

VATUSA DENVER ARTCC AND VATUSA MINNEAPOLIS ARTCC

LETTER OF AGREEMENT

EFFECTIVE: 12/01/2022

SUBJECT: INTERFACILITY COORDINATION

1. **PURPOSE:** This agreement establishes coordination procedures and defines delegation of airspace between VATUSA Denver ARTCC (ZDV) and VATUSA Minneapolis ARTCC (ZMP). This agreement is supplemental to procedures contained within FAA Order 7110.65.
2. **DISCLAIMER:** Information contained herein is designed and specifically for use in a virtual air traffic control environment. It is not applicable, nor should it be referenced for live operations in the National Airspace System (NAS).
3. **CANCELLATION:** VATUSA Denver ARTCC and VATUSA Minneapolis ARTCC Letter of Agreement dated June 18, 2020
4. **RESPONSIBILITIES:**
 - a. Denver ARTCC delegates control responsibility and jurisdiction of airspace at 7,000 feet MSL and below to Minneapolis ARTCC as depicted on Attachment B. Minneapolis ARTCC must have control of aircraft landing at Kearney, Nebraska, Municipal Airport (EAR) for descent and turns not to exceed 45 degrees left or right of course within a 30NM radius of the EAR VOR. The Denver ARTCC controller must coordinate all approaches to Holdrege (Nebraska)/Brewster Field (HDE).
5. **PROCEDURES:**
 - a. Each ARTCC must route/restrict aircraft in accordance with Attachment C.
 - b. Aircraft landing within 60 miles of the boundary must enter the receiving ARTCC's airspace AOB FL230, and the receiving ARTCC must have control for descent and turns.
 - c. Inappropriate altitude for direction of flight may be assigned IAW FAA JO 7110.65 and with prior approval from the receiving facility.
 - d. Transponder codes may be changed without coordination in an area 30NM either side of the ZDV/ZMP ARTCC common boundary.
 - e. The receiving controller must have control for turns 20 degrees left or right of course, and speed adjustments for aircraft within 20NM of the ZDV/ZMP ARTCC common boundary.
 - f. Flights originating less than 5 minutes flying time from the adjacent ARTCC's boundary must be coordinated by the transferring ARTCC.
 - g. Data Block Coordination and Interim Altitude Procedures.
 - (1) Data blocks must reflect the aircraft's assigned altitude at the time of handoff.
 - (2) Handoffs must be directed to the appropriate sector for the aircraft's altitude assignment. Acceptance of a radar handoff constitutes approval coordination for that aircraft to climb or descend to the displayed altitude.
 - (3) Use of interim (temp) altitudes is authorized between Denver ARTCC and Minneapolis ARTCC and must represent valid altitude coordination. Use of interim altitudes must not be authorized to coordinate Inappropriate Altitude for Direction of Flight (IAFDOF), or to supersede altitude restrictions established within this Letter of Agreement.

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- (4) When unable to approve the automated altitude, the receiving controller must verbally coordinate with the transferring controller prior to acceptance of the handoff.
- h. Radar handoffs should be made with reference to the Denver ARTCC/Minneapolis ARTCC boundary and along regularly used routes. In addition, the following designated points may be used for radar handoffs:
- (1) CHAUX 43°42'30"N, 101°24'30"W
 - (2) WHITE 43°17'20"N, 100°06'00"W
 - (3) RESERVOIR 44°42'00"N, 101°29'00"W
 - (4) LOOP 41°21'00"N, 99°03'00"W
 - (5) NATOMA 39°28'30"N, 98°41'00"W
 - (6) LOGAN 39°51'00"N, 98°57'00"W
- i. Sector Stratification.
- (1) Minneapolis ARTCC sectors are stratified at FL230 and below for low altitude sectors and FL240 and above for high altitude sectors.
 - (2) Denver ARTCC sectors are stratified at FL260 and below for low altitude sectors and FL270 and above for high altitude sectors.
- j. Aircraft unable to comply with required routes or altitude must be coordinated with the receiving ARTCC on an individual basis.

6. ATTACHMENTS:

- a. Attachment A – Radar Sectors and Handoff Points
- b. Attachment B – EAR Shelf Delegated Airspace
- c. Attachment C – Route/Altitude Restrictions

_____/s/_____
Dhruv Kalra
Air Traffic Manager
VATUSA Minneapolis ARTCC

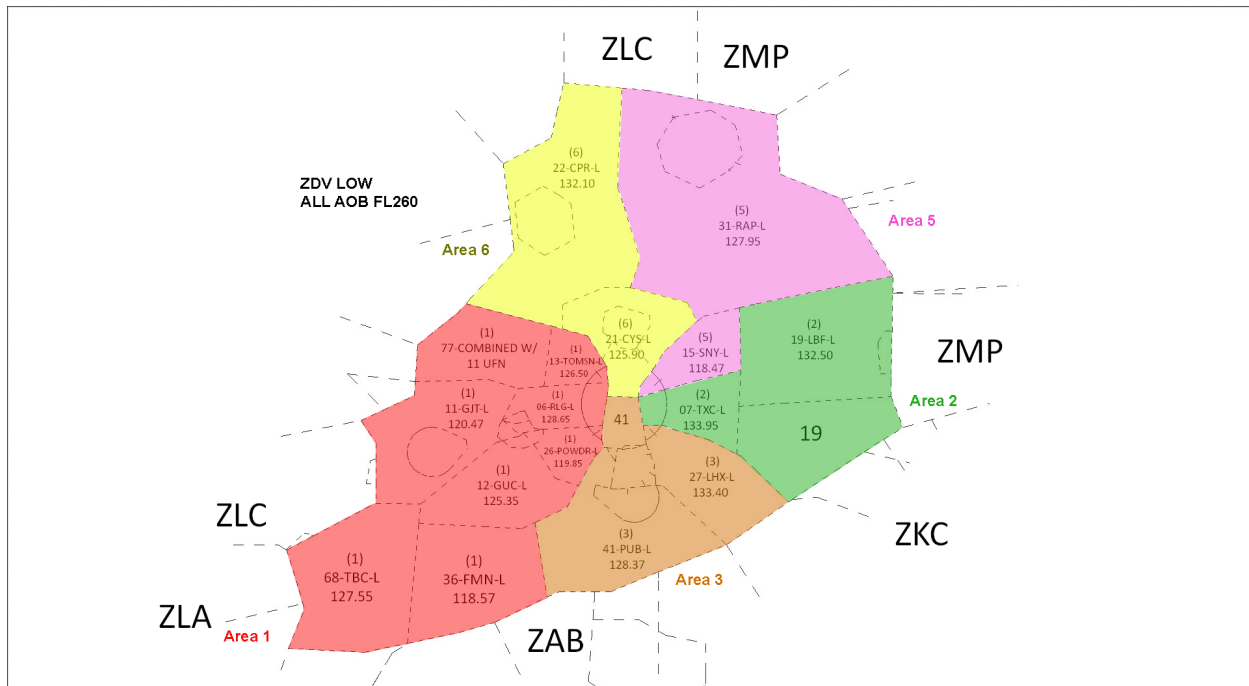
_____/s/_____
Austin Wilkins
Air Traffic Manager
VATUSA Denver ARTCC

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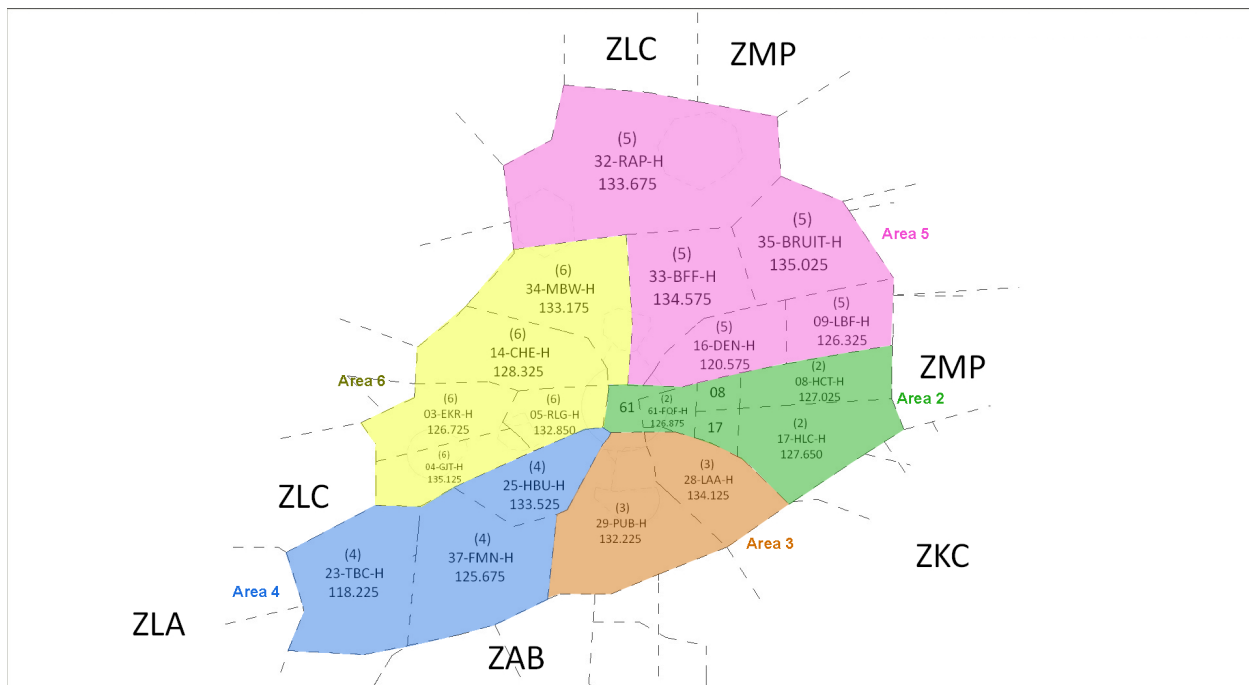
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ATTACHMENT A – RADAR SECTORS AND HANDOFF POINTS

ZDV LOW SECTORS (SFC-FL260)



ZDV HIGH SECTORS (FL270+)



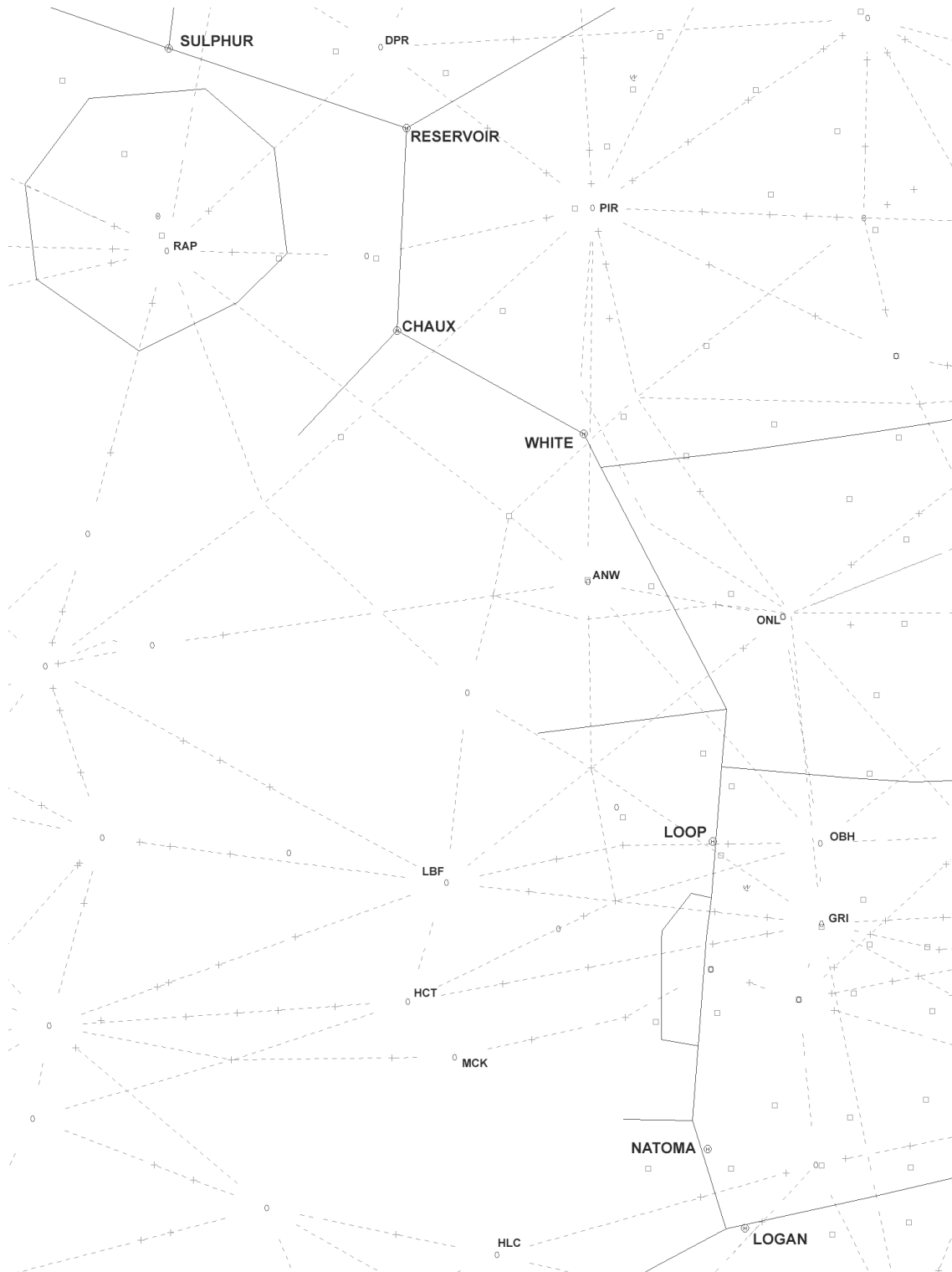
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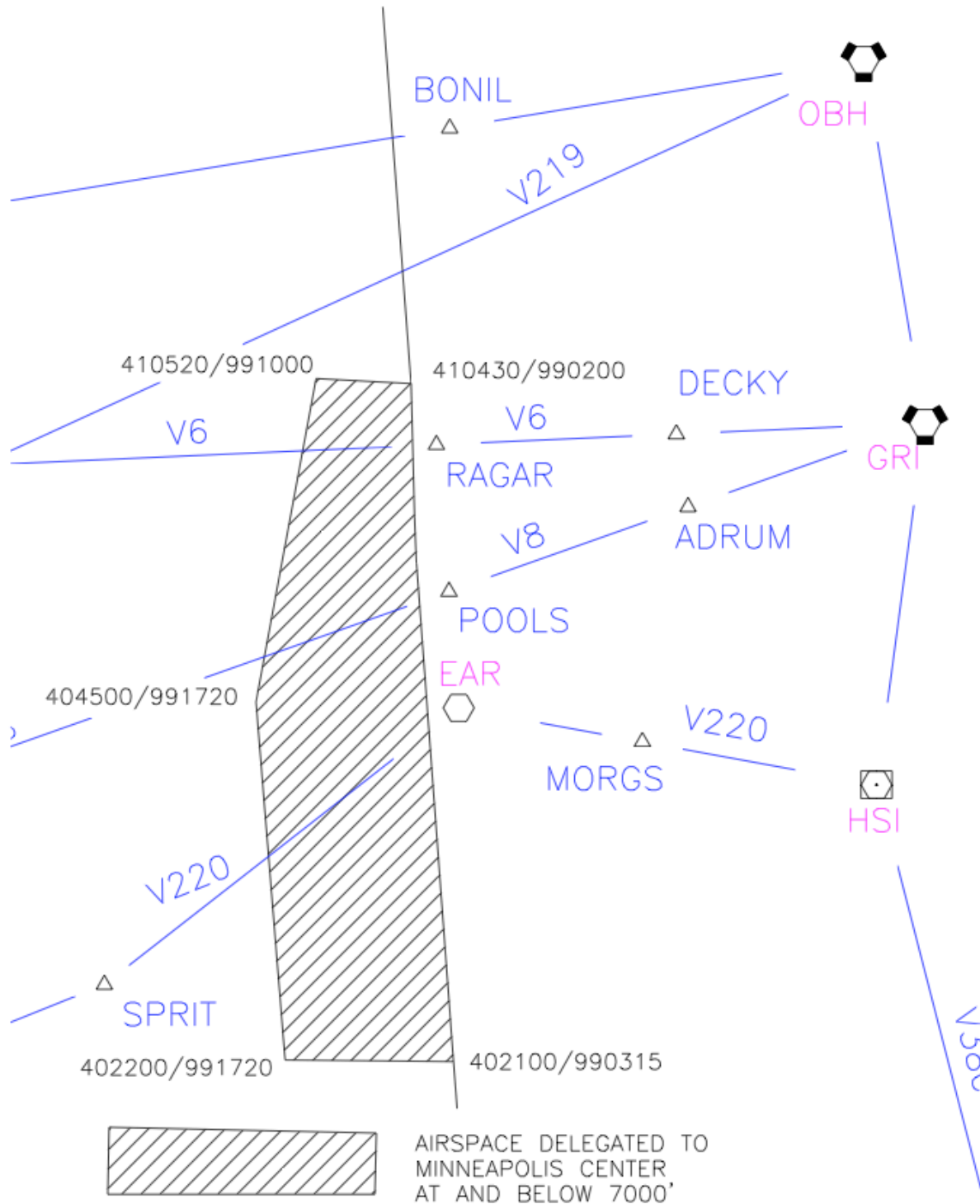
ZMP/ZDV BOUNDARY MANUAL COORDINATION REFERENCE POINTS



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ATTACHMENT B – EAR SHELF DELEGATED AIRSPACE



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ATTACHMENT C – ROUTE/ALTITUDE RESTRICTIONS

FROM ZDV TO ZMP

Arrival Airport(s)	Qualifier	Route Via	Altitude (Cross ZDV/ZMP Boundary, unless otherwise noted)
MSP	RNAV Jet	J114.FSD..SSWAN.TORG STAR	
	All Others	J114.FSD..RWF.SKETR STAR	
MSP Satellite (ANE FCM LVN MIC STP) ¹	All	HANKI..ENCEE.ENCEE STAR	
OMA, OFF	AOA 11,000	GRI/OBH/ONL.HOWRY STAR HTHWY.TIMMO STAR PWE.PWE STAR (Non-RNAV)	AOB FL350 (HOWRY) or AOB FL370 (PWE/TIMMO)
LNK	All		AOB FL330
EAR, HSI, GRI	All		AOB FL230
ORD	AOA FL240	ZZIPR.FYTTE STAR or FOD..MYRRS.FYTTE STAR or PWE..IRK.BENKY/SHAIN/BDF STAR No radar vectors or direct routing beyond MCW, FOD, or IRK	
	AOA FL240 Acft S of PWE	IRK.BENKY/SHAIN/BDF STAR MCW/FOD..DBQ..JVL.JVL STAR (Non- RNAV)	

¹ MSP satellite arrivals must enter ZMP either in-trail with or below MSP arrivals

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FROM ZMP TO ZDV

Arrival Airport(s)	Qualifier	Route Via	Altitude (Cross ZDV/ZMP Boundary, unless otherwise noted)
DEN (Turbojet)	North of HUTEF	RNAV: NYTRO.AALLE STAR Non-RNAV: BFF/SNY.LANDR STAR	
	S of HUTEF to ZMP29/39 Boundary	RNAV: PORDR.AALLE STAR Non-RNAV: ONL.J114.YANKI.LANDR STAR	
	South of ZMP29/39 Boundary	RNAV: BRWRY.LAWGR STAR SAYGE..FQF	
APA (Turbojet)	North of ZMP29/39 Boundary	SHRPE.BRNKO STAR SNY..YOKES..GLL..BJC (Non-RNAV)	
	South of ZMP29/39 Boundary	FRAAY.DUNNN STAR BRK (Non-RNAV)	
BJC (Turbojet)	RNAV	SHRPE.BRNKO STAR	
	Non-RNAV	SNY..YOKES..GLL..BJC	
BKF, CFO (Turbojet)	RNAV	SAYGE..FQF GLD.DANDD STAR	
	Non-RNAV	DANDD STAR	
FNL, GXY, LMO (Turbojet)	RNAV	SHRPE.BRNKO STAR GLD.DANDD STAR	
	Non-RNAV	SNY..YOKES..GLL DANDD STAR	
RAP Area (49B, EFC, RAP, RCA, SPF)	Above 16,000 between SULPHUR and RESERVOIR		AOB FL260 descending to 17,000 ¹
	Between RESERVOIR and CHAUX		AOB FL270 descending to FL240

¹ Denver ARTCC must have control for descent to 12,000 feet MSL and control for turns of 30 degrees left or right of course on Rapid City area arrivals from 20NM north of the common Denver/Minneapolis ARTCC boundary.