

SECTION 02316

ROADWAY EXCAVATION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Excavate all material within designated areas, including channels with a bottom width of 12.0 feet or greater. Widen cuts as directed.
- B. Rock excavation and removal.
- C. Dispose of excavated material; place in embankment and/or other areas.

1.2 RELATED SECTIONS

- A. Section 00820: Legal Relations and Responsibility to Public.
- B. Section 01571: Temporary Environmental Controls.
- C. Section 02056: Common Fill.
- D. Section 02061: Select Aggregate.
- E. Section 02075: Geotextiles.
- F. Section 02231: Site Clearing and Grubbing.
- G. Section 02324: Compaction.
- H. Section 02912: Topsoil.

1.3 REFERENCES

- A. NEPA 495: Code for the Manufacture, Transportation, Storage, and Use of Explosive Materials.
- B. UOSH Construction Standards Chapter U: Blasting and the Use of Explosives.

1.4 DEFINITIONS

- A. Rock: Solid mineral material which cannot be removed with equipment reasonably expected to be used in the work without cutting, drilling or blasting.

1.5 SUBMITTALS

- A. Submit proposed method of blasting, delay pattern, explosive types, type of blasting mat cover.

1.6 ACCEPTANCE

- A. Grading Tolerance: Top surface of subgrade = ± 0.1 foot of line and grade.

1.7 STOCKPILING AND HANDLING

- A. Stockpile excavated material at approved locations.
- B. Waste excess excavation as required.

PART 2 PRODUCTS

2.1 MATERIALS FOR OVER-EXCAVATED AREAS

- A. Common Fill: Refer to Section 02056.
- B. Select Aggregate: Refer to Section 02061.
- C. Geotextile Fabric: Refer to Section 02075.

2.2 EXPLOSIVES

- A. Type recommended by explosives firm.

2.3 DELAY FUSES

- A. Type recommended by explosives firm.

2.4 BLASTING MATERIALS

- A. Type recommended by explosives firm.

PART 3 EXECUTION

3.1 PREPARATION AND PROTECTION

- A. Refer to Section 01571.
- B. Pothole, expose, or otherwise locate buried utilities as necessary.
- C. Refer to Section 00820, article, "Protection and Restoration of Property and Landscape."
- D. Finish clearing and grubbing within the designated area following Section 02231 before starting excavation.

3.2 STORAGE OF BLASTING MATERIALS

- A. Securely store all explosives in compliance with Laws and Regulations.
- B. Mark all storage places clearly.

3.3 TOPSOIL

- A. Remove topsoil following Section 02912.

3.4 DEWATERING

- A. Keep excavation free from surface and ground water through all stages of construction.
 - 1. Maintain adequate drainage during all stages of construction through pumping, pipe culverts and drainage ditches.
 - 2. Provide temporary facilities when interrupting irrigation systems, sewer, underdrainage, etc.

3.5 EXCAVATION - STANDARD PROCEDURES

- A. Finish excavation to reasonably smooth and uniform surface.
- B. Provide and maintain satisfactory access to roads, streets, and adjacent property during all phases of construction according to the Traffic Control Plan.
- C. Remove material in all cut section to the depth shown. When necessary to obtain compaction, scarify to a 8.0 inch depth and compact to at least 96 percent of maximum laboratory density. Refer to Section 02324.

- D. Excavate and waste unsuitable material.
- E. Material for backfilling or finishing.
 - 1. Use suitable granular material encountered in excavation to construct the top layers of embankment, for finishing the roadbed, or for backfill when directed by the Engineer.
 - 2. When practical, haul the granular material directly from excavation to the final position on the roadbed.
- F. Contractor-furnished borrow may be used and roadway excavation wasted if there is no additional cost to the Department. Provide borrow that is equal to or better quality than the wasted roadway excavation.

3.6 ROCK REMOVAL - NONEXPLOSIVE METHOD

- A. Excavate solid rock 6.0 inches to 1.0 foot below subgrade and backfill with acceptable material.
 - 1. Rock removed more than 1.0 foot below subgrade will not be measured or paid for.
 - 2. Backfilling of depth greater than 1.0 foot below subgrade will not be measured or paid for.

3.7 ROCK REMOVAL- EXPLOSIVE METHOD

- A. Comply with UOSH Constructions Standards Chapter U rules and regulations.
- B. Provide a qualified explosives expert to act as an advisor and consultant during drilling and blasting operations.
- C. Do not blast beyond designated areas.

3.8 ROCK FACES

- A. Scale rock cuts of all loose rocks and fragments and leave in a neat and safe condition.

END OF SECTION