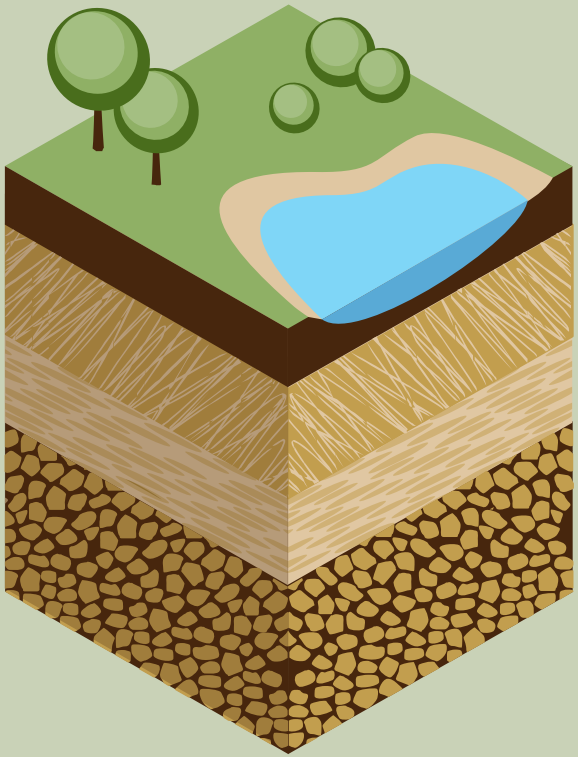
DIGITAL MAPPING TECHNIQUES 2022

The following was presented at DMT'22
May 22 - 25, 2022

The contents of this document are provisional

See Presentations and Proceedings
from the DMT Meetings (1997-2022)

http://ngmdb.usgs.gov/info/dmt/



ESRI Stylx Implementation of FGDC Standard

South Carolina Department of Natural Resources
Geological Survey

Megan James

https://ngmdb.usgs.gov/Info/standards/GeMS/

“Generally speaking (and to the extent that it is possible), line and point symbolization should follow the FGDC Digital Cartographic Standard for Geologic Map Symbolization (FGDC, 2006).”

—U.S. Geological Survey National Cooperative Geologic Mapping Program, 2020

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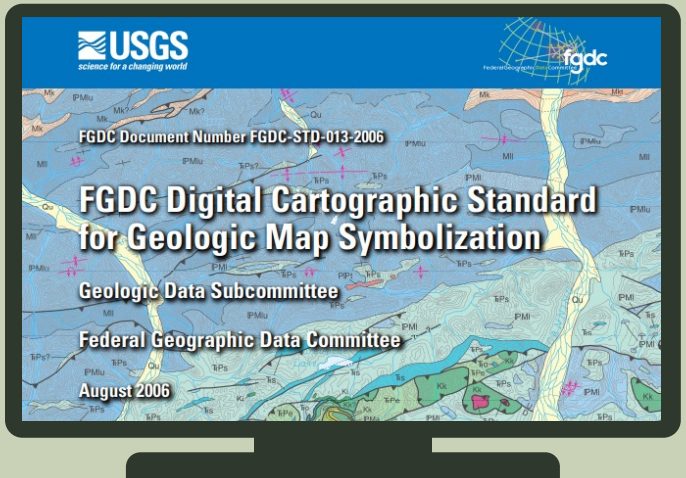
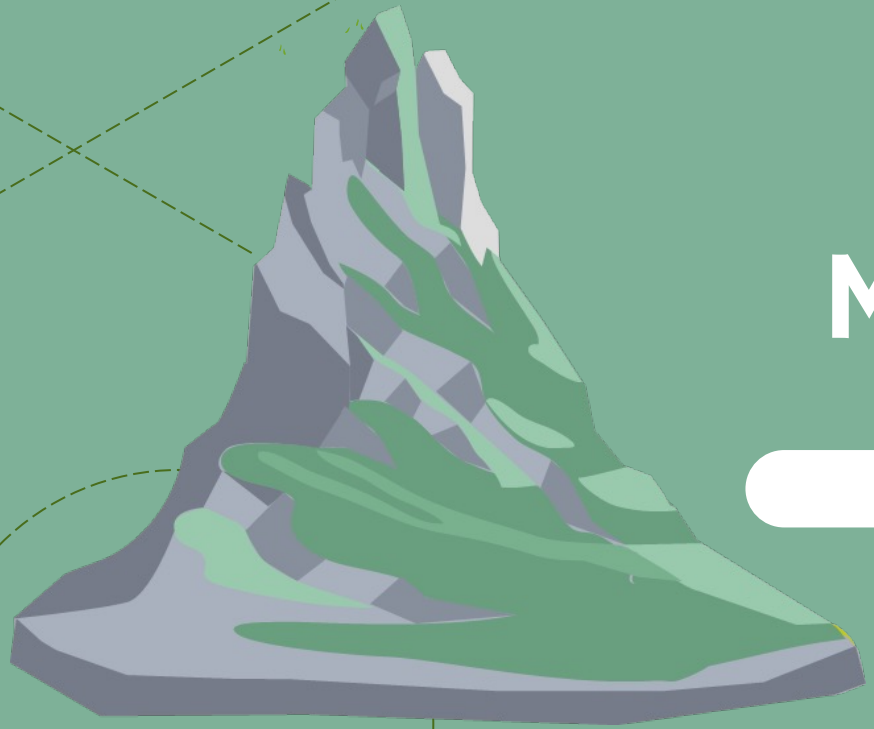




01

METHODOLOGY

How was the .stylx file created?

Symbolization Resources

GSC_FGDC_
GeologicMapSymbols

Point

Line

Polygon

Text

DGGS_Map_
Symbolization

Point

Line

Polygon

Text

Color

Color Scheme

Scale Bar

esriNcgmp Online Geologic
Mapping Template

Point

Line

Polygon

Text

Color

Color Scheme

Maplex Label
Placement

Symbolization Resources

GSC_FGDC_
GeologicMapSymbols

Colors → CMYK

Line Dashes/Marker Spacing

Rotation of Some Markers

672 Missing

DGGS_Map_
Symbolization

Fonts →
FGDCGeoSym#

Colors → CMYK

Line Dashes/Marker Spacing

Rotation of Some Markers

672 Missing

esriNcgmp Online Geologic Mapping Template

Line Dashes/Marker Spacing

~1080 Missing

My Work

Began with **DGGS_Map_Symbolization**:

- Edited Alaska's implementation to match FGDC's lengths/placements/etc. and to position more exactly
- Created missing symbols

Notes

- Used Arial instead of Helvetica

  6pt font → 2.117mm; 8pt font → 2.822mm

- Made polygon borders a line symbol (contacts and faults), and polygon fills a polygon without a border
- Some symbols have white fills versus transparent to ‘hide’ other lines

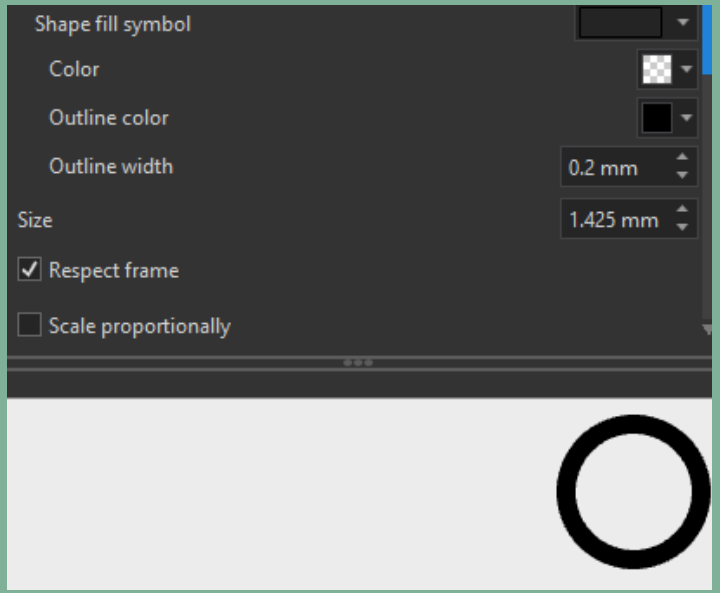
- Will have to use a label with a white background to break lines

- Some sizes of markers will not match exactly for one of two reasons:

  1) outlines add width/height that need to be removed to keep the correct size

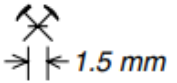
  2) the shape used is sized abnormally and needs to be adjusted

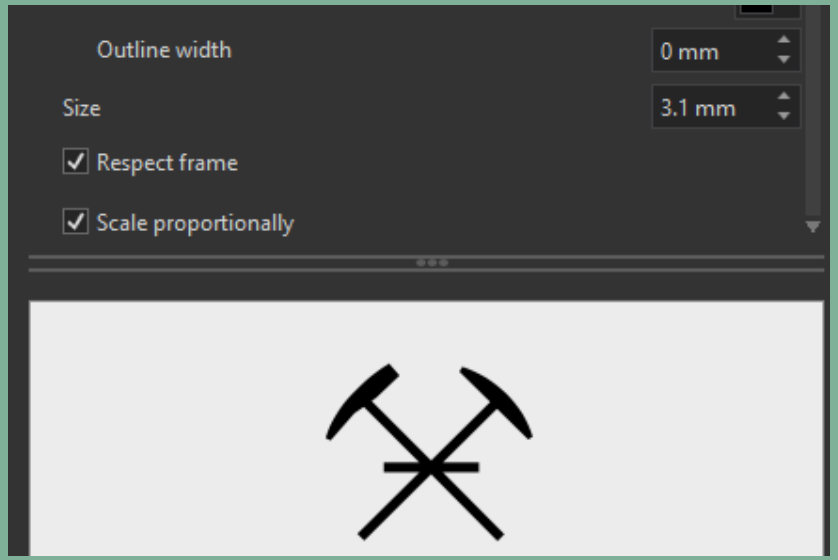
24.4	Secondary terrestrial impact crater (too small to draw to scale) (2nd option)—Formed by debris thrown from primary crater	○	*lineweight .2 mm* ○ *circle diameter 1.625 mm*



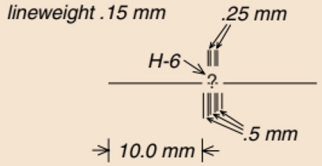
Evident in:
24.2,
24.4, &
all of 26

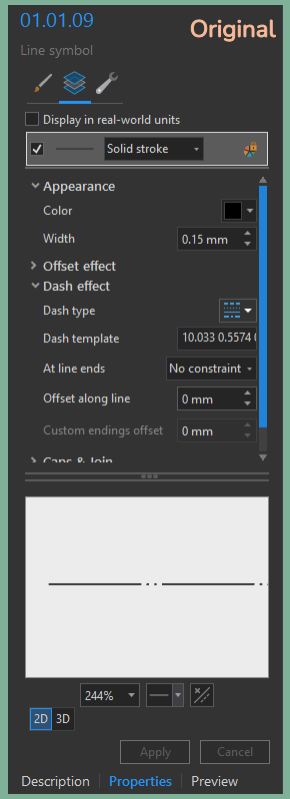
- Some sizes of markers will not match exactly for one of two reasons:
  - **1) outlines add width/height that need to be removed to keep the correct size**
  - 2) the shape used is sized abnormally and needs to be adjusted

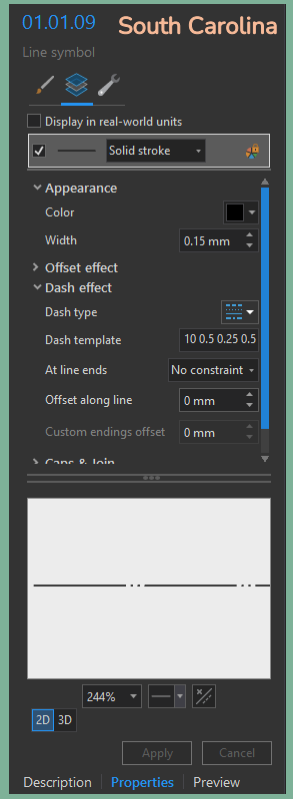
19.3.5	Abandoned open pit, quarry, or glory hole		*all lineweights .15 mm* 



- Some sizes of markers will not match exactly for one of two reasons:
  - 1) outlines add width/height that need to be removed to keep the correct size
  - 2) the shape used is sized abnormally and needs to be adjusted

1.1.9	Internal contact—Identity and existence certain, location accurate			Use to delineate individual debris flows, landslide blocks, alluvial fans, etc., within the same geologic map unit.
1.1.10	Internal contact—Identity or existence questionable, location accurate	?		





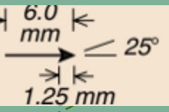
01.01.09

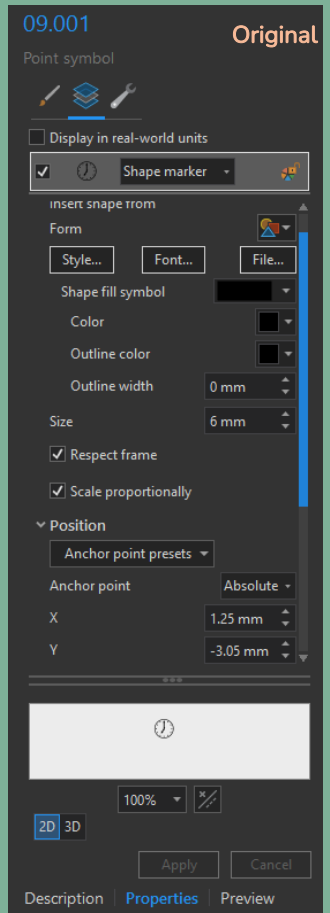
CMYK

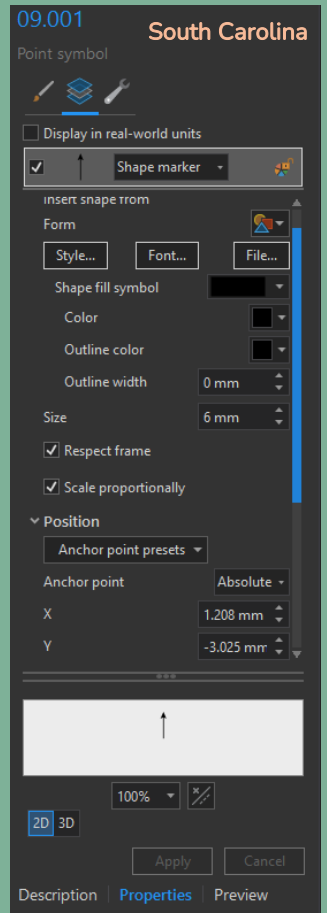
0/0/0/100

Dash Template

10 0.5 0.25 0.5
0.25 0.5

9.1	Approximate plunge direction of inclined generic (origin or type not known or not specified) lineation or linear structure (1st option)	→	lineweight .2 mm 





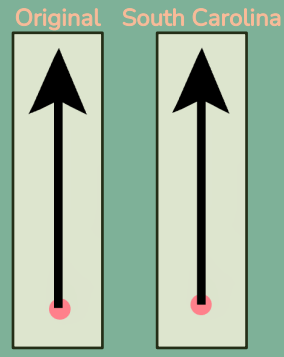
09.001

Font & CMYK

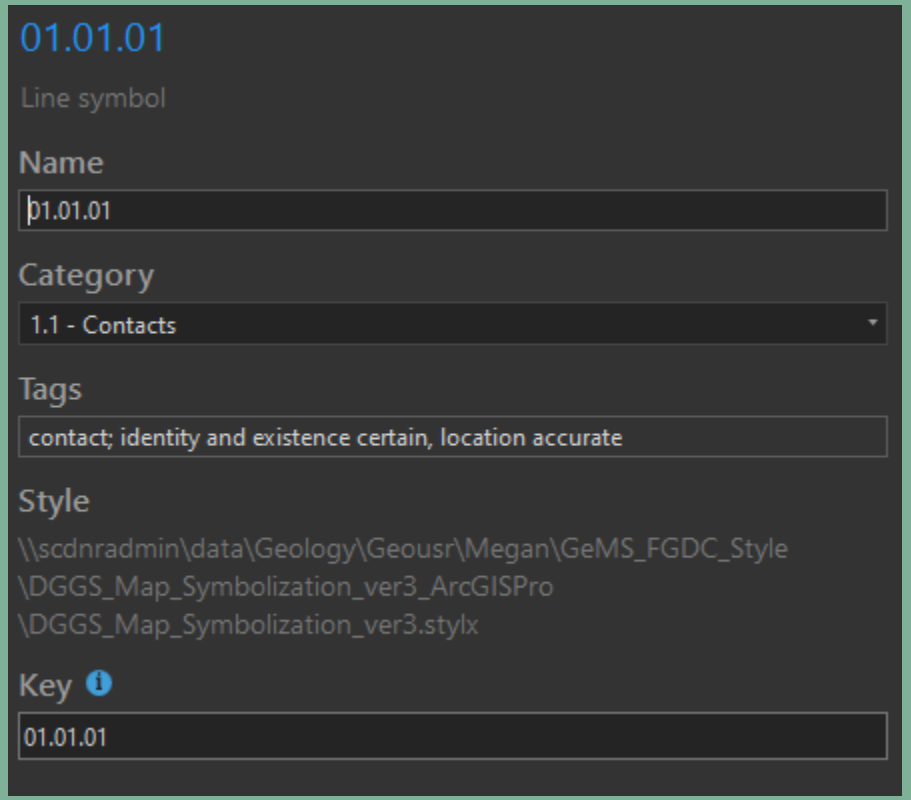
FGDCGeoSym02
0/0/0/100

Anchor Position

x: 1.208 mm
y: -3.025 mm

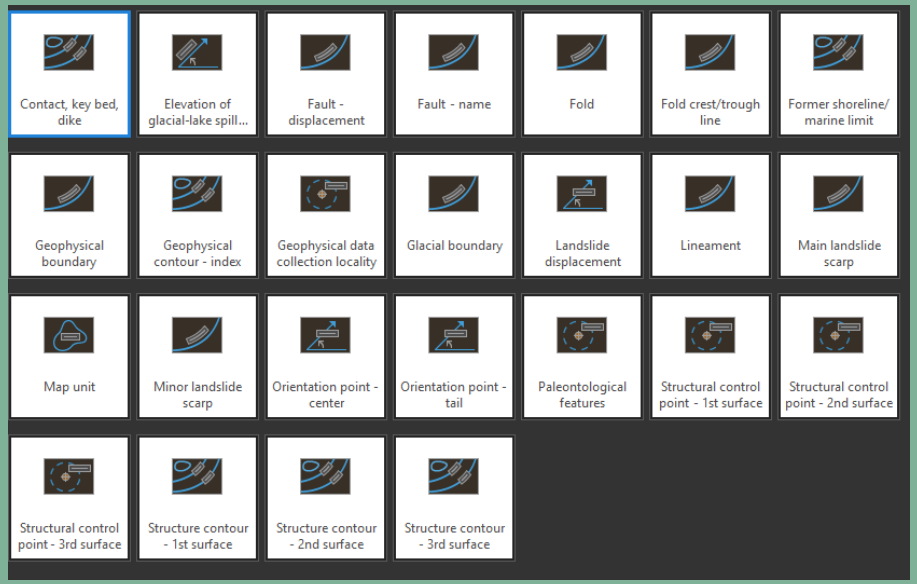


Names, tags, and keys



Other elements

1. Scale bars
2. Maplex label placements



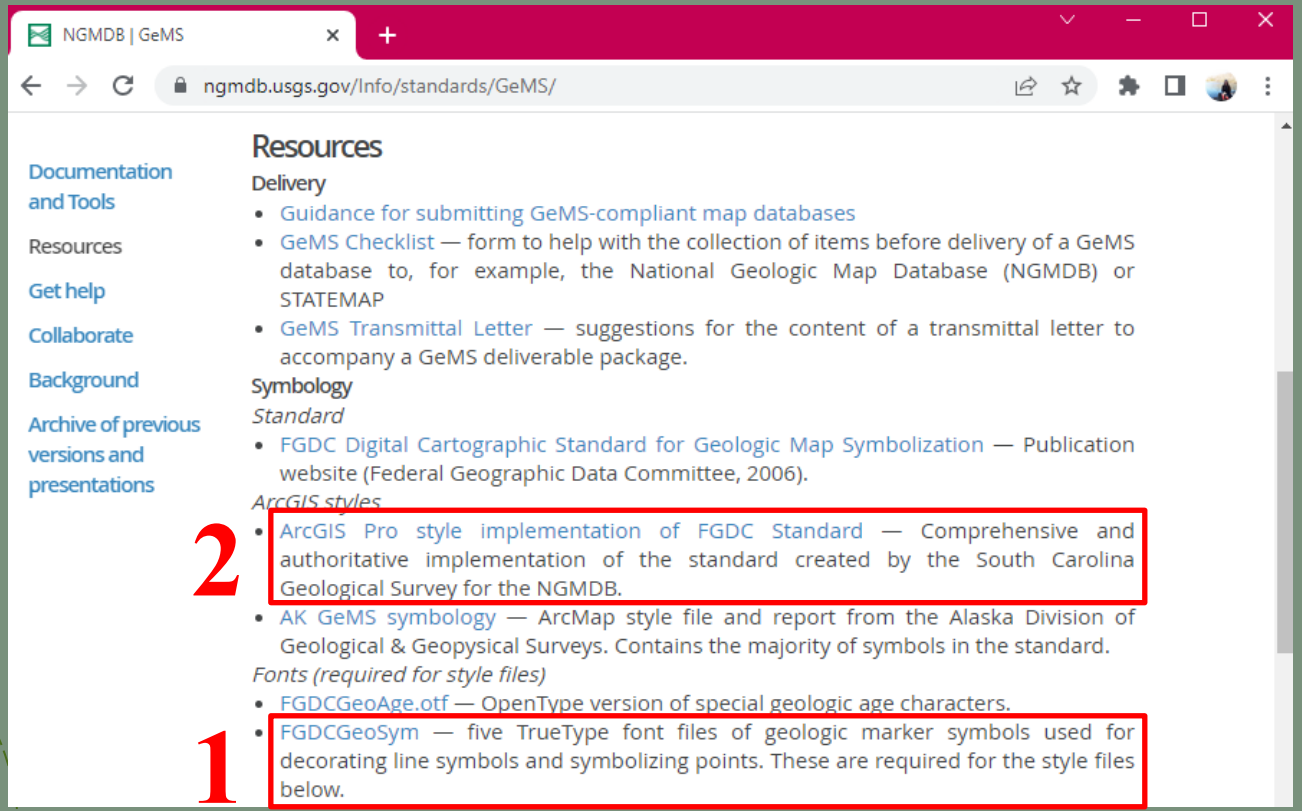
02

How To Use

How do I implement this into my workflow?

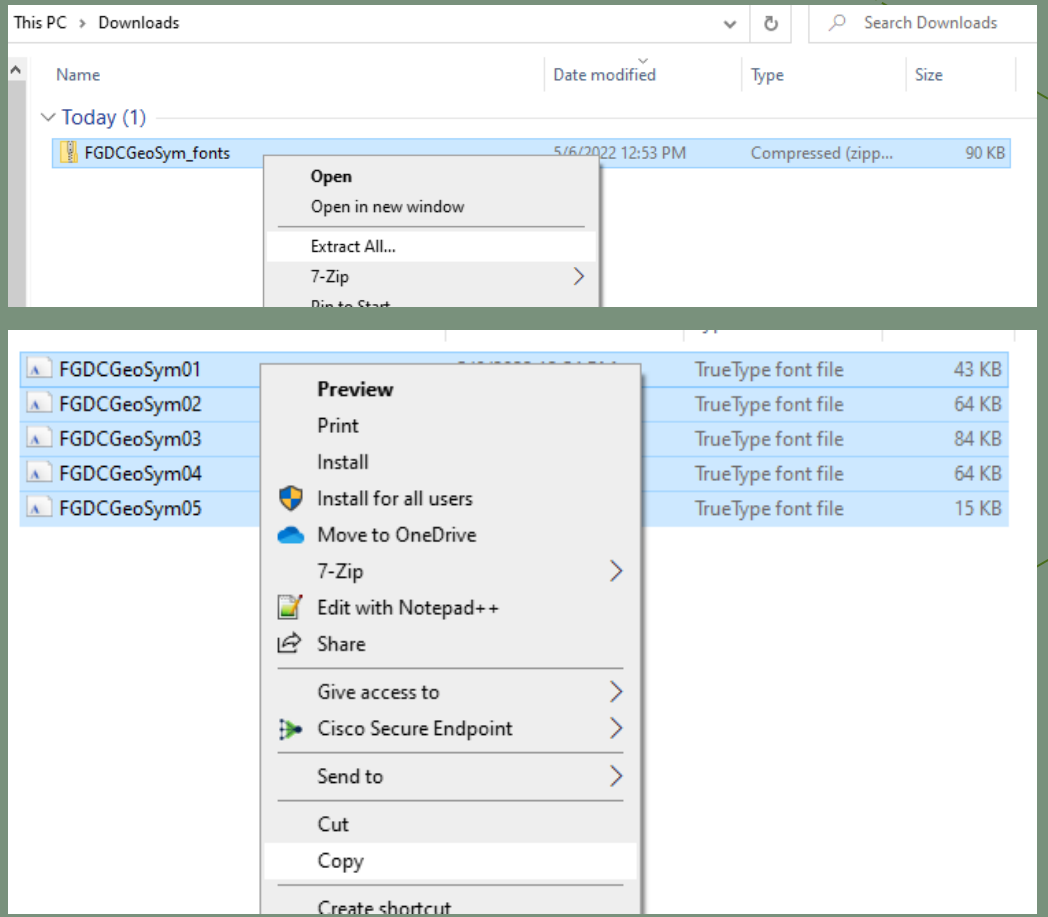
DOWNLOAD FONTS AND ZIPPED FOLDER

https://ngmdb.usgs.gov/Info/standards/GeMS/



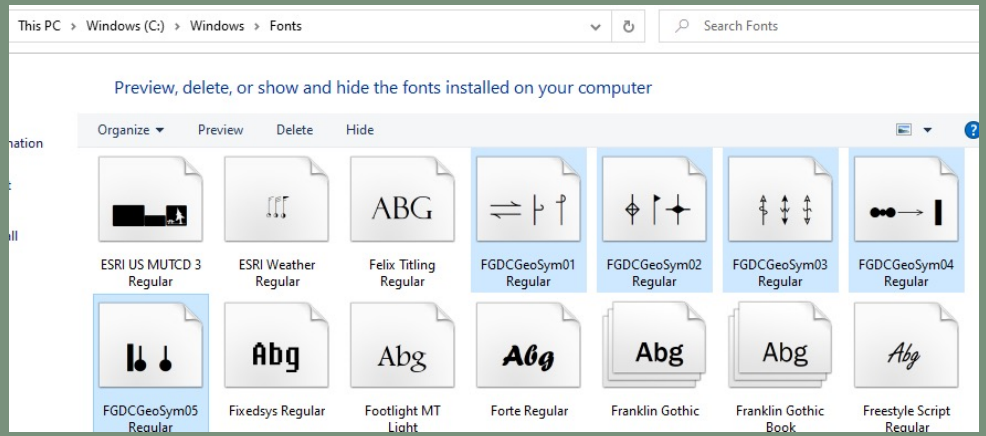
COPY FONTS

1. Unzip folder
2. Copy fonts



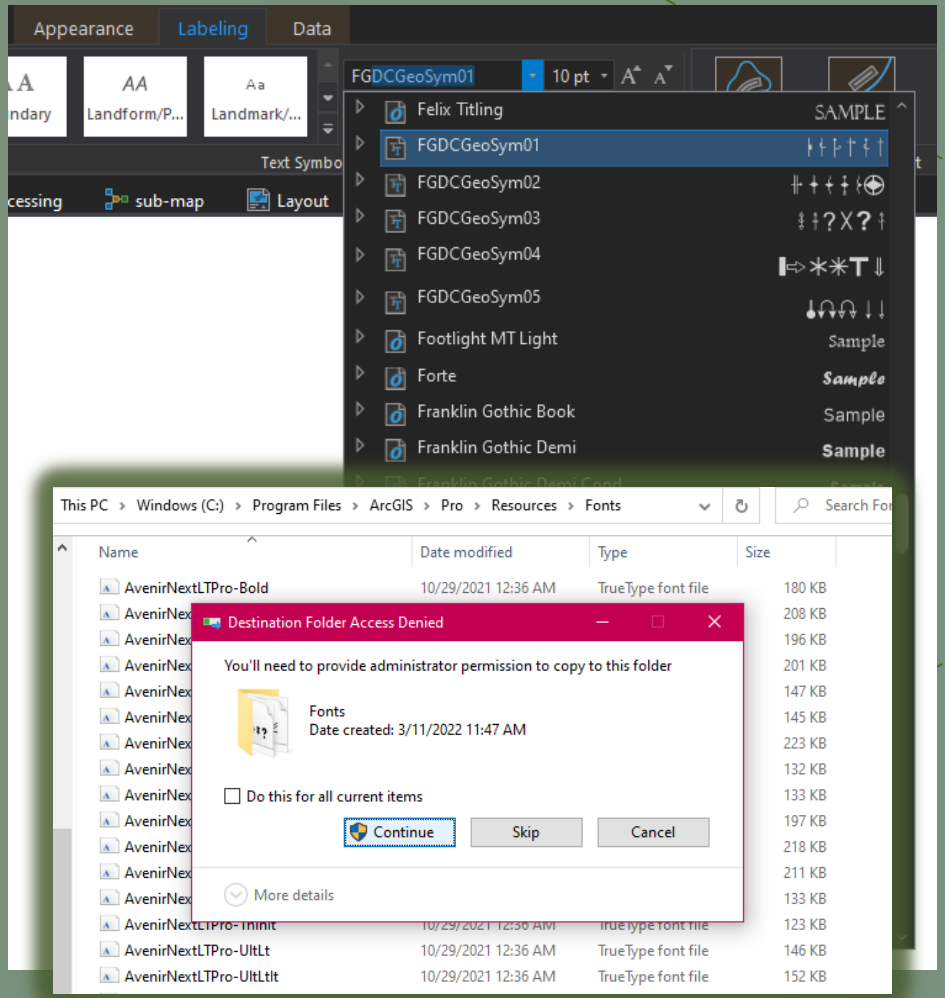
INSTALL FONTS

1. Paste in fonts folder
   - (Likely- C:\Windows\Fonts)



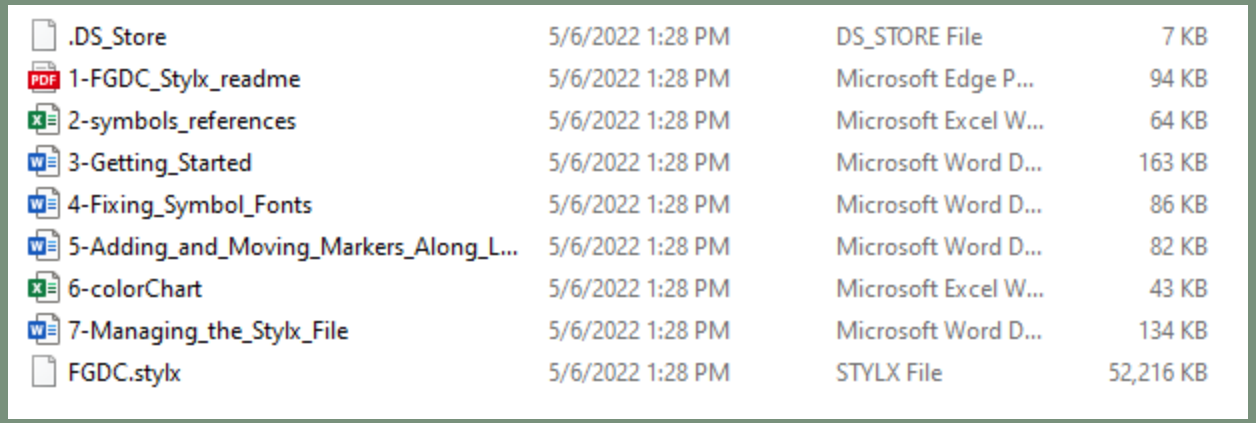
INSTALL FONTS

2. If font does not show up in ArcGIS Pro, paste in Pro's fonts folder
   - (Likely- C:\Program Files\ArcGIS\Pro\Resources\Fonts)



FAMILIARIZE YOURSELF WITH THE FGDC_STYLX FOLDER

1. Unzip folder



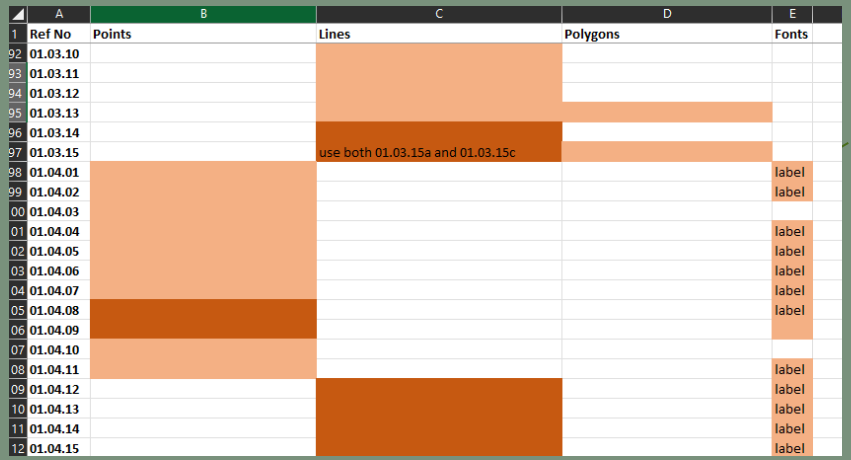
.DS_Store	5/6/2022 1:28 PM	DS_STORE File	7 KB
1-FGDC_Stylx_readme	5/6/2022 1:28 PM	Microsoft Edge P...	94 KB
2-symbols_references	5/6/2022 1:28 PM	Microsoft Excel W...	64 KB
3-Getting_Started	5/6/2022 1:28 PM	Microsoft Word D...	163 KB
4-Fixing_Symbol_Fonts	5/6/2022 1:28 PM	Microsoft Word D...	86 KB
5-Adding_and_Moving_Markers_Along_L...	5/6/2022 1:28 PM	Microsoft Word D...	82 KB
6-colorChart	5/6/2022 1:28 PM	Microsoft Excel W...	43 KB
7-Managing_the_Stylx_File	5/6/2022 1:28 PM	Microsoft Word D...	134 KB
FGDC.stylx	5/6/2022 1:28 PM	STYLX File	52,216 KB

LOOK THROUGH THE CONTENTS

2. READ the readme & Managing_the_StyIx_File
3. Take a peek at the reference sheet

Credits

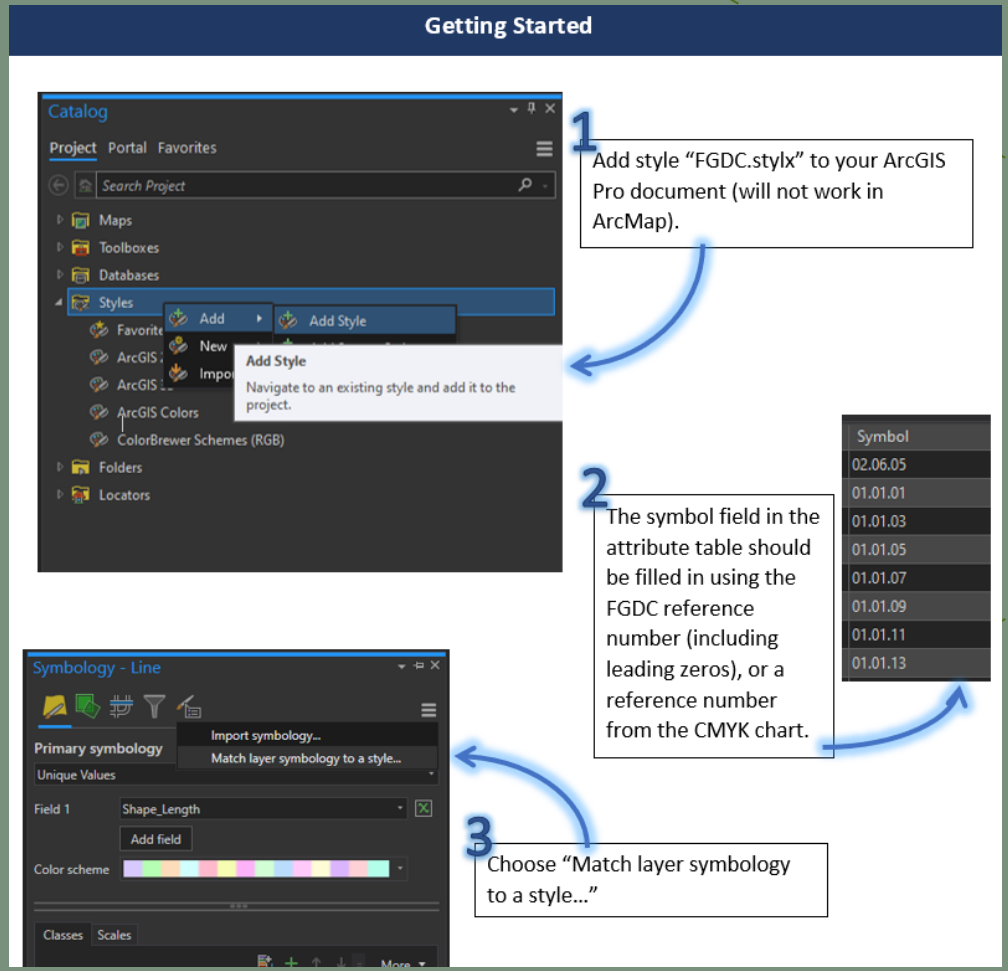
- Points, lines, polygons, or fonts with cells highlighted in Orange, Accent 2, Darker 25% in the symbols_references excel document were created by Megan James of the South Carolina Department of Natural Resources Geological Survey (JamesM@dnr.sc.gov).
- Points, lines, polygons, or fonts with cells highlighted in Orange, Accent 2, Lighter 40% in the symbols_references excel document were created by adjusting symbols from the AK GeMS symbology (Alaska Division of Geological & Geophysical Surveys, Miscellaneous Publication 169, https://dggs.alaska.gov/pubs/id/30584).
- 25.087 was copied from the planetary geology symbol library at the Github site (https://github.com/afrigeri/geologic-symbols) maintained by Andrea Nass (Institute of Planetary Research, Berlin) and Alessandro Frigeri (National Institute for Astrophysics, Rome).



	A	B	C	D	E
1	Ref No	Points	Lines	Polygons	Fonts
92	01.03.10				
93	01.03.11				
94	01.03.12				
95	01.03.13				
96	01.03.14				
97	01.03.15		use both 01.03.15a and 01.03.15c		
98	01.04.01				label
99	01.04.02				label
00	01.04.03				
01	01.04.04				label
02	01.04.05				label
03	01.04.06				label
04	01.04.07				label
05	01.04.08				label
06	01.04.09				
07	01.04.10				
08	01.04.11				label
09	01.04.12				label
10	01.04.13				label
11	01.04.14				label
12	01.04.15				label

LOOK THROUGH THE CONTENTS

4. USE the Getting_Started guide
5. Ignore the Fixing_Symbol_Fonts and Adding_and_Moving_Markers_Along_Lines (unless you need them)



GIVE IT A WHIRL

- CorrelationOfMapUnits
  - CMULines
  - CMUMapUnitPolys
  - CMUPoints
- CrossSectionA
  - CSAContactsAndFaults
  - CSAMapUnitPolys
  - CSAOrientationPoints
- GeologicMap
  - CartographicLines
  - ContactsAndFaults
  - ~~DataSourcePolys~~
  - FossilPoints
  - GenericPoints
  - GeochronPoints
  - GeologicLines
  - MapUnitLines
  - MapUnitOverlayPolys
  - MapUnitPoints
  - MapUnitPolys
  - OrientationPoints
  - OverlayPolys
  - Stations
- DescriptionOfMapUnits
- ~~DataSources~~
- ~~GeoMaterialDict~~
- ~~Glossary~~
- ~~MiscellaneousMapInformation~~
- RepurposedSymbols
- ~~StandardLithology~~

MapUnitPolys

Field: Add Calculate | Selection: Select By Attributes Zoom To Switch Clear Delete Copy

	OBJECTID *	Shape *	Shape_Length	Shape_Area	MapUnit	IdentityConfidence	Label	Symbol	DataSourceID	Notes	Ma
1	1	Polygon	75279.102703	281976449.221483	<Null>	<Null>	<Null>	602-K	<Null>	<Null>	<N
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3	3	Polygon	32970.317307	81879120.324924	<Null>	<Null>	<Null>	313-M	<Null>	<Null>	<N
4	4	Polygon	83915.394114	206750588.784385	<Null>	<Null>	<Null>	02.14.03	<Null>	<Null>	<N
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6	6	Polygon	94462.524539	440804142.657641	<Null>	<Null>	<Null>	339	<Null>	<Null>	<N

13.28

Polygon symbol

Name

13.28

Category

13.0 - Glacial and glaciofluvial features

Tags

Hummocky topography (3rd option)

Style

\\scdnradmin\data\Geology\Geousr\Megan\GeMS_FGDC_Style\FGDC_STYLX\FGDC.stylx

Key

13.28

	A	B	C	D	E
1	Ref No	Points	Lines	Polygons	Fonts
95	01.03.13				
96	01.03.14				
97	01.03.15		use both 01.03.15a and 01.03.15c		
98	01.04.01				label

Geoprocessing

Match Layer Symbology To A Style

Parameters Environments

Input Layer

MapUnitPolys

Match Values (Field or Expression)

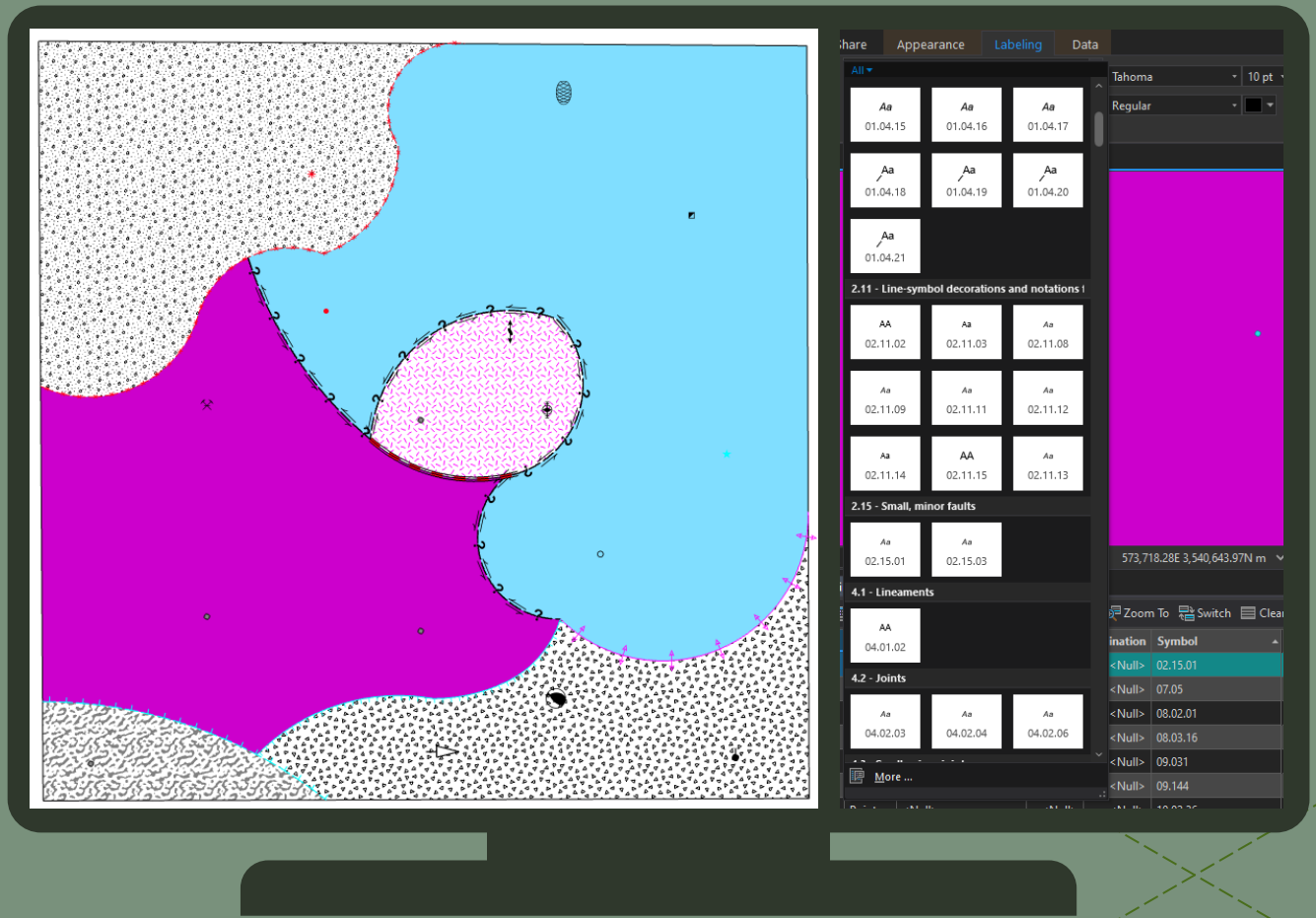
Symbol

Style

FGDC

Symbol	Value
	6 symbo
	02.14.03
	13.28
	602-K
	313-M
	339
	602

REVIEW AND LABEL



03 Questions

Do you have any questions for me?

THANKS!

Contact info

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Darby's Email	DeBruhlD@dnr.sc.gov