

TABLE 1. Merged

Merge Selection		SR		Z CR	
		HP	LP	HP	LP
Z → ll	# loose leptons, p _T ^l > 30 GeV	2			
	Opposite charge μ, no requirement on electron charge				
	Z mass window cut				
W/Z → J	# large-R jets	≥1			
	D ₂ cut	Pass	Fail	Pass	Fail
	WZ mass window cut	Pass		Fail	
	# of associated VR track jets b-tagged	For Z→J:≤1(=2) or untagged (tagged) category			
Topology cut	min(p _{T,l} ,p _{T,J})m _{WV}	>0.35(0.25) for DY/ggF (VBF) category			
Top-quark veto	# of b-taggd jets outside of large R-jet	0			
Pass VBF selection		No (yes) for DY/ggF (VBF) category			

TABLE 2. Resolved

Resolved Selection		SR	Z CR
Z → ll	# loose leptons, p _T ^l > 30 GeV	2	
	Opposite charge μ, no requirement on electron charge		
	Z mass window cut		
W/Z → jj	# small-R jets	≥2	
	Leading jet p _T	>60 GeV	
	Sub-leading jet p _T	>30 GeV	
	Z → q $\bar{q}$	70 < m _{jj} < 105 GeV	50 < m _{jj} < 62 GeV or
	W → q $\bar{q}$	62 < m _{jj} < 97 GeV	105 < m _{jj} < 150 GeV
	# of b-tagged jets	For Z→jj:≤1(=2) or untagged (tagged) category	
Topology cuts	Δφ(j,l)	>1.0	
	Δφ(j,E _{miss} ^T)	>1.0	
	Δφ(j,j)	>1.5	
	Δφ(l,E _{miss} ^T)	>1.5	
	min(p _{T,l} ,p _{T,jj})m _{WV}	>0.35 for DY/ggF (VBF) category	
Top-quark veto	# of additional b-tagged jets	0	
Pass VBF selection		No (yes) for DY/ggF (VBF) category	