ORDER

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

6560.12B

11/29/77

SUBJ: RUNWAY VISUAL RANGE SYSTEM DRAWINGS

1. PURPOSE. This order directs the use of the following new standard drawings for the establishment or relocation of touchdown, midpoint, and rollout runway visual range (RVR) systems at airports designated for Category I and Category II operations.

	Number	Date	Title
*	D-6128-1	6/27/77	Typical RVR Locations
	D-6128-2	6/27/77	RVR Material Schedule
	D-6128-3	6/27/77	Typical RVR Plan and Profile
	D-6128-4	6/27/77	Slab and Pier Foundations
	D-6128-5	6/27/77	Transmissometer Support Tower
	D-6128-6	6/27/77	Platform and Shelf Details
	D-6128-7	6/27/77	Anchor and Stairway Details
	D-6128-8	6/27/77	Main Platform/Stairway Details
	D-6128-9	6/27/77	Support Tower Lightning Protection
	D-6128-10	6/27/77	Power and Control Wiring Diagram
	D-6128-11	6/27/77	Power/Control from Glide Slope/ Localizer Shelter *

2. DISTRIBUTION. This order is distributed to branch level in the Airway Facilities Service and to division level in the Systems Research and Development Service and Office of Airports Programs in Washington headquarters; to branch level in the regional Airway Facilities and Airports divisions (except AEU); and to director level in NAFEC and the Aeronautical Center.

* 3. CANCELLATION. This order cancels Order 6560.12A, Runway Visual Range System Drawings, dated 10/13/77. *

4. BACKGROUND. FAA drawings D-6053-1 through -10 were issued in 1975 to reflect foundation design changes, wiring modifications, and the addition of support tower lightning protection not indicated on the superseded D-5855 series drawings. Several subsequent changes and additions have significantly altered installation details on these drawings. Lightning protection standards have been expanded for RVR systems to include revised lightning protection requirements for the transmissometer support tower and new standards for transient and surge protection for incoming power circuits. The FAA has adopted a refined method using laser beam technology for calibrating the RVR system during all visibility conditions. Safety

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Initiated By: AAF-560

considerations in using the calibration test equipment have necessitated the removal of the support tower ladder and the addition of a tower stairway. Electrical safety considerations were previously reflected in the D-6053 drawings through the addition of a ground-fault-interrupter (GFI) convenience outlet on the support tower. The protection capabilities of the GFI outlet have been expanded to include protection of convenience outlets provided in transmissometer equipment. Finally, the new Tasker RVR-500 equipment requires specific wire connections because of signal wire polarity requirements to properly interface with transmissometer systems. The D-6128 drawings incorporate all of these changes into the national standards for the installation of RVR systems.

* 5. APPLICATION. These drawings shall be used in conjunction with Specification FAA-C-2309 and other applicable specifications and engineering instructions for the construction or relocation of RVR systems. The regions shall be responsible for siting these systems in accordance with FAA-STD-008, Siting and Installation Standards for Runway Visual Range System at Airports Designated for Category I and Category II Operations. Materials designated in the drawings shall rule over materials stated in the construction specification. The pier foundation design should be used at sites that have frost depths greater than 18 inches. Service extension drawings shall be developed by the region, if hookup with existing instrument landing system (ILS) facilities cannot be accomplished. Power configuration and design shall be performed by the region in accordance with Order 6030.20, Provisions of Electrical Power for National Airspace System Facilities. Site access requirements shall be regionally determined in accordance with Order 6940.1, Access Roads to FAA Facilities. These drawings incorporate modifications developed for implementing at existing RVR facilities. Regional engineers should review 5a and 5b in preparation of Invitation for Bid (IFB) packages.

a. New Installations. The facility standards established by these drawings incorporate several modifications previously developed for existing RVR facilities under Electronic Equipment Modification (EEM) Handbook 6990.2. These EEMs and their extent of incorporation are stated below for regional reference.

(1) Support Tower Lightning Protection - Order 6990.2, Change 14, Chapter 36. This modification was originally developed for providing lightning protection for the support towers and incoming power and control circuits. The lightning protection of the power and control circuits has been superseded by later EEMs. Consequently, only the lightning protection of the tower/stairway is applicable from this document. D-6128-2 reflects all contractor furnished material required to provide lightning protection for the tower/stairway as depicted on D-6128-9. *

* (2) Lightning Protection for AC Powerlines - Order 6990.2, Change 19, Chapter 40. This modification applies to all types of transmissometer systems. The contractor furnished material and installation details are shown on D-6182-2, D-6128-5, and D-6128-10.

(3) Support Tower/Stairway Interface - Order 6990.2, Change 22, Chapter 42. The instructions for interfacing the FA-9473 stairway with the FA-8998/9 or FA-7870 support towers are contained in the instruction booklet provided with the stairway. The government furnished material for the towers and stairways is indicated on D-6128-2 with installation details indicated throughout the drawing series.

(4) Signal Wire Polarity - Order 6990.2, Change 20, Chapter 41. Verification of signal wire polarity prior to energizing transmissometers connected to FA-9471/1 graphic recorders (RVR-500/7) is mandatory. Correct wiring hookup in accordance with this EEM is reflected on D-6128-10. Regions have the option for having the contractor or FAA personnel terminate power and control wire within the equipment. Verification of the hookup shall be performed in accordance with this EEM or the equipment instruction book. No contractor furnished material is required.

(5) Thermostat and Heater Wiring Changes - Order 6990.2, Change 10, Chapter 29. This modification is required to be made on all transmissometers, except the FA-9471 transmissometer, which incorporated this modification during manufacture. Regions have the option for having the contractor or FAA personnel make this modification. Procedures and hookup details are given on D-6128-10. No contractor furnished material is required.

b. Relocation Installations. RVR systems being reconfigured due to runway extensions, baseline reduction, orientation changes, etc., shall be reinstalled to conform with these standard drawings. Since some or all of the modifications enumerated under item 5a may have been previously installed on existing systems to be relocated, the region shall verify which modifications have been installed, adjust the material (D-6128-2) as required and annotate the scope of work statement in the IFB accordingly.

6. DEVIATION FROM THE STANDARD. No deviation from the standard is authorized without prior approval of the Director, Airway Facilities Service. Region site adaptation to accommodate terrain, utility connections, access roads and other similar site - unique details is authorized without further clearance. * Dimensional errors, discrepancies, or suggestions for modification or addition of details should be brought to the attention of Chief, Environmental Systems Divisions, AAF-500, Airway Facilities Service.

7. CORRECTIONS TO STANDARD. Corrections to the standard may be made by the Director, Airway Facilities Service, without further regional or interservice coordination. These may include misspellings, corrections of dimensional errors, and modification, addition, or deletion of minor details.

8. DISTRIBUTION OF DRAWINGS. A reproducible copy of each drawing is being forwarded to NAFEC; each region (except AEU), Attention: Airway Facilities Division; and Aeronautical Center, Attention: Chief, FAA Depot. Additional copies may be obtained from the Environmental Systems Division, Airway
* Facilities Service, Attention: AAF-510. *

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