ARBORICULTURE

A. Scope:
1. Retain licensed arborist to:
a. Perform inspection of site with Landscape Architect before start of any site demolition or construction activities to determine scope and extent of construction activities and potential effect on landscape.
b. Supervise construction methods which affect health of existing trees and shrubs to remain.
c. Perform cutting and protection of tree roots.
d. Perform pruning of branches and limbs of trees and shrubs.
e. Perform inspection visits of construction activities and relationship with protected landscape materials at 6 week intervals, or more often as deemed necessary by Landscape Architect.
2. Perform following work under direct supervision of retained licensed arborist:
a. Hand-dig excavations for piping and conduit where roots of trees and shrubs are larger than 3 in. dia.
b. Water and fertilize trees and shrubs within construction limits during construction operations to comply with instructions of arborist.
c. Prevent construction equipment movement over roof structure of trees and shrubs as directed by arborist.
d. Prevent mounding of dirt and debris over root structure of trees and shrubs as directed by arborist.

B. Schedules: Submit detailed schedules as follows and prepared by arborist.
1. Location and extent of temporary protection for trees and shrubs.
2. Location and extent of potential hand-excavation operations to prevent damage to tree and shrub roots larger than 3 in. dia.
3. Extent of tree and shrub pruning to accommodate construction operations.
4. Location and extent of drip line of trees and shrubs.
5. Location and extent of potential root structure which could be damaged by movement of construction equipment.

C. Protection of Existing Trees and Vegetation:
1. Protect existing trees and other vegetation indicated to remain in place against unnecessary cutting, breaking or skinning of roots, skinning and bruising of bark, smothering of trees by stockpiling construction materials or excavated materials within drip line, excess foot or vehicular traffic, or parking of vehicles within drip line.
2. Water trees and other vegetation to remain within limits of Contract work as required to maintain their health during course of construction operations.
3. Roots:
a. Provide protection for roots over 1-1/2 in. dia. cut during construction operations.
b. Coat cut faces with emulsified asphalt, or other acceptable coating, formulated for use on damaged plant tissues.
c. Temporarily cover exposed roots with wet burlap to prevent roots from drying out.
4. Cover with earth when possible.
5. Replace trees that cannot be repaired and restored to full-growth status, as determined by arborist.
6. Coordinate placement of temporary tree and shrub protection fence (provided by Section 02230).

D. Maintenance of Existing Trees and Shrubs During Construction Operations:
1. Maintain by cultivating, watering, weeding, fertilizing, and restoring planting saucers as required to maintain healthy, viable plantings.
2. Spray as required to keep trees and shrubs free of insects and disease.

E. Tree Branches:
1. Remove tree branches overhanging walkways which are within 10 ft. of finish grade.
2. Remove tree branches overhanging roadways and access roads which are within 15 ft. of finish grade.

F. Tree and Shrub Pruning:
1. Prune, thin, and shape trees and shrubs as directed by Architect.
2. Prune, thin, and shape trees and shrubs according to standard horticultural practice.
3. Prune trees to retain required height and spread.
4. Unless otherwise indicated by Architect, do not cut tree leaders; remove only injured or dead branches from flowering trees.
5. Prune shrubs to retain natural character.
6. Shrub sizes indicated are sizes after pruning.

G. Tree Roots:
1. Employ arborist to cut roots less than 2-1/2 in. dia. to requirements specified in this Section.
2. For roots larger than 3 in., perform hand-excavation of roots.

H. Hand-Excavation of Tree Roots:
1. Where tree and shrub roots have been identified by arborist to possibly exceed 3 in. dia., take special care to prevent damage to large roots; stop all mechanical excavation before large roots are encountered.
2. Hand-excavate using shovels and similar handtools to continue excavation operations to extent required for earthwork for structures on site.
3. Protect exposed roots as specified in this Section.
4. Repair damage to roots, such as skinning, gouging, or other surface penetration of roots, as directed by arborist.

I. Existing Lawn Maintenance:
1. Maintain lawn by watering, fertilizing, weeding, mowing, trimming, and other operations.
2. Watering:
a. Provide and maintain temporary piping, hoses, and lawn-watering equipment to convey water from sources and to keep lawn uniformly moist to 4 in. depth.
b. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch.
c. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
d. Water lawn min. 1 in. per week.
3. Mowing:
a. Remove no more than 40 percent of grass-leaf growth in initial or subsequent mowings.
b. Do not delay mowing until grass blades bend over and become matted.
c. Do not mow when grass is wet.

J. Existing Tree and Shrub Maintenance:
1. Maintain by cultivating, watering, weeding, fertilizing, and restoring planting saucers as required to establish healthy, viable plantings.
2. Spray as required to keep trees and shrubs free of insects and disease.

SITE CONCRETE WORK

A. Scope: Cast-in-place concrete, including reinforcement, concrete materials, mix design, placement procedures, and finishes, consisting of:
1. Paving slabs serving as substrate for mortar set pavers.
2. Slabs serving as substructure for mortar set stonework at water features.
3. Footings, foundations, and walls for mortar set stonework site walls.
4. Footings and foundations for mortar set stonework site stairs.
B. Comply with ACI 301, Specification for Structural Concrete, including following, unless modified by requirements of Contract Documents.
1. General requirements, including submittals, quality assurance, acceptance of structure, and protection of in-place concrete.
2. Formwork and form accessories.
3. Steel reinforcement and supports.
4. Concrete mixtures.
5. Handling, placing, and constructing concrete.
C. Concrete Work:
1. Formwork: Furnish formwork and form accessories according to ACI 301.
2. Steel Reinforcement:
a. Reinforcing Bars: ASTM A615/A615M, Grade 60 (Grade 420), deformed.
b. Deformed-Steel Welded Wire Fabric: ASTM A497, flat sheet.
3. Concrete Materials:
a. Portland Cement: ASTM C150, Type I.
b. Normal-Weight Aggregate: ASTM C33, uniformly-graded, max. 1-1/2 in. nominal size.
c. Water: Potable, complying with ASTM C94.
4. Comply with ACI 301 requirements for concrete mixtures.
5. Ready-Mixed Concrete: Comply with ASTM C94.
D. Finishing Formed Surfaces:
1. Rough-Formed: As-cast concrete texture imparted by form-facing material with tie holes and defective areas repaired and patched, and fins and other projections exceeding 1/4 in. in height rubbed down or chipped off.
2. Smooth-Formed: As-cast concrete texture imparted by form-facing material, arranged in orderly and symmetrical manner with minimum of seams, repair and patch tie holes and defective areas, and completely remove fins and other projections.

UNIT PAVERS

A. Scope:
1. Preparation of subbase and placement of dense-graded gravel subbase and sand setting bed for hand-set cobblestone edging pavers on sand setting bed covered with roofing felt, fine sand filling joints at hot-mix asphalt paving.
2. Pavers, hand-set on latex-modified portland cement mortar bed with grouted joints over cast-in-place concrete substrate, to include:
a. Bluestone pavers.
b. Bluestone pool apron.
c. Granite pavers.
3. Granite pavers, hand-set on sand setting bed covered with roofing felt, fine sand filling joints.
B. Samples for Verification:
1. Submit samples made up of actual unit pavers for each type, color, and texture required.
2. Include in each set of samples full range of exposed color and texture to be expected in completed work.
3. Provide samples with joints grouted and cured indicating full range of color to be expected in completed work.
C. Pavers:
1.Bluestone
D. Setting Materials:
1. Ungrouted Mortarless Setting Materials:
a. Sand for Setting Beds: Fine aggregate complying with ASTM C33.
b. Roofing Felt: ASTM D226, Type I; asphalt saturated felt, 15 lb. type.
c. Sand for Joints: ASTM C144, with gradation for unusually thin joints.
2. Latex-Modified Portland Cement Applications:
a. Aggregate: ASTM C144 with fineness module of 2.25 +/-0.10.
b. Portland Cement: ASTM C150, Type I.
3. Colored Pigmented Grout:
a. Manufacturer's standard factory-prepackaged mixture of cement, fine aggregates and colorfast pigments formulated for mixing with liquid latex admixture.
b. Color: As selected by Architect from manufacturer's standard colors.
c. Product: H.B. Fuller Co. Model TA660 Joint Fill Floor Grout, Laticrete International Inc. Model Laticrete Floor grout and joint filler, upco division emhart corp model hydroment grout.
E. Ungrouted Mortarless Paver Applications:
1. Compact soil subgrade uniformly to min. 95 percent of ASTM D698 laboratory density.
2. Proof-roll prepared subgrade to identify soft pockets and areas of excess yielding.
3. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.
4. Place leveling course and screed to 1 in. to 1-1/2 in. thick, taking care that moisture content remains constant and density is loose and constant until pavers are set and compacted.
5. Set pavers with min. 1/16 in. joint width and max. 1/8 in., being careful not to disturb leveling base.
6. Leveling Course vibration:
a. Vibrate pavers into leveling course with low-amplitude plate vibrator capable of 3500 lbf to 5000 lbf compaction force at 80 Hz to 90 Hz.
b. Perform min. 3 passes across paving with vibrator.
c. Vibrate after edge pavers are installed and surface is completed or before surface is exposed to rain.
7. Joint Filling:
a. Spread dry sand and fill joints immediately after vibrating pavers into leveling course.
b. Vibrate pavers and add sand until joints are completely filled, then remove excess sand.
c. Leave slight surplus of sand on surface for joint filling.
d. Do not allow traffic on installed pavers until sand has been vibrated into joints.
e. Repeat joint-filling process 30 days later.
8. Grouting:
a. Grout joints as soon as possible after initial set of setting bed.
b. Force grout into joints, taking care not to smear grout on adjoining paver and other surfaces.
c. After initial set of grout, finish joints by tooling to produce very slightly concave polished joint, free from drying cracks.
d. Mix grout in proportion, by volume, of one part portland cement to two parts fine aggregate, with latter measured in damp, loose conditions, except for thin joints with fine sand, reduce fine aggregate proportion to one part.
e. Add liquid admixture in proportion and concentration recommended by admixture manufacturer.
f. Select and proportion color pigments with other grout ingredients to produce grout of color indicated.
g. Do not exceed pigment-to-cement ratio, by weight, of 1-to-10.
h. Cure grout by maintaining in damp condition for 7 days except as otherwise recommended by grout admixture manufacturer.

PLANTING AREA PREPARATION

A. Scope:
1. Standard topsoil mixture for application over prepared subgrade surrounding undergrade structure.
2. Lawn preparation, including:
a. Loosening newly-graded base course.
b. Application of fertilizers and soil amendments.
c. Placement of topsoil and finish grading to lines and elevations shown.

3. Exterior plant area preparation, including:
a. Lay out of individual trees and shrubs, including multiple exterior plantings.
b. Loosening base course of planting beds.
c. Application of fertilizers and soil amendments.
d. Placement of topsoil and finish grading to lines and elevations shown.

B. Topsoil:
1. Topsoil Analysis:
a. Furnish soil analysis by qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; sodium absorption ratio; deleterious material; pH; and mineral and plant-nutrient content of topsoil.
b. Report suitability of topsoil for plant growth.
c. State recommended quantities of nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory topsoil.
2. ASTM D5268, 5.5 to 7 pH range, min. 4 percent organic material content; free of stones 1 in. or larger in any dimension and other extraneous materials harmful to plant growth.

C. Inorganic Soil Amendments:
1. Lime: ASTM C602, agricultural limestone containing min. 80 percent calcium carbonate equivalent.
2. Agricultural Gypsum: Finely-ground, containing min. 90 percent calcium sulfate.
3. Sand: Clean, washed, natural or manufactured, free of toxic materials.
4. Diatomaceous Earth: Calcined, diatomaceous earth, 90 percent silica, with approximately 140 percent water absorption capacity by weight.

D. Organic Soil Amendments:
1. Well-composted, stable, and weed-free organic matter, 5.5 to 8 pH range; 35 to 55 percent by weight moisture content; 100 percent passing through 1/2 in. sieve; 5 to 10 decisiemens/m soluble salt content; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows.
2. Organic Matter Content: 50 to 60 percent of dry weight.

E. Slow-Release Fertilizer:
1. Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium.
2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from qualified soil-testing agency.

F. Newly-Graded Subgrades:
1. Loosen subgrade to min. 12 in.
2. Remove stones larger than 1-1/2 in. in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
3. Apply fertilizer directly to subgrade before loosening.
4. Thoroughly blend planting soil mix off-site before spreading or spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil mix.
5. Delay mixing fertilizer with planting soil if planting will not proceed within few days.
6. Mix lime with dry soil before mixing fertilizer.
7. Spread planting soil mix to 12 in. depth, but not less than required to meet finish grades after light rolling and natural settlement.
8. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.

G. Unchanged Subgrades:
1. If lawns are to be planted in areas unaltered or undisturbed by excavating, grading, or surface soil stripping operations, remove existing grass, vegetation, and turf.
2. Do not mix into surface soil.
3. Loosen surface soil to min. 12 in. depth.
4. Apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top 12 in. of soil.

5. Till soil to homogeneous mixture of fine texture.
6. Apply fertilizer directly to surface soil before loosening.
7. Remove stones larger than 1 in. in any dimension and sticks, roots, trash, and other extraneous matter.
8. Legally dispose of waste material, including grass, vegetation, and turf, off Owner's property.

H. Finish Grading:
1. Grade planting areas to smooth, uniform surface plane with loose, uniformly fine texture.
2. Grade to within +/-1/2 in. of finish elevation; use string lines as required for establishing even grade and slope.
3. Roll and rake, remove ridges, and fill depressions to meet finish grades.
4. Limit fine grading to areas that can be planted in immediate future.

LAWNS AND GRASSES

A. Scope:
1. Lawn development, consisting of sodding.
2. Existing lawn renovation, consisting of:
a. Mowing, dethatching, core aerating, and raking existing lawn.
b. Weeding of and waste removal from existing lawn before reseeding.
c. Tilling bare and compacted areas.
d. Applying soil amendments.
e. Reseeding existing lawn areas.
3. Lawn maintenance of newly-placed and reconditioned existing lawns.
B. Certification of Grass Seed:
1. From seed vendor for each grass-seed monostand or mixture stating botanical and common name and percentage by weight of each species and variety, and percentage of purity, germination, and weed seed.
2. Include year of production and date of packaging.
3. Certification of each seed mixture for turfgrass sod, identifying source, including name and telephone number of supplier.

C. Lawn Maintenance:
1. Begin maintenance immediately after each area is planted and continue until acceptable lawn is established, but for 30 days from Substantial Completion.
2. Maintain and establish lawn by watering, fertilizing, weeding, mowing, trimming, replanting, and other operations.
3. Roll, regrade, and replant bare or eroded areas and remulch to produce uniformly smooth lawn.
4. Watering:
a. Provide and maintain temporary piping, hoses, and lawn-watering equipment to convey water from sources and to keep lawn uniformly moist to 4 in. depth.
b. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch.
c. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
d. Water lawn min. 1 in. per week.
5. Mowing:
a. Mow lawn as soon as top growth is tall enough to cut.
b. Repeat mowing to maintain specified height without cutting more than 40 percent of grass height.
c. Remove no more than 40 percent of grass-leaf growth in initial or subsequent mowings.
d. Do not delay mowing until grass blades bend over and become matted.
e. Do not mow when grass is wet.
6. Lawn Postfertilization:
a. Apply fertilizer after initial mowing and when grass is dry.
b. Use fertilizer that will provide min. 1 lb. per 1000 sq. ft. actual nitrogen to lawn area.

D. Turfgrass Sod:
1. Certified Number 1 Quality/Premium, including limitations on thatch, weeds, diseases, nematodes, and insects,
complying with TPI Guideline Specifications to Turfgrass Sodding, Specifications for Turfgrass Sod Materials.
2. Furnish viable sod of uniform density, color, and texture, strongly-rooted, and capable of vigorous growth and development when planted.
3. Lay sod within 24 hours of harvesting.
4. Do not lay sod if dormant or if ground is frozen or muddy.
5. Lay sod to form solid mass with tightly-fitted joints.
6. Butt ends and sides of sod; do not stretch or overlap.
7. Stagger sod strips or pads to offset joints in adjacent courses.
8. Avoid damage to subgrade or sod during installation.

EXTERIOR PLANTS

A. Scope:
1. Exterior plants to consist of:
a. Trees.
b. Shrubs.
c. Ground cover.
d. Plants.
2. Tree and shrub maintenance of newly-placed trees and shrubs.

B. Maintenance Instructions:
1. Recommended procedures to be established by Owner for maintenance of exterior plants during calendar year.
2. Submit before expiration of required maintenance periods.
3. Trees and Shrubs:
a. Maintain for following maintenance period by pruning, cultivating, watering, weeding, fertilizing, restoring planting saucers, tightening and repairing stakes and guy supports, and resetting to proper grades or vertical position, as required to establish healthy, viable plantings.
b. Spray as required to keep trees and shrubs free of insects and disease.
c. Restore or replace damaged tree wrappings.
d. Maintenance Period: 12 months from Substantial Completion.
4. Ground Cover and Plants:
a. Maintain for following maintenance period by watering, weeding, fertilizing, and other operations as required to establish healthy, viable plantings:
b. Maintenance Period: 6 months from Substantial Completion.

C. Exterior Plants:
1. Furnish nursery-grown trees and shrubs complying with ANSI Z60.1, with healthy root systems developed by transplanting or root pruning.
2. Provide well-shaped, fully-branched, healthy, vigorous stock free of disease, insects, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.
3. Quality:
a. Provide quality, size, genus, specie, and variety of exterior plants indicated, complying with ANSI Z60.1, American Standard for Nursery Stock applicable requirements.
b. Selection of exterior plants purchased under Allowances will be made by Architect, who will tag plants at their place of growth before they are prepared for transplanting.
4. Tree and Shrub Measurements:
a. Measure according to ANSI Z60.1 with branches and trunks or canes in their normal position.
b. Do not prune to obtain required sizes.
c. Take caliper measurements 6 in. above ground for trees up to 4 in. caliper size, and 12 in. above ground for larger sizes.
d. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip-to-tip.
5. Grade:
a. Provide trees and shrubs of sizes and grades complying with ANSI Z60.1 for type of trees and shrubs required.
b. Trees and shrubs of larger size may be used if acceptable to Architect, with proportionate increase in root or ball size.
6. Labeling:
a. Label each tree and shrub with securely attached, waterproof tag bearing legible designation of botanical and common name.
b. Label at least one tree and one shrub of each variety and caliper with securely attached, waterproof tag bearing legible designation of botanical and common name.

D. Stakes and Guys:
1. Upright and Guy Stakes: Rough-sawn, sound, new hardwood, redwood, or
pressure-preservative-treated softwood, free of knots, holes, cross-grain, and other defects, 2 in. x 2 in. by length indicated, pointed at one end.
2. Guy and Tie Wire: ASTM A641, Class 1, galvanized-steel wire, 2-strand, twisted, 0.106 in. dia.
3. Hose Chafing Guard: Reinforced rubber or plastic hose min. 1/2 in. dia., black, cut to lengths required to protect tree trunks from damage.
4. Flags: Standard surveyor's plastic flagging tape, white, 6 in. long.

PERMIT SET
NOT FOR CONSTRUCTION

Reviewed for Code Compliance
Inspection Division
Portland, Maine
Date: 09/18/17

Soren deNiord Design Studio
43 Wellwood Road
Portland, ME
04103
T: 207-400-2450
E: soren@sorendeniord.com

SPIRN GULLIVER RESIDENCE
PEAKS ISLAND, MAINE

| No: | Revision | Date: |
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LANDSCAPE NOTES