

## BAB 6

### KESIMPULAN

#### 6.1. Kesimpulan

Kesimpulan dari penelitian ini adalah sebagai berikut:

1. Jembatan Bancang, Jembatan Drewolo, Jembatan Klepu, Jembatan Demak Ijo, Jembatan Karanggayam I dan Jembatan Jlantir termasuk dalam kategori jembatan dengan kondisi struktur bebas dari kerusakan yang mempengaruhi kinerja dan daya tahan struktur, sedangkan untuk Jembatan Tinalah, Jembatan Ngentak, Jembatan Kedung Keris dan Jembatan Ngalang termasuk dalam kategori jembatan dengan kondisi struktur memiliki kerusakan yang mempengaruhi daya tahan/umur layan struktur.
2. Berdasarkan pemeriksaan jembatan menggunakan metode Vicroads BCN, diketahui bahwa interval waktu pemeriksaan rutin untuk Jembatan Bancang, Jembatan Drewolo, Jembatan Klepu, Jembatan Demak Ijo, Jembatan Karanggayam I dan Jembatan Jlantir adalah 5 tahun, karena memiliki skor BCN kurang dari 30, sedangkan Interval waktu pemeriksaan rutin untuk Jembatan Tinalah, Jembatan Ngentak, Jembatan Kedung Keris dan Jembatan Ngalang adalah 3 tahun, karena memiliki skor BCN antara 30 sampai 60.
3. Kerusakan elemen jembatan yang memerlukan penanganan lanjutan adalah sebagai berikut:
  - a. Jembatan Karanggayam I: dua unit bantalan pada gelagar B1 sisi utara dan gelagar B3 sisi utara mengalami sobek dan rotasi yang termasuk dalam nilai kondisi tiga.

- b. Jembatan Ngalang: (1). lantai jembatan seluas 98,84 m<sup>2</sup> mengalami kehilangan bagian beton, pengkristalan dan korosi pada tulangan yang termasuk dalam nilai kondisi 3. (2). Sambungan lantai jembatan antara span 1 dan span 2 mengalami retakan dan pergeseran.
- c. Jembatan Jlantir: (1). Sambungan lantai jembatan sisi selatan sepanjang 5,8 m' mengalami retak dan *settlement* sehingga termasuk pada nilai kondisi tiga. (2). Jalan pendekat pada sisi utara dan selatan mengalami retakan pada lapis permukaan aus dan *settlement* yang termasuk pada nilai kondisi tiga.
- d. Jembatan Kedung Keris: sambungan lantai jembatan sisi timur sepanjang 6,6 m' mengalami retakan dan lapisan bitumen yang mengelupas sehingga termasuk dalam nilai kondisi 4.
- e. Jembatan Drewolo: jalan pendekat pada sisi timur dan barat jembatan mengalami *settlement*, retak pada lapis permukaan aus serta permukaan tidak rata, sehingga termasuk dalam nilai kondisi tiga.
- f. Jembatan Klepu: (1). Gelagar B1 dan B4 mengalami korosi hingga menyebabkan bagian sayap gelagar keropos, sehingga termasuk dalam nilai kondisi empat. (2). Abutmen pasangan batu sisi utara seluas 22 m<sup>2</sup> mengalami retak/pecah sehingga termasuk pada nilai kondisi tiga.
- g. Jembatan Tinalah: pada *pier wall* P1 seluas 10,65 m<sup>2</sup> mengalami *spalling*, dan korosi pada tulangan, sehingga termasuk pada nilai kondisi empat.

- h. Jembatan Ngentak: slab beton seluas 18,6 m<sup>2</sup> mengalami pengkristalan, *spalling*, dan korosi pada tulangan, sehingga termasuk pada nilai kondisi tiga.
4. Penanganan detail pada setiap elemen jembatan dengan nilai kondisi 3 dan 4 adalah sebagai berikut:
- a. Jembatan Karanggayam I: penggantian landasan/bantalan gelagar.
  - b. Jembatan Ngalang: penambalan (*patching*) dan perkuatan beton pada lantai jembatan yang mengalami deliminasi pada permukaan beton, penggantian lapisan bitumen pada sambungan lantai jembatan.
  - c. Jembatan Jlantir: penggantian lapisan bitumen pada sambungan lantai jembatan, penggantian tiang penyangga sandaran jembatan dan pelapisan ulang lapis permukaan lentur pada jalan pendekat jembatan.
  - d. Jembatan Kedung Keris: penggantian/pelapisa ulang lapisan bitumen pada sambungan lantai jembatan dan pelapisan ulang lapis permukaan lentur pada jalan pendekat jembatan.
  - e. Jembatan Drewolo: penggantian/pelapisan ulang lapisan perkerasan lentur pada jalan pendekat jembatan.
  - f. Jembatan Klepu: perkuatan gelagar atau rehabiltasi jembatan akibat ada gelagar baja yang mengalami keropos pada bagian sayap profil gelagar baja dan melakukan perkuatan pada abutmen pasangan batu yang retak.
  - g. Jembatan Tinalah: melakukan penambalan pada bagian permukaan *pier wall* dan kaki *pier wall* yang mengalami kehilangan lapisan beton dan karat pada baja tulangan.

- h. Jembatan Ngentak: pembersihan berkala pada lantai jembatan, penambalan (*patching*) pada lantai jembatan dan penggantian/pelapisan ulang lapis perkerasan lentur pada jalan pendekat jembatan.

## 6.2. Saran

Saran yang dapat diberikan sebagai pertimbangan dalam melakukan penelitian dengan tema yang sama adalah:

1. Melakukan penyesuaian satuan ukur yang digunakan untuk menentukan nilai kondisi elemen jembatan agar lebih sesuai dengan jenis jembatan yang ada di Indonesia.
2. Melakukan kajian lebih mendalam mengenai koefisien tingkat kepentingan elemen jembatan dalam menentukan nilai BCN. Kasus pemeriksaan pada Jembatan Klepu menunjukkan bahwa meskipun nilai BCN dibawah 30, namun terdapat gelagar jembatan yang mempunyai nilai kondisi 3 dan 4.

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**LAMPIRAN 1**  
**LEMBAR INSPEKSI JEMBATAN**  
**KARANGGAYAM**





## Structure Defect and Treatment Sheet

Bridge Name	Karanggayam	Latitude	-7.8468
Road Name	Sampakan - Singosaren	Longitude	110.4399
Crossing/General Location	Sungai Opak		
Region	Bantul, DIY		
Inspector	Y. Aryo Pramudito		
Date	Wednesday, June 28, 2023		

Defect No.	Component No.	Component Name	Location	Quantity	Photo No. (key)	Photo No. (full list)	Defect Description	Treatment for Condition State 3 and 4
Defect 1	8P	Deck/Slabs	pada pasangan pipa drainase	18 unit	6	6-10	Condition State 2 Retak minor	
Defect 2	14O	Fill/wearing surface on deck	area permukaan lapisan aus	164.1 m <sup>2</sup>	1	1	Condition State 2 Permukaan tergerus, alur dari jalur roda	
Defect 3	42O	Elastometric/pot bearings	-. Gelagar B5 sisi utara -. Gelagar B2 sisi selatan	2 unit	20	19-20	Condition State 2 Retak minor	
Defect 4	42O	Elastometric/pot bearings	-. Gelagar B1 sisi utara -. Gelagar B3 sisi utara	2 unit	22	21-22	Condition State 4 Retal mayor, sobek, berotasi	Ganti bantalan gelagar



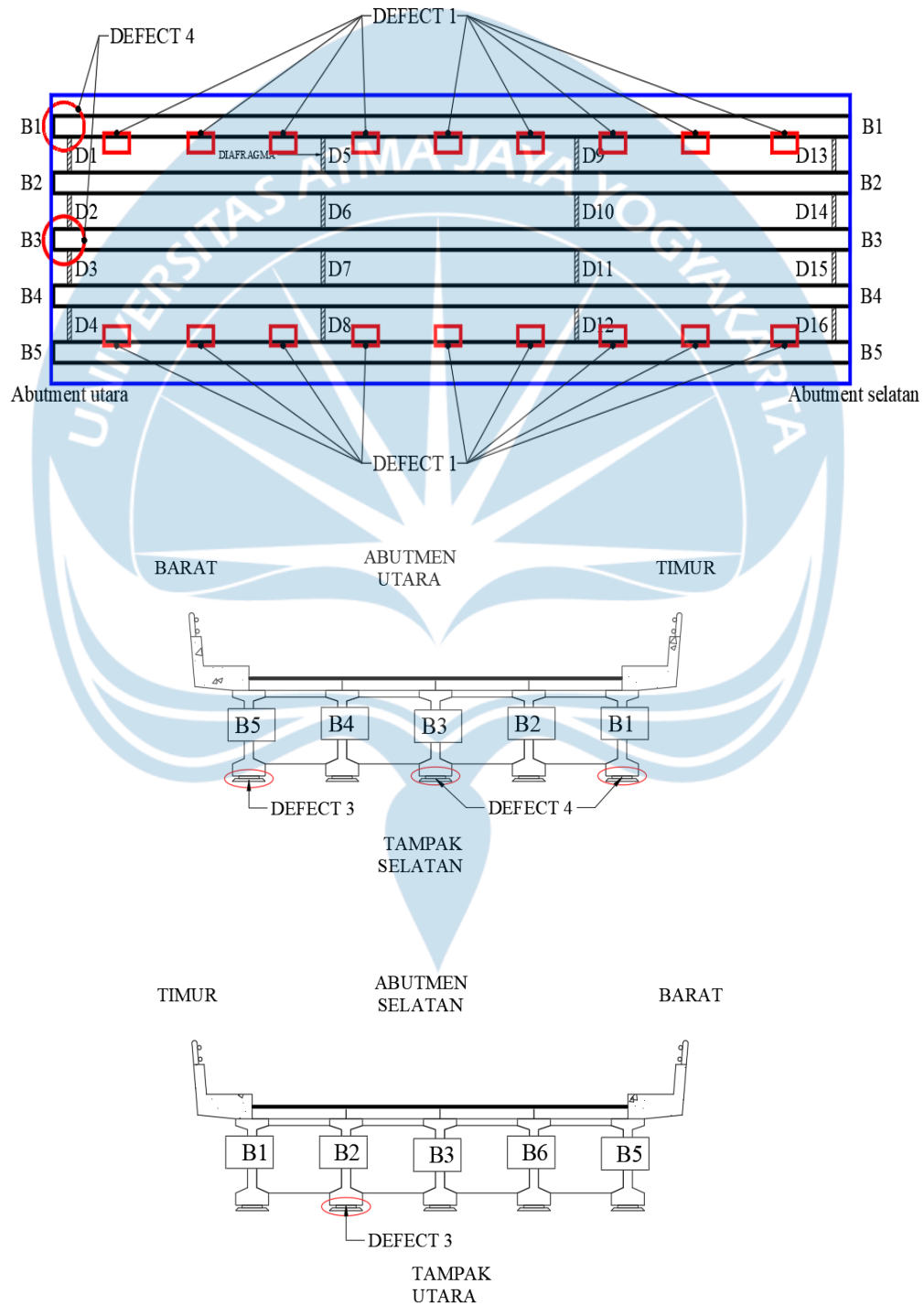
## Structure Defect and Treatment Sheet

Bridge Name	Karanggayam	Latitude	-7.8468
Road Name	Sampakan - Singosaren	Longitude	110.4399
Crossing/General Location	Sungai Opak		
Region	Bantul, DIY		
Inspector	Y. Aryo Pramudito		
Date	Wednesday, June 28, 2023		

Defect No.	Component No.	Component Name	Location	Quantity	Photo No. (key)	Photo No. (full list)	Defect Description	Treatment for Condition State 3 and 4

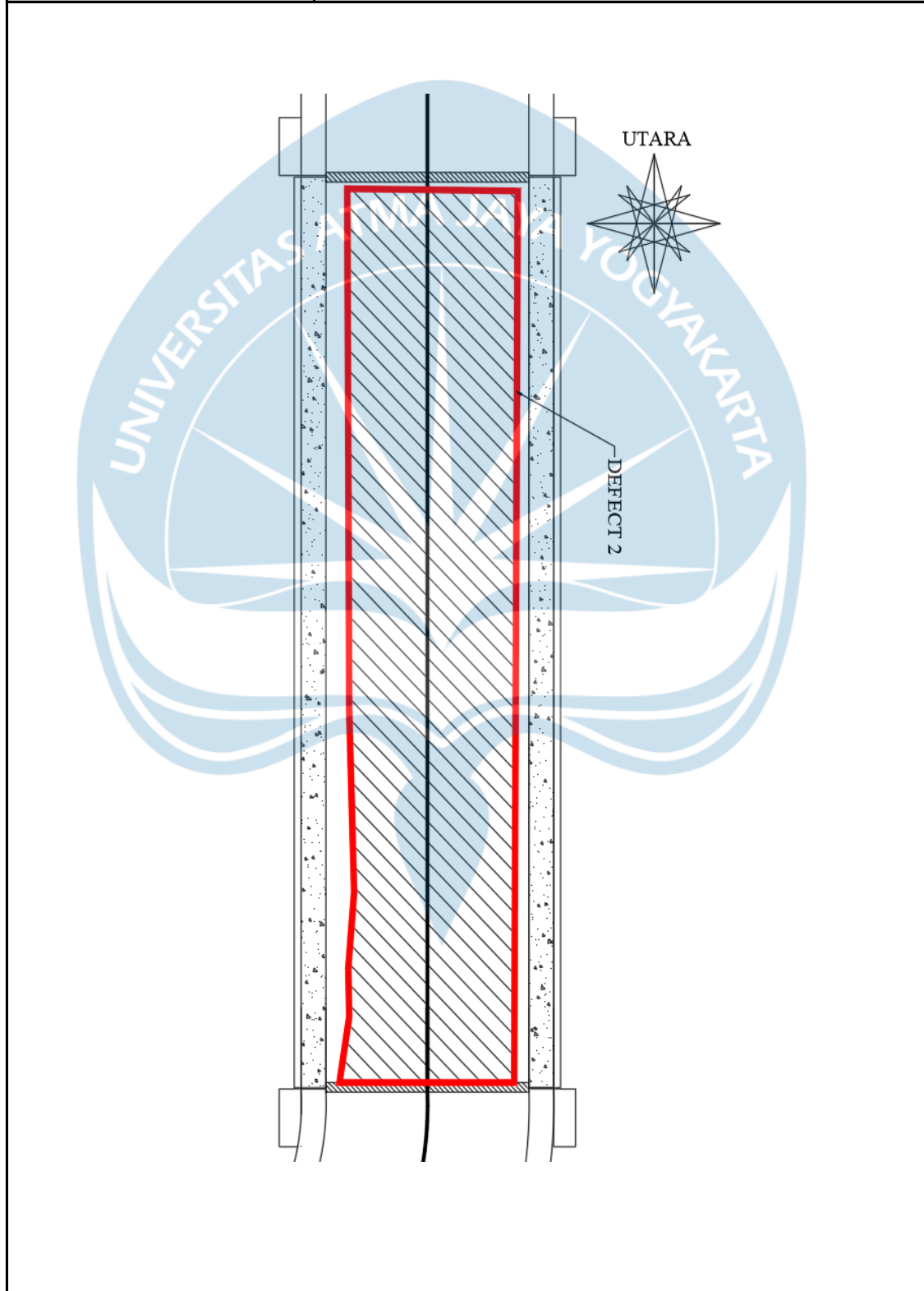
# Defect Mapping Sheet

Bridge Name	Karanggayam	Latitude	-7.8468
Road Name	Sampakan - Singosaren	Longitude	110.4399
Crossing/General Location	Sungai Opak		
Region	Bantul, DIY		
Inspector	Y. Aryo Pramudito		
Date	Wednesday, June 28, 2023		



## Defect Mapping Sheet

Bridge Name	Karanggayam	Latitude	-7.8468
Road Name	Sampakan - Singosaren	Longitude	110.4399
Crossing/General Location	Sungai Opak		
Region	Bantul, DIY		
Inspector	Y. Aryo Pramudito		
Date	Wednesday, June 28, 2023		











Photographic Record

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Photographic Record

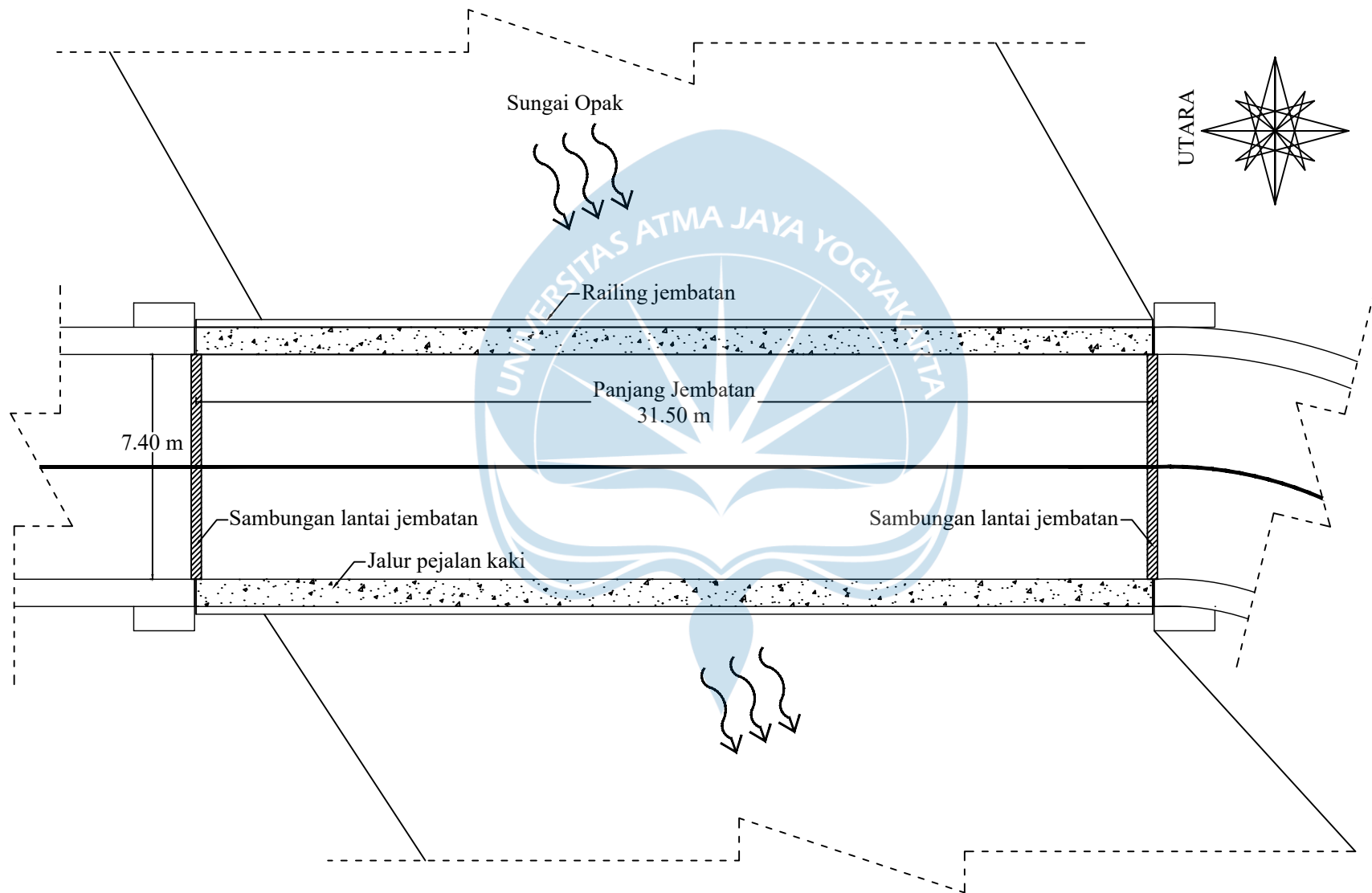
	
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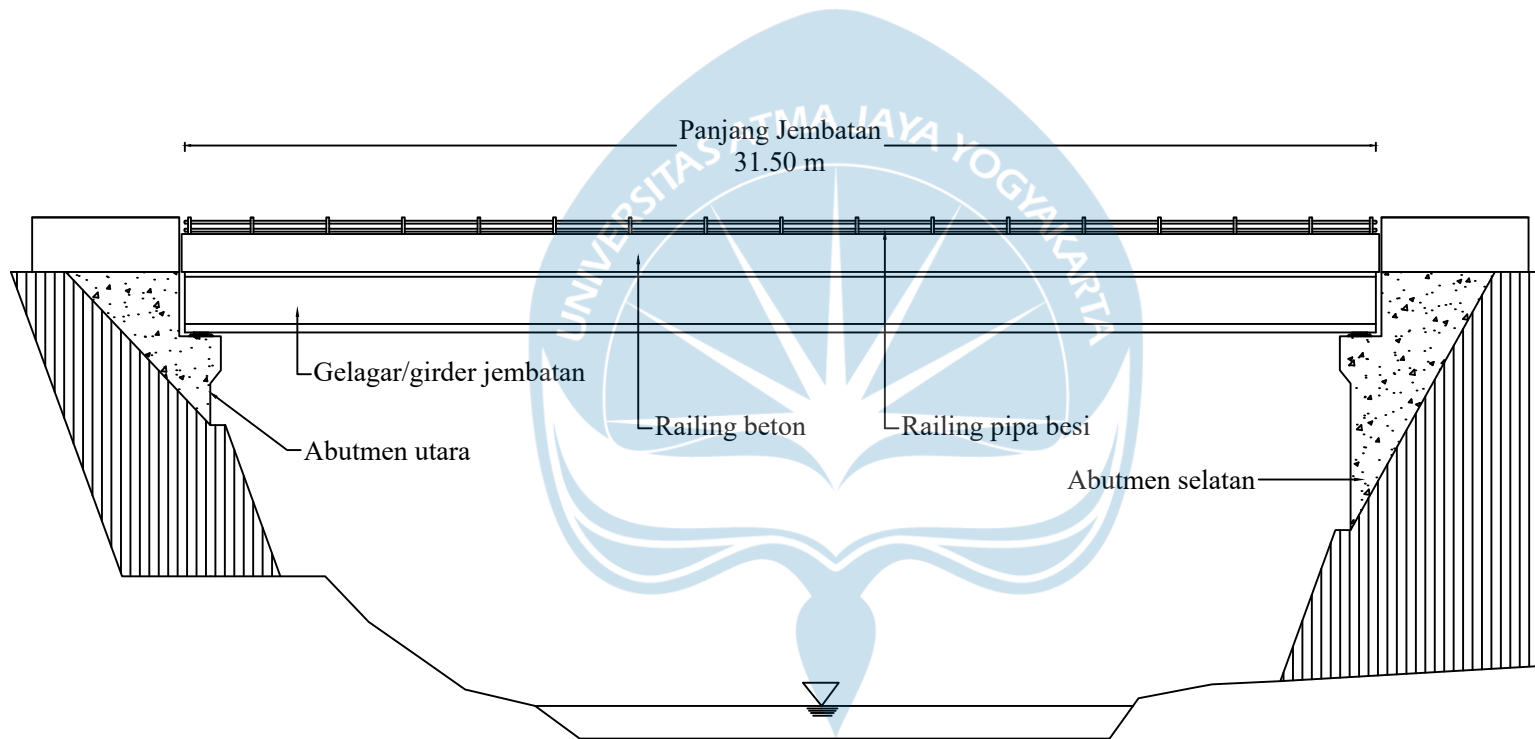
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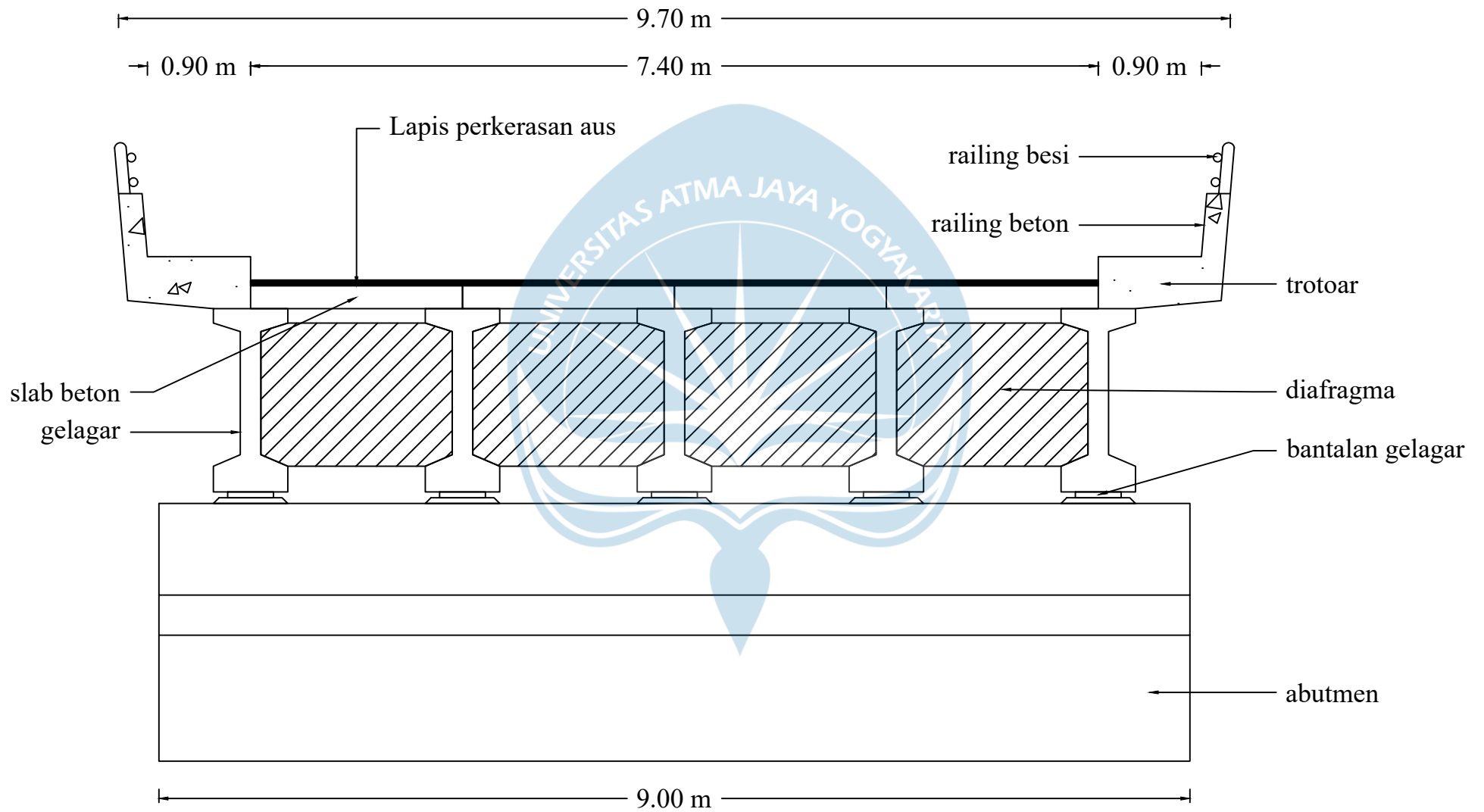


Bridge Name	: Karanggayam I	Drawing Title	Scale
Road Name	: Sampakan Singosaren		
Crossing/General Location	: Sungai	TAMPAK ATAS	1:200
Region	: Bantul, DIY		Sheet No.





Bridge Name	: Karanggayam I	Drawing Title	Scale
Road Name	: Sampakan Singosaren		1:200
Crossing/General Location	: Sungai		Sheet No.
Region	: Bantul, DIY		02



Bridge Name	: Karanggayam I	Drawing Title	Scale
Road Name	: Sampakan Singosaren		1:200
Crossing/General Location	: Sungai	TAMPAK SAMPING	Sheet No.
Region	: Bantul, DIY		02

## LAMPIRAN 2

# LEMBAR INSPEKSI JEMBATAN BANCANG



## Condition Rating Sheet

Bridge Name	Bancang	Latitude	-7.8536
Road Name	Ngalang - Hargomulyo	Longitude	110.5880
Crossing/General Location	Sungai Ngalang		
Region	Gunungkidul DIY		
Inspector	Y. Aryo Pramudito		
Date	Sunday, March 5, 2023		

Component Number	Widening		% component in each condition			
	L/R	1/2	1	2	3	4
2P			100.00	0.00	0.00	0.00
8P			97.78	2.22	0.00	0.00
12C			100.00	0.00	0.00	0.00
14O			100.00	0.00	0.00	0.00
24C			100.00	0.00	0.00	0.00
30O			100.00	0.00	0.00	0.00
42O			100.00	0.00	0.00	0.00
50C			100.00	0.00	0.00	0.00
51O			100.00	0.00	0.00	0.00
52O			0.00	100.00	0.00	0.00

Notes :

## Structure Defect and Treatment Sheet

Bridge Name	Bancang	Latitude	-7.8536
Road Name	Ngalang - Hargomulyo	Longitude	110.5880
Crossing/General Location	Sungai Ngalang		
Region	Gunungkidul DIY		
Inspector	Y. Aryo Pramudito		
Date	Sunday, March 5, 2023		

Defect No.	Component No.	Component Name	Location	Quantity	Photo No. (key)	Photo No. (full list)	Defect Description	Treatment for Condition State 3 and 4
Defect 1	8P	Deck/Slabs	pada pemasangan pipa drainase	4 unit	6	6-8	Condition State 2 Retak minor	
Defect 2	520	Bridge approaches	Sambungan jalur pendekat ke jembatan	3 unit	31	29-32	Condition State 2 Retakanminor, settlement < 15 mm	

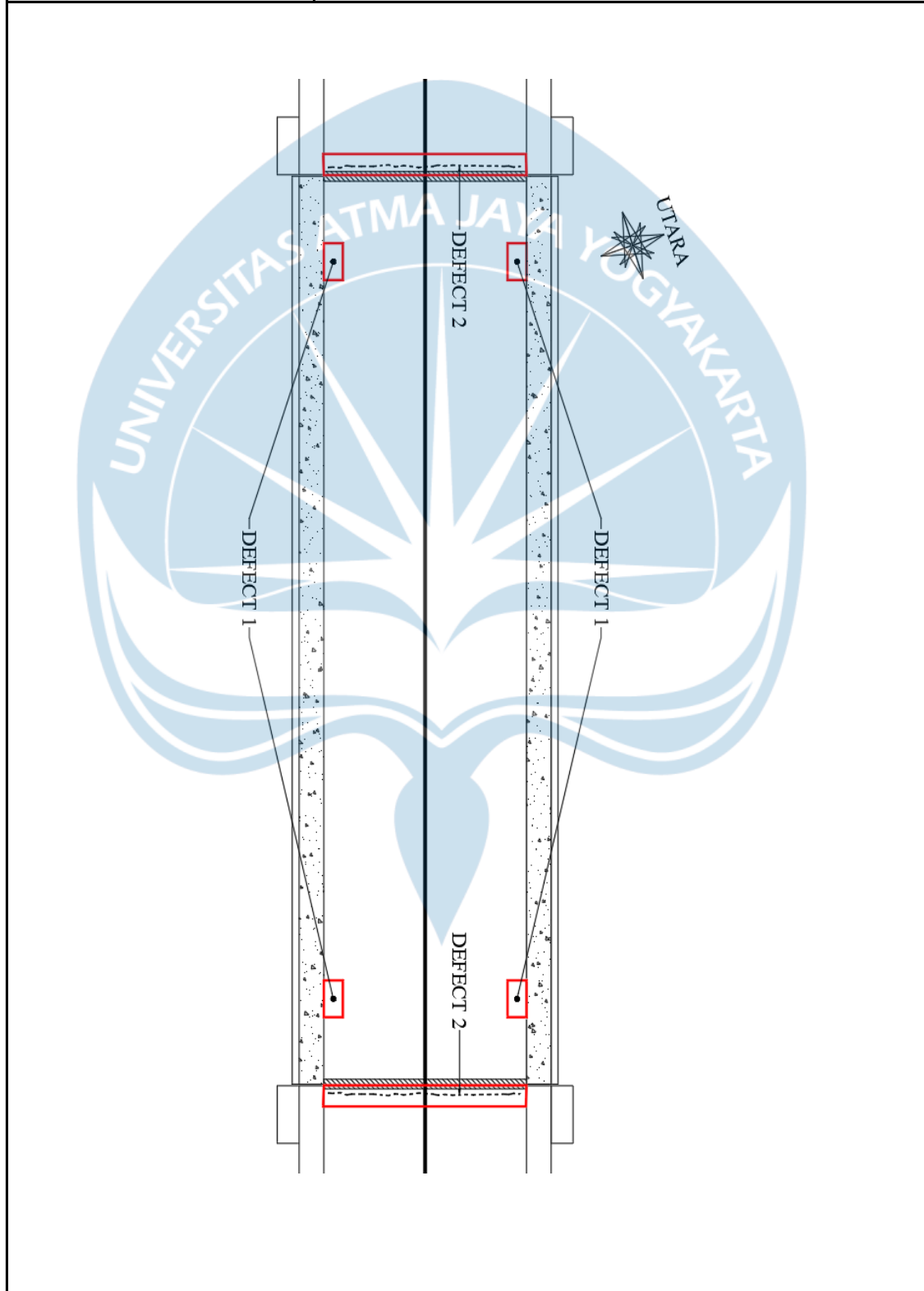
## Structure Defect and Treatment Sheet

Bridge Name	Bancang	Latitude	-7.8536
Road Name	Ngalang - Hargomulyo	Longitude	110.5880
Crossing/General Location	Sungai Ngalang		
Region	Gunungkidul DIY		
Inspector	Y. Aryo Pramudito		
Date	Sunday, March 5, 2023		

Defect No.	Component No.	Component Name	Location	Quantity	Photo No. (key)	Photo No. (full list)	Defect Description	Treatment for Condition State 3 and 4

## Defect Mapping Sheet

Bridge Name	Bancang	Latitude	-7.8536
Road Name	Ngalang - Hargomulyo	Longitude	110.5880
Crossing/General Location	Sungai Ngalang		
Region	Gunungkidul DIY		
Inspector	Y. Aryo Pramudito		
Date	Sunday, March 5, 2023		



Photographic Record









	
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<p>3</p>	<p>LEMBAR INSPEKSI JEMBATAN BANCANG</p>
	
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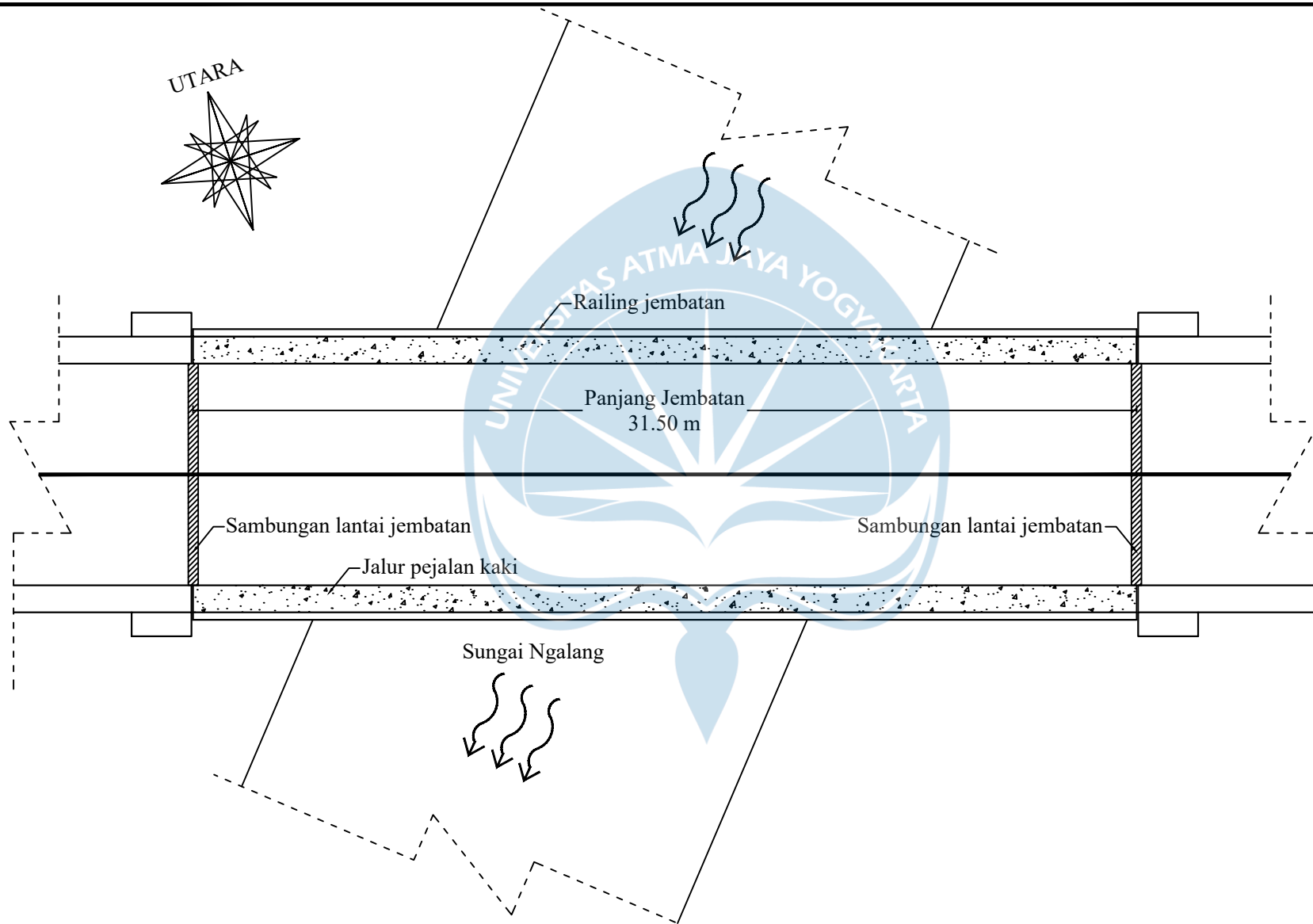
	
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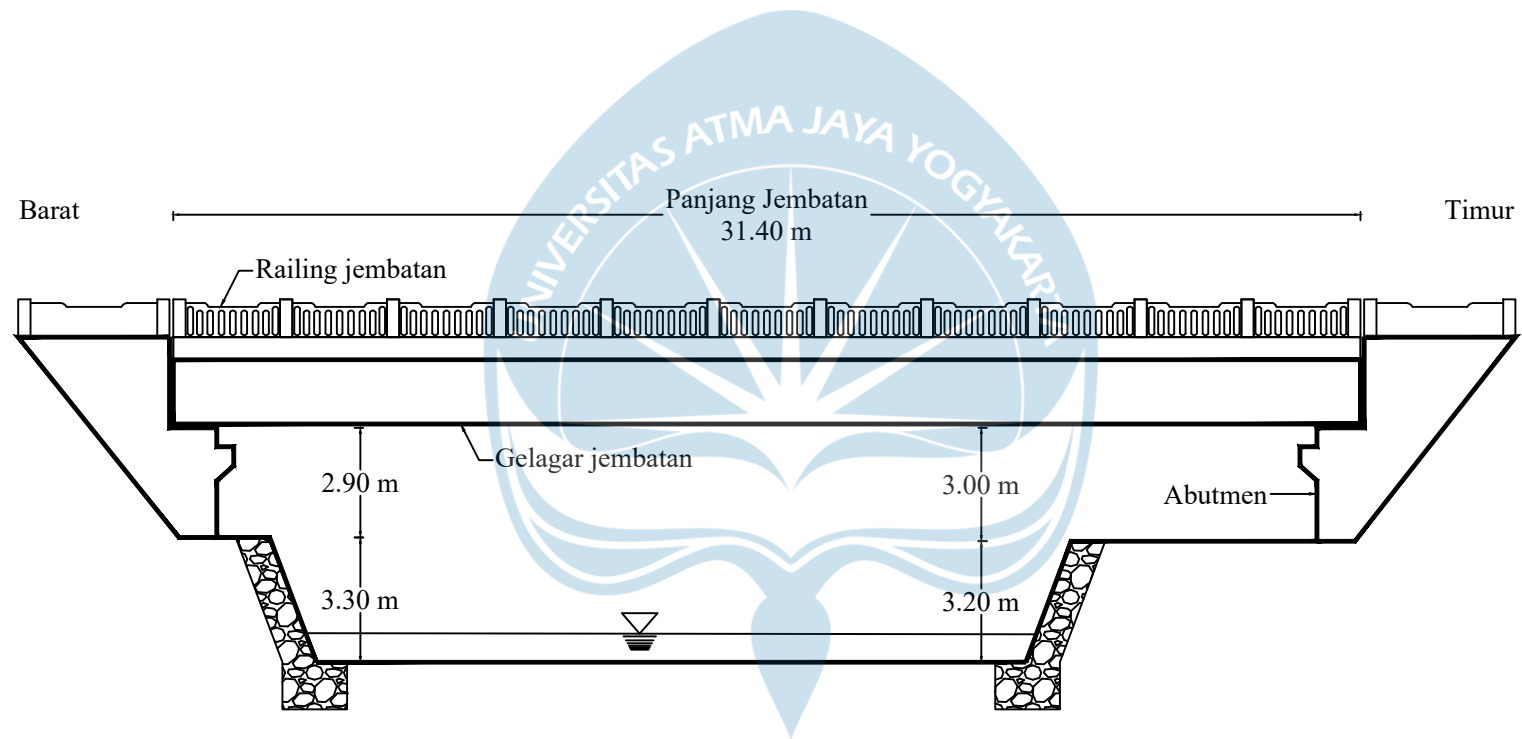
	
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**Photographic Record**

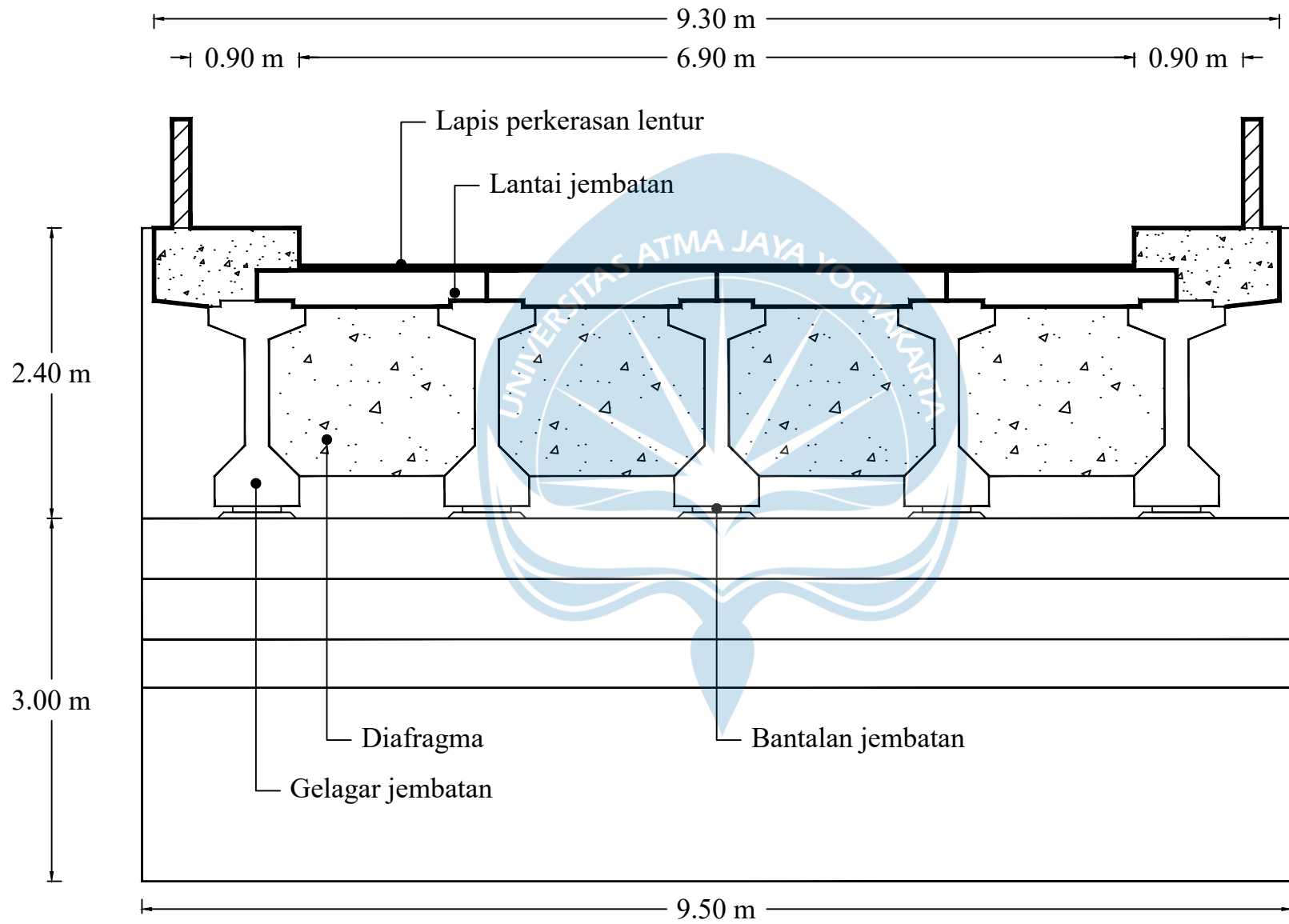
	
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<p>31</p>	<p>32</p>



Bridge Name	: Bancang	Drawing Title	Scale
Road Name	: Ngalang - Hargomulyo		
Crossing/General Location	: Sungai	TAMPAK ATAS	1:200
Region	: Gunungkidul, DIY		Sheet No.



Bridge Name	: Bancang	<b>Drawing Title</b>	<b>Scale</b>
Road Name	: Ngalang - Hargomulyo	TAMPAK SAMPING	1:200
Crossing/General Location	: Sungai		<b>Sheet No.</b>
Region	: Gunungkidul, DIY		02



Bridge Name	: Bancang	Drawing Title	Scale
Road Name	: Ngalang - Hargomulyo		1:50
Crossing/General Location	: Sungai	CROSS SECTION	Sheet No.
Region	: Gunungkidul, DIY		02

## LAMPIRAN 3

# LEMBAR INSPEKSI JEMBATAN NGALANG







## Structure Defect and Treatment Sheet

Bridge Name	Ngalang	Latitude	-7.8854
LAMPIRAN 3	Sambipitu - Nglipar	Longitude	110.5746
LEMBAR INSPEKSI JEMBATAN	Sungai Ngalang		
Region	Gunungkidul, DIY		
Inspector	Y. Aryo Pramudito		
Date	Sunday, March 5, 2023		

Defect No.	Component No.	Component Name	Location	Quantity	Photo No. (key)	Photo No. (full list)	Defect Description	Treatment for Condition State 3 and 4
Defect 1	2C	Open Girder	B2, B7, B10, B15, B18, B23	6 unit	5	3-7	Condition State 2 Retak minor	
Defect 2	8C	Deck/Slabs	Lihat "Mapping Defect Sheet"	49.42 m <sup>2</sup>	10	8-14	Condition State 2 Retak minor, berlumut	
Defect 3	8C	Deck/Slabs	Lihat "Mapping Defect Sheet"	98.84 m <sup>2</sup>	11,12	8-14	Condition State 3 Gerusan permukaan beton akibat air, karat pada tulangan, pengkristalan	Pemberisihan, penambalan ( <i>patching</i> ), perkuatan
Defect 4	23C	Pier wall	Seluruh permukaan pier wall	231.16 m <sup>2</sup>	18	15-19	Condition State 2 Retak, tambalan	
Defect 5	24C	Abutment (concrete)	Seluruh permukaan abutment beton	107.35 m <sup>2</sup>	21	20-22	Condition State 2 Retak,tambalan	

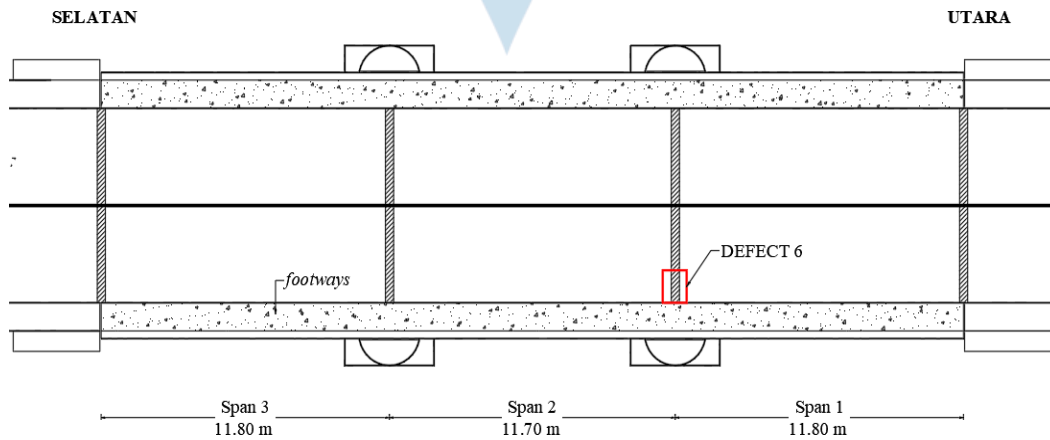
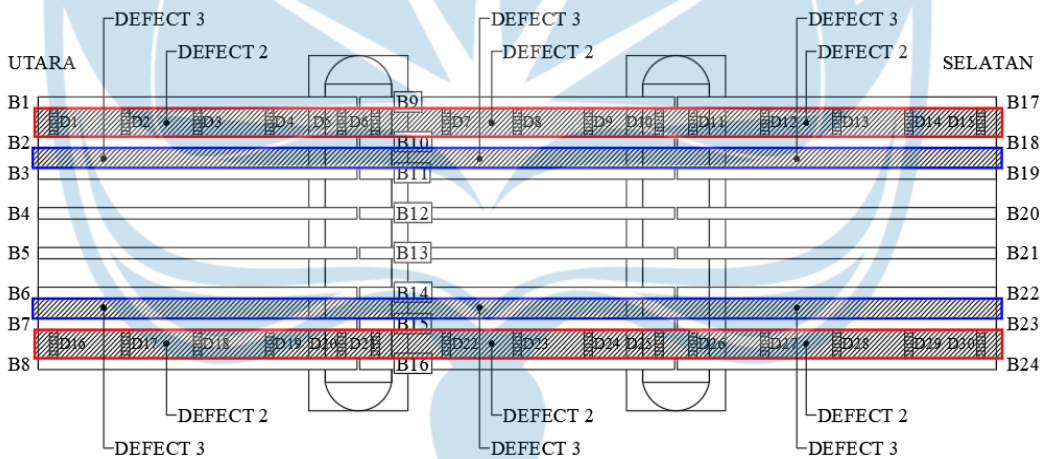
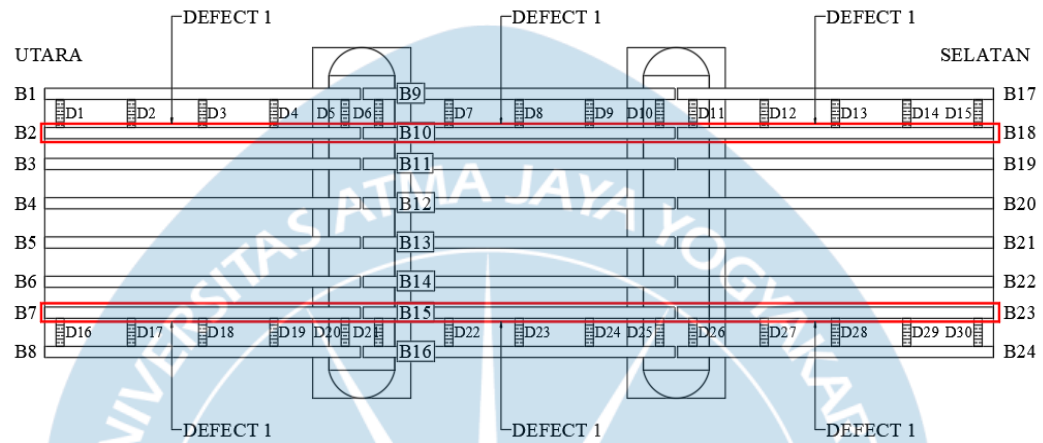
## Structure Defect and Treatment Sheet

Bridge Name	Ngalang	Lattitude	-7.8854
LAMPIRAN 3	Sambipitu - Nglipar	Longitude	110.5746
LEMBAR INSPEKSI JEMBATAN	Sungai Ngalang		
Region	Gunungkidul, DIY		
Inspector	Y. Aryo Pramudito		
Date	Sunday, March 5, 2023		

Defect No.	Component No.	Component Name	Location	Quantity	Photo No. (key)	Photo No. (full list)	Defect Description	Treatment for Condition State 3 and 4
Defect 6	300	Pourable joint seal	Sambungan antara Span 1 dan Span 2	1 m'	26	25-29	Condition State 3 Retak	Pelapisan ulang sambungan
Defect 7	400	Fixed bearings	Bantalan B3-B6; B11-B14; B19-B22	24 unit	30	30-32	Condition State 2 Cat terkelupas, korosi minor	
Defect 8	44C	Mortar pads/high bearing pedestal	Bantalan B1, B2, B7-B10, B15-B18, B23, B24	24 unit	33	33-34	Condition State 2 Retak minor	

# Defect Mapping Sheet

Bridge Name	Ngalang	Latitude	-7.8854
LAMPIRAN 3	Sambipitu - Nglipar	Longitude	110.5746
LEMBAR INSPEKSI JEM	Sungai Ngalang		
Region	Gunungkidul, DIY		
Inspector	Y. Aryo Pramudito		
Date	Sunday, March 5, 2023		



## Defect Mapping Sheet









Bridge Name	Ngalang	Latitude	-7.8854
LAMPIRAN 3	Sambipitu - Nglipar	Longitude	110.5746
LEMBAR INSPEKSI JEM	Sungai Ngalang		
Region	Gunungkidul, DIY		
Inspector	Y. Aryo Pramudito		
Date	Sunday, March 5, 2023		




Photographic Record

	
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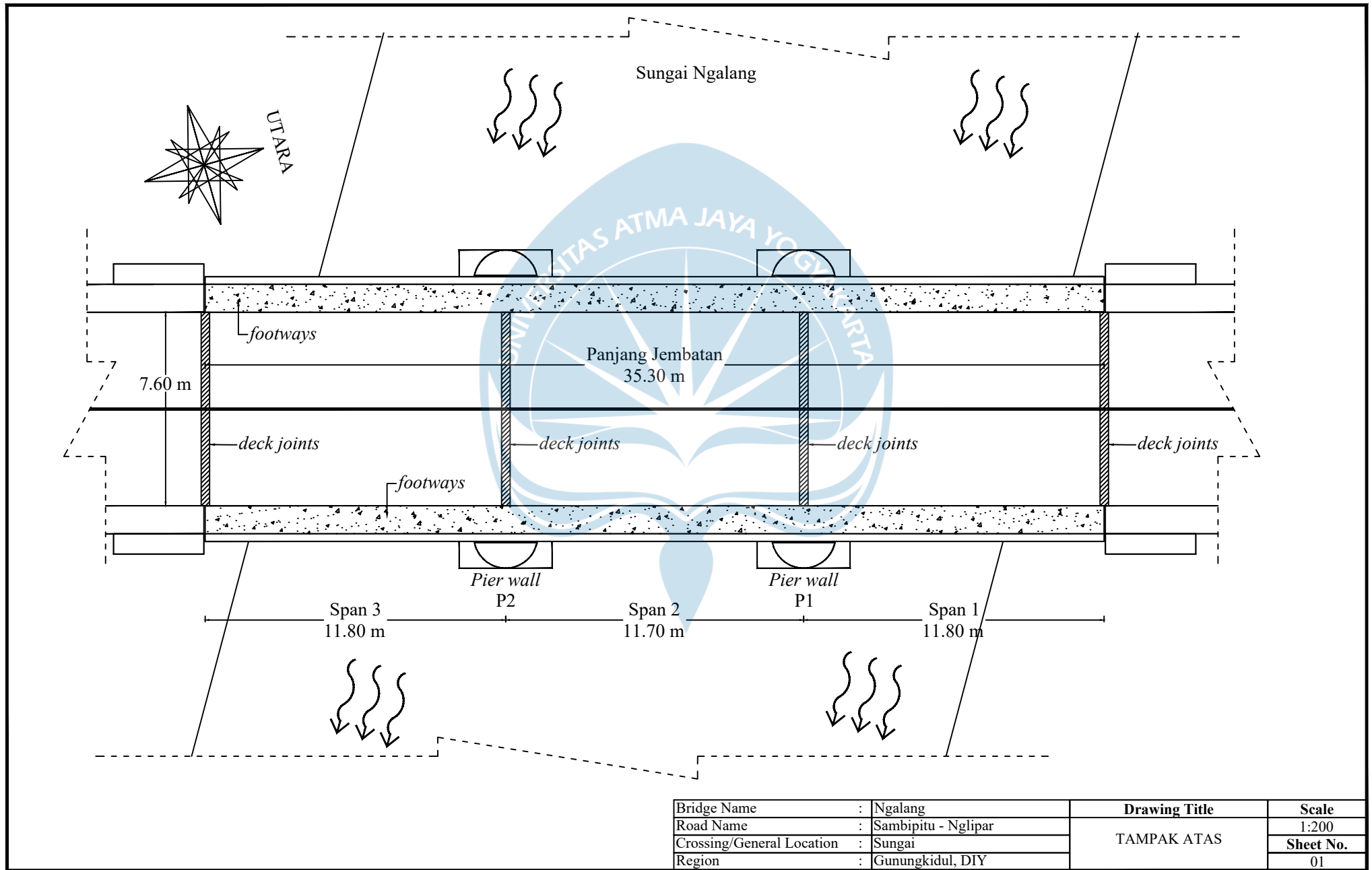
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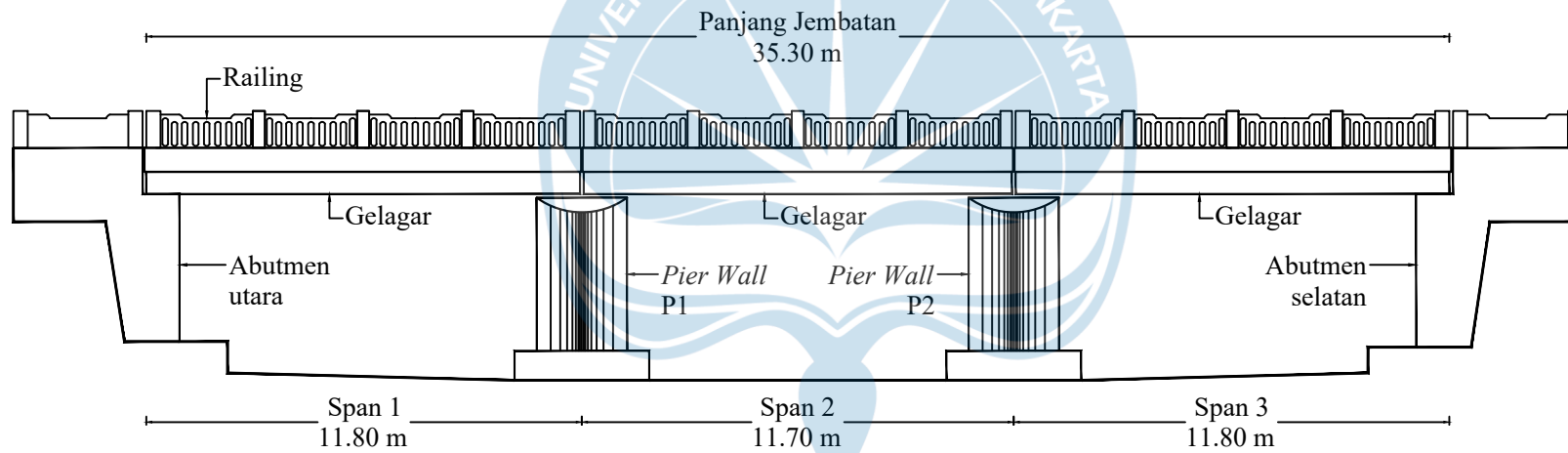
	
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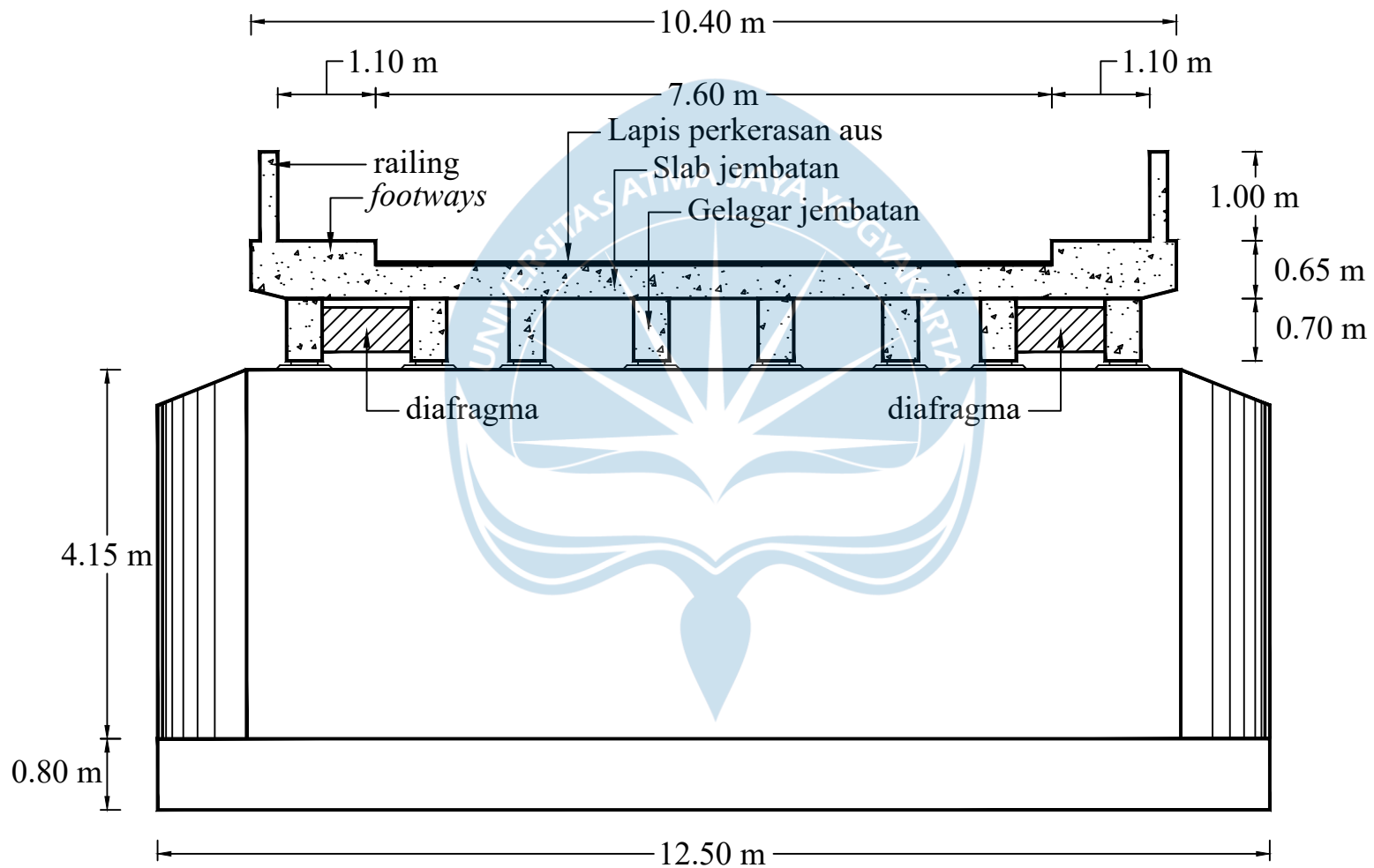
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Bridge Name	: Ngalang	<b>Drawing Title</b> TAMPAK SAMPIING	<b>Scale</b>
Road Name	: Sambipitu - Nglipar		1:200
Crossing/General Location	: Sungai		<b>Sheet No.</b>
Region	: Gunungkidul, DIY		02



Bridge Name	: Ngalang	Drawing Title	Scale
Road Name	: Sambipitu - Nglipar		1:50
Crossing/General Location	: Sungai	CROSS SECTION	Sheet No.
Region	: Gunungkidul, DIY		02

## LAMPIRAN 4

### LEMBAR INSPEKSI JEMBATAN JLANTIR





## Structure Defect and Treatment Sheet

Bridge Name	Jlantir	Latitude	-7.9313
Road Name	Karangmojo - Semin	Longitude	110.6851
Crossing/General Location	Sungai Ngalang		
Region	Gunungkidul, DIY		
Inspector	Y. Aryo Pramudito		
Date	Saturday, June 3, 2023		

Defect No.	Component No.	Component Name	Location	Quantity	Photo No. (key)	Photo No. (full list)	Defect Description	Treatment for Condition State 3 and 4
Defect 1	2S	Open Girder	Gelagar jembatan	3 unit	7	3-7	Condition State 2 Korosi minor	
Defect 2	12S	Diaphragm/B racing	Difragma jembatan	10 unit	9	8-10	Condition State 2 Korosi minor	
Defect 3	14O	Fill/wearing surface on deck	Lihat "Mapping Defect Sheet"	54 m <sup>2</sup>	11	11-14	Condition State 2 Gerusan roda pada permukaan aus ( <i>rutting</i> )	
Defect 4	30O	Pourable joint seal	Sambungan sisi utara	5.80 m'	31	29-32	Condition State 2 Retak	
Defect 5	30O	Pourable joint seal	Sambungan sisi selatan	5.80 m'	29	29-32	Condition State 3 Retak, sebagian hilang	Pergantian lapisan bitumen sambungan

## Structure Defect and Treatment Sheet

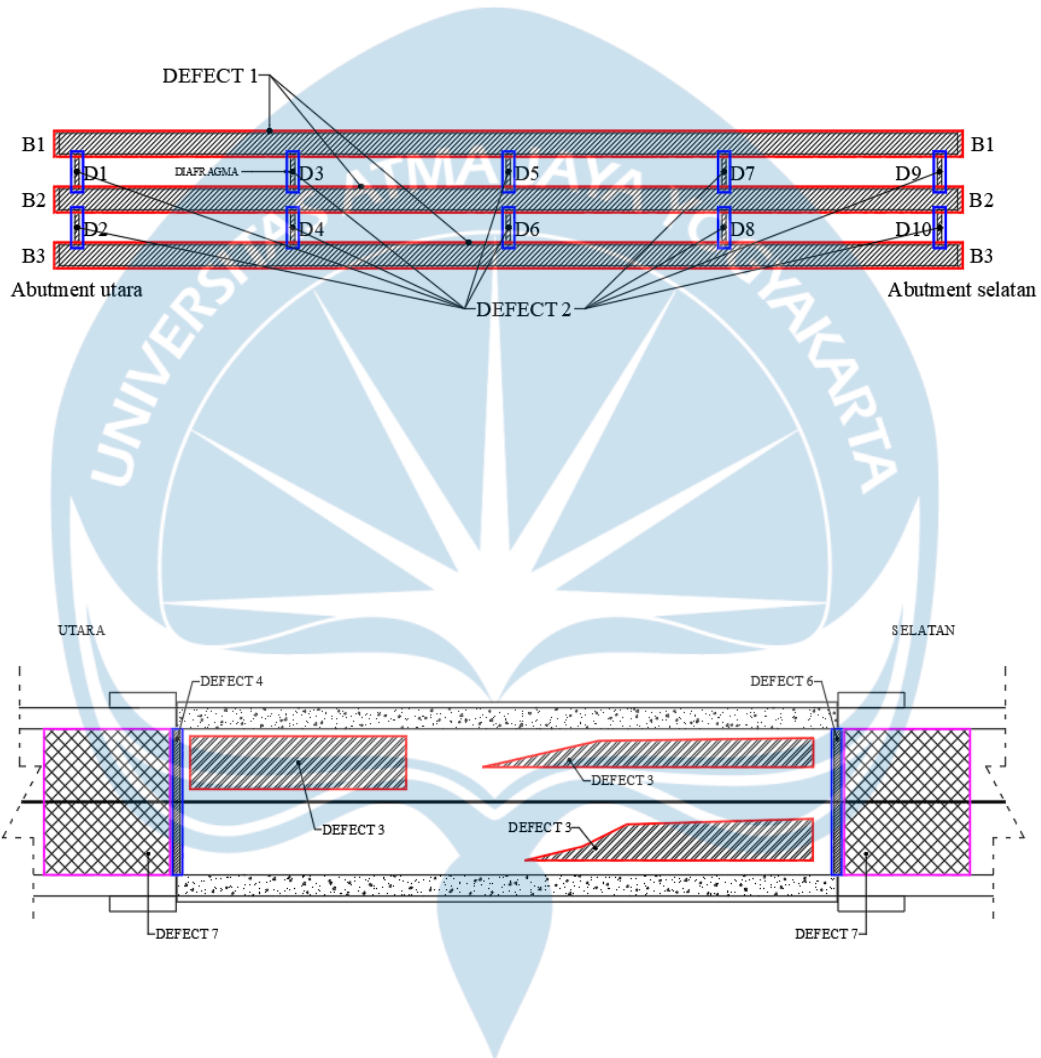
Bridge Name	Jlantir	Latitude	-7.9313
Road Name	Karangmojo - Semin	Longitude	110.6851
Crossing/General Location	Sungai Ngalang		
Region	Gunungkidul, DIY		
Inspector	Y. Aryo Pramudito		
Date	Saturday, June 3, 2023		

Defect No.	Component No.	Component Name	Location	Quantity	Photo No. (key)	Photo No. (full list)	Defect Description	Treatment for Condition State 3 and 4
Defect 6	51S	Bridge railing/barriers	keseluruhan pipa baja	59.1 m'	25	23-28	Condition State 2 Cat mengelupas	
Defect 7	51S	Bridge railing/barriers	Railing sisi timur-utara dan sisi timur-selatan	5.5 m'	26-28	23-28	Condition State 3 Cat mengelupas, deformasi bentuk, tiang penyangga lepas	Cat ulang, perbaikan tiang penyangga, pergantian pipa baja
Defect 8	52O	Bridge approaches	Jalan pendekat sisi utara dan selatan	2 unit	29,31	29-32	Condition State 3 lapisan aus retak, settlement	Pelapisan ulang lapisan aus



# Defect Mapping Sheet





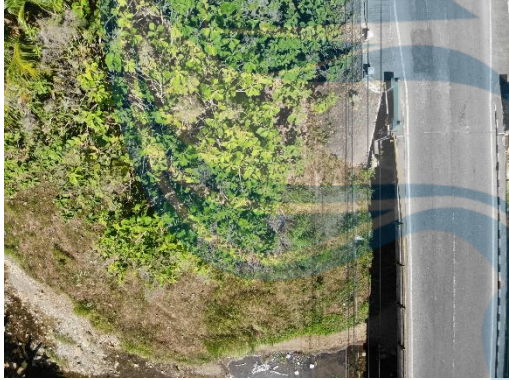



Bridge Name	Jlantir	Latitude	-7.9313
Road Name	Karangmojo - Semin	Longitude	110.6851
Crossing/General Location	Sungai Ngalang		
Region	Gunungkidul, DIY		
Inspector	Y. Aryo Pramudito		
Date	Saturday, June 3, 2023		



Photographic Record

	
<p>1</p>	<p>2</p>
	
<p>3</p>	<p>4</p>
	
<p>5</p>	<p>6</p>
	
<p>7</p>	<p>8</p>






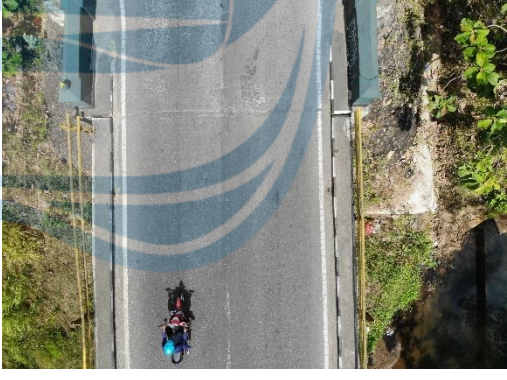

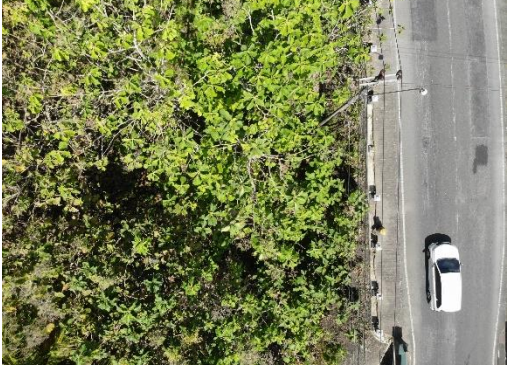
**Photographic Record**

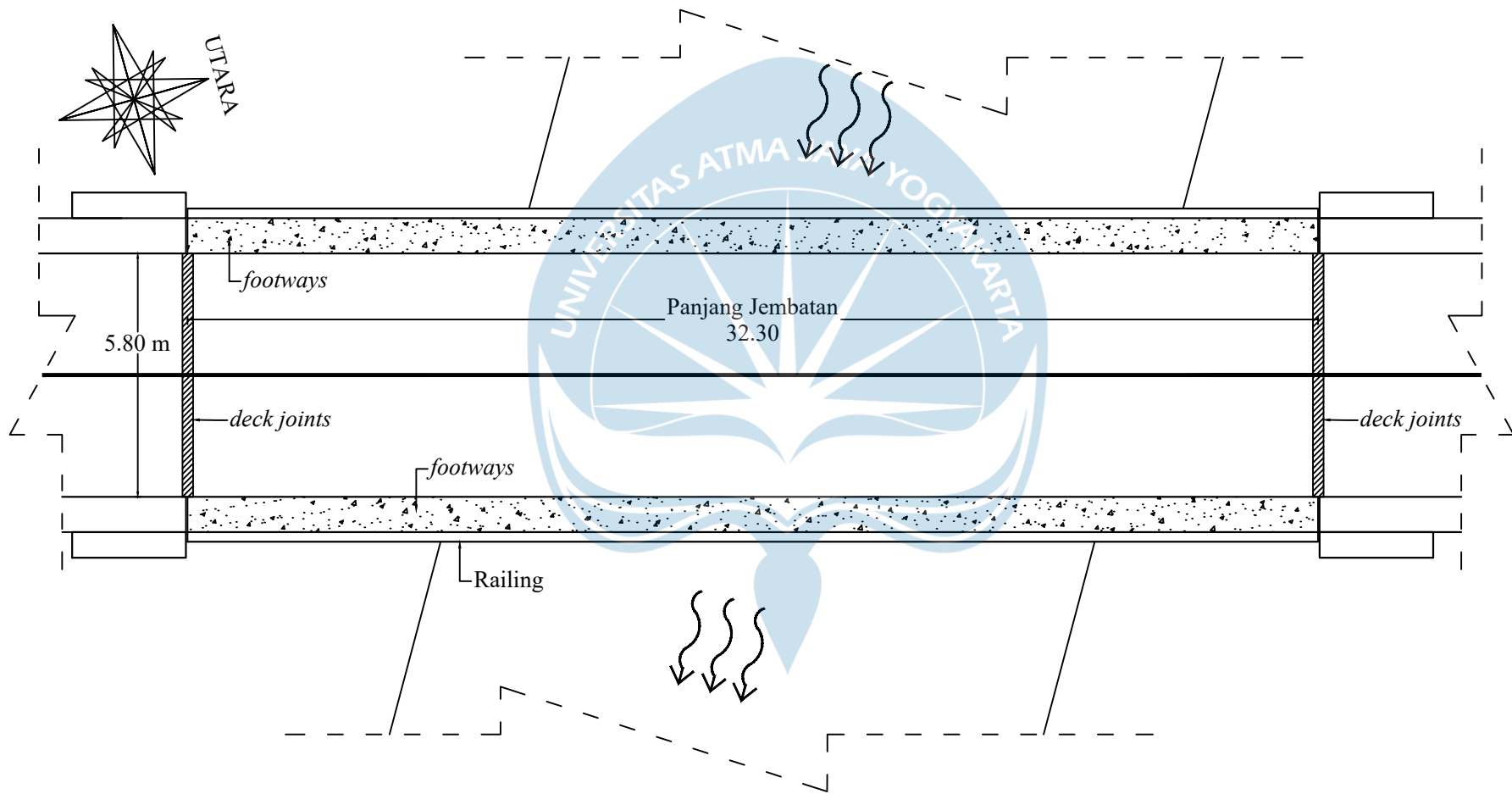
	
<p>9</p>	<p>10</p>
	
<p>11</p>	<p>12</p>
	
<p>13</p>	<p>14</p>
	
<p>16</p>	<p>15</p>

**Photographic Record**

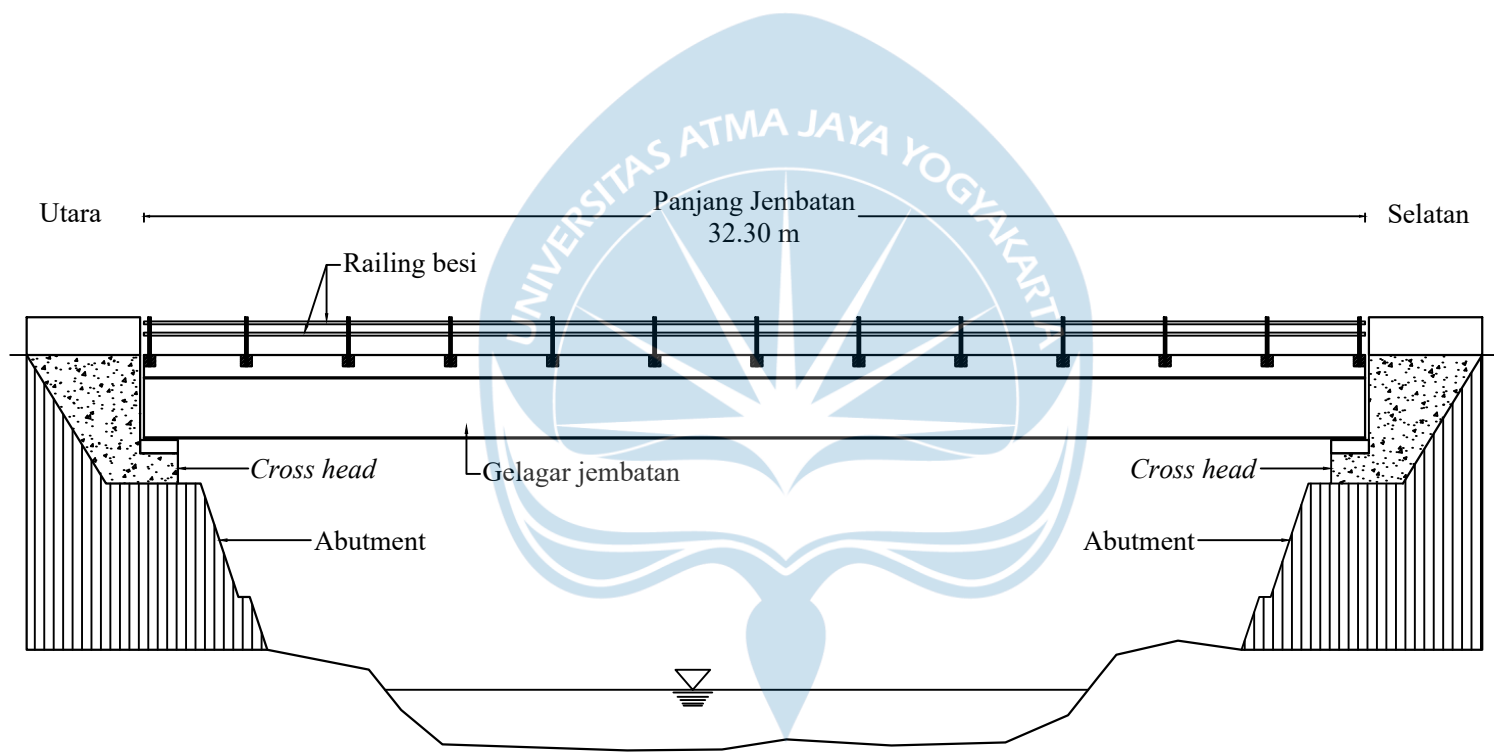
	
<p>17</p>	<p>18</p>
	
<p>19</p>	<p>20</p>
	
<p>21</p>	<p>22</p>
	
<p>23</p>	<p>24</p>

Photographic Record

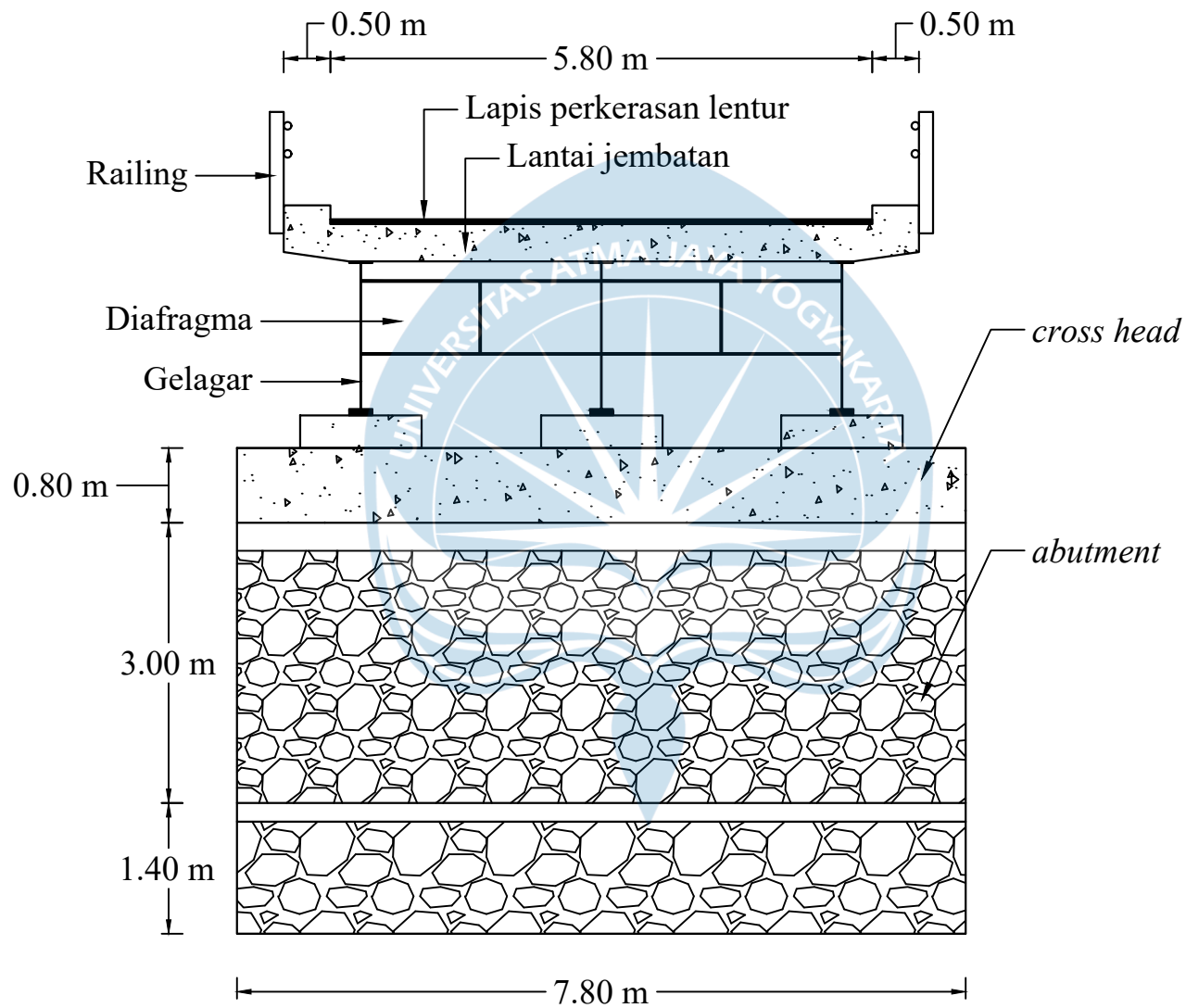
	
<p>25</p>	<p>26</p>
	
<p>27</p>	<p>28</p>
	
<p>29</p>	<p>30</p>
	
<p>31</p>	<p>32</p>



Bridge Name	: Jlantir	Drawing Title	Scale
Road Name	: Karangmojo - Semin		1:200
Crossing/General Location	: Sungai	TAMPAK ATAS	Sheet No.
Region	: Gunungkidul, DIY		01



Bridge Name	: Jlantir	Drawing Title	Scale
Road Name	: Karangmojo - Semin		
Crossing/General Location	: Sungai	TAMPAK SAMPING	1:200
Region	: Gunungkidul, DIY		Sheet No.



Bridge Name	: Jlantir	Drawing Title	Scale
Road Name	: Karangmojo - Semin		1:75
Crossing/General Location	: Sungai	CROSS SECTION	Sheet No.
Region	: Gunungkidul, DIY		03



**LAMPIRAN 5**  
**LEMBAR INSPEKSI**  
**JEMBATAN KEDUNG KERIS**





## Structure Defect and Treatment Sheet

Bridge Name	Kedung Keris	Latitude	-7.8859
Road Name	Sambipitu - Nglipar	Longitude	110.5999
Crossing/General Location	Sungai Ngalang		
Region	Gunungkidul, DIY		
Inspector	Y. Aryo Pramudito		
Date	Sunday, June 4, 2023		

Defect No.	Component No.	Component Name	Location	Quantity	Photo No. (key)	Photo No. (full list)	Defect Description	Treatment for Condition State 3 and 4
Defect 1	2C	Open Girder	B16, B22, B26, B27	4 unit	5	3-10	Condition State 2 Retakan minor	
Defect 2	30O	Pourable joint seal	-. Span1-Span2 -. Span2-Span3	13.2 m'	26	25-30	Condition State 2 Retakan minor	
Defect 3	30O	Pourable joint seal	Sambungan sisi timur	6.6 m'	30	25-30	Condition State 3 Retakan, bagian bitumen hilang/mengelupas	Pelapisan ulang lapisan bitumen
Defect 4	41O	Sliding bearings	keseluruhan bantalan tipe <i>sliding bearing</i>	32.00 unit	32	31-34	Condition State 2 Korosi	
Defect 5	51S	Bridge railing/barriers	keseluruhan railing pipa baja	96.40 m'	43	41-44	Condition State 2 Cat pelindung mengelupas	

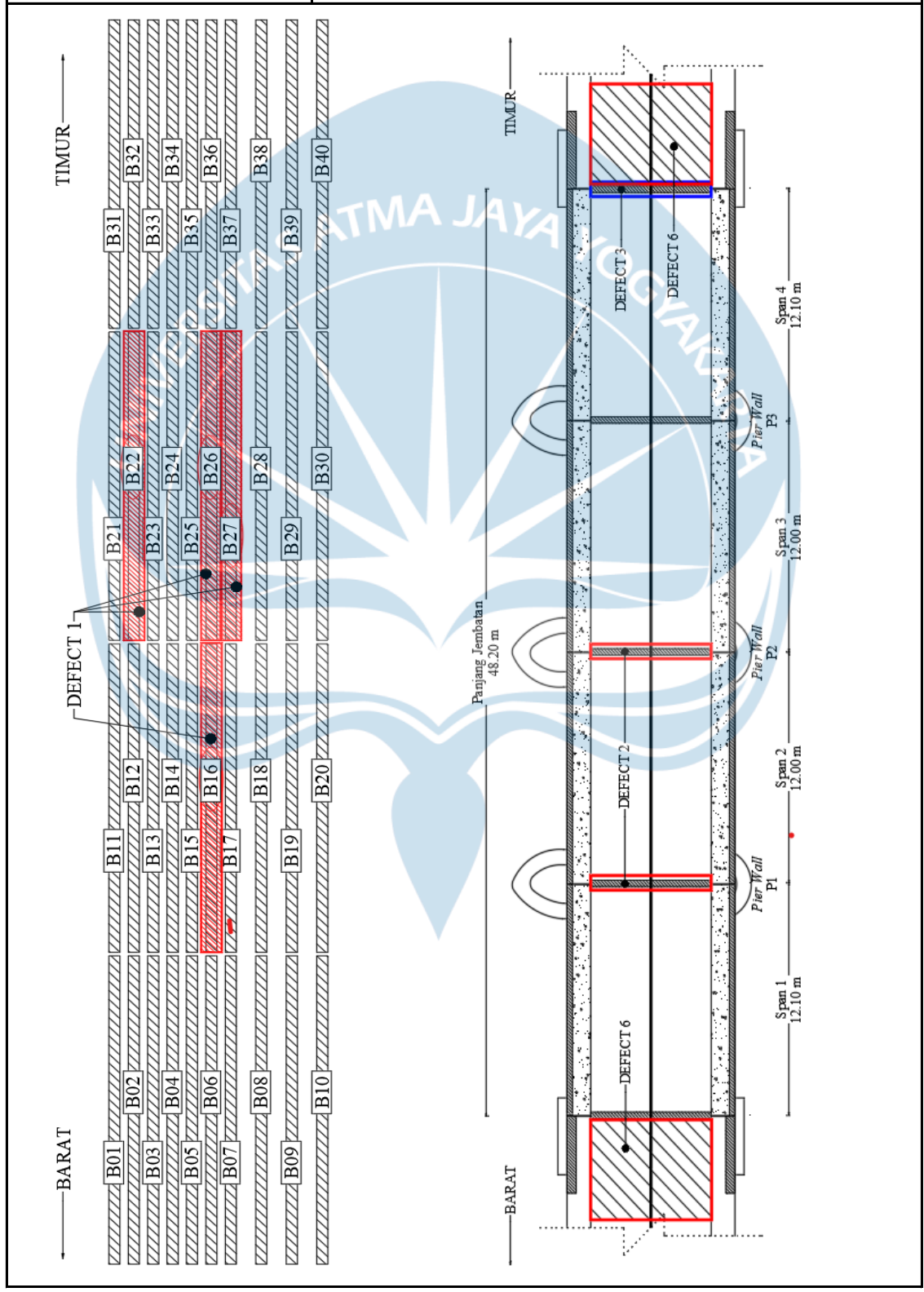
## Structure Defect and Treatment Sheet

Bridge Name	Kedung Keris	Lattitude	-7.8859
Road Name	Sambipitu - Nglipar	Longitude	110.5999
Crossing/General Location	Sungai Ngalang		
Region	Gunungkidul, DIY		
Inspector	Y. Aryo Pramudito		
Date	Sunday, June 4, 2023		







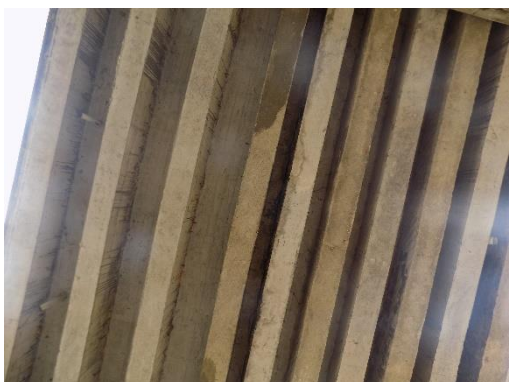

Defect No.	Component No.	Component Name	Location	Quantity	Photo No. (key)	Photo No. (full list)	Defect Description	Treatment for Condition State 3 and 4
Defect 6	520	Bridge approaches	Jalan pendekat sisi timur dan barat	2 unit	46	47-48	Condition State 3 Retak lapisan aus, settlement	Pelapisan ulang lapisan perkerasan lentur
Defect 7								
Defect 8								

# Defect Mapping Sheet









Bridge Name	Kedung Keris	Latitude	-7.8859
Road Name	Sambipitu - Nglipar	Longitude	110.5999
Crossing/General Location	Sungai Ngalang		
Region	Gunungkidul, DIY		
Inspector	Y. Aryo Pramudito		
Date	Sunday, June 4, 2023		



Photographic Record

	
<p>1</p>	<p>2</p>
	
<p>3</p>	<p>4</p>
	
<p>5</p>	<p>6</p>
	
<p>7</p>	<p>8</p>

Photographic Record









	
9	10
	
11	12
	
13	14
	
16	15

Photographic Record







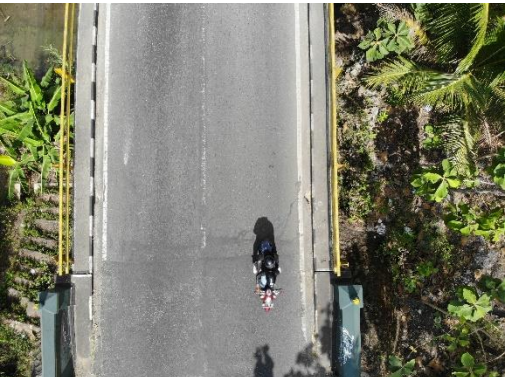
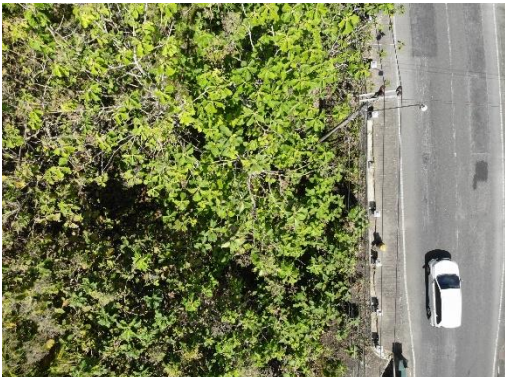
	
17	18
	
19	20
	
21	22
	
23	24











**Photographic Record**

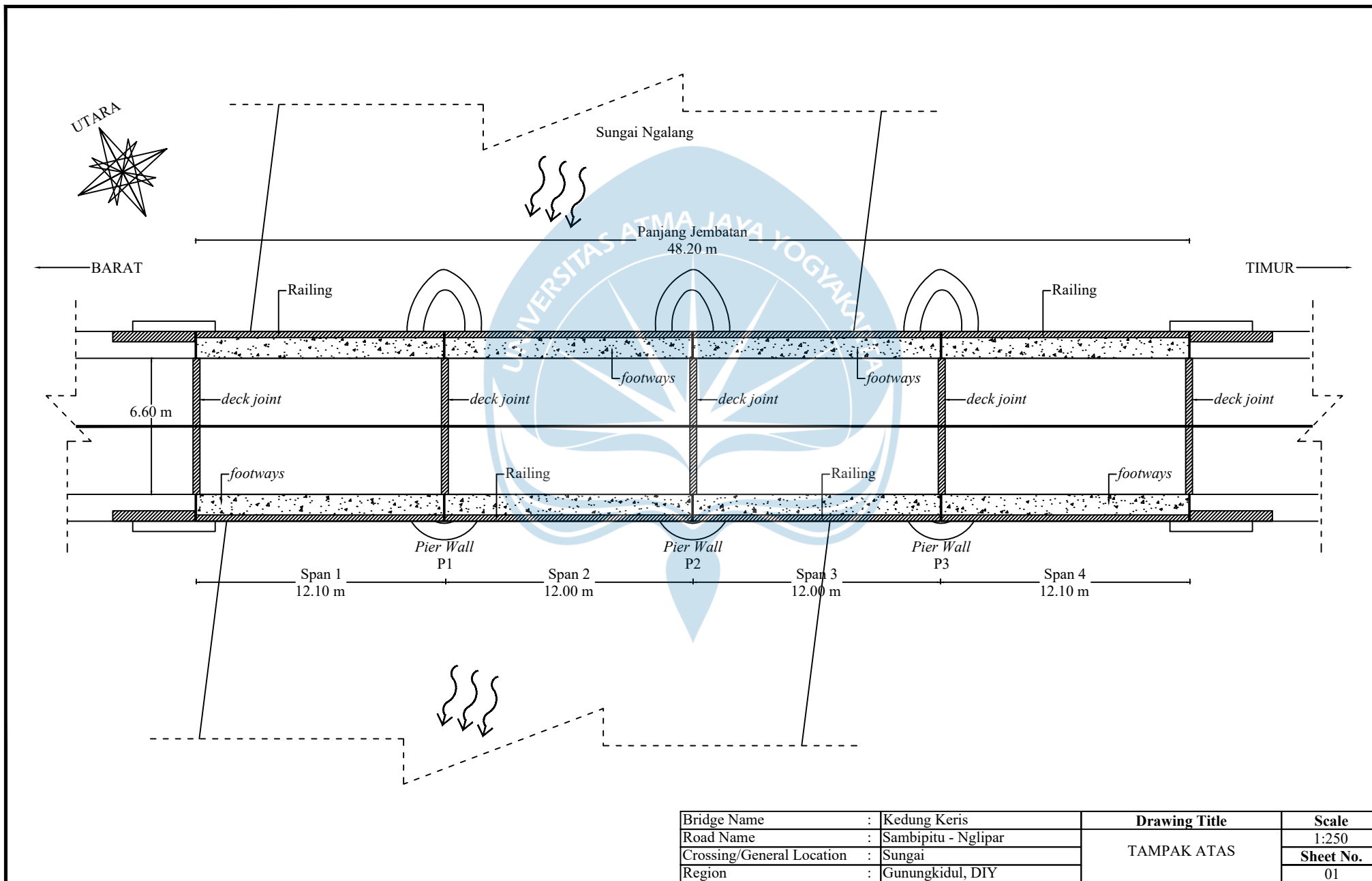
	
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<p>31</p>	<p>32</p>

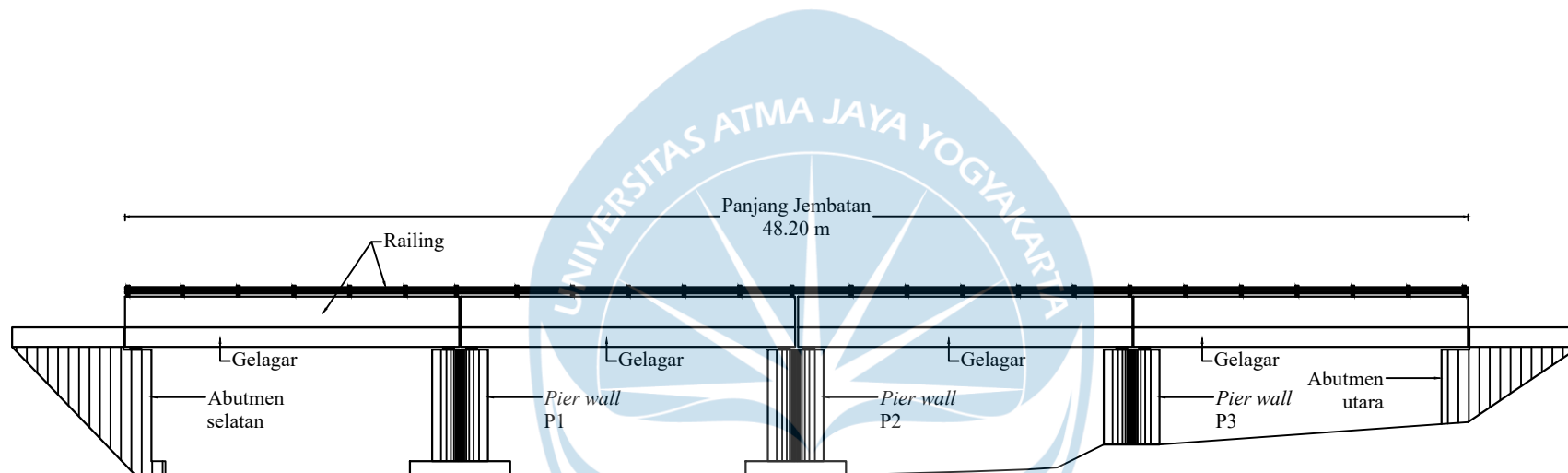
**Photographic Record**

	
<p>33</p>	<p>34</p>
	
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<p>39</p>	<p>40</p>

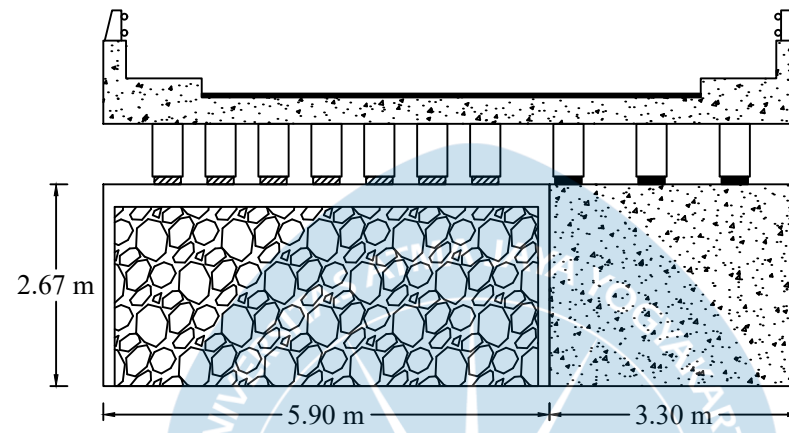
**Photographic Record**

	
<p>41</p>	<p>42</p>
	
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<p>45</p>	<p>46</p>
	
<p>47</p>	<p>48</p>

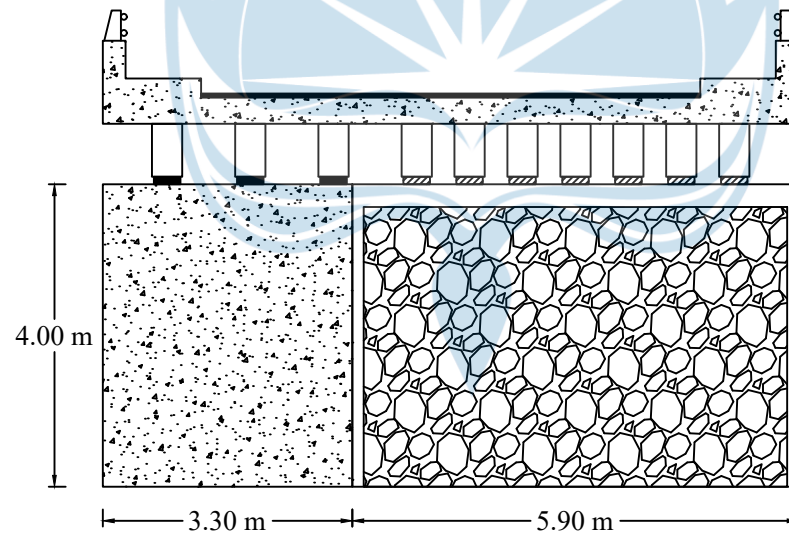




Bridge Name	: Kedung Keris	Drawing Title	Scale
Road Name	: Sambipitu - Nglipar		1:250
Crossing/General Location	: Sungai		Sheet No.
Region	: Gunungkidul, DIY		02

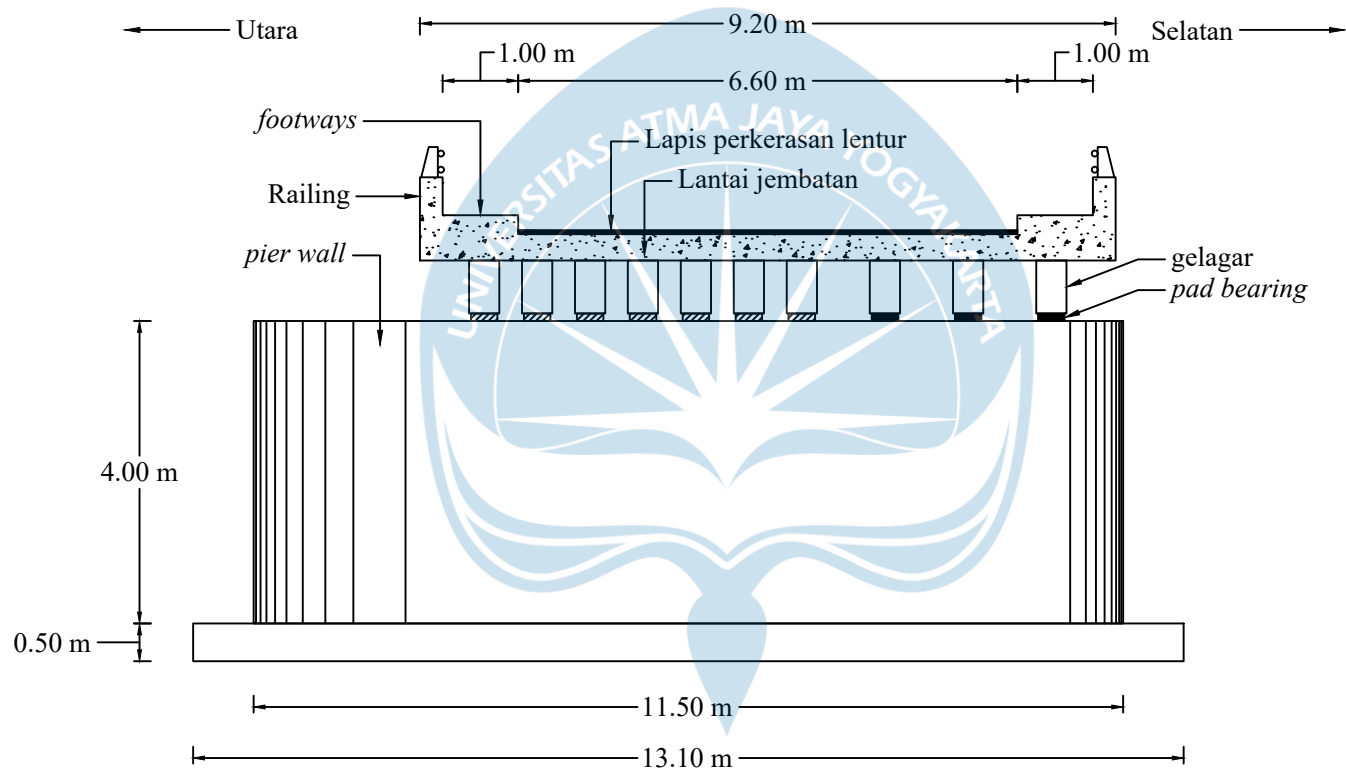


Abutmen sisi timur



Abutmen sisi barat

Bridge Name	: Kedung Keris	<b>Drawing Title</b>	<b>Scale</b>
Road Name	: Sambipitu - Nglipar	ABUTMEN JEMBATAN	1:100
Crossing/General Location	: Sungai		<b>Sheet No.</b>
Region	: Gunungkidul, DIY		03



Bridge Name	: Kedung Keris	Drawing Title	Scale
Road Name	: Sambipitu - Nglipar		1:100
Crossing/General Location	: Sungai	PIER WALL	Sheet No.
Region	: Gunungkidul, DIY		04

**LAMPIRAN 6**  
**LEMBAR INSPEKSI**  
**JEMBATAN DREWOLO**







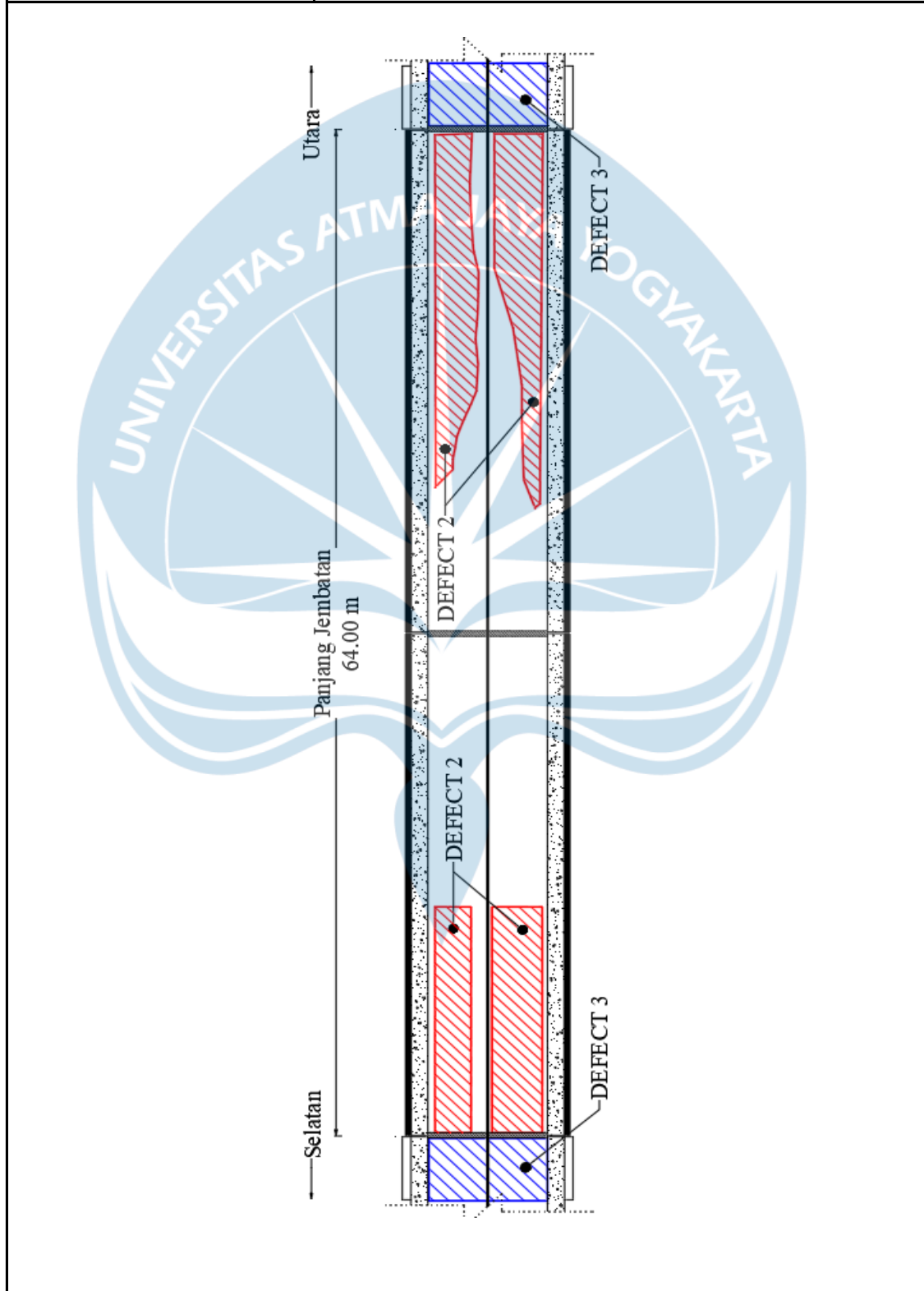
## Structure Defect and Treatment Sheet

Bridge Name	Drewolo	Latitude	-7.8387
Road Name	Sentolo - Pengasih	Longitude	110.1738
Crossing/General Location	Sungai Serang		
Region	Kulon Progo, DIY		
Inspector	Y. Aryo Pramudito		
Date	Sunday, June 4, 2023		









Defect No.	Component No.	Component Name	Location	Quantity	Photo No. (key)	Photo No. (full list)	Defect Description	Treatment for Condition State 3 and 4
Defect 1	8P	Deck/Slabs	Slab dengan pipa drainase	24 unit	5	3-6	Condition State 2 Retak	
Defect 2	14O	Fill/wearing surface on deck	Lihat "Mapping Defect Sheet"	113.7 m <sup>2</sup>	7	7-10	Condition State 2 Rutting	
Defect 3	52O	Bridge approaches	Sisi timur dan barat	2 unit	1	1-2	Condition State 3 Settlement, lapis aus retak, brgelombang	Penggantian lapis perkerasan lentur

# Defect Mapping Sheet









Bridge Name	Drewolo	Latitude	-7.8387
Road Name	Sentolo - Pengasih	Longitude	110.1738
Crossing/General Location	Sungai Serang		
Region	Kulon Progo, DIY		
Inspector	Y. Aryo Pramudito		
Date	Sunday, June 4, 2023		











Photographic Record

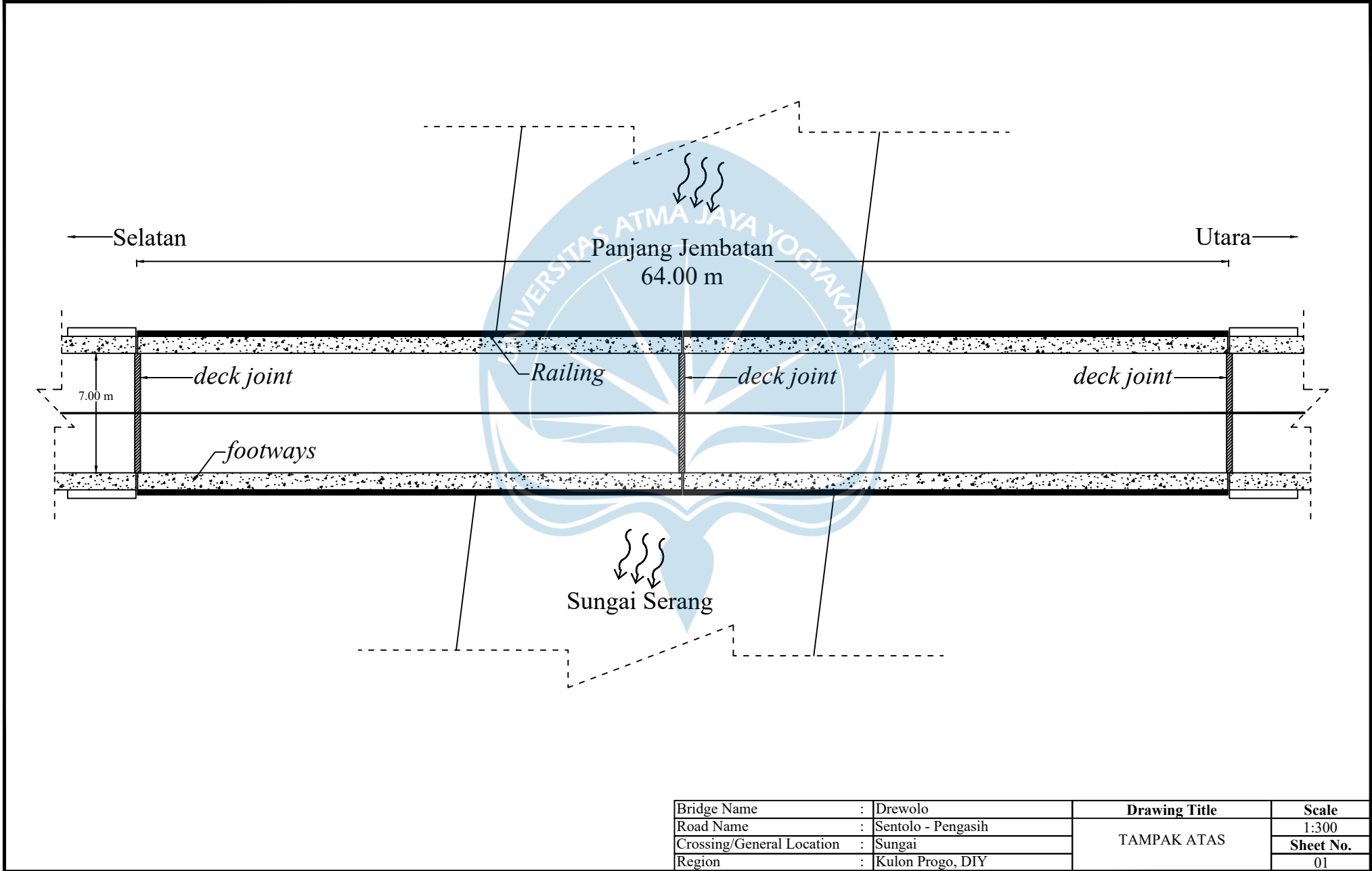
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 <p>3</p>	 <p>4</p>
 <p>5</p>	 <p>6</p>
 <p>7</p>	 <p>8</p>

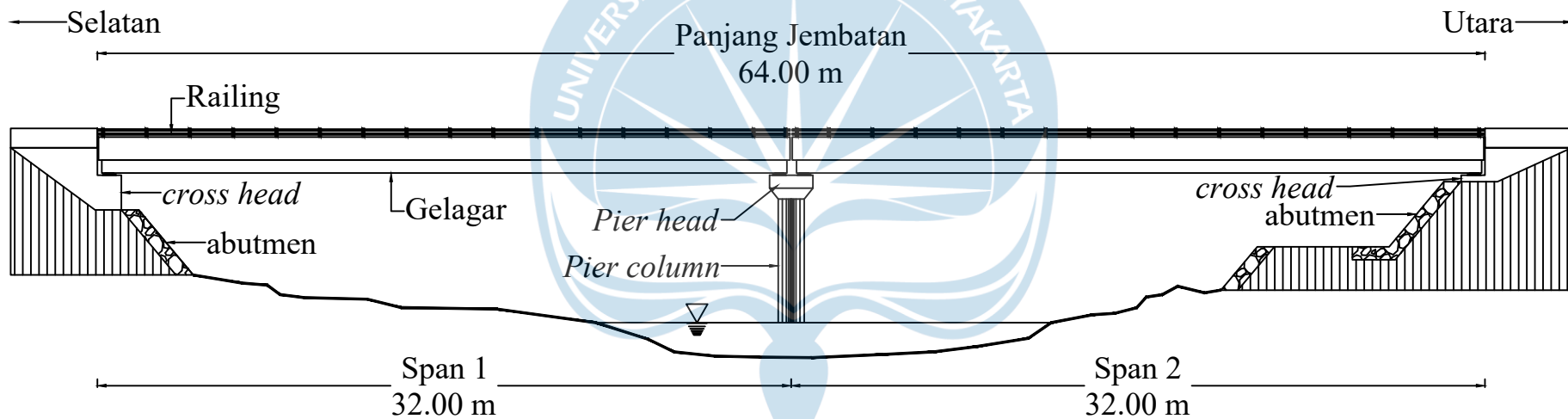
Photographic Record

	
<p>9</p>	<p>10</p>
	
<p>11</p>	<p>12</p>
	
<p>13</p>	<p>14</p>
	
<p>16</p>	<p>15</p>

Photographic Record

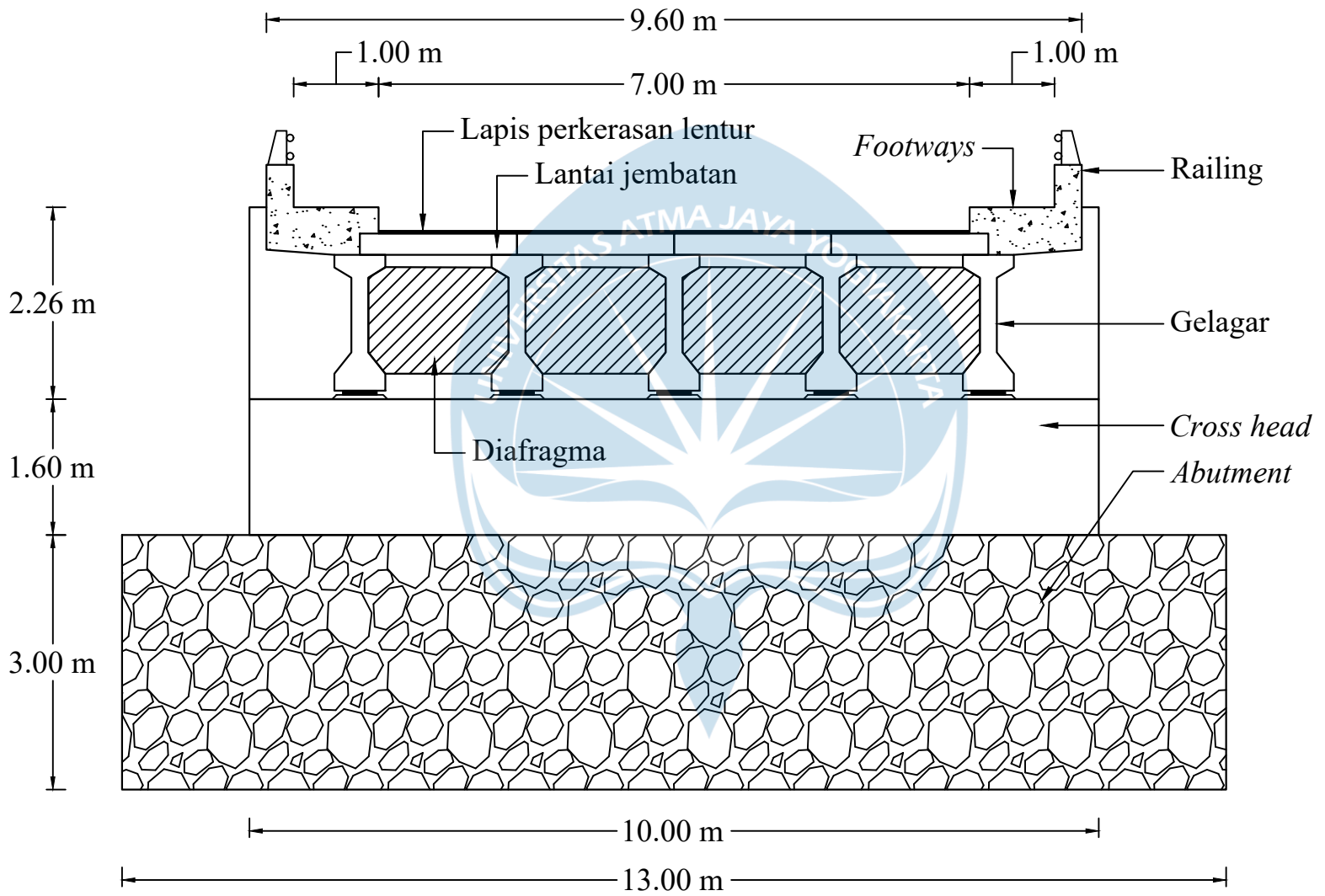
	
17	18
	
19	20
	
21	22
	
23	24



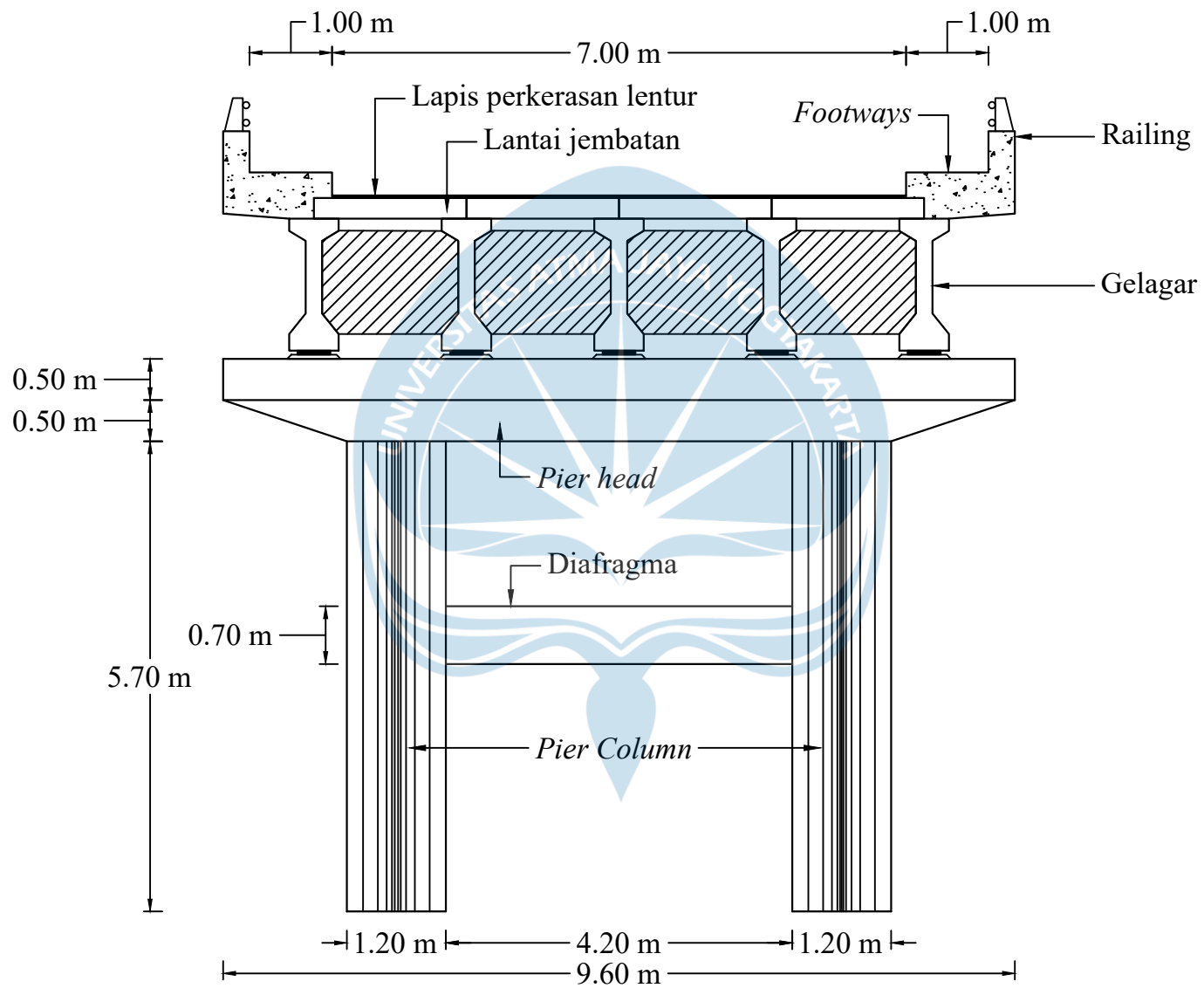


Bridge Name	: Drewolo	<b>Drawing Title</b>	<b>Scale</b>
Road Name	: Sentolo - Pengasih	TAMPAK SAMPING	1:300
Crossing/General Location	: Sungai		<b>Sheet No.</b>
Region	: Kulon Progo, DIY		02

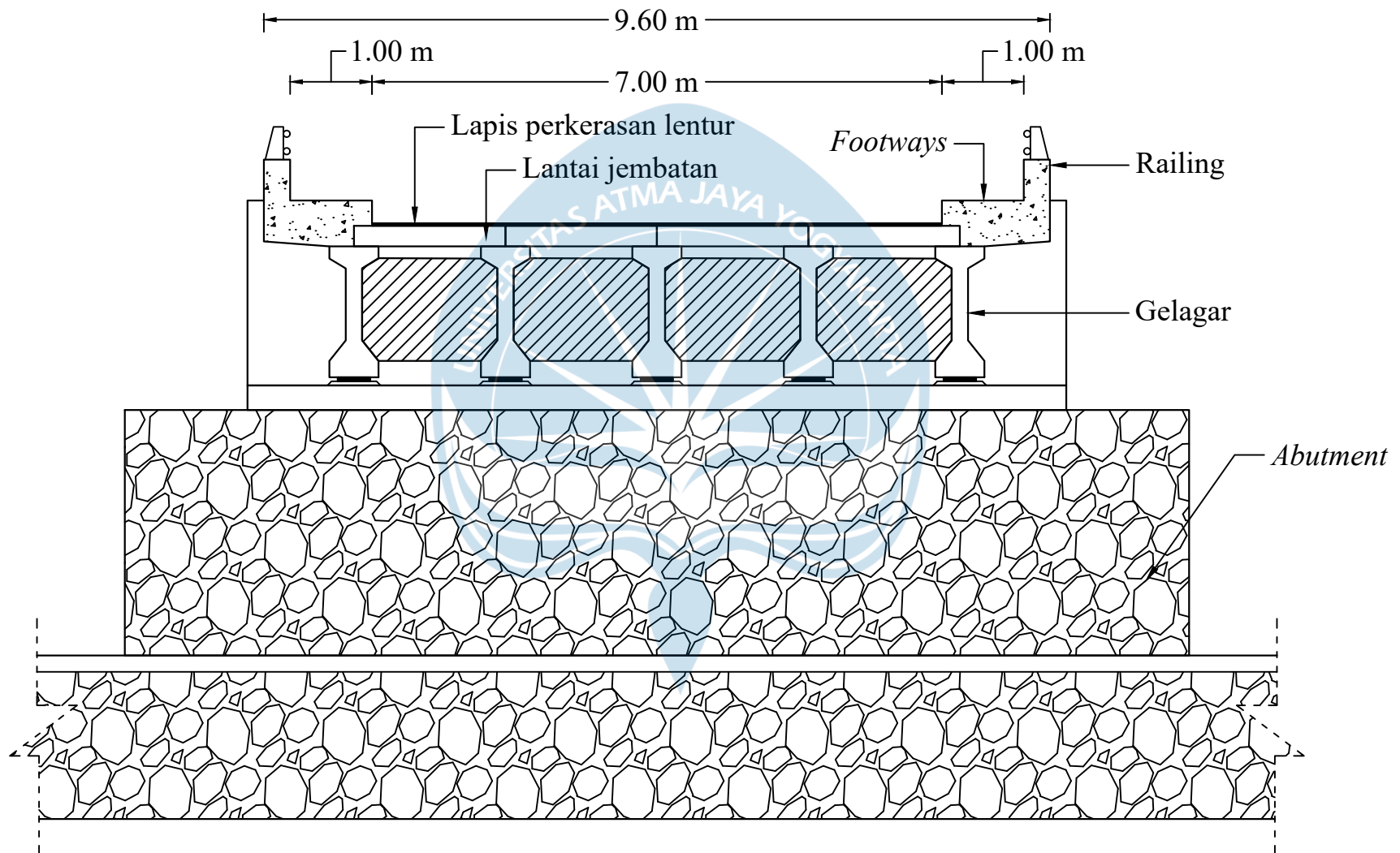




Bridge Name	: Drewolo	<b>Drawing Title</b>	<b>Scale</b>
Road Name	: Sentolo - Pengasih	ABUTMEN SELATAN	1:75
Crossing/General Location	: Sungai		<b>Sheet No.</b>
Region	: Kulon Progo, DIY		03



Bridge Name	: Drewolo	<b>Drawing Title</b>	<b>Scale</b>
Road Name	: Sentolo - Pengasih	<i>PIER COLUMN</i>	1:80
Crossing/General Location	: Sungai		<b>Sheet No.</b>
Region	: Kulon Progo, DIY		04



Bridge Name	: Drewolo	Drawing Title	Scale
Road Name	: Sentolo - Pengasih		1:75
Crossing/General Location	: Sungai		Sheet No.
Region	: Kulon Progo, DIY		05

**LAMPIRAN 7**  
**LEMBAR INSPEKSI**  
**JEMBATAN KLEPU**





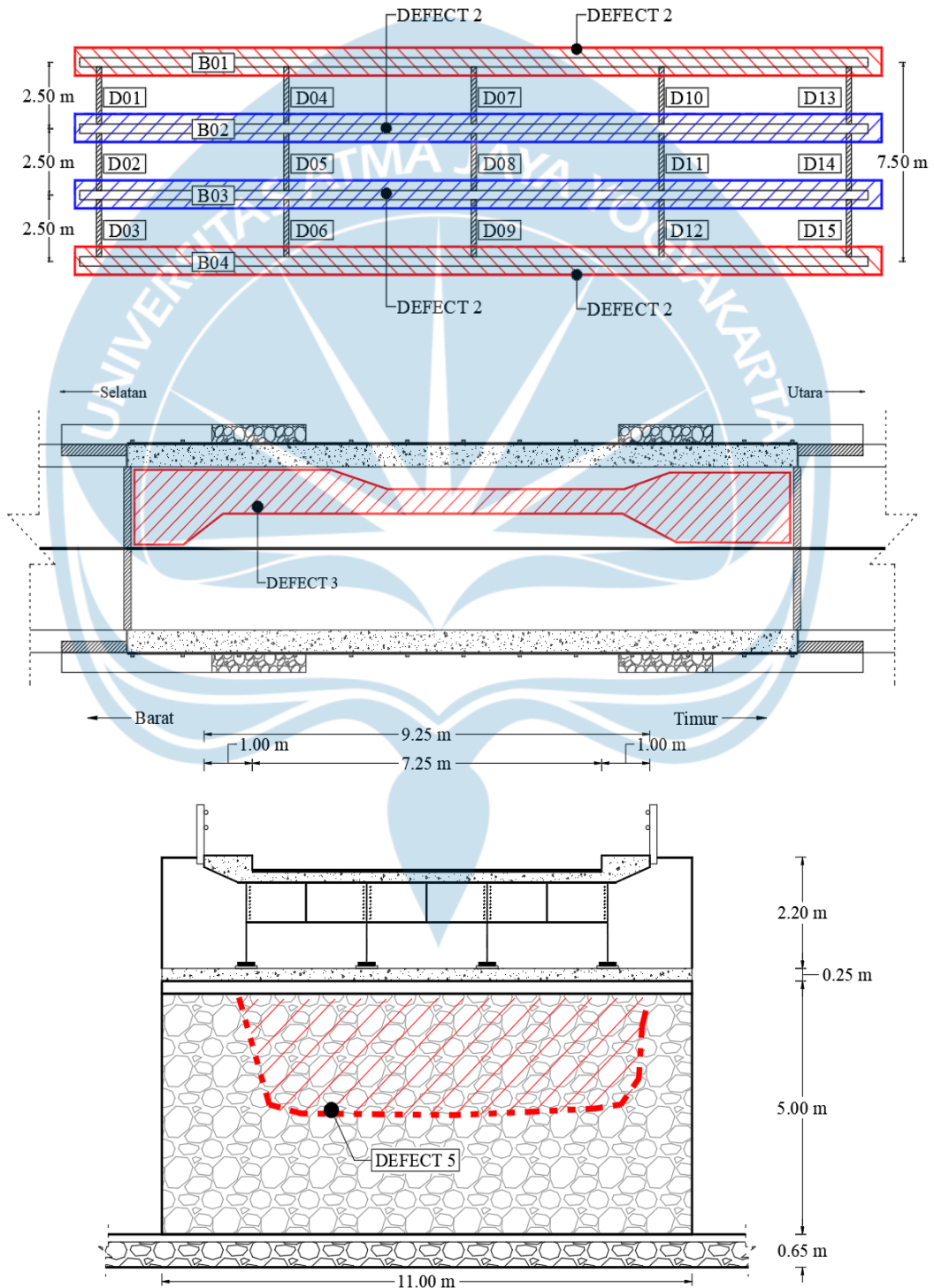
## Structure Defect and Treatment Sheet

Bridge Name	Klepu	Latitude	-7.6926
Road Name	Dekso - Klangon	Longitude	110.2557
Crossing/General Location	Sungai		
Region	Kulon Progo, DIY		
Inspector	Y. Aryo Pramudito		
Date	Sunday, June 4, 2023		









Defect No.	Component No.	Component Name	Location	Quantity	Photo No. (key)	Photo No. (full list)	Defect Description	Treatment for Condition State 3 and 4
Defect 1	2S	Open Girder	B2, B3	2 Unit	10	3-10	Condition State 3 Korosi, keropos	Penggantian gelagar
Defect 2	2S	Open Girder	B1, B4	2 Unit	8	3-10	Condition State 4 Korosi, keropos	Penggantian gelagar
Defect 3	14O	Fill/wearing surface on deck	Lihat "Mapping Defect Sheet"	49.82 m <sup>2</sup>	1	1-2	Condition State 2 Rutting	
Defect 4	24O	Abutment (masonry)	Abutmen selatan	127.60 m <sup>2</sup>	24	23-25	Condition State 2 Retak minor	
Defect 5	24O	Abutment (masonry)	Abutmen utara	22.00 m <sup>2</sup>	25	23-25	Condition State 3 Retak, settlement	Perkuatan abutment

# Defect Mapping Sheet

Bridge Name	Klepu	Latitude	-7.6926
Road Name	Dekso - Klangon	Longitude	110.2557
Crossing/General Location	Sungai		
Region	Kulon Progo, DIY		
Inspector	Y. Aryo Pramudito		
Date	Sunday, June 4, 2023		




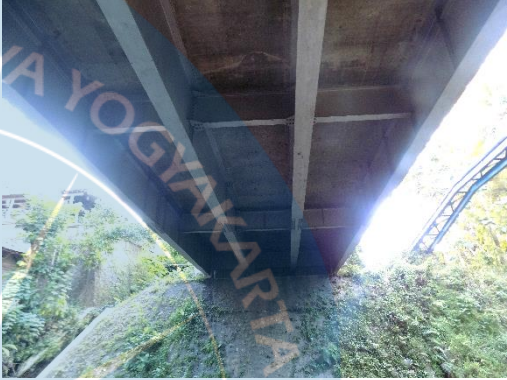






**Photographic Record**









	
<p>1</p>	<p>2</p>
	
<p>3</p>	<p>4</p>
	
<p>5</p>	<p>6</p>
	
<p>7</p>	<p>8</p>



Photographic Record

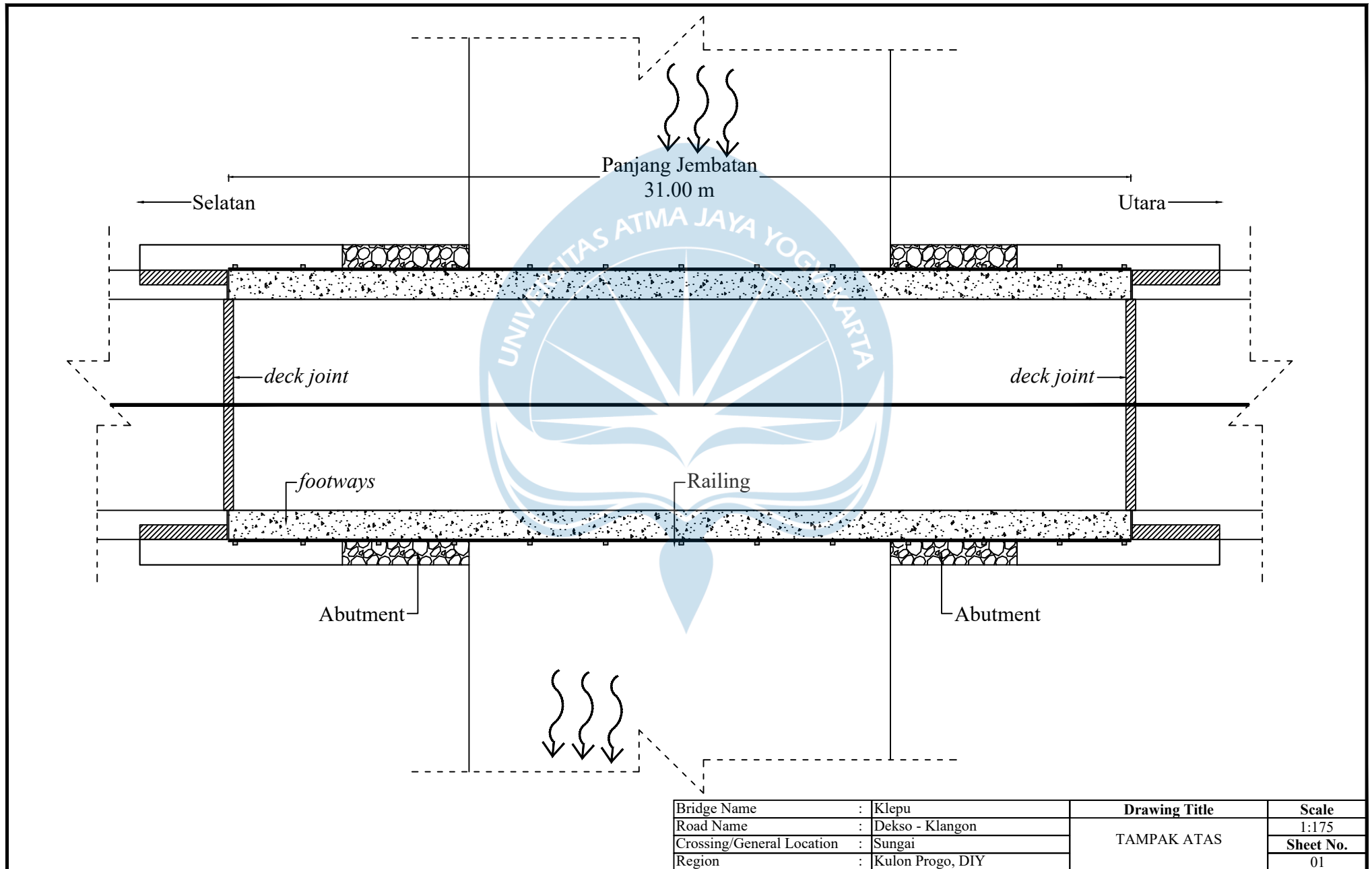
	
9	10
	
11	12
	
13	14
	
16	15

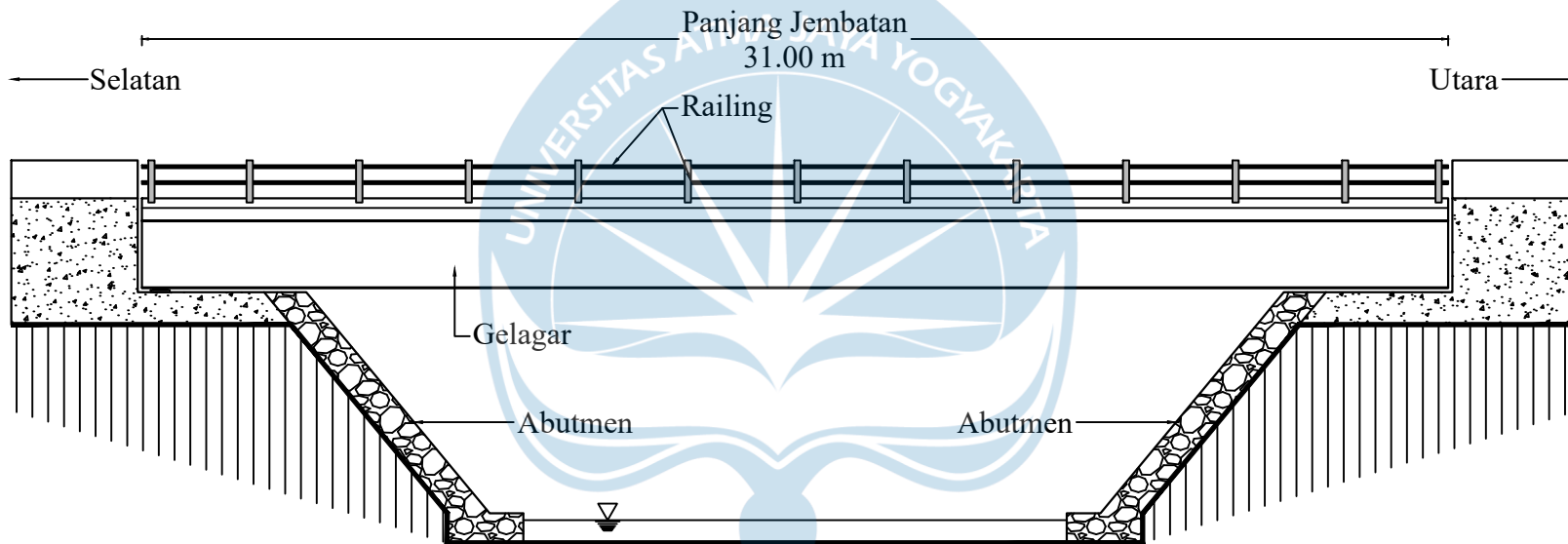
**Photographic Record**

	
<p>17</p>	<p>18</p>
	
<p>19</p>	<p>20</p>
	
<p>21</p>	<p>22</p>
	
<p>23</p>	<p>24</p>

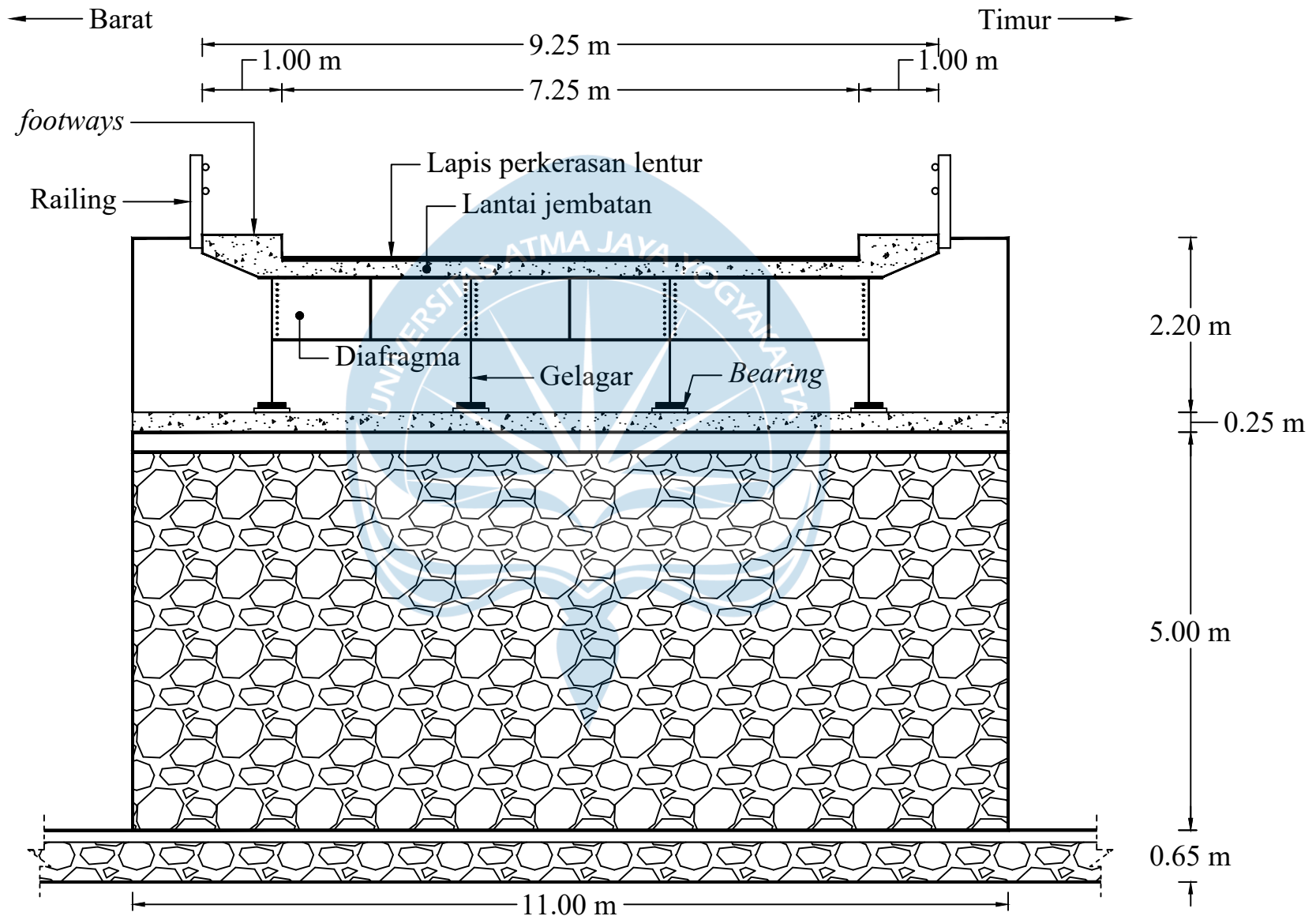
**Photographic Record**

	
<p>25</p>	<p>26</p>
	
<p>27</p>	<p>28</p>
	
<p>29</p>	<p>30</p>
	
<p>31</p>	<p>32</p>





Bridge Name	: Klepu	Drawing Title	Scale
Road Name	: Dekso - Klangon		1:175
Crossing/General Location	: Sungai		Sheet No.
Region	: Kulon Progo, DIY		02



Bridge Name	: Klepu	Drawing Title	Scale
Road Name	: Dekso - Klangon		1:75
Crossing/General Location	: Sungai	ABUTMEN	Sheet No.
Region	: Kulon Progo, DIY		03

**LAMPIRAN 8**  
**LEMBAR INSPEKSI**  
**JEMBATAN TINALAH**







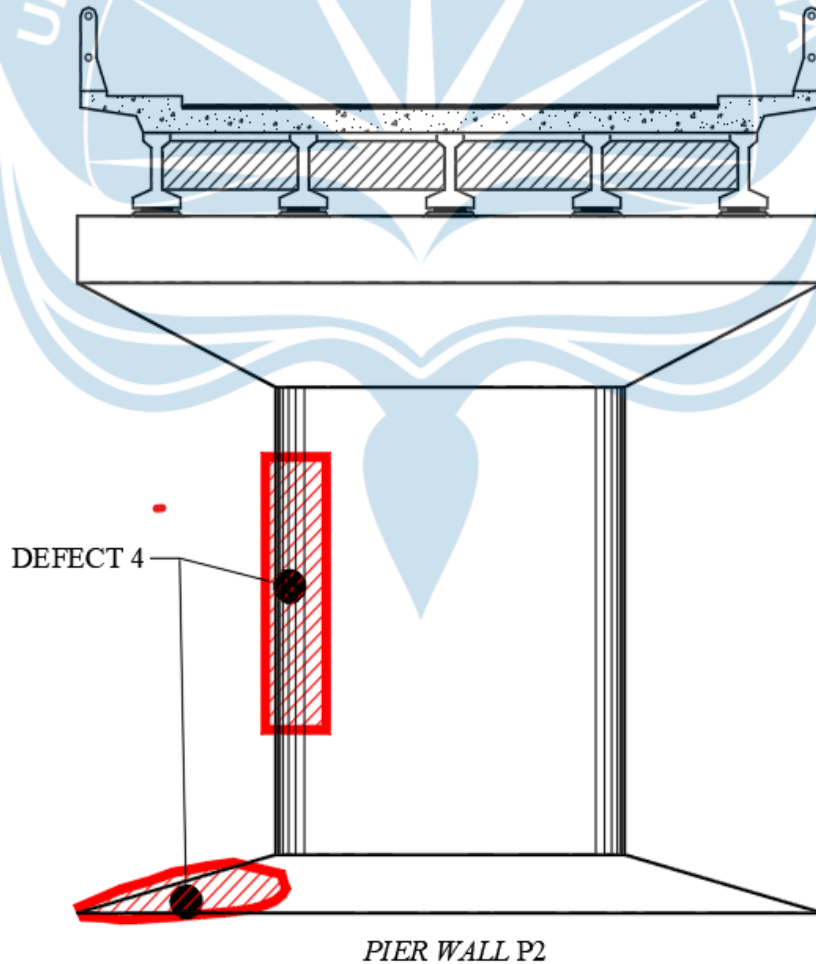
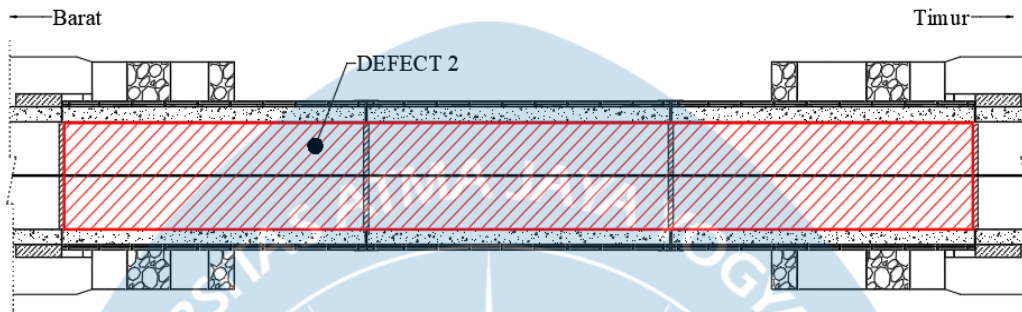
## Structure Defect and Treatment Sheet

Bridge Name	Tinalah	Latitude	-7.7299
Road Name	Dekso - Klangon	Longitude	110.2172
Crossing/General Location	Sungai Tinalah		
Region	Kulon Progo, DIY		
Inspector	Y. Aryo Pramudito		
Date	Monday, June 5, 2023		

Defect No.	Component No.	Component Name	Location	Quantity	Photo No. (key)	Photo No. (full list)	Defect Description	Treatment for Condition State 3 and 4
Defect 1	8P	Deck/Slabs	Slab dengan pipa drainase	54 unit	13	6-13	Condition State 2 Retak	
Defect 2	14O	Fill/wearing surface on deck	Lihat "Mapping Defect Sheet"	227.75 m <sup>2</sup>	1	1-2	Condition State 2 Rutting	
Defect 3	23C	Pier wall	P1, P2	492.33 m <sup>2</sup>	15	16-21	Condition State 2 Retak	
Defect 4	23C	Pier wall	P1	10.65 m <sup>2</sup>	18,21	16-21	Condition State 3 Tulangan korosi, beton pecah	<i>Patching</i> , perkuatan beton

# Defect Mapping Sheet

Bridge Name	Tinalah	Latitude	-7.7299
Road Name	Dekso - Klangon	Longitude	110.2172
Crossing/General Location	Sungai Tinalah		
Region	Kulon Progo, DIY		
Inspector	Y. Aryo Pramudito		
Date	Monday, June 5, 2023		











Photographic Record

	
<p>1</p>	<p>2</p>
	
<p>3</p>	<p>4</p>
	
<p>5</p>	<p>6</p>
	
<p>7</p>	<p>8</p>

Photographic Record

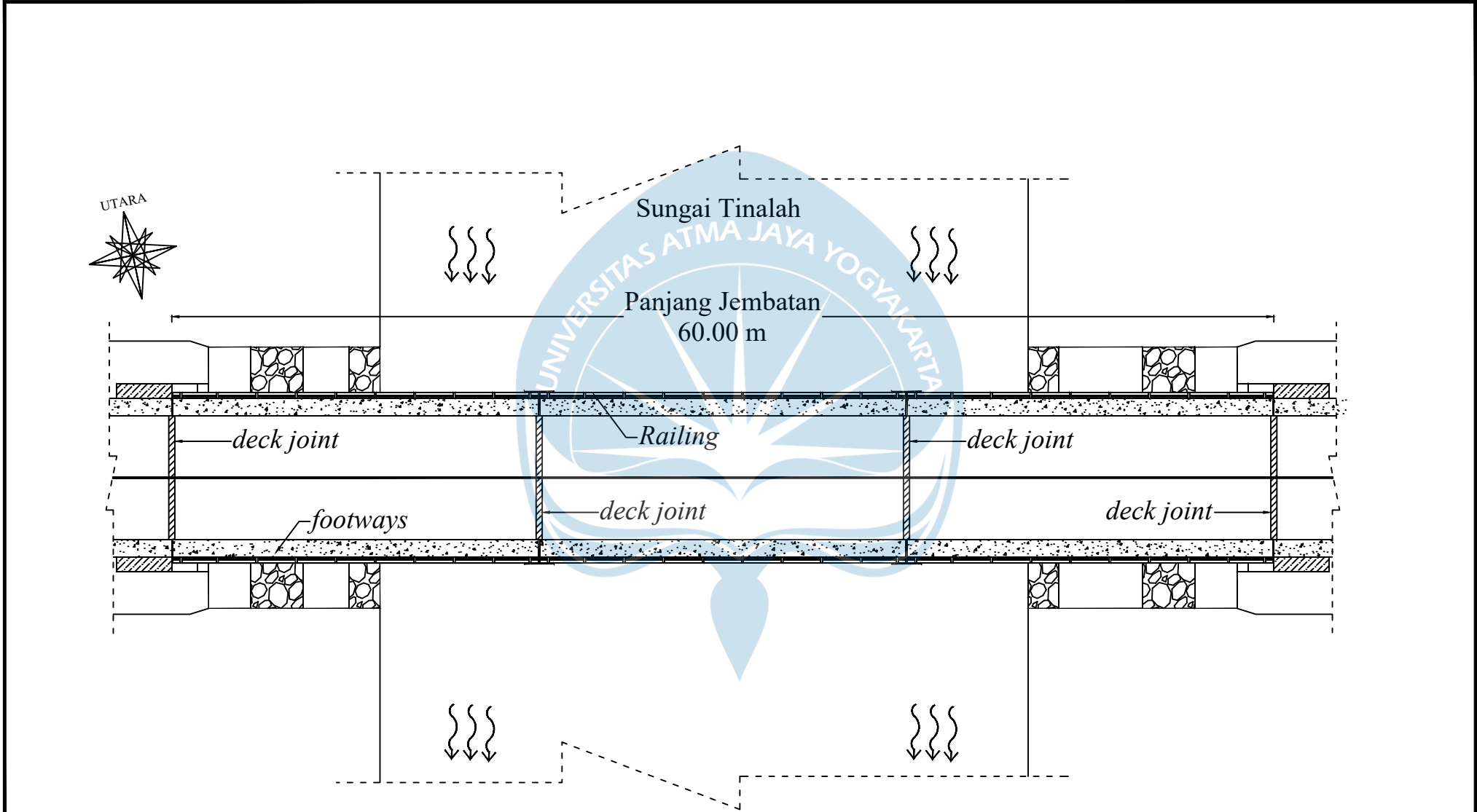
	
<p>9</p>	<p>10</p>
	
<p>11</p>	<p>12</p>
	
<p>13</p>	<p>14</p>
	
<p>16</p>	<p>15</p>

Photographic Record

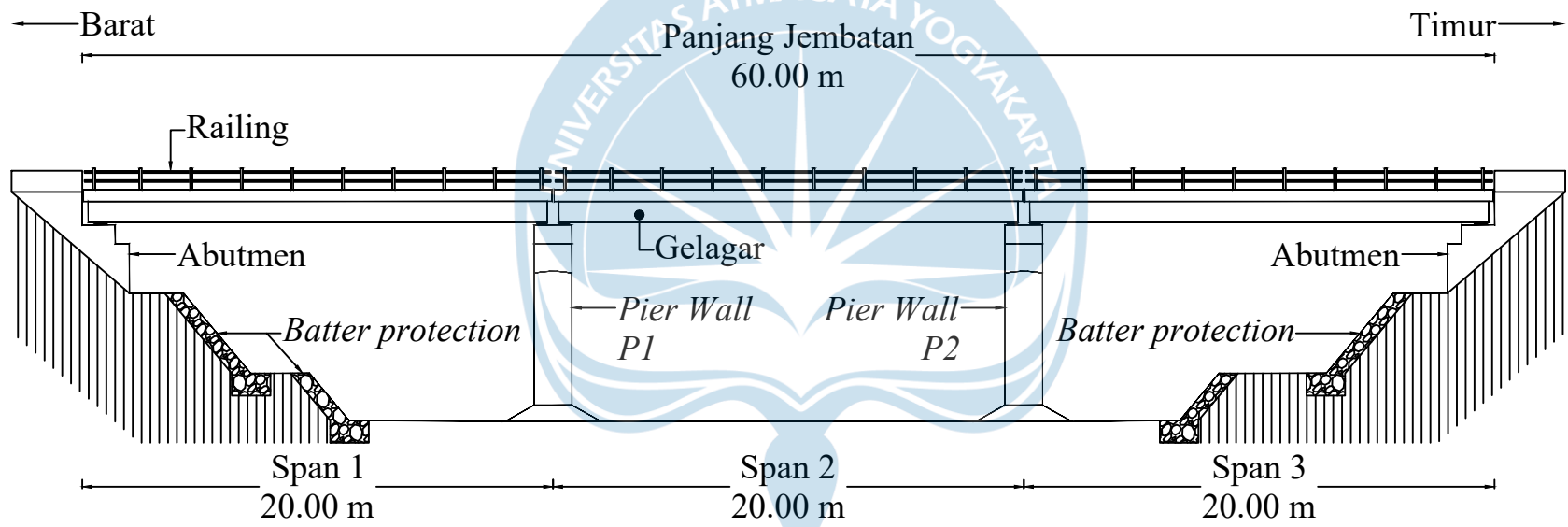
	
<p>17</p>	<p>18</p>
	
<p>19</p>	<p>20</p>
	
<p>21</p>	<p>22</p>
	
<p>23</p>	<p>24</p>

**Photographic Record**

	
<p>25</p>	<p>26</p>
	
<p>27</p>	<p>28</p>
	
<p>29</p>	<p>30</p>
	
<p>31</p>	<p>32</p>

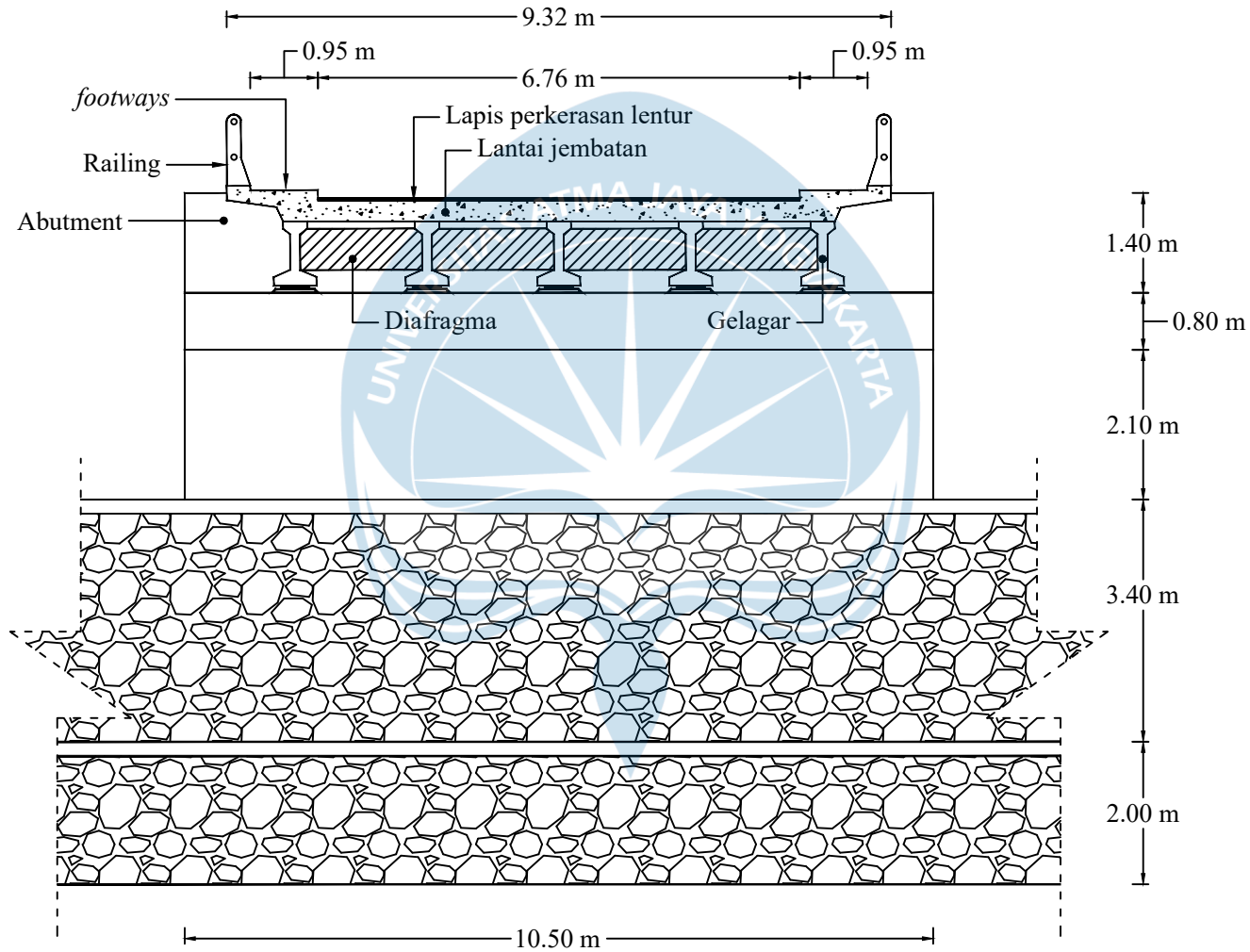


Bridge Name	: Tinalah	Drawing Title	Scale
Road Name	: Dekso - Klangon		1:300
Crossing/General Location	: Sungai	TAMPAK ATAS	Sheet No.
Region	: Kulon Progo, DIY		01

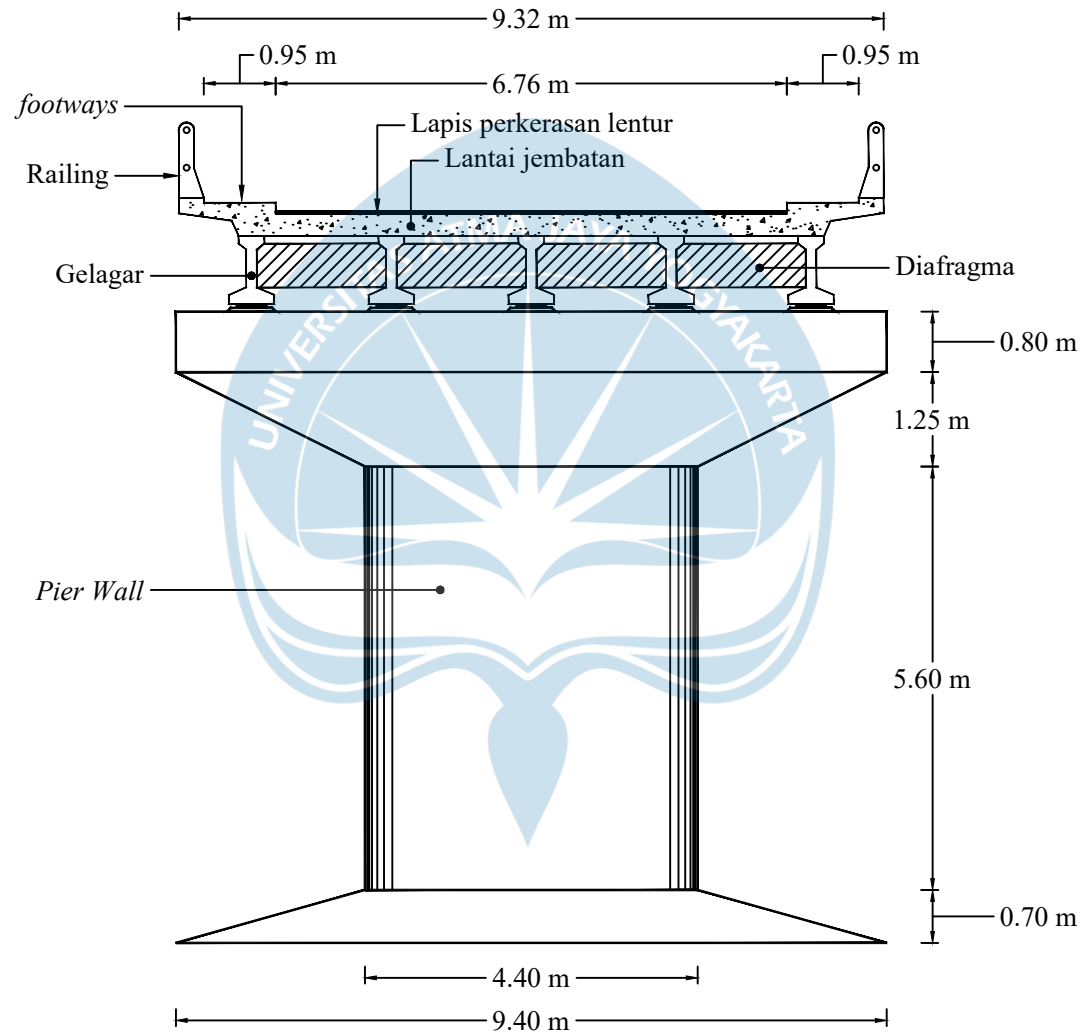


Bridge Name	: Tinalah	Drawing Title	Scale
Road Name	: Dekso - Klangon		1:300
Crossing/General Location	: Sungai		Sheet No.
Region	: Kulon Progo, DIY		02





Bridge Name	: Tinalah	Drawing Title	Scale
Road Name	: Dekso - Klangon		1:100
Crossing/General Location	: Sungai	ABUTMEN JEMBATAN	Sheet No.
Region	: Kulon Progo, DIY		03



Bridge Name	: Tinalah	Drawing Title	Scale
Road Name	: Dekso - Klangon		1:100
Crossing/General Location	: Sungai	PIER WALL	Sheet No.
Region	: Kulon Progo, DIY		04

**LAMPIRAN 9**  
**LEMBAR INSPEKSI**  
**JEMBATAN NGENTAK**





## Structure Defect and Treatment Sheet

Bridge Name	Ngentak	Latitude	-7.7226
Road Name	Wonorejo - Tambakan	Longitude	110.3893
Crossing/General Location	Sungai		
Region	Sleman, DIY		
Inspector	Y. Aryo Pramudito		
Date	Saturday, June 10, 2023		

Defect No.	Component No.	Component Name	Location	Quantity	Photo No. (key)	Photo No. (full list)	Defect Description	Treatment for Condition State 3 and 4
Defect 1	8C	Deck/Slabs	Lihat "Mapping Defect Sheet"	164.6 m <sup>2</sup>	8	7-14	Condition State 2 Retak, pengkristalan	
Defect 2	8C	Deck/Slabs	Lihat "Mapping Defect Sheet"	18.6 m <sup>2</sup>	7	7-14	Condition State 3 Retak, pengkristalan, korosi tulangan	<i>Patching</i> , pembersihan permukaan beton
Defect 3	14O	Fill/wearing surface on deck	Lihat "Mapping Defect Sheet"	37.57 m <sup>2</sup>	23	23-24	Condition State 2 Rutting	
Defect 4	23C	Pier wall	Lihat "Mapping Defect Sheet"	4.7 m <sup>2</sup>	16	15-16	Condition State 2 Retak minor	
Defect 5	51S	Bridge railing/barriers	Seluruh railing pipa baja	64.00 m'	22	21-22	Condition State 2 Cat terkelupas	

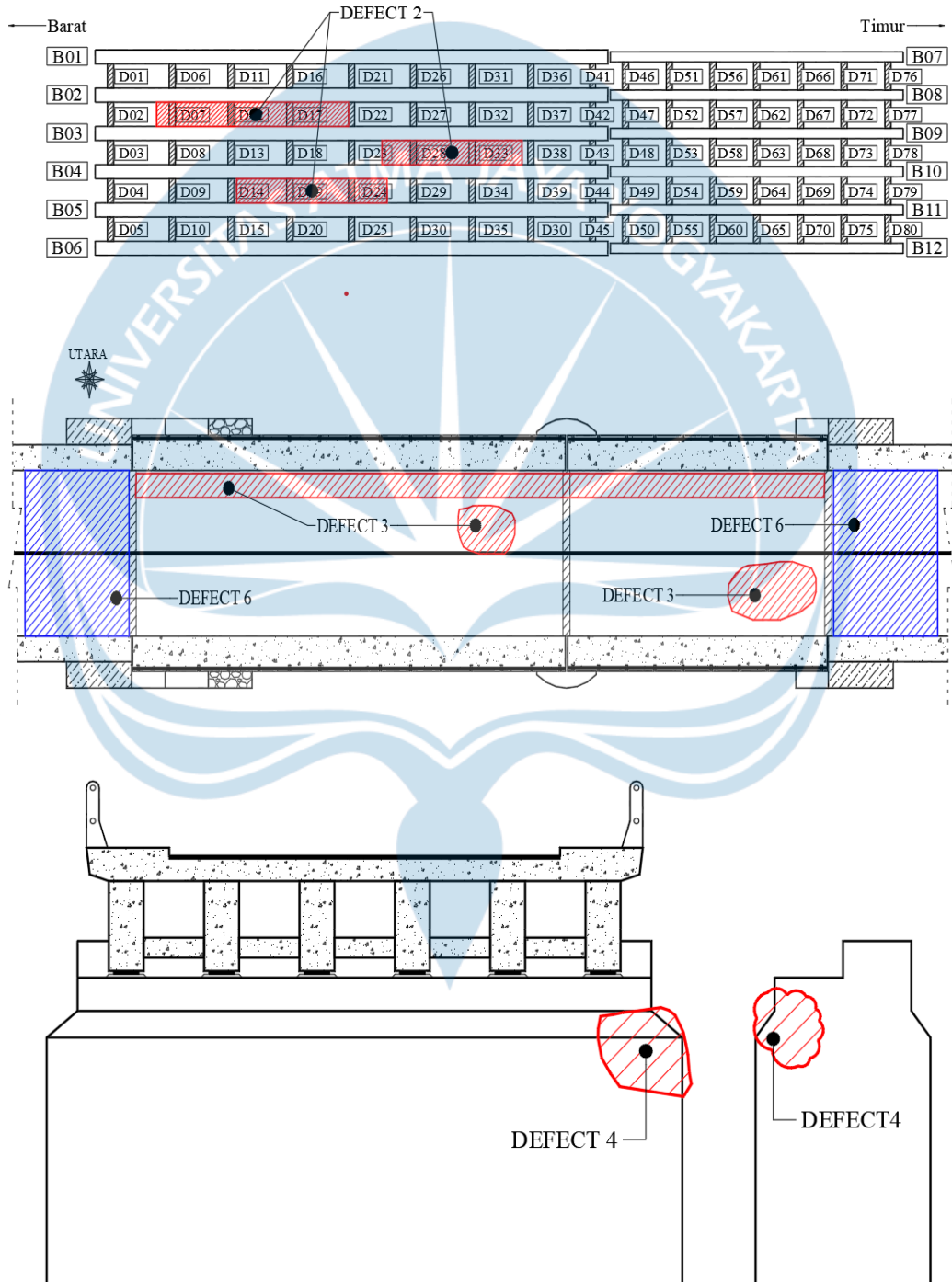
## Structure Defect and Treatment Sheet

Bridge Name	Ngentak	Lattitude	-7.7226
Road Name	Wonorejo - Tambakan	Longitude	110.3893
Crossing/General Location	Sungai		
Region	Sleman, DIY		
Inspector	Y. Aryo Pramudito		
Date	Saturday, June 10, 2023		

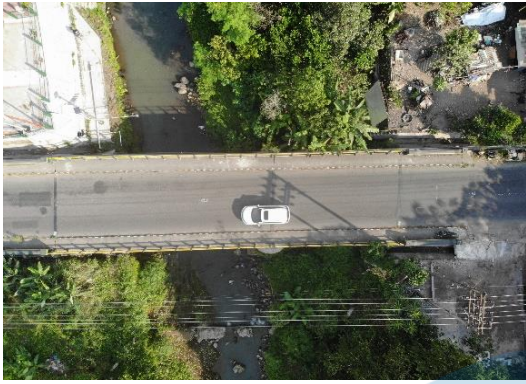







Defect No.	Component No.	Component Name	Location	Quantity	Photo No. (key)	Photo No. (full list)	Defect Description	Treatment for Condition State 3 and 4
Defect 6	520	Bridge approaches	Sisi timur dan barat	2 unit	23	23-34	Condition State 3 Bergelombang, settlement	Pelapisan ulang lapis perkerasan aus

# Defect Mapping Sheet

Bridge Name	Ngentak	Latitude	-7.7226
Road Name	Wonorejo - Tambakan	Longitude	110.3893
Crossing/General Location	Sungai		
Region	Sleman, DIY		
Inspector	Y. Aryo Pramudito		
Date	Saturday, June 10, 2023		



Photographic Record

 <p>1</p>	 <p>2</p>
 <p>3</p>	 <p>4</p>
 <p>5</p>	 <p>6</p>
 <p>7</p>	 <p>8</p>

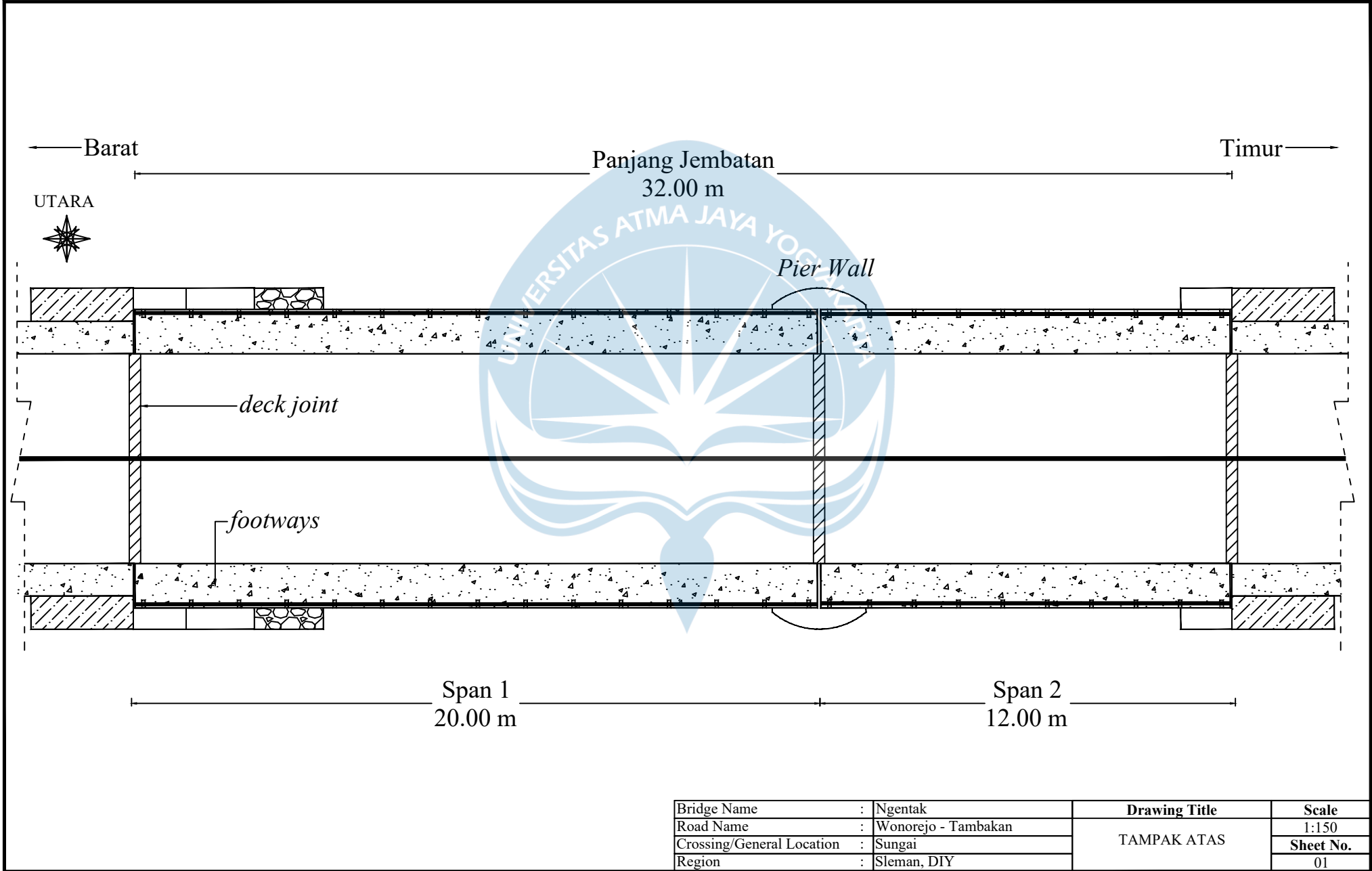


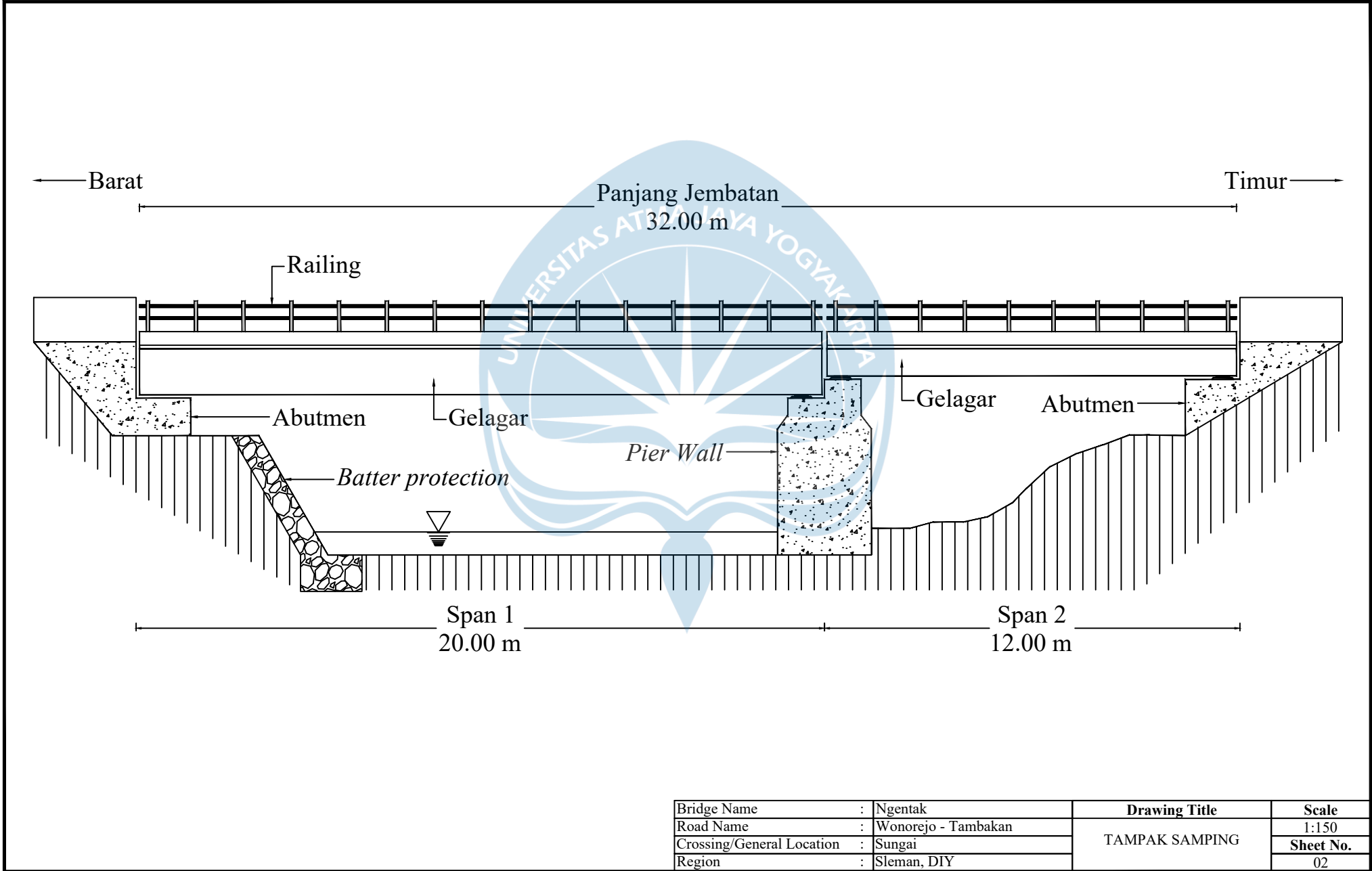
Photographic Record

	
<p>9</p>	<p>10</p>
	
<p>11</p>	<p>12</p>
	
<p>13</p>	<p>14</p>
	
<p>15</p>	<p>16</p>

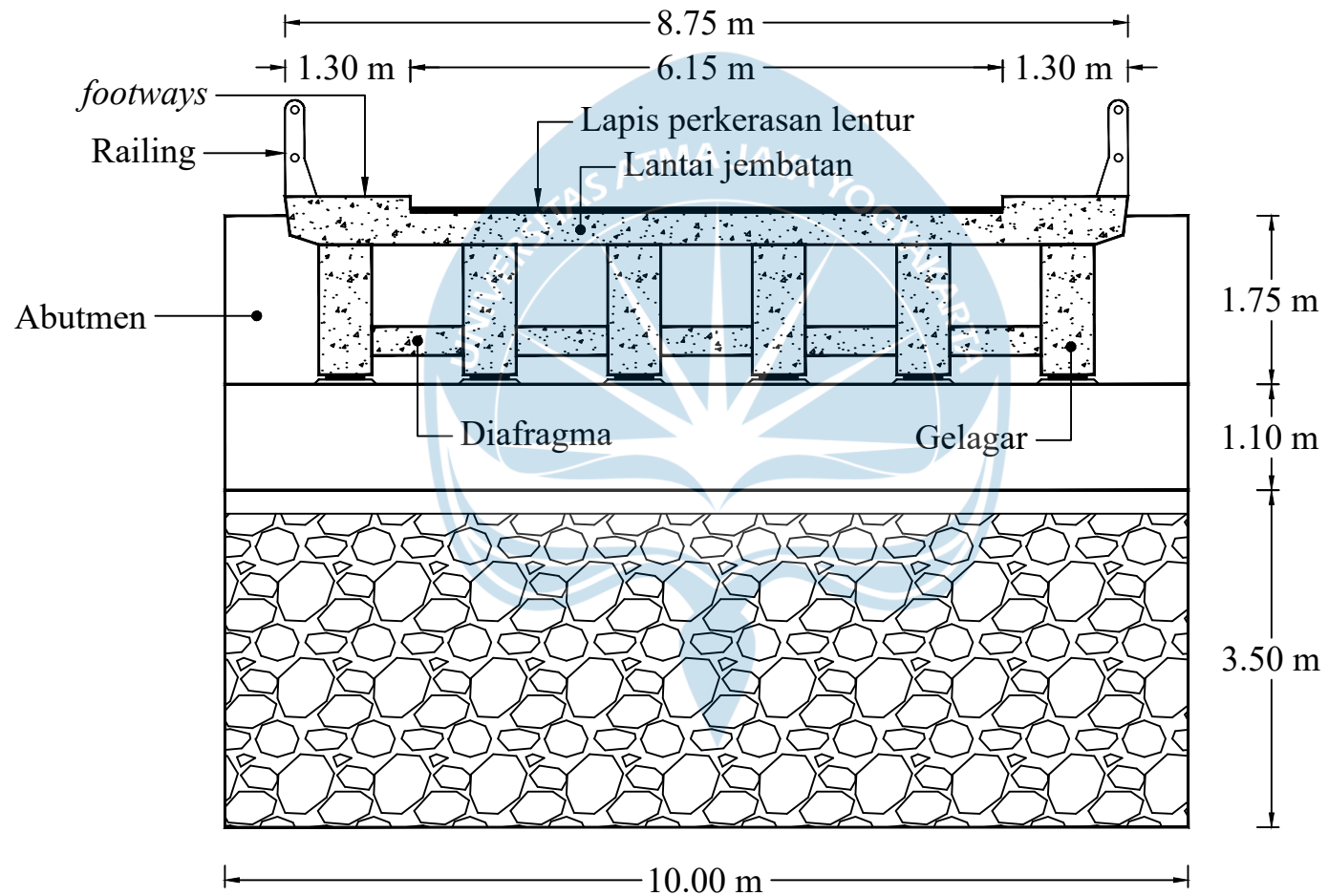
# Photographic Record

	
<p>17</p>	<p>18</p>
	
<p>19</p>	<p>20</p>
	
<p>21</p>	<p>22</p>
	
<p>23</p>	<p>24</p>

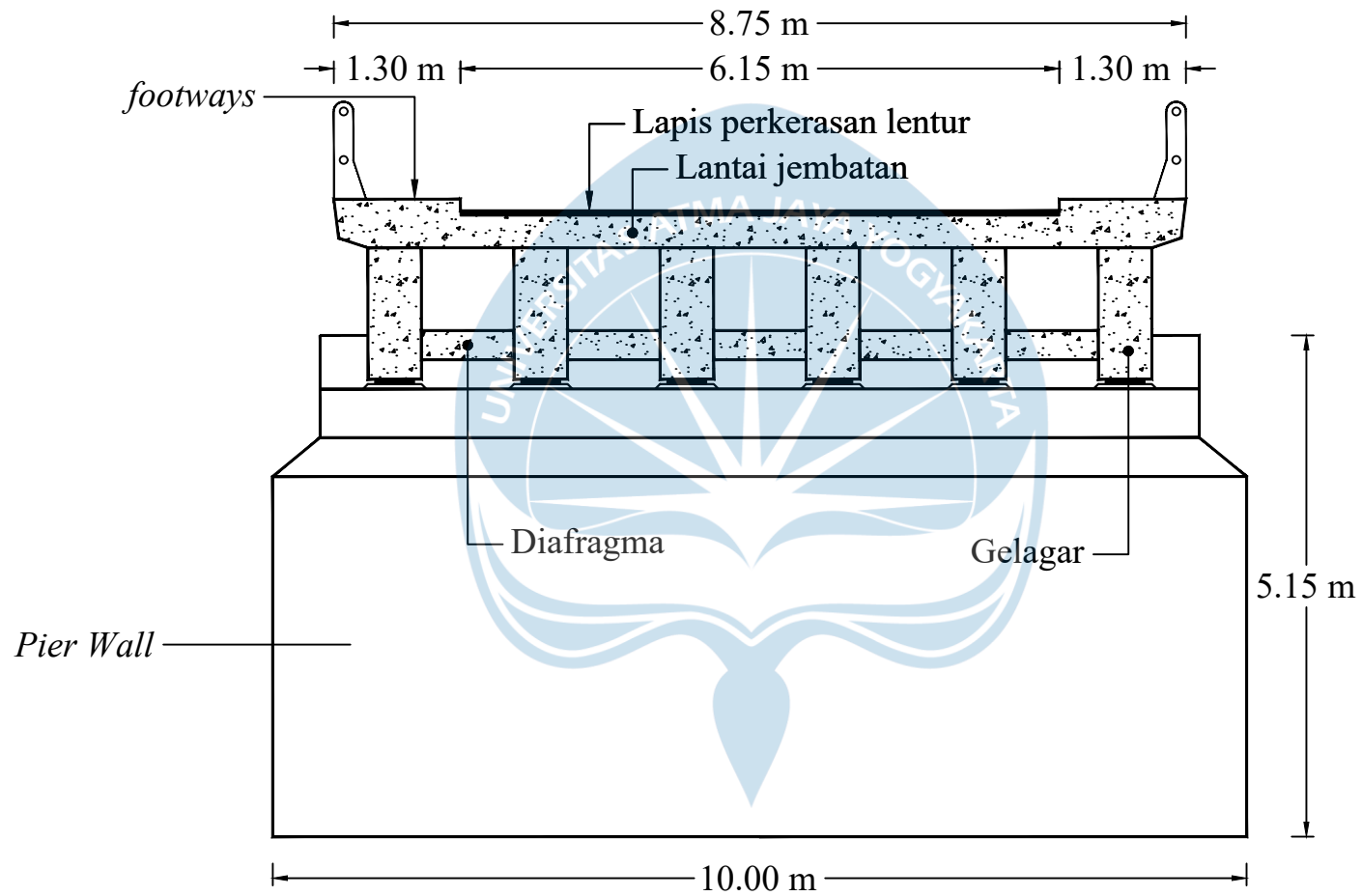




Bridge Name	: Ngentak	Drawing Title	Scale
Road Name	: Wonorejo - Tambakan		1:150
Crossing/General Location	: Sungai		Sheet No.
Region	: Sleman, DIY		02



Bridge Name	: Ngentak	<b>Drawing Title</b>	<b>Scale</b>
Road Name	: Wonorejo - Tambakan	ABUTMEN JEMBATAN	1:75
Crossing/General Location	: Sungai		<b>Sheet No.</b>
Region	: Sleman, DIY		03



Bridge Name	: Ngentak	<b>Drawing Title</b>	<b>Scale</b>
Road Name	: Wonorejo - Tambakan		1:75
Crossing/General Location	: Sungai	<i>PIER WALL</i>	<b>Sheet No.</b>
Region	: Sleman, DIY		04

**LAMPIRAN 10**  
**LEMBAR INSPEKSI**  
**JEMBATAN DEMAK IJO**







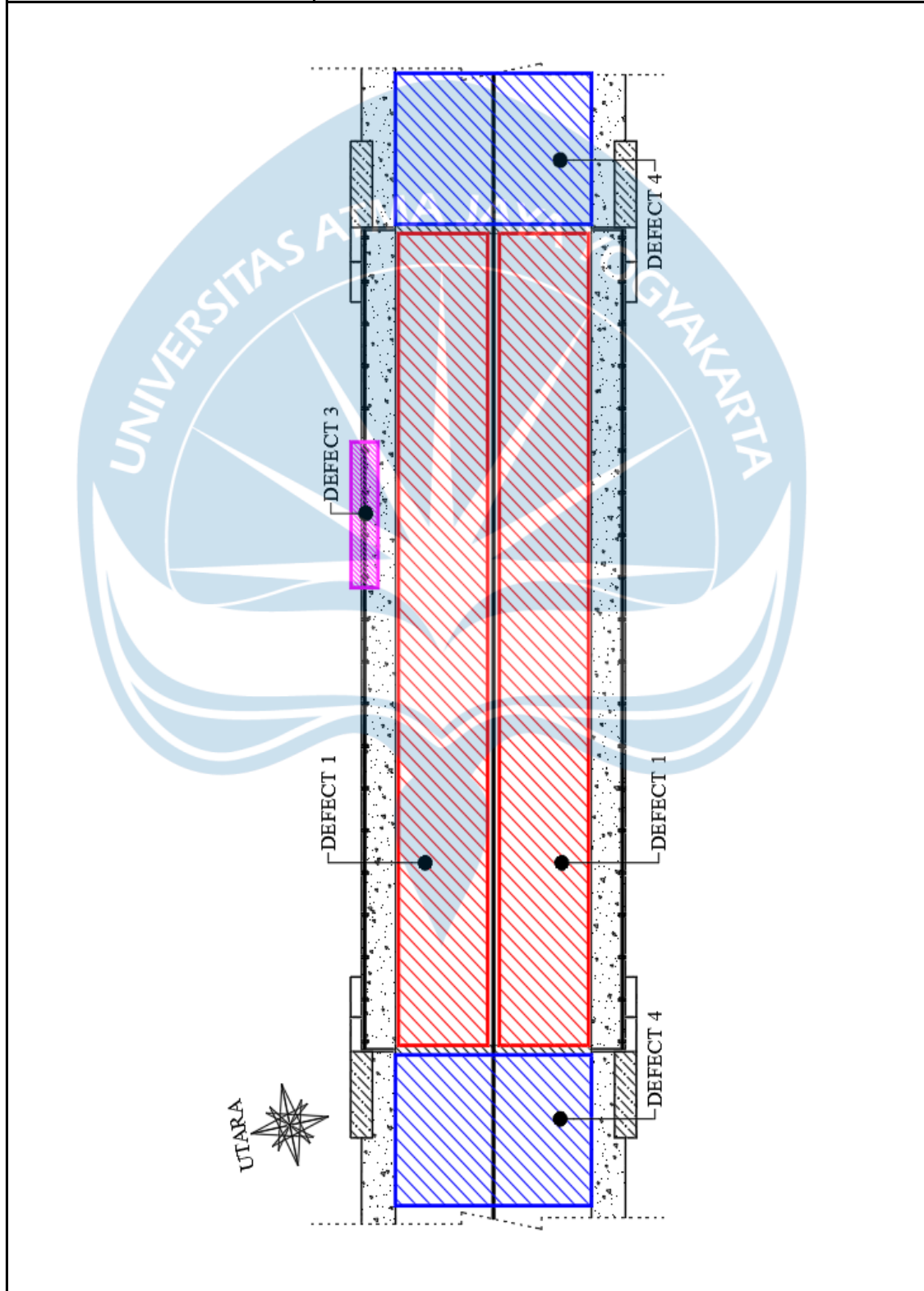
## Structure Defect and Treatment Sheet

Bridge Name	Demak Ijo	Latitude	-7.7770
Road Name	Yogyakarta - Kebonagung I	Longitude	110.3292
Crossing/General Location	Sungai Bedog		
Region	Sleman, DIY		
Inspector	Y. Aryo Pramudito		
Date	Saturday, June 10, 2023		

Defect No.	Component No.	Component Name	Location	Quantity	Photo No. (key)	Photo No. (full list)	Defect Description	Treatment for Condition State 3 and 4
Defect 1	8P	Deck/Slabs	Slab dengan pipa drainase	24 unit	7	3-9	Condition State 2 Retak	
Defect 2	14O	Fill/wearing surface on deck	Lihat "Mapping Defect Sheet"	154.29 m <sup>2</sup>	10	10-11	Condition State 2 Retak	
Defect 3	51S	Bridge railing/barriers	Railing sisi utara	3.00 m'	22	21-24	Condition State 3 Pipa baja bengkok/penyok	Penggantian pipa railing
Defect 4	52O	Bridge approaches	Sisi timur dan barat	2 unit	16	16-17	Condition State 2 Retak	

## Defect Mapping Sheet

Bridge Name	Demak Ijo	Latitude	-7.7770
Road Name	Yogyakarta - Kebonagung I	Longitude	110.3292
Crossing/General Location	Sungai Bedog		
Region	Sleman, DIY		
Inspector	Y. Aryo Pramudito		
Date	Saturday, June 10, 2023		











Photographic Record

	
1	2
	
3	4
	
5	6
	
7	8

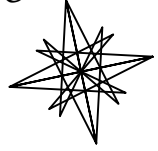
**Photographic Record**

	
<p>9</p>	<p>10</p>
	
<p>11</p>	<p>12</p>
	
<p>13</p>	<p>14</p>
	
<p>15</p>	<p>16</p>

Photographic Record

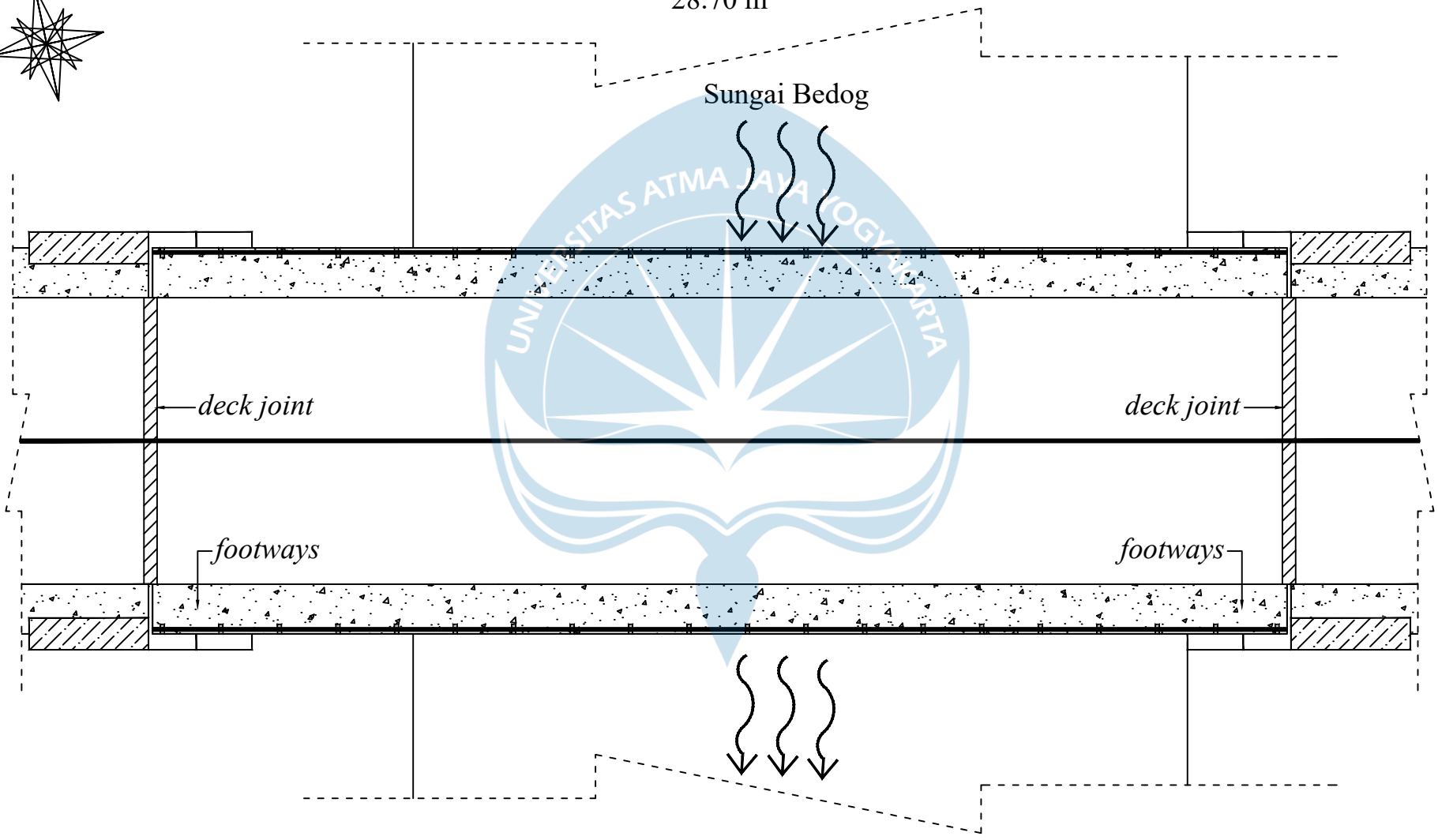
	
<p>17</p>	<p>18</p>
	
<p>19</p>	<p>20</p>
	
<p>21</p>	<p>22</p>
	
<p>23</p>	<p>24</p>

UTARA

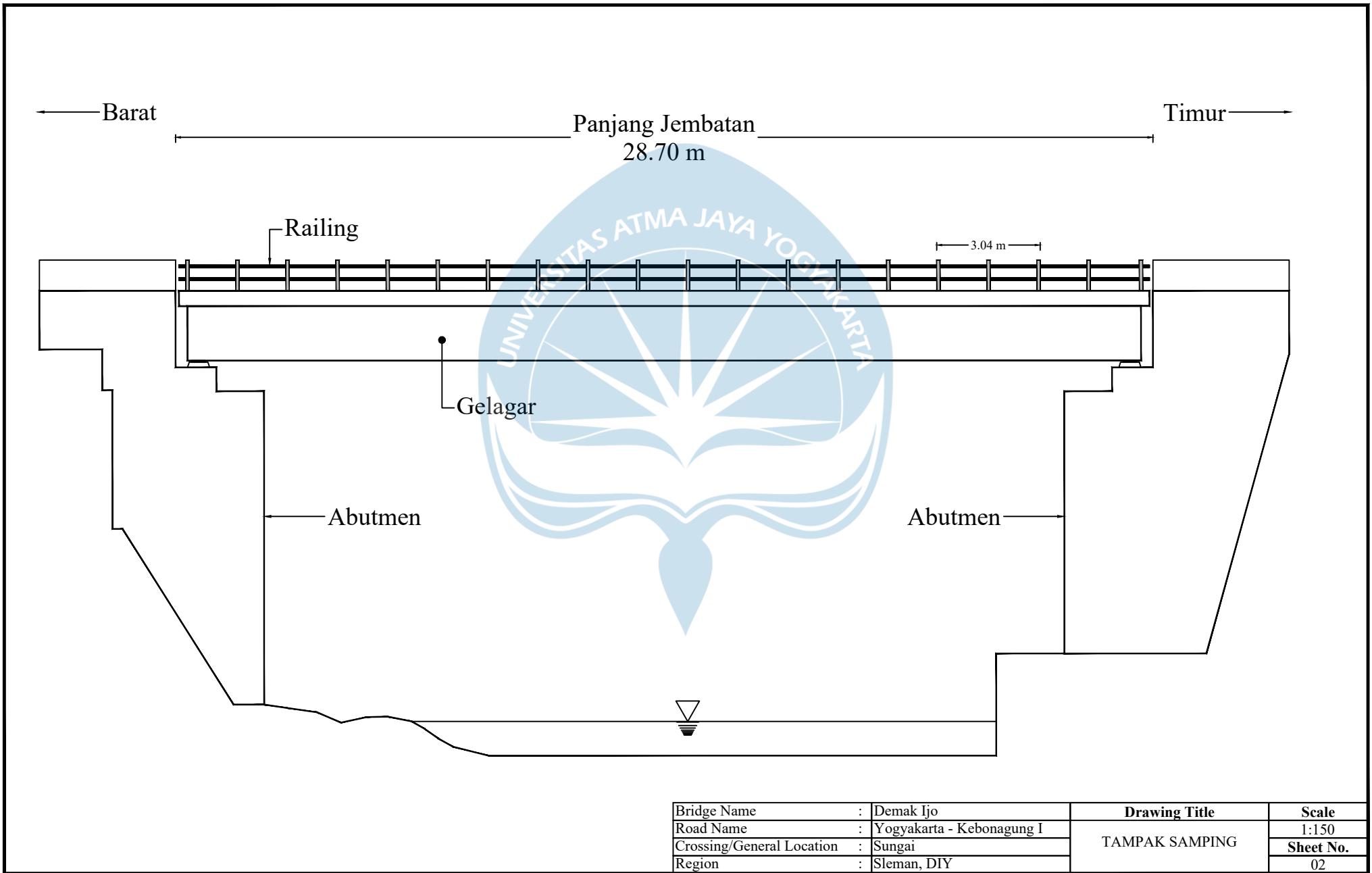


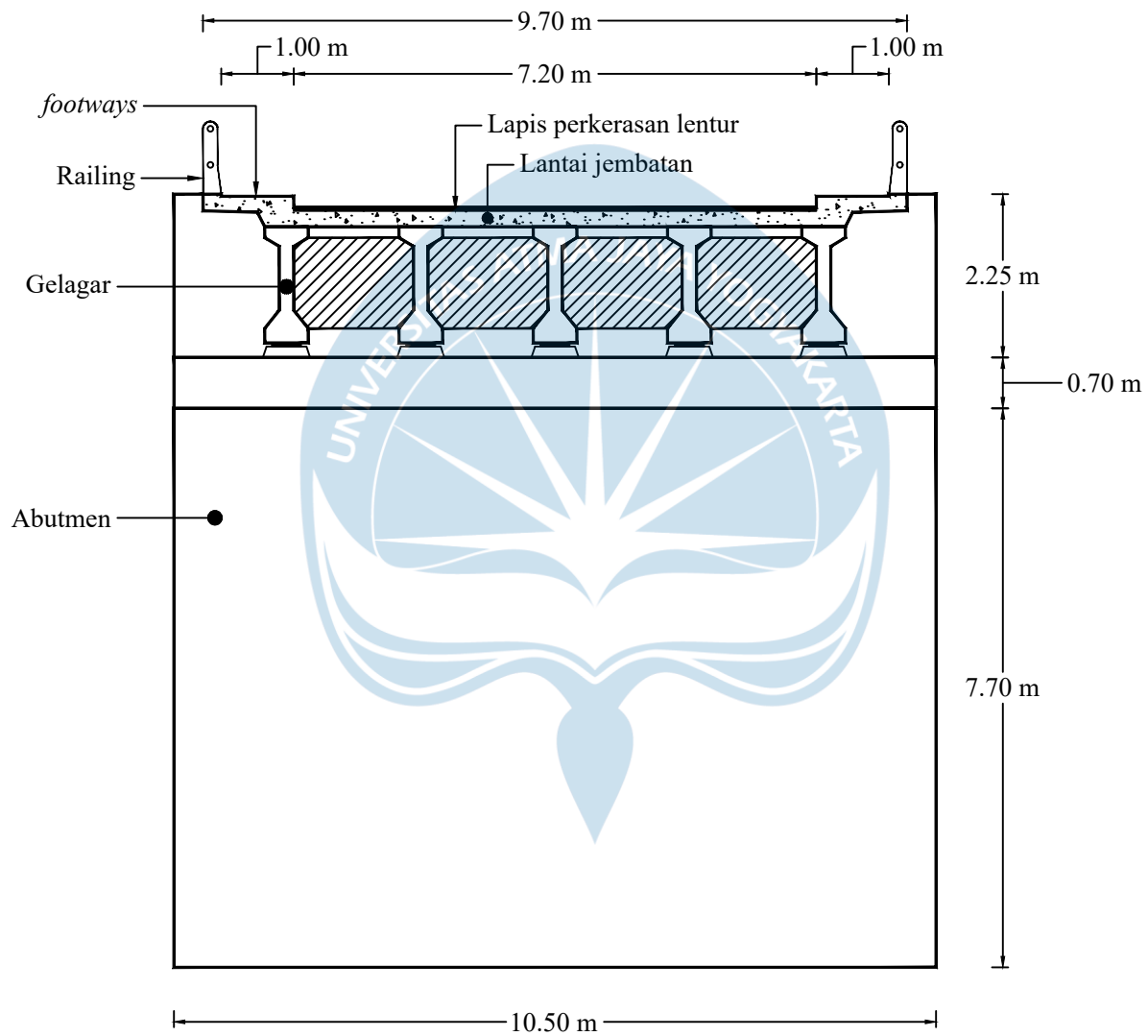
Panjang Jembatan  
28.70 m

Sungai Bedog



Bridge Name	: Demak Ijo	Drawing Title	Scale
Road Name	: Yogyakarta - Kebonagung I	TAMPAK ATAS	1:150
Crossing/General Location	: Sungai		Sheet No.
Region	: Sleman, DIY		01





Bridge Name	: Demak Ijo	<b>Drawing Title</b>	<b>Scale</b>
Road Name	: Yogyakarta - Kebonagung I	ABUTMEN JEMBATAN	1:100
Crossing/General Location	: Sungai		<b>Sheet No.</b>
Region	: Sleman, DIY		03