State of Alabama
License Plate Design Specifications
April 8, 2021

The State of Alabama began utilizing digital license plate manufacturing technology in September 2006. This technology permits plates to be manufactured in a uniform manner to ensure the legibility and visibility of the license plate characteristics. Many of the specifications contained in this document are required by law, have been adopted from the American Association of Motor Vehicle Administrators (AAMVA) License Plate Legibility Testing Guidelines for Reflective Sheeting, and digital license plate design guidelines.

<u>Please review the specifications below carefully before beginning the design process.</u>

Size

The finished plate size for passenger license plates is 6 X 12 inches. Motorcycle license plates are 4" X 7". Designs for use in the United States must fit into a 5.44 X 11.44" rectangle, with radius corners sized to match the debossing rim in the blanking press. The resulting .28" margin is needed to ensure acceptable finished license plates, given the requirements of the sheeting and the production process.

"ALABAMA" Header

"ALABAMA" must be capitalized and placed between the bolt holes at the top of the license plate using URW BaskerTwid, or similar font (Ex. Times New Roman). The font must be 80 point. The character color should provide a good color contrast with the license plate background color.

Category Names

The typical size of the font for the name of sponsoring organization, college or university, military campaign, etc. is ¾" to 1". If not included in the design, this text should appear at the bottom of the license plate design between the bolt holes for Quantity Class 2 license plates. Be mindful of the bolt holes which are .3125 inches in diameter.

Logos

If the logo or design includes copyright protected elements, written permission to have the design appear on an Alabama license plate must be provided to the Department. For generic design (quantity class 1) license plates, the logo or design shall be located on the left side of the license plate. The maximum size of the logo for the passenger plate is 3.22" X 2.3" (adjusted accordingly for motorcycle plate) to allow space for up to six (6) alphanumeric license plate characters. Design elements (text and logos) should be spaced at least 1/4 of an inch away from the alphanumeric characters.

License Plate Numbers

Alphanumeric characters on the license plates shall be no smaller than two and three-fourths inches in height. The "**2.875" X 8.75"** area for the license plate numbers should be free of graphics. A maximum of seven (7) alphanumeric characters may be displayed on standard license plates. A maximum of six (6) alphanumeric spaces may be displayed on distinctive license plates. Spacing between characters should be at least equal to the stroke width. All license plate numbers will be printed in black to ensure a minimum contrast ratio of 4-to-1 between different background colors and the alphanumeric characters to ensure that the background is four (4) times brighter than the alphanumeric characters. Heavy coverage of colorant in the alphanumeric areas should be avoided.

Reflectivity

License plates shall be manufactured in such a manner as to meet the minimum federal performance standards as set out in Table I of the Society of Automotive Engineers Standard J594e, "Reflex Reflectors," of Federal Standard 108. The face of the license plate to be displayed shall be fully treated with a reflective material which will increase the nighttime/low light visibility and legibility of the plate.

"HEART OF DIXIE" Language

Every license plate shall display a conventionalized representation of a heart and the words "Heart of Dixie". Sponsoring organizations may request that the "Heart of Dixie" language not be reflected on the license plate. For generic design (quantity Class 1) license plates, the heart will appear in the lower right-hand corner of the license plate. For full design (quantity Class 2) license plates, the heart may appear anywhere if it does not interfere with the required elements of the license plate design.

Sheeting

Medium - All license plates are printed on 3M reflective sheeting. The sheeting is not as dimensionally stable as paper; therefore, stretching may occur. This medium also has some limits in thermal transfer graphic printing due to the high heat required to transfer the ribbon media to the sheeting.

Registration - Registration of each of the 4 color stations is plus or minus 4.5 mils (.0045) per color. The sheeting has a tick mark used for printer registration. The printer uses a Top of Form (TOF) sensor to read the tick mark and locate the graphic. The registration of the printer to the tick mark is plus or minus 5 mils (.005)

Coverage - The coarseness of the sheeting may cause halftones over 75% tint value, to fill in. Halftones under 5% tint value may not print at all. Most images are printed at 55 LPI for optimum coverage and printability, but some images can be printed up to 55 LPI. Graduated halftones are especially better at the lower 55 LPI. The designer, in certain instances, may need

to adjust the separation angles, the separation technique and/or dot shape to optimize printing of the design. Thin lines less than 1/32 of an inch may break up or print unevenly.

Line Art

Avoid thin lines under 1/32 of an inch in width. Intricate solid shapes are acceptable; however, a loss of detail may occur. Design elements (shapes) smaller than .008 x .008 inches and/or .008 inches in any dimension, may fail to print.

Color

White is the optimum background color for all license plates and is required for quantity class 1 (generic) license plate designs. The colorants used for 3M digital license plate printing are resin ribbons manufactured to be UV fade resistant. These ribbons produce colors that are transparent, to meet reflectivity standards. The digital license plate printing process does not use the PANTONE® Color Match System.

Designs are limited to four (4) process colors. A process color is a mixture of CYAN, MAGENTA, YELLOW, and BLACK to make one color, but it is done in four passes of a press. DO NOT submit license plate designs with spot colors. A spot color, such as a PMS color, is mixed in a can and only takes one pass of a press. Solid colors will result in a better-finished product than screened colors that are made up of dots. Please be sure to include a list of your process colors for each element contained in the design with the corresponding color codes, e.g. Cyan: XX.

Typical 4-color designs should be designed and setup using the CMYK colors only. While halftones and graduated tones may be used, a shift in these tones may result, due to the unique properties of the reflective materials, ribbons and printing processes. At a 300 x 300 dpi resolution and a 55 LPI line screen, the printer is capable of printing a maximum of 32,768 colors. The actual color palette size is somewhat smaller due to limitations of the thermal transfer process and the reflective sheeting.

Due to the excessive heat that could be generated by producing plate designs with large color fill areas, the graphic design should be limited in the amount of color saturation. For best results, the following guidelines and test are suggested:

1 Pixel Test - The total tonal value of all colors should not exceed 50%. This can be found through Adobe Photoshop. After bringing the design into Photoshop, select the bilinear image resample and then reduce the size of the image to 1 pixel. Use the magnify tool to enlarge the pixel. Make sure the image is in CMYK mode. Place the Magic Wand tool over the pixel and add up the % values in the Info box. If any one color is over 25% or if the total coverage is over 50%, the length of a print run could be limited, and the life of the print heads could be shortened below warranty levels.

The designer should seek to balance the use of color in the design across the license plate. Designs with color on one side of the plate but not on the other side, or uneven color distribution across the plate, could cause ribbon wrinkling during printing.

Color Trapping

Because of the transparent properties of the thermal transfer ribbons, trapping between colors and halftones is not recommended. Think Thick!!! Trap lines are like the thick black lines in children's coloring books that hold a color within a boundary, or where two different colors meet and overlap. Your trap lines need to be at least two (2) points thick (the thicker the better). Any line width in your artwork must be at least .5 points, or it may not print.

Format

All license plate designs must be provided in vector form (Adobe Illustrator). Fonts, logos, halftone areas, gradient fill areas, and line art in general, should be constructed in Adobe Illustrator. This makes file sizes small and editing, trapping, and color separation easier. For example, crisp type produced in a paint program would need to be at 300 dpi resulting in huge file sizes. Convert all fonts to vector form by using Create Outlines. All placed or parsed bitmap files must be included separately. Save in the Illustrator .ai format. Save files with elements on separate layers and do not flatten before saving. All files must have antialiasing and color profiles turned off. **Do not use compression software of any kind for vector files.**   3D or CAD software is not used. Specify all fonts used, color call outs, and halftone tint values if halftones are used in the license plate design, or provide at the time of the license plate design submission.

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