

**ITEM 15603.85xx M - DRAINAGE PIPE, OPTIONAL, (FOR DRIVEWAYS, GRAVEL AND DIRT SURFACED ROADWAYS - ZONE 1 - FILL HEIGHTS 300mm OR MORE)**

**Description.** Under these items the Contractor shall furnish and install drainage pipes of the indicated sizes and shapes where shown on the plans or where indicated by the Engineer. The type of pipe material selected shall be at the Contractor's option from the list below.

**Materials.** The type of pipe materials shall meet the requirements given below. Select granular fill used shall meet the requirements for this material given in subsection 203-2.02c.

Non-Reinforced Concrete Pipe	706-01
Reinforced Concrete Pipe	706-02
Reinforced Concrete Elliptical Pipe	706-03
Corrugated Polyethylene Storm Drain Pipe	706-14
Round Corrugated Steel Pipe and Pipe Arches	707-02
Round Corrugated Aluminum Pipe, Pipe Arches and End Sections	707-13

The pipe class or gage shall be as indicated in TABLE 1, Zone 1 for pipes with cover of 300mm or more.

**Construction Details.** The Construction Details of subsection 603-3 shall apply. Only one type of pipe material will be allowed in the same run of pipe.

**Method of Measurement.** Pipe will be measured in meters along the bottom centerline as designated on the plans and specifications or as directed by the Engineer in writing.

**Basis of Payment.** The accepted quantities of pipe installed under this item will be paid for at the contract price bid which shall include the cost of furnishing all labor, materials and equipment necessary to complete the work.

The cost of any required excavation, sheeting, granular fill and backfill and applying water for compaction shall be included in the price for this item.

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**payment will be made under:**

<u>ITEM NO.</u>	<u>ITEM</u>	<u>PAY UNIT</u>
Item 15603.8501	Drainage Pipe, Optional 300mm Diameter (For Driveways, Gravel and Dirt Surfaced Roadways - Zone 1 Fill Heights 300mm or More)	METER
Item 15603.8502	Drainage Pipe, Optional 375mm Diameter (For Driveways, Gravel and Dirt Surfaced Roadways - Zone 1 Fill Heights 300mm or More)	METER
Item 15603.8503	Drainage Pipe, Optional 450mm Diameter (For Driveways, Gravel and Dirt Surfaced Roadways - Zone 1 Fill Heights 300mm or More)	METER
Item 15603.8504	Drainage Pipe, Optional 530mm Diameter (For Driveways, Gravel and Dirt Surfaced Roadways - Zone 1 Fill Heights 300mm or More)	METER
Item 15603.8505	Drainage Pipe, Optional 600mm Diameter (For Driveways, Gravel and Dirt Surfaced Roadways - Zone 1 Fill Heights 300mm or More)	METER

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TABLE 1 PIPES TO BE USED WHEN COVER IS 300mm OR MORE - ZONE 1							
CLASS OR GAGE OF PIPE REQUIRED							
FILL HEIGHT METERS	NON REINFORCED CONCRETE	REINFORCED CONCRETE	REINFORCED CONCRETE (H.E.)	CORRUG POLLY		ROUND CORRUG STEEL	ROUND CORRUG ALUMINUM
	§706-01	§706-02	§706-03	§706-14		§707-02	§707-13
	CLASS	CLASS	CLASS	STIFFNESS (1)		GAUGE	GAUGE
0.3	II	II	II	5 %	10 %	18	16
				45	40		
0.6	II	II	II	45	40	18	16
0.9	II	II	II	45	40	18	16
1.2	II	II	II	45	40	18	16
1.5	II	II	II	45	40	18	16
1.8	II	II	II	45	40	18	16
2.1	II	II	II	45	40	18	16
2.4	II	II	II	45	40	18	16
2.7	II	II	II	45	40	18	16
3	NOT ALLOWED	III	III	45	40	18	16
3.3	NOT ALLOWED	III	III	45	40	18	16
3.6	NOT ALLOWED	III	III	45	40	18	16
3.9	NOT ALLOWED	IV	IV	45	40	18	16
4.2	NOT ALLOWED	IV	IV	45	40	18	16
4.5	NOT ALLOWED	IV	IV	45	40	18	16

(1) Tabular values, as determined by ASTM D2412, in joules at 5% and 10% deflection  
Gages are based on requirements for 600 mm Round Pipe  
For Zone 1 location refer to Highway Design Manual, Figure 8A.