High and mighty is the Colfax High School football field, STMA's 1999 field of the year in the high school division. It's carved into the forest in the foothills of Northern California at an elevation of 2,250 feet. The football field was originally constructed in 1969 at its present location. It now serves a student body of approximately 930.

The rapidly growing city of Colfax is about an hour's drive from Sacramento eastward along Interstate 80. Gregg Roberts is Director of Facilities for the Placer Union High School District. Along with Colfax High School, the District currently includes two other comprehensive high schools with full athletic programs and one alternative education center. The District will start construction on a fourth comprehensive high school in the summer of 2002 as part of the $60 million construction program passed in bond issue in March of 2000. With football, soccer, baseball and softball game fields at all the comprehensive high schools, there currently are about 40 acres of athletic turf in the District. Each of the high schools are at different elevations—one at 160 feet, one at 1,200 feet, with the new high school to be built at 3,000 feet. All are native soil fields but due to the different sites, soil conditions also differ. There is no “one size fits all” solution in this field care program.

Roberts says, “The Colfax High School field is a heavy clay native soil and is surrounded by a decomposed granite track. The clay soil is significant due to the annual rainfall of approximately 40 to 80 inches, depending on the wetness of the year. This field was built with a 2-foot crown for drainage to 12-inch collector drains around the field and had remained basically the same for nearly 30 years.

“Starting in 1993, the entire school
dried sand trucked in at the cost of about $30 a ton. The field was graded and the soil chemistry checked and adjusted. Sand Channel Green's equipment cut and filled two parallel rows at a time. These rows are 9 inches deep and 16 inches apart and run the length of the football field. Another piece of equipment does the 9-inch-deep cross-field rows at 4-foot

Good turf coverage was achieved within 10 weeks of sprigging and the completion of field renovation.

district underwent an athletic field turf renovation from cool season turfgrasses to the warm season bermudagrasses. The first field, a soccer field, was converted to common bermudagrass. Over the next five years the rest of the fields were converted to hybrid bermudagrasses, mostly Tifway 419. Because the athletic fields of Colfax High School had been the best in the district when this project was started, they were among the last to be converted. Renovation of the fields at Colfax began in 1997. Baby, a hybrid bermudagrass from Delta Bluegrass Company, was selected for the Colfax fields because of its quick establishment rate and very aggressive lateral growth patterns.

The District's football season runs from August until December, with rain usually a factor in the later half of the season. The Colfax field can be hit with heavy downpours when the storms bump against the foothills. A 1-inch rain in the Valley can easily be a 3-inch rain at the 2,250 feet elevation. With a clay soil, turf condition becomes even more important.

Roberts says, “Prior to the conversion, the turf in the middle of the field was generally wiped out by November, resulting in quagmire playing conditions during the rainy season. The Colfax football team was continually in the playoffs at the wettest time. We examined all possible renovation options for the field and determined the patented Sand Channel Greens system would best suit our needs. We worked with Jerry Stratton of Sand Channel Greens, Steve Abella of Delta Bluegrass Company and Dave Patterson of Sierra Pacific Turf Supply, as our soil chemistry consultant, to coordinate the renovation. To reduce costs, the District bought the components and supplied a good share of the labor.

“Work began the first week of June, 1999, immediately after graduation. Our district and site grounds-men stripped off the existing turf. We had approximately 350 tons of kiln
dried sand trucked in at the cost of about $30 a ton. The field was graded and the soil chemistry checked and adjusted. Sand Channel Green's equipment cut and filled two parallel rows at a time. These rows are 9 inches deep and 16 inches apart and run the length of the football field. Another piece of equipment does the 9-inch-deep cross-field rows at 4-foot

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December 2000
**Colfax High School - Football Field Maintenance Program**

<table>
<thead>
<tr>
<th>Month</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>Mowing at 1-1/2-inch as needed</td>
</tr>
<tr>
<td></td>
<td>Fertilization - 15-15-15 at 290 pounds per acre, adjusted if needed based on soil test results</td>
</tr>
<tr>
<td>February</td>
<td>Mowing at 1-1/2-inch as needed</td>
</tr>
<tr>
<td>March</td>
<td>Mowing weekly at 1-inch</td>
</tr>
<tr>
<td></td>
<td>Fertilization - 29-3-10 at 150 pounds per acre, adjusted if needed based on soil test results</td>
</tr>
<tr>
<td></td>
<td>If soil chemistry dictates: gypsum added to modify the pH</td>
</tr>
<tr>
<td></td>
<td>Aeration: shatter tine to 6-inch depth</td>
</tr>
<tr>
<td></td>
<td>Topdress: If second topdressing used - with approximately 25 tons of kiln dried sand</td>
</tr>
<tr>
<td></td>
<td>Irrigation as needed throughout year</td>
</tr>
<tr>
<td>April</td>
<td>Mowing weekly at 7/8-inch</td>
</tr>
<tr>
<td>May</td>
<td>Mowing twice weekly at 7/8-inch</td>
</tr>
<tr>
<td>June</td>
<td>Mowing two or three times weekly at 7/8-inch</td>
</tr>
<tr>
<td></td>
<td>Aeration: shatter tine to 6-inch depth</td>
</tr>
<tr>
<td>July</td>
<td>Mowing two or three times weekly at 7/8-inch</td>
</tr>
<tr>
<td></td>
<td>Fertilization - 29-3-10 at 150 pounds per acre, adjusted if needed based on soil test results</td>
</tr>
<tr>
<td>August</td>
<td>Mowing two or three times weekly at 7/8-inch</td>
</tr>
<tr>
<td>October</td>
<td>Mowing twice weekly at 7/8-inch</td>
</tr>
<tr>
<td></td>
<td>Fertilization - 15-15-15 at 290 pounds per acre, adjusted if needed based on soil test results</td>
</tr>
<tr>
<td></td>
<td>Overseeding with mix of annual and perennial ryegrass at the rate of 6 to 10 pounds per 1,000 square feet</td>
</tr>
<tr>
<td>November</td>
<td>Mowing weekly at 1-inch</td>
</tr>
<tr>
<td></td>
<td>Aeration: shatter tine to 6-inch depth</td>
</tr>
<tr>
<td>December</td>
<td>Mowing at 1-1/2-inch as needed</td>
</tr>
</tbody>
</table>

- **September**
  - Mowing twice weekly at 7/8-inch
  - Aeration: shatter tine to 6-inch depth
  - Topdress: with approximately 25 tons of kiln dried sand
- **October**
  - Mowing twice weekly at 7/8-inch
  - Fertilization - 15-15-15 at 290 pounds per acre, adjusted if needed based on soil test results
  - Overseeding with mix of annual and perennial ryegrass at the rate of 6 to 10 pounds per 1,000 square feet

Roberts reports, "We did not overseed in 1999 because the turf was so young. Also, no spring sports use the stadium field, though it is used throughout the school season as weather permits from about 8:00 a.m. to 2:00 p.m. for the high school's physical education classes. But the students wear tennis shoes, not cleats, and the activity isn't concentrated in specific, defined areas. The school has no marching band. The football team practices on the turfed interval. This machine lays collector lines and fills the sand in one process. These collector lines transfer water to a 4-inch collector pipe which surrounds the field and which ties into our existing 12-inch drain lines. Our groundsmen filled the machine hoppers with sand, handled the backfill and removed the build up of native soil created by the channeling equipment. Following this, the final grading adjustments were done establishing a 1-1/2 percent crown for surface drainage. The field was sprigged with Baby bermudagrass on June 10. The project took 17 days from start to finish."

Roberts reports good turf coverage was achieved within nine to 10 weeks of sprigging. By the time of first field use, a football game played on Sept. 16, the field was well turfed with only a couple of small areas that hadn't covered completely. Generally, the bermudagrass starts green up in April and reaches full green up by mid-May. The football field is in great shape to host graduation at the end of May or early June.

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The field hosts 20 home football games and four to six soccer games each season.

sections of the baseball and softball fields. They do one light practice on the game field each week, usually on Wednesday, to work on the kicking game and coverage. The freshmen team plays on Thursdays and the Junior Varsity and Varsity teams on Fridays. The field hosts 20 home football games and four to six soccer games each season.”

The football season ends with the playoff games in early December. Regular season play for boy's soccer, also a fall sport, ends in late October, though playoffs could extend play. Girl's soccer is one of the spring sports, which begin on Feb. 1. The football field rest cycle generally extends from the last December playoff game into early February.

Roberts says, “Temperatures usually start dropping in mid-October. The bermudagrass goes through a slow phase down turning from a deep green to a lighter green and finally hitting a yellow brown. The field was overseeded this year in mid-October with a mix of annual and perennial ryegrass at the rate of 6 pounds per 1,000 square feet. Ryegrass phase out is not a problem. Even at this elevation temperatures can be as high as 100 degrees Fahrenheit in the summer time.”

Along with the field renovation, a 5/8-inch layer of crumb rubber was installed in both team boxes to reduce turf wear. The turf grows back through the rubber, protecting the crown of the plant and helping to maintain a higher soil temperature, thus delaying dormancy. Colfax High School has a standard in-ground irrigation system. The football field is equipped with Hunter I-

25 heads with new scrubber valves. Until 1995, the irrigation system used treated water which, with California water rates, added considerable expense to the field maintenance budget.

Roberts says, “We developed an innovative solution to this problem, working with our water supplier to convert to untreated water which we could buy at a fraction of the cost. The water agency did the conversion at no cost to us since they benefited by having more treated water to sell for home development in the area.

“The water comes from higher up in the mountains and flows through a series of natural ditches and man-

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Along with the field renovation, a 1/8-inch layer of crumb rubber was installed in both team boxes to reduce turf wear. The turf grows back through the rubber, protecting the crown of the plant and helping to maintain a higher soil temperature, thus delaying dormancy.

made canals into a canal about 200 feet higher than the high school elevation. The system is unique in that no pumps or electricity are needed. The difference in elevation alone enables us to get 57 pounds of pressure at the heads. We use a hydraulically actuated filter that senses the back pressure on the screen when impurities build up and rotates to clean off the screen. Thus we have a great irrigation system for very little cost.”

Another cost-saving measure used on the Colfax High School football field was the construction of the new stucco press box and concession stand. In 1995, funds were bequeathed for the athletic program. The school developed a plan to replace the existing building with a structure that met all modern standards. This plan was approved by the Division of State Architects. The funds were applied to the purchase of the materials. Under the direction of Roberts and spearheaded by one very dedicated volunteer, arrangements were made with local contractors to donate their time and equipment to the project. District personnel pitched in during the summer of 1997 to complete the structure for the first football game of the season.

Roberts also has developed an equipment-sharing partnership with

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a couple other school districts. Major equipment purchases are coordinat-
ed, with one district purchasing the
topdresser, another district purchas-
ing the aerator, etc., so all the cooper-
ating districts have the use of top
quality machines without overex-
tending their budgets.

Roberts says, "The field continues
to do very well in 2000 despite wet
conditions. The bermudagrass is now
fully mature. We had one game in
wet conditions the last Friday night
of October and post-game field condi-
tions were so good you couldn't even
tell they had played. That's due pri-
marily to the great team of grounds-
men within the district and on site.
The main players from the beginning
of the project were Ed Campbell,
Jason Campbell, Trinidad Garcia,
Ron Uno and Phil Godman, and their
dedication to the field continues.
Stan Sindell has moved to the posi-
tion of District Head Groundsman
and is integral in keeping it going. It
takes a huge commitment on every-
one's part to make it happen.

We went into this project with the
safety of the athletes our prime objec-
tive. That we've cut our injuries due
to turf quality conditions to zero is a
testimony to what effective sports
turf management can accomplish."

Bob Tracinski is the business
communications manager for the
John Deere Worldwide Commercial &
Consumer Equipment Division head-
quartered in Raleigh, N.C. He serves
as public relations co-chair for the
national Sports Turf Managers
Association.

Crew members take a moment from their busy schedule to pose for the camera. Say cheese!

For Quality Turf

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