

Global selection

—

$$p_{T1} > 25 \text{ GeV}, p_{T2} > 10 \text{ GeV (2016) or } 13 \text{ GeV}$$

$$p_T^{\text{miss}} > 20 \text{ GeV}, p_T^{\ell\ell} > 30 \text{ GeV}, m_{\ell\ell} > 12 \text{ GeV}$$

$e\mu$  pair with opposite charge

0-jet ggH category

$$\ell^\pm \ell^\mp, p_{T2} \leq 20 \text{ GeV}$$

$$m_T^H > 60 \text{ GeV}, m_T(\ell_2, p_T^{\text{miss}}) > 30 \text{ GeV}$$

$$p_{T2} \leq 20 \text{ GeV}$$

No jet with  $p_T > 30 \text{ GeV}$   
No b-tagged jet with  $p_T > 20 \text{ GeV}$

Top quark CR

As SR but with no  $m_T^H$  requirement,  $m_{\ell\ell} > 50 \text{ GeV}$   
At least 1 b-tagged jet with  $20 < p_T < 30 \text{ GeV}$

 $\tau\tau$  CR

As SR but with  $m_T^H < 60 \text{ GeV}$   
 $40 < m_{\ell\ell} < 80 \text{ GeV}$

1-jet ggH category

$$\ell^\pm \ell^\mp, p_{T2} \leq 20 \text{ GeV}$$

$$m_T^H > 60 \text{ GeV}, m_T(\ell_2, p_T^{\text{miss}}) > 30 \text{ GeV}$$

$$p_{T2} \leq 20 \text{ GeV}$$

1 jet with  $p_T > 30 \text{ GeV}$   
No b-tagged jet with  $p_T > 20 \text{ GeV}$

Top quark CR

As SR but with no  $m_T^H$  requirement,  $m_{\ell\ell} > 50 \text{ GeV}$   
At least 1 b-tagged jet with  $p_T > 30 \text{ GeV}$

 $\tau\tau$  CR

As SR but with  $m_T^H < 60 \text{ GeV}$   
 $40 < m_{\ell\ell} < 80 \text{ GeV}$

2-jet ggH category

SR

$$m_T^H > 60 \text{ GeV}, m_T(\ell_2, p_T^{\text{miss}}) > 30 \text{ GeV}$$

$$p_{T2} \leq 20 \text{ GeV}$$

At least 2 jets with  $p_T > 30 \text{ GeV}$   
No b-tagged jet with  $p_T > 20 \text{ GeV}$   
 $m_{jj} < 65 \text{ GeV}$  or  $105 < m_{jj} < 120 \text{ GeV}$

Top quark CR

As SR but with no  $m_T^H$  requirement,  $m_{\ell\ell} > 50 \text{ GeV}$   
At least one b-tagged jet with  $p_T > 30 \text{ GeV}$

 $\tau\tau$  CR

As SR but with  $m_T^H < 60 \text{ GeV}$   
 $40 < m_{\ell\ell} < 80 \text{ GeV}$