## RENOVATION OF AN ISLAND TEE Dan Hunt, Superintendent Treetops/Jones Course Gaylord, MI

Over the years our island tee on the Robert Trent Jones course had been settling. We decided it was time for total renovation of the tee. The job was a big one and it would include: striping the sod off the whole tee, installing a seawall for erosion and settling control, bringing in fill to raise the tee's height, installing drainage, installing new irrigation and a good finish grade. There was one major problem, the bridge to the tee was only  $4\frac{1}{2}$  feet wide. We wouldn't be able to get our heavy equipment there to work on it. All hand work had to be done on a 3,500 square foot tee.

The first thing we did was cut all the sod off on one end and stack it on the other end of the tee. Next we purchased seawall which came in 16 foot sections. It was recommended to be installed a minimum of 18 inches below the bottom of the pond. So we cut them into 4 foot sections. Since we weren't able to get a backhoe or excavator to the tee, the only alternative was a jackhammer. Each piece of seawall had to be cut. They come in 1 foot widths and it interlocked together as we drove them down. We soon found out that the seawall was not going to be easy to drive down to the recommended depth. During original construction they used whatever was available (which mostly consisted of large rocks and clay) to fill in and build up the original tee. We decided to drive each piece as far as we could which now ranged from 12 to 18 inches. One guy had to be on scaffolding operating the hammer and the other guy had waders on in the water guiding the seawall to be level.

Next was the tricky part. We wanted to raise the tee height about  $1\frac{1}{2}$  feet. How would we get all of that fill down to the tee with the bridge being over 100 feet long and only  $4\frac{1}{2}$  feet wide? The first thing we thought of were wheelbarrows. We decided it was going to be too labor intensive for six people. We started calling around to see if we could find a conveyor belt or a crane to make the job a little easier. What we came up with was the powered wheelbarrows that are used for hauling concrete. They were narrow enough to fit through the bridge with little room to spare. Next we had to figure out a way to fill these units without hand shoveling everything. We took a sander truck used in the winter for sanding the roads and took the whole bottom part that included the spinner off. Now it was only the belt auger taking the mix into the shoot. This appeared it was going to work well until we saw how tall the wheelbarrow was compared to the trucks shoot. We still needed to get the truck up about a foot so they would clear each other. Cart path and a small work area would not allow us to dig a hole for the wheelbarrows. So we dumped some mix on the cart path and put planks on top of the mix to build a ramp. It was pretty tough to keep the large truck on the ramp. We had two powered wheelbarrows hauling between 1/3 and 1/2 a yard of mix each pass.

Finally everything is moving smoothly until the weather starts to give us problems as it always can on any given November day. Four inches of snow made it a problem for the wheelbarrows to get back up the bridges incline. The sun and some warmer temperatures finally took the snow away.

With the seawall drove down we started to cut off the pieces so they were level on top from piece to piece. We then put two 2 x 6 treated boards horizontally sandwiched together with the seawall in between attached with 10 inch carriage bolts. This made the seawall stronger and provided a place for the top board or cap board to sit. The 2 x 6 board had to be grooved on the backside in order to turn the corner of the rounded tee. Anchors were put every 4 to 6 feet apart to make the wall more stable for the fill.

Next we installed the irrigation. We installed eight small heads 25 feet apart. This improved the irrigation coverage immensely since it used to be one large head to cover the entire tee.

We had the seawall up and the fill in place. We compacted the mix to settle it enough to complete the finish grade. We really wanted to work the mix more than with just landscape rakes. We wanted to use our sand trap rake to do the finish grade. Having the bridge only  $4\frac{1}{2}$  feet wide, we took the wheels off our powered sand trap rake and put floor jacks underneath it to roll it down the bridge. It proved to be worth it, saving time and making the finish grade excellent. We then started to put the sod back down and had another setback finding it was frozen. We made a tent and put heaters in it overnight to thaw out the turf. After laying the sod we painted a line where we wanted the tee to be (about 3 feet from the edge of the wall) and then put the rough sod around the perimeter. The backside was then finished the same way and we had a renovated tee in about 10 working days.