

BIDDING AND CONTRACT DOCUMENTS
ADDENDUM NUMBER ONE
STATE PROJECT NO. 13-026A-1

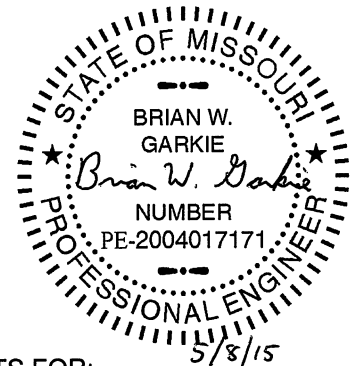
DATE: MAY 8, 2014

MEMPHIS MEMORIAL AIRPORT

CRAWFORD, MURPHY, TILLY, INC.
 ONE MEMORIAL DRIVE, SUITE 500
 SAINT LOUIS, MISSOURI 63102

TO: ALL PLANHOLDERS AND POTENTIAL BIDDERS

SUBJECT: ADDENDUM NUMBER ONE TO THE BIDDING DOCUMENTS FOR:
 T-HANGAR TAXILANE CONSTRUCTION



This addendum forms a part of the bidding and contract documents, and modifies the original bidding documents dated April 22, 2014. This addendum must be signed on the last page and included with the submitted Bid Package. An acknowledgement sheet is also attached. This must be signed and returned to Crawford, Murphy, & Tilly, Inc via fax or mail by May 27, 2014. FAILURE TO NOT RECOGNIZE THE ADDENDUM ON THE BID FORM MAY SUBJECT THE BIDDER TO DISQUALIFICATION.

The Contract Documents are revised as follows:

CONTRACT PROPOSAL:

Page 1-2, NOTICE TO BIDDERS

REPLACE list of contract work items with the following:

Base Bid:

1. Mobilization	Lump Sum
2. Class A Excavation	2,930 C.Y.
3. Silt Fence	1,838 L.F.
4. Silt Dike Ditch Check	13 E.A.
5. 4" Crushed Aggregate Base Course	4,181 S.Y.
6. Pavement Removal 3"ACC/8" Crushed AGG	33.5 S.Y.
7. 12" Reinforced Concrete Pipe	121 L.F.
8. 15" Reinforced Concrete Pipe	138 L.F.
9. 15" Reinforced Concrete Pipe Flared End Section	1 E.A.
10. 4" Perforated Underdrain Pipe	878 L.F.
11. 4" Non-Perforated Underdrain Pipe	26 L.F.
12. Underdrain Cleanout	3 E.A.
13. Underdrain End Section	1 E.A.
14. Direct Connection	1 E.A.
15. Precast Drop Inlet	2 E.A.
16. Airport Seeding	4 Acres
17. Airport Mulching	4 Acres
18. Airport Underground Cable (1-1/C, #8 AWG, 5KV)	196 L.F.
19. Relocate Airport Taxiway Lights, Base Mounted	1 E.A.
20. Relocate Airport Taxiway Lights, Stake Mounted	3 E.A.
21. Soil Stabilization – 12"	6,353 S.Y.

Additive Alternate No. 1:

- | | |
|---|------------|
| 22. 2" Additional Crushed Aggregate Base Course | 4,181 S.Y. |
| 23. Mineral Aggregate (BP-1 Mix) | 837 Tons |
| 24. Asphalt Cement (BP-1 Mix) | 44 Tons |

Additive Alternate No. 2:

- | | |
|---------------------------------|------------|
| 25. 6" Portland Cement Concrete | 3,829 S.Y. |
|---------------------------------|------------|

Page 129-134, ITEM MO-155 FLY ASH TREATED SUBGRADE

DELETE Item MO-155.

Page 236A-236E, ITEM SP-1 SOIL STABILIZATION

ADD Item SP-1.

Page 245-247, PROPOSAL FORM

REPLACE pages 245-247 with 245A-247A.

PLANS

Sheet 2 of 25

REPLACE Sheet 2 of 25 with Revision 1.

CLARIFICATIONS

The revised pages of the proposal form can be inserted into the binding of the book or stapled over top of the existing pages.

CRAWFORD, MURPHY & TILLY, INC.

This Addendum consists of 2 pages plus a fax transmittal sheet.

Signed
(Contractor)

Date

Contractor to sign and date this Addendum #1 to acknowledge receipt. This signed Addendum must be included with the submitted Bid Package.

FAX TRANSMITTAL

To: Crawford, Murphy & Tilly, Inc

Attention: **Brian Garkie**

Re: Addendum #1

Fax 314.436.0723

From:

(name)

(company)

Date:

To verify that all contractors are in receipt of this addendum, Contractors are asked to sign and date this acknowledgement sheet. The Contractor should fax or mail to Crawford, Murphy, & Tilly, Inc. at the number listed below by **May 27, 2015**.

Crawford, Murphy, & Tilly, Inc.
One Memorial Drive, Suite 500
Saint Louis, Missouri 63102

Fax: (314) 436-0723
Phone: (314) 436-5500

BY: CRAWFORD, MURPHY, & TILLY, INC.

ITEM SP-1 SOIL STABILIZATION

DESCRIPTION

SP-1-1.1 This work shall consist of the addition of self-cementing fly ash, hydrated lime, by-product hydrated lime, by-product non-hydrated lime, or Type I Portland cement along with mixing and compacting the material to the required density to develop a stabilized subgrade section. This item applies to natural ground or fill and shall be constructed as specified herein and in conformity with the typical sections, lines and grades as shown on the plans or as established by the Engineer.

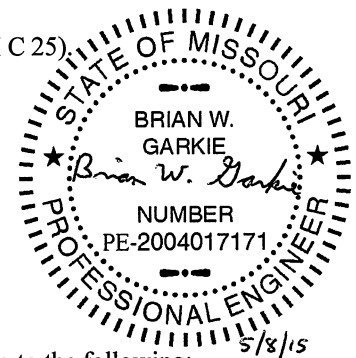
MATERIALS

SP-1-2.1 FLY ASH. Fly ash shall comply with the physical requirements of ASTM D-5239 6.4 maintaining a minimum compressive strength of 500 psi at 7 days and the chemical requirements of ASTM Specifications C-618, Section 3.3 when sampled and tested in accordance with Sections 5, 6 and 8, unless otherwise shown on the plans. Fly ash shall be of the Class "C" designation containing a minimum of 25 percent CaO. The source of the ash shall be selected by the Contractor and approved by the Engineer in advance of stabilization operations in order that the required laboratory tests can be completed prior to construction without delaying the work. The fly ash shall conform to Department of Natural Resources fly ash regulations.

SP-1-2.2 HYDRATED LIME. Hydrated lime shall be according to ASTM C 207, Type N with the following modifications:

- A. Total calcium and magnesium oxides (nonvolatile basis) = 90% minimum (ASTM C 25).
- B. Free calcium oxide (as-received basis) = 5% maximum (ASTM C 25).
- C. Free moisture (as-received basis) = 4% maximum (ASTM C 25).
- D. Sieve Analysis:

Sieve	Maximum % Retained
No. 4 (4.75 mm)	0
No. 30 (600 μ m)	2.5
No. 100 (150 μ m)	15



SP-1-2.3 BY-PRODUCT, HYDRATED LIME. By-product, hydrated lime shall be according to the following:

- A. Total calcium and magnesium oxides (nonvolatile basis) = 90% minimum (ASTM C 25).
- B. Available calcium hydroxide (rapid sugar test, ASTM C 25) plus total MgO content calculated to be equivalent Ca(OH)_2 = 70% minimum (ASTM C 25).
- C. As-received loss on ignition (carbon dioxide plus moisture, combined and free) = 5% maximum (ASTM C 25).
- D. Free moisture (as-received basis) = 4% maximum (ASTM C 25).
- E. SO_3 = 10% maximum.
- F. Sieve Analysis.

Sieve	Maximum % Retained
No. 4 (4.75 mm)	0
No. 30 (600 μ m)	10
No. 100 (150 μ m)	60

SP-1-2.4 BY-PRODUCT, NON-HYDRATED LIME. By-product, non-hydrated lime shall be according to the following:

- A. Total calcium and magnesium oxides (nonvolatile basis) = 60% minimum (ASTM C 25).
- B. Available calcium hydroxide (rapid sugar test, ASTM C 25) plus total MgO content calculated to be equivalent Ca(OH)_2 = 30% minimum (ASTM C 25).

- C. As-received loss on ignition (carbon dioxide plus moisture, combined and free) = 40% maximum (ASTM C 25).
- D. Free moisture (as-received basis) = 4% maximum (ASTM C 25).
- E. SO₃ = 10% maximum
- F. Sieve Analysis:

Sieve	Maximum % Retained
No. 4 (4.75 mm)	5
No. 30 (600 µm)	10
No. 100 (150 µm)	30

SP-1-2.5 CEMENT. Cement shall be Type I Portland.

SP-1-2.6 WATER. The water used in the stabilized mixture shall be clean, clear, free of sewage, vegetable matter, oil, acid and alkali. Water known to be potable may be used without testing. All other sources shall be tested in accordance with AASHTO T26 and approved by the Engineer.

SP-1-2.7 SOIL. The soil for this work shall consist of materials on the site or selected materials from other sources and shall be uniform in quality and gradation, and shall be approved by the Engineer. The soil shall be free of roots, sod, weeds, and stones larger than 2-1/2 inches.

COMPOSITION

SP-1-3.1 MATERIAL COMPOSITION. From preliminary subsurface investigations the estimated application rate is 16 percent Class C fly ash per dry weight of soil or 6% lime per dry weight of soil. **The contractor shall be responsible for obtaining field samples and preparing laboratory testing to determine the actual application rate and obtain a Proctor to determine optimum moisture and compaction in accordance with ASTM D 698. The testing firm providing the tests shall be fully accredited to perform all necessary testing. These tests shall be performed and reports provided to the Engineer before any soil stabilization operations begin. The minimum application rate that will be required for the soil stabilization to be included for payment is 14 percent per dry weight of soil for fly ash and 5% per dry weight of soil for lime and cement. The Contractor may select which stabilizing material to use from the list of materials shown in SP-1-2.**

SP-1-3.2 TOLERANCES. At final compaction, the stabilizing material and water content for each course of subgrade treatment shall conform to the following tolerances:

<u>Material</u>	<u>Tolerance</u>
Stabilizing Material	+ 0.5%
Water	0% to +2%

EQUIPMENT

SP-1-4.1 EQUIPMENT. The machinery, tools, and equipment necessary for proper execution of the work shall be on the project and approved by the Engineer prior to beginning construction operations. Blending of the soil-stabilization material mixture shall be accomplished by a direct hydraulic drive pulvamer. Compaction shall be achieved using sheepsfoot or padfoot rollers. Smooth steel wheeled or rubber-tired rollers will not be permitted except for finish rolling of the stabilized section.

All machinery, tools and equipment used shall be maintained in a satisfactory and workmanlike manner.

Stabilizing material shall be stored and handled in closed weatherproof containers until immediately before distribution. Stabilizing material exposed to moisture prior to mixing with soils shall be discarded. If stabilizing material is furnished in trucks, each truck shall have the weight of stabilizing material certified on public scales or the Contractor shall place a set of standard platform truck scales or hopper scales at a location approved by the Engineer.

CONSTRUCTION METHODS

SP-1-5.1 GENERAL. It is the primary purpose of this specification to secure a completed section of treated material which contains a uniform stabilizing material/soil mixture with no loose or segregated areas; has a uniform density and moisture content; is well bound for its full depth. It shall be the responsibility of the Contractor to regulate the sequence of his/her work; to process a sufficient quantity of material to provide a completed section as shown on plans; to use the proper amounts of stabilizing material; to achieve final compaction within the specified time; to maintain the work; and to rework the lifts as necessary to meet the above requirements.

SP-1-5.2 WEATHER LIMITATION. The soil-stabilizing material mixture shall not be mixed while the atmospheric temperature is below 40°F or when conditions indicate that temperatures may fall below 40°F within 24 hours, when it is foggy or rainy, or when soil or subgrade is frozen.

SP-1-5.3 PREPARATION OF SUBGRADE. Before other construction operations are begun, the area where the stabilized material will be placed shall be cut and shaped in conformance with the lines and grades shown on the plans.

All areas shall be firm and able to support, without displacement, the construction equipment and the compaction hereinafter specified. Soft or yielding subgrade shall be corrected and made stable by scarifying, adding stabilizing material, and compacting until it is of uniform stability.

Where the stabilized section is to extend below the cut surface, the stabilizing material shall be distributed uniformly across the surface in a quantity sufficient to provide the specified content. The stabilizing material shall be incorporated with a pulv mixer with water being added to achieve the specified moisture content.

SP-1-5.4 MOISTURE CONTROL. Moisture control shall be achieved through use of a pulv mixer equipped with a spray bar in the mixing drum capable of applying sufficient quantities of water to achieve the required moisture content for the soil-stabilizing material mixture. The system shall be capable of being regulated to the degree necessary as to maintain moisture contents within the recommended range.

Required moisture contents will be established by the Engineer based on laboratory tests made the Contractor's testing firm with the site soils and specific stabilizing material to be used for the treatment. Final moisture content of the mix, immediately prior to compaction shall not exceed the specified range of moisture content. If moisture contents exceed the specified limits, additional stabilizing material may be added to lower moisture contents to the required limits. Lowering moisture contents by aeration following addition of stabilizing material will not be allowed.

SP-1-5.5 APPLICATION OF STABILIZING MATERIAL. Immediately prior to application of stabilizing material, the area shall be bladed to allow uniform distribution of stabilizing material. The stabilizing material shall be spread only on that area where the complete placement operation can be completed within 2 hours. The application and mixing of the stabilizing material with the soil shall be accomplished by the methods hereinafter described.

The stabilizing material shall be spread uniformly over the top of the subgrade by an approved screw-type auger spreader box or other approved spreading equipment. The amount of stabilizing material spread shall be the amount required for mixing to the specified depth which will result in the percentage determined in the job mix formula.

The stabilizing material shall be distributed at a uniform rate and in such manner as to reduce the scattering of stabilizing material by wind to a minimum. Stabilizing material shall not be applied when wind conditions, in the opinion of the Engineer, are detrimental to a proper application or becomes objectionable to adjacent property owners. No contract days will be given back if operations are suspended due to wind conditions. **A motor grader shall not be used to spread the stabilizing material.**

SP-1-5.6 MIXING. The mixing procedure utilized shall be for Dry Placing as hereinafter described.

The full depth of the treated subgrade shall be mixed with a rotary pulv mixer which utilizes a direct hydraulic drive. Stabilizing material shall not be left exposed for more than 30 minutes after distribution. The mixing machine shall make two coverage's. Water shall be added through use of a pulv mixer equipped with a spray bar in the mixing drum capable of applying sufficient quantities of water to achieve the required moisture content of the soil-stabilizing

material mixture. The system shall be capable of being regulated to the degree as to maintain moisture contents within the recommended range.

Required moisture contents shall be established based on laboratory tests with the site soils and specific stabilizing material to be used for the treatment. Final moisture content of the mix, immediately prior to compaction, shall be determined in accordance with ASTM D 698 and shall not be below nor more than 2% above the optimum moisture content for maximum density of the mix. If moisture contents exceed the specified limits, additional stabilizing material may be added to lower the moisture content to the required limits. Lowering moisture contents by aeration following addition of the stabilizing material will not be permitted.

If the soil-stabilizing material mixture contains clods greater than 1-1/2" in size, they shall be reduced in size by additional pulverization.

SP-1-5.7 COMPACTION. Compaction of the soil-stabilizing material mixture shall begin immediately after mixing of the stabilizing material and be completed within two hours following incorporation of stabilizing material. Compaction of the mixture shall begin at the bottom and shall continue until the entire depth of mixture is uniformly compacted to the specified density using sheepfoot or padfoot rollers. A test for both density and moisture content of the soil-stabilizing material mixture shall be taken for each 750 square yards of material placed.

The field density of the compacted mixture shall be at least 95 percent of the maximum density of laboratory specimens prepared from samples taken from material in place. The specimens shall be compacted and tested in accordance with ASTM D 698. The in-place field density shall be determined in accordance with ASTM D 1556, ASTM D 2167 or ASTM D 6938.

In lieu of the core method of field density determination, acceptance testing may be accomplished using a nuclear gage in accordance with ASTM D 6938 using the Direct Transmission Method. Calibration and operation of the gage shall be in accordance with the requirements of the manufacturer. The operator of the nuclear gage must show evidence of training and experience in the use of the instrument. The gage shall be standardized daily in accordance with ASTM D 6938.

All irregularities, depressions, or weak spots which develop shall be corrected immediately by scarifying the areas affected, adding or removing material as required and remixing and re-compacting. The surface of the course shall be maintained in a smooth condition, free from undulations and ruts, until other work is placed thereon or the work is accepted.

In addition to the requirements specified for density, the full depth of the material shown on the plans shall be compacted to the extent necessary to remain firm and stable under construction equipment. After each section is completed, tests will be made by the Engineer. If the material fails to meet the density requirements, it shall be reworked to meet these requirements. Throughout this entire operation, the shape of the course shall be maintained by blading, and the surface upon completion shall be smooth and shall conform with the typical section shown on the plans and to established lines and grades. Should the material, due to any reason or cause, lose the required stability, density and finish before the work is accepted, it shall be reprocessed, recompact and refinished at the sole expense of the Contractor. Reprocessing shall follow the same pattern as the initial stabilization including the addition of stabilizing material. The final surface of the stabilized material shall be finished rolled with a steel wheeled or rubber-tired roller.

SP-1-5.8 FINISHING AND CURING. After the final layer or course of the stabilizing material treated subgrade has been compacted, it shall be brought to the required lines and grades in accordance with the typical sections. The finished surface shall not vary more than 3/8 inch when tested with a 16-foot straightedge applied parallel with and at right angles to the pavement centerline. Any variations in excess of this tolerance shall be corrected by the Contractor, at his/her own expense, in a manner satisfactory to the Engineer.

After the stabilizing material treated course has been finished as specified herein, the surface shall be protected against rapid drying by either of the following methods for a period of not less than three days or until the pavement section is placed.

- 1) Maintain in a thorough and continuously moist condition by sprinkling.
- 2) Apply a 2-inch layer of earth on the completed course and maintain in a moist condition.

SP-1-5.9 THICKNESS. The thickness of the stabilizing material treated subgrade shall be determined by depth tests or cores taken at intervals so that each test shall represent no more than 300 square yards. Where the thickness is deficient by more than 1/2 inch, the Contractor shall correct such areas in a manner satisfactory to the Engineer. The Contractor shall replace, at his/her expense, the soil/stabilizing material material where borings are taken for test purposes.

SP-1-5.10 MAINTENANCE. The contractor shall maintain, at his/her own expense, the entire stabilizing material-treated subgrade in good condition from the start of work until all the work has been completed, cured, and accepted by the Engineer.

METHOD OF MEASUREMENT

SP-1-6.1 The yardage of processed stabilizing material-treated subgrade to be paid for shall be the number of square yards completed and accepted subject to the minimum stabilizing material percentages stated herein.

SP-1-6.2 The amount of stabilizing material shall not be measured for payment but shall be considered incidental to the soil stabilization item.

BASIS OF PAYMENT

SP-1-7.1 Payment shall be made at the contract unit price per square yard for soil stabilization of the thickness specified. The price shall be full compensation for furnishing all material, including the stabilizing material, and for all preparation, delivering, placing, mixing and compacting these materials, shaping and maintaining, for all curing including water, and all labor, equipment, tools and incidentals necessary to complete this item.

Payment will be made under:

Item SP-1-7.1	Soil Stabilization – 12”--per square yard
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TESTING REQUIREMENTS

ASTM D 698	Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5 lb. (2.49 kg) Rammer and 12-in. (305mm) Drop
ASTM D 1556	Density of Soil in Place by the Sand-Cone Method
ASTM D 2167	Density of Soil in Place by the Rubber-Balloon Method
ASTM D 6938	Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).
AASHTO T26	Quality of Water to be Used in Concrete

MATERIAL REQUIREMENTS

ASTM C 25	Standard Test Methods for Chemical Analysis of Limestone, Quicklime, and Hydrated Lime
ASTM C 618	Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete

END ITEM SP-1

PROPOSAL FORM
CITY OF MEMPHIS, MISSOURI
 State Block Grant Project No. **13-026A-1**

TO: Mayor

The undersigned, in compliance with the request for bids for construction of the following Project:

T-HANGAR TAXILANE CONSTRUCTION:

hereby proposes to furnish all labor, permits, material, machinery, tools, supplies and equipment to faithfully perform all work required for construction of the Project in accordance with the project manual, project drawings and issued Addenda within the specified time of performance for the following prices:

BASE BID							
BID ITEM	FAA or MoDOT SPEC.	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		EXTENSION	
				DOLLARS	CTS	DOLLARS	CTS
1	MO-100-4.1	Mobilization	1 Lump Sum				
2	MO-152-4.1	Class A Excavation	2,930 C.Y.				
3	MO-156-4.5.1	Silt Fence	1,838 L.F.				
4	MO-156-4.5.2	Silt Dike Ditch Check	13 Each				
5	MO-209-5.1	4" Crushed Aggregate Base Course	4,181 S.Y.				
6	MO-601-5.1	Pavement Removal 3"ACC/8" Crushed Aggregate	33.5 S.Y.				
7	MO-701-5.1	12" Reinforced Concrete Pipe	121 L.F.				
8	MO-701-5.2	15" Reinforced Concrete Pipe	138 L.F.				
9	MO-701-5.3	15" Reinforced Concrete Pipe Flared End Section	1 Each				
10	D-705-5.1	4" Perforated Underdrain Pipe	878 L.F.				
11	D-705-5.2	4" Non-Perforated Underdrain Pipe	26 L.F.				
12	D-705-5.3	Underdrain Cleanout	3 E.A.				
13	D-705-5.4	Underdrain End Section	1 E.A.				
14	D-705-5.5	Direct Connection	1 E.A.				
15	D-751-5.1	Precast Drop Inlet	2 Each				

16	MO-901-5.1	Airport Seeding	4 Acre				
17	MO-908-5.1	Airport Mulching	4 Acre				
18	MO-108-5.1	Airport Underground Cable (1-1/c, #8 AWG, 5kV)	196 L.F.				
19	MO-125-5.1	Relocate Airport Taxiway Lights, Medium Intensity, Base Mounted	1 Each				
20	MO-125-5.2	Relocate Airport Taxiway Lights, Medium Intensity, Stake Mounted	3 Each				
21	SP-1-7.1	Soil Stabilization – 12”	6,353 S.Y.				
TOTAL BID (Base Bid)							

ADDITIVE ALTERNATE NO. 1							
BID ITEM	FAA or MoDOT SPEC.	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		EXTENSION	
				DOLLARS	CTS	DOLLARS	CTS
22	MO-209-5.2	2” Additional Crushed Aggregate Base Course	4,181 S.Y.				
23	MO-401F-8.1	Mineral Aggregate (BP-1 Mix)	837 Tons				
24	MO-401F-8.2	Asphalt Cement (BP-1 Mix)	44 Tons				
TOTAL BID (Additive Alternate No. 1)							

TOTAL BID							
TOTAL BID (Base Bid + Additive Alternate No. 1)							

ADDITIVE ALTERNATE NO. 2							
BID ITEM	FAA or MoDOT SPEC.	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		EXTENSION	
				DOLLARS	CTS	DOLLARS	CTS
25	MO-501-8.1	6” Portland Cement Concrete Pavement	3,829 S.Y.				
TOTAL BID (Additive Alternate No. 2)							

TOTAL BID	
TOTAL BID (Base Bid + Additive Alternate No. 2)	

ACKNOWLEDGEMENTS BY BIDDER

- a. By submittal of a proposal, the BIDDER acknowledges and accepts that the quantities established by the OWNER are an approximate estimate of the quantities required to fully complete the Project and that the estimated quantities are principally intended to serve as a basis for evaluation of bids. The BIDDER further acknowledges and accepts that payment under this contract will be made only for actual quantities and that quantities will vary in accordance with the General Provisions subsection entitled "Alteration of Work and Quantities".
- b. The BIDDER acknowledges and accepts that the Bid Documents are comprised of the documents identified within the General Provisions. The BIDDER further acknowledges that each the individual documents that comprise the Bid Documents are complementary to one another and together establishes the complete terms, conditions and obligations of the successful BIDDER.
- c. As evidence of good faith in submitting this proposal, the undersigned encloses a bid guaranty in the form of a certified check, cashier's check or bid bond in the amount of 5% of the bid price. The BIDDER acknowledges and accepts that refusal or failure to accept award and execute a contract within the terms and conditions established herein will result in forfeiture of the bid guaranty to the owner as a liquidated damage.
- d. The BIDDER acknowledges and accepts the OWNER'S right to reject any or all bids.
- e. The BIDDER acknowledges and accepts the OWNER'S right to hold all Proposals for purposes of review and evaluation and not issue a notice-of-award for a period not to exceed sixty (60) calendar days from the stated date for receipt of bids.
- f. The undersigned agrees that upon written notice of award of contract, he or she will execute the contract within fifteen (15) calendar days of the notice-of-award, and furthermore, and provide executed payment and performance bonds within ten (10) calendar days from the date of contract execution. The undersigned accepts that failure to execute the contract and provide the required bonds within the stated timeframe shall result in forfeiture of the bid guaranty to the owner as a liquidated damage.
- g. Time of Performance: By submittal of this proposal, the undersigned acknowledges and agrees to commence work within ten (10) calendar days of the date specified in the written "Notice-to-Proceed" as issued by the OWNER. The undersigned further agrees to complete the Project within **fifty five (55)** Calendar days from the commencement date specified in the Notice-to-Proceed.
- h. The undersigned acknowledges and accepts that for each and every Calendar day the project remains incomplete beyond the contract time of performance, the Contractor shall pay the non-penal amount of **seven hundred fifty dollars (\$750.00)** per Calendar day as a liquidated damage to the OWNER.
- i. The undersigned prime contractor, if not a MoDOT certified DBE, hereby assures that they will subcontract **three (3)** percent of the dollar value of the prime contract to DBE firms or make good faith efforts to meet the DBE contract goal. In addition, the prime contractor will include the DBE clauses (see Supplementary Provision No. 6 of the Federal and State Provisions) required by the DBE Program adopted by MoDOT and the city in all contracts and subcontracts relating to this project. The undersigned will complete the DBE Participation information included herein, when a DBE goal has been established, including a demonstration of good faith efforts if the DBE goal is not met. If the undersigned prime contractor is a MoDOT certified DBE firm, then the prime contractor must perform at least thirty percent (30%) of the total contract value work with its own forces, and will receive DBE credit for all work which the prime contractor and any other MoDOT certified DBE firm performs directly.

5/8/2015
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SUMMARY OF QUANTITIES

BASE BID

ITEM	DESCRIPTION	UNIT	QUANTITY
MO-100-4.1	MOBILIZATION	LS	1
MO-152-4.1	CLASS A EXCAVATION	CY	2,930
<div>△</div> MO-155-7.1	AIRPORT FLY ASH TREATED SUBGRADE 12"	SY	6,353
<div>△</div> MO-155-7.2	AIRPORT FLY ASH	TON	457
MO-156-4.5.1	SILT FENCE	LF	1,838
MO-156-4.5.2	SILT DIKE DITCH CHECK	EA	13
MO-209-5.1	4" CRUSHED AGGREGATE BASE COURSE	SY	4,181
MO-601-5.1	PAVEMENT REMOVAL 3" ACC/8" CRUSHED AGGREGATE	SY	34
MO-701-5.1	12" REINFORCED CONCRETE PIPE	LF	121
MO-701-5.2	15" REINFORCED CONCRETE PIPE	LF	138
MO-701-5.3	15" REINFORCED CONCRETE PIPE FES	EA	1
D-705-5.1	4" PERFORATED UNDERDRAIN PIPE	LF	878
D-705-5.2	4" NON-PERFORATED UNDERDRAIN PIPE	LF	26
D-705-5.3	UNDERDRAIN CLEANOUT	EA	3
D-705-5.4	UNDERDRAIN END SECTION	EA	1
D-705-5.5	DIRECT CONNECTION	EA	1
D-751-5.1	PRECAST DROP INLET	EA	2
MO-901-5.1	AIRPORT SEEDING	AC	4.0
MO-908-5.1	AIRPORT MULCHING	AC	4.0
MO-108-5.1	AIRPORT UNDERGROUND CABLE (1-1/C, #8 AWG, 5KV) IN UNIT DUCT	LF	196
MO-125-5.1	RELOCATE AIRPORT TAXIWAY LIGHTS, MEDIUM INTENSITY, BASE MOUNTED	EA	1
MO-125-5.2	RELOCATE AIRPORT TAXIWAY LIGHTS, MEDIUM INTENSITY, STAKE MOUNTED	EA	3
<div>△</div> SP-1-7.1	SOIL STABILIZATION - 12"	SY	6,353

ADDITIVE ALTERNATE #1

ITEM	DESCRIPTION	UNIT	QUANTITY
MO-209-5.2	2" ADDITIONAL CRUSHED AGGREGATE BASE COURSE	SY	4,181
MO-401F-8.1	MINERAL AGGREGATE (BP-1 MIX)	TON	837
MO-401F-8.2	ASPHALT CEMENT (BP-1 MIX)	TON	44.0

ADDITIVE ALTERNATE #2

ITEM	DESCRIPTION	UNIT	QUANTITY
P-501-8.1	6" PORTLAND CEMENT CONCRETE PAVEMENT	SY	3,829

EARTHWORK SUMMARY TABLE

XS AREA	CUT (CY)	FILL (CY)
TAXILANE	751	2,930

NOTE: EXTRA FILL REQUIRED WILL BE OBTAINED FROM THE BORROW AREA

REVISIONS

NUMBER	BY	DATE
△	BWG	5/8/2015

012

THIS BAR IS EQUAL TO 2'
AT FULL SCALE (34X22).
PLOT 1

MEMPHIS MEMORIAL AIRPORT
MEMPHIS, MISSOURI

T-HANGAR TAXILANE CONSTRUCTION

STATE OF MISSOURI
BRIAN W. GARKIE
NUMBER
PE-2004017171
PROFESSIONAL ENGINEER
DATE: 5/8/15
BRIAN W. GARKIE, P.E.
PROFESSIONAL ENGINEER

ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
(314) 436-5500

CMT

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PROFESSIONAL ENGINEERING - 000631

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STATE PROJECT NO. 13-026A-1

FILE: 02_Quantities-Rev_1.dgn

DESIGN BY: BWG

DRAWN BY: BDB

CHECKED BY: TCS

APPROVED BY: BWG

DATE: APRIL 22, 2015

JOB No: 13430-01

SUMMARY OF QUANTITIES

SHEET 2 OF 25 SHEETS