North Scott Community (IA) wins Schools/Parks Soccer FOY

Congratulations to John Netwal, CGCS, and the North Scott Community School District for winning the 2004 STMA Schools/Parks Soccer Field of the Year. In the spring of 2001, the district approved the construction of a new sand-based soccer field to meet the demands of this growing program. Until this commitment, the soccer program was limited to practicing and playing all their events on the practice football and outdoor physical education areas. These areas had historically been overused and were always in poor condition due to these demands.

The newly authorized sand-based soccer field was to be built to the standards of a modified USGA golf green. These specifications called for the elimination of the 2-inch intermediate sand layer, if suitable materials were available. Early test reports indicated that suitable materials were available locally for this method of field construction.

Midway into the project, additional material testing indicated that three out of five particle size analyses were failing to meet the necessary bridging requirements for this specification. Uncertainty about whether or not to proceed with these materials brought the project to a halt. After some debate, it was suggested that the district look at adding intermediate sand between the growing medium and gravel bed to provide the bridging characteristics desired, but cost estimates of this alternate plan were prohibitive. Further discussions led to a variation of this plan that permitted for the use of an intermediate sand layer directly above the drainage lines. This cost-saving modification to the alternate plan provided the bridging characteristics sought in the original specifications and fell within the project budget.

This solution called for the removal of the 4-inch gravel layer over the base pad and due to the removal of this drainage feature, it was recommended that the number of the original tile lines be doubled to make up for this loss. It was reasoned that this modification would make up for any loss in drainage characteristics by the elimination of the four-inch gravel bed. The tile lines were back filled with pea gravel up to within 2 inches of the top of the trench and then capped with intermediate sand. This strategy provided enough gradient between the particle sizes of the growing medium, the intermediate sand and the gravel to permit satisfactory bridging, without sacrificing drainage.

The construction of this field began with a completely compacted 380 x 275-foot base pad. This pad was then laser leveled, re-compacted, and "GPS'd" for the new design of the modified drainage system. A laser-guided trencher then cut the tile lines across the field with a 1% slope. Once this was completed a geo-textile fabric was laid across the entire floor of the base pad and into the exposed trench lines before installing tile and pea gravel.

The irrigation system was then installed on the floor of the base pad and consists of 56 Hunter I-40 heads in a block system that is controlled by a Rain Bird ESP 16-station satellite. The 4-inch irrigation mainline was completely looped around the exterior of the field cavity to maximize the system pressure from the municipal water source, and to keep the valves outside of the playing surface.

The 12-inch deep 85% sand 15% Dakota Peat growing medium was pushed out by bulldozers and then laser leveled. The field was then seeded to a five-way blend of Sure Shot low growth Kentucky Bluegrasses. Spectator mounds were also constructed on each side of the field. The field is completely surrounded with 6-foot security fencing and

illuminated with Musco lighting equipment.

The field is maintained year-round at a cutting height of 5/8-inch with a National tri-plex mower. The low growth bluegrasses are on a growth regulator program throughout the growing season. The monthly fertility program calls for approximately .85 lbs. to 1 lb. of N / monthly /m of granular fertilizers, supplemented with bi-weekly applications of foliar products with micronutrients. The annual nutrient target for this sand-based field is approximately 6 lbs. of nitrogen, 2.5 lbs. of phosphorous, and 5.2 lbs. of potassium /m / year. The field is annually aerated with 5/8-inch hollow core tines and topdress it bi-monthly. Weed control for broadleaf weeds are done on an alternating year basis while, pre-emergent applications are on an annual program. Insect and disease problems have been relatively non-existent on the field and monitoring for all problems continues on daily.

Build it and they will use it

The field opened for play and practice during the spring of 2003 for the both the girls' and the boys' programs. These programs begin in mid-March and run through the first weeks of June. During this period, the field is normally utilized six days per week. Throughout the season field setups are shifted monthly to move the high traffic areas out of play to keep the quality of playing conditions consistent. Area coaches, athletes, visitors, and game officials have all remarked about the quality and playability of the field. Game officials have also reported how much less fatigued they feel after officiating games.

John Netwal says, "We have also become our own researchers by conducting a variety of trials and studies on our sports fields. We are currently studying the effects of growth regulators on the soccer field as well as our other sports turf areas. This trial has justified the use of these products and has proven that they belong in our management programs.

"We have also undertaken another project this year in which we are studying the actual maintenance cost of all of our sport fields (see page XX). We began this study to better understand the maintenance cost of our new soccer field and how it compares to the input requirements of our native soil sports fields," says Netwal. "We currently tracking our labor, supplies, materials and utility cost inputs, necessary to produce the turf conditions we desire on each field type. Our interest is to shed some light on the actual maintenance cost of our new sand-based sport field. We are also interested in comparing our findings with those suggested by the sales staff and manufacturers of the next generation of artificial sport field systems. It is our hope that through our efforts we will be able to fairly evaluate the pros and cons of each type of these modern sports field systems."

In addition to this work, Netwal is participating with Iowa State University in a 2-year study to evaluate the integrated pest management practices for schools. This study, sponsored by the EPA, is a 2-year commitment to determine threshold limits and IPM strategies for school systems. ST

North Scott Community Schools

Soccer Fielld Maintenance Equipment

National Hydro 70 Tri-Plex Mower
John Deere 4600 Tractor
Allied 150-Gallon Spray Tank and Boom
BEFCO PTO Driven Overseeder
Jacobsen Model 40 PTO Driven Blower
Powerline 5000 Airless Field Painter
Toro Workman Utility Vehicle

Rented Equipment
Dakota Topdresser
Toro ProCore 4000 Aerator