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A handwritten signature in cursive script that reads "Dan Jones".

# The South Florida Green

The Official Bulletin of the South Florida Golf Course Superintendents Association

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## COVER PHOTOGRAPH

By Harry McCartha

Amy Alcott holes out on number 18 to win The Elizabeth Arden Golf Classic at Country Club Aventura.

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# GREENS CONSTRUCTION

By HUBERT E. (AL) FRENETTE

As turf management personnel, your duties may, at some time, include the construction of greens. Should this happen, you must be prepared to become completely involved. You must also be prepared to assume responsibility for any failures, as all future problems will be laid at the doorstep of the Superintendent. Any superintendent who does not believe this should never involve himself in the construction of greens.

Good putting surfaces require no special formula or magic touch. They are the result of:

1. Proper Design
2. Proper Construction
3. Proper Maintenance

On occasion, we have seen excellent putting surfaces that appear to have none of these qualities. Apparent or not, they exist.

The proper design of the green(s) should be the job of a competent architect. The responsible superintendent will insure that he has a say in the selection of the architect. It is absolutely necessary that these two individuals have the mutual respect of one for the other if the club is to get what they paid for in good faith.

Construction of the greens requires good planning and a knowledge of fundamental construction procedures. Whether you contract the job or utilize club personnel, this planning and procedure should follow a sequence such as:

1. Specifications — To date, no has come up with a better way to construct consistently good putting surfaces than to use the specifications developed by the USGA Green Section. Other methods have been developed and used with varying degrees of success. When built to specifications, there are (to my knowledge) no recorded failures of "USGA Green".

Insist on a good set of specifications and, if necessary, contact your USGA representative for assistance in preparing these specs. They will protect the integrity of your greens and may protect you in possible future litigations.

2. Materials Testing — Collect samples of all locally available materials and get a complete test of these from the USGA testing lab. It has been this author's experience that random tests by independent labs, contractor's lab or other agencies are not adequate to give you an acceptable seedbed. Your USGA lab is equipped to perform all the necessary tests to evaluate your materials and make sound recommendations.

Once the recommended materials have been mixed, additional samples should be gathered and retested to insure the mix is as recommended.



H.E. (Al) Frenette

Remember one important thing about testing; the cost is nothing compared to rebuilding.

3. Materials Purchasing — Following selection of the materials, the next step is contracting for their purchase and delivery. The contract should include unit price, delivery charges, on-site inspection of quantities delivered, delivery schedules, payment schedule, and time limits.

The most single important item for the superintendent to check is the on-site inspection of quantities delivered. If anything will come back to haunt you, this item will. Many clubs end up paying extra for materials because they did not have a handle on this operation.

The actual construction of greens should follow accepted procedures. There are ample instructions from the USGA regarding the steps to follow in the building of the green. Rather than belabor these procedures, let us look at some of the mistakes that you will want to avoid:



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1. Personal Supervision —

Check every aspect of the job yourself. Do not leave details to anyone and inspect every phase before it is buried. Absolute observance of this rule will save you a lot of embarrassment later.

2. Specifications —

Do not, under any circumstances, change the specifications without written approval from the architect or owner. Insist on having all changes in writing and keep them on file.

3. Materials —

All material changes should be approved by the architect in writing.

New materials should be tested in the lab before they are placed on the job.

4. Construction —

Attention to certain details is a good way to avoid later problems.

a. Base or Subgrade — Grade the base to the same contours as the finished grade.

b. Drains — Run all interceptor trenches perpendicular to the natural grade.

Insure that the base is graded to allow water into the trenches.

Carry all drains to a creek, ditch, or solid drain pipe. You will have to do it some day anyway.

c. Gravel — Be certain to maintain the rule of 7 diameters. Failure to do so will result in possible failure of the perched water table.

Maintain the proper contours with the aid of a depth gauge.

d. Sand — If specified, carefully place this layer to avoid mixing with the gravel blanket.

Maintain the proper contours and depth.

e. Seedbed — Off-site mixing of materials is preferred. When loading for delivery to the green, keep a minimum of 6" on the ground to avoid contamination. A paved area will eliminate this problem.

Keep a minimum of 8" of material under your wheels or tracks while spreading. This will prevent mixing of the seedbed with the course sand and gravel layers. Keep the mix free of all foreign materials.

If amendments are to be added, till them to a depth of at least 5".

To insure a good stand of turf, insist on fumigation of the seedbed.

Use a tracked vehicle to firm the seedbed prior to a final contouring.

Use a depth gauge to maintain proper contours and avoid differences in the depth over the entire green and collar. Differences could cause moisture variations in stress periods. Allow ample area for a collar of about 36" width.

Float the surface to remove irregularities and to eliminate excessive topdressing after turf establishments.

The seedbed, at this point, should be firm enough to resist foot printing.

f. Irrigation — Keep all pipes and sprinklers outside the seedbed area, including the collar.

Keep all controls and valves outside the maximum radius of the sprinklers. Provide proper access to the valves and wire connections.



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Provide a manual valve and coupler for each green. Leaving the coupler live will allow watering in emergencies.

Avoid excessive coverage of the green area. A maximum of 120 gpm with 100% overlap should suffice.

- g. Planting — Hydro-mulch appears to be the most satisfactory method of applying seed or stolons to the surface.

Avoid excessive rates to prevent excess mortality rates. Rates of 1-1½ lbs. seed or 8-10 bu. stolons per 1000 appear to be quite adequate.

Use controlled watering during germination periods to control seed rot or drying.

Mow the new turf at the earliest possible date. Start the mowing at about 3/8".

As you may note, no recommendations are made for fertilizers or chemical applications. Starter fertilizers should be included in the specs. And chemicals may or may not be included. Your own good judgment should determine these requirements.

Let me sign off with this one thought:  
"When the smoke clears and the architect and contractor have been paid and are gone; you, the Superintendent, will answer for all the mistakes that were made during the construction of the greens."

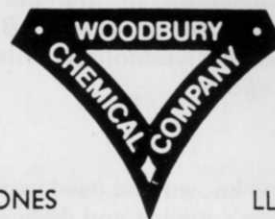
**EDITOR'S NOTE:**

*Al Frenette, C.G.C.S., is Golf Course Superintendent at the Peachtree Golf Course, Atlanta, Georgia. Mr Frenette is also Past President of the Southern Turf Grass Association*

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# THE MUSSER FOUNDATION

A Brief Review

By FRED V. GRAU, President



Fred V. Grau

Part of the first monies collected for The Musser Fund went to help Dr. Burton get his turf program started in Tifton. Now Dr. Burton is on the honorary board of The Musser Foundation. Many things could be accomplished in the South through this Foundation, but so far no support has come from our area. Lets stand up and give our financial support for a Musser Fellowship to combat some of the problems facing golf courses in the South.

**EDITORS NOTE:** We welcome Dr. Grau to our esteemed list of guest writers. We will eagerly await his future articles. During the depression Dr. Grau worked his way through four years of college and his Ph.D. When he became U.S.G.A. Green Section Director he began at once to develop a fund to help graduate students. In 1953 Dr. Grau became a consultant to manufacturers and the graduate program was dropped. When H.B. Musser died he saw a chance to develop a foundation in his memory and to renew the graduate effort.

**Penncross bent** is known and used world wide. It is the product of Burt Musser's genius and dedication. It was one of his "investments in the future". Playing conditions on golf courses have been improved greatly by the use of Penncross bent, the first seeded bent to produce uniform playing surfaces.

**Pennlawn fescue** has improved millions of lawns and is favored in mixtures with bluegrass for producing quality sod. It, too, was developed under Professor Musser's guiding hand.

The book "Turf Management" was written by Professor Musser under the sponsorship of the U.S. Golf Association. What a boon it has been to golf course superintendents!

Golf course superintendents who studied at Penn State under this pioneer teacher are scattered 'round the world. What a wonderful way to make an "investment in the future" because now they are teaching others.

Among the graduate students who earned (and I mean earned) their Ph.D. degrees at Penn State under this "task master" are:

- Dr. James R. Watson, v.p. Toro Co.; 2nd v.p. MITF
  - Dr. Joseph M. Duich, Prof. Turfgrass Science, PSU; secretary, MITF (incorporator)
  - Dr. John C. Harper II, Extension Agronomist, Penn State
- These men are leaders — a credit to the profession. The turfgrass industry has been enriched by their activities.

We honor the memory of this pioneer in turf by establishing a Turfgrass Research Fellowship Fund in the Musser Foundation which will perpetually assist deserving graduate students to achieve their degrees and to take their place among the leaders in the turfgrass industry. Some of our current scientists are facing retirement. We must provide for their replacement. These are the men who brought this Living Memorial into being as INCORPORATORS:

- Dr. J. M. Duich
- Mr. Albert W. Wilson II
- Mr. E. R. Steiniger
- Dr. Fred V. Grau
- Mr. Warren A. Bidwell

Many others have been supportive. The Pennsylvania Turfgrass Council gave it a start when Don Krigger, then president of PTC in 1968, named Grau to head the organizing committee which included names well known in the turf industry: Hallowell, Harper, Mascaro, Miller, Shuman, Sirianni, Stolpe, Steiniger, Tenos, Watson, Wilcox and Wilson.

These contributors started the Fellowship Fund with money out of their pockets (total \$475.00):

- Philadelphia Toro Co.
  - Frank I. Shuman
  - Fred. V. Grau
  - Dr. J. M. Duich
  - GCSA of N. California
- They believed in the future.

Professor Howard Burton Musser initiated turf work at Penn State in 1927. The first turf conference came in 1929. He died in 1968. He was active in organizing the Pennsylvania Turfgrass Council in 1955. His work with bluegrasses laid the foundation for Pennstar Kentucky bluegrass. In weed control work he successfully blended chemicals with fertilizers.

The Musser Foundation is one of three non-profit groups which accept contributions and raise funds in other ways in order to perform needed research and to improve the quality of turf and turfgrass management. The Noer Foundation operates independently and does not conflict with Musser Foundation goals and objectives. The third group is the newly-formed American Council for Turfgrass (ACT), a group designed to correlate activities and to provide a unified voice for turf in the nation.

The Musser Foundation has grown slowly partly because many have misunderstood its function. MITF raises money in several ways, all tax-exempt:

- 1) Free-will contributions
- 2) Unitrusts which provide lifetime income (planned giving)

3) Memorial giving — funds instead of flowers to yield income forever to help students of turf.

4) Turfgrass Benefit Tournaments. There have been twelve of these: 5 in Ohio; 4 in Oregon; 3 in Delaware. One is planned for the Mid-Atlantic region June 12, 1979 at Indian Spring C.C., Silver Spring, MD. This is a painless way to raise money by having fun.

5) Turfgrass Research Fellowships named for the donor, \$1,000 each. This approach is designed to let those who profit through sales & services to share with a tax-exempt foundation that will put money to work for turfgrass improvement across the board. It includes manufacturers, distributors, dealers, seed producers, sod growers, landscape contractors, golf course architects, lawn care companies and others. Actually no one is excluded. Two such fellowships now exist in the name of individuals, Fred. V. Grau and Bob Dunning; and one in the name of a seed-growing firm, the Penncross Bluegrass Association.

The Musser Foundation is run by a board of 24 directors with an Honorary Board to lend prestige. All serve without pay. The annual meeting is held in conjunction with the GCSAA Conference and Show. All monies are turned over to the treasurer, Ben Warren, who invests it in secure high-yield securities. Only the income is used for grants to exceptional graduate students at turf-oriented research institutions to help them obtain advanced degrees. By this method the entire turf industry gains valuable research data by way of a learned thesis and, a new leader has been trained!

Other officers are:

Fred V. Grau, president

Joseph M. Duich, secretary

Warren A. Bidwell, first vice president

Dr. James R. Watson, second vice president

Dr. Frank Dobie is Director of Benefit Tournaments

Anyone wishing further information on any of the several fund-raising efforts may write to Dr. Fred V. Grau, P.O. Box AA, College Park, MD 20704, or phone 301/864-0090.

Most turfgrass managers are aware that the *Ataenius* beetle threatened turf with multi-million dollar damages. The Musser Foundation pooled its resources with the GCSAA and Ohio golf clubs over a 3-year period to support research aimed at life history and control. The joint efforts paid off and Mr. Gerald Wegner, a student under Dr. Harry Niemczyk, Wooster, Ohio, expects to have his thesis finished soon. Thus another scientist has been trained and every phase of the turf industry will profit.

The misuse of tax funds has made it almost useless to look to this source for assistance. Those in the industry who operate for profit should face up to the fact that they have a responsibility to build a FUND that will be self sustaining for now and in the future. Fellowships offer the ideal way to perform needed research, accumulate valuable data, produce a learned thesis and, most important of all, develop a trained scientist who can become a leader in the industry. The Musser Foundation is the ideal vehicle by which these benefits can be accomplished. We need to share and to work together. As George Cleaver, president of GCSAA, has said, "Let's Communicate, Cooperate and Coordinate."

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**Payload:** 1000 pounds.

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**Suspension System:** Torsion bars, leaf springs, front and rear shocks.

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**Dump Construction:** Single wall.

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**Headlights:** Single.

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**Seating:** Single seat for one passenger with back rest and hip restraint.

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**Price:** Virtually the same.

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