Charlotte Douglas International Airport

Charlotte, North Carolina

Class I Airport

Airport Certification Manual

Haley Gentry

Aviation Director

Federal Aviation Administration
Southern Region Airports Division
APPROVED
May 06 2022
NBL
Airport Certification Safety Inspector

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Definitions

The following are definitions of terms and acronyms used in this Manual:

AFFF – means aqueous film forming foam agent.

Air Carrier – a person who undertakes directly by lease, or other arrangement, to engage in air transportation. This includes an individual, firm, partnership, corporation, company, association, joint-stock association, governmental entity, and a trustee, receiver, assignee, or similar representative of such entities. [See 14 CFR Part 1.1, General definitions.]

Air Carrier Aircraft – an aircraft that is being operated by an air carrier and is categorized, as determined by the aircraft type certificate issued by a competent civil aviation authority, as either a:

* Large air carrier aircraft if designed for at least 31 passenger seats or
* Air carrier aircraft if designed for more than 9 passenger seats but less than 31 passenger seats.

Air carrier operation – the takeoff or landing of an air carrier aircraft including the period of time from 15 minutes before and until 15 minutes after the takeoff or landing.

Class I Airport – an airport certificated to serve scheduled operations of large air carrier aircraft that can also serve unscheduled passenger operations of large air carrier aircraft and/or scheduled operations of small air carrier aircraft.

Clean Agent – means an electrically non-conducting volatile or gaseous fire extinguishing agent that does not leave a residue upon evaporation and has been shown to provide extinguishing action equivalent to halon 1211 under test protocols of FAA Technical Report DOT/FAA/AR-95/87.

Heliport – means an airport, or an area of an airport, used or intended to be used for the landing and takeoff of helicopters.

Index – means the type of aircraft rescue and firefighting equipment and quantity of fire extinguishing agent that the certificate holder must provide in accordance with FAR 139.315.

Joint-Use Airport – means an airport owned by the United States that leases a portion of the airport to a person operating an airport specified under Section 139.1 (a).

Movement Area – the runways, taxiways, and other areas of an airport that are used for taxiing, takeoff and landing of aircraft, exclusive of loading ramps and aircraft parking areas.

Regional Airports Division Manager – mean the airports division manager for the FAA region in which the airport is located.

Safety Area – a defined area comprised of either a runway or taxiway and the surrounding surfaces that is prepared or suitable for reducing the risk of damage to aircraft in the event of an undershoot, overshoot, or excursion from a runway or the unintentional departure from a taxiway.

Scheduled Operation – any common carriage passenger-carrying operation for compensation or hire conducted by an air carrier for which the air carrier or its representatives offers in advance the departure

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location, departure time, and arrival location. It does not include any operation that is conducted as a supplemental operation under 14 CFR Part 121 or public charter operations under 14 CFR Part 380.

Shared-Use Airport – a U.S. Government-owned airport that is co-located with an airport specified under Section 139.1(a) and at which portions of the movement areas and safety areas are shared by both parties.

Unscheduled Operation – any common carriage passenger-carrying operation for compensation or hire, using aircraft designed for at least 31 passenger seats, conducted by an air carrier for which the departure time, departure location, and arrival location are specifically negotiated with the customer or the customer's representative. This includes any passenger-carrying supplemental operation conducted under 14 CFR Part 121 and any passenger-carrying public charter operation conducted under 14 CFR Part 380.

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RECORD OF REVISIONS

Subpart#	Change #	Page #	Revision Date	FAA Approval Date	Revision Summary
Cover	-	-	11/30/2020		Updated Cover Page.
Record of Revisions	1	V	1/14/2021		Updated Record of Revisions.
§139.311	1	1,2,4,5,6,7	1/14/2021		Updated Markings, Signs, and Lighting.
§139.315	1	1	11/30/2020		Updated ARFF Index.
§139.325	1	All	11/30/2020		Updated Airport Emergency Plan – Full Revision.
§139.327	1	3,4,5,6	1/14/2021		Updated Self-Inspection Program
§139.329	1	2,3,4	1/14/2021		Updated Pedestrian & Ground Vehicles.
Appendix B	1	-	11/30/2020		Updated Grid Map.
Appendix C	1	-	1/14/2021		Updated Airfield Movement Area Map.
Appendix D	1	-	11/30/2020		Updated Runway Safety Areas Map.
Appendix E	1	-	11/30/2020		Updated Lighted Obstruction Map.
Appendix F	1	-	1/14/2021		Updated Inspection Reports.
Appendix G	1	-	1/14/2021		Updated Fuel Storage and Handling Standards.
Appendix H	1	-	11/30/2020		Updated Snow and Ice Control Plan.
Appendix J	1	-	11/30/2020		Updated Wildlife Hazard Management Plan (WHMP).
Appendix L	1	-	1/26/2021		Updated ARFF Equipment Index
Appendix O	1	-	11/30/2020		Updated Modification of Standards.
Record of Revisions	2	V	4/16/2021		Updated Record of Revisions
Appendix F	2	-	4/8/2021		Updated Inspection Reports
Appendix O	2	-	4/8/2021		Updated Modification of Standards
Appendix H	2	-	4/16/2021		Updated Snow & Ice Control Plan
Appendix J	2	-	4/16/2021		Updated Wildlife Hazard Management Plan
Record of Revisions	3	V	8/10/2021		Updated Record of Revisions.
Cover	2	-	7/22/2021		Updated Cover Page.
§139.329	2		7/13/2021		Updated Pedestrian & Ground Vehicles.

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Appendix C	2	-	8/9/2021		Updated Airfield Movement Area Map.
Appendix F	2	-	7/16/2021		Updated Inspection Records.
Appendix G	2	-	8/3/2021		Updated Fuel Storage and Handling Standards.
§139.319	1	1	7/8/2021		Updated ARFF Operational Requirements.
§139.321	1	2	8/5/2021		Updated Handling and Storing of Hazardous Substances and Materials.
§139.305	1	2	7/13/2021		Updated Paved Areas.
§139.311	2	2	7/22/2021		Updated Markings, Signs, and Lighting.
Table of Contents	1	ii	8/11/2021		Updated Table of Contents.
§139.305	2	1, 3, 4	10/1/2021		Updated Paved Areas.
§139.329	3	1,2,3,4,5	10/7/2021		Updated Pedestrian & Ground Vehicles.
§139.319	2	1,2,3,4	10/11/2021		Updated ARFF Operational Requirements.
§139.321	2	1, 2	10/26/2021		Updated Handling and Storing of Hazardous Substances and Materials.
Appendix G	3	-	10/26/2021		Move Appendix G items to Appendix F. Remove Appendix G.
Appendix C	3	-	10/26/2021		Remove Appendix C.
Appendix F	3	-	10/26/2021		Updated Inspection Reports.
§139.311	3	1,2,3,4,5,6,8	10/26/2021		Updated Markings, Signs, and Lighting.
Table of Contents	2	ii, vi	10/29/2021		Updated Table of Contents.
§139.311	4	2	1/25/2022		Updated Markings, Signs, and Lighting
§139.319	3	1	1/25/2022		Updated ARFF Operational Requirements.
§139.329	4	1,2,3,4,5,6	2/9/2022		Updated Pedestrian & Ground Vehicles.
§139.305	3	1	2/9/2022		Updated Paved Areas.
§139.321	2	1, 2	2/9/2022		Updated Handling and Storing of Hazardous Substances and Materials.
§139.339	1	2	2/10/2022		Updated Airport Condition Reporting.
§139.303	1	2	2/28/2022		Updated Personnel.
Appendix I	2	-	3/1/2022		Updated SMGCS plan.
Appendix N	1	-	1/6/2022		Added Movement, Non-Movement and Runway Safety Areas LOA.
Appendix A	1	-	3/1/2022		Updated Airfield Sign Plan.
Appendix K	1	-	3/1/2022		Updated Evacuation Plan.

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Appendix F	4	-	3/1/2022		Updated Fueling templates.
Record of Revisions	4	vi	3/1/2022		Updated Record of Revisions.
§139.305	4	1	4/29/2022		Updated use of Runway 5/23
Appendix L	2		4/29/2022		Updated ARFF Equipment Index
Appendix N	2		4/29/2022		Remove Movement, Non-Movement and Runway Safety Areas LOA. Added Requirements for Operating in the Runway Safety Areas (RSAs) & Control Ground Vehicles/Pedestrians on the Movement Area LOAs.
Appendix O	3		4/29/2022		Updated Modification of Standards
Record of Revisions	5	vii	4/29/2022		Updated Record of Revisions.
Record of Revisions	6	vii	9/9/2022		Updated Record of Revisions.
Appendix D	2	-	9/9/2022		Updated Runway Safety Areas Map
Appendix E	2	-	9/9/2022		Updated Lighted Obstruction Map
Appendix G	4	-	9/9/2022		Add Appendix G Title Page
Appendix J	3	-	9/9/2022		Updated Wildlife Hazard Management Plan
Appendix N	3	-	9/9/2022		Replaced with updated Charlotte Douglas International Airport Emergency Procedures LOA
Record of Revisions	7	vii	9/7/2023		Updated Record of Revisions
Appendix A	2	All	9/7/2023		Update Airfield Sign Plan
§139.303	2	2	9/7/2023		§139.303
Appendix N	4	-	9/7/2023		Update Emergency Air Traffic Services LOA
Appendix N	4	-	9/7/2023		Updated Control Ground Vehicles/Pedestrians on the Movement Area LOA
Record of Revisions	8	vii	1/8/2024		Updated Record of Revisions.
Appendix F	5	-	1/8/2024		Added FOD Template Updated Product Type Numbers
Appendix H	3	-	1/8/2024		Updated Snow and Ice Control Plan
Appendix I	3	-	1/8/2024		Updated SMGCS Plan
Appendix K	2		1/8/2024		Updated Airport Emergency Plan
Appendix L	3	-	1/8/2024		Updated ARFF Equipment Index

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Appendix N	5	-	1/8/2024		Updated CDIA Emergency Procedures LOA
Record of Revisions	9	viii	5/12/2025		Updated Record of Revisions
Subpart A	1	A-1	1/25/2025		Removed “subpart B” from 139.7; formatting update
Subpart C	1	C-1, C-2	2/17/2025		Changed external agency access of ACM to Airport’s public website; update procedure for amending the ACM under 139.205
§139.301	1	1	1/25/2025		Added references to 139.402(d), 139.402(b)(2), and 139.402(b)(2)(v)
§139.303	3	1,2,3	6/25/2024		Removed reference to the number of City departments; added Chief Infrastructure Officer and SMS Manager under “Key Personnel and Functions” and “Line of Succession”; updated working title for Commercial and Community Engagement Director; Replaced “Operations Assistant Director” with “Operations Director – Regulatory Compliance”; added (E)(7) 139.402 components of airport SMS
§139.305	6	1,2,3,4	1/25/2025		Added Development under General section in reference to maintaining pavement; removed references to RWY 5/23; added taxiway safety areas; updated TCP colors (yellow, orange, blue) and numbers (1-34); Removed taxiways from Table 1
§139.309	1	1,2,3	1/25/2025		Removed RWY 5/23; corrected 18L/36R length to include RSA; added published declared distances for 18L/36R; added pre-existing nonstandard conditions at TWY C10, TWY A, and TWY D; added non-standard RSA inventory for each runway (signs within 288’ of the centerline)
§139.311	5	1,2,3,4,5,6,7	1/25/2025		changed “Appendix 1” to “Appendix A”; changed “online work order system” to “digital work order system”; removed all references to RWY 5/23 and associated equipment; updated address for rotating beacon; updated glossary
§139.319	4	1,2,3,4	1/25/2025		changed “Airport Operations” to “the Airport Operations Center (AOC)”; changed “his designee” to “their designee”; removed definition of “on duty” for EMT since all CFD personnel are qualified under this section
§139.323	1	1	1/25/2025		removed references to RWY 5/23; changed “online work order system” to “digital work order system”

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§139.327	2	1-8	1/25/2025		Added new types of work orders: *FAA/Project Pending* and *Airfield Construction*; removed secondary workflow allowing AF Mx to initiate work orders; changed "online work order system" to "digital work order system"; added explanation of how inspections/work orders are documented for each inspection; added required training, including SMS (139.402)
§139.329	5	1-5	4/25/2025		Updated name of movement area LOA; added Airside Ops exception for operating on the MA without ATCT clearance; updated ATCT phone number; changed "AMA" to "MAT"
§139.331	1	1,2	5/10/2025		Changed references to Cityworks to "digital work order system"; added "current version of" to reference advisory circulars
§139.337	1	1	2/26/2025		Specified "near airport" to mean within 5 miles of the AOA, per AC update; changed "Airport Operations" to "Airside Operations"
§139.339	2	1,2,3	2/10/2025		added AOC staff under *Personnel Responsible to Issue NOTAMs*
§139.341	1	1	3/17/2025		updated position titles and language to align with CFR and AC
§139.343	1	1	3/17/2025		updated language to align with CFR and AC
§139.401	1	1	5/3/2024		Added section
§139.402	1	1-2	5/3/2024		Added section
§139.403	1	1	5/3/2024		Added section
Appendix A	3	-	2/13/2025		Updated Sign Plan
Appendix B	2	-	11/7/2024		Updated Airport Grid Map
Appendix D	3	-	1/31/2025		Updated RSA Map
Appendix E	3	-	11/6/2024		Updated Light Obstruction Map
Appendix F	6	-	5/1/2024		Updated Quarterly Fueling Templates (hydrant carts and tankers); removed daily FOD templates; removed daily fuel inspection templates
Appendix H	4	-	10/30/2024		Updated Snow and Ice Control Plan
Appendix I	4	-	1/25/2025		Updated SMGCS Plan
Appendix J	4	-	5/5/2025		Updated WHMP

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Appendix K	3	-	4/25/2025		Updated AEP
Appendix L	4	-	2/5/2025		Updated ARFF Equipment List
Appendix N	6	-	5/9/2025		Updated LOAs: Control of Ground Vehicles Pedestrians on the MA; CDIA Emergency Procedures; NOTAMs; Opening and Closing RWYs; Emergency Air Traffic Services; NEAT Phase 1; Providing Continuous Power for NAVAIDS during CAT II/III conditions; RSA
Appendix O	4	-	5/12/2025		Remove expired MOS for TWY D (2019_11434)

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SUBPART A – GENERAL

Section 139.1 Applicability

A. This part prescribes rules governing the certification and operation of airports in any State of the United States, the District of Columbia, or any territory or possession of the United States serving any –

(1) Scheduled passenger-carrying operations of an air carrier operating aircraft configured for more than 9 passenger seats, as determined by the regulations under which the operation is conducted or the aircraft type certificate issued by a competent civil aviation authority; and

(2) Unscheduled passenger-carrying operations of an air carrier operating aircraft configured for at least 31 passenger seats, as determined by the regulations under which the operation is conducted or the aircraft type certificate issued by a competent civil aviation authority.

B. This part applies to those portions of a joint-use or shared-use airport that are within the authority of a person serving passenger-carrying operations defined in paragraphs (a)(1) and (a)(2) of this section.

Section 139.3 Delegation of authority

The authority of the Administrator to issue, deny, and revoke Airport Operating Certificates is delegated to the Associate Administrator for Airports, Director of Airport Safety and Standards, and Regional Airports Division Managers which has oversight for Charlotte Douglas International Airport.

Section 139.7 Methods and Procedures for Compliance

Charlotte Douglas International Airport will comply with the requirements prescribed by subparts C and D of this part in a manner authorized by the Administrator. The FAA Advisory Circulars that contain methods and procedures for compliance with this part that are acceptable to the Administrator will be followed.

SUBPART B – CERTIFICATION

Section 139.101 General Requirements

Except as otherwise authorized by the Administrator, no person may operate the airport specified under Part 139.1 of this part without an Airport Operating Certificate or in violation of that certificate, the applicable provisions, or the approved Airport Certification Manual.

Each certificate holder shall adopt and comply with an Airport Certification Manual as required under §139.203.

Persons required to have an Airport Operating Certificate under this part shall submit their Airport Certification Manual to the FAA for approval, in accordance with the following schedule:

(1) Class I airports – 6 months after June 9, 2004,

Airport Information

This Airport Certification Manual is prepared by the City of Charlotte, as the sole owner and operator of Charlotte Douglas International Airport in accordance with the requirements of Title 14 CFR Part 139.

Physical Address

5501 Josh Birmingham Parkway
Charlotte, NC 28208

Mailing Address

Charlotte Douglas International Airport
P.O. Box 19066, Charlotte, NC 28219

Location

The Airport is located approximately 5 NM west of downtown Charlotte, in Mecklenburg County, North Carolina.

Section 139.111 Exemptions

There are no exemptions in effect for Charlotte Douglas International Airport.

Section 139.113 Deviations

In an emergency condition requiring immediate action for the protection of life or property, Charlotte Douglas International Airport may deviate from any requirement of Subpart D of this part, or the Airport Certification Manual, to the extent required to meet that emergency. In the event of a deviation, the Airport shall, within 14 days after the emergency, notify the FAA Regional Airports Division Manager of the nature, extent, and duration of the deviation. When requested by the Regional Airport Division Manager, the Airport must provide this notification in writing.

FEDERAL AVIATION ADMINISTRATION
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INSPECTOR

SUBPART C – AIRPORT CERTIFICATION MANUAL

Section 139.201 General Requirements

Charlotte Douglas International Airport will:

[1] Keep the Airport Certification Manual (ACM) current at all times. The Airside Operations Manager is responsible for maintaining the ACM.

[2] Maintain at least one complete and current copy of the approved ACM at the airport, which will be available for inspection by the FAA. This copy will be maintained in the office of the Airside Operations Manager.

[3] Furnish the applicable portions of the FAA-approved ACM to airport personnel responsible for its implementation and to other interested stakeholders. (See Distribution List).

[4] Ensure the FAA Regional Airports Division is provided a complete copy of the most current ACM including any approved amendments under §139.205.

ACM Distribution List:

The Airport Certification Manual will be held in the Airside Operations Managers Office. Other agencies wishing to receive a copy of the ACM can access an electronic copy via the Airport's public website.

Section 139.203 Contents of Airport Certification Manual

Except as otherwise authorized by the Administrator, Charlotte Douglas International Airport has included in its Airport Certification Manual a description of operating procedures, facilities and equipment, responsibility assignments, and any other information needed by personnel concerned with operating the airport in order to comply with the applicable provisions of Subpart D of this part and the following paragraphs of this section.

Except as otherwise authorized by the Administrator, the airport has included in the Airport Certification Manual all of the elements meeting the requirements of a Class I airport.

In addition, this manual provides direction and lines of responsibility in the day-to-day operation of the Charlotte Douglas International Airport (herein referred to as "CLT" or "Airport"). It details operating procedures for both routine matters and unusual circumstances or emergencies that may arise. The contents of this manual comply with the Federal Aviation Administration rules and regulations Title 14 CFR Part 139 effective June 9, 2004.

Under this regulation, CLT operates as a **Class I** airport with scheduled air carrier service with over 30 passenger seats, unscheduled passenger operations of large air carrier aircraft, and scheduled operations of small air carrier aircraft.

Section 139.205 Amendment of Airport Certification Manual

The following procedure is in effect for amendments to the Airport Certification Manual.

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[1] A copy of the amendments, in color if applicable, will be submitted to the Federal Aviation Administration (FAA) Regional Airports Division Manager through any measure acceptable by the Administrator.

[2] Amendments to the ACM will be submitted at least 30 days prior to the proposed effective date, unless otherwise communicated. Amendments will be submitted as needed to maintain currency.

[3] The ACM Page Revision Log will be completed and submitted with each amendment.

[4] Each page of the revision, including the Revision Log, will have the date of revision and the original approval date of the ACM.

[5] Upon FAA approval, all printed copies of the Manual will be updated. An electronic copy of the ACM will be updated on the Airport's public website and intranet. Notification and electronic copies of the approved amendment(s) will be sent to the recipients listed on the Distribution List.

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Section 301 – Records

Section 139.301 Records – General

All self-inspection records required by §139.327(a) are maintained and kept within the Airside Operations computerized database. These inspection records are entered on a computerized Self-Inspection Form **Appendix F** and kept for no less than 12 consecutive calendar months after the inspection date, in the Airside Operations office. The Airport will make and maintain any additional records required by the FAA, FAR Part 139, and this Manual.

Furnished Records

Upon request of the FAA the Airport will furnish records listed under this section.

Required Records

[1] Personnel Training – 24 consecutive calendar months for personnel training records under Sections §139.303, §139.327, and §139.402(d).

[2] Emergency Personnel Training – 24 consecutive calendar months for ARFF and emergency medical service personnel training records under Section §139.319.

[3] Airport Fueling Agent Inspection– 12 consecutive calendar months for records of inspection of airport fueling agents under Section §139.321.

[4] Fueling Personnel Training – 12 consecutive calendar months for training records of fueling personnel under Section §139.321.

[5] Self-Inspection – 12 consecutive calendar months for self-inspection records under Section §139.327.

[6] Movement areas and safety area training – 24 consecutive calendar months for records of training given to pedestrians and ground vehicle operators with access to movement areas under Section §139.329.

[7] Accident and Incident – 12 consecutive calendar months for each accident or incident in movement areas or safety areas involving air carrier aircraft and/or ground vehicles under Section §139.329.

[8] Airport Condition – 12 consecutive calendar months for records of airport condition information dissemination under Section §139.339.

[9] Safety Risk Management Documentation – The longer of 36 consecutive calendar months after the risk analysis of identified hazards under §139.402(b)(2) has been completed, or 12 consecutive calendar months after mitigations required under §139.402(b)(2)(v) have been completed.

[10] Safety Communications – 12 consecutive calendar months for safety communications, as required under §139.402(d).

Additional Records

The Airport will make and maintain any additional records required by the Administrator.

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Section 303 – Personnel

Section 139.303 Personnel – General

Administration of the Airport is performed by the City of Charlotte as the sole owner and operator; the Aviation Department operates as one of the City departments. The Aviation Director, under the authority of the City Manager and City Council, is directly responsible for oversight of the Airport's operation, maintenance, administration, and personnel functions. The Airport shall maintain sufficient and qualified personnel to comply with the requirements of this Airport Certification Manual and the requirements of Part 139 of the Federal Aviation Regulations. All persons will be equipped with sufficient resources needed to comply with the requirements of Part 139.

Key Personnel and Functions

The principal Airport Management and Airside Operations staff consists of:

Aviation Director/ Chief Executive Officer - Under the general direction of the City Manager, supervises the planning, improvement, maintenance, operation, development, and regulation of CLT. The Aviation Director/CEO has the power to negotiate terms and recommend approval by the City Council and City Manager of all contracts relating to the operation of the airport.

Chief Operating Officer - Responsible for the day-to-day operation of the Airport and in the absence of the Aviation Director, or at their direction – carries out all duties and responsibilities of that position.

Chief Infrastructure Officer - Responsible for Airport Planning, Engineering, Design and Construction of the terminal, and development of airfield projects. Also responsible for all aspect of Maintenance of airport property – including building, airfield, landside, and vehicle maintenance and logistics.

Airport Finance Manager - Has the delegated responsibility for the administration and monitoring of the Airport's budget, accounts receivable, and accounting functions.

Airport Procurement Manager - Directs the Procurement and Construction Contracting Section of the Airport's Finance Division. Manages all services related to developing formal and informal solicitations for bidding, selection, negotiating and awarding of goods, services, technology, construction and design services contracts.

Business & Revenue Director - Has the delegated responsibility for working with Airport staff and tenants to maximize concessionaire performance, achieve tenant objectives, and provide a consistent, high-level customer experience.

Chief Financial Officer - Has the delegated responsibility for budgeting, purchasing, and accounting.

Development Director - Has the delegated responsibility for carrying out the Airport's capital improvement program, property development and noise compatibility programs.

Commercial and Community Engagement Director - Responsible for planning, directing, managing and overseeing the activities and operations regarding commercial development, community engagement, real estate, and airplane noise at the Charlotte Douglas International Airport. Their primary duties include identifying corporations and business facilities that are targets for recruitment to locate on or near Airport and marketing the Airport to those organizations.

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Facilities Director - Has the delegated responsibility for maintaining all Airport facilities and equipment, including buildings, the airfield, and vehicles as well as conducting custodial activities for the current and original terminal facilities.

Operations Director-Regulatory Compliance - Has the delegated responsibility for airside operations, safety management systems (SMS), and security operations.

Safety Management Systems (SMS) Manager – Responsible for oversight of CLT's SMS program and all SMS staff.

Technology Director - Has the delegated responsibility for ensuring the continued integrity of the Airport's technology infrastructure to serve the needs of staff and the traveling public.

Airside Operations Manager – Has responsibility for Airside Operations including special assignments (i.e. Wildlife, Training, Construction).

Airside Operations Assistant Manager – Has the delegated responsibility for the day-to-day operation of Airside Operations including all inspections.

Airside Operations Supervisor – Responsible for the day-to-day operation of Airside Operations including all inspections.

Airside Operations Coordinator – Responsible for conducting Daily, Special, Periodic, and Continuous inspections of the Airfield.

Line of Succession

Charlotte Douglas International Airport is operated by the City of Charlotte. The line of succession for airport operational responsibility is as follows:

1. Aviation Director/CEO
2. Chief Operating Officer
3. Chief Infrastructure Officer
4. Operations Director – Regulatory Compliance
5. Airside Operations Manager
6. Assistant Airside Operations Manager
7. SMS Manager
8. Airside Operations Supervisor
9. Airside Operations Coordinator

Sufficient qualified Operations personnel will staff the Airside duty positions twenty-four (24) hours per day, seven (7) days a week.

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Personnel Requirements

In a manner authorized by the Administrator, The Airport shall:

A. Provide sufficient and qualified personnel to comply with the requirements of its Airport Certification Manual and the requirements of this part.

B. Equip personnel with sufficient resources needed to comply with the requirements of this part.

C. Train all persons who access movement areas and safety areas and perform duties in compliance with the requirements of the Airport Certification Manual and requirements of this part. This training must be completed prior to the initial performance of such duties and at least once every 12 consecutive calendar months. The curriculum for initial and recurrent training must include at least the following areas:

1. Airport familiarization, including airport marking, lighting, and signs system.
2. Procedures for access to, and operation in, movement areas and safety areas, as specified under § 139.329.
3. Airport communications, including radio communication between the air traffic control tower and personnel, use of the common traffic advisory frequency if there is no air traffic control tower or the tower is not in operation, and procedures for reporting unsafe airport conditions.
4. Duties required under the Airport Certification Manual and the requirements of this part.
5. Any additional subject areas required under § 139.319, 139.321, 139.327, 139.329, 139.337, and 139.339, as appropriate.

D. Make a record of all training completed after June 9, 2004, by each individual in compliance with this section that includes, at a minimum, a description and date of training received. Such records must be maintained for 24 consecutive calendar months after completion of training.

E. As appropriate, comply with the following training requirements of this part:

1. § 139.319, Aircraft rescue and firefighting; Operational requirements;
2. § 139.321, Handling and storage of hazardous substances and materials;
3. § 139.327, Self-inspection program;
4. § 139.329, Pedestrians and Ground Vehicles;
5. § 139.337, Wildlife hazard management;
6. § 139.339, Airport condition reporting; and
7. § 139.402. Components of airport safety management system.

F. Use an independent organization, or designee, to comply with the requirements of its Airport Certification Manual and the requirements of this part only if-

1. Such an arrangement is authorized by the Administrator;
2. A description of responsibilities and duties that will be assumed by an independent organization or designee is specified in the Airport Certification Manual; and
3. The independent organization or designee prepares records required under this part in sufficient detail to assure the certificate holder and the Administrator of adequate compliance with the Airport Certification Manual and the requirements of this part.

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Section 305 – Paved Areas

Section 139.305 Paved Areas – General

Paved areas that are used by the air carriers at Charlotte Douglas International Airport are maintained by the Airfield Maintenance Department in occasional partnership with Airport Development. The maintenance and prompt repair of runway and taxiway pavement, terminal aprons, cargo and maintenance aprons are the responsibility of the Airfield Maintenance Manager, or their designees.

Paved Areas Available for Air Carriers

Runways - Runway 18L/36R, Runway 18C/36C, Runway 18R/36L

Taxiways- All taxiways are available for air carriers. All taxiways, except for TWY D and TWY C10, have a taxiway safety area (TSA) of 214'. Taxiway D has a TSA of 171' and Taxiway C10 has a TSA of 118'.

Air Carrier Movement Areas

All Taxiways at CLT are movement areas, except for Taxiway B between the non-movement area boundary marking, north of Taxiway J, and the Terminal Apron; and Taxiway M, west of Taxiway B, to Spot 25S.

CLT has a Letter of Agreement in place with ATCT that describes the segments of taxiways that are excluded from the Movement Area. The described LOA is **Appendix N** of this ACM.

The runway designation system is shown on **Table 1** below.

Air Carrier Non-Movement Areas

CLT has identified the taxiways, and apron (ramp) areas that are not under the control of the FAA ATCT but are used by aircraft.

Terminal Ramp Areas

Air carrier movements on the apron areas surrounding the terminal at CLT are controlled by American Airlines Ramp Tower. To assist in the transfer of aircraft from Ramp Tower to the FAA controlled movement areas are the Transfer Control Points (TCPs). These markings are identified by yellow, orange, or blue circles with black numbers, and are numbered from 1 through 34.

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Table 1

Runway Data

RUNWAY	TAXIWAY	LENGTH	WIDTH	SURFACE	STRENGTH	SAFETY AREA
18L/36R		8,676’	150’	Concrete/Asphalt Grooved	S – 50,000# D – 250,000# DT – 719,000# DDT – 900,000# TDT – 900,000#	18L – 1,000’ 36R – 463’ W – 500’
18C/36C		10,000’	150’	Concrete Grooved	S – 50,000# D – 258,000# DT – 787,000# DDT – 1,000,000# TDT – 1,000,000#	18C – 1,000’ 36C – 1,000’ W – 500’
18R/36L		9,000’	150’	Concrete Grooved	S – 50,000# D – 184,000# DT – 535,000# DDT – 709,000# TDT – 709,000#	18R – 1,000’ 36L– 1,000’ W – 500’

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Required Conditions of Paved Areas

In a manner authorized by the FAA, the airport shall maintain and promptly repair the runway(s), taxiway(s), loading ramp(s) and the parking apron(s) available for air carrier use as follows:

[1] Pavement edges shall not exceed 3 inches difference in elevation between abutting pavement sections and between pavement and abutting areas.

[2] The pavement shall have no hole exceeding 3 inches in depth nor any hole the slope of which from any point in the hole to the nearest point at the lip of the hole is 45 degrees or greater as measured from the pavement surface plane, unless, in either case, the entire area of the hole can be covered by a 5-inch diameter circle.

[3] The pavement shall be free of cracks and surface variations which could impair directional control of air carrier aircraft. Any pavement crack or surface deterioration that produces loose aggregate or other contaminants shall be immediately repaired.

[4] Mud, dirt, sand, loose aggregate, debris, foreign objects, rubber deposits, and other contaminants shall be removed promptly and as completely as practicable. This requirement does not apply to snow and ice accumulations and their control including the associated use of materials such as sand and de-icing solutions.

[5] Any chemical solvent used to clean any pavement area shall be removed as soon as possible, consistent with the instructions of the manufacturer of the solvent.

[6] The pavement shall be sufficiently drained and free of depressions to prevent ponding that obscures markings or impairs safe aircraft operations.

Inspection of Paved Areas

Airside Operations personnel inspect paved areas daily in accordance with Part 139 and this Manual and enter discrepancies into the digital work order system for repair or immediate removal of any hazard.

Maintenance of Paved Areas

The Airfield Maintenance Department, in occasional partnership with Airport Development, is responsible for the general maintenance and repair of all airport paved areas. This section has an adequate staff of maintenance personnel available 24-hours a day, seven (7) days a week, and is equipped with a full range of maintenance and construction equipment for use in the maintenance and repair of paved areas.

[1] The Airfield Maintenance Department is advised of discrepancies via the digital work order system. If removal of a hazard is the responsibility of another agency, such as a contractor, Airside Operations personnel will notify or initiate action to inform the agency concerned.

[2] Airside Operations personnel coordinate with the FAA Tower, Ramp Tower and repair crew(s) for the closure and repair of affected areas. Runway and taxiway closures for maintenance or construction will include traffic cone and/or lighted low-profile barricade placement around the work site to identify the closed area(s). Air carriers are notified as described in this Manual in Section 339, Airport Condition Reporting.

[3] Upon completion of repairs or removal of hazards, Airside Operations personnel inspect the repair work and affected area(s), and if found satisfactory, the FAA Tower is advised that the

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closed movement area(s) are reopened. Previously issued NOTAMs are canceled or amended, as required. Air carriers are notified as described in this Manual in Section 339, Airport Condition Reporting.

[4] Airside Operations personnel document information concerning paved areas and non-hazardous paved area discrepancies. At such time, information is entered into the digital work order system for scheduling of repairs. Such areas are then lighted, barricaded, and a NOTAM is issued as necessary. Air carriers are notified as described in this Manual in Section 339, Airport Condition Reporting.

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Section 307 – Unpaved Areas

Section 139.307 Unpaved Areas – General

There are no unpaved areas at Charlotte Douglas International Airport that are available for air carrier use.

Section 309 – Safety Areas

Section 139.309 Safety Areas - General

Runway and Taxiway safety areas at Charlotte Douglas International Airport are maintained by the Airfield Maintenance Department at CLT. Airside Operations personnel conducts daily inspections in accordance with Part 139 of this Section. A description and dimensions of the runway safety areas are included in **Appendix D**, Runway Safety Areas.

Dimension of Safety Areas

Safety area dimensions at CLT conform to the FAA standards in *AC 150/5300-13, Airport Design*. Safety area dimensions are as follows:

- Runway 18L/36R - 9,239 feet; runway full length plus 1,000 feet at the approach end of 36R and 463 feet at the approach end of 18L, which includes an (EMAS), Engineered Materials Arresting Systems. The RSA at the approach end of RWY 18L is restricted due to privately-owned railroad land just north of the runway.
  - TORA: 8,676/8,676
  - TODA: 8,676/8,676
  - ASDA: 8,676/8,390
  - LDA: 8,676/8,390
- Runway 18C/36C - 12,000 feet; runway full length plus 1,000 feet beyond each end.
- Runway 18R/36L - 11,000 feet; runway full length plus 1,000 feet beyond each end.
  - Non-standard safety area conditions where a sign is located within 288’ of the runway centerline are listed below for each runway:
    - 18R/36 – south of Taxiways W3 and W4; north of Taxiways W7 and W9
    - 18C/36C – south of Taxiways E4 and E7; btn Taxiways S and E5 (2 signs); north of Taxiways E6 and E8
    - 18L/36R – btn Taxiways C1 and C2 (2 signs); north of Taxiways C2, C3, C6, C8, C9, D7, A (east side); south of Taxiways C3, C8, R (both sides), C10, D4, D5, D6, A (east side); btn Taxiways C5 and C6 (3 signs)
- All taxiways at CLT, except for TWY D and TWY C10, have a taxiway safety area (TSA) of 214’. TWY D has a TSA of 171’ and TWY C10 has a TSA of 118’.
  - Non-standard safety area conditions exist north of TWY C10, exiting RWAY 36R, due to non-standard grade
  - Non-standard safety area conditions exist south of TWY A, btn TWY A4 and TWY F, due to a trench drain and non-standard grade

Safety areas of no less than the above dimensions will be provided and maintained unless construction, reconstruction, or significant expansion of a runway or taxiway occurs in the future. In such cases, a safety area which conforms to the dimensions authorized by the FAA shall be provided to the extent practical at the time that reconstruction or significant expansion occurs.

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Map of Runway Safety Areas

Please see **Appendix D** for Map of CLT Runway Safety Areas

Required Conditions of Safety Areas

Runway and taxiway safety areas available for air carrier use shall be maintained in a manner authorized by the FAA as follows:

[1] Each safety area is cleared and graded and has no potentially hazardous ruts, humps, depressions, or other surface variations.

[2] Each safety area is drained by grading and storm sewers to prevent water accumulation.

[3] Each safety area is capable, under dry conditions, of supporting snow removal equipment, Aircraft Rescue and Fire Fighting equipment, and supporting the occasional passage of aircraft without causing major damage to the aircraft.

[4] No objects are or may be in any safety area, except for objects that need to be located in a safety area because of their function. These objects are constructed, to the extent practical, on frangible-mounted structures of the lowest practical height with the frangible point no higher than 3 inches above grade.

[5] Service roads that are on, or traverse through any safety areas, are properly marked and maintained to meet the standards of *AC 150/5340-1, Standards for Airport Markings*, and *AC 150/5300-13 Airport Design Standards*.

Inspection of Safety Areas

Airside Operations personnel inspect the safety areas daily in accordance with Part 139 and this Manual. Airside Operations personnel document information concerning safety areas that cannot be repaired immediately, or non-hazardous safety area discrepancies. This information is entered into the digital work order system for the scheduling of repairs. The affected areas are then NOTAM'd as required. Air carriers are notified as described in this Manual in Section 339, Airport Condition Reporting. Safety area inspection forms can be found in **Appendix F**.

Procedures for Maintenance

The Airfield Maintenance Department is responsible for the maintenance and repairs of terrain and drainage systems within safety areas. This section is staffed with adequate maintenance personnel available 24-hours a day, seven (7) days a week. A full range of equipment including heavy construction equipment is available for safety area maintenance.

[1] The Airfield Maintenance Department is advised of discrepancies via the digital work order system. If the removal of a hazard is the responsibility of another agency, such as a contractor, Airside Operations personnel will notify, or act to inform the agency concerned.

[2] Airside Operations personnel coordinate with the ATCT and repair crews for the closure and repair of affected areas. Air carriers are notified as described in this Manual in Section 339, Airport Condition Reporting.

[3] Upon completion of repairs or removal of hazards, Airside Operations personnel inspect the repaired work and affected area(s) and, if found satisfactory, the work order is closed, ATCT is advised and previously issued NOTAMs are canceled or amended, as required. Air carriers are notified as described in this Manual in Section 339, Airport Condition Reporting.

[4] Airside Operations personnel document information concerning safety areas that cannot be repaired immediately, or non-hazardous safety area discrepancies. This information is entered into the digital work order system for the scheduling of repairs. If necessary, NOTAMs are issued for the affected areas. Air carriers are notified as described in this Manual in Section 339, Airport Condition Reporting.

Engineered Materials Arresting Systems (EMAS)

Airport Operations will follow the EMAS inspection procedure located in **Appendix M**, *Engineered Materials Arresting Systems,* for RWY 36R, provided by ESCO. T procedure includes conducting a weekly inspection by walking or driving around the system, accompanied by a monthly walk-through inspection.

EMAS Dimensions
Length: 255 feet
Width: 170 feet
Height: 7 inches on the south end, 21 inches on the north end

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Section 311 – Markings, Signs, and Lighting

Section 139.311 Markings, Signs, and Lighting – General

Charlotte Douglas International Airport maintains an Airfield Signage and Marking Plan that shows the Runway and Taxiway identification system, including the location and inscriptions of signs, runway markings, and holding position markings. The Plan identifies signs and markings in the appropriate colors, as specified in the current versions of *AC 150/5340-1, Standards for Airport Markings*, and *AC 150/5340-18, Standards for Airport Sign Systems.* The Airfield Signage and Marking Plan is included in this manual as **Appendix A**.

Inspections of Markings, Signs, and Lighting

Airside Operations personnel in accordance with 14 CFR Part 139, and this Manual, conduct airfield safety inspections to ensure that markings, signs, and airfield lighting are properly maintained and installed in accordance with adopted standards for air carrier operation during the daytime, periods of darkness, and during instrument weather conditions.

Procedures of Maintenance of Markings, Signs, and Lighting

Markings - The Airfield Maintenance Department is responsible for the maintenance of paved area paint markings. This Section is adequately staffed and equipped with paint sprayers and support equipment to satisfy paved area painting requirements.

Discrepancies are entered into the digital work order system. The Airfield Maintenance Department coordinates proposed painting activity with Airside Operations. Airside Operations personnel coordinate closure of affected movement area(s) with the FAA ATCT, and issue NOTAMs as required. When work is completed, Airside Operations personnel inspect markings and affected movement area(s) to ensure compliance with *AC 150/5340-1,* Part 139, and this Manual. If satisfactory, Airside Operations personnel will advise the ATCT that previously closed movement area(s) are reopened and cancel or amend previously issued NOTAMs, as required. Air carriers are notified as described in this Manual in Section 339, Airport Condition Reporting.

Signs and Lighting - Airfield Signage and Lighting systems at Charlotte Douglas International Airport that is owned by the airport shall be properly maintained by cleaning, replacing, or repairing any faded, missing, or nonfunctional item. Each sign and lighting system will be maintained unobscured, clearly visible and shall provide an accurate reference to airport users. Each lighting system will be maintained at least to the minimum operational criteria listed in *AC 150/5340-26, current edition, Maintenance of Airport Visual Aid Facilities.*

To provide continuity of visual guidance, the allowable number of inoperable lights shall not be in such a way as to alter the basic pattern of the lighting system. A *Quick Reference Guide for Airfield Lighting Tolerances* is located at the end of this section. If Airside Operations determines that the outage may not provide an accurate reference to airport users or if an entire light system is inoperable or out of service, information concerning the outage shall be disseminated by an airport condition report by way of a NOTAM.

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[1] Airside Operations personnel document routine lighting system discrepancies, such as broken fixtures, unlit lights, or misaligned lights, etc. This information is submitted for repair in the digital work order system.

[2] Airside Operations personnel coordinate repair or restoration of lighting systems with the Airfield Maintenance Department by means of the digital work order system. NOTAMs are issued as required.

[3] The Airfield Maintenance Department is responsible for the preventive maintenance, scheduled repairs, and emergency restoration of the airfield lighting systems. The Airfield Maintenance Department reviews the digital work order system for reported discrepancies daily to schedule repairs and take corrective action.

[4] After notification from the Airfield Maintenance Department or during follow-up inspections by Airside Operations that the lighting systems are restored to acceptable operations, the previously issued NOTAMs are canceled or amended, as required, and the digital work order system record is updated and/or closed to document the status.

Approach Lighting Systems, Visual Landing Aids, and Runway Status Lights Overview and Maintenance Procedures

The FAA MOCC/Technical Operations (TechOps) is responsible for maintenance and repair of all Approach Lighting Systems, Precision Approach Path Indicators (PAPI) (excluding 18R/36L), and Runway Status Lights (RWSL) at Charlotte Douglas International Airport as indicated in Table 5. Airside Operational personnel in accordance with 14 CFR Part 139, and this Manual, conduct airfield safety inspections to ensure that these lighting systems are operational and properly maintained for air carrier operation during the daytime and for periods of darkness and/or instrument weather conditions.

Airside Operations personnel perform daytime and nighttime inspections of these lighting systems and document in the digital work order system the inspection completed and any outages or improperly working Approach Lighting Systems, PAPI, or RWSL. Airside Operations then reports any outages or improperly working approach lighting, visual landing aid, or runway status light to the FAA MOCC/Tech Ops for repair or restoration.

Markings – General

In a manner authorized by the FAA, pavement markings will be maintained on the airport for air carrier operations as follows:

[1] Marking - All pavement markings, as applicable, will be maintained in accordance with *FAA AC 150/5340-1, Standards for Airport Markings.*

[2] Runway markings - Runways will have at a minimum the markings appropriate for the runway approach category as shown in **Table 2** and **Table 3** below.

[3] Taxiway marking - Yellow centerlines and holding position markings are no less than six inches wide on all taxiways and runways if applicable, and outlined in black on light colored pavement; double yellow edge markings where appropriate. Runway holding position markings are located on taxiways that intersect runways. ILS critical area holding position markings are located on TWY V

north of TWY L, TWY V south of TWY V15TWY D north of TWY D2, TWY D8, and TWY D north of D8.

Table 2
Runway Markings

Runway	Approach Category	Marking Required
Precision Instrument	PIR	Centerline, Designation Threshold, Aiming Point, Touchdown Zone, Side Stripes

In addition, aiming point markings are painted on runways longer than 4000' used by turbojets.

Table 3
Air Carrier Approach Categories
CLT Runways

Runway	14 CFR Part 77 Category
18R/36L	PIR/PIR
18L/36R	PIR/PIR
18C/36C	PIR/PIR

Signs- General

The airport will provide and maintain a sign system for air carrier operations in accordance with 14 CFR Part 139.311 (b). The CLT Airport Signage and Marking Plan is included as Appendix A**. Table 4** gives a description of the various signs used in the CLT Airport Signage and Marking Plan. All of the signs meet standards *in AC 150/5340-18, current edition, Standards for Airport Sign Systems*, and sign specifications in *AC 150/5345-44, current edition, Specification for Taxiway and Runway Signs*.

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Table 4

Glossary of Sign Types

TYPE	DESCRIPTION
Boundary Signs	Boundary Signs are used to identify the location of the boundary of the Runway Safety Area (RSA)/Obstacle Free Zones (OFZ) or ILS critical area for a pilot exiting the runway. The sign has a black inscription on a yellow background.
Destination Signs	A destination sign has a black inscription on a yellow background and always contains an arrow. These signs indicate the general direction to a remote location.
Direction Signs	A direction sign has a black inscription on a yellow background and always contains arrows. The signs indicate directions of taxiways leading out of an intersection. The signs may also be used to indicate a taxiway exit from a runway.
Information Signs	These signs are installed on the airside of an airport and provide information other than mandatory holding positions, taxiway guidance, and runway distance remaining signs. An information sign has a black inscription on a yellow background.
Location Signs	These signs identify the taxiway or runway upon which the aircraft is located. The sign has a yellow inscription with a yellow border on a black background. The yellow border is set in from the inner edge of the sign to yield a continuous black margin.
Mandatory Instruction Signs	A mandatory instruction sign has a white inscription (legend) with a black outline on a red background. They denote taxiway/runway intersections, runway/runway intersections. Instrument Landing System (ILS) critical areas, POFZ boundaries, runway approach/departure areas, CAT II/III operations areas, military landing zones, and no entry areas.
Runway Distance Remaining Signs	Runway distance remaining signs are used to provide distance remaining information to pilots during takeoff and landing operations. The sign has a white numeral inscription on a black background.
Taxiway Ending Marker	This marker sign indicates that a taxiway does not continue beyond an intersection.
Vehicle Roadway Signs	These are signs located on the airfield and are intended solely for vehicle operators.

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Lighting – General

The airport will provide and maintain lighting systems for air carrier operations in accordance with Part 139.311 (c) and the current edition of *AC 150/5340-30, Design and Installation Details for Airport Visual Aids*, to meet the specifications for the lowest instrument approach minimums authorized for each runway. **Table 5** and **Table 6** describe runway and taxiway lighting systems in use at Charlotte Douglas International Airport.

Table 5

Runway Lighting Systems

Runway	Lighting System	Approach Lights
18R	HIRL, CL, THLD, TDZ, RWSL	ALSF-2/PAPI
36L	HIRL, CL, THLD, TDZ, RWSL	ALSF-2/PAPI
18C	HIRL, CL, THLD, RWSL	MALSR/PAPI
36C	HIRL, CL, THLD, RWSL	ALSF-2/PAPI
18L	HIRL, CL, THLD, REIL	PAPI
36R	HIRL, CL, THLD, TDZ	ALSF-2/PAPI

HIRL – High Intensity Runway Lights
CL – Center Line Lights
THLD – Threshold Lights
TDZ – Touch Down Zone Lights
REIL – Runway End Identifier Lights
ALSF-2 Approach Lighting System with Sequenced Flashing Lights
MALSR – Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights

Table 6

Taxiway Lighting System

Taxiway	Lighting System
All	Medium Intensity Taxiway Edge Lights (blue)
Centerlines	Taxiways (green)
High-speeds	Green and Yellow Alternating Centerline
Bridges	Green Centerline, Red Obstruction, Medium Intensity Taxiway Edge Lights (blue)
RWY / TWY Intersections	Runway Guard Lights (yellow)
RWY / TWY Intersections	Stop Bar Lights (red)

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Lighting Interference

All other lighting at Charlotte Douglas International Airport (aprons, parking areas, roadways, fuel storage areas, and buildings), are adjusted or shielded to prevent interference with air traffic control and aircraft operations.

Airfield Emergency Generator

To ensure a constant source of power for airfield lighting, the airport maintains three (3) diesel-powered generators as a secondary power source to commercial power for all runway and taxiway complex signs and lighting systems.

Location of Airport Beacon

Charlotte Douglas International Airport Rotating Beacon is located at 6440 Airport Beacon Lane, which is .35 NM northeast of the approach end of RWY 18C.

Low Visibility Conditions

A copy of the Low Visibility Operations/Surface Movement Guidance and Control System (LVO/SMGCS) Plan can be found in Appendix I, *SMGCS Plan.*

Lighting Tolerances

Quick Reference Guide for Airfield Lighting Tolerances

RWY Centerline Lights

RWY centerline lights are spaced 50 ft apart
RWY 18C/36C has 200 centerline lights
RWY 18L/36R has 175 centerline lights
RWY 18R/36L has 180 centerline lights

No more than 5% of the centerline lights may be inoperative. This is the same during CAT II/III operations.

18C/36C – 10 lights 18R/36L – 9 lights 18L/36R – 8 lights

RWY Edge Lights

RWY 18C/36C has 100 edge lights. 50 per side, spaced 200 ft apart.
RWY 18R/36L has 90 edge lights. 45 per side, spaced 200 ft apart.
RWY 18L/36R has 84 edge lights. 42 per side, spaced on average 206.5 ft. apart.

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At any given time, 85% of the edge lights must be in operation. During CAT II/III operations, tolerances change to 95% required to be operational.

Normal Operations:

18C/36C – 15 18R/36L – 14 18L/36R – 13

CAT II/III operations:

18C/36C – 5 18R/36L – 5 18L/36R – 4

RWY Touchdown Zone Lights

Touchdown Zone lights consist of 30 rows of lights on each side of centerline.
Touchdown Zone lights total 90 on each side of centerline, or 180 total.
At any given time, no more than 10% (18 lights) of the lights may be inoperative. This is the same during CATII/III operations.

If the lights are obscured by rubber build-up, it is considered inoperative.

RWY Threshold Lights

There are 4 lights either side of centerline (Non-ALS). At any given time, 75% of the lights must be operational. No more than 2 lights out in the array. This is the same during CAT II/III operations.

TWY Edge Lights

Normal operations require 85% of the lights to be operational.
During CAT II/III operations, 85% must be operational and no more than 2 in a row unlit.

TWY Centerline Lights

Normal operations require 90% of the lights to be operational.
During CAT II/III operations, 90% must be operational and no more than 2 in a row unlit.

Elevated RWY Guard Lights

No more than one light in a fixture unlit at any time.

RWY Stop Bar Lights

No more than 3 lights inoperative per location and no 2 adjacent lights inoperative.

Signs

Any unlit mandatory sign requires a NOTAM.
*A flickering lamp or bulb within the housing is considered inoperative.
If any of the above tolerances are exceeded, a NOTAM must be issued stating the lighting issue.

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Section 313 – Snow and Ice Control Plan

Section 139.313 Snow and Ice Control Plan – General

As determined by the Administrator, the Charlotte Douglas International Airport is located where snow and icing conditions occur and must prepare, maintain, and carry out a snow and ice control plan in a manner authorized by the Administrator. The Snow and Ice Control Plan can be found in **Appendix H**.

The snow and ice control plan required by this section includes, at a minimum, instructions and procedures for—

[1] Prompt removal or control, as completely as practical, of snow, ice, and slush on each movement area;

[2] Positioning snow off the movement area surfaces so all air carrier aircraft propellers, engine pods, rotors, and wing tips will clear any snowdrift and snowbank as the aircraft's landing gear traverses any portion of the movement area;

[3] Selection and application of authorized materials for snow and ice control to ensure that they adhere to snow and ice sufficiently to minimize engine ingestion;

[4] Timely commencement of snow and ice control operations; and

[5] Prompt notification, in accordance with § 139.339, of all air carriers using the airport when any portion of the movement area normally available to them is less than satisfactorily cleared for safe operation by their aircraft.

Section 315 – ARFF Index Determination

Section 139.315 ARFF: Index Determination – General

The Index for aircraft firefighting and rescue is E, based on index criteria determined in § 139.315, capable of serving aircraft more than 200 feet in length.

The Airport will provide at least Index E ARFF capability during air carrier operations. Rescue and firefighting capability is provided 24 hours a day, 7 days a week.

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Section 317 – ARFF Equipment and Agents

Section 139.317 ARFF: Equipment and Agents – General

Charlotte Douglas International Airport will maintain FAR PART 139 Index E requirements by operating a combination of the ARFF vehicles listed in **Appendix L**, *ARFF Equipment Index* to provide at least:

One vehicle carrying 500 pounds of sodium-based dry chemical, halon 1211, or clean agent; or 450 pounds of potassium-based dry chemical and water with a commensurate quantity of AFFF to total 100 gallons for simultaneous dry chemical and AFFF application and;

Two vehicles carrying an amount of water and a commensurate quantity of AFFF so the total quantity of water for foam production carried by all three vehicles is at least 6,000 gallons.

FOAM DISCHARGE CAPACITY

[1] Each vehicle with a minimum rated vehicle water tank capacity of at least 500 gallons, but less than 2,000 gallons will have a turret discharge rate of at least 500 gallons per minute, but not more than 1,000 gallons per minute.

[2] Each vehicle with a minimum rated vehicle water tank capacity of at least 2,000 gallons will have a turret discharge rate of at least 600 gallons per minute, but not more than 1,200 gallons per minute.

AGENT DISCHARGE CAPACITY

[1] Each vehicle required to carry dry chemical or halon 1211 will have a minimum discharge rate of 5 pounds per second through a hand line or 16 pounds per second through a turret.

The most current version of Advisory Circular 150/5210-6, *Aircraft Fire Extinguishing Agents*, and the most current version of Advisory Circular 150/5220-10, *Guide Specification for Aircraft Rescue and Fire Fighting (ARFF) Vehicles*, is used as guidance for the number of gallons.

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Section 319 – ARFF Operational Requirements

Section 139.319 ARFF: Operational Requirements – General

Aircraft Rescue and Firefighting (ARFF) capabilities for the Charlotte-Douglas International Airport are provided through a Letter of Agreement by the Charlotte Fire Department.

ARFF Operations

Increase in Index - If an increase in the average daily departures or the length of air carrier aircraft would result in an increase in the Index required by FAR 139, Charlotte Douglas International Airport shall comply with the increased requirements before authorization is given to the air carrier concerned.

Reduction in rescue and firefighting - Any temporary reductions in the ARFF Index are covered in this section below.

Vehicle Communications

Each required and backup firefighting vehicle is equipped with two-way radio equipment for communication with:

[1] The FAA Air Traffic Control Tower

[2] Charlotte Fire Department Dispatch (Fire Alarm) and other Charlotte Fire Department companies.

[3] Airport Operations Center

[4] North Carolina Air National Guard

Vehicle Marking and Lighting

All vehicles listed in 139.317 are painted and lighted in conformance to FAA AC 150/5210-5, standards on Painting, Marking, and Lighting of Vehicles Used on an Airport and the City of Charlotte. Each required vehicle is equipped with a flashing or rotating beacon and is painted in colors to enhance contrast with the background environment.

Vehicle Readiness

The City of Charlotte is responsible for purchasing and maintaining ARFF vehicles and their systems. When conditions exist for prolonged temperatures below 33 degrees Fahrenheit, the ARFF vehicles will be provided cover to ensure the proper equipment operation and discharge under freezing conditions. A vehicle and its systems will be considered not operationally capable of performing the functions required if it does not meet the standards listed in AC 150/5220-10E (Guide Specification for ARFF Vehicles) and NFPA 414.

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Inoperative Vehicle

If a vehicle is placed out of service, the following procedures will be implemented by the designated, on-duty CFD representative:

[1] Replace immediately the inoperative equipment with equipment having at least equal capabilities. If replacement equipment is not available immediately, notify the Airport Operations Center (AOC).

[2] AOC will notify the Airside Operations Manager.

[3] Upon being advised that an ARFF vehicle or required equipment that is needed to maintain the minimum certification Index requirement is out of service, the Airside Operations Manager or their designee will:

- Issue a NOTAM advising an ARFF vehicle is unserviceable and that a replacement vehicle is not available.
- Directly notify local air carriers and the Regional Airports Division Manager of the outage.
- If the Index is not restored within 48 hours, issue new NOTAM stating the temporary index change. The Aviation Director or their designee, unless otherwise authorized by the Administrator, will limit air carrier operations to those compatible with the Index corresponding to the remaining operative aircraft rescue and firefighting equipment.

Response Requirements

CFD ARFF personnel will respond to each emergency for which procedures have been established in the Airport Emergency Plan during periods of air carrier operations and will demonstrate compliance with response requirements when requested by the FAA (ARFF areas of responsibility are listed below in Table 17). Within three (3) minutes from the time of an alarm, at least one required ARFF vehicle can reach the mid-point of the farthest runway serving air carriers from its assigned post, or reach any other specified point of comparable distance on the movement area which is available to air carriers, and begin application of extinguishing agent. Within 4 minutes from the time of the alarm, all other required vehicles can reach the same point from their assigned post and begin application of extinguishing agent.

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Table 17
ARFF Areas of Responsibility

Station 17	East Side Airfield
Station 41	West Side Airfield

Personnel

Sufficient ARFF personnel are available twenty-four hours a day during all air carrier operations to operate the vehicles, meet the response times, and meet the minimum agent discharge rates required by FAR 139 and this Manual.

Firefighter protective clothing and equipment – The clothing worn and equipment used by the Charlotte Fire Department follows guidelines set forth in the most current version of the Advisory Circular 150/5210-14, Aircraft Rescue Fire Fighting Equipment, Tools and Clothing.

ARFF Training Curriculum

Each person assigned to rescue and firefighting duty will receive initial training in the following subject areas prior to assignment to either temporary or permanent duty. Recurrent training will be conducted in the same subject areas every 12 consecutive calendar months thereafter. Training records documenting completion of these requirements will be maintained at CLT along with a complete copy of the training curriculum. The curriculum identifies the instructors for each subject area, training resources and objectives for each subject area, and hours of initial and recurrent training required in each subject.

[1] Airport familiarization, including airport signs, markings, and lighting.
[2] Aircraft familiarization.
[3] Rescue and firefighting personnel safety.
[4] Emergency communications systems on the airport, including fire alarms.
[5] Use of the fire hoses, nozzles, turrets, and other appliances.
[6] Application of Extinguishing Agents.
[7] Emergency aircraft evacuation assistance.
[8] Firefighting operations.
[9] Adapting and using structural rescue and firefighting equipment for aircraft rescue and firefighting.
[10] Aircraft Cargo Hazards/Dangerous Goods.
[11] Familiarization with Firefighter duties under the Airport Emergency Plan.

Live-fire training - Each Part 139 certificate holder must ensure all ARFF personnel participate in at least one live-fire drill every 12 CCM. This drill must include at least a pit fire with an aircraft mock-up, using enough fuel to provide a fire that simulates realistic firefighting conditions. The conditions should simulate the type of fire that could be encountered on an air carrier aircraft at the airport. The drill should provide an opportunity for the firefighting team familiarized with the use of all fire extinguishing equipment, enhance their confidence and abilities with the equipment they will use in an actual accident/incident, and develop tactics, strategies, and procedures. If possible, a simulated rescue of aircraft occupants will help create a realistic simulation.

Emergency Medical Services Training

At least one person trained and current in basic emergency medical care must be on duty during air carrier operations. This training must include 40 hours covering at least the following areas:

[1] primary patient survey

[2] triage

[3] cardiopulmonary resuscitation (CPR)

[4] bleeding

[5] shock

[6] injuries to the skull, spine, chest, and extremities

[7] internal injuries

[8] moving patients

[9] burns

Training Records - A record is maintained of all training given to each individual for 24 consecutive calendar months after completion of training. Records include a description, and dates of training received and are maintained by Charlotte Fire Department.

Emergency Alerting System

Emergency alarm notification procedures are located in the Letter of Agreement, in Appendix F, Airport Emergency Plan [Under separate cover], as well as in Appendix N, Letters of Agreement, of this Manual.

Exemptions

The Airport has no ARFF exemptions.

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Section 321 – Handling and Storing of Hazardous Substances and Materials

Section 139.321 Handling and Storing of Hazardous Substances and Materials – General

Charlotte Douglas International Airport is not a designated air cargo handling agent; therefore, airport employees are not required to act as handling agents for materials or substances regulated by the Code of Federal Regulations, Title 49 – Transportation. Airport employees handle only those substances and materials normally used in daily airport operations.

Fueling Agents

The following fueling agents operate at Charlotte Douglas International Airport:

Menzies Aviation
6502 Old Dowd Rd
Charlotte, NC 28208

Wilson Air Center
5400 Airport Drive
Charlotte, NC 28208

Fire Safety Fuel Standards

Charlotte Douglas International Airport complies with the current editions of the *International Fire Code and the NFPA 407*. Specific fuel safety standards have been established and are in **Appendix F**, Inspection Reports through the Fuel Use Safety Forms. These standards apply to the Airport's fueling agents.

[1] All fueling operations at the Airport must meet the standards of **Appendix F**, Inspection Reports and all current local, state, and federal fire codes applicable to this operation. All fueling inspections are conducted using Cityworks. Samples of these inspections are included in **Appendix F**.

[2] The Airport requires fueling agents to comply with the standards outlined in **Appendix F**, Inspection Reports. Further, Airport staff members make daily and periodic inspections of fueling activities to ascertain that standards set forth in **Appendix F**, Inspection Reports are met.

Procedures for Inspections

Charlotte Douglas International Airport requires all fueling agents to comply with the above standards by means of periodic inspections by Airside Operations, a section of the Aviation Department having Authority to uphold the CLT AOA Standards. Discrepancies are documented in writing to the tenant along with a deadline for corrections. Follow-up inspection are conducted as necessary to ensure compliance. Fuel safety inspections are conducted once every three consecutive months of both mobile fuelers and fuel farms and are recorded on report forms shown in **Appendix F,** Inspection Reports. These reports are kept on file in the Airside Operations' office for 12 consecutive calendar months and will be made available for FAA inspection upon request.

Inspection Items

Inspections conducted by Airside Operations Personnel address:

[1] Bonding
[2] Public protection
[3] Control of access to storage areas

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[4] Fire safety in fuel farm and storage area
[5] Fire safety in mobile fuelers, fueling pits, and fueling cabinets
[6] Training of personnel in fire safety

Noncompliance Notification Procedures

The Airport will require each tenant-fueling agent engaged in the handling and dispensing of aviation fuel to take corrective action upon notification of non-compliance with CLT rules and regulations, FAR 139.321(g), and the checklists listed in Appendix F, Inspection Reports. The Airport will notify the FAA immediately when non-compliance is discovered and corrective action cannot be accomplished within a reasonable period.

Required Training

[1] A fueling supervisor will complete an aviation fuel training course in fire safety acceptable to the FAA Administrator. The supervisor will receive recurrent training at least once every twenty-four consecutive calendar months. If a new employee is hired, they will be trained prior to initial performance of duties or be enrolled in an authorized aviation fuel training course that will be completed within 90 days of initiating duties. Certification that at least one supervisor has completed a fire safety training course acceptable to the FAA will be submitted to the Airport at least annually.

[2] All other employees who fuel aircraft, accept fuel shipments, or handle fuel, receive at least initial on-the-job training in fire safety and recurrent training every twenty-four consecutive months from the supervisor mentioned in the previous paragraph.

[3] All fueling agents, engaged in handling and dispensing fuel at the airport, shall submit confirmation to airport management once every twelve consecutive calendar months, that the above training standards have been accomplished. The training confirmation records shall be maintained in the Airport Operations office for twelve consecutive calendar months.

Fueling agent personnel training records will be maintained for twenty-four consecutive calendar months at the fueling agent's office.

Aircraft handling and storage follows the guidance in the most current version of Advisory Circular 150/5230-4, *Aircraft Fuel Storage, Handling, and Dispensing on Airports.*

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Section 323 – Traffic and Wind Direction Indicators

Section 139.323 Traffic and Wind Direction Indicators – General

In a manner authorized by the FAA, traffic and wind indicators on the airport shall be maintained as follows:

[1] Wind cones are installed on the airport near the approach ends of runways 18L, 36R, 18C, 36C, 18R, 36L. All mentioned wind cones are lighted for nighttime air carrier operations.

[2] The primary wind cone is located adjacent to the Airport Reference Point.

[3] Unless otherwise instructed by the CLT ATCT, all traffic patterns are standard.

[4] Airside Operations personnel check wind cones during daily airport safety inspections for any damage, improper vanning, inoperative lights, and worn, ripped or entangled windsocks.

[5] Airside Operations personnel enter discrepancies into the digital work order system. Conditions not requiring immediate attention are scheduled for repair.

[6] The Airfield Maintenance Department is responsible for wind cone maintenance, electrical repairs, replacement of bulbs, and wind cones. Replacement windsocks are maintained in stock by the airport Airfield Maintenance Department.

Maintenance Procedures

The Airport utilizes the current version of AC 150/5345-27, which contains methods and procedures for the installation, lighting, and maintenance of traffic and wind indicators that are acceptable to the Administrator. The traffic and wind direction indicator devices are part of the Airside Operations' Part 139 Self Inspection daily duties.

[1] If a discrepancy is found, the Airfield Maintenance Department is notified, and the discrepancy is entered into the digital work order system.

[2] Corrective action shall be initiated promptly when unsatisfactory conditions and/or violations are found with the wind direction indicators.

[3] Airfield Maintenance Department is responsible for CLT airfield lighting, including lighting of wind cones.

Segmented Circles

The Airport does not have a segmented circle.

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Section 325 – Airport Emergency Plan

Section 139.325 Airport Emergency Plan (AEP) - General

The Charlotte Douglas International Airport Emergency Plan is maintained separately as **Appendix K**, and outlines the procedures, instructions, and communications network necessary to respond to the emergencies as listed in FAR Part 139.325. The Plan was developed and coordinated with law enforcement agencies, rescue and firefighting agencies, medical personnel and organizations, principal tenants at the airport, and all other persons who have responsibilities under the plan.

Training of Airport Personnel

All persons having duties and responsibilities under the AEP are properly trained and familiar with their assignments.

Annual Review of the AEP

A review of the AEP is conducted at least once every 12 consecutive calendar months to ensure that the AEP is current and all parties with whom the plan is coordinated are familiar with their responsibilities. All agencies involved in the AEP are invited to participate in either an annual review meeting or table-top exercise at the airport.

Triennial Full-Scale Exercise of the AEP

A full-scale exercise of the AEP is conducted at least once every 36 consecutive months. The full-scale exercise involves, to the extent practical, all mutual aid participants and a reasonable amount of emergency equipment. The purpose of the exercise is to test the effectiveness of various items in the AEP through a response of the airport and its mutual aid to an aircraft accident at the airport, and to familiarize emergency personnel with their responsibilities in the plan.

Consistency with Security Regulations

The AEP contains instructions for responses to bomb incidents, including designation of parking areas of the aircraft involved; sabotage, hijack incidents, and other unlawful interference with operations, that are consistent with the approved Airport Security Plan.

Sensitive Security Information

Copies of the Airport Emergency Plan are distributed independently to the parties involved or have a responsibility in the Plan, on a need-to-know basis.

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Section 327 – Self-Inspection Program

Section 139.327 Self-Inspection – General

The Airside Operations Department as the authorized representative for Airport Management, conducts airport self-inspections for Charlotte Douglas International Airport. Airside Operations personnel inspect the airport on a frequency described in the section below to ensure compliance with 14 CFR Part 139 and this Manual, *and AC 150/5200-18*.

The Airside Operations section is responsible for:

[1] Inspections

[2] Reporting and documenting findings and/or discrepancies

[3] Following up on any discrepancies

[4] Close-out of any discrepancies that have been corrected

Frequency of Inspection

[1] Daily: which includes at least one (1) daytime inspection during daylight hours and one (1) nighttime inspection during hours of darkness.

[2] Continuous: activities or facilities that have been identified to possibly present a hazard will require continuous surveillance any time Airside Operations personnel are in the AOA – ex. during and after construction activities, fueling activities, FOD, areas of identified/known wildlife hazards, public protection, ground vehicles, and any identified area that have been noted with a discrepancy.

[3] Periodic: inspection of activities and facilities done on a regular basis, but less than daily; weekly, monthly, or quarterly – ex. quarterly fuel inspections.

[4] Special: at the end of construction activity, during any rapidly changing meteorological condition, immediately after an accident or incident, and before and after any other unusual condition on the airport.

Equipment

All self-inspection personnel are provided or have access to equipment and/or a vehicle that has the following:

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[1] A two-way ground control radio capable of communicating with Airport Traffic Control Tower (ATCT).

[2] A self-inspection checklist available while performing inspections.

[3] Equipment that may be used for immediate correction or maintain airport safety while performing self- inspections (i.e. safety cones, brooms, distance measuring equipment, and reflective safety vests).

Reporting

Procedures for Conducting Self-Inspections

[1] All areas of a daily Self-Inspection will be completed at least once daily during daylight hours and during nighttime hours.

[2] Airside Operations will perform the specific inspection for the frequency required.

[3] Airside Operations will document the inspection performed in the specific form, (i.e. daily, continuous, periodic, or special) as soon as practical.

[4] Existing airport conditions and/or discrepancies will be documented in the digital work order system.

[5] Any new discrepancies found during an inspection will be documented by a work order and noted on the inspection report.

[6] Any discrepancies found during inspection that do not meet the FAR 139 compliance (violation) and this ACM, Airside Operations will limit air carrier operations to that portion of the airport, initiate prompt corrective action/repairs, and issue an airport condition notification/NOTAM, as appropriate.

[7] Airside Operations will perform follow-up inspections of previously found discrepancies to monitor changes and/or required response for the type of discrepancy.

[8] Airside Operations will perform a visual verification of corrected discrepancies before closing out work orders.

[9] Self-Inspection records will be prepared and maintained by Airside Operation for a minimum of twelve (12) consecutive calendar months, a record of each inspection prescribed by this section.

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Work Order Management System

The life cycle of a Part 139 discrepancies can be logged and tracked in the digital work order management system. When each user logs in, they will be able to see the following types of work orders:

- *Open work orders* – Flagged by Airside Operations) staff, but not yet repaired by Airfield Maintenance, with an *Open* status and *Priority of 1 thru 6*.
- *FAA/Project Pending work orders* – Flagged by Airside Operations staff, but permanent repairs are either the responsibility of FAA Tech Ops or are part of an existing future Maintenance project, with a *Pending* status.
- *Open Airfield Construction work orders* – Flagged by Airside Operations staff, but permanent repairs are the responsibility of Development and/or the project contractor(s), with an *Open* status and *Priority of 7*.
- *Complete work orders* – Flagged by Airside Operations staff, repaired by Airfield Maintenance, and awaiting Airside Operations inspection.
- *Closed work orders* - Flagged by Airside Operations staff, repaired by Airfield Maintenance, inspected, and closed by Airside Operations or Airfield Maintenance staff.

Workflow

The following workflow should be followed for discrepancy reporting:

[1] Airside Operations finds a discrepancy on the airfield and enters it in the digital work order system, resulting in an *Open* work order.

[2] If discrepancy is the responsibility of FAA Tech Ops or is part of an existing future Maintenance/Development project, it may be changed to *Pending* or change the *Priority to 7.*

[3] Airfield Maintenance, Development/Contractor(s), or FAA Tech Operations repairs the discrepancy, resulting in a *Completed* work order.

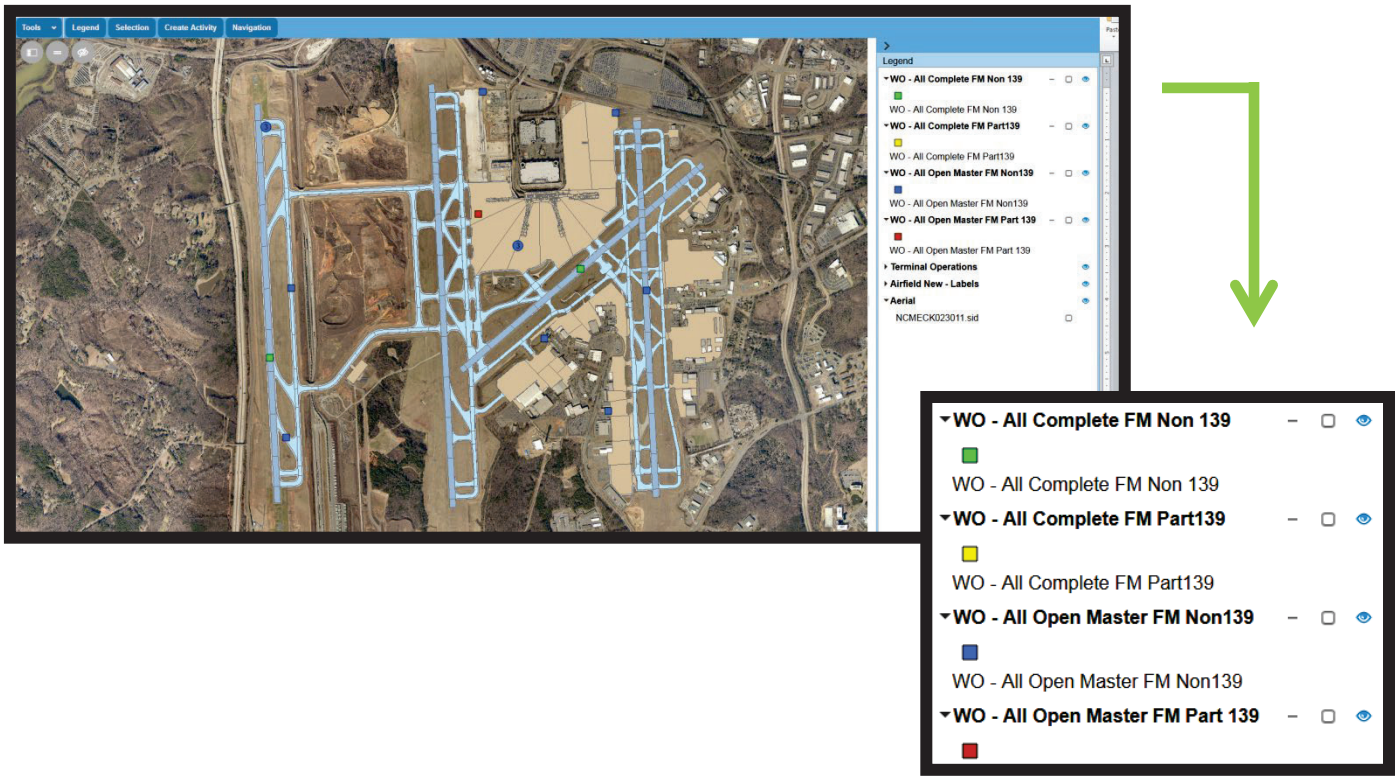
[4] Airside Operations will inspect the repaired item. If the discrepancy no longer exists, then Airside Operations will close the work order, resulting in a *Closed* work order.

[5] If the discrepancy still needs to be addressed , Airside Operations will change the status of the work order back to *Open* and the appropriate party will re-

address the issue. This process will be repeated until the discrepancy is resolved and the work order is *Closed*.

Airport Map Overview

Figure 1 provides an overview of the map that is generated by the digital work order management system, which displays all Open and Completed Part 139 and Non-Part 139 work orders.



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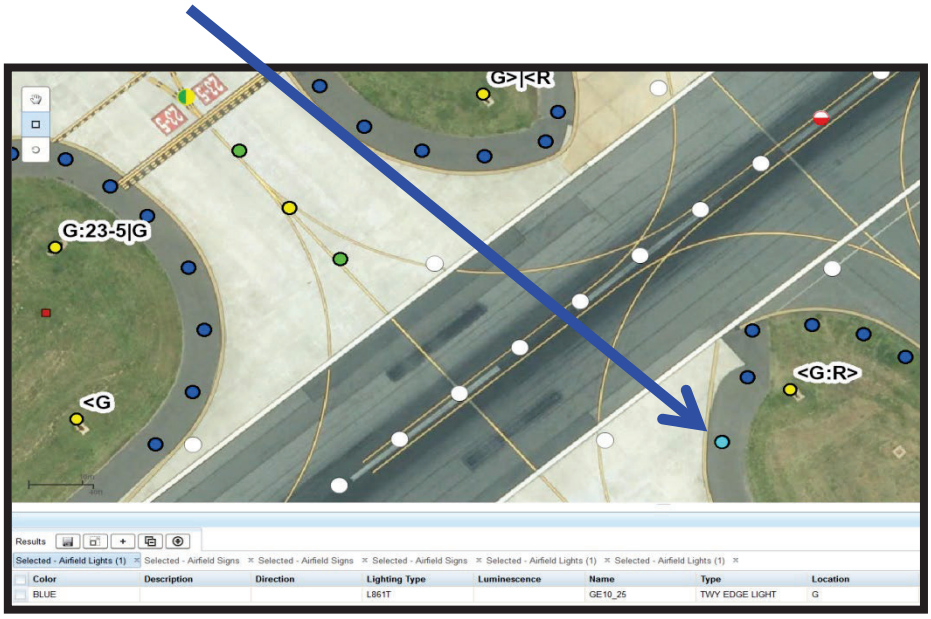
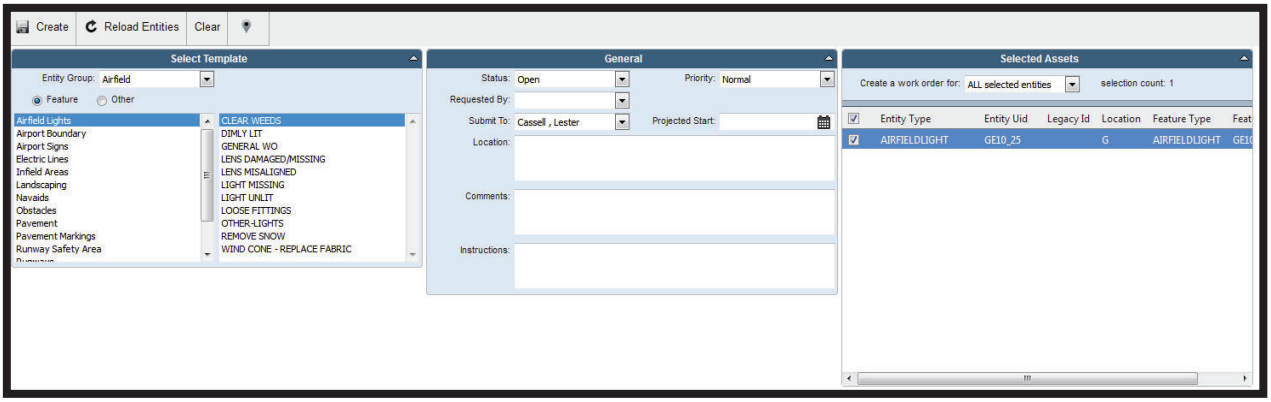
Example Work Order

Illustrated below is an example of a work order.

Once Airside Operations identifies a discrepancy on the airfield, the item will be selected (One TWY edge light).



The selected item is then transferred to the work order template, and the specific issue associated with that asset can be selected.



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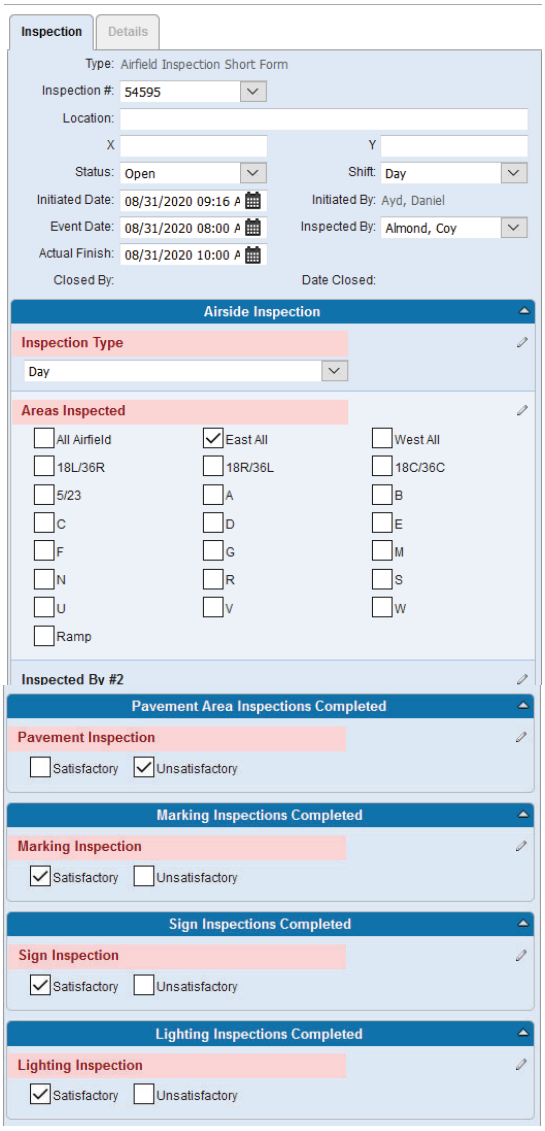
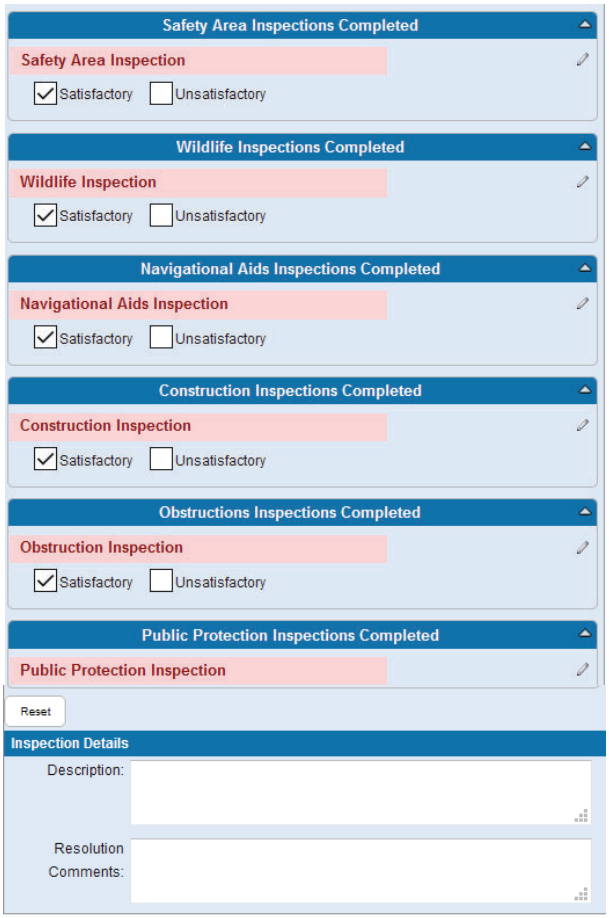
Part 139 Inspection Template

Below is an illustration of the Part 139 inspection template that Airside Operations uses.

This template is intended to be a snapshot of the self-inspection at that specific time. Upon inspection, if a discrepancy is found, it should be noted and marked unsatisfactory with a work order attached to the inspection. Existing *Open* or *Pending* work orders from previous inspections, which would typically indicate an "unsatisfactory" status, are not noted on new inspections.

The Airport Safety Self-Inspection Checklist will be attached in each Airfield Inspection template.





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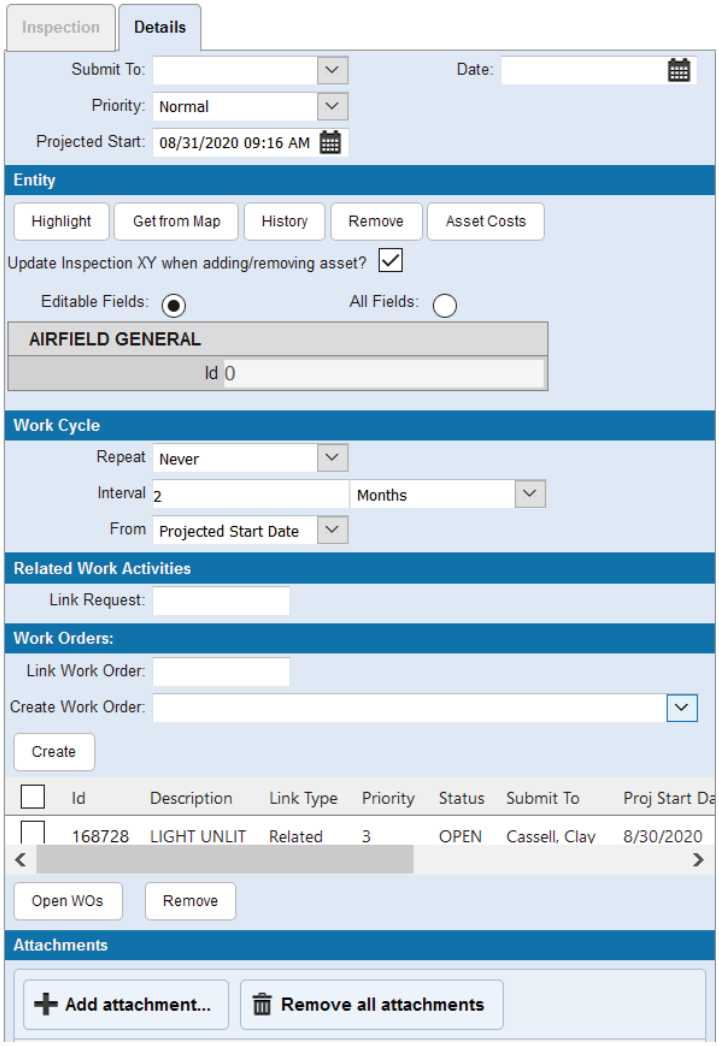

Personnel

The Airside Operations staff are the qualified persons that can conduct the airport self-inspections at Charlotte Douglas International Airport. Those listed above are authorized to close and open movement areas for aircraft use. Careful examination and inspection of areas being opened for aircraft use is a requirement. Airside Operations will complete the pre-opening inspection and notify the FAA ATCT that the area is open for use, after cancelling the associated NOTAM.

Required Training

The Airside Operations Department is responsible for training to ensure that qualified personnel perform the regular daily/nightly self-inspections, in addition to continuous, periodic, and special inspections as necessary. In addition to on-the-job training, a training program has been established and includes initial, and recurrent training every twelve consecutive calendar months in the following subjects:

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[1] Airport familiarization, including airport signs, markings, and lighting (§ 139.303)

[2] Airport Emergency Plan (AEP) (§139.325)

[3] Airport communications (§139.303)

[4] Duties required under this Airport Certification Manual (ACM) (§139.303)

[5] Notices to Airmen (NOTAM) notification procedures (§ 139.339)

[6] Procedures for pedestrians and ground vehicles in movement areas and safety areas (Movement Area Drivers Training) (§ 139.329)

[7] Discrepancy reporting procedures (§ 139.327)

[8] Inspection procedures and record keeping (§ 139.327)

[9] ARFF operational requirements (§ 139.319)

[10] HAZMAT (§ 139.321)

[11] Wildlife hazards (§ 139.337)

[12] Components of airport safety management system (SMS) (§139.402)

Training records for each individual responsible for self-inspection duties include at a minimum, a description and date of training received. Training records are kept for at least twenty-four consecutive calendar months in the Airside Operations Office.

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Section 329 – Pedestrians and Ground Vehicles

Section 139.329 Pedestrians and Ground Vehicles – General

The Airport uses the guidelines set forth in the most current version of Advisory Circular 150/5210-20, *Ground Vehicle Operations on Airports* in setting the policies and procedures for pedestrians and ground vehicles on the airfield.

Limited Access

Only ground vehicles and pedestrians necessary for airport operations are permitted access to the movement areas and safety areas. Individuals who need access to the movement areas are escorted by qualified personnel or have successfully completed the movement area training program prior to operating a vehicle on the aircraft movement area. The movement area training program is highlighted in paragraph C of this section.

The following vehicles and pedestrians are authorized in the AOA:

Movement and Safety Area

[1] Airport owned vehicles

[2] FAA Tech Ops vehicles authorized for the maintenance of FAA NAVAIDs

[3] Non-crew, taxi-certified mechanics towing aircraft via conventional tug, or Supertug

[4] Air National Guard vehicles

[5] Other tenants with an operational need, operated by an MAT certificated driver

Non-movement Area

[1] City of Charlotte owned vehicles

[2] Government vehicles

[3] Tenant-owned and operated vehicles

[4] Aircraft service vehicles

[5] Fueling service vehicles

[6] Contractor vehicles

Operating Procedures: Movement Area

The Letter of Agreement titled Control of Ground Vehicles/Pedestrians on the Movement Area, in **Appendix N** Letters of Agreement, with the FAA ATCT contains procedures for air traffic control of the movement area. Additional ground vehicle procedures are as follows:

[1] Procedures for the safe and orderly access to and operation in movement and safety areas shall be in accordance with CLT's Movement Area Handbook and Letter of Agreement titled Control of Ground Vehicles/Pedestrians on the Movement Area in Appendix N.

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[2] Operators of any two-way radio-equipped vehicles on the movement areas must be trained and familiar with airport radio procedures prior to operating on the movement areas or safety areas. The vehicle beacon shall be operated only while on the movement areas.

[3] Vehicle operators, except for Airside Operations, must obtain ATCT clearance before operating on the movement areas; *all* vehicle operators and pedestrians must obtain ATCT clearance before operating on active runways and their associated safety areas.

[4] Vehicle operators must monitor the FAA ATCT radio when on movement areas and safety areas adjacent to the movement areas.

[5] Aircraft have the right of way on movement areas and aprons. Vehicles are required to yield to all moving aircraft.

[6] Movement areas or safety areas under construction shall be closed to aircraft operations, as necessary for the safety of air carrier operations. Construction equipment that must operate on active movement areas shall be controlled by signs, signals, guards, flag persons, or radio-equipped escort vehicles. Operators of construction equipment shall be briefed on their procedures for operating on or near movement areas.

Vehicles Communications

Vehicle and pedestrian operations within the movement area are controlled through communications with ATCT or by an escort vehicle in communication with ATCT. Any person providing an escort in the movement area will maintain visual contact with the person(s)/vehicle(s) being escorted to reasonably control their movements and to take immediate corrective and/or mitigating actions if necessary. Vehicles and pedestrians will remain clear of the runway(s) during aircraft landings and takeoffs.

Authorized activities such as airfield construction projects requiring operations by vehicles and equipment that are not in communication with ground control are handled as follows:

[1] An escort vehicle that is in contact with ATCT will be required and provided in accordance with the requirements set forth in the paragraph above or as determined by Airside Operations.

[2] Vehicles, equipment, and personnel are controlled by a flagman stationed at an area designated by Airside Operations when an escort vehicle is not required.

In the event of an ATCT radio failure, clearances will be made via alternate tower frequencies. For complete ATCT radio failure or vehicle aeronautical radio failure, other communication methods may be used, including calling the FAA ATCT at (704)790-5460; and as a last resort, light gun signals may be used. See (**Table 12**).

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Table 12

FAA Light Gun Signals

Color and Type of Signal	Movement of Vehicles, Equipment and Personnel
Steady Green	Cleared to cross, proceed or go
Steady Red	Stop
Flashing Red	Clear active runway
Flashing White	Return to starting point on airport
Alternating Red/Green	Exercise extreme caution

Control Vehicles/Pedestrians

Ground vehicle and pedestrian access to movement area and safety areas is controlled by the following:

[1] Security fencing

[2] Controlled access gates

[3] Signage

[4] Patrols by Charlotte Police Department, Security Operations and Airside Operations

[5] ILS critical area holding position markings and signage at appropriate runway/taxiway intersections

[6] Holding position markings and signage requiring tower communications at taxiway access points

[7] Runway/taxiway guidance signs

Logos or markings are required to be identifiable and affixed to the vehicle by decal, magnetic sign, or paint. Authorized activities such as airfield construction projects requiring operations by vehicles and equipment that are not in communication with ground control are handled as follows:

[1] An escort vehicle that is in contact with ground control will be required and provided in accordance with the requirements set forth in this section as determined by Airport Operations.

[2] Vehicles, equipment, and personnel are controlled by a flagman stationed at an area designated by Airport Operations when an escort vehicle is not required.

Taxiway "A" Crossing

As stated in the Control of Ground Vehicles/Pedestrians on the Movement Area Letter of Agreement, pedestrians and ground vehicles without two-way radio, such as catering trucks, tugs, baggage carts, and other airline ground service vehicles are authorized to utilize the cargo tunnel service roadway. The south AOA access roadway crosses

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Taxiway "A" at the mid-point, adjacent to Taxiway A5. The following safety measures have been implemented to control vehicular traffic crossings:

[1] The crossing roadway has pavement stop lines, stop signs and red stop lights located on the north and south sides of Taxiway “A” that flash when an aircraft is approaching the crossing roadway on Taxiway “A” from either direction.

[2] The AOA Standards require each operator to stop at the stop lines before proceeding, and yield to any aircraft movement at the Taxiway “A” crossing.

Movement Area / Safety Area Training

The Airport has prepared a ground vehicle rules and regulations handbook (referred herein as AOA Standards) that is available to all airport employees authorized to operate on the airport. In addition, to ensure that all persons are familiar with the ground vehicle procedures and consequences of noncompliance, the following training program has been established at the airport:

[1] New employees authorized to operate a vehicle on the movement areas are required to successfully complete the movement area training program which includes on-the-job training and computer-based training covering the following subjects:

a. Review of the Airport’s pedestrian and ground vehicle procedures and consequences of noncompliance to those procedures

b. Airport familiarization and aircraft operations

c. Access to and operation within the movement area

d. Radio communication procedures

[2] The process for becoming certificated for driving on the movement area is as follows:

a. The tenant trains the individual on airport familiarization, communication, and access onto the movement area

b. Airside Operations provides initial movement area training on airport familiarization, communication, and access onto/movement within the movement areas and safety areas, through computer-based training, which includes built-in tests on airport familiarization and communication.

c. Once the computer-based training is passed, the individual is invited to take two behind-the-wheel movement area (MA) driving tests with a qualified Airside Operations personnel (one daytime and one nighttime test, regardless of company). If passed, the individual receives an movement area training (MAT) badge and qualifications to operate on the movement area for one (1) year.

d. Each year, to retain MAT driving privileges and the MAT badge, each person must complete computer-based training on airport familiarization, communication, and access onto/movement within the movement areas and safety areas, and any changes to the airfield and upcoming construction. Each time recurrent MAT

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training is completed, MAT privileges are extended for twelve consecutive calendar months.

e. Copies of the Driving Rules and Regulations are distributed to all employees authorized to operate a vehicle on movement areas or areas adjacent to movement areas. All MAT certificated individuals are expected to follow the CLT AOA Standards.

Non-Movement Area (Apron) Training

All persons authorized to operate independently on the AOA are required to receive SIDA training and pass an interactive video testing program. Included within this program, is training identifying movement and non-movement areas and their differences, boundary marking, escort and challenge procedures, and ramp driving safety. Those persons authorized to operate on the ramps, service roads and aprons only are trained on the areas of their authorization and prohibited from entering the movement areas without appropriate escort. Persons with driving privileges for the non-movement area only will have the "DR (driver)" endorsement displayed on their airport SIDA badge.

Records of Training

The Airport, at a minimum maintains a description and date of training completed by each individual operating on the movement areas, safety areas, or aprons. Records are maintained in the Airside Operations office for twenty-four consecutive calendar months after the termination of an individual's access on the movement areas, safety areas, and/or aprons.

Accident/Incident

The Airport maintains records of accidents or incidents on the movement areas and safety areas, involving air carrier aircraft and/or ground vehicles. Records of each accident or incident are maintained in the Airside Operations office for twelve consecutive calendar months from the date of the accident or incident.

Consequences

The Airport enforces the pedestrian and ground vehicle regulations applicable to all persons, which are written in the CLT AOA Standards. All airport tenant permits and agreements require compliance with the Airport's rules and regulations. The Airport addresses consequences of noncompliance by retraining individuals, requiring modifications to tenant's procedures/equipment, or by denial of use after a review of the situation and circumstances. The Airport takes appropriate enforcement action(s) depending on the nature and severity of the offense(s). Some examples of violations are failing to yield ground crew directing or marshalling an aircraft, failing to stop at a posted stop sign or stop bar, improper parking, unauthorized aircraft engine runs, driving outside of marked roadway, fuel spills attributed to improper or negligent fueling operations. Failure to comply with the CLT AOA Standards will result in immediate disciplinary action per the following disciplinary schedule. As described in this document, Airside Operations Management and/or Airport Leadership has the discretion to escalate or de-escalate the penalty tier if unique circumstances exist to justify such modification. All infractions will be documented, tracked, and will remain on the individual's AOA driving record for 3 years. A breakdown of the disciplinary actions are listed in the CLT AOA Standards.

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Section 331 – Obstructions

Section 139.331 Obstructions– General

Any obstructions within the authority of Charlotte Douglas International Airport in the airport imaginary surfaces as defined by Part 77 of the Federal Aviation Regulations will be removed, marked and/or lighted in a manner authorized by the FAA. However, removal, marking, and lighting is not required if it is determined to be unnecessary by an FAA aeronautical study.

All obstructions on the Airport penetrating the Part 77 imaginary surfaces are marked and lighted in accordance with the appropriate Advisory Circular, or as recommended by an FAA aeronautical study. Maintenance responsibilities associated with the obstruction lights are addressed in § 139.311 of this ACM. Obstruction lights are inspected daily during night inspections conducted by the personnel assigned to self-inspection duties. Inoperable lights owned and maintained by the Airport shall be repaired by the Airport Maintenance Department. Maintenance issues with obstruction lights maintained by the FAA are sent to the FAA via the digital work order system.

Procedures for Coordination

There are no objects within the boundary of the Airport which are in 14 CFR Part 77 surfaces except for those that, because of their function, must be there. To the extent practical, these objects are constructed on frangible mounted structures of the lowest possible height with the frangible point no higher than three (3) inches above grade. Non-frangible objects within the safety areas are listed in **Appendix E**.

Proposed Construction

The Airport Manager submits written notice to the FAA Administrator of proposed construction or alteration of objects that may affect airport navigational airspace in accordance with the current version of *AC 70/7460-1.*

Authorized airport contractors and equipment operators, in accordance with the current version of *AC 70/7460-1*, are required to submit a completed FAA Form 7460 before beginning construction or operating equipment on or near Charlotte Douglas International Airport.

Method of removal

In the event than an object is discovered which exceeds any of the heights or imaginary surfaces in FAR Part 77, the Airport will take steps necessary for the object removal, marking, or lighting as appropriate.

Reporting Procedures

Operations personnel note and report any airfield obstruction lighting outages during airport safety inspections and patrols.

[1] Information concerning non-critical obstruction lighting outages on terminals, overpasses, etc., is documented and submitted via the digital work order system for scheduling of repairs.

[2] Airport-owned facility obstruction lighting outages are submitted for repair by the Airport Electricians or responsible party via the digital work order system. FAA-owned obstruction lighting outages are reported to the FAA Tech Ops.

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[3] Tenant-owned obstruction lighting outages are reported to the tenant directly by Operations personnel.

[4] The FAA NOTAM system is used as appropriate means to notify the air carriers and all airport users of any required outages.

The Airport follows the guidelines set forth in the most current version of Advisory Circular 70/7460-1 , Obstruction Marking and Lighting, the most current version of Advisory Circular 150/5210-20, Ground Vehicle Operations on Airports, the most current version of Advisory Circular 15/5340-30, Design and Installation Details for Airport Visual Aids, the most current version of Advisory Circular 150/5345-43, Specification for Obstruction Lighting Equipment, and the most current version of Advisory Circular 150/5370-2, Operational Safety on Airports During Construction, in reference to obstructions on and around the airfield.

Appendix E, *Lighted Obstruction Map* depicts the location of Airport Obstructions.

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Section 333 – Protection of NAVAIDs

Section 139.333 Protection of NAVAIDs – General

In a manner authorized by the FAA, Charlotte Douglas International Airport prevents the construction of facilities on the airport that, as determined by the Administrator, would derogate the operation of electronic NAVAIDS, visual aids, and air traffic control facilities primarily through the process of prior notification to the FAA for approval of the change to the approved Airport Layout Plan (ALP). Construction is not authorized until an aeronautical study is completed and the FAA Airports office has approved the ALP revision.

Construction Coordination

The Airport will prevent the construction of facilities on the airport that, as determined by the Administrator, would derogate the operation of an electronic/visual NAVAID or air traffic control facility. The Aviation Director or his designees shall notify the FAA if aware of any construction plans or equipment. Utility plans for the airport are on file in the Airport Planning/Engineering office. The location of any airport utility lines in the areas of construction shall be marked by Airport Maintenance personnel or by survey personnel prior to the start of construction. Utility lines for NAVAIDS and ILS critical areas shall be marked by the contractor under the direction of the local FAA Tech Ops personnel. Airport Operations staff are responsible for monitoring construction activity on the airport to prevent the interruption of visual and electronic signals of NAVAIDS.

Protection of NAVAIDs

Physical protection of NAVAIDS installed, controlled, and maintained by the FAA within the contiguous confines of the Airport, is provided by the perimeter fencing with controlled access through locked gates to enable the FAA to service and maintain these NAVAID facilities. In addition to the normal preventative and service maintenance visits to these facilities by the FAA maintenance personnel, Airport Operations and/or airfield maintenance personnel will also report any unusual or suspicious activity in the area around these facilities. FAA cables are located and properly marked, and precautions are taken to preclude displacement or removal of markers by contractor work or routine airfield maintenance activity.

All electronic NAVAIDS are located on airport property within the perimeter fence and the Airport Surface Detection Equipment – Model X (ASDE - X) are protected against vandalism and theft, by the fence. Those navigational aids and facilities installed off the Airport property are provided physical security in the form of fencing and other protection as prescribed by the FAA. Those NAVAIDS situated adjacent to or within visual range of the Airport property are monitored during routine perimeter fence inspection and patrol by Operations and the Charlotte - Mecklenburg Police Department (CMPD).

The perimeter fence is routinely patrolled by Airport Operations and CMPD, who also move throughout the AOA as a part of their routine security patrol.

Interruption of Visual and Electronic Signals of NAVAIDs

The interruption of visual and electronic signals of NAVAIDS is prevented, insofar as it is within the Airport's authority. The monitoring of construction programs on the Airport to eliminate or minimize interferences with NAVAIDS and supporting utility services is set forth in § 139.341 of this ACM. FAA Form 7460-1, *Notice of Proposed Construction or Alteration*, is to be filed for all projects on and off the Airport that require notification to the FAA. At the preconstruction conference, local FAA personnel are invited to attend any time their area of interest is involved.

City water and sewer crews, as well as utility companies, are forbidden to undertake any repair work on their respective facilities serving the airport until contact is made with, and permission is given by, the Aviation Director or his designees. The Aviation Director directs the Airport Engineer to advise the FAA Facility Chief, as well as visit the site of the proposed repair in company with the FAA representative, to assure that FAA cables will not be disturbed.

ILS critical areas have been identified by signs and markings to prevent inadvertent entry into a critical area by a vehicle during Instrument Flight Rules (IFR) conditions.

Notification of Possible Interference

Prior to routine maintenance activities inside NAVAID critical areas, Airside Operations shall notify the ATCT and coordinate the work with the ATCT for the affected areas. Once work is completed and equipment is clear of the NAVAID critical areas, Airside Operations shall notify the ATCT that all equipment is clear of the area.

Section 335 – Public Protection

Section 139.335 Public Protection – General

Part 139 requires the airport operator of a Class I airport to describe how it intends to provide for public protection. The requirements that address this subject are oriented toward inadvertent entry into an area containing hazards for the unwary trespasser. The prevention of intentional entry of airport security areas is within the purview of the Transportation Security Administration Regulation on airport security.

Safeguards to Prevent of Inadvertent Entry

The Airport provides security fencing, controlled access gates, signage, and ground vehicle operating procedures to safeguard against inadvertent entry by persons or vehicles that may endanger aircraft operations. The following safeguards are in place:

[1] Gates and doors that access the aircraft operating areas are to be attended or secured, when not in use.

[2] Restricted area signs are posted on gates and on security fencing approximately 100 feet apart in moderately to heavily traveled areas and 300 feet apart in other areas.

[3] A description of the perimeter fencing is listed on **Table 9.**

[4] The Airport will provide reasonable protection of persons and property from aircraft blast in those areas found to have regular aircraft blasts that endanger the public.

Table 9
Perimeter Fencing

Location	Type Fencing
AOA / NAVAIDS	6' Chain Link / Barbed Wire
Gates / Aprons	6' Chain Link / Barbed Wire

Maintenance of Safeguards

Perimeter fencing, gates, and signs are inspected as part of the patrols assigned to both CMPD, Security Operations and Airside Operations personnel. Problems noted will be recorded on the daily inspection form and a work order will be issued. Fencing is repaired and maintained by the Airfield Maintenance Department.

Inspection of Safeguards

Security fencing and gates are routinely checked by Charlotte Mecklenburg Police Department, Security Operations and Airport Operations.

Access Control

All air carrier passenger embarkations and debarkations, except for hardstand air carrier and Commuter aircraft, are accomplished with enclosed loading bridges. Hardstand air carrier and Commuter aircraft passenger operations are protected and monitored by airline ground personnel.

Access onto apron areas is limited to persons having a need. Procedures for controlling access onto apron areas are included in the TSA-approved ASP. An airport tiered-identification badging system has been established in accordance with the ASP for persons authorized on the AOA or portions of the AOA. Procedures for authorizing temporary access on the AOA are also addressed in the ASP.

Section 337 – Wildlife Hazard Management

Section 139.337 Wildlife Hazard Management – Overview

Charlotte Douglas International Airport shall take immediate action to alleviate wildlife hazards whenever they are detected. The Airport uses the guidelines set forth in the most current version of Advisory Circular 150/5200-33, *Hazardous Wildlife Attractants on or Near Airports* in reference to Wildlife Hazard Management at CLT. A continuous advisory covering migratory birds near the Airport is broadcasted via the Automated Terminal Information Service (ATIS).

Wildlife Hazard Assessment Requirements

Charlotte Douglas International Airport will review their FAA approved Wildlife Hazard Management Plan (WHMP) at least annually and when any of the following events occurs on the airport or within five (5) miles of the AOA:

[1] An air carrier aircraft experiences multiple wildlife strikes.

[2] An air carrier aircraft experiences substantial damage from striking wildlife. Substantial damage means damage or structural failure incurred by an aircraft that adversely affects the structural strength, performance, or flight characteristics of the aircraft and that would normally require major repair or replacement of the affected component.

[3] An air carrier aircraft experiences an engine ingestion of wildlife.

[4] Wildlife of a size or in numbers capable of causing an event described above is observed to have access to any airport flight pattern or aircraft movement area.

Report Processing

Reports of any of the above occurrences shall be forwarded to Airside Operations. Airside Operations shall take immediate measures to alleviate wildlife hazards whenever they are detected in accordance with the latest revision of the Wildlife Hazard Management Plan.

Wildlife Hazard Management Plan

Charlotte Douglas International Airport currently maintains an FAA approved Wildlife Hazard Management Plan per the Wildlife Hazard Assessment Recommendation. The airport completed a Wildlife Hazard Assessment (WHA) in accordance with Advisory Circular 150/5200-38 (Protocol for the Conduct and Review of Wildlife Hazard Site Visits, Wildlife Hazard Assessments, and Wildlife Hazard Management Plans). The WHA recommended the creation of a Wildlife Hazard Management Plan (WHMP). The WHMP is approved by the FAA and is maintained by Charlotte Douglas International Airport staff. The plan is an integral part of the ACM under **Appendix J** which is published separately for ease of revision, reference, and distribution.

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Section 339 – Airport Condition Reporting

Section 139.339 Airport Condition Reporting – General

Charlotte Douglas International Airport is expected to and will make known, as soon as practical, any condition on or near the airport, existing or anticipated, that will prevent, restrict, or present a hazard during the arrival or departure of aircraft; including but not limited to conditions on the Movement Areas. Airport Operations personnel will follow *AC 150/5200-28 Notice to Air Missions (NOTAMS) for Airport Operators,* which provides guidance on using the NOTAM system for airport condition reporting. Other systems and procedures shall be utilized when appropriate that are acceptable to the Administrator. Copies of all NOTAMS are kept in the Airport Operations Digital NOTAM Manager for no less than 12 consecutive calendar months.

Procedures for Collection and Dissemination of Information

In a manner authorized by the FAA, Charlotte Douglas International Airport provides for the collection and dissemination of airport condition information to air carriers as follows. Notices to Airmen (NOTAMs) are generated and controlled by Airport Operations and issued through the FAA Digital NOTAM Manager. The following procedures are used to collect and disseminate Airport Condition Information to the Air Carriers:

[1] Charlotte Douglas International Airport utilizes the NOTAM system to convey information not known sufficiently in advance to publicize by other means such as hazards or change to a facility, service, or procedures that affect aircraft safety or operations at CLT.

[2] Airport Operations will issue NOTAMs by utilizing the FAA Digital NOTAM Manager or by calling the Leidos Flight Service Outage Reporting and Notice to Airmen line in the event the FAA Digital NOTAM Manager system is unavailable, at (877) 487 – 6867.

[3] A copy of the prepared NOTAM, whether it is entered in the FAA Digital NOTAM Manager site or via the Leidos Flight Service Outage Reporting and Notice to Airmen line is retained in the FAA Digital NOTAM Manager System to be recalled via the “Reports” tab.

[4] Airport Operations personnel are authorized to issue, amend, and cancel NOTAMs for the Airport.

[5] NOTAMs are tracked in the database via their FAA-issued tracking number. The list of NOTAMs currently in effect is reviewed by Airport Operations and amended as necessary.

Procedures used to Monitor Airport Conditions

Airport Operations personnel monitor the airport conditions as outlined in the self-inspection program of this manual in Section 327. This is done as daily inspections, continuous inspections, periodic

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inspections, and special inspections. Additionally, when receiving reports from ATCT and PIREPs, Airport Operations will investigate and issue NOTAMS on airport conditions as appropriate.

Conditions requiring NOTAMs

Airport Operations shall provide information on the following airport conditions which may affect the safe operation of air carriers:

[1] Construction or maintenance activity on movement areas, safety areas, or loading ramps and parking areas.

[2] Surface irregularities on movement areas or loading ramps and parking areas.

[3] Snow, ice, slush, or water on the movement areas or loading ramps and parking areas.

[4] Snow piled or drifted on or near movement areas such that air carrier aircraft propellers, engine pods, rotors, and wingtips will not clear any snowdrift or snowbank as the aircraft's landing gear traverses any full-strength portion of the movement area.

[5] Objects on the movement area or safety areas contrary to §139.309.

[6] Malfunction of any lighting system, holding position sign, or ILS critical area signs required by §139.311.

[7] Unresolved wildlife hazards as identified in accordance with §139.337.

[8] Newly-created obstructions to air navigation.

[9] Non-availability of any Aircraft Rescue Fire Fighting capability required in §139.317 or §139.319.

[10] Any other condition as specified in this Airport Certification Manual or that may otherwise adversely affect the safe operation of air carriers.

Personnel Responsible to Issue NOTAMS

Only authorized personnel shall issue NOTAMS affecting the facilities at Charlotte Douglas International Airport. Airport Operations personnel in the following positions are authorized to issue Airport Condition Reports (NOTAMS) via the DDN Digital NOTAM Manager, or disseminate airport conditions locally to the ATCT and to the Air Carriers:

[1] Trained Airside Operations Staff (e.g., Airside Coordinators/Supervisors)

[2] Trained Airport Operations Center (AOC) Staff (e.g., AOC Coordinators/Supervisors)

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A current and complete list of personnel authorized to issue Airport Condition Reports has been provided to Leidos Flight Services.

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Section 341 – Identifying, Marking and Lighting Construction and Other Unserviceable Areas

Section 139.341 Identifying, Marking and Lighting Construction and Other Unserviceable Areas – General

Safety plans and construction marking and lighting at Charlotte Douglas International Airport will be accomplished in accordance with the most current version of *AC 150/5370-2, Operational Safety on Airports During Construction.*

Construction Marking and Lighting Procedures

Marking and lighting requirements will be set forth in the planning and design stages of each construction project and will be monitored throughout by Airport Operations for compliance. During construction, Charlotte Douglas International Airport will require unserviceable areas to be marked and, if appropriate, lighted by the contractor or project liaison in a manner authorized by the FAA:

[1] Construction areas and unserviceable areas that are on or adjacent to any movement area or any other area of the airport on which air carrier aircraft may be operated.

[2] Each item of construction equipment and each construction roadway, which may affect the safe movement of aircraft on the airport.

Construction Equipment Marking/Operations

During construction, Charlotte Douglas International Airport will require that contractors mark equipment and operate in a manner as authorized by the FAA:

[1] The routing and control of all equipment, personnel, and vehicular traffic on or adjacent to active movement areas is accomplished using pre-approved flagger-controlled crossings or other approved methods.

[2] Construction vehicles are to be be equipped with appropriate vehicle lighting in a manner authorized by the FAA .

Unserviceable Area Marking Procedures

Charlotte Douglas International Airport will mark and, if appropriate, light unserviceable areas in a manner authorized by the FAA for as follows:

[1] Unserviceable pavement and safety areas are barricaded and lighted as required.

[2] Any area adjacent to a NAVAID that, if traversed, could cause interference of the signal or failure of the NAVAID.

[3] Construction areas and unserviceable areas that are on or adjacent to any movement area or any other area of the airport on which air carrier aircraft may be operated.

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[4] Current airfield construction activities are inspected daily during airport safety self-inspections.

[5] Airport Users are notified of construction and unserviceable areas through the issuance of NOTAMs in accordance with the most up to date version of AC 150/5200-28, and other appropriate means of communication.

Utility Damage Prevention Procedures

Plans for airport utilities are on file in the Airport Planning/Engineering office. The location of any airport utility lines in the areas of construction shall be marked by authorized airport consultants/survey staff prior to the start of construction.

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Section 343 – Non-Complying Conditions

Section 139.343 Non-Complying Conditions – General

Unless otherwise authorized by the FAA Administrator, whenever the requirements of Subpart D – Operations, of FAR Part 139 cannot be met to the extent that uncorrected unsafe conditions exist on the airport, CLT shall limit air carrier operations to those portions of the airport rendered unsafe by those conditions.

Responsibility for unsafe area closures

The Airside Operations Manager, Assistant Airside Operations Manager, Airside Supervisors, Airside Coordinators, and Airside Agents have been delegated and have the responsibility to close areas on the airport that are unsafe for air carrier operations. Any closure of the Movement Area, Non-Movement area, or Ramp Areas will be coordinated with the FAA ATCT and/or AA Ramp Tower as applicable.

Procedures to limit Air Carrier operations in unsafe areas

The Airside Operations Staff will evaluate situations when it becomes known that an unsafe condition exists on the airport. Notification of the unsafe condition will be given to the FAA ATCT and Airport Operations will close the surface. If necessary, the pavement will remain closed until the unsafe condition has been corrected. All airport users will receive notification of the unsafe condition, closure, and/or any limitations of the surface through the NOTAM System.

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Section 401 – Airport Safety Management System: General Requirements

Section 139.401 – General Requirements

Under Part 139.401(a), CLT is required to comply with SMS requirements as the FAA has determined it is classified as a Large Hub based on passenger data extracted from the Air Carrier Activity Information System.

In accordance with Part 139 subpart E, CLT will develop, implement, maintain, and adhere to the Airport Safety Management System (SMS) in accordance with CLT's submitted and approved SMS Implementation Plan, dated April 22, 2024. The scope of the Airport SMS being developed will encompass aircraft operation in the movement area, aircraft operation in the non-movement area, and other airport operations addressed under Part 139. CLT is the responsible party for compliance with the Airport SMS.

Policies and procedures for the development of, implementation of, maintenance of, and adherence to CLT's SMS Program, as required under Part 139 Subpart E of this part, will be described in a separate Airport SMS Manual, which will be completed no later than April 22, 2025. CLT's Airport SMS Manual is being drafted and will be maintained by the Airport SMS Manager in the Airport Operations Department.

Once completed, the Airport SMS Manual will be shared with the FAA on an annual basis, or upon request. Any changes to the Airport SMS Manual will be explicitly noted.

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Section 402 – Components of the Airport Safety Management System

SMS Components

In accordance with Part 139.402, CLT's SMS Program, once fully implemented, will have the following components:

- Safety Policy;
- Safety Risk Management process and procedures for identifying hazards and their associated risks within airport operations and for changes to those operations covered by Part 139;
- Safety Assurance processes and procedures to ensure mitigation measures are adequate and the Airport SMS is functioning effectively; and
- Safety Promotion processes and procedures to foster an airport operating environment that encourages safety.

Safety Risk Management Records

CLT will establish and maintain records that document the Airport's Safety Risk Management processes, once CLT's SMS Program is fully implemented. These records shall provide a means for the Airport's acceptance of responsibility for assessed risks and mitigations. These records will be maintained for a minimum of:

- 36 consecutive calendar months after the risk analysis of identified hazards under Part 139.402(b)(2) has been completed; or
- 12 consecutive calendar months after mitigations required under Part 139.402(b)(2)(v) have been completed.

Safety Awareness Orientation

Once CLT's SMS Program is fully implemented, CLT will provide all persons authorized to access airport areas regulated under Part 139 with a safety awareness orientation, which includes hazard identification and reporting. The safety awareness orientation materials are readily available to such persons and will be reviewed and updated at least once every 24 months, or sooner if necessary. CLT will maintain a record of all safety awareness orientation materials made available in compliance with Part 139(d)(1), including any revisions and means of distribution. These records will be retained for 24 months after the materials are made available.

SMS Training

Once CLT's SMS Program is fully implemented, CLT will provide safety training on those requirements of SMS and its implementation to each person with responsibilities under the Airport SMS that is appropriate to the individual's role. In accordance with the forthcoming SMS Manual, this training will be required to be completed prior to the initial performance of SMS duties and at least every 24 consecutive calendar months. CLT will maintain a record of all training for those employees that includes, at a minimum, a description and date of the training received. These records will be retained for 24 consecutive calendar months after completion of the training.

SMS Communications

CLT will develop and maintain a formal means for communicating important safety information within its SMS Manual. Once CLT's SMS Program is fully implemented, these communication methods will, at a minimum:

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- Ensure all persons authorized to access the airport areas regulated under this part are aware of the SMS and their safety roles and responsibilities;
- Convey critical safety information;
- Provide feedback to individuals using the airport's safety reporting system required under Part 139.402(c)(2); and
- Disseminate safety lessons learned to relevant airport employees or other stakeholders.

Records of these communications will be maintained for at least 12 consecutive months.

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Section 403 – Airport Safety Management System Implementation

In accordance with Part 139.403(a), CLT has an FAA-approved SMS Implementation Plan, dated April 22nd, 2024. This Implementation Plan provides details on how CLT will meet Part 139 SMS requirements, including:

- A schedule for implementing SMS components and elements prescribed in Part 139.402; and
- A description of any existing programs, policies, or procedures that CLT intends to use to meet Part 139 SMS requirements.

CLT will fully implement its Airport SMS within 36 months of April 22, 2024 and in accordance with the FAA-approved SMS Implementation Plan.

U.S. Department of Transportation
Federal Aviation Administration

Southern Region, Airports Division
1701 Columbia Avenue
College Park, GA 30337

Email: john.fotiadis@faa.gov
Phone: 404-305-6857

April 22, 2024

Ms. Haley H. Gentry
Chief Executive Officer
Charlotte Douglas International Airport
5601 Wilkinson Blvd
Charlotte, NC 28208

RE: Approval of Part 139 SMS Implementation Plan for Charlotte Douglas International Airport, Charlotte, NC

Dear Ms. Gentry:

The Federal Aviation Administration (FAA) has approved the Implementation Plan submitted by Charlotte Douglas International Airport, Charlotte, NC. This plan is to be used to comply with 14 CFR § 139.403. The certificate holder is responsible for adhering to all elements and timelines contained in the plan. Updates to the approved plan timelines or elements will be submitted to the FAA, but will not require further FAA approval providing the requirements as defined in 14 CFR parts §139.402 and §139.403 continue to be met.
In accordance with the requirements as defined in part 139.403(c)-(d), you must submit your SMS manual within 12 months from the date of this approval letter. In addition, you must fully implement your SMS as identified in your implementation plan, no later than 36 months from the date of this letter.

Please contact me if you have any questions.

Sincerely,
JOHN N FOTIADIS
Digitally signed by JOHN N FOTIADIS
Date: 2024.04.22 13:18:46 -04'00'
John N. Fotiadis
Airport Certification Safety Inspector
FAA Southern Region, Airports Division

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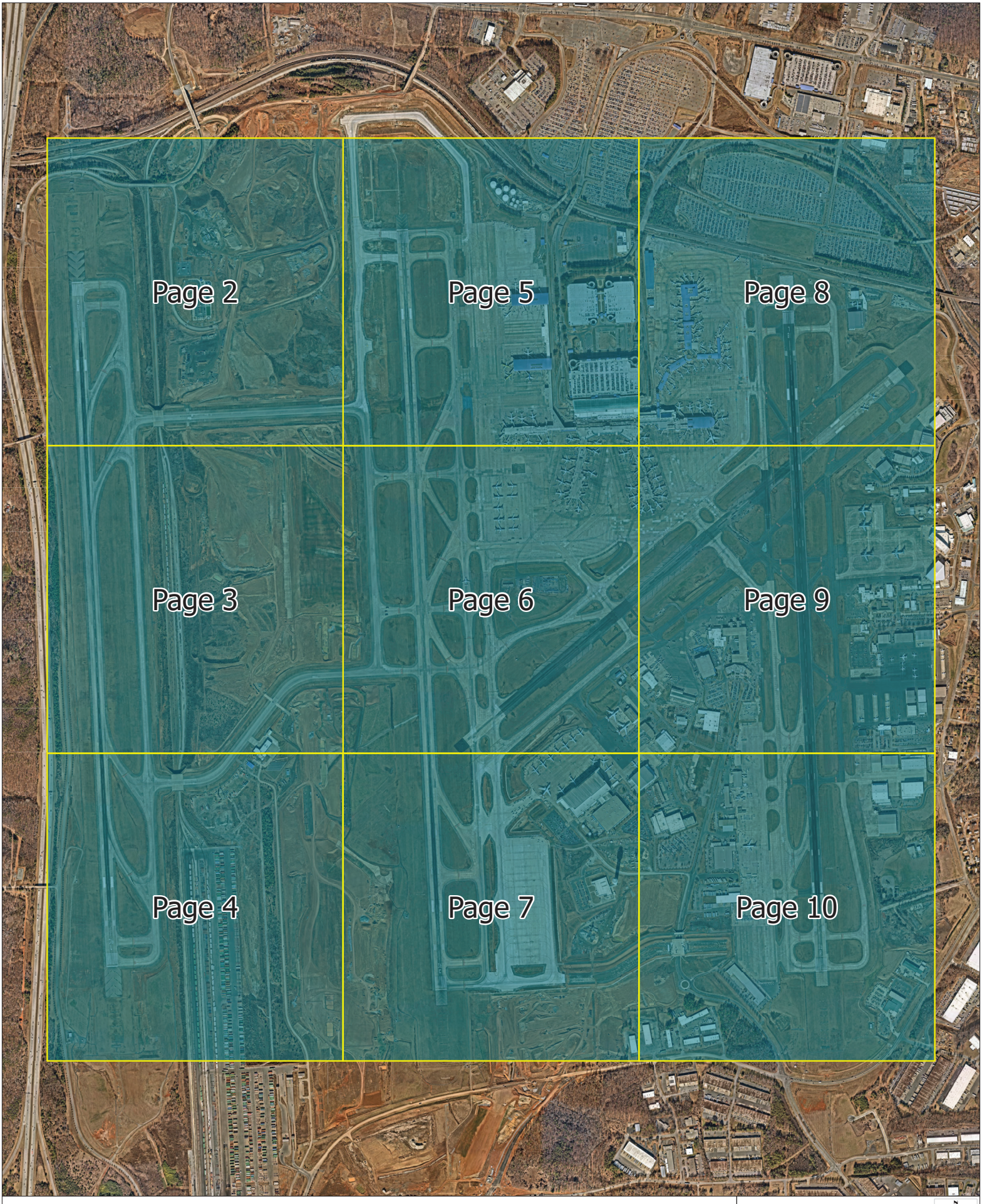
APPENDIX A

AIRFIELD SIGN PLAN



CLT Sign Plan

Key

CLT CHARLOTTE DOUGLAS INTERNATIONAL AIRPORT

0 500 1,000 2,000 FT.

Created by: Zach Yarbrough

Map Date: 03/28/2022

Modified Date: 02/13/2025


MAX WINGSPAN
118 FEET
STOP
STOP


36L
STOP
36L
DO NOT PROCEED
CONTACT ATC


MAX WINGSPAN 118 FEET
MAX WINGSPAN 118 FEET
MAX WINGSPAN 118 FEET
STOP
HOLD SHORT
ILS

APPENDIX B

GRID MAP

Existing Railroad
Runway Centerline
Security Fence
Buildings
Apron
Runway
Airport Parcels

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CLT VACINITY GRID MAP

Created by: Raymond Galicia

Map Date: 11/4/2024

N

0 500 1,000 2,000 US Feet

CLT
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INTERNATIONAL AIRPORT

APPENDIX C

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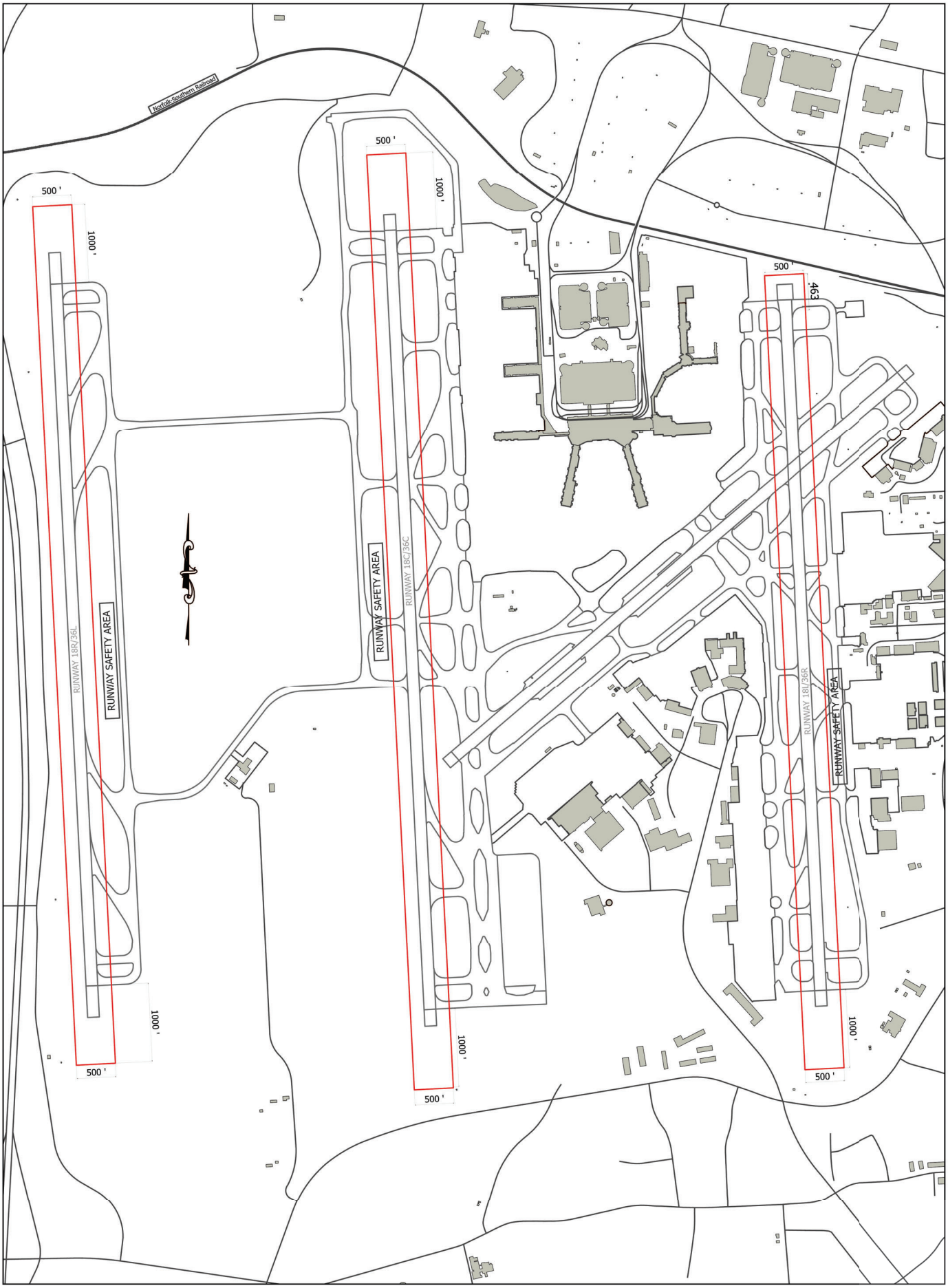
APPENDIX D

RUNWAY SAFETY AREAS

RUNWAY SAFETY AREAS Appendix D



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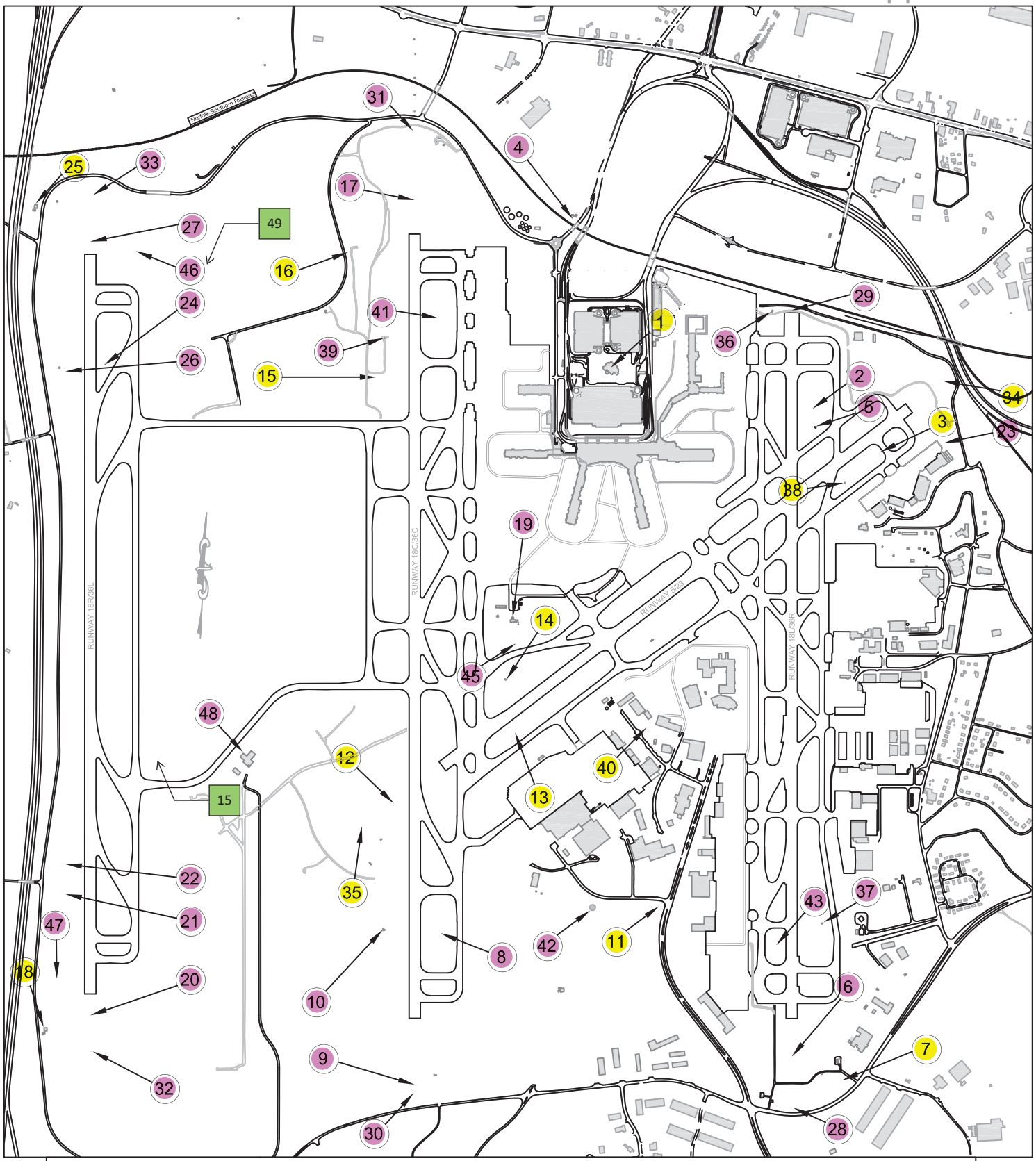
APPENDIX E

LIGHTED OBSTRUCTION MAP



LIGHTED OBSTRUCTIONS

* 1. FAA TOWER	* 10. 36C GLIDE SLOPE	* 19. ASR	* 28. 18L LOCALIZER	* 37. 36R GLIDE SLOPE	*** 46. MLAT SENSOR
** 2. WIND CONE	* 11. ASDE ANTENNA	* 20. ALSF-2	* 29. 36R LOCALIZER	* 38. 23 GLIDE SLOPE	*** 47. MLAT SENSOR
** 3. WIND CONE	* 12. MALSR	** 21. WIND CONE	* 30. 18C LOCALIZER	* 39. 18C GLIDE SLOPE	*** 48. MLAT SENSOR
** 4. BEACON	** 13. WIND CONE	* 22. 36L GLIDE SLOPE	* 31. 36C LOCALIZER	* 40. ASDE ANTENNA	
* 5. 18L GLIDE SLOPE	* 14. 5 GLIDE SLOPE	*** 23. MLAT SENSOR	* 32. 18R LOCALIZER	** 41. WIND CONE	
* 6. ALSF-2	* 15. ASOS	** 24. WIND CONE	* 33. 36L LOCALIZER	* 42. FAA TOWER	
* 7. ASDE ANTENNA	* 16. ASDE ANTENNA	* 25. ASDE ANTENNA	* 34. 5 LOCALIZER	** 43. WIND CONE	
** 8. WIND CONE	* 17. MALSR	* 26. 18R GLIDE SLOPE	* 35. 23 LOCALIZER	44. NOT USED	
* 9. ALSF-2	* 18. ASDE ANTENNA	* 27. ALSF-2	*** 36. MLAT SENSOR	** 45. PRIMARY WIND CONE	

* FAA MAINTAINED ** AIRPORT MAINTAINED *** AIRLINE MAINTAINED

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W:\AutoCAD Data Files\Exhibits\Operations\MOVEMENT AREA, RSA, OBSTRUCTIONS 2020.dwg
DATE: MAY 2020

STATUS SUMMARY

Lighted Obstructions

Charlotte Douglas International Airport
Charlotte, North Carolina

Date: November 6, 2024

Removed Lighted Obstuctions
Lighted Obstructions To Remain
Relocated or New Lighted Obstructions

No.	Lighted Obstruction	Maintained By		Status/Disposition	Comment
1	FAA Tower	*	FAA	Removed	
2	Wind Cone	**	Airport	To Remain	
3	Wind Cone	**	Airport	Future Removal	To be removed by April 2025.
4	Beacon	**	Airport	To Remain	
5	18L Glide Slope	*	FAA	To Remain	
6	ALSF-2	*	FAA	To Remain	
7	ASDE Antenna	*	FAA	Future Removal	To be removed by December 2025.
8	Wind Cone	**	Airport	To Remain	
9	ALSF-2	*	FAA	To Remain	
10	36C Glide Slope	*	FAA	To Remain	
11	ASDE Antenna	*	FAA		
12	MALSR	*	FAA	Future Removal	To be removed by January 2025.
13	Wind Cone	**	Airport	Future Removal	To be removed by April 2025.
14	5 Glide Slope	*	FAA	Future Removal	To be removed by January 2027.
15	ASOS	*	FAA	Removed	Removed and relocated to North Side of Taxiway S at Taxiway W.
15	ASOS (Relocated)	*	FAA	To Remain	Relocated to North Side of Taxiway S at Taxiway W.
16	ASDE Antenna	*	FAA	Future Removal	To be removed by December 2025.
17	MALSR	*	FAA	To Remain	
18	ASDE Antenna	*	FAA	Future Removal	To be removed by December 2025.
19	ASR	*	FAA	To Remain	
20	ALSF-2	*	FAA	To Remain	
21	Wind Cone	**	Airport	To Remain	
22	36L Glide Slope	*	FAA	To Remain	
23	MLAT Sensor	***	Airline	To Remain	
24	Wind Cone	**	Airport	To Remain	
25	ASDE Antenna	*	FAA	Future Removal	To be removed by December 2025.
26	18R Glide Slope	*	FAA	To Remain	
27	ALSF-2	*	FAA	To Remain	

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STATUS SUMMARY

Lighted Obstructions

Charlotte Douglas International Airport
Charlotte, North Carolina

Removed Lighted Obstuctions
Lighted Obstructions To Remain
Relocated or New Lighted Obstructions

Date: November 6, 2024

No.	Lighted Obstruction	Maintained By		Status/Disposition	Comment
28	18L Localizer	*	FAA	To Remain	
29	36R Localizer	*	FAA	To Remain	
30	18C Localizer	*	FAA	To Remain	
31	36C Localizer	*	FAA	To Remain	
32	18R Localizer	*	FAA	To Remain	
33	36L Localizer	*	FAA	To Remain	
34	5 Localizer	*	FAA	Removed	Localizer Anntenna removed. Removal of Platform pending FAA.
35	23 Localizer	*	FAA	Removed	
36	MLAT Sensor	***	Airline	To Remain	
37	36R Glide Slope	*	FAA	To Remain	
38	23 Glide Slope	*	FAA	Future Removal	To be removed by January 2027.
39	18C Glide Slope	*	FAA	To Remain	
40	ASDE Antenna	*	FAA	Future Removal	To be removed by December 2025.
41	Wind Cone	**	Airport	To Remain	
42	FAA Tower	*	FAA	To Remain	
43	Wind Cone	**	Airport	To Remain	
44	Not Used				
45	Primary Wind Cone	**	Airport	To Remain	
46	MLAT Sensor	***	Airline	To Remain	
47	MLAT Sensor	***	Airline	To Remain	
48	MLAT Sensor	***	Airline	To Remain	
49	RTR CLTB (4)	*	FAA	To Remain	Obstruction lights on four new RTR towers adjacent to the Airport Overlook.

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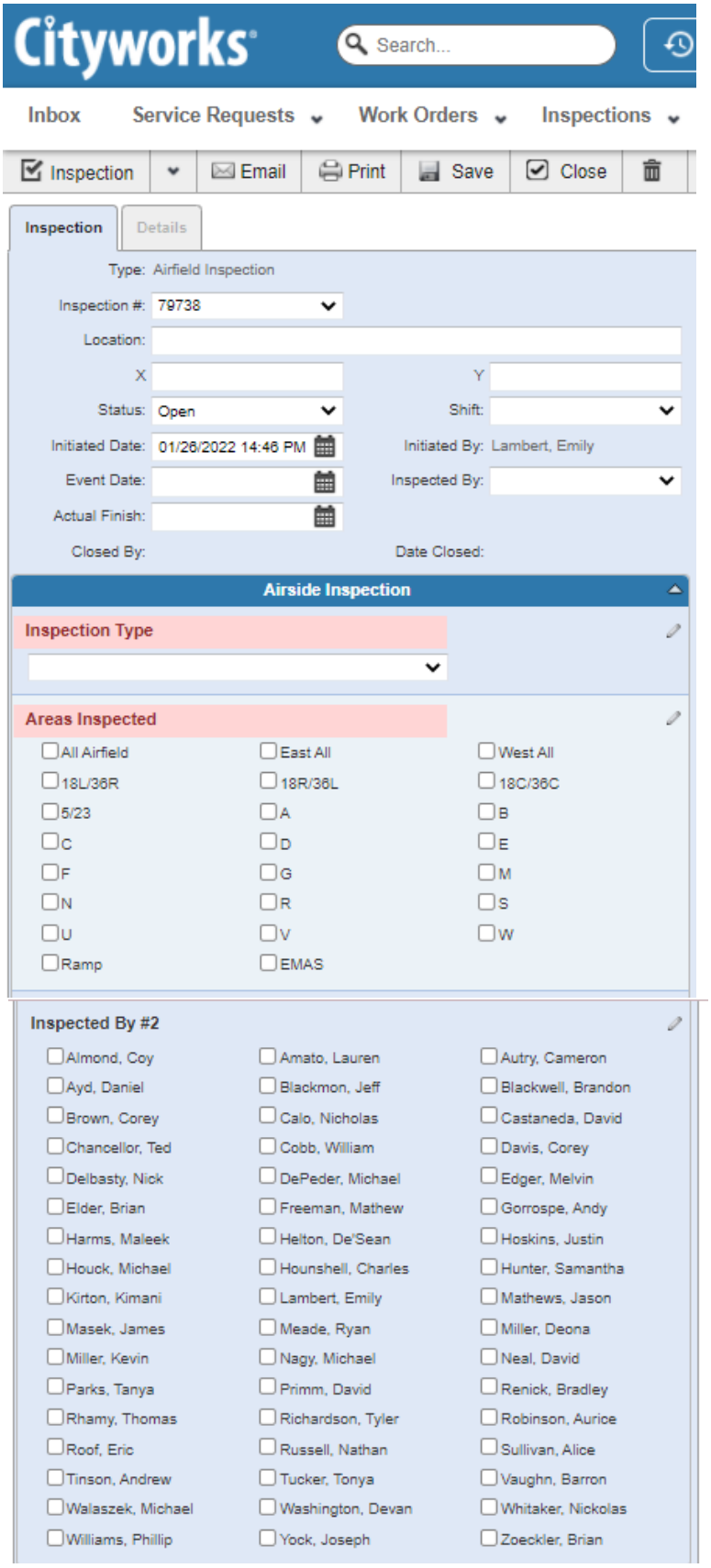
APPENDIX F

INSPECTION REPORTS



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Pavement Area Inspections Completed

Pavement Inspection

☐ Satisfactory ☐ Unsatisfactory

Marking Inspections Completed

Marking Inspection

☐ Satisfactory ☐ Unsatisfactory

Sign Inspections Completed

Sign Inspection

☐ Satisfactory ☐ Unsatisfactory

Lighting Inspections Completed

Lighting Inspection

☐ Satisfactory ☐ Unsatisfactory

Safety Area Inspections Completed

Safety Area Inspection

☐ Satisfactory ☐ Unsatisfactory

Wildlife Inspections Completed

Wildlife Inspection

☐ Satisfactory ☐ Unsatisfactory

Navigational Aids Inspections Completed

Navigational Aids Inspection

☐ Satisfactory ☐ Unsatisfactory

Construction Inspections Completed

Construction Inspection

☐ Satisfactory ☐ Unsatisfactory

Obstructions Inspections Completed

Obstruction Inspection

☐ Satisfactory ☐ Unsatisfactory

Public Protection Inspections Completed

Public Protection Inspection

☐ Satisfactory ☐ Unsatisfactory

Aircraft Rescue and Fire Fighting Inspections Completed

Aircraft Rescue & Firefighting Inspection

☐ Satisfactory ☐ Unsatisfactory

Snow and Ice Inspections Completed

Snow and Ice Inspection

☐ Satisfactory ☐ Unsatisfactory

Observations

PLEASE WRITE IN THE DESCRIPTION BOX BELOW
WHY THE SPECIAL INSPECTION IS NEEDED

Reset

Inspection Details

Description:

Resolution Comments:

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Cityworks

Inbox | Service Requests | Work Orders | Inspections

Inspection | Email | Print | Save | Close

Inspection | Details

Type: Fuel Storage Facility Avgas-Q

Inspection #: 80544

Location:

X: Y:

Status: Open | Shift:

Initiated Date: 02/17/2022 12:25 PM | Initiated By: Lambert, Emily

Event Date: | Inspected By:

Actual Finish:

Closed By: | Date Closed:

-

Inspection Type

Quarterly

Fueling Agent

100LL Section Items

1) Entrances to fueling areas posted with "No Smoking" and Hazardous Materials Identification System (HMIS) signs

☐ Satisfactory ☐ Unsatisfactory ☐ NA

2) No evidence of smoking

☐ Satisfactory ☐ Unsatisfactory ☐ NA

3) All tanks machinery and piping is bonded or grounded

☐ Satisfactory ☐ Unsatisfactory ☐ NA

4) Areas around tanks are free of weeds, trash or combustible material

☐ Satisfactory ☐ Unsatisfactory ☐ NA

5) Hazardous Material ID and no smoking and product type labels present on front, rear and sides of tanks at probable entry points.

☐ Satisfactory ☐ Unsatisfactory ☐ N/A

6) Emergency Fuel Shuttoffs provided outside probable spill areas

☐ Satisfactory ☐ Unsatisfactory ☐ NA

7) Emergency Fuel Shutoff Placards located at least 7 ft above grade with a minimum of 2" letters.

☐ Satisfactory ☐ Unsatisfactory ☐ NA

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10) Fuel facility piping, filter and pump sections properly maintained and free of leaks.

☐ Satisfactory ☐ Unsatisfactory ☐ NA

11) Spill Prevention and Control measures are in place.

☐ Satisfactory ☐ Unsatisfactory ☐ NA

12) Bonding Connection available and serviceable for loading stations.

☐ Satisfactory ☐ Unsatisfactory ☐ NA

13) Deadman controls available and not bypassed for loading and unloading stations.

☐ Satisfactory ☐ Unsatisfactory ☐ NA

14) Dry Break Couplers/Adapters installed

☐ Satisfactory ☐ Unsatisfactory ☐ NA

15) Fueling hose - no blistering, cracking separation, saturation, leaks. or slippage

☐ Satisfactory ☐ Unsatisfactory ☐ NA

16) Fueling hydrants, pits, cabinets located 50 ft from buildings other than loading bridges.

☐ Satisfactory ☐ Unsatisfactory ☐ NA

17) Fire Extinguishers (40 B:C rating) present and serviceable at fuel storage and loading stations

☐ Satisfactory ☐ Unsatisfactory ☐ NA

18) No A:B:C dry chemical fire extinguishers permitted within 500 feet of AOA

☐ Satisfactory ☐ Unsatisfactory ☐ N/A

19) Explosion proof electrical equipment

☐ Satisfactory ☐ Unsatisfactory ☐ NA

20) Above ground piping on protected by guardrail or bollards

☐ Satisfactory ☐ Unsatisfactory ☐ NA

21) Proper fueling procedures in use

☐ Satisfactory ☐ Unsatisfactory ☐ NA

Remarks

Reset

Inspection Details

Description:

Resolution Comments:

Cityworks

Inbox | Service Requests | Work Orders | Inspections

Inspection | Email | Print | Save | Close

Inspection | Details

Type: Fuel Storage Facility Jet A-Q

Inspection #: 80548

Location:

X: Y:

Status: Open | Shift:

Initiated Date: 02/17/2022 11:50 AM | Initiated By: Lambert, Emily

Event Date: | Inspected By:

Actual Finish:

Closed By: | Date Closed:

-

Inspection Type

Quarterly

Fueling Agent

Jet A Section Items

1) Entrances to fueling areas posted with "No Smoking" and Hazardous Materials Identification System (HMIS) signs

☐ Satisfactory ☐ Unsatisfactory ☐ NA

2) No evidence of smoking

☐ Satisfactory ☐ Unsatisfactory ☐ NA

3) All tanks machinery and piping is bonded or grounded

☐ Satisfactory ☐ Unsatisfactory ☐ NA

4) Areas around tanks are free of weeds, trash or combustible material

☐ Satisfactory ☐ Unsatisfactory ☐ NA

5) Hazardous Material ID and no smoking and product type labels present on front, rear and sides of tanks at probable entry points.

☐ Satisfactory ☐ Unsatisfactory ☐ N/A

6) Emergency Fuel Shuttoffs provided outside probable spill areas

☐ Satisfactoy ☐ Unsatisfactory ☐ NA

7) Emergency Fuel Shutoff Placards located at least 7 ft above grade with a minimum of 2" letters.

☐ Satisfactory ☐ Unsatisfactory ☐ NA

8) Emergency Fuel Shutoff access kept clear and tested every 6 months

☐ Satisfactory ☐ Unsatisfactory ☐ NA

9) Emergency Fuel Shut Offs present at all loading stations.

☐ Satisfactory ☐ Unsatisfactory ☐ N/A

10) Fuel facility piping, filter and pump sections properly maintained and free of leaks

☐ Satisfactory ☐ Unsatisfactory ☐ NA

11) Spill Prevention and Control measures are in place.

☐ Satisfactory ☐ Unsatisfactory ☐ NA

12) Bonding Connection available and serviceable for loading stations

☐ Satisfactory ☐ Unsatisfactory ☐ NA

13) Deadman controls available and not bypassed for loading and unloading stations.

☐ Satisfactory ☐ Unsatisfactory ☐ NA

14) Dry Break Couplers/Adapters installed

☐ Satisfactory ☐ Unsatisfactory ☐ NA

15) Fuel Hose - no blistering, cracking separation, saturation, leaks or slippage.

☐ Satisfactory ☐ Unsatisfactory ☐ NA

16) Fueling hydrants, pits, cabinets located 50 ft from buildings other than loading bridges

☐ Satisfactory ☐ Unsatisfactory ☐ NA

17) Fire Extinguishers (40 B:C rating) present and serviceable at fuel storage and loading stations

☐ Satisfactory ☐ Unsatisfactory ☐ NA

18) No A:B:C dry chemical fire extinguishers permitted within 500 feet of AOA

☐ Satisfactory ☐ Unsatisfactory ☐ N/A

19) Explosion proof electrical equipment

☐ Satisfactory ☐ Unsatisfactory ☐ NA

20) Above ground piping on protected by guardrail or bollards.

☐ Satisfactory ☐ Unsatisfactory ☐ NA

21) Proper fueling Procedures in use.

☐ Satisfactory ☐ Unsatisfactory ☐ NA

Remarks

Reset

Inspection Details

Description:

Resolution Comments:

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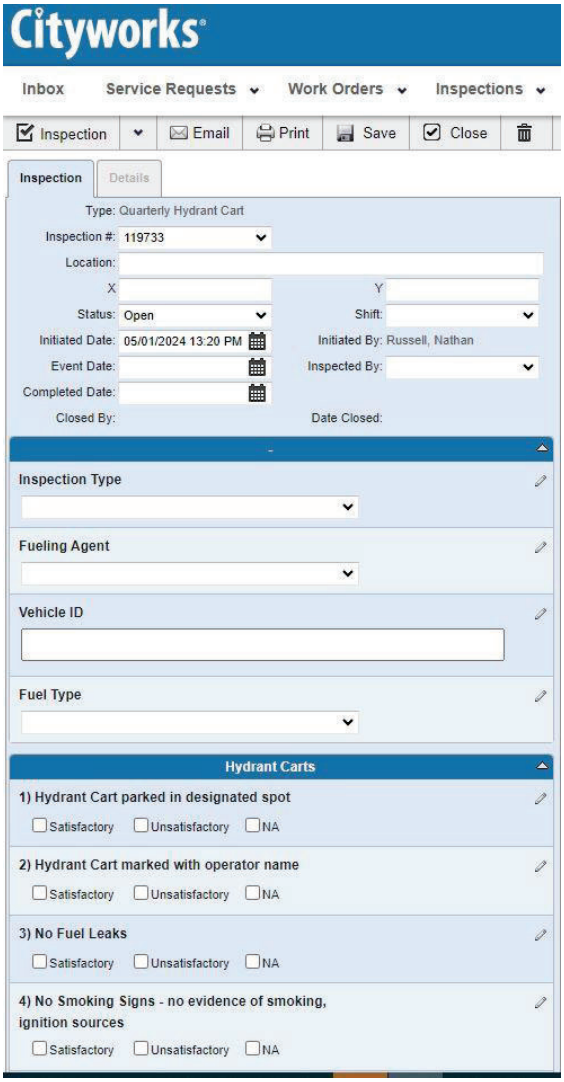

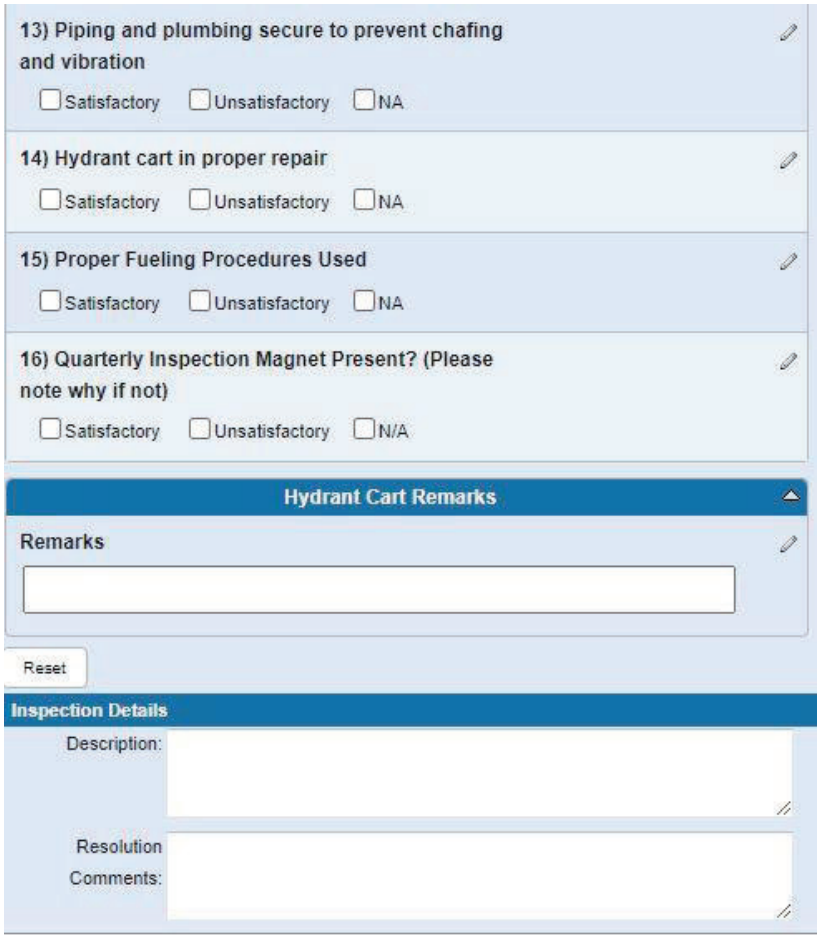

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Cityworks

Inbox | Service Requests | Work Orders | Inspections

Inspection | Email | Print | Save | Close

Inspection | Details

Type: Quarterly Tanker/Hydrant Truck

Inspection #: 119735

Location:

X: Y:

Status: Open | Shift:

Initiated Date: 05/01/2024 13:40 PM | Initiated By: Russell, Nathan

Event Date: | Inspected By:

Completed Date:

Closed By: | Date Closed:

Inspection Type

Fueling Agent

Vehicle ID

Fuel Type

Fuel Trucks

1) Fuel trucks parked 50 ft from buildings and 10 ft apart
☐ Satisfactory ☐ Unsatisfactory ☐ NA

2) Fuel trucks marked with operator name on both sides
☐ Satisfactory ☐ Unsatisfactory ☐ NA

3) No fuel leaks
☐ Satisfactory ☐ Unsatisfactory ☐ NA

4) Vehicle exhaust system - Shielded, leak free, spark arrester if required
☐ Satisfactory ☐ Unsatisfactory ☐ NA

5) No Smoking Sign - cab, no evidence of smoking, no ash tray
☐ Satisfactory ☐ Unsatisfactory ☐ NA

6) Flammable/Product Type/HAZMAT placards on all sides
☐ Satisfactory ☐ Unsatisfactory ☐ NA

7) Bonding cables present, clamps and bayonets secure and functional
☐ Satisfactory ☐ Unsatisfactory ☐ NA

8) Fire Extinguishers: 40 B:C with a minimum capacity 20lbs of dry chem 1 each on hydrant truck and 2 each on tankers.
☐ Satisfactory ☐ Unsatisfactory ☐ NA

9) Deadman Control for all nozzles: not bypassed
☐ Satisfactory ☐ Unsatisfactory ☐ NA

10) Interlock System operational - hoses, lifts and bottom load coupler
☐ Satisfactory ☐ Unsatisfactory ☐ NA

11) Emergency Fuel Shutoffs operational, placards present
☐ Satisfactory ☐ Unsatisfactory ☐ NA

12) Fueling Hoses and Sense Lines - no blistering, cracking, separation, saturation, kinks, or slippage.
☐ Satisfactory ☐ Unsatisfactory ☐ NA

13) Dry Break Couplers/Adapters installed
☐ Satisfactory ☐ Unsatisfactory ☐ NA

14) External Electrical Components - enclosed, gasketed & weatherproof
☐ Satisfactory ☐ Unsatisfactory ☐ NA

15) Dome Covers - forward mounted hinge, gaskets in place
☐ Satisfactory ☐ Unsatisfactory ☐ NA

16) Vehicle DPF Regen Area meets standard
☐ Satisfactory ☐ Unsatisfactory ☐ NA

17) Fuel Vehicle free of FOD and other combustibles
☐ Satisfactory ☐ Unsatisfactory ☐ NA

18) Piping and plumbing secure to prevent chafing and vibration
☐ Satisfactory ☐ Unsatisfactory ☐ NA

19) Fueling vehicle in proper repair
☐ Satisfactory ☐ Unsatisfactory ☐ NA

20) Proper Fueling Procedures Used
☐ Satisfactory ☐ Unsatisfactory ☐ NA

21) Quarterly Inspection Magnet Present? (Please note why if not)
☐ Satisfactory ☐ Unsatisfactory ☐ N/A

Fuel Truck Remarks

Remarks

Reset

Inspection Details

Description:

Resolution Comments:

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AIRPORT SAFETY SELF-INSPECTION CHECKLIST

DATE: _____ DAY: _____ √ Satisfactory

X Unsatisfactory

Day Inspector/Time: _____ Night Inspector/Time: _____

FACILITIES	CONDITIONS	D	N	REMARKS	RESOLVED BY (Date/Initials)
Pavement Areas	Pavement lips over 3"				
	Hole – 5" diam. 3" deep				
	Cracks/spalling/heaves				
	FOD: gravel/debris/sand				
	Rubber deposits				
	Ponding/edge dams				
Safety Areas	Ruts/humps/erosion				
	Drainage/construction				
	Support equipment/aircraft				
	Frangible bases				
	Unauthorized objects				
Markings	Clearly visible/standard				
	Runway markings				
	Taxiway markings				
	Holding position markings				
	Glass beads				
Signs	Standard/meet Sign Plan				
	Obscured/operable				
	Damaged/retroreflective				

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AIRPORT SAFETY SELF-INSPECTION CHECKLIST - Continuation

FACILITIES	CONDITIONS	D	N	REMARKS	RESOLVED BY (Date/Initials)
Lighting	Obscured/dirty/operable				
	Damaged/missing				
	Faulty aim/adjustment				
	Runway lighting				
	Taxiway lighting				
	Pilot control lighting				
Navigational Aids	Rotating beacon operable				
	Wind indicators				
	RENLs/VGSI systems				
Obstructions	Obstruction lights operable				
	Cranes/trees				
Fueling Operations	Fencing/gates/signs				
	Fuel marking/labeling				
	Fire extinguishers				
	Frayed wires				
	Fuel leaks/vegetation				
Snow & Ice	Surface conditions				
	Snowbank clearances				
	Lights & signs obscured				
	NAVAIDs				
	Fire access				

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AIRPORT SAFETY SELF-INSPECTION CHECKLIST - Continuation

FACILITIES	CONDITIONS	D	N	REMARKS	RESOLVED BY (Date/Initials)
Construction	Barricades/lights				
	Equipment parking				
	Material stockpiles				
	Confusing signs/markings				
Aircraft Rescue and Fire Fighting	Equipment/crew availability				
	Communications/alarms				
	Response routes affected				
Public Protection	Fencing/gates/signs				
	Jet blast problems				
Wildlife Hazards	Wildlife present/location				
	Complying with WHMP				
	Dead birds				

Comments/Remarks: _____

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FIRE SAFETY INSPECTION - AIRCRAFT FUEL SERVICING TRUCKS

Type Inspection: Quartely____ Follow Up____ Other_____

Inspector: _____ Fueling Agent:_____ Date: _____

Enter an "S" or "U" in blocks 1-19. S = Satisfactory; U = Unstaisfactory

Criterion	Truck Number, Fuel Type	Truck Number, Fuel Type	Truck Number, Fuel Type
1. Fuel Trucks Parked 50 ft from buildings and 10 ft apart			
2. Fuel trucks marked with operator name on both sides			
3. No Fuel leaks			
4. Vehicle exhaust system - Shielded, leak free, spark arrester if required			
5. No Smoking Sign - cab, no evidence of smoking, no ash tray			
6. Flammable/Product Type/HazMat placards on all sides			
7. Bonding cables present, clamps and bayonets secure and functional			
8. Fire Extinguishers: 80-B:C, 2 ea on tankers, 1 ea on hydrant vehicles			
9. Deadman Control for all nozzles: not bypassed			
10. Interlock System operational - hoses, lifts and bottom load coupler			
11. Emergency Fuel Shutoffs operational, placards present			
12. Fueling Hoses - no blistering, cracking, separation, saturation, kinks			
13. Dry Break Couplers/Adapters installed			
14. External Electrical Components - enclosed, gasketed & weatherproof			
15. Dome Covers - forward mounted hinge, gaskets in place			
16. Vehicle DPF Regen Area meets standard			
17. Fuel Vehicle free of FOD and other combustibles			
18. Piping & plumbing secure to prevent chafing & vibration			

19. Proper Fueling Procedures Used ☐

Remarks: (Enter line number & remark)

Inspection Crteria based on NFPA 407, Standard for Aircraft Fuel Servicing, 2017 Edition

FIRE SAFETY INSPECTION - FUEL STORAGE AREAS & LOADING STATIONS

Type Inspection: Quartely____ Follow Up____ Other_____

Inspector: _____ Fueling Agent:_____ Date: _____

Enter an "S" or "U" in blocks 1-19. S = Satisfactory; U = Unstaisfactory

Criterion	Jet A Section	100LL Section
1. Entrances to fueling areas posted with "No Smoking" signs		
2. No Evidence of smoking		
3. All tanks machinery & piping is bonded or grounded		
4. Areas around tanks are free of weeds, trash or combustible material		
5. Emergency Fuel Shutoffs provided outside probable spill areas		
6. Emergency Fuel Shutoff Placards are 7 ft above grade		
7. Emergency Fuel Shutoff access kept clear and tested every 6 months		
8. Fuel servicing equipment properly maintained and free of leaks		
9. Procedures for prevention & control of spills and FD notification posted		
10. Bonding Connection available for loading stations		
11. Deadman controls available for loading stations - not bypassed		
12. Dry Break Couplers/Adapters installed		
13. Fueling hose - no blistering, cracking separation, saturation, kinks		
14. Fueling hydrants, pits, cabinets located 50 ft from bldgs except jetways		
15. Fire Extinguishers at fuel storage and loading stations		
16. At least 1 wheeled fire extinguisher if > 200 GPM fueling sys or equip.		
17. Explosion proof electrical equipment		
18. Above ground piping on AOA protected by guardrail or bollards		

19. Proper Fueling Procedures Used ☐

Remarks: (Enter line number & remark)

Inspection Crteria based on NFPA 407, Standard for Aircraft Fuel Servicing, 2017 Edition

FEDERAL AVIATION ADMINISTRATION
FEB - 6 2020
WLR
INSPECTOR

FIRE SAFETY INSPECTION - AIRCRAFT FUEL SERVICING HYD CARTS

Type Inspection: Quartely____ Follow Up____ Other_____

Inspector: _____ Fueling Agent:_____ Date: _____

Enter an "S" or "U" in blocks 1-14. S = Satisfactory; U = Unstaisfactory

Criterion	Truck Number, Fuel Type	Truck Number, Fuel Type	Truck Number, Fuel Type
1. Hydrant Cart parked in designated spot			
2. Hydrant Cart marked with operator name			
3. No Fuel leaks			
4. No Smoking Signs - no evidence of smoking, ignition sources			
5. Flammable/Product Type/HazMat placards on all sides			
6. Bonding cables present, clamps and bayonets secure and functional			
7. Fire Extinguishers: 80-B:C, 1 ea on hydrant carts			
8. Deadman Control for all nozzles: not bypassed			
9. Emergency Fuel Shutoffs operational, placards present			
10. Fueling Hoses - no blistering, cracking, separation, saturation, kinks			
11. External Electrical Components - enclosed, gasketed & weaterproof			
12. Hydrant Cart and Immediate Area free of FOD and other combustibles			
13. Piping & plumbing secure to prevent chafing & vibration			

14. Proper Fueling Procedures Used ☐

Remarks: (Enter line number & remark)

Inspection Crteria based on NFPA 407, Standard for Aircraft Fuel Servicing, 2017 Edition

FEDERAL AVIATION ADMINISTRATION

FEB - 6 2020

WLR
INSPECTOR

APPENDIX G

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May 04 2023

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APPENDIX H

SNOW AND ICE CONTROL PLAN

Snow and Ice Control Plan

Charlotte Douglas International Airport

CHARLOTTE DOUGLAS SM
INTERNATIONAL AIRPORT

Federal Aviation Administration
Southern Region Airports Division
Approved
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Phase #1

Pre- and Post-Winter Season Topics

Chapter 1 - Pre-Season Actions

1.1 Airport Preparation

a) Airport Management Meetings

The Airside Operations Manager will initiate a meeting prior to the winter season to discuss with airport tenants and carriers the overall operations required for the upcoming inclement weather season. This meeting will discuss roles of various airport personnel, equipment and material inventory, staffing, training, issues from the previous year, and any other topics relevant to the Snow and Ice Control Plan (SICP).

b) Personnel Training

i. Airside Operations

1) Each year prior the beginning of the snow season, Airside Operations will conduct training with its personnel to include:
   - (a) Aircraft deicing operations (pad locations)
   - (b) Types of Glycol
   - (c) Deicing Configurations
   - (d) Importance and timing of pre & post-event meetings
   - (e) Snow Desk roles
   - (f) Snow teams and assignments
   - (g) Notification procedures for snow events
   - (h) Condition Reporting updates
   - (i) FICONs

2) Airside Operations will retain their own records in the Airside Operations Office.

ii. Airport Facilities

1) Each year prior to the beginning of the snow season, Airport Facilities will conduct training with its personnel to include:
   - (a) Tabletop exercise to go over movement area snow and ice clearing, and treatment.
   - (b) Field exercises will be conducted in order of set priorities. These exercises will include all equipment required to remove and treat movement area surfaces.

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(c) All staff involved with airfield snow and ice removal operations will participate in an airfield movement area training class.

c) Equipment Preparation

CLT has Bowmonk AFM2 friction measuring devices that will be calibrated, updated and certified once per year, or earlier if the instrument warns of a calibration fault. Each unit will be calibrated once, after the end of the previous snow season, but before the beginning of the next.

Airport Vehicle Maintenance staff will inspect and prepare each piece of snow removal equipment. Required fluids, replacement parts, and snow removal equipment components will be inventoried and stockpiled.

1.2 Snow and Ice Control Committee (SICC) Meetings

a) SICC Meetings

The Airport has developed two Snow and Ice Control Committees (SICCs). One is dedicated to providing feedback, making recommendations and updating the SICP, while the second is responsible for the Airport Deicing Plan, each with dedicated meetings. Due to the complex nature of both the SICP and Airport Deicing Plan, the decision was made to cover each with a separate SICC. Each SICC meets at least annually, with Airside Operations leading and acting as the chair for each.

Through both SICC groups, the following general topics will be discussed:

- Changes to airport staff, equipment, runway chemicals, and airport clearing procedures;
- Changes to air carrier ground deicing/anti-icing programs;
- Lessons learned from actual events encountered.

b) SICC Members – Airport Snow Removal Operations

The following departments and tenants will be invited to attend the SICC pre and post-season meetings for the SICP.

i. CLT Airside Operations
ii. CLT Airfield Maintenance
iii. CLT Development & Engineering (D & E)
iv. CLT Admin & Executive Leadership
v. CLT Environmental

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vi. FAA (ATCT, Support Staff, Tech Ops, FSS)
vii. Aircraft Deicing Provider(s)
viii. Airline Leadership
ix. Cargo Carriers
x. FBO
xi. Charlotte Fire Department (CFD)
xii. North Carolina Air National Guard (NCANG)

The following topics will be considered and discussed by the above SICC and its members:

- Areas designated as Priority 1, to include any new infrastructure;
- Clearing operations and follow-up airfield assessments and reporting actions to further mitigate the potential for pilot and vehicular surface incidents or runway incursions;
- Staff requirements and qualifications (training) for snow crews and Snow Control Center staff;
- Updated training program;
- Streamlined decision making process, the "chain-of-command" authority;
- Response time to keep runways, taxiways and ramp areas operational;
- Communication, terminology, frequencies, and procedures with the Air Traffic Control Tower (ATCT), snow crews, and the Snow Control Center;
- Monitoring and updating of runway surface conditions after a clearing operation and deicing;
- Issuance of NOTAMs and dissemination to air carriers and other airport tenants to meet timely notification requirements;
- Equipment inventory, including assessing the condition of snow control equipment, scheduling repairs, and stocking spare parts;
- Status of procurement contracts and specifications for new vehicles or equipment;
- Preventative maintenance program for snow control equipment and maintenance and calibration for friction measuring equipment;
- Status of procurement contracts and specifications for deicer-/anti-icer materials, including their storage before the first snowfall;
- Validation of deicer certification letters from vendors;
- Procedures for storm water runoff mitigation;
- Snow hauling and/or disposal plan, including sites for dumping snow or positioning of portable melter equipment for melting snow in place;
- New runoff requirements for containment and/or collection of deicing chemicals and vehicle maintenance fluids;
- Changes to or the addition of new contract service for clearing aprons.

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A pre-season SICC meeting will take place in the fall of each year to review recommendations made at the last post-season meeting, in reference to the SICP. The pre-season meeting typically takes place in October of each year.

After each SICC meeting, a copy of the materials covered will be provided to attendees, as well as those not able to attend.

c) SICC Members – Air Carrier Ground Deicing/Anti-Icing Programs

The following departments and tenants will be invited to attend the SICC pre-and post-season meeting (as well as post-event meetings) to discuss updates to the Deicing Plan.

i. CLT Airside Operations
ii. CLT Airfield Maintenance
iii. CLT Development & Engineering (D & E)
iv. CLT Admin & Executive Leadership
v. FAA (ATCT, Support Staff, Tech Ops, FSS)
vi. Aircraft Deicing Provider(s)
vii. Supplemental Contractors
viii. Airline Leadership
ix. Cargo Carriers
x. FBO
xi. CFD
xii. NCANG

The following topics will be considered and discussed by the above SICC and its members:

- Air Carrier Ground Deicing programs from the previous years
  - Reviewing airplane surface flow strategies
  - Reviewing ground time and takeoff clearance after deicing
  - Analyzing and adjusting to airplane deicing plans
- Actions needed by various parties (i.e., airport operator, aircraft operators, air traffic) to maximize efficiency of operations, including:
  - Identifying locations for airplane deicing that use chemicals
  - Planning taxi routes to minimize ground time
  - Developing rates that control deiced departures
  - Allocating departure slot capacities
  - Determining airport deicing crew needs
  - Verifying communication procedures between air traffic control and airplanes to be deiced
- Any requirements for contaminant/collection of deicing/anti-icings

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A pre-season SICC meeting will take place in the fall of each year to review recommendations made at the last post-season meeting, in reference to aircraft deicing. The pre-season meeting typically takes place in October of each year.

After each SICC meeting, a copy of the materials covered will be provided to attendees, as well as those not able to attend.

The SICP can be found in CLT's Airport Certification Manual, under Appendix H, *Snow and Ice Control Plan*. Also, the Deicing Plan is referenced in the Airport's Storm Water Pollution and Prevention Plan.

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Chapter 2 - Post-Event/Season Actions

2.1 Post-Event.

After each snow event, the Snow Boss, assigned by the COO, shall conduct an after-action review. The purpose of this review will be to critique event procedures, identify strengths and areas of needed improvement, and make any necessary adjustments.

All SICC members listed in 1.2(b) and 1.2(c) will be invited to attend each after-action review and will be encouraged to provide feedback.

Even though a review is hosted after each snow event, all members of the two SICCs will be encouraged to provide feedback to airport management before and during a snow event as well.

During the snow season, winter operational safety will be emphasized with tenants at the monthly tenant safety meetings. An increased number of vehicles on and around the airfield and ramp, low temperatures, precipitation, and fatigue can more easily lead to accidents and incidents. Ways to mitigate them will be an important, ongoing discussion with the airfield tenants.

2.2 Post Season.

After each snow event and snow season, each SICC will hold a meeting to discuss processes that went well, challenges, and ways to improve for the upcoming events, through both the SICP and Deicing Plan. The same topics listed in 1.2(b) and 1.2(c) should be reviewed. The post-season meetings will take place in April or May of each year.

The following will occur after each winter season:

a) Airside Operations

i. Calibrate Bowmonk AFM2 Friction Measuring Devices
ii. Update SICP
iii. Update Deicing Plan

b) Airfield Maintenance

i. All snow and ice removal equipment will be inspected and reconditioned for the next season.

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Phase #2

Winter Storm Actions and Procedures

Chapter 3 - Snow Removal Action Criteria

3.1 Activating Snow Removal Personnel.

a) Clearing Responsibilities

i. Airport Facilities will clear and treat all priorities on the movement area. Airport Development will clear and treat the apron areas outside of the tenant spaces.

b) Weather Forecasting

Local weather conditions are monitored continuously by Airside Operations using information provided by:

- Aviationweather.gov
- National Weather Service in Greenville, South Carolina
- Weather Channel
- Local weather providers

CLT does not have surface condition sensors on any runway or taxiway.

c) Chain of Command

- When forecasts indicate the possibility of snow or freezing precipitation, Airside Operations shall immediately contact the Snow Boss. The Snow Boss shall determine the required personnel, scope of operations, and start time for snow/ice removal operations.
- When snow/ice removal operations appear imminent, the Snow Boss shall conduct a pre-event meeting, which can also be attended via conference call. During this meeting, the Snow Boss will communicate strategies, timelines, and resources to the attendees. Meeting attendees invited will include:

i. CLT Airside Operations
ii. CLT Airfield Maintenance
iii. CLT Development & Engineering (D & E)
iv. CLT Admin & Executive Leadership
v. FAA (ATCT, Support Staff, Tech Ops, FSS)
vi. Aircraft Deicing Provider(s)
vii. Supplemental Contractors
viii. Airline Leadership
ix. Cargo Carriers
x. FBO
xi. CFD
xii. NCANG

After the meeting, the Snow Operations Boss or their Designee will send out a

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summary of the meeting, including a plan for the coming day(s), weather forecasts, and other information as necessary.

d) Snow Team Notifications / Callout Procedures / Hold Over

The Snow Boss will determine the start and end times for snow teams. Typically, a twelve-hour shift is utilized for each snow team, but the start / end times are subject to change based on operational need.

i. Operations

1. When the Snow Boss determines the need for Snow Teams, Airside Operations via the Airside Operations Manager or designee will send out activation notifications to personnel.

ii. Airfield Maintenance

1. The Field Maintenance Manager and/or Deputy Field Maintenance Manager will initiate a snow shift callout.
2. Each team member will be contacted for each shift and a roll call will be conducted by the shift supervisor.

e) Monitoring Airfield Conditions

The airfield will be monitored and inspected by Airside Operations.

i. Airside Operations and Airfield Maintenance will coordinate the assessment of the airfield using:

1. Friction Surveys
2. Runway assessments to determine the inputs for the Runway Condition Assessment Matrix (RCAM) and determination of the Runway Condition Code (RwyCC).

   Having both departments actively assess will allow for a more accurate survey of field conditions and a more proactive approach to treatment.

i. The airfield will be inspected and runway condition reports updated at the following frequencies:

1. After a weather event;
2. After the application of chemicals;
3. After plowing or sweeping operations;

No aircraft shall be allowed to operate on a runway after any of the above events, until an inspection takes place, and a new runway assessment is conducted,

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identifying the changed condition(s) and the effectiveness of mitigations and treatments and ensuring no new hazards have been inadvertently introduced. Mitigation efforts can be used to improve the conditions, in which a new runway assessment would be conducted. For example, if any third of a runway receives an RwyCC of "0", the runway would be closed until mitigation actions are performed and the unsafe conditions no longer exist. After mitigating actions, CLT will reassess the runway conditions and determine whether a different runway condition applies, following Steps 1 – 3 in 5.2 (a), below. This process differs from the upgrade process, which is based on an improvement of friction within the existing contaminants.

Also, new runway condition reports (airfield inspections conducted) should be completed at the beginning of each shift of Airside Operations personnel, when conditions are not changing but contaminants are present. This will provide the oncoming shift with a current view of the airfield conditions.

In addition, Daily, Continuous, Periodic, and Special inspections should be conducted as required and necessary to fulfill FAA and Operations requirements. Regular airfield inspections during snow events will require one Airside Operations staff.

ii. To enhance the safety of plowing operations, which frequently contain periods of heightened radio traffic and reduced visibility, the following procedure will be followed:

1. The lead vehicle for each Runway and Taxiway plow team will be operated by Airfield Maintenance and will be monitored by Airside Operations.

The process for reporting runway conditions to determine Runway Condition Codes (RwyCCs) (when applicable) will be covered below in Chapter 5.

f) Triggers for Initiating Snow Removal Operations

Pre-treatment will begin prior to precipitation only when conditions are relevant. Snow removal operations will begin when contaminants begin accumulating on pavement surfaces.

3.2 Personnel Responsible.

Below is a description of each key personnel and their descriptions:

a) Chief Operating Officer (COO) or CIO (Chief Infrastructure Officer)

1. Overall responsibility for the operation of the airfield.

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2. Oversees and assigns Snow Boss for each shift.

b) The Directors of Operations or Facilities / Assigned Snow Boss or Designee

1. Overall plan direction and implementation.

2. Determining when snow and ice removal operations will begin and end.

2. Establishing priorities for cleaning surfaces based upon field conditions, weather forecasts, and consultation with tenants and the FAA.

4. Determining field conditions and disseminating reports.

5. Providing information to Public Affairs for dissemination to the public.

6. Conducting pre-event meetings, preparedness exercises and post-event after action reviews to assess snow removal readiness, training, and operational conduct.

c) Field Maintenance Manager and Deputy Field Maintenance Manager

Act as the primary Snow/Ice Removal Operations Managers. Other CLT managers may serve in this capacity on a rotating basis during actual snow removal operations. They are responsible for snow, slush and ice removal.

1. Directing the operation of snow removal personnel and equipment.

2. Assisting with CLT snow removal operational procedures.

3. Supervision of snow, slush and ice removal on runways, taxiways, commercial aprons, cargo aprons, pedestrian areas, and AOA vehicle roadways. Inspecting all snow removal equipment prior to and immediately following each snow, slush, and ice control event.

3. Procuring equipment and supplies necessary to conduct snow and ice removal operations.

4. Conducting pre-event meetings, preparedness exercises and post-event after action reviews to assess snow removal readiness.

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5. Maintenance of airfield lighting systems and directing airfield lighting crews.

d) Airside Operations Manager or their Designee

Will establish a Snow Desk which will be responsible for:

1. Disseminating up-to-date airfield condition reports to necessary parties.

2. Communicating with airlines, tenants, and the FAA regarding the status of the CLT snow removal operations.

3. Escorting as necessary.

4. Operation of the Snow Desk:

   a. The Snow Desk will be staffed by Airport Operations personnel in the Airport Emergency Operations Center (AEOC). The number for the Snow Desk is 704-359-4333.

   b. In support of the Snow Desk operation, there may be additional Operations employees staffing the Ramp Tower. Their primary function will be to coordinate winter operations with the deicing contractor and with the airlines. The number for the Ramp Tower Desk is 704-359-4332.

5. Input runway field conditions and NOTAMS into the FAA Digital NOTAM Manager and generate RwyCCs as applicable.

6. Opening and closing runways and taxiways.

e) Fleet Manager / Chief Mechanic

Responsible for the repair, maintenance and installation of all snow removal equipment.

f) Director of Development and Contractor Team Coordinator

1. Contacting and arranging the use of contracted, supplemental snow removal equipment.

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2. Coordinating and directing the actions of snow removal contractors on the air carrier apron.

g) Airport Logistics Manager or Designee

1. Procurement and acquisition of supplies and commodities prior to, during, and after the snow/ice event.

2. Provide support to the Chief Auto Mechanic with minor repairs and installation of components on snow removal equipment.

3. Accounting for snow/ice removal chemicals

h) Airlines

1. Maintaining and clearing gates.

2. Removed materials must be pushed beyond apron roadway markings, which will then be removed to designated areas.

3.3 Snow Desk

The Snow Desk, which serves as the Snow Control Center (SCC), is located in the AEOC and operated by Airport Operations Personnel, along with an Airside Operations Staff.

a) Hours of Operations

The Snow Desk is operated 24/7 during a snow event.

b) Methods of Contact

The Snow Desk has the following means of communications:

i. Dedicated landline Snow Phone (704) 359 – 4333

ii. Avtec phone / radio console with the following channels

1. AIR-OP1: Airside Operations

2. AIRFIELD: Airfield Maintenance

3. Events: Airside Operations, Airfield Maintenance, and other dedicated groups can be moved to discrete, separate channels to maintain an acceptable level of traffic on each frequency.

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iii. Emergency Notification System (ENS)
Airport Operations can send out a Notification via the Airports mass notification system to airport tenants informing them of a snow event.

c) Field Condition Updates

In order to maintain a central location for information collection and dissemination, all field conditions are required to go directly from the personnel conducting airfield inspections and assessments to the Snow Desk. The conditions are then disseminated to the ATCT and tenants via NOTAMs submitted by the Snow Desk. Mu values will not be disseminated to aircraft operators or the ATCT.

The Snow Desk will:

i. Document in the Records Management System

1. Surfaces closed
2. Surfaces being inspected
3. Airfield inspections in progress

ii. In a dedicated Snow Log, the Snow Desk will record:

1. Times and widths of airfield surfaces cleared
2. Conditions* at the start of each operations shift
3. Conditions after each clearing operation
4. Type and quantity of chemicals applied

*Conditions to be collected will include type & depth of contaminant, along with the Outside Air Temperature (OAT) in degrees Celsius (ºC). The type and depth of contaminant, along with OAT will later be entered into the FAA Digital NOTAM Manager, as outlined below in Chapter 5 to determine if an RwyCC is generated.

iii. Act as the sole source for:

1. Opening and closing runways and taxiways, including disseminating closures through the FAA Digital NOTAM Manager.
2. Coordination between the runway and taxiway plow teams, and the ATCT cab.

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3. Collecting airfield condition reports, entering conditions into the FAA Digital NOTAM Manager, applying upgrades and downgrades (as applicable), and submitting FICONs.

4. Communicating airfield conditions to the ATCT. Airfield conditions will be disseminated to the ATCT cab (704-790-5460), unless otherwise directed to disseminate to the TRACON (704-790-5453).

5. Disseminating field conditions to air carriers and cargo carriers.

6. To demonstrate compliance with the SICP, document when and where Snow and Ice Control activities have taken place.

3.4 Airfield Clearing Priorities.

During inclement weather, CLT generally operates in a northern operation for deicing of aircraft, and runway arrivals/departures. Snow Clearing diagrams are provided in Appendix B, *Snow Clearing Equipment*.

a) Priority 1 (North Ops)

i. Runway 18C/36C
ii. Taxiway E
iii. Taxiway F
iv. Taxiways E14 and E16
v. Taxiway U
vi. Appropriate high speeds (E6, E8)
vii. Runway 18L/36R
viii. Taxiway C (including C1)
ix. Taxiway R
x. Taxiway G
xi. Appropriate high speeds (R, C10)
xii. Taxiway J between RWY 18L/36R and TWY E
xiii. Taxiway A between RWY 18L/36R and TWY E
xiv. ARFF Station 17
xv. ARFF Station 41 (including TWY S between Station 41 and RWY 18C/36C **or** alternate access route due to construction)
xvi. Field Gate 4047 access road
xvii. Taxiway C stubs, west of TWY C (for access to South Cargo Deice Pads)
xviii. Deicing Pads (Central Deicing Pad and South Cargo)

b) Priority 2 (North Ops)

i. Runway 18R/36L
ii. Taxiway N **or** S (depending on construction closures)
iii. Taxiway W (including W1)
iv. Appropriate high speeds (W7, W8)

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v. Taxiway M, from F to C
vi. Taxiway V between TWY N and TWY L
vii. Taxiway L
viii. Taxiway V
ix. Taxiways V4 and V5
x. Taxiway W9
xi. TWY T

c) Priority 1 (South Ops)

i. Runway 18C/36C
ii. Appropriate high speeds (E4, E5)
iii. Taxiway E
iv. Taxiway L, east of RWY 18C/36C
v. Taxiway E17
vi. Taxiway S between RWY 18C/36C and TWY F
vii. Taxiway F
viii. Runway 18L/36R
ix. Taxiway C (including C1 and C12)
x. Taxiway C4 (high speed)
xi. Taxiway R
xii. Taxiway G
xiii. TWY J between TWY E and RWY 18L/36R
xiv. Taxiway A between TWY C and TWY E
xv. ARFF Station 17
xvi. ARFF Station 41 (including TWY S between Station 41 and RWY 18C/36C **or** alternate access route due to construction)
xvii. Field Gate 4047 access road
xviii. Deicing Pad (Central Deice Pad, including TWY U)

d) Priority 2 (South Ops)

i. Runway 18R/36L
ii. Taxiway N **or** S (depending on construction closures)
iii. Taxiway W (including TWY W at the approach end of RWY 18R and TWY W1)
iv. Appropriate high speeds (W3, W4)
v. Taxiway M between TWY F and TWY C
vi. Taxiway V between TWY N and TWY S
vii. Taxiways V4 and V5
viii. Taxiways C6, E14, E16

e) Priority 3 (South Ops)

i. Taxiway V between TWY N and TWY L
ii. Taxiway L, west of RWY 18C/36C

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iii. Taxiway T

f) Priority 2 Non-Movement Areas

i. Air Carrier aprons
ii. Ramp around A, B, C, D, and E concourses
iii. FBO Apron

3.5 Airfield Target Clearance Times

Airfield Clearance times comply with Table 1-1 (below).

Table 1-1. Clearance Times for Commercial Service Airports

Annual Airplane Operations (includes cargo operations)	Clearance Time[1] (hour)
40,000 or more	1/2
10,000 – but less than 40,000	1
6,000 – but less than 10,000	1 1/2
Less than 6,000	2

General: Commercial Service Airport means a public-use airport that the U.S. Secretary of Transportation determines has at least 2,500 passenger boardings each year and that receives scheduled passenger airplane service [see 49 U.S.C. 47102(7)].

Footnote 1: These airports should have sufficient equipment to clear 1 inch (2.54 cm) of falling snow weighing up to 25 lb/ft^3 (400 kg/m^3) from Priority 1 areas within the targeted clearance times.

3.6 Snow Equipment List.

A list of snow removal equipment can be found in Appendix A, *Equipment List*. A list of contractor equipment can be found in Appendix C, *Contractor Equipment*.

3.7 Storage of Snow and Ice Control Equipment.

All snow equipment will be properly stored prior to and after a snow and ice event. Also, all snow and ice removal equipment will be inspected before and after each use to determine if additional maintenance is necessary.

The most current version of AC 150/5220-20, *Airport Snow and Ice Control Equipment* is used to provide guidance for selecting the number and type of equipment to meet targeted clearance times.

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3.8 Definitions.

Ash
Ash is a grayish white to black solid residue of combustion normally originating from pulverized particulate matter ejected by volcanic eruption.

Compacted Snow
Compacted snow is snow that has been compressed and consolidated into a solid form that resists further compression such that an airplane will remain on its surface without displacing any of it. If a chunk of compressed snow can be picked up by hand, it will hold together or can be broken into smaller chunks rather that falling away as individual snow particles.

> **Note:** A layer of compacted snow over ice must be reported as compacted snow only.
>
> **Example:** When operating on the surface, significant rutting or compaction will not occur. Compacted snow may include a mixture of snow and embedded ice; if it is more ice than compacted snow, then it should be reported as either ice or wet ice, as applicable.

Contaminant
A contaminant is a deposit such as frost, any snow, slush, ice, or water on an airport pavement where the effects could be detrimental to the friction characteristics of the pavement surface.

Contaminated Runway
For purposes of generating a runway condition code and airplane performance, a runway is considered contaminated when more than 25 percent of the overall runway length and width coverage or cleared width is covered by frost, ice, or any depth of snow, slush, or water.

When runway contaminants exist, but overall coverage within the area of the runway that is being maintained is 25 percent or less, the contaminants will still be reported. However, a runway condition code will not be generated.

Note: While mud, ash, sand, and oil are reportable contaminants, there is no associated airplane performance data available for these contaminants and no Runway Condition Code (RwyCC) will be reported. Mud is the only contaminant in this reference where a measured depth is reportable.

Exception: Rubber is not subject to the 25 percent rule, and will be reported as Slippery When Wet when the pavement evaluation/friction deterioration indicates the averaged Mu value on the wet pavement surface is below the Minimum

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Friction Level classification specified in Table 3-2, Friction Level Classification for Runway Pavement Surfaces, of AC150/5320-12, *Measurement, Construction, and Maintenance of Skid-Resistant Airport Pavement Surfaces*.

Dry Runway/Pavement

Use the term "DRY" to describe runway/pavement surfaces that are neither wet nor contaminated. A FICON NOTAM must not be originated for the sole purpose of reporting a dry runway. A dry runway surface should be reported only when there is need to report conditions on the remainder of the surface.

Dry Snow

Dry snow is snow that has insufficient free water to cause it to stick together. This generally occurs at temperatures well below 32° F (0° C). If when making a snowball, it falls apart, the snow is considered dry.

Eutectic Temperature/Composition

A deicing chemical melts ice by lowering the freezing point. The extent of this freezing point depression depends on the chemical and water in the system. The limit of freezing point depression, equivalent to the lowest temperature that the chemical will melt ice, occurs with a specific amount of chemical. This temperature is called the eutectic temperature, and the amount of chemical is the eutectic composition. Collectively, they are referred to as the eutectic point.

FICON (Field Condition Report)

A FICON is a Notice to Airmen (NOTAM) generated to reflect pavement surface conditions on runways, taxiways, and aprons and Runway Condition Codes (RwyCCs) if greater than 25 percent of the overall runway length and width coverage or cleared width of the runway is contaminated.

Frost

Frost consists of ice crystals formed from airborne moisture that condenses on a surface whose temperature is below freezing. Frost differs from ice in that the frost crystals grow independently and therefore have a more granular texture.

Note: Heavy frost that has noticeable depth may have friction qualities similar to ice and downgrading the runway condition code accordingly should be considered. If driving a vehicle over the frost does not result in tire tracks down to bare pavement, the frost should be considered to have sufficient depth to consider a downgrade of the runway condition code.

Ice

Ice is the solid form of frozen water including ice that is textured (i.e., rough or scarified ice).

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Note: A layer of ice over compacted snow must be reported as ice only.

Layered Contaminant

A layered contaminant is a contaminant consisting of two overlapping contaminants. The RCAM identifies the approved list of layered contaminants, including:

1. Dry Snow over Compacted Snow
2. Wet Snow over Compacted Snow
3. Slush over Ice
4. Water over Compacted Snow
5. Dry Snow over Ice
6. Wet Snow over Ice

Mud

Mud is wet, sticky, soft earth material.

Multiple Contaminants

Multiple contaminants are a combination of contaminants (as identified in the RCAM) observed on paved surfaces. When reporting multiple contaminants, only the two most prevalent contaminants are reported. When reporting on runways, up to two contaminant types may be reported for each runway third. The Runway Condition Code (when applicable) will be based on the most hazardous contaminant, when both contaminants are not from the same category in the RCAM. The reported contaminants may consist of a single and layered contaminant, two single contaminants, or two layered contaminants. The reporting of “multiple contaminants” represent contaminants which are located adjacent to each other, not to be confused with a “layered contaminant” which is overlapping. For example:

- Single contaminant and Layered contaminant.

  ‘Wet’ and ‘Wet Snow over Compacted Snow’

- Single contaminant and Single contaminant.

  ‘Wet Snow’ and ‘Slush’

- Layered contaminant and Layered contaminant.

  ‘Dry Snow over Compacted Snow’ and ‘Dry Snow over Ice’

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Oil

Oil is a viscous liquid, derived from petroleum or synthetic material, especially for use as a fuel or lubricant.

Runways (Primary and Secondary)

Primary

Primary Runways are runways being actively used or expected to be used during existing or anticipated adverse meteorological conditions, where the majority of the takeoff and landing operations will take place.

Secondary

Secondary runways are runways that support a primary runway and is less operationally critical. Takeoff and landing operations on such a runway are generally less frequent than on a primary runway. Snow removal operations on these secondary runways should not occur until Priority 1 surfaces are satisfactorily cleared and serviceable.

Runway Condition Assessment Matrix (RCAM)

The RCAM is the tool (Table 5-2) by which an airport operator will assess a runway surface when contaminants are present.

Runway Condition Code (RwyCC)

Runway Condition Codes describe runway conditions based on defined contaminants for each runway third. Use of RwyCCs harmonizes with ICAO Annex 14, providing a standardized “shorthand” format (e.g.,4/3/2) for reporting. RwyCCs are used by pilots to conduct landing performance assessments. RwyCCs are reported based on the direction of the assessment and may read in reverse when aircraft are operating from the opposite direction.

Sand

Sand is a sedimentary material, finer than a granule and coarser than silt.

Slippery When Wet Runway

For runways where a friction survey (conducted for pavement maintenance) indicates the averaged Mu value at 40 mph on the wet pavement surface failed to meet the minimum friction level classification specified in AC 150/5320-12, *Measurement, Construction, and Maintenance of Skid Resistant Airport Pavement Surfaces*, the airport operator must report via the NOTAM system a RwyCC of ‘3’ for the entire runway (by thirds: 3/3/3) when the runway is wet. The runway condition description “Slippery When Wet” is used for this condition. **Do not report a “Wet” runway when a “SLIPPERY WHEN WET” NOTAM is in effect.** When a “SLIPPERY WHEN WET" NOTAM is in effect, report the runway condition “Slippery When Wet “instead of “Wet” or the relevant

thirds. If airport operator judgment deems a downgrade is necessary, the downgrade must be made such that all three runway thirds match (i.e. 3/3/3, 2/2/2, 1/1/1). An airport may discontinue the use of this NOTAM when the runway minimum friction level classification has been met or exceeded.

Slippery When Wet is only reported when a pavement maintenance evaluation indicates the averaged Mu value on the wet pavement surface is below the Minimum Friction Level classification specified in Table 3-2 of AC 150/5320-12. Some contributing factors that can create this condition include rubber buildup, groove failures/wear, and pavement macro/micro textures.

Slush

Slush is snow that has water content exceeding a freely drained condition such that it takes on fluid properties (e.g., flowing and splashing). Water will drain from slush when a handful is picked up. This type of water-saturated snow will be displaced with a splatter by a heel and toe slap-down motion against the ground.

Slush over Ice

See individual definitions for each contaminant.

Water

Water is the liquid state of water. For purposes of condition reporting and airplane performance, water is greater than 1/8-inch (3mm) in depth.

Wet Ice

Wet ice is ice that is melting, or ice with a layer of water (any depth) on top.

Wet Runway

A runway is wet when it is neither dry nor contaminated. For purposes of condition reporting and airplane performance, a runway can be considered wet when more than 25 percent of the overall runway length and width coverage or cleared width being used is covered by any visible dampness or water that is 1/8-inch (3 mm) or less in depth.

Wet Snow

Wet snow is snow that has grains coated with liquid water, which bonds the mass together, but that has no excess water in the pore spaces. A well-compacted, solid snowball can be made, but water will not squeeze out.

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Chapter 4 - Snow Clearing Operations and Ice Prevention

4.1 Snow Clearing Principals.

a) Ramp and Terminal

CLT hires contractors to clear snow once the airlines have pushed it out of the gate areas. Contractors also clear lead-in paths on the non-movement surfaces. The snow that is cleared is placed in locations that will not create obstructions and will not block or impede pilots' views.

The Airport will take care to ensure, as much as possible, the prevention of slick apron surfaces, prevention of surface irregularities (such as frozen ruts), obscuration of taxiway signage, and terminal visual aids, and creating stockpiles adjacent to airplane operating areas.

b) Runway and Taxiways

Runway plow teams plow and treat the full width of each runway in a close wing formation. This team consists of 4 Vammas multifunction machines and one deicing unit.

Taxiways plow teams clear and treat priority taxiways edge line to edge line in close wing formation. This team consists of 7 dump trucks with plows and 1 deicing unit.

c) Engineered Materials Arresting System (EMAS)

Airfield Maintenance will determine appropriate actions for the removal of contaminants from the EMAS, per AC 150/5220-22, *Engineered Materials Arresting Systems (EMAS) for Aircraft Overruns* and the Manufacturer's procedures, provided by ESCO.

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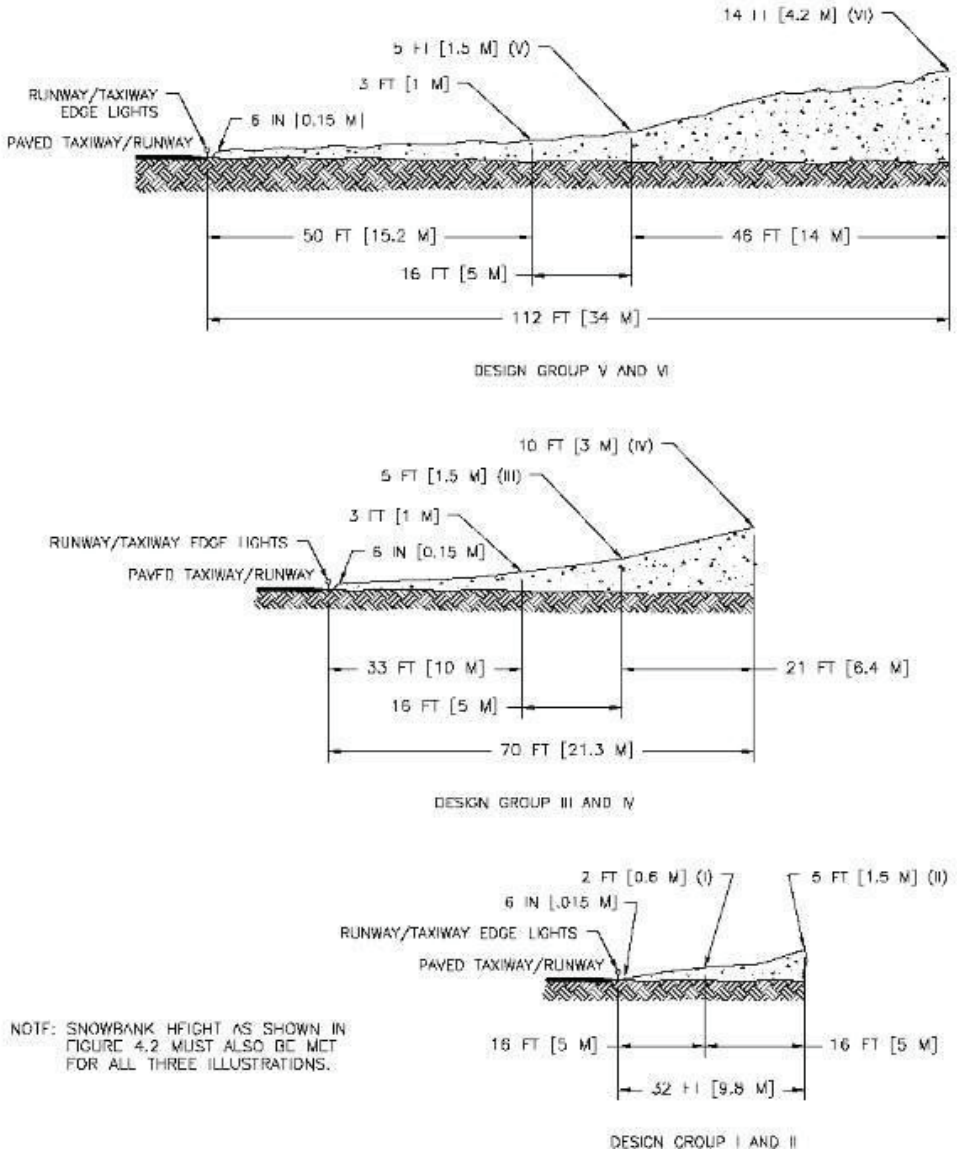
d) Snowbanks

Figure 4-1. Snow Bank Profile Limits Along Edges of Runways and Taxiways with the Airplane Wheels on Full Strength Pavement (see Figure 4-2 guidance)



Snowbanks will be addressed using 2 loaders with avalanche plows and 1 rotary plow (in accordance Figures 4-1 and 4-2 below), on the airfield and around the ramp.

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e) Navigational Aids (NAVAIDs)

NAVAIDs are the responsibilities of the owner or operator. Charlotte Airport only owns and operates the PAPIs on Runway 18R/36L, which are maintained by Airfield Maintenance.

4.2 Controlling Snow Drifts.

CLT does not regularly receive levels of snow that generate snow drifts. If snow drifts are generated, the plow team will clear the areas with a rotary plow.

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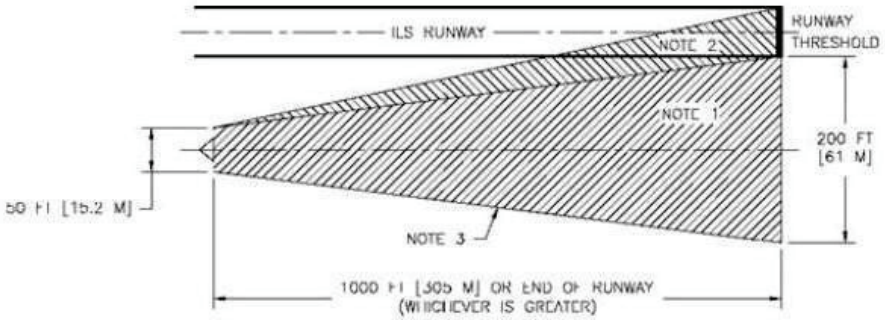
Figure 4-2. ILS CAT I and CAT II/III Snow Clearance Area Depth Limitations

4.3



NOTES:

1. CATEGORY I GLIDE SLOPE SNOW CLEARANCE AREA.
2. CATEGORY II AND III GLIDE SLOPE SNOW CLEARANCE AREA. THE AREA DEPICTED UNDER NOTE 1 SHALL ALSO BE CLEARED.
3. THE DEPTH OF SNOWBANKS ALONG THE EDGES OF THE CLEARED AREA SHALL BE LESS THEN 2 FEET.

ACTION TAKEN	SNOW DEPTH		
	SBR <6 IN [15 cm] NR. CEGS <18 IN [45 cm]	SBR 6 TO 8 IN [15 TO 20 cm] NR. CEGS 18 TO 24 IN [45 TO 60 cm]	SBR >8 IN [20 cm] NR. CEGS <24 IN [60 cm]
SNOW REMOVAL (SEE ABOVE FIGURE)	REMOVAL NOT REQUIRED RESTORE FULL SERVICE AND CATEGORY.	ILS CATEGORY I REMOVE SNOW 50 FT [15M] WIDE AT MAST WIDENING TO 200 FT [60M] WIDE AT 1000 FT [300M] OR END OF RUNWAY TOWARD MIDDLE MARKER. ILS CATEGORIES II AND III AS ABOVE PLUS WIDEN THE AREA TO INCLUDE A LINE FROM THE MAST TO THE FAR EDGE OF RUNWAY THRESHOLD.	
NO SNOW REMOVAL	RESTORE FULL SERVICE AND CATEGORY.	ALL CATEGORIES RESTORE TO CATEGORY I SERVICE. CATEGORY D AIRCRAFT MINIMA RAISED TO LOCALIZER ONLY. TYPICAL NOTAM TEXT: "DUE TO SNOW ON THE IXXX (APPROPRIATE IDENTIFER) GLIDE SLOPE, MINIMA TEMPORARILY RAISED TO LOCALIZER ONLY FOR CATEGORY D AIRCRAFT" IF APPLICABLE, "CAILGORY II NA"* OR "CATEGORY II/III NA".	ALL CATEGORIES APPROACH RESTRICTED TO LOCALIZER ONLY MINIMA. TYPICAL NOTAM TEXT: "DUE TO SNOW ON THE IXXX (APPROPRIATE IDENTIFER) GLIDE SLOPE, MINIMA TEMPORARILY RAISED TO LOCALIZER ONLY.

* NA (NOT AUTHORIZED)

Snow Disposal.

Snow is hauled to a location away from all movement areas to melt, dependent upon availability so it does not interfere with aircraft operations.

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4.4 Methods for Ice Control and Removal – Chemicals.

CLT uses the following chemicals on the airfield:

- Potassium Acetate (liquid deicer)
- Sodium Formate (solid deicer)

4.5 Surface Incident/Runway Incursion Mitigation Procedures.

Each year, through the SICCs, airfield safety is a topic of discussion. Past year incidents are discussed, and lessons learned are carried forward into the next snow season.

Vehicles will be marked and lighted in accordance with the most current version of AC 150/2510-5, *Painting, Marking and Lighting of Vehicles Used on an Airport*.

The Airport will ensure that snow clearing operations do not create the possibility for a runway incursion after the runway opens (by making sure signage, markings and lighting are clearly visible).

a) Radio Communication

Each vehicle on the airfield is equipped with a transponder and a dedicated ATC radio or will be under escort. Vehicles will be placed on a separate radio frequency as needed to maintain radio traffic at an acceptable level and allow individuals involved in snow and ice clearing the opportunity to focus on the task(s) at hand. The ATCT is open 24 hours a day.

b) Failed Radio Communication

If communication is lost between the snow and ice removal teams, the ATCT, light gun signal procedures will be followed. Also, vehicles can contact the ATCT directly at 704-790-5460 for assistance.

c) Low Visibility and Whiteout Conditions

If whiteout conditions are imminent or occur, the Snow Boss will determine what actions to take, when to stop clearing operations, and when to resume.

d) Driver Fatigue

Shift hours will be adjusted based on the significance and anticipated duration of the event. Personnel and shift adjustment will be monitored throughout the duration of the event.

Chapter 5 - Surface Assessment and Reporting

Conducting Surface Assessments.

Airside Operations, Airfield Maintenance, and the Snow Boss will remain aware and monitor all paved surface conditions in order to plan and carry out appropriate maintenance actions in accordance with the SICP. The airport strives to maintain a 'no worse than wet' (no contaminant accumulation) surface condition.

In complying with Part 139.339, CLT will at a minimum utilize the NOTAM system for collection, dissemination, and logging of airport information to air carriers, and other airport users.

NOTAM Manager is used to report airfield conditions.

5.1 Conducting Surface Assessments.

Runway assessments will be made by Airside Operations and Airfield Maintenance staff, and / or the Snow Boss.

- Assessments are performed after each snow clearing or treatment operation, at the beginning of each shift, and when requested by the Snow Boss.
- PIREPS, Bowmonk AFM2 friction measuring devices, and vehicles will be used to conduct assessments of runways, taxiways, and aprons.

5.2 Applying the Runway Condition Assessment Matrix (RCAM).

a) Determining Runway Conditions

When conducting the runway assessment, the contaminant observed on the surface will be noted and factored into the Runway Condition Assessment Matrix, along with its depth (when applicable), and the outside air temperature (OAT). The RCAM can be seen below in Table 5-2.

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Table 5-2. Runway Condition Assessment Matrix (RCAM) *(for Airport Operators' Use Only)*

Assessment Criteria		Downgrade Assessment Criteria		
Runway Condition Description	**Code**	**Mu (μ) [1]**	**Vehicle Deceleration or Directional Control Observation**	**Pilot Reported Braking Action**
• Dry	6	40 or Higher	---	---
• Frost • Wet (Includes Damp and 1/8 inch depth or less of water) ***1/8 inch (3mm) depth or less of:*** • Slush • Dry Snow • Wet Snow	5		Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.	Good
5º F (-15ºC) and Colder outside air temperature: • Compacted Snow	4	39 to 30	Braking deceleration OR directional control is between Good and Medium.	Good to Medium
• Slippery When Wet (wet runway) • Dry Snow or Wet Snow (Any depth) over Compacted Snow ***Greater than 1/8 inch (3mm) depth of:*** • Dry Snow • Wet Snow ***Warmer than 5º F (-15ºC) outside air temperature:*** • Compacted Snow	3		Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.	Medium
Greater than 1/8 (3mm) inch depth of: • Water • Slush	2	29 to 21	Braking deceleration OR directional control is between Medium and Poor.	Medium to Poor
• Ice [2]	1		Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced.	Poor
• Wet Ice [2] • Slush over Ice [2] • Water over Compacted Snow [2] • Dry Snow or Wet Snow over Ice [2]	0	20 or Lower	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.	Nil

[1] The correlation of the Mu (μ) values with runway conditions and condition codes in the Matrix are only approximate ranges for a generic friction measuring device **and are not intended to be used only to downgrade a runway condition code; with the exception of circumstances identified in Note 2.** Airport operators should use their best judgment when using friction measuring devices for downgrade assessments, including their experience with the specific measuring devices used.

[2] In some circumstances, these runway surface conditions may not be as slippery as the runway condition code assigned by the Matrix. The airport operator may issue a higher runway condition code (but no higher than code 3) for each third of the runway if the Mu value for that third of the runway is 40 or greater obtained by a properly calibrated friction measuring device, **and all other observations, judgment, and vehicle braking action support the higher runway condition code. The decision to issue a higher runway condition code than would be called for by the Matrix cannot be based on the Mu values alone; all available means of assessing runway slipperiness must be used and must support the higher runway condition code.** This ability to raise the reported runway condition code to a code 1, 2, or 3 can only be applied to those runway conditions listed under codes 0 and 1 in the Matrix.

The airport operator must also continually monitor the runway surface as long as the higher code is in effect to ensure that the runway surface condition does not deteriorate below the assigned code. The extent of monitoring must consider all variables that may affect the runway surface condition, including any precipitation conditions, changing temperatures, effects of wind, frequency of runway use, and type of aircraft using the runway. If sand or other

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approved runway treatments are used to satisfy the requirements for issuing this higher runway condition code, the continued monitoring program must confirm continued effectiveness of the treatment.

Caution: Temperatures near and above freezing (i.e., at 26.6° F (-3°C) and warmer) may cause contaminants to behave more slippery than indicated by the runway condition code given in the Matrix. At these temperatures, airport operators should exercise a heightened level of runway assessment, and should downgrade the runway condition code if appropriate.

Step 1: RwyCC:

If 25 percent or less of the overall runway length and width coverage or cleared width is covered with contaminants, RwyCCs must not be applied, or reported. In this case, CLT will report the contaminant percentage, type, and depth for each third of the runway, to include any associated treatments or improvements.

Or

If the overall runway length and width coverage or cleared width is greater than 25 percent, RwyCCs must be assigned, and reported, informing airplane operators of the contaminant present, and associated codes for each third of the runway. [The reported codes will serve as a trigger for all airplane operators to conduct a takeoff and/or landing performance assessment (TALPA)].

Step 2: Apply Assessment Criteria

Based on the contaminants observed, the associated RwyCC from the RCAM for each third of the runway will be assigned.

Step 3: Validating RwyCCs

If the observations by CLT determine that RwyCCs assigned accurately reflect the runway conditions and performance, no further action is necessary, and the RwyCCs generated may be disseminated.

a) Downgrade Assessment Criteria

When observations indicate a more slippery condition than generated by the RCAM, because of other observations related to runway slipperiness, CLT may downgrade the RwyCCs. When applicable, the downgrade of RwyCCs may be based on Mu (μ), Vehicle Deceleration or Directional Control Observation, pilot reported braking action, or temperature.

1) Mu (μ):

When conditions are acceptable for Bowmonk use, CLT may utilize Mu readings as a means to assess runway slipperiness for downgrading or to validate RwyCCs generated by the RCAM.

1) Vehicle Control

Vehicle deceleration or directional control issues do not need to occur simultaneously for a concern to exist.

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2) Pilot Reported Braking Action
Pilot reports are limited to the portions of the runway where braking occurred.

NOTE: Temperatures near and above freezing (i.e., at negative 26.6° F (-3° C) and warmer) may cause contaminants to behave more slippery than indicated by the RwyCC given in the RCAM. At these temperatures, CLT will exercise a heightened awareness of airfield conditions, and will downgrade the RwyCC if appropriate.

b) Upgrade Assessment Criteria Based on Friction Surveys

RwyCCs of 0 or 1 (Ice, Wet Ice, Slush over Ice, Water over Compacted Snow, or Dry or Wet Snow over Ice) may not be as slippery as the RwyCC generated by the RCAM, and can only be upgraded when the following requirements are met:

1. All observations, judgment, and vehicle braking action support the higher RwyCC, and;
2. Mu values of 40 or greater are obtained for the affected third(s) of the runway by a calibrated Bowmonk AFM2 friction measuring device that is operated within allowable parameters.
3. This ability to raise the reported RwyCC to no higher than a code 3 can only be applied to those runway conditions listed under code 0 and 1 in the RCAM. (See footnote 2 on the RCAM.)
4. CLT will continually monitor the runway surface as long as the higher code is in effect to ensure that the runway surface condition does not deteriorate below the assigned code.

   a. The extent of monitoring considers all variables that may affect the runway surface condition, including any precipitation, changing temperatures, effects of wind, frequency of runway use, and type of aircraft using the runway.

   b. If sand or other approved runway treatments are used to satisfy the requirements for issuing the higher RwyCC, the monitoring program must confirm continued effectiveness of the treatment.

5.3 Runway Friction Surveys, Equipment, and Procedures.

CLT uses Bowmonk AFM2 friction measuring devices, listed in 1.1(c).

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a) Conditions Acceptable to Use Decelerometers or Continuous Friction Measuring Equipment to Conduct Runway Friction Surveys on Frozen Contaminated Surfaces.

The data obtained from such runway friction surveys are only considered to be reliable when the surface is contaminated under any of the following conditions.

- Ice or wet ice. Ice that is melting or ice with a layer of water (any depth) on top. The liquid water film depth of .04 inches (1 mm) or less is insufficient to cause hydroplaning.
- Compacted snow at any depth.
- Dry snow 1 inch or less (25.4 mm) or less.
- Wet snow or slush 1/8 inch (3 mm) or less.

b) When to Conduct

Friction surveys should be conducted when conditions in 5.3 (a) are met if any of the following occurs:

- When the central portion of the runway, centered longitudinally along the runway centerline, is contaminated over a distance of 500 feet (152 m) or more.
- Following all snow clearing, anti-icing, deicing, or sanding operations.
- Immediately following any aircraft incident or accident on the runway, recognizing that responding ARFF or other circumstances may restrict an immediate response.

CLT conducts friction surveys based on the above information and the guidance provided in the most current version of AC 150/5200-30, *Airport Field Condition Assessments and Winter Operations Safety*, and AC 150/5320-12, *Measurement, Construction, and Maintenance of Skid-Resistant Airport Pavement Surfaces*.

c) How to Conduct

Friction surveys using the Bowmonk AFM2 friction testers will be conducted Based on the following:

- Advanced coordination with the ATCT before surveys are commenced to allow adequate time to conduct the survey, with minimal disruption to airplane operations;
- Lateral locations of 10 feet and 20 feet from the runway centerline. The worst track is used for the friction survey. If the worst-case condition is

found to be consistently limited to one track, future surveys may be limited to this track. Consideration will be given to future and/or seasonal changes in aircraft mix; only one survey is needed on one side of the runway centerline unless the surface conditions are noticeably different between the two sides.

- Same direction that airplanes are landing;
- A minimum of three braking tests are conducted in each zone (touchdown, midpoint, and rollout), then averaged to determine the final number for that zone. The number is rounded up or down to the nearest whole number. Reference Table 5-1, *Friction Survey Example* below (from the most current version of AC 150/5200-30, *Airport Field Condition Assessments and Winter Operations Safety)* for guidance on rounding friction readings;
- A minimum of nine tests will be conducted for each runway friction survey;
- The vehicle's speed should be 20 mph.
- The Bowmonk AFM2 friction measuring devices are compatible with anti-lock braking systems (ABS).
- Only on contaminated areas when pavements have frozen contaminant coverage of less than 25%.

Runway friction survey data will be recorded and retained by the Snow Desk.

d) Calibration

After the end of each snow season, Airside Operations is responsible for ensuring each of the Bowmonk AFM2 friction measuring devices is calibrated.

5.4 Taxiway, Apron, and Holding Bay Assessments.

Assessments to these surfaces will occur when contaminants are present, and whenever a contaminant is present on the surface. Assessments will occur anytime the pavement is worse than wet. Surfaces will be monitored on a regular, continual basis.

Throughout each shift, Airside Operations and Airfield Maintenance will monitor the airfield conditions and address changes with equipment and/or chemical applications.

5.5 Surface Condition Reporting.

Personnel responsible for implementing the SICP will carefully monitor changing airfield conditions and disseminate information about those conditions via the NOTAM System in a timely manner to airport users. Records of issued

NOTAMS will automatically be retained in the FAA Digital NOTAM Manager System.

Runway: Runway condition reports will occur when contaminants are present on a runway surface, via the NOTAM System. Condition Reports and RwyCCs will be updated as necessary whenever there is a change to the runway surface conditions, as outlined in 3.1 (e).

Taxiway, Apron: Taxiway and Apron condition reports will occur when contaminants are present on these surfaces via the NOTAM System. NOTAMs will be updated as necessary whenever conditions change, such as a contaminant type, depth, percentage, or treatment/width.

Conditions will be reported any time a change to the surface conditions occurs, which could be any of the following:

- Active snow event;
- Plowing/brooming/deicing/sanding;
- Rapidly rising or falling temperatures;
- Rapidly changing conditions.

The term 'DRY' is used to describe a surface that is neither wet nor contaminated. While a FICON NOTAM is not generated for the sole purpose of reporting a dry runway, a dry surface will be reported when there is need to report conditions on the remainder of the surface. (For example: snow is present on the first two thirds of the runway.)

5.6 Reportable Contaminants without Performance Data.

If present, unable to be removed, and pose no hazard, mud will be reported with a measured depth. Ash, oil, sand, and rubber contaminants will be reported without a measured depth. These contaminants will not generate an RwyCC.

5.7 Slippery When Wet Runway.

For runways where a friction survey (for the purposes of pavement maintenance) indicates the averaged Mu value at 40 mph on the wet pavement surface failed to meet the minimum friction level classification specified in the most current version of AC 150/5320-12, *Measurement, Construction, and Maintenance of Skid Resistant Airport Pavement Surfaces*, CLT will report via the NOTAM system an RwyCC of '3' for the entire runway (by thirds: 3/3/3) when the runway is wet. A runway condition description of 'Slippery When Wet' will be used for this condition.

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If it is determined by CLT that a downgrade is necessary, the downgrade will be made so that all three runway thirds match (i.e. 3/3/3, 2/2/2, 1/1/1).

The 'Slippery When Wet' NOTAM will be cancelled when the minimum runway friction level classification has been met or exceeded.

5.8 Requirements for Closures.

a) Runways

Runways receiving a NIL pilot braking action report (PIREP), or NIL braking action assessment by Airside Operations or Airfield Maintenance is unsafe for aircraft operations and the surface(s) will be closed immediately when this unsafe condition exists, prior to the next flight operation.

CLT has a Letter of Agreement with the ATCT, entitled "*Braking Action Reports, Runway Condition Codes (RwyCC) and FICON NOTAM Dissemination"*. This LOA can be found in Appendix N of CLT's Airport Certification Manual (ACM).

The Snow Desk will work in conjunction with the ATCT to cease all aircraft operations, and close runway(s) via the NOTAM Manager when a NIL braking action is received, or when a NIL assessment is made.

When previous PIREPs have indicated GOOD or MEDIUM braking action, two consecutive POOR PIREPS should be taken as evidence that surface conditions may be deteriorating. If CLT has not already instituted its continuous monitoring procedures, an assessment should occur before the next operation. If the airport operator is already continuously monitoring runway conditions, this assessment should occur as soon as air traffic volume allows.

b) Taxiways, Aprons and Holding Bays

Taxiways, aprons, or holding bays receiving a NIL pilot braking action report (PIREP), or NIL braking action assessment by Airside Operations or Airfield Maintenance is unsafe for aircraft operations and the surface(s) will be closed immediately when this unsafe condition exists, prior to the next flight operation. The surface(s) will be closed until the NIL condition is mitigated.

The airport will maintain available airport surfaces in a safe operating condition at all times and provide prompt notifications when areas normally available are less than satisfactorily cleared for safe operations. If a surface (runway, taxiway, apron, or lane) becomes unsafe due to a NIL (by braking action or assessment) or otherwise unsafe hazard or condition, the surface will be closed until the condition no longer exists and is safe.

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5.9 Continuous Monitoring and Deteriorating Conditions.

Under deteriorating conditions, the airport will take all reasonable steps using available equipment and materials that are appropriate for the condition to improve the braking action and adhere to snow and ice to prevent engine ingestion. If braking action cannot be improved, and the surface is not NIL, the airport will continually monitor the runways, taxiways, aprons, and holding bays to ensure braking does not become NIL.

Deteriorating conditions include but not limited to:

- Frozen or freezing precipitation;
- Falling air or pavement temperatures that may cause a wet runway to freeze;
- Rising air or pavement temperatures that may cause frozen contaminants to melt;
- Removal of abrasives previously applied to the runway due to wind or airplane effects;
- Frozen contaminants blown onto the runway by wind.

For continuous monitoring, CLT will have Airside Operations and Airfield Maintenance staff visually inspect and use friction measuring devices, in addition to PIREPs reported from the ATCT to assess airfield conditions, on a rotating basis around the airfield, based on snow clearing operations and conditions. Pavement surface temperatures will also be monitored for changes.

5.10 Surface Conditions Not Being Monitored/Reported

Airside Operations and Airfield Maintenance are available 24/7 to monitor the airfield conditions as necessary.

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Appendix A – Equipment List

Type of Equipment	Qty
Dump Trucks/Snow Plows	7
Standard Truck mounted Snow Plows	12
Foot Snow Plows	2
Walk Behind Snow Blower	1
Rubber Tire Loader, John Deere	2
MB North Star Rotary Plow	1
John Deere Utility Vehicle with Snow Blade and Spreader	1
Stake body with Medium Spreader	1
Vammas plow/snow broom/blower	4
Truck Mounted Chemical Applicator (500 Gallon)	1
Dump Truck with Sand/Urea Spreader	3
Deicing Truck (4000 Gallon)	1
Toolcat utility vehicle with front mounted broom	1

CLT has the above snow removal equipment on site.

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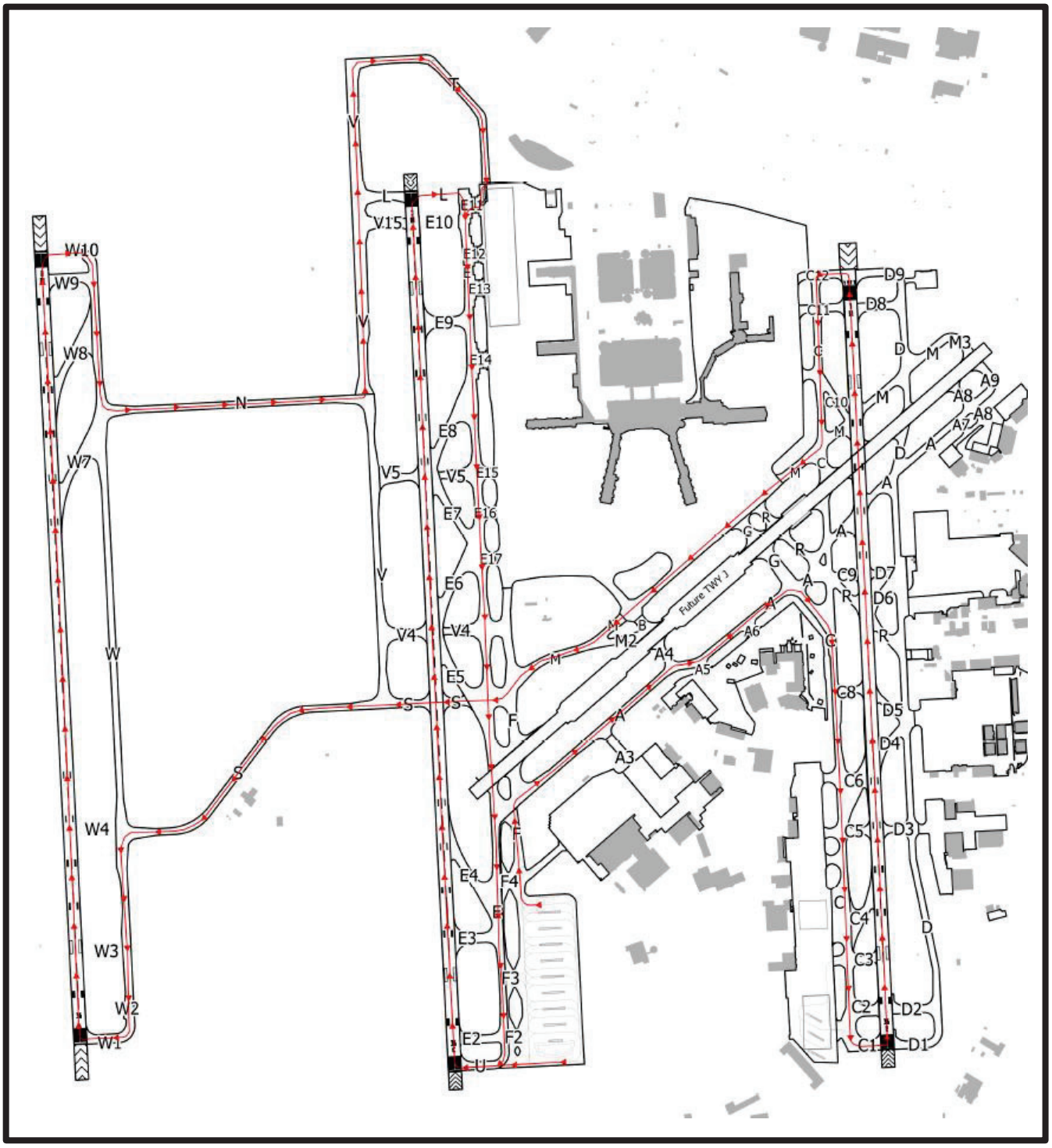
Appendix B – Snow Clearing Diagrams

Runway Snow Removal Route



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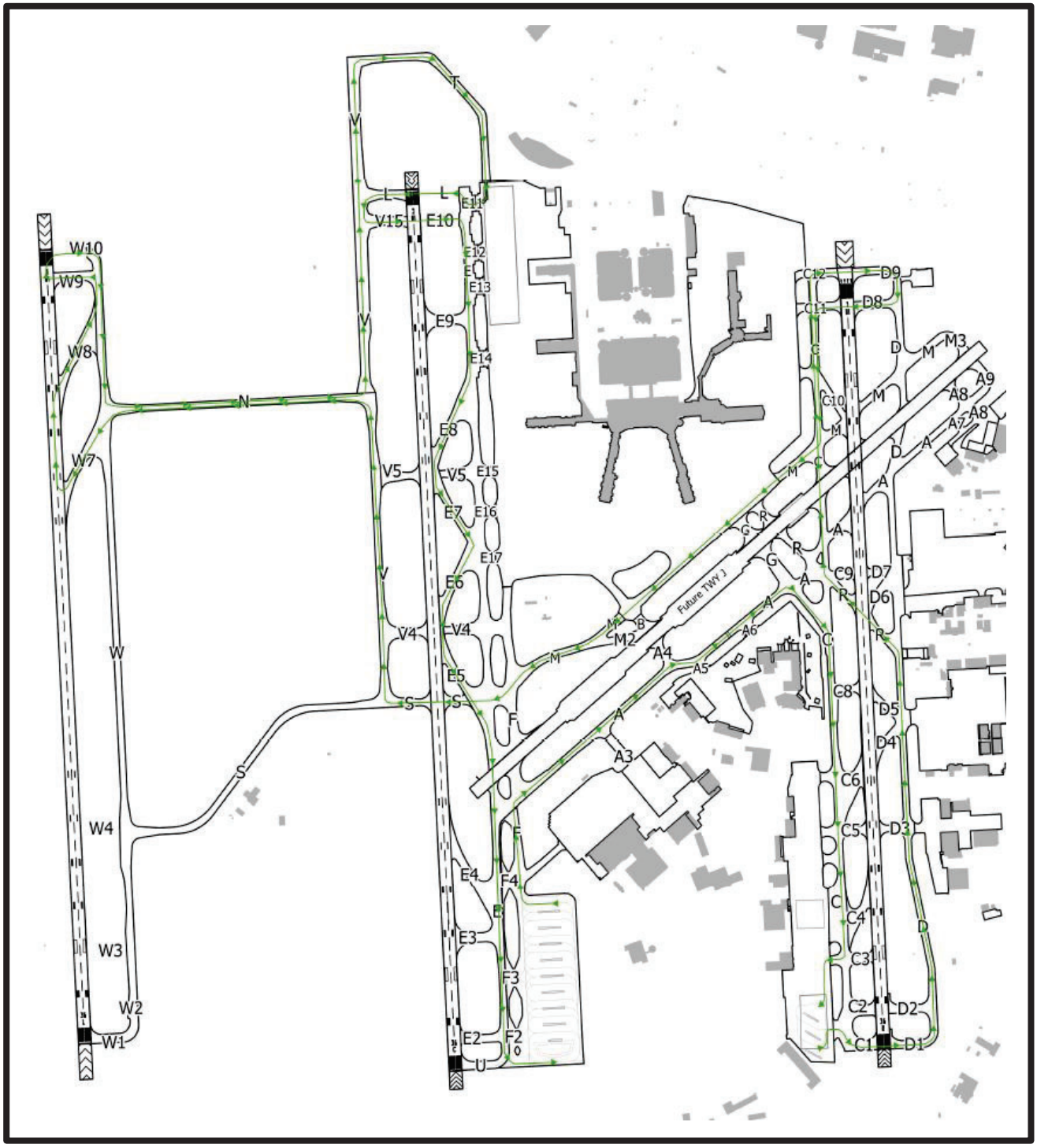
Taxiway Snow Removal Route



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Appendix C – Contractor Equipment

The City of Charlotte (City) Aviation Division, will contract and reserve equipment including operators to have them respond and assist the Aviation Department with snow removal from the Airport Ramp Area on a contingency basis.

Type of Equipment	Qty
Motor Grader	6
650 John Deere Loaders or Equivalent	8
John Deere Skid Steer or Equivalent	4

The City reserves the right to request less or additional equipment at any time.

This equipment is to be mobilized at any time, 24/7, to the Airport Ramp Area upon notification from the Airport. The contractor must provide this equipment and operators within four hours of notification. The equipment and operators may be required to work in 12-hour shifts, 24-hours a day until conditions are cleared. This will be the decision of the Airport Snow Boss or designee.

Once mobilized, the equipment and operators will work with City personnel to plow and push snow from the Airport Ramp Area. The City reserves all rights to adjust snow clearing operations based on conditions. Locations may change within the ramp or other areas as determined by the Airport designee.

Under this agreement, the City of Charlotte agrees to pay the following fees and rates:

Hourly Working Equipment Rate
If the equipment is used, the City will pay an hourly working equipment rate per hour for each motor grader, per hour for each rubber–tired loader, and per hour for each skid steer used. This rate includes the operator, maintenance, support personnel, and any repairs for each piece of equipment.

Blades
Blades will be provided by the City for all 12-foot moldboards. All blades will be installed by the City and contractor's maintenance personnel.

Fuel
The City and contractor will provide fuel for equipment.

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Timesheets for vehicle operators and man-hour utilization reports will be submitted to the City on a weekly basis for calculations of payment.
A list of contacts will be required in the event the equipment is needed. Contact names or numbers are required to be updated during the course of the winter if changes in personnel occur.

The airport will be awarding two contracts for each winter season.

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Appendix D – Letter of Agreement

The Letter of Agreement entitled *Braking Action Reports, Runway Condition Codes (RwyCC) and FICON NOTAM Dissemination* can be found in Appendix N, *Letters of Agreement, in the ACM.*

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May 14 2025
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APPENDIX I

SMGCS Plan

5501 Josh Birmingham Parkway
Charlotte, NC 28208

Class I Airport

Surface Movement Guidance and Control System Plan (SMGCS)

CHARLOTTE DOUGLAS SM
INTERNATIONAL AIRPORT

2024 - 2025

Federal Aviation Administration
Southern Region Airports Division
Approved
May 14 2025
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Airport Certification Safety Inspector

Surface Movement Guidance and Control System Plan (SMGCS)

1.0 Introduction

This Surface Movement Guidance and Control System (SMGCS) Plan outlines the procedures and actions applicable to the airport operator, air traffic control tower, Part 121 air carriers, Part 135 aircraft operators and other airport tenants. Air Traffic Control along with the Charlotte Douglas International Airport will implement this SMGCS Plan when the visibility is less than 1,200 feet Runway Visual Range (RVR). When the RVR is less than 500 feet, normally no Part 121 air carriers or Part 135 aircraft operators will be allowed to arrive or depart.

1.1 The procedures and actions contained in this SMGCS Plan were developed by and coordinated with members of the SMGCS Working Group. The group consisted of Charlotte Douglas International Airport Operations and Engineering, North Carolina Air National Guard and City of Charlotte ARFF, FAA ATCT, Airways Facility Sector Field Office, Southern Region Airports Division, Flight Standards Regional and District Offices, Air Transport Association, all air carriers, and other Charlotte-based operators and tenants.

1.2 The FAA-approved SMGCS Advisory Circular 120-57(current version) and all amendments were used as a guide for the development of this procedure. Also, several memorandums concerning the FAA/ATA SMGCS Working Group were utilized.

1.3 This plan addresses the current airport layout regarding SMGCS takeoff, landing and taxiing operations. The SMGCS working group will meet at least annually to discuss any improvements or problems that may arise from the implementation of the plan. This document does not supersede established policies, procedures, rules, or guidelines for airports, operators, or air traffic control.

1.4 The Charlotte Air Traffic Control Tower (CLT-ATCT) shall be responsible for initiating or terminating the SMGCS plan. The plan will be initiated when the meteorological trend of Runway Visual Range (RVR) values and weather phenomena indicate that visibilities of less than 1200 feet RVR will likely occur in the time that it would take to implement this plan. The CLT-ATCT will contact the Airport Operations Center immediately upon initiation or termination of the SMGCS plan. Airport Operations will notify operators and tenants appropriately.

1.5 Although not mandated by Advisory Circular 120-57 (current version), Part 91 operators are encouraged to comply with this plan to the maximum extent possible, however they may operate at their own discretion and risk.

1.6 This document does not supersede established policies, procedures, rules or guidelines for airports, aircraft or vehicle operators, or air traffic control. It does prescribe certain airfield lighting and marking improvements and operating procedures that have been designed to enhance the safety and efficiency of aircraft and vehicle movements.

2.0 Definitions

2.1 Airfield. That portion of the Airport intended to be used wholly or in part for the arrival, departure, and movement of aircraft.

2.2 Airport apron controller. The term "airport apron controller" refers to personnel from American Airlines and Airport Operations providing joint control of the concourse non-movement area.

2.3 Airport Operations. The term "Airport Operations" refers to personnel assigned from the Airport Operations Department who are responsible for the overall management of the airfield. This may include Airport security, airfield maintenance services, apron control, air cargo area, Airport Operations and safety; and other activities specified in Title 14 Code of Federal Regulations part 139.

2.4 Airport Operations Area (AOA). That portion of the airport designed and used for landing, taking off, servicing, and surface maneuvering of aircraft.

2.5 Airport Surveillance Detection Equipment (ASDE). Radar equipment specifically designed to detect all principal features on the surface of an airport, including aircraft and vehicular traffic, and to present the entire image on a radar indicator console in the control tower. Used to augment visual observation by tower personnel of aircraft or vehicular movement on runways and taxiways.

2.6 Apron (Ramp). A defined area on an airport intended to accommodate aircraft for purposes of loading or unloading passengers or cargo, refueling, parking, and maintenance. The apron includes the following components:

i. Aircraft Parking Positions. Intended for parking aircraft to enplane/deplane passengers, load, or unload cargo.
ii. Aircraft Service Areas. On or adjacent to an aircraft parking position. Intended for use by personnel/equipment for servicing aircraft and staging of equipment to facilitate loading and unloading of aircraft.
iii. Taxilanes. Apron area which provides taxiing aircraft access to and from parking positions.
iv. Vehicle Roadways. Identified rights of way on the apron area designated for service and ARFF vehicles.

2.7 Clearance Bar. A clearance bar consists of three in-pavement steady-burning yellow lights.

2.8 Controlling Region. Refers to the FAA Region in which an airport is located.

2.9 Gate Designator Markings. Pavement markings used to identify an aircraft parking position/gate(s).

2.10 Geographic Position Markings. Pavement markings used to identify the location of aircraft or vehicles during low visibility conditions. They are referred to as "spots" by air traffic control (ATC).

2.11 Hold Points. The term hold point refers to a location in the movement area. This is where an air traffic controller may hold a taxiing aircraft.

2.12 Judgmental Over Steering. When the taxiway centerline does not provide an adequate nose wheel radius, the pilot may use over steering to keep the main gear within the taxiway pavement.

2.13 Low Visibility Operations. The movement of aircraft or vehicles on the airport paved surfaces when visibility conditions are reported to be less than 1,200 feet RVR.

2.14 Movement Area. Refers to the runways, taxiways, and other areas of the airport which are used for taxiing or hover taxiing, takeoff, and landing of aircraft, exclusive of loading ramps and aircraft parking areas. Aircraft or vehicle operations within this area require an air traffic control clearance.

2.15 Non-movement Area. Refers to taxiways and aprons not controlled by the FAA Control Tower. The Air Carrier Apron is controlled by the American Airlines Apron Control Tower.

2.16 Runway Guard Lights—Elevated. Fixture consists of a pair of elevated flashing yellow lights installed on both sides of a taxiway, at the runway hold position marking. Their function is to confirm the presence of an active runway and assist in preventing runway incursions.

2.18 Runway Visual Range (RVR). An instrumentally derived value based upon standard calibrations that represents the horizontal distance a pilot will see down the runway from the approach end.

i. Touchdown RVR. The RVR visibility readout values from the RVR equipment serving the runway touchdown zone.
ii. Mid-RVR. The RVR visibility readout values obtained from RVR equipment located midfield of the runway.
iii. Rollout RVR. The RVR visibility readout values obtained from the RVR equipment located nearest the rollout end of the runway.

2.19 Stop Bar. Stop bar lights consist of elevated and in-pavement red fixtures that are installed at the runway holding position or instrument landing system (ILS) critical area holding position marking. Stop bars may be controllable by ATC and will include a system of in-pavement green taxiway centerline/lead-on lights at locations where aircraft will enter or cross a runway.

2.20 Surface Movement Guidance and Control System (SMGCS). A SMGCS consists of the provision of guidance to, and control or regulation of, all aircraft, ground vehicles and personnel on the movement area of an airport. Guidance relates to facilities, information, and advice necessary to enable the pilots of aircraft and/or the drivers of ground vehicles to find their way on the airport and to keep the aircraft or vehicles on the surfaces or within the areas intended for their use.

Control or regulation means the measures necessary to prevent collisions and ensure that the traffic flows smooth and freely.

2.21 Surface Movement Surveillance System (SMSS). A system which provides positive identification and accurate positional information on all aircraft and vehicles.

2.22 Surface Painted Holding Position Sign. Pavement marking which is used to identify a specific runway. These markings are configured the same as the associated sign.

2.23 Surface Painted Direction Sign. Pavement markings that are configured the same as the associated sign and provided when it is not possible to provide taxiway direction signs at intersections.

2.24 Surface Painted Location Sign. Pavement markings that are configured the same as the associated sign and are used to supplement the signs located alongside the taxiway and assist the pilot in confirming the designation of the taxiway on which the aircraft is located.

2.25 Taxi Route (SMGCS). A specific taxiway or series of taxiways with enhanced lighting and marking to provide aircraft guidance when the SMGCS Plan has been implemented.

2.26 Unserviceable. In this document, refers to equipment, which is inoperative, obscured (i.e., by ice, snow, sand), degraded, not operating normally (e.g., abnormally low intensity), or not performing its intended function.

3.0 Facilities, Services, and Equipment

3.1 SMGCS Operations

3.1.1 Operations when visibility conditions are less than 1200 RVR down to and including 500 RVR will be conducted as follows:

3.1.1.1 Arrivals

Runway 36R: 8676' X 150', asphalt; concrete; grooved; precision instrument markings; TDZ/CL; HIRL; touchdown, midfield and rollout RVR; ALSF-2

Runway 36C: 10,000' X 150'; concrete; grooved; precision instrument markings; TDZ/CL; HIRL; touchdown, midfield and rollout RVR; ALSF-2

Runway 36L: 9,000 X 150'; concrete; grooved; precision instrument markings; TDZL/CL; HIRL; touchdown, midfield and rollout RVR; ALSF-2

Runway 18R: 9,000 X 150'; concrete; grooved; precision instrument markings; TDZL/CL; HIRL; touchdown, midfield and rollout RVR; ALSF-2

3.1.1.2 Departures

Runway 36R: 8676' X 150', asphalt; concrete; grooved; precision instrument markings; TDZ/CL; HIRL; touchdown, midfield, and rollout RVR.

Runway 36C: 10,000' X 150'; concrete; grooved; precision instrument markings; TDZ/CL; HIRL; touchdown, midfield, and rollout RVR.

Runway 36L: 9,000 X 150'; concrete; grooved; precision instrument markings; TDZL/CL; HIRL; touchdown, midfield and rollout RVR; ALSF-2

Runway 18R: 9,000 X 150'; concrete; grooved; precision instrument markings; TDZL/CL; HIRL; touchdown, midfield and rollout RVR; ALSF-2

Runway 18C: 10,000' X 150'; concrete; grooved; precision instrument markings; TDZ/CL; HIRL; touchdown, midfield, and rollout RVR.

Runway 18L: 8676' X 150', asphalt; concrete; grooved; precision instrument markings; TDZ/CL; HIRL; touchdown, midfield, and rollout RVR

3.2 Taxiway Edge Lights. Medium Intensity edge lights are installed along all taxiways except Taxiways Bravo and Echo. Taxiways Bravo and Echo have edge lights only on the radii.

3.3 Taxiway Centerline Lights. All taxiways have centerline lights **Except;** Taxiway Charlie north of Taxiway Juliet, Taxiway Alpha, Taxiway Mike 2, and Taxiway Delta.

3.5 Taxiway Guidance Signing and Marking. Taxiway guidance signs and markings are installed in accordance with an approved airport signage plan. The signs are illuminated and monitored by the airfield lighting computer system.

3.6 Taxiway Centerline Marking. Provides a visual cue to permit taxiing along a designated path. Marking may be enhanced on light-colored pavement by outlining with a black border.

3.7 Runway Guard Lights--Elevated. Elevated runway guard lights are located at all SMGCS runway access points and stay illuminated at all times to prevent runway incursions.

3.9 Taxiway guidance signing and marking inspections. Taxiway guidance signing and markings are inspected routinely as part of the Airport Operations airfield inspection program. Electronic monitoring is provided for all signs and lights associated with low visibility taxi routes. This monitoring alerts ATC whenever threshold outage levels are exceeded.

3.10 Non-movement area control. Control of the non-movement area between and around the concourses is administered by American Airlines from their apron control tower. Other non-movement areas are controlled by the tenants of those respective areas. Appropriate movement/non-movement area markings are installed on apron edges.

3.11 Surface movement surveillance. The Airport has airport surface detection equipment (ASDE-X). FAA utilizes this equipment to monitor the geographical position of aircraft and vehicles during reduced visibility conditions and at night.

3.12 Follow-me service. Airside Operations will provide "follow-me" services for air carrier aircraft upon request, subject to availability of equipment and the need to accomplish higher priority duties. To enhance safe operations in low visibility conditions, Part 91 operators should expect follow-me services to and from the runway environment. The Airport Operations follow-me vehicle is identified by yellow flashing emergency lights. A follow-me request may be initiated by the pilot, ATC, or the American Airlines Apron Tower.

3.13 Aircraft docking. The airline assumes control of the aircraft in the vicinity of the gate, as directed by the airport apron controller, and provides aircraft docking by use of wing walkers, follow-me vehicles, tugs, or other appropriate means as set out in the airline's operations manual.

3.14 Communications. Telephone and radio communications are functional between all organizations involved in the execution of this plan (i.e., telephone and radio communication between Aircraft Rescue and Fire Fighting (ARFF) and the CLT-ATC.

3.15 Airfield Lighting and Marking Requirements. Airport Operations performs regular scheduled inspections of all airfield lighting and markings. Airfield Maintenance conducts all repairs as part of normal preventive maintenance, with the following objectives:

- Taxiway edge lights and centerline lights have no two adjacent lights unlit.
- In-pavement Stop bar lights have no more than three lights per location unserviceable or two adjacent lights unserviceable.
- Elevated runway guard lights have no more than one light in a fixture unserviceable.

The Airfield Lights and Navigational Aids are powered by three generators located in the west, center, and east vaults on the airfield.

4.0 Airport Operations

4.1 Receive notifications from the CLT-ATCT to initiate or terminate the SMGCS plan.

4.2 Advise the American Airlines Apron Control (which will notify other air carriers) and pertinent tenants of the implementation or termination of the SMGCS plan. Subsequently, notify the CLT-ATCT that all pertinent tenants have been contacted.

4.3 Prior to implementing the SMGCS plan, conduct airfield lighting checks through the use of the electronic monitoring and/or visual inspections as required in Part 139. While the SMGCS plan is in effect, airfield lighting needs to be inspected every 2 to 4 hours. Notify the ATCT when the inspections are complete.

4.4 Control vehicle access to the Air Operations Area (AOA).

4.5 Prior to implementing the SMGCS plan, Airport Operations will analyze construction activity or other special activity to either reduce or terminate the activity as deemed necessary to enhance airfield safety.

4.6 Prior to implementing the SMGCS plan, Airport Operations will NOTAM TWY C4 and C6 closed. TWY C4 and C6 must be closed during SMGCS operations due to the taxiway being wider than 150 feet and not being equipped with in-pavement guard lights.

4.7 Consider the SMGCS plan when implementing the ice/snow removal and/or deicing plan.

4.8 All nonessential vehicle operations shall be restricted while the SMGCS plan is in effect.

4.9 Advise CLT-ATCT of airfield conditions which may impact air traffic control operations.

5.0 Aircraft Rescue and Fire Fighting (ARFF)

5.1 ARFF coverage. The ARFF facilities are located off TWY D on the East side of Runway 18L-36R abeam TWY R and off TWY S between Runway 18C-36C and Runway 18R-36L. The response time from the ARFF facility is in compliance with FAR Part 139. During low visibility operations (SMGCS), equipment and personnel will remain on "Alert 1" status at the ARFF station. Airport Operations will notify the ARFF facility of the implementation of the plan by telephone. All ARFF personnel will be required to take SMGCS training or refresher training on an annual basis.

5.2 ARFF coordination. Coordination between ATC and ARFF is accomplished annually to ensure effectiveness of ARFF services. This coordination is accomplished as part of the annual emergency plan review required by Part 139.

5.3 ARFF vehicles. All ARFF vehicles will be equipped with the latest adopted version of the approved SMCGS charts.

6.0 Vehicle Control

6.1 Vehicle access. Vehicle access to the airport is controlled by a system of perimeter fencing and gates. All airport, vendor, contractor, and tenant vehicles entering the AOA are identified by company logo or name on the side of the vehicle and all the occupants are displaying a security badge issued by the Aviation Department or are being escorted.

6.2 Vehicle service roads. Except for necessary movement in leased areas, vehicles must be operated within the clearly marked system of vehicle service roads. These service roads are identified by solid white lines with a dashed white line as the centerline divider strip. Where a service road intersects a taxiway, a solid white stop line is provided across the vehicle lane. Standard stop signs are installed abeam the stop line on the right side of the road at each entrance.

6.3 Driver training. Vehicles driven on the AOA during low visibility operations will only be operated by drivers that have completed SMGCS training. All personnel authorized to drive on the airfield in movement or non-movement areas are provided driver training by Airport Operations or through an approved tenant/company program. The airport driver training course uses video training aids which include SMGCS lighting, signage, markings, and procedures and includes a written test.

6.4 Access restrictions. In low visibility operations, only vehicles in direct support of the SMGCS plan will be permitted in the movement areas. All vehicles that are supporting the SMGCS plan will have copies of the approved low visibility taxi routes. All other access to the movement areas will be coordinated with Airport Operations.

7.0 Air Traffic Control

7.1 CLT ATCT shall implement the SMGCS plan when the visibility trend indicates that lower than 1200 RVR is imminent. CLT ATCT shall also terminate the SMGCS plan when visibility improves above 1,200 feet RVR.

7.2 Broadcast over the ATIS frequencies that Low Visibility operations are in effect until further notice.

7.3 Configure airfield lighting system to meet operational requirements.

7.4 While under SMGCS, all operations will generally be northbound on the open runways. (CLT ATCT may vary directions as necessary consistent with safe practices).

7.5 Runway 36R Departures

7.5.1 Air Carriers departing on Runway 36R from the Terminal Apron utilizing SPOT 22 or 24; proceed to the runway end as directed by CLT ATCT. The typical route will be crossing Taxiway J via TWY G southeast to TWY C south to the approach of 36R.

7.5.2 Cargo Operators departing on Runway 36R from the South Cargo Apron for Runway 36R shall proceed to the runway end as directed by CLT ATCT. The typical route will be south on TWY C to the approach of Runway 36R.

7.6 Runway 36C Departures

7.6.1 Air Carriers departing on Runway 36C from the Terminal Apron utilizing SPOT 12 or 13; proceed to the runway end as directed by CLT ATCT. The typical route will be south on TWY F, crossing Taxiway J, stay on TWY F or turn west onto TWY E via TWY F4, then continuing south on TWY E or TWY F to the approach of Runway 36C.

7.6.2 Cargo Operators departing from the South Cargo Apron for Runway 36C shall proceed to the runway end as directed by CLT ATCT. The typical route will be north on TWY C, northwest on TWY R, southwest on TWY J, south on TWY E and continuing south on TWY E to the approach of Runway 36C.

7.7 Runway 36L Departures

7.7.1 Air Carriers departing on Runway 36L from the Terminal Apron utilizing SPOT 9; shall proceed to the runway end as directed by CLT ATCT. The typical route will be TWY E15, west on TWY V5 crossing Runway 18C/36C, south on TWY V, west on TWY S, then proceeding south on TWY W to the approach of Runway 36L.

7.7.2 Air Carriers departing on Runway 36L from the Terminal Apron utilizing SPOT 10 or 11; shall proceed to the runway end as directed by CLT ATCT. The typical route will south on TWY E, crossing Runway 18C/36C at TWY V4, south on TWY V,

west on TWY S, then proceeding south on TWY W to the approach of Runway 36L.

7.7.3 Cargo Operators departing on Runway 36L from the South Cargo Apron for shall proceed to the runway end as directed by CLT ATCT. The typical route will be north on TWY C, northwest on TWY R, southwest on TWY J, north on TWY E, then crossing Runway 18C/36C at TWY V4, south on TWY V, west on TWY S, then proceeding south on TWY W to the approach of Runway 36L.

7.8 Runway 18R Departures

7.8.1 Air Carriers departing on Runway 18R from the Terminal Apron utilizing SPOT 4; proceed to the runway end as directed by CLT ATCT. The typical route will be TWY E13, south on TWY E, crossing Runway 18C/36C at TWY V5, north on TWY V, west on TWY N, then north on TWY W to the approach of Runway 18R.

7.8.2 Air Carriers departing on Runway 18R from the Terminal Apron utilizing SPOT 6; proceed to the runway end as directed by CLT ATCT. The typical route will be TWY E14, south on TWY E south, crossing Runway 18C/36C at TWY V5, north on TWY V, west on TWY N, then north on TWY W to the approach of Runway 18R.

7.8.3 Air Carriers departing on Runway 18R from the Terminal Apron utilizing SPOT 9; proceed to the runway end as directed by CLT ATCT. The typical route will be TWY E15, crossing Runway 18C/36C at TWY V5, north on TWY V, west on TWY N, then north on TWY W to the approach of Runway 18R.

7.8.4 Air Carriers departing on Runway 18R from the Terminal Apron utilizing SPOT 10; proceed to the runway end as directed by CLT ATCT. The typical route will be TWY E16, north on TWY E south, crossing Runway 18C/36C at TWY V5, north on TWY V, west on TWY N, then north on TWY W to the approach of Runway 18R.

7.8.5 Air Carriers departing on Runway 18R from the Terminal Apron utilizing SPOT 11; proceed to the runway end as directed by CLT ATCT. The typical route will be TWY E17, north on TWY E, crossing Runway 18C/36C at TWY V5, north on TWY V, west on TWY N, then north on TWY W to the approach of Runway 18R.

7.8.6 Cargo Operators departing from the South Cargo Apron for Runway 18R shall proceed to the runway end as directed by CLT ATCT. The typical route will be north on TWY C, northwest on TWY G, southwest on TWY A, north on TWY F, crossing Runway 18C/36C at TWY V4/V5, north on TWY V, west on TWY N, then north on TWY W to the approach of Runway 18R.

7.9 Runway 18C Departures

7.9.1 Air Carriers departing on Runway 18C from the Terminal Apron utilizing SPOT 4; proceed to the runway end as directed by CLT ATCT. The typical route will be TWY E13, then north on TWY E to the approach of Runway 18C.

7.9.2 Air Carriers departing on Runway 18C from the Terminal Apron utilizing SPOT 6; proceed to the runway end as directed by CLT ATCT. The typical route will be TWY E14, then north on TWY E to the approach of Runway 18C.

7.9.3 Air Carriers departing on Runway 18C from the Terminal Apron utilizing SPOT 9; proceed to the runway end as directed by CLT ATCT. The typical route will be TWY E15, then north on TWY E to the approach of Runway 18C.

7.9.4 Air Carriers departing on Runway 18C from the Terminal Apron utilizing SPOT 10; proceed to the runway end as directed by CLT ATCT. The typical route will be TWY E16, then north on TWY E to the approach of Runway 18C.

7.9.5 Air Carriers departing on Runway 18C from the Terminal Apron utilizing SPOT 11; proceed to the runway end as directed by CLT ATCT. The typical route will be TWY E17, then north on TWY E to the approach of Runway 18C.

7.9.6 Cargo Operators departing from the South Cargo Apron for Runway 18C shall proceed to the runway end as directed by CLT ATCT. The typical route will be north on TWY C, northwest on TWY G, southwest on TWY A, north on TWY F, west on TWY V4, then north on TWY E to the approach of Runway 18C.

7.10 Runway 18L Departures

7.10.1 Air Carriers departing on Runway 18L from the Terminal Apron utilizing SPOT 29; proceed to the runway end as directed by CLT ATCT. The typical route will be east on TWY C12 to the approach of Runway 18L.

7.10.2 Air Carriers departing on Runway 18L from the Terminal Apron utilizing SPOT 28; proceed to the runway end as directed by CLT ATCT. The typical route will be TWY C11, then north on TWY C to the approach of Runway 18L.

7.10.3 Air Carriers departing on Runway 18L from the Terminal Apron utilizing SPOT 27; proceed to the runway end as directed by CLT ATCT. The typical route will be TWY C10, then north on TWY C to the approach of Runway 18L.

7.10.4 Air Carriers departing on Runway 18L from the Terminal Apron utilizing SPOT 25 proceed to the runway end as directed by CLT ATCT. The typical route will be TWY M northeast, then proceeding north on TWY C to the approach of 18L.

7.10.5 Cargo Operators departing from the South Cargo Apron for Runway 18L shall proceed to the runway end as directed by CLT ATCT. The typical route will be north on TWY C, crossing Taxiway J, then continuing north on TWY C to the approach of Runway 18L.

7.11 Runway 36L Arrivals

7.11.1 Aircraft will have the capability to land any of the active Runways, as directed by the ATCT.

7.11.2 Air Carriers arriving Runway 36L shall proceed as directed by CLT ATCT. The typical route will be TWY W7 or W8, east on TWY N, either north on TWY V to TWY T (using the NEAT – for ADH III and smaller) or crossing Runway 36C at TWY L, V4, V5. Once cleared to cross Runway 36C, air carrier aircraft will proceed to the Terminal Apron, as directed. Typically, this will be north or south on TWY E then E13, E14, E16, E16, or E17 to the Terminal Ramp.

7.11.3 Cargo Operators arriving 36L shall proceed as directed by CLT ATCT. The typical route will be TWY W7 or W8, then east on TWY N, crossing Runway 36C at TWY V4. Once cleared to cross Runway 36C, Cargo Operators will proceed to the apron, as directed. Typically, this will be south on TWY E, then northeast on TWY J. south on TWY F, northeast on TWY A, southeast on TWY G, then south on TWY C south to the South Cargo Ramp.

7.12 Runway 36C Arrivals

7.12.1 Aircraft will have the capability to land any of the active Runways, as directed by the CLT ATCT.

7.12.2 Air Carriers arriving Runway 36C shall proceed, as directed by CLT ATCT. The typical route will be TWY E6, E8, E10 or L to the air carrier apron by proceeding north or south on TWY E to TWY E13, E14, E15, E16, or E17 to the terminal ramp.

7.12.3 Cargo Operators arriving Runway 36C shall proceed, as directed by the CLT ATCT. The typical route will be to TWY E6, E8, E10 or TWY L, south on TWY E, northeast on TWY J, south on TWY J, northeast on TWY A, southeast on TWY G, then south on TWY C to the South Cargo Ramp.

7.13 Runway 36R Arrivals

7.13.1 Aircraft will have the capability to land any of the active Runways, as directed by the CLT ATCT.

7.13.2 Air Carriers arriving Runway 36R shall proceed, as directed by the CLT ATCT. The typical route will be TWY R, crossing TWY J to the terminal ramp. Alternatively, after turning northwest onto TWY R, proceeding northeast on TWY J, then TWY C to C10, C11, or C12 to the terminal

7.13.3 Cargo Operators exiting Runway 36R shall proceed, as directed by the CLT ATCT. The typical route will be TWY J, C11 or C12, then south on TWY C to the South Cargo Ramps.

7.14 Runway 18R Arrivals

7.14.1 Aircraft will have the capability to land any of the active Runways, as directed by the CLT ATCT.

7.14.2 Air Carriers arriving Runway 18R shall proceed, as directed by CLT ATCT. The typical route will be TWY W4, W3, or W1, north on TWY W, east on TWY S, north on TWY V, crossing Runway 18C/36C at V4 or V5, then north or south on TWY E to the terminal apron via TWY E13, E14, E15, E16, or E17.

7.14.3 Cargo Operators arriving Runway 18R shall proceed, as directed by the CLT ATCT. The typical route will be TWY W4, W3, or W1, north on TWY W, east on TWY S, north on TWY V, crossing Runway 18C/36C at V4, south on TWY F, northeast on TWY A, southeast on TWY G, then south on TWY C to the South Cargo Ramps.

7.15 Repositioning of Aircraft During Low Visibility Operations

7.15.1 To reposition aircraft from the American Airlines Maintenance Hangar Apron to the Air Carrier Apron, the aircraft shall proceed, as directed by the CLT ATCT. The typical route will be TWY A3, northeast on TWY A, then northwest on TWY A4 crossing Taxiway J to TWY B, into the terminal apron.

7.15.2 To reposition aircraft from the Air Carrier Apron to the American Airlines Maintenance Hangar Apron, the aircraft shall proceed, as directed by the CLT ATCT. The typical route will be southeast on TWY B crossing Taxiway J to TWY A4, then southwest on TWY A to A3, into the Maintenance Ramp.

8.0 Airport Tenants

8.1 Participate in the SMGCS working group.

8.2 All airport tenants shall submit a company plan for Low Visibility operations in non-movement areas to the Aviation Department.

8.3 Assure compliance with sections of this SMGCS plan that fall under the responsibility of the tenant.

8.4 Disseminate low visibility procedures to affected company employees as required.

8.5 Provide for and assure that all affected company personnel are adequately trained for low visibility procedures.

8.6 American Airlines Tower will provide all directions for air carrier aircraft on the air carrier apron which is a non-movement area.

8.7 Prior to push back, pilots of all air carriers will contact American Airlines Control Tower for clearance.

8.8 All air carriers will notify their appropriate personnel that Low Visibility Operations has been implemented or terminated.

8.9 All nonessential vehicle operations shall be restricted while the SMGCS plan is in effect.

8.10 Provide affected company personnel with airport charts depicting low visibility taxi routes, movement and non-movement areas.

9.0 North Carolina Air National Guard

9.1 The North Carolina Air National Guard (NCANG) will not operate routine training flights during Low Visibility Operations (less than 1,200 RVR), however based upon operational needs of the government, the North Carolina Air National Guard may have operationally imperative flights depart and/or arrive as necessary based upon the Guards 1,000' RVR minimums. Dependent upon the operational needs, National Guard aircraft will be routed for taxiing, via TWY D7, TWY C9, and TWY C to Runway 36R for takeoff; and when landing on 36R will taxi to the North Carolina National Guard area as directed by ATC. The North Carolina National Guard shall notify the ATC of the operational need for low visibility operations at least two hours prior to the need. In turn, all other aircraft will be held either on the aircraft apron or in the air at established holding points while the NCANG is operating on the airfield.

10.0 Responsibilities

10.1 Charlotte Douglas International Airport-Aviation Department

10.1.1 Host annual meetings of the SMGCS working group.

10.1.2 Maintain documentation of working group proceedings.

10.1.3 Coordinate, amend, publish, and distribute the SMGCS plan.

10.1.4 Ensure adherence and correct deficiencies to those sections of the plan under the control of the Aviation Department.

10.1.5 Assure that initial and recurrent training on SMGCS procedures is accomplished and documented for all vehicle operators.

10.1.6 Coordinate with SMGCS working group the development of the low visibility chart.

10.1.7 Notify other organizations that have responsibilities under the SMGCS plan of deficiencies that require corrective action.

10.1.8 Coordinate the Low Visibility Taxi Routes chart through Airports District Office, AEA220B (AWOPM) then to Charlotte Airport IT for publication.

10.2 Air Traffic Control-CLT

10.2.1 Participate in the SMGCS working group.

10.2.2 Ensure adherence to those sections of the SMGCS plan that fall under the control of the CLT-ATCT.

10.2.3 Provide progressive instructions to ARFF and other pertinent responders during an

emergency.

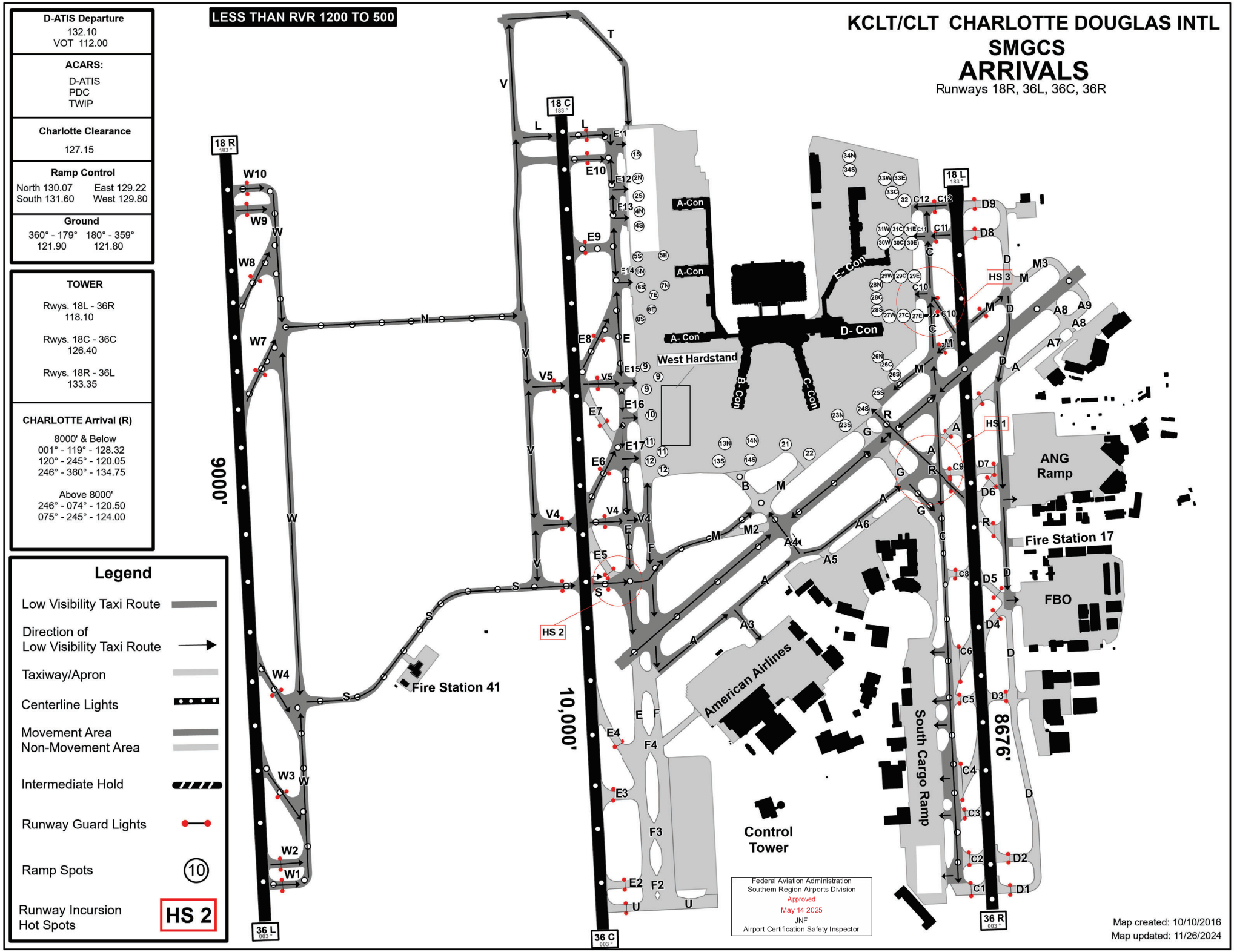
10.3 Airport Tenants

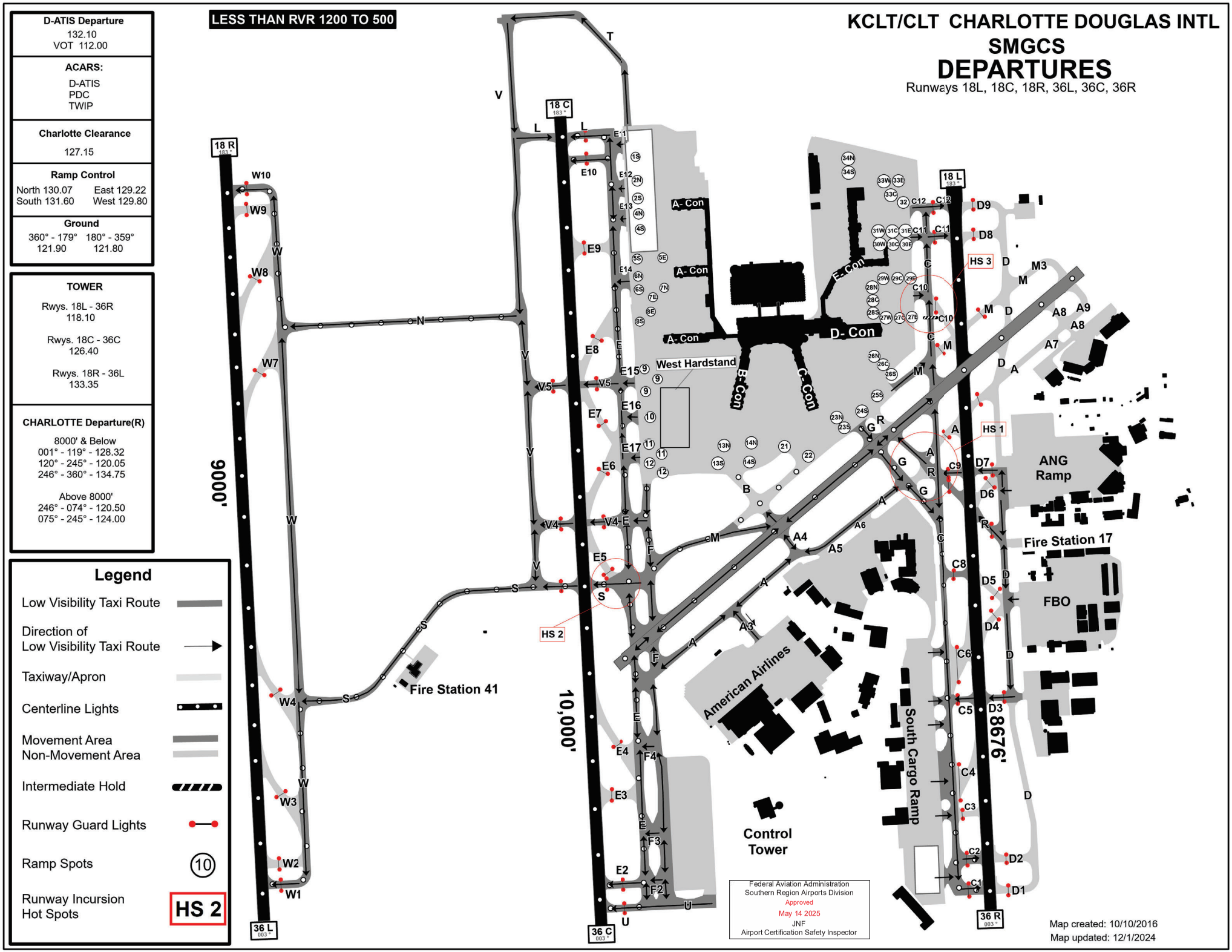
10.3.1 Participate in the SMGCS working group.

10.3.2 Ensure adherence to those sections of the SMGCS plan that fall under the control of the airport tenants.

10.3.3 Submit a company plan for non-movement area operations during Low Visibility Operations to the Aviation Department for approval.

10.3.4 Train company personnel in low visibility operations which should include at minimum vehicle operations.


LESS THAN RVR 1200 TO 500
KCLT/CLT CHARLOTTE DOUGLAS INTL
SMGCS
ARRIVALS
Runways 18R, 36L, 36C, 36R
D-ATIS Departure
132.10
VOT 112.00
ACARS:
D-ATIS
PDC
TWIP
Charlotte Clearance
127.15
Ramp Control
North 130.07 East 129.22
South 131.60 West 129.80
Ground
360° - 179° 180° - 359°
121.90 121.80
TOWER
Rwys. 18L - 36R
118.10
Rwys. 18C - 36C
126.40
Rwys. 18R - 36L
133.35
CHARLOTTE Arrival (R)
8000' & Below
001° - 119° - 128.32
120° - 245° - 120.05
246° - 360° - 134.75
Above 8000'
246° - 074° - 120.50
075° - 245° - 124.00
Legend
Low Visibility Taxi Route
Direction of Low Visibility Taxi Route
Taxiway/Apron
Centerline Lights
Movement Area
Non-Movement Area
Intermediate Hold
Runway Guard Lights
Ramp Spots
Runway Incursion Hot Spots
HS 2
18 R
18 C
18 L
36 L
36 C
36 R
9,000'
10,000'
8676'
A-Con
B- Con
C- Con
D- Con
E- Con
West Hardstand
ANG Ramp
Fire Station 17
FBO
Fire Station 41
American Airlines
South Cargo Ramp
Control Tower
HS 1
HS 2
HS 3
Federal Aviation Administration
Southern Region Airports Division
Approved
May 14 2025
JNF
Airport Certification Safety Inspector
Map created: 10/10/2016
Map updated: 11/26/2024


LESS THAN RVR 1200 TO 500
KCLT/CLT CHARLOTTE DOUGLAS INTL
SMGCS
DEPARTURES
Runways 18L, 18C, 18R, 36L, 36C, 36R
D-ATIS Departure
132.10
VOT 112.00
ACARS:
D-ATIS
PDC
TWIP
Charlotte Clearance
127.15
Ramp Control
North 130.07 East 129.22
South 131.60 West 129.80
Ground
360° - 179° 180° - 359°
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TOWER
Rwys. 18L - 36R
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126.40
Rwys. 18R - 36L
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CHARLOTTE Departure(R)
8000' & Below
001° - 119° - 128.32
120° - 245° - 120.05
246° - 360° - 134.75
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Legend
Low Visibility Taxi Route
Direction of Low Visibility Taxi Route
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Centerline Lights
Movement Area
Non-Movement Area
Intermediate Hold
Runway Guard Lights
Ramp Spots
Runway Incursion Hot Spots
HS 2
18 R
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18 L
36 L
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36 R
8,000'
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A- Con
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E- Con
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West Hardstand
HS 1
HS 2
HS 3
ANG Ramp
Fire Station 17
FBO
Fire Station 41
American Airlines
South Cargo Ramp
Control Tower
Federal Aviation Administration
Southern Region Airports Division
Approved
May 14 2025
JNF
Airport Certification Safety Inspector
Map created: 10/10/2016
Map updated: 12/1/2024

APPENDIX J

WILDLIFE HAZARD MANAGEMENT PLAN

FOUND AS SEPARATE BOUNDED MATERIAL IN THE AIRPORT OPERATIONS OFFICE

APPENDIX K

AIRPORT EMERGENCY PLAN

FOUND AS SEPARATE BOUNDED MATERIAL IN THE AIRPORT OPERATIONS OFFICE

APPENDIX L

ARFF EQUIPMENT INDEX

Charlotte/Douglas International Airport

Aircraft Rescue and Firefighting (ARFF) Equipment

Equip. #	Trial Response Time Min. & Sec. (00+00)	Type Vehicle	Manufacturer		Color	Condition of Vehicle	Persons Per Shift		Agents	Water	AFFF	Dry Chemical	Portable Fire Extinguishers	Remarks	Radio Equip.
			Name	Year			Pro.	Aux.		Gal	Gal	lbs.			
B-1		ARFF Striker HRET	Oshkosh	2020	Lime Green	Excellent	2		A	3000	420	450	35 lbs Dry Powder	460 lbs Halatron 1/PKW	Yes
					CLT				B	1950			30 lbs Metal X		
B-2		ARFF Global Striker	Oshkosh	2016	Lime Green	Excellent	3		A	3000	420	450	35 lbs Dry Powder	460 lbs Halatron 1/PKW	Yes
					CLT				B	1950			30 lbs Metal X		
B-5		Quick Attack	Danko	2013	Lime Green	Excellent	2		A	300	25	450	35 lbs Dry Powder	PKW	Yes
					CLT				B	150					
B-8		Command Vehicle	Ford	2019	White	Excellent	1								Yes
					CLT										
B-41		ARFF Global Striker	Oshkosh	2016	Lime Green	Excellent	2		A	3000	420	450	35 lbs Dry Powder	460 lbs Halatron 1/PKW	Yes
					CLT				B	1950			30 lbs Metal X		
B-42		ARFF Global Striker	Oshkosh	2016	Lime Green	Excellent	3		A	3000	420	450	35 lbs Dry Powder	460 lbs Halatron 1/PKW	Yes
					CLT				B	1950			30 lbs Metal X		
B-44		ARFF P-19	Oshkosh	2005	Red	Good	0		A	1500	200	450	35 lbs Dry Powder	PKW, Reserve	Yes
					NCANG				B	1950			30 lbs Metal X		
B-45		Quick Attack	Danko	2013	Lime Green	Excellent	2		A	300	25	450	35 lbs Dry Powder	PKW	Yes
					CLT				B	150					
B-47		ARFF Panther	Rosenbauer	2019	Red	Excellent	3		A	3000	400	450		PKW	Yes
					NCANG				B	325			30 lbs Metal X		
B-51		ARFF Striker HRET	Oshkosh	2006	Lime Green	Good	0		A	3000	420	450		460 lbs Halatron 1/PKW Reserve	Yes
					CLT				B	1950					
B-53		ARFF P-23	E-One / Teledyne	1994	Red	Good	0		A	3300	500	500	35 lbs Dry Powder	Reserve	Yes
					NCANG				B				30 lbs Metal X		
B-54		RIV	Pierce		Red	Excellent	0		A	400	56			Reserve	Yes
					NCANG				B						

A-Quantities (Water in Gallons; Dry Chemical in Pounds; Pre Mix in Gallons) (Foam is 3% Mil Spec AFFF)

B-Pump Rates per minutes

AIRPORT: Charlotte/Douglas International Airport

DATE: February 2025 INDEX: E

Federal Aviation Administration
Southern Region Airports Division
Approved
May 14 2025
JNF
Airport Certification Safety Inspector

APPENDIX M

ENGINEERED MATERIALS ARRESTING SYSTEMS

CHAPTER 3: INSPECTION REQUIREMENTS

3-1 GENERAL INFORMATION

This chapter provides the inspection requirements of the EMAS system as tabulated data. The inspection requirements are in lieu of an aircraft arrestment. When an arrestment has occurred, follow the instructions in Chapter 2.

3-2 TRAINING

At a convenient time during the installation cycle or immediately following, ESCO will conduct a training seminar for the Airport personnel who will be responsible for inspection and maintenance of the EMAS bed. This training will cover the procedures detailed in this manual to ensure that all personnel have a similar understanding of what is required in the way of inspections, how to classify defects, how to repair any problems identified, how to record and report on the problems, and why these efforts are crucial to ensuring the long life of the bed.

3-3 WARRANTY

The EMAS Bed is provided with a 1-year warranty against defective parts and labor. A copy of this warranty is included in the back of this manual. As part of this warranty, ESCO will provide quarterly inspection visits by one of our field service technicians during the warranty period in order to monitor the condition of the bed and to assist the Airport personnel with inspection and maintenance of the EMAS.

3-4 PERIODIC INSPECTIONS

3-4.1 EMAS Inspection (Drive-Around)

This inspection consists of ***SLOWLY*** driving or walking around the perimeter of the bed while visually checking for the types of damage described in TABLE 3-1 below. This inspection is best performed with two personnel in the vehicle and should take no more than 5 to 10 minutes. It should, at a minimum, be conducted weekly during daylight hours when visibility is good.

Debris Deflector Shields – Visually check for any damage such as dents or flattened sections caused by vehicles or foot traffic. Look for loose or missing installation hardware. If damage is evident, a closer inspection should be performed.

EMAS Bed - Visually check for any damage as described in TABLE 3-1 below. Check for any debris lying on or around the bed. Check for any water lying on or around the edge of the bed. If any of these conditions exist, a closer inspection should be performed.

Reporting and Repairing – Complete a report, utilizing FORM 3-1, provided in this manual, noting the location and type of damage or unacceptable condition that exists and follow-up by scheduling a repair of the problem.

3-4.2 EMAS Inspection (Walk Through)

This inspection consists of slowly walking the entire bed surface while visually examining the bed for damage as described in TABLE 3-1. This inspection is best-performed utilizing two personnel and should take no more than two hours. It should, at a minimum, be conducted monthly during daylight hours when visibility is good.

Debris Deflector Shields – Walk along the Debris Deflector and visually check for any damage such as dents or flattened sections caused by vehicle or foot traffic. Look for any missing or loose installation hardware. Check the spacing between the panels. The gap should not exceed ¼" (6mm). Any larger gap should be covered by aluminum flashing, which can be pop riveted in position. Check the paint finish on the shields for excessive abrasion. A build up of sand or other debris in front of the Debris Deflector is unacceptable and should be removed. Check that the caulking between the Debris Deflector and the first row of blocks is in good condition with no holes or loose areas.

EMAS Bed – Starting at the front of the bed, staying on a single row of blocks, walk across the bed visually checking each block for any damage as described in TABLE 3-1 below. After completing inspection of the first row, reverse direction and walk back checking the second row of blocks. Continue this process until the entire bed has been inspected. Use FORM 3-1, provided in this manual, to track the location and type of damage to any particular block. While checking the bed, also look for any other type of problem that may not be listed in the table, such as a block that appears soft on top, stains on the surface, etc.

Reporting and Repairing – Complete a report, utilizing FORM 3-1 provided in this manual, noting the location (block number) and type of damage or unacceptable condition that exists and follow-up by scheduling a repair of the problem. If ***ANY*** problem is identified which would require replacement of a top lid or an entire block, or ***ANY*** problem that involves a significant area of the bed, contact ESCO immediately for assistance is remedying the problem.

TABLE 3-1

Problem	Remedy
Lifting or missing seam sealant.	Trim away loose material. If required, clean area with a mild solvent (such as) rubbing alcohol, to remove any dirt. Allow area to dry thoroughly. Inspect and replace as needed, with the approved seam sealant.
Surface cracks or cuts less than 1/8" deep	Clean area with solvent, dry and apply epoxy into and along surface of crack. Flatten and smooth.
Severe cracks or cuts (from more than 1/8" deep to completely through the top cover)	Depending on the severity of the damage this may be repairable or the top cover may need replacement. Refer to paragraph 4-3.2.
Minor depressions, surface indentations where the top cover has not been cracked or penetrated	This problem does not require repair. If the surface is cracked or cut, repair as described for that condition
Severe depressions	Depending on severity of the damage this may be repairable or the block may need replacement. Refer to paragraph 4-3.2.
Holes	Depending on severity of the damage this may be repairable or the block may need replacement. Refer to paragraph 4-3.2.
Top cover on the block is loose along the side or the entire top cover is lifting.	Depending on the cause of the problem, the top cover or the entire block will require replacement. Refer to paragraph 4-3.4.
Abrasion attack caused by sand or gravel blown against the bed by wind or jet blast	Depending on severity of the damage this may be repairable, it may require replacement of the top cover, or the block may need replacement. Refer to paragraph 4-3.3.
Chemical attack: The polymer top cover and scrim material will be attacked by concentrated (15%)	Damage from these chemicals will include staining, softening of the surface coating, dissolving of the surface

solutions of harsh chemicals. EMAS materials have only "fair" resistance to solvents (like benzene, toluene, carbon tetrachloride, etc.) or weak acid solutions (like sulfuric, nitric, chloric, flouric, etc.) or weak alkaline solutions (like sodium hydroxide, ammonia, etc.). If exposed to any solutions of this type the surface must be washed off immediately. The coating is resistant to water, standard deicers, and jet fuel.	coating, and dissolving of the scrim material. All damage, except staining will result in loss of water resistant properties of the top cover. Attempt to identify the chemical involved in the spill. Contact ESCO if there is a question regarding the reaction of the spilled chemical with the top coating. The top cover or the block will require replacement. Refer to paragraph 4-3.4.
Crushed block	This category is for damage more excessive than "Holes" as described above. This will require replacement of the block. Refer to paragraph 4-3.5.
Damage to vertical side walls	Refer to paragraph 4-3.6.
Damage to Debris Deflector Shields	Refer to paragraph 4-3.7.
Clogged vents	Remove debris from the vents by using a shop or a leaf vacuum. Blowing the debris into the bed will lead to a build-up which will prevent proper drainage of water from under the bed.
Efflorescence stains along the outside perimeter of the EMAS	This common issue that affects all cementious type products especially along downgrades and vent locations. If left untreated it will accumulate in thickness. Occasional scrapping and power washing of the asphalt / concrete surface is necessary to combat this problem.
If there are Light standards in the bed, check that the base seal is still watertight and that it is properly attached to the top cover surface	Carefully remove damaged sealant, then re-attach base using ESCO approved seam sealant.
Check for any block that may have heaved upward, settled lower, or otherwise moved in position.	If this condition is found, contact ESCO immediately as this problem is generally caused by movement of the underlying pavement, and may be a first indication of a more severe support surface problem.

FORM 3-1: PREVENTATIVE MAINTENANCE INSPECTION REPORT

This inspection form is designed to notify, inform and document any deficiencies, damage or repairs that are identified during the preventative maintenance inspection. This report is only a description of the condition of an existing bed and does not imply an immediate procedure for repair for any deficiencies found as a result of this inspection. All procedures for repairs must be reviewed and accepted by the EMAS Director of Project Engineering and Standards.

LOCATION OF EMAS BED (AIRPORT)_____

RUNWAY END DESIGNATION_____

DATE OF INSPECTION _____

AIRPORT REPRESENTATIVE_____
SIGNATURE

PROBLEM	LOCATION (column/row)	ACTION
Surface cracks (less than 6"/15cm in length and do not go completely through the Top Cover)		
Severe cuts or cracks (more than 6"/15cm long and/or completely through the Top Cover)		
Minor depressions, surface indentations where the Top Cover has not been penetrated		
Severe Depressions		
Holes		
Top Cover is loose		
Abrasion attack caused by debris blown against the bed.		
Breach in seals around light stanchions		

Scrim is loose or torn (specify)		

PROBLEM	LOCATION (column/row)	ACTION
Water laying on the bed (provide reason, low spots, seam seal too high, or other observation)		
Chemical attack		
Crushed block		
Damage to Vertical Side wall Or Side Coating is breached or Peeling		
Damage to Blast Deflector Shield		
Lifting or missing Seam Seal		
Other		

COMMENTS/OBSERVATIONS

APPENDIX N

LETTERS OF AGREEMENT

Charlotte ATC Tower and Charlotte Douglas International Airport

LETTER OF AGREEMENT

Effective Date: October 1, 2016

Subject: Braking Action Reports, Runway Condition Codes (RwyCC) and FICON NOTAM Dissemination

1. Purpose: To establish procedures and define responsibilities for Charlotte ATCT and Charlotte International Airport Operations (CDIA).

2. Cancellation: Letter of Agreement between Charlotte ATCT and CDIA dated September 30, 2003.

3. Procedures. Braking Action Advisories are in effect when any braking action report less than "good" is received. The following actions will be taken:

   a. As received, CDIA will furnish Runway Condition Codes (RwyCC) to Charlotte ATCT. When a Runway Condition Report (RCR) is received between 1 and 6, CDIA will issue a Field Condition (FICON) NOTAM into the Federal NOTAM System (FNS). (See attachment 1 for Runway Condition Assessment Matrix (RCAM).

   b. Charlotte ATCT will report runway and taxiway braking action reports received from pilots whenever reports have deteriorated to "good to medium," "medium," "medium to poor," "poor," or "nil" or have improved to "good" to CDIA in a timely manner.

      Charlotte ATCT will report to CDIA anytime Two (2) consecutive braking action reports of "poor" are received as evidence that surface conditions may be deteriorating.

      In the event of a "Nil" braking action report, Charlotte ATCT will advise CDIA and immediately cease all operations on that runway.

      NOTE: When known, include the type of aircraft and time from which the report is received.

Lot John Greene

John Greene
Manager (Acting)
Charlotte ATC Tower

Brent Cagle
Aviation Director
Charlotte Douglas International Airport

Attachment 1

Assessment Criteria		Downgrade Assessment Criteria		
Runway Condition Description	Code	Mu (μ) [1]	Vehicle Deceleration or Directional Control Observation	Pilot Reported Braking Action
• Dry	6	40 or Higher	---	---
• Frost • Wet (Includes Damp and 1/8 inch depth or less of water) *1/8 inch (3mm) depth or less of:* • Slush • Dry Snow • Wet Snow	5		Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.	Good
5° F (-15°C) and Colder outside air temperature: • Compacted Snow	4	39 to 30	Braking deceleration OR directional control is between Good and Medium.	Good to Medium
• Slippery When Wet (wet runway) • Dry Snow or Wet Snow (Any depth) over Compacted Snow *Greater than 1/8 inch (3mm) depth of:* • Dry Snow • Wet Snow *Warmer than 5° F (-15°C) outside air temperature:* • Compacted Snow	3		Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.	Medium
Greater than 1/8 inch (3mm) inch depth of: • Water • Slush	2	29 to 21	Braking deceleration OR directional control is between Medium and Poor.	Medium to Poor
• Ice [2]	1		Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced.	Poor
• Wet Ice [2] • Slush over Ice • Water over Compacted Snow [2] • Dry Snow or Wet Snow over Ice [2]	0	20 or Lower	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.	Nil

Charlotte ATC Tower (ATCT)/Charlotte Douglas International Airport (Airport Ops)/Charlotte Fire Department (ARFF)/ North Carolina Air National Guard (NCANG)

LETTER OF AGREEMENT

Effective: January 15, 2024

SUBJECT: Charlotte Douglas International Airport Emergency Procedures

1. **PURPOSE:** This agreement establishes responsibilities and procedures for emergency service in the event of a potential emergency, emergency or accident on or in the vicinity of Charlotte Douglas International Airport.

2. **SCOPE:** The procedures contained herein are for use between Charlotte ATCT, Charlotte Fire Department (ARFF stations 17, 41, 30), CDIA Operations, and NC National Guard, while providing emergency services in accordance with FAA Order 7210.3, *Facility Operation and Administration*. This agreement also establishes procedures for a daily system test of the crash notification system.

3. **EXPLANATION OF CHANGES:**

Added a new section under Procedures for Change in Alert Status.

4. **DEFINITIONS:**

In order to preserve lives and control damage, it is essential that rapid and accurate communications be used.

a. **ALERT 1:** Indicates an aircraft approaching the airport is in minor difficulty; feathered propeller, oil leak, etc.

b. **ALERT 2:** Indicates an aircraft is approaching the airport with major difficulty; engine on fire, faulty landing gear, no hydraulic pressure, etc. **This is the minimum alert status for military aircraft.** ARFF equipment shall proceed to the appropriate standby position.

c. **ALERT 3:** Only to be used to indicate an aircraft has been involved in an accident on or near airport property. The ARFF equipment will proceed immediately to the scene after clearance by ATCT is received.

d. **GROUND EMERGENCY:** An emergency condition involving aircraft operations, while on the ground and is not incident to flight operations nor classed as an in-flight or airborne emergency.

e. **CODE RED:** Structural fire OR alarm on the airport. ARFF will proceed to the scene after clearance by ATCT is received. Airside Ops will then request to proceed to the scene.

f. **CODE BLUE:** Medical emergency on the airport. ARFF will proceed to the scene after clearance by ATCT is received. Airside Ops will then request to proceed to the scene.

5. PROCEDURES:

A. ATCT :

1. In the event of an aircraft accident, emergency, or potential/simulated emergency on or in the vicinity of the Airport, ATCT shall initiate alert notification procedures via the crash phone, when in the opinion of any of the following, a potential or actual emergency exists:

    a. The pilot of the aircraft concerned
    b. The FAA ATC Specialist on duty
    c. The aircraft owner, operator, or designated representative
    d. An authorized representative of CLT
    e. CFD/NCANG Aircraft Rescue Fire Fighting (ARFF)

2. Provide notification of all aircraft emergencies, potential aircraft emergencies, accidents, fires, bomb threats, and/or any aircraft operation other than normal that would affect the safety or security of the passengers and/or crew as follows:

    The following information, if known, after all parties have checked on, **must** be given in the following order:

    a. Alert type (Alert 1, 2, or 3) or Ground Emergency
    b. Runway of airborne emergency or location of ground emergency
    c. Nature of emergency
    d. Aircraft identification and type
    e. Fuel remaining and souls on board
    f. Hazardous cargo status, if known.
    g. Estimated time of arrival (update as necessary)
    h. Runway of airborne emergency or location of ground emergency will be given again

3. Follow up questions may be answered via the crash phone or landline at the ATCT at 704-790-5460.

4. After the alert aircraft crosses the landing threshold, ATCT shall issue clearance to ARFF vehicles and Airport Ops vehicles to proceed on the designated runway to follow the aircraft. “Proceed onto the runway to follow aircraft”.

5. When ATCT is advised of a medical emergency the Operations Manager/Operations Supervisor/Controller in Charge shall notify Airport Ops at 704-359-4911.

6. ATCT shall test the emergency crash phone daily at **0805** local time.

B. ARFF:

1. ARFF equipment shall contact ATCT on the appropriate ground frequency enroute to established standby positions (see attachments), giving way to all aircraft at all times. **Exception: ARFF equipment at Station 41 will contact ATCT on 126.4** All other responding vehicles shall be in monitor status. Communication regarding an aircraft emergency shall be limited to ARFF vehicles, the pilot of the emergency aircraft, ATCT and Airport Ops vehicles.

2. ARFF vehicles shall not enter/cross any runways without specific instructions from ATCT.

3. ARFF must inform ATCT when the Command Post is established and identify the Incident Commander (IC). ("Charlotte Ground/Tower, Blaze Unit # is now Incident Commander"). This will be the main Point of Contact (POC).

4. After ARFF is responding, they should be notified via radio as to any changes in status. Only NCANG and Airport Ops will answer the crash phone on an additional information call.

5. Upon receipt of clearance, ARFF vehicles shall enter the runway after the aircraft has passed their standby position. ARFF shall advise ATCT when all emergency equipment are clear of the runway hold lines.

6. ARFF vehicles shall give way to all taxiing aircraft.

7. ARRF will contact Airport Ops on Fire Operations channel for additional information.

C. AIRPORT OPS:

1. Shall answer Crash Phone, obtain information, and alert personnel of emergency on Airport Ops channel and radio channel 1-J.

2. Airport Ops vehicles must be equipped to monitor and communicate on Ground Control Frequencies 121.8/121.9.

3. Clearance onto the movement area for Airport Ops vehicles proceeding to and from standby positions or the emergency site must be controlled

on the appropriate ATCT frequency.

4. Any vehicle needing a runway crossing clearance must obtain a specific ATC clearance and advise the ATCT when the runway is clear/crossing completed.

5. Upon receipt of clearance, Airport Ops shall follow the emergency aircraft and ARFF equipment while performing a runway inspection. Airport Ops shall advise via the appropriate frequency when the runway may be returned to service.

D. NCANG

1. Shall Answer the Crash Phone, obtain information, and alert personnel via Secondary Crash Phone.

2. If required based on event ensure notification to appropriate squadrons on base are made so resources can be postured in a timely manner.

3. If the incident requires NCANG assets Crisis Action Team (CAT) and Emergency Operations Center (EOC) may be activated by the Wing Commander.

4. If the incident involves military assets the Command Post will make appropriate notifications.

5. If the incident involves military assets after published duty hours, the North Carolina Base Defense Operations Center (BDOC) will make all appropriate notifications until the Command Post is activated.

E. ALL – SECONDARY CRASH PHONE PROCEDURES

(If at least one entity responds, continue to use the crash phone as the primary method of reporting emergencies. Then follow steps 1-5.)

In the event of any failure (no –notice or pre-notice) with the crash phone where no entity responds the following should occur:

1. ATCT will notify CLT's Airport Operations Center (AOC) via landline phone at 704-359-4911 and notify them of the emergency (Alert 1, 2, 3, or Ground Emergency).
2. If ATCT is unable to reach the AOC at 704-359-4911, they should report the emergency by calling 9-1-1.

3. AOC will immediately contact CFD ALARM on radio channel 1-J to notify them of the emergency and location.
4. ALARM will dispatch over the radio the appropriate ARFF and fire resources for the emergency.
5. Responding ARFF equipment will follow up via radio 1-J with the AOC while responding for additional relevant emergency information (fuel, nature, souls, etc.).

F. CHANGE IN STATUS OF EMERGENCY

Any Ground Emergency or Alert can be upgraded by Airport Operations, ATCT, NCANG ARFF or Charlotte Fire Department (ARFF).

**The entity upgrading the alert must immediately advise all other parties of the upgrade.

Charlotte ATC Tower (ATCT)/Charlotte Douglas International Airport (Airport Operations)/Charlotte Fire Department (ARFF)/North Carolina Air National Guard (NCANG)

MARK A LIBBY JR
Digitally signed by MARK A LIBBY JR
Date: 2025.04.01 20:56:20 -04'00'

Mark Libby
Air Traffic Manager (A)
Charlotte Air Traffic Control Tower

Haley Gentry
Digitally signed by Haley Gentry
Date: 2025.03.17 13:16:14 -04'00'

Haley H. Gentry
CEO
Charlotte/Douglas International Airport

Reginald Johnson
Digitally signed by Reginald Johnson
Date: 2025.03.05 09:39:26 -05'00'

Reginald Johnson
Fire Chief
Charlotte Fire Department

HAYLETT.MARSHAL.TYLER.1073707966
Digitally signed by HAYLETT.MARSHAL.TYLER.1073707966
Date: 2025.03.20 10:32:42 -04'00'

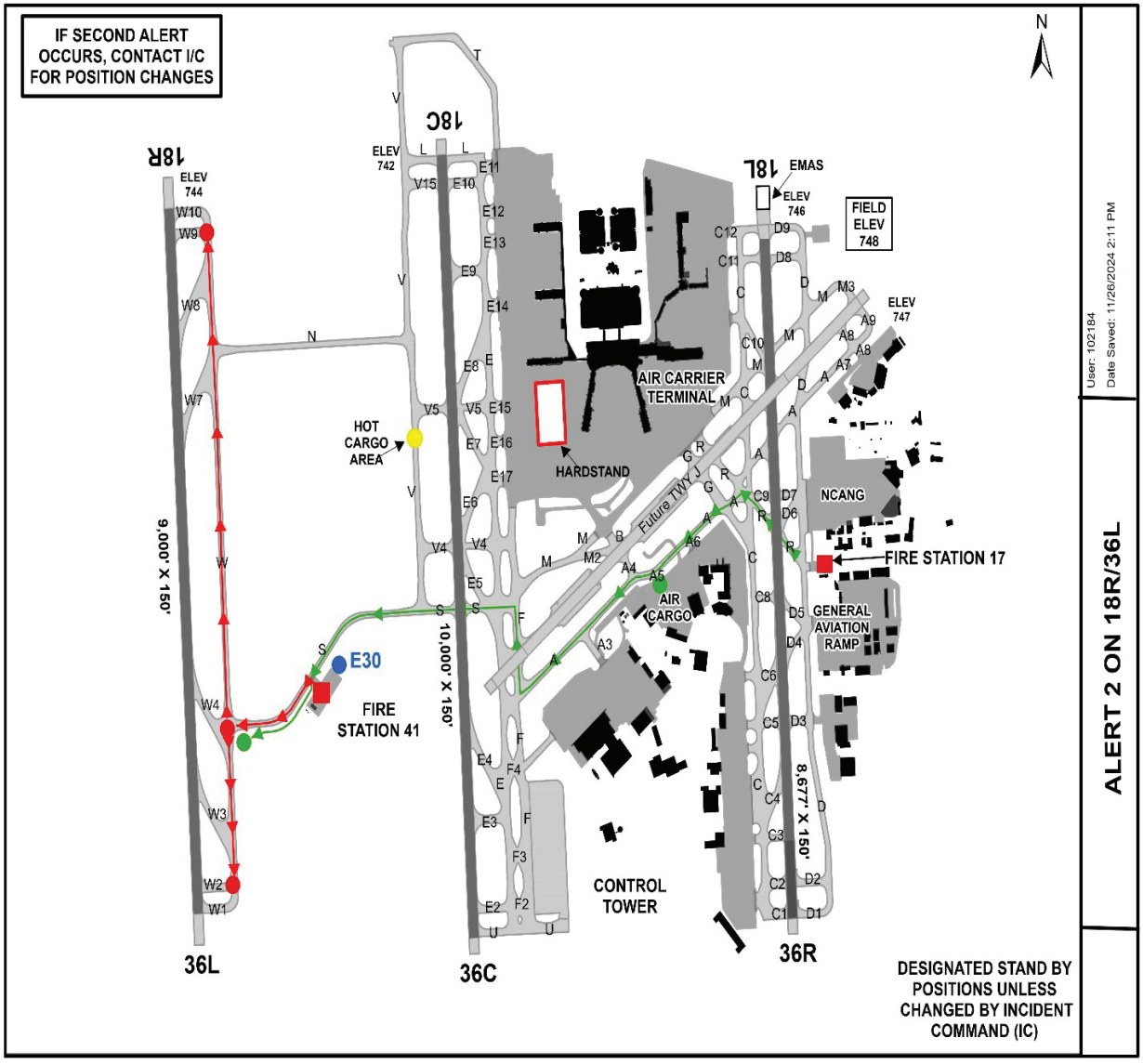
Colonel Marshal Haylett
145th AW/CC
Air National Guard

COOK.DARYL.D.1052923693
Digitally signed by COOK.DARYL.D.1052923693
Date: 2025.03.20 10:24:47 -04'00'

CMSGT Daryl Cook
NCANG Fire Chief
Air National Guard

ATTACHMENT 1

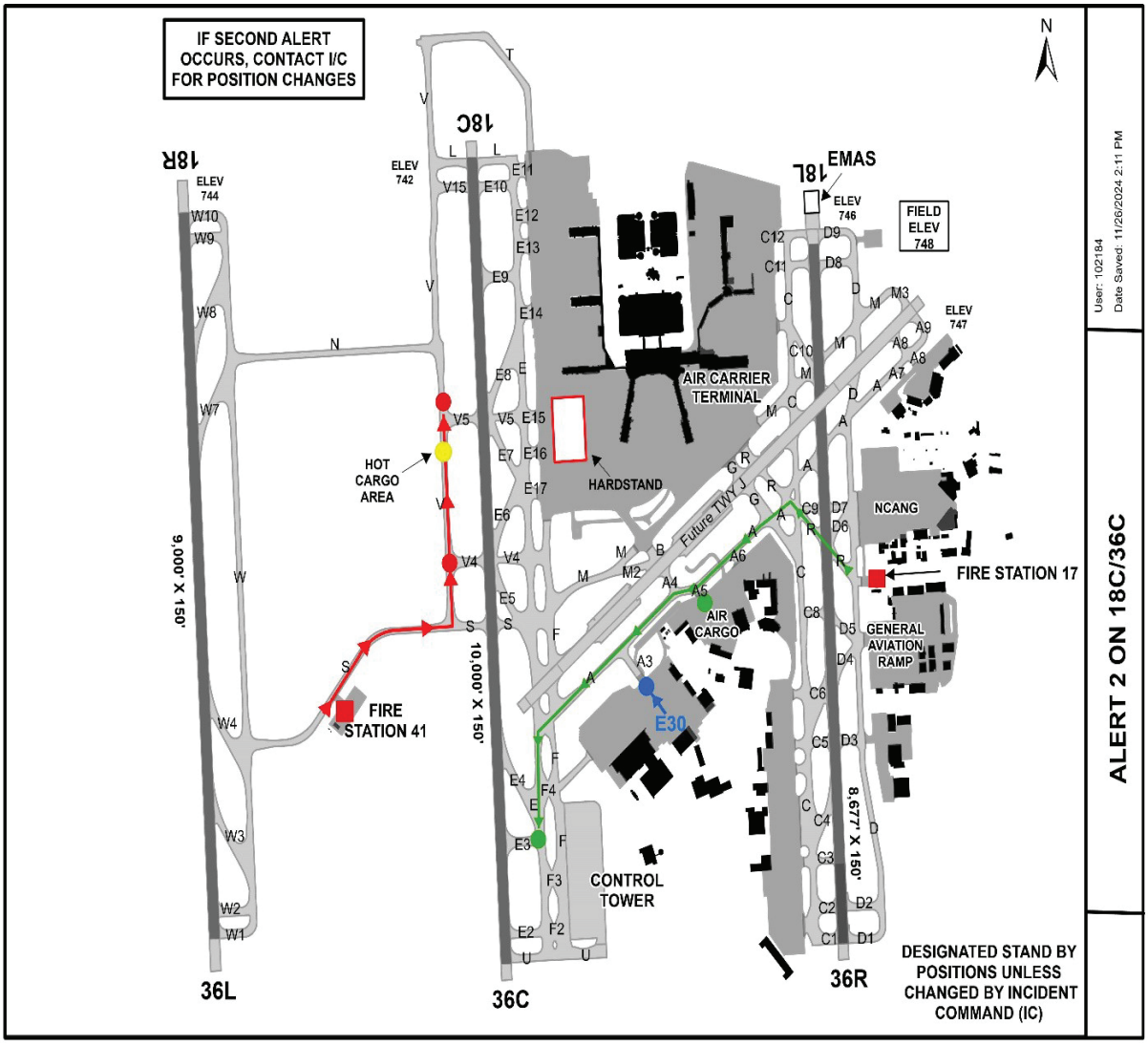
ALERT 2 ON RUNWAY 18R/36L



Charlotte ATC Tower (ATCT)/Charlotte Douglas International Airport (Airport Operations)/Charlotte Fire Department (ARFF)/North Carolina Air National Guard (NCANG)

ATTACHMENT 2

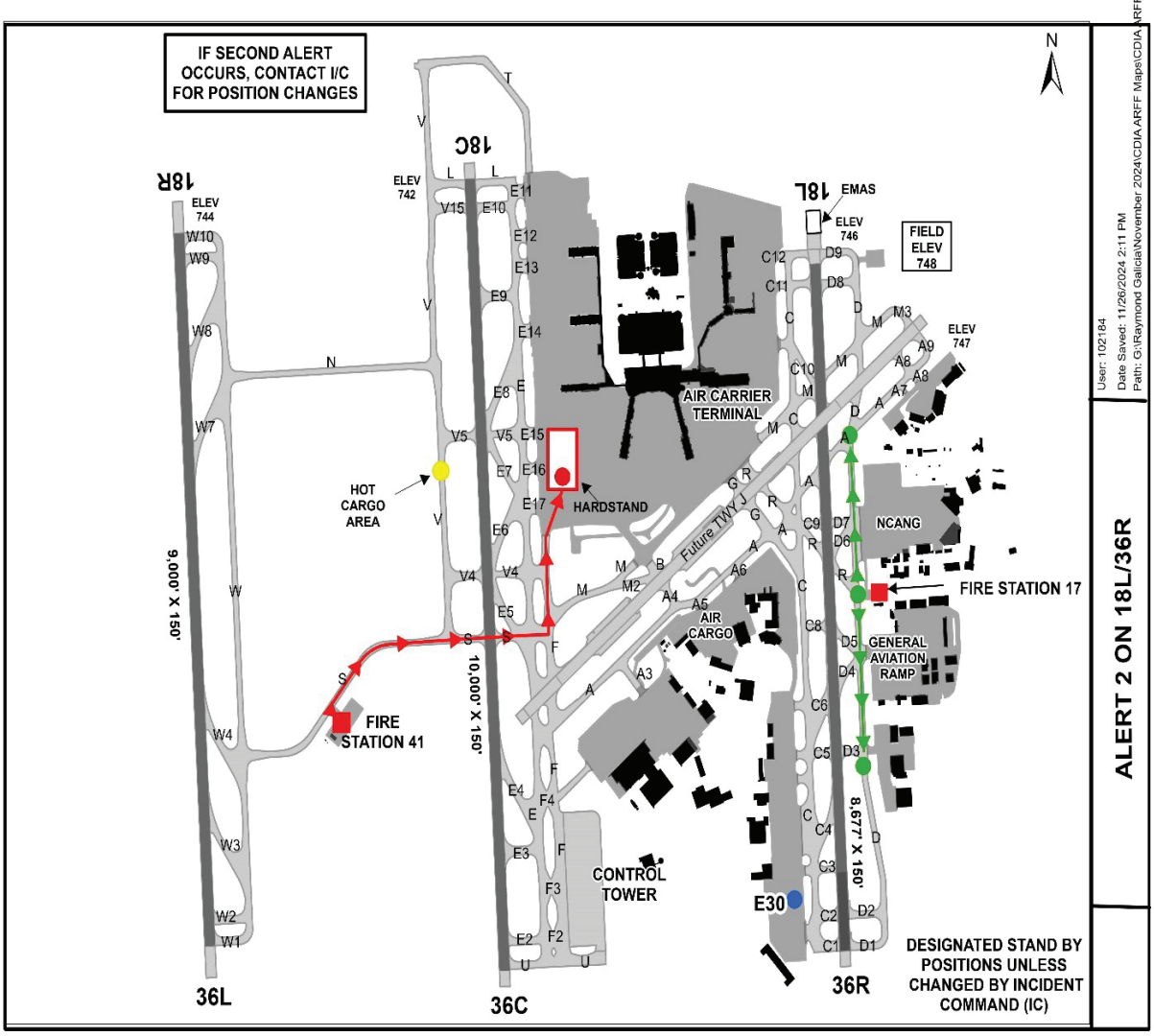
ALERT 2 ON RUNWAY 18C/36C



Charlotte ATC Tower (ATCT)/Charlotte Douglas International Airport (Airport Operations)/Charlotte Fire Department (ARFF)/North Carolina Air National Guard (NCANG)

ATTACHMENT 3

ALERT 2 ON RUNWAY 18L/36R



Charlotte Air Traffic Control Tower, Charlotte Air Traffic Control Tower Technical Operations and Charlotte Douglas International Airport Airside Operations

LETTER OF AGREEMENT

EFFECTIVE: May 30, 2025

SUBJECT: Control of Ground Vehicles/Pedestrians on the Movement Area

1. PURPOSE: This agreement between Charlotte Douglas International Airport Airside Operations (CDIA Operations), Charlotte Air Traffic Control Tower (CLT ATCT), and Charlotte Air Traffic Control Tower Technical Operations (Tech Ops), defines responsibilities for vehicular traffic movement in these areas.

2. CANCELLATION: Control of Ground Vehicles/Pedestrians on the Movement Area Letter of Agreement dated November 30, 2022.

3. EXPLANATION OF CHANGES:

- Removed references to RWY 5/23, it is now Taxiway Juliet.
- Updated airport map to show the central de-ice pad and the NEAT.
- Added a procedure for CDIA Operations vehicles to go back and forth to the central de-ice pad.
- Reformatted the sections

4. SCOPE: The procedures and responsibilities outlined herein are for use in the conduct of aircraft, vehicle and pedestrian movement by CDIA Operations, CLT ATCT and Tech Ops on or through the designated areas depicted in Attachment 1. Special provisions during de-icing are addressed. Exceptions for vehicles (with or without two-way radio communication capability or transponders) to operate at specified locations are addressed.

5. DEFINITIONS:

a. Movement area – The runways, taxiways, and other areas of an airport/heliport which are utilized for taxiing, hover taxiing, takeoff and landing of aircraft, exclusive of loading ramps and parking areas.
b. Non-movement area – Taxiway, taxi lane and apron (ramp) areas not under the control of air traffic.
c. Crossing Point (CP) – a place where vehicles are permitted to cross a taxiway without communication or approval from ATC.
d. Prearranged Coordinated Area – The movement areas, excluding runways and associated safety areas.

6. RESPONSIBILITIES:

a. All vehicle operators and pedestrians must:

(1) Hold short of all runways, until given clearance
(2) Give way to all taxiing aircraft
(3) Read back all runway hold short instructions
(4) Request and receive CLT ATCT clearance prior to operating on the movement area with exception of 7.c.- d., and CP's

b. CLT ATCT must:

(1) Be responsible for the movement and separation of aircraft and vehicle traffic on open movement areas (Attachment 1) with the exceptions outlined under paragraph 7 a through f.
(2) Ensure Operational personnel are trained on the procedures contained in this LOA.

c. CDIA Operations must:

(1) Ensure all vehicle operators will monitor the appropriate CLT ATCT ground frequency based on their location on the airfield.
(2) Advise airport tenants that may block ingress to or egress from the movement area (with exception of the Main Terminal ramp) to contact the CLT ATCT for advisories prior to conducting pushback operations. Information related to aircraft movement on the loading ramps or parking areas is advisory in nature and does not imply control responsibility.
(3) Ensure personnel are trained on the procedures contained in this LOA.

d. Vehicles/Pedestrians Operating on Runways must:

(1) Have an operational need to enter or cross runways. Runway crossings should be kept to a minimum.
(2) Receive a specific clearance from the appropriate CLT ATCT frequency to cross or proceed on a runway.

7. PROCEDURES:

a. Vehicles without transponder and/or two-way radio communication with CLT ATCT may cross Taxiway Alpha at the entrance to Tunnel Road (CP7 in Attachment 1) and must always yield right-of-way to aircraft.

b. Vehicles and personnel on the closed movement areas must be in direct communications with CDIA Operations.

c. CDIA operations vehicles that are properly marked, lighted, equipped with ADSD-B transponders labeled with an "Ops" call sign and two-way radios may operate on the prearranged coordinated area (Attachment 2) ***EXCEPT*** Runways, ILS Localizer/Glide Slope Critical Areas, and Runway Safety Areas without clearance from the CLT ATCT.

d. During declared De-icing operations, CDIA Operations vehicles may may escort de-icing trucks and equipment from Taxiway A5 (via Taxiway A) or to the Maintenance Ramp, to Taxiway F, to the Central Deicing Pad and back, without contacting CLT ATCT. CDIA Operations vehicles must yield right-of-way to aircraft at all times.

e. CDIA Operations will ensure de-icing operators will not impede aircraft entering or leaving the de-icing area.

f. Taxiway Mike between spot 25 and Taxiway Charlie, and Taxiway Charlie north of Taxiway Mike are designated taxiways within the movement area for ADG-V aircraft. CLT ATCT will avoid clearances which require ADG-V aircraft to use greater than normal taxiing power.

8. SPECIAL WEATHER CRITERIA:

a. CLT ATCT must advise CDIA Operations at (704) 359-4012 when weather conditions are less than a reported ceiling of 800' or visibility less than 2 miles. All vehicle operations must remain clear of instrument landing system critical areas when above weather conditions exist.
b. Blanket clearances are not allowed during SMGCS operations.

9. DEVIATIONS:

Deviations from procedures established by this agreement may be made only after coordination is accomplished which completely defines responsibilities in each case.

NOTE: The airport owner/operator covenants and expressly agrees that with regard to any liability, which may arise from the operation within the areas listed above, that party must be solely and exclusively liable for the negligence of its own agents, servants, and/or employees, in accordance with applicable law. No party looks to the other to save or hold it harmless for the consequences of any negligence on the part of one of its own agents, servants, and/or employees.

MARK A LIBBY JR Digitally signed by MARK A LIBBY JR Date: 2025.05.08 10:45:47 -04'00'

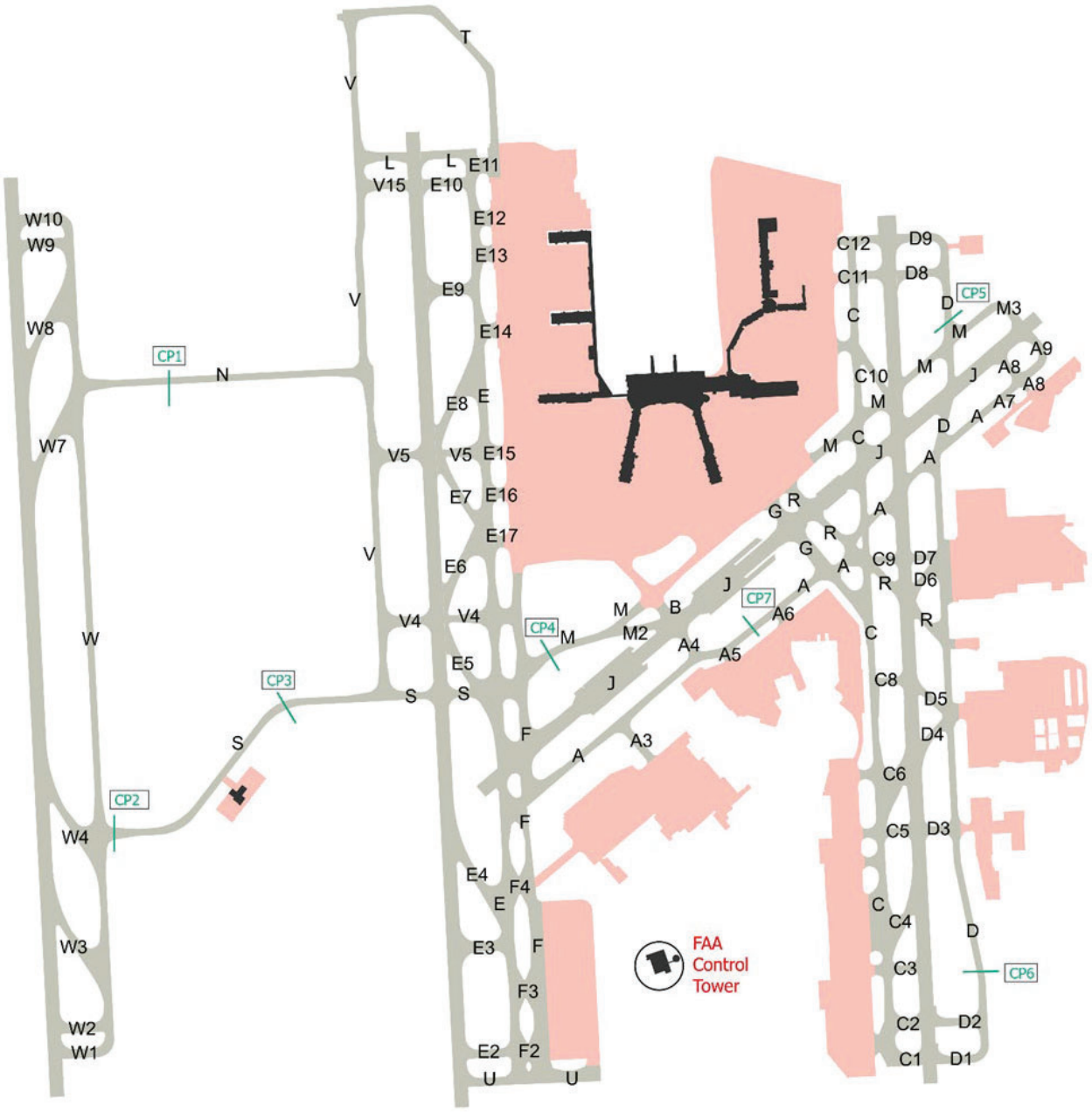
Mark Libby
Air Traffic Manager (A)
CLT ATCT

Haley Gentry
CEO
CDIA

BRETT M GENDOES Digitally signed by BRETT M GENDOES Date: 2025.05.08 14:28:19 -04'00'

Brett Gendoes
Technical Operations Manager
North Carolina Group

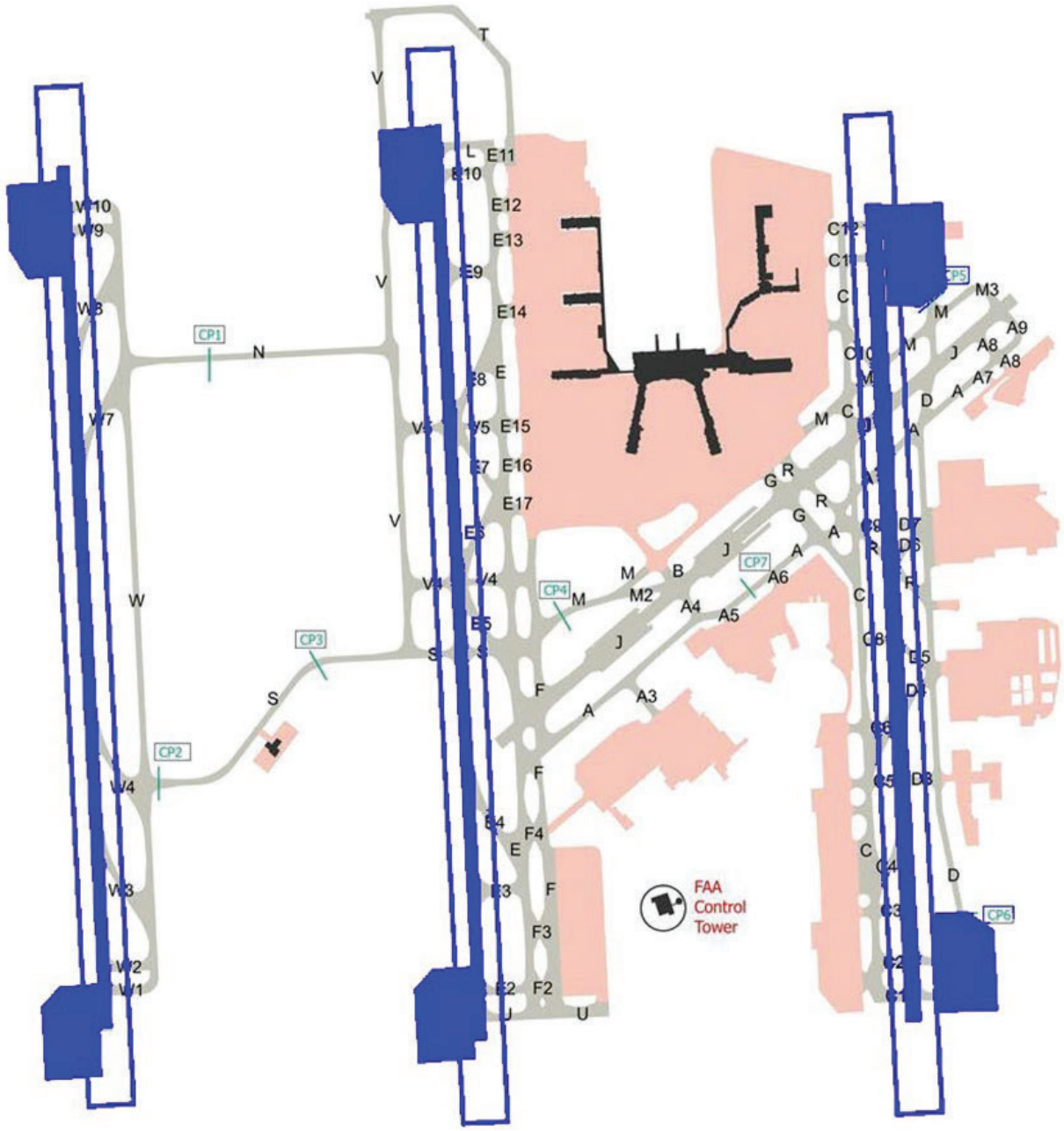
ATTACHMENT 1: Movement areas – grey
Non-movement areas – pink
Crossing points – green (e.g. CP5 Crossing Point 5)



Charlotte Air Traffic Control Tower, Charlotte Air Traffic Control Tower Technical Operations and Charlotte Douglas International Airport Airside Operations

ATTACHMENT 2:

Prearranged Coordinated Area outside of blue indications.



Federal Aviation Administration
Southern Region Airports Division
Approved
May 15 2025
JNF
Airport Certification Safety Inspector

Charlotte Air Traffic Control Tower (CLT ATCT), Charlotte Air Traffic Control Tower Technical Operations (Tech Ops) and Charlotte Douglas International Airport Airside Operations (CDIA Operations)

LETTER OF AGREEMENT

EFFECTIVE: March 31, 2025

SUBJECT: Requirements for Operating in the Runway Safety Areas (RSAs)

1. PURPOSE: This Letter of Agreement establishes procedures and defines responsibilities of CLT ATCT, Tech Ops and CDIA Operations for accessing, operating in, and exiting the RSAs at Charlotte Douglas International Airport (CDIA).

2. CANCELLATION: Movement, Non-Movement and Runway Safety Areas Letter of Agreement dated April 30, 2022.

3. EXPLANATION OF CHANGES: Updated maps due to Runway 5/23 becoming Taxiway J.

4. SCOPE: The procedures and responsibilities outlined herein are for use in the conduct of aircraft, vehicle, and pedestrian movement by CDIA Operations, CLT ATCT, and Tech OPS on or through the RSAs (Attachment 2).

5. RESPONSIBILITIES: Each entity/line of business listed above has some responsibility for ensuring the RSA is protected during aircraft operations. The RSA is defined as surface surrounding the runway; prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway. Specific responsibilities are listed below:

a. General

1. CDIA Operations has designated the Airport Movement Area as the runways and taxiways are depicted in Attachment 1. The RSAs depicted in Attachment 2.

2. The RSAs must normally be clear of personnel, vehicles, and equipment during aircraft operations. Most activities that need to take place in the RSA should occur when the runway is closed. However, there are some situations and/or circumstances where personnel, vehicles, and equipment require access to the RSA during aircraft operations. Examples include maintenance of NAVAIDS, signs and lighting within the RSA, limited mowing operations, personnel on foot and emergency response.

3. Coordination must be made with CDIA Operations prior to conducting any construction or maintenance in the RSA. To the extent possible, schedule maintenance activities within the RSA during planned and coordinated runway closures. In the event the coordinated time period to be in the RSA needs to be extended, coordination must be made through CDIA Operations as soon as possible.

4. CDIA Operations and Tech Ops may operate in the RSAs when performing essential duties. Time in the RSA must be limited. Drivers shall drop off needed equipment within the RSA, park the vehicle outside the RSA, and walk back into the RSA with handheld radio.

5. Ensure operational personnel that will access RSAs have a valid CDIA Security Identification Display Area (SIDA) badge and Airport Movement Area License.

6. Unless otherwise coordinated, radio communication with the ATCT will be on the frequency assigned to the runway whose RSA is being requested. Maintain positive radio communication with the ATCT while operating in the RSA. The runways and associated frequencies are:

Runway	**Frequency**
Runway 36R/18L	118.1
Runway 36C/18C	126.4
Runway 36L/18R	133.35

7. Closed Runway: Any person entering the RSA of a closed runway must establish and maintain communications with CLT ATCT before traversing open movement areas, with the exception that communication with CLT ATCT may not be necessary if accessing directly from a non-movement area. However, if there is any doubt whether the associated runway is closed, contact CLT ATCT for confirmation.

b. CDIA Operations Responsibilities:

1. Develop and conduct training, required and recurrent, for operational personnel that access airport movement areas and operate in RSAs.

2. Approve/deny request to access the RSA based on location, safety and weather conditions.

3. Maintain and monitor a database of employees that have access privileges to the RSAs.

4. Maintain code of enforcement policies for those who violate RSA procedures.

c. CLT ATCT Responsibilities:

1. Provide training for all CLT ATCT Operational personnel on the RSA procedures contained in this LOA.

2. Upon request to enter the RSAs the ATCT may state, “Proceed as requested”.

3. Vehicle operators or maintenance personnel with equipment (in direct communications with the ATCT), may be authorized to operate up to the edge of the active runway surface when necessary, per 7110.65 para. 3-1-5.

d. Tech Ops Responsibilities:

1. Ensure operational personnel that will access RSAs are properly trained and adhere to RSA entry/exit procedures.

2. Request ATC clearance onto the airport movement area and into and out of the RSAs before proceeding, defining specific routes of travel.

NOTE: The airport owner/operator covenants and expressly agrees that with regard to any liability, which may arise from the operation within the areas listed above, that party must be solely and exclusively liable for the negligence of its own agents, servants, and/or employees, in accordance with applicable law. No party looks to the other to save or hold it harmless for the consequences of any negligence on the part of one of its own agents, servants, and/or employees.

MARK A LIBBY JR
Digitally signed by MARK A LIBBY JR
Date: 2025.03.24 10:16:05 -04'00'

Mark Libby
Air Traffic Manager (A)
CLT ATC Tower

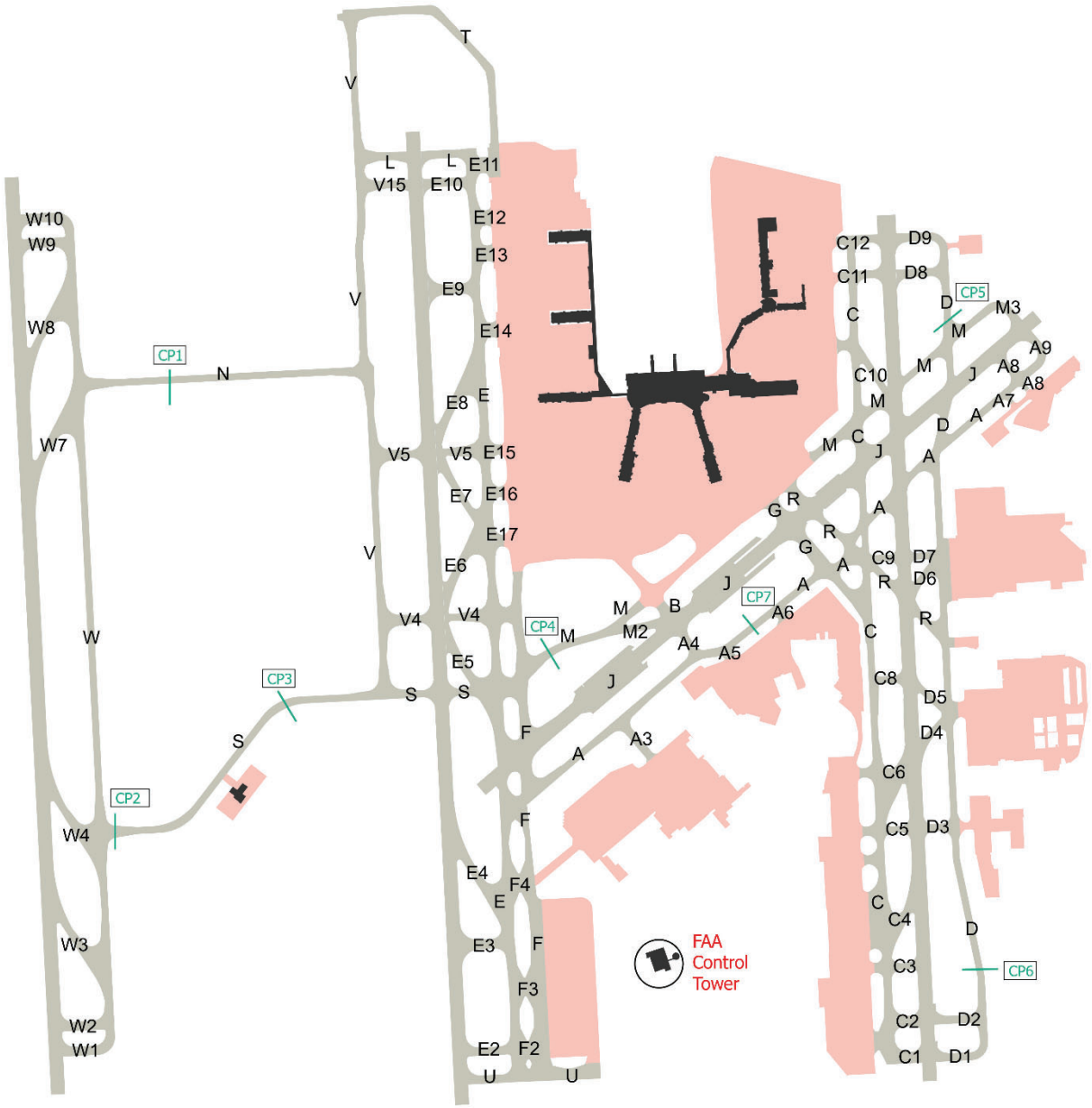
Haley Gentry
CEO
Charlotte Douglas International Airport

Brett Gendoes 3/24/25

Brett Gendoes
Technical Operations Manager
North Carolina Group

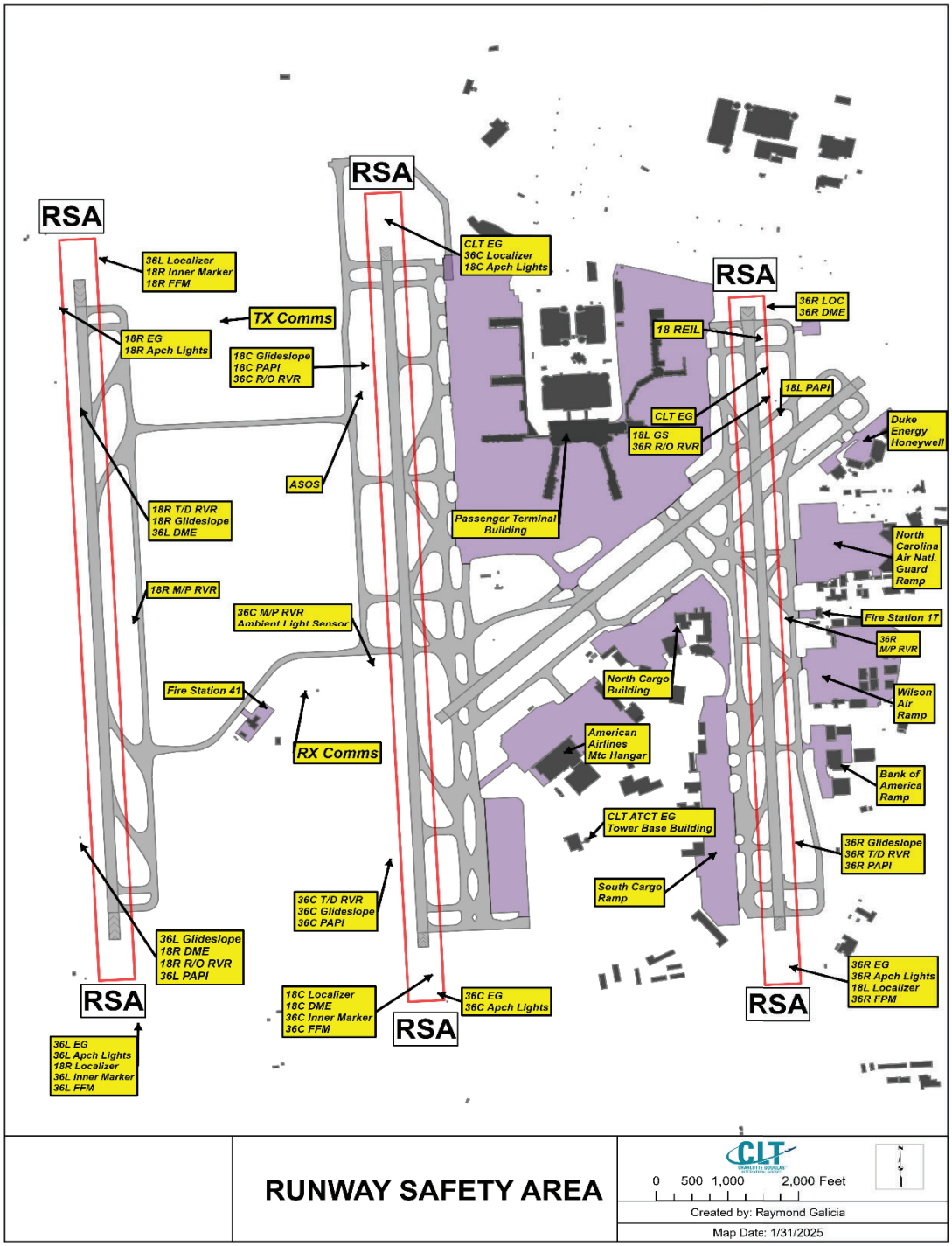
ATTACHMENT 1

Movement areas – grey
Non-movement areas – pink
Crossing Points – green (e.g. CP5 – Crossing Point 5)



ATTACHMENT 2

Charlotte Air Traffic Control Tower (CLT ATCT), Charlotte Air Traffic Control Tower Technical Operations (Tech Ops) and Charlotte Douglas International Airport Airside Operations (CDIA Operations)



Charlotte ATC Tower and Charlotte Douglas International Airport

LETTER OF AGREEMENT

DATE: February 24, 2016

SUBJECT: Responsibility and Inspections of the Airport Lighting System

1. Purpose. This Agreement prescribes procedures and responsibilities of the airport lighting system with respect to Charlotte/Douglas International Airport Operations and Airfield Maintenance, Federal Aviation Administration Technical Operations (FAA Tech Ops), and the Charlotte Air Traffic Control Tower (CLT ATCT).

2. Cancellation. CLT ATCT and Charlotte/Douglas International Airport Letter of Agreement *RESPONSIBILITY FOR OPERATION OF THE AIRPORT LIGHTING SYSTEM*, effective November 6, 1997, is canceled.

3. Responsibilities. CLT Airfield Maintenance shall maintain, in proper working order, the airport lighting and the airport lighting control panel located in the air traffic control cab. CLT Airport Operations will conduct the inspections outlined in Section 4a. CLT ATCT is responsible for operation of the airport lighting. FAA Tech Ops is responsible for maintenance and repair of any federally owned and operated lighted NAVAIDs, including, but not limited to: PAPIs, approach lights, REILs, RWSLs, and threshold lights.

4. Inspections.

a) CLT Airport Operations will conduct inspections of City and FAA owned lights and NAVAIDs on a daily basis, upon request from the CLT ATCT, or following a severe weather event. An inspection will be done before and during CAT II/III operations at two hour intervals. Nightly inspections will be conducted with an effort made to avoid high volume periods and will require the CLT ATCT to put the runway and approach lighting systems through the steps of brightness.

b) FAA Tech Ops will be the primary inspector for all FAA owned lighted NAVAIDs, and any inspections by CLT Airport Operations personnel will be supplemental.

5. Notifications.

a) CLT ATCT shall notify CLT Airport Operations that a CAT II/III light inspection is needed prior to beginning CAT II/III ILS approaches and will advise when CAT II/III operations have ceased.

b) CLT ATCT and FAA Tech Ops shall notify Airport Operations whenever a problem exists with the airport lighting system or the airport lighting system control panel. CLT Airport Operations will dispatch an officer to verify the malfunction and make the determination as to whether the runway is safe for aircraft operations.

c) CLT Airport Operations and Airfield Maintenance shall coordinate with the CLT ATCT prior to removing or interrupting service to the airport lighting system.

d) In the event that CLT Airport Operations finds unlighted NAVAIDs, or outages that may cause potential safety issues, the inspector will call the CLT ATCT as soon as practical to notify and confirm the lighting system is showing an alarm. After this call, it will be up to the fixture owner to make the appropriate notifications to have the system fixed in a timely manner and issue any necessary NOTAMs.

e) For less severe problems with FAA-owned lighted NAVAIDs, Airport Operations will contact the on-call FAA technician responsible for airfield lighting.

Prostell Thomas
Air Traffic Manager
CLT ATCT

Brent Cagle
Interim Aviation Director
Charlotte Douglas
International Airport

Steven G. Reisch
(Acting) NC Group TOM

Charlotte Air Traffic Control Tower (ATCT) and Charlotte Douglas International Airport (CDIA)

LETTER OF AGREEMENT

EFFECTIVE: August 1, 2023

SUBJECT: Procedures for Opening and Closing Runways

1. PURPOSE: Establish procedures and responsibilities for opening and closing runways at Charlotte Douglas International Airport (CDIA).

2. SCOPE: The procedures outlined herein are for use in the conduct of opening and closing runways. These procedures will outline the use of lighted devices, portions of the closed runway available for ground operations such as crossings, and the responsibility in issuing of NOTAMs.

3. EXPLANATION OF CHANGES:

a. Update Fax numbers
b. Update signatories
c. Update NOTAM notification method

4. RESPONSIBILITIES:

a. CDIA has sole authority for opening/closing a runway and must issue required NOTAM's.

b. CDIA has responsibility over all closed runways; vehicles and personnel operating on the closed runway must yield right-of-way to aircraft at all times and either be under escort or in direct communications with CDIA operations.

c. ATCT must, if they observe or are informed of any condition which affects the safe use of a runway, relay the information to CDIA.

5. PROCEDURES:

a. CDIA must:

(1) Notify ATCT of planned runway closures and re-openings via telephone conversation.

(2) Provide a Local/National copy of the NOTAM to the Operations Supervisor (OS) or his/her designee via email. If notified on an email issue/outage, the backup method will be via FAX:

(a) TRACON FAX – 704-790-5476

(3) For closures of significant duration, CDIA operations must place a lighted X, both at night and during the day, at each end of the runway facing the approach.

(4) Advise ATCT of specific crossing points, for use in taxiing aircraft without coordination.

(5) CDIA Operations must provide authorization to vehicles and personnel on the closed runway.

(6) CDIA Operations must ensure all vehicles, personnel, and equipment are off the runway prior to opening.

b. ATCT must:

(1) Consider a runway closed at the time stated on the NOTAM, plan accordingly, and be off affected surfaces at that time.

(2) Obtain specific approval from CDIA Operations via radio or telephone, for crossing a closed runway, if 5. a. (4) has not occurred.

(3) Advise CDIA of any extenuating circumstances, via telephone, requiring a need for a change/delay to a planned closure.

MARK A LIBBY JR
Digitally signed by MARK A LIBBY JR
Date: 2025.04.15 13:23:35 -04'00'

Haley H Gentry

Mark Libby
Air Traffic Manager (A)
Charlotte ATCT

Haley Gentry
CEO
Charlotte Douglas International Airport

Charlotte ATC Tower and Charlotte-Douglas International Airport

LETTER OF AGREEMENT

EFFECTIVE: January 6, 2020

SUBJECT: Group VI Diversion

1. PURPOSE: This Letter identifies the procedure for maneuvering Group VI aircraft on the Charlotte Douglas International Airport Air Operations Area, and defines responsibilities of Charlotte ATC Tower (ATCT) and Airport Operations (CDIA).

2. SCOPE: For the purpose of this Letter, Group VI aircraft are defined as an aircraft with a wingspan of 264 feet and or tail height of 80 feet. CDIA has defined designated runways and taxiways in the GROUP VI diversion plan that are suitable for taxiing, landing and departing Group VI aircraft.

3. RESPONSIBILITIES: ATCT is responsible for movement of aircraft on the movement areas. CDIA shall require, by agreement and regulation, that all Group VI aircraft operate in accordance with the approved routes attached in the agreement.

4. PROCEDURES:

a. Upon notification of a Group VI diversion, ATCT will contact CDIA at (704) 359-4012 to coordinate the movement of the Group VI aircraft.

b. Runway 18C/36C is the designated runway for all Group VI arriving and departing aircraft.

(1) For Group VI arrivals, CDIA will determine the parking location of the Group VI aircraft. ATCT shall taxi the aircraft via the approved taxi routes in the Attachments. All exits from RWY 18C/36C are available for Group VI aircraft.

(2) For Group VI departures, ATCT shall taxi the aircraft to Runway 18C/36C via the approved taxi routes in the Attachments.

c. When Group VI aircraft are taxiing on TWY E, limit aircraft on TWY E2/E10 to Group V, and limit aircraft on TWY F to Group III. When Group VI aircraft are taxiing on TWY R, limit aircraft on TWY G to Group III.

Sonya H Busch

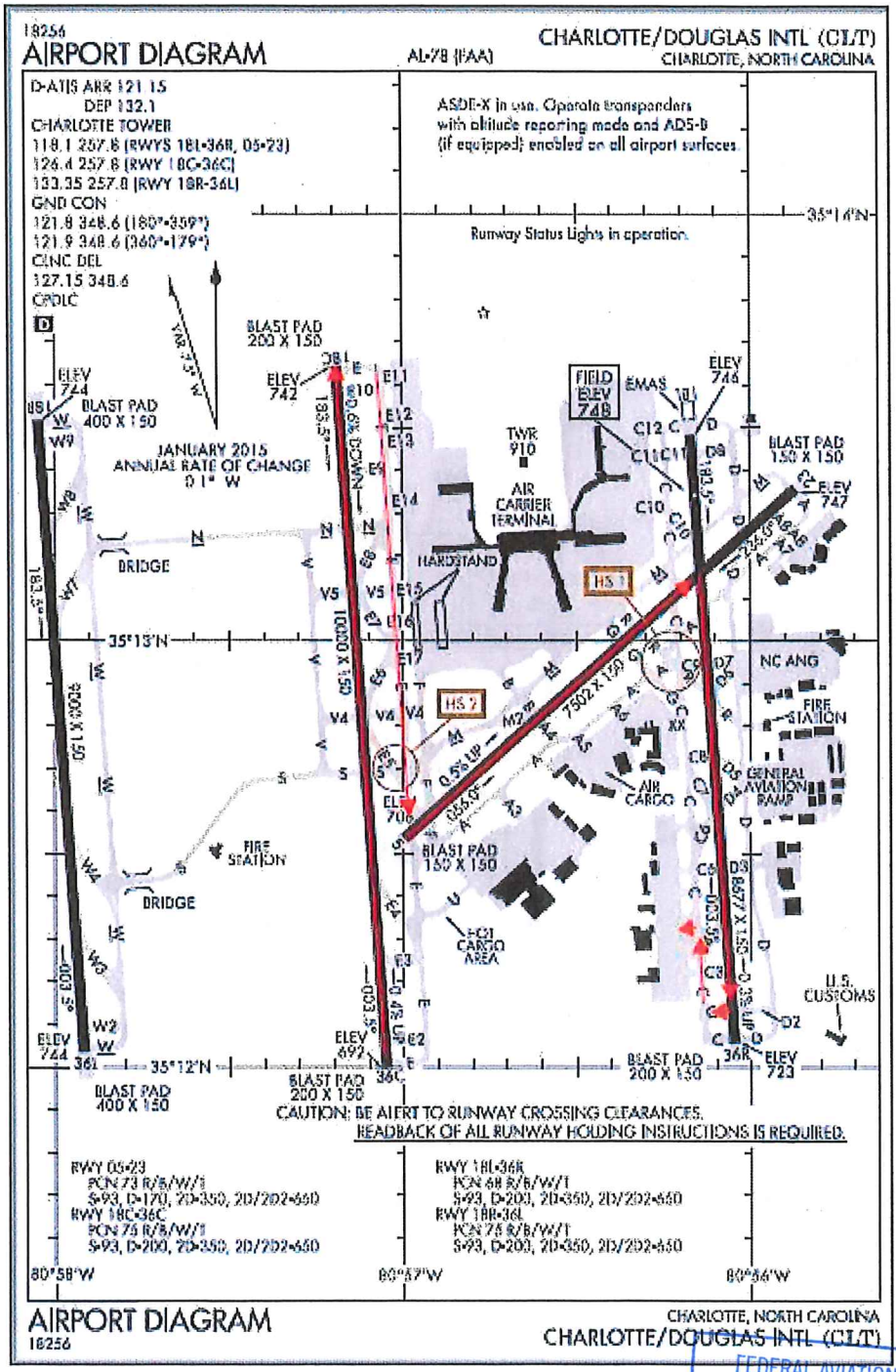
Sonya Busch
Air Traffic Manager
FAA Charlotte ATC Tower

Brent Cagle

Brent Cagle
CEO
Charlotte Douglas International Airport

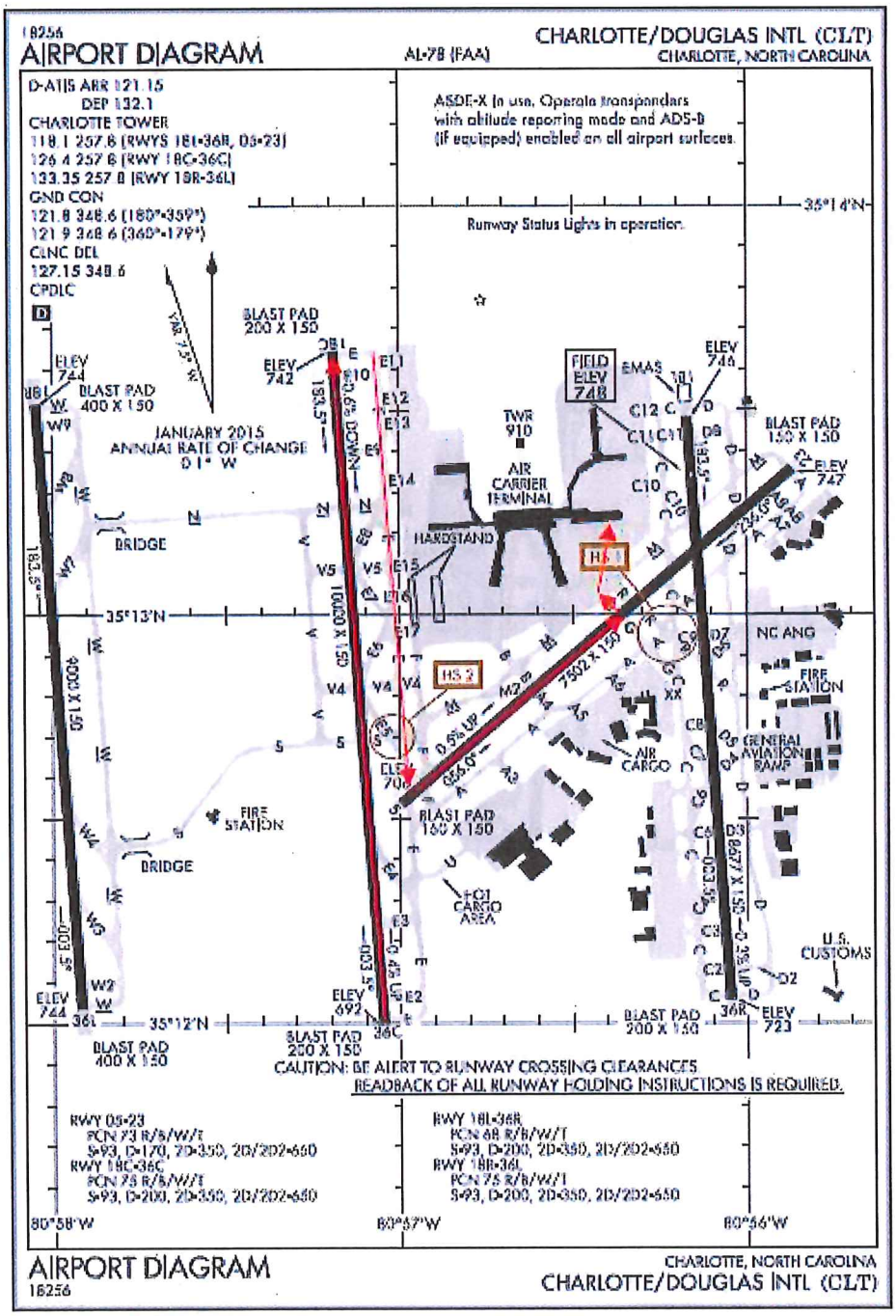
ATTACHMENT

Runway 36C to South Cargo via TWY C2



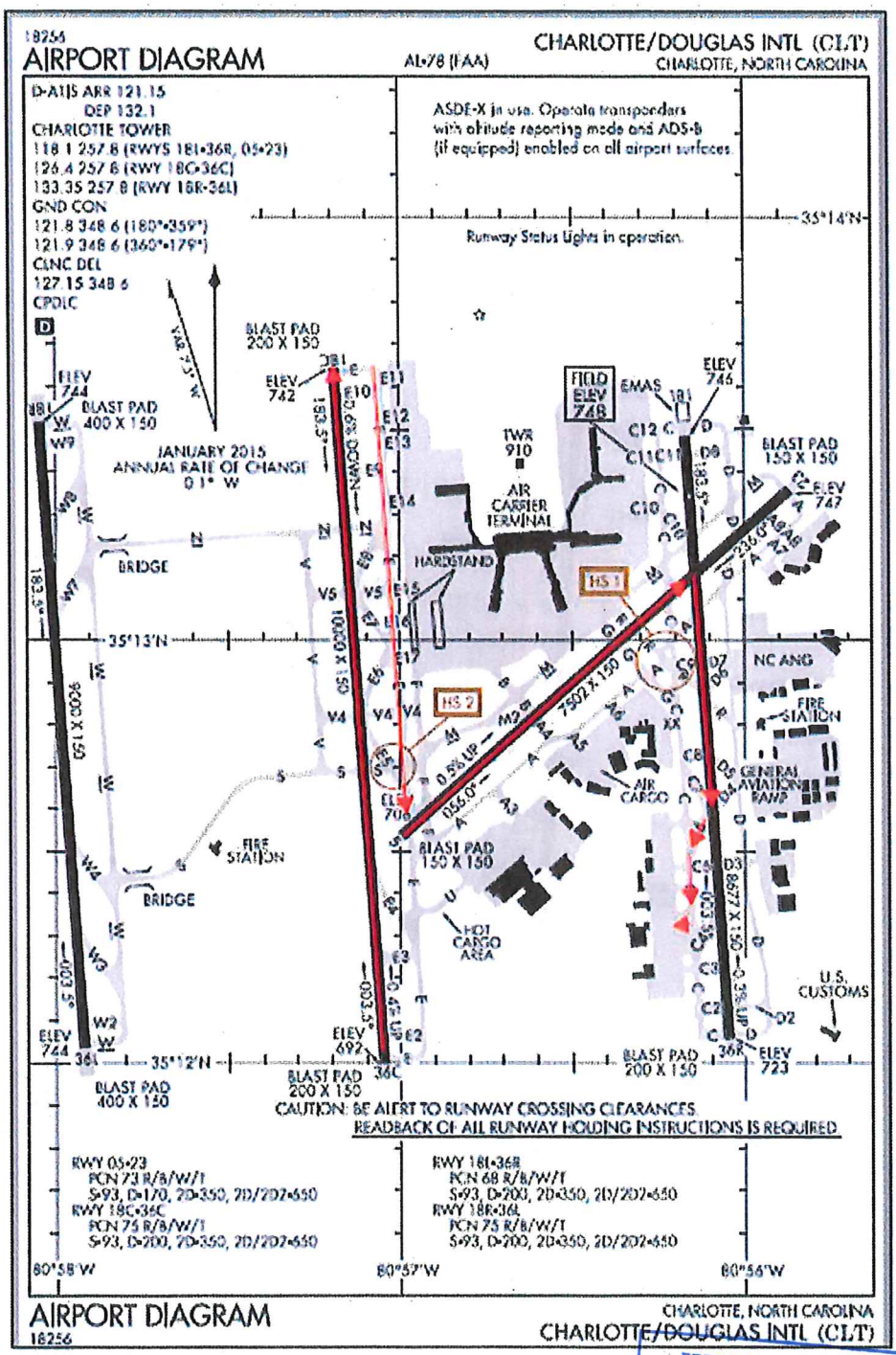
ATTACHMENT

Runway 36C to Gate D9a via Taxiway G



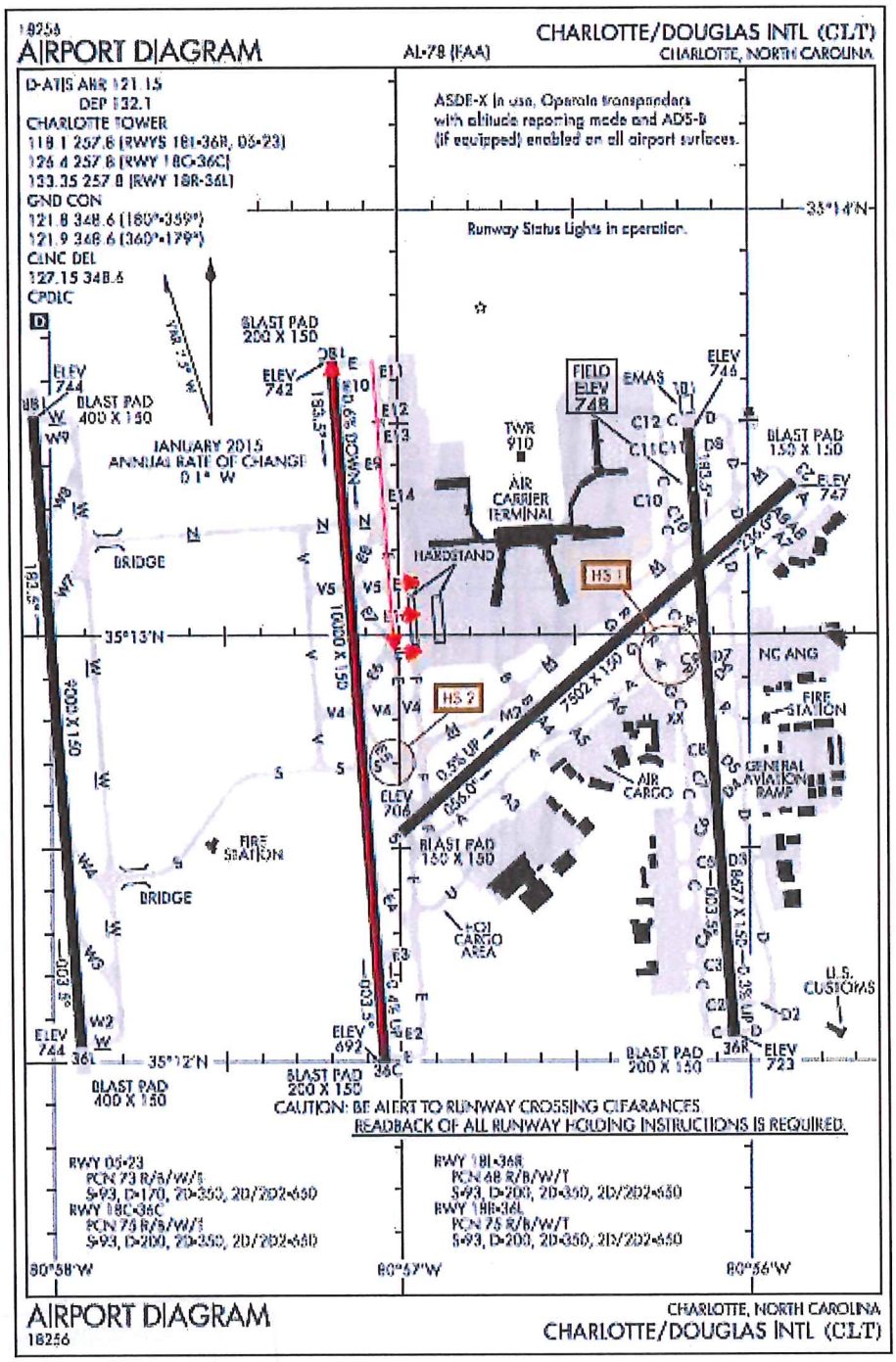
ATTACHMENT

Runway 36C to South Cargo via TWY C6



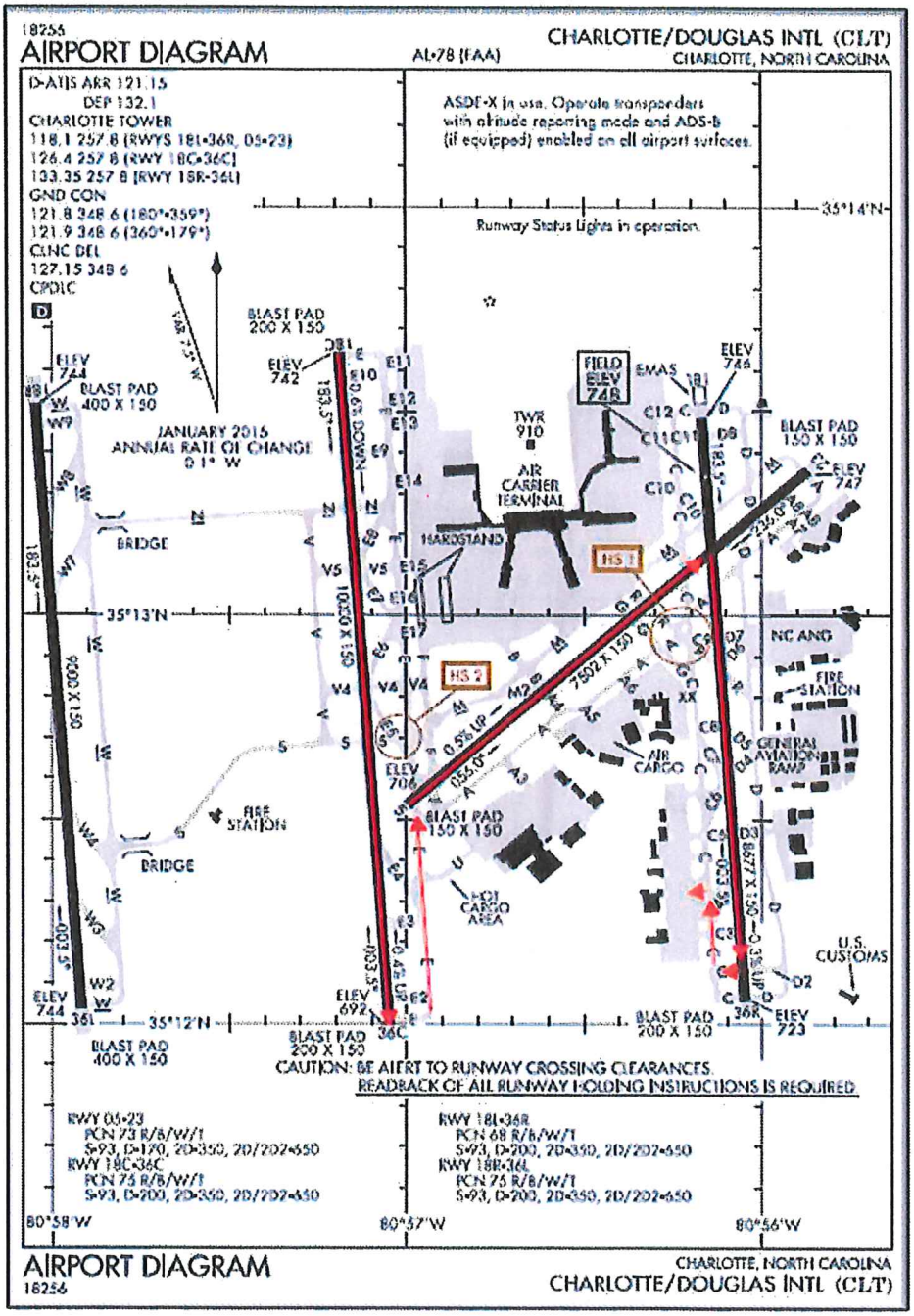
ATTACHMENT

Runway 36C to West Hardstand via TWYs E15, E16, or E17



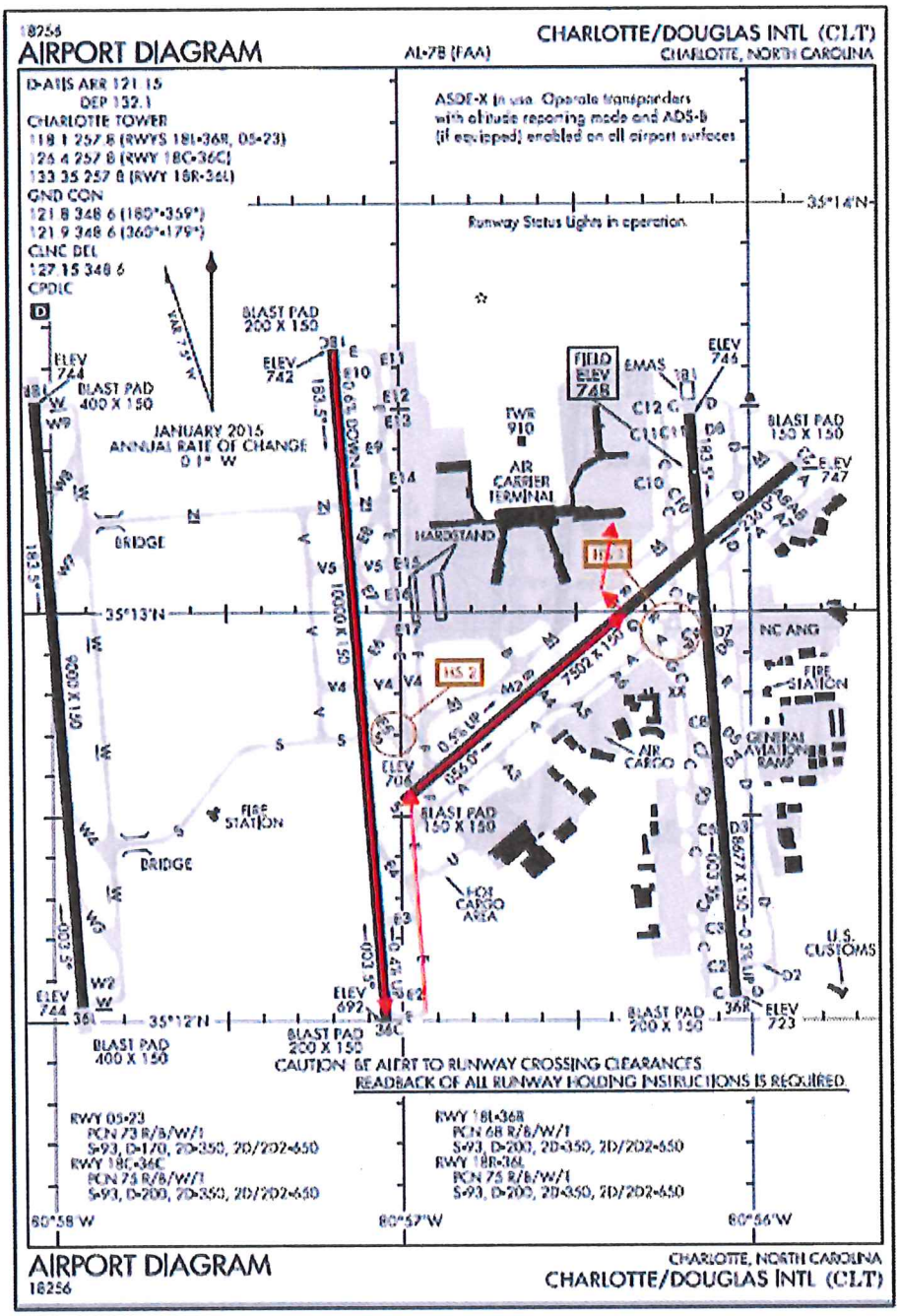
ATTACHMENT

Runway 18C to South Cargo via TWY C2



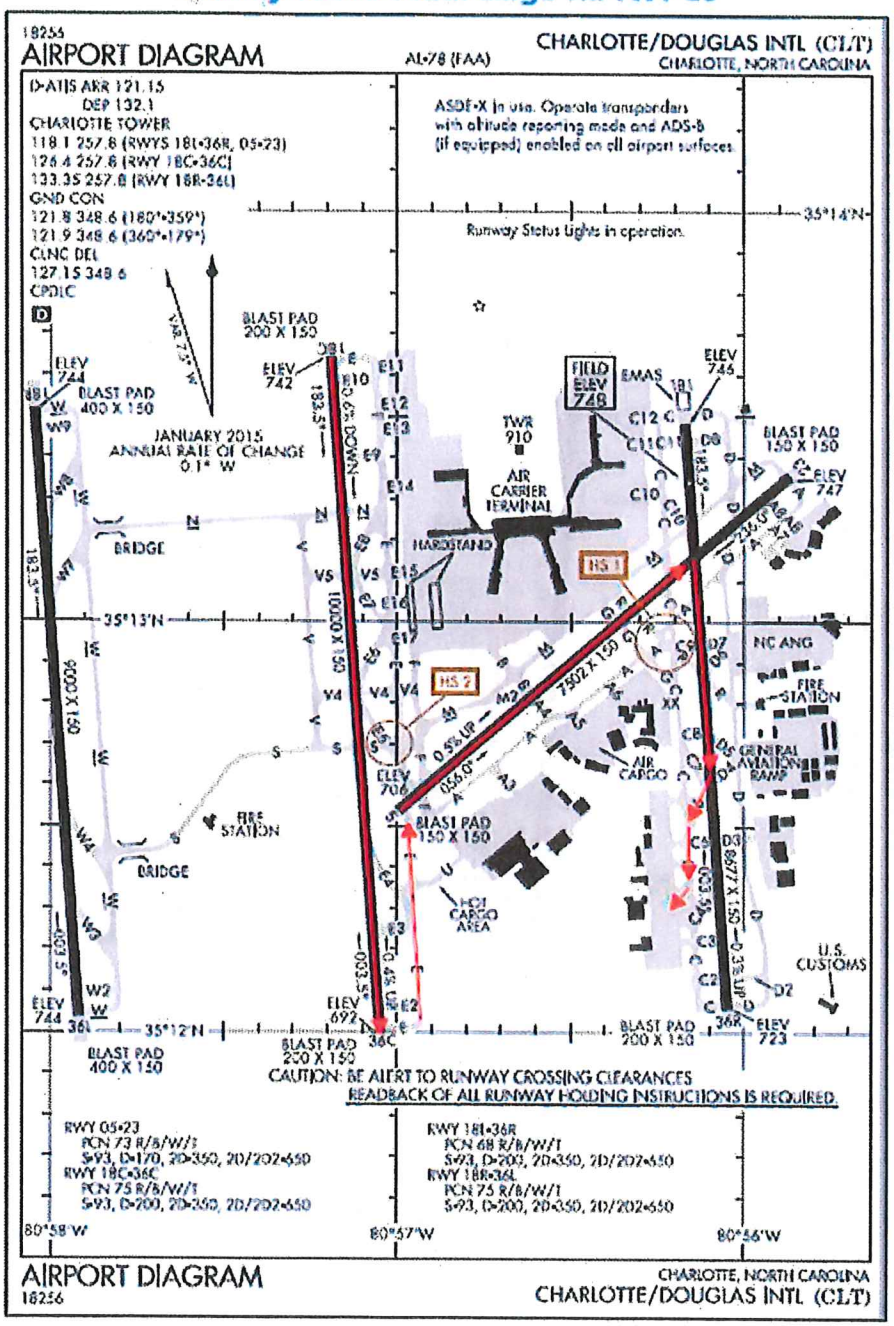
ATTACHMENT

Runway 18C to Gate D9a via Taxiway G



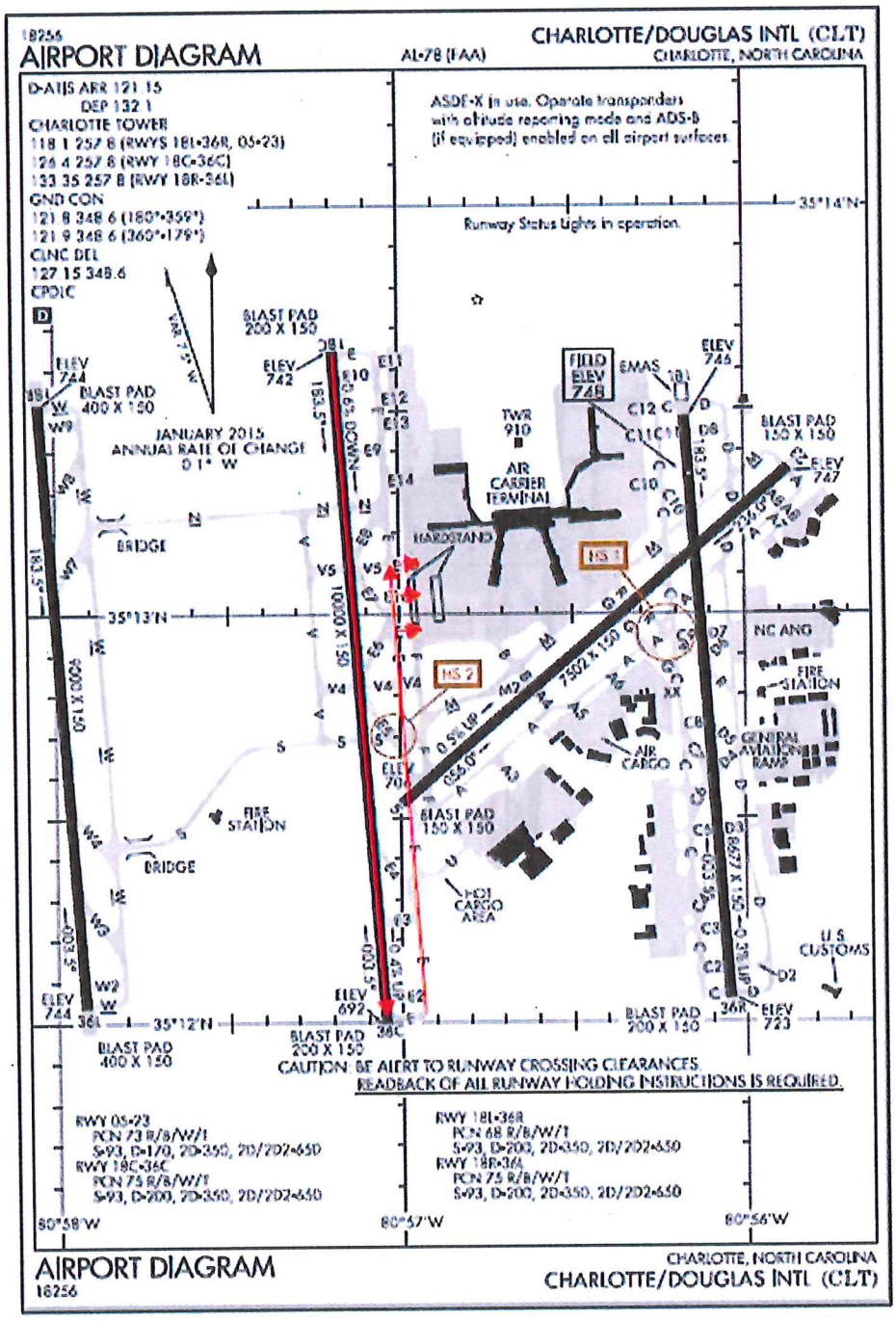
ATTACHMENT

Runway 18C to South Cargo via TWY C6

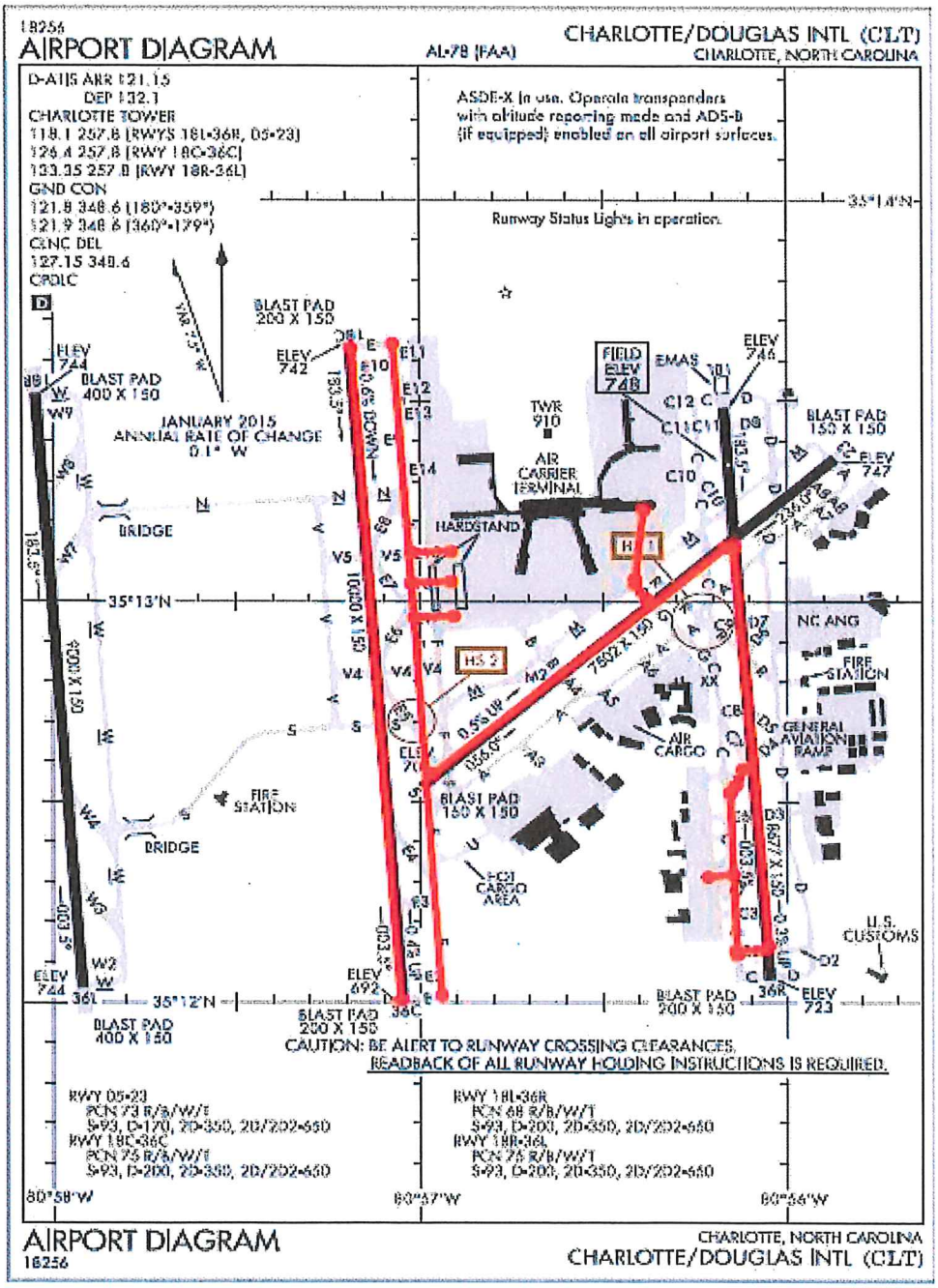


ATTACHMENT

Runway 18C to West Hardstand via TWYs E15, E16 or E17



ATTACHMENT



Charlotte ATC Tower (ATCT), Charlotte Douglas International Airport (Airport OPS)

LETTER OF AGREEMENT

EFFECTIVE: April 1, 2024

SUBJECT: Emergency Air Traffic Services

1. PURPOSE: This Agreement establishes procedures and responsibilities for the resumption of basic air traffic services in the event of an emergency evacuation of the Charlotte Air Traffic Control Tower (ATCT) facility.

2. CANCELLATION: Charlotte ATCT, Charlotte Douglas International Airport, and American Airlines Letter of Agreement dated September 1, 2023.

3. RESPONSIBILITIES: In the event an emergency evacuation of the Charlotte ATCT facility were necessary, the parties agree to the following coordination procedures.

4. PROCEDURES: In the event an emergency evacuation of the ATCT occurs:

a. ATCT must:

1. Contact Airport Ops and advise that an evacuation is necessary.
2. Advise Airport Ops that 126.4 is now the Common Traffic Advisory Frequency (CTAF).

b. Airport OPS must:

1. Contact airfield stakeholders and advise of the situation.

MARK A LIBBY JR Digitally signed by MARK A LIBBY JR Date: 2024.03.14 07:56:35 -04'00'

Mark Libby

Air Traffic Manager (A)

Charlotte ATCT

Haley Gentry Digitally signed by Haley Gentry Date: 2024.03.13 11:55:42 -04'00'

Haley H. Gentry

CEO

Charlotte Douglas International Airport

Federal Aviation Administration
Southern Region Airports Division
Approved
May 15 2025
JNF
Airport Certification Safety Inspector

CHARLOTTE AIRPORT TRAFFIC CONTROL TOWER (CLT ATCT),
AND
CHARLOTTE DOUGLAS INTERNATIONAL AIRPORT (CDIA)

LETTER OF AGREEMENT

Effective Date: April 1, 2024

SUBJECT: Notification Process by the Airport for Surface Area NOTAMs

1. PURPOSE. This agreement identifies responsibility for notification of the affected Air Traffic Control (ATC) facility of Surface Area Notices to Airmen (NOTAMs) created by Charlotte Douglas International Airport (CDIA).

2. CANCELLATION. CLT ATCT and CDIA Letter of Agreement Notification Process by The Airport for Surface Area NOTAMS, effective April 20, 2016, is cancelled.

3. SCOPE. The procedures outlined herein are to be used to standardize procedures between the Charlotte ATCT and Charlotte Douglas International Airport regarding the notification of Surface Area NOTAMs created and directly-entered by the Airport in the FAA Direct-entry Digital NOTAM system.

4. DEFINITION. The Airport, for the purposes of this agreement will include the Airport Director and Operations Staff.

5. RESPONSIBILITIES. According to the NOTAM Manual (FAA JO 7930.2), the Airport is responsible for creating and reporting surface area NOTAMs associated with the Airport. Surface area NOTAMs include conditions pertaining to: Aerodrome, Runway, Taxiway, Apron, Ramp, Services and Obstructions on the Airport property.

6. NOTAMs. Under the current legacy NOTAM system, the Airport contacts Flight Service (FSS) about the need to create Surface Area NOTAMs. FSS is responsible for the classification, accuracy, format, dissemination, and cancellation of the NOTAM information received from the Airport and is also responsible for notifying the affected ATC facility.

7. DIRECT-ENTRY DIGITAL NOTAMs. The Airport will be using FAA Web-based software to directly enter Surface Area NOTAMs into the United States NOTAM System (USNS) and will by-pass FSS. Therefore, the Airport is responsible for the classification, accuracy, format, dissemination, and cancellation of the NOTAM information, as well as notifying the affected ATC facility.

8. NOTIFICATION. Because the Airport will be directly entering NOTAMs into the USNS and bypassing FSS, they must notify CLT ATCT per FAA Order 100.36 Chapter 2. Before NOTAMs are entered into the FAA's Digital NOTAM System, the notification process will be as follows:

A. The Airport must notify the ATCT via facsimile (FAX), phone, or other electronic means:

1) NOTAM keywords:

a) Aerodrome, Runway, Taxiway, Ramp/Apron, Obstruction or Services

2) NOTAM designator (such as 18C/36C or terminal ramp)

3) Reason/condition for all of the following keyword NOTAMs:

a) **Aerodrome** – all NOTAMs

b) **Runway** – all NOTAMs

c) **Taxiway**

i. all Movement area NOTAMs

ii. all Non-movement area NOTAMs that impact normal flow operations

d) **Ramp/Apron** – all NOTAMs that impact normal flow operations

e) **Obstruction** – all NOTAMs

f) **Services** - all NOTAMs

4) Start date and time, end date and time, or the expected time period of the NOTAM.

Examples:

"CLT TWY A8 BTN TWY J AND TWY A CLSD 2401120028-2412301700"

"TWY A SFC PAINTED HLDG PSN SIGNS FOR RWY 18L/36R EAST SIDE REMOVED 2303011433-2404011600"

"CLT RWY 18L FICON 3/3/3 100 PCT 1/4IN DRY SN 75FT WID 2402081300-2402082100"

B. The Airport must follow up with a phone call to CLT ATCT (704-790-5460) to ensure receipt of the NOTAM's pertaining to surface area openings/closings and FICON changes. If the NOTAM affects the availability of any surface area, this phone call must occur not more than one hour, and in most cases not less than ten minutes, prior to the effective date and time on the NOTAM.

9. FAILURE OF THE DIRECT-ENTRY NOTAM SYSTEM. When the Airport becomes aware of a failure of the Direct Entry Digital NOTAM system, the Airport must alert the CLT ATCT of this fact and then revert to the legacy system using FSS.

10. TERMINATION OF AGREEMENT. This agreement must remain in effect unless terminated by the signatories. The signatories shall provide a 30 day written termination notice to the other party, unless otherwise agreed upon.

MARK A LIBBY JR

Digitally signed by MARK A LIBBY JR
Date: 2025.03.24 08:37:46 -04'00'

Haley H Gentry

Mark A. Libby
Air Traffic Manager (A)
Charlotte Air Traffic Control Tower

Haley Gentry
CEO
Charlotte Douglas International Airport

Charlotte Air Traffic Control Tower and Charlotte Douglas International Airport

LETTER OF AGREEMENT

Effective Date: December 26, 2024

1. **SUBJECT**: Operation of the North End-Around Taxiway, Phase 1

2. **PURPOSE:** To establish procedures and define responsibilities for Charlotte Air Traffic Control Tower (ATCT) and Charlotte Douglas International Airport (CDIA) for the operation of a north end-around taxiway (NEAT) for Runway 18C/36C.

3. **SCOPE**: The procedures/responsibilities outlined herein are for use between Charlotte ATCT and CDIA for operation and use of the end-around taxiway.

4. **DEFINITIONS:**

    a. Movement area – Runways, taxiways, and other areas of an airport/heliport which are utilized for taxiing/hover taxiing, air taxiing, takeoff and landing of aircraft, exclusive of loading ramps and parking areas. At those airports/heliports with a tower, specific approval for entry onto the movement area must be obtained from air traffic.

    b. Non-movement area – Apron or ramp areas not under control of air traffic.

    c. Airplane Design Group (ADG) – A classification of aircraft based on wingspan and tail height. When the aircraft wingspan and tail height fall in different groups, the higher group is used. See Appendix 2 for the ADG's identified to use the NEAT upon completion of Phase 1.

5. **BACKGROUND:** The directional flow of the airfield will determine the operational allowances for the end-around taxiway.

    Based on the design of the end-around taxiway, ADG IV and larger aircraft will require additional considerations and instruction from ATCT to cross the center runway. For permissible aircraft (ADG III and smaller), locations to hold short of the approach and departure surfaces will be designated with painted hold markings and mandatory signage. These painted hold line markings and signage will comply with standards established in Advisory Circulars 150/5340-1 and 150/5340-18, respectively.

    Once this phase of the end-around taxiway is completed, these procedures will be updated in the *Movement, Non-Movement and Runway Safety Areas Letter of Agreement*.

6. RESPONSIBILITIES

a. CLT ATCT is responsible for the movement/separation of aircraft and vehicle traffic of the end-around taxiway when "open". This does not apply to CDIA Airside Operations vehicular traffic as covered in the Letter of Agreement titled *Control of Ground Vehicles/Pedestrians on the Movement Area.*

b. CDIA Airside Operations is responsible for the movement of vehicles and persons of the end-around taxiway when "closed".

7. PROCEDURES

a. Northbound Operation

ADG III and smaller: Aircraft will be able to operate unrestricted, meaning that once they have received instruction to traverse the end around, they will not have to hold short for departing traffic or arriving traffic on Runway 36C.

ADG IV and larger: Aircraft will not be permitted to use the North End-Around Taxiway due to the proximity of MALSR light stations to the taxiway.

b. Southbound Operation

ADG III and smaller: Aircraft will be required to hold short for landing traffic. ATCT will provide instruction to hold short or to proceed based on the arrival traffic of Runway 18C. There will be no limitations on the transit of aircraft for traffic departing Runway 18C.

ADG IV and larger: Aircraft will not be permitted to use the North End-Around Taxiway due to the proximity of MALSR light stations to the taxiway.

MARK A LIBBY JR

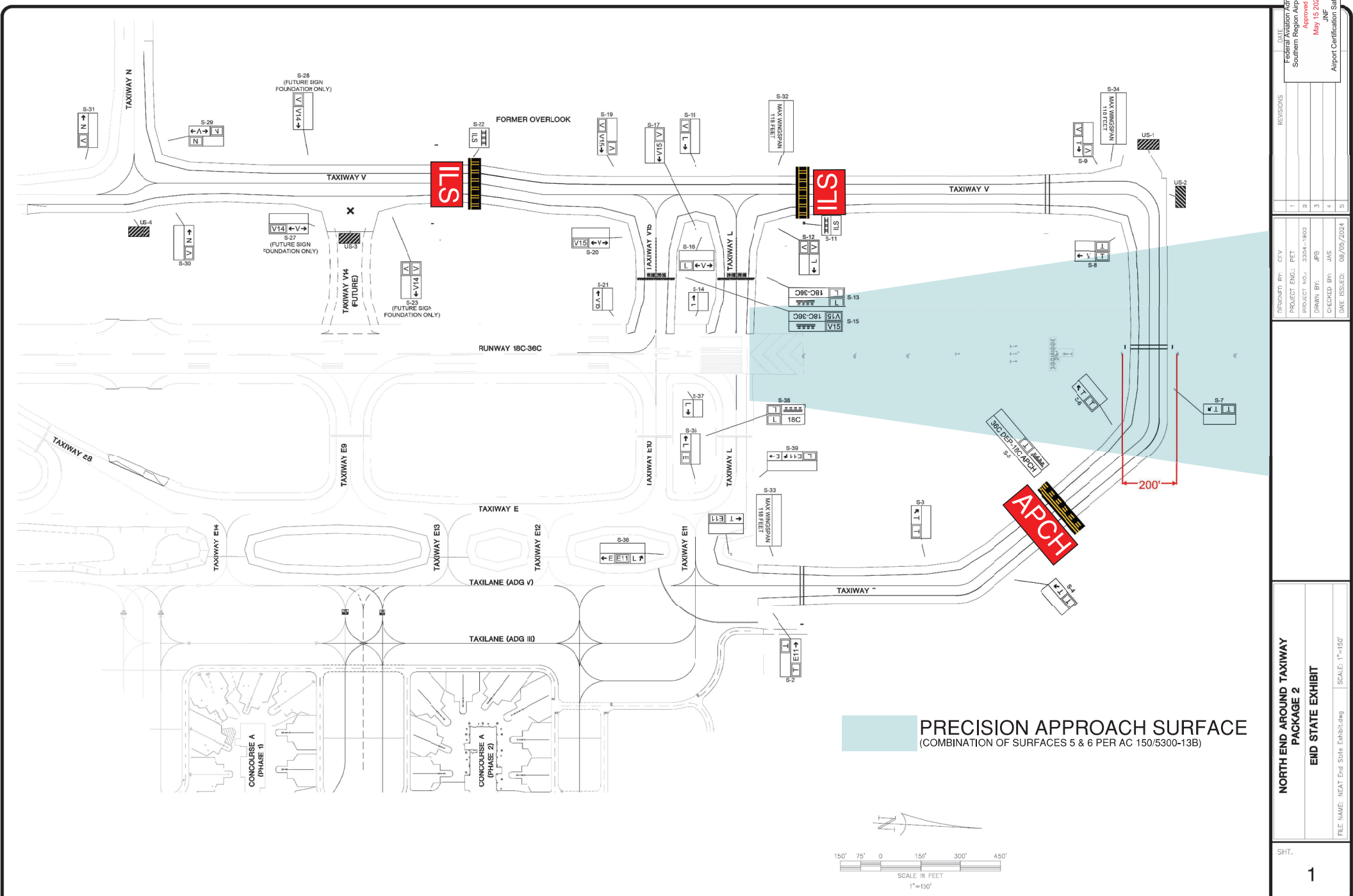
Digitally signed by MARK A LIBBY JR
Date: 2024.12.02 12:59:46 -05'00'

Mark Libby
Air Traffic Manager (A)
Charlotte ATC Tower

Haley Gentry
Chief Executive Officer
Charlotte Douglas International Airport

Federal Aviation Administration
Southern Region Airports Division
Approved
May 15 2025
JNF
Airport Certification Safety Inspector

Appendix 1 - North End-Around Taxiway Diagram



Federal Aviation Administration
Southern Region Airports Division
Approved
May 15 2025
JNF
Airport Certification Safety Inspector

REVISIONS	DATE
1	
2	
3	
4	
5	

DESIGNED BY: CFV
PROJECT ENG.: PET
PROJECT NO.: 23204-19002
DRAWN BY: JPB
CHECKED BY: JAS
DATE ISSUED: 08/05/2024

NORTH END AROUND TAXIWAY PACKAGE 2

END STATE EXHIBIT

FILE NAME: NEAT End State Exhibit.dwg
SCALE: 1"=150'

SHT. 1

Appendix 2 – Airplane Design Group Table

Airplane Design Group (ADG)

Group #	Tail Height (ft [m])	Wingspan (ft [m])
I	< 20′ (< 6 m)	< 49′ (< 15 m)
II	20′ - < 30′ (6 m - < 9 m)	49′ - < 79′ (15 m - < 24 m)
III	30′ - < 45′ (9 m - < 13.5 m)	79′ - < 118′ (24 m - < 36 m)

Fleet Mix by Airplane Design Group

ADG III Aircraft
Airbus A220 (all variations)
Airbus A319 (all variations)
Airbus A320 (all variations)
Airbus A321 (all variations)
Boeing 737 (all variations)
Canadair CRJ-700, -900
Embraer EMB 175
Embraer EMB 190

*This list is not comprehensive but captures the majority of traffic at Charlotte Douglas International Airport

Charlotte Air Traffic Control Tower, Charlotte Technical Operations, and Charlotte Douglas International Airport

LETTER OF AGREEMENT

EFFECTIVE: May 1, 2025

SUBJECT: Providing continuous electrical power for NAVAIDS during ILS Category II and III weather conditions.

1. PURPOSE : This Letter of Agreement establishes procedures for continuous electrical power for NAVAIDS during ILS Category II and III weather conditions.

2. CANCELLATION : Charlotte Air Traffic Control Tower, Charlotte Airway Facilities System Support Center, and Charlotte/Douglas International Airport Letter of Agreement*, Providing continuous electrical power for NAVAIDS during ILS Category II and III weather conditions,* dated November 6, 1997.

3. BACKGROUND : Reduced landing minima for ILS Category II and III operations require certain ground equipment to have two power sources. This requirement dictates that standby power generators be operating during these weather conditions.

4. EXPLANATON OF CHANGES:

a. Updated document formatting.

b. Updated job titles and signatories.

5. PROCEDURES:

a. The Charlotte Tower Cab Supervisor (OS) shall:

1. Notify the Operations Supervisor in Charge/Operations Manager (OSIC/OM) when Category II or III weather conditions are imminent.
2. Start the Charlotte Airport and ALSF-2 engine generators for the airport lighting system.
3. Notify the OSIC/OM of any malfunctions with the generators.
4. Notify the OSIC/OM when weather conditions improve to above CAT II minima.
5. Monitor the generator status in the tower cab.

b. The OSIC/OM shall:

1. Notify Airport Operations of any malfunction or outage that will affect Category II or III Operations.
2. Notify the OS and Technical Operations (Tech Ops) personnel of equipment malfunctions or outages that will affect Category II or III operations.

3. Issue NOTAM's as appropriate for equipment outages affecting Category II and III minima.

c. Tech Ops Personnel shall:

1. Notify the OSIC/OM of equipment malfunctions or outages that will affect Category II or III minima.

d. Airport Operations shall:

1. Inform the OSIC/OM of any changes in the operational status of the airport lighting standby generator.
2. Coordinate scheduled maintenance on the airport lighting generator at least twenty-four hours in advance of such maintenance.
3. Notify the OSIC/OM immediately before any actual work on the generator begins and after it's completion.
4. Provide a safety "lock-out" device on the airport lighting standby generator to prevent its starting from the tower cab while work is in progress.
5. Coordinate with the OSIC/OM in advance of any grass cutting activities in the glide slope and localizer critical areas.

MARK A LIBBY JR

Digitally signed by MARK A LIBBY JR
Date: 2025.04.16 03:46:25 -04'00'

Mark Libby
Air Traffic Manager (A)
CLT ATCT

Haley Gentry
CEO
Charlotte Douglas International Airport

Brett Gendoes

Brett Gendoes
District Facilities Manager
Charlotte Group (Tech Ops)

Federal Aviation Administration
Southern Region Airports Division
Approved
May 15 2025
JNF
Airport Certification Safety Inspector

APPENDIX O

Modification of Standards

U.S. Department
of Transportation
**Federal Aviation
Administration**

Memphis Airports District Office
2600 Thousand Oaks Blvd., Suite 2250
Memphis, TN 38118

Phone (901) 322-8180

January 9, 2020

Mr. Brent Cagle, Aviation Director
Charlotte-Douglas International Airport
5601 Wilkinson Blvd
Charlotte, NC 28208

Charlotte Douglas International Airport
Charlotte, North Carolina
Modification of Standards (MOS) Request

Dear Mr. Cagle,

This is in response to your request for a modification of airport design standards dated November 27, 2019 for the perimeter fence located in the Runway 18L Object Free Area at Charlotte Douglas International Airport.

Based on the information provided, the request is conditionally approved. The conditions associated with this approval are listed below:

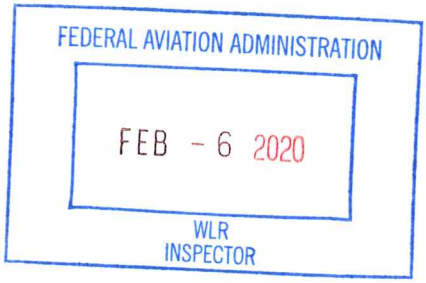
1. Frangible couplings added to the fence located within the Runway Object Free Area (ROFA).
2. The Airport Layout Plan must be updated to include the approved MOS.
3. The Airport sponsor shall reference the approved MOS in the airport's Part 139 Airport Certification Manual.
4. This MOS expires in five years from the date of approval.

Enclosed is a copy of the approved Modification of Airport Design Standards Request.

Sincerely,

Tommy E. Dupree
Acting Manager, Memphis Airports District Office

Enclosure



FAA SOUTHERN REGION

MODIFICATION OF AIRPORT STANDARDS

BACKGROUND CLT_2020_12274 (COMPLETED)

Airport	Location (City, State)	LOC ID
CLT	CHARLOTTE, NC	KCLT

Runway	
18L/36R	Aircraft Approach Category: D Airplane Design Group: V Visibility minimums: 5000

Affected Taxiway/TDG

Design Aircraft (Each Runway/Taxiway)

A340-600

AIP Grant Number

Passenger Charge Code (PFC)

MODIFICATION OF STANDARDS

AC Number	Chapter	Paragraph	Page Num
150/5300-13A	3	307	23

Title of Standard Being Modified (Cite Reference Document)	AC Published Date
Airport Design	2012-09-28

EB Number

--

Title of Airport Engineering Brief	EB Published Date

Category	Design
Sub Category	Runway Object Free Area (ROFA)

FEDERAL AVIATION ADMINISTRATION

FEB - 6 2020

WLR
INSPECTOR

1. Standard/Requirement

Objects non-essential for air navigation purposes must not be placed in the ROFA

2. Proposed

Erect security fence in the ROFA

3. Explain Why Standard Cannot be Met (FAA ORDER 5300.1)

The perimeter fence is currently located at the departure end of Runway 36R, behind the EMAS. Directly behind the EMAS is an emergency response egress road for the airport. Per TSR 1542, FAA Part 139, and the Airports ACM a security fence is a requirement. Due to the geographical location of the fence placement, the standards of the ROFA cannot be met.

4. Discuss Viable Alternatives (FAA ORDER 5300.1)

Due to the geographical constraints of the EMAS, emergency egress road and railroad, one viable alternative would be to move the perimeter fence of the airport along and adjacent to the railroad, possibility impeding on the land due to the topography.

5. Explain Why the Modification is Necessary to Conform to Local Laws and Regulations (if Applicable)

The perimeter fence is currently located at the departure end of Runway 36R, behind the EMAS. Directly behind the EMAS is an emergency response egress road for the airport. Per TSR 1542, FAA Part 139, and the Airports ACM a security fence is a requirement.

6. State Why Modification Would Provide Acceptable Level of Safety, Economy, Durability, and Workmanship (FAA ORDER

5300.1)

The current perimeter fence is being replaced by a new stronger fence that will improve the durability and help the airport in keeping out wildlife. The perimeter fence located in the ROFA has a frangible mount keeping an acceptable level of safety.

7. Explain any Special Operational Procedures and/or Restrictions Necessary to Accommodate the Modification of Standards

N/A

SPONSOR

Full Name	Position	Date
Jeffrey Perry	Airside Operations Manager	11/27/2019

ADO

Date of Latest FAA Signed ALP

03/01/2016

Recommendation

Recommend approval. The perimeter fence that is located on Runway 18L end and within the ROFA will be replaced with a wildlife deterrent perimeter fence. Frangible couplings will be added to the fence located within the ROFA.

Full Name	Position	Date
Tommy Dupree	Assistant Manager	12/12/2019

REGION

Recommendation

The nonstandard OFA condition is mitigated by that portion of the fence in the OFA being frangible . Conditional approval is recommended.

Full Name	Position	Date
Jesse Carriger	Manager, ASO-610	01/09/2020

HEADQUARTERS

Recommendation

Full Name	Position	Date

POST APPROVAL

Effective Start Date	Effective End Date	Post Implementation Complete Date
01/09/2020	01/09/2025	01/09/2020

COORDINATION USERS

Date	Name	Coordination level	Concur

CONDITIONS

Date	Condition	ADO	RO
01/08/2020	The MOS must be included on the Airports Airport Layout Plan.	Duane Johnson	Not required
01/08/2020	The MOS must be included in the Airports Part 130 certification manual.	Duane Johnson	Not required
01/08/2020	This MOS expires in five years and must be reevaluated at that time.	Duane Johnson	Not required

U.S. Department
of Transportation
**Federal Aviation
Administration**

Memphis Airports District Office
2600 Thousand Oaks Blvd, Ste. 2250
Memphis, TN 38118

Phone: 901-322-8180

June 10, 2015

Mr. Jack Christine, A.A.E., Deputy Aviation Director
Charlotte-Douglas International Airport
P.O. Box 19066
Charlotte, NC 28208

Request for Modification of Design Standards for
Runway 18L-36R Paved Shoulders, &
Taxiway D 7 Longitudinal Grade-Vertical Curves,
Charlotte-Douglas International Airport
Charlotte, NC

Dear Mr. Christine:

We have completed our review of your requests for Modification of Design Standards (MOS) for the following projects at Douglas International Airport (CLT):

1. CLT request dated 7/16/2014, Request to postpone the requirement for paved shoulders for the upcoming Rehabilitation of Runway 18L-36R.

2. CLT request dated July 17, 2014, Request to postpone correction of taxiway longitudinal grade and vertical curve length and separation for upcoming Rehabilitation of Taxiway D7.

We have determined that no MOSs for the Runway 18L-36R Rehabilitation project and the Taxiway D7 Rehabilitation project are required. Given that Runway 18L-36R is scheduled for complete reconstruction within the next 10 to 15 years, the requirement for paved shoulders is deferred until such time. Additionally, given that Taxiway D7 intersects Runway 18L-36R, compliance with item 2 above is also deferred to coincide with the future Runway 18L-36R Reconstruction project.

If you have any other questions concerning this determination, please feel free to contact me at 901-322-8182, or email at tommy.dupree@faa.gov.

Sincerely,

Tommy L. Dupree
Assistant Manager, Memphis Airports District Office

Federal Aviation Administration
Southern Region Airports Division
APPROVED
Jan 14 2021
NBL
Inspector

FAA GREAT LAKES REGION
MODIFICATION OF AIRPORT DESIGN STANDARDS
COMPLETE FORM IN CONJUNCTION WITH THE USER GUIDE

BACKGROUND		
1. AIRPORT: Charlotte Douglas International Airport	2. LOCATION (CITY,STATE): Charlotte, North Carolina	3. LOC ID: CLT
4. EFFECTED RUNWAY/TAXIWAY: Taxiway D7	5. APPROACH (EACH RUNWAY): ___ PIR ___ NPI ___ VISUAL	6. AIRPORT REF. CODE (ARC): D-V
7. DESIGN AIRCRAFT (EACH RUNWAY/TAXIWAY): C-130 for Taxiway D7		

MODIFICATION OF STANDARDS

8. TITLE OF STANDARD(S) BEING MODIFIED (CITE REFERENCE DOCUMENT):

AC 150/5300-13A, Airport Design

9. STANDARD/REQUIREMENT:

418. Surface gradient and Line Of Sight (LOS).

b. Taxiways/taxilanes and TSAs. The centerline longitudinal gradient and transverse gradient standards for taxiways/taxilanes and TSAs are as follows:

(1) The maximum longitudinal grade is 2.0 percent for Aircraft Approach Categories A and B and 1.50 percent for Aircraft Approach Categories C, D, and E. Minimum longitudinal grades are desirable.

(3) When longitudinal grade changes are necessary, the vertical curves are parabolic. The minimum length of the vertical curve is 100 feet (30 m) for each 1.0 percent of change. A vertical curve is not necessary when the grade change is less than 0.40 percent, nor where a taxiway crosses a runway or taxiway crown. Where two taxiways intersect, flatter grades that provide adequate drainage are acceptable.

10. DESCRIPTION OF PROPOSED MODIFICATION:

It is proposed to relocate Taxiway D7 to prevent direct access with the following deviations from standards:

- The maximum recommended longitudinal grade is 1.50% for Aircraft Category D. In order to tie into the existing grade, a segment of the taxiway will have a grade of 2.0%.
- The maximum recommended grade break is 0.4 without a vertical curve. At the edge of parallel taxiway 'D' pavement, there is a grade break of 0.6%.
- The minimum recommended length of vertical curve is 100 feet for each 1.0% percent of change. The proposed length of the vertical curve is 60', rather than the recommended 148'; due to the short length of the taxiway.

11. EXPLAIN WHY STANDARD(S) CANNOT BE MET:

Taxiway D7 must be relocated north 130 feet to prevent direct access from the North Carolina Air Guard (NCANG) ramp to Runway 18L/36R. Due to the short length of Taxiway D7 from the NCANG ramp to Taxiway D and the existing grades of each tie-in point the longitudinal grade, grade break and vertical curve do not meet the standard.

Federal Aviation Administration
Southern Region Airports Division
APPROVED
Jan 14 2021
NBL
Inspector

12. DISCUSS ALL VIABLE ALTERNATIVES:

The current location of D7 provides direct access from the NCANG ramp to Runway 18L/36R and, therefore, must be relocated. Relocating the taxiway any further north along the NCANG ramp will only exacerbate the issue as the grade worsens toward the north. To construct Taxiway D7 within standards would require the removal, re-grading, and repaving of the entire length of Taxiway D.

13. ASSURANCE THAT MTS WILL PROVIDE AS OUTLINED IN THE 'USER GUIDE':

The NCANG is the only entity that utilizes Taxiway D7 at the point where grades exceed the standard. Although the standard outlined in AC150/5300-13A sets a maximum grade of 1.5 percent, the NCANG allows up to a 3.0 percent grade according to UFC 3-260-01 AIRFIELD AND HELIPORT PLANNING AND DESIGN Table 5-1. Fixed Wing Taxiways. The NCANG Airfield Manager has reviewed and agreed with the plans to relocate Taxiway D7.

Although these grades are considered a deviation from FAA standards, no adverse effect is anticipated due to these slight breaks in grade and considering the slow speed of the aircraft in these locations.

ATTACH ADDITIONAL SHEETS AS NECESSARY – INCLUDE SKETCH/PLAN

Federal Aviation Administration
Southern Region Airports Division

APPROVED
Jan 14 2021
NBL
Inspector

FAA GREAT LAKES REGION
MODIFICATION OF AIRPORT DESIGN STANDARDS

14. Skip to Question 15 if request is not for a Modification To Material Standards or Construction Methods.

CHECK WHEN APPLICABLE	
☐	Modifications to materials standards is requested because locally available materials cannot meet the requirements of that standard.
■	Modifications to construction methods standards will result in cost savings and/or greater efficiency.
☐	Bids have already been received for this project.

IF ANY OF THE ABOVE IS CHECKED PLEASE PROVIDE ADDITIONAL DETAILS.

15. SIGNATURE OF ORIGINATOR:	16. PRINTED NAME OF ORIGINATOR	17. DATE
	Jack Christine, Deputy Aviation Director	07/17/2014
18. ORIGINATOR'S ORGANIZATION:	19. TELEPHONE	20. E-MAIL
Charlotte Douglas International Airport	704-359-4000	jlchristine@cltairport.com
21. DATE OF LATEST FAA SIGNED ALP:		
February 2013		

Federal Aviation Administration
Southern Region Airports Division
APPROVED
Jan 14 2021
NBL
Inspector

BELOW IS TO BE COMPLETED BY FAA

22. ADO RECOMMENDATION:	23. SIGNATURE:	24. DATE:

25. FAA DIVISIONAL REVIEW (AT, AF, FS, etc.):

ROUTING SYMBOL	SIGNATURE	DATE	CONCUR	NON-CONCUR

COMMENTS:

26. AIRPORTS' DIVISION FINAL ACTION:

☐ UNCONDITIONAL APPROVAL	☐ CONDITIONAL APPROVAL	☐ DISAPPROVAL

DATE:	SIGNATURE:	TITLE:

CONDITIONS OF APPROVAL:

Federal Aviation Administration
Southern Region Airports Division

APPROVED
Jan 14 2021
NBL
Inspector

U.S. Department
of Transportation
**Federal Aviation
Administration**

Memphis Airports District Office
2600 Thousand Oaks Blvd., Suite 2250
Memphis, TN 38118

Phone (901) 322-8180

February 18, 2022
updated March 28, 2022

Mrs. Haley Gentry, Aviation Director
Charlotte-Douglas International Airport
5601 Wilkinson Blvd
Charlotte, NC 28208

Charlotte Douglas International Airport
Charlotte, North Carolina
Modification of Standards (MOS) Request
AGIS MOS Nos.: CLT-2022-27934 & CLT-2022-27954

Dear Mrs. Gentry,

We understand that CLT's Air Traffic Control Tower (ATCT) has requested not to include the 15 mph taxi speed restriction in the letter of agreement (LOA). Therefore, this letter has been revised to allow flexibility on where this restriction is published. Our office has no objection to the speed restriction being placed in the chart supplement (formerly called AF/D) in lieu of the LOA.

This is in response to your request for the above referenced modifications of airport design standards submitted in December 2021 for the use of Draft Advisory Circular (AC) 150/5300-13B standards, application of Airplane Design Group (ADG) V taxilane standards to portions of Taxiways C & M, and non-standard pavement markings associated with Concourses D and E Dual Taxilane Project at Charlotte Douglas International Airport.

Based on the information provided, the requests are ***Conditionally Approved***. The conditions associated with this approval are listed below:

CLT-2022-27934 (AC 150/5300-13B standards & ADG V Taxilane Standards to portions of Taxiways C&M):

1. The Airport sponsor establishes a letter of agreement (LOA) with CLT Air Traffic Control Tower (ATCT) to utilize portions of Taxiways C and M reflected in this MOS as taxilane.
2. Operational restrictions to include maximum ADG-V aircraft and maximum taxi speed of 15 mph.
3. The Airport sponsor includes a reference of the conditionally approved MOS in the airport's Part 139 Airport Certification Manual.
4. The Airport Layout Plan (ALP) must be updated to include the conditionally approved MOS.
5. Additional surface painted guidance signage is provided on inner and outer taxilanes at C10 intersection as discussed in SRM Panel on 10/28/2021.
6. This MOS expires in five years from the date of approval.

CLT-2022-27954 (non-standard pavement markings):

1. Additional surface painted guidance signage is provided on inner and outer taxilanes at C10 intersection as discussed in SRM Panel on 10/28/2021.
2. The surface painted hold spot and wingspan limitation signage paint schemes to match the associated taxilane paint scheme. e.g. same color.
3. Wingspan limits for each taxilane must be added to the Jeppesen 10-9 airport chart and the 10-7 airline specific chart.
4. The Airport sponsor includes a reference of the conditionally approved MOS in the airport's Part 139 Airport Certification Manual.
5. The Airport Layout Plan (ALP) must be updated to include the conditionally approved MOS.
6. This MOS expires five years from date of approval.

Enclosed is a copy of the conditionally approved Modification of Airport Design Standards Request.

Sincerely,

DUANE L JOHNSON

Digitally signed by DUANE L JOHNSON
Date: 2022.03.28 11:14:34 -05'00'

Duane L. Johnson, PE
Assistant Manager, Memphis Airports District Office

Enclosure

Federal Aviation Administration
Southern Region Airports Division
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Airport Certification Safety Inspector

FAA SOUTHERN REGION

MODIFICATION OF AIRPORT STANDARDS

BACKGROUND CLT_2022_27934 (CONDITIONAL)

Airport	Location (City, State)	LOC ID
CLT	CHARLOTTE, NC	KCLT

Runway	
18L/36R	Aircraft Approach Category: D Airplane Design Group: V Visibility minimums: 1200

Affected Taxiway/TDG

TWY C (RWY 5/23 to APPROACH END RWY 18L/36R)/TDG-6
TWY M (RAMP to RWY 18L-36R)/TDG-6

Design Aircraft (Each Runway/Taxiway)

AIRBUS A350-900

AIP Grant Number

Passenger Charge Code (PFC)

MODIFICATION OF STANDARDS

AC Number	Chapter	Paragraph	Page Num
150/5300-13A	4	403	122-126

Title of Standard Being Modified (Cite Reference Document)	AC Published Date
Airport Design	2012-09-28

EB Number

--

Title of Airport Engineering Brief	EB Published Date

Category	Design
Sub Category	Taxiway to Taxiway/Taxilane Separation

1. Standard/Requirement

Application of Draft AC 150/5300-13B Standards to Project and Application of ADG-V Taxilane Standards to portions of existing Taxiways C & M per AC 150/5300-13B, as further described in Attachment 1.

Current applicable standards per AC 150/5300-13A: Paragraph 403 - Taxiway/Taxilane Clearance Requirements as described in Attachment 1.

2. Proposed

Proposed modification is application of Draft AC 150/5300-13B, including Section 4.5.2 (page 4-10), paragraph 4.5.4.1.3, Appendix J pages J-1 through J-36, and conversion of portions of Taxiway C and M to taxilane design standards as described in Attachment 1.

3. Explain Why Standard Cannot be Met (FAA ORDER 5300.1)

Upon issuance of AC 150/5300-13B, the current AC 150/5300-13A standards will be obsolete, and further relocation of passenger boarding bridges, fixed tunnel sections, and fuel hydrant pits may be required to optimize airline operations based on the revised taxilane standards.

Application of taxilane design standards with ADG-V speed restriction to existing Taxiways C and M is vital to enable the

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project to occur. Taxiway (as opposed to taxilane) standards applicable to ADG-V aircraft operating on existing Taxiways C and M would not allow ample space to enable the dual Ramp D & E
Taxilanes to be constructed.

4. Discuss Viable Alternatives (FAA ORDER 5300.1)

No viable alternatives exist to enable the construction of the Ramp D & E Dual Taxilanes without application of taxilane design standards to portions of Taxiways C and M for ADG-V aircraft as discussed in Attachment 1. Utilization of the existing Draft AC 150/5300-13B standards would result in a significant reduction in operating space for airline and airport tenants along Concourse D, in comparison to current AC 150/5300-13A, as detailed in Attachment 1.

5. Explain Why the Modification is Necessary to Conform to Local Laws and Regulations (if Applicable)

N/A

6. State Why Modification Would Provide Acceptable Level of Safety, Economy, Durability, and Workmanship (FAA ORDER 5300.1)

This modification provides a level of safety and economy equivalent to that specified in Draft AC 150/5300-13B. There is no modification to standards as provided in Draft AC 150/5300-13B, and therefore this modification to the current standards provides an acceptable level of safety, economy, durability, and workmanship.

7. Explain any Special Operational Procedures and/or Restrictions Necessary to Accommodate the Modification of Standards

Per FAA Engineering Brief 78 (EB-78), the application of a taxilane in both movement and non-movement areas shall include a speed restriction as a condition for MOS approval, so that ATCT and local Ramp Control will not expedite taxiing airplanes along a speed-restricted taxi route.

As a result of the above, the letter of agreement between CLT and KCLT Tower shall specify that the taxi speed restriction only applies to ADG-V, TDG-5 aircraft and greater.

SPONSOR

Full Name	Position	Date
Ashton Watson	Airport Engineer	12/03/2021

ADO

Date of Latest FAA Signed ALP

07/22/2021

Recommendation

Recommend approval with the following conditions:
1) The airport sponsor establishes a letter of agreement (LOA) with CLT Air Traffic Control Tower (ATCT) to utilize portions of Taxiways C and M reflected in this MOS as taxilane.
2) Operational restrictions in CLT-ATCT LOA include maximum ADG-V aircraft and maximum taxi speed of 15 mph.
3) The airport sponsor includes a reference of the conditionally approved MOS in the airport's Part 139 Airport Certification Manual.
4) The ALP must be updated to include the conditionally approved MOS.
5) This MOS expires five years from date of approval.

Full Name	Position	Date
Duane Johnson	Program Manager	01/14/2022

REGION

Recommendation

Conditional approval is recommended. While the region has final approval authority, this MOS was also coordinated with AAS. AAS concerns about marking which are not part of this MOS are handled in a marking MOS.

Full Name	Position	Date

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Jasmine Evains	Community Planner	02/17/2022

HEADQUARTERS

Recommendation		
Full Name	**Position**	**Date**

POST APPROVAL

Effective Start Date	Effective End Date	Post Implementation Complete Date
02/17/2022	02/17/2027	

COORDINATION USERS

Date	Name	Coordination level	Concur
02/14/2022	Carlton Lambiasi	REGION	YES
02/14/2022	Steve Debban	REGION	YES

CONDITIONS

Date	Condition	ADO	RO
02/17/2022	1) The airport sponsor establishes a letter of agreement (LOA) with CLT Air Traffic Control Tower (ATCT) to utilize portions of Taxiways C and M reflected in this MOS as taxilane.	Wes Mittlesteadt	Not required
02/17/2022	2) Operational restrictions in CLT-ATCT LOA include maximum ADG-V aircraft and maximum taxi speed of 15 mph.	Wes Mittlesteadt	Not required
02/17/2022	3) The airport sponsor includes a reference of the conditionally approved MOS in the airport's Part 139 Airport Certification Manual.	Wes Mittlesteadt	Not required
02/17/2022	4) The ALP must be updated to include the conditionally approved MOS.	Wes Mittlesteadt	Not required
02/17/2022	5) This MOS expires five years from date of approval	Wes Mittlesteadt	Not required

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FAA SOUTHERN REGION

MODIFICATION OF AIRPORT STANDARDS

BACKGROUND CLT_2022_27954 (CONDITIONAL)

Airport	Location (City, State)	LOC ID
CLT	CHARLOTTE, NC	KCLT

Runway	

Affected Taxiway/TDG

NONE (RAMP Areas ONLY)/TDG-5

Design Aircraft (Each Runway/Taxiway)

AIRBUS A350-900

AIP Grant Number

Passenger Charge Code (PFC)

MODIFICATION OF STANDARDS

AC Number	Chapter	Paragraph	Page Num
150/5340-1M	4	4.2.4	

Title of Standard Being Modified (Cite Reference Document)	AC Published Date
Standards for Airport Markings	2019-05-10

EB Number

--

Title of Airport Engineering Brief	EB Published Date

Category	Design
Sub Category	Markings Configuration - Color

1. Standard/Requirement

Standard being modified is Paragraph 4.2.4 of AC 150/5340-1M - taxiway (taxilane) centerline marking as yellow.

2. Proposed

Proposed modification to Paragraph 4.2.4 of FAA AC 150/5340-1M from yellow taxilane centerline markings to also include orange and blue. Refer to Attachment 1 - Modification of Standards Technical Memorandum for a detailed description of the proposed modification of standards.

3. Explain Why Standard Cannot be Met (FAA ORDER 5300.1)

Use of multiple, non-standard colors increases the clarity of taxilanes that are to be utilized by specific airplane design groups. The multiple colors provides a frame on reference for the air carrier ramp controller to utilize when directing pilots to follow a certain taxilane within the non-movement area. Refer to Attachment 1 - Modification of Standards Technical Memorandum for more information.

4. Discuss Viable Alternatives (FAA ORDER 5300.1)

FAA AC 150/5340-1M does not include a viable alternative for demarcation of a taxilane based on the color of its centerline. Several alternatives were reviewed, including dashed centerlines, surface-painted markings, and colors other than orange and blue.

5. Explain Why the Modification is Necessary to Conform to Local Laws and Regulations (if Applicable)

N/A

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6. State Why Modification Would Provide Acceptable Level of Safety, Economy, Durability, and Workmanship (FAA ORDER 5300.1)

The modification of colors from yellow to orange/blue would be of the same economy, durability, and workmanship as the standard. Use of multiple colors enhances safety as it provides the pilot and air carrier ramp controller an additional frame of reference to ensure clarity in communications regarding ramp movement.

7. Explain any Special Operational Procedures and/or Restrictions Necessary to Accommodate the Modification of Standards

The non-standard colors of orange and blue are utilized on the inner and outer taxilanes to enhance safety and clarify ramp control communications with more concise phraseology. In addition to the variable colors denoting taxilane centerline, spot position markings will be installed to provide a reference point for pilots and ramp control to reference. These spot position markings are depicted in Figure 1 and match the existing spot position markings already established on the air carrier ramp in other locations. This plan has been coordinated with the local Ramp Tower, operated by American Airlines.

SPONSOR

Full Name	Position	Date
Ashton Watson	Airport Engineer	12/03/2021

ADO

Date of Latest FAA Signed ALP

07/22/2021

Recommendation

Recommend approval with the following conditions:
1)The surface painted hold spot and wingspan limitation signage paint schemes to match the associated taxilane paint scheme. e.g. same color.
2) Wingspan limits for each taxilane must be added to the Jeppesen 10-9 airport chart and the 10-7 airline specific chart.
3)The airport sponsor includes a reference of the conditionally approved MOS in the airport's Part 139 Airport Certification Manual.
4) The ALP must be updated to include the conditionally approved MOS.
5) This MOS expires five years from date of approval.

Full Name	Position	Date
Duane Johnson	Program Manager	01/14/2022

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REGION

Recommendation

Approve with noted condition.

Full Name	Position	Date
VERNED JACKSON	ASO 620 Manager	02/10/2022

HEADQUARTERS

Recommendation

Full Name	Position	Date

POST APPROVAL

Effective Start Date	Effective End Date	Post Implementation Complete Date
02/10/2022	02/10/2027	

COORDINATION USERS

Date	Name	Coordination level	Concur

CONDITIONS			
Date	**Condition**	**ADO**	**RO**
02/08/2022	Additional surface painted guidance signage is provided on inner and outer taxilanes at C10 intersection as discussed in SRM Panel on 10/28/2021.	Wes Mittlesteadt	Not required

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FAA GREAT LAKES REGION
MODIFICATION OF AIRPORT DESIGN STANDARDS
COMPLETE FORM IN CONJUNCTION WITH THE USER GUIDE

BACKGROUND

1. AIRPORT:	2. LOCATION (CITY,STATE):	3. LOC ID:
Charlotte Douglas International Airport	Charlotte, North Carolina	CLT

4. EFFECTED RUNWAY/TAXIWAY:	5. APPROACH (EACH RUNWAY):	6. AIRPORT REF. CODE (ARC):
RWY 18L/36R	X PIR ___ NPI ___ VISUAL	D-V

7. DESIGN AIRCRAFT (EACH RUNWAY/TAXIWAY):

B747-400

MODIFICATION OF STANDARDS

8. TITLE OF STANDARD(S) BEING MODIFIED (CITE REFERENCE DOCUMENT):
FAA Advisory Circular 150/5300-13A, Airport Design

9. STANDARD/REQUIREMENT:

Chapter 3, Paragraph 304.c., Runway Shoulders
Runway shoulders. Runway shoulders provide resistance to blast erosion and accommodate the passage of maintenance and emergency equipment and the occasional passage of an aircraft veering from the runway. Table 3-8 presents runway shoulder width standards. A stabilized surface, such as turf, normally reduces the possibility of soil erosion and engine ingestion of foreign objects. Soil not suitable for turf establishment requires a stabilized or low cost paved surface (see AC 150/5320-6). Paved shoulders are required for runways accommodating Airplane Design Group (ADG) IV and higher aircraft, and are recommended for runways accommodating ADG-III aircraft. Turf, aggregate-turf, soil cement, lime or bituminous stabilized soil are recommended adjacent to runways accommodating ADG-I and ADG-II aircraft.

10. DESCRIPTION OF PROPOSED MODIFICATION:

It is proposed to postpone paving shoulders on Runway 18L/36R until the runway is completely resurfaced in the future when operational demand permits.

11. EXPLAIN WHY STANDARD(S) CANNOT BE MET:

Compliance with the standard is not financially practical at this time due to future planned reconstruction of Runway 18L/36R. The Airport's Capital Improvement Plan identifies a project that will replace the asphalt on Runway 18L/36R with concrete. The current rehabilitation project of Runway 18L/36R will extend the runway's useful life to a point in the future when airfield capacity can support operational demand without the use of Runway 18L/36R at which time the runway will be reconstructed. Adding paved shoulders to the existing asphalt runway will require the demolition and repaving of these shoulders for future lighting, drainage, and concrete when it is feasible to replace the runway's pavement.

12. DISCUSS ALL VIABLE ALTERNATIVES:

The only viable alternative is to comply with standard and construct paved shoulder on Runway 18L/36R. However, constructing paved shoulders on the existing asphalt runway will require the demolition and repaving of these shoulders for future lighting, drainage, and concrete when it is feasible to replace the runway's pavement. The Airport's Capital Improvement Plan identifies a project that will replace the asphalt on Runway 18L/36R with concrete. The current rehabilitation project of Runway 18L/36R will extend the runway's useful life to a point in the future when airfield capacity can support operational demand without use of Runway 18L/36R.

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13. ASSURANCE THAT MTS WILL PROVIDE AS OUTLINED IN THE 'USER GUIDE':

Paved shoulders are necessary to protect soils adjacent to pavement from jet blast erosion. A stabilized surface, such as turf, normally reduces the possibility of soil erosion and engine ingestion of foreign objects. AC150/5300-13A states that "A dense, well-rooted turf cover can prevent erosion and support the occasional passage of aircraft, maintenance equipment, or emergency equipment under dry conditions." The Airport will conduct periodic inspections of the runway shoulders to ensure turf is maintained and there is no deterioration or erosion occurring along the pavement edge.

ATTACH ADDITIONAL SHEETS AS NECESSARY – INCLUDE SKETCH/PLAN

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FAA GREAT LAKES REGION
MODIFICATION OF AIRPORT DESIGN STANDARDS

14. Skip to Question 15 if request is not for a Modification To Material Standards or Construction Methods.

CHECK WHEN APPLICABLE	
☐	Modifications to materials standards is requested because locally available materials cannot meet the requirements of that standard.
■	Modifications to construction methods standards will result in cost savings and/or greater efficiency.
☐	Bids have already been received for this project.

IF ANY OF THE ABOVE IS CHECKED PLEASE PROVIDE ADDITIONAL DETAILS.

15. SIGNATURE OF ORIGINATOR:	16. PRINTED NAME OF ORIGINATOR	17. DATE
	Jack Christine, Deputy Aviation Director	07/16/2014
18. ORIGINATOR'S ORGANIZATION:	19. TELEPHONE	20. E-MAIL
Charlotte Douglas International Airport	704-359-4000	jlchristine@cltairport.com
21. DATE OF LATEST FAA SIGNED ALP:		
February 2013		

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BELOW IS TO BE COMPLETED BY FAA

22. ADO RECOMMENDATION:	23. SIGNATURE:	24. DATE:

25. FAA DIVISIONAL REVIEW (AT, AF, FS, etc.):

ROUTING SYMBOL	SIGNATURE	DATE	CONCUR	NON-CONCUR

COMMENTS:

26. AIRPORTS' DIVISION FINAL ACTION:

☐ UNCONDITIONAL APPROVAL	☐ CONDITIONAL APPROVAL	☐ DISAPPROVAL

DATE:	SIGNATURE:	TITLE:

CONDITIONS OF APPROVAL:

Federal Aviation Administration
Southern Region Airports Division
APPROVED
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Modification of Airport Standards Request Form

Airport information

1. AIRPORT NAME:	2. AIRPORT LOCATION (CITY,STATE):	3. LOCID:
Charlotte Douglas International Ai	Charlotte, NC	KCLT

4. AFFECTED RUNWAY/TAXIWAY:	5. APPROACH (EACH RUNWAY):	6. AIRPORT REF. CODE (ARC):
Taxiway A	☒ PIR ☐ NPI ☐ VISUAL	D-V

7. DESIGN AIRCRAFT (EACH RUNWAY/TAXIWAY):

Airbus 340-600

Modification of Standards

8. TITLE OF STANDARD BEING MODIFIED (CITE REFERENCE DOCUMENT):

AC 150/5300-13A Airport Design, paragraph 418 - Surface Gradient

9. STANDARD/REQUIREMENT:

Maximum longitudinal taxiway grade is 1.50 percent.

10. PROPOSED:

Longitudinal grade up to 2.51%, to match the existing conditions (see attached profile of proposed & existing).

11. EXPLAIN WHY STANDARD CANNOT BE MET (FAA ORDER 5300.1):

The existing grade along TW A (west of TW G) is at 1.8%, and the existing grade along TW A (between TW G and TW R) is over 2%. Since the construction project is a pavement rehabilitation project, and with the limited distance to try and flatten the slope between Taxiways G and R, the 1.5% gradient criteria cannot be met.

12. DISCUSS VIABLE ALTERNATIVES (FAA ORDER 5300.1):

In order to lower the longitudinal gradient to meet the 1.5% criteria, both Taxiways G and R would require reconstruction.

13. STATE WHY MODIFICATION WOULD PROVIDE ACCEPTABLE LEVEL OF SAFETY, ECONOMY, DURABILITY, AND WORKMANSHIP (FAA ORDER 5300.1):

Aircraft have been utilizing TW A at the existing grades, and the aircraft have adequate clearance below the fuselage. Also, after reviewing the grades in the area, there will be adequate slope for the pavement to drain properly without any standing water. Additionally, this pavement will eventually be replaced with new apron pavement (per the current ALP).

Attach more sheets as needed.

Include sketch or plan.

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14. AIRPORT NAME	15. AIRPORT LOCATION (CITY, STATE)	
Charlotte Douglas International Airport	Charlotte, NC	
16. NAME OF ORIGINATOR	17. ORIGINATOR'S ORGANIZATION	18. TELEPHONE
Jack Christine, AAE	Charlotte Douglas Int'l Airport	(704) 359-4932
SIGNATURE OF ORIGINATOR		19. DATE SIGNED
Jack Christine		7.6.17

For FAA Use Only

20. DATE OF LATEST FAA SIGNED ALP: March 1, 2016

21. ADO RECOMMENDATION	SIGNATURE	22. DATE
Approved		7/12/17

23. FAA DIVISIONAL REVIEW (AT, AF, FS)

ROUTING SYMBOL	SIGNATURE	DATE	CONCUR OR NON-CONCUR
ASO 610	Supv, Working	10/16/2017	☑ Concur ☐ Nonconcur
			☐ Concur ☐ Nonconcur
			☐ Concur ☐ Nonconcur

24. COMMENTS

25. AIRPORTS DIVISION FINAL ACTION:

☐ Unconditional Approval ☑ Conditional Approval ☐ Disapproval

26. DATE	SIGNATURE	27. TITLE
X 10-19-17		ASO-610

28. CONDITIONS OF APPROVAL

See attachment (Next Page)

Federal Aviation Administration
Southern Region Airports Division
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Apr 08 2021
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Airport Certification Safety Inspector

ASO Conditions of Approval

CLT- Taxiway "A

MOS: Maximum Longitudinal Grade

Conditions:

1. The Airport Layout Plan shall be updated to reference this MOS.

2. The Airports Part 139 Certification Manual must be updated to include this MOS.

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Apr 08 2021
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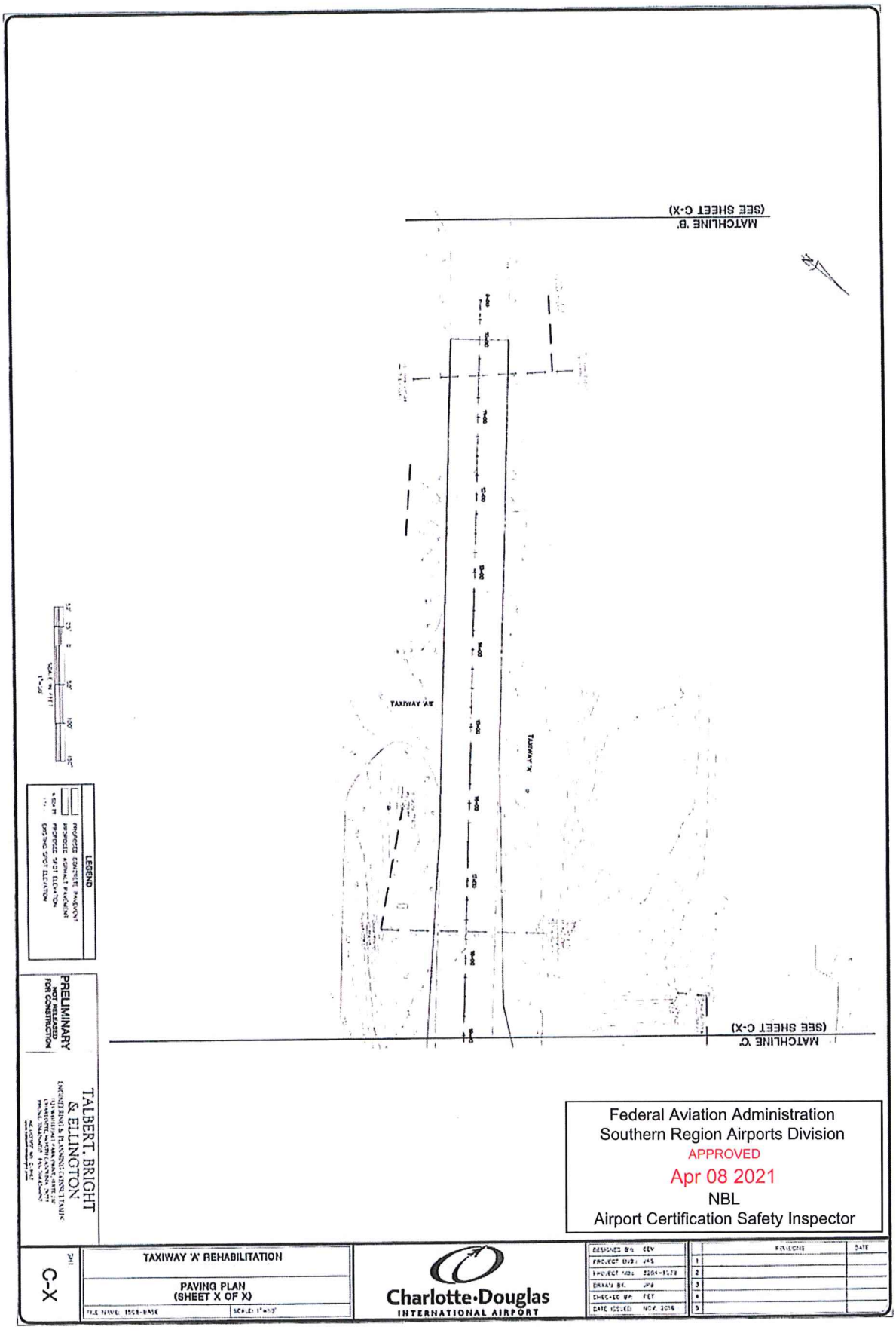
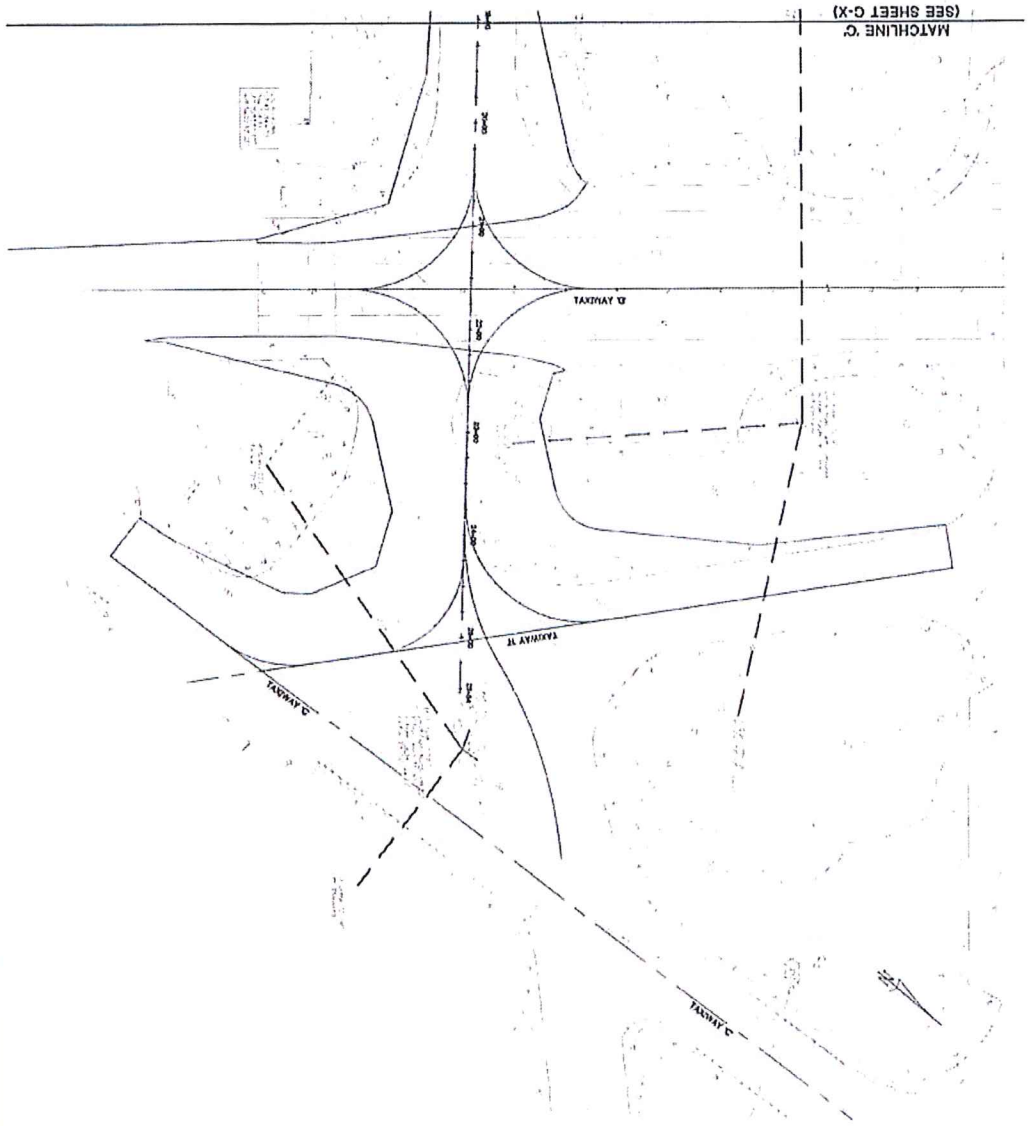

MATCHLINE 'B'
(SEE SHEET C-X)
TAXIWAY 'A'
TAXIWAY 'X'
MATCHLINE 'C'
(SEE SHEET C-X)
LEGEND
PROPOSED CONCRETE PAVEMENT
PROPOSED ASPHALT PAVEMENT
PROPOSED SPOT ELEVATION
EXISTING SPOT ELEVATION
PRELIMINARY
NOT FOR CONSTRUCTION
TALBERT, BRIGHT & ELLINGTON
Federal Aviation Administration
Southern Region Airports Division
APPROVED
Apr 08 2021
NBL
Airport Certification Safety Inspector
TAXIWAY 'A' REHABILITATION
PAVING PLAN
(SHEET X OF X)
C-X
Charlotte·Douglas
INTERNATIONAL AIRPORT



LEGEND

PROPOSED CONCRETE PAVEMENT
PROPOSED ASPHALT PAVEMENT
PROPOSED SPOT ELEVATION
EXISTING SPOT ELEVATION

PRELIMINARY
NOT RELEASED FOR CONSTRUCTION

TALBERT, BRIGHT & ELLINGTON

Federal Aviation Administration
Southern Region Airports Division
APPROVED
Apr 08 2021
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SHT
C-X

TAXIWAY 'A' REHABILITATION

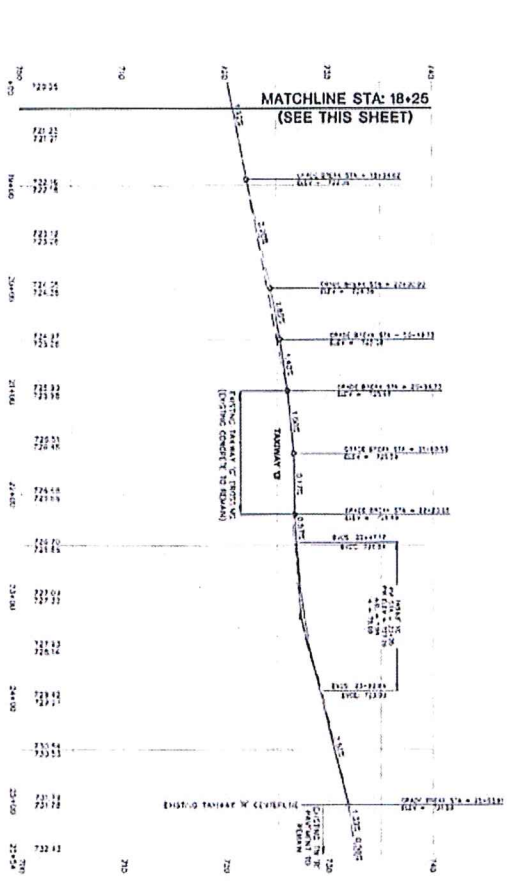
PAVING PLAN
(SHEET X OF X)

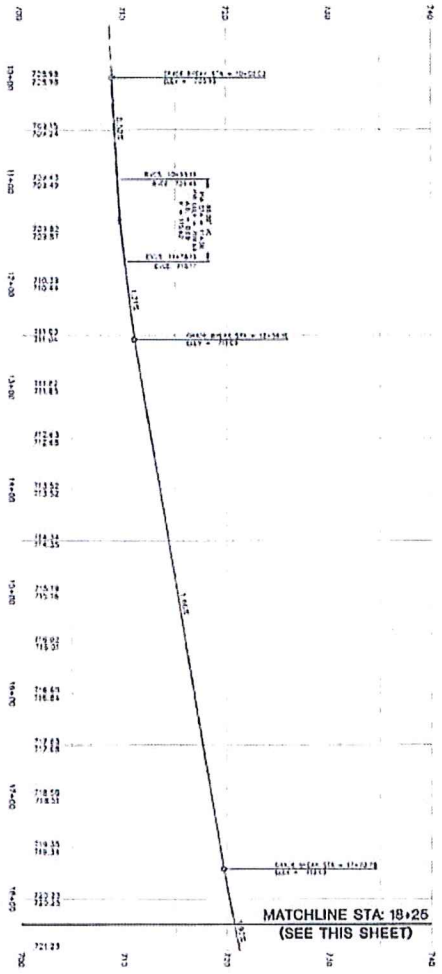
FILE NAME: 11551-PAVE | SCALE: 1"=50'

Charlotte·Douglas
INTERNATIONAL AIRPORT

DESIGNED BY:	CEV
PROJECT MGR:	JAS
PROJECT NO:	2004-1503
DRAWN BY:	JPB
CHECKED BY:	PET
DATE ISSUED:	NOV. 2016

	REVISIONS	DATE
1		
2		
3		
4		
5		





PRELIMINARY
NOT RELEASED FOR CONSTRUCTION

TALBERT, BRIGHT & ELLINGTON

LEGEND
PROPOSED CENTERLINE GRADE
EXISTING GRADE

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SHT. C-X

TAXIWAY 'A' REHABILITATION
CENTERLINE PROFILE
(SHEET X OF X)

Charlotte·Douglas
INTERNATIONAL AIRPORT

DESIGNED BY:	CEV
PROJECT ENGR:	JAS
PROJECT NO:	2207-1528
DRAWN BY:	JPB
CHECKED BY:	PET
DATE ISSUED:	NOV 2016

	REVISION	DATE
1		
2		
3		
4		
5		