

4.0 APPENDIX

4.4 Installation/Assembly Instructions



TRAPEZOIDAL SECTION ASSEMBLY INSTRUCTIONS

1. Assembly Preparation - Visually inspect liners for damage.

Assembly Kit Includes:

Sealing strips, anchors (with cables), coated screws, washers, cable locks, installation sheet.

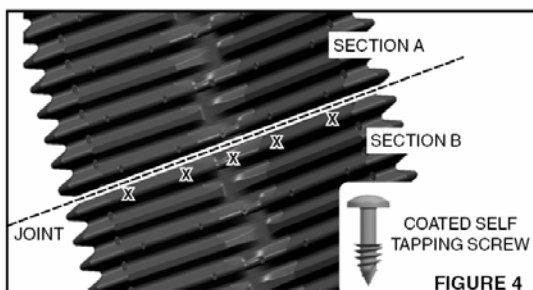
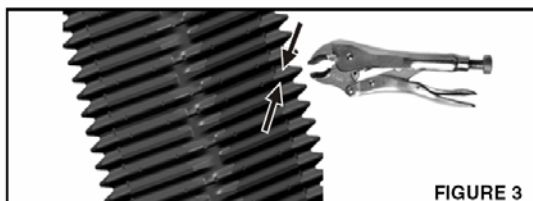
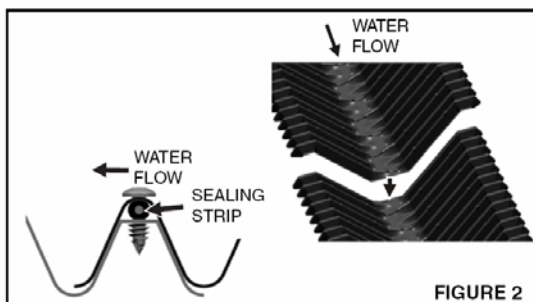
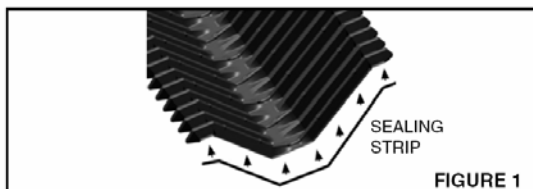
Tools/Supplies Required:

Leather work gloves, battery operated hand-held drill, 1/2" drill bit, pliers, vise grip (2), #3 square driver or phillips, electric powered hammer (with 3/4" sleeve bit), anchor driving rod (1/2" x 32" rod).

READ ALL INSTRUCTIONS THOROUGHLY BEFORE STARTING.

ALWAYS DO WORK SAFELY. ENSURE THAT THE PROPER SAFETY EQUIPMENT IS USED; INCLUDING STEEL-TOED SAFETY SHOES, SAFETY GLASSES, AND HARD HATS.

2. Assembly



STEP 1

Ensure that the ditch has been cleared of all sharp objects, rocks and debris prior to placing the SmartDitch sections into the ditch.

STEP 2

Place SmartDitch sections end-to-end along the ditch bank. Ensure that the ditch bank is free of tripping hazards and is level for connecting the ditch sections.

Connect no more than 10 sections prior to placement into the ditch.

STEP 3

Place sealing strip inside the channel groove (female end beneath product — See FIGURE 1):

- 12" Trapezoid – 50" pre-cut strip per joint
- 24" Trapezoid – 85" pre-cut strip per joint

STEP 4

Nest sections together ensuring that the upstream section over-laps the down-stream section (See FIGURE 2).

STEP 5

Place vice-grip on each side of joined sections to firmly hold sections in place (See FIGURE 3).

STEP 6

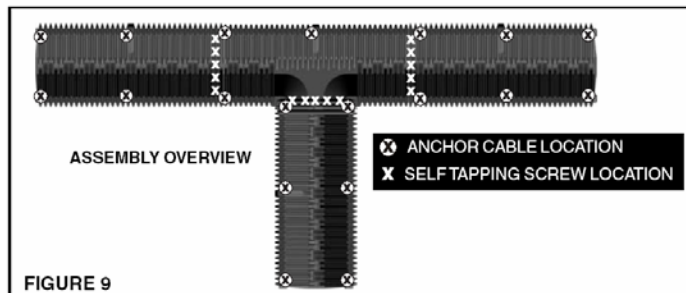
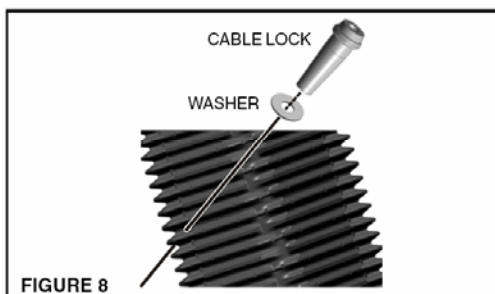
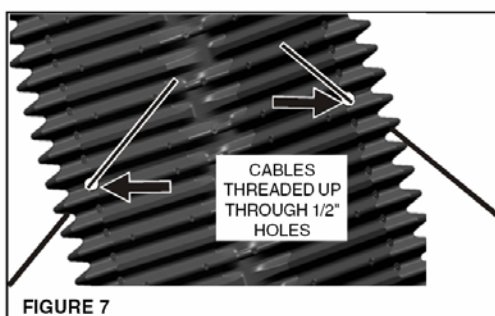
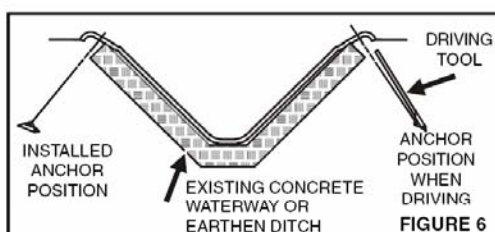
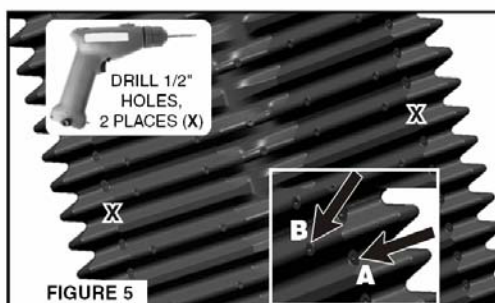
Drill coated self tapping screws provided, through both nested liners at the dimples visible on the sides of the overlapped ribs to join nested parts (See FIGURE 4):

- 12" Trapezoid – 5 screws
- 24" Trapezoid – 9 screws

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STEP 7

Visually inspect the sections to ensure the fastener screws have securely joined the sections. Place SmartDitch sections in ditch and ensure the sections fit as snugly as possible.

STEP 8

Drill 1/2" holes through both nested sections (or close to nested joints) at top of joints. Also drill at mid-length-top of sections at center of indentations; for the through threading of the anchoring cables (See FIGURE 5).

- 12" Trapezoid – Drill out dimples between the ribs (Inset "A").
- 24" Trapezoid – Drill out dimples on top of ribs (Inset "B").

STEP 9

Drive anchors at section joints and at the center line along sections.

Place driving rod into anchor and place anchor on soil surface. Hold driving rod and anchor cable into position and drive rod to required depth. Pull cable to engage anchor horizontally (See FIGURE 6).

STEP 10

Thread cable through drilled holes. Slide the washers and then the anchor cable lock, (narrow end first) on the anchor cable. The cable lock should fit snug and tight to the washer (See FIGURE 7).

Do not over extend the cable anchors such that the section connection is bowed or sprawled out.

STEP 11

Use pliers to grip and firmly tighten the cable lock until the anchor is taut. Trim excess cable (See FIGURE 8).

Repeat the process for all sections.

STEP 12

It is important to use appropriate backfill material. Perform layered compaction based on the backfill material type. Do not over compact to deform trench lining. Ensure that compaction is substantial enough to support maximum flow capacity.

Please refer to technical manual for comprehensive installation instructions.

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4.4 Assembly Instructions



SEMI-CIRCULAR SECTION ASSEMBLY INSTRUCTIONS

1. Assembly Preparation - Visually inspect liners for damage.

Assembly Kit Includes:

Sealing strips, anchors (with cables), ratchet fastener clips, washers, cable locks, installation sheet

Tools/Supplies Required:

Leather work gloves, battery operated hand-held drill, 1/2" & 3/8" drill bit, pliers, vise grip (2), electric power hammer (with 3/4" sleeve bit), anchor driving rod (1/2" x 36" rod).

READ ALL INSTRUCTIONS THOROUGHLY BEFORE STARTING.

ALWAYS DO WORK SAFELY. ENSURE THAT THE PROPER SAFETY EQUIPMENT IS USED; INCLUDING STEEL-TOED SAFETY SHOES, SAFETY GLASSES, AND HARD HATS.

2. Assembly

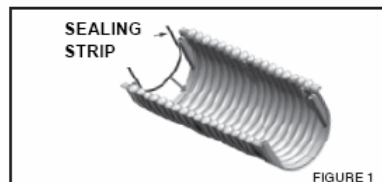


FIGURE 1

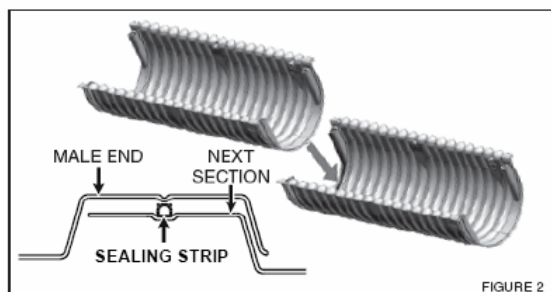


FIGURE 2

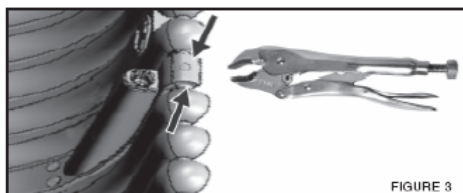


FIGURE 3

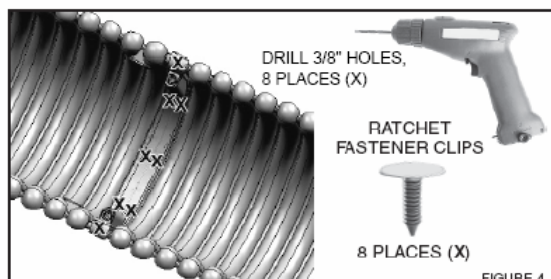


FIGURE 4

STEP 1

Ensure that ditch has been cleared of all sharp objects, rocks and debris prior to placing the SmartDitch sections into the ditch.

STEP 2

Place SmartDitch sections end-to-end along the ditch bank. Ensure that the ditch bank is free of tripping hazards and is level for connecting the ditch sections.

Connect no more that 10 sections prior to placement in ditch.

STEP 3

Place sealing strip inside channel groove (female end of product – See FIGURE 1).

- 24" Semi-circular: 39" pre-cut strip per join

STEP 4

Nest sections together ensuring that the upstream section over-laps the down-stream section (See FIGURE 2).

STEP 5

Place vice-grip on each side of joined sections to firmly hold sections in place (See FIGURE 3).

STEP 6

Drill 3/8" holes through both nested channels at the dimples visible on the sides of the overlapped ribs, and install ratchet fastening clips (See FIGURE 4).

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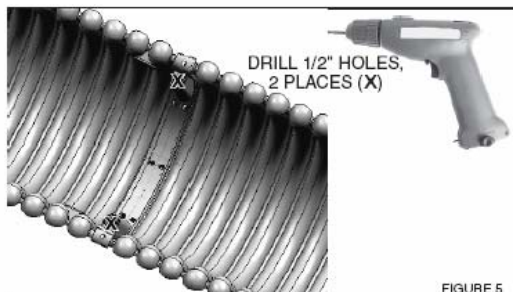


FIGURE 5

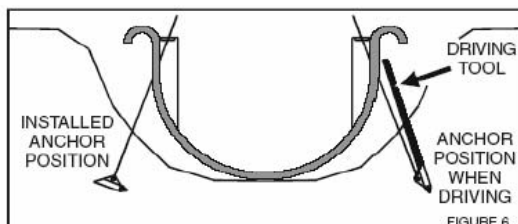


FIGURE 6

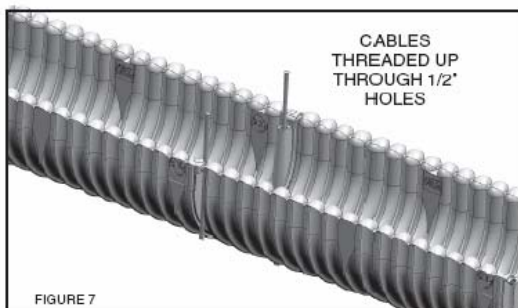


FIGURE 7

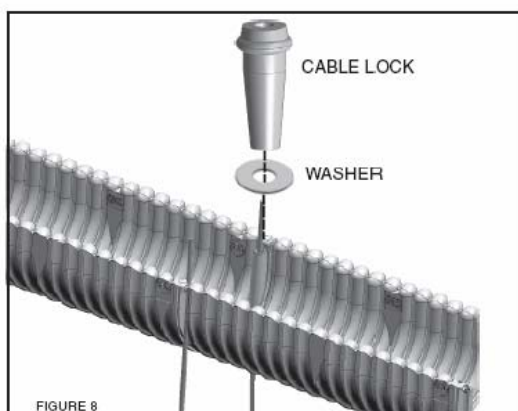


FIGURE 8

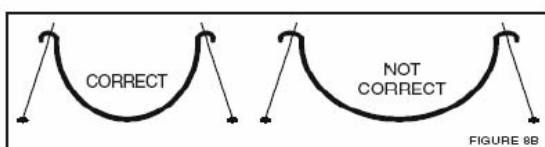


FIGURE 8B

STEP 7

Visually inspect the sections to ensure the ratchet fastener clips pushed through and securely joined the sections. Place SmartDitch channels in the ditch and ensure the sections fit as snugly as possible.

STEP 8

Drill 1/2" holes through both nested channels at the recessed barrel of the staking column for the threading of anchor cables (See FIGURE 5).

STEP 9

Drive cable anchor at section joints, near the staking columns.

Place driving rod into anchor and place anchor on soil surface. Hold driving rod and anchor cable into position and drive rod to required depth. Pull cable to engage anchor horizontally (See FIGURE 6).

STEP 10

Thread cable through drilled holes in staking columns (See FIGURE 7). Slide the washers and then the anchor cable lock (narrow end first) on the anchor cable (See FIGURE 8). The cable lock should fit snug and tight to the washer.

Do not over extend the cable anchors such that the section connection is bowed out (See FIGURE 8B).

STEP 11

Use pliers to grip and firmly tighten the cable lock until the anchor is taut. Trim excess cable.

Repeat process for all sections.

STEP 12

It is important to use appropriate backfill material. Perform layered compaction based on the backfill material type. Do not over compact to deform trench lining. Ensure that compaction is substantial enough to support maximum flow capacity.

Please refer to the SmartDitch Technical Manual for comprehensive installation instructions.