

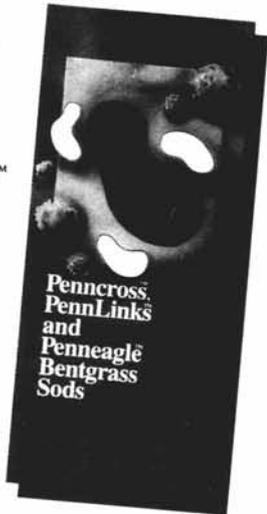
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(On the Waterfront cont'd.)

to excessively high pressures. This effect is greater as the pipe line is longer, the velocity change greater and the closing time of the valve shorter."

A table in the article gives an example of the maximum pressure surge with instantaneous valve closure for water flowing in PVC pipe. In SDR 21 pipe (what we refer to as Class 200 pipe) with a velocity change from 5 feet/second to instantaneous close, a pressure surge of 80.2 psi is observed. The same situation as described above at 6 feet/second yields a 96.3 psi surge; at 8 feet/second - 128.3 psi; at 10 feet/second - 160.4 psi. The 6, 8, and 10 feet/second velocity's of flow are not recommended in system design and will be covered in next month's article.

Sod-Faced Bunkers: An Old Idea That Works Today

by Tim Scott, Asst. Lake Shore C.C.

The history of sod-faced bunkers most likely goes back to the late 1800's when the Scots lined the faces of their bunkers with sod bricks, also known as revetting. The reasons this process was used on many of the bunkers was to provide definition and the steepness helped prevent the winds from blowing the sand out. Importantly, revetting enabled the Scots to build these walls to enormous heights and had the desired effect to alter or disrupt the players swing.

Today, Muirfield in Scotland is one of only a handful of golf courses in the world that still uses revetted bunkers. In the U.S., there are some golf courses that use a variance of this method for their bunkers such as The Golf Club in Columbus, Ohio; a private club in Lake Forest, Illinois and the famed "Devils Hole" at Pine Valley in New Jersey.

As with the Scots and their use of sod bricks, one can also build a sod-faced bunker using sod rolls. There are advantages and disadvantages to constructing a sod-faced bunker. On the positive side, it is easy to form a bunker face with a steep angled slope and of enormous heights. By using rolls of sod, one doesn't need to worry about trying to grow grass on the face of the bunker, which can be very difficult. The sod wall can be substituted for sand where washouts are a constant problem on bunker slopes. Also, with a steep face, one is able to reroute players to an easier exit rather than having them climb up the face and destroying it. On the downside, the amount of sod needed can be expensive and over a period of five to seven years, the sod wall may need to be rebuilt. If you plan to construct a sod-faced bunker, the following is a general guideline for this procedure.

STEP 1 — Calculation of Sod Needed.

Determine the amount of sod needed by measuring the area, length by height, where the sod wall will be built. I suggest this step first in case sod is not readily available for the project, otherwise, Step 2 can precede Step 1.

NOTE: When determining the amount of sod needed, the thickness of the sod should be taken into consideration.

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STEP 2 — Preparation of the Project Area.

Prepare the bunker to be renovated by first removing the sand from the face and base of the bunker slope, so as not to contaminate the sand with soil. Then, cut the desired angle into the slope of the soil base.

The desired angle is the backbone against which the sod strips will be butted.

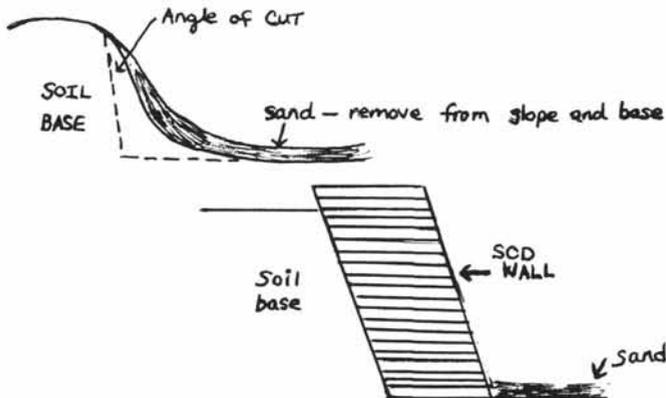
STEP 3 — Construction of the Sod Wall.

Before building the sod wall, in addition to the sod, a supply of sand or soil will be needed as filler between each layer of sod, similar to the mortar between bricks in a brick wall. The soil/sand is used for the following reasons:

- 1) The sand/soil helps solidify and stabilize the sod in the sod wall.
- 2) It is used to fill in cracks and low spots in the sod wall.
- 3) The amount of sand/soil needed will also depend on how thick the sod is cut. The greater the amount soil cut with the sod relates to less sand/soil needed.

There are two methods to stacking the sod for the wall. The first method is to place each piece of sod soil surface down and filling the sand/soil between each layer. This type of stacking will show less of a layering pattern than the second method.

The second method is to place the first layer soil surface down, then add the soil/sand to cover the grass side for a level surface and place the second strips of sod grass side down. Therefore, the wall will have interfaces of soil-soil and grass-grass. The sand/soil will be used only between the grass-grass interface, or every other layer. Continue stacking and butting the sod until the desired height is reached. An additional layer or more of sod can be added to compensate for any compaction or settling that may occur.



My preference is for the second method because it gives a better brick like or layered appearance than the first. After a period of time, the grass interfaces of the sod wall will grow out and provide a beautiful grass faced bunker. The grass can be trimmed if the layered appearance is preferred. Also, the life of the bunker face will probably be increased if it isn't exposed toward the southern horizon and the hot summer sun.

Credit: Ron Crowley, Golf Magazine

Negotiating for Success

by John Turner

Negotiations are an important part of our everyday lives. Virtually all interactions we have with others include possibilities for negotiations. The value in successful negotiations comes from the philosophy to create a "win-win" situation. That is both parties perceive they have hammered out an agreement that fulfills their concerns and real needs. Each emerges feeling like a winner!

Can you think of a recent situation that you have negotiated a deal and won or lost? Winning or losing an agreement is determined by the amount of planning necessary for discussing any proposal. Negotiating on several key issues about a subject will result in more favorable responses than focusing on only one key point. Therefore, in any negotiation ... never, never negotiate on **only one** issue!

When establishing a good negotiating proposal, one requires a firm action plan. A series of steps can be useful for organizing your thoughts on developing a persuasive argument. They are:

1. Develop a case
2. Justify the need
3. Provide the facts
4. Offer a resolution.

Should the process breakdown or fail, then one needs to obtain more information concerning the subject. It is estimated that planning may represent approximately 90% of the entire negotiation process. So it is vital to consider in detail strategies and a clear concise plan for presenting your ideas.

So the next time you begin to negotiate an idea, implement an action plan that illustrates several issues on "what's in it for me" and "what's in it for them". The end result: a successful win-win event that provides satisfaction to both parties.



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