MASS BURIAL SPECIFICATION – TN
Disposal of Animals due to Catastrophic Mortality - Disease
(Poultry)

1. Scope

The work shall consist of the disposal of animals in a burial pit(s) due to a disease based catastrophic mortality.

2. General

Design emergency mortality management operations to handle the catastrophic mortality due to disease in conformance with all Federal, State and local regulations. Ensure all required permits, if any, are approved prior to burial.

3. Biosecurity and Personal Protective Equipment

Address all biosecurity concerns in all aspects of planning, installation, operation and maintenance of a burial operation.

4. Planning, Investigating and Identifying the Burial Location

The USDA-NRCS provides soil interpretations for catastrophic mortality burial through the online Web Soil Survey under the Disaster Recovery category, Soil Suitability's and Limitations section. This data should be used as an initial planning tool to identify areas that are likely to be most suitable for burial. It should be noted that some requirements in this specification exceed the criteria used to develop these interpretations, specifically the criteria related to soil permeability. The chance of an inclusion of a contrasting soil at a particular soil map varies. For this reason, a planned site for the burial of catastrophic mortality should never be finalized without a site specific visit to verify assumptions about the location. Note: There is also the possibility that a site mapped as having moderate or severe limitations, might be suitable after a thorough onsite review has been performed.

During the planning process, the proposed burial site should be investigated by a qualified professional with adequate knowledge of soils and their properties. Soil properties such as texture, permeability, fragments, slope, depth to water table, depth to bedrock, flooding, ponding, etc. should be investigated. Other land features such as presence of fractured or cavernous bedrock, rock outcrops, proximity to water bodies, wells, public areas, residences, property lines, etc. should also be analyzed. Test pits and/or auger soil samples should be examined to a depth of 2ft below the lowest planned excavation.

- The location of burial pits shall be identified in consultation with the TN Department of Agriculture State Veterinarian's Office and a qualified soil professional or equivalent.
- Locate the burial site on soils that do not flood or pond.
- Locate the burial site outside of the 100-year floodplain.
- Locate a minimum of 300ft up gradient or 150ft down gradient from any well.
- Locate a minimum of 165ft from any property line and a minimum of 100ft from a waterbody, stream or drainage way.
- The bottom of the pit or trench must have acceptable soil material a minimum of 2ft over bedrock and/or the seasonal high water table (defined as a zone of saturation at the highest average depth during the wettest season) as determined by the a onsite investigation.
- Avoid areas where the soil is very high in organic matter (Unified classes pt, ol, oh).
- Burial sites located on slopes greater than 5% can impede trafficability.
- For burial of disease related catastrophic mortalities, in situ soil criteria for permeability shall follow NEH Part 651, Agricultural Waste Management Field Handbook (AWMFH), Chapter 10, Appendix 10D. According to AWMFH, soils that meet soil permeability groups III and/or IV and are not high in calcium, are typically acceptable. Soils not meeting this criteria, will need a liner installed in accordance with AWMFH, Appendix 10D.
- Consider prevailing winds, landscape elements, ingress/egress, etc. when selecting a burial site.

5. Size

- Safety must always be a primary consideration in the design and construction of burial operations. Tennessee 811 should be consulted to locate utilities.
- A Microsoft Excel spreadsheet has been provided to TN Department of Agriculture that will aid in the trench sizing requirements for burial. Every site is different and this tool should be considered a planning tool. Site specific modifications may be needed.
- Pits shall be minimum of 4ft wide by 2ft deep. Even in soils that are good for burial, do not exceed a trench depth of 8ft.
- The depth of the pit shall accommodate a minimum of 1ft of cover between the top layer of birds and natural ground.
- Place stockpiled soil no closer than 20ft from the edge of the burial pit.
- Use barriers to keep vehicular traffic at least 4ft from the edge of the pit.
- Use pit excavation techniques that are OSHA compliant. For pit/trenches that are 4 to 5ft deep, provide a step or bench 18in wide and 1ft deep dug around the perimeter of the main pit so that the remaining vertical wall will not exceed 4ft. For pits greater than 5ft deep, provide earthen walls that are sloped at 2 horizontal to 1 vertical or flatter.
- Excavating trenches on the natural contour of the land can ensure relatively level trench bottoms as well as consistent trench depths.
- If more than one pit is required, they shall be separated by a minimum of three 3ft of undisturbed or compacted soil.
- Remove or render inoperable all field tile (subsurface drains) within the operational area of the burial pit.
- For informational purposes, 2 standard drawings are attached to this document. Every site is different, therefore modifications may be necessary.

6. Placement

- Dead animals shall be uniformly placed in the pit or trench so that the carcasses do not exceed a maximum thickness of 1ft.
- A 1ft thick layer of soil or litter should be placed between each layer of animal mortality.
- Allow for placement of 1ft of earthen material between the top layer of birds and natural ground.
- Compaction of the earthfill is not recommended.

7. Cover

- All dead animals shall be covered the same day they are placed in the pit.
- The cover over and surrounding the buried carcasses shall be a minimum of 1ft.
- The finished soil cover (above natural ground) shall be a minimum thickness of 2ft and shaped so that drainage and runoff will be directed away from the pit.
- If the potential exists for animals such as coyotes, dogs, possums, etc. to dig into the burial site, either use more than 2ft of cover material or install an appropriate fence to exclude these animal types.

8. Topsoiling, Seeding and Mulching

- Topsoil shall be stockpiled during the initial excavation for later use in the establishment of post burial vegetation.
- After the completion of the burial process, place a minimum of 3” of topsoil on top of site. Clear unwanted materials and smooth or shape the ground, as needed.
- Soil test and apply amendments as needed for desired vegetation species.
- Prepare a suitable seedbed and establish permanent vegetation on the sites to prevent erosion and/or movement of biological contamination from the site.
- Selected species will have the capacity to achieve adequate density and vigor to stabilize the site within an appropriate period. Seed shall be placed within appropriate planting dates and plantings shall be mulched as necessary to ensure establishment.
- Other disturbed areas shall be mulched as necessary to prevent erosion. Establish a temporary cover crop or mulch the area with 100% coverage if seeding dates are not conducive to seeding perennial vegetation. Crimping in mulch or lightly disking mulch will aid in stabilizing mulch. Mulch at planting should cover 70% of the surface. Typically 1.5 tons (75 bales) of straw mulch is applied per acre. Surfaces with more than 70 percent gravel may be seeded without tillage and/or mulch.

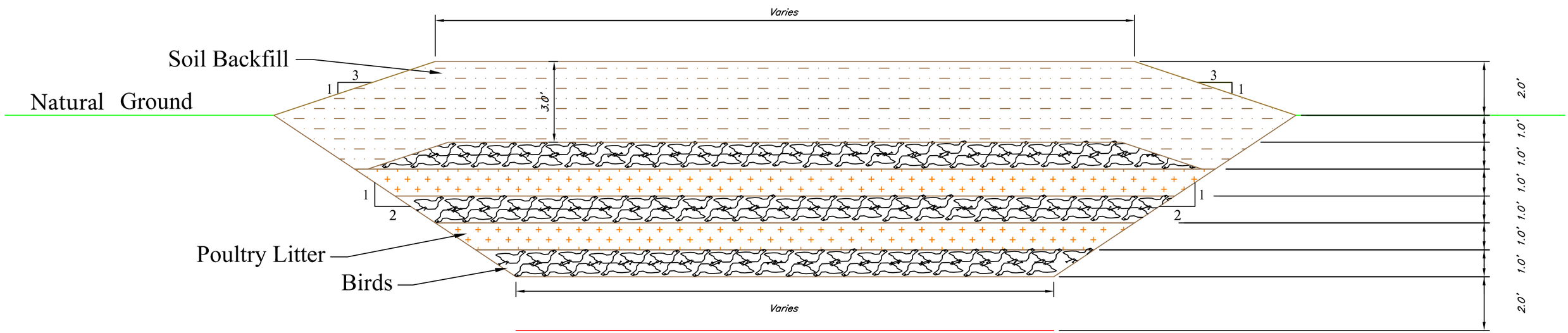
- Plant species, seeding rates, and planting dates are located in the NRCS 342 Critical Area Planting conservation practice standard in Tennessee NRCS's electronic Field Office Technical Guide. Additional mulching information is available in the NRCS 484 Mulching conservation practice standard in Tennessee NRCS's electronic Field Office Technical Guide. (http://efotg.sc.egov.usda.gov/)

9. Closeout
   - Ensure documentation exists that details the burial process. (I.e. number of animals, weight, trench widths, depths, lengths, amount of litter used or buried, trench modifications, etc.)
   - GPS coordinates of all 4 corners of the burial pits shall be recorded.
   - Ensure proper drainage is present at the burial site.
   - Photos of the burial process and closeout.

10. Maintenance
   - Perform periodic inspections of disposal sites as appropriate.
   - Always follow safety and biosecurity protocols.
   - Promptly repair any damage caused by animals, etc.
   - Maintain vegetation and proper drainage at the burial site.

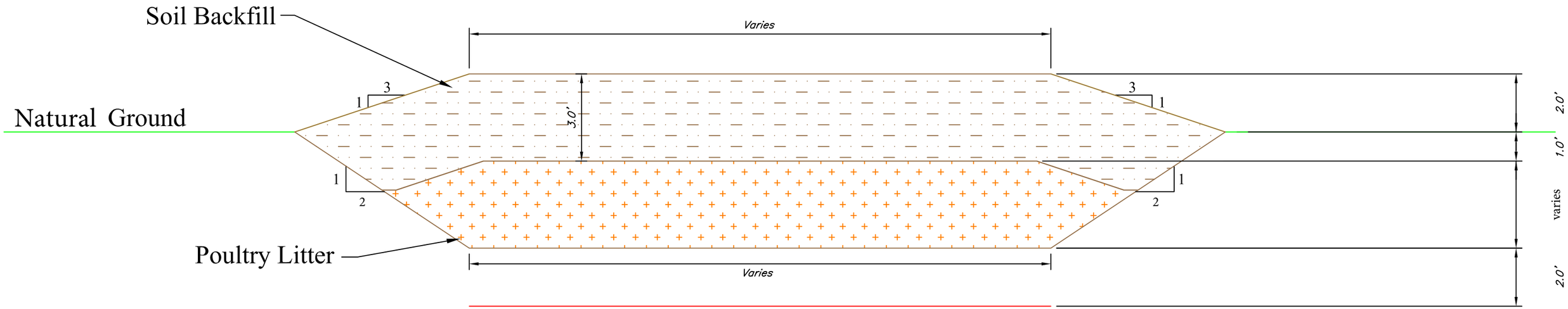
Attachments

1. Typical Bird and Litter Burial Schematic
2. Typical Litter Burial Schematic



TYPICAL SECTION
CATASTROPHIC POULTRY MORTALITY BURIAL TRENCH
Trench Depth Varies (6ft shown)
For Mortality & Litter Burial

Note: For trench depths 4ft or less, vertical side walls are allowed. For depths of 4 to 5ft, a 1ft deep 18in wide bench is required. For depths greater than 5ft, excavated side slopes should be a minimum of 2H:1V.



TYPICAL SECTION
CATASTROPHIC POULTRY MORTALITY BURIAL TRENCH
Trench Depth Varies
For Litter Burial

Note: For trench depths 4ft or less, vertical side walls are allowed. For depths of 4 to 5ft, a 1ft deep 18in wide bench is required. For depths greater than 5ft, excavated side slopes should be a minimum of 2H:1V.