

		Ma	REGIONAL EVENTS	EFFECT IN SITE VICINITY	
CENOZOIC		0	Erosion and incision of streams. Deposition of stream terraces. Formation of Cape Fear arch	Erosion and incision of modern streams	
		65			
MESOZOIC	JURASSIC		Erosion of Appalachians and Piedmont and deposition of Coastal Plain sediments	Deposition of Coastal Plain sediments	
		136			
	TRASSIC	195	Intrusion of diabase dikes	Intrusion of diabase dikes, and some continued faulting in the Deep River basin	
PALEOZOIC	PERMIAN	245			
		286	<i>Alleghenian Orogenesis</i> : Regional greenschist and amphibolite facies metamorphism, emplacement of plutons, deformation in Raleigh belt, strike-slip faulting	Emplacement of the Rolesville batholith and ductile mylonite shear zones (e.g., Nutbush Creek fault zone)	
	CARBONIFEROUS	LATE			
		333	Emplacement of Charlotte Terrane over Inner Piedmont; development of Central Piedmont shear zone	No clear effect in site vicinity	
	DEVONIAN	LATE	362		
		MIDDLE	382.5	<i>Acadian Orogenesis</i> : High- to medium-grade metamorphism, deformation, Gold Hill dextral shear zone, Brevard fault zone	No clear effect in site vicinity
		394			
		EARLY	418		
	SILURIAN	LATE	424	<i>Silurian Orogenesis</i> 40Ar/39Ar hornblende in North Carolina	No clear effect in site vicinity
		EARLY	424	425 Ma - 430 Ma	
ORDOVICIAN	LATE	443	<i>Taconic Orogenesis</i> : Collision and formation of Appalachian basin	No clear effect in site vicinity	
	MIDDLE	458			
	EARLY	468			
CAMBRIAN	LATE	490	<i>Penobscottian Orogenesis</i> : Collision of Carolina with North America, deformation and metamorphism in Appalachians	No clear effect in site vicinity	
	MIDDLE	500			
	EARLY	510	<i>Virgilian and Avalonian Orogenesis</i> with fabric development and metamorphism to upper greenschist to amphibolite facies; followed by mafic intrusions?	Development of upper greenschist to amphibolite facies assemblages	
NEOPROTEROZOIC		550			
		600	Gondwana Island Arc Accumulation of volcanic pile with intrusion of granodiorite-tonalite followed by clastic and carbonate sedimentation	Formation of Carolina Zone and Raleigh Slate Belt stratigraphy. Formation of Carolina, Raleigh, and Spring Hope terranes	

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Geologic History of the Site Vicinity

FIGURE 2.5.1-260 Rev. 1