

621-R-697 SEED UPDATES

(Adopted 09-19-19)

The Standard Specifications are revised as follows:

SECTION 621, BEGIN LINE 11, INSERT AS FOLLOWS:

621.02 Materials

Materials shall be in accordance with the following:

Fertilizer	914.03
Grass Seed.....	914.04
Grass Seed, Temporary	914.02
Leguminous Inoculants	914.06
Mulch	914.05(a)
Plastic Net	914.09(g)
Sod, including Nursery Sod	914.07
Top Soil.....	914.01
Water	914.09(a)
Staples	914.09(f)

Seed that has passed the expiration date shown on the bag tag shall not be installed.

SECTION 621, BEGIN LINE 217, DELETE AND INSERT AS FOLLOWS:

621.06 Seed Mixtures

Seed mixtures are classified as follows. Mixes including warm season grasses, forbs, or aquatic species will be specified in the plans.

(a) Seed Mixture R

This seed mixture shall be applied at the rate of ~~205~~202.5 lb/ac consisting of 100 lb/ac of low endophyte Tall Fescue, 50 lb/ac of turf type Perennial Ryegrass, 50 lb/ac of Creeping Red Fescue, and ~~5~~2.5 lb/ac of White Dutch Clover. Seed used in this mixture shall be drought tolerant. Fertilizer and mulching material, where specified or directed, shall be applied in accordance with 621.05.

(b) Seed Mixture U

This seed mixture shall be applied at the rate of ~~200~~196.5 lb/ac consisting of 100 lb/ac of a 4-way blend of turf type Tall Fescue, 50 lb/ac Creeping Red Fescue, 45 lb/ac Perennial Ryegrass and ~~5~~1.5 lb/ac White Dutch Clover. Fertilizer and mulching material, where specified or directed, shall be applied in accordance with 621.05.

(c) Seed Mixture P

This seed mixture shall be applied at the rate of 130 lb/ac consisting of 35 lb/ac of Weeping Alkaligrass, 35 lb/ac of Creeping Red Fescue, 35 lb/ac of Slender Creeping Red Fescue, and 25 lb/ac of Perennial Ryegrass. Seed used for this mixture shall be salt tolerant. Fertilizer shall be applied at the rate of 400 lb/ac. Fertilizer and mulching material, where specified or directed, shall be applied in accordance with 621.05.

(d) ~~Blank~~Seed Mixture Shade

This seed mixture shall be applied at the rate of 145 lb/ac consisting of 35 lb/ac of Fine Fescue, 40 lb/ac of Perennial Ryegrass, 40 lb/ac of Tall Fescue, 10 lb/ac of Kentucky Bluegrass, 15 lb/ac of Timothy, 3 lb/ac of Redtop, and 2 lb/ac of Alsike Clover. Seed used for this mixture shall be shade tolerant varieties or cultivars. Fertilizer and mulching material, where specified or directed, shall be applied in accordance with 621.05.

(e) Seed Mixture ~~D~~Floodplain

~~This seed mixture is intended for ditch situations which experience seasonal to chronic saturated soils. This seed mixture shall be used on maintenance contracts or where otherwise specified. This mixture shall be applied at the rate of 16 lb/ac. It shall consist of the materials and be applied at the rates shown below~~*This seed mixture is intended for areas that require natural habitat restoration below the 100 year floodplain in conjunction with IDNR Construction in a Floodway permit. If certain species in this mix are unavailable, substitutions may be allowed when approved by the Engineer. This mix quantity shall be measured in pure live seed, PLS, pounds per acre. This mixture shall be applied at a rate of 20 PLS lb/ac. This seed mix shall include seasonal cover crop. Fertilizer shall not be applied with this seed mixture.*

Common Name	Botanical Name	Application Rates
Alkaligrass	<i>Puccinellia distans</i>	3 oz/ae
Bearded Strangletop	<i>Leptochloa fascicularis</i>	3 oz/ae
Creeping Bentgrass	<i>Agrostis stolonifera</i>	2 lb/ae
Fowl Manna Grass	<i>Glyceria striata</i>	2 oz/ae
Perennial Ryegrass	<i>Lolium perenne</i>	5 lb/ae
Red Fescue	<i>Festuca rubra</i>	2 lb/ae
Redtop	<i>Agrostis gigantea</i>	1 lb/ae
Rice Cut Grass	<i>Leersia oryzoides</i>	2 oz/ae
Virginia Wild Rye	<i>Elymus virginicus</i>	5 lb/ae
Wetland Carex Species	<i>Carex spp.</i>	3 oz/ae
Wetland Rush Species	<i>Juncus spp.</i>	3 oz/ae

Common Name	Botanical Name	Application Rate, PLS
<i>Virginia Wild Rye</i>	<i>Elymus virginicus</i>	2 lb/ac
<i>Canada Wildrye</i>	<i>Elymus canadensis</i>	2 lb/ac
<i>Rough Dropseed</i>	<i>Sporobolus asper</i>	2.5 lb/ac
<i>Little Bluestem</i>	<i>Schizachyrium scoparium</i>	8.4 lb/ac
<i>Purpletop</i>	<i>Tridens flavus</i>	0.4 lb/ac
<i>Upland Bentgrass</i>	<i>Agrostis perennans</i>	0.2 lb/ac
<i>Partridge Pea</i>	<i>Chamaecrista fasciculata</i>	0.8 lb/ac
<i>Illinois Bundleflower</i>	<i>Desmanthus illinoensis</i>	0.6 lb/ac
<i>Black-eyed Susan</i>	<i>Rudbeckia hirta</i>	0.6 lb/ac
<i>Showy Tick Trefoil</i>	<i>Desmodium canadense</i>	0.4 lb/ac
<i>Foxtail Barley</i>	<i>Hordeum jubatum</i>	0.6 lb/ac
<i>Purple Coneflower</i>	<i>Echinacea purpurea</i>	0.6 lb/ac
<i>False Sunflower</i>	<i>Heliopsis helianthoides</i>	0.4 lb/ac
<i>Common Milkweed</i>	<i>Asclepias syriaca</i>	0.2 lb/ac
<i>Yellow Coneflower</i>	<i>Ratibida pinnata</i>	0.2 lb/ac

<i>Wild Bergamot</i>	<i>Monarda fistulosa</i>	<i>0.1 lb/ac</i>
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Seed used in this mixture shall be wet tolerant. If certain species in this mix are unavailable, substitutions may be submitted for approval. The mix shall be applied as specified per acre. The method of planting shall be by means of hydroseeding or by means of a hand method with a minimal amount of mulch applied in a separate operation. Fertilizer shall not be added to this seed mixture. A seasonal cover crop shall be applied with seed mixture Floodplain. The Spring Summer Cover Crop mix shall be applied during spring and summer months and no later than July 31 of the current year. The Fall Cover Crop mix shall be applied in fall months and no earlier than August 1 of the current year. Cover crops shall be applied at 50 PLS lb/ac.

1. Spring Summer Cover Crop

<i>Common Name</i>	<i>Botanical Name</i>	<i>Application Rate, PLS</i>
<i>Common Oat</i>	<i>Avena sativa</i>	<i>35 lb/ac</i>
<i>Annual Ryegrass</i>	<i>Lolium multiflorum</i>	<i>15 lb/ac</i>

2. Fall Cover Crop

<i>Common Name</i>	<i>Botanical Name</i>	<i>Application Rate, PLS</i>
<i>Cereal Rye</i>	<i>Secale cereal</i>	<i>35 lb/ac</i>
<i>Austrian Winter Pea</i>	<i>Pisum sativum</i>	<i>10 lb/ac</i>
<i>Crimson Clover</i>	<i>Trifolium incarnatum</i>	<i>5 lb/ac</i>

(f) Blank

(g) Seed Mixture Grass

This seed mixture shall be placed when specified as shown below.

1. Type 1

This seed mixture shall be placed at the rate of 235 lb/ac consisting of 15 lb/ac of Smooth Brome Grass, 10 lb/ac of Orchard Grass, and the mixture specified in 621.06(a).

2. Type 2

This seed mixture shall be placed at the rate of 125 lb/ac consisting of 20 lb/ac of Smooth Brome Grass, 10 lb/ac of Orchard Grass, 40 lb/ac of Kentucky Bluegrass, 35 lb/ac of Creeping Red Fescue, and 20 lb/ac of Perennial Rye Grass.

(h) Seed Mixture Legume

This seed mixture shall be placed when specified as shown below. Mulched seeding, when specified, shall be in accordance with 621.07. Legume mixtures shall only be used from February 1 to May 31.

1. Type 1

This seed mixture shall be placed at the rate of 230 lb/ac consisting of 7 lb/ac of Korean Lespedeza, 6 lb/ac of Red Clover or Alsike Clover, 7 lb/ac of Partridge Pea and the mixture specified in 621.06(a).

2. Type 2

This seed mixture shall be placed at the rate of 150 lb/ac consisting of ~~7.5 lb/ac of Korean Lespedeza, 7.5 lb/ac of Red Clover or Alsike Clover, 7.5 lb/ac of Birdsfoot Trefoil, 7.5 lb/ac of Partridge Pea, 50 lb/ac of Kentucky Bluegrass, 45 lb/ac of Creeping Red Fescue, and 25 lb/ac of Perennial Rye Grass.~~

“Do Not Spray” signs shall be placed near the beginning and end of this work, at 200 ft intervals, or as otherwise directed. The sign shall be 16 gauge aluminum. The size and message arrangement shall be as shown on the plans. The sign background shall be white. The sign lettering shall be black. The sign shall not be reflectorized. Paint and primer shall be in accordance with 909.04. The sign post shall be placed as shown on the plans. The post shall otherwise be in accordance with 910.15.

621.07 Mulched Seeding

Mulched seeding, when specified, shall consist of applying the seed mixtures in accordance with 621.06(a), 621.06(b), ~~and 621.06(c), and 621.06(d)~~ as specified. This mixture shall include fertilizer and mulching material in the amounts set out herein. If erosion control blanket is specified, the Contractor will be allowed to use excelsior blanket, paper mat, or straw mat in accordance with 621.05(d), 621.05(e), or 621.05(f), respectively.

SECTION 621, BEGIN LINE 349, DELETE AND INSERT AS FOLLOWS:

621.11 Seeding or Sodding Disturbed Areas Outside Construction Limits

Areas outside shown construction limits which are disturbed by the Contractor shall be repaired to their original condition or better. The areas shall be seeded with a seed mixture ~~grass type 2 in accordance with 621.06(g)2 or seed mixture legume type 2 in accordance with 621.06(h)2~~ *R, U, P, Shade, or Floodplain* as directed. If the contract contains seed mixtures other than the ~~two~~ *mixes* listed here, the Contractor may seed the disturbed area with the mixture contained in the contract provided the area is less than 1 ac in size. If the area disturbed is well maintained and part of a residential or commercial lot, it shall be sodded unless the Engineer determines otherwise.

SECTION 621, BEGIN LINE 359, INSERT AS FOLLOWS:

621.12 Seasonal Limitations

The Contractor shall post a warranty bond for all permanent seeding done from October 16 through January 31. Only completed seeding with seed mixtures *R, U, or P, or Shade* ~~shall~~ *will* satisfy the requirements of the warranty bond. Seeding without mulch shall not be done between May 1 and August 15.

Sod placed during the months of June, July, and August shall be subject to the following conditions:-

- (a) sod shall be in good, live, growing condition; and
- (b) sod shall be placed within 36 h after cutting and protected from damage during that period.

Winter sodding will be allowed when the temperature is above 35°F. No frozen sod shall be laid and no sod shall be laid on frozen soil. Sod shall be properly protected from drying out and shall be laid within 48 h after cutting.

SECTION 621, BEGIN LINE 377, INSERT AS FOLLOWS:

621.13 Method of Measurement

Fertilizer and mulching material will be measured by the ton. Seed mixtures will be measured by the pound. *Spring Summer Cover Crop and Fall Cover Crop seed mixtures used in conjunction with seed mixture Floodplain will not be measured for payment.* Topsoil will be measured by the cubic yard in accordance with 211.09. Mulched seeding and sodding will be measured by the square yard. Water will be measured by the 1,000 gal. Mobilization and demobilization for seeding will be measured per each trip, when directed, to the project site. "Do Not Spray" signs will be measured by the number of signs installed.

SECTION 621, BEGIN LINE 420, INSERT AS FOLLOWS:

The cost of leguminous inoculants, preparing seed beds, sowing, raking, and all other necessary incidentals shall be included in the cost of seed mixtures. *The cost of Spring Summer Cover Crop and Fall Cover Crop used in conjunction with seed mixture Floodplain shall be included in the cost of seed mixture Floodplain.* The cost of furnishing and placing fertilizer, *water*, seed mixtures, and mulching material, in addition to the incidentals listed above for seed mixtures shall be included in the cost of mulched seeding.

SECTION 914, BEGIN LINE 29, DELETE AND INSERT AS FOLLOWS:

914.04 Grass, and Legume, and Forb Seed

Grass, ~~and~~ legume, *and forb* seed in the quantities and varieties required shall be furnished full-tagged and delivered in properly designated packages or bags as directed. Seeds shall be in accordance with the following requirements.

~~Seed of warm season grasses, forbs, or aquatic species shall be delivered to the project site individually packaged by species. Warm season~~*Native* grass and forb seed shall be purchased from lots for which test results are provided. Testing will not be required for aquatic species. When normal germination testing is not practical for forb species, a tetrazolium test shall be conducted to determine seed viability.

Seeds shall contain none of the *prohibited* noxious weeds listed ~~herein~~*in 360 IAC 1-1-5* or any that are listed in the Acts of the General Assembly of the State. ~~Noxious weeds are Canada Thistle, Field Bindweed, Johnson Grass, Perennial Peppergrass, Perennial Sowthistle, Quack Grass, Russian Knapweed, and Wild Garlic. Restricted noxious weed seed listed in 360 IAC 1-1-6 shall not exceed 0.25% by weight in accordance with IC 15-15-1-32.~~

Clover shall be free from dodder with no tolerance allowed. ~~Lespedeza will be allowed no more than 90 dodder/lb and 45 giant foxtail per lb.~~

Requirements noted above are minimum and trade allowances will not be allowed.

Seed shall be purchased from sources of supply that have been ~~sampled, tested,~~*accepted* and reported by the State Seed Commissioner, Purdue University, West Lafayette, Indiana, and found to be satisfactory. Seed of ~~warm season~~*native* grasses shall

be tested by the State Seed Commissioner or *by* an independent laboratory. Seed of forbs shall be tested by an independent laboratory. Test results by independent laboratories shall be signed by a Registered Seed Technologist. ~~Test results and~~ shall be submitted to the State Seed Commissioner, ~~and a copy to the Office of Materials Management~~. This report is required before seed is ~~sown~~ *installed*. ~~Such test report shall be no more than nine months old at the time seed is used and the use of the seed shall be subject to approval. Seed will be considered to be expired 15 months after the date it was tested. Expired seed shall not be installed.~~

~~Seed which has been tested by the State Seed Commissioner may be used without further testing provided each bag of seed bears a tag showing the various seeds and their respective percentage in the bag. Each bag of seed used on the contract shall be accompanied by a copy of the State Seed Commissioner's letter for acceptance in accordance with 916.02(e). Each bag or container of seed shall have a printed tag or label providing all of the information required by IC 15-15-1-32. Seed from bags with no labels, illegible labels, or with labels not giving all of the required information will not be accepted.~~

The seed supplier shall provide certification in accordance with 916.02(e) that lists the seed lots used in the mixture and shall indicate that the seed mixture supplied meets the contract requirements for the specific contract that the particular seed mixture is supplied. Also, as part of the certification, the seed supplier shall provide a copy of the State Seed Commissioner's letter for the seed mixture that shows that each seed lot has been tested and found to be satisfactory. The specific test results for each seed lot shall also be attached to the certification.

Seed which meets the weed seed tolerance, but does not comply with the purity or germination requirements, or both, may be used provided the percentage of purity or the percentage of germination is not more than 10% below the minimum specified and that the result obtained from the following formulae does not exceed the maximum percent of weed seeds allowed.

$$W \times P \times G = M \text{ or less}$$

$$P = \frac{\text{Minimum Specified Purity}}{\text{Actual Purity}}$$

$$G = \frac{\text{Minimum Specified Germination}}{\text{Actual Germination}}$$

W = Actual percent of weed seeds

P = Purity Factor

G = Germination Factor

M = Maximum percent of weed seeds allowed.

If such seeds are selected for use, the amount to be used shall be increased in accordance with the following formula except the amount used shall not be less than that specified.

Amount to be used = Amount specified x P x G

Percentages of Weed Seed Content		
Variety		% (not more than)
Alfalfa	<i>Medicago sativa</i>	0.5
Alkaligrass	<i>Puccinellia distans</i>	0.5
Alsike Clover	<i>Trifolium hybridum</i>	0.5
Birdsfoot Trefoil	<i>Lotus corniculatus</i>	0.5
Chewings Fescue	<i>Festuca rubra</i> (var. fallax)	0.5
Creeping Bentgrass	<i>Agrostis stolonifera</i>	0.5
Creeping Red Fescue	<i>Festuca rubra</i> spp. rubra	0.5
Fowl Manna Grass	<i>Glyceria striata</i>	‡
Illinois Bundleflower	<i>Desmanthus illinoensis</i>	0.5
Kentucky Bluegrass	<i>Poa pratensis</i>	0.5
Korean Lespedeza	<i>Lespedeza stipulacea</i>	0.75
Sericea Lespedeza	<i>Lespedeza sericea</i>	0.75
Ladino Clover	<i>Trifolium repens</i> (var. latum)	0.5
Lemons Alkali Grass	<i>Puccinellia airoides</i> (Lemons)	0.5
Orchard Grass	<i>Dactylis glomerata</i>	0.5
Perennial Rye Grass	<i>Lolium perenne</i>	0.5
Purple Prairie Clover	<i>Dalea purpurea</i>	0.5
Red Clover	<i>Trifolium pratense</i>	0.5
Red Fescue	<i>Festuca rubra</i>	0.5
Red top	<i>Agrostis gigantea</i>	0.75
Rice Cut Grass	<i>Leersia oryzoides</i>	‡
Rough Stalked Meadowgrass	<i>Poa trivialis</i>	0.5
Rye, Agricultural	<i>Secale cereale</i>	0.5
Rye, Annual	<i>Lolium multiforum</i>	0.5
Sheeps Fescue	<i>Festuca ovina</i>	0.5
Smooth Brome Grass	<i>Bromus inermis</i>	0.95
Sweet Clover white (Scarified)	<i>Melilotus alba</i>	0.5
Sweet Clover yellow (Scarified)	<i>Melilotus officinalis</i>	0.5
Tall Fescue	<i>Festuca arundinacea</i>	0.5
Timothy	<i>Phleum pratense</i>	0.5
Virginia Wild Rye	<i>Elymus virginicus</i>	‡
White Dutch Clover	<i>Trifolium repens</i>	0.75

Percentages of Purity		
Variety		% (not less than)
Alfalfa	<i>Medicago sativa</i>	99
Alkaligrass	<i>Puccinellia distans</i>	90
Alsike Clover	<i>Trifolium hybridum</i>	97
Birdsfoot Trefoil	<i>Lotus corniculatus</i>	98
Chewings Fescue	<i>Festuca rubra</i> (var. fallax)	97
Creeping Bentgrass	<i>Agrostis stolonifera</i>	98

Creeping Red Fescue	<i>Festuca rubra</i> spp. <i>rubra</i>	95
Fowl Manna Grass	<i>Glyceria striata</i>	95
Illinois Bundleflower	<i>Desmanthus illinoensis</i>	98
Kentucky Bluegrass	<i>Poa pratensis</i>	85
Korean Lespedeza	<i>Lespedeza stipulacea</i>	98
Sericea Lespedeza	<i>Lespedeza sericea</i>	98
Ladino Clover	<i>Trifolium repens</i> (var. <i>latum</i>)	98
Lemons Alkali Grass	<i>Puccinellia airoides</i> (Lemons)	85
Orchard Grass	<i>Dactylis glomerata</i>	85
Perennial Rye Grass	<i>Lolium perenne</i>	95
Purple Prairie Clover	<i>Dalea purpurea</i>	99
Red Clover	<i>Trifolium pratense</i>	98
Red Fescue	<i>Festuca rubra</i>	95
Red top	<i>Agrostis gigantea</i>	90
Rice Cut Grass	<i>Leersia oryzoides</i>	98
Rough Stalked Meadowgrass	<i>Poa trivialis</i>	85
Rye, Agricultural	<i>Secale cereale</i>	99
Rye, Annual	<i>Lolium multiforum</i>	95
Sheeps Fescue	<i>Festuca ovina</i>	97
Smooth Brome Grass	<i>Bromus inermis</i>	85
Sweet Clover white (Scarified)	<i>Melilotus alba</i>	98
Sweet Clover yellow (Scarified)	<i>Melilotus officinalis</i>	98
Tall Fescue	<i>Festuca arundinacea</i>	98
Timothy	<i>Phleum pratense</i>	90
Virginia Wild Rye	<i>Elymus virginicus</i>	90
White Dutch Clover	<i>Trifolium repens</i>	97

Percentages Actual Germination		
Variety		% (not less than)
Alfalfa	<i>Medicago sativa</i>	85*
Alkaligrass	<i>Puccinellia distans</i>	80
Alsike Clover	<i>Trifolium hybridum</i>	85*
Birdsfoot Trefoil	<i>Lotus corniculatus</i>	80*
Chewings Fescue	<i>Festuca rubra</i> (var. <i>fallax</i>)	75
Creeping Bentgrass	<i>Agrostis stolonifera</i>	85
Creeping Red Fescue	<i>Festuca rubra</i> spp. <i>rubra</i>	80
Fowl Manna Grass	<i>Glyceria striata</i>	90
Illinois Bundleflower	<i>Desmanthus illinoensis</i>	85
Kentucky Bluegrass	<i>Poa pratensis</i>	80
Korean Lespedeza	<i>Lespedeza stipulacea</i>	80*
Sericea Lespedeza	<i>Lespedeza sericea</i>	80*
Ladino Clover	<i>Trifolium repens</i> (var. <i>latum</i>)	85*
Lemons Alkali Grass	<i>Puccinellia airoides</i> (Lemons)	80
Orchard Grass	<i>Dactylis glomerata</i>	80
Perennial Rye Grass	<i>Lolium perenne</i>	90
Purple Prairie Clover	<i>Dalea purpurea</i>	75

Red Clover	Trifolium pratense	90*
Red Fescue	Festuca rubra	85
Red top	Agrostis gigantea	80
Rice Cut Grass	Leersia oryzoides	80
Rough Stalked Meadowgrass	Poa trivialis	75
Rye, Agricultural	Secale cereale	80
Rye, Annual	Lolium multiflorum	90
Sheeps Fescue	Festuca ovina	75
Smooth Brome Grass	Bromus inermis	80
Sweet Clover white (Scarified)	Melilotus alba	85*
Sweet Clover yellow (Scarified)	Melilotus officinalis	85*
Tall Fescue	Festuca arundinacea	85
Timothy	Phleum pratense	85
Virginia Wild Rye	Elymus virginicus	70
White Dutch Clover	Trifolium repens	90*

* including not more than 25% hard seeds.

For all other seed indicated to be used but not shown in the charts above, that seed shall be placed at the indicated rate and be 100% pure live seed.

SEED CERTIFICATION, OTHER

This is to certify that the seed mixture supplied, _____, by
(name of seed mixture)

(Manufacturer's Name) (source code)

located in _____,
(City) (State)

manufactured at _____
(Location of Manufacturing Plant)

and has Case Review Number _____ meets INDOT Standard Specifications.

Attached are copies of the State Seed Commissioner's Letter and test reports for each lot of seed used in the above-mentioned seed mixture.

Seed Species	Lot No.	Seed Expiration Date
<<All seed species contained in the seed mixture shall be listed in this space. >>		

