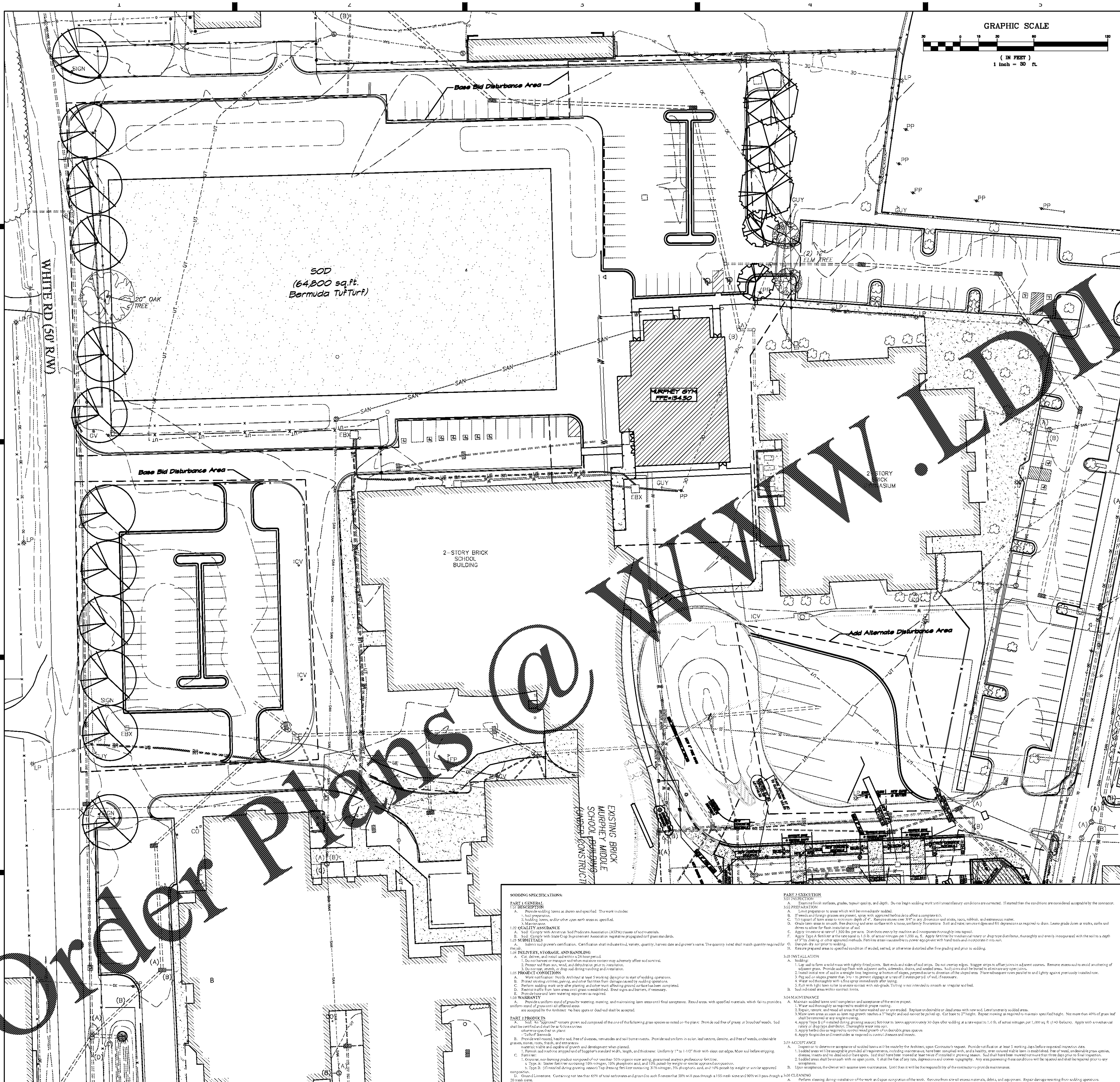

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SPECIFICATIONS:
TREES, PLANTS, AND GROUND COVERS

1.01 QUALITY ASSURANCE
A. All plants shall be nursery grown under climatic conditions similar to those in the locality of the project.
B. Plants shall be located by the Contractor prior to bidding. They shall be reserved at the time of award of the General Contract and lack of availability at the time of installation will not serve as a legitimate excuse for substitution of plant types due to unavailability.

1.02 PROJECT CONDITIONS
A. A complete list of plants, including a schedule of sizes, quantities, and other requirements is shown on the drawings. In the event that quantity discrepancies or material omissions occur in the plant materials list, the planting plans shall govern.

1.03 WARRANTY
A. Warrant plant material to remain alive and be in healthy, vigorous condition for a period of one year after completion and will start at the date of "Architect's Final Acceptance".
1. Inspection of plants will be made by the Architect at completion of planting.
2. A second inspection will be made one year later.
B. Replace, in accordance with the drawings and specifications, all plants that are dead or, as determined by the Architect, are in an unhealthy or unsightly condition, or have lost their natural shape due to dead branches. The cost of such replacements is at Contractors' expense. Warrant all replacement plants for two (2) years after installation. Should a plant be damaged due to improper handling or planting, in lieu of replacement, the Architect may require an additional warranty period, up to an additional year.
C. Remove and immediately replace all plants, as determined by the Architect, to be unsatisfactory during the initial planting installation and subsequent inspections.

PART 2 PRODUCTS
2.01 MATERIALS
A. Plants: Provide plants typical of their species or variety; with normal, densely developed branches and vigorous, fibrous root systems. Provide only sound, healthy, vigorous plants free from defects, disfiguring knots, sun scald injuries, frost cracks, abrasions of the bark, plant diseases, insect eggs, borers, and all forms of infestation. Dug trees shall have been root pruned at least once. All plants shall have a fully developed form without voids and open space. Plants shall not be loose in the container or root ball.
1. Dig balled and burlapped plants with firm, natural balls of earth of sufficient diameter and depth to encompass the fibrous and feeding root system necessary for full recovery of the plant. Provide ball sizes complying with the latest edition of the "American Standard for Nursery Stock". Cracked or mushroomed balls are not acceptable.
2. Container-grown stock: Grown in a container for sufficient length of time for the root system to have developed to hold its soil together, firm and whole.
a. No plants shall be loose in the container.
b. Container stock shall not be pot bound or have encircling roots.
3. Trees that have the main trunk forming a "Y" shape are not acceptable. Trees that are not fully branched will not be accepted. Two-thirds of the tree's total height shall have living branches. Trees shall have no bark damage and shall not be leaning or have significant sweep, crook or bend.
4. Plants planted in rows shall be matched in size and form.

2.02 ACCESSORIES
A. Mulch: Double ground native hardwood bark mulch shall not be larger than 4" in length and ½" in width, free of wood chips and sawdust. It shall be medium brown.
B. Water: Shall be free of substances harmful to plant growth. Hoses or other methods of transportation shall be furnished by contractor. Plants shall be watered by the Contractor for the warranty period to ensure success.

PART 3 EXECUTION
3.01 INSTALLATION
A. Space ground cover plants in accordance with indicated dimensions. Adjust spacing as necessary to evenly fill planting bed with indicated quantity of plants.
B. Drainage: Do not install plant wherever water is seeping or standing in the hole. Notify the Architect if such condition occurs.
C. Pruning:
1. Prune dead or dying branches from planting shrubs after planting to balance the loss of roots and preserve the natural character appropriate to the particular plant requirements. Remove or cut back broken, damaged, and unsymmetrical growth of new wood.

3.02 MAINTENANCE
A. Maintain plants until completion and acceptance of the entire project.
B. Maintenance shall include pruning, cultivating, weeding, watering, and application of appropriate insecticides and fungicides necessary to maintain plants free of insects and disease.

3.03 ACCEPTANCE
A. Acceptance will be subject to compliance with specified materials and installation requirements.
B. Beds shall be weed free at the final inspection.

TREE ORDINANCE LANDSCAPING REQUIREMENTS

PRESERVED TREES

SYMBOL	SPECIES	TOTAL CANOPY COVERAGE
	(1) 20" OAK	1,520
	(2) 12" ELM	760
		2,280

PLANTED TREES

SYMBOL	SPECIES	QTY	X CANOPY POINTS	= TOTAL CANOPY COVERAGE
	FRUITLESS SWEETGUM (Liquidambar styraciflua 'Rotundiloba')	12	1400	16,800
	WILLOW OAK (Quercus phellos)	3	1400	4,200
	TRIDENT MAPLE (Acer buergeranum)	2	750	1,500
				22,500

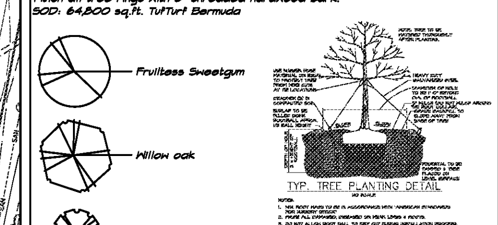
LANDSCAPE DATA

TREE CANOPY PLANTED = 22,500 sq.ft.
TREE CANOPY SAVED = 2,280sq.ft.
TREE CANOPY PROVIDED = 24,780sq.ft.
TCC REQUIRED
DISTURBACE ACREAGE: 4.92 Acres (214315.2 sq.ft.) x 30% = 64,295 REQUIRED.

PLANT LIST

Qty	Code Name	Scientific Name	Common Name	Planting Size
2	AB	Acer buergeranum	Trident Maple	3"-Cal
12	LSR	Liquidambar styraciflua 'Rotundiloba'	Fruitless Sweetgum	3"-Cal
3	QP	Quercus phellos	Willow oak	3"-Cal

Mulch all tree rings with 3" shredded hardwood bark.
SOD: 64,800 sq.ft. TufTurf Bermuda



TREE ORDINANCE COMPLIANCE NOTES:

ALL PLANTED TREES MUST BE AT LEAST 8' IN HEIGHT & 3" IN CALIPER.
ALL PLANTED TREES MUST BE LIMBED UP TO 6'.
NO TREE SHALL BE LOCATED MORE THAN 100' FROM PERMANENT WATER SOURCE.
ADEQUATE PROTECTION SHALL BE PROVIDED FOR ALL RETAINED TREES.
NO LIGHTPOLE WITHIN 20' OF ANY TREE OR IN ANY REQUIRED LANDSCAPE ISLAND.
NO PARKING SPACE SHALL BE MORE THAN 65' FROM A PLANTED TREE.
SITE LIGHTING IS TO BE DELINEATED ON PLAN.
NO LIGHTING CAN BE WITHIN 20' OF A REQUIRED TEE OR WITHIN A REQUIRED LANDSCAPE ISLAND.

LIGHTING PLAN MUST BE CONSISTENT WITH LIGHTING DELINEATED ON THE LANDSCAPE PLAN; IF CONFLICTS BETWEEN THE TWO PLANS ARISE, THE LIGHTING ON THE LANDSCAPE SUPERSEDES LIGHTING ON THE ELECTRICAL PLAN.

NO SIGNS, WITH THE EXCEPTION OF SMALL DIRECTIONAL SIGNS, MAY BE LOCATED WITHIN 20' OF A REQUIRED TREE OR WITHIN REQUIRED LANDSCAPE ISLANDS.

NO BIKE RACKS, FIRE HYDRANTS, UTILITY BOXES, TRANSFORMERS OR OTHER SITE APPURTENANCES MAY BE LOCATED IN REQUIRED LANDSCAPE ISLANDS.

A PERMANENT WATER SOURCE MUST BE WITHIN 100' OF ALL REQUIRED TREES.

NO NEW UTILITIES (OVER OR UNDER) MAY BE LOCATED DIRECTLY ABOVE OR BELOW EXISTING OR PROPOSED TREE LOCATIONS. PROPOSED UTILITIES MUST BE ROUTED AWAY FROM ALL REQUIRED TREES ON THIS SITE.

PLANTS SHALL BE LOCATED PRIOR TO BIDDING AND SHALL BE RESERVED AT THE TIME OF AWARD OF THE GENERAL CONTRACT.
AVAILABILITY AT THE TIME OF INSTALLATION WILL NOT SERVE AS A LEGITIMATE EXCUSE FOR SUBSTITUTION.

SODDING SPECIFICATIONS:

PART 1 GENERAL
1.01 DESCRIPTION
A. Provide sodding lawns as shown and specified. The work includes:
1. Soil preparation.
2. Sodding lawns, and/or other open earth areas so specified.
3. Maintenance.
1.02 QUALITY ASSURANCE
A. Sod: Comply with American Sod Producers Association (ASPA) classes of sod materials.
B. Sod: Comply with State Crop Improvement Association vegetative propagated turf grass standards.
1.03 SUBMITTALS
A. Submit sod grower's certification. Certification shall indicate kind, variety, quantity, harvest date and grower's name. The quantity listed shall match quantity required for the job.
1.04 DELIVERY, STORAGE, AND HANDLING
A. Cut, deliver, and install sod within a 24-hour period.
1. Do not harvest or transport sod when moisture content may adversely affect sod survival.
2. Protect sod from sun, wind, and dehydration prior to installation.
3. Do not tear, stretch, or drop sod during handling and installation.
1.05 PROJECT CONDITIONS
A. Work notification: Notify Architect at least 5 working days prior to start of sodding operations.
B. Protect existing utilities, paving, and other facilities from damage caused by sodding operations.
C. Perform sodding work only after planting and other work affecting ground surface has been completed.
D. Restrict traffic from lawn areas until grass is established. Erect signs and barriers, if necessary.
E. Provide hose and lawn watering equipment as required.
1.06 WARRANTY
A. Provide a uniform stand of grass by watering, mowing, and maintaining lawn areas until final acceptance. Resod areas, with specified materials, which fail to provide a uniform stand of grass until all affected areas are accepted by the Architect. No bare spots or dead sod shall be accepted.

PART 2 PRODUCTS
A. Sod: An "approved" nursery grown sod composed of the one of the following grass species as noted on the plans: Provide sod free of grassy or broadleaf weeds. Sod shall be certified and shall be as follows unless otherwise specified on plans:
- 'Tufturf' Bermuda
B. Provide well-rooted, healthy sod, free of diseases, nematodes and soil borne insects. Provide sod uniform in color, leaf texture, density, and free of weeds, undesirable grasses, stones, roots, thatch, and extraneous material; viable and capable of growth and development when planted.
1. Furnish sod machine stripped and of Supplier's standard width, length, and thickness: Uniformly 1" to 1-1/2" thick with clean cut edges. Mow sod before stripping.
C. Fertilizer:
1. Granular, non-burning product composed of not less than 50% organic slow acting, guaranteed analysis professional fertilizer.
a. Type A: Starter fertilizer containing 10% nitrogen, 10% phosphoric acid, and 10% potash by weight or similar approved composition.
b. Type B: (if installed during growing season) Top dressing fertilizer containing 31% nitrogen, 3% phosphoric acid, and 10% potash by weight or similar approved composition.
D. Ground Limestone. Containing not less than 85% of total carbonates and ground to such fineness that 50% will pass through a 100 mesh sieve and 90% will pass though a 20 mesh sieve.
E. Water: Free of substance harmful to sod growth. Hoses or other methods of transportation furnished by Contractor.

PART 3 EXECUTION
3.01 INSPECTION
A. Examine finish surfaces, grades, topsoil quality, and depth. Do not begin sodding work until unsatisfactory conditions are corrected. If started then the conditions are considered acceptable by the contractor.
3.02 PREPARATION
A. Limit preparation to areas which will be immediately sodded.
B. If weeds and foreign grasses are present, spray with approved herbicide to affect a complete kill.
C. Till topsoil of lawn areas to minimum depth of 4". Remove stones over 3/4" in any dimension and sticks, roots, rubbish, and extraneous matter.
D. Grade lawn areas to smooth, free draining and even surface with a loose, uniformly fine texture. Roll and rake; remove ridges and fill depressions as required to drain. Leave grade down at walks, curbs and drives to allow for flush installation of sod
E. Apply limestone at rate of 1,500 lbs. per acre. Distribute evenly by machine and incorporate thoroughly into topsoil.
F. Apply Type A fertilizer at the rate equal to 1.0 lb. of actual nitrogen per 1,000 sq. ft. Apply fertilizer by mechanical rotary or drop type distributor, thoroughly and evenly incorporated with the soil to a depth of 3" by disking or other approved methods. Fertilize areas inaccessible to power equipment with hand tools and incorporate it into soil.
G. Dampen dry soil prior to sodding.
H. Restore prepared areas to specified condition if eroded, settled, or otherwise disturbed after fine grading and prior to sodding.

3.03 INSTALLATION
A. Sodding:
1. Lay sod to form a solid mass with tightly-fitted joints. Butt ends and sides of sod strips. Do not overlay edges. Stagger strips to offset joints in adjacent courses. Remove excess sod to avoid smothering of adjacent grass. Provide sod top flush with adjacent curbs, sidewalks, drains, and seeded areas. Sod joints shall be butted to eliminate any open joints.
2. Install initial row of sod in a straight line, beginning at bottom of slopes, perpendicular to direction of the sloped area. Place subsequent rows parallel to and lightly against previously installed row.
3. Peg sod on slopes greater than 3 to 1 to prevent slippage at a rate of 2 stakes per yd. of sod, if necessary.
4. Water sod thoroughly with a fine spray immediately after laying.
5. Roll with light lawn roller to ensure contact with sub-grade. Rolling is not intended to smooth an irregular sod bed.
B. Sod indicated areas within contract limits.

3.04 MAINTENANCE
A. Maintain sodded lawns until completion and acceptance of the entire project.
1. Water sod thoroughly as required to establish proper rooting.
2. Repair, rework, and resod all areas that have washed out or are eroded. Replace undesirable or dead areas with new sod. Level unevenly sodded areas.
3. Mow lawn areas as soon as lawn top growth reaches a 3" height and sod cannot be pulled up. Cut back to 2" height. Repeat mowing as required to maintain specified height. Not more than 40% of grass leaf shall be removed at any single mowing.
4. Apply Type B (if installed during growing season) fertilizer to lawns approximately 30 days after sodding at a rate equal to 1.0 lb. of actual nitrogen per 1,000 sq. ft. (140 lbs/acre). Apply with a mechanical rotary or drop type distributor. Thoroughly water into soil.
5. Apply herbicides as required to control weed growth of undesirable grass species
6. Apply fungicides and insecticides as required to control diseases and insects.

3.05 ACCEPTANCE
A. Inspection to determine acceptance of sodded lawns will be made by the Architect, upon Contractor's request. Provide notification at least 5 working days before requested inspection date.
1. Sodded areas will be acceptable provided all requirements, including maintenance, have been complied with, and a healthy, even colored viable lawn is established, free of weed, undesirable grass species, disease, insects and no dead sod or bare spots. Sod shall have been mowed at least twice if installed in growing season. Sod shall have been mowed not more than three days prior to final inspection.
2. Sodded areas shall be smooth with no open joints. It shall be free of any ruts, depressions and uneven topography. Any area possessing these conditions will be rejected and shall be repaired prior to any acceptance.
B. Upon acceptance, the Owner will assume lawn maintenance. Until then it will be the responsibility of the contractor to provide maintenance.

3.06 CLEANING
A. Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, debris, and equipment. Repair damage resulting from sodding operations.

TREE STANDARDS (Section 8-4-11-(h)):
1. All required trees shall be grown within one climatic zone of Augusta, GA.
2. All required trees shall be nursery grown, typical of their species or variety, with normal, densely developed branches and vigorous, fibrous root systems. Trees shall be sound, healthy, vigorous, free from defects, free from disfiguring knots, free from sun scald injuries, frost breaks and/or abrasions of the bark, and be free from plant diseases, insect eggs, borers, and all forms of infestations. All trees shall have a fully developed form without voids and open space. Trees shall not be loose in the container or root ball. It is recommended that dug trees shall have been root pruned at least once.
3. All required trees shall have straight, single central leaders. Trees that have the main trunk forming a "Y" shape are not acceptable. Trees that are not fully branched will not be accepted. Trees shall have no bark damage and shall not be leaning or have significant sweep, crook or bend. Trees shall be a minimum of 8' in height, have a minimum 3" caliper and shall have a straight unbranched trunk to 6'. Trees specified as "multi-stemmed" shall have a minimum of 3 and a maximum of 5 separate canes minimum of 1" caliper each coming from the root ball and pruned into tree form with no branches on the lower half of the tree. Multiple plants shall not be used at a "multi-stemmed" plant. Plants planted in rows shall match in size and form.
4. All required trees shall be set in the planting pit to proper grade and alignment, and shall be set upright, plumb and faced to give the best appearance or relationship to other trees. Each tree shall be set 1-2" above the finish grade and backfill shall be brought even with the top of the root ball. No fill shall be permitted atop the root ball.
5. All burlap, ropes, straps, and wires shall be removed from the root ball. If it is not possible to remove the burlap and wire from the bottom of the root ball, the burlap and wire shall be cut away from the sides and removed from the hole.
6. After required trees are set, the backfill shall be muddled around the base of the root ball and all voids shall be filled.
7. All required trees shall have their planting pits mulched with approved mulching material immediately after planting. The mulched areas shall be thoroughly watered. Note: Mulch shall be placed to a maximum thickness of 3" except at the trunk, where it shall be no more than 1"
8. If staking and supports have been installed on the required tree(s), all staking and supports shall be removed after one growing season.

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PROJECT TITLE:

MURPHEY MIDDLE SCHOOL P.E. BUILDING
PROJECT #
B-17-005-3756.1

REVISIONS

REV #	DATE	APRVD BY	REVISION
	11-02-2018	-	FINAL
1	11-15-2018	RWD	Power on Pump Rev
2	11-20-2018	RWD	Issued for Bid

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DA PROJECT NUMBER & NAME:
1707.1

DRAWING TITLE:

TREE PLAN

DRAWING NO:

L1.1