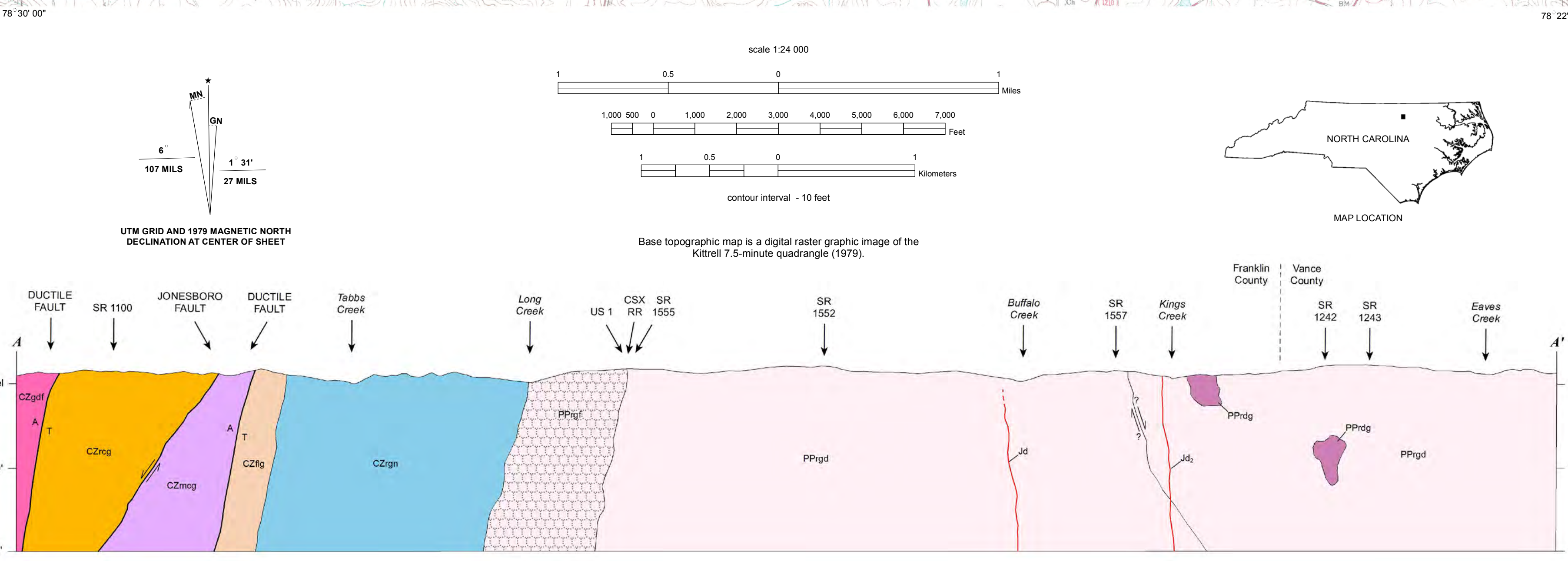


- ### Description of Map Units
- Qal** - Alluvium: unconsolidated, tan to light gray stream deposits of sand and gravel, with local clay and silt, poorly to well-sorted, poorly stratified.
 - Tg** - Unconsolidated upland terrace gravel: abundant well-rounded quartz pebbles and cobbles, typically ellipsoidal, occurring at higher elevation than active floodplains and stream valleys.
 - Jd** - Diabase: most commonly occurs as steeply dipping to vertical dikes of gray to bluish-black, slightly to severely weathered, fine to medium-grained diabase. Common variety is olivine diabase. Dikes are indicated by solid lines where location is known, dashed where inferred, and dotted where concealed. Isolated diabase stations indicated by a red circle.
 - Jd₂** - Diabase: olivine-free, two-pyroxene diabase commonly containing quartz and alkali feldspar granophyre. Dikes are indicated by solid lines where location is known, dashed where inferred, and dotted where concealed. Isolated diabase stations indicated by a red circle.
 - PPwg** - Granite of the Wilton pluton: Grayish-orange to pinkish-orange, medium- to coarse-grained, weakly foliated or lineation nonfoliated, leucocratic (C) less than 15) biotite granite. Locally mylonitic bearing.
 - 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 monzogranite. Commonly has an almost isometric fabric with well-formed alkali feldspar and plagioclase grains. C1 = 1-12. 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 Louisville 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 rusty, friable and/or cavernous. Rolesville main phase of Speer (1994).
 - PPrgj** - Granitoid facies j: Heterogeneous granitoid unit consisting of streaky, gneissic, or layered biotite granitoid and biotite granitoid gneiss. Includes granite, leucogranite, and granodiorite and their gneissic counterparts. Generally medium grained but ranges from fine to coarse. Locally has alkali feldspar xenocrysts up to 3 cm. Locally exhibits strong compositional banding, elsewhere vague phasing layering, boundaries of darker phases, biotite schlieren, or xenoliths of biotite gneiss. Additionally may contain feldspar or biotite foliation. Planar fabric elements may be contorted and possibly transposed. Pegmatite and apatite dikes are abundant and locally deformed. Consistently associated with granitoid of the Rolesville main phase PPrgd.
 - PPrgf** - foliated Rolesville granite: Gray-white to pink-white, medium to coarse-grained, locally weakly porphyritic, moderately to well-foliated biotite-bearing granite and leucogranite, gneissic granite and leucogranite, and granitic to leucogranitic gneiss. Locally contains muscovite, garnet, or hornblende.
 - PPbg** - Biotite granite: Pink-white, medium to coarse-grained, unfoliated to weakly foliated biotite granite, with local pegmatite.
 - PPrd** - Diorite-gabbro of the Rolesville batholith: medium grained biotite granodiorite, hornblende-biotite diorite, quartz diorite, and biotite-hornblende gabbro/diorite, apparently unmetamorphosed and surrounded by PPrgj.
- ### Carolina Terrane
- CZcf** - Foliated Tabbs Creek meta-intrusive suite: Variably green colored, fine- to medium-grained phyllosilicate, protomylonite, and mylonite formed from felsic, intermediate, and mafic magmatic rocks of the Tabbs Creek suite. Chlorite and white mica fine grains define a mylonitic to fine grained foliation and aggregate mineral stretch lineation. Degree of dynamic recrystallization varies, with polycrystalline quartz and feldspar displaying a gradational range from relict igneous to porphyroclastic S-C composite fabric.
 - CZic** - Tabbs Creek meta-igneous suite: Variably green, fine to medium-grained, variably fractured greenstone to metagabbro and metadiorite. Crossover by fine to coarse-grained biotite-hornblende meta-quartz diorite to metagranodiorite, and locally metarhyolite to metagranite. Greenstone, metagabbro, and metadiorite typically occur as enclaves within or contain dikes of the more felsic rocks.
 - CZgf** - Foliated Tabbs Creek metagranodiorite: Gray-green, fine to coarse-grained, well foliated and lineated, leucocratic (C) less than 15) metagranodiorite. Chlorite and white mica define a variably developed protomylonitic to mylonitic foliation and stretch lineation.
 - CZvg** - Granitoid of the Vance County Pluton (T): Gray-white to green-white, coarse-grained, unfoliated to foliated, mesocratic (C) less than 40) biotite hornblende metagranodiorite containing conspicuous relict blue quartz phenocrysts.
- ### Crabtree Terrane
- CZrc** - Ruin Creek gneiss: Variably tan-orange to gray-orange fine to medium-grained, well foliated and lineated porphyroclastic K-feldspar granitic gneiss. White mica and recrystallized K-feldspar define the shear foliation and stretch lineation.
 - CZicg** - Little Creek gneiss: Pink-gray to orange-tan, fine- to medium-grained, well foliated to lineated, leucocratic (C) less than 10) white mica + biotite granitic gneiss. Locally magnetite-bearing.
 - CZmca** - Middle Creek gneiss, mafic facies: Dark grayish black to dark green, fine to medium-grained, foliated and lineated, layered, epidote-bearing tonalitic gneiss and amphibolite. Locally contains opaque mineral-rich metaproxenite.
 - CZmcg** - Middle Creek gneiss: Fine to coarse-grained, gneissic to schistose, locally lineated, mesocratic (C) less than 10) biotite quartz diorite to granodioritic gneiss. Interbedded with pink-gray to orange-tan fine to medium-grained, locally lineated, leucocratic (C) less than 10) white mica biotite granitoid gneiss, and fine to medium-grained amphibolitic gneiss.
- ### Raleigh Terrane
- CZfg** - Falls leucogneiss: Pinkish-gray to orange-tan, fine to medium-grained, weakly to moderately foliated, strongly lineated, leucocratic (C) less than 5) biotite-magnetite granitic gneiss. Discordant U-Pb upper intercept age of 550.8 +/- 4.9 Ma (Casin, 2001) interpreted as dating crystallization of plutonic protolith.
 - CZrgn** - Raleigh gneiss: mafic to intermediate orthogneiss. Dominantly biotite +/- hornblende gneiss, with local amphibolite, metagabbro, and biotite schist, locally grades to granitoid gneiss. Locally intruded by dikes of pink to gray granitic pegmatite and white to gray graphic granite. Occurs west of Prg and as xenoliths within Prg; xenoliths are indicated by blue circles.
 - CZru** - Metatuffaceous rock: Dark green to black, fine to coarse-grained massive to foliated talc-chlorite-actinolite schist and actinolite rock.

- ### EXPLANATION OF MAP SYMBOLS
- #### CONTACTS
- lithologic contacts - Solid where location known, dashed where inferred, dotted where concealed.
 - diabase dikes - Solid where location known, dashed where inferred, dotted where concealed.
- #### FAULTS
- Solid where location known, dashed where inferred, dotted where concealed, dashed and 7 where conjectural.
 - D indicates downthrown side, U indicates upthrown side.
 - Tick marks indicate dip direction of fault plane, where known or inferred. In the cross section, A indicates movement away from the viewer, T towards the viewer.
- #### PLANAR FEATURES
- Observation sites are centered on the strike bar or are at the intersection point of multiple symbols. Planar feature symbols may be combined with linear features.
- strike and dip of pegmatite dike
 - strike of vertical pegmatite dike
 - strike and dip of metamorphic foliation
 - strike of vertical metamorphic foliation
 - strike and dip of foliation in Rolesville granite
 - strike of vertical foliation in Rolesville granite
 - strike and dip of mylonitic foliation
 - strike of vertical mylonitic foliation
 - strike and dip of joint
 - vertical joint
 - strike and dip of quartz vein
 - strike of vertical quartz vein
- #### LINEAR FEATURES
- trend and plunge of fold axis
 - trend and plunge of mineral lineation
 - trend of horizontal mineral lineation
- #### OTHER FEATURES
- observation station location
 - fine-grained granitoid rocks
 - pavement (pv)
 - diabase station location
 - xenolith
 - whole-rock geochemical sample location
 - abundant quartz, locally brecciated
 - trace of siliceous breccia zones
 - crushed stone quarry-active



Disclaimer: This Open-File report has been reviewed for conformity with the North Carolina Geological Survey editorial standards or with the North American Stratigraphic Code. Further revisions or corrections to this map may occur.

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ADJOINING 7.5' QUADRANGLES

Grimes 2000	Stoddard 2002	Oxford	Henderson	Vicksboro
2004 Robitaille & Blake	Stoddard 2001	Wilton	Kittrell	Ingleside
		Grissom	Franklinton	Louisburg

OXIDES IN PERCENT

SAMPLE ID	ROCK TYPE	MAP UNIT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	Cr2O3	LOI	TOTAL
K-290	metagranitoid	CZic	59.40	1.15	16.00	6.71	0.14	2.15	4.76	4.59	1.99	0.31	NA	1.10	98.30
K-293	metadiorite	CZgf	51.20	1.61	15.10	8.33	0.15	4.08	6.27	3.84	1.23	0.21	NA	6.65	98.67
K-294	leucogneiss	CZhg	76.80	0.15	11.40	1.25	0.03	0.09	0.60	3.67	4.33	0.01	NA	0.50	98.83
Kmy-1	granitoid mylonite	CZrcg	70.80	0.31	15.40	2.15	0.03	0.50	1.81	3.96	4.23	0.12	NA	0.70	100.01
Of-1	leucogneiss	CZhg	78.90	0.10	11.30	2.08	0.06	0.00	0.00	4.22	3.33	0.00	NA	0.25	100.24
Rgn-m	hornblende gneiss	CZrgn	58.50	1.01	16.10	8.65	0.15	3.08	7.15	3.31	0.36	0.20	NA	1.60	100.11
TR99-204B	biotite granite	PPcg	76.60	0.13	12.40	1.92	0.06	0.02	0.70	4.01	3.31	<0.01	NA	0.30	99.50
NEKT-187	biotite gneiss	CZmcg	64.8	0.895	15.70	5.18	0.11	1.79	4.14	4.86	1.55	0.23	NA	0.80	100.20
NEKT-51	olivine diabase	Jd	48.54	0.55	16.41	12.31	0.19	8.4	10.69	2.16	0.32	0.1	0.05	0.3	100.1
NEKT-171	biotite granite	PPrgd	69.45	0.6	15.23	3.32	0.03	0.81	1.61	3.56	5.15	0.2	<0.01	0.3	100.6
NEKT-180	coarse biotite granite	PPrgd	71.07	0.34	14.95	2.4	0.04	0.64	1.83	3.84	4.47	0.1	<0.01	0.4	100.3
NEKT-187	subvolcanic	PPrdg	50.05	1.32	13.33	11.19	0.15	9.61	9.14	2.68	1.05	0.39	0.05	0.55	99.72
NEKT-209	biotite amphibolite enclave	CZrgn	52.67	1.87	14.67	9.68	0.15	5.79	6.09	3.21	1.38	0.68	0.02	0.25	98.71
NEKT-210	biotite-hornblende tonalite	PPrdg	52.71	1.78	15.74	9.47	0.14	5.07	6.55	3.58	3.04	0.58	0.01	0.65	99.6
NEKT-215	2-pyroxene diabase	Jd ₂	50.79	0.9	17.46	11.78	0.17	4.64	10.63	2.51	0.5	0.12	0.01	0.5	100.1
NEKT-283A	biotite amphibolite enclave	CZrgn	51.29	0.99	16.04	10.03	0.16	6.96	8.7	4.06	1.2	0.21	0.01	0.5	100.3
SEKT-53	biotite granodiorite	PPrgd	64.32	0.68	17.5	4.27	0.09	1.29	3.39	5.19	2.16	0.24	<0.01	0.4	99.7
SEKT-63	biotite quartz diorite	PPrgd	54.65	1.92	15.57	10.26	0.16	2.61	5.15	3.83	2.66	1.12	0.01	0.55	98.71
SEKT-168	fine biotite granite	PPrgj	67.52	0.63	15.62	2.96	0.03	0.83	1.60	3.68	5.14	0.18	<0.01	0.80	99.30

SELECTED ELEMENTS IN PPM

SAMPLE ID	Ag	As	Au	Ba	Ce	Co	Cu	Nd	Ni	Se	Sr	Ta	Zn	Zr
K-290	NA	3	NA	572	64	15	15	20	9	18	391	1.5	89	376
K-293	NA	3	NA	308	35	31	32	12	35	17	389	1.9	70	226
K-294	NA	1	NA	478	68	4	3	20	3	2	51	NA	24	245
Kmy-1	2	858	88	41	6	32	NA	3	384	1	53	209		
Of-1	1	272	122	67	NA	65	NA	1	47	1	118	421		
Rgn-m	3	117	29	44	82	16	9	23	526	NA	78	131		
TR99-204B	<1	<2	515	71	<0.5	12.7	20	1	6	68	<0.5	76.3	260	
NEKT-187	7	503	65	5.9	28.9	33	9	14	389	1.4	74.5	274		
NEKT-51	3	119	15.3	62	146	82	200	NA	157	<0.5	114	49		
NEKT-171	<1	1580	205	5.7	28	89.3	5	NA	426	<0.5	108	370		
NEKT-180	<1	892	78.2	4	7	31.1	<5	NA	327	1.4	68	204		
NEKT-187	7	499	54.7	58.5	57	28.5	213	NA	1070	0.8	128	127		
NEKT-209	<1	824	148	33.4	21	65.3	108	NA	795	5.6	178	282		
NEKT-210	<1	1150	97.2	33.6	36	43.5	43	NA	923	2.5	187	214		
NEKT-215	<1	133	18.7	46	68	10.6	40	NA	164	<0.5	118	68		
NEKT-283A	<1	249	31.7	42.8	18	16.2	172	NA	591	0.6	154	86		
SEKT-53	<1	640	82.6	10.4	252	30.8	12	NA	398	2.6	151	258		
SEKT-63	<1	715	105	24.1	29	54	8	NA	538	2	172	195		
SEKT-168	<1	NA	9	1750	231	4.2	19	69.3	<5	NA	456	<0.5	77	372

7/26/2016