

1 (D) Bedding and Backfill with Select Material

2 No measurement will be made for select bedding and backfill material required in the
3 contract documents. The select bedding and backfill material will be included in the cost
4 of the installed pipe.

5 Where unclassified excavation or borrow material meets the requirements for select
6 bedding and backfill and is approved for use by the Engineer, no deductions will be made
7 to these pay items to account for use in the pipe installation.

8 Payment will be made under:

Pay Item	Pay Unit
Foundation Conditioning Material, Minor Structures	Ton
Foundation Conditioning Geotextile	Square Yard

9 **SECTION 305**
10 **DRAINAGE PIPE**

11 305-1 DESCRIPTION

12 Where shown in the plans, the Contractor may use reinforced concrete pipe, aluminum alloy
13 pipe, aluminized corrugated steel pipe, HDPE pipe or PVC pipe in accordance with the
14 following requirements.

15 305-2 MATERIALS

16 Refer to Division 10.

Item	Section
Aluminized Corrugated Steel Pipe	1032-3(A)(7)
Corrugated Aluminum Alloy Pipe	1032-2(A)
Corrugated HDPE Pipe	1032-7
Elbows	1032
PVC Pipe	1032-8
Reinforced Concrete Pipe, Class II or III	1032-6(B)

17 Corrugated steel pipe will not be permitted in counties listed in Article 310-2.

18 Only pipe with smooth inside walls will be allowed for storm drain systems. Define “storm
19 drain systems” as pipe under curb and gutter, expressway gutter and shoulder berm gutter that
20 connects drainage structures and is not open ended.

21 305-3 CONSTRUCTION METHODS

22 Install pipe culverts in accordance with Section 300. Where allowed by the plans, use any of
23 the several alternate pipes shown herein, but only one type of pipe and elbow will be
24 permitted between drainage structures or for the entire length of a cross line pipe.

25 305-4 MEASUREMENT AND PAYMENT

26 ___" *Drainage Pipe* will be measured and paid as the actual number of linear feet of pipe that
27 has been incorporated into the completed and accepted work. Measurement of pipe will be
28 made by counting the number of joints used and multiplying by the length of the joint to
29 obtain the number of linear feet of pipe installed and accepted. Measurements of partial joints
30 will be made along the longest length of the partial joint to the nearest 0.1 ft. Select bedding
31 and backfill material will be included in the cost of the installed pipe.

32 ___" *Drainage Pipe Elbow* will be measured and paid in units of each.

Section 310

1 Payment will be made under:

Pay Item

— " Drainage Pipe
— " Drainage Pipe Elbows

Pay Unit

Linear Foot
Each

2
3

**SECTION 310
PIPE CULVERTS**

4 **310-1 DESCRIPTION**

5 Furnish and install drainage pipe at locations and size called for in the contract documents.
6 The work includes construction of joints and connections to other pipes, endwalls and
7 drainage structures.

8 **310-2 MATERIALS**

9 Refer to Division 10.

Item

Concrete Pipe Tees and Elbows
Corrugated Aluminum Alloy Pipe Culvert
Corrugated Aluminum Alloy Pipe Tees and Elbows
Corrugated Steel Culvert Pipe and Pipe Arch
Corrugated Steel Eccentric Reducers
Corrugated Steel Pipe Tees and Elbows
HDPE Smooth Lined Corrugated Plastic Pipe
Precast Concrete Pipe End Sections
Prefabricated Corrugated Steel Pipe End Sections
PVC Pipe
Reinforced Concrete Pipe Culvert

Section

1032-6(D)
1032-2(A)
1032-2(B)
1032-3(A)
1032-3(D)
1032-3(C)
1032-7
1032-6(C)
1032-3(B)
1032-8
1032-6(B)

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

14 Do not use plain galvanized or aluminized corrugated steel pipe in the following counties:

15 Beaufort, Bertie, Bladen, Brunswick, Camden, Carteret, Chowan, Columbus,
16 Craven, Currituck, Dare, Gates, Hertford, Hyde, Jones, Martin, New Hanover,
17 Onslow, Pamlico, Pasquotank, Pender, Perquimans, Tyrell and Washington.

18 **310-3 PIPE INSTALLATION**

19 Install pipe, pipe tees and elbows according to Section 300.

20 **310-4 SIDE DRAIN PIPE**

21 Define “side drain pipe” as storm drain pipe running parallel to the roadway to include pipe in
22 medians, outside ditches, driveways and under shoulder berm gutter along outside shoulders
23 greater than 4 ft wide.

24 Where shown in the plans, side drain pipe may be Class II reinforced concrete pipe,
25 aluminized corrugated steel pipe, corrugated aluminum alloy pipe, HDPE pipe or PVC pipe.
26 Use of corrugated steel pipe is restricted in the counties listed in Article 310-2. Install side
27 drain pipe in accordance to Section 300. Cover for side drain pipe shall be at least one foot.