

PART 1 - General

1.1 Work Included

- .1 Removal of identified and discovered rock during excavation.
- .2 Explosives to assist rock removal.

1.2 RELATED SECTIONS

- .1 Section 31 22 13 - Rough Grading.
- .2 Section 31 23 16 - Excavating: Building excavation.
- .3 Section 31 23 18 - Trenching: Trenching and backfilling for utilities.
- .4 Section 31 23 23 - Backfilling: Backfill materials.
- .5 Section 31 37 10 - Riprap.

1.3 PRICE AND PAYMENT PROCEDURES

- .1 Site Rock Removal: If required and approved by the Owner will be by the cubic metre measured before disintegration. Includes preparation of rock for removal, explosive disintegration of rock, removal from position, loading and removing from site. For over excavation, payment will not be made for over excavated work or for replacement materials.
- .2 Trench Rock Removal: If required and approved by the Owner will be by the cubic metre measured before disintegration. Includes preparation of rock for removal, explosive disintegration of rock, removal from position, loading and removing from site. For over excavation, payment will not be made for over excavated work or for replacement materials.

1.4 DEFINITIONS

- .1 Site Rock: Solid mineral material with a volume in excess of 1 cu m or solid material that cannot be removed with a 0.57 cu m capacity power shovel without drilling or blasting.
- .2 Rock: Solid mineral material with a volume in excess of 1 cu m or solid material that cannot be removed with a 0.57 cu m capacity power shovel without drilling or blasting.

1.5 SUBMITTALS FOR REVIEW

- .1 Section 01 33 00: Submission procedures.

- .2 Shop Drawings: Indicate the proposed method of blasting, delay pattern, explosive types, type of blasting mat or cover, and intended rock removal method.

1.6 QUALITY ASSURANCE

- .1 Explosives Firm: Company specializing in explosives for disintegration of rock, with five (5) years documented experience.

1.7 REGULATORY REQUIREMENTS

- .1 Conform to applicable codes for explosive disintegration of rock.
- .2 Obtain permits from authorities having jurisdiction before explosives are brought to site or drilling is started.

1.8 PROJECT CONDITIONS

- .1 Conduct pre-blast survey and document conditions of buildings near locations of rock removal, prior to blasting, and photograph existing conditions identifying existing irregularities.
- .2 Advise owners of adjacent buildings or structures in writing, prior to executing seismographic survey. Explain planned blasting and seismic operations.

PART 2 - Products

2.1 MATERIALS

- .1 Explosives: Type recommended by explosive firm following seismic survey and required by authorities having jurisdiction.
- .2 Delay Device: Type recommended by explosives firm.
- .3 Blast Mat Materials: Type recommended by explosives firm.

PART 3 - Execution

3.1 EXAMINATION

- .1 Section 01 70 00: Verify existing conditions before starting work.
- .2 Verify site conditions and note subsurface irregularities affecting work of this section.

3.2 PREPARATION

- .1 Identify required lines, levels, contours, and datum.

3.3 ROCK REMOVAL BY A MECHANICAL METHOD

- .1 Not applicable.

3.4 ROCK REMOVAL BY EXPLOSIVE METHODS

- .1 Drill blasting holes within 4 m of finished slope.
- .2 Disintegrate rock and remove from excavation.
- .3 Remove rock at excavation bottom to form level bearing.
- .4 Remove shale layers to provide a sound and unshattered base for footings or foundations.
- .5 In utility trenches, excavate to 150 mm below inverted elevation of pipe and 600 mm wider than pipe diameter.
- .6 Remove excavated material as directed by the Owner.
- .7 Correct unauthorized rock removal in accordance with backfilling and compacting requirements of Section 31 23 23.

3.5 FIELD QUALITY CONTROL

- .1 Section 01 45 00: Field inspection.
- .2 Provide for visual inspection of foundation bearing surfaces and cavities formed by removed rock.

END OF SECTION