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sedimentology, depositional environments, and application to oil reservoirs

Jorry, Stephan

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Publication DOI:

[10.13097/archive-ouverte/unige:707](https://doi.org/10.13097/archive-ouverte/unige:707)

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UNIVERSITÉ DE GENÈVE
Département de Géologie et de Paléontologie

FACULTÉ DES SCIENCES
Professeur E. DAVAUD

TOTAL
Département de Sédimentologie

EXPLORATION-PRODUCTION
Docteur B. CALINE

**The Eocene Nummulite Carbonates
(Central Tunisia and NE Libya):
Sedimentology, Depositional Environments,
and Application to Oil Reservoirs**

THÈSE

présentée à la Faculté des Sciences de l'Université de Genève
pour obtenir le grade de Docteur ès Sciences, mention Sciences de la Terre

par

Stéphan JORRY

de

Mâcon (France)

Thèse N°3540

GENÈVE

Atelier de reproduction de la Section de Physique

2004

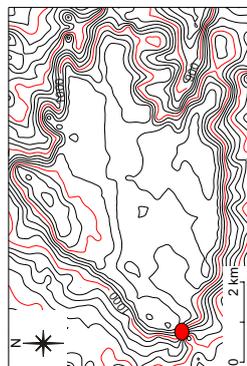
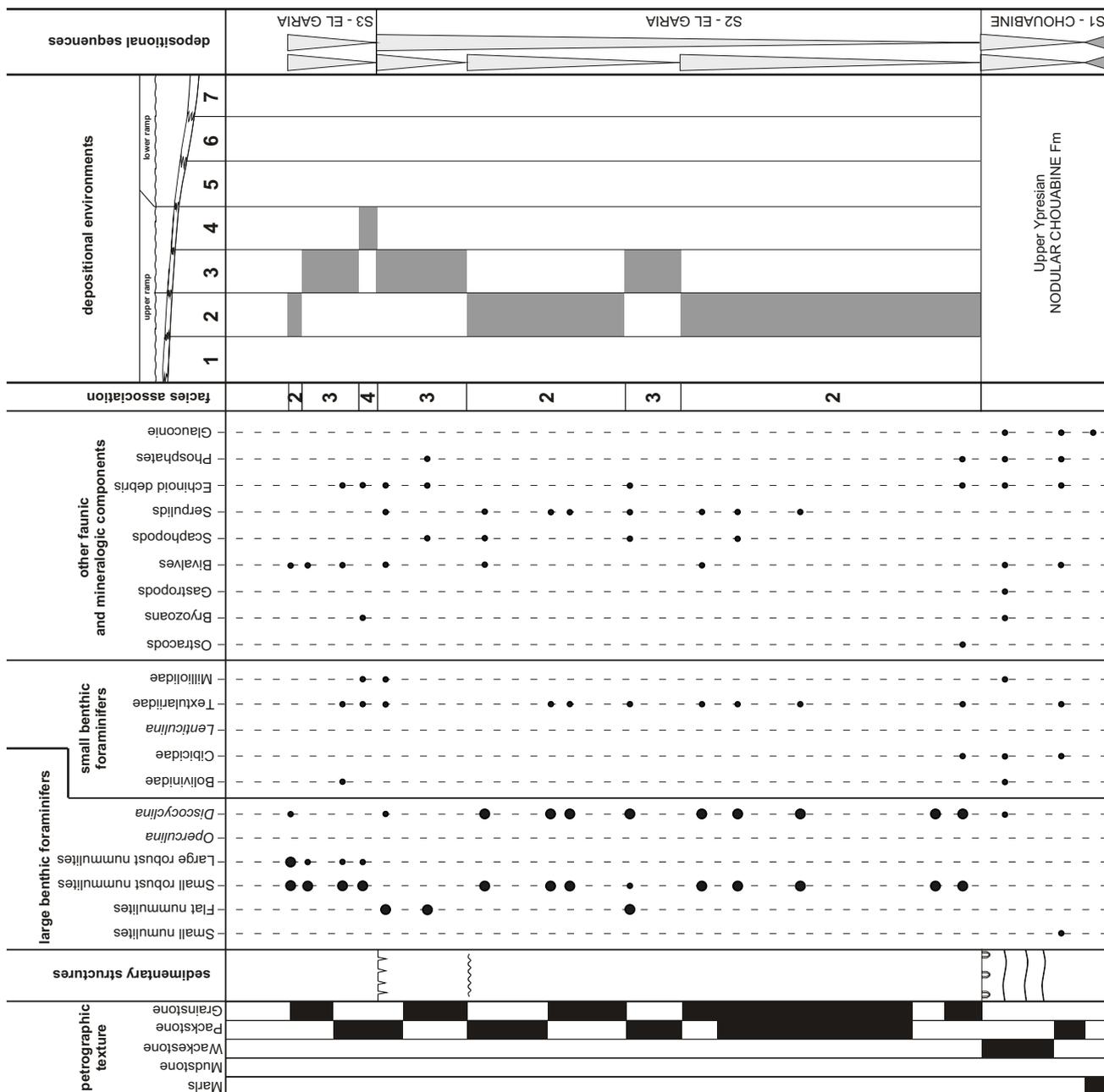
List of Appendix

Appendix 1: List of symbols for the facies description.....	170
Appendix 2: Section of the Kesra Roman Steps (MKR), Kesra Plateau.....	171
Appendix 3: Section of the Murabat (Mu), Kesra Plateau.....	172
Appendix 4: Section of the Dir Daba (DD1), Kesra Plateau.....	173
Appendix 5: Section of Ali ben Salem (AbS), Kesra Plateau.....	174
Appendix 6: Section of Dir el Jerouia West (DeJO), Kesra Plateau.....	175
Appendix 7: Section of Dir el Jerouia East (DeJE), Kesra Plateau.....	176
Appendix 8: Section of S ¹ Mohamed ben Abdallah (SMbA1, SMbA2), Kesra Plateau.....	177
Appendix 9: Section of S ¹ Mohamed ben Abdallah (SMbA3), Kesra Plateau.....	178
Appendix 10: Section of S ¹ Mohamed ben Abdallah (SMbA4), Kesra Plateau.....	179
Appendix 11: Section of S ¹ Mohamed ben Abdallah (SMbA5), Kesra Plateau.....	180
Appendix 12: Section of S ¹ Mohamed ben Abdallah (SMbA6), Kesra Plateau.....	181
Appendix 13: Section of Deroudj el Hamra (DeH), Kesra Plateau.....	182
Appendix 14: Section of A. ès Souk (AeS), Kesra Plateau.....	183
Appendix 15: Section of A. el Hallouf (AeH), Kesra Plateau.....	184
Appendix 16: Section of Dir el Hadj Ali (DeHA), Kesra Plateau.....	185
Appendix 17: Section of Douirat Sadoune (DS), Kesra Plateau.....	186
Appendix 18: Section of Dir Feddane el Mrassi (DFeM1), Kesra Plateau.....	187
Appendix 19: Type Section of Ain ad-Dabusseyah (top), NE Cyrenaica.....	188
Appendix 20: Type Section of West Dernah Roadcut, NE Cyrenaica.....	189
Appendix 21: Type Section of Cyrene (top), NE Cyrenaica.....	190
Appendix 22: Section A, Sidi al Machmùm, NE Cyrenaica.....	191
Appendix 23: Section B, Sidi al Machmùm, NE Cyrenaica.....	192
Appendix 24: Section S, Sidi al Machmùm, NE Cyrenaica.....	193
Appendix 25: Section E, Wadi Murqùs, NE Cyrenaica.....	194
Appendix 26: Section H, Wadi Murqùs, NE Cyrenaica.....	195
Appendix 27: Section T, Wadi Murqùs, NE Cyrenaica.....	196
Appendix 28: Section L, Wadi Murqùs, NE Cyrenaica.....	197
Appendix 29: Section J, Ras el Hilal roadcut, NE Cyrenaica.....	198
Appendix 30: Section G, Ra's ar Ramlah, NE Cyrenaica.....	199
Appendix 31: Section K, Arqùb ash Shawà'ir, NE Cyrenaica.....	200
Appendix 32: Section M, Arqùb ash Shawà'ir, NE Cyrenaica.....	201
Appendix 33: Section N, Wadi bin Jubàrah, NE Cyrenaica.....	202
Appendix 34: Section O, Wadi bin Jubàrah, NE Cyrenaica.....	203
Appendix 35: Section P, Wadi bin Jubàrah, NE Cyrenaica.....	204
Appendix 36: Section Q, Wadi bin Jubàrah, NE Cyrenaica.....	205
Appendix 37: Section R, Wadi bin Jubàrah, NE Cyrenaica.....	206

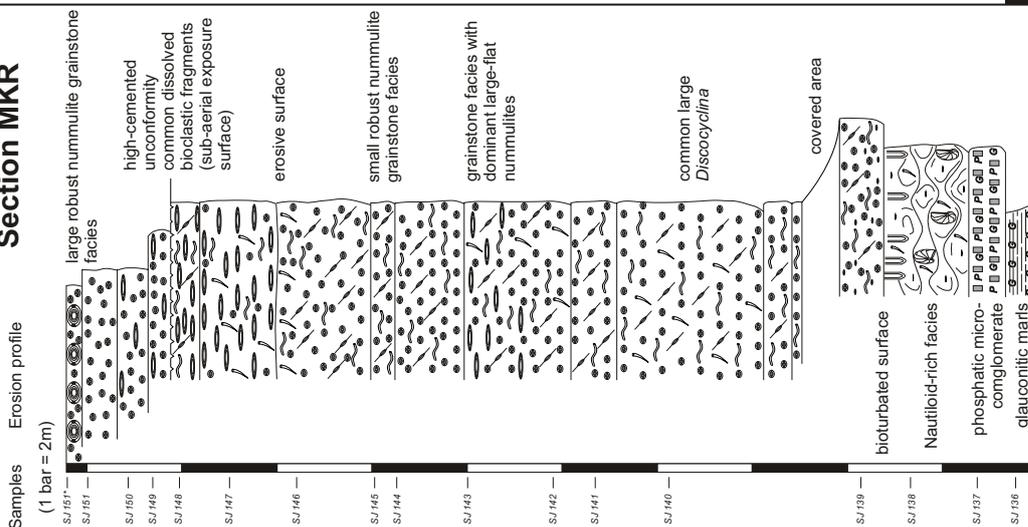
Appendix 1: List of symbols for the facies description

	Symbol
bioclasts	
nummulite s.s	
small nummulite	
small-robust nummulite	
large-flat nummulite	
large-robust nummulite	
discocyclinid	
<i>Operculina</i>	
<i>Orbitolites</i>	
<i>Alveolina</i>	
plankton	
gastropod	
bivalve	
red algae	
scaphopod	
serpulid	
massive coral	
branching coral	
nautiloid	
lithoclasts and mineralogic components	
chert	
lithoclast	
phosphate	
glauconite	
sedimentary structures	
undulating surface	
erosive surface	
bioturbated surface	
hard-ground	
bioturbation	
wavy-bedding	
low-angle cross stratification	
large-scale cross-bedding	
hummocky-cross stratification	
sequence stratigraphy	
shallowing-upward cycle	
deepening-upward cycle	

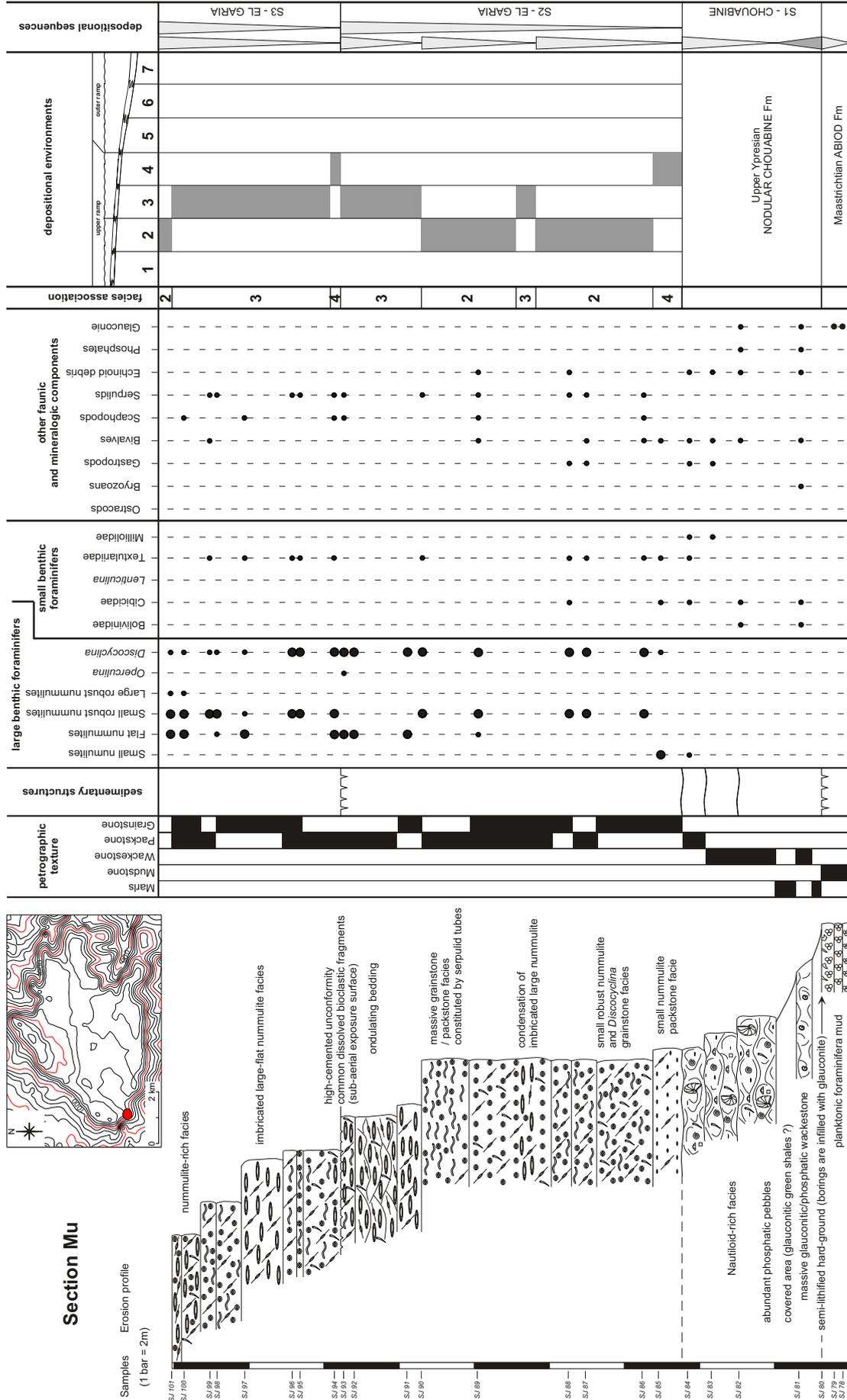
Appendix 2: Section of the Kesra Roman Steps (MKR), Kesra Plateau



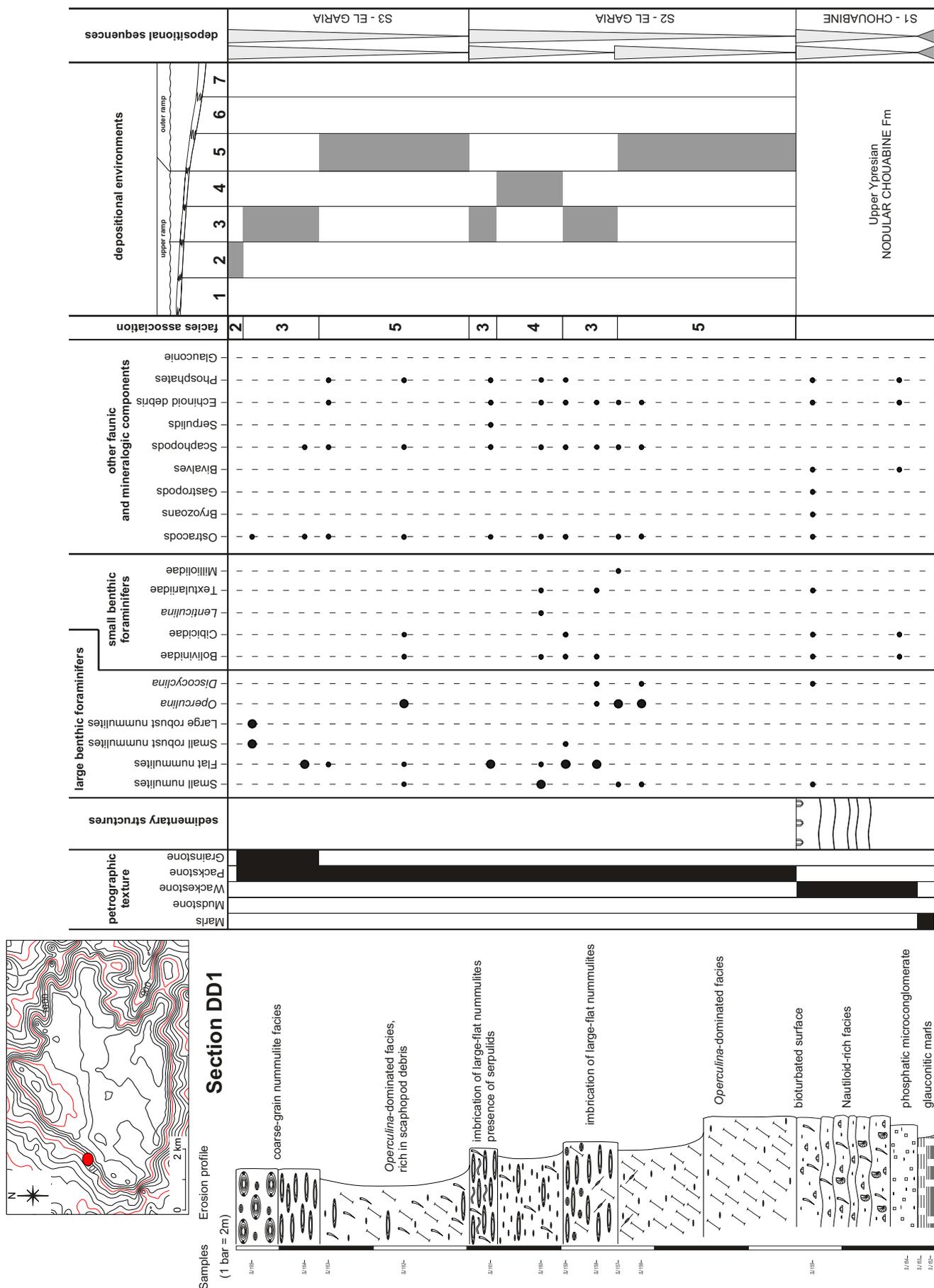
Section MKR



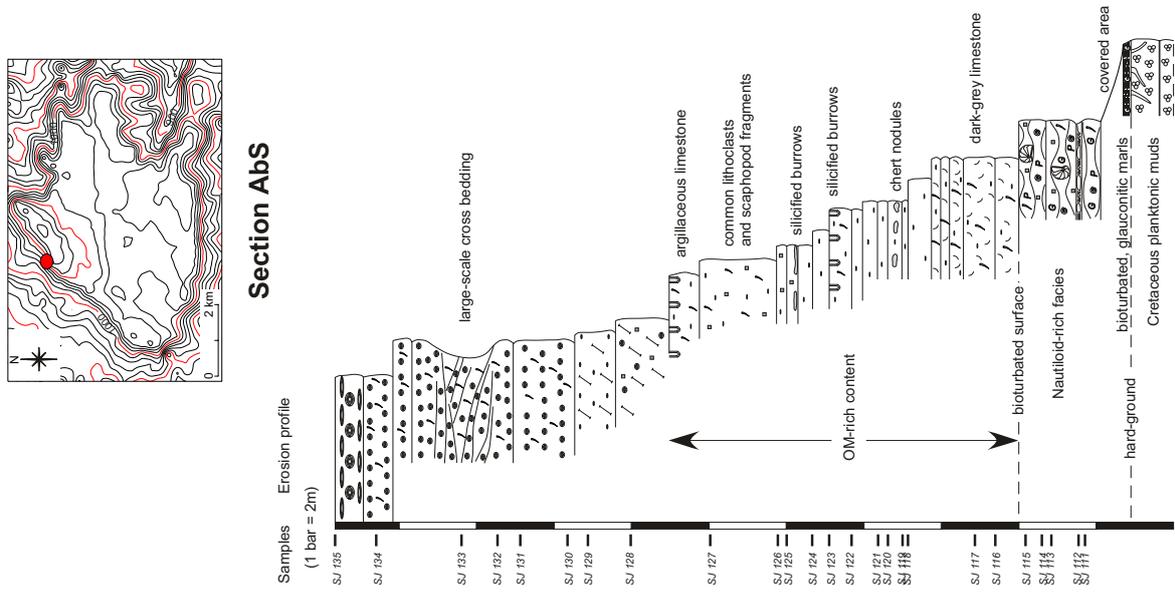
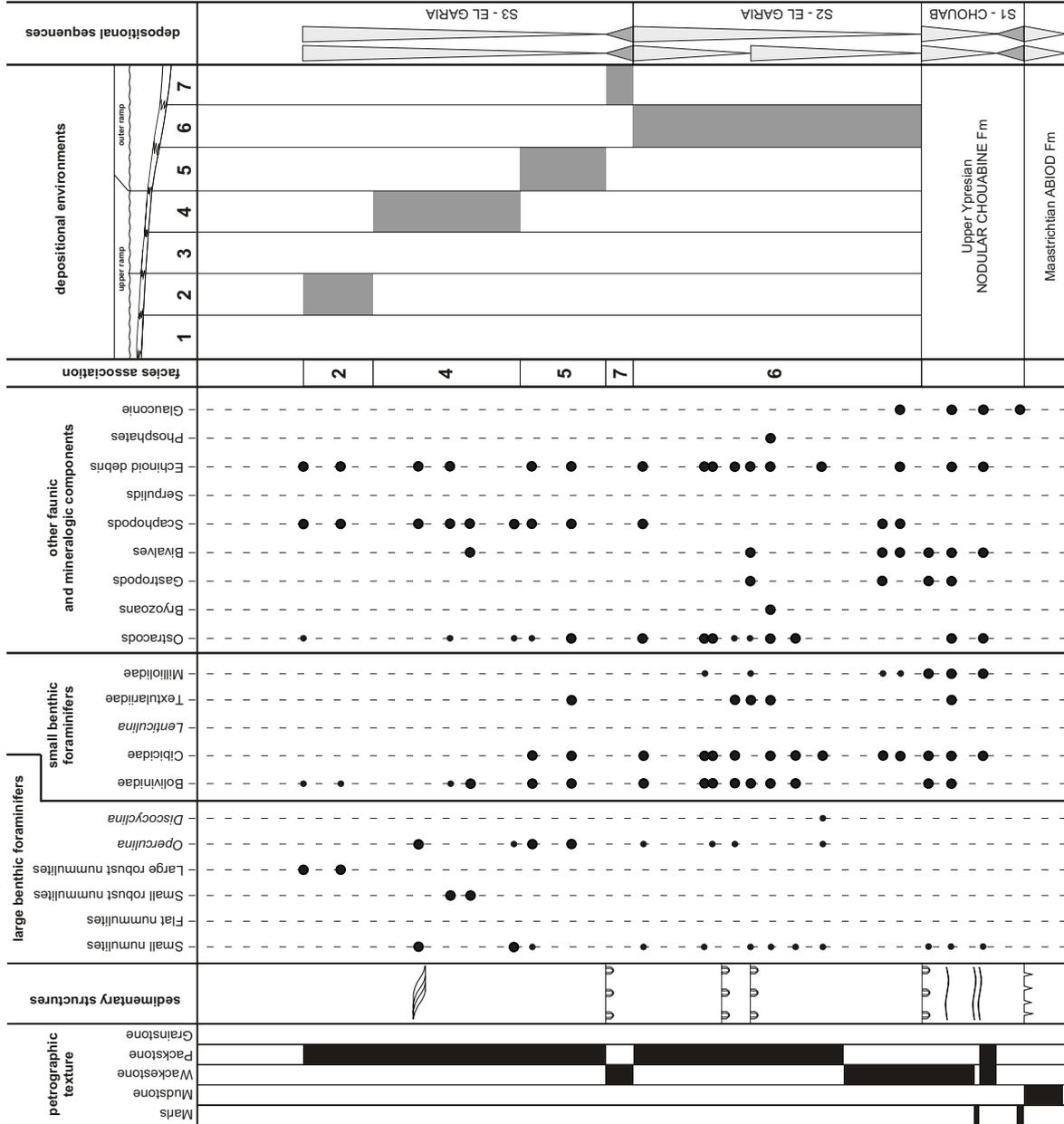
Appendix 3: Section of the Murabat (Mu), Kesra Plateau



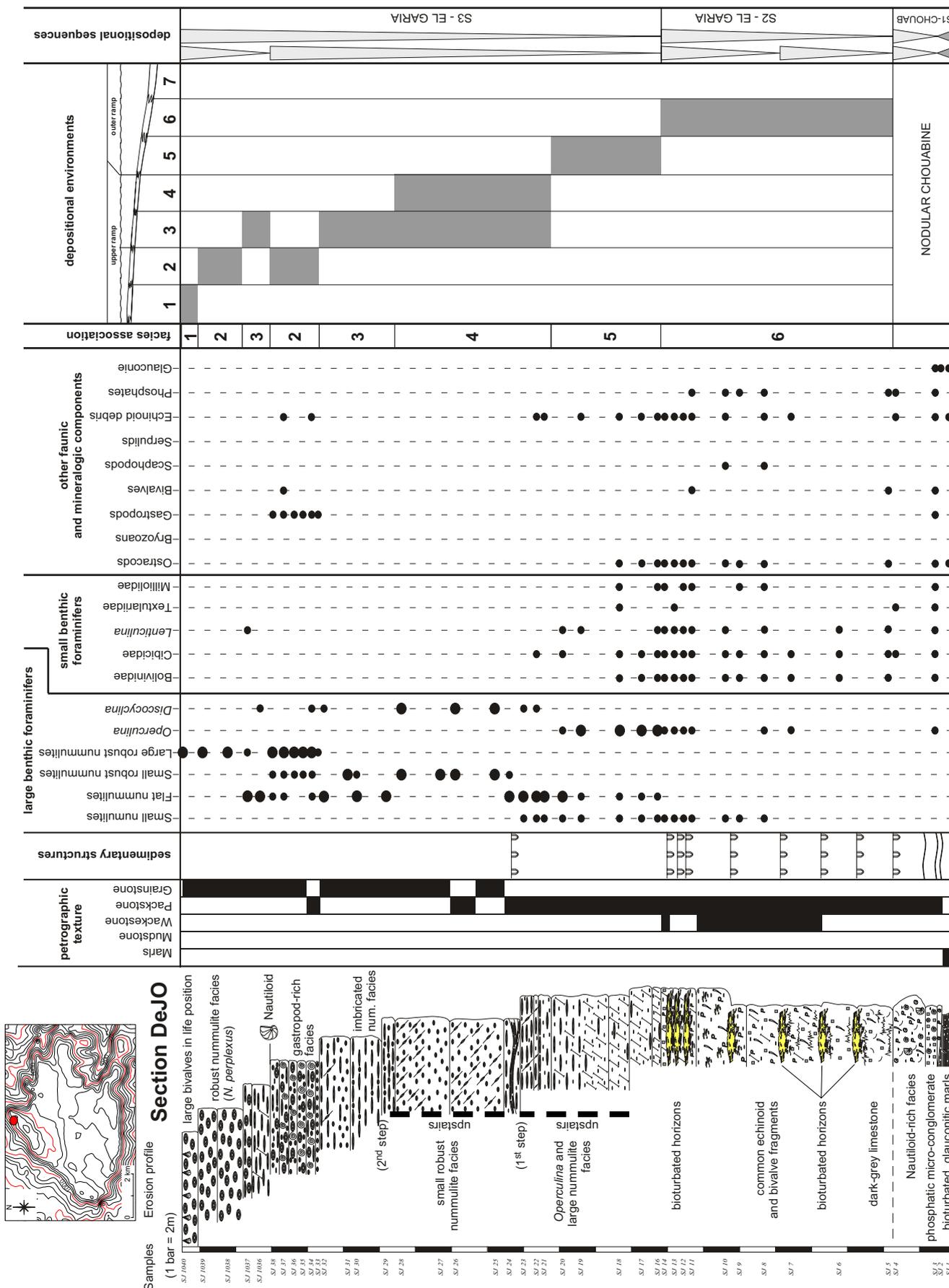
Appendix 4: Section of the Dir Daba (DD1), Kesra Plateau



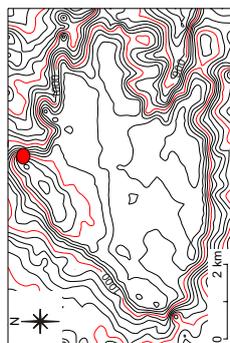
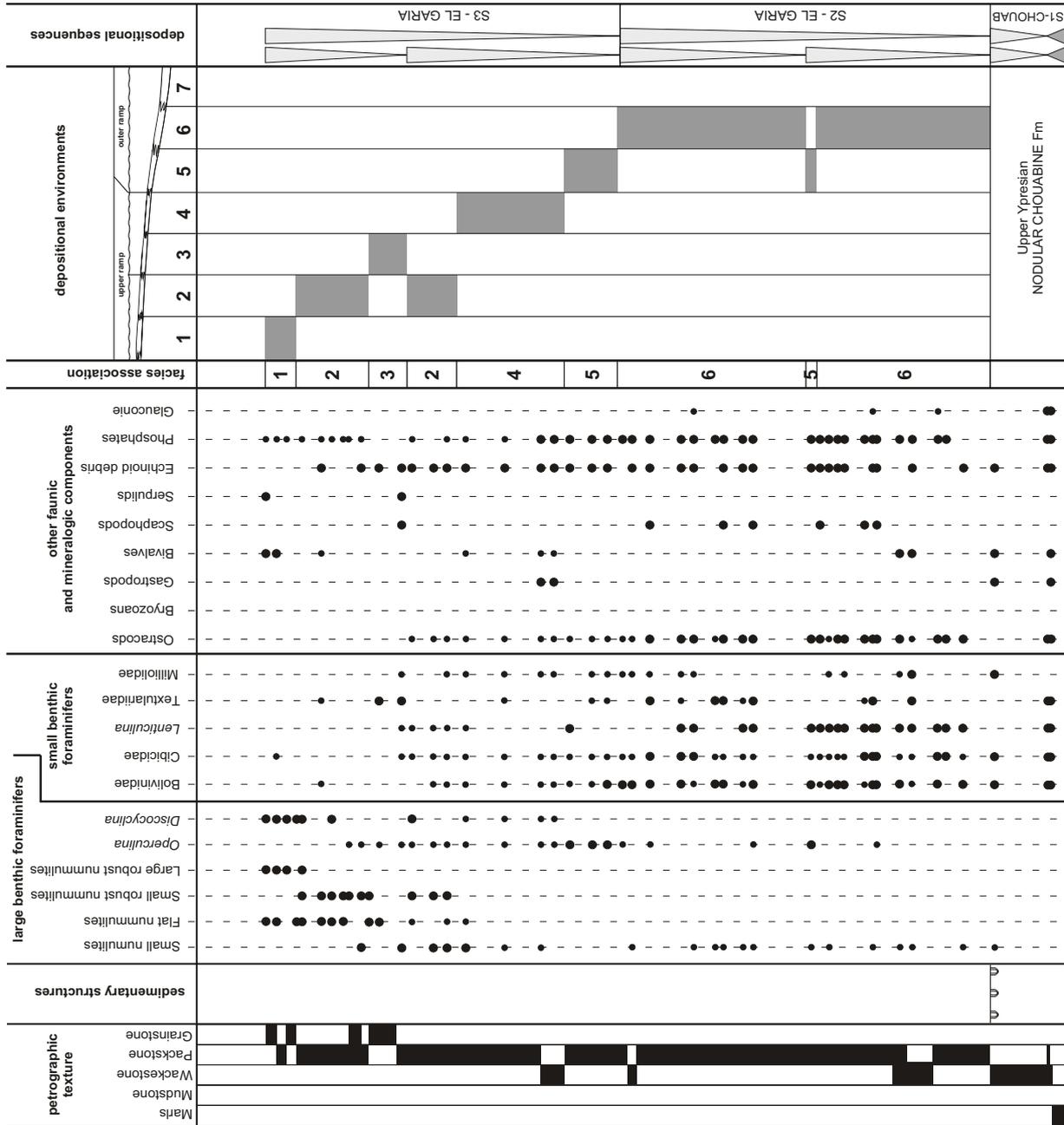
Appendix 5: Section of Ali ben Salem (Abs), Kesra Plateau



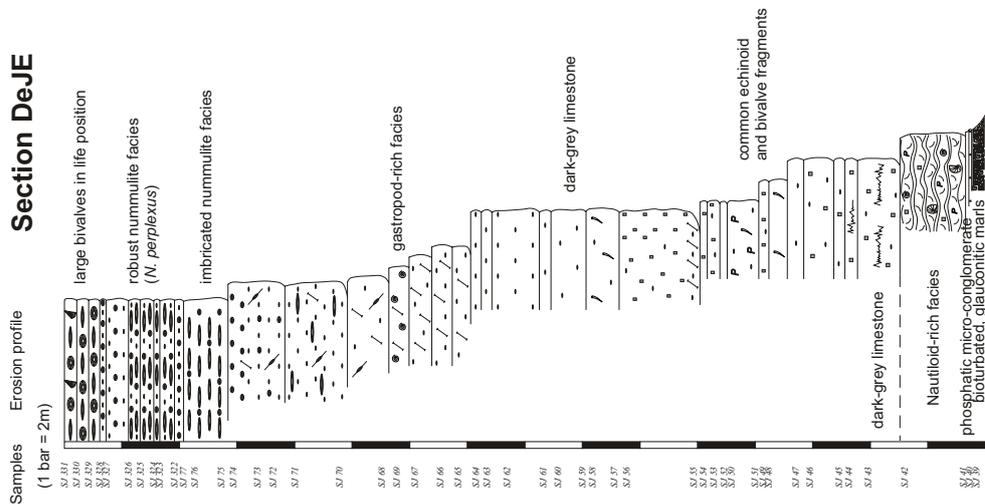
Appendix 6: Section of Dir el Jerouia West (DeJO), Kesra Plateau



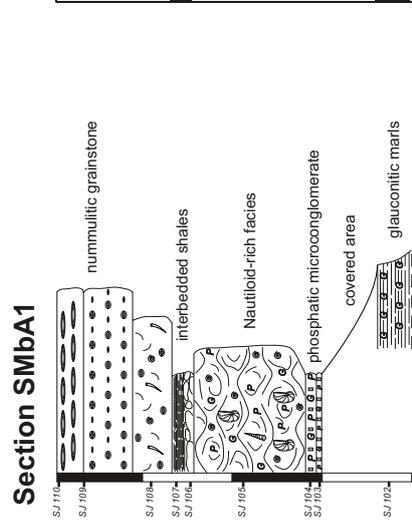
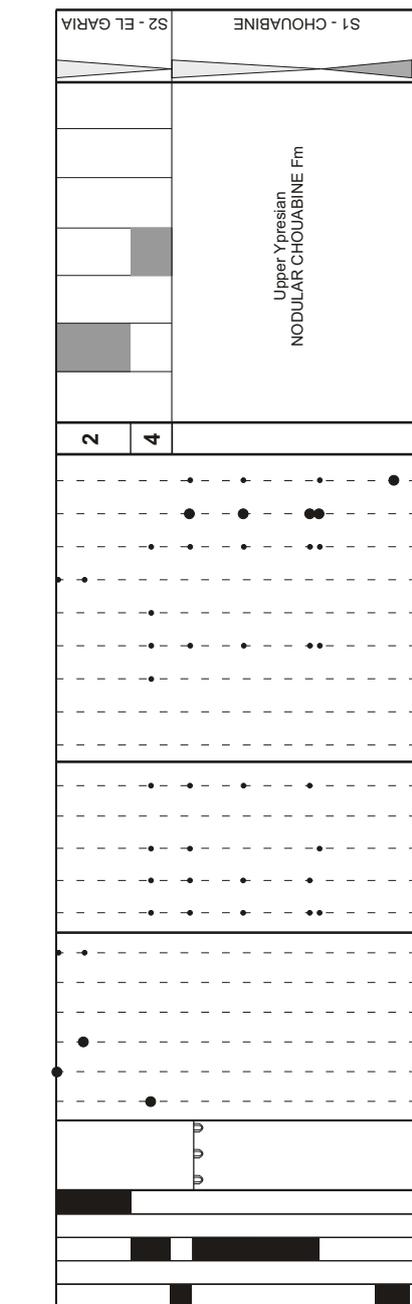
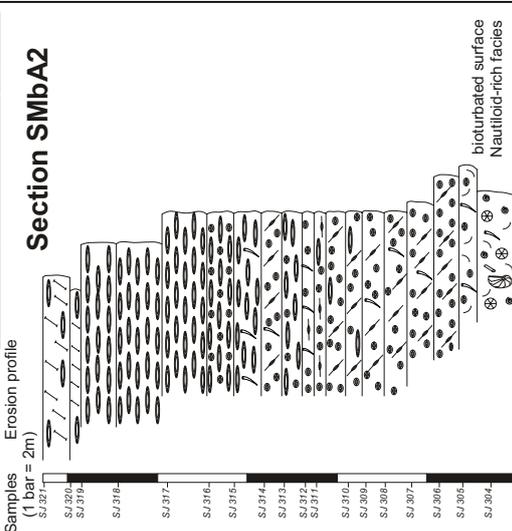
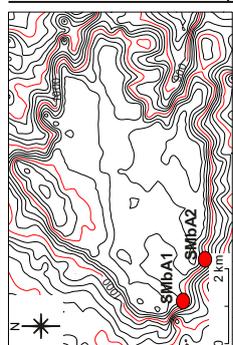
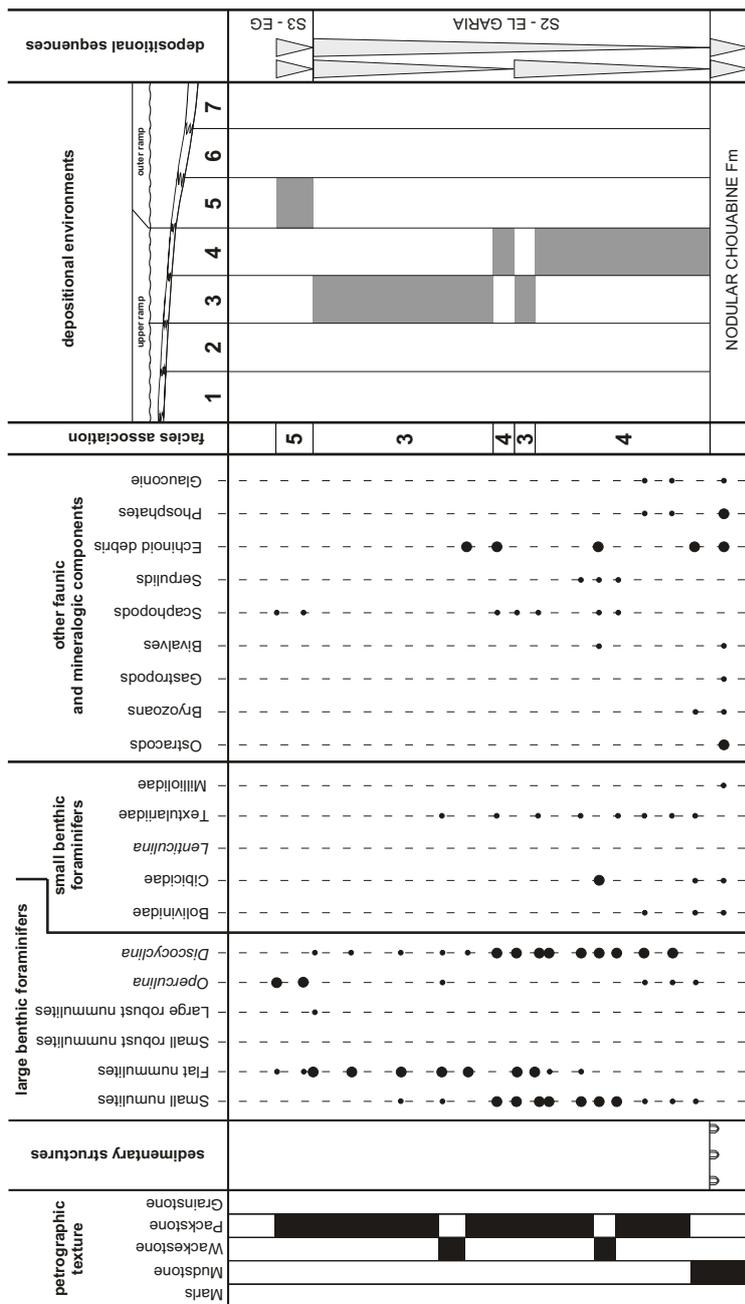
Appendix 7: Section of Dir el Jerouia East (DeJE), Kesra Plateau



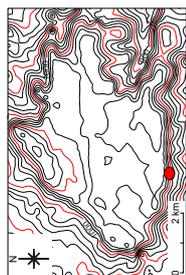
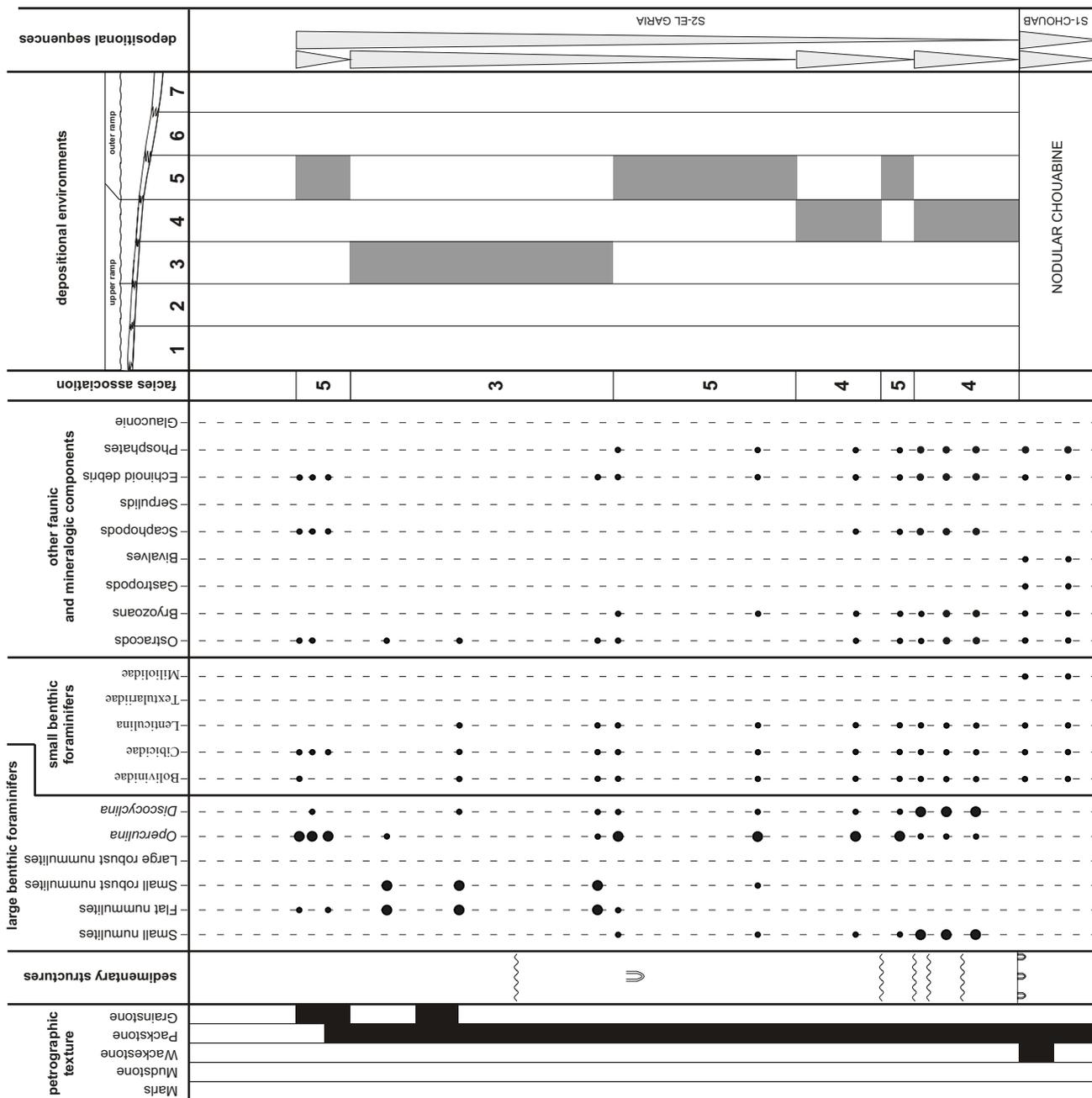
Section DeJE



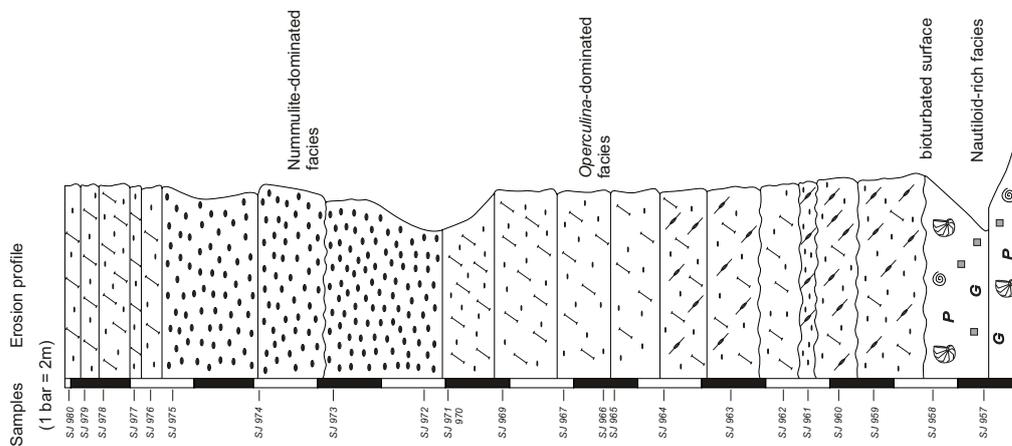
Appendix 8: Section of S^I Mohamed ben Abdallah (SMbA1, SMbA2), Kesra Plateau



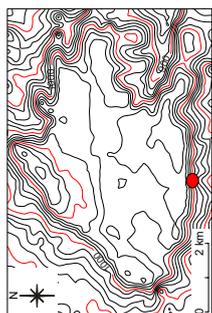
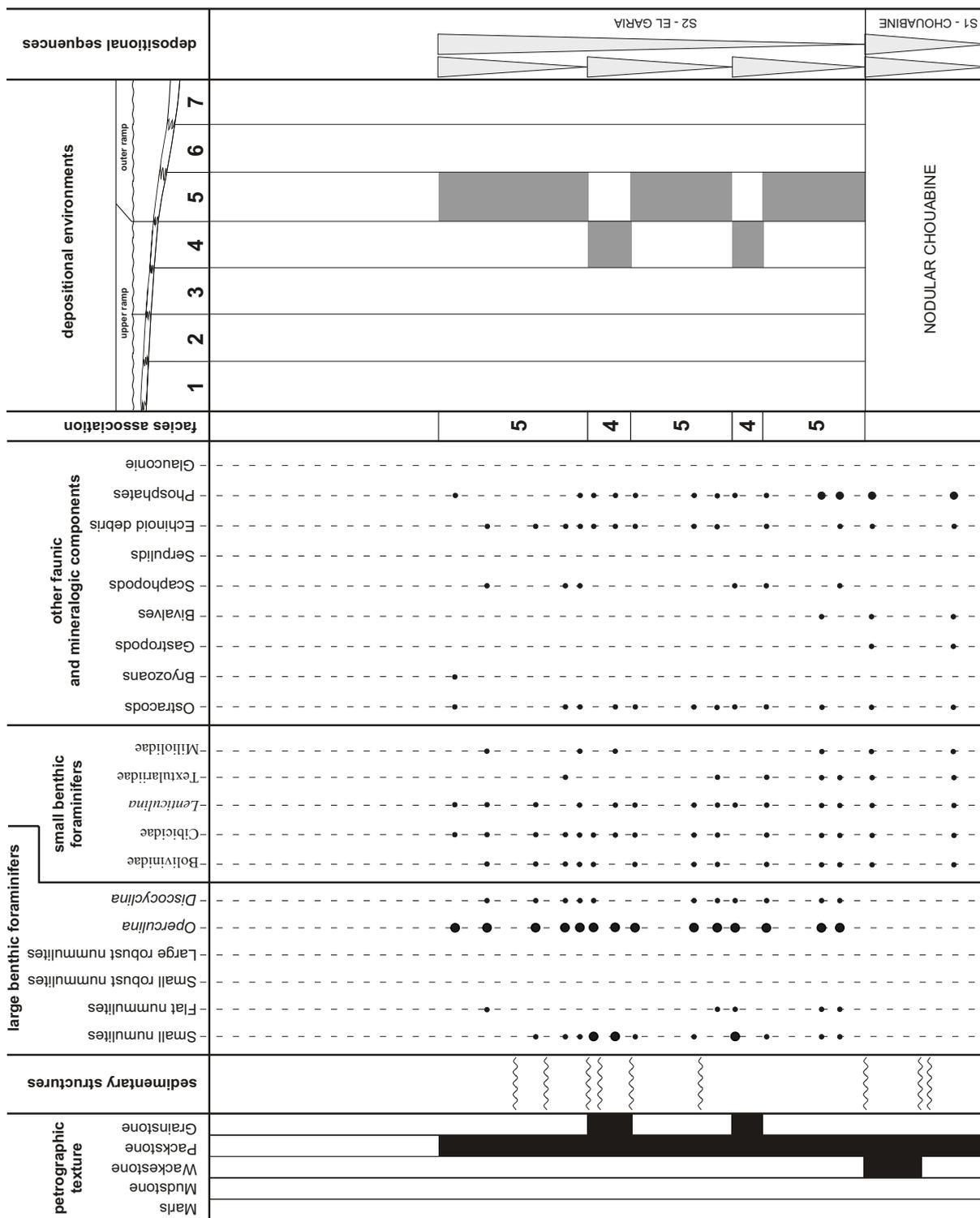
Appendix 9: Section of S^I Mohamed ben Abdallah (SMbA3), Kesra Plateau



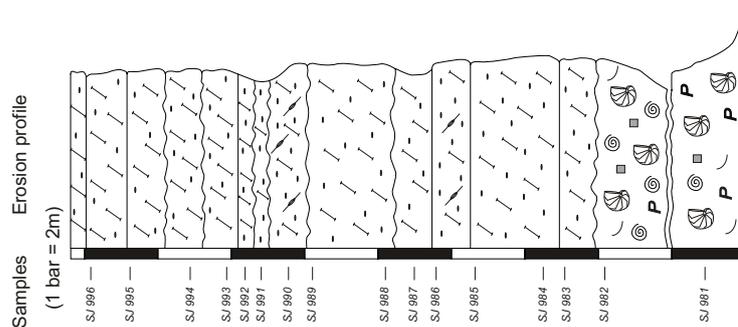
Section SMbA3



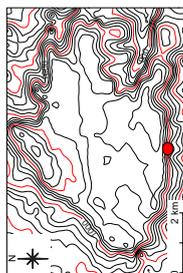
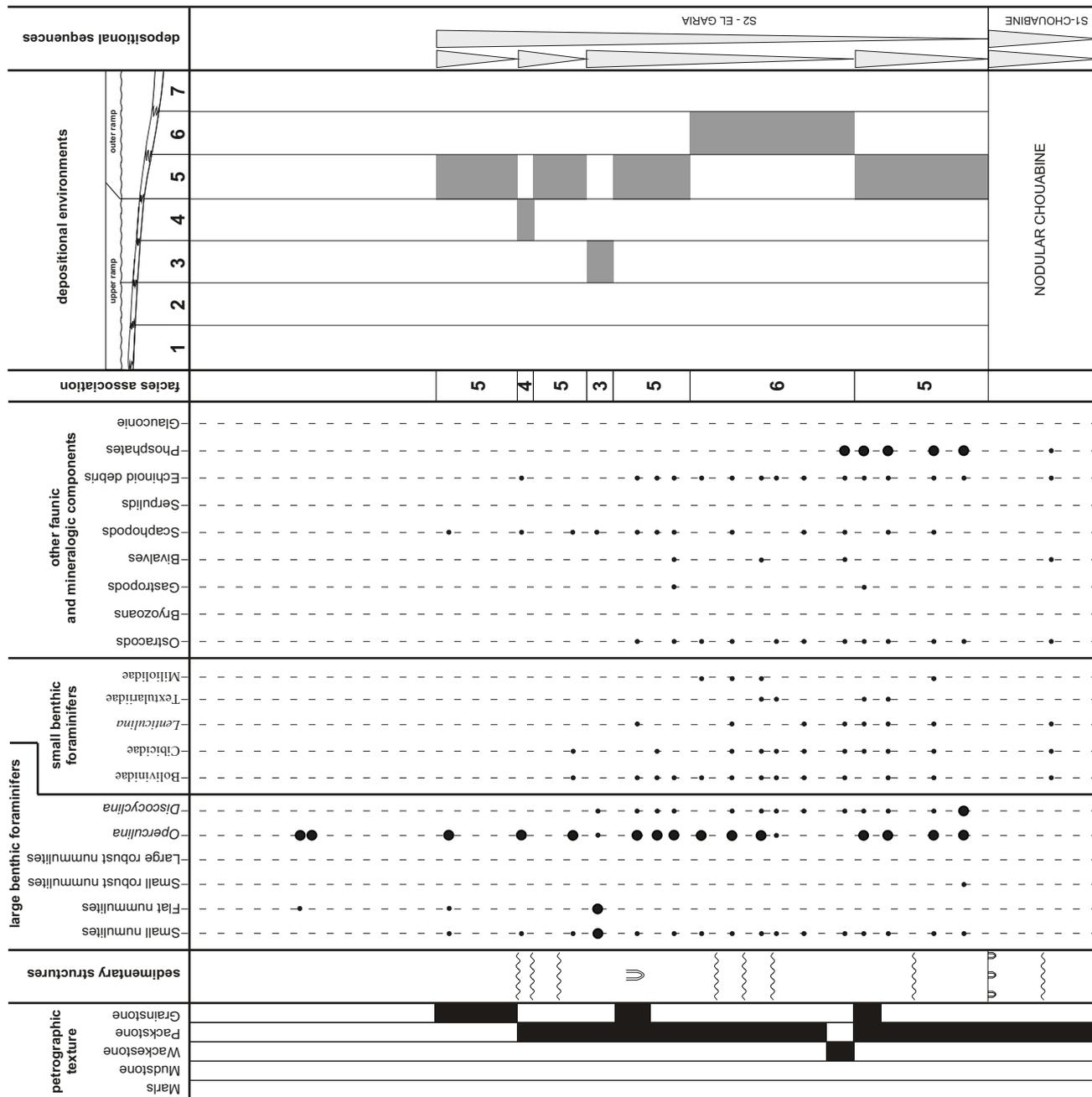
Appendix 10: Section of S^I Mohamed ben Abdallah (SMbA4), Kesra Plateau



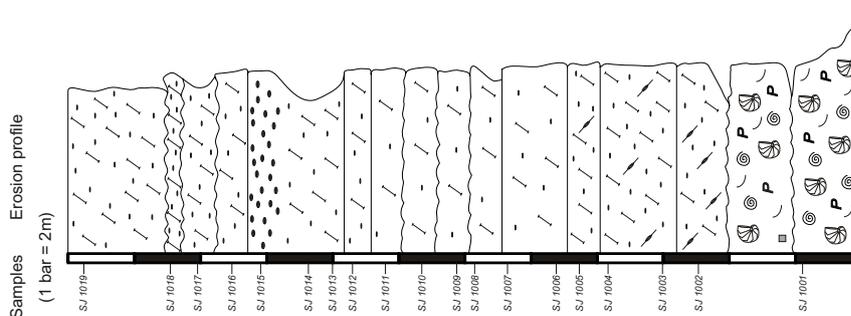
Section SMbA4



Appendix 11: Section of S^I Mohamed ben Abdallah (SMbA5), Kesra Plateau

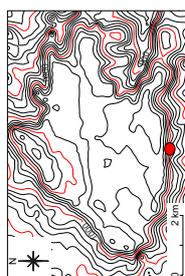


Section SMbA5

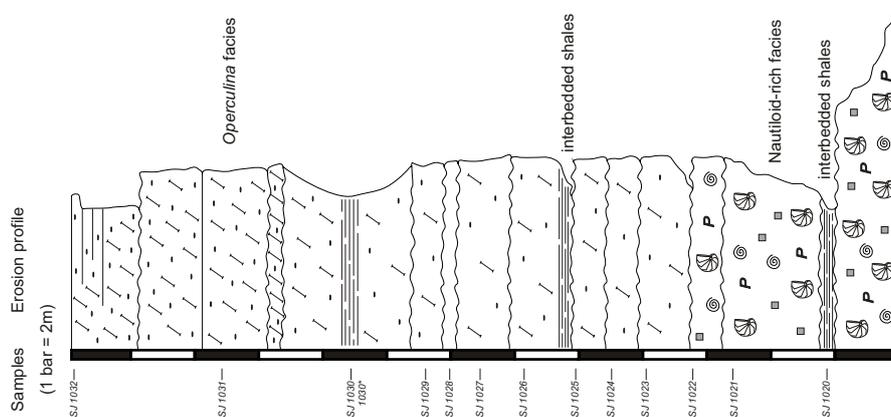


Appendix 12: Section of S^I Mohamed ben Abdallah (SMbA6), Kesra Plateau

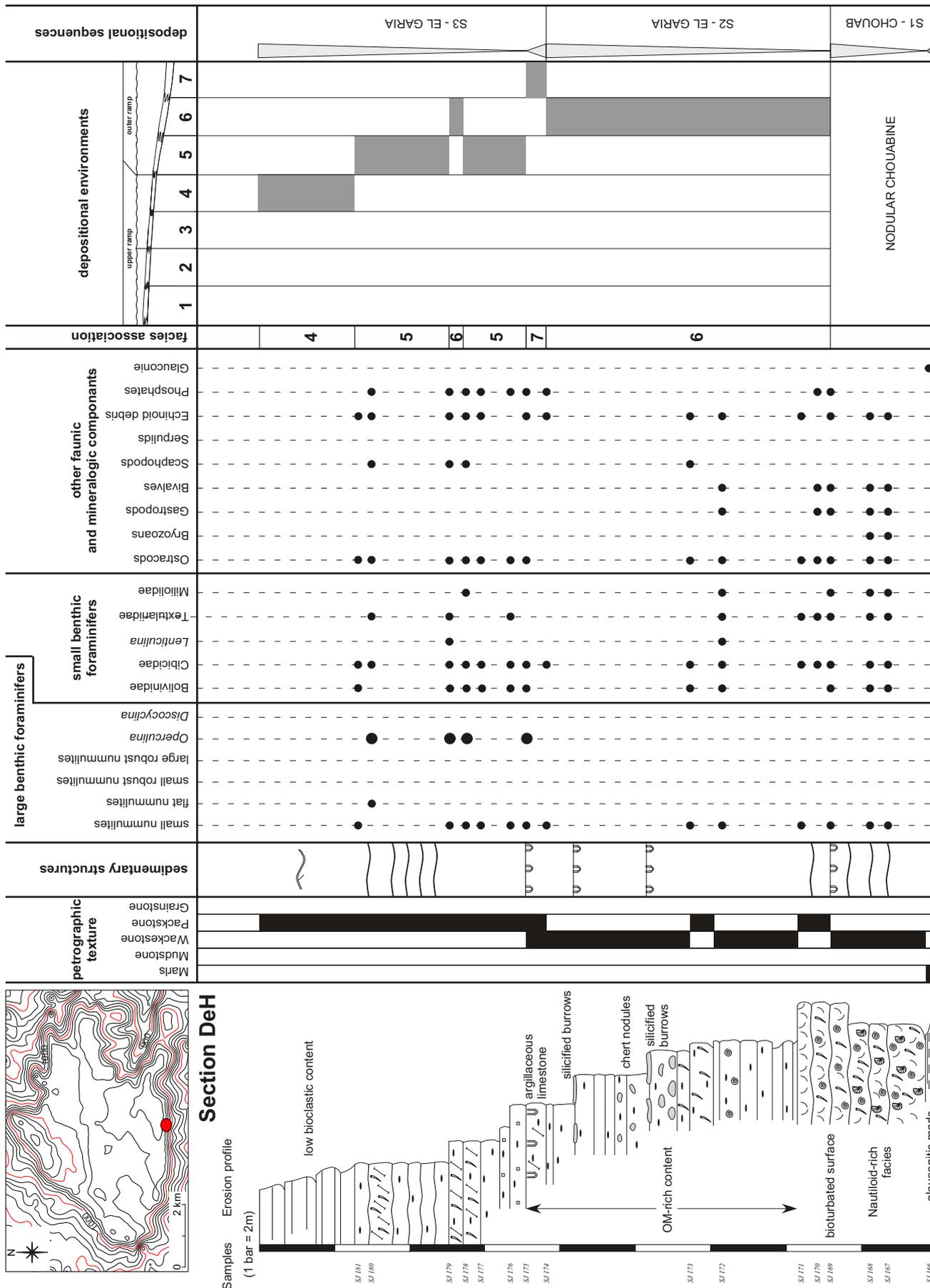
depositional sequences		S2 - EL GARIA							S1 - CHOUABINE																																																																																																														
depositional environments									NODULAR CHOUABINE																																																																																																														
facies association		5			6																																																																																																																		
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Discocyclina																																																																																																																							
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petrographic texture																																																																																																																							



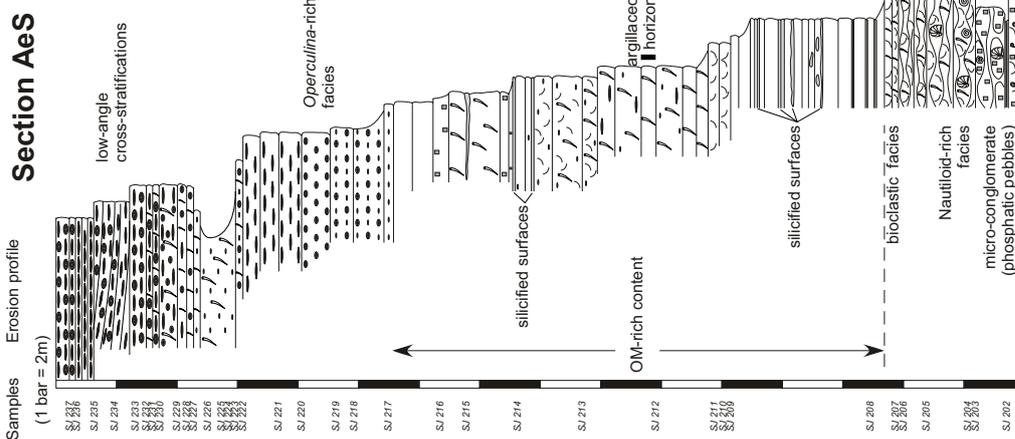
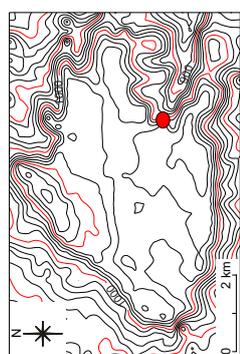
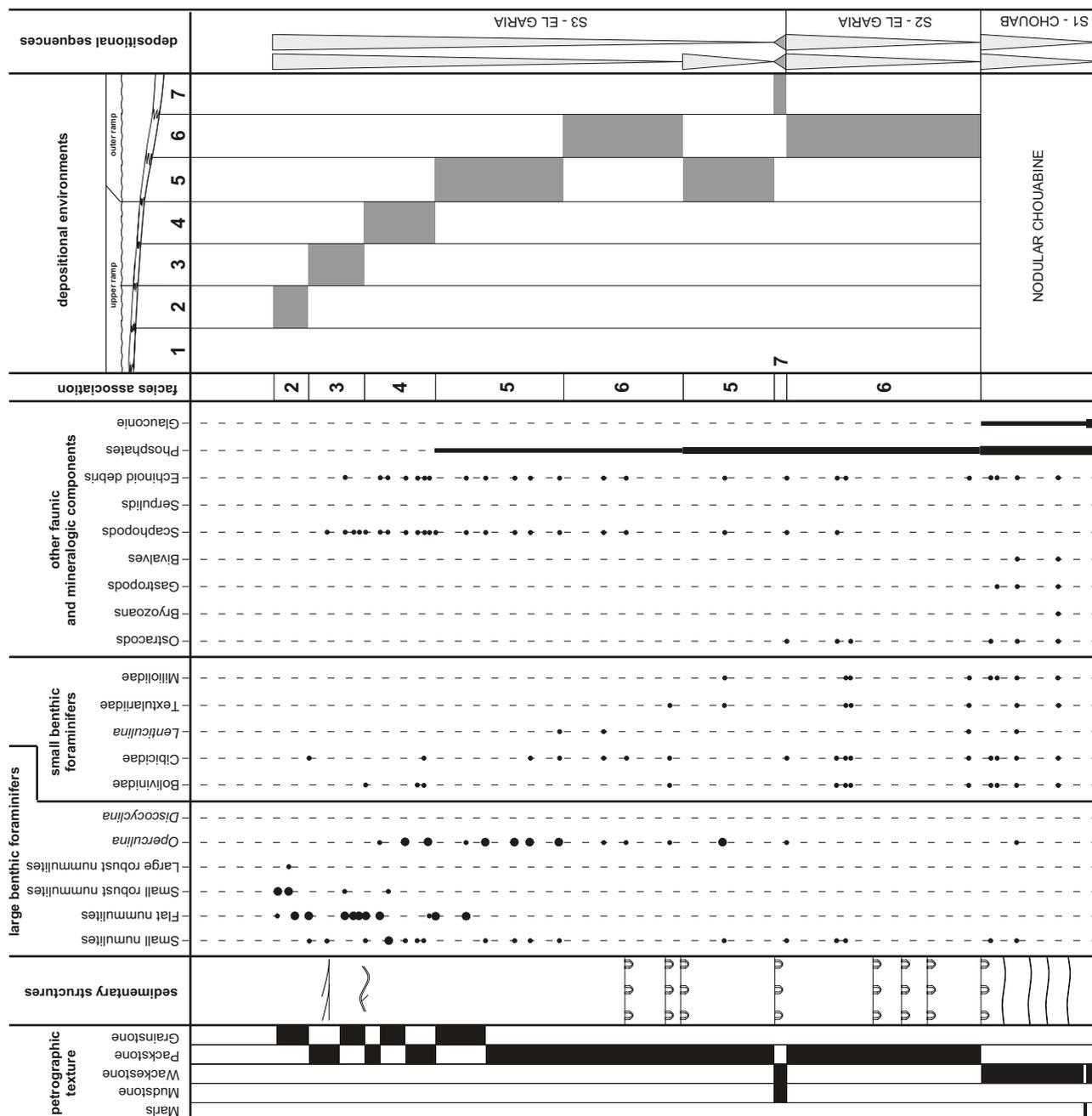
Section SMbA6



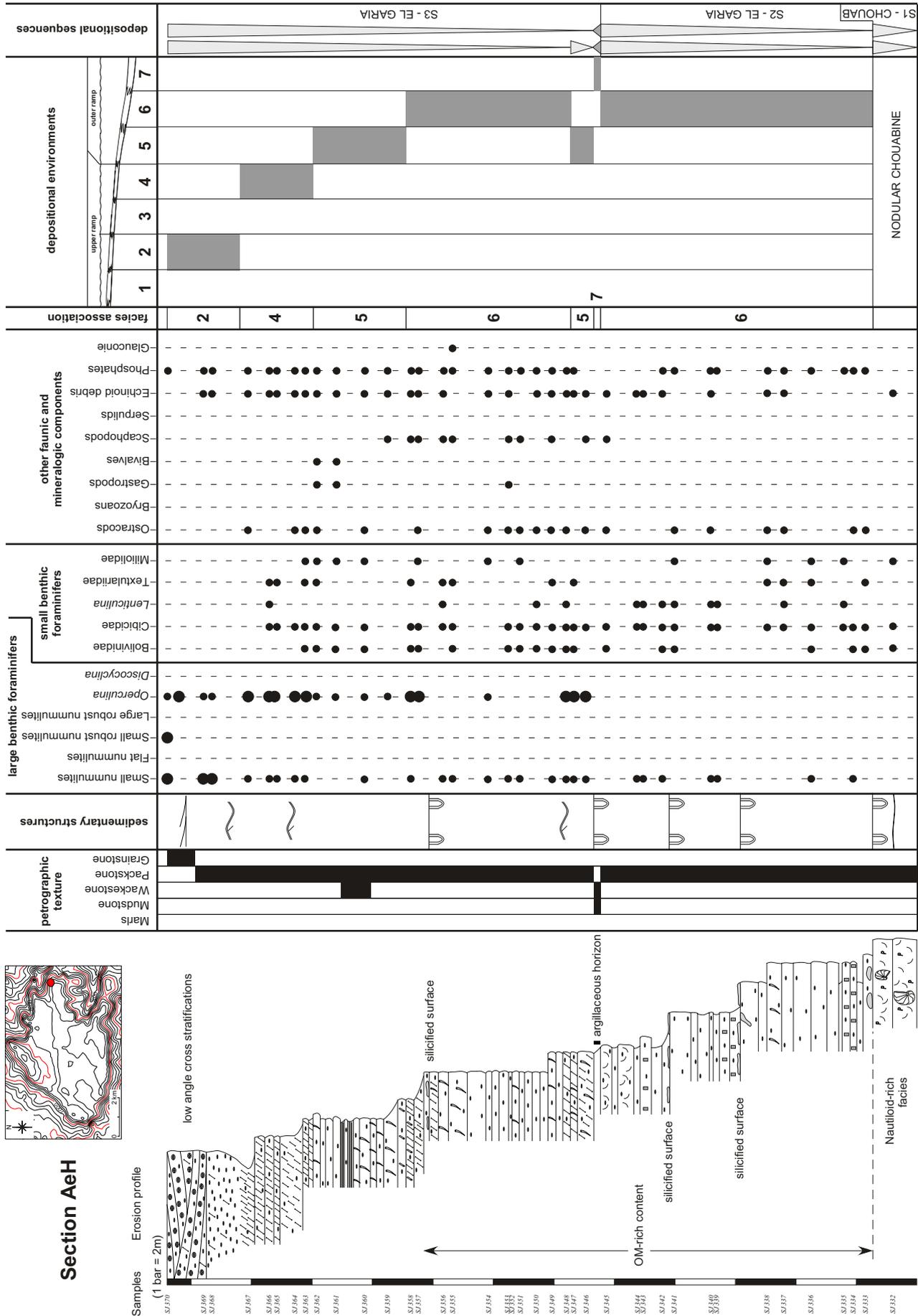
Appendix 13: Section of Deroudj el Hamra (DeH), Kesra Plateau



Appendix 14: Section of A. ès Souk (AeS), Kesra Plateau

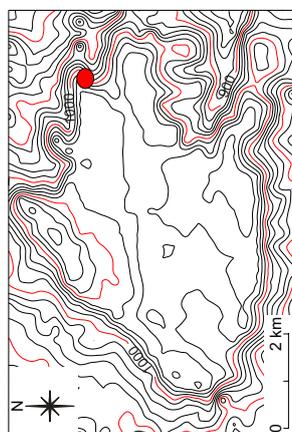


Appendix 15: Section of A. el Hallouf (AeH), Kesra Plateau

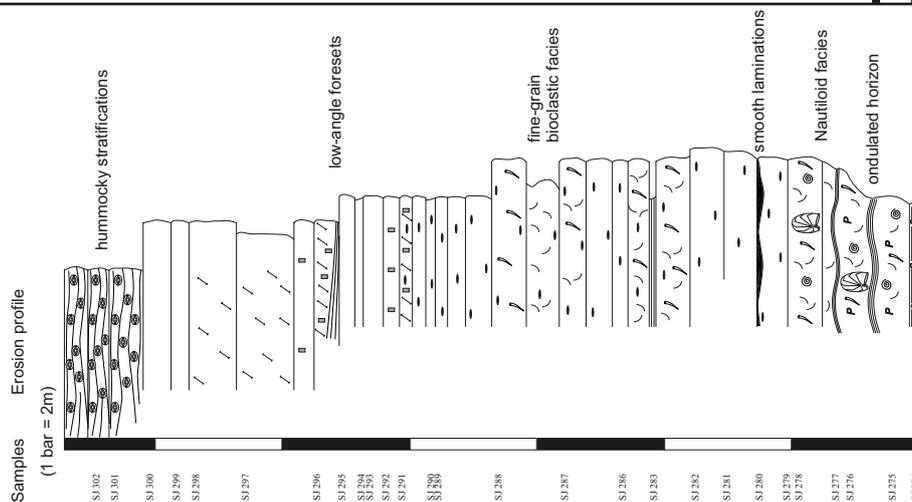


Appendix 16: Section of Dir el Hadj Ali (DeHA), Kesra Plateau

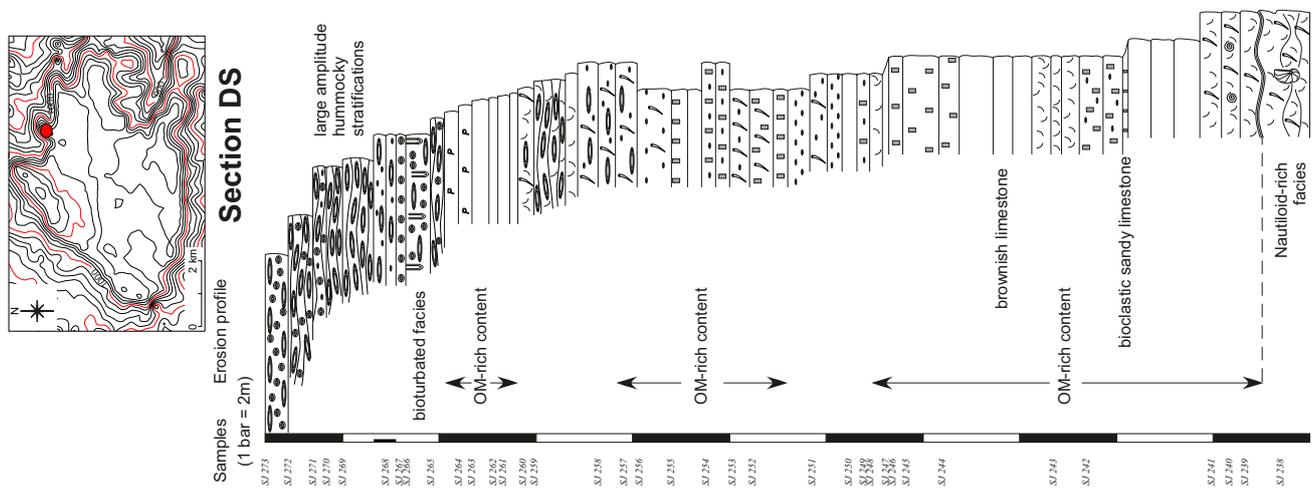
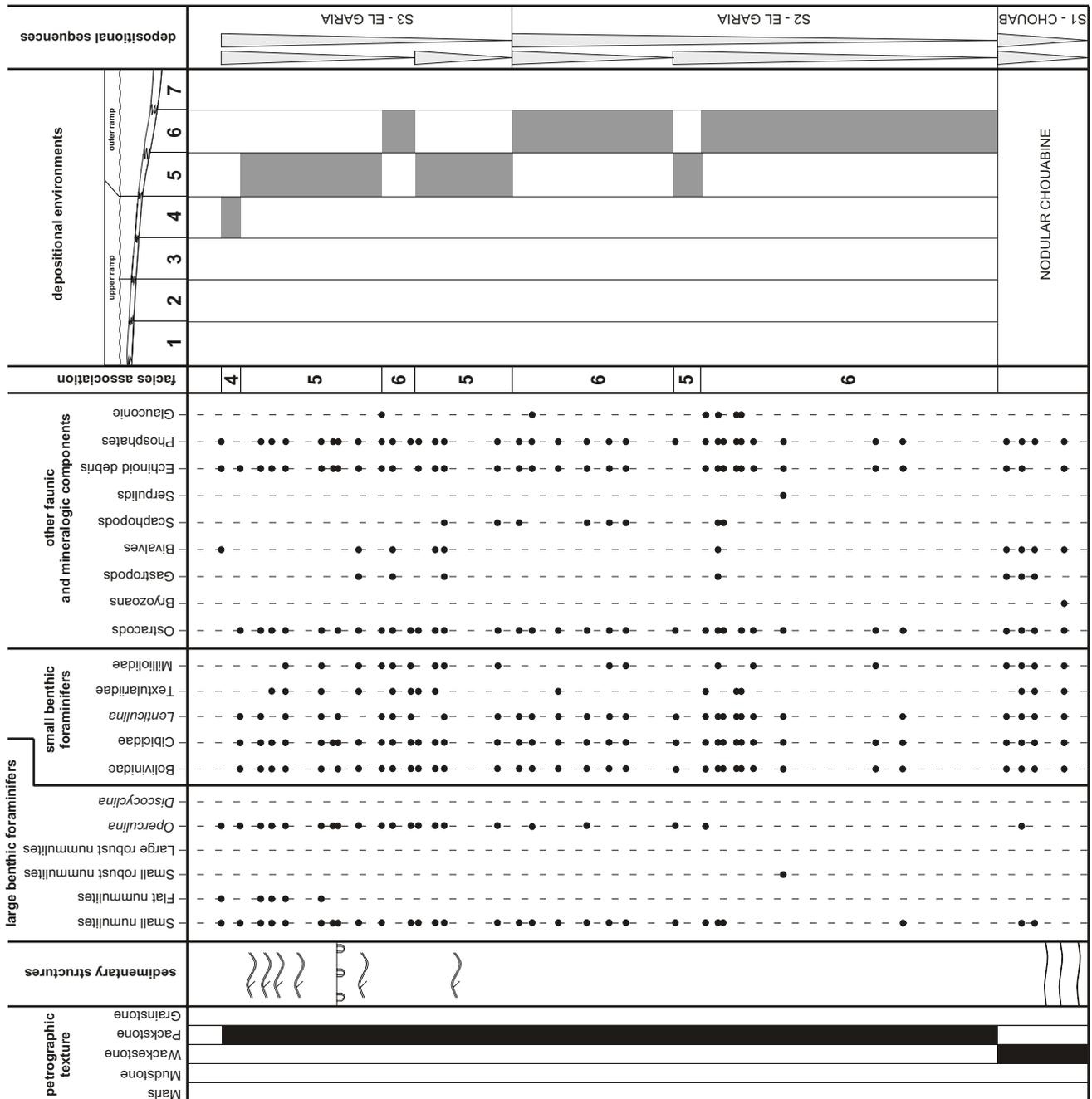
depositional sequences	S2 - EL GARIA		S1 - EL GARIA		S1 - CHOUAB									
depositional environments	1	2	3	4	5	6	7	NODULAR CHOUABINE						
facies association	6													
other faunic and mineralogic components	Ostracods Bryozoans Gastropods Bivalves Scaphopods Serpulis Echinoid debris Phosphates Glauconite													
small benthic foraminifers	Miliolidae Textularidae Lenticulina Cibicides Bolivinae Discocyclina													
large benthic foraminifers	Operculina Large robust nummulites Small robust nummulites Flat nummulites Small nummulites													
sedimentary structures														
petrographic texture	Mudsstone Wackestone Packstone Grainstone													



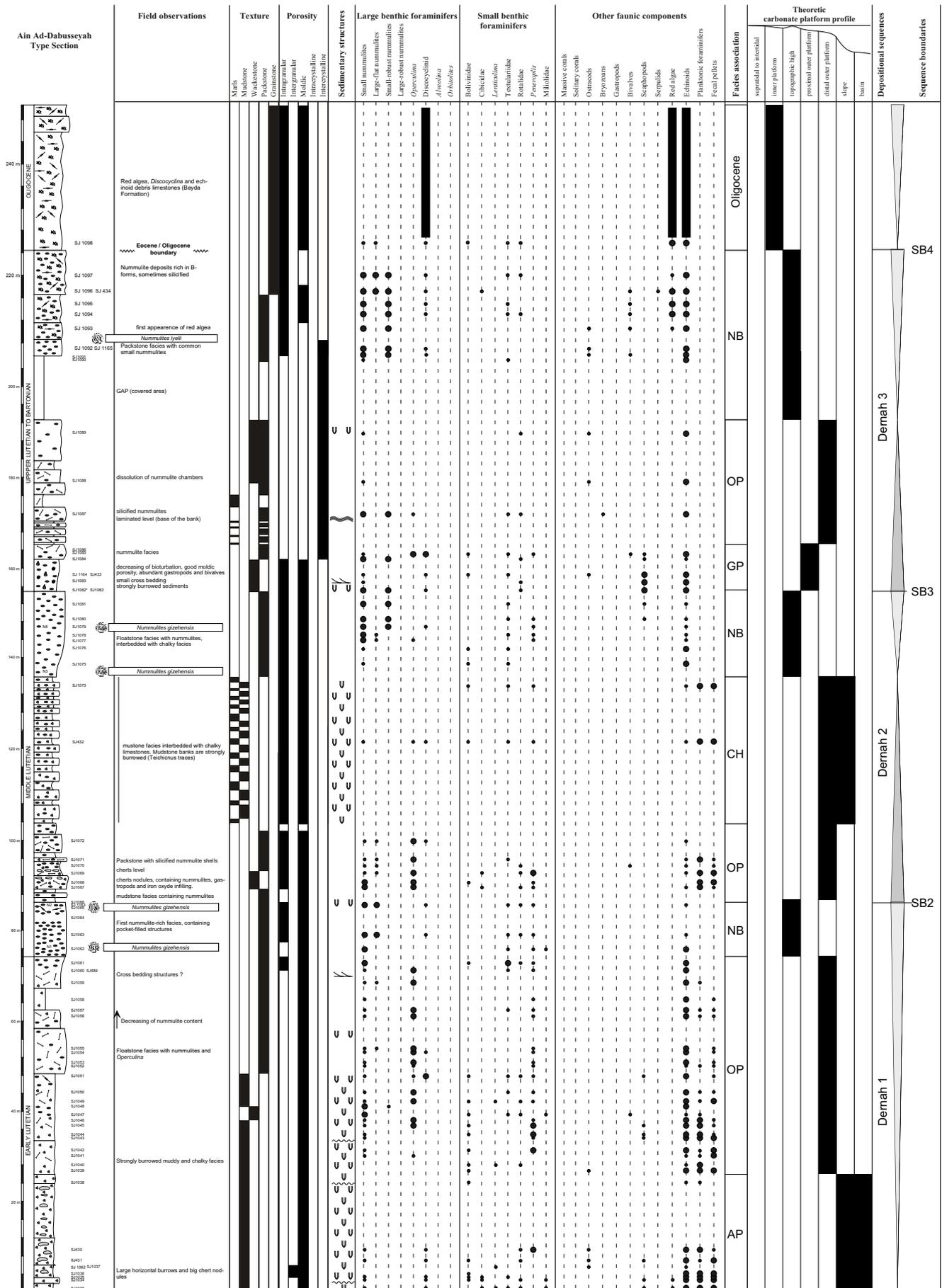
Section DeHA



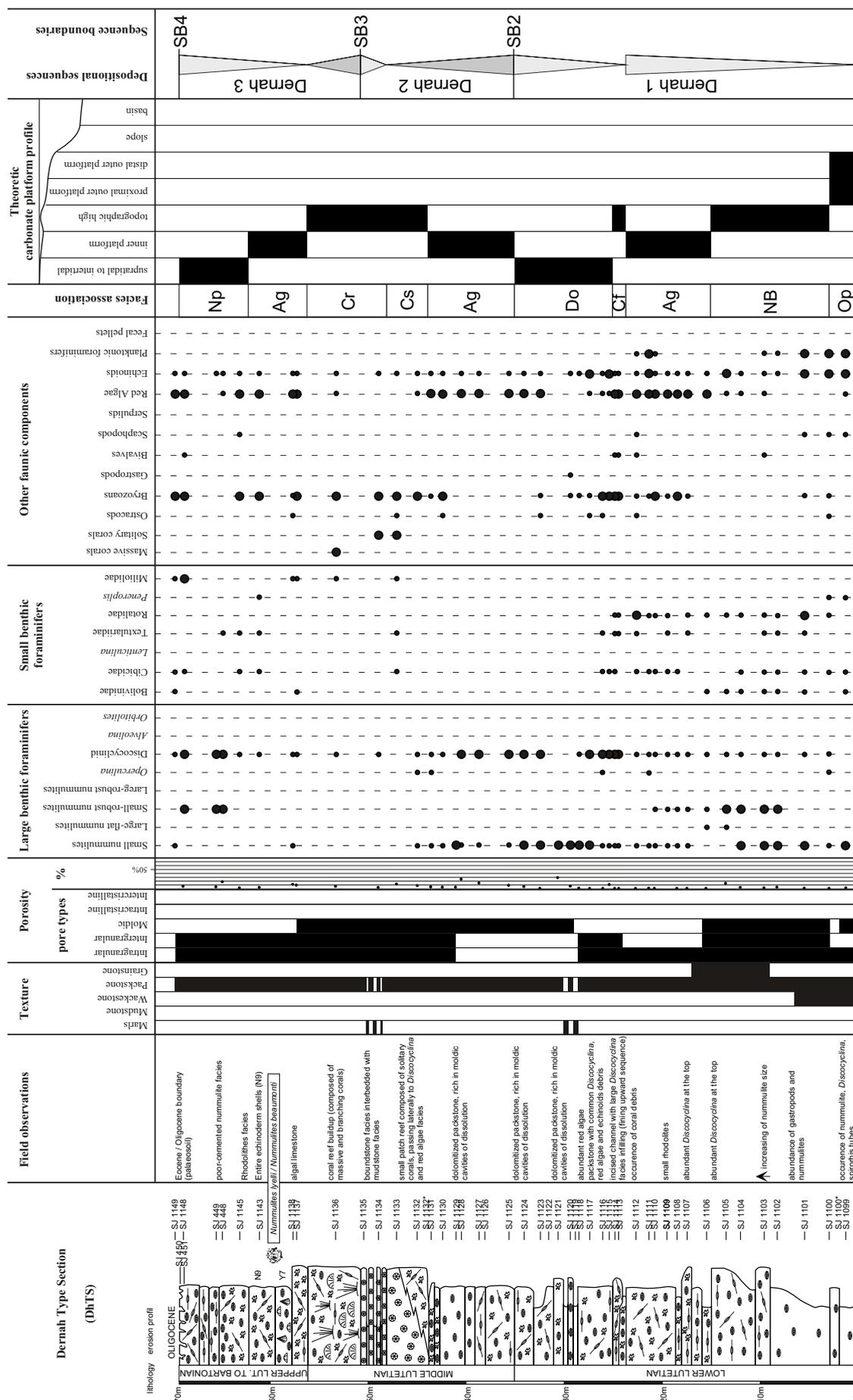
Appendix 17: Section of Douirat Sadoune (DS), Kesra Plateau



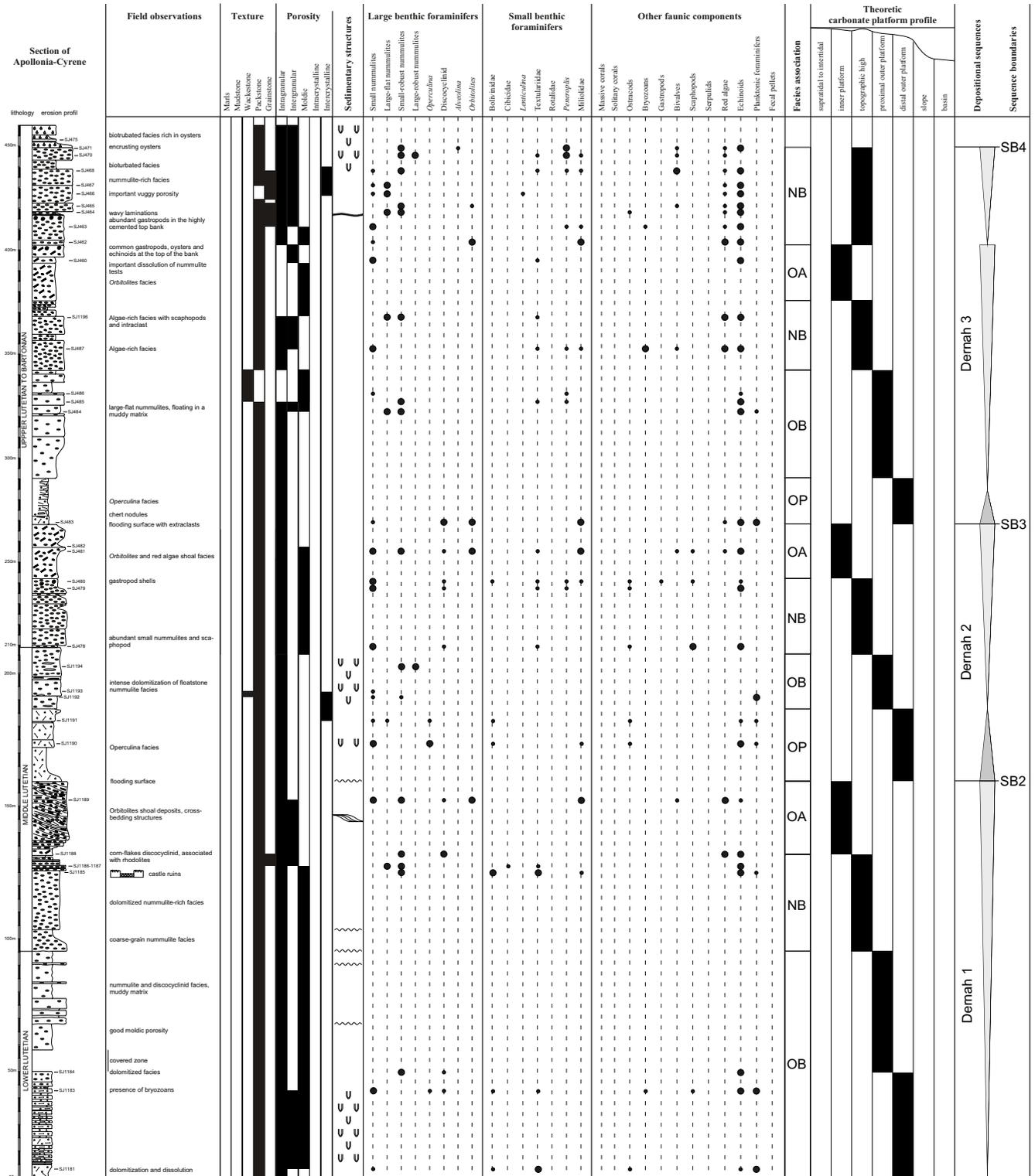
Appendix 19: Type Section of Ain ad-Dabusseyah (top), NE Cyrenaica



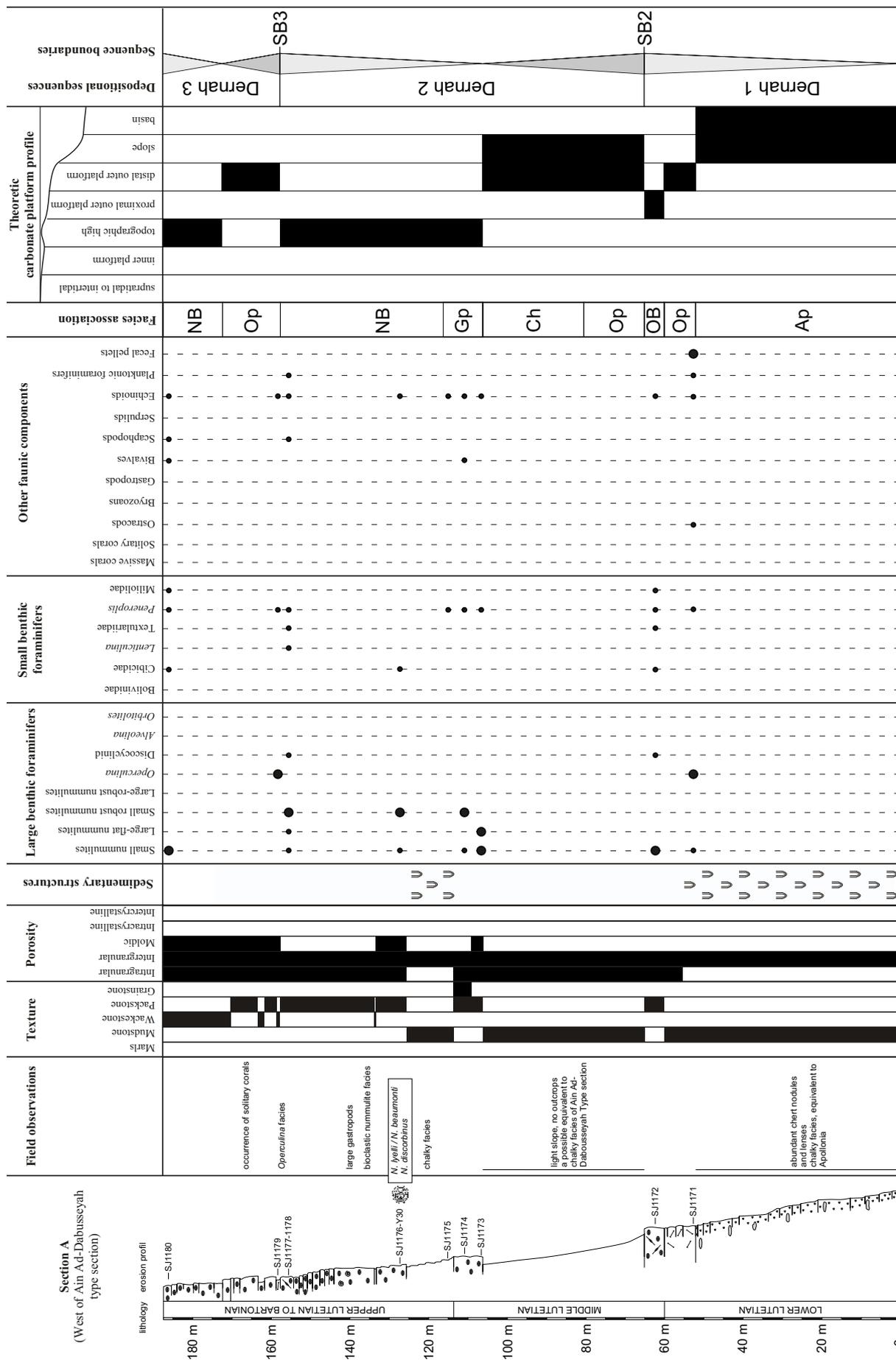
Appendix 20: Type Section of West Dernah Roadcut, NE Cyrenaica



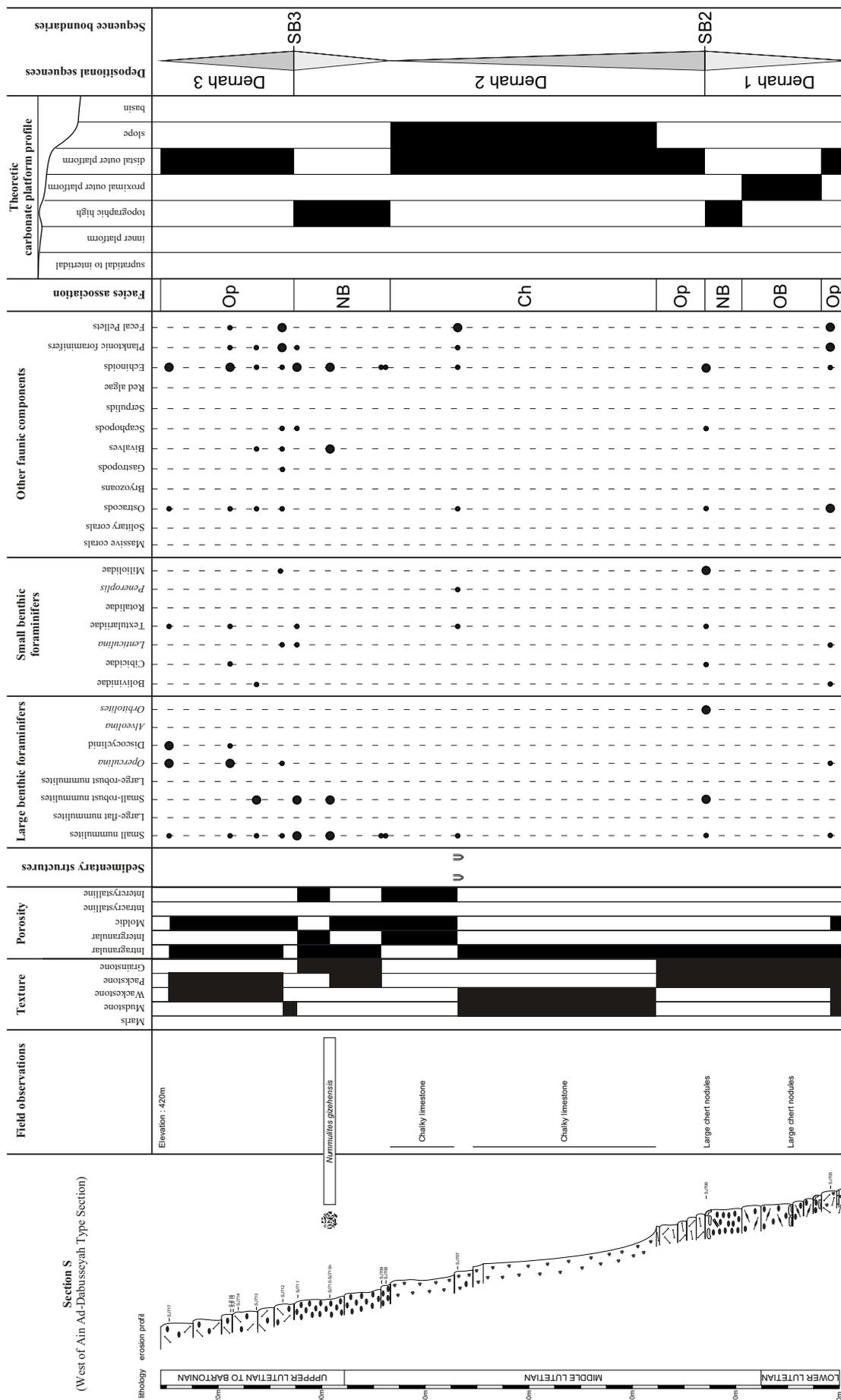
Appendix 21: Type Section of Cyrene (top), NE Cyrenaica



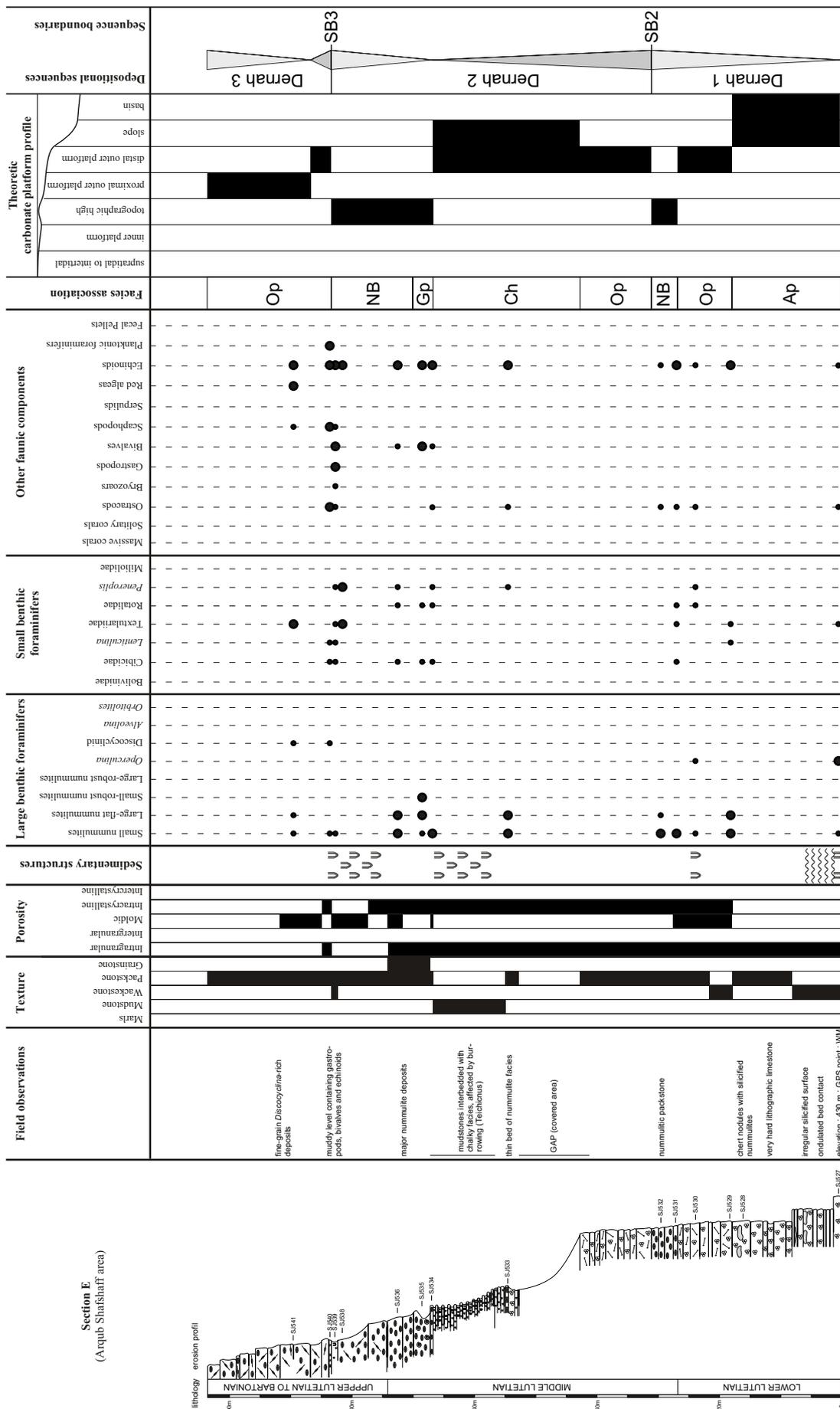
Appendix 22: Section A, Sidi al Machmùm, NE Cyrenaica



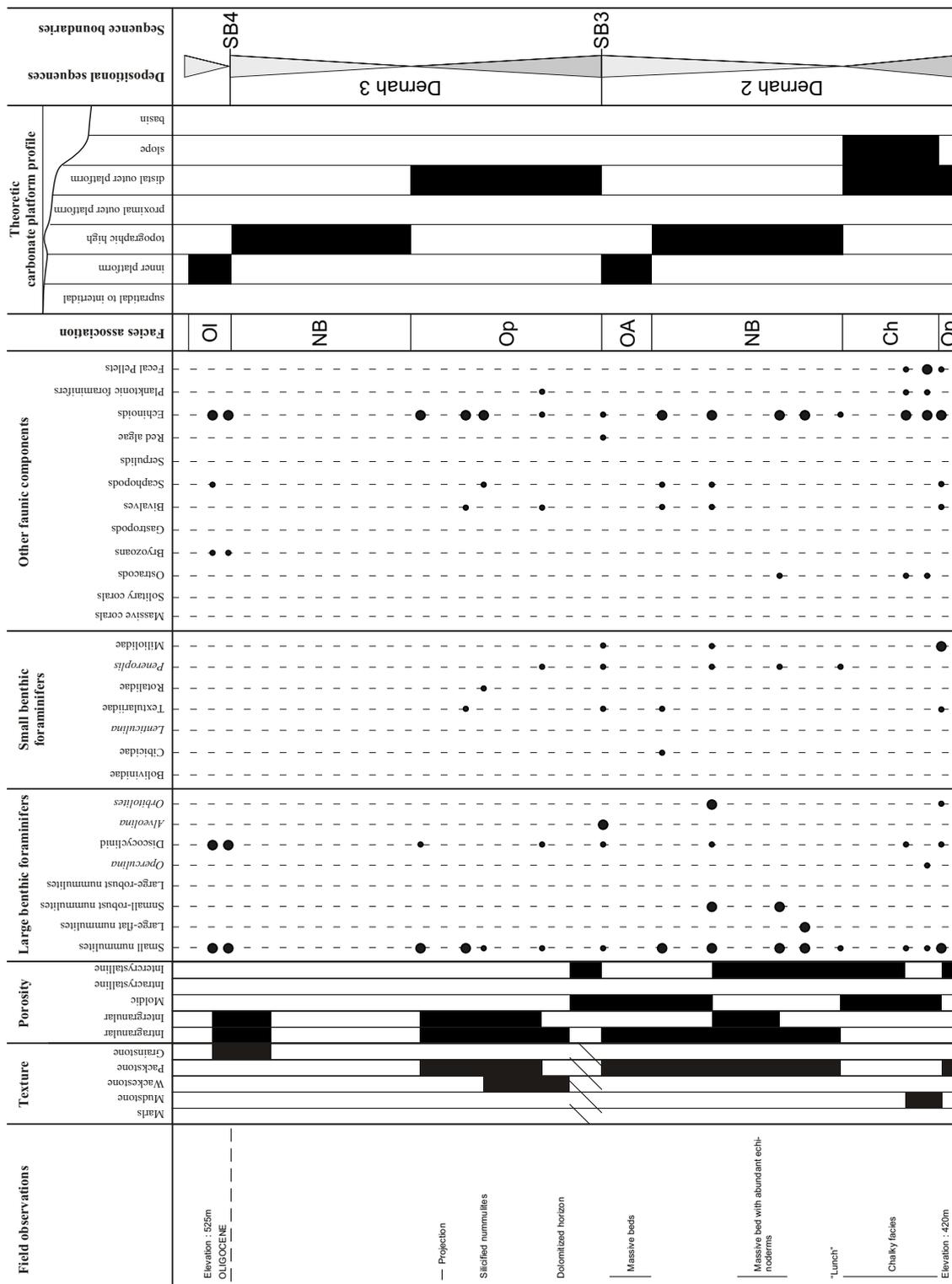
Appendix 24: Section S, Sidi al Machmùm, NE Cyrenaica



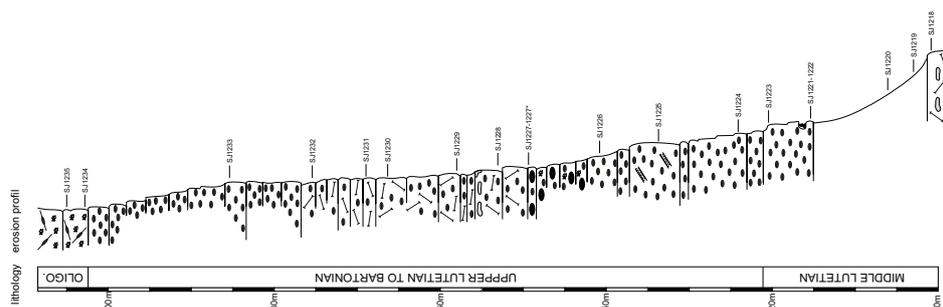
Appendix 25: Section E, Wadi Murqùs, NE Cyrenaica



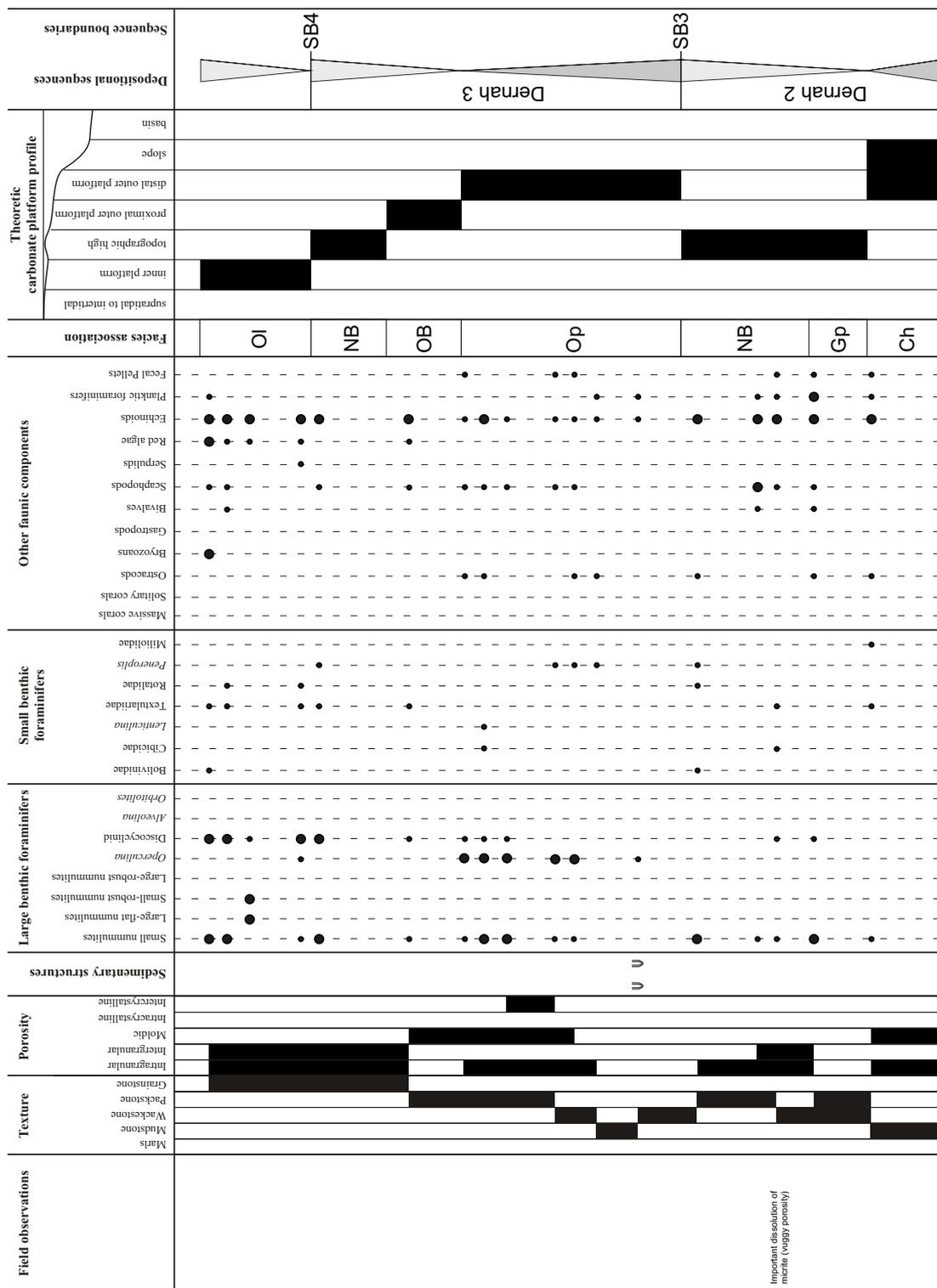
Appendix 28: Section L, Wadi Murqùs, NE Cyrenaica



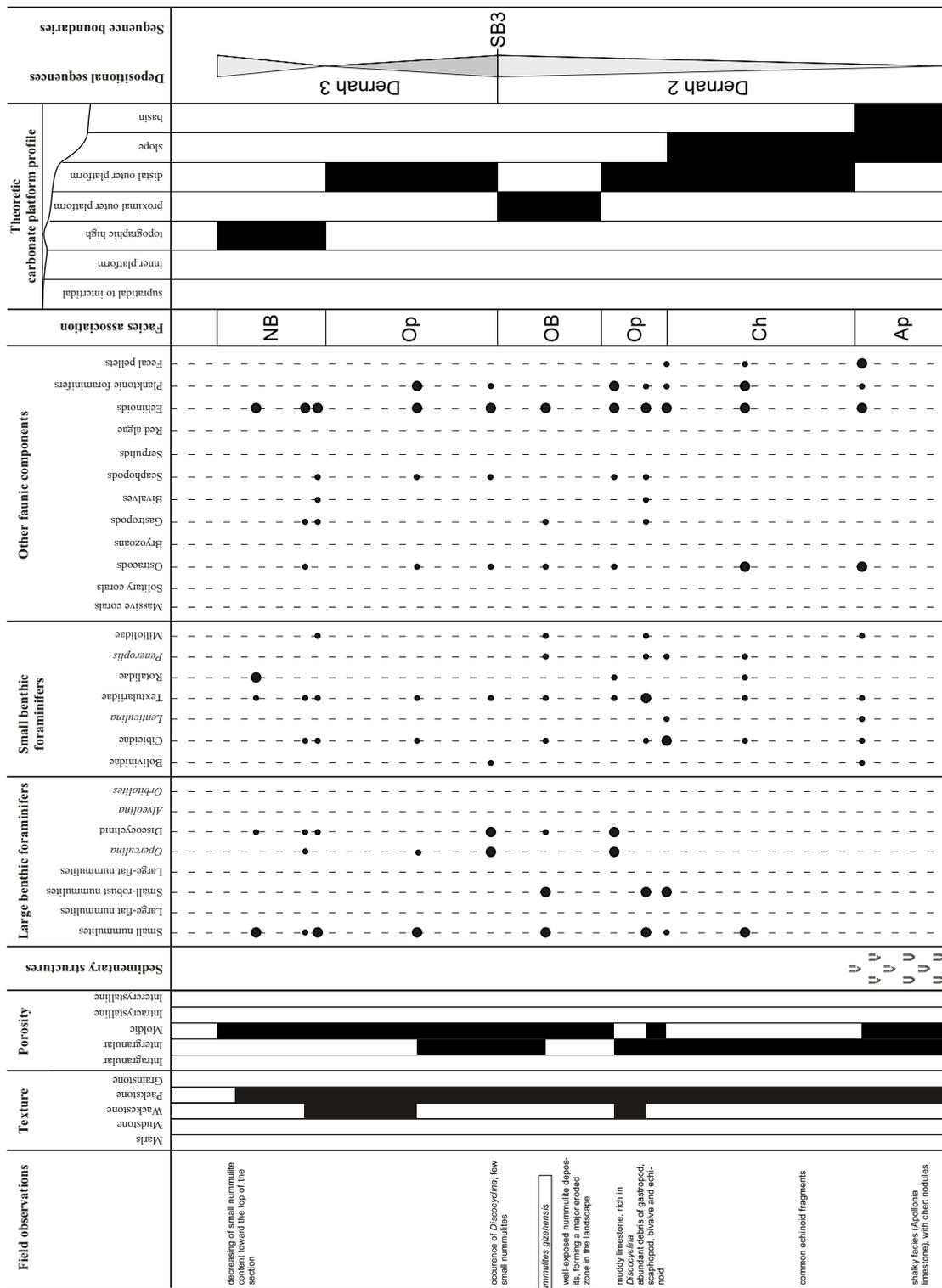
Section L (South of Wadi Marcus)



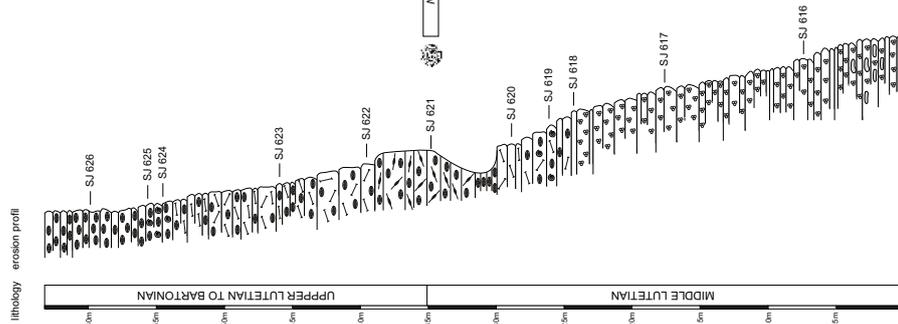
Appendix 30: Section G, Ra's ar Ramlah, NE Cyrenaica



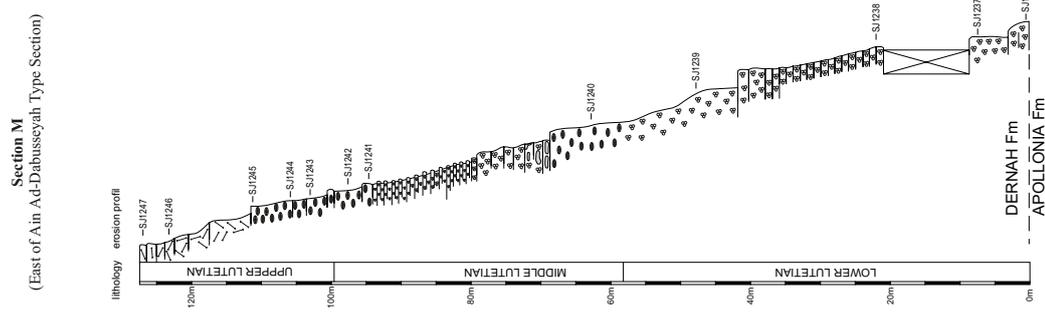
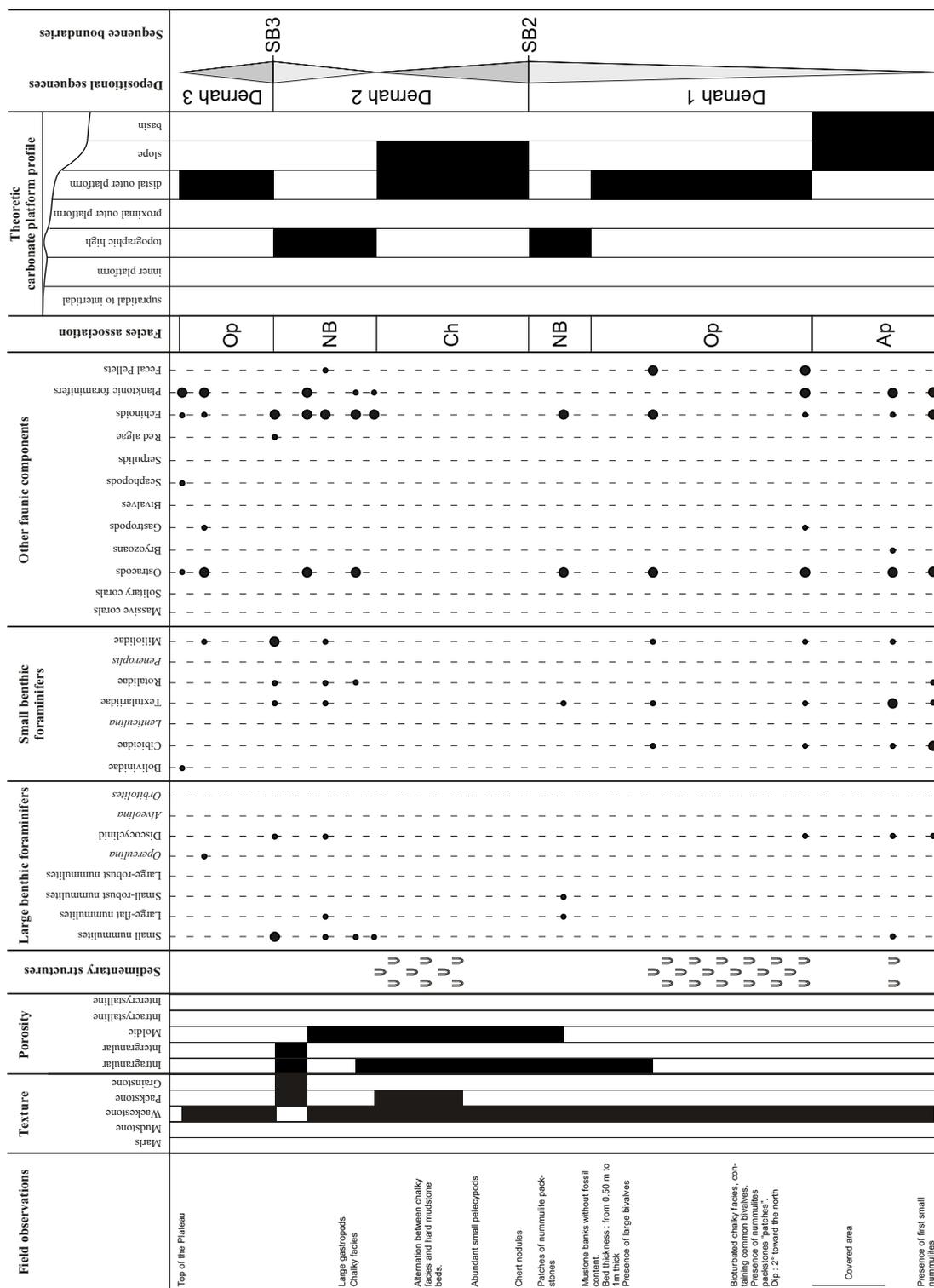
Appendix 31: Section K, Arqùb ash Shawà'ir, NE Cyrenaica



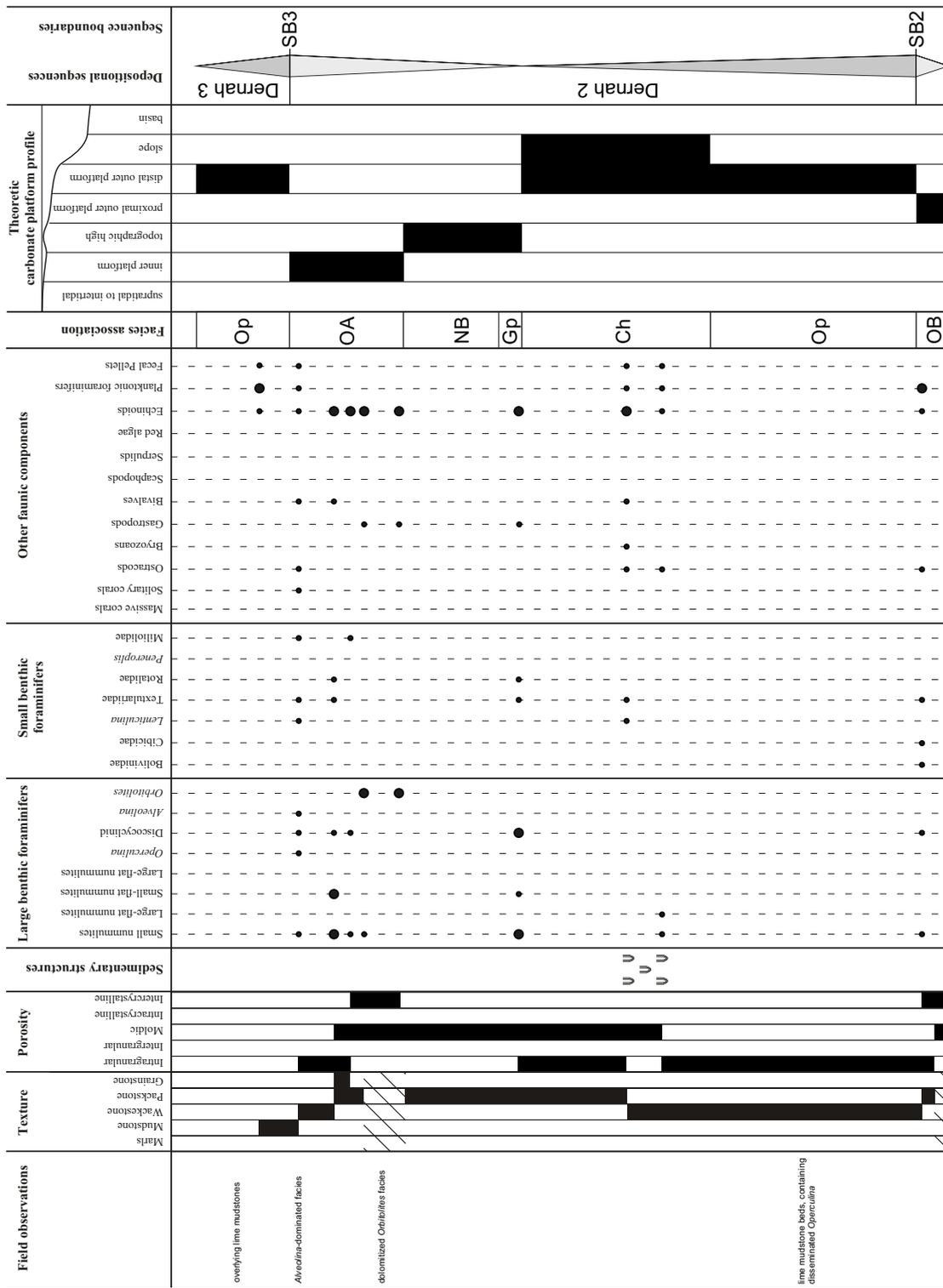
Section K (East of Ain Ad-Dabusseyah Type Section)



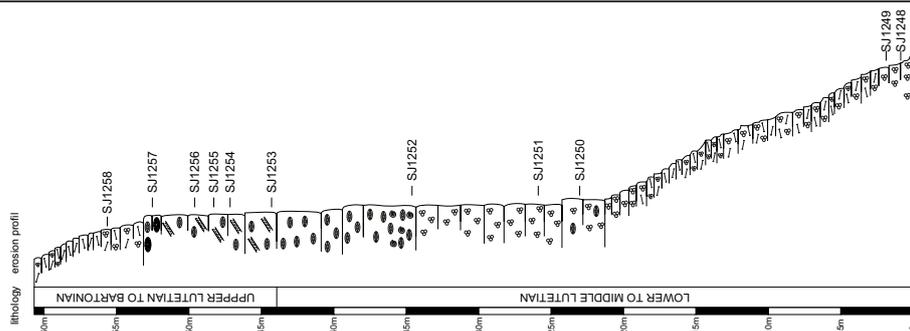
Appendix 32: Section M, Arqùb ash Shawà'ir, NE Cyrenaica



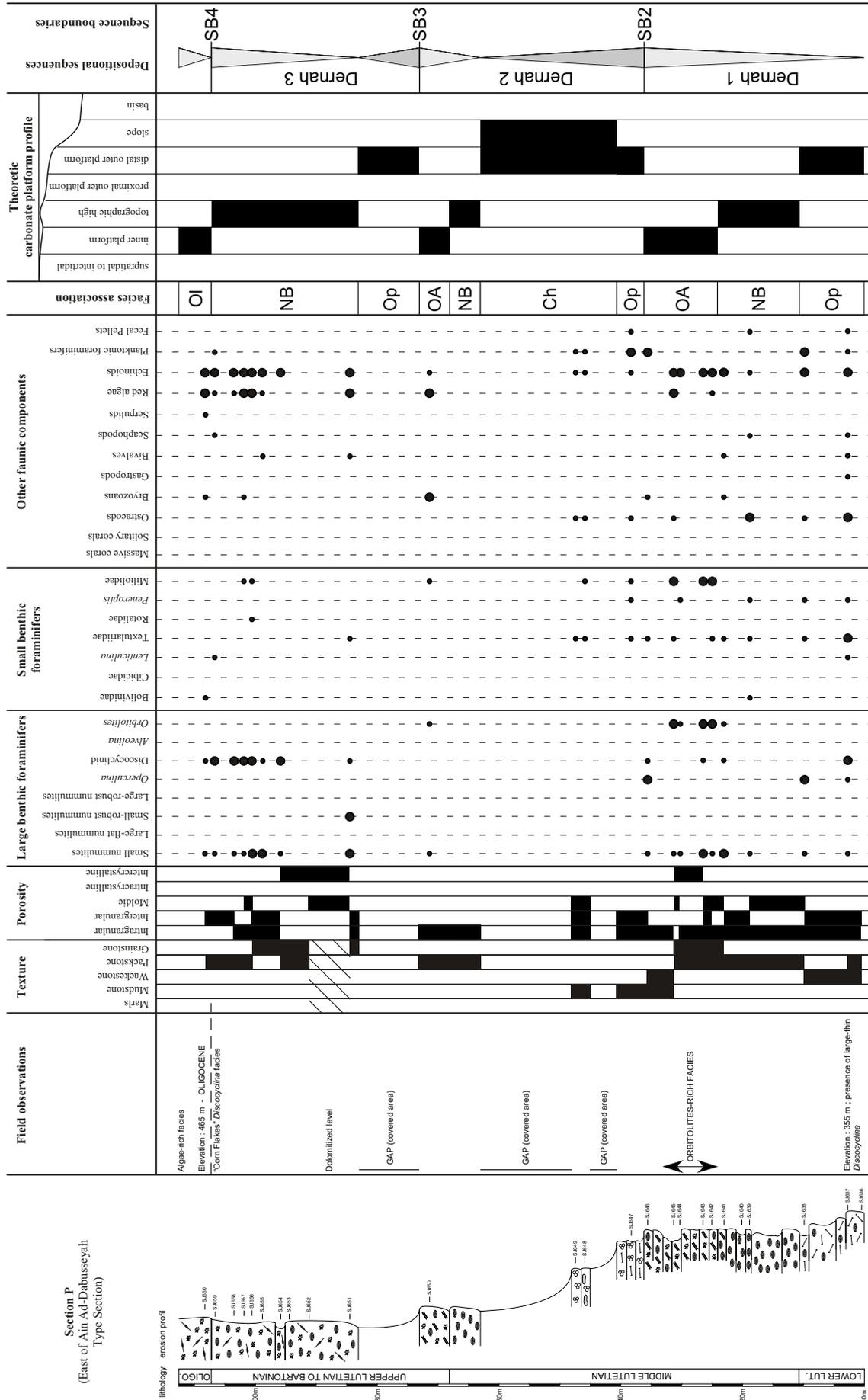
Appendix 33: Section N, Wadi bin Jubàrah, NE Cyrenaica



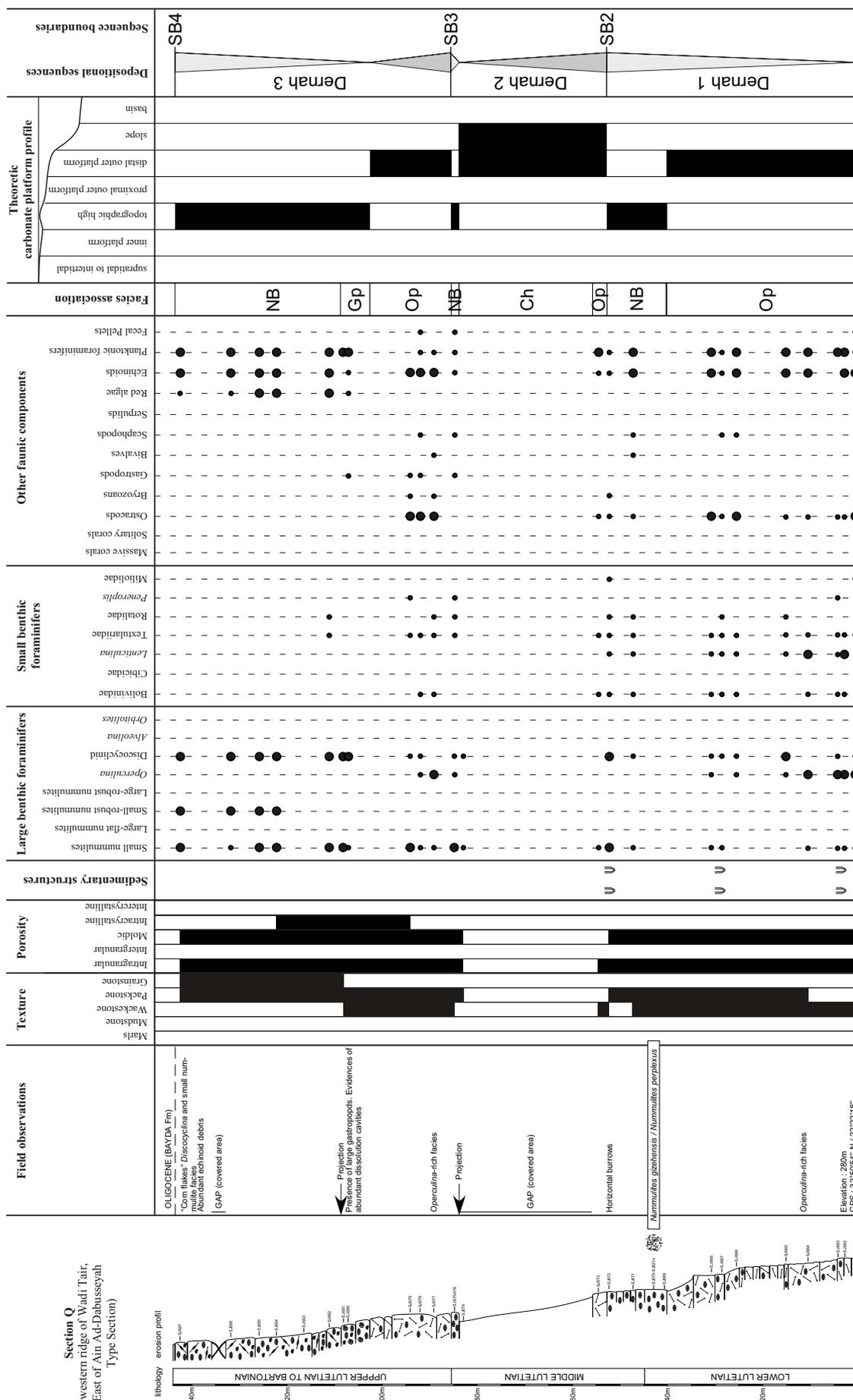
Section N
(East of Ain Ad-Dabusseyah Type Section)



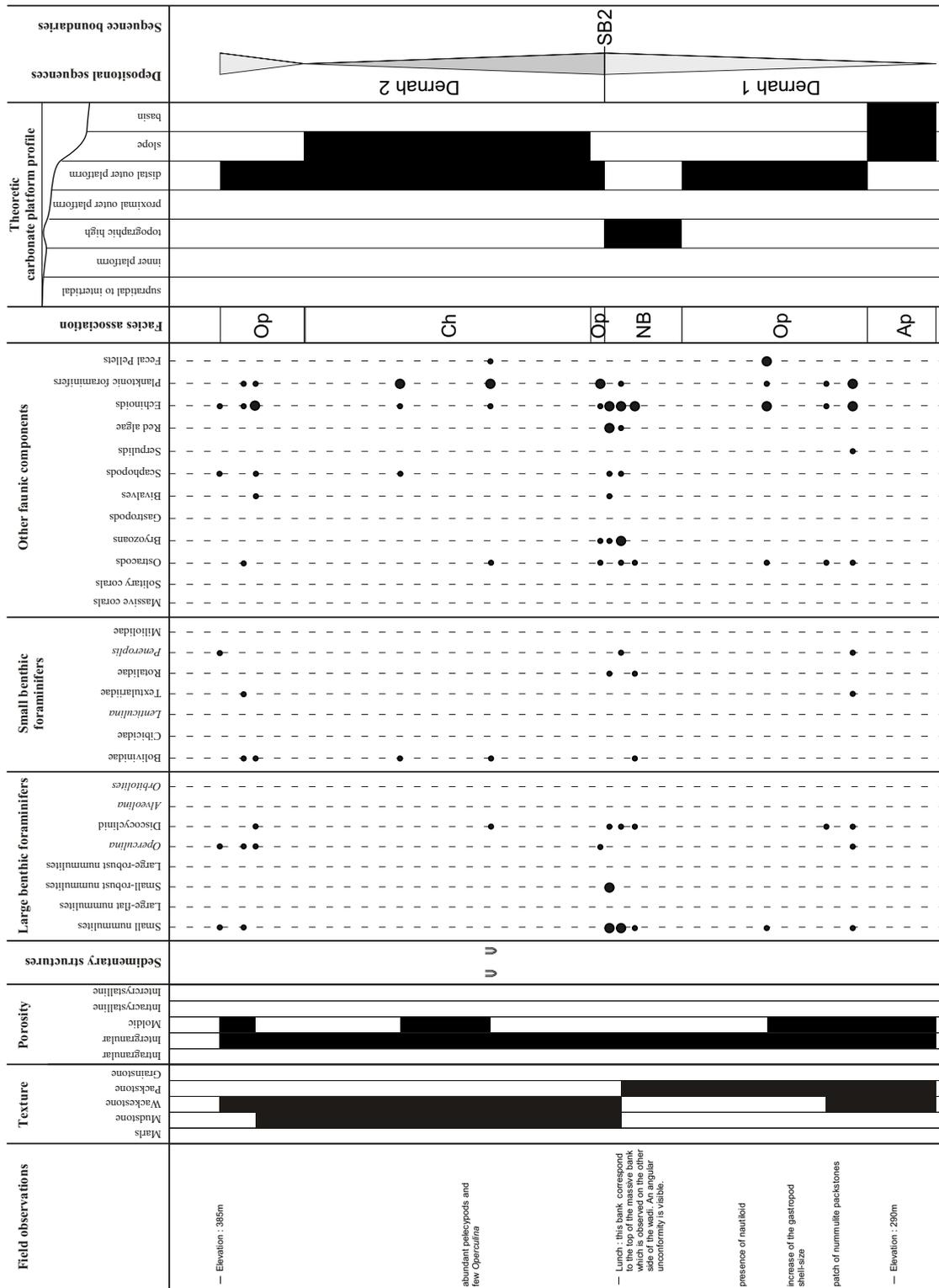
Appendix 35: Section P, Wadi bin Jubàrah, NE Cyrenaica



Appendix 36: Section Q, Wadi bin Jubàrah, NE Cyrenaica



Appendix 37: Section R, Wadi bin Jubàrah, NE Cyrenaica



Section R
(Wadi Bin Jubarah,
East of Ain Ad-Dabusseyah Type Section)

