



**ADDENDUM NO. 1 – 07/06/2021**

**TO**

Dallas Fort Worth International Airport

Standard Specification Book

Published Date on 12/17/2018

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Incorporated into the contract documents will be the Dallas Fort Worth International Airport Standard Specification Book Version 2: Published December 17, 2018, and updated in Addendum No.1 published July 6, 2021 can be found at [www.dfwairport.com/business/solicitations](http://www.dfwairport.com/business/solicitations).

The specification sections listed below are now hereby incorporated into and supersede those specifications in the Dallas Fort Worth International Airport Standard Technical Specification Book: Published December 17, 2018.

- 00 01 10 Table of Contents
  - Added 01 41 26.21 Migratory Bird Protection
- 01 22 20 Contractor Badging, AOA, and Revenue Access
  - Revision of the entire specification includes insurance requirements, Identification/Access Badges, vehicle permits, and AOA and revenue area access.
- 01 41 26.21 Migratory Bird Protection
  - Added Specification
- 32 92 19 Seeding and Sodding
  - Modified Section 2.2 (D & E) Sod includes a required inspection of sod during the warmer months that is planted during the cool season.
  - Modified Section 3.1 General includes phase of finalization of turf with an approved transfer to DFW
  - Modified Section 3.4 Final Stabilization includes an option of transferring of sod to DFW after substantial completion.
  - Modified Section 4.2 Payment includes when payments are made for unit price and lump sum projects
  - Added Section 4.3 Transfer of Final Turf Establishment to DFW After Substantial Completion of Construction Project. This section stipulates conditions of achieving final stabilization of turf, ongoing maintenance of newly planted turf and/or establishment of warm season turf due to seasonal delays.

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Incorporated into the Contract Documents will be the Dallas-Fort Worth International Airport Standard Specification Book Version 2, Published December 17, 2018 and updated in Addendum No. 1 published July 6, 2021 can be found at <https://www.dfwairport.com/business/solicitations>.

Any Section marked as “Applicable” below is hereby 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 dated 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 21 00	Standby Time Allowance	✓		
01 21 00.01	Standby Time Work 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 13.13	Minimum Standards for Construction and Maintenance on the AOA	✓		

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Section	Description	Applicable	Revised	Added
01 35 13.13.01	Minimum Standards for Construction and Maintenance on the AOA – Forms and Instructions	✓		
01 35 23	Hot Work Operations and Control	✓		
01 35 24	Asbestos Operations and Control	✓		
01 41 26.10	Construction Air Permitting	✓		
01 41 26.13	Concrete Batch Plant and Hot Mix Asphalt Plant Permitting	✓		
01 41 26.21	Migratory Bird Protection	✓		
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	✓		
01 78 23	Operation and Maintenance Data	✓		
01 78 33.36	Bonds and Warranties	✓		

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<b>Section</b>	<b>Description</b>	<b>Applicable</b>	<b>Revised</b>	<b>Added</b>
01 78 39	Project Record Documents	✓		
01 78 46	Extra Stock Materials	✓		
01 79 00	Demonstration and Training	✓		
01 81 13	Sustainable Design Requirements	✓		
01 91 00	Commissioning	✓		
<b>DIVISION 03</b>				
32 92 19	Seeding and Sodding	✓		

**- END OF SECTION -**

# MIGRATORY BIRD PROTECTION

## Section: 01 41 26.21

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### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This specification provides airport board employees, contractors and tenants with information and guidance on protecting avian wildlife that may be encountered during construction projects at Dallas Fort Worth International Airport (DFW Airport). The intent is to comply with the Migratory Bird Treaty Act.
- B. The Contractor shall be responsible for all cost associated with nest surveys, reports, mitigation activities, and training to maintain compliance with this specification.

#### 1.2 RELATED SECTIONS

- A. Section 01 41 26.19, NEPA Requirements
- B. Section 01 57 23, Temporary Storm Water Pollution Control.
- C. Section 01 74 19, Construction Waste Management and Disposal

#### 1.3 REFERENCES

- A. The following is a list of policies and regulations which may be referenced in this Section:
  - 1. Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. §§ 703-712)
    - a. <https://www.fws.gov/laws/lawsdigest/migtrea.html>
  - 2. Endangered Species Act
    - a. <https://www.fws.gov/international/pdf/esa.pdf>
  - 3. Bald & Golden Eagle Protection Act
    - a. [https://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&sid=9a2c074a271d17db16c4a0fa4ca3d2ba&tpl=/ecfrbrowse/Title50/50cfr22\\_main\\_02.tpl](https://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&sid=9a2c074a271d17db16c4a0fa4ca3d2ba&tpl=/ecfrbrowse/Title50/50cfr22_main_02.tpl)
  - 4. DFW Airport Wildlife Hazard Management Plan
    - a. Contact the Wildlife Administrator for the plan.
  - 5. DFW Airport Nest Survey Guidance Map
    - a. <https://www.dfwairport.com/sustainability/index.php>

#### 1.4 DEFINITIONS

- A. Active Nest. Nest containing birds and/or eggs.
- B. Inactive Nest. A nest is considered inactive if any one of the following conditions is present:

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- a. The nest is empty containing no birds and/or eggs;
  - b. The nest contains non-viable eggs as determined by a qualified 3<sup>rd</sup> party;
  - c. This nest is only partially constructed.
- C. Natural Wooded Areas. Areas primarily consisting of natural tree cover, with trees capable of producing timber or other wood products and exerting an influence on the climate or water regime. Refer to the Nest Survey Guidance Map
- D. Nesting Season.
- a. February 1<sup>st</sup> to August 31<sup>st</sup>.
  - b. Year round in natural wooded areas.
- E. Buffer Zone. A 100-foot radius identified by a visual barrier surrounding an active bird nest. No activity shall occur within this area.
- F. Bird. Refers to any species federally protected under the MBTA.
- G. Depredation. Includes agricultural damage, private/public property damage, threats to human health and safety, and threats to recovery of protected wildlife. The nest itself or birds attending to the nest must be contributing to physical damage or physical loss to constitute a depredation problem and must not merely be causing a nuisance.
- H. OAR. Owner's Authorized Representative.

#### 1.5 SUBMITTALS

- A. Nest Survey. A Nest Survey shall encompass all areas within their project site, 100 feet adjacent to their project site, and all areas that will be impacted by their project operations.
- a. Surveys must be conducted within 5 days prior to disturbance.
  - b. Survey shall address and contain:
    - i. Dates & Times
    - ii. Maps of project site indicating nests
    - iii. Photos of nests, project site
    - iv. Identified species
    - v. Active vs Inactive
    - vi. Methodology (grid, transects)
    - vii. metadata
    - viii. Qualifications

## **MIGRATORY BIRD PROTECTION**

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- B. Self-Certified Nest Survey. A small-scale nest survey that may be conducted by the contractor for a site less than 1 acre and in developed area. This template will provide instruction and methodologies for the completing a nest survey. See Part 2.B.c. - Self Certification Nest Survey.
  - a. Signatory by the Project OAR and individual conducting the nest survey.
- C. Nest Activity Report. Follow up report based on the findings of active nest during a nest survey. Report shall indicate if chicks have fledged, or the eggs were not viable. Report shall address and contain:
  - a. Dates & Times
  - b. Maps of project site with nests
  - c. Photos nest, project site
  - d. Identified species
  - e. Status of Fledgling and eggs
  - f. Methodology (grid, transects)
  - g. metadata
  - h. Qualifications

#### 1.6 QUALITY ASSURANCE

- A. Persons conducting wildlife related survey activities shall be a 3<sup>rd</sup> party possessing the education, training and experience necessary to recognize avian species, their nest and/or eggs, their respective habitats, and appropriately permitted with Federal, and State agencies for relocation / taking of avian wildlife.
- B. Education. Train all employees, contractors, and/or visitors of this specification to protect avian wildlife.
  - a. Prohibition of disturbing of nests and birds.
  - b. Prohibition of the taking of any birds or their parts.

#### 1.7 SEQUENCING AND SCHEDULING

- A. Nest surveys shall be conducted within 5 days prior to any vegetation disturbance activities.

#### 1.8 REPORTING

- A. Report any incidental take of a bird or active nest to the OAR within 24 hours.
- B. Report any newly identified nests to the OAR within 24 hours for further evaluation.
- C. Any other wildlife activities that pose a safety hazard should be reported to AOC (Wildlife) for further evaluation.
- D. If activities will extend past the limits of disturbance contact the OAR for direction prior to beginning.



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#### PART 2 - Execution

- 2.0 Nest Survey Requirements. Conduct a Nest Survey prior to any disturbance of vegetation during nesting season (February 1<sup>st</sup> to August 31<sup>st</sup>) or year-round in natural wooded areas.
- A. A 3<sup>rd</sup> Party Nest Survey shall be submitted to the Environmental Affairs Department or Airport Operations for review. In the event a nest is observed refer to section 2.1 Construction Activities with Active Nests.
  - B. Self-Certification Nest Survey may be conducted if both the following conditions are met:
    - a. The project's disturbance is less than one acre and;
    - b. The project's area has been previously disturbed and has a maintained landscape. (i.e. lawns, lots, planter beds, and other landscaped areas).
      - i. In the event that nest(s) are observed, a qualified 3rd party nest survey will be required.
    - c. The Self – Certification Nest Survey Template can be found at <https://www.dfwairport.com/sustainability/index.php> or provided by the EAD Design & Construction Group.
- 2.1 Construction Activities with Active Nests
- A. All active nests identified by a nest survey will establish the buffer zone around the nest to prevent any intrusion or negative impacts to birds.
    - a. No activity shall occur within the buffer zone. In the event the barrier is compromised work operations in the immediate area will be suspended until the barrier is restored.
    - b. Artificial Lighting shall not be directed toward active nests. Contractor shall use down shielding or directional lighting to avoid light trespass into bird habitat.
    - c. Contractors will instruct their staff and sub-contractors to remain outside of the restricted areas and to avoid activities that will disturb the birds.
  - B. Active nest(s) shall be monitored periodically by 3rd party until chicks fledge the nest or the eggs are no longer viable. The 3rd party will need to submit a professional Nest Activity Report to the OAR. Once the report is approved the visual barrier can be removed and activities in that area can commence
- 2.2 Shop Drawings for the Installation of Bird Deterrent Spikes
- A. All bird deterrent spikes installed in any bird deterrent spike project must contain the following:
    - a. Must be all metal

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- b. Must be permanently fastened to the structure using hardware (no glue)
- c. Shop drawings must be submitted and approved due to a range of its lengths and widths. Designed bird spikes must be made of all metal and affixed (not glued).

### **PART 3 - PROHIBITED ACTIVITIES**

#### **3.0 Wildlife Prevention.**

- A. The Contractor, their staff, subcontractors and others having access to the property will be responsible for complying with relevant aspects of DFW Airport's Wildlife Hazard Management Plan, which prohibits attracting wildlife intentionally or unintentionally.
  - a. Contractors shall not allow activities or operations that could attract birds or other wildlife, either intentionally or unintentionally.
  - b. Contractors will not allow active or passive feeding of birds or any wildlife. The contractor is responsible for proper trash management.
  - c. Contractor utilizing ponds or causing ponding must implement deterrent devices if they begin to attract birds or other wildlife

**- END OF SECTION -**

## **PART 1 – GENERAL**

### **1.1 SUMMARY**

This section covers the requirements for the contractor to acquire access to the airport's airside and Revenue Area (RA) as identified in the section 01 11 00 Summary of Work.

### **1.2 IDENTIFICATION/ ACCESS BADGES**

A. The Contractor and all Subcontractors must obtain and pay for all Airport Identification/Access Badges and Access Permits as required by the Airport. (A list of Fees & Charges can be found on Access DFW's website: [www.dfwairport.com/accessdfw](http://www.dfwairport.com/accessdfw) under Fees & Charges.)

1. All appropriate forms and applications must be obtained, completed and submitted to Access DFW. Badging and AOA Vehicle Permits: The Contractor and all Subcontractors must be onboarded with the Access DFW and an Authorized Signatory must be assigned to request badging privileges and AOA permits. For further information contact ACCESS DFW at 972-973-5100

#### **1.2.1 TERMINATING EMPLOYEES**

A. The Authorized Signatory must immediately log in to SAFE and terminate the employee in SAFE immediately. All Airport ID Badge are property of the DFW Airport and must be returned to Access DFW. Badges can be returned 24 hours a day, 7 days a week by using the Airport ID drop box located outside the entrance of Access DFW. This is a TSA requirement and is very important to ensure that all Airport ID Badges at DFW are properly accounted for

B. Failure to return a badge within 5 days after termination or access is no longer needed will result in a \$120 non-refundable unreturned badge fee, billed to the company by DFW Airport

#### **1.2.2 UNACCOUNTED FOR BADGES**

An unaccountable ID badge is one that has been lost, stolen, or is missing, with an unexpired date on the front of the badge.

Access DFW monitors unaccountability percentages for each company and may suspend new badges and renewals until the company re-gains control of the badges issued to the company. You may also be required to meet with Access DFW and DFW management if unaccountable badges remain high. It is a key requirement of your Authorized Signatory job duties that each week you run the Unreturned Badges report (in the Reports tab in SAFE) and proactively recover all unaccountable badges, unless they have been lost or stolen. Failure to comply could result in the above consequences.

### 1.3 AOA VEHICLE ACCESS PERMITS

Air Operations Area (AOA) Permits, including AOA vehicle Access Permits, Temporary AOA Vehicle Access Permits, and AOA Equipment Permits are the means by which a motor vehicles and ground handling equipment signify that they are properly insured and authorized to enter and operate on the AOA and the SIDA.

All vehicles and ground handling equipment entering security gates, commonly referred to as "AOA gates" must comply with the following:

- A. Must display valid, unexpired AOA Permits or be under escort by an agent of the Airport Board, a representative of the airlines, or a tenant responsible for the AOA gate through which the vehicle or ground handling equipment is entering.
- B. Must be marked with the company name and/or logo for identification purposes.
- C. Are subject to inspection by security personnel, and ground handling equipment being brought into the SIDA for the first time must be inspected by DPS security personnel at the AOA gate.
- D. Must Affix the permit to the vehicle to which the AOA Permit was issued on the driver's side front and rear bumper of the vehicle, or for tractor trailers, the AOA Permits must be affixed to the driver's side front and driver's side rear of the tractor.

#### 1.3.1 VEHICLE PERMIT ISSUANCE

The following will help you determine which AOA permit application is needed:

- A. Select "Annual Vehicle Permit" for Permit Type when the following conditions apply:
  - 1. Your company is an airline tenant, government agency, Airport concessionaire, or the Airport Board; OR
  - 2. Your company is a contractor or vendor for an airline tenant, government agency, Airport concessionaire, or the Airport Board whose contract/agreement expires on the last day of the calendar year (ex: contract term begins on 05/15/2019 and expires on 12/31/2019).
- B. Select "Temporary" for Permit Type when the following condition applies
  - 1. Your company is a contractor or vendor for an airline tenant, government agency, Airport concessionaire, or the Airport Board whose contract/agreement expires prior to the end of the last day of the calendar year (ex: contract term begins on 01/01/2019 and expires on 09/30/2019).
- C. Select "Equipment" for Permit Type when the following condition applies
  - 1. Your company is an airline tenant, government agency, the Airport Board, or an Airport Board contractor that has ground handling equipment that will remain in the SIDA and the ground handling equipment does not traverse through AOA gates after being brought into the SIDA.

Please make sure you allow two to three business days for application processing and permit issuance. Access DFW will contact you when the permits are ready to be picked up.

### 1.3.2 VEHICLE PERMIT INSURANCE REQUIREMENTS

All policies must be written through a licensed company authorized by the Texas State Board of Insurance to transact that class of insurance business in the State of Texas, with a minimum rating of 'A-', 'VII' by A. M. Best Company. If the rating of any insurer should fall below this standard, you shall cause the policy to be replaced promptly by an acceptable insurer.

insurance policy.

#### **Commercial General Liability (CGL)**

**Limit Any One Occurrence.....\$ 1,000,000**

CGL must be written on an "Occurrence Form."

#### **Business Automobile Liability**

**Combined Single Limit for Each Accident ..... \$500,000**

Coverage must apply to all vehicles (owned, non-owned, or hired) operating on our site/location, or transporting our people or property off our site.

#### **Excess / Umbrella Liability**

**Air Operations Area (within air operations area) ..... \$10,000,000**

Coverage must apply in excess of all required primary Liability insurance and must be at least as broad as the underlying Liability insurance.

This coverage limit may be satisfied by adding the amounts of CGL and Excess/Umbrella Liability to arrive at a total of \$10,000,000. The same would be applicable for Business Auto Liability and Excess/Umbrella Liability to arrive at a total of \$10,000,000.

### 1.4 SECURITY

#### A. Security Violations:

If an employee with your company receives a Violation Notice, the Authorized Signatory will also receive the notice and be responsible for ensuring that the proper follow-up and response to the Airport is provided by the employee. In all circumstances, DFW Airport reserves the right to penalize an individual for security violations. Penalties/fees may be assessed based on the consultation and coordination with TSA.

#### B. Pedestrian Traffic at AOA Vehicle gates:

TSA Regulations prohibit pedestrian traffic through AOA vehicle gates. Violators may receive a Violation Notice.

#### C. DFW Violation Appeal Process:

If your company's employee receives a Violation Notice, they have the ability to appeal it. Details explaining the violation appeal process are included in the original security Violation Notice letter.

## 1.5 REVENUE AREA ACCESS

It is the policy of the Owner to promote adequate and efficient vehicle services and operations at the Airport. To this end, Rules and Regulations for RA use is developed to protect the public health and safety, and promote public convenience and necessity, while minimizing adverse effect on public parking capacity and protection of revenues. Specifically, it is the policy of the Owner that all vehicles, including private vehicles, unless otherwise noted in Section 01 11 00 Summary of Work, shall enter and exit the RA via the North and South Control Plazas or via crossover gates as specified by the contract.

### 1.5.1 AUTHORITY FOR ENFORCEMENT

The Employee Parking Office (EPO) is designated to administrator the Airport Vehicle Rules and Regulations to control RA use. The EPO may, establish procedures consistent with the Rules and Regulations which EPO determines necessary. The Airport Department of Public Safety (DPS) shall be responsible for the enforcement of the Rules and Regulations.

### 1.5.2 OPERATING AUTHORITY

- A. The EPO administers and Transportation Business Unit (TBU) approves all requests for access to the RA. The Contractor and his subcontractors must request approval for 24-hour access in designated RAs. Approval will be only for contract work for the duration of this contract.
- B. Access to the RA is managed by the TBU at the EPO. Email the EPO at [Prkpri@DFWAirport.com](mailto:Prkpri@DFWAirport.com) or call 972-973-8040 to start the request. The following documentation is required but not limited to:
  1. Notice-To-Proceed (NTP) Letter
  2. The Contract Agreement
  3. Specifications Section 01 11 00 Summary of Work
- C. Once all the above is received by the EPO, the Parking Guest Relations Manager will set up a meeting to instruct the Authorized Signatory on how to input vehicles into the system
- D. At any point a change order (CO) is issued that effects this access, to include any extensions to the contract, Contractor must email the CO to the EPO for modification to the approved access. Any failure to inform the EPO in a timely manner will result in termination of access.
- E. Any violations to policy and procedures presented by the TBU and/or EPO could result in termination of access to one or more of vehicles associated with this contact.

## **CONTRACTOR BADGING, AOA AND REVENUE AREA ACCESS**

### **Section: 01 55 20**

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- F. The prime contractor will be responsible for processing and access to all sub-contractors and will take on all responsibilities of their actions.
- G. All access to the RA is based on each vehicle having an NTTA toll tag and each account MUST be associated to an active credit card (no cash accounts).
- H. If access to the revenue area is required as defined by the Summary of Work, daily fees will be waived.

#### **1.5.3 ENFORCEMENT**

##### **A. Violations**

If TBU and/or EPO determines that the Contractor violates terms of its Operating Authority or the Code of Rules and Regulations, TBU and/or EPO may notify the Contractor, of the violation and may either deny or terminate access to RA based on the nature of violation.

#### **PART 2 – PRODUCTS**

Not Used.

#### **PART 3 – EXECUTION**

Not Used.

#### **PART 4 – MEASUREMENT AND PAYMENT**

Not Used.

**- END OF SECTION -**

## SEEDING AND SODDING

### Section: 32 92 19

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#### PART 1 - GENERAL

##### 1.1 SUMMARY

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 ( $\text{Purity} \times \text{Germination} / 100 = \text{PLS}$ )
- 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.



## SEEDING AND SODDING

### Section: 32 92 19

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- 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.

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>Passopyrum smithii</i>		X	X	X	20 lbs. PLS

## SEEDING AND SODDING

### Section: 32 92 19

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

## 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 or as detailed in 4.3 below with an approved transfer to DFW.
- 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.

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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 are subject to approval by the OAR prior to use.

### 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.

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#### **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 a 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 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 or as detailed in 4.3 below with an approved transfer to DFW.

#### **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, topsoil, 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.

## SEEDING AND SODDING

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- D. Inspection
  - 1. Once soil is prepped and topsoil 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
    - b. 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
    - c. If hydroseed application method is selected, contractor must evenly apply seed, and tackifier at approved application rates.
    - d. 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.

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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.
  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 topsoil 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.

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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.

### **3.4 FINAL STABILIZATION**

A. All areas shall be maintained until final stabilization is achieved unless clause 4.3 below is invoked.

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.

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#### 4.2 PAYMENT

##### A. Unit Price Contracts

1. 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, 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.
2. The contractor will be paid for 75% of the seeding installed during the monthly 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 had made final acceptance of the seeded areas.
3. 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.
4. 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.
5. 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 unless otherwise specified in the contract.
6. 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.
7. 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.
8. 100% payment will be made for Seeding and Sod if transfer to DFW as accepted per terms in 4.3 below.

##### B. Lump Sum Contracts

1. The contractor will be paid for 90%, less applicable retainage, of the sod installed during the monthly pay application period based on the approved Schedule of Values. The remaining 10% will be paid once Final Stabilization of the sodded



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areas is achieved. Sod that is placed during the cool season will require an inspection in the warm season to confirm viability for final stabilization. Areas where sod has failed to thrive shall be replaced with living green sod at the contractor's expense.

2. The contractor will be paid for 75%, less applicable retainage, of the seeding installed during the monthly pay period based on the percentage of work installed assessed against the approved Schedule of Values pay item. The remaining 25% will be paid once final stabilization of the seeded areas is achieved.
3. 100% payment will be made for Seeding and Sod if transfer to DFW as accepted per terms in 4.3 below.

#### **4.3 TRANSFER OF FINAL STABILIZATION TURF ESTABLISHMENT TO DFW AFTER SUBSTANCIAL COMPLETION OF CONSTRUCTION PROJECT**

- A. Due to seasonal delays in achieving final stabilization of turf, ongoing maintenance of newly planted turf and/or establishment of warm season turf may be transferred to DFW ETAM contingent upon the following.
  1. Contractor may request transfer as defined below.
  2. The contractor has complied with all requirements of Section: 32 92 19 SEEDING and SODDING.
  3. The newly planted turf must be healthy and growing satisfactorily at the time of transfer.
  4. Temporary irrigation systems will be left in place for use by DFW until final establishment. These systems remain the property of the contractor, but DFW will operate and maintain this equipment. At final establishment, the contractor may pick up the equipment or release it to DFW.
  5. Irrigation by contractor water truck will be continued by DFW using a DFW water truck.
  6. Provided the contractor complied with all sod and turf planting specifications, DFW will replant areas which fail to establish in a timely manner. DFW will mow, provide weed control, and fertilization as required to bring newly planted areas to final stabilization.
  7. Sodded and seeded turf is under warranty for one year after substantial completion unless failure was caused by inadequate maintenance by DFW.
  8. Seed and Sod inspections noted above must be completed and approved.
    - a. SECTION 3.2 d & 3.3D, SEEDING AND/OR SODDING MUST BE PLACED AND WITHIN SPECIFICATION DETAILED ABOVE.

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10. Final approval of this transfer will be completed after a site visit is scheduled with ETAM & EAD representatives after installation.
11. After final inspection, the Board may assume responsibility for SWPP closeout.

**- END OF SECTION -**