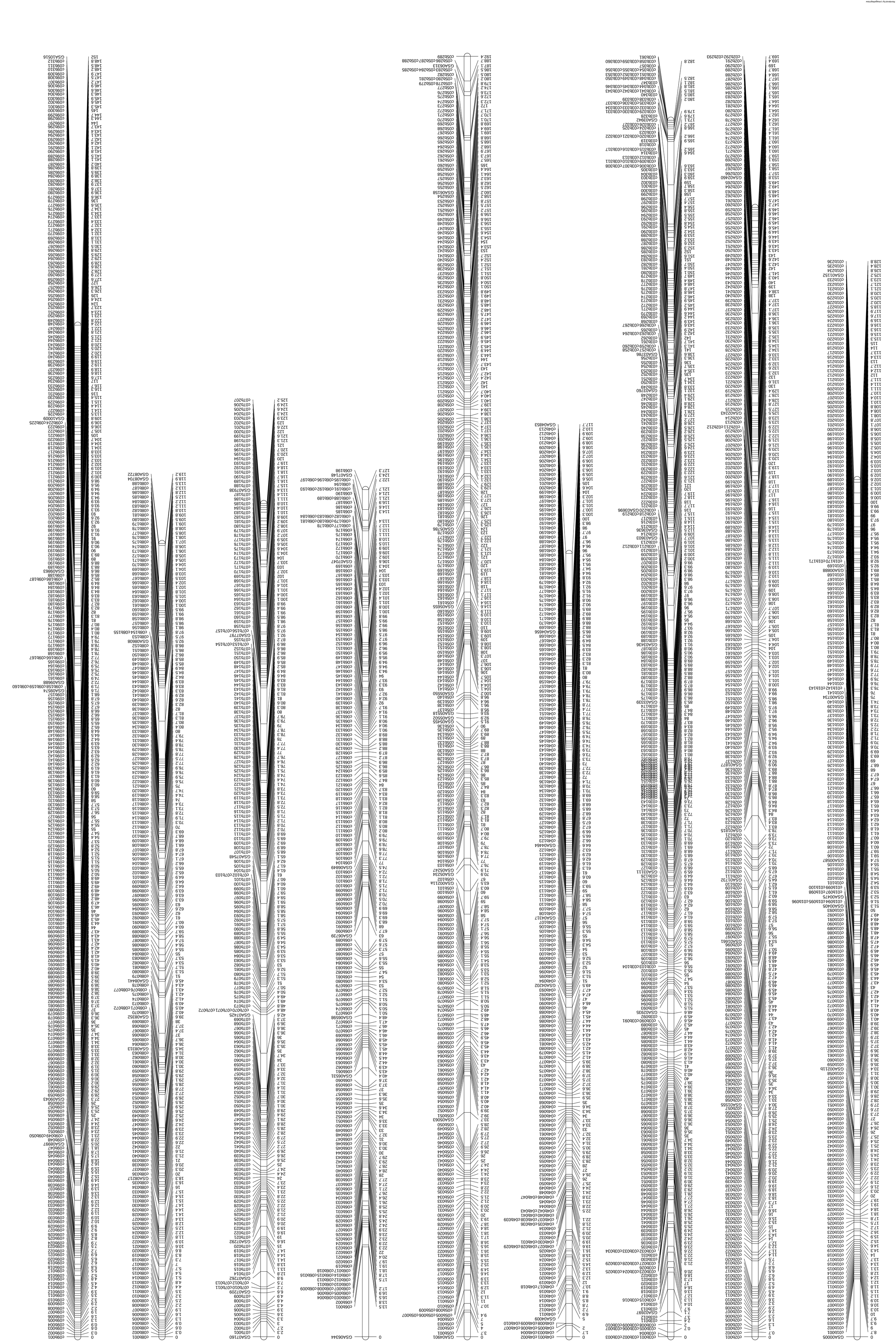derived by LinkageMapView