

663.8**663.8-PAY ITEMS:**

ITEM	DESCRIPTION	UNIT
663001-*	EDGE LINE, TYPE "type"	LINEAR MILE (KILOMETER) or FOOT (M)
663002-*	LANE LINE OR CENTERLINE, TYPE "type"	LINEAR MILE (KILOMETER) or FOOT (M)
663003-*	BARRIER LINE, TYPE "type"	LINEAR MILE (KILOMETER) or FOOT (M)
663005-*	STOP LINE, TYPE "type"	FOOT (M)
663006-*	CROSSWALK LINE, TYPE "type"	LINEAR FOOT (M)
663007-*	STRIPE, TYPE "type"	LINEAR FOOT (M)
663010-*	LANE ARROW, TYPE "type"	EACH
663011-*	LANE LETTER, TYPE "type"	EACH
663012-*	RAISED PAVEMENT MARKER, TYPE "type"	EACH

*Sequence Number

SECTION 664

TRAFFIC SAFETY DEVICES

664.1-DESCRIPTION:

This work shall consist of the furnishing and installing of various types of traffic safety devices in accordance with these Specifications and the Plans or as established by the Engineer. This work shall include, but not be limited to impact attenuating devices.

664.2-MATERIALS:

Materials shall conform to the requirements of the following subsections of Division 700 as manufactured by Energy Absorption Systems, Incorporated, or approved equal.

MATERIALS	SUBSECTION
Sand Barrel Impact Attenuating Device (Type V)	715.41.1
Crash Cushion Terminal Impact Attenuating Device (Type VI)	715.41.2
Truck Mounted Attenuating Devices (Type VII)	715.41.3
Quad Guard Terminal Device (Type VIII)	715.41.4

664.3-CONSTRUCTION METHODS:

664.3.1-Impact Attenuating Devices: Fabrication and installation of Impact Attenuating Devices shall be as detailed on the Plans or as directed by the Engineer. All work shall be done in a uniform, workmanlike manner.

The devices shall be located on a hard, flat surface, preferably concrete. The lateral slope of the installation site should be as level as possible and still provide adequate drainage.

The nose of the device shall have a XS-15 marker attached with alternating black and reflectorized yellow stripes in accordance with Section 3C-2 of the latest edition of the *Manual on Uniform Traffic Control Devices for Streets and Highways*. The width of the alternating stripes shall be 6 inches (152.4 mm). The stripes for construction zone attenuating devices shall be as above except the stripes shall be reflectorized white and reflectorized orange.

Type V devices shall be protected from freezing by mixing sodium chloride with the sand in a ratio of 1:10 by volume. Clean concrete on building sand with a moisture content of less than three percent shall be used. The sand shall weigh 100 ± 5 pounds per cubic foot ($1\ 270 \pm 60$ kg per cubic meter). Type V devices shall be winterized in accordance with 715.41.

664.3.1.1- Crash Cushion and Quad Guard Terminal Devices:

A backup structure accommodating the width of the impact cushion and providing adequate length for the cushion must be constructed or modified into the existing structure as shown on the plans. The backup structure must be capable of resisting the imposed forces brought upon it by the unit.

664.3.1.2-Sand Barrel Devices (Type V):

The assembly of all parts of the device, including filling with sand, shall be in the sequence and according to the recommendations of the manufacturer. The weight and location of each module and overall arrangement of each installation shall be as shown on the Plans. The figures within each circle on the Plans indicate the amount of sand, in pounds (kg), contained in each module. Leave one to 6 inches (24 to 150 mm) clearance between modules to facilitate lid installation. Each barrel location shall be painted on the pavement with a circle and the weight of sand in pounds (kg).

"Core-type" modules of 2,100 pound (953 kg) design require a sand seal to be placed on the bottom before the sand is added. "Wine glass-type" modules on structures require a stem block. If modules are preassembled before delivery to the site, the modules must be shipped upright on their bottom and not forced into an oval shape.

664.4-METHOD OF MEASUREMENT:

664.4.1-Impact Attenuating Devices:

664.5

This work shall be measured as a unit, complete and in place.

664.5-BASIS OF PAYMENT:

The quantities, determined as provided above, shall be paid for at the contract unit price for the items listed below, which prices and payment shall be full compensation for furnishing all the materials and doing all work prescribed in a workmanlike and acceptable manner, including all tools, equipment, supplies, and incidentals necessary to complete and, where required, winterize the items. All incidental work and materials for which no basis of payment is provided will be considered as completely covered by the prices bid for the items included in the contract.

664.6-PAY ITEMS:

ITEM	DESCRIPTION	UNIT
664001-*	IMPACT ATTENUATING DEVICE, TYPE "type"	EACH

*Sequence #

SECTION 665

PLUGGING GAS, OIL, AND DRILLED WATER WELLS

665.1-DESCRIPTION:

This work shall consist of plugging oil wells as designated on the Plans. This work shall also consist of plugging drilled water wells unless otherwise noted on the Plans.

665.2-MATERIALS:

665.2.1-Oil and Gas Wells: All materials used for plugging the oil wells and gas wells shall meet the requirements of the laws of the State of West Virginia.

665.2.2-Drilled Water Wells: Materials for plugging water wells shall meet the requirements of Division 700 as follows:

MATERIAL	SUBSECTION
Bentonite	715.45
Aggregate	703

Concrete shall be class D conforming to applicable requirements of 601 and may be with or without air entrainment at the option of the Contractor. The concrete shall be placed in accordance with current regulations of the Oil and Gas Division of the Department of Mines when a coal seam is involved.