



Engineering Design Submittal Checklist

Project name: _____

Operator: _____

General Submittal Requirements

All plans shall comply with the Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development: The Gold Book, the BLM Manual Section 9113 Road Standards, as well as The Buffalo Field Office Oil and Gas Road Guidelines for all APD's. Any deviations from these accepted standards shall require a written statement on the cover of the plans from the designing engineer that explains how the proposed deviation design shall still meet the intended purpose of the approved standard design. This statement from the designing Civil Engineer in no way guarantees approval of the deviation; however, it will be taken into consideration by the reviewing Civil Engineer. If there is no statement or reason for the deviation, then it will be automatically be written up as a deficiency.

Is a deviation proposed YES NO.

Have you provided a written statement YES NO.

- ___ 1. Provide a set of 11x17 drawings for the BLM Civil Engineer
- ___ 2. Cross sections and profiles: The ratio of the vertical to the horizontal scale shall be 1V:10H or 1V:5H. EX: (H) 1"=50' (V) 1"=5' or (H) 1"=50' (V) 1"=10' (From the Gold Book)
- ___ 3. Provide a north Arrow on every sheet
- ___ 4. Provide a scale on every sheet
- ___ 5. Identify the scale of every profile and cross section, or clearly label NTS
- ___ 6. Provide a project title on every sheet
- ___ 7. Provide a current Professional Engineer's Stamp, Signature, and date.
- ___ 8. Provide existing contours
- ___ 9. Provide proposed contours
- ___ 10. Label enough contours to clearly illustrate the surrounding topography
- ___ 11. Clearly differentiate between proposed and existing structures, i.e. roads, culverts, cattle guards, impoundments, etc.
- ___ 12. Identify boundaries and/or limits of site disturbance, clearing, and grading
- ___ 13. Provide a legend and clearly identify every line type in said legend

- ___ 14. Provide culvert data: 1) invert elevations 2) type 3) size 4) length 5) station 6) erosion control measures downstream & 7) slope. EX: STA 11+24.63, N INV: 105, S INV 103, 100LF of 24" CMP sloped at 2.0% with 10LF of 6" rip-rap at the outfall to be constructed per standard drawing XX.
- ___ 15. Identify location and type of proposed BMP's for erosion control (if any)
- ___ 16. Identify grading quantities in cubic yards, both cut and fill volumes
- ___ 17. Identify total disturbance in acres
- ___ 18. Provide typical cross sections for all proposed roads, culverts, LWC's, signage, cattle guards, etc. If they are not proposed, if it is not proposed it is not necessary to show a cross section.
- ___ 19. Label all road alignments with 100 foot stationing and stationing at PTs and PCs
- ___ 20. Always extend your alignment a minimum of 50' beyond the edge of your proposed road to show how the designed/engineered road will transition into the existing ground and/or pad
- ___ 21. Identify the curve data listed either by the curve in the plan view or in a curve table, please label all curves C1, C2, C3 etc if possible
- ___ 22. Identify road design speed; please note that speed limits and design speeds are not always the same. Please refer to the 9113 manual to determine design speed
- ___ 23. Identify each road classification as primitive, template, engineered, local, resource, or collector
- ___ 24. Identify the expected ADT for each section of road
- ___ 25. Draw plans to a standard engineer scale (1"=10', 20', 30', 40', 50', 60', 100', 200')
- ___ 26. Identify sections of land along the proposed road that have slopes at 25% or greater
- ___ 27. Has sight distances been met
- ___ 28. Identify proposed road sign locations
- ___ 29. If curve widening is proposed, the amount of travel width added to the specific curve must be shown on the plan view with the additional amount of disturbance also shown
- ___ 30. Road grades should be a minimum of 1% for adequate drainage; 0.5% is allowed, however very hard to construct
- ___ 31. Identify cut and fill slopes on all typical cross sections (i.e. 2:1, 3:1, etc.)
- ___ 32. Identify the location of all turnouts in the plan view
- ___ 33. Identify the location of all turn-a-rounds in the plan view
- ___ 34. Identify the location of all fence crossings and cattle guards

- ___35. Identify the location of all drainage elements in the plan view
- ___36. Specify aggregate size, type, amount, and application method if surfacing is needed

Notes to consider:

Be consistent among your own drawings, profiles, and cross sections. If you use a dashed line for your existing ground in one profile, use the same line type in subsequent profiles and cross sections. This makes for less guess work.

Always double check your legend that everything is included. If it is not included, be sure to call it out in the plan or profile so it is easily identifiable.

No culvert design should have a slope less than 2%.

Anything (culvert, road, ditch, cross drainage, etc.) sloped at 1% or less is very hard for a contractor to construct. 2% provides ease to the contractor, maximum drainage, and minimum erosion.

Some deviations must first have the approval of the State Engineer. This can be a lengthy/time consuming process. Please try to keep deviations at a minimum for that reason.

If you have questions/concerns on a specific design, please contact the BLM Civil Engineer before you submit your design. Many issues can be resolved with a phone call and/or meeting rather than at the OIM.

Please follow minimum culvert spacing as called out in the Gold Book, page 33.

It is a fact that engineers change. It is also a fact that rules and regulations change. Therefore, just because a design was approved by a previous engineer, does not mean that a similar design will be approvable by the present engineer. Our rules and regulations are always adjusting to the current needs of the general public and to the overall safety requirements as adopted by the United States Government.

Please use this checklist before submitting any designs in the future. This same checklist is used to review your designs. If you, the designing Civil Engineer cannot complete this checklist, then the reviewing Civil Engineer will not be able to either. If the checklist cannot be completed by the reviewer, the neglected portions will be written up in the deficiencies and provided to the operator at the OIM.