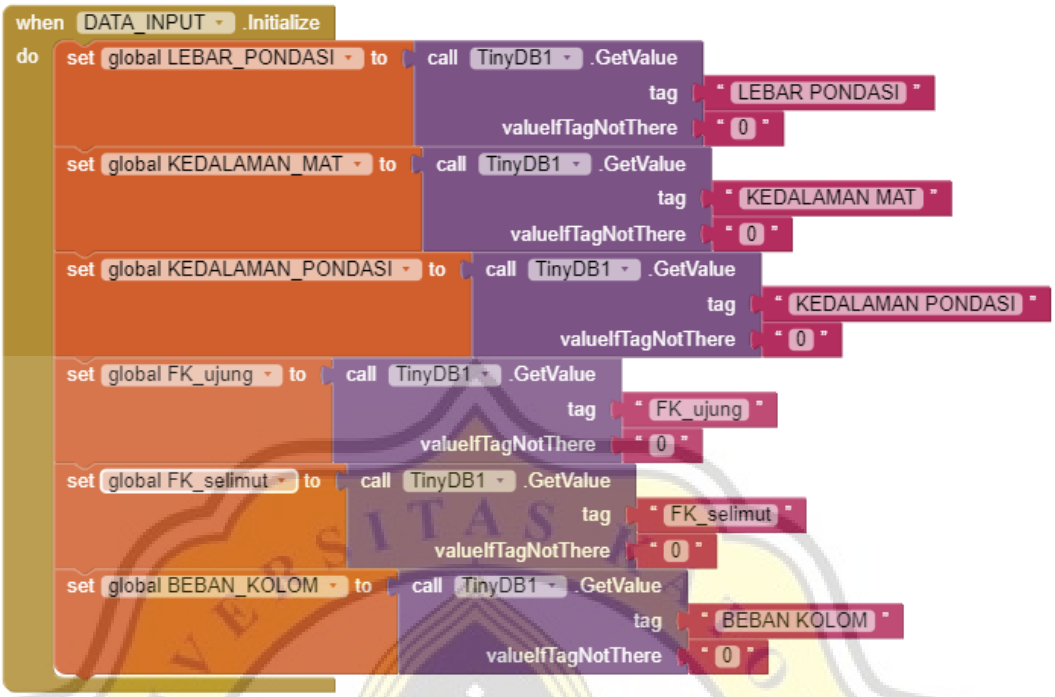


Gambar LE.33 Susunan Blok *Procedure* : *CLEAR*.

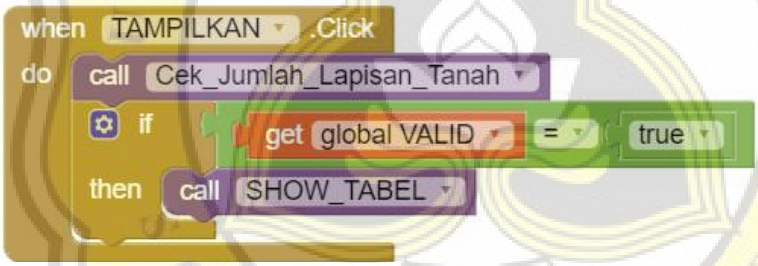
Gambar LE.34 Susunan Blok *Procedure* : hapus_input.

Gambar LE.35 Blok Untuk Tombol *Back*.

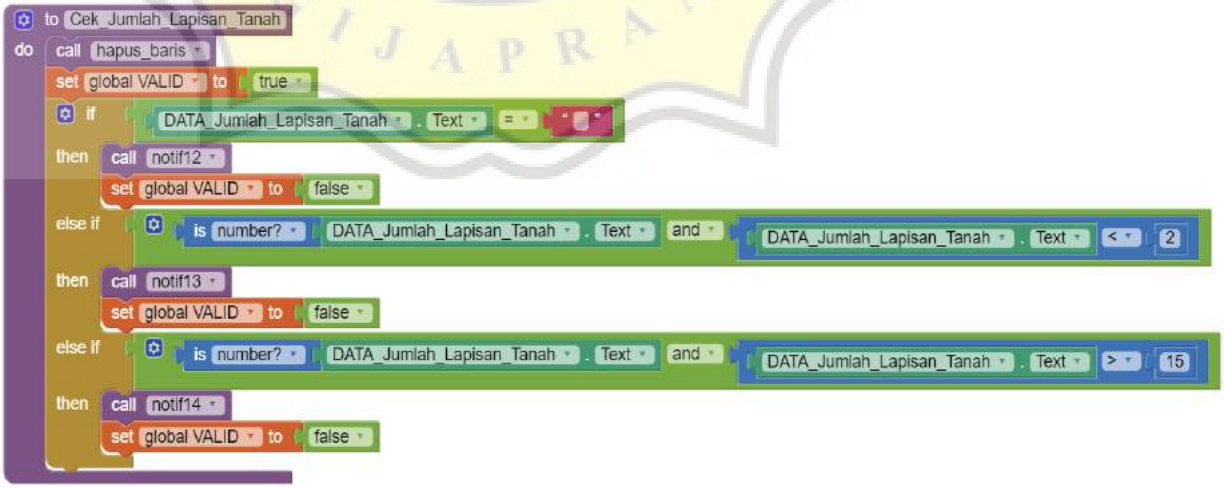
E.4 Blok Program Halaman Input Data



Gambar LE.36 Blok *Screen* Data Input.

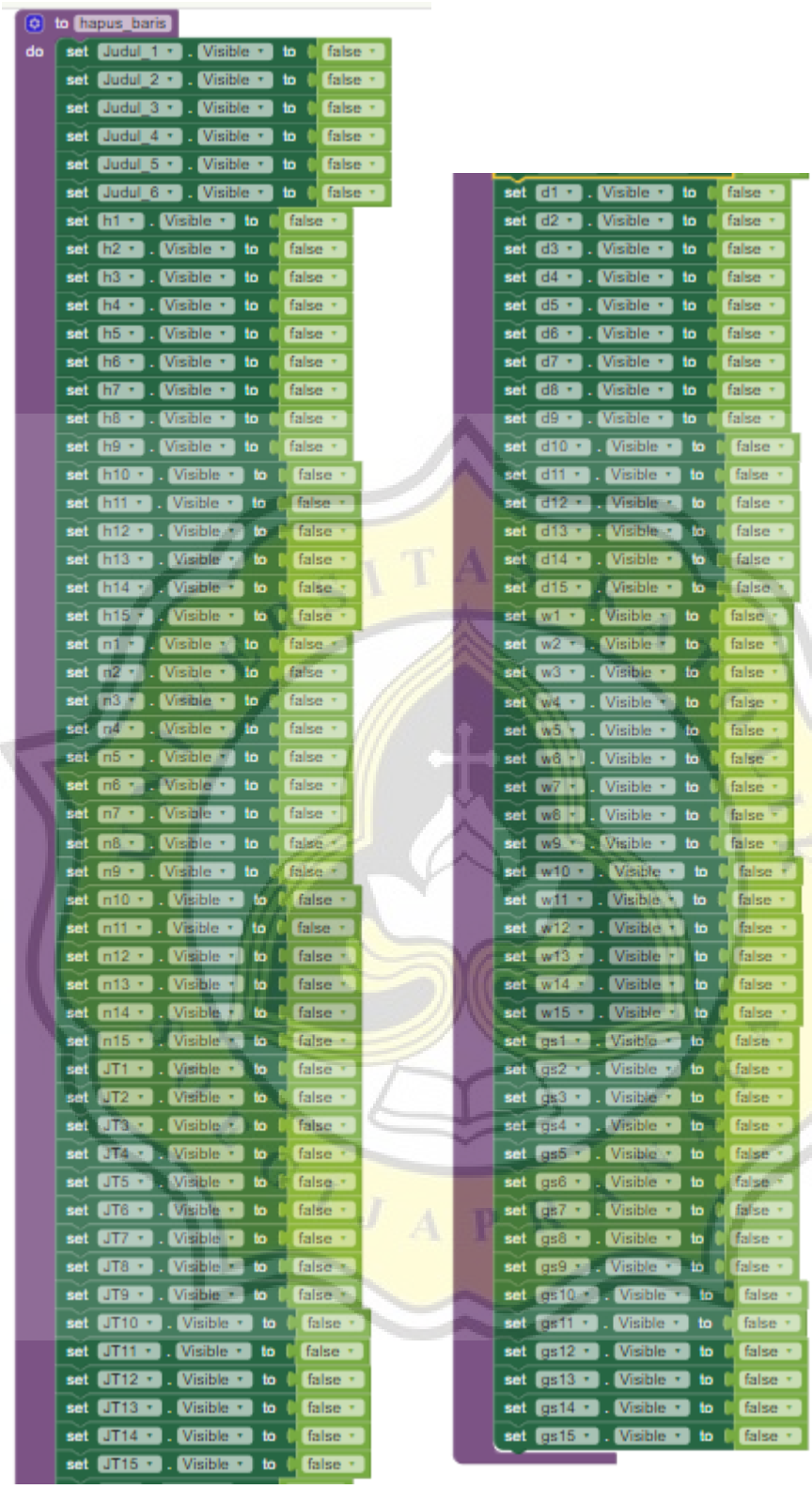


Gambar LE.37 Blok Untuk Tombol Tampilkan



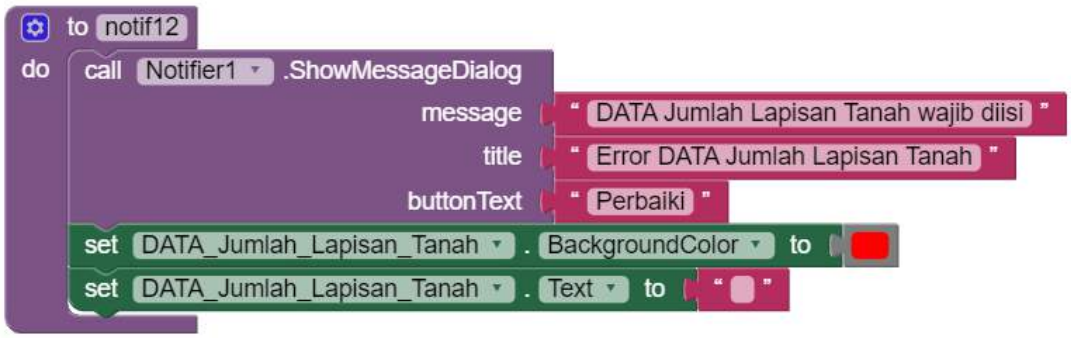
Gambar LE.38 Blok *Procedure* : Cek_Jumlah_Lapisan_Tanah.

E.4 Blok Program Halaman Input Data (Lanjutan)

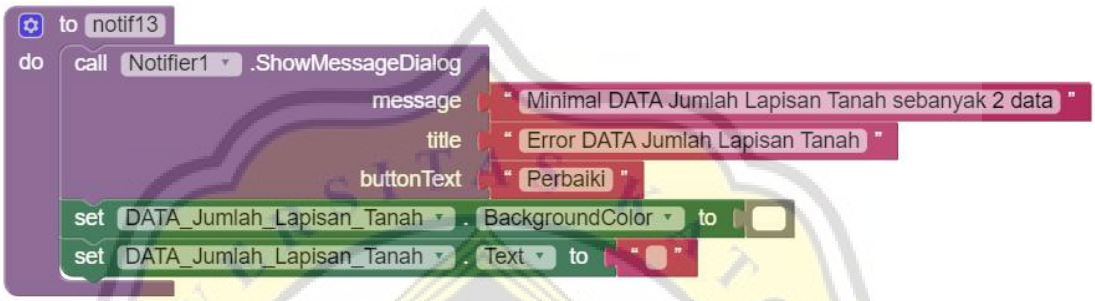


Gambar LE.39 Blok *Procedure* : hapus_baris.

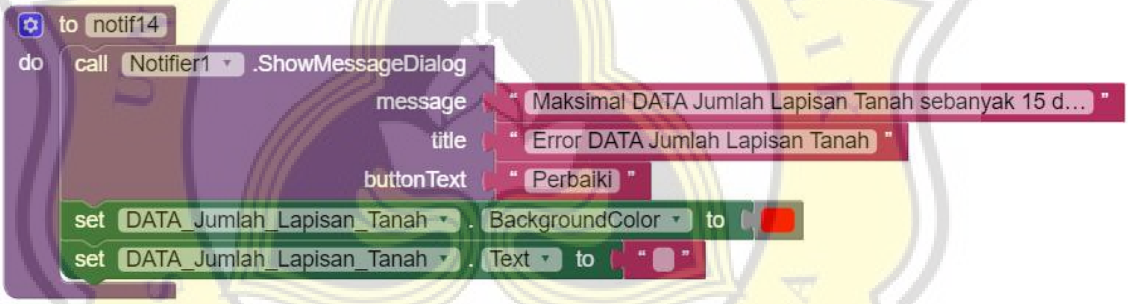
E.4 Blok Program Halaman Input Data (Lanjutan)



Gambar LE.40 Blok Notif12

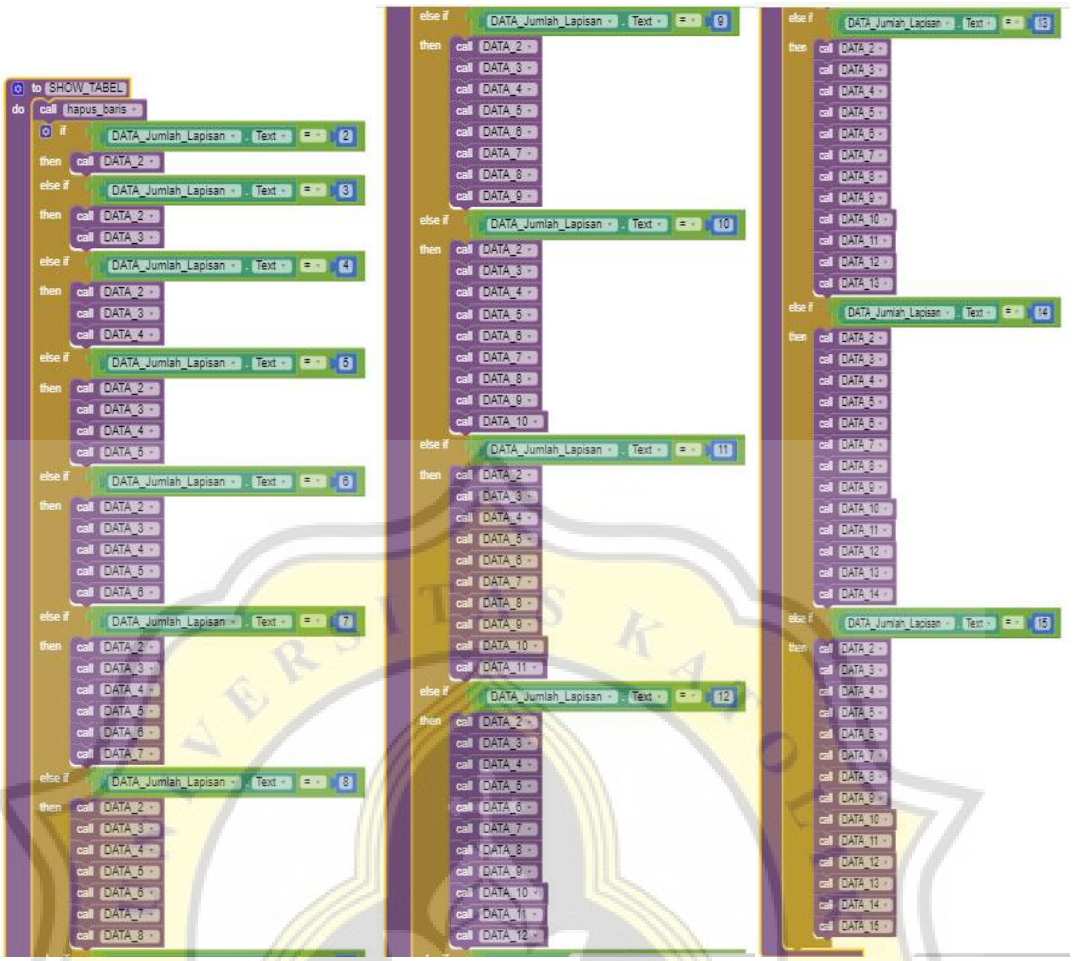


Gambar LE.41 Blok Notif13



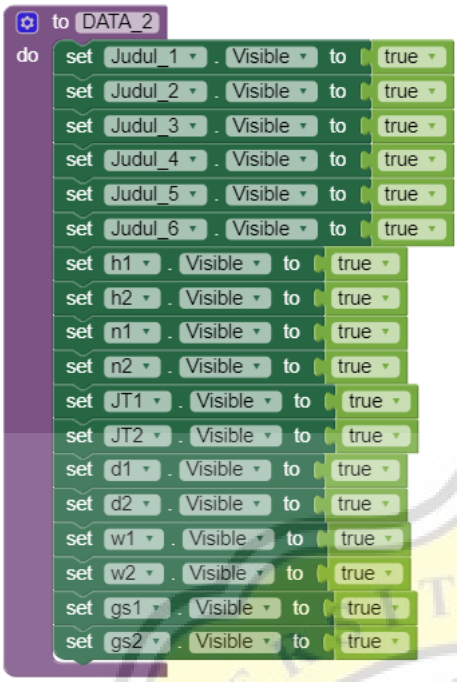
Gambar LE.42 Blok Notif14

E.4 Blok Program Halaman Input Data (Lanjutan)

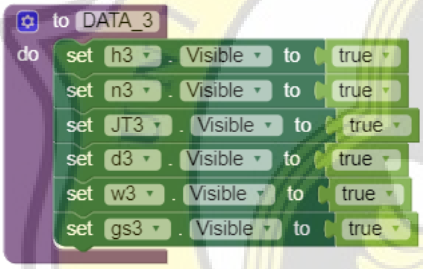


Gambar LE.43 Blok *Procedure* : SHOW_TABEL.

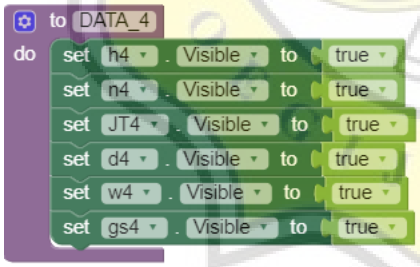
E.4 Blok Program Halaman Input Data (Lanjutan)



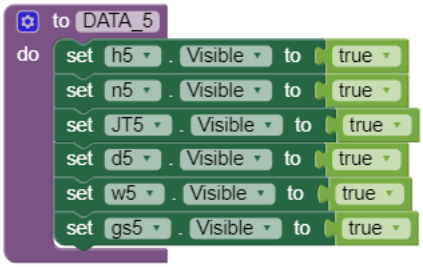
Gambar LE.44 Blok *Procedure* : DATA_2.



Gambar LE.45 Blok *Procedure* : DATA_3.

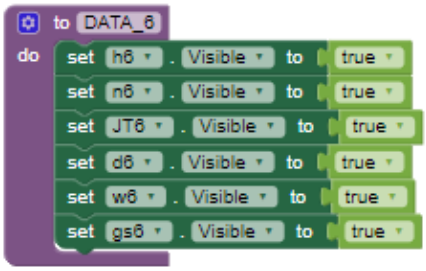


Gambar LE.46 Blok *Procedure* : DATA_4.

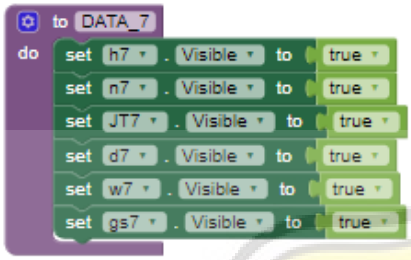


Gambar LE.47 Blok *Procedure* : DATA_5.

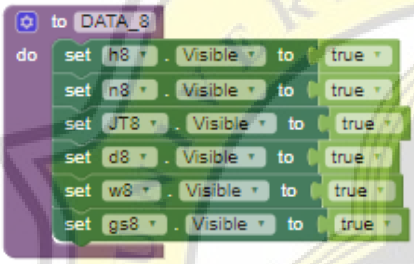
E.4 Blok Program Halaman Input Data (Lanjutan)



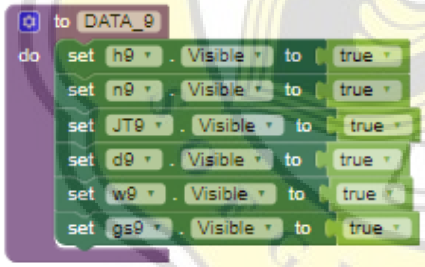
Gambar LE.48 Blok *Procedure* : DATA_6.



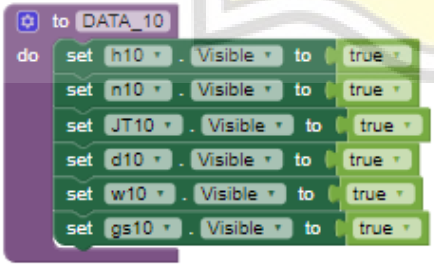
Gambar LE.49 Blok *Procedure* : DATA_7.



Gambar LE.50 Blok *Procedure* : DATA_8.

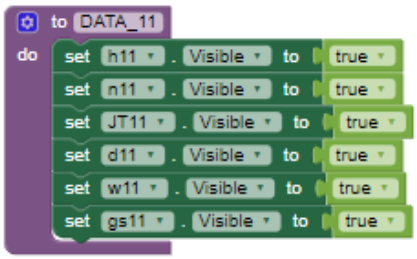


Gambar LE.51 Blok *Procedure* : DATA_9.

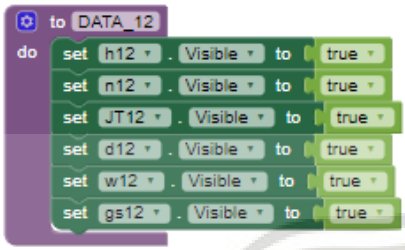


Gambar LE.52 Blok *Procedure* : DATA_10.

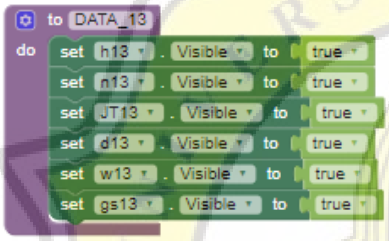
E.4 Blok Program Halaman Input Data (Lanjutan)



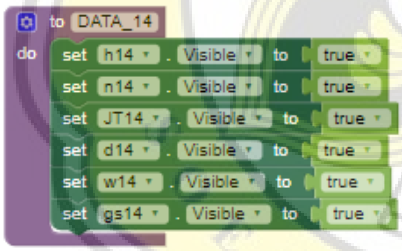
Gambar LE.53 Blok *Procedure* : DATA_11.



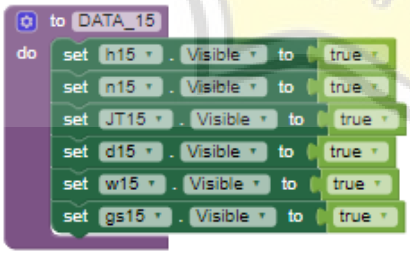
Gambar LE.54 Blok *Procedure* : DATA_12.



Gambar LE.55 Blok *Procedure* : DATA_13.

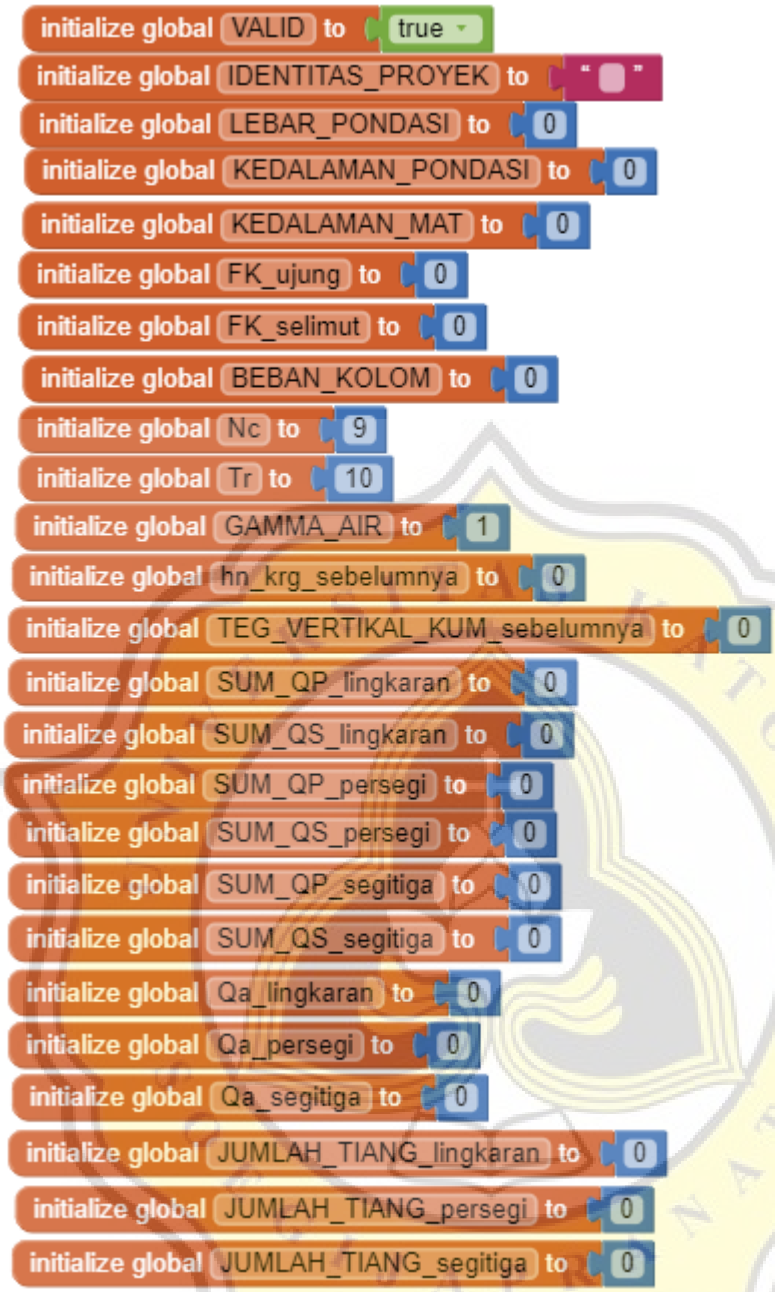


Gambar LE.56 Blok *Procedure* : DATA_14.



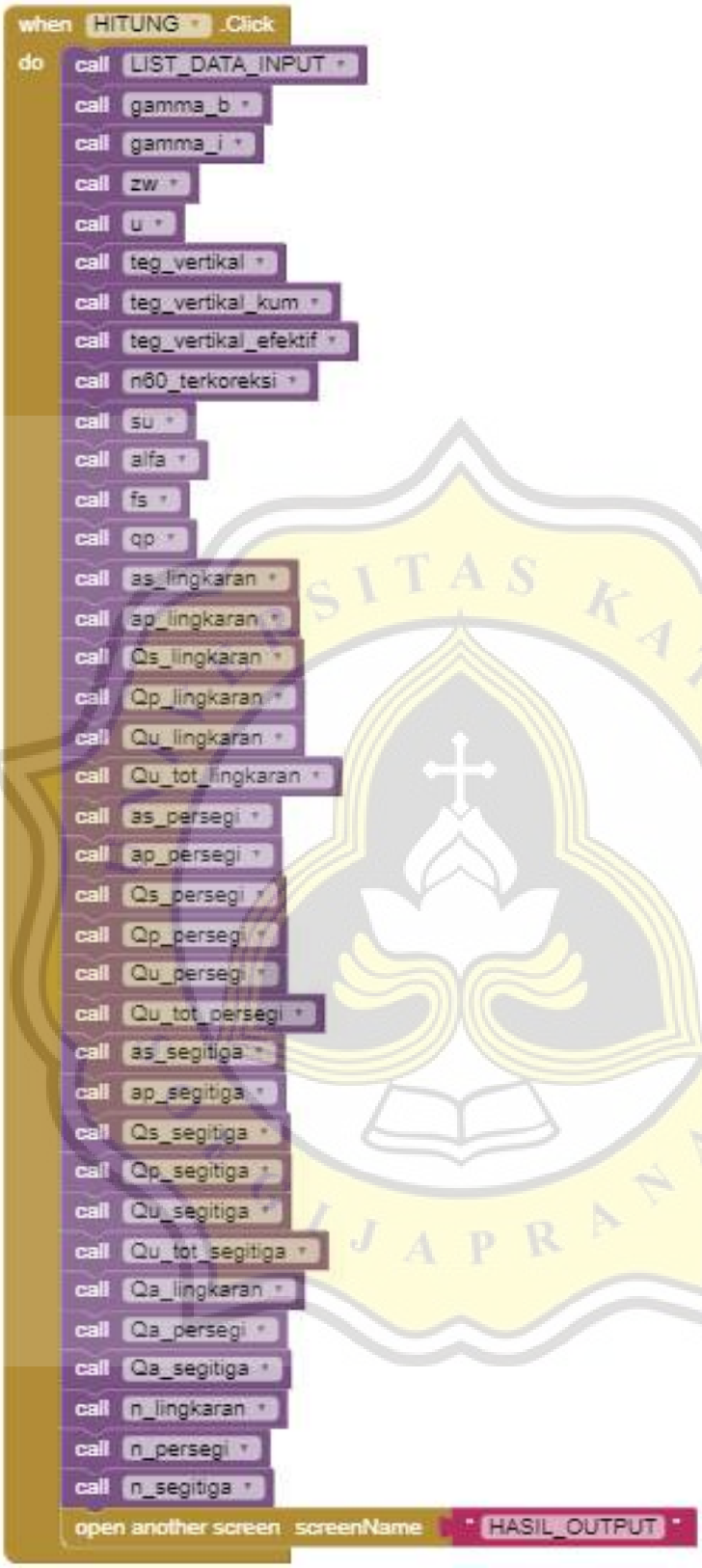
Gambar LE.57 Blok *Procedure* : DATA_15.

E.4 Blok Program Halaman Input Data (Lanjutan)



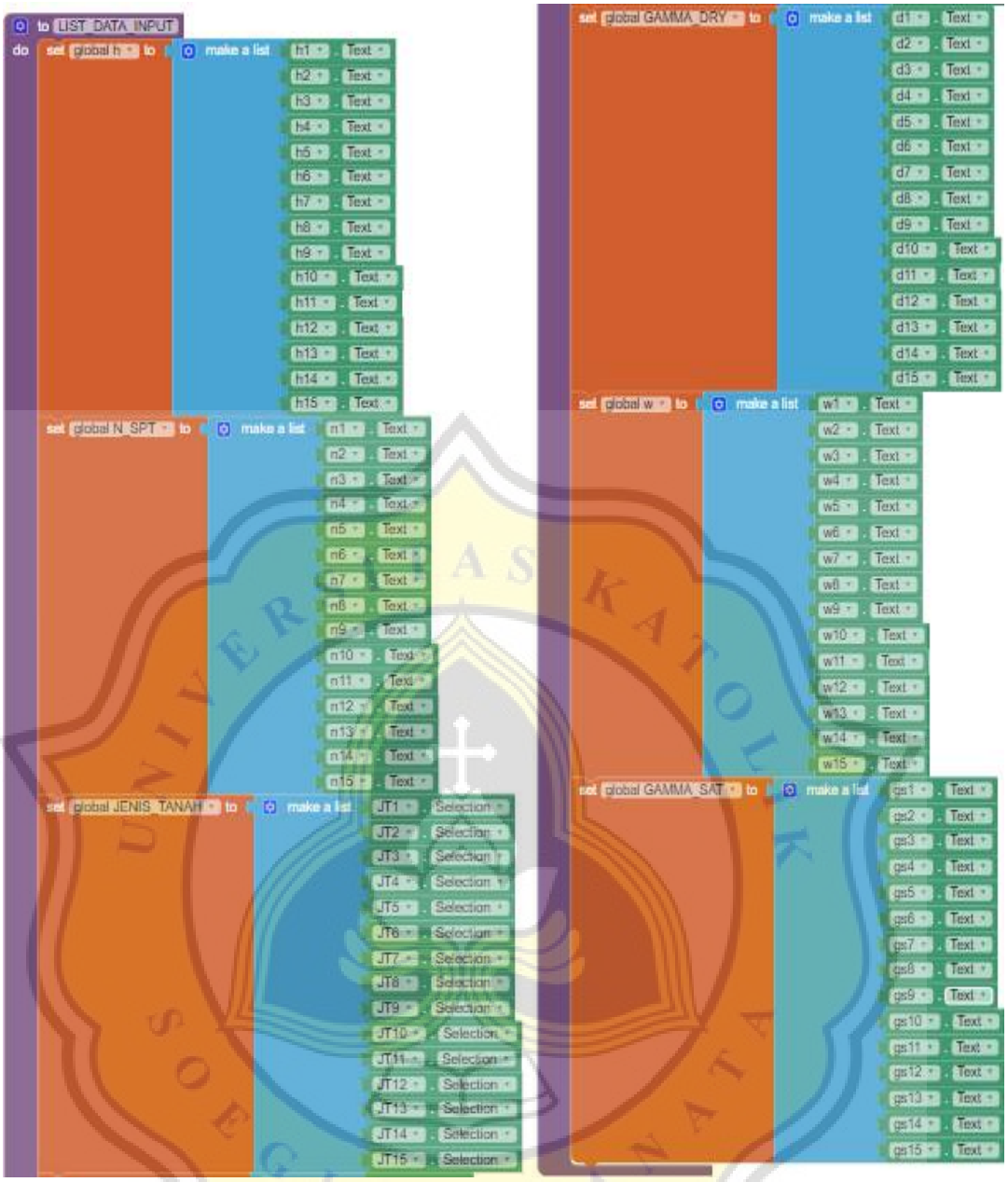
Gambar LE.58 Blok Untuk Membuat Variabel.

E.4 Blok Program Halaman Input Data (Lanjutan)



Gambar LE.59 Blok Untuk Tombol Hitung.

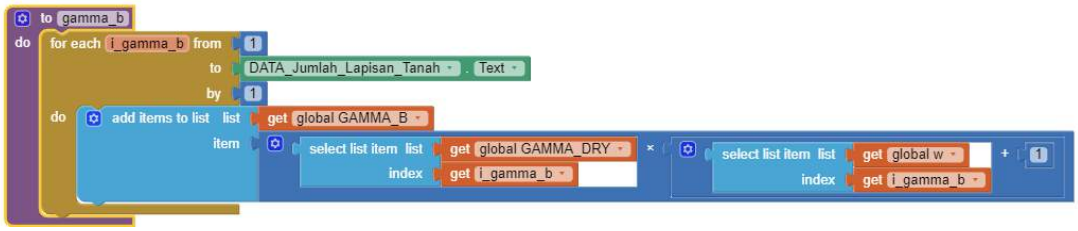
E.4 Blok Program Halaman Input Data (Lanjutan)



Gambar LE.60 Blok *Procedure* : List_Data_Input

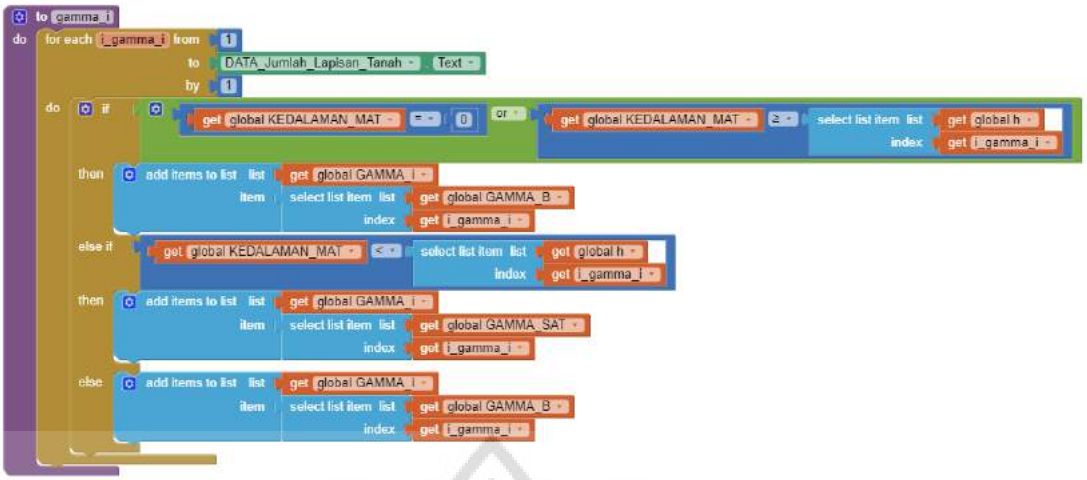
E.4 Blok Program Halaman Input Data (Lanjutan)

Gambar LE.61 Blok Untuk Membuat Variabel.

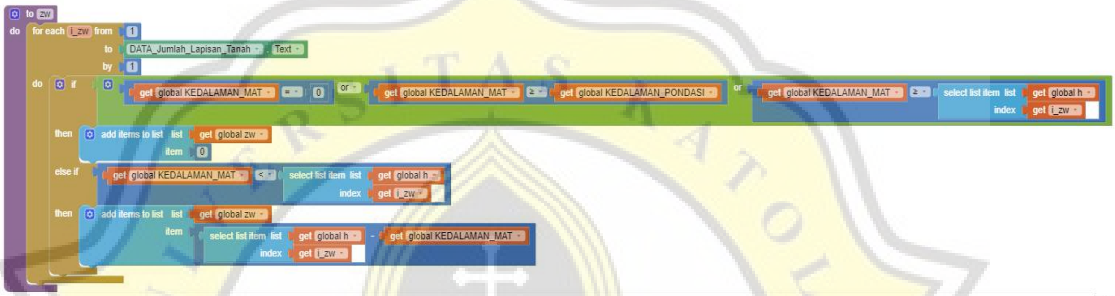


Gambar LE.62 Blok *Procedure* : Gamma b.

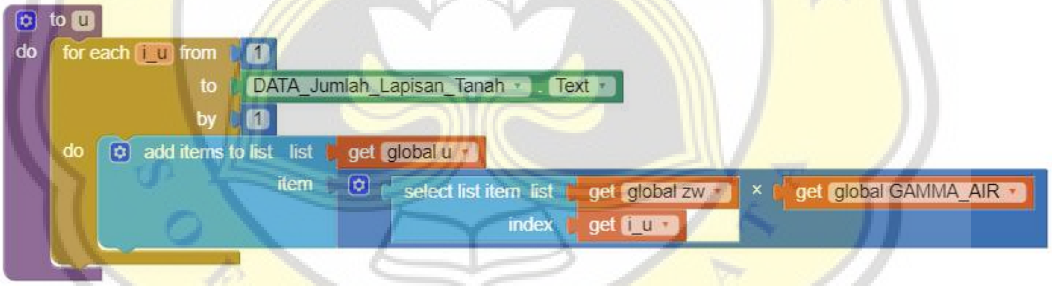
E.4 Blok Program Halaman Input Data (Lanjutan)



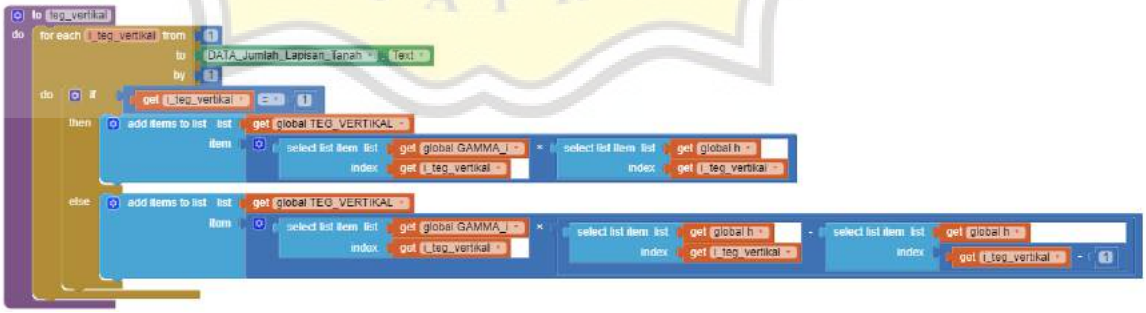
Gambar LE.63 Blok *Procedure* : Gamma_i.



Gambar LE.64 Blok *Procedure* : zw.

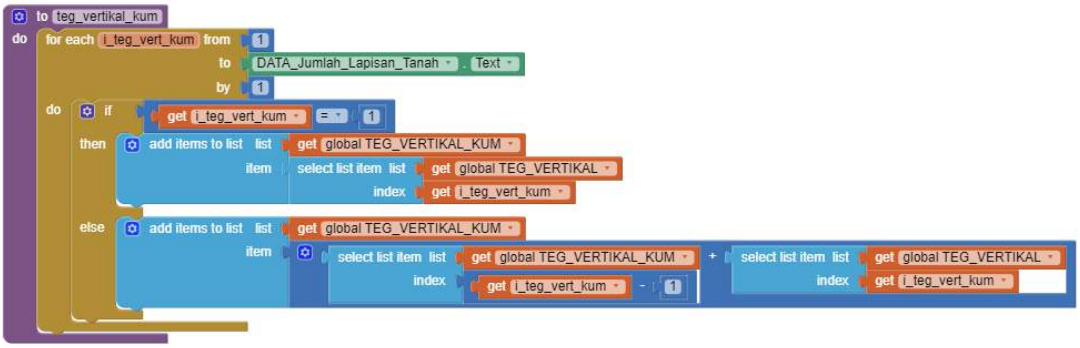


Gambar LE.65 Blok *Procedure* : u.



Gambar LE.66 Blok *Procedure* : Tegangan Vertikal.

E.4 Blok Program Halaman Input Data (Lanjutan)

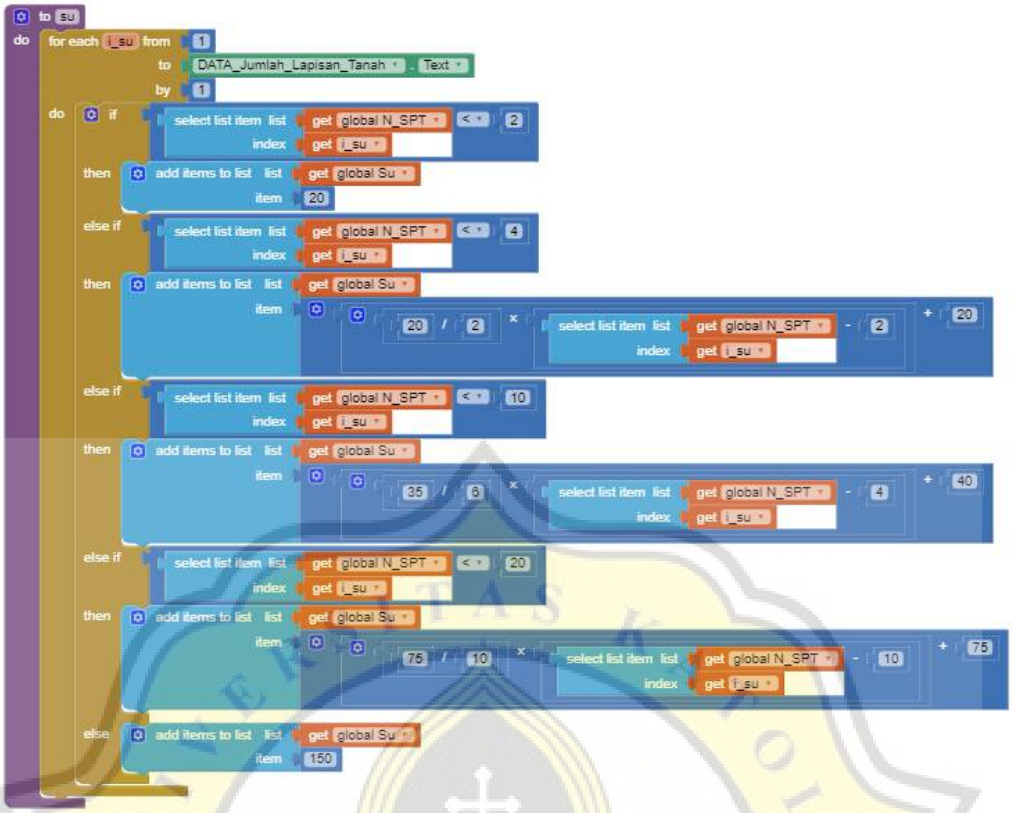


Gambar LE.67 Blok *Procedure* : Tegangan Vertikal Kumulatif.

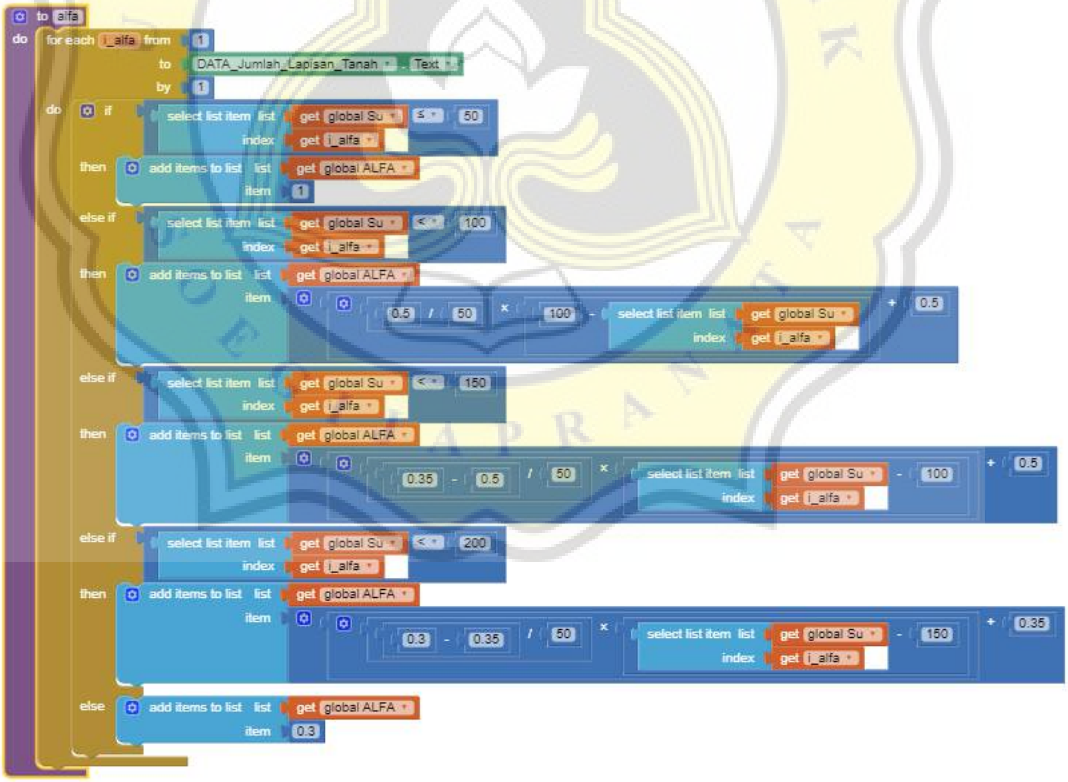
Gambar LE.68 Blok *Procedure* : Tegangan Vertikal Efektif.

Gambar LE.69 Blok *Procedure* : n60 Terkoreksi.

E.4 Blok Program Halaman Input Data (Lanjutan)

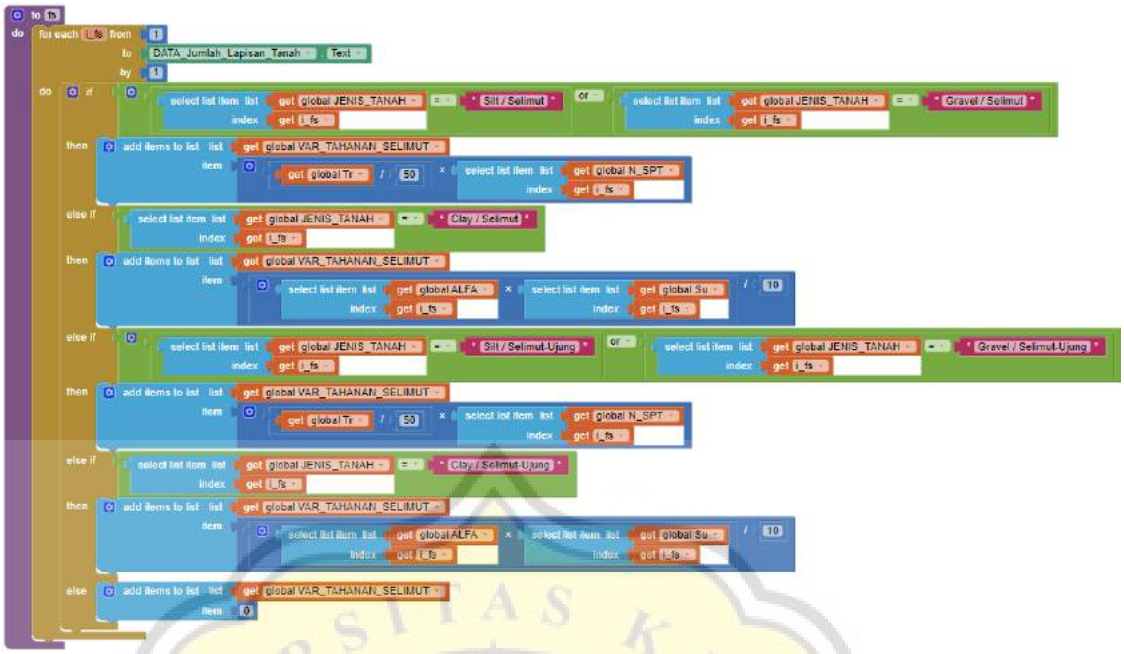


Gambar LE.70 Blok *Procedure* : su.

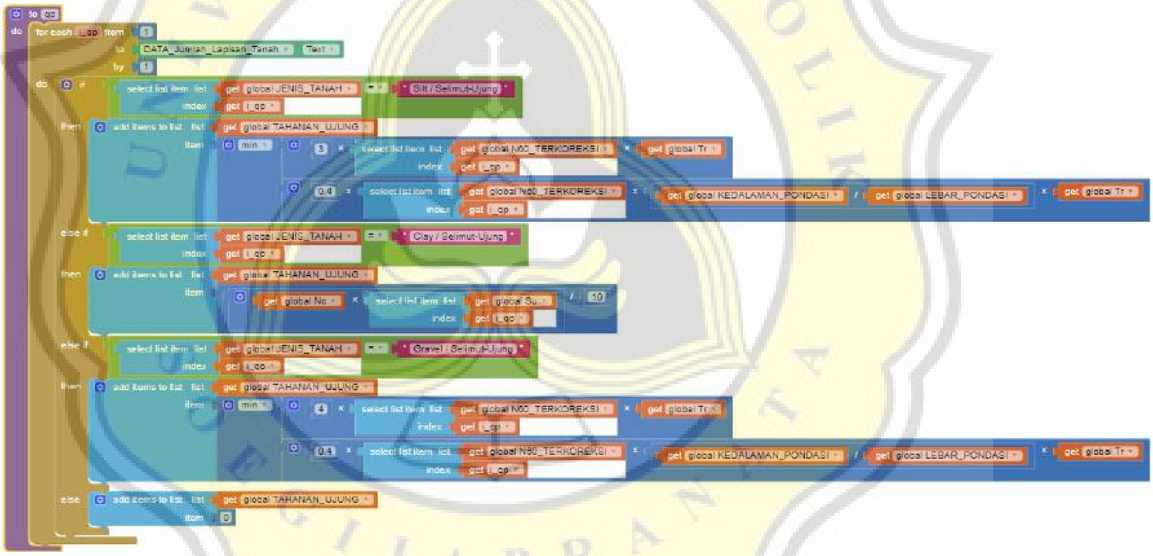


Gambar LE.71 Blok *Procedure* : Alfa.

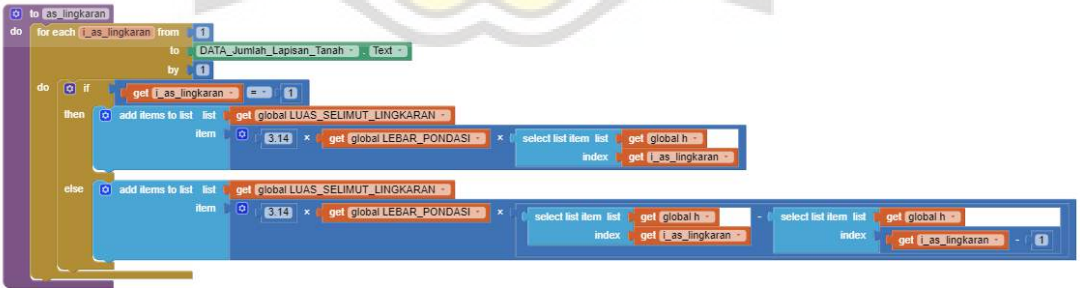
E.4 Blok Program Halaman Input Data (Lanjutan)



Gambar LE.72 Blok *Procedure* : fs.

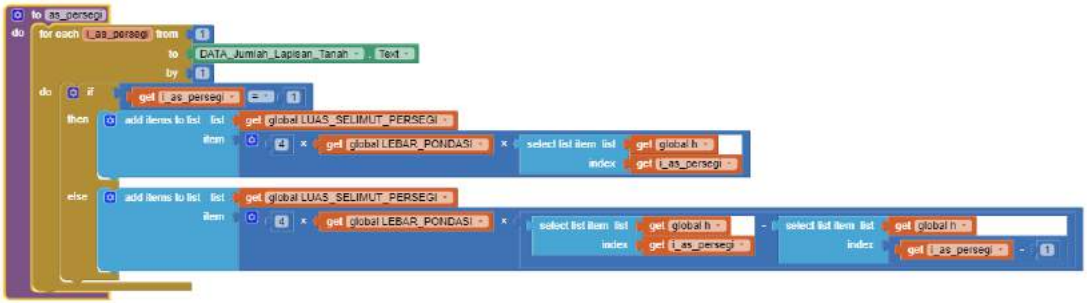


Gambar LE.73 Blok *Procedure* : qp.

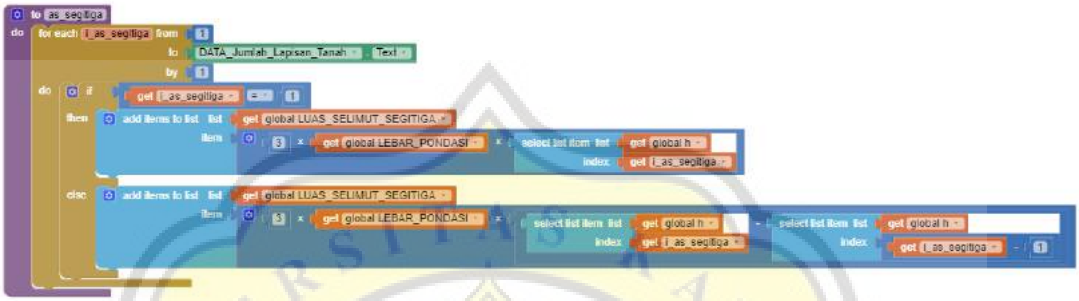


Gambar LE.74 Blok *Procedure* : Luas Selimut Lingkaran.

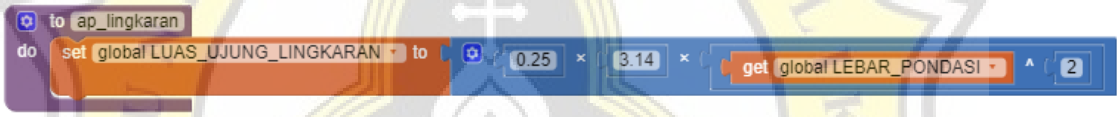
E.4 Blok Program Halaman Input Data (Lanjutan)



Gambar LE.75 Blok *Procedure* : Luas Selimut Persegi.



Gambar LE.76 Blok *Procedure* : Luas Selimut Segitiga.



Gambar LE.77 Blok *Procedure* : Luas Ujung Lingkaran.

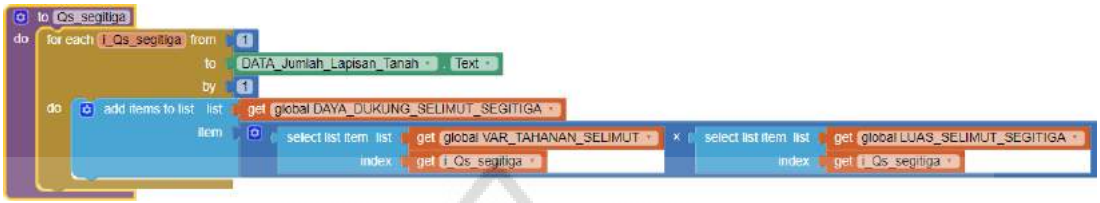
Gambar LE.78 Blok *Procedure* : Luas Ujung Persegi.

Gambar LE.79 Blok *Procedure* : Luas Ujung Segitiga.

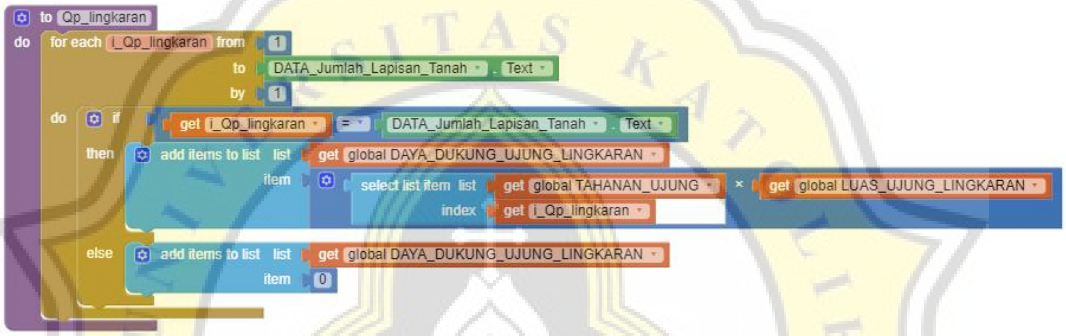
Gambar LE.80 Blok *Procedure* : Daya dukung Selimut Lingkaran.

E.4 Blok Program Halaman Input Data (Lanjutan)

Gambar LE.81 Blok *Procedure* : Daya dukung Selimut Persegi.



Gambar LE.82 Blok *Procedure* : Daya dukung Selimut Segitiga.



Gambar LE.83 Blok *Procedure* : Daya Dukung Ujung Lingkaran.

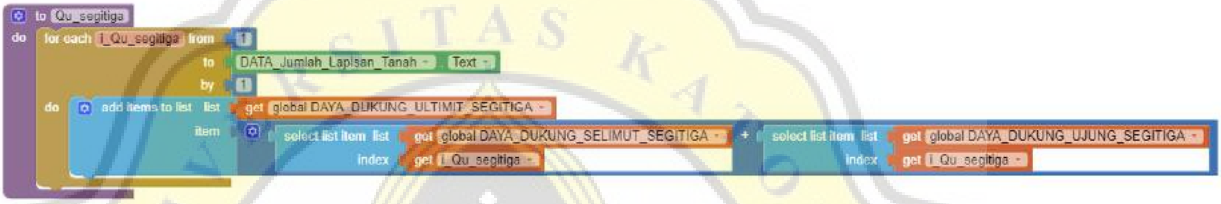
Gambar LE.84 Blok *Procedure* : Daya Dukung Ujung Persegi.

Gambar LE.85 Blok *Procedure* : Daya Dukung Ujung Segitiga.

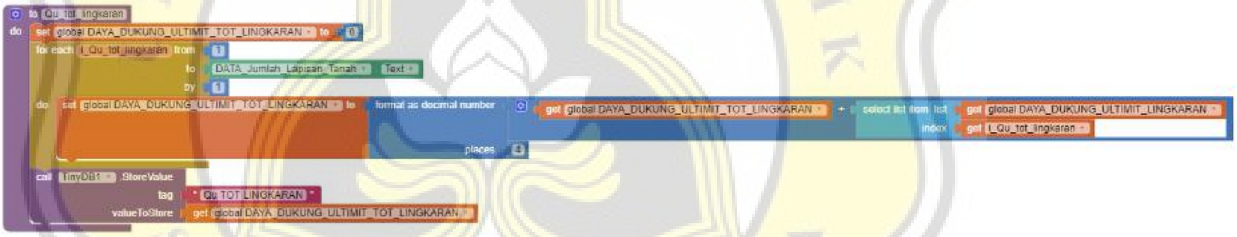
E.4 Blok Program Halaman Input Data (Lanjutan)

Gambar LE.86 Blok *Procedure* : Daya Dukung Ultimit Lingkaran.

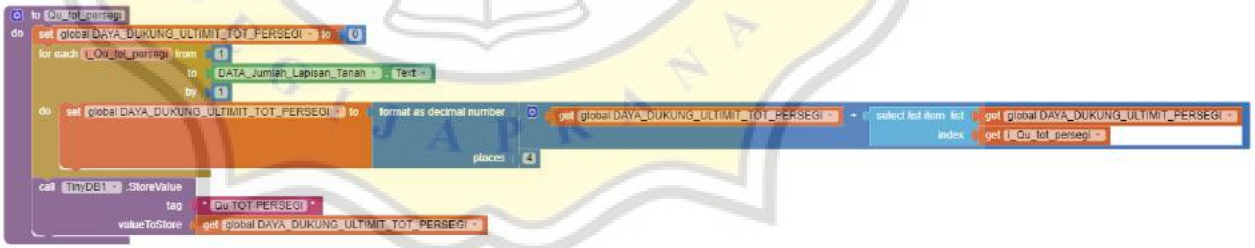
Gambar LE.87 Blok *Procedure* : Daya Dukung Ultimit Persegi.



Gambar LE.88 Blok *Procedure* : Daya Dukung Ultimit Segitiga.



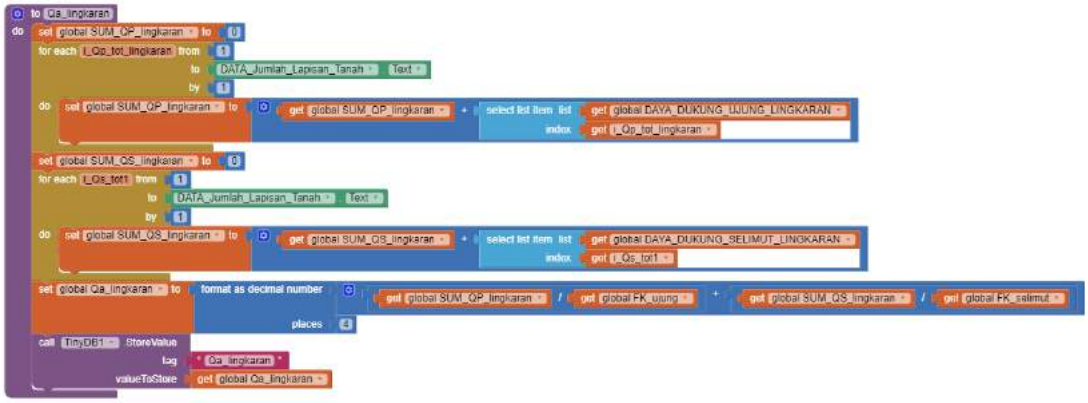
Gambar LE.89 Blok *Procedure* : Daya Dukung Total Ultimit Lingkaran.



Gambar LE.90 Blok *Procedure* : Daya Dukung Total Ultimit Persegi.

Gambar LE.91 Blok *Procedure* : Daya Dukung Total Ultimit Segitiga.

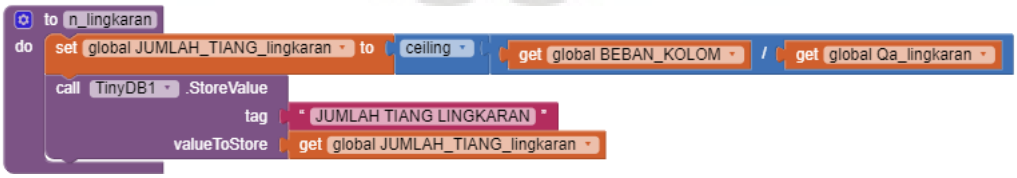
E.4 Blok Program Halaman Input Data (Lanjutan)



Gambar LE.92 Blok *Procedure* : Daya Dukung Ijin Lingkaran.

Gambar LE.93 Blok *Procedure* : Daya Dukung Ijin Persegi.

Gambar LE.94 Blok *Procedure* : Daya Dukung Ijin Segitiga.

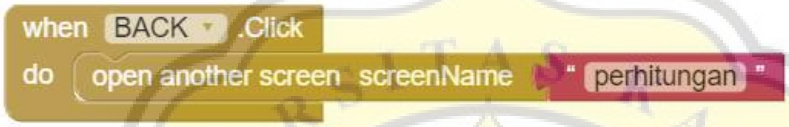


Gambar LE.95 Blok *Procedure* : Jumlah Tiang Lingkaran.

E.4 Blok Program Halaman Input Data (Lanjutan)

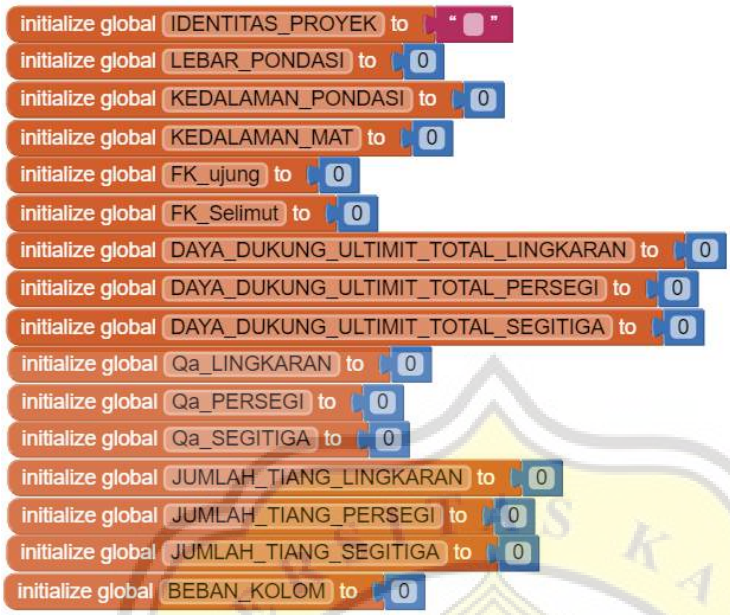
Gambar LE.96 Blok *Procedure* : Jumlah Tiang Persegi.

Gambar LE.97 Blok *Procedure* : Jumlah Tiang Segitiga.

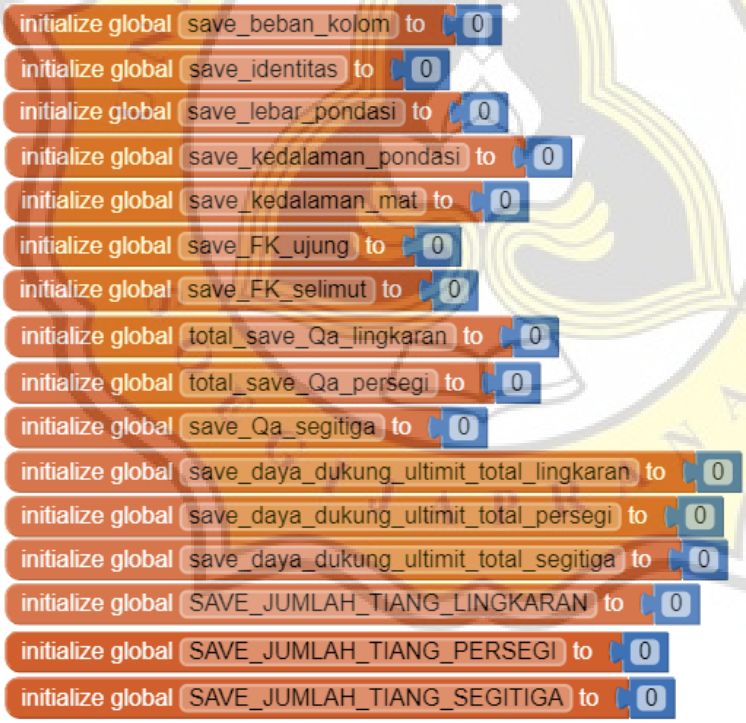


Gambar LE.98 Blok Untuk Tombol *Back*.

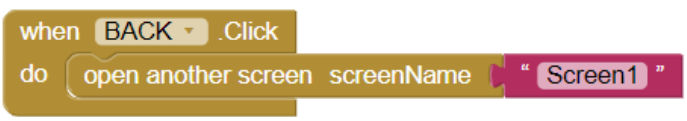
E.5 Blok Program Halaman Hasil Output



Gambar LE.99 Blok Untuk Membuat Variabel.

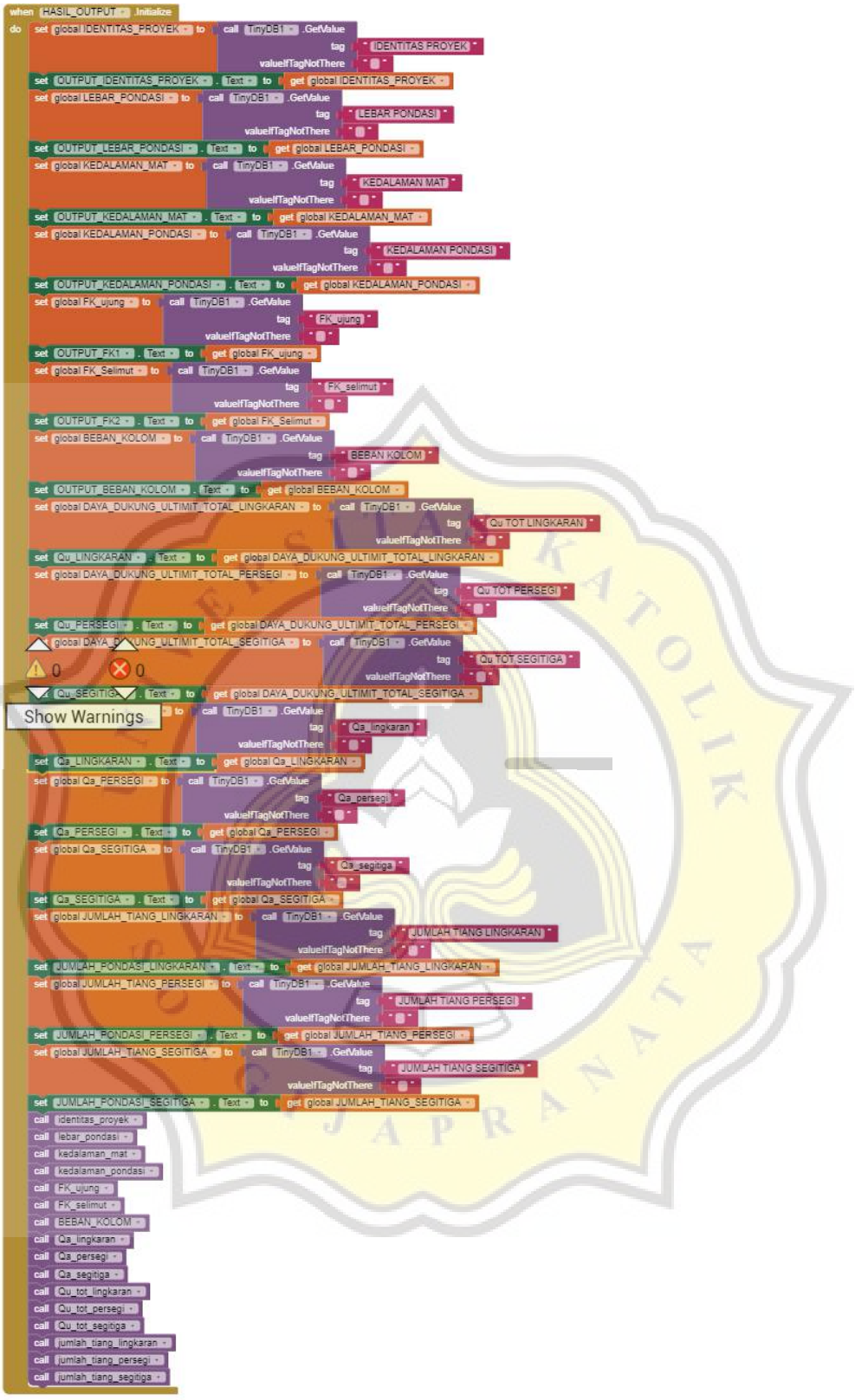


Gambar LE.100 Blok Untuk Membuat Variabel Save.



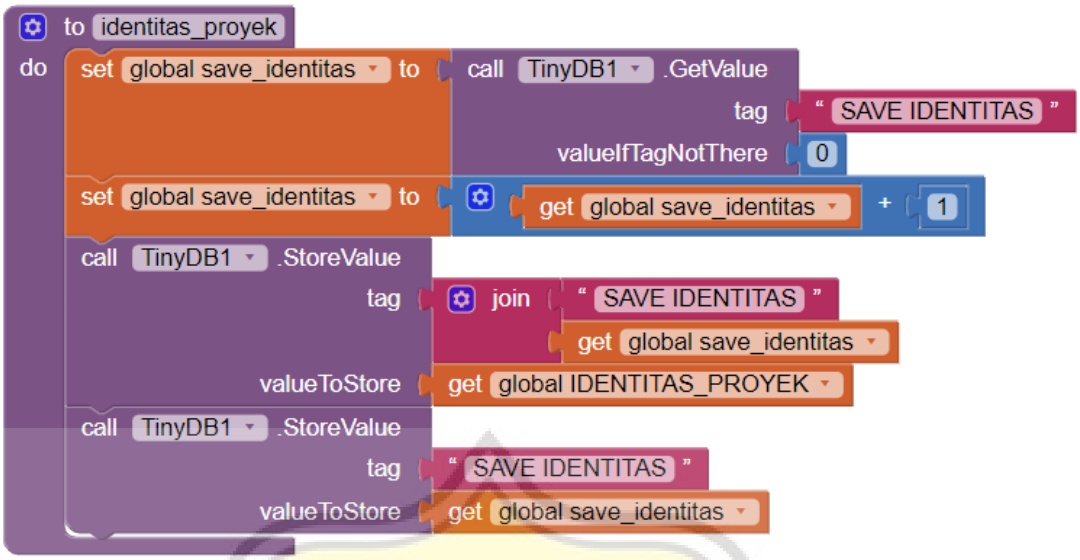
Gambar LE.101 Blok Untuk Tombol *Back*.

E.5 Blok Program Halaman Hasil Output (Lanjutan)

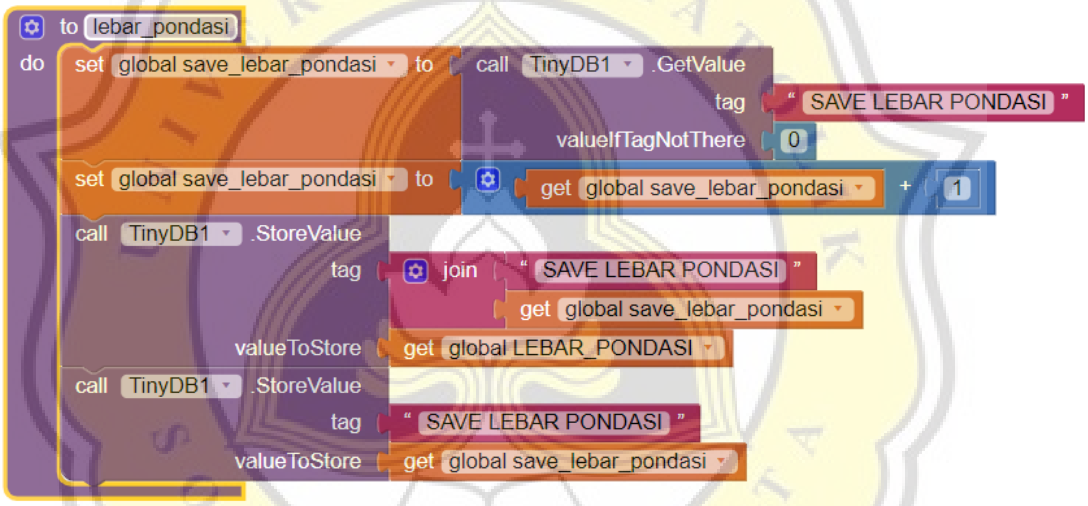


Gambar LE.102 Blok Untuk *Screen* Hasil Output.

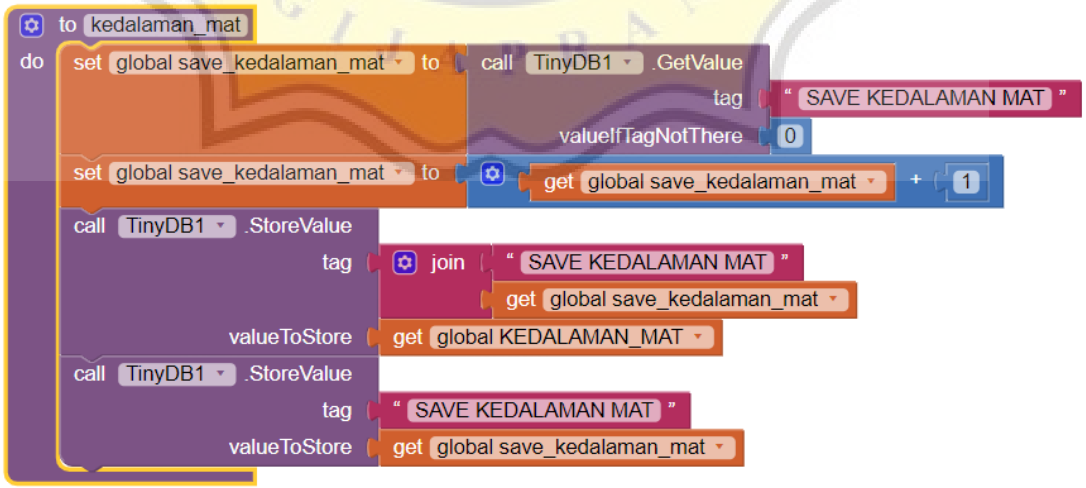
E.5 Blok Program Halaman Hasil Output (Lanjutan)



Gambar LE.103 Blok *Procedure* : Identitas Proyek.

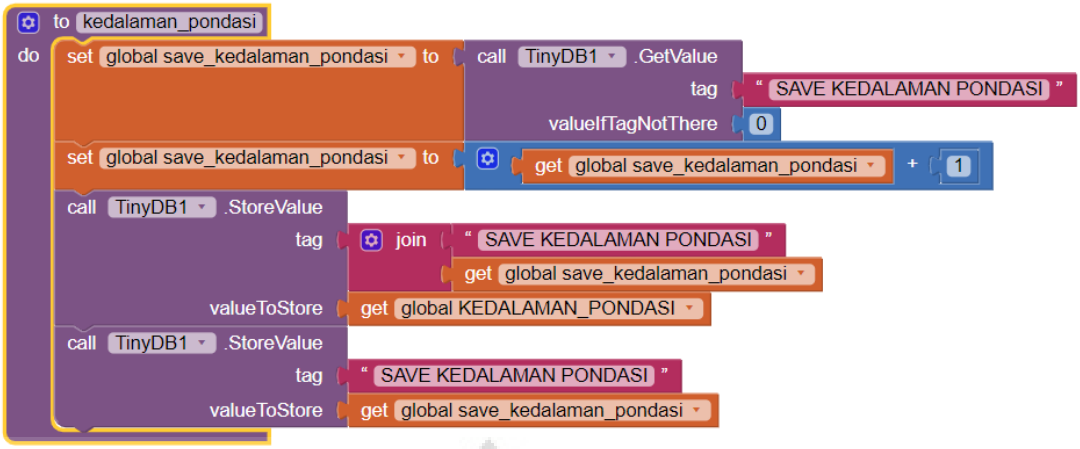


Gambar LE.104 Blok *Procedure* : Lebar Pondasi.

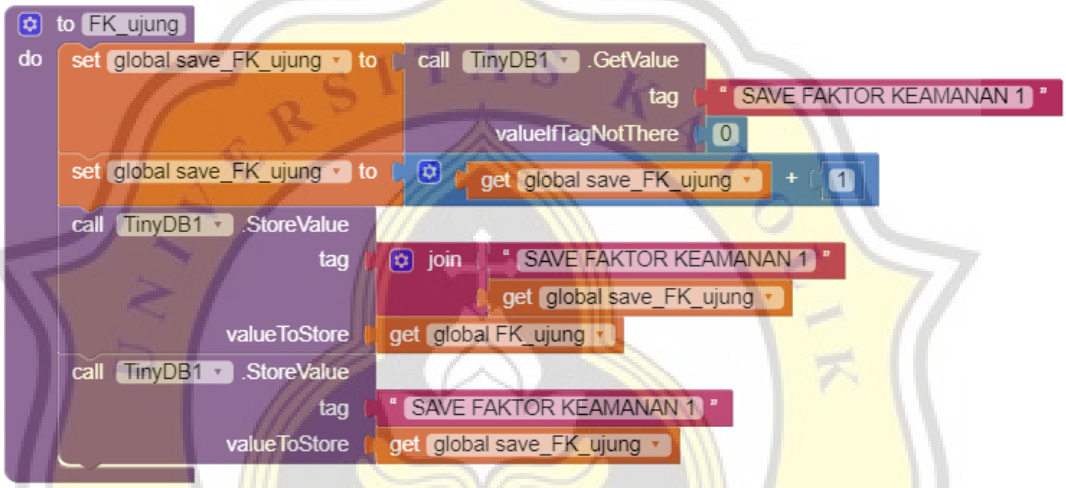


Gambar LE.105 Blok *Procedure* : Kedalaman Muka Air Tanah.

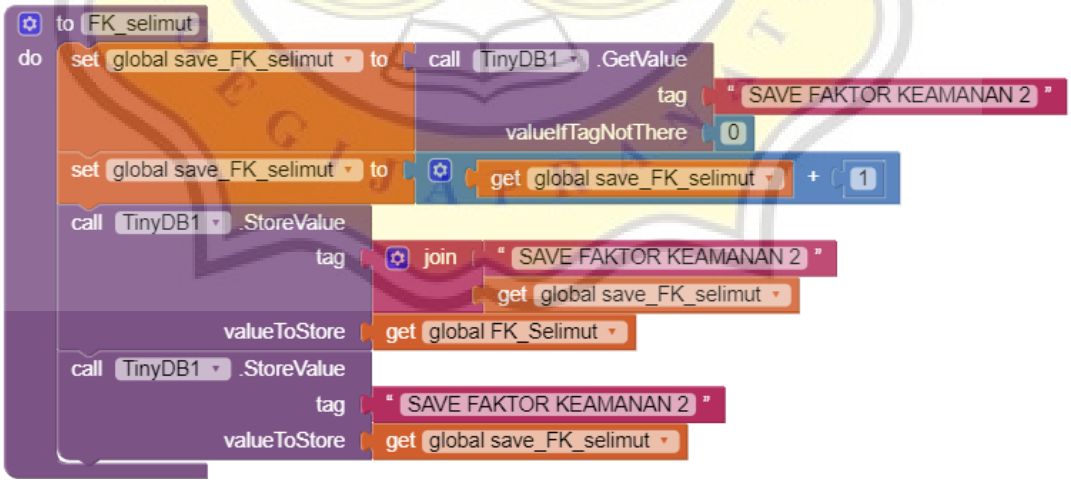
E.5 Blok Program Halaman Hasil Output (Lanjutan)



Gambar LE.106 Blok *Procedure* : Kedalaman Pondasi.

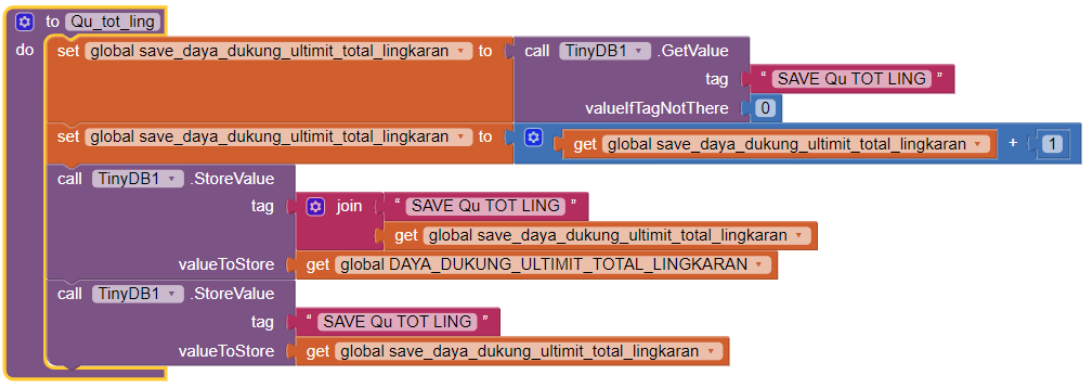


Gambar LE.107 Blok *Procedure* : Faktor Keamanan Ujung.



Gambar LE.108 Blok *Procedure* : Faktor Keamanan Selimut.

E.5 Blok Program Halaman Hasil Output (Lanjutan)

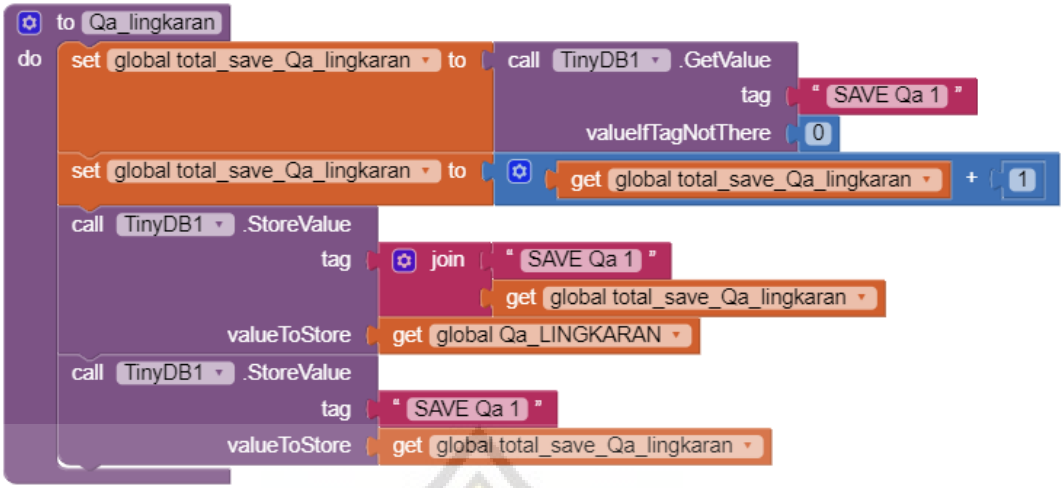


Gambar LE.109 Blok *Procedure* : Daya Dukung Ultimit Lingkaran.

Gambar LE.110 Blok *Procedure* : Daya Dukung Ultimit Persegi.

Gambar LE.111 Blok *Procedure* : Daya Dukung Ultimit Segitiga.

E.5 Blok Program Halaman Hasil Output (Lanjutan)



Gambar LE.112 Blok *Procedure* : Daya Dukung Ijin Lingkaran.

Gambar LE.113 Blok *Procedure* : Daya Dukung Ijin Persegi.

Gambar LE.114 Blok *Procedure* : Daya Dukung Ijin Segitiga.

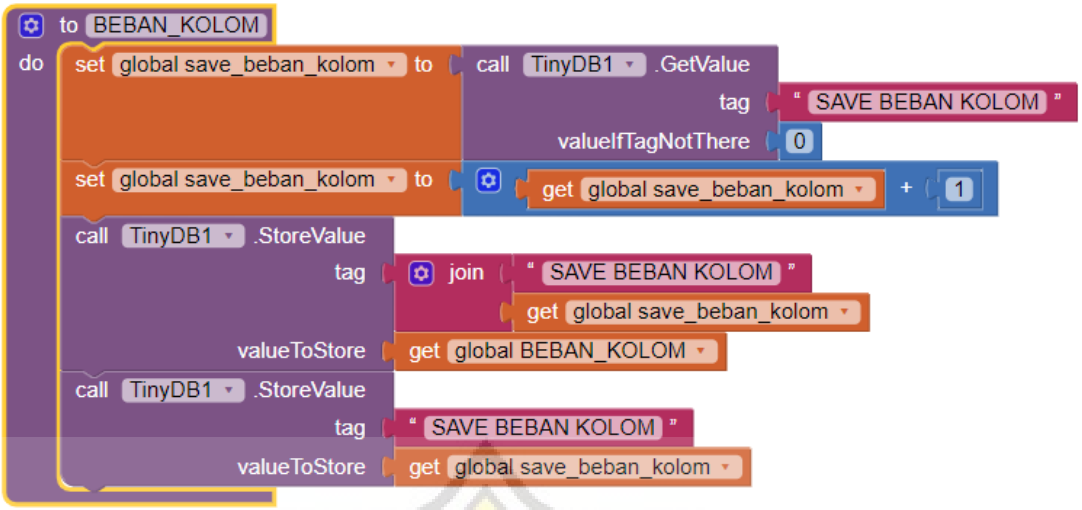
E.5 Blok Program Halaman Hasil Output (Lanjutan)

Gambar LE.115 Blok *Procedure* : Jumlah Tiang Lingkaran.

Gambar LE.116 Blok *Procedure* : Jumlah Tiang Persegi.

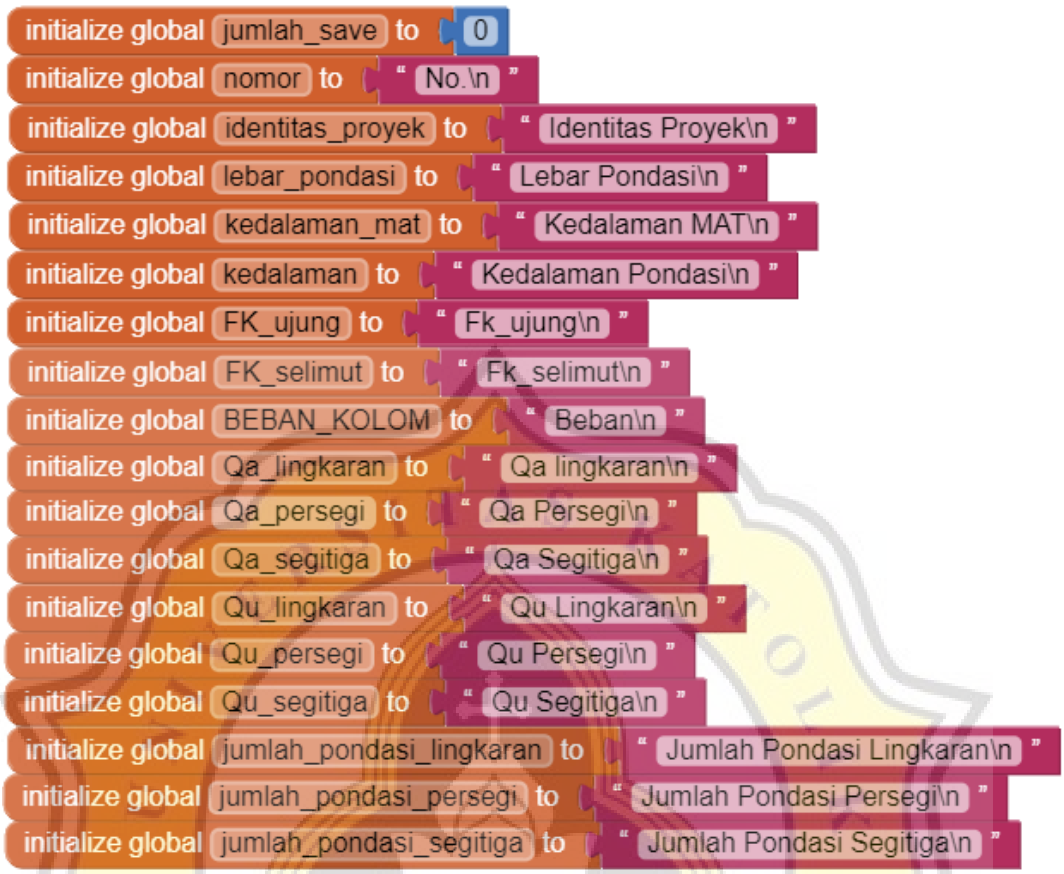
Gambar LE.117 Blok *Procedure* : Jumlah Tiang Segitiga.

E.5 Blok Program Halaman Hasil Output (Lanjutan)



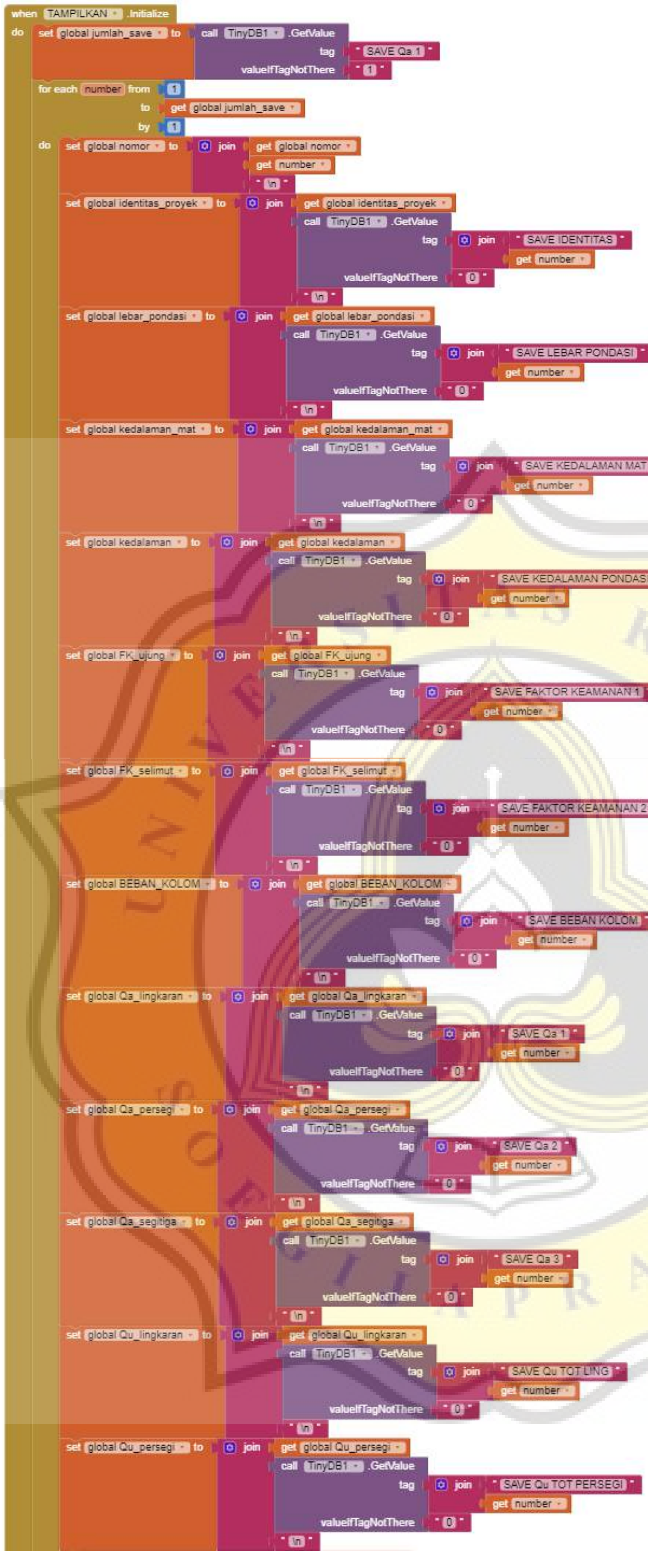
Gambar LE.118 Blok *Procedure* : Beban Kolom.

E.6 Blok Program Halaman Riwayat



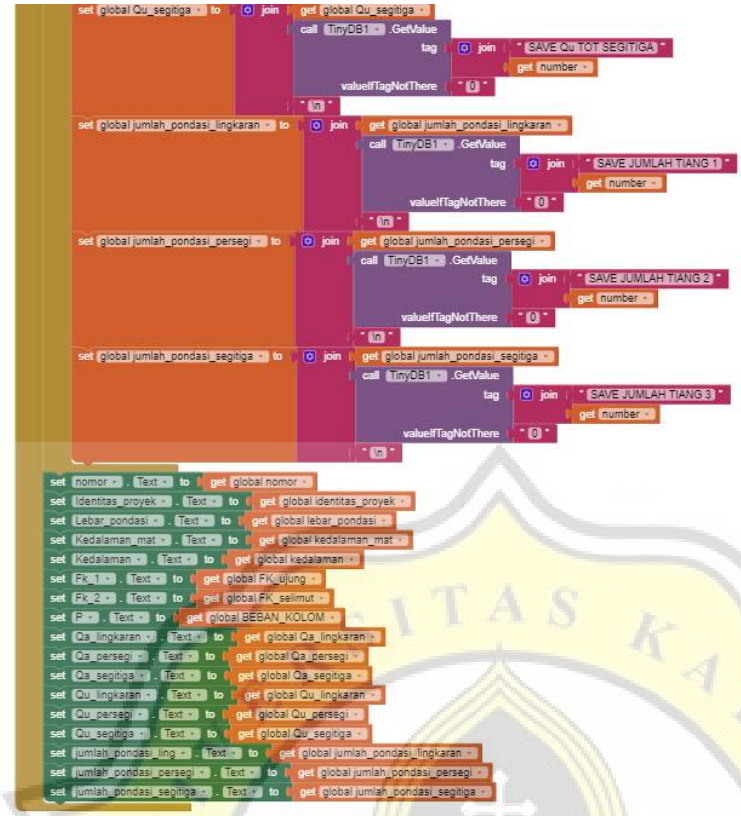
Gambar LE.119 Susunan Blok Untuk Membuat Variabel.

E.6 Blok Program Halaman Riwayat (Lanjutan)



Gambar LE.120 Blok Untuk *Screen* Tampilkan.

E.6 Blok Program Halaman Riwayat (Lanjutan)



Gambar LE.120 Blok Untuk *Screen* Tampilkan (Lanjutan).

E.6 Blok Program Halaman Riwayat (Lanjutan)

Gambar LE.121 Blok Untuk Tombol *Back.*

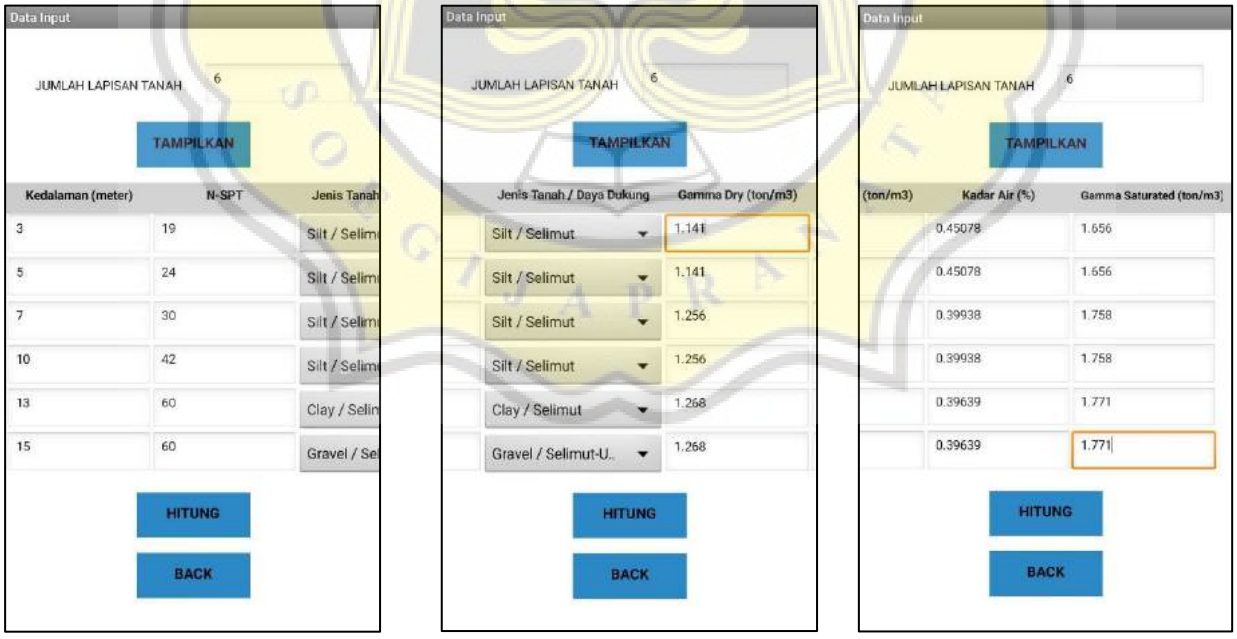
Gambar LE.122 Blok Untuk Tombol *Clear*.

Gambar LE.123 Blok Untuk Tombol *Delete Data.*

Lampiran F
Tampilan Perhitungan Aplikasi "BERCA"

F.1 Perhitungan 1 (Penampang Lingkaran, B = 0,3 m)

Gambar LF.1 Halaman Perhitungan IPC Unika (Tiang Pancang Lingkaran)



(a) (b) (c)

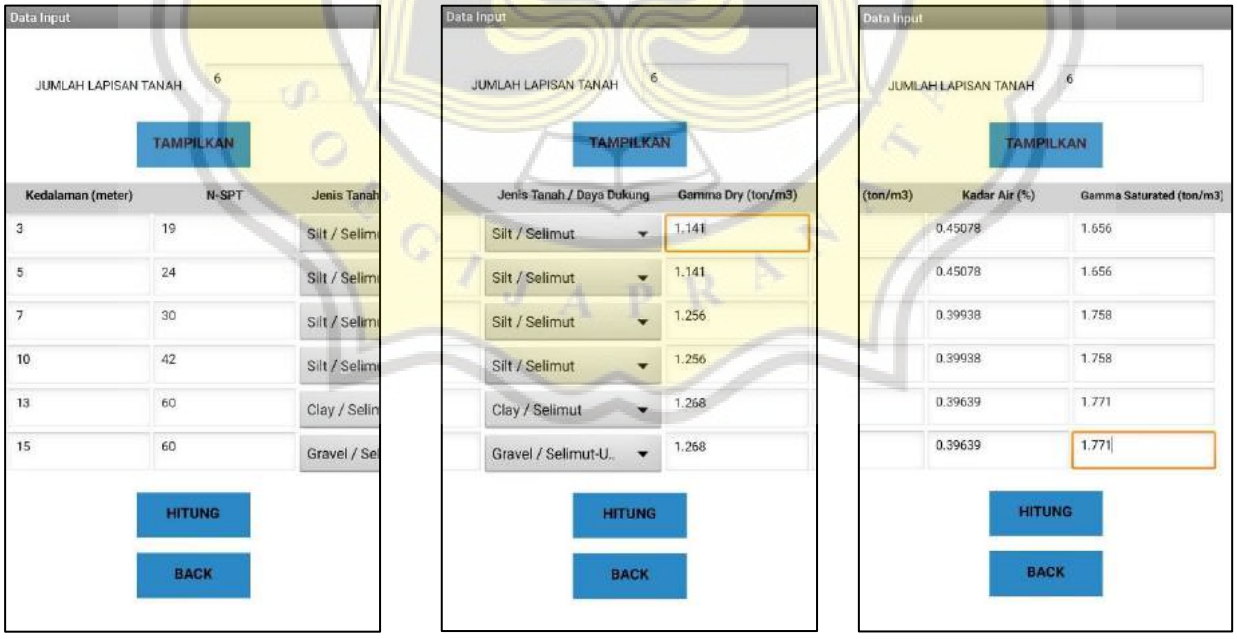
Gambar LF.2 Halaman Data *Input* IPC Unika (Tiang Pancang Lingkaran)

F.1 Perhitungan 1 (Penampang Lingkaran, B = 0,3 m) (Lanjutan)

Gambar LF.3 Halaman Hasil *Output* IPC Unika (Tiang Pancang Lingkaran)

F.2 Perhitungan 2 (Penampang Persegi, B = 0,3 m)

Gambar LF.4 Halaman Perhitungan IPC Unika (Tiang Pancang Persegi)



(a) (b) (c)

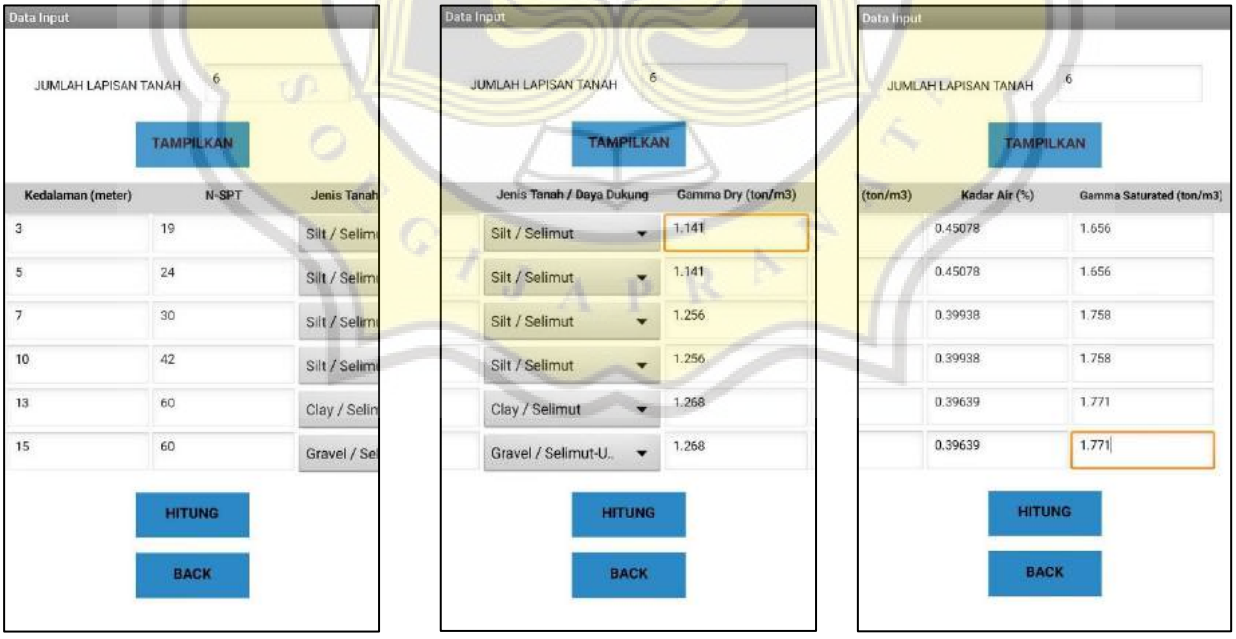
Gambar LF.5 Halaman Data *Input* IPC Unika (Tiang Pancang Persegi)

F.2 Perhitungan 2 (Penampang Persegi, B = 0,3 m) (Lanjutan)

Gambar LF.6 Halaman Hasil *Output* IPC Unika (Tiang Pancang Persegi)

F.3 Perhitungan 3 (Penampang Segitiga, B = 0,32 m)

Gambar LF.7 Halaman Perhitungan IPC Unika (Tiang Pancang Segitiga)



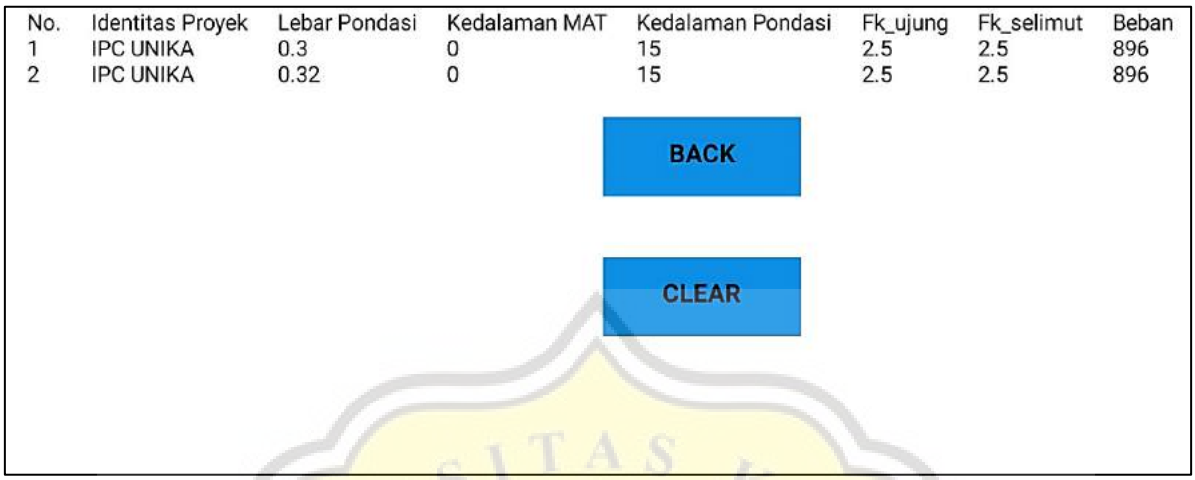
(a) (b) (c)

Gambar LF.8 Halaman Data *Input* IPC Unika (Tiang Pancang Segitiga)

F.3 Perhitungan 3 (Penampang Segitiga, B = 0,32 m) (Lanjutan)

Gambar LF.9 Halaman Hasil *Output* IPC Unika (Tiang Pancang Segitiga)

F.4 Riwayat



(a)

(b)

Gambar LF.10 Halaman Riwayat

Lampiran G
Efisiensi *Group Pile* & Penulangan Tiang Pancang

G.1 Efisiensi *Group Pile*

1. Data proyek

   Lebar pondasi (B) = 0,3 m (tiang pancang lingkaran)

   Kedalaman penanaman pondasi (D_f) = 15 m

   Beban yang bekerja (P) = 896 ton

   Jumlah tiang (n) = 12 (m = 3, n' = 4)

   Tebal *pile cap* (t) = 1 m

   Daya dukung ijin (Q_a) = 74,6737 ton

2. Perhitungan efisiensi kelompok tiang (Metode *Converse – Labbarre)*

   Menghitung jarak antar tiang (s_1)

   s_1 = 3B

   = 3 x 0,3

   = 0,9 m

   Menghitung jarak tiang ke tepi (s_2)

   s_2 = 2B

   = 2 x 0,3

   = 0,6 m

   Menghitung efisiensi kelompok tiang (η)

   θ = arc tg (B/s_1)

   = arc tg (0,3/0,9)

   = 18,435 °

   $$\eta = 1 - \theta \frac{m \times (n' - 1) + n' \times (m - 1)}{90 \times m \times n'}$$

   $$= 1 - 18{,}435 \frac{3 \times (4 - 1) + 4 \times (3 - 1)}{90 \times 3 \times 4}$$

   = 0,7098

   Menghitung daya dukung vertikal kelompok tiang (Q_g)

   Q_g = η x n x Q_a

   = 0,7098 x 12 x 74,6737

   = 636,0407 ton < P = 896 ton (TIDAK OK)

   Jumlah tiang (n) diperbanyak. Gunakan jumlah tiang (n) sebanyak 20.

G.1 Efisiensi *Group Pile* (Lanjutan)

Jumlah tiang (n) = 20 (m = 5, n' = 4)

Menghitung efisiensi kelompok tiang (η)

$$\eta = 1 - \theta \frac{m \times (n' - 1) + n' \times (m - 1)}{90 \times m \times n'}$$

$$= 1 - 18{,}435 \frac{5 \times (4 - 1) + 4 \times (5 - 1)}{90 \times 5 \times 4}$$

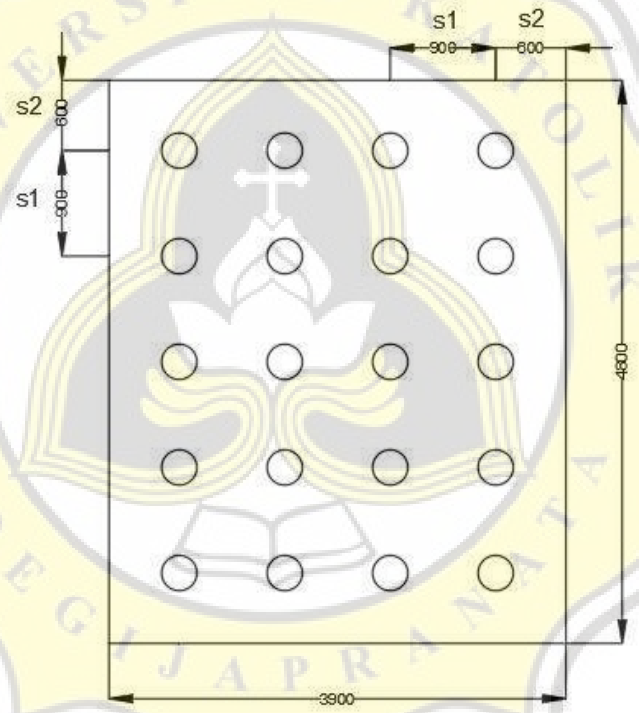
$$= 0{,}6825$$

Menghitung daya dukung vertikal kelompok tiang (Q_g)

$Q_g = \eta \times n \times Q_a$

= 0,6825 x 20 x 74,6737

= 1019,296 ton > P = 896 ton (OK)

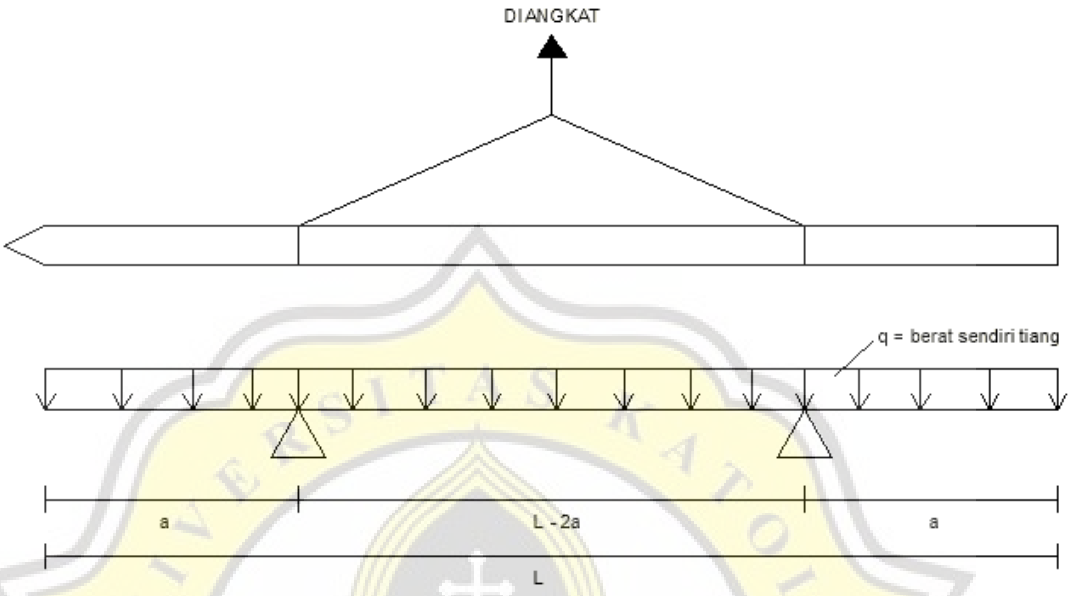


Gambar LG.1 *Group Pile* Tiang Pancang Lingkaran

G.2 Desain Penulangan Tiang Pancang

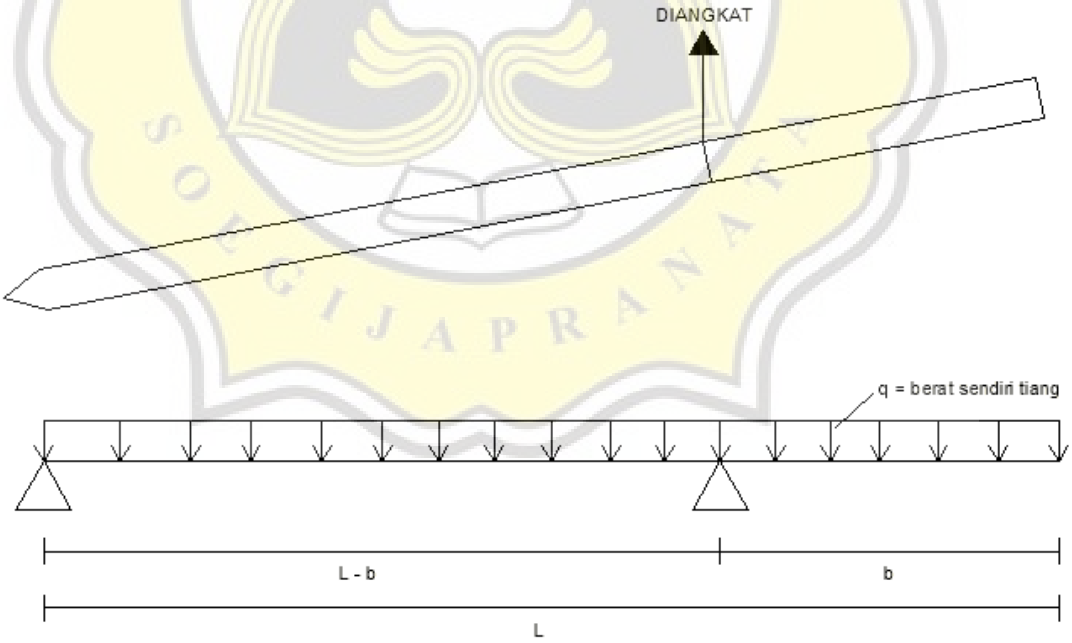
1. Pengangkatan Tiang Pancang

1. Pengangkatan tiang pancang cara ke – 1



Gambar LG.2 Pengangkatan Tiang Pancang Cara Ke - 1

2. Pengangkatan tiang pancang cara ke – 2



Gambar LG.3 Pengangkatan Tiang Pancang Cara Ke – 2

G.2 Desain Penulangan Tiang Pancang (Lanjutan)

2. Momen Pengangkatan Tiang Pancang Cara Ke – 1

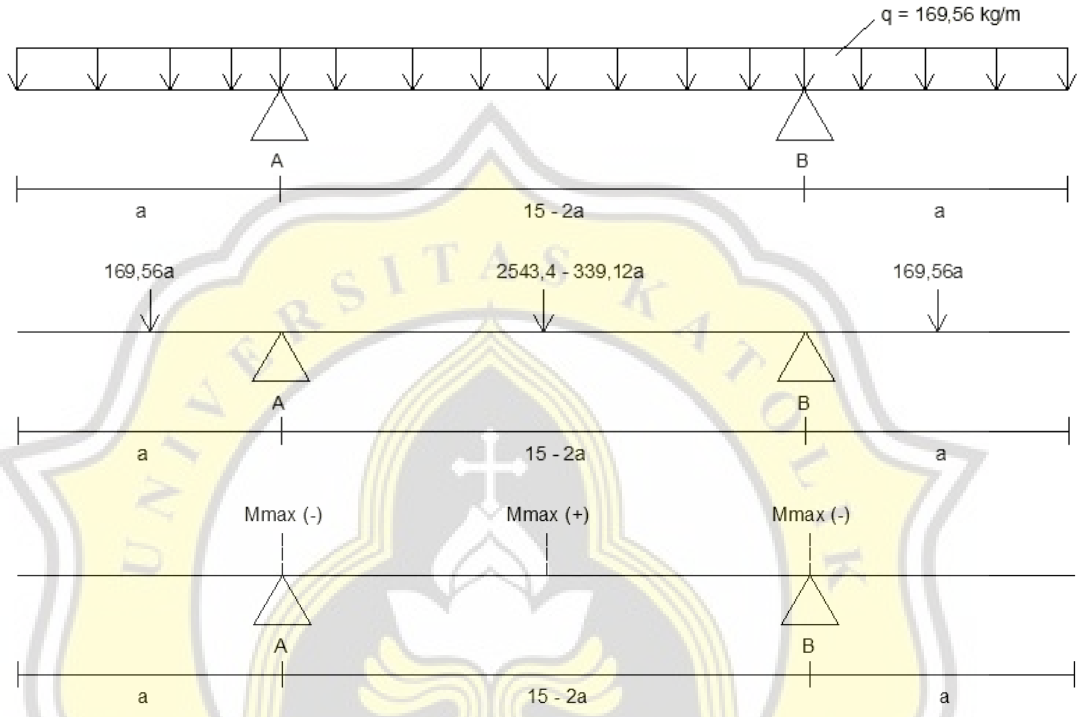
Lebar tiang pancang = 0,3 m

Berat jenis beton = 2400 kg/m^3

q tiang pancang = ¼ x π x d^2 x berat jenis beton

= ¼ x 3,14 x 0,3^2 x 2400

= 169,56 kg/m



Gambar LG.4 Beban dan Momen Pada Pengangkatan Tiang Pancang Cara Ke – 1

Menghitung M_{max}^- dan M_{max}^+

M_{max}^- = -169,56a x $\frac{1}{2}a$

= -84,78 a^2

M_{max}^+ = (-169,56a ($\frac{1}{2}a + \frac{1}{2}(15 - 2a)$)) + $\frac{1}{2}$ (15 - 2a) R_A – (169,56 x $\frac{1}{2}$ (15 – 2a) x $\frac{1}{4}$ (15 – 2a))

= (-169,56a (-0,5a + 7,5)) + (7,5 - a) R_A – (21,195 (225 – 60a + 4a^2)

= 84,78a^2 - 1271,7a + (7,5 - a) R_A – 4768,875 + 1271,7a – 84,78a^2

= (7,5 - a) R_A – 4768,875

Menghitung R_A

ΣM_B = 0

$= (-169{,}56a\ (\frac{1}{2}a + 15 - 2a)) + (15 - 2a)\ R_A - ((2543{,}4 - 339{,}12a)\ (\frac{1}{2}\ (15 - 2a)))$

$+ 169{,}56a \times \frac{1}{2}a$

$= (-169{,}56a\ (-1{,}5a + 15)) + (15 - 2a)\ R_A - ((2543{,}4 - 339{,}12a)\ (7{,}5 - a)) + 84{,}78\ a^2$

$= 254{,}34a^2 - 2543{,}4a + (15 - 2a)\ R_A - 19075{,}5 + 2543{,}4a + 2543{,}4a - 339{,}12a^2 + 84{,}78\ a^2$

$R_A = \frac{-2543{,}4a + 19075{,}5}{15 - 2a}$

Menghitung $M_{max}^- = M_{max}^+$

$M_{max}^- = M_{max}^+$

$84{,}78\ a^2 = (7{,}5 - a)\ R_A - 4768{,}875$

$84{,}78\ a^2 = (7{,}5 - a)\ (\frac{-2543{,}4a + 19075{,}5}{15 - 2a}) - 4768{,}875$

$84{,}78\ a^2 = -1271{,}7a + 9537{,}75 - 4768{,}875$

$0 = -84{,}78\ a^2 - 1271{,}7a + 4768{,}875$

Diperoleh nilai $a_1 = 3{,}1066$ m dan $a_2 = -18{,}1066$ m

Digunakan $a = 3{,}1066$ m ($a = \frac{1}{5}L$)

Menghitung M_{max}^- dan M_{max}^+

$M_{max}^- = -84{,}78\ a^2$

$= -84{,}78 \times 3{,}1066^2$

$= -818{,}2087$ kg.m

$M_{max}^+ = (7{,}5 - a)\ R_A - 4768{,}875$

$= (7{,}5 - a)\ (\frac{-2543{,}4a + 19075{,}5}{15 - 2a}) - 4768{,}875$

$= (7{,}5 - 3{,}1066)\ (\frac{-2543{,}4a + 19075{,}5}{15 - 2a}) - 4768{,}875$

$= 818{,}212$ kg.m

G.2 Desain Penulangan Tiang Pancang (Lanjutan)

3. Momen Pengangkatan Tiang Pancang Cara Ke – 2

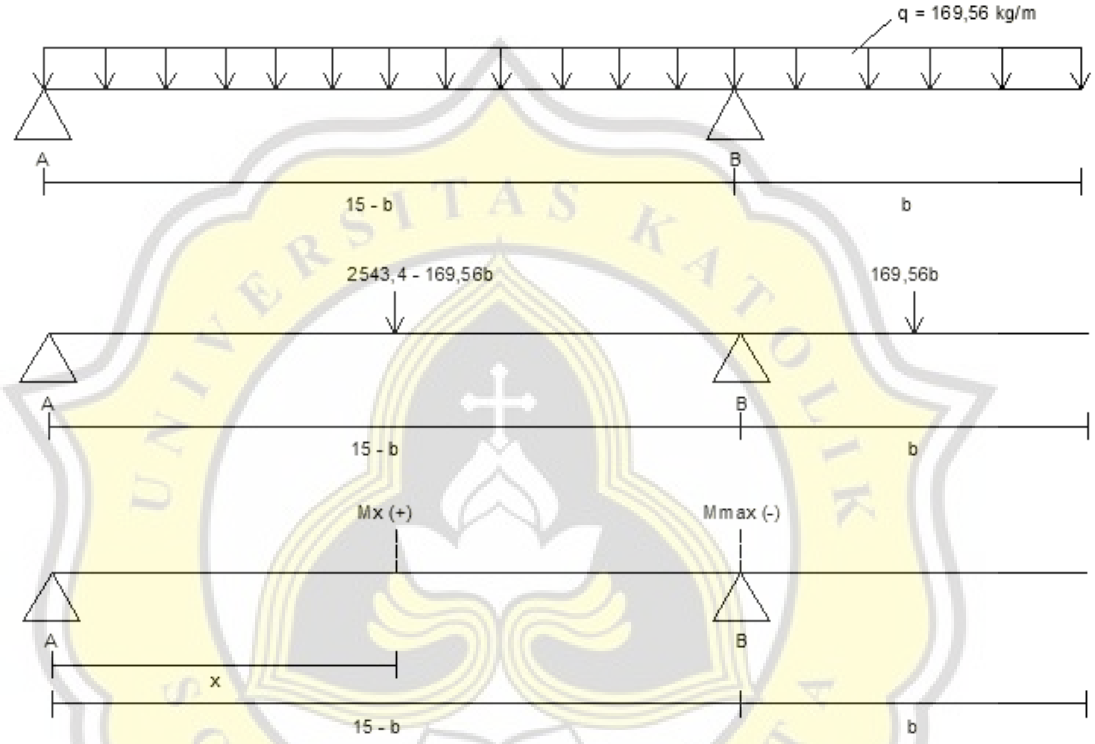
Lebar tiang pancang = 0,3 m

Berat jenis beton = 2400 kg/m^3

q tiang pancang = ¼ x π x d^2 x berat jenis beton

= ¼ x 3,14 x 0,3^2 x 2400

= 169,56 kg/m



Gambar LG.5 Beban dan Momen Pada Pengangkatan Tiang Pancang Cara Ke – 2

Menghitung R_A dan R_B

$\Sigma M_A = 0$

$= (2543{,}4 - 169{,}56b)\left(\frac{1}{2}(15 - b)\right) - R_B(15 - b) + \left(169{,}56b\left(15 - b + \frac{1}{2}b\right)\right)$

$= (2543{,}4 - 169{,}56b)(7{,}5 - 0{,}5b)) - R_B(15 - b) + (169{,}56b(15 - 0{,}5b))$

$= 19075{,}5 - 1271{,}7b - 1271{,}7b + 84{,}78\,b^2 - R_B(15 - b) + 2543{,}4b - 84{,}78\,b^2$

$R_B = \frac{19075{,}5}{15 - b}$

$R_A = q \times L - R_B$

$= 169{,}56 \times 15 - \frac{19075{,}5}{15 - b}$

$$= 2543{,}4 - \frac{19075{,}5}{15 - b}$$

Menghitung M_{max}^{-} dan M_{max}^{+}

$M_{max}^{-} = -169{,}56b \times \frac{1}{2}b$

$= -84{,}78\ b^2$

$M_{max}^{+} = M_x^{+}$

$M_x^{+} = (R_A \times X) - (q \times X\ (\frac{1}{2}X))$

$= R_A X - \frac{1}{2}\ q\ X^2$

$\frac{dmx}{dx} = 0$

$= R_A - q\ X$

$= (2543{,}4 - \frac{19075{,}5}{15 - b}) - 169{,}56X$

$169{,}56X = 2543{,}4 - \frac{19075{,}5}{15 - b}$

$X = 15 - \frac{112{,}5}{15 - b}$

$M_x^{+} = R_A X - \frac{1}{2}\ q\ X^2$

$= (2543{,}4 - \frac{19075{,}5}{15 - b})\ (15 - \frac{112{,}5}{15 - b}) - (\frac{1}{2}\ 169{,}56\ (15 - \frac{112{,}5}{15 - b})\ (15 - \frac{112{,}5}{15 - b}))$

$= (38151 - \frac{286132{,}5}{15 - b} - \frac{286132{,}5}{15 - b} + \frac{2145993{,}75}{225 - 30b + b}) - 84{,}78\ (225 - \frac{1687{,}5}{15 - b} - \frac{1687{,}5}{15 - b} + \frac{12656{,}25}{225 - 30b + b^2})$

$= 38151 - \frac{572265}{15 - b} + \frac{2145993{,}75}{225 - 30b + b^2} - 19075{,}5 + \frac{286132{,}5}{15 - b} - \frac{1072996{,}875}{225 - 30b + b^2}$

$= 19075{,}5 - \frac{286132{,}5}{15 - b} + \frac{1072996{,}875}{225 - 30b + b^2}$

$= 19074{,}5\ \frac{225 - 30b + b^2}{225 - 30b + b^2} - \frac{286132{,}5\ (15 - b)}{225 - 30b + b^2} + \frac{1072996{,}875}{225 - 30b + b^2}$

$= \frac{4291762{,}5 - 572235b + 19074{,}5b^2 + 225 - 30b + b^2}{225 - 30b + b^2} - \frac{(4291987{,}5 - 286132{,}5b)}{225 - 30b + b^2} + \frac{1072996{,}875}{225 - 30b + b^2}$

$$= \frac{4291987{,}5 - 572265b + 19075{,}5b^2 - 4291987{,}5 + 286132{,}5b + 1072996{,}875}{225 - 30b + b^2}$$

$$= \frac{19075{,}5b^2 - 286132{,}5b + 1072996{,}875}{225 - 30b + b^2}$$

Menghitung $M_{max}^{-} = M_x^{+}$

$M_{max}^{-} = M_x^{+}$

$$84{,}78\ b^2 = \frac{19075{,}5b^2 - 286132{,}5b + 1072996{,}875}{225 - 30b + b^2}$$

$19075{,}5\ b^2 - 2543{,}4\ b^3 + 84{,}78\ b^4 = 190075{,}5\ b^2 - 286132{,}5b + 1072996{,}875$

$84{,}78\ b^4 - 2543{,}4\ b^3 + 286132{,}5b - 1072996{,}875 = 0$

Diperoleh nilai $b = 4{,}3934$ m ($b = 0{,}3L$)

Menghitung X, M_x^{+}, M_{max}^{-}

$$X = 15 - \frac{112{,}5}{15 - b}$$

$$= 15 - \frac{112{,}5}{15 - 4{,}3934}$$

$= 4{,}3934$ m ($X = 0{,}3L$)

$$M_x^{+} = R_A X - \frac{1}{2} q X^2$$

$$= (2543{,}4 - \frac{19075{,}5}{15 - b})\ (4{,}3934) - \frac{1}{2}\ 169{,}56\ (4{,}3934)^2$$

$$= (2543{,}4 - \frac{19075{,}5}{15 - 4{,}3934})\ (4{,}3934) - \frac{1}{2}\ 169{,}56\ (4{,}3934)^2$$

$= 1636{,}4179$ kg.m

$$M_{max}^{-} = -169{,}56b \times \frac{1}{2}b$$

$= -84{,}78\ b^2$

$= -84{,}78\ (4{,}3934)^2$

$= -1636{,}42$ kg.m

G.2 Desain Penulangan Tiang Pancang (Lanjutan)

4. Perhitungan Tulangan Tiang Pancang

1. Data perhitungan:

M_u	= 1636,42 kg.m = 16,3642 kN.m
Lebar pondasi (B)	= 0,3 m
Mutu beton (f_c')	= 49,8 MPa (K-600)
Mutu baja (f_y)	= 400 MPa (U-40)
Tinggi pondasi (h)	= 0,3 m
Selimut beton (d_s)	= 0,075 m
Diameter tulangan ($Ø_{tul}$)	= 16 mm = 0,016 m (A_s = 199 mm^2)
Diameter sengkang ($Ø_{sengkang}$)	= 8 mm = 0,008 m

2. Perhitungan tulangan tiang pancang

M_u = 1,6 x 16,3642

= 26,1827 kN.m

d = $h - d_s - Ø_{sengkang} - ½\ Ø_{tul}$

= 0,3 – 0,075 – 0,008 – (1/2 x 0,016)

= 0,209 m

= 209 mm

$\frac{Mu}{b \times d^2} = \frac{26,1827}{0,3 \times 0,209^2}$

= 1998,0236 kN/m^2

= 1,998 N/mm^2

$\frac{Mu}{b \times d^2} = \rho \times \Phi \times f_y \left(1 - 0,588\rho \times \frac{f_y}{f_c'}\right)$

$1,998 = \rho \times 0,8 \times 400 \left(1 - 0,588\rho \times \frac{400}{49,8}\right)$

$1,998 = 320\rho(1 - 4,7229\rho)$

$0 = 1511,328\rho^2 - 320\ \rho + 1,998$

$\rho_1 = 0,2053$

$\rho_2 = 0,0063$

$\rho_{min} = \frac{1,4}{f_y}$

$= \frac{1,4}{400}$

= 0,0035

G.2 Desain Penulangan Tiang Pancang (Lanjutan)

ρ_{max} $= \frac{\beta \text{ x } 450}{600 + f_y} \text{ x } \frac{0{,}85 \text{ x } f_c'}{400}$

$= \frac{0{,}85 \text{ x } 450}{600 + 400} \text{ x } \frac{0{,}85 \text{ x } 49{,}8}{400}$

$= 0{,}0405$

Gunakan $\rho = 0{,}0063$

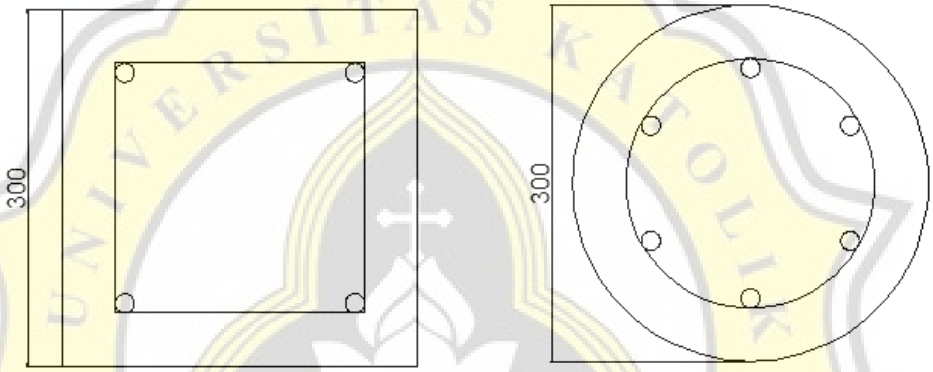
As $= \rho \text{ x } b \text{ x } d$

$= 0{,}0063 \text{ x } 0{,}3 \text{ x } 0{,}209$

$= 3{,}9501 \text{x } 10^{-4} \text{ m}^2$

$= 395{,}01 \text{ mm}^2$ (A_s D16 = 199 mm^2)

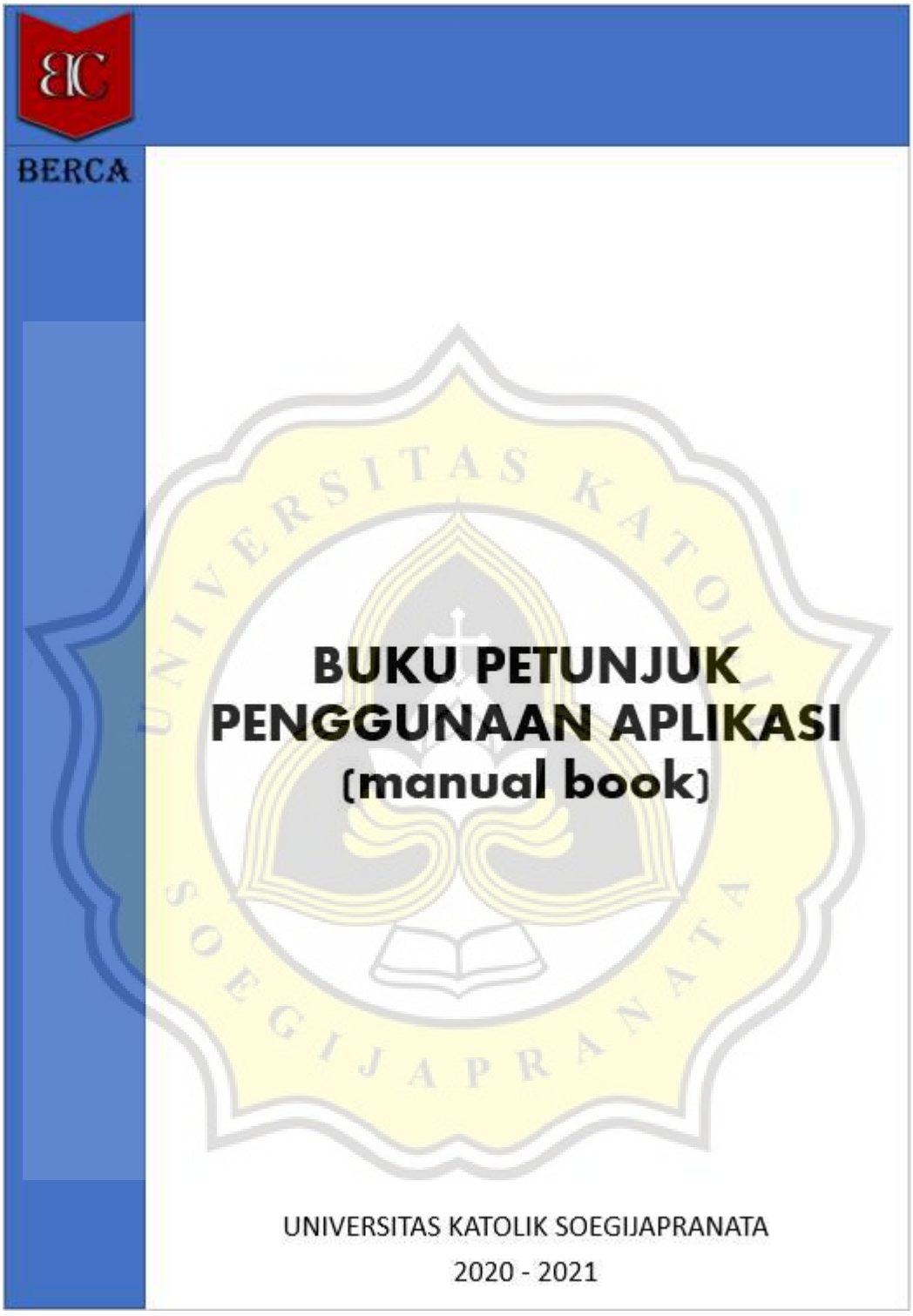
Gunakan tulangan tiang pancang 2D16.



Gambar LG.6 Detail Tiang Pancang

Lampiran H
Manual Book Penggunaan Aplikasi

H.1 Cara Penggunaan Aplikasi BERCA

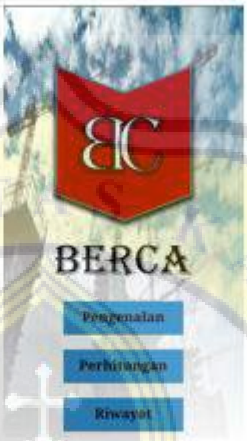


H.1 Cara Penggunaan Aplikasi BERCA

BERCA

1. Memulai Aplikasi

Aplikasi BERCA ini dapat digunakan *offline* atau tanpa internet. Setelah aplikasi BERCA terunduh di ponsel dan dijalankann, akan muncul tampilan awal aplikasi.



2. Pengenalan

Pada halaman pengenalan ini berguna untuk mempelajari teori – teori mengenai tiang pancang berupa penjelasane dan gambar. User yang belum paham ataupun lupa dapat mengingat Kembali materi tiang pancang sebelum melanjutkan ke tahap perhitungan.

H.1 Cara Penggunaan Aplikasi BERCA

BERCA

3. Perhitungan

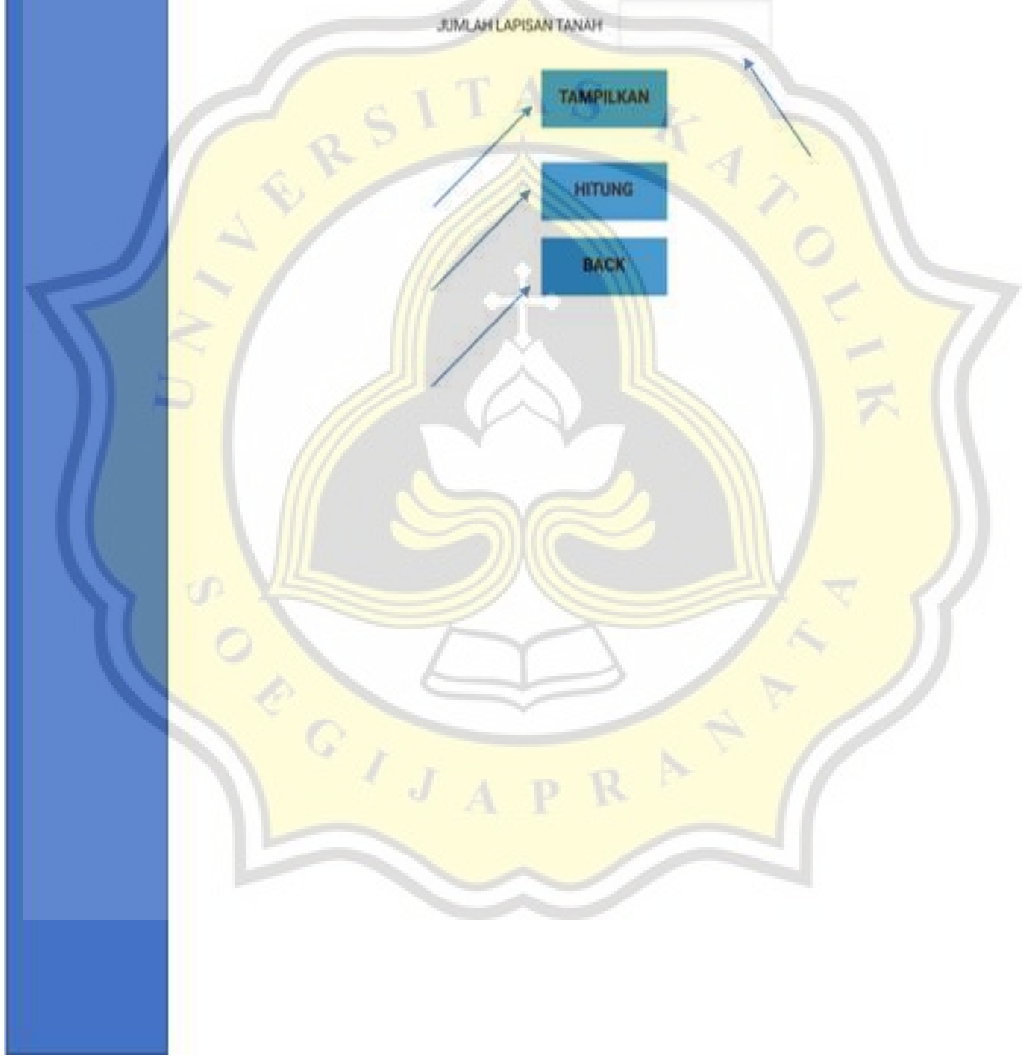
Pada halaman input pertama, *user* diharuskan mengisi dan memilih data dari identitas proyek sampau beban. Pada halaman input ini terdapat shortcut untuk melihat teori tentang faktor keamanan untuk memudahkan *user* memilih kategori faktor keamanan yang ada. Untuk melaniutkan ke halaman perhitungan selaniutnva dapat menekan tombol *next*.

H.1 Cara Penggunaan Aplikasi BERCA

BERCA

3. Perhitungan

Pada halaman input kedua, user diharusan menginput data – data tanah. Langkah pertama yang dilakukan adalah menginput jumlah lapisan tanah lalu tekan tombol tampilkan untuk memunculkan tabel input data tanah. Setelah selsai memasukkan data – data yang ada tekan tombol hitung untuk mendapatkan hasil.



H.1 Cara Penggunaan Aplikasi BERCA

BERCA

4. Hasil

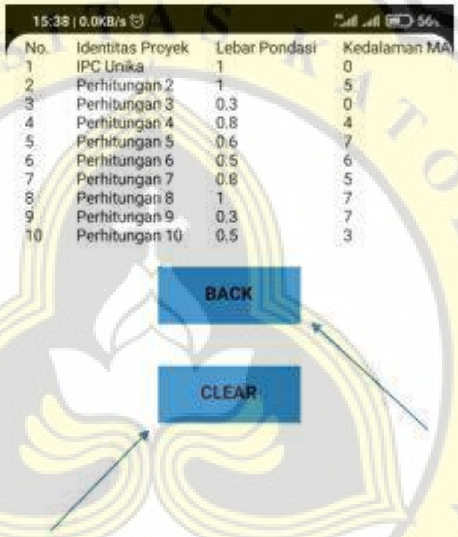
Pada halaman hasil atau output, menampilkan data input pertama dan hasil berupa daya dukung ultimit, daya dukung ijin, dan jumlah pondasi.

H.1 Cara Penggunaan Aplikasi BERCA

BERCA

5. Riwayat

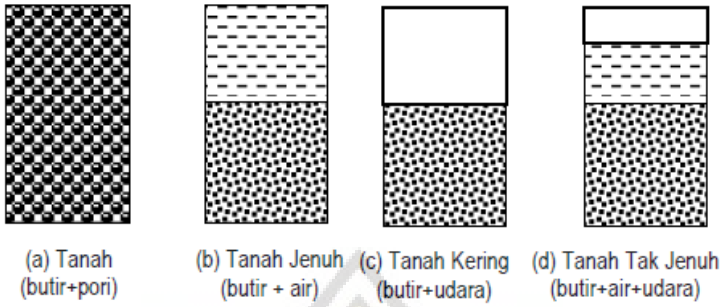
Pada halaman ini user dapat melihat data – data perhitungan sebelumnya dari data input sampai ke hasil. User juga dapat menghapus riwayat dengan menekan tombol clear.



Lampiran I
Komposisi Tanah

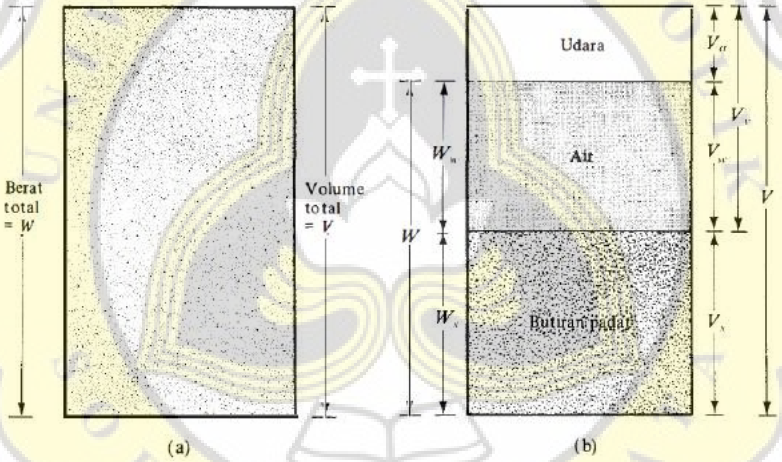
I.1 Berat Volume atau Berat Isi Tanah

Material tanah terdiri dari 2 atau 3 unsur, yaitu butiran padat, udara, dan air.



Gambar I.1 Komposisi Tanah

Terdapat 3 fase yang menunjukan perbandingan volume dengan berat agregat, yaitu butiran agregat, udara, dan air yang dipisahkan seperti pada gambar I.1.



Gambar I.2 (a) Tanah asli (b) Tiga fase elemen tanah

Menghitung volume total tanah dapat dirumuskan sebagai berikut:

$$V = V_s + V_v \qquad \text{(i.1)}$$
$$= V_s + V_w + V_a$$

Di mana :

V_s = volume butiran

V_v = volume pori

V_w = volume air dalam pori

V_a = volume udara dalam pori

I.1 Berat Volume atau Berat Isi Tanah

Menghitung berat total tanah tidak memperhitungkan berat udara di dalam pori. Udara dianggap tidak memiliki berat (W). Persamaan berat total tanah dapat dinyatakan sebagai berikut:

$$W = W_s + W_w \tag{i.2}$$

Di mana :

W_s = berat butiran

W_w = berat air

Hubungan volume yang umum dipakai untuk suatu elemen tanah adalah angka pori, porositas, dan derajat kejenuhan. Persamaan untuk angka pori (e), porositas (n), dan derajat kejenuhan (Sr) dapat dinyatakan sebagai berikut:

$$e = \frac{V_v}{V_s} \tag{i.3}$$

$$n = \frac{V_v}{V} \times 100\% \tag{i.4}$$

$$Sr = \frac{V_w}{V_v} \times 100\% \tag{i.5}$$

Di mana :

e = angka pori

n = porositas

Sr = derajat kejenuhan

Hubungan angka pori (e) dan porositas (n) dapat dinyatakan sebagai berikut:

$$e = \frac{V_v}{V_s} = \frac{V_v}{V - V_v} = \frac{\frac{V_v}{V}}{1 - \frac{V_v}{V}} = \frac{n}{1 - n} \tag{i.6}$$

$$n = \frac{e}{1 + e} \tag{i.7}$$

I.1 Berat Volume atau Berat Isi Tanah

Dari Persamaan (i.5) derajat kejenuhan (*Sr*) dapat dituliskan rumus sebagai berikut:

$$V_w = \frac{W_w}{\gamma_w} = \frac{W_{wet} - W_{dry}}{\gamma_w} \quad \text{(i.8)}$$

$$V_v = V - V_s = V - \frac{W_s}{G_s \, x \, \gamma_w} \quad \text{(i.9)}$$

$$Sr = \frac{V_w}{V_v} \times 100\% = \frac{(\frac{W_{wet} - W_{dry}}{\gamma_w})}{(V - \frac{W_s}{G_s \, x \, \gamma_w})} \times 100\% \quad \text{(i.10)}$$

Istilah yang umum dipakai untuk hubungan berat dan volume ini adalah kadar air (*moisure content*) dan berat volume (*unit weight*). Kadar air (*w*) adalah perbandingan antara berat air dengan butiran padat dalam volume yang telah ditentukan. Persamaan kadar air dapat dinyatakan sebagai berikut:

$$w = \frac{W_w}{W_s} \times 100\% \quad \text{(i.11)}$$

Di mana :

W_w = Berat air

W_s = Berat butiran

Berat volume tanah atau *unit weight* (γ) adalah berat tanah per satuan volume. Persamaan adalah berat volume tanah asli atau biasa disebut berat volume basah (*moist unit weight,* γ_b). Persamaan dapat dinyatakan sebagai berikut:

$$\gamma_b = \frac{W}{V} \quad \text{(i.12)}$$

Dari persamaan di atas dapat dinyatakan dalam berat butiran, berat air, dan volume total sebagai berikut:

$$\gamma_b = \frac{W}{V} = \frac{W_s + W_w}{V} = \frac{W_s \left[1 + \left(\frac{W_w}{W_s}\right)\right]}{V} = \frac{W_s(1+w)}{V} \quad \text{(i.13)}$$

I.1 Berat Volume atau Berat Isi Tanah

Untuk keperluan tertentu diperlukan untuk mengetahui berat kering per satuan volume tanah atau biasa disebut dengan istilah berat volume kering (*dry unit weight*, γ_d). Persamaan berat volume kering dapat dinyatakan sebagai berikut:

$$\gamma_d = \frac{W_s}{V} \tag{i.14}$$

Dari persamaan hubungan antara berat volume, berat volume kering, dan kadar air dapat dituliskan sebagai berikut:

$$\gamma_d = \frac{\gamma_b}{1+w} \tag{i.15}$$

Untuk mendapatkan hubungan antara berat volume, angka pori, dan kadar air, maka perhatikan suatu elemen tanah di mana volume butiran padat (V_s) = 1 dan volume pori (V_v) sama dengan angka pori (e), seperti terlihat pada Gambar I.3. Lalu untuk mendapatkan berat butiran padat dan berat air dapat dinyatakan sebagai berikut:

$$W_s = G_s \gamma_w \tag{i.16}$$

$$W_w = w\, W_s = w\, G_s\, \gamma_w \tag{i.17}$$

Di mana:

G_s = berat spesifik butiran padat

w = kadar air

γ_w = berat volume air

Dengan menggunakan berat volume dan berat volume kering per satuan volume dapat dinyatakan sebagai berikut:

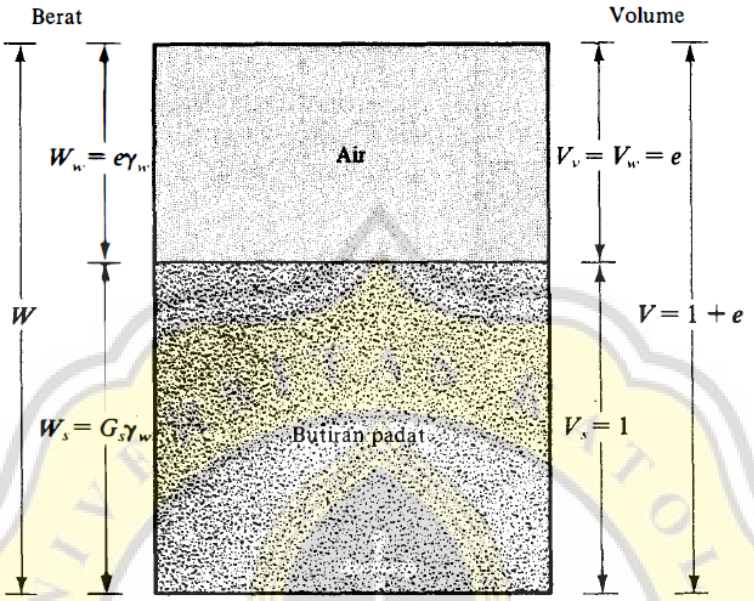
$$\gamma_b = \frac{W}{V} = \frac{W_s + W_w}{V} = \frac{G_s\gamma_w + w\, G_s\, \gamma_w}{1+e} = \frac{(1+w)G_s\, \gamma_w}{1+e} \tag{i.18}$$

dan

$$\gamma_d = \frac{W_s}{V} = \frac{G_s\gamma_w}{1+e} \tag{i.19}$$

I.1 Berat Volume atau Berat Isi Tanah

Lalu diperlukan untuk mengetahui berat volume pada tanah dengan kondisi jenuh air (*saturated*). Jenuh air dapat diartikan ruang pori terisi dengan air (Gambar I.3).



Gambar I.3 Elemen tanah jenuh air dengan volume butiran padat sama dengan 1

Berat volume tanah jenuh air dapat dinyatakan dengan persamaan sebagai berikut:

$$\gamma_{sat} = \frac{W}{V} = \frac{W_s + W_w}{V} = \frac{G_s\gamma_w + e\gamma_w}{1+e} = \frac{(G_s + e)\gamma_w}{1+e} \qquad \text{(i.20)}$$

di mana:

e = angka pori

Gs = berat spesifik butiran

γ_w = berat volume air

Lampiran J
Scan Plagiasi

J.1 Hasil *Plagiarism Check*

PLAGIARISM CHECK.ORG

5.47% PLAGIARISM APPROXIMATELY

Report #13721853

47 BAB 1 PENDAHULUAN Latar Belakang Setiap bangunan pasti menggunakan pondasi agar dapat menopang beban di atasnya agar bangunan lebih kokoh dan kuat. 42 Pondasi adalah bagian dari struktur bawah sebuah konstruksi yang berfungsi untuk menyalurkan semua beban diatasnya ke lapisan tanah dibawahnya yang memiliki daya dukung cukup kuat. Untuk menentukan jenis pondasi dan panjang pondasi yang akan digunakan, diperlukan perencanaan perhitungan letak tanah keras dan daya dukung tanah serta faktor lain yang mendukung. Pada umumnya pada proyek dengan letak kedalaman tanah keras yang dalam menggunakan jenis pondasi tiang pancang. Pada perencanaan diperlukan analisis tanah atau penyelidikan tanah. Penyelidikan tanah dilakukan untuk mengetahui kemampuan tanah untuk mendukung struktur diatasanya ataupun untuk mendapatkan hasil atau data seperti kedalaman tanah keras, daya dukung tanah, dan daya kelengketan tanah. 5 7 13 14 15 16 17 18 19 20 21 22 46 53 55 56 58 59 63 64 66 67 68 Penyelidikan tanah yang dilakukan adalah Cone

REPORT #1372185328 CHECKED 8 SEP 2021, 8:17 AM AUTHOR ANDRE KURNIAWAN PAGE 1 OF 89