

SECTION 32 92 00
TURFGRASS RENOVATION AND REESTABLISHMENT

1.1. WORK OVERVIEW

1.1.1. This section outlines operational procedures to be followed in sections designated for topsoil surface leveling, renovation, and re-establishment of the existing turfgrass stand. Turf renovation generally includes curb-to-curb renovation unless otherwise directed by the COR. The contractor shall provide all supervision, professional advice/guidance, labor, parts, materials, equipment, and personnel, to provide the services defined herein.

1.1.2. The COR will determine the beginning point and ending points in each gravesite section.

1.2. TOPSOIL AND TURFGRASS RENOVATION PROCESS:

1.2.1. The following renovation process shall begin with the approval of the COR and only when the existing turfgrass is actively growing and not in dormancy.

1.2.2. Contractor shall inventory, remove, and store all irrigation heads and cap head risers within the limits of work. Provide a copy of the inventoried equipment and materials to the COR. Provide protection of any exposed components, risers, etc. that might be damaged by renovation equipment.

1.2.3. Contractor shall locate and inventory all irrigation components: (valve boxes, gate valves, quick couplers, etc.) within the limits of work and protect the location and component access throughout contract work. Provide a copy of the inventoried equipment and materials to the COR.

1.2.4. The Contractor shall be responsible for the replacement of irrigation heads and components at finish grade, ensuring all irrigation lines and heads are free of foreign matter and operating properly.

1.2.5. Removal of Existing Turf Stand:

1.2.5.a. Power rake or verticut entire treated area to loosen and prepare the site for the removal of all residual plant debris including thatch.

1.2.5.b. Remove all residual plant debris including thatch.

1.2.6. Topsoil Preparation:

1.2.6.a. Rototill area to a minimum depth of 6 inches to uniformly mix topsoil and to uniformly loosen top surface for re-grading and leveling.

1.2.6.b. Provide and apply turf fertilizer that is commercial grade, free flowing, uniform in composition, and conforms to applicable state and federal regulations. Granular fertilizer shall bear the manufacturer's warranted

statement of analysis. Granular fertilizer shall contain a minimum percentage by weight of 10 nitrogen (of which 50 percent shall be organic), 10 available phosphoric acid, and 10 potash. Spread at a rate recommended by the manufacturer evenly over entire area using any suitable broadcast application device.

- 1.2.6.c. Rake in fertilizer into the top one (1) inch of soil to minimize the new sod from making direct contact with the fertilizer.

1.2.7. Topsoil Leveling and Grading

- 1.2.7.a. Grade and compact surface of site to achieve desired finished appearance, free of all surface ripples, depressions, high spots, low areas, ridges. New surfaces shall be blended to existing areas.
- 1.2.7.b. The prepared surface (finish grade) shall be a maximum 1 inch below the adjoining grade of any surfaced area.
- 1.2.7.c. Topsoil shall be free of foreign matter, any objects bigger than 25 mm (1 inch) and weed seeds.
- 1.2.7.d. Apply and compact sufficient topsoil to eliminate all ripples, depressions as needed to achieve the desired smooth finish grade and appearance.
- 1.2.7.e. Firm the topsoil by rolling with a standard turfgrass roller that is half-full of water. If more weight is required to adequately firm the surface, fill the roller with water and repeat rolling as necessary. Properly firmed soil will show a foot print when walked upon, but will not allow the walker's foot to sink into the soil.
- 1.2.7.f. Protect finished areas from damage by vehicular or pedestrian traffic.
- 1.2.7.g. Install and maintain erosion control material to meet local environmental regulations. Copies of these requirements may be reviewed by contacting the COR.

- 1.2.8. After finish grade has been established, raise all irrigation components and install sprinkler heads to finish grade. Adjust sprinkler heads to provide full coverage and best distribution uniformity.

1.2.9. Turfgrass Sod Transplanting and Installation:

- 1.2.9.a. Provide certified sod as specified in Exhibit (G).
- 1.2.9.b. Moistening the Soil: During periods of higher than optimal temperature for the species specified, and after all unevenness in the soil surface has been

corrected, the soil shall be lightly moistened immediately prior to installation of the turfgrass sod.

- 1.2.9.c. Starter Strip: The first row of turfgrass sod shall be laid in a straight line, with subsequent rows placed parallel to and tightly against each other. Lateral joints shall be staggered to promote more uniform growth and strength. Care shall be exercised to insure that the pieces are not stretched or overlapped and that all joints are butted tightly to prevent voids that would cause air drying of the roots.
 - 1.2.9.d. Sloping Surfaces: On 3:1 or greater slopes, traditional size (1 sq yd / 1 sq m) turfgrass sod shall be laid across the angle of the slope (perpendicular), with staggered joints and secured by tamping, pegging, stapling or other approved methods of temporarily securing each piece. Large-roll turfgrass sod shall be laid in the direction of the slope, with temporary securing being at the discretion of the installation contractor.
 - 1.2.9.e. **Swales and Intermittent Waterways:** The installation of turfgrass sod within drainways or intermittent waterways shall be determined after considering maximum channel velocities for storms of a designated intensity. Traditional size turfgrass sod shall be laid perpendicular to the direction of flow and pegged to resist washout during the establishment period, while large-roll pieces shall be laid in the direction of the flow, with temporary securing being at the discretion of the installation contractor.
 - 1.2.9.f. Watering and Rolling: The installation contractor shall water the turfgrass sod immediately after transplanting to prevent drying. As sod placement is completed in any one section, the entire area shall be lightly rolled. It shall then be thoroughly watered to a depth sufficient to ensure the underside of the new sod pad and soil immediately below the pad are thoroughly wet. The Contractor shall be responsible for ensuring adequate water is available at the site prior to and during installation. If the Cemetery irrigation system is inoperative, the Contractor shall still ensure water is available at the site via other means or conveyances.
 - 1.2.9.g. All turfgrass sod shall be uniform in color, leaf texture and shoot density and shall be reasonably free of weeds, diseases and other visible imperfections at acceptance.
- 1.2.10. Turfgrass Sod Establishment:
- 1.2.10.a. The establishment period for turf shall begin immediately after installation, with the approval of the COR. All turf established by the Contractor shall be irrigated and fully maintained by the Contractor until final acceptance is made by the Government. The Governments reserves the right to increase or decrease frequency of watering as deemed necessary.

- 1.2.10.b. Watering: Irrigate area routinely and as required to ensure complete and satisfactory sod establishment. Apply water at a moderate rate so as not to flood the plants and turf. Soil on sod pads shall be kept moist at all times to maintain moist soil to a depth of at least 4 inches. Sod shall be watered daily for the first 10 to 14 days to avoid dry out. Then, water sod routinely as needed to prevent visual wilt (blue/gray hue). The Cemetery has a functioning in-ground irrigation system capable of providing water for this purpose. In all cases, Contractor shall coordinate irrigation schedules with the COR.
- 1.2.10.c. Eradicate all weeds. Water, fertilize, over-seed, and perform any other operation necessary to promote the growth of grass. Replant areas void of turf 0.1 m² (one square foot) and larger in area. Mow the new lawn at least three times, prior to the final inspection. Begin mowing when grass is two and one-half (2-1/2) inches high. Mow to a two (2) inch height per each of the three mowings prior to final inspection. String trim/stick trim the turf around the headstones/ flat markers at least three times, maintaining the same surrounding height of the mowed turf prior to the final inspection. Begin trimming when grass is three and one-half (3-1/2) inches high.
- 1.2.10.d. Mowing: Mowing shall be performed in accordance with the requirements of paragraph 1.3. The first mowing shall not be attempted until the turfgrass sod is firmly rooted and securely in place. Begin mowing sod when plant height reaches two and one-half (2-1/2) inches or as otherwise directed by the COR.
- 1.2.10.e. Continue mowing and irrigation until sod is 100% established. After the sod has been established the Contractor shall request a Final Inspection in writing to the Contracting Officer and COR.
- 1.2.10.f. Germinated weeds must be eliminated by spraying with a typical three-way broadleaf herbicide combination product or with DriveTM or an approved equal post emergence herbicide for control of crabgrass or both if necessary to achieve 100% turfgrass cover. The seedling turfgrass shall be mowed at least three times before any herbicide treatment is applied.
- 1.2.11. In areas where turf work has been completed, clear the area of all debris. Any areas damaged during establishment operations must be restored to their original condition.
- 1.3. MOWING PROCEDURES AND EQUIPMENT FOR TURFGRASS SOD ESTABLISHMENT
 - 1.3.1. The Contractor shall use rear-discharge mowers or mowers with mulching decks only. At no time is freshly mowed grass to be blown onto headstones. Riding mowers may be used if they are not operated within two (2) inches of headstones, flat markers, monuments, tree trunks or other vertical surfaces.

- 1.3.2. Commercial grade power trimmers and power edgers shall be used to trim grass from around headstones, monuments, markers, etc. The Contractor shall use trimmers with a plastic blade attachment to cleanly trim edges around all flat markers. Care must be taken not to chip flat markers with blades.
- 1.3.3. All mowing equipment shall be cleaned before mowing at the Cemetery to reduce the risk of introducing contaminant weed seeds into the cemetery turf. No equipment will be cleaned on cemetery property.
- 1.3.4. Cutting blades on mowing and trimming equipment must be kept sharp so that grass tips are cleanly cut and not torn or damaged.
- 1.3.5. Turfgrass Heights: Turf shall be maintained at a height within one (1) inch of the range as specified in Exhibit (G) or as directed by the COR. The height of grass is what is measured to get the correct cutting height. The cutting height of all mowing equipment shall be set to maintain the specified height. At no time will more than one-third (1/3) of leaf blade be removed during any single mowing.
- 1.3.6. Trimming: The base of headstones, trees, monuments, markers, buildings walls, fences, signs and other vertical surfaces shall be trimmed to keep the grass within one (1) inch above the range as specified in Exhibit (G) or as directed by the COR. Trimming operations will be considered a part of mowing and accomplished concurrently with mowing operations. A mowing cycle will not be considered complete until all trimming operations are accomplished. Areas will be mowed first, followed by the trimming operation.
- 1.3.7. Mowing and trimming will be accomplished free of scalping, rutting, bruising, and uneven and rough cutting. Use of cutting equipment that is out of adjustment, thereby causing streaks or irregularities, uneven cutting, plowing, or gouging of the soil is not permitted. After cutting, grass will have a uniform height.
- 1.3.8. Contractor shall be familiar with and utilize different mowing patterns. Changing direction and patterns reduces turf wear, prevents wheel rutting, and provides a neater appearance. All mowing around trees will be accomplished in a manner that prevents a “ringing pattern” around the tree and associated damage to turf.
- 1.3.9. Mowing, trimming and edging operations will not damage headstones, markers, floral or commemorative items, structures, survey monuments, irrigation equipment, etc.
- 1.4. TRASH, DEBRIS & LEAF REMOVAL
 - 1.4.1. Debris and Trash: Any item, material, or foreign object not permanently attached to or planted within the cemetery grounds and boundaries. Items include, but are not limited to, fallen twigs and branches that are under ten (10) inches (25.40 cm) in diameter, paper products, cigarette butts, gum, glass and metal products, plastic and any other synthetic items, loose rock and stone over three (3) inches (7.62 cm) in diameter that are not the

apparent result of an interment. Not included is the material found within trash receptacles.

- 1.4.2. Contractor shall collect and dispose of all debris and trash before and after each mowing and trimming event within the Cemetery.
- 1.4.3. Any clippings deposited on headstones, flat markers, monuments, roadways, walkways (inside and out), flagpole bases, or other non-turf grass areas, shall be mechanically blown onto nearby turf areas when possible, or collected and disposed of on the same day as the mowing and trimming event that produced them. Any clippings deposited on sidewalks or at public visitor areas including at the Committal Shelter areas shall be swept or removed using mechanical blowers at same time mowing work is occurring. Clearly visible windrows of clippings, as a result of infrequent mowing, will be removed and disposed of at no extra cost to the Government.

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