

**DALLAS/FORT WORTH INTERNATIONAL AIRPORT  
DESIGN, CODE AND CONSTRUCTION DEPARTMENT**

**ADDENDUM NO. 2  
FOR**

**REHAB LS ROADWAYS & BRIDGES PH 4A, 4B, 4D AND CU#4 RETAINING WALL**

**CONTRACT NO. 9500690**

**August 26, 2019**

The Request for Bids for the above is hereby revised as follows:

**Technical Specification Revisions**

1. Specification section 00 01 10, Table of Contents, dated June 14, 2019 has been replaced with the attached dated August 23, 2019 and revised as detailed below.
  - a. Added specification TX-502-DFW and revised specification 32 92 19.
2. Special Provision specification section TX-502-DFW, Barricades, Signs, and Traffic Handling, dated August 23, 2019 has been added.
  - a. Added specification TX-502-DFW to revise measurement and payment articles.
3. Specification section 32 92 19, Seeding and Sodding, has been revised with the attached dated August 23, 2019 and is detailed below.
  - a. This specification was originally marked as "Applicable" and incorporated by reference. It has been revised and reissued in its entirety.

**Plan Sheet Revisions**

1. None.

**RFB Revisions**

1. **Effective immediately, the Contract Administrator is Lisa Arthurs. Ms. Arthurs' email address is [larthurs@dfwairport.com](mailto:larthurs@dfwairport.com).**
2. The Bid Schedule has been revised as detailed below and replaced as posted on [www.dfwairport.com/business/solicitations/](http://www.dfwairport.com/business/solicitations/). Bid schedule is revised to include the following changes:
  - a. Pay item number 65, 136, 171, and 189 revised as follows:
    - i. Quantities revised to one (1).
    - ii. Unit of measure revised from "per month" to "per lump sum".
    - iii. Specification reference changed from "502" to "TX-502-DFW-1".
  - b. Revised quantities for pay items:
    - i. 28, 29, 33, 37-39, 41-44, 48-49, 68-69, 103, 107
3. Appendix 8 – Solicitation Schedule is revised to include the following change:
  - a. Bid Opening is revised from September 3, 2019 at 1:00 pm to September 17, 2019 at 11:00 am Central Time.

**Solicitation Questions (Q) and Answers (A)**

**Q1.** The bid date is set for 9/3/2019. Would DFW consider extending the bid date to the following week (9/10), as 9/3 is the day after the Labor Day holiday, and the TXDOT letting is scheduled for 9/5 and 9/6 and those dates may impact subcontractor availability and participation.

**A.** See revised RFB issued via this addendum.

**Q2.** Please provide a detail for the retaining wall expansion joint repair at SB Ramp Crossunder #4.

**A.** Expansion joint material shall meet the requirements of Class 4 according to TxDOT specification DMS-6310 "Joint Sealants and Fillers" as referenced in TxDOT specification 420 section 2.5. Backer rod and joint width per manufacturer's recommendations; color shall match wall. Original wall construction provided a 1" expansion joint; contractor shall field verify.

**Q3.** Is there any need for land clearing in this project?

**A.** No.

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Incorporated into the contract documents will be the Dallas-Fort Worth International Airport Standard Specifications Book Version 2, Published December 07, 2018 and can be found at [www.dfairport.com/business/solicitations](http://www.dfairport.com/business/solicitations).

Specifications marked as “Applicable” below will be incorporated into the Project Manual by reference. Any Section revised or a new Section to be added to supersede the above published document are as indicated and date below and are hereby included in the project Manual. Any Section included in the published book that are not included in the table below are not included in the Project Manual.

Section	Description	Applicable	Revised	Added
<b>DIVISION 00</b>	<b>PROCUREMENT AND CONTRACTING REQUIREMENTS</b>			
00 01 01	Project Title Page		✓	
00 01 07	Seals Page		✓	
00 01 10	Table Of Contents		✓	
<b>DIVISION 01</b>	<b>GENERAL REQUIREMENTS</b>			
01 10 01	Abbreviations, Acronyms and Definitions	✓		
01 10 02	Reference Standards	✓		
01 11 00	Summary of Work		✓	
01 18 16	Protection of Existing Underground Utilities and Cables	✓		
01 18 16.13	Utility Location Sign-Off Sheet	✓		
01 18 16.14	Underground Utilities Damage Report	✓		
01 25 13	Product Substitution Procedures	✓		
01 25 13.01	Product Substitution Form	✓		
01 26 13	Request for Information	✓		
01 29 00	Payment Procedures	✓		
01 29 73	Schedule of Values	✓		
01 29 85	Wage Rate Requirements		✓	
01 29 85.01	Request for Authorization of Additional Classification and Rate	✓		
01 30 00	Allowances		✓	
01 31 19	Project Meetings	✓		
01 32 16	Schedules	✓		
01 33 23	Shop Drawings, Product Data, and Samples	✓		
01 33 29.06.01	Contaminated Media Management Plan	✓		
01 35 23	Hot Work Operations and Control	✓		
01 35 24	Asbestos Operations and Control	✓		
01 41 26.10	Construction Air Permitting	✓		

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01 41 26.13	Concrete Batch Plant and Hot Mix Asphalt Plant Permitting	✓		
01 45 16.13	Contractor Quality Control	✓		
01 45 20	Non-Conformance Report	✓		
01 45 29	Owners Testing Laboratory	✓		
01 50 00	Temporary Facilities and Controls	✓		
01 50 00.01	Temporary Facilities and Controls – Water Request Form	✓		
01 50 13	Owner's Field Office		✓	
01 52 00.01	Construction Signage	✓		
01 52 13	Dust Control	✓		
01 52 16	Haul Road	✓		
01 55 20	Contractor Use of the Parking Revenue Area	✓		
01 55 20.01	Contractor Use of the Parking Revenue Area – Instructions and Forms	✓		
01 55 29	Staging Areas		✓	
01 57 13	Temporary Erosion and Sediment Control	✓		
01 57 19	Spill Prevention Control and Countermeasure	✓		
01 57 19.13	Spill Response	✓		
01 57 19.13.01	Spill Response Plan Form	✓		
01 66 00	Product Storage and Handling Requirements	✓		
01 71 13	Mobilization	✓		
01 71 14	Land Use Requirements	✓		
01 71 14.01	Land Use Requirements – Application Procedures	✓		
01 73 29	Cutting And Patching	✓		
01 74 13	Progress Cleaning	✓		
01 74 18	Concrete Waste	✓		
01 74 19	Construction Waste	✓		
01 74 23	Final Cleaning	✓		
01 76 00	Protecting Installed Construction	✓		
01 76 50	Punch List	✓		
01 77 00	Closeout Procedures	✓		
01 77 00.01	Closeout Procedures – System Acceptance Process	✓		
01 78 23	Operation and Maintenance Data	✓		
01 78 33.36	Bonds and Warranties	✓		
01 78 39	Project Record Documents	✓		
01 78 46	Extra Stock Materials	✓		
01 79 00	Demonstration and Training	✓		
01 91 00	Commissioning	✓		

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<b>DIVISION 03</b>				
02 32 00	Geotechnical Instrumentation			✓
31 23 23.15	Trenching, Backfilling, Embedment, and Encasement			✓
31 43 01	High Density Polyurethane Foam (HDPF)			✓
32 01 02	TXDOT Reference			✓
32 11 00	Controlled Low-Strength Material (CLSM)			✓
32 84 00	Planting Irrigation			✓
32 92 19	Seeding and Sodding	✗	✓	
33 14 00	Water Systems			✓
SP-100	Polyethylene Sheeting			✓
<b>APPLICABLE TXDOT STANDARD SPECIFICATIONS*</b>				
TXDOT Item 100	Preparing Right of Way			✓*
TXDOT Item 104	Removing Concrete			✓*
TXDOT Item 105	Removing Treated and Untreated Base and Asphalt Pavement			✓*
TXDOT Item 110	Excavation			✓*
TXDOT Item 132	Embankment			✓*
TXDOT Item 160	Topsoil			✓*
TXDOT Item 162	Sodding for Erosion Control			✓*
TXDOT Item 216	Proofrolling			✓*
TXDOT Item 247	Flexible Base			✓*
TXDOT Item 260	Lime Treatment (Road-Mixed)			✓*
TXDOT Item 275	Cement Treatment (Road-Mixed)			✓*
TXDOT Item 276	Cement Treatment (Plant-Mixed)			✓*
TXDOT Item 310	Prime Coat			✓*
TXDOT Item 340	Dense-Graded Hot-Mix Asphalt (Small Quantity)			✓*
TXDOT Item 344	Superpave Mixtures			✓*
TXDOT Item 354	Planing and Texturing Pavement			✓*
TXDOT Item 360	Concrete Pavement			✓*
TXDOT Item 361	Repair of Concrete Pavement			✓*
TXDOT Item 400	Excavation and Backfill for Structures			✓*
TXDOT Item 401	Flowable Backfill			✓*
TXDOT Item 402	Trench Excavation Protection			✓*
TXDOT Item 420	Concrete Substructures			✓*
TXDOT Item 421	Hydraulic Cement Concrete			✓*
TXDOT Item 429	Concrete Structure Repair			✓*
TXDOT Item 432	Riprap			✓*
TXDOT Item 434	Bridge Bearings			✓*
TXDOT Item 438	Cleaning and Sealing Joints			✓*

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TXDOT Item 439	Bridge Deck Overlays			✓*
TXDOT Item 440	Reinforcement for Concrete			✓*
TXDOT Item 442	Metal for Structures			✓*
TXDOT Item 446	Cleaning and Painting Steel			✓*
TXDOT Item 447	Structural Bolting			✓*
TXDOT Item 448	Structural Field Welding			✓*
TXDOT Item 449	Anchor Bolts			✓*
TXDOT Item 454	Bridge Expansion Joints			✓*
TXDOT Item 464	Reinforced Concrete Pipe			✓*
TXDOT Item 465	Junction Boxes, Manholes, and Inlets			✓*
TXDOT Item 479	Adjusting Manholes and Inlets			✓*
TXDOT Item 483	Concrete Bridge Deck Resurfacing			✓*
TXDOT Item 496	Removing Structures			✓*
TXDOT Item 502	Barricades, Signs and Traffic Handling			✓*
TXDOT Item 506	Temporary Erosion, Sedimentation, and Environmental Controls			✓*
TXDOT Item 508	Constructing Detours			✓*
TXDOT Item 512	Portable Traffic Barrier			✓*
TXDOT Item 529	Concrete Curb, Gutter, and Combined Curb and Gutter			✓*
TXDOT Item 530	Intersections, Driveways, and Turnouts			✓*
TXDOT Item 531	Concrete Sidewalks			✓*
TXDOT Item 536	Concrete Medians and Directional Islands			✓*
TXDOT Item 540	Metal Beam Guard Fence			✓*
TXDOT Item 542	Removing Metal Beam Guard Fence			✓*
TXDOT Item 544	Guardrail End Treatments			✓*
TXDOT Item 545	Crash Cushion Attenuators			✓*
TXDOT Item 550	Chain Link Fence			✓*
TXDOT Item 556	Pipe Underdrains			✓*
TXDOT Item 618	Conduit			✓*
TXDOT Item 620	Electrical Conductors			✓*
TXDOT Item 636	Signs			✓*
TXDOT Item 644	Small Roadside Sign Supports and Assemblies			✓*
TXDOT Item 662	Work Zone Pavement Markings			✓*
TXDOT Item 666	Reflectorized Pavement Markings			✓*
TXDOT Item 677	Eliminating Existing Pavement Markings and Markers			✓*
TXDOT Item 678	Pavement Surface Preparation for Markings			✓*
TXDOT Item 681	Temporary Traffic Signals			✓*
TXDOT Item 713	Cleaning and Sealing Joints and Cracks (Concrete Pavement)			✓*

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TXDOT Item 720	Repair of Spalling in Concrete Pavement			✓*
TXDOT Item 721	Fiber Reinforced Polymer Patching Material			✓*
TXDOT Item 735	Debris Removal			✓*
TXDOT Item 751	Landscape Maintenance			✓*
TXDOT Item 770	Guard Fence Repair			✓*
TXDOT Item 772	Post and Cable Fence			✓*
TXDOT Item 776	Metal Rail Removal			✓*
TXDOT Item 778	Concrete Rail Repair			✓*
TXDOT Item 780	Concrete Crack Repair			✓*
TXDOT Item 784	Steel Member Repair			✓*
TXDOT Item 785	Bridge Joint Repair or Replacement			✓*
TXDOT Item 786	Carbon Fiber Reinforced Polymer			✓*
<b>APPLICABLE TXDOT SPECIAL SPECIFICATIONS*</b>				
TXDOT Item 1004	Tree Protection			✓*
TXDOT Item 4048	Prestressed Ground Anchors			✓*
TXDOT Item 5033	Bollards			✓*
TXDOT Item 6001	Portable Changeable Message Sign			✓*
TXDOT Item 6002	Video Imaging Detection System			✓*
TXDOT Item 6058	BBU System (Stand-Alone Batt Cabinet)			✓*
<b>SPECIAL PROVISIONS</b>				
TX-216-DFW	Proof Rolling			✓
TX-310-DFW	Prime Coat			✓
TX-340-DFW	Dense-Graded Hot-Mix Asphalt (Small Quantity)			✓
TX-400-DFW	Excavation and Backfill for Structures			✓
TX-402-DFW	Trench Excavation Protection			✓
TX-420-DFW	Concrete Substructures			✓
<u>TX-502-DFW</u>	<u>Barricades, Signs, and Traffic Handling</u>			<u>✓</u>
TX-556-DFW	Pipe Underdrains			✓
TX-662-DFW	Work Zone Pavement Markings			✓
TX-4048-DFW	Prestressed Ground Anchors			✓
TX-6002-DFW	Video Imaging Detection System			✓

\*Available on TxDOT Website

\*The above list does not include all reference specifications. Contractor shall review DFW Standard Specifications and TxDOT 2014 Specifications for additional information on reference specifications.

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<b>ATTACHMENTS</b>				
Attachement A	Volume 1 and 2: Geotechnical Report			✓
Attachement B	Volume 3: Geotechnical Report			✓
Attachement C	Volume 3: Subsurface Utility Engineering (SUE) Test Hole Data Forms			✓

**- END OF SECTION -**



## SEEDING AND SODDING

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#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. This Section covers furnishing of all labor, materials, equipment, tools, supervision, and incidentals necessary for seeding or sodding. Turf materials must address the elimination and/or mitigation of materials that could attract hazardous wildlife on and/or around an airport.

##### 1.2 REFERENCES

- A. Federal Aviation Administration (FAA) Advisory Circular 150/5200-33A, Hazardous wildlife Attractants on or Near Airports
- B. FAA Advisory Circular 150/5370-10G, Standards for Specifying Construction of Airports (Specifically Part 10, Turfing)
- C. Wildlife Hazard Management at Airports, A Manual for Airport Personnel available at:  
[https://www.faa.gov/airports/airport\\_safety/wildlife/resources/media/2005\\_FAA\\_Manual\\_complete.pdf](https://www.faa.gov/airports/airport_safety/wildlife/resources/media/2005_FAA_Manual_complete.pdf)
- D. Texas Commission on Environmental Quality (TCEQ) Stormwater Construction General Permit TXR150000 (specifically Final Stabilization criteria)
- E. TxDOT approved product list: <https://www.txdot.gov/business/resources/erosion-control.html>

##### 1.3 DEFINITIONS

- A. Adequate Grass Stand (FAA): A good stand of grass of uniform color and density, and when unviable or bare spots are one square foot or less, randomly dispersed, and do not exceed 3% of the area sodded.
- B. Airside: The airside consists of all areas within the AOA fence at the completion of the project, all areas extending 20 ft from the AOA fence, and all Runway Protection Zones (RPZ).
- C. Cool season: The cool season is October 1<sup>st</sup> through March 31<sup>st</sup>.
- D. Final Stabilization (TCEQ): All soil disturbing activities at the site have been completed and uniform (evenly distributed without large bare areas) perennial vegetative cover with a density of at least 70% approved vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures. In addition, Airside areas have established "Adequate Grass Stand".
- E. Non-public area: All non-Airside areas greater than 30 feet from a leased area, not mowed, and not landscaped.
- F. Permanent Seed: approved perennial grass species/varieties for final stabilization
- G. PLS: Pure Live Seed (Purity x Germination / 100 = PLS)

## **SEEDING AND SODDING**

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- H. Public area: All non-Airside areas within 30 feet of a leased area, mowed, or landscaped.
- I. Sun Area: An area receiving greater than 4 hours of direct sunlight daily.
- J. Shade area: An area receiving 4 or less hours of direct sunlight daily.
- K. Temporary Seed: approved annual grass species/varieties
- L. TxDOT: Texas Department of Transportation
- M. Warm season: The warm season is April 1<sup>st</sup> through September 30<sup>th</sup>.

#### **1.4 SUBMITTALS**

- A. Seed/Sod Plan: Submit a seed/sod plan for approval. Plan shall include number of acres/square yards to seed/sod, application method, grass species/variety latin name, supplier name and location, sod type/quality designation, seed vendor certification, total quantity of seed to be applied, tackifier SDS, mulch selected from TxDOT approved list, soil retention blanket selected from TxDOT approved list, soil retention blanket's manufacturer installation instructions, topsoil source and quantity.
- B. Fertilizer Plan: Submit a fertilizer plan for approval. The plan shall include the soil analysis laboratory results, laboratory fertilizer recommendation based on soil results and grass species/variety, proposed fertilizer mix and application rate.

## **PART 2 – PRODUCTS**

### **2.1 SEED**

- A. Provide and install seed as shown on the plans or as directed by OAR. All seed must be from previous season's crop and meet the requirement of the Texas Seed Law.
- B. All seed weight shall be per PLS pounds. Minimum application rate is indicated per acre.
- C. Only seed meeting the land use, season, and sun exposure requirements may be applied. Refer to charts below for permanent and temporary seed options. Seed shall be applied at the application rate specified in the table below.

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PERMANENT SEED OPTIONS					
Land Use	Season During Application		Sun Exposure		Minimum Application Rate
	Warm	Cold	Sun	Shade	
<b>Airside</b>					
No seed options available (Sod Only)					
<b>Public</b>					
Unhulled Bermuda <i>Cynadon dactylon</i>	X		X	X	50 lbs. PLS
Hulled Bermuda <i>Cynadon dactylon</i>	X		X	X	50 lbs. PLS
Zoysia Grass <i>Zoysia japonica</i>	X			X	100 lbs. PLS
<b>Non-public</b>					
Unhulled Bermuda <i>Cynadon dactylon</i>	X		X	X	20 lbs. PLS
Hulled Bermuda <i>Cynadon dactylon</i>	X		X	X	20 lbs. PLS
Buffalo Grass <i>Bouteloua dactyloides</i> / Blue Grama Grass (native) <i>Bouteloua gracilis</i>	X		X	X	50 lbs. PLS/ 100 lbs. PLS
Buffalo Grass <i>Bouteloua dactyloides</i> w/ Sand Drop <i>Sporobolus cryptandrus</i>	X		X	X	50 lbs. PLS / 2 lbs PLS
Buffalo Grass <i>Bouteloua dactyloides</i> w/ Hooded Windmill <i>Chloris cucullata</i>	X		X	X	50 lbs. PLS / 1.5 lbs PLS
Blue Grama Grass (native) <i>Bouteloua gracilis</i>	X		X	X	4 lbs. PLS
TXDOT Permanent Urban Seed Mix (District 18 Clay Soils) Green Sprangletop- <i>Leptochloa dubia</i> , Sideoats Grama (El Reno)- <i>Boutelous curtipendula</i> , Buffalograss (Texoka)- <i>Bouteloua dactyloides</i> , Bermudagrass- <i>Cyando dactylon</i>	X		X	X	1 lbs. PLS/7 lbs. PLS/3 lbs. PLS/5 lbs. PLS

TEMPORARY SEED OPTIONS					
Land Use	Season During Application		Sun Exposure		Application Rate
	Warm	Cold	Sun	Shade	
<b>Airside</b>					
No seed options available					
<b>Public</b>					
No seed options available					
<b>Non-public</b>					
Teff Grass <i>Eragrostis tef</i>	X	X	X	X	10 lbs PLS
Creeping red fescue <i>Festuca rubra</i>		X	X	X	220 lbs. PLS
Western Wheatgrass <i>Passcopyrum smithii</i>		X	X	X	20 lbs. PLS

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#### 2.2 SOD

- A. Use grass sod with a healthy root system and dense matted roots throughout the soil of the sod for a minimum thickness of 1in.
- B. Keep sod moist from the time it is dug until it is planted. Grass sod with dried roots is unacceptable.
- C. Sod shall be relatively free of weeds or other undesirable foreign plants, large stones, roots, or other materials.
- D. Sod must be green and have evidence of 99% root establishment to achieve final stabilization. Sod that is placed during the cool season will require an inspection in the warm season to confirm viability.
- E. Sod will be considered under warranty for one year after final stabilization is achieved.
- F. Approved sod options vary based on season, sunlight, and location on Airport property. Refer to the chart below for sod options. Only sod meeting the land use, season, and sun exposure requirements may be utilized.

SOD OPTIONS				
Land Use	Season During Application		Sun Exposure	
	Warm	Cold	Sun	Shade
<b>Airside</b>				
Bermuda <i>Cynadon dactylon</i>	X	X	X	X
<b>Public</b>				
Bermuda <i>Cynadon dactylon</i>	X	X	X	X
<b>Non-public</b>				
Bermuda <i>Cynadon dactylon</i>	X	X	X	X
<i>Zoysia Zoysia japonica</i>	X	X		X
Buffalo Grass <i>Bouteloua dactyloides</i>	X		X	X

#### 2.3 FERTILIZER

- A. Provide and distribute fertilizer over all areas to be seeded or sodded.
- B. Fertilizer is subject to testing by the Texas A&M Feed and Fertilizer Control Service or another approved lab in accordance with the Texas Fertilizer Law.

#### 2.4 WATER

- A. Use water that is clean and free of industrial wastes and other substances harmful to the growth of vegetation.
- B. Water may be from a Potable Water source or Reclaimed Water source, but never pumped directly from a creek, stream or pond.
- C. The water source and supply location is subject to approval by the OAR prior to use.

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#### 2.5 MULCH

- A. Mulch is required to cover all seeded areas.
- B. See chart below for the approved mulch types and minimum application rates.

MULCH OPTIONS	
Type	Application Rate
Wheat Straw Mulch	2 tons per acre
TxDOT Approved Cellulose Fiber Mulch	per manufacturer rate but no less than 2000 lbs. per acre

- C. Wheat straw mulch must be crimped into the soil using an approved Straw Mulch Crimper.
- D. Recycled paper based cellulose mulches are prohibited.

#### 2.6 TACKIFIER

- A. Use a tacking agent for all hydroseed applications. Apply per manufacturer's recommendations.

#### 2.7 SOIL RETENTION BLANKET

- A. Soil retention blanket is required on all seeded areas with a slope of 3:1 or greater, and in any area where concentrated flow occurs.
- B. Use an soil retention blanket from the TxDOT Approved Product List

#### 2.8 TOPSOIL

- A. Use easily cultivated, fertile topsoil that is free from objectionable material and resistant to erosion.
- B. Utilize existing topsoil from the project site.
- C. If necessary to obtain additional topsoil, adhere to the soil transfer requirements in 01 33 29.06.01 Contaminated Media Management Plan.

## PART 3 - EXECUTION

#### 3.1 General

- A. All seed or sod applications must adhere to all applicable TCEQ or FAA Circulars including most recent versions of 150/5200-33, and 150/5370-10.
- B. All seed or sod applications will be considered under warranty for one year after final stabilization is achieved.

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#### 3.2 SEED

##### A. General

1. Submit a seed/sod plan for approval by the OAR prior to application.
2. Seed may be applied by the following methods: broadcast, drill seeding, hydroseeding.
3. All seed applications will require soil prep, top soil, fertilizer, and mulch. Tackifier and soil retention blankets are required based on application method and site conditions.

##### B. Soil Prep

1. After grading of the area has been completed, thoroughly loosen and work soil to a depth of not less than 5 inches, and break any clods greater than 1" in diameter.
2. The area shall be raked or otherwise cleared of stones, sticks, stumps, and other debris greater than 1" in diameter. The surface shall be prepared in a manner that is loose and level without voids, openings, or pores.

##### C. Topsoil

1. Complete soil prep prior to placing topsoil.
2. Spread the topsoil to a uniform loose cover with a minimum depth of 4 inches.

##### D. Inspection

1. Once soil is prepped and top soil is placed, request a DFW environmental inspection.
2. Soil prep and topsoil placement must be inspected and approved by a DFW environmental inspector prior to seed application.

##### E. Fertilizer

1. Submit a Fertilizer Plan for OAR approval.
2. Fertilizer mix and application rate shall be determined based on a soil laboratory analysis.
3. A soil sample shall be submitted to Texas A&M Agrilife Extension or equivalent laboratory certified in soil analysis. Follow the laboratory's procedure for collecting a soil sample. Soil sample may be collected at any point post-grading and prior to seed application.
4. Submit the lab results and proposed fertilizer for review and approval by OAR prior to application.
5. Apply fertilizer at the approved application rate.

##### F. Installation

1. Broadcast Application
  - a. If broadcast application method is selected, contractor shall evenly distribute seed across the entire area at the approved application rate.
2. Drill seed Application

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- a. If drill seed application is selected, contractor shall evenly distribute seed in rows no further than 7" apart, utilizing an industry approved grass seed drill.
3. Hydroseed Application
  - a. If hydroseed application method is selected, contractor must evenly apply seed, and tackifier at approved application rates.
  - b. All equipment shall be clean and free of contaminants prior to use.
- G. Mulch
  1. The Contractor is required to apply an approved mulch at the rates specified over the planted seed bed.
  2. If wheat straw mulch is utilized, it must be crimped into the soil using an approved Straw Mulch Crimper.
- H. Soil retention Blanket
  1. All areas with a slope of 3:1 or greater, and any area where concentrated flow occurs will require soil retention blanket.
  2. Install and anchor the soil retention blanket according to the manufacturer's installation instructions.
- I. Water
  1. Water as needed until final stabilization is achieved and approved by the OAR.
  2. Ponding is not allowed. Do not water to the point of ponding.
- J. Mowing
  1. Mowing is required when the grass reaches 6" in height.
  2. Additional mowing may be required by the OAR until final stabilization is achieved.
- K. Reseeding
  1. The area may require reseeding to achieve final stabilization. Reseeding is considered incidental to the cost of seeding and will be done at no additional expense to the owner.
  2. If final stabilization is not achieved in the warm season, reseeding will be required in the next warm season.
  3. At a minimum, reseeding consists of seed, fertilizer, and water application. Mulch, tackifier and soil retention blankets may be utilized.
- 3.3 SOD
  - A. General
    1. Submit a seed/sod plan for approval by the OAR prior to application.
  - B. Soil Prep
    1. After grading of the area has been completed, thoroughly loosen and work soil to a depth of not less than 5 inches, and break any clods greater than 1" in diameter.

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2. The area shall be raked or otherwise cleared of stones, sticks, stumps, and other debris greater than 1" in diameter. The surface shall be prepared in a manner that is loose and level without voids, openings, or pores.
- C. Topsoil
1. Complete soil prep prior to placing topsoil.
  2. Spread the topsoil to a uniform loose cover with a minimum depth of 4 inches.
- D. Inspection
1. Once soil is prepped and top soil is placed request a DFW Environmental Inspection.
  2. Soil prep and topsoil placement must be inspected and approved by a DFW Environmental Inspector prior to sod installation.
- E. Fertilizer
1. If placing sod in a warm season, submit a fertilizer plan for approval.
  2. If placing sod in a cool season, OAR may require fertilizer in the warm season.
  3. Fertilizer mix shall contain primarily Nitrogen, and be applied at a rate of 100 lbs. of Nitrogen per acre.
- F. Installation
1. Place sod over the prepared area and roll or tamp to create a solid mat.
  2. Sod placed on the Airside, in ditches, or on slopes greater than 4:1 will require staples. Use 12" wood staples to secure the sod.
  3. Fill all gaps with additional topsoil.
- G. Water
1. Water as needed until final stabilization is achieved and approved by the OAR.
  2. Ponding is not allowed. Do not water to the point of ponding.
- H. Mowing
1. Mowing may be required by the OAR until final stabilization is achieved.
  2. Mowing will be conducted within the time frame specified by the OAR.



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#### 3.4 FINAL STABILIZATION

- A. All areas shall be maintained until final stabilization is achieved.
- B. Final stabilization is achieved when the following conditions are met:
  - 1. All soil disturbing activities at the site have been completed.
  - 2. Uniform (evenly distributed without large bare areas) perennial vegetative cover with a density of at least 70% approved vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures.
  - 3. All Airside areas achieve a good stand of grass of uniform color and density, and when unviable or bare spots are one square foot or less, randomly dispersed, and do not exceed 3% of the area sodded.
- C. Final stabilization will be determined during the warm season (April 1<sup>st</sup> thru September 31<sup>st</sup>)

## **PART 4 MEASUREMENT AND PAYMENT**

### 4.1 MEASUREMENT

- A. The area to be seeded/sodded is measured by the square yard/acre as indicated by the limits of disturbance on the design plans. Any additional area of disturbance will be seeded/sodded by the contractor at no additional cost to the owner.
- B. Seed is measured by the square yard or by the acre.
- C. Sod is measured by the square yard in its final position.
- D. Fertilizer is measured by the acre of surface area covered or by the ton (2,000 lb.) Measurement by ton will use guaranteed weight of bags or containers as shown by the manufacturer.
- E. Hydromulch or straw mulch is measured by the square yard or by the acre.
- F. Tackifier is measured by the acre.
- G. Soil retention blanket is measured by the square yard of surface area covered.

### 4.2 PAYMENT

- A. The contractor will be paid for 90% of the sod installed during the monthly estimate period based on the actual quantities installed using the unit Price amount for the pay item. The remaining 10% will be paid once the owner has made final acceptance of the sodded areas. The unit price bid is full compensation for securing a source, excavation, loading, hauling, placing, rolling, finishing, furnishing materials, equipment, labor, tools, supplies, and incidentals. Sod is under warranty for one year after final stabilization is achieved. Sod must be green and have evidence of root establishment to achieve final stabilization. Sod that is placed during the cool season will require an inspection in the warm season to confirm viability for final acceptance. Areas where sod has failed to thrive shall be replaced with living green sod at the contractor's expense.

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- B. The contractor will be paid for 75% of the seeding installed during the monthly estimate period based on the actual quantities installed using the unit Price amount for the pay item. The remaining 25% will be paid once the owner has made final acceptance of the seeded areas.
- C. Fertilizer is considered subsidiary to the seed and sod bid items of the contract. Work performed, materials furnished, equipment, labor, tools and incidentals will not be paid for directly unless otherwise specified in the contract.
- D. The contractor will be paid for 100% of Hydromulch or straw mulch installed during the monthly estimate period based on the actual quantities installed using the unit Price amount for the pay item.
- E. Tackifier is considered subsidiary to the Hydromulch or straw mulch bid items of the contract. Work performed, materials furnished, equipment, labor, tools and incidentals will not be paid for directly unless otherwise specified in the contract.
- F. The contractor will be paid for 100% of the erosion blanket installed during the monthly estimate period based on the actual quantities installed using the unit Price amount for the pay item.
- G. Protective barriers, mowing and other maintenance activities are considered subsidiary to the seed or sod unit price. Work performed, materials furnished, equipment, labor, tools and incidentals will not be paid for directly unless otherwise specified in the contract.

**- END OF SECTION -**

## **BARRICADES, SIGNS, AND TRAFFIC HANDLING**

**Section: TX-502-DFW**

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### **SPECIAL PROVISION TO ITEM 502 BARRICADES, SIGNS, AND TRAFFIC HANDLING**

Item 502, "Barricades, Signs, and Traffic Handling" of the Texas Department of Transportation (TxDOT) Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges, Adopted November 1, 2014 (TxDOT Specifications), is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

**Article 502.3 "Measurement"** is replaced as follows:

Barricades, Signs and Traffic Handling will be measured by the lump sum.

**Article 502.4 "Payment"** is replaced as follows:

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the lump sum price for "Barricades, Signs, and Traffic Handling." This price is full compensation for installation, maintenance, adjustments, replacements, removal, materials, equipment, labor, tools, and incidentals.

Payment will be made under:

Pay Item TX-502-DFW-1:

Barricades, Signs and Traffic Handling – per lump sum

**– END OF SECTION –**

**BARRICADES, SIGNS, AND TRAFFIC HANDLING**

**Section: TX-502-DFW**

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