

NATURAL RESOURCES CONSERVATION SERVICE
CONSTRUCTION SPECIFICATION
North Dakota

SAND AND GRAVEL
(Code 106)

1. SCOPE

The work shall consist of furnishing, placing, and compacting sand and gravel materials for the purpose of drainfill, filters, erosion protection, subgrade, road surfacing, foundation improvement, and other functions 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

Sand and gravel shall be placed 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. MATERIALS

Quality

Materials shall be sand, gravel, or mixtures thereof obtained from the specified sources. They shall be selected as necessary to avoid the inclusion of organic matter, clay balls, excessive fine particles or other substances that would interfere with their free-draining properties.

If a source is not specified in the Items of Construction Detail, NRCS shall be provided access to the source of the materials for the purpose of obtaining samples for testing, and provide any recent lab tests available from the supplier. Aggregates shall be tested for soundness according to ASTM C88 and shall have a weighted average loss in 5 cycles of not more than 12 percent when sodium sulfate is used or 18 percent when magnesium sulfate is used.

Grading

Sand and gravel materials shall conform to the specified grading limits after being placed at the jobsite and after being compacted, if compaction is specified. Grading shall be determined by ASTM Method C-136. The percentage of material finer than the No. 200 sieve shall be determined by the method outlined in ASTM C117.

5. BASE PREPARATION

Base surfaces, including trenches and trench walls, shall be clean and free of organic matter, loose soil, foreign substances, and standing water when the sand and gravel material is placed. Earth surfaces upon or against which sand and gravel will be placed shall not be scarified.

6. PLACEMENT

Sand and gravel shall be placed uniformly in layers not more than 12 inches deep before compaction, if compaction is specified. When compaction is accomplished by hand operated equipment, the layers shall be not more than 8 inches deep. The material shall be placed in a manner to avoid segregation of particle sizes and to ensure the continuity and integrity of all zones. No foreign materials shall be allowed to become intermixed with, or otherwise contaminate, the placed sand and gravel.

When sand and gravel is being placed as drainfill in trenches, traffic shall not be allowed to cross over trenches at random. Equipment crossovers shall be maintained, and the number and location of such crossovers shall be established and approved prior to the beginning of drainfill placement. Each crossover shall be cleaned of all contaminating materials before additional drainfill is placed. Any damage to the foundation surface or the sides or bottoms of trenches occurring during placement of drainfill shall be repaired before drainfill placement is continued. The upper surface of drainfill

constructed concurrently with adjacent zones of earthfill shall be maintained at an elevation at least one foot above the upper surface of the adjacent fill. Drainfill over or around pipe or drain tile shall be placed in a manner to avoid any displacement in line or grade of the pipe or tile.

Placement of sand and gravel adjacent to newly constructed concrete structures shall not be started until the required time intervals shown below have elapsed:

Structure	Time Interval
Retaining walls and counterforts (impact basins)	14 days
Walls backfilled on both sides simultaneously	7 days
Conduits and spillway risers, cast-in-place (with inside forms in place)	7 days
Conduits and spillway risers, cast-in-place (inside forms removed)	14 days
Conduits, pre-cast, cradled	2 days
Conduits, pre-cast, bedded	1 day
Cantilever outlet bents (backfilled both sides simultaneously)	3 days

7. CONTROL OF MOISTURE

When the addition of water is required, it shall be applied in such a way as to avoid excessive wetting to adjacent earthfill. Except as specified in Items of Construction Detail or in the drawings, control of moisture content will not be required.

8. COMPACTION

Unless specific compaction requirements are specified in Items of Construction Detail or in the drawings, no compaction will be required beyond that resulting from the placing and spreading operations.

Heavy equipment shall not be operated within 2 feet of any structure. Vibrating rollers shall not be operated within 5 feet of any structure. Compaction by means of drop weights operating from cranes or hoists will not be permitted.

9. ITEMS OF CONSTRUCTION DETAIL

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

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