Cover sequence strata (younger than Swc)
Cover sequence strata (older than Swc)
Imbricated carbonate sequence

a

A | A'
NY | PA

10 km

A   **A'**

NY | PA

Appalachian Plateau

Appalachian front

Valley and Ridge

Elevation (km)

5
0
-5
-10
-15

b

H
G
F
E
D
B
A
C

10 km

NY + LPS

Appalachian front

Elevation (km)

0
-5
-10

c

I
J

Explanation

Mmc	Mauch Chunk		Dh	Hamilton Gp	
Mb	Burgoon Fm		Doo	Onondaga/Old Port Fms	
Mp	Pocono Fm		DSkt	Keyser/Tonoloway Fms	
MDh	Huntley Mtn Fm		Swc	Wills Creek Fm	
MDsk	Speckty Kopf Fm		Smb	Mifflintown and Bloomsburg Fms, undivided	
Dcbr	Buddies Run Mbr		Sc	Clinton Gp	
Dcd	Duncannon Mbr		St	Tuscarora Fm	
Dccf	Clarks Ferry Mbr		Oj	Juniata Fm	
Dcsc	Shermans Creek Mbr		Obe	Bald Eagle Fm	
Dciv	Irish Valley Mbr		Or	Reedsville Fm	Om Martinsburg Fm
Dclh	Lock Haven Mbr		O	Stonehendge – Coburn/Salona Fms, undivided	
Dtr	Trimmers Rock		Є	Waynesboro – Gatesburg Fms, undivided	

Catskill Fm

Note.
Vertical color bars reflect groupings depicted in the restored cross section.

A. Thickness of the sedimentary package above the basement and 3° slope of basement (top of Cambrian Waynesboro Formation) determined from industry seismic reflection lines (Gwinn, 1970; Beardsley and Cable, 1983; Scanlin and Engelder, 2003a).

B. Duplexing of Cambrian-Ordovician carbonates beneath the Valley and Ridge are inferred to fill space between the sole thrust and the roof thrust in the Ordovician Reedsville Formation. Duplexes are positioned such that the hinge zones of horses correspond with the positions of first-order anticlines on the surface, as per the fault-bend model (Suppe, 1983).

C. Duplexes 11 and 12 fill space beneath the southern most syncline in the Valley and Ridge where the fold-thrust belt is yielding to a different style of deformation dominated by extensive pressure solution and ≥50% LPS in the Ordovician Martinsburg Fm. (i.e., Wright and Platt, 1982).

D. Bedding thickness variations within the Ordovician Reedsville Fm are limited to the thickness necessary to satisfy map scale constraints. Thomas (2001, 2007) documents similar thickness variations from seismic reflection lines in the southern Appalachians of Alabama.

E. Detachment at the base of the Silurian Wills Creek Fm based upon field observations (i.e., Nickelsen, 1986; Klawon, 1994). The Wills Creek detachment feeds displacement from horses 8 and 10 onto the detachment in the Silurian Salina Group on the Appalachian Plateau (i.e., Prucha, 1968; Wiltchko and Chapple, 1977; Davis and Engelder, 1985).

F. Nittany Anticlinorium

G. Location and depth of thrust faults in fault-propagation anticlines are inferred to accommodate shortening in cores of both anticlines.

H. Bed thickness variations on the Appalachian Plateau vary in the plastic Salina evaporite group (i.e., Prucha, 1968; Wiltchko and Chapple, 1977).

I. Bed thickness variations in the predominately folded sequence are constrained by local stratigraphic studies and regional scale correlations (i.e., Ayrton, 1963; Colton, 1963; Hoskins et al., 1963; Sutton, 1963; Gwinn, 1964; Dyson, 1967; Faill and Wells, 1974; Hoskins, 1976; Faill et al., 1977, 1978; Berg and Edmunds, 1979; Wells and Bucek, 1980; Inners, 1981, 1997; Berg et al., 1983, 1993; Epstein, 1986; Edmunds, 1993, 1996.

J. Position of the New York State line in the restored section assuming 13% LPS along the length the of the cross section from the pin line at the northern end of the line of section (Figure 1).

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Plate 1