

### Description of Map Units

**SEDIMENTARY UNITS**

- Qal** - Quaternary alluvium: Unconsolidated, poorly sorted and poorly stratified, tan to light gray deposits of gravel, sand, silt, and clay. Similar to stratified terraces along streams.

**INTRUSIVE ROCKS**

- Jd** - olivine diabase: Gray to bluish-black, generally fine-grained and locally porphyritic diabase, consisting primarily of plagioclase, augite, olivine, magnetite and ilmenite. Occurs as steeply dipping to vertical dikes. Dikes are indicated by solid lines where location is known, dashed where inferred by correlation and magnetic data, and dotted where concealed. Isolated diabase stations indicated by a red circle.
- Jd** - two-pyroxene diabase: Gray to bluish-black, fine to medium-grained and commonly plagioclase porphyritic, olivine-free, augite + pigeonite diabase commonly containing quartz and alkali feldspar granophyre. Dikes are indicated by solid lines where location is known, dashed where inferred by correlation and aeromagnetic data, and dotted where concealed. Isolated diabase stations indicated by a red circle.
- PPZp** - lamprophyre dike: A fine to medium-grained, panidiomorphic lamprophyre with generally euhedral phenocrysts to 1.5 mm of red-brown (seranditic?) hornblende, red-brown biotite, and pale pink to beige augite. Amphibole is the most abundant ferromagnesian mineral, followed by biotite and then clinopyroxene. Amphibole occurs in characteristically elongate slender prismatic habit, and is randomly oriented. Biotite plates have inclusions of amphibole. The groundmass consists of extensively sericitized alkali feldspar and saussuritized plagioclase, with alkali feldspar apparently about twice as abundant as plagioclase. The rock contains sparse amygdules of epidote/silicite up to 1 cm. Up to 5% of the rock is opaque minerals, including pyrite. The rock is unmetamorphosed, but shows significant late-magmatic and/or hydrothermal alteration. Secondary minerals include calcite. Classified as a vogueite.

**PERMIAN/TRIASSIC**

- PPcg** - Granite of the Cedar Creek pluton: Pink-white, medium to coarse-grained, unfoliated to moderately foliated and lineated biotite granite, with local pegmatite.
- PPrgd** - granitoid facies d: Fine to coarse-grained, but primarily medium-grained equigranular to moderately porphyritic (very rarely megacrystic), rarely foliated, pink or salmon and white biotite +/- muscovite monzonite. Commonly has an almost idiomorphic fabric with well-formed alkali feldspar and plagioclase grains. Cl = 5-12. Contains common biotite schlieren and local biotite crystal clots. Pegmatite dikes and pods are extremely common, locally, isolated xenocrysts of alkali feldspar 1-4 cm in length also occur. Unit also contains relatively common xenoliths of Raleigh terrane country rocks, especially in Ingleside and Louisburg quadrangles. Less commonly contains outcrops of fine granodiorite or tonalite and may display igneous layering between biotite-rich and biotite-poor phases. Weathered surfaces are commonly rubbly, friable and/or cavernous. Rolevsite main phase of Speer (1994).
- PPrg** - foliated Rolevsite granite: Gray-white to pink-white, medium to coarse-grained, locally weakly porphyritic, moderate to well-foliated biotite-bearing granite and leucogranite, gneissic granite and leucogranite, and granitic to leucogranitic gneiss. Locally contains muscovite, garnet, or hornblende.
- PPrgv** - Avereite granitoid (Speer, 1994): massive, coarse-grained biotite +/- muscovite granitoid, having abundant subhedral orange alkali feldspar megacrysts to 1 cm. Locally foliated near western margin of batholith.

**PALEOZOIC**

- PzZgn** - gneissic biotite granitoid (Paleozoic?): Foliated biotite granitoid and granitoid orthogneiss interlayered with Raleigh gneiss.

**METAMORPHIC ROCKS**

**RALEIGH TERRANE**

- CZgn** - Raleigh gneiss: Mixed unit consisting mainly of fine to coarse-grained, well foliated, compositionally layered, and locally lineated biotite granitoid gneiss, and lesser amounts of biotite + hornblende gneiss, biotite schist, white mica +/- sillimanite schist, metagabbro, and amphibolite. More mafic CZgn rocks locally contain clinopyroxene or garnet, and display hornblende texture. CZgn also includes leucogranitic gneiss containing garnet and locally magnetite. The unit is locally intruded by dikes of pink to gray granitic pegmatite and white to gray graphic granite.
- CZum** - metamorphic rock: Dark green to black, fine to coarse-grained massive to foliated talc-chlorite-actinolite schist and actinolite rock, locally with octahedral magnetite crystals.

### EXPLANATION OF MAP SYMBOLS

**CONTACTS**

Lithologic contacts - Solid where location known, dashed where inferred, dotted where concealed.

**FAULTS**

Faults - Solid where location known, dashed where inferred, dotted where concealed. Tick mark indicates dip of fault plane.

**FOLDS**

antiform      synform

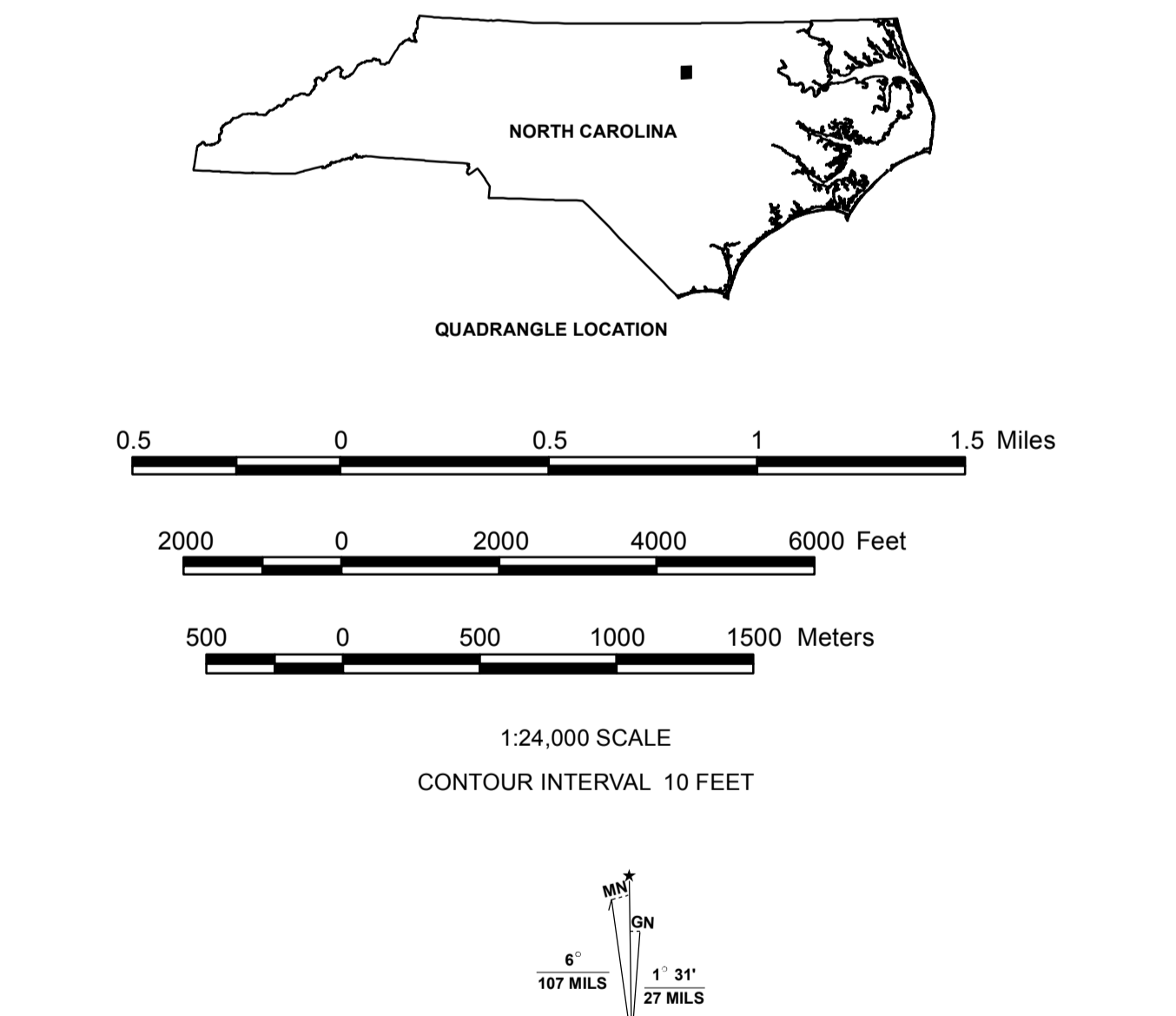
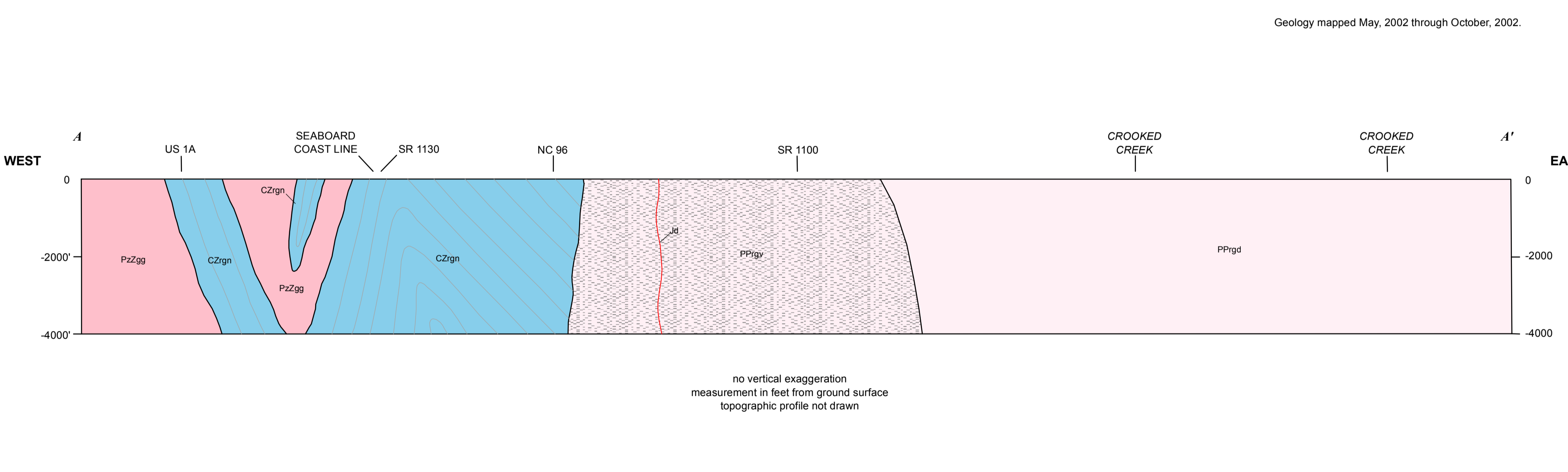
**STRUCTURAL SYMBOLS**

Observation sites are centered on the strike bar or are at the intersection point of multiple symbols.

- Strike and dip of inclined regional foliation (Srs)
- Strike and dip of inclined diabase dike
- Strike of vertical regional foliation
- Strike and dip of magmatic foliation in granitoid
- Strike of regional foliation, dip unknown
- Strike of vertical magmatic foliation in granitoid
- Strike and dip of inclined regional C or C' foliation
- Strike and dip of biotite schlieren
- Strike of vertical regional C or C' foliation
- Strike of biotite schlieren, dip unknown
- Strike and dip of inclined joint surface
- Strike and dip of quartz stringer
- Strike of vertical joint surface
- Strike and dip of inclined mesoscale brittle fault
- Strike of joint surface, dip unknown
- Strike and dip of axial surface of F2 fold
- Strike of vertical joint surface
- Bearing and plunge of mineral lineation
- Strike and dip of inclined pegmatite dike
- Bearing of mineral lineation, plunge unknown
- Strike of pegmatite dike, dip unknown
- Bearing and plunge of minor fold hinge (F2)

**OTHER STATIONS**

- silicified breccia outcrop location
- FR 1164 geochemical sample location
- station location



SAMPLE ID	ROCK TYPE	MAP UNIT	OXIDES IN PERCENT													SELECTED ELEMENTS IN PPM													
			SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	Cr2O3	LOI	TOTAL	Ag	Au	Ba	Ce	Co	Cu	Nd	Ni	Sr	Ta	Zn	Zr		
FR-1	2-pyx diabase	Jd	50.44	0.84	17.5	11.19	0.17	4.93	10.96	2.58	0.53	0.1	0.02	1.1	100.4	<1	<1	100	13.7	43	69	8.2	39	196	<0.5	108	63		
FR-2072	ultramafic	CZum in CZgn	44.8	0.38	8.62	13.92	0.32	22.45	5.01	0.51	0.07	0.04	0.14	3.8	100.1	<1	<1	68	10	97	18	7.8	511	22	<0.5	145	72		
FR-2073	ultramafic (?)	CZgn	46.84	0.22	22.22	6.04	0.1	8.64	13.92	1.23	0.24	0.03	0.14	0.7	100.4	<1	<1	<20	3	37.7	71	2.2	157	344	<0.5	65	23		
FR-1020	biotite gneiss	CZgn	68.97	0.52	15.09	5.19	0.1	0.77	2.54	4.75	2.17	0.09	<0.01	0.2	100.5	<1	<1	379	80.6	5.5	87	42.5	<5	220	0.8	176	250		
FR-2080	biotite gneiss	CZgn	72.45	0.33	13.31	3.39	0.06	1.13	2.98	3.66	2.29	0.06	<0.01	0.4	100.2	<1	<1	712	41.8	9.5	16	11.5	11	233	<0.5	76	105		
FR-1164	biotite granite	PPrgd	71.29	0.28	14.8	2.58	0.03	0.52	1.15	3.39	4.78	0.09	<0.01	1.05	100.2	<1	<1	1050	40.4	3.6	10	26.8	<5	402	<0.5	70	214		
FR-1200	gneissic granite	PPcg	72.08	0.24	14.72	2.16	0.04	0.43	1.88	3.82	4.21	0.06	<0.01	0.3	100.1	<1	<1	1050	63.8	3	11	19.4	6	329	0.8	67	158		
LAMP-1	lamprophyre	PPZp	47.55	2.6	17.13	9.27	0.13	5.2	5.56	4.26	4.25	0.85	<0.01	1.4	98.54	1	<1	1310	82.7	34.3	44	44.5	63	1120	7.4	134	276		

Powder material processing conducted at the Petrology Preparation Laboratory of the Department of Geography and Geology at the University of North Carolina Wilmington.

Geochemical analyses completed by SGS Minerals, Toronto, Canada for 11 major and 49 trace elements. Whole-rock analyses using method codes XRF76Z + 75V, IMS95A, and FAI303, and individual element method code ICMS12B for Ta.

NA = No sample analysis  
PPM = parts per million  
LOI = loss on ignition

The electronic files of the geochemical data are available upon request from the North Carolina Geological Survey.

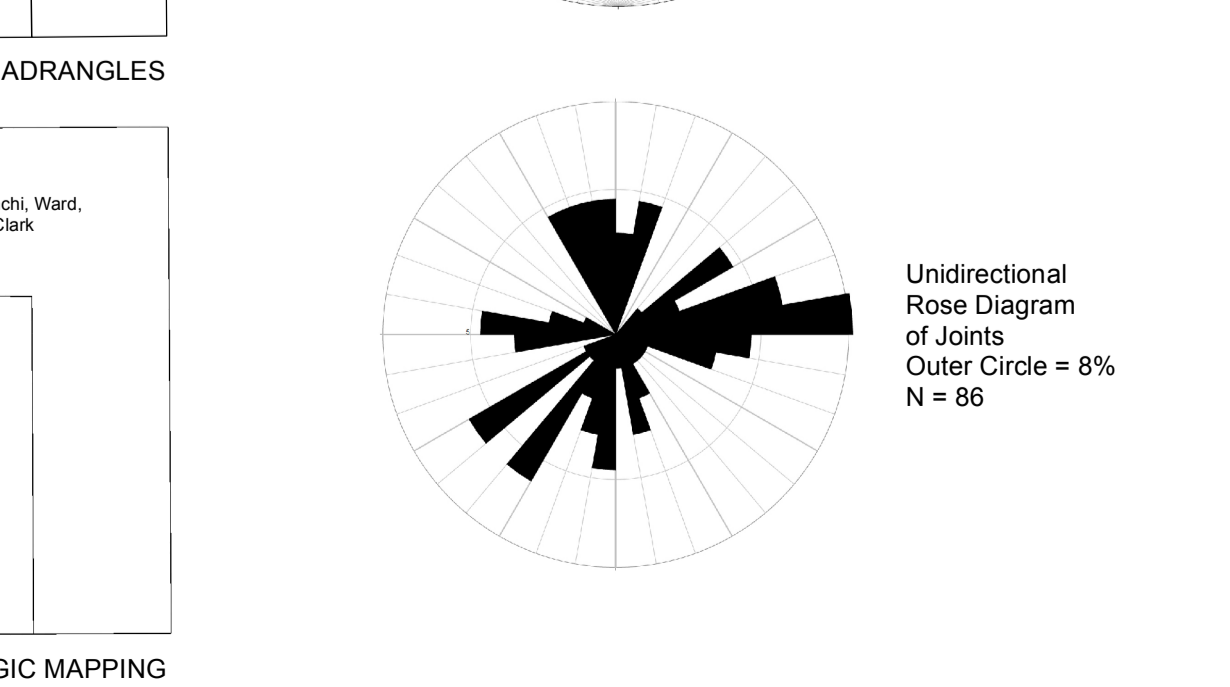
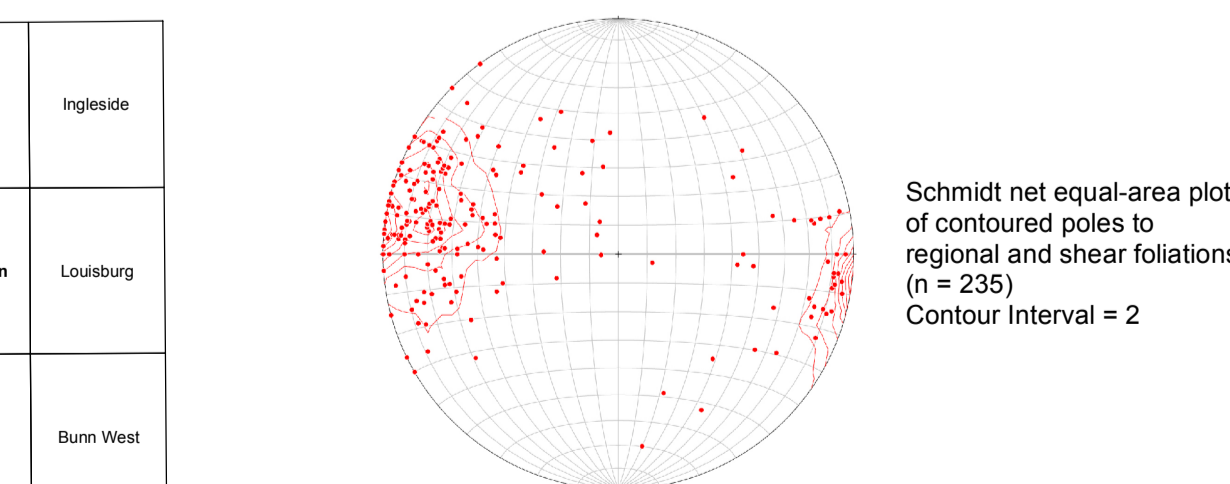
### REFERENCES

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Speer, J.A., 1994. Nature of the Rolevsite batholith, North Carolina, in Stoddard, E.F., and D.E. Blake (eds.), Geology and Field Trip Guide, Western Flank of the Raleigh Metamorphic Belt, North Carolina: Carolina Geological Society Guidebook, p. 97-102.

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## GEOLOGIC MAP OF THE FRANKLINTON 7.5-MINUTE QUADRANGLE, FRANKLIN AND WAKE COUNTIES, NORTH CAROLINA

By Edward F. Stoddard, Cindy M. Phillips, Channa D. Witanachchi, Amy N. Ward, Paul F. Farris, David E. Blake and Timothy W. Clark

Digital representation by Michael A. Medina, Cindy M. Phillips, and Timothy W. Clark  
Also includes previous mapping of Blake (1986) and Horton and others (1992)



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