



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5

Top Photo courtesy of Clinton Bailey, Engineer—City of San Angelo. **Photo 1:** Irrigation problems—could have been avoided. **Photo 2:** Know and analyze your existing soils. **Photo 3:** Sample and analyze soils. **Photo 4:** Verify your grades. **Photo 5:** Specify weed control throughout construction period.

Factors to consider before building a new sports field complex

HAVE YOU EVER gazed upon a sports field, either your own or someone else's, and wondered why there are so many problematic conditions on that site? It could be issues dealing with soils, drainage, compaction, salinity, or any number of other problems. Who is responsible for these issues? How could they have been avoided? Could something have been done differently during its construction that would have made a difference? Ultimately, the design and construction of a sports field/ complex plays a major role in determining the maximum level of over-all performance from your turfgrass for that site.

Anyone who has ever been a part of building a new sports complex knows that it can be one of the most satisfying experiences in their career. Walking onto a new sports field where you and your staff played some role in its completion can be a very proud moment. But, as most turfgrass managers know, the path to this proud moment isn't easy. It takes a tremendous amount of time, hard work, and determination.

Throughout the entire process, you will likely work with many fantastic people within the turfgrass industry and some outside of our industry. You will have days where everything goes your way. Then, unfortunately, you will face some days that are not pleasurable. Trials and tribulations with your project can be expected, but you CAN minimize the varying degree of these problems.

There are many factors to consider when building a new sports field complex that will assist in maximizing the performance of your site and minimizing the unnecessary problems. As a turfgrass manager, you should create your own list and outline the issues that you feel are important. Here are a few helpful tips:

PLANNING AND DESIGN

- Choose an architect who knows and understands the complexity of sports field construction (i.e. turfgrass management, soils, irrigation, drainage, fencing, buildings, electrical, plumbing, etc.).
- Always check the references of the architect for performance of past projects.
- Work directly with the architect on the design and specifications of the contract.
- Make sure the architect understands his or her role before, during, and at the completion of the project.

CONTRACT SPECIFICATIONS

- Review and make the necessary changes in the contract before going out for bid.
- Use resources you know and trust for advice (i.e., turfgrass specialists, soil lab personnel, other turf managers, books, articles, etc.).
- Make sure the owner is well informed and accepts the contents/specifications of the contract.
- Add more specifications to cover ALL aspects of the project. Do not assume that the contractor will know and understand the complexities of sports field construction (i.e., over-compaction, drainage, soil types and depths, soil quality, weed management, irrigation installation procedures, laser grading, fencing, buildings/structures, etc.).

- Remember, you can always negotiate what you have in the specifications of the contract, but you cannot add to the specifications once you have hired the contractor and started the project—unless you want to pay extra!

- Know and understand your construction plans as well as the contract specifications. You will use these extensively throughout the project.

CONTRACTOR SELECTION

- Contractor shall list all sports field construction (or related) projects currently in progress: name, contact person, schedule or percent completion, and value/amount of project.

- Contractor shall provide list and credentials of all sub-contractors for approval before the awarding of the bid.

- Contractor shall list all projects that were awarded to them but failed to complete within the past 7 years.

- Contractor shall list all defaults of bids and/or performance bonds.

- Contractor shall list all judgments, claims, arbitration, proceedings, or lawsuits pending or outstanding either against them or from them for the past 7 years.

- Contractor shall provide the name, credentials, and job responsibility of the **turfgrass superintendent** the contractor intends to use during the sports field construction before bid.

- Contractor shall provide information or a list of past completed jobs relating to sports field complex construction as a reference.

- Specify that the bid will go to the lowest, **qualified** bidder for the project and then define “qualified.”

CONTRACTOR/OWNER ISSUES

- Have the contractor develop a timeline for the start date and completion date of all aspects of the project in the appropriate order.

- Contractor should meet with his/her architect, sub-contractors, and owner representatives at least once per week. Commu-

nication is the key!

- Contractor should make periodic changes on the timeline and approved by the owner.

- Liquidated damages should be applied to the contractor if he/she fails to meet the timeline. Make sure the amount is appropriate (i.e., \$100 per day for being late will likely not get the attention of a contractor on a \$10 million project).

- Change orders need to be made in a timely manner with approval by the owner and the contractor.

- Documentation is critical for change orders and specifications of the contract.

- Payments to the contractor should be made if he/she adheres to the contract and shows adequate and acceptable progress.

- Payments should be withheld if the contractor fails to adhere to the specifications or does not show adequate and acceptable progress.

SOIL SELECTION

- Use a reputable soil testing lab for

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analysis and advice before and during the project.

- Sample, analyze, and understand your existing soils at the site.
- Know and understand the drainage issues, sub-grade, topsoil, and infield mix that you plan to use.
- Keep the ranges of the specifications tight for all types of soils used in the project.
- Specify the type of analysis (i.e. texture, EC, pH, fertility, plasticity, organic content, etc.)
- Specify the soil sampling technique.
- Specify what, when, and how many samples will be taken (i.e., before delivery and at delivery for verification before installation, for example, every 2,000 tons, every quadrant, etc.).
- Remember, you can always negotiate a wider range if you choose to do so later, but you cannot make the specification tighter after hiring the contractor unless you want to pay extra!
- Take soil samples of blends, existing

soil, etc. to verify your specifications.

- If you specify a certain depth of topsoil over the sub-grade, spend the time verifying that you have it.
- Specify that the sub-grade and topsoil over the entire site be free of rock, debris, glass, etc.
- Specify that two different soils cannot be used on the same field, area, etc.
- Verify compaction issues in the sub-grade and topsoil. If appropriate, specify scarification to eliminate/minimize compaction issues.
- For proper turfgrass growth, proctor densities should range from 83% to 88%. Anything greater may lead to management issues due to over-compaction.
- Define the expectations for weed control during construction throughout the entire project site.

INFIELD MIXES AND CONDITIONERS

- Make sure the contractor understands the specifications for the texture, color,

plasticity, organic content, etc. of the infield clay and conditioners (i.e. 60% sand, 20% clay, and 20% silt for the infield clay with +/- 5% tolerance).

- Define the depth of the infield clay and conditioners, mound installation process, etc.
- Keep the ranges of the specifications tight for the infield clay and conditioners used in the project.
- Specify what, when, and how many infield clay samples will be taken (i.e., before delivery and at delivery for verification before installation, for example, every 1,000 tons, every field, etc.).
- Specify that the infield clay will be free of rocks, glass, debris, etc.
- Understand the differences in sand particle size.

LASER GRADING

- Specify laser grading with tight but appropriate tolerance levels (i.e. +/- 0.5 inch).
- Specify the appropriate type and size of equipment that can be used.

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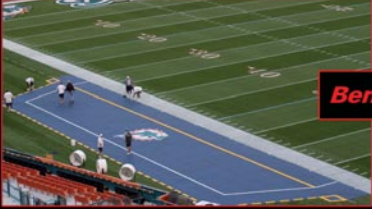

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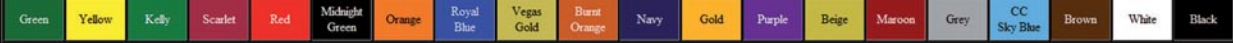


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- Verify sub-grade and final topsoil grade elevations to confirm slope, topsoil depth, proper drainage, etc. by having the contractor use a 3rd party, licensed surveyor with an appropriate grid pattern.

- Fine grade the topsoil to eliminate uneven areas and low spots. Maintain profiles and contour of sub-grade.

- Finish grade shall be a smooth, clod-free, non-compacted seedbed ready for planting.

- Throughout the project, it is the contractor's responsibility to maintain the topsoil in place at specified grades. Topsoil losses due to erosion will be replaced by the contractor until acceptance is achieved from the owner.

- Protect existing plant growth and features remaining as final landscaping.

IRRIGATION

- Check the architect's irrigation system design for flaws, equipment type and compatibility, layout design, manufacturer specifications, application rates, distribution

uniformity (head to head coverage), etc.

- Make sure you have enough irrigation water from the source to meet the demands.

- Specify the method of installing the irrigation system (i.e., ditch and pipe into sub-grade, add topsoil, and then place heads to avoid topsoil contamination issues.

- Specify irrigation audits on all zones for approval by owner.

- Strategically place isolation valves throughout the project site.

TURFGRASS SELECTION

- Specify exactly what you want—variety/type, sod vs. sprigs vs. seed, planting rate, appropriate dates of planting, pre-plant and grow-in fertilizer, herbicide applications, tillage, rolling, irrigation, etc.

- Have a backup plan if the contractor cannot meet the dates for planting.

- Specify a finished product free of weeds (i.e., common bermudagrass as a weed in a hybrid bermudagrass site).

- Specify that the owner must approve the turfgrass before installation. Travel to

the sod farms for sod/sprig approval.

- Specify the guarantee maintenance period after planting for the contractor.

FINAL THOUGHTS

- Be observant and verify the work of the contractor.

- Don't expect to always be the most liked person at the site.

- Take digital photos and document everything.

- Stay focused, sustain professional mannerisms, but maintain resolve! ■

Roger D. Havlak is a private turfgrass consultant who also serves as the Parks Superintendent for the San Angelo, Texas community. The City of San Angelo completed the construction of a sports field complex in 2009 that included 15 baseball/softball/flag football fields, concession and restroom facilities, playground site, four sand volleyball courts, and 55 acres of Tifway 419 bermudagrass turf. He can be reached at rdh@zipnet.us.



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