CIVL 1112 Civil Engineering Analysis **Name:** _____
Detention Pond Project Report - 2026

Section	Topic		Check
Introduction	Background	Project scenario	
		Project Coordinator	
		Why is stromwater an issue?	
		Why is a pond important?	
	Objectives	At least 50,000 gallons	
		Balanced cut-and-fill cost	
		Low total project cost	
	Design Constraints	At least 50,000 gallons	
		Embankment side slopes	
		Embankment crest	
		Pond water level	
		Diagram of embankment constraints	
		A diagram indicating slopes	
		A diagram indicating crest width	
		Soil compaction	
		Erosion protection	
		Embankment spillway	
		Earthwork unit costs	
		Erosion control unit costs	
Methods	Original topographic model	Source of data	
		Grid size	
		Topographic model	
		Contour lines (use correct contour value)	
		North arrow	
		Street markings and landmarks	
	Cut-and-fill	Refining grid spacing	
		Interpolation of elevations	
		Proposed elevations	
		Cut-and-fill elevations	
		Cut-and-fill sign convention	
		Adjustment of fill elevations for compaction	
		Compaction elevation equation	
		Cut-and-fill volume equation	
		Definition of total cut	
		Definition of total fill	
		On-site cost equation	
		Off-site cut cost equation	
		Off-site fill cost equation	
	Pond Volume	Proposed pond water elevation	
		Pond volume equation	
	Pond Design	Topographic features	
		Pond location on site	
		Model for computing pond volume	
		Excel Goal Seek for pond volume	
		>50,000 gallons	
		Model for balancing cut-and-fill	
		Goal Seek for balancing cut-and-fill	
		Balanced cut-and-fill	
		Total cut and fill values	
		Spillway location	
		Pond slope values	
		Computation of erosion area	
		Value of erosion area	
	Budget	Values for total cut and total fill	
		Cut-and-fill on-site cost	
		Cut-and-fill off-site cost	
		Erosion control cost	
		Total cost	
	Proposed topographic model	Topographic model	
		Contour lines (use correct contour value)	
		Indicate Spillway	
		North arrow	
		Street markings and lanmarks	
Discussion	Strengths/weaknesses	Strength of design	
		Weakness of design	

Total of 65 points