

FEED vs DETAIL ENGINEERING DELIVERABLES

Discipline	Deliverable/activity	FEED	DETAIL
General	Basic Engineering Design Data	x	x
Safety	HAZOP	x	x
	HAZID	x	x
	QRA	If required by Authorities	x
	Hazardous area classification drawings	IFD	IFC
	Fire water demand calculation	Preliminary	final
	Fire & Gas detection layout		x
	Fire water network layout drawing	IFD	IFC
	Safety philosophy	x	x
Process	Environment impact Assessment	x	x
	Process Flow Diagrams (PFDs)	x	x
	Heat & Material Balances (HMB)	x	x
	Equipment list	x	x
	P&IDs	IFD	IFC
	P&IDs - packaged units	Preliminary (main principles)	x
	Process description	x	x
	Operating manual		x
	Equipment Process Data Sheets	x	x
	Instrument Process Data Sheets	Control & ON/OFF valves, analysers, flowmeters, PSVs	all
	Packaged units duty specifications	x	x
	Emergency shutdown philosophy	x	x
	Causes & Effects diagrams	x	x
	Heat exchangers thermal design & data sheets	x	x
Mechanical	Utility balance	preliminary	final
	Flare study	relief load summary	complete report
	Equipment specifications	x	x
	Equipment mechanical design	x	x
	Equipment Mechanical Data Sheet	x	x
	Requisition for inquiry	For main equipment	For all
	Requisition for purchase	For LLI	For all
Plant Layout	Technical Bid Tabulation	For main equipment	For all
	Vendor follow-up		x
	General Plot Plan	x	x
	Unit Plot Plan	IFD	IFC
Piping Installation	3D model review	Equipment + main process lines only	x
	Piping routing drawings	x	
	Piping studies and Layout drawings		x
	Piping General Arrangement drawings		x
Piping/Material	Isometric drawings		x
	General specification for piping materials	x	x
	Piping classes summary	x	x
	Material selection and corrosion control report	x	x
	Special piping items specification		x
	Piping Material Classes Specifications	x	x
	Standard drawings	design	installation
Piping/Stress		from P&ID (item count) and Plot Plan/Piping routing drawings (lengths)	from Piping layout studies/3D model
	Piping MTO		
	Design specification (piping stress design basis)	x	x
	Piping stress calculations	Simplified calculation of critical lines with impact on Plant Layout	x
	Piping support drawings and list		x

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Instrumentation & Control	Control system specification	x	x
	Instrument data sheets	ON/OFF valves, control valves, PSVs, flowmeters, analysers	all
	Instrumentation & Automation design specification	x	x
	System architectural drawing	x	x
	Systems I/O sizing	x	x
	Instrument list	x	x
	Material Requisitions		x
	Material Take-Off		x
	Cable schedule		x
	Loop diagrams		x
	Hook-up drawings	standard	assigned
	Control and technical rooms/buildings Equipment Arrangement drawings	Preliminary (size of building only)	x
	Cable routing drawings	Main routings only	all routings
			for additional soil investigations
Civil	Soil investigation specification	x	
	Underground networks drawings	General (1:200 scale)	Area (1:50 scale)
	Design specifications	x	x
	Civil works specifications	Main	all
	Guide / outline drawings	If needed to perform MTO	
	Design drawings		x
	Calculation & calculation notes		x
	Drainage network calculation	x	x
	Concrete/steel standard drawings	design	construction
	Buildings architectural drawings	x	x
	Material take-off	preliminary	x
Electrical	One Line Diagram	General	Switchgear's
	Electrical consumers list	preliminary	final
	Equipment general specification	x	x
	Electrical design specification	x	x
	Equipment data sheet	HV, MV	LV
	Material Requisitions		x
	Standard drawings	design	installation
	Specification for bulk		x
	MTO	preliminary (for bulk: cables only)	all
	Cable schedule	preliminary	final
	Substation Equipment arrangement drawings	preliminary (size of sub-station only)	x
	Cable routing drawings	Main routings only	all routings
	Calculations	Some	All
Painting, Coating, Insulation	Specifications	x	x
	Standard drawings		x

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