

[54] **CORRUGATED DRAINAGE PIPE**

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[56] **References Cited**

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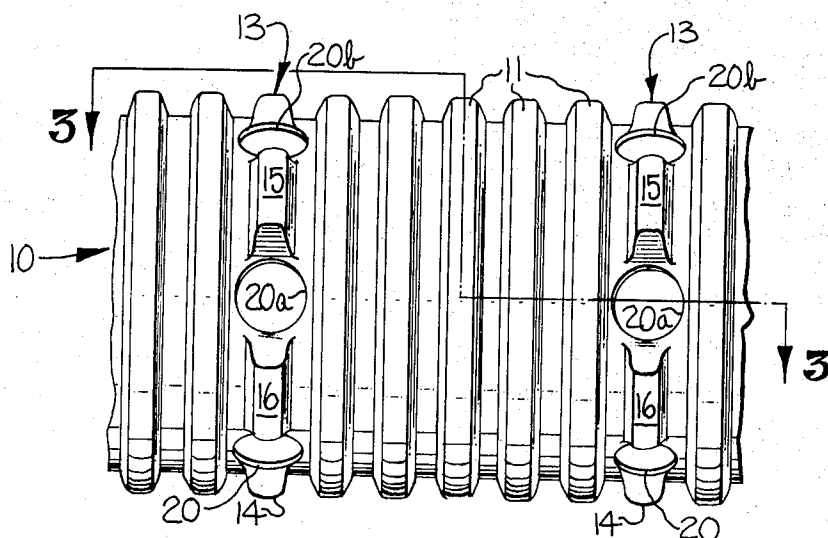
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[57] **ABSTRACT**

A corrugated plastic drainage pipe having spaced apart annular ribs with certain ribs being interrupted and having a set of three circularly arranged spaced apart arcuate rib segments defining a series of three drainage holes positioned between the ends of adjacent rib segments and wherein the rib segments are of such extent and so arranged as to position the drainage holes around the bottom of the pipe and wherein sight means are provided on the upper surface of the pipe and running longitudinally thereof in direct opposition to the intermediately positioned drainage holes for aiding in installing the pipe in the ground with all of the drainage holes located below the horizontal center line of the pipe and with the intermediate drainage holes occupying lowermost position.

3 Claims, 4 Drawing Figures



CORRUGATED DRAINAGE PIPE

This invention relates to corrugated drainage pipes and more particularly to drainage pipes for use with septic tanks and wherein the pipe is formed of plastic material and is of relatively thin wall construction with the corrugations imparting the desired strength to withstand compressive forces and avoid collapsing of the pipe and further aiding in providing the desired resiliency to the pipe for ease in installing the pipe for use in a septic field, for example.

The primary object of this invention is to provide an improved corrugated resilient plastic drainage pipe wherein a series of three drainage holes are provided around the lower portion of the pipe and wherein each of the drainage holes have segmental rib portions on opposite sides thereof, which serve for protectively shielding the drainage holes from the surrounding earth and particularly during the back filling of the earth around the pipe. Furthermore, the corrugated plastic pipe is provided with sight means extending longitudinally of the pipe on the outer surface thereof directly opposite intermediately positioned drainage holes for visually aiding in installing the pipe in the ground with all of the drainage holes located below the horizontal center line of the pipe and with the intermediate drainage holes occupying lowermost position.

Some of the objects of the invention having been stated, other objects will appear as the description proceeds when taken in connection with the accompanying drawings, in which:

FIG. 1 is a perspective view of a length of corrugated drainage pipe shown positioned in a drainage ditch prior to being covered with earth, with the drainage holes being positioned lowermost;

FIG. 2 is a bottom plan view of the drainage pipe;

FIG. 3 is a side elevational view of the drainage pipe with parts broken away and taken along line 3—3 of FIG. 2; and

FIG. 4 is a cross-sectional view of the drainage pipe taken along line 4—4 of FIG. 3.

Referring now more particularly to the drawings, reference numeral 10 broadly indicates the corrugated drainage pipe which is formed of a plastic material, such as polyethylene. Spaced apart annular ribs with annular valley portions are provided throughout the extent of the pipe with the majority of the ribs being uninterrupted, as indicated by ribs 11. As illustrated, one out of every six ribs is interrupted, as indicated by ribs 13. Thus, the uninterrupted ribs 11 are successively arranged in groups of five with an interrupted rib 13 being positioned between adjacent groups of uninterrupted ribs.

Each of the interrupted ribs 13 comprises a set of three circularly arranged spaced apart arcuate rib segments, as indicated by numerals 14, 15 and 16, respectively. The respective rib segments forming each of the interrupted ribs 13 are correspondingly arranged throughout the pipe so as to be in longitudinal alignment with each other.

Between the ends of adjacent rib segments 14, 15, 16 is a series of three drainage holes, identified as 20, 20a and 20b, which series of holes as illustrated is arcuately arranged. As will be noted with particular reference to FIG. 4, the series of drainage holes 20, 20a and 20b are located around the bottom portion of the pipe with the rib segments 14, 15, 16 projecting outwardly therefrom

and serving to space the holes from the earth for effecting proper drainage therethrough. Furthermore, it will be noted that the rib segment 14 is desirably longer than the other two segments and has an arcuate extent encompassing at least the upper half of the drainage pipe, i.e., at least 180°, and preferably is of an extent of about 200° to 220° so as to shieldingly protect holes 20 and 20b during the back filling operation of the earth around the drainage pipe to avoid blocking the drainage holes.

For aiding in properly installing the drainage pipe, sight means 30 is provided longitudinally of the pipe along the upper surface thereof in direct opposition to drainage hole 20a for visually aiding in installing the pipe in the ground with the drainage holes properly positioned lowermost. As illustrated, sight means 30 is in the form of a painted line contrasting with the color of the drainage pipe but may, if desired, be in the form of a series of small rib portions extending longitudinally of the pipe along the outer surface of the annular ribs.

Referring now more particularly to the set of arcuate rib segments 14, 15 and 16, which comprise each of the interrupted ribs 13, as noted earlier, rib segment 14 is desirably of an arcuate extent exceeding 180°, for shieldingly protecting the drainage holes. The shorter rib segments 15 and 16 are preferably of the same length as each other and each have an arcuate extent of about 40° to 45°. It is to be noted that all of the arcuate rib segments 14, 15 and 16 are provided with oppositely sloping terminal end portions 14a, 14b, 15a, 15b and 16a, 16b, respectively, for aiding in directing the fluid flowing through the drainage holes into the annular valleys between the annular ribs.

Preferably, as illustrated, the respective arcuate segments 14, 15, 16 are uniformly spaced from each other so as to readily accommodate similar size drainage holes therebetween, which drainage holes are of at least one half inch in diameter and may be as large as three quarters of an inch if desired. The drainage holes each extend through an arcuate extent of the pipe of about 15° to 25° and have a diameter greater than the width of the ribs. As illustrated, the intersecting axes of adjacent drainage holes defines an angle of about 60° as indicated by A.

It will thus be apparent that the instant invention is directed to an inexpensive drainage pipe which may readily be installed with the drainage holes located lowermost for proper dissipation of the effluent from a septic system, with the construction of the pipe being such as to protectively shield the drainage holes from blockage during the back filling operation in installing the pipe.

In the drawings and specification, there has been set forth a preferred embodiment of the invention, and although specific terms are employed, they are used in a generic and descriptive sense only.

That which is claimed is:

1. A corrugated resilient plastic drainage pipe having spaced apart successive annular ribs with annular valley portions therebetween, the majority of said annular ribs being uninterrupted and successively arranged in spaced groups, the remaining ribs being interrupted and each comprising a set of three circularly arranged spaced apart arcuate rib segments, the rib segments forming each of the interrupted ribs being correspondingly arranged throughout the pipe with one of the interrupted ribs being positioned between each adjacent

pair of said groups of uninterrupted ribs, one rib segment of each set being substantially longer than the other two rib segments and having an arcuate extent of about 200° to 220°, said other two rib segments each having an arcuate extent of about 40° to 45°, a series of three drainage holes being provided between said rib segments of each set with the diameter of the holes being at least one half inch and greater than the width of the ribs, two of said drainage holes being positioned between the opposite terminal ends of said long rib segment and the respective shorter rib segments, the third drainage hole being positioned between the shorter rib segments and being substantially centrally disposed between said two holes, and sight means extending longitudinally of said pipe on and along the outer surface of said annular ribs thereof, directly opposite said third drainage holes, for visually aiding in installing the pipe in the ground with all of the drainage holes located below the horizontal center line of the pipe and with the third drainage holes occupying lowermost position.

2. A corrugated resilient plastic drainage pipe according to claim 1 wherein said sight means extending longitudinally of said pipe along the outer surface of said annular ribs comprises a painted line contrasting with the color of the pipe.

3. A corrugated resilient plastic drainage pipe having spaced apart successive annular ribs with annular valley portions therebetween, certain of said annular ribs being uninterrupted, certain other

annular ribs being interrupted, each of said certain other interrupted ribs comprising a set of three circularly arranged spaced apart arcuate rib segments, the rib segments forming each of said certain other interrupted ribs being correspondingly arranged throughout the pipe and being positioned between uninterrupted ribs, one rib segment of each set being substantially longer than the other two rib segments and having an arcuate extent of about 200 to 220 degrees, said other two rib segments each having an arcuate extent of about 40 to 45 degrees, a series of three drainage holes being provided between said rib segments of each set with the diameter of the holes being at least one half inch and greater than the width of the ribs, two of said drainage holes being positioned between the opposite terminal ends of said long rib segment and the respective shorter rib segments, the third drainage hole being positioned between the shorter rib segments and being substantially centrally disposed between said two holes, and sight means extending longitudinally of said pipe on and along the outer surface of said annular ribs thereof, directly opposite said third drainage holes, for visually aiding in installing the pipe in the ground with all of the drainage holes located below the horizontal center line of the pipe and with the third drainage holes occupying lowermost position.

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