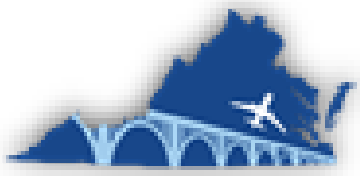


# GROUND VEHICLE OPERATIONS TRAINING MANUAL

## MOVEMENT DRIVER/TUG-TAXI-TOW TRAINING

*PRODUCED BY THE RICHMOND AIRPORT OPERATIONS DEPARTMENT*

This manual belongs to:

Name _____

Company _____

Date of computer based training (IET) completed _____

Annual Tarining Month _____

CONTENTS:

# INTRODUCTION

Welcome to the Airport's Pedestrian and Ground vehicle training. The Richmond International Airport values your safety, as well as the safety of our tenants, co-workers, flight crews, and the passengers we serve. SAFETY IS AND MUST ALWAYS BE OUR SHARED #1 PRIORITY AT RIC.

This supplemental training manual is intended to serve as reference for individuals' who have the responsibility for operating a vehicle in, on, or near the airport's movement area. Combined with computer based training, and on-the-job training the Ground Vehicle Operations Training Manual is a valuable resource for movement authorized personnel.

The Federal Aviation Administration (F.A.A.) considers "runway incursions" at the top of the list when it comes to aviation safety.

What is a Runway Incursion?

- Any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle, or person on the protected area of a surface designated for the landing and takeoff of aircraft.

What is a Surface Incident?

- A surface incident is an unauthorized or unapproved movement within the designated movement area (excluding runway incursions) or an occurrence in that same area associated with the operation of an aircraft that affects or could affect the safety of flight.

The Richmond International Airport has an obligation to ensure that personnel authorized to operate vehicles or taxi/tow aircraft do so safely, in compliance with federal and Airport rules and regulations, with the proper equipment and training.

*We thank you for your attention to the important reference material contained within this manual, and your dedication to safety at RICHMOND!*

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# Section 1
# Documentation and Training Requirements

## Documentation

**Movement driving candidate may be required to complete or provide any or all of the following documentation:**

- Initial Movement Driving Authorization Form
- Taxiing or Towing Aircraft Company Authorization Form
- Certification of Training (company)
- Certification of Training (Richmond International Airport)
- On-the-Job (O.J.T.) Training Log
- Movement Driver Skills Assessment (completed by Instructor)
- RIC Part 139 Training Log
- Proof of valid vehicle operators licensed issued by state or other authority (i.e., Virginia driver's license)

## Initial Training

Training requirements for successfully obtaining Movement Driver authorization at RIC may vary based on the level of access required, and the individual's needs. The training program has some components that are required of all personnel. These components are:

- Completion of RIC computer based SIDA Security, Non-Movement, and Movement driver courses
- Completion of familiarization/OJT training (responsibility of company, organization or CRAC department) including one full airfield familiarization ride with Airport Operations.
- Skills assessment by qualified instructor

Individuals will be required to demonstrate a practical knowledge of the following areas:

- Airfield layout
- Airfield Signs and Markings
- Airfield Lighting Systems

- Location of NAVAID and critical areas
- Communication with Air Traffic Control
- Situational Awareness

**Annual Recurrent Training**

It is the policy of the Federal Aviation Administration (F.A.A.) and the Richmond International Airport personnel authorized and qualified to drive in the movement areas complete recurrent training annually. RIC offers a computer-based training module that satisfies this requirement. Personnel must complete this training at a minimum of once every 12 months to maintain their movement driving privileges. This training is documented using the RIC Part 139 Training Log, and kept on file for inspection by the F.A.A.

Candidates for RIC Movement Driver or Taxi/Tow training will receive comprehensive training that is based on their experience. For experienced operators, training may only take a few days. For less experienced individuals the training period may take a few weeks to a few months. Candidates must demonstrate proficiency at their final assessment, so they should take the time to study the provided materials and ask questions during their initial airfield familiarization and continuing on-the-job training. To achieve the movement driving "M" endorsement employees will be required to successfully pass a practical assessment that covers airfield layout, airfield markings, signs, and lighting, communications, and situational awareness.

Vehicle operators towing or pushing back aircraft onto the movement area for flight (with a pilot in command), are not required to obtain movement area driver training. Once the aircraft is disconnected, the tug operator and any other push back support personnel will immediately return to the apron area. All personnel must be briefed on and understand this procedure by their company.

Candidates will receive the forms they need to complete each process including initial computer-based training (Part 139 training form – maintained in the Badging Office), on-the-job training log, and final assessment form.

Candidates will also receive a checklist (pictured below) that will help them, their instructors, and Airport Operations team members track their progress.

# Section 2
# Airport Driving and Anyone Taxiing or Towing Aircraft - Rules and Regulations

**Authority for Implementation of Rules and Regulations.** The Richmond International Airport operates under the authority of the Capital Region Airport Commission. The Commonwealth of Virginia has granted the Capital Region Airport Commission the authority to make bylaws for the management and supervision of its airport affairs.

**Applicability.** This regulation applies to all users of, and persons on any portion of, the property owned or controlled by the Capital Region Airport Commission. No persons are exempt from airport operating training requirements for operating a vehicle on the movement and safety areas of an airport. Tenant organizations must be responsible for the dissemination of, accessibility to, and compliance with these rules and regulations by their employees.
These Rules and Regulations may be amended, changed, or modified by the Capital Region Airport Commission, as necessary.

**Definitions.** The following terms are defined as indicated in this section for the purpose of this Ground Vehicle Operation Training Manual.

**Accident**–a collision between one aircraft or vehicle and another aircraft, vehicle, person, or object that results in property damage, personal injury, or death.

**Air Carrier Apron**–an apron for air carriers. Only authorized personnel and vehicles may operate on this apron. Unauthorized vehicles and aircraft are prohibited from operating on it.

**Air Operations Area (AOA)** – the air operations area includes paved or unpaved areas used or intended to be used for the unobstructed movement of aircraft, in addition to its associated runways, taxiways, or aprons. Commonly refers to anything within the secured and fenced-in area of the airport.

**Airport Traffic Control Tower (ATCT)**–operated by an appropriate authority to promote the safe, orderly, and expeditious flow of air traffic.

**Aircraft**–a device that is used or intended to be used for flight in the air.

**Airport**–Richmond International Airport Facility, owned and operated by the Capital Region Airport Commission, including all improvements and equipment existing or to be developed.

**Apron**–a defined area on an airport or heliport intended to accommodate aircraft for the purposes of parking, loading, and unloading passengers or cargo, refueling, or maintenance.

**Fixed-Based Operator (FBO)**–a person, firm, or organization engaged in a business that provides a range of basic services to general aviation. Services may include the sale and dispensing of fuel, line services, aircraft parking and

tie-down, pilot and passenger facilities, airframe and power plant maintenance, aircraft sales and rental, and pilot instruction.

**Flight Service Station (FSS)**–air traffic facilities that provide pilot briefings enroute communications, and visual flight rules search and rescue services; assist lost aircraft and aircraft in emergency situations; relay air traffic control clearances; originate Notices to Airmen; broadcast aviation weather and National Airspace System information; receive and process instrument flight rules flight plans; and monitor NAVAIDs. In addition, at selected locations, FSSs provide Enroute Flight Advisory Service (Flight Watch), take weather observations, issue airport advisories, and advise Customs and Immigration of trans-border flights.

**Foreign Object Debris (FOD)**–debris that can cause damage to aircraft engines, tires, or fuselage from rocks, trash, or the actual debris found on runways, taxiways, and aprons.

**General Aviation (GA)**–that portion of civil aviation that encompasses all facets of aviation except air carriers holding a certificate of public convenience and necessity.

**Ground Vehicle**–all conveyances and aircraft not operated for the purpose of flight, vehicles used on the ground to reposition aircraft, transport persons, cargo, fuel, or equipment.

**ILS Critical Area**–an area provided to protect the signals of the localizer and glideslope.

**Jet Blast**–jet engine exhaust or propeller wash (thrust stream turbulence).

**Law Enforcement Officer (LEO)**–any person vested with police power of arrest under Federal, state, county, or city authority and identifiable by uniform, badge, and other indication of authority.

**Light Gun**–a hand-held, directional light-signaling device that emits a bright narrow beam of white, green, or red light, as selected by the tower controller. The color and type of light transmitted can be used to approve or disapprove anticipated pilot or vehicle actions where radio communication is not available. The light gun is used for controlling traffic operating in the vicinity of the airport and on the airport movement area.

**Mobile Fueler**–a vehicle owned and/or operated by authorized agents to pump and dispense Jet A and 100 LL fuel at an airport. This may include fuel tankers, in-to-plane fueling pumpers, and hydrant carts.

**Movement Area**–the runways, taxiways, and other areas of an airport that aircraft use for taxiing, takeoff, and landing, exclusive of loading aprons and aircraft parking areas.

**MULTICOM**–a mobile service is not open to public correspondence used to provide communications essential to conduct the activities being performed or directed from private aircraft.

**Non-movement Areas**–the area, other than that described as the movement area, used for the loading, unloading, parking of aircraft. This may include the apron areas and on-airport fuel farms.

**Operator**–any person who is in actual physical control of an aircraft or a motor vehicle.

**Owner**–a person who holds the legal title of an aircraft or a motor vehicle.

**Protected Area**–the protected area of a surface intended for landing or take off includes the area inside the runway hold position markings (e.g., hold line) on paved taxiways or bridges and the designated runway safety area.

**Restricted Areas**–areas of the airport posted to prohibit or limit entry or access by the public. All areas other than public areas.

**Runway**–a defined rectangular area on a land airport prepared for the landing and takeoff run of aircraft along its length.

**Runway Incursion**–any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle, or person on the protected area of a surface designated for the landing and take-off of aircraft.

**Runway in Use or Active Runway**–any runway or runways currently being used for takeoff or landing. When multiple runways are used, they are all considered active runways.

**Runway Safety Area**–a defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes (Typically 250 feet off the runway centerline and 1,000 feet off each end or as required) in the event of an excursion, overshoot, or undershoot from the runway. Note: Guidance for RSA is located in AC 150/5300-13A, *Airport Design*.

**Surface Incident**- Unauthorized or unapproved movement within the designated movement area (excluding runway incursions) or an occurrence in that same area associated with the operation of an aircraft that affects or could affect the safety of flight.

**Surface Movement Guidance and Control System (SMGCS)**–a system of guidance, control, and regulation of all aircraft, ground vehicles, and personnel of the airport during low-visibility operations. Guidance relates to facilities and information necessary for pilots and ground vehicle operators to find their way about the airport. Control or regulation means the measures necessary to prevent collisions and to ensure that traffic flows smoothly and efficiently.

**Taxiways**–those parts of the movement and safety areas designated for the surface maneuvering of aircraft to and from the runways and aircraft parking areas.

**Tie Down Area**–an area used for securing aircraft to the ground.

**Uncontrolled Airport**–an airport without an operating airport traffic control tower or when airport traffic control tower is not operating.

**UNICOM**–a non-Federal communication facility that may provide airport information at certain airports. Locations and frequencies of UNICOMs are shown on aeronautical charts and publications.

**Vehicle or Pedestrian Deviation (V/PD)**–any entry or movement on the airport movement area or safety area by a vehicle operator or pedestrian that has not been authorized by air traffic control (includes surface incidents involving aircraft operated by non-pilots, such as anyone).

**Vehicle Service Road**–a designated roadway for vehicles in a non-movement area.

**Very High Frequency Omnidirectional Range (VOR)**–a ground-based electronic navigation aid transmitting very high frequency navigation signals, 360 degrees in azimuth, oriented from magnetic north. Used as the basis for navigation in the National Airspace System.
**Wake Turbulence**–phenomenon resulting from the passage of an aircraft through the atmosphere. The term includes vortices, thrust stream turbulence, jet blast, jet wash, propeller wash, and rotor wash both on the ground and in the air.

**Severability.** If any section, subsection, subdivision, paragraph, sentence, clause, or phrase of these Rules and Regulations or any part thereof is for any reason held to be unconstitutional, invalid, or ineffective by any court of competent jurisdiction or other competent agency, such decision will not affect the validity or effectiveness of the remaining portions of these Rules and Regulations.

**Violation of Rules—Penalties and Suspension of Driving or Anyone taxiing or towing an aircraft Privileges.** Any person, who does not comply with any of the provisions of these Rules and Regulations, or any lawful order issued pursuant thereto, will be subject to progressive penalties for repeat violations. These penalties may include being denied use of the Airport by the Capital Region Airport Commission in addition to the penalties described pursuant to Federal, state, or local authorities.

- Penalties for failure to comply with the Movement and safety areas Vehicular Traffic Regulations will consist of written warnings, suspension of movement and safety areas driving privileges, and/or revocation of movement and safety areas driving privileges. Receipt of 12 demerit points by an operator of a vehicle in any 24-month period will automatically result in suspension of the employee's airport ID badge as well as movement and safety areas driving privileges.
- Based on an evaluation of the circumstances or the severity of a particular incident or incidents, the Capital Region Airport Commission reserves the exclusive right to assess any penalty it deems appropriate at any time to any individual authorized to operate a vehicle on the movement and safety areas without regard to prior operating history.
- The Capital Region Airport Commission will provide a copy of all written warnings issued to an operator to the local manager of the company owning or in possession and control of the vehicle or vehicles involved in the violation(s).
- The Capital Region Airport Commission must require any individual involved in a runway incursion or other vehicle incident to complete remedial airfield driver training.

**Regulations on the Movement and Safety Areas of an Airport for Drivers and Anyone Taxiing or Towing an Aircraft.**

- **Vehicle Operator and Anyone Taxiing or Towing and Aircraft Requirements.**
  - All applicants must satisfactorily complete the applicable driver's computer-based training course before receiving a movement and safety area badge. Non-based personnel require escort from airport qualified movement/non movement area personnel.

- All applicants are required to complete a computer-based training assessment. Applicants who do not pass the assessment may re-take the course after a 24-hour period has passed.

- Applicants for movement area driving, taxiing, or towing an aircraft are required to successfully complete a movement and safety areas driving test by a designated representative of the Capital Region Airport Commission.

- No vehicle can be operated or anyone taxi or tow an aircraft on the movement and safety areas unless—
(1) The driver is authorized to operate the class of vehicle by an appropriate state-licensing agency and/or by the driver's employer through a company training/certification program.

  (2) The driver properly displays an approved, airport-issued ID card with the Authorized Driver designation *("M" endorsement)*.

- For taxiing or towing an aircraft, the owner/operator needs to ensure the person is trained by the owner or aircraft operator to start, run, taxi, or tow that particular type of aircraft. When towing an aircraft with a "Tow-barless tractor," there should be a trained person in the cockpit that can stop the aircraft.

- No person operating or driving a vehicle on any aircraft apron should exceed a speed greater than 15 miles per hour. Factors including, but not limited to, weather and visibility should be taken into consideration when determining safe operating speed.

- No vehicle may pass another ground vehicle in a designated vehicle roadway.

- Vehicles may not pass between an aircraft and passenger terminal or passenger lane when the aircraft is parked at a gate position except those vehicles servicing the aircraft. All other vehicles must drive to the rear of the aircraft.

- Moving aircraft and passengers enplaning or deplaning aircraft must always have the right-of-way over vehicular traffic. Vehicle drivers must yield the right-of-way.

- No vehicle operator may enter the movement and safety areas (includes controlled and non- controlled movement areas) unless authorized by the Capital Region Airport Commission or the vehicle is properly escorted.

No vehicle operator or anyone taxiing or towing an aircraft can enter the movement area—
(1) Without first obtaining the permission of the Capital Region Airport Commission, Aircraft operator, and clearance from the ATCT to enter the movement area for taxiing or towing.

(2) Unless equipped with an operable two-way radio in communication with the ATCT; or

(3) Unless escorted by a Capital Region Airport Commission approved vehicle and as long as the vehicle remains under the control of the escort vehicle.

(4) Anyone taxiing or towing an aircraft, without the authorization of the airport operator, must receive ATCT clearance to enter the airport movement area.

No person may operate any motor vehicle that is in such physical or mechanical condition as to endanger persons or property or that the Capital Region Airport Commission considers an endangerment.

No person may—
(1) Operate any vehicle that is overloaded or carrying more passengers than for which the vehicle was designed.

(2) Ride on the running board or stand up in the body of a moving vehicle.

(3) Ride with arms or legs protruding from the body of a vehicle except when the vehicle was designed for such use.

A vehicle guide person is required whenever the vision of the vehicle operator is restricted.

No fuel truck may be brought into, stored, or parked within 50 feet of a building. Fuel trucks may not be parked within 10 feet from other vehicles.

Container carriers and tugs may tow no more carts, pods, or containers than are practical, under control, tracking properly, and safe.

When not serving aircraft or undertaking their intended functions, apron vehicles and equipment may be parked only in approved areas.

Vehicle operators should not operate or park vehicles under any passenger loading bridge.


No person may park a vehicle in an aircraft parking area, safety area, grass area, or in a manner that obstructs or interferes with operations in the aircraft movement area or apron area.


No person may park, or leave unattended, vehicles or other equipment that interfere with the use of a facility by others or prevent movement or passage of aircraft, emergency vehicles, or other motor vehicles or equipment.


No person may park a vehicle or equipment within 15 feet of a fire hydrant or in a manner that prohibits a vehicle from accessing the fire hydrant


No person may operate a vehicle or other equipment within the movement and safety areas under the influence of alcohol or any drug that impairs, or may impair, the operator's abilities.


Each vehicle operator using an airport perimeter (security) gate must ensure the gate closes behind the vehicle prior to leaving the vicinity of the gate. The vehicle operator must also ensure no unauthorized vehicles or persons gain access to the movement and safety areas while the gate is open.


Vehicle operators must not operate vehicles in a reckless or careless manner. A reckless or careless manner is one that intentionally or through negligence threatens the life or safety of any person or threatens damage or destruction to property.


Vehicles may not enter the movement area or cross runways unless the operator of the vehicle has received required training and authorization from the Capital Region Airport Commission to operate on the movement area. Whenever possible, all airport vehicles must utilize the airport perimeter and service roads to transition between areas on the airport.


Each vehicle operator is responsible for the activities of each vehicle passenger on the movement and safety areas of the airport.

**Vehicle Regulations.**

- No vehicle may be operated on the movement and safety areas unless it has proper registration in the (State) or is a qualified off-road vehicle that is not normally operated on public streets but has received the approval of the Capital Region Airport Commission.

- All vehicles operated on the movement and safety areas must have vehicle liability insurance, as required by the Capital Region Airport Commission.
- The Capital Region Airport Commission must approve tenant vehicles operated on the movement area. Vehicles operating in the non-movement area must have company logo prominently displayed.
- Carts or pieces of equipment being towed or carried after darkness must have side and rear reflectors or rear lights.
- No vehicle must be permitted on the movement and safety areas unless—
  (1) It is properly marked, as outlined in FAA Advisory Circular 150/5210-5, *Painting, Marking, and Lighting of Vehicles Used on an Airport*.

  (2) It is in sound mechanical condition with unobstructed forward and side vision from the driver's seat.

  (3) It has the appropriately rated and inspected fire extinguishers (fuel trucks or other vehicles).

  (4) It has operable headlamps and brake lights.
- Vehicles operating on the movement area must be equipped with operating rotating beacon or equivalent per AC 150/5210-5 as required.
- All aircraft refueling vehicles and any other vehicles 8-feet or more in width must be equipped with clearance lights, a flashing amber beacon and flashing front, and rear taillights that are always activated when operating on the movement, non-movement, and safety areas.

**Vehicular Accidents.** Operators of vehicles involved in an accident on the airport that results in injury to a person or damage to an aircraft, airport property, or a vehicle must—
(1) Immediately stop and remain at the scene of the accident.

(2) Render reasonable assistance, if capable, to any person injured in the accident.

(3) Report the accident immediately to the Capital Region Airport Commission (Airport Communications – 804-226-0001) before leaving the scene, if possible.

(4) Provide and surrender the following to any responding Capital Region Airport Commission personnel: name and address, airport identification card, state driver's license, and any information such personnel need to complete a motor vehicle accident report.

# Section 3
# Driving on the Non-Movement Areas

Non-movement areas include aprons, service roads, and other areas not under control of the ATCT. Anyone authorized to operate a motorized vehicle on the movement and safety areas may do so on the non-movement areas (except RSA) without being in positive radio contact with the ATCT.
These areas include— Service roads, cargo aprons, general aviation aprons, and air carrier aprons.

**Driving.** Operating within the apron areas requires the vehicle driver to exercise extreme caution as aircraft are always moving, aircraft passengers may be walking from an aircraft to the gate, and noise levels are high.

- Vehicle drivers—
  - Never drive between safety cones or across delineated passenger walkways.
  - Watch cockpit blind spots—pilots typically cannot see behind or below the aircraft.
  - Avoid jet blast or prop wash, which can blow debris or overturn vehicles.
  - Be aware and avoid moving propellers that can cause damage, injury, or death.
  - Be aware of other vehicle movements—you may not hear them approaching due to aircraft engine noise.
  - Yield to aircraft, passengers, and emergency vehicles, which ALWAYS have the right-of-way on the Air Operations Area of the airport.
  - Pay particular attention when aircraft beacons are illuminated, as they may be moving or preparing to move. Obey the directions of flaggers/wing walkers/guide persons (if available).

When traveling on the apron, always use designated vehicle service roads. Driving close to buildings, around vehicles, or aircraft is prohibited. This policy helps to establish a predictable order to vehicle movements in congested areas and helps to ensure their visibility to aircraft and other vehicles.

Parked aircraft may still have their engines running, so be aware of the hazards of jet blast or prop wash, which may overturn vehicles. Before an aircraft engine is started, pilots are supposed to turn on the anti-collision beacon(s) which may be flashing red or white. However, don't assume that if the beacon(s) aren't flashing that the engine(s) isn't (aren't) running. In some instances, propellers and engine spinners are marked to

indicate when the engine is operating. A pilot's ability to maneuver quickly on the ground is limited. Propellers and jet engines can cause significant damage and injury to personnel. In addition, cockpit visibility prohibits the pilot from seeing under the nose or behind the aircraft and limits the pilot's ability to avoid ground vehicles.

**Nighttime and Poor Weather Driving Conditions.** Poor weather (snow, fog, rain, etc.) conditions can and will obscure visual cues, roadway markings, and airport signs. Vehicle operators must remain cognizant of their surroundings and operating boundaries. Watch out for snow removal equipment and aircraft operating in the vicinity under low-visibility conditions. There are additional risks present under these conditions consult AC 150/5200-30C, *Airport Winter Safety and Operations* and the airports *Snow and Ice Control Plan.*

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# Section 4
# Driving, Taxiing or Towing Aircraft on the Movement Areas

Drivers, anyone taxiing, or towing an aircraft who are authorized to operate on the movement area require more training and vigilance since there are dangers associated with this area that are not present on non-movement areas. In addition to the principals for driving on the non-movement area, drivers and anyone that has access to the movement area must be cognizant of the meanings of airfield signs, markings, and lighting configurations. Additionally, they must be able to communicate with air traffic control (ATC) and be able to follow ATC directions. The Airport Operator must have a MOU (memorandum of understanding) or LOA (letter of agreement) with the local ATCT regarding any specific procedures for operations on the movement areas.

**ATCT Control all Movement Areas** as defined: the runways, taxiways, and other areas of the airport that are used for taxiing, hover taxiing, air taxiing, and takeoff and landing of aircraft, exclusive of loading aprons and aircraft parking areas. Movement areas are considered "positive control," meaning that all vehicle operators and anyone taxiing or towing an aircraft will need permission from ATC before entering the area.

**Authorized Vehicles and Anyone Taxiing or Towing an Aircraft.** Only vehicles, taxiing, or towing an aircraft, that are needed for airport operations may enter a movement area with radio contact through ATCT. Therefore, fuel trucks, maintenance vehicles, catering trucks, and other non-essential vehicles will not be permitted to enter the movement areas without being escorted. Exceptions may include Airport Operator authorized (radio equipped) vehicles with appropriately trained personnel. Airport Operations/Maintenance must coordinate all other vehicle operations within the movement areas.

Vehicle operators towing or pushing back aircraft onto the movement area for flight (with a pilot in command), are not required to obtain movement area driver training. Once the aircraft is disconnected, the tug operator and any other push back support personnel will immediately return to the apron area. All personnel must be briefed on and understand this procedure by their company.

**Taxiways**

- **Designations.** Aircraft use taxiways to move to and from the aprons and the runways. Taxiways are designated by letters or by a letter/number combination such as A, B, G2, or B3. Diagrams of RIC have been included at the end of this manual.

- **Lighting.** Taxiways are lighted with **blue** edge lighting and/or reflectors. Some taxiways are also lighted with **green** in-pavement, centerline lighting that also include Taxiway Lead On/Off lights, which alternate yellow/green. *At RIC, Taxiway "E"cho, and portions of Taxiways"L"ima, "U"niform, "A"lpha, and "C"harlie have green in-pavement centerline lights.*
- **Signs.** The signs used on taxiways are direction, destination, location, and taxiway ending marker signs.

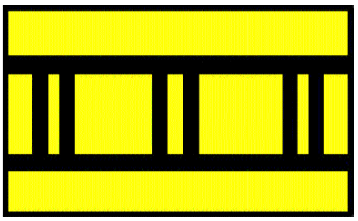
***Direction and Designation Signs*** have black lettering and a directional arrow or arrows on a yellow background. The arrow indicts the direction to that taxiway, runway, or destination.


**Taxiway Direction Sign**

***Location Signs*** have **yellow lettering** on a **black background.** The location sign below indicates that the operator of the vehicle/equipment is located on the named taxiway or runway. Black square, you are here.


**Taxiway Location Sign**

***Runway Safety Area/Object Free Zone (RSA/OFZ) and Runway Approach Area Boundary Signs,*** when required, identify the boundary of the runway safety area/OFZ or the runway approach area to the pilot and vehicle operator. The driver can use these signs to identify when the vehicle is clear of the runway environment. It has a **black inscription** that depicts the hold line marking on a **yellow background.**



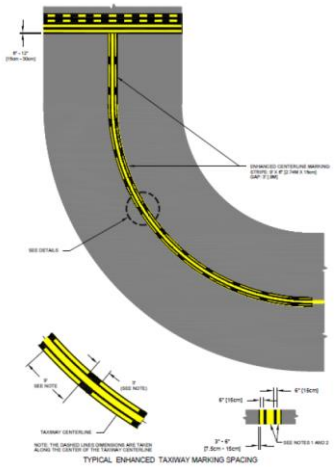
- ***Markings.*** Pavement markings on taxiways are always yellow. The taxiway centerline is painted on all taxiways. On the edges of some taxiways, there is a solid, double yellow line or double-dashed line. If pavements are usable on both sides of the line, the lines will be dashed; if not, the lines will be solid.

**Enhanced Taxiway Centerline Markings** provide supplemental visual cues to alert pilots of an upcoming runway holding position marking (Pattern A) for minimizing the potential for runway incursions. To reinforce situational awareness before entering a runway, this safety enhancement is only used on those taxiways that directly enter a runway.

**Notes:**

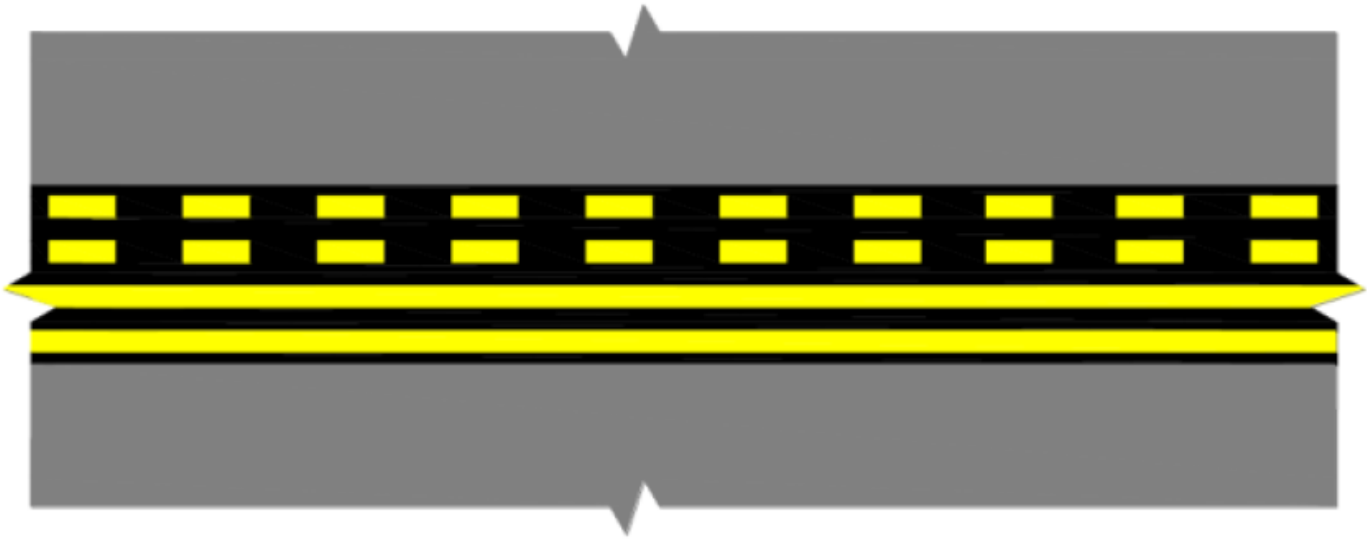
1. Dashed lines for the enhanced taxiway centerline marking are 6 inches (15 cm) in width and separated 6 inches (15 cm) from the taxiway centerline. This applies to both 6 inches (15 cm) and 12 inches (30 cm) taxiway centerline markings.

2. The taxiway centerline markings may be shifted left or right to avoid interference with the taxiway centerline lights.



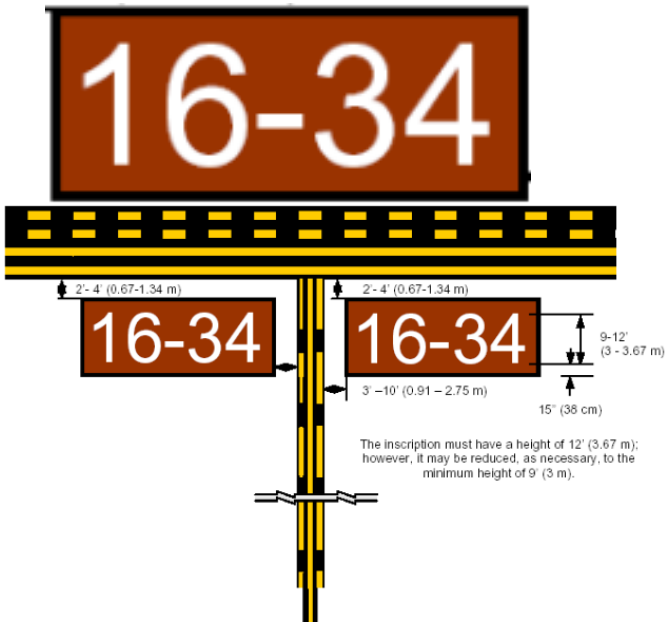
Enhanced Taxiway Centerline Markings

***Runway Holding Position Markings*** are located across each taxiway that leads directly onto a runway. These markings are made up **of two solid lines and two broken yellow lines** and denote runway holding position markings. These markings are always co-located with a Runway Holding Position Sign. **A vehicle operator must not cross from the solid-line side of the marking without first obtaining clearance.**



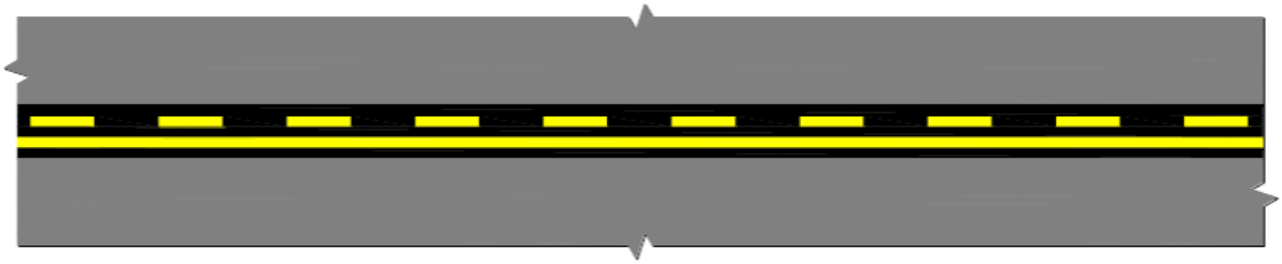
**Runway Holding Position Marking**

***Surface Painted Holding Position*** are located on each taxiway that leads directly onto a runway. These markings are co-located with Runway Holding Position Markings. The markings are rectangular, red in color, with a black border and white numerals that designate the runway number. This marking denotes an entrance to a runway from a taxiway and supplements the elevated holding position signs.



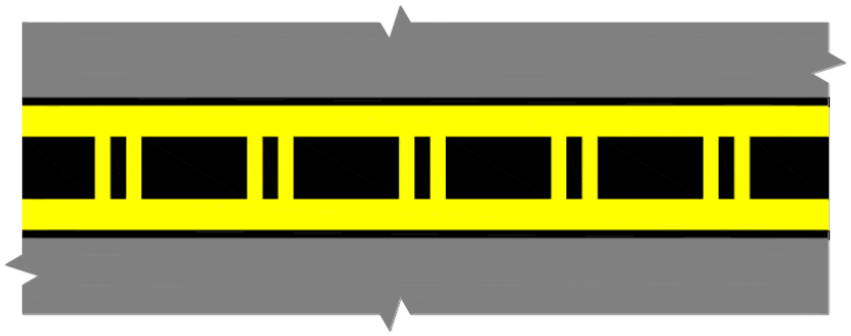
## Surface Painting Holding Position Marking

***Non-Movement Area Boundary Markings*** consist of two yellow lines (one solid and one dashed). The solid line is located on the non-movement area side, while the dashed yellow line is located on the movement area side. **A vehicle operator is not to cross from the solid-line side without first contacting the ATCT and obtaining a clearance to operate on the movement area**



**Non-Movement Area Boundary Marking**

***Instrument Landing System (ILS) Critical Area Holding Position Markings*** are comprised of **two parallel yellow lines** with lines running perpendicular between the two parallel yellow lines. These markings identify the location on a taxiway where an aircraft or vehicle is to stop when it does not have clearance to enter ILS critical areas. The ILS critical area must remain clear, especially in inclement weather. If a vehicle proceeds past this ILS marking, it might cause a false signal to be transmitted to the landing aircraft.

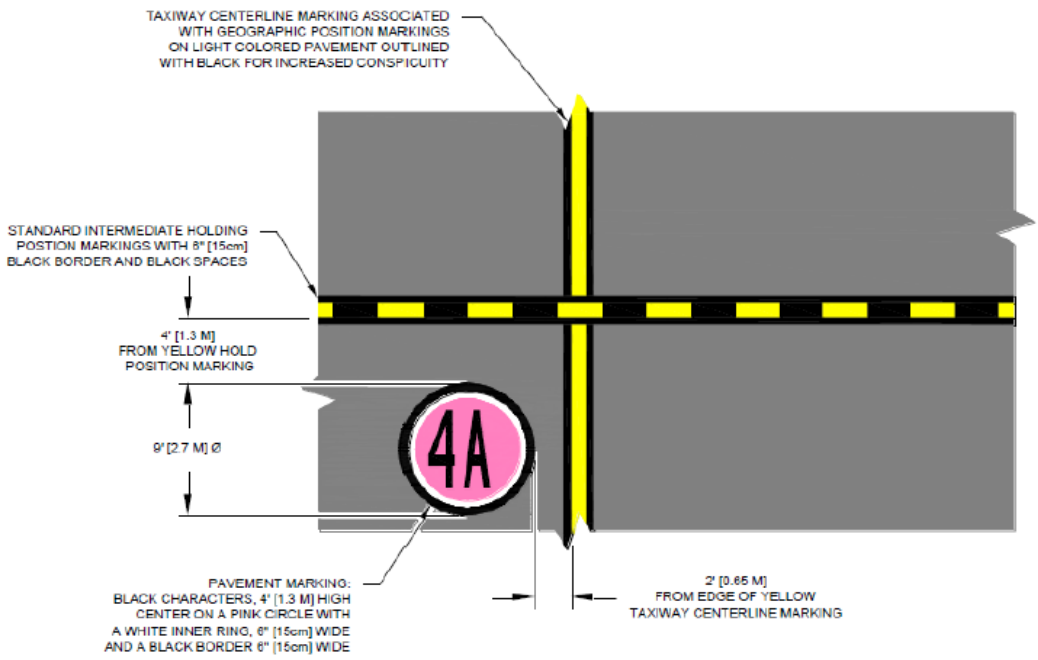


ILS Hold Position Marking

***Surface painted holding position for Instrument Landing System (ILS) critical area*** are rectangular markings, red in color, with a black border and white "ILS" inscription. These markings are co-located with ILS Hold Position Markings. They are located on taxiways at a point where the taxiway would enter the protected NAVAID or ILS critical area. The marking supplements the ILS Critical Holding Position Signs.

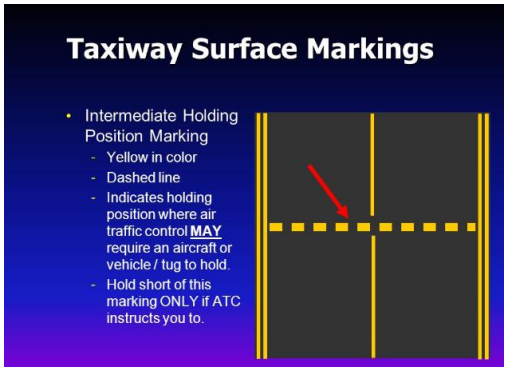

***Surface Painted Holding Position for ILS***

***The geographic position marking (GPM)*** is used repeatedly along a designated taxi route to serve as an indicator of a location (a spot) so that pilots can confirm holding points or report their location while taxiing during periods of low-visibility operations.




**Geographic Position Markings**

***Taxiway intermediate Hold Line (Taxiway/Taxiway Holding Position) marking*** is a single, dashed yellow line typically installed on a black background. This marking denotes the location on a taxiway to hold short of an intersecting or crossing taxiway. The marking is typically found along the Surface Movement Guidance Control System (SMGCS) route and ensures adequate wingtip clearance for aircraft taxiing on the intersecting taxiway.




***Taxiway/Taxiway Holding Position Marking***

**Runways**

- **Designations.** Runways are areas where aircraft land and take off. Runways are always designated by a number such as 2 or 20. The number indicates the compass heading of the runway. An aircraft taking off on runway 20 is headed 200 degrees. In the event of parallel runways, a letter designation is added to indicate either the right or left runway, e.g., **2L-20R, 2R-20L.**
- **Lighting.** Runways are lighted with a variety of colored lights.

  ***Runway Edge Lights*** are **white. If the runway has an instrument approach,** the last 2,000 feet of the runway will be yellow in color.

  ***Runway Centerline Lights*** are **white** except for the last 3,000 feet of the runway, where they begin to alternate **red** and **white.** For the last 1,000 feet of runway the centerline lights are all **red.**

  ***Runway Touchdown Zone Lights*** are **white.**

  ***Runway End/Threshold Lights*** are split lenses that are **red/green.**
- **Signs.**

  ***Mandatory Holding Position Signs for Runways*** have **white numbering/lettering with a black outline** on a **red background with a white border.** These are located at each entrance to a runway and at the edge of the runway safety area/obstacle-free zone and are co-located with runway holding position markings.

**Do not proceed beyond these signs until clearance is given by the ATCT to enter onto the runway.**


**Holding Position Sign**

***Instrument Landing System (ILS) Holding Position Signs*** have white letters with a black outline on a red background with a white border. These signs tell pilots and vehicle operators where to stop to avoid interrupting a type of navigational signal used by landing aircraft. This is a critical area, and a vehicle/equipment operator must remain clear of it *(use airport-specific policy)*. If a vehicle proceeds pass this microwave landing system/ILS marking, it may cause a false signal to be transmitted to the landing aircraft.


ILS Hold Sign

***Holding Position Signs for Runway Approach Areas.*** The inscription on a sign for a runway approach area is the associated runway designation followed by a dash and the abbreviation APCH for approach. This sign has **white numbering with a black outline** on a **red background** with a **white border.** The sign is installed on taxiways located in approach areas where an aircraft on a taxiway would either cross through the runway safety area or penetrate the airspace required for the approach or departure runway.


**Approach Sign**

***Runway Distance Remaining Signs*** provide distance remaining information to pilots during takeoff and landing operations. They have

white numbering on a black background. The number on the sign provides the remaining runway length in 1,000-foot increments.


**Runway Distance Remaining Sign**

***Runway Exit Sign*** is a destination sign located prior to the runway/ taxiway intersection on the side and in the direction of the runway where the aircraft is expected to exit. This sign has **black lettering** and a **directional arrow** on a **yellow background.**


**Direction/Runway Exit Sign**

- **Markings.**

***Pavement markings on a runway are white.*** Runway Threshold Markings and Runway Threshold Bars, Runway Aiming Point Markings, Runway Designation Markings, Runway Touchdown Zone Markings, Runway Centerline Markings, Runway Side Stripes, and Displaced Threshold Markings are white. The only non-white lines on a runway are yellow lead-in/-off lines that extend from the runway centerline and hold lines for a specific operation known as land and hold short.

# Section 5

# Communications

Any vehicle driving and anyone taxiing or towing an aircraft on the movement areas **(runways and taxiways),** must have contact with the ATCT. Vehicle operators, anyone taxiing, or towing an aircraft must always monitor the appropriate radio frequency ***(Richmond Ground – 121.90 / Richmond Tower – 121.10)*** when in the movement areas on controlled airports. Permission must be requested, and clearance given prior to driving, taxiing, or towing an aircraft on a movement area. A vehicle that is equipped with a radio and a driver who is movement area qualified may escort vehicles or anyone towing an aircraft without radios; these vehicles must always stay under the control of the escort. When a movement area is closed for construction, vehicles may traverse that area without ATCT contact but must be escorted if their travels require them to cross an active movement area or the protected area of the RSA.

The ATCT controller may use separate or common radio frequency to control all ground traffic, vehicle, and aircraft in the movement areas. These frequencies are only to be used to get clearance onto and off the movement areas. When the ATCT is closed.

- **Phraseology.** Vehicle operators and anyone taxiing or towing an aircraft must contact the ATCT ground controller each time they proceed onto or leave the movement area. When proceeding onto a movement area, vehicle operators and anyone taxiing or towing an aircraft must tell the controller three things: **WHO you are, WHERE you are, and WHAT your intentions are.** Vehicle operators must always acknowledge all communications with ATC phraseology i.e. read back the clearance with their vehicle, tug or aircraft identification so ground control and other persons know that the message was received**. Vehicle operators must always give aircraft and ground control transmissions priority unless an emergency exists.** Very high frequency frequencies are for the primary use of aircraft and ATCT personnel. Some typical transmissions are as follows:

🚘 Vehicle: "Richmond ground control; this is Yellow 17 at Taxiway Charlie. Request permission on to Runway 34 for a pavement inspection."
🚘 Vehicle: "Richmond ground control; this is OPS1 at Taxiway Alpha. Request to proceed south on runway 20 right for a light inspection."
✈ Anyone taxiing or towing an aircraft: "Richmond ground control; this is Northwest maintenance 9901(name of company and aircraft identifier), at gate B14 request taxi (or tow) to the Cargo Ramp."

Reply transmissions may be brief, such as—

🗣 ATCT: "OPS1, hold short of runway 20."
🚘 Driver: "OPS1 holding short of runway 20."
🗣 ATCT: "OPS1 cleared south on runway 20."

"Please expedite, landing aircraft on a 10-mile final for runway 20."

🚘 Driver: "OPS1 proceeding south on runway 20 will expedite."

- Driver: "Ground control, OPS1 is off of runway 20."

ATCT Communication with anyone taxiing or towing an Aircraft.

- ATCT: "Northwest Maintenance 9901, taxi to the Cargo Ramp, via taxiways Alpha, Foxtrot." *(If the clearance includes to "hold short" of a surface, read-back the instruction and comply by holding short.)*
- Anyone: "Northwest Maintenance 9901, taxi to the Cargo Ramp, via taxiways Alpha and Foxtrot."

**NOTE:** If you are unsure what the controller has said, or if you don't understand an instruction, you can ask the controller to repeat it *(say again.)* Good communications only occur when each party knows and understands what the other is saying.

**Common Use Phrases.** (Reference Pilot Controller Glossary Aeronautical Information Manual)

| What Is Said: | What It Means: |
|---|---|
| Acknowledge | Let me know you have received and understand this message. |
| Advise Intentions | Let me know what you plan to do and do not do it until ATCT provides authorization. |
| Affirmative | Yes. |
| Correction | An error has been made in the transmission, and the correct version follows. |
| Go Ahead | Proceed with your message only. |
| Hold/Hold Short | Phrase used during ground operations to keep a vehicle or aircraft within a specified area or at a specified point while awaiting further clearance from air traffic control. |
| How do you hear me? | Question relating to the quality of the transmission or to determine how well the transmission is being received. |
| Immediately or without delay | Phrase used by ATC when such action compliance is required to avoid an imminent situation. |
| Negative | "No" or "permission not granted" or "that is not correct." |
| Out | The radio conversation is ended, and no response is expected. |
| Over | My radio transmission is ended, and I expect a response |

| What Is Said: | What It Means: |
|---|---|
| Read Back | Repeat my message to me. |
| Roger | I have received all of your last transmission. |
| Stand By | Means the controller or pilot must pause for a few seconds, usually to attend to other duties of a higher priority. Also means to wait as in "stand by for clearance." The caller can reestablish contact if a delay is lengthy. |
| Unable | Indicates inability to comply with a specific instruction, request, or clearance. |
| Verify | Request confirmation of information. |
| Wilco | I have received your message, understand it, and will comply with it. |

**Phonetic Aviation Alphabet.** Because some letters have similar sounds, like B and P, the international aviation industry uses the following words to reduce confusion. For example, Taxiway B would be referred to as Taxiway Bravo on the radio.

| | |
|---|---|
| **A** Alpha | **N** November |
| **B** Bravo | **O** Oscar |
| **C** Charlie | **P** Papa |
| **D** Delta | **Q** Quebec |
| **E** Echo | **R** Romeo |
| **F** Fox-Trot | **S** Sierra |
| **G** Golf | **T** Tango |
| **H** Hotel | **U** Uniform |
| **I** India | **V** Victor |
| **J** Juliet | **W** Whiskey |
| **K** Kilo | **X** X-Ray |
| **L** Lima | **Y** Yankee |
| **M** Mike | **Z** Zulu |

**ATCT Light Gun Signals.** Air traffic controllers have a backup system for communicating with aircraft or ground vehicles if their radios stop working. The controller has a light gun in the tower that can send out different colored lights to tell the pilot or driver what to do.

If a vehicle operator or anyone taxiing or towing an aircraft experiences a radio failure on a runway or taxiway, the operator can vacate the runway as quickly and safely as possible and contact the ATCT by other means, such as a cellular telephone, and advise the ATCT of the situation. If this is not practical, then the driver, or anyone taxiing or towing an aircraft after vacating the runway, can turn the vehicle, tug or aircraft toward the tower and start flashing the vehicle, tug, or aircraft (landing lights) headlights and wait for the controller to signal with the light gun.

**Light Signal Meanings**

| LIGHT GUN SIGNALS | | | |
|---|---|---|---|
| COLOR AND TYPE OF SIGNAL | MOVEMENT OF VEHICLES, EQUIPMENT AND PERSONNEL | AIRCRAFT ON THE GROUND | AIRCRAFT IN FLIGHT |
| STEADY GREEN | Cleared to cross, proceed or go | Cleared for takeoff | Cleared to land |
| FLASHING GREEN | Not applicable | Cleared for taxi | Return for landing (to be followed by steady green at the proper time) |
| STEADY RED | STOP | STOP | Give way to other aircraft and continue circling |
| FLASHING RED | Clear the taxiway/runway | Taxi clear of the runway in use | Airport unsafe, do not land |
| FLASHING WHITE | Return to starting point on airport | Return to starting point on airport | Not applicable |
| ALTERNATING RED AND GREEN | Exercise Extreme Caution!!!! | Exercise Extreme Caution!!!! | Exercise Extreme Caution!!!! |

**Safety.** The FAA defines runway incursion as any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle, or person on the protected area of a surface designated for the landing and take -off of aircraft.

- **Runway Incursions.** Runway incursions are primarily caused by error in one or more of the following areas:

- Pilot/Anyone taxiing or towing an aircraft/ground and vehicle/controller communication failure
- Airport unfamiliarity
- Loss of situational awareness and not using a current airport diagram

An example of an incursion is a vehicle at an airport with an operating ATCT straying onto a runway in front of an aircraft causing the pilot to take an action to avoid a collision.

- **Right-of-Way.** When driving on the airfield, vehicle operators and anyone taxiing or towing an aircraft need to always be aware of their location and the meaning of all pavement markings, lights, and signs. When on the aprons and taxiways, stay away and steer clear of aircraft.

**Aircraft always have the right-of-way!** 


**NOTE:** *Any individual involved in a runway incursion may receive remedial airfield drivers, taxiing or towing an aircraft training given by the Richmond International Airport subject to management approval. Remedial drivers training is not in lieu of the airport operators established consequences of non-compliance with the airport operator's drivers training program, remedial drivers training is in addition to the airport operator's implementation of a progressive penalty program.*

# Section 6
# Description of Movement Areas at RIC

Air Carrier movement areas (runways and taxiways) at the Richmond International Airport include the following:

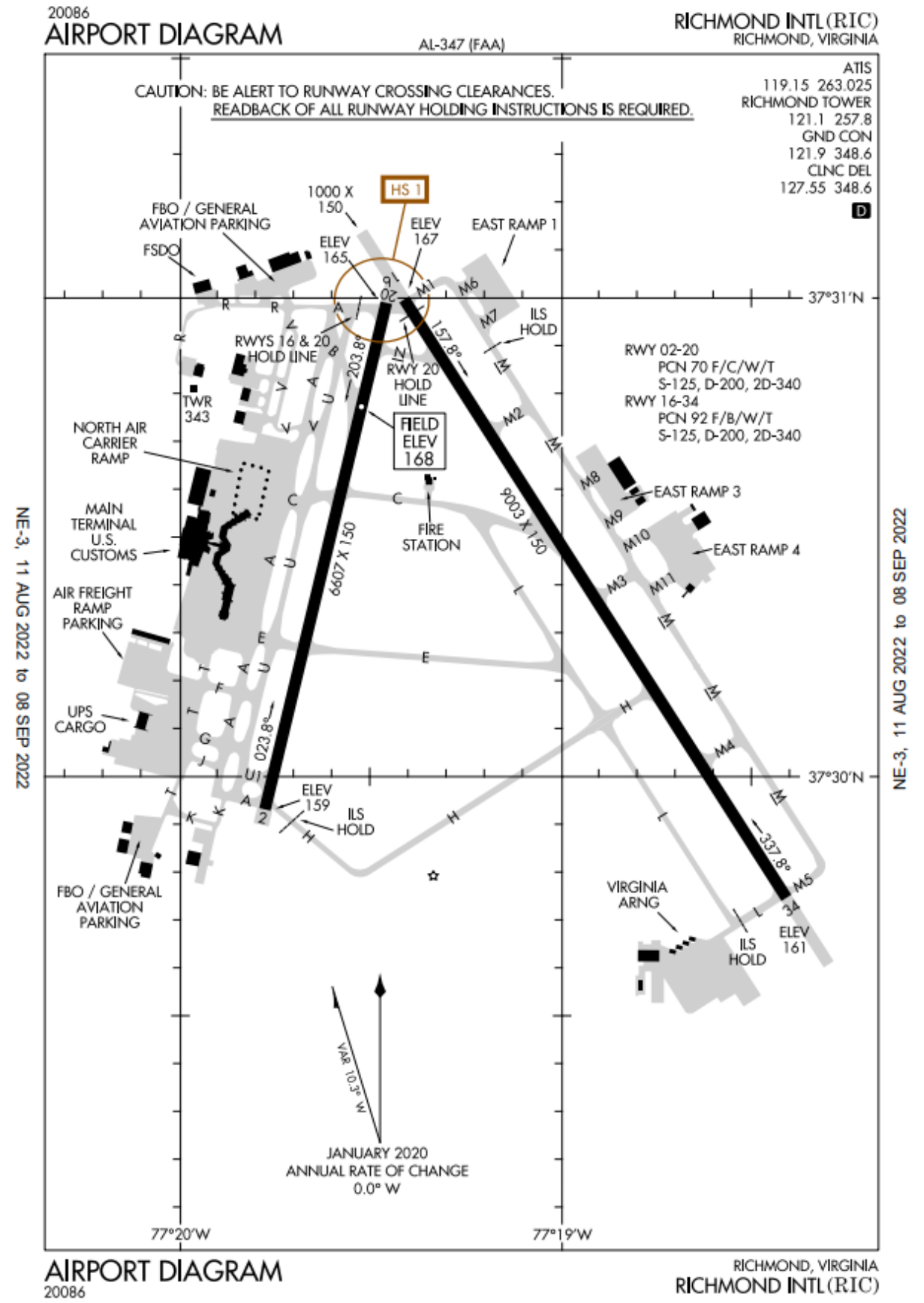
NOTE: safety area width is expressed in terms of feet (') from centerline marking (CL).

Air Carrier Movement Areas

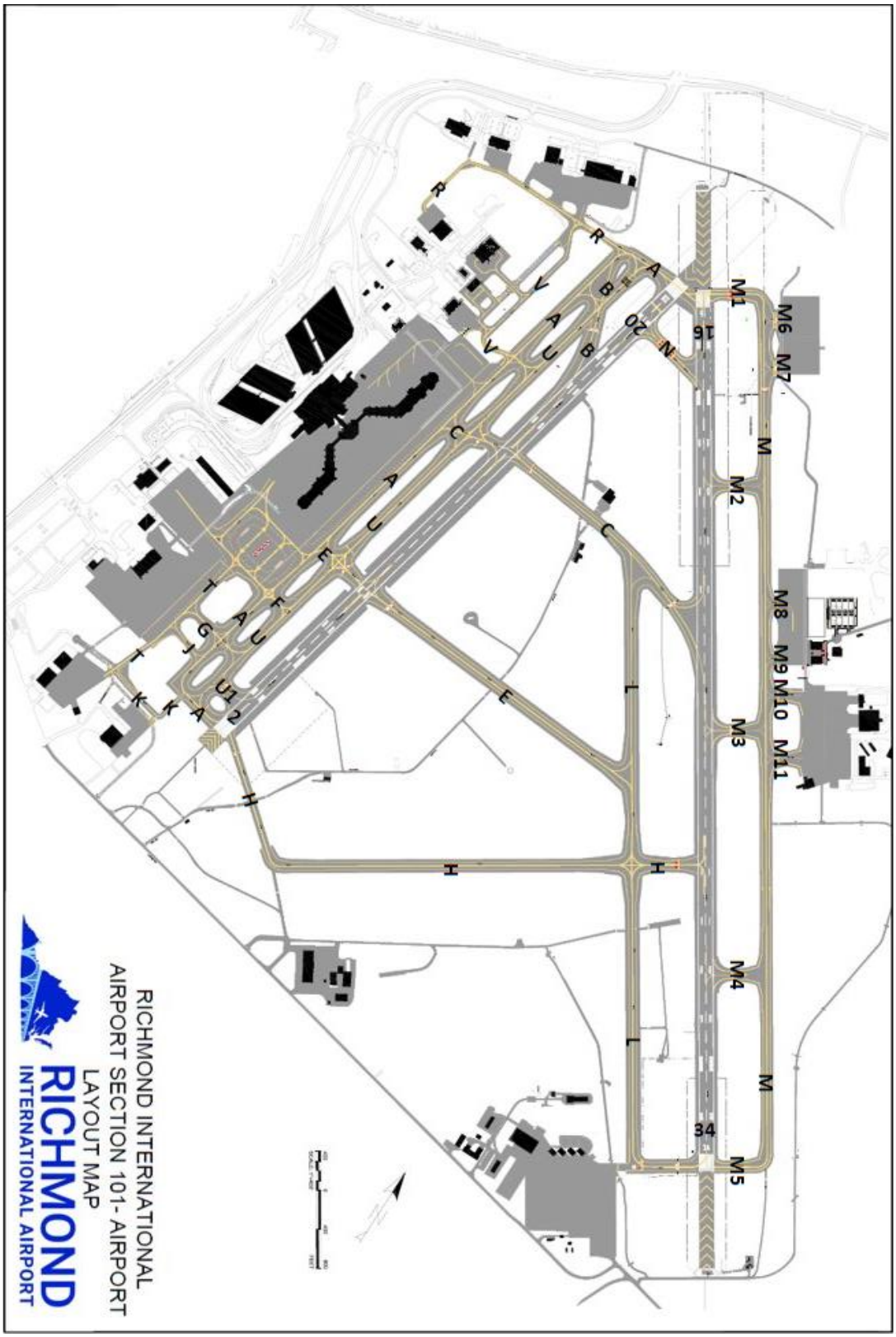
| Runway | Length | Width / Safety Area | Surface Type |
|---|---|---|---|
| Runway 2/20 | 6,607 Ft Long | 150' / 250' from CL | Grooved Asphalt |
| NOTE: NAVAID PROTECTION ZONE - ILS SYSTEM Runway 2 and PAPI Runways 2 and 20 | | | |
| **NOTE: SAFETY AREA ALSO EXTENDS 1000' BEYOND THRESHOLD EITHER END OF RUNWAY** | | | |
| Runway 16/34 | 9,003 Ft Long | 150' / 250'from CL | Grooved Asphalt |
| NOTE: NAVAID PROTECTION ZONES - ILS SYSTEM and PAPI Runways 16 and 34 | | | |
| **NOTE: SAFETY AREA ALSO EXTENDS 1000' BEYOND THRESHOLD EITHER END OF RUNWAYS 16/34 AND 2/20.** | | | |

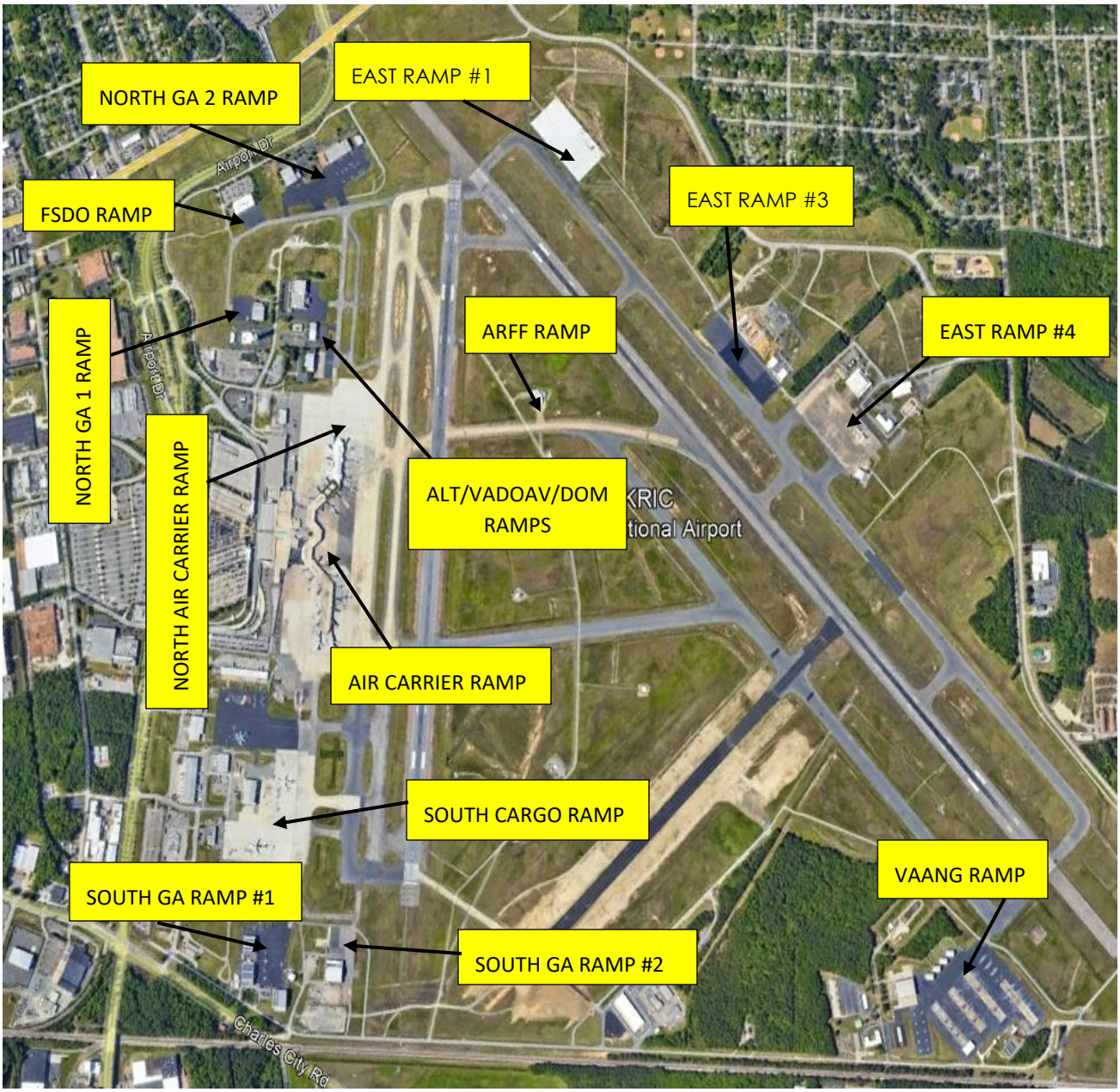
| Taxiway | Width / Safety Area | Surface Type |
|---|---|---|
| Taxiway A | 75' / 107' from CL | Concrete (TWY E intersection and portions North)<br>Asphalt (Portions South of TWY E) |
| Taxiway B | 75' / 85.5' from CL | Concrete |
| Taxiway C | 75' / 107' from CL | Concrete |
| Taxiway E | 75' / 85.5' from CL | Asphalt |
| Taxiway F | 75' / 85.5' from CL | Asphalt |
| Taxiway G | 75' / 107' from CL | Asphalt (East of TWY A)<br>Concrete (West of TWY U) |

| | | |
|---|---|---|
| Taxiway H | 75' / 107' from CL | Asphalt |
| Taxiway J | 50' / 59' from CL | Asphalt |
| Taxiway K | 50' / 59' from CL | Asphalt |
| Taxiway L | 75' / 107' from CL | Asphalt |
| Taxiway M | 75' / 107' from CL | Asphalt |
| Taxiways M1 thru M11 | 75' / 107' | Asphalt |
| Taxiway N | 75' / 85.5' from CL | Asphalt |
| Taxiway R | 50' / 59' from CL | Asphalt |
| Taxiway T | 75' / 85.5' | Concrete |
| | 50' / 59' from CL | Asphalt (South of TWY J) |
| Taxiway U | 75' / 107' from CL | Concrete (north of TWY E) |
| | | Asphalt (south of TWY E) |
| Taxiway U1 | 75' / 107' from CL | Concrete |
| Taxiway V | 75' / 59' from CL (East of TWY A) | Concrete (TWY A & East) |
| | 50' / 59' from CL (West of TWY A) | Asphalt |


20086
AIRPORT DIAGRAM
AL-347 (FAA)
RICHMOND INTL (RIC)
RICHMOND, VIRGINIA
CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES.
READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS REQUIRED.
ATIS
119.15 263.025
RICHMOND TOWER
121.1 257.8
GND CON
121.9 348.6
CLNC DEL
127.55 348.6
D
1000 X 150
HS 1
FBO / GENERAL AVIATION PARKING
FSDO
ELEV 165
ELEV 167
EAST RAMP 1
37°31'N
ILS HOLD
RWYS 16 & 20 HOLD LINE
203.8°
157.8°
RWY 20 HOLD LINE
TWR 343
FIELD ELEV 168
RWY 02-20
PCN 70 F/C/W/T
S-125, D-200, 2D-340
RWY 16-34
PCN 92 F/B/W/T
S-125, D-200, 2D-340
NORTH AIR CARRIER RAMP
EAST RAMP 3
EAST RAMP 4
MAIN TERMINAL U.S. CUSTOMS
FIRE STATION
6607 X 150
9003 X 150
AIR FREIGHT RAMP PARKING
UPS CARGO
023.8°
337.8°
ELEV 159
ILS HOLD
37°30'N
FBO / GENERAL AVIATION PARKING
VIRGINIA ANG
ILS HOLD
ELEV 161
VAR 10.3° W
JANUARY 2020
ANNUAL RATE OF CHANGE
0.0° W
77°20'W
77°19'W
AIRPORT DIAGRAM
20086
RICHMOND, VIRGINIA
RICHMOND INTL (RIC)
NE-3, 11 AUG 2022 to 08 SEP 2022
NE-3, 11 AUG 2022 to 08 SEP 2022

## Richmond International Airport (KRIC)




NORTH GA 2 RAMP
EAST RAMP #1
FSDO RAMP
EAST RAMP #3
NORTH GA 1 RAMP
ARFF RAMP
EAST RAMP #4
NORTH AIR CARRIER RAMP
ALT/VADOAV/DOM RAMPS
AIR CARRIER RAMP
SOUTH CARGO RAMP
VAANG RAMP
SOUTH GA RAMP #1
SOUTH GA RAMP #2
Airport Dr
Charles City Rd

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# Section 7

## Construction activity adjacent Movement Areas

**Requirements for construction operations in the movement areas at RIC:**

All construction activities at RIC shall be in compliance with FAA Advisory Circular 150/5370-2F, "Operational Safety on Airports During Construction".

VEHICLES

All vehicles shall be marked and lighted in accordance with FAA A/C 150/5210-5, "Painting, Marking, and Lighting of Vehicles Used on an Airport". Vehicles required to operate in the movement areas should be equipped with two-way radios for communicating with air traffic control. Two-way radios should be vehicle mounted and not handheld. Handheld radios do not function well in some areas of the Richmond International Airport.

TRAINING

All personnel who require unescorted assess into the movement areas must successfully complete the RIC Movement Area Interactive Employee Training (IET) program and must successfully complete a check ride by qualified airport personnel. Personnel who fail to successfully complete either requirement shall not receive a movement authorization endorsement.

In the event of construction in a movement area that is closed to aircraft operation, all personnel shall watch the RIC Movement Area Training DVD. A record shall be kept by the contractor documenting the attendance of all personnel.

ESCORT PROCEEDURES

From time-to-time personnel without RIC movement area authorization may need access to the movement areas of the airport. If personnel are escorted into the movement area, the following conditions must be met:

- The escort must maintain "positive control" of all personnel and equipment under his/her charge.
- An escort must be within "shouting" distance of all personnel and equipment under his/her charge.

- An appropriate number of escorts shall be provided to ensure safety and security at all times.

*Positive control is defined as any measure that will successfully prevent personnel or equipment from entering any part of an active movement area without prior authorization and coordination.

CROSSING ACTIVE RUNWAY/TAXIWAY INTERSECTIONS

If construction activity requires the crossing of an active runway or taxiway during operations the following procedures shall be followed:

- Closed surface intersections shall be properly barricaded to prevent unauthorized vehicles from entering the movement areas.
- If the crossing is a runway, signage stating "RUNWAY IS OPEN DO NOT CROSS WITHOUT AIR TRAFFIC AUTHORIZATION" must be posed at all crossing points. Signage must be visible and secure against adverse weather conditions.
- If frequent crossings are required, the contractor shall provide a radio equipment pilot car with a qualified movement authorized driver to escort all equipment across. Additional, trained flagmen shall be provided on each side of the crossing to prevent unescorted vehicle from crossing without the pilot car (this does not apply to vehicles operated by movement qualified personnel). Frequent crossing operations shall be coordinated in advance with RIC ATCT.

NOTAMS

All required NOTAMS shall be coordinated a minimum of 72 hours (3 business days) in advance of the work being requested for all surfaces except Runway 16/34. Runway 16/34 closures must be requested a minimum of 7 business days in advance. "Personal and Equipment Working" (PAEW) NOTAMS shall be issued for all construction operations within the runway safety areas.

To ensure proper processing and timely notifications to all effected Tenants and Commission Departments requests for Monday NOTAMS must be received on Wednesday mornings. Tuesday NOTAM requests on Thursday mornings an so on.

SMGCS

All construction activity shall be immediately suspended if ATC declares SMGCS conditions.

COORDINATION OF CONSTRCUTION ACTIVITIES

All coordination of construction activities with RIC ATC shall be done by airport personnel.

"PULL-BACK" Operations

"Pull back" operations are not allowed under FAA Advisory Circular 150/5370-2F, "Operational Safety on Airports During Construction".

PENALTIES

All movement are vehicle operations shall comply with the Richmond International Airport Rules and Regulations and FAA procedures. Should any safety violation occur, the vehicle operator(s) privileges shall be immediately suspended pending the outcome of an investigation.

# Section 8
## Movement Area – Letters of Agreement (LOA)

The Capital Region Airport Commission, owner and operator of the Richmond International Airport, has entered into agreements with the Federal Aviation Administration to include RIC Air Traffic Control (ATC) and Airway Facilities/Technical Operations groups. Three of these agreements relate directly to vehicle operations on the Movement Areas at RIC. The agreements are outlined as Letter of Agreements (LOAs') and have been incorporated into the RIC Airport Certification Manual (ACM), Section 329. The LOAs' define the movement and non-movement areas at RIC, along with protocols and procedures for vehicle operators that address certain unique circumstances while maintaining compliance with F.A.A. directives.

- Letter of Agreement – **Designation of Movement and Non-Movement Areas at RIC**
    - This LOA, amended 06/01/2017, describes the designation of Movement and Non-Movement areas at RIC. All ramps, aprons, vehicle service roads, and a portion of Taxiway "R"omeo are designated non-movement areas, and are not subject control by RIC Air Traffic. All runways, and taxiways (with the exception of a portion of Taxiway "R"omeo) are designated movement areas and require permission for RIC Air Traffic Control for access.
- Letter of Agreement – **Crossing/entering taxiways without ATC Clearance**
    - This LOA, amended 4/8/2016, **applies only to employees of the Capital Region Airport Commission and FAA Airway Facilities and Technical Operations groups**. It defines the responsibilities, provisions, and procedures for vehicular traffic crossing Taxiways "H"otel, "E"cho, and "C"harlie while driving on Vault Road. Additionally, the LOA outlines a provision for crossing Taxiway "L"ima at the Old Sierra vehicle service road south of Runway 7/25.
- Letter of Agreement – **Access to Runway Safety Area and Taxiway Safety Area by authorized personnel**
    - This LOA, effective 12/15/2013, **applies only to employees of the Capital Region Airport Commission and FAA Airway Facilities and Technical Operations groups**. It defines the responsibilities, provisions, and procedures for personnel and/or equipment entering the Runway Safety Area (RSA) or Taxiway Safety Area (TSA) for non-construction projects or maintenance.

The details of the aforementioned Letters of Agreement are covered during initial, and on-the-job movement driver training. Movement area authorized employees of the Capital Region Airport Commission are required to annually review the LOAs' contained within the ACM. Additional information may be obtained from the RIC Airport Operations department.

# SECTION 9
# Surface Movement Guidance Control (SMGCS) Operations

The **Surface Movement Guidance and Control System (SMGCS)** Plan outlines the procedures and actions applicable to the Capital Region Airport Commission (CRAC), Richmond International Airport Air Traffic Control Tower (ATCT), and all Richmond International Airport (RIC) Tenants during **low visibility operations**. RIC's SMGCS Plan does recommend special operating procedures designed to enhance safety and efficiency of both aircraft and vehicle movements during low visibility conditions.

**Utilization of Vehicle Service Roads:** Except for the necessary movement in leased areas, vehicles on the airfield should be operated within the boundaries of vehicle service roads. The latter is required when low visibility conditions of less than **1200 feet RVR** (runway visual range) are present. Vehicle service roads are identified by solid line on each side with and in some cases a broken line used as a center divider. Accompanying vehicle service roads are stop signs and markings, yield signs and markings, and general guidance and location signs. Vehicle service roads that abut Movement Areas are delineated by reflective Non-Movement/ Movement Area Boundary markings.

**Driver's Training: AMBER colored strobe lights are positioned at certain AOA access gates alerting that SMGCS operations are in effect.** Low visibility conditions of less than 1200 feet RVR will prompt Airport Public Safety Personnel to patrol and monitor the AOA for unauthorized vehicles. In addition, authorized drivers are required to stop and/or report unauthorized vehicles and personnel to Airport Operations.

**Access Restrictions:** When low visibility conditions exist, all vehicular movement within the AOA will be limited to essential operations. Vehicles permitted access to the Movement Area during these conditions are restricted to designated RIC and FAA Airways Facility maintenance personnel. In consequence, no vehicles outside the direct support of RIC's SMGCS plan will be allowed in the Movement Areas. In addition, RIC's Public Safety personnel will analyze all construction and/or other specialized activity on the airport and may determine that limitations be imposed. Limitations may range from a temporary restriction to complete suspension of the activity.


The amber colored beacons are mounted on poles and are highly visible. If activated the lights will flash, indicating to the driver that low-visibility (SMGCS) are in effect.
Once SMGCS restrictions are lifted, the lights will be deactivated by Airport Communications.
STOP
For questions regarding SMGCS activation or deactivation contact Airport Communications at 804-226-0001.