

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Related Sections include but are not limited to:
 - 1. Section 31 20 00 – Earth Moving
 - 2. Section 31 23 00 – Excavation and Fill
 - 3. Section 32 13 13 – Soil Preparation
 - 4. Section 32 93 00 – Planting
 - 5. Section 32 90 00 – Planting Irrigation
 - 6. Section 33 11 00 – Water Utility Distribution Piping

1.2 SUMMARY

- A. This Section includes furnishing and installing turf and grasses including:
 - 1. Preparation of seedbeds and soil amendments.
 - 2. Installation of turf by seeding, sodding, or hydroseeding.
 - 3. Fertilizing, watering, and initial maintenance.
- B. Related requirements include:
 - 1. Soil testing and analysis (Section 32 13 13).
 - 2. Irrigation for turf establishment (Section 32 90 00).

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM)
 - 1. ASTM D2487 – Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System)
 - 2. ASTM D5268 – Standard Practice for Topsoil Fines Assessment
- B. American Association of Nurserymen (AAN)
 - 1. AAN Z60.1 – Nursery Stock Standards
- C. American Society of Agronomy (ASA)
- D. Federal Seed Act (FSA)
- E. International Code Council (ICC)
 - 1. International Building Code (IBC)
- F. Turfgrass Producers International (TPI)
- G. U.S. Department of Agriculture (USDA)
- H. U.S. Green Building Council (USGBC)

1.4 DEFINITIONS

- A. Turf: A surface layer of earth containing a dense growth of grass and its matted roots.
- B. Seedbed: Prepared soil surface to receive grass seed or sod.
- C. Hydroseeding: Application of seed, mulch, fertilizer, and water in a slurry by spraying.
- D. Sodding: Installation of pre-grown turf cut into sections.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications:
 - 1. Engage an experienced installer who has successfully completed turf and grass installation similar in scope and quality to this project.
 - 2. Installer shall be a member of Turfgrass Producers International or similar professional turf association.
- B. Source Quality:
 - 1. Obtain seed and sod from sources with a minimum of 5 years' experience growing and supplying turf materials in the project region.
 - 2. Provide seed and sod that comply with applicable state and federal regulations.
- C. Regulatory Requirements:
 - 1. Comply with Federal Seed Act and applicable state seed laws regarding seed labeling, purity, and germination.
 - 2. Comply with local codes including International Building Code requirements for erosion and sediment control related to turf installation.
- D. Testing and Verification:
 - 1. Soil Testing: Perform soil analysis prior to seeding or sodding to determine pH, nutrient levels, and organic matter content.
 - 2. Seed Testing: Provide seed test reports including purity, germination percentage, noxious weed seed content, and date of testing.

1.6 SUBMITTALS

- A. Action Submittals:
 - 1. Product Data: For all turf materials including seed mixes, sod, fertilizers, and soil amendments.
 - 2. Samples:
 - (1) Provide representative samples of seed mix, minimum 100 grams.
 - (2) Provide sod sample, minimum 12 inches by 12 inches.
 - 3. Shop Drawings: Layout plan showing areas of turf installation, seed mix types, and installation methods.
 - 4. Certificates: Certification of seed analysis and sod source.
 - 5. Manufacturer's Installation Instructions for each product.
- B. Informational Submittals:
 - 1. Soil Test Reports.
 - 2. Turf Establishment Plan including watering schedule, fertilization plan, and maintenance procedures.
 - 3. Maintenance Data including instructions for maintenance during warranty period.
 - 4. Warranty Documentation.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Delivery:
 - 1. Deliver seed in original sealed containers with labels intact indicating species, purity, germination rates, and testing date.
 - 2. Deliver sod fresh, cut within 24 hours prior to delivery, and maintain moisture during transport.

- B. Storage:
 - 1. Store seed in a cool, dry location protected from sunlight, moisture, and pests.
 - 2. Store sod on pallets or similar supports to prevent contamination and moisture loss.
- C. Handling:
 - 1. Handle seed and sod carefully to prevent damage or contamination.
 - 2. Protect soil and seedbeds from compaction and contamination prior to installation.

1.9 WARRANTY

- A. Provide a minimum 12-month warranty on turf and grasses covering establishment and maintenance.
- B. Warranty shall cover replacement or repair of turf that fails to thrive due to installation or material defects, including failure to meet specified density, uniformity, and coverage criteria.
- C. Provide manufacturer's standard warranty for seed and sod materials.
- D. Provide installer's warranty covering workmanship for the duration of the maintenance period.

PART 2 – PRODUCTS

2.1 TURFGRASS SEED

- A. Seed Mix: Provide seed mix as indicated on drawings and specified in contract documents.
- B. Species and Varieties: Use only species and cultivars adapted to local climate and soil conditions.
- C. Seed Purity and Germination:
 - 1. Minimum purity 95% by weight.
 - 2. Minimum germination 80% for all species.
- D. Noxious Weed Seed Content: Comply with Federal and State regulations; maximum 0.01% by weight.
- E. Seed Analysis Report: Submit current seed test analysis with each shipment.

2.2 TURFGRASS SOD

- A. Sod Type: Provide sod of species and cultivars specified in contract documents.
- B. Quality:
 - 1. Sod shall be free of weeds, diseases, and pests.
 - 2. Sod thickness shall be 1 to 1.5 inches including soil and root mat.
 - 3. Sod shall be harvested within 24 hours prior to installation.
- C. Source: Use sod grown in similar climatic and soil conditions to project site.
- D. Moisture Content: Sod must be moist at delivery and maintained until installation.

2.3 SOIL AMENDMENTS

- A. Fertilizers:
 - 1. Provide commercial fertilizers conforming to ASTM standards and state regulations.
 - 2. Use slow-release nitrogen fertilizers with minimum analysis of 10-10-10 or as specified.
- B. Organic Matter:
 - 1. Provide composted organic matter free of contaminants, weed seeds, and pathogens.
- C. Lime and pH Adjusters:

1. Provide agricultural lime or other pH adjusting materials as required by soil tests.

2.4 MULCH MATERIALS

- A. Provide straw mulch or other approved erosion control mulch to protect seeded areas.
- B. Mulch shall be free of noxious weeds and contaminants.

2.5 WATER

- A. Provide potable water for irrigation and establishment of turf.

2.6 MANUFACTURERS

- A. Turfgrass Producers:
 1. Scotts Miracle-Gro Company
 2. Pennington Seed, Inc.
 3. Jonathan Green, Inc.
 4. Berger Seeds
 5. Sun City Turf, LLC
- B. Fertilizer Manufacturers:
 1. The Andersons, Inc.
 2. Haifa Group
 3. Lesco, Inc.
- C. Soil Amendment Suppliers:
 1. Black Kow Compost
 2. Earthgro Compost
 3. Local approved compost suppliers

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verify that soil preparation, grading, and drainage work are complete and conform to requirements.
- B. Verify that soil pH and nutrient levels comply with recommendations from soil testing.
- C. Do not proceed with turf installation until unsatisfactory conditions are corrected.

3.2 PREPARATION

- A. Seedbed Preparation:
 1. Loosen soil to minimum 4 inches depth using tilling or rototilling equipment.
 2. Remove debris, stones larger than 1 inch, roots, and other materials that may interfere with turf growth.
 3. Incorporate soil amendments and fertilizers as recommended by soil test results.
 4. Grade and smooth seedbed to eliminate low spots and provide positive drainage.
 5. Lightly compact seedbed surface to firm but not hard condition.
- B. Sod Bed Preparation:

1. Prepare soil as for seedbed preparation.
2. Ensure smooth and firm surface to receive sod with no voids.

3.3 INSTALLATION

- A. 3.3.1 Seeding:
 1. Apply seed at rates specified by manufacturer or contract documents.
 2. Use mechanical spreaders for uniform distribution.
 3. Lightly rake or drag seeded area to incorporate seed into soil 0.25 to 0.5 inches deep.
 4. Apply mulch immediately after seeding to protect seed and retain moisture.
- B. Hydroseeding (If Specified):
 1. Prepare slurry of seed, fertilizer, mulch, tackifier, and water per manufacturer's instructions.
 2. Apply slurry uniformly with hydroseeding equipment at specified rates.
- C. Sodding:
 1. Lay sod in staggered rows with tight joints; avoid gaps or overlapping.
 2. Roll sod immediately after installation to ensure contact with soil.
 3. Trim sod edges neatly and fill voids with soil or sod pieces.
- D. Fertilization:
 1. Apply starter fertilizer at installation as recommended by soil test.
- E. Watering:
 1. Begin watering immediately after installation to maintain soil moisture adequate for germination and establishment.
 2. Follow watering schedule as per Turf Establishment Plan.

3.4 FIELD QUALITY CONTROL

- A. Inspection:
 1. Inspect turf areas weekly during establishment for coverage, density, and weed invasion.
 2. Identify and correct areas of poor growth or damage.
- B. Acceptance Criteria:
 1. Turf shall be healthy, uniformly dense, free of bare or thin spots greater than 5% of any area.
 2. Weeds shall not exceed 10% of turf area by visual estimate.

3.5 MAINTENANCE

- A. Provide maintenance for minimum 12 months after installation including watering, mowing, fertilization, weed control, and pest management.
- B. Maintain turf at height recommended by species and cultivar guidelines.
- C. Repair or replace areas failing to meet requirements at no additional cost to Owner.

3.6 CLEANING

- A. Remove debris, excess soil, and materials from turf areas after installation and maintenance operations.
- B. Leave the site in a clean and orderly condition acceptable to the Owner.

END OF SECTION