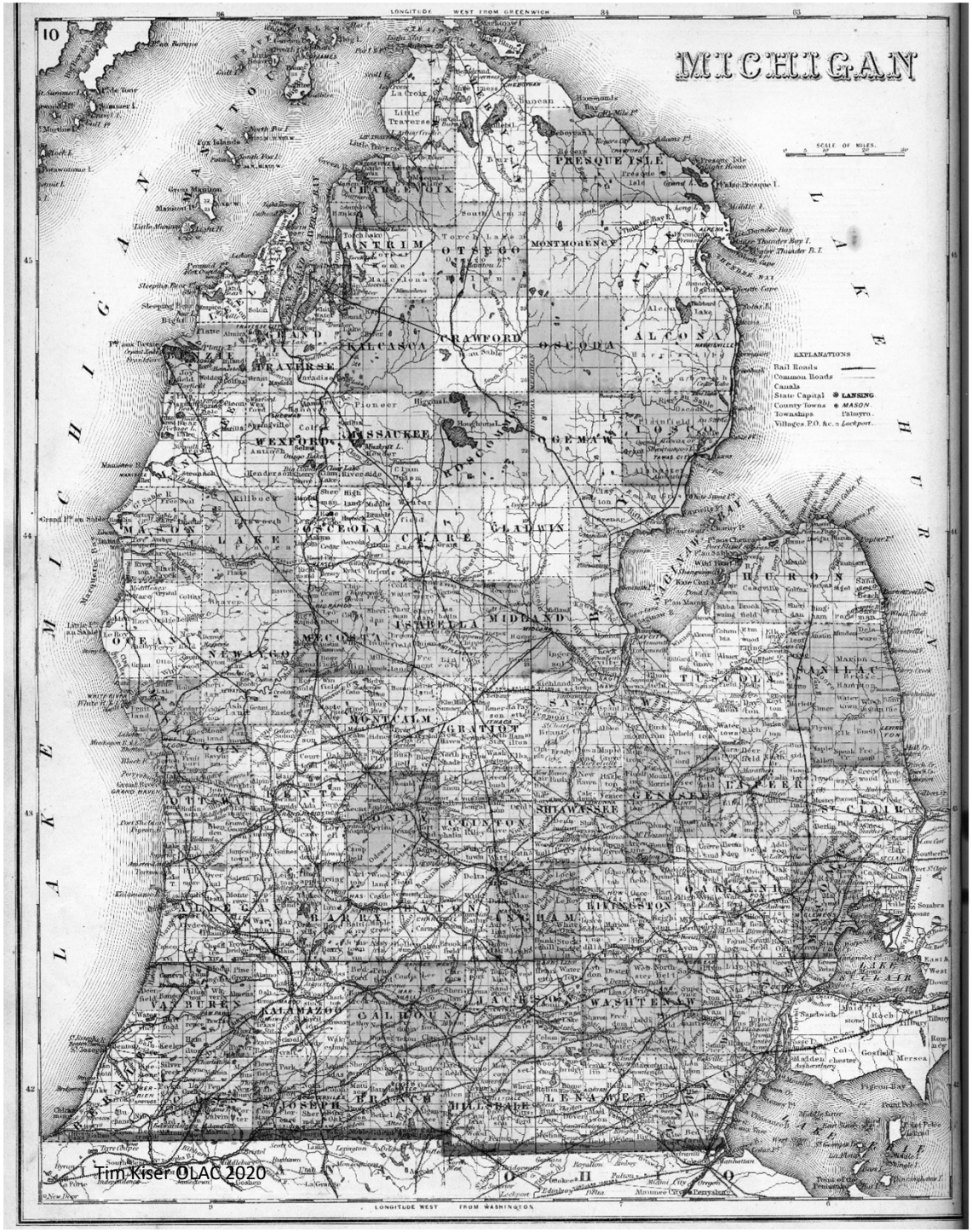

CARTOGRAPHIC RESOURCES CATALOGING: *Basics of Sheet Maps*

Tim Kiser
Catalog Librarian for Maps
Michigan State University Libraries

OLAC 2020

Michigan. Published by F.W. Beers, 1873.

Thanks to Paige Andrew,
Maps Cataloging Librarian,
Pennsylvania State University

Useful resources

Online:

- *Cartographic Resources Manual (CRM)* (2016) (in Cataloger's Desktop)
  - Reflects LC policy, but contains *very* useful guidance for everybody else
- *Cartographic Materials: A Manual of Interpretation for AACR2 (CM)* (last revised 2005) (in Cataloger's Desktop; also an out-of-print book)
- *DCRM(C): Descriptive Cataloging of Rare Materials (Cartographic),* Rare Books & Manuscripts Section (2018) https://rbms.info/dcrm/dcrmc/

Books

- *Cataloging Sheet Maps: The Basics*, Paige Andrew (1994)
  - AACR2-based; the pithiest book on the topic, a must-read
- *RDA and Cartographic Resources*, Paige Andrew, Susan Moore, Mary Larsgaard (2015)
  - Excellent update on the earlier book

Listserv:

- magirt-rda@lists.ala.org – affiliated with ALA's Cartographic Resources Interest Group; won't clog your inbox ☺

Scope of this workshop

- Set of principles about maps
- Basic methodology
  - Physical description (the concept of “main map”; which dimensions to record?)
  - Choosing the title proper
  - Recording creators/contributors (often corporate bodies)
  - Scale
  - Projection statements
  - Coordinates

BASIC PRINCIPLES ABOUT CARTOGRAPHIC RESOURCES AND THEIR DESCRIPTION

- **Information type = graphic (primarily)**

- Expressly intended as a 2-dimensional substitute for a 3-dimensional reality
  - This requires some specialized elements of description, like scale and projection information

- Sheet map description is focused on the “main map” or “main maps” only.
  - It’s common for multiple maps to be printed on a single sheet. Often not all of them are described to the same level of detail.
  - Main maps are fully described, but insets and/or ancillary maps are typically listed in a note.

- Difference between a “panel” and “cover” (impacts “source of title” note)

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Creating an original record

- **Spend time looking over all parts of map, front and back, to see what is there and what is not**
- **Answer the question, "how many main maps?"**
- Look for:
  - Title(s)
  - Statement(s) of responsibility
  - Scale
  - Projection statement
  - Coordinates
  - Date(s) including copyright
  - Publishing info
  - Geographic coverage
  - Relief
  - Themes/topics (Roads? Tourism? Geology? Agriculture? Statistics?)

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  - Date(s) including copyright
  - Publishing info
  - **Geographic coverage**
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  - Themes/topics (Roads? Tourism? Geology? Agriculture? Statistics?)

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  - Coordinates
  - Date(s) including copyright
  - Publishing info
  - Geographic coverage
  - **Relief**
  - Themes/topics (Roads? Tourism? Geology? Agriculture? Statistics?)

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- Spend time looking over all parts of map, front and back, to see what is there and what is not
- Answer the question, “how many main maps?”
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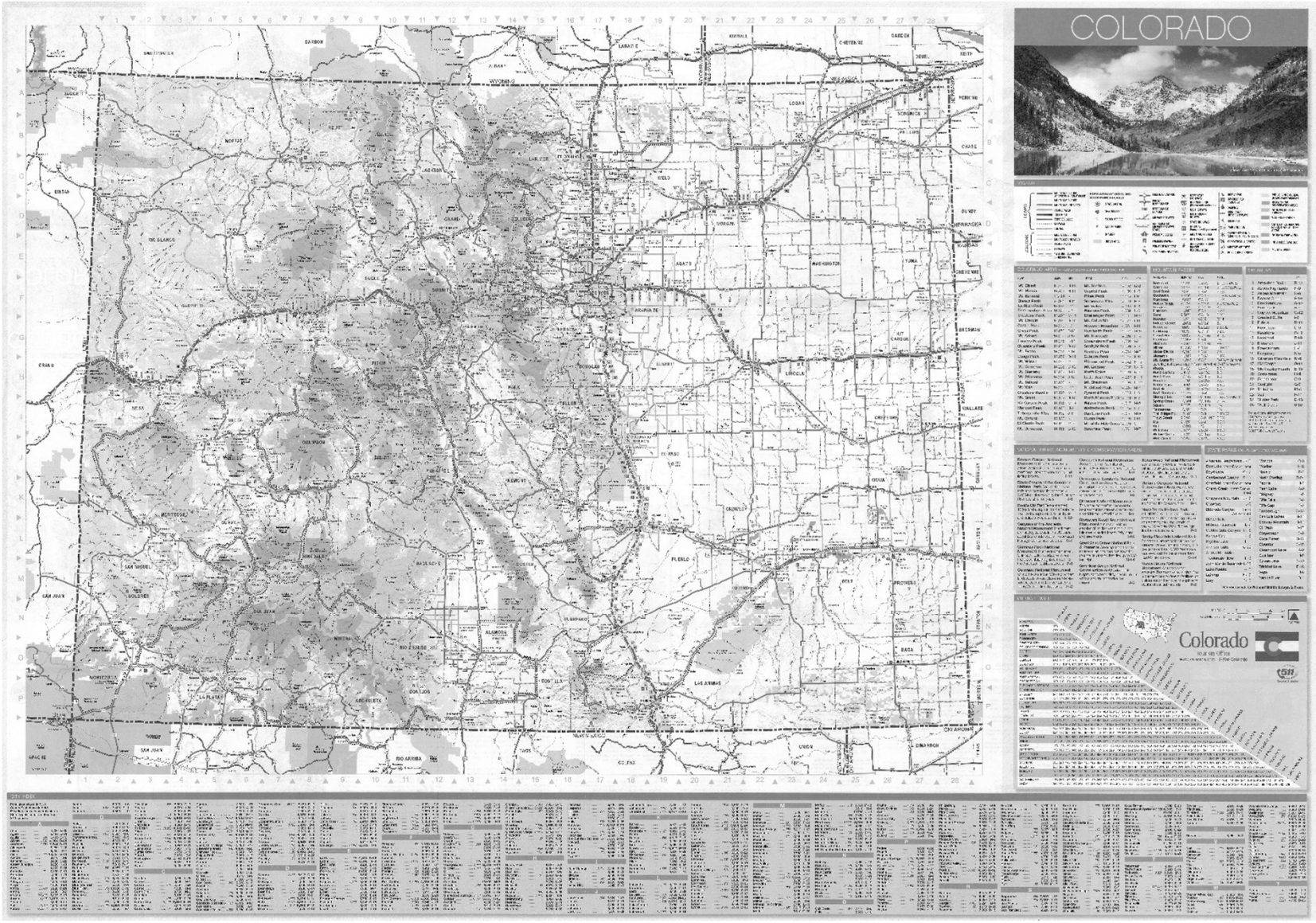
  - Title(s)
  - Statement(s) of responsibility
  - Scale
  - Projection statement
  - Coordinates
  - Date(s) including copyright
  - Publishing info
  - Geographic coverage
  - Relief
  - **Themes/topics (Roads? Tourism? Geology? Agriculture? Statistics?)**

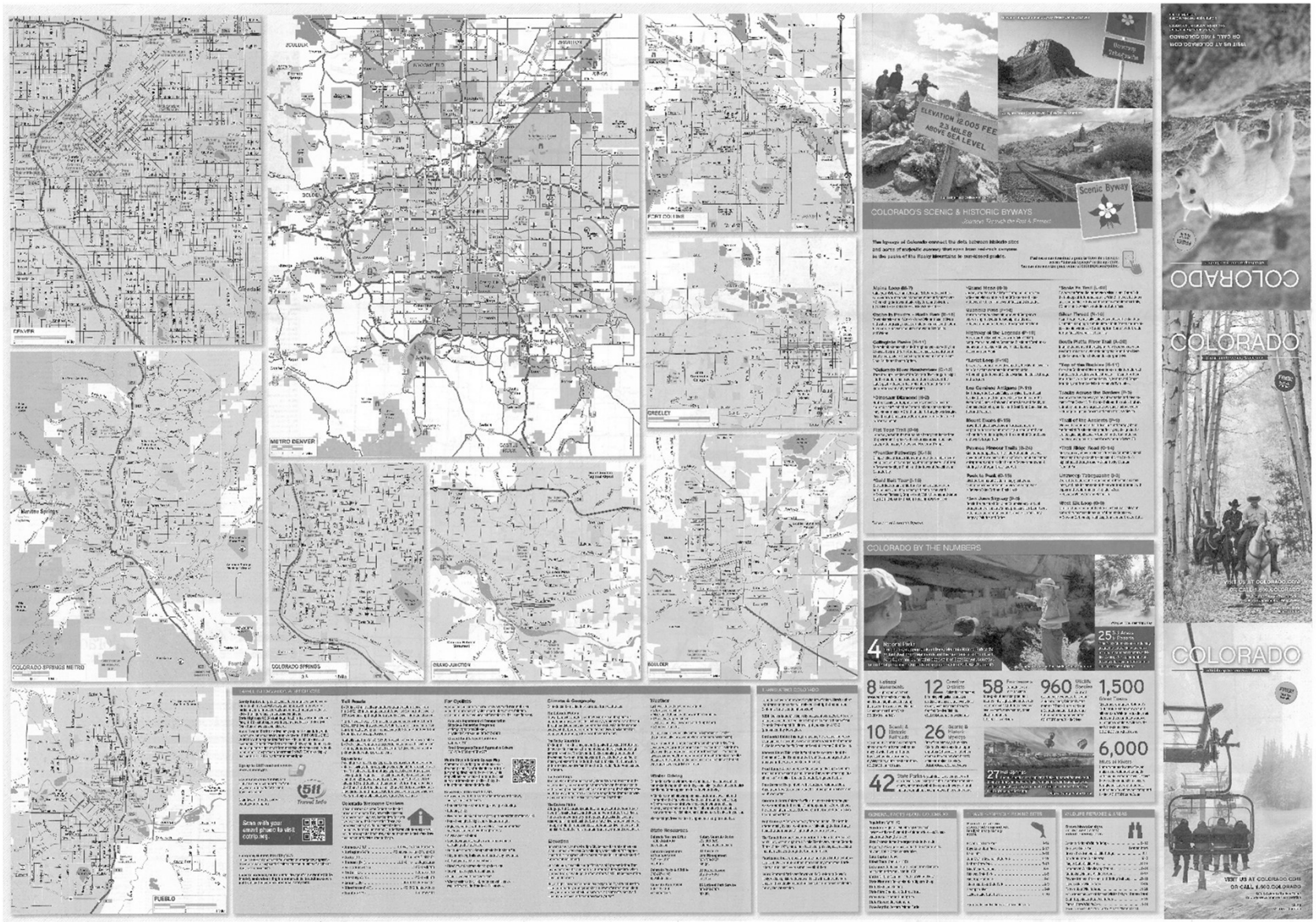
- **Physical description (300) → Based on main map(s)!!**
- Title proper + variant title(s) (245/246 $a/$b)
- Statement of responsibility (245 $c)
- Creator/contributor access points (1xx/7xx)
- Mathematical cartographic data (255)
- Coded mathematical cartographic data (034, Proj fixed field)
- Relief notes and related fixed fields

Example: Colorado (folded)

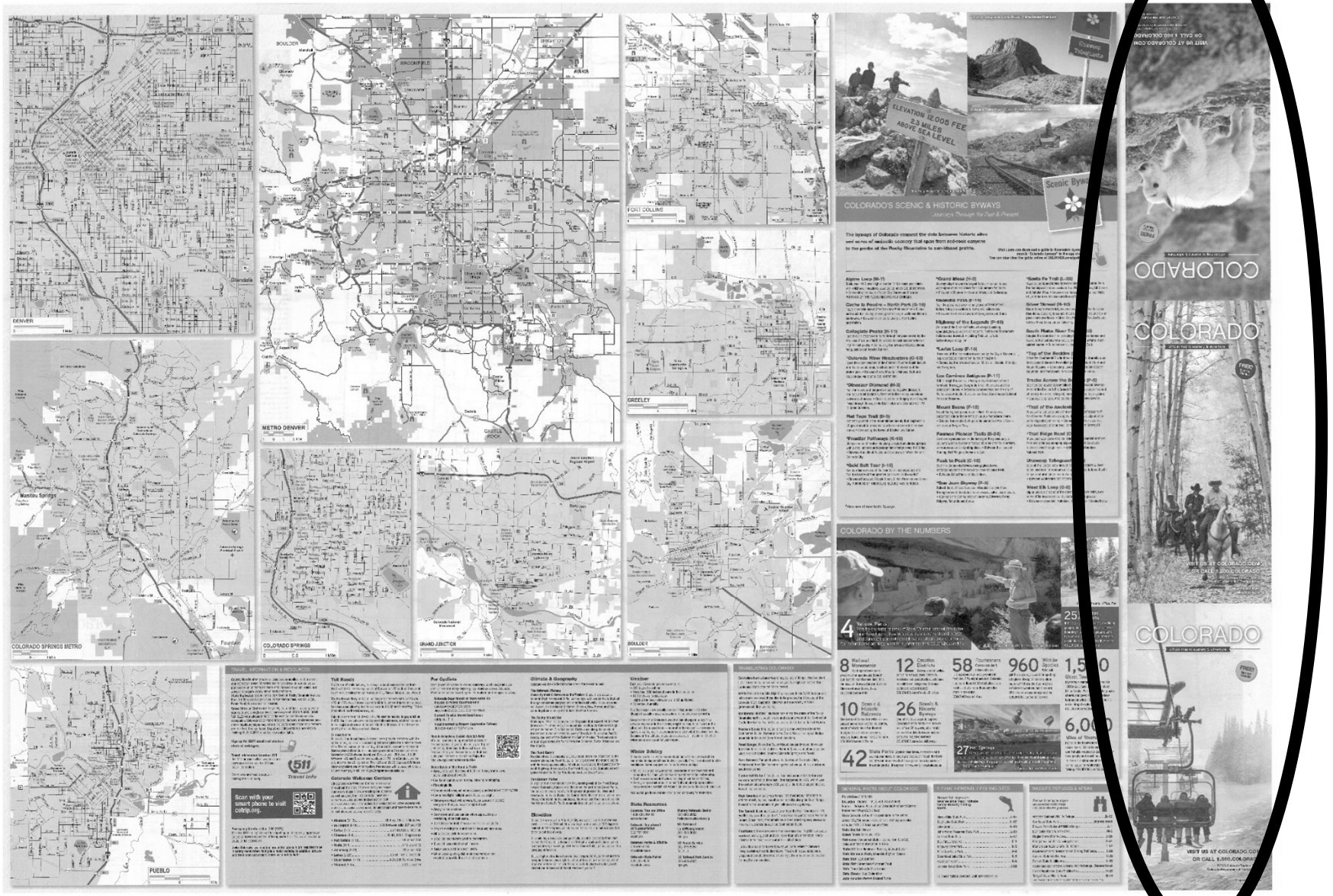
Example: Colorado (one side)



Example: Colorado (the other side)



Example: Colorado (the other side)



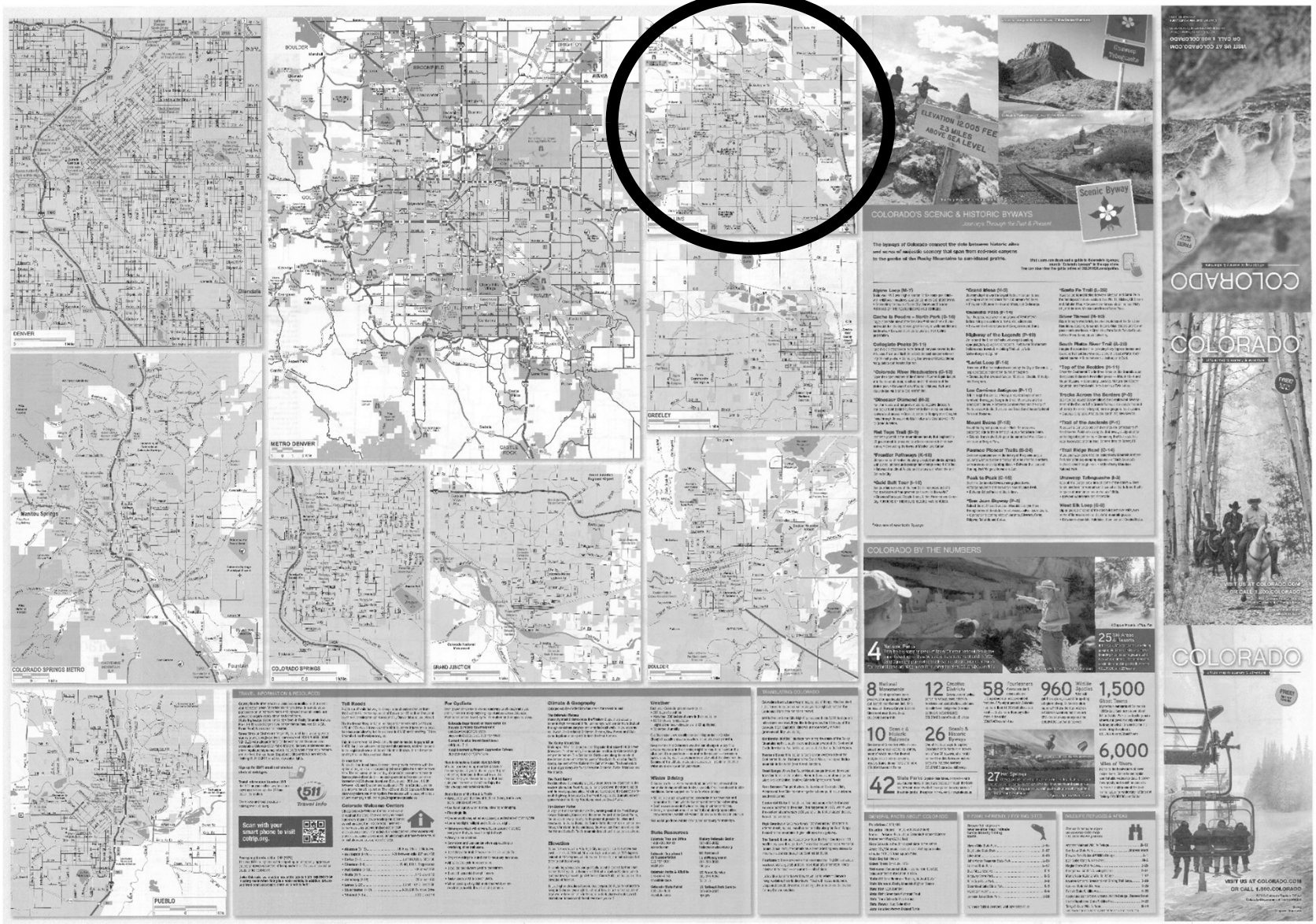
Example: Colorado (panel)

COLORADO

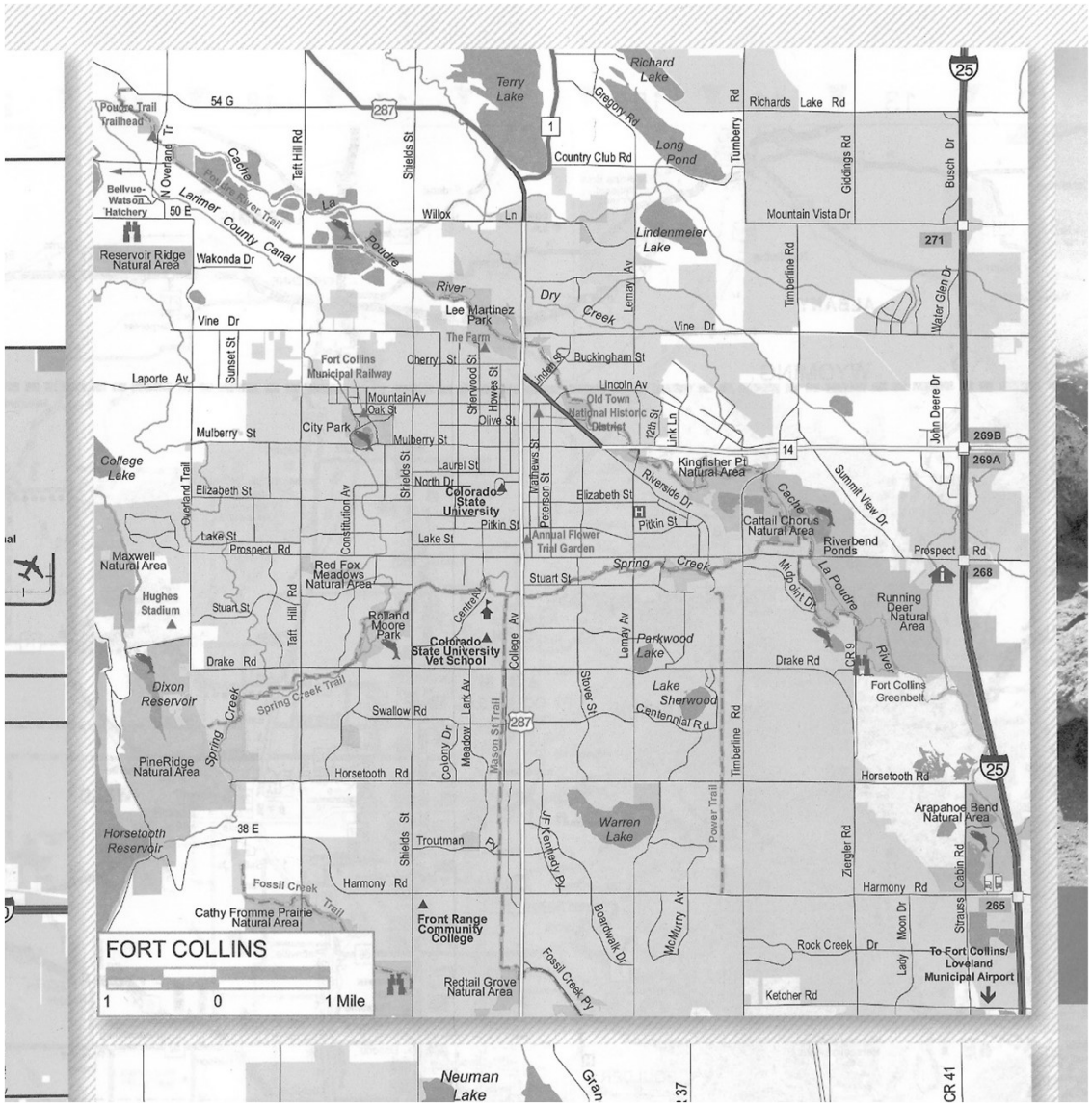
official map to scenery & adventure

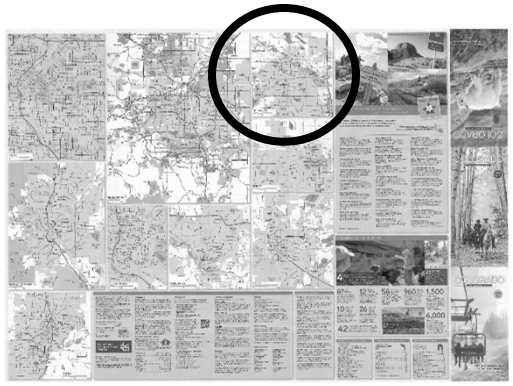
©2016 Colorado Tourism Office/
Colorado Department of Transportation

Example: Colorado (the other side)



Fort Collins detail





Ancillary map and inset map defined

Ancillary map:

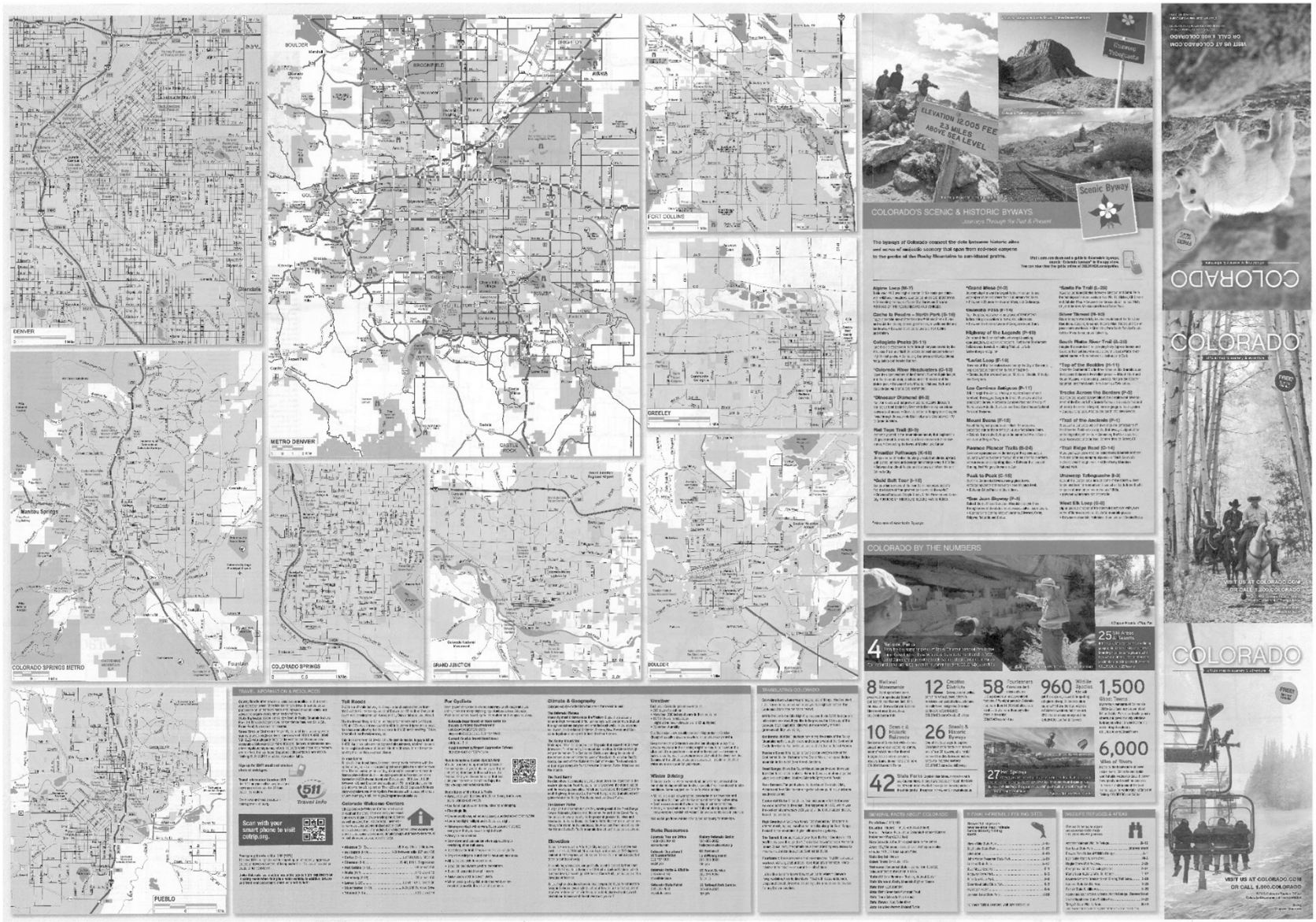
- A small supplementary or secondary map *outside* the border (“neat line”) of the principal or main map.

Inset map:

- A small supplementary or secondary map *inside* the border (“neat line”) of the principal or main map.

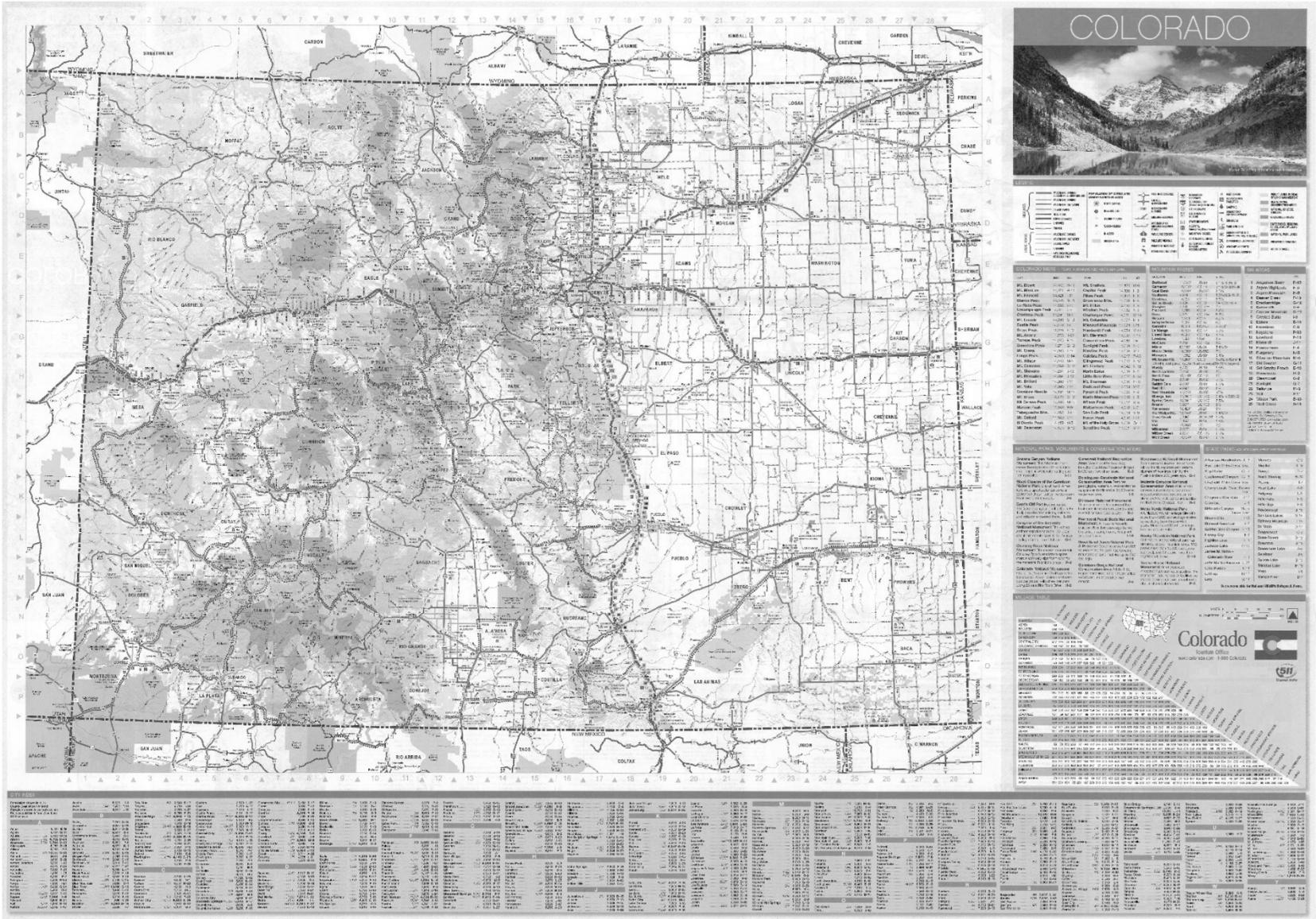
(Cartographic Resource Manual chapter 3)

Ancillary maps (plus text, illustrations, etc.)



Tim Kiser OLAC 2020

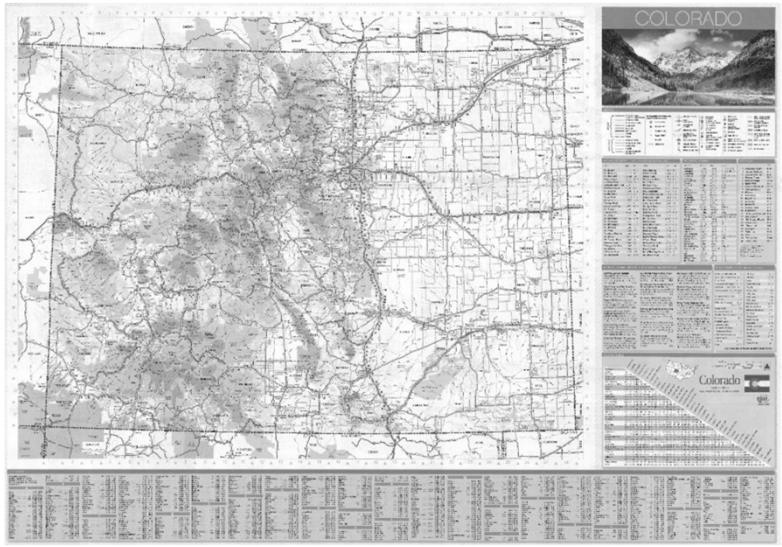
Main map (plus text, tables, etc.)



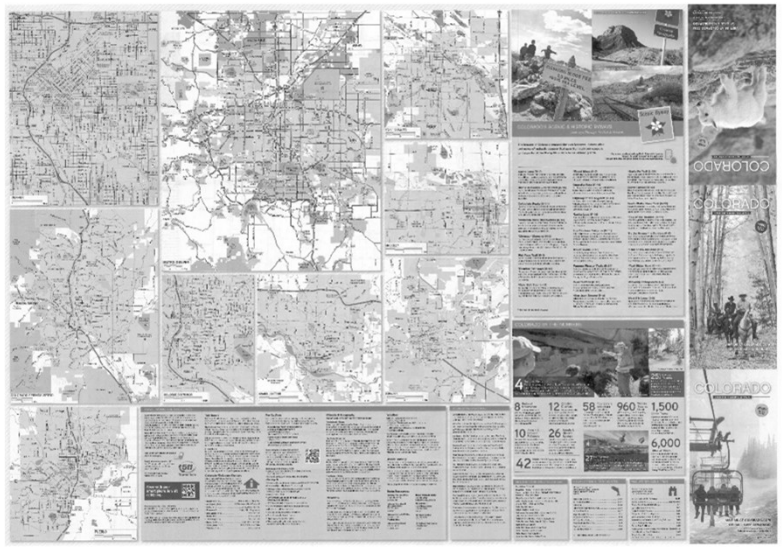
Main maps

- Cataloger always determines
- Always a matter of cataloger's judgment
- More art than science: no math-based guidelines
- Typically considerations:
  - Relative size (if multiple maps are present)
  - Publisher's intent (usually expressed by title and variant title)

Recto and verso (front and back)

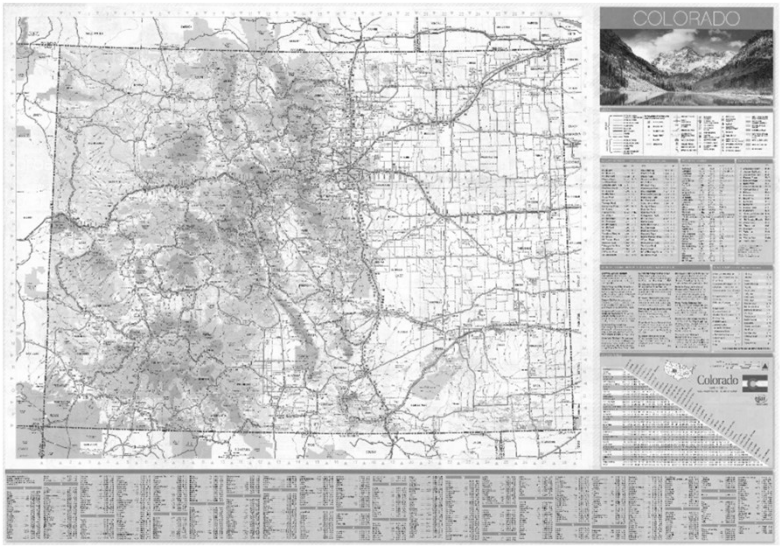


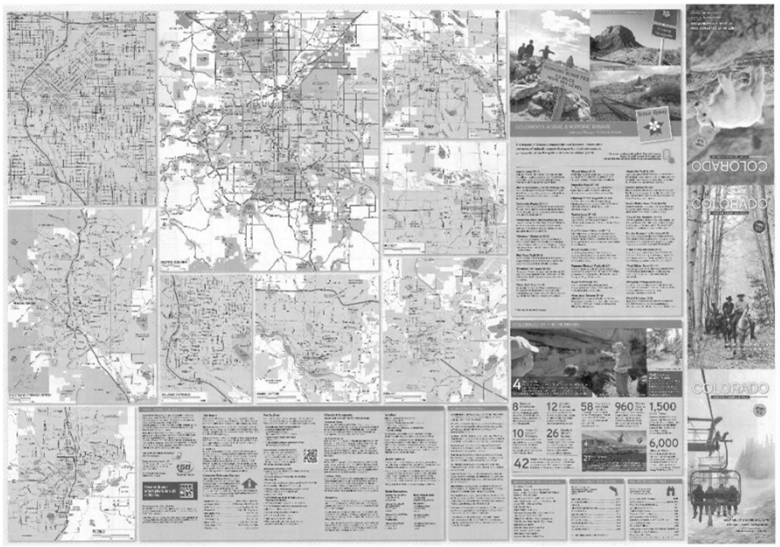
“Recto” = front:
The side with the main map



“Verso” = back:
No main map

300 $a





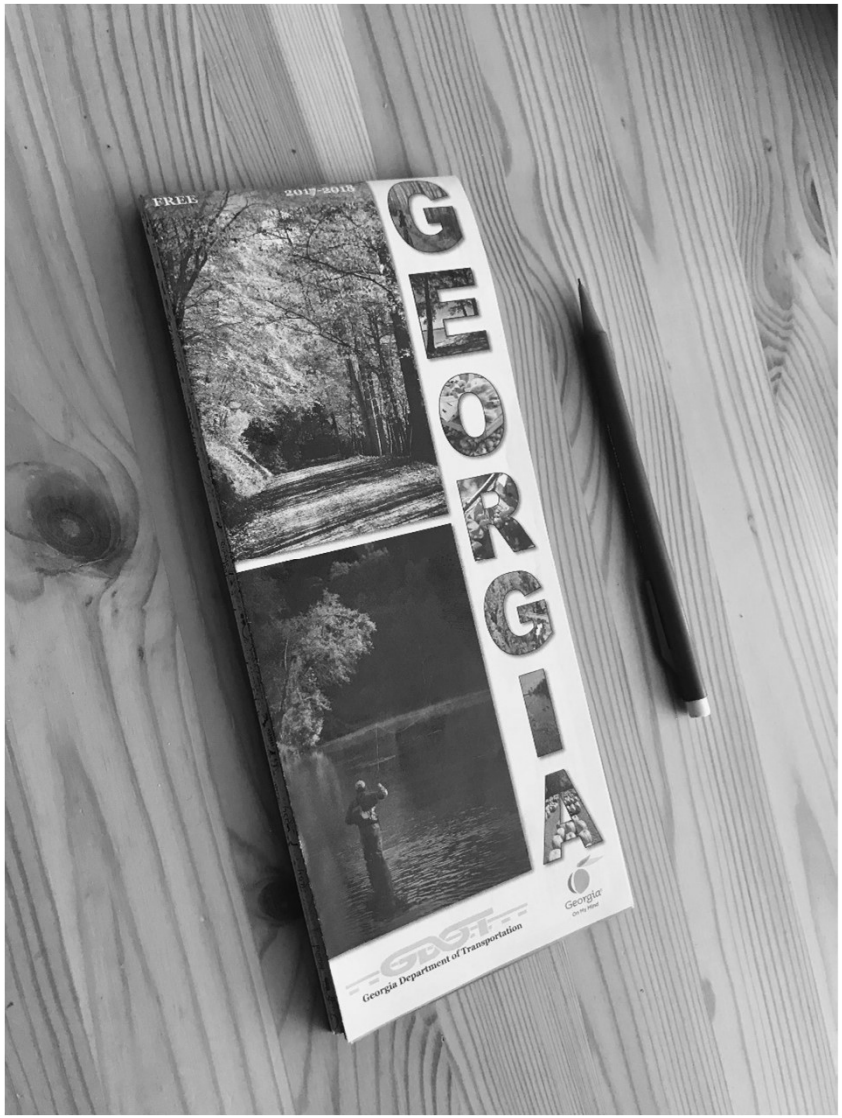
300 $a **1 map**

Important:
"1 map" refers to the *main map* (Colorado), not the entire sheet

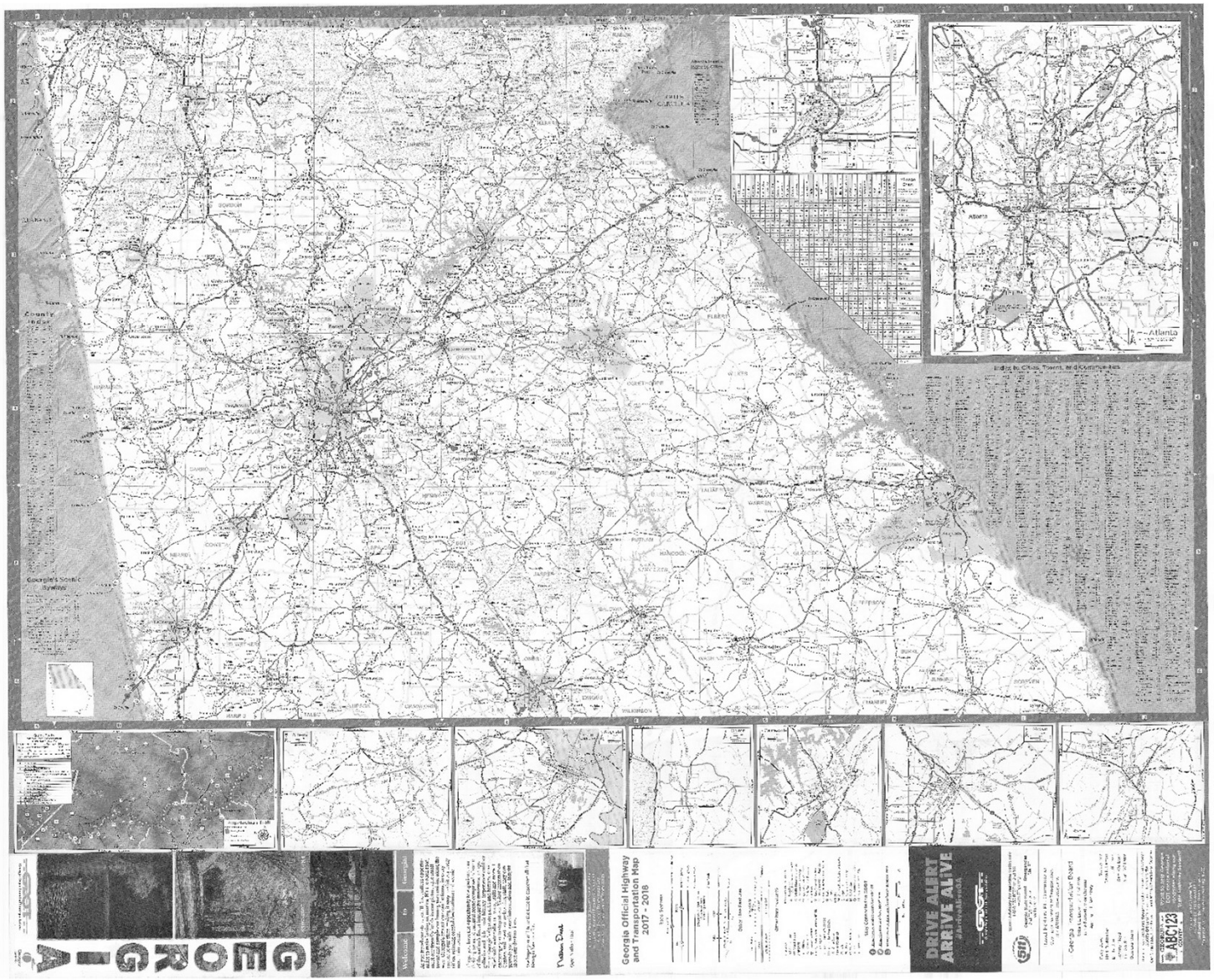
This means:

- Unlike book records, we don't mention illustrations in 300 $b
- When recording dimensions in $c, we must maintain a clear distinction between the "map" and the "sheet"

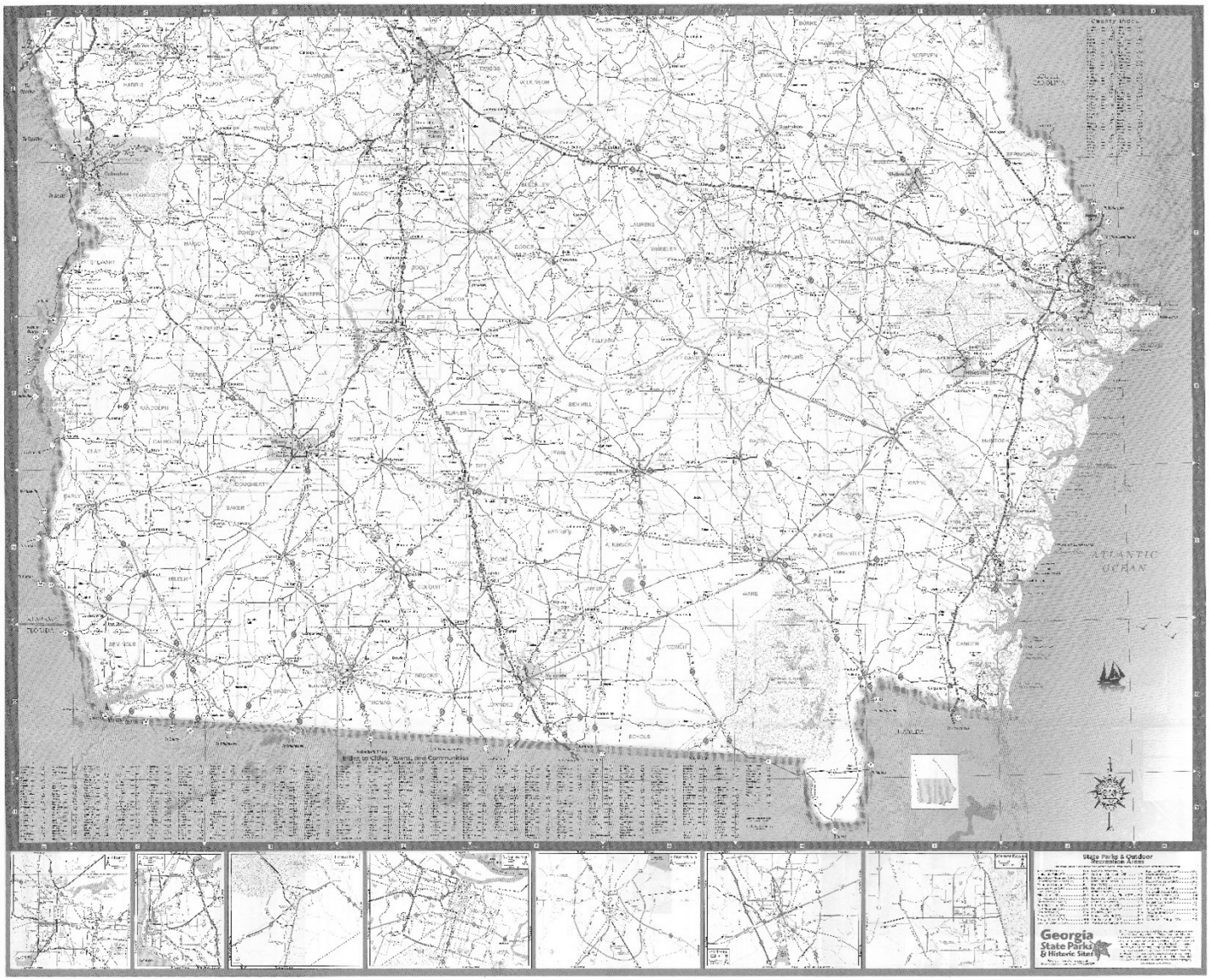
Example: Georgia (folded)



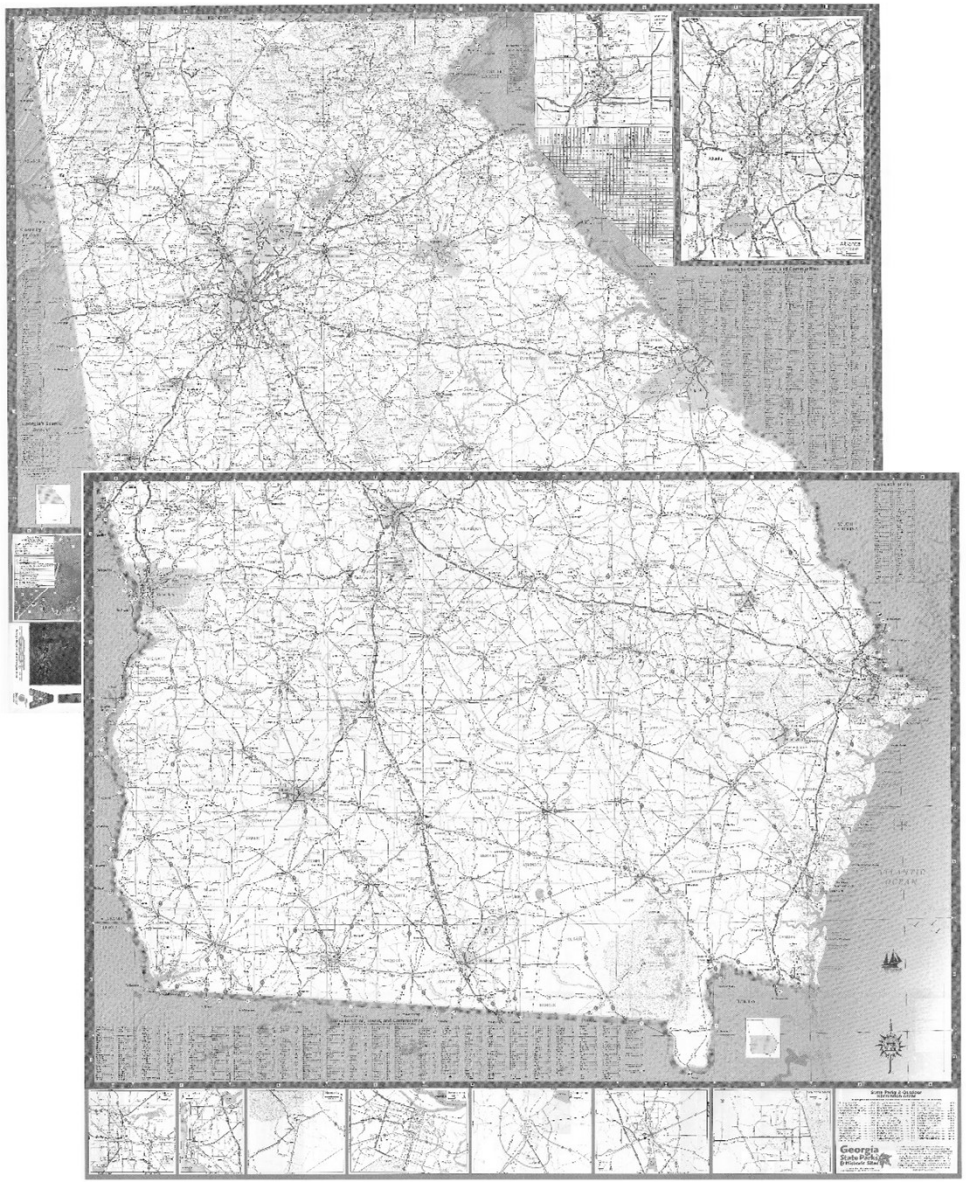
Example: Georgia (one side)



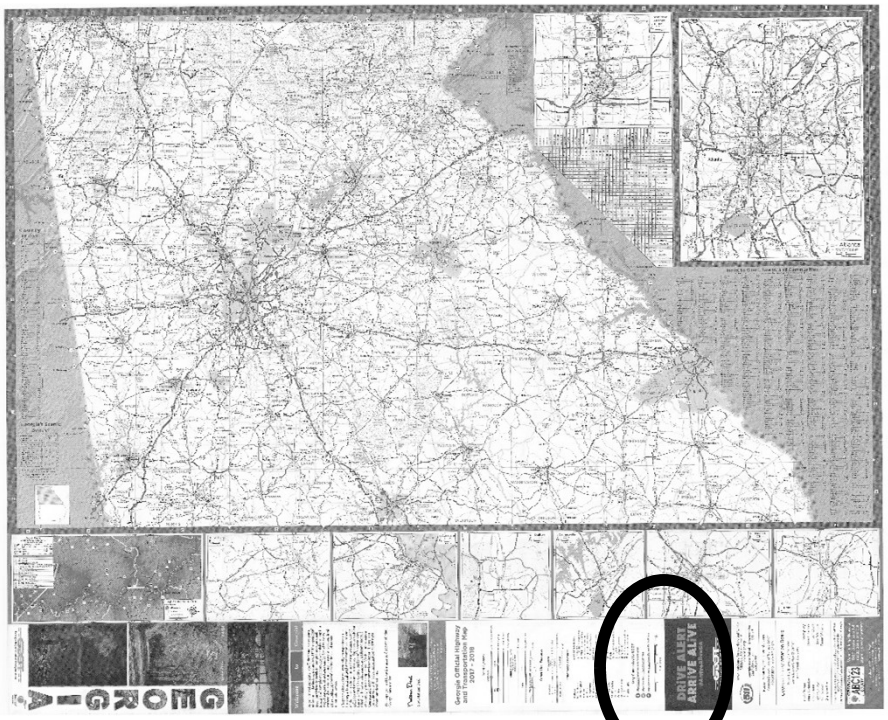
Example: Georgia (the other side)

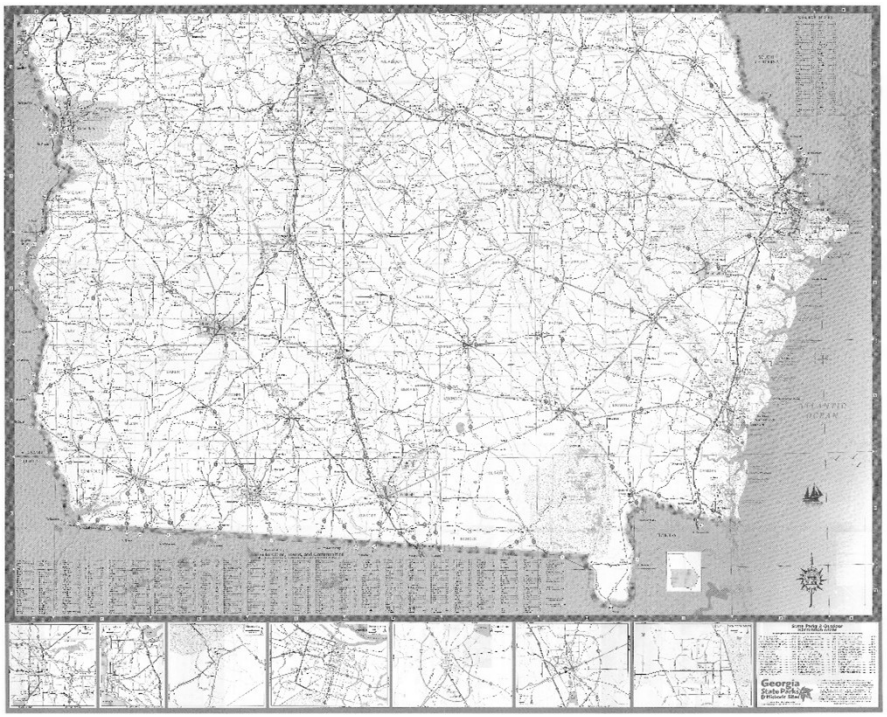


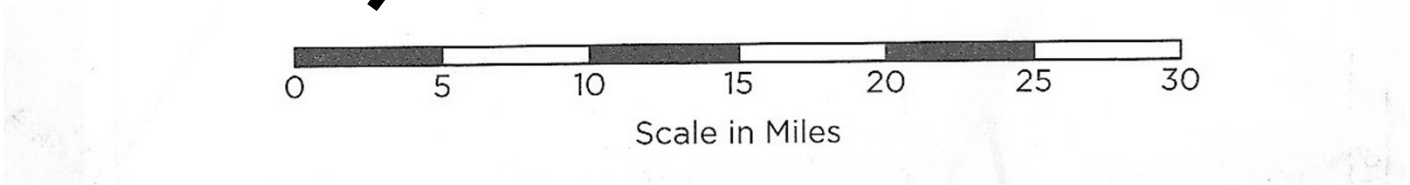
Example: Georgia (connected sides)



Example: Georgia (both sides)







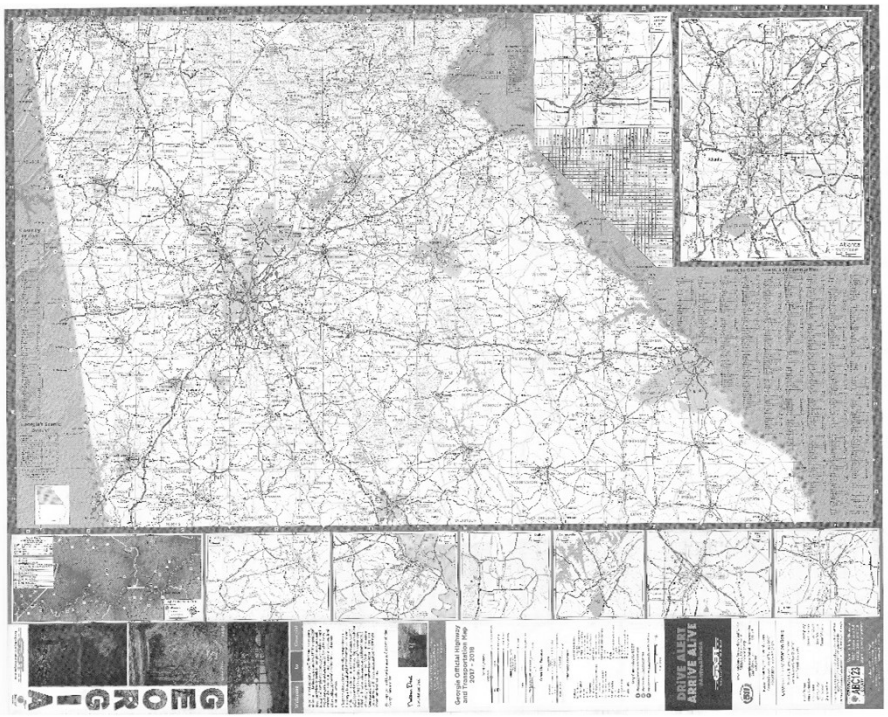
Example: Michigan as one map

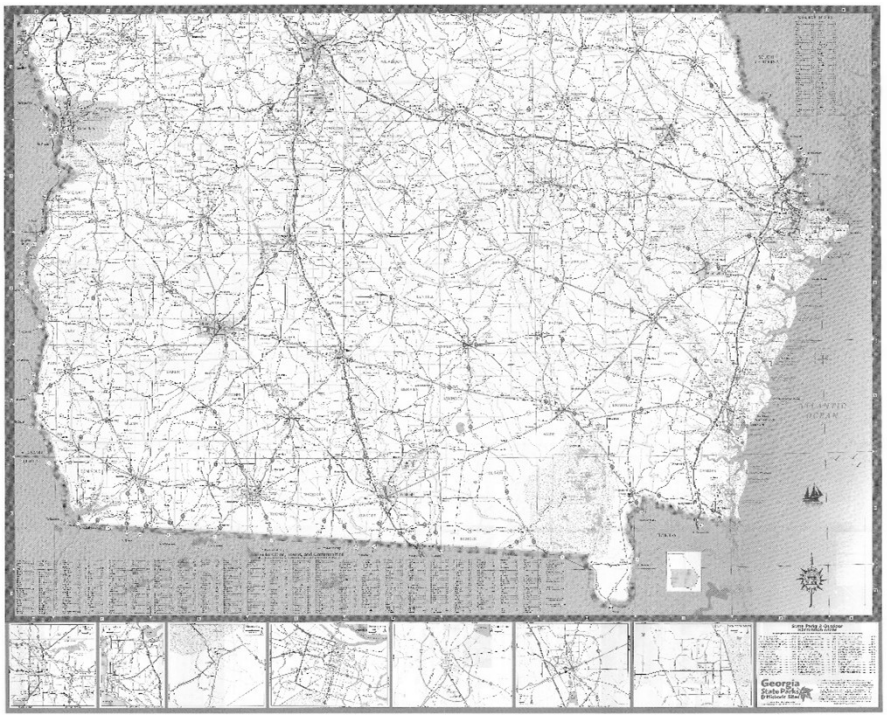
Michigan:
1 map

Example: Michigan as two maps at different scales

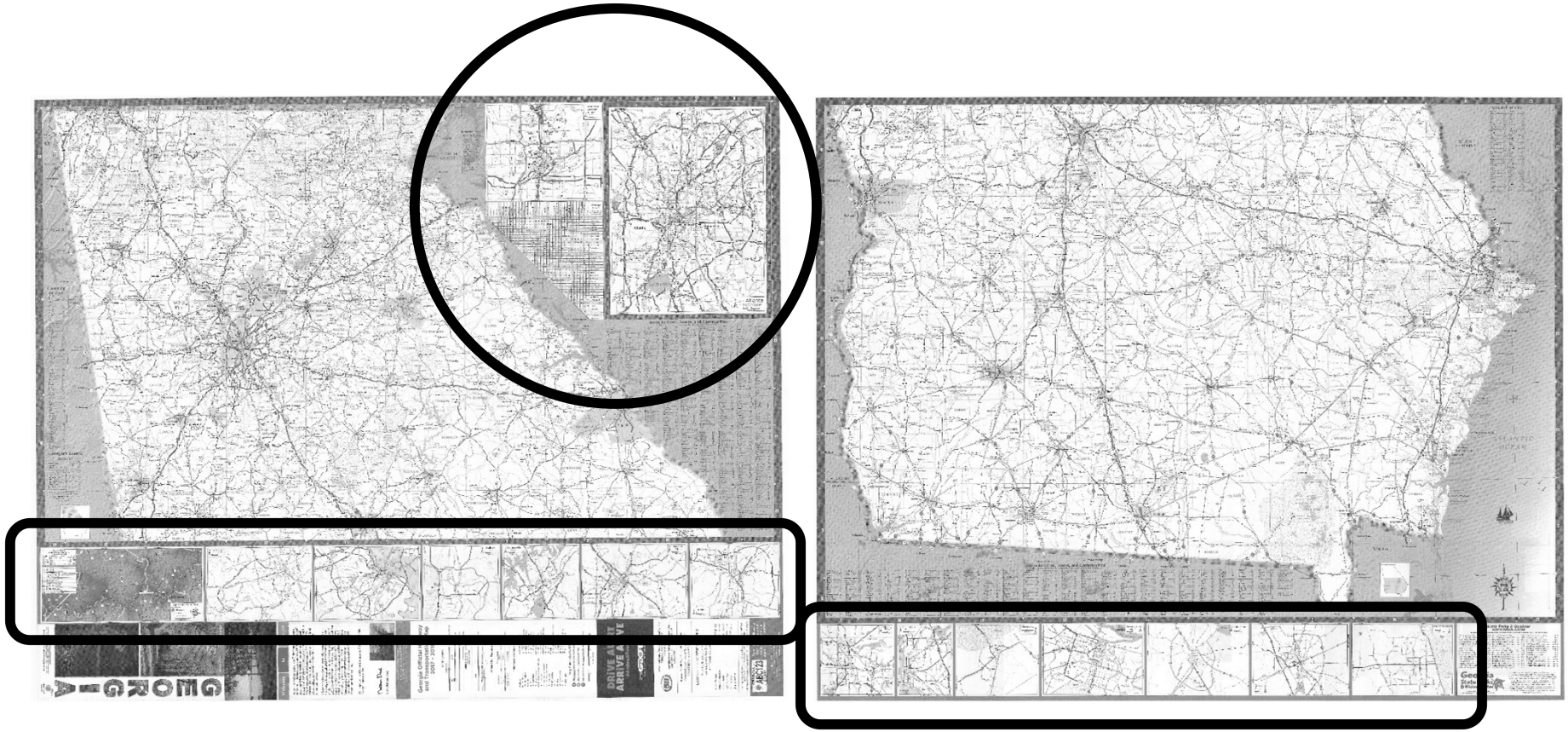
“Michigan”:
2 maps on 1 sheet

Example: Georgia (both sides)





Example: Georgia (both sides)



Georgia: 1 map on both sides

300 field:

$a 1 map :

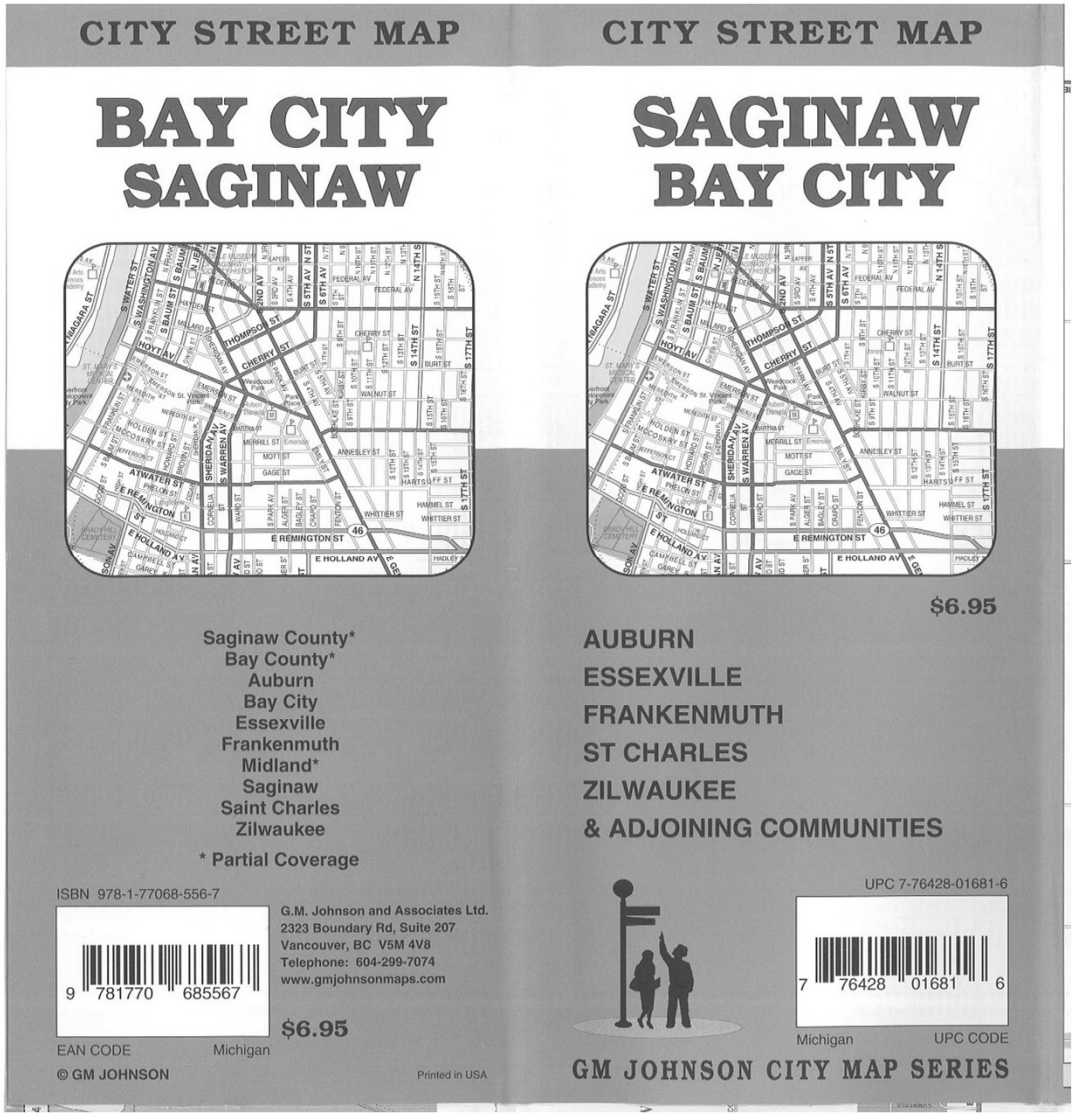
$b both sides, color ;

$c 116 x 95 cm, on sheet 77 x 97 cm, folded to 25 x 11 cm

“both sides”: RDA 3.11.1.3 (recording layout)

Map printed on both sides of one sheet: RDA 3.5.2.7

Example: Bay City, Saginaw



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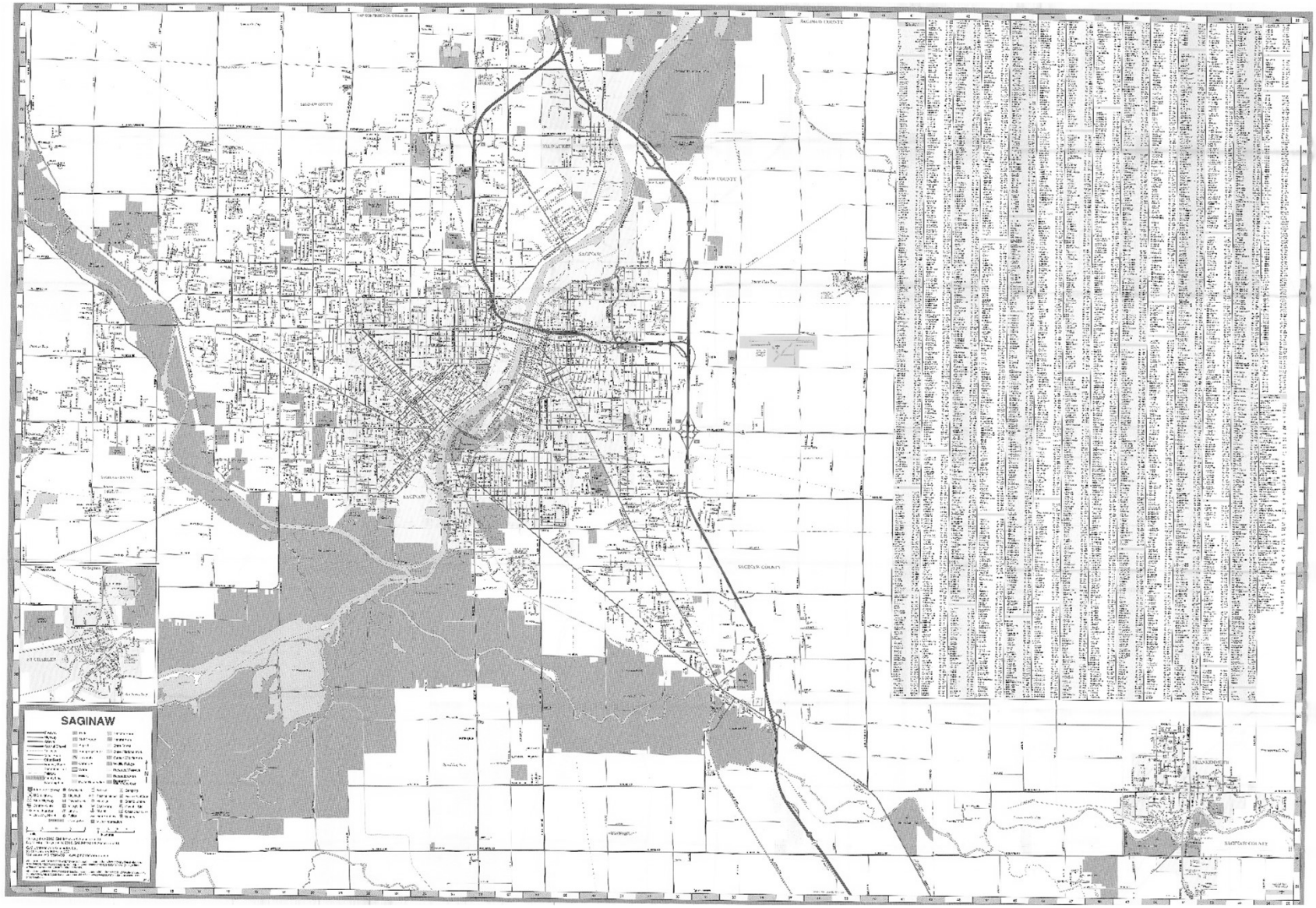

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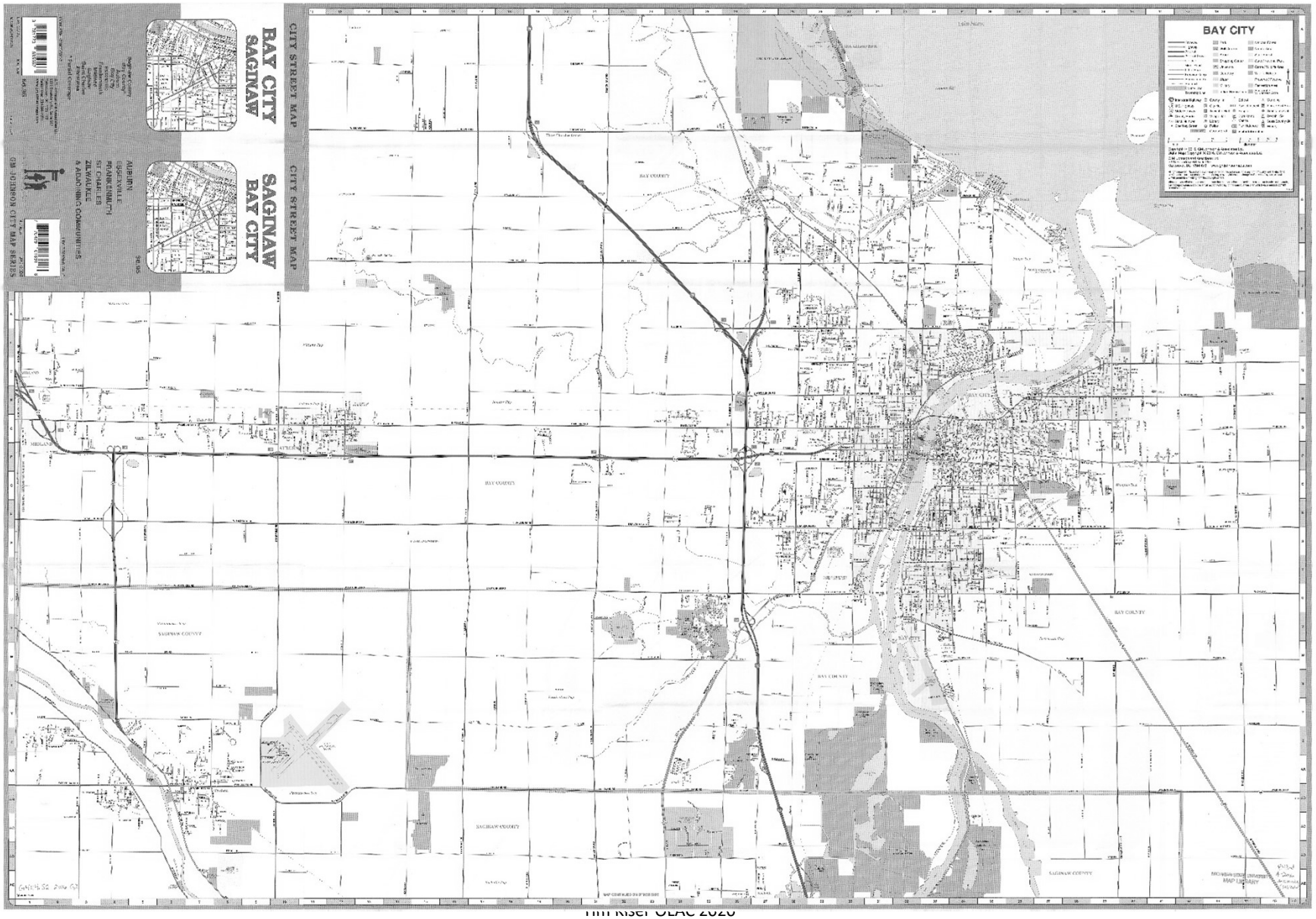


Two maps (one on each side)

This is common!

- One city on one side, a nearby city on the other
- A city on one side, a county on the other
  - Panel title: *Altoona and Blair County*
  - Use judgment: If the county map is of poor quality, and it's not mentioned in a collective title, maybe it's best to call it an ancillary map
- Commonly encountered: A detailed city map on one side, a less-detailed map of that city's metropolitan area on the other:
  - Often the metro area map is treated as an ancillary map
- When there are multiple main maps, list them in a contents note (505), with bracketed titles if necessary.

Saginaw/Bay City: 2 maps on both sides

300 field:

$a 2 maps on 1 sheet :

$b both sides, color ;

$c both 67 x 98 cm, sheet 69 x 100 cm, folded to 23 x 11 cm

Two different sizes:

66 x 98 cm and 67 x 98 cm, sheet 69 x 100 cm, folded to 23 x 11 cm

Saginaw/Bay City: 2 maps on both sides

300 field:

$a 2 maps on 1 sheet :

$b both sides, color ;

$c both 67 x 98 cm, sheet 69 x 100 cm, folded to 23 x 11 cm

In $a, generally we record the number of sheets only in cases where the number of maps and number of sheets do not match.

"1 map" implies 1 sheet (unless stated otherwise)

"30 maps" implies 30 sheets (unless stated otherwise)

“on” : only once!

$a 2 maps on 1 sheet :

$b both sides, color ;

$c both 67 x 98 cm, sheet 69 x 100 cm, folded to 23 x 11 cm

$a 1 map :

$b both sides, color ;

$c 116 x 95 cm, on sheet 77 x 97 cm, folded to 25 x 11 cm

The word “on” is used only at the first mention of the sheet (wherever that occurs).

Saginaw/Bay City *and* Georgia

If “main map” content is present on both sides of a sheet, that sheet does not have a recto or verso.

Important to remember when organizing notes

Multiple main maps:
Keep the order consistent throughout the record
(especially 034/255, 300, 505)

Title: ***Fort Dodge and Webster County, Iowa***

034 a $b 30000

034 a $b 100000

255 Scale approximately 1:30,000

255 Scale 1:100,000

300 2 maps on 1 sheet : $b both sides, color ; $c 67 x 98 cm and 45 x 70 cm, sheet 72 x 102 cm, folded to 23 x 11 cm

505 Fort Dodge, Iowa, street map – Webster County.

Video: How to Measure a Map (Paige Andrew, Pennsylvania State University) *~14 minutes*

https://www.youtube.com/watch?v=pBqUBLM5VQs

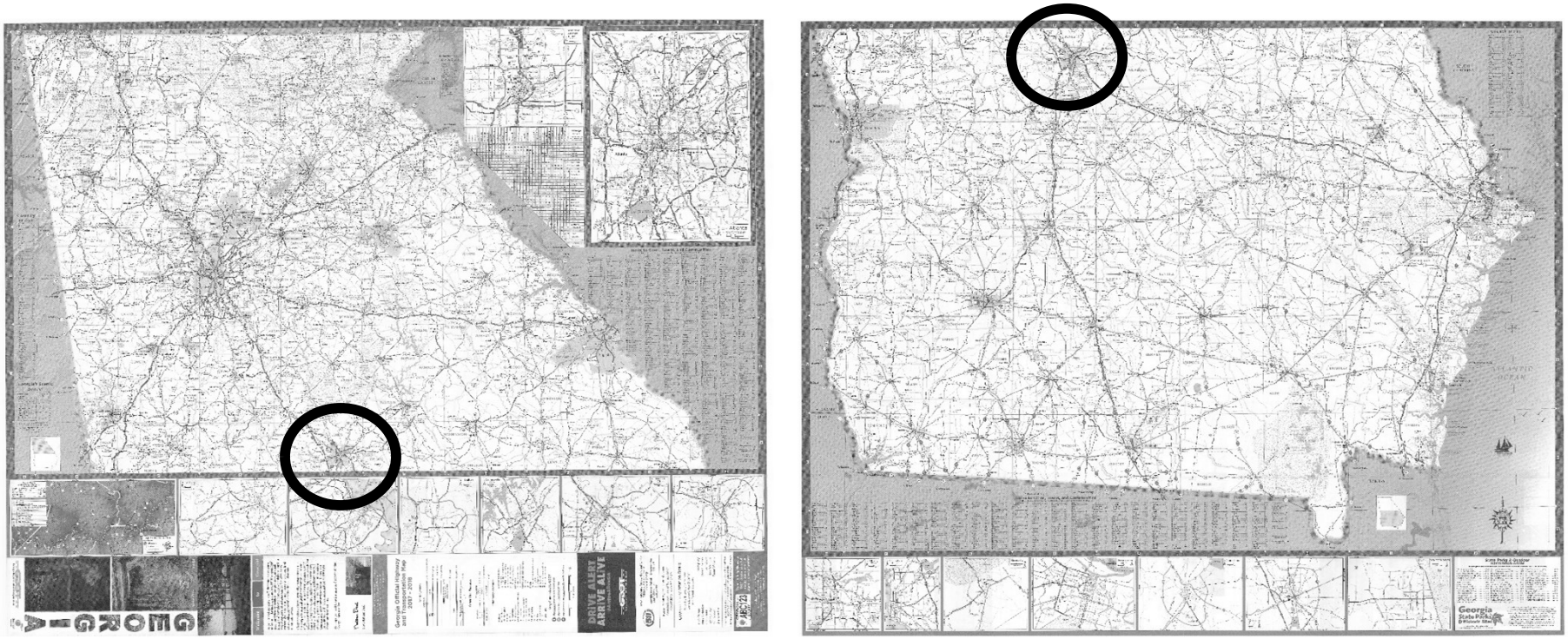
Short url: http://tiny.cc/MeasureMap

(Please note Paige's description of the "neat line")

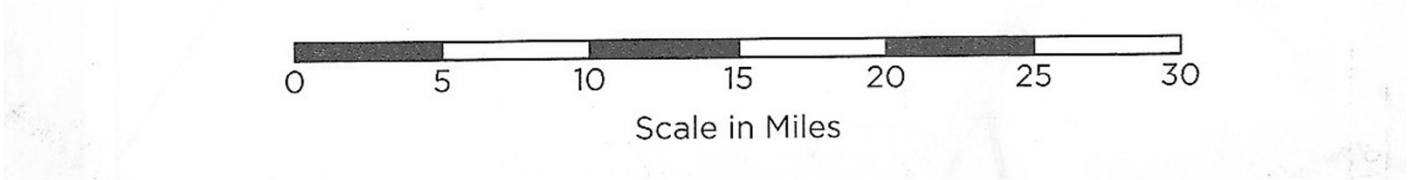
After the video: A couple of additional points, then questions and discussion

[Blank slide]

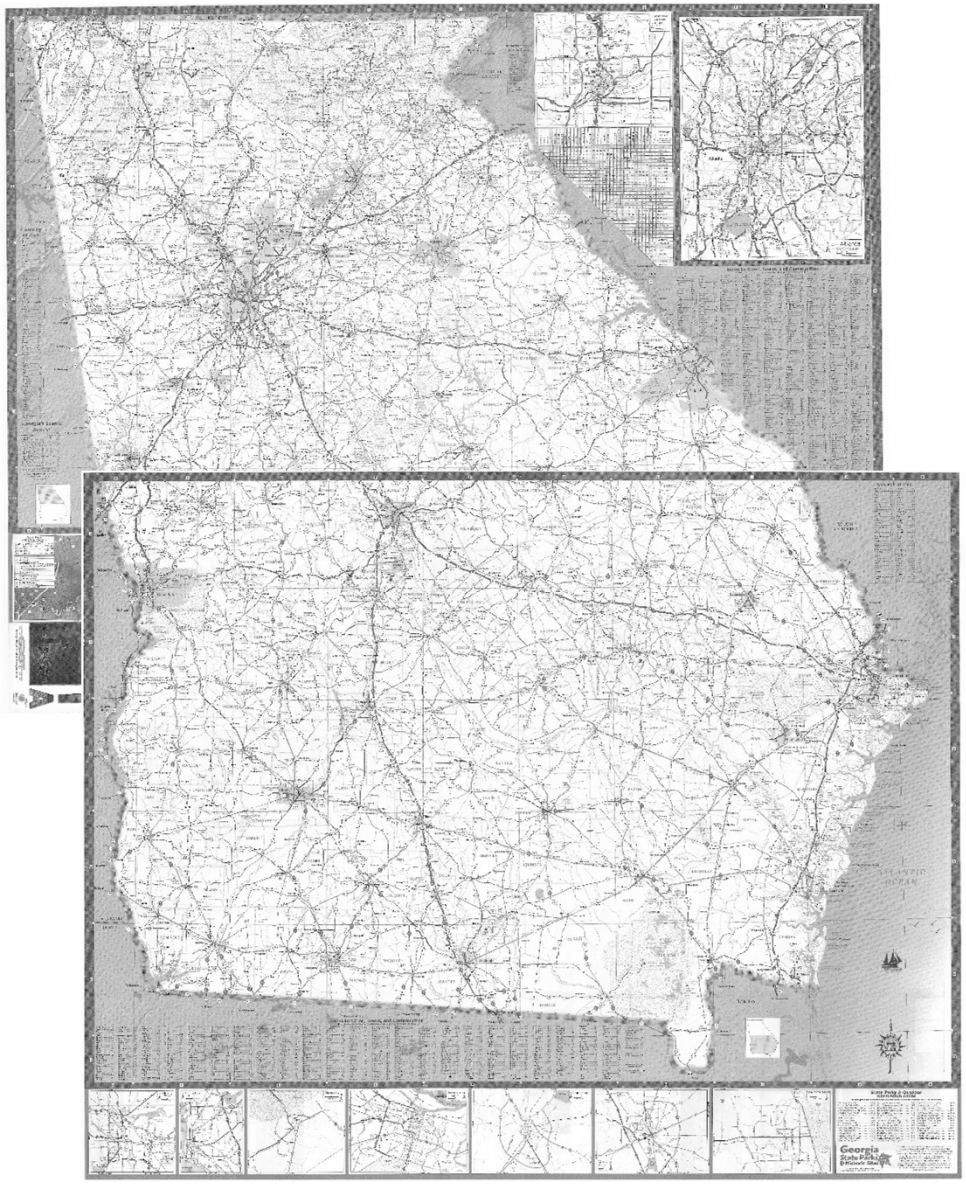
Example: Georgia (both sides)



The city of Macon is shown twice



Example: Georgia (connected sides)



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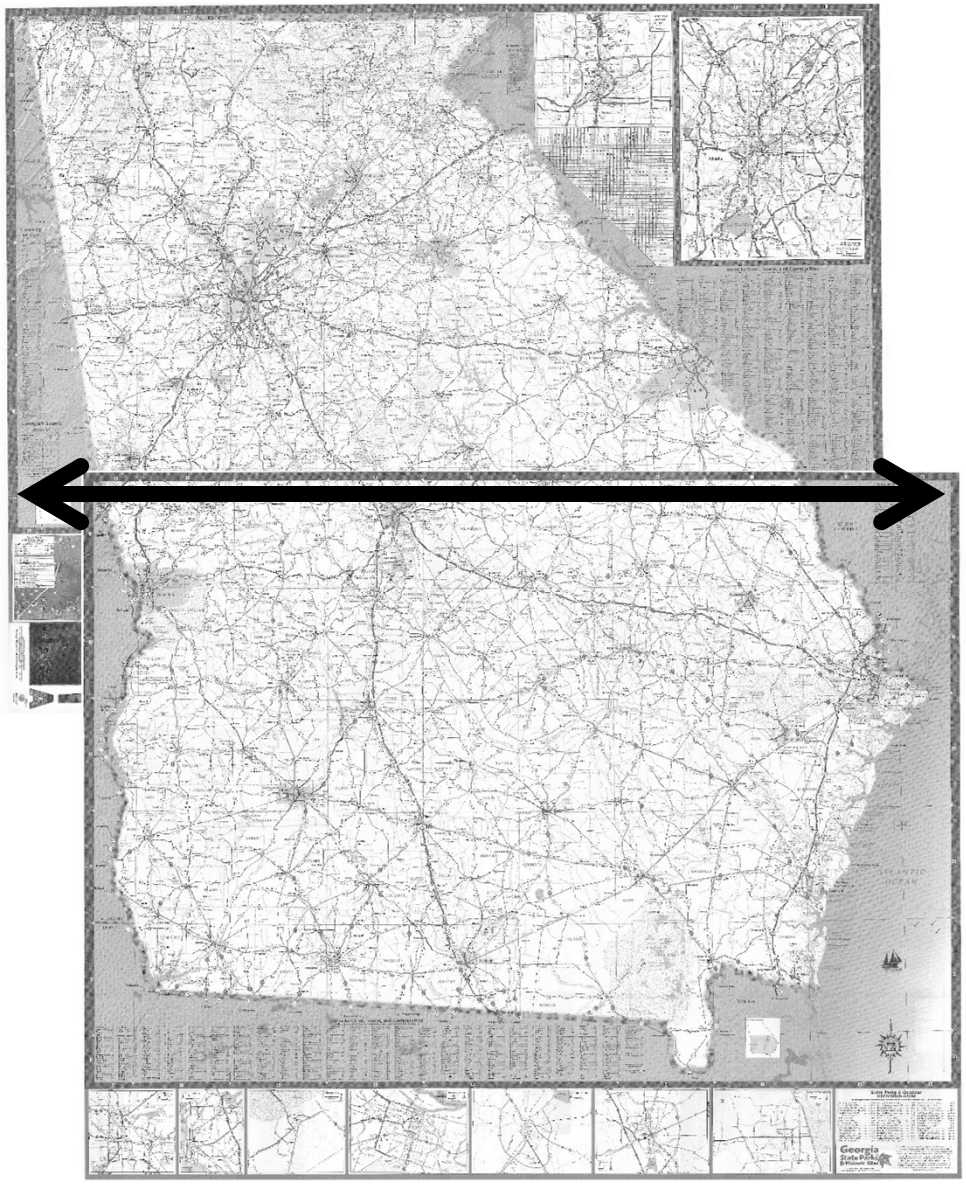


3+ main maps

RDA 3.5.2.3

If there are 3 or more main maps of different sizes (or they're on different-sized sheets):

- Use the format
  - [*max top-to-bottom*] x [*max side-to-side*] cm **or smaller**
  - 86 x 115 cm or smaller

The two maximum dimensions might not be on the same map or sheet.

Questions and discussion

- Physical description (300)
- **Title proper + variant title(s) (245/246 $a/$b)**
- Statement of responsibility (245 $c)
- Creator/contributor access points (1xx/7xx)
- Mathematical cartographic data (255)
- Coded mathematical cartographic data (034, Proj fixed field)
- Relief notes and related fixed fields

Map titles

Common scenarios:

- Single title that can only be read one way
- Single title that can be read differently and still make sense (layout, typography factors)
- More than one title to choose from (titles in different locations)

RDA coverage of Title proper

RDA Instruction 2.3 = Title

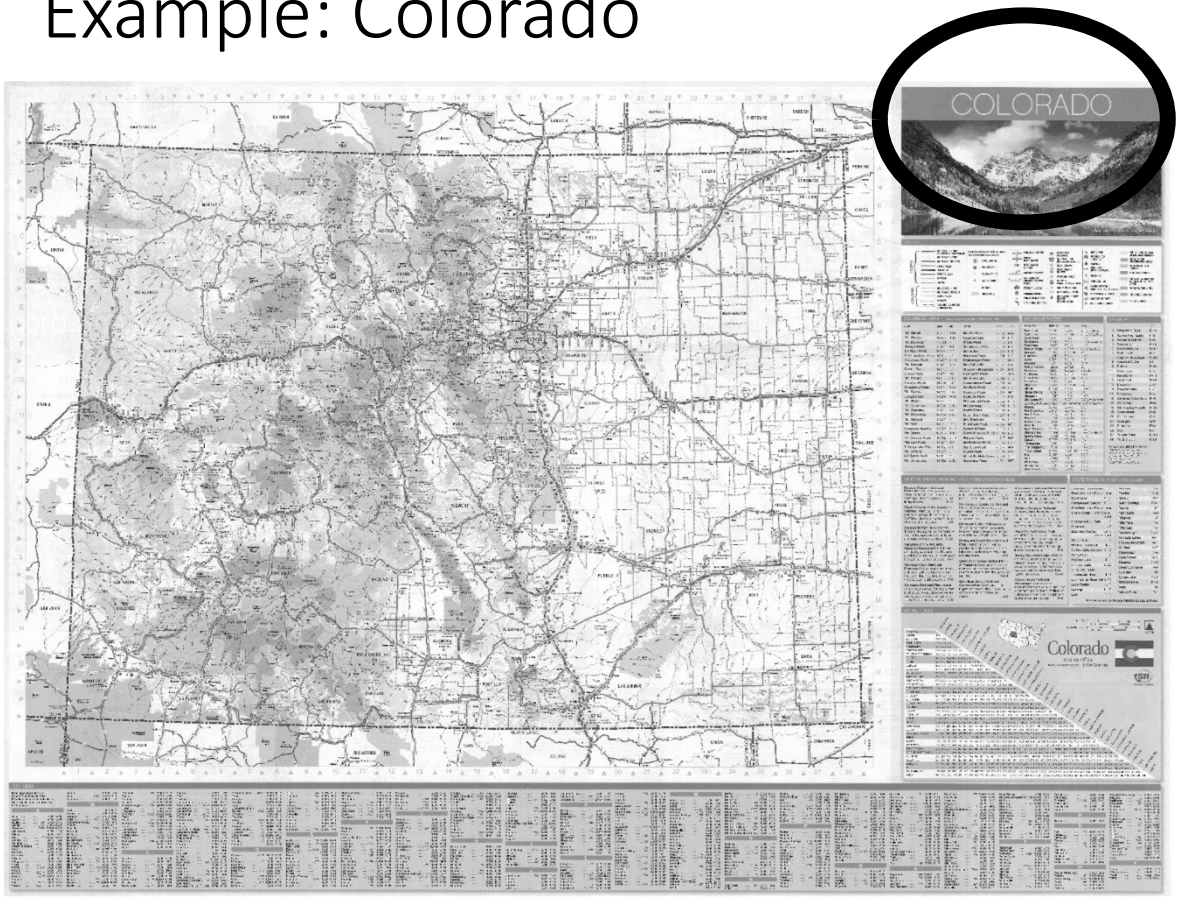
- Title proper is a core element, other title types are optional
- 2.3.2 = Title proper
- **2.3.2.5** = Title in more than one form (very important, see separate handout for how to choose)

Two or more titles: How to choose the title proper

RDA 2.3.2.5 “If the sequence, layout, and typography do not provide the basis for a clear choice, choose the most comprehensive title.”

In practice, this means we generally choose the most comprehensive title. RDA asserts no preference for a title “on the map” vs. a panel title.

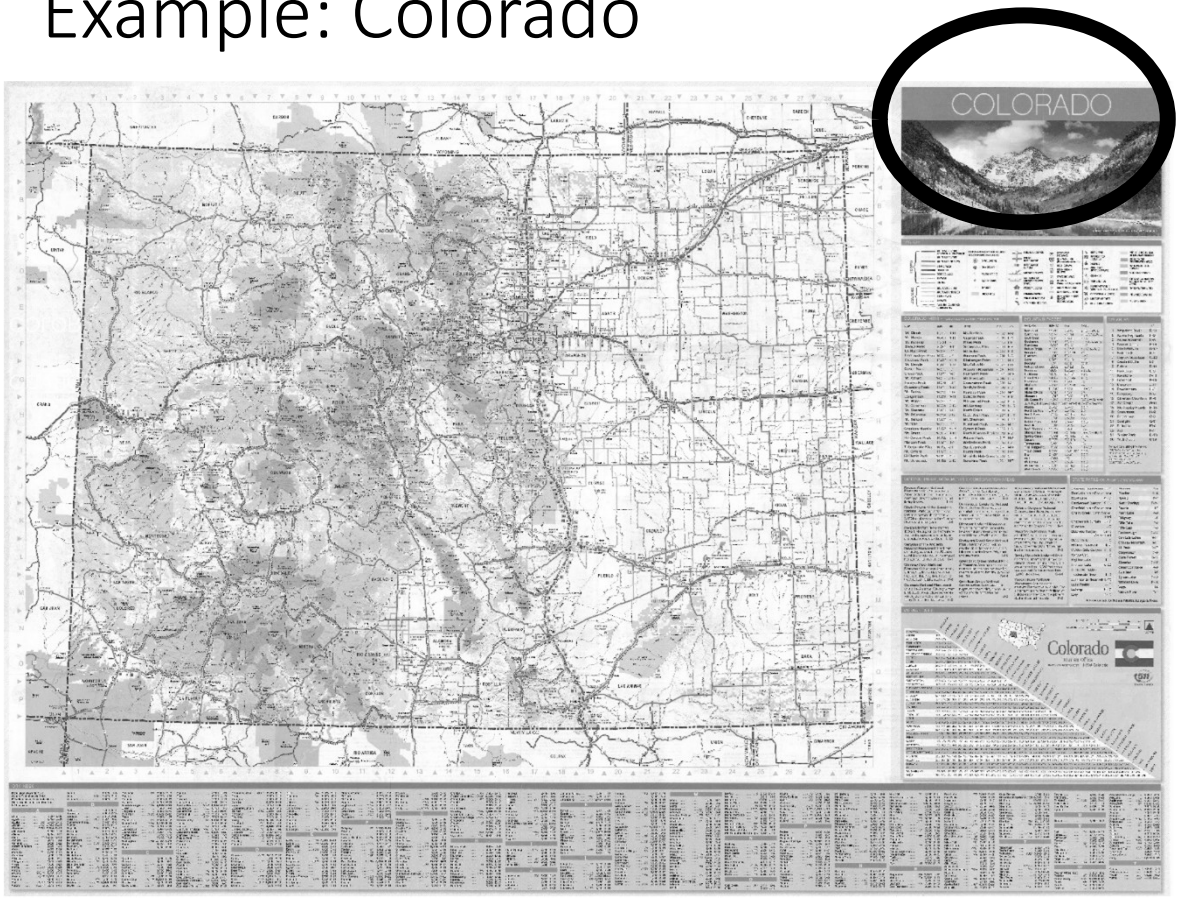
Example: Colorado



Map title/legend title: *Colorado*

Panel title: *Colorado, official map to scenery & adventure*

Example: Colorado



There are pre-RDA standards that required the choice of *Colorado* based on its location.

Evidence of this practice remains widespread in older records.

Title does not indicate geographic coverage

RDA 2.3.4.5: If the title "does not include an indication of the geographic area covered," we add it in brackets. In MARC field 245, we enter this as the last thing in subfield b, following a space-colon-space.

245 00 Land use : $b [Albuquerque, New Mexico]

Title does not indicate geographic coverage

In practice, we apply this instruction most often when a geographic area is not *adequately* identified (i.e., is ambiguously identified):

245 10 Map of Springfield : $b [Ohio]

245 10 Springfield visitor map and attractions guide : $b including lodging and dining : [Springfield, Ohio]

245 10 Historic sites of Washington County : $b [Ohio]

245 10 Washington County visitor map including lodging and dining : [Washington County, Ohio]

- Physical description (300)
- Title proper + variant title(s) (245/246 $a/$b)
- **Statement of responsibility (245 $c)**
- **Creator/contributor access points (1xx/7xx)**
- **Questions**
- Mathematical cartographic data (255)
- Coded mathematical cartographic data (034, Proj fixed field)
- Relief notes and related fixed fields

Statements of responsibility

- The words “prepared by” on a map are the best indicator of cartographic responsibility.
- Statements of responsibility are often corporate bodies.
- It’s common for the same corporate body to appear in both the statement of responsibility (245 $c) and name of publisher (264_1 $b) subfields

Creator/contributor access points

RDA 19.2.1.1.1 (Corporate bodies considered to be creators):

- Corporate bodies are considered to creators in the case of
  - cartographic works originating with a corporate body other than a body that is merely responsible for their publication or distribution

Definitely map creators:

- U.S. Geological Survey, departments of transportation, local governments, park districts, CIA, Rand McNally, AAA

What about tourist bureaus? Often yes, because cartographic works do “originate” with them

Creator/contributor access points

Common relationship designators for creators:

- Cartographer (obviously)
- Creator (not strictly RDA, but permitted by LC/PCC-PS for I.1, via Guideline 4 of *PCC Training Manual for Applying Relationship Designators in Bibliographic Records*)

Common relationship designators for contributors:

- Compiler (Example usage: “topography compiled by”)
- Editor (“edited by,” “revised by”)
- Surveyor (“land survey by”)
- Photographer (“Aerial photography by”)
- Publisher (per LC/PCC-PS for I.1)

Questions about titles, creators, etc?

- Physical description (300)
- Title proper + variant title(s) (245/246 $a/$b)
- Statement of responsibility (245 $c)
- Creator/contributor access points (1xx/7xx)
- **Mathematical cartographic data (255, 034, Proj fixed field)**
  - **Scale, projection, coordinates**
- Relief notes and related fixed fields

Scale, projection, coordinates

Scale:

- “Eye-readable”: 255 $a
- “Encoded”: 034 $b

Projection:

- “Eye-readable”: 255 $a
- “Encoded”: Proj fixed field (2-letter code)

Coordinates:

- “Eye-readable”: 255 $c
- “Encoded”: 034 $d $e $f $g

I will focus on 255. Consult OCLC’s documentation for 034 and Proj for good examples of how to reformat the 255 content into coded form for 034/Proj.

What is geographic scale?

map distance : ground distance in the same units

OR

$$\text{Map Scale} = \frac{\text{Map Distance}}{\text{Earth Distance}}$$

Scale is recorded as a ratio called a Representative Fraction (RF). Covered in RDA by **7.25.1.3.**

We record scale as RF even when it isn't stated this way on the map.

1:600

1:62,500

1:1,140,480

Typical scale format shown on map

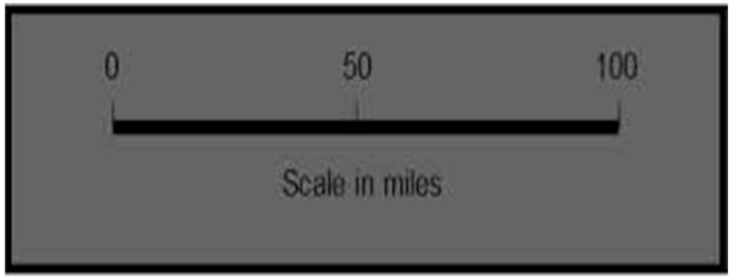
I. Representative fraction:

1:24,000

II. Verbal:

1 inch = 1 mile

III. “Scale bar” or graphic scale diagram:



Verbal form of scale

When encountering something like “1 inch equals 70 miles” or “600 ft. to the in.” there is a bit of work to do.

- Important w/miles: 63,360 inches in a mile

Other units of measure are common, such as knowing that 1 ft = 12 in or 1 km = 1000 m = 100,000 cm

These calculations are easy, for example…

Verbal form of scale

To convert inches/miles statement:

- Multiply number of miles by 63,360:
  - 1 inch = 6 miles (6 x 63360 = 380,160) or Scale 1:380,160

To convert inches/feet statement:

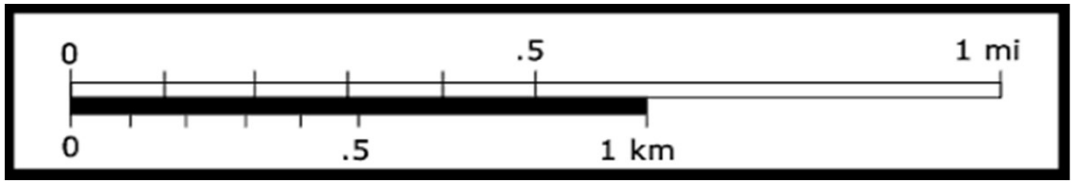
- Multiply number of feet by 12:
  - 1 inch = 5000 feet (12 x 5000 = 60,000) or Scale 1:60,000

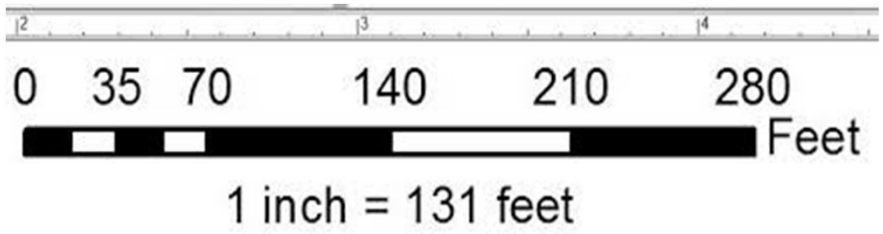
To convert centimeters to kilometers statement:

- Multiply number of kilometers by 100,000:
  - 1 cm = 5 km (5 x 100,000 = 500,000) or Scale 1:500,000

Graphic or “bar” form of scale

Bar scales appear in many forms but are, in all cases, a line segmented at specific distances. For example:



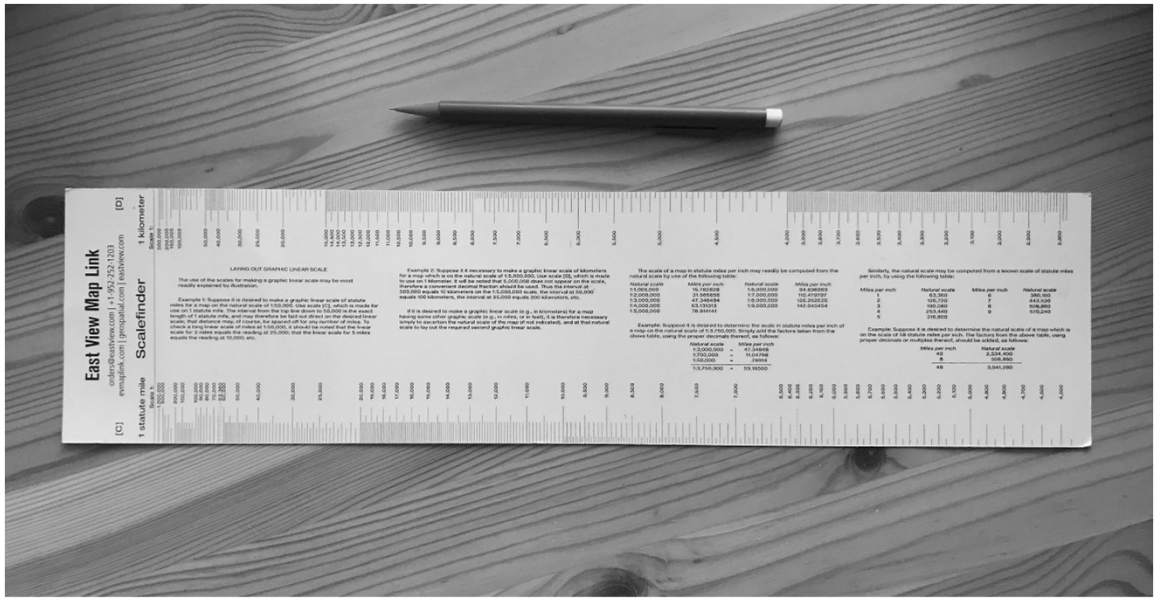


Calculation tools

- There are many online scale calculators – do a web search for “map scale calculator” and choose your favorite. (Check the math first!)
- There is a desktop application called “ScaleFinder 7.0” created by Nigel James of Oxford University. It is my favorite, but I cannot vouch for the security of the download:

http://freemappingtools.yolasite.com/scale-finder.php
Short url: http://tiny.cc/scalefinder

Natural Scale Indicator



East View Map Link Scalefinder by East View Press

https://www.evmaplink.com/East_View_Map_Link_Scalefinder_by_East_View_Press_p/2050259b.htm

~$5. Do a web search for “East View Map Link Scalefinder”

Natural Scale Indicator

Video: How to Use the Natural Scale Indicator
by Susan Moore, University of Northern Iowa
~3 minutes

https://www.youtube.com/watch?v=vSus_5bt440

Short url: tiny.cc/NaturalScale

Supplied scale phrases

When scale is *not shown* in one of the three methods we've covered, or when we are dealing with certain distinct situations, we supply one of the following four phrases.

See RDA **7.25.1.3** for applying the phrases:

- Scale not given *(very common)*
- Not drawn to scale *(classic example: schematic map showing subway lines)*

See RDA **7.25.1.4** for applying the phrases:

- Scale varies *(very rare – shifting scale on a single map)*
- Scales differ *(more common – multiple maps at different scales)*

The most commonly-used phrases are "Scale not given" and "Scales differ".

255 $a (Scale)

OCLC documentation for MARC field 255 provides numerous excellent examples of formatting this field.

Printed on map: 1:50,000

255 Scale 1:50,000

Printed on map: a scale bar. Cataloger uses a natural scale indicator to calculate a scale of ~1:50,000

255 Scale approximately 1:50,000

(If we calculate scale by measuring a scale bar using a ruler or a natural scale indicator, we always add the word “approximately.” Scales calculated this way were bracketed pre-RDA. They are never bracketed in RDA.)

old AACR2 records: Scale [ca. 1:50,000]

RDA equivalent: Scale approximately 1:50,000

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RDA equivalent: Scale approximately 1:50,000

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OCLC documentation for MARC field 255 provides numerous excellent examples of formatting this field.

Printed on map: 1:50,000

255 Scale 1:50,000

Printed on map: a scale bar. Cataloger uses a natural scale indicator (or ruler and math) to calculate a scale of ~1:50,000

255 Scale approximately 1:50,000

(If we calculate scale by measuring a scale bar using a ruler or a natural scale indicator, we always add the word “approximately.” Representative fractions calculated this way were bracketed pre-RDA. They are never bracketed in RDA.)

old AACR2 records:	Scale [ca. 1:50,000]
RDA equivalent:	Scale approximately 1:50,000

Rounding scale bar measurements: Cataloger’s judgment.

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OCLC documentation for MARC field 255 provides numerous excellent examples of formatting this field.

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old AACR2 records: Scale [ca. 1:50,000]

RDA equivalent: Scale approximately 1:50,000

Rounding scale bar measurements: Cataloger's judgment, except: See *Cartographic Materials* or DCRM(C) for a rounding table for early maps.

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OCLC documentation for MARC field 255 provides numerous excellent examples of formatting this field.

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old AACR2 records: Scale [ca. 1:50,000]

RDA equivalent: Scale approximately 1:50,000

Rounding scale bar measurements: Cataloger’s judgment, except: See *Cartographic Materials* or DCRM(C) for a rounding table for early maps.

255 $a (Scale)

Verbal scale statement printed on map: **2 inches to 1 mi.**

255 Scale 1:31,680. **2 in. = 1 mile**

If a verbal scale statement is printed on the map, we use it to calculate a representative fraction. Then we record (not transcribe) the statement, in $a, after the RF and a full stop.

Use RDA abbreviations. Can use equals sign (=).

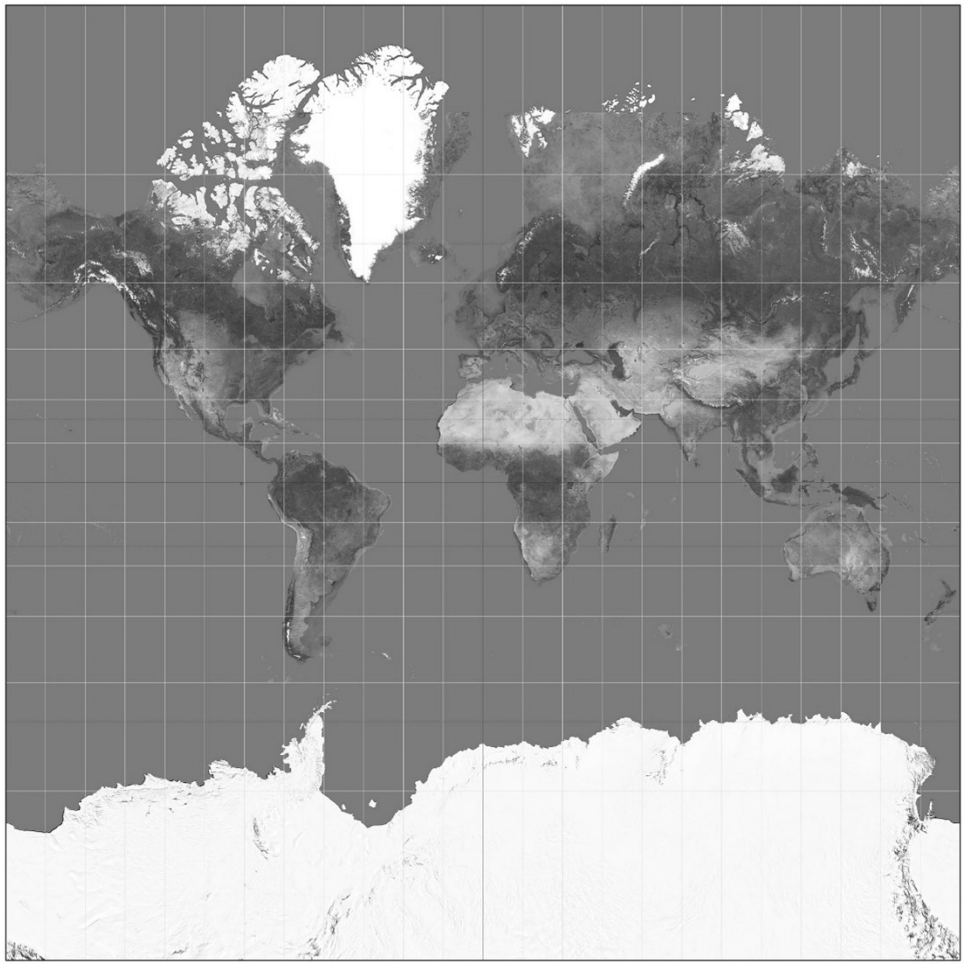
How many scales to record?

- 255 is repeatable.
- Typically we provide no more than two 255 fields.
- One 255 field can refer to multiple main maps *only* if the 255 data is the same for each main map.
- 2 main maps at different scales? Use two 255 fields.
- 3+ main maps at different scale? Use “Scales differ.”

Questions about scale?

Projection statements

Defined in RDA as: “A method or system used to represent the surface of the Earth or of a celestial sphere on a plane.”



Mercator projection

Source:
File:Mercator projection Square.JPG
Wikimedia Commons

Projection statements

- In short: If the projection is stated, record it in the record. (Most often, it is not stated.)
- Record it in 255 $b and the Proj fixed field.
- I recommend reviewing two things to help you recognize a projection statement when you see it:
  - OCLC's documentation of 255 provides excellent examples.
  - The Proj fixed field documentation provides a long list of commonly encountered projections

Bounding box coordinates

RDA 7.4 covers the geographic coordinates element

- Not core except for PCC BIBCO (see LC-PCC-PS for 7.4)
  - But strongly encouraged!!!
- Express as set of points of longitude and latitude (7.4.2)
- Recorded in 255 $c and 034 $d, $e, $f, $g

Bounding box coordinates

Examples (not yet formatted for MARC), each describing the same single point on the surface of the earth

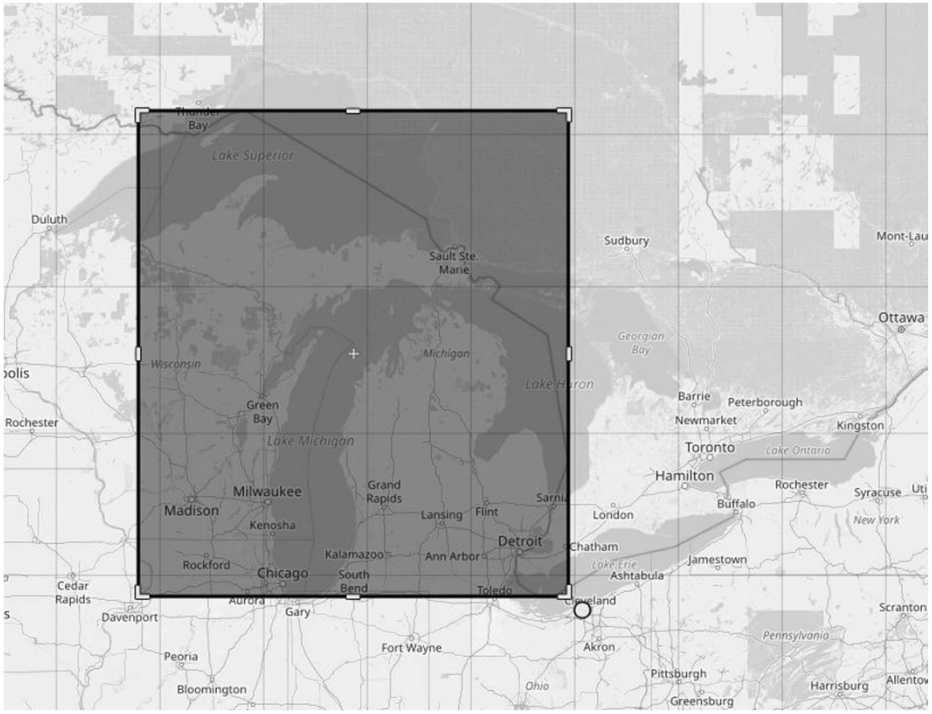
Degrees minutes seconds:
N 25°48'50" W 81°21'47"

Decimal degrees:
N 025.814024 W 081.363314

Emerging consensus:
Use Degrees-minutes-seconds in 255, Decimal degrees in 034

Bounding box coordinates

- Coordinates are sometimes shown on the map. In the past, it was typical to record coordinates in the record *only* in such cases.
- Online tools make it very easy to record coordinates in nearly all cases.
- Generally recorded in the form of a “bounding box” in a prescribed order that outlines the edges of the map: left, right, top, bottom
- Recorded in 255 $c and 034 $d, $e, $f, $g



Bounding box coordinates

- Not core, but: Bounding box coordinates are wonderful
- More precise description of the map than text
- They support map-based search interfaces for map collections, such as geoportals
  - Example: https://geo.btaa.org/ Big Ten Academic Alliance Geoportal

- Fun and easy to add, via Klokan Bounding Box tool:

https://boundingbox.klokantech.com/

Demo

- When using the Klokan Bounding Box tool, always enter **$2 bound** in 034.

Questions about coordinates or anything else?

Thank you!!!

Contact info:

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East Lansing, MI 48824

tkiser@msu.edu