OKLAHOMA SPECIFICATIONS
FOR DIGITAL BALLOT PRINTING

SECTION 1. INTRODUCTION

1.1 PURPOSE

This document specifies the requirements for the printing of digital ballots for all elections conducted in Oklahoma.

Included are the printing specifications that are to be followed by a printer (Printer) certified by the State Election Board. Only a Printer that has been certified by the State Election Board as capable of digitally printing ballots for use in Oklahoma with the Hart InterCivic eScan A/T voting device and with Hart InterCivic's Ballot Now software application may bid on ballot printing.

1.2 SCOPE

This document specifies requirements for Printers to produce digital ballots compatible with the Hart InterCivic eScan A/T and Ballot Now functionality. These specifications define the minimum requirements and the Election Board reserves the right to change or add to these specifications at any time it is deemed necessary. If any changes are made, the Printer will be provided with the new specifications prior to the time printing begins for the next scheduled election.

Ballots should not vary from the specifications without prior approval from the Election Board. The Election Board shall not be responsible for paying for any ballots not produced in accordance with all ballot specifications.

Any and all questions regarding ballot specifications and production should be immediately presented to the Election Board prior to digitally printing any ballot.

1.3 OVERVIEW

These specifications are to be used by the Printer and will be used to specify the ballot and printing requirements for certifying Printers. Ballot Now is Hart InterCivic’s central count and ballot-on-demand election software component and the eScan A/T is a precinct-based component that digitally scans and tabulates ballots. Ballot Now produces the formatted ballots. Ballot Now supports both direct printing of ballots and produces a PDF file for remote printing by third parties (Printer).
SECTION 2. REQUIREMENTS

2.1 PRINTING EQUIPMENT

Hart InterCivic’s Ballot Now and eScan A/T election products are designed to accept digitally printed ballots produced by laser equipment. Any equipment used in the production of ballots must be maintained in accordance with the manufacturer’s specifications. Given that digital equipment continues to change and update, the Election Board does not provide a list of approved equipment since it may arbitrarily exclude new or less common equipment. Any printing equipment must produce documents at 600 dpi or higher.

2.2 FILE FORMAT

Files provided to a Printer are in Adobe .pdf format and will be accessible via an FTP website using a login and password provided by the State Election Board or other secure means as directed by the State Election Board.

2.3 BALLOTS

Ballots must be printed using digital printer(s). Each ballot will have a unique barcode and will be printed on both sides (duplex). Each regular ballot printed will include the name of the county, the entity, and the precinct for which the ballots are printed. Absentee ballots may be printed by style or by precinct.

The width of all ballots must be 8.5”. All ballots in an election will be the same length. Absentee and regular ballots must be stitched into book form. The number of ballots per book shall be 100. When the number of ballots needed for a precinct is less than 25, the ballots shall be stitched in a book of 50. Sample ballots shall not be bound or stitched into books. All regular and absentee ballots shall have a line of micro perforation separating the stub (top of ballot) from the actual ballot. The micro perforation shall be placed 3 inches from the top of the stub for 14.0 and 17.0 inch ballots and 2 inches from the top of the stub for 19.0 inch ballots. The micro perforation must allow for easy removal of the ballot from the stub without tearing the ballot. The micro perforation shall be 36 perforations per inch.

The ballot files will contain all ballots for a given precinct/style including the numbers.

2.4 BARCODES

All ballots will have unique barcodes included on both faces of all ballots. Three barcodes are used:
• Unique Barcode – A barcode placed on the ballot stub and the ballot that uniquely identifies the ballot. This barcode assists in preventing multiple ballots from being processed through the scanner at the same time and prevents a ballot from being processed more than once.

• Election ID Barcode – An identification barcode that is unique for every election and used internally by the software.

• Ballot Identifier Barcode – A barcode printed on the paper ballot that indicates the precinct number, party, language, and page number of the ballot. In addition, the first three characters of the barcode identifies whether the ballot was printed from the Ballot Now application or an external ballot printer, and if the ballot is an official ballot, absentee ballot, sample ballot, or a test ballot.

2.5 BALLOT IMAGE MODIFICATION

No image may be added to the ballot without prior written approval from the Election Board.

2.6 PAPER SPECIFICATIONS

All official ballots must be printed on paper stock that meets or exceeds the specifications. All stock and supplies must be furnished by the printer. Official Ballot Paper is #1 grade bond, laser guaranteed, meeting the following minimum specifications:

- **Basis Weight:** 28# Bond
- **Finish:** Smooth Xerography
- **Sheffield:** 100-120
- **Brightness:** 91-94
- **Content:** Virgin wood fiber, no recycled content
- **Florescent level:** 4%
- **Moisture content:** 4.5%
- **Packaging:** Moisture resistant ream wrap
- **Trim:** +/- 0.025”
- **Squareness:** +/- 0.025”
- **Toner Adhesion:** Mill treatment which allows optimum binding of toner and paper fibers
- **Stub:** 36 micro perforations per inch
- **Color:** Primary election ballots must be distinguished by color as directed by the Election Board

2.7 BALLOT COLOR

Color distinction may be made by the use of colored stock or by a color bar. Colored stock recommendations by Hart InterCivic include *Domtar 70-Pound Smooth* and *International Springhill Opaque*. Approved colors from these sources include only white, ivory, pink, and yellow.
For a color bar, Printer must be able to print solid or screened print bars 1/4” to 3/8” along the top and bottom end of both sides of the official ballot. The printed stripes may not extend left or right beyond the vertical plane(s) of the copy box, nor anywhere inside the copy box (the rectangular outline box within which all ballot copy resides).

Specifications require the use of only laser-safe inks and a 48 hour allowance for drying purposes prior to laser imaging of ballot copy.

The printed bars must be printed in one of the following Pantone Matching System (PMS) colors:

- Green 352
- Brown 464
- Tan 468
- Blue 297
- Gray Cool #3
- Peach 163
- Cherry 183
- Purple 251

Color distinctions for ballots shall be at the discretion of the Election Board according to color availability from successful bidder. Absentee ballots of the same style or precinct shall be printed with the same color bar or on the same color ballot stock as the regular ballots.

**2.8 COLOR CODING OR HIGHLIGHTS**

No image, screen, tint, logo, pantograph, or any mark may be added to the ballot which encroaches upon the ballot area (rectangular outline box within which all ballot copy resides), nor within any vertical tracks from sheet edge to ballot area, top to bottom, where the barcodes exist. Highlight printing with color toner may only be performed at the same time and machine pass that the ballot image is printed. Pre-printed stock, i.e. stock which has been printed using the lithographic process, shall be printed only with laser safe inks, and allowed to dry for 48 hours prior to laser imaging.

**2.9 SAMPLE BALLOTS**

Files for sample ballots will be provided in the same manner as regular official ballots. Sample ballots will not be numbered, stitched or perforated. Sample ballots will be shrink-wrapped.
SECTION 3. PRODUCTION

3.1 PAPER CONDITIONING

Official Ballot Paper must be properly conditioned in accordance with the printer manufacturer specifications. Conditioning time increases proportionally to the difference in temperature between storage and production locations.

Paper that is purchased in trimmed to size reams should be prepared for a print job by removing outer skid wraps. Do not remove from cartons or remove ream wraps from paper.

The following chart should be used for conditioning ream wrapped papers:

<table>
<thead>
<tr>
<th>Paper Quantity (Number of Cartons)</th>
<th>Cut Sheets, Ream Wrapped in Cartons</th>
<th>Difference in Temperature (From Storage to Production Area)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10° F</td>
<td>15° F</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>10</td>
<td>8</td>
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<td>11</td>
<td>18</td>
</tr>
<tr>
<td>40</td>
<td>13</td>
<td>21</td>
</tr>
</tbody>
</table>

3.2 TRIMMING

Ballot Now produces a .pdf for each unique ballot and supports sizes (in inches) 8.5 x 11 (14” with 3” stub), 8.5 x 14 (17” with 3” stub), and 8.5 x 17 (19” with 2” stub). These sizes do not require trimming, and are guaranteed to meet all tolerances required.

Cutter blades should be changed every 2000 to 2500 pulls, which generally equates to every other day in two-shift production. Failure to change blades as recommended will result in inaccurate cuts and improper feeding into the digital printer and/or the scanner, ultimately resulting in rejected ballots.

Stock width must be plus or minus .025” from target. Mylar overlays shall be used for testing periodically throughout the production day. Stock must be square. Any variation in excess of 0.025” is unacceptable.
3.3 PRINT PRODUCTION

The .pdf file must be printed at 100% image size. A Mylar overlay for comparison with printed ballots may be obtained from the State Election Board or Hart InterCivic and shall be used to verify ballot format, at a minimum of every 500 ballots or for each precinct printed, whichever is less. The linearity shall be verified at the same sampling rate, using a linearity Mylar overlay supplied by the SEB. The Printer must test bar code position with the overlay every 500 ballots, and print, validate, and retain five consecutive linearity grid sheets prior to commencing production and hourly thereafter. These tests should also be re-validated during the post-production QC period after the ballots have re-acclimated to room temperature.

The image must be centered on the page within 0.060” left to right and 0.125” top to bottom. Image size must not vary from ballot to ballot more than 2.0% from actual. For general comparison, overall text or graphics stretching is not to exceed .864 cm/.0340 in. Toner “spray” must not be visible to the naked eye.

3.4 PERFORATIONS

All regular and absentee ballots shall have a line of micro perforation separating the stub (top of ballot) from the actual ballot. The micro perforation shall be placed 3 inches from the top of the stub for 14.0 and 17.0 inch ballots and 2 inches from the top of the stub for 19.0 inch ballots. The micro perforation must allow for easy removal of the ballot from the stub without tearing the ballot. The micro perforation shall be 36 perforations per inch.

3.5 GRAIN ORIENTATION

Ballots shall be printed with the paper grain parallel to the ballot width (grain short) to minimize dimensional changes.

SECTION 4. POST PRINT PRODUCTION

4.1 POST-PRINTING CONDITIONING

Digital printers fuse toner to paper using very high heat and pressure. Moisture is removed from the stock during this process. Ballots printed using digital presses require a minimum of 24 hours prior to beginning other bindery processes, in order to allow the stock to re-acclimate.

4.2 STITCHING

Absentee and regular ballots must be stitched into book form. The number of ballots per book shall be 100. When the number of ballots for a precinct is less than 25, the number of ballots per book shall be 50. Sample ballots shall not be bound or stitched into books. Each book of consecutively-numbered ballots shall be stitched together in the top 1/4 inch margin of the stub. Staples should not interfere with any number or text matter that appears on the stub.
4.3 SHRINK-WRAPPING

Printed ballots shall be shrink-wrapped by precinct number in maximum packages of no more than four books of 100 ballots each. Ballots are packaged by shrink-wrapping in such a way that edges are not damaged by flares, delamination, bends, and tears to the ballot stock.

4.4 PACKAGING

Printed ballots are to be packaged in the order provided in the transmitted files. Completed ballots shall be shrink-wrapped following post-production conditioning. Optimum package size is 200 to 400 ballots. If there are less than 200 ballots per package, turn shrink tunnel heat down to prevent full wrap shrinkage and resultant curling of ballots.

Shrink-wrapped packages shall be reinforced with index or chipboard. Packages shall be labeled to reveal enough pertinent information about the contents to ensure the package can remain sealed until ballots are ready to be voted.

4.5 CARTONS

Ballot packages shall be protected in corrugated cartons of single wall construction, #275 virgin Kraft, approximately .125”-.250” larger than the ballot size. If correct size cartons are not available, corrugated corners shall be fitted to protect the package. Chipboard or corrugated cushions shall be placed on the bottom and top of each carton to further protect ballots. Tamper-proof tape or security tape to seal cartons is required and may be specified by the customer. Fully loaded carton weight shall not exceed 60 pounds. Most “mill” paper cartons do not provide adequate protection for printed ballots, and thus should not be used for shipping completed orders.

4.6 SHIPPING

Ballots shall be boxed and shipped to the Election Board office(s). Shipping documents shall verify carton contents. The Printer must have a method of tracking shipments and of communicating package delivery status. Bid prices shall include all charges for freight, F.O.B. with inside delivery. A shipping charge may be added to orders of small quantities of ballots.