

## REVIEWING AND REDACTING CAST VOTE RECORDS AND BALLOT IMAGES

*[Harvie Branscomb comments in bold italics within brackets]*

### I. Introduction

Currently, Dominion's Democracy Suite® 5.2 is the only voting system certified for use in Colorado that is capable of exporting ballot-level cast vote records (CVRs). As a result, Election Rule 25.2.1(a) requires Dominion counties to conduct a type of risk-limiting audit known as a comparison audit. Election Rule 25.2.4 requires these counties to review their CVR files and redact voter choices corresponding to ballot cards susceptible of being personally identified with an individual voter, as required by section 24-72-205.5(4)(b)(iii), C.R.S.

Section 24-72-205.5((2)(a), C.R.S., defines a "ballot" as a "ballot voted by any acceptable, applicable, or legal method that is in the custody of an election official," and specifically includes "any digital image or electronic representation of votes cast." The digital ballot images captured by the Dominion system during tabulation are therefore "ballots" within the meaning of CORA. The CVR file exported from the Dominion system also constitutes "ballots" within the meaning of CORA, because the file electronically represents all votes counted in the election. This document contains Secretary of State guidance concerning mandatory and permissive "ballot" redactions for purposes of Election Rule 25.2.4 and CORA. **Since each Clerk and Recorder is the custodian of all election records within each individual county, we strongly recommend that each Clerk and Recorder confer with and obtain legal counsel from his or her county attorney before finalizing ballot redactions and producing documents responsive to any CORA requests.**

### II. CORA's ballot "blackout" period

CORA generally prohibits designated election officials from fulfilling open records requests for public inspection of ballots "during the period commencing with the forty-fifth day preceding election day and concluding with the date either by which the designated election official is required to certify an official abstract of votes cast for the applicable candidate contest or ballot issue or ballot question pursuant to section 1-10-102 or 31-10-1205(1), C.R.S., as applicable, or by which any recount conducted in accordance with article 10.5 of title 1, C.R.S., or section 31,10-1207, C.R.S., is completed, as applicable, whichever date is later." Section 24-72-205.5(3)(a), C.R.S.<sup>1</sup>

*[CORA (Colorado Open Records Act) provision 205.5 calls for a "stay period" that was intended to prevent interference with regular duties of election offices during periods of required work – prior to certification and during a recount.]*

In 2017, the statutory deadline for an interested party to request a permissive recount is 31 days after the election, or Friday, December 8, 2017. If timely requested and other conditions

<sup>1</sup> Please note that this blackout period applies to CORA requests for ballots by members of the public who are not "interested persons" within the meaning of section 24-72-205.5(2)(c), C.R.S. Candidates in election contests that are subject to a recount, among others, are permitted to "inspect and request copies of ballots in connection with such recount without having to obtain a court order granting such inspection." Section 24-72-205.5(3)(b), C.R.S.

are satisfied, a permissive recount must be completed no later than 37 days after the election. Section 1-10.5-106(2), C.R.S.

Election Rule 25.2.4 requires counties that conduct comparison audits to review and redact their CVR files no “later than the third business day following the expiration of the deadline to request a recount under section 1-10.5-107(2), C.R.S. or the completion of any recount, whichever is later....” The rule adopts that deadline because, ordinarily, a county cannot know with certainty whether or not a permissive recount will be conducted until the statutory deadline for requesting such a recount expires. For that reason, the clerk and recorder **ordinarily should deny** (or defer) any CORA request for ballots until after the permissive recount request deadline expires, or any requested recount is completed, whichever is later. The ballots should **then be produced** (or made available for inspection) **within three business days. That three-day period may be extended up to seven working days “if extenuating circumstances exist.” See section 27-72-203(3)(b), C.R.S.**

*[SOS staff ironically claim to have no authority over CORA whenever I have asked. The SOS interpretation argues that the law specifically prevents access by the public to voted ballots during all of the period during which the records could be of use in informing a decision about an election remedy in the form of an optional recount. Furthermore, the interpretation goes further to advise that a request made during this “stay period” can and should be denied, thus requiring another request to be made that would trigger an extra three and then even the extra 7 business days delay built into CORA for utterly new requests, where this one may have been made weeks ahead during the stay period. I understand and argue for an interpretation that in case of an elective recount there are two non-overlapping stay periods- one ending after official results are known and beginning again once an elective recount is started. This way the campaign who wishes can use the voted ballot data to decide whether a recount is justified. That is an interpretation consistent with a constructive and just legislative intention.]*

### III. Guiding principles

The decision to redact particular CVRs and ballot images (and withhold paper ballots from public inspection, if applicable) should be informed by competing and at times conflicting public policies. On the one hand, principles of transparency and accountability of public officials favor the most complete records production possible. On the other hand, section 8 of article VII of the Colorado constitution contains this mandate:

*All elections by the people shall be by ballot, and in case paper ballots are required to be used, no ballots shall be marked in any way whereby the ballot can be identified as the ballot of the person casting it. The election officers shall be sworn or affirmed not to inquire or disclose how any elector shall have voted.*

*[ It is the first of these two sentences that is too much overlooked in Colorado. It provides for anonymity of each ballot from the onset of any risk to voter privacy- the way the ballot is printed and handled and the marks placed on the ballot by anyone including the voter must achieve this standard- “no ballot can be identified.” In Colorado since the CORA law of 2012 was enacted, this has been warped to mean “ballots must be rendered non-identifiable prior to being released to the public, but while in the exclusive custody of officials they may remain identifiable”]*

The legislative declaration contained in section 24-72-205.5(1)(a), C.R.S., acknowledges these competing objectives:

*By enacting this section, the general assembly intends to permit the inspection*

*of ballots under the conditions specified in this section and to protect the integrity of the election process while protecting voter privacy and preserving secrecy in voting in accordance with the provisions of section 8 of article VII of the state constitution.*

Each Clerk and Recorder should exercise his or her best judgment in ballot redaction in achieving both of these policy objectives to the greatest possible extent.

*[Upon careful deliberation one should conclude that in almost every case, there is a statutory, regulatory or best practice solution to combine both of these policy objectives. With the cooperation of the voter solutions allow for full voter privacy and transparency of the voted ballot in all its forms through, in Colorado, a voter-identified ballot envelope containing an anonymous ballot that will remain anonymous until rendered identifiable or identified by the voter.]*

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#### **IV. General redaction practices**

We discuss some mandatory and discretionary ballot redaction scenarios below. Although there may be some exceptions, we generally recommend the following uniform business practices:

*[Several of the practices for redaction and withholding suggested here, even though they will satisfy the CORA 205.5 law, will not maximize the utility of the remaining transparency provided. In particular, any redaction of voter intent in all columns of a row in a county CVR will prevent the verifiability of the crucial second step of the RLA- the independent aggregation of all voter intent via the CVR record and comparison to the audited election results. This requires an ability for independent public aggregation of the vote counts recorded by the voting system for the audited contest and any contest to be opportunistically audited as well. So there is a real public interest impetus to redact only necessary portions of a CVR leaving the full record for as many contests as possible. In a nutshell, this requires redaction of columns rather than rows in the CVR. The SOS document takes an entirely different approach that I will argue with. I will provide a beneficial alternative for in these inline comments.]*

#### **CVR Files**

· We recommend that counties produce the .CSV version of the CVR file, not the .JSON version. This recommendation is based on the fact that the JSON version of the CVR actually consists of 10 different compressed files, all of which relate to one another in defined ways. It is technically difficult and time-consuming to work with the JSON files and ensure that the CVR has been thoroughly and accurately redacted. In fact, in 2016, Secretary Williams adopted a new voting system technical requirement (Rule 21.4.14) requiring voting systems to export CVRs in CSV format precisely because the JSON versions are so difficult for most county election offices to work with.

*[JSON files are the format of the future if the VVSG discussions are to be believed. Yes they seem awkward and perhaps inaccessible but many COTS tools are available to manipulate JSON files and help is available. In Colorado, the reason to request the JSON files is to get access to mark density information that will guide research into poorly marked ballots. Unfortunately the SOS-approved format for the CVR (Rule 21.4.14) did not include this mark density information even though Dominion provides it. Methods for JSON redaction for the equivalent of rows that interfere with voter privacy would best be learned until the CDOS revises its rule concerning CSV based CVRs to include columns showing mark density. The mark density information*

*is one of the most powerful tools that Dominion offers as an advantage. The SOS advice to resist delivery of JSON formats will interfere with the availability of this benefit.]*

- If in your election at least 10 ballots were cast for each and every district style (if you reported results by district or ballot style) or precinct style (If you reported results by precinct), you may determine that it is not necessary to make additional redactions to the CVR file. In that event, you may produce in response to a CORA request the CVR file that you uploaded to the RLA Tool (i.e., the CVR file in .CSV format exported from the voting system, after deleting original Column F (“CountingGroup”).

*[ This is correct. District style is referred to in the CVR as Ballot Type. Further discussion is coming on the topic of precinct coding and its impact on the CVR]*

- There are many ways to redact the CVR file if you determine that such redactions are necessary to preserve voter anonymity and ballot secrecy. We propose one optional solution, which retains the unique CVR identifying information in Columns A – G, and then deletes the voting choices from traceable ballots. We provide step-by-step instructions on this process in section V, below. The principal benefit of this method is that the redacted CVR will contain a number of rows equal to the total number of ballot cards tabulated in the election, which makes it easy for the county to prove it provided the complete CVR file. This is only a suggestion – you may have a different process that works better for you.

*[There are indeed many ways to redact or reformat data to satisfy CORA 205.5. The optional solution provided here provides perhaps least functionality as a means for verifying the correctness of the RLA. Its mistake is to start by redacting in rows instead of columns. Note that ‘voter anonymity’ is a common misnomer. Voters who are anonymous wear masks and don’t bring ID. Voters are definitely intended to be identifiable in a Colorado election. It is ballots that are supposed to be anonymous and required to be by the time they reach the public. Agreed there is benefit to not disappearing rows in the CVR as if they never existed. These comments provide full support to keep the number of rows in the CVR file the same after any redaction. If redaction is to be performed on a single row (not recommended here) it would best be done by replacing the “1” and “0” characters with an “X” so that the location of the redaction is made clear. A secondary benefit of the use of “X” is that any observer of the redacted record can count the number of instances of that “form” of ballot represented by each row of the CVR file to see there are less than 10 instances and understand why it was redacted. However, any redaction of all voter intent from a row of the CVR (column H and above) will interfere with the usability of all the voter intent for all contests that were voted in that row, even contests which do not contribute to an anonymity issue such as countywide contests. Please watch for these comments to recommend redaction of whole columns of CVR rather than columns H and above in any single row.]*

- Once the CVR file is completely redacted, the county should sum the un-redacted votes in the CVR and compare those results to the official abstract of votes cast or the county’s ENR results. This process is also illustrated in section V, below. We recommend taking this step just to ensure that the redactions fully remedy any traceability issues. For example, assume that final results report shows County Ballot Question 1A with 3500 “yes” votes and 2950 “no” votes. Assume also that the county determined it needed to redact a total of 5 CVR records. The county then adds up all of the votes in the *redacted* CVR file, and sees there are now 3500 “yes” votes and 2945 “no” votes. The redacted CVR file itself reveals how the voters who cast the 5 redacted ballots voted (because they all voted “no”). In this case, it

may be advisable to redact a handful of other CVRs with “yes” votes for Ballot Question 1A, to preserve ballot secrecy.

*[Here the SOS advice admits to a newly produced risk- the proposed method of redaction actually can introduce a new risk to voter privacy and one that is a real headache to avoid, just like the potential risk to privacy of the difference between unofficial and final results when published by precinct. Here the advice is to actually redact even more and otherwise unnecessary rows in order to counteract the damage caused by the original redaction. The alternate method proposed in these comments will at least minimize the need for such risky redaction practices.]*

### **Ballot Images and Paper Ballots**

· Counties should review all ballots before producing them in response to a CORA request to ensure the ballots do not contain markings that identify the voter.

*[Prior to July 2016 Rule 1.1.12 Defined “damaged ballot” to include:*

*(c) Ballots that the elector marked in a way that would disclose his or her identity.*

*And Rule 18.3.2 required “damaged ballots” to be duplicated.*

*In a July 19, 2016 comment to rulemaking, Harvie Branscomb wrote the following:*

*[link: [http://www.sos.state.co.us/pubs/rule\\_making/written\\_comments/2016/20160719Branscomb.pdf](http://www.sos.state.co.us/pubs/rule_making/written_comments/2016/20160719Branscomb.pdf) ]*

*(c) above is a good thing to have in rule because it encourages election judges opening envelopes to sequester and duplicate ballots with identifiable markings. This protects the privacy of the voter. If redaction is accomplished by duplication as a damaged ballot then everything scanned can be anonymous and no further privacy violations will occur in the normal election process and no redaction is required later when the ballots are requested under CORA. Note also the relevance of the following rules requiring duplication. Ballots marked in a way that would disclose identity will be duplicated. Also of course ballots that are deemed by judges to be unlikely to scan correctly or to be correctly interpreted by machine will also be duplicated prior to scanning.*

*However, on 8/11/2016 the SOS adopted the changed rule defining “damaged ballot” now labeled 1.1.13 to remove the line (c) that until that change required redaction of voter identification on incoming ballots before scanning by duplication. That was a change in the wrong direction for support of transparency and public access to election evidence needed for evidence-based elections. Fortunately many counties do still use duplication shortly after envelope opening to redact voter signatures and initials and printed names (outside a write-in line) and hence provide for anonymity in a best practice conformance with constitutional voter privacy. Another best practice is to notify the voter on the ballot instructions not to identify themselves on the ballot.]*

○ We know that some counties adopted business processes to “flag” ballots with potentially identifiable markings during the adjudication process. Those processes should expedite locating ballots with identifiable markings, but only if the ballots themselves contained an outstack condition (such as overvotes, ambiguous markings and write-in votes). There may be many ballots with identifiable markings that were never queued for adjudication. For this reason, we recommend counties review **all** ballots (i.e., both adjudicated and unadjudicated ballots) before producing them in response to a CORA request.

*[ As previously mentioned, many counties do actually review all ballots upon opening even after the requirement was lifted in 2016 to look for identifiable marks and duplicate. As shown above, a policy to “flag” only ballots that are adjudicated will not suffice to find and remove these identifying marks. Counties have been experimenting with technical means to efficiently find identifying marks, such as by inspecting using ballot images many ballots at once to find stray marks that would be considered identifiable. This is a technically soluble problem that most crucially requires regulatory support for the definition of what*

*constitutes an identifiable mark. Here the SOS lets counties down by failing to provide advice in this document. At least one large county defines an identifiable stray mark as a printed name, initials or a signature outside of a write-in area.]*

○ Each county should “search and locate” ballots with identifiable markings in a manner that works best for the county. A “low-tech” but acceptable solution is to search through the paper ballots and maintain their RLA batches and ballot positions. If you find a paper ballot with identifiable markings, it will be easy to find the associated ballot image because the ballot image file names correspond to the “scanner/batch/position within batch” CVR-naming convention. Other counties may choose to use an image viewer to review all of the digital images rather than the paper ballots. Whatever works best for you is fine.

*[Clearly a review using a software TIFF reader with access to ballot images is a fast way to get access to the stray marks. Some companies have offered to provide an automated search software to find such marks. Some TIFF readers are faster than others. Hand access to the paper isn't really efficient unless the review is done at the time the ballot is opened prior to scanning, and that is the best practice time to find and redact the identifying mark.]*

○ The best practice here is to redact markings (such as signatures or printed voter names) that would allow a third person to associate a particular ballot with a particular voter. But not all ballot markings share this characteristic, like printed names of write-in candidates. The voter may be able to identify his or her own handwriting, but third parties probably cannot. There will be lots of gray area here, so each Clerk and Recorder ultimately must decide the types of markings that require redaction.

*[Agreed that third party identifiability (beyond a reasonable doubt) is a reasonable criterion. Obviously the gray area needs to be turned to black and white by an authority over CORA- either a court or the legislature. Before that happens, election officials are left without clarity about how to defend themselves and voter irresponsibility is not something that officials should be responsible for correcting.]*

○ A CORA request may ask for ballot image files in the native .TIF format. That is fine for ballot images that do not require redaction of identifiable markings. But we do not know how to easily preserve image redactions in TIF format. Therefore, redacted ballot images probably must be produced in PDF format.

*[There are ample cheap and free TIFF editors that can accomplish redaction and save file in TIFF format, so pdf really isn't necessary nor is it desirable. Also batch redaction can be accomplished by such editors.]*

· If an individual CVR is redacted, the corresponding ballot image should not be produced in response to a CORA request.

*[Disagree on an important nuance. The CVR is far more easily rendered anonymous than the ballot image, primarily because the BallotType of a paper ballot and its ballot image is self-evident. In the CVR that information can be speedily redacted with the removal of one or more columns. Only if there is no recourse other than redaction of the voter intent from a row of the CVR, then the corresponding ballot image should not be produced. If however the request is formulated so that portions of the CVR for a given ballot can be produced, then corresponding portions of the ballot image may also be produced. The most likely case is in redaction of precinct information from the CVR that allows many extra rows of a CVR file to be produced. In that case redaction of ballot images to remove the precinct identity would suffice to permit their production.]*

· If an individual CVR is redacted (and the corresponding ballot image is deleted from the ballot images produced in response to a CORA request), the corresponding paper ballot

similarly should be withheld from any public inspection or copying, if applicable.

*[Agree, and this condition should apply to the production of the paper ballot for the audit, as the public requires access to the audit process in order to be able to verify it. If the ballot cannot for reasons of voter privacy be interpreted once listed for sample by the audit process, then it should not be accessed by the Audit Board and instead it should be considered a discrepancy for purposes of escalation (without any need for correction of results).]*

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## **V. Mandatory ballot redactions under CORA**

Please review section 24-72-205.5(4), C.R.S., in its entirety. As pertinent here, section 24-725-205.5(4)(b)(III), C.R.S., states in part:

*Notwithstanding any other provision of this section, no ballot, or any portion thereof, may be made available of inspection where the ballot, or any portion thereof, is identical in printed form, considering a combination of the election contests at issue and precinct coding, to only nine or fewer ballots, or comparable portions thereof, among all ballots used in the same election. However, any such ballot, or any requested portion thereof, that is identical in printed form to ten or more ballots, or comparable portions thereof, used in the same election may be inspected.*

*[The final sentence here is key- the requestor may request a portion of the CVR such that 10 or more comparable portions thereof are identical in printed form- meaning that CVR columns may be removed from the file until there are no instances of patterns of contests for less than 10 rows. This is the key to the column method of redaction that will leave numerous contests fully populated for purposes of aggregating and comparing results to the audited original results to confirm the audit. The only difficulty is to determine which contest columns to redact in addition to "BallotType." To determine this, the requestor needs to know for the BallotTypes that show instances of fewer than 10 rows (regardless of in-person or mail in formats) which BallotTypes they are and what contests are on the ballot. Once the appropriate contests are removed from the CVR file, and the BallotType, PrecinctStyle and CountingGroup columns are removed, the result will be no rows that are as rare (in resultant style) as 9 or fewer.*

*For ballot images there is a corresponding scenario that matches that for the CVR, with a wrinkle. Because ICX ballots are demonstrably different in form from mail ballots, they represent one more virtual column – CountingGroup - that cannot be redacted (unless the county chooses to duplicate ICX to flat paper to protect the privacy of their voters.) So for purposes of decisions about withholding paper ballots and the corresponding images, the CORA 205.5 is applied within the set of mail ballots and within the set of ICX ballots separately. If the SOS had allowed Hart or Clear Ballot systems to be purchased, this extra annoying wrinkle would not have arisen. Or if in future Dominion produces a BMD that prints a ballot indistinguishable from the mail-in format, we might be able to avoid this issue. Meanwhile, for most counties only the ICX ballots will trigger the CORA 205.5 limit of 9 or fewer for withholding, and if precincts are coded, these precinct numbers can be redacted automatically off of the ICX ballot images to make many more of them anonymous when the number of instances of ICX ballots are counted by BallotType instead of Precinct style.]*

### **A. Generally**

Section 24-72-205.5((4)(b)(III), C.R.S., requires the county to redact or withhold from any CORA ballot production any ballot or portion thereof where the ballot is identical in printed form to

nine or fewer ballots used in the same election.

The easiest way to determine whether your county has less than 10 counted ballots of a particular district or precinct style is to generate a Cards Cast report, and filter by district or precinct. See page 111 of Dominion's Colorado Ballot Handling and Post-Election Guide.

Alternatively, you can open and sort the CVR file by ballot type (explained below)

If you identify 9-or-fewer tabulated ballots of a particular district or precinct style, then redact the CVR file by locating the pertinent "ballot type" in the CVR file, and "clearing the contents" of the applicable rows. In the examples that follow, we use Routt County's CVR file from its logic and accuracy test for demonstration purposes.

***[As explained above, if the requestor does not care about precincts, even if precincts are coded for reporting the PrecinctStyle column of the CVR table can first be removed, prior to making the count described above. Then filtering by district, or sorting by Ballot Type is all that is required to count the number of instances to compare to the CORA threshold of 10. Also far better for transparency than "clearing the contents" of column H and beyond with a blank is simply filling those columns with an "X" or other non-summable character. This allows confirmation that the redaction was done and done correctly.]***

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1. Import the RLA CVR file into Excel (to prevent Excel from reformatting ImprintedID numbers that look like dates into dates). This process is generally explained in the attached document "Importing the County Ballot List into Excel." The only difference here is that you will import the RLA CVR file into Excel, rather than the county ballot list.

2. Open the CVR file and Autofit Column Width so you can see the complete contents

- Select the entire spreadsheet by clicking on the "southeast" arrow to the left of Column A
- Then select the Format icon in the ribbon
- Then select "AutoFit Column width" from the dropdown menu

***[All images from the original document did not survive the cut and paste- it may not be worth while to reconstruct them. There is one more comment at the end of the file.]***

- You should now see the complete contest and choice names in rows 2 and 3 for columns H and higher.

### 3. Sort the CVR file by BallotType

- Select Row 4 through the last row of your CVR file. This screen shot shows the final row as Row 19. For an actual CVR, if you have 10,000 ballots, your final row will be 10,004 (because the first four rows of the CVR file are header rows):

- Select the Data menu item at the top of the ribbon:

- Click the Sort icon:
- In the Sort dialog box, click the box next to “My data has headers”

- In the first Sort by box, select “BallotType” from the drop down menu:
  - Click Add Level again, then select CvrNumber. Click Add Level again, then select TabulatorNum.
- Click Add Level again, then select BatchId. Click Add Level again, then selected ImprintedId.
- When all of those sort criteria have been selected, click Ok to sort your CVR file

- Once sorted by ballot type, you can see that there are only 8 CVRs (or rows) for ballot type S6-50J in this CVR file:
  - To redact the voting choices for these ballots (reflected in columns H and higher for rows 262-269), but leave the CVR identification information Columns A – G, select the cells reflecting voting choices only (Column H through the last column in your CVR file):
    - Right click the selected area, then select Clear contents from the drop down menu

- The votes for City Council At Large in the original CVR have now been redacted:
- As a navigational aid while you are working in the file, to visually indicate that you have redacted votes from these particular cast vote records, select the CVR identification information in Columns A – G for these CVRs (in this case, rows 262 – 269), and change the font to red from Excel's Home tab:  
2 The font color change will not be retained in the redacted CVR file if you save it in CSV format, but it may be helpful to highlight the CVRs you have redacted while you work in the file.

- Once you have made all redactions, save this file with a new name. Since the original file in this example is named RouttLATCVR\_Export\_2.csv, we are naming the redacted version Redacted\_RouttLATCVR\_Export\_2.csv
- Also, whenever you try to save a CSV file in Excel, Excel always asks you if you want to keep using that format. Always select Yes when you see this message:
- If a county finds it necessary to redact its CVR file, the county should produce the redacted CVR file in response to any CORA request.

#### 4. Summing the vote totals in the redacted CVR file

- Now save the Redacted CVR file with a new name to reflect that the next version will be summed. E.g., Summed\_Redacted\_RouttLATCVR\_Export\_2.csv. You are doing this because you should produce the redacted CVR file in response to the CORA request, not the version you will create to independently tabulate all unredacted votes in the CVR file.
- Click on the cell in column H immediately after the last row of your CVR file. In this example, the last row of the CVR file is row 303, so we've selected cell H304
- In the selected cell, type the following formula: =sum(H4:H**N**), where **N** is the final row number of your CVR file. In this example, the formula is =sum(H4:H303)

- Then press Enter. The formula will add all votes for the voting choice in Column H. In this example, candidate Lisel Petis receives 21 votes after all redactions

- Copy the formula you just entered into all other cells to the right of the same row, starting with Column I and ending with the last column reflecting a ballot choice in your CVR file. In this example, the final column of the CVR file is column AW.
- You have now created an independent tabulation of the *redacted* CVR file. You can now compare the vote totals of the redacted file to the final votes reflected in your statement of ballots cast or ENR results, to ensure that your redactions resolve all traceable ballot issues, and do not create any new ones.

## B. ICX ballots

Ballots marked on an ICX device are obviously different “in printed form” than preprinted mail ballots. We recommend that counties determine whether they have 9 or fewer ICX ballots of a particular ballot or precinct style, and consider withholding the paper ballots and ballot images from the documents produced in response to a CORA request. If the county opts to withhold potentially traceable ICX ballots, then the county should also consider redacting the corresponding CVRs from the CVR file. **Since CORA does not explicitly address the difference in appearance between ICX ballots and mail ballots, we strongly recommend that Clerks and Recorders discuss this issue with their county attorneys.**

*[ Disagree with some of the advice prior to the bold portion above. If ICX ballot pictures (digital photo images from Dominion) are redacted, the corresponding ICX ballots should not be allowed to be audited in public. If the audit is to be performed in public, then a technique must be used to reject these as audit samples and then act accordingly, as if the ballot contributed to a reversal of the presumed outcome. If the ICX ballot image for reasons of BallotType or PrecinctStyle deserves redaction that does not also imply that the corresponding CVR row requires redaction. The corresponding CVR row is far more easily rendered anonymous since the ICX ballots are not identified by CountingGroup after that column is removed. Any other column that is correlated with the use of ICX can similarly be selectively removed from rows that correspond to rare ICX ballots. If precinct is not of importance to the public request, that columns that indicate precinct style can be removed in the CVR and the precinct number can be redacted from the ICX image (and arguably masked when shown in paper form to the public, such as at the audit.)*