

3-14-24

(MSP) MINNEAPOLIS, MINNESOTA, MINNEAPOLIS-ST PAUL INTL/
WOLD-CHAMBERLAIN

KBREW TWO DEPARTURE [https://swims.faa.gov/Landing/Actionable/
Edit/8533](https://swims.faa.gov/Landing/Actionable/Edit/8533)

Requested By: FAA

PRB Result: Recommend Approval

Waiver: No hazard identified

ADMINISTRATIVE:

1) (15B) CONTROLLING OBSTACLE – KSTP RWY 32 – MISSING
CGTA 2500 OBSTACLE 2375 TOWER (27-000498)

450330.00N/0930728.00W – TYPO

2) (15B) MSP RWY 12L – OBSTACLE (27-090531) HAS BEEN
UPDATED (3/1/24) – UPDATED DATA MAKES THE TAKEOFF
MINIMUMS STANDARD VS CLIMB GRADIENT AND NON-
STANDARD MINS

corrected 4/1
eric suski, ajva-431, manager

Digitally signed by

ERIC N SUSKI

Apr 02, 2024

Flight Procedures Cover Page	Task Action: Amendment	Task Type: SID	Estimated Chart Date: 05/16/2024	APWS Task ID: 2CCEF991F3DD49CBB1F9A0E3C7845D41	APWS Project ID: E9F9655B529F4AAE923E4FB3D182D356
Procedure: SID KBREW TWO		Enroute: YES	Specialist: Sweeting, Dexter		Agreement Number:
Airport ID: KMSP			Airport City: MINNEAPOLIS		State: MN
Facility ID:	Facility Type:	Flight Inspection Remark Type:			

Procedure Comments:
ACTIVE DATA USED FOR KMSP, KSTP, KFCM AND KANE AIRPORT AND RWYS.
ACTIVE DATA USED FOR MSP, GEP, FAR AND RWF NAVAIDS.

DARWIN (DWN) VORTAC VOR MON. HARD DATE
ADDED REDWOOD (RWF) VOR/DME AS CROSSING NAVIAD TO HOMUR, HRBEK AND KBREW.

WAIVERS (1): REQUEST PUBLICATION OF ATC CLIMB GRADIENT.
APPROVALS (1): REQUEST FOR CLIMB GRADIENTS IN EXCESS OF 500 FT/NM.

ESV(S): (3): REDWOOD FALLS (RWF) VDME (3)

CONTACT ERIC SUSKI: 405-650-4749.

04/01/2024: THIS IS A CORRECTED COPY OF THE FORM APPROVED ON 03/19/2024.
1. TRANSITION ROUTES (GRAPHICAL DEPICTION ONLY): CHANGED COURSE FROM "297.60" TO "295.51".
2. TRANSITION ROUTES (GRAPHICAL DEPICTION ONLY): CHANGED MOCA FROM "3000" TO "3300"

Digitally signed by
ERIC N SUSKI
Feb 08, 2024

J ZEDER 04/02/2024

QUALITY
16
CHECKED

QUALITY
41
CHECKED

QUALITY
23
CHECKED

FIPC BASIC FORM						
PROCEDURE: SID KBREW TWO			AIRPORT NAME: MINNEAPOLIS-ST PAUL INTL/WOLD-		AIRPORT ID: KMSP	SPECIAL CONTROL NO: BP-02-199-24
FAC ID: KBREW2		CITY: MINNEAPOLIS			ST: MN	ORIG CHART DATE: 05/16/2024
DFL TYPE: PROC/T	THIRD PARTY: <input type="checkbox"/> YES	EST. TIME ON SITE: 0.4	REIMB. NUMBER: AC0721	PTS TASK ID: 2CCEF991F3DD49CBB1F9A0E3C7845D41		
PREFLIGHT NOTES						
REVIEWER: marc webber					DATE: 03/29/2024	
COMMENTS:					CHECK ONE:	
					<input checked="" type="checkbox"/> FLT CK REQ <input type="checkbox"/> NFCR <input type="checkbox"/> REJECT	
					<div style="display: flex; justify-content: space-between;"> YES NO </div>	
					CPV COMPLETE?	
					X	
PROCEDURE RESULTS						
INSPECTION DATE: 03/27/2024	CREW #: VN424	N #: N76	INSTRUMENT PROCEDURE STATUS:		ARINC CODING:	
			<input type="checkbox"/> SAT <input type="checkbox"/> SAT W/CHANGES <input checked="" type="checkbox"/> UNSAT		<input type="checkbox"/> SAT <input type="checkbox"/> SAT/GOLD <input type="checkbox"/> UNSAT	
FLIGHT INSPECTOR SIGNATURE:			PRINTED NAME:			NOTAM INITIATED?
marc webber @ 03/29/2024 11:18			WEBBER, MARC RAYMOND			<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
FLIGHT INSPECTOR REMARKS: KBREW2 is an amendment to existing KBREW ONE Departure (serving KMSP and KSTC) – The Procedure Package (F.pdf / file) contains FAA Form 8260-15B – Page 1 of 5 list MOCA 3000’MSL (attached) – However there’s existing (1056’AGL / 2217’MSL) charted obstacle at KBREW intersection (2nd attachment) – Existing KBREW ONE DEPARTURE (SID) (3rd attachment) has 3300 MOCA for KBREW – FAR leg. The amendment appears to have lowered the MOCA from 3300’ to 3000’ on the KBREW – FAR transition – This change would reduce the MOCA obstruction clearance over KBREW from 1083’ to 783’						
IN-FLIGHT OBSTACLE REPORT						
OBSTRUCTION ID #:	COORDINATES OR LOCATION:	GNSS ALTITUDE (MSL):	BAROMETRIC ALTITUDE (MSL):	HEIGHT ABOVE GROUND LEVEL:		

1. FLIGHT PROCEDURE IDENTIFICATION:

Minneapolis, MN
MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLAIN (KMSP)
KBREW DEPARTURE

2. WAIVER REQUIRED AND APPLICABLE STANDARD:

Publish ATC Climb Gradients (CG). FAA Order 8260.46 Para 2-1-1 e (3) (c) Do not chart CGs that may be needed to support airspace, navigation solution, environmental, or ATC operational limitations.

3. REASON FOR WAIVER (JUSTIFICATION FOR NONSTANDARD TREATMENT):

A Procedure Review Board determined that Climb Gradients (CGs), including those less than 500 ft/NM, are to be charted in the departure route description for KMSP.

4. EQUIVALENT LEVEL OF SAFETY PROVIDED:

Climb gradients will be included in the departure route description as follows:
TAKEOFF ALL RUNWAYS: Climb on assigned heading for RADAR vectors to GEP VORTAC then on depicted route to KBREW, then on transition. Maintain ATC assigned altitude. Expect filed altitude 10 minutes after departure
ALL AIRCRAFT: CLIMB GRADIENTS: If unable to accept climb rates, advise ATC prior to taxi.
RUNWAYS 12L/12R: For assigned headings from 060° clockwise to 100°, RWY 12L: 540 feet per NM to 3500, RWY 12R: 542 feet per NM to 3500.
RUNWAY 17: For assigned headings from 230° clockwise to 285°, 512 feet per NM to 3500.
RUNWAY 30L/R: For assigned headings from 220° clockwise to 360°, 380 feet per NM to 3500.

FARGO TRANSITION (KBREW2.FAR): From over KBREW on FAR R-116 TO FAR VOR/DME.

This allows controllers time to coordinate with the controller in the adjacent airspace or assign a different departure.

5. ALTERNATIVE ACTIONS DEEMED NOT FEASIBLE:

Discarding the climb gradients in favor of a standard climb was considered, but due to the high density air traffic in the MSP airspace, the risk of essential controller transmissions and the loss of traffic flow was regarded as being too great and a safety issue.

6. COORDINATION WITH USER ORGANIZATIONS (SPECIFY):

Central Service Area and NATCA leads.
MN TRACON (M98)
ZMP ARTCC
Minneapolis Approach
Delta and Southwest Airlines

7. SUBMITTED BY:

DATE	OFFICE IDENTIFICATION	TITLE
01/25/24	AJV-A431	MANAGER

SIGNATURE

8. AFS ACTIONS:

☐ APPROVED ☐ DISAPPROVED ☐ NOT REQUIRED

Digitally signed by
ERIC N SUSKI
Feb 08, 2024

COMMENTS:

DATE	ROUTING SYMBOL	SIGNATURE
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Federal Aviation Administration

Memorandum

To: Wade Terrell, Manager, Flight Technologies and Procedures Division
THRU: Wayne Radicke, Manager, Flight Procedures and Airspace Group

From: Julie Morgan, Manager, Instrument Flight Procedures (IFP) Coordination
Team, AJV-A410

Subject: Approval Request: Minneapolis-ST Paul INTL/World-Chamberlain,
Minneapolis, MN (KMSP)

The purpose of this memo is to request Flight Standards approval to publish the Minneapolis KBREW Departure with a climb gradient higher than 500 FT/NM as stated in Order 8260.46J Paragraph 2-1-1.d.(2): "The Flight Procedures and Airspace Group (or appropriate military authority) must approve DPs and DVAs requiring a CG in excess of 500 FT/NM (600 FT/NM for helicopters)..." and Paragraph 2-1-1.d.(2)(a) "Requests for approval of CGs in excess of 500 FT/NM (600 FT/NM for helicopters) must include documentation showing the calculations used to derive the climb gradient values."

The KMSP KBREW Departure was intended for aircraft separation to protect the arriving and departing aircraft into ST PAUL DOWNTOWN HOLMAN FLD (KSTP) to the East and to protect arriving and departing aircraft into FLYING CLOUD (KFCM) and CRYSTAL (KMIC) to the West. This crossing restriction is needed to ensure separation and optimal traffic flow for a very congested airspace. The crossing restrictions result in ATC climb gradients of: RWY 12L: 540 FT/NM to 3500, 12R: 542 FT/NM to 3500, 17: 512 FT/NM to 3500. This ensures traffic flow for both airports and if the aircraft cannot accept the climb gradient ATC can coordinate for traffic into KSTP RWY 14/32 to stop until the departure is airborne and past the final approach. Historically all aircraft have been able to make the crossing altitudes.

Manager, Airspace and Procedures, North Team
ATO Eastern Service Center

ESV Details

Originating Office :AJV-A423		Airspace Docket Number :		Request Type :Establish		
Facility Data						
Chart Name:HOMUR XING		City:REDWOOD FALLS		Ident:RWF		State:MN
Type/Class: H-VOR		Frequency: M113.3		Reference Number: 23105071		
Extended Service Volume Data: (Requesting Officer)						
ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	
FAA 701857 - 029	31		73	90	156	
Requirement: XING RADIAL FOR HOMUR INT						
Signature:Shelton Gale		Routing Symbol:AJV-A423				Date:10/25/2023
Extended Service Volume Data: (FMO)						
ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 701857 - 029	31		73	90	156	APPROVE
Requirement/Remarks: XING RADIAL FOR HOMUR INTAPPROVED. FREQ. PROTECTION & FIELD STRENGTH. PENDING FLIGHT INSPECT @ REQUIRED. DIST. & MIN ALT..						
Signature:Bowers Michael		Routing Symbol:			Date:10/26/2023	
Extended Service Volume Data: (Super FMO)						
ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 701857 - 029	31		73	90	156	APPROVE
Requirement/Remarks: XING RADIAL FOR HOMUR INTAPPROVED. FREQ. PROTECTION & FIELD STRENGTH. PENDING FLIGHT INSPECT @ REQUIRED. DIST. & MIN ALT..						
Signature:Hughes Dennis		Routing Symbol:			Date:10/26/2023	
Extended Service Volume Data: (FIFO)						
ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 701857 - 029	31					
Requirement/Remarks:						
Signature:		Routing Symbol:			Date:	

ESV Details

Originating Office :AJV-A423		Airspace Docket Number :		Request Type :Establish		
Facility Data						
Chart Name:HRBEK XING		City:REDWOOD FALLS		Ident:RWF		State:MN
Type/Class: H-VOR		Frequency: M113.3		Reference Number: 23105067		
Extended Service Volume Data: (Requesting Officer)						
ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	
FAA 701857 - 027	40		76	90	156	
Requirement: XING RADIAL FOR HRBEK INT						
Signature:Shelton Gale		Routing Symbol:AJV-A423				Date:10/25/2023
Extended Service Volume Data: (FMO)						
ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 701857 - 027	40		76	90	156	APPROVE
Requirement/Remarks: XING RADIAL FOR HRBEK INTAPPROVED. FREQ. PROTECTION & FIELD STRENGTH. PENDING FLIGHT INSPECT @ REQUIRED. DIST. & MIN ALT..						
Signature:Bowers Michael		Routing Symbol:			Date:10/26/2023	
Extended Service Volume Data: (Super FMO)						
ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 701857 - 027	40		76	90	156	APPROVE
Requirement/Remarks: XING RADIAL FOR HRBEK INTAPPROVED. FREQ. PROTECTION & FIELD STRENGTH. PENDING FLIGHT INSPECT @ REQUIRED. DIST. & MIN ALT..						
Signature:Hughes Dennis		Routing Symbol:			Date:10/26/2023	
Extended Service Volume Data: (FIFO)						
ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 701857 - 027	40					
Requirement/Remarks:						
Signature:		Routing Symbol:			Date:	

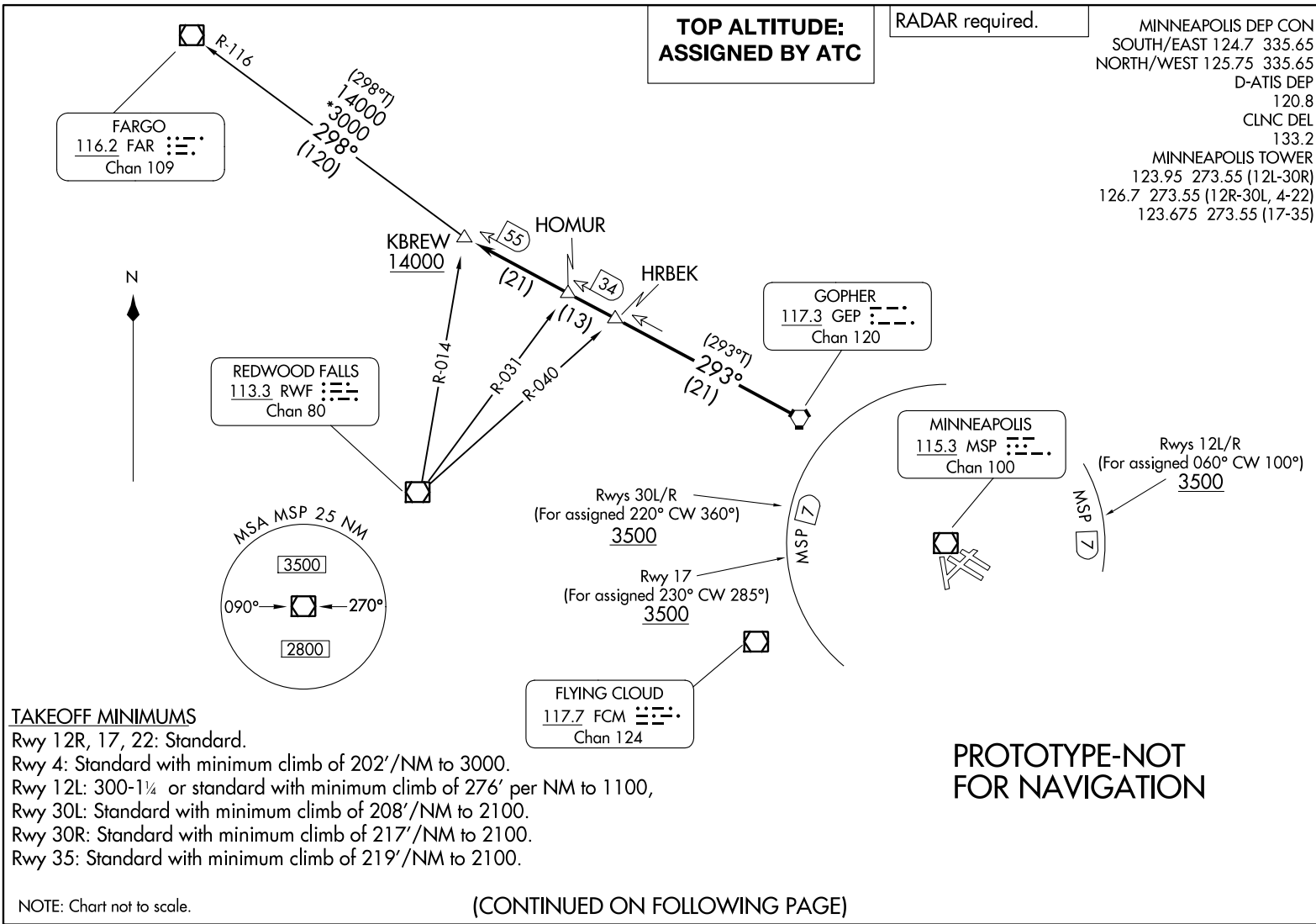
ESV Details

Originating Office :AJV-A423		Airspace Docket Number :		Request Type :Establish		
Facility Data						
Chart Name:KBREW XING		City:REDWOOD FALLS		Ident:RWF		State:MN
Type/Class: H-VOR		Frequency: M113.3		Reference Number: 23105072		
Extended Service Volume Data: (Requesting Officer)						
ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	
FAA 701857 - 030	14		72	90	156	
Requirement: XING RADIAL FOR KBREW INT						
Signature:Shelton Gale		Routing Symbol:AJV-A423				Date:10/25/2023
Extended Service Volume Data: (FMO)						
ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 701857 - 030	14		72	90	156	APPROVE
Requirement/Remarks: XING RADIAL FOR KBREW INTAPPROVED. FREQ. PROTECTION & FIELD STRENGTH. PENDING FLIGHT INSPECT @ REQUIRED. DIST. & MIN ALT..						
Signature:Bowers Michael		Routing Symbol:			Date:10/26/2023	
Extended Service Volume Data: (Super FMO)						
ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 701857 - 030	14		72	90	156	APPROVE
Requirement/Remarks: XING RADIAL FOR KBREW INTAPPROVED. FREQ. PROTECTION & FIELD STRENGTH. PENDING FLIGHT INSPECT @ REQUIRED. DIST. & MIN ALT..						
Signature:Hughes Dennis		Routing Symbol:			Date:10/26/2023	
Extended Service Volume Data: (FIFO)						
ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 701857 - 030	14					
Requirement/Remarks:						
Signature:		Routing Symbol:			Date:	

MINNEAPOLIS DEP CON
 SOUTH/EAST 124.7 335.65
 NORTH/WEST 125.75 335.65
 D-ATIS DEP 120.8
 CLNC DEL 133.2
 MINNEAPOLIS TOWER
 123.95 273.55 (12L-30R)
 126.7 273.55 (12R-30L, 4-22)
 123.675 273.55 (17-35)

RADAR required.

**TOP ALTITUDE:
 ASSIGNED BY ATC**



**PROTOTYPE-NOT
 FOR NAVIGATION**

AUTOMATED AL-264 KBREW DEPARTURE

NC-1
 01/29/24
 COMPILER: JUN
 REVIEWER:
 DBL CHKR:
 EFF: FIG

(KBREW2.KBREW) FIG

KBREW TWO DEPARTURE

MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLAIN (MSP)

AL-264 (FAA)

MINNEAPOLIS, MINNESOTA



DEPARTURE ROUTE DESCRIPTION

TAKEOFF ALL RUNWAYS: Climb on assigned heading for RADAR vectors to GEP VORTAC then on depicted route to KBREW, then on transition. Maintain ATC assigned altitude. Expect filed altitude 10 minutes after departure.

ALL AIRCRAFT: CLIMB GRADIENTS: If unable to accept climb rates, advise ATC prior to taxi.

RUNWAY 12L/R DEPARTURES: For assigned headings from 060° clockwise to 100°, cross MSP VOR/DME 7 DME arc at or above 3500, Rwy 12L: 540' per NM to 3500, 12R: 542' per NM to 3500.

RUNWAY 17: For assigned headings from 230° clockwise to 285°, cross MSP VOR/DME 7 DME arc at or above 3500, 512' per NM to 3500.

RUNWAYS 30L/R: For assigned headings from 220° clockwise to 360°, cross MSP VOR/DME 7 DME arc at or above 3500, 380' per NM to 3500.

...on transition, maintain ATC assigned altitude. Expect filed altitude 10 minutes after departure.

FARGO TRANSITION (KBREW2.FAR): From over KBREW on FAR R-116 to FAR VOR/DME.

PROTOTYPE-NOT FOR NAVIGATION

AUTOMATED AL-264 KBREW DEPARTURE (CONT.)

NC-1
1/19/24
COMPILER: JUN
REVIEWER:
DBL CHKR:
EFF: FIG

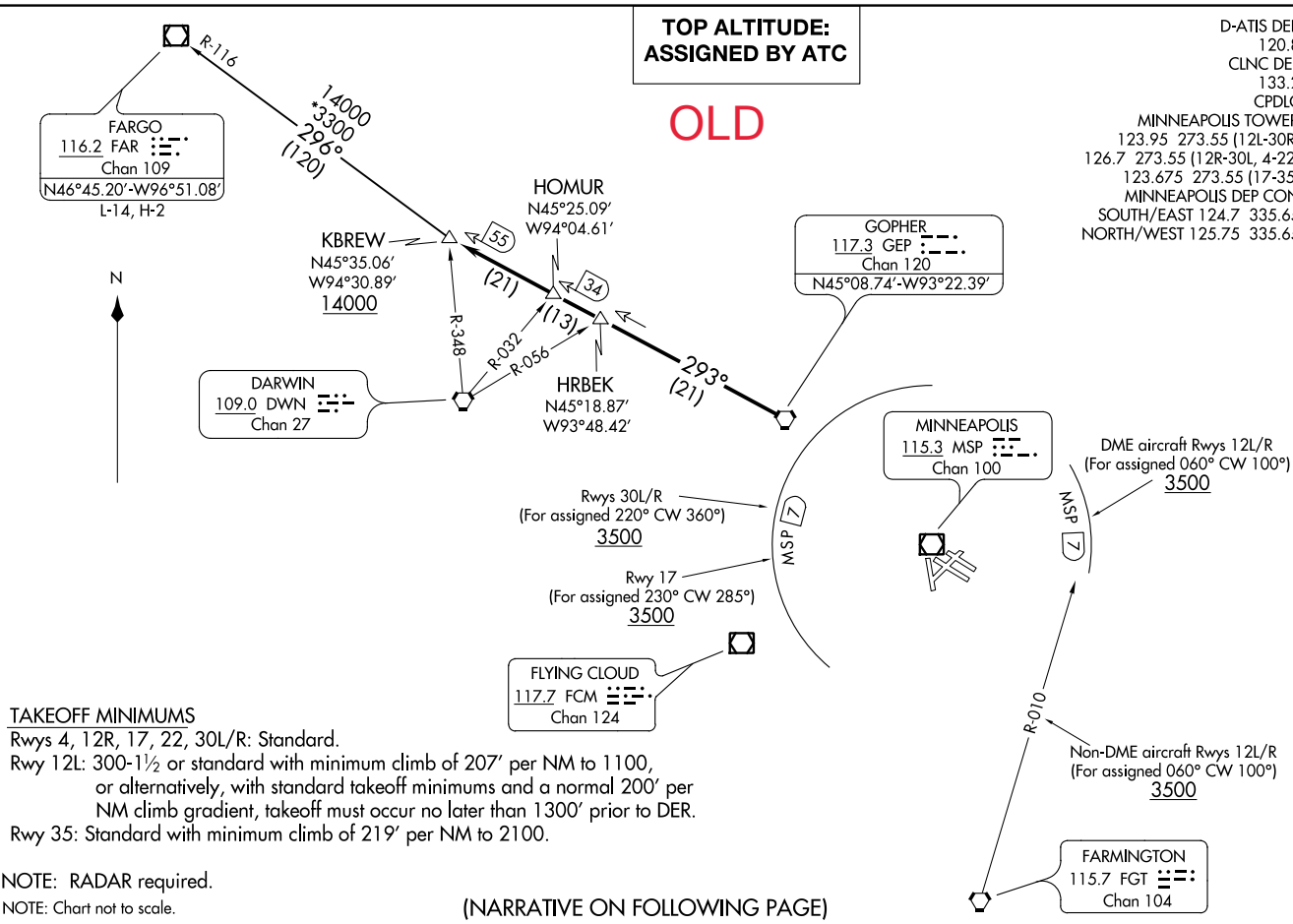
KBREW TWO DEPARTURE

(KBREW2.KBREW) FIG

MINNEAPOLIS, MINNESOTA
MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLAIN (MSP)

KBREW ONE DEPARTURE
(KBREW1, KBREW) 01 FEB 18

MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLAIN (MSP)
MINNEAPOLIS, MINNESOTA



(KBREW1, KBREW) 20086
KBREW ONE DEPARTURE

MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLAIN (MSP)
AL-264 (FAA)
MINNEAPOLIS, MINNESOTA

D-ATIS DEP 120.8
CLNC DEL 133.2
CPDLC
MINNEAPOLIS TOWER 123.95 273.55 (12L-30R)
126.7 273.55 (12R-30L, 4-22)
123.675 273.55 (17-35)
MINNEAPOLIS DEP CON
SOUTH/EAST 124.7 335.65
NORTH/WEST 125.75 335.65



DEPARTURE ROUTE DESCRIPTION

TAKEOFF ALL RUNWAYS: Fly assigned heading for RADAR vectors to GEP VORTAC then on GEP R-293 to KBREW INT/GEP 55 DME. Maintain ATC assigned altitude.

DME EQUIPPED AIRCRAFT RUNWAYS 12L/R DEPARTURES: For assigned headings from 060° clockwise to 100°, cross MSP 7 DME at or above 3500, maintain assigned altitude. If unable to comply, advise ATC as soon as possible prior to departure. Thence. . . .

NON-DME EQUIPPED AIRCRAFT RUNWAYS 12L/R DEPARTURES: For assigned headings from 060° clockwise to 100°, cross FGT R-010 at or above 3500, maintain assigned altitude. If unable to comply, advise ATC as soon as possible prior to departure. Thence. . . .

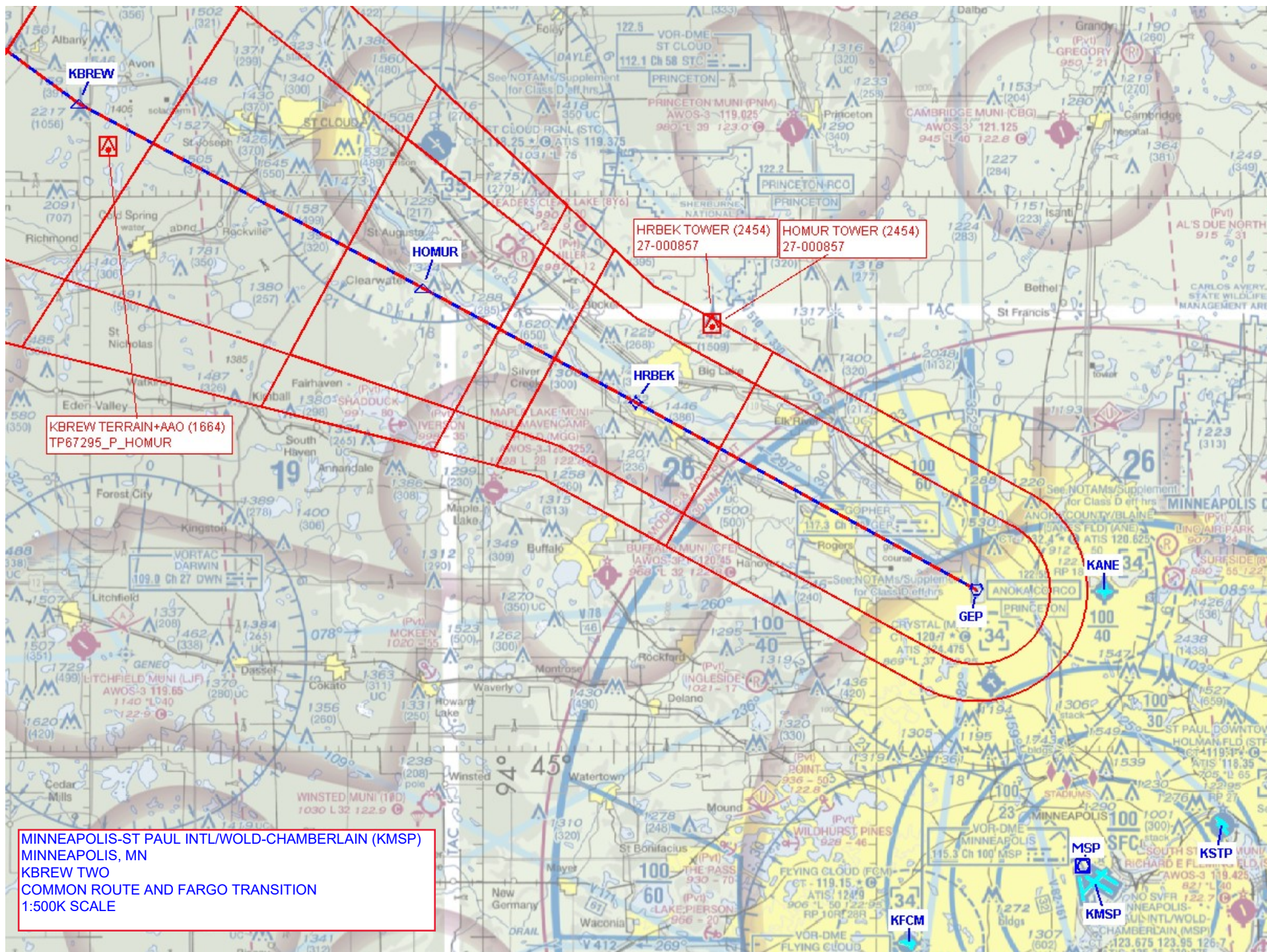
TAKEOFF RUNWAY 17: For assigned headings from 230° clockwise to 285°, cross MSP 7 DME at or above 3500, maintain assigned altitude. If unable to comply, advise ATC as soon as possible prior to departure. Thence. . . .

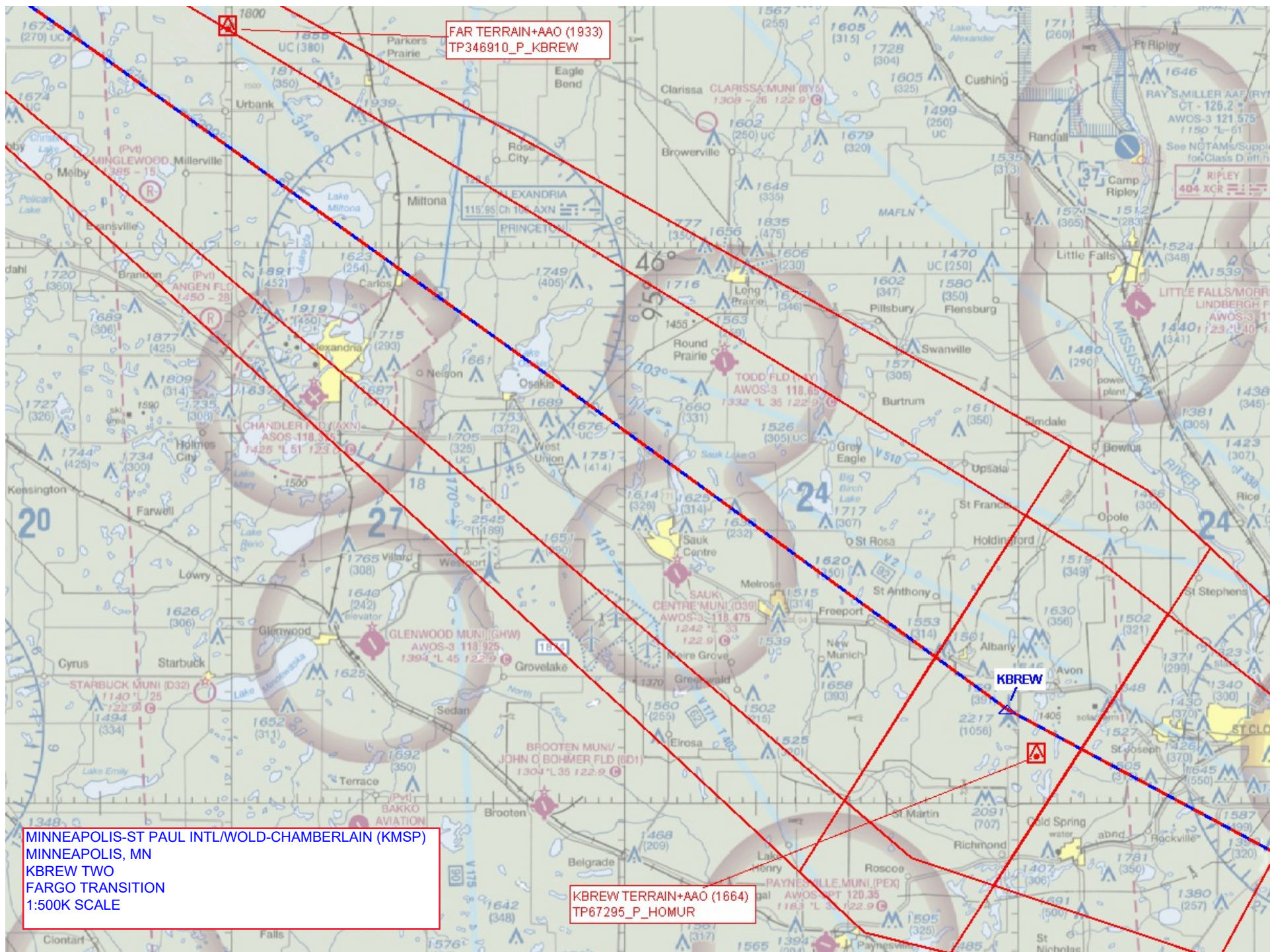
TAKEOFF RUNWAYS 30L/R: For assigned headings from 220° clockwise to 360°, cross MSP 7 DME at or above 3500, maintain assigned altitude. If unable to comply, advise ATC as soon as possible prior to departure. Thence. . . .

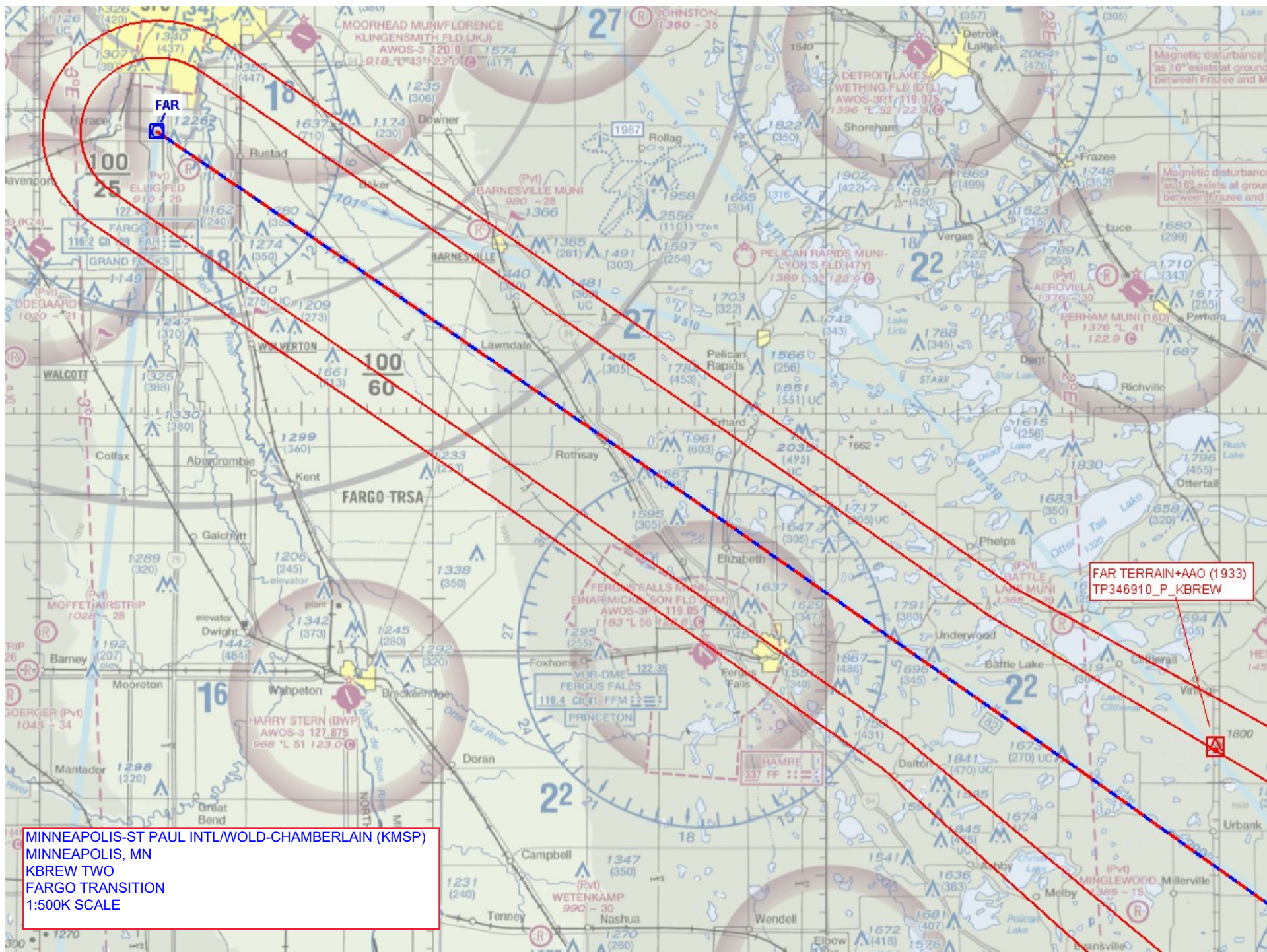
TAKEOFF RUNWAYS 4, 22, 35: Initially assigned heading, thence. . . .

. . . .on transition or assigned route. Expect clearance to filed altitude/flight level 10 (ten) minutes after departure.

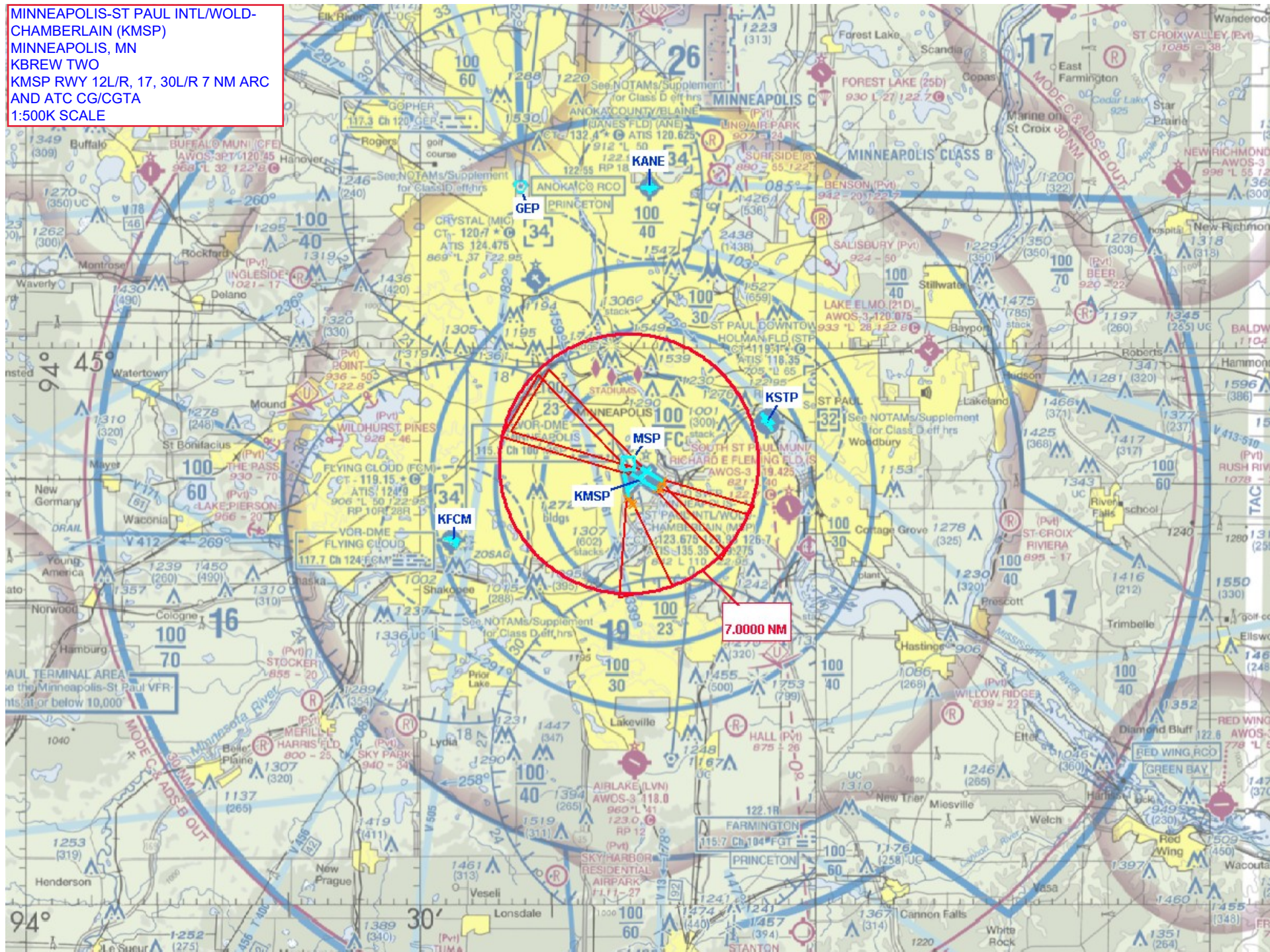
FARGO TRANSITION (KBREW1.FAR): From over KBREW on FAR R-116 to FAR VOR/DME.



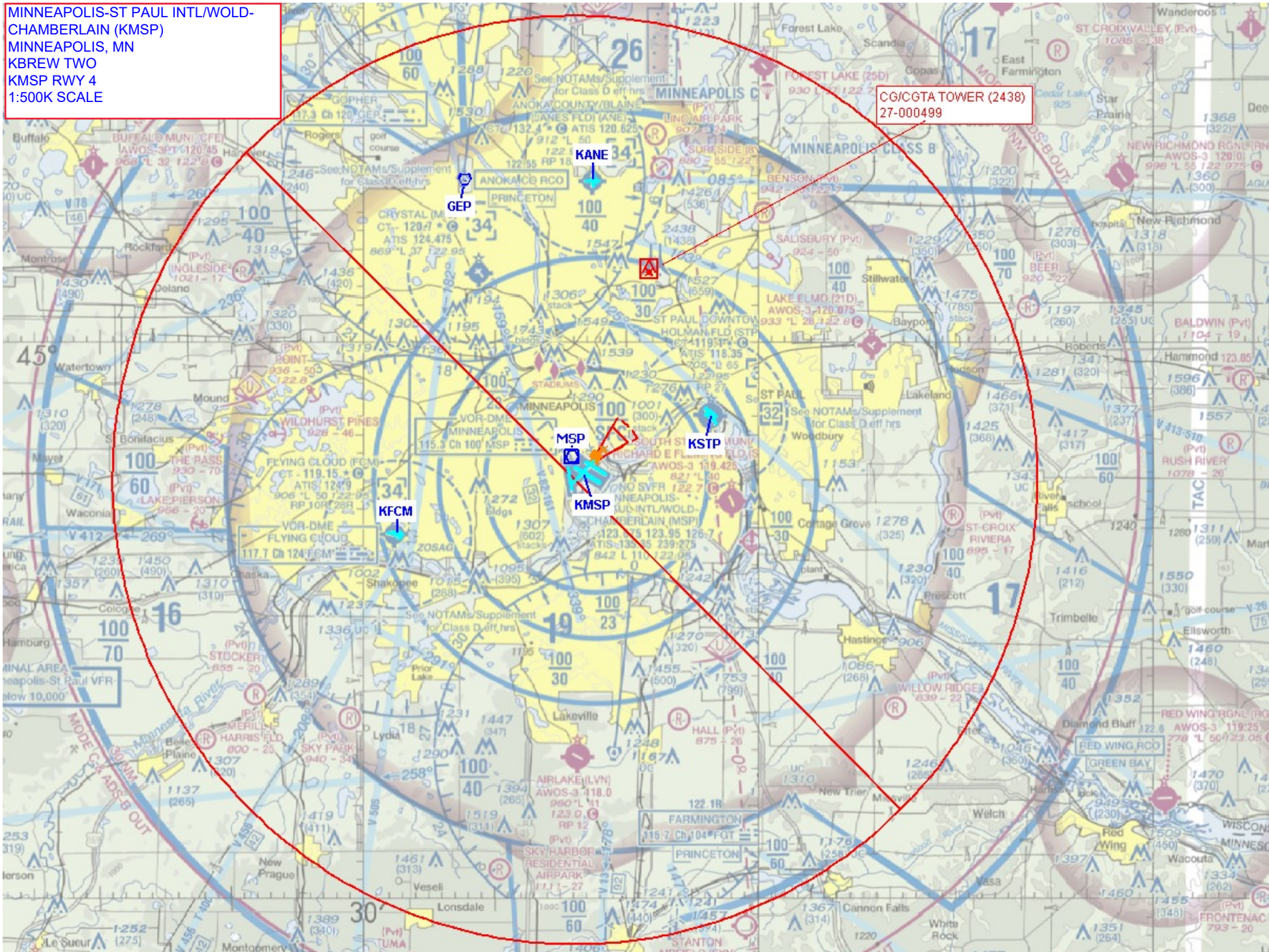




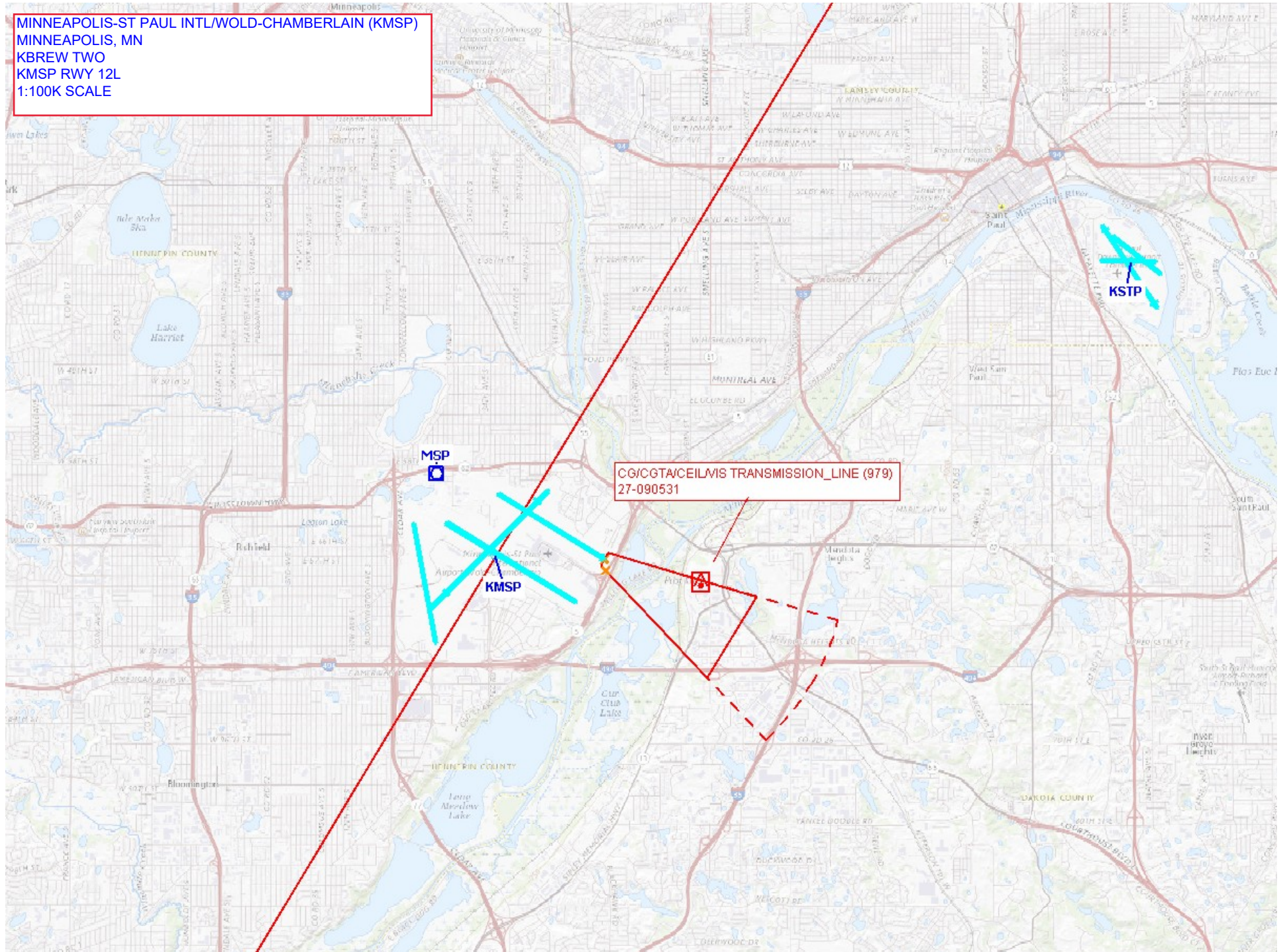
MINNEAPOLIS-ST PAUL INTL/WOLD-
CHAMBERLAIN (KMSP)
MINNEAPOLIS, MN
KBREW TWO
KMSP RWY 12L/R, 17, 30L/R 7 NM ARC
AND ATC CG/CGTA
1:500K SCALE



MINNEAPOLIS-ST PAUL INTL/WOLD-
CHAMBERLAIN (KMSP)
MINNEAPOLIS, MN
KBREW TWO
KMSP RWY 4
1:500K SCALE

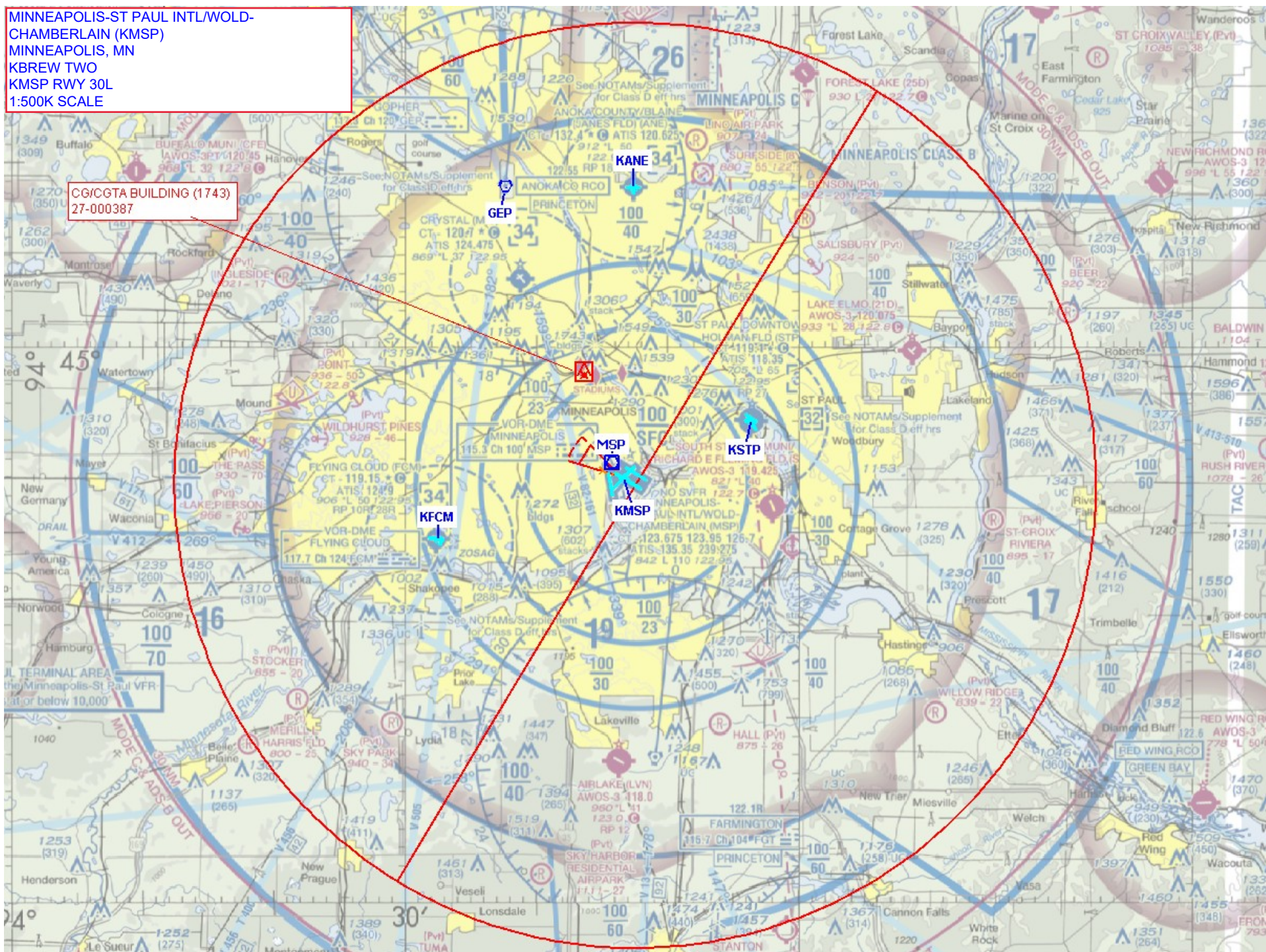


MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLAIN (KMSP)
MINNEAPOLIS, MN
KBREW TWO
KMSP RWY 12L
1:100K SCALE



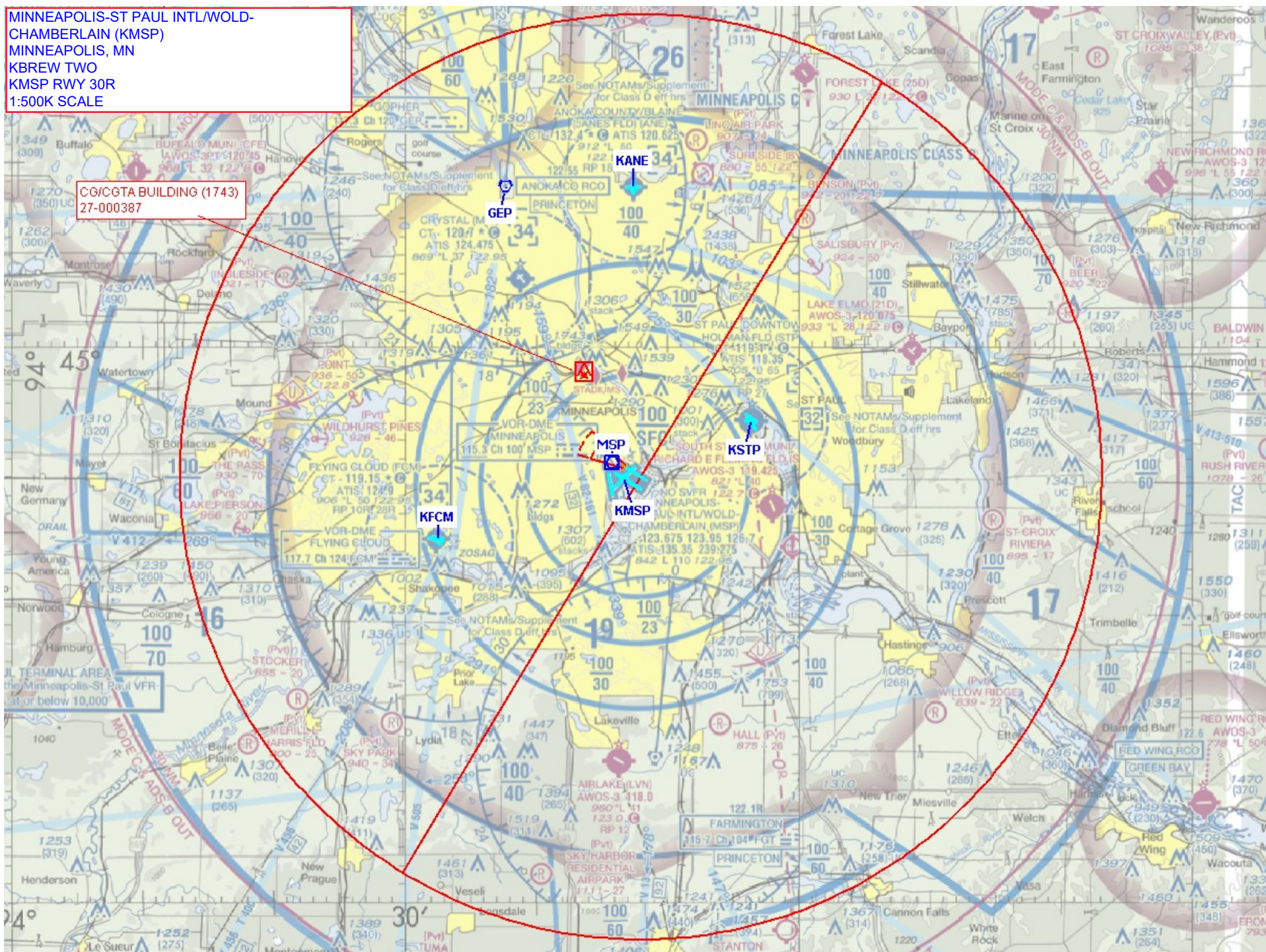
MINNEAPOLIS-ST PAUL INTL/WOLD-
CHAMBERLAIN (KMSP)
MINNEAPOLIS, MN
KBREW TWO
KMSP RWY 30L
1:500K SCALE

CG/CGTA BUILDING (1743)
27-000387

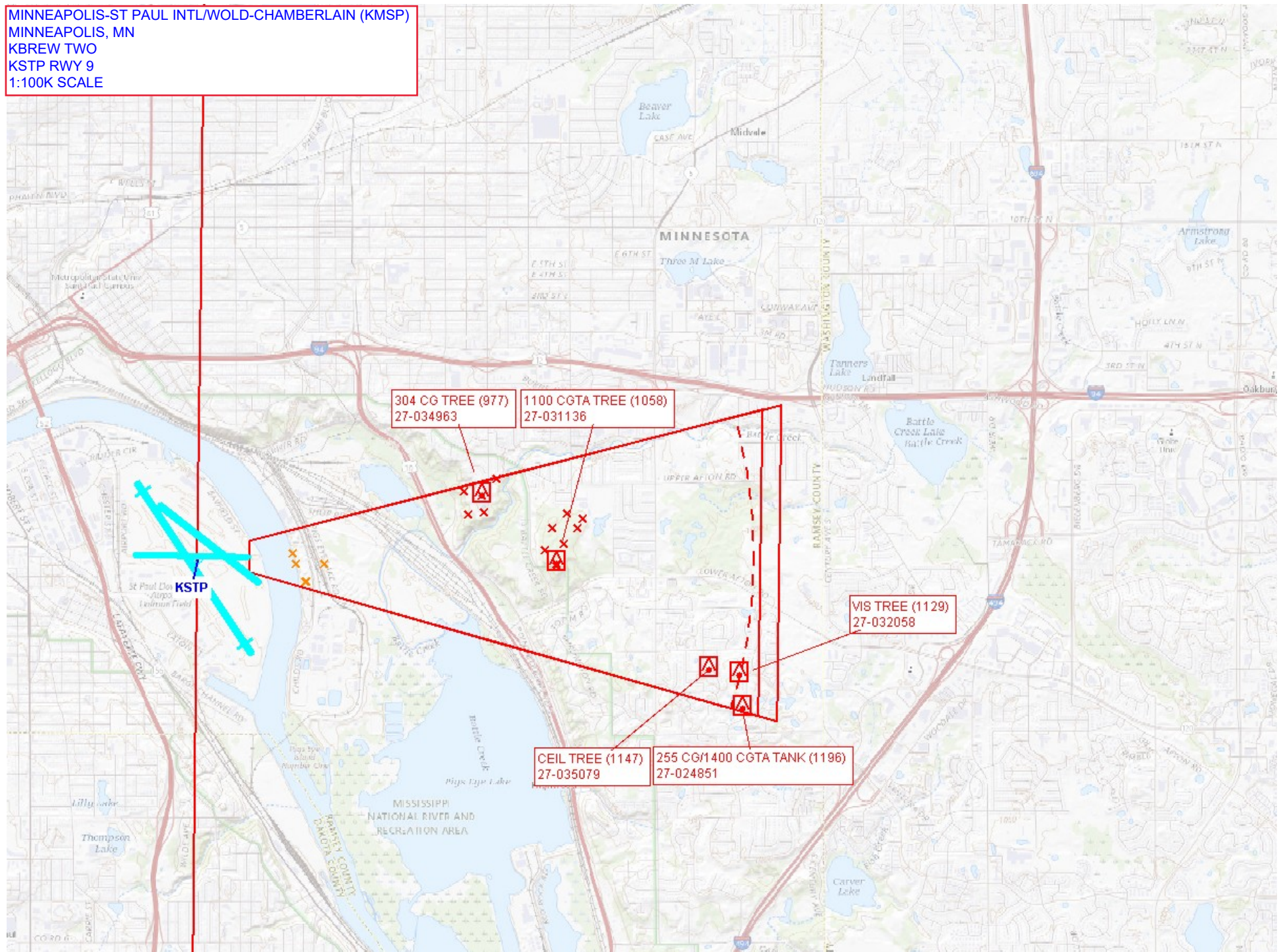


MINNEAPOLIS-ST PAUL INTL/WOLD-
CHAMBERLAIN (KMSP)
MINNEAPOLIS, MN
KBREW TWO
KMSP RWY 30R
1:500K SCALE

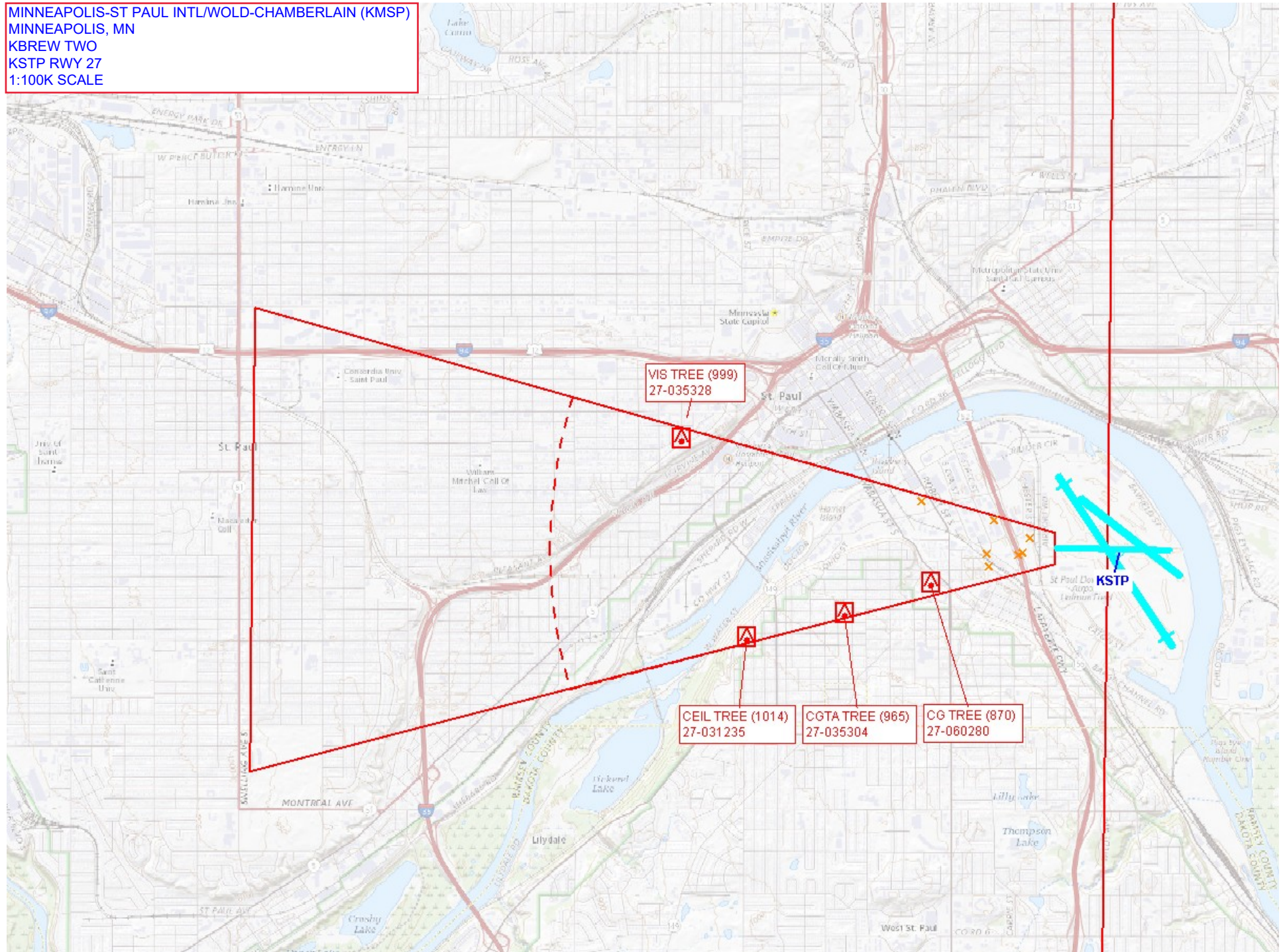
CG/CGTA BUILDING (1743)
27-000387



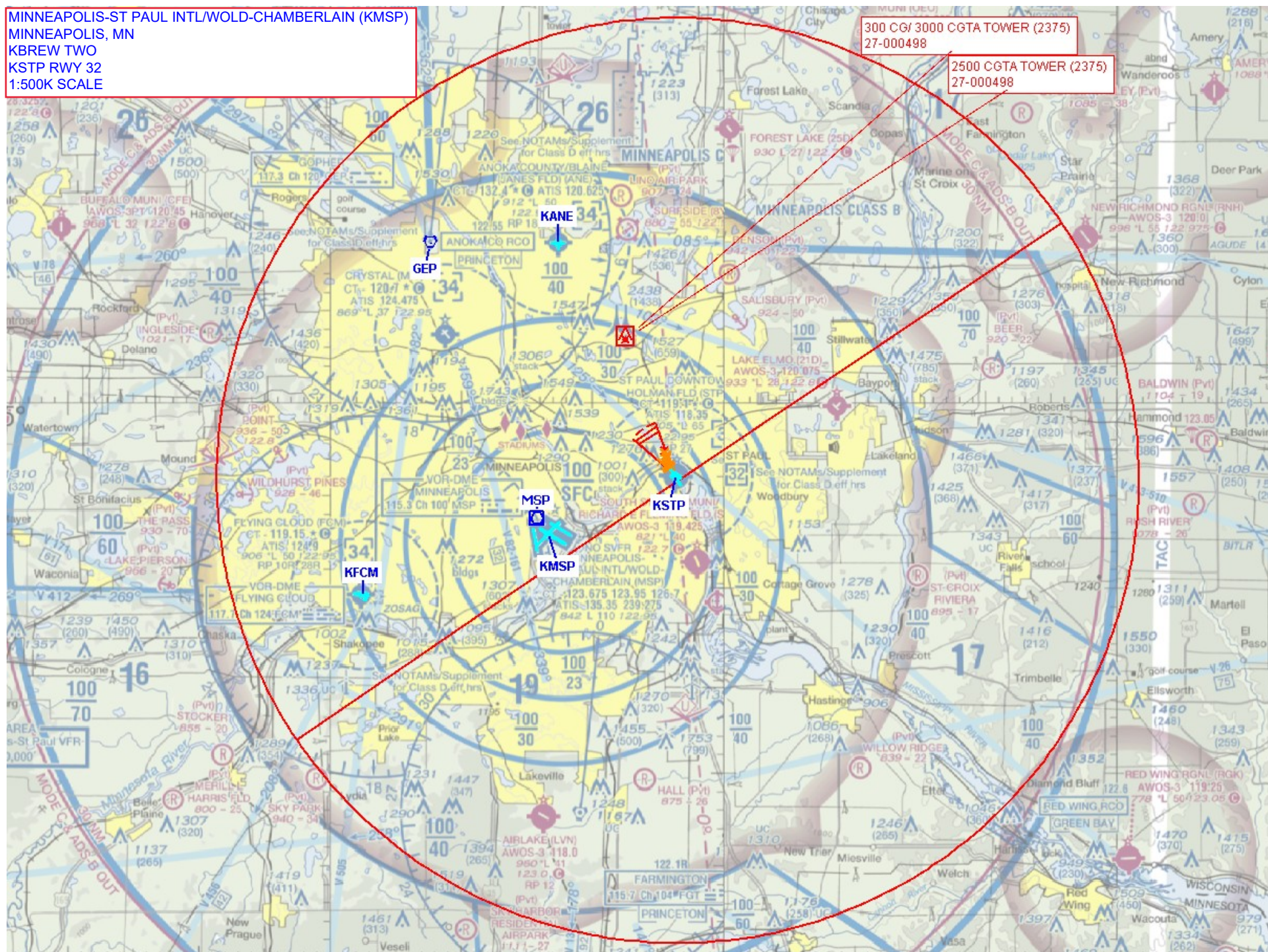
MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLAIN (KMSP)
MINNEAPOLIS, MN
KBREW TWO
KSTP RWY 9
1:100K SCALE



MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLAIN (KMSP)
MINNEAPOLIS, MN
KBREW TWO
KSTP RWY 27
1:100K SCALE



MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLAIN (KMSP)
MINNEAPOLIS, MN
KBREW TWO
KSTP RWY 32
1:500K SCALE



MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLAIN (KMSP)
MINNEAPOLIS, MN
KBREW TWO
KSTP RWP 32
1:100K SCALE

