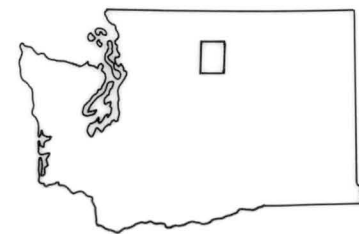
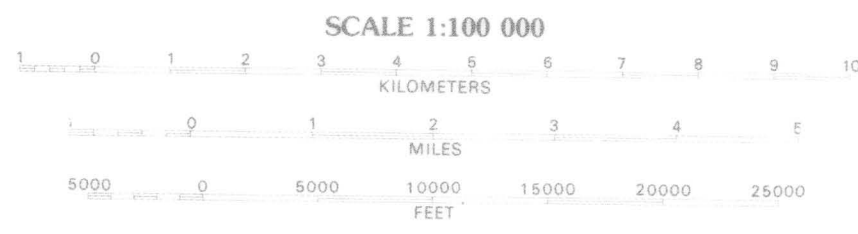
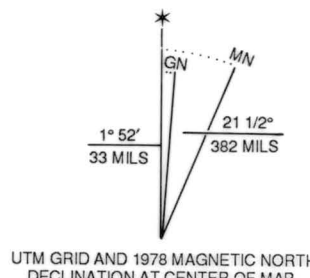


GEOLOGIC UNITS

SEDIMENTARY AND VOLCANIC ROCKS AND DEPOSITS		MIXED IGNEOUS AND METAMORPHIC ROCKS OF PLUTONIC COMPLEXES	
QUATERNARY UNCONSOLIDATED DEPOSITS		Skagit Gneiss complex	
Qs	sediments, undivided	TKmls	Skagit Gneiss
Nonglacial Deposits		pKhm	heterogeneous metamorphic xenoliths in the Skagit Gneiss complex
Qls	talus and landslides	Chelan Complex	
Glacial Deposits		Kogc	tonalite of the Chelan Complex
Qgsl	glacial drift	Kmgc	migmatite of the Chelan Complex
Qgt	glacial till	Okanogan complex	
Qgl	glaciolacustrine deposits	KJmli	gneissic trondhjemite of Tiffany Mountain
Qgo	glacial outwash deposits	KJogd	Tonalite and tonalite gneiss of the Okanogan complex (Summit-Frazer gneiss)
TERTIARY SEDIMENTARY ROCKS		KJogp	Coyote Ridge quartz diorite gneiss
PAcp	Pipestone Canyon Formation	KJogp	mylonitic gneiss along the Pasayten fault
MESOZOIC SEDIMENTARY AND VOLCANIC ROCKS		KJamo	amphibolite in the Okanogan complex
Cretaceous Sedimentary And Volcanic Rocks		HIGH GRADE METAMORPHIC ROCKS	
Kcm	Midnight Peak Formation, Ventura member	TERTIARY METAMORPHIC ROCKS	
Kvm	Midnight Peak Formation, volcanic member	Eocene Orthogneiss	
Kcw	Winthrop Sandstone	Eogc	Gneissic parts of the Cooper Mountain Batholith
Kvsw	Winthrop Sandstone, volcanic member	Paleocene Orthogneiss	
Kmv	Virginian Ridge Formation (<40% conglomerate beds)	PAogo	Oval Peak batholith
Kcgv	Virginian Ridge Formation (>40% conglomerate beds)	PAogj	Lake Juanita leucogneiss
Kcgp	Patterson Lake conglomerate	PAogb	Tuckaway Lake gneiss
Cretaceous-Jurassic Sedimentary And Volcanic Rocks		PAogw	Battle Mountain gneiss
KJmli	sedimentary rocks of the undivided Newby Group	MESOZOIC METAMORPHIC ROCKS	
KJchn	carbonate pods in the undivided Newby Group	Mzoga	Hornblende tonalite gneiss of Antoine Creek
KJvsn	volcanic and sedimentary rocks of the undivided Newby Group	Cretaceous Orthogneiss	
KJvln	dacite and rhyolite of the undivided Newby Group	Kogbr	Reynolds Peak phase of the Black Peak batholith
KJvtn	altered andesitic tuff of the undivided Newby Group	pre-Cretaceous Orthogneisses	
Jmli	Twisp Formation	pKogm	Methow Gneiss
LOW GRADE METAMORPHIC ROCKS		pKogi	diorite gneiss of the Leecher Metamorphics
pTmfm	McClure Mountain unit	Triassic Orthogneiss	
pKmvn	North Creek Volcanics	TKogb	Bearcat Ridge plutons
INTRUSIVE IGNEOUS ROCKS		MESOZOIC TO PALEOZOIC LAYERED METAMORPHIC ROCKS	
TERTIARY INTRUSIVE IGNEOUS ROCKS		pTgn	gneiss east of Elbow Canyon
Tia	leucovolcanic unit of Frey (1988)	pKhm	Twisp Valley Schist
Eocene Hypabyssal Intrusive Rocks		pKhm	amphibolite and schist of Twentyfive Mile Creek
Eis	stock of St. Louise Creek	pKhm	heterogeneous rocks of the Leecher Metamorphics
Eisr	stocks and dikes of Sawtooth Ridge	pKbgi	banded gneiss of the Leecher Metamorphics
Eiaf	dike swarm of South Fork Ridge	TECTONIC ZONE	
Eiar	stock of Fox Peak	tz	
Eigdb	stock of Bryan Butte	tectonic zone	
Eidag	porphyry dike swarm of Goat Mountain		
Eidas	porphyry dike swarm of South Fork Gold Creek		
Eimr	dike of Rainy Creek		
Eigb	gabbro		
Eocene Plutonic Rocks			
Eige	quartz monzonite to granite phase of the Cooper Mountain batholith		
Eiqm	biotite quartz monzonite phase of the Cooper Mountain batholith		
Eigdc	biotite granodiorite to quartz monzonite phase (main phase) of the Cooper Mountain batholith		
Eigdn	Noname stock		
Eiqn	stock of Hungry Mountain		
Eiqd	Duncan Hill Pluton		
Paleocene Plutonic Rocks			
PAito	Oval Peak batholith		
TERTIARY-CRETACEOUS INTRUSIVE IGNEOUS ROCKS			
TKigd	granodiorite near Elbow Canyon		
TKiqy	stock of Yockey Creek		
MESOZOIC INTRUSIVE IGNEOUS ROCKS			
Cretaceous Plutonic Rocks			
Kigd	Texas Creek stock		
Kidc	hornblende diorite in Texas Creek		
Kicg	Carlton stocks		
Kicgp	Cardinal Peak pluton		
Kidn	McFarland Creek stock		
Cretaceous-Jurassic Plutonic Rocks			
KJiqa	Alder Creek stock		
KJib	Frazer Creek complex tonalite		
KJir	Frazer Creek complex quartz diorite		
KJigbi	gabbro of the Frazer Creek complex		
KJigb	Red Shirt gabbro		

EXPLANATION

---	Scratch boundary - indicates unreconciled differences at source map boundaries
- - - -	Contact - dashed where interpretive
- - - - -	Fault - dashed where inferred; dotted where concealed
- + - + -	Fault - ball and bar on downthrown side
- + - + -	Fault - showing relative horizontal movement
- + - + -	Thrust fault - sawteeth on upper plate
- + - + -	Anticline - showing direction of plunge; dashed where inferred, dotted where concealed
- + - + -	Syncline - showing direction of plunge; dashed where inferred, dotted where concealed
- + - + -	Strike and dip of beds
- + - + -	Strike and dip of overturned beds
- + - + -	Strike of vertical beds
- + - + -	Strike and dip of foliation
- + - + -	Strike of vertical foliation
- + - + -	Bearing and plunge of lineation
- + - + -	Strike and dip of joints
+++++	Dike
=====	Mylonite protomylonite, and abundant ductile shear zones



GEOLOGIC MAP OF THE EAST HALF OF THE TWISP 1:100,000 QUADRANGLE, WASHINGTON

Compiled by  
**BONNIE B. BUNNING**

February 1990

THIS REPORT CONSISTS OF 1 MAP AND A 51 PAGE TEXT