

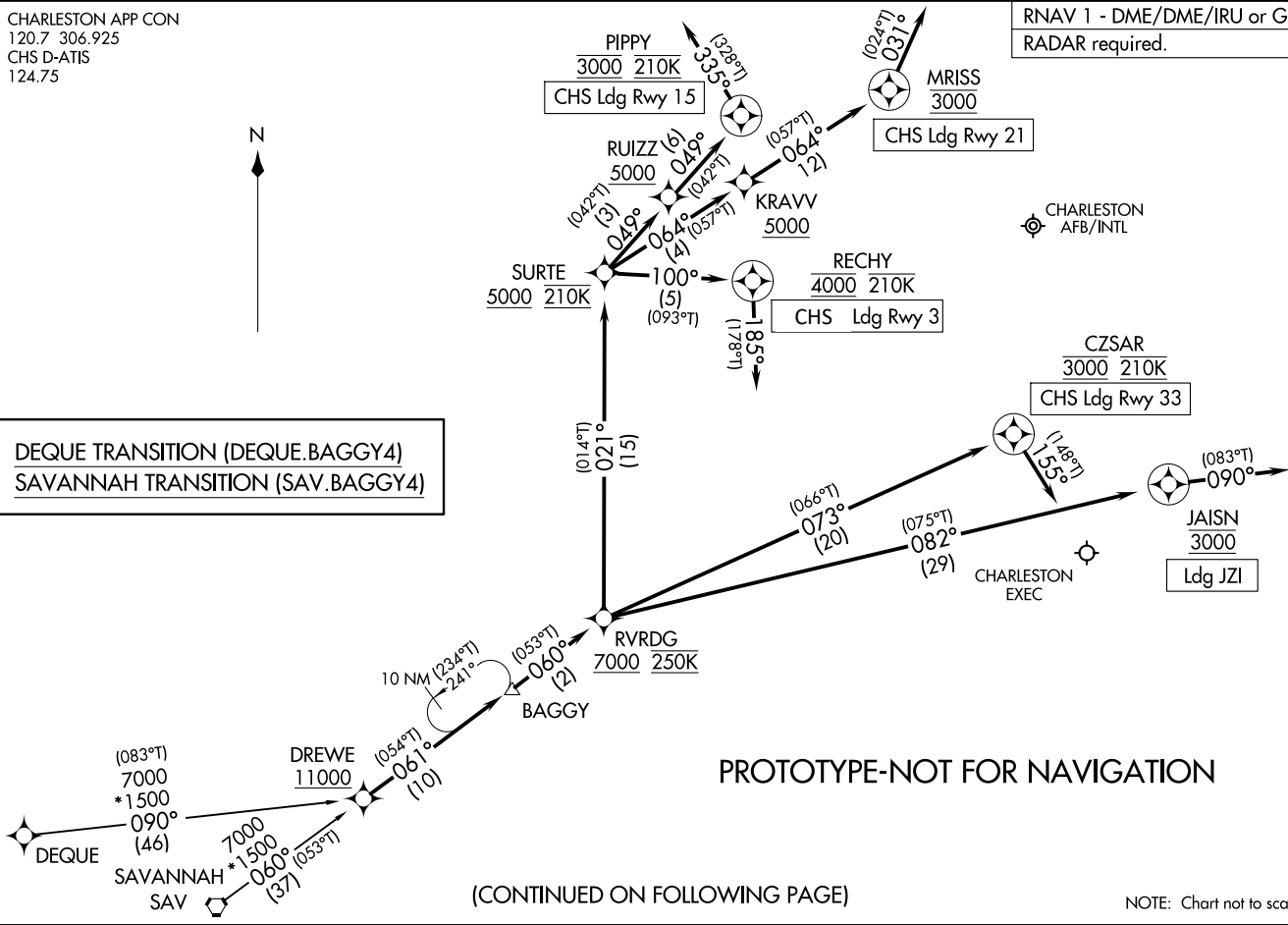
Flight Procedures Cover Page	Task Action: FLIGHT CHECK	Task Type: STAR	Estimated Chart Date: 10/29/2026	APWS Task ID: 0DFD98EADD274AF7BCD184728ECC279D	APWS Project ID: 8A3F8297991B43E896CA57F8742D5D92
Procedure: STAR BAGGY FOUR (RNAV) CHARLESTON SC KCHS		Enroute: YES	Specialist: Donkor, Kweku		Agreement Number:
Airport ID: KCHS			Airport City: CHARLESTON		State: SC
Facility ID:	Facility Type:	Flight Inspection Remark Type: New FC Slot			
Procedure Comments: LOA (2): DG DREWE TO RVRDG, DG RUIZZ TO PIPPY. CONTACT: TARA N MARTINELLI (AJV-A432) 405-954-8376. 07/09/26: THIS IS AN UPDATED COPY OF THE FORM DEVELOPED ON 06/30/26. FEPID 8260-2 1. HOLDING PATTERNS: CHANGED PAT 1 MAX TEMPLATES FROM 14 TO 11. 2. HOLDING TYPE OF ACTION: CHANGED FROM NO CHANGE TO MODIFY. Digitally signed by TARA N MARTINELLI Jul 09, 2026 06/03/2026 7 QUALITY CHECKED 9 QUALITY CHECKED BEGUE					

FIPC DME/DME FORM							
PROCEDURE: BAGGY (RNAV) FOUR ARRIVAL			AIRPORT NAME: CHARLESTON AFB/INTL		AIRPORT ID: KCHS	SPECIAL CONTROL NO: AG-07-005-26	
FAC ID: BAGGY4		CITY: CHARLESTON			ST: SC	ORIG CHART DATE: 10/29/2026	
DFL TYPE: PROC/D	THIRD PARTY: ☐ YES	EST. TIME ON SITE: 1.0	REIMB. NUMBER:		PTS TASK ID: 0DFD98EADD274AF7BCD184728ECC279D		
PREFLIGHT NOTES							
REVIEWER:					DATE:		
COMMENTS:					CHECK ONE:		
					☐ FLT CK REQ ☐ NFCR ☐ REJECT		
							YES
					CPV COMPLETE?		X
PROCEDURE RESULTS							
INSPECTION DATE: 07/31/2026		CREW #: VN387	N #: N90	INSTRUMENT PROCEDURE STATUS: ☒ SAT ☐ SAT W/CHANGES ☐ UNSAT		ARINC CODING: ☒ SAT ☐ SAT/GOLD ☐ UNSAT	
FLIGHT INSPECTOR SIGNATURE: justus r bray @ 08/04/2026 09:12			PRINTED NAME: BRAY, JUSTUS ROBERT				NOTAM INITIATED? ☐ YES ☒ NO
FLIGHT INSPECTOR REMARKS:							
DME/DME STATUS: ☒ SAT ☐ UNSAT		SPECIALIST SIGNATURE: david c-ctr cook @ 08/05/2026 07:35			PRINTED NAME: Dave Cook		
SPECIALIST REMARKS: Procedure SAT for DME/DME/IRU flight.							
IN-FLIGHT OBSTACLE REPORT							
OBSTRUCTION ID #:	COORDINATES OR LOCATION:		GNSS ALTITUDE (MSL):		BAROMETRIC ALTITUDE (MSL):		HEIGHT ABOVE GROUND LEVEL:

CHARLESTON APP CON
120.7 306.925
CHS D-ATIS
124.75

RNAV 1 - DME/DME/IRU or GPS.
RADAR required.

DEQUE TRANSITION (DEQUE.BAGGY4)
SAVANNAH TRANSITION (SAV.BAGGY4)



ARRIVAL ROUTE DESCRIPTION

CHS: From DREWE on track 061° to BAGGY, then on track 060° to cross RVRDG at or above 7000 and at 250K.

LANDING CHS RUNWAY 3: From RVRDG on track 021° to cross SURTE at or above 5000 and at 210K, then on track 100° to cross RECHY at 4000 and at or below 210K, then on track 185°. Expect RADAR vectors to final approach course.

LANDING CHS RUNWAY 15: From RVRDG on track 021° to cross SURTE at or above 5000 and at 210K, then on track 049° to cross RUIZZ at or above 5000, then on track 049° to cross PIPPY at 3000 and at 210K, then on track 335°. Expect RADAR vectors to final approach course.

LANDING CHS RUNWAY 21: From RVRDG on track 021° to cross SURTE at or above 5000 and at 210K, then on track 064° to cross KRAVV at or above 5000, then on track 064° to cross MRISS at 3000, then on track 031°. Expect RADAR vectors to final approach course.

LANDING CHS RUNWAY 33: From RVRDG on track 073° to cross CZSAR at 3000 and at 210K, then on track 155°. Expect RADAR vectors to final approach course.

LANDING JZI: From DREWE on track 061° to BAGGY, then on track 060° to cross RVRDG at or above 7000 and at 250K, then on track 082° to cross JAISN at 3000, then on track 090°. Expect RADAR vectors to final approach course.

PROTOTYPE-NOT FOR NAVIGATION

BAGGY THREE ARRIVAL (RNAV)
(BAGGY.BAGGY3) 27JAN22

BAGGY THREE ARRIVAL (RNAV)

BAGGY THREE ARRIVAL (RNAV)
232222

AL-76 (FAA)

CHARLESTON, SOUTH CAROLINA

CHARLESTON APP CON
120.7 306.925
CHS D-ATIS
124.75

OLD

NOTE: Monitor ATIS for runway in use.
NOTE: Expect runway assignment from Charleston Approach on initial contact.
NOTE: LANDING KJZI RUNWAYS 4/9: Expect RADAR vectors to final approach course prior to DDENA.

DEQUE TRANSITION (DEQUE.BAGGY3)
SAVANNAH TRANSITION (SAV.BAGGY3)

RNAV 1 - DME/DME/IRU or GPS.
RADAR required.

MRISS
3000

KCHS Ldg Rwy 21

ADERY
4000

CHARLESTON
AFB/INTL

CZSAR
3000

KCHS Ldg Rwy 33

MURAY
5000

JAISN
3000

Ldg KJZI

CHARLESTON
EXEC

FEPID
3000

KCHS Ldg Rwy 3

DDENA
5000

BAGGY
7000

10 NM

239°

059°

SAVANNAH
SAV

DREWE
11000

11000
*1900
060°
(37)

7000
*1300
061°
(10)

DEQUE

7000
*1500
085°
(55)

(NARRATIVE ON FOLLOWING PAGE)

NOTE: Chart not to scale.

BAGGY THREE ARRIVAL (RNAV)

CHARLESTON, SOUTH CAROLINA

ARRIVAL ROUTE DESCRIPTION

KCHS: From BAGGY on track 059° to cross DDENA at or above 5000.

LANDING KCHS RUNWAY 3: From DDENA on track 090° to cross FEPID at or above 3000. Expect RNAV (RNP) RWY 3 approach.
Non-RNP aircraft: Expect RADAR vectors to final approach course.

LANDING KCHS RUNWAY 15: From DDENA on track 030° to cross PIPPY at 5000, then on heading 030°. Expect RNAV (RNP) RWY 15 approach.
Non-RNP aircraft: Expect RADAR vectors to final approach course.

LANDING KCHS RUNWAY 21: From DDENA on track 042° to cross MURAY at or above 5000, then on track 042° to cross ADERY at or above 4000, then on track 038° to cross MARISS at 3000 then on heading 031°. Expect RNAV (RNP) RWY 21 approach. Non-RNP aircraft: Expect RADAR vectors to final approach course.

LANDING KCHS RUNWAY 33: From DDENA on track 077° to cross CZSAR at 3000, then on heading 077°. Expect RNAV (RNP) RWY 33 approach.
Non-RNP aircraft: Expect RADAR vectors to final approach course.

LANDING KJZI RUNWAYS 4, 9: From BAGGY on track 059° to cross DDENA at or above 5000, then on track 086° to cross JAISN at 3000, then on heading 090°. Expect RADAR vectors to final approach course prior to DDENA.

LANDING KJZI RUNWAY 27: From BAGGY on track 059° to cross DDENA at or above 5000, then on track 086° to cross JAISN at 3000, then on heading 090°. Expect RADAR vectors to final approach course after JAISN.



Federal Aviation Administration

Memorandum

Date: October 29, 2025

To: Christopher Hope, Manager, Flight Technologies and Procedures Division
THRU: Romana Wolf, Manager, Flight Procedures and Airspace Group

From: Bev Bordy, Manager, Instrument Flight Procedures Coordination Team, AJV-A45

Prepared by: Miles H. Carpenter, Sr. ATC Specialist, NAVTAC CTR Support

Subject: Approval Request: Charleston AFB/International Airport (KCHS)
BAGGY (RNAV) STAR

DREWE to RVRDG Segment

Per FAA Order 8260.3, 2-2-8. a.:

2-2-8. Descent Gradient (DG). Calculate DGs between fixes with an altitude restriction by using the guidance in this paragraph and the calculation methods in section 2-9. When deceleration is required, also use paragraphs 2-2-9 and 2-2-10. The DG past the termination fix of the STAR is not calculated as part of the STAR design; the overall airspace design should optimize the location and altitude for the STAR termination fix and that becomes an input to the STAR design.

a. The maximum DG (see figure 2-2-1) is based on altitude, deceleration, and airspeed constraints, as follows:

- (1) The maximum permissible DG 10000 feet MSL and above is 330 ft/NM (approximately 3.11 degrees).
- (2) The maximum permissible DG below 10000 feet MSL is 318 ft/NM (approximately 3.0 degrees).
- (3) When a STAR contains a descent between fixes that passes through 10000 feet MSL, the maximum permissible DG is between 318 ft/NM and 330 ft/NM and is in proportion to the amount of the altitude change that is below/above 10000 feet MSL. Use formula 2-2-1 to determine the maximum DG (DG_{max}) between fixes that contain a descent that passes through 10000 feet MSL.

(6) If more than one of paragraphs 2-2-8.a(1) through 2-2-8.a(5) applies, use the lower of the resulting values for the maximum DG.

b. When a gradient exceeds the maximum DG allowed in paragraph 2-2-8.a, the STAR requires approval (see paragraph 1-4-2).

Formula 2-2-1. Maximum DG Passing Through 10000 Feet MSL (ft/NM)

$$DG_{max} = \frac{(Alt_1 - 10000) \times 12}{(Alt_1 - Alt_2)} + 318$$

Where:

Alt_1 = Altitude at the fix prior to crossing 10000 feet MSL

Alt_2 = Altitude at the fix after crossing 10000 feet MSL

TARGETS Reference Software computed a descent gradient of 331.81 FT/NM for the segment from DREWE (at or above 11,000 feet to RVRDG (at or above 7,000 feet/250 KIAS), over a distance of 12.02 NM. This value exceeds the established criteria, which stipulate that the descent gradient should not exceed 321 FT/NM.

While the initial computed descent gradient from DREWE to RVRDG exceeds the 321 FT/NM limit, discussion(s) with industry during the design meetings, there were no objections to the altitude constraints and confirmed the descent gradient is well within limits of aircraft that will use the procedure.

Consideration was given to relocating RVRDG, but this would significantly affect multiple traffic flows within the Charleston Terminal Area, leading to increased controller workload and the potential introduction of safety risks.

In light of the above analysis and operational constraints, Charleston ATCT respectfully requests approval to chart the BAGGY ARRIVAL as currently designed. This procedure ensures continued procedural integrity, maintains safety, and minimizes operational disruptions within the terminal area.



Federal Aviation Administration

Memorandum

Date: October 29, 2025

To: Christopher Hope, Manager, Flight Technologies and Procedures Division
THRU: Romana Wolf, Manager, Flight Procedures and Airspace Group

From: Bev Bordy, Manager, Instrument Flight Procedures Coordination Team, AJV-A45

Prepared by: Miles H. Carpenter, Sr. ATC Specialist, NAVTAC CTR Support

Subject: Approval Request: Charleston AFB/ International Airport (KMYR)
BAGGY (RNAV) STAR

RUIZZ to PIPPY Segment

Per FAA Order 8260.3, 2-2-8. a.:

2-2-8. Descent Gradient (DG). Calculate DGs between fixes with an altitude restriction by using the guidance in this paragraph and the calculation methods in section 2-9. When deceleration is required, also use paragraphs 2-2-9 and 2-2-10. The DG past the termination fix of the STAR is not calculated as part of the STAR design; the overall airspace design should optimize the location and altitude for the STAR termination fix and that becomes an input to the STAR design.

a. The maximum DG (see figure 2-2-1) is based on altitude, deceleration, and airspeed constraints, as follows:

- (1) The maximum permissible DG 10000 feet MSL and above is 330 ft/NM (approximately 3.11 degrees).
- (2) The maximum permissible DG below 10000 feet MSL is 318 ft/NM (approximately 3.0 degrees).
- (3) When a STAR contains a descent between fixes that passes through 10000 feet MSL, the maximum permissible DG is between 318 ft/NM and 330 ft/NM and is in proportion to the amount of the altitude change that is below/above 10000 feet MSL. Use formula 2-2-1 to determine the maximum DG (DG_{max}) between fixes that contain a descent that passes through 10000 feet MSL.

(4) Gradient after deceleration to 220 KIAS. After a speed restriction of 220 KIAS or less is used, for subsequent fixes along the route of the STAR the maximum permissible descent gradient is 250 ft/NM (approximately 2.36 degrees).

(6) If more than one of paragraphs 2-2-8.a(1) through 2-2-8.a(5) applies, use the lower of the resulting values for the maximum DG.

b. When a gradient exceeds the maximum DG allowed in paragraph 2-2-8.a, the STAR requires approval (see paragraph 1-4-2).

Formula 2-2-1. Maximum DG Passing Through 10000 Feet MSL (ft/NM)

$$DG_{max} = \frac{(Alt_1 - 10000) \times 12}{(Alt_1 - Alt_2)} + 318$$

Where:

Alt_1 = Altitude at the fix prior to crossing 10000 feet MSL

Alt_2 = Altitude at the fix after crossing 10000 feet MSL

TARGETS Reference Software computed a descent gradient of 326.23 FT/NM for the segment from RUIZZ (at or above 5000 feet) to PIPPY (at or above 3,000 feet), over a distance of 6.13 NM. This value exceeds the established criteria, which stipulate that the descent gradient should not exceed 250 FT/NM.

The restriction at RVRDG which is the IF for the Runway 33 Transition is “at or above 7000/250KIAS” and the restriction at PIPPY is “at or above 3000”. The distance from RVRDG to PIPPY is 23.35 NM. If the descent gradient is calculated from RVRDG to PIPPY the resulting descent gradient is 206.72 FT/NM.

Tool for Establishing Altitude and Speed Restrictions

Enter distance between waypoints (D)	23.350	NM
Enter beginning altitude (a)	7000	FT
Enter ending altitude (b)	3000	FT
Enter beginning speed	250	KIAS
Enter ending speed	210	KIAS
Calculated Descent Gradient (DG)	171.306	FT / NM
Calculated speed loss (x)	40	Knots
Calculated Speed Adjusted Descent Gradient (SADG)	206.718	FT / NM

While the initial computed descent gradient from RUIZZ to PIPPY exceeds the 250 FT/NM limit, the operationally relevant segment from RVRDG to PIPPY yields a descent gradient well within the prescribed criteria. This indicates that, when considering the actual altitude restrictions and segment distances, the descent profile remains compliant with regulatory requirements.

Consideration was given to relocating RVRDG, but this would significantly affect multiple traffic flows within the Charleston Terminal Area, leading to increased controller workload and the potential introduction of safety risks.

In light of the above analysis and operational constraints, Charleston ATCT respectfully requests approval to chart the BAGGY ARRIVAL as currently designed. This procedure ensures continued procedural integrity, maintains safety, and minimizes operational disruptions within the terminal area.

