Flight Procedure Tracking Form	Action: FLIGHT CHECK	Task Type: IAP	Date Open: 06/15/2011	Task #: 201106142249173700 1	Request #: 20110614224917
Procedure: RNAV (GPS) RWY 30 AMDT 1		Airport ID: KD60	Airport: TIOGA MUNI		Reimbursable #:
City: TIOGA	**ST:** ND	GPS #:		Estimated Chart Date: 01/10/2013	FICO #:
Fac ID:	Fac. Type: LPV	Specialist: RODNEY RUMSEY			

LPV

Procedure Review

	Rec'd	Rel'd	Full Name	Comments
Lead:	05/07/2012	08/13/2012	STEVEN SZUKALA	
QA:	08/13/2012	08/13/2012	STEVEN SZUKALA	
Liaison:	08/13/2012		Spurlin	MAGVAR

Procedure Comments:

Remark Type: INFORMATION

pg 1 of 1

TIOGA, ND TIOGA MUNI (KD60) RNAV (GPS) RWY 30, AMDT 1 (LPV) ENROUTE-NO FC: 11.27.12 PUB: 1.10.13

ATTACHED FORMS: 8260-3; 8260-10; 8260-9; 8260-2(S): CETBO, REV 1; ERUVE-INT, REV 1; GAZAH, REV 2; RENLY, REV 2; (INFO ONLY) FONIA-INT, REV 1.

CONTACT: JILL OLSON, AJV-353 LEAD, 405.954.9568:

RNAV (GPS) RWY 30
TIOGA MUNI (D6Ø)

WAAS CH 56630 W30A	APP CRS 305°	Rwy ldg 5102 THRE 2271 Apt Elev 2271

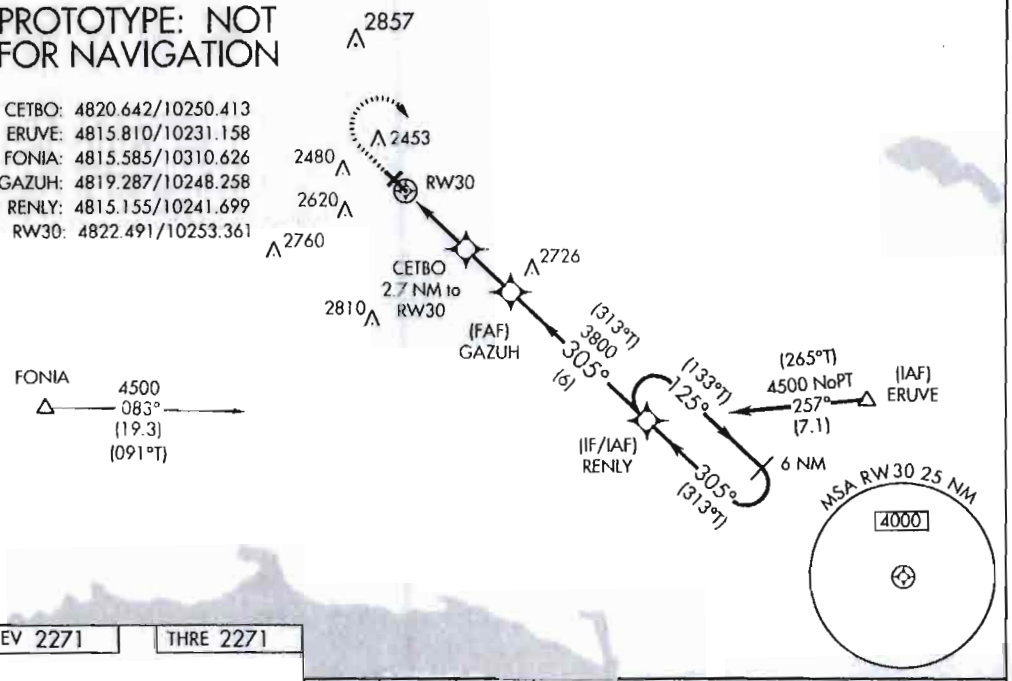
VISIBILITY REDUCTION BY HELICOPTERS NA. WHEN LOCAL ALTIMETER SETTING NOT RECEIVED, USE WILLISTON ALTIMETER SETTING AND INCREASE ALL DA 115 FT AND ALL MDA 120 FEET, INCREASE LPV VISIBILITY ALL CATS AND LNAV CAT C/D VISIBILITY 1/4 MILE, LNAV/VNAV ALL CATS 3/8 MILE, CIRCLING CAT C AND D 1/2 MILE. BARO-VNAV NA WHEN USING WILLISTON ALTIMETER SETTING. WHEN VGSI INOP, STRAIGHT-IN/CIRCLING RWY 30 PROCEDURE NA AT NIGHT. DME/DME RNP-0.3 NA. FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW -19C (2F) OR ABOVE 54C (130F).

MISSED APPROACH: Climb to 3200 then climbing right turn to 4500 direct RENLY and hold.

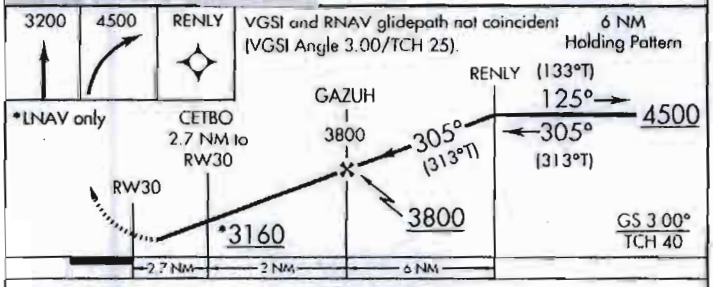
AWOS-3	MINNEAPOLIS CENTER	CTAF
118.575	127.6 279.6	122.9

PROTOTYPE: NOT FOR NAVIGATION

CETBO: 4820.642/10250.413
ERUVE: 4815.810/10231.158
FONIA: 4815.585/10310.626
GAZUH: 4819.287/10248.258
RENLY: 4815.155/10241.699
RW30: 4822.491/10253.361



ELEV 2271 | THRE 2271



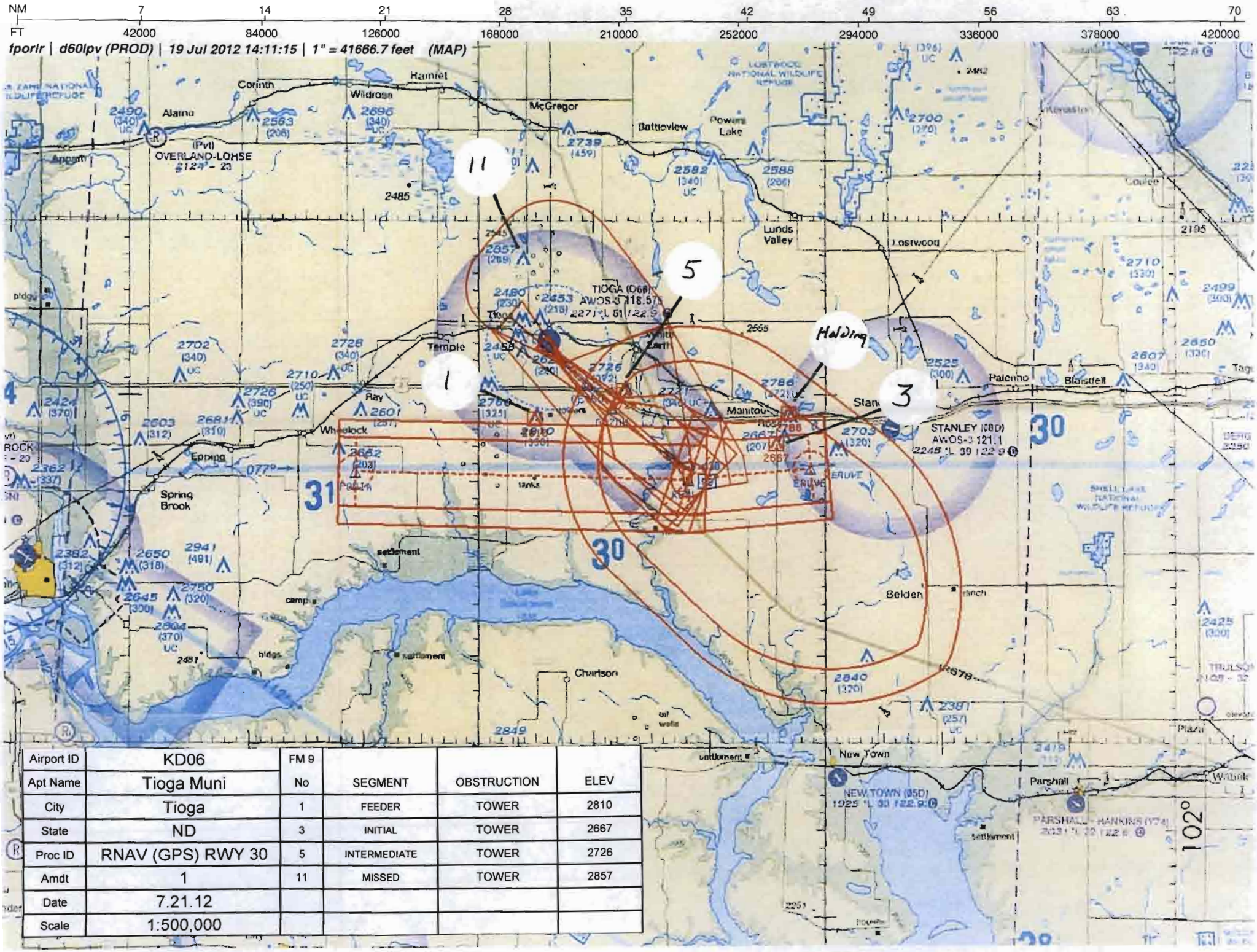
CATEGORY	A	B	C	D
LPV DA	2521-1 250 (300-1)			
LNAV/VNAV DA	2610-1⅛ 339 (400-1⅛)			
LNAV MDA	2720-1 449 (500-1)		2720-1⅜ 449 (500-1⅜)	
CIRCLING	2760-1 489 (500-1)	2840-1 569 (600-1)	2840-1½ 569 (600-1½)	2980-2¼ 709 (800-2¼)

305° to RW30

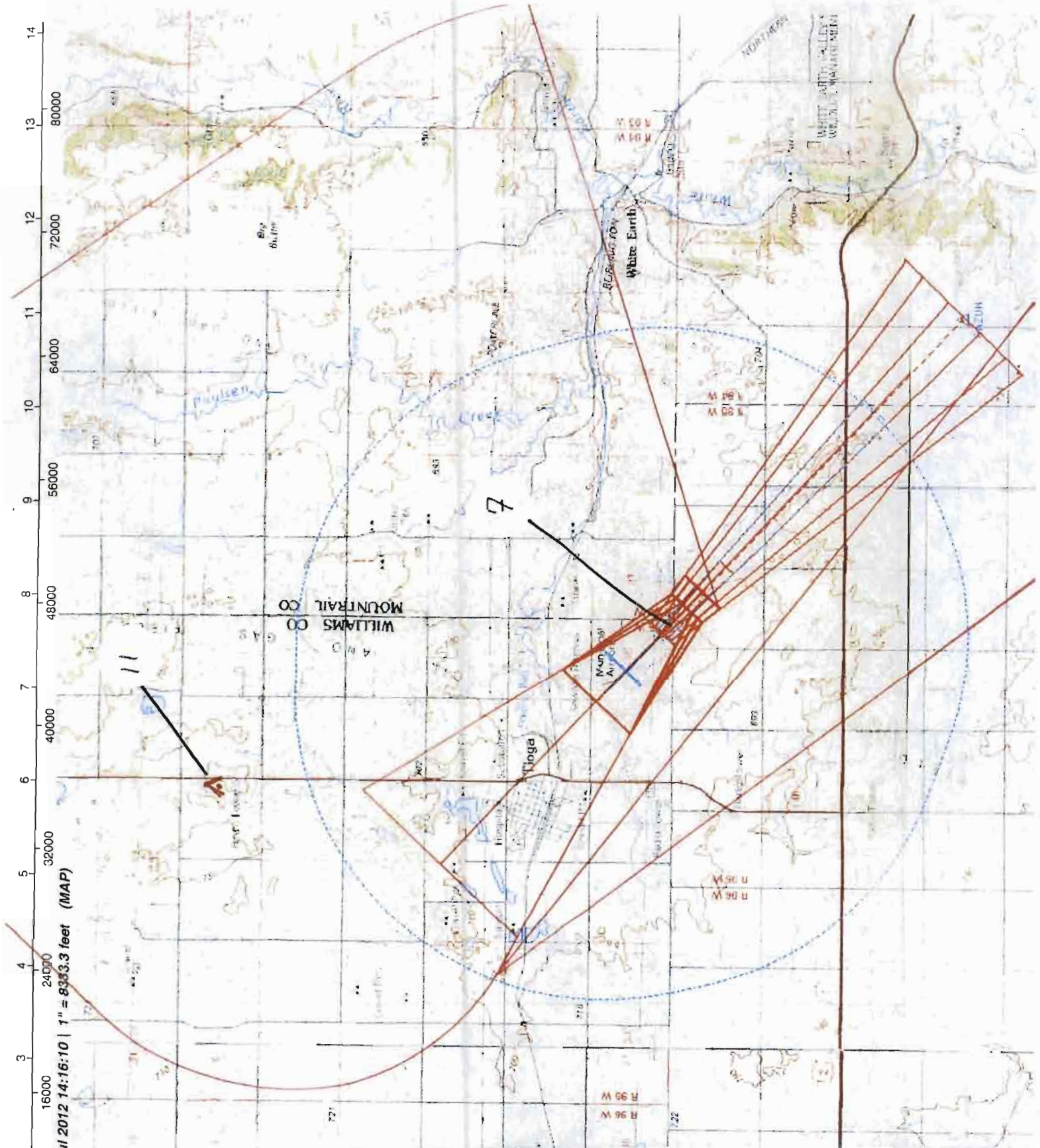
MIRL Rwy 12-30

48°23'N-102°54'W

TIOGA MUNI (D6Ø)
RNAV (GPS) RWY 30

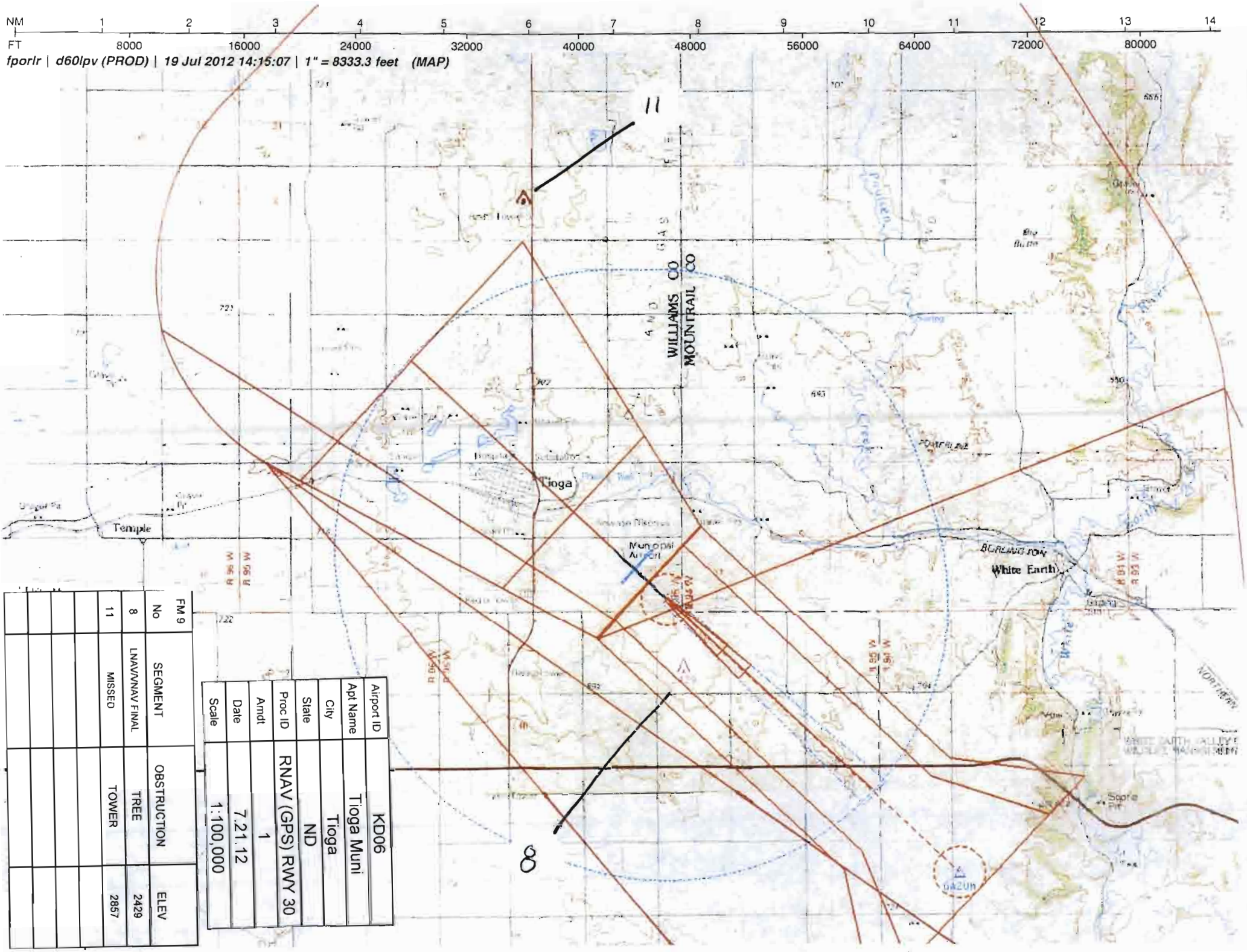


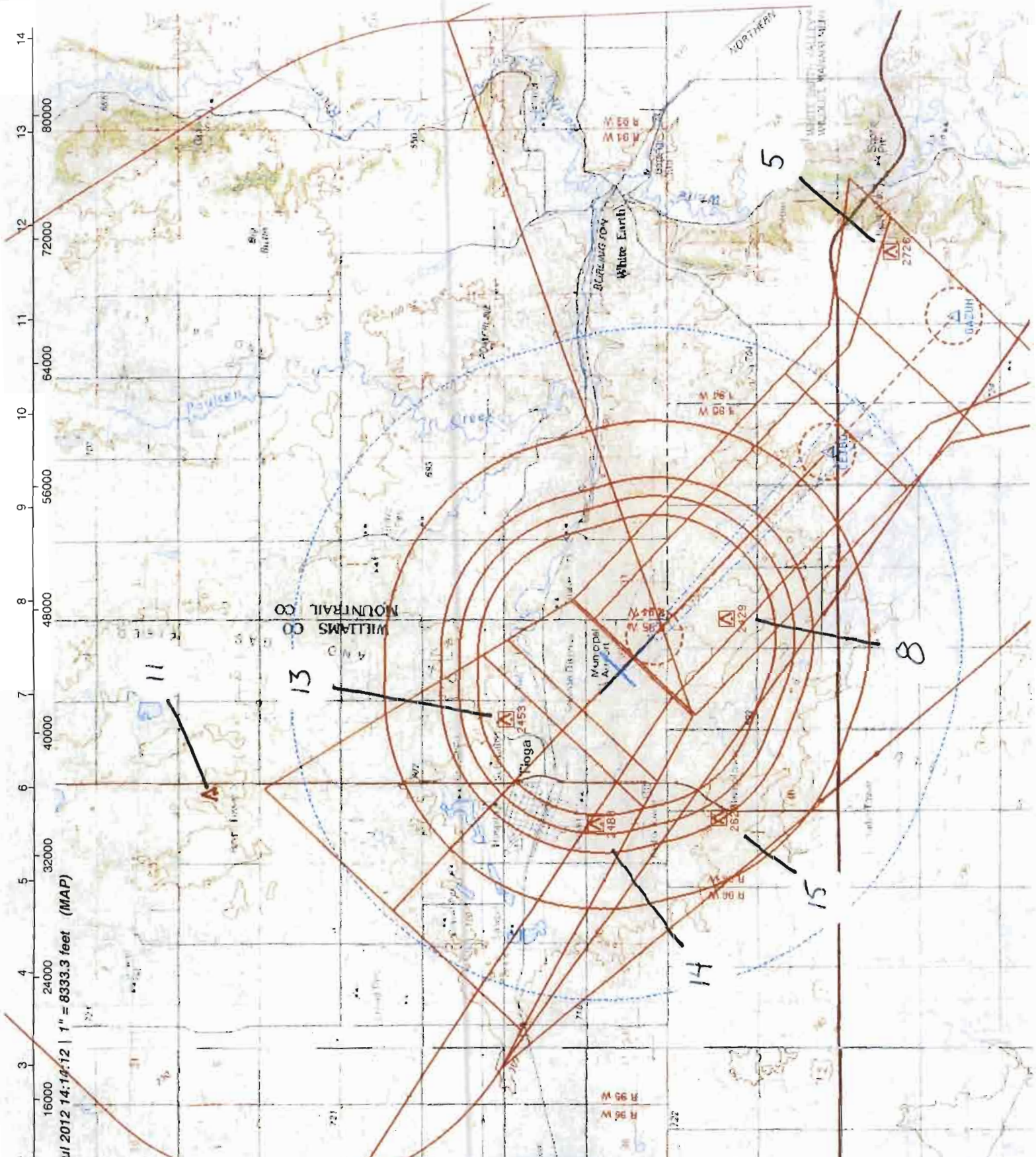
Airport ID	KD06	FM 9			
Apt Name	Tioga Muni	No	SEGMENT	OBSTRUCTION	ELEV
City	Tioga	1	FEEDER	TOWER	2810
State	ND	3	INITIAL	TOWER	2667
Proc ID	RNAV (GPS) RWY 30	5	INTERMEDIATE	TOWER	2726
Amdt	1	11	MISSED	TOWER	2857
Date	7.21.12				
Scale	1:500,000				



Airport ID	KD06	FM 9			
Apt Name	Tioga Muni	No	SEGMENT	OBSTRUCTION	ELEV
City	Tioga	7	LPV FINAL	ROAD	2304
State	ND	11	MISSED	TOWER	2857
Proc ID	RNAV (GPS) RWY 30				
Amdt	1				
Date	7.21.12				
Scale	1:100,000				

fporlr | d60lpv (PROD) | 19 Jul 2012 14:16:10 | 1" = 8333.3 feet (MAP)


NM 1 2 3 4 5 6 7 8 9 10 11 12 13 14
FT 8000 16000 24000 32000 40000 48000 56000 64000 72000 80000
fporlr | d60lpv (PROD) | 19 Jul 2012 14:15:07 | 1" = 8333.3 feet (MAP)
WILLIAMS CO
MOUNTRAIL CO
Tioga
Temple
Municipal Airport
White Earth
FM 9
No
SEGMENT
OBSTRUCTION
8
LNAV/VNAV FINAL
TREE
ELEV
11
MISSED
TOWER
2429
2857
Airport ID
KD06
Apt Name
Tioga Muni
City
Tioga
State
ND
Proc ID
RNAV (GPS) RWY 30
Amdt
1
Date
7.21.12
Scale
1:100,000



Airport ID	KD06
Apt Name	Tioga Muni
City	Tioga
State	ND
Proc ID	RNAV (GPS) RWY 30
Amdt	1
Date	7.21.12
Scale	1:100,000

FM 9 No	SEGMENT	OBSTRUCTION	ELEV
5	LNAV FINAL	TOWER	2726
8	STEP DOWN	TREE	2429
11	MISSED	TOWER	2857
13	CIRCLING CAT A	STACK	2453
14	CIRCLING CAT B/C	TOWER	2480
15	CIRCLING CAT D	TOWER	

NM 1 2 3 4 5 6 7 8 9 10 11 12 13 14
FT 8000 16000 24000 32000 40000 48000 56000 64000 72000 80000

fporlr | d60lpv (PROD) | 19 Jul 2012 14:14:12 | 1" = 8333.3 feet (MAP)

US DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

RNAV - STANDARD INSTRUMENT APPROACH PROCEDURE TITLE 14 CFR PART 97.33

Bearings, headings, courses, and radials are magnetic. Elevations and altitudes are in feet, MSL, except HAT, HAA, TCH, and RA. Altitudes are minimum altitudes unless otherwise indicated. Ceilings are in feet above airport elevation. Distances are in nautical miles unless otherwise indicated, except visibilities which are in statute miles or in feet RVR.

TERMINAL ROUTES

FROM	TO	COURSE AND DISTANCE	ALTITUDE
FONIA	RENLY (FO)	083.10 / 19.33	4500
ERUVE (IAF)	RENLY (NOPT) (FB)	256.75 / 7.07	4500
RENLY (IF/IAF)	GAZUH (FB)	305.39 / 6.02	3800
GAZUH (FAF)	CETBO/2.70 NM TO RW30 (FB)	305.31 / 1.98	
CETBO/2.70 NM TO RW30	RW30 (MAP) (FO)	305.29 / 2.70	
RW30 (MAP)	3200 MSL	305.29	3200
3200 MSL	RENLY (FO)		4500

MISSED APPROACH

LPV: DA
LNAV/VNAV: DA
LNAV: RW30

CLIMB TO 3200 THEN CLIMBING RIGHT TURN TO 4500 DIRECT RENLY AND HOLD.

ADDITIONAL FLIGHT DATA:
CHART FAS OBST: 2429 TREE 482138N/1025305W
CHART 2726 TOWER 481953N/1024714W.
DISTANCE TO THLD FROM 250 HATH: 0.66 NM.
WAAS CHANNEL # 56630
REFERENCE PATH ID: W30A
LTP HAE: 673.9 M

1. PT ____ SIDE OF COURSE ____ OUTBOUND ____ FT WITHIN ____ MILES OF ____ (IAF)
2. HOLD SE RENLY, RT, 305.39 INBOUND, 4500 FT. IN LIEU OF PT (IAF)
3. FAC: 305.31 FAF: GAZUH DIST FAF TO MAP: 4.68 THLD: 4.68
4. MIN. ALT: RENLY 4500, GAZUH 3800, CETBO/2.70 NM TO RW30 3160*
5. DIST TO THLD FROM OM: ____ MM: ____ IM: ____ 150 HAT: ____ 100 HAT: ____ GS ANT: ____
6. MIN GS INCPT: 3800 GS ALT AT: GAZUH 3800 OM: ____ MM: ____ IM: ____
7. GS ANGLE: 3.00 TCH: 40.0 34:1 IS NOT CLEAR
8. MSA FROM: RW30 4000

MAG VAR: 8E EPOCH YEAR: 2015

MINIMUMS

TAKEOFF: SEE FAA FORM 8260-15A FOR THIS AIRPORT | ALTERNATE: N A | STANDARD @

CATEGORY =====>	A			B			C			D			E		
	DH/MDA	VIS	HAT/HAA	DH/MDA	VIS	HAT/HAA	DH/MDA	VIS	HAT/HAA	DH/MDA	VIS	HAT/HAA	DH/MDA	VIS	HAT/HAA
LPV DA	2521	1	250	2521	1	250	2521	1	250	2521	1	250			
LNAV/VNAV DA	2610	1 1/8	339	2610	1 1/8	339	2610	1 1/8	339	2610	1 1/8	339			
LNAV MDA	2720	1	449	2720	1	449	2720	1 3/8	449	2720	1 3/8	449			
CIRCLING	2760	1	489	2840	1	569	2840	1 1/2	569	2980	2 1/4	709			

NOTES:
CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW -19C (2F) OR ABOVE 54C (130F).
CHART NOTE: WHEN VGSI INOP, STRAIGHT-IN/CIRCLING RWY 30 PROCEDURE NA AT NIGHT.
CHART NOTE: DME/DME RNP-0.3 NA.
CHART NOTE: VISIBILITY REDUCTION BY HELICOPTERS NA.
(SEE FORM 8260-10)

@ CAT D 800-2 1/4
@ NA WHEN LOCAL WEATHER NOT AVAILABLE.

QUALITY CHECKED

CITY AND STATE	ELEVATION: 2271 THRE: 2271 AIRPORT NAME:	FACILITY IDENTIFIER:	PROCEDURE NO./AMDT NO./EFFECTIVE DATE:	SUP:
TIOGA, ND	TIOGA MUNI	RNAV	RNAV (GPS) RWY 30, AMDT 1	AMDT: ORIG
				DATED 08/27/2009

ALL AFFECTED PROCEDURES REVIEWED?	COORDINATES OF FACILITIES	REQUIRED EFFECTIVE DATE
[ ] YES [X] NO		ROUTINE

COORDINATED WITH:

ATA	AAT	ALPA	APA	AOPA	NBAA	OTHER (specify)
[ ]	[ ]	[X]	[ ]	[X]	[X]	[X] ZMP, AMGR

FLIGHT CHECKED BY

NAME:	FIFO	DATE:

DEVELOPED BY

NAME:	FIFO	DATE:
RODNEY L. RUMSEY	AJV-353	07/18/2012

APPROVED BY

NAME:		FIFO	DATE:
LARRY H STROUT	MANAGER	AJV-353	

CHANGES:

1. REMOVED LEFT BASE LEG AND FIX CEPIM.
2. HOLDING AT FIX RENLY CHANGED FROM 303.39 TO 305.39.
3. FIX CETBO MOVED FROM 2.5NM FROM THLD TO 2.7NM.
4. LPV AND LNAV/VNAV MINIMUMS ADDED AND ASSOSIATED NOTES.
5. "WHEN VGSI INOP, STRAIGHT-IN AND CIRCLING RWY 30 PROCEDURES NA AT NIGHT" NOTE ADDED.
6. ADD ALT MINIMUMS TO PROCEDURE.
7. MAG VAR CHANGED FROM 10E TO 8E.
8. FAC CHANGED FROM 303.39 TO 305.39.
9. LNAV CAT C VISIBILITY RAISED FROM 1 1/4 TO 1 3/8, CAT D LOWERED FROM 1 1/2 TO 1 3/8.
10. ADDED CLIMB TO 3200 FOR MISSED APPROACH.
11. COURSE AND DISTANCE RENLY TO GAZUH CHANGED TO 305.39/6.02NM FROM 303.39/6.08NM.
12. FEEDER FROM FIX FONIA CHANGED FROM FIX CEPIM TO FIX RENLY.

REASONS:

1. NOT NEEDED, FEEDER USED FROM FIX FONIA INSTEAD BY FPO CONCURRENCE.
2,8. MAG VAR CHANGE.
3. ACCOMODATE NEW OBST IN FINAL.
4. FPR FTW FTP.
5. 20:1 PENETRATIONS.
6. MEETS CRITERIA OF 8260.10E, 8-53.
7. PER NOAA MAG VAR.
9. NEW VISIBILITY CRITERIA.
10. NEW OBSTACLES IN MISSED.
11. FIXES MOVED FOR NEW MAG VAR AND TO MEET CRITERIA.
12. FIX CEPIM CANCELLED.

US DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION

RNAV - STANDARD
INSTRUMENT APPROACH PROCEDURE - TITLE 14 CFR PART 97.33

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NOTES, (CONT.):
CHART PROFILE NOTE: VGSI AND RNAV GLIDEPATH NOT COINCIDENT.
*LNAV ONLY
CHART NOTE: WHEN LOCAL ALTIMETER SETTING NOT RECEIVED, USE WILLISTON ALTIMETER SETTING AND INCREASE ALL DA 115 FT AND ALL MDA 120 FEET, INCREASE LPV VISIBILITY ALL CATS AND LNAV CAT C/D VISIBILITY 1/4 MILE, LNAV/VNAV ALL CATS 3/8 MILE, CIRCLING CAT C AND D 1/2 MILE.
CHART NOTE: BARO-VNAV NA WHEN USING WILLISTON ALTIMETER SETTING.

QUALITY 4 CHECKED

CITY AND STATE	ELEVATION: 2271 THRE: 2271	FACILITY IDENTIFIER:	PROCEDURE NO./ AMDT NO./EFFECTIVE DATE:	SUP:
TIOGA, ND	AIRPORT NAME: TIOGA MUNI	RNAV	RNAV (GPS) RWY 30, AMDT 1	AMDT: ORIG
				DATED: 08/27/2009

ALL AFFECTED PROCEDURES REVIEWED? ☐ YES ☐ NO	COORDINATES OF FACILITIES	REQUIRED EFFECTIVE DATE

COORDINATED WITH:

ATA ☐ AAT ☐ ALPA ☐ APA ☐ AOPA ☐ NBAA ☐ OTHER (specify) ☐ _____

FLIGHT CHECKED BY		
NAME:	FIFO	DATE:
DEVELOPED BY		
NAME:	FIFO	DATE:
APPROVED BY		
NAME:	FIFO	DATE:

CHANGES:

REASONS:

Bearings, headings, courses, and radials are magnetic. Elevations and altitudes are in feet, MSL, except HAT, HAA, TCH, and RA. Altitudes are minimum altitudes unless otherwise indicated. Ceilings are in feet above aiport elevation. Distances are in nautical miles unless otherwise indicated, except visibilities which are in statute miles or in feet RVR.

FAS DATA BLOCK INFORMATION

DATA FIELD	DATA
OPERATION TYPE	0
SBAS SERVICE PROVIDER IDENTIFIER	0
AIRPORT IDENTIFIER	D60
RUNWAY	RW30
APPROACH PERFORMANCE DESIGNATOR	0
ROUTE INDICATOR	
REFERENCE PATH DATA SELECTOR	0
REFERENCE PATH IDENTIFIER (APPROACH ID)	W30A
LTP/FTP LATITUDE	482229.4540N
LTP/FTP LONGITUDE	1025321.6825W
LTP/FTP ELLIPSOIDAL HEIGHT	+06739
FPAP LATITUDE	482330.4500N
FPAP LONGITUDE	1025459.0500W
THRESHOLD CROSSING HEIGHT (TCH)	00040.0
TCH UNITS SELECTOR (METERS OR FEET USED)	F
GLIDEPATH ANGLE (GPA)	03.00
COURSE WIDTH AT THRESHOLD	106.75
LENGTH OFFSET	1192
HORIZONTAL ALERT LIMIT (HAL)	40.0
VERTICAL ALERT LIMIT (VAL)	50.0
CRC REMAINDER	5AAE270E

ADDITIONAL PATH POINT RECORD INFORMATION

ICAO CODE	K3
LTP ORTHOMETRIC HEIGHT	+06921
FPAP ORTHOMETRIC HEIGHT	+06921

QUALITY CHECKED

ALL AFFECTED PROCEDURES REVIEWED? ☐ YES ☐ NO	COORDINATES OF FACILITIES	REQUIRED EFFECTIVE DATE

COORDINATED WITH:

ATA ☐ AAT ☐ ALPA ☐ APA ☐ AOPA ☐ NBAA ☐ OTHER (specify) ☐ _____

FLIGHT CHECKED BY		
NAME:	FIFO	DATE:
DEVELOPED BY		
NAME:	FIFO	DATE:
APPROVED BY		
NAME:	FIFO	DATE:

CHANGES:

REASONS:

U.S. DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION

RNAV (GPS) STANDARD INSTRUMENT APPROACH PROCEDURE

FLIGHT STANDARDS SERVICES - **FAR PART 97.33**

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ARINC PACKET - 424-18 - RNAV (GPS)

```
                1         2         3         4         5         6         7         8         9         0         1         2         3
WP      12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------
        SUSAEAENRT   CETBO K30    W     N48203849W102502480                    E0080     NAR           CETBO
        SUSAEAENRT   ERUVE K30    C   L N48154860W102310946                    E0078     NAR           ERUVE
        SUSAEAENRT   FONIA K30    C   L N48153507W103103754                    E0082     NAR           FONIA
        SUSAEAENRT   GAZUH K30    W     N48191721W102481545                    E0080     NAR           GAZUH
        SUSAEAENRT   RENLY K30    W     N48150927W102414196                    E0079     NAR           RENLY

                1         2         3         4         5         6         7         8         9         0         1         2         3
AIRPORT 12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------
        SUSAP D60 K3AD60     0     051YHN48224900W102535050E008002271         18000018000C    MNAR    TIOGA MUNI

                1         2         3         4         5         6         7         8         9         0         1         2         3
SEGMENT 12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------
        SUSAP D60 K3FR30   AERUVE 010ERUVEK3EA0E  A    IF                                          18000                A JS
        SUSAP D60 K3FR30   AERUVE 020RENLYK3EA0EE B 010TF                    25680071    + 04500                      A JS
        SUSAP D60 K3FR30   AFONIA 010FONIAK3EA0E      IF                                          18000                A JS
        SUSAP D60 K3FR30   AFONIA 020RENLYK3EA0EY   020TF                    08310193    + 04500                      A JS
        SUSAP D60 K3FR30   AFONIA 030RENLYK3EA0EE AR   HF                    30540060    + 04500                      A JS
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        SUSAP D60 K3FR30   R       020GAZUHK3EA1E  F 051TF                    30540060    + 03800                RW30  K3PGA JS
        SUSAP D60 K3FR30   R       020GAZUHK3EA2WALPV       ALNAV/VNAV ALNAV                                           JS
        SUSAP D60 K3FR30   R       021CETBOK3EA0E S  031TF                    30530020    V 0316003170       -300    A JS
        SUSAP D60 K3FR30   R       030RW30 K3PG0GY M 031TF                    30530027      02311            -300    A JS
        SUSAP D60 K3FR30   R       040          0  M     CA                   3053        + 03200                      A JS
        SUSAP D60 K3FR30   R       050RENLYK3EA0EY  R   DF                                + 04500                      A JS
        SUSAP D60 K3FR30   R       060RENLYK3EA0EE  R   HM                    30540060    + 04500                      A JS

                1         2         3         4         5         6         7         8         9         0         1         2         3
RUNWAY  12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------
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                1         2         3         4         5         6         7         8         9         0         1         2         3
PP      12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------
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        SUSAP D60 K3PR30   RW30 002E      +06921+06921LPV       56630

                1         2         3         4         5         6         7         8         9         0         1         2         3
MSA     12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
```

QUALITY CHECKED

CITY AND STATE	ELEVATION: **2271** **THRE: 2271**	FACILITY IDENTIFIER:	PROCEDURE NO. / AMDT NO. / EFFECTIVE DATE:	SUP:
TIOGA, ND	AIRPORT NAME: **TIOGA MUNI**	**RNAV**	**RNAV (GPS) RWY 30, AMDT 1**	AMDT: **ORIG**
				DATED: **08/27/2009**

ALL AFFECTED PROCEDURES REVIEWED? ☐ YES ☐ NO	COORDINATES OF FACILITIES	REQUIRED EFFECTIVE DATE

COORDINATED WITH:

ATA ☐ AAT ☐ ALPA ☐ APA ☐ AOPA ☐ NBAA ☐ OTHER (specify) _____

FLIGHT CHECKED BY

NAME:	FIFO	DATE:

DEVELOPED BY

NAME:	NFPG	DATE:

APPROVED BY

NAME:	NFPG	DATE:

CHANGES:

REASONS:

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```
SUSAP D60 K3SRW30 K3PG              0   18018004025                                                    M
```

QUALITY CHECKED

CITY AND STATE	ELEVATION: 2271 THRE: 2271	FACILITY IDENTIFIER:	PROCEDURE NO. / AMDT NO. / EFFECTIVE DATE:	SUP:
TIOGA, ND	AIRPORT NAME: TIOGA MUNI	RNAV	RNAV (GPS) RWY 30, AMDT 1	AMDT: ORIG
				DATED: 08/27/2009

ALL AFFECTED PROCEDURES REVIEWED?	COORDINATES OF FACILITIES	REQUIRED EFFECTIVE DATE
☐ YES ☐ NO		

COORDINATED WITH:

ATA ☐ AAT ☐ ALPA ☐ APA ☐ AOPA ☐ NBAA ☐ OTHER (specify) ☐ _____

FLIGHT CHECKED BY		
NAME:	FIFO	DATE:
DEVELOPED BY		
NAME:	NFPG	DATE:
APPROVED BY		
NAME:	NFPG	DATE:

CHANGES:

REASONS:

Bearings, headings, courses, and radials are magnetic. Elevations and altitudes are in feet, MSL, except HAT, HAA, TCH, and RA. Altitudes are minimum altitudes unless otherwise indicated. Ceilings are in feet above airport elevation. Distances are in nautical miles unless otherwise indicated, except visibilities which are in statute miles or in feet RVR.

ARINC SUMMARY - 424-18 - RNAV (GPS)

ROUTES	TRANSITION	FIX	SEQ	USE	PATH	TURN	FO/FB	RNP	MAG(TRUE)	DISTANCE	ALTITUDE	SPEED
	ERUVE	ERUVE	010	IAF	IF		FB					
	ERUVE	RENLY	020		TF		FB	1.0	256.8(264.8T)	007.1	AA 04500	
	FONIA	FONIA	010		IF		FB					
	FONIA	RENLY	020		TF		FO	2.0	083.1(091.1T)	019.3	AA 04500	
	FONIA	RENLY	030	IAF	HF	R	FO		305.4(313.4T)	006.0	AA 04500	
		RENLY	010	FACF	IF		FB				AA 04500	
		GAZUH	020	FAF	TF		FB	0.5	305.4(313.4T)	006.0	AA 03800	
		CETBO	021	SDF	TF		FB	0.3	305.3(313.3T)	002.0	AA 03160 GS 03170	
		RW30	030	MAP	TF		FO	0.3	305.3(313.3T)	002.7	AT 02311	

MISSED APPROACH	FIX	SEQ	USE	PATH	TURN	FO/FB	RNP	MAG(TRUE)	DISTANCE	ALTITUDE	SPEED
		040		CA		FB		305.3(313.3T)		AA 03200	
	RENLY	050		DF	R	FO				AA 04500	
	RENLY	060		HM	R	FO		305.4(313.4T)	006.0	AA 04500	

POINT DATA	WAYPOINT	LAT IN SECS	LONG IN SECS	LAT IN MINS	LONG IN MINS
	CETBO	N482038.49	W1025024.80	N4820.642	W10250.413
	ERUVE	N481548.60	W1023109.46	N4815.810	W10231.158
	FONIA	N481535.07	W1031037.54	N4815.585	W10310.626
	GAZUH	N481917.21	W1024815.45	N4819.287	W10248.258
	RENLY	N481509.27	W1024141.96	N4815.155	W10241.699
	RW30	N482229.45	W1025321.68	N4822.491	W10253.361

RUNWAY DATA	RWY	THRESHOLD ELEVATION	TCH
	RW30	02271	40

QUALITY CHECKED

CITY AND STATE	ELEVATION: **2271** THRE: **2271**	FACILITY IDENTIFIER:	PROCEDURE NO. / AMDT NO. / EFFECTIVE DATE:	SUP:
TIOGA, ND	AIRPORT NAME: **TIOGA MUNI**	**RNAV**	**RNAV (GPS) RWY 30, AMDT 1**	AMDT: **ORIG**
				DATED: **08/27/2009**

ALL AFFECTED PROCEDURES REVIEWED?	COORDINATES OF FACILITIES	REQUIRED EFFECTIVE DATE
☐ YES ☐ NO		

COORDINATED WITH:

ATA ☐ AAT ☐ ALPA ☐ APA ☐ AOPA ☐ NBAA ☐ OTHER (specify) ☐ _____

FLIGHT CHECKED BY		
NAME:	FIFO	DATE:
DEVELOPED BY		
NAME:	NFPG	DATE:
APPROVED BY		
NAME:	NFPG	DATE:

CHANGES:

REASONS:

STANDARD INSTRUMENT APPROACH PROCEDURE DATA RECORD

PART - A OBSTRUCTION DATA

1. APP SEGMENT	FROM	TO	OBSTRUCTION	COORDINATES	ELEV. MSL	ROC	ALT. ADJUSTMENTS	MIN. ALT.
FEEDER	FONIA	RENLY	1. TOWER (38-000009)	481816.00N/1025458.00W	2810 (4D)	1000	DG690	4500
			2. TERRAIN	481648.00N/1025112.00W	2494 (2500)		AS1500	4000
INITIAL	ERUVE	RENLY	3. TOWER (38-000595)	481651.00N/1023405.00W	2667 (3D)	1000	DG833	4500
			4. TERRAIN	481642.00N/1023651.00W	2519 (2500)		AS1500	4000
INTERMEDIATE: LNAV	RENLY (IF/IAF)	GAZUH	5. TOWER (38-001074)	481952.59N/1024713.67W	2726 (5D)	500	DG574	3800
			6. TERRAIN	481742.00N/1024054.00W	2412 (2400)		AS1000	3400
FINAL: LPV	GAZUH	RW30	7. RD(N) (KD60T0014)	482221.31N/1025317.63W	2304 (2C)	34:1	AC20	2521/250
FINAL: LNAV/VNAV	GAZUH	RW30	8. TREE	482138.15N/1025304.78W	2429 (2C)	PDA	AC20	2610/339
FINAL: LNAV	GAZUH	CETBO/2.70 NM TO RW30	5. TOWER (38-001074)	481952.59N/1024713.67W	2726 (5D)	250	AC50 RA115	3160
FINAL: LNAV STEPDOWN	CETBO/2.70 NM TO RW30	RW30	8. TREE	482138.15N/1025304.78W	2429 (2C)	250	XP41	2720
2. HOLD-IN-LIEU-OF-PT	RENLY	P-8	9. TWR (38-001007)	481834.80N/1023303.80W	2786 (2C)	1000	AT714	4500
			10. TERRAIN	480821.00N/1023406.00W	2537 (2500)		AS1500	4000
3. MISSED APPROACH MAP:	DA / DA / RW30	RENLY				ASC		4500
			11. TOWER (38-000016)	482710.00N/1025547.00W	2857 (5F)	1000		3900
ELEV:	2334/2479/2620		12. TERRAIN	482209.00N/1025300.00W	2299 (2300)		AS1500	3800

4. CIRCLING AREA	DISTANCE	HT. ABV. ARPT. REQUIRED	HT. ABV. ARPT. ACTUAL	OBSTRUCTION	COORDINATES	ELEV. MSL	ROC	ALT. ADJUSTMENTS	MIN. ALT.
CATEGORY A	1.3 NM	350	489	13. STACK (38-020949)	482359.12N/1025440.68W	2453 (1A)	300		2760
CATEGORY B	1.5 NM	450	569	14. TOWER (38-000015)	482302.00N/1025622.00W	2480 (5D)	300	AC50	2840
CATEGORY C	1.7 NM	450	569	14. TOWER (38-000015)	482302.00N/1025622.00W	2480 (5D)	300	AC50	2840
CATEGORY D	2.3 NM	550	709	15. TOWER (38-000014)	482143.00N/1025616.00W	2620 (4D)	300	AC50	2980
CATEGORY E	4.5 NM	550							

5. MINIMUM SAFE ALTITUDES — PRIMARY NAVAID: **RW30**

SECTOR	OBSTRUCTION	BRG/DIST	ELEVATION (MSL)	M S A	SECTOR	OBSTRUCTION	BRG/DIST	ELEVATION (MSL)	M S A
360-360	AAO	167/ 28.8	3000 (6C)	4000					

ORIG
CHECKED

CITY AND STATE		FACILITY	PROCEDURE AND AMENDMENT NO:	REGION
TIOGA, ND	ELEVATION: 2271 AIRPORT NAME: TIOGA MUNI	RNAV	RNAV (GPS) RWY 30, AMDT 1	AGL

PART B - SUPPLEMENTAL DATA

1. COMMUNICATIONS WITH:	2. WEATHER SERVICE	3. ALTIMETER SETTING
ZMP ARTCC GFK FSS	[ ] N W S [ ] F A A [ ] A / C OTHER: AWOS-3	SOURCE: KD60 / KISN DISTANCE: 0 / 32.23 HOURS REMOTE OPERATION: 0 / 24
SATISFACTORY ON: [X] V H F [X] U H F [ ] H F	LOCATION: KD60	ADJUSTMENT: 0 / 115

4. MONITOR STATUS	PRIMARY NAVAID:	
	MONITOR POINT:	
	HRS OPTN: CAT 1	
	HRS OPTN: CAT 3	
5. APPROACH & RUNWAY LIGHTING	[ ]	ALS
	[ ]	(S) SALS
	[ ]	MALS
	[ ]	HIRL
	[X]	MIRL 12 (PCL), 30 (PCL)
	[ ]	REIL
	[ ]	TDZ
	[ ]	C/LINE
	[X]	OTHER (SPECIFY) PAPI-2L 12 (PCL), 30 (PCL)
6. RUNWAY MARKINGS	BASIC	
	ALL WEATHER	
	INSTRUMENT	NPI-G 12, 30
7. RUNWAY VISUAL RANGE	APPROACH	
	MIDFIELD	
	ROLL OUT	
8. GLIDE PATH	GP ANGLE: 3.00	ELEV RWY THRESHOLD: 2270.7
	DISTANCE FROM RWY:	ELEV GP ANTENNA:
		THRESHOLD CROSSING HEIGHT: 40.0
9. FINAL APPROACH COURSE AIMING	[X] RUNWAY THRESHOLD	FT. FROM THRESHOLD
	[X] ON CENTERLINE	FT. FROM CENTERLINE

10. WAIVERS: NONE

PART D - PREPARED BY: RODNEY L. RUMSEY	DATE: 07/18/2012
TITLE: AERONAUTICAL INFORMATION SPECIALIST	OFFICE: AJV-353

PART C - REMARKS:

VDP NOT ESTABLISHED - 20:1 PENETRATIONS.

PARA 251, 20:1 PENETRATION.

PARA 251, 34:1 PENETRATION.

PRECIPITOUS TERRAIN EVALUATION COMPLETED.

VGSI DATA: 3.00/TCH 25

TERPS, VOLUME 1, "VISUAL PORTION OF FINAL" PENETRATIONS:

20:1 2304 ROAD (KD60T0014) 482221.31N/1025317.63W (5.19)
2307 ROAD (KD60T0020) 482221.29N/1025315.19W (2.10)

34:1 2305 ROAD (KD60T0019) 482221.31N/1025312.03W (9.71)
2305 ROAD (KD60T0013) 482221.31N/1025309.76W (6.43)
2304 ROAD (KD60T0012) 482221.61N/1025307.48W (2.75)
2289 GRD (KD60T0004) 482222.78N/1025315.73W (2.06)
2293 GRD (KD60T0006) 482220.04N/1025316.40W (1.44)
2304 ROAD (KD60T0021) 482221.46N/1025306.55W (1.10)
2282 GRD (KD60T0001) 482224.82N/1025316.51W (0.36)

NO ADDITIONAL AIRSPACE REQUIRED.
RASS PRESSURE PATTERNS SAME KD60 2270.6 MSL, KISN 1981.5 MSL
RA = 115.

TAA NOT DEVELOPED PER FPO.
VDP NA OBST PENETRATE 20:1.

ISA DEVIATION -30 USED.
NO HISTORICAL WEATHER INFORMATION AVAILABLE.
HIGH TEMPERATURE LIMITS DERIVED FROM AFS 400 CALCULATOR.

#9 2C AC DERIVED FROM 2005-AGL-639-OE.

MISSED BUILT USING 25 DEGREE BANK ANGLE @ 250 KTS.

XP=ALTITUDE ADDED TO RAISE MDA TO PUBLISHED MINIMUM.

RADIO FIX AND HOLDING DATA RECORD

NAME: CETBO **STATE:** ND **COUNTRY:** US

LATITUDE/LONGITUDE: 482038.49N/1025024.80W **TYPE:** WP

AIRSPACE DOCKET: **FIX TYPE OF ACTION:** MODIFY

HOLDING: **HOLDING TYPE OF ACTION:** NO CHANGE

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	RNAV (GPS) RWY 30			KD60	TIOGA	ND (US)

REQUIRED CHARTING: IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 1 **DATE OF REVISION:** 01/10/2013

REASON FOR REVISION:
MOVED .3NM OUTWARD TO STABILIZE STEPDOWN

DEVELOPED BY: **DATE:** 07/13/2012 **OFFICE:** AJV-353 **NAME:** RODNEY RUMSEY

APPROVED BY: **DATE:** **OFFICE:** AJV-353 **NAME:** LARRY STROUT

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: CEN
ARTCC: ZMP
ATC FACILITY:
OTHER:

QUALITY A CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: ERUVE **STATE:** ND **COUNTRY:** US

LATITUDE/LONGITUDE: 481548.60N/1023109.46W **TYPE:** WP, DME

AIRSPACE DOCKET: **FIX TYPE OF ACTION:** MODIFY

FIX MAKE-UP FACILITIES:

FAC	NAME	IDENT	TYPE	CLASS	MAG BRG	TRUE BRG	DME	DIST FROM FAC NM	DIST FROM FAC FEET	MRA	MAA
1	MINOT	MOT	VORTAC	H	257.68	270.68	49.40	49.40		5000	17500
2	WILLISTON	ISN	VORTAC	L	076.84	088.84	49.37	49.37		5000	17500

EXPANDED SERVICE VOLUME (ESV):

FAC IDENT	FAC TYPE	RADIAL/BEARING	DISTANCE	MIN ALTITUDE	MAX ALTITUDE
MOT	VORTAC	R-258	50	5000	16200
ISN	VORTAC	R-077	50	5000	17500

FIX RESTRICTIONS:
MRA V430 5000

HOLDING: **HOLDING TYPE OF ACTION:** NO CHANGE

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
EN ROUTE	V430	1, 2				ND (US)
IAP	RNAV (GPS) RWY 30			KD60	TIOGA	ND (US)

REQUIRED CHARTING: IAP, CONTROLLER, EN ROUTE LOW

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 1 **DATE OF REVISION:** 01/10/2013

REASON FOR REVISION:
UPDATED FAC 1 AND 2 MRA FROM 4500 TO 5000 PER FLIGHT CHECK.
UPDATED FIX USE.
ADDED FIX AS WP.

DEVELOPED BY: **DATE:** 07/23/2012 **OFFICE:** AJV-353 **NAME:** RODNEY RUMSEY

APPROVED BY: **DATE:** **OFFICE:** AJV-353 **NAME:** LARRY STROUT

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: CEN
ARTCC: ZMP
ATC FACILITY:
OTHER:

QUALITY CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: GAZUH **STATE:** ND **COUNTRY:** US

LATITUDE/LONGITUDE: 481917.21N/1024815.45W **TYPE:** WP

AIRSPACE DOCKET: **FIX TYPE OF ACTION:** MODIFY

HOLDING: **HOLDING TYPE OF ACTION:** NO CHANGE

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	RNAV (GPS) RWY 30			KD60	TIOGA	ND (US)

REQUIRED CHARTING: IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 2 **DATE OF REVISION:** 01/10/2013

REASON FOR REVISION:
FIX MOVED TO PFAF LOCATION.

DEVELOPED BY: **DATE:** 07/11/2012 **OFFICE:** AJV-353 **NAME:** RODNEY RUMSEY

APPROVED BY: **DATE:** **OFFICE:** AJV-353 **NAME:** LARRY STROUT

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: CEN
ARTCC: ZMP
ATC FACILITY:
OTHER:

QUALITY CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: RENLY **STATE:** ND **COUNTRY:** US

LATITUDE/LONGITUDE: 481509.27N/1024141.96W **TYPE:** WP

AIRSPACE DOCKET: **FIX TYPE OF ACTION:** NO CHANGE

HOLDING: **HOLDING TYPE OF ACTION:** MODIFY

PATTERNS:

PAT	DIR	IDENT	TYPE	RAD/CRS/BRG	CRS INBOUND	TURN (L OR R)	LEG LENGTH TIME	LEG LENGTH DME	HOLDING ALTITUDES MIN	HOLDING ALTITUDES MAX	TEMPLATES MIN	TEMPLATES MAX
1	SE		WP	125.39	305.39	R		6	4500	6000	8	8

CONTROLLING OBSTRUCTIONS:

PAT	AIRSPEED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	230	TOWER (38-001007)	481834.80N/1023303.80W	2786	2C

HOLDING RESTRICTIONS:
HOLDING LIMITED TO ESTABLISHED PATTERN.

REMARKS:
PRECIPITOUS TERRAIN EVALUATION COMPLETED.

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	RNAV (GPS) RWY 30		1	KD60	TIOGA	ND (US)

REQUIRED CHARTING: IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 2 **DATE OF REVISION:** 01/10/2013

REASON FOR REVISION:
CHANGED INBOUND HOLDING DIRECTION FROM 303.39 TO 305.39 TO ALIGN WITH INTERMEDIATE COURSE.

DEVELOPED BY: **DATE:** 07/13/2012 **OFFICE:** AJV-353 **NAME:** RODNEY RUMSEY

APPROVED BY: **DATE:** **OFFICE:** AJV-353 **NAME:** LARRY STROUT

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: CEN
ARTCC: ZMP
ATC FACILITY:
OTHER:

RADIO FIX AND HOLDING DATA RECORD

NAME: FONIA **STATE:** ND **COUNTRY:** US

LATITUDE/LONGITUDE: 481535.07N/1031037.54W **TYPE:** WP, DME

AIRSPACE DOCKET: **FIX TYPE OF ACTION:** NO CHANGE

FIX MAKE-UP FACILITIES:

FAC	NAME	IDENT	TYPE	CLASS	MAG BRG	TRUE BRG	DME	DIST FROM FAC NM	DIST FROM FAC FEET	MRA	MAA
1	WILLISTON	ISN	VORTAC	L	076.84	088.84	23.00	23.00		4500	17500

HOLDING: **HOLDING TYPE OF ACTION:** NO CHANGE

REMARKS:
FIX LOCATED ON ZMP/ZLC AIRSPACE BOUNDARY.

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
EN ROUTE	V430	1				ND (US)
IAP	RNAV (GPS) RWY 30			KD50	CROSBY	ND (US)
IAP	RNAV (GPS) RWY 30			KD60	TIOGA	ND (US)
IAP	RNAV (GPS) RWY 29			KISN	WILLISTON	ND (US)

REQUIRED CHARTING: IAP, CONTROLLER, EN ROUTE LOW

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 1 **DATE OF REVISION:** 07/29/2010

REASON FOR REVISION:
UPDATED FIX USE.
ADDED WP TO FIX TYPE.

DEVELOPED BY: **DATE:** 12/21/2009 **OFFICE:** AVN-120 **NAME:** PATRICK HARRINGTON

APPROVED BY: **DATE:** 07/28/2010 **OFFICE:** AVN-120 **NAME:** SUE CRUMB

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: CEN
ARTCC: ZMP
ATC FACILITY: ZLC
OTHER:

INFORMATION ONLY

QUALITY CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: CEPIM **STATE:** ND **COUNTRY:** US

LATITUDE/LONGITUDE: 481131.29N/1024649.98W **TYPE:** WP

AIRSPACE DOCKET: **FIX TYPE OF ACTION:** CANCEL

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	RNAV (GPS) RWY 30			KD60	TIOGA	ND (US)

REQUIRED CHARTING: IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: ORIG **DATE OF REVISION:** 08/27/2009

DEVELOPED BY: **DATE:** 04/11/2009 **OFFICE:** AVN-120 **NAME:** STEVEN BARNETT

APPROVED BY: **DATE:** **OFFICE:** AVN-120 **NAME:** SUE CRUMB

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: CEN
ARTCC: ZMP
ATC FACILITY:
OTHER:

QUALITY CHECKED
CANCELLED

Federal Aviation Administration

Memorandum

Date:

To: Dick Powell Manager, National Flight Data Center, AJV-21

From: Larry Strout, Manager, Terminal Procedures & Charting Services, Central Team, AJV-353

Subject: **ACTION:** Magnetic Variation Change

The Magnetic Variation (MV) data for the airport(s) and/or facility(s) listed under the 'Airport/Facility" column will be revised effective concurrent with the publication of the procedure(s) listed below.

RNAV (GPS) RWY 30, AMDT 1

Estimated Chart Date: 01/10/2013

Runway Numbers are not affected.

Please publish these changes in the National Flight Data Digest.

NORTH DAKOTA

Location	Name	Airport /Facility	Identifier	Assigned Magnetic Variation Value	Epoch Year
Tioga	Tioga Muni	Airport	KD60 / D60	Old 10 ° East New 8 ° East	2015
Tioga	Tioga Muni	Facility Type	Facility ID	Old 10 ° East New 8 ° East	2015

If you have any questions please notify Larry H. Strout, larry.h.strout@faa.gov (405) 954-5070

CONCURRENCES

ROUTING SYMBOL	INITIALS/SIG	DATE
AJV-34 SBaker		
AJV-353 JOlson		
AJV-353 LStrout		
AJV-341 JAlfonso		

cc: FTW-FPT, AVJ-3rf

AJV-353; LStrout :sbj::x4750:07/16/2012 :U:\AVN100\100Public\MAGVAR\MAGVAR Letters 2012\MV Change Request for Tioga, ND (KD60) 7-16-12

Requestor:RRumsey, AJW-3762:RSteward, Evaluated By:LFortier