

Chapter 1

Voting Equipment Testing

Purpose: To set minimum statewide standards for voting equipment testing.

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North Carolina State Board of Elections Logic & Accuracy Testing Standards: Optical Scan

Purpose: To run a test election on the Model 100 Optical Scan voting equipment to verify that the ballots and equipment are properly prepared.

- 1. Every component including PCMCIA card, tabulator and ballot box to be utilized/issued for the election MUST be tested to verify functionality.**
- 2. Use the M100 Check Log (or equivalent) to document testing.**
- 3. Upon completion of testing, testing media must be processed through the ERM software module and then uploaded to the ENR site. Follow the “Procedures for Reporting Test Results” guidelines.**
- 4. After reporting the test results, prepare all components for delivery to the polling place. Follow the “Post-Test Preparations” guidelines.**

PREPARING TEST SCRIPTS & TEST DECKS

1. Test scripts must be written before testing is performed. Scripts must be compared to final results. If script and final results do not match, test must be performed again and/or script must be reviewed to determine cause of error. If retesting fails, remove machine from use and submit service request to vendor.
2. The test script must be written such that every candidate and/or question for all ballot styles is tested. Additional votes must be scripted such that candidates and/or questions have unique vote totals in order to test the ability of the terminal to accurately tally votes. For example, a test script for a five candidate contest could be written such that votes are cast with the following variation: Candidate A – 5, Candidate B – 4, Candidate C – 3, Candidate D – 2, Candidate E – 1.
3. Prepare a test script with predetermined vote combinations and include the following types of ballots:
 - ✓ Ballots prepared using ADA marking devices (AutoMARK)
 - ✓ Blank ballots
 - ✓ Ballots containing overvoted & undervoted contests
 - ✓ Ballots containing write-ins (if applicable)
 - ✓ Ballots containing straight party & crossover votes (if applicable)

TESTING TABULATORS

1. Each tabulator should be tested in election mode.
2. All ballots to be voted on Election Day must be tested on each tabulator.
3. Generate results under Election Day conditions and compare results to expected totals (test script). If modeming results, compare those results to both actual result tapes and test script.
4. Test each tabulator assigned to a polling place during one-stop voting, Election Day and post-election processes.
5. Test overvoted ballots for expected tabulator performance (Does tabulator query the voter?)
6. Test ballots with write-in candidates for expected tabulator performance (Is ballot sorted in correct bin?).
7. When testing individual precincts, test the election definition's ability to recognize a ballot style that is not appropriate for that precinct.
8. Test tabulator feed by attempting to feed multiple ballots at one time.
9. Test that the tabulator will accept the ballots in all vertical orientations.
10. Test a sufficient number of backup tabulators so that they are ready to be deployed to a polling place in case of emergency. This testing should occur BEFORE Election Day or one-stop opens.
11. If a tabulator does not perform all of the functions correctly, discontinue use immediately and call vendor for repair.
12. Close M100 unit and print results. Compare results to test script for accuracy.

PROCEDURES FOR REPORTING TEST RESULTS

Upon completion of testing, testing media for all polling locations and tested equipment must be processed through the ERM software module and then uploaded to the ENR site. Verify that results are accurate and correct between the results tape, ERM and ENR.

Test results must be reported no later than 10 business days prior to the election date.

Step 1: Zero Procedures

- Following steps in the "Election Night Reporting" document for zeroing out ERM.
- Run a Summary Report to verify that ERM is set to zero.
- Generate and export the results (ASCII file) to a memory device, such as a flash key, memory stick, or CD. At an internet-connected PC, upload the results to the Clarity ENR website. (Note: SBE guidelines do not allow the Unity computer to be connected to the internet.)

Step 2: Reporting Procedures

- Remove PCMCIA cards from the M100 units.
- Read testing media from all voting equipment into the ERM software module.
- When all votes have been processed, run a Summary Report to obtain a hard copy of the results.
- Generate and export the results (ASCII file) to a memory device, such as a flash key, memory stick, or CD. At an internet-connected PC, upload the results to the Clarity ENR website. (NOTE: SBE guidelines do not allow the Unity computer to be connected to the internet.)
- Review the results in ENR to confirm that they are an exact match to the printed ERM Summary Report.
- Once you are confident that the results match, publish the totals in ENR for SBE review and to aggregate the totals with other counties. An email will be sent to the CBE confirming review by the SBE.

NOTE: For detailed steps regarding ERM and ENR, see documents "Election Night Reporting" and "ERM Addendum".

POST-TEST PREPARATIONS

1. All documentation, test scripts, test decks, and other materials should be retained and properly secured for the period designated by the NC Records & Retention schedule.
2. Determine that all tabulators meet expected performance and secure for delivery to assigned polling place.
3. Prior to delivery to polling places, all media should be cleared of any test votes and ballot boxes cleared of any test ballots.

M100 Logic and Accuracy Test

STEP 1



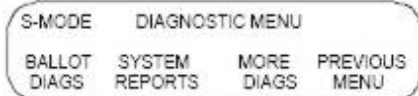
- Verify the ballot box is empty
Unlock left bin door, right bin door
and emergency bin door, look inside
for ballots. Remove if found.
- Lock all 3 ballot bin doors

STEP 2



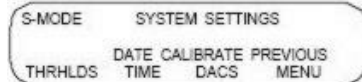
- Unlock door on front of scanner
Insert the PCMCIA card into the top
slot. Seal the PCMCIA card
- Close and lock panel in up position
- Turn key to Open/Close Polls
- Wait for system to start

STEP 3



- Press the 1st and 3rd buttons from
left at same time to access the
Diagnostic Test Menu
- Press DIAGS then MORE DIAGS
- Press BATTERY STATUS
- If not FULL, charge battery
- Press PREVIOUS 3 times

STEP 4



- Press SYSTEM SETTINGS
- Press DATE TIME
- Set Date and Time
- Press PREVIOUS MENU
- Press SET ZONE
- Verify DST enabled
- Press PREVIOUS until "LOCK OUT
SYSTEM SETTING" appears
- Press NO

STEP 5

ELECTION CARD INSERTED.
OPEN POLLS NOW?
YES

- Press PREVIOUS until "ELECTION CARD INSERTED, OPEN POLLS NOW?" appears.
- Press YES
- Message appears PLEASE TURN KEY/SWITCH TO VOTE.
- Turn key to VOTE
- Zero tape will print.

STEP 6



- Run Test deck of ballots
- Turn key to OPEN/CLOSE POLLS
- Press Close Polls
- Reports will print automatically
- Remove ballots from ballot box.

STEP 7

- Compare M100 tape to test desk spread sheet.
- REPORT TEST RESULTS:**
- Remove PCMCIA card
- Follow procedures for uploading results into ERM/Unity.
- Follow procedures for exporting results from Unity to ENR.
- Review ERM and ENR to insure uploads were successful and results match test data.
- Return PCMCIA card to the m100 unit.

STEP 8

- If results and mock election are correct, choose MORE then MORE SELECTIONS from POLLS CLOSED MENU.
- Press RE-OPEN POLLS
- Enter password, press Enter
- When "CLEAR ELECTION DAY TOTALS ?" appears, press YES to clear the totals

STEP 9

INSERT BALLOT
NUMBER OF VOTERS: 0

- Turn m100 off then back on to complete the open polls procedure. Verify zero tape and LCD has 0 voters.
- Clear Election Day totals again.
- OPTION: Lock system settings? Select "Yes" to block edits w/o administrative override (default password).
- Follow your County's procedure regarding PCMCIA card transport & security. With BOE approval, your L & A certification is complete.

M100 Check Log	Edition Date: 3/11/2010
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Turn off / Turn on Verify Zeros										
OPTION: Lock System Settings										
Change paper to new roll- FLIP THE LEVER DOWN!										
Add labels to ballot box										

CERTIFICATION OF LOGIC & ACCURACY TESTING

We, the undersigned, hereby certify that the above procedures for pre-testing, logic and accuracy testing, and post-test procedures were performed using guidelines provided by the vendor and that all systems functioned properly and as expected. We further certify that any known failures or problems were documented and reported to the proper authorities. This document and all other testing materials will be stored for the time period as required by the NC Records Retention and Disposition Schedule.

Date: _____

Signature: _____

Signature: _____

Signature: _____

North Carolina State Board of Elections Logic & Accuracy Testing Standards: DRE

Purpose: To run a test election on the iVotronic Direct Record Electronic voting equipment to verify that the ballots and equipment are properly prepared.

Minimum Requirements:

- Every component including terminal, RTAL printer, PEB, flashcard, printer/communication pack and audio ballot to be utilized/issued for the election MUST be tested to verify functionality.
- Use the iVotronic Check Log (or equivalent) to document testing.
- At minimum, one voting machine per polling place, which may be the ADA designated voting machine, must be tested under the “Procedures for Testing the Ballot Coding” guidelines within this document.
- All machines and voting-related equipment to be issued for the election must be tested under the “Procedures for Testing the Equipment Functionality” guidelines within this document.
- Upon completion of testing, testing media must be processed through the ERM software module and then uploaded to the ENR site. Follow the “Procedures for Reporting Test Results” guidelines within this document.
- After reporting the test results, prepare all components for delivery to the polling place. Follow the “Post Test Preparations” guidelines within this document.

PROCEDURES FOR TESTING THE BALLOT CODING

These procedures must be completed on **AT LEAST ONE** voting machine per polling place.

The ADA designated voting machine may be used for these procedures; however, the ballot must be listened to in its entirety, including all names, contests, questions, and instructions, to ensure that all pronunciation is correct and audio matches voter touch commands. At least one ballot outlined by the pre-determined test script must be voted on the ADA designated voting machine.

Alternatively, for One-Stop and Transfer designated voting machines, the procedures outlined in this section may be distributed among all equipment. For example, a county with 20 precincts and five voting machines assigned to the One-Stop polling place may test four precincts per machine, therefore testing all 20 precincts and ballot styles for the One-Stop site.

These procedures are in addition to the procedures outlined in the section “Procedures for Testing the Equipment Functionality”.

- Test scripts should be written before testing is performed. Scripts must be compared to final results. If script and final results do not match, tests must be performed again and/or script must be reviewed to determine cause of error. If

manual retest fails, remove machine from use and submit service request with vendor.

- The test script must be written such that every candidate and/or question for all ballot styles is tested. Additional votes must be scripted such that candidates and/or questions have unique vote totals in order to test the ability of the terminal to accurately tally votes. For example, a test script for a five candidate contest could be written such that votes are cast with the following variation: Candidate A – 5, Candidate B – 4, Candidate C – 3, Candidate D – 2, Candidate E – 1.
- Prepare a test script with predetermined vote combinations and include the following types of ballots:
 - ✓ Blank ballots
 - ✓ Ballots containing overvoted & undervoted contests
 - ✓ Ballots containing write-ins (if applicable)
 - ✓ Ballots containing straight party & crossover votes (if applicable)
- Vote a ballot for write-in candidates, if applicable. Key in all letters, numbers, and symbols as the write-in candidate's name to ensure the calibration and functionality of the screen's keypad.

To effectively conduct a manual test:

- Clear & Test the terminal and PEB before conducting the manual test script to ensure there are no recorded votes prior to the test. (NOTE: Printing of a zero tape is not required for testing purposes, since the audit log and test results would indicate if the terminal was not cleared & tested properly.)
- Vote the test script exactly as written to verify the terminal performs as expected.
- Print results to the printer/communication pack to test the pack's functionality and to check the results against the test pattern. Retain these print-outs for verification of manual testing having been conducted.
- All documentation, test scripts, and other materials should be retained and properly secured for the period designated by the NC Records Retention and Disposition Schedule.

PROCEDURES FOR TESTING THE EQUIPMENT FUNCTIONALITY

At minimum, these procedures must be completed on **ALL** voting machines per polling place.

- Once one machine per polling place has been tested in full (see Procedures for Testing the Ballot Coding), cast one test vote rotating through the test script on all remaining machines assigned to that polling place. (Following these procedures using the pre-determined test script and accumulating the votes from all the machines assigned to a polling place will verify that the system is capable of accumulating the votes correctly.)
- Test scripts should be written before testing is performed. Scripts must be compared to final results. If script and final results do not match, tests must be performed again and/or script must be reviewed to determine cause of error. If manual retest fails, remove machine from use and submit service request with vendor.

- Complete the steps outlined in the “iVotronic Check Log”, including:
 - Set RTAL printer configuration to 4.5” view
 - Clear & Test terminal
 - Open terminals with Master PEB
 - Verify and/or set correct date, time, and DST setting
 - Verify candidates/contests layout
 - Verify audio is working and pronunciation is correct
 - Close terminals and collect test votes
 - Print results tape and compare to test script for accuracy
- Print results to the printer/communication pack to test the pack’s functionality and to check the results against the test pattern. Retain these print-outs for verification of manual testing having been conducted.
- All documentation, test scripts, and other materials should be retained and properly secured for the period designated by the NC Records Retention and Disposition Schedule.

PROCEDURES FOR REPORTING TEST RESULTS

Upon completion of testing, testing media for all polling locations and tested equipment must be processed through the ERM software module and then uploaded to the ENR site. Verify that results are accurate and correct between the results tape, ERM and ENR.

Test results must be reported no later than 10 business days prior to the election date.

Step 1: Zero Procedures

- Following steps in the “Election Night Reporting” document for zeroing out ERM.
- Run a Summary Report to verify that ERM is set to zero.
- Generate and export the results (ASCII file) to a memory device, such as a flash key, memory stick, or CD. At an internet-connected PC, upload the results to the Clarity ENR website. (Note: SBE guidelines do not allow the Unity computer to be connected to the internet.)

Step 2: Reporting Procedures

- Read testing media from all voting equipment into the ERM software module.
- When all votes have been processed, run a Summary Report to obtain a hard copy of the results.
- Generate and export the results (ASCII file) to a memory device, such as a flash key, memory stick, or CD. At an internet-connected PC, upload the results to the Clarity ENR website. (NOTE: SBE guidelines do not allow the Unity computer to be connected to the internet.)
- Review the results in ENR to confirm that they are an exact match to the printed ERM Summary Report.
- Once you are confident that the results match, publish the totals in ENR for SBE review and to aggregate the totals with other counties. An email will be sent to the CBE confirming review by the SBE.

POST-TEST PREPARATIONS

After reporting the test results, prepare all components for delivery to the polling place. Complete the steps outlined in the “iVotronic Check Log”, including:

- Clear & Test terminals
- Record public and protective counts
- Load RTAL printer with new roll of paper
- Seal flash card door (NOTE: The flash card used for testing should remain with that terminal.)
- Calibrate terminal (note: Person calibrating should be of average height)
- Clean touch screen if needed
- Seal terminal doors
- Clear PEBs using supervisor terminal
- Store all testing documentation

IVOTRONIC CHECK LOG: Pre-Test/Logic & Accuracy/Post-Test Procedures (Edition Date: 7/20/2011)													
Polling Place: _____		Election Date: _____				Test Date: _____							
	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #
PRE-TEST PROCEDURES													
Start an EQC Code (Supervisor Terminal)	<input type="checkbox"/> COMPLETED - DATE __/__/__ EQC Code _____												
Qualify PEBs (Supervisor Terminal)	<input type="checkbox"/> COMPLETED - DATE __/__/__												
Create Clear & Test PEB (optional; Supervisor Terminal)	<input type="checkbox"/> COMPLETED - DATE __/__/__												
Burn PEBs with election data (Unity Computer and Supervisor Terminal)	<input type="checkbox"/> COMPLETED - DATE __/__/__												
Format and burn flash cards with election data (Unity Computer)	<input type="checkbox"/> COMPLETED - DATE __/__/__												
Create test script appropriate for election type	<input type="checkbox"/> COMPLETED - DATE __/__/__												
Load paper in RTAL printer for testing													
Install flash card in terminal (Flash card used for testing should remain with that terminal)													
Attach RTAL window cover (if needed)													
Change RTAL printer configuration to 4.5" view (if needed)													

IVOTRONIC CHECK LOG: Pre-Test/Logic & Accuracy/Post-Test Procedures (Edition Date: 7/20/2011)												
Polling Place: _____			Election Date: _____				Test Date: _____					
	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #
L&A TESTING												
Clear & Test Terminal, via service menus or clear & test PEB												
Open terminal with Master PEB												
Verify date, time, and DST are correct												
Verify candidates/contests layout												
Vote as instructed with test script												
Audio working & pronunciation correct?												
Close terminal & collect test votes												
Print results tape and compare to test script for accuracy												
POST TEST PROCEDURES												
Read results into ERM; Upload to ENR												

IVOTRONIC CHECK LOG: Pre-Test/Logic & Accuracy/Post-Test Procedures (Edition Date: 7/20/2011)												
Polling Place: _____	Election Date: _____				Test Date: _____							
	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #
Seal flash card door (<i>Flash card used for testing should remain with that terminal</i>)												
Calibrate touch screen (<i>if needed</i>)												
Clean touch screen if needed (<i>Alcohol or damp cloth only</i>)												
Change RTAL printer paper to new roll												
Clear & Test terminal												
Verify Public Count is zero and record Protective Count (<i>Terminal Menu: General Info-Terminal Settings</i>)	Public: Protective:	Public: Protective:	Public: Protective:	Public: Protective:	Public: Protective:	Public: Protective:	Public: Protective:	Public: Protective:	Public: Protective:	Public: Protective:	Public: Protective:	Public: Protective:
Verify Election Close and Date Time (<i>Terminal Menu: General Info-Election Settings</i>)	<input type="checkbox"/> COMPLETED - TIME: _____ DATE: ___/___/_____ CORRECT? Yes or No (<i>circle</i>)											
<u>Optional:</u> Open and Lock Terminals 1) Clear PEBs 2) Open with Master 3) Print Zero 4) Lock Terminal												

IVOTRONIC CHECK LOG: Pre-Test/Logic & Accuracy/Post-Test Procedures (Edition Date: 7/20/2011)												
Polling Place: _____			Election Date: _____			Test Date: _____						
	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #	Serial # Seal # FC Seal #
Seal terminal doors												
Clear PEBs (Supervisor Terminal)	<input type="checkbox"/> COMPLETED - DATE ___/___/___											
Store all testing documentation for required period	<input type="checkbox"/> COMPLETED - DATE ___/___/___											

CERTIFICATION OF LOGIC & ACCURACY TESTING

We, the undersigned, hereby certify that the above procedures for pre-testing, logic and accuracy testing, and post-test procedures were performed using guidelines provided by the vendor and that all systems functioned properly and as expected. We further certify that any known failures or problems were documented and reported to the proper authorities. This document and all other testing materials will be stored for the time period as required by the NC Records and Retention schedule.

Date: _____

Signature: _____

Signature: _____

Signature: _____

XXXXXXXX COUNTY IVO TESTING PROCESS

TESTER NAME: _____ DATE: _____

PRECINCT: _____

SERIAL NUMBERS:

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Number of PEBs (including Master): _____

- ▶ Set up all machines assigned to precinct
- ▶ Load RTAL printer paper
- ▶ Insert flash card – match flash card and terminal serial number
- ▶ Confirm RTAL window cover is secure and has yellow sticker
- ▶ Insert CLEAR & TEST PEB (Password: _____)
 - Touch OK
 - Press VOTE button to clear
 - Remove PEB when instructed, then continue to next terminal
 - Touch OK when displayed on terminal screen
- ▶ For each terminal complete SETUP & CONFIGURATION procedures
 - Press and hold VOTE button then insert Master PEB, allow machine to chirp for 2 seconds before releasing VOTE button
 - Calibrate Screen
 - Press VOTE, and press VOTE again
 - Touch screen on each X
 - Then confirm X follows touch location
 - Press VOTE, then touch screen to proceed
 - Touch Setup & Configuration
 - Enter password _____, touch OK
 - Touch Configure Terminal
 - Touch Set Date & Time
 - Adjust if needed & set...
 - Precinct terminals: DST enabled; set to current time
 - One-Stop terminals: DST disabled; set to current time
 - Touch Done
 - Confirm RTAL printer configuration is set to 4.5" view (not 9")
 - Exit Menu
 - Remove PEB and press VOTE to power down

► Conduct Manual L&A Test

- For all terminals assigned to precinct insert Master PEB to open polls
 - Touch Yes to confirm polling location
 - Remove PEB when instructed, then continue with next terminal to open
 - Press VOTE to exit (DO NOT press zero tape)
- Vote test script completely on 1st machine, including audio ballot, with supervisor PEB**
- Vote one ballot as scripted on all remaining machines with supervisor PEB**
- *** For one-stop machines, spread testing across machines dividing precincts among machines*

► Close Terminals and collect votes

- Advance the time to mimic normal poll closing
 - Press and hold VOTE button then insert Master PEB, allow machine to chirp for 2 seconds before releasing VOTE button
 - Touch Setup & Configuration
 - Enter Password _____ and touch OK
 - Touch Configure Terminal
 - Touch Set Date & Time
 - Advance year by 1 year by touching the box above the year
 - Touch Done
 - Remove PEB and press VOTE to power down
- Insert Master PEB
 - Touch close the polls
 - Remove PEB when instructed
 - Press screen when prompted
 - Repeat process on all terminals
 - After closing last terminal:
 - Reinsert Master PEB
 - Touch Print polling location results tape now
 - Disconnect gray RTAL printer cable
 - Connect black Printer Pack cable to terminal
 - Plug in Printer Pack and turn on
 - Touch print on iVo screen (report will print in a few seconds)
 - Touch No (do not want additional tape)
 - Touch Done
 - Disconnect Printer Pack and reconnect gray RTAL cable
 - Review accuracy and place results tape in supply container to return to director

► Final Steps

- Correct date and time on all terminals
 - Press and hold VOTE button then insert Master PEB, allow machine to chirp for 2 seconds before releasing VOTE button
 - Touch Setup & Configuration
 - Enter Password _____ and touch OK

- Touch Configure Terminal
- Touch Set Date & Time
 - Back up year by 1/set to correct year
 - Reconfirm and/or adjust time and date
 - Touch Done
- Remove PEB and press VOTE to power down
- Remove RTAL tapes, fold and place in supply container
- Load new roll of RTAL paper
- Load new roll of paper in Printer Pack (if needed for precincts; definitely for one-stops) and return printer, connector cable, and power cord to red bags.
- Insert CLEAR & TEST PEB (Password: _____)
 - Touch OK
 - Press VOTE button to clear
 - Remove PEB when instructed, then continue to next terminal
 - Touch OK when displayed on terminal screen
- Clean terminal screen with alcohol wipe

I hereby certify that the above procedures were performed and that all systems functioned properly and as expected. Any known failures or problems were documented and reported to the director.

Tester Signature: _____ Date: _____

North Carolina State Board of Elections Logic & Accuracy Testing Standards: Model 650 Central Ballot Scanner

Purpose: To run a test election on the Model 650 central ballot scanner voting equipment to verify that the ballots and equipment are properly prepared.

- 1. Every component including zip disk and scanner to be utilized/issued for the election MUST be tested to verify functionality.**
- 2. Use the M650 Check Log (or equivalent) to document testing.**
- 3. Upon completion of testing, testing media must be processed through the ERM software module and then uploaded to the ENR site. Follow the “Procedures for Reporting Test Results” guidelines within this document.**
- 4. After reporting the test results, prepare all components for delivery to the polling place. Follow the “Post-Test Preparations” guidelines within this document.**

PREPARING TEST SCRIPTS & TEST DECKS

- Test scripts must be written before testing is performed. Scripts must be compared to final results. If script and final results do not match, test must be performed again and/or script must be reviewed to determine cause of error. If retesting fails, remove machine from use and submit service request to vendor.
- The test script must be written such that every candidate and/or question for all ballot styles is tested. Additional votes must be scripted such that candidates and/or questions have unique vote totals in order to test the ability of the terminal to accurately tally votes. For example, a test script for a five candidate contest could be written such that votes are cast with the following variation: Candidate A – 5, Candidate B – 4, Candidate C – 3, Candidate D – 2, Candidate E – 1.
- Prepare a test script with predetermined vote combinations and include the following types of ballots:
 - ✓ Ballots prepared using ADA marking devices (AutoMARK)
 - ✓ Blank ballots
 - ✓ Ballots containing overvoted & undervoted contests
 - ✓ Ballots containing write-ins (if applicable)
 - ✓ Ballots containing straight party & crossover votes (if applicable)

TESTING CENTRAL BALLOT SCANNERS

- Each central ballot scanner should be tested in election mode. Protective and public counters should be recorded before and after test.
- All ballots to be voted for this election must be tested on the scanner.
- Generate results under Election Day conditions and compare results to expected totals (test script).
- Tests must be conducted with the same kind of paper ballots that will be used for the election.
- Test the scanner for all voting methods to be counted on the scanner (absentee by mail, one-stop voting, transfers, provisional, curbside, Election Day and post-election processes) to insure coding is correct.
- Test overvoted ballots for expected scanner performance.
- Test ballots with write-in candidates for expected scanner performance.
- When testing individual precincts, test the election definition's ability to recognize a ballot style that is not appropriate for that precinct.
- If a scanner does not perform all of the functions correctly, discontinue use immediately and call vendor for repair.
- Close m650 unit and print results. Compare results to test script for accuracy.

PROCEDURES FOR REPORTING TEST RESULTS

Upon completion of testing, testing media for all polling locations and tested equipment must be processed through the ERM software module and then uploaded to the ENR site. Verify that results are accurate and correct between the results tape, ERM and ENR.

Test results must be reported no later than 10 business days prior to the election date.

Step 1: Zero Procedures

- Following steps in the "Election Night Reporting" document for zeroing out ERM.
- Run a Summary Report to verify that ERM is set to zero.
- Generate and export the results (ASCII file) to a memory device, such as a flash key, memory stick, or CD. At an internet-connected PC, upload the results to the Clarity ENR website. (Note: SBE guidelines do not allow the Unity computer to be connected to the internet.)

Step 2: Reporting Procedures

- Read testing media from all voting equipment into the ERM software module.
- When all votes have been processed, run a Summary Report to obtain a hard copy of the results.

- Generate and export the results (ASCII file) to a memory device, such as a flash key, memory stick, or CD. At an internet-connected PC, upload the results to the Clarity ENR website. (NOTE: SBE guidelines do not allow the Unity computer to be connected to the internet.)
- Review the results in ENR to confirm that they are an exact match to the printed ERM Summary Report.
- Once you are confident that the results match, publish the totals in ENR for SBE review and to aggregate the totals with other counties. An email will be sent to the CBE confirming review by the SBE.

POST-TEST PREPARATIONS

- All documentation, test scripts, test decks, and other materials should be retained and properly secured for the period designated by the NC Records Retention and Disposition Schedule.
- Determine that all scanners meet expected performance and secure equipment.
- Follow vendor guidelines for inspecting, cleaning, and maintaining the scanner.

M650 Testing Process Checklist

Supplies needed for Logic & Accuracy Testing:

- M650 tabulator with two dot matrix printers
- Master Election Media (containing data for the current election, but no vote results) or election media created for tabulation purposes with no vote results
- Blank Election Media
- Continuous print printer paper to print out zero and test results
- Empty ballot boxes or containers for securing test ballots after tabulation
- Empty containers labeled “Write-In”, “Overvote”, or “Manual Count” for rejected/sorted ballots
- Seals for ballot boxes/container
- Marked test ballots (should have test deck created in Ballot on Demand or printed and marked in a way consistent with prepared Test Script to verify system is tabulating correctly)
- Hand marked test ballots to further test tabulation
- Header cards (Precinct by precinct/VTD and ones for grouping as a whole)
- Pens to mark ballots, label reports

Before the testing begins:

- Assemble necessary supplies
- Reserve room if necessary
- Print test ballots and header cards (if do not use Ballot on Demand, hand mark and label as test ballots)
- Create Master Election Media
- Label blank election media for required categories (i.e. Absentee, Provisional, etc.)
- Insure pick belt is correctly attached and output hopper is in place
- Ascertain that all ballots are face up and all are turned in the same direction

To Begin Testing:

Election Officials will:

- Insert Master Election Media into tabulator, turn on tabulator and upload Election data
- Check the scanner's printout (the Machine Readiness Report) to verify correct Election Information is loaded
- Remove Master Election Media from tabulator and secure
- Turn on blank, overvote and write-in sensors (if applicable)
- Clear all vote totals
- Print a zero printout to verify no votes are stored on Tabulator and correct contests are loaded. Leave report on printer, do not tear off
- Open secure ballot boxes/containers holding test ballots to be counted (run through jogger if necessary to straighten stacks)
- Place ballots in insert hopper and run through tabulator
- Remove any ballots that tabulator "kicks out" per occurrence (these ballots will not have counted unless they were sorted for write-ins)
- Examine "kicked out" ballots to determine reason (such as, but not limited to, timing marks are out/off, overvote has occurred, or torn ballot)
- Rerun the ballots "kicked out" and then resume tabulation. (If ballot will not run, that ballot will need to be spoiled and labeled as such with a remark as to why). Keep the spoiled ballot in a separate, secure place from the test deck.
- If "kickout" is sorted as a write-in, it may need to be manually tabulated (do not rerun a sorted write-in ballot)
- Secure ballots from output hopper that have been counted and keep separate from ballots to be counted
- After all ballots have been tabulated, place in secure ballot box
- Save totals to tabulator (may save after each stack (precincts, if not compromised) of ballots or wait until all have been tabulated.)
- Print test totals below zero printout and verify that each ballot has been tabulated accurately
- If printout is correct, tear off the vote totals with the zero printout attached and label the report
- Print second copy of test vote totals and label report (not required if using 3 ply paper)
- Save totals to blank election media and label if not previously done
- Use election media to download totals to Unity
- Print Unity report
- Label the ballot boxes/containers of test ballots that have been tabulated
- Make logic and accuracy totals (with zero totals attached) available to the Board Members for their approval, if requested

M650 Check Log	Edition Date: 7/20/2011
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Election _____	Serial # _____
Test Date _____	**Reference vendor guidelines for more detailed procedures.
<u>Check Pick Belt Condition</u> Worn? Dirty? Exceeds recommended manufacture date? Is rough edge positioned to make contact with ballots?	
<u>Check Retard Pad</u> Dirty? Worn?	
<u>Check Pick Belt Rollers</u> Clean with rubbing alcohol and cotton cloth	
<u>Check Sensors & Feed Path</u> Clean with dry, cotton cloth or pressurized air	
Connect Printer & Load Printer Paper	
Install/Adjust Output Hopper	
<u>Load Election Definition</u> Zero Totals; Check accuracy of election coding	
Scan Test Deck	
<u>Print Results & Save to Disk</u> Check for accuracy with test script	
<u>REPORT TESTING RESULTS:</u> ERM & ENR	
Reload zip disk in scanner & zero totals	
Store & secure properly for election use	

CERTIFICATION OF LOGIC & ACCURACY TESTING

We, the undersigned, hereby certify that the above procedures for pre-testing, logic and accuracy testing, and post-test procedures were performed using guidelines provided by the vendor and that all systems functioned properly and as expected. We further certify that any known failures or problems were documented and reported to the proper authorities. This document and all other testing materials will be stored for the time period as required by the NC Records Retention and Disposition Schedule.

Date: _____ Signature: _____
 Signature: _____
 Signature: _____

AutoMARK™ Pre-election/ L&A/ Post-test Procedures

Installing the Compact Flash Card (Machine is OFF)

1. Using the Access Door key provided, unlock the Access Door containing the compact flash card.
2. Remove the current compact flash card from the slot, replacing it with the compact flash card containing your new election files. The back of the card has a tab on it. When inserting the compact flash card, insure the tab is pointing towards the right of the unit.

NOTE: The compact flash card must be installed before ballots can be processed using the ES&S AutoMARK™

3. Close and lock the Compact Flash Access Door.

Installing the Test Ink Cartridge (Machine is OFF)

The Test Ink Cartridge is a regular inkjet cartridge that is used only for testing prior to election day. This ink cartridge must be replaced on election day at the polling place before the unit is turned on.

1. Open the Rear Access Door and insert the test ink cartridge.
2. Close the Rear Access Door.
3. Insert the brass key and turn to the **Test** Position to access the Test Menu.

NOTE: The screen will remain blank for approximately one minute after the key is turned to the Test position. The screen will display the Main Menu once the unit is finished downloading the data from the compact flash card.

Checking the Battery Status (Machine is in TEST Mode)

Check the battery status to insure that the battery is fully charged.

1. Press the **Battery Status** button.
2. Confirm the Power source is **External** and the battery strength is **Good**.
3. The power source is External when the unit is operating on power from the wall outlet. The power source is Battery when the unit is operating on power from the internal battery.
4. Press **Done**.

Setting Date and Time (Machine is in TEST Mode)

1. Select **System Maintenance**
2. Enter the System Password and press **OK**.
3. Select **Set Date/Time**.
4. Confirm **Date** is selected from the menu.
5. If the Date is NOT correct, press **CLEAR**.
6. Using the Keypad enter the correct Date in the MM-DD-YY format and press **Apply**. A message will state "Change was successfully applied." If you enter the date in the wrong format and press Apply this error message will appear "**ERROR! Format: MM-DD-YY**". Press **CLEAR** and re-enter the Date in the correct format.
7. Select **Time** from the menu.
8. If the Time is NOT correct, press **CLEAR**.
9. Using the Keypad enter the correct Time in the HH:MM AM or PM format and press **Apply**. A message will state "Change was successfully applied." If you don't select AM or PM, the system will automatically select AM.
10. Press **Done** to exit and return to the **System Maintenance** screen. Press **Done** again to return to the **Main Menu** screen.

Calibrating the Touch Screen (Machine is in TEST Mode)

1. Select **Calibrate Touch Screen**.
2. Press the **Calibrate** button to start the calibration.
3. Carefully press and briefly hold the stylus on the center of the target then release. Repeat as the target moves around the screen.
4. **Tap** the screen to save your calibration settings. If you make a mistake, just wait 30 seconds and your settings will not be saved.
5. Press **Done** after you complete the calibration. If you skip this step, the settings may not be remembered when the system is re-booted.

AutoMARK Check Log
Pre Election / Logic & Accuracy / Post Test Procedures

Edition Date: 7/20/2011

Election	Precinct	Serial #	Precinct	Serial #	Precinct	Serial #	Precinct	Serial #	Precinct	Serial #	Precinct	Serial #	Precinct	Serial #	Precinct	Serial #
Test Date																
PRE TEST PROCEDURES																
Install Flash Card¹																
Install Test Ink²																
Check Battery																
Set Date & Time																
Calibrate Screen																
Select Ballot Styles or Precincts as needed³																
Conduct Ballot Print Test⁴																
L&A Testing⁵																

¹ Install flash card BEFORE turning on the machine. During a first time use the flash card may need to be unlocked. Please contact ES&S for the security code.

² Install ink cartridge BEFORE turning on the machine. After installation, turn machine on and to "TEST" mode using brass key.

³ This is best done with someone to proof your work as the list all starts to look the same. Counties should choose either by style or by precinct depending on how their paper ballots were printed.

⁴ Each ballot style should be tested. Also note that ballots should be inserted in various orientations (right side up, upside down, etc.) If adjustments are suggested, contact ES&S immediately.

⁵ L&A reflects that candidates selected are printed accurately. Each ballot style must be tested. Specific criteria to check for are listed separately. Brass key should be turned to the "ON" position. If at any time, the AutoMARK fails to setup or test properly, please contact ES&S immediately.

AutoMARK Check Log
Pre Election / Logic & Accuracy / Post Test Procedures

Edition Date: 7/20/2011

Election	Precinct		Precinct		Precinct		Precinct		Precinct		Precinct		Precinct		Precinct	
Test Date	Serial #	Serial #	Serial #	Serial #	Serial #	Serial #	Serial #	Serial #	Serial #	Serial #	Serial #	Serial #	Serial #	Serial #	Serial #	
Verify Audio/Keypad Function																
Verify Contests & Candidate Layout/Spelling																
Zoom In/Out																
High Contrast																
Write Ins (if applicable)																
Overvote not possible																
Ballot Read Test Complete⁶																
POST TEST PROCEDURES⁷																
Seal Flash Card/Store silver key																

⁶ Insert a marked ballot and confirm that the AutoMARK will show summary screen and WILL NOT allow further changes.

⁷ Complete these steps following a successful setup and L&A.

AutoMARK Check Log
Pre Election / Logic & Accuracy / Post Test Procedures

Edition Date: 7/20/2011

Election	Precinct	Serial #	Precinct	Serial #	Precinct	Serial #	Precinct	Serial #	Precinct	Serial #	Precinct	Serial #	Precinct	Serial #	Precinct	Serial #
Test Date																
Charge battery																
Clean per guidelines																
Remove test ink cartridge⁸																
Repack AutoMARK to include new ink cartridge, headphones, power cord, and brass key																
Arrange for delivery																

CERTIFICATION OF LOGIC & ACCURACY TESTING

We, the undersigned, hereby certify that the above procedures for pre-testing, logic and accuracy testing, and post-test procedures were performed using guidelines provided by the vendor and that all systems functioned properly and as expected. We further certify that any known failures or problems were documented and reported to the proper authorities. This document and all other testing materials will be stored for the time period as required by the NC Records and Retention schedule.

Date: _____

Signature: _____

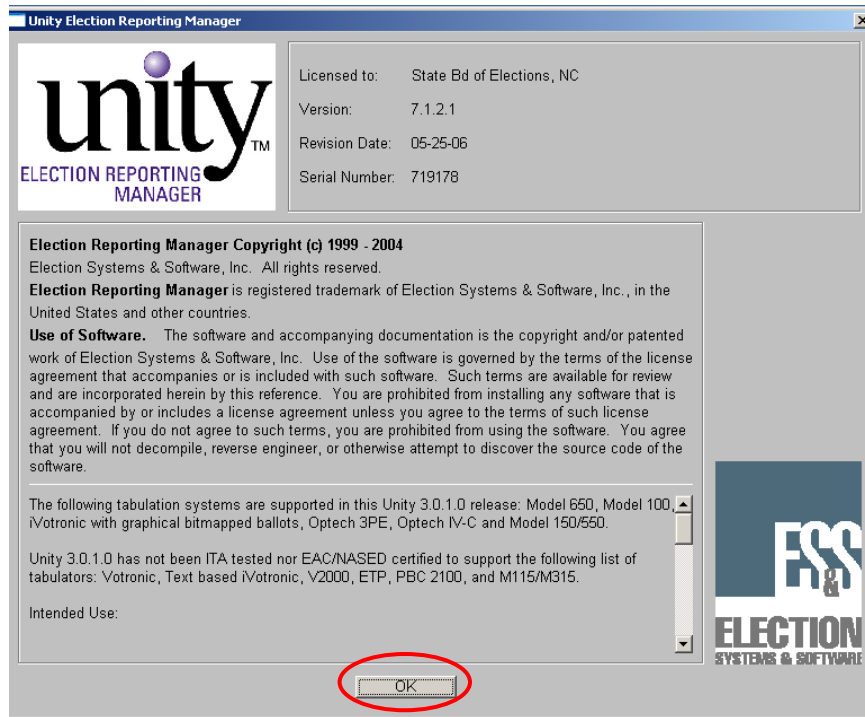
Signature: _____

Signature: _____

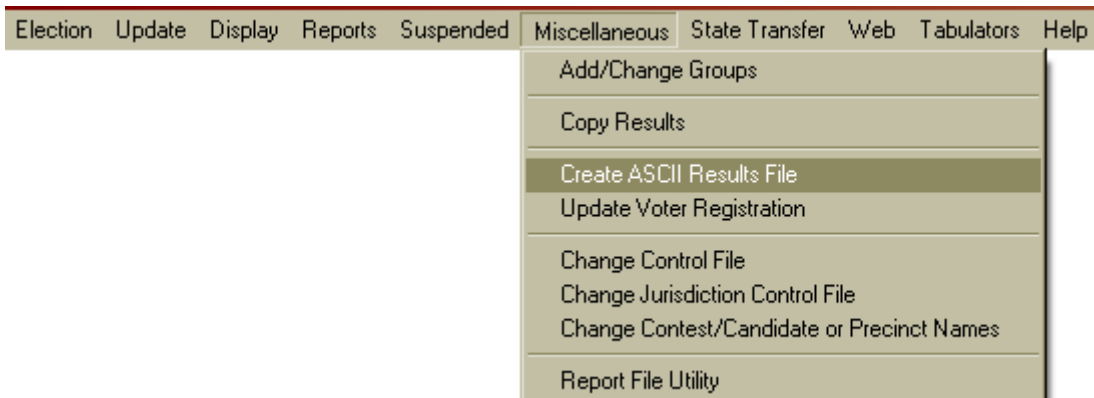
⁸ A new ink cartridge should be installed at the polling location on Election Day to prevent leaks.

CREATING AND EXPORTING L&A ASCII FILE

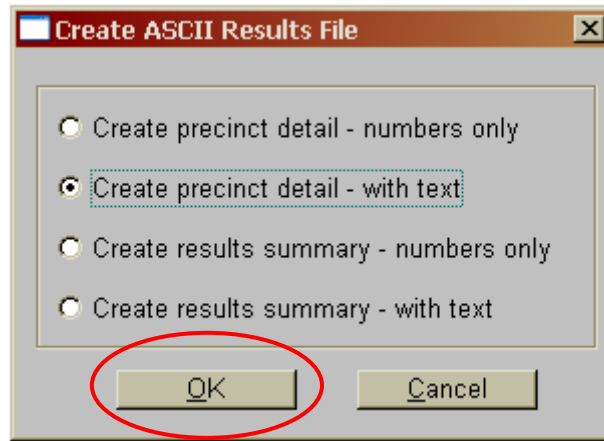
1. Open Election Reporting Manager. Click OK.



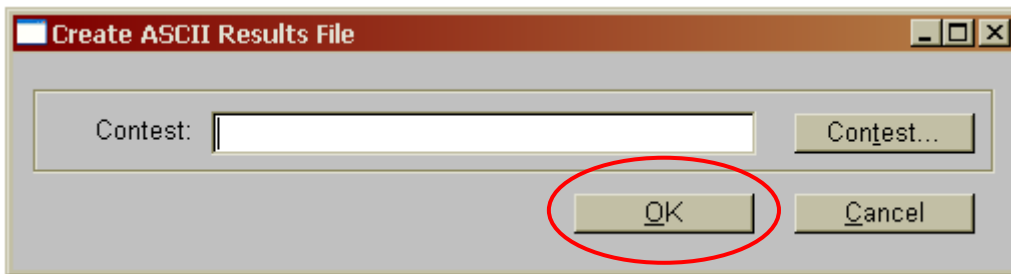
2. Select the Miscellaneous drop-down menu and click on **Create ASCII Results File**.



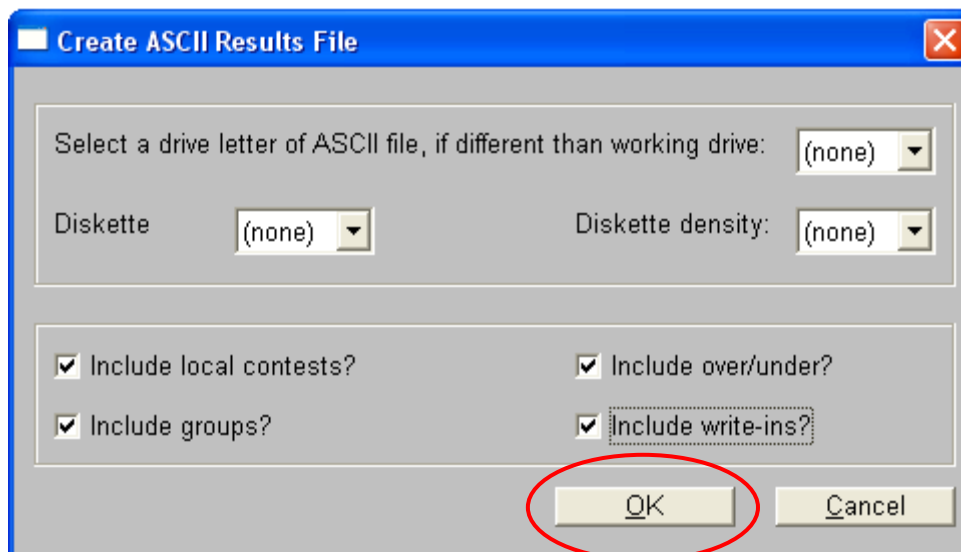
3. Select **Create precinct detail – with text**, and then click **OK**.



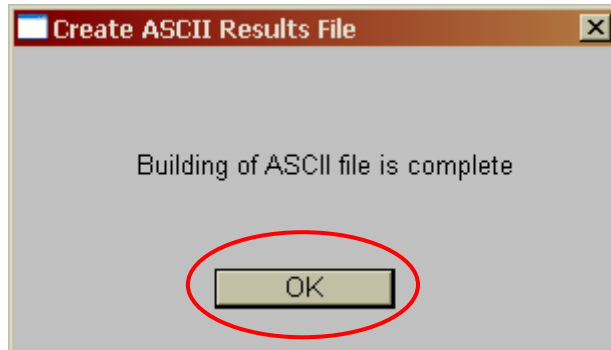
4. Click **OK** to select all contests.



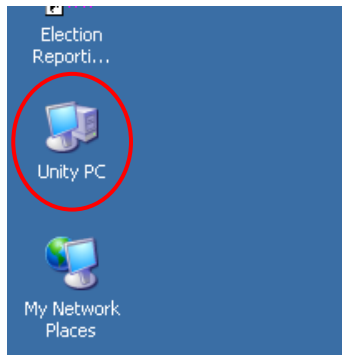
5. Click to check the boxes to **Include local contests**, **Include groups**, **Include over/under**, and **Include write-ins**, then click **OK**.



6. The following message will be displayed when the file is complete. Click OK.



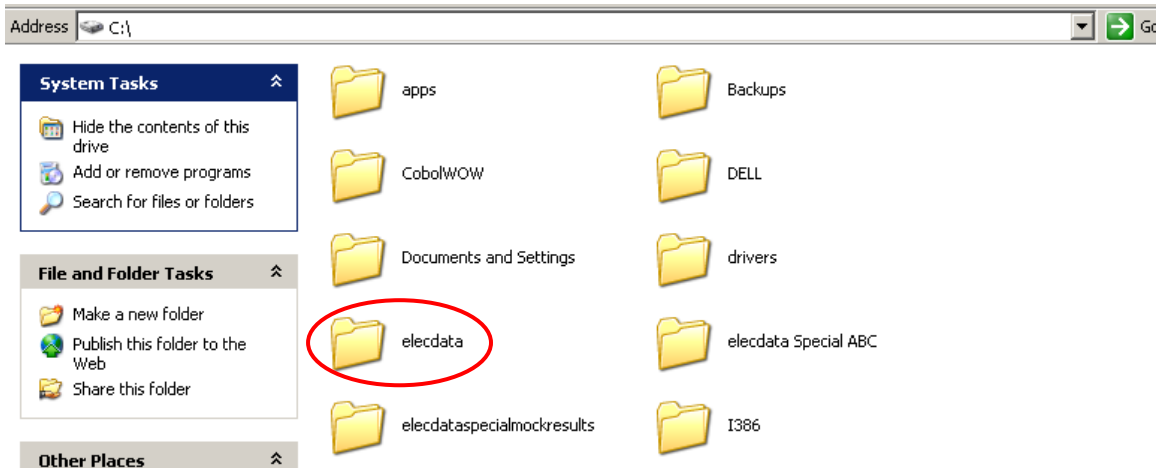
7. To transfer the zero ASCII file that has been created to a flash drive, from the Desktop, Double Click Unity PC.



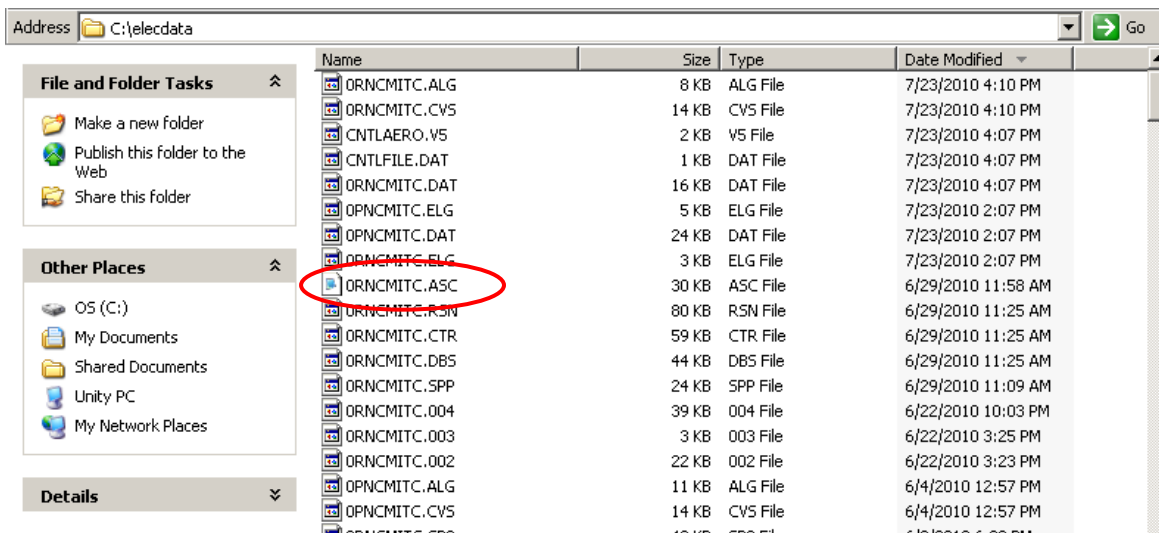
8. Double Click OS(C:) *Note – For counties using modems you will need to select the (W:) Drive or the drive that contains the elecdata folder.



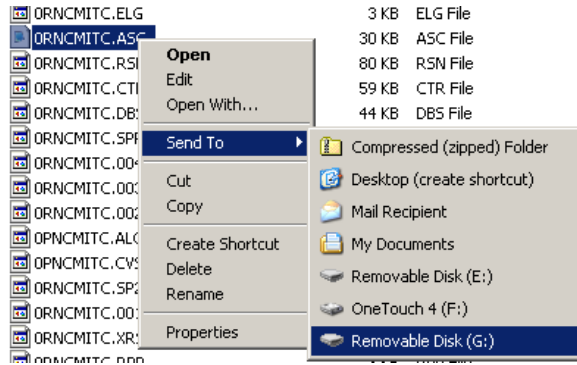
9. Double Click the elecdata folder.



10. Locate the ASCII file. It will have the file name of the current election followed by .asc.



11. To send the ASCII to a flash drive, Click once to highlight the file. Then right click, Send To. You will send the file to the drive that corresponds to your flash drive.



12. You are now ready to upload your ASCII file to ENR.