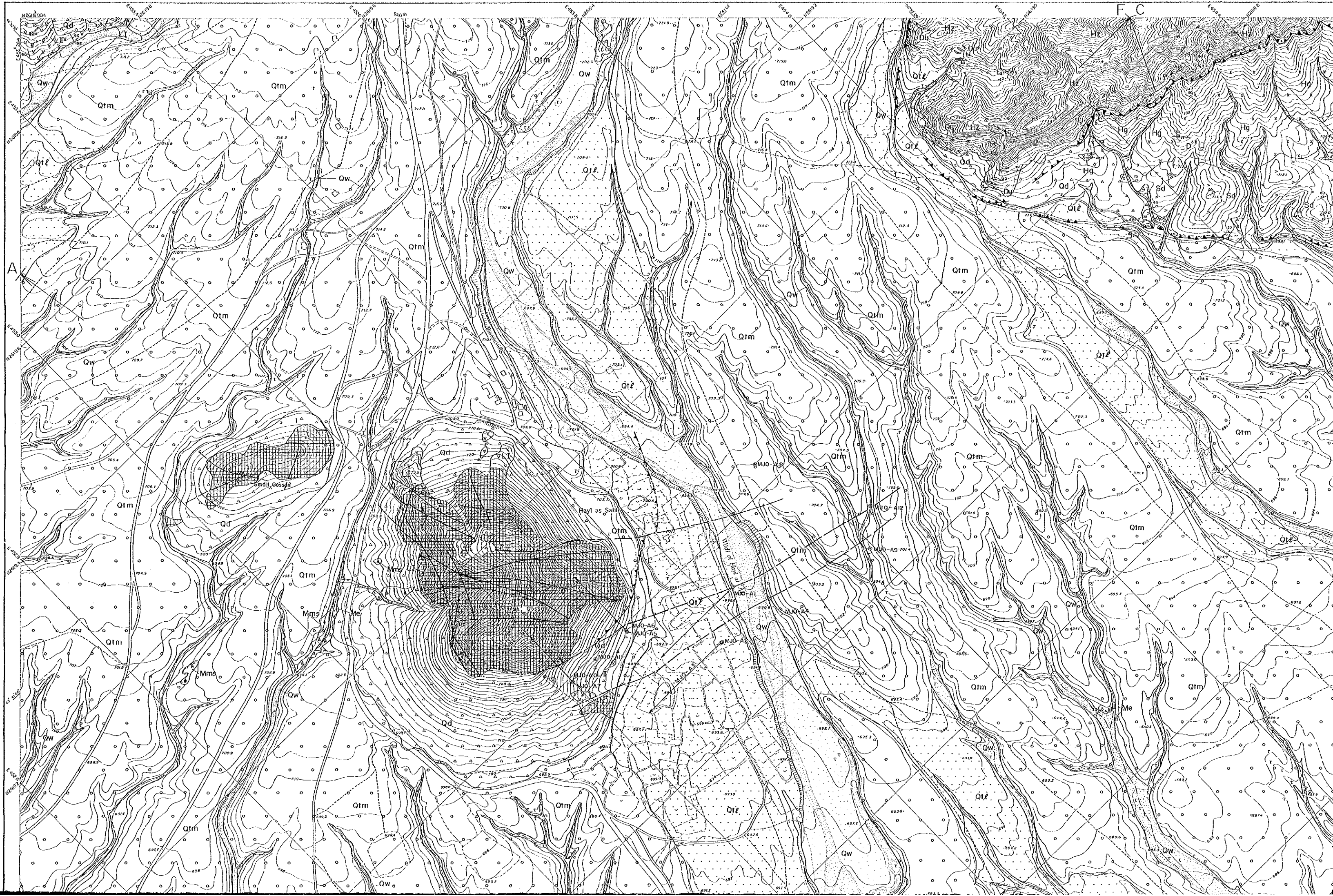
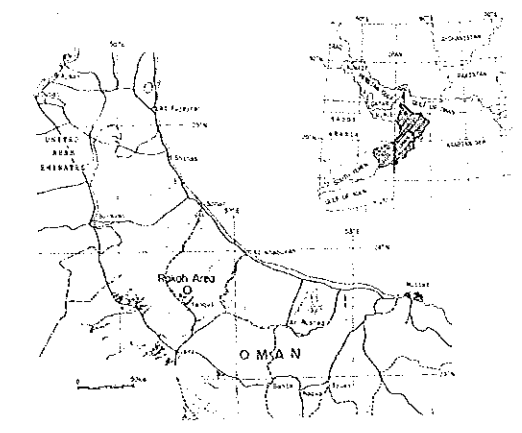


RAKAH A AREA

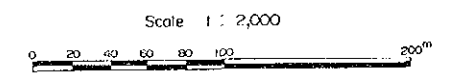


REPORT ON THE MINERAL EXPLORATION
IN
THE RAKAH AREA, SULTANATE OF OMAN

GEOLOGIC MAP OF AREA A



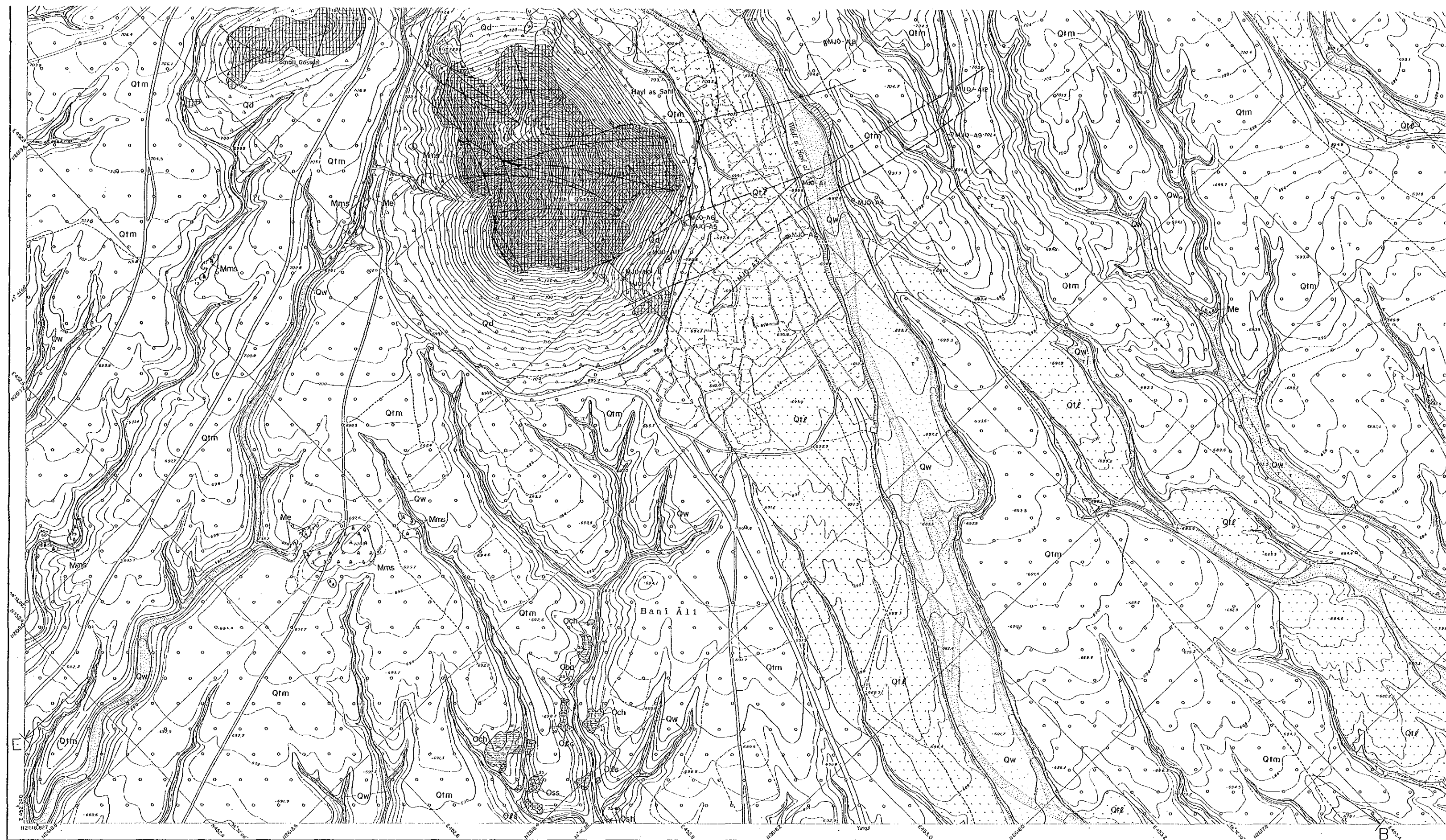
JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
FEBRUARY, 1990



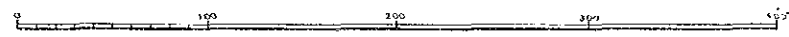
LEGEND

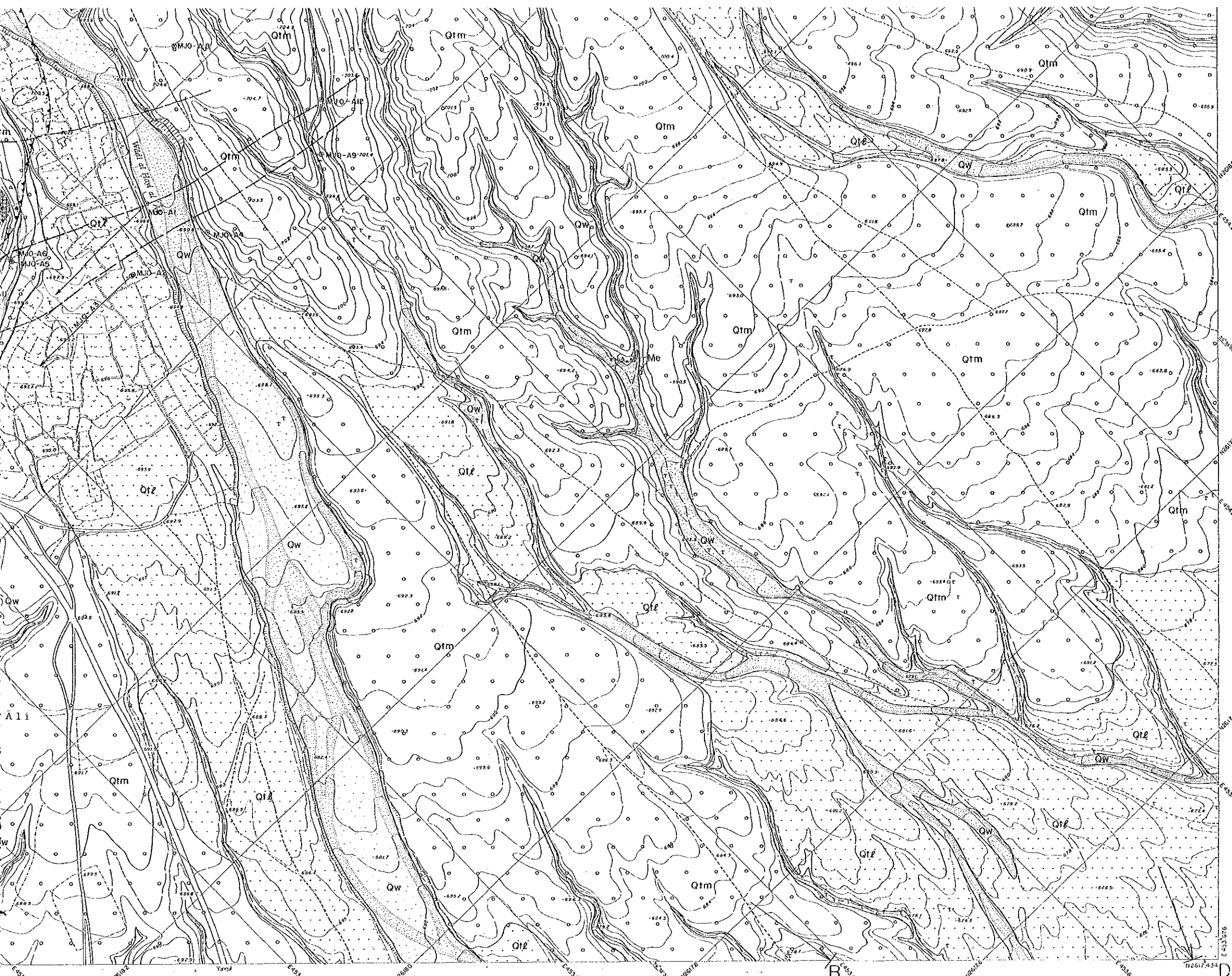
Quaternary	Wadi Sediments	Qv, Gravel, sand	
	Debris	Qd, Talus breccia	
Pleistocene Holocene	Terrace Deposits	Qtl, Gravel, sand	
		Qtm, Gravel, sand	
Late Cretaceous	Batinah Oligostrome	Ols, Olistolith of limestone	
		Och, Olistolith of chert	
		Osh, Olistolith of shale	
		Oss, Olistolith of sandstone	
		Oba, Olistolith of basalt	
	Samail Volcanic Rocks	Me, Pillow lavas	
		Mms, Massive lavas	
		Mus, Metalliferous sediments	
		Lower Extrusives II	LII, Pillow and massive lavas
		Lower Extrusives I	LI, Pillow lavas
Early to Middle Cretaceous	Sheeted-dyke Complex	Sd, Sheeted-dykes	
	High-level Gabbro	Hg, High-level gabbro	
	Cumulate Sequence	Cg, Cumulate layered gabbro	
	Tectonites	Hx, Herzburgite	
Intrusive Rocks		Du, Dunite	
		Cr, Chromitite	
		Ga, Gabbro	
		D, Dykes	

	Stratification, inclined		Contact
	Stratification of pillow lavas, inclined		Fault; dashed where inferred or concealed
	Layering, inclined		Thrust fault, saw-teeth, showing dip
	Foliation, inclined		Vein
	Dyke, inclined		Gossan
	Shear zone		Drill hole
			Section



1:2,000



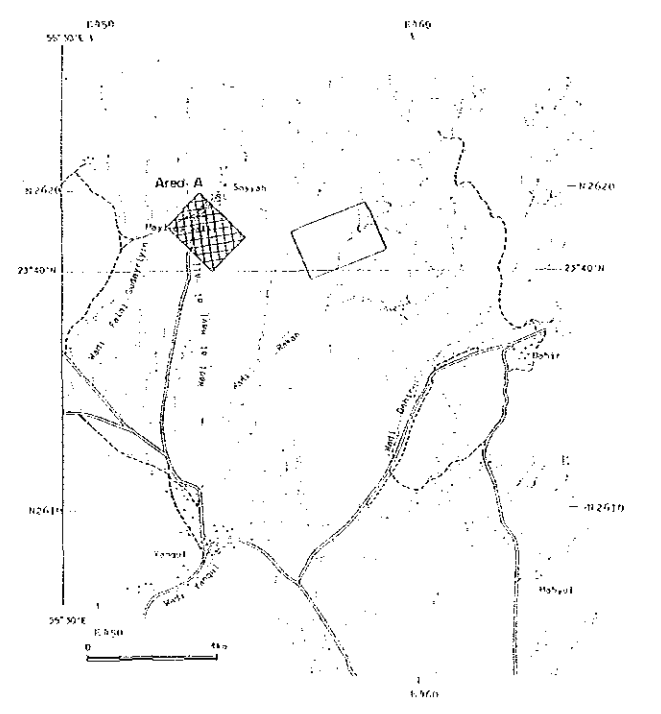


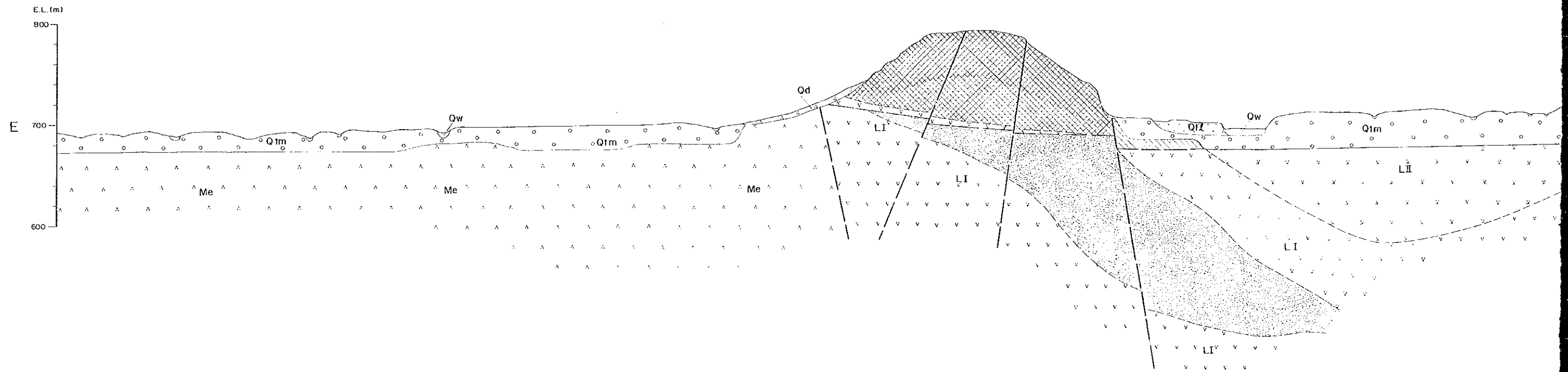
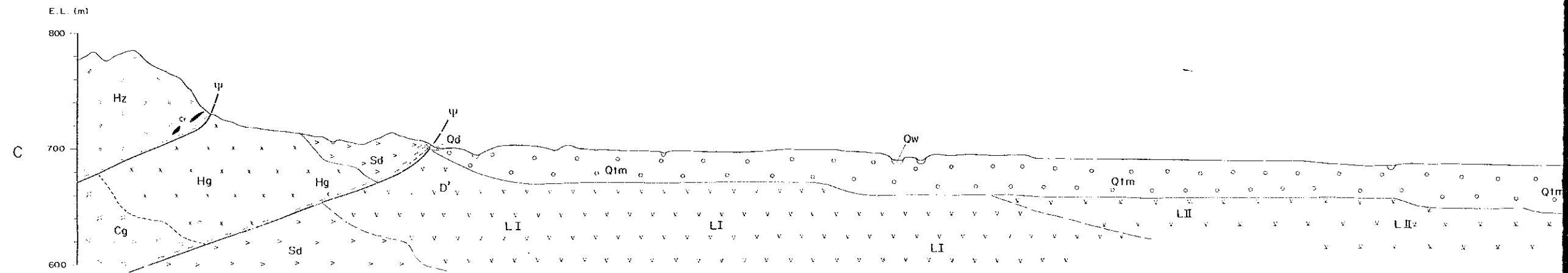
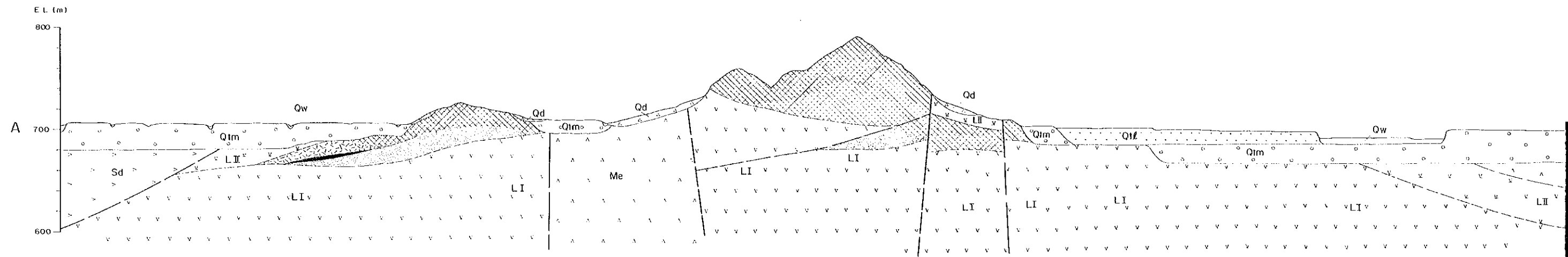
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LEGEND

Quaternary	Fluvio-lacustrine Deposits	Wadi Sediments	Qw, Gravel, sand		
	Superficial Deposits	Debris	Qd, Talus breccia		
Pliocene	Terrace Deposits	Lower Terrace Deposits	Q1l, Gravel, sand		
		Middle Terrace Deposits	Q1m, Gravel, sand		
Late Cretaceous	Sagm-ophitic Sediments	Batirah Olistostrome	O1s, Olistolith of limestone		
			O1ch, Olistolith of chert		
			O1sh, Olistolith of shale		
			O1ss, Olistolith of sandstone		
			O1ba, Olistolith of basalt		
		Samail Volcanic Rocks	Middle Volcanic Rocks	Me, Pillow lavas	
			Lower Volcanic Rocks	Mms, Massive lavas	
				Mm, Metaliferous sediments	
				Lower Extrusives II	LII, Pillow and massive lavas
				Lower Extrusives I	LI, Pillow lavas
Early to Middle Cretaceous	Samail Ophiolite	Sheeted-dyke Complex	Sd, Sheeted-dykes		
		High-level Gabbro	Hg, High-level gabbro		
		Cumulate Sequence	Cg, Cumulate layered gabbro		
		Tectonites	Itz, Harzburgite		
			Do, Dunite		
Intrusive Rocks	Cr, Chromitite				
	Ga, Gabbro				
	D, Dykes				

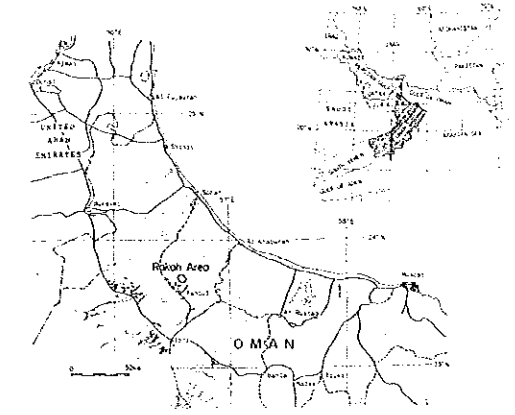
Stratification, inclined	Contact
Stratification of pillow lavas, inclined	Fault, dashed where inferred or concealed
Layering, inclined	Thrust fault, saw-teeth, showing dip
Foliation, inclined	Vein
Dyke, inclined	Gossan
Shear zone	Drill hole





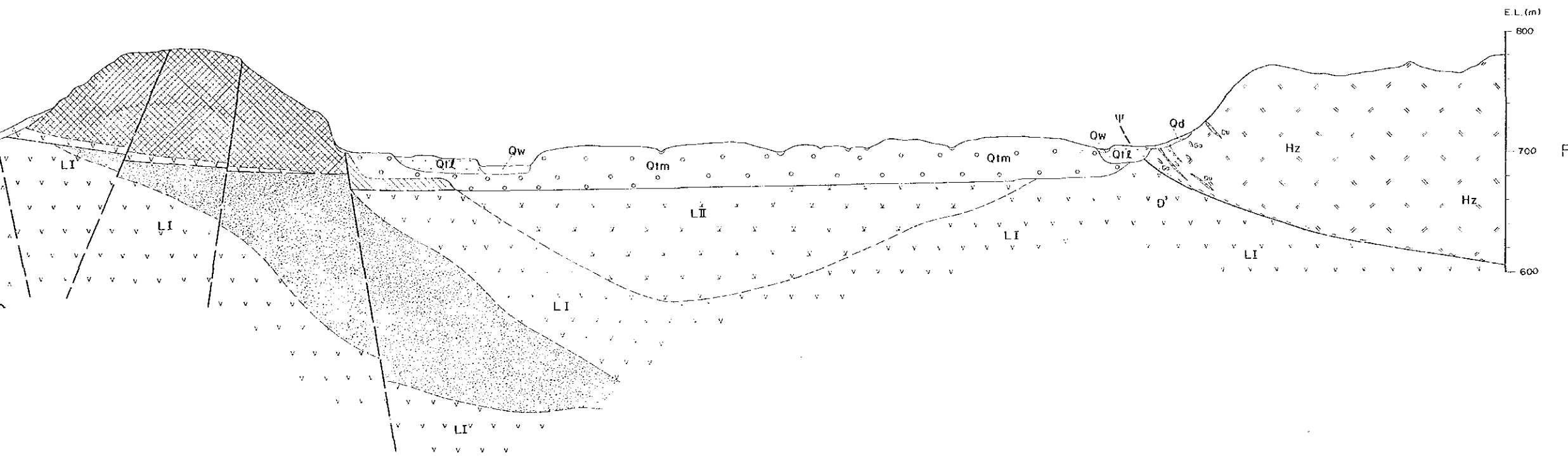
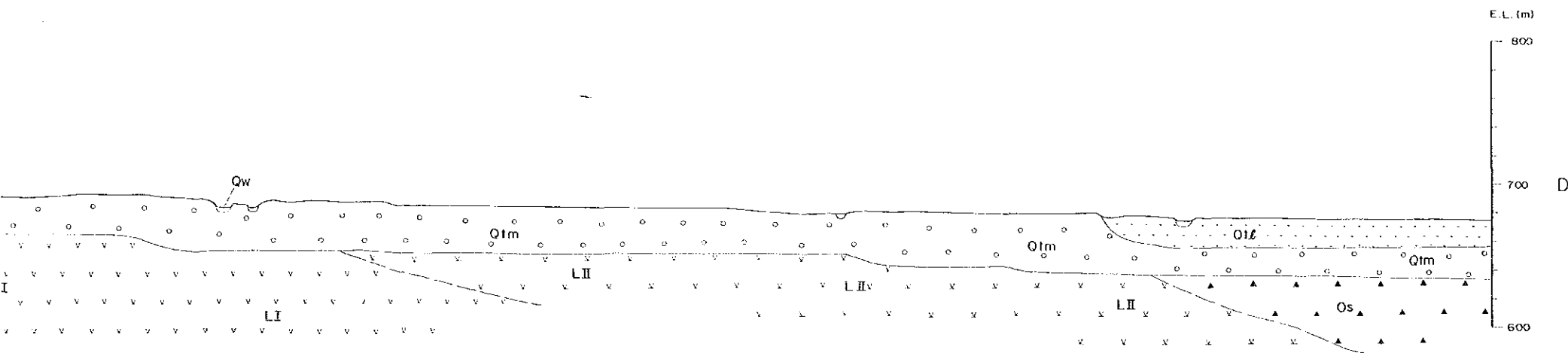
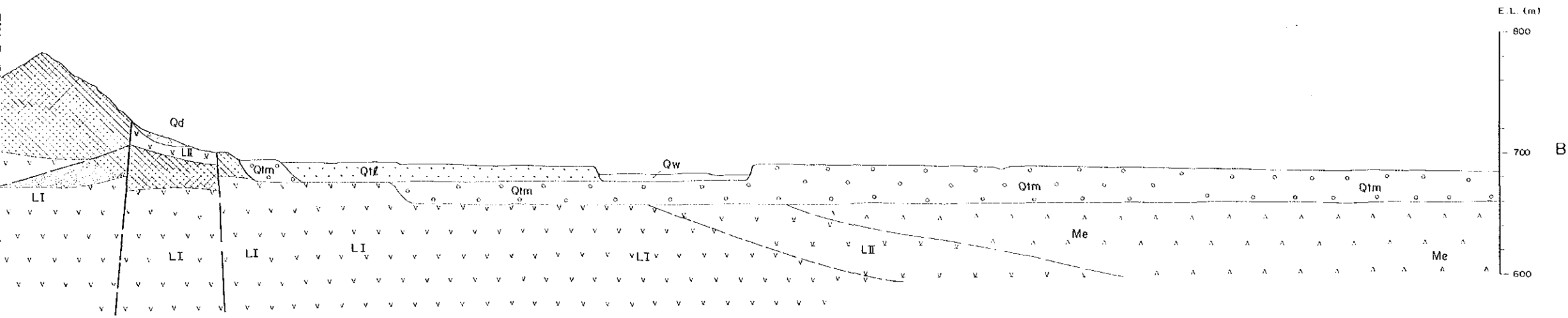
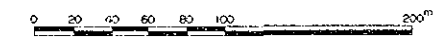
REPORT ON THE MINERAL EXPLORATION
IN
THE RAKAH AREA, SULTANATE OF OMAN

GEOLOGIC SECTIONS OF AREA A



JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
FEBRUARY, 1990

Scale 1 : 2,000

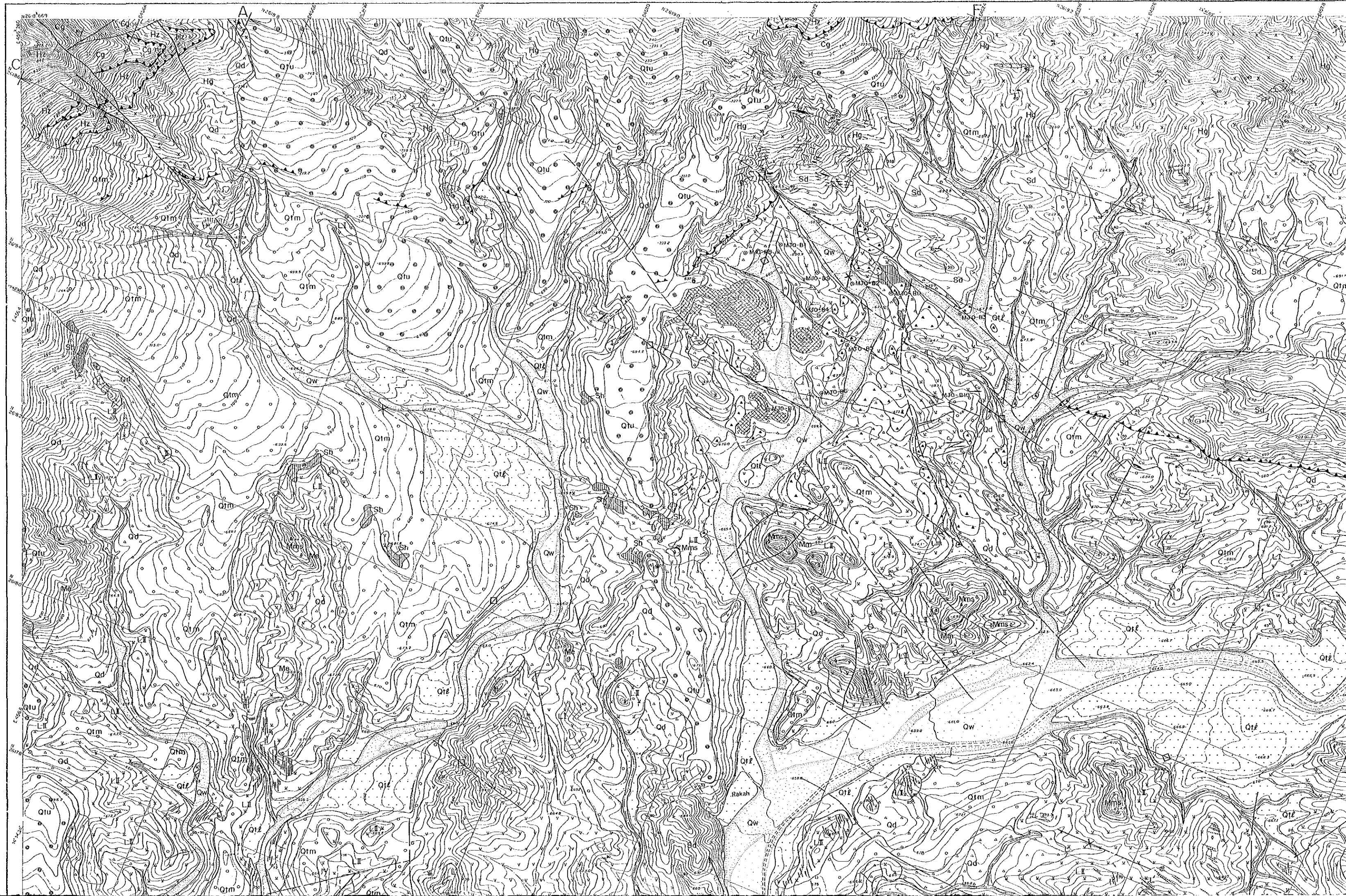


LEGEND

Quaternary	Wadi Sediments	Qw, Gravel, sand	
	Debris	Qd, Talus breccia	
Pleistocene Holocene	Terrace Deposits	Lower Terrace Deposits	Atl, Gravel, sand
		Middle Terrace Deposits	Atm, Gravel, sand
Samail Ophiolite	Batinah Olistostrome	Os, Olistoliths	
	Middle Volcanic Rocks	Me, Pillow and massive lavas	
		Lower Volcanic Rocks	Lower Extrusives II
	Lower Volcanic Rocks	LI, Pillow and massive lavas	
		LI, Pillow lavas	
	Sheeted-dyke Complex	Sd, Sheeted dykes	
	High-level Gabbro	Hg, High-level gabbro	
	Cumulate Sequence	Cg, Cumulate layered gabbro	
	Tectonites	Hz, Harzburgite	
		Du, Dunite	
Cr, Chromitite			
Intrusive Rocks	Ga, Gabbro		
	D, Dykes		

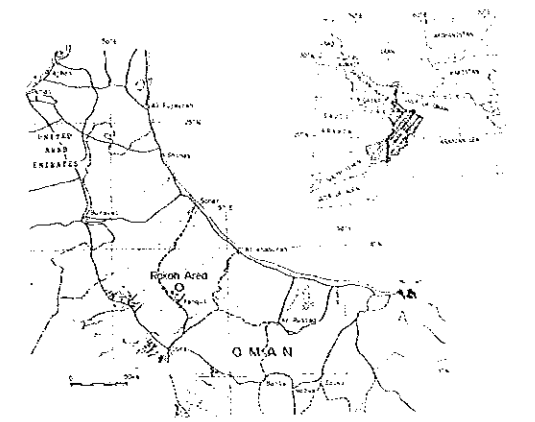
Mineralization	Gossanized zone
	Brecciated ore zone
	Massive ore zone
	Stockwork ore zone
Contact	
Fault; dashed where inferred or concealed	
Thrust fault; saw teeth, showing dip	
Shear zone	

RAKAH B AREA



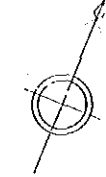
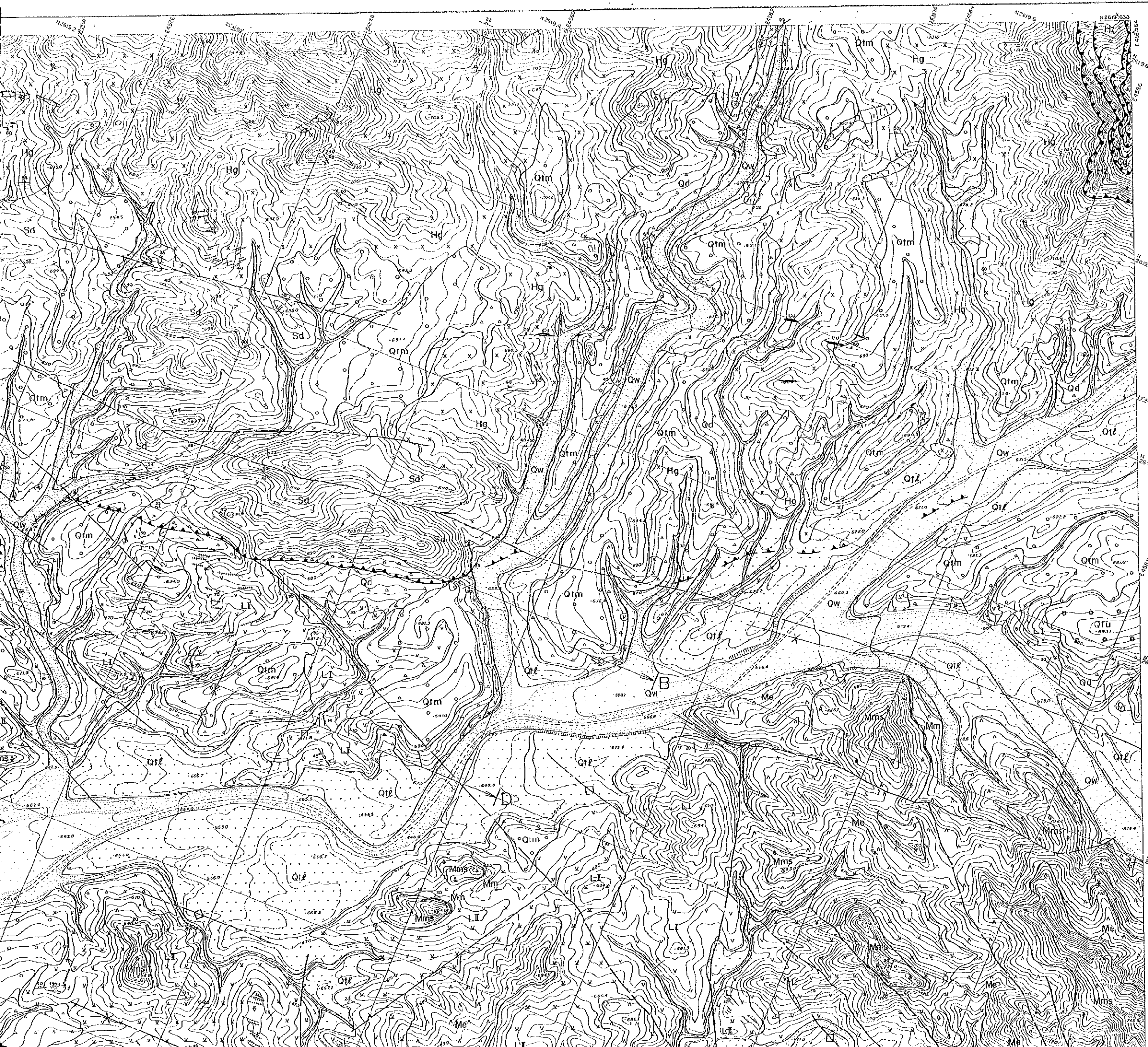
REPORT ON THE MINERAL EXPLORATION
IN
THE RAKAH AREA, SULTANATE OF OMAN

GEOLOGIC MAP OF AREA B



JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
FEBRUARY, 1950

Scale 1:2,000



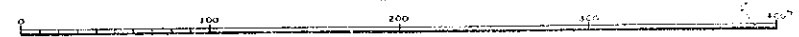
LEGEND

Quaternary	Wadi Sediments	Qw, Gravel, sand	
	Debris	Qd, Talus breccia	
Pleistocene	Terrace Deposits	Lower Terrace Deposits	Qtl, Gravel, sand
		Middle Terrace Deposits	Qtm, Gravel, sand
		Upper Terrace Deposits	Qtu, Gravel, sand
Late Cretaceous	Batinah Olistostrome	Ol, Olistolith of limestone	
	Olistostrome	Och, Olistolith of chert	
Subsahyali Formation	Sp, Serpentine		
	Sh, Chert		
Samail Supper	Middle Volcanic Rocks	Me, Pillow lavas	
		Mms, Massive lavas	
	Lower Volcanic Rocks	Mm, Metalliferous sediments	
		Lm, Metalliferous sediments	
Early to Middle Cretaceous	Sheeted-dyke Complex	Sd, Sheeted-dykes	
	High-level Gabbro	Hg, High-level gabbro	
Samail Dophthalite	Cumulate Sequence	Cg, Cumulate layered gabbro	
	Tectonites	Ht, Harzburgite	
Intrusive Rocks	D, Dykes		
	L, Late dykes		

Stratification; inclined	Fault, dashed where inferred or concealed
Stratification of pillow lavas; inclined	Thrust fault; saw-teeth, showing dip
Layering; inclined	Vein
Foliation; inclined	Geogan
Dyke; inclined	Drill hole
Shear zone	Slag dump
Contact	Section



1:2,000

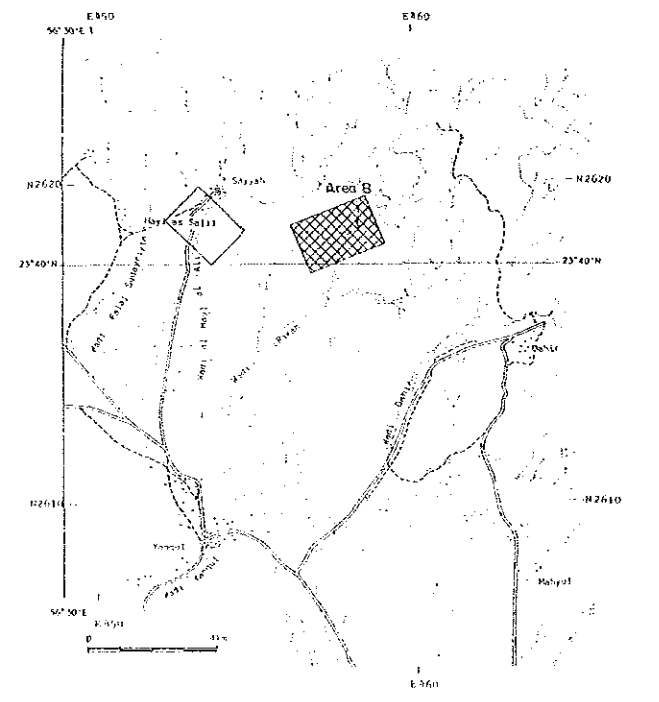


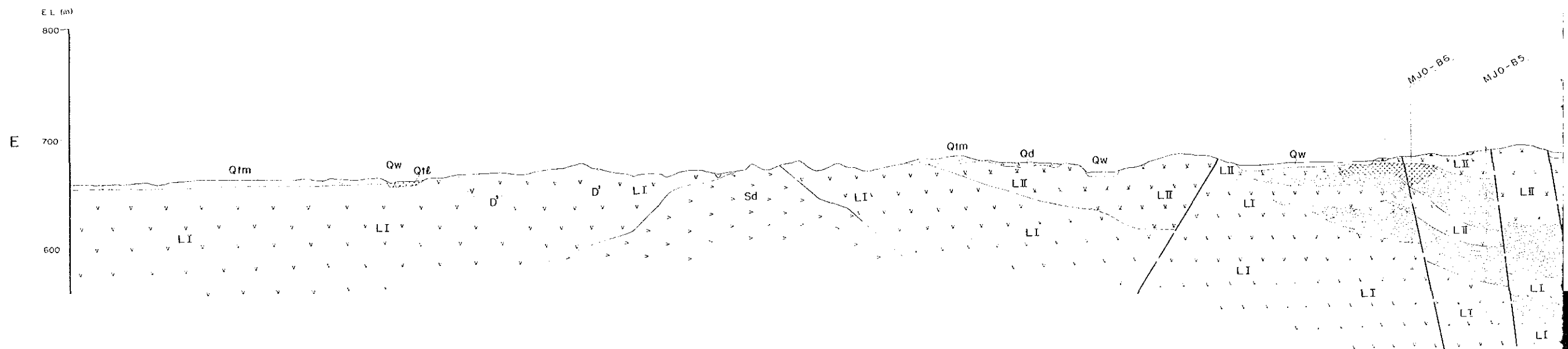
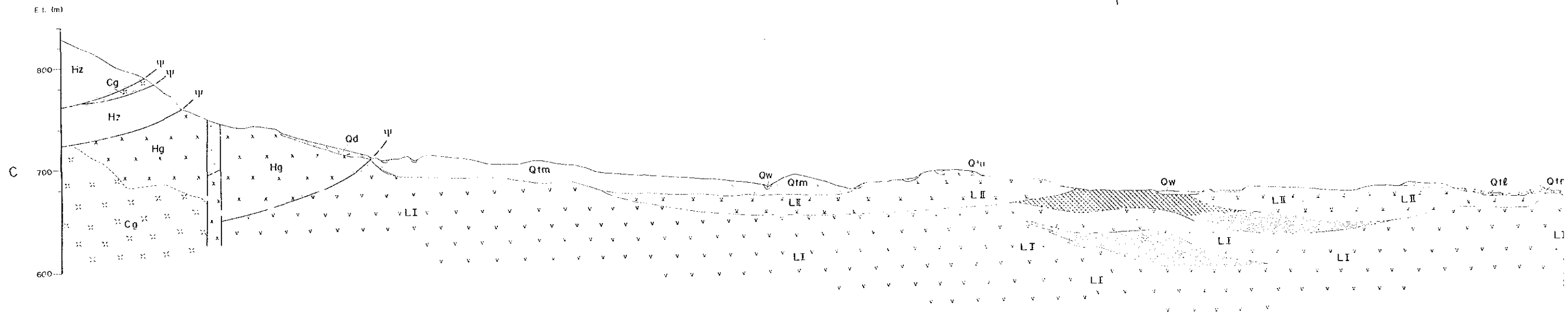
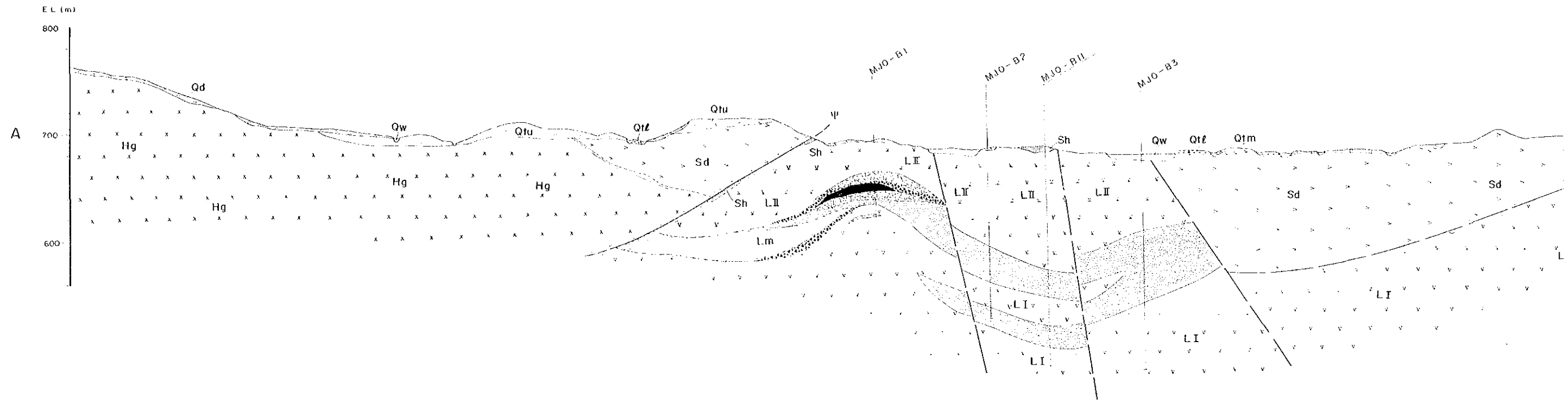


LEGEND

Quaternary	Wadi Sediments	Qw, Gravel, sand		
	Debris	Qd, Talus breccia		
		Qd, Gravel, sand		
Pleistocene	Terrace Deposits	Lower Terrace Deposits		
		Middle Terrace Deposits		
		Upper Terrace Deposits		
Late Cretaceous	Batinah Oligostrome	Ols, Olistolith of limestone		
		Och, Olistolith of chert		
	Subyah Formation	Sp, Serpentine		
		Sh, Chert		
	Samail Volcanic Rocks	Middle Volcanic Rocks	Me, Pillow lavas	
			Mms, Massive lavas	
			Mm, Metalliferous sediments	
			LII, Pillow and massive lavas	
		Lower Volcanic Rocks	LI, Metalliferous sediments	
			LI, Pillow lavas	
Sd, Sheeted dykes				
Hg, High-level gabbro				
Early to Middle Cretaceous	Samail Ophiolite	Sheeted-dyke Complex		
		High-level Gabbro		
	Intrusive Rocks	Cumulate Sequence		
		Tectonites		
Early to Middle Cretaceous	Intrusive Rocks	Htz, Harzburgite		
		D, Dykes		
Early to Middle Cretaceous	Intrusive Rocks	L, Late dykes		

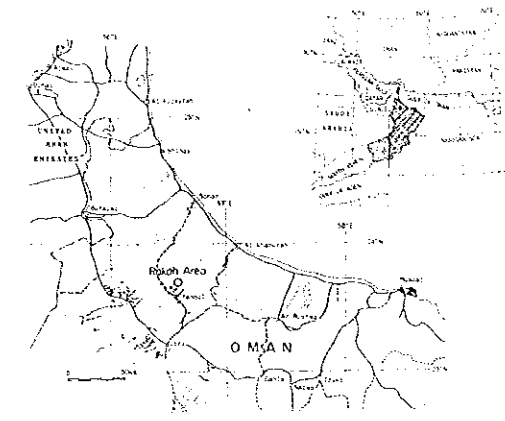
	Stratification; inclined		Fault, dashed where inferred or concealed
	Stratification of pillow lavas; inclined		Thrust fault; saw-teeth, showing dip
	Layering; inclined		Vein
	Foliation; inclined		Gossan
	Dyke; inclined		Drill hole
	Shear zone		Slag dump
	Contact		Section





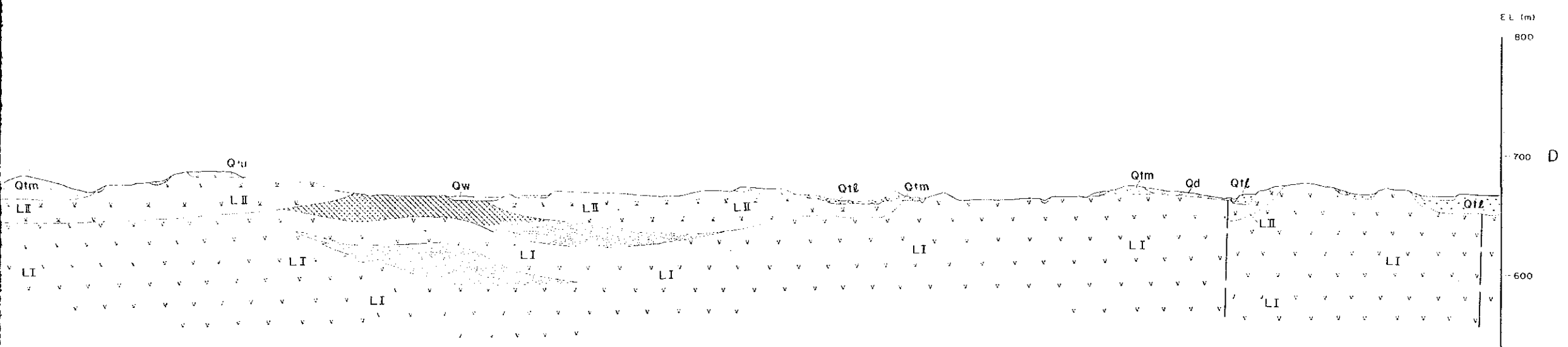
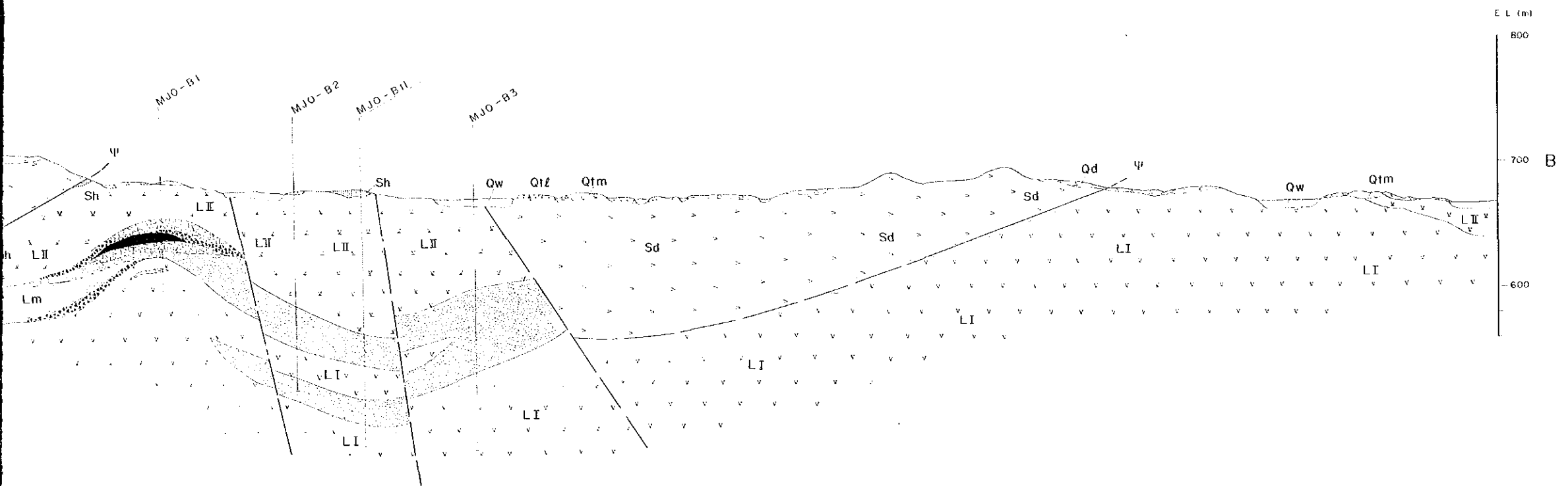
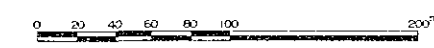
REPORT ON THE MINERAL EXPLORATION
IN
THE RAKAH AREA, SULTANATE OF OMAN

GEOLOGIC SECTIONS OF AREA B



JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
FEBRUARY, 1990

Scale 1 : 2,000



LEGEND

Quaternary	Wadi Sediments	Qw, Gravel, sand
	Debris	Qd, Talus/breccia
	Superficial Deposits	QIz, Gravel, sand
Pleistocene	Terrace Deposits	Qtm, Gravel, sand
	Middle Terrace Deposits	Qm, Gravel, sand
	Upper Terrace Deposits	Qu, Gravel, sand
Late Pleistocene	Suhaylah Formation	Sh, Chert
	Small Volcanic Rocks	LI, Pillow and massive lavas Laz, Metalliferous sediments LI, Pillow lavas
Early to Middle Cretaceous	Sheeted-dyke Complex	Sd, Sheeted-dykes
	High-level Gabbro	Hg, High-level gabbro
	Cumulate Sequence	Cg, Cumulate-layered gabbro
	Tectonites	Ht, Harzburgite
	Intrusive Rocks	D, Dykes

Mineralization

Contact	Gossanized zone
Fault, dashed where inferred or concealed	Siliceous ore zone
Thrust fault; saw-teeth, showing dip	Brecciated ore zone
Shear zone	Massive ore zone
Slag dump	Stockwork ore zone
Drill hole	

REPORT ON THE MINERAL EXPLORATION
IN THE RAKAH AREA, SULTANATE OF OMAN

FINAL REPORT

VOLUME III (MINE DEVELOPMENT)

FEBRUARY 1990

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