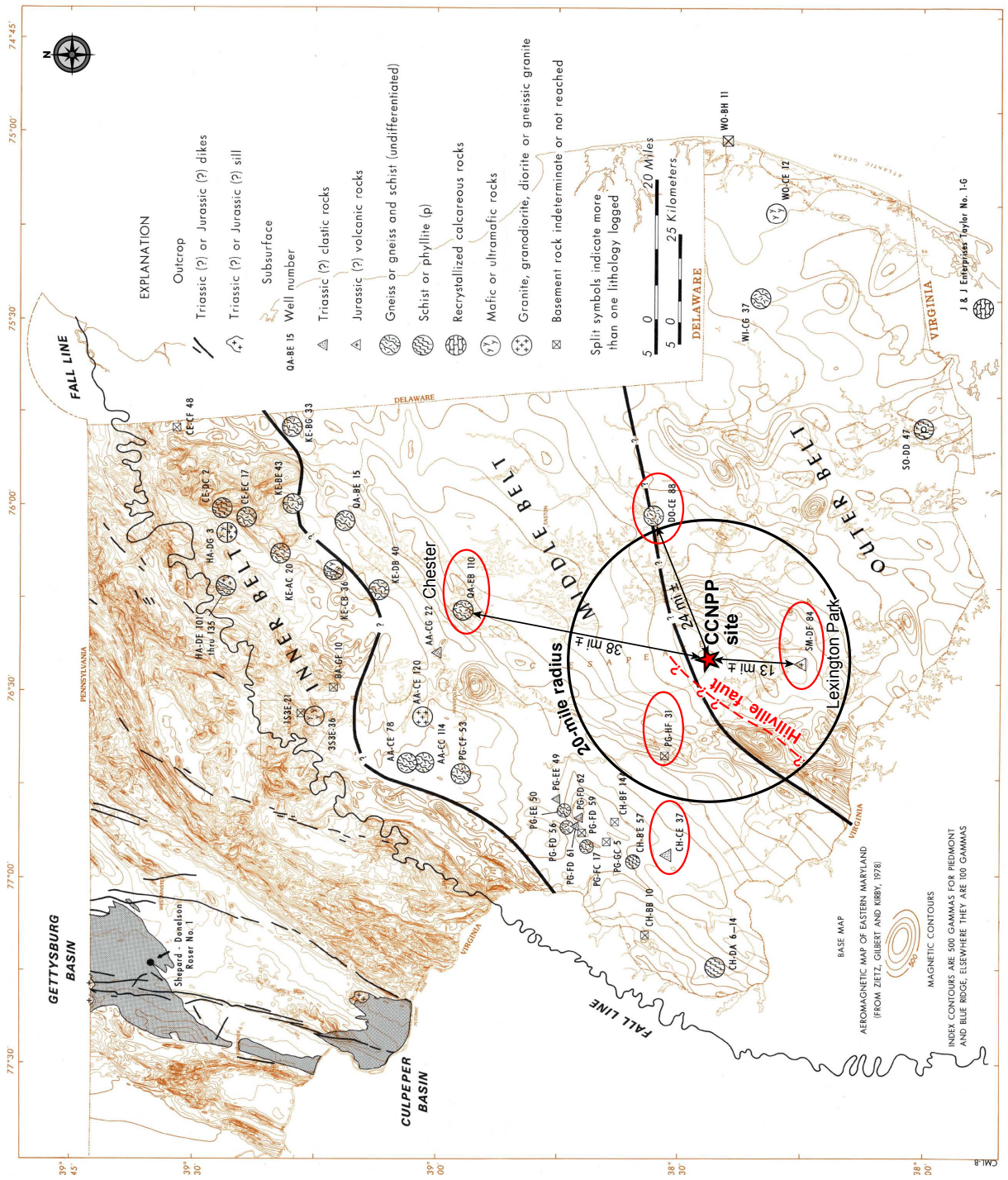
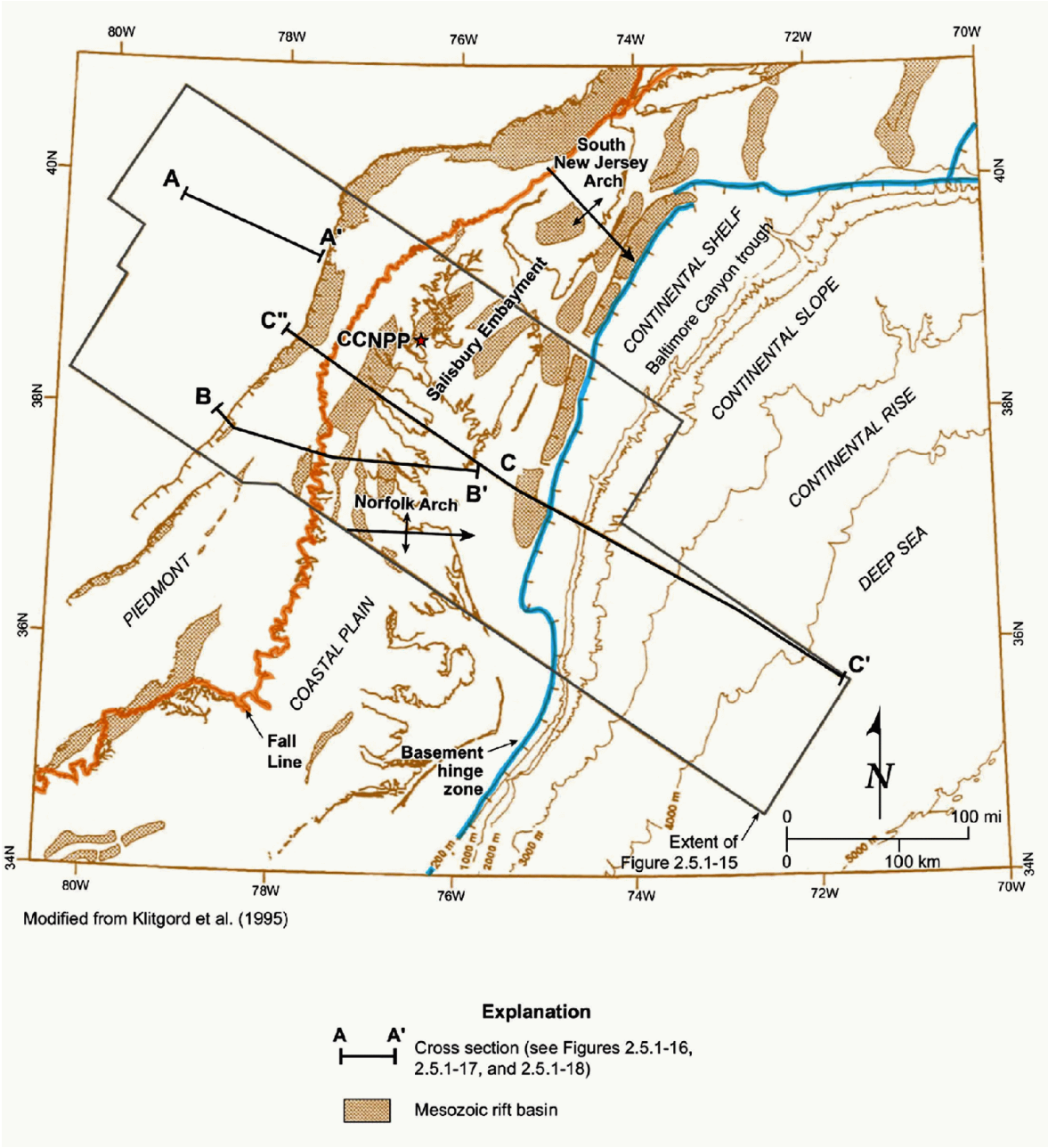


Figure 2.5-11— {Lithologies of Basement Rocks from Coastal Plain Wells}

Figure 2.5-12— {Tectonic Features of the Mid-Atlantic Passive Margin}



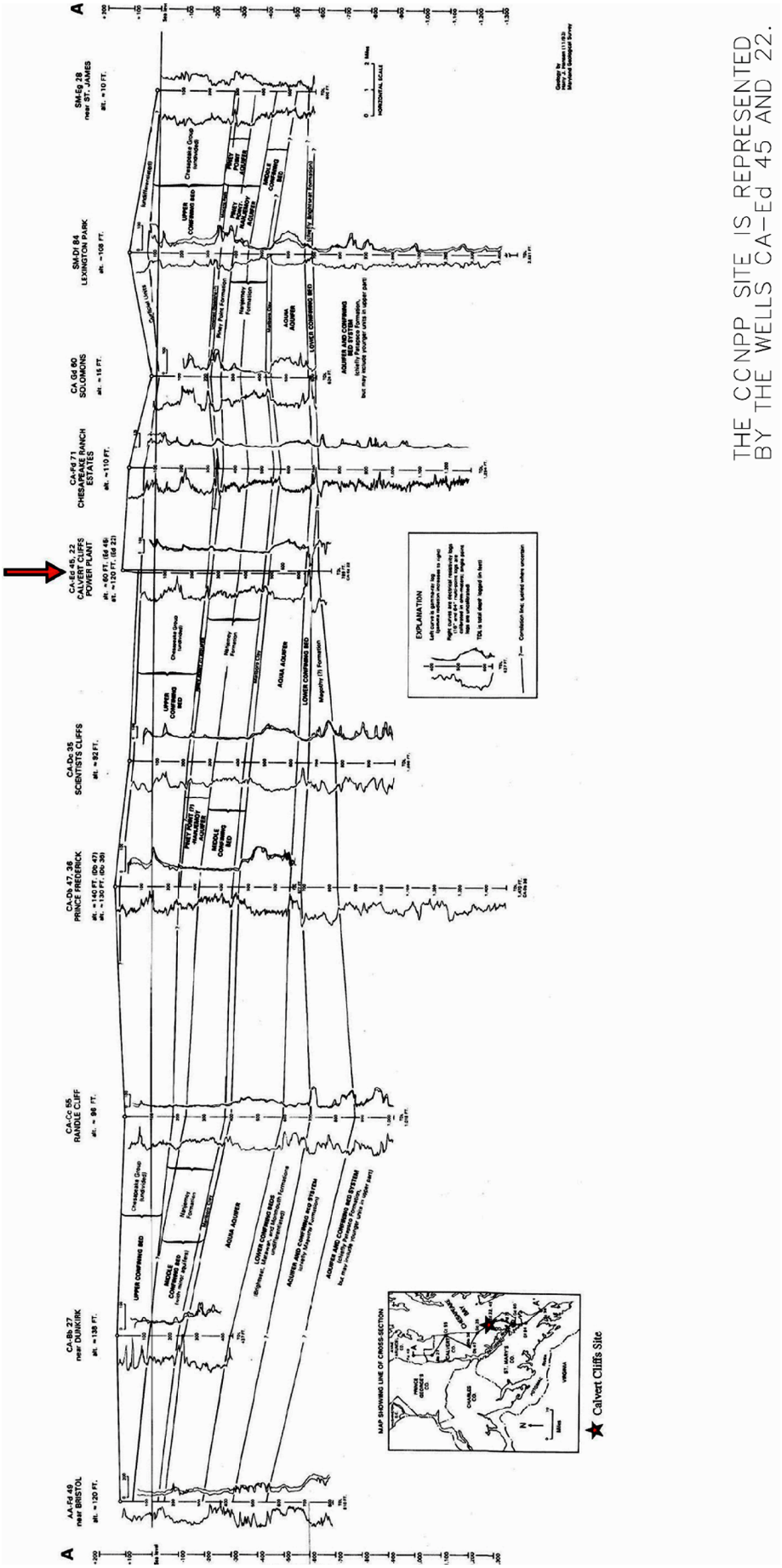
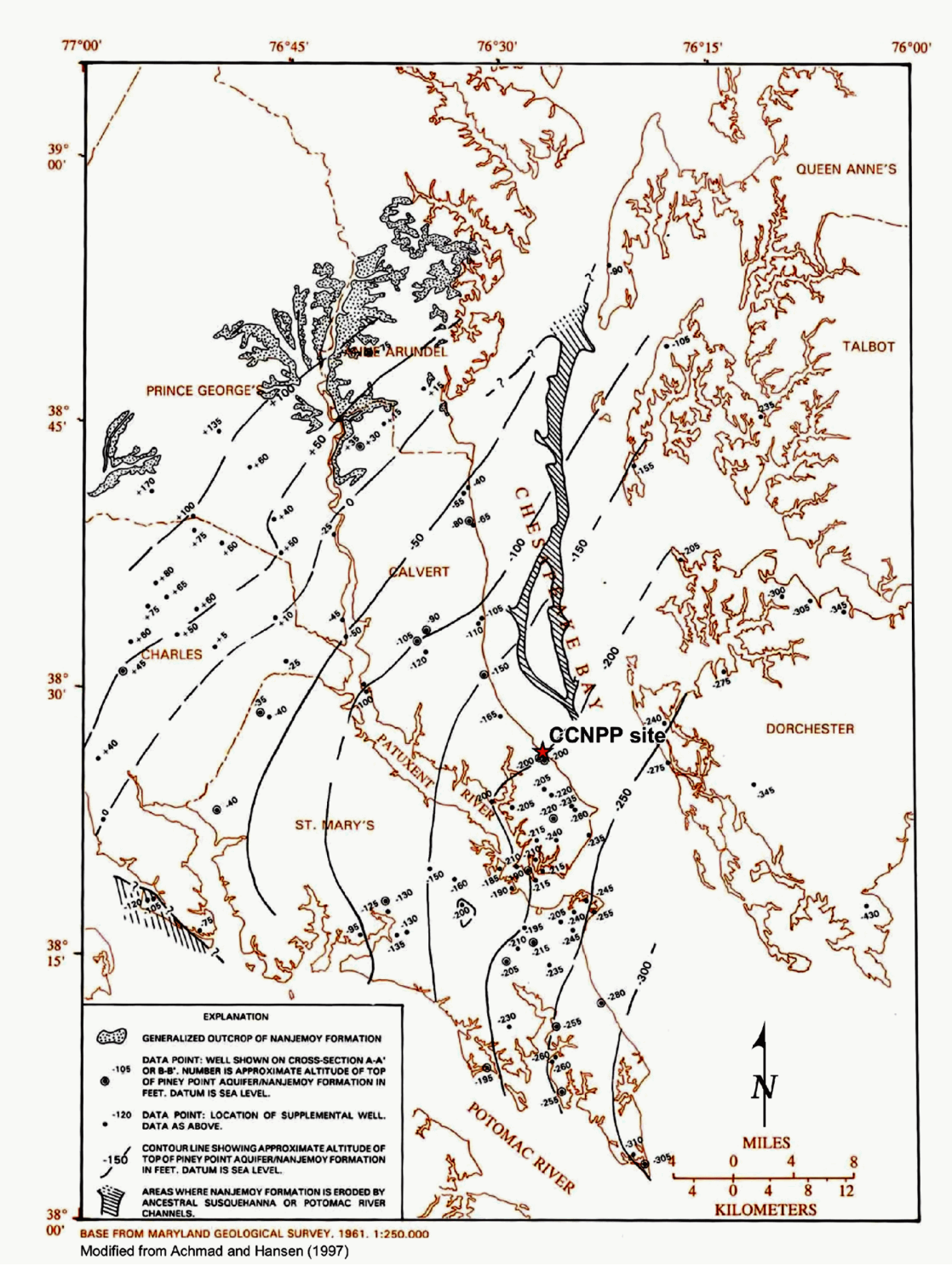


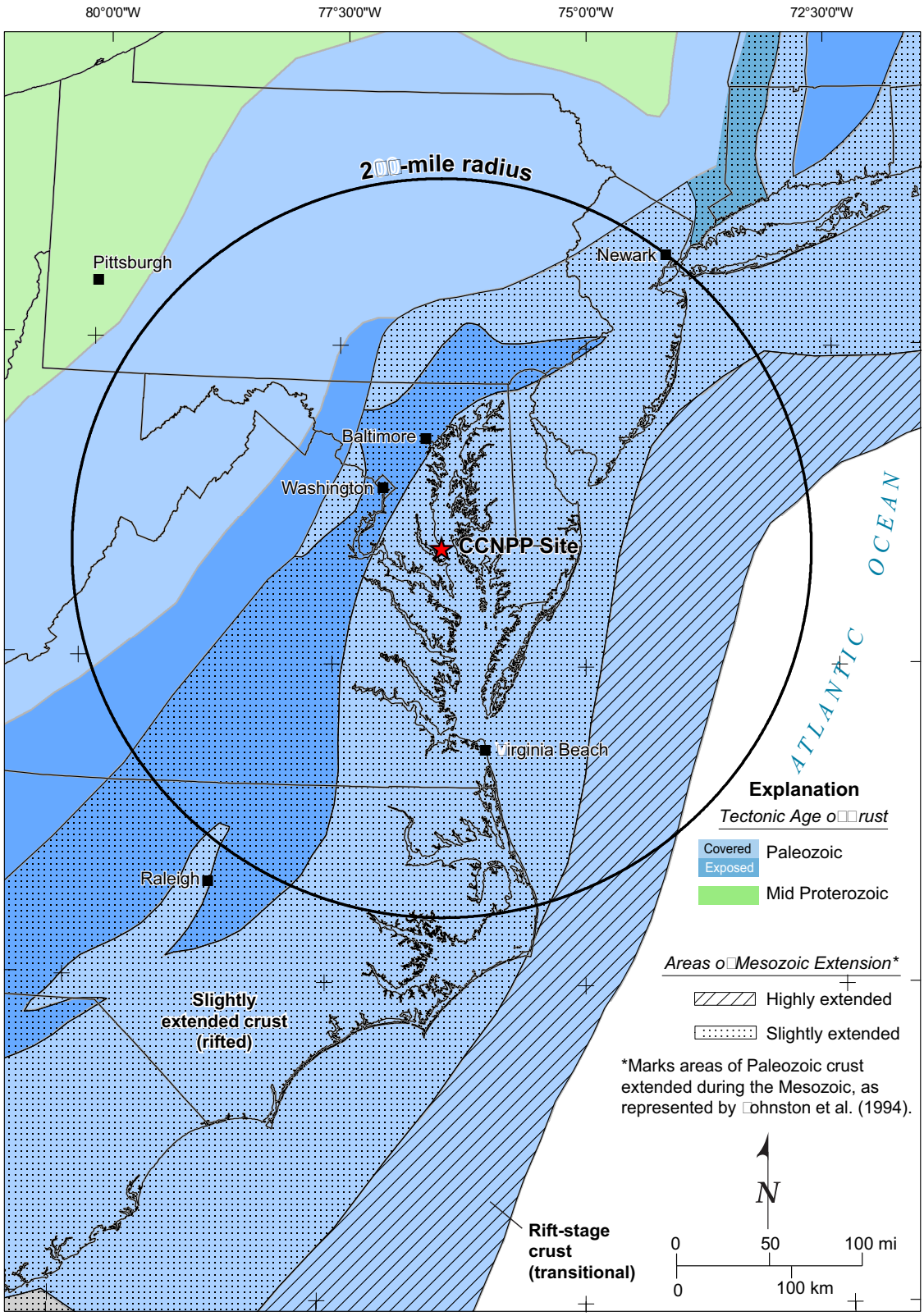
Figure 2.5-13— {Stratigraphic Cross-Section Through Anne Arundel, Calvert and St. Mary's Counties}

Figure 2.5-14— {Structure-Contour Map of the Top of the Piney Point-Nanjemoy Aquifer}



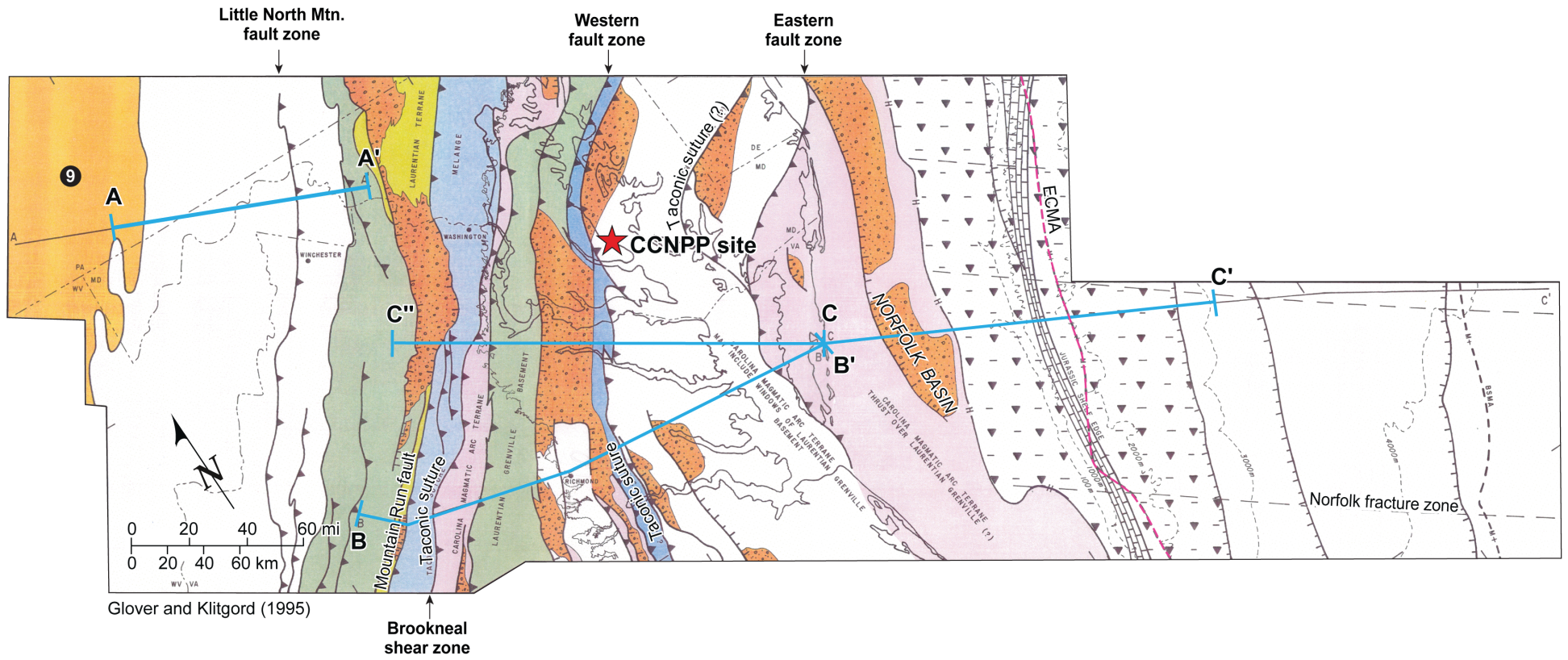
Modified from Achmad and Hansen (1997)

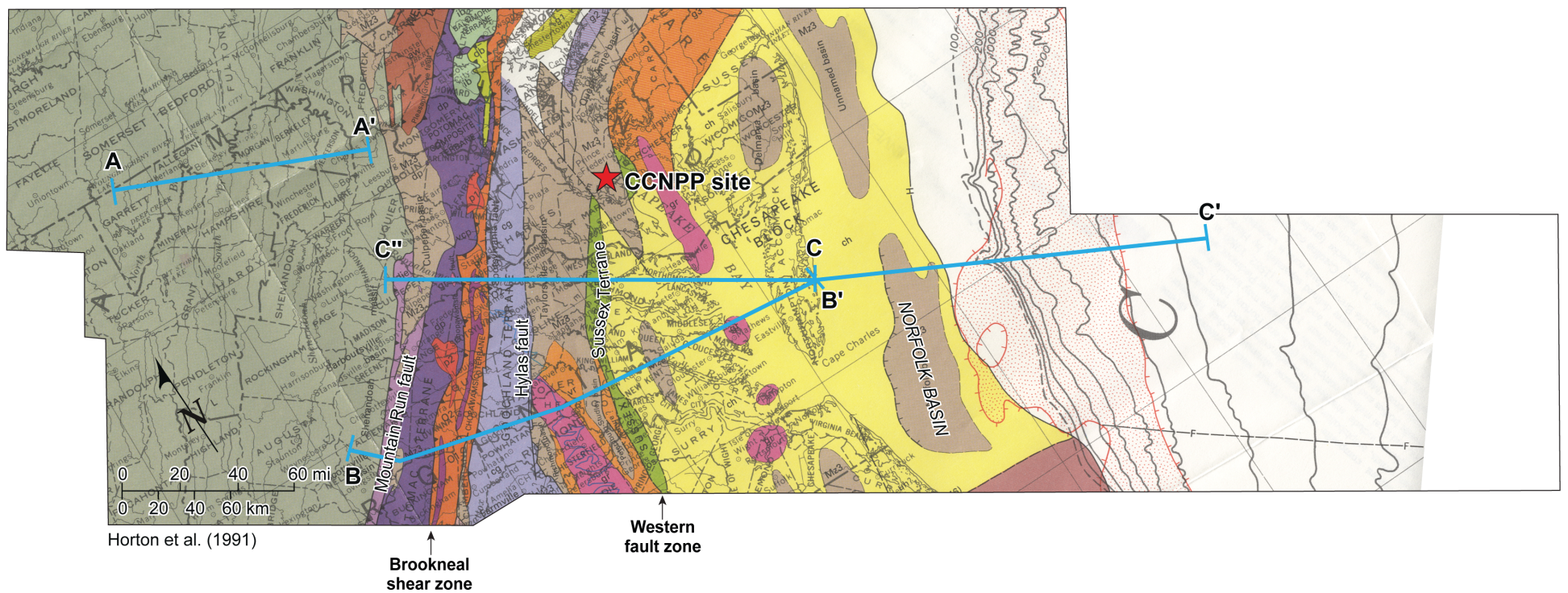
Figure 2.5-15— {Tectonic Age of Crust}



Johnston et al. (1994)

Figure 2.5-16— {Regional Strip Maps Showing Tectonostratigraphic Divisions and Regional Cross-Section Lines}





Explanation
(Glover and Klitgord, 1995)

Symbols	*Map Units*
Bathymetric isobath	Cenozoic
Normal fault	Early Mesozoic basin
Basement hinge zone	Cretaceous - stratified rock
Cross section (see Figures 2.5.-17, 18, and 19)	Permian - Upper Mississippian straified rock
Magnetic lineament	Lower Jurassic - Upper Triassic stratified rock
	Jurassic volcanic wedge
	Cambrian - stratified rock
	Cambrian - intrusive rock

Explanation
(Horton et al., 1991)

Symbols	*Map Units*
Basement hinge zone	M_Z3 Jurassic and Triassic Newark super group
Mesozoic normal fault	gr Late Paleozoic granitoids
Thrust fault	p^1, p^2 Other stitching plutons
Cross-section line (see Figures 2.5-17, 18, and 19	O_2 O_1 Late and Middle Ordovician sequences interpreted as Taconian successor basin deposits
Fault; solid where certain, dashed where inferred or approximate	L Laurentia (undivided)
Magnetic low - less than 600 nanoteslas	aw Westminster terrane
Magnetic high - greater than 1,000 nanoteslas	ib Baltimore terrane
	dje Jefferson terrane
	dp Potomac composite terrane
	ob Bel Air - Rising Sun terrane
	os Sussex terrane
	vcp Chopawamsic terrane
	vr Roanoke Rapids terrane
	cg Goochland terrane
	ch Chesapeake block
Gravity Anomalies on Delmarva Peninsula	g1 Probable mafic complexes
	g2 Linear gravity high associated with migmatitic gneiss
	g3 Broad gravity low

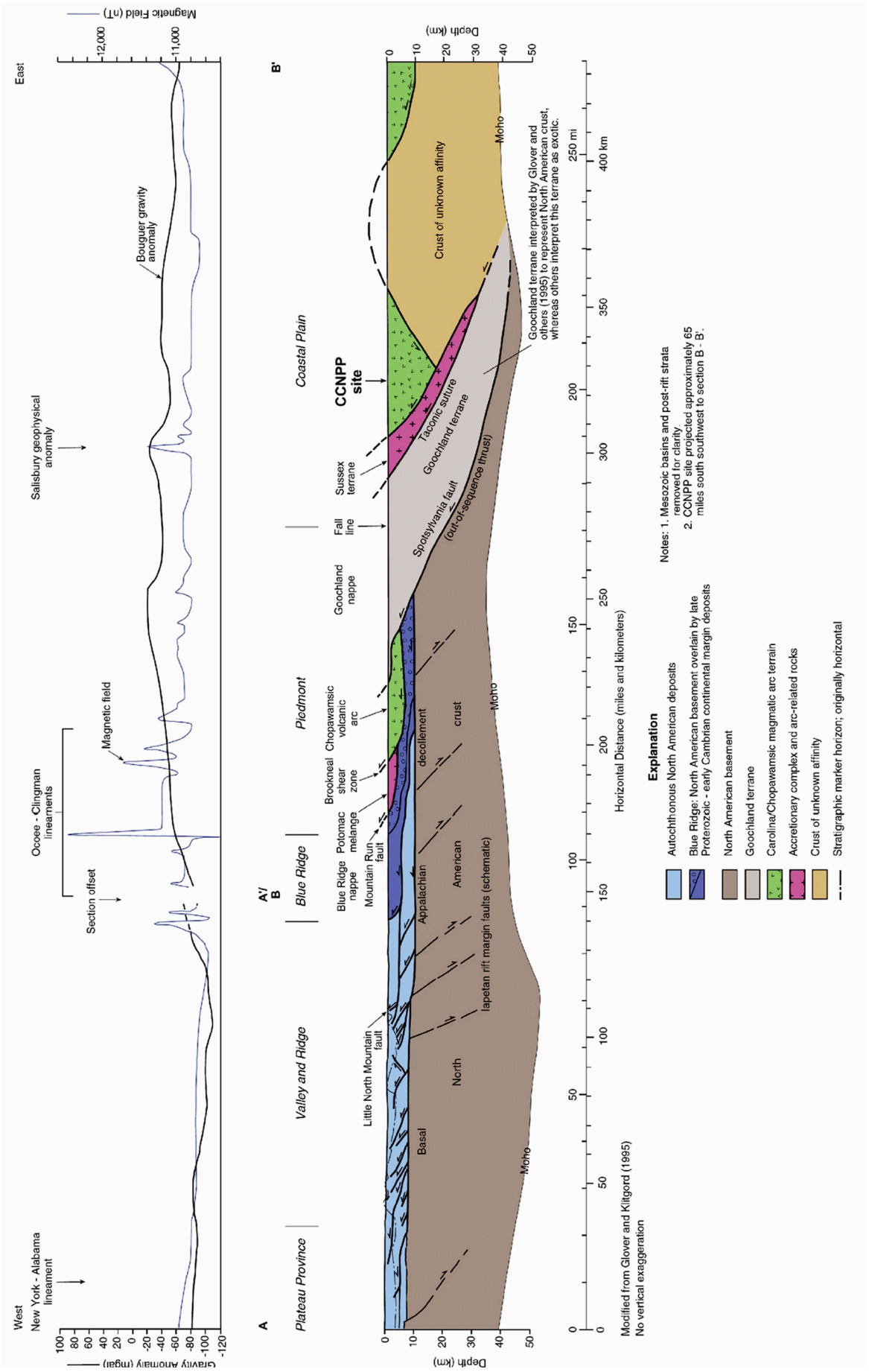


Figure 2.5-17— {Crustal-Scale Cross Section Through the Appalachian Orogen and Coastal Plain}

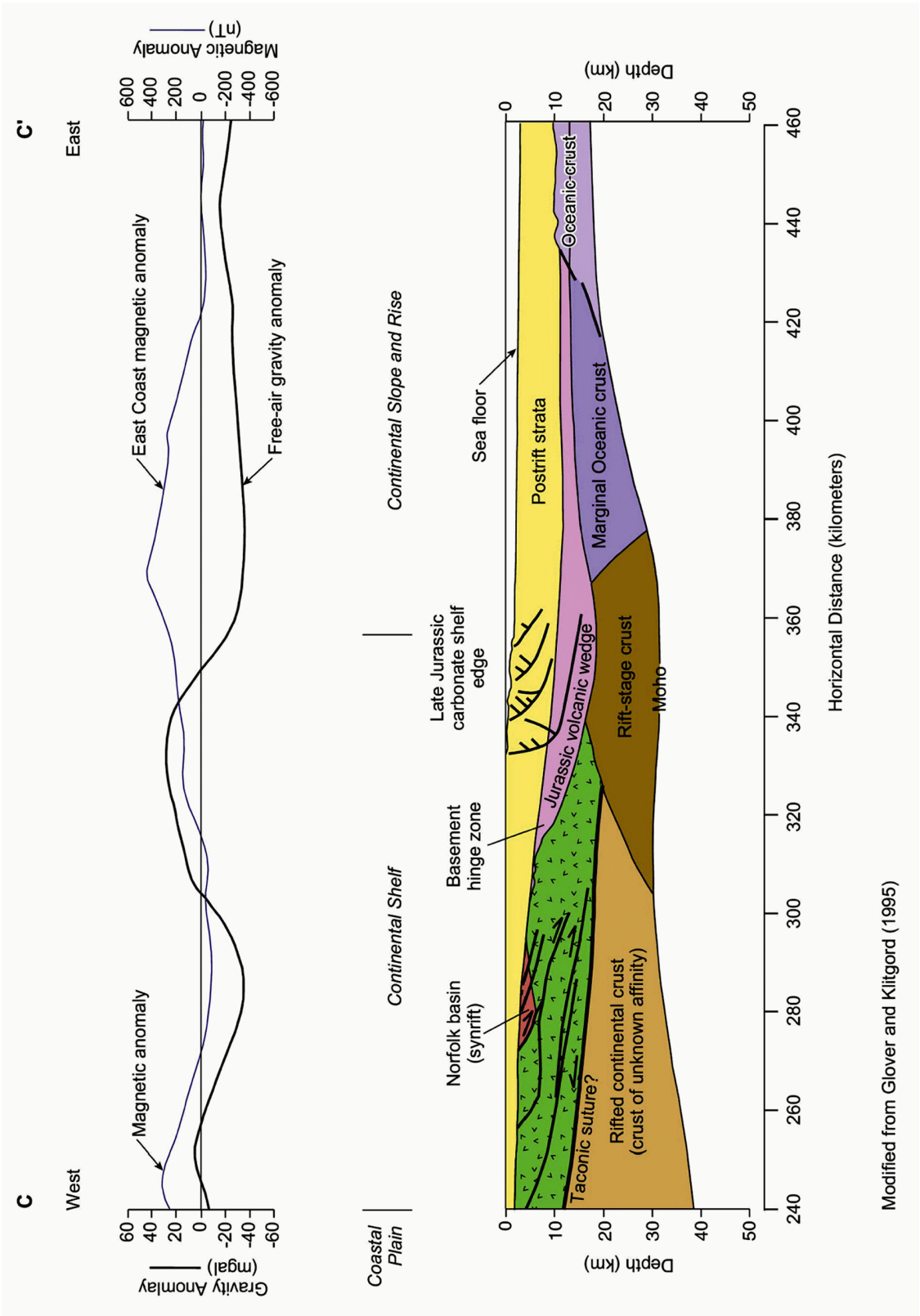
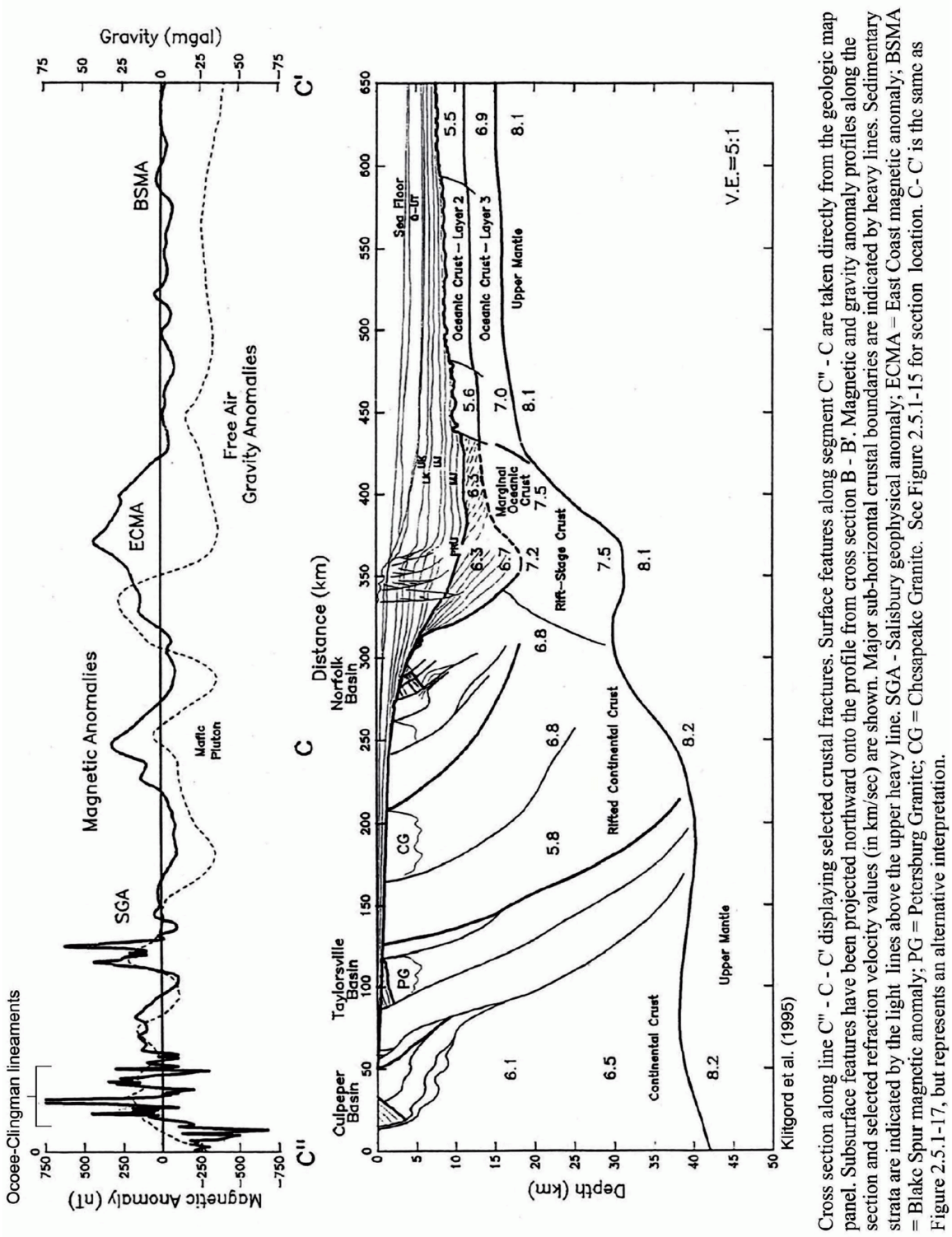


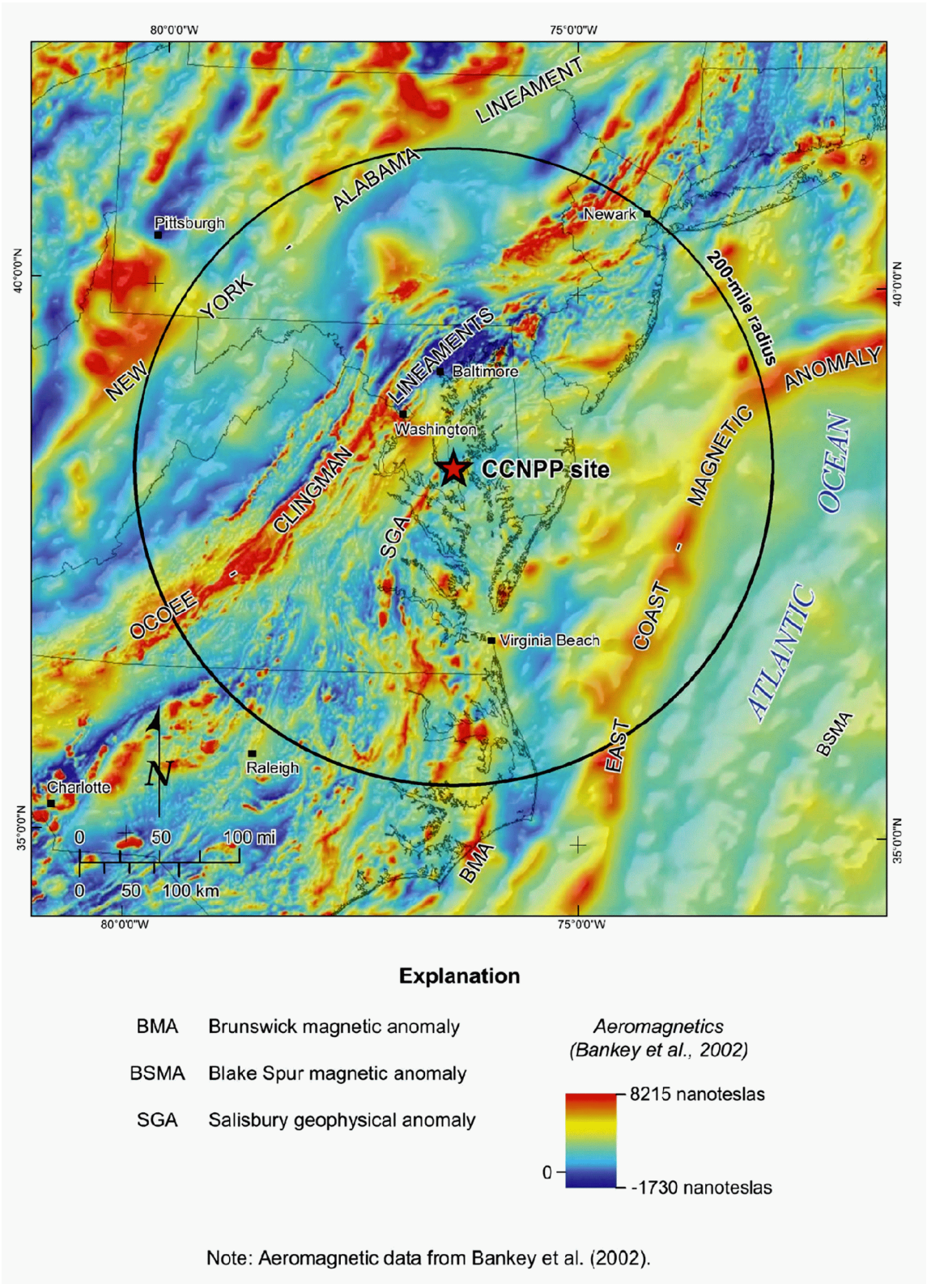
Figure 2.5-18— {Crustal-Scale Cross Section Across the Mid-Atlantic Continental Shelf, Slope and Rise}

Figure 2.5-19— {Crustal-Scale Cross Section of the Mid-Atlantic Passive Margin}



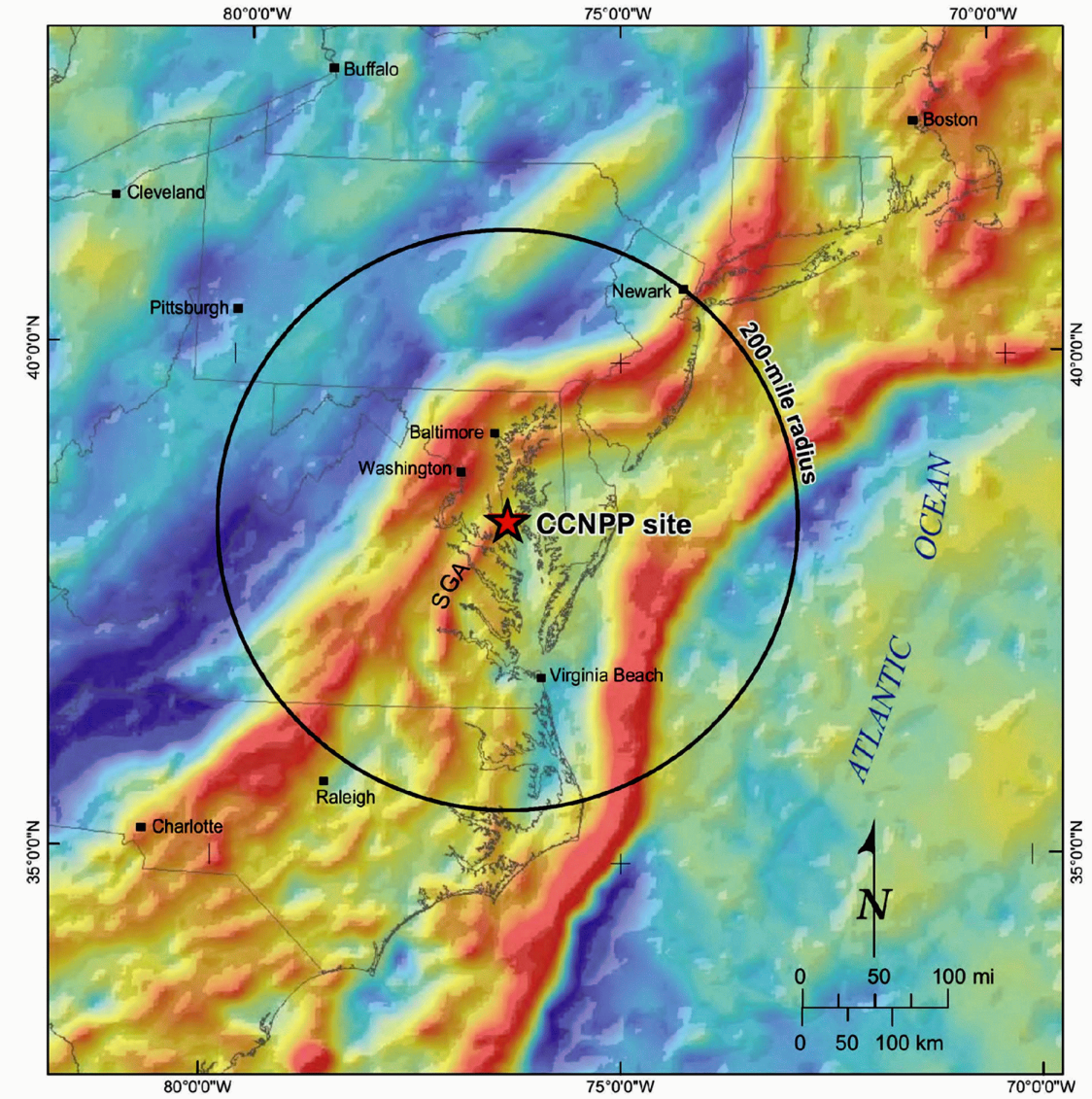
Cross section along line C'' - C - C' displaying selected crustal fractures. Surface features along segment C'' - C are taken directly from the geologic map panel. Subsurface features have been projected northward onto the profile from cross section B - B'. Magnetic and gravity anomaly profiles along the section and selected refraction velocity values (in km/sec) are shown. Major sub-horizontal crustal boundaries are indicated by heavy lines. Sedimentary strata are indicated by the light lines above the upper heavy line. SGA - Salisbury geophysical anomaly; ECMA = East Coast magnetic anomaly; BSMA = Blake Spur magnetic anomaly; PG = Petersburg Granite; CG = Chesapeake Granite. See Figure 2.5.1-15 for section location. C- C' is the same as Figure 2.5.1-17, but represents an alternative interpretation.

Figure 2.5-20— {Regional Magnetic Anomaly Map}



Note: Aeromagnetic data from Bankey et al. (2002).

Figure 2.5-21— {Regional Gravity Anomaly Map}



Explanation

SGA Salisbury geophysical anomaly

Gravity Anomaly

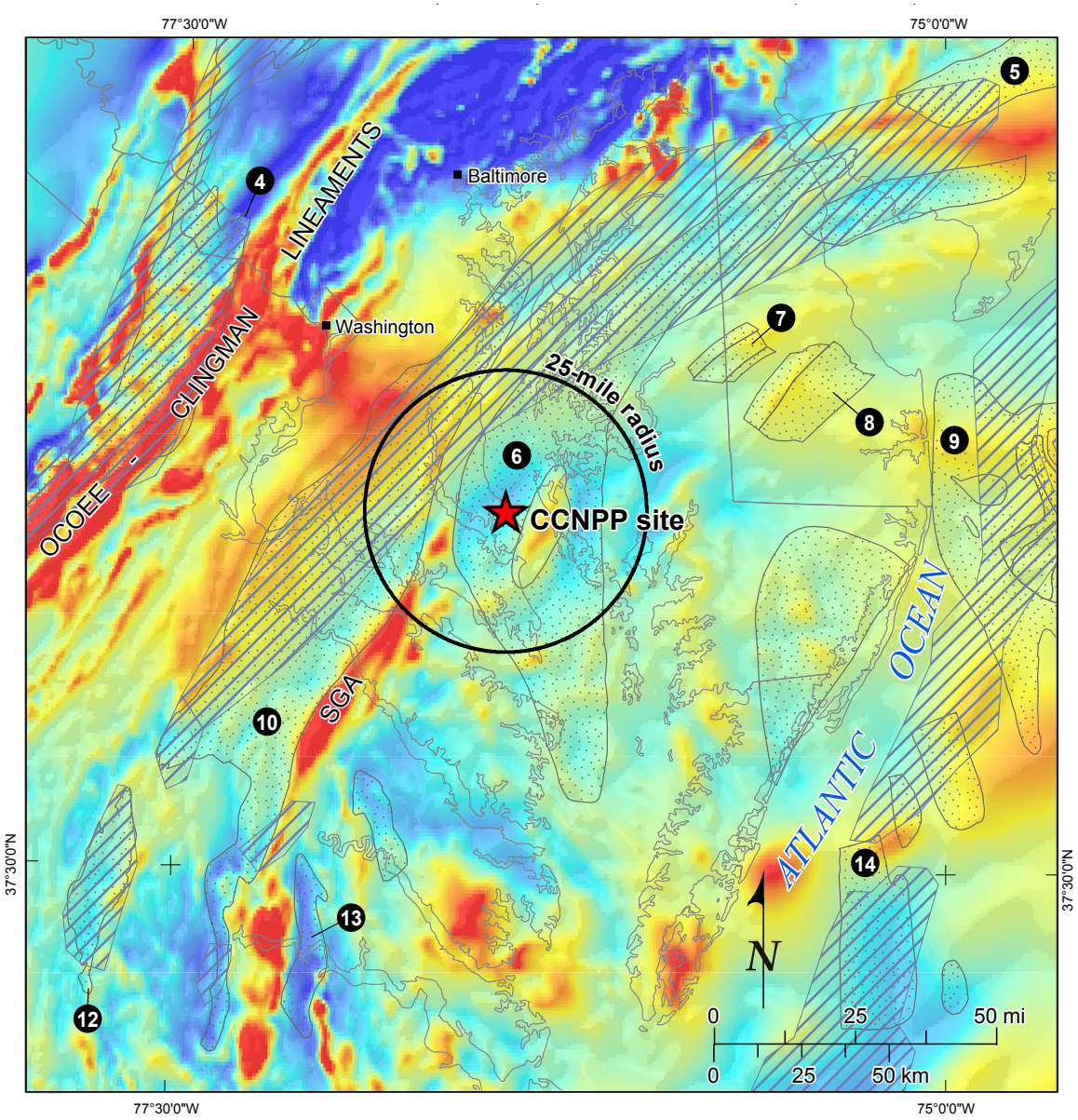
87 mgals

0

-110 mgals

Notes: 1. Gravity data from Hittelman et al. (1994).
2. Gravity measurements over land are Bouger gravity anomalies.
3. Gravity measurements over water are free-air anomalies.

Figure 2.5-22— {Chesapeake Bay Region Magnetic Anomalies with Mesozoic Basins}



Explanation

Mesozoic basin, Schlische and Olsen (1990)

Mesozoic basin, Benson (1992)

SGA Salisbury geophysical anomaly

14 Mesozoic basin names listed on Figure 2.5-10 (Benson 1992)

Aeromagnetics

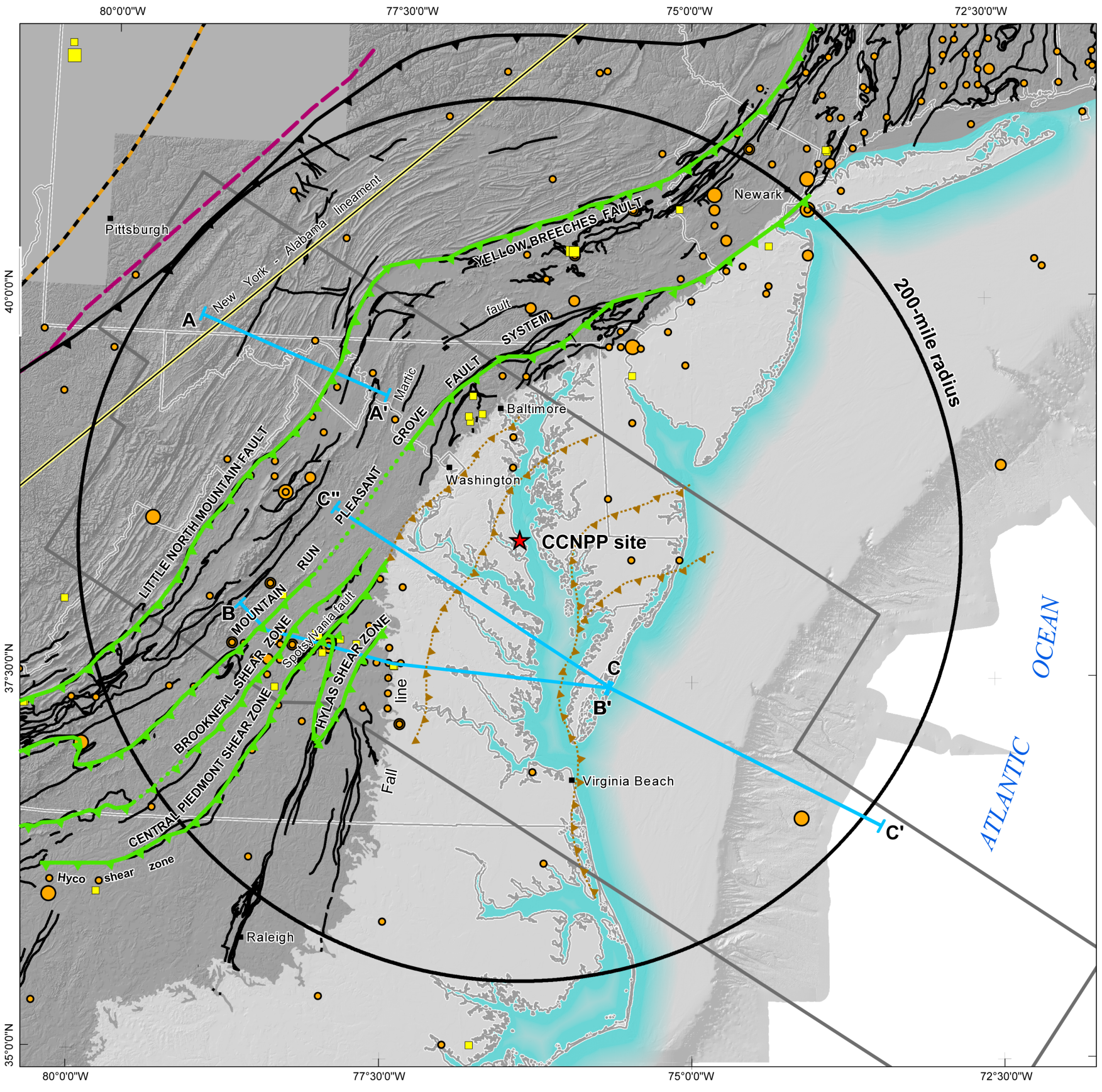
2116 nanoteslas

0

-819 nanoteslas

Note: Aeromagnetic data from Bankey et al. (2002).

Figure 2.5-23— {Late Proterozoic and Paleozoic Tectonic Features}



Explanation

A A' Cross section line (Figure 2.5.1-16, 2.5.1-17, and 2.5.1-18)

Extent of Figure 2.5.1-15

Structures

Latest Precambrian

Northwest boundary of Iapetan normal faults (Wheeler,1995)

Rome trough (Wheeler,1995)

Paleozoic

Appalachian thrust front (concealed) (Wheeler,1995)

Paleozoic fault (Hibbard et al., 2006)

Major Paleozoic fault system dotted where concealed below Mesozoic basins

Taconic suture beneath Coastal Plain (Glover and Klitgord, 1995)

New York - Alabama lineament (King and Zietz, 1978)

Earthquake Epicenters (by magnitude, Emb)

EPRI Catalog (1627 - 1984)	*Eastern U.S. Seismicity (1985 - 2006)*
3.00 - 3.99	3.00 - 3.99
4.00 - 4.99	4.00 - 4.99
5.00 - 5.99	5.00 - 5.21
6.00 - 6.99	
7.00 - 7.49	

Note: Emb is an equivalent body wave magnitude explained in Section 2.5.2.1.

N

0 50 100 mi

0 50 100 km

Figure 2.5-24— {Seismic Zones and Seismicity in CEUS}

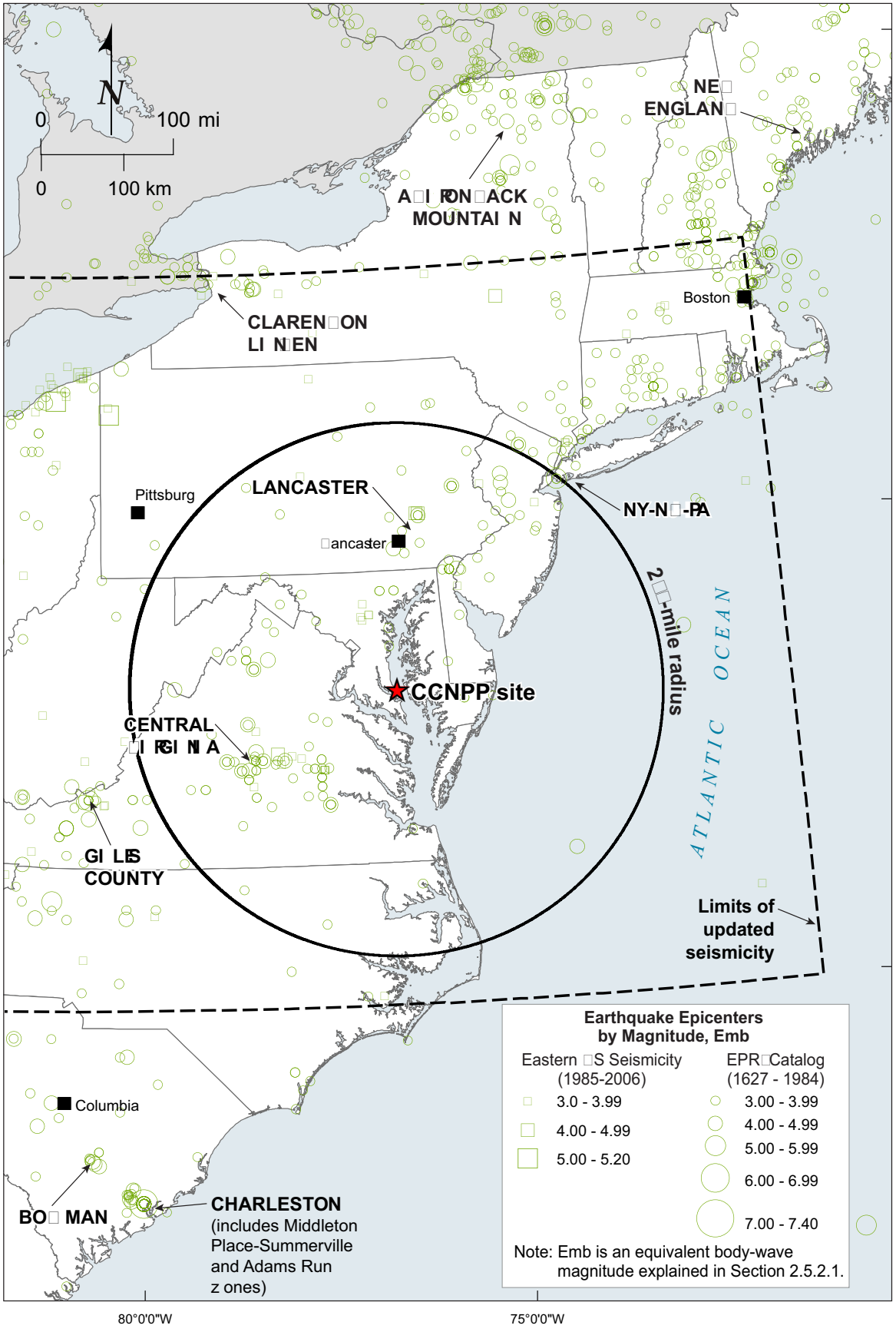
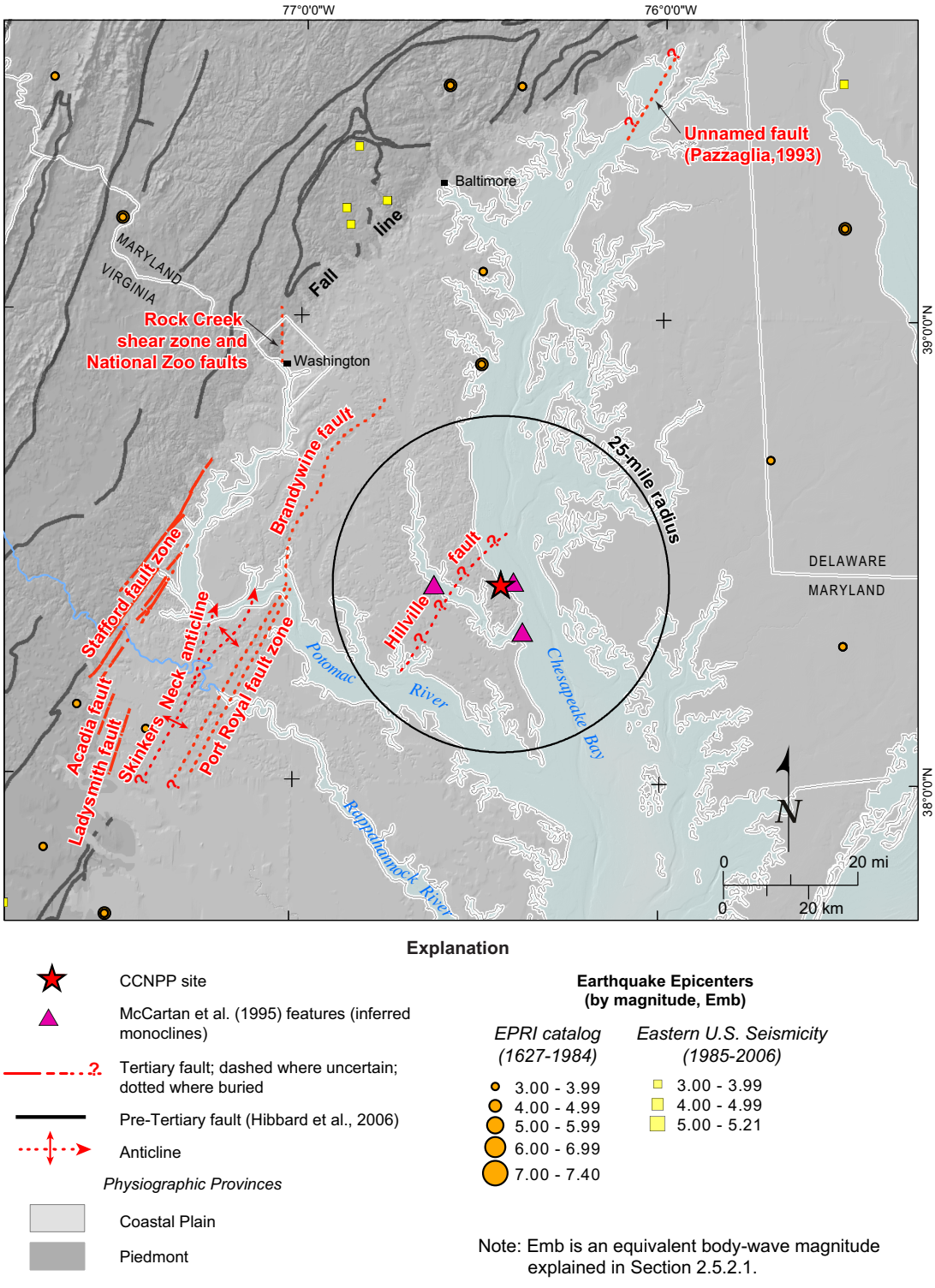


Figure 2.5-25— {Map of Tertiary Tectonic Features}



Explanation

CCNPP site

McCartan et al. (1995) features (inferred monoclines)

Tertiary fault; dashed where uncertain; dotted where buried

Pre-Tertiary fault (Hibbard et al., 2006)

Anticline

Physiographic Provinces

Coastal Plain

Piedmont

Earthquake Epicenters (by magnitude, Emb)

EPRI catalog (1627-1984)	*Eastern U.S. Seismicity (1985-2006)*
3.00 - 3.99	3.00 - 3.99
4.00 - 4.99	4.00 - 4.99
5.00 - 5.99	5.00 - 5.21
6.00 - 6.99	
7.00 - 7.40	

Note: Emb is an equivalent body-wave magnitude explained in Section 2.5.2.1.