

**Analyst: Jeffrey Lenberg**

**Date: May 3, 2021**

## **Executive Summary**

Vote modification in Antrim County was consistent with technical manipulation of the election project file. This project file was generated and deployed by ElectionSource for the November 3, 2020 election.

ElectionSource configured and deployed Antrim County's project files that resulted in the modification of the votes during the election. The modification demonstrates manipulation of any and all races on the ballot. Administrator access (via administrator password) permits modification to these project files and creates inaccurate vote tally results observed during the election in Antrim County.

The SQL Management Studio Version 17.1 was found to be installed on the Antrim County Election Management System (EMS) (see Douglas Logan's Report dated 4/9/2021). This software is not certified by the Election Assistance Commission for use on electronic voting systems. This software tool was utilized in expert testing to replicate the Antrim County November 3, 2020 election vote tally manipulation. Testing using this software tool was consistent with technical manipulation of the project file resulting in inaccurate vote tallies.

The ElectionSource staff responsible for the creation and deployment of the project have direct access to make specific modifications to the project files. Testing indicates that vote modification can be pre-planned and deployed prior to an election. ElectionSource staff possesses all of the administrative access to make selective modification of the project files to manipulate the vote tally for any targeted county, precinct, or race.

Logs from the EMS indicate ElectionSource technicians responsible for deploying the project files to Antrim County also had access to numerous other counties project files to include:

Alcona	Alger	Alpena	Arenac	Berrien
Calhoun	Charlevoix	Cheboygan	Gogebic	Houghton
Iosco	Isabella	Keweenaw	Manistee	Marquette
Menominee	Midland	Otsego	Presque Isle	Schoolcraft
Wayne	Wexford			

It is unclear if modifications to the above counties listed impacted the Antrim County project file.

## Project Files

Testing of Antrim County project files indicates that modification of the project files can replicate the election inaccuracies observed in the November 3, 2020 election. In addition, further testing revealed that selective modification of the project files resulted in tailored manipulation of the votes tallied. The manipulation can be tailored to modify a specific county, precinct, or race. The steps used to manipulate the vote tally are listed below:

- Modify the specific precinct election files
  - Edit the VIF\_BALLOT\_INSTANCE.DVD
  - Note: Technical access to ElectionSource corporate resources would allow for these types of manipulations to the elections.
- Burn Compact Flash cards with the configurations for the tabulators
- Run the Election (Process the Ballots through the Tabulator)

The results of the modifications to the project file will show vote totals changed on the tabulator's printed tape as well as modified vote totals in the Results Tally Reporting (RTR) system.

In order to validate these findings; two test cases were run:

1. The swap of Trump and Jorgenson vote totals on both the paper tape and the RTR results
2. The swap of Biden and Trump (Presidential Race) and Ferguson and Bergman (Congressional) while leaving the Senate race unmodified on both the paper tape and the RTR results

Exhibit A contains photos of all the ballots that were run for test case number 2 as well as the paper tapes and RTR tallies showing the manipulations.

Both test cases were successful in that the modifications were made without any alerts or error messages being generated by the EMS or the tabulator. The test cases would not have been detected during the canvassing process because both the paper tapes and the RTR results matched.

## SQL Database Tools on the EMS

The SQL Management Studio Version 17.1 was found on the EMS (see Douglas Logan's report dated 4/9/2021) and this software is not certified by the Election Assistance Commission (EAC) for use on electronic voting systems. The SQL tool is a utility that enables the modification of project files and databases on the EMS.

Testing shows the replication of the Antrim County election vote manipulation as asserted by Halderman from November 3, 2020 modifying the vote totals on the EMS by utilizing the SQL tool resident on the EMS. The use of SQL tool requires no special access beyond being able to log into the EMS itself. Therefore, any actor with access to the EMS could create this manipulation of the election results.

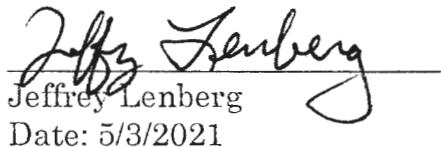
### **ElectionSource Staff Access to Other Counties**

ElectionSource staff that worked on the Antrim County project file also had access to a number of other counties across Michigan to include:

Alcona	Alger	Alpena	Arenac	Berrien
Calhoun	Charlevoix	Cheboygan	Gogebic	Houghton
Iosco	Isabella	Keweenaw	Manistee	Marquette
Menominee	Midland	Otsego	Presque Isle	Schoolcraft
Wayne	Wexford			

These counties appeared in the UserInfo log file on the EMS as being previously opened projects that were being utilized by the ElectionSource technician during the same timeframe that the ElectionSource technicians was working to configure and deploy project files for Antrim County.

It is certain that the ElectionSource technician had access project files for more than just Antrim County. It is unclear whether the configuration of the other counties had an impact on the Antrim county election.

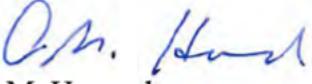


Jeffrey Lenberg  
Date: 5/3/2021

## MICHIGAN NOTARY ACKNOWLEDGEMENT

State of Michigan  
County of Michigan

The foregoing instrument was acknowledged before me on this 3<sup>rd</sup> day of May, 2021 by Jeffrey Lenberg.

Notary Public Signature: 

Notary Printed Name: Ann M. Howard

Acting in the County of: Oakland

My Commission Expires: 2/24/2023

ANN M. HOWARD  
Notary Public, State of Michigan  
County of Oakland  
My Commission Expires 02-24-2023  
Acting in the County of Oakland

## Exhibit A – Test Case #2 – Presidential and Congressional Swap Only

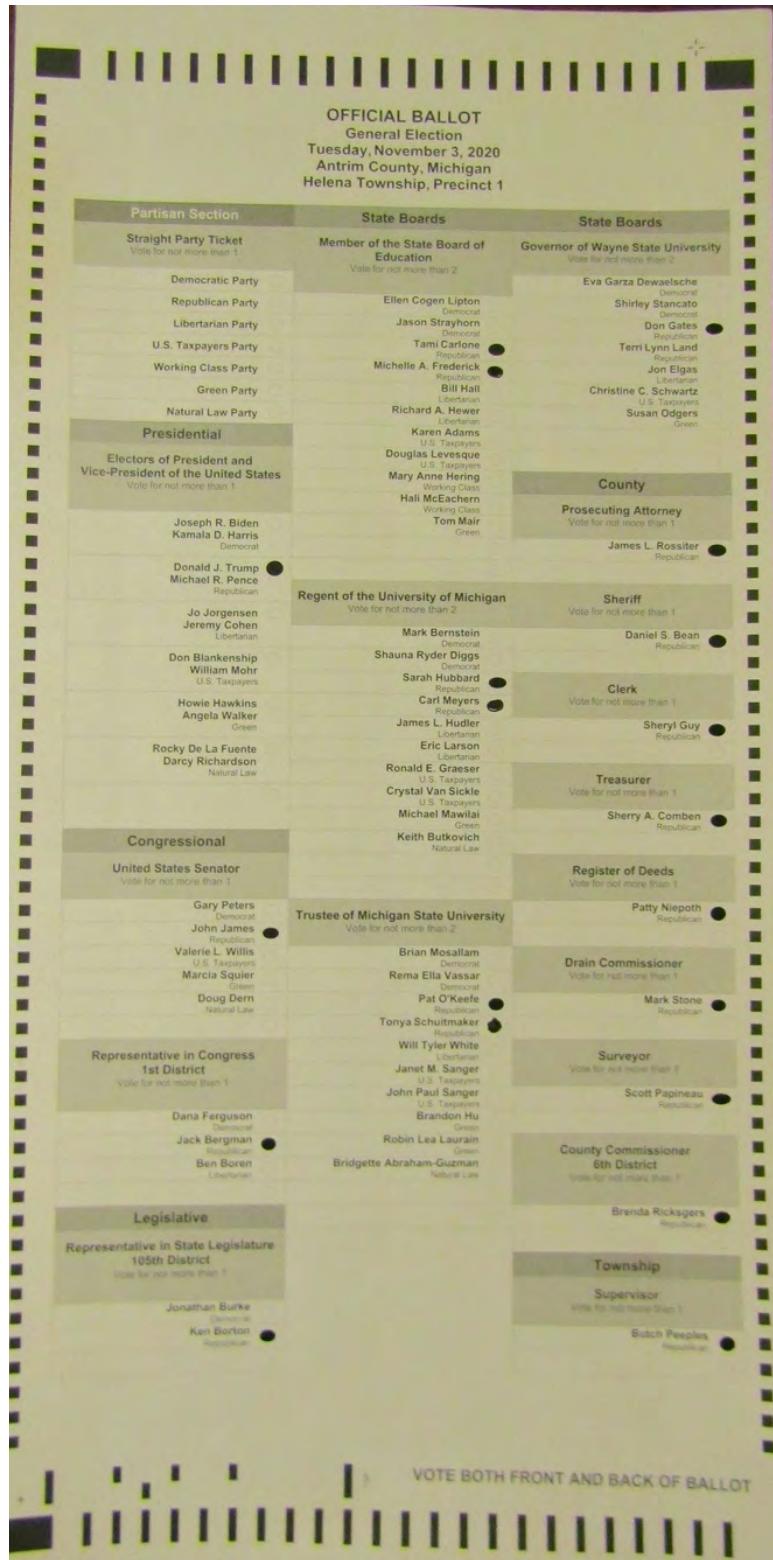


Figure 1 - Trump/James/Bergman

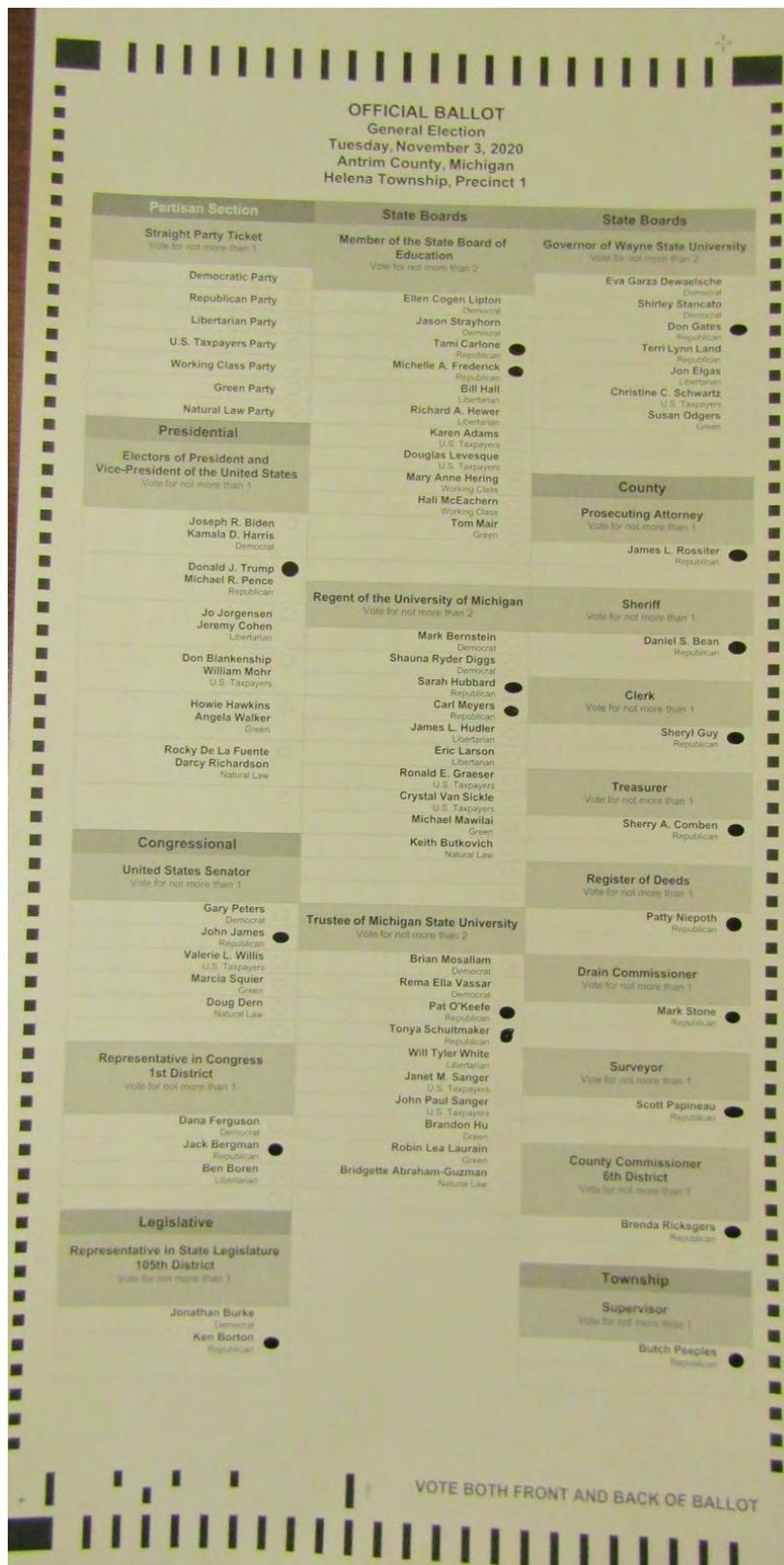


Figure 2 - Trump/James/Bergman

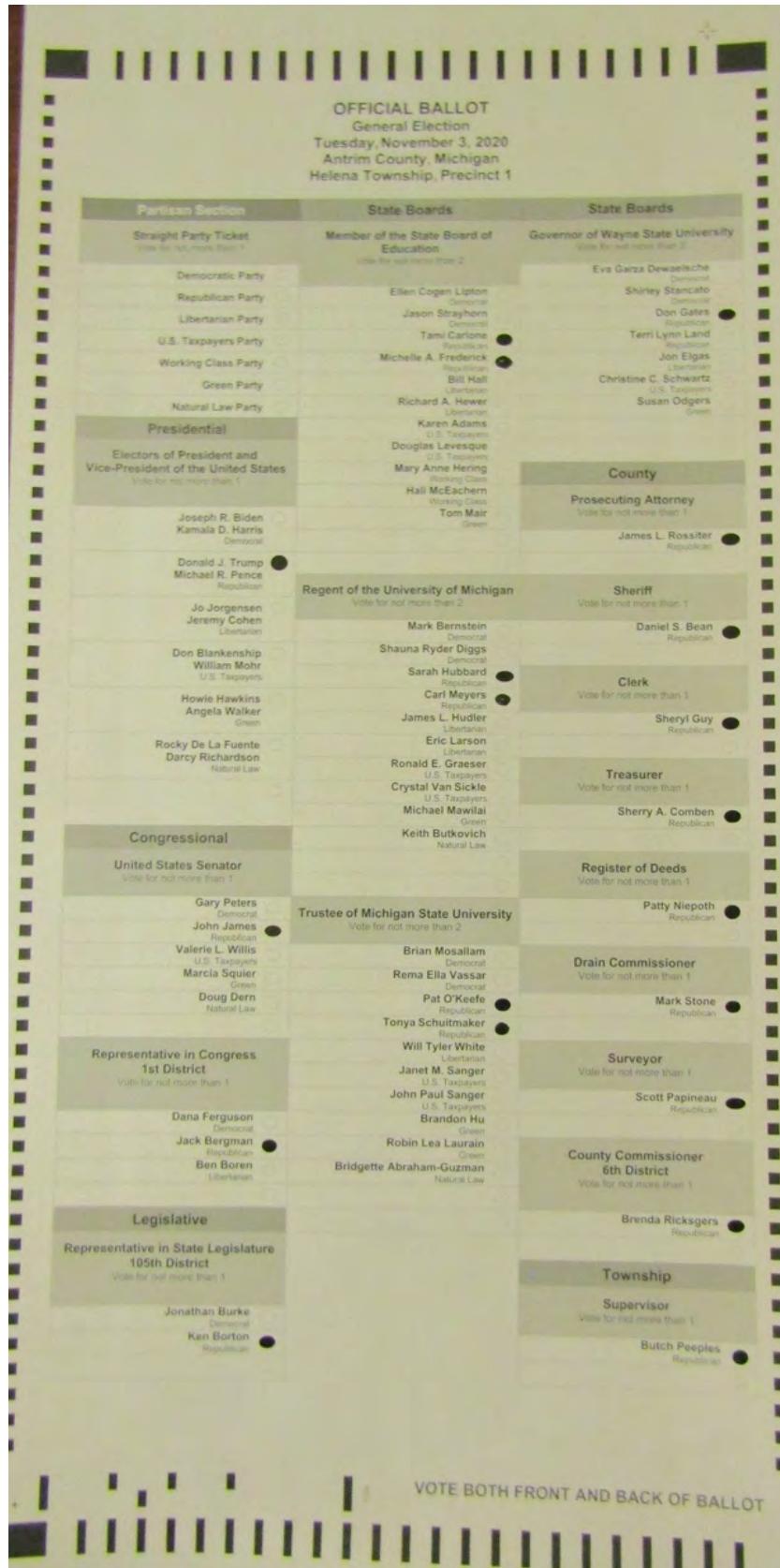


Figure 3 - Trump/James/Bergman

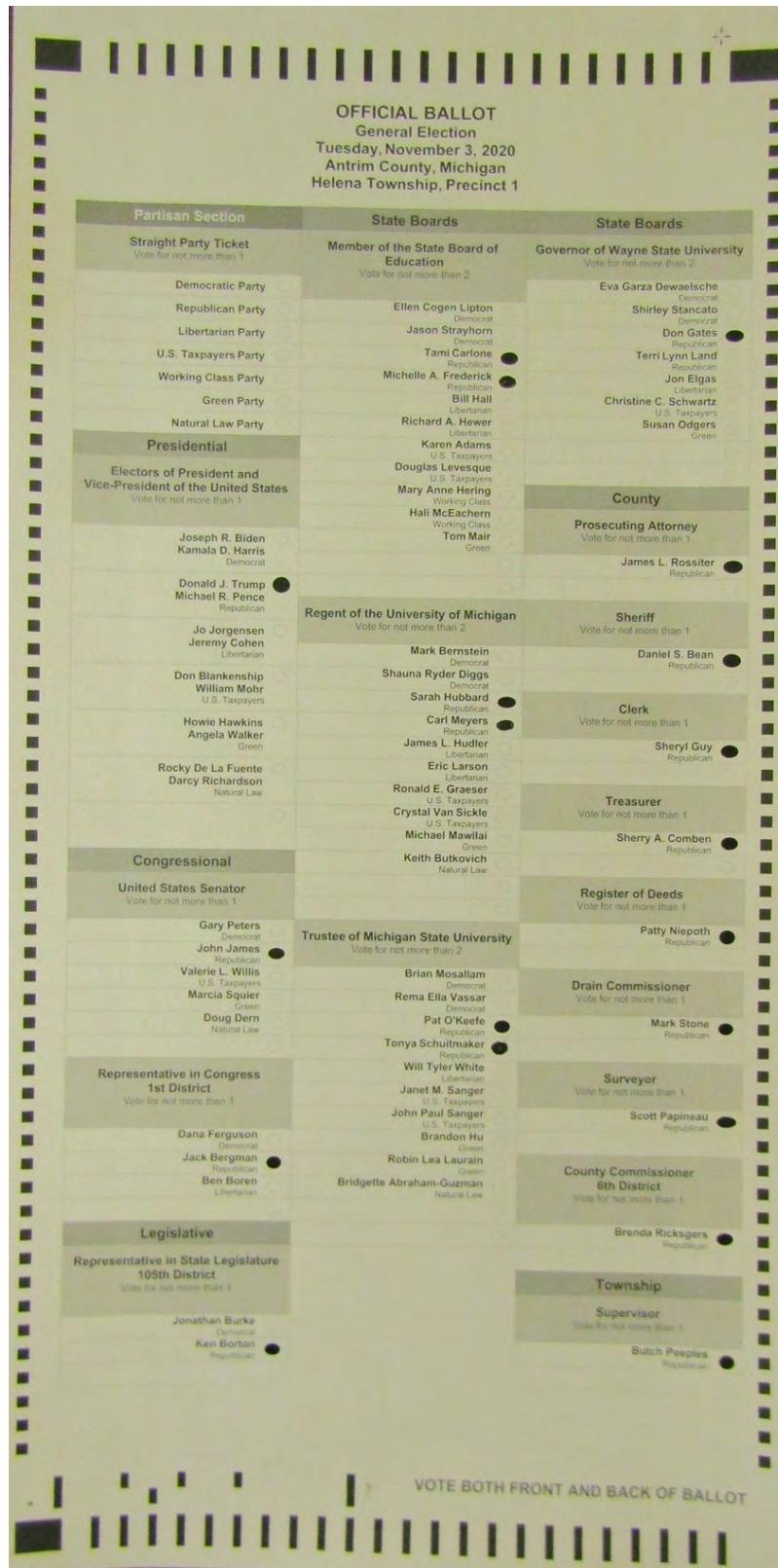


Figure 4 - Trump/James/Bergman

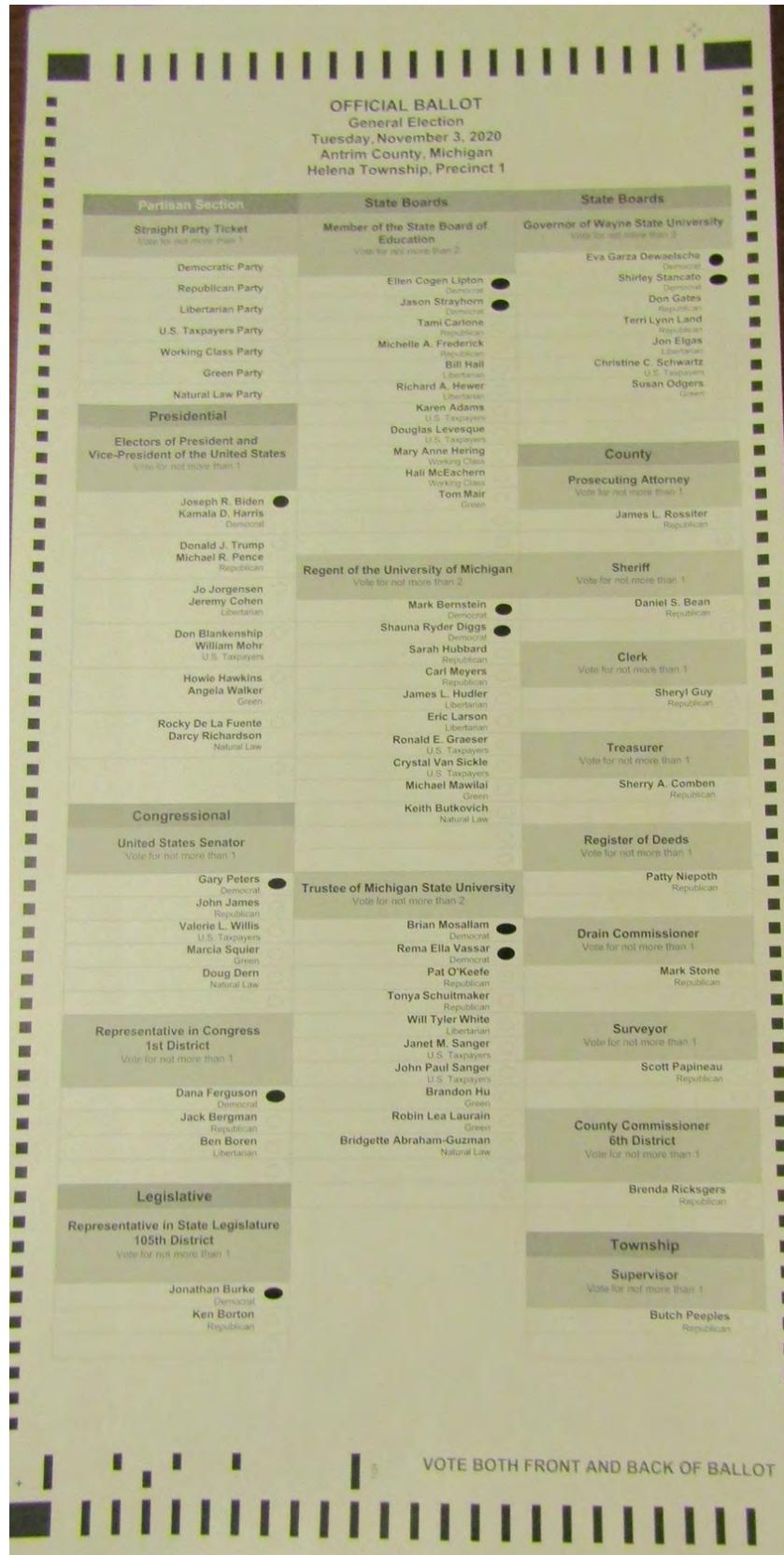


Figure 5 - Biden/Peters/Ferguson

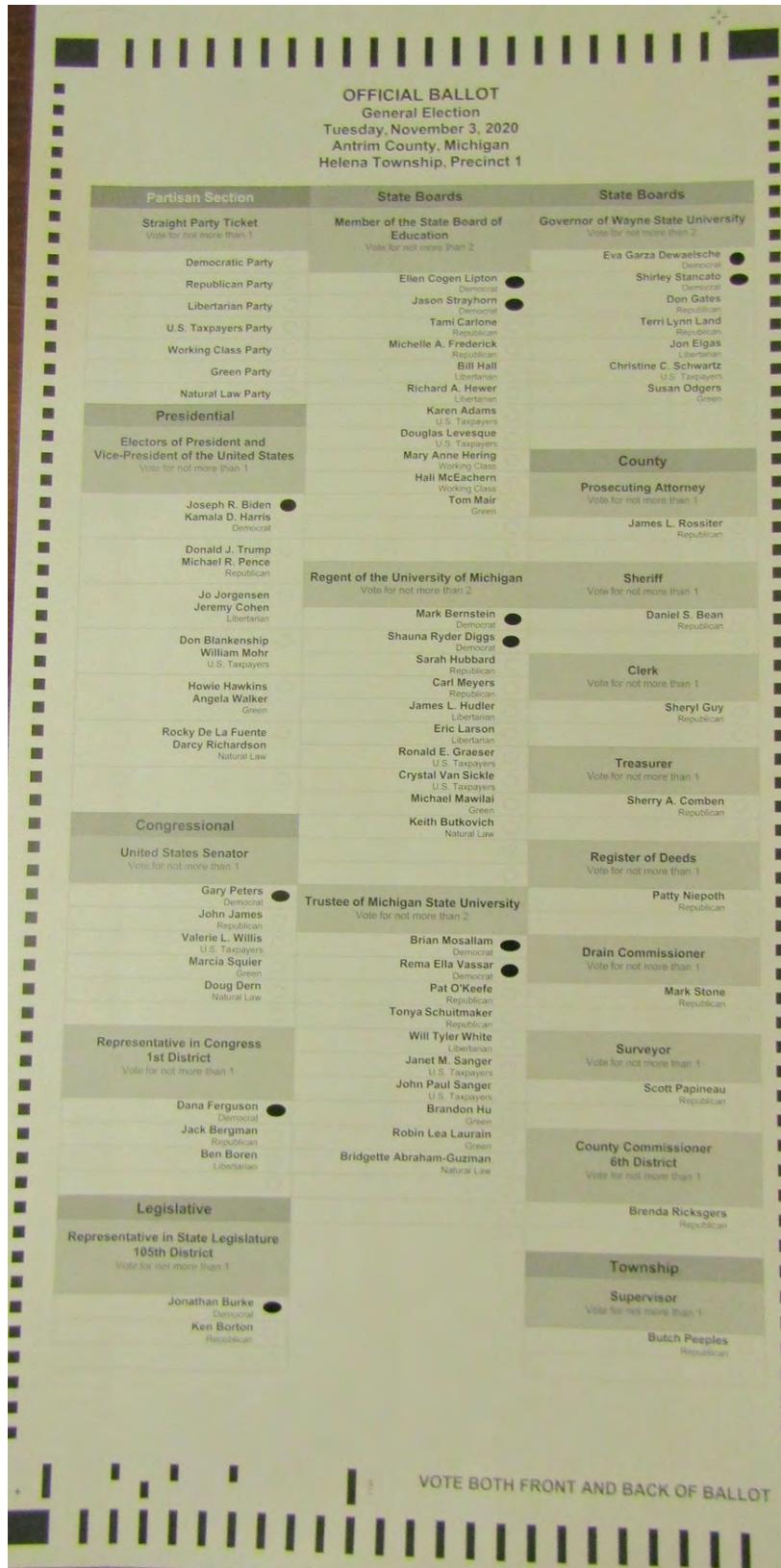


Figure 6 - Biden/Peters/Ferguson

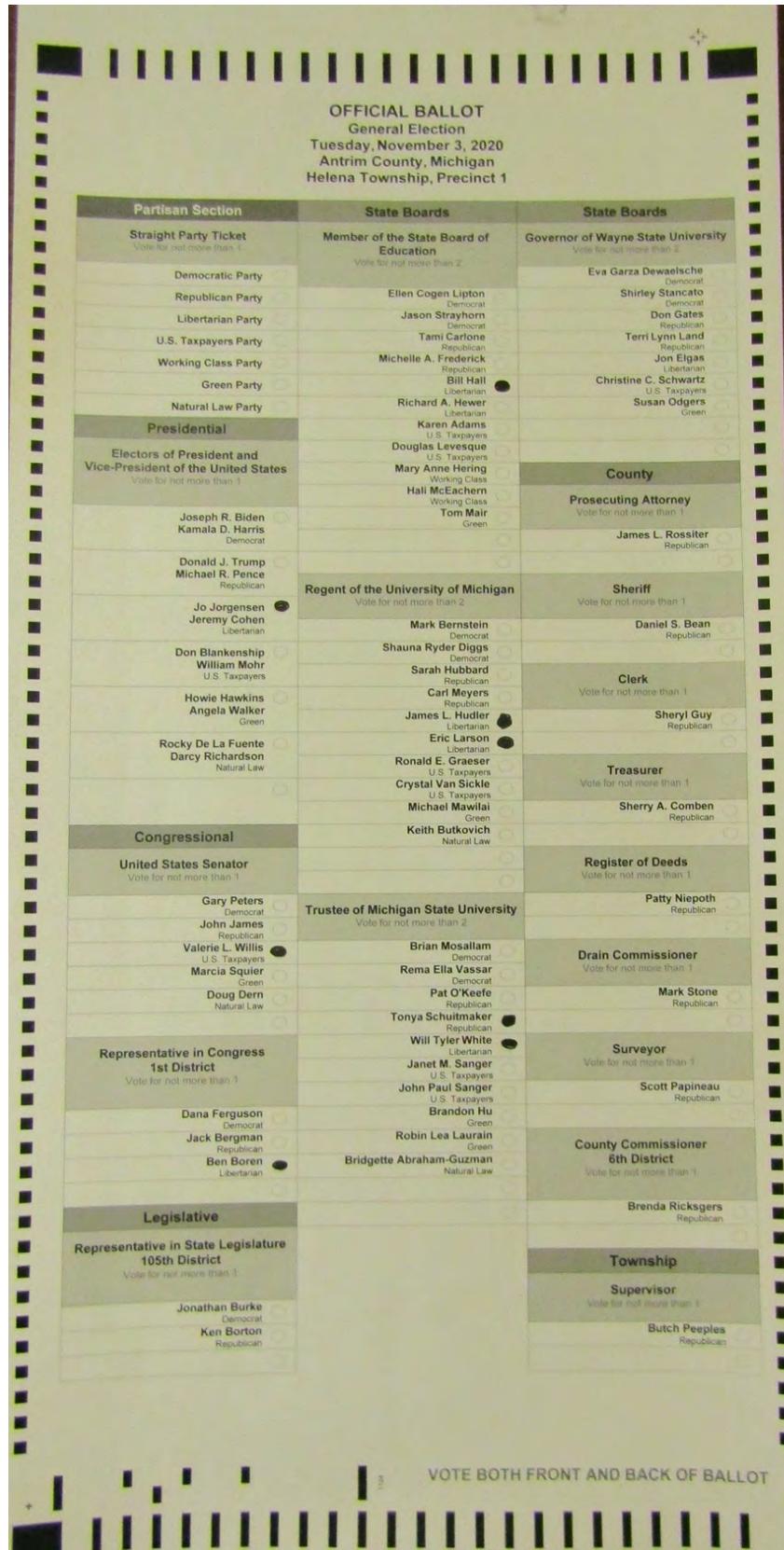


Figure 7 - Jorgenson/Willis/Boren

Contest:	<b>President and Vice President of the United States</b>		
Number Of Postions :	<b>1</b>		
Precinct Portion:	<b>Helena Township, Precinct 1</b>		
Ballot Manifestation :	<b>1124</b>		
 <b>Ballot Statistics</b>			
 <b>Contest Results</b>			
Overvotes:	0		
Undervotes:	0		
Blank:	0		
Double Votes:	0		
Invalid Votes:	0		
Writein Overrides:	0		
 <b>Candidate Results</b>			
	Name	Party	Votes
	Joseph R. Biden / Kamala D. Harris	DEM	4
	Donald J. Trump / Michael R. Pence	REP	2
	Jo Jorgensen / Jeremy Cohen	LIB	1
	Don Blankenship / William Mohr	UST	0
	Howie Hawkins / Angela Walker	GRN	0
	Rocky De La Fuente / Darcy Richardson	NLP	0
	Write-in		0

Figure 8 - Trump/Biden Flipped on RTR

Contest:	<b>United States Senator for State</b>		
Number Of Postions :	<b>1</b>		
Precinct Portion:	<b>Helena Township, Precinct 1</b>		
Ballot Manifestation :	<b>1124</b>		
<hr/>			
 <b>Ballot Statistics</b>	 <b>Contest Results</b>		
<hr/>			
Overvotes:	0		
Undervotes:	0		
Blank:	0		
Double Votes:	0		
Invalid Votes:	0		
Writein Overrides:	0		
<hr/>			
 <b>Candidate Results</b>			
<hr/>			
	Name	Party	Votes
	Gary Peters	DEM	2
	John James	REP	4
	Valerie L. Willis	UST	1
	Marcia Squier	GRN	0
	Doug Dern	NLP	0
	Write-in		0

Figure 9 - Senate - Correct - No Flip

Contest: **Representative in Congress 1st District**  
Number Of Postions : **1**  
Precinct Portion: **Helena Township, Precinct 1**  
Ballot Manifestation : **1124**

 **Ballot Statistics**

 **Contest Results**

Overvotes: **0**  
Undervotes: **0**  
Blank: **0**  
Double Votes: **0**  
Invalid Votes: **0**  
Writein Overrides: **0**

 **Candidate Results**

	<b>Name</b>	<b>Party</b>	<b>Votes</b>
	Dana Ferguson	DEM	4
	Jack Bergman	REP	2
	Ben Boren	LIB	1
	Write-in		0

Figure 10 - Congressional District - Ferguson/Bergman Flipped

President and Vice President of the United States (1)	
Joseph R. Biden / Kamala D. Harris (Democrat):	4
Donald J. Trump / Michael R. Pence (Republican):	2
Jo Jorgensen / Jeremy Cohen (Libertarian):	1
Don Blankenship / William Mohr (U.S. Taxpayers):	0
Howie Hawkins / Angela Walker (Green):	0
Rocky De La Fuente / Darcy Richardson (Natural Law):	0
Write-in:	0
Total Votes:	7

United States Senator for State (1)	
Gary Peters (Democrat):	2
John James (Republican):	4
Valerie L. Willis (U.S. Taxpayers):	1
Marcia Squier (Green):	0
Doug Dern (Natural Law):	0
Write-in:	0
Total Votes:	7

Representative in Congress 1st District (1)	
Dana Ferguson (Democrat):	4
Jack Bergman (Republican):	2
Ben Boren (Libertarian):	1
Write-in:	0

Figure 11 - Paper Tape Results Showing Presidential/Congressional Flipped - Senate Correct

## Exhibit B – Jeffrey Lenberg CV

Retired Distinguished Member of the Technical Staff Sandia National Laboratories Chief Technology Officer World Light Power LLC, World Light Africa Limited

Jeff Lenberg graduated from the University of New Mexico with a Bachelors degree (1978) and Masters degree (1980) in Electrical Engineering. While in college he gained two years experience at the NASA Dryden Flight Research Center at Edwards AFB, CA working on the development of flight simulators.

In 1980 Jeff joined Sandia National Laboratories. He retired in December, 2011 after thirty-one plus years at the labs. He spent several years as a first level supervisor and finished his career as a Distinguished Member of the Technical Staff.

The first twelve years at Sandia, Jeff developed satellite systems involving flight hardware, test software, test systems, project management, and supervisor roles.

For two and a half years, he led the development of secure national and international networks for export control while on assignment at DOE headquarters in Washington DC. While in DC and on his own time, he was involved in the investigation of potential election fraud associated with the 1994 Maryland gubernatorial election. He assisted the FBI with data analysis in their investigation which was initiated in March 1995.

After returning from Washington and for the rest of his career, Jeff performed national vulnerability assessments and led the development of national security related projects. These projects required systems analysis, hardware (including low power microsystems) and software design, team development, project management, and program development. These projects varied from a one person, \$100K project to a one hundred person, \$20M project.

While working on national security projects, Jeff held high level security clearances. He worked on projects with several governmental

agencies. He led “black hat” teams whose objective was to expose vulnerabilities by developing ways to break in (if possible) to what were considered to be secure systems and demonstrate that it could be done (physical security, secure hardware, and secure software systems).

In 2012 after Jeff retired from Sandia Labs, he started a renewable energy development company and in 2014 started a company based in Nairobi, Kenya to help create African jobs and bring energy to those who are without it.