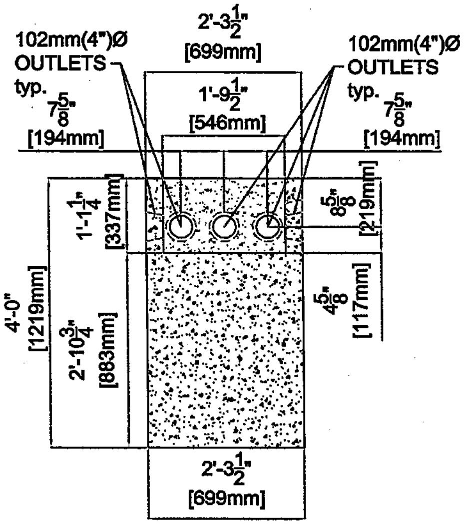
## APPENDIX A - DIAGRAMS

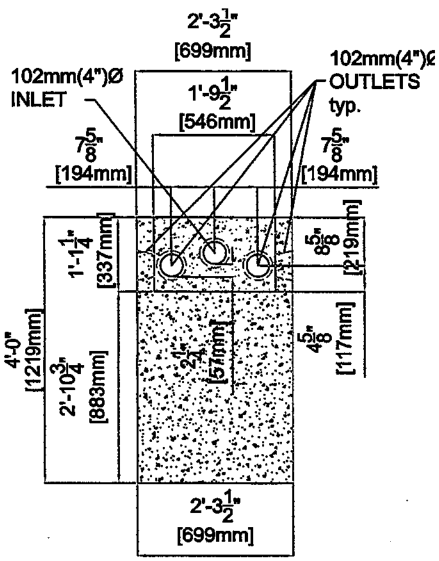
Standard Distribution Box - For Peat Treatment Units

Peat Unit – Bottom Discharge

Peat Unit – Piped Discharge




SIDE SECTION

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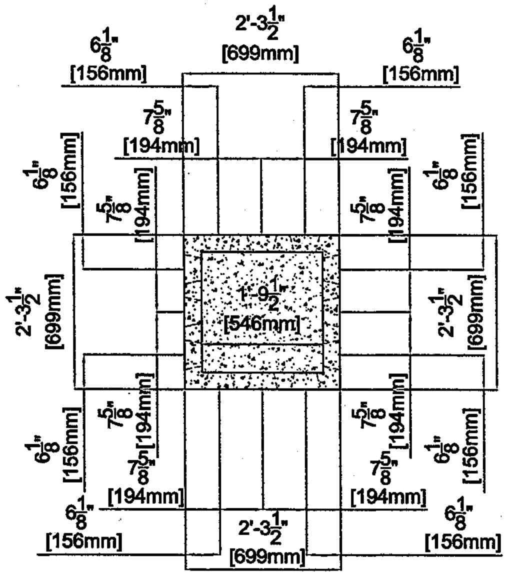
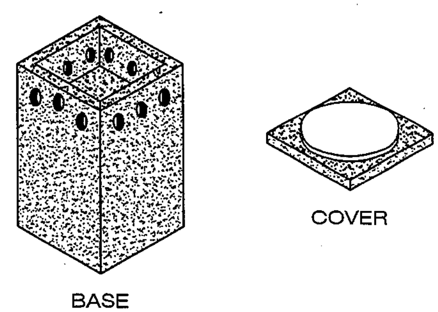



PLAN VIEW




ISOMETRIC VIEW

# 11 Port Distribution Box

## Details

Concrete Strength: 6500 psi (45 MPa) @ 28 Days
Air Entraining: 5 - 7%

Reinforcement: 10 mm Rebar and Structural Fiber

Design For Earth Dead Load Only
Maximum Bury: 2.0 m (6.5')

Conforms To CSA B66-M2005

## Options

Alternative Placement Of Inlet And Outlet Holes

Plastic Risers

Other Notes

Weight: 2300 lb (1043 kg) when complete

Conforms To CSA B66M05
(Dalhousie University)

ISLAND
CONCRETE PRODUCTS LTD.
SYDNEY SITE
517 KELTIC Dr.
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PORT HASTINGS SITE
522 Hwy 105
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DATE: March 2016
SCALE: 3/8" = 1'-0"
PROJECT:

LOCATION:
Sheet # of

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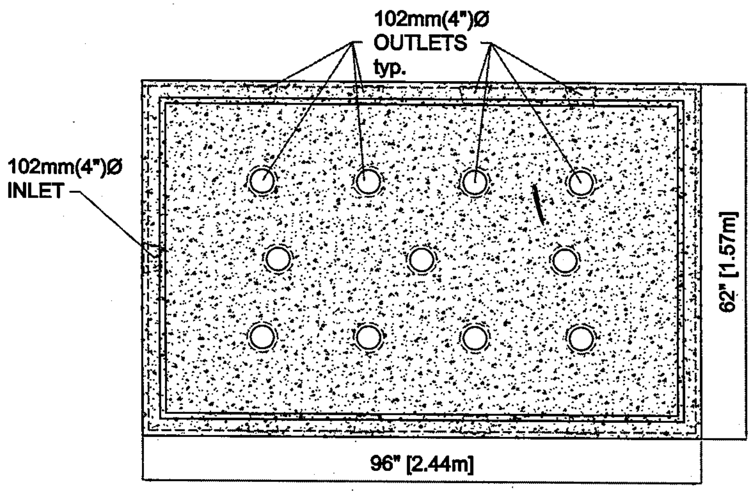
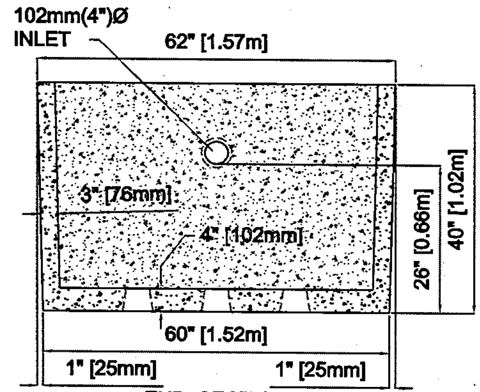



PLAN VIEW

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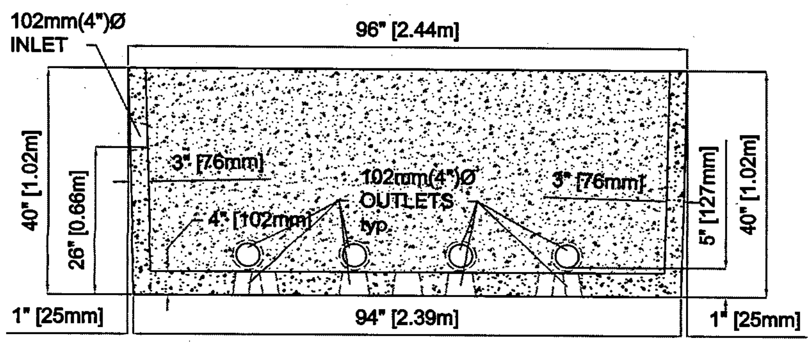
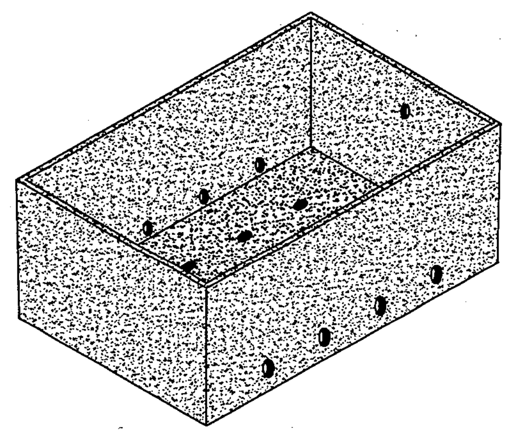



SIDE SECTION



ISOMETRIC VIEW

# Peat Unit
# Bottom Discharge

## Details

Concrete Strength: 6500 psi (45 MPa) @ 28 Days
Air Entraining: 5 - 7%

Reinforcement: 10 mm Rebar and Structural Fiber

Joint Seal: Butyl Rope Sealent Or Equivalent

Design For Earth Dead Load Only
Maximum Bury: 2.0 m (6.5')

Conforms To CSA B66-M2005

## Options

Alternative Placement Of Inlet And Outlet Holes

Plastic Risers

### Other Notes

Weight: 9400 lb (4264 kg) when complete

Conforms To CSA B66M05
(Dalhousie University)

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Brookfield Products Ltd.
Your Pre-cast Specialists

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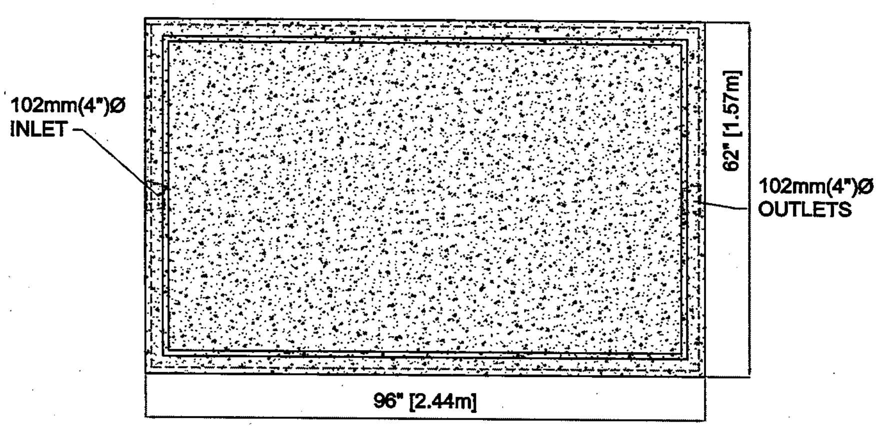
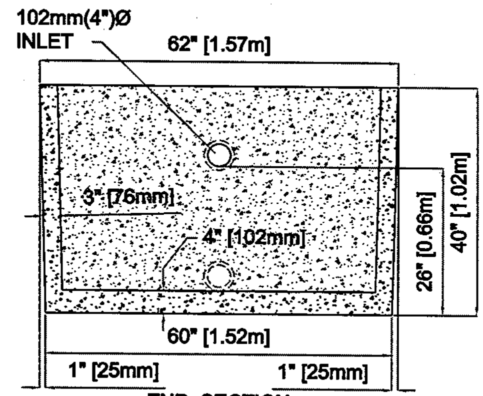



PLAN VIEW

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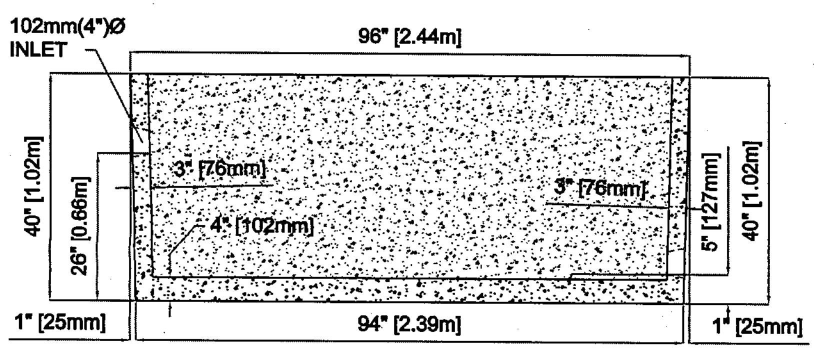


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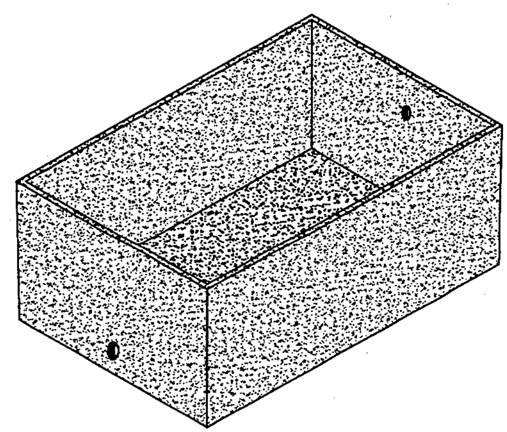

ISOMETRIC VIEW

# Peat Unit
# End Discharge

## Details

Concrete Strength: 6500 psi (45 MPa) @ 28 Days
Air Entraining: 5 - 7%

Reinforcement: 10 mm Rebar and Structural Fiber

Joint Seal: Butyl Rope Sealent Or Equivalent

Design For Earth Dead Load Only
Maximum Bury: 2.0 m (6.5')

Conforms To CSA B66-M2005

## Options

Alternative Placement Of Inlet And Outlet Holes

Plastic Risers

### Other Notes

Weight: 9400 lb (4264 kg) when complete

Conforms To CSA B66M05
(Dalhousie University)


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## APPENDIX B -SOIL STRUCTURE

The structure of a soil refers to the clumping of individual soil particles into groups called peds. The presence or absence of structure in a soil can influence the permeability of soils with similar textures. There is a brief discussion on soil structure in section 2.5.3.b of the Nova Scotia On-Site Guidelines. The attached discussion of soil structure is take form Soil and Site Evaluation for Onsite Wastewater Infiltration System Selection and Design, National Onsite Wastewater Recycling Association, Inc with Tyler & Associates, Inc. November,1996. The presence of platy structure is usually the most restrictive structure for water movement. Table 1 in the Technical Manual For Use In The Design, Installation and Maintenance of Brookfield Peat Sewage Treatment Units provides maximum soil loading rates for effluent from Brookfield Peat Treatment Units. Table 1 shows that for silty sand, sandy silt, or clay silt where platy structure is present the loading rate should be 0. In other words, in ground disposal would not be an option under these conditions. For all other loading rates presented in Table 1 structure has been taken into account in the maximum loading rates provided. Therefore to use Table 1 the site assessor must determine if platy structure is present when the soils are silty sand, sandy silt or clay silt.

Soil Structure

Soil structure refers to the natural organization of soil particles into units. These units are separated by surfaces of weakness. The surfaces persist through more than one cycle of wetting and drying in place. An individual unit is called a ped. Most peds described in soils are large enough to be seen without magnification.

Peds are distinguished from (1) clods, which are caused by disturbances such as plowing, that mold the soil into transient bodies, (2) soil fragments, which form when the soil cracks or is broken and which are bounded by ephemeral planes that do not reappear in the same place on drying and (3) concretions or nodules, which are local concentrations of substances binding grains of soil together into discrete units within the soil. These kinds of bodies are described in other parts of this section.

The persistent surfaces of peds can often be distinguished from the fracture surfaces of soil fragments by smoothness, coatings, relationship of mineral grains to the surface, and the absence of shapes and grooving characteristic of slickensides. Identification of some peds require careful examination of sections through the soil for clearly defined parting planes repeated over reasonably consistent distances and careful examination of the surfaces of units when they are removed.

Some soils lack structure. Some have simple structure, each ped being an entity without component smaller peds that persist through successive wetting and drying cycles. Others have compound structure, in which large peds are composed of smaller peds separated by persistent planes of weakness.

Layers that lack structure are structureless. In structureless soils, no peds are observable in place or after the soil has been gently disturbed, as by tapping a spade containing a slice of soil against a hard surface, dropping a large fragment on the ground, or tossing a fragment up in the air and catching it. When structureless soils are disturbed, soil fragments and single mineral grains can be identified. The soil fragments may be strongly coherent or they may be easily broken or crushed.

In soils that have structure, the shape, size, and grade (distinctness) of the peds are described. Field terminology for soil structure consists of separate sets of terms designating each of the three properties, which by combination form the name of the structure.

Shape

Several basic shapes of peds are recognized in soils. Supplemental statements about the variations in shape of individual peds are needed in detailed descriptions of some soils. The following terms describe the basic shapes and related arrangement of peds:

Platy: The peds are flat and platelike. They are generally oriented horizontally and are usually overlapping. Platy structure is illustrated in in Figure 1. A special form, lenticular platy structure, is recognized for plates that are thickest in the middle and thin toward the edges.

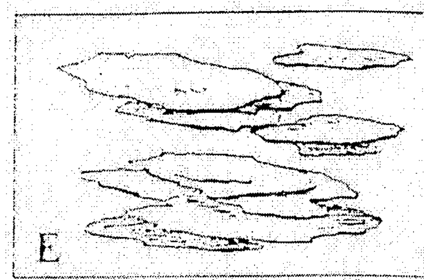



Figure 2. Platy structure

Prismatic: The individual peds are bounded by flat or slightly rounded vertical faces. Peds are distinctly longer vertically, and the faces are typically casts or molds of adjoining peds. Vertices are angular or subrounded; the tops of the prisms are somewhat indistinct and normally flat. Prismatic structure is illustrated in Figure 2.

Figure 3. Prismatic and Columnar Structure

Columnar: The peds are similar to prisms and are bounded by flat or slightly rounded vertical faces. However, the tops of columns, in contrast to those of prisms, are very distinct and normally rounded, as illustrated in Figure 2.

Blocky: The peds are blocklike or polyhedral. The peds are bounded by flat or slightly rounded surfaces that arecasets of the faces of the surrounding peds. Blocky peds are nearly equidimensional but grade to prisms, which are longer horizontally. The structure is described as angular, blocky if the faces intersect at relatively sharp angles and as subangular blocky if the faces are a mixture of rounded and plane faces and the angles are mostly rounded. Figure 3 illustrates angular blocky peds.

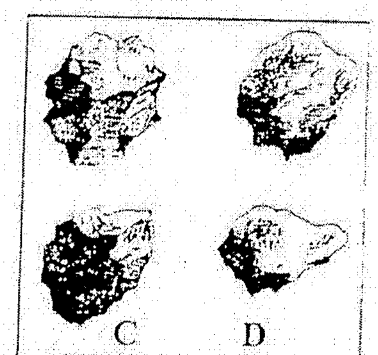



Figure 4. Blocky Structure

Granular: The peds are approximately spherical or polyhedral and are bounded by curved or very irregular faces that are not casts of adjoining peds. Granular peds are illustrated in Figure 4.

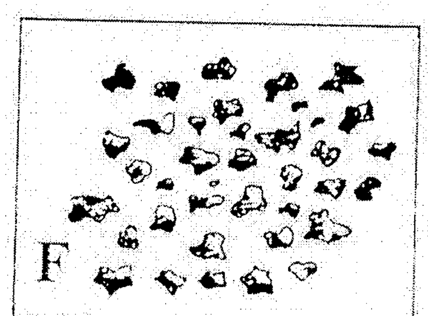



Figure 5. Granular Structure

Size

Five classes describe the size of peds: very fine, fine, medium, coarse, very coarse. The size limits of the classes differ according to the shape of the peds. The classes of size for the various ped shapes are given in Table 4-5. The size limits refer to measurements in the smallest dimension of plates, prisms, and columns and to the largest of the nearly equal dimensions of blocks and granules.

In some horizons the peds are very much larger than the minimum size given for the very coarse class. If the peds are more than twice the minimum size of "very coarse," the actual size is given: "prisms 30 to 40 cm across."

Grade

Grade describes the distinctness of peds and their relationship of cohesion within peds and adhesion between peds. The determination of grade and structure in the field depends on the ease with which the soil separates into discrete peds and also on the proportion of peds that hold together when the soil is handled. Three classes are used:

Weak: The peds are barely observable in place. When gently disturbed, the soil material parts into a mixture of entire and broken peds and much material that exhibits no ped faces. Ped faces that indicate persistence through at least one wetting and drying cycle are evident if the soil is handled carefully. Distinguishing structureless from weak structure is sometimes difficult. In virtually all material that has structure, the surface of individual peds will differ in some way from the interiors of the peds.

Moderate: The peds are well formed and evident in undisturbed soil. When disturbed the soil material parts into a mixture of many peds, some broken peds, and little material that is not in peds. The peds part from adjoining peds to reveal nearly entire faces that have properties distinct from those of fracture surfaces.

Strong: The peds are distinct in undisturbed soil. They separate cleanly when the soil is disturbed. When removed, the soil material separates mainly into entire peds. Generally, faces of peds have distinctive properties that distinguish them from fracture surfaces.

Grade of structure changes with the soil-water state. When soils are described in the field, soil structure of necessity is described for the existing soil-water state. The state is specified, either for the soil as a whole at the beginning of the description or for the individual horizons. When descriptions of a map unit or a taxonomic unit are prepared, structure is described for the soil-water state most common for the soil, and that state is specified. Changes in grade of structure as soil-water state changes are also described.

Structure may be altered in soil sections such as road cuts exposed to variations of temperature and moisture. Soil sections that have been exposed for a long time are not siuitable places to determine the grade of the soil.

The distinctness of individual peds and the relationship of cohesion within peds to adhesion between peds determine grade and structure. The relationship of adhesion to cohesion is relative to the specific horizon being evaluated: individual peds in a sandy loam A horizon may have strong structure yet be less durable than individual peds in a silty clay loam B horizon of weak structure. The degree of disturbance required to determine structure grade depends largely on moisture content and percentage and kind of clay. Only slight disturbance may be necessary to separate peds of a moist sandy loam having strong granular structure, while considerable disturbance may be required to separate peds of a moist clay loam having strong blocky structure.

The three terms for soil structure are combined in the order (1) grade, (2) size, (3) shape: "strong fine granular structure" is used to describe a soil that separates almost entirely into discrete units that are loosely packed, roughly spherical, and mostly between 1 and 2 mm in diameter.

The designation of structure by grade and shape can be modified with other appropriate terms when necessary to describe other characteristics of the peds. Surface characteristics of peds are described separately. Special structural units such as the wedge-shaped aggregates of Vertisols are described in appropriate terms.

Compound Structures

In many soil horizons one or more sets of small peds are held together to form discrete bodies recognizable as larger peds. Both order of peds as well as the relationship of one to the other are described. Grade, size, and shape are given for both. The relationship of one set of structural units to the other is important and is shown: "strong medium blocks within moderate coarse prisms," or "moderate coarse prismatic structure parting to strong medium blocky." The word "parting," not "breaking," is used. The term "breaking" is applied when the soil is fractured along planes other than natural planes of weakness.

A description of peds within peds implies primary and secondary parting planes and voids associated with them. It commonly also suggests differing degrees of continuity of the parting planes and associated voids.

Clods and Soil Fragments

If enough force is used, any body of soil material can be broken into smaller pieces. The pieces are peds if their form and size are related to persistent planes of weakness. Aggregations of soil grains that do not have orderly shape and size or surfaces that indicate persistence are not peds.

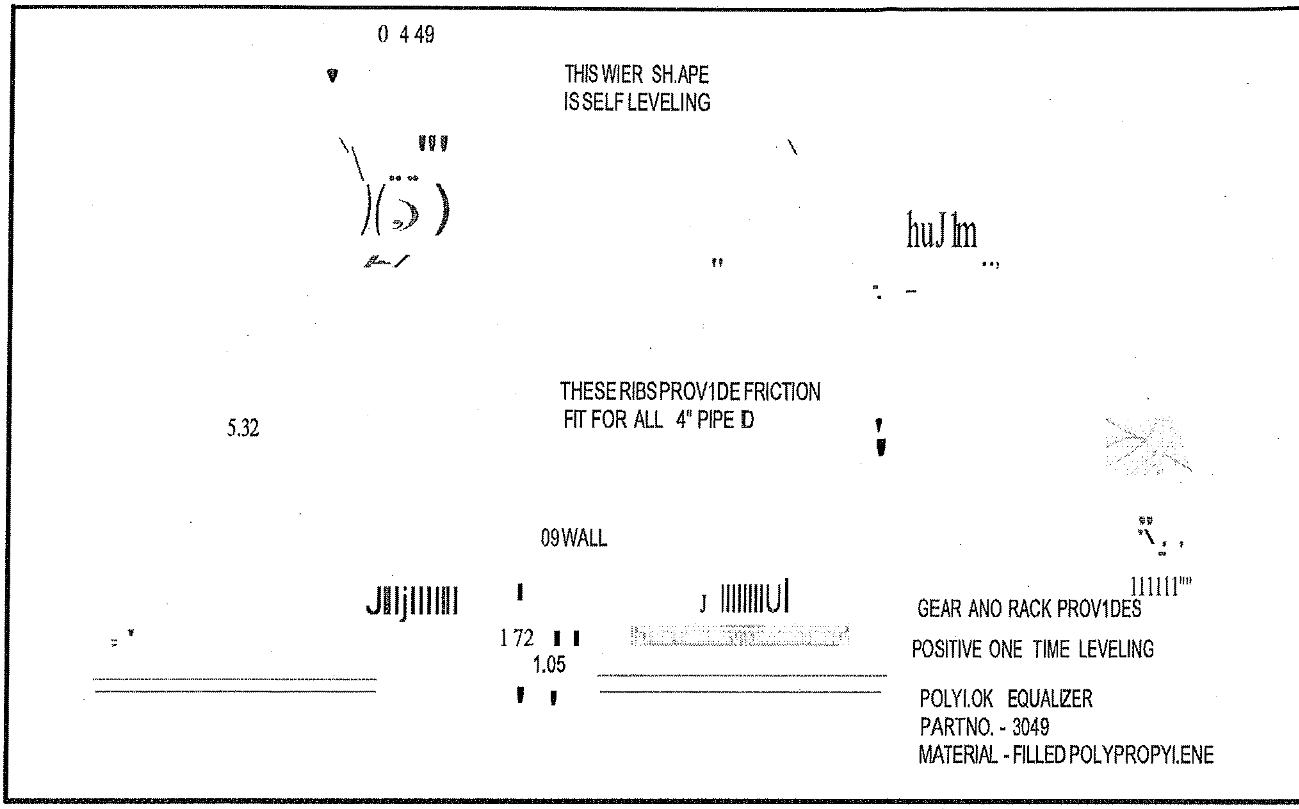
Clod are bodies of soil material that form when the soil is subjected to shearing, as during plowing or digging. There is some rearrangement of primary particles, at least next to the surfaces formed. On slaking, some clods leave peds; others slake to structureless material. The shape, grade, and size of clods should be described.

Soil Fragments include (1) units of undisturbed soil that are separated by planes of weakness or planar voids that at the time they are observed but that do not persist through cycles of wetting and

Drying and (2) pieces formed independently of planes for weakness by outside pressures, as when massive material or a ped is broken during examination of the soil. The soil fragments formed when a soil contracts upon drying are examples of the first kind (Figure 4-18). They form without manipulation and have size, shape, and arrangement governed by forces within the soil; however, the same fracture planes might not form during another wetting and drying cycle. The sizes and shapes of pieces of soil material formed by outside pressures during manipulation depend on the pressure applied. The term "soil fragments" is used to avoid confusion with rock fragments.

## APPENDIX C –Polylok Equalizer

The following information includes diagrams describing, installation instructions, and adjustment instructions for the Polylok Equalizer.




## ADJUSTMENT INSTRUCTIONS Easy as 1-2-3...

1. Insert one Equalizer unit into each D-Box outlet pipe as in Fig 1 with the adjustment knob positioned on top.
2. Rotate all adjustment knobs counter-clockwise to the full DOWN position.
3. Add water into the D-Box until reaching the weir openings of the Equalizers. Using the water as a level, observe which outlet sits highest in the D-Box and do not adjust the Equalizer fitted to that outlet. Rotate all remaining Equalizer knobs clockwise, moving the weir plate UP to match the level of the highest Equalizer. Fine tune by slowly adding water to make sure all weir opening outlets are at the same level.

**CAUTION:**
If a D-Box is out of level more than 3/8" (6 Clicks), relevel the box and start again.

### For Equal Flow To All Trenches

FIG 1

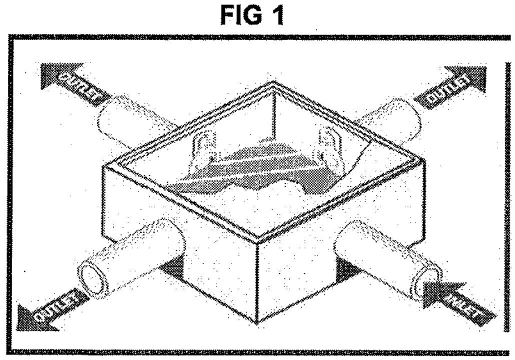



FIG 2