

FINAL ASSIGNMENT

**DESIGN AND ANALYSIS OF STEEL BOX GIRDER
FOR HIGHWAY BRIDGE**

**Submitted to fulfill requirements in completing undergraduate education
In the Department of Civil Engineering Faculty of Engineering
Sultan Agung Islamic University**



By:

MUHAMMAD AMINUDDIN NAJIB

3.02.015.04184

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**DEPARTEMENT OF CIVIL ENGINEERING
FACULTY OF ENGINEERING
SULTAN AGUNG ISLAMIC UNIVERSITY
SEMARANG**

2019



YAYASAN BADAN WAKAF SULTAN AGUNG
UNIVERSITAS ISLAM SULTAN AGUNG SEMARANG
FAKULTAS TEKNIK

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APPROVAL PAGE OF FINAL ASSIGNMENT

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30.2015.04.184



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Have been approved in Semarang on February 1st 2019

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1. Ir. Gatot Rusbintardjo, M.R.Eng.Sc., Ph.D.
2. Ari Sentani, ST., MSc.
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Signature

Head of The Department of Civil Engineering, Faculty of Engineering

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Ari Sentani, ST., MSc.



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BERITA ACARA BIMBINGAN TUGAS AKHIR

No:

Pada hari ini tanggal 08 Agustus 2019 berdasarkan surat keputusan rektor Universitas Islam Sultan Agung (UNISSULA) Semarang perihal penunjukan dosen pembimbing dan asisten dosen pembimbing :

1. Nama : Ir. Gatot Rusbintardjo, M.R.Eng.Sc., Ph.D.
Jabatan Akademik : Lektor
Jabatan : Dosen Pembimbing I
2. Nama : Ari Sentani, ST., MSc.
Jabatan Akademik : Lektor
Jabatan : Dosen Pembimbing II

Dengan ini menyatakan bahwa mahasiswa yang tersebut di bawah ini telah menyelesaikan bimbingan Tugas Akhir / Skripsi :

Nama : Muhammad Aminuddin Najib Nama : Muhammad Naufal Widodo
NIM : 3.02.015.04184 NIM : 3.02.015.04199

Judul : Design and Analysis of Steel Box Girder for Highway Bridge

Dengan tahapan sebagai berikut :

No	Tahapan	Tanggal
1	Penunjukan dosen pembimbing	26 November 2018
2	Pengumpulan data	29 November 2018
3	Penyusunan laporan	01 Desember 2018 – 31 Januari 2019
4	Selesai laporan	01 Februari 2019
5	Seminar Tugas Akhir	08 Februari 2019

Demikian Berita Acara Bimbingan Tugas Akhir / Skripsi ini dibuat untuk diketahui dan dipergunakan seperlunya oleh pihak-pihak yang berkepentingan

Pembimbing I

Ir. Gatot Rusbintardjo, M.R.Eng.Sc., Ph.D.

Pembimbing II

Ari Sentani, ST., MSc.



Mengetahui,
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PLAGIARISM STATEMENT

The undersigned below:

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Department : Civil Engineering

Hereby declare this our Final Assignment is entitled: **DESIGN AND ANALYSIS OF STEEL BOX GIRDER FOR HIGHWAY BRIDGE** is a scholarly work free from plagiarism. If later there is proven plagiarism from this final assignment, then I am willing to accept section in accordance with applicable legislation.

Semarang, March 5th 2019

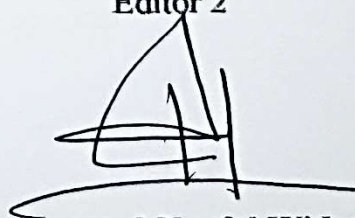
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Editor 1



Muhammad Aminuddin Najib

Editor 2



Muhammad Naufal Widodo

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The undersigned below:

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2. Muhammad Naufal Widodo (30201504199)
TITLE : Design and Analysis of Steel Box Girder for Highway Bridge

This Final Assignment is the result of my own original research, thought and presentation. We do not include without recognition material – material that has been previously published or written by someone else, or an ingredient that has been submitted for a degree or diploma at the Sultan Agung Islamic University of Semarang or other universities.

In the future there are deviations and untruths in this statement, then I am willing to accept academic sanctions in accordance with the regulations that apply at Sultan Agung Islamic University of Semarang.

Semarang, March 5th 2019

By:

Editor 1



Muhammad Aminuddin Najib

Editor 2



Muhammad Naufal Widodo

MOTTO

“Because in fact after the difficulty there is convenience (5) in fact after the difficulty there is convenience (6) then when you have finished something of an affair, work hard on other matters (7) and only to your god should you hope (8)”.

(QS. Al Insyirah: 5-8)

“Yes my rabb, lay it for me on my chest and make it easy for me my affairs and release the rigidity from my tongue so they understand my words”.

(QS. Thoha: 25-28)

“On this day every soul be rewarded with what it earned, no one harmed today. Allah is swift at reckoning”.

(QS. Al Ghafir: 17)

DEDICATION

Bismillahirrahmanirrahiim. Thanks the author to Allah SWT, thanks to His grace and guidance the author can complete this final assignment. Prayer and greetings were poured out on the Prophet Muhammad, his family, and friends. I dedicated this Final Assignment to:

1. A very special expression of thanks and appreciation from the author with the humble and respectfulness of the two beloved parents Mrs. Fatina Ardi, ST., and Mr. Imam Widodo, ST.
2. My brothers Muhammad Alwan Dwi Widodo, my sister Reika Aprilia Putri Ardina, for all of their love.
3. My study supervisor Mr. Ir. Gatot Rusbintardjo, M.R.Eng.Sc., Ph.D., and Mr. Ari Sentani, ST., MSc., thank you for his encouragement, guidance, criticism, friendship, advice, and motivation. Without their continued support and interest, this final assignment report would not have been the same as presented here.
4. Mr. and Mrs. Lecturer Faculty of engineering who have provided their knowledge to the author. Hopefully, the knowledge that the author has obtained can be useful in the future.
5. I also would like thank Muhammad Aminuddin Najib as my partner, for all that we have been through together.
6. Thanks to all of my friends in Departement of Civil Engineering 2015 especially class C for their support.
7. All members of Subur Residence (Lutfi, Ilham, Minyak, Joko, Kevin, Juyan, Wicak, Najib, and Khoirul) for their patience, prayers, and understanding during this study were always a blessing.

Muhammad Naufal Widodo

NIM: 3.02.015.04199

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1. A very special expression of thanks and appreciation from the author with the humble and respectfulness of the two beloved parents Mrs. Dra. Hj. Nur Izzah (Alm), and Mr. Drs. H. Faidhul Khaqim
2. My brother Ahmad Wahib Luthfi, and my sister Farida Fikriyati Faiz. A.md.Keb, for their love
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Muhammad Aminuddin Najib

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Bismillahirrahmanirrahiim. Thanks the author to Allah SWT, thanks to His grace and guidance the author can complete this final assignment with the tittle “Design and Analysis of Steel Box Girder for Highway Bridge” to fulfill requirements in completing undergraduate education In the Department of Civil Engineering Faculty of Engineering Sultan Agung Islamic University.

Furthermore, the author would like to convey infinite gratitude to all parties who helped smooth the writing this final assignment, both in the form of moral and material encouragement. Because the author believes without help and support, it was difficult for the writer to finish writing this description. In addition, allow the author to express his gratitude and appreciation to:

1. Dean of the Engineering Faculty of UNISSULA Bapak Ir. H. Rachmat Mudiyono, MT., Ph.D.,
2. Head of Civil Engineering Department, Engineering Faculty of UNISSULA Mr. Ari Sentani, ST, MSc., for permission, to take final assignment as the requirement for reaching Bachelor Degree in Civil Engineering in Engineering Faculty of UNISSULA.
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Finally, the author hopes that the good deeds of all parties that have helped the writer in completing this final assignment get reward form the mercy of Allah SWT. Hopefully what has been written in this final assignment can be beneficial for all parties. Amiin ya Robbal ‘alamin.

Semarang, February 2019

Muhammad Naufal Widodo

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Muhammad Aminuddin Najib

