

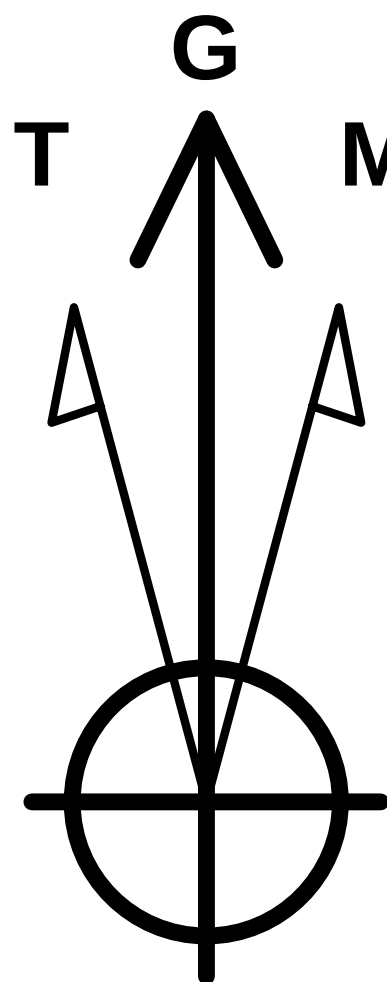
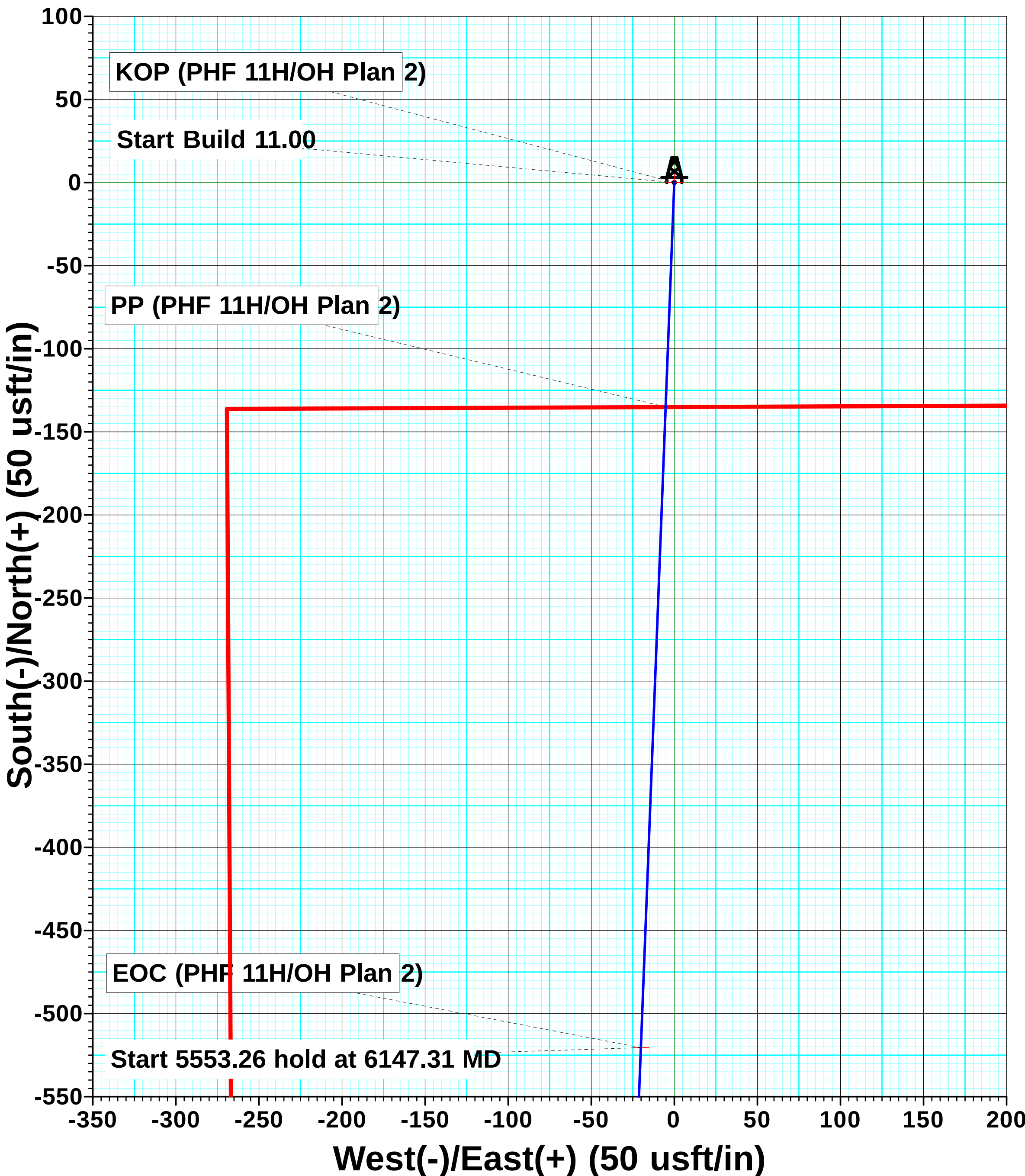
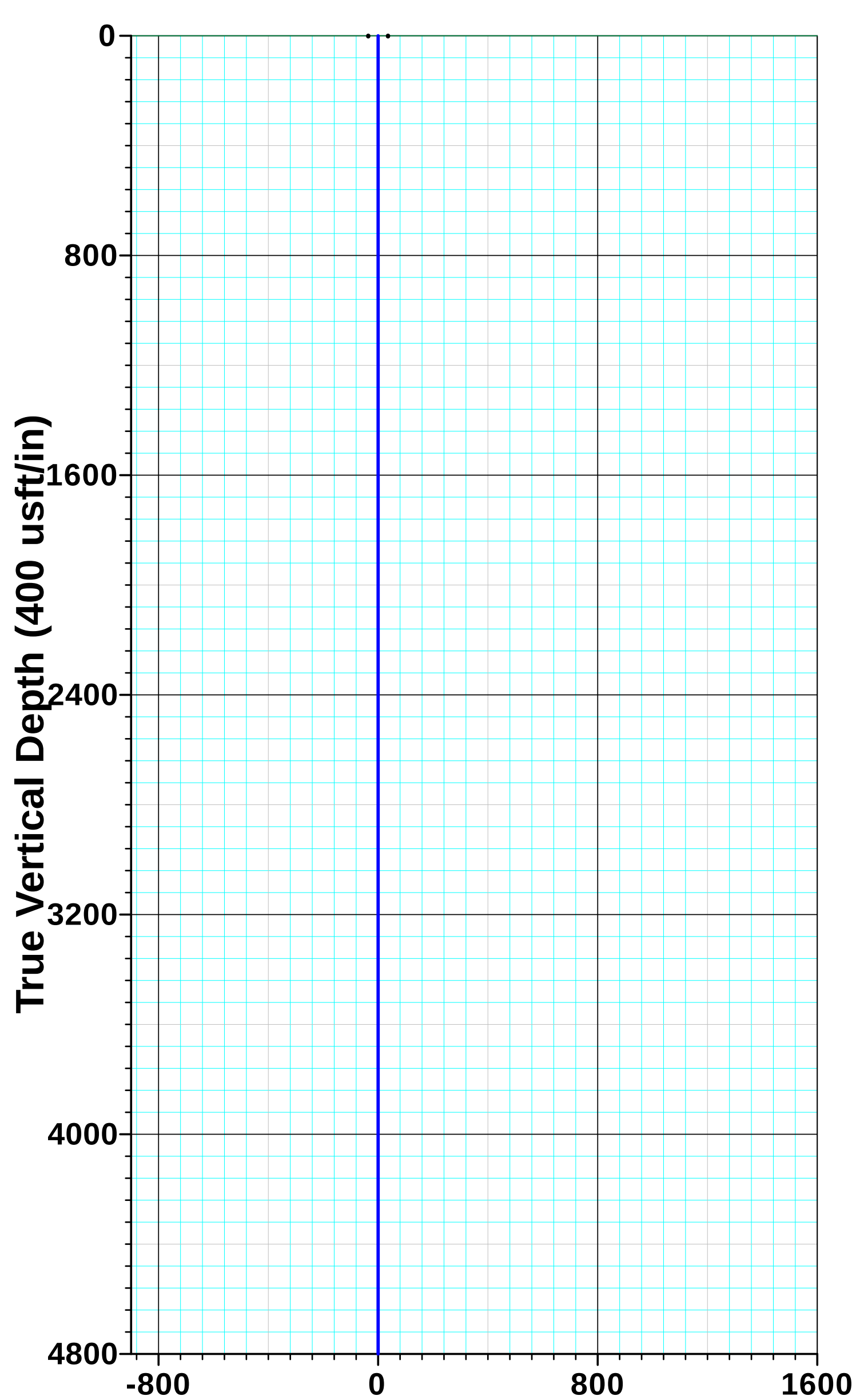


Section Details											
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	5329.13	0.00	0.00	5329.13	0.00	0.00	0.00	0.00	0.00		
3	6147.31	90.00	182.21	5850.00	-520.48	-20.12	11.00	182.21	520.87		
4	11700.57	90.00	182.21	5850.00	-6069.60	-234.60	0.00	0.00	6074.13	PBHL (PHF 11H/OH Plan 2)	

Ground Elevation:: 4170.00
RKB Elevation: KB @ 4186.00usft (United 43)

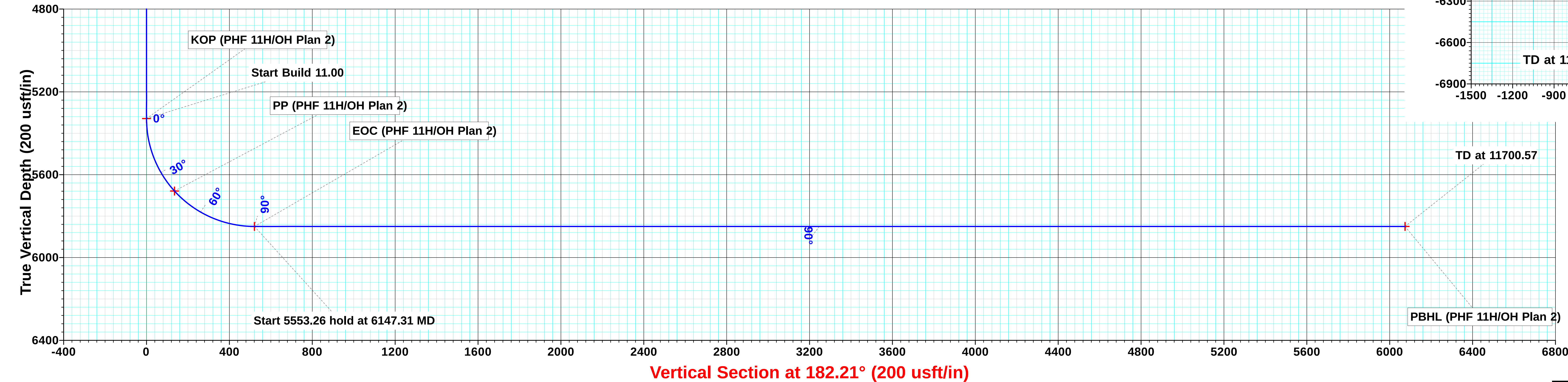
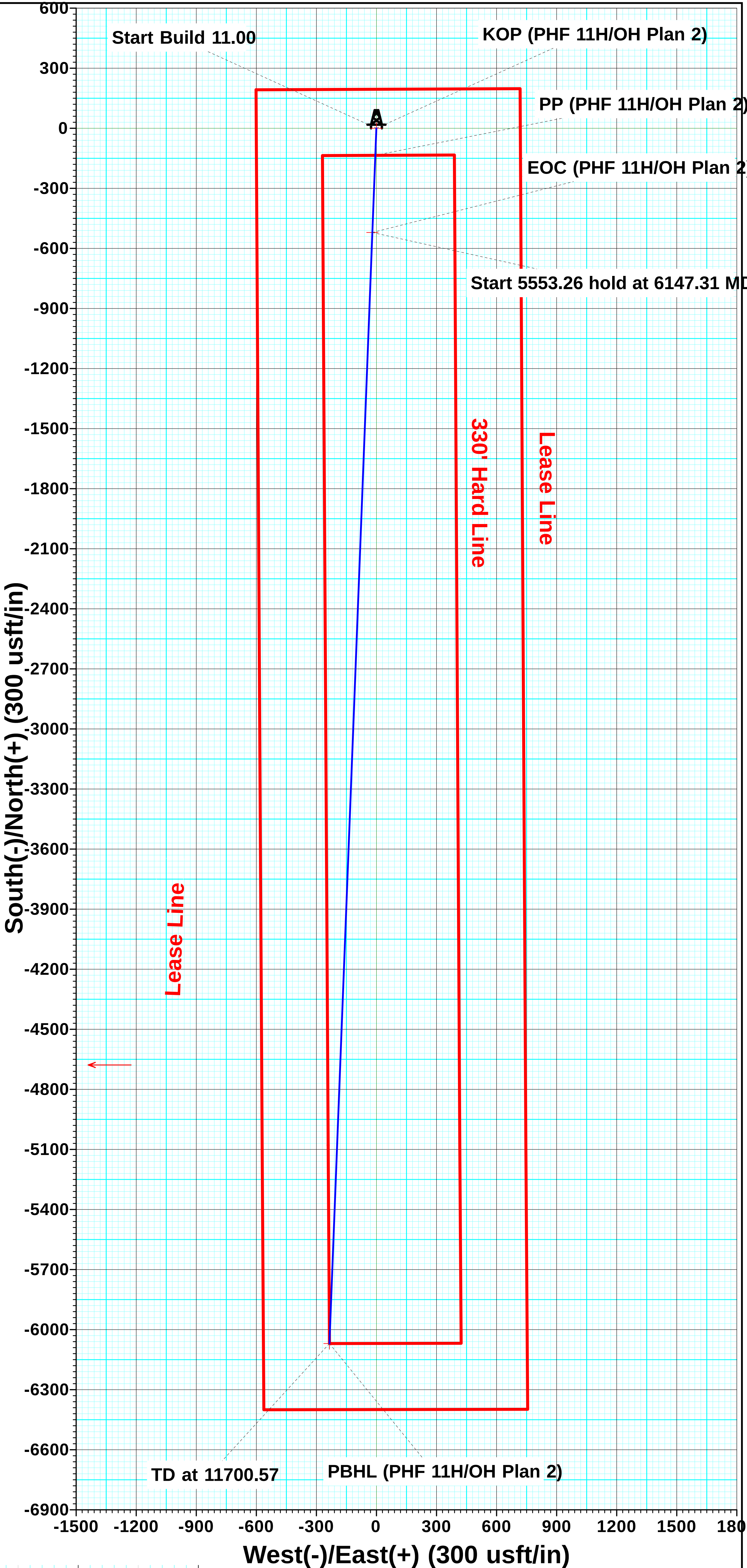
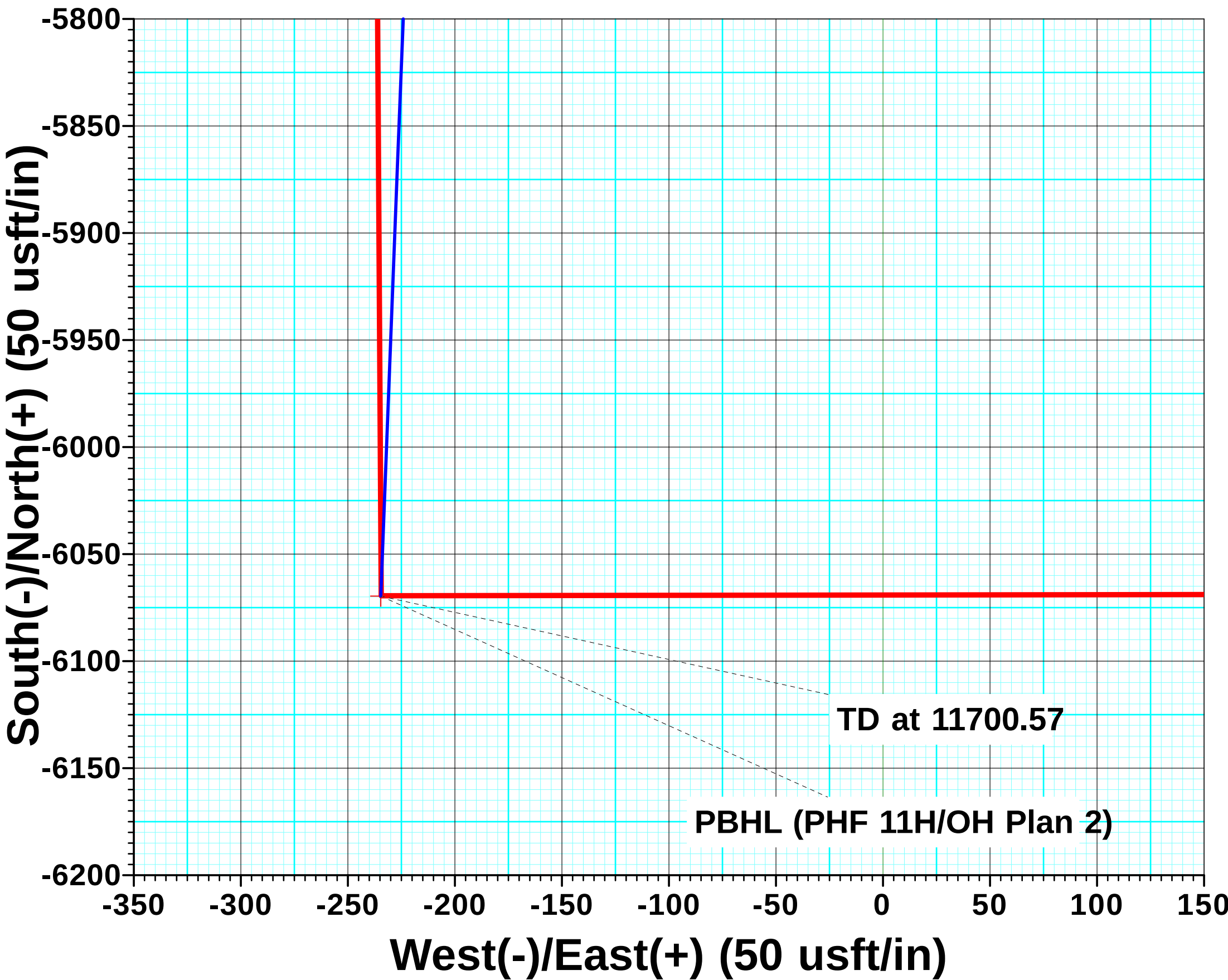
Northing 675514.10 Easting 681209.30 Latitude 32° 51' 20.450 N Longitude 103° 44' 35.649 W

COG Operating LLC
Project: Lea County, NM (NAD-27 2015)
Site: Pan Head Fee #11H
Well: SHL: 195' FNL, 600' FWL, Sec 11, T17S, R32E, Unit D
Wellbore: BHL: 989' FNL, 330' FWL, Sec 14, T17S, R32E, Unit D
Plan: Design #2 (SHL: 195' FNL, 600' FWL, Sec 11, T17S, R32E, Unit D/BHL: 989' FNL, 330' FWL, Sec 14, T17S, R32E, Unit D)



Azimuths to Grid North
True North: -0.32°
Magnetic North: 6.88°

Magnetic Field
Strength: 48405.1snT
Dip Angle: 60.63°
Date: 05/04/2016
Model: IGRF2015



Terra Directional Services LLC
3705 South County Road 1210, Midland, TX 79706
Phone: 432-618-1210

PROJECT DETAILS: Lea County, NM (NAD-27 2015)
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Local North: Grid