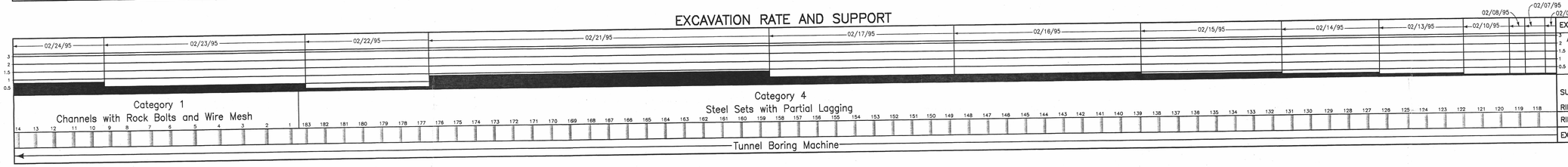
ROCK–MASS CLASSIFICATION

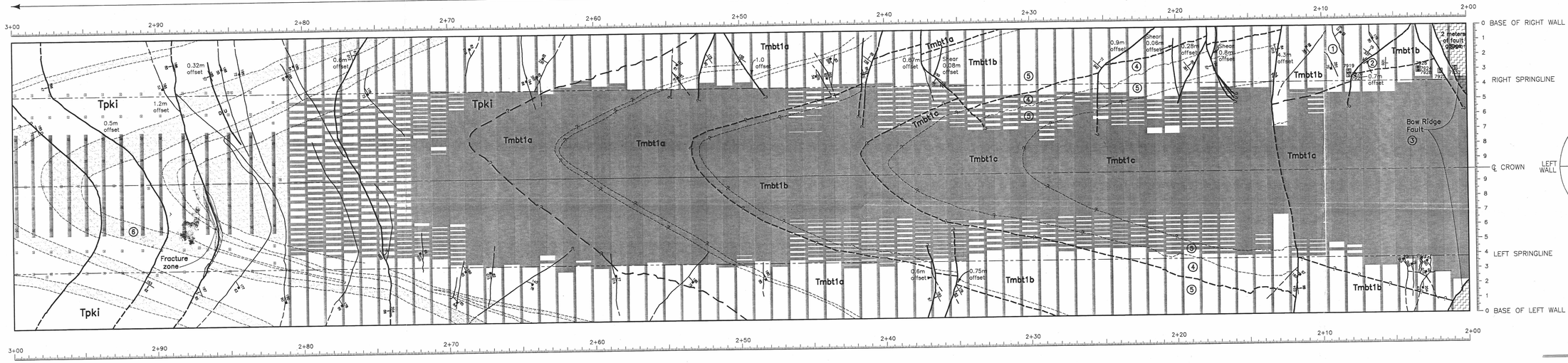
100%	100%	100%	99%	93%	100%	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		R.Q.D.
29.90	38.10	18.60	18.30	23.50	32.10	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		SCANLINE Q
33.	33.	17.	17.	16.	27.	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		MAPPED Q
0.0	−0.1	0.0	0.0	−0.2	−0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		Δ Q *
GOOD		GOOD	GOOD	GOOD	GOOD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		DESCRIPTION
66	68	81	63	67	73	NR	NR	NR	NR	NA	NR	NR	NR	NR	NR	NR		SCANLINE RMR
GOOD ROCK		VERY GOOD ROCK		GOOD ROCK														DESCRIPTION

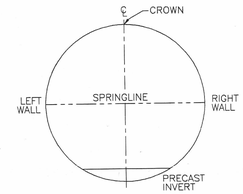
$$* \Delta Q = \log_{10}\left(\frac{\text{MAPPED Q}}{\text{SCANLINE Q}}\right)$$

EXCAVATION RATE AND SUPPORT

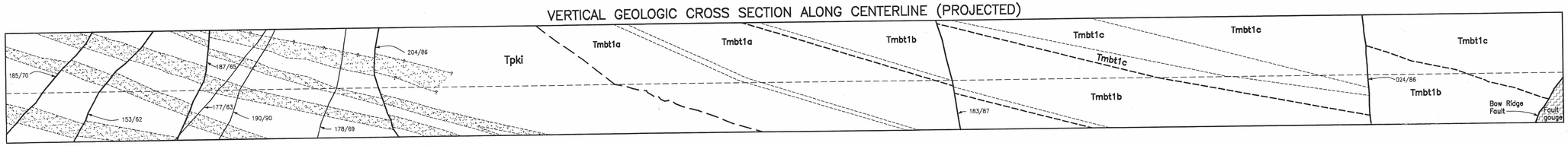


299°





VERTICAL GEOLOGIC CROSS SECTION ALONG CENTERLINE (PROJECTED)



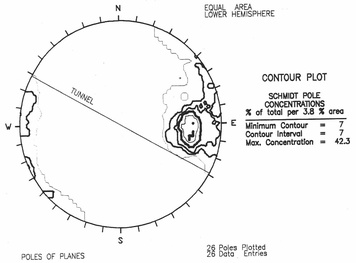
Notes

For General Geologic Explanation and Notes, see Drawing OA–46–179.

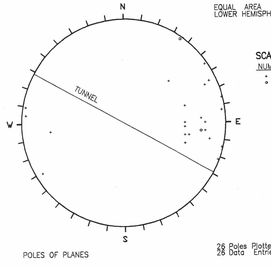
Fracture data for stereo plots taken exclusively from detailed line surveys along right wall.

1:125 (METERS)

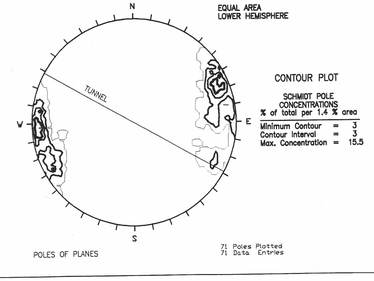
Station 2+63.5 to 3+46: Tuff 'X' and Pre-Tuff 'X'



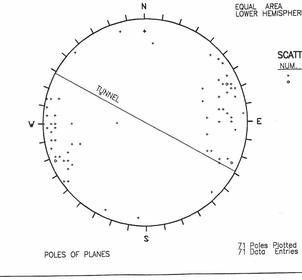
Station 2+63.5 to 3+46: Tuff 'X' and Pre-Tuff 'X'



Station 1+99.8 to 2+63.5: PRE-RAINIER MESA TUFF



Station 1+99.8 to 2+63.5: PRE-RAINIER MESA TUFF



Geologic Notes

1. Massive, sand–size tuff.
2. Bedded tuff.
3. Bow Ridge Fault: Fault rubble zone with rotated pieces of Tiva Canyon lower lithophysal zone material. Uncemented to weakly consolidated fault breccia/gouge. Fault breccia is mostly matrix supported. Matrix is composed of clayey tuffaceous(?) material derived from the Pre–Rainier Mesa tuff. Clasts range in size from <5 mm to >25 cm. They are angular to subangular, and composed predominately of welded tuff from the Tiva, although some clasts are derived from the Pre–Rainier.
4. Coarse, white, laminar to thinly bedded tuff.
5. Fine to medium, tan, massive tuff with 5 to 10% gravel.
6. Layers with concentrations of subangular to subrounded lithic fragments (mostly rhyolite), which range from less than 1 cm to 15 cm in size, with possible reverse grading. Although the layers are distinct, the boundaries or contacts are indistinct and gradational.

ALWAYS THINK SAFETY

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION / U.S. GEOLOGICAL SURVEY
YUCCA MOUNTAIN PROJECT
GEOLOGIC MAPPING OF THE ESF D-10

ESF – NORTH RAMP

STATION 2+00.00 TO STATION 3+00.00

AS BUILT GEOLOGY AND GEOTECHNICAL DATA

GEOLOGY	USBR MAPPING TEAM	PEER REVIEW	MARK H. McKEOWN
DRAWN	USBR CADD TEAM	PRINCIPAL INVESTIGATOR	STEVEN C. BEASON
CHECKED	ROBERT C. LUNG	T.P.O.	J.A. KRULIK

CADD SYSTEM	CADD FILENAME	DATE AND TIME PLOTTED
AutoCad 12.0	TBM2OOX	PLOTTED
MERCURY, NEVADA	SCP 8.3.1.4.2.2.4	OA–46–182