

SECTION 1130 - BLASTING

PART 1 - GENERAL

1.1 SCOPE OF WORK:

Provide all labor, materials, equipment and services required for blasting as specified herein.

PART 2 - EXECUTION

2.1 BLASTING:

- A. All blasting operations shall be conducted in strict accordance with the Ohio Revised Code which shall be deemed to be included in these specifications the same as though herein written in full. The CONTRACTOR shall also comply with applicable municipal ordinances, Federal Safety Regulations and Section 9 of the Manual of Accident Prevention in Construction, published by the Associated General Contractor's of America, Inc. Necessary permits shall be secured and paid for by the CONTRACTOR. All explosives shall be stored in conformity with said ordinances, laws and safety regulations. No blasting shall be done within five feet of any water mains, or ten feet of any gas mains except with light charges of explosives. Any damage done by blasting is the responsibility of the CONTRACTOR and shall be promptly and satisfactorily repaired by him. The CONTRACTOR shall limit peak particle velocities occurring as a result of blasting to protect structures from damage due to ground motions from blast events. The peak particle velocity is the maximum velocity of particle excitation measured along any of the three orthogonal axes (longitudinal, vertical or transverse). In addition the following guidelines shall be applicable to new concrete.

<u>Age of Concrete, Days*</u>	<u>Maximum Permissible Particle Velocity, IPS**</u>
0 to 1	0.25
2	0.50
3-or more	1.00

*Concrete is defined as properly designed and placed, well consolidated Portland Cement concrete achieving a normal increase in strength with age.

**Measured at location of concrete, by probe fixed in or on soil surface.

- B. As an option, a scaled distance (distance from blast to concrete/-square root of charge weight) of 130 or more can be used conservatively to design blast events.
- C. Unless otherwise required by ordinance or law, each excavation crew shall be provided with two metal boxes equipped with suitable locks. One of these boxes shall be for storing explosives and one for caps. The boxes shall always be locked except when in actual use. They shall be painted a bright color and stenciled with appropriate warning signs. At night, explosives and caps shall be stored in separate magazines.
- D. All shots shall be covered with rope, heavy timber or steel blasting mats to prevent flying material. Unless otherwise specified or directed, delay caps shall be used to reduce earth vibrations and noise. In sparsely populated areas, the ENGINEER may permit the CONTRACTOR to use regular type caps.
- E. The CONTRACTOR shall keep a blasting log and, for each blast, shall record the date, time of blast, number of holes, type of explosive, number of delays, amount of charge per delay, stemming and number and type of caps. An inventory of all explosives handled and stored shall also be kept.
- F. All blasting shall be supervised and performed by qualified personnel and shall be monitored to ensure compliance with the particle velocity requirements. The CONTRACTOR shall submit a monitoring plan to the ENGINEER prior to beginning blasting activities.

- G. A pre-blast survey shall be performed by the CONTRACTOR. The pre-blast survey shall be accurate and up to date at the time of the blast event.
- H. Appropriate notification and warning shall be given to all persons in the immediate vicinity of blasting activities.
- I. The survey shall be a compilation of the condition, type, and general appearance of all nearby structures. It shall also include a listing of any vibration-sensitive equipment or conditions which exist at adjacent facilities. The owners and occupants of these facilities shall be notified of the intent to blast and the blasting schedule. The survey shall be conducted by a competent engineering firm or other qualified firm and sufficiently documented by photographs, measurements, and diagrams. The survey shall include all structures within 500 feet of the water main centerline or the nearest structure measured perpendicular to the centerline. Pre-blast survey results shall be submitted to the OWNER for review before construction takes place.
- J. Blasting operations shall be covered by comprehensive general liability insurance or separate public liability insurance to cover blasting as set forth in the General Conditions. The CONTRACTOR shall bear all associated costs of insurance and shall be liable for all damage to persons or property.
- K. All blasting shall be supervised and performed by qualified personnel.

PART 3 - BASIS OF PAYMENT

Blasting is **not** a pay item.

END OF SECTION