SPOKANE INTERNATIONAL AIRPORT
BUSINESS PARK AND FELTS FIELD
9000 W AIRPORT DRIVE, SUITE 204
SPOKANE, WA 99224

SPENT ADF RECOVERY MAINTENANCE SERVICES
Project #18-41-9999-009

Addendum No. 1

DATE OF ADDENDUM: March 21, 2018

The following changes, additions, and/or deletions are considered as Addendum No. 1, and are hereby made a part of the contract documents. All bidders are required to base their bid upon the information furnished in this addendum; and as required in the contract documents. The Contractor is required to acknowledge Addendum No. 1 in their company proposal. Failure to acknowledge addendum on the bid form will result in bid being declared non-responsive.

The bid submission due date scheduled for **March 23, 2018 at 2:00 pm** at the Spokane International Airport has not changed.

CHANGES, ADDITIONS, DELETIONS AND/OR CLARIFICATIONS TO THE CONTRACT DOCUMENTS:

Request for Bids, response to questions date and time is changed to no later than Wednesday, March 21, 2018 at 3:30.

Attachment A § 7.0 – OTHER SERVICES, shall be modified to read:

SECTION 7 OTHER SERVICES

7.0 The Spokane International Airport estimates two thousand (2,000) labor hours for the collection and application of spent ADF. The estimated hours will not be included in the monthly service amounts. The estimated hours will be a separate charge billed per hour(s) of labor per month.

Bid Form § 1.06.A – OFFER, shall be modified to read:

1.06 OFFER

A. For the purposes of this Bid Form the Airport estimates two thousand (2,000) hours for Other Services.

Exhibit 4 – Drill Calibration, is added and attached.

ATTACHMENTS:

Attached are the following documents to be acknowledged with each contractor bid package as part of Addendum No. 1.

Attachments to this addendum are as follows:

1. Exhibit 4 – Drill Calibration
2. Mandatory Pre-Bid Conference Attendance Sign-In Sheet
3. Mandatory Pre-Bid Conference Minutes

EXHIBIT 4

Drill Calibration

Several methods for calibrating drills are presented below. For any of these methods, ensure that all units are properly delivering seed before conducting any calibration. Look for any loose hoses or chains, gears, etc. that might affect seed delivery.

For all target recommendations, we are expecting a germination rate of 90 percent. For example, when 30 to 35 seeds per sq. ft. is recommended, we are expecting 27 to 32 plants to emerge. Seeding rates for no-tillage are slightly higher than conventional tillage, because we anticipate slightly lower emergence rates.

When calibrating a drill, make note of the standard germination of seed as marked on the seed tag. That number can be used with the desired live seeding rate to calculate how many total seeds to drop. For example, if the targeted live seeding rate is 35 live seeds per sq. ft. and the standard germination is 80 percent, then the total seeds needed are 38 seeds per sq. ft. Table 4-1 can help with calculations of standard germination and adjusted seeding rate.

Once desired seeding rate has been determined, based on field conditions and standard germination of the seed, then the following methods can be used.

Method 1: (Most accurate) A five-step process for proper grain-drill calibration follows:

- **Step 1:** Use Table 4-2 as a guide for seeding rates at various row widths when the seed germination test is 90 percent or higher. Table 4-3 gives estimates of the pounds of seed needed per acre at seeding rates of 30 and 35 seeds per square foot for a known seed size.

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Table 4-2. Recommended number of wheat seeds to plant per 50 drill-row feet.			
Row width (in)	**Length of row needed for 1 sq. ft. (in)**	**Seeds/ sq. ft.**	
		30	**35**
		Seeds/50 drill-row feet needed*	
4	36.0	500	600
6	24.0	750	900
7	20.6	850	1000
7.5	19.2	950	1100
8	18.0	1000	1150
10	14.4	1250	1450
*Assumes 90 percent germination rate.			

T able 4-3. Number of pounds of wheat seed needed per acre, depending on seed size and seeding rate.		
Seeds/lb.*	**Seeds/ sq. ft.**	
	30	**35**
	lb./acre	
10,000	131	152
12,000	109	127
14,000	93	109
16,000	82	95
18,000	73	85
20,000	65	76
*Based on 90 percent or greater germination.		

- **Step 2:** Calculate the number of seeds required in 50 drill-row feet. For example, with 7-inch wide rows and on-time planting, an appropriate seeding rate would be 20 seeds per drill-row foot multiplied by 50 feet, which equals 1,000 seeds planted every 50 feet of row. Count 1,000 seeds of each variety and put them in a graduated tube, such as a rain gauge, or other clear tube or cylinder. Mark the level of the 1,000 seeds on the tube. Or, if you have scales, weigh the 1,000 seeds of each variety.
- **Step 3:** Hook a tractor to the grain drill so that the drive wheels of the drill can be raised off the ground and the drive gears can be engaged. Jack up the drive wheel so it clears the ground and turn the wheel several revolutions to be certain all working parts are turning freely. Check all drill spouts for blockages.
- **Step 4:** Determine the number of revolutions the drive wheel must make to travel 50 feet. Measure the distance around the drive wheel. This distance can be measured directly with a tape measure or calculated by measuring the diameter or distance across the tire and multiplying that distance by a factor of 3.2. For example, if the drive wheel measures 30 inches from tread to tread (diameter), the distance around the tire should measure 96 inches (30 x 3.2). The number of tire revolutions per 50 feet (50 x 12 inches) equals 600 inches. Divide 600 inches by 96 inches to get 6.25 revolutions of the tire per 50 feet of travel. Make a mark on the wheel so the number of revolutions can be conveniently determined when the wheel is turned.
- **Step 5:** Calibrate the drill.
    1. Put at least a quart of seed of the variety to be calibrated over at least two drill spouts. (You get better accuracy if you use more than one drill spout.)
    2. Set the drill on a rate setting expected to be close to that desired, and turn the wheel the number of revolutions needed for 50 feet (as determined in step 4) while catching the seed from each spout in a separate container. Pour the seed caught into the pre-calibrated tube (as determined in step 2), and check the level. Repeat for each of the drill spouts.
    3. Change settings as needed, and repeat until you get the appropriate number of seeds (level marked on the tube). Repeat the above steps for each variety.

Option: The above procedure also can be used under actual field conditions by catching seed while the drill is traveling a distance of 50 feet. Use Table 4-4 to determine how much seed should be collected from each row unit.

Method 2: (less accurate) Put the wheat seed in the hopper of the drill to cover two or three drill spouts. Keep the seed tag for reference.

1. Pull one or more hoses off of the planter units and attach bags to the bottom of the hoses using either zip ties or duct tape.
2. With the drill engaged, drive the drill for 50 feet.
3. Pull the bags off of the row units and weigh the seed.
4. Use Table 4-4 to determine how much seed should be collected from each row unit. Use the seed tag to identify how many wheat seeds are in a pound. Each variety and possibly each seed lot of wheat will be a different seed size.

5. Adjust the settings on the drill if necessary.

Table 4-4. Weight of seed needed for one row unit and 50 feet of row, depending on seed size, target seeding rate and spacing between row units (assuming 90% seed germination).

Seed Size (Seeds/lb.)	Row Width (in)					
	7	7.5	8	7	7.5	8
	Seed collected from one unit in 50 ft. of row					
	Ounces			grams		
30 seeds/ sq. ft. (target seeding rate)						
10000	1.55	1.67	1.78	44.1	47.2	50.3
12000	1.3	1.39	1.48	36.7	39.4	42
14000	1.11	1.19	1.27	31.5	33.7	36
16000	0.97	1.04	1.11	27.5	29.5	31.5
18000	0.86	0.93	0.99	24.5	26.2	28
20000	0.78	0.83	0.89	22	23.6	25.2
35 seeds/ sq. ft. (target seeding rate)						
10000	1.81	1.94	2.07	51.4	55.1	58.7
12000	1.51	1.62	1.73	42.8	45.9	49
14000	1.3	1.39	1.48	36.7	39.4	42
16000	1.13	1.22	1.3	32.1	34.5	36.7
18000	1.01	1.08	1.15	28.6	30.6	32.6
20000	0.91	0.97	1.04	25.7	27.6	29.4

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Table 4-4. Weight of seed needed for one row unit and 50 feet of row, depending on seed size, target seeding rate and spacing between row units (assuming 90% seed germination). (continued)

Seed Size (Seeds/lb.)	Row Width (in)					
	7	7.5	8	7	7.5	8
	Seed collected from one unit in 50 ft. of row					
	Ounces			grams		
40 seeds/ sq. ft. (target seeding rate)						
10000	2.07	2.22	2.37	58.8	63	67.1
12000	1.73	1.85	1.97	49	52.5	55.9
14000	1.48	1.59	1.69	42	45	48
16000	1.3	1.39	1.48	36.7	39.4	42
18000	1.15	1.23	1.32	32.6	35	37.3
20000	1.04	1.11	1.18	29.4	31.5	33.6

Calculation to determine seeds needed:
Ounces of seed needed =[seeds/ sq. ft. *(50 ft.*row width in ft.) seeds per pound)*16 ounces per pound]/0.9
Where seeding rate is seeds/ sq. ft., Row width is in feet, and 0.9 is 90% germination.

Method 3: (least accurate) Calculate out how many pounds of seed should be planted for each acre. For example, a target of 35 seeds per square foot is 1,524,600 seeds per acre. If the seed size is 10,000 seeds per pound, the total pounds per acre needed is 152 pounds per acre (Table 4-3).

1. Put a specific amount of wheat seed into the drill hopper (either fill to a certain line inside the hopper or fill the hopper to the top).
2. Plant a specified area, either one acre or one-half acre.
3. Weigh out 200 pounds of seed. Put seed into the hopper until you have filled the hopper back to the specified height.
4. Weigh the remaining seed to determine how many pounds were added back to the hopper.

SPOKANE INTERNATIONAL AIRPORT

#18-41-9999-009 SPENT ADF RECOVERY MAINTENANCE SERVICES

Wednesday, March 14, 2018 @ 10:00 a.m.

NAME	COMPANY	PHONE	EMAIL
JEFF MITCHELL	SIA	509-455-6437	jmitchell@spokaneairports.net
MARGARET MERIN	SIA	509-455-6404	mmerin@spokaneairports.net
Todd Robison	Inland Technologies	509-939-2477	TRobison@inlandgroup-ct
Chris Winkler	Wm. Winkler Company	509-489-6100	chris@wmwinkler.com

SPENT ADF RECOVERY MAINTENANCE SERVICES, PROJECT #18-41-9999-009
MANDITORY PRE-BID MEETING, Wednesday, March 14, 2018

Minutes:

Meeting started exactly at 10:00am.

See attached Sign-in Sheet for Attendance

1. Important dates
    a. Bidders Check list
        i. Submission of Questions - Monday, March 19, 2018 2:00 PM All questions from this point forward must be in writing or email.
        ii. Responses to Questions - Wednesday, March 21, 2018 3:30 PM via an addendum
            1. The date on the bid documents is incorrect. A correction to the date given here will be implemented with Addendum #1.
        iii. Bid/Quote due date - Friday, March 23, 2018 2:00 PM in the SIA Boardroom
    b. Board approval date - Thursday, April 26, 2018
2. Important Items
    a. Ensure you completely read and understand the Instructions to Bidders, Special Provisions to the Instruction, General Conditions and Supplement to General Conditions. You are responsible.
    b. This is a Public Works job, prevailing wage is required.
    c. Retainage – Five percent (5%) retainage will be withheld until the end of each contract year. Please see the Supplement to General Conditions § 2.04 for additional information. A Retainage Bond may be used in lieu of Retainage.
    d. A 5% Bid security is required as per the Instructions to Bidders, ARTICLE 5.2.
    e. Certificate of insurance requirement is $5M
3. ***NEW LAW***
    a. Please notice the Wage Compliance Certification. It is on the checklist and is a requirement.
4. Addendums will be issued via email to those on the sign in sheet. Additionally, they will be posted on our web page for the project.

PM – Jeff Mitchell

1. We provide the three trucks for the collection. We will do the maintenance but the contractor will do the check lists such as checking the oil, etc.
2. It is the responsibility of the contractor to provide the equipment for the land application.
3. It is important that land application dates and deadlines are met to ensure we stay in compliance with our permit. Weather can make this hard to staff adequately, it is the contractor's responsibility to ensure all deadlines are met.

Q&A

Q. Is there a Landscaping trade required for prevailing wage?
A. It is possible. Please refer to General Conditions § 5.04, the last sentence of "A" states, "It is the Contractor's responsibility to verify the applicable prevailing wage rate.", therefore, use the Scope of Work (Attachment A) and all Exhibits to make this determination.