

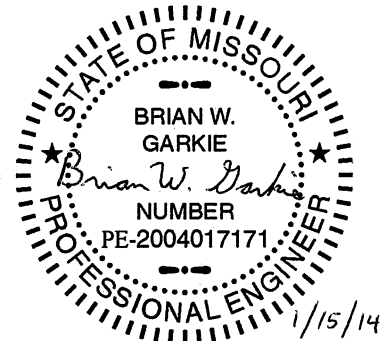
**BIDDING AND CONTRACT DOCUMENTS**  
**ADDENDUM NUMBER ONE**  
**STATE PROJECT NO. 13-045B-1**

DATE: JANUARY 15, 2014

CAMDENTON 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:  
HANGAR B TAXILANE RECONSTRUCTION

This addendum forms a part of the bidding and contract documents, and modifies the original bidding documents dated December 18, 2013. 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 January 22, 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 2**

REPLACE in the section titled **Contract Time** the words "forty (40)" with "fifty (50)".

**Page 191**

ADD to the end of section 701-2.1 the following:

Pipe used for roof subsurface drainage shall be PVC SDR-35 pipe or High Density Polyethylene dual wall pipe.

**Page 193**

REPLACE the section 701-4.1 with the following:

**701-4.1** The length of reinforced concrete pipe shall be measured in linear feet of pipe in place, complete, and approved. It shall be measured along centerline of the pipe from end or inside face of structure to the end or inside face of structure, whichever is applicable. The length of flared end sections shall not be included in the measurement for pipe length. The several sizes of reinforced concrete pipe shall be measured separately. The entire roof subsurface drainage system shall be measured per lump sum and shall include all pipe, pipe fittings, connections, trenching, labor, tools, equipment and incidentals necessary to complete the work to the satisfaction of the Engineer.

REPLACE section 701-5.1 with the following:

**701-5.1** Payment will be made at the contract unit price per linear foot for each kind of reinforced concrete pipe of the type and size designated, per each for each kind of flared end section of the type and size designated, and per lump sum for the roof subsurface drainage.

These prices shall fully compensate the Contractor for furnishing all materials, excavation, bedding, installation of these materials, backfilling, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item MO-701-5.1	18" Reinforced Concrete Pipe--per linear foot
Item MO-701-5.2	21" Reinforced Concrete Pipe--per linear foot
Item MO-701-5.3	21" Reinforced Concrete Pipe Flared End Section--per each
Item MO-701-5.4	Hangar D Roof Subsurface Drainage--per lump sum

**Pages 241-243**

REPLACE pages 241-243 with 241A-243A.

**Pages 255**

REPLACE page 255 with 255A

**PLANS**

**Sheet 2 of 19**

REPLACE Sheet 2 of 19 with Revision 1.

**Sheet 5 of 19**

REPLACE in Note 1. of 2. PHASING the word "40" with "50".

ADD to 2. PHASING the following:

3. RESTORATION OF THE DISTURBED GROUND FOR THE ENTIRE WORK AREA MAY BE DEFERRED TO PHASE 3 PROVIDED THE CONTRACTOR CAN STILL MEET THE REQUIREMENTS OF MISSOURI STATE OPERATING PERMIT NO. MORA03575.

REPLACE in Note 5. of 9. NOTIFICATION OF CONSTRUCTION ACTIVITIES the words "MIKE NICHOLS – ASSISTANT CITY ADMINISTRATOR" with "JEFF HANCOCK – CITY ADMINISTRATOR".

**Sheet 6 of 19**

DELETE last bullet in Phasing Notes that reads "-NEW AIRFIELD PAVEMENT MARKING".

**Sheet 7 of 19**

DELETE last bullet in Phasing Notes that reads "-NEW AIRFIELD PAVEMENT MARKING".

**Sheet 8 of 19**

ADD to the end of Phasing – Work Detail Notes the following: "-SEEDING, SODDING, AND MULCHING".

**Sheet 10 of 19**

REPLACE Sheet 10 of 19 with Revision 1.

**Sheet 12 of 19**

REPLACE Sheet 12 of 19 with Revision 1.

**Sheet 13 of 19**

REPLACE Sheet 13 of 19 with Revision 1.

**CLARIFICATION:**

The contract time is being changed from forty (40) calendar days to fifty (50) calendar days.

CRAWFORD, MURPHY & TILLY, INC.

**This Addendum consists of 2 pages plus 4 revised plan sheets, 4 revised pages and 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 **January 22, 2014**.

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.

**PROPOSAL FORM**  
**CITY OF CAMDENTON**  
 State Block Grant Project No. 13-045B-1

TO: City Administrator

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

**HANGAR B TAXILANE RECONSTRUCTION:**

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:

<b>BASE BID</b>							
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	2,300 C.Y.				
3	MO-156-4.5.1	Silt Fence	525 L.F.				
4	MO-156-4.5.2	Silt Dike Ditch Check	4 Each				
5	MO-156-11.5.1	Erosion Control Blanket	900 S.Y.				
6	MO-156-12.4.1	Inlet Protection	2 Each				
7	MO-209-5.1	13" Crushed Aggregate Base Course	5,585 S.Y.				
8	MO-401F-8.1	Mineral Aggregate (BP-1 Mix)	1,216 Ton				
9	MO-401F-8.2	Asphalt Cement (BP-1 Mix)	64.0 Ton				
10	MO-601-5.1	Pavement Removal	4,770 S.Y.				
11	MO-602-5.1	Bituminous Prime Coat	1,900 Gal				
12	MO-603-5.1	Bituminous Tack Coat	800 Gal				
13	MO-620-5.1	Airport Taxiway Pavement Marking (Yellow)	980 S.F.				
14	MO-701-5.1	18" Reinforced Concrete Pipe	397 L.F.				
16	MO-701-5.2	21" Reinforced Concrete Pipe	169 L.F.				

17	MO-701-5.3	21" Reinforced Concrete Pipe Flared End Section	3 Each				
18	MO-701-5.4	Hangar D Roof Subsurface Drainage	1 Lump Sum				
19	D-705-5.1	4" Perforated Pipe for Underdrain	1,021 L.F.				
20	D-705-5.3	Underdrain Cleanout	5 Each				
21	D-705-5.5	Direct Connection	5 Each				
22	D-751-5.1	Precast Drop Inlet	6 Each				
23	MO-901-5.1	Airport Seeding	1.0 Acres				
24	T-904-5.1	Sodding	645 S.Y.				
25	MO-908-5.1	Airport Mulching	1.0 Acres				
26	SP-1-5.1	Geotextile Grid	11,170 S.Y.				
<b>TOTAL BID (Base Bid)</b>							

**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 thirty (30) calendar days of the notice-of-award, and furthermore, and provide executed payment and performance bonds within fifteen (15) 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 (50)** 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 **ten (10) 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.
- j. The BIDDER, by submission of a proposal, acknowledges that award of this contract is subject to the provisions of the David Bacon Act and the Missouri Prevailing Wage Law. The BIDDER accepts the requirement to pay prevailing wages for each classification and type of worker as established in the attached wage rate determinations as issued by the United States Department of Labor and the Missouri Division of Labor Standards. The BIDDER further acknowledges and accepts their requirement to incorporate the provision to pay the established prevailing wages in every subcontract agreement entered into by the Bidder under this project. The highest rate between the two (Federal and State) for each job classification shall be considered the prevailing wage.
- k. Compliance Reports (41 CFR Part 60-1.7): Within 30 days after award of this contract, the Contractor/Subcontractor shall file a compliance report (Standard Form 100) if s/he has not submitted a complete compliance report within 12 months proceeding the date of award. This report is required if the Contractor/Subcontractor meets all of the following conditions:
  - 1. Contractors/Subcontractors are not exempt based on 41 CFR 60-1.5.
  - 2. Has 50 or more employees.
  - 3. Is a prime contractor or first tier subcontractor.
  - 4. There is a contract, subcontract, or purchase order amounting to \$50,000 or more

- l. The undersigned acknowledges receipt of the following addenda:

Addendum No. _____, dated _____	Date Received _____
Addendum No. _____, dated _____	Date Received _____
Addendum No. _____, dated _____	Date Received _____
Addendum No. _____, dated _____	Date Received _____

#### **REPRESENTATIONS BY BIDDER**

By submittal of a proposal (bid), the BIDDER represents the following:

- a. The BIDDER has read and thoroughly examined the bid documents including all authorized addenda.

- a. Said amount is based on the schedule of prices and estimated quantities stated in CONTRACTOR'S Bid Proposal, which is attached to and made a part of this Agreement;
- b. Said amount is the aggregate sum of the result of the CONTRACTOR'S stated unit prices multiplied by the associated estimated quantities;
- c. CONTRACTOR and OWNER agree that said estimated quantities are not guaranteed and that the determination of actual quantities is to be made by the OWNER'S ENGINEER;
- d. Said amount is subject to modification for additions and deductions as provided for within the Contract General Provisions.

**Article 4 – Payment**

Upon the completion of the work and its acceptance by the OWNER, all sums due the CONTRACTOR by reason of faithful performance of the work, taking into consideration additions to or deductions from the Contract price by reason of alterations or modifications of the original Contract or by reason of "Extra Work" authorized under this Contract, will be paid to the CONTRACTOR by the OWNER after said completion and acceptance.

The acceptance of final payment by the CONTRACTOR shall be considered as a release in full of all claims against the OWNER, arising out of, or by reason of, the work completed and materials furnished under this Contract.

OWNER shall make progress payments to the CONTRACTOR in accordance with the terms set forth in the General Provisions. Progress payments shall be based on estimates prepared by the ENGINEER for the value of work performed and materials completed in place in accordance with the Contract Drawings and Specifications. Progress payments are subject to retainage requirements as set forth in the General Provisions.

**Article 5 – Contract Time**

The CONTRACTOR agrees to commence work within ten (10) calendar days of the date specified in the OWNER'S Notice-to-Proceed. CONTRACTOR further agrees to complete said work within **fifty (50)** Calendar days of the commencement date stated within the Notice-to-Proceed.

It is expressly understood and agreed that the stated Contract Time is reasonable for the completion of the Work, taking all factors into consideration. Furthermore, extensions of the Contract Time may only be permitted by execution of a formal modification to this Contract Agreement in accordance with the General Provisions and as approved by the OWNER.

**Article 6 – Liquidated Damages**

The CONTRACTOR and OWNER understand and agree that time is of essence for completion of the Work and that the OWNER will suffer additional expense and financial loss if said Work is not completed within the authorized Contract Time. Furthermore, the CONTRACTOR and OWNER recognize and understand the difficulty, delay, and expense in establishing the exact amount of actual financial loss and additional expense. Accordingly, in place of requiring such proof, the CONTRACTOR expressly agrees to pay the OWNER as liquidated damages the non-penal sum of **Seven Hundred Fifty Dollars (\$750.00)** per day for each calendar day required in excess of the authorized Contract Time.

Furthermore, the CONTRACTOR understands and agrees that;

- a. the OWNER has the right to deduct from any moneys due the CONTRACTOR, the amount of said liquidated damages;
- b. the OWNER has the right to recover the amount of said liquidated damages from the CONTRACTOR, SURETY or both.

**Article 7 – CONTRACTOR'S Representations**

The CONTRACTOR understands and agrees that all representations made by the CONTRACTOR within the Proposal Form shall apply under this Agreement as if fully rewritten herein.



SUMMARY OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITY
MO-100-4.1	MOBILIZATION	LS	1
MO-152-4.1	CLASS A EXCAVATION	CY	2,300
MO-156-4.5.1	SILT FENCE	LF	525
MO-156-4.5.2	SILT DIKE DITCH CHECKS	EA	4
MO-156-11.5.1	EROSION CONTROL BLANKET	SY	900
MO-156-12.4.1	INLET PROTECTION	EA	2
MO-209-5.1	13" CRUSHED AGGREGATE BASE COURSE	SY	5,585
MO-401F-8.1	MINERAL AGGREGATE (BP-1 MIX)	TON	1,216
MO-401F-8.2	ASPHALT CEMENT (BP-1 MIX)	TON	64.0
MO-601-5.1	PAVEMENT REMOVAL	SY	4,770
MO-602-5.1	BITUMINOUS PRIME COAT	GAL	1,900
MO-603-5.1	BITUMINOUS TACK COAT	GAL	800
MO-620-5.1	AIRPORT TAXIWAY PAVEMENT MARKING (YELLOW)	SF	980
MO-701-5.1	18" REINFORCED CONCRETE PIPE	LF	397
MO-701-5.2	21" REINFORCED CONCRETE PIPE	LF	169
MO-701-5.3	21" REINFORCED CONCRETE PIPE FLARED END SECTION	EA	3
MO-701-5.4	HANGAR D ROOF SUBSURFACE DRAINAGE	LS	1
D-705-5.1	4" PERFORATED PIPE FOR UNDERDRAIN	LF	1,021
D-705-5.3	UNDERDRAIN CLEANOUT	EA	5
D-705-5.5	DIRECT CONNECTION	EA	5
D-751-5.1	PRECAST DROP INLET	EA	6
MO-901-5.1	AIRPORT SEEDING	AC	1.0
T-904-5.1	SODDING	SY	645
MO-908-5.1	AIRPORT MULCHING	AC	1.0
SP-1-5.1	GEOTEXTILE GRID	SY	11,170

EARTHWORK SUMMARY

SECTION	AREA (SF)
PAVEMENT REMOVED AND REPLACED WITH TURF	2,037
NEW PAVEMENT OUTSIDE OF EXISTING PAVEMENT	7,265
PAVEMENT TO BE REMOVED AND REPLACED	40,298
INFIELD DITCH GRADING AREA	21,304
EXTENDED DITCH AREA TO THE SOUTH	6,210

REVISIONS

NUMBER	BY	DATE
	BWG	1/14/14

012

1

2

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

CAMDENTON MEMORIAL AIRPORT  
CAMDENTON, MISSOURI

HANGAR B TAXILANE RECONSTRUCTION

STATE OF MISSOURI

BRIAN W. GARKIE

NUMBER  
PE-2004017171

PROFESSIONAL ENGINEER

DATE: 1/14/14  
BRIAN W. GARKIE, P.E.  
PROFESSIONAL ENGINEER

ONE MEMORIAL DRIVE, SUITE 500  
ST. LOUIS, MO 63102  
(314) 436-5300

CMT  
CRAWFORD, MURPHY & TILLY, INC.  
CONSULTING ENGINEERS

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PROFESSIONAL ENGINEERING - 000631

STATE PROJECT NO. 13-045B-1

FILE: 02\_Sum\_of\_Quant\_Rev-1.dgn

DESIGN BY: BWG

DRAWN BY: TGH

CHECKED BY: TCS

APPROVED BY: BWG

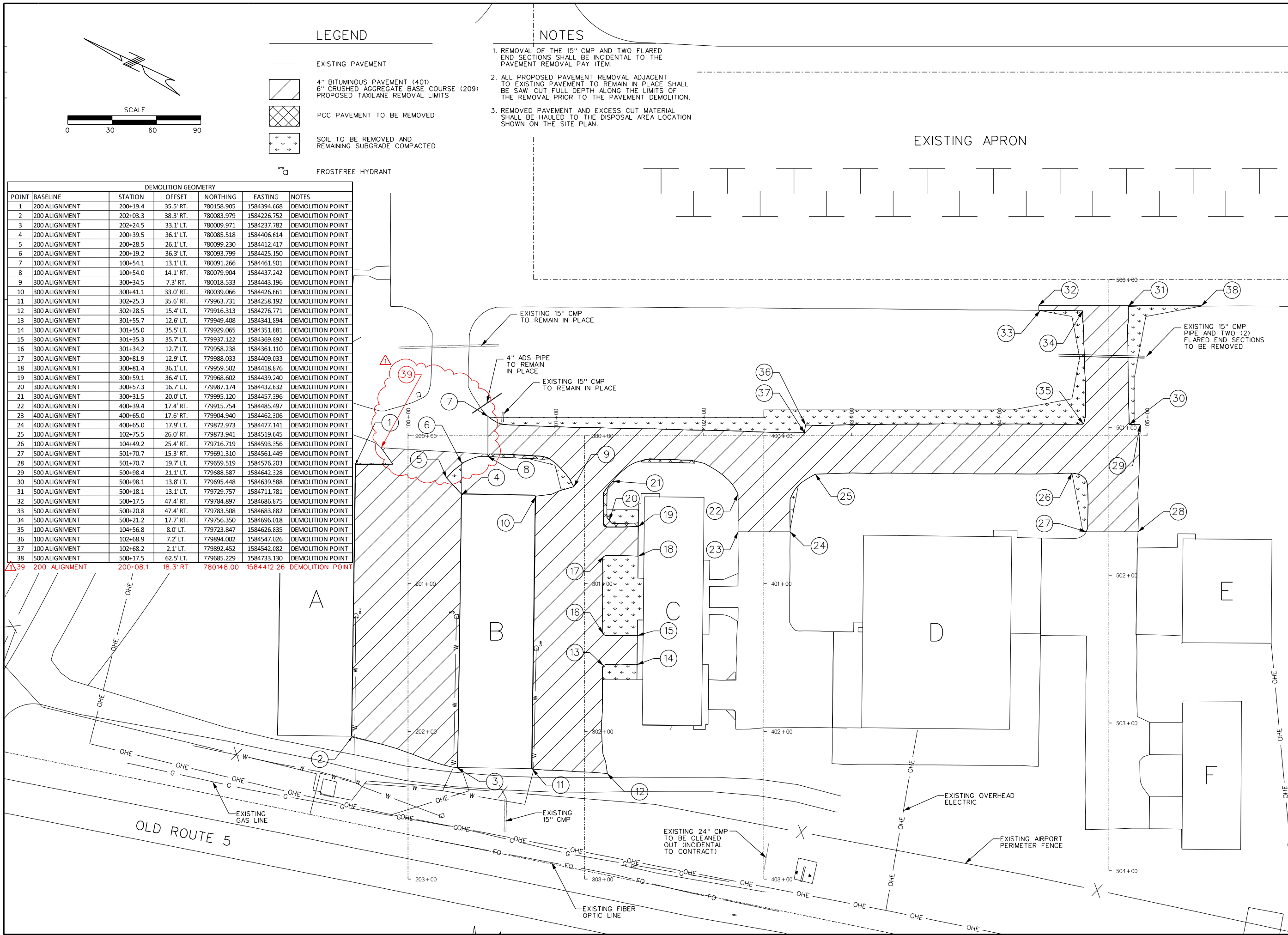
DATE: DECEMBER 18, 2013

JOB No: 13480-01

SUMMARY OF QUANTITIES

SHEET 2 OF 19 SHEETS

1/15/2014  
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## LEGEND

- EXISTING PAVEMENT
- 4" BITUMINOUS PAVEMENT (401)  
6" CRUSHED AGGREGATE BASE COURSE (209)  
PROPOSED TAXILANE REMOVAL LIMITS
- PCC PAVEMENT TO BE REMOVED
- SOIL TO BE REMOVED AND  
REMAINING SUBGRADE COMPACTED
- FROSTFREE HYDRANT

## NOTES

- REMOVAL OF THE 15" CMP AND TWO FLARED  
END SECTIONS SHALL BE INCIDENTAL TO THE  
PAVEMENT REMOVAL PAY ITEM.
- ALL PROPOSED PAVEMENT REMOVAL ADJACENT  
TO EXISTING PAVEMENT TO REMAIN IN PLACE SHALL  
BE SAW CUT FULL DEPTH ALONG THE LIMITS OF  
THE REMOVAL PRIOR TO THE PAVEMENT DEMOLITION.
- REMOVED PAVEMENT AND EXCESS CUT MATERIAL  
SHALL BE HAULED TO THE DISPOSAL AREA LOCATION  
SHOWN ON THE SITE PLAN.

EXISTING APRON

## REVISIONS

NUMBER	BY	DATE
△	BWG	1/14/14

0 1 2  
THIS BAR IS EQUAL TO 2'  
AT FULL SCALE (34X22).  
PLOT 1

CAMDENTON MEMORIAL AIRPORT

CAMDENTON, MISSOURI

HANGAR B TAXILANE RECONSTRUCTION



DATE: 1/14/14  
BRIAN W. GARKIE, P.E.  
PROFESSIONAL ENGINEER

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

**CMT**  
CRAWFORD, MURPHY & TILLY, INC.  
CONSULTING ENGINEERS  
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PROFESSIONAL ENGINEERING - 000631

STATE PROJECT NO. 13-045B-1

FILE: 10\_Demolition\_Plan\_Rev-1.dgn

DESIGN BY: BWG

DRAWN BY: TGH

CHECKED BY: TCS

APPROVED BY: BWG

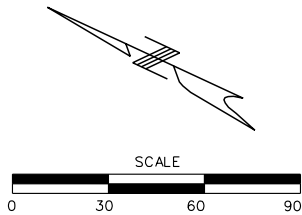
DATE: DECEMBER 18, 2013

JOB No: 13480-01

DEMOLITION PLAN

SHEET 10 OF 19 SHEETS

1/15/2014 K:\Camdenton\1348001\_Taxilane\Draw\Sheets\12\_Drainage Plan\_Rev-1.dgn



## NOTES

- UNDERDRAINS INSTALLED OFF THE EDGE OF PAVEMENT SHALL BE INSTALLED AT THE OFFSET DISTANCE SHOWN AT THE UNDERDRAIN DETAILS.
- CLEANOUT AND COLLECTION STRUCTURE RIM ELEVATIONS SHALL NOT BE ABOVE THE PROPOSED TURF ELEVATIONS.
- SEE TYPICAL SECTIONS FOR SHOULDER GRADING DETAIL.
- CONTRACTOR SHALL DIRECT CONNECT UD-1 THROUGH UD-4 INTO THE SIDE OF THEIR RESPECTIVE TERMINAL INLETS. CONNECTION SHALL BE FINISHED WITH A CONCRETE COLLAR.

## LEGEND

- SS — PROPOSED STORM SEWER PIPE
- UD — PROPOSED UNDERDRAIN PIPE
- FL — PROPOSED FLOW LINE
- PROPOSED INLET
- CO — PROPOSED UNDERDRAIN CLEANOUT
- CS — PROPOSED COLLECTION STRUCTURE
- PI — POINT OF INTERSECTION
- PROPOSED FLARED END SECTION (FES)
- ELEVATION LABEL

UNDERDRAIN / STORM SEWER STRUCTURE SCHEDULE						
STRUCTURE	ALIGNMENT	STATION	OFFSET	RIM EL.	INVERT	NOTES
INLET-1	200 ALIGNMENT	201+46	0.00'	1054.25	1051.25	PROPOSED INLET
INLET-2	200 ALIGNMENT	200+49	0.00'	1053.80	1050.80 IN 1050.70 OUT	PROPOSED INLET
INLET-3	100 ALIGNMENT	100+57	28.0' RT.	1053.20	1050.20 IN 1049.70 IN	PROPOSED INLET
INLET-6	100 ALIGNMENT	101+62	28.0' RT.	1053.20	1049.50 OUT	PROPOSED INLET
INLET-4	300 ALIGNMENT	301+63	0.00'	1054.00	1051.00	PROPOSED INLET
INLET-5	300 ALIGNMENT	300+76	0.00'	1054.00	1050.60 IN 1050.50 OUT	PROPOSED INLET
FES-1	100 ALIGNMENT	101+84.9	36.6' LT.	1051.44	1049.45	FLARED END SECTION
FES-2	500 ALIGNMENT	500+50	60.0' RT.	1050.21	1048.21	FLARED END SECTION
FES-3	500 ALIGNMENT	500+53	60.0' RT.	1049.85	1047.85	FLARED END SECTION
CO-1	200 ALIGNMENT	202+18	5.0' RT.	1054.90	1052.40	TYPE I
CO-2	200 ALIGNMENT	202+21	5.0' RT.	1054.90	1052.40	TYPE I
CO-3	300 ALIGNMENT	302+28.5	5.0' RT.	1054.60	1052.10	TYPE I
CO-4	300 ALIGNMENT	302+29	5.0' RT.	1054.65	1052.10	TYPE I
CO-5	100 ALIGNMENT	101+04	13.5' LT.	1052.69	1050.69	TYPE I
PI-1	100 ALIGNMENT	102+00	13.0' LT.	-	1050.31	POINT OF INTERSECTION
PI-2	100 ALIGNMENT	102+32	18.5' LT.	-	1050.18	POINT OF INTERSECTION
PI-3	100 ALIGNMENT	104+09	18.5' LT.	-	1049.47	POINT OF INTERSECTION
PI-4	100 ALIGNMENT	104+46	28.0' LT.	-	1049.32	POINT OF INTERSECTION
DC-1	500 ALIGNMENT	500+51	22.4' LT.	-	1049.21	DIRECT CONNECTION

UNDERDRAIN / STORM SEWER PIPE SCHEDULE							
LINE	UPSTREAM STRUCTURE	DOWNSTREAM STRUCTURE	UPSTREAM INVERT	DOWNSTREAM INVERT	LENGTH (FT.)	SLOPE	PIPE
SS-1	INLET-1	INLET-2	1051.25	1050.80	93	0.48%	18" RCP
SS-2	INLET-2	INLET-3	1050.70	1050.20	58	0.86%	18" RCP
SS-3	INLET-3	INLET-6	1050.10	1049.70	101	0.40%	18" RCP
SS-4	INLET-4	INLET-5	1051.00	1050.60	83	0.48%	18" RCP
SS-5	INLET-5	INLET-6	1050.50	1049.70	62	1.29%	18" RCP
SS-6	INLET-6	FES-1	1049.60	1049.45	67*	0.22%	21" RCP
SS-7	FES-2	FES-3	1048.21	1047.85	120*	0.30%	21" RCP
UD-1	CO-1	INLET-2	1052.40	1051.30	170.0	0.65%	4" PERFORATED PIPE
UD-2	CO-2	INLET-2	1052.40	1051.30	170.0	0.65%	4" PERFORATED PIPE
UD-3	CO-3	INLET-5	1052.10	1051.50	155.0	0.39%	4" PERFORATED PIPE
UD-4	CO-4	INLET-5	1052.10	1051.50	155.0	0.39%	4" PERFORATED PIPE
UD-5	CO-5	PI-1	1050.69	1050.31	96.0	0.40%	4" PERFORATED PIPE
UD-6	PI-1	PI-2	1050.31	1050.18	32.5	0.40%	4" PERFORATED PIPE
UD-7	PI-2	PI-3	1050.18	1049.47	177.1	0.40%	4" PERFORATED PIPE
UD-8	PI-3	PI-4	1049.47	1049.32	38.1	0.39%	4" PERFORATED PIPE
UD-9	PI-4	DC-1	1049.32	1049.21	27.0	0.41%	4" PERFORATED PIPE

\*NOTE: PIPE LENGTH IN TABLE INCLUDES LENGTH OF FES. THE LENGTH OF FES IS NOT INCLUDED IN THE PIPE PAYMENT QUANTITY.

## REVISIONS

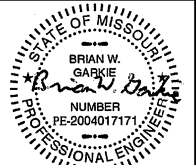
NUMBER	BY	DATE
1	BWG	1/14/14

0 1 2  
THIS BAR IS EQUAL TO 2'  
AT FULL SCALE (34X22).  
PLOT 1

CAMDENTON MEMORIAL AIRPORT

CAMDENTON, MISSOURI

HANGAR B TAXILANE RECONSTRUCTION



DATE: 1/14/14  
BRIAN W. GARKIE, P.E.  
PROFESSIONAL ENGINEER

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

CMT  
CRAWFORD, MURPHY & TILLY, INC.  
CONSULTING ENGINEERS



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STATE PROJECT NO. 13-045B-1

FILE: 12\_Drainage Plan\_Rev-1.dgn

DESIGN BY: BWG

DRAWN BY: TGH

CHECKED BY: TCS

APPROVED BY: BWG

DATE: DECEMBER 18, 2013

JOB No: 13480-01

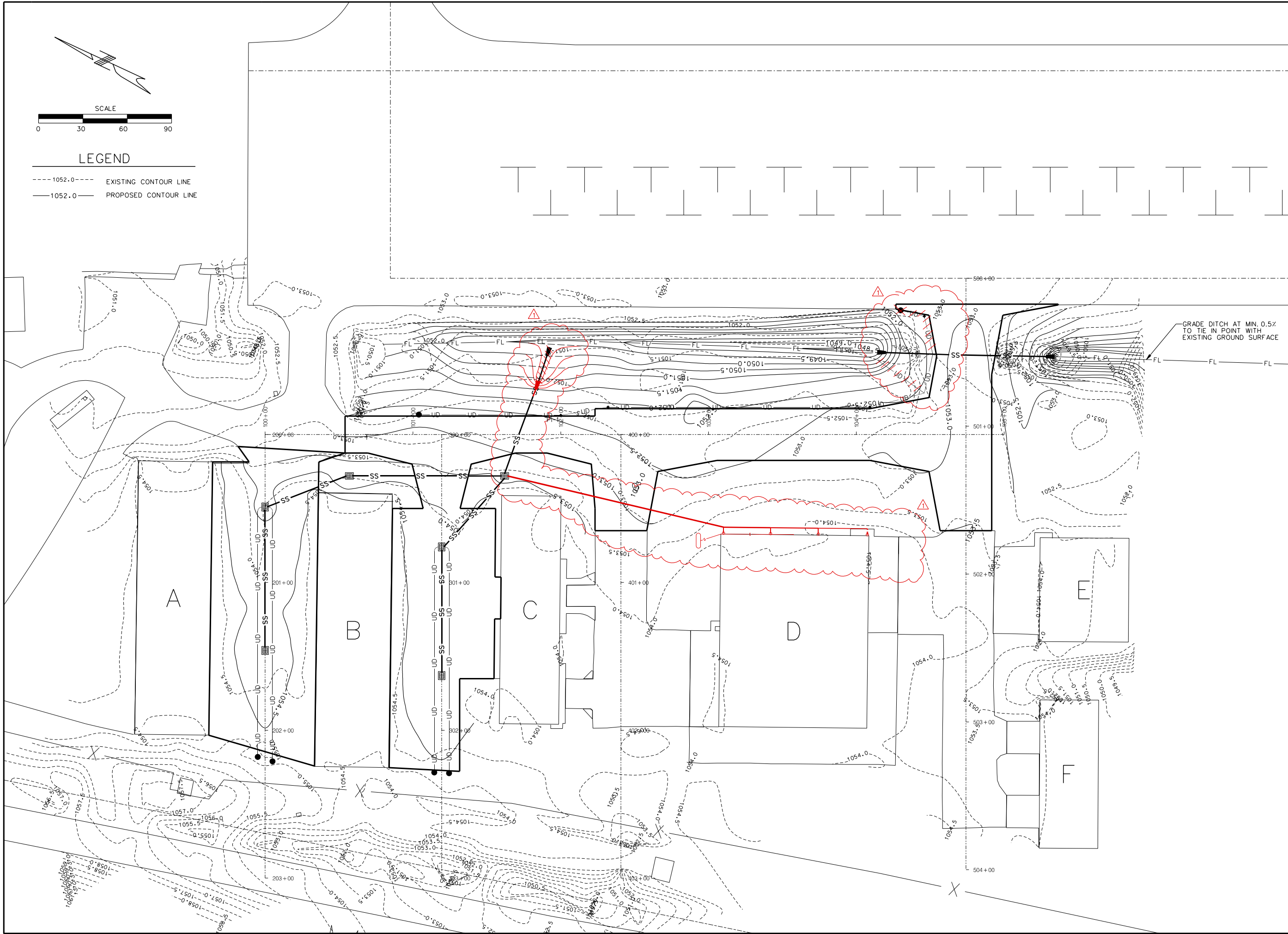
DRAINAGE PLAN

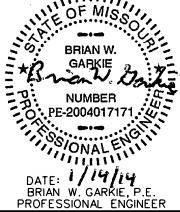

SHEET 12 OF 19 SHEETS

## HANGAR D ROOF DRAINAGE NOTES

- CONTRACTOR SHALL VERIFY EXISTING LOCATION AND ELEVATION OF SOUTHERN MOST DOWNSPOUT OUTLET PIPE PRIOR TO INSTALLING THE PROPOSED DRAINAGE PIPING. IF THE FLOWLINE ELEVATION IS BELOW THE PROPOSED ELEVATION OF THE NEXT CONNECTION THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE ENGINEER WILL UPDATE THE PROPOSED FLOWLINE ELEVATIONS.
- DAMAGE TO EXISTING SIDEWALK OR UTILITIES CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.
- EXISTING PIPING RUNS UNDERGROUND TO EXISTING LEACH FIELD. CONTRACTOR SHALL REMOVE ANY EXISTING PIPE THAT IS IN DIRECT CONFLICT WITH THE PROPOSED PIPING AND MAY ABANDONE THE REMAINING PIPE IN PLACE.
- REPLACE EXISTING 6" PVC PIPE TO ABOVE GROUND CONNECTION WITH DOWNSPOUT (TYP. OF 3 OF 4 LOCATIONS).
- APPROXIMATE QUANTITIES INCLUDE 50 LF OF 6" PVC, 32 LF OF 8" PVC, 32 LF OF 10" PVC AND 150 LF OF 12" PVC PLUS REQUIRED FITTINGS.

1/15/2014  
K:\Camdenton\1348001\_Taxilane Draw Sheets\13\_Grading\_Plan\_Rev-1.dgn



REVISIONS		
NUMBER	BY	DATE
△	BWG	1/14/14
0 1 2 THIS BAR IS EQUAL TO 2' AT FULL SCALE (34X22). PLOT 1		
CAMDENTON MEMORIAL AIRPORT CAMDENTON, MISSOURI		HANGAR B TAXILANE RECONSTRUCTION
 DATE: 1/14/14 BRIAN W. GARKIE, P.E. PROFESSIONAL ENGINEER		STATE PROJECT NO. 13-045B-1
 ONE MEMORIAL DRIVE, SUITE 500 ST. LOUIS, MO 63102 13141 436-5500 CMT CRAWFORD, MURPHY & TILLY, INC. CONSULTING ENGINEERS © Copyright CMT, Inc. PROFESSIONAL ENGINEERING - 000631		FILE: 13_Grading_Plan_Rev-1.dgn
DESIGN BY: BWG		CHECKED BY: TCS
DRAWN BY: TGH		APPROVED BY: BWG
DATE: DECEMBER 18, 2013		JOB No: 13480-01
GRADING PLAN		SHEET 13 OF 19 SHEETS