



Tugas Akhir

Studi Perbandingan Estimasi *Bill of Quantity* pada Pekerjaan Penulangan *Pile Cap*, Pilar Tunggal dan Ganda Jalan Layang Antara Metode Konvensional dan BIM (*Building Information Modeling*)



LAMPIRAN A :
SHOPDRAWING
(L-1 s.d. L-2)



PROGRAM STUDI TEKNIK SIPIL
 FAKULTAS TEKNIK
 UNIVERSITAS KATOLIK SOEGIJAPRANATA
 SEMARANG

MATA KULIAH

Tugas Akhir
 Tahun 2021/2022

JUDUL GAMBAR

Detail Penulangan
 Pilar Tunggal

PESERTA TUGAS AKHIR

NAMA :
 Oei, Natanael Indrawan Wiharno
 Atanasius Agri Permadi Putra

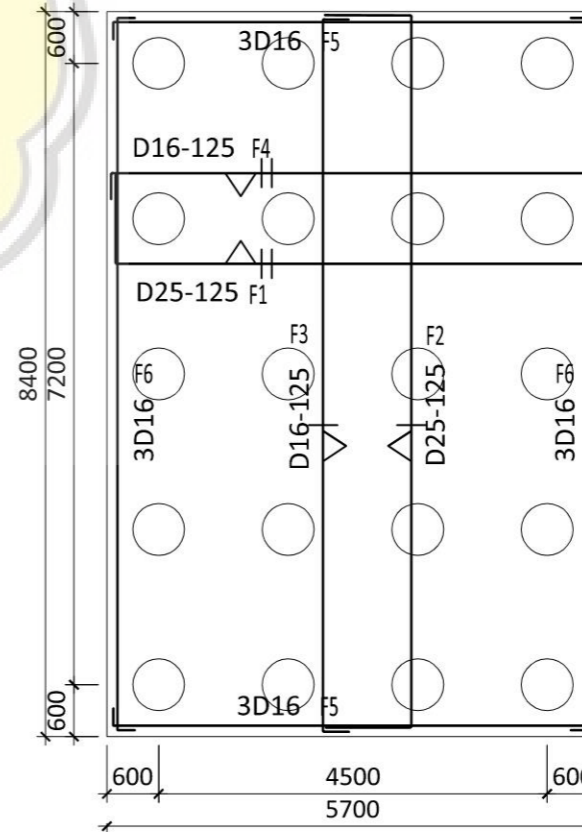
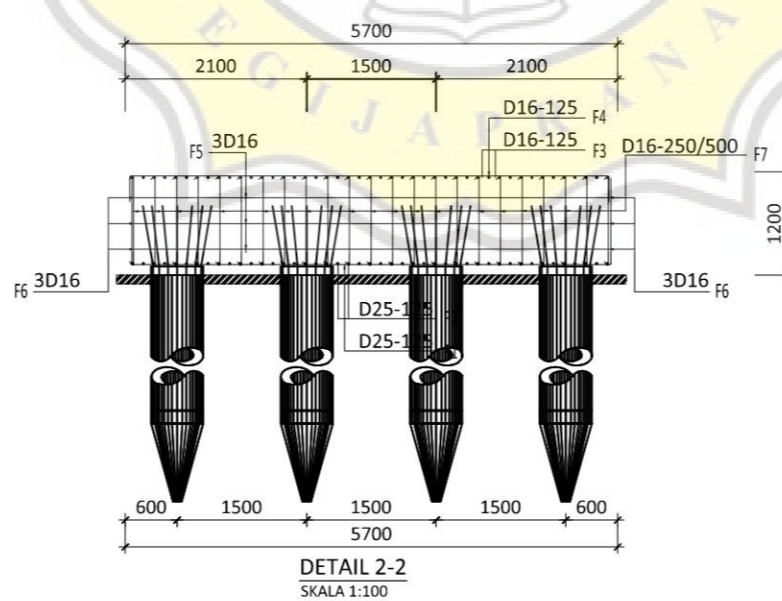
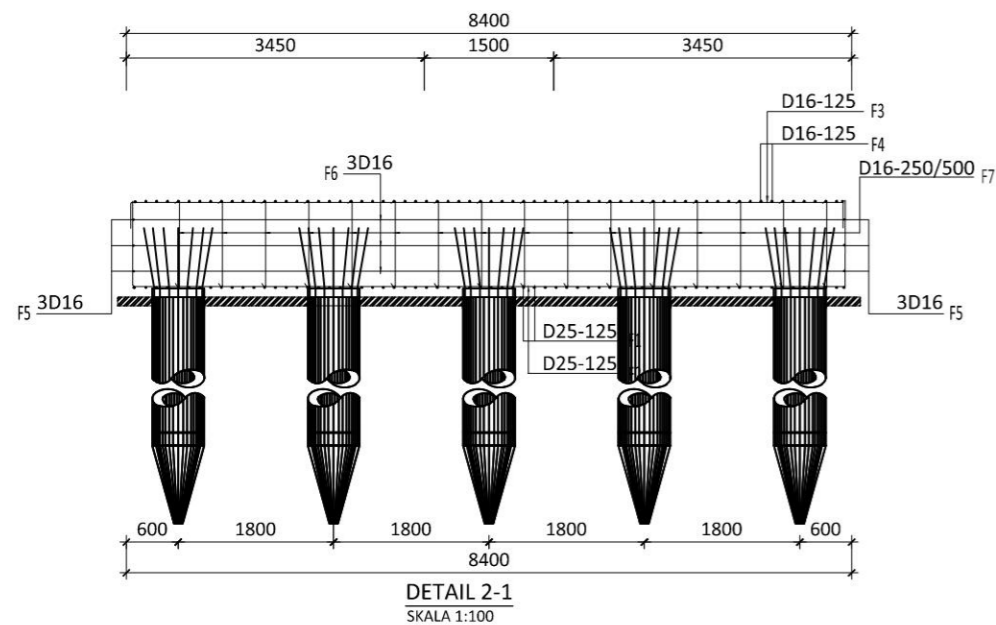
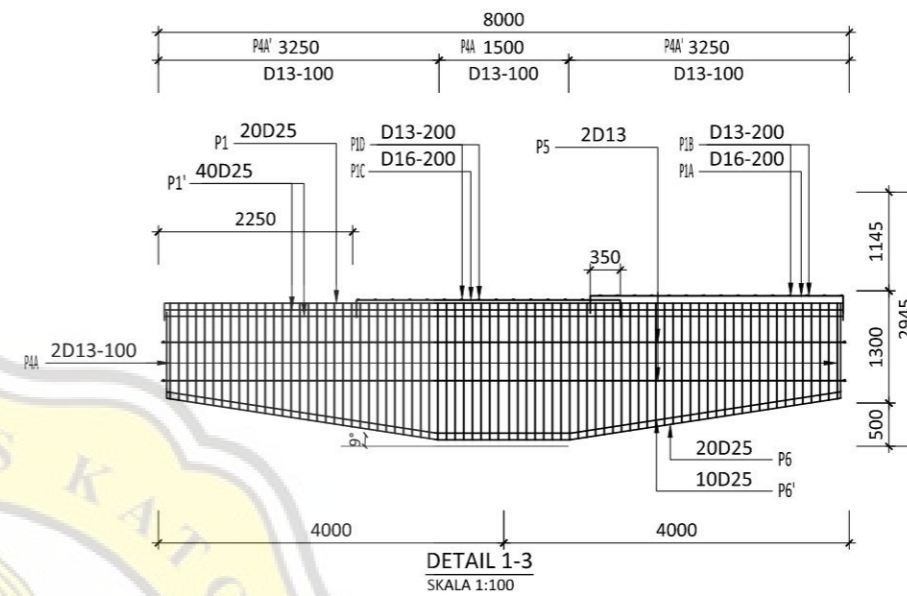
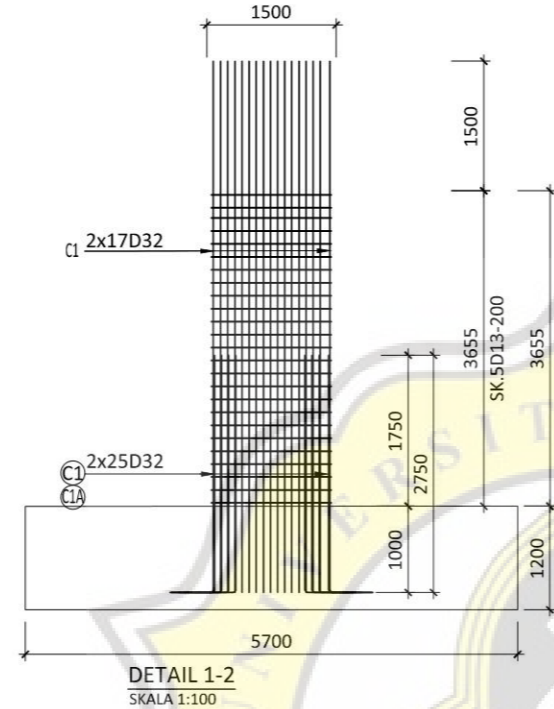
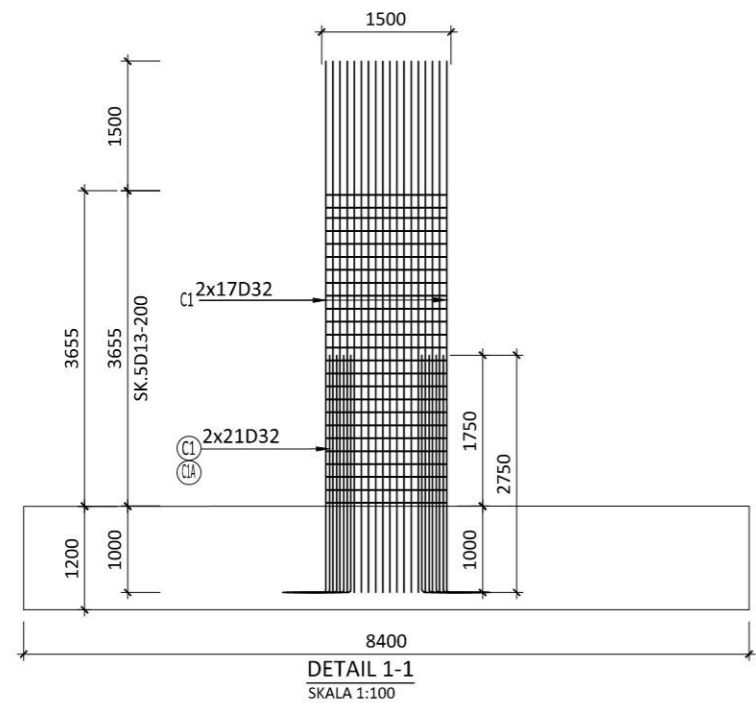
NIM : 17.B1.0010
 17.B1.0100

SEMESTER : Genap
 TAHUN: 2022

SKALA	NO LEMBAR
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	JUMLAH LEMBAR
	2

KETERANGAN

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 Pilar Ganda

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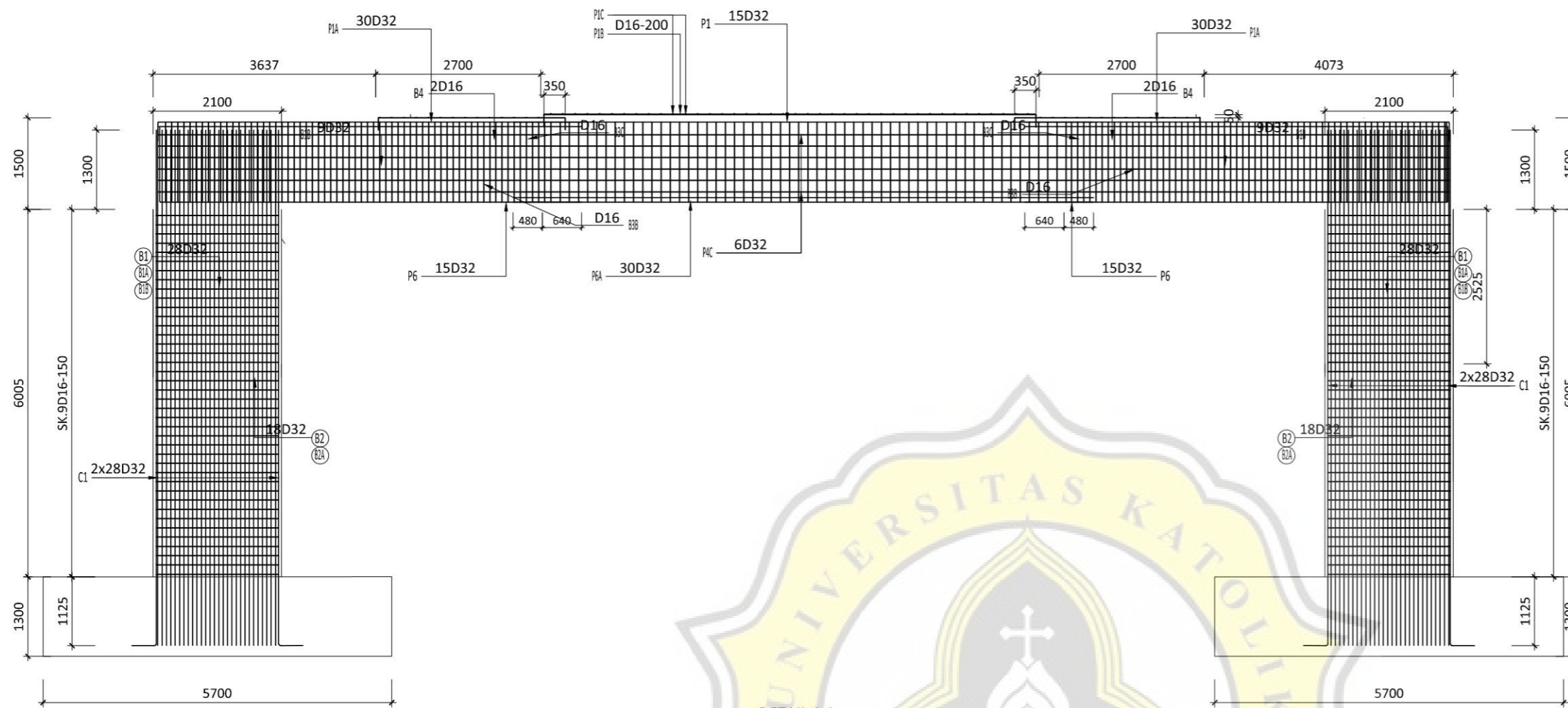
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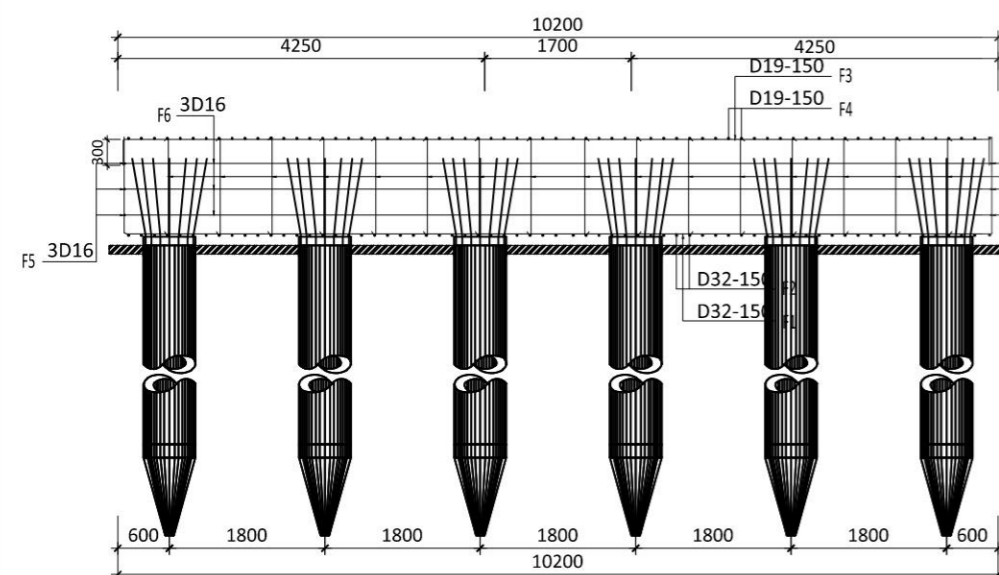
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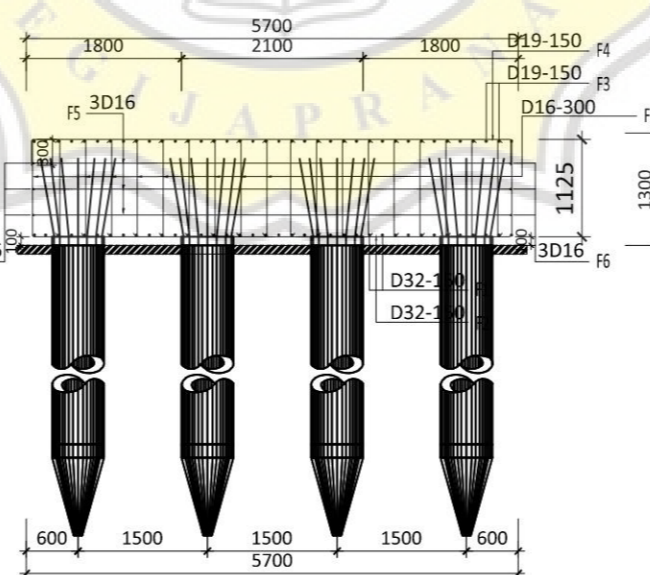
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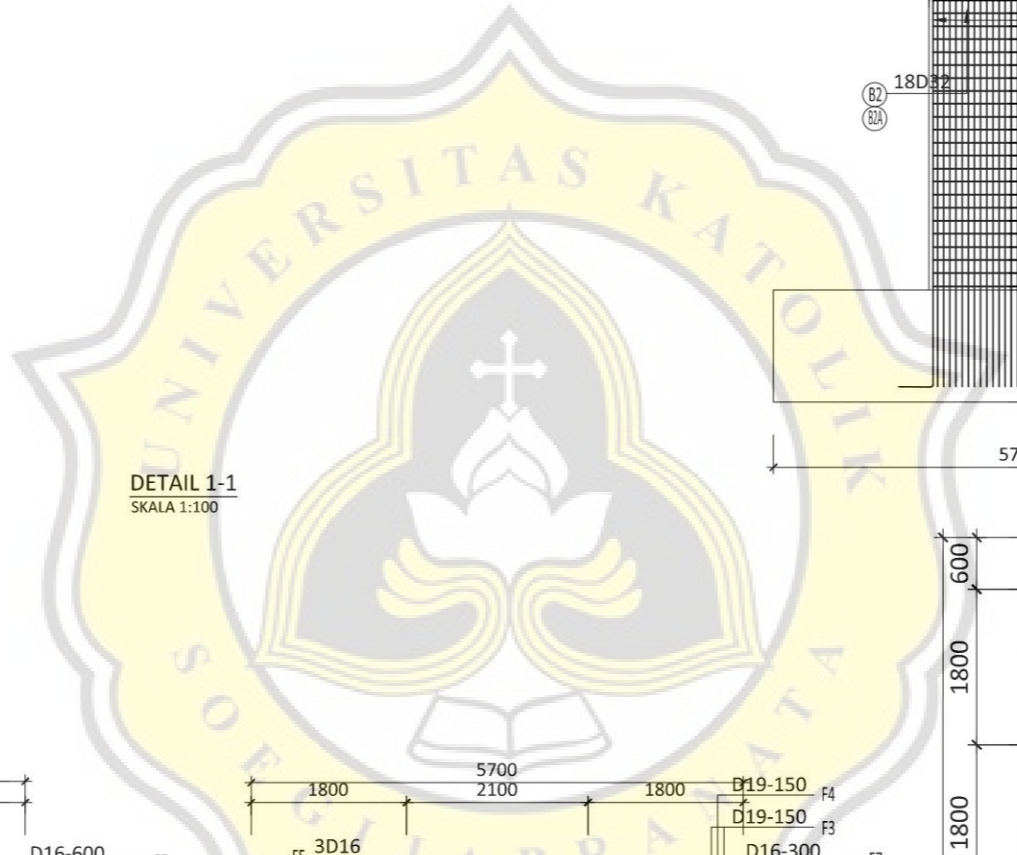
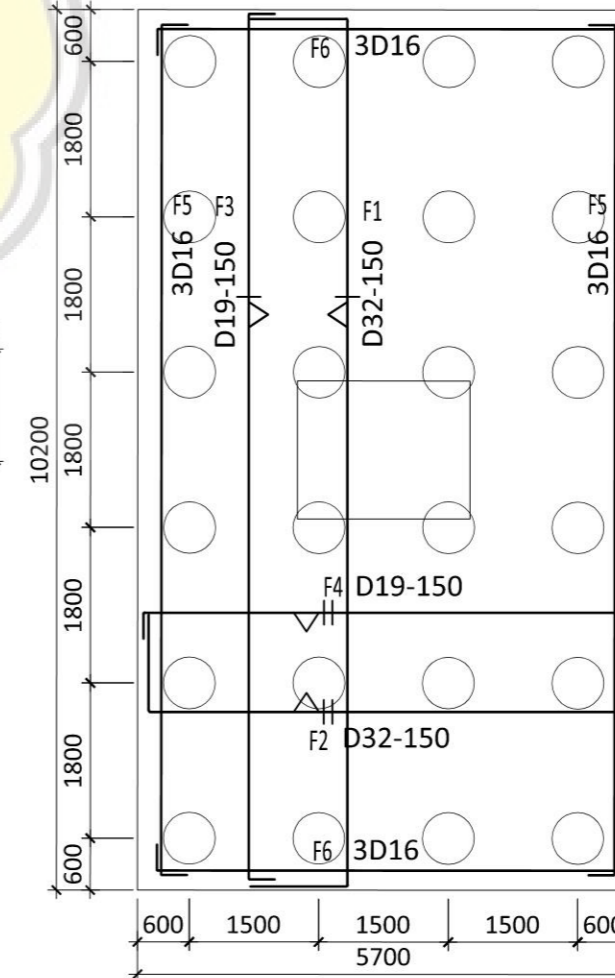
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 SKALA 1:100



DETAIL 2-1
 SKALA 1:100



DETAIL 2-2
 SKALA 1:100





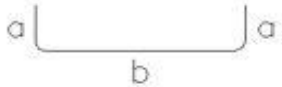

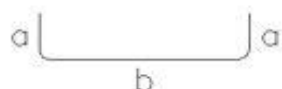




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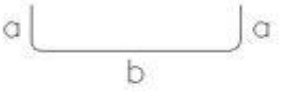
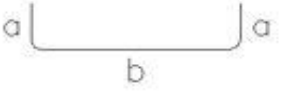
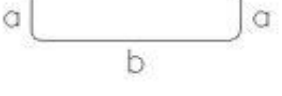




LAMPIRAN B :
HASIL ESTIMASI
(L-3 s.d. L-6)

ESTIMASI KONVENSIONAL VOLUME PENULANGAN *PILE CAP* PILAR TUNGGAL

Bentuk Tulangan	Bagian	Diameter (mm)	Jumlah (batang)	Panjang Bengkokan (m)	Panjang Satu Batang (m)	Panjang Semua Batang (m)	Berat Per Meter (kg/m)	Volume Kerja (kg)
	F1	25	67	0,3	7,85	525,95	3,85	2024,9075
	F2	25	45	0,3	10,55	474,75	3,85	1827,7875
	F3	16	45	0,192	9,042	406,89	1,58	642,8862
	F4	16	67	0,192	6,342	424,914	1,58	671,36412
	F5	16	6	0,192	6,142	36,852	1,58	58,22616
	F6	16	6	0,192	8,842	53,052	1,58	83,82216
	F7	16	368	0,128	1,228	451,904	1,58	714,00832
TOTAL VOLUME (kg)								6023,002


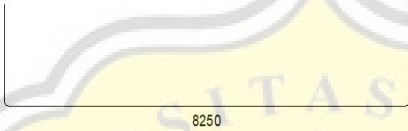







ESTIMASI KONVENSIONAL VOLUME PENULANGAN *PILE CAP* PILAR GANDA

Bentuk Tulangan	Bagian	Diameter (mm)	Jumlah (batang)	Panjang Bengkokan (m)	Panjang Satu Batang (m)	Panjang Semua Batang (m)	Berat Per Meter (kg/m)	Volume Kerja (kg)
	F1	32	38	0,512	12,812	973,712	6,31	6144,12272
	F2	32	67	0,512	8,312	1113,808	6,31	7028,12848
	F3	19	38	0,228	10,878	826,728	2,23	1843,60344
	F4	19	67	0,228	6,378	854,652	2,23	1905,87396
	F5	16	6	0,192	6,142	73,704	1,58	116,45232
	F6	16	6	0,192	10,642	127,704	1,58	201,77232
	F7	16	288	0,128	1,328	764,928	1,58	1208,58624
TOTAL VOLUME (kg)								18448,539

Reinforcement schedule - bending shapes

Project: Volume Tulangan *Pile Cap* Pilar Tunggal Metode BIM
 For layout:
 Edited by: Atanasius Agri – Oei natanael
 Date / time: 12/19/2021 / 09:39
 Note:

All bar shapes

Mark	Pcs	Ø [mm]	Dimensioned bending shape	Individual length [m]	TotalLength [m]	Weight [kg]
Pilecap						
1	67	25		7.42	497.48	1,917.27
2	45	25		10.08	453.38	1,747.31
3	45	16		8.78	394.88	623.51
4	67	16		6.08	407.03	642.69
5	3	16		5.83	17.48	27.59
6	3	16		5.83	17.48	27.59
7	3	16		8.53	25.58	40.38
8	3	16		8.53	25.58	40.38
9	368	16		1.12	414.00	653.71

Reinforcement schedule - bending shapes

Project: Volume Tulangan *Pile Cap* Pilar Tunggal Metode BIM
For layout:
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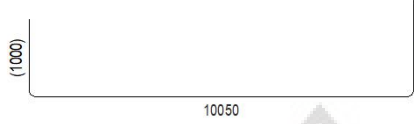
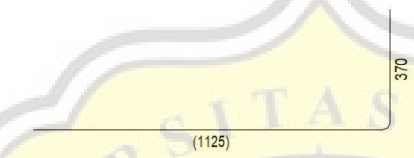
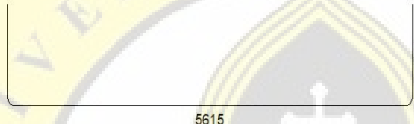
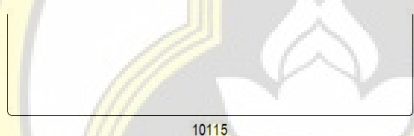
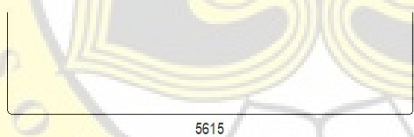

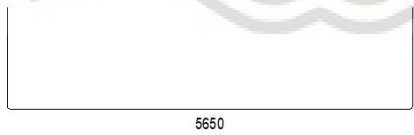
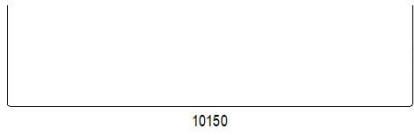
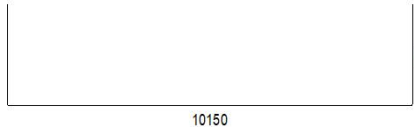
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Sum of all components	12,965.65
Number of elements	1
Total weight	12,965.65



Reinforcement schedule - bending shapes

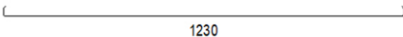
Project: Volume Tulangan *Pile Cap* Pilar Ganda Metode BIM
 For layout:
 Edited by: Atanasius Agri – Oei natanael
 Date / time: 12/20/2021 / 22:36
 Note:

All bar shapes

Mark	Pcs	Ø [mm]	Dimensioned bending shape	Individual length [m]	TotalLength [m]	Weight [kg]
Pilecap						
63	76	32		12.00	912.00	5,757.46
64	76	32		1.40	106.40	671.70
65	134	32		7.67	1,028.45	6,492.60
66	76	19		10.62	807.50	1,796.69
67	134	19		6.12	820.75	1,826.17
68	6	16		5.98	35.85	56.61
69	6	16		5.98	35.85	56.61
70	6	16		10.47	62.85	99.24
71	6	16		10.47	62.85	99.24

Reinforcement schedule - bending shapes

Project: Volume Tulangan *Pile Cap* Pilar Ganda Metode BIM
 For layout:
 Edited by: Atanasius Agri – Oei natanael
 Date / time: 12/20/2021 / 22:36
 Note:

72	612	16		1.35	826.20	1,304.57
Sum Pilecap						18,160.88
Sum of all components						48,233.51
Number of elements						1
Total weight						48,233.51



PAPER NAME

17.B1.0010_Oei, Natanael Indrawan Wiharno

AUTHOR

Oei, Natanael Indrawan Wiharno

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CHARACTER COUNT

119615 Characters

PAGE COUNT

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