

ANALYSIS AND DESIGN OF A RING-TYPE VIEWDECK WITH  
FOOTBRIDGE AT NINYOY AQUINO CIRCLE -

TAGAYTAY CITY

Design Project

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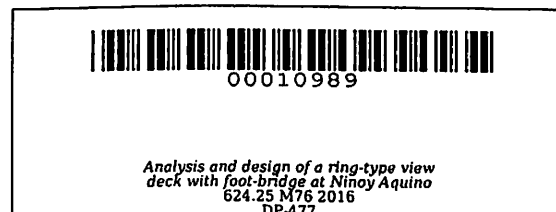
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**ANALYSIS AND DESIGN OF A RING-TYPE VIEWDECK WITH  
FOOTBRIDGE AT NINOY AQUINO CIRCLE –  
TAGAYTAY CITY**

**Undergraduate Design Project  
Submitted to the Faculty of the  
College of Engineering and Information Technology  
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Bachelor of Science in Civil Engineering**



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## **ABSTRACT**

**MONTOYA, JAN ARIES B. and NOVELO, RYAN S. Analysis and Design of a Ring-Type View Deck with Footbridge at Ninoy Aquino Circle - Tagaytay City.** Undergraduate Design Project. Bachelor of Science in Civil Engineering. Cavite State University Indang, Cavite. April 2016. Adviser: Engr. Marcelino A. Dagasdas Jr.

The “Analysis and Design of a Ring-Type Footbridge with View Deck at Ninoy Aquino Circle-Tagaytay City” was conducted at Cavite State University – Main Campus from November 2015 to April 2016.

The study aimed to prepare a design of a steel footbridge with view deck for the Ninoy Aquino Circle-Rotunda at Tagaytay City. This study included four footbridges intersecting in a circular view deck which aims to develop emphasis to the monument and to bring comfort to the pedestrian crossers in the area. The study included the architectural plans, structural details and an estimate of the proposed structure which amounted to Php 29,705,585.00.

It was determined that the footbridge would be beneficial especially in the long term run and that a cross-shaped footbridge design with a circular intersection would fit the proposed location pretty well. It was also concluded that the project would serve its’ purpose of giving ease to the pedestrian crossers, give emphasis to the monument through the footbridge’s view deck and at the same time give off a nice aesthetic feel to the surroundings thus improving the existing beauty of the location.

As the technology advances, better engineering programming and analysis softwares become public and usable even by students. Therefore, the authors would like to challenge the next researchers to propose more complicated design projects regarding circular or other irregularly-shaped structures using different types of truss framings and bridge patterns.

## TABLE OF CONTENTS

	Page
<b>BIOGRAPHICAL DATA.....</b>	<b>iii</b>
<b>ACKNOWLEDGMENT.....</b>	<b>v</b>
<b>ABSTRACT.....</b>	<b>xi</b>
<b>LIST OF APPENDIX TABLES.....</b>	<b>xv</b>
<b>LIST OF APPENDIX FIGURES.....</b>	<b>xvi</b>
<b>LIST OF APPENDICES.....</b>	<b>xviii</b>
<b>INTRODUCTION.....</b>	<b>1</b>
Statement of the Problem.....	2
Objectives of the Study.....	3
Significance of the Study.....	3
Time and Place of the Study.....	4
Scope and Limitation of the Study.....	4
Definition of Terms.....	5
<b>REVIEW OF RELATED LITERATURE.....</b>	<b>8</b>
<b>METHODOLOGY.....</b>	<b>11</b>
Data Gathering.....	11
Ocular Inspection.....	11
Site Inspection .....	11
Site Surveying.....	11

Structural Specification.....	11
Establishment of Load to Be Carried.....	12
Architectural Design of the Project.....	12
Structural Design of the Project.....	12
Design of Steel.....	12
Design of Base plate, Anchor Bolts and Pedestal.....	15
Design of Footing.....	16
Design of Steel Column.....	17
Cost Estimate of Project.....	18
<b>RESULTS AND DISCUSSION.....</b>	<b>19</b>
Gathering of Important Information.....	19
Surveying of the Proposed Location.....	20
Development Plan Layout.....	21
Analysis of Individual Structural Members.....	21
Design Computation and Analysis.....	22
Cost Estimate.....	24
<b>SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.....</b>	<b>25</b>
Summary.....	25
Conclusions.....	27
Recommendations.....	29
<b>REFERENCES.....</b>	<b>31</b>
<b>APPENDICES.....</b>	<b>33</b>

## LIST OF APPENDIX TABLES

Appendix Table		Page
1	Minimum uniform and concentrated live loads.....	56
2	Concrete proportions.....	58
3	Quantity of cement and sand for mortar and plaster in cu. m.....	58
4	Quantity of cement and sand for CHB mortar per square meter.....	59
5	No. 16 G.I. tie wire for CHB reinforcement per square meter.....	59
6	Beam member end forces from (kN-m).....	59
7	Column member end forces (kNm).....	60
8	Support reactions for mat foundation.....	60
9	Support reactions for combined footing.....	60

## LIST OF APPENDIX FIGURES

Appendix Figure		Page
1	Perspective.....	35
2	Location map.....	36
3	Proposed location.....	37
4	Proposed plan.....	38
5	Front elevation.....	39
6	Side elevation.....	40
7	Ground level.....	41
8	Deck.....	42
9	Detail of section.....	43
10	Detail of base plate.....	44
11	Detail of pedestal and anchor bolts.....	44
12	Combined footing sectional detail.....	45
13	Top steel arrangement for combined footing.....	46
14	Mat footing sectional detail.....	47
15	Top steel arrangement for mat footing.....	48
16	Typical hand rail and connection detail.....	49
17	Hand rail section thru A-A.....	50
18	Framing plan for short plan.....	51



<b>Appendix Figure</b>		<b>Page</b>
19	Framing plan for long plan.....	52
20	Framing plan for circular deck.....	53
21	Foundation plan.....	54

## LIST OF APPENDICES

Appendix		Page
1	Architectural and structural plan of proposed building.....	34
2	List of tables.....	55
3	Design computation of structural member.....	61
4	Cost estimate .....	128
5	STAAD program.....	131
6	Construction specification .....	147

# **ANALYSIS AND DESIGN OF A RING-TYPE VIEW DECK WITH FOOTBRIDGE AT NINOY AQUINO CIRCLE – TAGAYTAY CITY**

**Jan Aries B. Montoya  
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An undergraduate design project manuscript submitted to the faculty of Department of Civil Engineering, College of Engineering and Information Technology, Cavite State University, Indang, Cavite in partial fulfillment of the requirements for the degree of Bachelor of Science in Civil Engineering with Contribution No. CEIT – 2015–16–2–027, Prepared under the supervision of Engr. Marcelino A. Dagasdas Jr.

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## **INTRODUCTION**

A footbridge or a pedestrian bridge is a bridge designed for pedestrians and in some cases cyclists, animal traffic and horse riders, rather than vehicular traffic. Footbridges complement the landscape and can be used decoratively to visually link two distinct areas or to signal a transaction. A pedestrian bridge, also called a footbridge, is simply a bridge, whether over land or water, that is designed for foot traffic. Often, footbridges are constructed to give pedestrians a safe way to cross from one side of a busy road to the other. There are also pedestrian bridges built over railroad tracks, rivers, parking lots, canyons and other areas where walking could be perilous or even impossible.

Tagaytay City has a total land area of 66.1 km<sup>2</sup> (26 sq mi) which represents about 4.37% of the total area of the Province of Cavite. It lies within 120° 56' longitude and 14° 6' latitude and overlooks Manila Bay to the North, Taal Volcano and Lake to the south