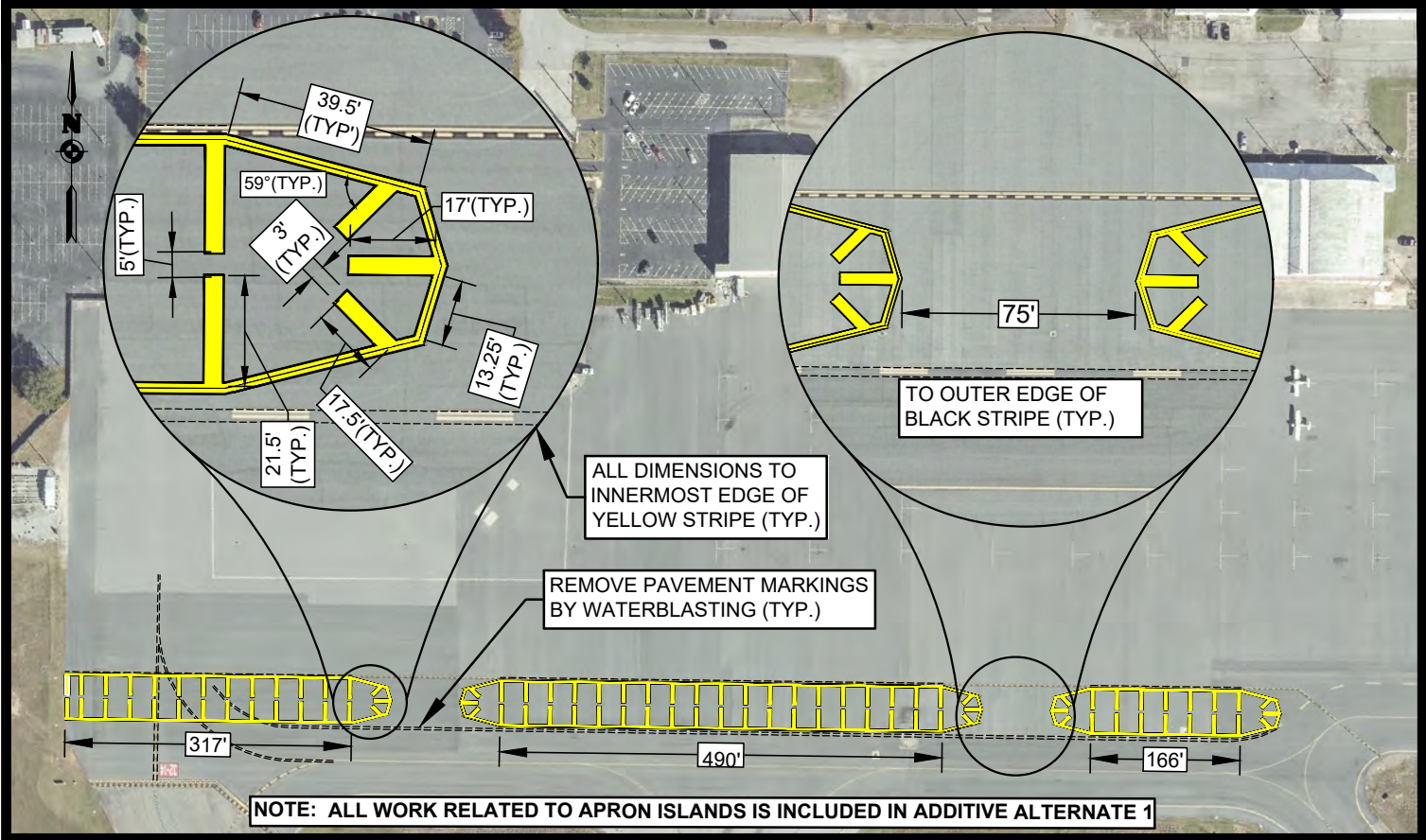
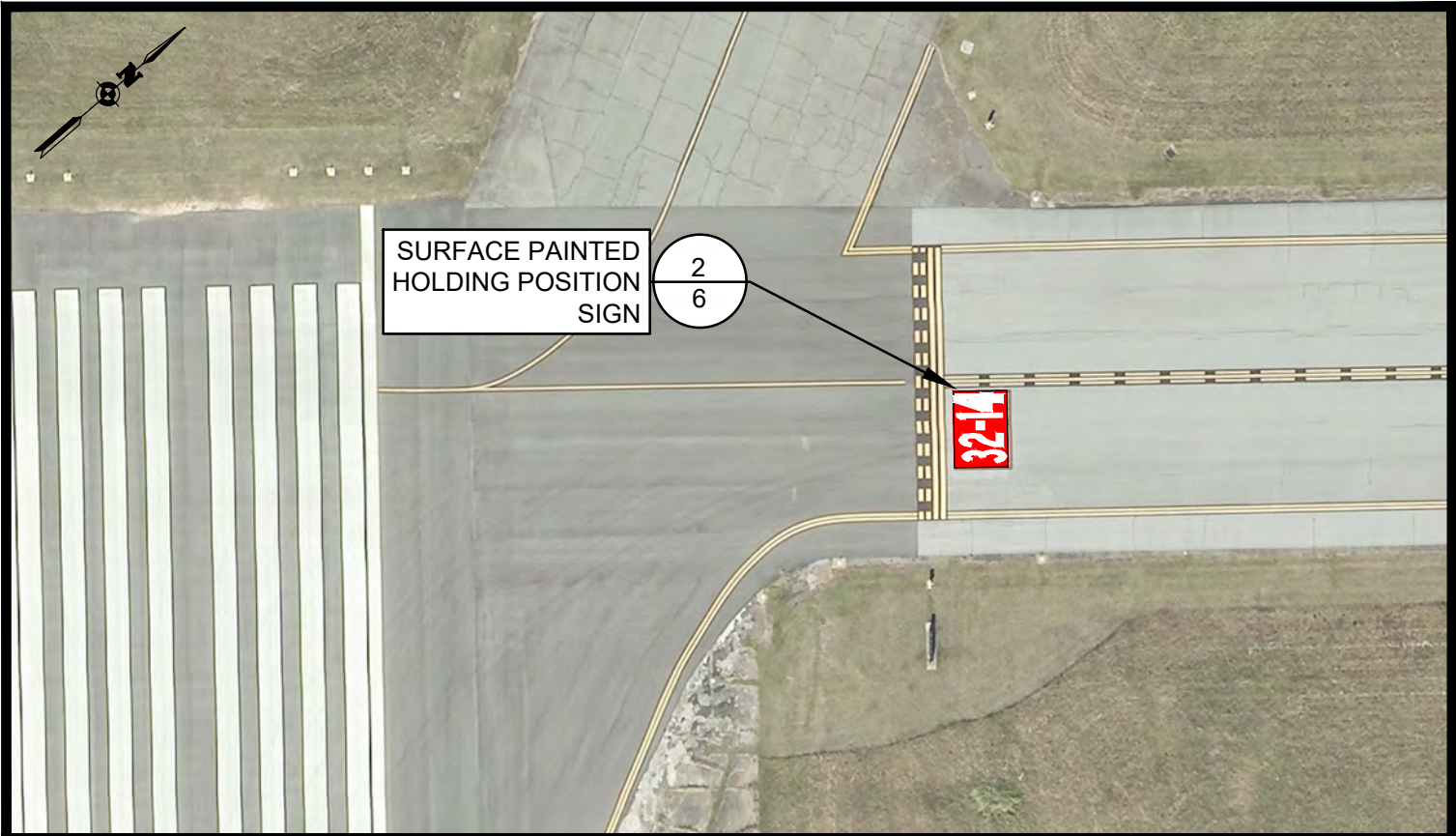


Middle Georgia Regional Airport  
 1000 Terminal Drive Suite 100  
 Macon, Georgia 31216  
 (478) 219-1138  
 www.iflymacon.com

Project: **AIRPORT MARKING**  
 Drawing:  
 Owner: MACON-BIBB COUNTY  
 700 POPLAR STREET  
 MACON, GEORGIA 31201  
 (478) 751-7400

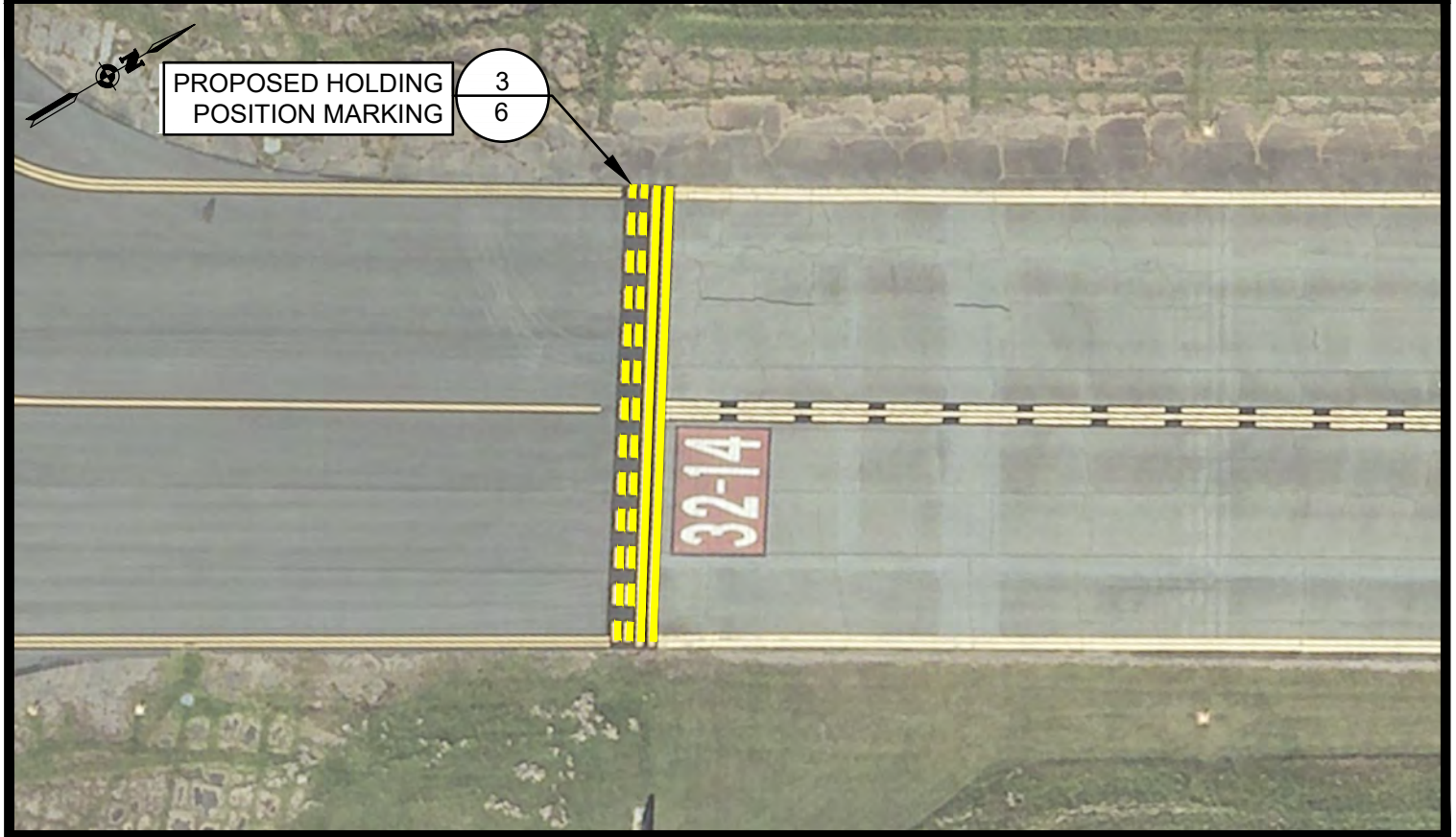
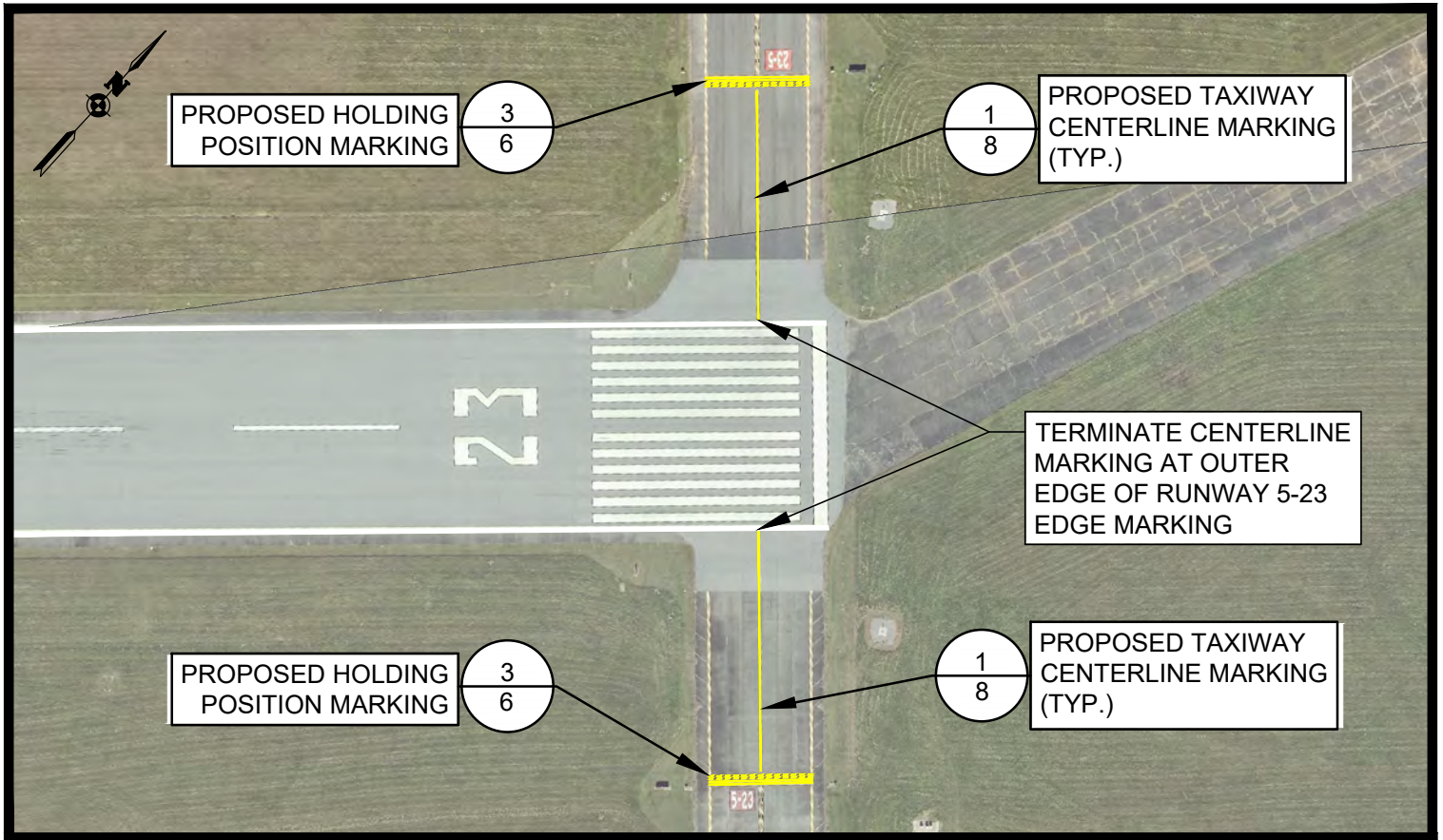
Project No.:  
 Drawing No.: **1/9**  
 Scale: **N.T.S.**  
 Date: **June 2022**



Middle Georgia Regional Airport  
 1000 Terminal Drive Suite 100  
 Macon, Georgia 31216  
 (478) 219-1138  
 www.iflymacon.com

Project: **AIRPORT MARKING**  
 Drawing:  
 Owner: MACON-BIBB COUNTY  
 700 POPLAR STREET  
 MACON, GEORGIA 31201  
 (478) 751-7400

Project No.:  
 Drawing No.: **2/9**  
 Scale: **N.T.S.**  
 Date: **June 2022**



Middle Georgia Regional Airport  
 1000 Terminal Drive Suite 100  
 Macon, Georgia 31216  
 (478) 219-1138  
 www.iflymacon.com

Project: **AIRPORT MARKING**

Drawing:

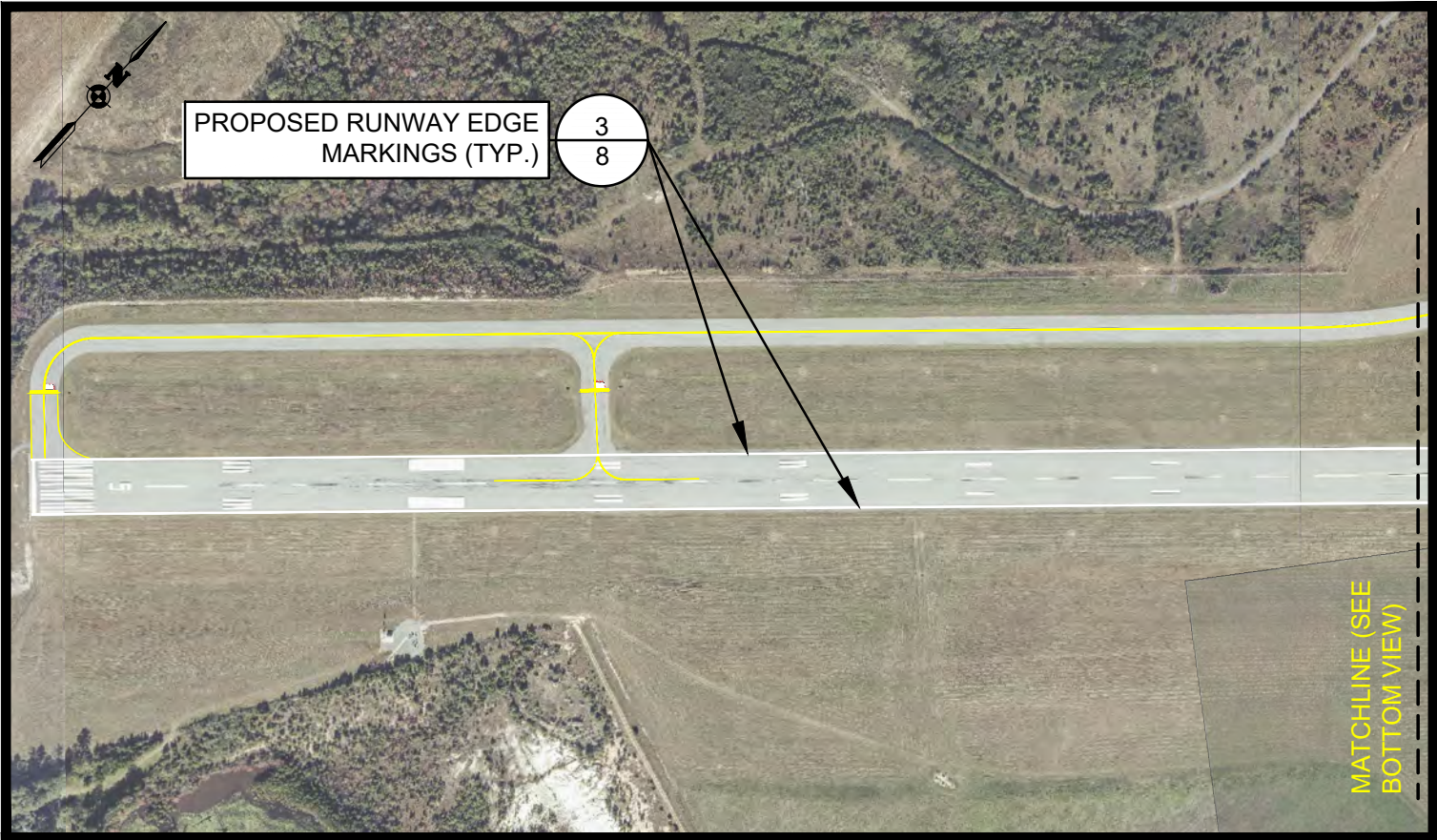
Owner: MACON-BIBB COUNTY  
 700 POPLAR STREET  
 MACON, GEORGIA 31201  
 (478) 751-7400

Project No.:

Drawing No.: **3/9**

Scale: **N.T.S.**

Date: **June 2022**




Middle Georgia Regional Airport  
 1000 Terminal Drive Suite 100  
 Macon, Georgia 31216  
 (478) 219-1138  
 www.iflymacon.com

Project: **AIRPORT MARKING**

Drawing:

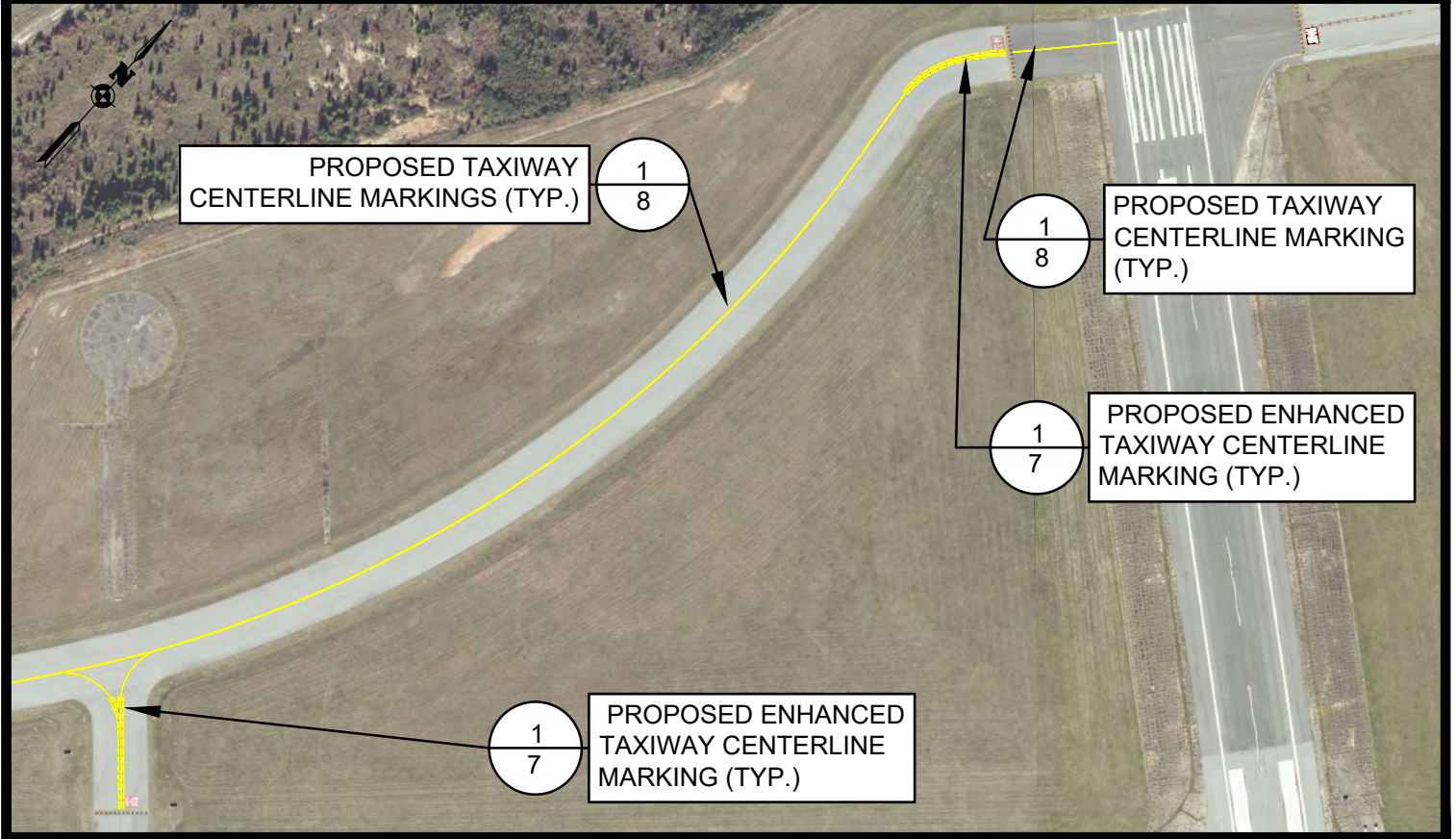
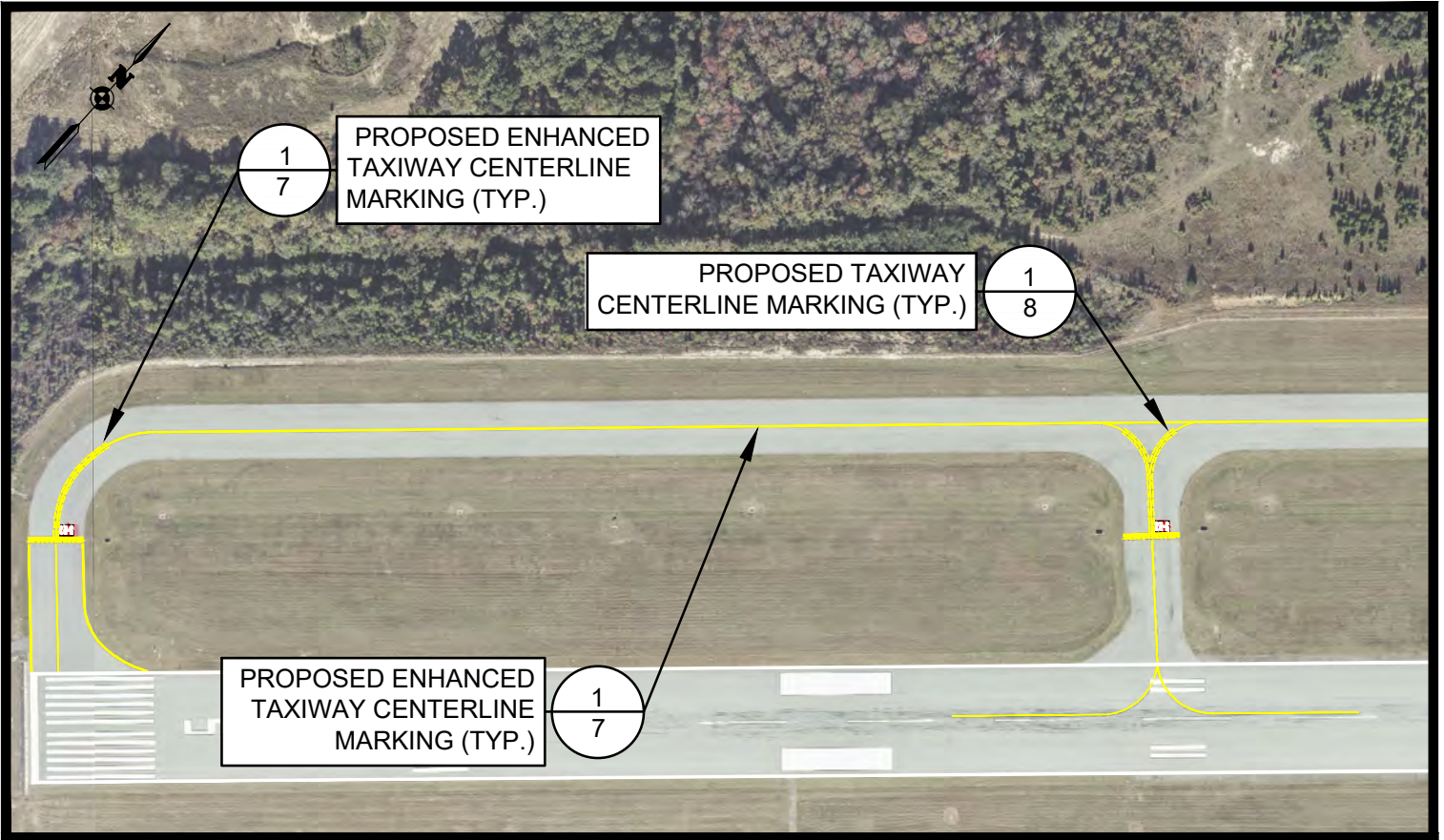
Owner: MACON-BIBB COUNTY  
 700 POPLAR STREET  
 MACON, GEORGIA 31201  
 (478) 751-7400

Project No.:

Drawing No.: **4/9**

Scale: **N.T.S.**

Date: **June 2022**




Middle Georgia Regional Airport  
 1000 Terminal Drive Suite 100  
 Macon, Georgia 31216  
 (478) 219-1138  
[www.iflymacon.com](http://www.iflymacon.com)

Project: **AIRPORT MARKING**

Drawing:

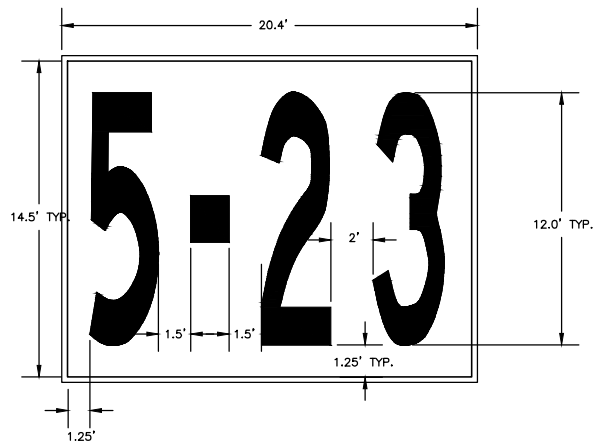
Owner: MACON-BIBB COUNTY  
 700 POPLAR STREET  
 MACON, GEORGIA 31201  
 (478) 751-7400

Project No.:

Drawing No.: **5/9**

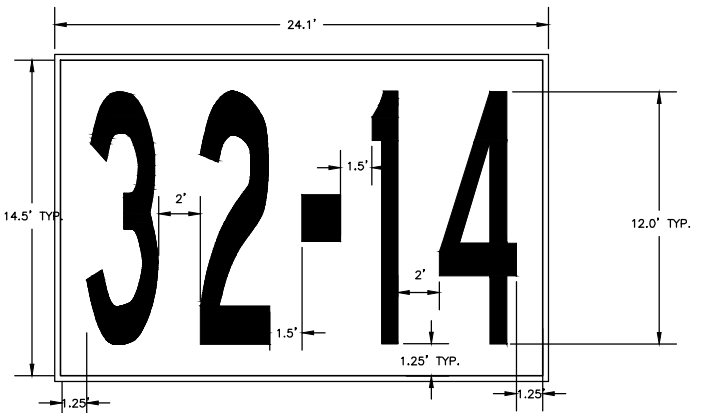
Scale: **N.T.S.**

Date: **June 2022**



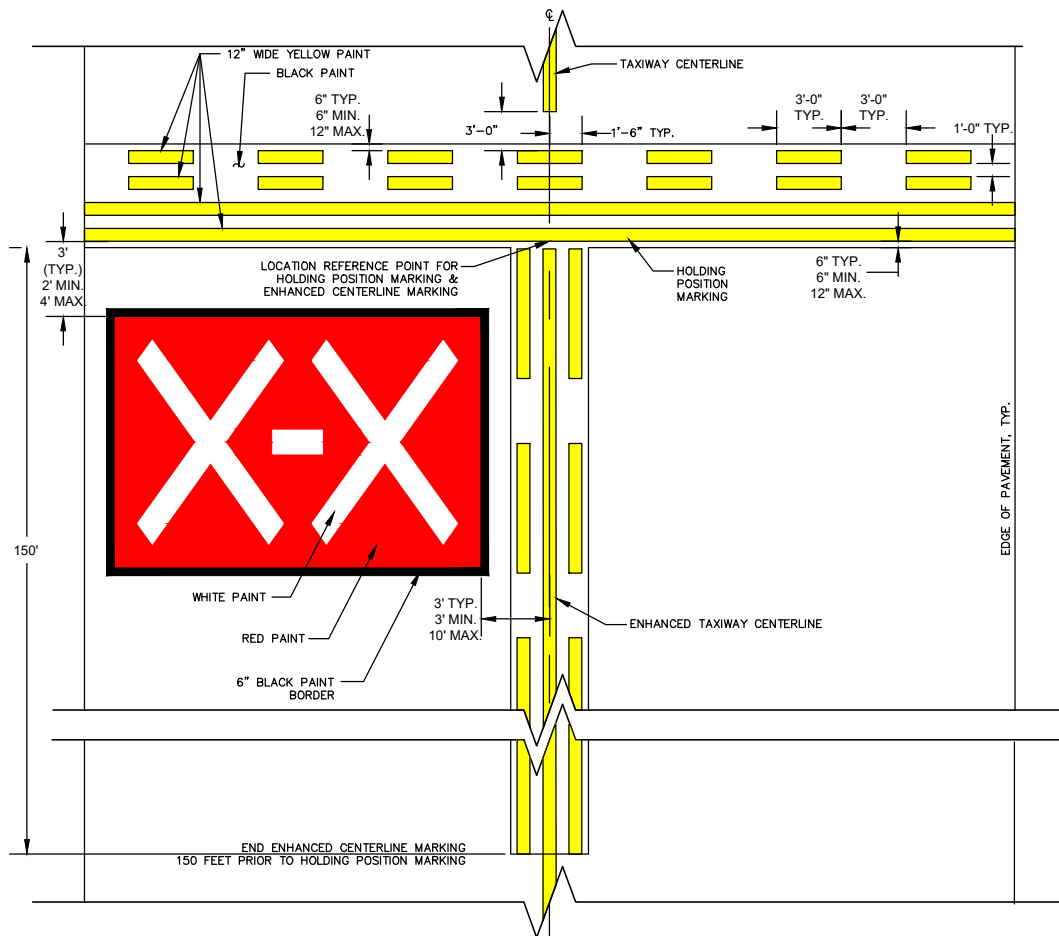
**NOTE:**  
1. THE SIGNS CONSIST OF WHITE CHARACTERS ON A RED BACKGROUND WITH A 6" BLACK BORDER.

**1**  
**6** SURFACE PAINTED HOLDING POSITION SIGN (SPHPS) DIMENSIONS DETAIL



**NOTE:**  
1. THE SIGNS CONSIST OF WHITE CHARACTERS ON A RED BACKGROUND WITH A 6" BLACK BORDER.

**2**  
**6** SURFACE PAINTED HOLDING POSITION SIGN (SPHPS) DIMENSIONS DETAIL



**NOTE:**  
1. SEE ENHANCED TAXIWAY CENTERLINE MARKING DETAILS FOR FURTHER INFORMATION.  
2. SEE SURFACE PAINTED HOLDING POSITION SIGN DETAILS FOR FURTHER INFORMATION.

**3**  
**6** TYPICAL HOLDING POSITION MARKING & SURFACE PAINTED HOLDING POSITION SIGN FOR TW WIDTH > 35' (CASE 1)

N.T.S.



Middle Georgia Regional Airport  
1000 Terminal Drive Suite 100  
Macon, Georgia 31216  
(478) 219-1138  
www.iflymacon.com

Project:

**AIRPORT MARKING**

Drawing:

Owner: MACON-BIBB COUNTY  
700 POPLAR STREET  
MACON, GEORGIA 31201  
(478) 751-7400

Project No.:

Drawing No.:

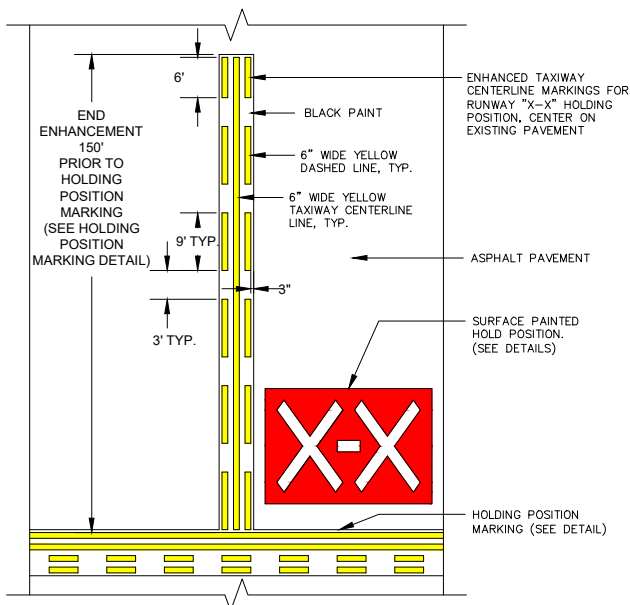
6/9

Scale:

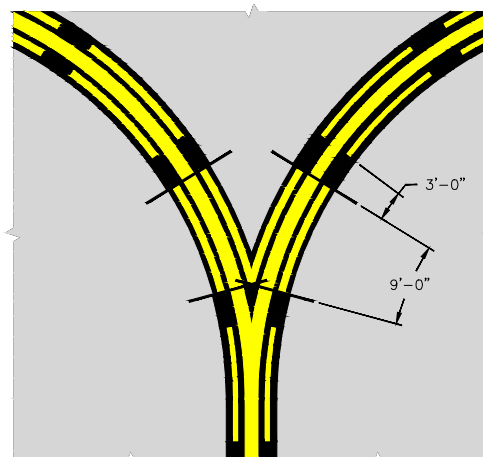
N.T.S.

Date:

June 2022



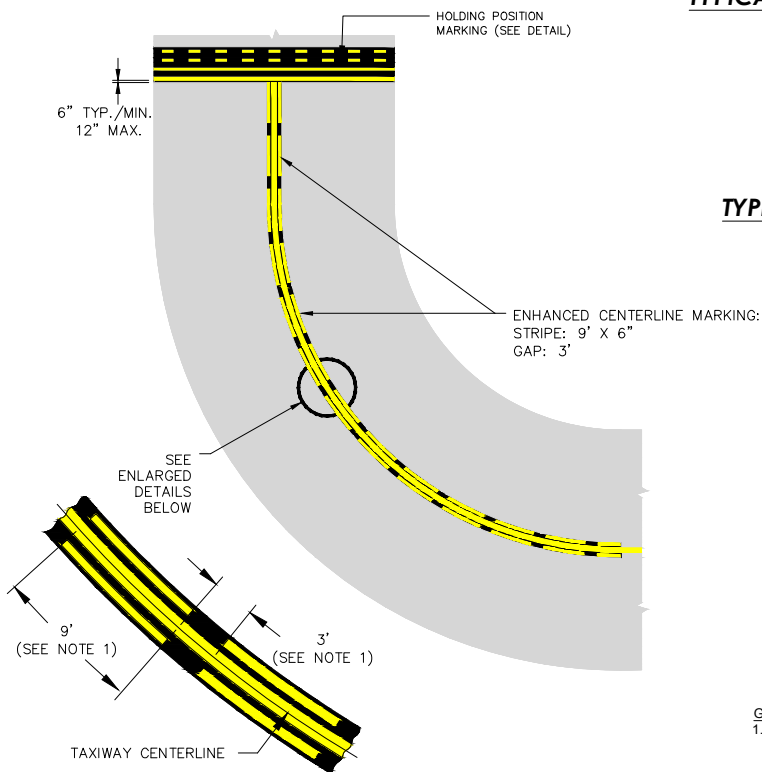
**TYPICAL ENHANCED CENTERLINE ON STRAIGHT TAXIWAY SECTION**



**CONVERGING TAXIWAY NOTES:**

1. AS SHOWN IN THE ABOVE ILLUSTRATION THE V-SHAPED DASHES START & STOP WITH THE OUTSIDE 9-FOOT DASHES; HOWEVER, THIS WILL NOT ALWAYS BE THE CASE. IF THE V-SHAPED DASHES ARE LESS THAN 5 FEET THEY MAY BE OMITTED.
2. MEASUREMENTS ARE TAKEN ALONG THE CENTER OF THE CENTERLINE STRIPE.

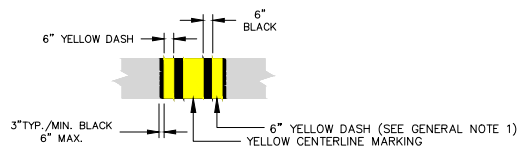
**TYPICAL CONVERGING CURVED TAXIWAY ENHANCED CENTERLINES**



**CURVED SECTION NOTE:**

1. THE DASHED LINES DIMENSIONS ARE TAKEN ALONG THE CENTER OF THE CENTERLINE ON CURVED SECTIONS, THEREFORE THE DASH WILL BE SLIGHTLY LONGER ON THE OUTSIDE OF THE CURVE AND SLIGHTLY SHORTER ON THE INSIDE OF THE CURVE.

**TYPICAL ENHANCED CENTERLINE ON CURVED TAXIWAY SECTION**



**TYPICAL ENHANCED CENTERLINE MARKING STRIPE SPACING**

**GENERAL NOTES:**

1. DASHED LINES FOR THE ENHANCED TAXIWAY CENTERLINE MARKING ARE 6 INCHES IN WIDTH AND SEPARATED 6 INCHES FROM THE TAXIWAY CENTERLINE. THIS APPLIES TO BOTH TAXIWAY CENTERLINE MARKINGS THAT ARE 6 INCHES AND 12 INCHES.
2. TAXIWAY CENTERLINES SHALL BE ENHANCED FOR 150 FEET PRIOR TO THE HOLDING POSITION MARKING. THE STANDARD APPLICATION (CASE 1) FOR STRAIGHT AND CURVED TAXIWAY SECTIONS INCLUDES 12 SETS OF 9-FOOT DASHES PLUS 3-FOOT GAP & ENDS WITH A SET OF 6-FOOT DASHES. IN CASE 2 APPLICATIONS WHERE THE SURFACE PAINTED HOLDING POSITION SIGN IS CENTERED OVER THE TAXIWAY CENTERLINE, THE ENHANCED TAXIWAY CENTERLINE MARKING WILL BE LESS THAN 150' SINCE IT DOES NOT BEGIN AT HOLDING POSITION MARKING. SEE HOLDING POSITION MARKING AND SURFACE PAINTED HOLDING POSITION SIGN DETAILS FOR ILLUSTRATION OF CASE 1 AND CASE 2 APPLICATIONS.
3. THE TAXIWAY CENTERLINE MARKINGS MAY BE SHIFTED LEFT OR RIGHT TO AVOID INTERFERENCE WITH TAXIWAY CENTERLINE LIGHTS.

1 ENHANCED TAXIWAY CENTERLINE MARKING DETAILS  
7  
N.T.S.



Middle Georgia Regional Airport  
1000 Terminal Drive Suite 100  
Macon, Georgia 31216  
(478) 219-1138  
www.iflymacon.com

Project:

**AIRPORT MARKING**

Drawing:

Owner: MACON-BIBB COUNTY  
700 POPLAR STREET  
MACON, GEORGIA 31201  
(478) 751-7400

Project No.:

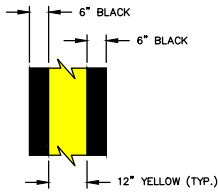
Drawing No.:  
7/9

Scale:

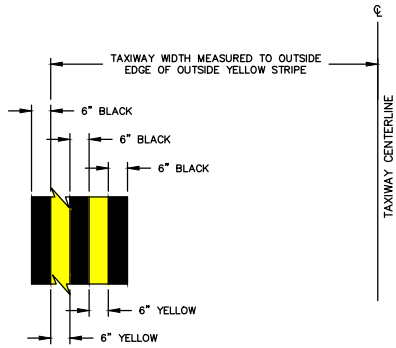
N.T.S.

Date:

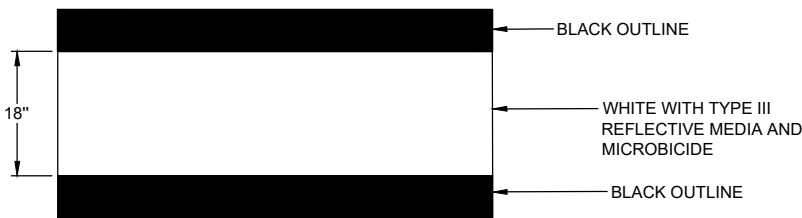
June 2022



1 STANDARD TAXIWAY CENTERLINE MARKING DETAIL  
8 N.T.S.



2 STANDARD TAXIWAY EDGE MARKING DETAIL  
8 N.T.S.



3 RUNWAY 5-23 EDGE MARKING DETAIL  
8 N.T.S.



Middle Georgia Regional Airport  
1000 Terminal Drive Suite 100  
Macon, Georgia 31216  
(478) 219-1138  
www.iflymacon.com

Project:

AIRPORT MARKING

Drawing:

Owner: MACON-BIBB COUNTY  
700 POPLAR STREET  
MACON, GEORGIA 31201  
(478) 751-7400

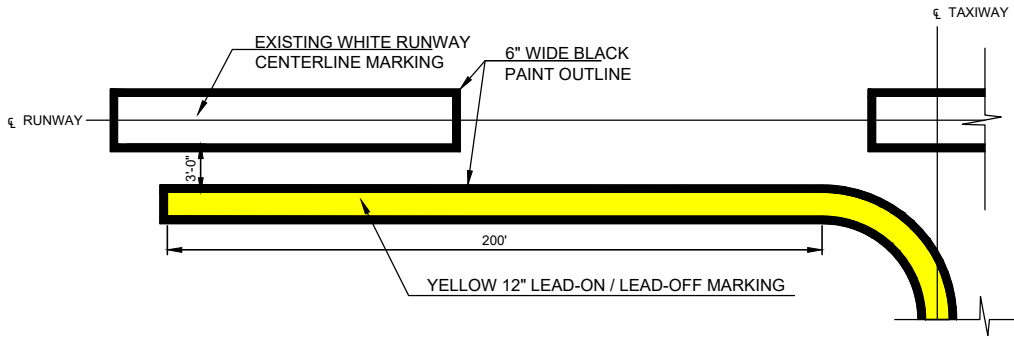
Project No.:

Drawing No.:  
8/9

Scale:  
N.T.S.

Date:  
June 2022





1 TAXIWAY LEAD-ON/LEAD-OFF MARKING  
 9 N.T.S.



Middle Georgia Regional Airport  
 1000 Terminal Drive Suite 100  
 Macon, Georgia 31216  
 (478) 219-1138  
 www.iflymacon.com

Project:

AIRPORT MARKING

Drawing:

Owner: MACON-BIBB COUNTY  
 700 POPLAR STREET  
 MACON, GEORGIA 31201  
 (478) 751-7400

Project No.:

Drawing No.:  
 9/9

Scale:  
 N.T.S.

Date:  
 June 2022

## Item P-620 Runway and Taxiway Marking

### DESCRIPTION

**620-1.1** This item shall consist of the preparation and painting of numbers, markings, and stripes on the surface of runways, taxiways, and aprons, in accordance with these specifications and at the locations shown on the plans, or as directed by the Resident Project Representative (RPR). The terms “paint” and “marking material” as well as “painting” and “application of markings” are interchangeable throughout this specification.

### MATERIALS

**620-2.1 Materials acceptance.** The Contractor shall furnish manufacturer’s certified test reports, for materials shipped to the project. The certified test reports shall include a statement that the materials meet the specification requirements. This certification along with a copy of the paint manufacturer’s surface preparation; marking materials, including adhesion, flow promoting and/or floatation additive; and application requirements must be submitted and approved by the Resident Project Representative (RPR) prior to the initial application of markings. The reports can be used for material acceptance or the RPR may perform verification testing. The reports shall not be interpreted as a basis for payment. The Contractor shall notify the RPR upon arrival of a shipment of materials to the site. All material shall arrive in sealed containers that are easily quantifiable for inspection by the RPR.

**620-2.2 Marking materials.**

**Table 1. Marking Materials**

Paint <sup>1</sup>				Glass Beads <sup>2</sup>	
Type	Color	Fed Std. 595 Number	Application Rate Maximum	Type	Application Rate Minimum
II	White	37925	115 ft <sup>2</sup> /gal	III	10 lb/gal
II	Red	31136	115 ft <sup>2</sup> /gal	III	10 lb/gal
II	Yellow	33538 or 33655	115 ft <sup>2</sup> /gal	III	10 lb/gal
II	Black	37038	115 ft <sup>2</sup> /gal		

<sup>1</sup> See paragraph 620-2.2a

<sup>2</sup> See paragraph 620-2.2b

**a. Paint.** Paint shall be waterborne in accordance with the requirements of this paragraph. Paint colors shall comply with Federal Standard No. 595.

**Waterborne.** Paint shall meet the requirements of Federal Specification TT-P-1952F, Type II. The non-volatile portion of the vehicle for all paint types shall be composed of a 100% acrylic polymer as determined by infrared spectral analysis.

**Microbicide.** All Waterborne paint shall contain a microbicide that provides microbial efficacy for a period of no less than 3 years. The microbicide shall be blended homogeneously with the paint under high speed dispersion during production by the supplier/ manufacturer. The final homogenous blend of

microbicide treated paint shall conform to the same viscosity stability standards as specified in TT-P-1952E. Dow (formally Rohm and Hass) Rocima 63 microbicide (or other approved equivalent) shall be added at a rate of 10 pounds per 100 gallons of paint. Other products may be available that meet or exceed these specifications".

**b. Reflective media.** Glass beads for white and yellow paint shall meet the requirements for Federal Specification TT-B-1325D Type III.

Glass beads for red and pink paint shall meet the requirements for Type I, Gradation A.

Glass beads shall be treated with all compatible coupling agents recommended by the manufacturers of the paint and reflective media to ensure adhesion and embedment.

Glass beads shall not be used in black and green paint.

Type III glass beads shall not be used in red and pink paint.

## CONSTRUCTION METHODS

**620-3.1 Weather limitations.** Painting shall only be performed when the surface is dry, and the ambient temperature and the pavement surface temperature meet the manufacturer's recommendations in accordance with paragraph 620-2.1. Painting operations shall be discontinued when the ambient or surface temperatures does not meet the manufacturer's recommendations. Markings shall not be applied when the wind speed exceeds 10 mph unless windscreens are used to shroud the material guns. Markings shall not be applied when weather conditions are forecasts to not be within the manufacturers' recommendations for application and dry time.

**620-3.2 Equipment.** Equipment shall include the apparatus necessary to properly clean the existing surface, a mechanical marking machine, a bead dispensing machine, and such auxiliary hand-painting equipment as may be necessary to satisfactorily complete the job.

The mechanical marker shall be an atomizing spray-type or airless type marking machine with automatic glass bead dispensers suitable for application of traffic paint. It shall produce an even and uniform film thickness and appearance of both paint and glass beads at the required coverage and shall apply markings of uniform cross-sections and clear-cut edges without running or spattering and without over spray. The marking equipment for both paint and beads shall be calibrated daily.

**620-3.3 Preparation of surfaces.** Immediately before application of the paint, the surface shall be dry and free from dirt, grease, oil, laitance, or other contaminants that would reduce the bond between the paint and the pavement. Use of any chemicals or impact abrasives during surface preparation shall be approved in advance by the RPR. After the cleaning operations, sweeping, blowing, or rinsing with pressurized water shall be performed to ensure the surface is clean and free of grit or other debris left from the cleaning process.

**a. Preparation of new pavement surfaces.** The area to be painted shall be cleaned by broom, blower, water blasting, or by other methods approved by the RPR to remove all contaminants, including PCC curing compounds, minimizing damage to the pavement surface.

**b. Preparation of pavement to remove existing markings.** Existing pavement markings shall be removed by rotary grinding, water blasting, or by other methods approved by the RPR minimizing damage to the pavement surface. The removal area may need to be larger than the area of the markings to eliminate ghost markings. After removal of markings on asphalt pavements, apply a fog seal or seal coat to 'block out' the removal area to eliminate 'ghost' markings.

**c. Preparation of pavement markings prior to remarking.** Prior to remarking existing markings, loose existing markings must be removed minimizing damage to the pavement surface, with a method approved by the RPR. After removal, the surface shall be cleaned of all residue or debris.

Prior to the application of markings, the Contractor shall certify in writing that the surface is dry and free from dirt, grease, oil, laitance, or other foreign material that would prevent the bond of the paint to the pavement or existing markings. This certification along with a copy of the paint manufactures application and surface preparation requirements must be submitted to the RPR prior to the initial application of markings.

**620-3.4 Layout of markings.** The proposed markings shall be laid out in advance of the paint application. The locations of markings to receive glass beads shall be shown on the plans.

**620-3.5 Application.** A period of 30 days shall elapse between placement of surface course or seal coat and application of the permanent paint markings. Paint shall be applied at the locations and to the dimensions and spacing shown on the plans. Paint shall not be applied until the layout and condition of the surface has been approved by the RPR.

The edges of the markings shall not vary from a straight line more than 1/2 inch (12 mm) in 50 feet (15 m), and marking dimensions and spacing shall be within the following tolerances:

**Marking Dimensions and Spacing Tolerance**

Dimension and Spacing	Tolerance
36 inch (910 mm) or less	±1/2 inch (12 mm)
greater than 36 inch to 6 feet (910 mm to 1.85 m)	±1 inch (25 mm)
greater than 6 feet to 60 feet (1.85 m to 18.3 m)	±2 inch (50 mm)
greater than 60 feet (18.3 m)	±3 inch (76 mm)

The paint shall be mixed in accordance with the manufacturer’s instructions and applied to the pavement with a marking machine at the rate shown in Table 1. The addition of thinner will not be permitted.

Glass beads shall be distributed upon the marked areas at the locations shown on the plans to receive glass beads immediately after application of the paint. A dispenser shall be furnished that is properly designed for attachment to the marking machine and suitable for dispensing glass beads. Glass beads shall be applied at the rate shown in Table 1. Glass beads shall not be applied to black paint or green paint. Glass beads shall adhere to the cured paint or all marking operations shall cease until corrections are made. Different bead types shall not be mixed. Regular monitoring of glass bead embedment and distribution should be performed.

**620-3.6 Application--preformed thermoplastic airport pavement markings.**

Preformed thermoplastic pavement markings not used.

**620-3.7 Control strip.** Prior to the full application of airfield markings, the Contractor shall prepare a control strip in the presence of the RPR. The Contractor shall demonstrate the surface preparation method and all striping equipment to be used on the project. The marking equipment must achieve the prescribed application rate of paint and population of glass beads (per Table 1) that are properly embedded and evenly distributed across the full width of the marking. Prior to acceptance of the control strip, markings must be evaluated during darkness to ensure a uniform appearance.

**620-3.8 Retro-reflectance.** Not used.

**620-3.9 Protection and cleanup.** After application of the markings, all markings shall be protected from damage until dry. All surfaces shall be protected from excess moisture and/or rain and from disfiguration by spatter, splashes, spillage, or drippings. The Contractor shall remove from the work area all debris, waste, loose reflective media, and by-products generated by the surface preparation and application operations to the satisfaction of the RPR. The Contractor shall dispose of these wastes in strict compliance with all applicable state, local, and federal environmental statutes and regulations.

### **METHOD OF MEASUREMENT**

**620-4.1** The quantity of pavement removal by waterblasting to be paid for shall be measured by the number of square feet (SF) of waterblasting.

**620-4.2** The quantity of temporary markings to be paid for shall be measured by the number of square feet (SF) of painting.

**620-4.3** The quantity of permanent markings to be paid for shall be measured by the number of square feet (SF) of painting.

**620-4.1d** There shall be no separate measurement made for reflective media.

### **BASIS OF PAYMENT**

This price shall be full compensation for furnishing all materials and for all labor, equipment, tools, and incidentals necessary to complete the item complete in place and accepted by the RPR in accordance with these specifications.

**620-5.1** Payment for pavement removal by waterblasting shall be made at the contract price for the number of square feet (SF) of waterblasting.

**620-5.2** Payment for temporary markings shall be made at the contract price for the number of square feet (SF) of painting.

**620-5.3** Payment for permanent markings shall be made at the contract price for the number of square feet (SF) of painting.

**620-5.4** There shall be no separate payment made for reflective media.

Payment will be made under:

Item P-620-5.1	Pavement Marking Removal by Waterblasting – per square foot
Item P-620-5.2	Temporary Pavement Marking, Yellow – per square foot
Item P-620-5.3a	Permanent Pavement Marking, Yellow – per square foot
Item P-620-5.3b	Permanent Pavement Marking, Black – per square foot
Item P-620-5.3c	Permanent Pavement Marking, Red – per square foot
Item P-620-5.3d	Permanent Pavement Marking, White – per square foot

### **REFERENCES**

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM D476	Standard Classification for Dry Pigmentary Titanium Dioxide Products
ASTM D968	Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive
ASTM D1652	Standard Test Method for Epoxy Content of Epoxy Resins
ASTM D2074	Standard Test Method for Total, Primary, Secondary, and Tertiary Amine Values of Fatty Amines by Alternative Indicator Method
ASTM D2240	Standard Test Method for Rubber Property - Durometer Hardness
ASTM D7585	Standard Practice for Evaluating Retroreflective Pavement Markings Using Portable Hand-Operated Instruments
ASTM E303	Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester
ASTM E1710	Standard Test Method for Measurement of Retroreflective Pavement Marking Materials with CEN-Prescribed Geometry Using a Portable Retroreflectometer
ASTM E2302	Standard Test Method for Measurement of the Luminance Coefficient Under Diffuse Illumination of Pavement Marking Materials Using a Portable Reflectometer
ASTM G154	Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials

Code of Federal Regulations (CFR)

40 CFR Part 60, Appendix A-7, Method 24	Determination of volatile matter content, water content, density, volume solids, and weight solids of surface coatings
29 CFR Part 1910.1200 Hazard Communication	

Federal Specifications (FED SPEC)

FED SPEC TT-B-1325D	Beads (Glass Spheres) Retro-Reflective
FED SPEC TT-P-1952F	Paint, Traffic and Airfield Marking, Waterborne
FED STD 595	Colors used in Government Procurement

Commercial Item Description

A-A-2886B	Paint, Traffic, Solvent Based
-----------	-------------------------------

Advisory Circulars (AC)

AC 150/5340-1	Standards for Airport Markings
AC 150/5320-12	Measurement, Construction, and Maintenance of Skid Resistant Airport Pavement Surfaces

**END OF ITEM P-620**