SPECIFICATIONS

SECTION 02485 - SEEDING OF LAWN AREAS

PART 1 - GENERAL

Related Work and Documents: - The work in this contract includes, but is not limited to:

1. Ground Preparation
1. Fertilizing
3. Seeding
4. Maintenance
5. Replacement

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to Work of this Section.

~~Related Work Not Included in This Contract - The following items or related work are not included in this contract:~~

1. Earthwork - Section 02200
2. Trees, Shrubs and Ground Cover - Section 02490
3. Underground Sprinkler System - Section 02442

Limits of Work: All work to be completed under these specifications will be within the area shown on the Drawings.

Protection: The Landscape Contractor shall protect that which is to remain and shall conduct all seeding operations in a manner that will not damage or jeopardize the surrounding plant life designated on the Drawings to remain.

Referenced Specifications and Standards: The following specifications and standards of the issues listed below (including the amendments, addenda and errata), but referred to thereafter by basic designation only, form a part of this specification to the extent required by the references thereto:

U.S. Department of Agriculture

SRA 156 U.S. Department of Agriculture, Rules and Regulations under the Federal Seed Act

AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE STANDARD:

1942 Standardized Plant Names

SUBMITTALS: Landscape Contractor to submit certificate of seed analysis for all seed used on the project.

PART 2 - PRODUCTS

MATERIALS:

Seed: All seed shall be new crop seed labeled in accordance with the U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act. All seed shall be furnished in sealed, standard containers, unless otherwise approved. Seed which has become wet, moldy, or otherwise damaged will not be acceptable.

Seed Types:

Seed type number one (#1) shall be a locally hardy blend of fine bladed hybrid fescues (Rebel, Arid, Falcon) seeded at the rate of 8 pounds PLS per 1,000 square feet.

Seed type number two (#2) shall be a mixture of buffalograss (Buchloe dactyloides 'Texoka' or 'Sharp's Improved' treated) seeded at the rate of 80 pounds PLS per acre and annual ryegrass (Lolium multiflorum) seeded at the rate of 50 pounds PLS per acre.

Seed type number three (#3) shall be a mixture of little bluestem (Andropogon scoparis 'Aldous' or 'Native') seeded at the rate of 40 pounds PLS per acre and wildflowers (see note) seeded at the rate of 4 pounds per acre.

Seed type number four (#4) shall be switchgrass (Panicum virgatum 'Blackwell') seeded at the rate of 40 pounds PLS per acre.

Seed type number five (#5) shall be Indiangrass (Sorghastrum nutans 'Cheyenne') seeded at the rate of 40 pounds PLS per acre.

Origin of Seed: All native grass seed (Types #2, #3, #4, and #5) shall be obtained from a source as near the project area as possible. The source of native harvest seed should not be more than:

1. North - 100 to 150 miles.
2. South - 150 to 300 miles (seed from a southern source will be given preference over seed from a nothern source).
3. Elevation increase - not to exceed 1,000 feet.

COMMERCIAL FERTILIZER:

Fertilizer for turf areas shall be uniform in composition, free-flowing, suitable for application with approved equipment and delivered to the site unopened in original containers, each bearing the manufacturer's guaranteed analysis and in conformity with state fertilizer laws.

Fertilizer for areas seeded with seed Type #1 shall contain the following minimum percentage of plant food by weight:

12% available Nitrogen

12% available Phosphoric Acid

12% available Potash

Areas seeded with seed Type #2 shall be fertilized only one time after seeding. Fertilizer for areas seeded with seed Type #2 shall contain the following minimum percentage of plant food by weight:

12% available Nitrogen

24% available Phosphoric Acid

12% available Potash

Areas seeded with native warm season grasses, seed Types #3, #4, and #5, shall not receive fertilizer.

Water: Shall be furnished by the ~~Owner~~ CONTRACTOR for execution of all work specified in this contract. The Landscape Contractor shall verify that the water available is suitable for irrigation and free from ingredients harmful to plant life.

GROUND PREPARATION:

General: The ground areas are to be fertilized and seeded as indicated on the Drawings and/or as specified herein. Equipment necessary for the proper preparation of the ground surface and for handling and placing all required materials shall be on hand, in good condition and shall be approved by Landscape Architect prior to commencement of work.

Clearing: Prior to tillage, or other specified operations, all vegetation which might interfere with the indicated treatment of the area shall be mowed, grubbed, raked and the debris removed from the site. Prior to or during tillage operations, the ground surface shall be cleared of materials which might hinder final operations. Areas which have not previously been disturbed by others shall be cleared and seeded as indicated on the Drawings, or as specified.

Tillage: Tillage shall be required only in areas to be seeded with seed Type #1. After the areas required to be seeded have been cleared as specified, they shall be thoroughly tilled to a depth of at least six (6) inches by plowing, disking, harrowing, or other approved methods until the condition of the soil is acceptable to the Landscape Architect. Work shall be performed only during periods when beneficial results are likely to be obtained. When conditions are such by reason of drought, excessive moisture, or other factors, that satisfactory results are not likely to be obtained, work shall be stopped. Work shall be resumed only when desired results are likely to be obtained.

Leveling: Any undulations or irregularities in the surface resulting from tillage, fertilizing or other operations shall be leveled with a float drag before seeding operations are begun. The ground shall be prepared so finish grade is 1" below all adjacent walks and curbs.

Chemical Preparation: Prepare seed bed for seed Types, #2, #3, #4, and #5, by use of herbicides that suppress existing vegetation and leave a mulch which will be seeded into without additional tillage. Chemicals used must be federally and locally registered and must be applied strictly in accordance with registered uses, directions on label, and other federal or state policies and requirements.

Application of Fertilizer: Fertilizer shall be distributed uniformly at a rate of 200 pounds per acre over the areas indicated to be seeded with seed Type #1 and at a rate of 250 pounds for areas to be seeded with seed Type #2.

Fertilizer shall be incorporated into the soil to a depth of at least three (3) to four (4) inches by disking, harrowing, or other approved methods. The incorporation of fertilizer may be a part of the tillage operation hereinbefore specified. Distribution by means of an approved seed drill equipped to sow seed and distribute fertilizer at the same time will not be acceptable. Fertilizer shall be incorporated into the soil a minimum of ten (10) days before seed is planted.

SEEDING:

General: All seeding shall be done according to the following seeding schedule except as directed by the Landscape Architect.

SEED TYPE	SEEDING TIME
#1	September 1 to October 15
#2	April 15 to June 30 (soil must be above 60 degrees F.)
#3, #4, and #5	March 15 to May 15

When delays in operations carry the work beyond the most favorable planting season for the species designated, or when the conditions are such, by reason of drought, high winds, excessive moisture, or other factors that satisfactory results are not likely to be obtained, the work shall be stopped. The work shall be resumed only when conditions are favorable again as approved by the Landscape Architect. Seeding shall be done as soon as possible after final grading and ground preparation are completed.

Drilled or Broadcast Seeding: Seed shall be drilled or broadcast by approved equipment.

Seed Type #1 shall be broadcast or drilled at the rate herein specified. The seed shall be uniformly distributed over the designated areas. Half the seed shall be sown with the sower moving in one direction, and the remainder shall be sown with the sower moving at right angles to the first sowing. Broadcast seeding shall not be done during windy weather. —Soil to be rolled following seeding operation.

Seed Types #2, #3, #4, and #5, shall be seeded with a native grass drill equipped with double coulter furrow openers with depth bands and press wheels or drag chains.

Seed Types #2, #3, #4, and #5 shall be planted at a depth of 1/2".

Mulching: A mulch of prairie (native) hay may not more than two (2) years old and free of noxious weeds will be applied to all seeded areas shown on the plans. The mulch will be uniformly spread at the rate of two to two-and-one-half (2 - 2-1/2) tons per acre, and shall be applied immediately following completion of seeding.

The mulch will be anchored by using a straight serrated disc weighted to press the mulch into the soil a minimum of two (2) inches. Spacing between discs will not exceed twelve (12) inches. No area shall be mulched that cannot be anchored in the same day's operation.

Watering: Immediately after seeding the contractor shall thoroughly water areas seeded with seed Type #1 with a fine mist spray until ground is soaked two inches deep.

Areas seeded with native grasses seed Types #3, #4, and #5 shall not require watering after seeding.

MAINTENANCE:

General: The project areas shall be kept clean at all times and care shall be taken that use of the premises shall not be unduly hampered by work herein specified. The intent of this section is to insure healthy, well-established turf.

Watering:

First Week: The ~~Owner's representative~~ CONTRACTOR shall provide all labor and arrange for all watering necessary for rooting of seed Type #1.

In the absence of adequate rainfall, watering shall be daily or as often as necessary during the first week and in sufficient quantities to maintain moist soil to a depth of at least four (4) inches. Watering should be done during the heat of the day to help prevent wilting.

Second and Subsequent Weeks till final acceptance the ~~Owner's representative~~ CONTRACTOR shall water the seed as required to maintain adequate moisture, in the upper four (4) inches of soil, necessary for the promotion of deep root growth.

Native grasses seed Types #2, #3, #4, and #5, shall require no watering.

~~During the maintenance period the contractor shall notify the Owner's representative in writing of any watering condition which he views as being detrimental to the establishment of the seeded area, so that it may be corrected. The Contractor is responsible for the establishment of the seeded area even though it is not his responsibility to do the watering. Therefore, he should check to see that the watering is being done correctly.~~

Mowing: After turf is established seed Type #1 (fescue mix) shall be mowed frequently enough that no more than 1-1/2" is removed at one time. In the spring and fall Type #1 turf shall be mowed to a height of 2" and to a height of 2-1/2" to 3" during the summer.

Seed Type #2 (buffalograss and annual rye grass) shall be mowed infrequently removing no more than one-third (1/3) of the grass at any one mowing. A height of 3" should be maintained throughout the growing season. Seed Types #3, #4, and #5 (native grasses) shall not be mowed during the first year to insure complete establishment. Weeds that invade seeded areas shall be controlled by mowing when they reach a height of 6-8 inches. Mowing shall be above the height of seeded grasses. After establishment native grasses shall be mowed only once a year in February or March. Native grass areas shall not be mowed after the first of April when warm season grasses break dormancy.

A 30' wide mowing strip at a height of 3" shall be maintained between all types of turf and shrub beds to serve as a firebreak.

ACCEPTANCE:

Acceptance: Acceptable standard for seeded areas shall be when scattered bare spots, not greater than one (1) square foot, do not exceed three percent (3%) of the lawn areas.

Timing: At the end of final acceptance the Landscape Architect will make an inspection to determine the condition of the seeded areas. All areas not meeting the acceptance standard noted above will be reseeded as soon as season conditions permit. Reseeding shall be done at no extra cost to the Owner. Damage to existing plant materials, sidewalks, etc. during reseeding shall be repaired without cost to the Owner.

Reseeding: Reseeding shall be with the seed specified hereinbefore for seeding and shall be sown at the rate of (40) pounds per acre in a manner that will cause a minimum of disturbance to the existing stand of grass and at an angle of not less than 15 degrees from the direction of the rows of prior seedings.

END OF SECTION 02485

SECTION 02490 - TREES, SHRUBS AND GROUND COVER

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to Work of this Section.

DESCRIPTION OF WORK:

Extent of trees, shrubs and ground cover work is shown on the Drawings.

The work of this Section includes, but is not limited to:

Erosion Control Net
Mulch
Fertilizer
Watering
Wrapping
Soil
Staking
Planting
Plant Materials
Maintenance
Replacement

Related Work Specified Elsewhere: The following items of similar or related work are not included in this Section:

1. Earthwork - Section 02200
2. Seeding of Lawn Areas - Section 02485
3. Underground Sprinkler System - Section 02442

Intent of Specifications: The object of these specifications is to obtain healthy, established plant material by the end of the Landscape Contractor's responsibilities. During this period, the Landscape Contractor shall provide all appropriate materials, equipment, and operations necessary to achieve this objective.

QUALITY ASSURANCE:

Protection: The Landscape Contractor is responsible for the location of all utilities in the project area and their protection during the scope of the work. Any damage to these lines during planting operations shall be repaired by the Landscape Contractor in a manner approved by the Landscape Architect and at no additional cost to the Owner.

Referenced Specifications and Standards: The following specifications and standards of the issues listed below (including the amendments, addenda, and errata), but referred to thereafter by basic designation only, form a part of this Specification to the extent required by the references thereto.

American Joint Committee On Horticultural Nomenclature Standard: 1942 Edition, Standardized Plant Names.

American National Standards Institute, Inc.: ANSI Z60.1-1973, American Standard for Nursery Stock

PART 2 - PRODUCTS

MATERIALS FOR PLANTING:

Topsoil: New topsoil shall be a natural, friable topsoil, representative of productive soils in the vicinity. It shall be obtained from well-drained areas, free of admixture of subsoil and foreign matter, toxic substances, and any material or substances which may be harmful to plant growth.

The Landscape Contractor shall submit an analysis of soils along with samples for approval by the Landscape Architect if requested.

Pre-emergent Herbicide: This material shall be Treflan (trifluralin), or approved equal, in the 5 percent granular form for spring planting. Fall plantings should use Dymid in the 5 percent granular form or approved equal.

Fertilizer: Commercial fertilizer shall be uniform in composition, free-flowing, and conforming to the applicable state and federal fertilizer laws. Deliver to site in unopened, original containers, each bearing the manufacturer's guaranteed analysis. Fertilizer shall be 10 percent phosphorus, 4 percent nitrogen and 4 percent potash commercial fertilizer.

Mulch: Shall be Shredded Wood Fiber mulch to be supplied by ~~City of Wichita, Landscape and Forestry Department of the Board of Park Commissioners as approved by Landscape Architect.~~ CONTRACTOR Spread evenly to a thickness of 6 inches over all plant beds and tree saucers. Thoroughly water immediately after placement. ~~Contractor shall notify Landscape and Forestry Department of need 24 months prior to use and provide a fenced dumping yard for stockpiling mulch.~~

Erosion Control Net: Shall be an excelsior blanket consisting of curled wood excelsior of 80% six inch or longer wood fibers with a photodegradable extruded plastic mesh, as manufactured by AMOCO, Arlington, Texas, (817) 640-1555, with the trade name "Curlex Erosion Control Blanket" or approved equal.

~~Soil Conditioner - 100% composted cotton burrs - Soil additive shall be Soil Conditioner as manufactured by Back To Earth Resources, Inc., Dallas, Texas (214) 373-6776.~~

Wrapping Material: Wrapping material for tree trunks shall be 2 thicknesses of crinkled paper, cemented together with bituminous material. Wrapping material shall be strips 3 to 5 inches wide, having qualities to resist insect infestation.

Water: Shall be furnished by the ~~Owner~~ CONTRACTOR for execution of all work specified in this Contract. The Landscape Contractor shall verify that the water available is suitable for irrigation and free from ingredients harmful to plant life. The Landscape Contractor shall water all plant material until the final acceptance, ~~and during maintenance period.~~

Material for Staking:

Wire: Shall be pliable, No. 12 gauge, twisted in a double strand allowing for tightening or loosening the guywire during the guarantee period.

Protection of Trees from Wire: Hose to encase wire used for fastening trees to stakes shall be new, two-ply reinforced rubber garden hose, having an inside diameter of not less than 1/2-inch (minimum length 18 inches).

Stakes: Stakes for supporting trees shall be straight, sound, rough-sawn, not less than 2 inches if square, of 2-1/2 inches in diameter if round, and 8 feet long.

NOTE:

Wildflower mix shall contain seed for the following annuals and perennials:

Blanketflower
Upright Prairie Coneflower
Grayhead Prairie Coneflower
Dame's Rocket
Partridge Pea
Purple Prairie Coneflower
Gayfeather
Pitcher Sage
Black-Eyed Susan
Purple Coneflower
Cornflower
Yarrow

PROJECT NO.	SHEET NO.	TO SHEE
	49	82

ENGINEERING DIVISION — CITY OF WICHITA

K-96 LANDSCAPING/BEAUTIFICATION IMPROVEMENTS

LANDSCAPE SPECIFICATIONS

K-96 BYPASS
I-135 TO CITY LIMITS

PDS DESIGN GROUP Wichita, Kansas

MID-KANSAS ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

Designed by		Checked by	
Drawn by		Date 4/10/89	Job No. 3004

Rev. 8/4/89