CONTENTS

CHAPTER N	D. TITLE	PAGE NO.
	LIST OF FIGURES	III - VI
	LIST OF TABLES	VII - IX
	LIST OF PLATES	X - XI
	PRELUDE	XII - XIII
Chapter 1	INTRODUCTION	1-10
	Background Information	1
	Aims and Objectives	3
	Methodology	5
	Study Area	6
	Communication	. 8
	Physiography	8
	Climate	9
	Terrain Resources	10
Chapter 2	LITHO-TECTONIC SETUP	11 - 63
	General Background	11
	Geological Setup	13
	Tectonic Framework of Kumaun Himalayas	20
	Structural Style	25
	Geological Setup of Tawaghat – Jipti Route Corridor	27
	Structural Analysis	57
Chapter 3	TERRAIN CHARACTERISTICS	64 -75
	Physiography	64
	Drainage Characteristics	65
	Landform Features	68
Chapter 4	LANDSLIDE INVESTIGATION	76 - 128
	Engineering Geologic Mapping of Mangti Landslide	79
	Rock and Slope Mass Characterization	87
	Field Instrumentation	102
	Landslide Kinematics	121
Chapter 5	LABORATORY STUDIES	129 - 147
	Sampling	130
	Engineering Characteristics of Soil	130
	Engineering Characteristics of Rock	139

Chapter 6	LANDSLIDE TRIGGERS	148 - 166
	Rainfail	149
	Seismicity	158
	Anthropogenic Factors	164
Chapter 7	SLOPE STABILITY MODELING; MANGTI LANDSLIDE	167 - 197
	Background and History	167
	Solution Techniques	168
	Slope Stability Modeling with GeoStudio-	
	GeoSlope Standard Software	173
	Slope Stability Modeling Incorporating Reinforcement and	
	Structural Measures	189
Chapter 8	LANDSLIDE HAZARD ZONATION AND REMEDIATIONS	198 - 257
	Remote Sensing and GIS in Landslide Hazard Zonation	200
	Landslide Hazard Zonation of Tawaghat – Jipti Route Corridor	201
	Empirical Modeling	206
	Generation of Thematic Layers and Programme Structure	208
	Accuracy Estimation	234
	Landslide Remediations	237
	Recommended Landslide Mitigatory Measures	241
	EPILOGUE	256
	REFERENCES	258 - 270
	ANNEXURES (1 – 5) APPENDIX (1 – 2)	