

Section 8.02 Mineral Extraction and Primary Mineral Processing

8.02.01 The applicant shall submit a plan for the staged extraction and restoration of the site in accordance with the following sub-sections.

8.02.02 Specific Criteria for Submittals of Petitions for Mineral Extractions

1. Stage One

A. Evidence Concerning Feasibility:

1. Description of the character and thickness of the mineral deposit.
2. Boring logs-composition of sand and gravel.
3. Average depth of overburden to be redistributed.

B. Site and Operational Analysis:

1. Site:
 - a. Location of site-county, section and township.
 - b. Property line survey.
 - c. Easements and rights-of-way.
 - d. Aerial photo.
 - e. Zoning and land use maps.
 - f. Existing land use (adjacent and in general area of the site).
 - g. Access and transportation arteries (indicate types of surface).
 - h. Development trends (patterns of expansion) of adjacent land uses.
2. Description of Environment:
 - a. Contour maps (2 ft. or 5 ft. contour interval preferred).
 - b. Soils data.
 - c. Existing ground cover and location of any wooded area.
 - d. Relationship of site to surrounding terrain.
 - e. Special surface or subsurface geologic features such as streams, rock out cropping, etc.
 - f. Views into site.
 - g. Areas of most probable visual conflict.
3. The Deposit:
 - a. Depth of topsoil and overburden.
 - b. Deposit depth and outline.
 - c. Percentage of waste sand.
 - d. Depth, outline and type of unmineable material.
 - e. Groundwater elevation (normal).
 - f. Groundwater flow and character.
4. Equipment and Operational Procedures:
 - a. Type of excavating equipment.
 - b. Type of transporting equipment.
 - c. Processing plant layout, including stockpiles (diagrammatic).
 - d. Anticipated general excavation patterns.
 - e. Location of settling ponds (if any).
5. Review of Historical/Archaeological Features on Site.

6. Assessment of Wildlife and Possible Impacts from Proposed Operation.
 7. Extraction/Rehabilitation Plan (Conceptual).
 - a. Conceptual Sketch Plan and Narrative:
 - i. Layout major excavation and rehabilitation pattern (to include):
 - a. Establish high and low points.
 - b. Stockpiling method and locations.
 - c. Handling of topsoil (preservation and re-spreading of topsoil) and possible effect on change in soil composition.
 - d. Staged method of restoration.
 - e. Proposed land features.
 - f. Drives, access and traffic generation.
 - g. Setbacks (Minimum 50 ft. from all property lines).
 - h. Fences.
 - i. Outline measures to be taken for noise, dust, erosion control and protection of wildlife habitat.
 - j. Permanent man-made features to left on-site.
 - k. Estimated length of operation.
 - l. Determine essential screening to reduce inherent conflicts.
 - m. Future land use alternatives.
 - ii. Brief discussion considering impact of proposed operation on surrounding land areas.
2. Stage Two
 - A. Detailed Site and Operational Analysis
 1. Prepare detailed outline of sand and gravel deposits.
 2. Determine the volume of material unsuitable for processing.
 3. Outline area required for processing plant (including stockpiles and handling of topsoil).
 4. Coordinate Excavation and Development Functions:
 - a. Review equipment in respect to land forming capabilities.
 - b. Manipulate the excavation equipment within the scope of its operating patterns.
 - c. Minimize hauling distance of land forming material.
 - d. Taking both site and operational characteristics into consideration, develop the specific pattern of excavation that will implement the development of the proposed land forms.
 - B. Detailed Extraction/Rehabilitation Plan
 1. Handling and placement of overburden.
 2. Handling and placement of topsoil.
 3. Detailed planting and screening plans.
 4. Detailed grading plan including topography (1 or 2 ft. contour interval), drainage and land form grading.
 5. Master Plan - Illustrates proposed land forms, land uses and basic site features.
3. Performance Standards

- A. Progressive rehabilitation (excavation and rehabilitation occur simultaneously) will be required for any mineral extraction area.
- B. Topsoil Requirements.
 - 1. Topsoil is to be preserved and utilized for site rehabilitation.
 - 2. Topsoil is to be re-spread to the depth that originally existed.
- C. Planting and seeding of depleted areas will be implemented as soon as practicable to prevent erosion, as approved by the Zoning Administrator.
- D. Remove all equipment associated with the industry as soon as excavation is terminated.
- E. Do not permit the accumulation of debris or abandoned equipment within the pit or on the property.
- F. Cut slopes will not exceed the normal angle of repose.
- G. Slope requirements:
 - 1. 3:1 maximum slope for mowed banks.
 - 2. 2:1 maximum slope for unmowed banks with vegetation cover.
 - 3. 4:1 maximum slope for spoil banks (Coincide with Code of Iowa, Chapter 208).
 - 4. 5:1 maximum slope above water line.
 - 5. 5:1 maximum slope below water line extended a minimum horizontal of 10 ft. into water body for shoreline.
- H. Slope requirements may be changed subject to the approval of the Zoning Commission.
- I. Individual Site Bonding Required for all Mineral Extraction Areas.

8.02.03

The developer shall *post a bond* with the Boone County Auditor, which bond will ensure to the County that the restoration for reuse as provided in the approved plan shall be completed by the developer within one (1) year of discontinuance of the extraction activities specified in the approved master plan. The amount of the bond shall not be less than the estimated cost of the restoration. Bond requirements may be waived or modified if the applicant can demonstrate that bonding under compliance with Chapter 208 of the Code of Iowa will be sufficient to ensure restoration of the site as specified in the approved plan.