



# JEFFERSON COUNTY, TEXAS PURCHASING DEPARTMENT

1149 Pearl Street – First Floor  
Beaumont, Texas 77701  
409-835-8593 phone

## ADDENDUM TO IFB

IFB Number: IFB 17-024/JW  
IFB Title: Taxiway D Reconstruction (2017) at Jack Brooks Regional Airport  
IFB Due: **11:00 am CDT, Tuesday, August 8, 2017**  
Addendum No.: 3  
Issued (Date): August 4, 2017

**TO BIDDER:** This Addendum is an integral part of the IFB package under consideration by you as a Bidder in connection with the subject matter herein identified. Jefferson County deems all sealed proposals to have been proffered in recognition and consideration of the entire IFB package – **including all addenda.** For purposes of clarification, **receipt of this present Addendum by a Bidder should be evidenced by returning it (signed) as part of the Bidder's sealed proposal.** If the Proposal has already been received by the Jefferson County Purchasing Department, Bidder should return this addendum in a separate sealed envelope, clearly marked with the IFB Title, IFB Number, and Opening Date and Time, as stated above.

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### **Reason for Issuance of this Addendum: Extending the Construction Schedule, and Changing the Method of Measurement for P-152 Material.**

#### **Extending the Construction Schedule**

The construction schedule has been extended from 274 calendar days to 359 calendar days. Please find attached the updated Construction Safety and Phasing sheets from the construction drawings reflecting the new phase durations. The project manual has also been edited to reflect the new schedule. The following project manual sections reference the construction duration and have therefore been updated and included in this addendum: The Template Notice to Proceed; The Bid Form; The Contract.

#### **Changing the Method of Measurement for P-152 Material**

Borrow material – governed by the P-152 specification – shall no longer be measured for payment in its original position at the borrow pit. Instead, it shall be paid for based on plan quantities as stated in the amended and attached P-152 specification.

**Addendum No. 3 (Continued)**

(IFB 17-024/JW), Taxiway D Reconstruction (2017) at Jack Brooks Regional Airport

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**The information included herein is hereby incorporated into the documents of this present Bid matter and supersedes any conflicting documents or portion thereof previously issued.**

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Receipt of this Addendum is hereby acknowledged by the undersigned Bidder:

ATTEST:

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Witness

Approved by \_\_\_\_ Date: \_\_\_\_\_

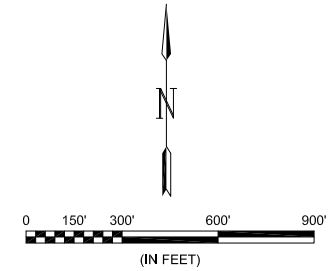
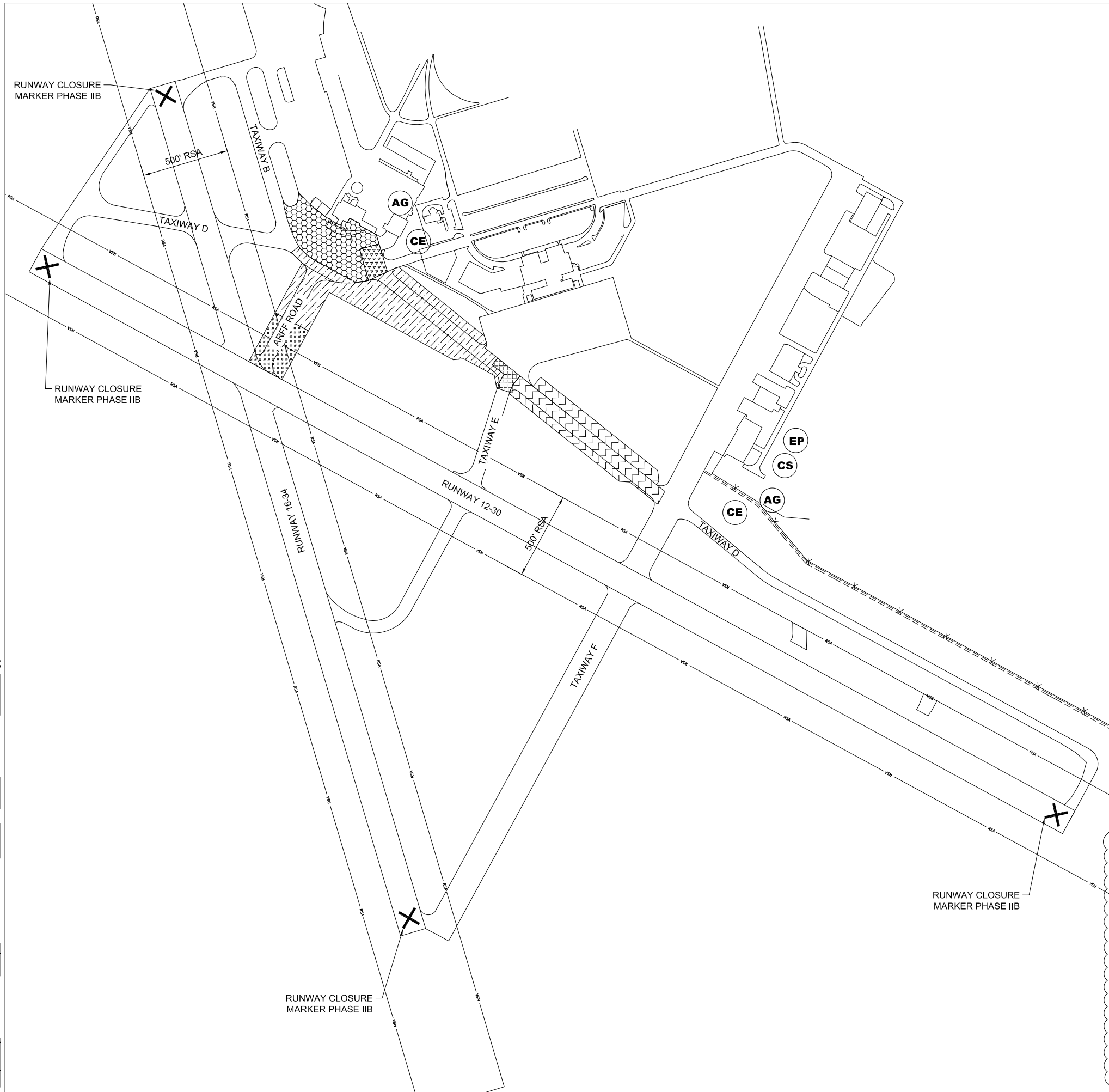
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Authorized Signature (Bidder)

\_\_\_\_\_  
Title of Person Signing Above







\_\_\_\_\_  
Typed Name of Business or Individual

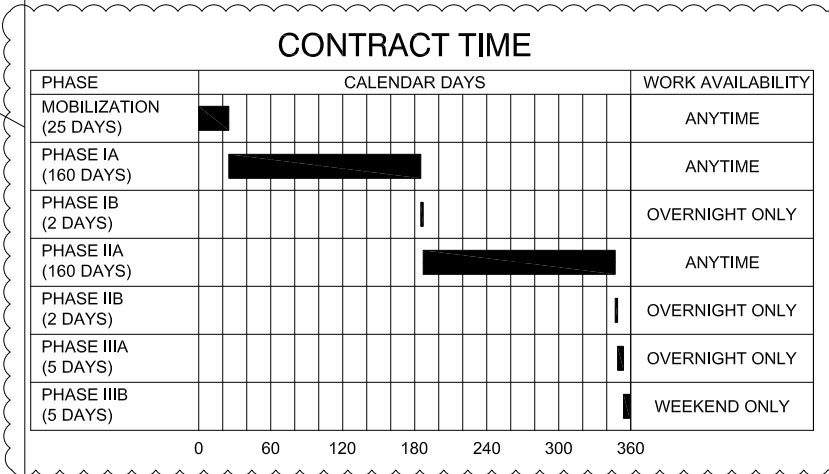
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Address

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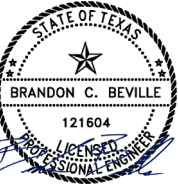


LEGEND	
<b>AG</b>	ACCESS GATE
<b>CS</b>	CONTRACTOR'S STAGING
<b>EP</b>	CONTRACTOR'S EMPLOYEE PARKING
<b>CE</b>	CONTRACTOR'S ENTRANCE

ITEMS OF WORK	
PHASE	DESCRIPTION
 <b>IA</b>	RECONSTRUCT TAXIWAY 'D' PAVEMENT, REMARK TAXIWAY 'D' PAVEMENT, AND REMOVE AND INSTALL LIGHTING IMPROVEMENTS. CLEAN AND SEAL TAXIWAY 'D' PAVEMENT.
 <b>IB</b>	CLEAN AND SEAL TAXIWAY 'D' PAVEMENT.
 <b>IIA</b>	REALIGN AND RECONSTRUCT TAXIWAY 'D' PAVEMENT, REMARK TAXIWAY 'D' PAVEMENT, AND REMOVE AND INSTALL LIGHTING IMPROVEMENTS. CONSTRUCT SPLIT DUCT ENCASEMENT OF EXISTING FAA COMMUNICATIONS CABLE. PARTIAL APRON RECONSTRUCTION. NARROW AND SEAL COAT THE ARFF ROAD OUTSIDE OF RUNWAYS RSA. INSTALL NEW PRIMARY WIND CONE.
 <b>IIB</b>	NARROW AND SEAL COAT THE ARFF ROAD WITHIN RSA LIMITS.
 <b>IIIA</b>	APRON PAVEMENT SEAL COAT LIMITS 1
 <b>IIIB</b>	APRON PAVEMENT SEAL COAT LIMITS 2



REGISTRATION NO. F-5713



DIGITALLY SIGNED 08/04/2017

REV.	DATE	DESCRIPTION	BY
1	08/04/17	ADDENDUM NO. 3	CMB

JACK BROOKS REGIONAL AIRPORT  
 JEFFERSON COUNTY, TX

TAXIWAY D RECONSTRUCTION (2017)

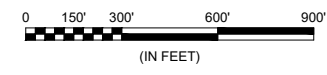
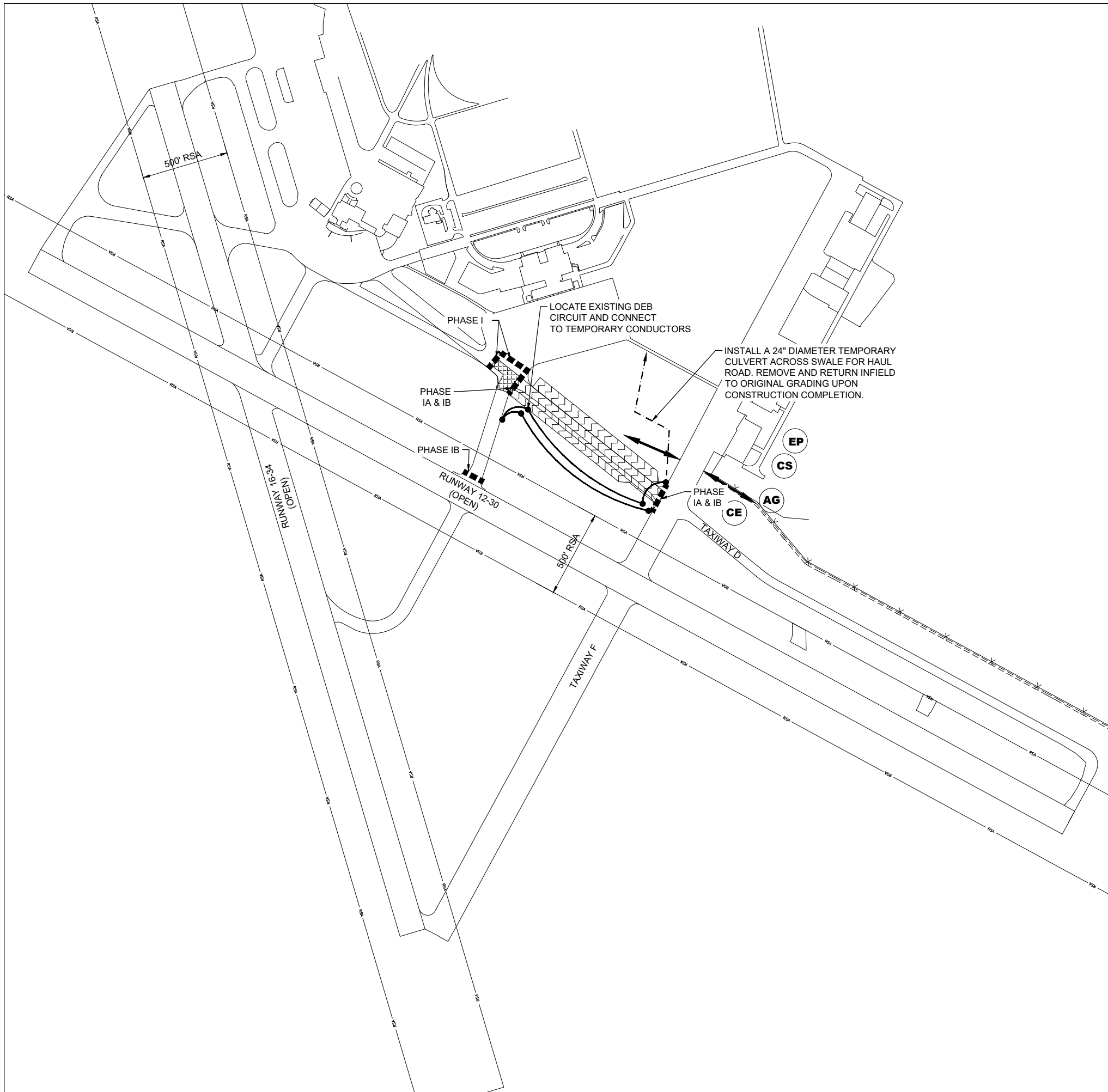
SAFETY AND PHASING PLAN

JOB NO.: 17121501  
 DATE: JULY, 2017  
 DESIGNED BY: TDD  
 DRAWN BY: JS

DRAWING NUMBER  
**G-301**

SHEET NUMBER  
**5**

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### PHASE I NOTES

1. PLACE LOW PROFILE AIRCRAFT BARRICADES AS INDICATED (SEE DETAIL ON SHEET G-302).
2. RECONSTRUCT AND REALIGN TAXIWAY 'D' PAVEMENT WITHIN PHASE I WORK LIMITS.
3. REMARK TAXIWAY 'D' PAVEMENT WITHIN PHASE I WORK LIMITS.
4. REMOVE EXISTING TAXIWAY EDGE LIGHTING AND INSTALL LIGHTING IMPROVEMENTS ALONG TAXIWAY 'D' WITHIN PHASE I WORK LIMITS.
5. REMOVE LOW PROFILE AIRCRAFT BARRICADES WHEN PHASE I IS COMPLETED.
6. JOINT CLEAN AND SEAL TAXIWAY 'D' AT TAXIWAY 'E' INTERSECTION WHEN JOINT SEALING NEW TAXIWAY 'D' PAVEMENT.

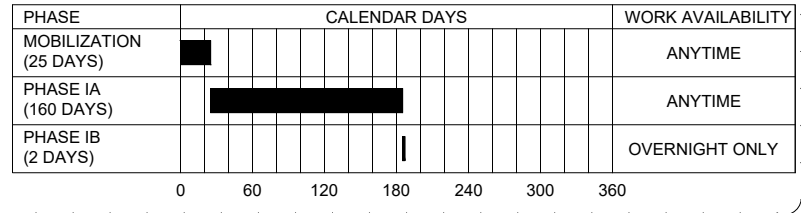
### LEGEND

- PHASE IA CONSTRUCTION AREA
- PHASE IB CONSTRUCTION AREA
- CONTRACTORS ACCESS/HAUL ROUTE
- FENCE
- PERIMETER ROAD
- LOW PROFILE AIRCRAFT BARRICADES (SEE SHEET G-302 FOR DETAILS)
- EXISTING DITCH
- ACCESS GATE
- CONTRACTOR'S STAGING
- CONTRACTOR'S EMPLOYEE PARKING
- CONTRACTOR'S ENTRANCE
- ELECTRICAL JUMPER CONNECTION

### GENERAL NOTES:

1. ALL EQUIPMENT AND PERSONNEL MUST REMAIN OUT OF THE RUNWAY SAFETY AREA WHILE THE RUNWAY IS ACTIVE.
2. SEE SHEET G-302 FOR SAFETY AND PHASING DETAILS.
3. SEE SHEET E-313 FOR TEMPORARY ELECTRICAL CONNECTION DETAILS.
4. CONTRACTOR'S ACCESS ROUTE PASSES THROUGH AN ACTIVE AIRCRAFT MOVEMENT AREA. CONTRACTOR TO PROVIDE FLAGMEN AND GUIDE VEHICLE FOR CONSTRUCTION TRAFFIC CROSSING THE ACTIVE AIRCRAFT MOVEMENT AREA. THE ACCESS ROUTE FROM THE CONTRACTOR'S STAGING AND STORAGE AREA TO THE WORK SITE WILL BE CONTINUOUSLY MONITORED FOR DEBRIS AND CLEANED IMMEDIATELY.
5. LOCATE TEMPORARY ELECTRICAL JUMPERS ADJACENT TO LOW PROFILE BARRICADES WHERE POSSIBLE.

### CONTRACT TIME



REGISTRATION NO.  
F-5713



DIGITALLY SIGNED  
08/04/17

REV	DATE	DESCRIPTION	BY
1	08/04/17	ADDENDUM NO. 3	CMB

JACK BROOKS REGIONAL AIRPORT  
JEFFERSON COUNTY, TX

TAXIWAY D RECONSTRUCTION (2017)

SAFETY AND PHASING - PHASE I

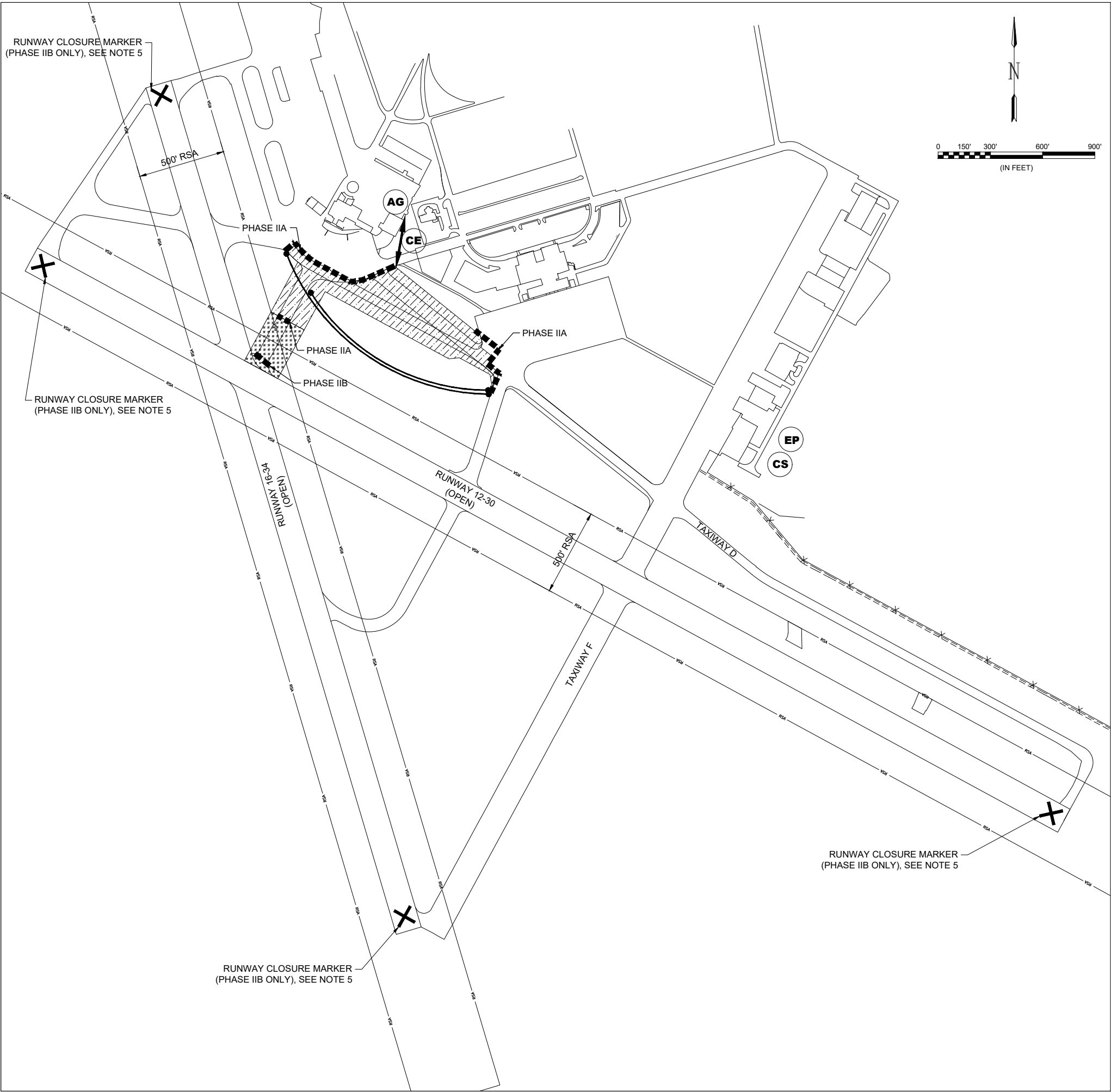
JOB NO.: 17121501  
DATE: JULY, 2017  
DESIGNED BY: TDD  
DRAWN BY: JS

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DRAWING NUMBER  
**G-303**

SHEET NUMBER  
**7**

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**PHASE II NOTES**

1. PLACE LOW PROFILE AIRCRAFT BARRICADES AS INDICATED (SEE DETAIL ON SHEET G-302).
2. RECONSTRUCT AND REALIGN TAXIWAY 'D' PAVEMENT WITHIN PHASE II WORK LIMITS.
3. REMARK TAXIWAY 'D' PAVEMENT WITHIN PHASE II WORK LIMITS.
4. REMOVE AND INSTALL LIGHTING IMPROVEMENTS ALONG TAXIWAY 'D' WITHIN PHASE II WORK LIMITS.
5. CONSTRUCT SPLIT DUCT ENCASUREMENT OF FAA CABLES.
6. ADJUST FAA MANHOLE TO NEW GRADE.
7. PARTIALLY RECONSTRUCT AND REHABILITATE APRON WITHIN PHASE II WORK LIMITS.
8. MILL TAXIWAY 'C' OUTER PAVEMENT SECTIONS.
9. REMOVE LOW PROFILE AIRCRAFT BARRICADES WHEN PHASE II IS COMPLETED.

**LEGEND**

	PHASE IIA CONSTRUCTION AREA
	PHASE IIB CONSTRUCTION AREA
	CONTRACTORS ACCESS/HAUL ROUTE
	FENCE
	PERIMETER ROAD
	LOW PROFILE AIRCRAFT BARRICADES (SEE SHEET G-302 FOR DETAILS)
	EXISTING DITCH
	ACCESS GATE
	CONTRACTOR'S STAGING
	CONTRACTOR'S EMPLOYEE PARKING
	CONTRACTOR'S ENTRANCE
	ELECTRICAL JUMPER CONNECTION
	LIGHTED RUNWAY CLOSURE MARKER

**GENERAL NOTES:**

1. ALL EQUIPMENT AND PERSONNEL MUST REMAIN OUT OF THE RUNWAY SAFETY AREA WHILE THE RUNWAY IS ACTIVE.
2. SEE SHEET G-302 FOR SAFETY AND PHASING DETAILS.
3. SEE SHEET E-313 FOR TEMPORARY ELECTRICAL CONNECTION DETAILS.
4. CONTRACTOR'S ACCESS ROUTE PASSES THROUGH AN ACTIVE AIRCRAFT MOVEMENT AREA. CONTRACTOR TO PROVIDE FLAGMEN AND GUIDE VEHICLE FOR CONSTRUCTION TRAFFIC CROSSING THE ACTIVE AIRCRAFT MOVEMENT AREA. THE ACCESS ROUTE FROM THE CONTRACTOR'S STAGING AND STORAGE AREA TO THE WORK SITE WILL BE CONTINUOUSLY MONITORED FOR DEBRIS AND CLEANED IMMEDIATELY.
5. FOR RUNWAY CLOSURES BETWEEN THE HOURS OF 2200 AND 0600 DAILY, CONTRACTOR WILL BE REQUIRED TO POSITION LIGHTED RUNWAY CLOSURE MARKERS AS SHOWN ON THE PLANS. MARKERS WILL BE REMOVED PRIOR TO RETURNING THE RUNWAY TO SERVICE. A DAY WILL BE MEASURED BY EACH 24 HOUR PERIOD THE MARKER IS IN USE FOR A CLOSURE.
6. LOCATE TEMPORARY ELECTRICAL JUMPERS ADJACENT TO LOW PROFILE BARRICADES WHERE POSSIBLE.

**CONTRACT TIME**

PHASE	CALENDAR DAYS	WORK AVAILABILITY
PHASE IIA (160 DAYS)		ANYTIME
PHASE IIB (2 DAYS)		OVERNIGHT ONLY

0    60    120    180    240    300    360



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JACK BROOKS REGIONAL AIRPORT  
JEFFERSON COUNTY, TX

TAXIWAY D RECONSTRUCTION (2017)

SAFETY AND PHASING - PHASE II

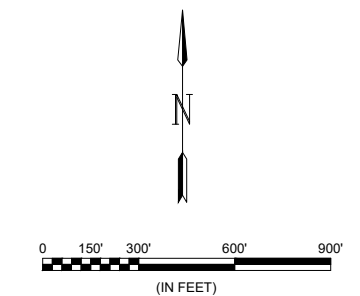
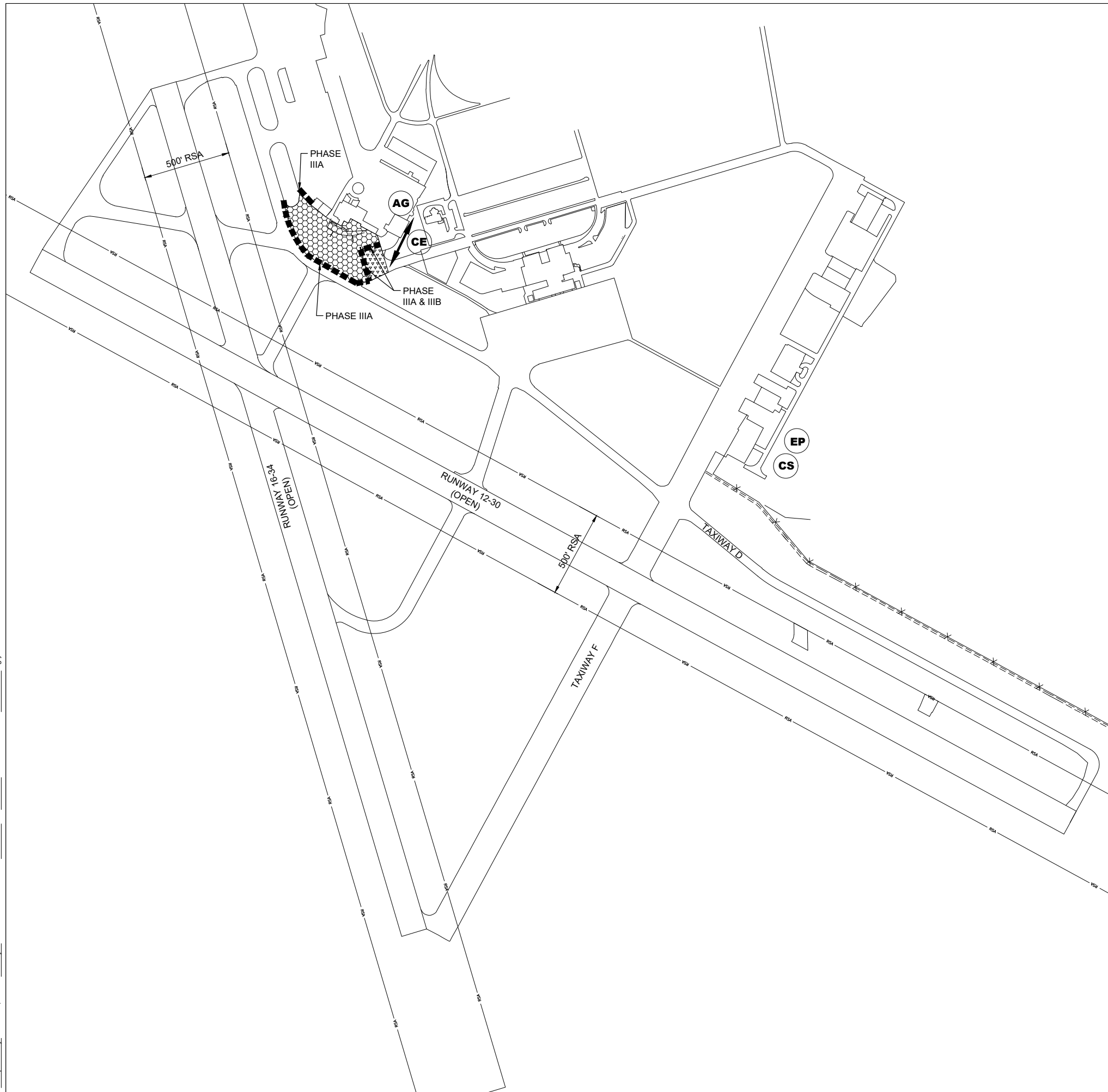
JOB NO.: 17121501  
DATE: JULY, 2017  
DESIGNED BY: TDD  
DRAWN BY: JS

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**G-304**

SHEET NUMBER  
**8**

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**PHASE III NOTES**

1. PLACE LOW PROFILE AIRCRAFT BARRICADES AS INDICATED (SEE DETAIL ON SHEET G-302).
2. REHABILITATE WARE RAMP WITHIN PHASE III WORK LIMITS
3. REMARK WARE RAMP PAVEMENT WITHIN PHASE III WORK LIMITS.
4. REMOVE LOW PROFILE AIRCRAFT BARRICADES WHEN PHASE III IS COMPLETED.

**LEGEND**

- PHASE IIIA CONSTRUCTION AREA
- PHASE IIIB CONSTRUCTION AREA
- CONTRACTORS ACCESS/HAUL ROUTE
- FENCE
- PERIMETER ROAD
- LOW PROFILE AIRCRAFT BARRICADES (SEE SHEET G-302 FOR DETAILS)
- EXISTING DITCH
- ACCESS GATE
- CONTRACTOR'S STAGING
- CONTRACTOR'S EMPLOYEE PARKING
- CONTRACTOR'S ENTRANCE

**GENERAL NOTES:**

1. ALL EQUIPMENT AND PERSONNEL MUST REMAIN OUT OF THE RUNWAY SAFETY AREA WHILE THE RUNWAY IS ACTIVE.
2. SEE SHEET G-302 FOR SAFETY AND PHASING DETAILS.
3. CONTRACTOR'S ACCESS ROUTE PASSES THROUGH AN ACTIVE AIRCRAFT MOVEMENT AREA. CONTRACTOR TO PROVIDE FLAGMEN AND GUIDE VEHICLE FOR CONSTRUCTION TRAFFIC CROSSING THE ACTIVE AIRCRAFT MOVEMENT AREA. THE ACCESS ROUTE FROM THE CONTRACTOR'S STAGING AND STORAGE AREA TO THE WORK SITE WILL BE CONTINUOUSLY MONITORED FOR DEBRIS AND CLEANED IMMEDIATELY.

**CONTRACT TIME**

PHASE	CALENDAR DAYS	WORK AVAILABILITY
PHASE IIIA (5 DAYS)	0 60 120 180 240 300 360	OVERNIGHT ONLY
PHASE IIIB (5 DAYS)	0 60 120 180 240 300 360	WEEKEND ONLY



REGISTRATION NO.  
F-5713



DIGITALLY SIGNED  
08/04/2017

REV	DATE	DESCRIPTION	BY
1	08/04/17	ADDENDUM NO. 3	CMB

JACK BROOKS REGIONAL AIRPORT  
JEFFERSON COUNTY, TX

TAXIWAY D RECONSTRUCTION (2017)

SAFETY AND PHASING - PHASE III

JOB NO.: 17121501  
DATE: JULY, 2017  
DESIGNED BY: TDD  
DRAWN BY: JS

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**G-305**

SHEET NUMBER  
**9**

XXXXXXX, 2017

XXXXXXXXXXXX  
XXXXXXXXXXXX  
XXXXXXXXXXXX  
XXXXXXXXXXXX

Re: Jack Brooks Regional Airport  
Taxiway D Reconstruction (2017); Jefferson County Contract 17-024/JW  
AIP No. 3-48-0018-034-2017  
Notice to Proceed

Dear Mr. \_\_\_\_\_:

Please consider this letter as your Notice to Proceed with construction on the above referenced project, effective XXXXXXX, 2017.

Under the terms of the Contract, contract time will start when construction begins or ten (10) days after the effective date of this Notice to Proceed, whichever comes first. Work must be completed within 359 calendar days of the start of contract time. Before you start work at the site, Special Provisions Section C-01 requires that you must deliver to the Engineer and Owner Certificates of Insurance which you are required to purchase and maintain in accordance with the Contract. As stipulated in the Contract Proposal, failure to complete the work within the contract time shall result in the assessment of liquidated damages. The damages are therein set in the amount of \$1,000.00 per calendar day.

~~As required in Section 80-03, a construction schedule is to be submitted as soon as possible since no schedule was submitted at the pre-construction meeting of XXXXXXXXXXXX, 2017.~~

Please call me if you have any questions.

Sincerely,

**GARVER, LLC**

Colin M. Bible, P.E.  
Sr. Project Manager

CC: Alex Rupp, Jack Brooks Regional Airport (via email)

JACK BROOKS REGIONAL AIRPORT  
TAXIWAY D RECONSTRUCTION (2017) AT JACK BROOKS REGIONAL AIRPORT  
BID FORM

BASE BID

BID ITEM	DESCRIPTION	UNITS	ESTIMATED QUANTITY	UNIT PRICE	BID AMOUNT
SECTION 105	MOBILIZATION	L.S.	1	\$	\$
	Unit price in words: _____ dollars and _____ /100				
SS-120-1	SITE PREPARATION	L.S.	1	\$	\$
	Unit price in words: _____ dollars and _____ /100				
SS-300-5.1	LOCKOUT/TAGOUT AND CONSTANT CURRENT REGULATOR CALIBRATION PROCEDURES	L.S.	1	\$	\$
	Unit price in words: _____ dollars and _____ /100				
SS-300-5.2	NON-ENCASED, SCHEDULE 80 PVC CONDUIT, 1-WAY 1"C, MOUNTED TO SURFACE FOR TEMPORARY ELECTRICAL CONNECTION	L.F.	5,000	\$	\$
	Unit price in words: _____ dollars and _____ /100				
SS-301-5.1	EXISTING CONCRETE ENCASED, 2'Wx2'L ELECTRICAL HANDHOLE, REMOVED	EACH	1	\$	\$
	Unit price in words: _____ dollars and _____ /100				
SS-301-5.2	EXISTING CONCRETE ENCASED, 3'Wx3'L FAA-STYLE ELECTRICAL HANDHOLE, REMOVED	EACH	3	\$	\$
	Unit price in words: _____ dollars and _____ /100				



JACK BROOKS REGIONAL AIRPORT  
TAXIWAY D RECONSTRUCTION (2017) AT JACK BROOKS REGIONAL AIRPORT  
BID FORM

BID ITEM	DESCRIPTION	UNITS	ESTIMATED QUANTITY	UNIT PRICE	BID AMOUNT
SS-301-5.3	EXISTING STAKE MOUNTED EDGE LIGHT, REMOVED	EACH	71	\$	\$
	Unit price in words: _____ dollars and _____ /100				
SS-301-5.4	EXISTING BASE MOUNTED EDGE LIGHT, REMOVED	EACH	2	\$	\$
	Unit price in words: _____ dollars and _____ /100				
SS-301-5.5	EXISTING BASE MOUNTED EDGE LIGHT, REMOVED, BASE TO REMAIN	EACH	1	\$	\$
	Unit price in words: _____ dollars and _____ /100				
SS-301-5.6	ABANDONED WIND CONE BASE, REMOVED	EACH	1	\$	\$
	Unit price in words: _____ dollars and _____ /100				
SS-301-5.7	EXISTING WIND CONE AND FOUNDATION, REMOVED	EACH	1	\$	\$
	Unit price in words: _____ dollars and _____ /100				
SS-301-5.8	EXISTING SEGMENTED CIRCLE MARKER SYSTEM, REMOVED	EACH	1	\$	\$
	Unit price in words: _____ dollars and _____ /100				
SS-301-5.9	ABANDONED SIGN BASE, REMOVED	EACH	4	\$	\$
	Unit price in words: _____ dollars and _____ /100				

JACK BROOKS REGIONAL AIRPORT  
TAXIWAY D RECONSTRUCTION (2017) AT JACK BROOKS REGIONAL AIRPORT  
BID FORM

BID ITEM	DESCRIPTION	UNITS	ESTIMATED QUANTITY	UNIT PRICE	BID AMOUNT
SS-301-5.10	EXISTING BASE MOUNTED GUIDANCE SIGN, REMOVED	EACH	19	\$	\$
	Unit price in words: _____ dollars and _____ /100				
SS-301-5.11	EXISTING BASE MOUNTED GUIDANCE SIGN, REMOVED, BASE TO REMAIN	EACH	4	\$	\$
	Unit price in words: _____ dollars and _____ /100				
SS-301-5.12	CONCRETE ENCASED DUCT BANK REMOVAL	L.F.	650	\$	\$
	Unit price in words: _____ dollars and _____ /100				
SS-305-5.1	DIRECTIONAL BORING, 2-WAY 2" C POLYETHYLENE CONDUIT	L.F.	400	\$	\$
	Unit price in words: _____ dollars and _____ /100				
SS-310-5.1	L-858(L) BASE MOUNTED, 2-MODULE GUIDANCE SIGN, INSTALLED	EACH	4	\$	\$
	Unit price in words: _____ dollars and _____ /100				
SS-310-5.2	L-858(L) BASE MOUNTED, 3-MODULE GUIDANCE SIGN, INSTALLED	EACH	4	\$	\$
	Unit price in words: _____ dollars and _____ /100				
SS-310-5.3	L-861T(L) BASE MOUNTED TAXIWAY EDGE LIGHT, INSTALLED	EACH	75	\$	\$
	Unit price in words: _____ dollars and _____ /100				

JACK BROOKS REGIONAL AIRPORT  
TAXIWAY D RECONSTRUCTION (2017) AT JACK BROOKS REGIONAL AIRPORT  
BID FORM

BID ITEM	DESCRIPTION	UNITS	ESTIMATED QUANTITY	UNIT PRICE	BID AMOUNT
SS-310-5.4	L-852T(L) LOW PROFILE BASE MOUNTED IN-PAVEMENT TAXIWAY EDGE LIGHT, INSTALLED IN EXISTING PAVEMENT	EACH	1	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
SS-310-5.5	FIELD LIGHTNING ARRESTOR, INSTALLED	EACH	5	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
SS-310-5.6	VEHICLE SIGN ASSEMBLY, INSTALLED	L.S.	1	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
D-701-1	18" REINFORCED CONCRETE PIPE (CLASS III)	L.F.	275	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
D-751-1	4'X4' SINGLE GRATE INLET (HEAVY-DUTY)	EACH	1	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
D-751-2	4'X4' JUNCTION BOX	EACH	1	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
P-101-1	CONCRETE PAVEMENT REMOVAL	S.Y.	18,355	\$ _____	\$ _____

JACK BROOKS REGIONAL AIRPORT  
TAXIWAY D RECONSTRUCTION (2017) AT JACK BROOKS REGIONAL AIRPORT  
BID FORM

BID ITEM	DESCRIPTION	UNITS	ESTIMATED QUANTITY	UNIT PRICE	BID AMOUNT
	Unit price in words: _____ dollars and _____ /100				
P-101-2	MILLING AND REMOVAL OF ASPHALT PAVEMENT SURFACING (4" THICKNESS)	S.Y.	4,239	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
P-152-1	UNCLASSIFIED EXCAVATION	C.Y.	2,250	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
P-152-2	BORROW EXCAVATION	C.Y.	5,500	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
P-152-3	UNSUITABLE EXCAVATION	C.Y.	750	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
P-154-1	8" SUBBASE COURSE	S.Y.	15,172	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
P-155-1	16" LIME-TREATED SUBGRADE	S.Y.	16,159	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
P-155-2	LIME	TON	600	\$ _____	\$ _____

JACK BROOKS REGIONAL AIRPORT  
TAXIWAY D RECONSTRUCTION (2017) AT JACK BROOKS REGIONAL AIRPORT  
BID FORM

BID ITEM	DESCRIPTION	UNITS	ESTIMATED QUANTITY	UNIT PRICE	BID AMOUNT
	Unit price in words: _____ dollars and _____ /100				
P-156-1	TEMPORARY EROSION CONTROL	L.S.	1	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
P-501-1	12.5" PORTLAND CEMENT CONCRETE PAVEMENT	S.Y.	14,359	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
P-605-1	CONCRETE JOINT CLEAN AND SEAL	L.F.	1,500	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
P-620-1	RETRO-REFLECTIVE PAVEMENT MARKINGS	S.F.	2,650	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
P-620-2	NON-REFLECTIVE BLACK OUTLINE	S.F.	4,300	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
P-620-3	PAVEMENT MARKING REMOVAL	L.S.	1	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
P-631-7.1	REFINED COAL TAR EMULSION WITH ADDITIVES FOR SLURRY COAT	S.Y.	18,637	\$ _____	\$ _____

JACK BROOKS REGIONAL AIRPORT  
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BID FORM

BID ITEM	DESCRIPTION	UNITS	ESTIMATED QUANTITY	UNIT PRICE	BID AMOUNT
	Unit price in words: _____ dollars and _____ /100				
T-901-1	SEEDING, INCLUDING FERTILIZING AND WATERING	ACRE	7.4	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
T-904-1	SODDING	S.Y.	1,405	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
T-905-1	TOPSOILING (OBTAINED ON SITE OR REMOVED FROM STOCKPILE 2" THICKNESS)	S.Y.	36,567	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
L-107-5.1	L-807(L), STYLE I-B, SIZE 2 WIND CONE AND FOUNDATION, IN PLACE	EACH	1	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
L-107-5.2	SEGMENTED CIRCLE MARKER SYSTEM, IN PLACE	EACH	1	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
L-108-5.1	TRENCHING FOR DIRECT-BURIED CABLE, 18 INCH MINIMUM DEPTH	L.F.	300	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
L-108-5.2	NO. 8 AWG, 5 kV, L-824, TYPE C CABLE, INSTALLED IN TRENCH, DUCT	L.F.	15,200	\$ _____	\$ _____

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BID FORM

BID ITEM	DESCRIPTION	UNITS	ESTIMATED QUANTITY	UNIT PRICE	BID AMOUNT
	BANK, OR CONDUIT				
	Unit price in words: _____ dollars and _____ /100				
L-108-5.3	NO. 6 AWG, SOLID, BARE COUNTERPOISE WIRE, INSTALLED IN TRENCH, ABOVE THE DUCT BANK OR CONDUIT, INCLUDING GROUND RODS AND GROUND CONNECTORS	L.F.	6,500	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
L-108-5.4	NO. 1/0 AWG, STRANDED, BARE COUNTERPOISE WIRE, INSTALLED IN TRENCH, ABOVE THE DUCT BANK OR CONDUIT, INCLUDING GROUND RODS AND GROUND CONNECTORS	L.F.	350	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
L-108-5.5	TRENCHING FOR DIRECT-BURIED BARE COUNTERPOISE WIRE, 8" MINIMUM DEPTH	L.F.	5,600	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
L-108-5.6	NO. 6 AWG STRANDED, 600V RATED, TYPE THHN/THWN-2 CABLE, INSTALLED IN DUCT BANK OR CONDUIT	L.F.	150	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				

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BID FORM

BID ITEM	DESCRIPTION	UNITS	ESTIMATED QUANTITY	UNIT PRICE	BID AMOUNT
L-108-5.7	NO. 8 AWG STRANDED, 600V RATED, TYPE THHN/THWN-2, GREEN INSULATED EQUIPMENT GROUND, INSTALLED IN DUCT BANK OR CONDUIT	L.F.	75	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
L-110-5.1	NON-ENCASED, ELECTRICAL CONDUIT, 1WAY-2"C	L.F.	5,600	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
L-110-5.2	NON-ENCASED, ELECTRICAL DUCT BANK, 2-WAY 2"C	L.F.	70	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
L-110-5.3	NON-ENCASED, SCHEDULE 40 PVC DRAIN CONDUIT, 1-WAY 2"C	L.F.	225	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
L-110-5.4	ENCASED, ELECTRICAL CONDUIT, 1-WAY 2"C, WITH FLOWABLE FILL AND SAWCUT PAVEMENT REPAIR	L.F.	275	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
L-110-5.5	CONCRETE ENCASED, ELECTRICAL DUCT BANK, 2-WAY 2"C	L.F.	125	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
L-110-5.6	FAA-STYLE, CONCRETE ENCASED, SPLIT DUCT CONDUIT, 1-WAY 3"C	L.F.	700		



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BID FORM

BID ITEM	DESCRIPTION	UNITS	ESTIMATED QUANTITY	UNIT PRICE	BID AMOUNT
	Unit price in words: _____ dollars and _____ /100				
L-115-5.1	CONCRETE ENCASED ELECTRICAL JUNCTION STRUCTURE, L-867 CLASS 1, SIZE 12" DIAMETER BY 24" DEPTH	EACH	2	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
L-115-5.2	CONCRETE ENCASED ELECTRICAL JUNCTION STRUCTURE, L-867 CLASS 1, SIZE 16" DIAMETER BY 24" DEPTH	EACH	8	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				
L-115-5.3	ADJUST MANHOLE TO NEW GRADE	EACH	1	\$ _____	\$ _____
	Unit price in words: _____ dollars and _____ /100				

TOTAL (BASE BID) \$ \_\_\_\_\_

Total price in words: \_\_\_\_\_ dollars and \_\_\_\_\_ /100

It is understood the quantities of work to be done at unit prices are approximate and are intended for bidding purposes only. Amounts are to be shown in both words and figures. In case of discrepancy the amount shown in words shall govern.

Contract Award will be based on the lowest qualified bidder, depending on the availability of funds.

Bidders understand the Owner reserves the right to reject any irregular proposal and the right to waive technicalities if such waiver is in the best interest of the Owner and conforms to State and local laws and ordinances pertaining to the letting of construction contracts. Funding availability will be considered in selecting the bid award. The bidder agrees this bid shall be honored and may not be withdrawn for a period of 90 calendar days after the scheduled closing time for receiving bids.

Bidder hereby agrees to commence work under this contract on or before a date to be specified in a written "Notice to Proceed" and to fully complete the project within:

- **359 Calendar Days** thereafter.

Bidder further agrees to pay as liquidated damages the sum of **One Thousand Dollars (\$1,000.00)** for each calendar day to complete the work beyond the allotted time or as extended by an approved Change Order or Supplemental Agreement.

**CONTRACT**

THIS AGREEMENT made this \_\_\_\_\_ day of \_\_\_\_\_, 2016, by and between **XXXXXX** a Corporation organized and existing under the laws of the State of **Texas** hereinafter called the "Contractor", and **JEFFERSON COUNTY, TEXAS**, hereinafter called the "Owner".

W I T N E S S E T H:

That the Contractor and the Owner for the consideration stated herein mutually agree as follows:

ARTICLE 1. Statement of Work. The Contractor shall furnish all supervision, technical personnel, labor, materials, machinery, tools, equipment, incidentals and services, including utility and transportation services and perform and complete all work required for the construction of **Taxiway D Reconstruction (2017) from Ware Ramp to Taxiway 'F' at Jack Brooks Regional Airport** in strict accordance with the Contract Documents.

ARTICLE 2. The Contract Price. The Owner will pay the Contractor, because of his performance of the Contract, for the total quantities of work performed at the lump sum and unit prices stipulated in the Proposal for the **Base Bid, not to exceed a total contract value of: XXXXXXXXXXXXXXXXXXXX dollars and no /100 (\$X,XXX,XXX.00)** subject to additions, and deductions as provided in the Section entitled "CHANGES IN THE WORK" under GENERAL PROVISIONS.

ARTICLE 3. Contract Time. The Contractor agrees to begin work within ten (10) calendar days after issuance by the Owner of a "Work Order" or "Notice to Proceed" and to complete the work within **Three-Hundred and Fifty-Nine (359)** consecutive calendar days thereafter (except as modified in accordance with the GENERAL PROVISIONS of these Contract Documents). If the Contractor shall fail to complete the work within the time specified, he and his Surety shall be liable for payment to the Owner, as liquidated damages ascertained and agreed, and not in the nature of a penalty, the amount specified in the PROPOSAL of these Contract Documents for each day of delay. To the extent sufficient in amount, liquidated damages shall be deducted from the payments to be made under this Contract.

ARTICLE 4. Contract. The executed Contract Documents shall consist of the following:

- a. Advertisement and Invitation to Bidders
- b. Instructions to Bidders
- c. Bid Form and Proposal
- d. Executed Contract
- e. Statement of Bidder's Qualifications
- f. List of Proposed Subcontractors
- g. Performance and Payment Bonds
- h. Certificates of Insurance and Insurance Policies
- i. General Provisions (FAA AC 150/5370-10F)
- j. Special Provisions
- k. Addenda (if any)
- l. Wage Rates
- m. Technical Specifications
- n. Drawings
- o. Certificate(s) of Insurance

This Agreement, together with other Documents enumerated in this Article 4, which said other Documents are as fully a part of the Contract as if hereto attached or herein repeated, form the Contract between the parties hereto. In the event that any provisions in any component part of this Contract conflicts with any

provision of any other component part, the conflict shall be resolved by the Engineer whose decision shall be final.

**ARTICLE 5. Surety.** The Surety on the Performance-Payment Bond shall be a surety company of financial resources satisfactory to the Owner, authorized to do business in the State of Texas, and shall comply with applicable Texas laws.

IN WITNESS WHEREOF, the parties hereto have caused this AGREEMENT to be executed in four (4) counterparts, each of which shall be considered an original on the day and year first above written.

**Name** \_\_\_\_\_  
(Contractor)

ATTEST: \_\_\_\_\_ By \_\_\_\_\_

\_\_\_\_\_  
(Print the names underneath all signatures) Title: \_\_\_\_\_

\_\_\_\_\_  
(Street)

\_\_\_\_\_  
(City)

**JEFFERSON COUNTY, TEXAS,** \_\_\_\_\_  
(Owner)

ATTEST: \_\_\_\_\_ By \_\_\_\_\_

\_\_\_\_\_  
(Print the names underneath all signatures) Title: \_\_\_\_\_

## ITEM P-152 EXCAVATION, SUBGRADE, AND EMBANKMENT

### DESCRIPTION

**152-1.1** This item covers excavation, disposal, placement, and compaction of all materials within the limits of the work required to construct safety areas, runways, taxiways, aprons, and intermediate areas as well as other areas for drainage, building construction, parking, or other purposes in accordance with these specifications and in conformity to the dimensions and typical sections shown on the plans.

**152-1.2 CLASSIFICATION.** All material excavated shall be classified as defined below:

**a. Unclassified Excavation.** Unclassified excavation shall consist of the excavation and disposal of all material, regardless of its nature which is not otherwise classified and paid for under one of the following items.

~~**b. Rock Excavation.** Rock excavation shall include all solid rock in ledges, in bedded deposits, in unstratified masses, and conglomerate deposits which are so firmly cemented they cannot be removed without blasting or using rippers. All boulders containing a volume of more than 1/2 cubic yard will be classified as "rock excavation."~~

~~**c. Muck Excavation.** Muck excavation shall consist of the removal and disposal of deposits or mixtures of soils and organic matter not suitable for foundation material. Muck shall include materials that will decay or produce subsidence in the embankment. It may consist of decaying stumps, roots, logs, humus, or other material not satisfactory for incorporation in the embankment.~~

~~**d. Drainage Excavation.** Drainage excavation shall consist of all excavation made for the primary purpose of drainage and includes drainage ditches, such as intercepting, inlet or outlet ditches; temporary levee construction; or any other type as shown on the plans.~~

**e. Borrow Excavation.** Borrow excavation shall consist of approved material required for the construction of embankments or for other portions of the work in excess of the quantity of *potentially* usable material available from required excavations. Borrow material shall be obtained from areas designated by the Engineer within the limits of the airport property but outside the normal limits of necessary grading, or from areas outside the airport boundaries.

**152-1.3 Unsuitable Excavation.** Any material containing vegetable or organic matter, such as muck, peat, organic silt, or sod shall be considered unsuitable for use in embankment construction. Material, suitable for topsoil may be used on the embankment slope when approved by the Engineer. *Material not considered by the Engineer to be suitable for use on the embankment slope shall be disposed of off-site or as directed by the Engineer. Undercutting of material unsatisfactory for subgrade foundation, roads, shoulders, or areas intended for turfing shall be considered unsuitable excavation and shall be excavated to the depth specified by the Engineer below the subgrade.*

### CONSTRUCTION METHODS

**152-2.1 General.** Before beginning excavation, grading, and embankment operations in any area, the area shall be completely cleared and grubbed in accordance with Item P-151.

The suitability of material to be placed in embankments shall be subject to approval by the Engineer. All unsuitable material shall be disposed of in waste areas shown on the plans. All waste areas shall be graded to allow positive drainage of the area and of adjacent areas. The surface elevation of waste areas shall not extend above the surface elevation of adjacent usable areas of the airport, unless specified on the plans or approved by the Engineer.

When the Contractor's excavating operations encounter artifacts of historical or archaeological significance, the operations shall be temporarily discontinued and the Engineer notified per subsection 70-20 of the *General Provisions*. At the direction of the Engineer, the Contractor shall excavate the site in such a manner as to preserve the artifacts encountered and allow for their removal. Such excavation will be paid for as extra work.

Those areas outside of the limits of the pavement areas where the top layer of soil material has become compacted by hauling or other Contractor activities shall be scarified and disked to a depth of 4 inches, to loosen and pulverize the soil.

If it is necessary to interrupt existing surface drainage, sewers or under-drainage, conduits, utilities, or similar underground structures, the Contractor shall be responsible for and shall take all necessary precautions to preserve them or provide temporary services. When such facilities are encountered, the Contractor shall notify the Engineer, who shall arrange for their removal if necessary. The Contractor, at his or her expense, shall satisfactorily repair or pay the cost of all damage to such facilities or structures that may result from any of the Contractor's operations during the period of the contract.

**152-2.2 EXCAVATION.** No excavation shall be started until the work has been staked out by the Contractor and the Engineer has obtained from the Contractor the survey notes of the elevations and measurements of the ground surface. All areas to be excavated shall be stripped of vegetation and topsoil. Topsoil shall be stockpiled for future use in areas designated on the plans or by the Engineer. All suitable excavated material shall be used in the formation of embankment, subgrade, or other purposes shown on the plans. All unsuitable material shall be disposed of as *described in paragraph 152-1.3 shown on the plans.*

When the volume of the excavation exceeds that required to construct the embankments to the grades indicated, the excess shall be used to grade the areas of ultimate development or disposed as directed by the Engineer. When the volume of excavation is not sufficient for constructing the embankments to the grades indicated, the deficiency shall be obtained from borrow areas.

The grade shall be maintained so that the surface is well drained at all times. When necessary, temporary drains and drainage ditches shall be installed to intercept or divert surface water that may affect the work.

**a. Selective Grading.** When *the quality of material varies significantly* ~~selective grading is indicated on the plans,~~ the more suitable material designated by the Engineer shall be used in constructing the embankment or in capping the pavement subgrade. If, at the time of excavation, it is not possible to place this material in its final location, it shall be stockpiled in approved areas. ~~so that it can be measured for payment as specified in paragraph 152-3.3. Selective grading will not be measured for separate payment but will be considered subsidiary to "Unclassified Excavation".~~

**b. Undercutting.** Rock, shale, hardpan, loose rock, boulders, or other material unsatisfactory for safety areas, subgrades, roads, shoulders, or any areas intended for turf shall be excavated to a minimum depth of 12 inches below the subgrade or to the depth specified by the Engineer. Muck, peat, matted roots, or other yielding material, unsatisfactory for subgrade foundation, shall be removed to the depth specified. Unsuitable materials shall be disposed of as directed in paragraph 152-1.3. This excavated material shall be paid for at the contract unit price per cubic yard for **unsuitable excavation**. The excavated area shall be backfilled with suitable material obtained from the grading operations or borrow areas and compacted to specified densities. The necessary backfill will constitute a *necessary part of Unsuitable Excavation* ~~part of the embankment.~~ Where rock cuts are made, backfill with select material. Any pockets created in the rock surface shall be drained *as directed by the Engineer in accordance with the details shown on the plans.*

**c. Overbreak.** Overbreak, including slides, is that portion of any material displaced or loosened beyond the finished work as planned or authorized by the Engineer. All overbreak shall be graded or removed by the Contractor and disposed of as directed by the Engineer. The Engineer shall determine if the displacement of such material was unavoidable and his or her decision shall be final. Payment will not be

made for the removal and disposal of overbreak that the Engineer determines as avoidable. Unavoidable overbreak will be classified as "Unclassified Excavation."

**d. Removal of Utilities.** The removal of *some* existing structures and utilities required to permit the orderly progress of work *may will* be accomplished by someone other than the Contractor; for example, the utility unless otherwise shown on the plans. All existing foundations shall be excavated at least 2 feet below the top of subgrade or as indicated on the plans, and the material disposed of as directed by the Engineer. All foundations thus excavated shall be backfilled with suitable material and compacted as specified. *All work associated with the excavation, removal, backfill, disposal, and/or stockpiling of existing structures and culverts will not be measured for separate payment but will be considered subsidiary to "Unclassified Excavation".*

**e. Compaction Requirements.** The subgrade under areas to be paved shall be compacted to a depth of **8 inches** and to a density of not less than **95** percent of the maximum density as determined by ASTM **D 1557**. The material to be compacted shall be within +/- 2 percent of optimum moisture content before rolled to obtain the prescribed compaction (except for expansive soils).

The in-place field density shall be determined in accordance with ASTM D6938 using Procedure A, the direct transmission method, and ASTM D6938 shall be used to determine the moisture content of the material. The machine shall be calibrated in accordance with ASTM D6938. Stones or rock fragments larger than 4 inches in their greatest dimension will not be permitted in the top 6 inches of the subgrade. The finished grading operations, conforming to the typical cross-section, shall be completed and maintained at least 1,000 feet ahead of the paving operations or as directed by the Engineer.

All loose or protruding rocks on the back slopes of cuts shall be pried loose or otherwise removed to the slope finished grade line. All cut-and-fill slopes shall be uniformly dressed to the slope, cross-section, and alignment shown on the plans or as directed by the Engineer.

Blasting shall not be allowed.

**e. Proof Rolling.** After compaction is completed, the subgrade area shall be proof rolled with a heavy pneumatic-tired roller having four or more tires abreast, each tire loaded to a minimum of 30,000 pounds and inflated to a minimum of 125 psi in the presence of the Engineer. Apply a minimum of **2** coverage, or as specified by the Engineer, to all paved areas. A coverage is defined as the application of one tire print over the designated area. Soft areas of subgrade that deflect more than 1 inch or show permanent deformation greater than 1 inch shall be removed and replaced with suitable material or reworked to conform to the moisture content and compaction requirements in accordance with these specifications.

**152-2.3 BORROW EXCAVATION.** ~~Borrow areas within the airport property are indicated on the plans. Borrow excavation shall be made only at these designated locations and within the horizontal and vertical limits as staked or as directed by the Engineer.~~

When borrow sources are outside the boundaries of the airport property, it shall be the Contractor's responsibility to locate and obtain the borrow sources, subject to the approval of the Engineer. The Contractor shall notify the Engineer at least 15 days prior to beginning the excavation so necessary measurements and tests can be made. All borrow pits shall be opened up to expose the various strata of acceptable material to allow obtaining a uniform product. All unsuitable material shall be disposed of by the Contractor. Borrow pits shall be excavated to regular lines to permit accurate measurements, and they shall be drained and left in a neat, presentable condition with all slopes dressed uniformly.

**152-2.4 DRAINAGE EXCAVATION.** Drainage excavation shall consist of excavating for drainage ditches such as intercepting; inlet or outlet ditches; for temporary levee construction; or for any other type as designed or as shown on the plans. The work shall be performed in sequence with the other construction. Intercepting ditches shall be constructed prior to starting adjacent excavation operations. All satisfactory material shall be placed in embankment fills; unsuitable material shall be placed in designated waste areas

or as directed by the Engineer. All necessary work shall be performed true to final line, elevation, and cross-section. The Contractor shall maintain ditches constructed on the project to the required cross-section and shall keep them free of debris or obstructions until the project is accepted.

**152-2.5 PREPARATION OF EMBANKMENT AREA.** Where an embankment is to be constructed to a height of 4 feet or less, all sod and vegetative matter shall be removed from the surface upon which the embankment is to be placed. The cleared surface shall be broken up by plowing or scarifying to a minimum depth of 6 inches and shall then be compacted as indicated in paragraph 152-2.6.

When the height of fill is greater than 4 feet, sod not required to be removed shall be thoroughly disked and recompacted to the density of the surrounding ground before construction of embankment.

Sloped surfaces steeper than one (1) vertical to four (4) horizontal shall be plowed, stepped, benched, or broken up so that the fill material will bond with the existing material. When the subgrade is part fill and part excavation or natural ground, the excavated or natural ground portion shall be scarified to a depth of 12 inches and compacted as specified for the adjacent fill.

No direct payment shall be made for the work performed under this section. The necessary clearing and grubbing and the quantity of excavation removed will be paid for under the respective items of work.

**152-2.6 FORMATION OF EMBANKMENTS.** Embankments shall be formed in successive horizontal layers of not more than 8 inches in loose depth for the full width of the cross-section, unless otherwise approved by the Engineer.

The layers shall be placed, to produce a soil structure as shown on the typical cross-section or as directed by the Engineer. Materials such as brush, hedge, roots, stumps, grass and other organic matter, shall not be incorporated or buried in the embankment.

Earthwork operations shall be suspended at any time when satisfactory results cannot be obtained because of rain, freezing, or other unsatisfactory weather conditions in the field. Frozen material shall not be placed in the embankment nor shall embankment be placed upon frozen material. Material shall not be placed on surfaces that are muddy, frozen, or contain frost. The Contractor shall drag, blade, or slope the embankment to provide surface drainage at all times.

The material in each layer shall be within  $\pm 2\%$  of optimum moisture content before rolling to obtain the prescribed compaction. To achieve a uniform moisture content throughout the layer, the material shall be moistened or aerated as necessary. Samples of all embankment materials for testing, both before and after placement and compaction, will be taken for each **1,000 SY of material placed per layer**. Based on these tests, the Contractor shall make the necessary corrections and adjustments in methods, materials or moisture content to achieve the specified embankment density.

Rolling operations shall be continued until the embankment is compacted to not less than ~~95% of maximum density for noncohesive soils, and~~ 90% of maximum density for cohesive soils *outside of areas to be paved*. *Maximum density is as determined by ASTM D 1557. Contractor's laboratory shall perform density test in the Engineer's presence and provide the test results upon completion to the Engineer for review.* Under all areas to be paved, the embankments shall be compacted to a depth of **8 inches** and to a density of not less than **95** percent of the maximum density as determined by ASTM D 1557.

On all areas outside of the pavement areas, no compaction will be required on the top 4 inches.

The in-place field density shall be determined in accordance with **ASTM 6938 using Procedure A, the direct transmission method, and ASTM D6938 shall be used to determine the moisture content of the material. The machine shall be calibrated in accordance with ASTM D6938. The Engineer shall perform all density tests.**



Compaction areas shall be kept separate, and no layer shall be covered by another layer until the proper density is obtained.

During construction of the embankment, the Contractor shall route all construction equipment evenly over the entire width of the embankment as each layer is placed. Layer placement shall begin in the deepest portion of the embankment fill. As placement progresses, the layers shall be constructed approximately parallel to the finished pavement grade line.

When rock and other embankment material are excavated at approximately the same time, the rock shall be incorporated into the outer portion of the embankment and the other material shall be incorporated under the future paved areas. Stones or fragmentary rock larger than 4 inches in their greatest dimensions will not be allowed in the top 6 inches of the subgrade. Rockfill shall be brought up in layers as specified or as directed by the Engineer and the finer material shall be used to fill the voids with forming a dense, compact mass. Rock or boulders shall not be disposed of outside the excavation or embankment areas, except at places and in the manner designated on the plans or by the Engineer.

When the excavated material consists predominantly of rock fragments of such size that the material cannot be placed in layers of the prescribed thickness without crushing, pulverizing or further breaking down the pieces, such material may be placed in the embankment as directed in layers not exceeding 2 feet in thickness. Each layer shall be leveled and smoothed with suitable equipment by distribution of spalls and finer fragments of rock. The layer shall not be constructed above an elevation 4 feet below the finished subgrade.

There will be no separate measurement of payment for compacted embankment. All costs incidental to placing in layers, compacting, discing, watering, mixing, sloping, and other operations necessary for construction of embankments will be included in the contract price for excavation, borrow, or other items.

**152-2.7 FINISHING AND PROTECTION OF SUBGRADE.** After the subgrade is substantially complete, the Contractor shall remove any soft or other unstable material over the full width of the subgrade that will not compact properly. All low areas, holes or depressions in the subgrade shall be brought to grade with suitable select material. Scarifying, blading, rolling and other methods shall be performed to provide a thoroughly compacted subgrade shaped to the lines and grades shown on the plans.

Grading of the subgrade shall be performed so that it will drain readily. The Contractor shall protect the subgrade from damage and limit hauling over the finished subgrade to only traffic essential for construction purposes. All ruts or rough places that develop in the completed subgrade shall be graded and recompacted.

No subbase, base, or surface course shall be placed on the subgrade until the subgrade has been approved by the Engineer.

**152-2.8 HAUL.** All hauling will be considered a necessary and incidental part of the work. The Contractor shall include the cost in the contract unit price for the pay of items of work involved. No payment will be made separately or directly for hauling on any part of the work.

**152-2.9 TOLERANCES.** In those areas upon which a subbase or base course is to be placed, the top of the subgrade shall be of such smoothness that, when tested with a 12-foot straightedge applied parallel and at right angles to the centerline, it shall not show any deviation in excess of 1/2 inch, or shall not be more than 0.05 feet from true grade as established by grade hubs. Any deviation in excess of these amounts shall be corrected by loosening, adding, or removing materials; reshaping; and recompacting.

On safety areas, intermediate and other designated areas, the surface shall be of such smoothness that it will not vary more than 0.10 feet from true grade as established by grade hubs. Any deviation in excess of this amount shall be corrected by loosening, adding or removing materials, and reshaping.

**152-2.10 TOPSOIL.** When topsoil is specified or required as shown on the plans or under Item T-905, it shall be salvaged from stripping or other grading operations. The topsoil shall meet the requirements of Item T-905. If, at the time of excavation or stripping, the topsoil cannot be placed in its final section of finished construction, the material shall be stockpiled at approved locations. Stockpiles shall not be placed within **500** feet of runway pavement or **250** feet of taxiway pavement and shall not be placed on areas that subsequently will require any excavation or embankment fill. If, in the judgment of the Engineer, it is practical to place the salvaged topsoil at the time of excavation or stripping, the material shall be placed in its final position without stockpiling or further rehandling.

Upon completion of grading operations, stockpiled topsoil shall be handled and placed as directed, or as required in Item T-905.

No direct payment will be made for topsoil under Item P-152. The quantity removed and placed directly or stockpiled shall be paid for at the contract unit price per cubic yard for "Unclassified Excavation."

When stockpiling of topsoil and later rehandling of such material is directed by the Engineer, the material so rehandled shall be paid for at the contract unit price per cubic yard for "topsoiling," as provided in Item T-905.

### METHOD OF MEASUREMENT

~~**152-3.1** The quantity of excavation to be paid for shall be the number of cubic yards measured in its original position. Measurement shall not include the quantity of materials excavated without authorization beyond normal slope lines, or the quantity of material used for purposes other than those directed. [The quantity of compacted embankment in place to be paid for shall be the number of cubic yards measured in its final position.]~~

*Measurement of excavation/embankment shall be based on **plan quantities**. These quantities are believed to be correct and shall be utilized for final excavation quantity payment notwithstanding any adjustments to the project by written direction of the Engineer. Should the contractor find discrepancies and/or errors, he/she shall bring the discrepancy and/or error to the attention of the Engineer immediately and corrections shall be made to the quantity of excavation to be paid for by change order. It is expressly understood by the contractor that upon disturbance of the existing ground and no notification to the engineer of possible errors, that the contractor accepts as final payment the quantities of excavation as detailed on the plans and laid out in the proposal. No adjustment has been made to the plan quantities for the construction or demolition of existing drainage structures. The Contractor shall make his own determination as to the amount of unsuitable excavated material which may be encountered and the resulting additional borrow material required for the construction of the embankment. There will be no adjustment for additional embankment required to construct the project if the excavated material is deemed unsuitable.*

~~**152-3.2** Borrow material shall be paid for on the basis of the number of cubic yards measured in its original position at the borrow pit as based on plan quantities.~~

**152-3.3** Stockpiled material shall be paid for on the basis of the number of cubic yards measured in the stockpiled position as soon as the material has been stockpiled.

**152-3.4** For payment specified by the cubic yard, measurement for all excavation and embankment shall be computed by the average end area method. The end area is that bound by the original ground line established by field cross-sections and the final theoretical pay line established by excavation and embankment cross-sections shown on the plans, subject to verification by the Engineer. After completion of all excavation and embankment operations and prior to the placing of base or subbase material, the final excavation and embankment shall be verified by the Engineer by means of field cross-sections taken randomly at intervals not exceeding 500 linear feet.

*In cut sections, the additional cut required to construct the topsoil layer to the plan grade has not been measured and will not be measured for separate payment but will be subsidiary to "Unclassified Excavation". In fill sections, the additional fill required to replace the stripped material has not been measured and will not be measured for payment but will be subsidiary to "Unclassified Excavation".*

*No allowance has been made in the measurement for shrink/swell. The Contractor shall make his own determination as to the amount of shrink/swell involved in the construction of the embankment.*

*The Contractor shall make his own determination as to the suitability of the excavated material to be placed in embankments and the resulting additional off-site material required for the construction of the embankment. Additional off-site material required for the formation of embankment shall not be measured for separate payment but shall be considered subsidiary to "Unclassified Excavation".*

**152-3.6** *Unsuitable excavation shall be measured from the surface of the ground, after stripping has been accomplished, or from the bottom of the planned excavation, to the depth of the excavation as directed by the Engineer. Measurements will be taken by the Engineer, and the volume of excavation will be calculated by the average end area method. The necessary refilling of unsuitable areas will not be measured for separate payment but will be subsidiary to "Unsuitable Excavation". Only that amount of excavation directed by the Engineer will be measured for payment.*

## **BASIS OF PAYMENT**

**152-4.1** "Unclassified excavation" payment shall be made at the contract unit price per cubic yard. This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.

~~**152-4.2** "Rock Excavation" payment shall be made at the contract unit price per cubic yard. This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.~~

~~**152-4.3** "Muck Excavation" payment shall be made at the contract unit price per cubic yard. This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.~~

~~**152-4.4** "Drainage Excavation" payment shall be made at the contract unit price per cubic yard. This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.~~

**152-4.5** "Borrow Excavation" payment shall be made at the contract unit price per cubic yard. This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.

~~**152-4.6** "Stockpiled Material" payment shall be made at the contract unit price per cubic yard. This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.~~

~~**152-4.7** For embankment in place, payment shall be made at the contract unit price per cubic yard. This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.~~

**152-4.8** Unsuitable excavation shall be paid for at the contract unit price bid per cubic yard for "Unsuitable Excavation", which price shall be full compensation for all excavation; for disposal or placement of unsuitable material (in accordance with section 152-1.3), including loading, hauling, spreading, and

compaction; for compaction and preparation of subgrade; for the refilling, rolling, and compaction of all undercut areas; and for all equipment, tools, labor, and incidentals necessary to complete the work.

Payment will be made under:

Item P-152-1	Unclassified Excavation - per Cubic Yard
Item P-152-2	Borrow Excavation - per Cubic Yard
Item P-152-3	Unsuitable Excavation - per Cubic Yard

#### **TESTING REQUIREMENTS**

ASTM D698	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft <sup>3</sup> )
ASTM D1556	Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D1557	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft <sup>3</sup> )
ASTM D2167	Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method
ASTM D6938	Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

**END OF ITEM P-152**

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