

# Current Bank Check Scanning Practices



526

526

FITZGERALD LAW FIRM, S.C.

♿ Accessible Entrance  
at 717 N. Jackson St. →



Northern Trust Bank  
Banking Hours  
Monday - Friday  
8:30am - 5:00pm

Martin Luther King Jr. Day  
Monday, January 15th

# Check 21

Check Clearing for the Twenty-First Century was implemented in 2004 in the USA.

Permits the transmission of electronic images of checks rather than physical transfer of original checks from bank to bank.

Scanned Images:  
How Well Do they Depict the Subtle  
Features in Handwriting?

Presented by Janet Fenner Masson at the  
AAFS February, 2011 in Chicago,  
Illinois

Inspired this research

# Check 21 and Forensic Document Examiners



# Bank Scanning Questions:

1. What resolution are your checks scanned at (100 ppi, 200 ppi, or 300 ppi)?
2. Is the image type black and white or grayscale?
3. Are the images saved as JPEG or TIFF files?
4. What is the make and model of your scanner?
5. What is the name of your bank?

# JPEG

Joint Photographic Experts Group format.

JPEG is a lossy format.

# TIFF

Tagged Image File Format.

TIFF is a lossless image file format.

# X9.37

An Ansi Standard for the electronic exchange of images of checks by banks.



# Bank Statistics

1. 17 banks or credit unions responded
2. 10 banks scanned in black and white
3. 6 banks scanned in grayscale
4. 1 bank from Germany used 24 bit color

# More Bank Statistics

5. 8 banks used 200 ppi resolution
6. 4 banks used 300 ppi resolution
7. 4 remaining banks used: 240 ppi, 100 ppi, 1262 x 552 ppi, and 96 ppi
8. 6 banks used TIFF file formats to save images of checks

# Even More Bank Statistics

9. 5 banks used JPEG file formats
10. Other misc. file formats reported: X9.37, CDi, BMP, and PDF
11. Reported scanners used by banks included: Unisys Smart Source, Canon and Teller Scan TS 230

# Forensic Lab Imaging

- Wisconsin State Crime Lab-Milwaukee scans documents at 300 ppi for documentation.
- 1200 ppi for analytical purposes (cropping into an area of interest)





STOP  
↑

FEED ON  
DIGITAL  
TellerScan  
TS230

W LAB





UNISYS

Model 100

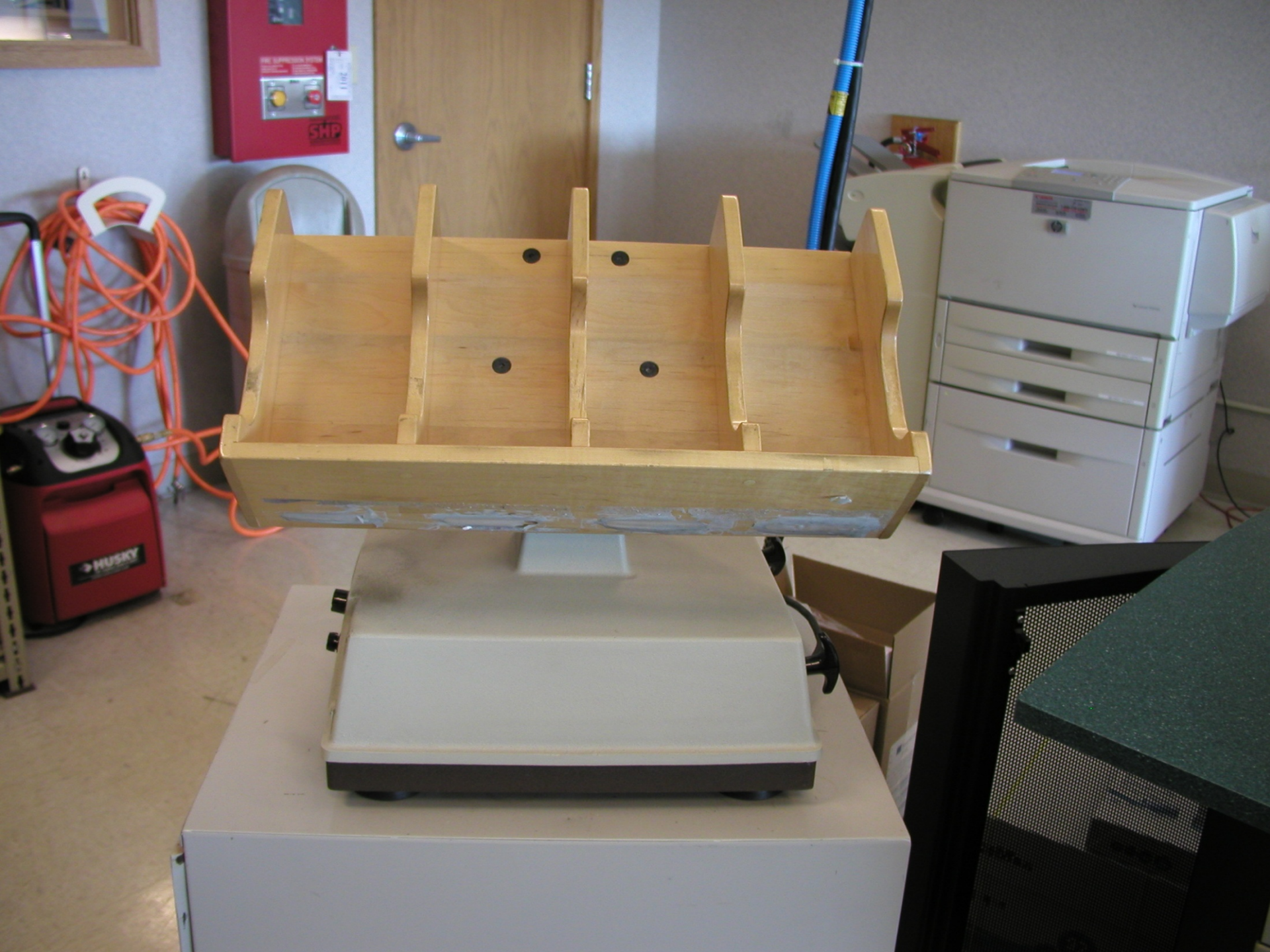
UNISYS  
Model 100  
Card Reader

[Blank white sheet of paper]

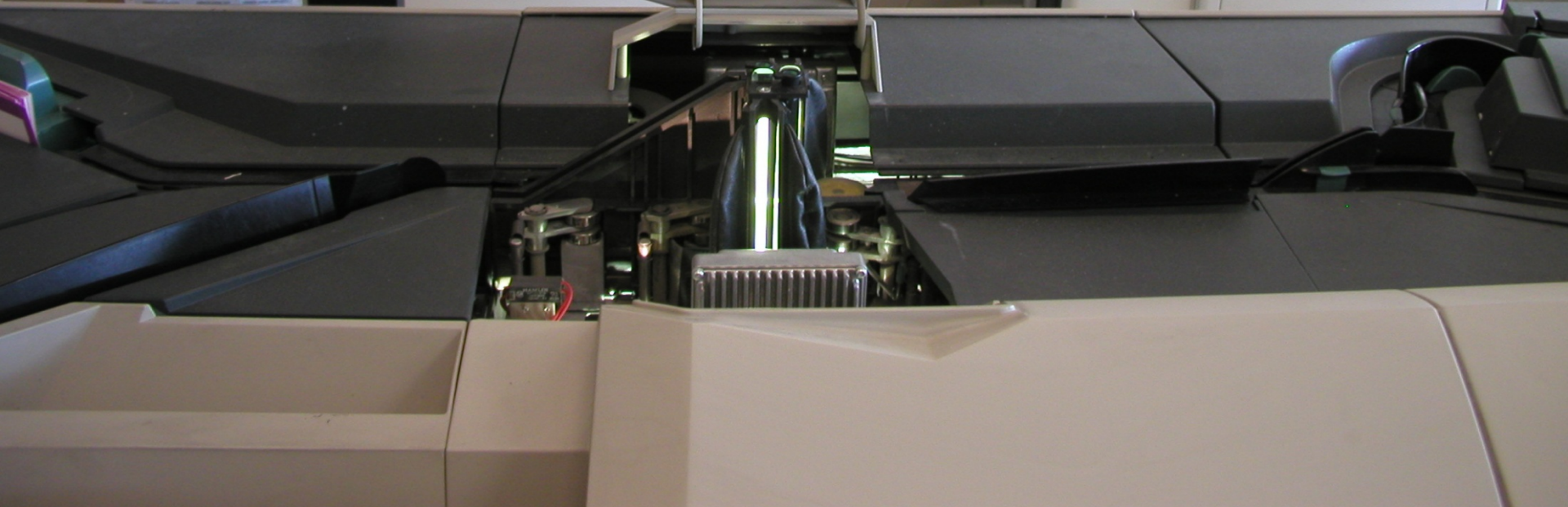
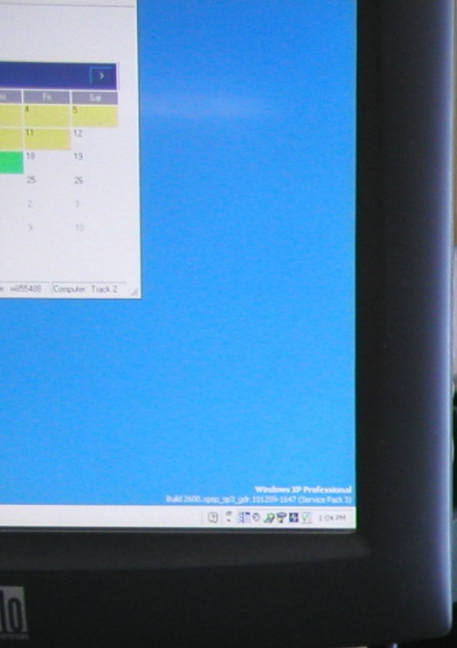
















# Image of check B/W 100ppi

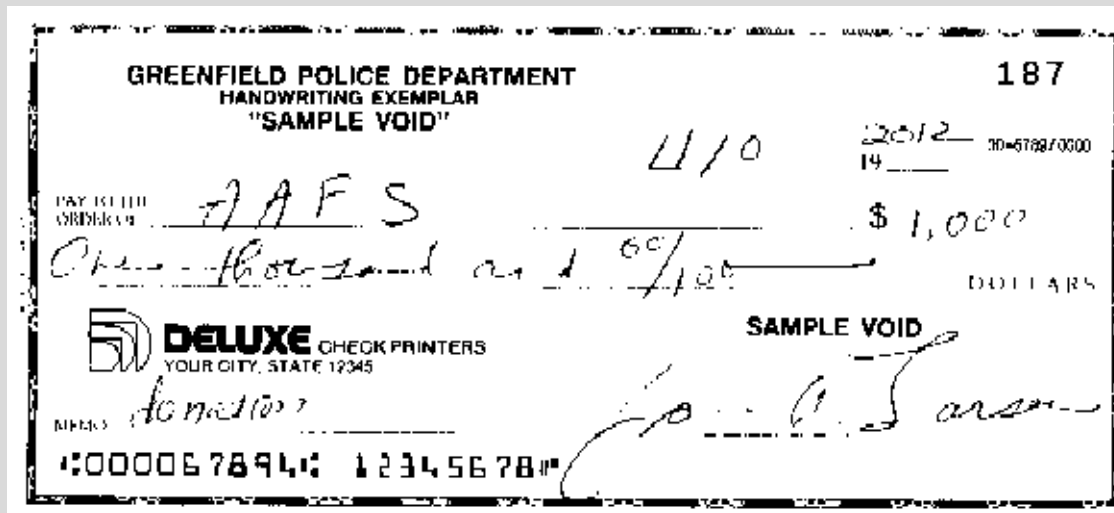
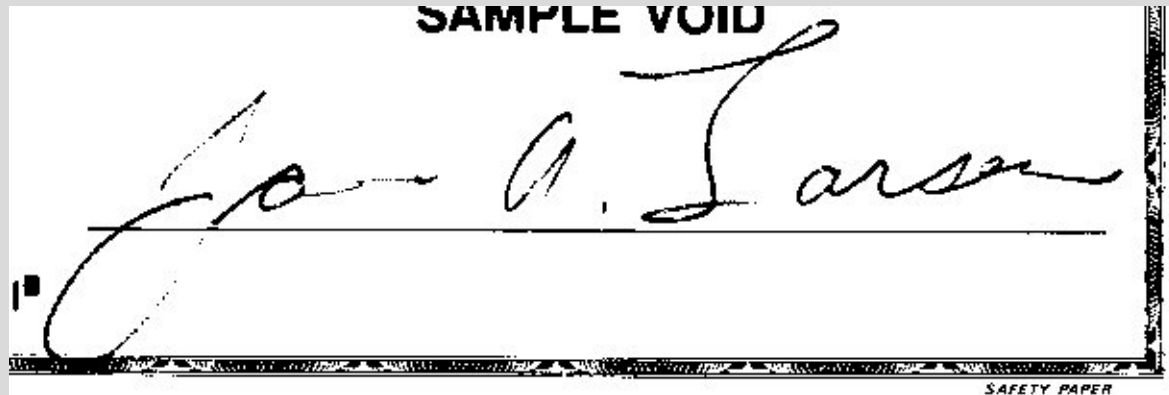


Image of check B/W 100 ppi 2x




# Image of check B/W 200ppi

**GREENFIELD POLICE DEPARTMENT** 187  
**HANDWRITING EXEMPLAR**  
**"SAMPLE VOID"**

11/0 2012 00-6789/0000  
19

PAY TO THE ORDER OF AAFS \$ 1,000

One thousand and 00/100 DOLLARS

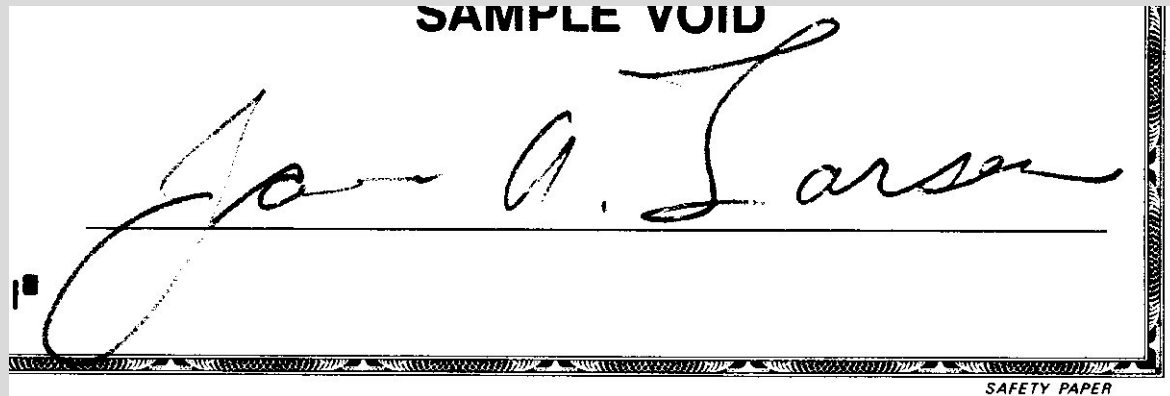
 **DELUXE** CHECK PRINTERS  
YOUR CITY, STATE 12345

MEMO donation **SAMPLE VOID**  
Jan A. Larson

⑆000067894⑆ 12345678⑈

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# Image of check B/W 200 ppi 2x



# Image of check B/W 300ppi

**GREENFIELD POLICE DEPARTMENT** 187  
**HANDWRITING EXEMPLAR**  
**"SAMPLE VOID"**

11/0 2012 00-6789/0000  
19

PAY TO THE ORDER OF AAFS \$ 1,000

One thousand and 00/100 DOLLARS

**DELUXE** CHECK PRINTERS SAMPLE VOID  
YOUR CITY, STATE 12345

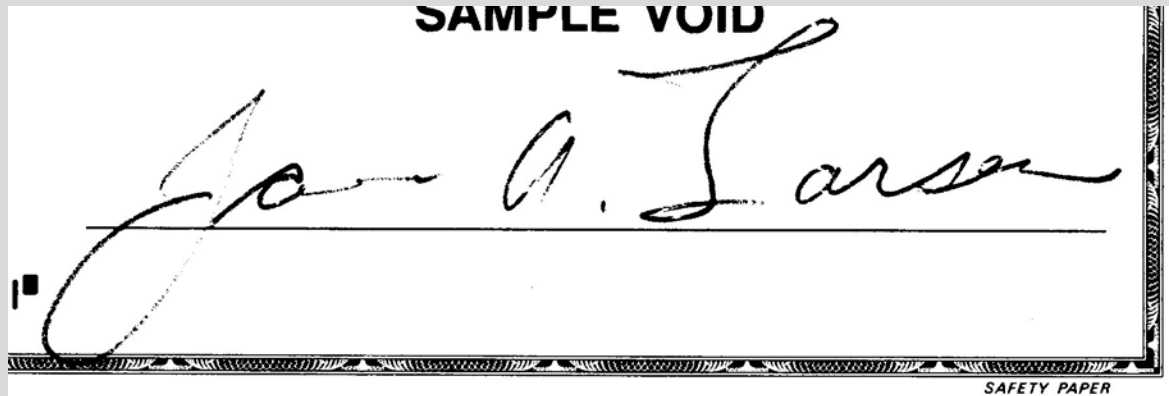
MEMO donation Jan A. Larsen

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Image of check B/W 300 ppi 2x



# Image of check B/W 600ppi

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**"SAMPLE VOID"**

11/0 2012 00-6789/0000  
19

PAY TO THE ORDER OF AAFS \$ 1,000

One thousand and 00/100 DOLLARS

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# Image of check 8-bit grayscale 100ppi

**GREENFIELD POLICE DEPARTMENT**  
HANDWRITING EXEMPLAR  
"SAMPLE VOID" 187

11/0 2012 00-6789/0000  
19

PAY TO THE ORDER OF AAFS \$ 1,000

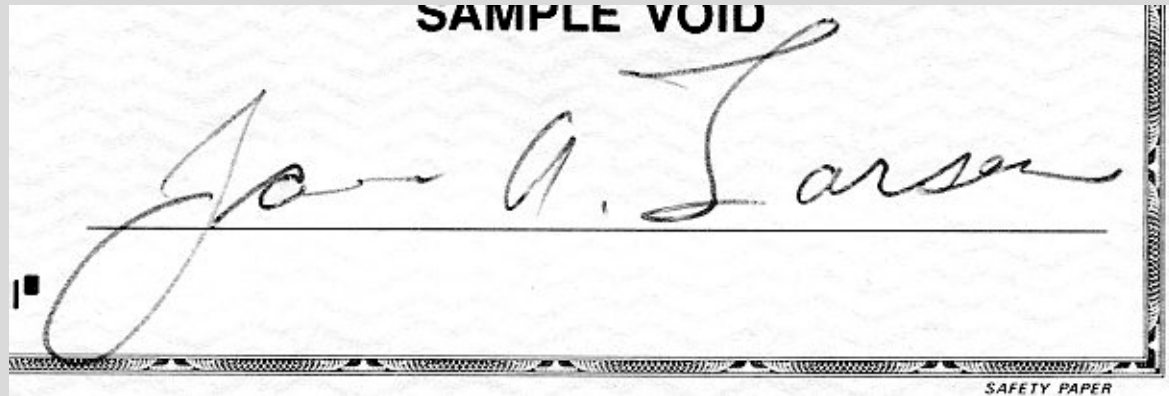
One thousand and 00/100 DOLLARS

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Image of check 8-bit grayscale 100 ppi  
2x



# Image of check 8-bit grayscale 200ppi

**GREENFIELD POLICE DEPARTMENT**  
HANDWRITING EXEMPLAR  
"SAMPLE VOID" 187

*11/0* *2012* 00-6789/0000  
19

PAY TO THE ORDER OF *AAFS* \$ *1,000*

*One thousand and 00/100* DOLLARS

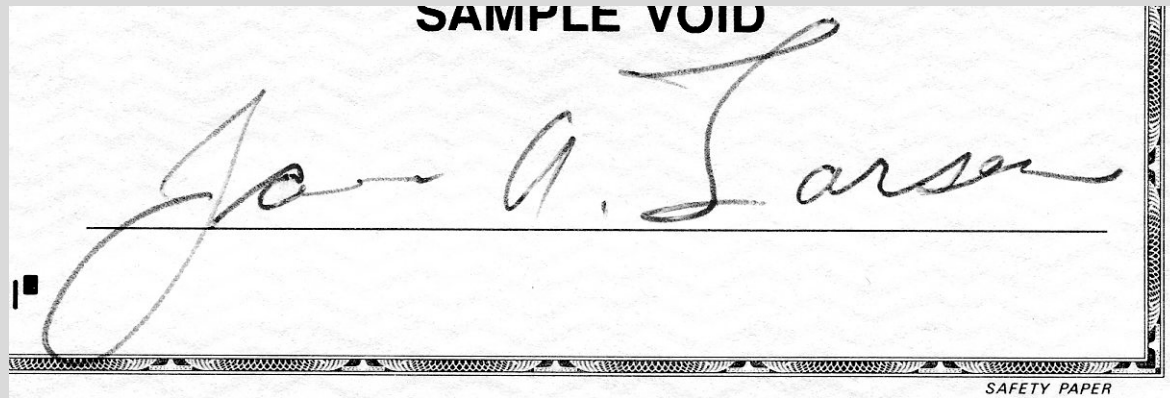
**DELUXE** CHECK PRINTERS  
YOUR CITY, STATE 12345 **SAMPLE VOID**

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Image check 8-bit grayscale 200 ppi 2x



# Image of check 8-bit grayscale 300ppi

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"SAMPLE VOID" 187

*11/0* 2012 00-6789/0000  
19

PAY TO THE ORDER OF AAFS \$ 1,000

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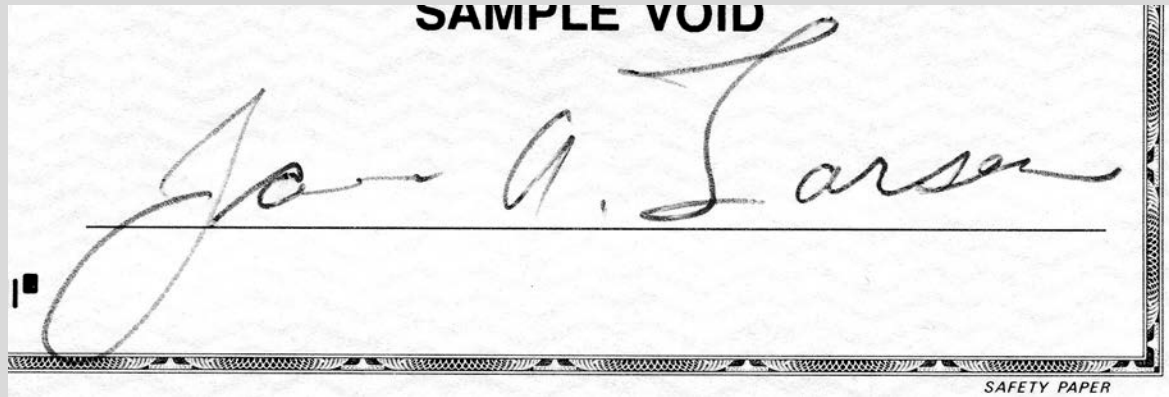
**DELUXE** CHECK PRINTERS  
YOUR CITY, STATE 12345 **SAMPLE VOID**

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Image check 8-bit grayscale 300 ppi 2x





# Image of check 8-bit grayscale 600ppi

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**DELUXE** CHECK PRINTERS  
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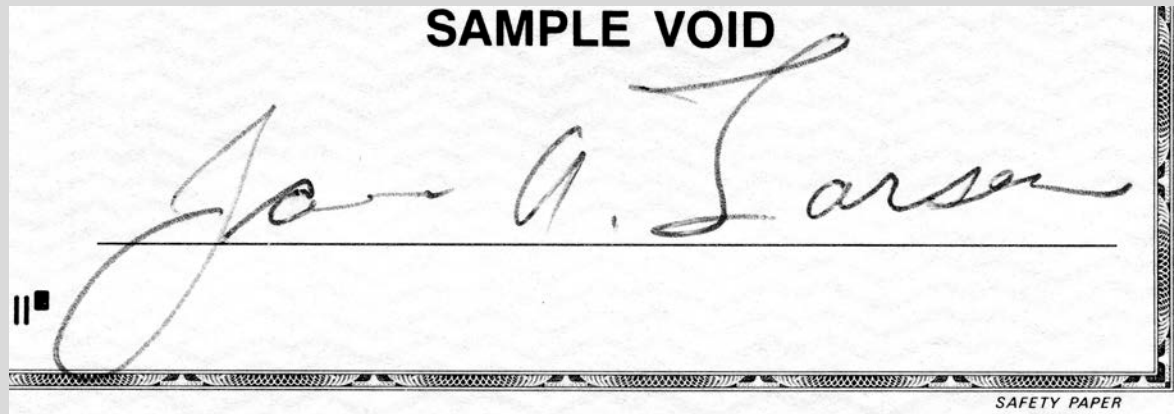
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Image check 8-bit grayscale 600 ppi 2x



# Image of check 24-bit color 100ppi

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"SAMPLE VOID" 187

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19

PAY TO THE ORDER OF *AAFS* \$ *1,000*

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# Image of check 24-bit color 200ppi

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# Image of check 24-bit color 300ppi

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SAFETY PAPER

# Image of check 24-bit color 600ppi

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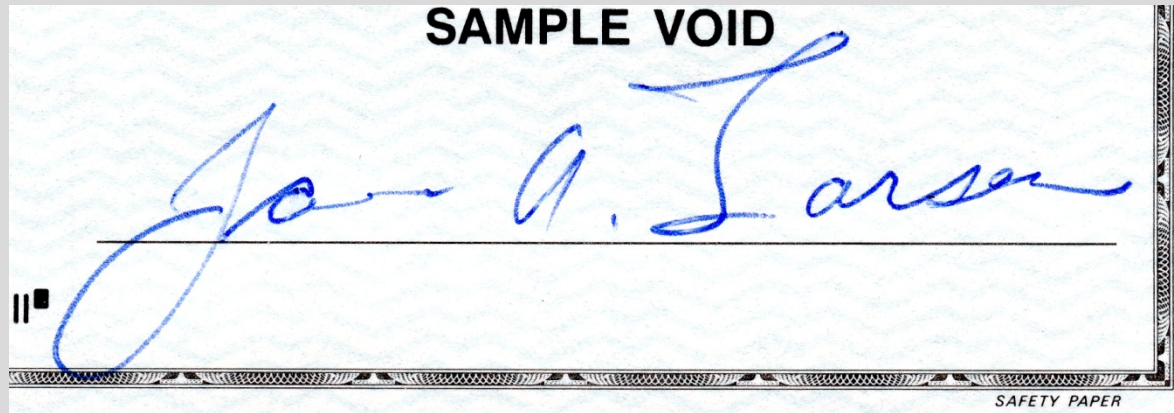
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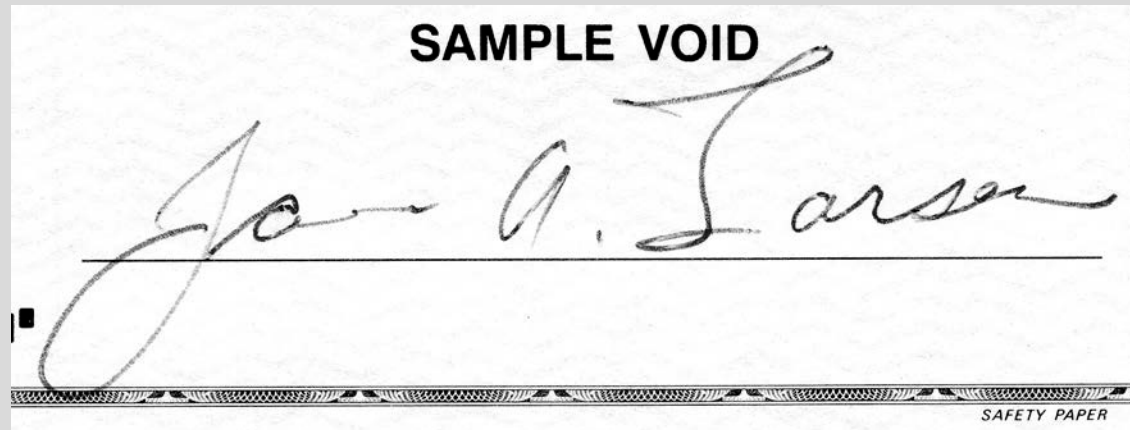
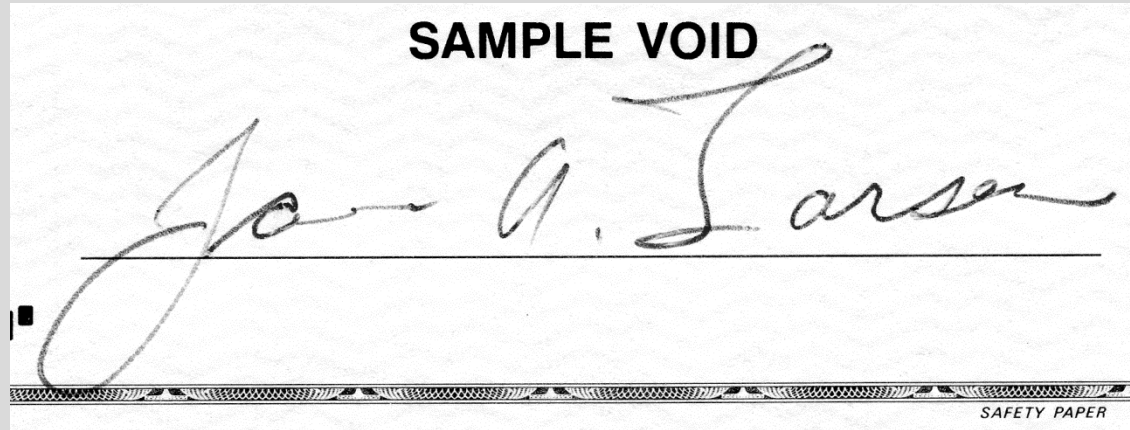
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# Image of check 2 24-bit color 600 ppi 2x



# 300 ppi Grayscale image in TIFF vs. JPEG







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