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Published by the National Society of Professional Engineers Buffalo Bills PE Gets Ralph Wilson Stadium in Shape for Kickoff

By David Siegel
Editor

When Professional Engineer and NSPE member Joe Frandina was growing up in Buffalo, New York, in the 1960s, the Buffalo Bills of the American Football League were everything to him. He remembers 1966 when, even though money was tight, his parents bought him a ticket to the AFL title game against the Kansas City Chiefs, who won the game and went on to play in the first Super Bowl.

“In 1965, when the Bills won their first AFL championship, I was 10 years old, and when someone asked me what I wanted to be when I grew up, I said that I was going to be a Buffalo Bill,” he says. “And oddly enough, in a different capacity, I guess I am.”

Frandina’s dream of a career as a Bills linebacker ended after high school. However, it was his skill in engineering rather than chasing down quarterbacks that has led him to become a very important part of the team. Today, Frandina serves as the Bills’ director of stadium operations, and possibly the only PE in the National Football League.

Frandina’s job, like the job of most engineers, involves the details that usually go unnoticed. In this case it’s the thousands of things the average football fan doesn’t see but have to happen to successfully put on an NFL game. Preparation is what it’s all about, but as Frandina says, “The game’s going to happen whether you’re ready or not.”

When the Bills are at home, Ralph Wilson Stadium has a population larger than that of Frandina’s hometown of Tonawanda (population approximately 61,000). With more than 70,000 fans, plus teams and employees, the stadium population would make it the second largest city in New York’s Westchester County.

Frandina’s job can be compared to that of a town’s public works department director. He oversees the 23-employee operations department, which oversees a campus covering 200 acres. The department’s responsibilities include buildings and grounds, HVAC, plumbing, electrical, structural, maintenance, preventative maintenance, snow removal, and house cleaning, among others. On game day his staff grows to about 200.

Frandina also oversees facility renovations, such as the construction of a new field house in 1995, a \$70 million stadium upgrade completed in 1999, and the addition of a new playing surface last year. The field house, which has a regulation football field and a roof high enough to allow kickers to practice, is the largest indoor practice facility for football in the U.S.

During the week, the stadium complex is the working headquarters for about 150 Bills employees, not counting the team. Frandina’s job is to make sure that everything about the facility is in working order and ready to go.

How to Make the NFL

Engineering, as well as active involvement in the Erie-Niagara Chapter of the New York State Society of Professional Engineers, runs in Frandina’s family. His sister, Rosanne, was NSPE’s 1990 Young Engineer of the Year, and his brother, Frank, was the chapter’s Engineering Manager of the Year in 1997. In 2000, Joe was

named the chapter's Engineer of the Year and he's a chapter past president.

It was Frandina's father, Phil, a PE, licensed land surveyor, and active member of the Erie-Niagara Chapter, who introduced him to engineering. In 1973, when the Bills' stadium was under construction, Phil worked for Erie County, owner of the stadium, and he took Joe to watch the construction at various stages. Those visits had a lasting effect.

"In high school and college, when and I was leaning toward engineering, I was a season ticket holder," says Frandina. "The people I would come [to the games] with would kind of laugh because sometimes I was more intrigued by the structure and construction of the stadium than what was happening on the field."

After graduating from the State University of New York at Buffalo with a civil engineering degree, Frandina worked for a private practice engineering firm in Buffalo for 15 years before starting Frandina Engineering.

It was in the early 1990s when Frandina got a call from Bills Assistant General Manager, Bill Munson, who was looking for a local firm to do a feasibility study for renovations at the stadium. "I was thrilled and of course I took the project," says Frandina. After that, his firm continued to be involved in the stadium renovation projects.

The relationship grew from there, and when a full-time position opened up with the Bills in 1995, he was offered the job.

Game Preparation

When the Bills have a home game, Tuesdays start with a pre-game staff meeting where all departments in the organization go over their plans for the upcoming game. The marketing group will tell about promotional events and sponsor parties while the media group will tell about the needs of the networks covering the game. The guest services department may report broken concrete that needs repair or a suite owner who needs shelves built; stadium security may need a place to store their winter parkas; and the merchandise group will go over the set-up details for the 18 merchandise stands.

"There are hundreds of activities," Frandina says, and almost all of them require help from the stadium operations group.

After Tuesday's pre-game meeting, Frandina takes the information to an operations department staff meeting on Wednesday, where he assigns game-specific responsibilities in addition to regular responsibilities.

Thursdays and Fridays are spent carrying out game preparations and also playing a chess game with the weather, which makes for some challenges at an outdoor stadium in Buffalo.

Also on Fridays the networks begin setting up for the game, and on Saturdays the operations department is going full blast with the final touches.

All of this game preparation takes place while the Bills are practicing either at their outdoor field or in the field house. Two operations department employees are assigned to the team while it practices during the week.

Game Day

On game day, Frandina arrives at the stadium at 7:30 a.m for a 1:00 p.m. kickoff. By that time other staff are already tending to the final details before the gates open at 11:30 and the first of the 70,000-plus fans enter the stadium.

The tarp crew uncovers the field. Ushers, ticket takers, and security arrive. Computerized schedules for stadium and parking lot lighting are checked, as are the temperatures in the suites, locker rooms, and club areas. The suites are readied for the arrival of caterers, and the tunnel areas are touched up for the arrival of the teams.

During the game, Frandina is on the sidelines. He's responsible for the coaches' communications system as well as radio communications between the coach and quarterback, who is equipped with a radio receiver in his helmet. Responsibility for the facility is turned over to Frandina's assistant, Perry Dix.

By the middle of November, the big concern for Frandina and the operations department is snow. Each day the group is responsible for keeping access roads and parking lots clear for daily staff.

When it snows before a game, the operations department puts a prioritized plan in play. First the field must be made playable, and then the safety of the fans is addressed by clearing stairs, aisles, and ramps. Third, given time, comfort-related work, like clearing seats, is carried out. "The main thing we have to concentrate on is that the game has to go on," says Frandina.

The pressures of Frandina's job can be compounded by the difficulties that come with the snow Buffalo is famous for. It's only fitting that he was forced to deal with it in his first game as director of stadium operations.

Before opening kickoff in a game against the New England Patriots, Frandina recalls, the referee told him the field would not need to be cleared because there wasn't enough accumulation. New England coach Bill Parcells overheard the conversation and planned for a playing surface where footing could be a problem.

Later, Bills' coach Marv Levy told Frandina to clear the field. "So of course that's what I was going to do," he says. Frandina thought he should share the decision, in all fairness, with Parcells, who is well known for his intensity.

"It's my first game and I'm nervous about a lot of things. Now I have to tell Bill Parcells we're going to do something he doesn't want us to do," he says. "I walked up behind him and said, 'Coach we're clearing the field,' and I turned and ran. I don't even know if he heard me."

Post Game Show

Football season is the most intense time of the year for Frandina, but throughout the year Ralph Wilson Stadium rarely sleeps. Last year, the stadium hosted 344 events other than Bills' games, including corporate meetings, Christmas parties, weddings, high school sporting events, football camps, not to mention occasional concerts. The Rolling Stones, 'N Sync, George Strait, and Dave Matthews are a few of the acts that have come to the stadium in recent years.

For a kid born and raised in Western New York as a Bills fan, growing up to work at One Bills Drive tops the charts. At the same time, it's a job, like any other, with downsides.

Bills losses are particularly tough. "The feeling as a fan is compounded by the fact that I'm an employee and I see all the hard work by all of the staff and the entire organization, not just the football team, in preparation for the game."

There's also very little time off. During the season Frandina has not only the responsibilities for the stadium and related facilities, but he also travels with the team and maintains the sideline communications system. The job is seven days a week every week. "Plus, with your cell phone it's a 24-hour day," he says. And even though he's

a huge football fan, during the regular season there's only one time per week he gets to watch a game for fun. "Monday nights from 9:00 until about 10 minutes after 9:00," he laughs.

This year, the Bills' next-to-last game of the regular season is in San Francisco the day after Christmas, and Frandina plans to make it a vacation for his whole family. Then the season finishes up with a home game against the Pittsburgh Steelers.

Provided the Bills don't make the playoffs, another season will come to an end. The final home game of the season always brings a sense of sadness, Frandina says, but it's also mixed with a little relief: "Let it snow. I don't have to worry about clearing out the stadium."

Ralph Wilson Stadium
Nickname: The Ralph

Opened: August 17, 1973

Capacity: 73,967

Largest Crowd: 80,368 vs. Miami, October 4, 1992

Campus size: 200 acres

Playing field: AstroPlay, an artificial surface that resembles natural grass, was installed before the start of last season

Physical plant: Includes stadium, 94,000 square foot field house, and 80,000 square foot training center

Water usage: 13.5 million gallons during a typical 10 home game season. That covers 1,200 restroom fixtures, 38 concession stands, and 12 kitchens

Water and sanitary piping: More than 30,000 linear feet in the stadium

TV, telephone, and video cable: 9 miles worth

Luxury boxes: 164

Televisions: 1,500

Cold? "The Ralph" was the first stadium in North America to have heated seats. Each of the 6,800 club-level seats have individual heat controls.

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