



Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Centralized Request for Information
 Miscellaneous

| | | | |
|--|----------------------------|-------------------------|---------------------------------|
| Proc Folder: 1227087 | | | Reason for Modification: |
| Doc Description: STANDARDIZATION REQUEST FOR INFORMATION-SECURITY PAPER | | | |
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| 2023-05-19 | 2023-06-01 13:30 | CRFI 0506 HSC2300000004 | 1 |

BID RECEIVING LOCATION

BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

06/01/23 09:37:45
 WV Purchasing Division

VENDOR

Vendor Customer Code: VS0000014299

Vendor Name : Banknote Corporation of America, Inc

Address : 6109 Corporate Park Drive

Street :

City : Browns Summit

State : NC **Country :** US **Zip :** 27214

Principal Contact : Christine Murray

Vendor Contact Phone: 336-375-1134 **Extension:** 326

FOR INFORMATION CONTACT THE BUYER
 Crystal G Husted
 (304) 558-2402
 crystal.g.husted@wv.gov

Vendor Signature X *Christine Murray* **FEIN#** 061292634 **DATE** 5/31/23

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION**REQUEST FOR INFORMATION**

THE STATE OF WEST VIRGINIA PURCHASING DIVISION PURSUANT TO W. VA. CODE 5A-3-61, IS ISSUING THIS STANDARDIZATION REQUEST FOR INFORMATION ON BEHALF OF THE WEST VIRGINIA DEPARTMENT OF HEALTH AND HUMAN RESOURCES, BUREAU FOR PUBLIC HEALTH, HEALTH STATISTICS CENTER, OFFICE OF VITAL RECORDS ("AGENCY"), TO ALL VENDORS THAT HAVE A DESIRE TO PROVIDE INFORMATION ABOUT SECURITY PAPER FOR VITAL RECORDS. THIS RFI IS INTENDED TO PROVIDE THE AGENCY WITH INFORMATION NECESSARY TO PLAN AND DEVELOP SPECIFICATIONS FOR A FUTURE PROCUREMENT.

QUESTIONS REGARDING THE SOLICITATION MUST BE SUBMITTED IN WRITING TO CRYSTAL.G.HUSTEAD@WV.GOV PRIOR TO THE QUESTION PERIOD DEADLINE

ELECTRONIC RESPONSES ARE PROHIBITED FOR THIS SOLICITATION

| Line | Comm Ln Desc | Qty | Unit Issue | Unit Price | Total Price |
|------|---|---------|------------|------------|-------------|
| 1 | Security Paper for WV Office of Vital Records | 0.00000 | SH | | |

| Comm Code | Manufacturer | Specification | Model # |
|-----------|--------------|---------------|---------|
| 14111544 | | | |

Extended Description:

Security Paper for WV Office of Vital Records

SCHEDULE OF EVENTS

| <u>Line</u> | <u>Event</u> | <u>Event Date</u> |
|-------------|--------------------------|-------------------|
| 1 | VENDOR QUESTION DEADLINE | 2023-05-23 |

| | Document Phase | Document Description | Page 3 |
|---------------|----------------|--|-----------|
| HSC2300000004 | Final | STANDARDIZATION REQUEST FOR INFORMATION-SECURITY PAPER | |

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions



State of West Virginia

Department of Administration

2019 Washington Street East

Charleston, WV 25305

Request of Information on Security Printed Paper

Solicitation HSC 2300000004

Attn: Crystal Husted

**PREPARED BY:
BANKNOTE CORPORATION OF AMERICA
6109 CORPORATE PARK DRIVE
BROWNS SUMMIT, NC 27214
USA**





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EXECUTIVE SUMMARY

Banknote Corporation of America (BCA) (www.banknote.com) is recognized as the leading high-security printer in the U.S. BCA has the expertise and in-house capabilities to provide all services related to the design, intaglio plate making, and production of all types of security documents. These capabilities are housed in our state-of-the-art high-security facility in Browns Summit, NC, which has continuously operated since 1995. In addition to being **ISO 14298:2023 (Management of Security Printing processes)** certified, BCA has been audited and certified by the U.S. Secret Service, the United States Postal Inspection Service, and the Department of Homeland Security to produce high-security documents. BCA is also **ISO 9001:2015 (Quality Management Systems)** certified. Copies of these certifications will be provided upon request.

BCA has secured a respected tradition of excellence, craftsmanship, and leadership in the field of secure document printing. With an outstanding record of service to this country and the industry, we have earned the confidence of corporations, governments, and financial institutions around the globe. BCA believes in creating the most secure document possible while preserving the artistic heritage of the craft.

BCA is an equal opportunity employer and as such does not discriminate in employment practices with regard to race, color, religion, age, sex, marital status, political affiliation, national origin, or disability. In addition, BCA maintains an Affirmative Action Program and conforms to the Department of Homeland Security Employment Eligibility Verification (I-9) requirement.

BCA is part of the security label division of CCL Industries Inc. (www.cclind.com). CCL employs over 25,000 people and operates 204 production facilities around the globe. Annual revenues for 2021 were CDN\$ 5.7 billion. Additional financial information can be found on the CCL website. As a division of CCL, we are a stable entity in the security printing industry, which is currently in a state of flux with many US security printers closing their doors. BCA has unique capabilities with over 25 years of experience as a single source supplier for many of the country's highest-level security documents.



Part I

There are common and mandatory security features that are recommended by NAPHSIS for Vital Records. Paper security features and security printing methods are utilized by the industry today using overt, covert, and forensic features. This creates a multi-level of security.

Below is the common list of the security features that are printed by security manufacturing companies and their security levels are explained in diagram 1.

| Security Feature | Definition | Level | Instrument Used to verify feature | Method |
|--|--|------------------------|--|-------------------------------|
| Intaglio Multicolor | Allows and adds a new dimension of complexity to high-security printing | Overt | Naked eye | Printing Method |
| Intaglio Guilloche | Oscillation design based on a mathematical formula | Overt | Naked eye | Secure Printed Design |
| Intaglio Latent image | Intaglio printed image appears when the image is tilted towards the light | Overt | Naked eye | Secured Printed Design |
| Intaglio Color Shifting Ink – OVI | Optical Variable Ink (OVI) – is an exclusive and unique security ink used in the Intaglio process that allows a color shift when tilted towards and away from a light source | Overt | Naked eye | Ink Feature |
| OVI - Foil | Nano images that are located on small foil particulates found in OVI Ink. Charms can be customized | Covert/Forensic | Microscope | Ink/Foil Feature |
| Intaglio White Line designs | Reverse printed fine line design produces | Overt | Naked Eye | Secured Printed Design |

| | | | | |
|--------------------------------------|---|---------------|--------------------|-------------------------------|
| | negative printing or "White Lines" | | | |
| Geometric Raster | Distinct pattern array that carries illustration or photographic references. | Overt | Naked Eye | Secured Printed Design |
| Prismatic Printing | Multicolor image resulting in "rainbow" effect | Overt | Naked Eye | Secured Printed Design |
| Fingerprinted Lines | Unique varying line width within the design, making the document more difficult to counterfeit | Covert | Magnifier | Secured Printed Design |
| UV Fluorescent Serial Numbers | The sequential number is used for tracking and inventory. Fluorescent print is visible under UV Light | Covert | UV light | Security Ink |
| Litho Micro text | Text measured at "X" that is only readable through high-powered magnification | Covert | Magnifier | Printed feature |
| Duplex Patterns | Interaction of design elements on the Front and Back to create a "watermark" effect | Overt | Naked Eye | Design Printed Feature |
| Custom Halftone Raster | Using custom halftone pattern to reproduce images with high fidelity | Overt | Naked Eye | Design Printed Feature |
| "COPY" Pantograph | When photocopied or scanned the word "Copy" or "Void" appears in the scanned image | Covert | Photocopier | Design Printed Feature |

| | | | | |
|---|--|-----------------|------------------------|-------------------------------|
| | | | | |
| UV Invisible Ink | Ink that is not visible under standard viewing conditions, typically viewable under 365 nm UV wavelength. Standard UV Ink is considered Long wave at 365 nm & Short wave at 254 nm | Covert | UV light | Ink Feature |
| Solvent Sensitive Ink | When exposed to solvents (typically alcohol or bleach) will react and change color | Covert | Solvent | Ink Feature |
| Variable Line Width | A Line design that varies in thickness, resulting in tonal variations | Covert | Magnifier | Printed Design Feature |
| IR Transparent Ink | An ink that is invisible under an IR light filter, also called "drop-out IR | Forensic | IR light Source | Ink Feature |
| Thermochromic Ink | Temperature-sensitive ink that changes when activated | Covert | Finger Rub | Ink Feature |
| Intaglio Blind Emboss Micro text | Embossing, not easily seen under standard viewing conditions, typically verified with an x10 magnifier | Covert | Magnifier | Printed Design Feature |
| Numismatic Relief | Relief pattern in design using intricate linework, text features, or images to simulate a 3D effect/visual depth, often integrates Guilloche patterns to create the desired | Overt | Naked Eye | Printed Design Feature |

| | | | | |
|---|--|-----------------|---------------------|-------------------------------|
| | effect. Sometimes called a "Line Emboss" | | | |
| Anti-Counterfeiting Guilloche Design | Patterns of interlaced/interwoven lines that create complex geometric patterns. Guilloche patterns can be made using micro text, shapes, or varying-width line work further increasing the complexity of the design | Covert | Magnifier | Printed Design Feature |
| Micro Text | Small text is not legible under standard viewing conditions. Read using magnification. It can be as small as 0.71-1pt | Covert | Magnifier | Printed Design Feature |
| Nano Text | This feature is viewed under a microscope, x60, or higher magnification. Nano text patterns are typically in hologram foils or security threads and are not visible to the naked | Covert | Microscope | Printed Design Feature |
| Taggants | Taggant inks have a special pigment only detected with a specified reader provided by the ink manufacturer. This can be printed via a transparent ink or mixed into inks to integrate with different design elements | Forensic | Special tool | Printed Ink |



| | | | | |
|--------------------------------------|---|-----------------|-------------------------------------|---------------------------------------|
| Indicia Patterns | Hidden features in the print that are only visible with a special decoder lens or digital software | Forensic | Special Decoder | Patented Design Feature |
| VTS - Variable Text Screen | Unique wave structure for every serial number, variable text size (300-800 microns), machine (mobile) readable variable information, very strong protection against re-engineering and data substitution | Covert | Magnifier/Phone Verification | Digital Printed Design Feature |
| VMT - Variable Modulated Text | Digital Printing serialization, unique distortion for every serial number, variable font size, human-readable text, very strong protection against re-engineering and data substitution, Single color or multi-color appearance | Overt | Naked eye | Digital Printed Design Feature |
| MDT – Micro Dot Text | Micro-text size (250 and 280 microns), serialized text, spot color. Extremely difficult to print using commercialized equipment | Covert | Magnifier | Digital Printed Design Feature |

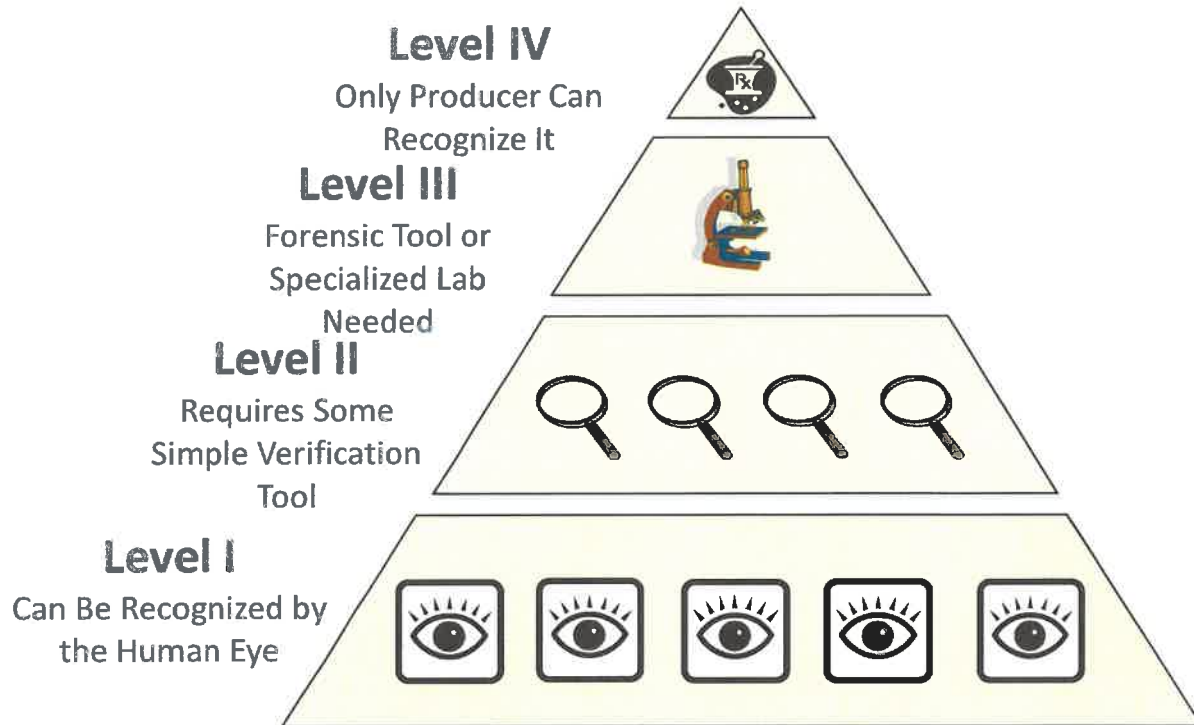


Diagram 1: Security Features Levels

Part II

Issues of commonly used security features and suggested alternatives

NAPHSIS or any other global recommendations provide only a list of common and multiple choices of security features that are available in the market today and listed above. The common issues that are observed by experts is the choice of security printing that the end user is requiring in the RFP. For instance, it is essential to understand first the extent of alteration and/ or counterfeited attempts in the existing Vital Record documents for the manufacturer to offer advanced robust security printing solutions to combat them. The technology and security features are changing, improving, and evolving. Furthermore, the level of awareness, functionality, and verifications of the security features are important to be known by the Vital Records issuer. Therefore, by adding, replacing, or improving the features especially complex overt ones, the public can identify them with the naked eye. The complexity of these features will make it harder for counterfeiters to reproduce them.



By reviewing the previous RFP for Vital Records documents as tabulated below, it is concluded that the combination of security features lacks mostly overt printed features and forensic ones. BCA suggests adding features highlighted in blue to make the document more robust against fraudulent attempts

| Security Feature | Level | Current West Virginia Vital Records | Minimum Naphsis Recommendation | Paper Feature | Print Feature | Ink Feature | Notes |
|--|-------|-------------------------------------|--------------------------------|---------------|---------------|-------------|------------------------------------|
| Watermark | O | X | X | X | | | |
| Security Fibers | O/C | X | X | X | | | |
| Security Thread | O/C | X | | X | | | |
| Chemical Sensitivity | C | X | X | X | | | |
| Rainbow Printing | O | X | | | X | | |
| Copy Pantograph | C | X | | | X | | |
| One color Invisible ink | C | X | X | | | X | |
| Thermochromic ink | C | X | | | | X | |
| Sequential Number | O | X | X | | X | | |
| 1 color Intaglio with OVI ink and latent image with Charms | O/C/F | | | | X | X | High-security improvement |
| Full RGB invisible inks | C | | | | | X | High-security improvement |
| Variable Text Screen | O/C | | | | | | New mobile technology verification |



Level O: Overt, Level C: Covert; Level F: Forensic

Part III

Security features and methods that have proven effective in combatting document fraud

A combination of security features is recommended to be effective in combatting any alteration or forgery attempts:

Intaglio printing: High-level security printing technique with a minimum printing resolution of 4000 DPI. Intaglio is easily verified due to its raised printing properties that are effortlessly to identify, but it is merely impossible to reproduce along with its latent image. To make the feature more complex and tougher to replicate, a color-shifting ink with Charms is utilized with intaglio printing. (Overt, Covert, and Forensic)

Full RGB invisible inks: printing technique incorporating three invisible colors (Red, Blue, and Green) instead of one-color invisible (Green or blue). This printing technique ensures full document protection against fraud. (Covert)

In addition, a new generation of security features that are printed with a digital press and verified instantly by utilizing a custom phone application that is shared with the public or within the state organization:

Variable Text Screen (VTS): serialized text, unique wave structure for every serial number; variable font size (300-800 microns); human-readable text; Mobile wave structure verification; strong protection against re-engineering and data substitution.

QR code: QR/Data Matrix code; copy protection; offline/online smart authentication.

Part IV

Document design or embedded security features available in the industry

The document design is the most valuable initial component in combatting alteration and counterfeiting efforts for highly secure documents, such as banknotes, passports, and certificates. High-security design creation can contain ultra-fine line modulation techniques, complicated geometric patterns, raster images, duplex patterns, variable line widths, micro lines, custom fonts, Microtext, complex guilloche patterns, anti-copying and anti-scanning features.

Commercially available software designs have many limitations where features can be easily scanned and reproduced (counterfeited).



Part V

BCA final recommendations

- BCA would welcome an invitation to meet with the appropriate individuals to discuss enhancing the security features of the current vital record document.
- It would be extremely helpful for BCA to understand the types of fraudulent attempts experienced by the agency with its existing document. This would enable BCA to provide specific recommendations to combat these attempts.
- An annual training session between the security paper manufacturer and the state in order to provide adequate training on security features.



May 31, 2023

Ms. Crystal G Husted
State of West Virginia
Department of Administration
Purchasing Division
2109 Washington Street East
Charleston, WV 25305

RE: Request for Information (RFI)
STANDARDIZATION REQUEST FOR INFORMATION-SECURITY PAPER
Solicitation No CRFI 0506 HSC2300000004

Dear Ms. Husted,

On behalf of Banknote Corporation of America (BCA) we would like to thank you for the opportunity to provide you with our generic vital record security paper samples in reference to your RFI. Ten (10) samples are being included for your review.

These Generic samples demonstrate our ability to produce security paper that includes many of the security features listed in our response.

Please feel free to contact me with any questions related to the provided samples.

Sincerely,

A handwritten signature in blue ink, appearing to read "Michelle Finn". The signature is fluid and cursive, with a prominent initial "M" and a long, sweeping tail.

Michelle Finn
Director of Business Development
Banknote Corporation of America

BANKNOTE CORPORATION OF AMERICA
CERTIFICATE OF VITAL RECORDS

SPECIMEN CERTIFICATE



BANKNOTE CORPORATION OF AMERICA
CERTIFICATE OF VITAL RECORDS

SPECIMEN CERTIFICATE



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SPECIMEN CERTIFICATE



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SPECIMEN CERTIFICATE



BANKNOTE CORPORATION OF AMERICA
CERTIFICATE OF VITAL RECORDS

SPECIMEN CERTIFICATE



BCA 017501



Banknote Corporation of America

CERTIFICATE OF VITAL RECORD

Specimen A



Banknote Corporation of America

CERTIFICATE OF VITAL RECORD

Specimen A



Banknote Corporation of America

CERTIFICATE OF VITAL RECORD

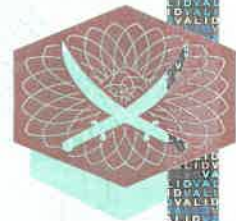
Specimen A



Banknote Corporation of America

CERTIFICATE OF VITAL RECORD

Specimen A



Banknote Corporation of America

CERTIFICATE OF VITAL RECORD

Specimen A





May 31, 2023

Ms. Crystal G Husted
State of West Virginia
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2019 Washington ST E
Charleston, WV 25305

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Solicitation No CRFI 0506 HSC2300000004

Dear Ms. Husted,

On behalf of Banknote Corporation of America (BCA) we would like to thank you for the opportunity to provide you with our response to the above Request for Information (RFI). BCA is recognized as the leading security printer in the United States and has been in business since 1990. BCA is part of CCL Secure, a Division of CCL Industries Inc. (CCL) was founded in 1951 and has grown to be the largest label company in the world.

We hope you find our proposal informative and would be happy to answer any questions you may have.

As noted in our response BCA would welcome the opportunity to meet with the appropriate individuals from Procurement and The Department of Health and Human Resources, Bureau for Public Health to discuss enhancing the security features of the current vital record document.

Sincerely,

A handwritten signature in blue ink, appearing to read "Michelle Finn", is written over a light blue circular stamp or watermark.

Michelle Finn
Director of Business Development
Banknote Corporation of America