

LAMPIRAN A



SPESIFIKASI AKSESORIS DAN PERLENGKAPAN UNIT BANGUNAN

LAMPIRAN A

SPESIFIKASI AKSESORIS DAN PELENGKAP UNIT BANGUNAN

1. BAK DESINFEKSI



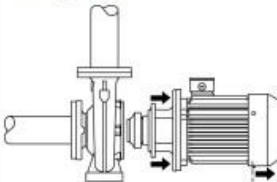
Menggunakan 1 unit pompa Dossing pump merk Grundfoss dengan tipe DDA 60-10 AR-PVC/E/C-F-31U3U3FG

Qty.	Description
1	<div style="display: flex; justify-content: space-between; align-items: flex-start; margin-bottom: 10px;"> <div style="text-align: center;">  </div> <div style="font-size: small;"> <p>Company name: Created by: Phone:</p> </div> </div> <div style="text-align: right; margin-top: 5px;"> <p>Date: 27/12/2023</p> </div>
	<p>DDA 60-10 AR-PVC/E/C-F-31U3U3FG</p> <div style="text-align: center; margin: 10px 0;">  </div> <p style="text-align: center; font-size: x-small; color: gray;">Note! Product picture may differ from actual product</p> <p>Product No.: 99159370 DDA 60-10 AR-PVC/E/C-F-31U3U3F</p> <p>The SMART Digital DDA is a compact positive displacement, diaphragm dosing pump with variable-speed drive (PMS motor) and intelligent control electronics with minimum energy consumption.</p> <p>The SMART Digital Dosing series operates at full stroke length to ensure optimum accuracy, priming and suction, even for high-viscosity or degassing liquids.</p> <p>The duration of each discharge stroke varies according to the capacity set, resulting in optimum smooth and continuous discharge flow.</p> <p>The mounting plate allows quick installation and service. The control cube can be turned easily into front, left or right position. The click wheel and the multi-coloured backlit graphical, plain-text LC display make commissioning and operation intuitive. The control elements are protected by a transparent cover.</p> <p>The dosing head is composed of:</p> <ul style="list-style-type: none"> - Long lifetime and universal, chemically resistant full double PTFE diaphragm. - Ball valves for highest dosing accuracy. - Deaeration valve for easy startup. <p>Operating modes:</p> <ul style="list-style-type: none"> - Manual dosing in ml/h, l/h or gph. - Pulse control in ml/pulse (incl. memory function). - Analog control 0/4-20 mA (scalable). - Pulse-based batch function in ml, l or gal. - Timer-based batch function (Dosing timer, cycle or week). - Fieldbus control (GENIbus prepared for Grundfos CIU fieldbus modules). <p>Other features:</p>

Qty.	Description
1	<p>Analog input: 0/4-20 MA Pulse control: YES Ext. Stop input: Yes Analog output: 0/4-20 MA Output relays: 2 Bus communication: YES</p> <p>Liquid: Pumped liquid: Water Liquid temperature range: 0 .. 40 °C Selected liquid temperature: 20 °C Density: 998.2 kg/m³</p> <p>Technical: Type key: DDA 60-10 AR-PVC/E/C-F-31U3U3F Max. Flow: 60 l/h Max. flow in slow mode 50%: 30 l/h Max. flow in slow mode 25%: 15 l/h Min flow: 75 ml/h Turn-down ratio: 1:800 Approvals: CE,CSA-US,NSF61,EAC,RCM Valve type: Standard Maximum viscosity at 100 %: 150 mPas Maximum viscosity in slow mode 50 %: 2000 mPas Maximum viscosity in slow mode 25 %: 3000 mPas Accuracy of repeatability: 1.5 %</p> <p>Materials: Dosing head: PVC (Polyvinyl chloride) Valve ball: Ceramic Gasket: EPDM</p> <p>Installation: Range of ambient temperature: 0 .. 45 °C Maximum operating pressure: 10 bar Installation set: NO Installation type: No installation set Pump inlet: Conn.pack U3 (hose ID.19mm &.. Pump outlet: Conn.pack U3 (hose ID.19mm &.. Max. Suction lift during operation: 3 m Max. Suction lift during priming: 1.5 m</p> <p>Electrical data: Maximum power input - P1: 62 W Mains frequency: 50 / 60 Hz Rated voltage: 1 x 100-240 V Enclosure class (IEC 34-5): IP65 / NEMA 4X Length of cable: 1.5 m Type of cable plug: EU Inrush current: 70A at 240V (35A/100V) for 2ms</p>

2. RESERVOIR

Menggunakan 1 unit pompa Sentrifugal pump untuk *backwash* merk Grundfos dengan tipe NB 50-160/139 AAF2LESBQQEFW3

		Company name: Created by: Phone: Date: 27/12/2023
Qty.	Description	
1	NB 50-160/139 AAF2LESBQQEFW3  <p style="text-align: center;"><small>Note! Product picture may differ from actual product</small></p> <p>Product No.: 98946385</p> <p>Non-self-priming, single-stage, centrifugal volute pump designed according to ISO 5199 with dimensions and rated performance according to EN 733 (10 bar). Flanges are PN 16 with dimensions according to EN 1092-1. The pump has an axial suction port, radial discharge port, horizontal shaft and a back pull-out design enabling removal of the motor, motor stool, cover and impeller without disturbing the pump housing or pipework.</p> <p>The unbalanced rubber bellows seal is according to DIN EN 12756.</p> <p>The pump is close-coupled to a fan-cooled asynchronous motor.</p> <p>The product's minimum efficiency index (MEI) is greater or equal to 0.70. This is by the Commission Regulation (EU) considered as an indicative benchmark for best-performing water pump available on the market as from 1 January 2013.</p> <p>The back pull-out design means that the pump can be serviced by a single person without disturbing the pump housing or pipes.</p>  <p>Cast-iron parts have an epoxy-based coating made in a cathodic electro-deposition (CED) process. CED is a high-quality dip-painting process where an electrical field around the products ensures deposition of paint particles as a thin, well-controlled layer on the surface.</p>	



Company name:

Created by:

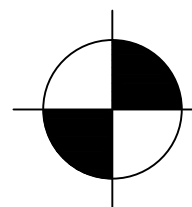
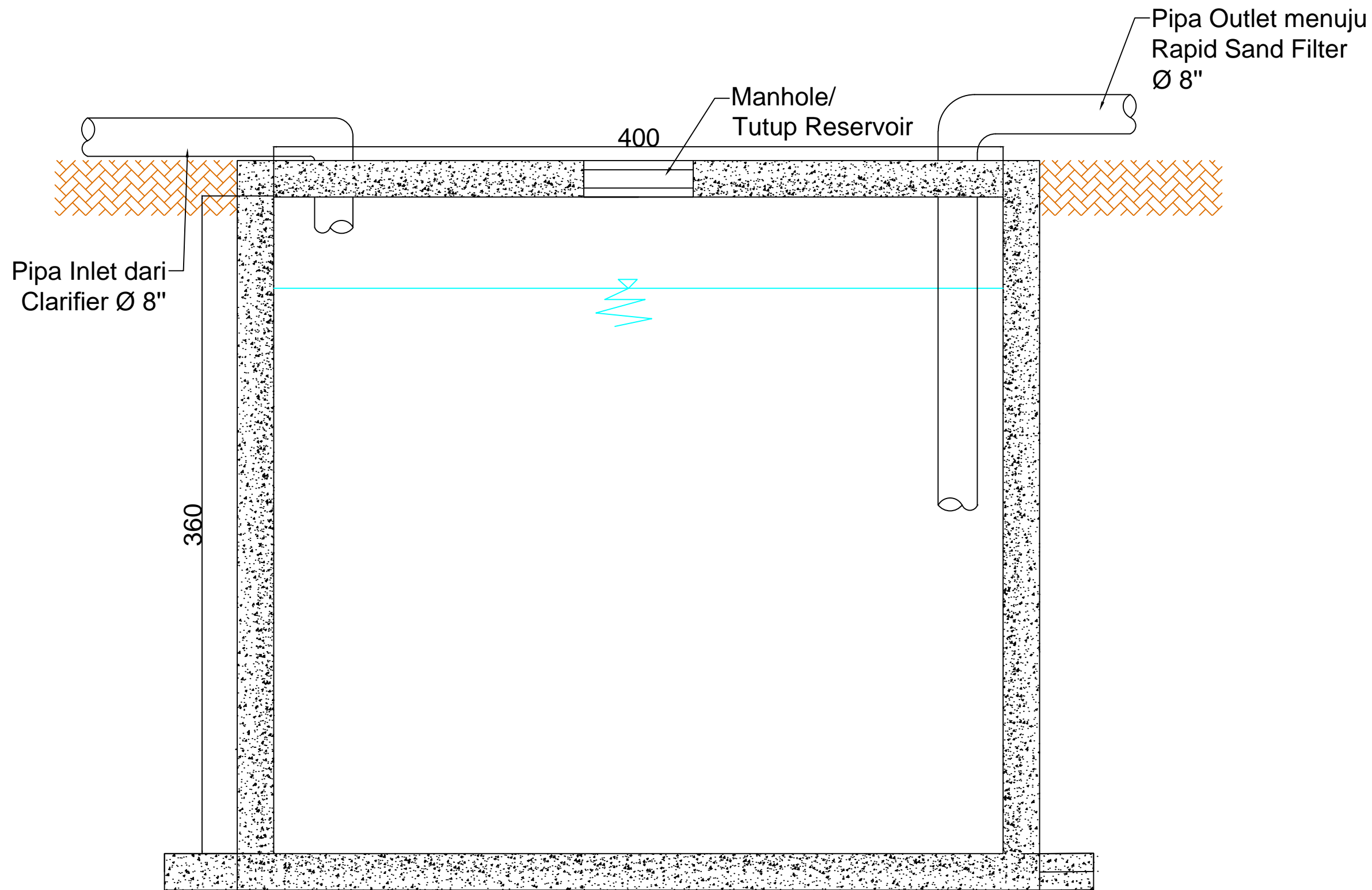
Phone:

Date:

27/12/2023

Qty.	Description
1	<p>The motor does not incorporate motor protection and must be connected to a motor-protective circuit breaker which can be manually reset. The motor-protective circuit breaker must be set according to the rated current of the motor (I1/1).</p> <p>Further product details</p> <p>Cast-iron parts have an epoxy-based coating made in a cathodic electro-deposition (CED) process. CED is a high-quality dip-painting process where an electrical field around the products ensures deposition of paint particles as a thin, well-controlled layer on the surface.</p> <p>Technical data</p> <p>Controls:</p> <p>Frequency converter: None Pressure sensor: N</p> <p>Liquid:</p> <p>Pumped liquid: Water Liquid temperature range: -25 .. 120 °C Selected liquid temperature: 20 °C Density: 998.2 kg/m³</p> <p>Technical:</p> <p>Pump speed on which pump data are based: 1450 rpm Rated flow: 35.8 m³/h Rated head: 5.4 m Actual impeller diameter: 139 mm Nominal impeller diameter: 160 Shaft seal arrangement: Single Code for shaft seal: BQQE Curve tolerance: ISO9906:2012 3B2 Bearing design: Standard</p> <p>Materials:</p> <p>Pump housing: Stainless steel EN 1.4517 ASTM CD4MCuN</p> <p>Wear ring: Stainless steel</p> <p>Impeller: Stainless steel</p>

LAMPIRAN B
GAMBAR DENAH DAN POTONGAN UNIT PENGOLAHAN



POTONGAN A-A' RESERVOIR

SKALA 1:25



PROGRAM STUDI TEKNIK LINGKUNGAN
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"VETERAN" JAWA TIMUR

TUGAS

PERANCANGAN
BANGUNAN PENGOLAHAN
AIR BUANGAN

DOSEN PENGAMPU

Ir. YAYOK SURYO PURNOMO,
M.P., M.S.

DOSEN PEMBIMBING

FIRRA ROSARIAWARI, S.T., M.T.

MAHASISWA	NPM
STEVEN ALBERT C. POHAN RR. GALUH RETNO C.N.	20034010070 20034010098
GAMBAR	SKALA
POTONGAN A-A' RESERVOIR	1 : 25
	SATUAN
	CENTIMETER
	NO. GAMBAR
	10

KETERANGAN



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 AIR MINUM

DOSEN PENGAMPU

PROF. EUIS NURUL H., S.T,
 M.T, Ph. D

DOSEN PEMBIMBING

FIRRA ROSARIAWARI, S.T., M.T.

MAHASISWA

NPM

STEVEN ALBERT C. POHAN
 RR. GALUH RETNO C.N.

20034010070
 20034010098

GAMBAR

SKALA

1 : 26

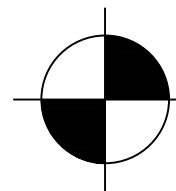
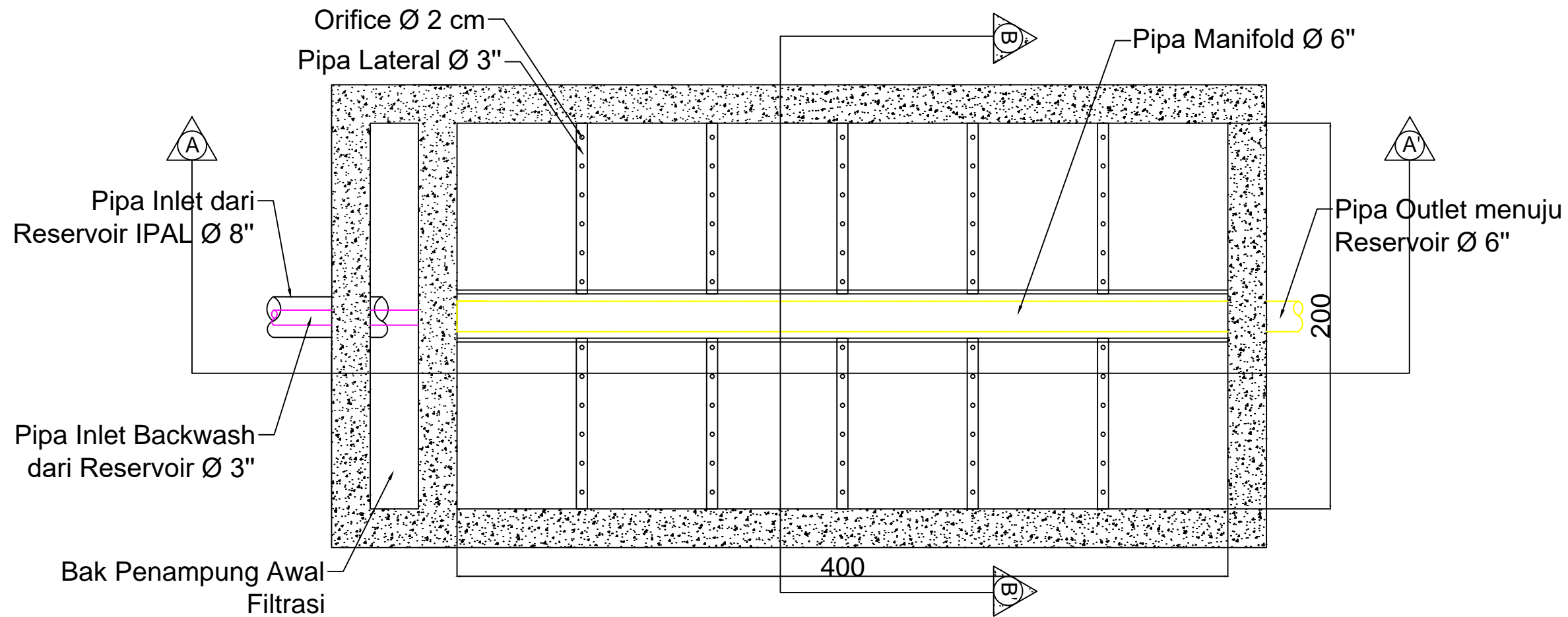
SATUAN

CENTIMETER

NO. GAMBAR

11

KETERANGAN



DENAH RAPID SAND FILTER

SKALA 1:26



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MAHASISWA

NPM

STEVEN ALBERT C. POHAN
 RR. GALUH RETNO C.N.

20034010070
 20034010098

GAMBAR

SKALA

1 : 26

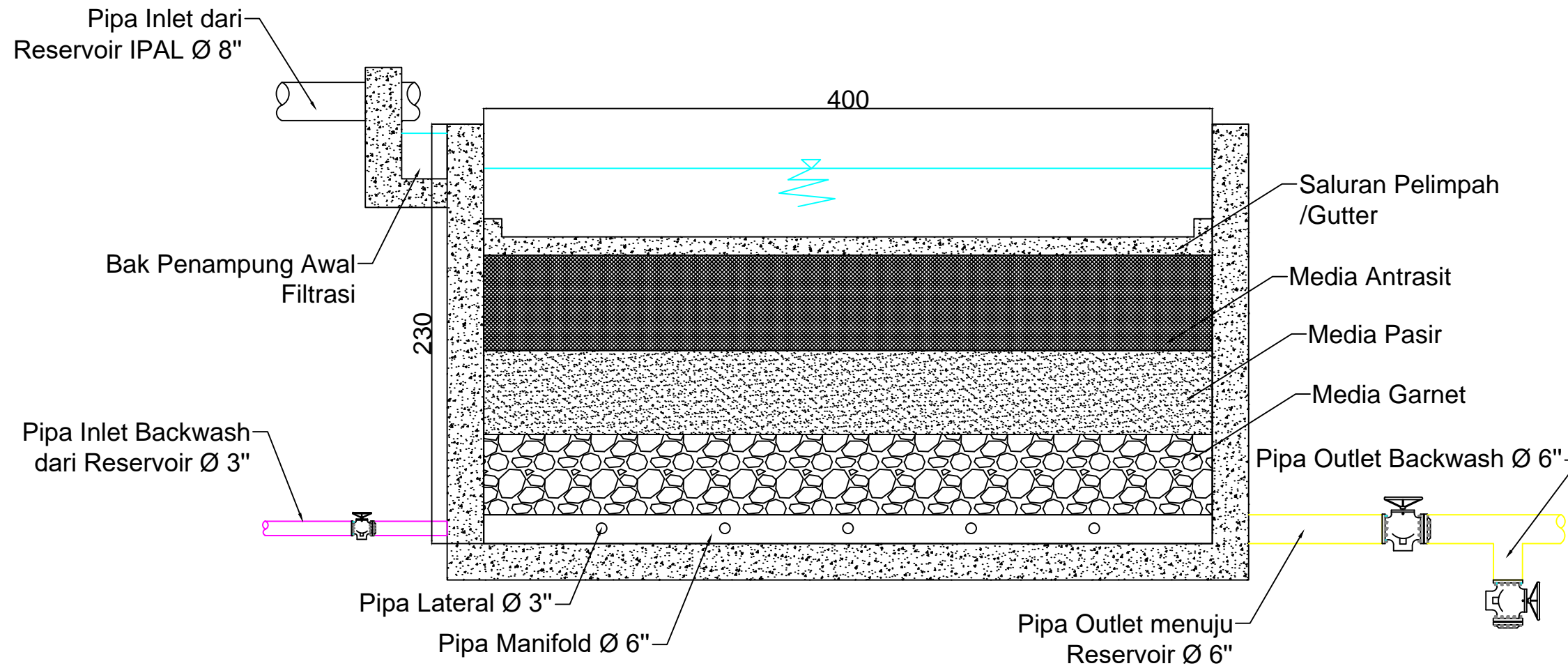
SATUAN

CENTIMETER

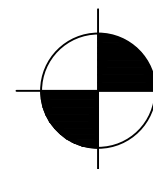
NO. GAMBAR

11

KETERANGAN



POTONGAN A-A' RAPID SAND FILTER
 SKALA 1:26





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 "VETERAN" JAWA TIMUR

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PERANCANGAN
 BANGUNAN PENGOLAHAN
 AIR MINUM

DOSEN PENGAMPU

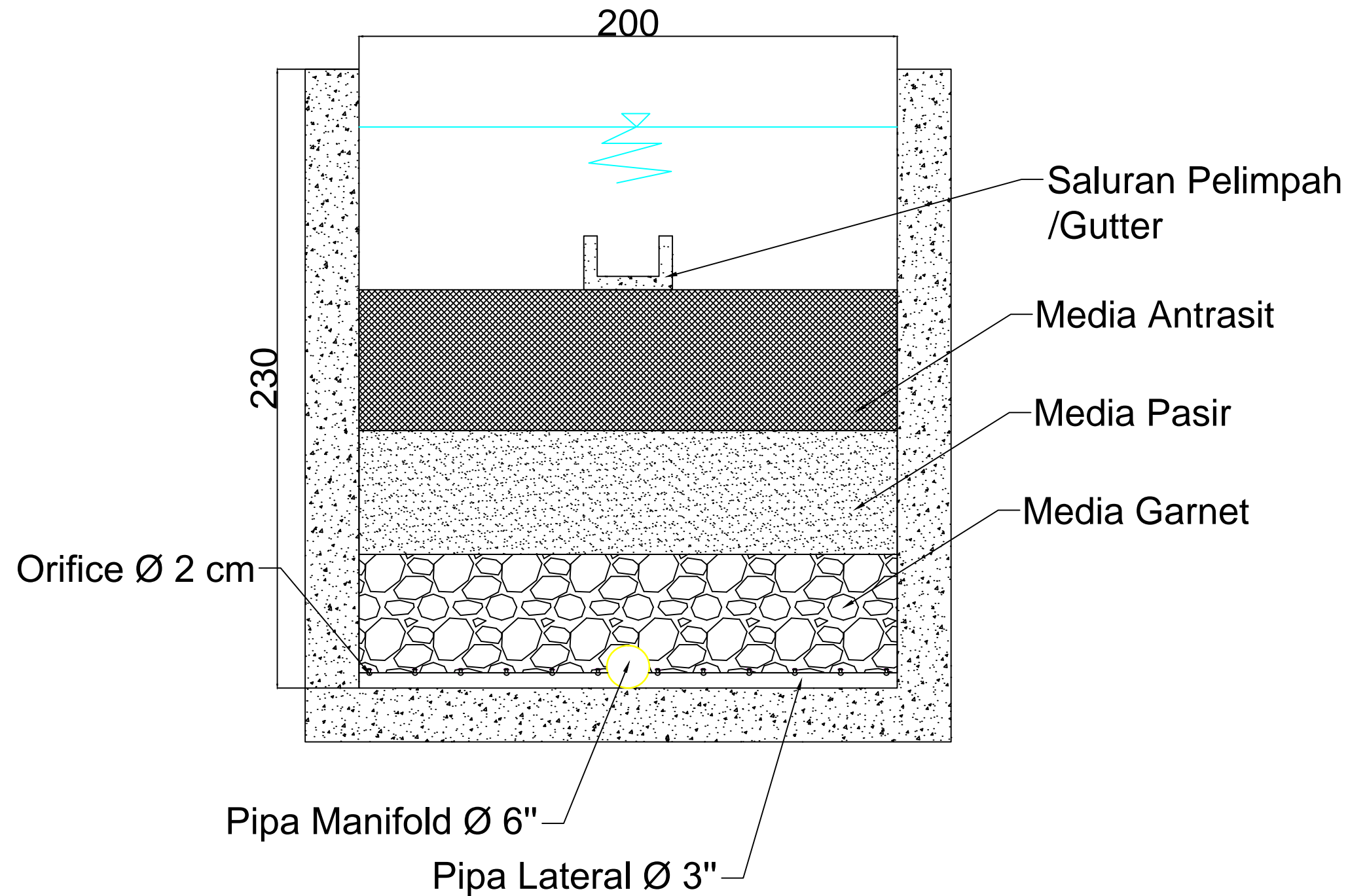
PROF. EUIS NURUL H., S.T,
 M.T, Ph. D

DOSEN PEMBIMBING

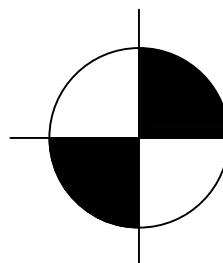
FIRRA ROSARIAWARI, S.T., M.T.

MAHASISWA	NPM
STEVEN ALBERT C. POHAN RR. GALUH RETNO C.N.	20034010070 20034010098
GAMBAR	SKALA
POTONGAN B-B' RAPID SAND FILTER	1 : 18
	SATUAN
	CENTIMETER
	NO. GAMBAR
	11

KETERANGAN



POTONGAN B-B' RAPID SAND FILTER
 SKALA 1:18





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TUGAS

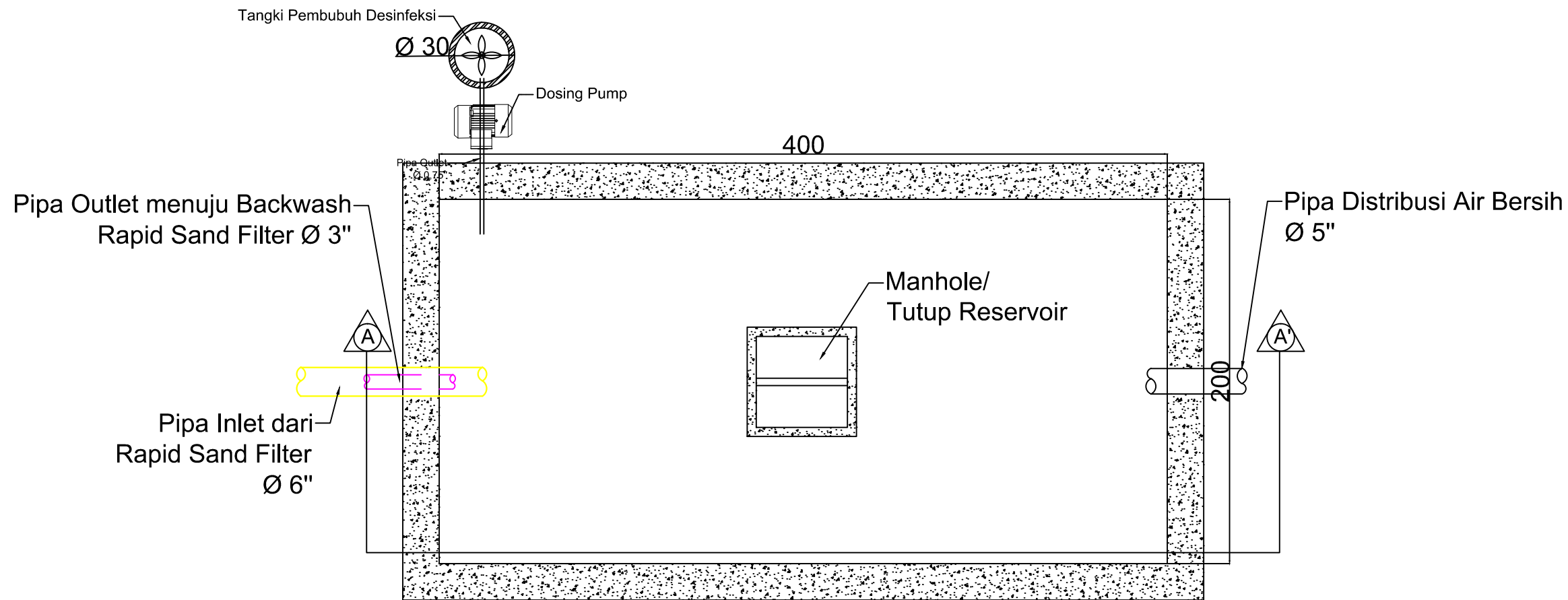
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 AIR MINUM

DOSEN PENGAMPU

PROF. EUIS NURUL H., S.T,
 M.T, Ph. D

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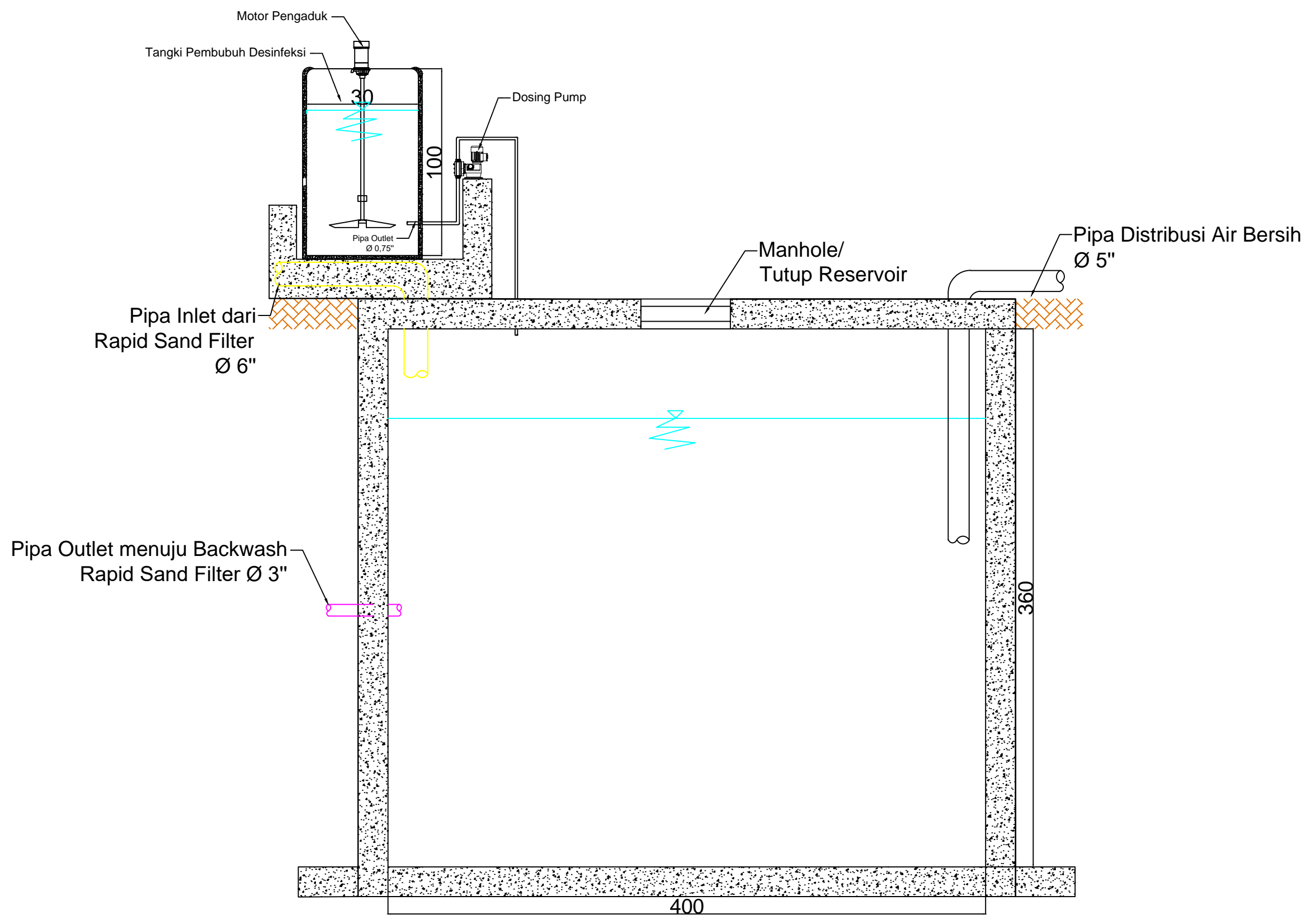
FIRRA ROSARIAWARI, S.T., M.T.



 DENAH BAK DESINFEKSI & RESERVOIR
 SKALA 1:29

MAHASISWA	NPM
STEVEN ALBERT C. POHAN RR. GALUH RETNO C.N.	20034010070 20034010098
GAMBAR	SKALA
DENAH BAK DESINFEKSI & RESERVOIR	1 : 29
	SATUAN
	CENTIMETER
	NO. GAMBAR
	12 & 13

KETERANGAN




POTONGAN A-A' BAK DESINFEKSI & RESERVOIR
 SKALA 1:29



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 "VETERAN" JAWA TIMUR

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PERANCANGAN
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 AIR MINUM

DOSEN PENGAMPU

PROF. EUIS NURUL H., S.T.,
 M.T, Ph. D

DOSEN PEMBIMBING

FIRRA ROSARIAWARI, S.T., M.T.

MAHASISWA	NPM
STEVEN ALBERT C. POHAN	20034010070
RR. GALUH RETNO C.N.	20034010098

GAMBAR	SKALA
	1 : 29

POTONGAN A-A' BAK DESINFEKSI & RESERVOIR	SATUAN
	CENTIMETER
	NO. GAMBAR
	12 & 13

KETERANGAN



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TUGAS

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DOSEN PEMBIMBING

FIRRA ROSARIAWARI, S.T., M.T.

MAHASISWA

NPM

STEVEN ALBERT C. POHAN
 RR. GALUH RETNO C.N.

20034010070
 20034010098

GAMBAR

SKALA

PROFIL HIDROLIS
 BANGUNAN
 PENGOLAHAN AIR
 BERSIH

1 : 100

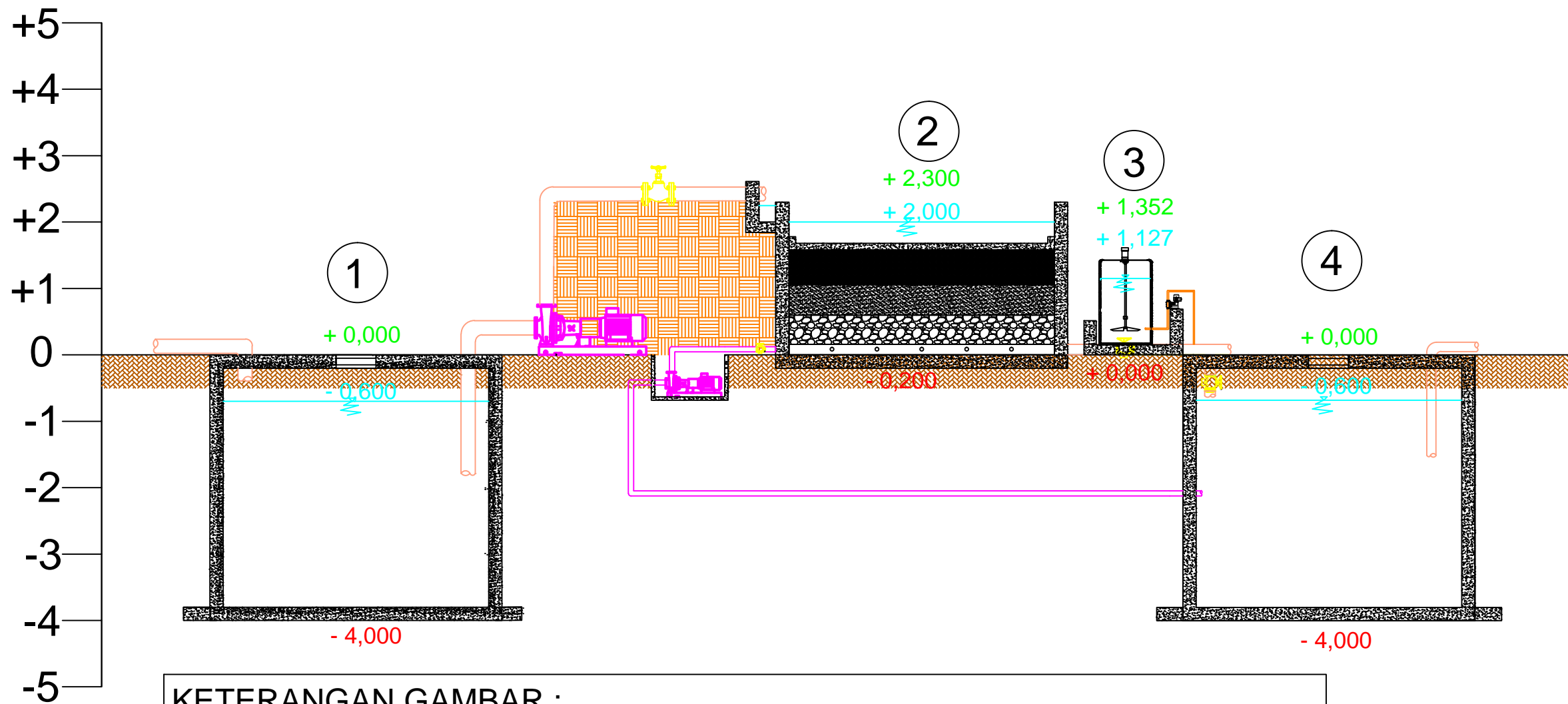
SATUAN

CENTIMETER

NO. GAMBAR

-

KETERANGAN



KETERANGAN GAMBAR :

- | | | | |
|--|---|---|-------------------|
| ■ Level Bangunan Awal | ■ Pipa Saluran Air Limbah | ■ Penyangga Pipa | 3. Bak Desinfeksi |
| ■ Level Muka Air | ■ Pipa Backwash | 1. Reservoir IPAL | 4. Reservoir |
| ■ Level Bangunan Akhir | ■ Pipa Desinfeksi | 2. Rapid Sand Filter | |



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 M.T., Ph.D

DOSEN PEMBIMBING

FIRRA ROSARIAWARI, S.T., M.T.

MAHASISWA

NPM

STEVEN ALBERT C. POHAN
 RR. GALUH RETNO C.N.

20034010070
 20034010098

GAMBAR

SKALA

LAYOUT BANGUNAN
 PENGOLAHAN AIR
 LIMBAH & AIR BERSIH

1 : 125

SATUAN

CENTIMETER

NO. GAMBAR

-

KETERANGAN

KETERANGAN GAMBAR :

1. Saluran Pembawa & Bar Screen
 2. Bak Penampung
 3. Grease Trap
 4. Bak Pembubuh Koagulan
 5. Bak Koagulasi
 6. Bak Flokulasi
 7. Bak Sedimentasi
 8. Biofilter Anaerob - Aerob
 9. Clarifier
 10. Reservoir IPAL
 11. Rapid Sand Filter
 12. Bak Desinfeksi
 13. Reservoir
 14. Sludge Collector
 15. Filter Belt Press
- Pipa Air Limbah
— Pipa Resirkulasi & Pipa Backwash
— Pipa Lumpur
— Pipa Bak Pembubuh & Desinfeksi

