

# **BIL RNAV (RNP) Z Rwy 28R 4.3.17**

**Point Of Contact**

**ATC Facility Name - WFPT**

**POC's Name - Dan Gearhart**

**Telephone Number - 425-917-6797**

**FAX Number -**

**Email Address - Dan.CTR.Gearhart@faa.gov**

**TARGETS Distribution Package**

## Path From BBCAT Leg Table 1/2

Segment	Leg Type	Start	End	Turn Type	RNP	Min End Fix Alt	Max End Fix Alt	Leg Length (NMI)	Leg Length (FT)	Start Course True	End Course True	Course Change	Turn Dir
INTERMEDIATE	IF	BBCAT	BBCAT	FB	1.0	8000.00	8000.00						
INTERMEDIATE	TF	BBCAT	WP17	FB	1.0	7400.00		2.85	17301.31563	111.71	111.76		LEFT
INTERMEDIATE	RF	WP17	PITCO_	FB	1.0	5000.00		9.45	57409.12730	111.76	291.81	0.00	RIGHT
FINAL	TF	PITCO_	KBIL:RW28R:AER	FB	0.3			4.57	27780.00000	291.81	291.74	0.00	LEFT
MISSED_APPROACH	TF	KBIL:RW28R:AER	WIBON [AIRNAV2]	FB	1.0	5900.00		12.96	78735.96752	291.75	291.54		

## Path From BBCAT Leg Table 2/2

Segment	Leg Type	Start	End	Turn Type	End Fix Speed Restriction	RF Leg Radius	Flyby Turn Bank Angle Override	Tailwind Component Override	RF Leg Arc Center	Reduced ROC
INTERMEDIATE	IF	BBCAT	BBCAT	FB	-210.0					
INTERMEDIATE	TF	BBCAT	WP17	FB				50.03		
INTERMEDIATE	RF	WP17	PITCO_	FB		3.0061			WP18	
FINAL	TF	PITCO_	KBIL:RW28R:AER	FB						
MISSED_APPROACH	TF	KBIL:RW28R:AER	WIBON [AIRNAV2]	FB						

## Path From GRYZZ Leg Table 1/2

Segment	Leg Type	Start	End	Turn Type	RNP	Min End Fix Alt	Max End Fix Alt	Leg Length (NMI)	Leg Length (FT)	Start Course True	End Course True	Course Change	Turn Dir
INITIAL	IF	GRYZZ	GRYZZ	FB	1.0	9000.00	9000.00						
INITIAL	TF	GRYZZ	WP04	FB	1.0	7600.00		4.16	25304.51826	54.36	54.42	70.90	LEFT
INITIAL	TF	WP04	YIGUD [AIRNAV2]	FB	1.0	6000.00		5.10	30970.01860	343.51	343.49	51.59	LEFT
INTERMEDIATE	TF	YIGUD [AIRNAV2]	PITCO_	FB	1.0	5000.00		3.39	20624.19196	291.90	291.84	0.04	LEFT
FINAL	TF	PITCO_	KBIL:RW28R:AER	FB	0.3			4.57	27780.00000	291.81	291.74	0.00	LEFT
MISSED_APPROACH	TF	KBIL:RW28R:AER	WIBON [AIRNAV2]	FB	1.0	5900.00		12.96	78735.96752	291.75	291.54		

## Path From GRYZZ Leg Table 2/2

Segment	Leg Type	Start	End	Turn Type	End Fix Speed Restriction	RF Leg Radius	Flyby Turn Bank Angle Override	Tailwind Component Override	RF Leg Arc Center	Reduced ROC
INITIAL	IF	GRYZZ	GRYZZ	FB	-210.0					
INITIAL	TF	GRYZZ	WP04	FB				50.03		
INITIAL	TF	WP04	YIGUD [AIRNAV2]	FB						
INTERMEDIATE	TF	YIGUD [AIRNAV2]	PITCO_	FB						
FINAL	TF	PITCO_	KBIL:RW28R:AER	FB						
MISSED_APPROACH	TF	KBIL:RW28R:AER	WIBON [AIRNAV2]	FB						

## Path From HRDIN Leg Table 1/2

Segment	Leg Type	Start	End	Turn Type	RNP	Min End Fix Alt	Max End Fix Alt	Leg Length (NMI)	Leg Length (FT)	Start Course True	End Course True	Course Change	Turn Dir
INITIAL	IF	HRDIN [AIRNAV2]	HRDIN [AIRNAV2]	FB	1.0	6700.00	6700.00						
INITIAL	TF	HRDIN [AIRNAV2]	YIGUD [AIRNAV2]	FB	1.0	6000.00		5.28	32072.88769	318.23	318.17	26.27	LEFT
INTERMEDIATE	TF	YIGUD [AIRNAV2]	PITCO_	FB	1.0	5000.00		3.39	20624.19196	291.90	291.84	0.04	LEFT
FINAL	TF	PITCO_	KBIL:RW28R:AER	FB	0.3			4.57	27780.00000	291.81	291.74	0.00	LEFT
MISSED_APPROACH	TF	KBIL:RW28R:AER	WIBON [AIRNAV2]	FB	1.0	5900.00		12.96	78735.96752	291.75	291.54		

## Path From HRDIN Leg Table 2/2

Segment	Leg Type	Start	End	Turn Type	End Fix Speed Restriction	RF Leg Radius	Flyby Turn Bank Angle Override	Tailwind Component Override	RF Leg Arc Center	Reduced ROC
INITIAL	IF	HRDIN [AIRNAV2]	HRDIN [AIRNAV2]	FB	-230.0					
INITIAL	TF	HRDIN [AIRNAV2]	YIGUD [AIRNAV2]	FB						
INTERMEDIATE	TF	YIGUD [AIRNAV2]	PITCO_	FB						
FINAL	TF	PITCO_	KBIL:RW28R:AER	FB						
MISSED_APPROACH	TF	KBIL:RW28R:AER	WIBON [AIRNAV2]	FB						

## Path From PILLR Leg Table 1/2

Segment	Leg Type	Start	End	Turn Type	RNP	Min End Fix Alt	Max End Fix Alt	Leg Length (NMI)	Leg Length (FT)	Start Course True	End Course True	Course Change	Turn Dir
INITIAL	IF	PILLR [AIRNAV2]	PILLR [AIRNAV2]	FB	1.0	6300.00	6300.00						
INITIAL	TF	PILLR [AIRNAV2]	YIGUD [AIRNAV2]	FB	1.0	6000.00		5.01	30447.67376	263.90	263.82	28.08	RIGHT
INTERMEDIATE	TF	YIGUD [AIRNAV2]	PITCO_	FB	1.0	5000.00		3.39	20624.19196	291.90	291.84	0.04	LEFT
FINAL	TF	PITCO_	KBIL:RW28R:AER	FB	0.3			4.57	27780.00000	291.81	291.74	0.00	LEFT
MISSED_APPROACH	TF	KBIL:RW28R:AER	WIBON [AIRNAV2]	FB	1.0	5900.00		12.96	78735.96752	291.75	291.54		

## Path From PILLR Leg Table 2/2

Segment	Leg Type	Start	End	Turn Type	End Fix Speed Restriction	RF Leg Radius	Flyby Turn Bank Angle Override	Tailwind Component Override	RF Leg Arc Center	Reduced ROC
INITIAL	IF	PILLR [AIRNAV2]	PILLR [AIRNAV2]	FB	-210.0					
INITIAL	TF	PILLR [AIRNAV2]	YIGUD [AIRNAV2]	FB						
INTERMEDIATE	TF	YIGUD [AIRNAV2]	PITCO_	FB						
FINAL	TF	PITCO_	KBIL:RW28R:AER	FB						
MISSED_APPROACH	TF	KBIL:RW28R:AER	WIBON [AIRNAV2]	FB						

## Waypoint Data

DB	Waypoint	Latitude (Deg)	Longitude (Deg)	Latitude (Deg, Decimal Min)	Longitude (Deg, Decimal Min)	Latitude (D° M' S.ss")	Longitude (D° M' S.ss")
	BBCAT WP	N 45.88439	W 108.42531	N45 53.06346	W108 25.51871	N45 53 3.80743	W108 25 31.12259
	GRYZZ WP	N 45.63089	W 108.38641	N45 37.85317	W108 23.18433	N45 37 51.19000	W108 23 11.06000
AIRNAV2	HRDIN	N 45.68716	W 108.25670	N45 41.22967	W108 15.40183	N45 41 13.78000	W108 15 24.11000
AIRNAV2	PILLR	N 45.76166	W 108.22179	N45 45.69933	W108 13.30767	N45 45 41.96000	W108 13 18.46000
	PITCO_ WP	N 45.77380	W 108.41539	N45 46.42782	W108 24.92314	N45 46 25.66907	W108 24 55.38829
AIRNAV2	WIBON	N 45.88169	W 108.80366	N45 52.90150	W108 48.21950	N45 52 54.09000	W108 48 13.17000
	WP04 WP	N 45.67129	W 108.30596	N45 40.27767	W108 18.35783	N45 40 16.66000	W108 18 21.47000
	WP17 WP	N 45.86682	W 108.36222	N45 52.00922	W108 21.73301	N45 52 0.55333	W108 21 43.98068
	WP18 WP	N 45.82030	W 108.38877	N45 49.21787	W108 23.32639	N45 49 13.07247	W108 23 19.58327
AIRNAV2	YIGUD	N 45.75273	W 108.34039	N45 45.16367	W108 20.42367	N45 45 9.82000	W108 20 25.42000

BIL RNAV (RNP) Z Rwy 28R 4.3.17

# RS Results BIL RNAV (RNP) Z Rwy 28R 4.3.17

Last Evaluation: 03-Apr-2017 10:28:32

Reference Software Version: 1.5.0

Project Chart Date: 07-Dec-2017

## Path Evaluation for GRYZZ

Flight Evaluation Table 1

Leg Tp	End Pt	Turn Tp	Alt Restr	Alt Restr 2	Max Spd	Turn Ang	Leg Length	Min Seg Length
IF	GRYZZ		9000.00		-210.00		0.0	0.0
TF	WP04		+7600.00			70.9	4.16	1.89
TF	YIGUD		+6000.00			51.59	5.1	3.21
TF	PITCO		5000.00			0.04	3.39	1.31
TF	KBIL:RW28R:AER						4.57	0.6
TF	WIBON		+5900.00				12.96	1.0

Flight Evaluation Table 2

Leg Tp	End Pt	Turn Tp	DTA1	DTA1 Turn Rad	DTA1 Turn Alt	DTA1 Turn Spd	DTA1 Bank Ang	DTA1 Tailwind	DTA1 True Airspd	DTA1 vGround	DTA2	DTA2 Turn Rad	DTA2 Turn Alt	DTA2 Turn Spd	DTA2 Bank Ang	DTA2 Tailwind	DTA2 True Airspd	DTA2 vGround
IF	GRYZZ				0.0	0.0							0.0	0.0				
TF	WP04		0.0		9000.0	210.0	0.0	64.82	247.16	311.98	1.89	2.66	7600.0	210.0	25.0	50.03	241.79	291.82
TF	YIGUD		1.89	2.66	7600.0	210.0	25.0	50.03	241.79	291.82	1.31	2.71	6000.0	210.0	25.0	58.88	235.85	294.73
TF	PITCO		1.31	2.71	6000.0	210.0	25.0	58.88	235.85	294.73	0.0	37.69	5000.0	165.0	1.0	30.0	182.48	212.48
TF	KBIL:RW28R:AER		0.0	37.69	5000.0	165.0	1.0	30.0	182.48	212.48			0.0	0.0				
TF	WIBON		0.0		0.0	0.0	0.0	0.0	0.0		0.0		5900.0	265.0	0.0	58.68	297.16	355.84

## Route Criteria Failures and Warnings

No failures.

## Path Evaluation for HRDIN

### Flight Evaluation Table 1

Leg Tp	End Pt	Turn Tp	Alt Restr	Alt Restr 2	Max Spd	Turn Ang	Leg Length	Min Seg Length
IF	HRDIN		6700.00		-230.00		0.0	0.0
TF	YIGUD		+6000.00			26.27	5.28	1.47
TF	PITCO		5000.00			0.04	3.39	1.47
TF	KBIL:RW28R:AER						4.57	0.6
TF	WIBON		+5900.00				12.96	1.0

### Flight Evaluation Table 2

Leg Tp	End Pt	Turn Tp	DTA1	DTA1 Turn Rad	DTA1 Turn Alt	DTA1 Turn Spd	DTA1 Bank Ang	DTA1 Tailwind	DTA1 True Airspd	DTA1 vGround	DTA2	DTA2 Turn Rad	DTA2 Turn Alt	DTA2 Turn Spd	DTA2 Bank Ang	DTA2 Tailwind	DTA2 True Airspd	DTA2 vGround
IF	HRDIN				0.0	0.0							0.0	0.0				
TF	YIGUD		0.0		6700.0	230.0	0.0	60.27	261.13	321.39	1.47	6.28	6000.0	230.0	13.14	58.88	258.31	317.19
TF	PITCO		1.47	6.28	6000.0	230.0	13.14	58.88	258.31	317.19	0.0	37.69	5000.0	165.0	1.0	30.0	182.48	212.48
TF	KBIL:RW28R:AER		0.0	37.69	5000.0	165.0	1.0	30.0	182.48	212.48			0.0	0.0				
TF	WIBON		0.0		0.0	0.0	0.0	0.0	0.0		0.0		5900.0	265.0	0.0	58.68	297.16	355.84

## Route Criteria Failures and Warnings

No failures.
--------------

## Path Evaluation for PILLR

### Flight Evaluation Table 1

Leg Tp	End Pt	Turn Tp	Alt Restr	Alt Restr 2	Max Spd	Turn Ang	Leg Length	Min Seg Length
IF	PILLR		6300.00		-210.00		0.0	0.0
TF	YIGUD		+6000.00			28.08	5.01	1.27
TF	PITCO		5000.00			0.04	3.39	1.27
TF	KBIL:RW28R:AER						4.57	0.6
TF	WIBON		+5900.00				12.96	1.0

### Flight Evaluation Table 2

Leg Tp	End Pt	Turn Tp	DTA1	DTA1 Turn Rad	DTA1 Turn Alt	DTA1 Turn Spd	DTA1 Bank Ang	DTA1 Tailwind	DTA1 True Airspd	DTA1 vGround	DTA2	DTA2 Turn Rad	DTA2 Turn Alt	DTA2 Turn Spd	DTA2 Bank Ang	DTA2 Tailwind	DTA2 True Airspd	DTA2 vGround
IF	PILLR				0.0	0.0							0.0	0.0				
TF	YIGUD		0.0		6300.0	210.0	0.0	59.47	236.95	296.42	1.27	5.06	6000.0	210.0	14.04	58.88	235.85	294.73
TF	PITCO		1.27	5.06	6000.0	210.0	14.04	58.88	235.85	294.73	0.0	37.69	5000.0	165.0	1.0	30.0	182.48	212.48
TF	KBIL:RW28R:AER		0.0	37.69	5000.0	165.0	1.0	30.0	182.48	212.48			0.0	0.0				
TF	WIBON		0.0		0.0	0.0	0.0	0.0	0.0		0.0		5900.0	265.0	0.0	58.68	297.16	355.84

## Route Criteria Failures and Warnings

No failures.
--------------

## Path Evaluation for BBCAT

### Flight Evaluation Table 1

Leg Tp	End Pt	Turn Tp	Alt Restr	Alt Restr 2	Max Spd	Turn Ang	Leg Length	Min Seg Length
IF	BBCAT		8000.00		-210.00		0.0	0.0
TF	WP17		+7400.00				2.85	1.0
RF	PITCO	FLY_BY	5000.00				9.45	0.2
TF	KBIL:RW28R:AER						4.57	0.6
TF	WIBON		+5900.00				12.96	1.0

### Flight Evaluation Table 2

Leg Tp	End Pt	Turn Tp	DTA1	DTA1 Turn Rad	DTA1 Turn Alt	DTA1 Turn Spd	DTA1 Bank Ang	DTA1 Tailwind	DTA1 True Airspd	DTA1 vGround	DTA2	DTA2 Turn Rad	DTA2 Turn Alt	DTA2 Turn Spd	DTA2 Bank Ang	DTA2 Tailwind	DTA2 True Airspd	DTA2 vGround
IF	BBCAT				0.0	0.0							0.0	0.0				
TF	WP17		0.0		8000.0	210.0	0.0	62.84	243.3	306.14	0.0		7400.0	210.0	0.0	50.03	241.03	291.06
RF	PITCO	FLY_BY	0.0		7400.0	210.0	0.0	50.03	241.03	291.06	0.0		5000.0	165.0	0.0	30.0	182.48	212.48
TF	KBIL:RW28R:AER		0.0		5000.0	165.0	0.0	30.0	182.48	212.48			0.0	0.0				
TF	WIBON		0.0		0.0	0.0	0.0	0.0	0.0		0.0		5900.0	265.0	0.0	58.68	297.16	355.84

### Flight Evaluation RF Table

Leg Tp	End Pt	Turn Tp	RF Init Turn Rad	RF Termination Turn Rad	RF Max Bank Angle	RF Bank Angle
RF	PITCO	FLY_BY	3.01	3.01	25.0	22.33

## Route Criteria Failures and Warnings

No failures.
--------------



## Controlling Obstacles

Start Pt	End Pt	Name	Height (ft) AMSL	Effective Height (ft) AMSL
GRYZZ	WP04	Initial1 TF 1-Initial1 TF 2-ConsideredTerrainPoint-13470	4101.05	4226.05
WP04	YIGUD	Initial1 TF 1-Initial1 TF 2-Intermediate TF 1-ConsideredTerrainPoint-103	3989.5	4114.5
YIGUD	PITCO	Initial1 TF 2-Intermediate TF 1-Final TF 1-ConsideredTerrainPoint-4570	3989.5	4114.5
HRDIN	YIGUD	Initial2 TF 1-Intermediate TF 1-ConsideredTerrainPoint-17275	4055.12	4180.12
YIGUD	PITCO	NONE		
PILLR	YIGUD	Initial3 TF 1-Intermediate TF 1-ConsideredTerrainPoint-11293	3979.66	4104.66
BBCAT	WP17	Intermediate TF 1-Intermediate RF 2-ConsideredTerrainPoint-9636	3585.96	3710.96
WP17	PITCO	Intermediate RF 2-ConsideredTerrainPoint-7349	3969.82	4094.82
Final		KBILT0551	3561.0	3560.99
MSA		Minimum Safe Altitude Area-ConsideredTerrainPoint-851980	7024.28	

## Terrain Information

Terrain Extractor Name	Extractor Location	Extractor Type	Resolution
DTED 3 Sec	C:\Program Files (x86)\TARGETS\data\DTED-3Sec	org.mitre.caasd.terrain.DTEExtractor	3.0

## Complete Procedure Results Summary

### Evaluation Input

Name:	RS Results BIL RNAV (RNP) Z Rwy 28R 4.3.17
Project:	GPS MASTER V3
Last Evaluated:	03-Apr-2017 10:28:32
Evaluated Obstacles?:	true
Obstacle Database:	
Evaluated Terrain?:	true
Worst Case Vegetation Height (ft) AGL:	0
Evaluated Airspace?:	false
Evaluated Precipitous Terrain?:	true
Converted 9I Accuracies to 4D?:	true
Used Specific Terrain Accuracy Values?:	false
Terrain Accuracy Override:	None

### Approach Input

HATh (ft):	391.80
Height Group:	4
Glidepath Angle (degs):	3.0
Threshold Crossing Height (ft):	55.63
Length of Runway Lighting System (ft):	0.00
Body Geometry:	Wide Body
ACT (degs C):	-25.7

### Airport

Name:	BILLINGS LOGAN INTL
Location:	N45° 48' 27.580000000",W108° 32' 34.350000000"
Elevation (ft):	3651.60

## Runway

Name:	RW28R
Landing Threshold Point:	N45° 48' 07.390000000",W108° 30' 59.440000000"
Elevation (ft):	3488.20
DER Location:	N45° 48' 45.810000000",W108° 33' 17.340000000"
DER Elevation (ft):	3584.40
Course (degs):	291.74
Width (ft):	150

## Reciprocal Runway

Name:	RW10L
Landing Threshold Point:	N45° 48' 45.810000000",W108° 33' 17.340000000"
Elevation (ft):	3584.40
DER Location:	N45° 48' 07.390000000",W108° 30' 59.440000000"
DER Elevation (ft):	3488.20
Course (degs):	111.71
Width (ft):	150

## Runways with AC 150/5300-18 Survey

KBIL:RW07 [AIRNAV2 r15 08-21-14 TO UNK], KBIL:RW10L [AIRNAV2 r18 01-05-17 TO UNK], KBIL:RW10R [AIRNAV2 r9 08-21-14 TO UNK], KBIL:RW25 [AIRNAV2 r16 08-21-14 TO UNK], KBIL:RW28L [AIRNAV2 r9 08-21-14 TO UNK], KBIL:RW28R [AIRNAV2 r17 01-05-17 TO UNK]

## Overall Results

Minimum Adjusted HATh (ft):	358.92
Decision Altitude (ft):	3879.80
Distance From LTP to DA (ft):	6409.55
DA Point:	N45° 47' 43.949046083",W108° 29' 35.411392583"
DHeightloss (ft):	954.06
ab Point:	N45° 47' 47.439303596",W108° 29' 47.917748097"
Minimum Allowable TCH (ft):	45.00
Maximum Allowable TCH (ft):	75.00
MSA (ft)	8300.00
Average Cold Temperature (deg C):	-25.7
Airport ISA (deg C):	7.769832
Delta ISA Low (deg C):	-32.6209820365799
Low Temperature Limit (deg C):	-24.0
Delta ISA High (deg C):	42.80759797857363
High Temperature Limit (deg C):	50.0
DVEB (ft):	4116.81
Minimum Distance LTP to DA (for Section 1a) (ft):	5071.00
OCS Slope:	22.036959815765144:1
ROC PFAF for TF leg (ft):	437.76
ROC 250 for TF leg (ft):	268.51

## Segment and Leg Summary Data

### InitialPILLR

### Leg PILLR to YIGUD

Leg Type:	TF
Leg Length (NM):	5.01
Leg RNP Value (NM):	1.0
Leg Minimum OCS Height (ft) AMSL:	5304.658792650918
Termination Minimum Altitude (ft):	6000
Descent Gradient (ft/NM):	60.0

BIL RNAV (RNP) Z Rwy 28R 4.3.17

### Controlling Obstacle

Name:	Initial3 TF 1-Intermediate TF 1-ConsideredTerrainPoint-11293
Source:	DTED 3 Sec
Location:	N45° 43' 42.000000000",W108° 15' 06.000000000"
Height (ft) AMSL:	3979.66
Vertical Accuracy Adjustment (ft):	125
Effective Height (ft) AMSL:	4104.66
Height Adjustments (AAO or WCVH) (ft):	200.00
ROC (ft):	1000.00
Min Obs/Terrain Height (ft) AMSL:	5304.66

### InitialHRDIN

### Leg HRDIN to YIGUD

Leg Type:	TF
Leg Length (NM):	5.28
Leg RNP Value (NM):	1.0
Leg Minimum OCS Height (ft) AMSL:	5380.118110236221
Termination Minimum Altitude (ft):	6000
Descent Gradient (ft/NM):	133.0

### Controlling Obstacle

Name:	Initial2 TF 1-Intermediate TF 1-ConsideredTerrainPoint-17275
Source:	DTED 3 Sec
Location:	N45° 41' 30.000000000",W108° 12' 45.000000000"
Height (ft) AMSL:	4055.12
Vertical Accuracy Adjustment (ft):	125
Effective Height (ft) AMSL:	4180.12
Height Adjustments (AAO or WCVH) (ft):	200.00
ROC (ft):	1000.00
Min Obs/Terrain Height (ft) AMSL:	5380.12

### InitialGRYZZ

### Leg GRYZZ to WP04

Leg Type:	TF
Leg Length (NM):	4.16
Leg RNP Value (NM):	1.0
Leg Minimum OCS Height (ft) AMSL:	5426.049868766404
Termination Minimum Altitude (ft):	7600
Descent Gradient (ft/NM):	337.0

### Controlling Obstacle

Name:	Initial1 TF 1-Initial1 TF 2-ConsideredTerrainPoint-13470
Source:	DTED 3 Sec
Location:	N45° 38' 09.0000000000",W108° 17' 45.0000000000"
Height (ft) AMSL:	4101.05
Vertical Accuracy Adjustment (ft):	125
Effective Height (ft) AMSL:	4226.05
Height Adjustments (AAO or WCVH) (ft):	200.00
ROC (ft):	1000.00
Min Obs/Terrain Height (ft) AMSL:	5426.05

### Leg WP04 to YIGUD

Leg Type:	TF
Leg Length (NM):	5.10
Leg RNP Value (NM):	1.0
Leg Minimum OCS Height (ft) AMSL:	5314.501312335958
Initial Minimum Altitude (ft):	7600
Termination Minimum Altitude (ft):	6000
Descent Gradient (ft/NM):	314.0

### Controlling Obstacle

Name:	Initial1 TF 1-Initial1 TF 2-Intermediate TF 1-ConsideredTerrainPoint-103
Source:	DTED 3 Sec
Location:	N45° 43' 42.000000000",W108° 23' 42.000000000"
Height (ft) AMSL:	3989.50
Vertical Accuracy Adjustment (ft):	125
Effective Height (ft) AMSL:	4114.50
Height Adjustments (AAO or WCVH) (ft):	200.00
ROC (ft):	1000.00
Min Obs/Terrain Height (ft) AMSL:	5314.50

### IntermediateBBCAT

#### Leg BBCAT to WP17

Leg Type:	TF
Leg Length (NM):	2.85
Leg RNP Value (NM):	1.0
Leg Minimum OCS Height (ft) AMSL:	4410.958005249344
Termination Minimum Altitude (ft):	7400
Descent Gradient (ft/NM):	211.0

### Controlling Obstacle

Name:	Intermediate TF 1-Intermediate RF 2-ConsideredTerrainPoint-9636
Source:	DTED 3 Sec
Location:	N45° 50' 24.000000000",W108° 21' 24.000000000"
Height (ft) AMSL:	3585.96
Vertical Accuracy Adjustment (ft):	125
Effective Height (ft) AMSL:	3710.96
Height Adjustments (AAO or WCVH) (ft):	200.00
ROC (ft):	500.00
Min Obs/Terrain Height (ft) AMSL:	4410.96

#### Leg WP17 to PITCO

Leg Type:	RF
Leg Length (NM):	9.45
Leg RNP Value (NM):	1.0
Leg Minimum OCS Height (ft) AMSL:	4794.816272965879
Initial Minimum Altitude (ft):	7400
Termination Mandatory Altitude (ft):	5000
Descent Gradient (ft/NM):	254.0

#### Controlling Obstacle

Name:	Intermediate RF 2-ConsideredTerrainPoint-7349
Source:	DTED 3 Sec
Location:	N45° 44' 39.000000000",W108° 22' 33.000000000"
Height (ft) AMSL:	3969.82
Vertical Accuracy Adjustment (ft):	125
Effective Height (ft) AMSL:	4094.82
Height Adjustments (AAO or WCVH) (ft):	200.00
ROC (ft):	500.00
Min Obs/Terrain Height (ft) AMSL:	4794.82

#### IntermediateYIGUD

#### Leg YIGUD to PITCO

Leg Type:	TF
Leg Length (NM):	3.39
Leg RNP Value (NM):	1.0
Leg Minimum OCS Height (ft) AMSL:	null
Initial Minimum Altitude (ft):	6000
Termination Mandatory Altitude (ft):	5000
Descent Gradient (ft/NM):	295.0

#### Controlling Obstacle



Name:	Initial1 TF 2-Intermediate TF 1-Final TF 1-ConsideredTerrainPoint-4570
Source:	DTED 3 Sec
Location:	N45° 43' 42.000000000",W108° 23' 42.000000000"
Height (ft) AMSL:	3989.50
Vertical Accuracy Adjustment (ft):	125
Effective Height (ft) AMSL:	4114.50
Height Adjustments (AAO or WCVH) (ft):	200.00
ROC (ft):	500.00
Min Obs/Terrain Height (ft) AMSL:	4814.50

#### Leg YIGUD to PITCO

Leg Type:	TF
Leg Length (NM):	3.39
Leg RNP Value (NM):	1.0
Leg Minimum OCS Height (ft) AMSL:	null
Initial Minimum Altitude (ft):	6000
Termination Mandatory Altitude (ft):	5000
Descent Gradient (ft/NM):	295.0

#### Controlling Obstacle

Name:	Initial1 TF 2-Intermediate TF 1-Final TF 1-ConsideredTerrainPoint-4570
Source:	DTED 3 Sec
Location:	N45° 43' 42.000000000",W108° 23' 42.000000000"
Height (ft) AMSL:	3989.50
Vertical Accuracy Adjustment (ft):	125
Effective Height (ft) AMSL:	4114.50
Height Adjustments (AAO or WCVH) (ft):	200.00
ROC (ft):	500.00
Min Obs/Terrain Height (ft) AMSL:	4814.50

#### Leg YIGUD to PITCO

Leg Type:	TF
Leg Length (NM):	3.39
Leg RNP Value (NM):	1.0
Leg Minimum OCS Height (ft) AMSL:	4814.501312335958
Initial Minimum Altitude (ft):	6000
Termination Mandatory Altitude (ft):	5000
Descent Gradient (ft/NM):	295.0

#### Controlling Obstacle

Name:	Initial1 TF 2-Intermediate TF 1-Final TF 1-ConsideredTerrainPoint-4570
Source:	DTED 3 Sec
Location:	N45° 43' 42.000000000",W108° 23' 42.000000000"
Height (ft) AMSL:	3989.50
Vertical Accuracy Adjustment (ft):	125
Effective Height (ft) AMSL:	4114.50
Height Adjustments (AAO or WCVH) (ft):	200.00
ROC (ft):	500.00
Min Obs/Terrain Height (ft) AMSL:	4814.50

#### Final Segment Results

TotalLength:	27780.00
MinimumAdjustedHath:	358.92
D500:	8479.00
ControllingObstacle:	KBILT0551 [AIRNAV2 r1]:577226596
D15sec:	11414.74
DPFAF:	27780.00
DVEB (ft):	4116.81
Distance from VEB to DA (ft):	5071.00
OCS Slope:	22.036959815765144:1
ROC PFAF for TF leg (ft):	437.76
ROC 250 for TF leg (ft):	268.51

#### Controlling Obstacle

Name:	KBILT0551
Source:	AIRNAV2
Location:	N45° 47' 55.200000000",W108° 29' 58.120000000"
Height (ft) AMSL:	3561.00
Vertical Accuracy Adjustment (ft):	3
Effective Height (ft) AMSL:	3560.99
Height Adjustments (AAO or WCVH) (ft):	0.00
Distance (ft):	4492.81
OCS Height (ft) AMSL:	3651.23

#### Leg PITCO to KBIL:RW28R:AER

Leg Type:	TF
Leg Length (NM):	4.57
Leg RNP Value (NM):	0.3
Glidepath Angle (degs):	3.0

#### Missed

Climb Gradient (ft/NM):	200.00
Climb Gradient Termination Altitude (ft):	N/A
Clearance Limit ROC:	1000.00
HMASab:	3548.95
Minimum Adjusted Da:	3879.80
D Splay:	31746.49
D End Ma:	84191.46
ab Point:	N45° 47' 47.439303596",W108° 29' 47.917748097"
DHeightloss (ft):	954.06
Precipitous Terrain Adjustment (ft):	0.00

#### Leg KBIL:RW28R:AER to WIBON

Leg Type:	TF
Leg Length (NM):	12.96
Leg RNP Value (NM):	1.0
Required Climb Gradient (ft/NM):	N/A

#### Airspace Terrain Point

BIL RNAV (RNP) Z Rwy 28R 4.3.17

Name:	Section 1b of First Leg of Missed Section of Standard Type-ConsideredTerrainPoint-5325
Source:	DTED 3 Sec
Location:	N45° 52' 00.000000000",W108° 46' 27.000000000"
Height (ft) AMSL:	4251.97

### Criteria Failures and Warnings

No failures.

### Software Evaluation Failures, Warnings, and Notes

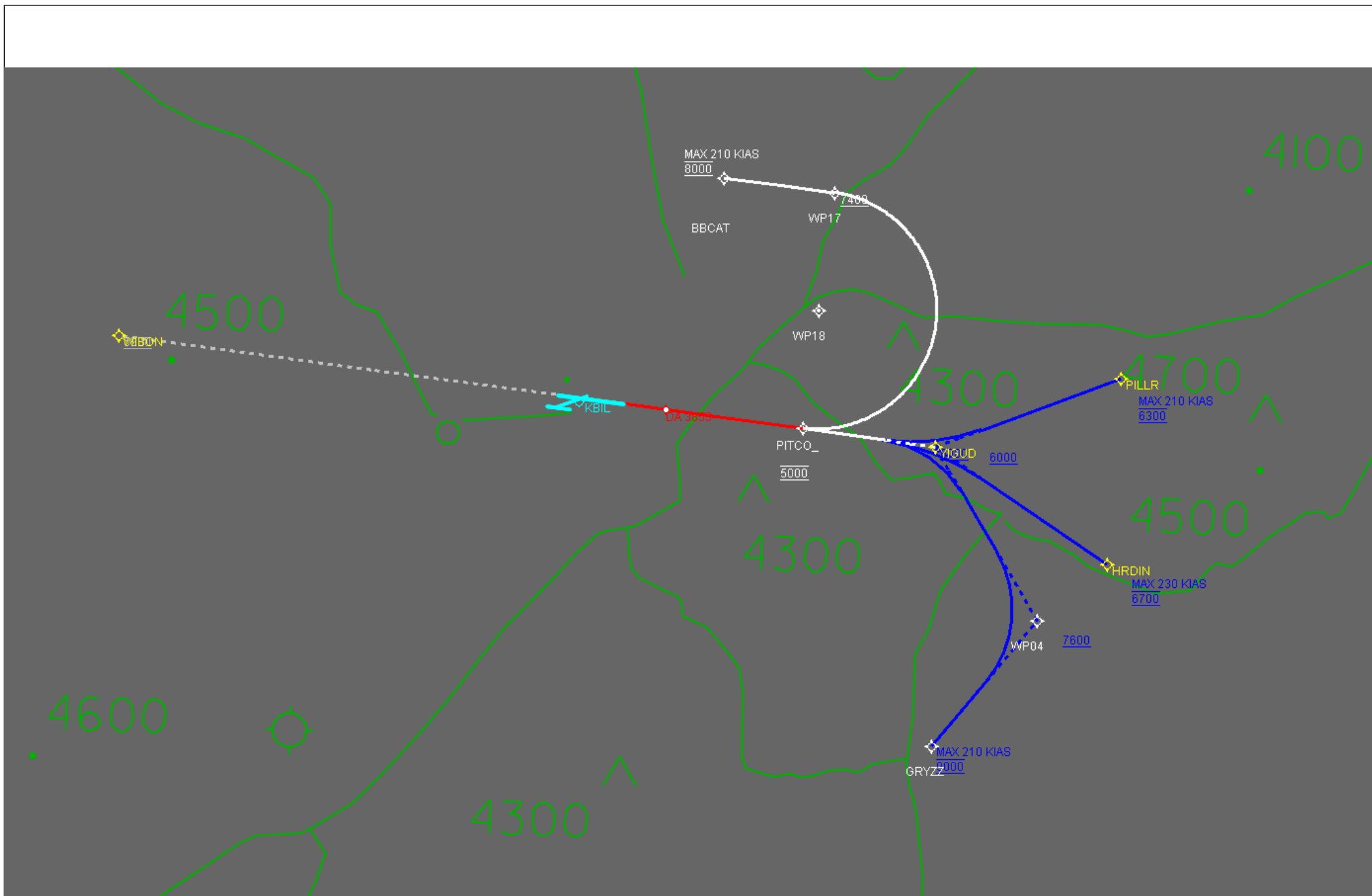
No failures.

### Obstacles Requiring Accuracy Code Verification

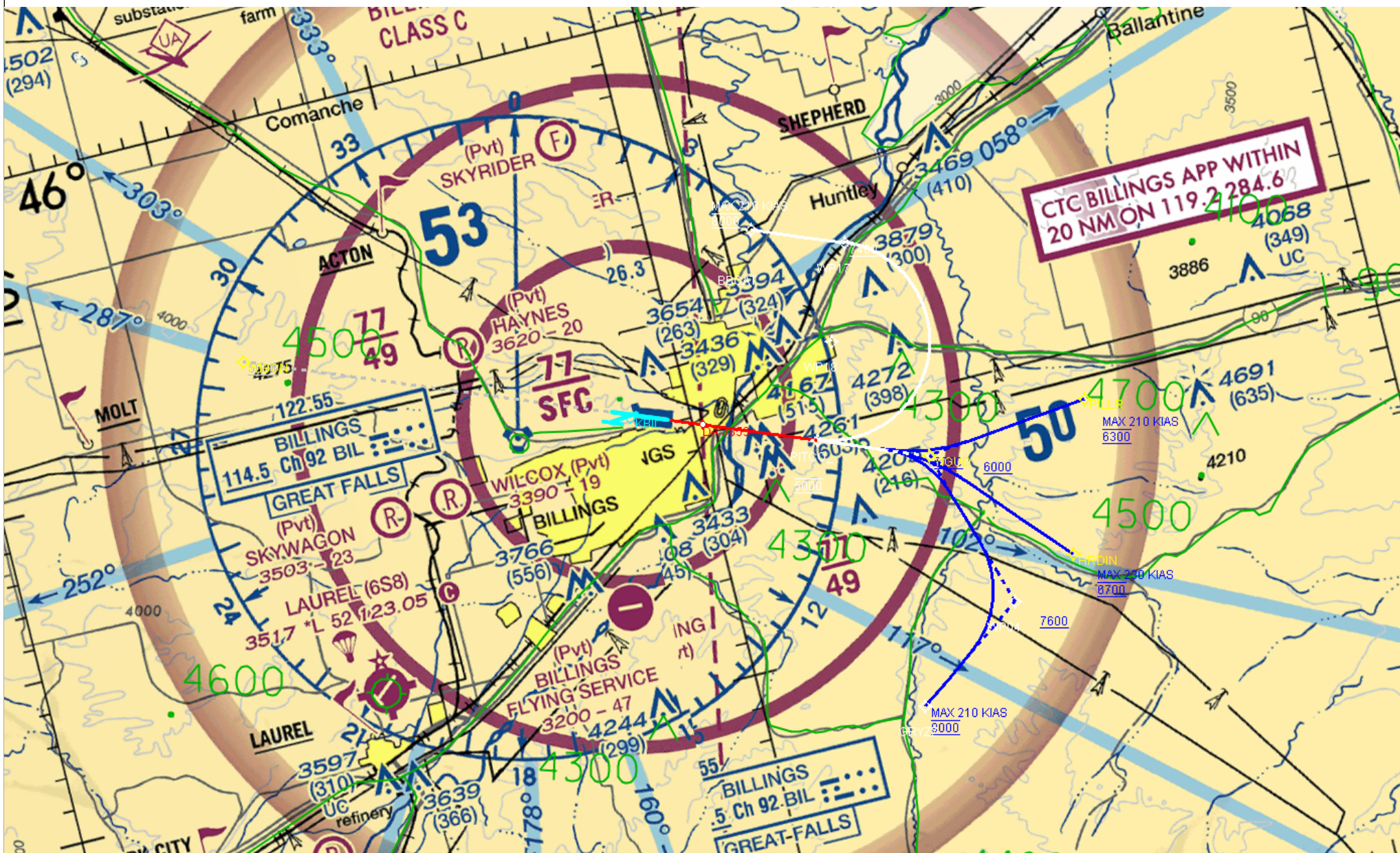
[30-020846 [AIRNAV2 r1], 30-020890 [AIRNAV2 r1]]

### Ignored Obstacles

None.



## BIL RNAV (RNP) Z Rwy 28R 4.3.17



BIL RNAV (RNP) Z Rwy 28R 4.3.17

## Database Effective Dates

Database	Date
UddfObstacle	03/09/2015
Tiled AIRNAV2	N/A
OEAAA	N/A
NFDC	03/02/2017
IFP_OFFLINE	N/A
AVNIS	04/03/2017
DOF	03/02/2017
AVNII_OFFLINE	N/A
AIRNAV2	04/03/2017
CIFP	03/30/2017

## Notes: