

Q:\Vancouver\Engineering\134\ProjectParks Canada Historical Projects GIS\Figures\JNP.mxd modified 5/22/2013 by anamaria.firbank

**LEGEND**

- X Disposal\_Sites
- ☆ Priority Locations
- National Parks
- freeway
- highway
- arterial
- collector

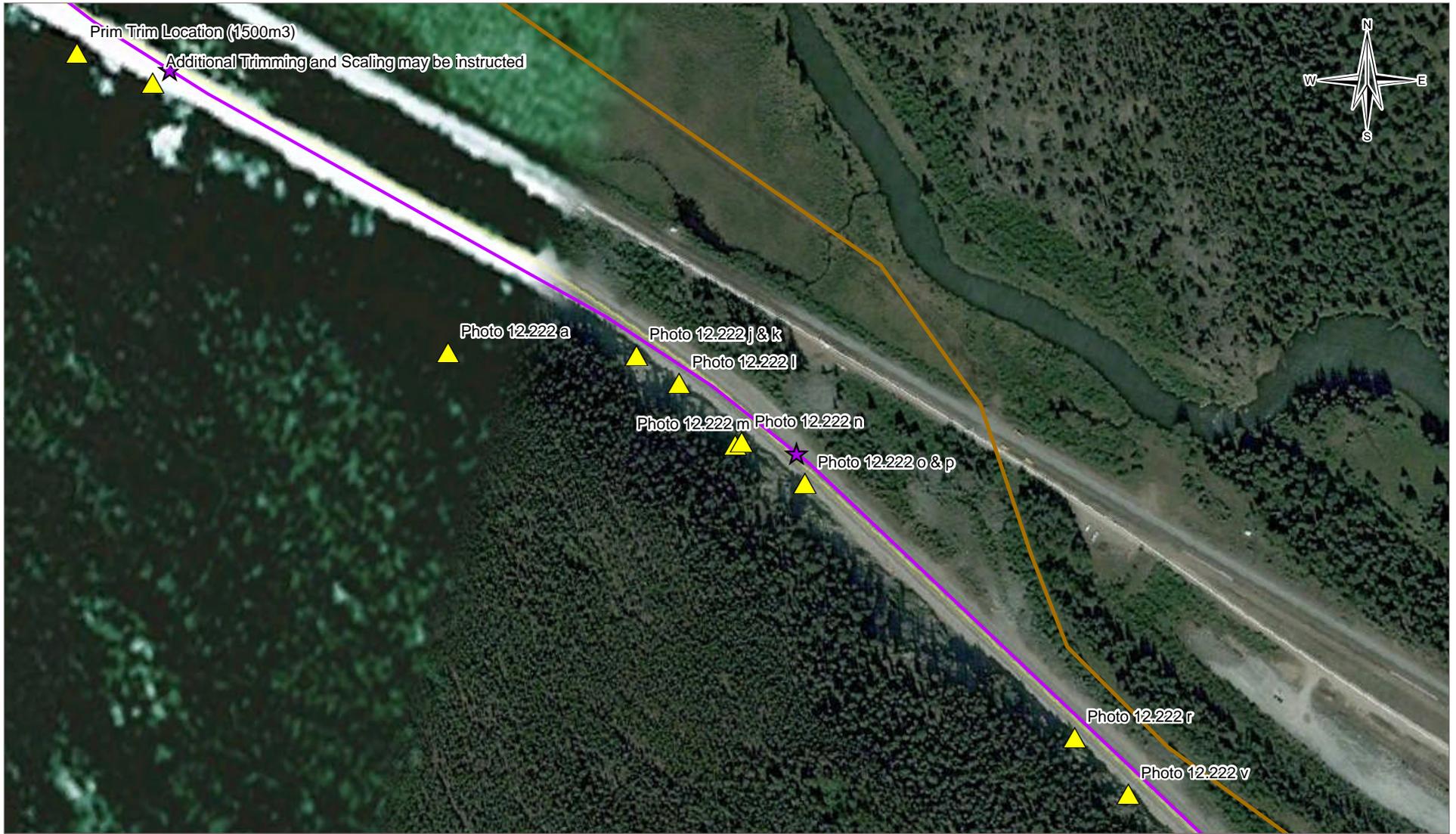
**NOTES**  
Base data source: Imagery provided by Google Earth Pro

**STATUS**  
Issued for Review

**PRIORITIZED ROCK SLOPE STABILIZATION WORK**

**Jasper National Park**

<b>PROJECTION</b> UTM Zone 11		<b>DATUM</b> NAD83		<b>CLIENT</b> Parks Canada	
Scale: 1:1,000,000 Kilometres					
<b>FILE NO.</b> JNP.mxd					
<b>PROJECT NO.</b> V13403021-01		<b>DWN</b> AMF	<b>CKD</b> AN	<b>APVD</b> CH	<b>REV</b> 0
<b>OFFICE</b> EBA-VANC		<b>DATE</b> May 9, 2013			
<b>A TETRA TECH COMPANY</b>					<b>Figure 1</b>

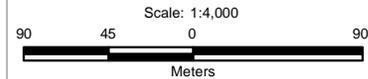


**LEGEND**

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

**NOTES**

Base data source: Google Pro Satellite Image



**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**

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

**STATUS**  
ISSUED FOR REVIEW

**Figure 2**

## Summary of Work by Rock Slope

Park	Slope Reference	Type of Work	Estimated Quantity
<b>Jasper National Park</b>		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

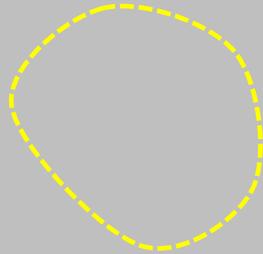
Jasper National Park Km 11.872 to 12.125

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

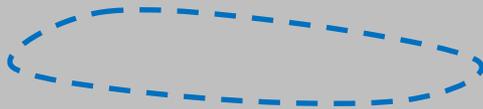
# Legend



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



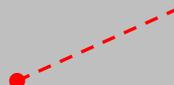
Approximate area of trim blasting



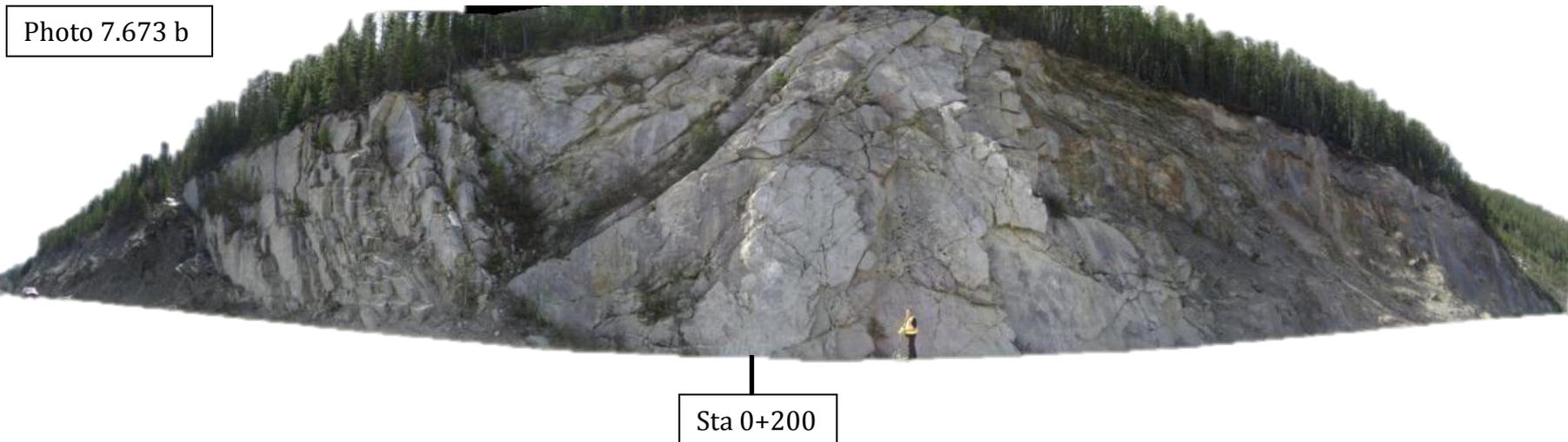
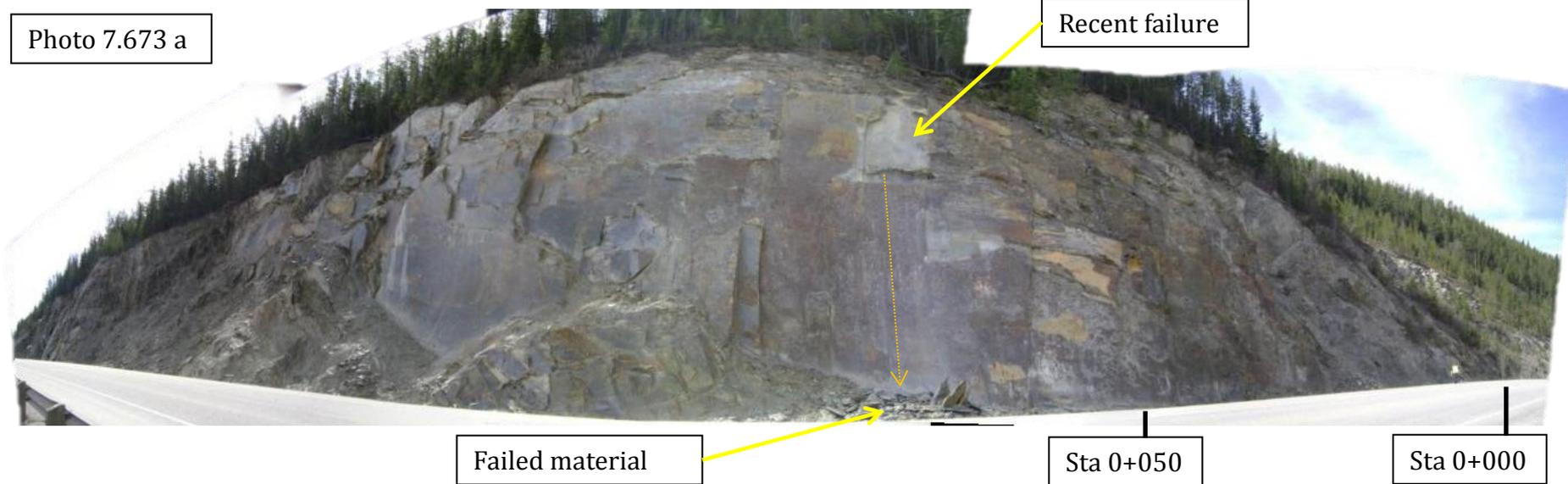
Approximate area of common excavation

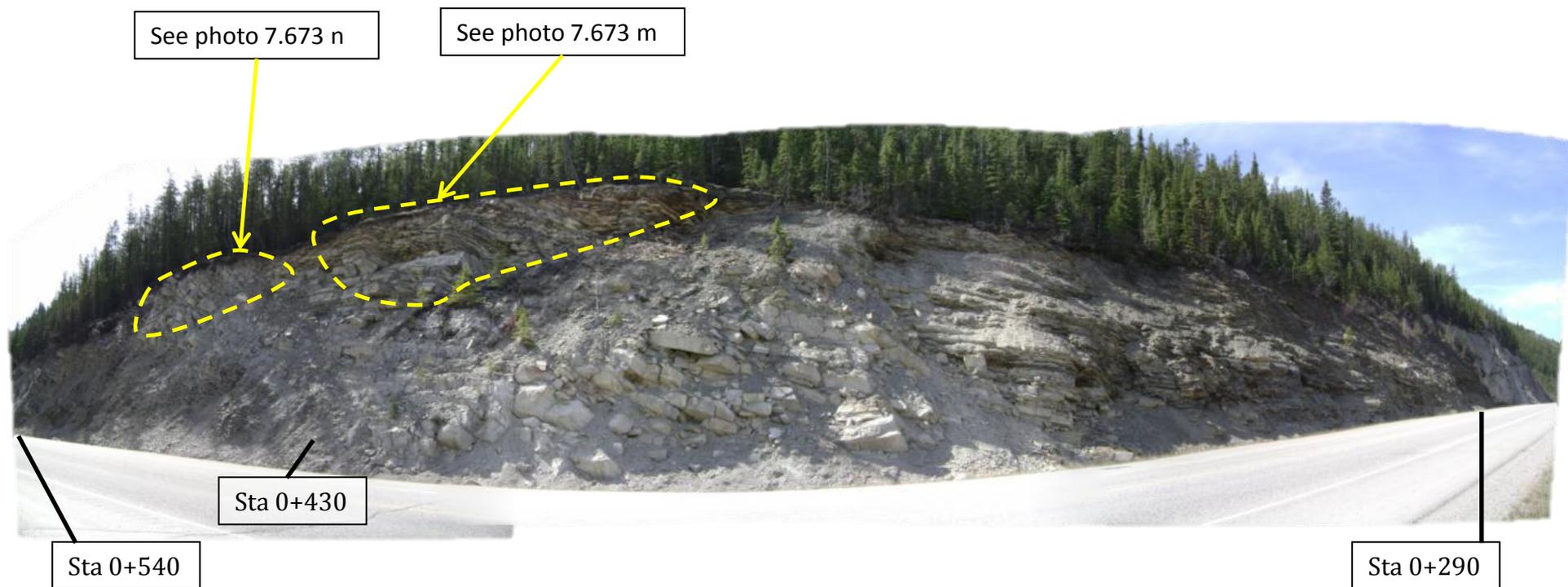


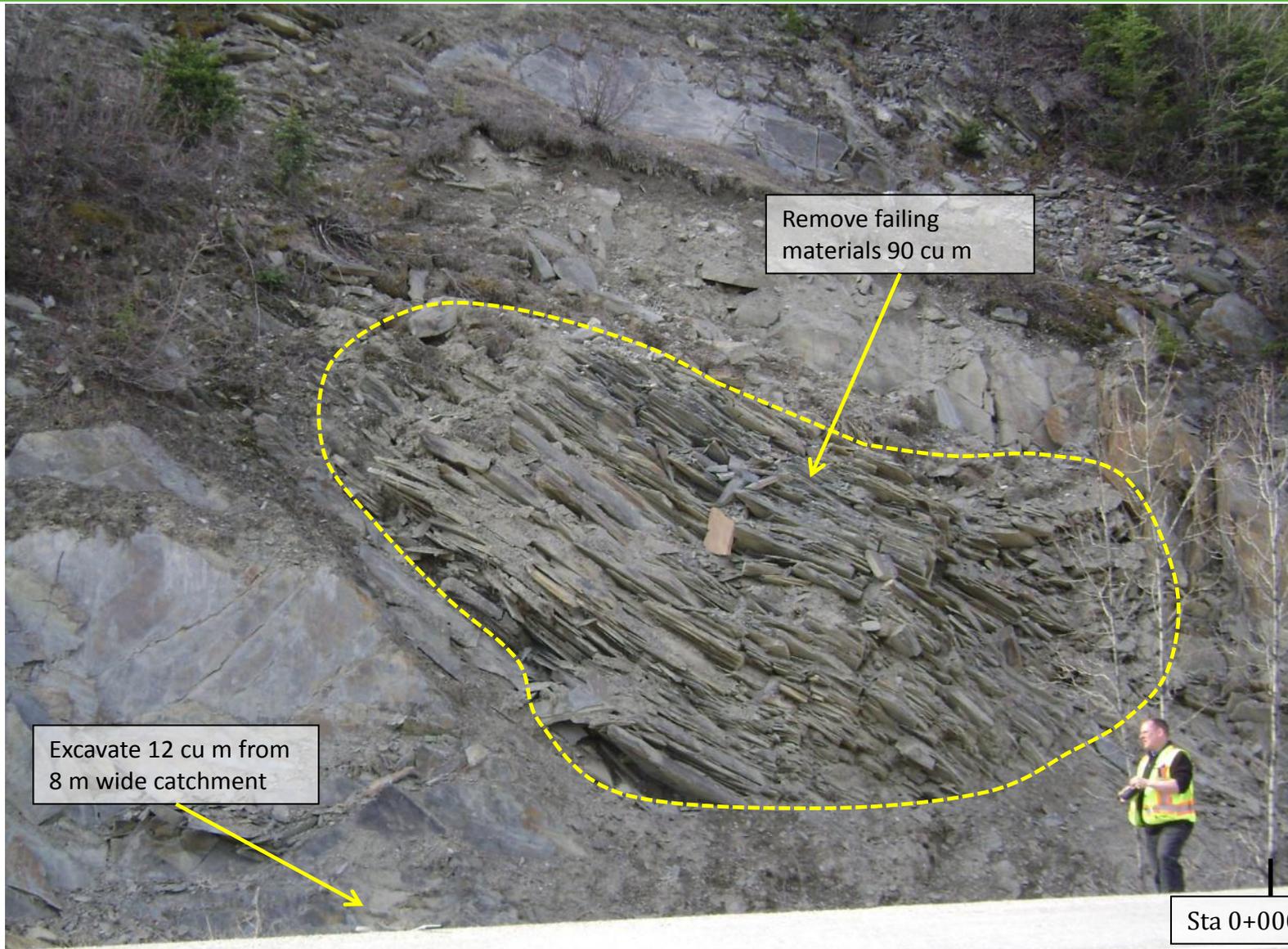
Approximate chainage from start of slope



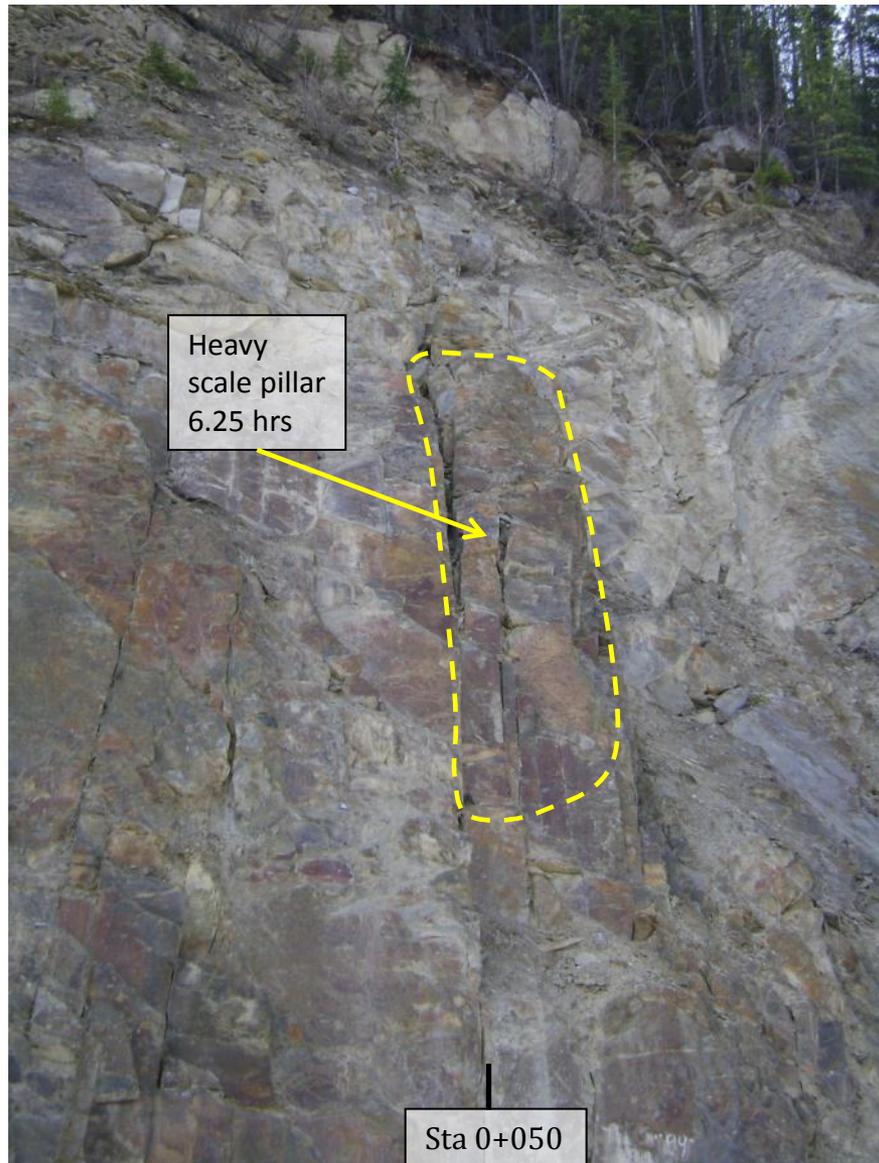
Approximate location and orientation of rock bolts / dowels





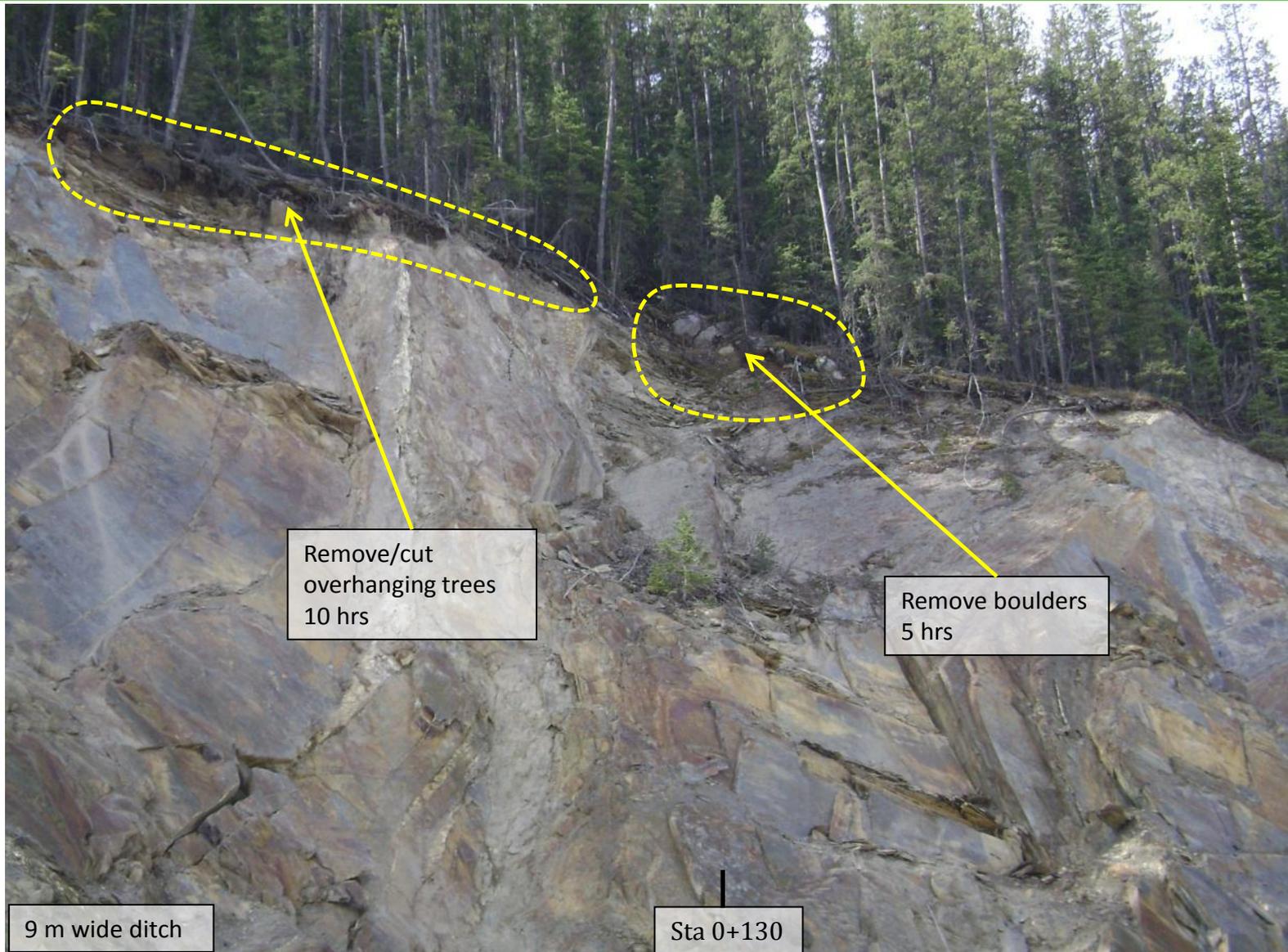


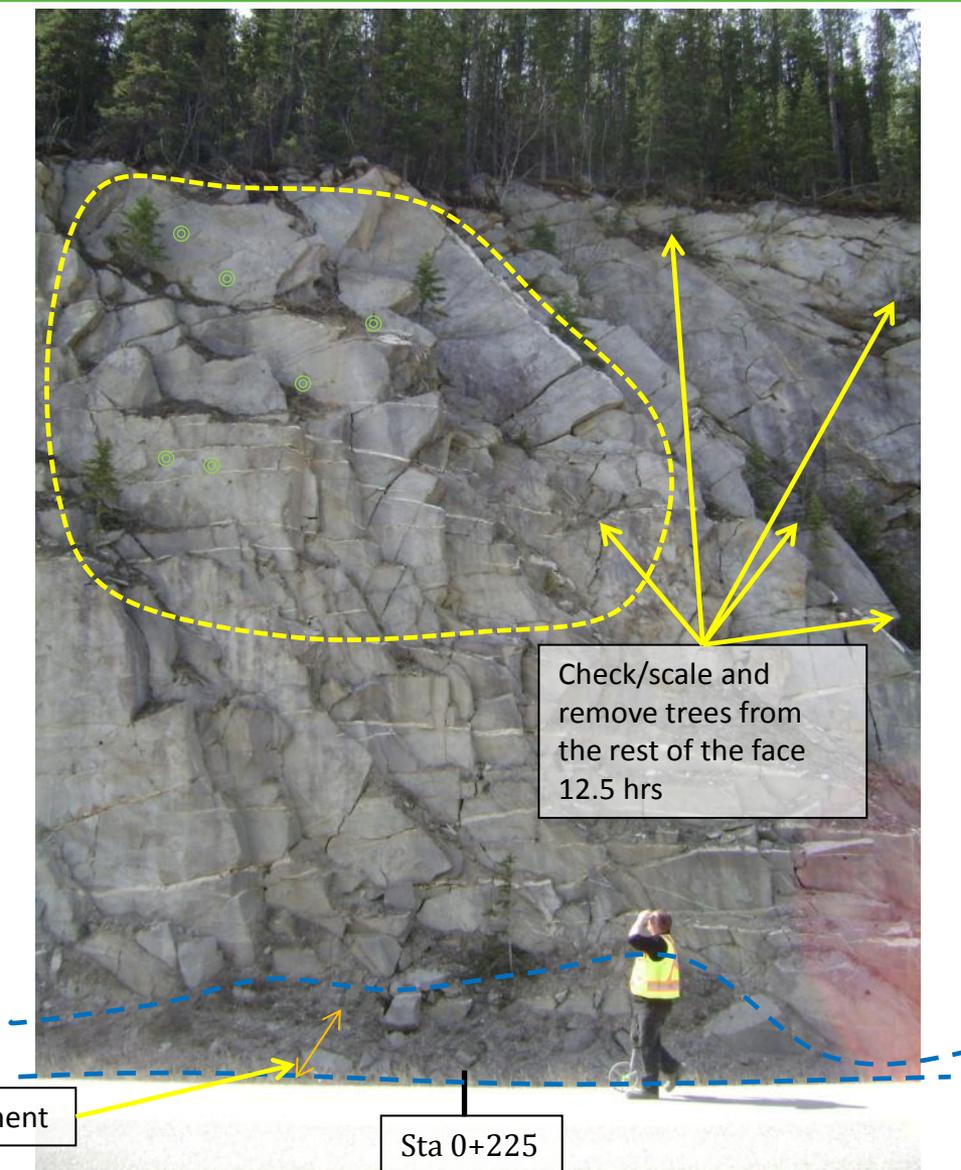
**Photo Taken:** May 13<sup>th</sup>, 2011



Heavy  
scale pillar  
6.25 hrs

Sta 0+050





Check/scale and  
remove trees from  
the rest of the face  
12.5 hrs

3 m wide catchment

Sta 0+225

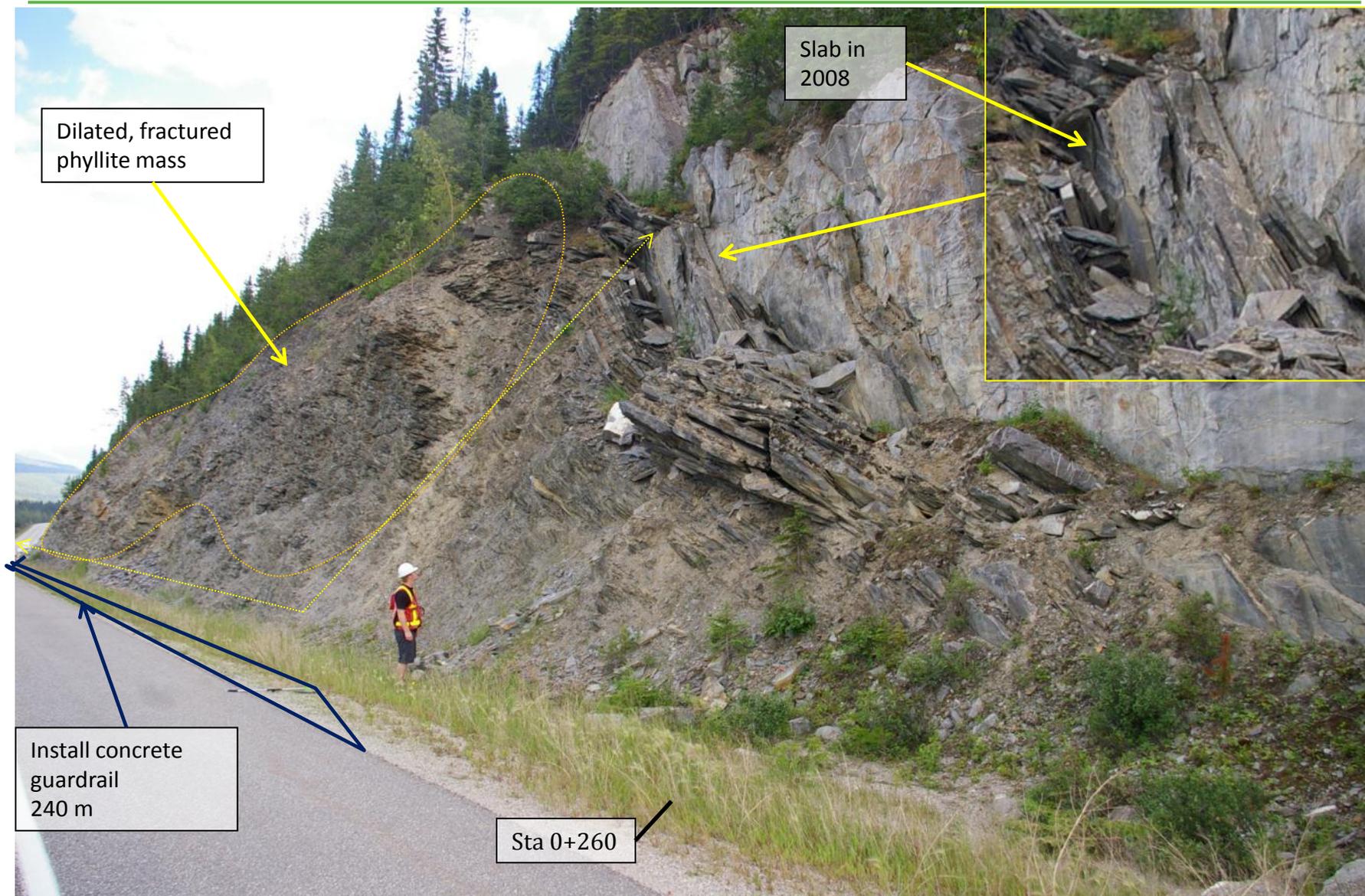
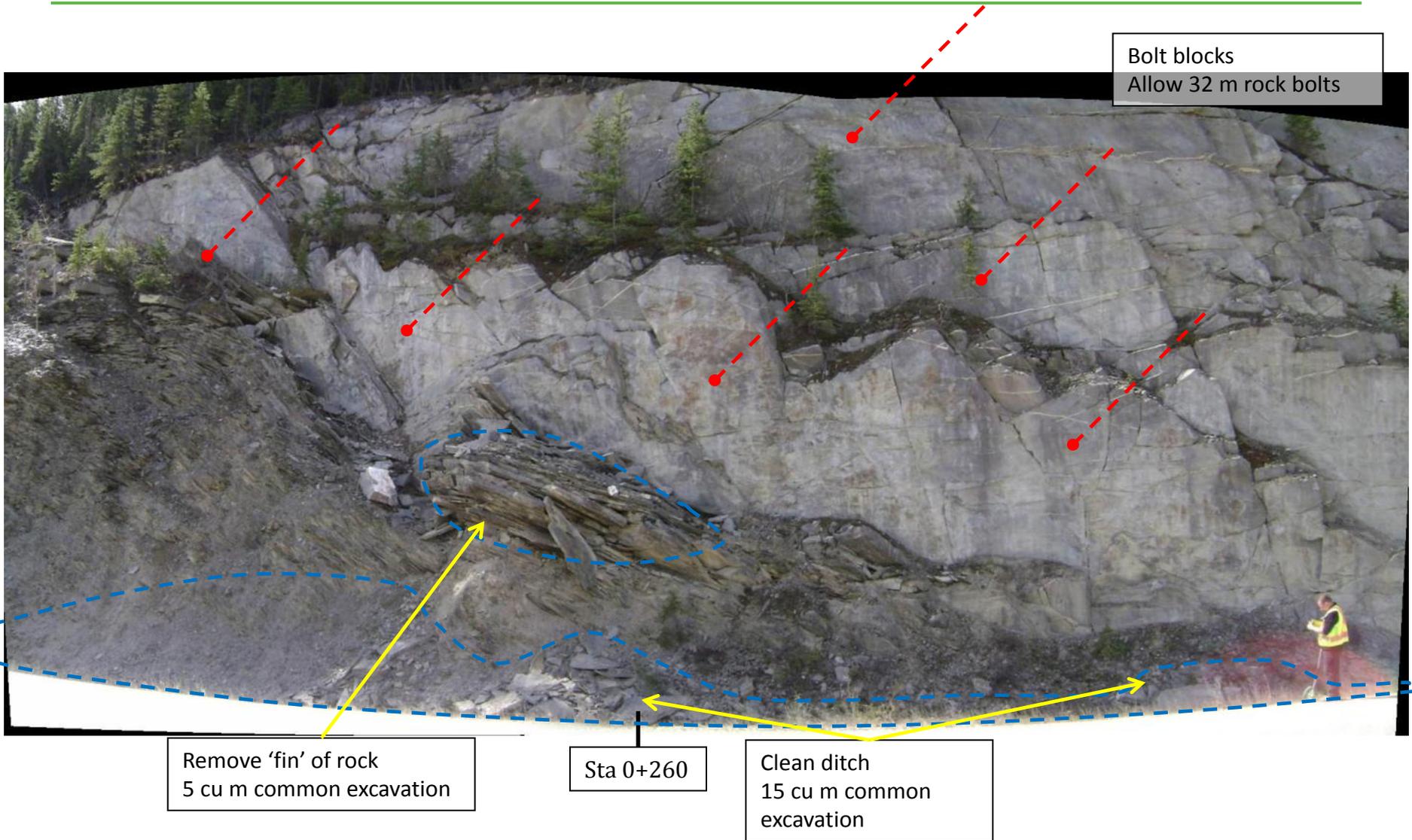
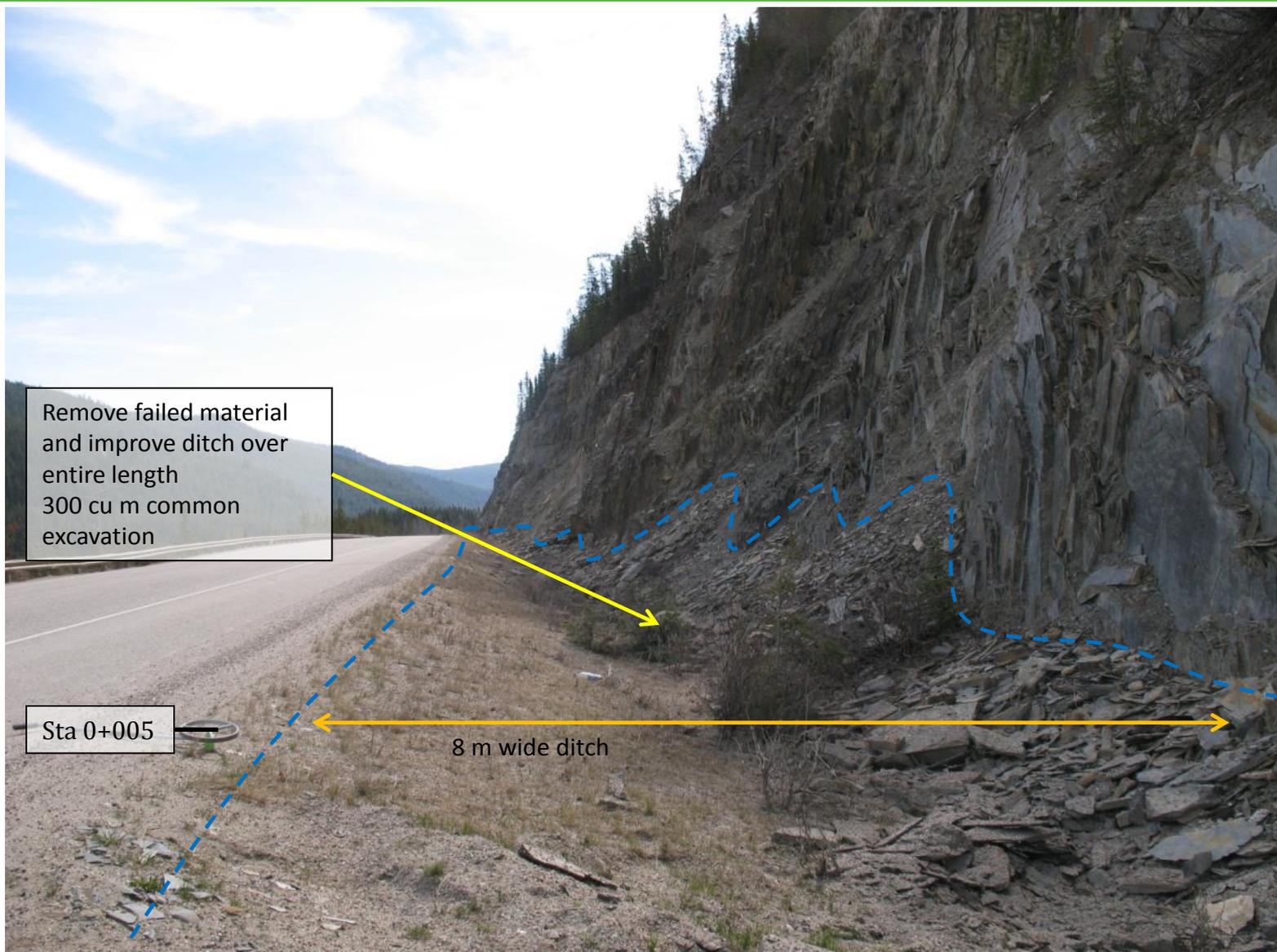


Photo Taken: July 28, 2008





**Photo Taken:** May 13<sup>th</sup>, 2011

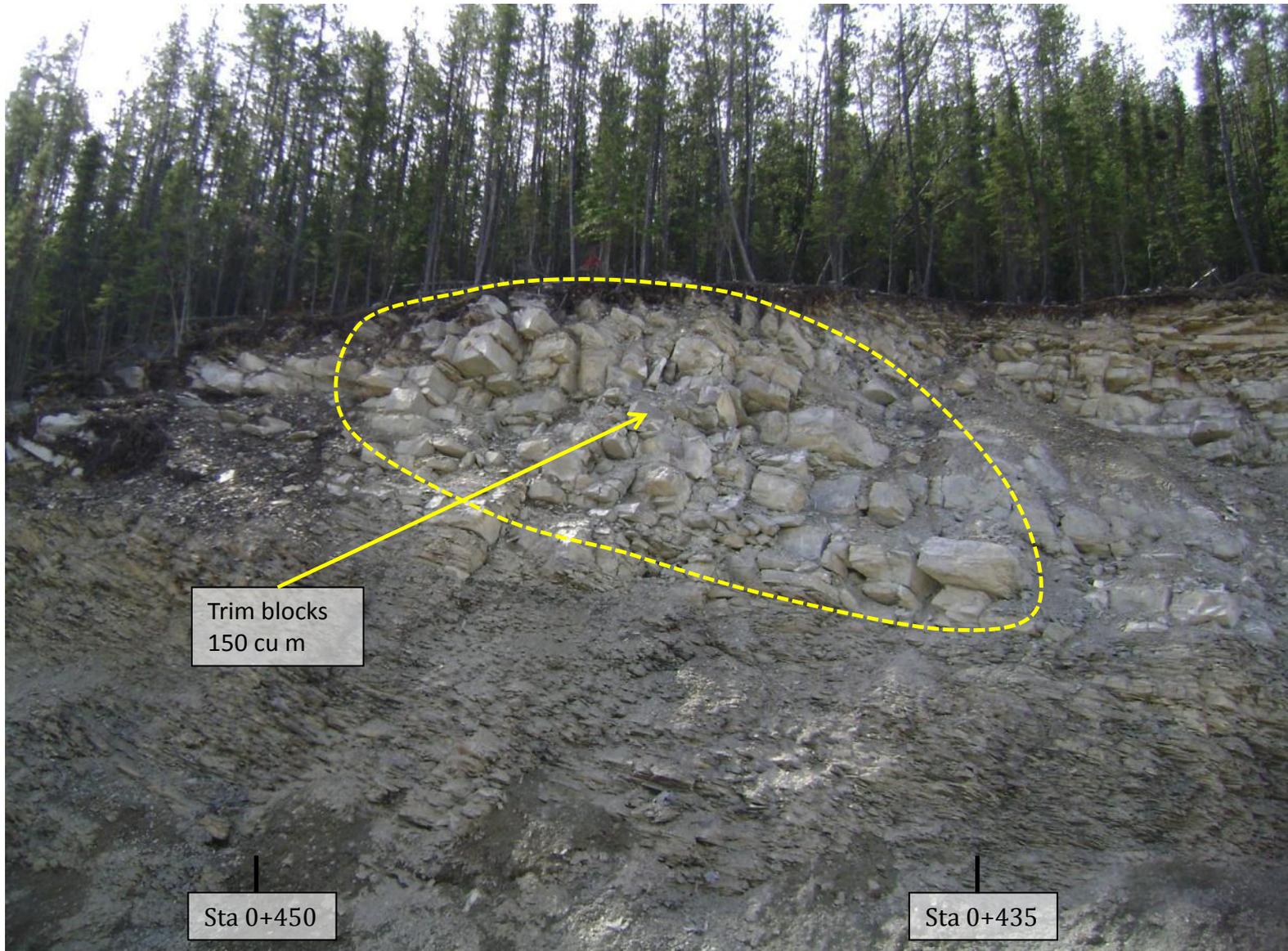


Scale boulders  
12.5 hrs

Sta 0+280



**Photo Taken:** May 13<sup>th</sup>, 2011



Trim blocks  
150 cu m

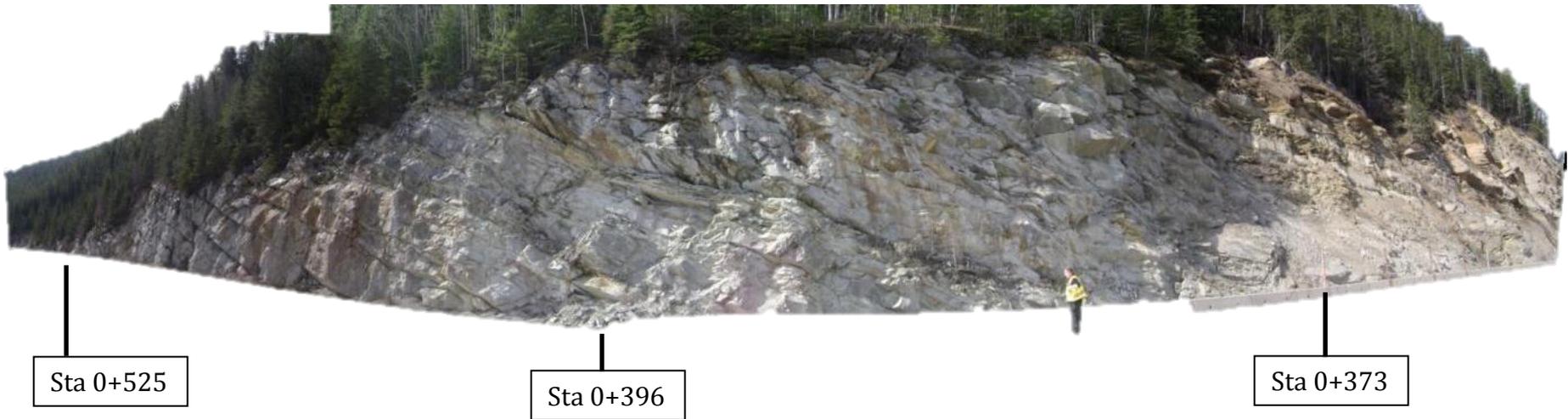
Sta 0+450

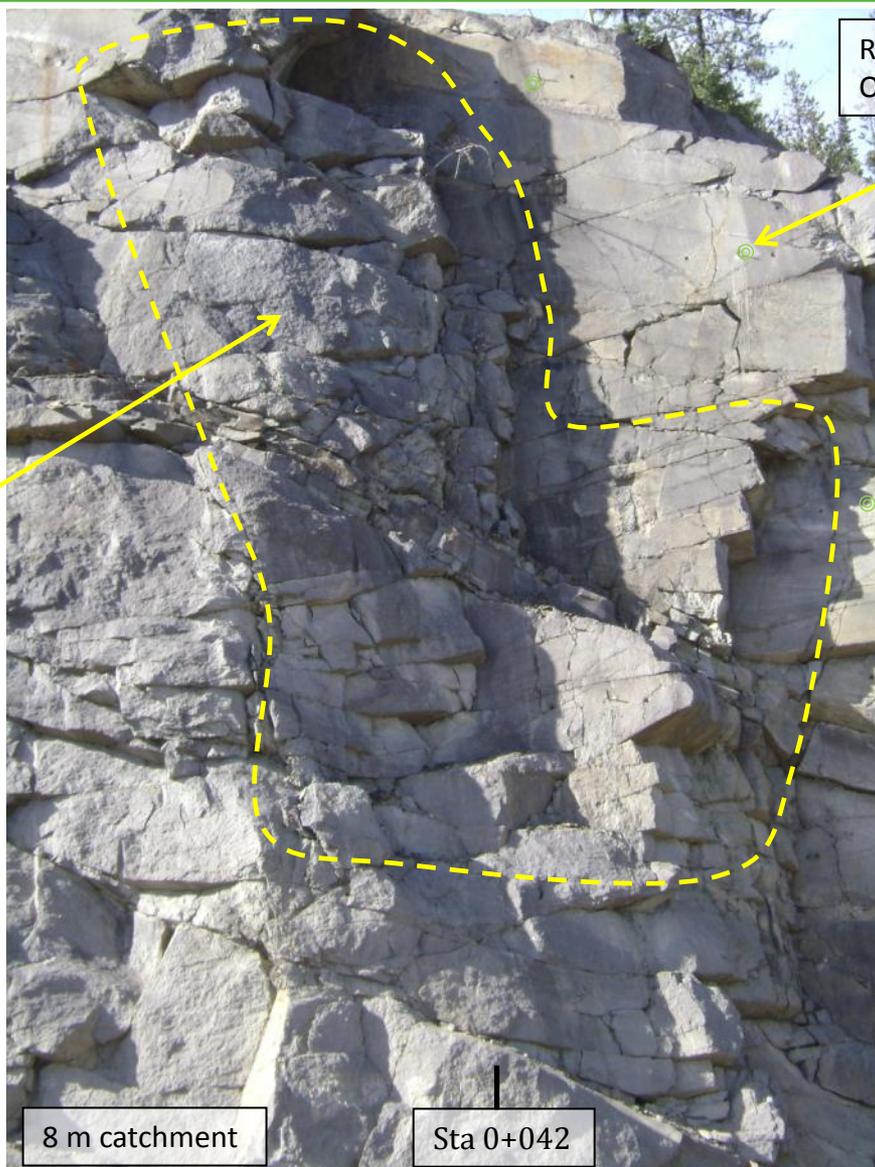
Sta 0+435



See photo 9.619f







Localized scaling of slab fractured rock  
6.25 hrs

Rock bolts in face  
Others probably present

8 m catchment

Sta 0+042

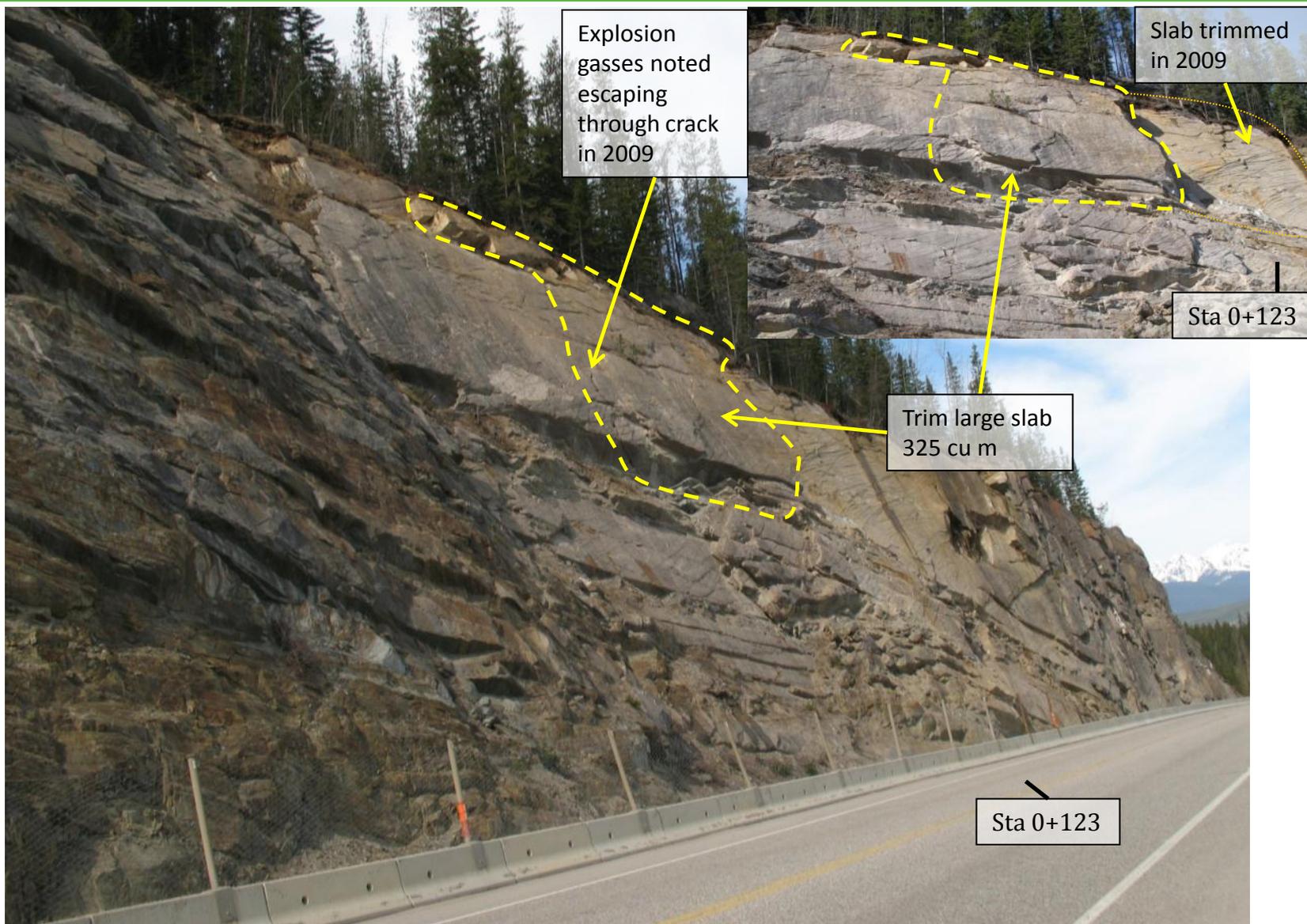
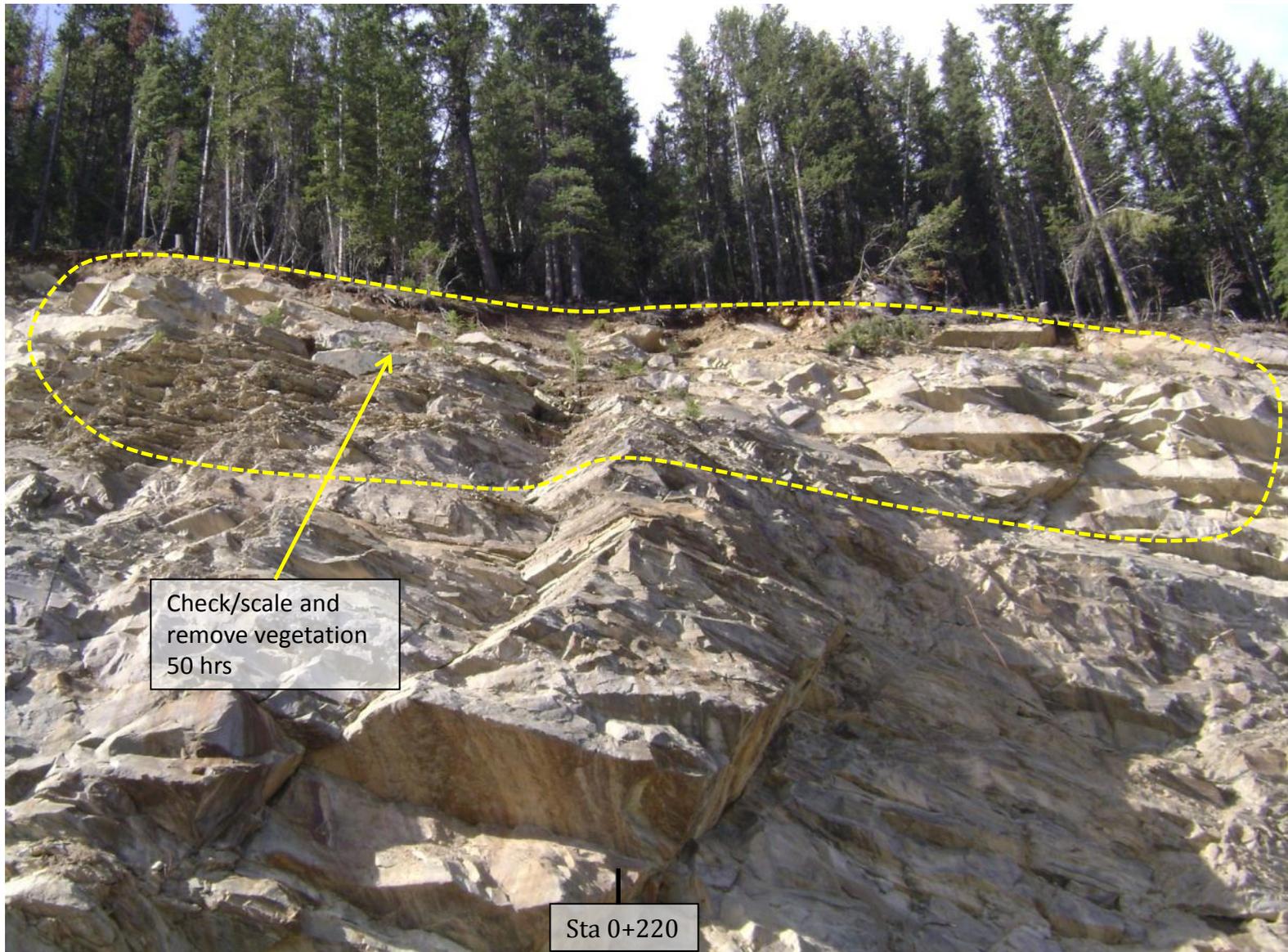
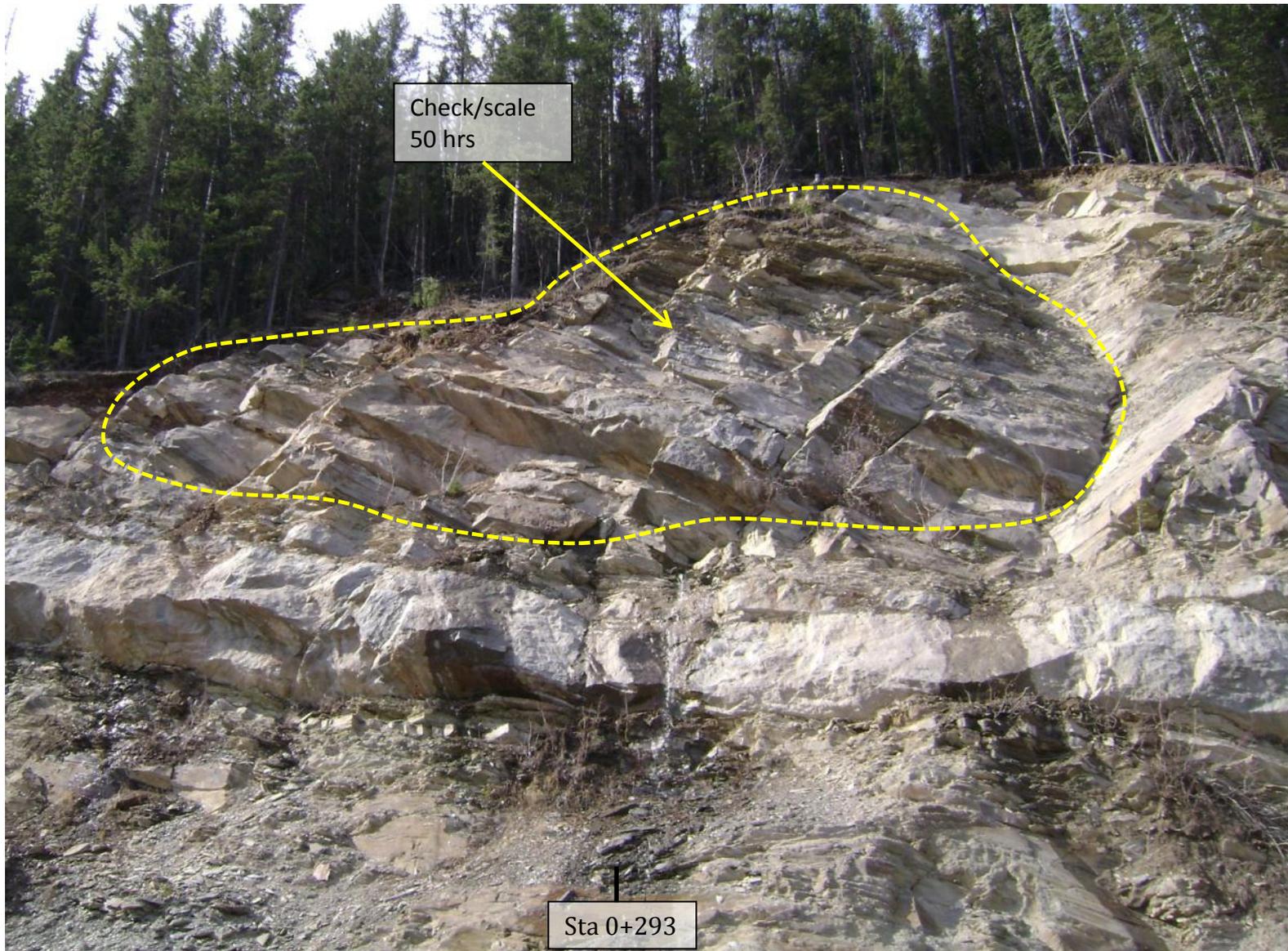


Photo Taken: May 13<sup>th</sup>, 2011



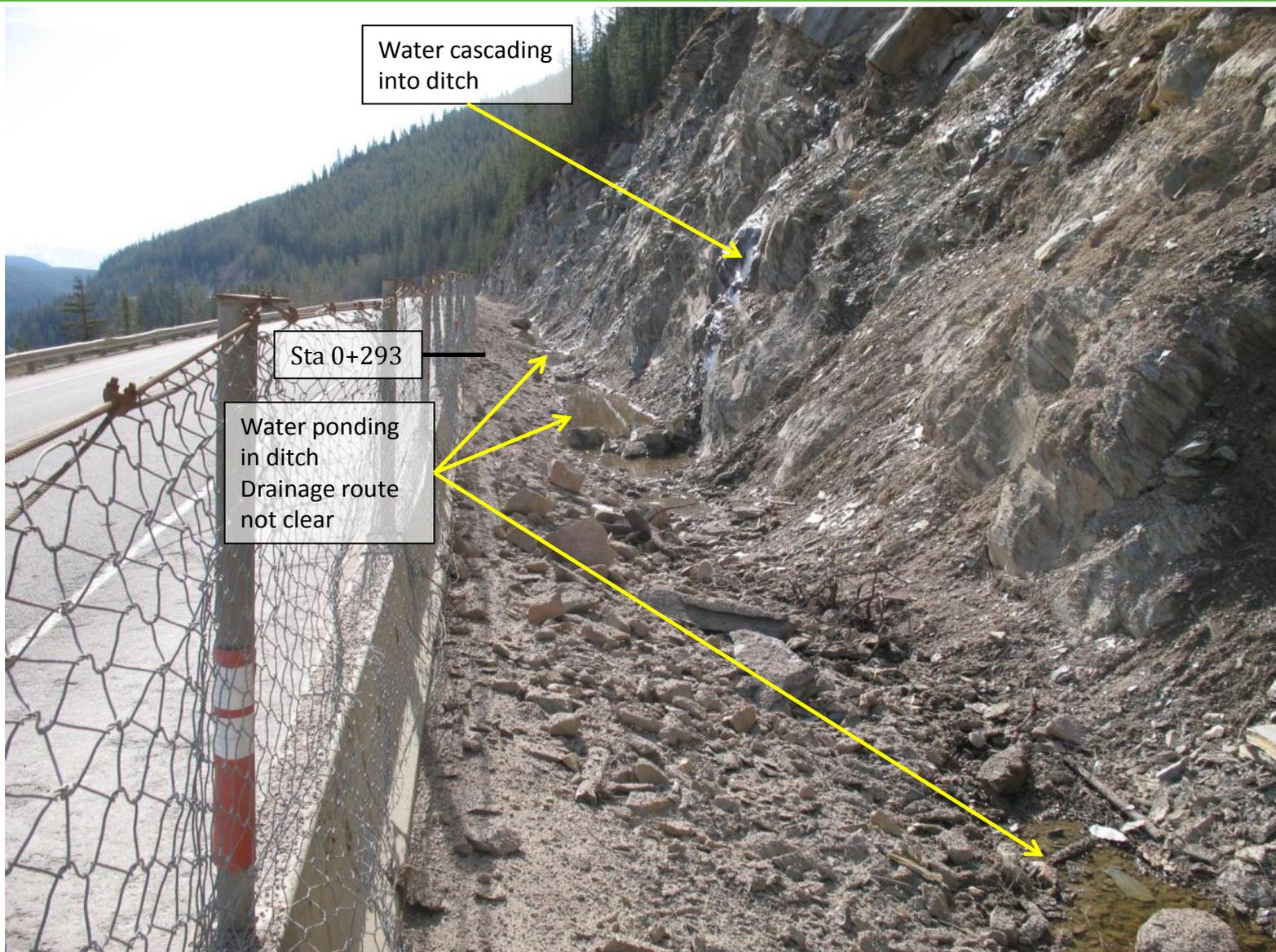
Check/scale and  
remove vegetation  
50 hrs

Sta 0+220

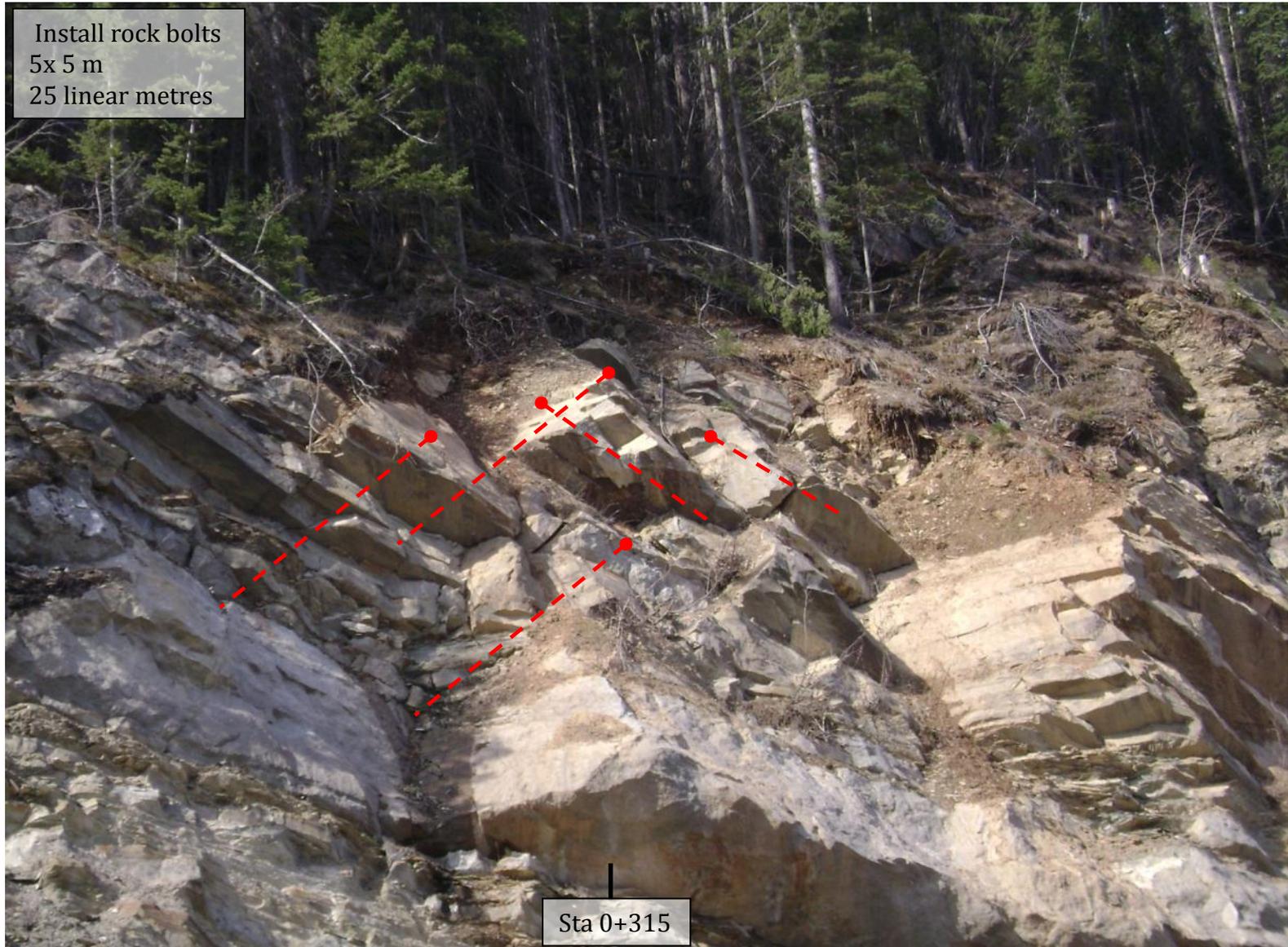


Check/scale  
50 hrs

Sta 0+293



**Photo Taken:** May 13<sup>th</sup>, 2011



Install rock bolts  
5x 5 m  
25 linear metres

Sta 0+315



**Photo Taken:** May 13<sup>th</sup>, 2011

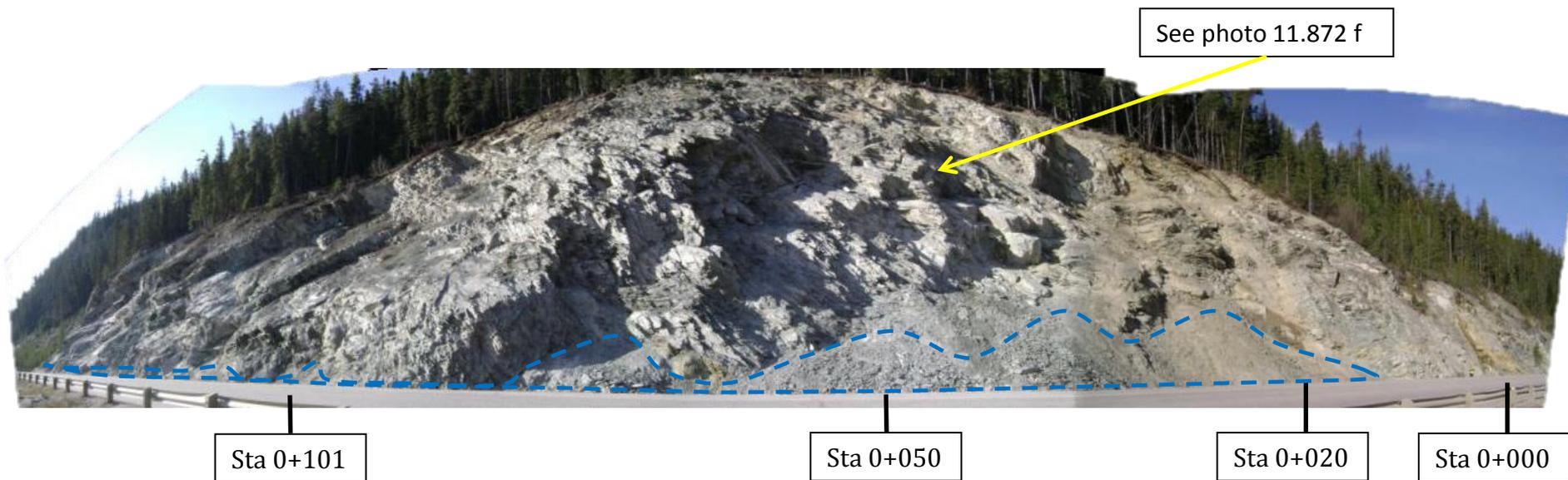
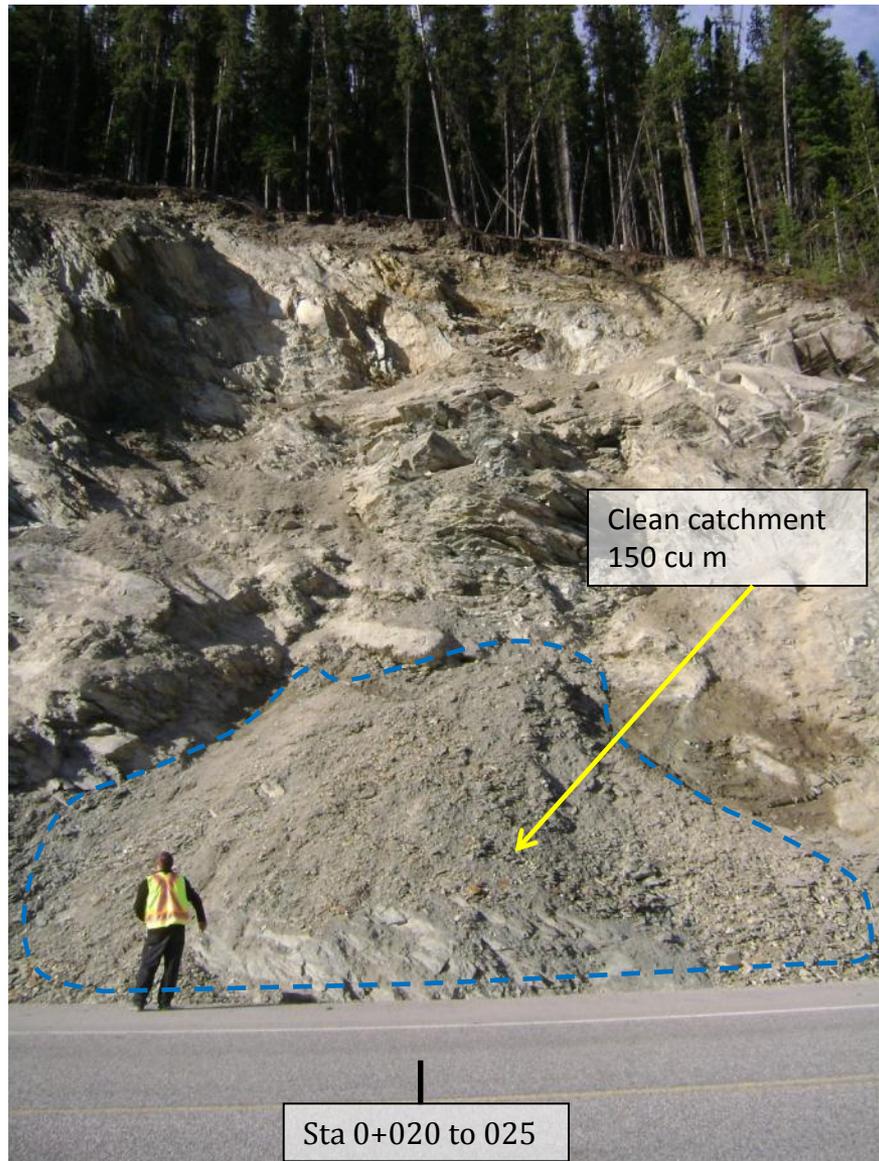
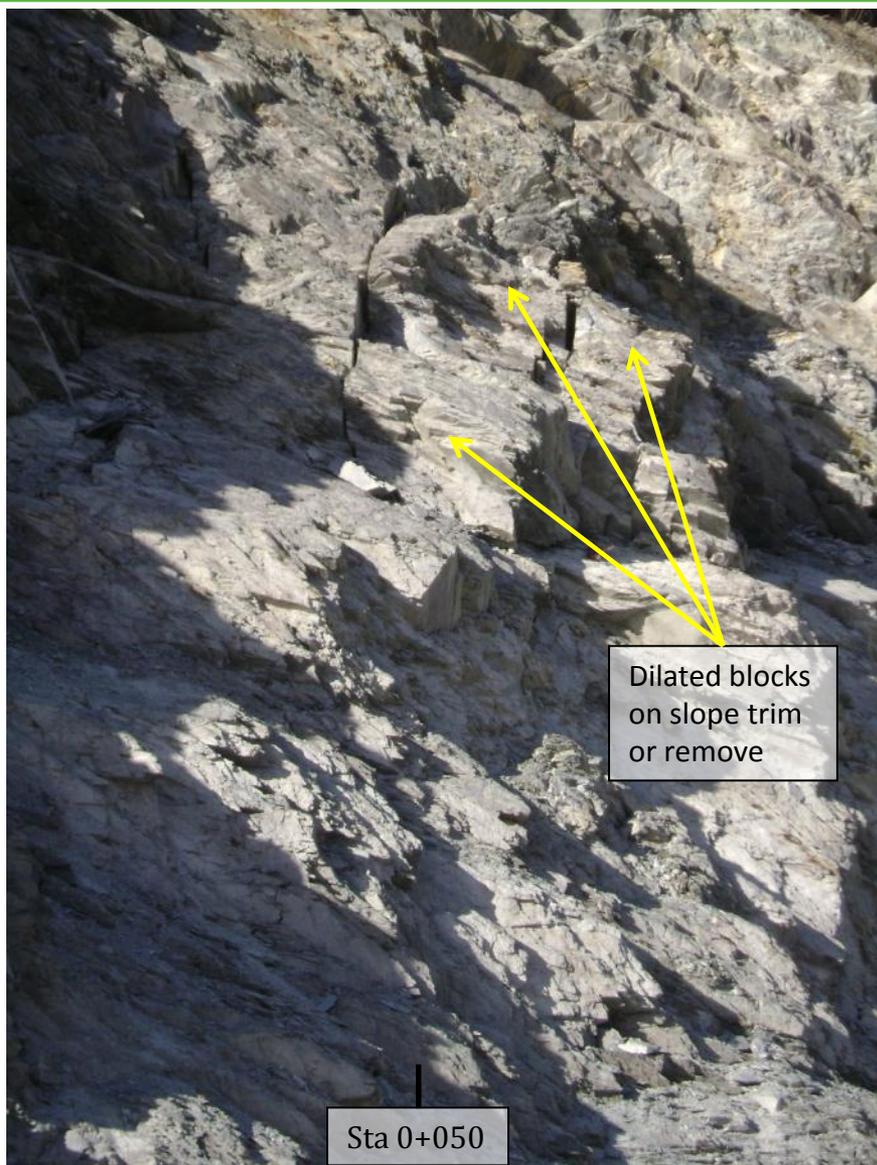
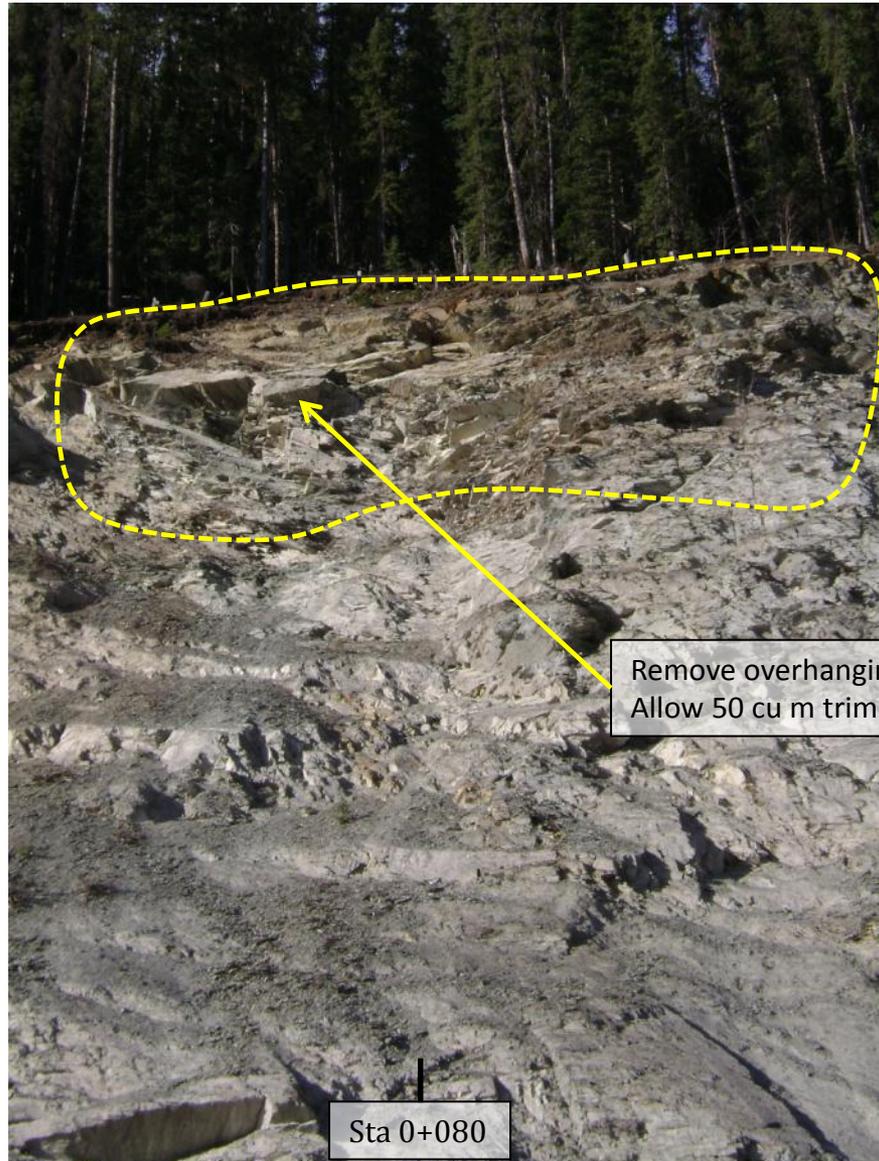
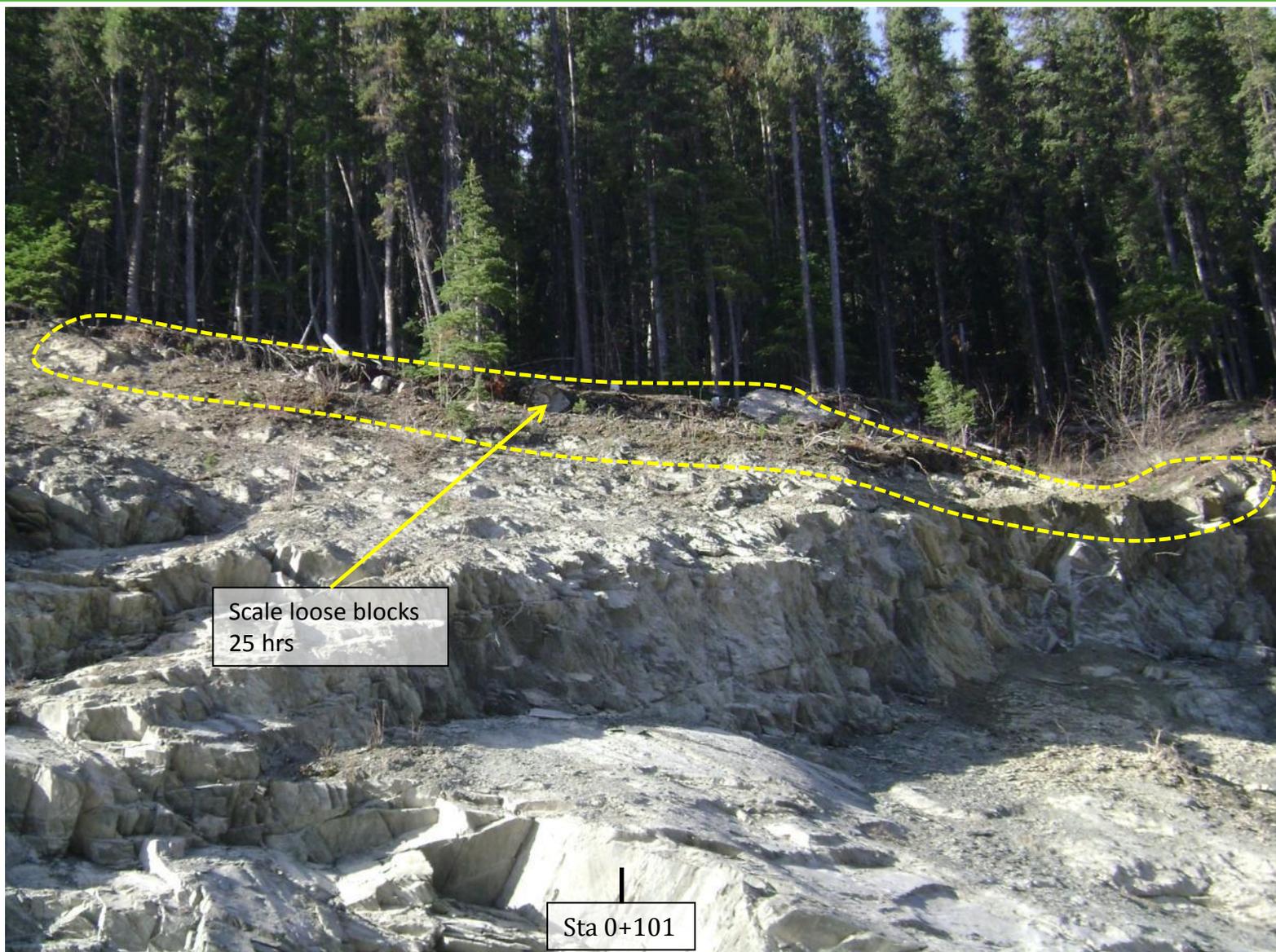


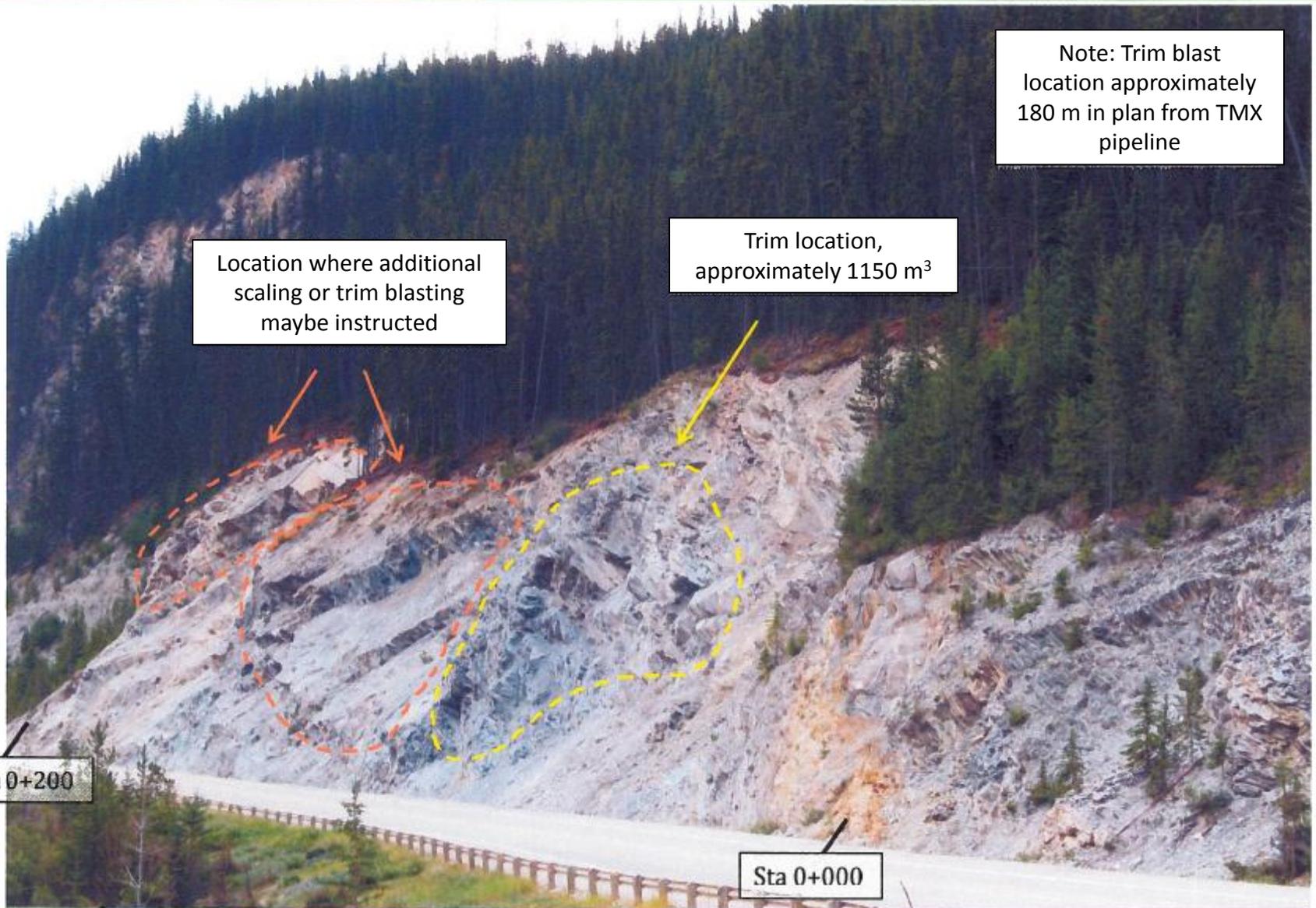
Photo Taken: May 13<sup>th</sup>, 2011











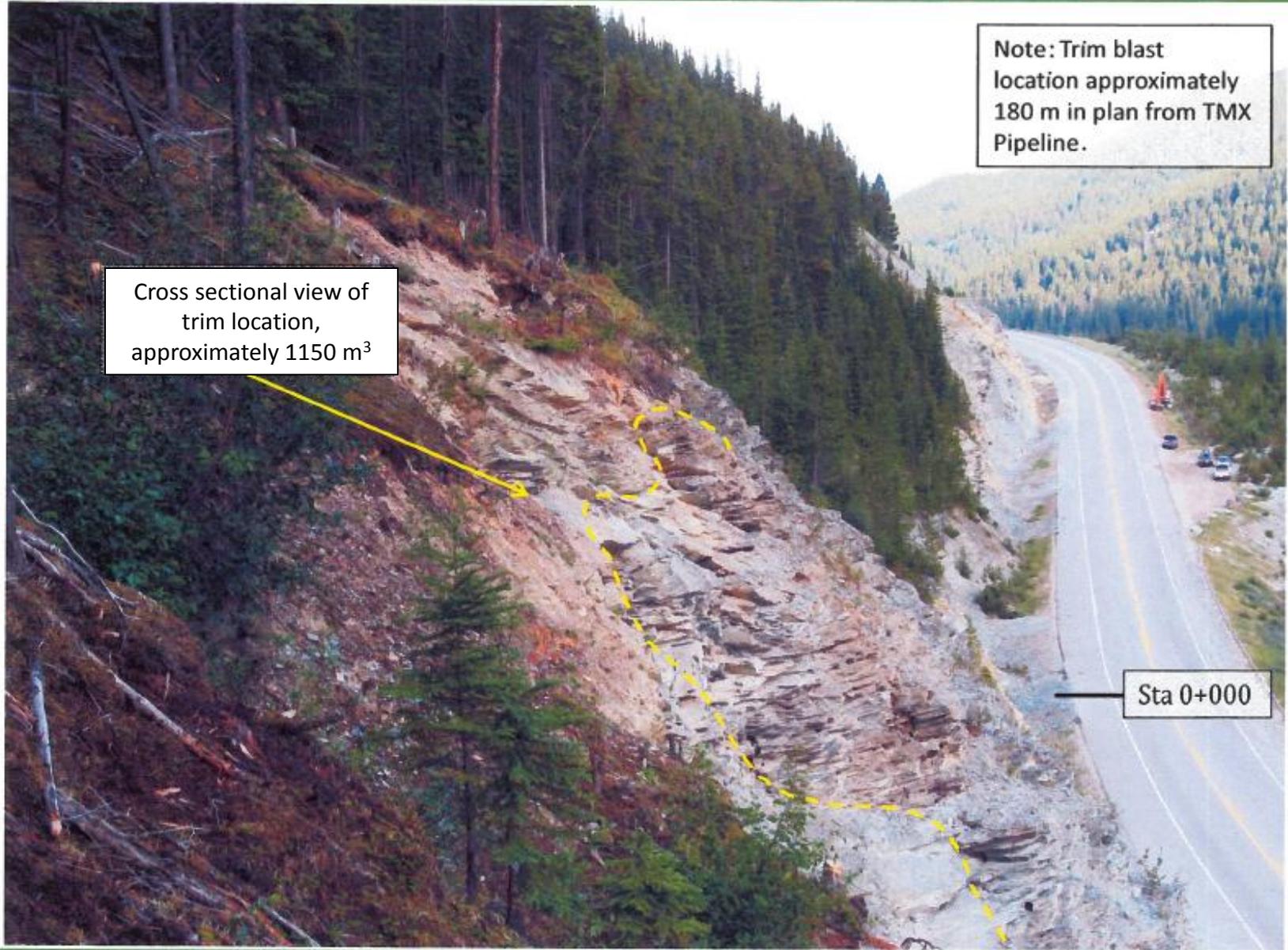
Location where additional scaling or trim blasting maybe instructed

Trim location, approximately 1150 m<sup>3</sup>

Note: Trim blast location approximately 180 m in plan from TMX pipeline

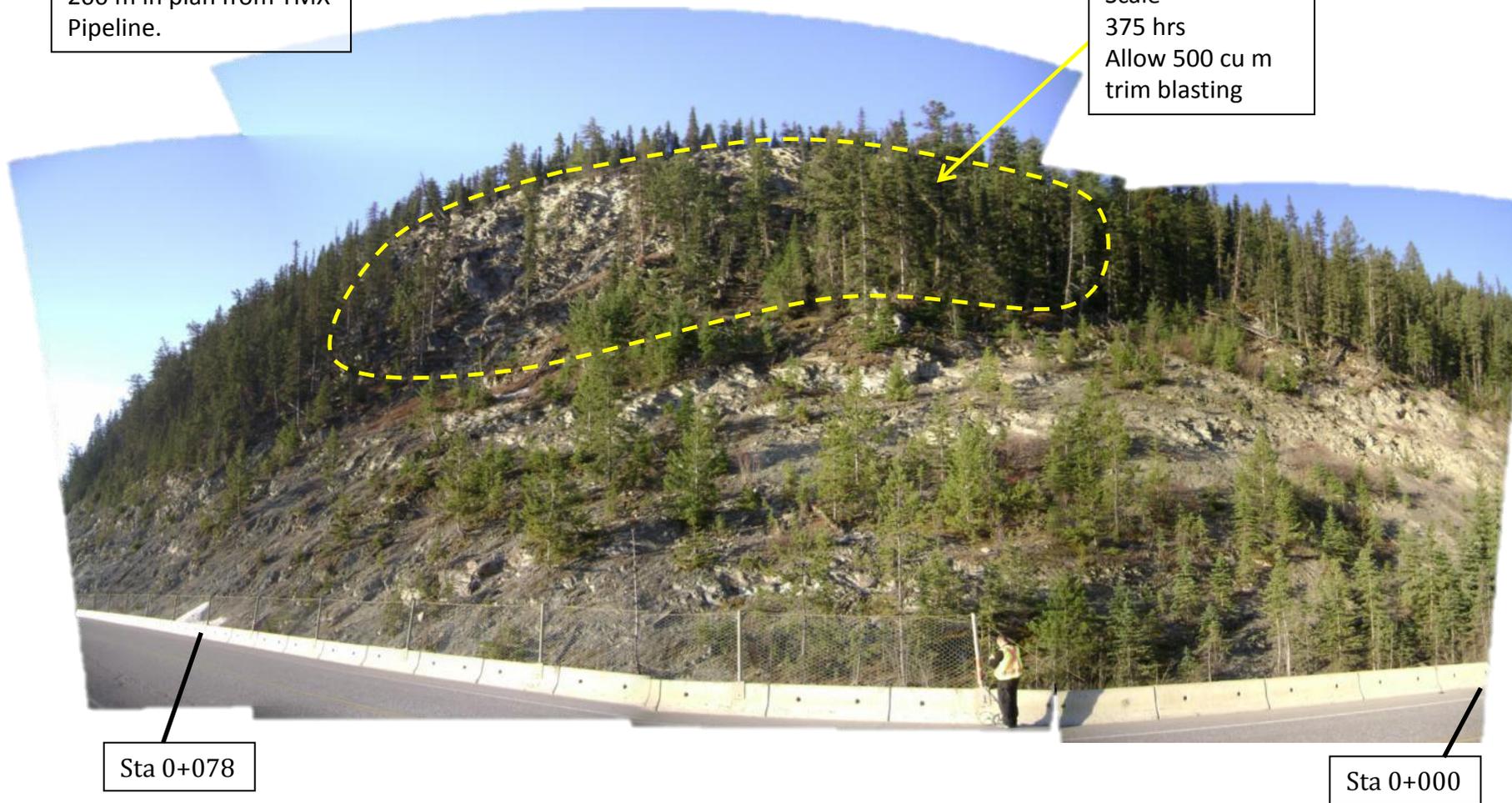
Sta 0+200

Sta 0+000



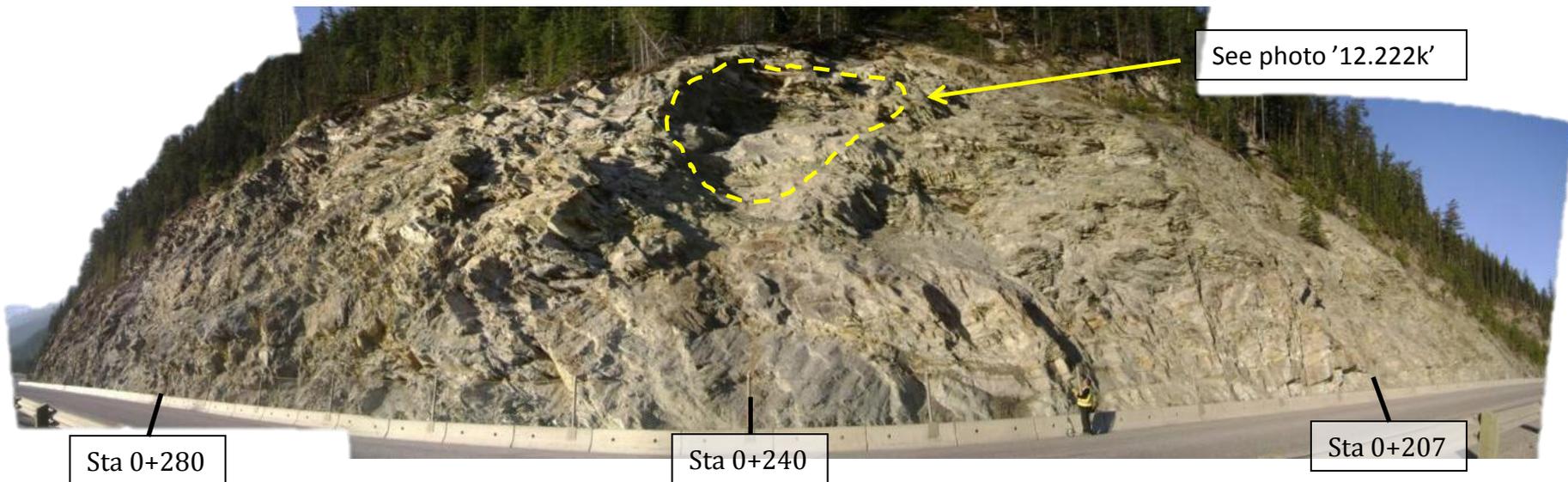
Note: Trim blast  
location approximately  
200 m in plan from TMX  
Pipeline.

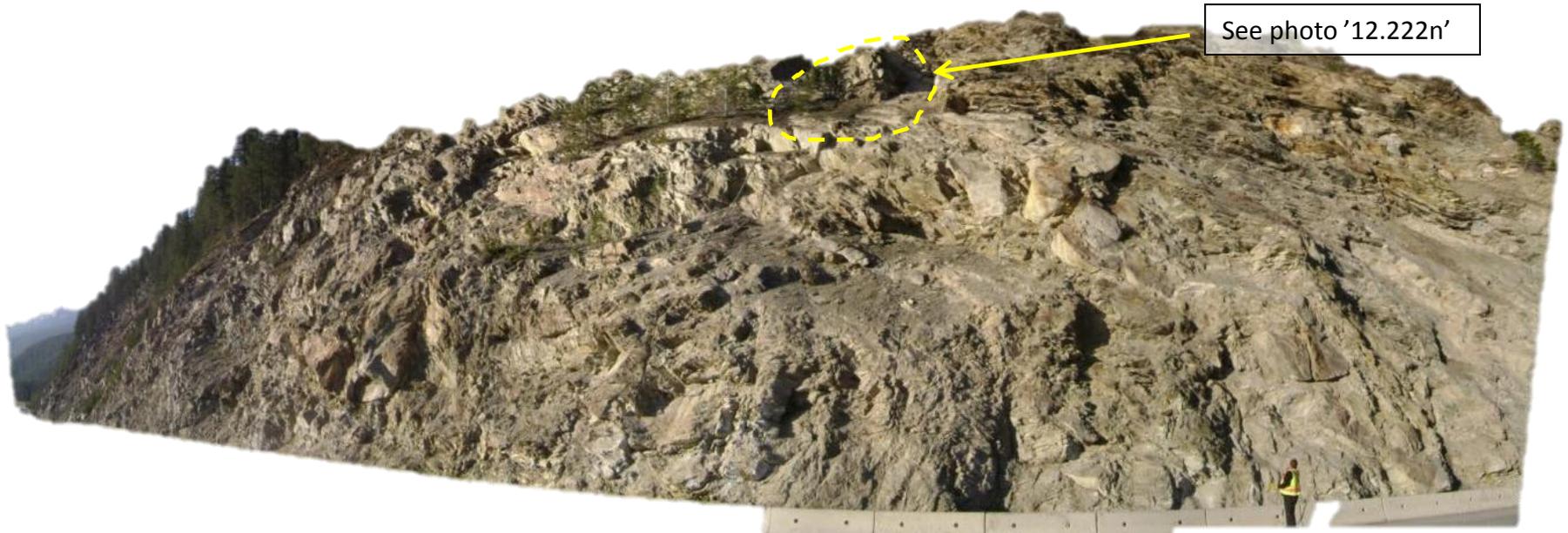
Scale  
375 hrs  
Allow 500 cu m  
trim blasting

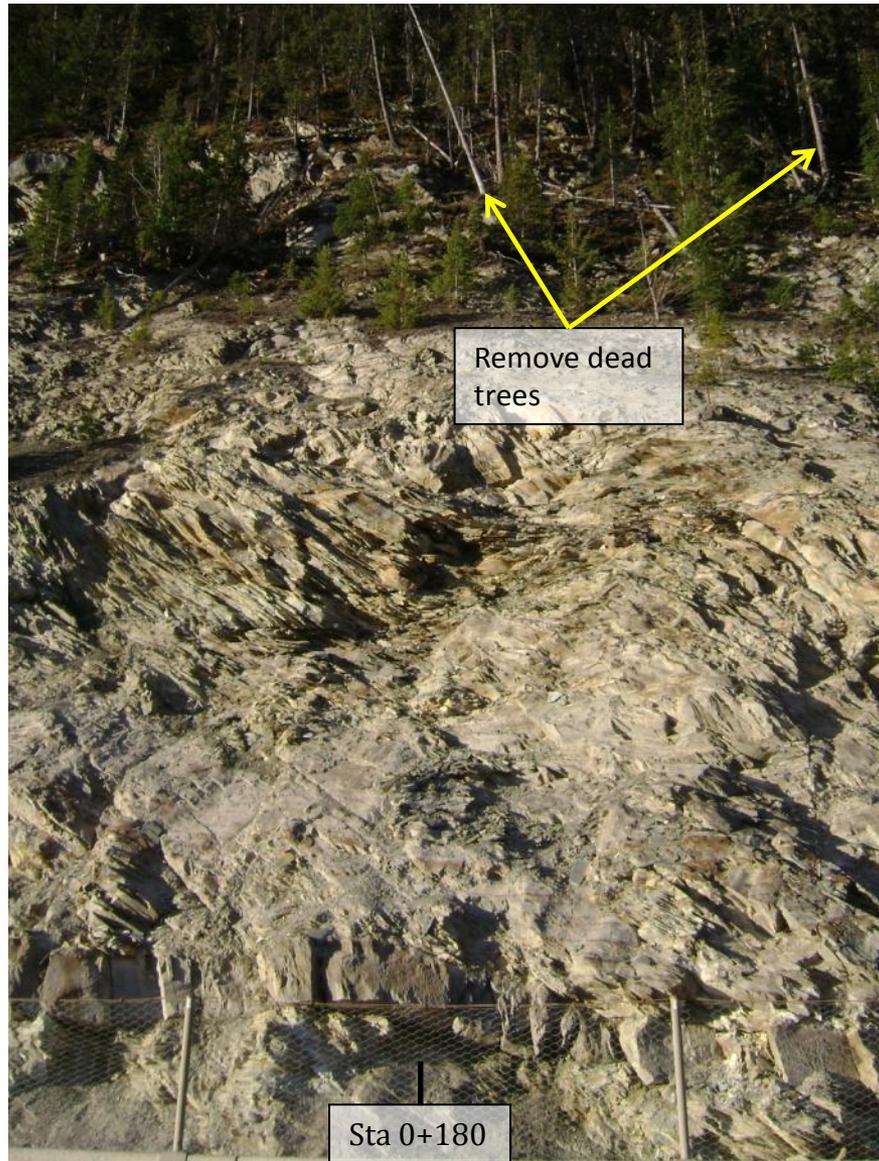


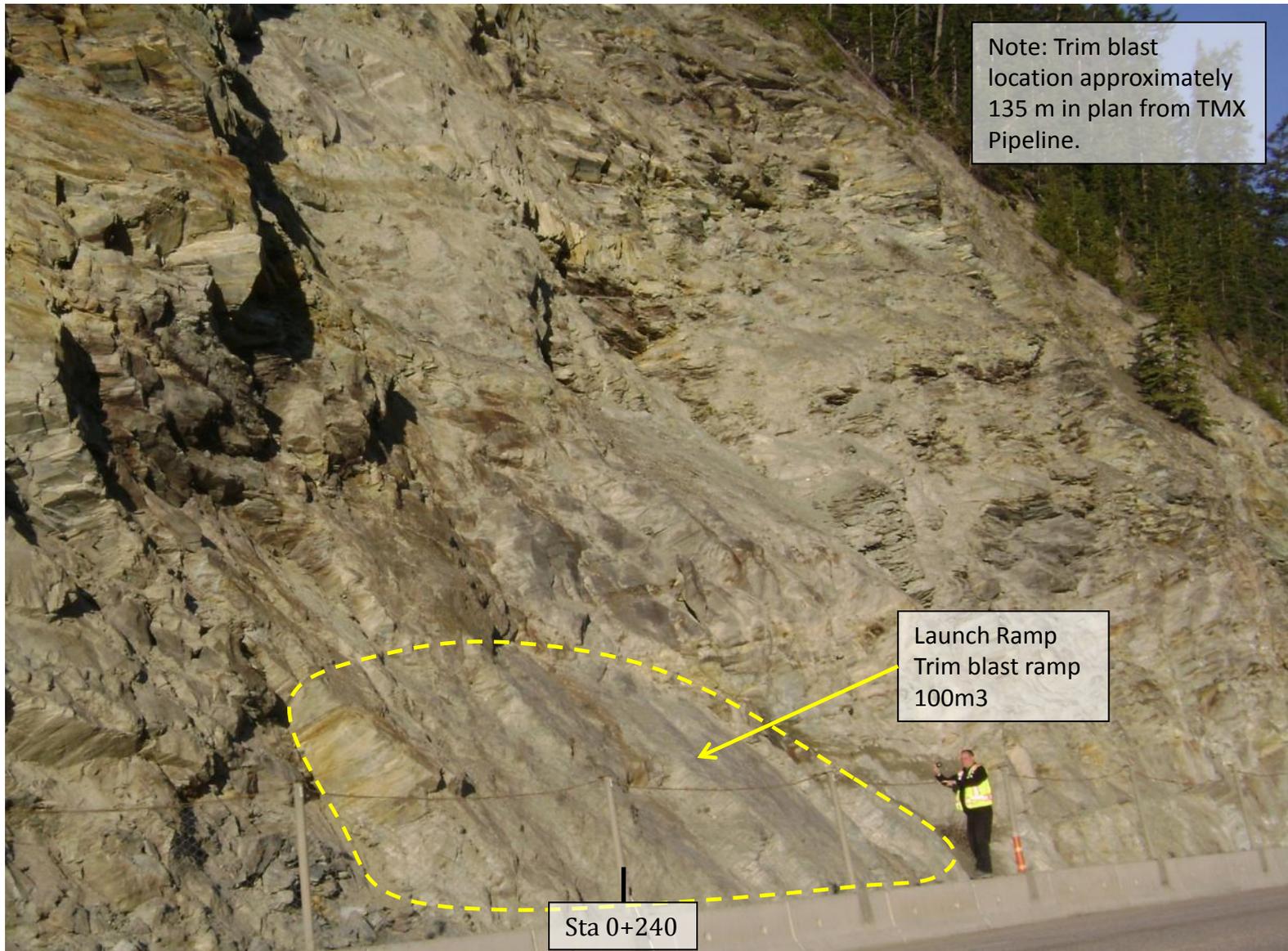
Sta 0+078

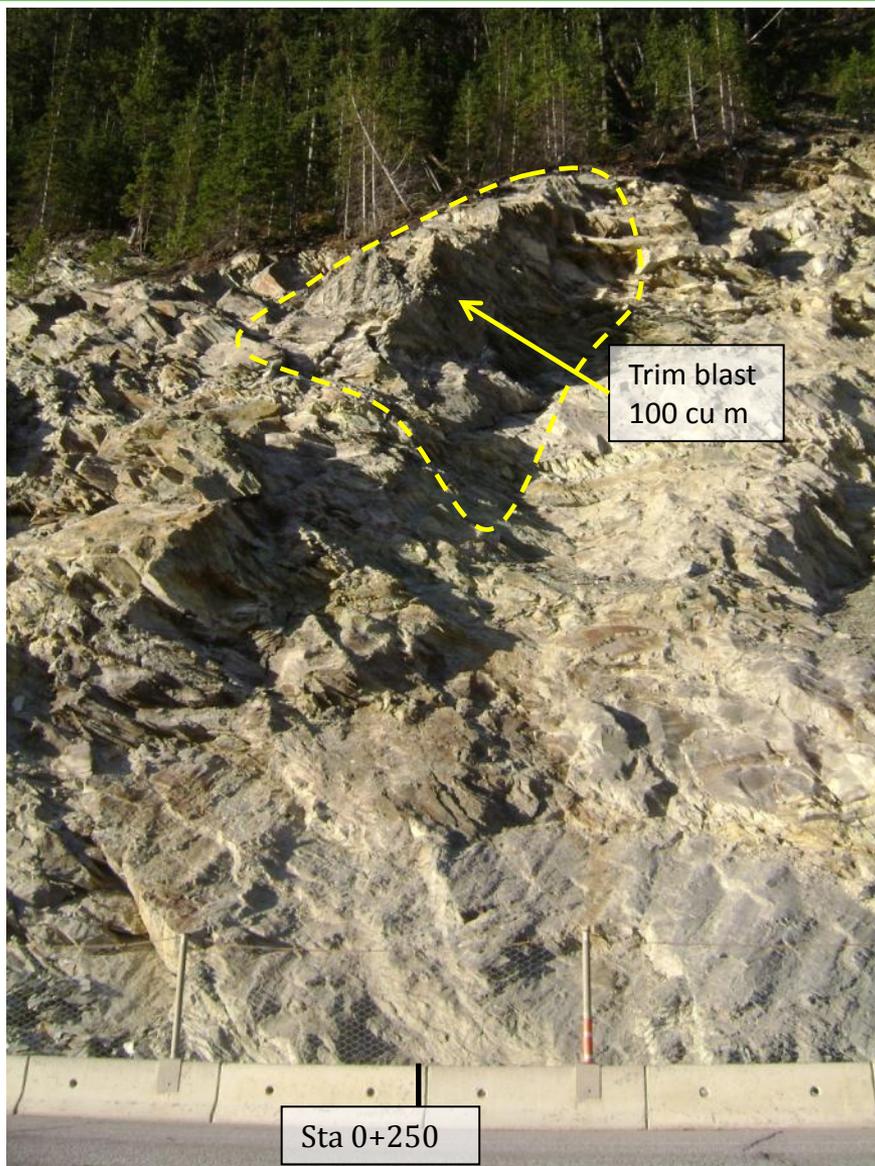
Sta 0+000



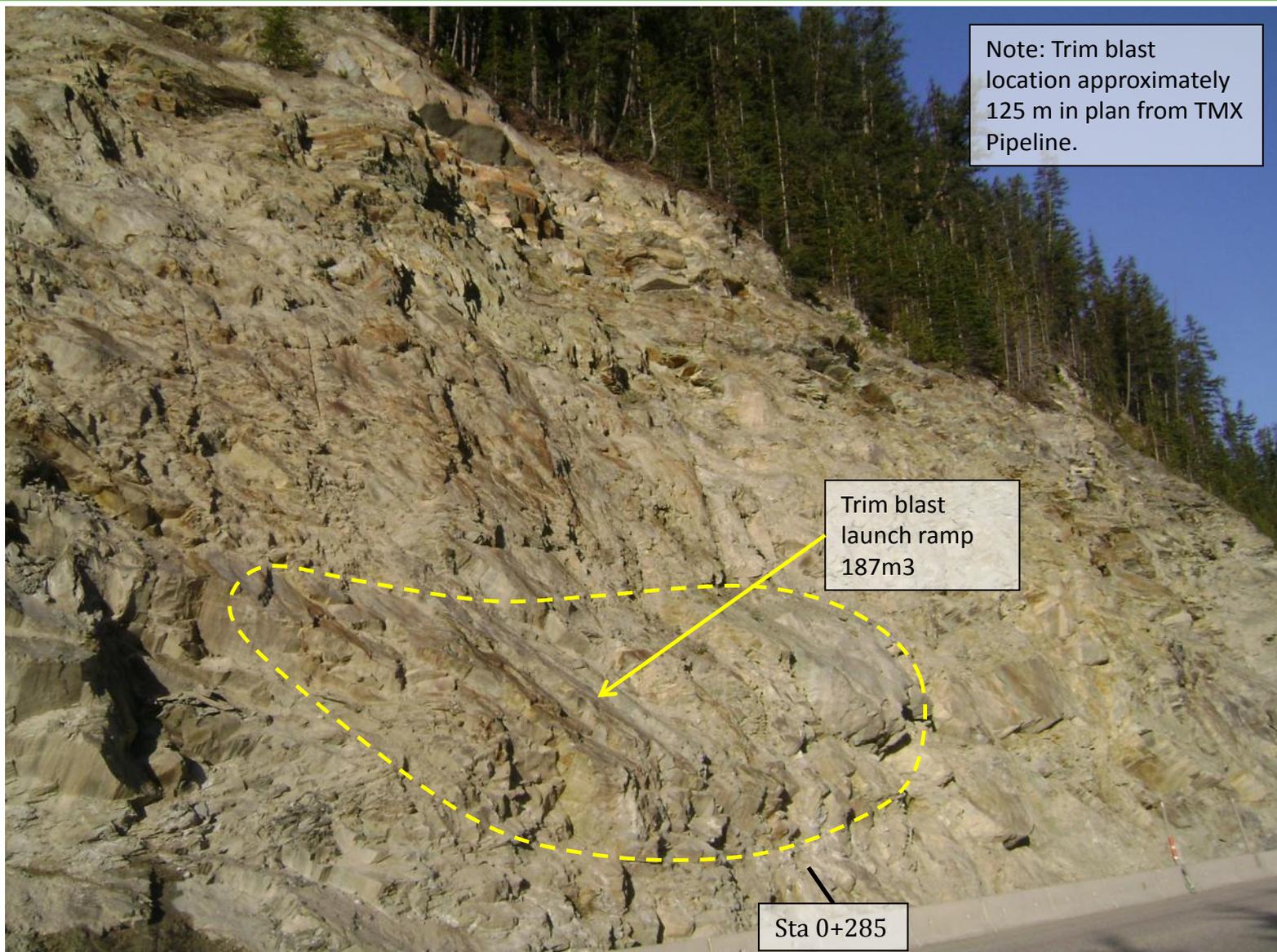




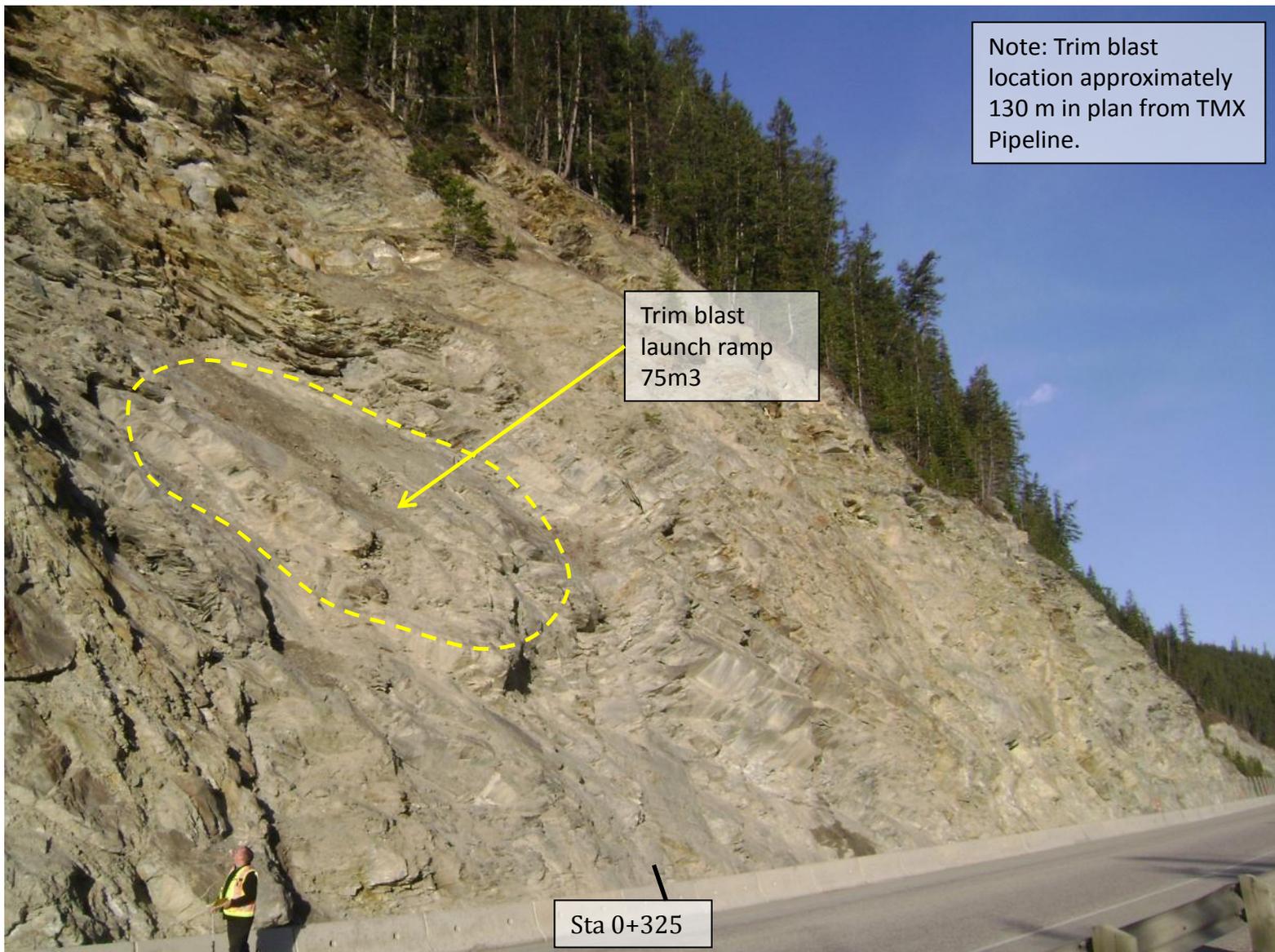


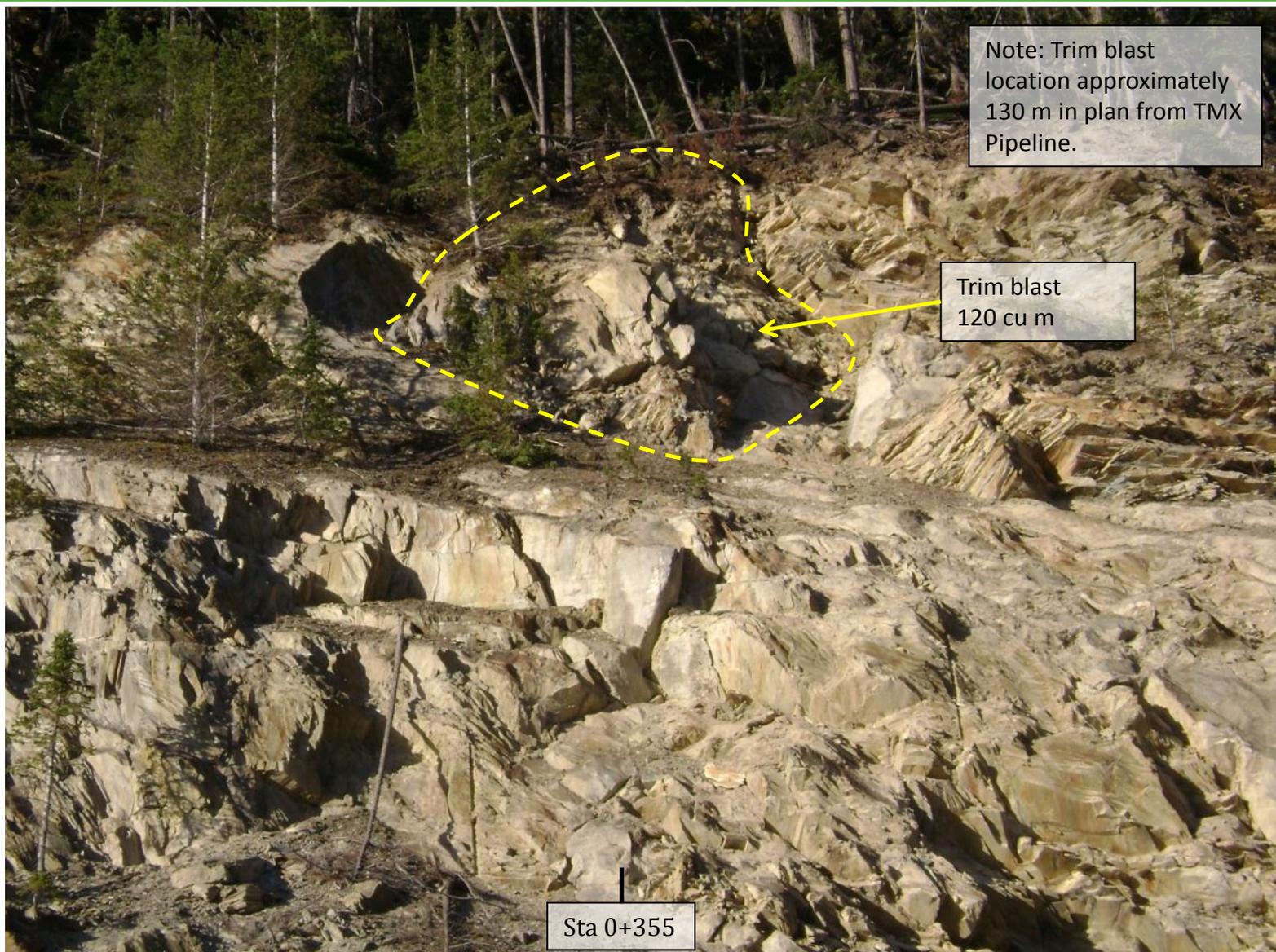


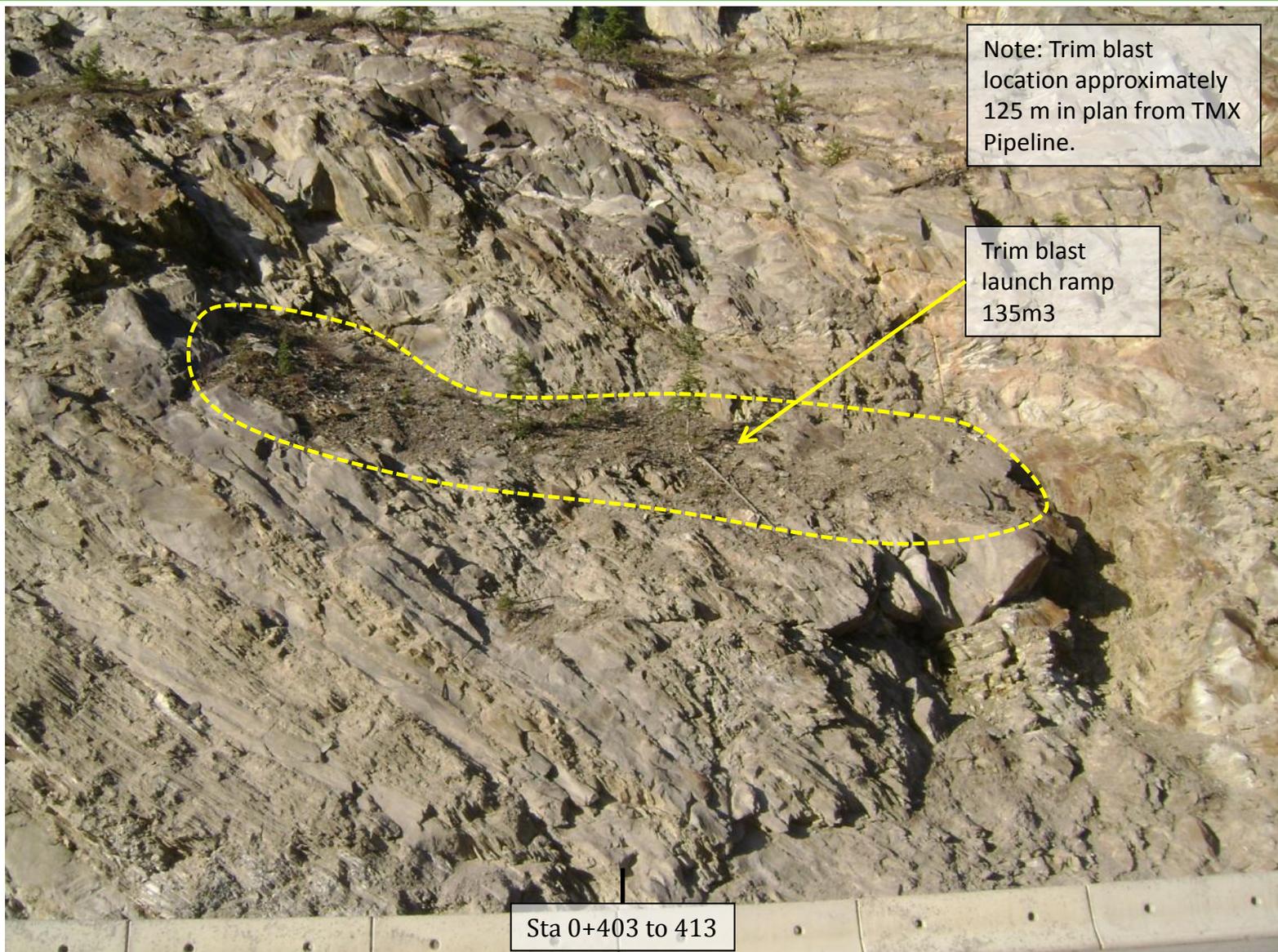
Note: Trim blast location approximately 140 m in plan from TMX Pipeline.

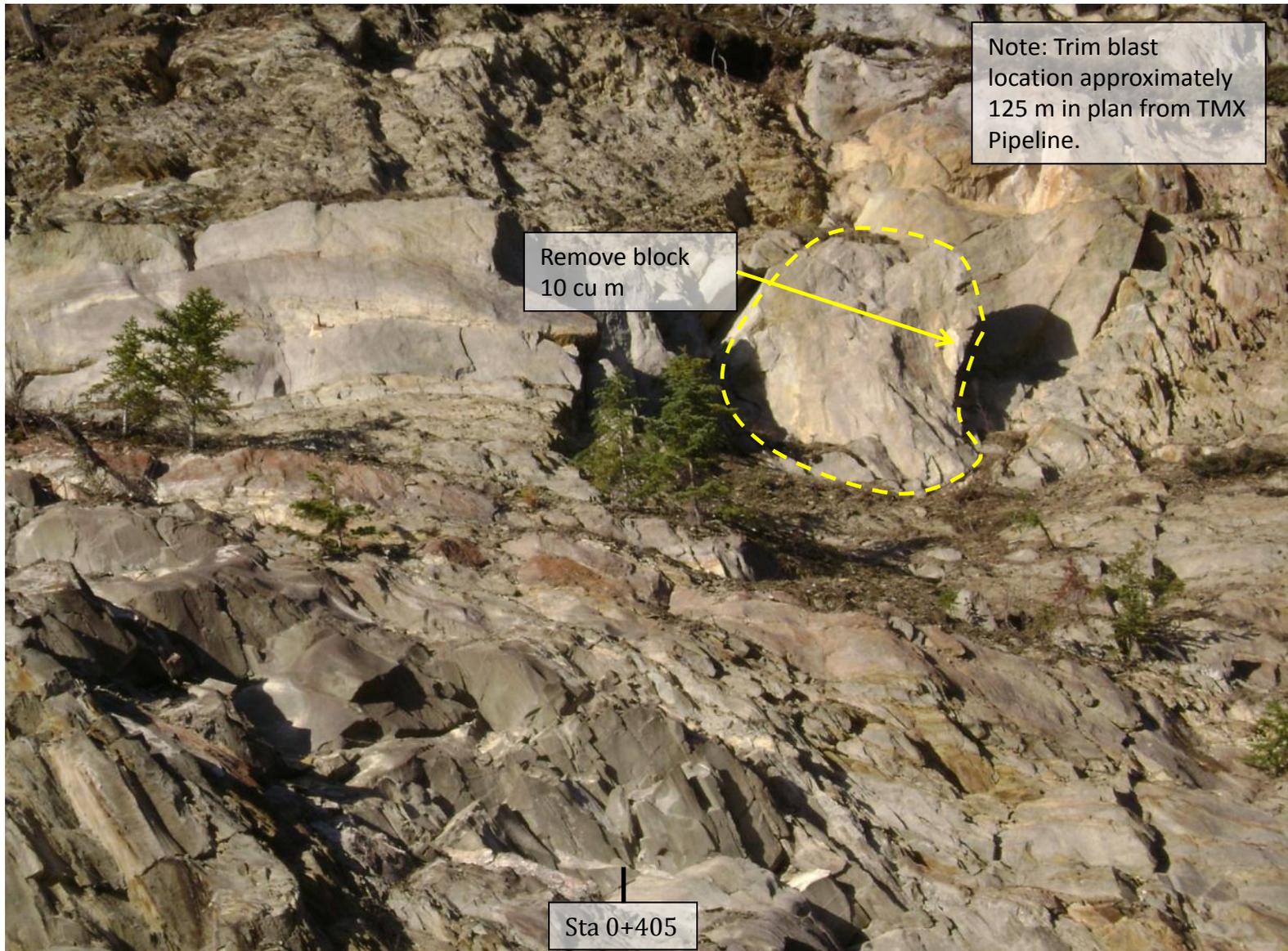


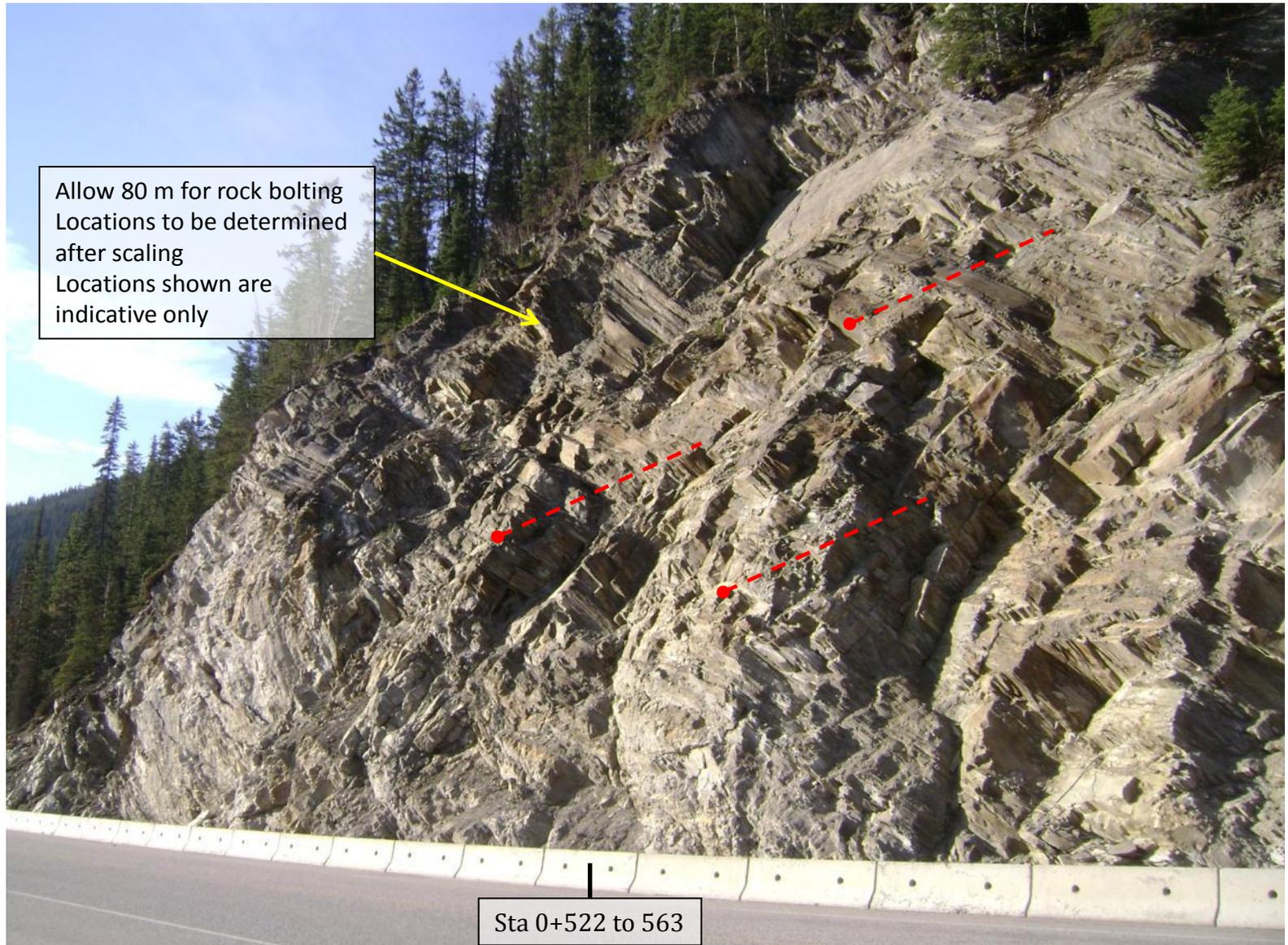
**Photo Taken:** May 13<sup>th</sup>, 2011

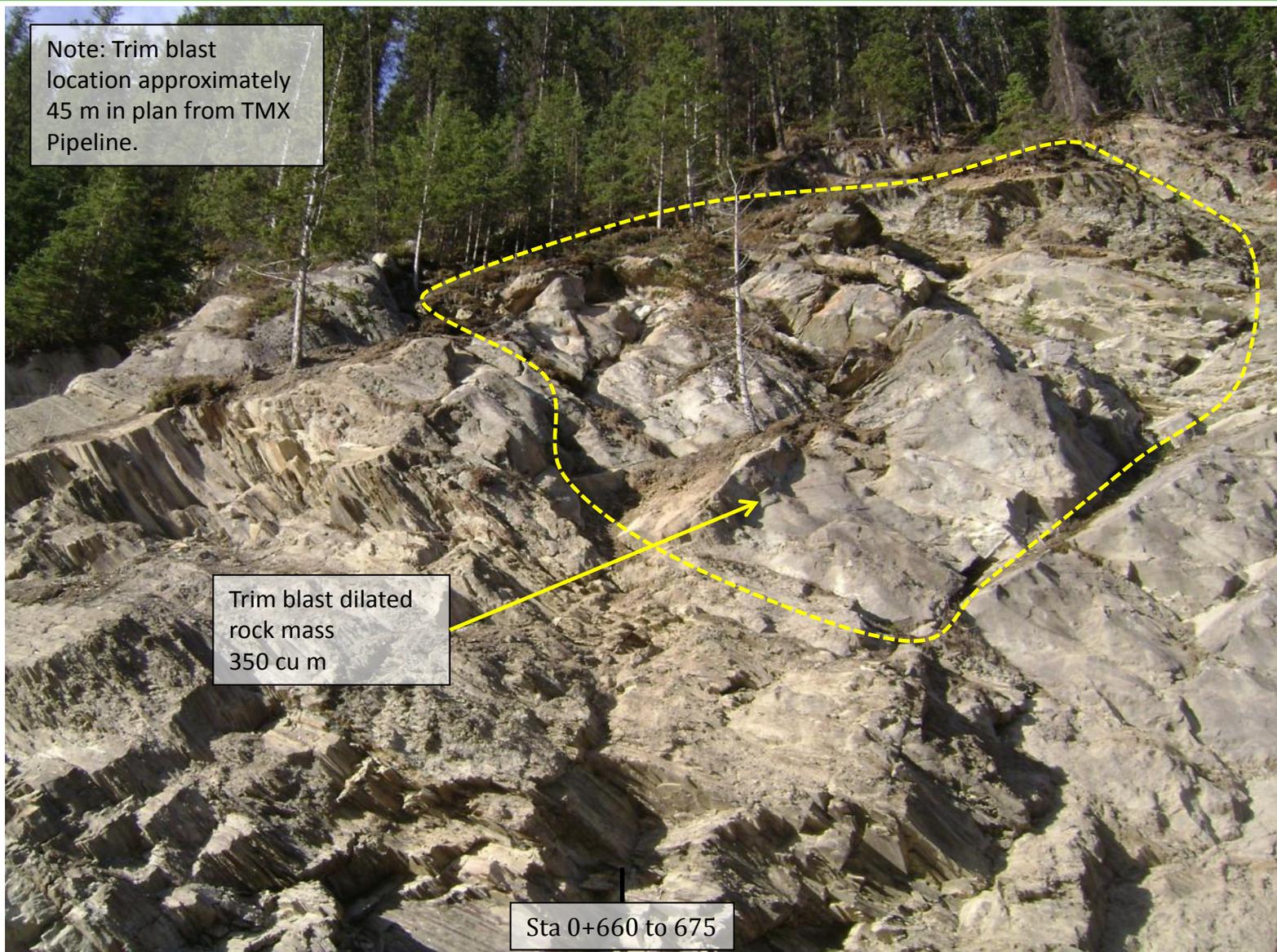


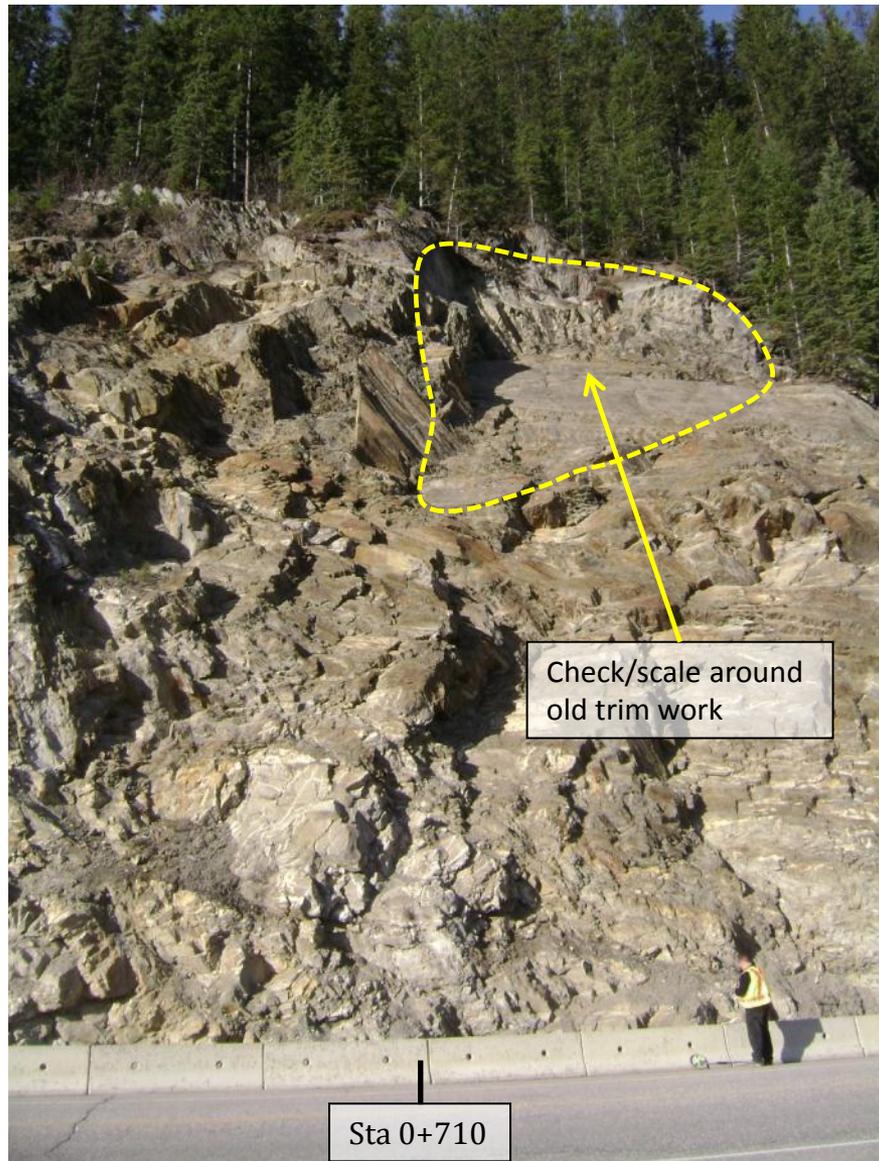


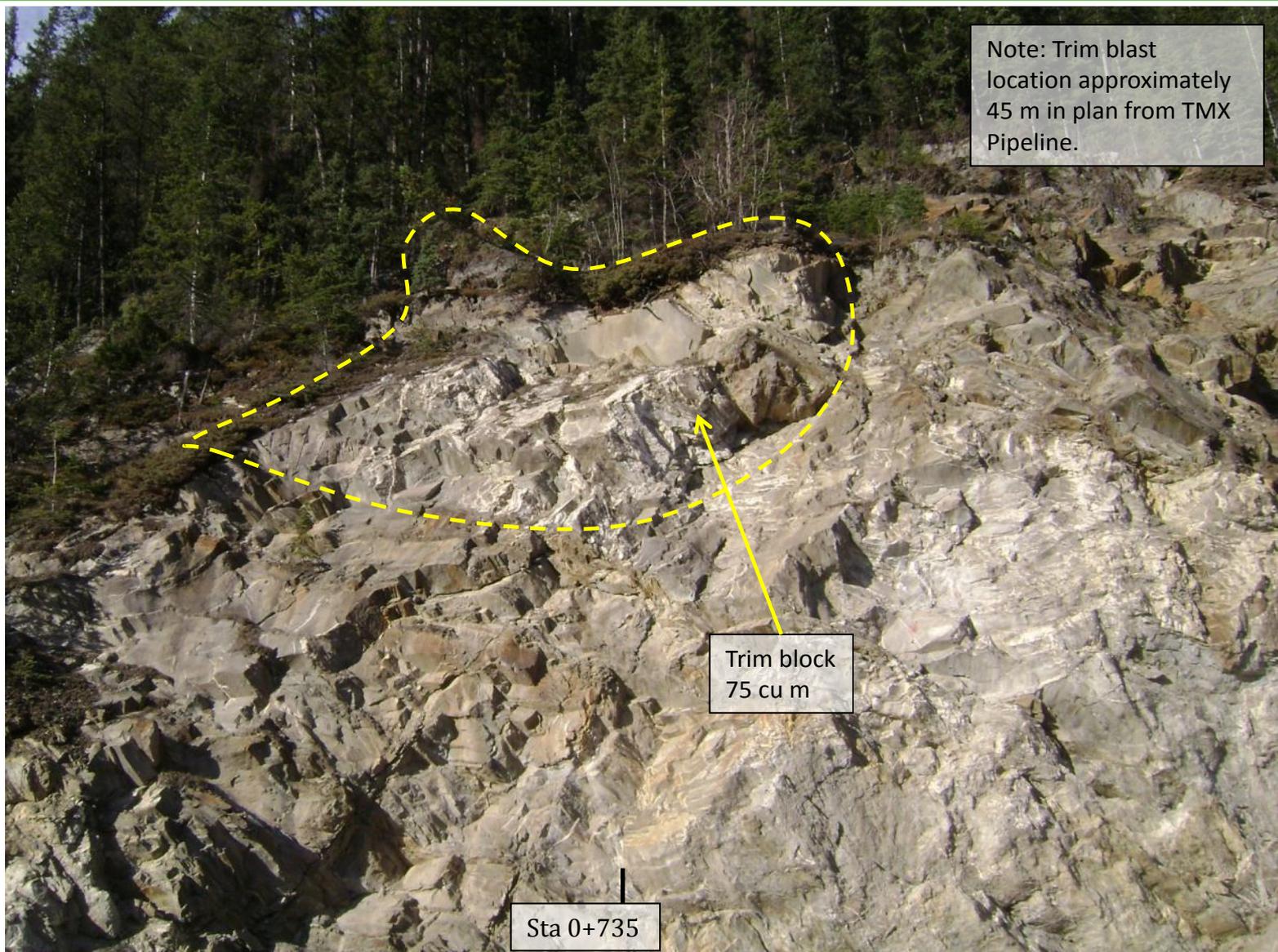




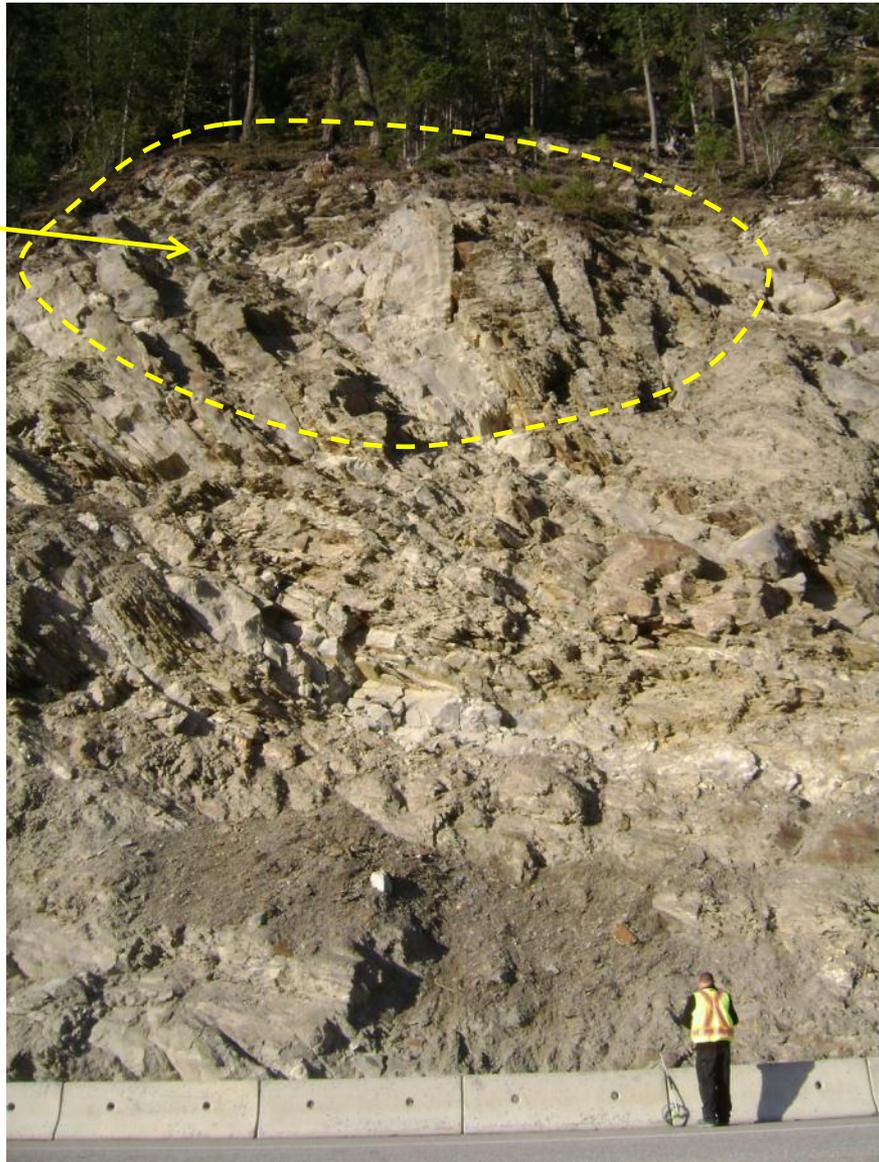






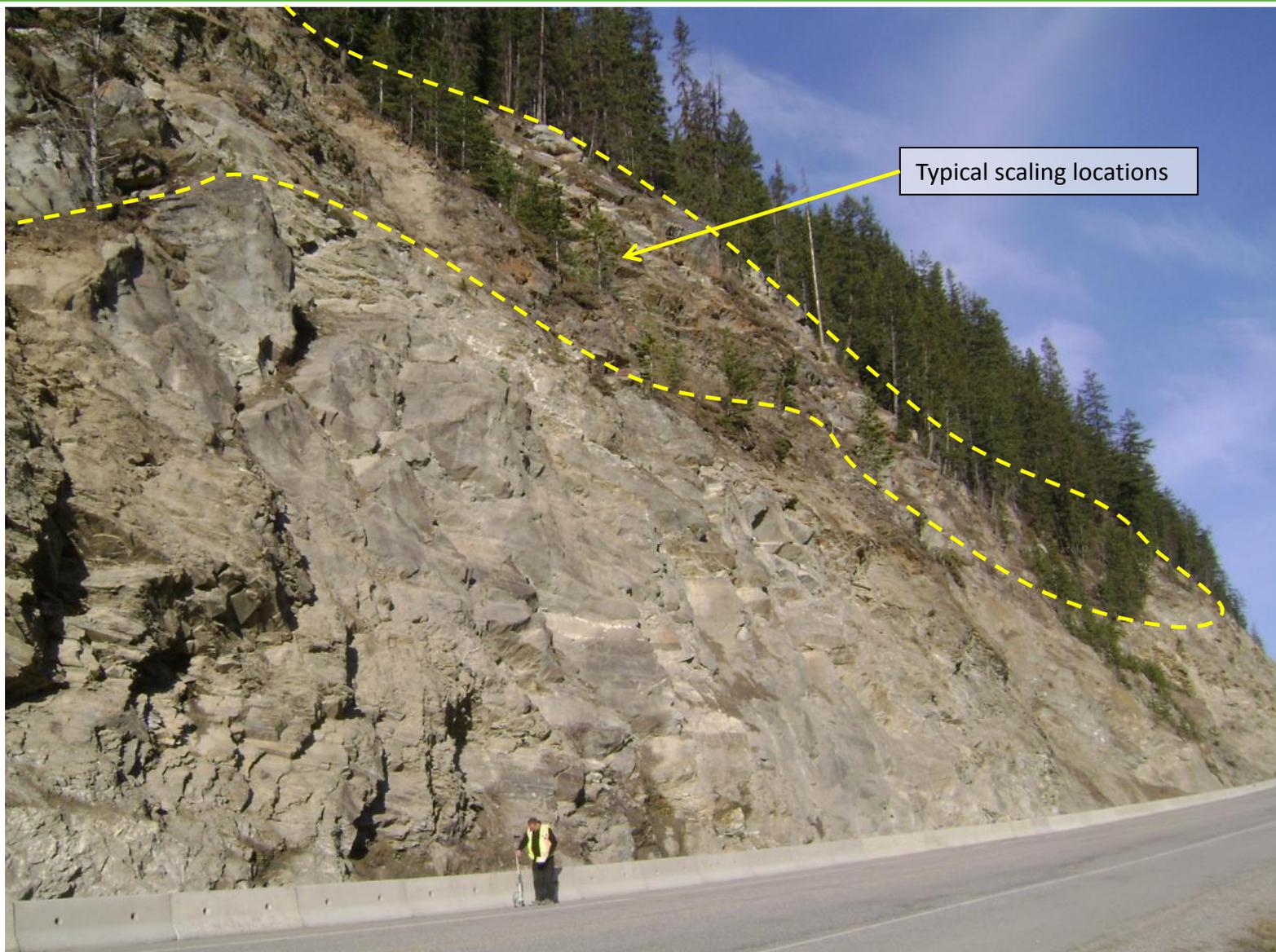


Check / scale



Relaxation of the rock  
in the ditch causing  
dilation of blocks





**Photo Taken:** May 13<sup>th</sup>, 2011