

NATURAL RESOURCES CONSERVATION SERVICE
CONSTRUCTION SPECIFICATION
North Dakota

EXCAVATION
(Code 107)

1. SCOPE

The work shall consist of the excavation of surface materials for purposes appropriate to the construction of conservation practices. Any materials or construction details contained within the design package supersede those of this construction specification.

2. LOCATION

Excavation shall be performed at the locations, and in the configurations, as shown on the drawings and staked in the field. Any deviation from the drawings requires approval from NRCS prior to installation.

3. QUALITY CONTROL

Quality Control of all materials and construction procedures is the responsibility of the producer and installer. NRCS will make periodic review(s) of work for the benefit of the agency which will include final construction inspection.

4. CLASSIFICATION

Excavation is classified as common excavation, rock excavation, or unclassified excavation in accordance with the following definitions.

Common excavation: Any material that can be excavated, transported, and unloaded using heavy ripping equipment or wheel tractor-scrappers with pusher tractors. The excavation may be dumped into place or loaded onto hauling equipment by excavators having a rated capacity of one cubic yard or larger (unless otherwise specified in the Items of Construction Detail) and equipped with attachments (shovel, bucket, backhoe, dragline, or clam shell) appropriate to the material type, character, and nature of the materials. Requirements for limited equipment size or capacity due to the project size and/or site conditions shall be specified in the Items of Construction Detail.

Rock excavation: The excavation of all hard, compacted, or cemented materials that require the use of ripping and excavating equipment larger than defined for common excavation. The excavation and removal of isolated boulders or rock fragments larger than 1 cubic yard encountered in materials otherwise conforming to the definition of common excavation shall be classified as rock excavation. The presence of isolated boulders or rock fragments larger than 1 cubic yard is not in itself sufficient cause to change the classification of the surrounding material.

For the purpose of these classifications, the following definitions shall apply:

Heavy ripping equipment is a rear-mounted, heavy duty, toothed, ripping attachment mounted on a track type tractor having a power rating of at least 250 flywheel horsepower unless otherwise specified in the Items of Construction Detail.

Wheel tractor-scraper is a self-loading (not elevating) and unloading scraper having a struck bowl capacity of at least 12 cubic yards unless otherwise specified in the Items of Construction Detail.

Pusher tractor is a track type tractor having a power rating of at least 250 flywheel horsepower, unless otherwise specified in the Items of Construction Detail, and be equipped with the appropriate attachments.

Unclassified excavation is defined as the excavation of all materials encountered, including rock materials, regardless of their nature or the manner in which they are removed.

5. STRIPPING

Stripping is required at all sites upon which embankments and fills are to be constructed and at required excavations or borrow areas that are required for the proper installation of the works. Stripping consists of excavating the top layer of soil to a sufficient depth to expose subsoil free of vegetation, roots, and other undesirable organic matter. The finished stripped area shall be cleared of all loose unconsolidated material to provide a firm foundation. Stripping material that is suitable for spreading over disturbed areas after construction has been completed shall be stockpiled and subsequently spread as directed by the NRCS.

6. USE OF EXCAVATED MATERIAL

To the extent they are needed, all suitable material from the specified excavations shall be used in the construction of required permanent earthfill or rockfill. The suitability of material for specific purposes is determined by the NRCS. The operator/contractor shall not waste or otherwise dispose of suitable excavated material.

7. DISPOSAL OF WASTE MATERIALS

All surplus or unsuitable excavated materials are designated as waste and shall be disposed of at the locations shown on the drawings.

8. EXCAVATION LIMITS

Excavations shall comply with OSHA Construction Industry Standards (29CFR Part 1926) Subpart P, Excavations, Trenching, and Shoring. All excavations shall be completed and maintained in a safe and stable condition throughout the total construction phase. Structure and trench excavations shall be completed to the specified elevations and to the length and width required to safely install, adjust, and remove any forms, bracing, or supports necessary for the installation of the work. Excavations outside the lines and limits shown on the drawings or specified herein required to meet safety requirements shall be the responsibility of the operator/contractor in constructing and maintaining a safe and stable excavation.

9. BORROW EXCAVATION

When the quantities of suitable material obtained from specified excavations are insufficient to construct the specified earthfills and earth backfills, additional material shall be obtained from designated borrow areas. The extent and depth of borrow pits within the limits of the designated borrow areas shall be as specified in the Items of Construction Detail or as approved by the NRCS. Borrow pits shall be excavated and finally dressed to blend with the existing topography and sloped to prevent ponding and to provide drainage.

10. OVER-EXCAVATION

Excavation in rock beyond the specified lines and grades shall be corrected by filling the resulting voids with Portland cement concrete made of materials and mix proportions approved by the NRCS. Concrete that will be exposed to the atmosphere when construction is completed shall meet the requirements of concrete selected for use under North Dakota Construction Specification 102, Concrete for Minor Structures. Concrete that will be permanently covered shall contain not less than five bags of cement per cubic yard. The concrete shall be placed and cured as specified by the engineer.

Excavation in earth beyond the specified lines and grades shall be corrected by filling the resulting voids with approved, compacted earthfill. If the earthfill is to become the subgrade for riprap, rockfill, sand or gravel bedding, or drainfill, the over-excavation shall be filled according to the foundation requirements of the appropriate construction specification; i.e. riprap, rockfill, bedding, or drainfill. Before correcting an over-excavation condition, the operator/contractor shall review the planned corrective action with the NRCS and obtain approval of the corrective measures.

11. ITEMS OF CONSTRUCTION DETAIL

Items of work to be performed in accordance with this specification and construction details are:

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