

# CITY OF SAN ANGELO, TEXAS

## SAN ANGELO REGIONAL AIRPORT - MATHIS FIELD

# TAXIWAY RECONFIGURATION PROJECT

CITY RFB # AP-02-17

FAA AIP # 3-48-0191-035-2017

REMOVE EXISTING TAXIWAY C AND TAXIWAY E, CONSTRUCT RIGHT ANGLED TAXIWAY C AND TAXIWAY E,  
CONSTRUCT APRON ISLANDS, REPAIR APRON EDGE, AND REMARK TERMINAL APRON.

JULY 2017

**OWNER**

CITY OF SAN ANGELO, TX

**CITY MANAGER**

DANIEL VALENZUELA

**AIRPORT DIRECTOR**

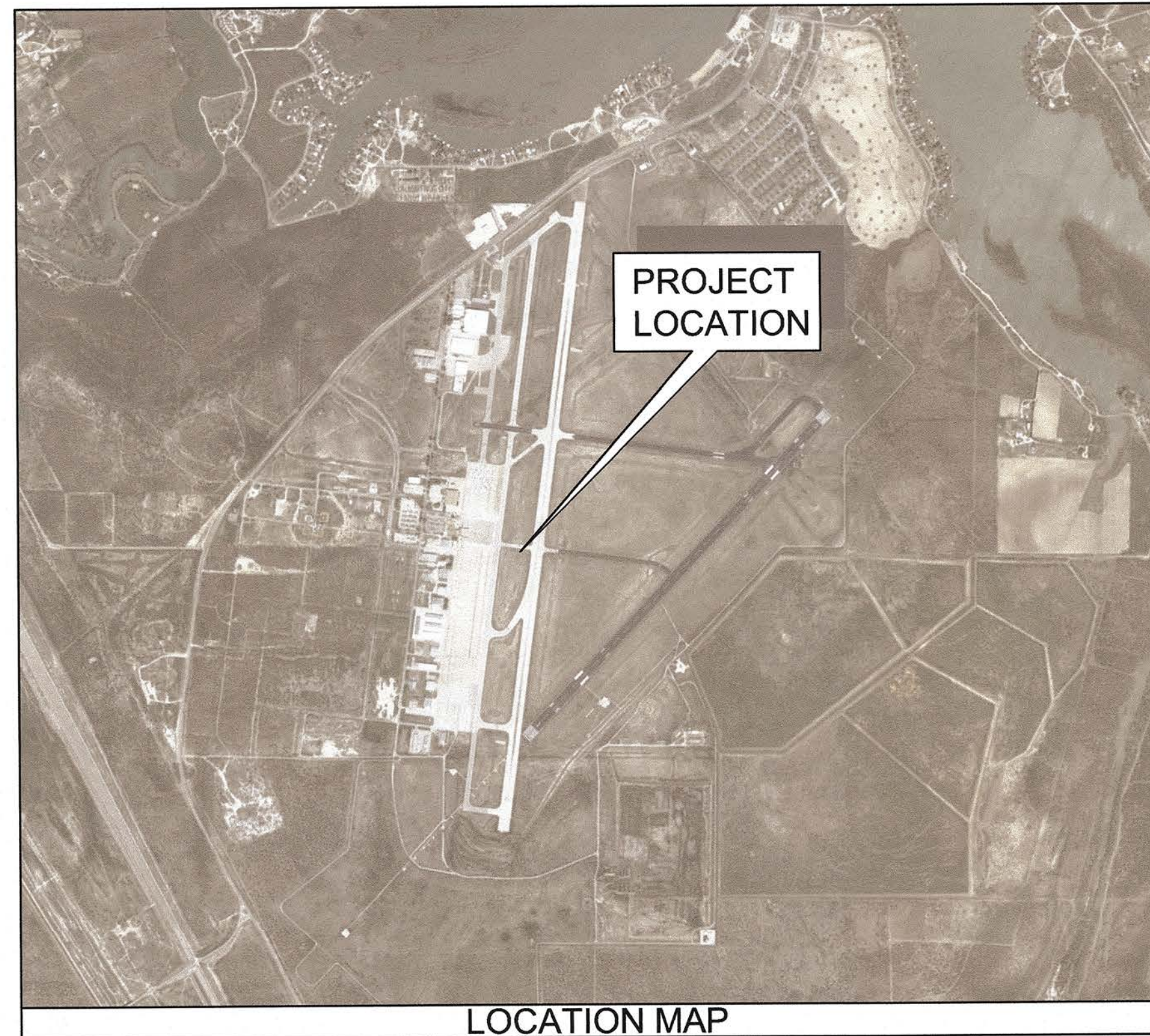
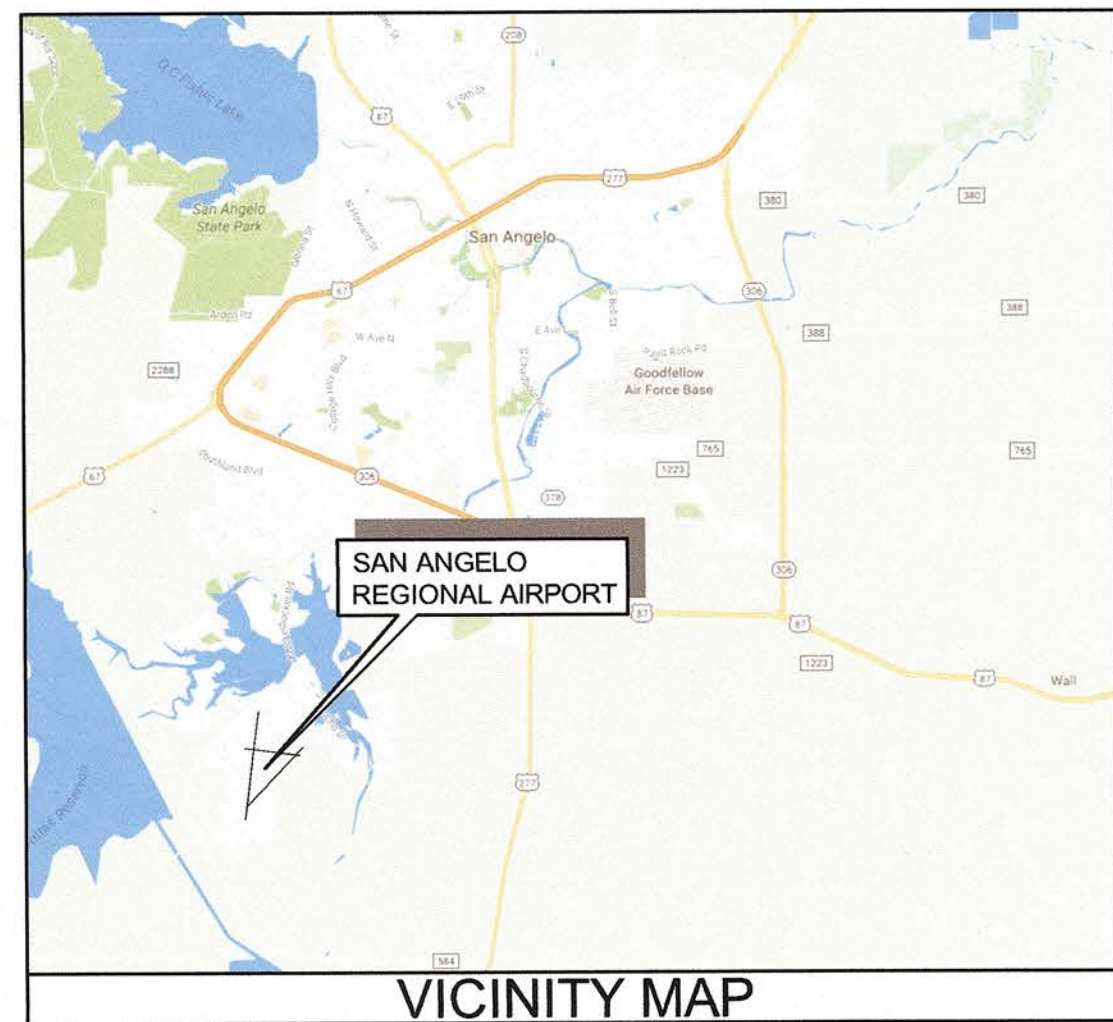
LUIS ELGUEZABAL, A.A.E.

**MAYOR**

BRENDA GUNTER

**CITY COUNCIL MEMBERS**

TOMMY HIEBERT  
TOM THOMPSON  
HARRY THOMAS  
LUCY GONZALES  
LANE CARTER  
CHARLOTTE FARMER



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E20	ALCMS SYSTEM MODIFICATIONS - SHEET 9 OF 10
E21	ALCMS SYSTEM MODIFICATIONS - SHEET 10 OF 10

**RECOMMENDED BY:**

KSA



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DAVID A. ALEXANDER, P.E.  
PROJECT ENGINEER

7/6/17  
DATE



# GENERAL NOTES

ADDITIONAL NOTES ON PLAN SHEETS

## SAFETY NOTES:

- WHILE THE AIRPORT IS OPEN, NO VEHICLE OR EQUIPMENT SHALL MOVE UPON APRONS, TAXIWAYS AND/OR RUNWAYS UNTIL THE VEHICLE IS GRANTED PERMISSION BY THE CONTROL TOWER. PERMISSION SHALL BE COORDINATED THROUGH THE AIRPORT DIRECTOR, LUIS ELGUEZABAL (325-859-6409). ONCE GRANTED PERMISSION, VEHICLE MAY PROCEED BY COORDINATING WITH THE TOWER ON THE APPROPRIATE GROUND CONTROL RADIO FREQUENCY, OR BE UNDER ESCORT BY A VEHICLE COORDINATING WITH THE TOWER ON THE APPROPRIATE GROUND CONTROL RADIO FREQUENCY. ALL VEHICLES MUST BE IDENTIFIED BY FLAG AND FLASHING AMBER LIGHT.
- FLAGMEN WILL BE REQUIRED TO DIRECT THE CONTRACTOR'S VEHICLES AND EQUIPMENT WHICH ARE OPERATING IN THE AREA OF MOVING AIRCRAFT. FLAGMEN TO MONITOR UNICOM, FREQUENCY 122.95 MHz. AIRCRAFT ALWAYS HAVE THE RIGHT-OF-WAY.
- CONSTRUCTION PERSONNEL AND EQUIPMENT WILL NOT BE ALLOWED WITHIN THE AIRPORT OPERATIONS AREA (AOA) UNTIL THE AREA HAS BEEN CLOSED TO AIRCRAFT AND NOTAMS ISSUED.
- REFERENCE AC 150/5370-2F, "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".
- GENERAL SAFETY REQUIREMENTS: DURING PERFORMANCE OF THIS CONTRACT, THE AIRPORT RUNWAYS, TAXIWAYS, AND AIRCRAFT PARKING APRONS SHALL REMAIN IN USE BY AIRCRAFT TO THE MAXIMUM EXTENT POSSIBLE. AIRCRAFT USE OF AREAS NEAR THE CONTRACTOR'S WORK WILL BE CONTROLLED TO MINIMIZE DISTURBANCE TO THE CONTRACTOR'S OPERATION. THE CONTRACTOR SHALL NOT ALLOW HIS/HER EMPLOYEES, SUBCONTRACTOR'S SUPPLIERS, OR ANY PERSON OVER WHOM HE/SHE HAS CONTROL TO ENTER OR REMAIN IN ANY PART OF THE AIRPORT WHICH WOULD BE HAZARDOUS TO PERSONS OR TO AIRCRAFT OPERATIONS. WHENEVER AIRCRAFT OPERATIONS REQUIRE, THE ENGINEER, MAY ORDER THE CONTRACTOR TO SUSPEND OPERATIONS, MOVE PLANT, PERSONNEL, EQUIPMENT, AND MATERIALS TO A SAFE LOCATION AND STAND BY UNTIL AIRCRAFT USE IS COMPLETED.
- VEHICLE IDENTIFICATION AND PARKING: (A) CONTRACTOR VEHICLES AND EQUIPMENT SHALL BE IDENTIFIED BY FLAGS AND AMBER FLASHING LIGHTS. (B) EMPLOYEE PARKING SHALL BE IN THE CONTRACTOR'S STAGING AND STORAGE AREA.
- THE CONTRACTOR SHALL NOT, FOR ANY REASON ENTER ACTIVE AIRFIELD AREAS WITHOUT EXPLICIT APPROVAL BY AIRPORT MANAGEMENT. THE CONTRACTOR SHALL LIMIT OPERATIONS TO LIMITS OF CONSTRUCTION ACTIVITIES.
- RUNWAY 18/36 MUST BE CLOSED ANYTIME CONSTRUCTION ACTIVITY IS OCCURRING WITHIN 250' ON EITHER SIDE OF THE RUNWAY CENTERLINE. THE NUMBER AND THE DURATION OF RUNWAY CLOSINGS SHALL BE MINIMIZED. IN ORDER TO MINIMIZE RUNWAY CLOSURES, MULTIPLE CONSTRUCTION ACTIVITIES NEAR THE RUNWAY SHOULD OCCUR SIMULTANEOUSLY WHEN IT IS CLOSED.
- THE CONTRACTOR SHALL EQUIP ALL CONSTRUCTION VEHICLES AND EQUIPMENT WITH A FLAG ON A STAFF ATTACHED TO THE VEHICLE AND READILY VISIBLE OR AMBER FLASHING LIGHT DURING DAY HOURS AND AMBER FLASHING LIGHT DURING NIGHT HOURS. THE FLAG SHALL BE NOT LESS THAN 3 FEET SQUARE CONSISTING OF A CHECKERED PATTERN OF INTERNATIONAL ORANGE AND WHITE SQUARES NOT LESS THAN ONE FOOT ON EACH SIDE AND DISPLAYED IN FULL VIEW ABOVE THE VEHICLE.
- ALL EQUIPMENT AND MATERIALS SHALL BE STORED IN THE CONTRACTOR'S STAGING AND STORAGE AREA WHEN NOT IN USE. EQUIPMENT AND MATERIALS SHALL NOT ENCROACH UPON ACTIVE OPERATIONAL AREAS. MINIMUM CLEARANCES SHALL BE MAINTAINED ON RUNWAYS IN ACCORDANCE WITH PART 77 OF THE FEDERAL AVIATION REGULATIONS.
- ALL EXCAVATIONS, OPEN TRENCHES AND STOCKPILED MATERIAL AT THE CONSTRUCTION SITE SHALL BE PROMINENTLY MARKED WITH FLAGS AND LIGHT UNITS ACCEPTABLE TO THE ENGINEER DURING HOURS OF RESTRICTED VISIBILITY OR DARKNESS.
- WASTE AND LOOSE MATERIAL CAPABLE OF CAUSING DAMAGE TO AIRPLANES MUST NOT BE PLACED ON ACTIVE AIRPLANE MOVEMENT AREAS. MATERIAL TRACKED ON THESE AREAS MUST BE REMOVED CONTINUOUSLY BY A SWEEPER OR VACUUM TRUCK SUPPLIED BY THE CONTRACTOR DURING THE PROJECT. NO DIRECT PAY IN BID PROPOSAL.

## CONSTRUCTION NOTES:

- AIRPORT SECURITY IS OF UTMOST IMPORTANCE. THE CONTRACTOR SHALL SUPPLY HIS OWN LOCK FOR ACCESS GATES, AND SHALL KEEP THE GATES LOCKED OR GUARDED AT ALL TIMES, EXCEPT FOR THE BRIEF PERIOD REQUIRED FOR PASSAGE OF AUTHORIZED VEHICLES OR EQUIPMENT.
- EACH CONSTRUCTION AREA SHALL BE SHAPED TO ALLOW DRAINAGE OF SURFACE WATER DURING EACH WORK OPERATION. THE CONTRACTOR SHALL PUMP SURFACE WATER IMMEDIATELY FROM EACH CONSTRUCTION AREA AFTER EACH RAIN.
- THE MAJORITY OF THE WORK WILL BE ACCOMPLISHED DURING NORMAL DAYTIME WORKING HOURS, OR AS APPROVED BY THE ENGINEER.
- STOCKPILE LOCATION SHALL BE ADJUSTED IN THE FIELD AND COORDINATED WITH THE ENGINEER. STOCKPILE SHALL NOT CREATE ANY PONDING OF WATER OR ALTER DRAINAGE PATTERNS OF THE AIRPORT PROPERTY EXCEPT AS SHOWN IN THESE PLANS.
- ALL WASTE OR SPOIL MATERIAL SHALL BE DISPOSED OFF OF THE AIRPORT PROPERTY BY THE CONTRACTOR, UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL PROVIDE AND INSTALL ALL MATERIALS AND DRAINAGE STRUCTURES TO CONSTRUCT A STABILIZED CONSTRUCTION EXIT AT EACH POINT WHERE CONSTRUCTION CREWS OR EQUIPMENT WILL EXIT AIRPORT PROPERTY.
- THE CONTRACTOR SHALL NOT, FOR ANY REASON ENTER ACTIVE AIRFIELD AREAS WITHOUT EXPLICIT APPROVAL BY AIRPORT MANAGEMENT. THE CONTRACTOR SHALL LIMIT OPERATIONS TO LIMITS OF CONSTRUCTION ACTIVITIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OF ANY DAMAGE TO EXISTING PAVEMENTS, UNDERGROUND CABLES, PIPELINES, ETC. ENCOUNTERED DURING CONSTRUCTION. ALL REPAIRS MUST BE MADE IN COMPLIANCE WITH THE CITY OF SAN ANGELO, THE ENGINEER, AND THE FAA REQUIREMENTS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND ACQUIRING AN ACCEPTABLE WATER SOURCE AS REQUIRED FOR CONSTRUCTION. CITY WATER IS AVAILABLE ON AIRPORT PROPERTY NEAR THE CONSTRUCTION SITE. CONTACT THE CITY OF SAN ANGELO WATER DEPARTMENT, (325-657-4323) FOR REQUIREMENTS FOR USING CITY WATER. THE CONTRACTOR SHOULD CHECK WITH THE REVENUE DEPARTMENT PRIOR TO PREPARING HIS BID IN ORDER TO DETERMINE ANY COST FOR WATER USED. NO DIRECT PAY PROVIDED IN BID PROPOSAL.
- THE CONTRACTOR MUST PROVIDE A MINIMUM OF 72 HOURS NOTICE TO THE RESIDENT PROJECT REPRESENTATIVE (RPR), PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES. A NOTICE TO AIRMEN (NOTAM) SHALL BE ISSUED. THE CONTRACTOR SHALL NOTIFY THE RPR WHO WILL THEN NOTIFY THE ENGINEER AND THE AIRPORT.

- CONTRACTOR SHALL CLEAN UP ALL MUD, DIRT AND DEBRIS DROPPED ON EXISTING PAVEMENT AS A RESULT OF CONSTRUCTION ACTIVITIES ON A DAILY BASIS. ALL CLEANUP MUST BE COMPLETED PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.
- ALL TRAFFIC CONTROL AND WARNING SIGNS SHALL BE IN ACCORDANCE WITH TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- CONTRACTOR SHALL PROVIDE RESTROOM FACILITIES FOR HIS EMPLOYEES.
- THE CONTRACTOR, ON BEHALF OF THE OWNER, WILL OBTAIN ALL PERMITS REQUIRED BY THE CITY OF SAN ANGELO AND/OR TOM GREEN COUNTY, TEXAS PRIOR TO STARTING CONSTRUCTION.

## ACCESS ROUTE NOTES:

- DAMAGE TO EXISTING PAVEMENTS WHICH IS CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED TO ORIGINAL OR BETTER CONDITION AT NO EXPENSE TO THE OWNER.
- ACCESS ROUTES FOR EACH CONSTRUCTION PHASE SHALL BE COORDINATED WITH THE ENGINEER. ROUTES SHOWN ARE PRELIMINARY ONLY, AND SUBJECT TO APPROVAL AND ADJUSTMENT BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL ACCESS ROUTES (PAVED & UNPAVED). SEE PHASING PLANS FOR ADDITIONAL ACCESS ROUTE INFORMATION.
- THE PAVEMENT ON THE ACCESS ROUTES MAY NOT SUPPORT CONSTRUCTION TRAFFIC. THE CONTRACTOR SHALL LIMIT LOADS AS NECESSARY TO PREVENT DAMAGE. IF PAVEMENTS TO REMAIN ARE DAMAGED OR REMOVED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE AND/OR REPAIR THE PAVEMENT TO ORIGINAL CONDITION OR BETTER, AT THE CONTRACTOR'S EXPENSE, AND IN ACCORDANCE WITH THE CITY OF SAN ANGELO'S SPECIFICATIONS.
- AIRCRAFT ALWAYS HAVE THE RIGHT OF WAY.
- CONTRACTOR SHALL SWEEP PAVEMENTS FREQUENTLY TO KEEP FREE OF DEBRIS.
- CONTRACTOR SHALL WATER EXCAVATION, EMBANKMENT, BORROW AREAS AND ACCESS ROUTES AS REQUIRED TO MINIMIZE DUST ON THE RUNWAY, TAXIWAYS AND OTHER AIRCRAFT OPERATIONS AREAS AS DIRECTED BY THE ENGINEER OR HIS REPRESENTATIVE. CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL OVER THE DURATION OF THE PROJECT.
- CONTRACTOR SHALL LOCATE, MARK, AND PROTECT EXISTING ELECTRICAL CABLES, TELEPHONE CABLES, WATER UTILITIES, AND WASTE WATER UTILITIES. ANY DAMAGE TO THESE FACILITIES SHALL BE REPAIRED AT NO COST TO THE OWNER.

## EXISTING UTILITY & PIPELINE NOTES:

- TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATIONS AS TO TYPE AND LOCATION OF UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL PROTECT EXISTING UTILITIES DURING CONSTRUCTION AND SHALL REPAIR ALL DAMAGES TO SAID UTILITIES AT NO EXPENSE TO THE OWNER.
- CONTRACTOR SHALL VERIFY LOCATION OF UNDERGROUND UTILITY LINES AND SHALL NOTIFY THE FOLLOWING AGENCY 48 HOURS PRIOR TO EXCAVATING NEAR EXISTING FACILITIES:

NATIONAL ONE-CALL

8-1-1

## ENVIRONMENTAL NOTES:

- IN THE EVENT THAT UNANTICIPATED ARCHEOLOGICAL DEPOSITS ARE ENCOUNTERED DURING CONSTRUCTION, WORK IN THE IMMEDIATE AREA WILL CEASE AND THE ENGINEER WILL CONTACT PROFESSIONAL ARCHEOLOGISTS TO INITIATE POST-REVIEW DISCOVERY PROCEDURES UNDER THE PROVISIONS OF 36 CFR 800.13.
- IN THE EVENT THAT UNANTICIPATED HAZARDOUS MATERIALS ARE ENCOUNTERED DURING CONSTRUCTION, WORK IN THE IMMEDIATE AREA WILL CEASE AND THE ENGINEER WILL BE NOTIFIED.
- STOCKPILES AND STAGING AREAS WILL NOT BE PLACED WITHIN ANY WATER OF THE UNITED STATES, INCLUDING WETLANDS.
- HAZARDOUS WASTE:** ALL SPILLS MUST BE REPORTED IMMEDIATELY TO THE TxDOT PROJECT MANAGER.

# SUMMARY OF QUANTITIES

Base Bid Item 1: Mobilization, Temporary Access and Erosion/Sedimentation Control Measures						
Item No.	Spec. No.	Description	Units	Estimated Quantity	Actual Quantity	
1.01	KSA-100	Mobilization	LS	1		
1.02	KSA-105	Barricades and Markings for Pavement Closures	LS	1		
1.03	P-156	Stormwater Pollution Prevention Plan (SWP3) Document	LS	1		
1.04	P-156	Temporary Sediment Control Fence	LF	1500		
1.05	P-156	Rock Construction Exit	EA	2		
1.06	T-905	Topsiiling (Obtained on Site or Removed from Stockpile)	CY	1736		
1.07	T-901	Seeding	AC	6		
1.08	T-904	Sodding	SY	1362		

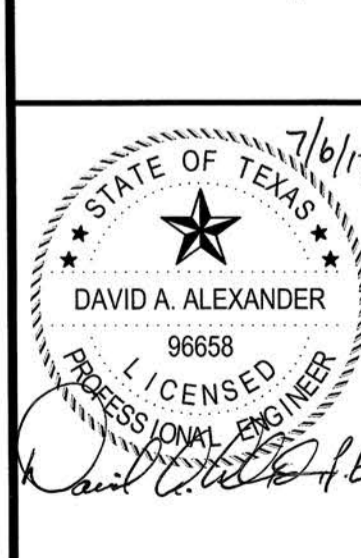
Base Bid Item 2: Reconfiguration Taxiways C and E						
Item No.	Spec. No.	Description	Units	Estimated Quantity	Actual Quantity	
2.01	P-152	Unclassified Excavation	CY	3934		
2.02	P-101	Asphaltic Concrete Pavement Removal	SY	11800		
2.03	P-155	8" Lime Treated Subgrade	SY	15010		
2.04	P-155	Hydrated Lime (7%)	TON	380		
2.05	P-403	11" HMA Base Course	TON	9322		
2.06	P-401	5" HMA Surface Course	TON	3886		
2.07	P-610	Portland Cement Concrete	CY	75		
2.08	P-602	Bituminous Prime Coat	GAL	2825		
2.09	-	Artificial Turf	SY	1965		
2.10	D-751	30" X 30" Inlet	EA	1		
2.11	D-701	24" Class III RCP	LF	32		
2.12	D-701	18" x 28.5" Class III RCP Arch Pipe	LF	204		
2.13	D-752	Sloped End Treatment for Arch Pipe	EA	2		
2.14	P-620	Yellow Markings (Reflective)	SF	20780		
2.15	P-620	Red Markings (Non-Reflective)	SF	2355		
2.16	P-620	Surface Painted Signs	EA	4		
2.17	P-620	Black Markings (Non-Reflective)	SF	14875		
2.18	P-620	Pavement Marking Removal	SF	18235		

Base Bid Item 3: Taxiway and Island Lighting, Other Electrical Improvements						
Item No.	Spec. No.	Description	Units	Estimated Quantity	Actual Quantity	
3.01	-	Mobilization	LS	1		
3.02	L-108-5.1	No. 8 AWG, 5 KV, L-824, Type C Cable, Installed in Conduit	LF	7500		
3.03	L-108-5.2	No. 6 AWG, Solid Bare Counterpoise Wire, Installed in Trench, including Ground Rods and Ground Connectors	LF	5000		
3.04	L-108-5.3	Remove Existing No. 8 AWG, L-624C in 2" Conduit	LF	8000		
3.05	L-108-5.4	Remove No. 6 AWG, Solid, Bare Counterpoise Wire, Installed in Trench, Including Ground Rods	LF	6000		
3.06	L-110-5.1	Install 2" PVC Schedule 40 Conduit in Trench Including Excavation and Backfill	LF	5000		
3.07	L-110-5.2	Install 2" HDPE SDR 11 Conduit Directional Boring under Pavement	LF	1200		
3.08	L-110-5.3	Remove Existing 2" Conduit	LF	7000		
3.09	L-110-5.4	Install 2" Conduit in Concrete Encased Duct Bank	LF	1200		
3.10	L-115-5.1	Install L-867E Electrical Handhole	EA	3		
3.11	L-115-5.2	Remove Existing Handhole	EA	2		
3.12	S-E125-5.1	Install Can-Mounted Elevated MITL/MIRL, Transformer, Base Can and Concrete Pad	EA	53		
3.13	S-E125-5.2	Install In-Pavement Elevated MITL, Transformer, Base Can in Existing PCC Pavement	EA	19		
3.14	S-E125-5.3	Install Base Mounted Sign L-858, Size 2 with Sign Legends per drawings, all in place	EA	13		
3.15	S-E125-5.4	Remove Existing Can-Mount Elevated MITL/MIRL including Transformer, Base Can, and Concrete Pad	EA	55		
3.16	S-E125-5.5	Remove Base Mounted Sign L-858, Size 2 and Concrete Pad	EA	9		
3.17	S-E890-5.1	Install Airfield Lighting Control and Monitoring System (ALCMS)	LS	1		
3.18	S-E890-5.2	Remove Existing Airfield Lighting Control and Monitoring System	LS	1		
3.19	S-E890-5.3	Install a Wireless WIFI Bridge Network System for the ALCMS	LS	1		

Additive Alternate Item 1: Apron Edge Repair						
Item No.	Spec. No.	Description	Units	Estimated Quantity	Actual Quantity	
AA1.01	P-152	Unclassified Excavation	CY	687		
AA1.02	P-101	Asphaltic Concrete Pavement Removal	SY	1000		
AA1.03	P-501	24" PCC Pavement	SY	1000		

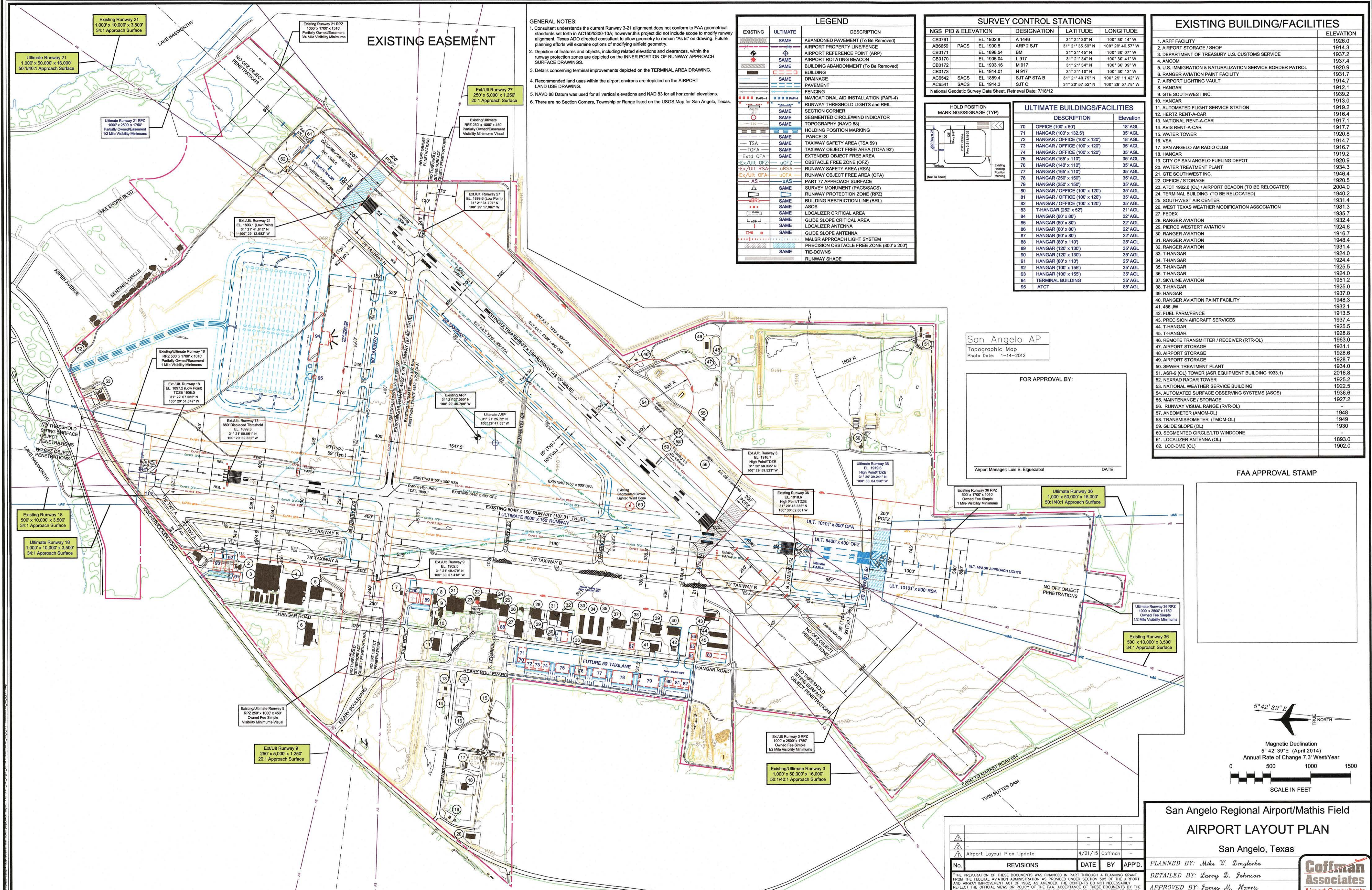
GENERAL NOTES  
 AND SUMMARY OF  
 QUANTITIES  
  
 SAN ANGELO REGIONAL  
 AIRPORT TAXIWAY  
 RECONFIGURATION PROJECT  
 SAN ANGELO, TEXAS

DRAWN BY: CBS  
 DESIGNED BY: JWD  
 LATEST REVISION: 6/29/2017  
 KSA JOB NO.: SAN\_058



SEAL:  
 TBPE Firm Registration No. F-1356  
 SHEET NO.





**GENERAL NOTES:**

1. Consultant understands the current Runway 3-21 alignment does not conform to FAA geometrical standards set forth in AC150/5300-13A; however, this project did not include scope to modify runway alignment. Texas A&M directed consultant to allow geometry to remain "As Is" on drawing. Future planning efforts will examine options of modifying airfield geometry.
2. Depiction of features and objects, including related elevations and clearances, within the runway protection zones are depicted on the INNER PORTION OF RUNWAY APPROACH SURFACE DRAWINGS.
3. Details concerning terminal improvements depicted on the TERMINAL AREA DRAWING.
4. Recommended land uses within the airport environs are depicted on the AIRPORT LAND USE DRAWING.
5. NAVD 88 Datum was used for all vertical elevations and NAD 83 for all horizontal elevations.
6. There are no Section Corners, Township or Range listed on the USGS Map for San Angelo, Texas.

**LEGEND**

EXISTING	ULTIMATE	DESCRIPTION
---	---	ABANDONED PAVEMENT (To Be Removed)
---	---	AIRPORT PROPERTY LINE/FENCE
⊙	⊙	AIRPORT ROTATING BEACON
---	---	BUILDING ABANDONMENT (To Be Removed)
---	---	BUILDING
---	---	DRAINAGE
---	---	PAVEMENT
---	---	FENCING
---	---	NAVIGATIONAL AID INSTALLATION (PAPI-4)
---	---	RUNWAY THRESHOLD LIGHTS AND REIL
---	---	SECTION CORNER
---	---	SEGMENTED CIRCLE/WIND INDICATOR
---	---	TOPOGRAPHY (NAVD 88)
---	---	HOLDING POSITION MARKING
---	---	PARCELS
---	---	TSA - SAME TAXIWAY SAFETY AREA (TSA 50')
---	---	TOFA - SAME TAXIWAY OBJECT FREE AREA (TOFA 93')
---	---	Ext'd OFA - SAME EXTENDED OBJECT FREE AREA
---	---	Ex/Ult OFZ - OFZ - SAME OBSTACLE FREE ZONE (OFZ)
---	---	Ex/Ult RSA - RSA - SAME RUNWAY SAFETY AREA (RSA)
---	---	Ex/Ult OFA - OFA - SAME RUNWAY OBJECT FREE AREA (OFA)
---	---	AS - SAME PART 77 APPROACH SURFACE
---	---	AS - SAME SURVEY MONUMENT (PACS/SACS)
---	---	AS - SAME RUNWAY PROTECTION ZONE (RPZ)
---	---	AS - SAME BUILDING RESTRICTION LINE (BRL)
---	---	AS - SAME ASOS
---	---	AS - SAME LOCALIZER CRITICAL AREA
---	---	AS - SAME GLIDE SLOPE CRITICAL AREA
---	---	AS - SAME LOCALIZER ANTENNA
---	---	AS - SAME MALSR APPROACH LIGHT SYSTEM
---	---	AS - SAME PRECISION OBSTACLE FREE ZONE (800' x 200')
---	---	AS - SAME TIE-DOWNS
---	---	AS - SAME RUNWAY SHADE

**SURVEY CONTROL STATIONS**

NGS PID & ELEVATION	DESIGNATION	LATITUDE	LONGITUDE
CB0761	PACS	EL. 1922.8	31° 21' 33" N 100° 30' 14" W
AS8559	ARP 2 S/JT	EL. 1920.8	31° 21' 35.98" N 100° 29' 40.57" W
CB0171	BM	EL. 1898.54	31° 21' 45" N 100° 30' 07" W
CB0170	84	EL. 1905.04	31° 21' 34" N 100° 30' 41" W
CB0172	M 917	EL. 1903.16	31° 21' 34" N 100° 30' 09" W
CB0173	N 917	EL. 1914.01	31° 21' 10" N 100° 30' 13" W
AC5542	S/JT AP STA B	EL. 1889.4	31° 21' 40.78" N 100° 29' 11.42" W
AC5541	S/JT C	EL. 1914.3	31° 20' 57.52" N 100° 29' 57.78" W

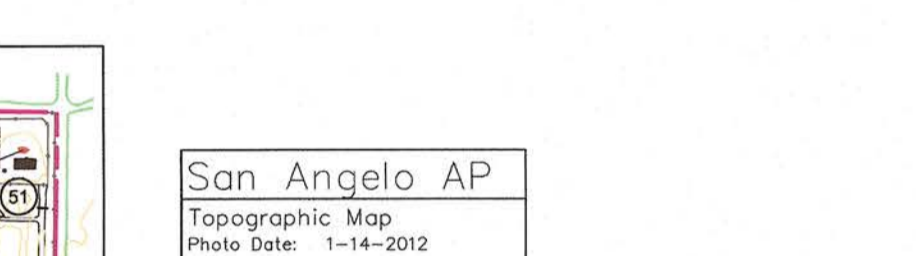
National Geodetic Survey Data Sheet, Retrieval Date: 7/18/12

**EXISTING BUILDING/FACILITIES**

NO.	DESCRIPTION	ELEVATION
1.	ARFF FACILITY	1926.0
2.	AIRPORT STORAGE / SHOP	1914.3
3.	DEPARTMENT OF TREASURY U.S. CUSTOMS SERVICE	1937.2
4.	AMCOM	1937.4
5.	U.S. IMMIGRATION & NATURALIZATION SERVICE BORDER PATROL	1920.9
6.	RANGER AVIATION PAINT FACILITY	1931.7
7.	AIRPORT LIGHTING VAULT	1914.7
8.	HANGAR	1912.1
9.	GTE SOUTHWEST INC.	1939.2
10.	HANGAR	1913.0
11.	AUTOMATED FLIGHT SERVICE STATION	1919.2
12.	HERTZ RENT-A-CAR	1916.4
13.	NATIONAL RENT-A-CAR	1917.1
14.	AIR RENT-A-CAR	1917.7
15.	WATER TOWER	1920.8
16.	VSA	1914.7
17.	SAN ANGELO AM RADIO CLUB	1916.7
18.	HANGAR	1919.2
19.	CITY OF SAN ANGELO FUELING DEPOT	1920.9
20.	WATER TREATMENT PLANT	1934.3
21.	GTE SOUTHWEST INC.	1946.4
22.	OFFICE / STORAGE	1920.5
23.	ATCT 1982.6 (OL) / AIRPORT BEACON (TO BE RELOCATED)	2004.0
24.	TERMINAL BUILDING (TO BE RELOCATED)	1940.2
25.	SOUTHWEST AIR CENTER	1931.4
26.	WEST TEXAS WEATHER MODIFICATION ASSOCIATION	1981.3
27.	FEDEX	1935.7
28.	RANGER AVIATION	1932.4
29.	PIERCE WESTERT AVIATION	1924.6
30.	RANGER AVIATION	1916.7
31.	RANGER AVIATION	1948.4
32.	RANGER AVIATION	1931.4
33.	T-HANGAR	1924.0
34.	T-HANGAR	1924.4
35.	T-HANGAR	1925.5
36.	T-HANGAR	1924.0
37.	SKYLINE AVIATION	1951.2
38.	T-HANGAR	1925.0
39.	HANGAR	1937.0
40.	RANGER AVIATION PAINT FACILITY	1948.3
41.	456 JW	1932.1
42.	FUEL FARM/FENCE	1913.5
43.	PRECISION AIRCRAFT SERVICES	1937.4
44.	T-HANGAR	1925.5
45.	T-HANGAR	1928.8
46.	REMOTE TRANSMITTER / RECEIVER (RTR-OL)	1965.0
47.	AIRPORT STORAGE	1931.1
48.	AIRPORT STORAGE	1928.6
49.	AIRPORT STORAGE	1928.7
50.	SEWER TREATMENT PLANT	1934.0
51.	ASR-3 (OL) TOWER (ASR EQUIPMENT BUILDING 1933.1)	2016.8
52.	HEXARAD RADAR TOWER	1925.2
53.	NATIONAL WEATHER SERVICE BUILDING	1922.5
54.	AUTOMATED SURFACE OBSERVING SYSTEMS (ASOS)	1936.6
55.	MAINTENANCE / STORAGE	1927.2
56.	RUNWAY VISUAL RANGE (RVR-OL)	1948
57.	ANEMOMETER (ANOM-OL)	1949
58.	TRANSMISSION TOWER (TMM-OL)	1930
59.	GLIDE SLOPE (OL)	1930
60.	SEGMENTED CIRCLE/LTD WINDCONE	-
61.	LOCALIZER ANTENNA (OL)	1893.0
62.	LOC-DME (OL)	1902.0

**ULTIMATE BUILDINGS/FACILITIES**

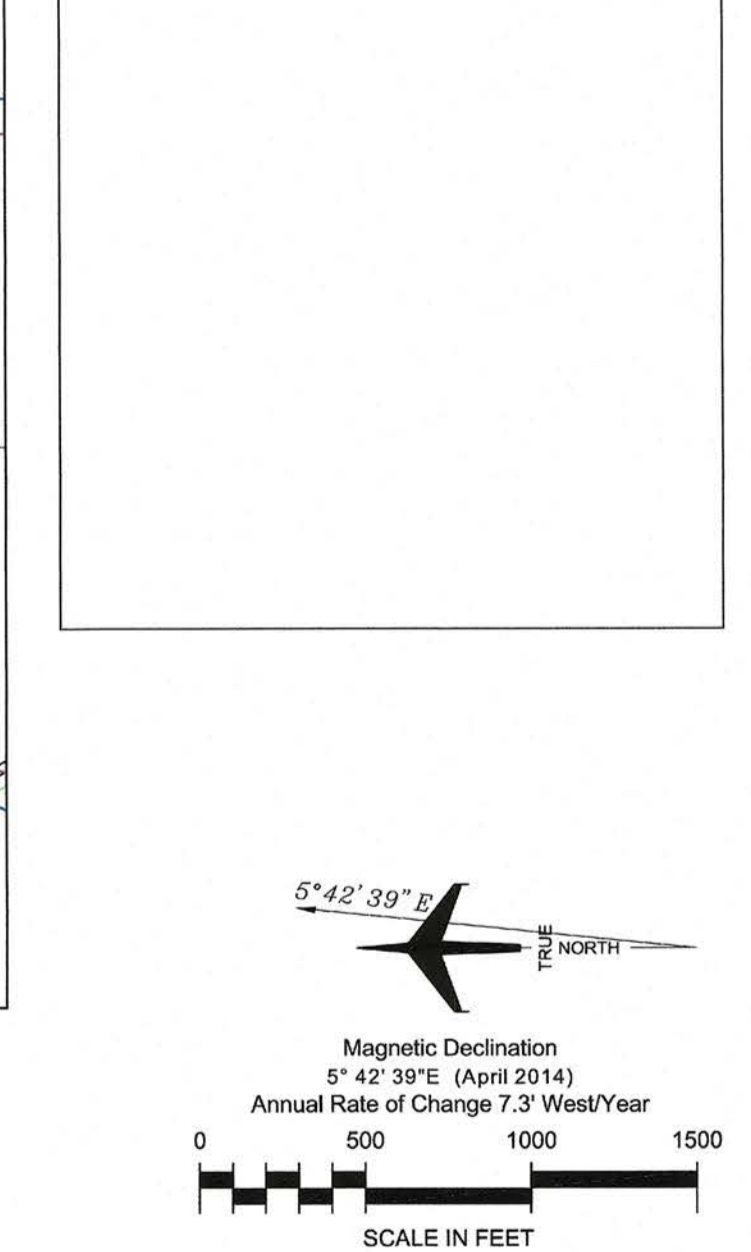
NO.	DESCRIPTION	Elevation
70.	OFFICE (100' x 50')	18' AGL
71.	HANGAR (100' x 132.5')	35' AGL
72.	HANGAR / OFFICE (100' x 120')	35' AGL
73.	HANGAR / OFFICE (100' x 120')	35' AGL
74.	HANGAR / OFFICE (100' x 120')	35' AGL
75.	HANGAR (165' x 110')	35' AGL
76.	HANGAR (140' x 110')	35' AGL
77.	HANGAR (165' x 110')	35' AGL
78.	HANGAR (250' x 150')	35' AGL
79.	HANGAR (80' x 110')	25' AGL
80.	HANGAR / OFFICE (100' x 120')	35' AGL
81.	HANGAR / OFFICE (100' x 120')	35' AGL
82.	HANGAR / OFFICE (100' x 120')	35' AGL
83.	T-HANGAR (252' x 52')	22' AGL
84.	HANGAR (60' x 80')	22' AGL
85.	HANGAR (60' x 80')	22' AGL
86.	HANGAR (60' x 80')	22' AGL
87.	HANGAR (60' x 80')	22' AGL
88.	HANGAR (100' x 150')	35' AGL
89.	HANGAR (120' x 130')	35' AGL
90.	HANGAR (120' x 130')	35' AGL
91.	HANGAR (80' x 110')	25' AGL
92.	HANGAR (100' x 150')	35' AGL
93.	HANGAR (100' x 150')	35' AGL
94.	TERMINAL BUILDING	35' AGL
95.	ATCT	85' AGL



**San Angelo AP**  
Topographic Map  
Photo Date: 1-14-2012

FOR APPROVAL BY: \_\_\_\_\_ DATE \_\_\_\_\_  
Airport Manager: Luis E. Elguizabal

FAA APPROVAL STAMP



San Angelo Regional Airport/Mathis Field  
**AIRPORT LAYOUT PLAN**  
San Angelo, Texas

PLANNED BY: Mike W. Dmylenko  
DETAILED BY: Larry D. Johnson  
APPROVED BY: James M. Harner

April 21, 2015 Sheet 3 of 23

**Coffman Associates**  
Airport Consultants  
www.coffmanassociates.com

REVISIONS

No.	REVISIONS	DATE	BY	APPD.
1	Airport Layout Plan Update	4/21/15	Coffman	

THE PREPARATION OF THESE DOCUMENTS WAS FINANCED IN PART THROUGH A PLANNING GRANT FROM THE FEDERAL AVIATION ADMINISTRATION AS PROVIDED UNDER SECTION 505 OF THE AIRPORT AND AIRWAY IMPROVEMENT ACT OF 1982, AS AMENDED. THE CONTENTS DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY OF THE FAA. ACCEPTANCE OF THESE DOCUMENTS BY THE FAA DOES NOT IN ANY WAY CONSTITUTE A COMMITMENT ON THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED HEREIN, NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS.

**KSA**  
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www.ksaeng.com

**FOR INFORMATION ONLY. NOT TO BE USED FOR BIDDING OR CONSTRUCTION.**

SEAL: TBPFE Firm Registration No. F-1356 SHEET NO. 3

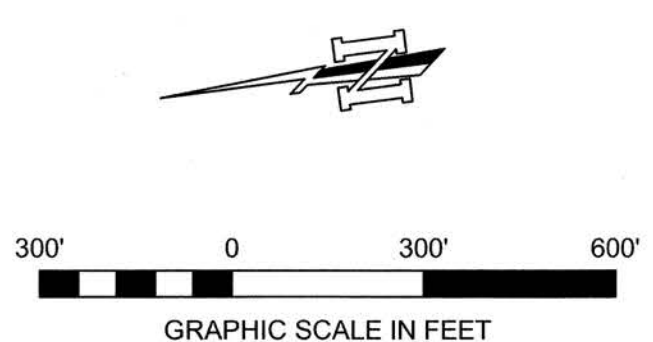
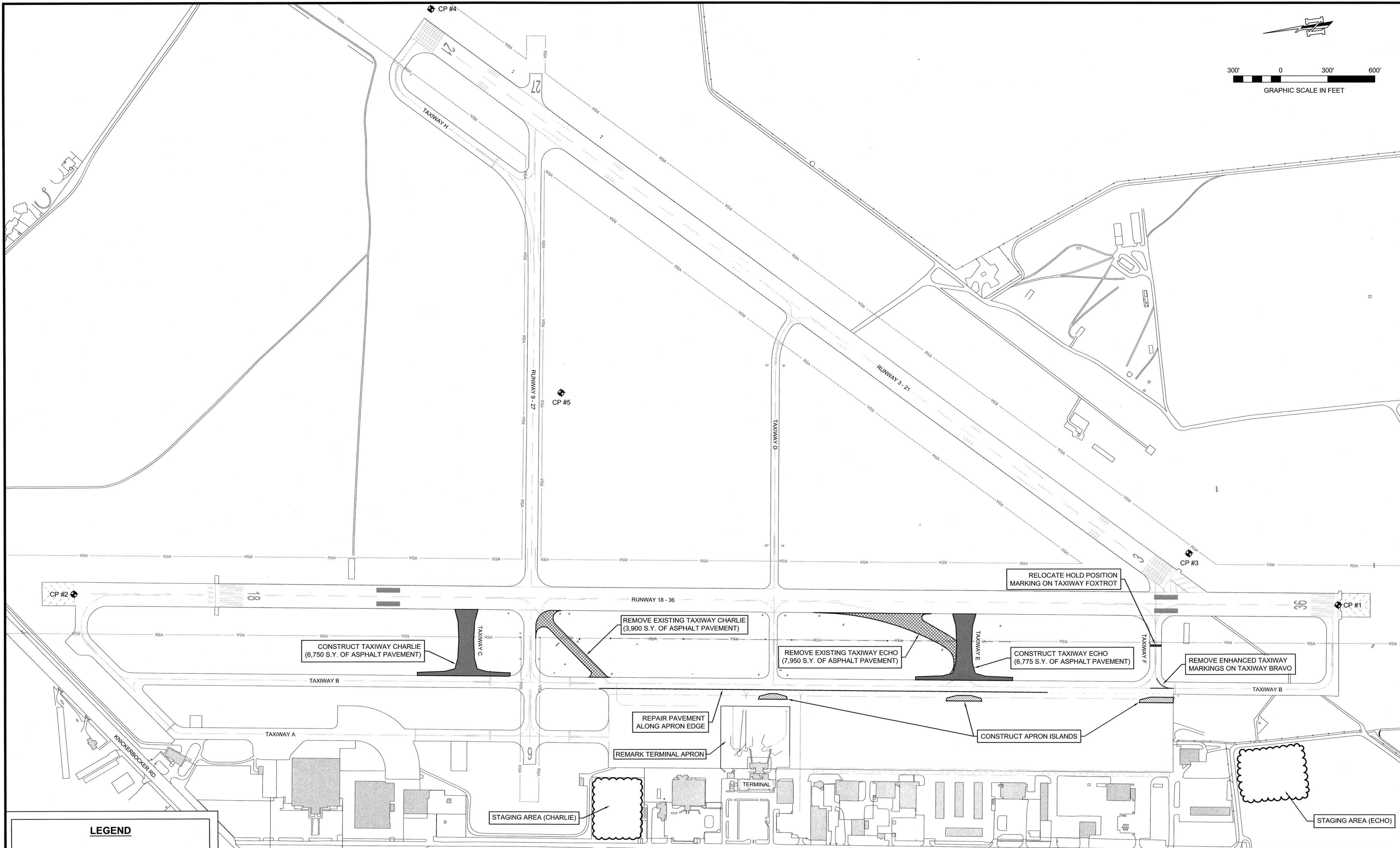
**SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT**  
SAN ANGELO, TEXAS

**AIRPORT LAYOUT PLAN**

DRAWN BY: CBS  
DESIGNED BY: JWD  
LATEST REVISION: 6/29/2017  
KSA JOB NO.: SAN 059

PROJECT NAME: \_\_\_\_\_  
SHEET NAME: \_\_\_\_\_  
DATE: \_\_\_\_\_



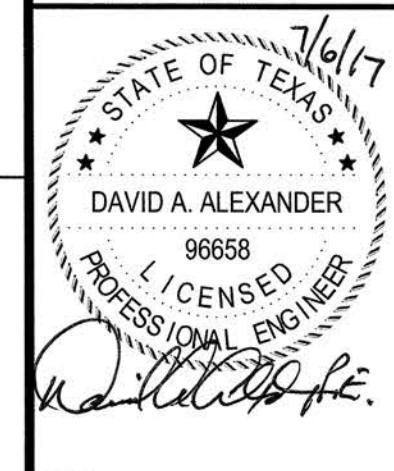


MARK	REVISION	DATE

PROJECT NAME: PROJECT LAYOUT  
 SHEET NAME:

SAN ANGELO REGIONAL  
 AIRPORT TAXIWAY  
 RECONFIGURATION PROJECT  
 SAN ANGELO, TEXAS

DRAWN BY:	CBS
DESIGNED BY:	JMD
LATEST REVISION:	6/29/2017
KSA JOB NO.:	SAN_059



SEAL: TBPE Firm Registration No. F-1356  
SHEET NO.

**LEGEND**

	PROPOSED TAXIWAY CONSTRUCTION
	REMOVE EXISTING TAXIWAYS
	PROPOSED APRON ISLANDS
	EXISTING BUILDINGS
	EXISTING FENCE
	RSA RUNWAY SAFETY AREA
	STAGING AREA

- NOTES:**
- CONTRACTOR HAUL ROUTE AND STAGING AREAS TO BE USED DURING CONSTRUCTION OF THIS PROJECT ARE TO BE LEFT IN A CONDITION EQUAL TO OR BETTER THAN THE CURRENT CONDITION. ON SITE HAUL ROUTE IS APPROXIMATE AND WILL BE APPROVED IN THE FIELD BY THE ENGINEER. ANY NECESSARY HAUL ROUTE CROSS DRAINS ARE TO BE INSTALLED AT NO DIRECT PAY. HAUL ROUTES SHALL BE SEEDED, FERTILIZED AND MULCHED AT NO DIRECT PAY.
  - ALL EXISTING GRASSED AREAS DISTURBED OUTSIDE THE LIMITS OF CONSTRUCTION SHALL BE SEEDED, FERTILIZED, AND MULCHED AT NO COST TO THE OWNER. EMBANKMENT AND EXCAVATION AREAS SHALL BE TOPSOILED, SEEDED, FERTILIZED, AND MULCHED AND THE LIMITS SHALL BE AS SHOWN ON TYPICAL SECTIONS.

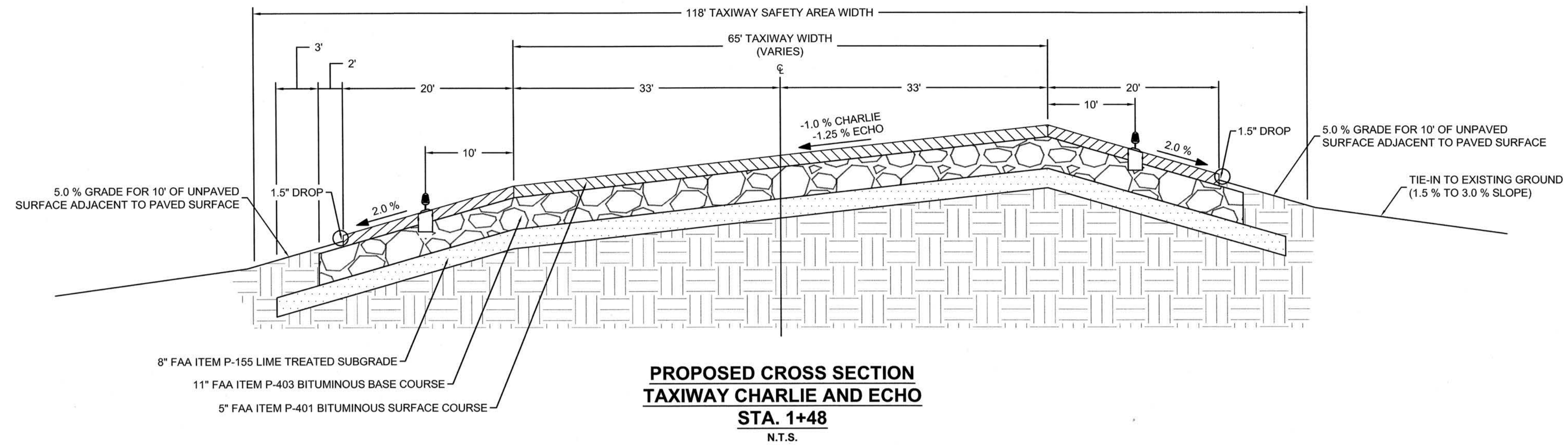
- CONTRACTOR SHALL PROVIDE FLAGGERS, BROOM, AND OTHER EQUIPMENT TO KEEP ALL PAVEMENTS, INCLUDING PUBLIC ROADS, CLEAN AT ALL TIMES.
- THE CONTRACTOR SHALL REPLACE, AT HIS COST, ANY RUNWAY PAVEMENT EDGE LIGHTS, TAXIWAY REFLECTIVE MARKERS OR ANY OTHER EXISTING EQUIPMENT THAT IS DAMAGED DURING CONSTRUCTION TO THE SAME OR BETTER CONDITION. CONSTRUCTION EQUIPMENT SHALL NOT CROSS OR TRAVEL ON RUNWAY OR TAXIWAY PAVEMENT.
- CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY CONSTRUCTION SIGNAGE AS REQUIRED BY THE CITY, AT NO DIRECT PAY.
- CONSTRUCTION GATE SHALL REMAIN LOCKED AT ALL TIMES EXCEPT WHEN HAUL OPERATIONS ARE IN PROGRESS. WHILE HAUL OPERATIONS ARE IN PROGRESS GATE SHALL BE GUARDED.

- PROJECT SCOPE:**
- CONSTRUCT TAXIWAY CHARLIE AND TAXIWAY ECHO, INSTALL LIGHTS, INSTALL LIGHTED TAXIWAY SIGNS, AND PAINT MARKINGS FOR TAXIWAYS CHARLIE, ECHO AND FOXTROT.
  - REMOVE EXISTING TAXIWAY CHARLIE AND ECHO.
  - CONSTRUCT APRON ISLANDS.
  - REPAIR PAVEMENT ALONG APRON EDGE.
  - PAINT APRON MARKINGS.

**COORDINATE TABLE**

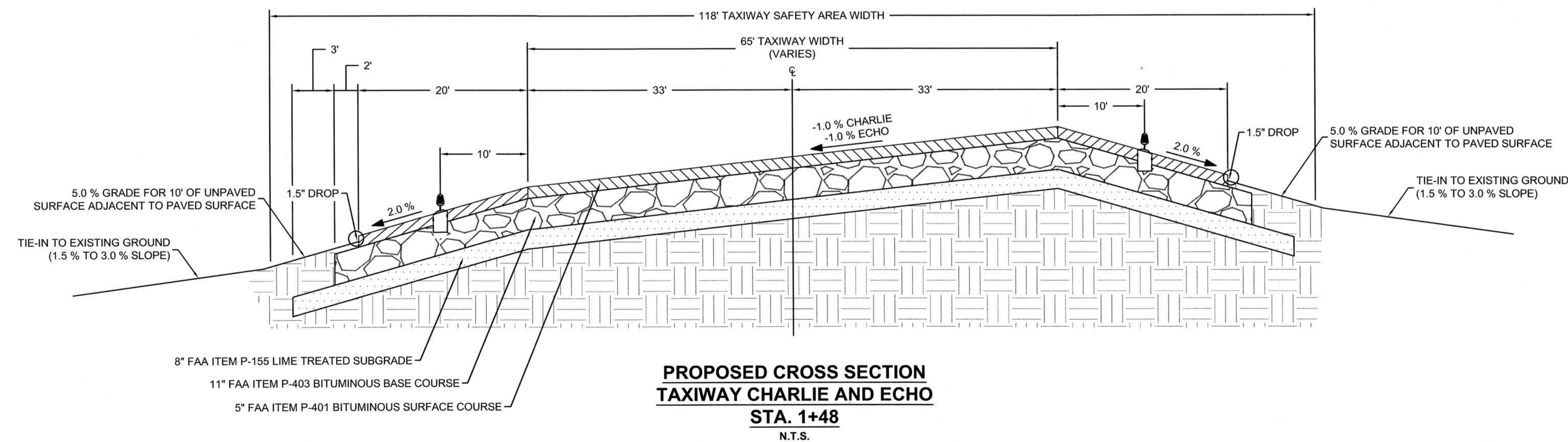
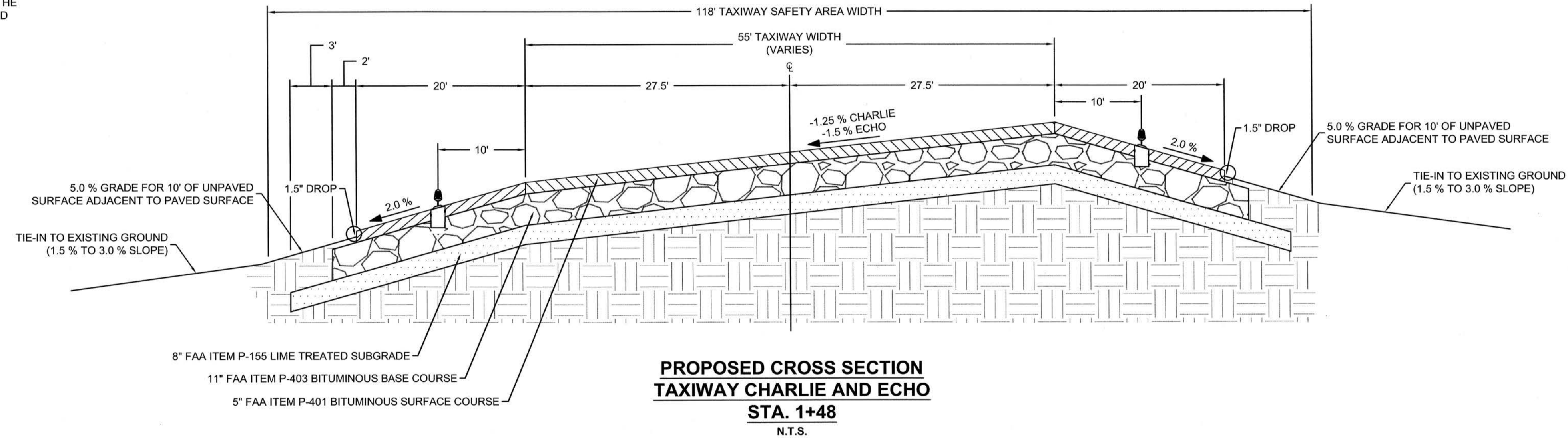
CONTROL POINT	DESCRIPTION	ELEVATION	NORTHING	EASTING
CP #1	MAG NAIL @ APPROACH 36	1917.99	10453614.67	2244308.19
CP #2	MAG NAIL @ APPROACH 18	1897.11	10461600.03	2245344.92
CP #3	CP SAC MONUMENT	1913.62	10454516.76	2244750.14
CP #4	CP SAC MONUMENT	1888.72	10458883.02	2248776.38
CP #5	CP PAC MONUMENT	1900.30	10458360.78	2246248.01





**NOTE:**

1. FOR PAVEMENT DESIGN THICKNESSES REFER TO THE GEOTECHNICAL REPORT BY RODRIGUEZ ENGINEERING LABORATORIES, MARCH 30TH, 2016.
2. PROPOSED CROSS SECTIONS ARE THE SAME FOR BOTH TAXIWAY ECHO AND TAXIWAY CHARLIE.

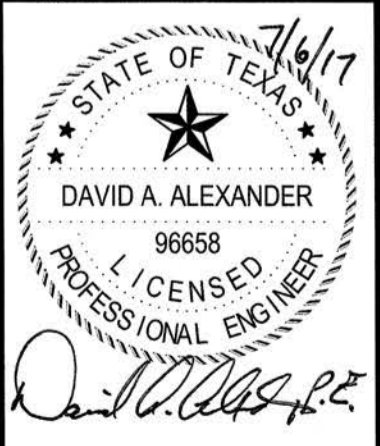


MARK	REVISION	DATE

**PROPOSED TYPICAL SECTIONS**

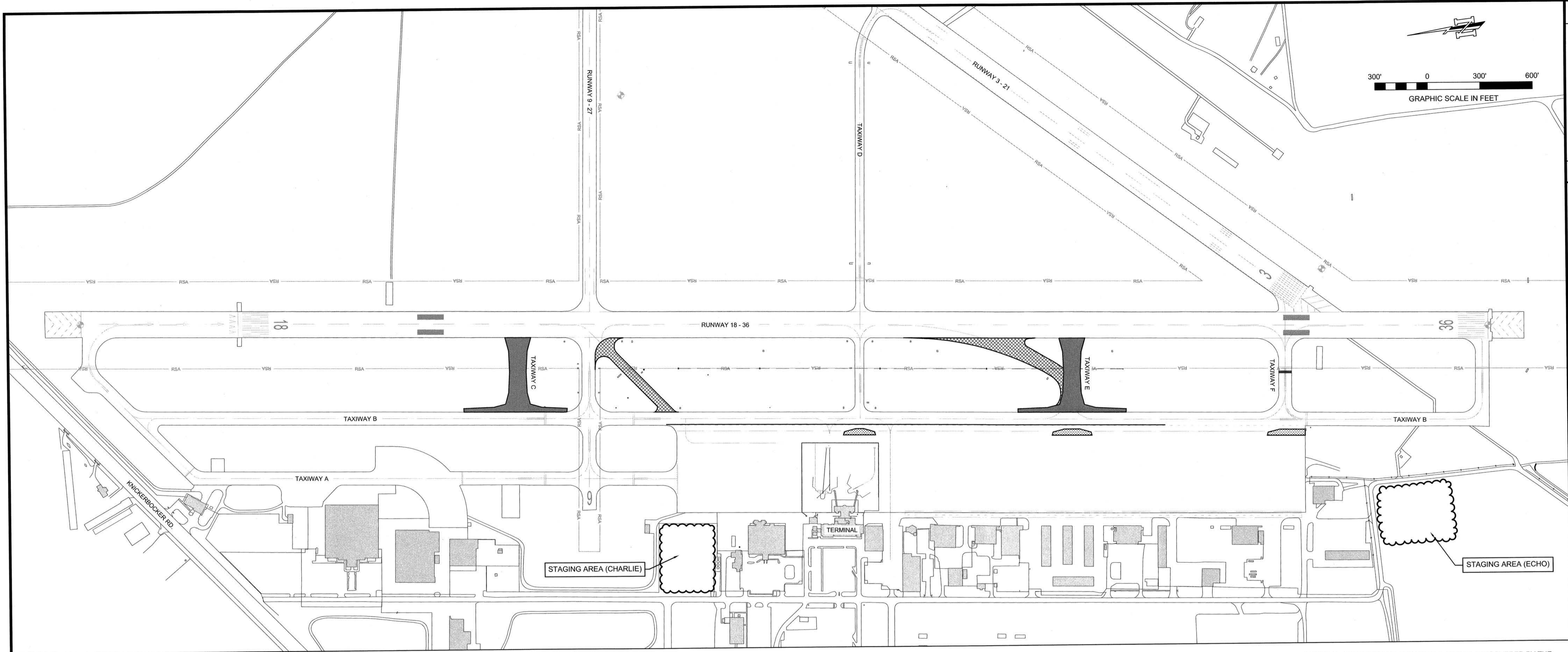
**SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT  
SAN ANGELO, TEXAS**

DRAWN BY:	CBS
DESIGNED BY:	JWD
LATEST REVISION:	6/29/2017
KSA JOB NO.:	SA01059



SEAL:  
TBPE Firm Registration No. F-1356  
SHEET NO.





MARK	REVISION	DATE

**CONSTRUCTION SAFETY AND PHASING PLAN**

**SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT**  
SAN ANGELO, TEXAS

DRAWN BY:	CBS
DESIGNED BY:	JWD
LATEST REVISION:	6/29/2017
KSA JOB NO.:	SAN 059
PROJECT NAME:	SAN 059

**KSA**  
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STATE OF TEXAS  
DAVID A. ALEXANDER  
96658  
LICENSED PROFESSIONAL ENGINEER  
Seal of David A. Alexander

SEAL: TBPE Firm Registration No. F-1356  
SHEET NO. **6**

**COMMUNICATIONS:**

- SAN ANGELO REGIONAL AIRPORT GROUND FREQUENCY - 122.95. OTHER FREQUENCIES MAY BE USED PER AIRPORT TOWER DIRECTION.
- THE CONTRACTOR WILL PROVIDE PORTABLE HAND HELD 2-WAY RADIOS (AVIATION BAND), SET TO THE APPROPRIATE FREQUENCIES, TO EACH FLAG MAN, SUPERVISORY INDIVIDUAL, AND RESIDENT PROJECT REPRESENTATIVE (RPR) SO THAT THEY MAY REMAIN IN CONSTANT CONTACT WITH THE AIR TRAFFIC CONTROL TOWER. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL RADIOS IN WORKING CONDITION THROUGHOUT THE DURATION OF THE PROJECT. UPON COMPLETION OF THE PROJECT AND ACCEPTANCE BY THE OWNER, THE RPR WILL RETURN THE RADIO TO THE CONTRACTOR.
- THE CONTRACTOR SHALL PROVIDE THE NAME AND TELEPHONE NUMBER OF THE PERSON TO ATCT AND OWNER AS THE CONTRACTOR'S REPRESENTATIVE, AVAILABLE 24 HOURS PER DAY, SHOULD PROBLEMS PERTAINING TO THE CONSTRUCTION WORK ARISE WHICH WOULD REQUIRE THE CONTRACTOR'S IMMEDIATE ATTENTION.

**COORDINATION:**

- CONTRACTOR PROGRESS MEETINGS - THE OWNER, ENGINEER AND/OR THE ON-SITE REPRESENTATIVE AND THE CONTRACTOR WILL HOLD PROGRESS MEETINGS ON A COORDINATED SCHEDULE DURING CONSTRUCTION. THE CSPP WILL BE A STANDING AGENDA ITEM IN SUCH MEETINGS. AIRPORT TENANTS AND USERS SHALL BE INVITED TO ATTEND THESE MEETINGS.
- SCOPE OR SCHEDULE CHANGES - CHANGES IN THE SCOPE OR DURATION OF THE PROJECT MAY NECESSITATE REVISIONS TO THE CSPP AND REQUIRE REVIEW AND APPROVAL BY THE OWNER AND FAA.
- FAA ATO COORDINATION - COORDINATION WITH THE FAA WILL BE DIRECTED THROUGH THE OWNER. COORDINATION WILL BE MADE WHEN SCHEDULING AIRWAY FACILITY SHUTDOWN AND RESTARTS. CONTRACTOR WILL COORDINATE WITH OWNER REGARDING SPECIFIC REQUIREMENTS RELATED TO SHUTDOWNS AND RESTARTS.

**PHASING:**

- REFER TO PLANS (SHEETS 7-12) FOR INDIVIDUAL PHASE ELEMENTS REGARDING PAVEMENT CLOSURES, DURATION, TAXI ROUTES, AND NAVAID IMPACTS.

**NAVIGATION AID (NAVAID PROTECTION):**

- NOTICE TO AIRMEN (NOTAM) - CONTRACTOR SHALL NOTIFY THE OWNER AT LEAST 72 HOURS BEFORE NOTAMS ARE REQUIRED. OWNER WILL THEN ENSURE NOTAMS ARE PUBLISHED APPROPRIATELY. ALL OPENINGS AND

CLOSURES OF THE AOA OR RESTRICTION ON AIRPORT OPERATIONS SHALL BE INITIATED OR CANCELED BY THE OWNER. THE CONTRACTOR WILL NOT COMMENCE CONSTRUCTION UNTIL APPROPRIATE NOTAMS HAVE BEEN ISSUED.

**CONTRACTOR ACCESS:**

- THE AIR OPERATIONS AREA (AOA) IS DEFINED AS ALL PAVED AND UNPAVED AREAS OF THE AIRPORT INSIDE THE PERIMETER FENCE AND INCLUDES BUT IS NOT LIMITED TO APRONS, TAXIWAYS, RUNWAYS AND RUNWAY SAFETY AREAS.
  - IT IS THE INTENT OF THESE PLANS TO MINIMIZE INTERFERENCE TO AIRCRAFT MOVEMENT. IN ACTIVE PORTIONS OF THE AOA, AIRCRAFT SHALL HAVE THE RIGHT-OF-WAY. THE ENGINEER MAY REQUIRE THE CONTRACTOR TO SUSPEND ALL CONSTRUCTION ACTIVITY IF REQUIRED FOR AIRCRAFT OPERATIONS. THIS WILL REQUIRE THE CONTRACTOR TO MOVE PERSONNEL, EQUIPMENT AND MATERIALS TO A SAFE LOCATION AND STAND BY UNTIL AIRCRAFT USE IS COMPLETED.
  - DURING PERFORMANCE OF THIS CONTRACT, RUNWAYS, TAXIWAYS AND AIRCRAFT PARKING APRONS WILL REMAIN OPEN TO THE MAXIMUM EXTENT POSSIBLE.
- CONSTRUCTION ACCESS AND HAUL ROUTES
  - ACCESS TO THE JOB SITE SHALL BE THROUGH DESIGNATED ROUTES DEPICTED ON THE PHASING PLANS (SHEET 7-12).
  - ACCESS ROUTES FOR EACH CONSTRUCTION PHASE WILL BE COORDINATED WITH THE OWNER. ACCESS ROUTES DEPICTED ON THE PLANS ARE PRELIMINARY ONLY AND ARE SUBJECT TO APPROVAL AND ADJUSTMENT BY THE OWNER.
  - THE PAVEMENTS ON THE ACCESS ROUTES MAY NOT SUPPORT LOADS IMPOSED BY CONSTRUCTION EQUIPMENT OR VEHICLES. THE CONTRACTOR SHALL LIMIT LOADS AS NECESSARY TO PREVENT DAMAGE OR SHALL INCLUDE IN HIS BID ADEQUATE BUDGET TO REPAIR OR DAMAGE TO THE PAVEMENT.
  - AIRCRAFT ALWAYS HAVE RIGHT OF WAY.
  - SWEEP PAVEMENTS ADJACENT TO WORK AND ACCESS AREAS FREQUENTLY TO KEEP PAVEMENT FREE OF LOOSE DEBRIS AT ALL TIMES.
  - PRIVATELY OWNED VEHICLE (POV) PARKING SHALL BE DESIGNATED BY THE ENGINEER OR AS SHOWN.

- CONSTRUCTION EQUIPMENT AND VEHICLES SHALL TRAVEL A MINIMUM AMOUNT ON NEWLY CONSTRUCTED PAVEMENTS SO THAT THESE ARE NOT DAMAGED. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIR OF ANY DAMAGE TO THE NEWLY CONSTRUCTED PAVEMENTS AT THE CONTRACTOR'S EXPENSE.
- DAMAGE TO EXISTING FACILITIES CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED TO ORIGINAL OR BETTER CONDITION AT NO EXPENSE TO THE OWNER.
- VEHICLE AND PEDESTRIAN OPERATIONS
  - NO VEHICLE OR EQUIPMENT SHALL MOVE INSIDE THE AOA UNLESS IT IS:
    - LIGHTED OR MARKED / FLAGGED (FLAG OR LIGHT FOR DAY TIME ACTIVITY AND LIGHT FOR NIGHT TIME ACTIVITY).
    - MONITORING THE APPROPRIATE RADIO FREQUENCY OR IS UNDER THE ESCORT OF A VEHICLE MONITORING THE APPROPRIATE RADIO FREQUENCY.
  - CONTRACTOR EMPLOYEES OR EMPLOYEES OF SUBCONTRACTORS OR SUPPLIERS, OR ANY OTHER PERSON UNDER THE CONTROL OF THE CONTRACTOR SHALL NOT ENTER ANY PART OF THE AIR OPERATIONS AREA (AOA) FROM THE CONSTRUCTION SITE UNLESS AUTHORIZED.
  - FLAG MEN OR ESCORTS WILL BE REQUIRED TO DIRECT THE CONTRACTOR'S TRUCKS AND EQUIPMENT THAT ARE OPERATING ON ACTIVE PORTIONS OF THE AOA.
  - CONSTRUCTION EQUIPMENT AND VEHICLES SHALL NOT EXCEED A SPEED OF 15 MPH WITHIN AIRPORT PROPERTY.
- STOCKPILED MATERIAL
  - CONTRACTOR IS LIMITED TO PLACEMENT OF STOCKPILED MATERIALS AT DESIGNATED LOCATIONS DEPICTED IN THE PLANS.
  - CONTRACTOR WILL BE REQUIRED TO COORDINATE WITH THE OWNER PRIOR TO STOCKPILING MATERIALS.
  - MATERIAL STOCKPILES WILL BE MANAGED BY THE CONTRACTOR SO THAT THEY DO NOT - ATTRACT WILDLIFE, GENERATE FOREIGN OBJECT DEBRIS (FOD) OR PENETRATE ANY AIRPORT OPERATION SURFACE LIKE THE APPROACH/DEPARTURE SURFACE ETC.

**SAFETY:**

- THE CONTRACTOR WILL ENSURE THAT AREAS OF AIRCRAFT OPERATION ARE CLEARLY AND VISIBLY SEPARATED FROM CONSTRUCTION AREAS.
- THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL SAFETY DEVICES AS INDICATED ON THE PLANS OR AS DIRECTED BY THE RPR.
- THE CONTRACTOR SHALL STRICTLY ADHERE TO ALL SECURITY POLICIES OF THE AIRPORT INCLUDING ESCORTING PERSONNEL, BADGING AND ACCESS WITHIN THE SECURED AREAS OF THE AIRPORT. ACCESS OUTSIDE THE DEFINED CONSTRUCTION AREA IS STRICTLY PROHIBITED.
- THE CONTRACTOR MUST TAKE CARE TO MAINTAIN SECURITY DURING CONSTRUCTION. THE CONTRACTOR SHALL KEEP THE GATES LOCKED OR GUARDED AT ALL TIMES TO PREVENT ACCESS BY UNAUTHORIZED PERSONNEL AND ANIMALS. THE CONTRACTOR MUST IMPLEMENT PROCEDURES TO ENSURE THAT ONLY AUTHORIZED PERSONS AND VEHICLES HAVE ACCESS TO THE AOA AND TO PROHIBIT "PIGGYBACKING" BEHIND AUTHORIZED VEHICLES.
- FOD PREVENTION - THE CONTRACTOR SHALL PROVIDE A MOTORIZED MECHANICAL SWEEPER ALONG WITH A "FOD PLAN" PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES. THE FOD PLAN IS SUBJECT TO APPROVAL BY THE CONSTRUCTION MANAGER. THE FOD PLAN AND DAILY ACTIVITIES SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.
- THE CONTRACTOR SHALL PROTECT ALL EXISTING RUNWAY AND TAXIWAY LIGHTS OR REMOVE, STORE AND THEN RE-INSTALL THEM UPON COMPLETION OF THE PROJECT AT NO ADDITIONAL COST TO THE AIRPORT OWNER.
- UTILITIES:
  - THE CONTRACTOR WILL ANTICIPATE ALL UNDERGROUND STRUCTURES SUCH AS BUT NOT LIMITED TO WATER MAINS, GAS LINES, STORM AND SANITARY SEWERS, TELEPHONE OR ELECTRIC LIGHT OR POWER DUCTS, CONCRETE, DEBRIS. ANY UNDERGROUND STRUCTURE DEPICTED ON THE PLANS SHOWS AN APPROXIMATE LOCATION AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR. THE OWNER AND CONSTRUCTION MANAGER WILL ENDEAVOR TO APPRISE THE CONTRACTOR OF ALL UNDERGROUND STRUCTURES BUT THIS WILL NOT RELIEVE THE CONTRACTOR FROM COMPLETE RESPONSIBILITY IN LOCATING ALL UNDERGROUND STRUCTURES WHETHER DEPICTED ON THE PLANS OR NOT.
  - THE CONTRACTOR AT HIS EXPENSE SHALL NOTIFY ALL UTILITY COMPANIES TO ACCURATELY LOCATE AND MARK ALL UNDERGROUND

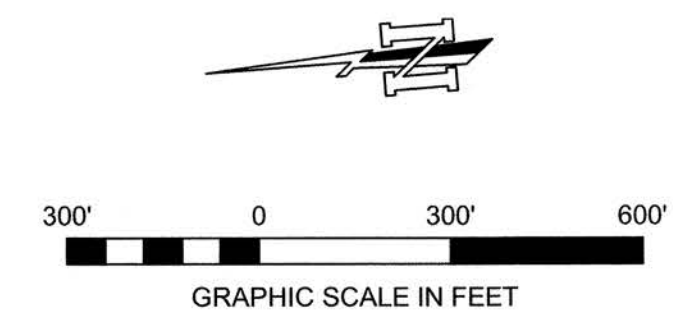
UTILITIES. ALL THESE UTILITIES SHALL THEN BE UNCOVERED BY THE CONTRACTOR TO VERIFY THEIR LOCATION AND ELEVATION PRIOR TO COMMENCEMENT OF CONSTRUCTION AT NO COST TO THE OWNER. THE CONTRACTOR WILL COORDINATE WITH THE UTILITY OWNER IF A UTILITY INSPECTOR IS REQUIRED TO BE ON SITE WHEN LOCATING OR EXCAVATING NEAR UTILITIES.

- THE CONTRACTOR SHALL HANDLE ALL HAZARDOUS MATERIAL (HAZMAT) WITH THE RELEVANT AUTHORITIES AND PURSUANT TO LOCAL, STATE, AND FEDERAL RULES AND REGULATIONS.
- ALL ACTIVITIES WILL BE PERFORMED IN CONFORMANCE WITH FEDERAL AVIATION ADMINISTRATION'S (FAA) ADVISORY CIRCULAR (AC) 150/5370-2 TITLED "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION", LATEST VERSION. NOTHING ON THE PLANS WILL RELIEVE THE CONTRACTOR FROM HIS/HER RESPONSIBILITY TO COMPLY WITH THE REQUIREMENTS SET FORTH THEREIN.

**LEGEND**

- PROPOSED TAXIWAY CONSTRUCTION
- REMOVE EXISTING TAXIWAYS
- PROPOSED APRON ISLANDS
- EXISTING BUILDINGS
- EXISTING FENCE
- RUNWAY SAFETY AREA
- STAGING AREA





RUNWAY 3 - 21 OPEN DURING THIS PHASE  
 RUNWAY 9 - 27 CLOSED DURING THIS PHASE  
 RUNWAY 18 - 36 CLOSED DURING THIS PHASE

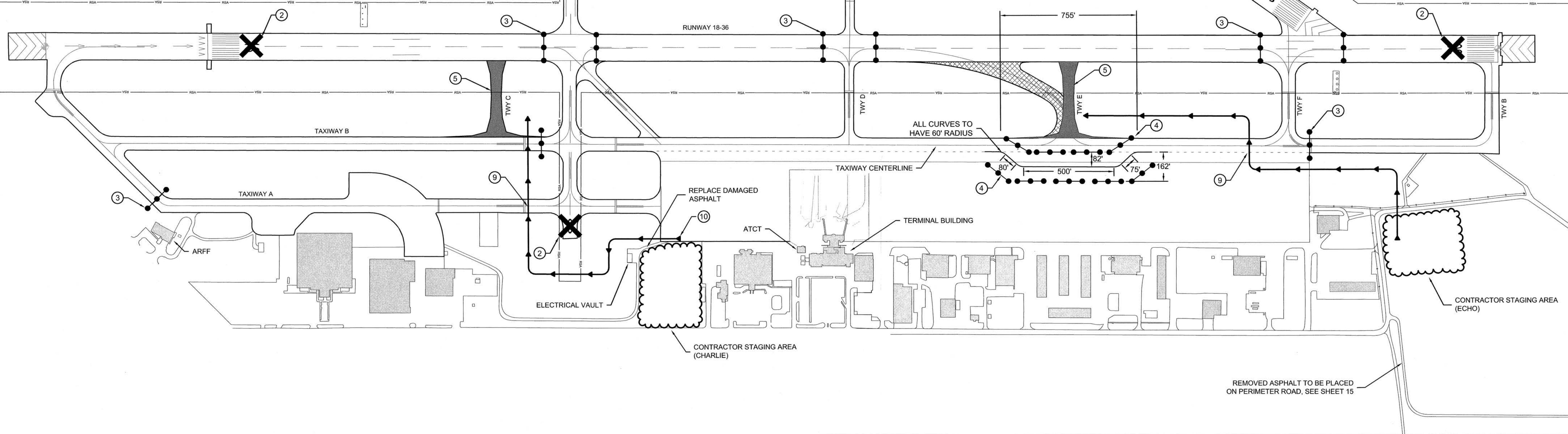
PHASING LEGEND	
	EXISTING FEATURES
	EXISTING HANGARS/BUILDINGS
	CONSTRUCTION AREA DURING PHASE
	DEMOLITION AREA DURING PHASE
	CONTRACTOR STAGING AREA
	LIGHTED CLOSED RUNWAY X
	LIGHTED BARRICADE LOCATIONS
	CONSTRUCTION ACCESS ROUTE

**NOTES:**

1. CONTRACTOR CONSTRUCTION ACTIVITIES SHALL NOT RESTRICT EXISTING STORMWATER FLOW PATTERNS.
2. CONTRACTOR SHALL WORK IN ONE CONSTRUCTION AREA AT A TIME UNLESS OTHERWISE APPROVED BY THE ENGINEER.
3. CONTRACTOR SHALL INSTALL SECURE CONSTRUCTION GATE AND COORDINATE LOCK WITH THE AIRPORT.

**PHASE 1: SEQUENCE 1**

1. ISSUE NOTICE TO AIRMEN (NOTAM) A MINIMUM OF 72 HOURS PRIOR TO START OF CONSTRUCTION ACTIVITIES. RPR TO COORDINATE WITH MR. MITCH SPRUNGER, OPERATIONS COORDINATOR, SAN ANGELO REGIONAL AIRPORT, (325) 659-6409 EXT 3. AT A MINIMUM NOTAM SHOULD STATE THAT RUNWAY 18-36 AND 9-27 ARE CLOSED.
2. CONTRACTOR SHALL USE LIGHTED X'S ON BOTH RUNWAY ENDS FOR ALL RUNWAY CLOSURES.
3. INSTALL INTERLOCKING LOW PROFILE BARRICADES AT LOCATIONS SHOWN. (SEE SHEET 13 FOR DETAIL)
4. INSTALL LOW PROFILE BARRICADES SPACED 10' APART AT LOCATIONS SHOWN. (SEE SHEET 13 FOR DETAIL)
5. WORK ACTIVITIES WITHIN LIMITS OF WORK FOR THIS PHASE INCLUDE:
  - REMOVE EXISTING TAXIWAY ECHO.
  - CONSTRUCT PROPOSED TAXIWAY CHARLIE AND ECHO.
  - APPLY TEMPORARY MARKINGS.
6. AT THE COMPLETION OF THIS PHASE, PERFORM NECESSARY PROCEDURES PRIOR TO RE-OPENING THE RUNWAYS. FOLLOW STEPS BELOW:
  - CLEAN RUNWAY SURFACES TO REMOVE ANY FOREIGN OBJECT DEBRIS FROM THE AREA.
  - REMOVE LOW PROFILE BARRICADES.
  - REMOVE TEMPORARY PAVEMENT MARKINGS
  - REMOVE ALL EQUIPMENT, MATERIALS, AND PERSONNEL FROM THE WORK AREA.
  - REMOVE LIGHTED X'S ONLY AFTER THE RUNWAYS ARE READY TO USE.
7. COORDINATE WITH THE AIRPORT AND ATCT TO RE-OPEN THE RUNWAYS.
8. COORDINATE WITH THE AIRPORT TO ISSUE/CANCEL APPLICABLE NOTAMS BEFORE AND AFTER ALL CLOSURES.
9. PROVIDE FLAG PERSONNEL AT ALL NON-BARRICADED CROSSINGS.
10. UTILIZE CONSTRUCTION GATE NEAR ELECTRICAL VAULT TO ACCESS ELECTRICAL VAULT. CONSTRUCTION GATE SHALL REMAIN LOCKED AT ALL TIMES AND SHALL ONLY BE OPENED FOR CONSTRUCTION VEHICLES TO PASS THROUGH, THEN RE-LOCKED.

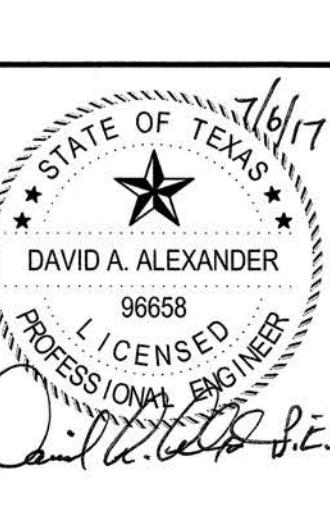


MARK	REVISION	DATE

**PHASING PLAN 1  
 SEQUENCE 1**

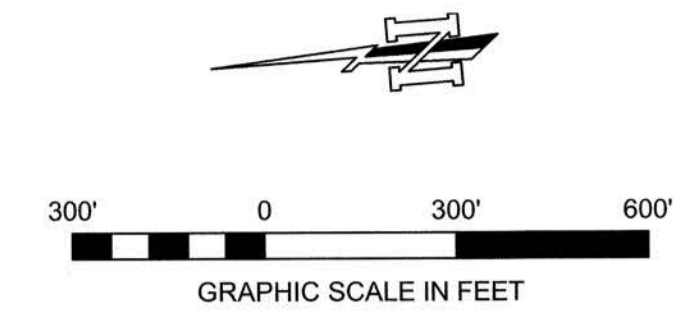
**SAN ANGELO REGIONAL  
 AIRPORT TAXIWAY  
 RECONFIGURATION PROJECT  
 SAN ANGELO, TEXAS**

DRAWN BY:	CBS
DESIGNED BY:	JWD
LATEST REVISION:	6/29/2017
KSA JOB NO.:	SAN_059



SEAL: TBPE Firm Registration No. F-1356  
 SHEET NO.





RUNWAY 3 - 21 OPEN DURING THIS PHASE  
 RUNWAY 9 - 27 CLOSED DURING THIS PHASE  
 RUNWAY 18 - 36 CLOSED DURING THIS PHASE

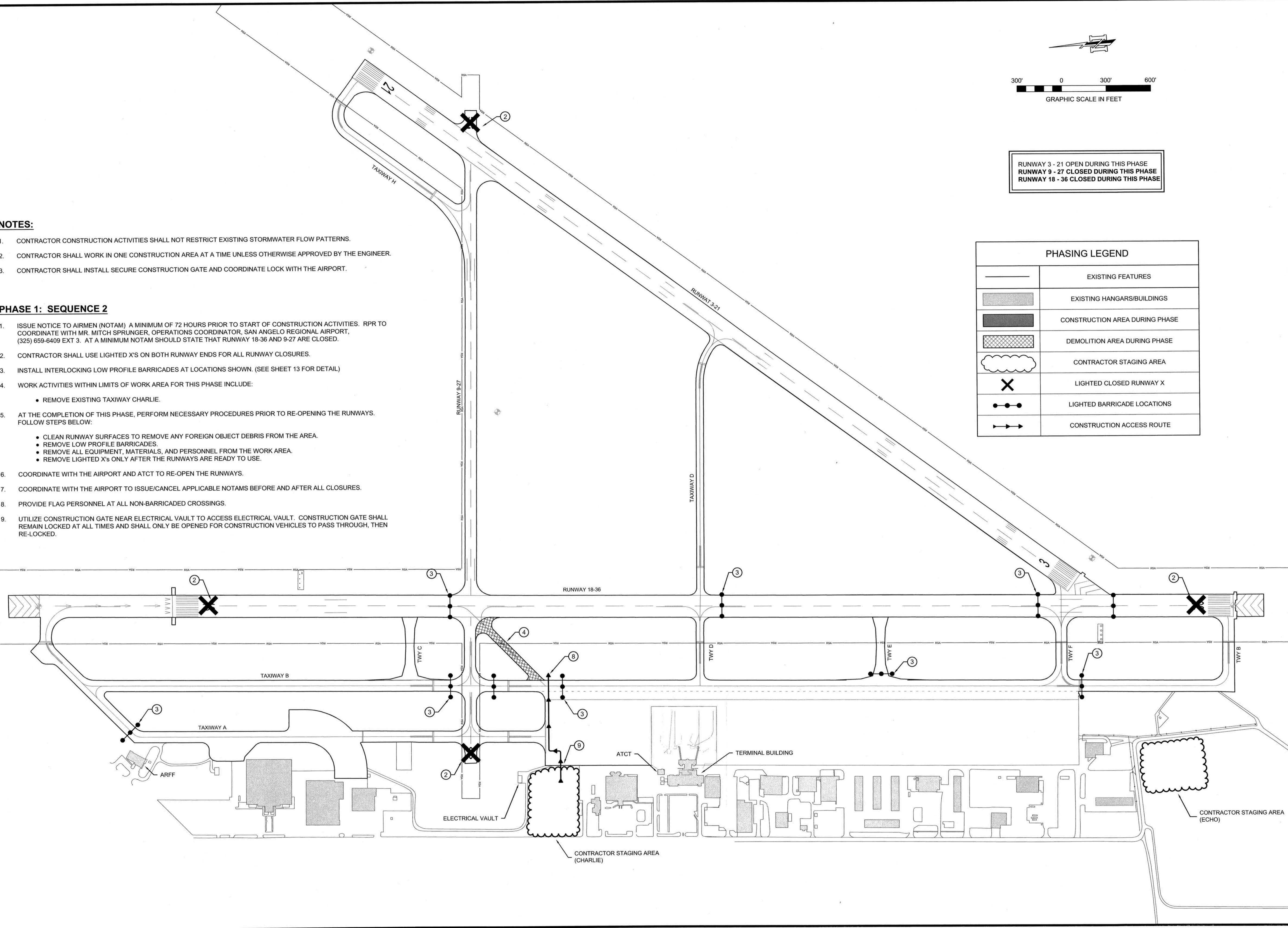
PHASING LEGEND	
	EXISTING FEATURES
	EXISTING HANGARS/BUILDINGS
	CONSTRUCTION AREA DURING PHASE
	DEMOLITION AREA DURING PHASE
	CONTRACTOR STAGING AREA
	LIGHTED CLOSED RUNWAY X
	LIGHTED BARRICADE LOCATIONS
	CONSTRUCTION ACCESS ROUTE

**NOTES:**

- CONTRACTOR CONSTRUCTION ACTIVITIES SHALL NOT RESTRICT EXISTING STORMWATER FLOW PATTERNS.
- CONTRACTOR SHALL WORK IN ONE CONSTRUCTION AREA AT A TIME UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- CONTRACTOR SHALL INSTALL SECURE CONSTRUCTION GATE AND COORDINATE LOCK WITH THE AIRPORT.

**PHASE 1: SEQUENCE 2**

- ISSUE NOTICE TO AIRMEN (NOTAM) A MINIMUM OF 72 HOURS PRIOR TO START OF CONSTRUCTION ACTIVITIES. RPR TO COORDINATE WITH MR. MITCH SPRUNGER, OPERATIONS COORDINATOR, SAN ANGELO REGIONAL AIRPORT, (325) 659-6409 EXT 3. AT A MINIMUM NOTAM SHOULD STATE THAT RUNWAY 18-36 AND 9-27 ARE CLOSED.
- CONTRACTOR SHALL USE LIGHTED X'S ON BOTH RUNWAY ENDS FOR ALL RUNWAY CLOSURES.
- INSTALL INTERLOCKING LOW PROFILE BARRICADES AT LOCATIONS SHOWN. (SEE SHEET 13 FOR DETAIL)
- WORK ACTIVITIES WITHIN LIMITS OF WORK AREA FOR THIS PHASE INCLUDE:
  - REMOVE EXISTING TAXIWAY CHARLIE.
- AT THE COMPLETION OF THIS PHASE, PERFORM NECESSARY PROCEDURES PRIOR TO RE-OPENING THE RUNWAYS. FOLLOW STEPS BELOW:
  - CLEAN RUNWAY SURFACES TO REMOVE ANY FOREIGN OBJECT DEBRIS FROM THE AREA.
  - REMOVE LOW PROFILE BARRICADES.
  - REMOVE ALL EQUIPMENT, MATERIALS, AND PERSONNEL FROM THE WORK AREA.
  - REMOVE LIGHTED X'S ONLY AFTER THE RUNWAYS ARE READY TO USE.
- COORDINATE WITH THE AIRPORT AND ATCT TO RE-OPEN THE RUNWAYS.
- COORDINATE WITH THE AIRPORT TO ISSUE/CANCEL APPLICABLE NOTAMS BEFORE AND AFTER ALL CLOSURES.
- PROVIDE FLAG PERSONNEL AT ALL NON-BARRICADED CROSSINGS.
- UTILIZE CONSTRUCTION GATE NEAR ELECTRICAL VAULT TO ACCESS ELECTRICAL VAULT. CONSTRUCTION GATE SHALL REMAIN LOCKED AT ALL TIMES AND SHALL ONLY BE OPENED FOR CONSTRUCTION VEHICLES TO PASS THROUGH, THEN RE-LOCKED.



MARK	REVISION	DATE
1	ISSUE FOR PROJECT	7/6/17
2	PHASING PLAN 1	7/6/2017 - 8:10 PM
3	PHASING PLAN 1	7/6/2017 - 8:10 PM
4	PHASING PLAN 1	7/6/2017 - 8:10 PM
5	PHASING PLAN 1	7/6/2017 - 8:10 PM
6	PHASING PLAN 1	7/6/2017 - 8:10 PM
7	PHASING PLAN 1	7/6/2017 - 8:10 PM
8	PHASING PLAN 1	7/6/2017 - 8:10 PM
9	PHASING PLAN 1	7/6/2017 - 8:10 PM
10	PHASING PLAN 1	7/6/2017 - 8:10 PM
11	PHASING PLAN 1	7/6/2017 - 8:10 PM
12	PHASING PLAN 1	7/6/2017 - 8:10 PM
13	PHASING PLAN 1	7/6/2017 - 8:10 PM
14	PHASING PLAN 1	7/6/2017 - 8:10 PM
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48	PHASING PLAN 1	7/6/2017 - 8:10 PM
49	PHASING PLAN 1	7/6/2017 - 8:10 PM
50	PHASING PLAN 1	7/6/2017 - 8:10 PM

**PHASING PLAN 1  
SEQUENCE 2**

**SAN ANGELO REGIONAL  
AIRPORT TAXIWAY  
RECONFIGURATION PROJECT  
SAN ANGELO, TEXAS**

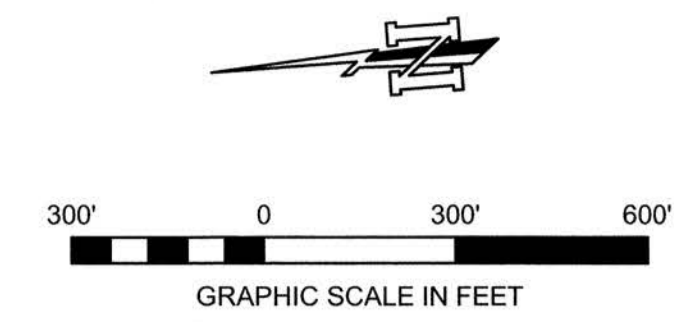
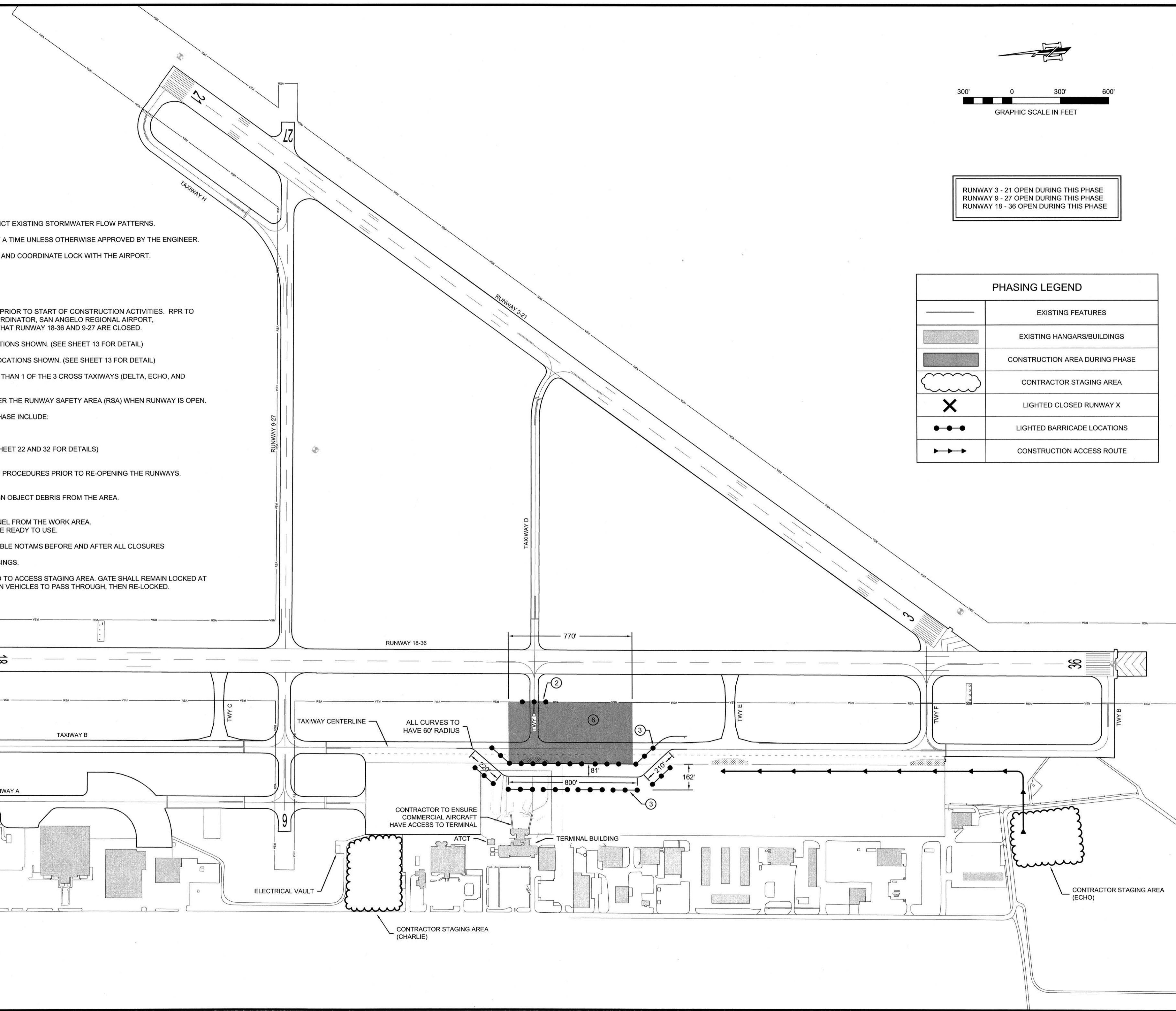
DRAWN BY:	CBS
DESIGNED BY:	JWD
LATEST REVISION:	6/29/2017
KSA JOB NO.:	SAN_058

**KSA**  
 58 Bullock Street, San Angelo, Texas 76901  
 T. 325-947-1557  
 www.ksaeng.com

STATE OF TEXAS  
 7/6/17  
 DAVID A. ALEXANDER  
 96658  
 LICENSED PROFESSIONAL ENGINEER

SEAL: TBPE Firm Registration No. F-1356  
 SHEET NO.





RUNWAY 3 - 21 OPEN DURING THIS PHASE  
 RUNWAY 9 - 27 OPEN DURING THIS PHASE  
 RUNWAY 18 - 36 OPEN DURING THIS PHASE

- NOTES:**
1. CONTRACTOR CONSTRUCTION ACTIVITIES SHALL NOT RESTRICT EXISTING STORMWATER FLOW PATTERNS.
  2. CONTRACTOR SHALL WORK IN ONE CONSTRUCTION AREA AT A TIME UNLESS OTHERWISE APPROVED BY THE ENGINEER.
  3. CONTRACTOR SHALL INSTALL SECURE CONSTRUCTION GATE AND COORDINATE LOCK WITH THE AIRPORT.

- PHASE 2, SEQUENCE 1:**
1. ISSUE NOTICE TO AIRMEN (NOTAM) A MINIMUM OF 72 HOURS PRIOR TO START OF CONSTRUCTION ACTIVITIES. RPR TO COORDINATE WITH MR. MITCH SPRUNGER, OPERATIONS COORDINATOR, SAN ANGELO REGIONAL AIRPORT, (325) 659-6409 EXT 3. AT A MINIMUM NOTAM SHOULD STATE THAT RUNWAY 18-36 AND 9-27 ARE CLOSED.
  2. INSTALL INTERLOCKING LOW PROFILE BARRICADES AT LOCATIONS SHOWN. (SEE SHEET 13 FOR DETAIL)
  3. INSTALL LOW PROFILE BARRICADES SPACED 10' APART AT LOCATIONS SHOWN. (SEE SHEET 13 FOR DETAIL)
  4. WORK ACTIVITIES SHALL BE SEQUENCED SO THAT NO MORE THAN 1 OF THE 3 CROSS TAXIWAYS (DELTA, ECHO, AND FOXTROT) SHALL BE CLOSED AT A TIME.
  5. NO CONSTRUCTION PERSONNEL OR EQUIPMENT SHALL ENTER THE RUNWAY SAFETY AREA (RSA) WHEN RUNWAY IS OPEN.
  6. WORK ACTIVITIES WITHIN LIMITS OF WORK AREA FOR THIS PHASE INCLUDE:
    - PAINT TEMPORARY MARKINGS.
    - REPAIR PAVEMENT ALONG APRON EDGE.
    - INSTALL APRON ISLANDS ALONG THE APRON. (SEE SHEET 22 AND 32 FOR DETAILS)
    - INSTALL ISLAND SIGNAGE AND LIGHTING.
  7. AT THE COMPLETION OF THIS PHASE, PERFORM NECESSARY PROCEDURES PRIOR TO RE-OPENING THE RUNWAYS. FOLLOW STEPS BELOW:
    - CLEAN RUNWAY SURFACES TO REMOVE ANY FOREIGN OBJECT DEBRIS FROM THE AREA.
    - REMOVE LOW PROFILE BARRICADES.
    - REMOVE TEMPORARY PAVEMENT MARKINGS
    - REMOVE ALL EQUIPMENT, MATERIALS, AND PERSONNEL FROM THE WORK AREA.
    - REMOVE LIGHTED X'S ONLY AFTER THE RUNWAYS ARE READY TO USE.
  8. COORDINATE WITH THE AIRPORT TO ISSUE/CANCEL APPLICABLE NOTAMS BEFORE AND AFTER ALL CLOSURES
  9. PROVIDE FLAG PERSONNEL AT ALL NON-BARRICADED CROSSINGS.
  10. UTILIZE ACCESS GATE AT THE SOUTH END OF HANGAR ROAD TO ACCESS STAGING AREA. GATE SHALL REMAIN LOCKED AT ALL TIMES AND SHALL ONLY BE OPENED FOR CONSTRUCTION VEHICLES TO PASS THROUGH, THEN RE-LOCKED.

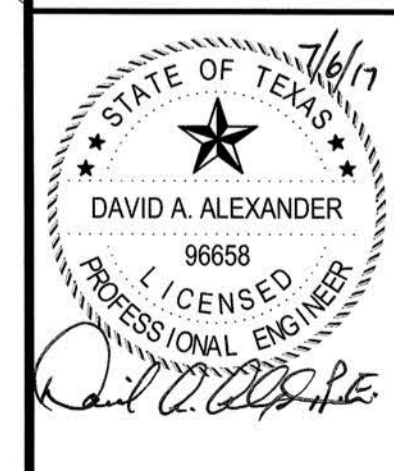
PHASING LEGEND	
	EXISTING FEATURES
	EXISTING HANGARS/BUILDINGS
	CONSTRUCTION AREA DURING PHASE
	CONTRACTOR STAGING AREA
	LIGHTED CLOSED RUNWAY X
	LIGHTED BARRICADE LOCATIONS
	CONSTRUCTION ACCESS ROUTE

MARK	REVISION	DATE

**PHASING PLAN 2  
SEQUENCE 1**

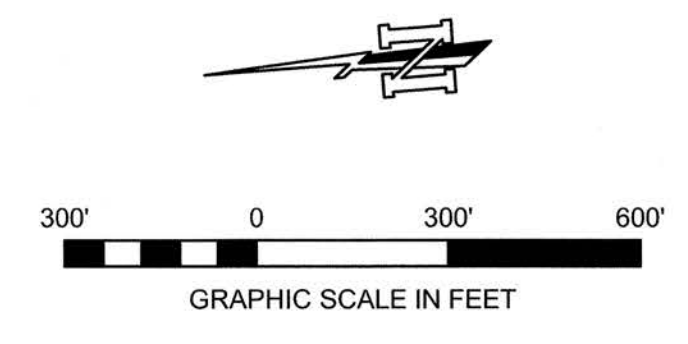
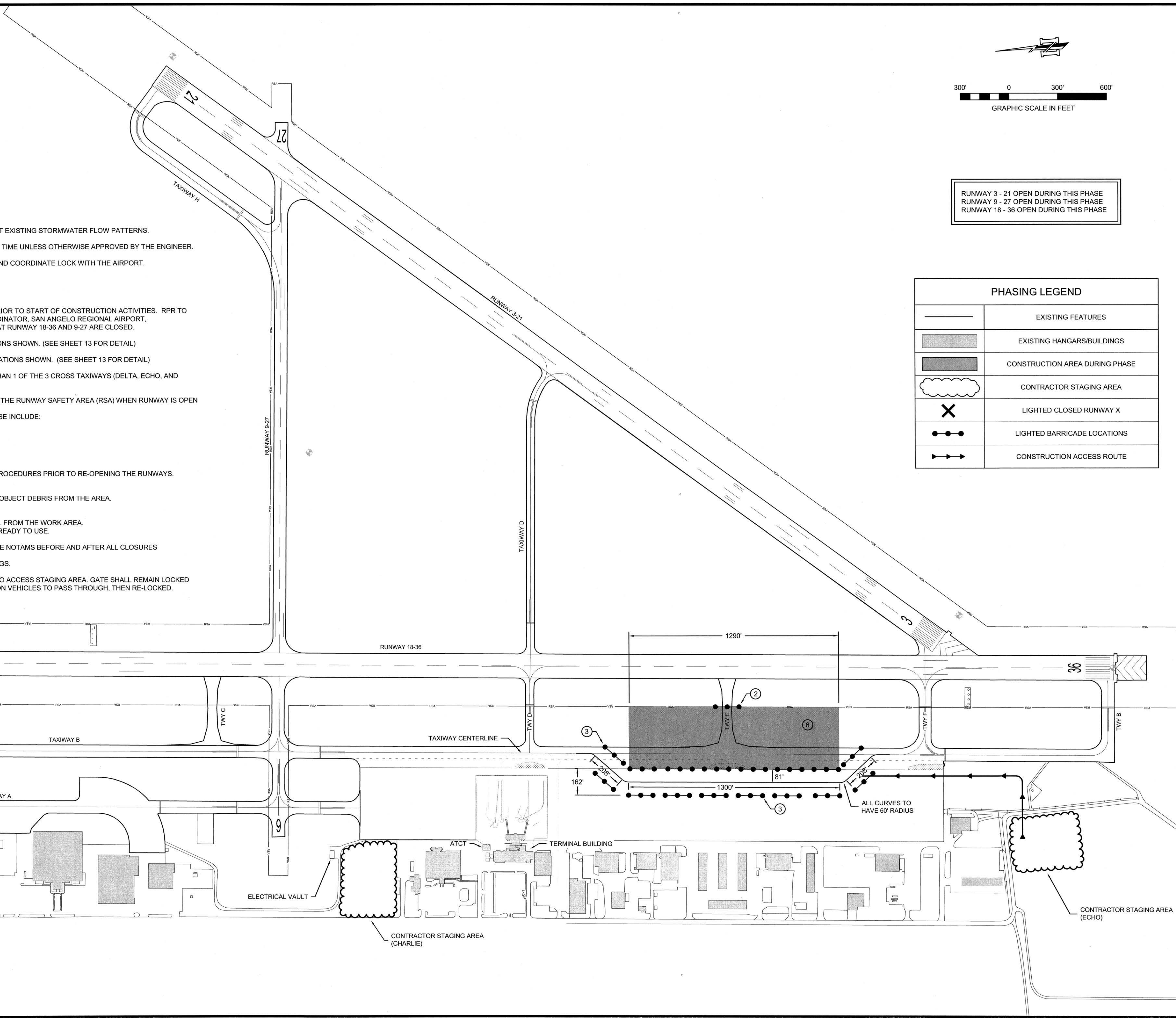
**SAN ANGELO REGIONAL  
AIRPORT TAXIWAY  
RECONFIGURATION PROJECT  
SAN ANGELO, TEXAS**

**KSA**  
 58 Buick Street, San Angelo, Texas 76901  
 T. 325-947-1555 F. 325-947-1559  
 www.ksaeng.com



SEAL:  
 TBPE Firm Registration No. F-1356  
 SHEET NO.  
**9**





RUNWAY 3 - 21 OPEN DURING THIS PHASE  
 RUNWAY 9 - 27 OPEN DURING THIS PHASE  
 RUNWAY 18 - 36 OPEN DURING THIS PHASE

PHASING LEGEND	
	EXISTING FEATURES
	EXISTING HANGARS/BUILDINGS
	CONSTRUCTION AREA DURING PHASE
	CONTRACTOR STAGING AREA
	LIGHTED CLOSED RUNWAY X
	LIGHTED BARRICADE LOCATIONS
	CONSTRUCTION ACCESS ROUTE

**NOTES:**

1. CONTRACTOR CONSTRUCTION ACTIVITIES SHALL NOT RESTRICT EXISTING STORMWATER FLOW PATTERNS.
2. CONTRACTOR SHALL WORK IN ONE CONSTRUCTION AREA AT A TIME UNLESS OTHERWISE APPROVED BY THE ENGINEER.
3. CONTRACTOR SHALL INSTALL SECURE CONSTRUCTION GATE AND COORDINATE LOCK WITH THE AIRPORT.

**PHASE 2, SEQUENCE 2:**

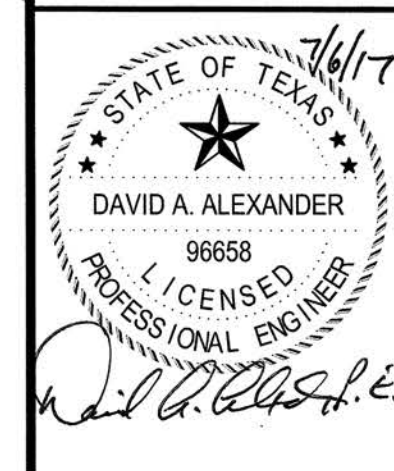
1. ISSUE NOTICE TO AIRMEN (NOTAM) A MINIMUM OF 72 HOURS PRIOR TO START OF CONSTRUCTION ACTIVITIES. RPR TO COORDINATE WITH MR. MITCH SPRUNGER, OPERATIONS COORDINATOR, SAN ANGELO REGIONAL AIRPORT, (325) 659-6409 EXT 3. AT A MINIMUM NOTAM SHOULD STATE THAT RUNWAY 18-36 AND 9-27 ARE CLOSED.
2. INSTALL INTERLOCKING LOW PROFILE BARRICADES AT LOCATIONS SHOWN. (SEE SHEET 13 FOR DETAIL)
3. INSTALL LOW PROFILE BARRICADES SPACED 10' APART AT LOCATIONS SHOWN. (SEE SHEET 13 FOR DETAIL)
4. WORK ACTIVITIES SHALL BE SEQUENCED SO THAT NO MORE THAN 1 OF THE 3 CROSS TAXIWAYS (DELTA, ECHO, AND FOXTROT) SHALL BE CLOSED AT A TIME.
5. NO CONSTRUCTION PERSONNEL OR EQUIPMENT SHALL ENTER THE RUNWAY SAFETY AREA (RSA) WHEN RUNWAY IS OPEN
6. WORK ACTIVITIES WITHIN LIMITS OF WORK AREA FOR THIS PHASE INCLUDE:
  - PAINT TEMPORARY MARKINGS.
  - REPAIR PAVEMENT ALONG APRON EDGE.
  - INSTALL APRON ISLANDS ALONG THE APRON.
  - INSTALL ISLAND SIGNAGE AND LIGHTING.
7. AT THE COMPLETION OF THIS PHASE, PERFORM NECESSARY PROCEDURES PRIOR TO RE-OPENING THE RUNWAYS. FOLLOW STEPS BELOW:
  - CLEAN RUNWAY SURFACES TO REMOVE ANY FOREIGN OBJECT DEBRIS FROM THE AREA.
  - REMOVE LOW PROFILE BARRICADES.
  - REMOVE TEMPORARY PAVEMENT MARKINGS
  - REMOVE ALL EQUIPMENT, MATERIALS, AND PERSONNEL FROM THE WORK AREA.
  - REMOVE LIGHTED X'S ONLY AFTER THE RUNWAYS ARE READY TO USE.
8. COORDINATE WITH THE AIRPORT TO ISSUE/CANCEL APPLICABLE NOTAMS BEFORE AND AFTER ALL CLOSURES
9. PROVIDE FLAG PERSONNEL AT ALL NON-BARRICADED CROSSINGS.
10. UTILIZE ACCESS GATE AT THE SOUTH END OF HANGAR ROAD TO ACCESS STAGING AREA. GATE SHALL REMAIN LOCKED AT ALL TIMES AND SHALL ONLY BE OPENED FOR CONSTRUCTION VEHICLES TO PASS THROUGH, THEN RE-LOCKED.

MARK	REVISION	DATE

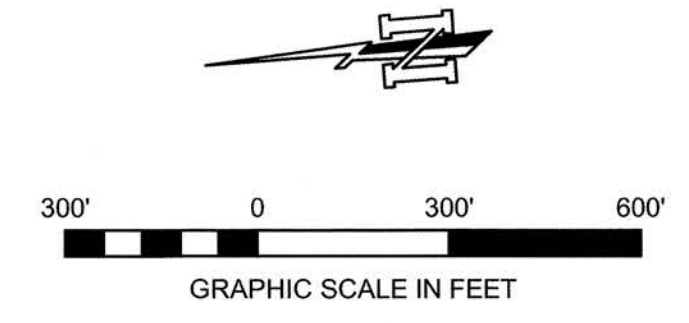
**PHASING PLAN 2  
 SEQUENCE 2**

SAN ANGELO REGIONAL  
 AIRPORT TAXIWAY  
 RECONFIGURATION PROJECT  
 SAN ANGELO, TEXAS

DRAWN BY: CBS  
 DESIGNED BY: JMD  
 LATEST REVISION: 6/29/2017  
 KSA JOB NO.: SAN 059







RUNWAY 3 - 21 OPEN DURING THIS PHASE  
 RUNWAY 9 - 27 OPEN DURING THIS PHASE  
 RUNWAY 18 - 36 OPEN DURING THIS PHASE

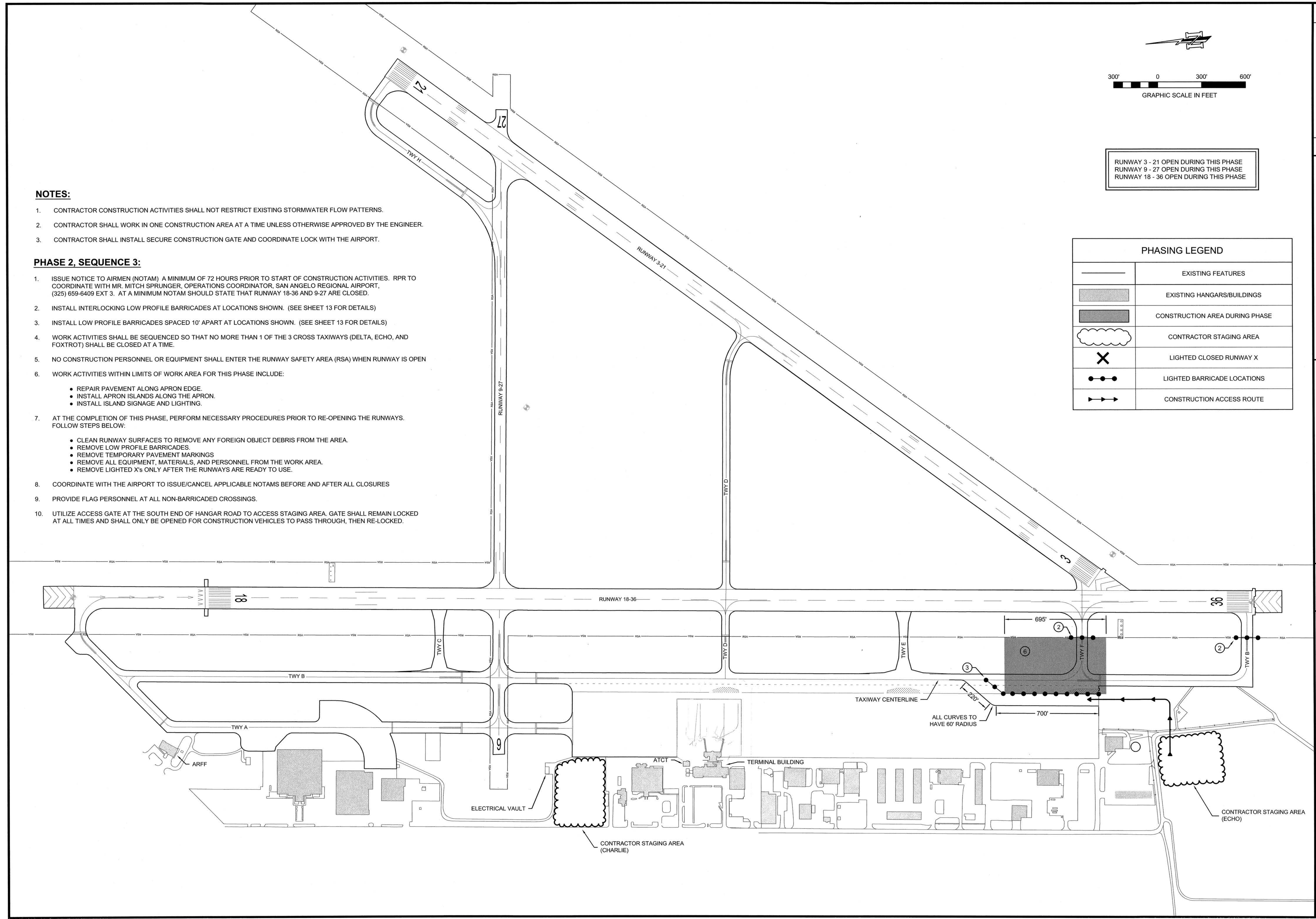
PHASING LEGEND	
	EXISTING FEATURES
	EXISTING HANGARS/BUILDINGS
	CONSTRUCTION AREA DURING PHASE
	CONTRACTOR STAGING AREA
	LIGHTED CLOSED RUNWAY X
	LIGHTED BARRICADE LOCATIONS
	CONSTRUCTION ACCESS ROUTE

**NOTES:**

- CONTRACTOR CONSTRUCTION ACTIVITIES SHALL NOT RESTRICT EXISTING STORMWATER FLOW PATTERNS.
- CONTRACTOR SHALL WORK IN ONE CONSTRUCTION AREA AT A TIME UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- CONTRACTOR SHALL INSTALL SECURE CONSTRUCTION GATE AND COORDINATE LOCK WITH THE AIRPORT.

**PHASE 2, SEQUENCE 3:**

- ISSUE NOTICE TO AIRMEN (NOTAM) A MINIMUM OF 72 HOURS PRIOR TO START OF CONSTRUCTION ACTIVITIES. RPR TO COORDINATE WITH MR. MITCH SPRUNGER, OPERATIONS COORDINATOR, SAN ANGELO REGIONAL AIRPORT, (325) 659-6409 EXT 3. AT A MINIMUM NOTAM SHOULD STATE THAT RUNWAY 18-36 AND 9-27 ARE CLOSED.
- INSTALL INTERLOCKING LOW PROFILE BARRICADES AT LOCATIONS SHOWN. (SEE SHEET 13 FOR DETAILS)
- INSTALL LOW PROFILE BARRICADES SPACED 10' APART AT LOCATIONS SHOWN. (SEE SHEET 13 FOR DETAILS)
- WORK ACTIVITIES SHALL BE SEQUENCED SO THAT NO MORE THAN 1 OF THE 3 CROSS TAXIWAYS (DELTA, ECHO, AND FOXTROT) SHALL BE CLOSED AT A TIME.
- NO CONSTRUCTION PERSONNEL OR EQUIPMENT SHALL ENTER THE RUNWAY SAFETY AREA (RSA) WHEN RUNWAY IS OPEN
- WORK ACTIVITIES WITHIN LIMITS OF WORK AREA FOR THIS PHASE INCLUDE:
  - REPAIR PAVEMENT ALONG APRON EDGE.
  - INSTALL APRON ISLANDS ALONG THE APRON.
  - INSTALL ISLAND SIGNAGE AND LIGHTING.
- AT THE COMPLETION OF THIS PHASE, PERFORM NECESSARY PROCEDURES PRIOR TO RE-OPENING THE RUNWAYS. FOLLOW STEPS BELOW:
  - CLEAN RUNWAY SURFACES TO REMOVE ANY FOREIGN OBJECT DEBRIS FROM THE AREA.
  - REMOVE LOW PROFILE BARRICADES.
  - REMOVE TEMPORARY PAVEMENT MARKINGS
  - REMOVE ALL EQUIPMENT, MATERIALS, AND PERSONNEL FROM THE WORK AREA.
  - REMOVE LIGHTED X's ONLY AFTER THE RUNWAYS ARE READY TO USE.
- COORDINATE WITH THE AIRPORT TO ISSUE/CANCEL APPLICABLE NOTAMS BEFORE AND AFTER ALL CLOSURES
- PROVIDE FLAG PERSONNEL AT ALL NON-BARRICADED CROSSINGS.
- UTILIZE ACCESS GATE AT THE SOUTH END OF HANGAR ROAD TO ACCESS STAGING AREA. GATE SHALL REMAIN LOCKED AT ALL TIMES AND SHALL ONLY BE OPENED FOR CONSTRUCTION VEHICLES TO PASS THROUGH, THEN RE-LOCKED.



MARK	REVISION	DATE

**PHASING PLAN 2  
 SEQUENCE 3**

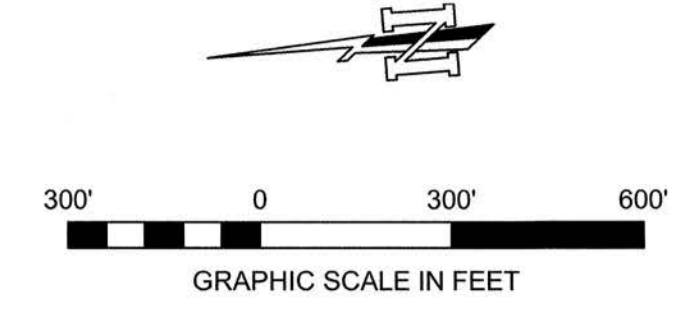
**SAN ANGELO REGIONAL  
 AIRPORT TAXIWAY  
 RECONFIGURATION PROJECT  
 SAN ANGELO, TEXAS**

DRAWN BY:	CBS
DESIGNED BY:	JMD
LATEST REVISION:	6/29/2017
KSA JOB NO.:	SAN_059

SEAL:  
 TBPE Firm Registration No. F-1356  
 SHEET NO.

**11**





RUNWAY 3 - 21 OPEN DURING THIS PHASE  
 RUNWAY 9 - 27 OPEN DURING THIS PHASE  
 RUNWAY 18 - 36 OPEN DURING THIS PHASE

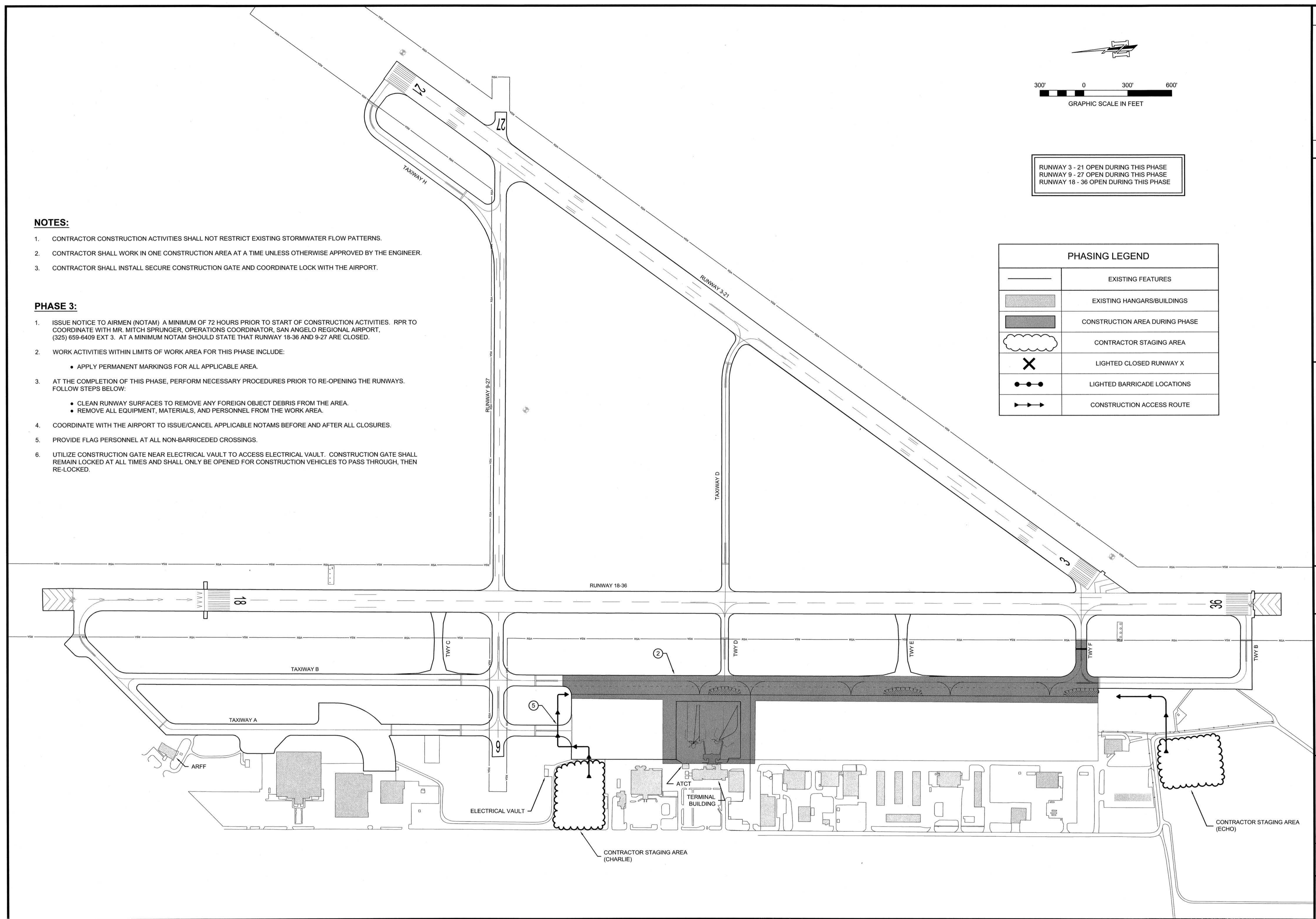
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	EXISTING FEATURES
	EXISTING HANGARS/BUILDINGS
	CONSTRUCTION AREA DURING PHASE
	CONTRACTOR STAGING AREA
	LIGHTED CLOSED RUNWAY X
	LIGHTED BARRICADE LOCATIONS
	CONSTRUCTION ACCESS ROUTE

**NOTES:**

1. CONTRACTOR CONSTRUCTION ACTIVITIES SHALL NOT RESTRICT EXISTING STORMWATER FLOW PATTERNS.
2. CONTRACTOR SHALL WORK IN ONE CONSTRUCTION AREA AT A TIME UNLESS OTHERWISE APPROVED BY THE ENGINEER.
3. CONTRACTOR SHALL INSTALL SECURE CONSTRUCTION GATE AND COORDINATE LOCK WITH THE AIRPORT.

**PHASE 3:**

1. ISSUE NOTICE TO AIRMEN (NOTAM) A MINIMUM OF 72 HOURS PRIOR TO START OF CONSTRUCTION ACTIVITIES. RPR TO COORDINATE WITH MR. MITCH SPRUNGER, OPERATIONS COORDINATOR, SAN ANGELO REGIONAL AIRPORT, (325) 659-6409 EXT 3. AT A MINIMUM NOTAM SHOULD STATE THAT RUNWAY 18-36 AND 9-27 ARE CLOSED.
2. WORK ACTIVITIES WITHIN LIMITS OF WORK AREA FOR THIS PHASE INCLUDE:
  - APPLY PERMANENT MARKINGS FOR ALL APPLICABLE AREA.
3. AT THE COMPLETION OF THIS PHASE, PERFORM NECESSARY PROCEDURES PRIOR TO RE-OPENING THE RUNWAYS. FOLLOW STEPS BELOW:
  - CLEAN RUNWAY SURFACES TO REMOVE ANY FOREIGN OBJECT DEBRIS FROM THE AREA.
  - REMOVE ALL EQUIPMENT, MATERIALS, AND PERSONNEL FROM THE WORK AREA.
4. COORDINATE WITH THE AIRPORT TO ISSUE/CANCEL APPLICABLE NOTAMS BEFORE AND AFTER ALL CLOSURES.
5. PROVIDE FLAG PERSONNEL AT ALL NON-BARRICADED CROSSINGS.
6. UTILIZE CONSTRUCTION GATE NEAR ELECTRICAL VAULT TO ACCESS ELECTRICAL VAULT. CONSTRUCTION GATE SHALL REMAIN LOCKED AT ALL TIMES AND SHALL ONLY BE OPENED FOR CONSTRUCTION VEHICLES TO PASS THROUGH, THEN RE-LOCKED.

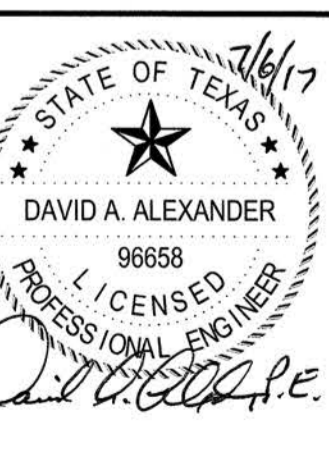


MARK	REVISION	DATE

**PHASING PLAN 3**

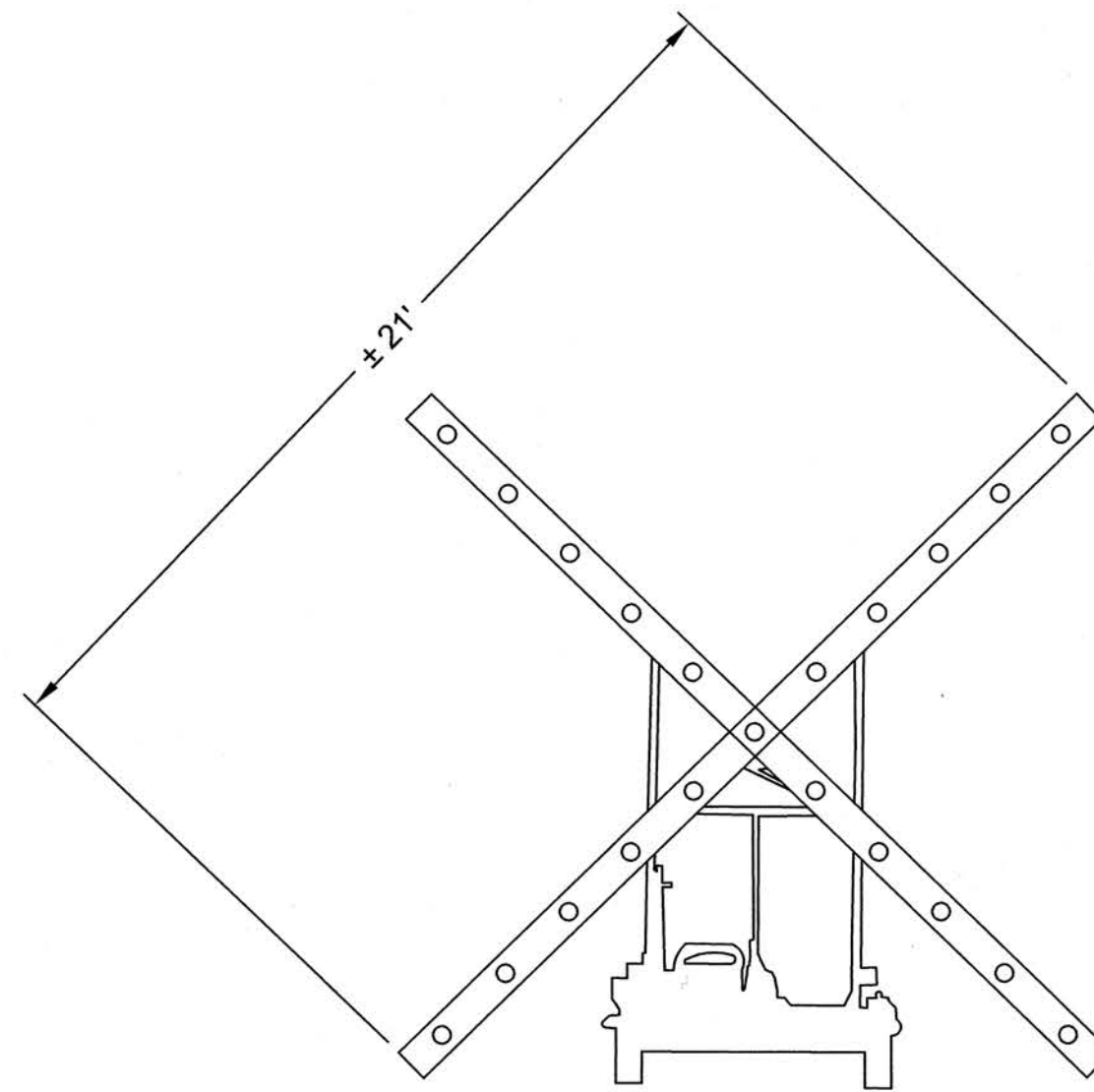
SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT  
 SAN ANGELO, TEXAS

**KSA**  
 58 Buick Street, San Angelo, Texas 76901  
 T. 325-947-1555 F. 325-947-1559  
 www.ksaeng.com



SEAL:  
 TBPE Firm Registration No. F-1356  
 SHEET NO. **12**

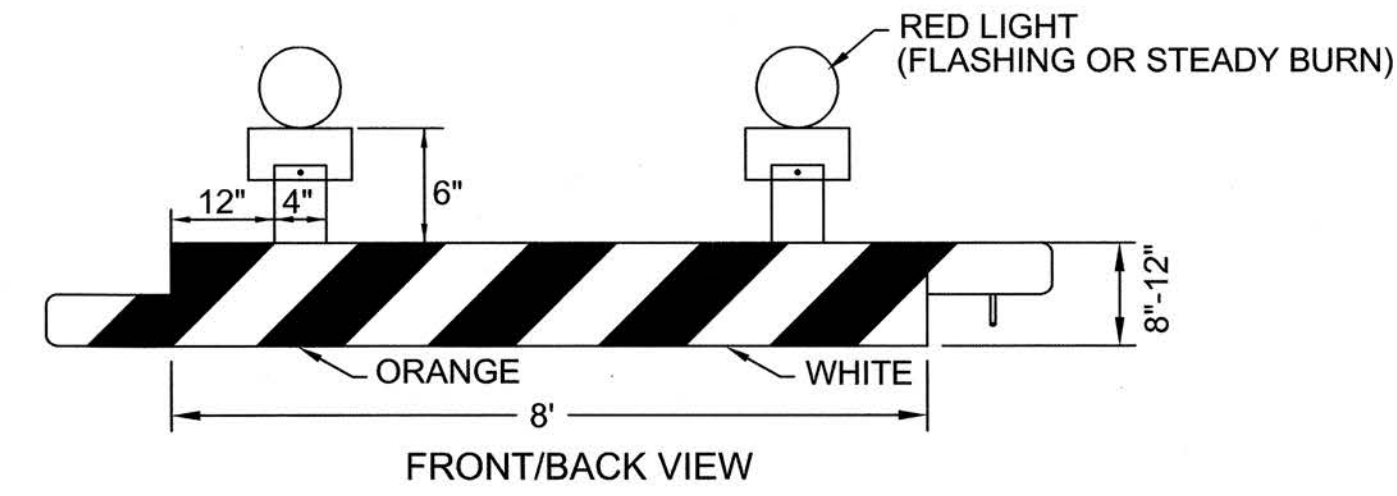




**LIGHTED TEMPORARY CLOSED  
RUNWAY MARKER**  
N.T.S.

**NOTE:**

1. CONTRACTOR SHALL ERECT LIGHTED TEMPORARY CLOSED RUNWAY MARKERS DURING RUNWAY CONSTRUCTION. MARKERS SHALL BE POSITIONED OVER THE RUNWAY DESIGNATION NUMERALS OR AS DIRECTED BY THE AIRPORT OR ENGINEER.
2. LIGHTED TEMPORARY CLOSED RUNWAY MARKERS SHALL CONFORM TO THE REQUIREMENTS OF AC 150/5345-55A.
3. LIGHTED TEMPORARY CLOSED RUNWAY MARKERS SHALL BE PLACED INTO POSITION BY THE CONTRACTOR AND MAINTAINED AS INSTRUCTED BY THE ENGINEER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN THE CLOSED RUNWAY MARKERS, AND INSURE ADEQUATE FUEL IS AVAILABLE FOR CONTINUOUS OPERATION.
4. CONTRACTOR SHALL PROMPTLY REMOVE MARKERS WHEN NO LONGER NEEDED OR WHEN SO INSTRUCTED BY THE ENGINEER.
5. LIGHTED TEMPORARY CLOSED RUNWAY MARKERS WILL NOT BE MEASURED FOR SEPARATE PAYMENT. PAYMENT WILL BE IN ACCORDANCE WITH SPECIFICATION KSA-105 BARRICADES, LIGHTS, AND CLOSED RUNWAY MARKINGS.



**LOW PROFILE  
INTERLOCKING BARRICADE**  
N.T.S.

**NOTE:**

1. CONTRACTOR SHALL USE LOW-PROFILE BARRICADES, AND SHALL BE APPROVED BY THE ENGINEER PRIOR TO THEIR USE.
2. BARRICADES SHALL BE INTERLOCKING AND WILL HAVE NO SPACE BETWEEN THEM WHEN INSTALLED.
3. BARRICADES SHALL BE EQUIPPED WITH TWO BATTERY OPERATED FLASHING LIGHTS FASTENED TO EACH END. FLASHER UNITS SHALL BE CHECKED AND CHARGED TO ENSURE CONTINUOUS OPERATION THROUGH DARK OR LOW VISIBILITY HOURS.
4. PRE-FABRICATED (COMMERCIAL) BARRICADES THAT INTERLOCK CONFORMING TO THE REQUIREMENTS OF AC 150/5370-2F, ARE THE ONLY APPROVED BARRICADES FOR THIS PROJECT.
5. FLUORESCENT ORANGE AND WHITE STRIPES SHALL BE ON THREE SIDES OF BARRICADE.
6. LOCATIONS FOR TEMPORARY BARRICADES ARE SHOWN IN THE PHASING PLAN. LOCATIONS FOR BARRICADES SHOWN IS A MINIMUM. CONTRACTOR SHOULD MAKE HIS OWN DETERMINATIONS AS TO LOCATION OF ADDITIONAL BARRICADES TO PROTECT WORK AND TO CONTROL THE FLOW OF AIRPLANE TRAFFIC.

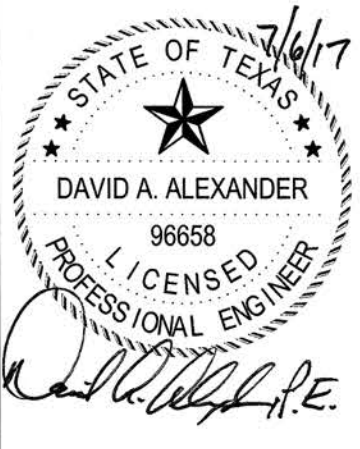
MARK	REVISION	DATE

**PHASING PLAN DETAILS**

**SAN ANGELO REGIONAL  
AIRPORT TAXIWAY  
RECONFIGURATION PROJECT**  
SAN ANGELO, TEXAS

DRAWN BY: CBS	DESIGNED BY: JMD	LATEST REVISION: 6/29/2017	KSA JOB NO.: SAN 059
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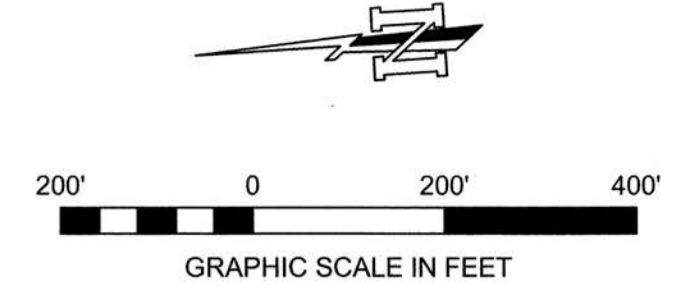
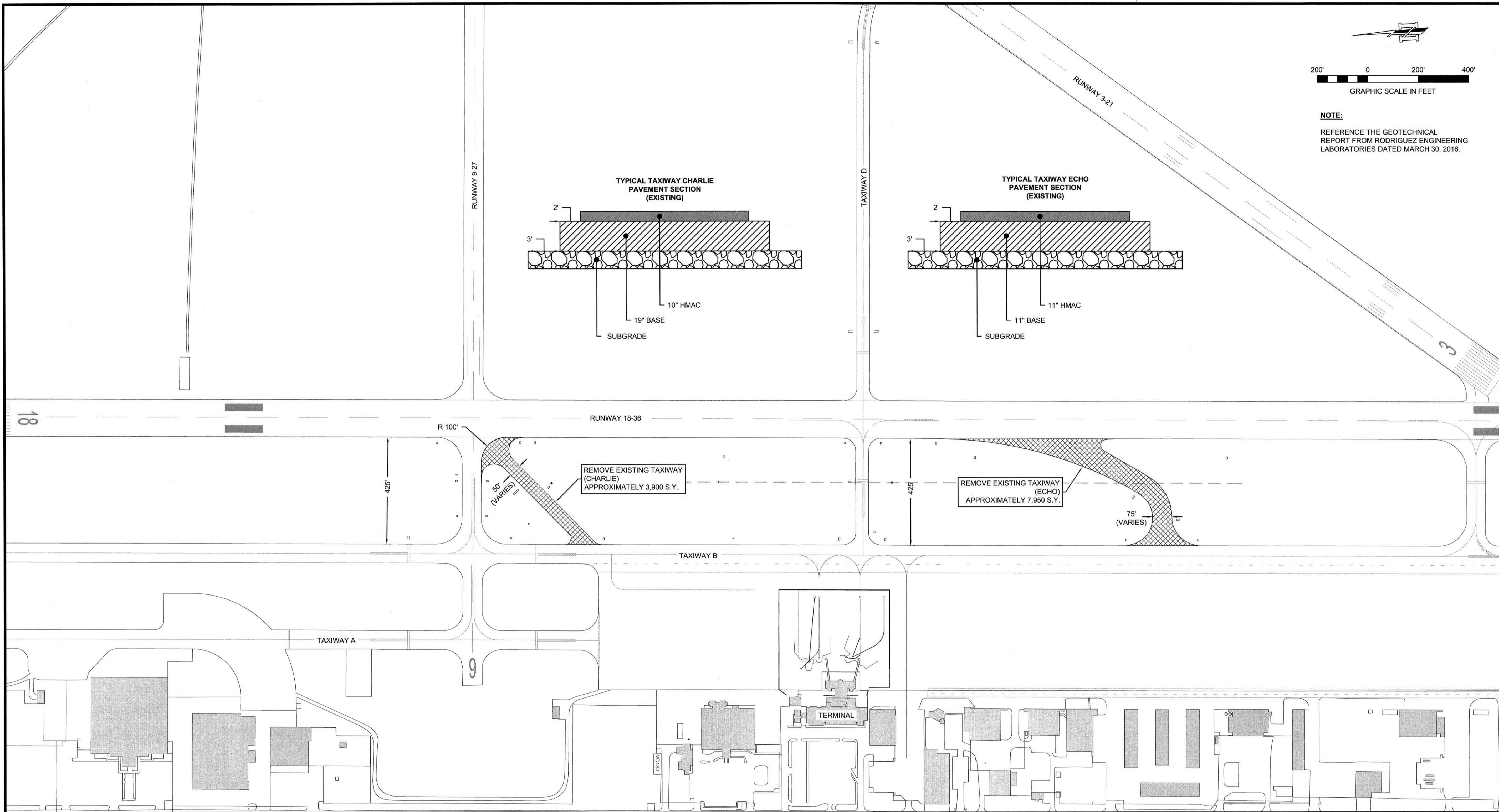
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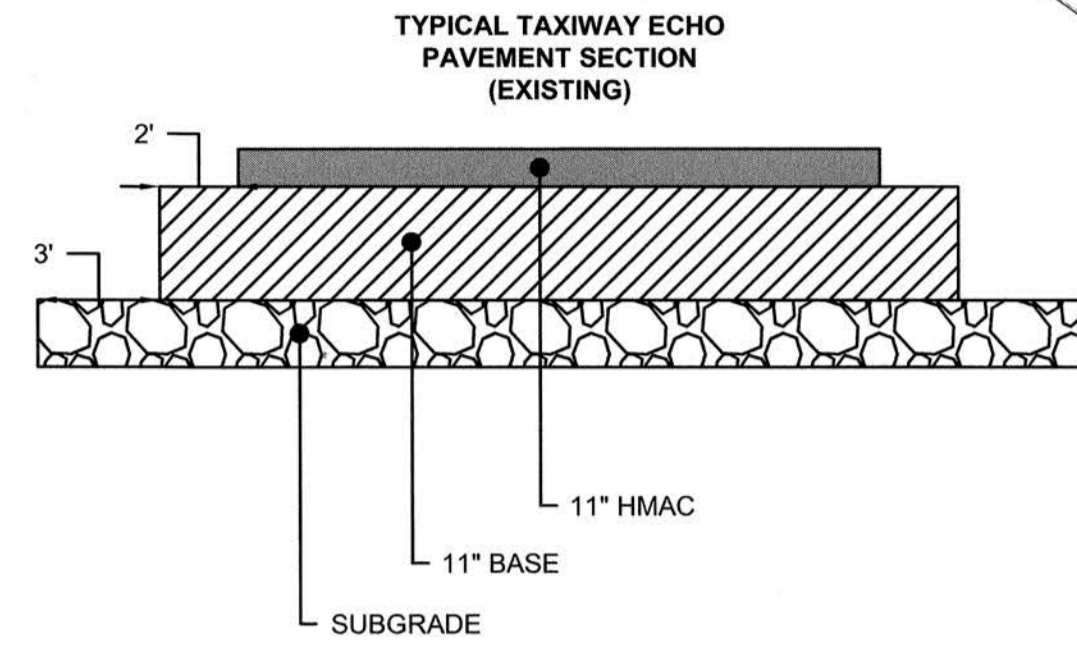
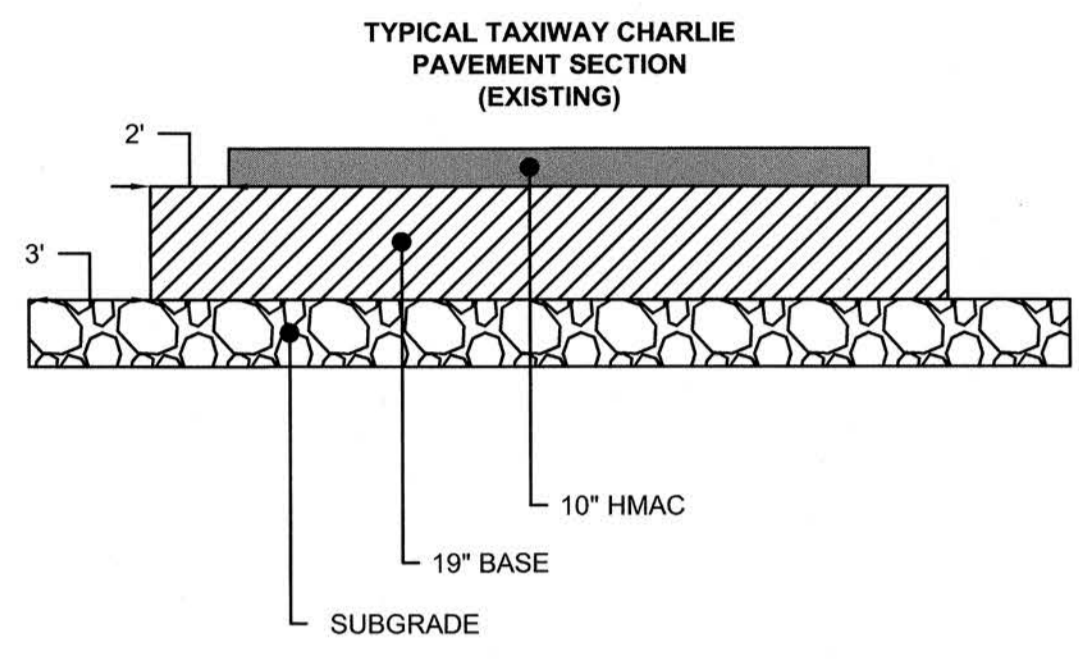
SEAL:  
TBPE Firm Registration No. F-1356  
SHEET NO.

**13**





**NOTE:**  
 REFERENCE THE GEOTECHNICAL REPORT FROM RODRIGUEZ ENGINEERING LABORATORIES DATED MARCH 30, 2016.



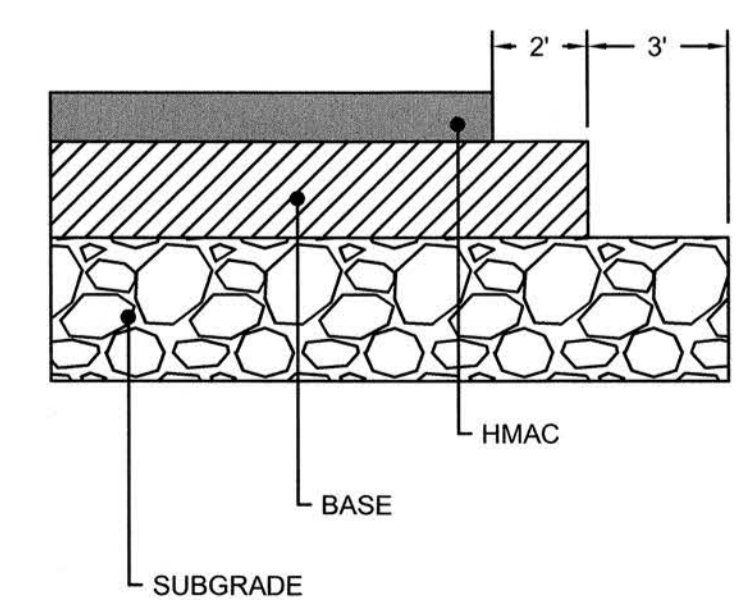
REMOVE EXISTING TAXIWAY (CHARLIE) APPROXIMATELY 3,900 S.Y.

REMOVE EXISTING TAXIWAY (ECHO) APPROXIMATELY 7,950 S.Y.

**DEMOLITION NOTES:**

- METHOD OF REMOVAL OF EXISTING PAVEMENTS SHALL BE AT THE CONTRACTOR'S DISCRETION. ALL MATERIALS REMOVED EXCEPT FOR MILLED PAVEMENT SHALL BE DISPOSED OF OFF-SITE AT A LOCATION DETERMINED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
- REMOVAL OF EXISTING PAVEMENTS SHALL BE MEASURED AND PAID FOR BY THE SQUARE YARD, IN ACCORDANCE WITH FAA ITEM P-101, SURFACE PREPARATION. PAVEMENT THICKNESSES SHOWN ARE APPROXIMATE AND MAY NOT ACCURATELY REFLECT EXISTING PAVEMENT THICKNESSES. REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR PER SQUARE YARD OF PCC AIRFIELD PAVEMENT, HMAc AIRFIELD PAVEMENT, OR GENERAL PAVEMENT, REGARDLESS OF THE THICKNESS. REMOVAL OF EXISTING PAVEMENTS SHALL INCLUDE THE ENTIRE PAVEMENT SECTION, INCLUDING SURFACE AND BASE.
- CONTRACTOR SHALL REFERENCE THE GEOTECHNICAL INVESTIGATION REPORTS WITHIN THE SPECIFICATIONS FOR INFORMATION REGARDING DEPTH OF EXISTING PAVEMENT SECTIONS. FOR THOSE PAVEMENTS WITHOUT CORRESPONDING DATA WITHIN THE GEOTECHNICAL INVESTIGATION REPORT, ASSUMED PAVEMENT SECTIONS ARE AS SHOWN IN THE PLANS.
- ANY PAVEMENT REMOVED OUTSIDE THE SPECIFIED LIMITS OF REMOVAL DUE TO NEGLIGENCE OR DAMAGE ON THE PART OF THE CONTRACTOR SHALL BE RECONSTRUCTED AT THE CONTRACTOR'S EXPENSE.
- REMOVAL OF STRUCTURES FOUND IN AN EXCAVATION AREA SHALL BE CONSIDERED "UNCLASSIFIED EXCAVATION" AND SHALL BE PAID FOR WITH THE CORRESPONDING UNIT PRICE AS NOTED IN FAA ITEM P-152, EXCAVATION AND EMBANKMENT.
- ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO PERFORMING ANY EARTH DISTURBING ACTIVITIES.
- THE CONTRACTOR SHALL HAVE UTILITY LOCATES PERFORMED PRIOR TO BEGINNING ANY CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FOLLOWING ANY DIRECTIVES BY THE RESPECTIVE UTILITY COMPANIES AND COORDINATING THE PRESENCE OF A REPRESENTATIVE OF THE UTILITY COMPANIES AS NECESSARY WHEN WORKING IN THE AREAS OF THE UTILITIES.
- CONTRACTOR SHALL KEEP ALL EXPOSED STORM SEWERS FREE OF SILT BUILDUP.
- DEMOLITION SHALL BE COMPLETED AS REQUIRED IN ACCORDANCE WITH PHASING PLANS.

**PAVEMENT EDGE CUT DETAIL**



- NOTES:**
- BASE TO REMAIN 2" OUTSIDE OF PAVEMENT EDGE.
  - SUBGRADE TO REMAIN 5" OUTSIDE OF PAVEMENT EDGE.
  - BACKFILL TO 1.5" BELOW TOP OF PAVEMENT.

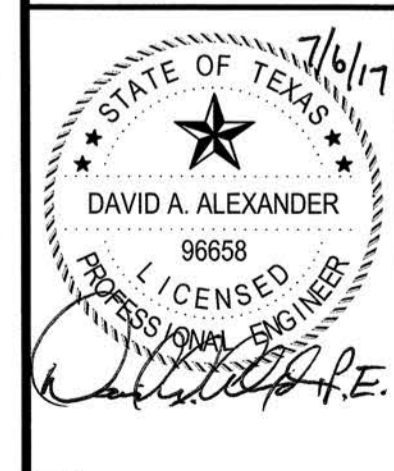
LEGEND	
	REMOVE EXISTING TAXIWAYS
	EXISTING BUILDINGS
	EXISTING FENCE
	RSA - RUNWAY SAFETY AREA

MARK	REVISION	DATE

PROJECT: SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT  
 SHEET: 14  
 DRAWING PATHNAME: LAYOUT | PLOT DATE: TIME

SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT  
 SAN ANGELO, TEXAS

DRAWN BY:	CBS
DESIGNED BY:	JWD
LATEST REVISION:	6/29/2017
KSA JOB NO.:	SAN 059



SEAL: TBPE Firm Registration No. F-1356  
 SHEET NO.







**NOTES:**

- IT IS THE INTENT OF THIS GRADING PLAN TO BE USED AS A GUIDE TO ENSURE THAT NO AREAS POND WATER UPON COMPLETION OF THE PROJECT. ANY AREAS OF PONDING WATER AFTER THE COMPLETION OF CONSTRUCTION SHALL BE SAWCUT AND REPAIRED TO ELIMINATE THE PONDING AREAS. NO DIRECT PAY.
- NO MODIFICATIONS TO THE QUANTITIES OR PRICE WILL BE MADE FOR DIFFERENCES BETWEEN ACTUAL QUANTITIES AND THE ENGINEER'S ESTIMATED QUANTITIES SHOWN ON SHEET 2. QUANTITIES ARE PLAN QUANTITIES ONLY.
- EXISTING CONTOURS INDICATE THE SURFACE OF EXISTING GROUND.
- PROPOSED CONTOURS INDICATE THE SURFACE OF PROPOSED GROUND.
- QUANTITIES FOR EXCAVATION AND EMBANKMENT ARE CALCULATED BY COMPARING EXISTING SURVEY DATA (EXISTING CONTOURS) TO THE FINAL DESIGN GRADES, NOT INCLUDING THE PAVEMENT OR BASE MATERIAL ELEVATIONS.
- ALL EXCESS EXCAVATION SHALL BE STOCKPILED ON SITE AT LOCATIONS DETERMINED BY THE ENGINEER AND OWNER.
- ALL COMPACTION AND EMBANKMENT AREAS SHALL BE COMPACTED TO MAXIMUM DENSITY AND OPTIMUM MOISTURE CONTENT AS FOLLOWS:


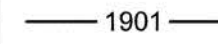
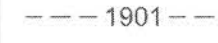
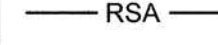

PLASTIC INDEX (PI)	MOISTURE CONTENT RANGE AT TIME OF COMPACTION (%)	PERCENT MAXIMUM DRY DENSITY (%)
<15	+3%	95%+
16 TO 25	-1% TO 4%	95%+
>26	+1% TO 6%	95% TO 100%

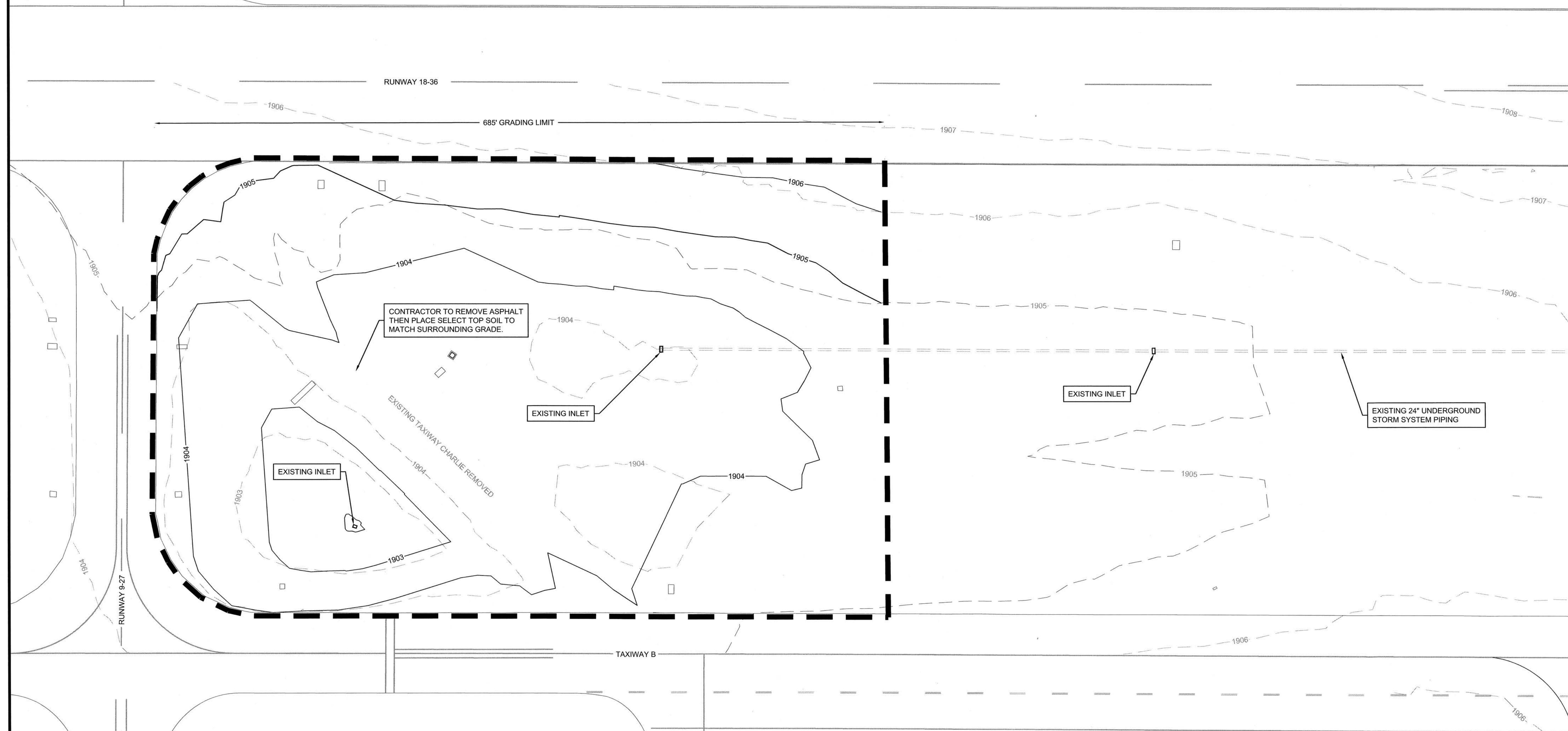
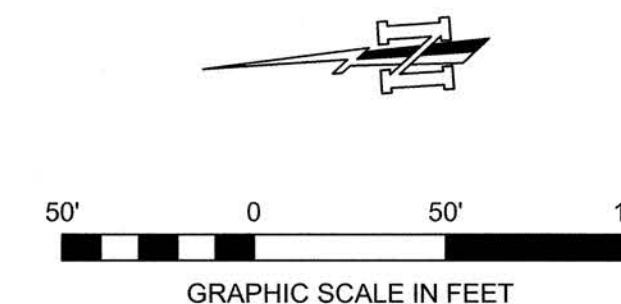
\*PERCENT OF THE MAXIMUM DENSITY DEFINED BY ASTM D-698 (STANDARD PROCTOR)

- ALL GRADING WORK SHALL CONFORM WITH FAA AC 150/5300-13A, CHANGE 1 REQUIREMENTS FOR RSA GRADING.
- HYDROMULCH, SEED, LIME AND FERTILIZER SHALL BE USED ON SLOPES MEASURING LESS THAN A 5% GRADE. BONDED FIBER MATRIX MULCH SHALL BE USED ON SLOPES MEASURING GREATER THAN A 5% GRADE.
- CONTRACTOR SHALL REMOVE NON-PLASTIC MATERIALS FROM THE SUBGRADE SOILS PRIOR TO BEGINNING SUBGRADE SOIL STABILIZATION OPERATIONS.
- ALL UNSUITABLE EXCAVATED MATERIAL SHALL BE STOCKPILED BY THE CONTRACTOR AT A LOCATION SPECIFIED BY THE OWNER.
- EXISTING STORM SEWERS AND INLETS LOCATED WITHIN THE LIMITS OF GRADING SHALL BE PROTECTED TO THE GREATEST EXTENT PRACTICAL. WHERE EXISTING PIPES AND/OR INLETS ARE DAMAGED DUE TO CONSTRUCTION ACTIVITIES, THE DAMAGED MATERIAL SHALL BE REMOVED AND REPLACED AT THE NEAREST JOINT OR PRACTICAL POINT, AS DETERMINED BY THE ENGINEER. IF THE JOINTS ARE GROUTED, SAWCUTTING MAY BE REQUIRED. ONCE REMOVED, THE CONTRACTOR SHALL DISPOSE OF THE DAMAGED PIPE OFFSITE AND SHALL REPLACE THE DAMAGED PIPE AT NO ADDITIONAL COST TO THE OWNER.
- MATERIAL FOR BEDDING UNDER PAVED AREAS SHALL BE CRUSHED ROCK MEETING THE REQUIREMENTS OF ASTM C33 NO. 57 MATERIAL. MATERIAL FOR BEDDING UNDER UNPAVED AREAS SHALL BE CRUSHED ROCK MEETING THE REQUIREMENTS OF CLASS B MATERIAL. THE BEDDING MATERIAL SHALL BE INSTALLED AS SHOWN IN THE CONSTRUCTION PLANS. DENSITY AND MOISTURE REQUIREMENTS SHALL BE AS SHOWN ON THE PLANS. BEDDING MATERIAL SHALL NOT BE PAID SEPARATELY.

- PRIOR TO BEGINNING ANY GRADING OPERATIONS, THE EXISTING TOPSOIL MATERIAL SHALL BE SALVAGED BY STRIPPING THE EXISTING MATERIAL IN ACCORDANCE WITH ITEM P-152, EXCAVATION AND EMBANKMENT.
- UPON COMPLETION OF GRADING, INSTALL TOPSOIL IN ALL DISTURBED AREAS. THE CONTRACTOR SHALL APPLY TOPSOIL AFTER THE GRADING IS COMPLETE AS CONSTRUCTION PROGRESSES AND NOT WAIT UNTIL ALL GRADING FOR THE ENTIRE PROJECT IS COMPLETE. IF AFTER ALL TOPSOIL HAS BEEN INSTALLED IN THE REQUIRED AREAS, ANY STOCKPILED TOPSOIL REMAINING SHALL BE PLACED IN A LOCATION AS SPECIFIED BY THE ENGINEER AT NO ADDITIONAL EXPENSE TO THE OWNER.
- ALL SUITABLE EXCESS EXCAVATED MATERIAL, INCLUDING DEMOLISHED ASPHALT SHALL BE SPREAD EVENLY IN AREAS ON THE AIRPORT AS DIRECTED BY THE ENGINEER.
- CONTRACTOR SHALL FILE VERIFY THE LOCATION AND ELEVATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATION.

**LEGEND**

-  PROPOSED PAVEMENT
-  1901 PROPOSED CONTOURS
-  1901 EXISTING CONTOURS
-  RSA RUNWAY SAFETY AREA
-  LIMITS OF GRADING

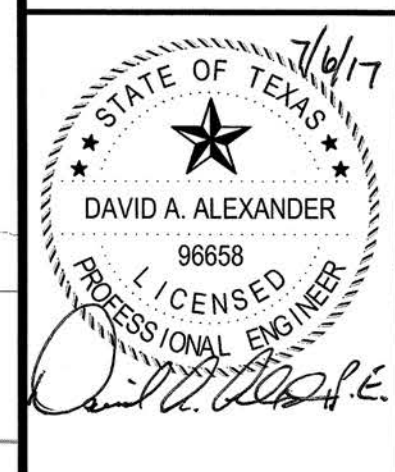


MARK	REVISION	DATE

**GRADING PLAN**  
**EXISTING TAXIWAY**  
**CHARLIE**

**SAN ANGELO REGIONAL**  
**AIRPORT TAXIWAY**  
**RECONFIGURATION PROJECT**  
**SAN ANGELO, TEXAS**

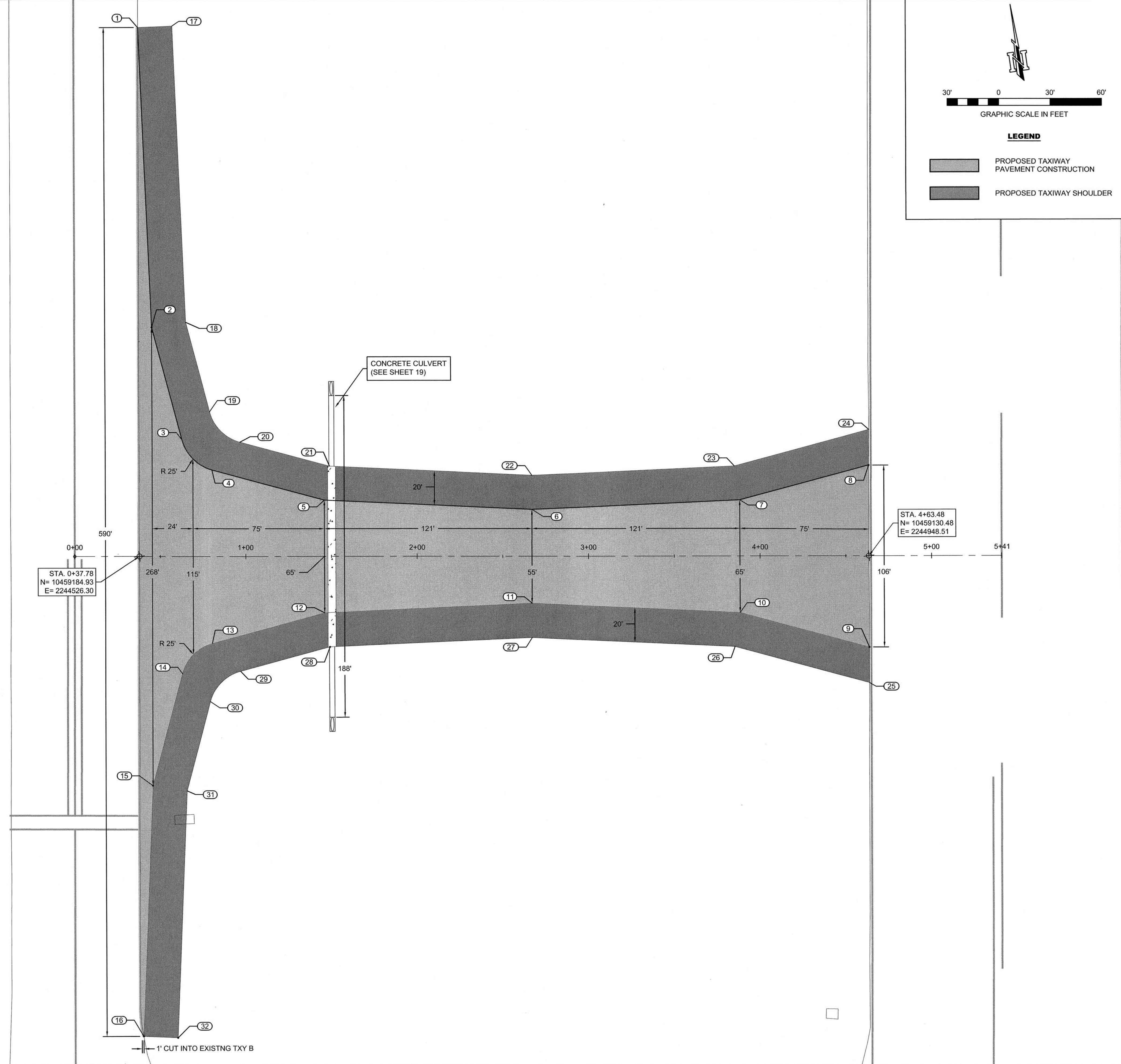
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 DESIGNED BY: JWD  
 LATEST REVISION: 6/29/2017  
 KSA JOB NO.: SAN\_059



SEAL:  
 TBPE Firm Registration No. F-1356  
 SHEET NO. **16**



COORDINATE TABLE				
POINT NO.	NORTHING	EASTING	ELEV.	DESCRIPTION
1	10459491.39	2244566.00	1900.70	EDGE OF TAXIWAY
2	10459316.94	2244550.94	1901.34	EDGE OF TAXIWAY
3	10459249.64	2244559.80	1901.42	EDGE OF TAXIWAY
4	10459229.80	2244575.02	1901.47	EDGE OF TAXIWAY
5	10459203.83	2244637.73	1901.62	EDGE OF TAXIWAY
6	10459182.82	2244757.30	1901.91	EDGE OF TAXIWAY
7	10459172.82	2244878.13	1902.61	EDGE OF TAXIWAY
8	10459183.31	2244955.35	1903.52	EDGE OF TAXIWAY
9	10459077.60	2244941.80	1903.98	EDGE OF TAXIWAY
10	10459107.37	2244869.69	1903.27	EDGE OF TAXIWAY
11	10459128.38	2244750.13	1902.60	EDGE OF TAXIWAY
12	10459138.38	2244629.29	1902.28	EDGE OF TAXIWAY
13	10459129.16	2244562.04	1902.04	EDGE OF TAXIWAY
14	10459113.84	2244542.29	1902.03	EDGE OF TAXIWAY
15	10459050.98	2244516.64	1902.24	EDGE OF TAXIWAY
16	10458906.65	2244492.07	1903.11	EDGE OF TAXIWAY
17	10459489.67	2244585.92	1900.30	EDGE OF SHOULDER
18	10459317.39	2244571.05	1900.94	EDGE OF SHOULDER
19	10459263.70	2244578.12	1900.97	EDGE OF SHOULDER
20	10459243.86	2244593.34	1901.03	EDGE OF SHOULDER
21	10459223.15	2244643.36	1901.22	EDGE OF SHOULDER
22	10459202.68	2244759.86	1901.51	EDGE OF SHOULDER
23	10459192.94	2244877.59	1902.21	EDGE OF SHOULDER
24	10459203.97	2244958.15	1903.45	EDGE OF SHOULDER
25	10459056.98	2244939.08	1904.04	EDGE OF SHOULDER
26	10459088.05	2244864.07	1902.87	EDGE OF SHOULDER
27	10459108.52	2244747.57	1902.20	EDGE OF SHOULDER
28	10459118.27	2244629.83	1901.88	EDGE OF SHOULDER
29	10459110.91	2244576.19	1901.60	EDGE OF SHOULDER
30	10459095.59	2244556.44	1901.59	EDGE OF SHOULDER
31	10459045.46	2244535.99	1901.83	EDGE OF SHOULDER
32	10458903.30	2244511.78	1902.71	EDGE OF SHOULDER



MARK	REVISION	DATE

**DIMENSIONAL CONTROL  
TAXIWAY CHARLIE**

**SAN ANGELO REGIONAL  
AIRPORT TAXIWAY  
RECONFIGURATION PROJECT  
SAN ANGELO, TEXAS**

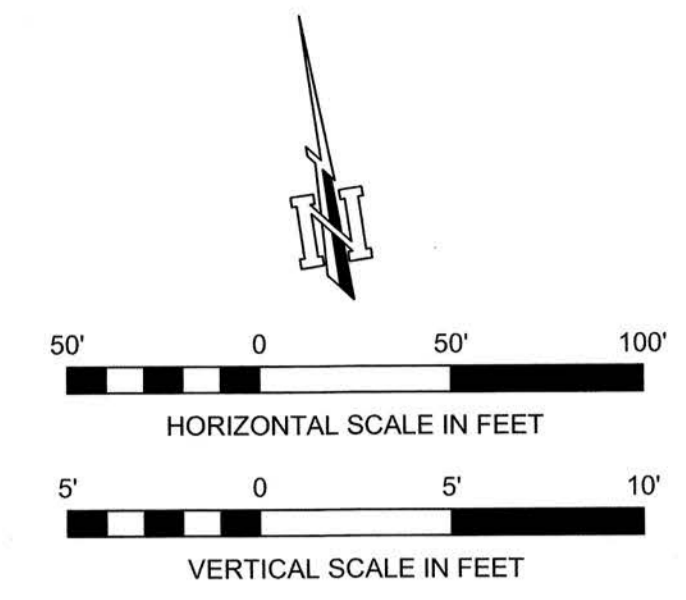
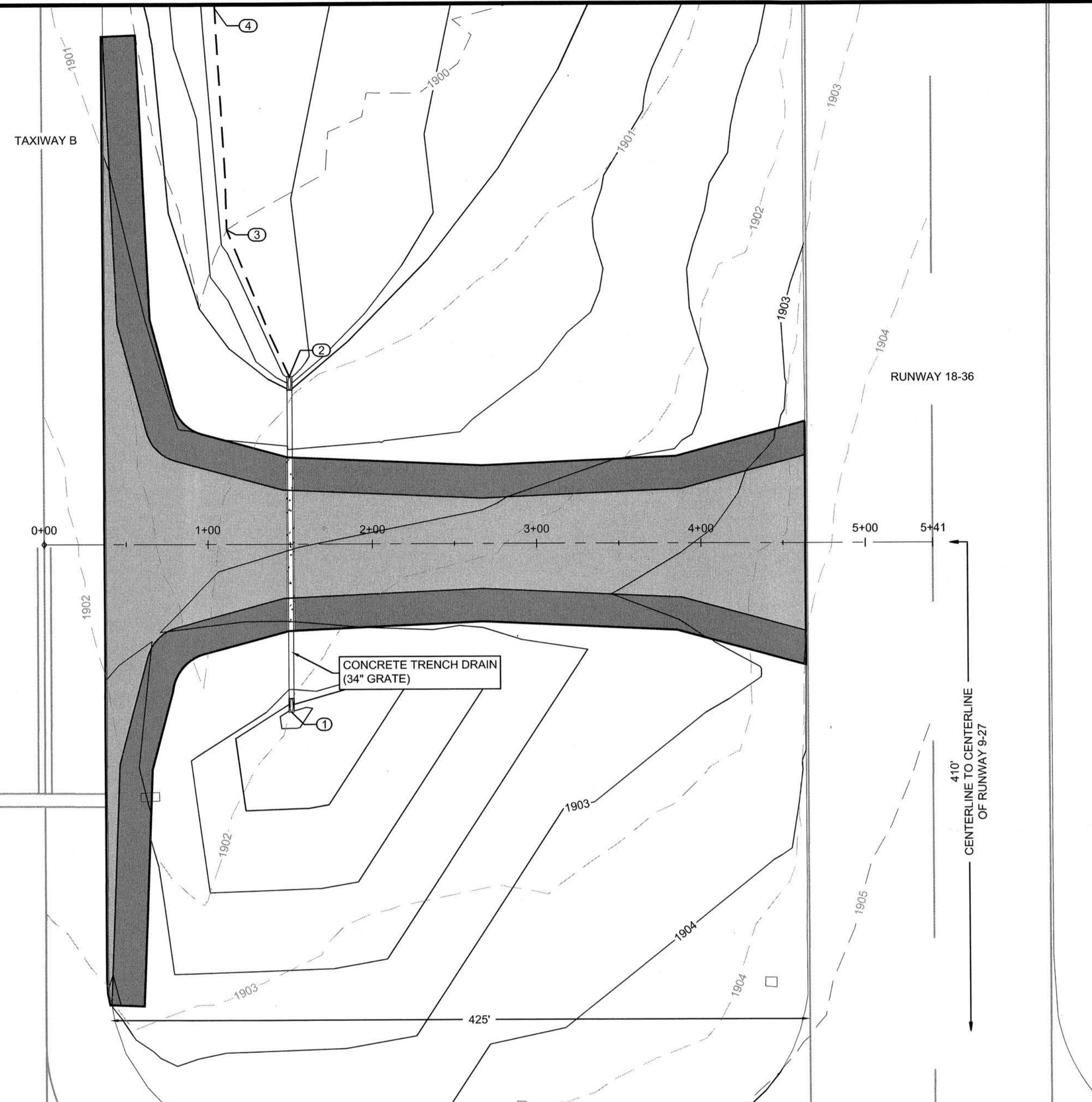
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KSA JOB NO.:	SAN_059

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SHEET NO. **17**



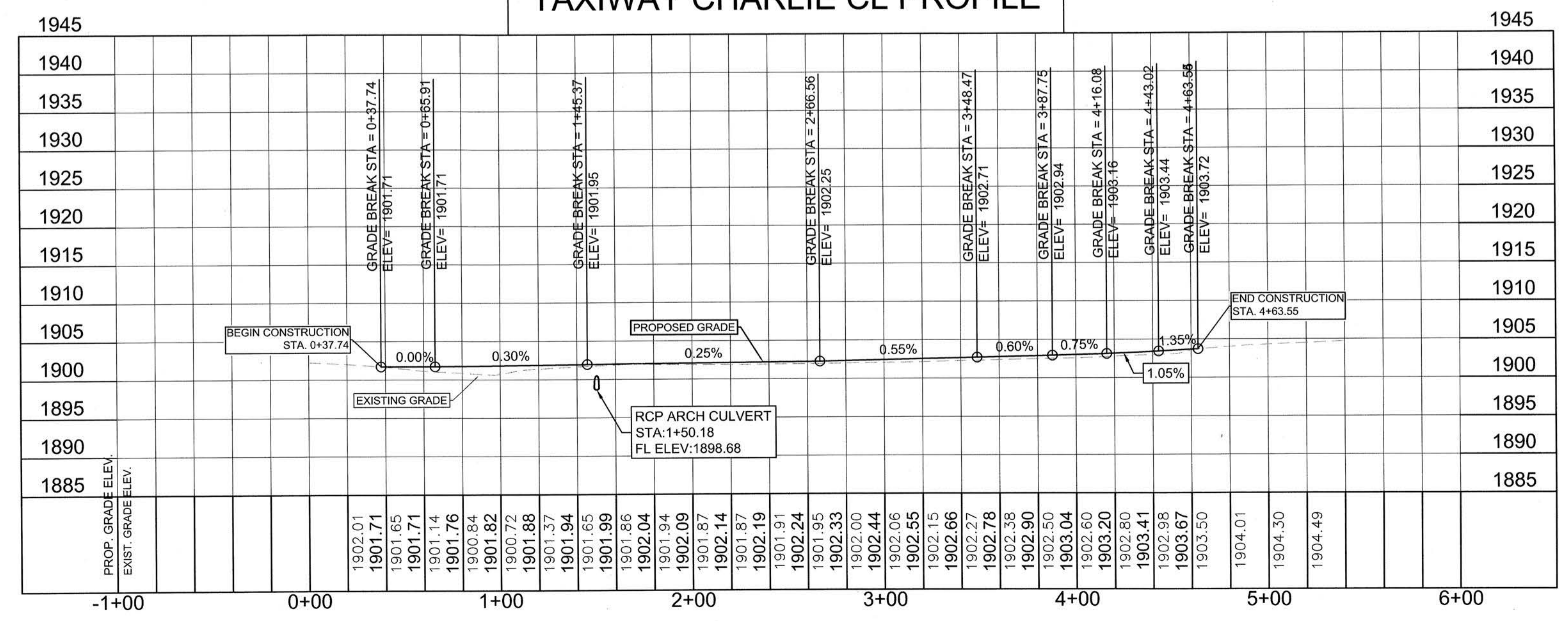
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COORDINATE TABLE				
POINT NO.	NORTHING	EASTING	ELEV.	DESCRIPTION
1	10459069.05	2244624.68	1898.80	DRAIN FLOWLINE
2	10459271.99	2244650.85	1897.86	DRAIN FLOWLINE
3	10459365.26	2244625.20	1897.52	FLOWLINE
4	10459499.22	2244635.85	1897.05	FLOWLINE



- LEGEND**
- PROPOSED TAXIWAY PAVEMENT CONSTRUCTION
  - PROPOSED TAXIWAY SHOULDER
  - 1901 PROPOSED CONTOURS
  - 1901 EXISTING CONTOURS
  - RSA RUNWAY SAFETY AREA

**TAXIWAY CHARLIE CL PROFILE**



MARK	REVISION	DATE

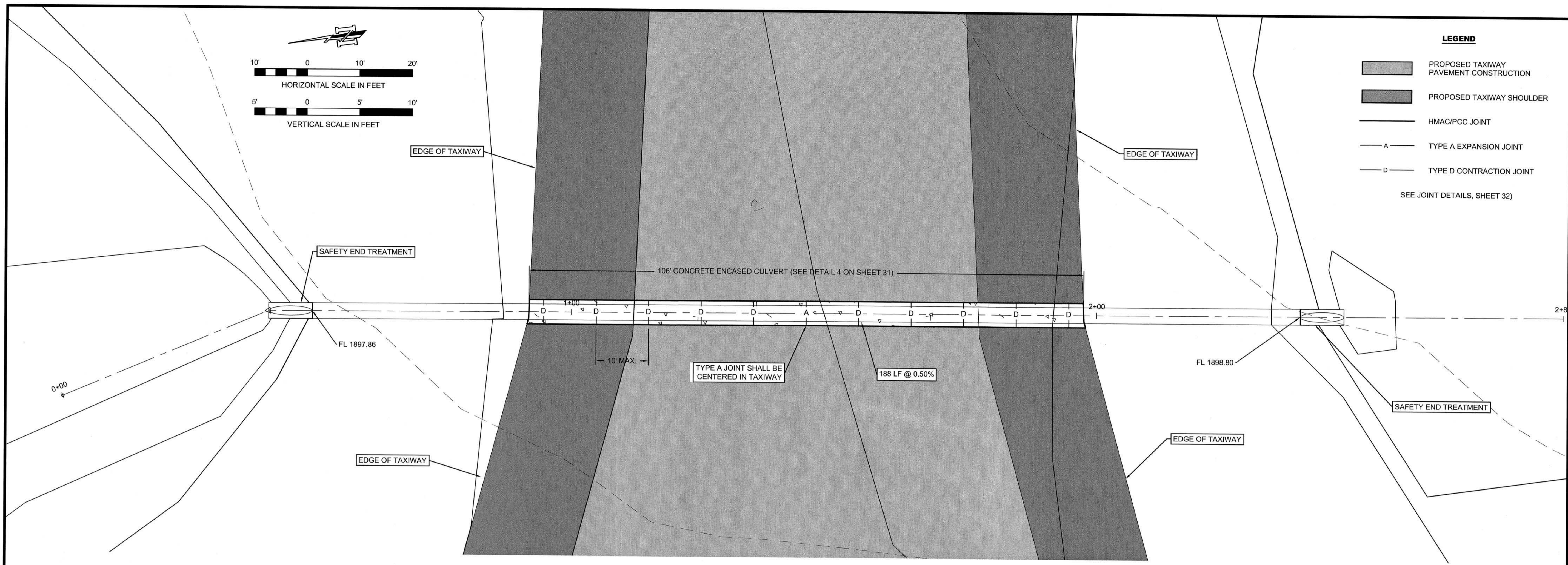
**PLAN AND PROFILE  
TAXIWAY CHARLIE**

**SAN ANGELO REGIONAL  
AIRPORT TAXIWAY  
RECONFIGURATION PROJECT**  
SAN ANGELO, TEXAS

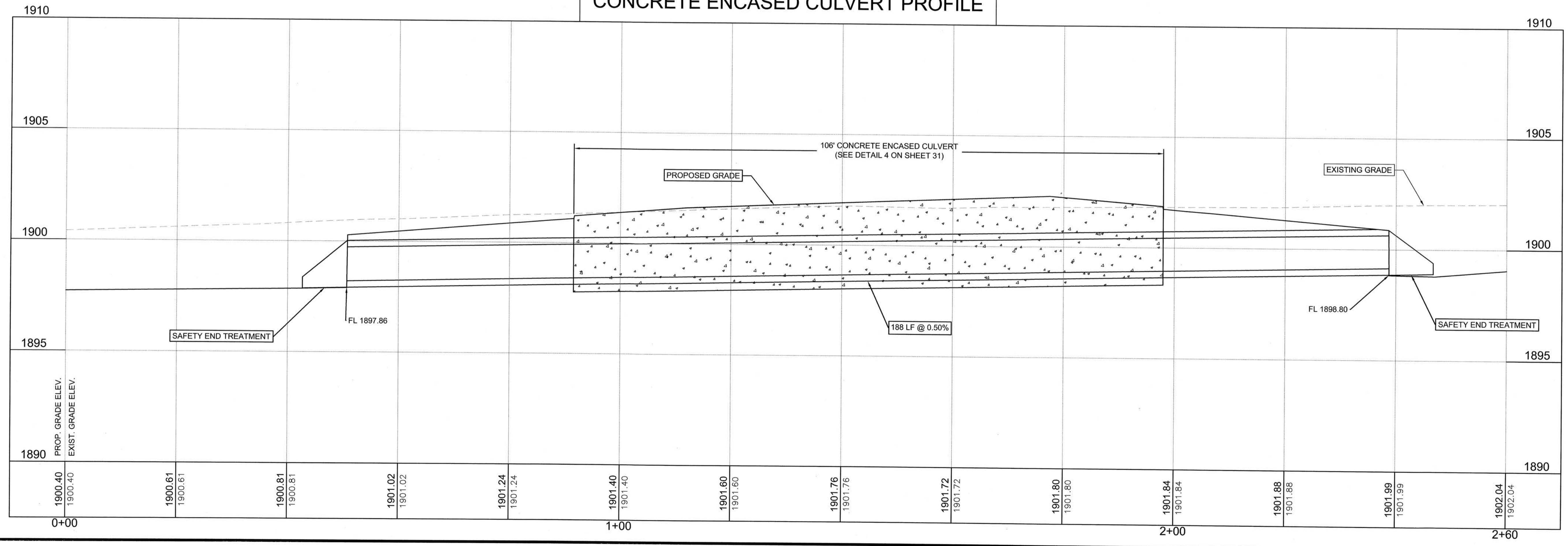
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KSA JOB NO.:	SAN_059

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SHEET NO.





**CONCRETE ENCASED CULVERT PROFILE**



DATE	
REVISION	
MARK	

WASA-SERVER/PROJECTS/SANANGLO/07 CAD/02  
PROJECT/30 SHEETS/CHARLE PIPE P AND P D/01/ PLAN  
AND PROFILE - CONCRETE CULVERT / 7/8/2017 - 9:18 PM  
DRAWING PATH/NAME LAYOUT/ PLOT DATE - TIME

**PLAN AND PROFILE  
CONCRETE ENCASED  
CULVERT**

**SAN ANGELO REGIONAL  
AIRPORT TAXIWAY  
RECONFIGURATION PROJECT**  
SAN ANGELO, TEXAS

PROJECT NAME: SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT  
SHEET NAME: CONCRETE ENCASED CULVERT

DRAWN BY:	CBS
DESIGNED BY:	JWD
LATEST REVISION:	6/29/2017
KSA JOB NO.:	SAN_059

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STATE OF TEXAS  
DAVID A. ALEXANDER  
96658  
LICENSED PROFESSIONAL ENGINEER

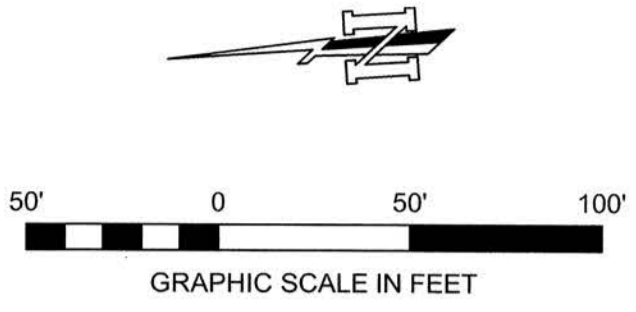
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SHEET NO.

**19**

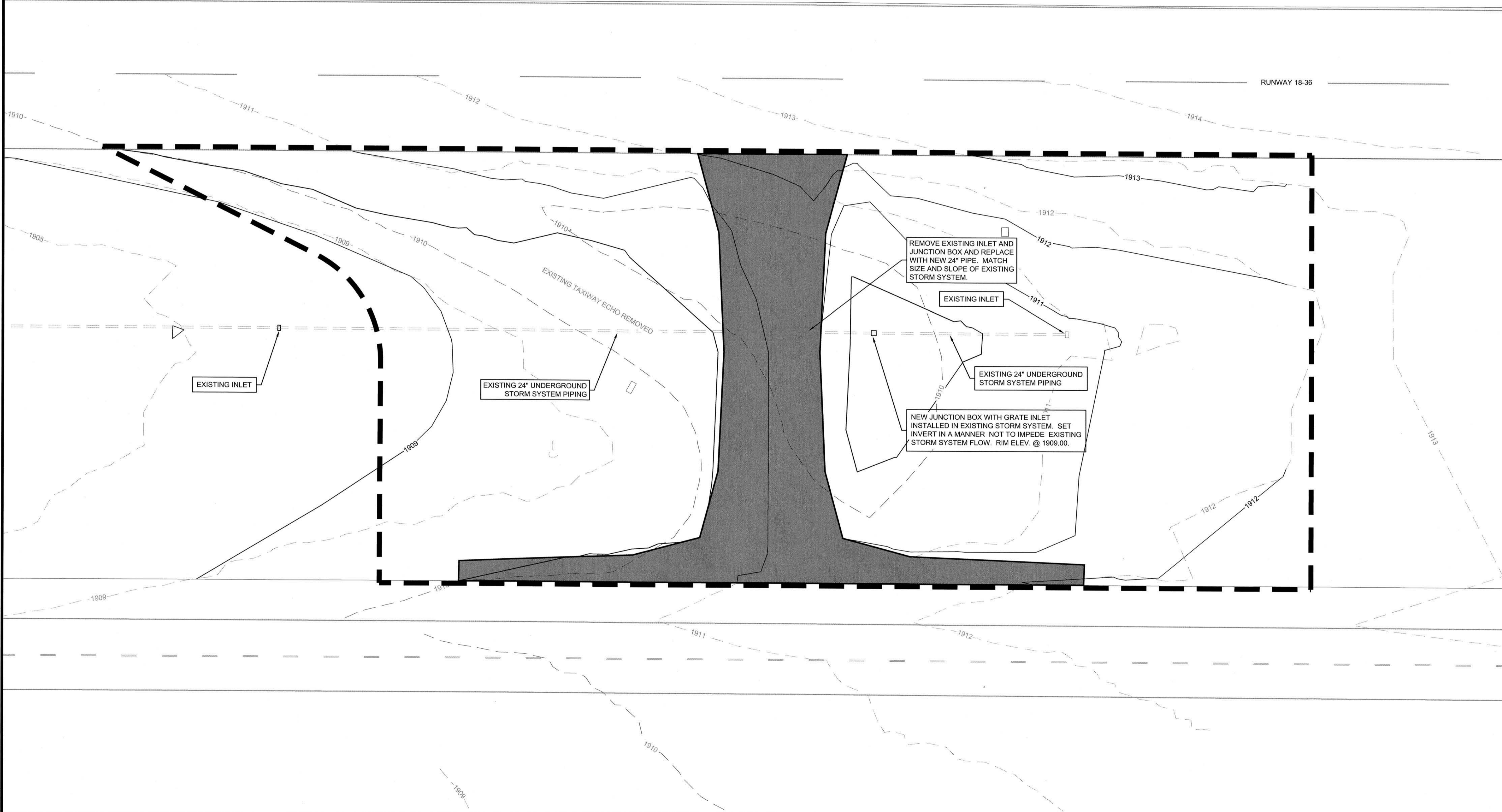


**LEGEND**

- PROPOSED PAVEMENT
- 1901 PROPOSED CONTOURS
- 1901 EXISTING CONTOURS
- RSA RUNWAY SAFETY AREA
- LIMITS OF GRADING



**NOTE:**  
SEE SHEET 16 FOR GRADING PLAN NOTES.



MARK	REVISION	DATE

**GRADING PLAN  
TAXIWAY ECHO**

**SAN ANGELO REGIONAL  
AIRPORT TAXIWAY  
RECONFIGURATION PROJECT  
SAN ANGELO, TEXAS**

DRAWN BY: CBS	DESIGNED BY: JWD	LATEST REVISION: 6/29/2017	KSA JOB NO.:	SAN_059
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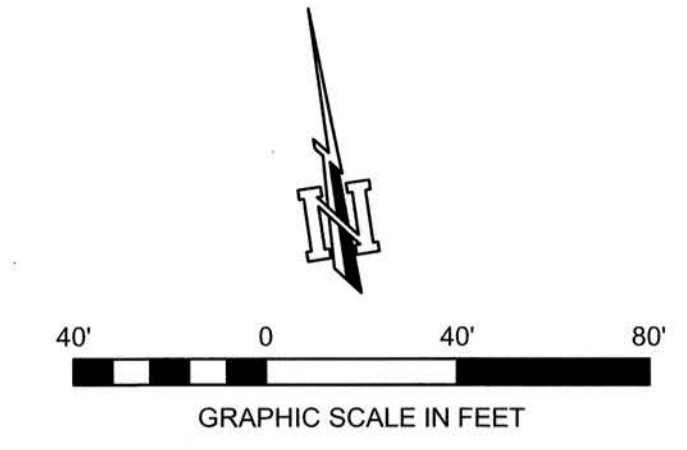
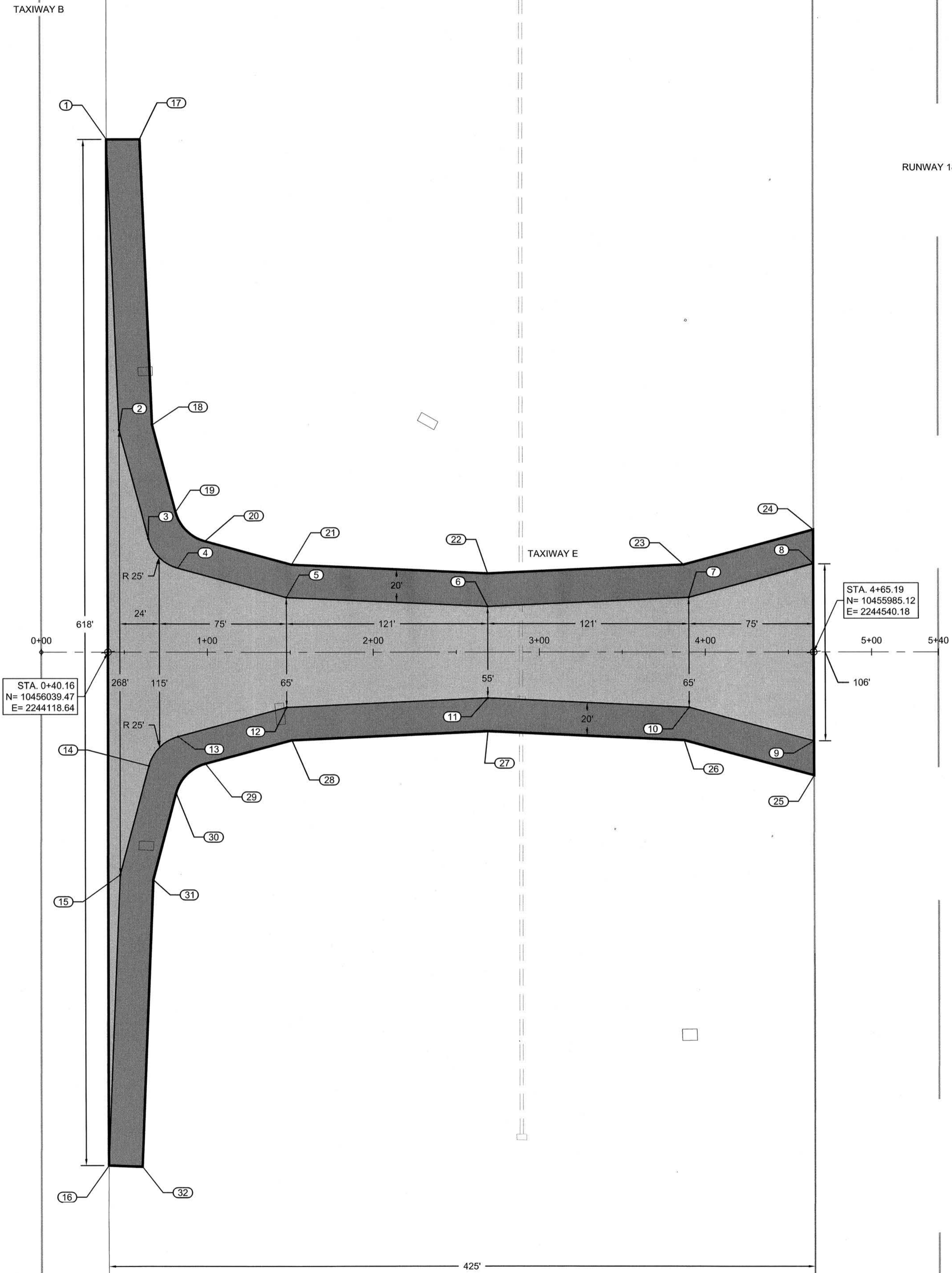
STATE OF TEXAS  
DAVID A. ALEXANDER  
96658  
LICENSED PROFESSIONAL ENGINEER

SEAL:  
TBPE Firm Registration No. F-1356  
SHEET NO.

**20**



COORDINATE TABLE				
POINT NO.	NORTHING	EASTING	ELEV.	DESCRIPTION
1	10456345.93	2244158.33	1910.00	EDGE OF TAXIWAY
2	10456171.54	2244142.84	1910.64	EDGE OF TAXIWAY
3	10456104.24	2244151.71	1910.52	EDGE OF TAXIWAY
4	10456084.41	2244166.93	1910.52	EDGE OF TAXIWAY
5	10456058.43	2244229.64	1910.63	EDGE OF TAXIWAY
6	10456037.42	2244349.20	1910.64	EDGE OF TAXIWAY
7	10456027.42	2244470.04	1911.15	EDGE OF TAXIWAY
8	10456037.97	2244546.98	1912.06	EDGE OF TAXIWAY
9	10455932.25	2244533.37	1912.58	EDGE OF TAXIWAY
10	10455961.97	2244461.60	1911.81	EDGE OF TAXIWAY
11	10455982.98	2244342.04	1911.46	EDGE OF TAXIWAY
12	10455992.98	2244221.20	1911.45	EDGE OF TAXIWAY
13	10455983.76	2244153.95	1911.56	EDGE OF TAXIWAY
14	10455968.44	2244134.19	1911.62	EDGE OF TAXIWAY
15	10455905.59	2244108.55	1911.76	EDGE OF TAXIWAY
16	10455733.00	2244078.96	1912.13	EDGE OF TAXIWAY
17	10456343.38	2244178.02	1909.60	EDGE OF SHOULDER
18	10456171.98	2244162.96	1910.24	EDGE OF SHOULDER
19	10456118.28	2244170.03	1910.08	EDGE OF SHOULDER
20	10456098.46	2244185.25	1910.08	EDGE OF SHOULDER
21	10456077.75	2244235.27	1910.23	EDGE OF SHOULDER
22	10456057.28	2244351.76	1910.24	EDGE OF SHOULDER
23	10456047.54	2244469.50	1910.74	EDGE OF SHOULDER
24	10456058.51	2244549.59	1912.01	EDGE OF SHOULDER
25	10455911.68	2244530.78	1912.64	EDGE OF SHOULDER
26	10455942.65	2244456.00	1911.40	EDGE OF SHOULDER
27	10455963.12	2244339.50	1911.06	EDGE OF SHOULDER
28	10455972.87	2244221.74	1911.05	EDGE OF SHOULDER
29	10455965.52	2244168.10	1911.11	EDGE OF SHOULDER
30	10455950.19	2244148.35	1911.17	EDGE OF SHOULDER
31	10455900.06	2244127.90	1911.36	EDGE OF SHOULDER
32	10455729.61	2244098.90	1911.70	EDGE OF SHOULDER



**LEGEND**

PROPOSED TAXIWAY  
 PAVEMENT CONSTRUCTION  
 PROPOSED TAXIWAY SHOULDER

MARK	REVISION	DATE

**DIMENSIONAL CONTROL  
TAXIWAY ECHO**

**SAN ANGELO REGIONAL  
AIRPORT TAXIWAY  
RECONFIGURATION PROJECT  
SAN ANGELO, TEXAS**

DRAWN BY:	CBS
DESIGNED BY:	JWD
LATEST REVISION:	6/29/2017
KSA JOB NO.:	SAN 059

**KSA**

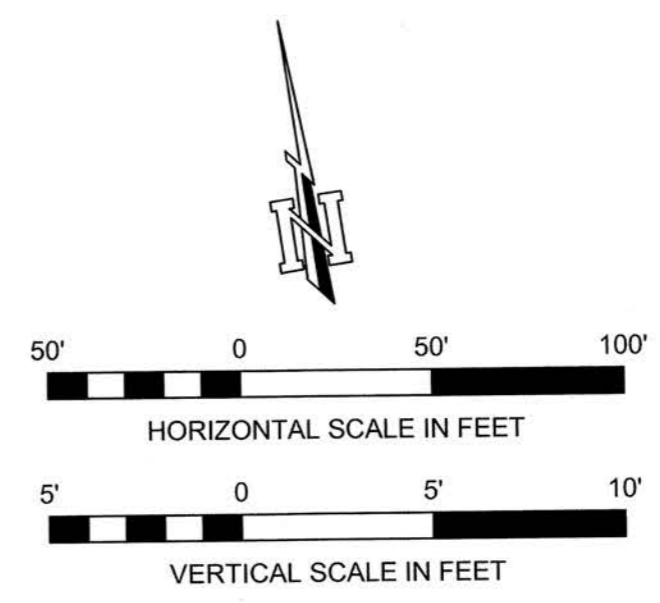
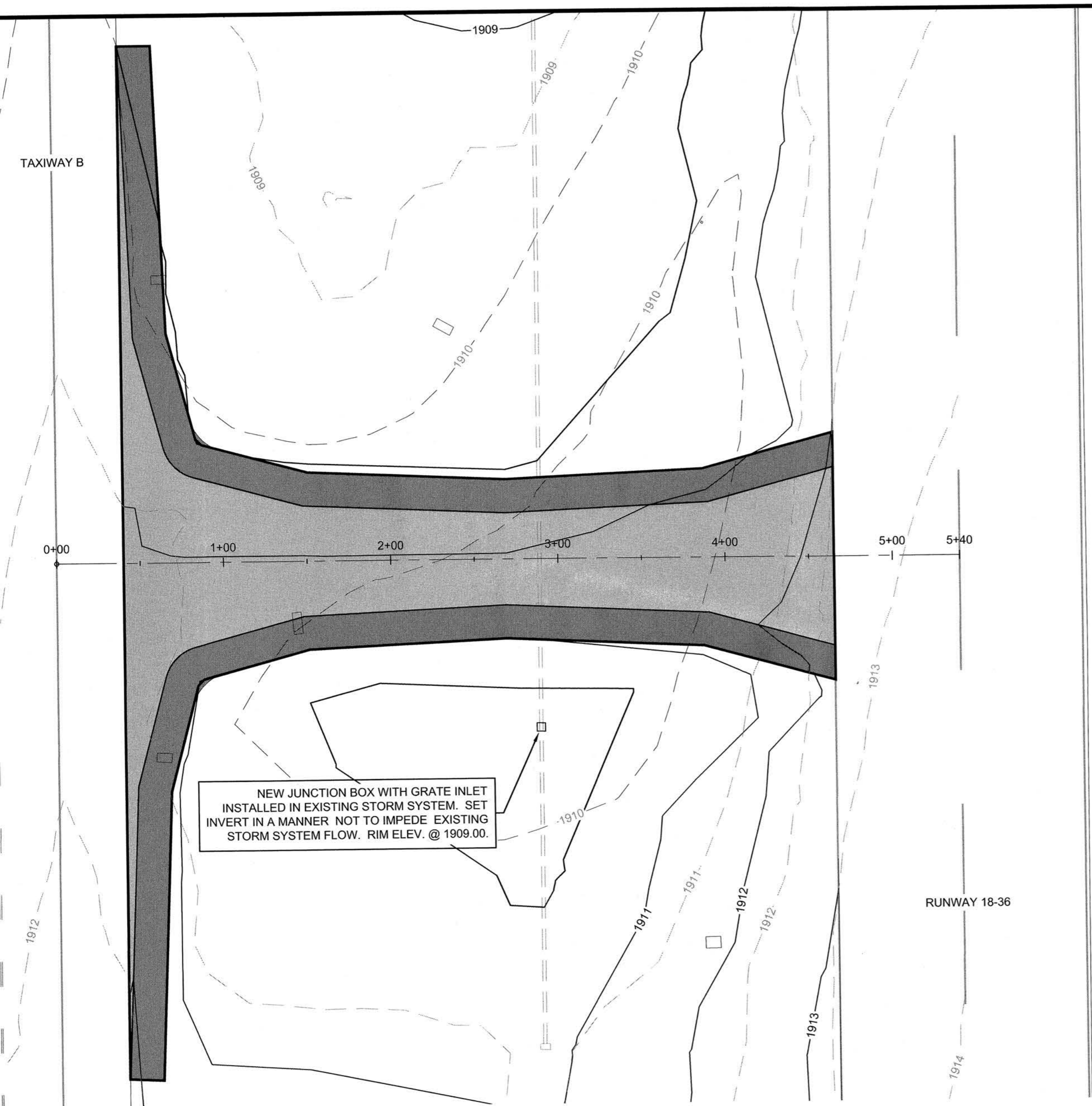
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STATE OF TEXAS

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LICENSED PROFESSIONAL ENGINEER

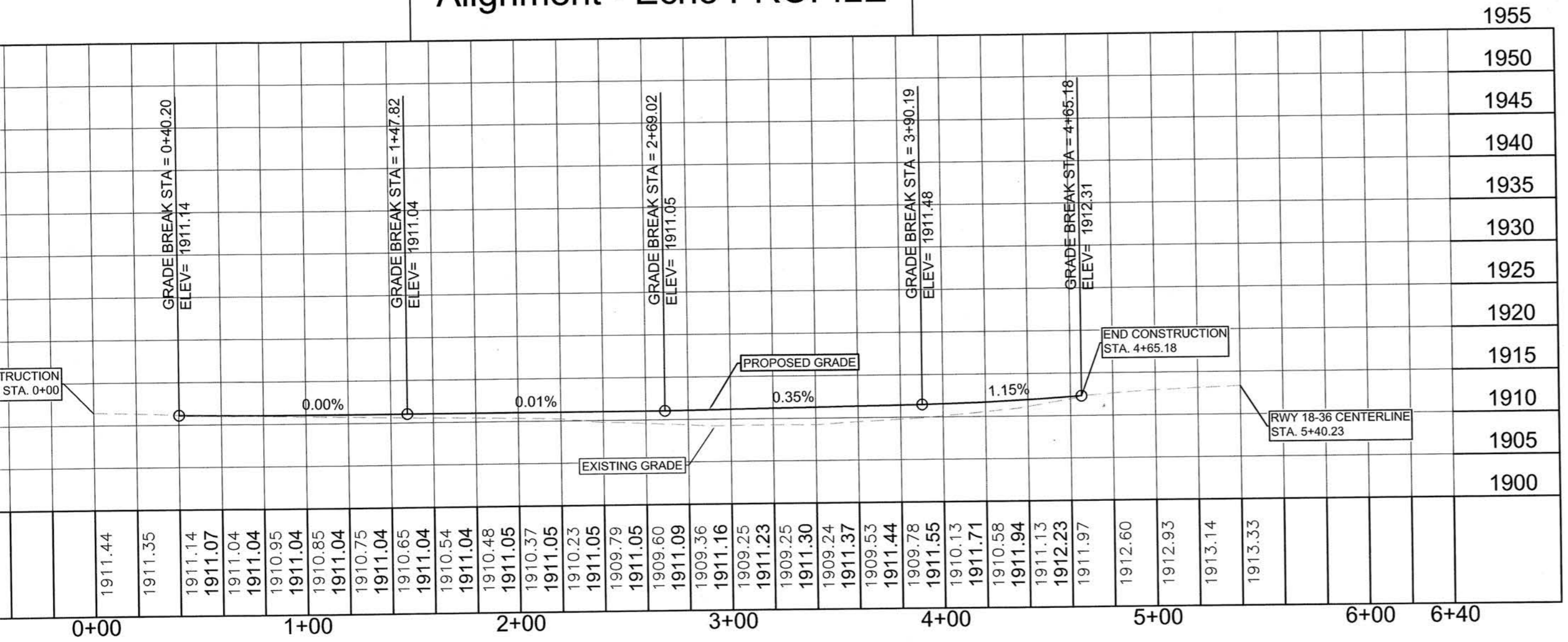
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SHEET NO.





- LEGEND**
- PROPOSED TAXIWAY PAVEMENT CONSTRUCTION
  - PROPOSED TAXIWAY SHOULDER
  - 1901 — PROPOSED CONTOURS
  - - - 1901 - - - EXISTING CONTOURS
  - RSA — RUNWAY SAFETY AREA

Alignment - Echo PROFILE

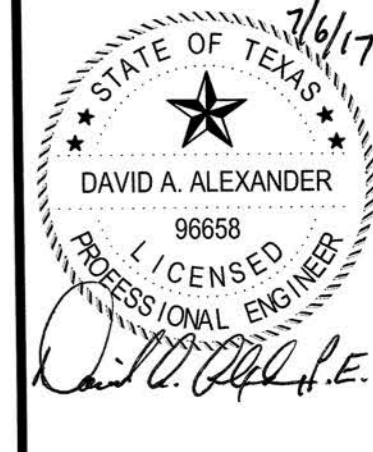


MARK	REVISION	DATE

**PLAN AND PROFILE  
TAXIWAY ECHO**

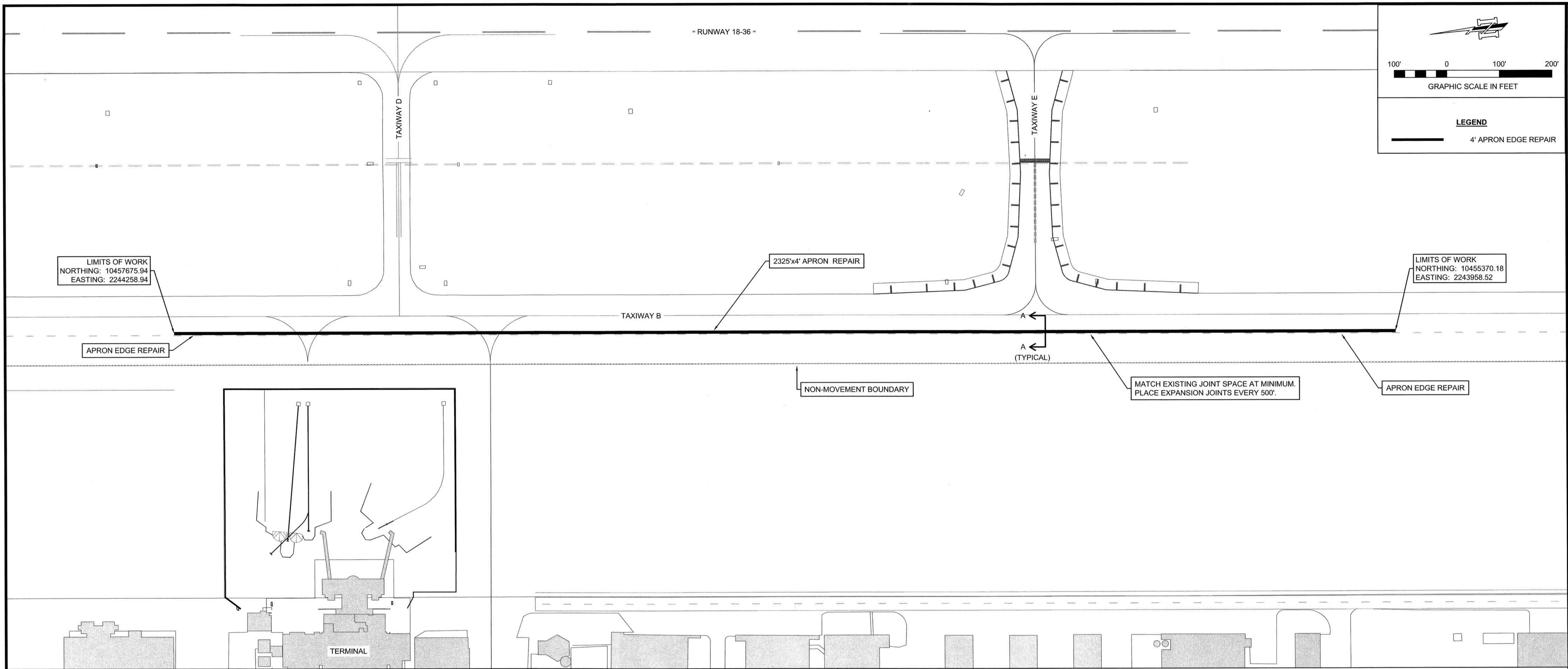
**SAN ANGELO REGIONAL  
AIRPORT TAXIWAY  
RECONFIGURATION PROJECT  
SAN ANGELO, TEXAS**

DRAWN BY:	CBS
DESIGNED BY:	JWD
LATEST REVISION:	6/29/2017
KSA JOB NO.:	SAN_059



SEAL:  
TBP Firm Registration No. F-1356  
SHEET NO.





MARK	REVISION	DATE

DRAWING PATHNAME: LAYOUT | PLOT DATE: TIME  
 PROJECT: SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT  
 PROJECT SHEETS: APRON EDGE REPAIR DWG 1220341  
 7/6/2017 - 9:16 PM

**APRON EDGE REPAIR**  
 SHEET NAME:

**SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT**  
 SAN ANGELO, TEXAS  
 PROJECT NAME:

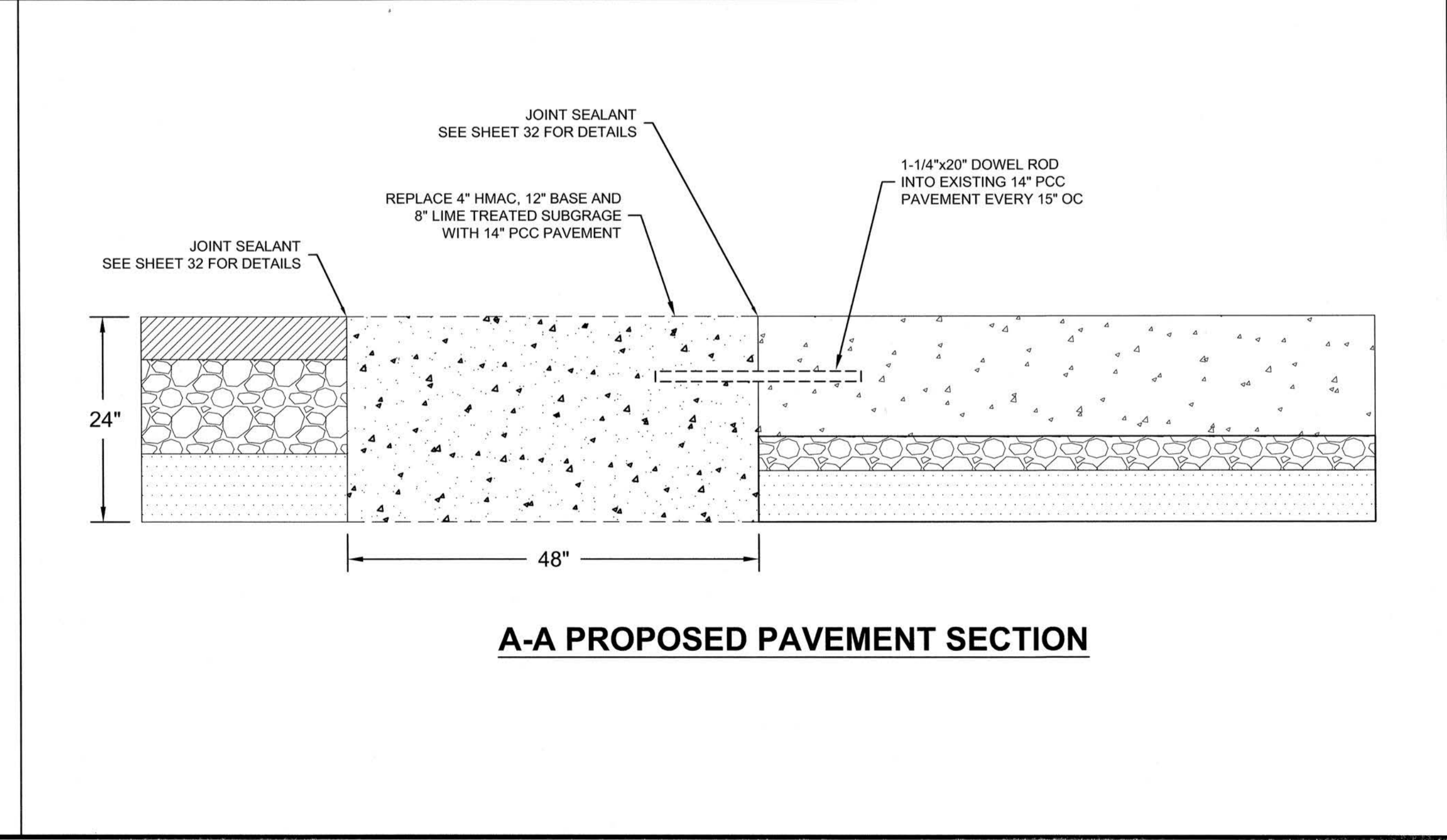
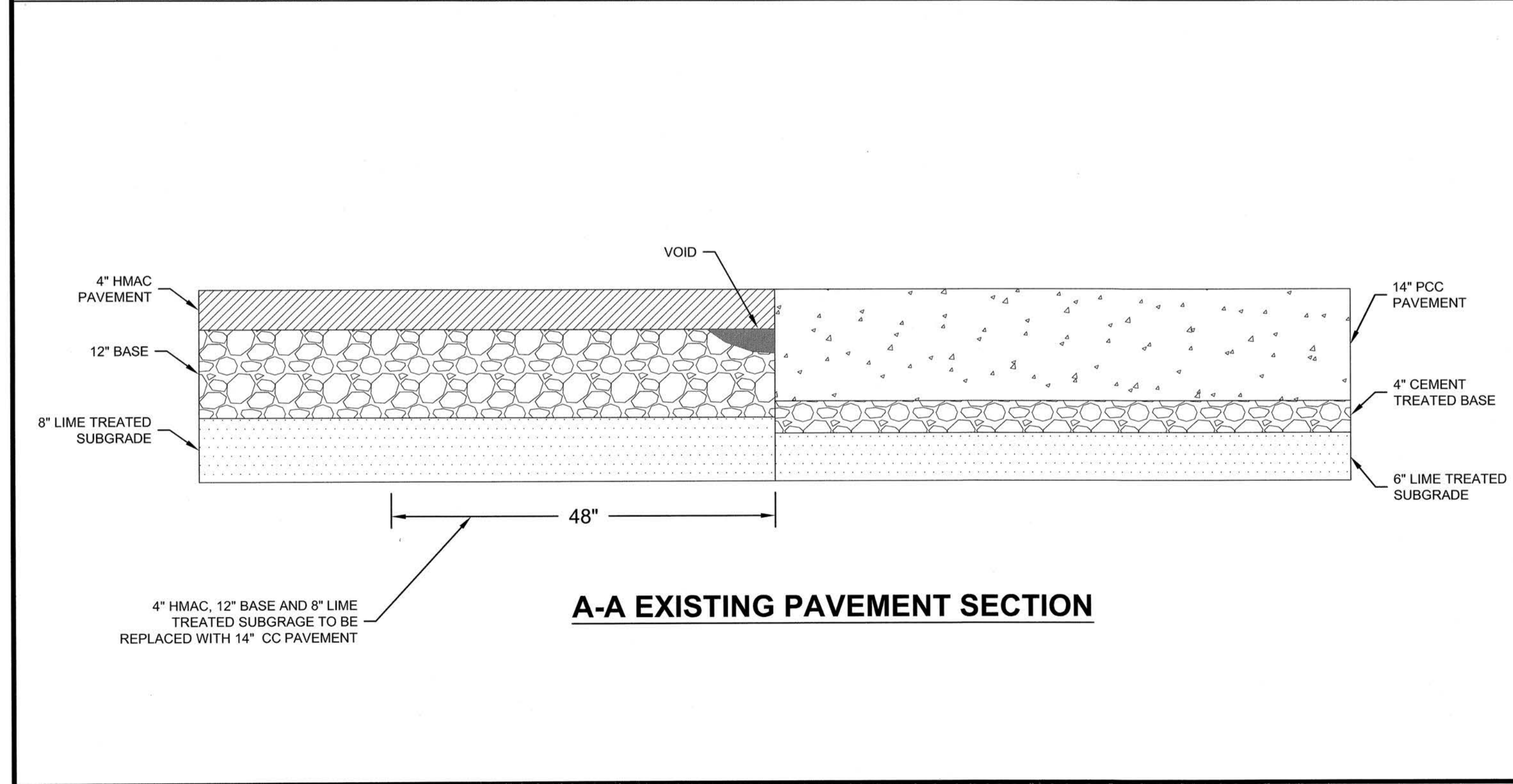
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DESIGNED BY:	JWD
LATEST REVISION:	6/29/2017
KSA JOB NO.:	SAN 039

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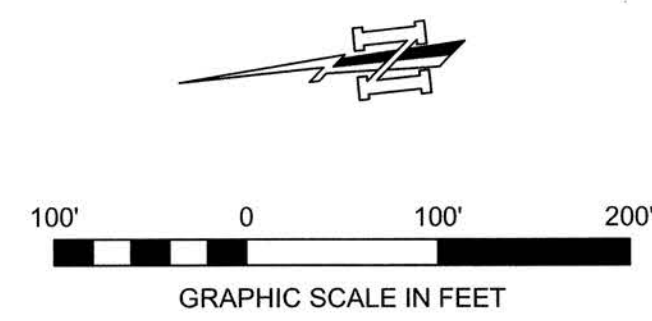
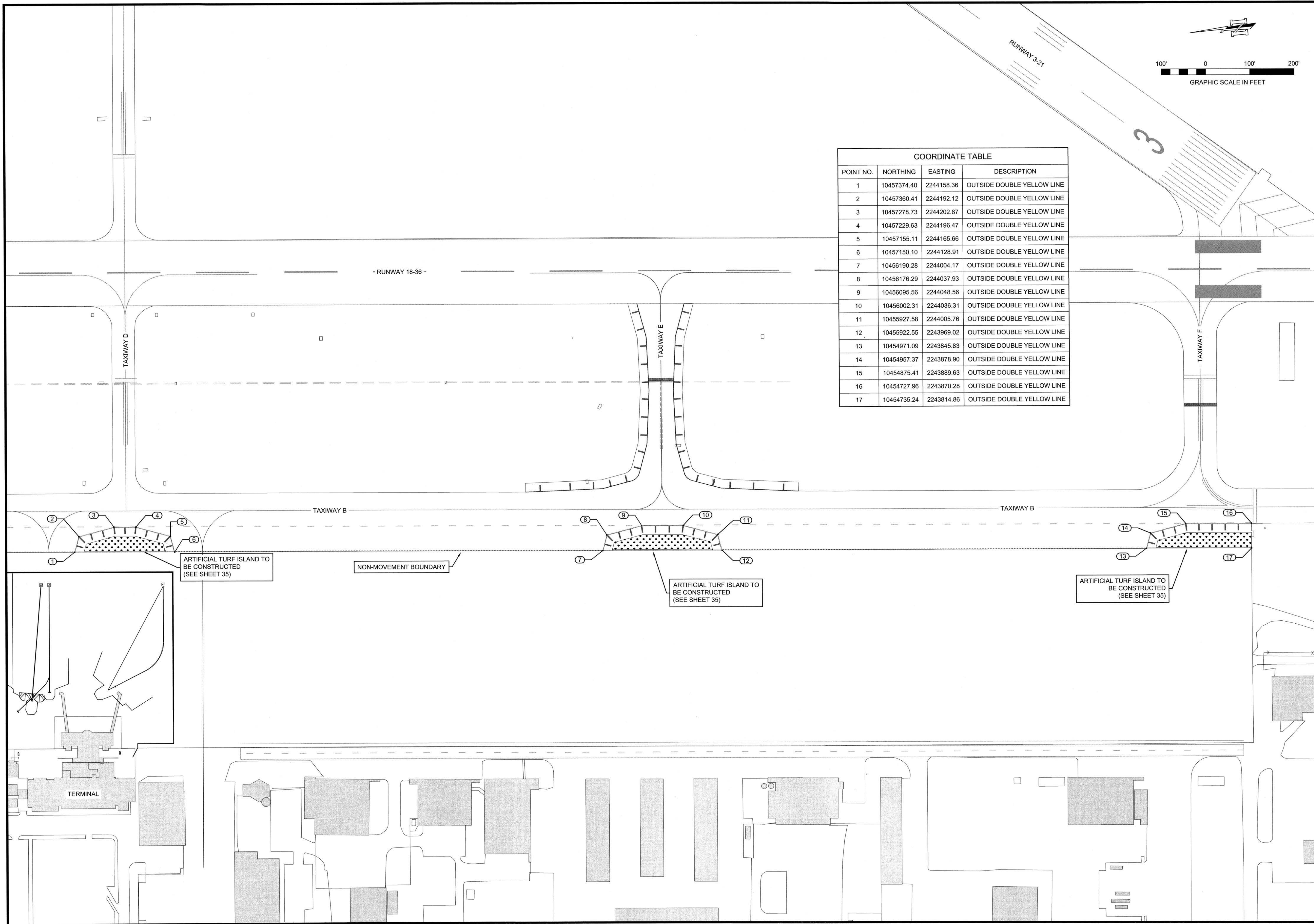
STATE OF TEXAS  
 DAVID A. ALEXANDER  
 96658  
 LICENSED PROFESSIONAL ENGINEER

SEAL:  
 TBPE Firm Registration No. F-1356  
 SHEET NO.

23







COORDINATE TABLE			
POINT NO.	NORTHING	EASTING	DESCRIPTION
1	10457374.40	2244158.36	OUTSIDE DOUBLE YELLOW LINE
2	10457360.41	2244192.12	OUTSIDE DOUBLE YELLOW LINE
3	10457278.73	2244202.87	OUTSIDE DOUBLE YELLOW LINE
4	10457229.63	2244196.47	OUTSIDE DOUBLE YELLOW LINE
5	10457155.11	2244165.66	OUTSIDE DOUBLE YELLOW LINE
6	10457150.10	2244128.91	OUTSIDE DOUBLE YELLOW LINE
7	10456190.28	2244004.17	OUTSIDE DOUBLE YELLOW LINE
8	10456176.29	2244037.93	OUTSIDE DOUBLE YELLOW LINE
9	10456095.56	2244048.56	OUTSIDE DOUBLE YELLOW LINE
10	10456002.31	2244036.31	OUTSIDE DOUBLE YELLOW LINE
11	10455927.58	2244005.76	OUTSIDE DOUBLE YELLOW LINE
12	10455922.55	2243969.02	OUTSIDE DOUBLE YELLOW LINE
13	10454971.09	2243845.83	OUTSIDE DOUBLE YELLOW LINE
14	10454957.37	2243878.90	OUTSIDE DOUBLE YELLOW LINE
15	10454875.41	2243889.63	OUTSIDE DOUBLE YELLOW LINE
16	10454727.96	2243870.28	OUTSIDE DOUBLE YELLOW LINE
17	10454735.24	2243814.86	OUTSIDE DOUBLE YELLOW LINE

MARK	REVISION	DATE

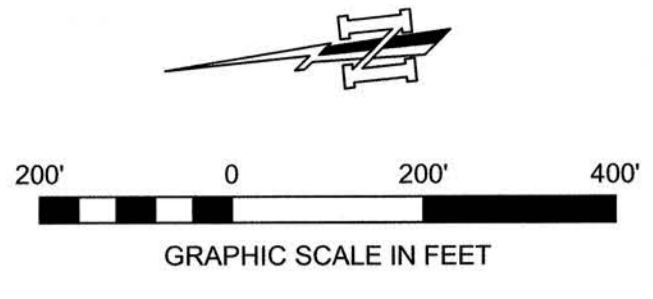
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 PROJECT NAME: SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT  
 SAN ANGELO, TEXAS  
 SHEET NAME:

DRAWN BY: CBS  
 DESIGNED BY: JWD  
 LATEST REVISION: 6/29/2017  
 KSA JOB NO.: SAN\_059

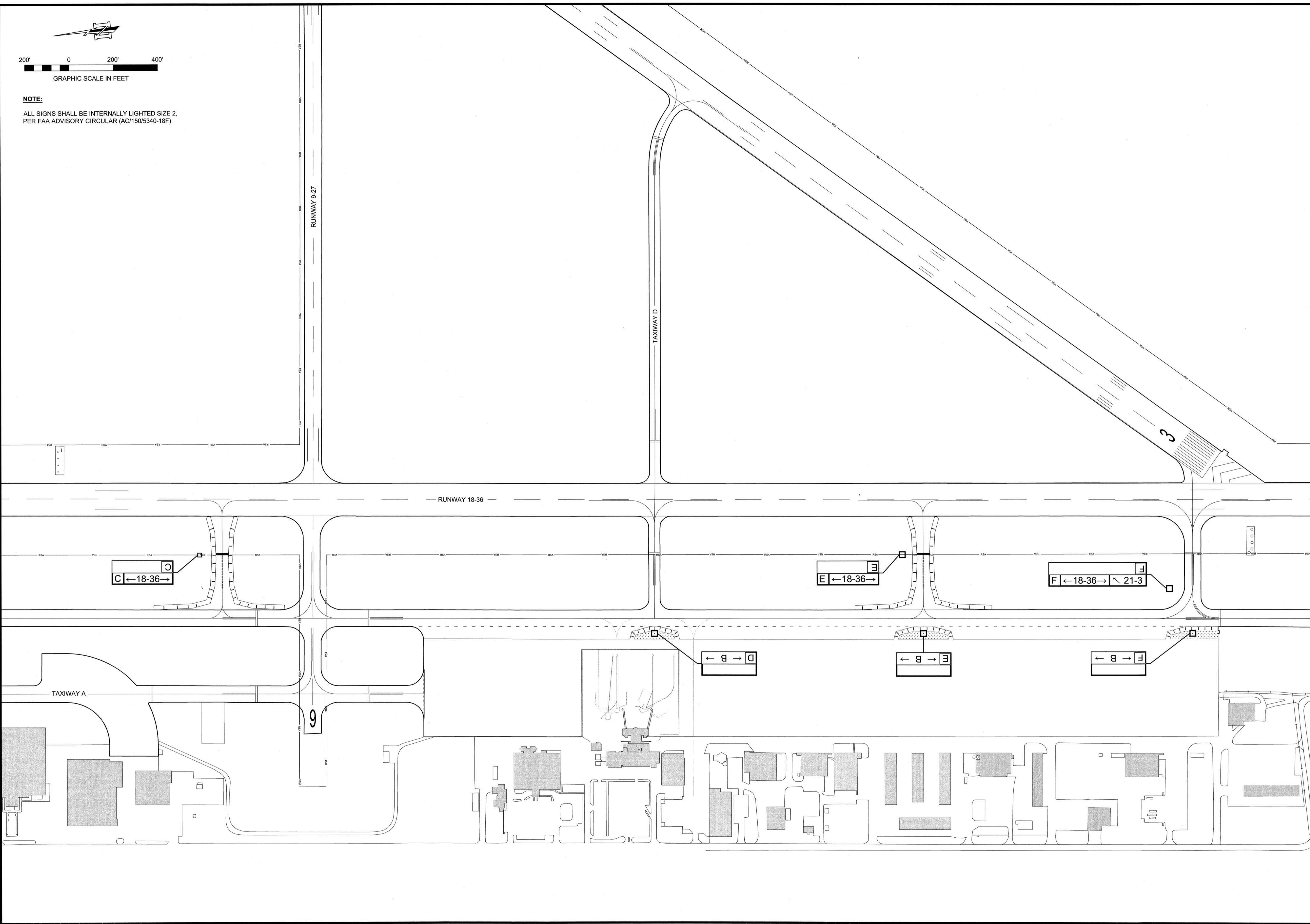
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 DAVID A. ALEXANDER  
 96658  
 LICENSED PROFESSIONAL ENGINEER  
 SEAL: TBE Firm Registration No. F-1356  
 SHEET NO. **24**





**NOTE:**  
ALL SIGNS SHALL BE INTERNALLY LIGHTED SIZE 2,  
PER FAA ADVISORY CIRCULAR (AC/150/5340-18F)

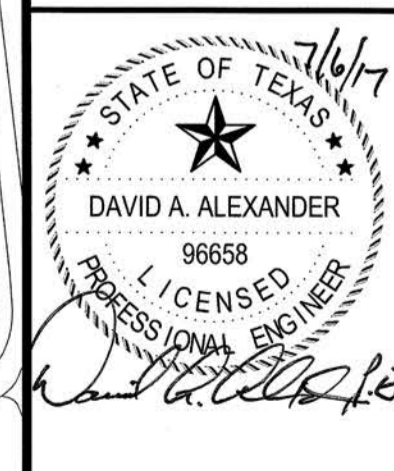


MARK	REVISION	DATE

**INTERNALLY LIGHTED  
SIGNS**

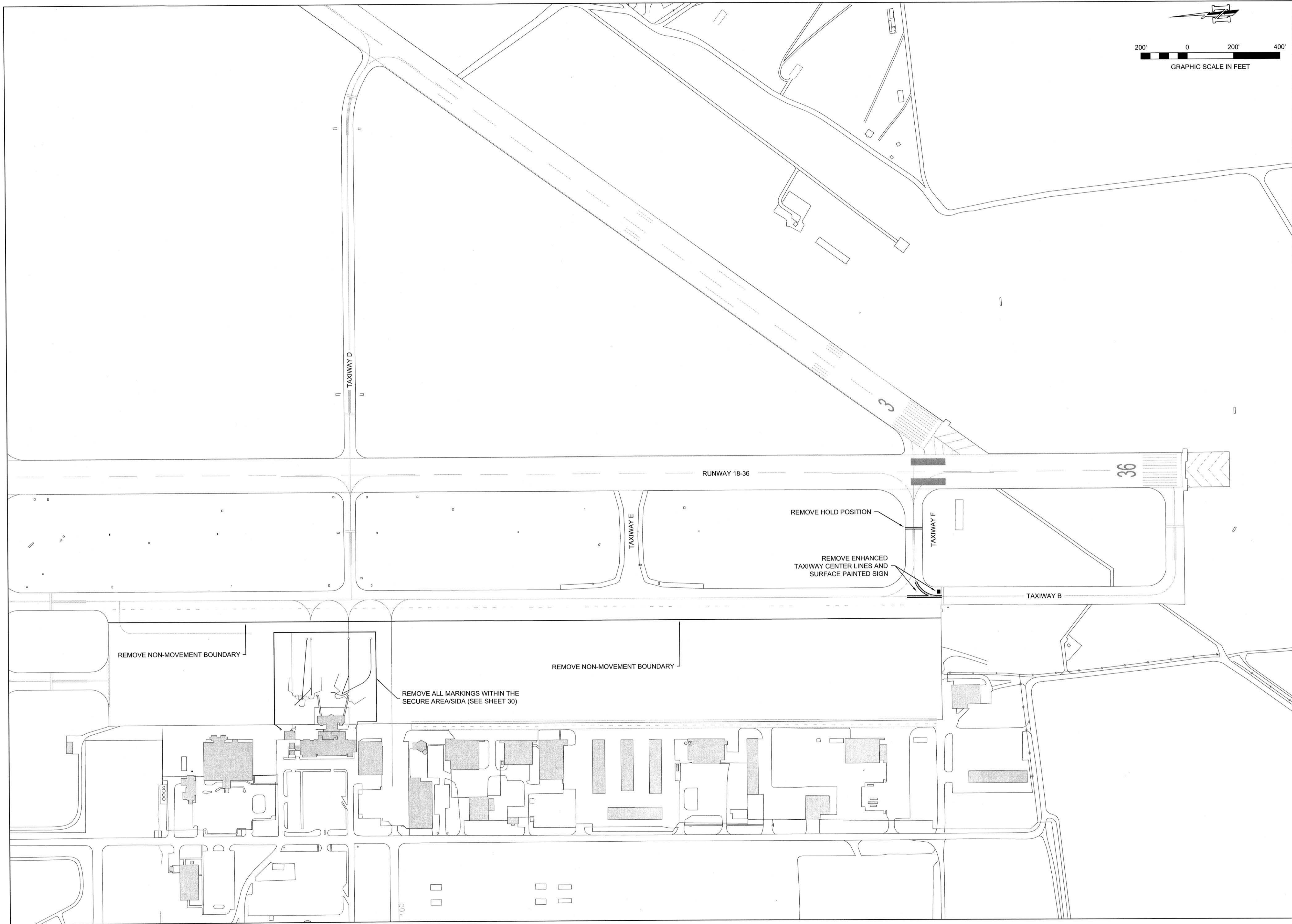
**SAN ANGELO REGIONAL  
AIRPORT TAXIWAY  
RECONFIGURATION PROJECT**  
SAN ANGELO, TEXAS

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**25**





MARK	REVISION	DATE

**MARKING DEMO PLAN**  
**PAGE 1**

**SAN ANGELO REGIONAL**  
**AIRPORT TAXIWAY**  
**RECONFIGURATION PROJECT**  
SAN ANGELO, TEXAS

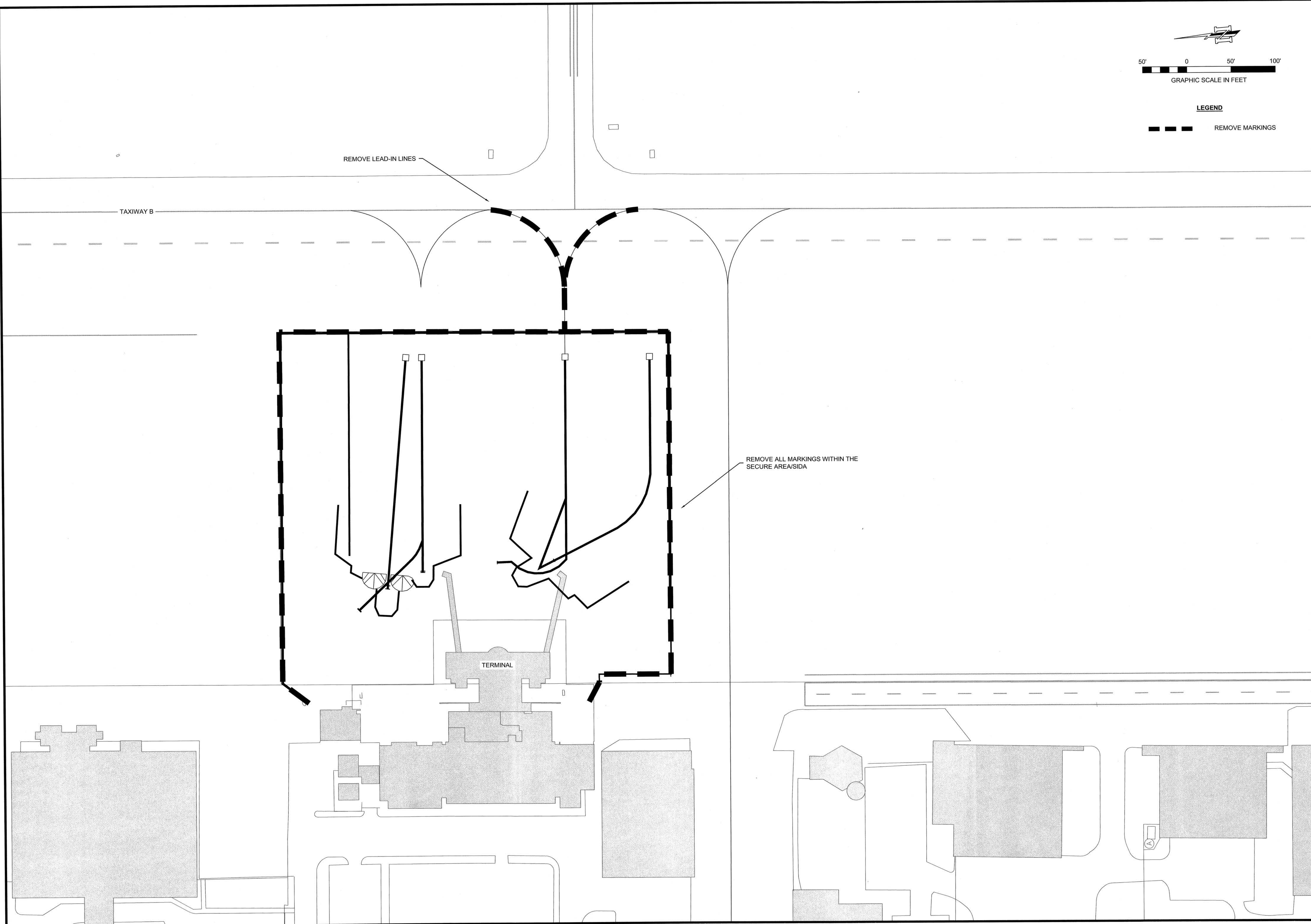
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DESIGNED BY:	JWD
LATEST REVISION:	6/29/2017
KSA JOB NO.:	SAN_059

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 58 Bullock Street, San Angelo, Texas 76901  
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STATE OF TEXAS  
 7/6/17  
 DAVID A. ALEXANDER  
 96658  
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SEAL:  
 T&E Firm Registration No. F-1356  
 SHEET NO.  
**26**





MARK	REVISION	DATE

MARKING DEMO PLAN  
 PAGE 2

SAN ANGELO REGIONAL  
 AIRPORT TAXIWAY  
 RECONFIGURATION PROJECT  
 SAN ANGELO, TEXAS

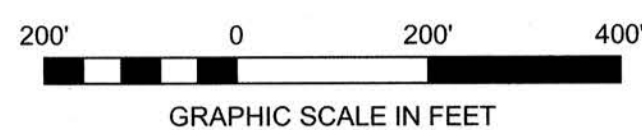
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DESIGNED BY:	JWD
LATEST REVISION:	6/29/2017
KSA JOB NO.:	SAN1058

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 DAVID A. ALEXANDER  
 96858  
 LICENSED PROFESSIONAL ENGINEER  
*David A. Alexander* P.E.

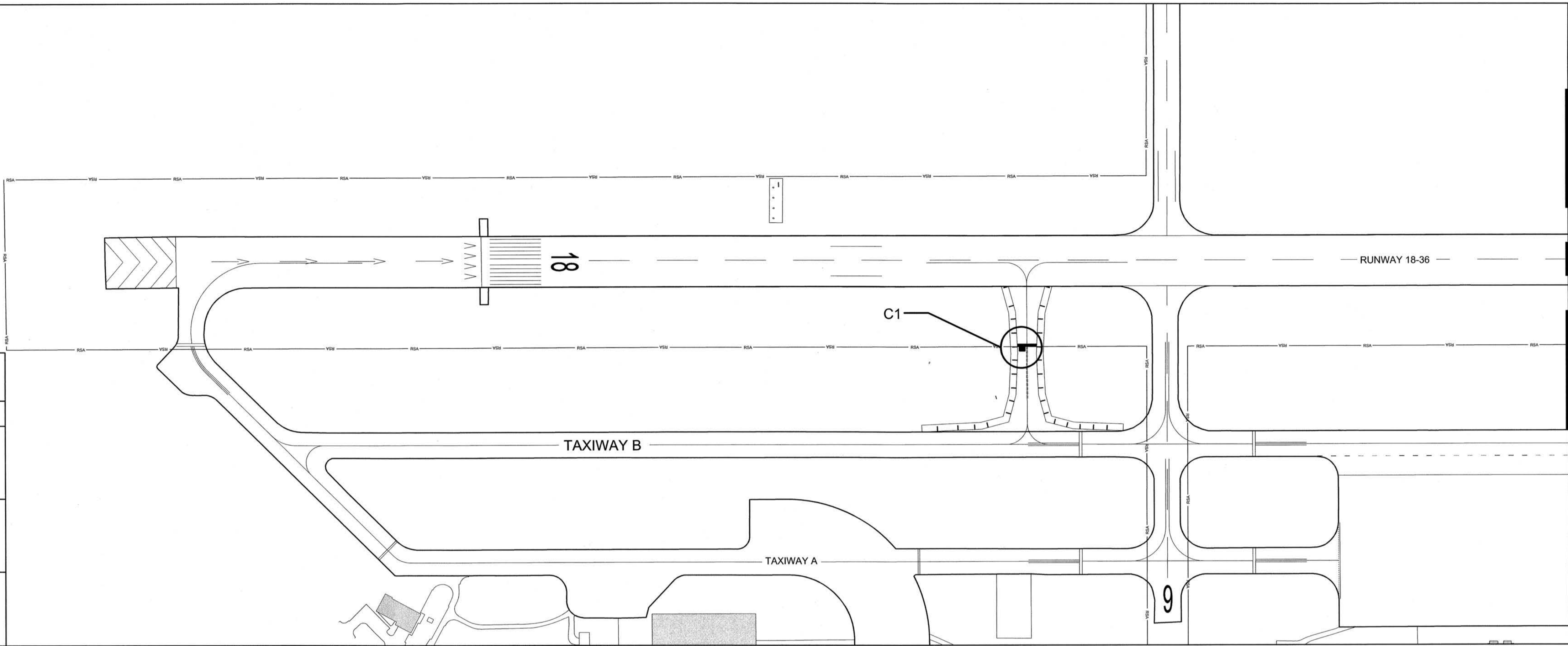
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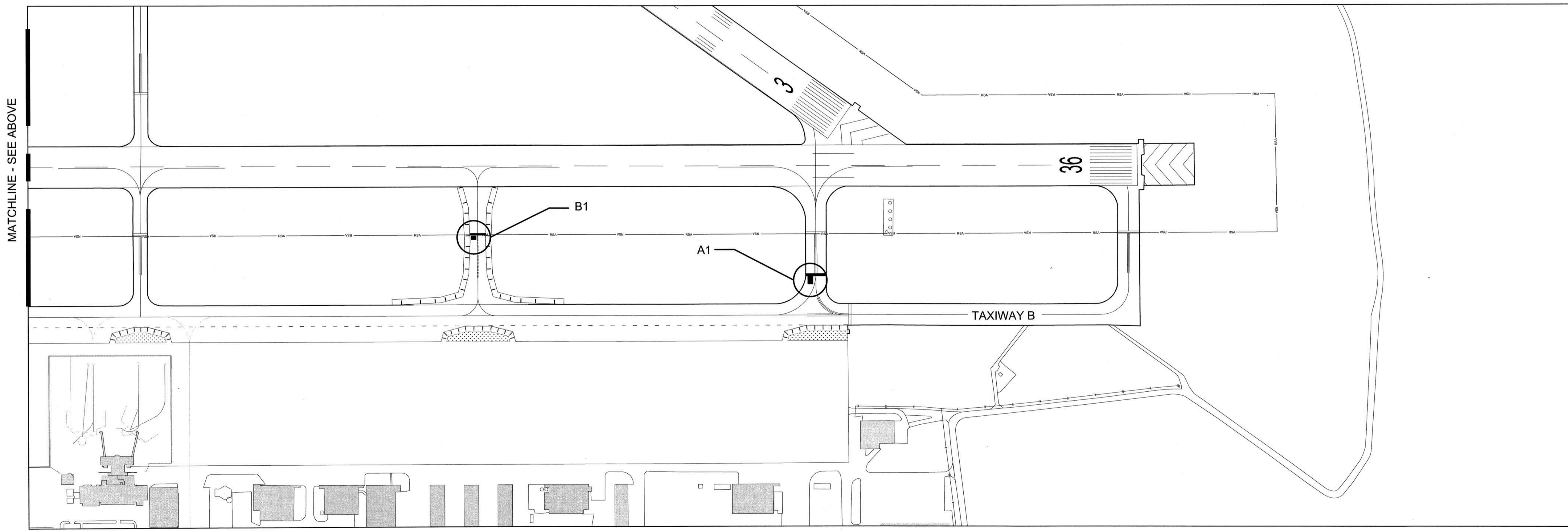


SURFACE PAINTED HOLD POSITION SIGNS		
MARK	DESCRIPTION	SIZE
A1	21-3 18-36	12'
B1	18-36	12'
C1	18-36	12'

\* SEE SHEET 31, DETAIL 5



MATCHLINE - SEE BELOW



MATCHLINE - SEE ABOVE

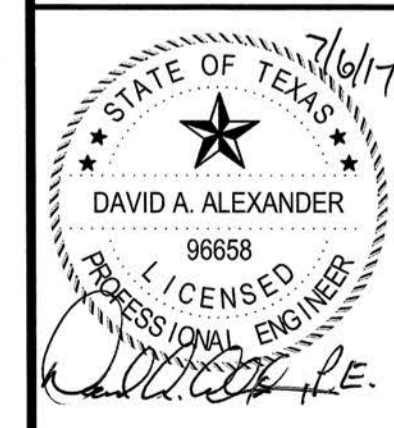
MARK	REVISION	DATE

**SURFACE PAINTED HOLD POSITION SIGNS**

**SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT**  
SAN ANGELO, TEXAS

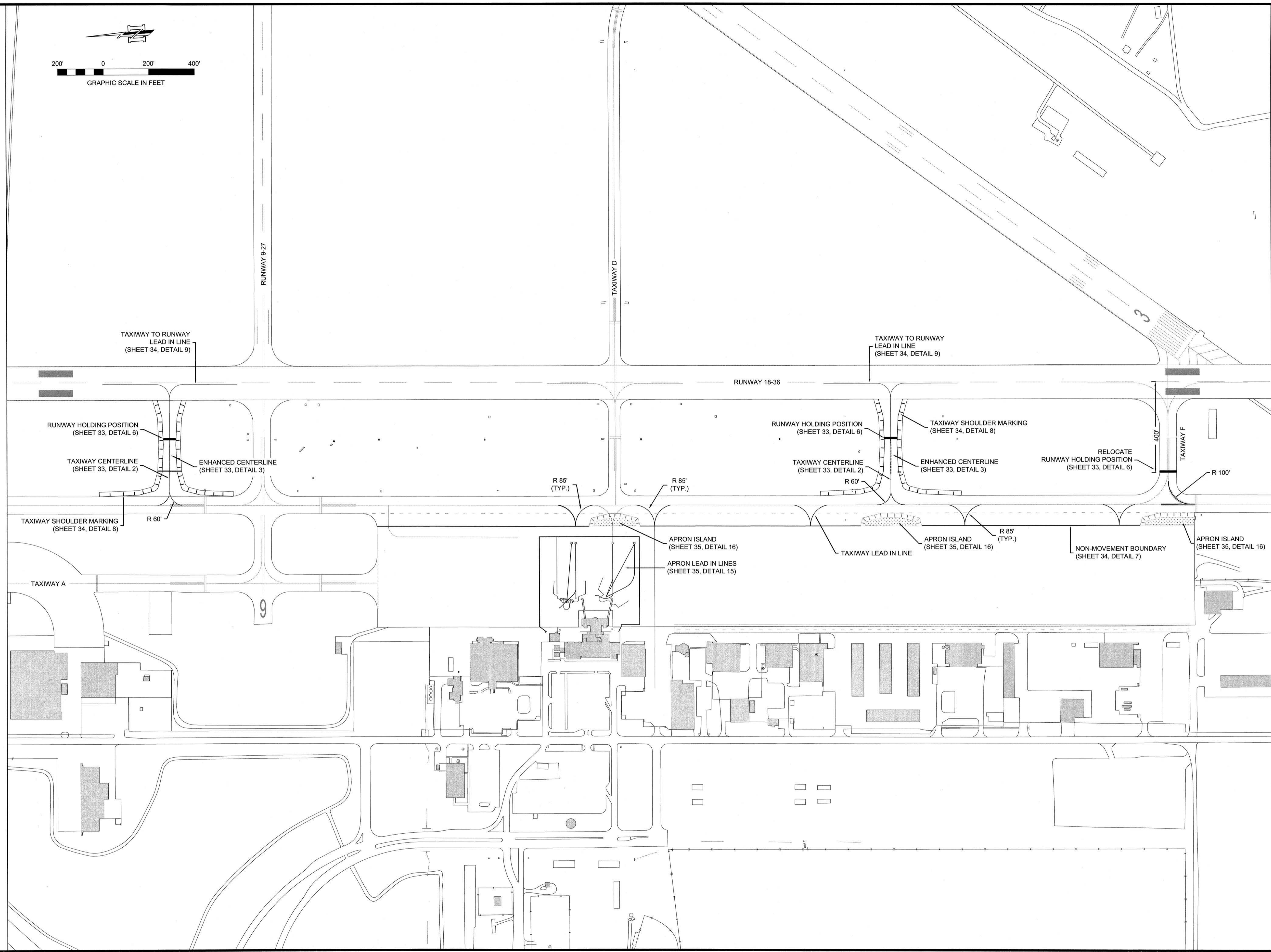
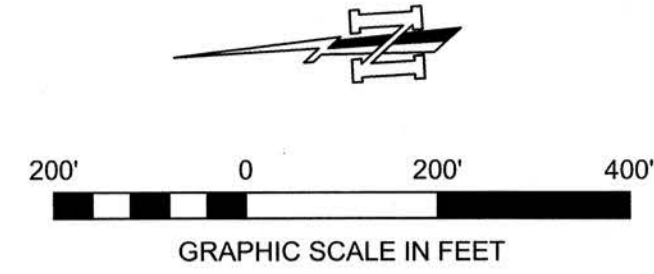
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MARK	REVISION	DATE

**MARKING PLAN**  
**PAGE 1**

**SAN ANGELO REGIONAL  
AIRPORT TAXIWAY  
RECONFIGURATION PROJECT**  
SAN ANGELO, TEXAS

DRAWN BY: CBS	DESIGNED BY: JWD	LATEST REVISION: 6/29/2017	KSA JOB NO.:	SAN 059
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TBPE Firm Registration No. F-1356  
SHEET NO. **29**



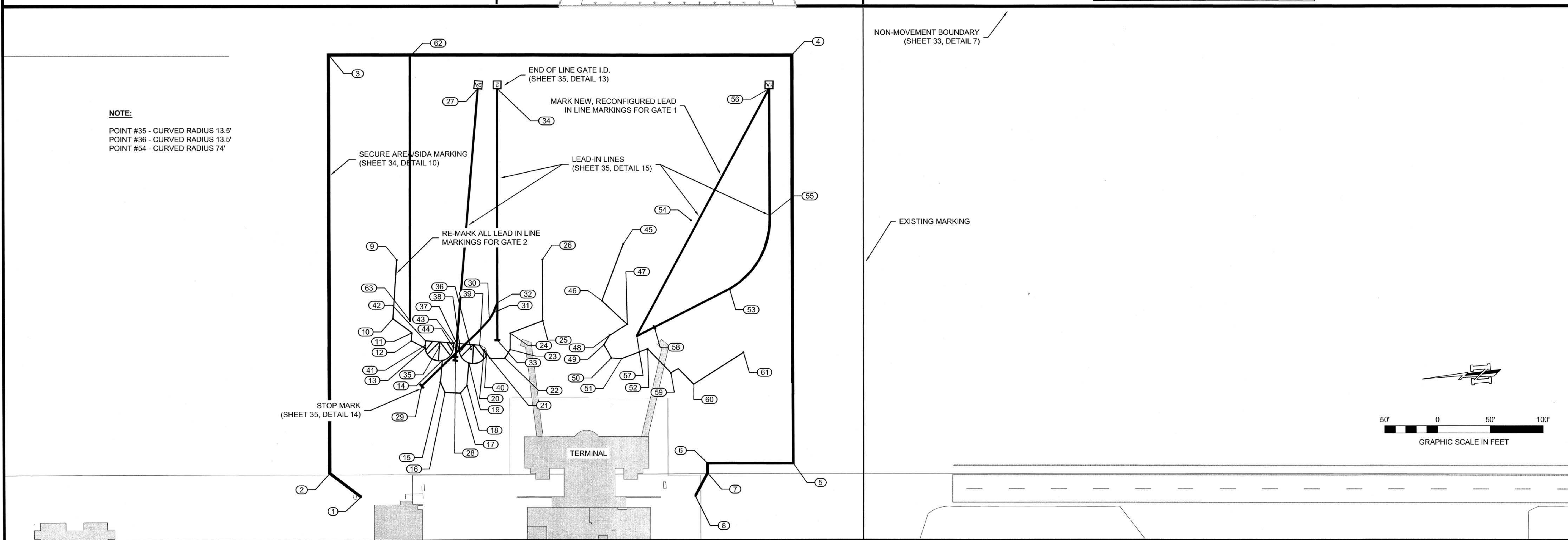
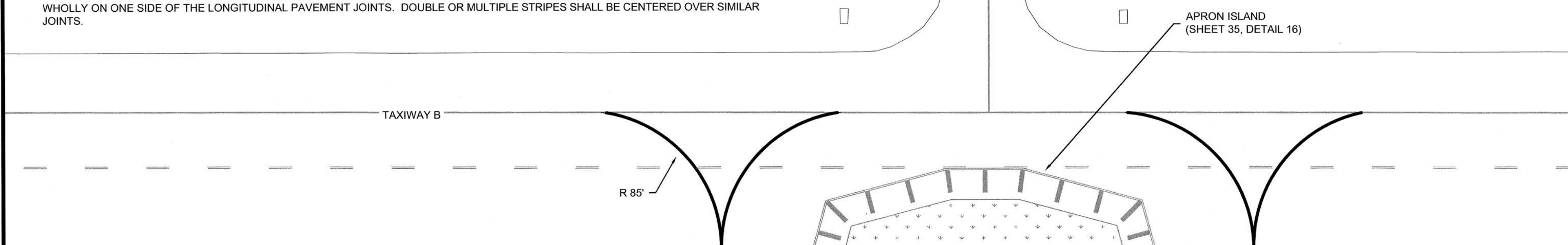
**NOTES:**

- ALL RAMP STRIPING SERVICES SHALL BE PROVIDED BY THE STRIPING CONTRACTOR IN ACCORDANCE WITH THE LOCAL PORT AUTHORITY REQUIREMENTS AS WELL AS FEDERAL SPECIFICATION P-620.
- CONTRACTOR SHALL RE-STRIP RAMP IN ACCORDANCE WITH THIS DRAWING PACKAGE AND ALL AIRPORT AUTHORITY REGULATIONS REGARDING STRIPING OF RAMP SURFACES.
- PAINT PRODUCTS SHALL MEET THE REQUIREMENTS OF FEDERAL SPECIFICATION TT-P-1925E.
- EQUIPMENT SHALL INCLUDE THE APPARATUS NECESSARY TO PROPERLY CLEAN THE EXISTING SURFACE, A MECHANICAL MARKING MACHINE, AND SUCH AUXILIARY HAND-PAINTING EQUIPMENT AS MAY BE NECESSARY TO SATISFACTORILY COMPLETE THE JOB.
- PRIOR TO APPLICATION OF PAINT, EXISTING SURFACE SHALL BE DRY AND CLEAN. ATMOSPHERIC TEMPERATURE SHALL BE ABOVE 45 DEGREES F AND RISING. WEATHER SHALL NOT BE EXCESSIVELY WINDY, DUSTY, OR FOGGY. CONTRACTOR IS RESPONSIBLE FOR OVERSPRAY DAMAGE TO SURROUNDING AREAS, EQUIPMENT, STRUCTURES, AND THE LIKE.
- PREPARATION OF EXISTING SURFACES:
  - IMMEDIATELY BEFORE APPLICATION OF THE PAINT, THE EXISTING SURFACE SHALL BE DRY AND ENTIRELY FREE FROM DIRT, GREASE, OIL, ACIDS, OR OTHER FOREIGN MATTER THAT WOULD REDUCE THE BOND BETWEEN THE COAT OF PAINT AND THE PAVEMENT.
  - SURFACE SHALL BE THOROUGHLY CLEANED AS REQUIRED TO REMOVE ALL DIRT AND LOOSE MATERIALS. THE OWNER SHALL APPROVE CONDITIONS OF THE SURFACE PRIOR TO THE APPLICATION OF PAINT.
  - EXISTING MARKING OR STRIPES TO BE ABANDONED OR REMOVED SHALL BE OBLITERATED BY WATER BLASTING OR OTHER APPROVED METHODS, TO THE SATISFACTION OF THE OWNER AND ENGINEER. ANY METHOD USED SHALL NOT CAUSE MAJOR DAMAGE TO THE PAVEMENT. MAJOR DAMAGE IS DEFINED AS CHANGING THE PROPERTIES OF THE PAVEMENT OR REMOVING PAVEMENT OVER 1/8 INCH DEEP.
    - DURING BLASTING, DUST AND DEBRIS SHALL BE CONTROLLED AND CONTAINED BY VACUUMS, MAGNETS OR OTHER APPROVED PROCESSES. CONTRACTOR SHALL HAVE BACK-UP EQUIPMENT TO ENSURE GATE IS TURNED OVER ON TIME. CONTRACTOR SHALL PAY SPECIAL ATTENTION TO CLEAN-UP OF BLASTING DEBRIS IN EXPANSION JOINTS.
    - OBSCURING EXISTING MARKINGS BY PAINTING OUT WILL NOT BE ALLOWED.
    - CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL EXISTING MARKINGS AS INDICATED ON THE DRAWINGS, INCLUDING THOSE MARKINGS THAT MAY CONTAIN LEAD. REMOVAL AND DISPOSAL OF EXISTING MARKINGS SHALL BE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL GUIDELINES, INCLUDING THOSE OF THE EPA.
    - CONTRACTOR SHALL REPAIR AT HIS EXPENSE ANY DAMAGE TO THE PAVEMENT, SURFACE TEXTURE, JOINT SEALANT, OR APPURTENANCES CAUSED BY THE REMOVAL WORK. METHODS TO REPAIR DAMAGES SHALL BE ACCEPTABLE TO THE CITY.
    - ANY REMOVAL METHOD THAT CAUSES OBJECTIONABLE DUST, CONTAMINATED WATER RUNOFF, OR OTHER SUCH HAZARD OR NUISANCE SHALL BE CONTROLLED BY MEANS APPROVED BY THE CITY THAT ELIMINATE SUCH CAUSES OF OBJECTION OR ITS USE SHALL NOT BE ALLOWED.
  - PAINT SHALL NOT BE APPLIED TO NEW PORTLAND CEMENT CONCRETE PAVEMENT UNTIL THE CONCRETE IN THE AREAS TO BE PAINTED IS CLEAN OF CURING MATERIAL. SANDBLASTING OR HIGH-PRESSURE WATER SHALL BE USED TO REMOVE CURING MATERIAL AND LANTANCE FROM THE CONCRETE SURFACE.
  - NO PAINT SHALL BE APPLIED TO BITUMINOUS PAVEMENT UNTIL THE PAVEMENT HAS BEEN ALLOWED TO CURE TO THE OWNER'S AND ENGINEER'S SATISFACTION. UPON APPLICATION TO PROPERLY PREPARED SURFACES AFTER CURING, THE PAINT SHALL NOT BLEED EXCESSIVELY, BLISTER, PEEL, CURL OR DISCOLOR.
- ALL STRIPES SHALL BE ACCURATELY SURVEYED AND LAYOUT ACCOMPLISHED WELL IN ADVANCE OF PAINTING AND SHALL BE APPROVED BY THE OWNER AND ENGINEER PRIOR TO APPLYING PAINT. THE CONTRACTOR SHALL PROVIDE AN EXPERIENCED TECHNICIAN TO SUPERVISE THE LOCATION, ALIGNMENT, LAYOUT, DIMENSIONS AND APPLICATION OF THE PAINT. SINGLE STRIPES SHALL BE APPLIED WHOLLY ON ONE SIDE OF THE LONGITUDINAL PAVEMENT JOINTS. DOUBLE OR MULTIPLE STRIPES SHALL BE CENTERED OVER SIMILAR JOINTS.

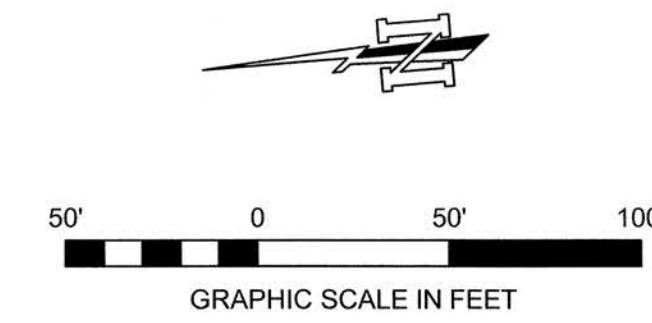
- APPLICATION:**
  - COMPETENT AND EXPERIENCED EQUIPMENT OPERATORS, LABORERS, AND ARTISANS SHALL PERFORM ALL PAINTING IN A NEAT AND WORKMANLIKE MANNER TO THE SATISFACTION OF THE OWNER AND ENGINEER.
  - MARKINGS SHALL BE APPLIED AT THE LOCATIONS AND TO THE DIMENSIONS AND SPACING INDICATED ON THE PLANS OR AS SPECIFIED.
    - ANY DEVIATION IN THE EDGES EXCEEDING 1/8" IN 50 FEET SHALL BE OBLITERATED AND THE MARKING CORRECTED. THE DIMENSIONS OF THE MARKINGS SHALL BE AS DESIGNATED WITHIN A TOLERANCE OF PLUS OR MINUS 1%.
    - COLORS SHALL BE AS INDICATED ON THE DRAWINGS, AND SHALL MEET THE FOLLOWING FEDERAL STANDARDS:
      - WHITE - 595-37925
      - RED - 595-31136
      - YELLOW - 595-33538 OR 33655
      - BLACK - 595-37038
    - APPROVED AMERICAN AIRLINE PAINTS WHEN STRIPING DONE IN HOUSE ARE: SHERMAN WILLIAMS TRAFFIC MARKING PAINTS:
      - WHITE - MPN: TM2160, CPN: 1114818
      - RED - MPN: TM2132, CPN: 114820
      - YELLOW - MPN: TM2161, CPN: 114817
      - BLACK - MPN: TM2135, CPN: 1114819
  - THE PAINT SHALL BE MIXED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS BEFORE APPLICATION. THE PAINT SHALL BE THOROUGHLY MIXED AND APPLIED TO THE SURFACE TO THE PAVEMENT WITH THE MARKING MACHINE AT ITS ORIGINAL CONSISTENCY WITHOUT THE ADDITION OF THINNER. THE PAINT SHALL BE APPLIED UNIFORMLY BY SUITABLE EQUIPMENT AT A RATE OF NOT LESS THAN 52 NOR MORE THAN 58 SQUARE FEET PER GALLON, OR THICKNESS OF 25 TO 30 MILLS AS MEASURED BY THE CONTRACTOR. IF THE PAINT IS APPLIED BY BRUSH, THE SURFACE SHALL RECEIVE TWO COATS, THE FIRST COAT SHALL BE THOROUGHLY DRY BEFORE THE SECOND COAT IS APPLIED.
- ALL MARKINGS SHALL BE PROTECTED FROM INJURY OR DAMAGE OF ANY KIND WHILE THE PAINT IS DRYING. THE CONTRACTOR SHALL BE DIRECTLY RESPONSIBLE AND SHALL ERECT OR PLACE SUITABLE WARNING SIGNS, FLAGS OR BARRICADES, AND PROTECTIVE SCREENS OR COVERINGS AS REQUIRED. ALL SURFACES SHALL BE PROTECTED FROM DISFIGURATION BY SPLATTER, SPLASHES, SPILLAGE, DRIPPINGS OF PAINT OR OTHER MATERIALS.
- ANY MATERIAL NOT CONFORMING TO THE REQUIREMENTS OF THE SPECIFICATIONS OR PLANS THAT HAS BEEN DELIVERED TO THE PROJECT OR INCORPORATED IN THE WORK, OR ANY WORK PERFORMED THAT IS OF INFERIOR QUALITY, SUCH MATERIAL OR WORK SHALL BE CONSIDERED DEFECTIVE AND SHALL BE CORRECTED AS DIRECTED BY THE OWNER OR ENGINEER, AT THE EXPENSE OF THE CONTRACTOR. ANY AREAS OF PAINT THAT CHIPS OR PEELS OR WEARS EXCESSIVELY IN RESPECT TO THE OVERALL SHALL BE REPAINTED WITHIN THE WARRANTY PERIOD OF ONE YEAR.
- REFLECTIVE MEDIA SHALL MEET FEDERAL SPECIFICATIONS TT-B-1325D, TYPE III, AND SHALL BE TREATED WITH COMPATIBLE AGENTS RECOMMENDED BY THE MANUFACTURER OF THE PAINT AND REFLECTIVE MEDIA TO ENSURE PROPER ADHESION AND EMBEDMENT.
  - APPROVED AMERICAN AIRLINES REFLECTIVE BEADS WHEN STRIPING DONE IN HOUSE ARE:
    - POTTERS (pottersbeads.com) MPN: 613157
    - SWARCO (swarco.com) MPN: 2797
- REFLECTIVE MEDIA SHALL BE APPLIED AT A MINIMUM RATE OF 10 LBS/GAL. ENSURE REFLECTIVE MEDIA APPLICATION IS DISTRIBUTED EVENLY ACROSS ALL SURFACE AREAS OF PAINT AS REQUIRED.
- RAMP MARKINGS SHOULD BE REFRESHED WHEN FADED OR AT AN INTERVAL NO GREATER THAN ONE YEAR.

COORDINATE TABLE			
POINT NO.	NORTHING	EASTING	DESCRIPTION
1	10457620.88	2243721.61	SIDA MARKING
2	10457647.24	2243747.65	SIDA MARKING
3	10457596.46	2244141.28	SIDA MARKING
4	10457160.93	2244084.23	SIDA MARKING
5	10457210.63	2243699.85	SIDA MARKING
6	10457291.21	2243710.53	SIDA MARKING
7	10457292.33	2243701.30	SIDA MARKING
8	10457306.66	2243681.09	SIDA MARKING
9	10457557.90	2243939.73	APRON MARKING
10	10457568.79	2243885.02	APRON MARKING
11	10457552.82	2243869.36	APRON MARKING
12	10457554.11	2243861.95	APRON MARKING
13	10457542.17	2243853.56	APRON MARKING
14	10457527.67	2243839.59	APRON MARKING
15	10457532.08	2243819.48	APRON MARKING
16	10457529.08	2243809.36	APRON MARKING
17	10457514.69	2243806.74	APRON MARKING
18	10457507.42	2243812.86	APRON MARKING
19	10457502.98	2243833.74	APRON MARKING
20	10457486.90	2243844.57	APRON MARKING
21	10457482.53	2243835.85	APRON MARKING
22	10457468.56	2243834.09	APRON MARKING
23	10457462.50	2243841.55	APRON MARKING
24	10457460.35	2243856.96	APRON MARKING
25	10457428.28	2243864.59	APRON MARKING
26	10457420.87	2243922.11	APRON MARKING
27	10457460.43	2244091.35	APRON MARKING
28	10457515.42	2243837.93	APRON MARKING
29	10457550.13	2243818.26	APRON MARKING
30	10457478.36	2243872.20	APRON MARKING
31	10457473.84	2243878.06	APRON MARKING
32	10457468.78	2243887.11	APRON MARKING

COORDINATE TABLE			
POINT NO.	NORTHING	EASTING	DESCRIPTION
33	10457473.27	2243851.70	APRON MARKING
34	10457442.35	2244088.84	APRON MARKING
35	10457528.66	2243853.06	APRON MARKING
36	10457499.18	2243846.66	APRON MARKING
37	10457510.32	2243848.89	APRON MARKING
38	10457509.40	2243853.48	APRON MARKING
39	10457490.66	2243849.42	APRON MARKING
40	10457485.55	2243839.21	APRON MARKING
41	10457541.86	2243855.92	APRON MARKING
42	10457540.91	2243860.31	APRON MARKING
43	10457514.52	2243854.59	APRON MARKING
44	10457515.47	2243850.20	APRON MARKING
45	10457342.94	2243927.05	APRON MARKING
46	10457370.17	2243876.24	APRON MARKING
47	10457349.15	2243851.16	APRON MARKING
48	10457367.43	2243842.82	APRON MARKING
49	10457373.73	2243834.68	APRON MARKING
50	10457368.28	2243821.34	APRON MARKING
51	10457358.53	2243819.51	APRON MARKING
52	10457333.08	2243825.65	APRON MARKING
53	10457248.48	2243870.98	APRON MARKING
54	10457276.30	2243941.20	APRON MARKING
55	10457201.76	2243936.06	APRON MARKING
56	10457186.40	2244055.72	APRON MARKING
57	10457341.63	2243838.80	APRON MARKING
58	10457324.03	2243845.05	APRON MARKING
59	10457314.28	2243799.80	APRON MARKING
60	10457294.14	2243786.49	APRON MARKING
61	10457243.45	2243810.29	APRON MARKING
62	10457520.32	2244129.49	APRON MARKING
63	10457553.01	2243880.79	APRON MARKING



**NOTE:**  
 POINT #35 - CURVED RADIUS 13.5'  
 POINT #36 - CURVED RADIUS 13.5'  
 POINT #54 - CURVED RADIUS 74'



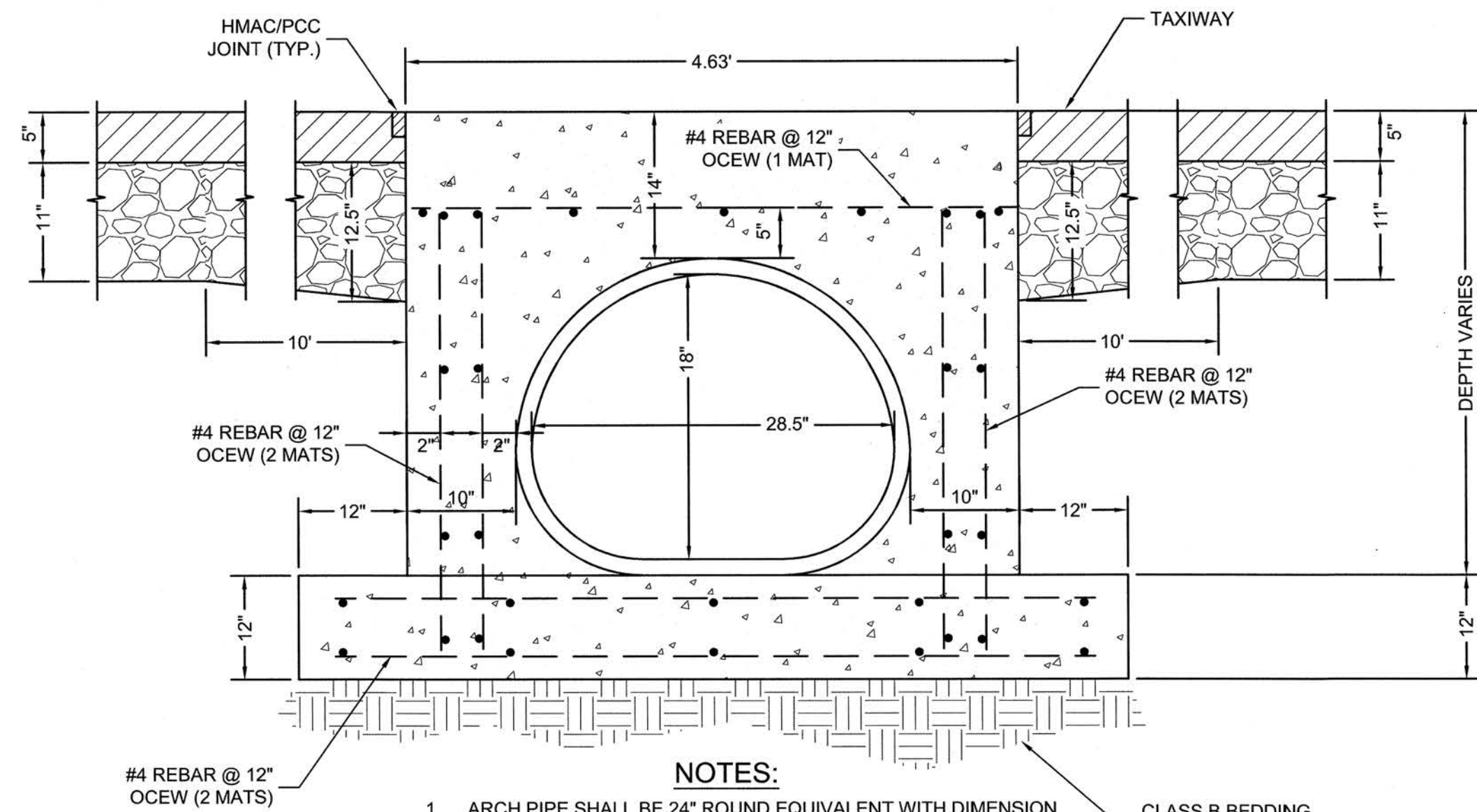
DATE	REVISION	MARK
11/14/17		

MARKING PLAN  
 PAGE 2  
 PROJECT NAME: SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT  
 PROJECT LOCATION: SAN ANGELO, TEXAS  
 SHEET NO.: 30

DRAWN BY: CBS  
 DESIGNED BY: JWD  
 LATEST REVISION: 6/28/2017  
 KSA JOB NO.: SAN\_059

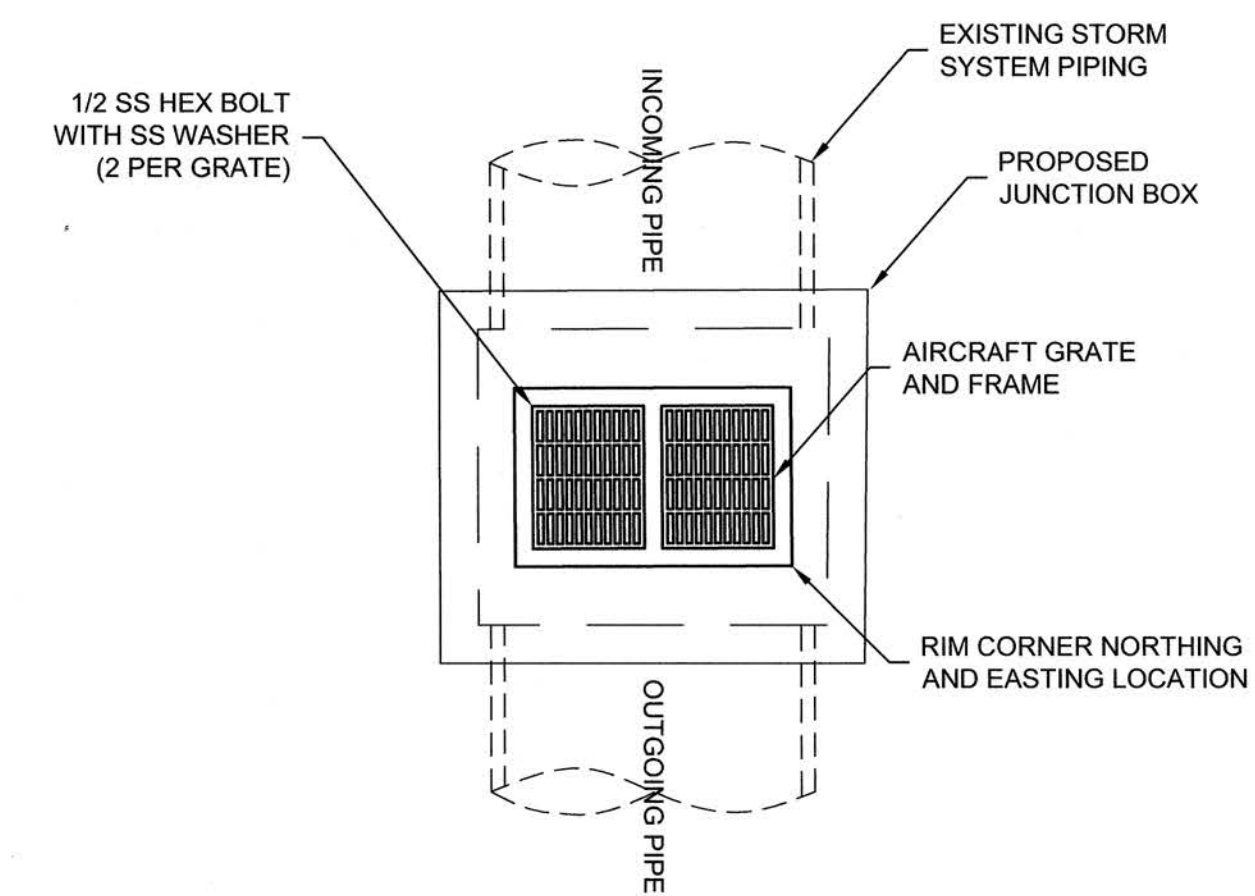
SEAL: TBPE Firm Registration No. F-1356  
 SHEET NO. 30





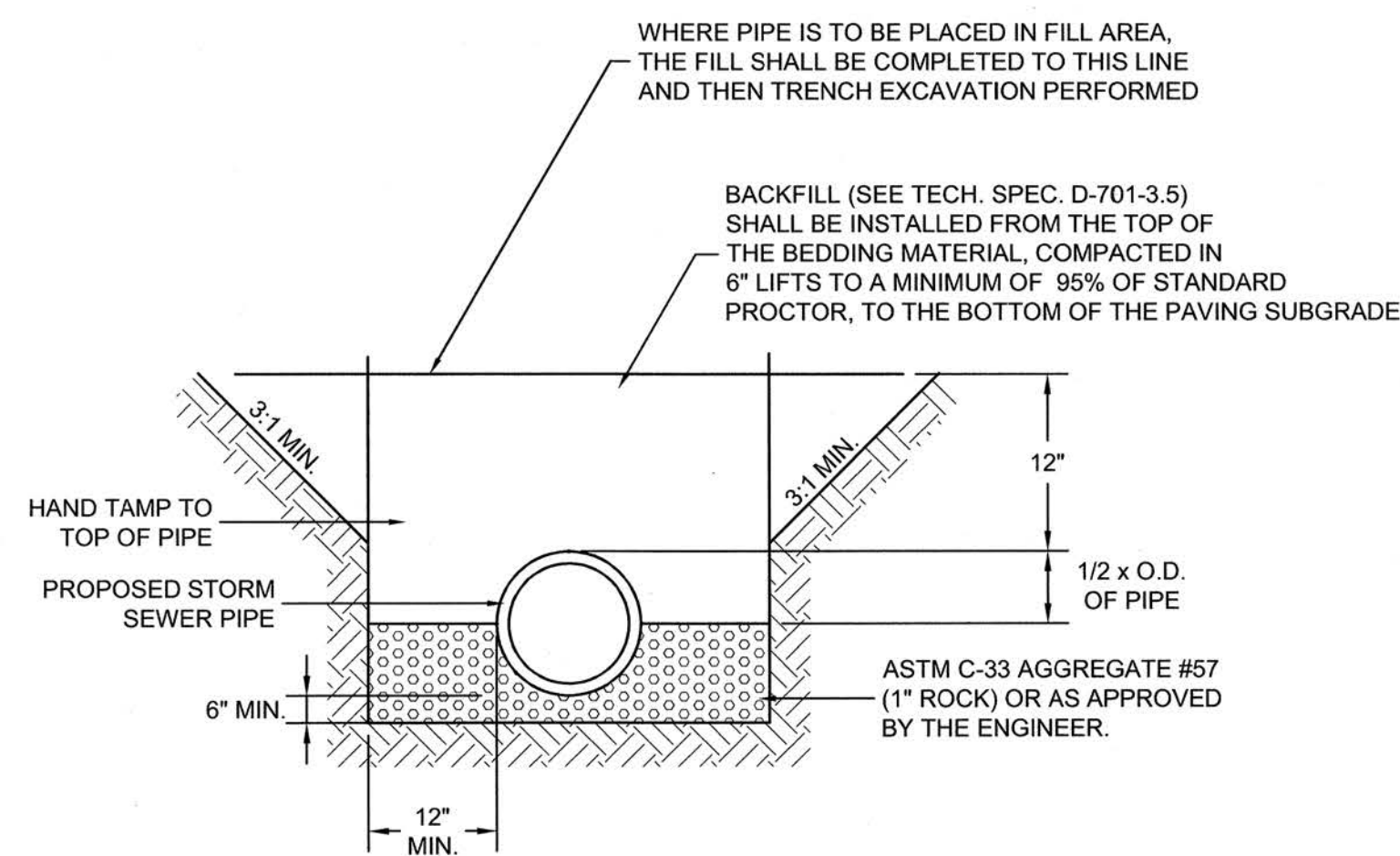
- NOTES:**
1. ARCH PIPE SHALL BE 24" ROUND EQUIVALENT WITH DIMENSION OF 18"x28.5" SPAN AND THE WALL THICKNESS OF 3.5".
  2. FLOWLINE OF PIPE AS SHOWN ON PLANS.
  3. ALL CONCRETE SHALL BE PER SPECIFICATION P-610 AND HAVE A MINIMUM, 3500 PSI AT 28 DAY COMPRESSIVE STRENGTH.
  4. ALL REINFORCING STEEL SHALL BE NEW, GRADE 60.
  5. BEDDING UNDER ALL PIPE SECTIONS SHALL MEET THE MATERIAL REQUIREMENTS FOR CLASS "B" BEDDING PER D-701.
  6. ALL STEEL SHALL HAVE A MINIMUM OF 2" COVER.
  7. ALL BACKFILL AROUND CONCRETE ENCASED CULVERT SHALL BE EXCESS LIME TREATED SUBGRADE COMPACTED IN 6" LIFTS TO THE BOTTOM OF THE BASE COURSE.

**CONCRETE ENCASED CULVERT DETAIL**  
N.T.S.

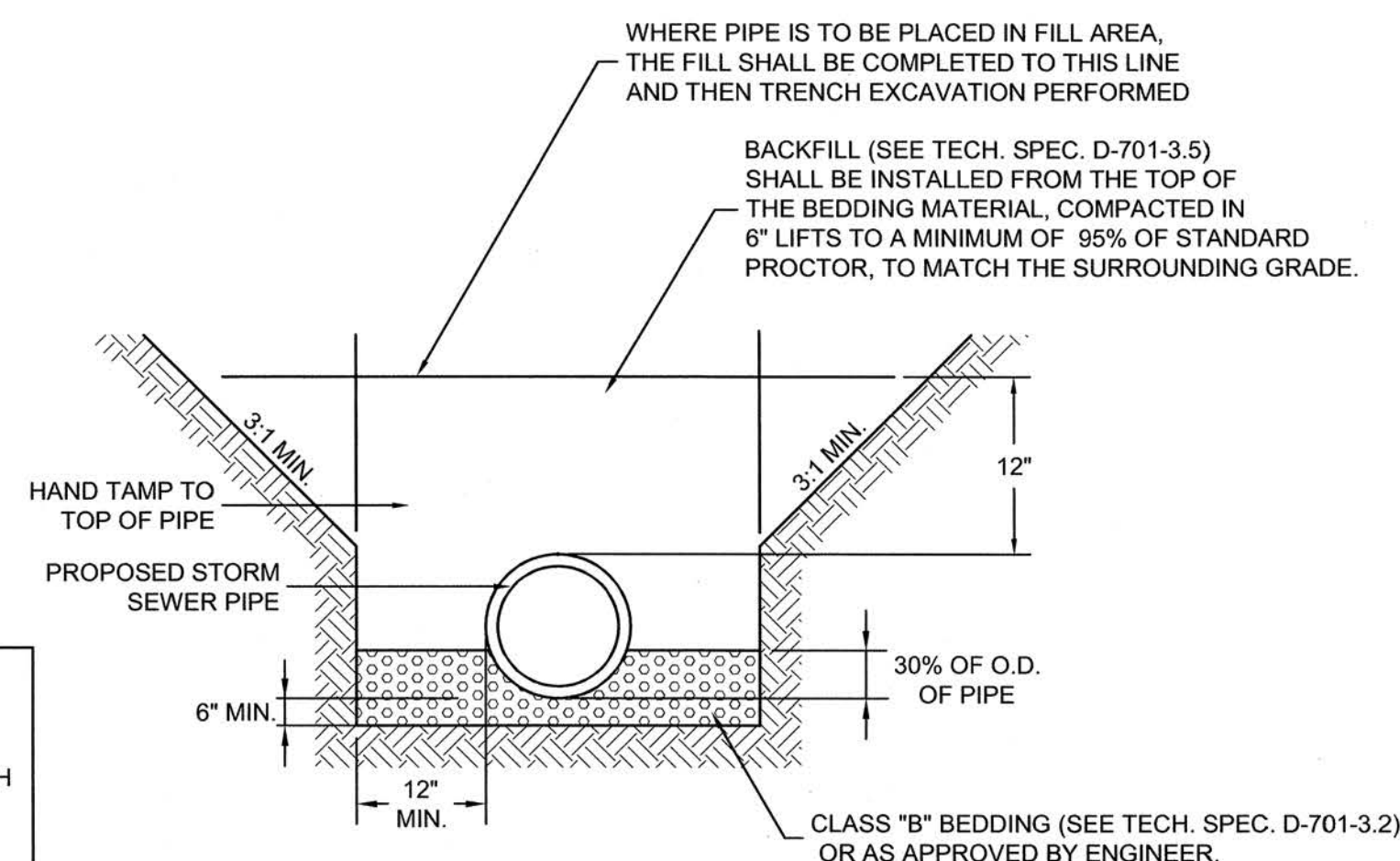


- NOTES:**
1. FRAME SHALL BE HEAVY DUTY AND DESIGNED TO SUPPORT 200,000 LB LOADING CONDITIONS.
  2. FRAMES SHALL BE BOLT ASSEMBLY.
  3. ALL CONCRETE SHALL MEET THE SPECIFICATIONS OF FAA ITEM P-610.
  4. ALL REINFORCING STEEL SHALL BE NEW, GRADE 60.
  5. RIM ELEVATIONS ARE AS SHOWN IN PLAN AND PROFILE VIEWS.
  6. ALL EXPOSED CONCRETE EDGES SHALL BE CHAMFERED 3/4"
  7. PIPE SIZES AND LOCATIONS SHOWN IN DETAIL ARE TYPICAL, CONTRACTOR SHALL REFER TO PLAN/PROFILE DESIGN SHEETS FOR ACTUAL PIPE SIZES FOR EACH GRATE INLET.
  8. GRATE INLET SHALL HAVE A MINIMUM OF 724 SQ. IN. OF OPEN AREA.
  9. SEE STORM SEWER NOTES ON SHEET 2 FOR ADDITIONAL REQUIREMENTS.

**GRATE INLET DETAIL**  
N.T.S.



**STORM SEWER TRENCH AND BACKFILL DETAIL (UNDER PROPOSED PAVEMENT)**  
N.T.S.



**STORM SEWER TRENCH AND BACKFILL DETAIL (OUTSIDE PAVED AREAS)**  
N.T.S.

- NOTES:**
1. JOINTS OF ALL CONCRETE STORM SEWER PIPES SHALL BE WRAPPED WITH FILTER FABRIC. THE FABRIC SHALL OVERLAP A MINIMUM OF 24" AROUND THE PIPE AND SHALL BE 18" WIDE.
  2. BEDDING MATERIAL SHALL BE SAND OR SELECTED SANDY SOIL, ALL OF WHICH POSSESSES A 3/8" SIEVE AND NOT MORE THAN 10% OF WHICH POSSESSES A NO. 200 SIEVE.

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**DRAINAGE DETAILS**

**SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT**  
SAN ANGELO, TEXAS

DRAWN BY: CBS  
DESIGNED BY: JWD  
LATEST REVISION: 6/29/2017  
KSA JOB NO.: SAN\_039

**KSA**  
58 Buick Street, San Angelo, Texas 76901  
T. 325-947-1535 F. 325-947-1559  
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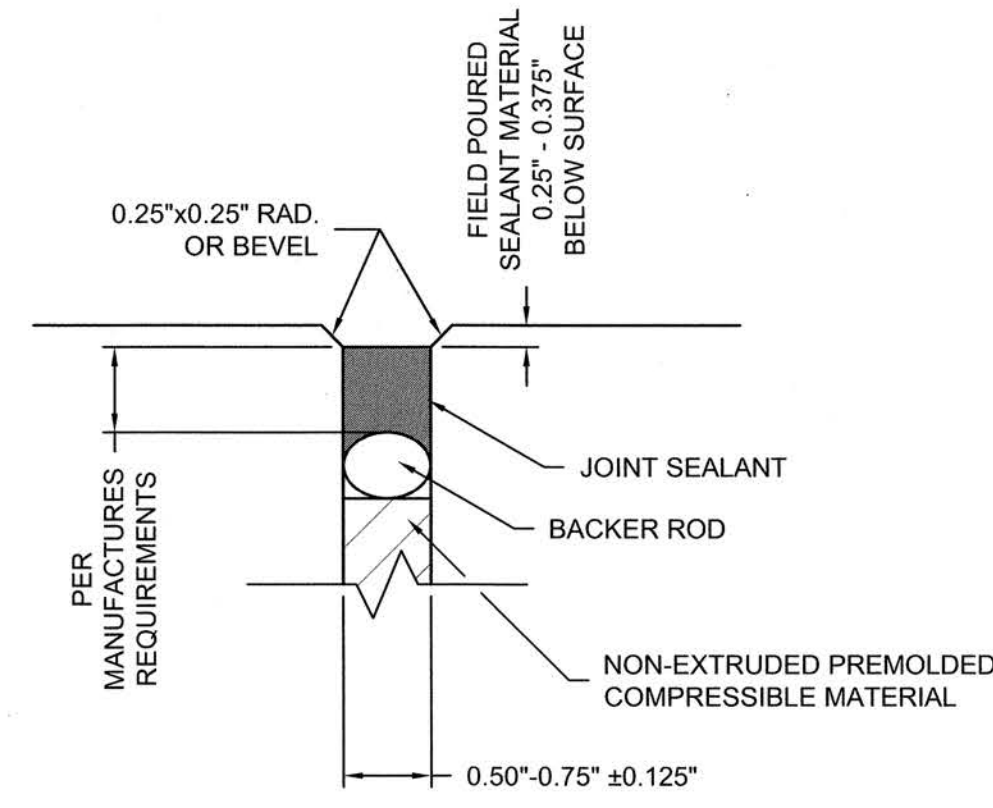
STATE OF TEXAS  
DAVID A. ALEXANDER  
96658  
LICENSED PROFESSIONAL ENGINEER

SEAL:  
TBPE Firm Registration No. F-1356  
SHEET NO.

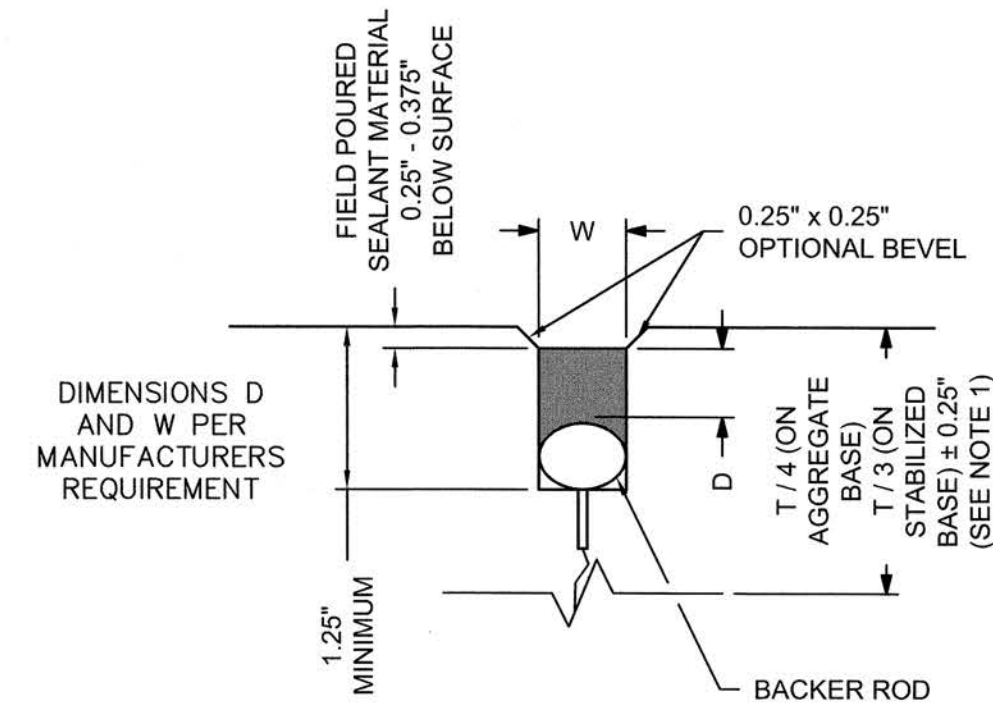
31

MARK: \_\_\_\_\_ REVISION: \_\_\_\_\_ DATE: \_\_\_\_\_  
KSA-SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT  
DRAINAGE DETAILS - PAGE 11/17/2017 - 10:31 PM  
DRAWING PATHNAME: LAYOUT\_PLOT\_DATE - TIME





DETAIL A - ISOLATION JOINT



DETAIL B - CONTRACTION JOINT (FIELD POURED)

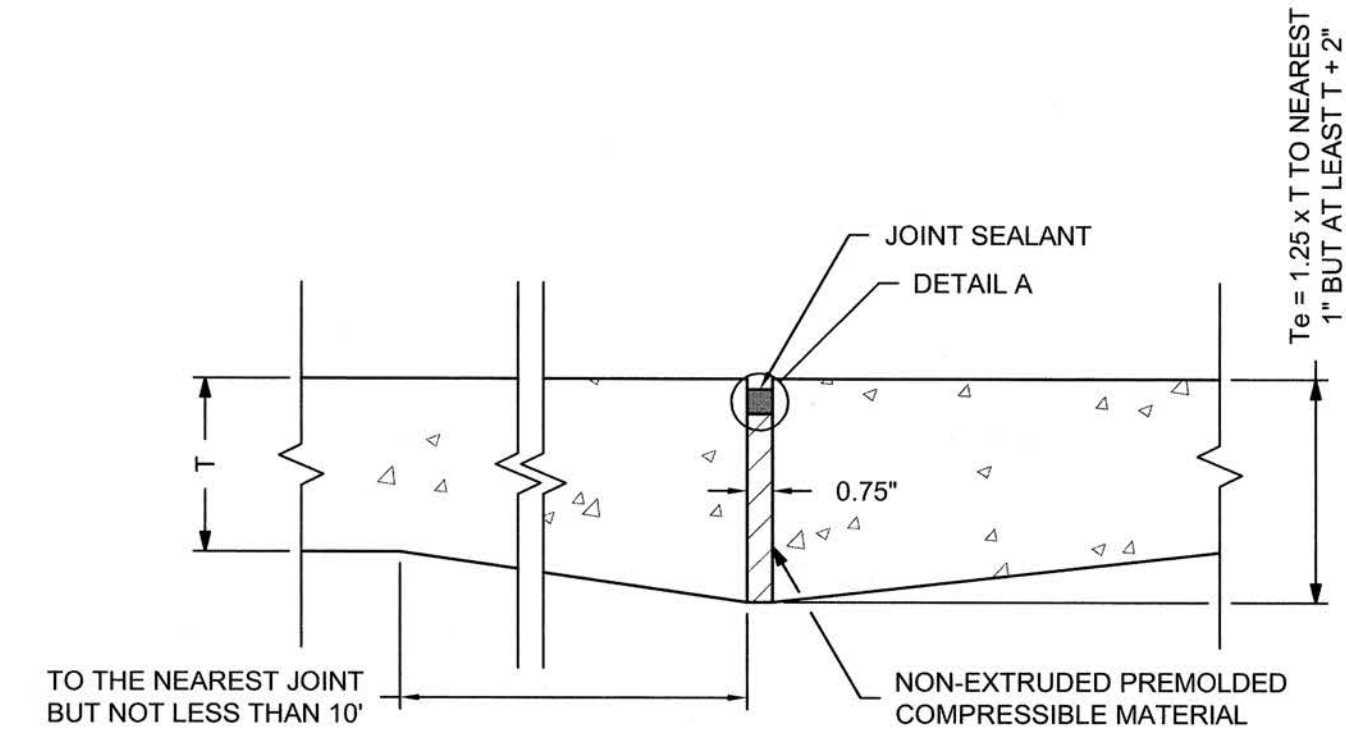
**RIGID PAVEMENT JOINT NOTES:**

- INITIAL SAW CUT T/6 TO T/5 (MINIMUM 1" WHEN USING EARLY ENTRY SAW).
- FIELD POURED SEALANT RESERVOIR SIZED TO PROVIDE PROPER SHAPE FACTOR, DEPTH (D); WIDTH (W) BASE UPON SEALANT MANUFACTURER REQUIREMENTS. TYPICALLY HOT POUR SEALANTS REQUIRE A 1:1 SHAPE FACTOR AND SILICON SEALANTS A 1:2 SHAPE FACTOR, FOR INDIVIDUAL PROJECTS REFER TO SEALANT MANUFACTURER'S RECOMMENDATIONS.
- HOLD ALL SEALANTS DOWN 3/8" ON GROOVED RW.

**RIGID PAVEMENT JOINT DETAILS**

N.T.S.

1



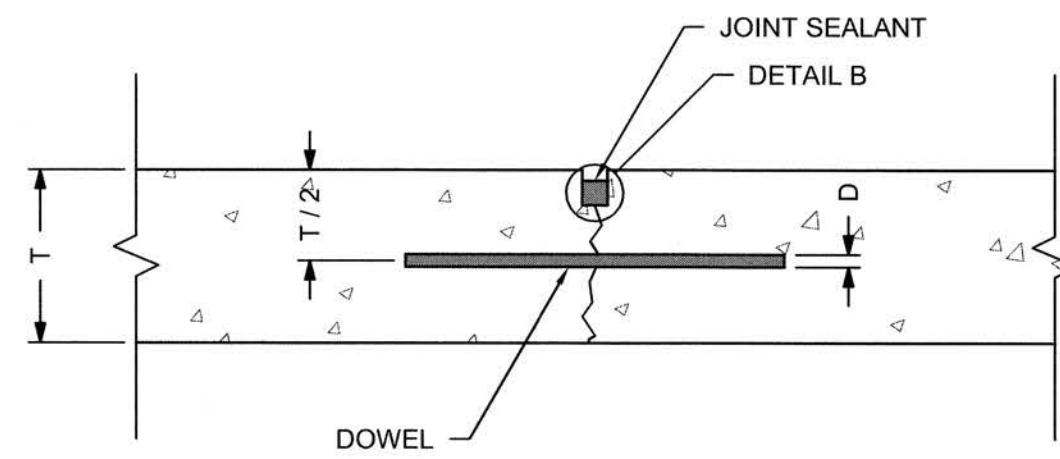
**TYPE-A EDGE ISOLATION JOINT NOTE:**

- GROOVE MUST BE FORMED BY SAWING
- SEALANT TO BE SELF LEVELING SILICONE

**TYPE-A EDGE ISOLATION JOINT DETAIL**

N.T.S.

2



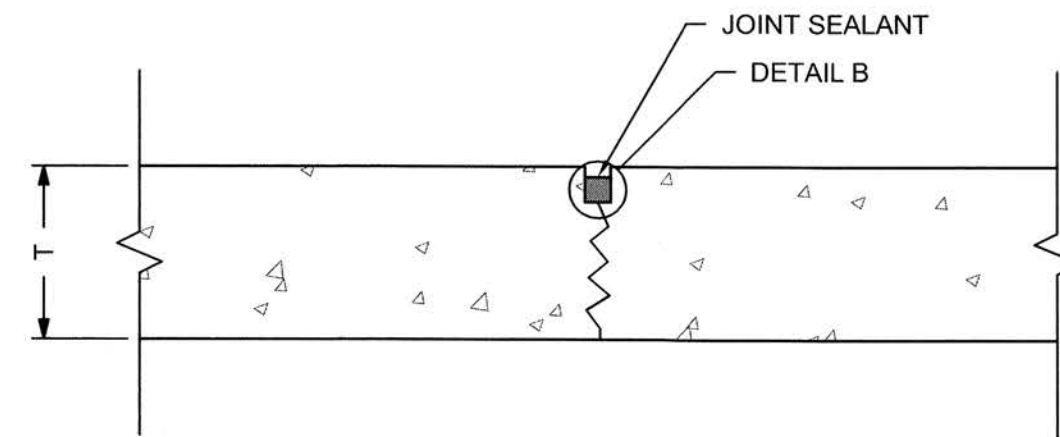
**TYPE-C DOWELED CONTRACTION JOINT NOTE:**

- GROOVE MUST BE FORMED BY SAWING
- SEALANT TO BE SELF LEVELING SILICONE

**TYPE-C DOWELED CONTRACTION JOINT DETAIL**

N.T.S.

3



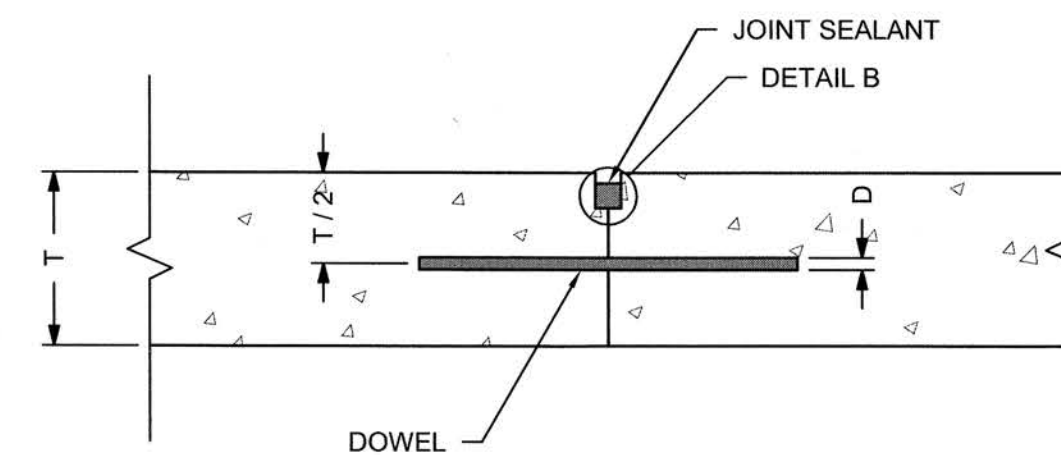
**TYPE-D DUMMY CONTRACTION JOINT NOTE:**

- GROOVE MUST BE FORMED BY SAWING
- SEALANT TO BE SELF LEVELING SILICONE

**TYPE-D DUMMY CONTRACTION JOINT DETAIL**

N.T.S.

4



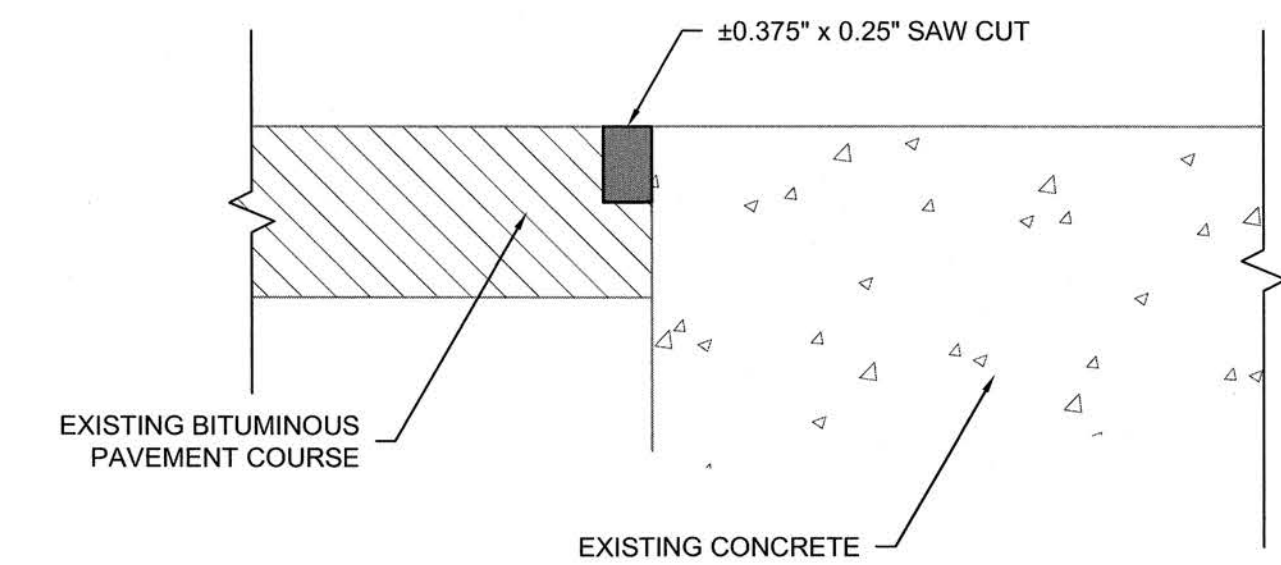
**TYPE-E DOWELED CONSTRUCTION JOINT NOTE:**

- GROOVE MUST BE FORMED BY SAWING
- SEALANT TO BE SELF LEVELING SILICONE

**TYPE-E DOWELED CONSTRUCTION JOINT DETAIL**

N.T.S.

5



**HMAC / CONCRETE JOINT SEAL NOTES:**

- ±0.375" x 0.25" SAW CUT RECESSED 0.375" BELOW SURFACE. FILL WITH ASTM D6690 (P-605) HOT APPLIED JOINT SEALER TYP. ALL EDGES OF BITUMINOUS SURFACE COURSE AND CONCRETE. RECESS SEALANT 0.25" BELOW SURFACE.
- HMAC / CONCRETE JOINT SEAL SHALL BE PAID FOR PER GALLON OF SEALANT. PAYMENT SHALL INCLUDE ALL LABOR AND MATERIALS TO SEAL JOINT.

**HMAC / CONCRETE JOINT SEAL DETAIL**

N.T.S.

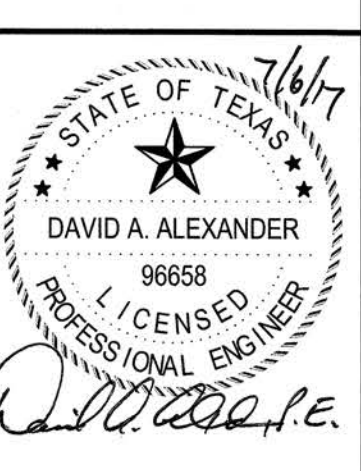
6

DATE	
REVISION	
MARK	

**JOINT DETAILS**

SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT  
SAN ANGELO, TEXAS

DRAWN BY:	CBS
DESIGNED BY:	JWD
LATEST REVISION:	6/29/2017
KSA JOB NO.:	SAN 059



SEAL: TBPE Firm Registration No. F-1356 SHEET NO.

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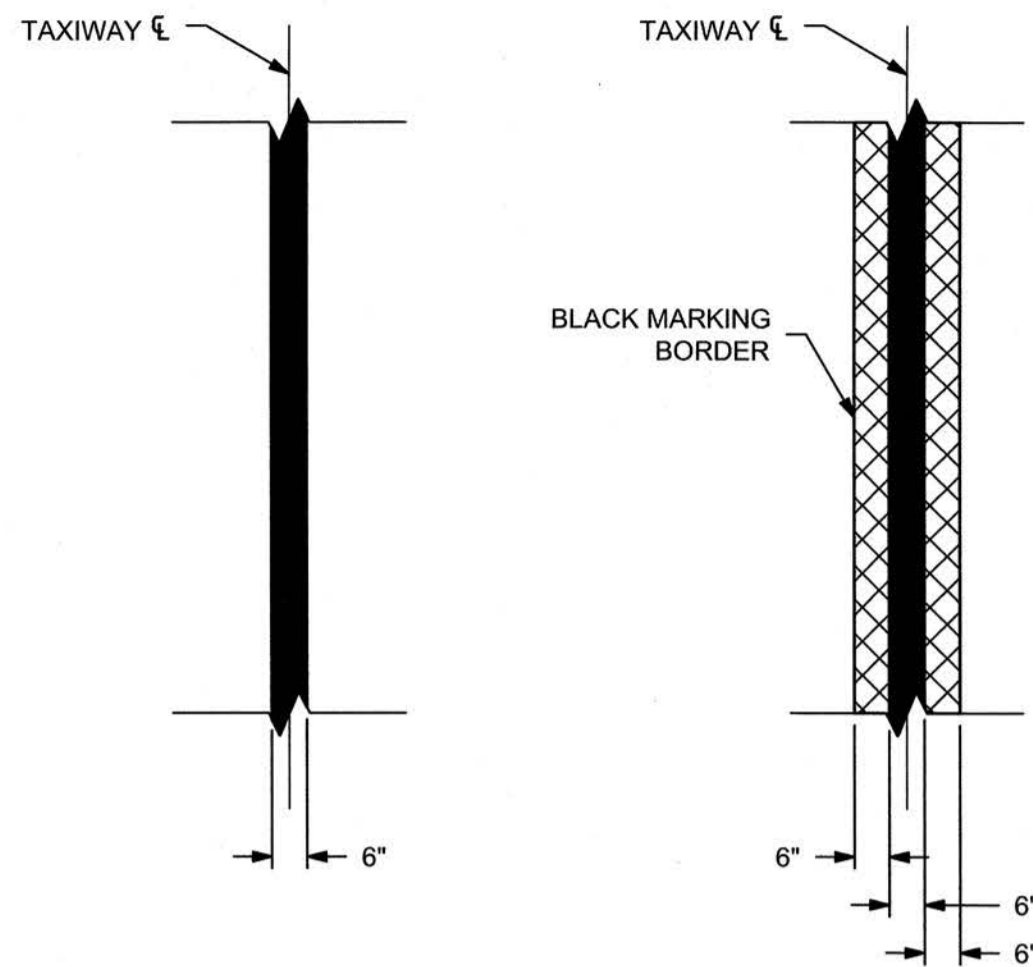
**PAVEMENT MARKING GENERAL NOTES:**

1. ALL RUNWAY STRIPING, INCLUDING RUNWAY DESIGNATION, CENTERLINE, AIMING POINT, TOUCHDOWN ZONE, AND THRESHOLD BARS, SHALL BE WHITE RETROREFLECTIVE PAINT AS PER SPECIFICATIONS.
2. ALL TAXIWAY STRIPING, INCLUDING HOLD POSITION MARKINGS AND TAXIWAY CENTERLINE, SHALL BE YELLOW RETROREFLECTIVE PAINT AS PER SPECIFICATIONS.
3. PAINT SHALL CONFORM TO FEDERAL SPECIFICATIONS TT-P-1952 (WATER BASED) AND SHALL BE APPLIED AT THE RATE OF 105 TO 115 SQUARE FEET PER GALLON.
4. REFLECTIVE MEDIA SHALL BE HIGH INDEX OF REFRACTION GLASS SPHERES CONFORMING TO FEDERAL SPECIFICATIONS TT-B-1325, TYPE I, GRADE A AND SHALL BE APPLIED AT THE RATE OF 12 POUNDS PER GALLON OF PAINT MINIMUM.
5. HOLD ALL DIMENSIONS FOR STRIPING FROM THE CENTERLINE OF RUNWAY OR TAXIWAY (AS APPLICABLE).

1

**PAVEMENT MARKING NOTES**

N.T.S.



**TAXIWAY CENTERLINE WITHOUT BLACK BORDER**

**TAXIWAY CENTERLINE WITH BLACK BORDER**

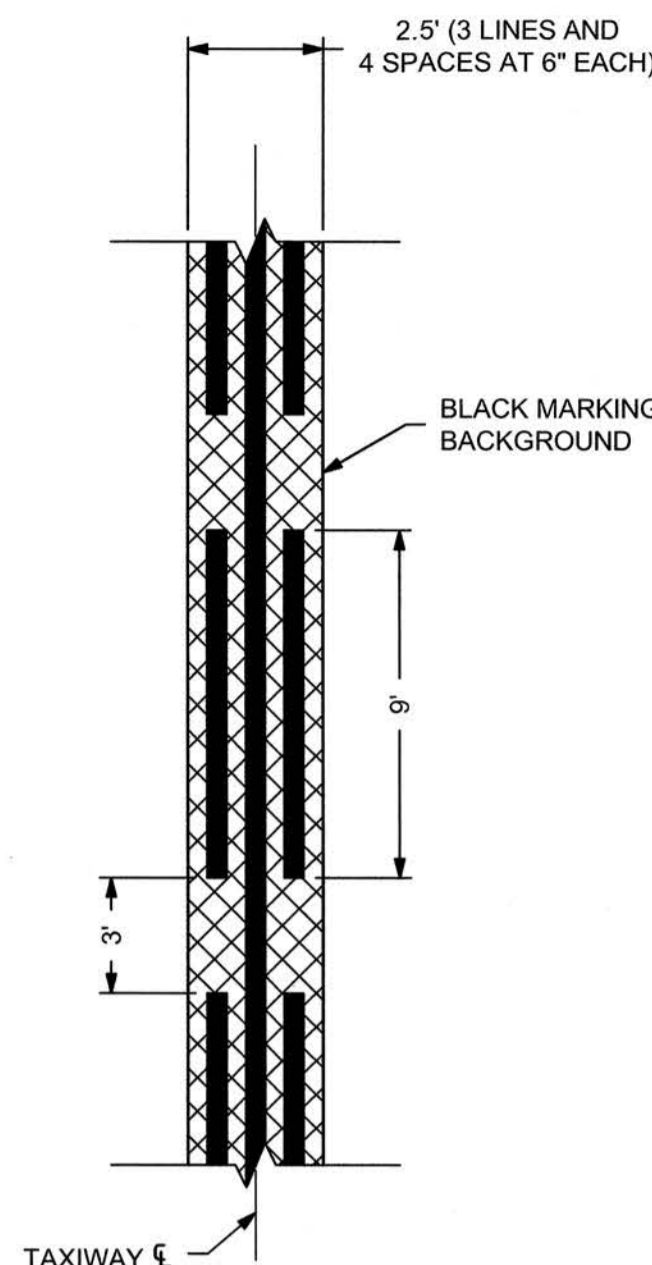
**TAXIWAY CENTERLINE MARKING NOTES:**

1. TAXIWAY CENTERLINE MARKINGS SHALL BE YELLOW AND 6" WIDE.
2. SEE PAVEMENT MARKINGS GENERAL NOTES FOR PAINT REQUIREMENTS.

2

**TAXIWAY CENTERLINE MARKING DETAIL**

N.T.S.



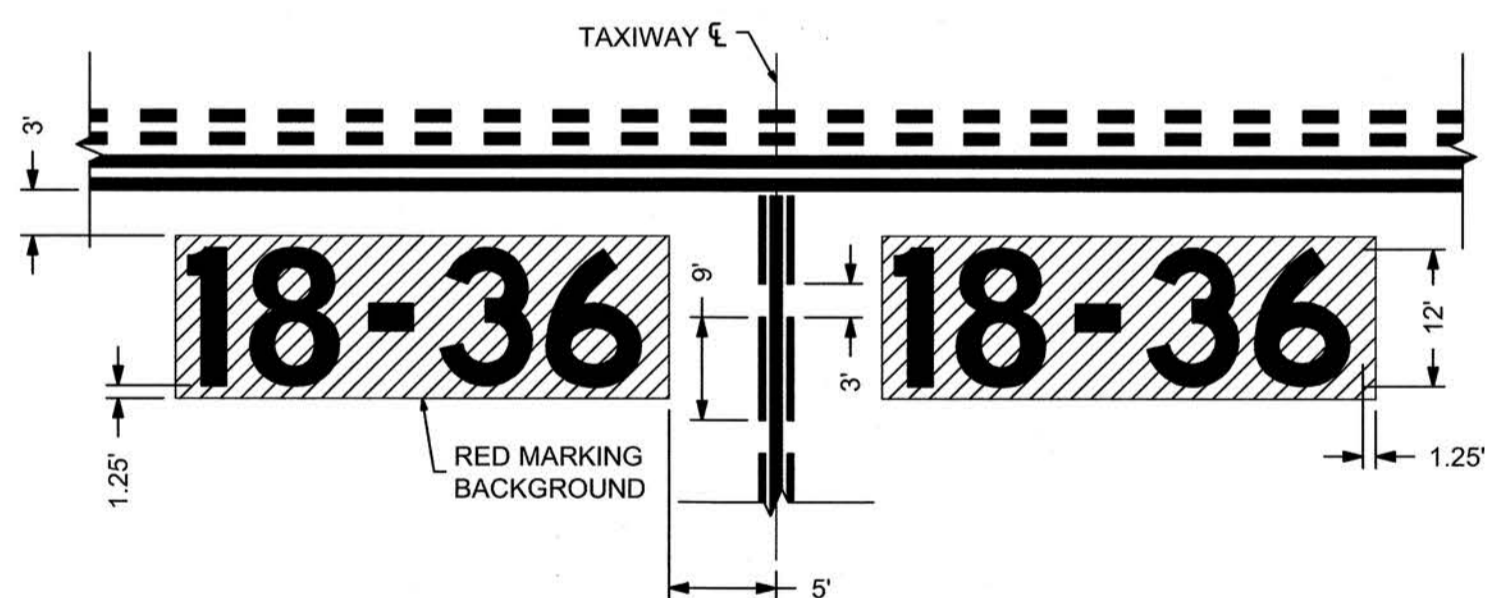
**ENHANCED TAXIWAY CENTERLINE MARKING NOTES:**

1. ENHANCED TAXIWAY CENTERLINE MARKINGS SHALL BE YELLOW WITH SOLID MIDDLE STRIPE AND 9' LONG, 6" WIDE DASHED LINES WITH 4" GAPS ON EITHER SIDE.
2. SEE PAVEMENT MARKINGS GENERAL NOTES FOR PAINT REQUIREMENTS.

3

**ENHANCED TAXIWAY CENTERLINE MARKING DETAIL**

N.T.S.



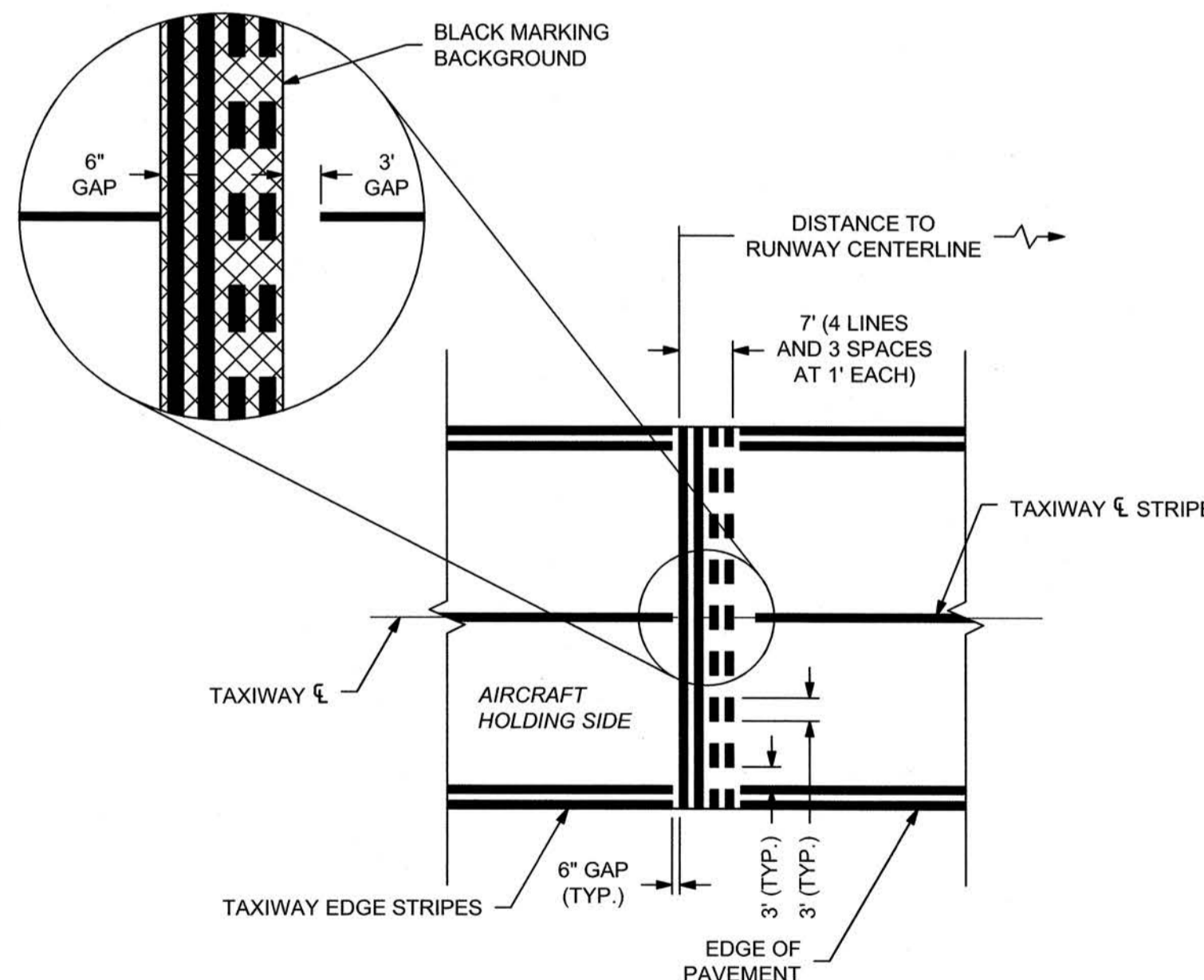
**SURFACE PAINTED HOLDING POSITION SIGNS FOR TAXIWAYS ≥ 35' MARKING NOTES:**

1. INSCRIPTIONS FOR SURFACE PAINTED HOLDING POSITION SIGNS FOR TAXIWAYS ≥ 35' MARKINGS SHALL BE WHITE WITH RED BACKGROUND.
2. ENHANCED TAXIWAY CENTERLINE AND HOLD POSITION BAR MARKINGS SHALL BE YELLOW. SEE MARKING DETAILS.
3. SEE PAVEMENT MARKINGS GENERAL NOTES FOR PAINT REQUIREMENTS.

4

**SURFACE PAINTED HOLDING POSITION SIGNS FOR TAXIWAYS ≥ 35' MARKING DETAIL**

N.T.S.



**RUNWAY HOLDING POSITION MARKING NOTES:**

1. RUNWAY HOLDING POSITION MARKING SHALL BE YELLOW, 3' LONG, 1' WIDE WITH 3" GAPS ON RUNWAY SIDE AND TWO SOLID, 1' WIDE STRIPES ON AIRCRAFT HOLDING SIDE.
2. TAXIWAY EDGE AND CENTERLINE MARKINGS SHALL BE YELLOW. SEE MARKING DETAILS.
3. SEE PAVEMENT MARKINGS GENERAL NOTES FOR PAINT REQUIREMENTS.

5

**RUNWAY HOLDING POSITION MARKING DETAIL**

N.T.S.

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REVISION	
MARK	

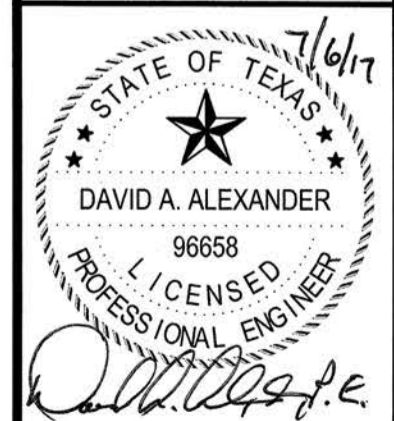
**MARKING DETAILS  
PAGE 1**

**SAN ANGELO REGIONAL  
AIRPORT TAXIWAY  
RECONFIGURATION PROJECT  
SAN ANGELO, TEXAS**

DRAWN BY:	CBS
DESIGNED BY:	JWD
LATEST REVISION:	6/29/2017
KSA JOB NO.:	SAN 059



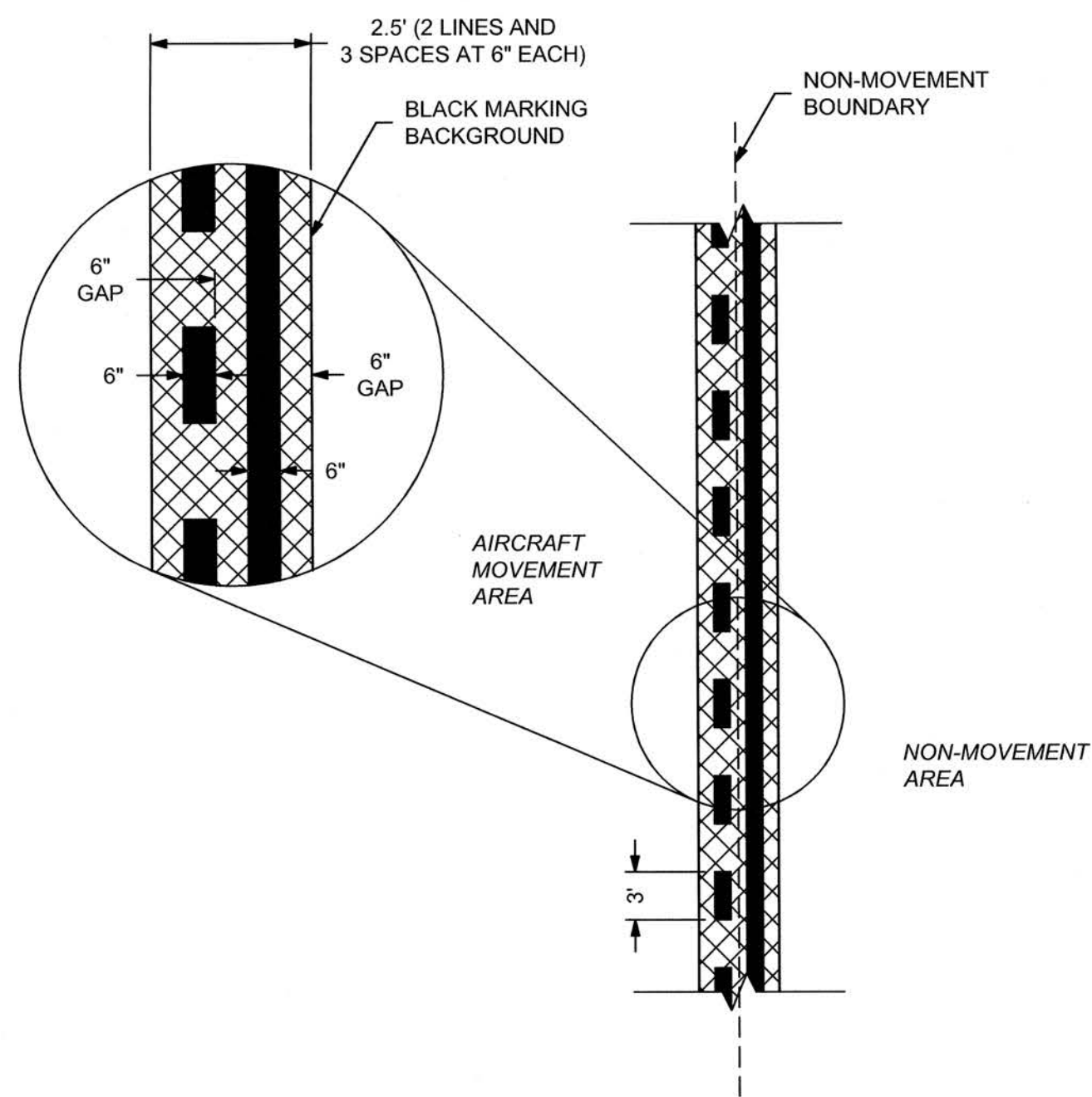
58 Buick Street, San Angelo, Texas 76901  
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33

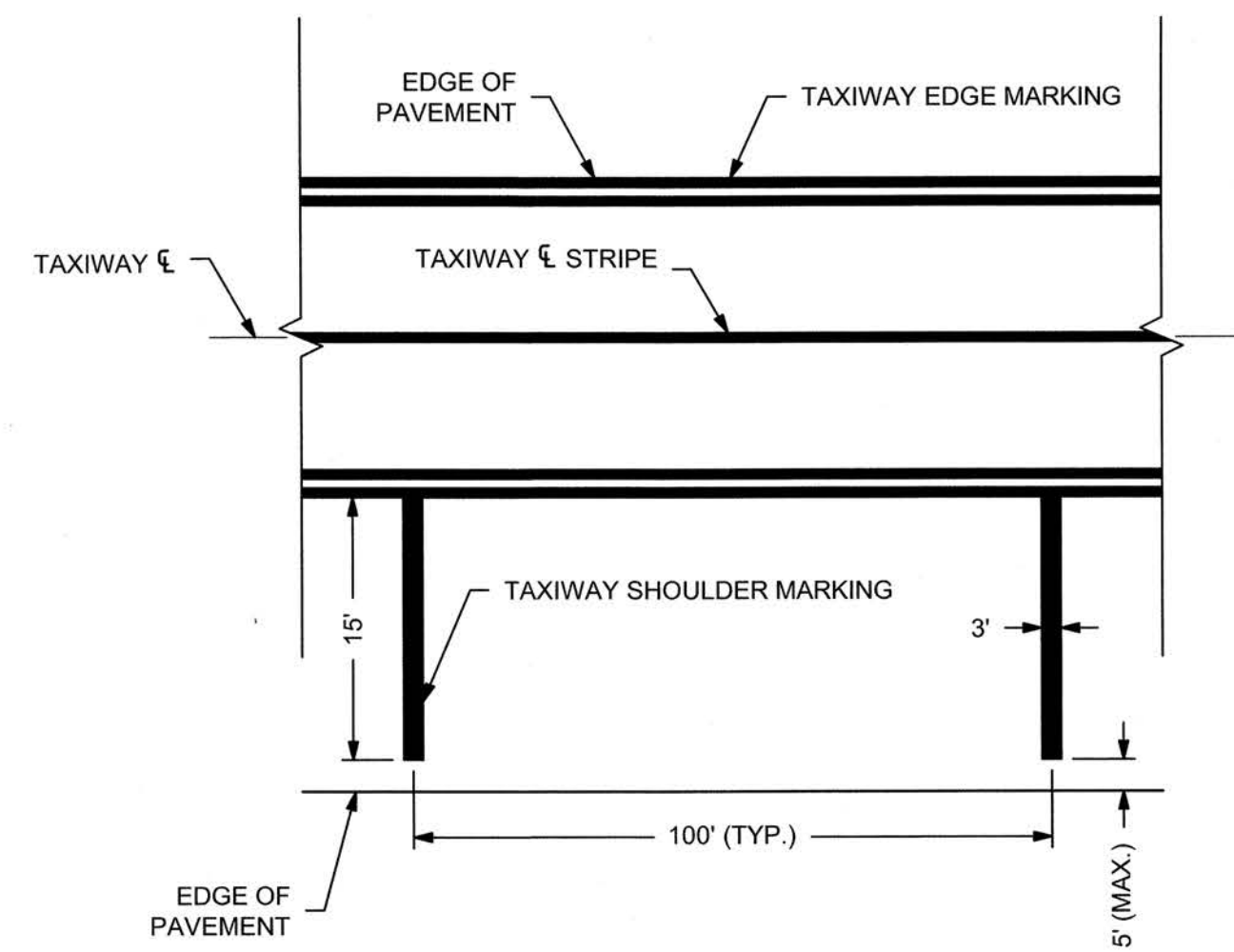




**NON-MOVEMENT AREA MARKING NOTES:**

1. NON-MOVEMENT AREA MARKING SHALL BE YELLOW DASHED, 3' LONG AND 6" WIDE, ON AIRCRAFT MOVEMENT SIDE AND CONTINUOUS 6" WIDE STRIPE ON NON-MOVEMENT SIDE.
2. SEE PAVEMENT MARKINGS GENERAL NOTES FOR PAINT REQUIREMENTS.

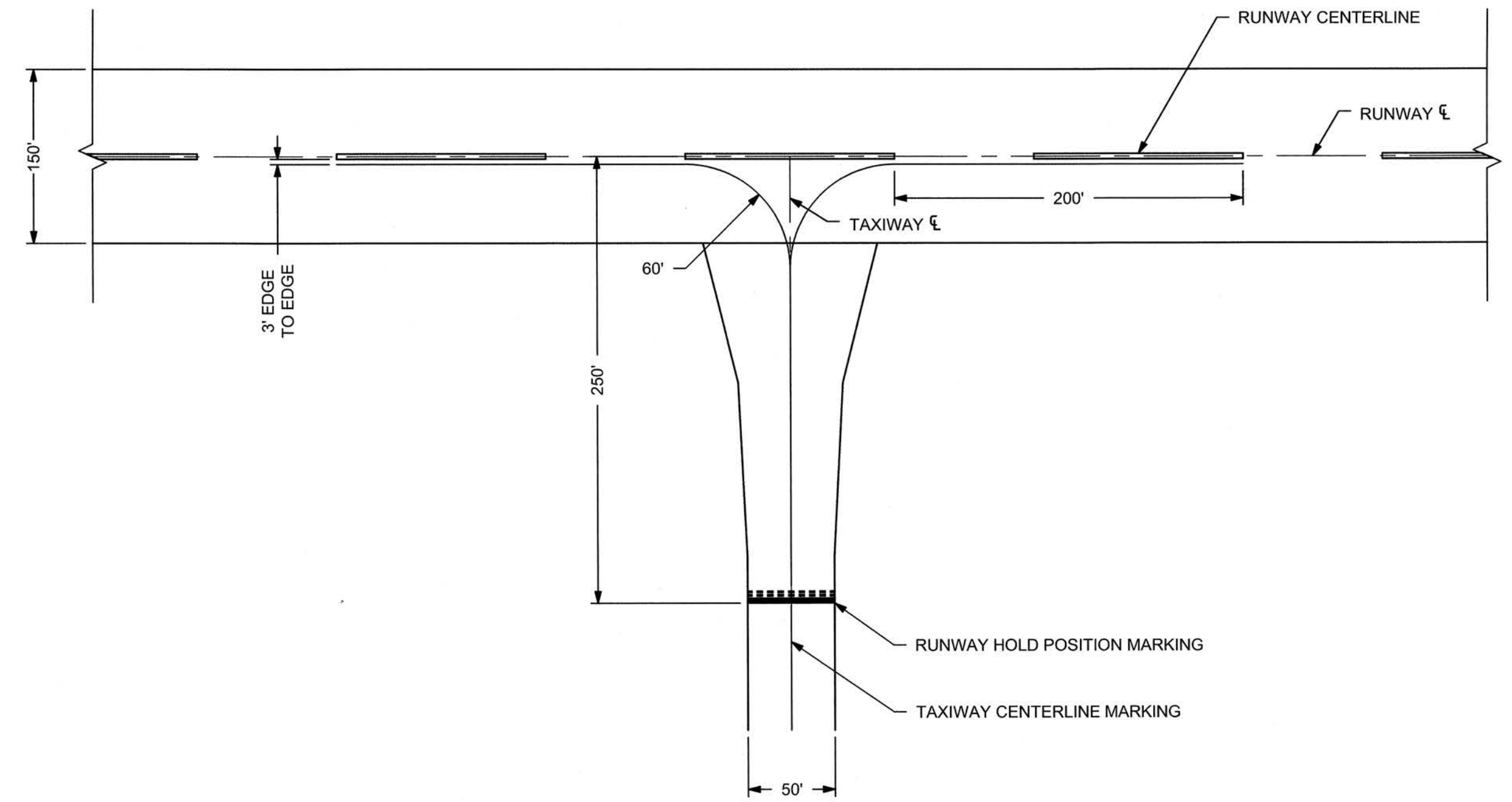
**7** **NON-MOVEMENT AREA MARKING DETAIL**  
N.T.S.



**TAXIWAY SHOULDER MARKING NOTES:**

1. TAXIWAY SHOULDER MARKINGS SHALL BE YELLOW, 3' WIDE AND EXTEND TO 5' OF EDGE OF PAVEMENT OR 25' IN LENGTH, WHICHEVER IS LESS.
2. TAXIWAY CENTERLINE AND EDGE MARKINGS SHALL BE YELLOW AND 6" WIDE. SEE MARKING DETAILS.
3. SEE PAVEMENT MARKINGS GENERAL NOTES FOR PAINT REQUIREMENTS.

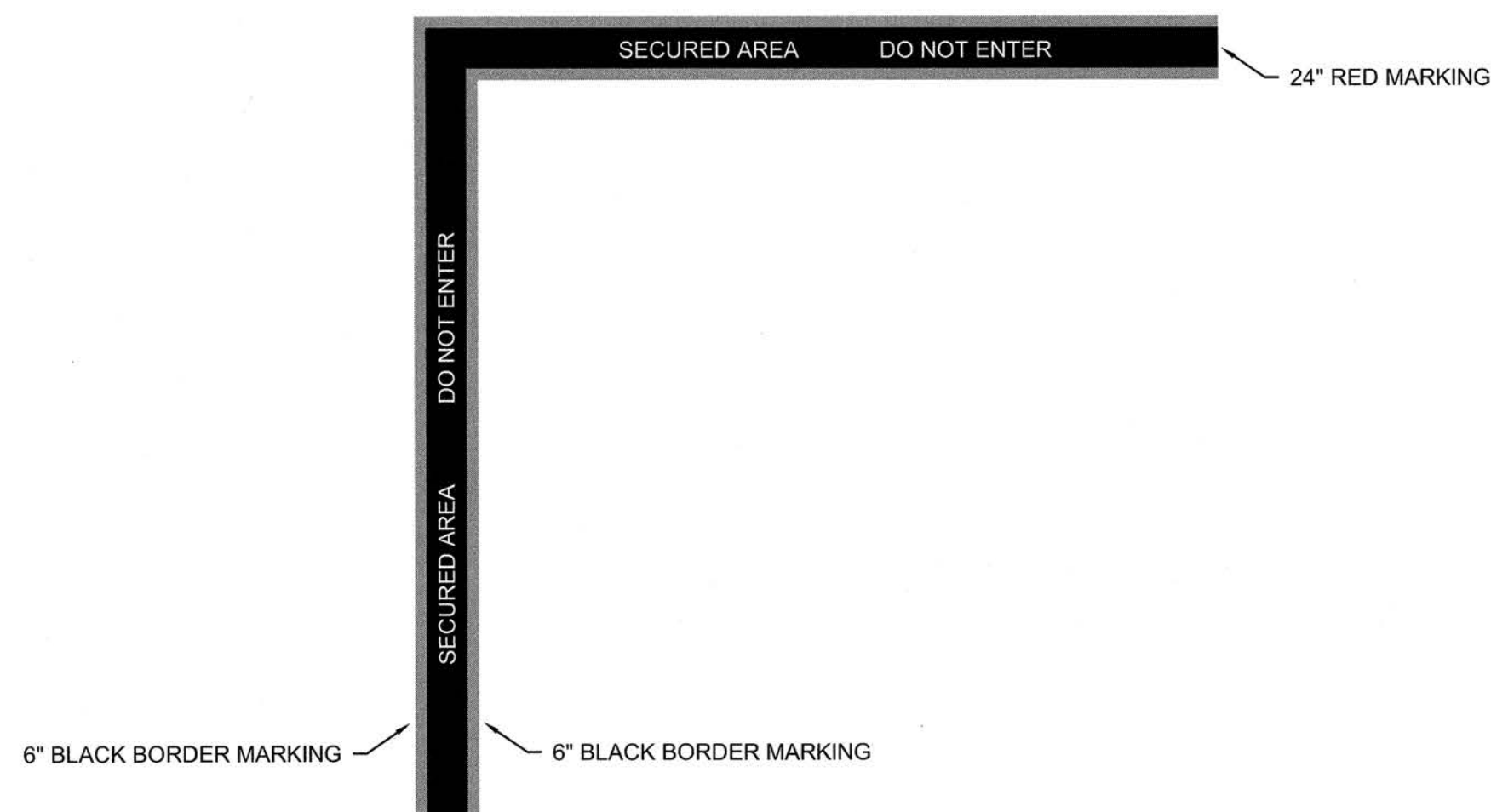
**8** **TAXIWAY SHOULDER MARKING DETAIL**  
N.T.S.



**RUNWAY / TAXIWAY INTERSECTION MARKING NOTES:**

1. ALL TAXIWAY MARKINGS SHALL BE YELLOW.
2. TAXIWAY CENTERLINE MARKING OFFSET 3' FROM OUTBOARD EDGE OF RUNWAY CENTERLINE MARKING TO INBOARD EDGE OF TAXIWAY CENTERLINE MARKING.
3. RUNWAY CENTERLINE AND EDGE MARKINGS SHALL BE WHITE.
4. SEE PAVEMENT MARKINGS GENERAL NOTES FOR PAINT REQUIREMENTS.

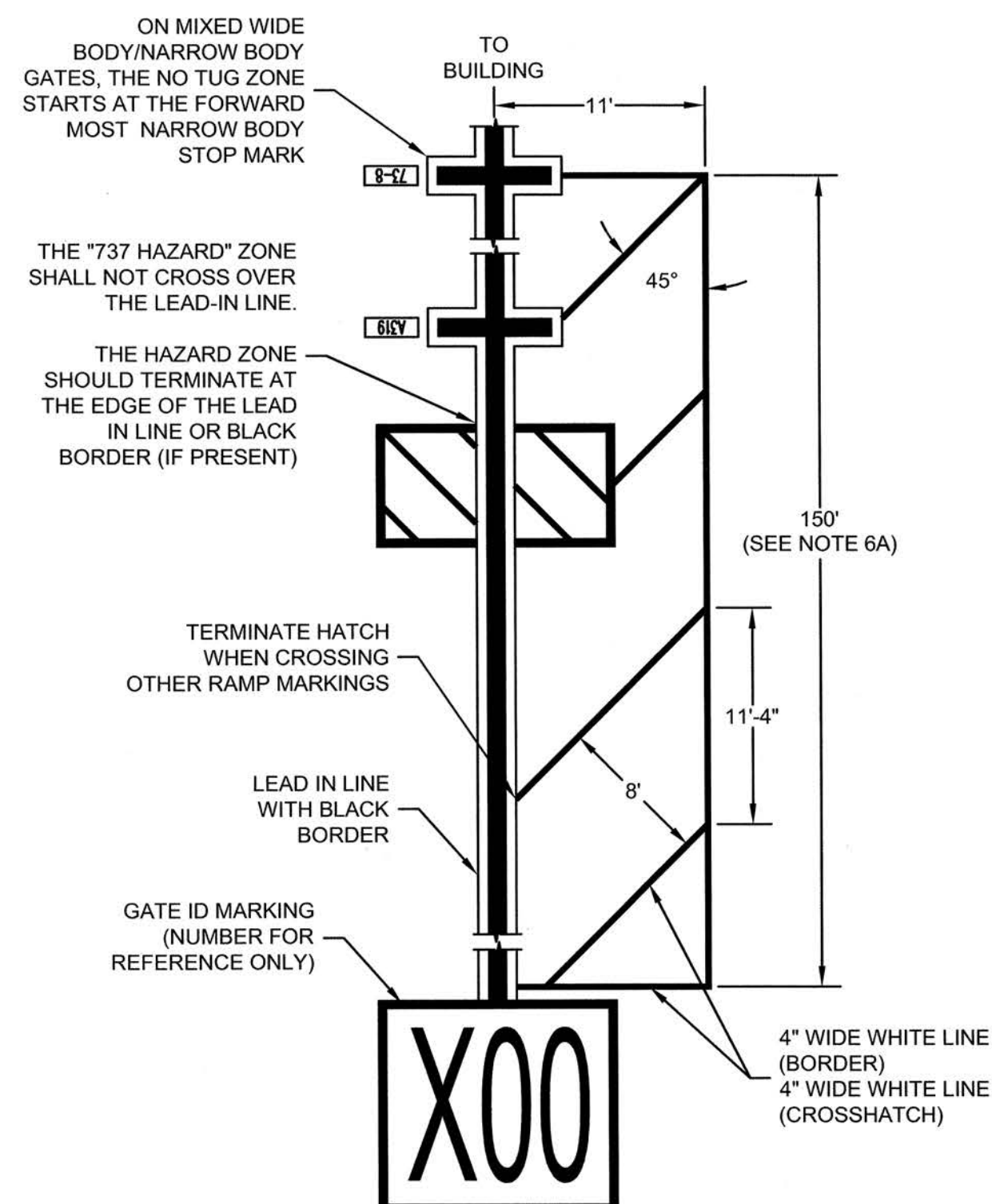
**9** **RUNWAY / TAXIWAY INTERSECTION MARKING DETAIL**  
N.T.S.



**SECURE AREA/SIDA MARKING NOTES:**

1. THE SECURE AREA/SIDA LINE MARKING IS RED AND 24" WIDE WITH A 6" BLACK BORDER ON BOTH SIDES.
2. SEE PAVEMENT MARKINGS GENERAL NOTES FOR PAINT REQUIREMENTS.

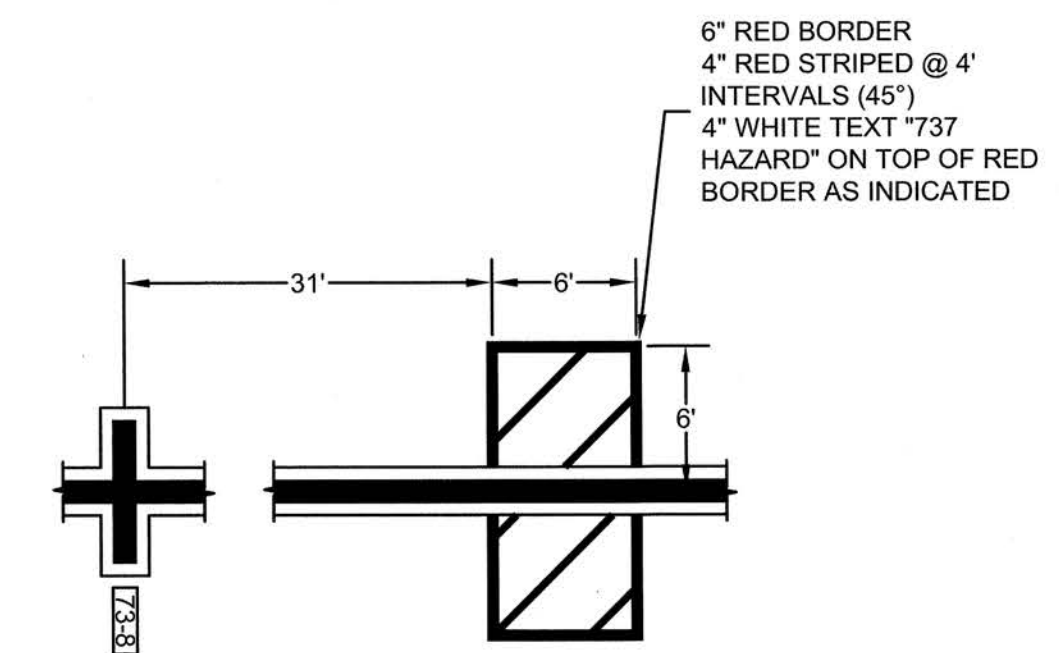
**10** **SECURE AREA/SIDA DETAIL**  
N.T.S.



**NOTES:**

- 6A. IN LOCATIONS WHERE THE LEAD IN LINE IS SHORTER THAN 150', THE NO TUG/BAG CART ZONE SHALL TERMINATE AT THE GATE ID MARKING.

**11** **NO TUG/BAG CART ZONE**  
N.T.S.



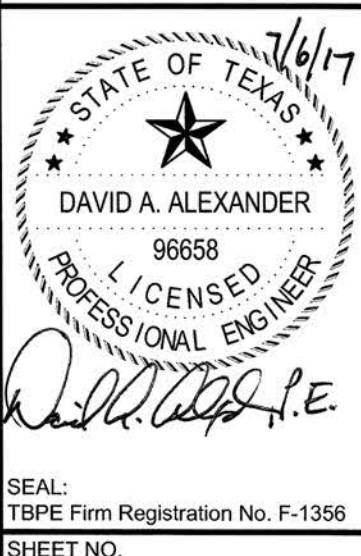
**12** **73-8 RAM AIR VENT HAZARD ZONE**  
N.T.S.

DATE	REVISION	MARK

**MARKING DETAILS**  
**PAGE 2**

**SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT**  
SAN ANGELO, TEXAS

DRAWN BY:	DESIGNED BY:	LATEST REVISION:	KSA JOB NO.:
CBS	JMD	6/29/2017	SAN 1059

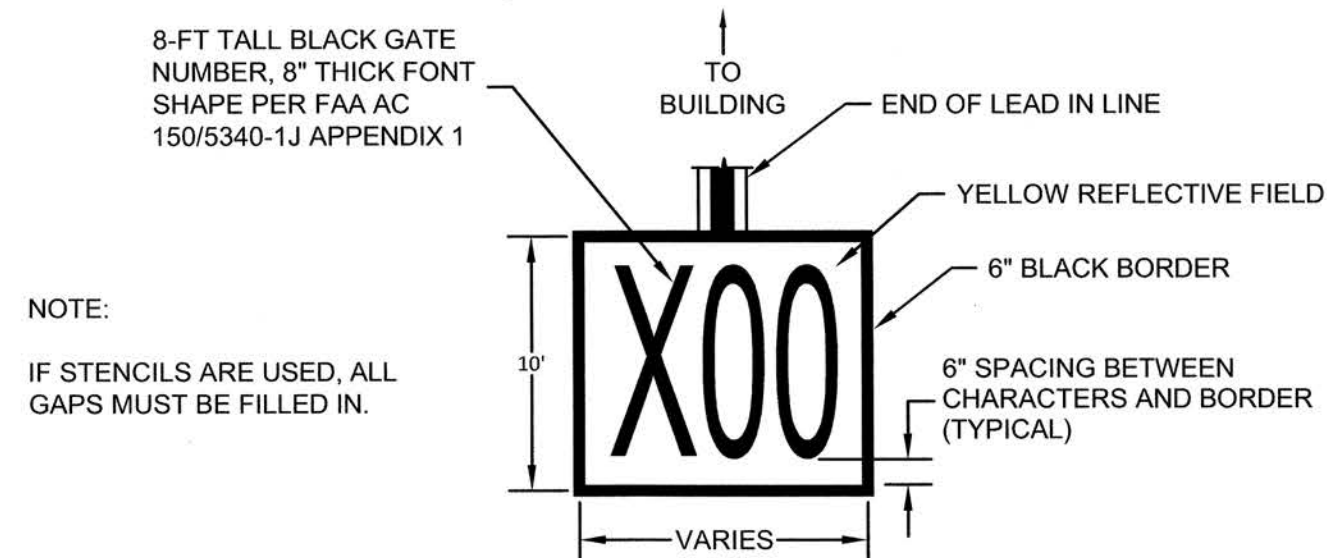


SEAL: TBPE Firm Registration No. F-1356  
SHEET NO. **34**



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**END OF LINE GATE ID**  
N.T.S.

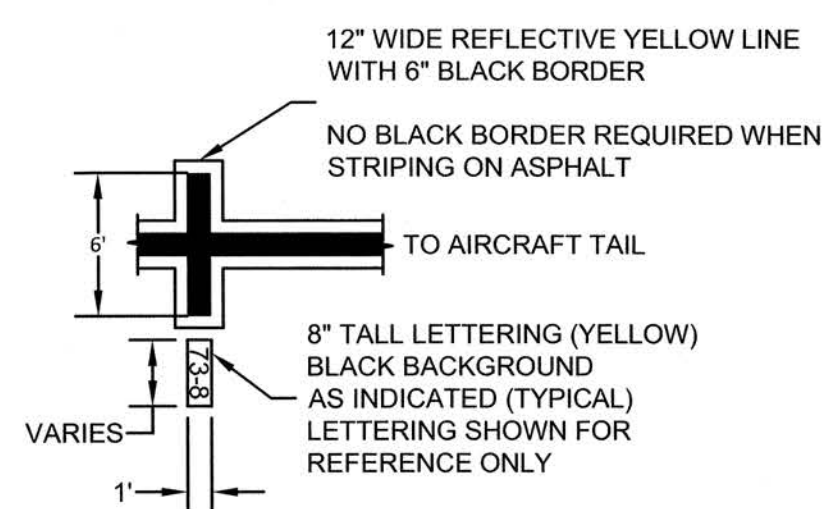


14

**STOP MARK AND STOP MARK LABEL (TYP.)**  
N.T.S.

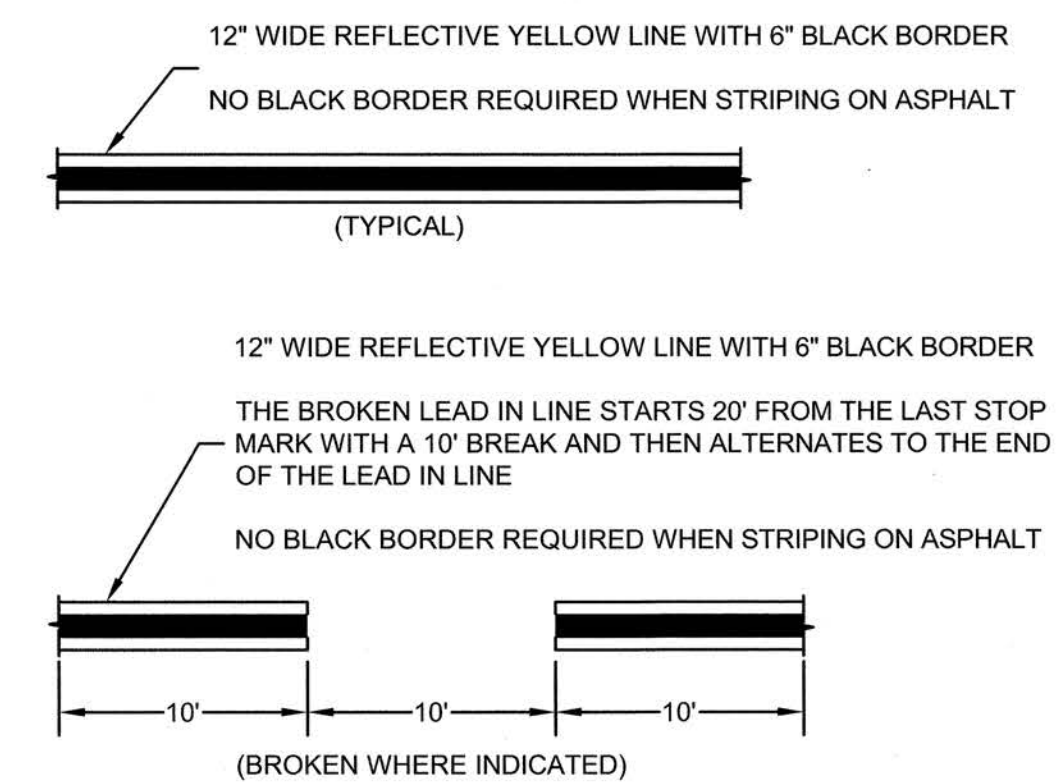
**AA STOP MARK LABELS**

- DASH8-100
- DASH8-300
- ERJ
- CR2
- CR7
- CR9
- E175
- E190
- MD80
- A319
- 73-8
- A320
- A321
- 75-2
- 76-3
- A332
- A333
- 77-2
- 77-3
- 78-8
- 78-9
- A359



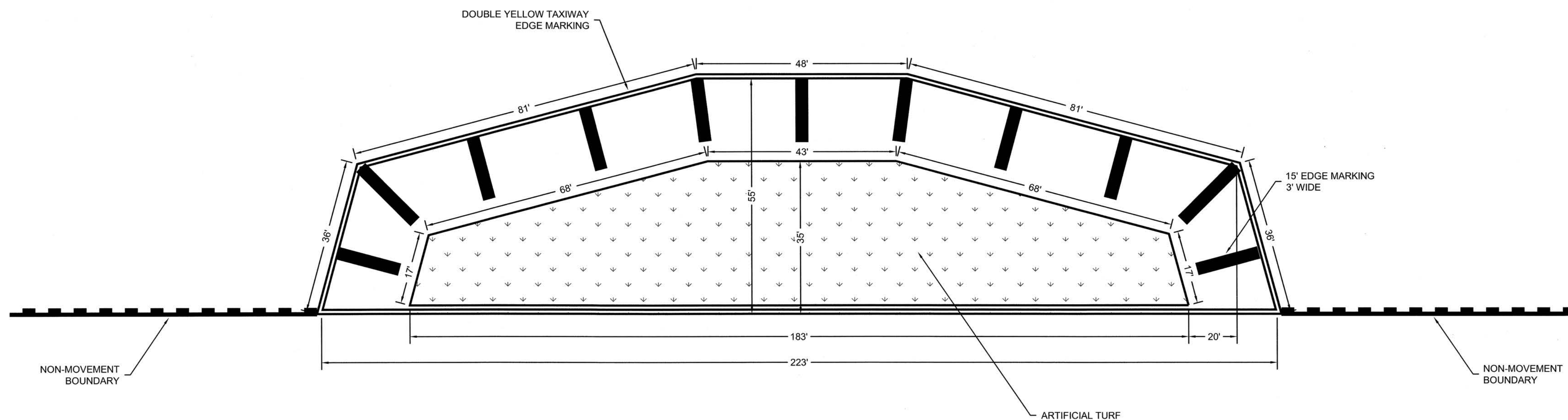
15

**LEAD IN LINE**  
N.T.S.



16

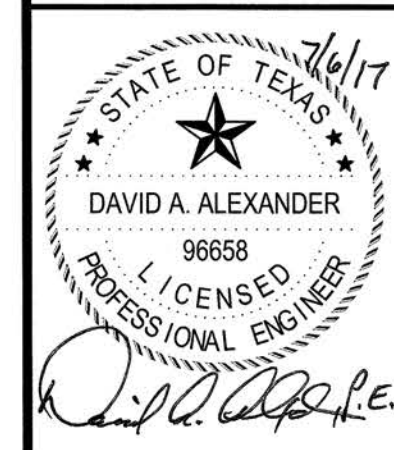
**APRON ISLAND DETAIL**  
N.T.S.



MARKING DETAILS  
PAGE 3

SAN ANGELO REGIONAL  
AIRPORT TAXIWAY  
RECONFIGURATION PROJECT  
SAN ANGELO, TEXAS

DRAWN BY: CBS  
DESIGNED BY: JWD  
LATEST REVISION: 6/29/2017  
KSA JOB NO.: SAN 059



SEAL: TBPE Firm Registration No. F-1356 SHEET NO.

35

MARK	REVISION	DATE

USA SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT SHEETS MARKING DETAILS DWG 3 | 7/6/2017 9:18 PM  
DRAWING PATHNAME | LAYOUT | PLOT DATE - TIME



**SITE DESCRIPTION**

PROJECT LIMITS:

SAN ANGELO REGIONAL AIRPORT – MATHIS FIELD

PROJECT DESCRIPTION:

REMOVE THE EXISTING TAXIWAYS ECHO AND CHARLIE AND REPLACE WITH RIGHT ANGLED TAXIWAYS. CONSTRUCT APRON ISLANDS, REPAIR APRON EDGE AND REMARK THE TERMINAL APRON.

TOTAL PROJECT AREA: 1365 AC. ±

TOTAL AREA TO BE DISTURBED: 60 AC. ±

WEIGHTED RUNOFF COEFFICIENT

(AFTER CONSTRUCTION): 0.52

EXISTING CONDITION OF SOIL & VEGETATIVE COVER AND % OF EXISTING VEGETATIVE COVER:

SOIL RANGES FROM NON-PLASTIC SILTY SANDS TO MEDIUM-PLASTICITY CLAYS COVERED WITH NATIVE GRASSES, WEEDS, AND TREES. APPROXIMATE PERCENTAGE OF EXISTING COVER 65%.

NAME OF RECEIVING WATERS:

LAKE NASWORTHY

**EROSION AND SEDIMENT CONTROLS**

**SOIL STABILIZATION PRACTICES:**

- TEMPORARY SEEDING (ONLY IF NECESSARY DUE TO SEASON)
- PERMANENT PLANTING, SODDING, OR SEEDING
- MULCHING
- SOIL RETENTION BLANKET
- BUFFER ZONES
- PRESERVATION OF NATURAL RESOURCES

OTHER:

**STRUCTURAL PRACTICES:**

- SILT FENCES
- HAY BALES
- ROCK FILTER DAMS
- ROCK BERMS
- DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
- DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
- DIVERSION DIKE AND SWALE COMBINATIONS
- PIPE SLOPE DRAINS
- PAVED FLUMES
- ROCK BEDDING AND CONSTRUCTION EXIT
- TIMBER MATTING AT CONSTRUCTION EXIT
- CHANNEL LINERS
- SEDIMENT TRAPS
- SEDIMENT BASINS
- STORM INLET SEDIMENT TRAP
- STONE OUTLET STRUCTURES
- CURBS AND GUTTERS
- STORM SEWERS
- VELOCITY CONTROL DEVICES

OTHER:

**NARRATIVE - SEQUENCE OF CONSTRUCTION (STORM WATER MANAGEMENT) ACTIVITIES:**

EROSION AND SEDIMENT CONTROLS WILL BE INSTALLED PRIOR TO THE BEGINNING OF CONSTRUCTION AND WILL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION PERIOD. ONCE INSTALLED, THESE DEVICES WILL BE MAINTAINED DURING THE DURATION OF THE PROJECT. EROSION AND SEDIMENT CONTROLS WILL BE REMOVED WHEN DIRECTED BY THE ENGINEER.

**STORM WATER MANAGEMENT:**

EXISTING AND PROPOSED DITCHES AND STORM SEWER WILL BE USED TO REMOVE WATER FROM THE SITE.

**OTHER EROSION AND SEDIMENT CONTROLS:**

**MAINTENANCE:**

EROSION AND SEDIMENT CONTROLS WILL BE CHECKED BY THE RESIDENT PROJECT REPRESENTATIVE ON A REGULAR BASIS AND MAINTAINED BY THE CONTRACTOR. CONTRACTOR WILL CHECK CONTROLS DAILY AND AFTER EACH RAINFALL.

**INSPECTION:**

INSPECTION OF ALL EROSION AND SEDIMENT CONTROLS WILL BE PERFORMED EVERY 7 DAYS (MINIMUM), AND AFTER EACH 0.5 INCH RAIN, BY THE CONTRACTOR AND RESIDENT PROJECT REPRESENTATIVE. INSPECTION REPORTS SHALL BE CREATED BY THE CONTRACTOR AND THE RESIDENT PROJECT REPRESENTATIVE AND DEFICIENCIES NOTED AND CORRECTED PER GENERAL PERMIT TXR0150000.

**WASTE MATERIALS:**

ALL COLLECTED WASTE MATERIALS WILL BE STORED IN CONTAINERS FOR LEGAL DISPOSAL BY THE CONTRACTOR.

**HAZARDOUS WASTE (INCLUDING SPILL REPORTING):**

POTENTIAL HAZARDOUS WASTES INCLUDE FUEL, PAINTS, ACIDS, SOLVENTS, ASPHALTS, AND OTHER ITEMS NEEDED FOR CONSTRUCTION. ALL SPILLS WILL BE REPORTED AS SOON AS POSSIBLE TO THE APPROPRIATE AGENCY. ALL SPILLS MUST BE REPORTED IMMEDIATELY TO THE TxDOT PROJECT MANAGER.

**SANITARY WASTE:**

THE CONTRACTOR WILL PROVIDE TEMPORARY RESTROOM FACILITIES FOR EMPLOYEES. THE PROVIDER OF THE FACILITIES WILL LEGALLY DISPOSE OF SANITARY WASTE.

**OFFSITE VEHICLE TRACKING:**

- HAUL ROADS DAMPENED FOR DUST CONTROL
- LOADED HAUL TRUCKS TO BE COVERED WITH TARPULIN
- EXCESS DIRT ON ROAD REMOVED DAILY
- STABILIZED CONSTRUCTION EXIT

**OTHER:**

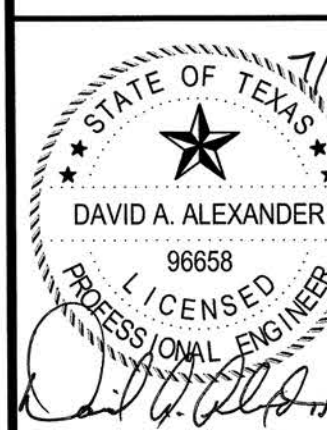
1. IN THE EVENT THAT UNANTICIPATED ARCHEOLOGICAL DEPOSITS ARE ENCOUNTERED DURING CONSTRUCTION, WORK IN THE IMMEDIATE AREA WILL CEASE AND THE ENGINEER WILL CONTACT PROFESSIONAL ARCHEOLOGISTS TO INITIATE POST-REVIEW DISCOVERY PROCEDURES UNDER THE PROVISIONS OF 36 CFR 800.13.
2. IN THE EVENT THAT UNANTICIPATED HAZARDOUS MATERIALS ARE ENCOUNTERED DURING CONSTRUCTION, WORK IN THE IMMEDIATE AREA WILL CEASE AND THE PROJECT MANAGER WILL BE NOTIFIED.
3. STOCKPILES AND STAGING AREAS WILL NOT BE PLACED WITHIN ANY WATER OF THE UNITED STATES, INCLUDING WETLANDS.

**REMARKS:**

STORMWATER POLLUTION PREVENTION PLAN

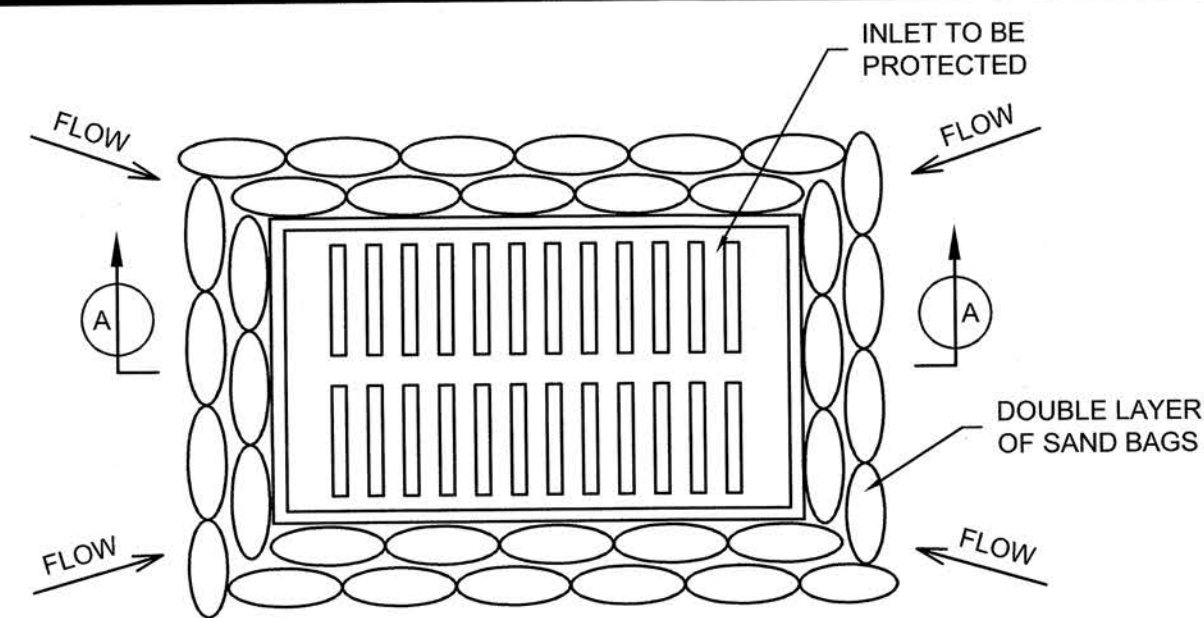
SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT SAN ANGELO, TEXAS

DRAWN BY: CBS  
DESIGNED BY: JWD  
LATEST REVISION: 6/29/2017  
KSA JOB NO.: SAN\_059

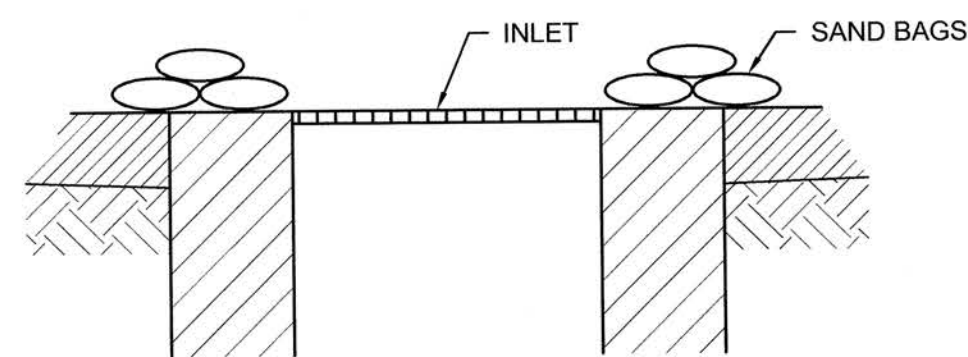


SEAL: TBPE Firm Registration No. F-1356 SHEET NO.





**PLAN VIEW**  
N.T.S.

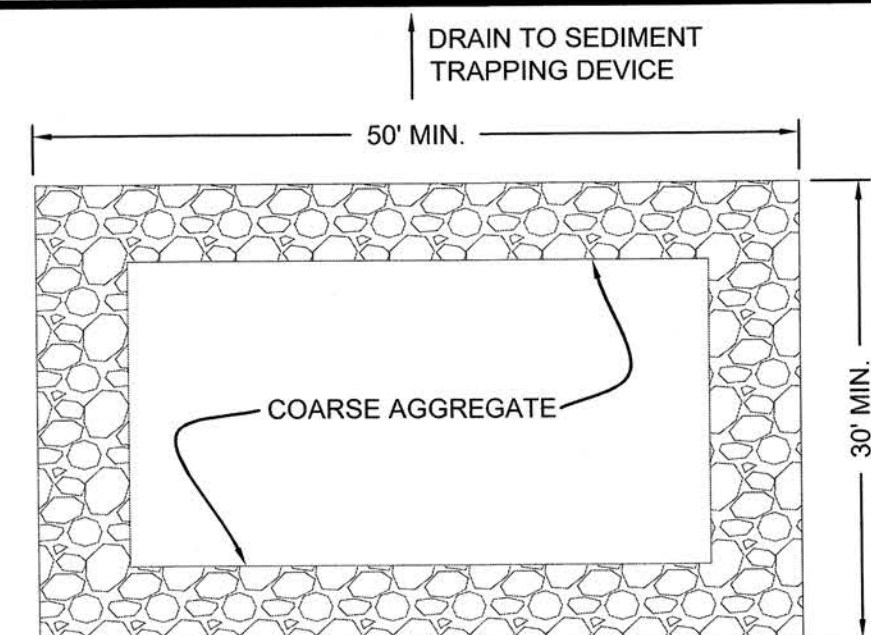


**SECTION VIEW A-A**  
N.T.S.

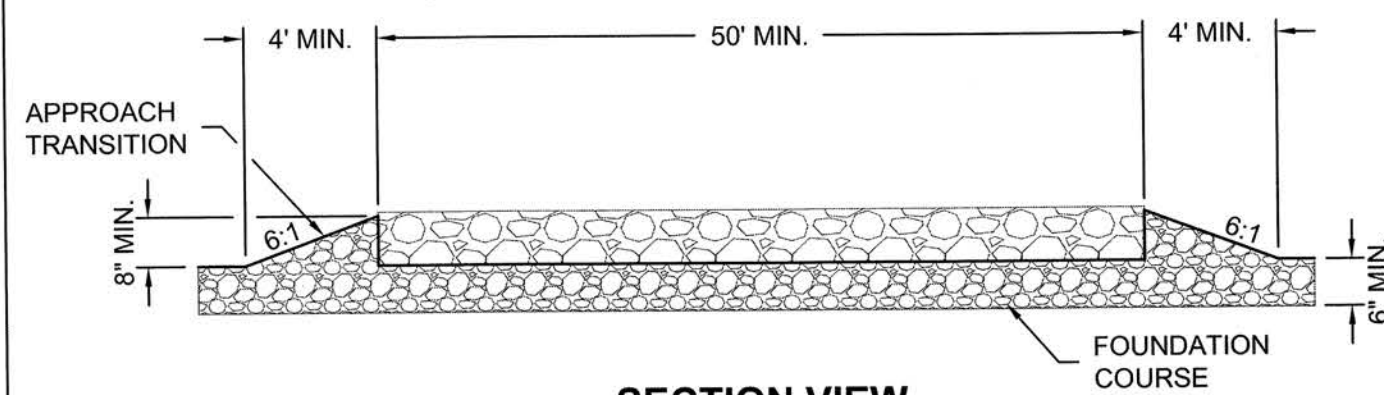
**INLET PROTECTION DETAIL NOTES:**

1. TEMPORARY SAND BAGS OR SOME ALTERNATE MEDIA FILTER SHALL BE USED TO INTERCEPT SILT.
2. SAND BAGS SHALL BE STAGGERED.
3. REMOVE SAND BAGS PRIOR TO OPENING PAVEMENT TO AIRCRAFT ACCESS.
4. TEMPORARY SAND BAGS SHALL BE REMOVED ONCE PERMANENT VEGETATION IS ESTABLISHED.
5. REMOVE SILT BUILDUP AS INSTRUCTED BY RPR.

**1 INLET PROTECTION DETAIL**  
N.T.S.



**PLAN VIEW**  
N.T.S.

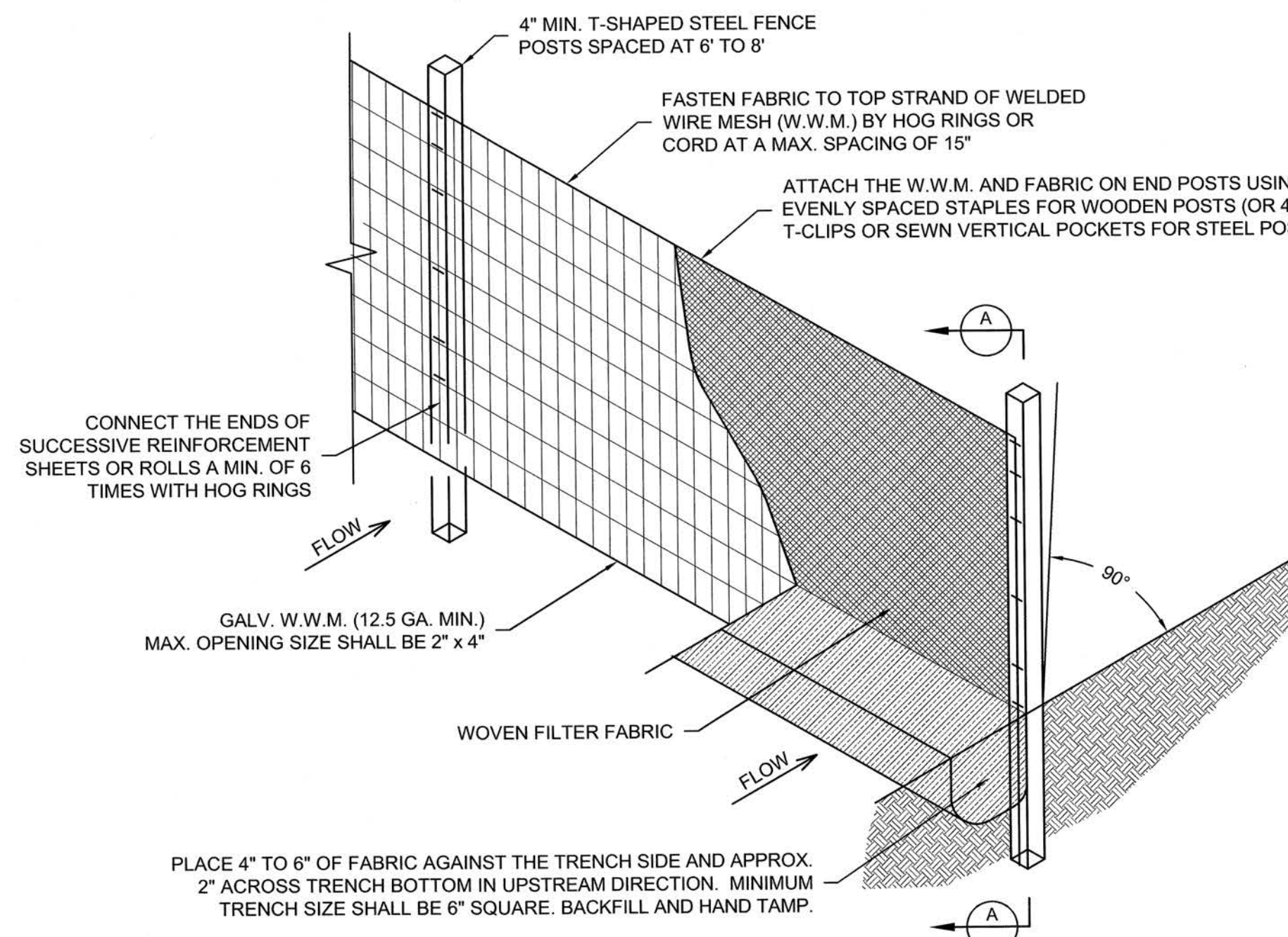


**SECTION VIEW**  
N.T.S.

**STABILIZED CONSTRUCTION EXIT DETAIL NOTES:**

1. THE STONE OR ROCK SHOULD BE OPEN GRADED WITH A NOMINAL SIZE OF 4" TO 8" AND SHALL BE APPROVED BY THE ENGINEER.
2. THE APPROACH TRANSITIONS SHOULD BE NO STEEPER THAN 6:1 AND CONSTRUCTED AS DIRECTED BY THE ENGINEER.
3. THE FOUNDATION COURSE SHALL BE FLEXIBLE BASE OR OTHER MATERIAL AS APPROVED BY THE ENGINEER.
4. THE STABILIZED CONSTRUCTION EXIT SHALL BE GRADED TO ALLOW DRAINAGE TO A SEDIMENT TRAPPING DEVICE.
5. UPON COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL REMOVE STABILIZED CONSTRUCTION EXIT AND GRADE AREA TO DRAIN. THE CONTRACTOR WILL THEN SEED THE AREA UNDER FAA ITEM T-904, SODDING (NO DIRECT PAY).

**2 STABILIZED CONSTRUCTION EXIT DETAIL**  
N.T.S.



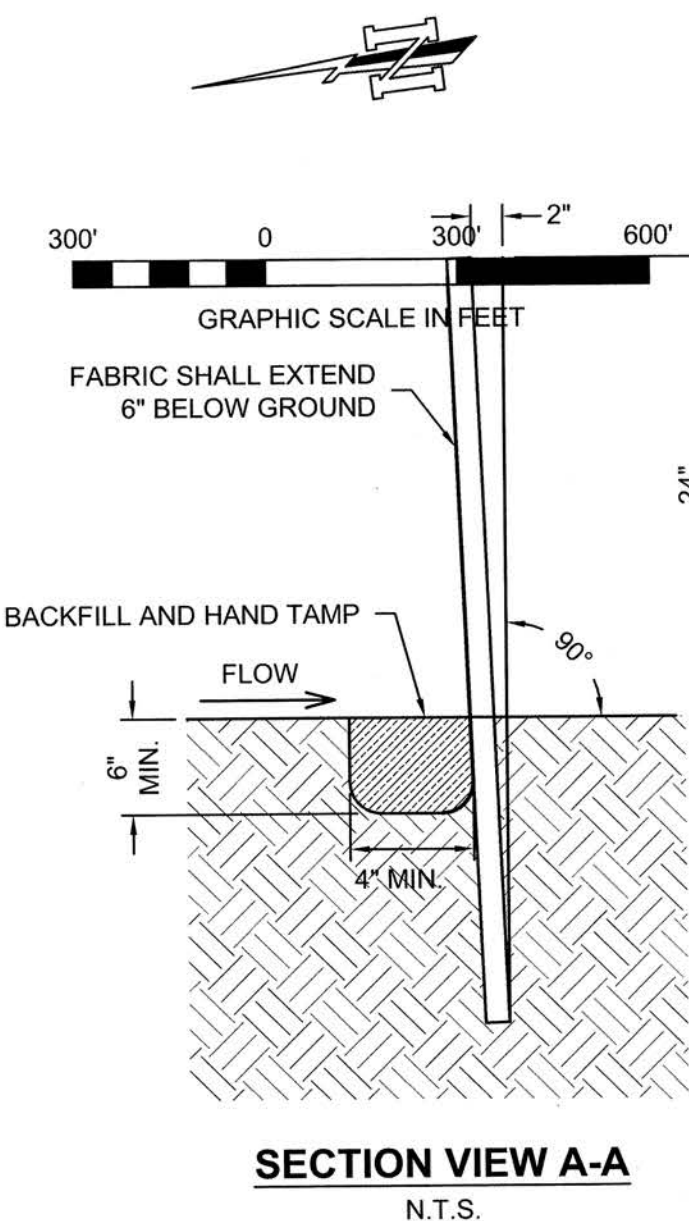
CONNECT THE ENDS OF SUCCESSIVE REINFORCEMENT SHEETS OR ROLLS A MIN. OF 6 TIMES WITH HOG RINGS

PLACE 4" TO 6" OF FABRIC AGAINST THE TRENCH SIDE AND APPROX. 2" ACROSS TRENCH BOTTOM IN UPSTREAM DIRECTION. MINIMUM TRENCH SIZE SHALL BE 6" SQUARE. BACKFILL AND HAND TAMP.

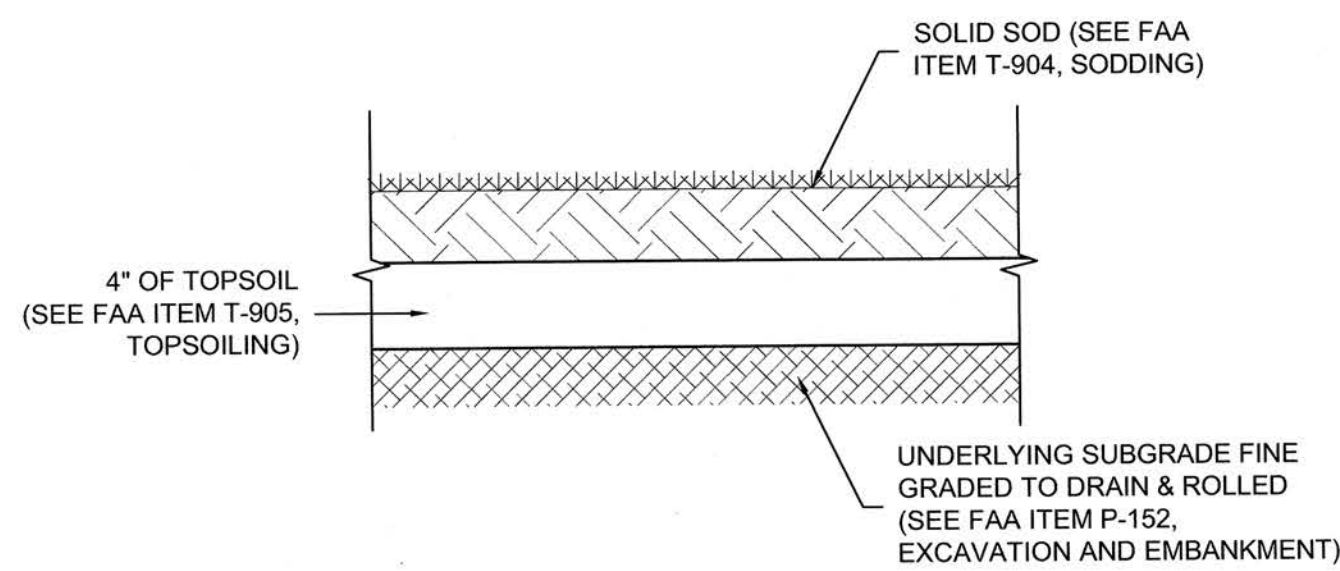
**TEMPORARY SEDIMENT CONTROL FENCE DETAIL NOTES:**

1. PAYMENT WILL BE MADE UNDER ITEM P-156.

**3 TEMPORARY SEDIMENT CONTROL FENCE DETAIL**  
N.T.S.



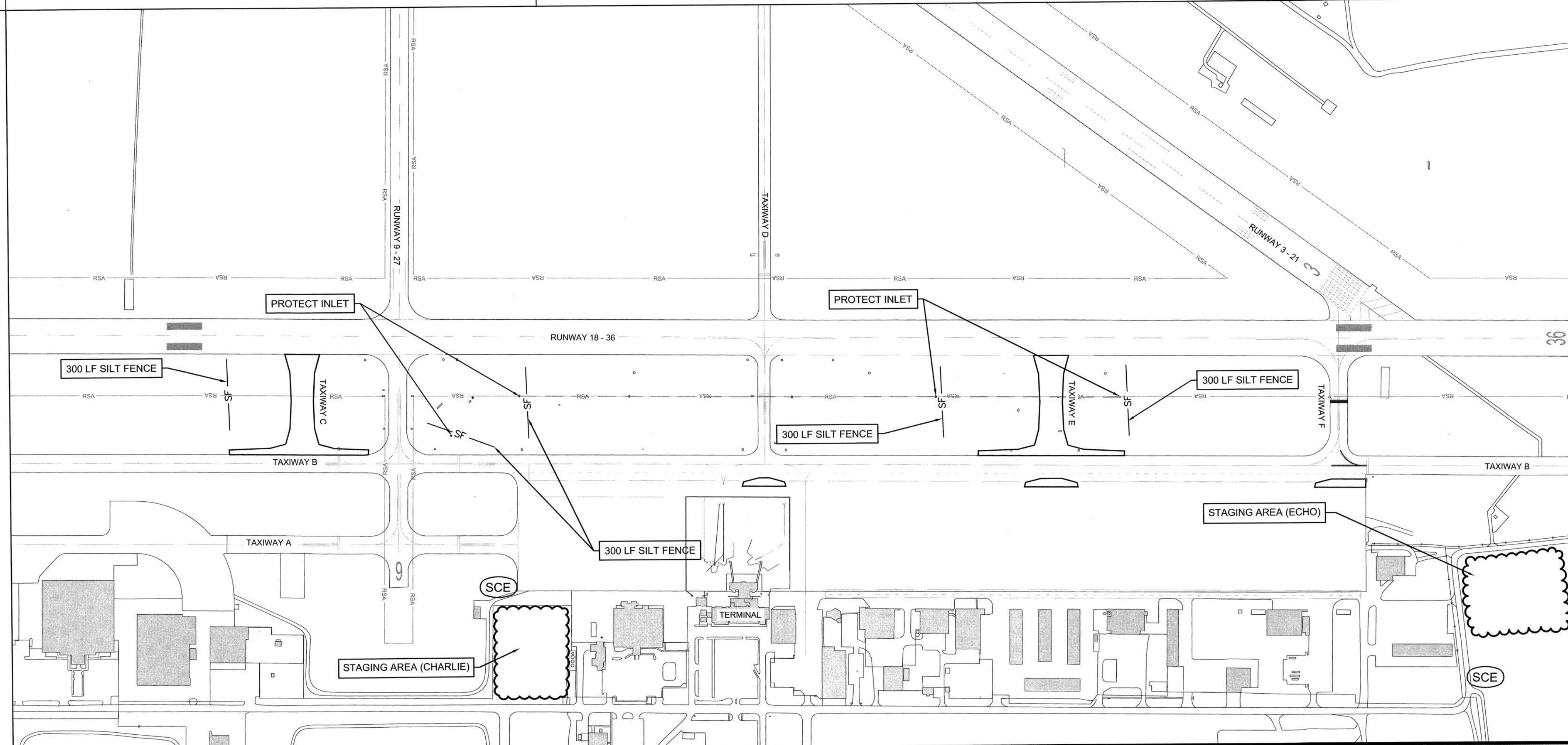
**SECTION VIEW A-A**  
N.T.S.



**SODDING DETAIL NOTES:**

1. SOD SHALL BE PLACED WITH NO GAPS BETWEEN ADJACENT SOD BLOCKS.
2. AREA TO BE SODDED SHALL BE FINE GRADED TO DRAIN AND ROLLED SMOOTH PRIOR TO SODDING. ALL FOREIGN OBJECTS SHALL BE REMOVED PRIOR TO SODDING.
3. ALL SODDED AREA SHALL BE ROLLED WITH HEAVY LAWN ROLLERS TO SET THE SOD. THE ROLLED SOD SHALL DRAIN FREELY AND CONTAIN NO RUTS, DEPRESSIONS, OR RIDGES.
4. CONTRACTOR SHALL WATER SOD AS NECESSARY TO ESTABLISH GROWTH AND REPLACE ANY SOD WHICH DIES WITHIN A ONE YEAR PERIOD.
5. SOD SHALL BE PLACED SUCH THAT A 1-1/2" LIP IS CREATED FROM THE TOP OF THE ADJACENT PAVEMENT TO THE TOP OF THE SOD.

**4 SODDING DETAIL**  
N.T.S.



DATE	REVISION	MARKS

**SWPPP LAYOUT AND DETAILS**

**SAN ANGELO REGIONAL AIRPORT TAXIWAY RECONFIGURATION PROJECT**  
SAN ANGELO, TEXAS

DRAWN BY:	CBS
DESIGNED BY:	JWD
LATEST REVISION:	6/29/2017
KSA JOB NO.:	
SAN 1059	

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DAVID A. ALEXANDER  
96658  
LICENSED PROFESSIONAL ENGINEER

SEAL: TBPE Firm Registration No. F-1356  
SHEET NO.