

WEST VIRGINIA EROSION AND SEDIMENT CONTROL

dep







PERMIT APPLICATION REQUIREMENTS

- Erosion and Sediment Control Plan: Over 3 acres disturbed , excluding pipelines and roads, must be certified by registered engineer.
- Contain a narrative and set of drawings.
- The narrative must describe a general sequence of events, how and when each construction phase (clearing and grubbing etc.) will occur and describe stabilization methods to be used and timeframes when.
- The plan view drawings show the location of all proposed erosion and sediment control BMP'S in a scale of (1"-100') or greater .

dep HORIZONTAL WELL PAD

Proposed Pad

Total cut : 689,588.1 C.F., 25,540.3 C.Y.
 Total fill: 726,067.8 C.F., 26,891.4 C.Y.
 Cut slope percent grade: 50.00%, slope ratio: 2:1
 Fill slope percent grade: 50.00%, slope ratio: 2:1
 Interior slope percent grade: 50.00% & 33.33%, slope ratio: 2:1 & 3:1
 Top of Pad elevation: 3161.0'
 Containment Berm: 6,487.5 C.F., 240.3 C.Y.

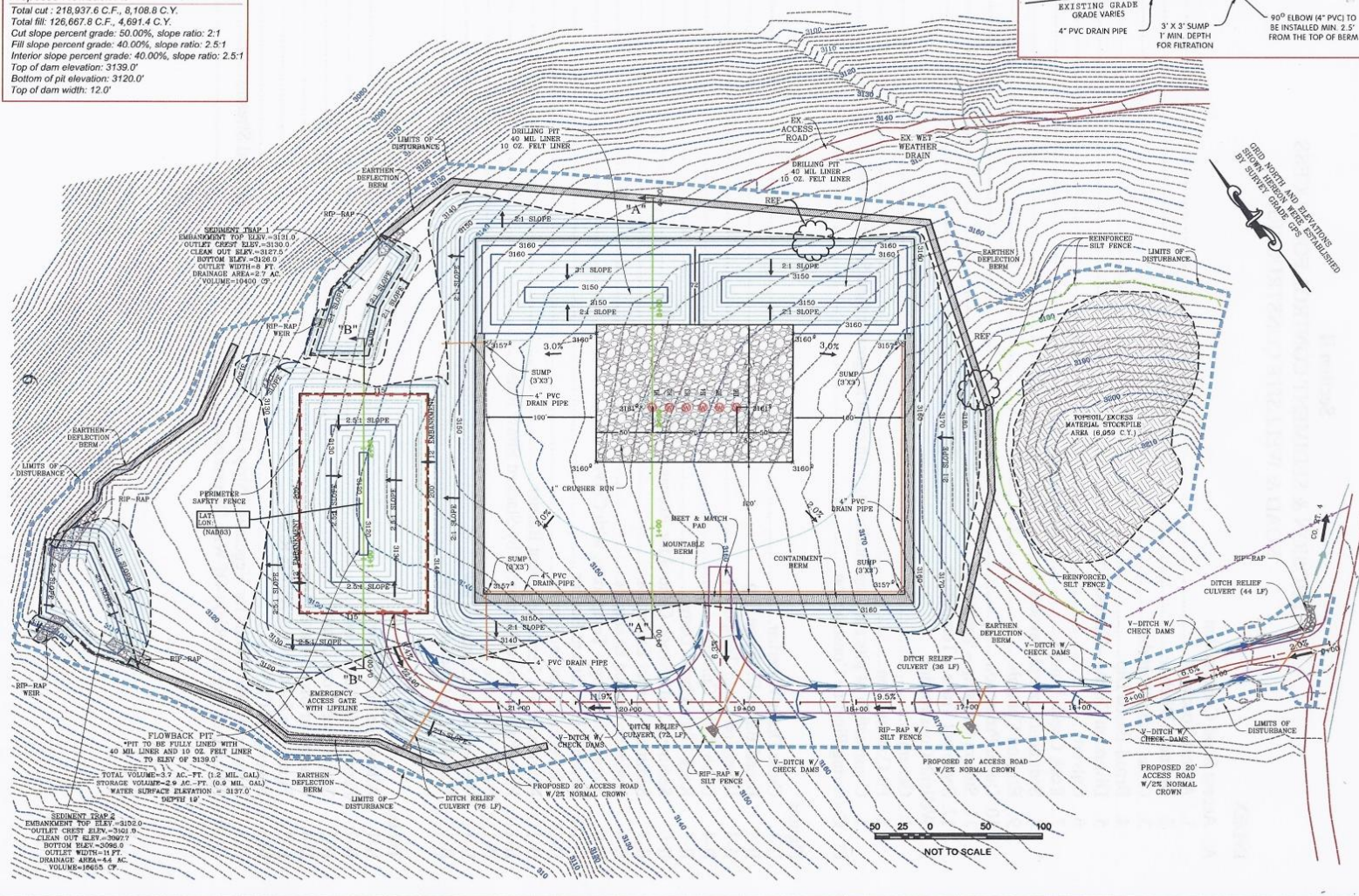
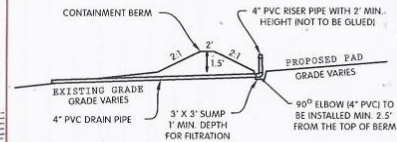
Proposed Flowback Pit

Total cut : 218,937.6 C.F., 8,108.8 C.Y.
 Total fill: 126,667.8 C.F., 4,691.4 C.Y.
 Cut slope percent grade: 50.00%, slope ratio: 2:1
 Fill slope percent grade: 40.00%, slope ratio: 2.5:1
 Interior slope percent grade: 40.00%, slope ratio: 2.5:1
 Top of dam elevation: 3139.0'
 Bottom of pit elevation: 3120.0'
 Top of dam width: 12.0'

EXAMPLE WELL PAD & FLOWBACK PIT DETAILS (PROPOSED WELLS NO.)

BERM TYPICAL

NOT TO SCALE



PERMIT APPLICATION REQUIREMENTS

- Site Construction Plan: For sites 3 ac. or more disturbed, excluding pipelines and roads, plans must be certified by a registered engineer.
- Includes a vicinity map locating the site in relation to the surrounding area and roads.
- Plan view of site on a scale of (1"-100') or greater, that provides existing topographic information on a contour interval that affords sufficient detail.
- Identifies proposed cut and fill areas with slope ratios.
- Includes cross-sections of length and width of the location with cut and fill volumes.



SEDIMENT

BARRIER@FILTER STRIP



SEDIMENT BARRIER



SEDIMENT BARRIER





GRIND STUMPS AND

BRUSH



CLEARING AND GRUBBING





SOIL STOCKPILING





SEDIMENT TRAP H2O

CONTROL





CULVERT @ LEVEL SPREADER





ROAD CONSTRUCTION





ROCK CHECKS H₂O CONTROL





SITE CONSTRUCTION CRITERIA:

- Clear all woody material, brush, and trees from the site keeping clearing to the minimum necessary for construction.
- Topsoil shall be removed from construction areas and stockpiled for reuse during reclamation.
- Fill material shall be clean mineral soil, free of roots, stumps, sod, large rocks, frozen soil etc.
- Fill material will be placed in lifts over the entire length of the fill. Lift thickness shall be as thin as the suitable random excavated material will allow, typically from 6 to 12 inches.
- Each lift shall be compacted to a standard proctor density of at least 95% by compaction equipment or the hauling equipment.
- At the base of a fill slope a toe foundation will be constructed, and with each (50) vertical feet of slope a terraced bench shall be constructed.



LOCATION CONSTRUCTION





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HYDROSEEDING





SEDIMENT CONTROL





SEDIMENT CONTROL





SEDIMENT CONTROLS





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