



Required information

		Detailed estimate ±5% range	Definitive estimate ±10% range	Preliminary estimate ±20% range	Study estimate ±30% range	Order-of- magnitude estimate > ±30% range
Site	Location	•	•	•	•	
	General description	•	•	•		
	Soil bearing	•	•	•		
	Location & dimensions R.R., roads, impounds, fences	•	•	•		
	Well-developed site plot plan & topographical map	•	•			
	Well-developed site facilities	•				
Process flow sheet	Rough sketches				•	
	Preliminary			•		
	Engineered	•	•			
Equipment list	Preliminary sizing & material specifications			•	•	
	Engineered specifications	•	•			
	Vessel sheets	•	•			
	General arrangement					
	(a) Preliminary		•	•		
	(b) Engineered	•				
Building and structures	Approximate sizes & type of construction			•	•	
	Foundation sketches		•	•		
	Architectural & construction	•	•	•		
	Preliminary structural design			•		
	General arrangements & elevations	•	•			
	Detailed drawings	•				
Utility requirements	Rough quantities (steam, water, electricity, etc.)				•	
	Preliminary heat balance			•		
	Preliminary flow sheets			•		
	Engineered heat balance	•	•			
	Engineered flow sheets	•	•			
	Well-developed drawings	•				
Piping	Preliminary flow sheet & specifications			•	•	
	Engineered flow sheet	•	•			
	Piping layouts & schedules	•				
Insulation	Rough specifications			•		
	Preliminary list of equipment & piping to be insulated		•			
	Insulation specifications & schedules	•	•			
	Well-developed drawings or specifications	•				
Instrumentation	Preliminary instrument list			•		
	Engineered list & flow sheet	•	•			
	Well-developed drawings	•				
Electrical	Preliminary motor list - approximate sizes			•	•	
	Engineered list & sizes	•	•			
	Substations, number & sizes, specifications	•	•	•		
	Distribution specifications	•				
	Preliminary lighting specifications			•		
	Preliminary interlock, control, & instrument wiring specs.		•			
	Engineered single-line diagrams (power & light)	•	•			
	Well-developed drawings	•				
Man-hours	Engineering & drafting	•	•	•	•	
	Labor by craft	•				
	Supervision	•				
Project scope standard processes					•	