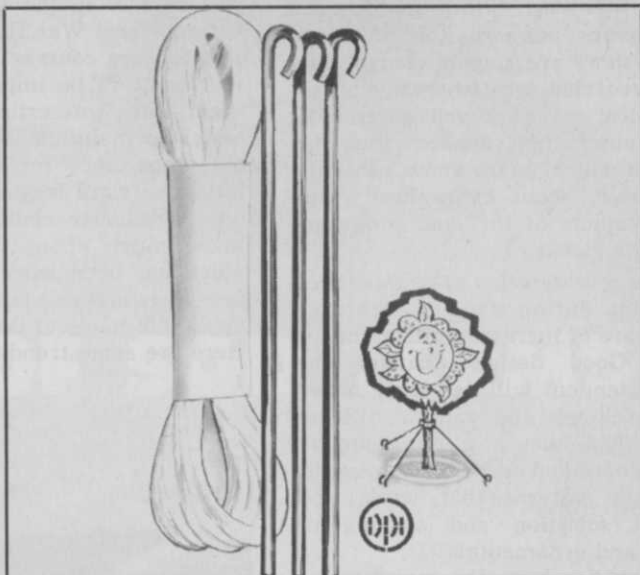


SWINGIN' SICKLE GRINDER: Lantz Manufacturing Div., Greenville, Ohio

An exclusive swinging arm brings the grinding wheel to the sickle bar to assure faster, more accurate sharpening and uniform edge on this new machine. One man, unassisted, can use this compact, light-weight unit and sharpen most any sickle bar with ease. Other features include a spring-loaded table that holds the sickle bar against the wheel with uniform pressure, extension arms that support the sickle ends and easy belt adjustment. It is available with two grinding wheels. For more details, circle (713) on the reply card.



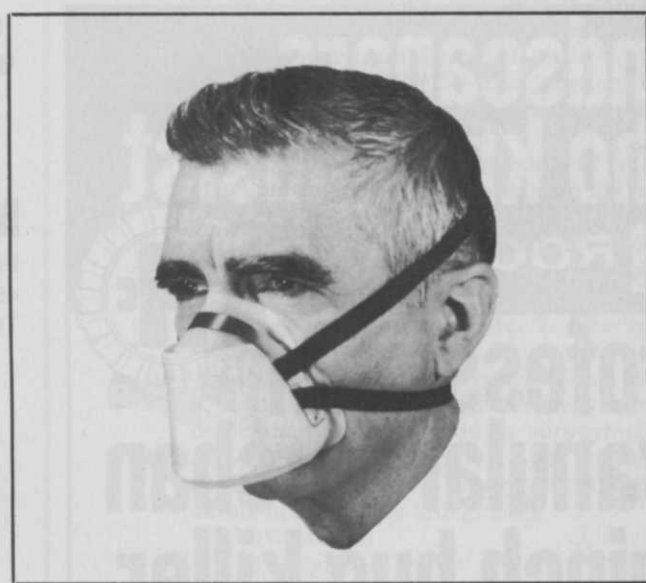
TREE BRACE: Decorative Products, Inc., Oshkosh, Wis.

Brace young trees to insure straight and strong growth with this tree brace. It consists of three metal stakes and enough cord to brace one tree. In use the stakes are driven into the ground at an angle away from the tree in a three or four foot radius from its base and spaced evenly. A plastic collar fits around the tree and rope is threaded between the collar and the stakes. For more details, circle (714) on the reply card.



TRUCK-MOUNTED BACKHOE: Tractor and Implement Operations, Ford Motor Company, Troy, Mich.

This one's so new that the welds are still hot. Mated together for the first time by one company is this truck-mounted backhoe available with a 13- or 15-foot boom. The backhoe consists of boom, dipperstick, double-acting lift, crowd and bucket cylinders, swing system, stabilizers, operator's console and seat, chain hook and stop switch. The unit is mounted on an F-600 series truck and the entire unit can quickly reach job sites at highway speeds. In less than three minutes the operator can begin digging. Backhoe features Auto-Dig cycle which reduces operator fatigue in crowd, lift and curl operations. For more details, circle (715) on the reply card.



DISPOSABLE RESPIRATOR: General Scientific Equipment Co., Philadelphia, Pa.

Approved by the Bureau of Mines, Model 7165 meets the requirements for dusts which have a Threshold Limit Value not less than 0.1 mg./cu. m. or 2.4 million particles/cu. ft. Simply throw the respirator away after use. This eliminates costly cleaning and maintenance. Large, wrap-around filter resists particulate clogging. A special inhalation and exhalation valve system prevents moisture build-up and permits cool breathing. Facepiece remains comfortable and pliable at all temperatures. Molded of non-irritating material, it can be worn with safety glasses or goggles. Elastic headbands are fully adjustable. Weighs less than two ounces. For more details, circle (716) on the reply card.



GOLF COURSE (from page 36)

and pumps increase, too. In some water-short areas, golf courses are using recycled, treated sewage effluent. Most have proved successful. More automation dictates that the superintendent must know virtually everything about hydraulics, water requirements of turf and programming via clocks.

More consideration of maintenance problems during design. Architects are aware of increasing maintenance costs. Good design assumes the superintendent will use large mowing machines and minimize hand work. This means a minimum of steep slopes and odd-shaped hazards, drainage patterns that work, and careful selection and spacing of plants and ornamentals.

Money has been the major motivator of all these trends. Golf courses are getting more and more expensive to build. Costs of construction have increased an average of eight percent a year over the past five years. That's why all the courses being built in Colorado are either municipal, financed by bond issues and backed by taxes, part of planned residential communities and resorts, or financed by land sales.

Nearly half of the present 10,500

golf courses in the U.S. were built before World War II. When we talk about older courses, there are few that couldn't be improved to make them more interesting to play and easier to maintain. Many are worn out, too short for today's longer hitters, or were designed by amateurs who a quarter century ago didn't know much about the game. Yet, much has been learned in the past few years and this is currently being applied to many of the older courses. Here are some trends we see in re-

modeling older courses:

1. The addition of 9 more holes to an existing 9 or 18 to handle increased play. The criteria often used by greens committees and architects are whether there is enough market to justify more facilities, and whether there is adjoining land space available. With a growing number of golfers, nearly every metropolitan course could utilize more holes.

(continued on page 56)



Water plays an important role in keeping greens, tees and fairways in shape. Older courses with antiquated irrigation are trading up to larger systems. Newer courses are designed with heavy-duty systems capable of delivering water to every part of the course.

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DIRECTORY OF SOD TERMS

EDITOR'S NOTE:

Sod producers who sell to contractors can be confused by terminology used in contract specifications. Likewise, contractors who write sodding specifications have been under pressure, especially in states where sod laws have been enacted, to be more specific. Because nearly every modern industry has a jargon or set of descriptive words, we have presented below a glossary of turfgrass terms compiled by the American Sod Producers Association. These terms and written specifications are contained in a booklet "Guideline Specifications For Sodding." For more details on the booklet, circle (719) on the reader reply card. JAS.

ABSORPTION—The intake of water or other substance by a cell, a root, or other plant organs.

ACID—A condition in which the acidic elements in a solution overbalance the basic elements: associated with a greater concentration of hydrogen than of hydroxal ions.

ACID SOIL—In practice, a soil with a pH of less than 6.6.

ACRE—A unit of surface area consisting of 43,560 square feet or 4,840 square yards. 640 acres equals one square mile.

ACRE INCH OF WATER—A quantity of water sufficient to cover an area of one acre to a depth of one inch and equal to 3,630 cubic feet or 27,154 gallons, or 220,000 lbs.

ADAPTABILITY—The adjustment or modification, or the ability for adjustment of modification, of an organism to environmental conditions.

ADHESION—The adhering or sticking together of substances in contact with each other. In soils, this may pertain to mineral and organic soil particles.

AERATION—The mixing of air with water or soil to improve the oxygen supply of plants and other organisms. (see also soil aeration.)

AERIFIERS—Tools used to make frequent vertical holes (and remove cores) in established turf, which loosen and cultivate the soil.

AGGREGATE—An inert material, such as sand, gravel, shell, or broken stone, or combination thereof, with which a cementing material is

mixed to form a concrete or macadam.

ALKALINE SOIL—A soil having a pH 7.3 or above. (7.0 is neutral)

ANNUAL—A plant that completes its life cycle in one year, germinating from seed, producing seed, and dying in the same growing season.

APPROVED SOD—Approved turfgrass sod is sod grown from high quality seed of known origin. It is inspected by an official Certification Agency of the state to insure over-all high quality and freedom from noxious weeds as well as excessive amounts of other crop and weedy plants at time of harvest. Approved sod is grown from Certified seed.

AVAILABLE NUTRIENT—The portion of the supply of a nutrient which can be assimilated by a plant.

AVAILABLE WATER—The portion of a supply of water in the soil which can be assimilated by a plant.

BACKFILL—1. The replacement of excavated material as into a pit or trench, against a structure, over and around culverts, and around plant materials, etc. 2. The replacement material.

BASE LINE—1. A line from which a start is made. 2. A line of known length from which other determinations are made in surveying.

BLEND—A combination of varieties of the same species of turfgrasses in any percentages. Example of Kentucky bluegrasses.

50% Merion
25% Fylking
25% Kenblue

BROADCAST—To scatter seed or fertilizer, rather than to sow it in rows with drills.

BROADLEAVED—Any plant or group of plants with broad leaves which have netted venation.

CERTIFICATION—A system for or act of documentation of inspection and approval.

CERTIFIED SOD—Certified turfgrass sod is superior sod grown from the Certified high quality seed of known origin or from plantings of certified grass seedlings or stolons. It is inspected by the official Certification Agency of the state to assure satisfactory

(continued on next page)

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For More Details Circle (108) on Reply Card

genetic identity and purity, over-all high quality and freedom from noxious weeds as well as excessive amounts of other crop and weedy plants at time of harvest. It may be of either one variety or composed of a mixture of two or more varieties or species. However, all seed in a mixture must be certified. The sod must meet the published state standards for certification.

CLAY—1. Small soil particles less than 0.002 mm in diameter whose chief property is plasticity when wet. 2. A soil textural classification containing forty percent or more clay, less than forty-five percent sand and less than forty percent silt.

CLAY LOAM—A soil material which contains from twenty percent to thirty percent clay particles, and from twenty percent to fifty percent sand particles, the remainder consisting of silt particles.

CLIPPING HEIGHT—Distance above soil line at which grasses are clipped.

COMMON NAME—Plant name used by the general public as distinguished from the botanical or scientific name.

COMPACTION — Manipulation by mechanical means to reduce volumes, thereby increasing density and bearing strength: state of being pressed closely together, as soil particles.

COMPLETE FERTILIZER—A mixed fertilizer which contains the three major elements, nitrogen, phosphorous and potassium.

CONTINGENCIES—Clauses in a contract or items in an estimate to cover unforeseen occurrences.

CONTOUR—An imaginary line or its representation on a map of all points of the same height above or below a given datum. Mean sea level (zero elevation) is generally the given datum.

COOL SEASON GRASSES—Retain their green color throughout the year with little winter dormancy, include bentgrasses—creeping, Colonial and velvet: bluegrasses—Kentucky rough, Canada and annual: fescues—red, chewings, and tall: ryegrasses—annual and perennial.

CORRECTIVE—A material added to a spray material that reduces its possible injurious influence on the host plant.

CULTIVAR—A "variety" of plants denoting an assemblage of cultivated individuals which are distinguished by any significant characteristics, and which when reproduced (sexually or asexually), retain their distinguishing features. See horticultural variety.

CULTIVATED SOD—Any sod planted on cultivated agricultural land and grown specifically for sod purposes. It shall have been mowed regularly and carefully and otherwise maintained from planting to harvest to maintain reasonable quantity and uniformity.

CULTIVATION—1. To prepare, or to prepare and use soil for the raising of crops. 2. to loosen or break up the soil about growing plants as in order to kill weeds.

DEFICIENT—Having less than normal, inadequate, expressed as symptoms or indicated by analysis.

DENSITY—1. The degree of consolidation or compactness. 2. The ratio of weight to volume of a substance. (water is 1.0 at 5 degrees C at sea level.)

DISEASE—A malady or expression of pathological infestation or weakening. (as leafspot caused by *H. vagans*.)

DOLOMITE—(Dolomite Limestone)—A limestone rich in Magnesium Carbonate.

DORMANT—Not in an active growing condition. Capable of resuming growth when environmental conditions become favorable.

DRAINAGE—Surface or subsurface removal of water.

DRESSING—1. The application of fertilizers, lime, gypsum, compost, or the like to improve the soil. 2. The operation of squaring and smoothing stones for buildings. 3. Also applied to smoothing lumber. (See also top dressing.)

EMULSION—Systems of oil dispersed in water or systems of water dispersed in oil. A more or less stable mixture but not a true solution.

ENVIRONMENTAL FACTOR—A constituent of an environment considered separately from other constituents such as: biotic, climatic, edaphic, and topographic.

ERADICATION—Removal or elimination.

EROSION—The process of wearing away of rocks and soil by natural agents.

ESTABLISHMENT PERIOD—The time necessary after the installation of a plant to assure continued growth.

EVAPO-TRANSPIRATION RATE—The moisture loss of a plant and/or soil due to evaporation and transpiration.



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FEEDER ROOTS—The hair-like roots through which the plants obtain water and nutrients.

FERTILE—Capable of being reproductive.

FERTILIZER—Any natural or artificial material added to the soil to supply one or more of the plant nutrients.

FERTILIZER BURN—Death or damage to plant tissues sometimes resulting from the direct application of dry fertilizer to the plant foliage or roots or from excessive application of fertilizer.

FIBROUS ROOT SYSTEM—Systems composed of profusely branched roots with many lateral rootlets, and often with no main or taproot development.

FIELD CAPACITY—1. The ultimate amount of plant materials which can be grown upon a plot of land. 2. Amount of water soil can hold after gravitational water has moved downward.

FIELD SOD—See pasture sod.

FINE GRADING—Refer to finish grade.

FINE LEAVED—Having narrow leaves in comparison with common types.

FINISH GRADE—The final earth work which leaves the terrain at the designated elevation as required by the site grading plans.

FRENCH DRAINS—A porous media below grade to aid in water absorption, usually dug and filled.

FRIABLE SOIL—A granular soil, easily crumbled by cultivation.

FROST—Frozen dew.

FROST ACTION—The formation of expanding ice crystals between particles, with heaving and lifting resulting.

FUMIGANT—A chemical used in the form of a volatile liquid or gas to kill insects, nematodes, fungi, bacteria, seeds, roots, rhizomes, or entire plants; usually employed within an enclosure or the soil.

FUMIGATION—Treatment of the soil, plants, or a greenhouse with a gas, smoke, or vapor to rid it of pests.

FUNGICIDE—A material used to destroy fungi or protect plants against their attack.

FUNGUS—A parasitic or saprophytic plant organism.

GENUS—A category of closely related organisms below the family in scope and above a species in scope.

GERMINATION—1. The process of sprouting or

coming into active growth. 2. The starting of plants from seed.

GERMINATION COUNT—Specific tests used to determine what percentage of the seeds are capable of growth.

GRADING—The modification of the ground surface by either cuts and/or fills.

GRADING PLAN—A plan showing existing and proposed elevations, which establishes levels for buildings, roads, retaining walls, outside steps or ramps, and other ground surface areas.

GRADING TOLERANCE—1. Variances in size or quality allowed plant materials due to conditions beyond the control of the grower. 2. Variations allowed in site grading.

GRASS—A large and important family of monoecious flowering plants with simple leaves.

GRAVEL—Hard rock particles larger than 2.0 mm in diameter, sometimes broken or angular but usually rounded. Aggregates larger than three inches are commonly called stones.

GROUND LIMESTONE—Particles of crushed rock selected for spreading into soil. (The finer the more quickly soluble.)

GROUND WATER—Subsurface water occupying the zone of saturation, the gravitational water below the water table.

HARDINESS—The adaption of a plant or other organisms to the rigors of a climate, particularly to the occurrence of freezing, although conditions of moisture, extreme heat, etc. may influence the ability of a plant to survive.

HERBICIDE—A material used to destroy weeds or other herbaceous plants.

HUMUS—1. A material formed by the partial decomposition of organic material in or on the soil. 2. The organic portion of soil.

HYDRATED LIME—Calcium hydroxide: results from adding water to burnt lime (CaO). Slaked lime. (Reacts faster than ground limestone.)

INORGANIC—All chemical compounds in nature, except the compounds of carbon, but including the carbonates.

INSECTICIDE—A material used to kill insects or protect against their attack.

IRRIGATION—The artificial distribution of water onto land to promote the growth of vegetation.

LAND LEVELING—The reshaping of a land surface to smooth level planes.

(continued on next page)

American Sod Producers Assn. Plan Canadian Summer Gala

Plans are being finalized for the annual meeting of the American Sod Producers Association, Skyline Hotel, Toronto, Canada, July 10-12.

The schedule of events includes registration and get-acquainted party on the first day, compliments of the Ontario Nursery Sod Growers.

On Tuesday, July 11, ASPA members will visit the Smilsky sod farm where loading and transporting equipment will be on display. A discussion on sod marketing is also slated. Next stop will be the Mc-

Cague mink and fox ranch and cattle farm. At the McCague sod farm harvesting equipment, pre-marking tillage equipment, transporting equipment and sweeper and marketing techniques will be featured.

The annual meeting will be conducted during the evening.

The following day, members will tour the Evans turf farm where a hauling fork lift will be featured. Guests will then visit the Belhaven turf farm, an excellent example of muck sod production and irrigation. Bentgrass sod will be featured on the next stop of the tour at the Bluegrass turf farm.

The entire afternoon will be devoted to field demonstrations of various makes of sod harvesting equipment. Site of these demonstrations will be the Brouwer sod farm where members will tour a pallet plant and sod harvester manufacturing facilities.

The meeting promises an opportunity not only to observe the featured attractions at each stop but also to get a first hand view of sod production in Canada.

For more details, call or write Dr. Henry Indyk, Executive Secretary, ASPA, New Brunswick, N. J. 08903. Tel. (201) 247-1766, Ext. 1453.

LANDSCAPE—1. A portion of land which the eye can comprehend in a single view, especially in its pictorial aspect. 2. A picture representing inland natural scenery. 3. To improve by landscape architecture or gardening.

LANDSCAPE ARCHITECT—A practitioner of the design profession of landscape architecture.

LANDSCAPE ARCHITECTURE—The art of arranging land and the objects upon it for human use and beauty.

LANDSCAPE CONSTRUCTION—The alteration of existing ground conditions together with construction and development of ground features including minor structures.

LANDSCAPE CONTRACTOR—A contractor that specializes in work dealing with all phases of landscape planting and construction.

LANDSCAPE DESIGN—A creative environmental problem solving process to organize external space and attain an optimum balance of natural factors and human needs.

LAWN—A land area covered with short grass, usually kept in this condition by mowing.

LEACHING—The washing out of soluble constituents from the soil.

LIME—Materials including limestone, shell, marl, slag, gypsum, containing calcium and magnesium compounds which are capable of neutralizing soil acidity.

LOAM—A soil containing a mixture of sand, silt, and clay particles in such proportion to exhibit light and heavy properties in about equal proportions.

MEADOW—A field of grass usually grown for hay or pasture.

MICRO-NUTRIENT—Certain elements which are essential to the growth of plants, but are required only in minute amounts.

MINERAL SOD—Sod grown on mineral soils.

MIXTURE—A combination of two or more different species (kinds) and/or varieties. Example:
40% Merion Kentucky Blue
40% Fylking Kentucky Blue
20% Pennlawn Creeping Red Fescue

MOISTURE CONTENT—The ratio expressed as a percentage, of the weight of water contained in soil or other material, to the weight of solid particles (dry weight).

MOWING HEIGHT—Distances above ground line at which grasses are clipped.

MUCK SOD—Sod grown on muck soils.

MULCH—Any loose and dry material as straw, leaves, manure, litter, etc., used as a thin protective covering over the soil.

MULCHING—The application of a protective cover to the soil to conserve moisture, lessen temperature variation, protect against run-off and erosion and surface compaction by rain, improve aeration, and discourage weeds.

NATIVE—A plant that grows naturally in a region, not introduced nor naturalized.

NEUTRAL SOIL—In practice, a soil which has a pH range between 6.6 and 7.3, thus is neither excessively acid nor alkaline. Specific 7.0.

NITROGEN—One of the major essential plant nutrients, especially noticeable in stimulating leaf and stem growth of darker green color.

ONSELECTIVE HERBICIDE—Chemicals or formulations which destroy or prevent plant life in general without regard to species.

NOXIOUS WEED—A weed arbitrarily defined by law as undesirable, troublesome, or difficult to control.

NURSERY SOD—See cultivated sod.

NUTRIENT—Any element necessary and normal within plant.

ORGANIC—A substance produced by plants or animals and thus containing carbon compounds.

ORGANIC FERTILIZERS—Usually refers to fertilizers derived from natural organic materials. (Urea is a synthetic organic but releases nitrogen for plants more rapidly than natural organics.)

ORGANIC SOIL—A soil or a soil horizon consisting principally of organic matter, such as peat or muck. Usually over 20% organic based on dry weight.

OVERSEED—To add seed to an area presently covered with vegetation.

PASTURE SOD—Sod obtained from meadows or fields that have served as a grazing area for animals. Also known as field sod.

PEAT—Organic matter of geological origin, excluding coal, formed from dead plant remains in water and in the absence of air.

PEAT HUMUS—Peat which contains less than 33% fiber based on oven dry weight.

PERCOLATION RATE—A measure of the rate at which water passes through the soil.

PERENNIAL—A plant that continues to live from year to year. In cold climates, the tops may die but the roots and rhizomes persist.

PERMANENT GRASSES—Grasses which are perennial in habit and which can be expected to persist in a turf.

PERMEABILITY—The degree to which any material permits the injection of liquids or gases. Measured in terms of rate of flow through a unit crosssection (of saturated soil) in unit time.

PESTICIDE—Any substance or mixture of substance intended for controlling insects, rodents, fungi, weeds and other forms of plant or animal life that are considered to be pests.

pH—A symbol denoting the negative logarithm of the concentration of the hydrogen ion in gram atoms/liter, used in expressing both acidity and alkalinity.

PLUGGING—Vegetative establishment of turf-grasses by planting small plugs (approximately two inches) containing the top growth, roots, rhizomes or stolons of the turfgrass.

POST-EMERGENCE—Term used in reference to treatments, e.g., herbicides, made after seedlings have emerged from the soil.

PRECIPITATION—Moisture falling upon the earth's surface in any form.

PRE-EMERGENCE TREATMENT—Treatment made after a crop is planted but before it emerges. Contact pre-emergence treatment is made after weed emergence, but before crop emergence. Residual pre-emergence treatment kills the weed seeds as they germinate or as they emerge, either before or after crop emergence.

RELATIVE HUMIDITY—The amount of water vapor in the atmosphere expressed as a percentage of the amount required for saturation at a given temperature.

(continued on page 49)



Watch for chinch bugs and use Aspon[®] Insecticide

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You can stop chinch bugs with quick-acting, long-lasting Aspon insecticide. One application destroys chinch bugs in 48 hours and prevents re-infestation for 3 months. One application may last the entire season in the North.

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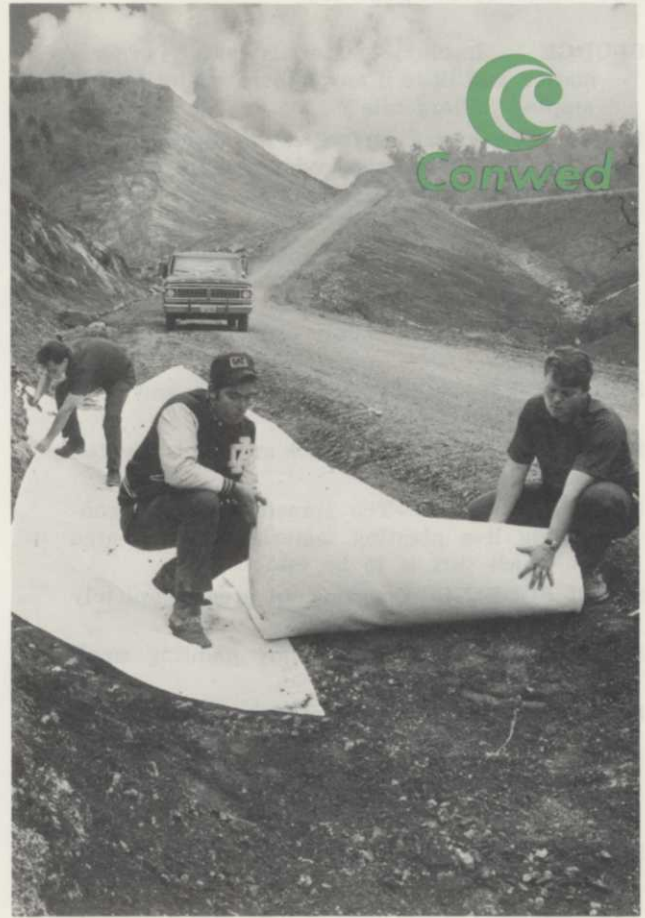
Aspon[®] from 

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SOD TERMS (from page 46)

- RENOVATION**—To renew, make over or repair turf.
- RESIDUAL**—Having a continued effect over a period of time.
- RESIDUAL SOIL MATERIAL**—Soil particles and minerals in a mixture, derived from the weathering of rock material.
- RESISTANT**—Tolerant and capable of withstanding adverse conditions.
- RHIZOME**—An elongated and underground stem, usually horizontal, capable of producing new shoots and roots at the nodes.
- ROOTS**—The parts of a plant containing the organs which absorb water, gases, and nutrients from the soil and atmosphere.
- ROOT HAIRS**—Numerous hair-like tubular outgrowths near the tip of a rootlet, performing the work of absorption.
- ROOT SPREAD**—The horizontal area penetrated by the roots of a plant.
- ROUGH GRADING**—The stages of earthwork operations, cuts and fills preliminary to final work.
- RUNNER**—A long, slender, trailing stem that puts out roots along the ground where the nodes make contact with the ground, thus producing new plants.
- SALINITY**—Degree of saltiness.
- SAND**—Mineral particles between 0.05 and 2.0 mm in diameter.
- SCALPING**—Mowing a lawn so closely that the green foliage is removed and the brown stems and soil are revealed.
- SCARIFICATION**—1. A process of loosening and aerating the soil without turning it over. 2. A method of scratching hard-coated seeds to weaken seed coats and thus hasten germination.
- SCARIFIER**—A machine equipped with steel teeth used to loosen the soil surface.
- SEED**—1. The small body produced by flowering plants which contains an embryo capable of developing by germination. 2. The male ovule of a flowering plant.
- SEED SOWING**—The placement of the seed in a desired location to induce germination.
- SEEDLING**—Young or small plants propagated from seed.
- SELECTIVE HERBICIDE**—One which has greater toxic effects on some plants than on others.
- SHADE**—The area of reduced light caused by partial or complete obstruction of direct sunlight.
- SHADE TOLERANT**—Plant materials which will sufficiently carry out their life processes, while growing in shade or partial shade.
- SHOOT**—A vigorous side branch or a new growth from the root of an old plant.
- SILT**—Soil particles 0.002 to 0.05 mm in diameter.
- SITE PLANNING**—A design process which explores the relationships between building masses, vehicular and pedestrian circulation, ground forms, vegetation, and appropriate use of all the land to produce an esthetic and functional development.
- SLOPE**—The face of an embankment or cut section; any ground whose surface makes an angle with the plane of the horizon.

(continued on page 50)



Promotes germination, reduces soil erosion Conwed® Turf Establishment Blanket

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SOD TERMS (from page 49)

SLUDGE — Insoluble materials largely organic matter, and little if any mineral material. Example—"Milorganite"

SOD—1. The grassy surface of the ground. 2. A section cut from grassland, containing the top growth, thatch, rhizomes, roots, and the soil clinging to it. (See also turf.)

SOD PAD—A unit of Sod (Turf) firmly held together by roots, rhizomes or stolons and adhering soil. This unit may be of any standard dimensions as commonly used by a producer in lifting.

SOD CUTTER—A Tool for undercutting and trimming strips of sod for lifting.

SODDING—A process by which an area is covered with sod.

MULCH SODDING—The spreading of soil containing live planting material over an area on which turf is to be established.

SOLID SODDING—Covering an area completely with pieces of sod.

SPOT SODDING — Sodding by planting small pieces of sod at intervals.

STRIP SODDING—The use of strips of sod spaced at intervals—usually across a slope. Depends upon spreading of the grass to form complete cover. Sometimes the area between strips is seeded.

SOIL—A natural layer on the earth's surface in which plants grow, composed of mineral and organic materials and living forms.

SOIL AERATION—Loosening or puncturing soil by mechanical means to increase its permeability to air and water.

SOIL AMENDMENT—A chemical or mineral element added to the soil to improve soil characteristics such as: porosity and aeration, drainage or moisture retention.

SOIL CLASS—The various textures by which soils are classified.

SOIL CLASSIFICATION—An arbitrary division of a continuous scale of sizes of soil particles such that each scale unit or grade may serve as a convenient class interval for conducting an analysis or for expressing the results of an analysis.

SOIL COMPACTION—The reduction of volume by pressure or rearrangement of the particles in soils, resulting in decreased permeability to air and water. (See also compaction.)

SOIL CONDITIONER—A material which when added to compacted soil, tends to make it more loose, crumbly, or porous.

SOIL CREEP—The movement of soil particles down a slope due to gravity.

SOIL FERTILITY—The ability of a soil to supply nutrients in sufficient quantity to meet the growth requirements of plants, when other growth factors are favorable.

SOIL MOISTURE—All water held by a soil at a given time.

SOIL PROFILE—The natural textural and chemical variation formed within a soil matrix under a climate and vegetation.

SOIL SOLUTIONS—The mixture of soluble materials and soilwater.

SOIL STABILIZATION—The treatment of soil to

provide protection or resistance to forces of erosion.

SOIL STERILIZATION—The process of reducing harmful organisms in or similar material by heat, steam, or fumigation.

SOIL STRUCTURE—The individual and group arrangement of the mineral particles in the soil.

SOIL TESTING—Scientific chemical and physical analysis of the composition, texture and acidity of a soil sample. (To determine its suitability for particular uses or modifications necessary to adapt the soil to desired uses.)

SOIL TEXTURE—Refers to the size of and the proportion of sand, silt, and clay.

SOUR SOIL—1. Soil that becomes toxic to plants through the accumulation of carbon dioxide and the absence of oxygen. 2. An acid soil with a pH of 5.5 or less.

SPECIES—A group of plants that resemble each other closely and that interbreed freely. The unit in the botanical classification of plants.

SPECIFICATION—A written document stipulating the kind, quality, and sometimes the quantity of materials and workmanship required for any construction or work.

SPHAGNUM PEAT—Peat which contains a minimum of 66% sphagnum peat fibers based on oven-dried weight.

SPOT-SEEDED—Seeding small irregular areas.

SPRAY—To disperse, as a liquid in fine droplets, or to scatter as fine particles.

SPREADER—1. Any low growing plant which naturally grows broader than tall. 2. A material sometimes added to spray materials to improve their spreading qualities, usually by reducing their surface tension. 3. A mechanical device to facilitate the distribution of dry materials.

SPRIG—A small stem, shoot or stolon.

SPRIGGING — The planting of healthy living stems (stolons or rhizomes) of perennial turf-forming grasses.

STABILIZE—To bind aggregates, etc., together by adding and thoroughly mixing the proper amount of clay, or other binding materials.

STABILIZER—A substance that when added to a spray material tends to keep it from deteriorating, breaking down, or settling out.

STOLON—A stem growing horizontally on or just below the surface of the ground and capable of producing at nodes new roots, leaves and stems.

STOLONIFEROUS — Having creeping surface stems or runners.

STOLONIZE—To plant surface runners.

STRAW MANURE—Chiefly applied to the manure from stables in which straw was used as bedding, as distinguished from stables in which sand, sawdust, shavings, etc., are used as bedding.

SUBGRADE—The prepared ground level, upon which a pavement, lawn, garden, etc., is constructed.

SUBSOIL—Soil below the usual depth of cultivation, containing little or no humus, and characteristically more dense than topsoil.

SWALE—A gentle man-made or natural depression in grade for drainage of surface water.

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