

LEGEND

- | | | | |
|--|--------------------|--|-----------|
| | Disposal_Sites | | freeway |
| | Priority Locations | | highway |
| | National Parks | | arterial |
| | | | collector |

NOTES

Base data source: Imagery provided by Google Earth Pro

STATUS

Issued for Review

PRIORITIZED ROCK SLOPE STABILIZATION WORK

Jasper National Park

PROJECTION

UTM Zone 11

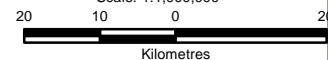
DATUM

NAD83

CLIENT

Parks Canada

Scale: 1:1,000,000



FILE NO.

JNP.mxd

PROJECT NO.

V13403021-01

DWN

AMF

CKD

AN

APVD

CH

REV

0

OFFICE

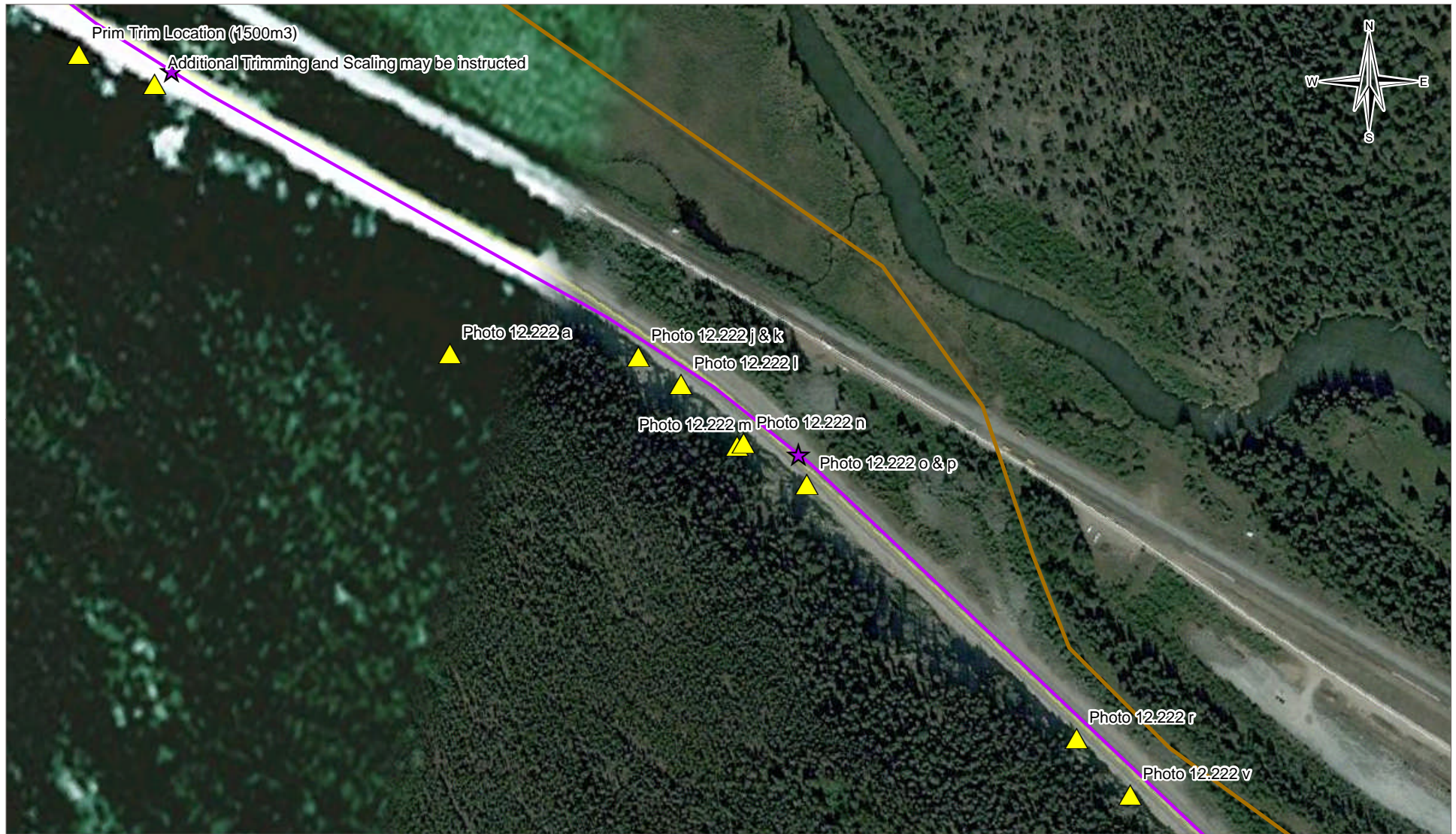
EBA-VANC

DATE

May 9, 2013

A TETRA TECH COMPANY

Figure 1



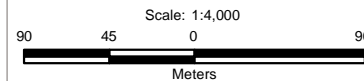
LEGEND

- ▲ Photo Locations
- TMX Pipeline
- ★ Priority Locations
- Expressway / Highway
- Arterial
- Rapid Transit

NOTES

Base data source: Google Pro
Satellite Image

STATUS
ISSUED FOR REVIEW



PROJECTION
UTM Zone 10

DATUM
NAD83

FILE NO.
JNP - Figure 2_v2.mxd



PRIORITIZED ROCK SLOPE STABILIZATION WORK

PIPELINE AND TRIM BLAST LOCATIONS AT PRIORITY LOCATION KM 12.222

PROJECT NO.	DWN	CKD	APVD	REV
V13403021-01	AMF	SC	CH	0
OFFICE	DATE			
EBA-VANC	May 22, 2013			

Figure 2

Summary of Work by Rock Slope

Park	Slope Reference	Type of Work	Estimated Quantity
Jasper National Park		Mobilization/ Demobilization	
Jasper National Park	km 7.673 to 8.173	Scaling (hrs)	50
		Trim blasting (cu m)	400
		Rock bolting (m)	32
		Common excavation (cu m)	950
Jasper National Park	km 9.619 to 10.149	Scaling (hrs)	120
		Trim blasting (cu m)	325
		Rock bolting (m)	25
		Common excavation (cu m)	550
		Remove and replace guardrail	40
		Drains	27
Jasper National Park	km 11.872 to 12.125	Scaling (hrs)	220
		Trim blasting (cu m)	1650
		Rock bolting (m)	40
		Common excavation (cu m)	3550
Jasper National Park	km 12.222 to 12.924	Scaling (hrs)	500
		Trim blasting (cu m)	1,500
		Rock bolting (m)	100
		Common excavation (cu m)	3000
		Remove and replace guardrail	200

Appendix A Photographs of Work Areas

Note: Within Jasper National Park, all kilometre stations are measured in an easterly direction from the Jasper Park West Gate.

Jasper National Park - Main Work Items

Jasper National Park Km 7.673 to 8.173

Relevant Photos: 7.673a; 7.673b; 7.673c; 7.673d; 7.673e; 7.673bf; 7.673b; 7.673h; 7.673i; 7.673k; 7.673l; 7.673m; 7.673n; 7.673o

Jasper National Park Km 9.619 to 10.149

Relevant Photos: 9.619a; 9.619b; 9.619c; 9.619d; 9.619f; 9.619g; 9.619h; 9.619j; 9.619m

Jasper National Park Km 11.872 to 12.125

Relevant Photos: 11.872a; 11.872b; 11.872c; 11.872f; 11.872g; 11.872h; 11.872(additional 1); 11.872(additional 2)

Jasper National Park Km 12.222 to 12.924

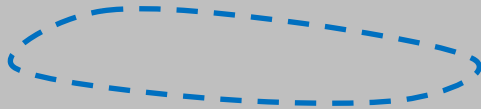
Relevant Photos: 12.222a; 12.222b; 12.222c; 12.222d; 12.222i; 12.222j; 12.222k12.222l; 12.222m; 12.222n; 12.222o; 12.222p; 12.222q; 12.222r; 12.222u; 12.222v; 12.222w; 12.222x; 12.222y

Legend

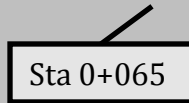


Approximate area of scaling with total number of man hours for the section

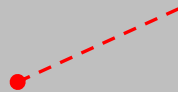
Approximate area of trim blasting



Approximate area of common excavation



Approximate chainage from start of slope



Approximate location and orientation of rock bolts / dowels

Photo 7.673 a

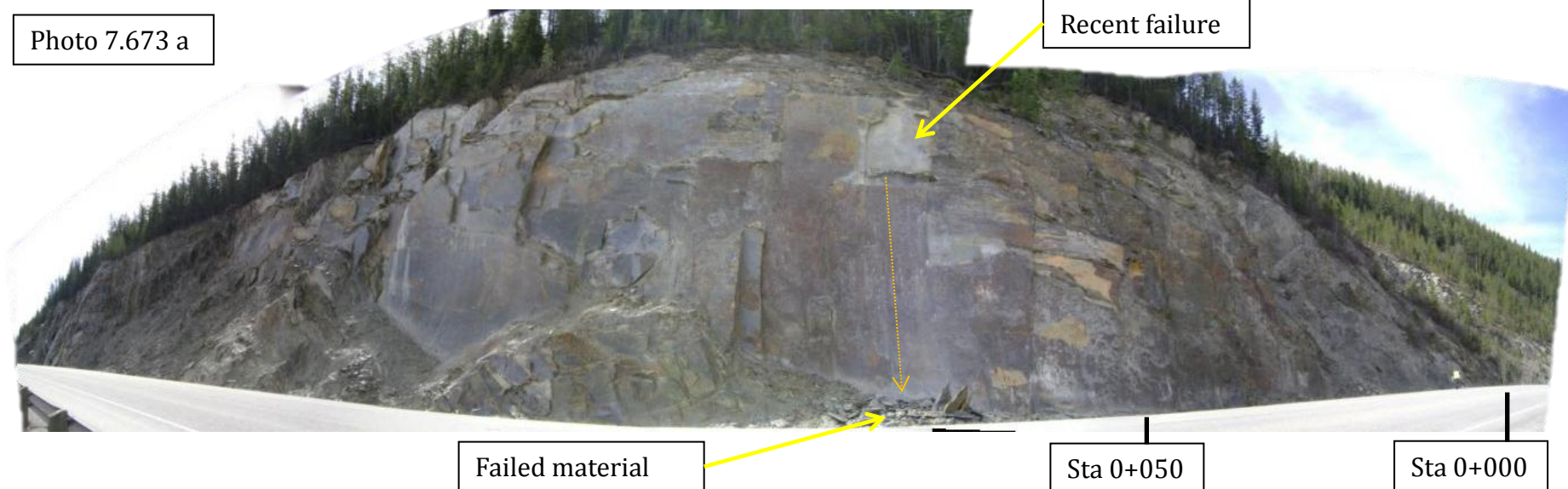
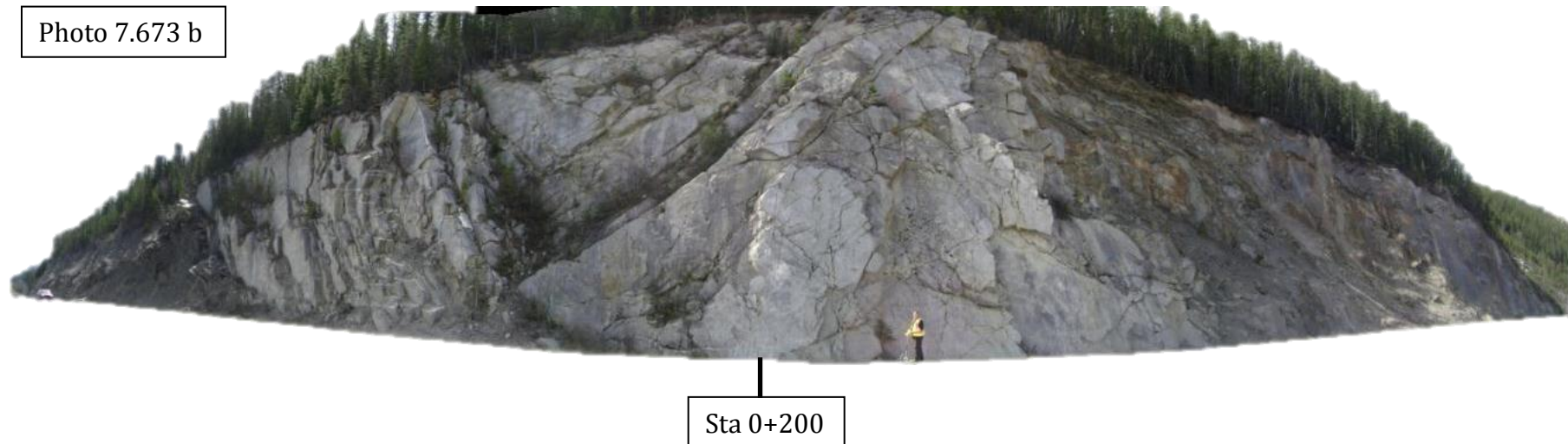
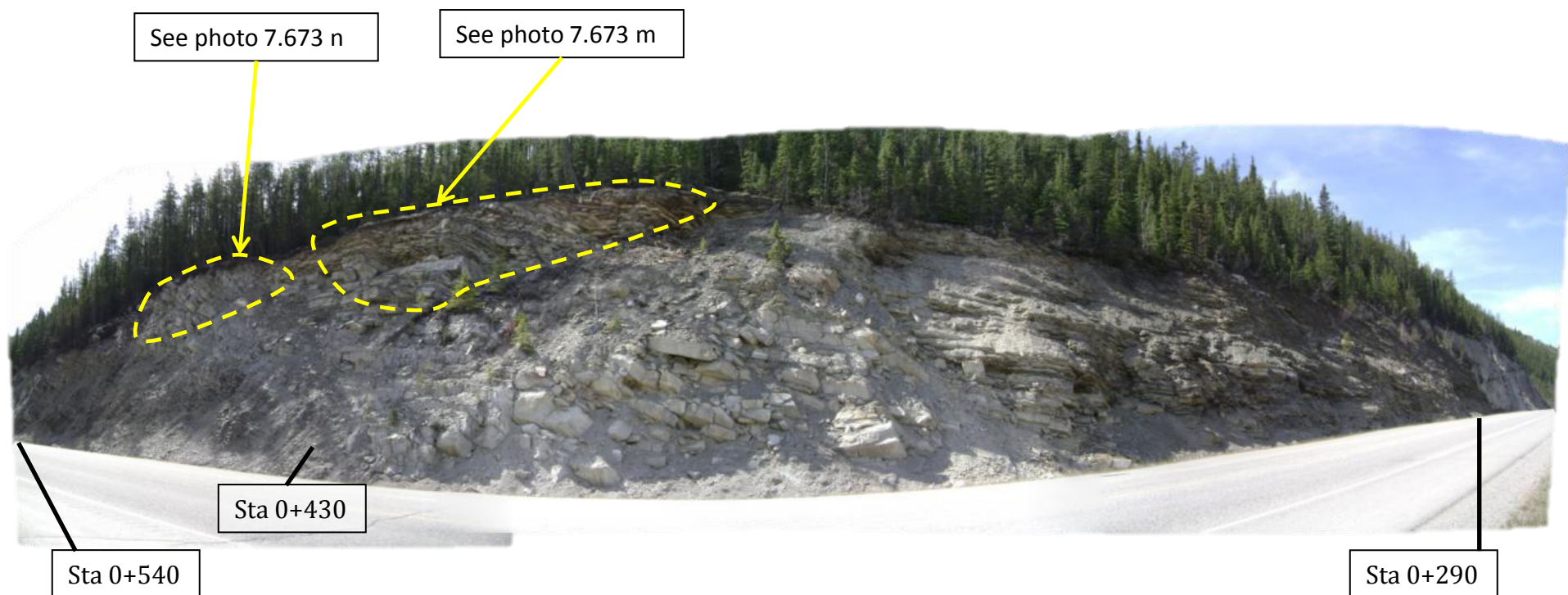
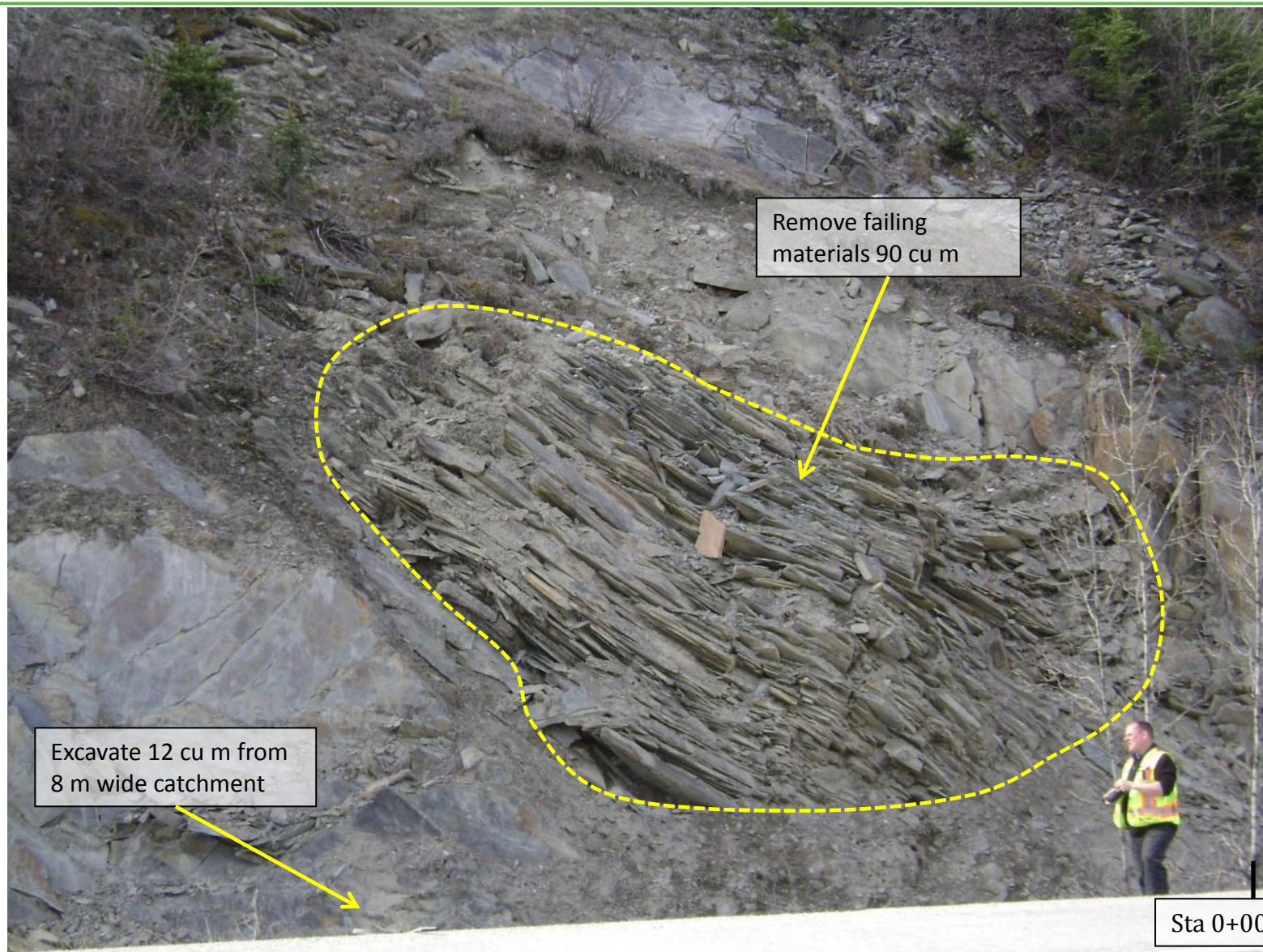
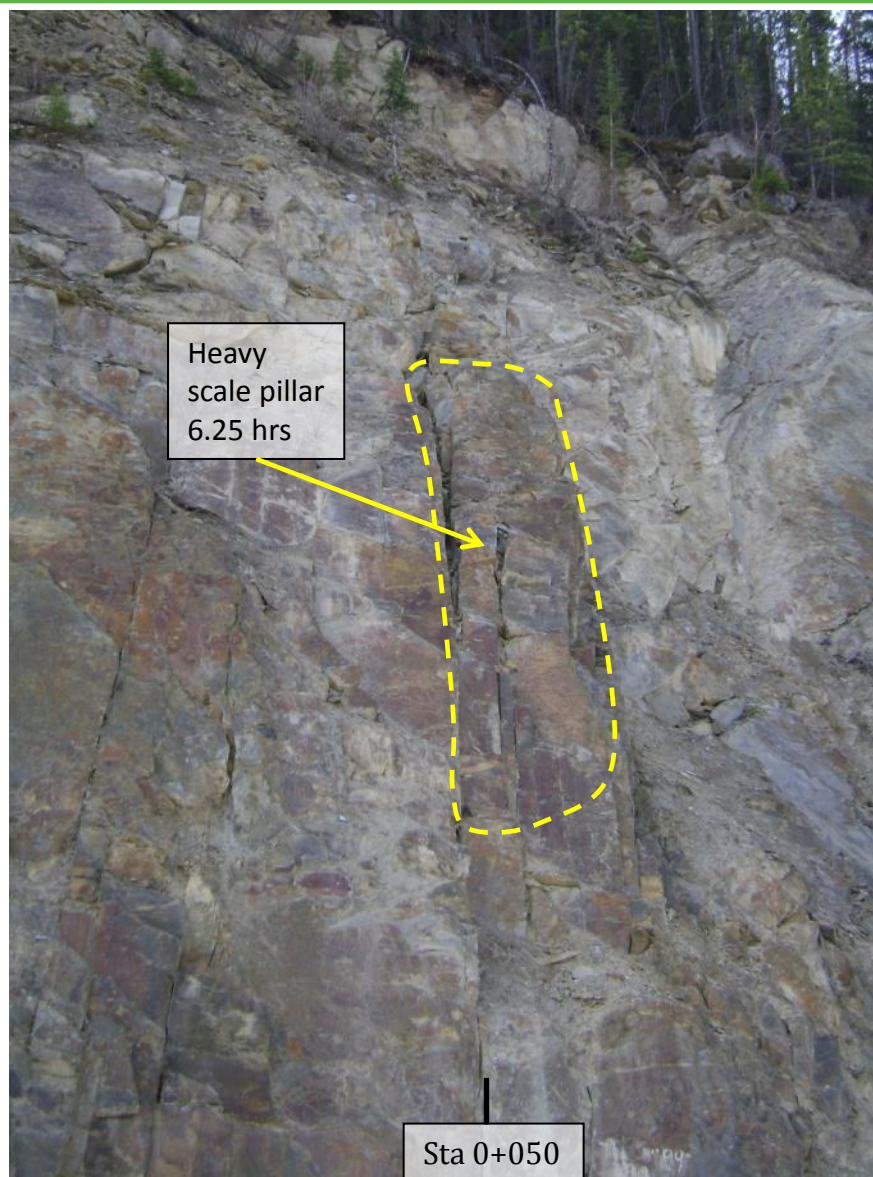


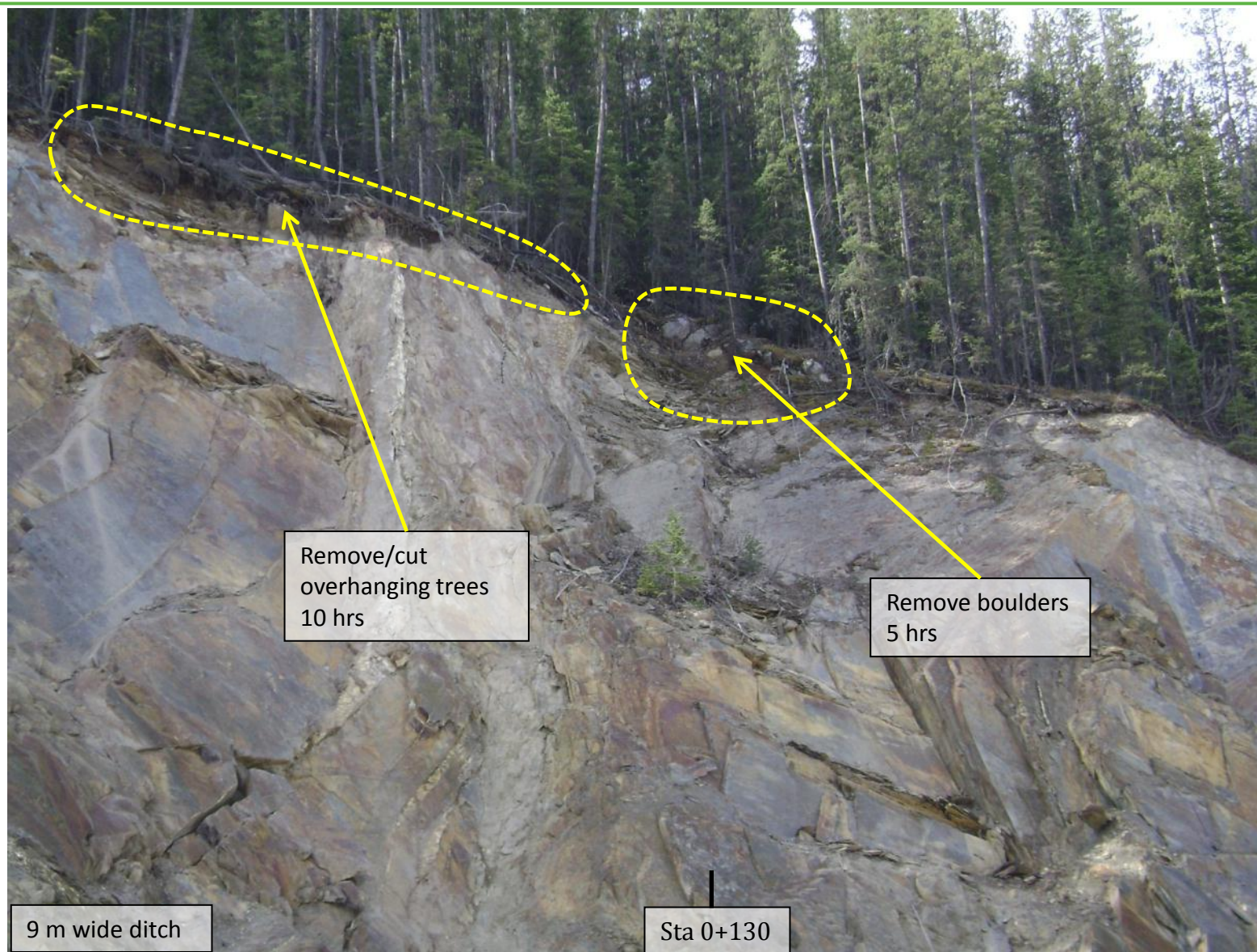
Photo 7.673 b

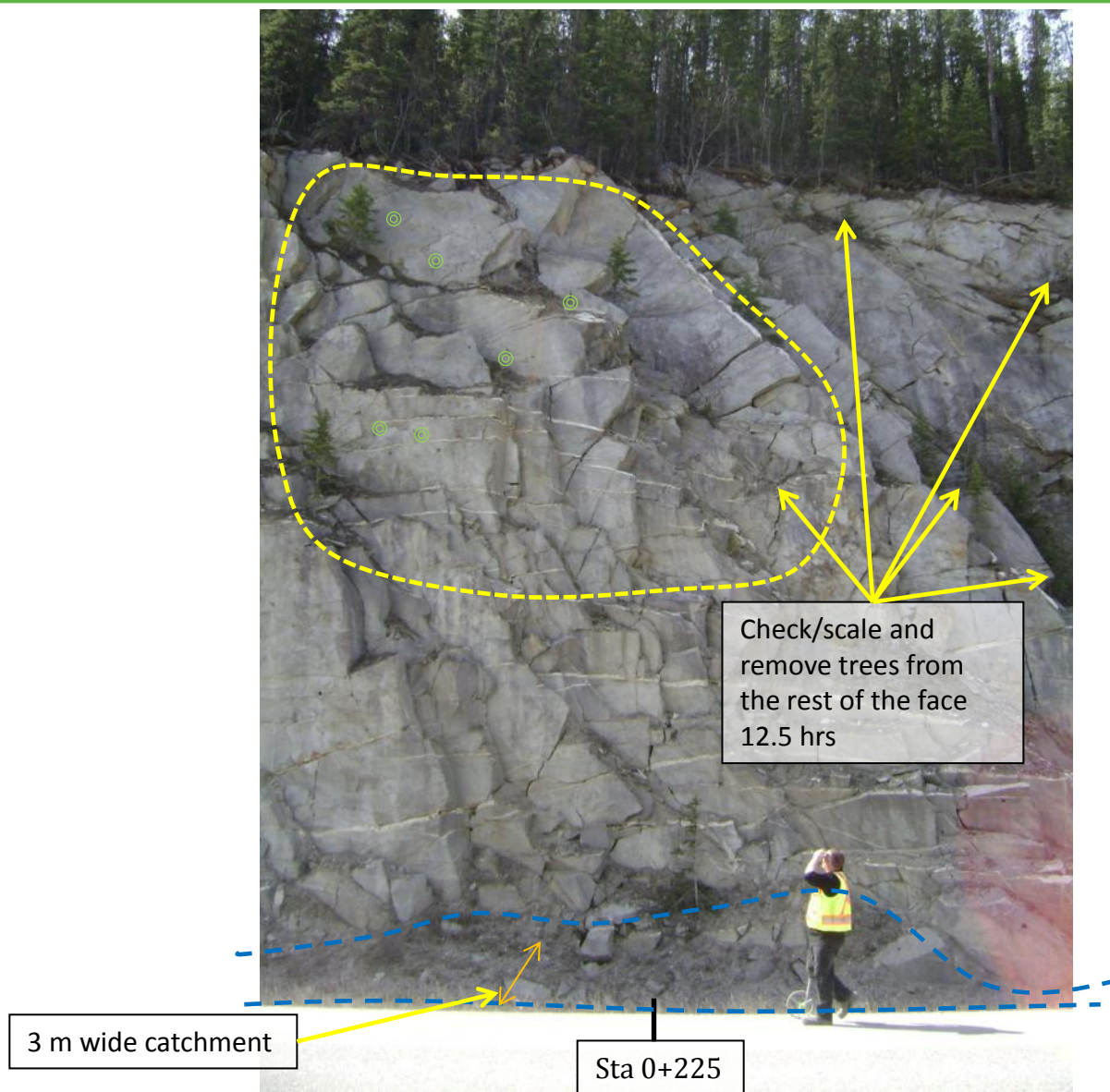












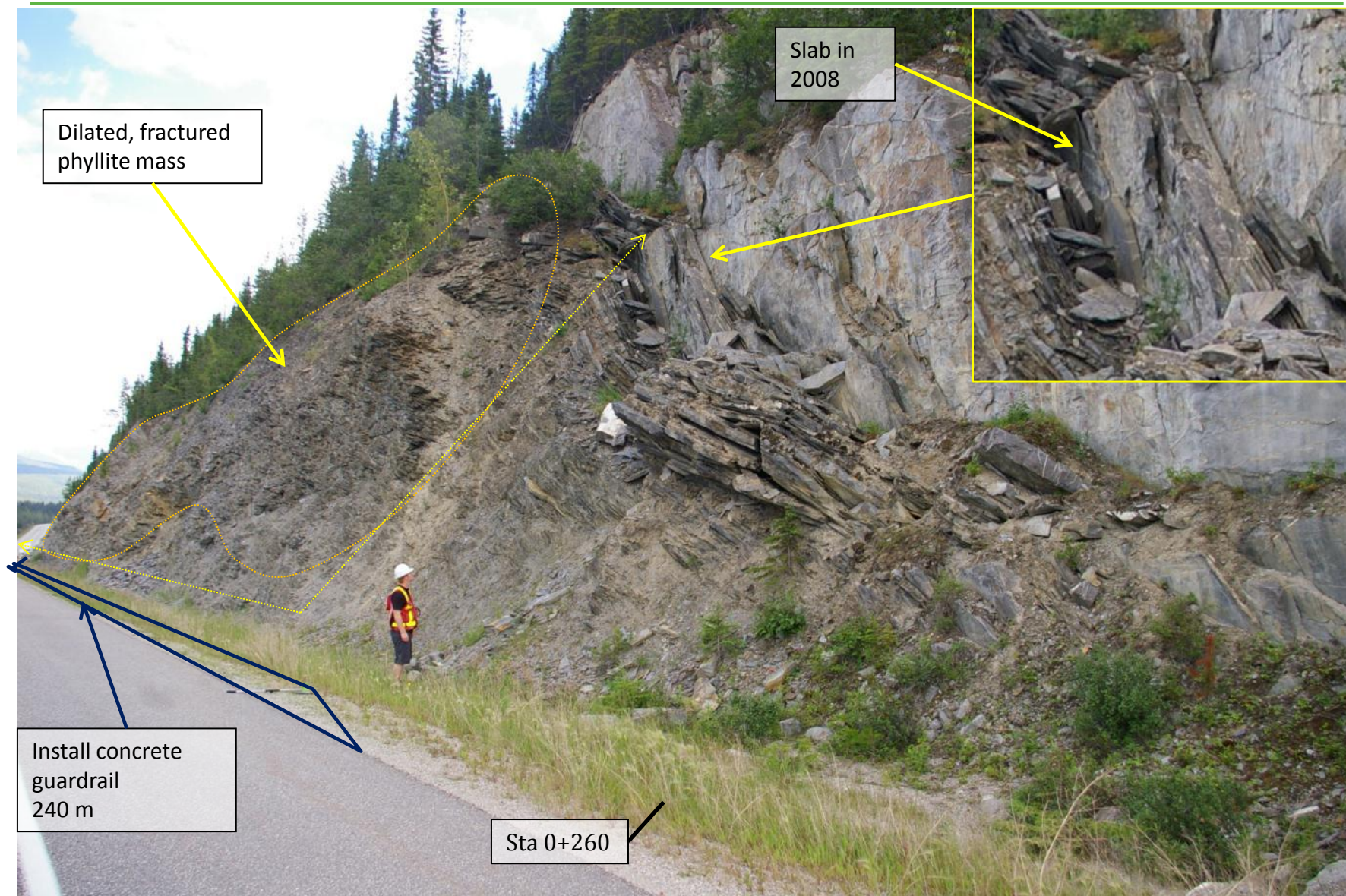
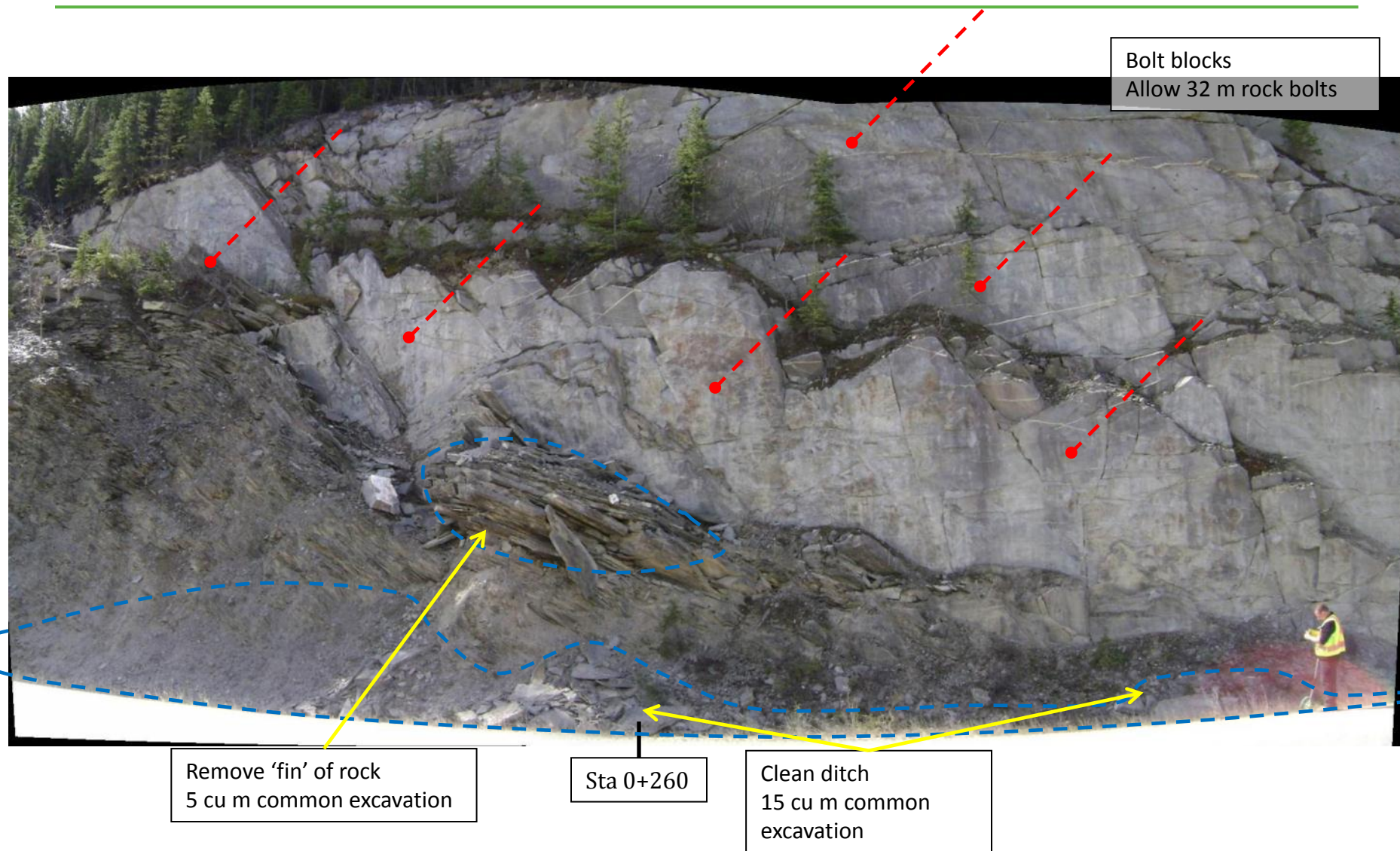
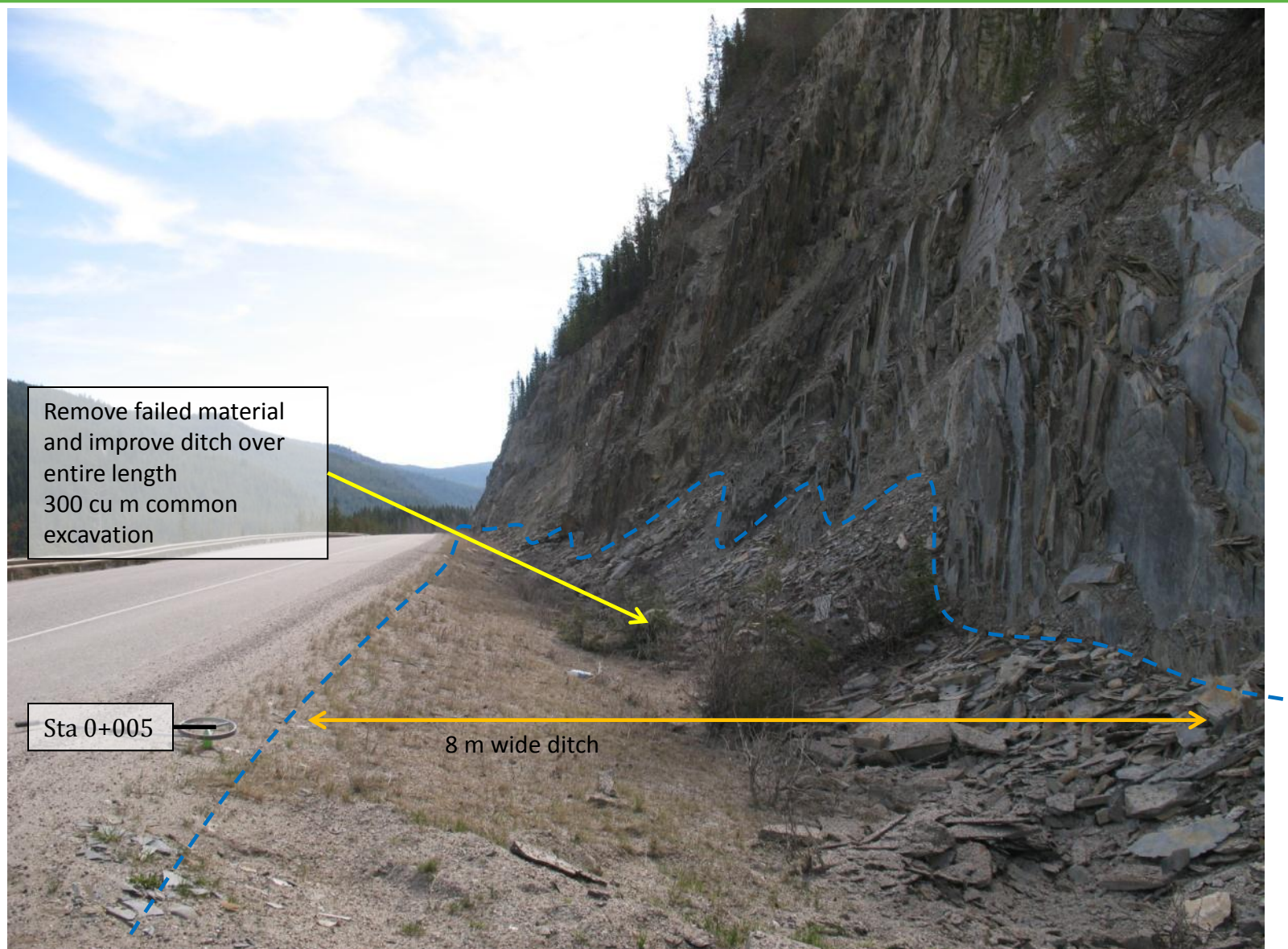
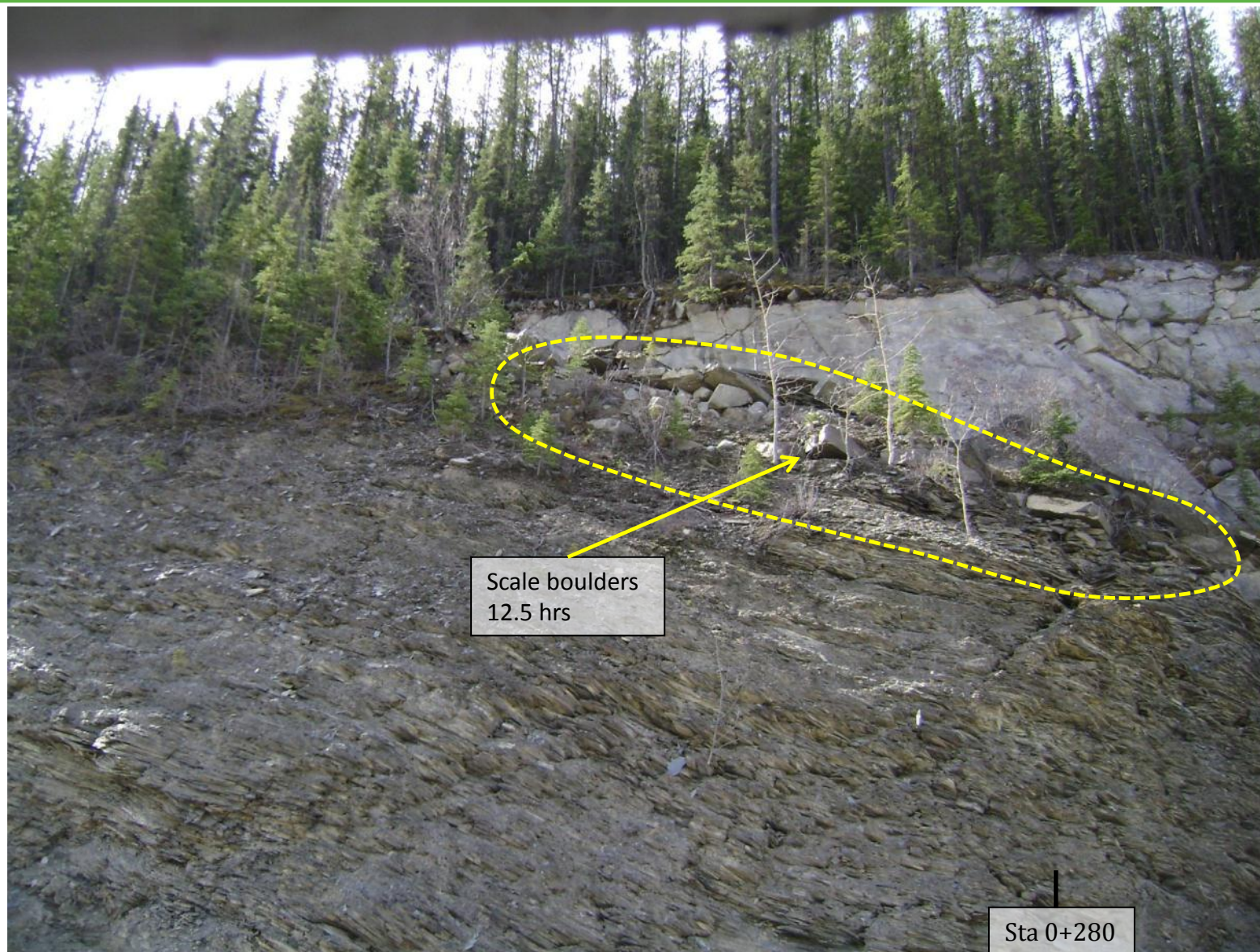
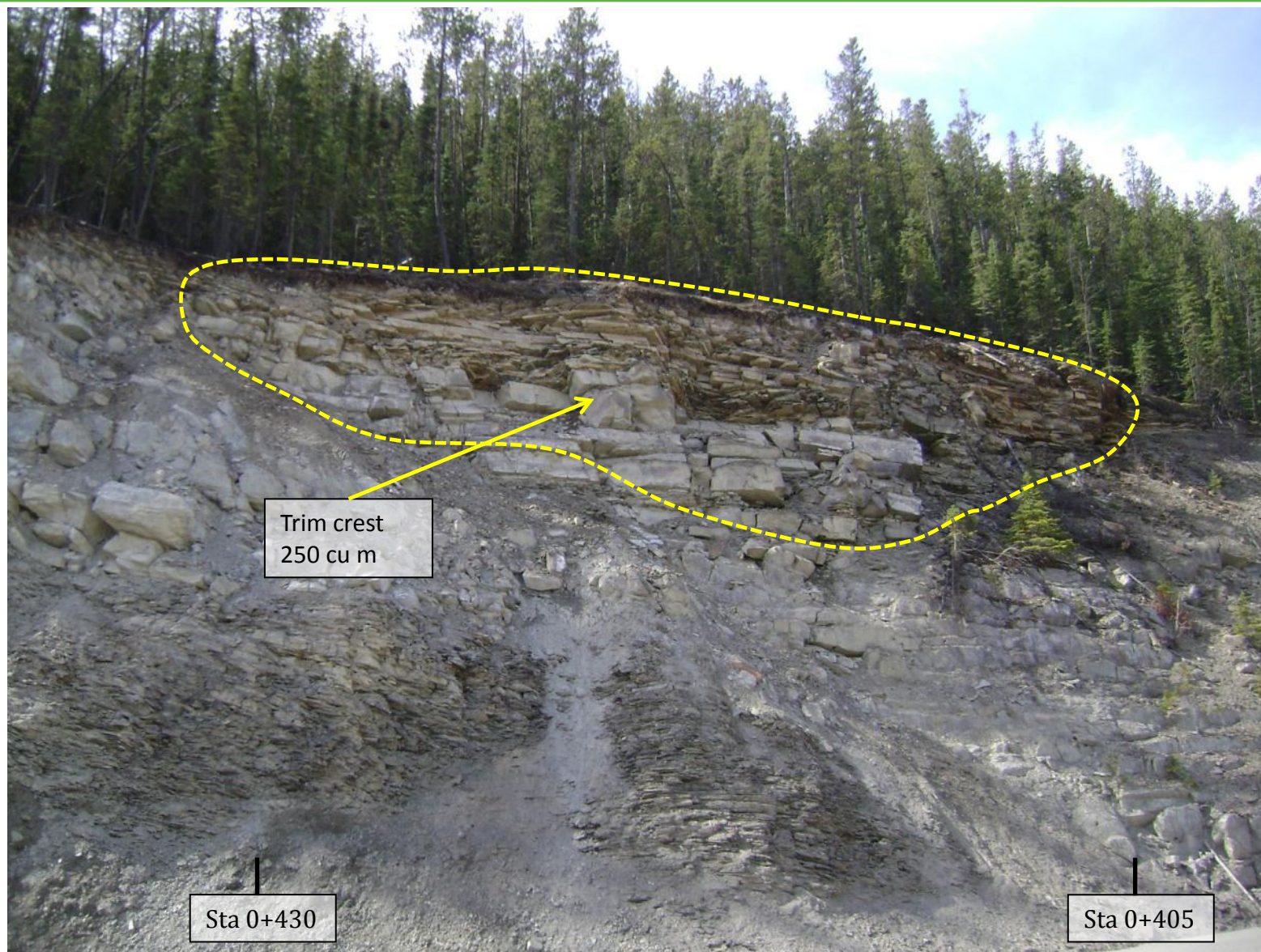


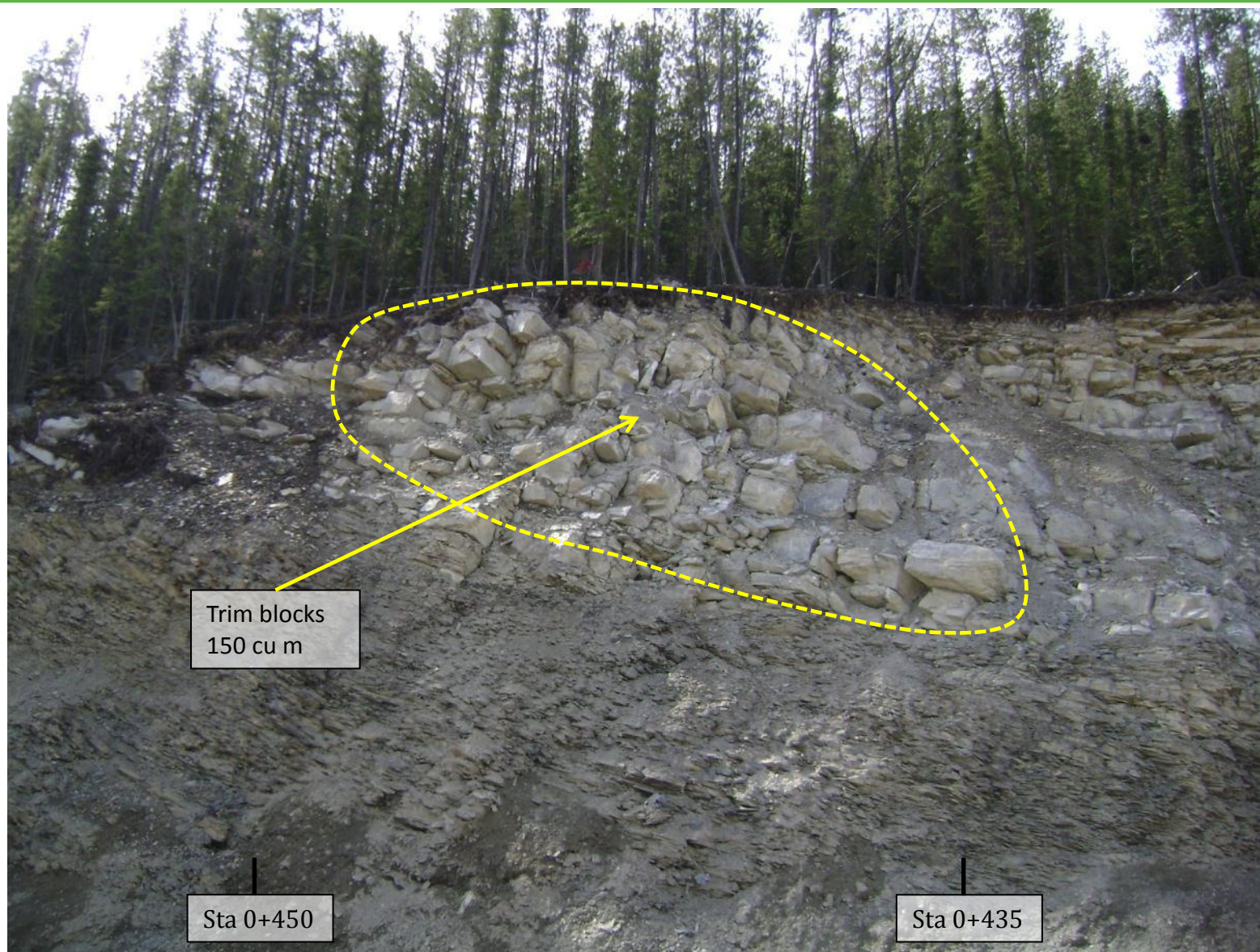
Photo Taken: July 28, 2008



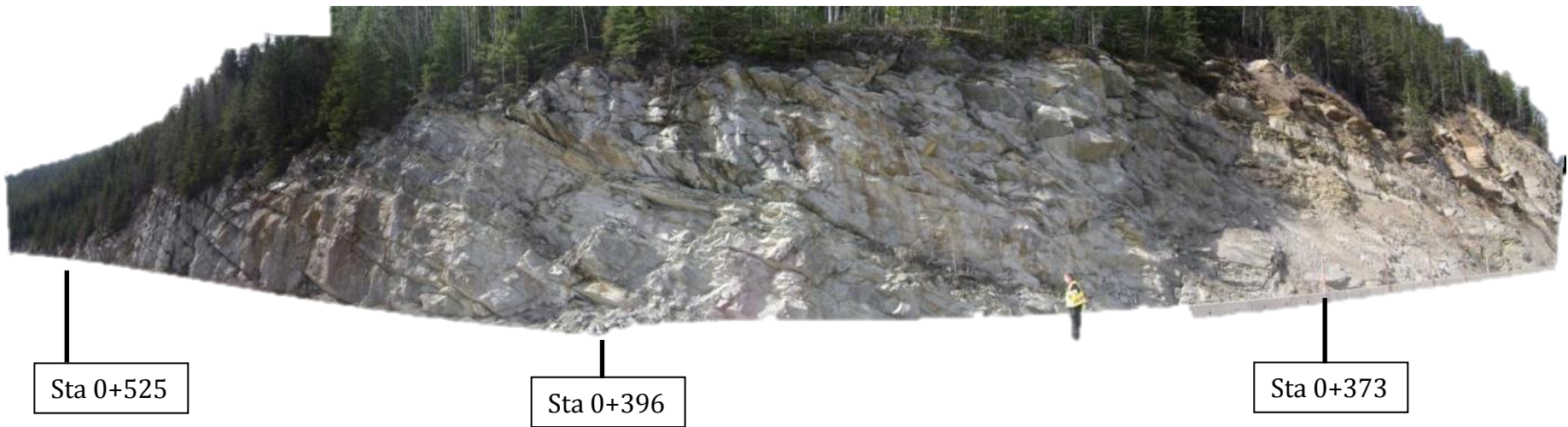


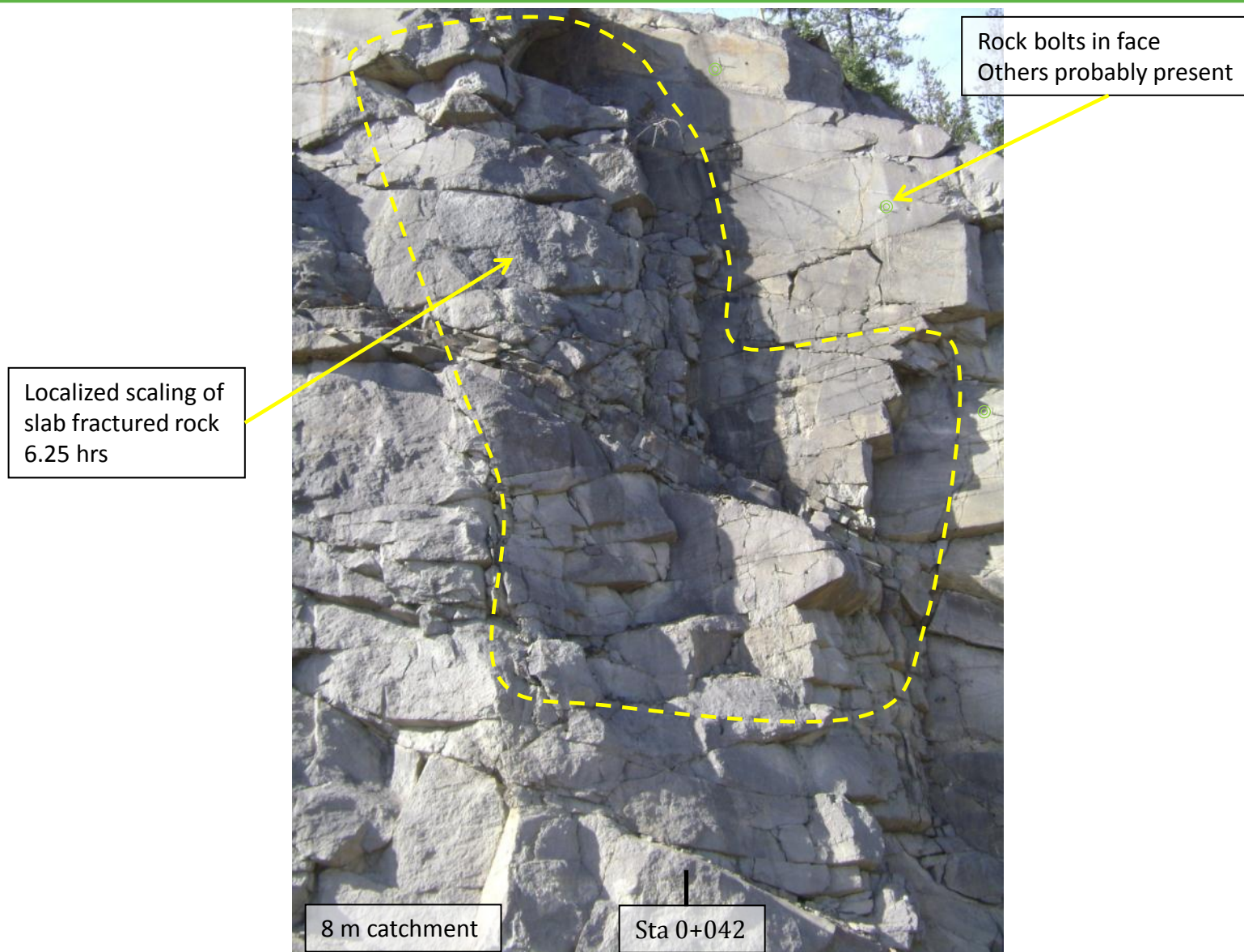


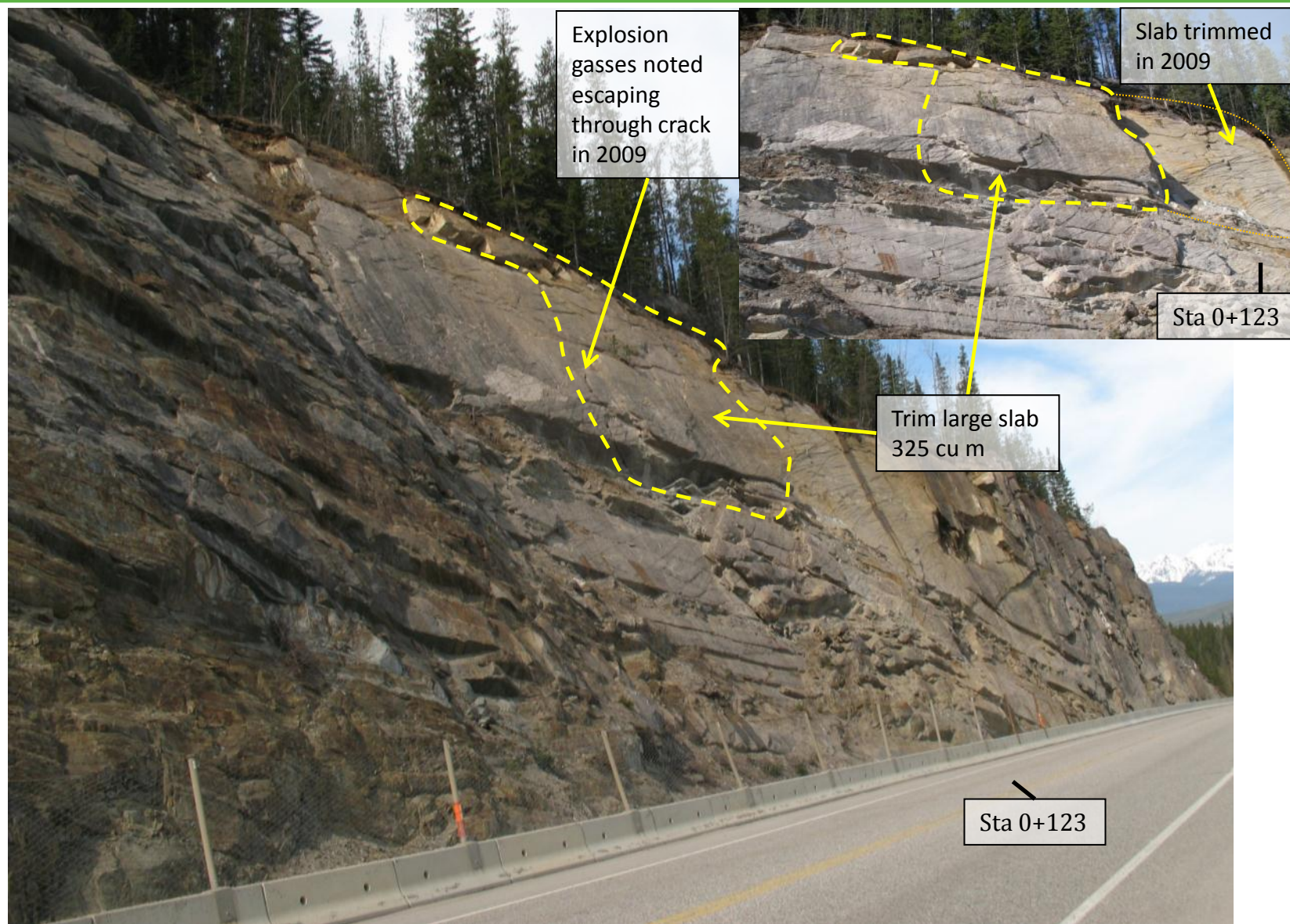


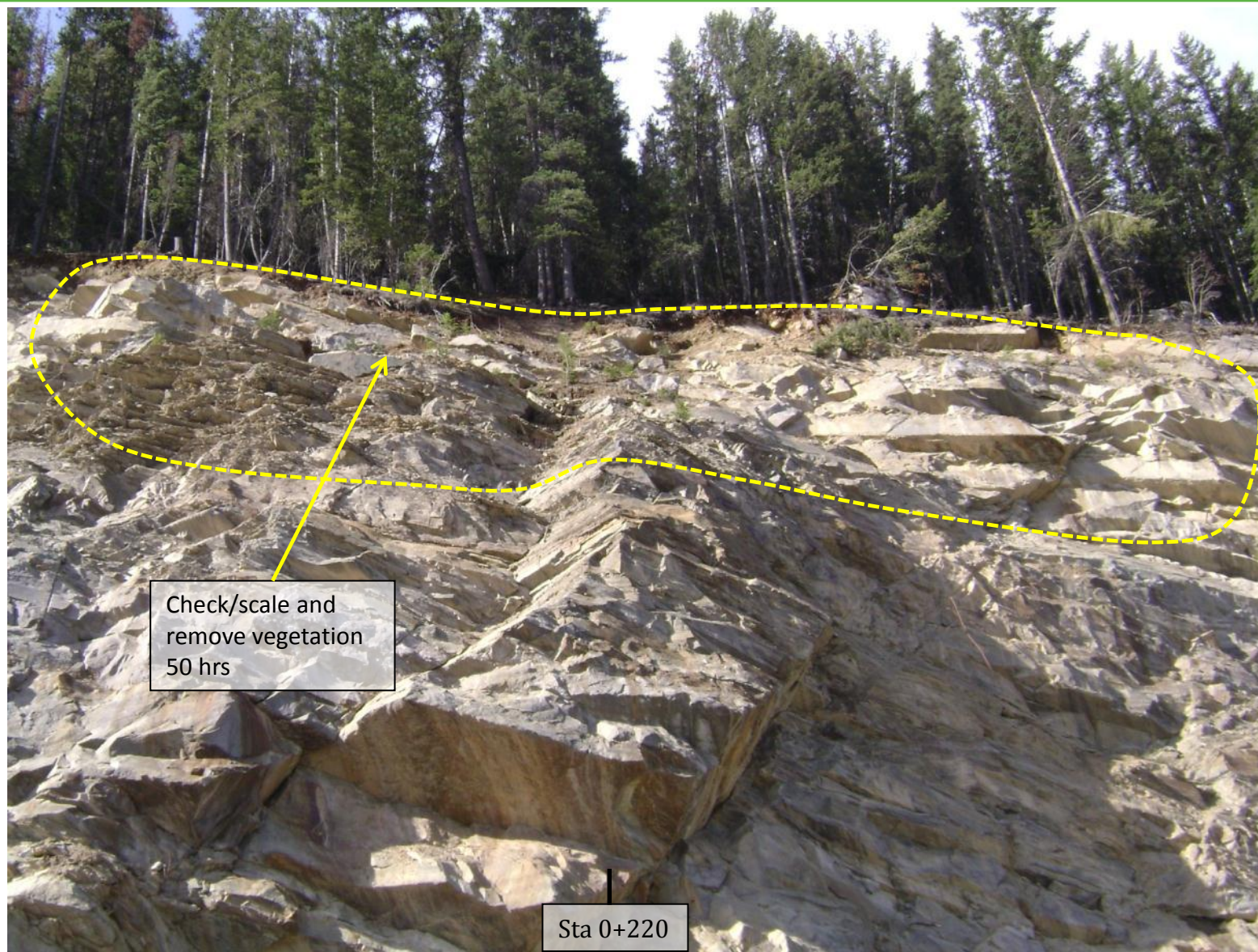


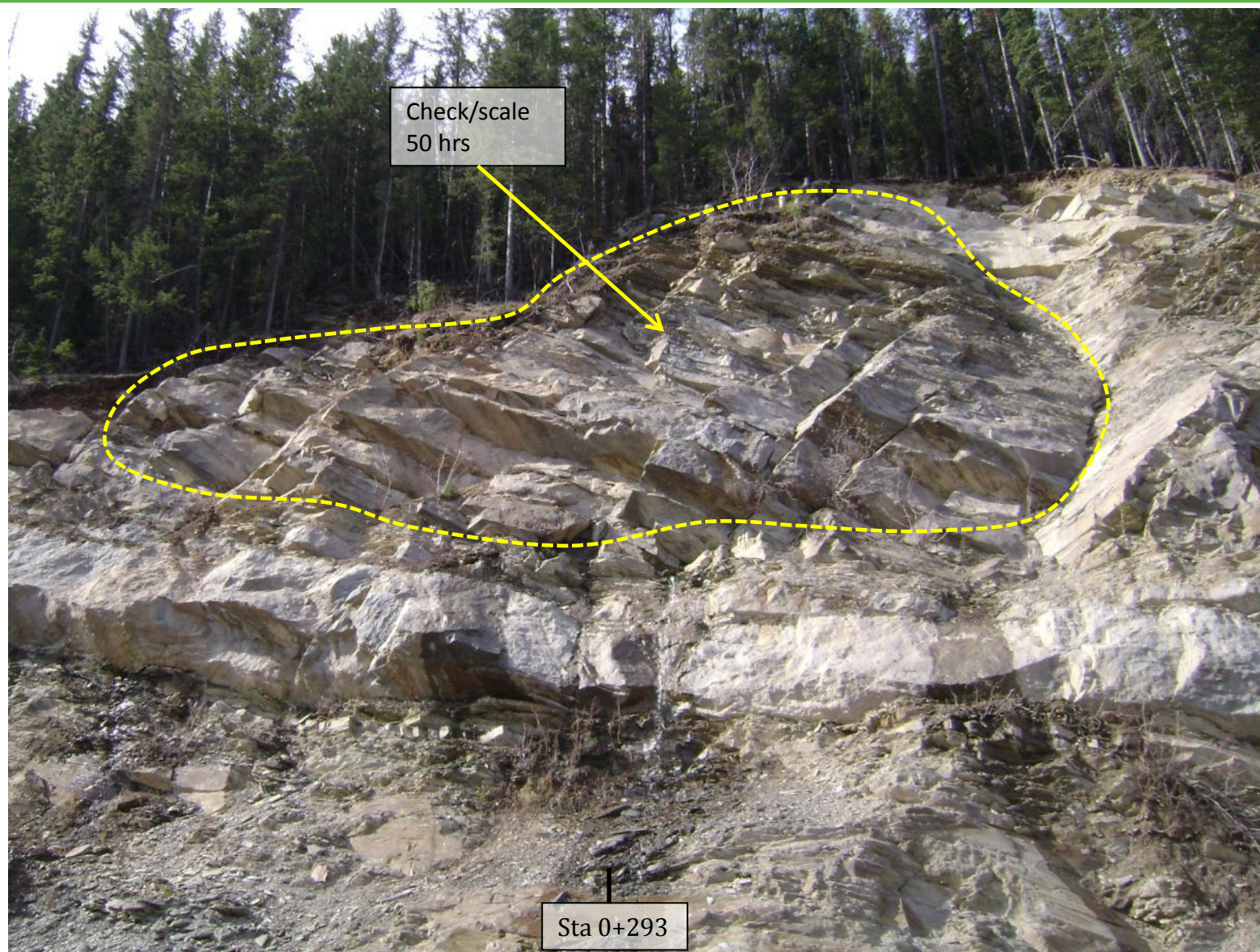


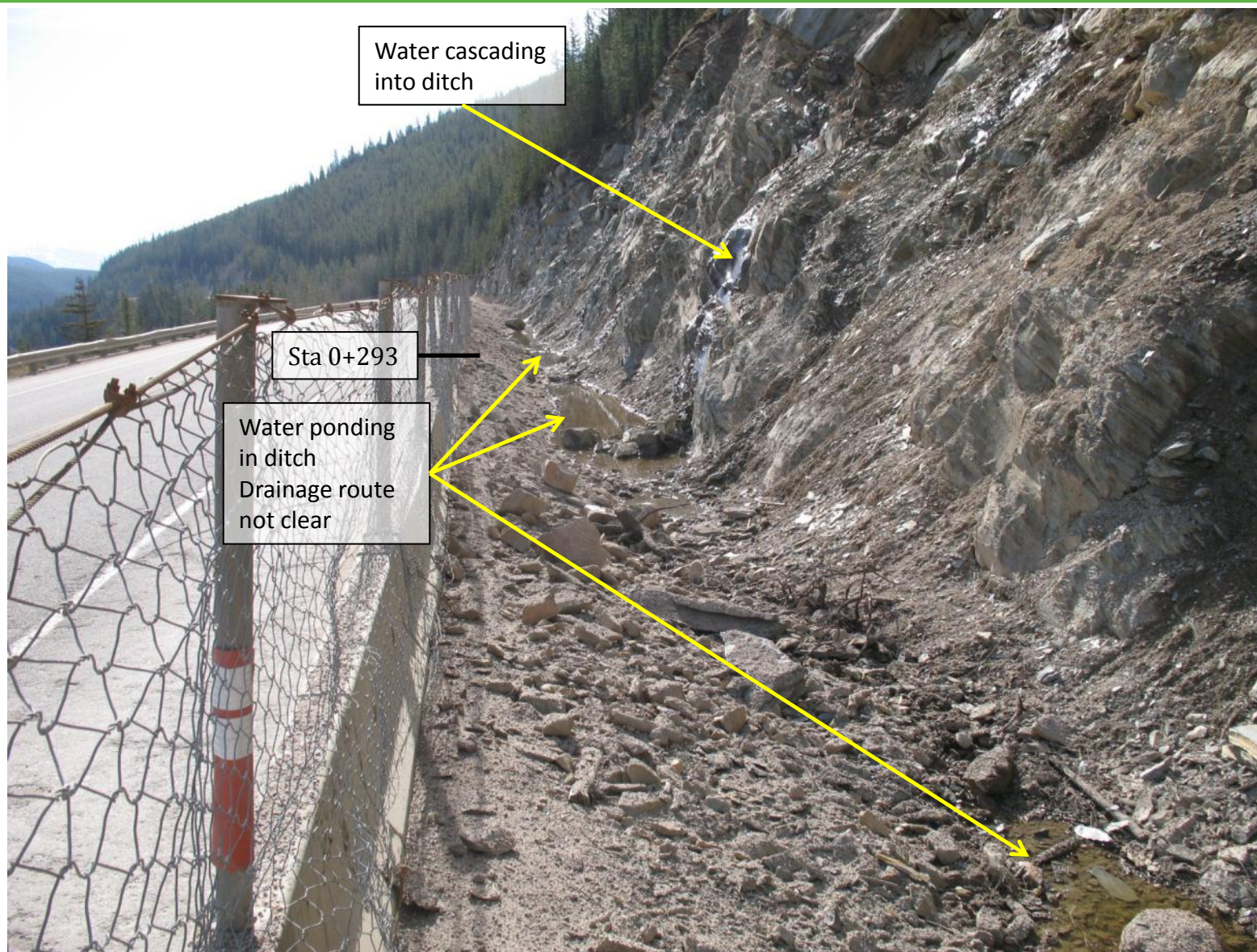


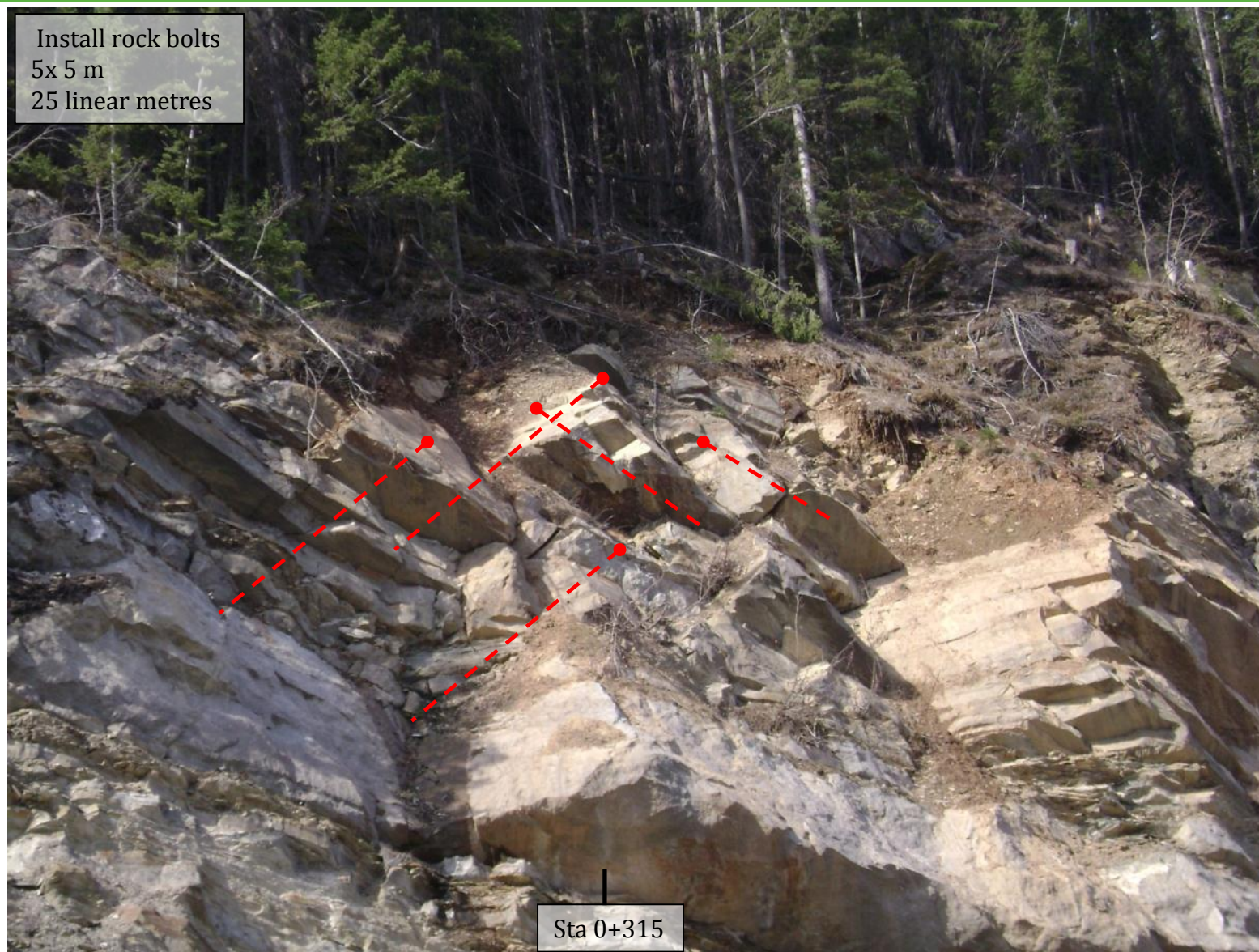








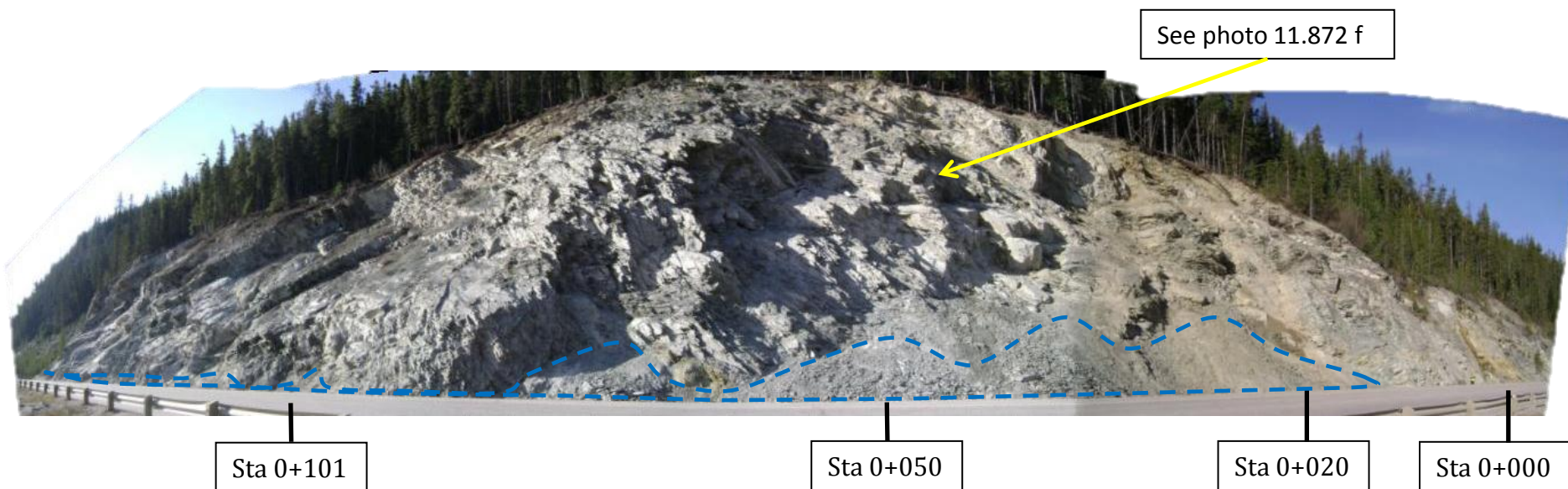


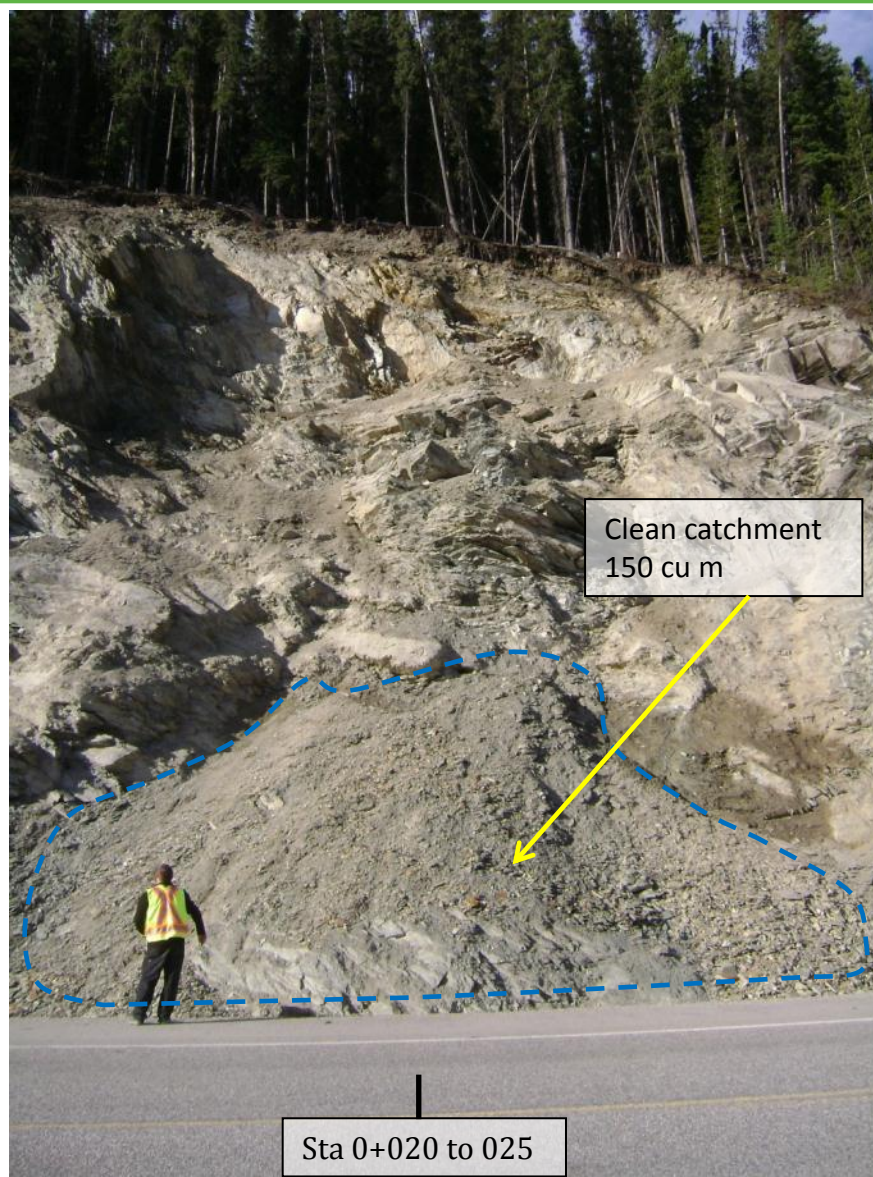


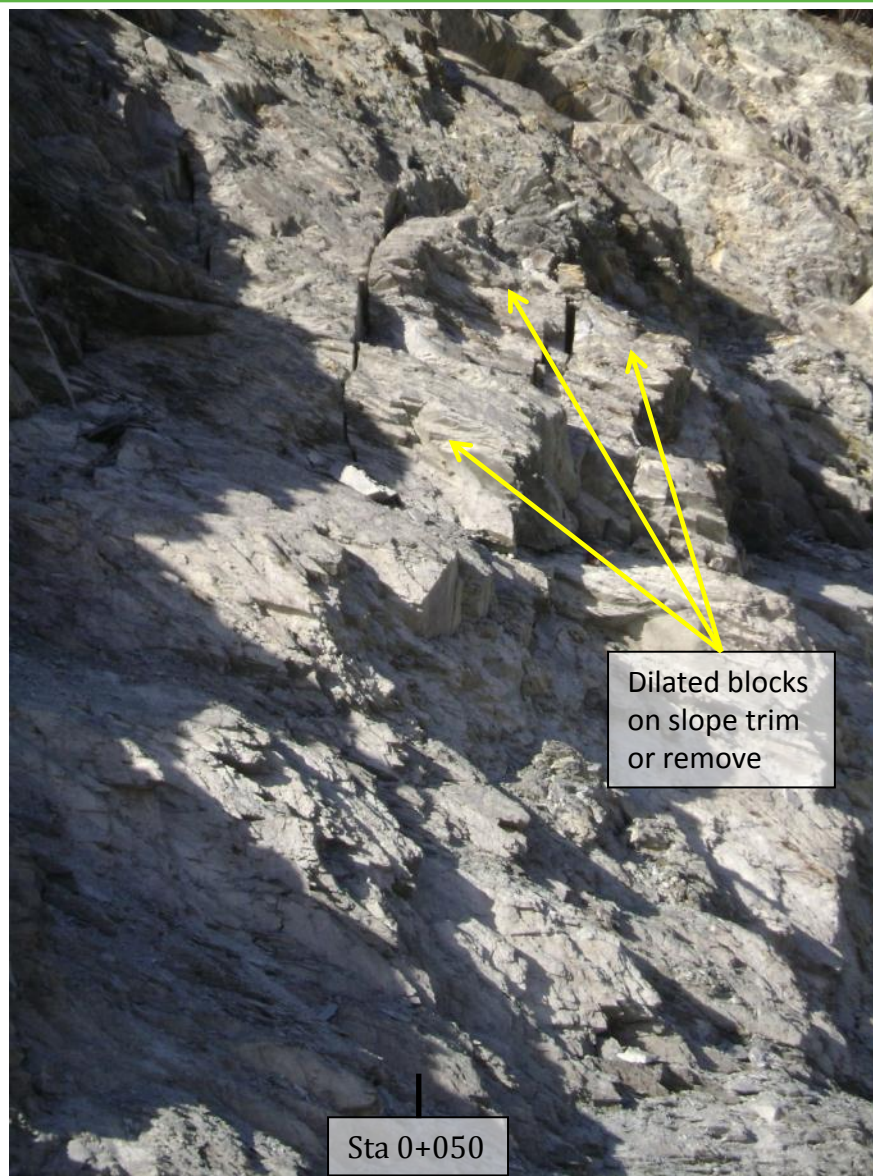
Install rock bolts
5x 5 m
25 linear metres

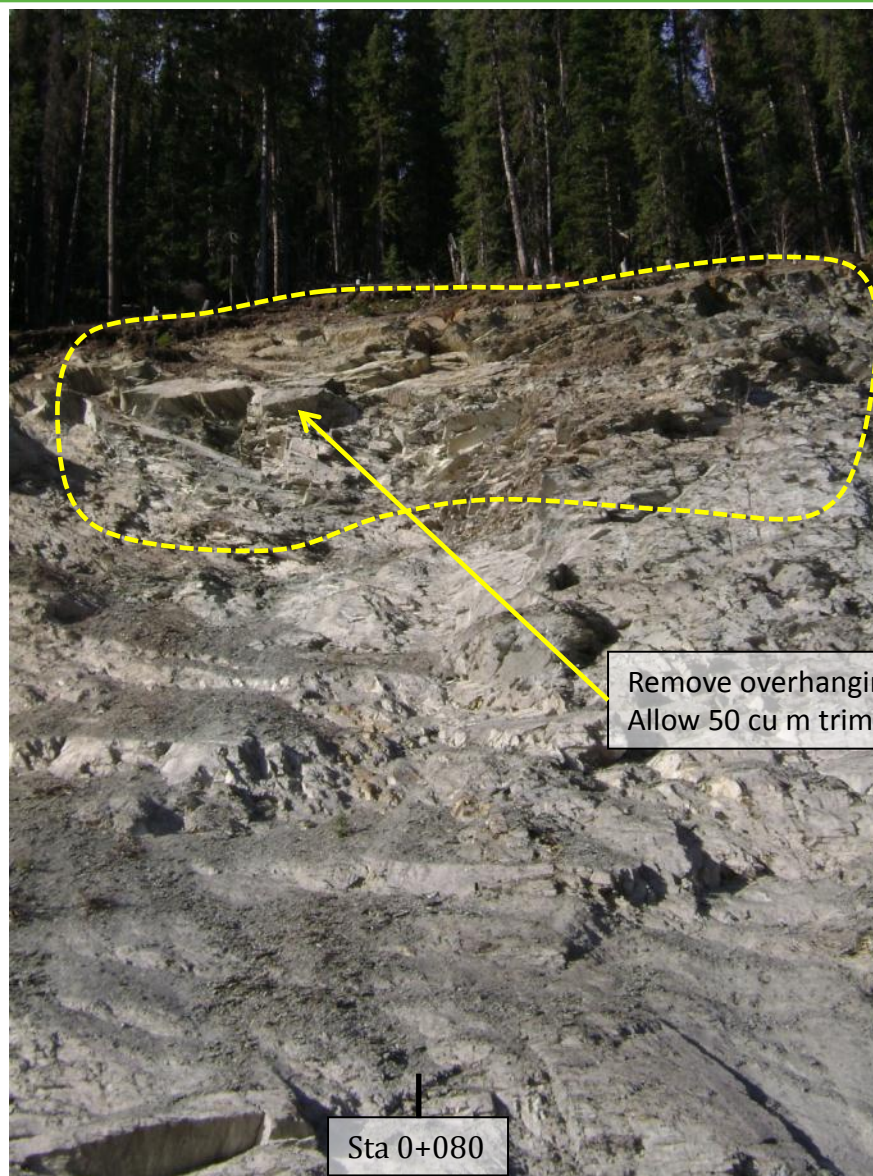
Sta 0+315

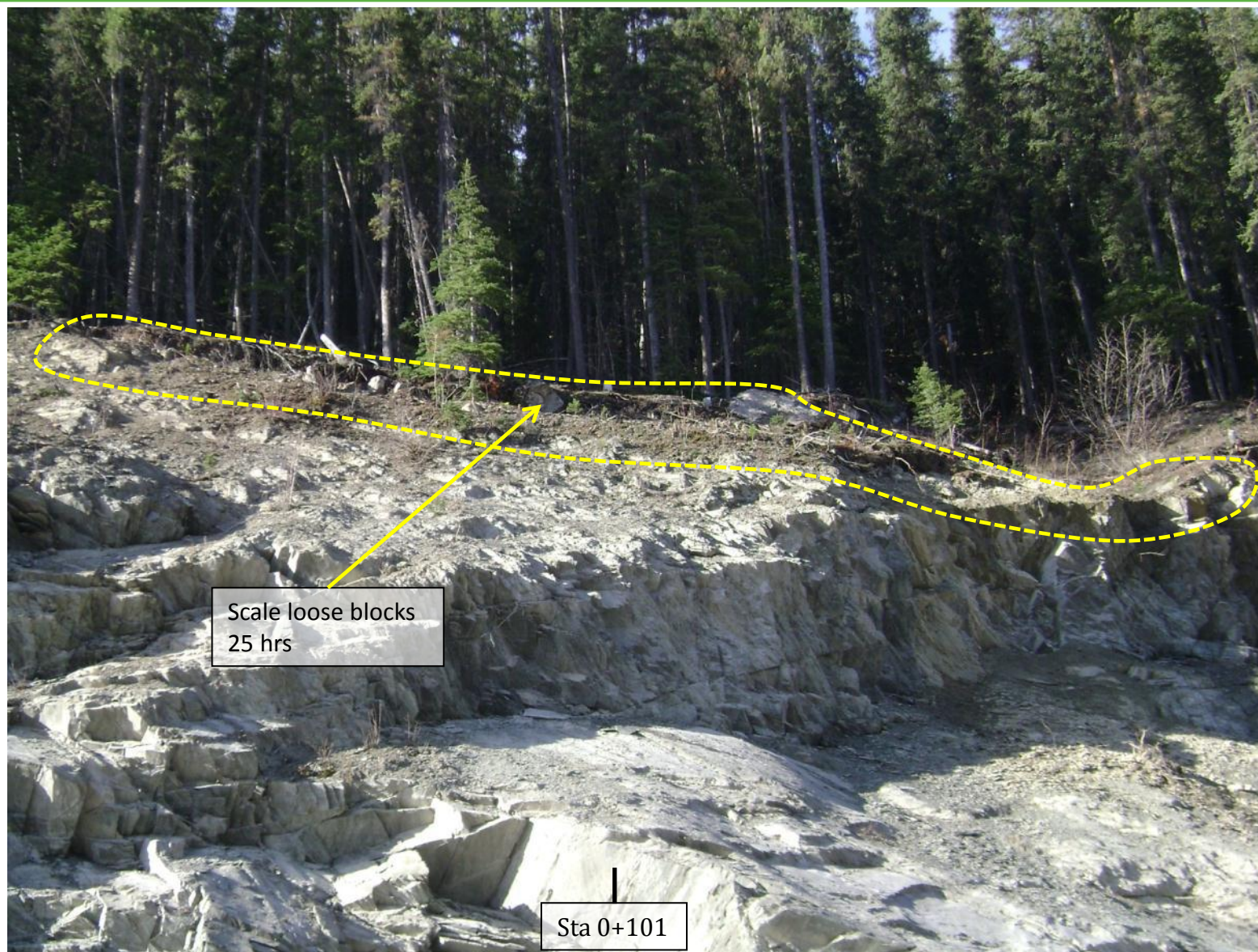












Scale loose blocks
25 hrs

Sta 0+101

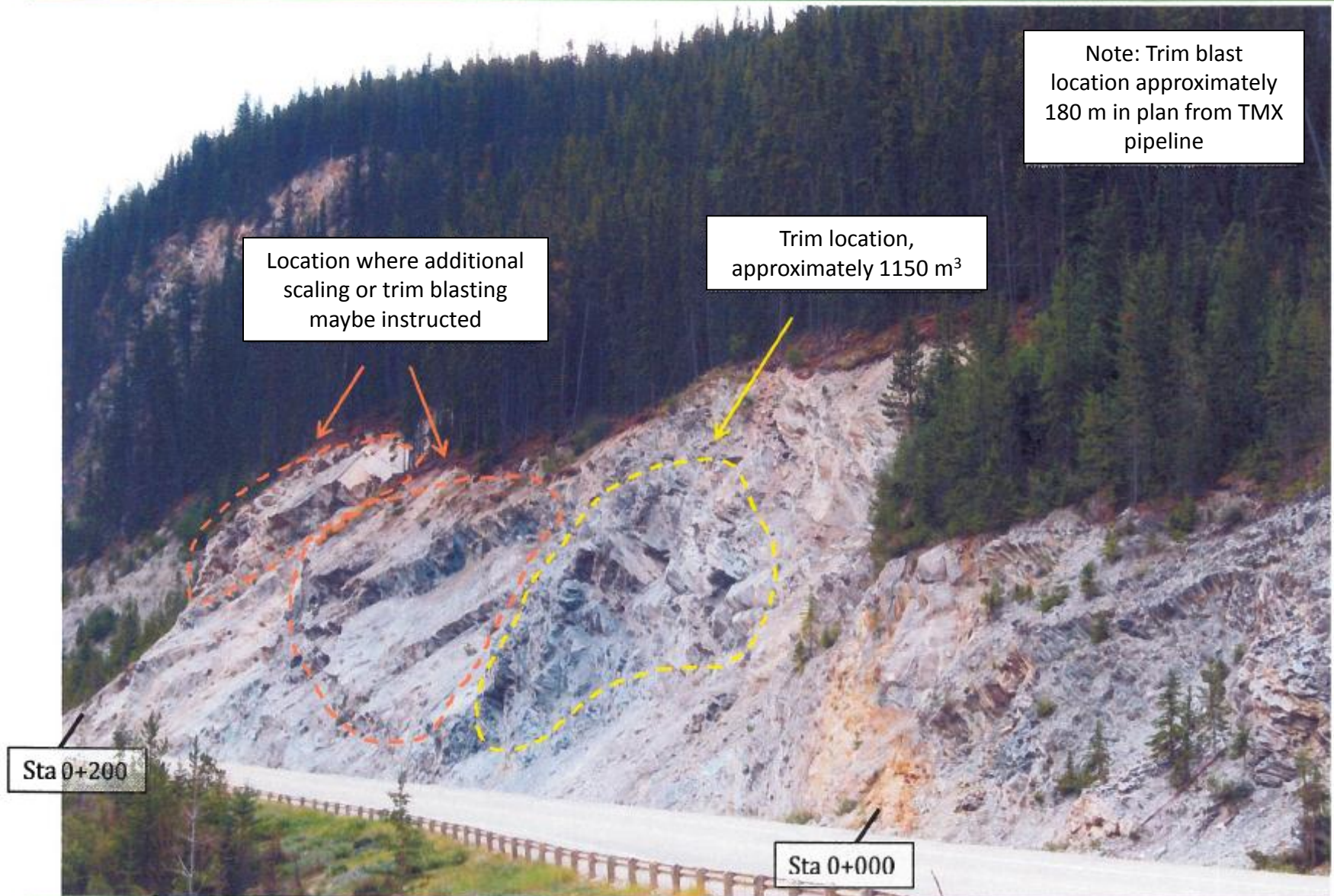
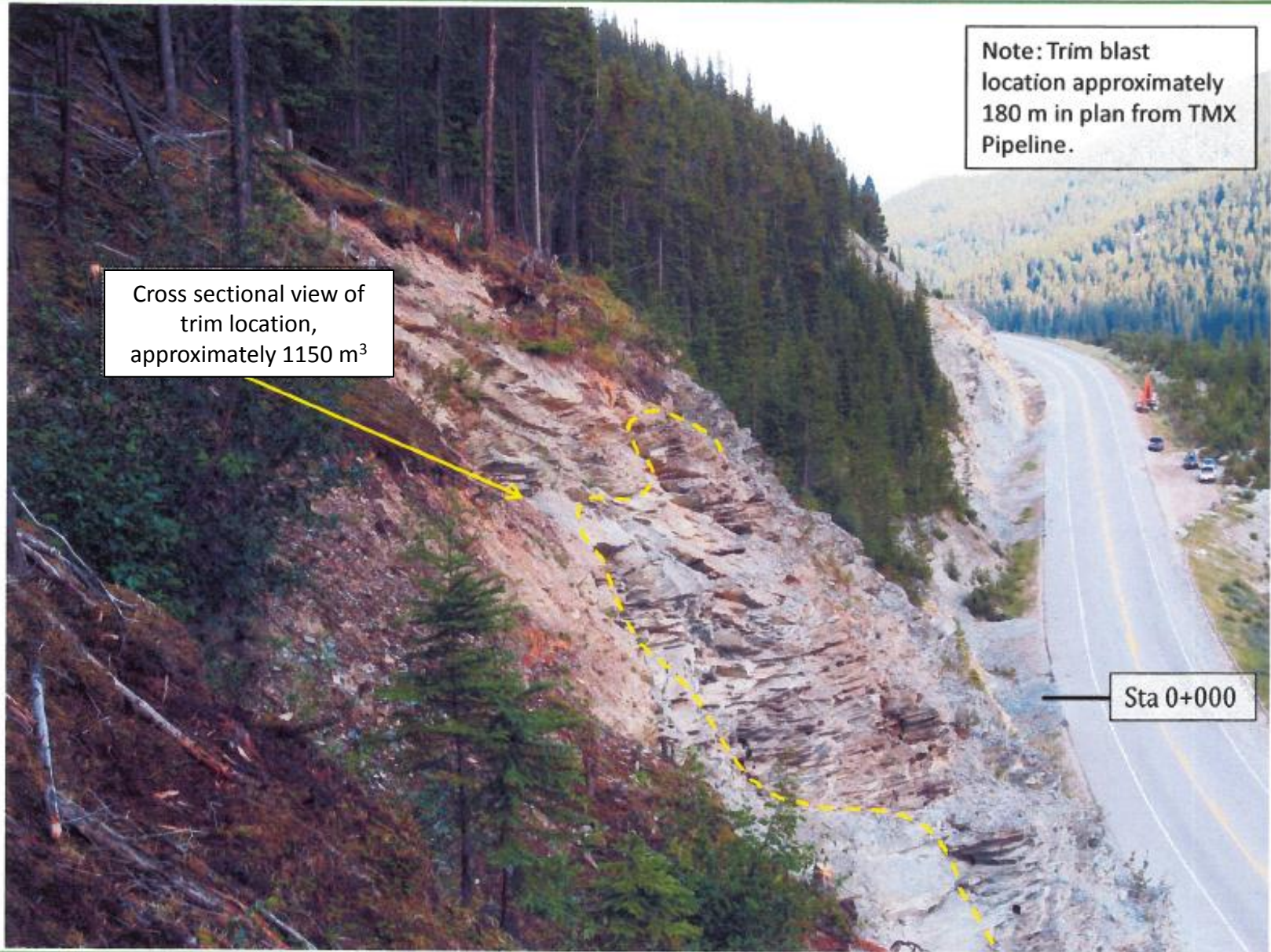
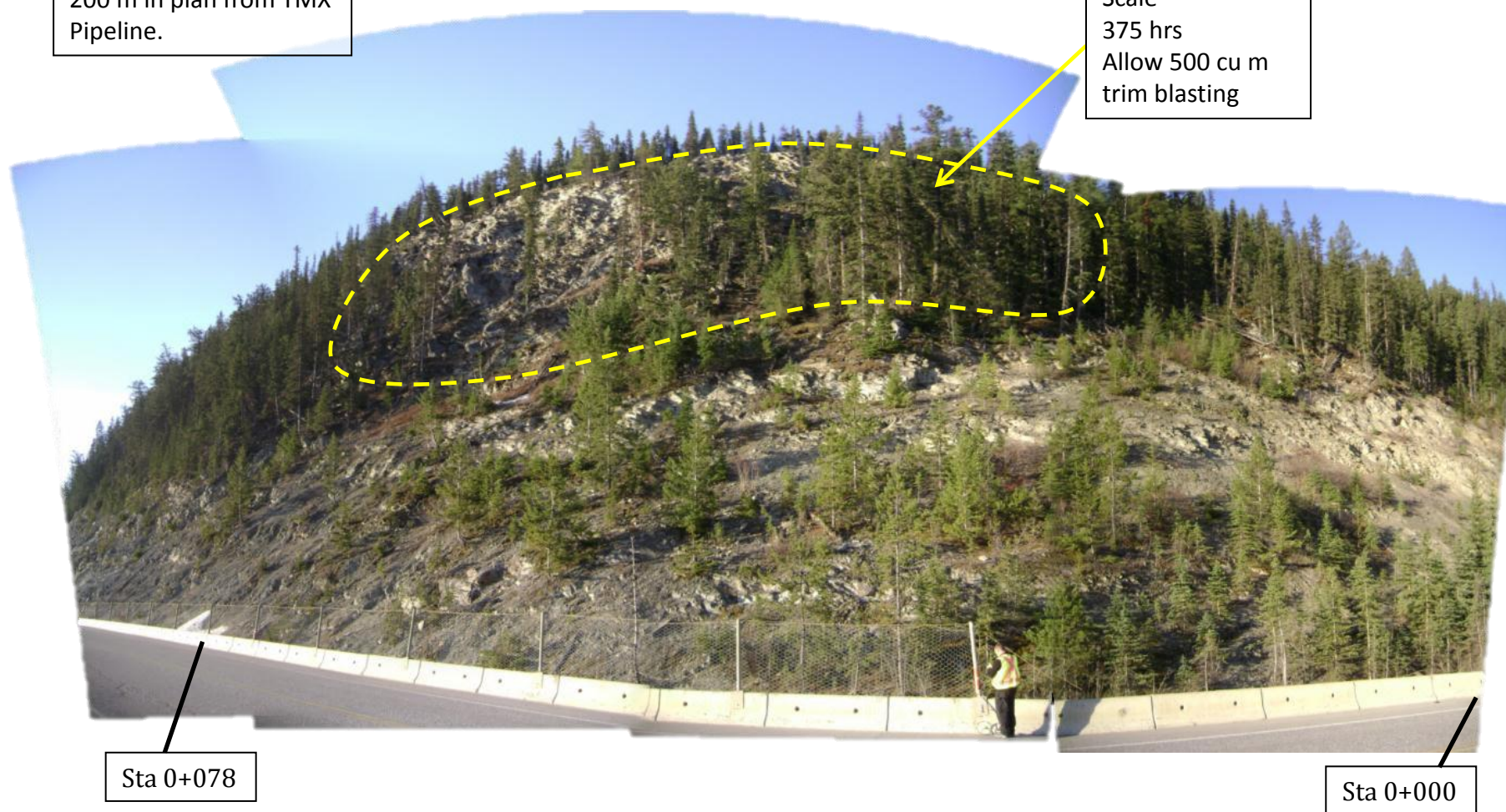


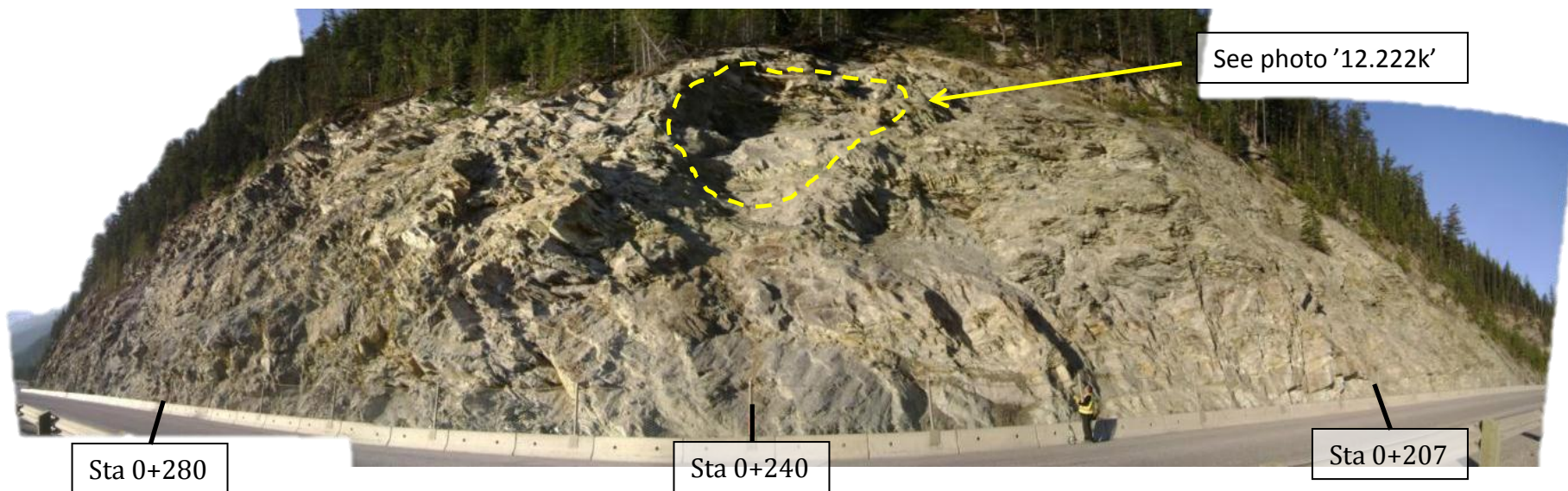
Photo Taken: July 28th, 2009

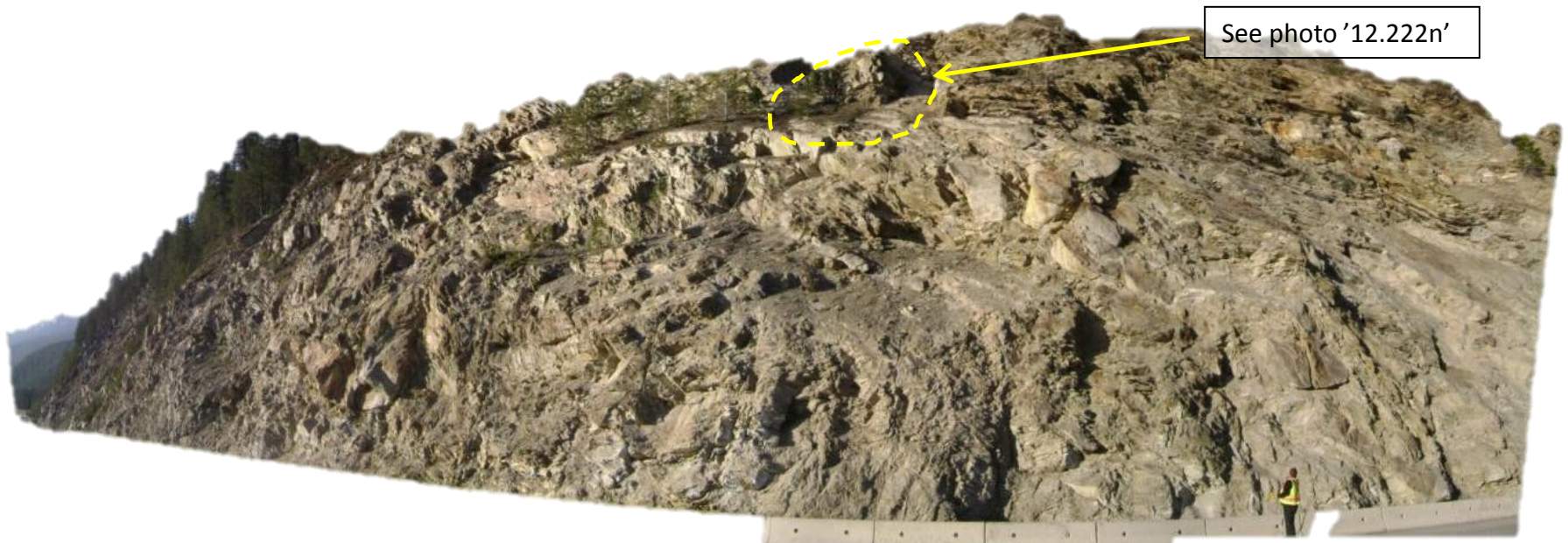


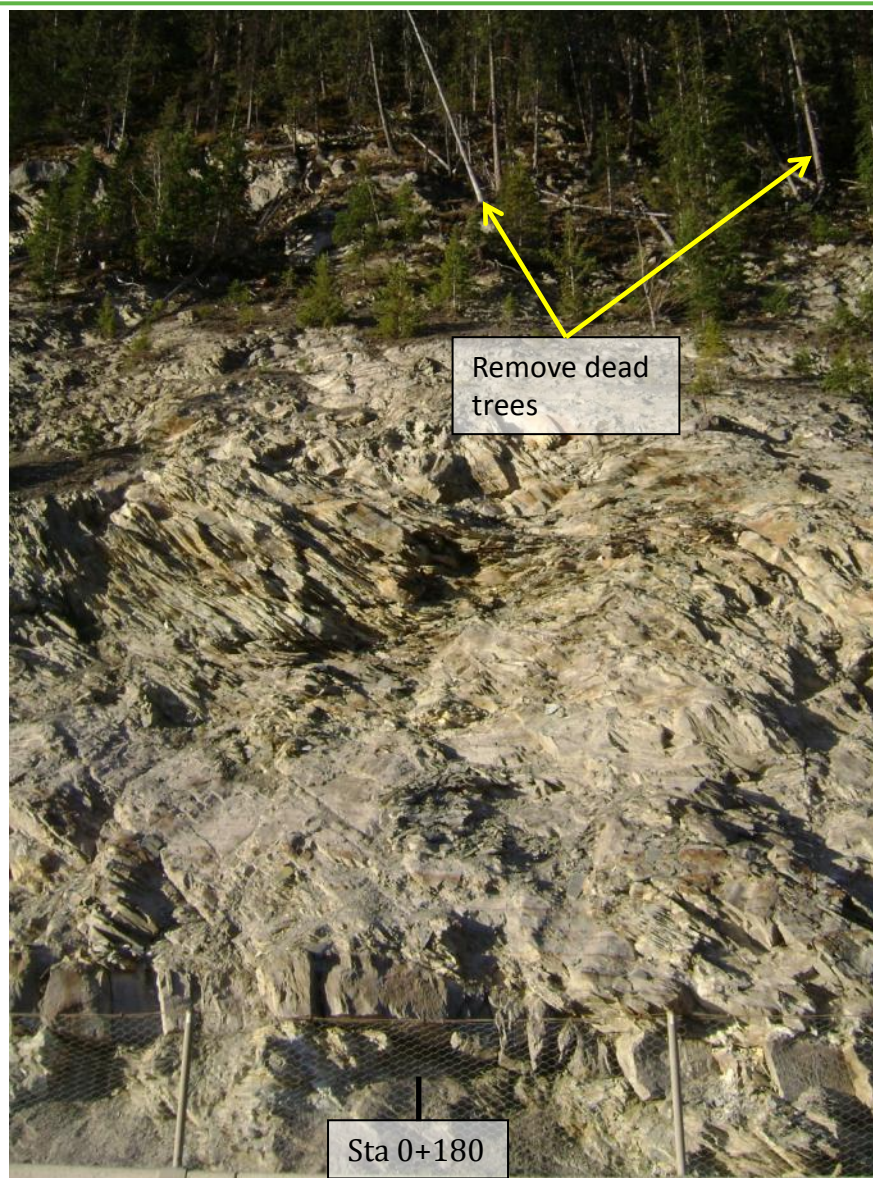
Note: Trim blast
location approximately
200 m in plan from TMX
Pipeline.

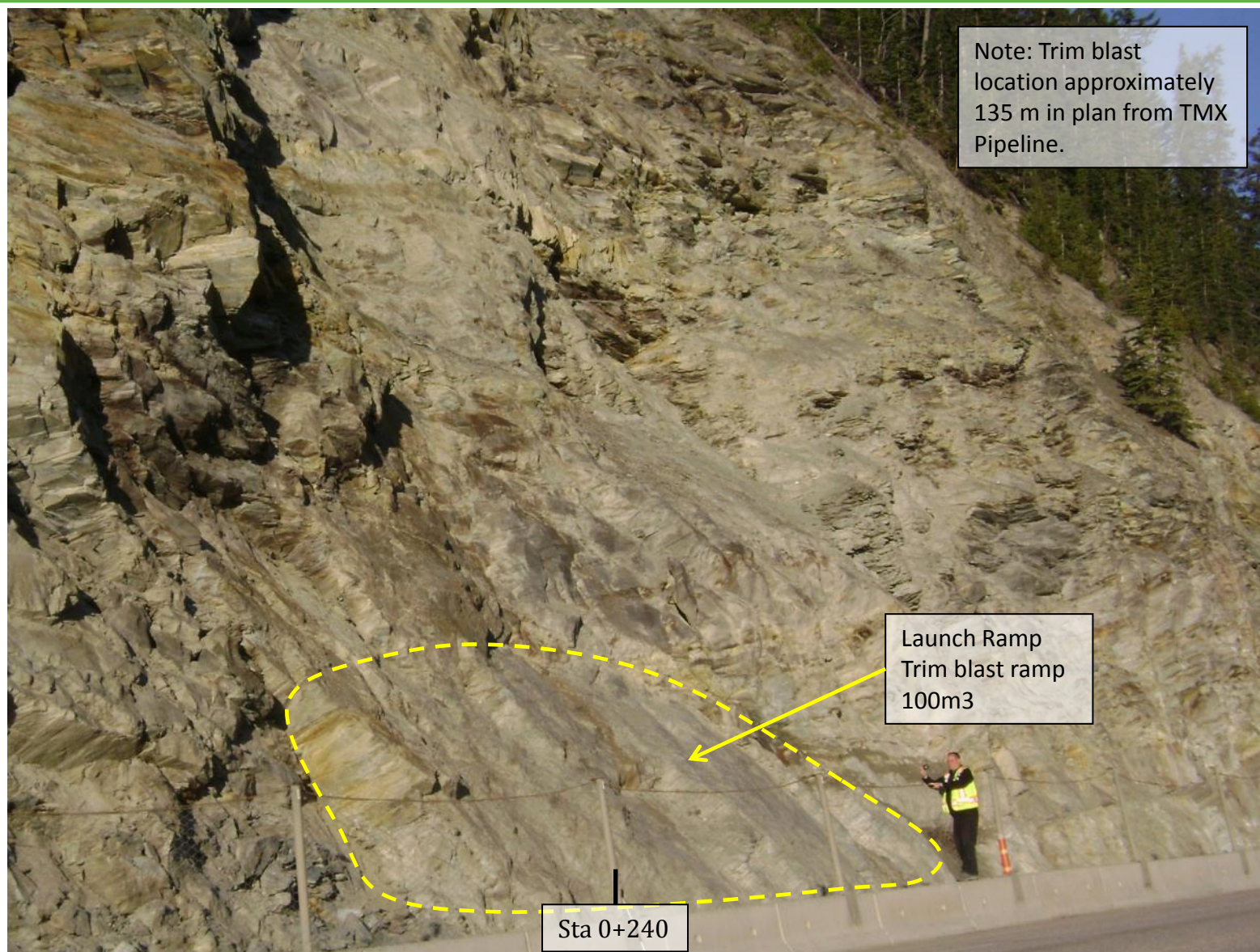
Scale
375 hrs
Allow 500 cu m
trim blasting

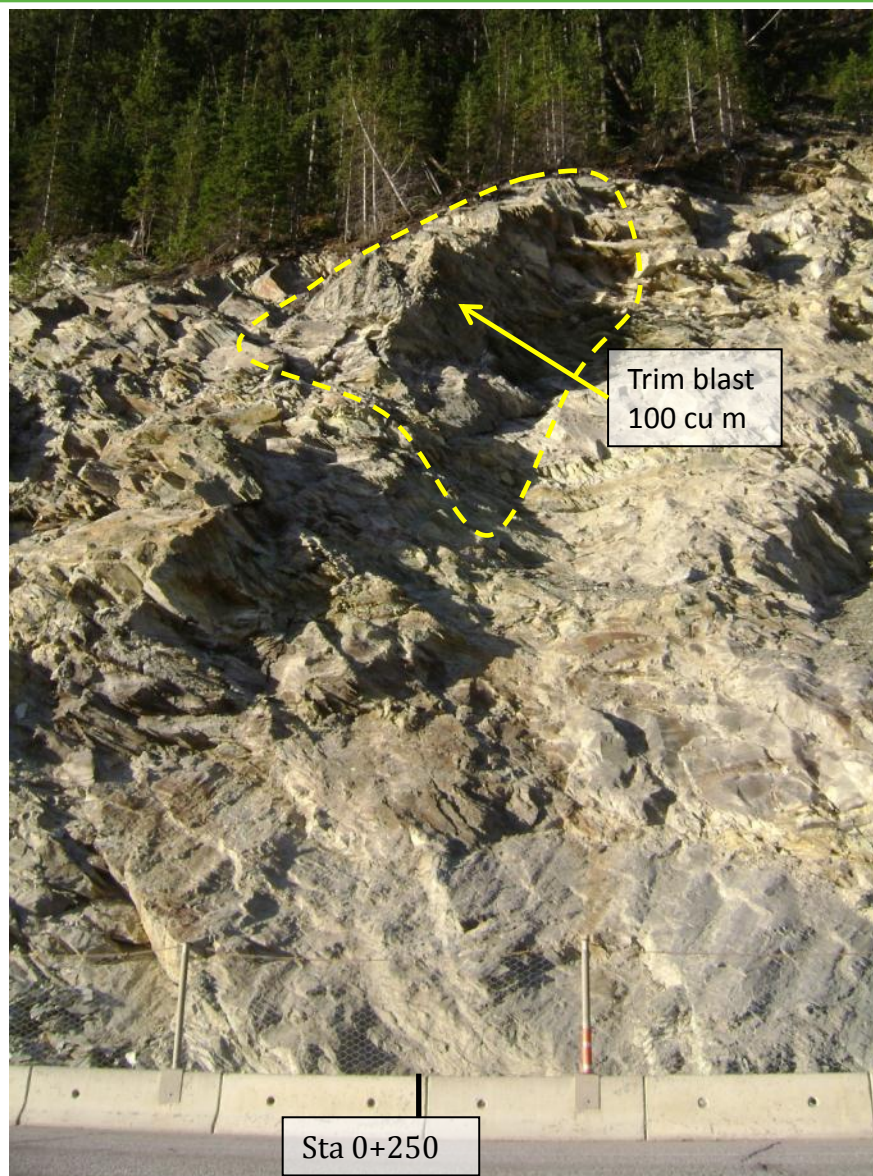




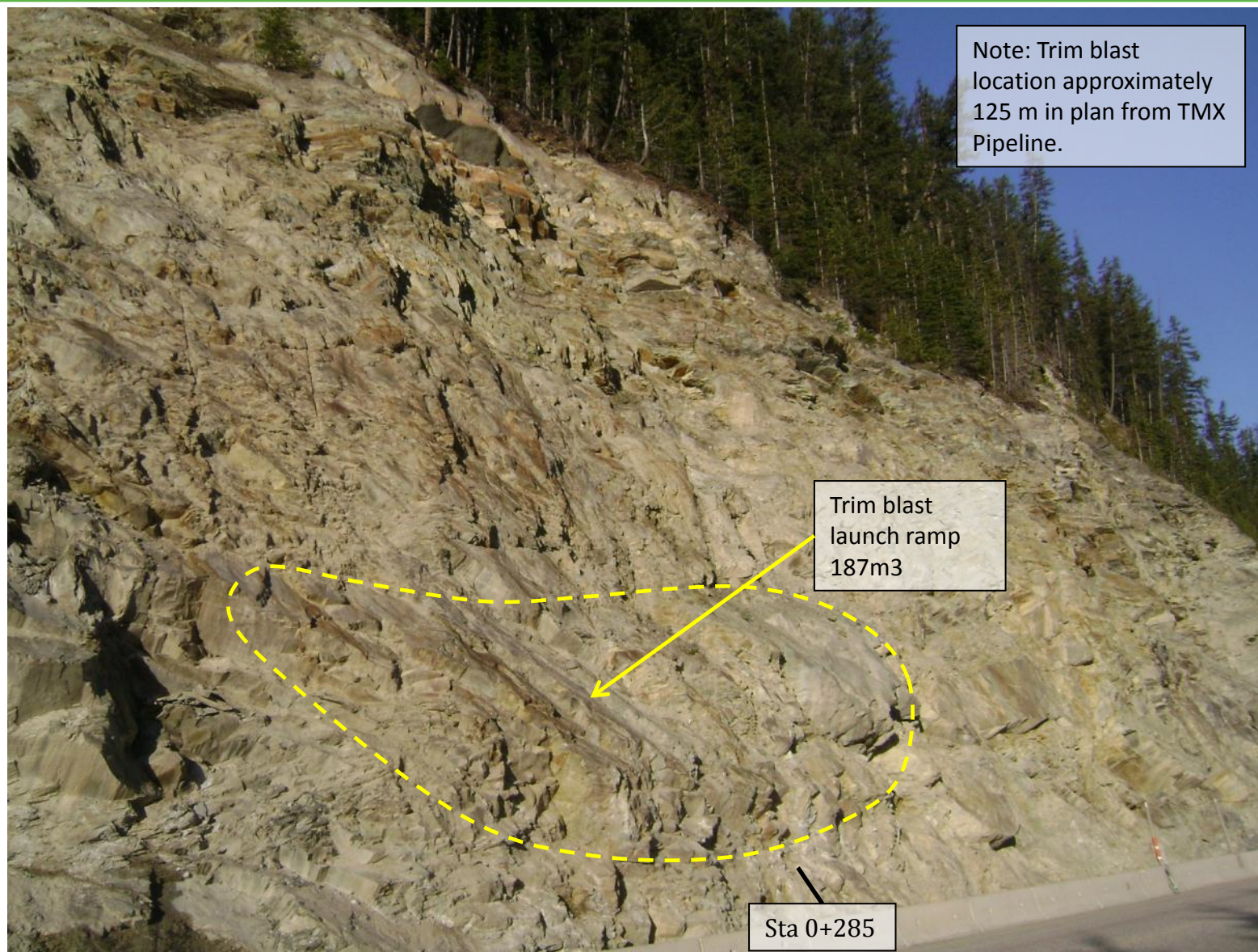


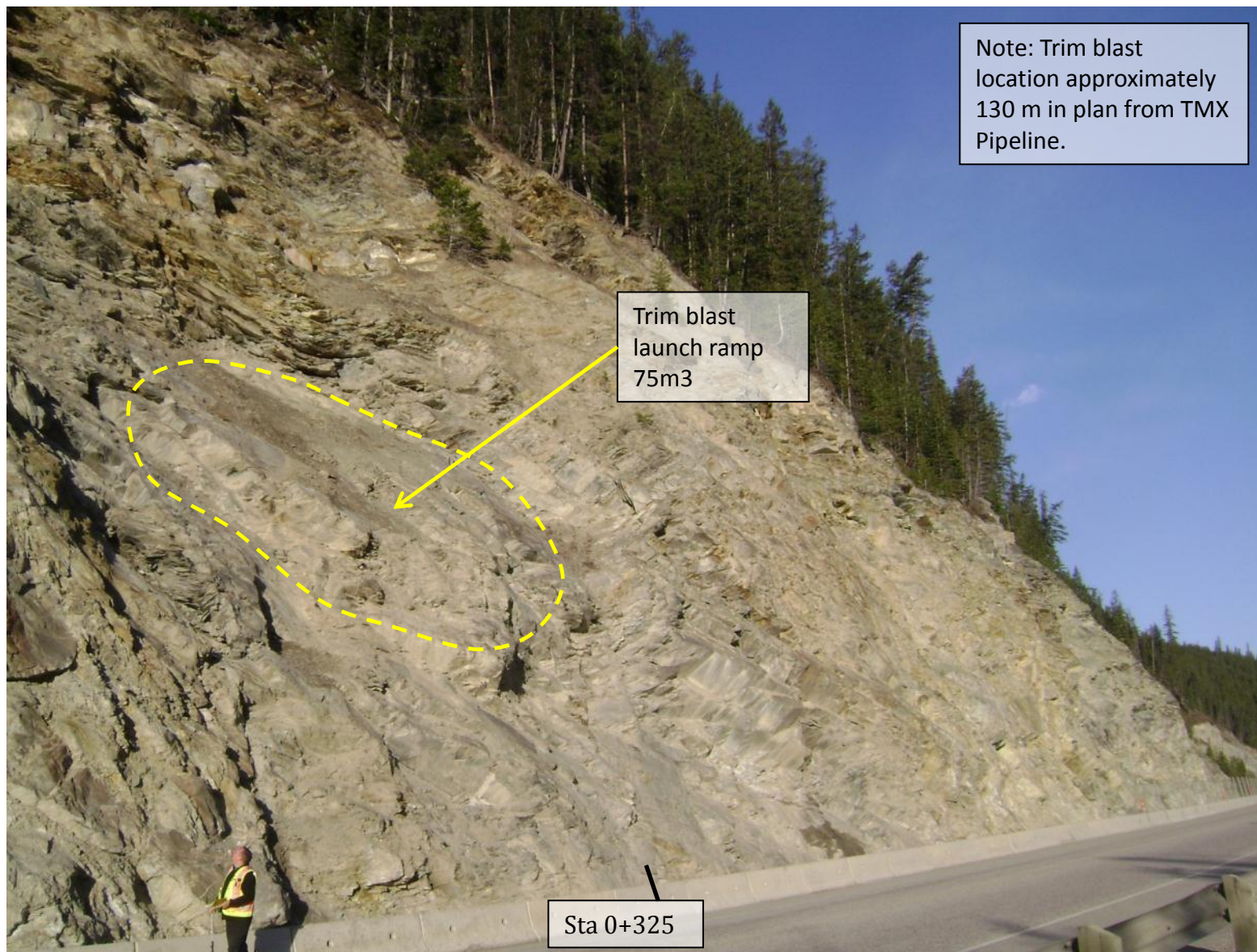


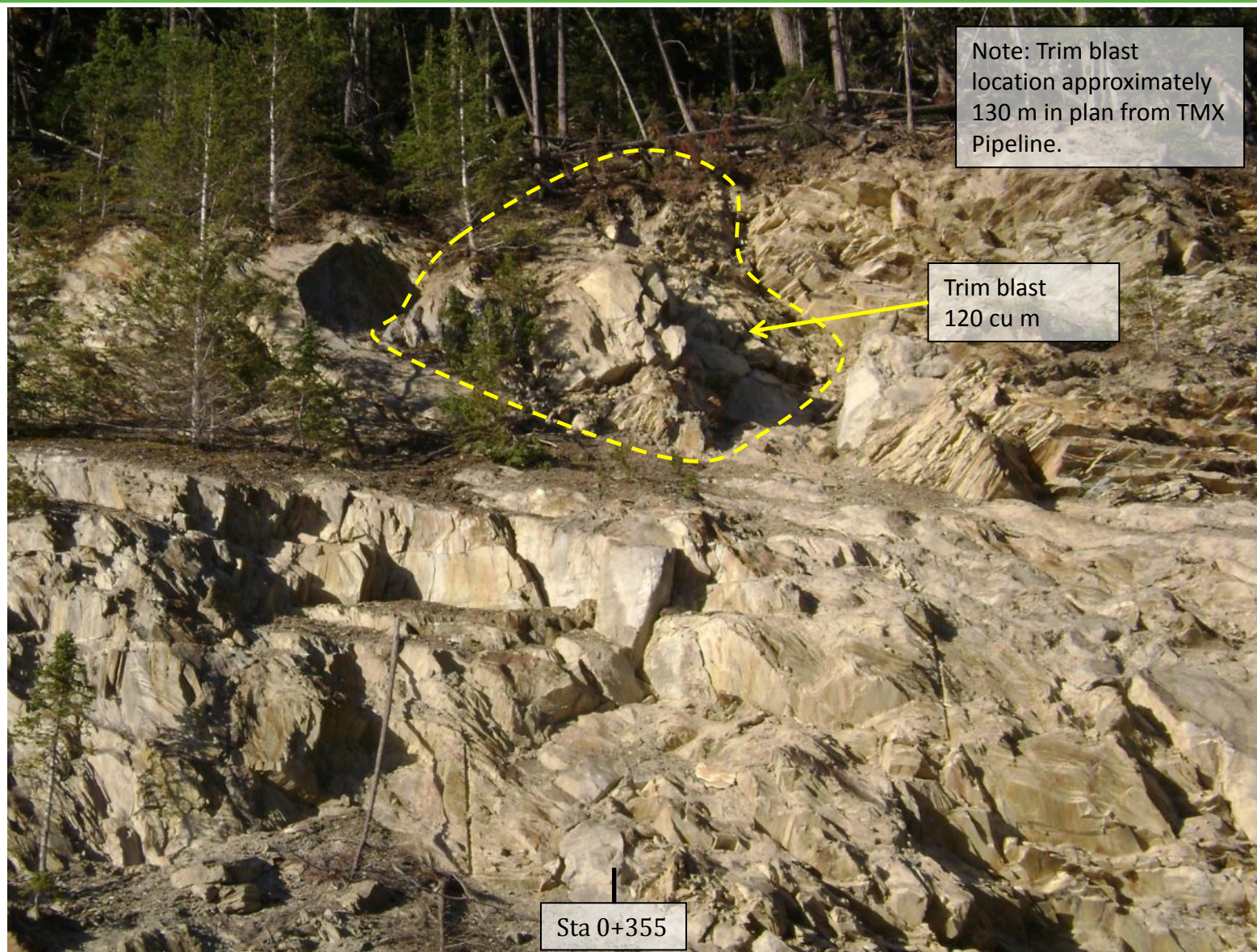


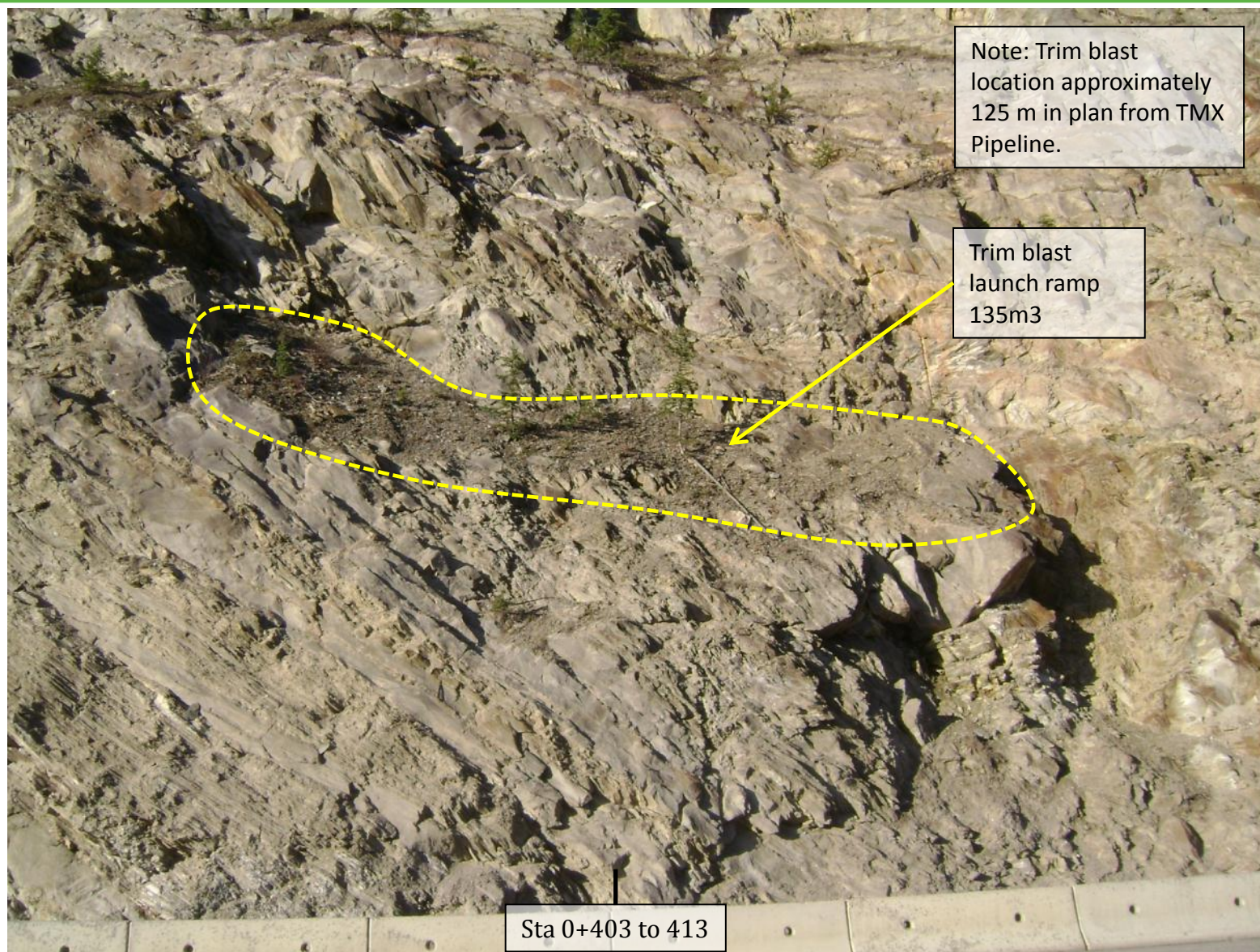


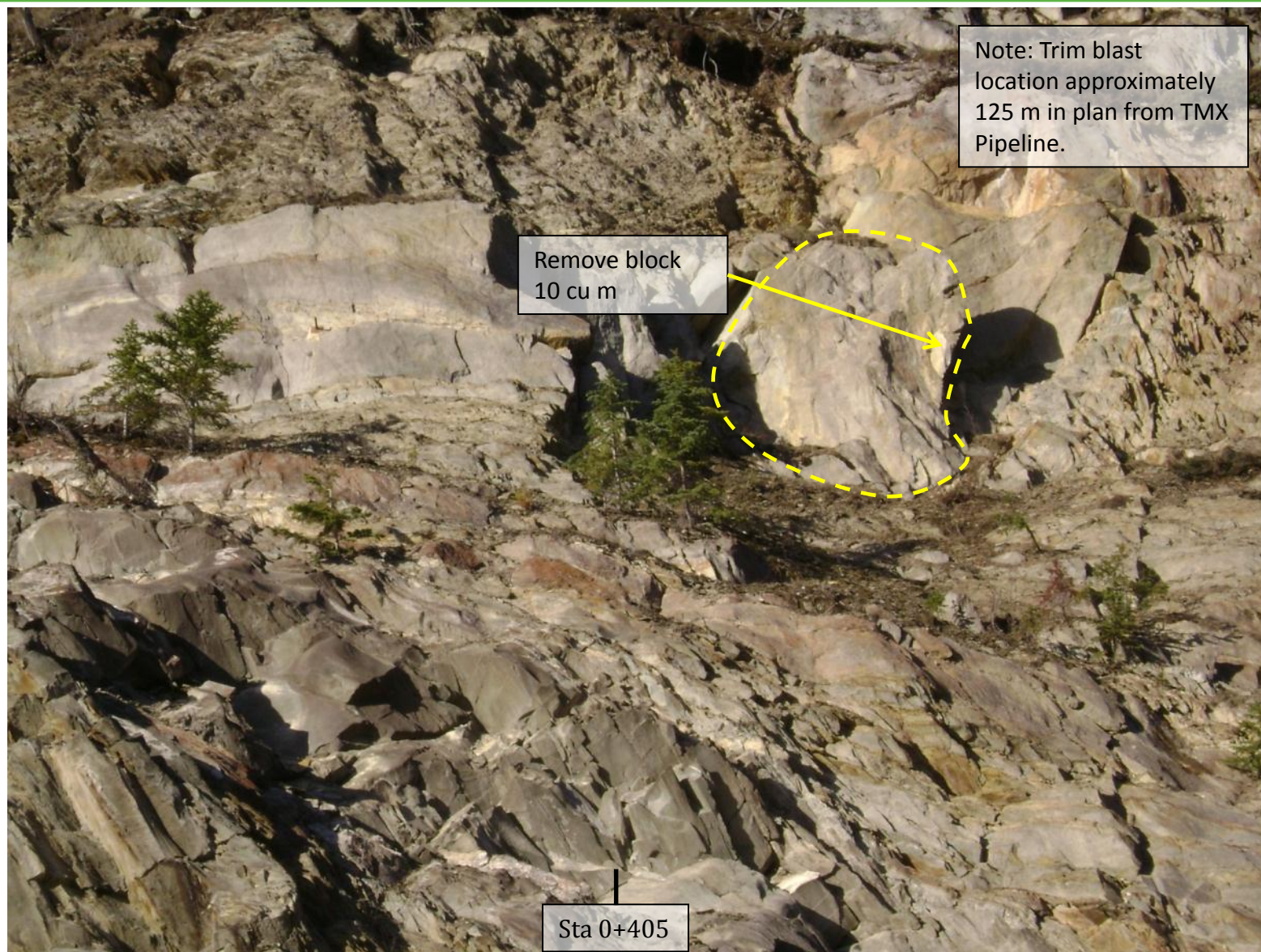
Note: Trim blast location approximately 140 m in plan from TMX Pipeline.

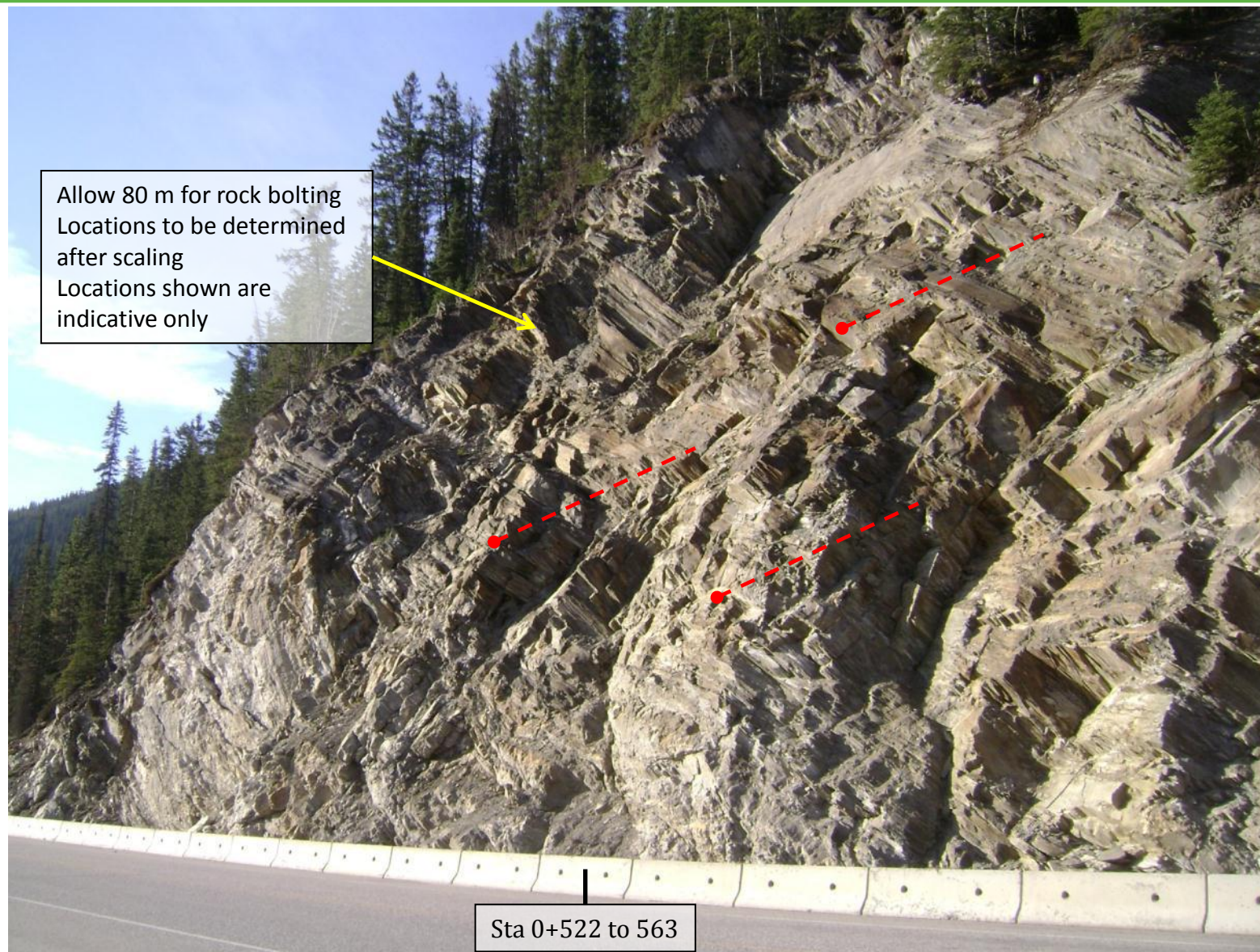


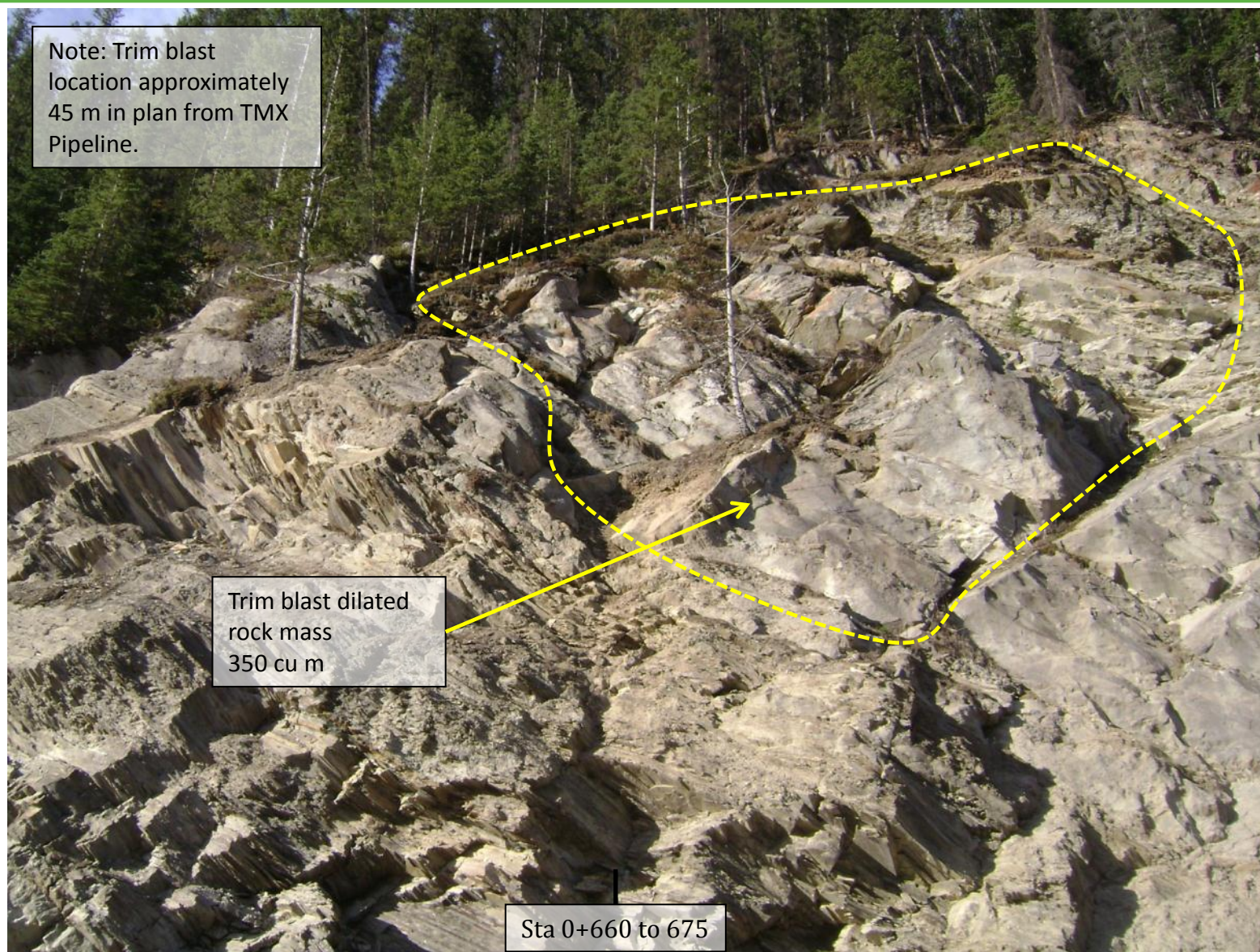


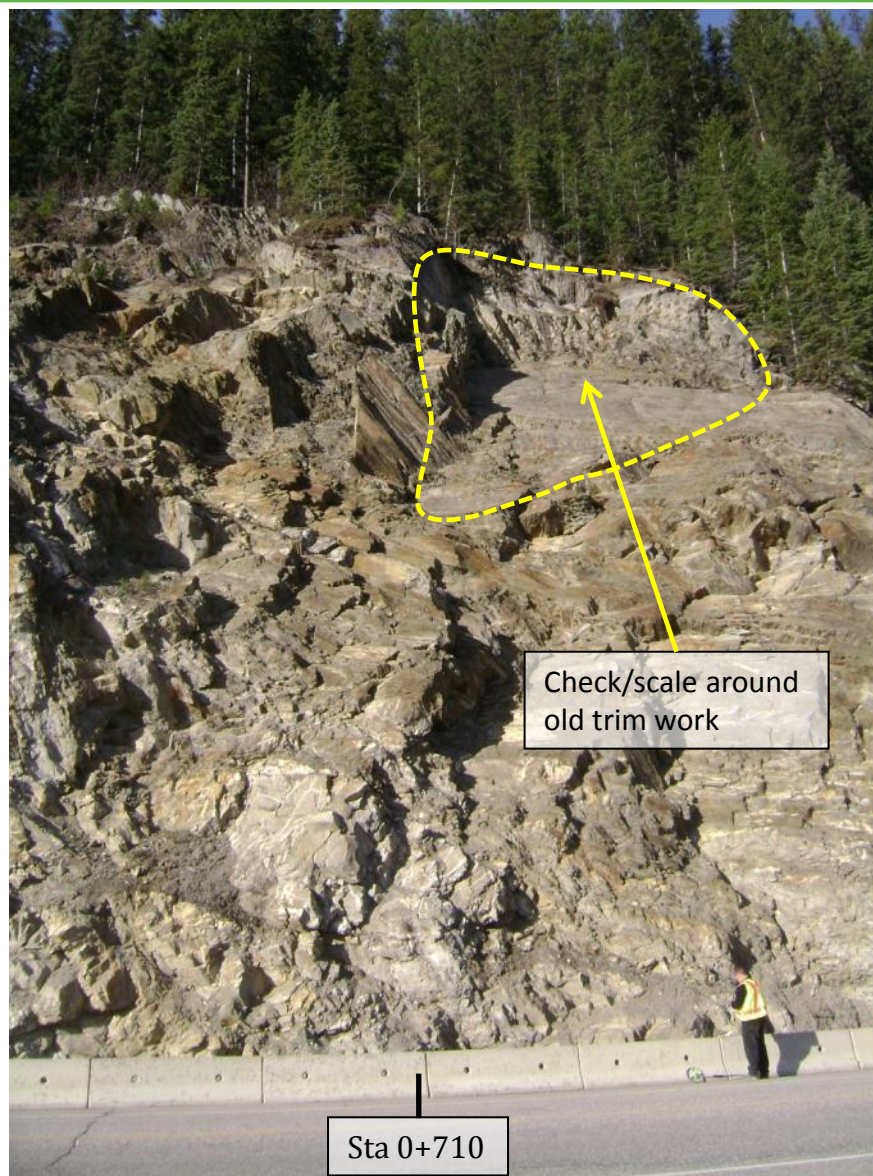






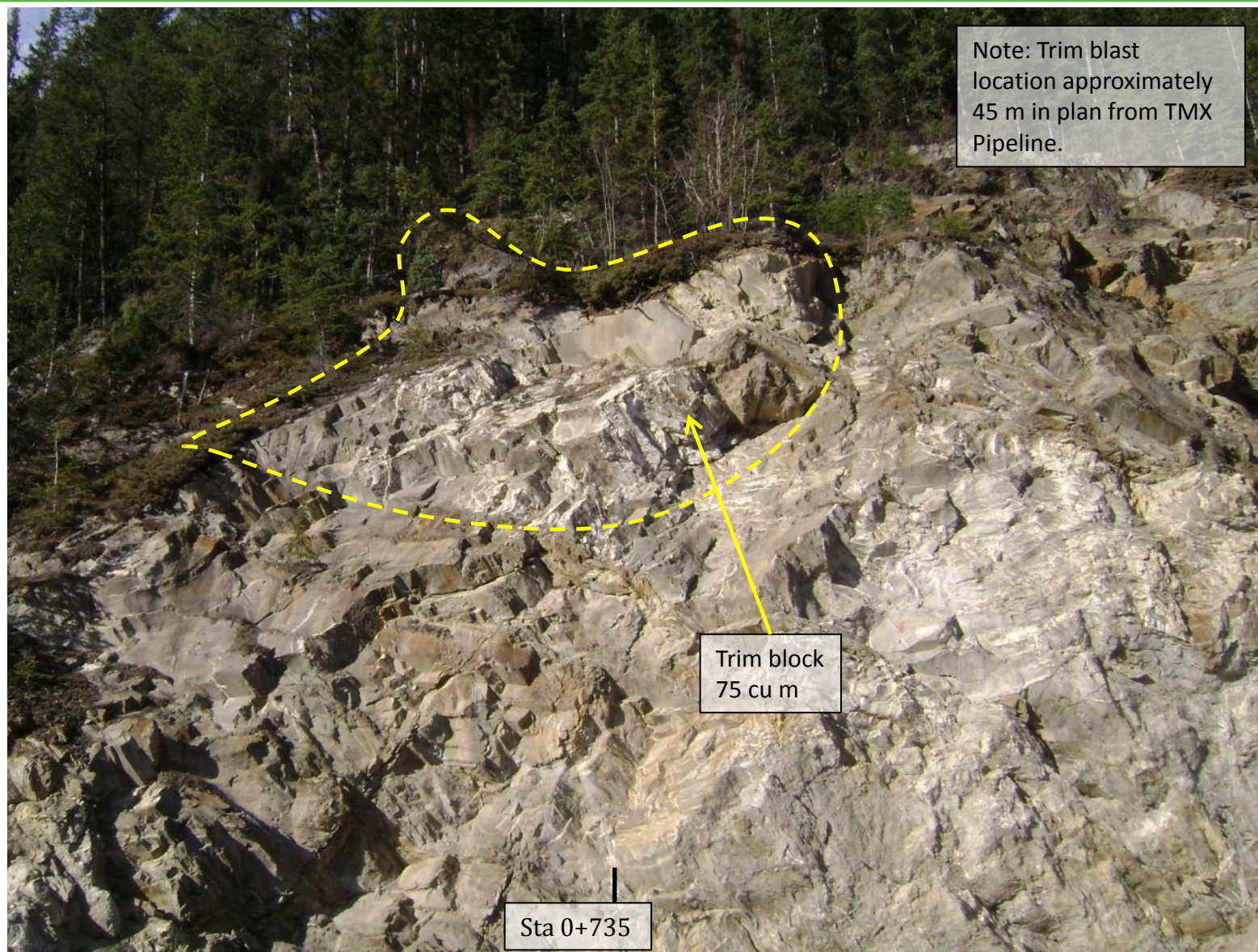




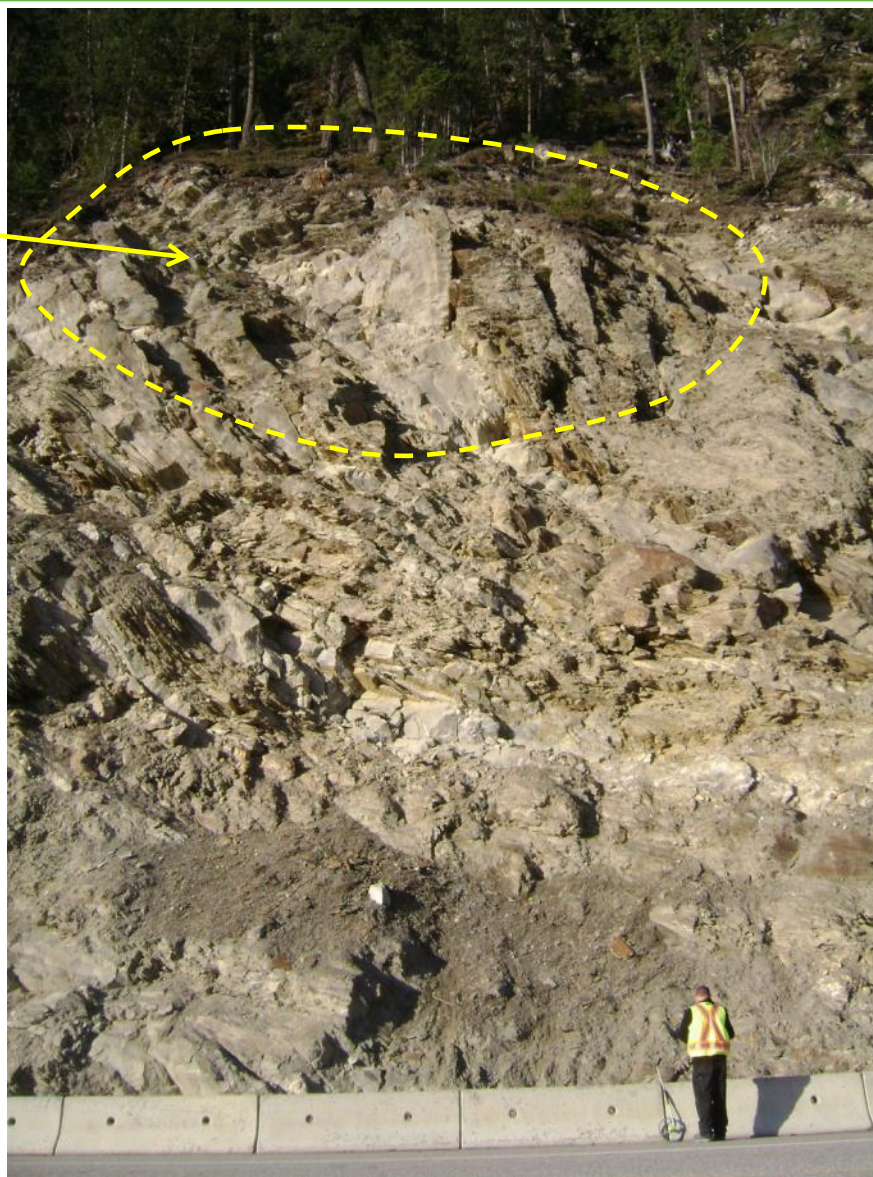


Check/scale around
old trim work

Sta 0+710



Check / scale



Relaxation of the rock
in the ditch causing
dilation of blocks



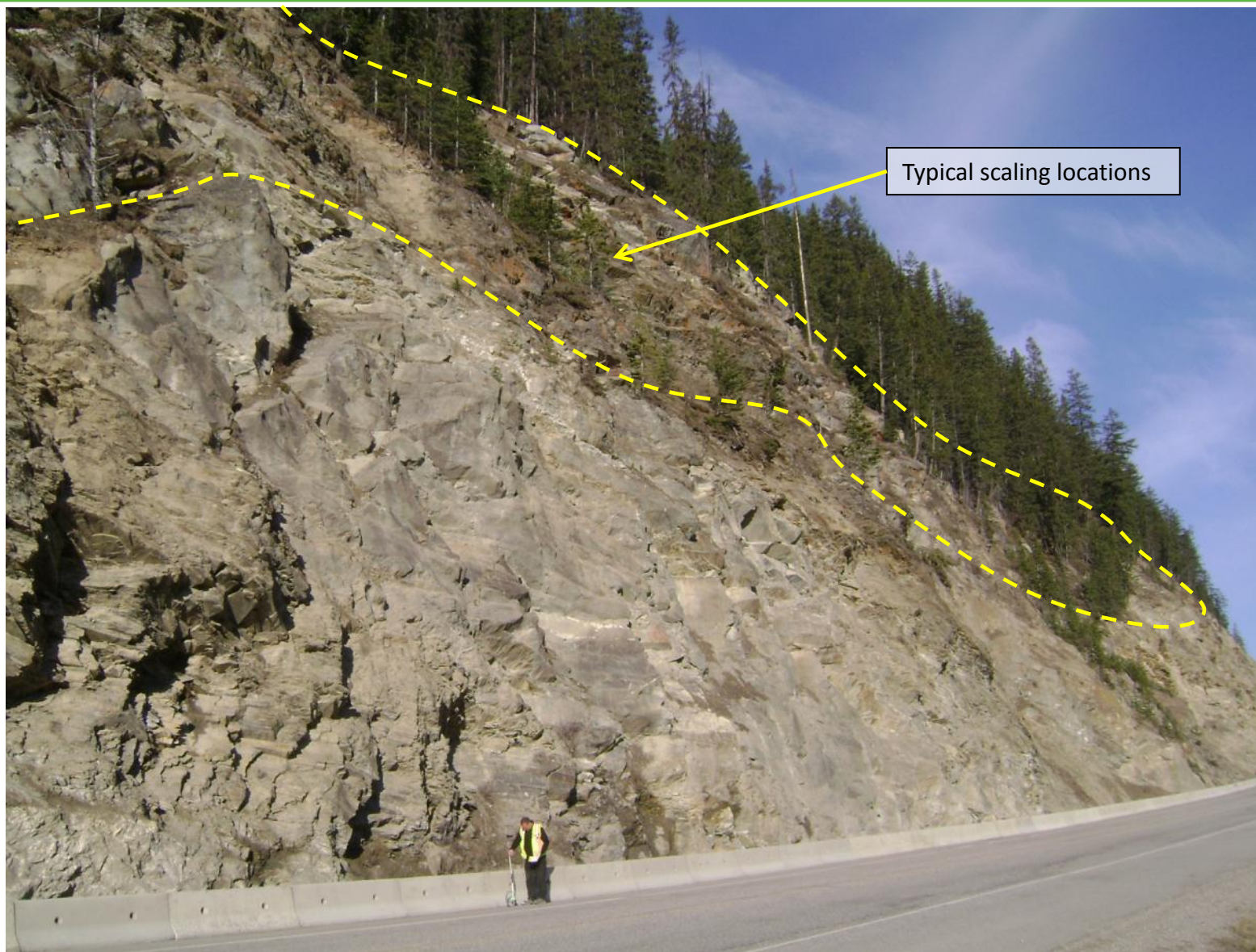


Photo Taken: May 13th, 2011