

DIGITAL MAPPING TECHNIQUES 2021

The following was presented at DMT'21
(June 7 - 10, 2021 - A Virtual Event)

The contents of this document are provisional

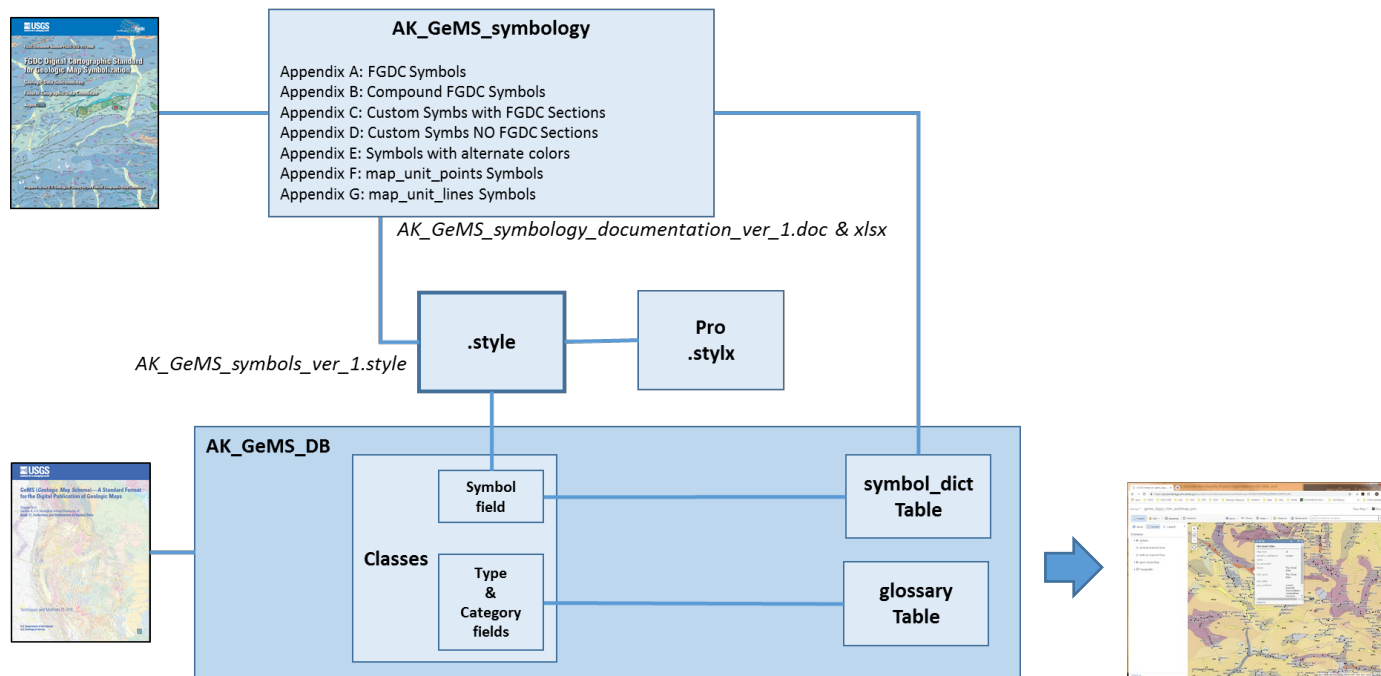
See Presentations and Proceedings
from the DMT Meetings (1997-2021)

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

Symbolizing a GeMS Database

DMT 2021

08 Jun 2021



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Alaska DGGs has developed and published a GeMS symbology standard and accompanying style file, *AK GeMS symbology: A description of the AK GeMS style file*. This publication describes the organization and content of the current style file used by DGGs for the Alaska GeMS map production system. In this standard, we have identified the primary and optional FGDC symbols for specific feature type values found within our established attribute domains. In addition, we have established procedures for requesting, creating, coding, and documenting custom symbols added to our style. This presentation will describe the development, key aspects, and implementation of this standard for GeMS based geologic map production.



Agenda

- **Introduction**
 - Key Symbology quotes from TM 11-B10 (GeMS)
 - Very brief review AK GeMS Geologic Mapping System
- **AK GeMS Symbology** philosophy & architecture
- **Style File** - AK_GeMS_symbols_ver_1.style
- **Custom Symbols** Procedures and Documentation
- **Future work**

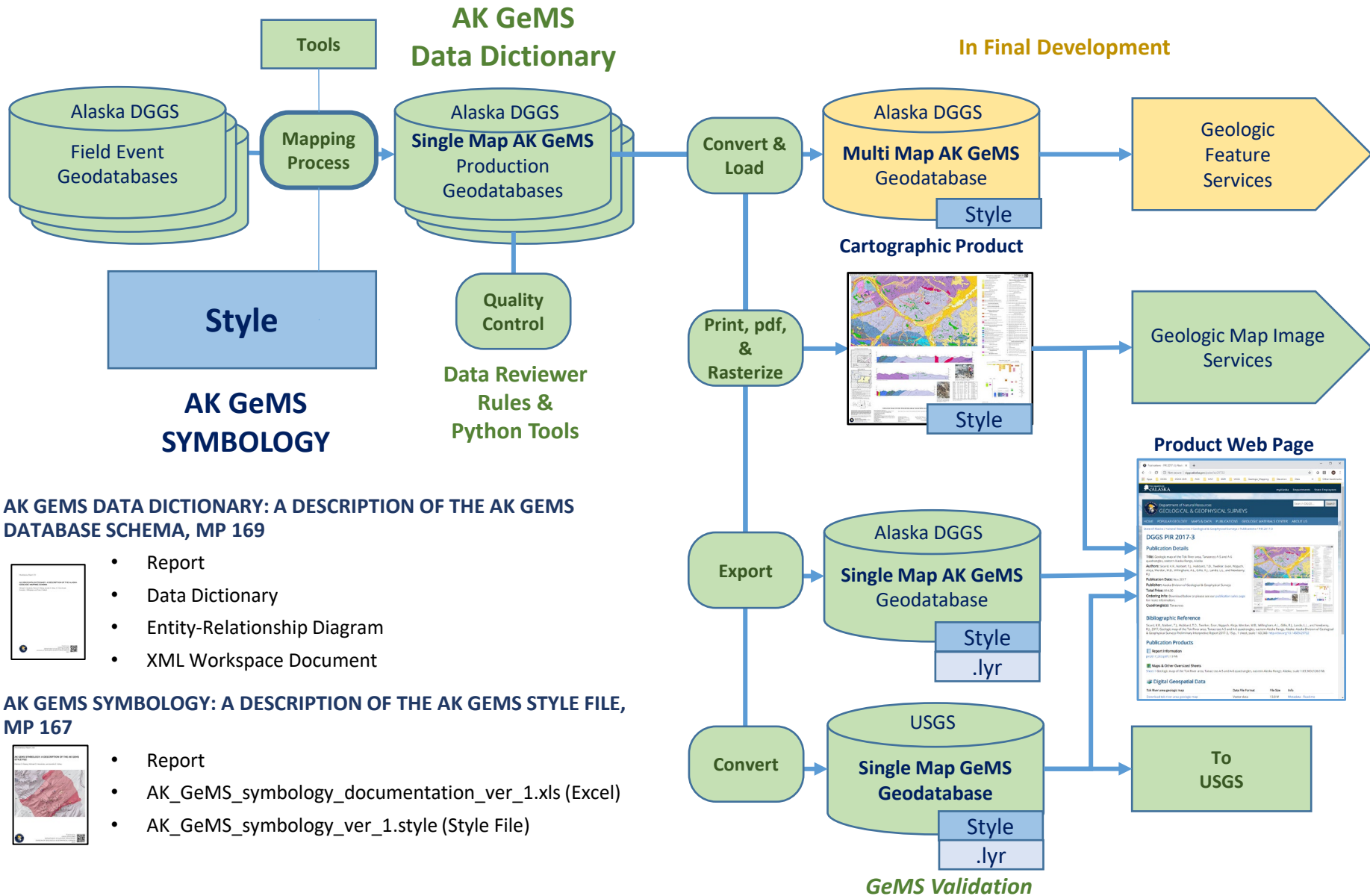
TM 11-B10: GeMS (Geologic Map Schema) Symbology Quotes

*“The distinction between map data and their symbolization is **important**.* Storing map data in a GIS—as opposed to its symbolization in a drawing program—facilitates machine-assisted analyses of the data, gives greater flexibility for alternate symbolization, and **eases reuse** of the data at different scales.”
p.2

“ArcGIS .style file that contains the area, line, and point symbols used to symbolize the map. **Must include all symbols specified in database.** It is recommended that the .style contain a subset of the symbols in the FGDC cartographic standard...” p11.

Alaska DGGs Geologic Mapping System Components

Organizational Procedures



AK GEMS DATA DICTIONARY: A DESCRIPTION OF THE AK GEMS DATABASE SCHEMA, MP 169



- Report
- Data Dictionary
- Entity-Relationship Diagram
- XML Workspace Document

AK GEMS SYMBOLOGY: A DESCRIPTION OF THE AK GEMS STYLE FILE, MP 167



- Report
- AK_GeMS_symbology_documentation_ver_1.xls (Excel)
- AK_GeMS_symbology_ver_1.style (Style File)

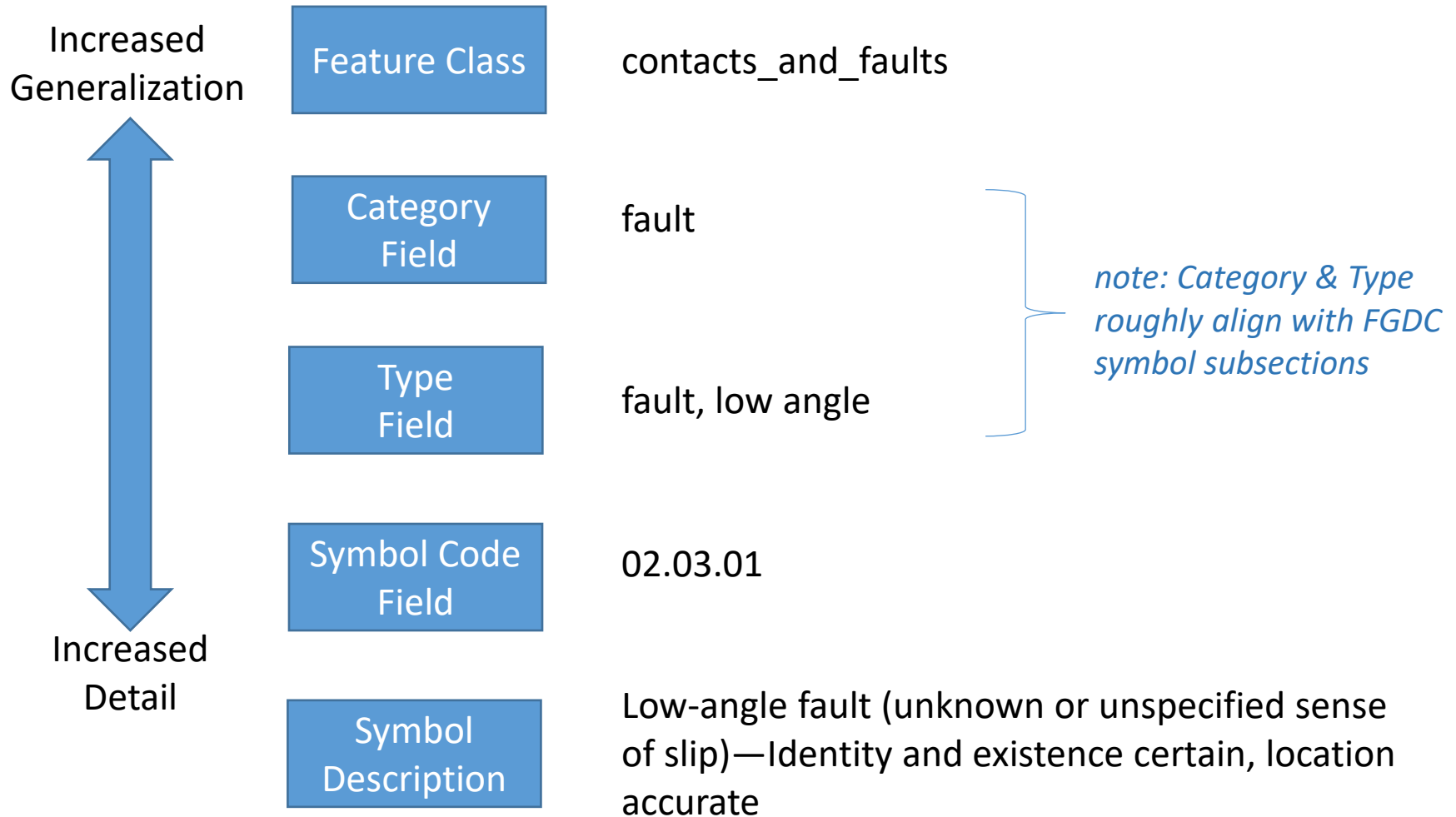
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AK GeMS Symbol philosophy

- Symbol code is part of a feature's representation hierarchy
- AK DGGS phased out the use of “ESRI representations”
- We do not use repurposed symbols – We make custom symbols with new symbol code instead
- Formalize the process of requesting, creating, and storing custom symbols
- Always consider symbolization for single map pdf as well as online interactive multi-map representations

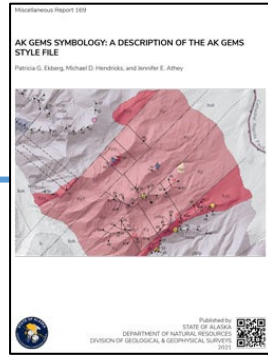
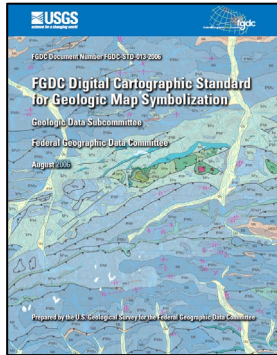
Symbol code is part of a feature's representation hierarchy



AK GeMS Symbology Architecture

AK GEMS SYMBOLOGY: A DESCRIPTION OF THE AK GEMS STYLE FILE, MP 167

- Report
- AK_GeMS_symbology_documentation_ver_1.xls (Excel)
- AK_GeMS_symbology_ver_1.style (Style File)



AK_GeMS_symbology

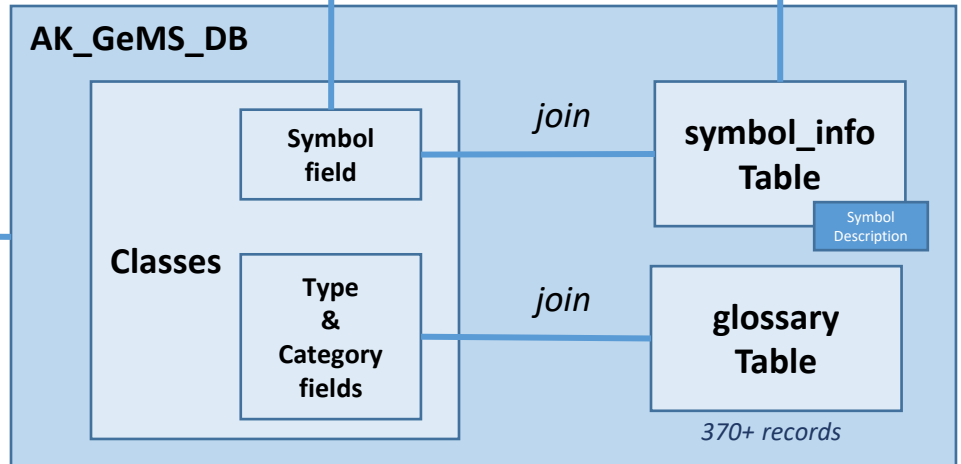
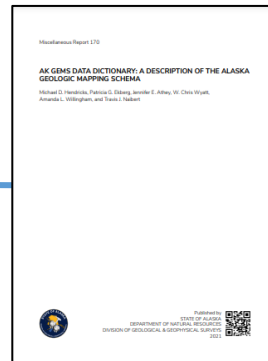
- Appendix A: FGDC Symbols
- Appendix B: Compound FGDC Symbols
- Appendix C: Custom Syms with FGDC Sections
- Appendix D: Custom Syms NO FGDC Sections
- Appendix E: Symbols with alternate colors
- Appendix F: map_unit_points Symbols
- Appendix G: map_unit_lines Symbols

AK_GeMS_symbols_ver_1.style

**.style
.stylx**

1400 + FGDC
60 + custom
730 map_unit_points

AK GEMS DATA DICTIONARY: A DESCRIPTION OF THE AK GEMS DATABASE SCHEMA, MP 169



Key Symbol Related Schema Implementations

- All feature classes have **symbol** field
- All feature classes have binary **draw_policy** field
 - *PlotAtScale field is not included in AK GeMS. We assume a value of 0 (draw at all scales) in GeMS submissions*
- Include **symbol_rotation** field with select FCs: geologic_points, cartographic_points. *May add to more in ver 2.0*
- Include **symbol_alt** field with select FCs: orientation_points, contacts_and_faults. *May add to more in ver 2.0*
 - *Orientation Point symbol for multiple observations at one locality*
 - *Symbolizing fault with custom point decorations.*
- In DMU, **area_fill_pattern_description** field is populated with, and only with, the FGDC pattern code, 101-K, 116-C, etc. and included in style
- Include **style** field in the project_info table to store version of style used for database



DGGS MP 169

AK GeMS symbology: A description of the AK GeMS style file

Authors: Ekberg, P.G., Hendricks, M.D., and Athey, J.E.

Publication Date: Mar 2021

Publisher: Alaska Division of Geological & Geophysical Surveys

Ordering Info: Download below for free or see our [publication sales page](#) to order a hard copy.

Quadrangle(s): Alaska General

Related project(s): [GeMS Database](#)

Citation ID: 30584

Bibliographic Reference

Ekberg, P.G., Hendricks, M.D., and Athey, J.E., 2021, AK GeMS symbology: A description of the AK GeMS style file: Alaska Division of Geological & Geophysical Surveys Miscellaneous Publication 169, 7 p. <https://doi.org/10.14509/30584>

Publication Products

Report Information

[mp169.pdf](#) (1.58 M)

Supplemental File(s)

[mp169_AK_GeMS_symbology.zip](#) (13.86 M)

Keywords

GeMS NCGMP09; Geologic Communications; Geologic Map; Geologic Mapping Standards; STATEMAP Project

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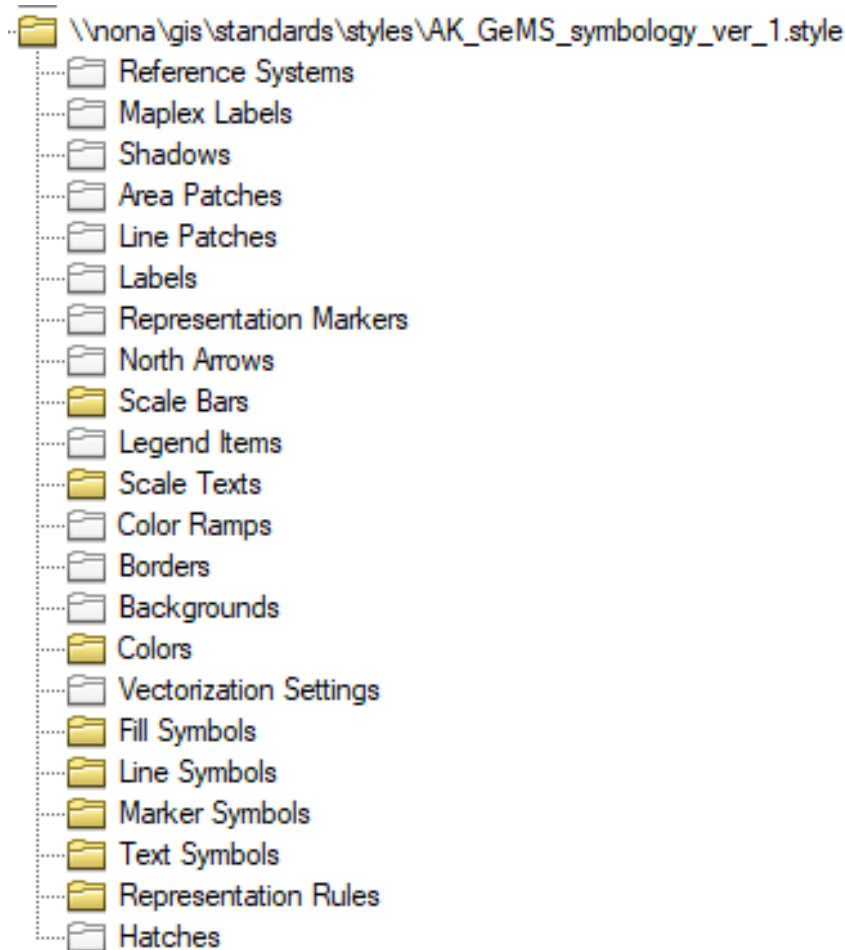
<https://dggs.alaska.gov/pubs/id/30584>

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Elements included in:

AK_GeMS_symbols_ver_1.style 32 Mb



Colors in style

For each code, each digit represents the percent of cyan, magenta, yellow, or black. Color codes use the following abbreviations:
 A=8%; 1=13%; 2=20%; 3=30%; 4=40%; 5=50%; 6=60%; 7=70%; X=100%.

The screenshot shows the 'Style Manager' application window. On the left, there is a tree view of style categories including Reference Systems, Maplex Labels, Shadows, Area Patches, Line Patches, Labels, Representation Markers, North Arrows, Scale Bars, Legend Items, Scale Texts, Color Ramps, Borders, Backgrounds, Colors, Vectorization Settings, Fill Symbols, Line Symbols, Marker Symbols, Text Symbols, Representation Rules, and Hatches. The main workspace is filled with a grid of color swatches. Each swatch is a small square with a unique alphanumeric code next to it. The codes are organized in a grid that matches the color definitions provided in the text above. For example, the first row of codes is 0000, 0530, 1060, 15X0, 2120, 2650, 31A0, 3710, 4240, 4770, 5300, 5A30, 6360, 6AX0, 7420, 7X50, A4A0, X010, X540. The grid continues for 20 rows and 20 columns, ending with 0520, 1050, 15A0, 2110, 2640, 3170, 3700, 4230, 4760, 52X0, 5A20, 6350, 6AA0, 7410, 7X40, A470, X000, X530. On the right side of the window, there are buttons for 'Close' and 'Styles...'. At the bottom right, there are icons for zooming and other window controls.

Map_unit_points symbols

The image shows a screenshot of the 'Style Manager' application window. The main area displays a grid of 400 symbols, each represented by a small colored circle with a unique alphanumeric label. The labels are organized in a grid that is 20 rows high and 20 columns wide. The labels start with '0000' in the top-left corner and end with 'XXA0' in the bottom-right corner. The symbols use a variety of colors, including shades of gray, yellow, orange, red, pink, purple, blue, green, and cyan. On the left side of the window, there is a tree view showing the hierarchy of style categories, with 'Map_unit_points.style' selected. On the right side, there are two buttons: 'Close' and 'Styles...'. The window title bar reads 'Style Manager'.

Map_unit_points symbols

The image shows a screenshot of the Style Manager application. The main window displays a grid of symbols, each represented by a colored circle and a unique alphanumeric code. The Symbol Property Editor is open, showing a preview of a yellow circle symbol. The Properties section is set to 'Simple Marker Symbol' with a 'Mask' type. The Color is set to yellow, the Style is 'Circle', and the Size is 8.0000. The 'Use Outline' checkbox is checked, and the Outline color is black with a width of 0.5000. The X and Y offsets are both 0.0000. A Color Selector dialog is also open, showing the CMYK values for the selected color: C=13%, M=8%, Y=100%, and K=0%. The Color Selector dialog includes a color bar and OK/Cancel buttons. The Style Manager interface includes a left-hand tree view showing the project structure, a top toolbar with 'Close' and 'Styles...' buttons, and a right-hand toolbar with 'Close' and 'Styles...' buttons. The bottom of the window shows a scroll bar and a status bar.

Style Manager

Symbol Property Editor

Preview

Properties:

Type: Simple Marker Symbol

Simple Marker Mask

Color: [Yellow]

Style: Circle

Size: 8.0000

X Offset: 0.0000

Y Offset: 0.0000

Use Outline [checked]

Outline: [Black]

Outline: 0.5000

Color Selector

Color Properties CMYK

C: 13 %

M: 8 %

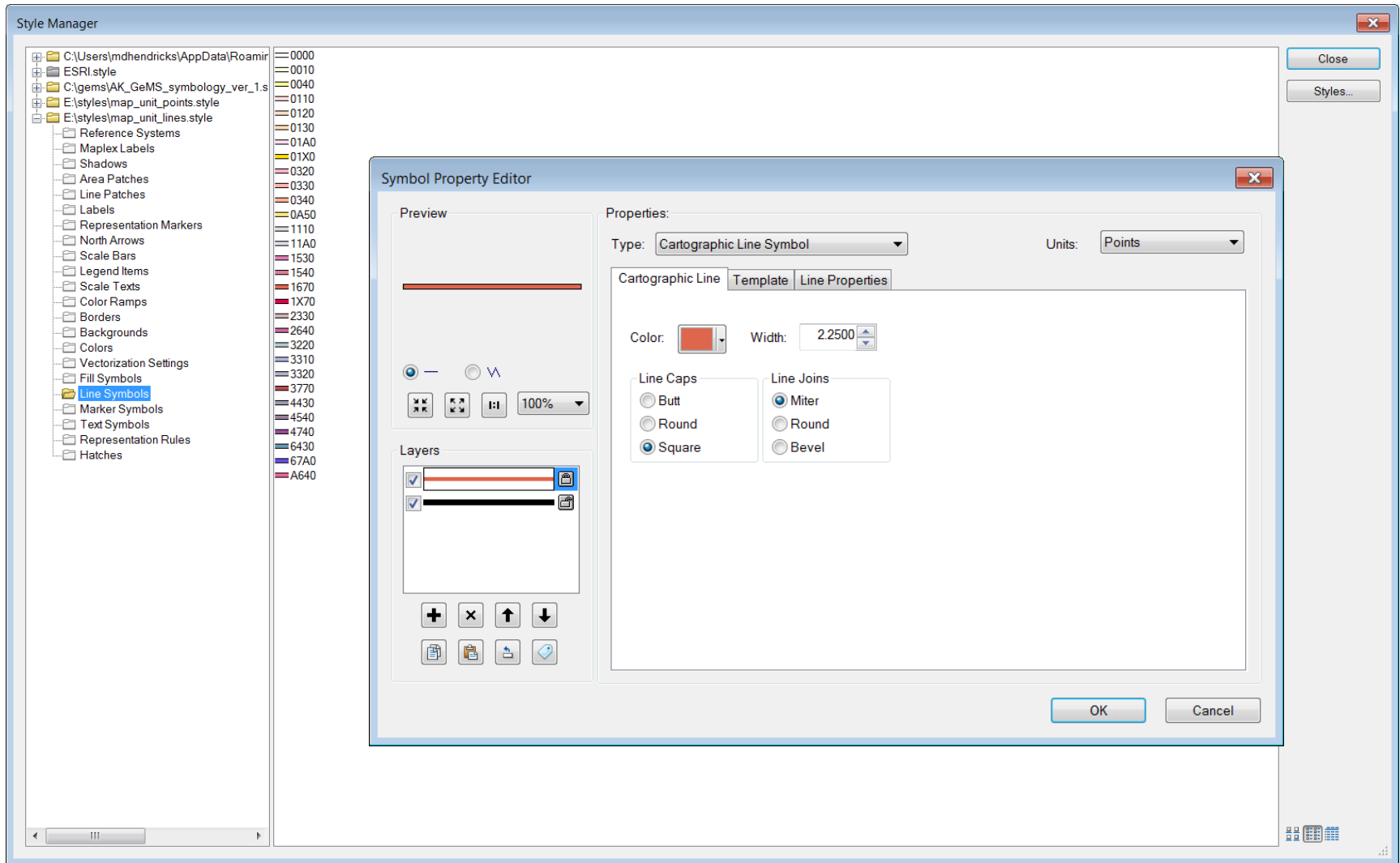
Y: 100 %

K: 0 %

OK Cancel

0000 0450 0XA0 1500 2030 2560 30X0 3620 4150 46A0 5210 5740 6270 6A00 7330 7A50 A3X0 AX20 X450
0001 0460 0XX0 1510 2040 2570 3100 3630 4160 46X0 5220 5750 62A0 6A10 7340 7A60 A400 AX30 X460
0002 0470 1000 1520 2050 25A0 3110 3640 4170 4700 5230 5760 62X0 6A20 7350 7A70 A410 AX40 X470
0003 04A0 1010 1530 2060 25X0 3120 3650 41A0 4710 5240 5770 6300 6A30 7360 7AA0 AX50 X4A0
0004 04X0 1020 1540 2070 2600 3130 3660 41X0 4720 5250 57A0 6310 6A40 7370 7AX0 A420 AX60 X4X0
0005 0500 1030 1550 20A0 2610 3140 3670 4200 4730 5260 57X0 6320 6A50 73A0 7X00 A440 AX70 X500
0006 0510 1040 1560 20X0 2620 3150 36A0 4210 4740 5270 5A00 6330 6A60 73X0 7A00 A450 AX80 X5X0
0007 0520 1050 1570 2100 2630 3160 36X0 4220 4750 52A0 5A10 6340 6A70 73X0 7A10 A460 AX90 X600
0420 0X50 1470 2000 2530 3060 35X0 4120 4650 51A0 5710 6240 6770 7300 7A20 A360 AAX0 X420 XX60
0430 0X60 14A0 2010 2540 3070 3600 4130 4660 51X0 5720 6250 67A0 7310 7A30 A370 AX00 X430 XX70
0440 0X70 14X0 2020 2550 30A0 3610 4140 4670 5200 5730 6260 67X0 7320 7A40 A3A0 AX10 X440 XX80
0450 0X80 1400 2030 2560 30X0 3620 4150 4680 5210 5740 6270 6700 7330 7A50 A3B0 AX20 X450 XX90
0460 0X90 1410 2040 2570 30Y0 3630 4160 4690 5220 5750 6280 6710 7340 7A60 A3C0 AX30 X460 XXX0
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0500 0XD0 1450 2080 2610 30C0 3670 41A0 4730 5260 5790 6320 6750 7380 7AA0 A400 AX70 X500
0510 0XE0 1460 2090 2620 30D0 3680 41B0 4740 5270 5800 6330 6760 7390 7AB0 A410 AX80
0520 0XF0 1470 20A0 2630 30E0 3690 41C0 4750 5280 5810 6340 6770 73A0 7AC0 A420 AX90
0530 0X00 1480 20B0 2640 30F0 36A0 41D0 4760 5290 5820 6350 6780 73B0 7AD0 A430 AX00
0540 0X10 1490 20C0 2650 30G0 36B0 41E0 4770 52A0 5830 6360 6790 73C0 7AE0 A440 AX10
0550 0X20 14A0 20D0 2660 30H0 36C0 41F0 4780 52B0 5840 6370 67A0 73D0 7AF0 A450 AX20
0560 0X30 14B0 20E0 2670 30I0 36D0 41G0 4790 52C0 5850 6380 67B0 73E0 7B00 A460 AX30
0570 0X40 14C0 20F0 2680 30J0 36E0 41H0 47A0 52D0 5860 6390 67C0 73F0 7B10 A470 AX40
0580 0X50 14D0 20G0 2690 30K0 36F0 41I0 47B0 52E0 5870 63A0 67D0 73G0 7B20 A480 AX50
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0730 0X40 14S0 20V0 2840 30Z0 36U0 41X0 47Q0 52T0 58M0 63P0 67S0 73V0 7BH0 A4N0 AX00
0740 0X50 14T0 20W0 2850 30A0 36V0 41Y0 47R0 52U0 58N0 63Q0 67T0 73W0 7BI0 A4O0 AX10
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1020 0X10 14V0 20Y0 3130 30C0 36X0 41A0 47T0 52W0 58P0 63S0 67V0 73Y0 7CA0 A4Q0 AX90
1030 0X20 14W0 20Z0 3140 30D0 36Y0 41B0 47U0 52X0 58Q0 63T0 67W0 73Z0 7CB0 A4R0 AX00
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1190 0X20 14M0 20P0 3300 30T0 36O0 41R0 47K0 52N0 58G0 63J0 67M0 73P0 7CR0 A4H0 AX60
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1220 0X50 14P0 20S0 3330 30W0 36R0 41U0 47N0 52Q0 58J0 63M0 67P0 73S0 7CU0 A4K0 AX90
1230 0X60 14Q0 20T0 3340 30X0 36S0 41V0 47O0 52R0 58K0 63N0 67Q0 73T0 7CV0 A4L0 AX00
1240 0X70 14R0 20U0 3350 30Y0 36T0 41W0 47P0 52S0 58L0 63O0 67R0 73U0 7CW0 A4M0 AX10
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1260 0X90 14T0 20W0 3370 30A0 36V0 41Y0 47R0 52U0 58N0 63Q0 67T0 73W0 7CY0 A4O0 AX30
1270 0XA0 14U0 20X0 3380 30B0 36W0 41Z0 47S0 52V0 58O0 63R0 67U0 73X0 7CZ0 A4P0 AX40
1280 0XB0 14V0 20Y0 3390 30C0 36X0 41A0 47T0 52W0 58P0 63S0 67V0 73Y0 7D00 A4Q0 AX50
1290 0XC0 14W0 20Z0 3400 30D0 36Y0 41B0 47U0 52X0 58Q0 63T0 67W0 73Z0 7D10 A4R0 AX60
1300 0XD0 14X0 20A0 3410 30E0 36Z0 41C0 47V0 52Y0 58R0 63U0 67X0 73A0 7D20 A4S0 AX70
1310 0XE0 14Y0 20B0 3420 30F0 36A0 41D0 47W0 52Z0 58S0 63V0 67Y0 73B0 7D30 A4T0 AX80
1320 0XF0 14Z0 20C0 3430 30G0 36B0 41E0 47X0 52A0 58T0 63W0 67Z0 73C0 7D40 A4U0 AX90
1330 0X00 14A0 20D0 3440 30H0 36C0 41F0 47Y0 52B0 58U0 63X0 67A0 73D0 7D50 A4V0 AX00
1340 0X10 14B0 20E0 3450 30I0 36D0 41G0 47Z0 52C0 58V0 63Y0 67B0 73E0 7D60 A4W0 AX10
1350 0X20 14C0 20F0 3460 30J0 36E0 41H0 47A0 52D0 58W0 63Z0 67C0 73F0 7D70 A4X0 AX20
1360 0X30 14D0 20G0 3470 30K0 36F0 41I0 47B0 52E0 58X0 63A0 67D0 73G0 7D80 A4Y0 AX30
1370 0X40 14E0 20H0 3480 30L0 36G0 41J0 47C0 52F0 58Y0 63B0 67E0 73H0 7D90 A4Z0 AX40
1380 0X50 14F0 20I0 3490 30M0 36H0 41K0 47D0 52G0 58Z0 63C0 67F0 73I0 7DA0 A4A0 AX50
1390 0X60 14G0 20J0 3500 30N0 36I0 41L0 47E0 52H0 58A0 63D0 67G0 73J0 7DB0 A4B0 AX60
1400 0X70 14H0 20K0 3510 30O0 36J0 41M0 47F0 52I0 58B0 63E0 67H0 73K0 7DC0 A4C0 AX70
1410 0X80 14I0 20L0 3520 30P0 36K0 41N0 47G0 52J0 58C0 63F0 67I0 73L0 7DD0 A4D0 AX80
1420 0X90 14J0 20M0 3530 30Q0 36L0 41O0 47H0 52K0 58D0 63G0 67J0 73M0 7DE0 A4E0 AX90
1430 0XA0 14K0 20N0 3540 30R0 36M0 41P0 47I0 52L0 58E0 63H0 67K0 73N0 7DF0 A4F0 AX00
1440 0XB0 14L0 20O0 3550 30S0 36N0 41Q0 47J0 52M0 58F0 63I0 67L0 73O0 7DG0 A4G0 AX10
1450 0XC0 14M0 20P0 3560 30T0 36O0 41R0 47K0 52N0 58G0 63J0 67M0 73P0 7DH0 A4H0 AX20
1460 0XD0 14N0 20Q0 3570 30U0 36P0 41S0 47L0 52O0 58H0 63K0 67N0 73Q0 7DI0 A4I0 AX30
1470 0XE0 14O0 20R0 3580 30V0 36Q0 41T0 47M0 52P0 58I0 63L0 67O0 73R0 7DJ0 A4J0 AX40
1480 0XF0 14P0 20S0 3590 30W0 36R0 41U0 47N0 52Q0 58J0 63M0 67P0 73S0 7DK0 A4K0 AX50
1490 0X00 14Q0 20T0 3600 30X0 36S0 41V0 47O0 52R0 58K0 63N0 67Q0 73T0 7DL0 A4L0 AX60
1500 0X10 14R0 20U0 3610 30Y0 36T0 41W0 47P0 52S0 58L0 63O0 67R0 73U0 7DM0 A4M0 AX70
1510 0X20 14S0 20V0 3620 30Z0 36U0 41X0 47Q0 52T0 58M0 63P0 67S0 73V0 7DN0 A4N0 AX80
1520 0X30 14T0 20W0 3630 30A0 36V0 41Y0 47R0 52U0 58N0 63Q0 67T0 73W0 7DO0 A4O0 AX90
1530 0X40 14U0 20X0 3640 30B0 36W0 41Z0 47S0 52V0 58O0 63R0 67U0 73X0 7DP0 A4P0 AX00
1540 0X50 14V0 20Y0 3650 30C0 36X0 41A0 47T0 52W0 58P0 63S0 67V0 73Y0 7DQ0 A4Q0 AX10
1550 0X60 14W0 20Z0 3660 30D0 36Y0 41B0 47U0 52X0 58Q0 63T0 67W0 73Z0 7DR0 A4R0 AX20
1560 0X70 14X0 20A0 3670 30E0 36Z0 41C0 47V0 52Y0 58R0 63U0 67X0 73A0 7DS0 A4S0 AX30
1570 0X80 14Y0 20B0 3680 30F0 36A0 41D0 47W0 52Z0 58S0 63V0 67Y0 73B0 7DT0 A4T0 AX40
1580 0X90 14Z0 20C0 3690 30G0 36B0 41E0 47X0 52A0 58T0 63W0 67Z0 73C0 7DU0 A4U0 AX50
1590 0XA0 14A0 20D0 3700 30H0 36C0 41F0 47Y0 52B0 58U0 63X0 67A0 73D0 7DV0 A4V0 AX60
1600 0XB0 14B0 20E0 3710 30I0 36D0 41G0 47Z0 52C0 58V0 63Y0 67B0 73E0 7DW0 A4W0 AX70
1610 0XC0 14C0 20F0 3720 30J0 36E0 41H0 47A0 52D0 58W0 63Z0 67C0 73F0 7DX0 A4X0 AX80
1620 0XD0 14D0 20G0 3730 30K0 36F0 41I0 47B0 52E0 58X0 63A0 67D0 73G0 7DY0 A4Y0 AX90
1630 0XE0 14E0 20H0 3740 30L0 36G0 41J0 47C0 52F0 58Y0 63B0 67E0 73H0 7DZ0 A4Z0 AX00
1640 0XF0 14F0 20I0 3750 30M0 36H0 41K0 47D0 52G0 58Z0 63C0 67F0 73I0 7E00 A4A0 AX10
1650 0X00 14G0 20J0 3760 30N0 36I0 41L0 47E0 52H0 58A0 63D0 67G0 73J0 7E10 A4B0 AX20
1660 0X10 14H0 20K0 3770 30O0 36J0 41M0 47F0 52I0 58B0 63E0 67H0 73K0 7E20 A4C0 AX30
1670 0X20 14I0 20L0 3780 30P0 36K0 41N0 47G0 52J0 58C0 63F0 67I0 73L0 7E30 A4D0 AX40
1680 0X30 14J0 20M0 3790 30Q0 36L0 41O0 47H0 52K0 58D0 63G0 67J0 73M0 7E40 A4E0 AX50
1690 0X40 14K0 20N0 3800 30R0 36M0 41P0 47I0 52L0 58E0 63H0 67K0 73N0 7E50 A4F0 AX60
1700 0X50 14L0 20O0 3810 30S0 36N0 41Q0 47J0 52M0 58F0 63I0 67L0 73O0 7E60 A4G0 AX70
1710 0X60 14M0 20P0 3820 30T0 36O0 41R0 47K0 52N0 58G0 63J0 67M0 73P0 7E70 A4H0 AX80
1720 0X70 14N0 20Q0 3830 30U0 36P0 41S0 47L0 52O0 58H0 63K0 67N0 73Q0 7E80 A4I0 AX90
1730 0X80 14O0 20R0 3840 30V0 36Q0 41T0 47M0 52P0 58I0 63L0 67O0 73R0 7E90 A4J0 AX00
1740 0X90 14P0 20S0 3850 30W0 36R0 41U0 47N0 52Q0 58J0 63M0 67P0 73S0 7EA0 A4K0 AX10
1750 0XA0 14Q0 20T0 3860 30X0 36S0 41V0 47O0 52R0 58K0 63N0 67Q0 73T0 7EB0 A4L0 AX20
1760 0XB0 14R0 20U0 3870 30Y0 36T0 41W0 47P0 52S0 58L0 63O0 67R0 73U0 7EC0

Map_unit_lines symbols



Fill symbols

Style Manager

- C:\Users\mdhendricks\AppData\Roaming\ESRI\style
- C:\gens\AK_GeMS_symbology_ver_1.s
 - Reference Systems
 - Maplex Labels
 - Shadows
 - Area Patches
 - Line Patches
 - Labels
 - Representation Markers
 - North Arrows
 - Scale Bars
 - Legend Items
 - Scale Texts
 - Color Ramps
 - Borders
 - Backgrounds
 - Colors
 - Vectorization Settings
 - Fill Symbols**
 - Line Symbols
 - Marker Symbols
 - Text Symbols
 - Representation Rules
 - Hatches
- E:\styles\map_unit_points.style
- E:\styles\map_unit_lines.style

0000	03A0	0X10	1430	1X10	2430	2X70	3450	3XA0	4440	4XA0	5510	6030	6560	7100	7630
0001	03X0	0X20	1440	1X20	2440	2XA0	3460	3XX0	4450	4XX0	5520	6040	6570	7110	7640
0002	0400	0X30	1450	1X30	2450	2XX0	3470	4000	4460	5000	5530	6050	65A0	7120	7650
0003	0410	0X40	1460	1X40	2460	3000	34A0	4010	4470	5010	5540	6060	65X0	7130	7660
0004	0420	0X50	1470	1X50	2470	3010	34X0	401-C	44A0	5020	5550	6070	6600	7140	7670
0005	0430	0X60	14A0	1X60	24A0	3020	3500	401-K	44X0	5030	5560	60A0	6610	7150	76A0
0006	0440	0X70	14X0	1X70	24X0	3030	3510	401-M	4500	5040	5570	60X0	6620	7160	76B0
0007	0450	0XA0	1500	1XA0	2500	3040	3520	4020	4510	5050	55A0	6100	6630	7170	7700
000A	0460	0XX0	1510	1XX0	2510	3050	3530	4030	4520	5060	55X0	6110	6640	71A0	7710
000X	0470	1000	1520	20.07	2520	3060	3540	4040	4530	5070	5600	6120	6650	71X0	7720
0010	04A0	1010	1530	2000	2530	3070	3550	4050	4540	50A0	5610	6130	6660	7200	7730
0020	04X0	1020	1540	2010	2540	30A0	3560	4060	4550	50X0	5620	6140	6670	7210	7740
0030	0500	1030	1550	2020	2550	30X0	3570	4070	4560	5100	5630	6150	66A0	7220	7750
0040	0510	1040	1560	2030	2560	31.08	35A0	40A0	4570	5110	5640	6160	66X0	7230	7760
0050	0520	1050	1570	2040	2570	31.14	35X0	40X0	45A0	5120	5650	6170	6700	7240	7770
0060	0530	1060	15A0	2050	25A0	31.15	3600	4100	45X0	5130	5660	61A0	6710	7250	77A0
0070	0540	1070	15X0	2060	25X0	31.16	3610	4110	4600	5140	5670	61X0	6720	7260	77B0
00A0	0550	10A0	1600	2070	2600	31.17	3620	4120	4610	5150	56A0	6200	67A0	7270	77C0
00X0	0560	10X0	1610	20A0	2610	3100	3630	4130	4620	5160	56X0	6210	67X0	72A0	77D0
01.02.42	0570	1100	1620	20X0	2620	3110	3640	4140	4630	5170	5700	6220	6750	72X0	77E0
01.02.43	05A0	1110	1630	2100	2630	3120	3650	4150	4640	51A0	5710	6230	6760	7300	77F0
01.02.44	05X0	1120	1640	2110	2640	3130	3660	4160	4650	51X0	5720	6240	6770	7310	77G0
01.02.45	0600	1130	1650	2120	2650	3140	3670	4170	4660	5200	5730	6250	67A0	7320	77H0
01.03.13	0610	1140	1660	2130	2660	3150	36A0	41A0	4670	5210	5740	6260	67X0	7330	77I0
0100	0620	1150	1670	2140	2670	3160	36X0	41X0	46A0	5220	5750	6270	6800	7340	77J0
0110	0630	1160	16A0	2150	26A0	3170	3700	4200	46X0	5230	5760	62A0	6A10	7350	77K0
0120	0640	1170	16X0	2160	26X0	31A0	3710	4210	4700	5240	5770	62X0	6A20	7360	77L0
0130	0650	119-K	17.58	2170	2700	31X0	3720	4220	4710	5250	57A0	6300	6A30	7370	77M0
0140	0660	11A0	17.59	21A0	2710	3200	3730	4230	4720	5260	57X0	6310	6A40	73A0	77N0
0150	0670	11X0	17.60	21X0	2720	3210	3740	4240	4730	5270	5750	6320	6A50	73X0	77O0
0160	06A0	1200	17.61	2200	2730	3220	3750	4250	4740	52A0	5760	6330	6A60	7400	77P0
0170	06X0	1210	17.65	2210	2740	3230	3760	4260	4750	52X0	5770	6340	6A70	7410	77Q0
01A0	0700	1220	1700	2220	2750	3240	3770	4270	4760	5300	57A0	6350	6AA0	7420	77R0
01X0	0710	1230	1710	2230	2760	3250	37A0	42A0	4770	5310	57X0	6360	6A00	7430	77S0
02.14.01	0720	1240	1720	2240	2770	3260	37X0	42X0	47A0	5320	5750	6370	6X10	7440	77T0
0200	0730	1250	1730	2250	27A0	3270	3A00	4300	47X0	5330	57A0	63A0	6X20	7450	77U0
0210	0740	1260	1740	2260	27X0	32A0	3A10	4310	4A00	5340	57A0	63X0	6X30	7460	77V0
0220	0750	1270	1750	2270	2A00	32X0	3A20	4320	4A10	5350	57A0	6400	6X40	7470	77W0
0230	0760	12A0	1760	22A0	2A10	3300	3A30	4330	4A20	5360	5AA0	6410	6X50	74A0	77X0
0240	0770	12X0	1770	22X0	2A20	3310	3A40	4340	4A30	5370	5AX0	6420	6X60	74X0	77Y0
0250	07A0	1300	17A0	2300	2A40	3320	3A50	43A0	4A40	53A0	5X00	6430	6X70	7500	77Z0
0260	07X0	1310	17X0	2310	2A50	3330	3A60	43X0	4A50	53X0	5X10	6440	6XA0	7510	77A0
0270	0A00	1320	19.02.04	2320	2A60	3340	3A70	43A0	4A60	5400	5X20	6450	6XX0	7520	77B0
02A0	0A10	1330	1A00	2330	2A70	3350	3AA0	43A0	4A70	5410	5X30	6460	7000	7530	77C0
02X0	0A20	1340	1A10	2340	2AA0	3360	3AX0	43X0	4A80	5420	5X40	6470	7010	7540	77D0
0300	0A30	1350	1A20	2350	2AX0	3370	3X00	4360	4AX0	5430	5X50	64A0	7020	7550	77E0
0310	0A40	1360	1A30	2360	2X00	33A0	3X10	4370	4X00	5440	5X60	64X0	7030	7560	77F0
0320	0A50	1370	1A50	2370	2X10	33X0	3X20	43A0	4X10	5450	5X70	6500	7040	7570	77G0
0330	0A60	13A0	1A60	23A0	2X20	3400	3X30	43X0	4X20	5460	5XA0	6510	7050	75A0	77H0
0340	0A70	13X0	1A70	23X0	2X30	3410	3X40	4400	4X30	5470	5XX0	6520	7060	75X0	77I0
0350	0AA0	1400	1AA0	2400	2X40	3420	3X50	4410	4X40	54A0	6000	6530	7070	7600	77J0
0360	0AX0	1410	1AX0	2410	2X50	3430	3X60	4420	4X60	54X0	6010	65A0	70A0	7610	77K0
0370	0X00	1420	1X00	2420	2X60	3440	3X70	4430	4X70	5500	6020	65X0	70X0	76A0	77L0

Close

Styles...

Marker Symbols

Style Manager

- C:\Users\mdhendricks\AppData\Roamir
 - ESRI.style
 - C:\gems\AK_GeMS_symbology_ver_1.s
 - Reference Systems
 - Maplex Labels
 - Shadows
 - Area Patches
 - Line Patches
 - Labels
 - Representation Markers
 - North Arrows
 - Scale Bars
 - Legend Items
 - Scale Texts
 - Color Ramps
 - Borders
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 - Colors
 - Vectorization Settings
 - Fill Symbols
 - Line Symbols
 - Marker Symbols**
 - Text Symbols
 - Representation Rules
 - Hatches
 - E:\styles\map_unit_points.style
 - E:\styles\map_unit_lines.style

0000	02.15.01	05.10.03	05.11.ak.02.0X00	06.43	0730	08.03.15	09.008	09.061	09.1
0001	02.15.02	05.10.04	05.10.05	06.44	0740	08.03.16	09.009	09.062	09.1
0002	02.15.03	05.10.05	05.10.06	06.45	0750	08.03.17	09.010	09.063	09.1
0003	0200	05.10.06	05.10.07	06.46	0760	08.03.18	09.011	09.064	09.1
0004	0210	05.10.07	05.10.08	06.47	0770	08.03.19	09.012	09.065	09.1
0005	0220	05.10.08	05.10.09	06.48	07A0	08.03.20	09.013	09.066	09.1
0006	0230	05.10.09	05.11.01	06.49	07X0	08.03.21	09.014	09.067	09.1
0007	0240	05.11.01	05.11.02	06.50	0600	08.03.22	09.015	09.068	09.1
000A	0250	05.11.02	05.11.03	06.51	0610	08.03.23	09.016	09.069	09.1
000X	0260	05.11.03	05.11.04	06.52	0620	08.03.24	09.017	09.070	09.1
0010	0270	05.11.04	05.11.05	06.53	0630	08.03.25	09.018	09.071	09.1
0020	02A0	05.11.05	05.11.06	06.54	0640	08.03.26	09.019	09.072	09.1
0030	02X0	05.11.06	05.11.07	06.55	0650	08.03.27	09.020	09.073	09.1
0040	03.03.03	05.11.07	05.11.08	06.56	0660	08.03.28	09.021	09.074	09.1
0050	03.03.04	05.11.08	05.11.09	06.57	0670	08.03.29	09.022	09.075	09.1
0060	+ 03.03.05	05.11.09	05.11.10	06.58	06A0	08.03.30	09.023	09.076	09.1
0070	0300	05.11.10	05.11.11	06.59	06X0	08.03.31	09.024	09.077	09.1
00A0	0310	05.11.11	05.11.12	07.00	0600	08.03.32	09.025	09.078	09.1
00X0	0320	05.11.12	05.11.13	07.01	0610	08.03.33	09.026	09.079	09.1
01.03.ak.01	0330	05.11.13	05.11.14	07.02	0620	08.03.34	09.027	09.080	09.1
01.03.ak.02	0340	05.11.14	05.11.15	07.03	0630	08.03.35	09.028	09.081	09.1
01.03.ak.03	0360	05.11.15	05.11.16	07.04	0640	08.03.36	09.029	09.082	09.1
01.03.ak.04	0370	05.11.16	05.11.17	07.05	0650	08.03.37	09.030	09.083	09.1
01.04.01	03A0	05.11.17	05.11.18	07.06	0660	08.03.38	09.031	09.084	09.1
01.04.02	03X0	05.11.18	05.11.19	07.07	0670	08.03.39	09.032	09.085	09.1
01.04.03	04.02.03	05.11.19	05.11.20	07.08	06A0	08.03.40	09.033	09.086	09.1
01.04.04	04.02.04	05.11.20	05.11.21	07.09	06X0	08.03.41	09.034	09.087	09.1
01.04.05	04.02.05	05.11.21	05.11.22	07.10	0600	08.03.42	09.035	09.088	09.1
01.04.06	04.02.06	05.11.22	05.11.23	07.11	0610	08.03.43	09.036	09.089	09.1
01.04.07	04.03.01	05.11.23	05.11.24	07.12	0620	08.03.44	09.037	09.090	09.1
01.04.10	04.03.02	05.11.24	05.11.25	07.13	0630	08.03.45	09.038	09.091	09.1
01.04.11	04.03.03	05.11.25	05.11.26	07.14	0640	08.03.46	09.039	09.092	09.1
0100	04.03.04	05.11.26	05.11.27	07.15	0650	08.03.47	09.040	09.093	09.1
0110	04.03.05	05.11.27	05.11.28	07.16	0660	08.03.48	09.041	09.094	09.1
0120	04.03.06	05.11.28	05.11.29	07.17	0670	08.03.49	09.042	09.095	09.1
0130	04.03.07	05.11.29	05.11.30	07.18	06A0	08.03.50	09.043	09.096	09.1
0140	04.03.08	05.11.30	05.11.31	07.19	06X0	08.03.51	09.044	09.097	09.1
0150	04.03.09	05.11.31	05.11.32	07.20	0600	08.03.52	09.045	09.098	09.1
0160	04.03.10	05.11.32	05.11.33	07.21	0610	08.03.53	09.046	09.099	09.1
0170	04.03.11	05.11.33	05.11.34	07.22	0620	08.03.54	09.047	09.100	09.1
01A0	04.03.12	05.11.34	05.11.35	07.23	0630	08.03.55	09.048	09.101	09.1
01X0	0400	05.11.35	05.11.36	07.24	0640	08.03.56	09.049	09.102	09.1
02.11.01	0410	05.11.36	05.11.37	07.25	0650	08.03.57	09.050	09.103	09.1
02.11.02	0420	05.11.37	05.11.38	07.26	0660	08.03.58	09.051	09.104	09.1
02.11.03	0430	05.11.38	05.11.39	07.27	0670	08.03.59	09.052	09.105	09.1
02.11.04	0440	05.11.39	05.11.40	07.28	06A0	08.03.60	09.053	09.106	09.1
02.11.05	0450	05.11.40	05.11.41	07.29	06X0	09.001	09.054	09.107	09.1
02.11.06	0460	05.11.41	05.11.42	07.30	0600	09.002	09.055	09.108	09.1
02.11.07	0470	05.11.42	05.11.43	07.31	0610	09.003	09.056	09.109	09.1
02.11.08	04A0	05.11.43	05.11.ak.01	07.32	0620	09.004	09.057	09.110	09.1
02.11.09	04X0	05.11.ak.01	05.11.ak.01.0X00	07.33	0630	09.005	09.058	09.111	09.1
02.11.10	05.10.01	05.11.ak.01.0X00	05.11.ak.02	07.34	0640	09.006	09.059	09.112	09.1
02.11.11	05.10.02	05.11.ak.02		07.35	0650	09.007	09.060	09.113	09.1
02.11.12				07.36	0660				10.0
02.11.12				07.37	0670				10.0
02.11.ak.01				07.38	0680				
02.14.01				07.39	0690				
				07.40	0700				
				07.41	0710				
				07.42	0720				

Close Styles...

Line Symbols

Style Manager

- C:\Users\mdhendricks\AppData\Roaming
 - ESRI.style
 - C:\gens\AK_GeMS_symbology_ver_1.s
 - Reference Systems
 - Maplex Labels
 - Shadows
 - Area Patches
 - Line Patches
 - Labels
 - Representation Markers
 - North Arrows
 - Scale Bars
 - Legend Items
 - Scale Texts
 - Color Ramps
 - Borders
 - Backgrounds
 - Colors
 - Vectorization Settings
 - Fill Symbols
 - Line Symbols**
 - Marker Symbols
 - Text Symbols
 - Representation Rules
 - Hatches
 - E:\styles\map_unit_points.style
 - E:\styles\map_unit_lines.style

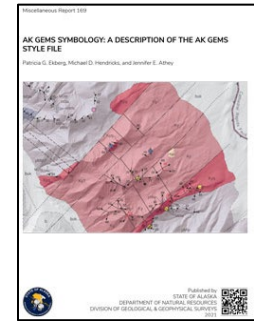
0000	- 01.02.18	- 02.02.10	- 02.06.10	- 02.09.01	- 02.10.30	02.12.41
0010	- 01.02.19	- 02.02.11	- 02.06.11	- 02.09.02	.. 02.10.31	02.12.42
0040	- 01.02.20	- 02.02.12	02.06.11/02.13.04	- 02.09.03	.. 02.10.32	02.12.43
01.01.01	- 01.02.21	- 02.02.13	- 02.06.12	- 02.09.04	- 02.10.33	02.12.44
01.01.02	- 01.02.22	- 02.02.14	- 02.06.13	- 02.09.05	- 02.10.34	02.12.45
01.01.03	.. 01.02.23	.. 02.02.15	- 02.06.14	- 02.09.06	- 02.10.35	02.12.46
01.01.04	.. 01.02.24	.. 02.02.16	.. 02.06.15	.. 02.09.07	- 02.10.36	02.12.47
01.01.05	- 01.02.25	- 02.03.01	02.06.15/02.13.04	.. 02.09.08	- 02.10.37	02.12.48
01.01.06	- 01.02.26	- 02.03.02	.. 02.06.16	- 02.09.09	- 02.10.38	02.12.49
01.01.07	- 01.02.27	- 02.03.03	- 02.07.01	- 02.09.10	.. 02.10.39	02.12.50
01.01.08	- 01.02.28	- 02.03.04	- 02.07.02	- 02.09.11	.. 02.10.40	02.12.51
01.01.09	- 01.02.29	- 02.03.05	- 02.07.03	- 02.09.12	- 02.11.02	02.12.52
01.01.10	- 01.02.30	- 02.03.06	- 02.07.04	- 02.09.13	02.11.21	02.12.53
01.01.11	.. 01.02.31	.. 02.03.07	.. 02.07.05	- 02.09.14	02.12.01	02.12.54
01.01.12	- 01.02.32	.. 02.03.08	.. 02.07.06	.. 02.09.15	02.12.02	02.12.55
01.01.13	.. 01.02.33	- 02.04.01	.. 02.07.07	.. 02.09.16	02.12.03	02.12.56
01.01.14	.. 01.02.35	02.04.01red/02.11.04red	.. 02.07.08	- 02.09.17	02.12.04	02.12.57
01.01.15	.. 01.02.37	- 02.04.02	- 02.07.09	- 02.09.18	02.12.05	02.12.58
01.01.16	.. 01.02.39	- 02.04.03	- 02.07.10	- 02.09.19	02.12.06	02.12.59
01.01.17	- 01.03.01	- 02.04.03/02.11.04	- 02.07.11	- 02.09.20	02.12.07	02.12.60
01.01.19	- 01.03.02	- 02.04.04	- 02.07.12	- 02.09.21	02.12.08	02.12.61
01.01.20	+ 01.03.03	- 02.04.05	- 02.07.13	- 02.09.22	02.12.09	02.12.62
01.01.21	+ 01.03.04	- 02.04.05/02.11.04	- 02.07.14	.. 02.09.23	02.12.10	02.12.63
01.01.23	- 01.03.05	- 02.04.06	.. 02.07.15	.. 02.09.24	02.12.11	02.12.64
01.01.25	- 01.03.06	.. 02.04.07	.. 02.07.16	- 02.10.01	02.12.12	02.12.65
01.01.26	- 01.03.07	.. 02.04.08	.. 02.08.01	- 02.10.02	02.12.13	02.12.66
01.01.27	- 01.03.08	- 02.05.01	02.08.01/02.13.04	- 02.10.03	02.12.14	02.12.67
01.01.28	- 01.03.09	- 02.05.02	- 02.08.02	- 02.10.04	02.12.15	02.12.68
01.01.29	- 01.03.10	- 02.05.03	- 02.08.03	02.10.05	02.12.16	02.12.69
01.01.30	- 01.03.11	- 02.05.04	02.08.03/02.13.04	- 02.10.06	02.12.17	02.12.70
01.01.31	- 01.03.12	- 02.05.05	- 02.08.04	.. 02.10.07	02.12.18	02.12.71
01.01.32	0110	- 02.05.06	02.08.04/02.13.04	.. 02.10.08	02.12.19	02.12.72
01.01.33	0120	.. 02.05.07	- 02.08.05	- 02.10.09	02.12.20	02.12.73
01.01.34	0130	.. 02.05.08	- 02.08.06	02.10.10	02.12.21	02.12.74
01.01.35	01A0	- 02.05.09	.. 02.08.07	- 02.10.11	02.12.22	02.12.75
01.01.36	01X0	- 02.05.10	02.08.07/02.13.04	- 02.10.12	02.12.23	02.12.76
01.02.01	- 02.01.01	- 02.05.11	.. 02.08.08	- 02.10.13	02.12.24	02.12.77
01.02.02	- 02.01.02	- 02.05.12	- 02.08.09	- 02.10.14	02.12.25	02.12.78
01.02.03	- 02.01.03	- 02.05.13	- 02.08.10	.. 02.10.15	02.12.26	02.12.79
01.02.04	- 02.01.04	- 02.05.14	- 02.08.11	.. 02.10.16	02.12.27	02.12.80
01.02.05	- 02.01.05	.. 02.05.15	- 02.08.12	.. 02.10.17	02.12.28	02.12.81
01.02.06	- 02.01.06	.. 02.05.16	- 02.08.13	- 02.10.18	02.12.29	02.12.82
01.02.07	.. 02.01.07	- 02.06.01	- 02.08.14	- 02.10.19	02.12.30	02.12.83
01.02.08	.. 02.01.08	- 02.06.02	.. 02.08.15	.. 02.10.20	02.12.31	02.12.84
01.02.09	- 02.02.01	- 02.06.03	.. 02.08.16	- 02.10.21	02.12.32	02.12.85
01.02.10	- 02.02.02	02.06.03/02.13.04	- 02.08.17	- 02.10.22	02.12.33	02.12.86
01.02.11	- 02.02.03	- 02.06.04	- 02.08.18	.. 02.10.23	02.12.34	02.12.87
01.02.12	- 02.02.04	- 02.06.05	- 02.08.19	.. 02.10.24	02.12.35	02.12.88
01.02.13	- 02.02.05	- 02.06.06	- 02.08.20	- 02.10.25	02.12.36	02.13.01
01.02.14	- 02.02.06	.. 02.06.07	- 02.08.21	- 02.10.26	02.12.37	02.13.02
01.02.15	.. 02.02.07	.. 02.06.08	- 02.08.22	- 02.10.27	02.12.38	02.13.03
01.02.16	.. 02.02.08	- 02.06.09	.. 02.08.23	- 02.10.28	02.12.39	02.13.04
01.02.17	- 02.02.09	02.06.09/02.13.04	.. 02.08.24	- 02.10.29	02.12.40	02.16.01

Close Styles...

Agenda

- Introduction
 - Key Symbology quotes from TM 11-B10 (GeMS)
 - Very brief review AK GeMS Geologic Mapping System
- AK GeMS Symbology philosophy & architecture
- Style File - AK_GeMS_symbols_ver_1.style
- **Custom Symbols** Procedures and Documentation
- Future work

AK DGGs Symbol Categories & Code Conventions



AK GEMS SYMBOLOGY: A DESCRIPTION OF THE AK GEMS STYLE FILE, MP 167

- **FGDC Standard Symbols**—This tab explains all the FGDC Standard Symbols in the style file as they are found in the FGDC manual. Symbols are listed by their FGDC Symbol code, with padded zeros (**example – 01.01.01**)
- **Compound FGDC Symbols**—This tab explains compound symbols which are created from two or more standard FGDC Symbols. Typically these are lines that need to have a repeating decoration along them, or a second symbol level of line color. Symbols are listed by the first FGDC Symbol code / second symbol code (**example – 02.04.03/02.11.04**)
- **Custom Symbols w FGDC Sections**—This tab explains custom symbols that fit into the established FGDC Sections. The symbol codes all start with the FGDC section and subsection into which the feature corresponds, followed by 'ak' and a unique number (**example – 01.03.ak.01**)
- **Custom Symbols NO FGDC Sections**— This tab explains custom symbols that DO NOT fit into the established FGDC Sections. The symbol codes all start with 'ak', followed by a group number (starting at 101 and assigned based on Category), followed by a unique number (**example – ak.101.01**)
- **Symbols with alternate colors**—This tab explains FGDC and AK GeMS custom symbols that need to be shown in alternate colors. In the FGDC manual, the notes on usage for many symbols indicate that a symbol “may be shown in other colors”. The default color, as shown in the FGDC manual, is the default color for the symbol in the style file.
 - When an alternate color is needed, a custom symbol is created that uses the standard symbol code and the CMYK color code of the alternate color.
 - For example, FGDC standard symbol 18.56 is a volcanic vent that has a default red color. When needed to be shown in black, the feature is symbolized with code **18.56.XXX0**.
 - To keep with the FGDC color convention of always keeping the K=0, the code **XXX0** is used to represent black.
- **map_unit_point Symbols**—This tab explains the convention for symbolizing map unit points. Symbols code is the FGDC color code that corresponds to the color of each map unit
- **map_unit_line Symbols**— This tab explains the convention for symbolizing map unit. Symbols code is the FGDC color code that corresponds to the color of each map unit

Custom symbols

AK DGGS “Symbol Types”

symbol_type	definition
FGDC Primary	The primary and expected FGDC symbol used to draw a feature type stored in an AK GeMS database.
FGDC Secondary	A substitute FGSC symbol used to draw a feature type stored in an AK GeMS database. These symbols should not be used without coordination with the AK GeMS admin staff. See the assoc_symbol_code field for this secondary symbol's primary symbol.
FGDC Decoration	A FGSC symbol used to enhance, or decorate a symbol. For example, a plunge direction.
FGDC Decoration Secondary	A substitute FGDC symbol used to enhance or decorate a symbol. For example, a plunge direction. These symbols should not be used without coordination with the AK GeMS admin staff. See the assoc_symbol_code field for this secondary symbol's primary symbol.
FGDC Alternate	An alternate FGDC symbol used to draw a feature with special characteristics stored in an AK GeMS database. A typical example of an alternate symbols is an orientation point with multiple observations at one locality. See the assoc_symbol_code field for this symbol's primary symbol.
FGDC Not Used by AK GeMS	The FGDC symbol is not currently used by DGGS
FGDC Not Available in Style	The FGDC symbol is not available in the current style file.
AK GeMS Custom Primary	Custom symbol made by DGGS staff for features that do not have a standard FGDC symbol or in cases where a FGCD symbol needs to be repurposed.
AK GeMS Custom Secondary	Custom substitute symbol made by DGGS staff for features that do not have a standard FGDC symbol or in cases where a FGCD symbol needs to be repurposed.

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A1 Symbol Type

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
	Symbol Type	FGDC Section	FGDC Sub-Section	FGDC Page	Symbol Co	FGDC Co	Feature Class	Category	Type	Feature Description	Associated Symbol	Style Folder	Usage	Notes
1	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-1	01.01.01	1.11	contacts_and_faults	contact	contact, generic	Contact--Identity and existence certain, location accurate	Null	Line Symbol		
2	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-1	01.01.02	1.12	contacts_and_faults	contact	contact, generic	Contact--Identity or existence questionable, location accurate	Null	Line Symbol		
3	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-1	01.01.03	1.13	contacts_and_faults	contact	contact, generic	Contact--Identity and existence certain, location approximate	Null	Line Symbol		
4	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-1	01.01.04	1.14	contacts_and_faults	contact	contact, generic	Contact--Identity or existence questionable, location approximate	Null	Line Symbol		
5	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-1	01.01.05	1.15	contacts_and_faults	contact	contact, generic	Contact--Identity and existence certain, location inferred	Null	Line Symbol		
6	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-1	01.01.06	1.16	contacts_and_faults	contact	contact, generic	Contact--Identity or existence questionable, location inferred	Null	Line Symbol		
7	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-1	01.01.07	1.17	contacts_and_faults	contact	contact, generic	Contact--Identity and existence certain, location concealed	Null	Line Symbol		
8	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-1	01.01.08	1.18	contacts_and_faults	contact	contact, generic	Contact--Identity or existence questionable, location concealed	Null	Line Symbol		
9	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-1	01.01.09	1.19	contacts_and_faults	contact	contact, internal	Internal contact--Identity and existence certain, location accurate	Null	Line Symbol		
10	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-1	01.01.10	1.110	contacts_and_faults	contact	contact, internal	Internal contact--Identity or existence questionable, location accurate	Null	Line Symbol		
11	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-1	01.01.11	1.111	contacts_and_faults	contact	contact, internal	Internal contact--Identity and existence certain, location approximate	Null	Line Symbol		
12	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-1	01.01.12	1.112	contacts_and_faults	contact	contact, internal	Internal contact--Identity or existence questionable, location approximate	Null	Line Symbol		
13	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-1	01.01.13	1.113	contacts_and_faults	contact	contact, internal	Internal contact--Identity and existence certain, location inferred	Null	Line Symbol		
14	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-1	01.01.14	1.114	contacts_and_faults	contact	contact, internal	Internal contact--Identity or existence questionable, location inferred	Null	Line Symbol		
15	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-1	01.01.15	1.115	contacts_and_faults	contact	contact, internal	Internal contact--Identity and existence certain, location concealed	Null	Line Symbol		
16	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-1	01.01.16	1.116	contacts_and_faults	contact	contact, internal	Internal contact--Identity or existence questionable, location concealed	Null	Line Symbol		
17	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-1	01.01.17	1.117	contacts_and_faults	contact	contact, gradational	Gradational contact--Identity and existence certain, location accurate	Null	Line Symbol		
18	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-1	01.01.18	1.118	contacts_and_faults	contact	contact, gradational	Gradational contact--Identity or existence questionable, location accurate	Null	Line Symbol		
19	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-1	01.01.19	1.119	contacts_and_faults	contact	contact, gradational	Gradational contact--Identity and existence certain, location approximate	Null	Line Symbol		
20	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-1	01.01.20	1.120	contacts_and_faults	contact	contact, gradational	Gradational contact--Identity or existence questionable, location approximate	Null	Line Symbol		
21	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-1	01.01.21	1.121	contacts_and_faults	contact	contact, gradational	Gradational contact--Identity and existence certain, location inferred	Null	Line Symbol		
22	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-1	01.01.22	1.122	contacts_and_faults	contact	contact, gradational	Gradational contact--Identity or existence questionable, location inferred	Null	Line Symbol		
23	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-1	01.01.23	1.123	contacts_and_faults	contact	contact, gradational	Gradational contact--Identity and existence certain, location concealed	Null	Line Symbol		
24	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-1	01.01.24	1.124	contacts_and_faults	contact	contact, gradational	Gradational contact--Identity or existence questionable, location concealed	Null	Line Symbol		
25	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-2	01.01.25	1.125	contacts_and_faults	contact	contact, unconformable	Unconformable contact--Identity and existence certain, location accurate	Null	Line Symbol		
26	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-2	01.01.26	1.126	contacts_and_faults	contact	contact, unconformable	Unconformable contact--Identity or existence questionable, location accurate	Null	Line Symbol		
27	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-2	01.01.27	1.127	contacts_and_faults	contact	contact, unconformable	Unconformable contact--Identity and existence certain, location approximate	Null	Line Symbol		
28	FGDC Primary	1--Contacts, Key Beds, and Dikes	11--Contacts	A-1-2	01.01.28	1.128	contacts_and_faults	contact	contact, unconformable	Unconformable contact--Identity or existence questionable, location	Null	Line Symbol		

A-FGDC Standard Symbols | B-Compound FGDC Symbols | C-Custom Syms w FGDC Sections | D-Custom Syms NO FGDC Sections | E-Symbols w ...

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	B	C	D	E	F	G	H	I	J
	First Symbol Code (fault, fold, etc)	Second Symbol Code (ie - decoration)	Symbol Code (firstcode,secondcode)	Picture	Feature Class	Category	Type	Feature Description	Style F
1	02.04.03	02.11.04	02.04.0302.11.04		contacts_and_faults	fault	fault, reverse	Reverse fault—Identity and existence certain, location approximate. Fault showing local right-lateral offset. Arrows show relative motion.	line syrr
2	02.04.05	02.11.04	02.04.0502.11.04		contacts_and_faults	fault	fault, reverse	Reverse fault—Identity and existence certain, location inferred. Fault showing local right-lateral offset. Arrows show relative motion.	line syrr
3	02.06.03	02.13.04	02.06.0302.13.04		contacts_and_faults	fault	fault, strike-slip, right-lateral offset	Strike-slip fault, right-lateral offset—Identity and existence certain, location approximate. Displacement during Quaternary time (undifferentiated).	line syrr
4	02.06.09	02.13.14	02.06.0902.13.14		contacts_and_faults	fault	fault, strike-slip, left-lateral offset	Strike-slip fault, left-lateral offset—Identity and existence certain, location accurate. Displacement during Quaternary time (undifferentiated).	line syrr
5	02.06.11	02.13.14	02.06.1102.13.14		contacts_and_faults	fault	fault, strike-slip, left-lateral offset	Strike-slip fault, left-lateral offset—Identity and existence certain, location approximate. Displacement during Quaternary time (undifferentiated).	line syrr
6	02.06.15	02.13.04	02.06.1502.13.04		contacts_and_faults	fault	fault, strike-slip, left-lateral offset	Strike-slip fault, left-lateral offset—Identity and existence certain, location concealed. Displacement during Quaternary time (undifferentiated).	line syrr
7	02.08.01	02.13.04	02.08.0102.13.04		contacts_and_faults	fault	fault, thrust	Thrust fault—Identity and existence certain, location accurate. Displacement during Quaternary time (undifferentiated).	line syrr
8	02.08.03	02.13.04	02.08.0302.13.04		contacts_and_faults	fault	fault, thrust	Thrust fault—Identity and existence certain, location approximate. Displacement during Quaternary time (undifferentiated).	line syrr
9	02.08.04	02.13.04	02.08.0402.13.04		contacts_and_faults	fault	fault, thrust	Thrust fault—Identity or existence questionable, location approximate. Displacement during Quaternary time (undifferentiated).	line syrr
10	02.08.07	02.13.04	02.08.0702.13.04		contacts_and_faults	fault	fault, thrust	Thrust fault—Identity and existence certain, location concealed. Displacement during Quaternary time (undifferentiated).	line syrr
11	05.01.05	05.10.05	05.01.0505.10.05		structure_lines	fold	fold, anticline	Plunging anticline—Identity and existence certain, location inferred. Large arrowhead shows direction of plunge.	line syrr
12	05.03.05	05.10.05	05.03.0505.10.05		structure_lines	fold	fold, anticline, asymmetric	Plunging asymmetric anticline—Identity and existence certain, location inferred. Large arrowhead shows direction of plunge.	line syrr
13	05.03.06	05.10.05	05.03.0605.10.05		structure_lines	fold	fold, anticline, asymmetric	Plunging asymmetric anticline—Identity or existence questionable, location inferred. Large arrowhead shows direction of plunge.	line syrr
14	05.05.06	05.10.07	05.05.0605.10.07		structure_lines	fold	fold, syncline	Plunging syncline—Identity or existence questionable, location inferred. Large arrowhead shows direction of plunge.	line syrr
15	05.06.03	05.10.05	05.06.0305.10.05		structure_lines	fold	fold, synform	Plunging synform—Identity and existence certain, location approximate. Large arrowhead shows direction of plunge.	line syrr
16	05.07.05	05.10.07	05.07.0505.10.07		structure_lines	fold	fold, syncline, asymmetric	Plunging asymmetric syncline—Identity and existence certain, location inferred. Large arrowhead shows direction of plunge.	line syrr

A-FGDC Standard Symbols B-Compound FGDC Symbols C-Custom Syms w FGDC Sections D-Custom Syms NO FGDC Section ...

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Future Work

- Continue adding custom symbols to style
- Integrate style_info table into data dictionary & DB template to assist with robust popups on interactive maps
- Begin transition to ArcPro style becoming the primary style
- Explore symbolizing with Dictionary Symbolology

Question?