

1 **310-5 PIPE END SECTIONS**

2 Choose which material to use for the required end sections. Both corrugated steel and  
 3 concrete pipe end sections will work on concrete pipe, corrugated steel pipe and HDPE  
 4 smooth lined corrugated plastic pipe.

5 **310-6 MEASUREMENT AND PAYMENT**

6 *Pipe* will be measured and paid as the actual number of linear feet of pipe that has been  
 7 incorporated into the completed and accepted work. Measurement of pipe will be made by  
 8 counting the number of joints used and multiplying by the length of the joint to obtain the  
 9 number of linear feet of pipe installed and accepted. Measurements of partial joints will be  
 10 made along the longest length of the partial joint to the nearest 0.1 ft. Select bedding and  
 11 backfill material will be included in the cost of the installed pipe.

12 *Pipe End Sections, Tees, Elbows and Eccentric Reducers* will be measured and paid as the  
 13 actual number of each of these items incorporated into the completed and accepted work.

14 Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
___" R.C. Pipe Culverts, Class ____	Linear Foot
___" x ___" x ___" R.C. Pipe Tees, Class ____	Each
___" R.C. Pipe Elbows, Class ____	Each
___" C.A.A. Pipe Culvert, ___" Thick	Linear Foot
___" x ___" x ___" C.A.A. Pipe Tees, ___" Thick	Each
___" C.A.A. Pipe Elbows, ___" Thick	Each
___" C.S. Pipe Culverts, ___" Thick	Linear Foot
___" x ___" C.S. Pipe Arch Culverts, ___" Thick	Linear Foot
___" x ___" x ___" C.S. Pipe Tees, ___" Thick	Each
___" C.S. Pipe Elbows, ___" Thick	Each
___" x ___" C.S. Eccentric Reducers, ___" Thick	Each
___" HDPE Pipe Culverts	Linear Foot
___" PVC Pipe Culverts	Linear Foot
___" Side Drain Pipe	Linear Foot
___" Side Drain Pipe Elbows	Each
___" Pipe End Section	Each

15

**SECTION 330**

16

**WELDED STEEL PIPE**17 **330-1 DESCRIPTION**

18 This work shall consist of furnishing and installing welded steel pipe by trenchless methods as  
 19 shown in the contract and as directed.

20 **330-2 MATERIALS**

21 Refer to Division 10.

<b>Item</b>	<b>Section</b>
Welded Steel Pipe	1032-5

22 Use suppliers of metal pipe culverts, fittings and all other accessories covered by this section  
 23 that meet the Department's Brand Certification program requirements for metal pipe culverts  
 24 and are listed on the Materials and Tests Unit's pre-approved list for suppliers of metal pipe  
 25 culvert. The pre-approved list is available on the Department's website.

**Section 340**

1 **330-3 PIPE INSTALLATION**

2 Install the pipe by trenchless construction, true to line and grade and so settlement does not  
3 occur. Fill all voids around the pipe. Replace installations that become damaged or have to  
4 be abandoned.

5 Conduct a pre-construction meeting in the presence of the Engineer at least 48 hours before  
6 the beginning of the pipe installation. The meeting shall consist of, but not be limited to:

- 7 (A) Reviewing all installation methods to install the pipe true to the line and grade given,
- 8 (B) Methods to insure there is no settlement of the pipe or of the completed roadway section,  
9 and
- 10 (C) Methods for filling any potential voids around the pipe.

11 **330-4 MEASUREMENT AND PAYMENT**

12 \_\_\_" *Welded Steel Pipe, \_\_\_" Thick, Grade B in Soil* will be measured and paid as the actual  
13 number of linear feet of pipe measured along the flow line to the nearest foot, which has been  
14 installed in soil.

15 \_\_\_" *Welded Steel Pipe, \_\_\_" Thick, Grade B Not in Soil* will be measured and paid as the actual  
16 number of linear feet of pipe measured along the flow line to the nearest foot which has been  
17 installed in non-soil, as observed and confirmed by the Engineer. Non-soil is defined as all  
18 material other than soil. The Contractor shall request and obtain the Engineer's observation  
19 and confirmation of the limits of the installation not in soil before and during the installation  
20 of the pipe or portion of the pipe not in soil.

21 Failure of the Contractor to request and obtain the Engineer's observation and confirmation of  
22 the limits of the pipe not in soil before and during the installation will result in the payment at  
23 the unit price for \_\_\_" *Welded Steel Pipe, \_\_\_" Thick, Grade B in Soil*.

24 Such payment will include, but is not limited to, furnishing all labor, tools, equipment,  
25 materials and incidentals, miscellaneous grading or excavation necessary to complete the  
26 work. Installations that become damaged or are abandoned will be replaced at no cost to the  
27 Department.

28 Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
___" <i>Welded Steel Pipe, ___" Thick, Grade B in Soil</i>	Linear Foot
___" <i>Welded Steel Pipe, ___" Thick, Grade B Not in Soil</i>	Linear Foot

29 **SECTION 340**  
30 **PIPE REMOVAL**

31 **340-1 DESCRIPTION**

32 Remove and dispose of all existing roadway drainage pipe, including flared end sections,  
33 where the removal of the existing pipes is required by the plans or as directed. Unless  
34 otherwise indicated in the plans, this work excludes the removal and disposal of any existing  
35 public or private water or sewage pipe or subsurface and shoulder drain pipe.

36 The Contractor has the option of leaving pipes in place and filling with flowable fill.

37 **340-2 MATERIALS**

38 Refer to Division 10.

<b>Item</b>	<b>Section</b>
Chemical Admixtures	1024-3
Fine Aggregate	1014-1
Flowable Fill	1000-6