

Independent Expert Engineering Investigation and Review Panel

Report on Mount Polley Tailings Storage Facility Breach

Appendix F: DRAWINGS

Drawing F1: Pre-breach Piezometer and Inclinometer Locations

Drawing F2: Pre-breach Piezometer and Inclinometer Locations in Breach Area

Drawing F3: Instrumentation Sections Near Breach Area

Drawing F4: Instrumentation Sections Near Breach Area

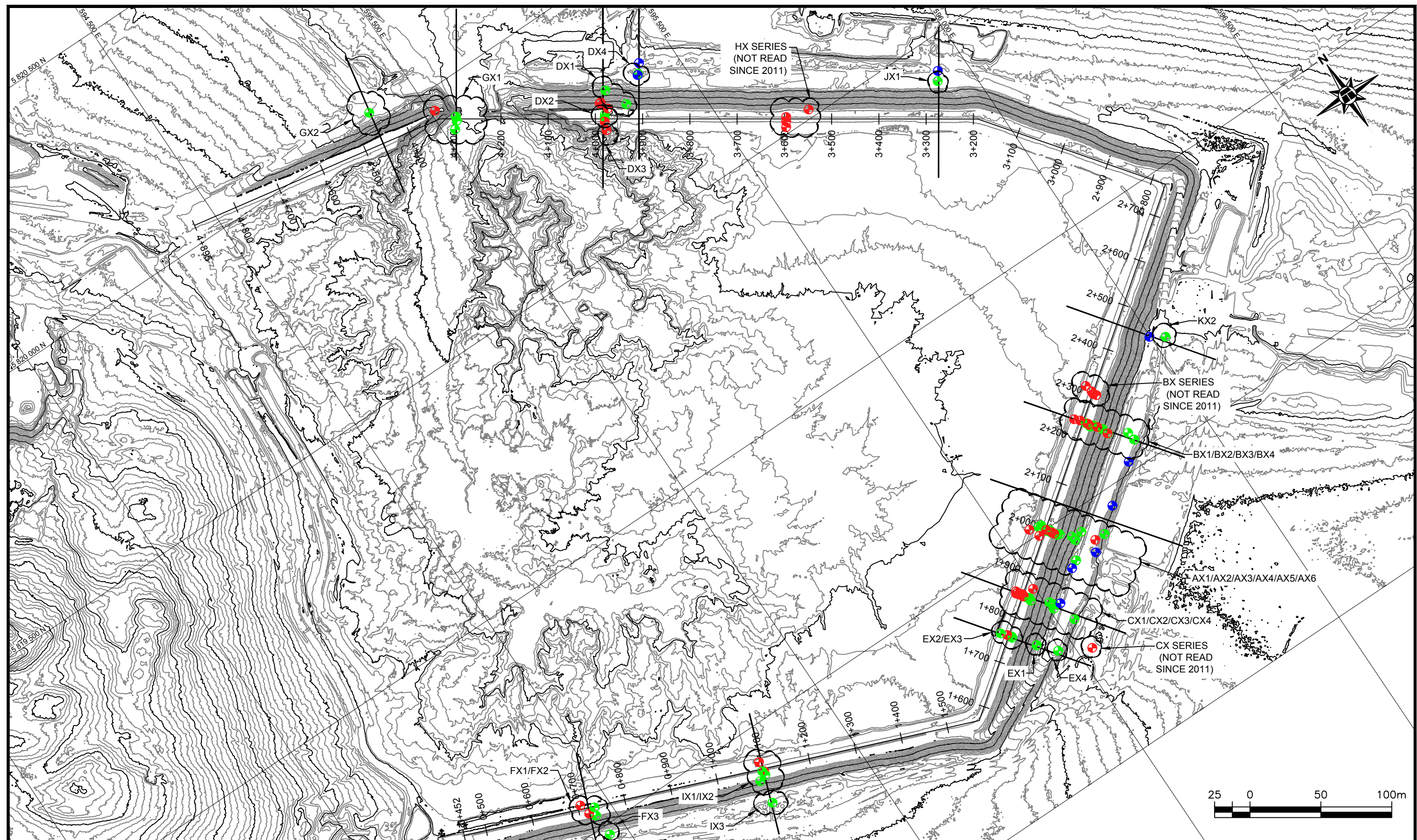
Drawing F5: Seepage Collection Elements Near Breach Area

Drawing F6: Inclinometer SI01-02 Log and Notes

Drawing F7: Inclinometer SI01-02 Monitoring Results

FOLD

Drawing F1: Pre-Breach Piezometer and Inclinator Locations



LEGEND:

- PIEZOMETER
- PIEZOMETER (NOT READ SINCE END OF CONSTRUCTION 2013)
- SLOPE INCLINOMETER

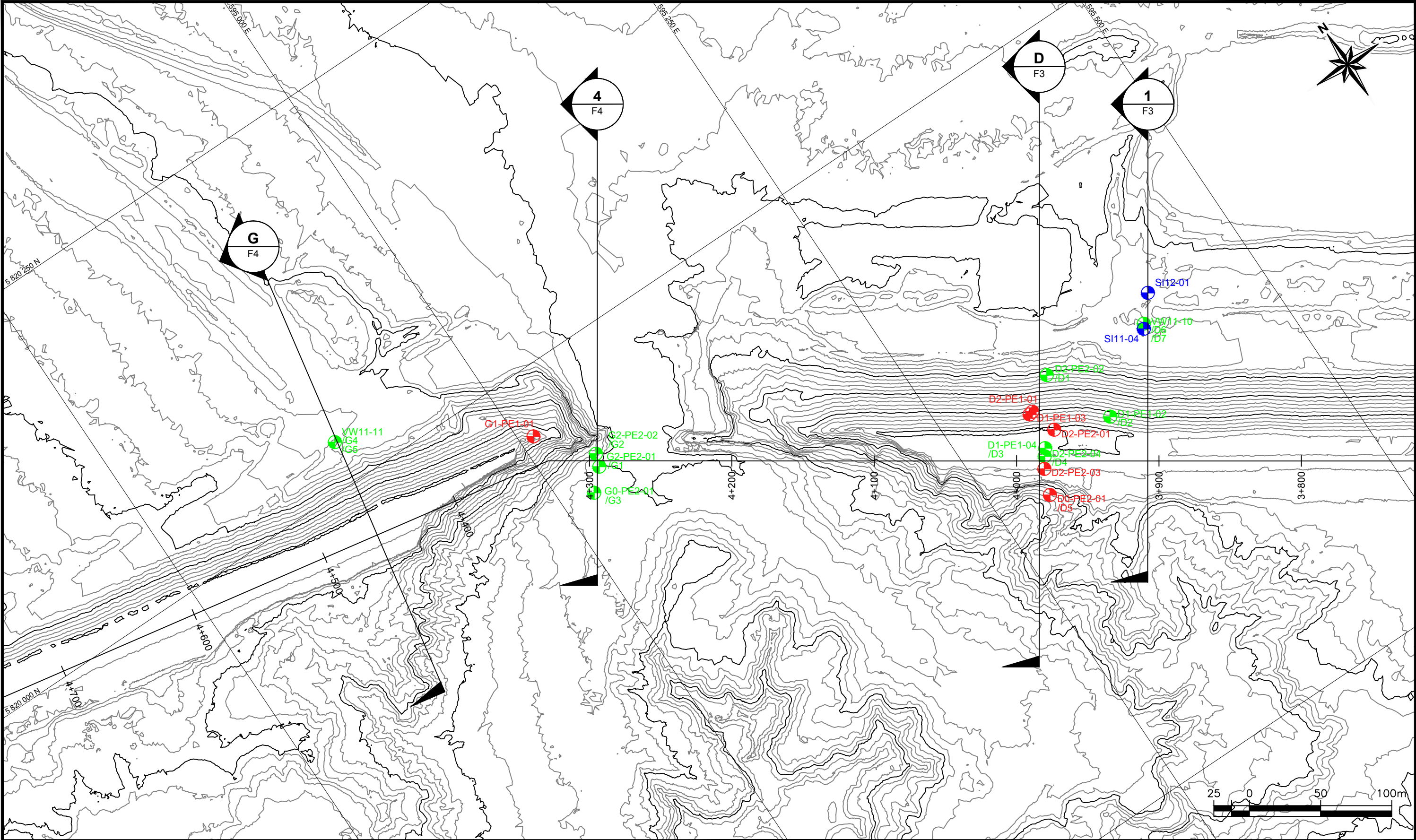
NOTES:

1. REFERENCES CAN BE FOUND IN SUMMARY TABLES IN ATTACHMENT 1.

**PRE-BREACH PIEZOMETER
AND INCLINOMETER LOCATIONS**

MOUNT POLLEY INDEPENDENT EXPERT ENGINEERING INVESTIGATION AND REVIEW PANEL

DESIGNED	DRAWN
PJW	NAK
APPROVED	
D. VAN ZYL	
DATE	DWG. No.
DECEMBER 23, 2014	F1



LEGEND:

- PIEZOMETER
- PIEZOMETER (NOT READ SINCE END OF CONSTRUCTION 2013)
- SLOPE INCLINOMETER

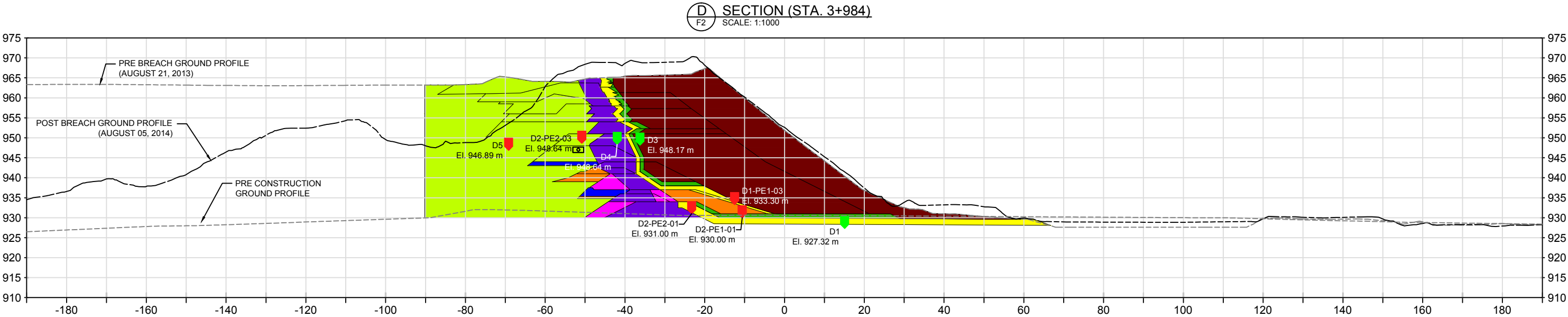
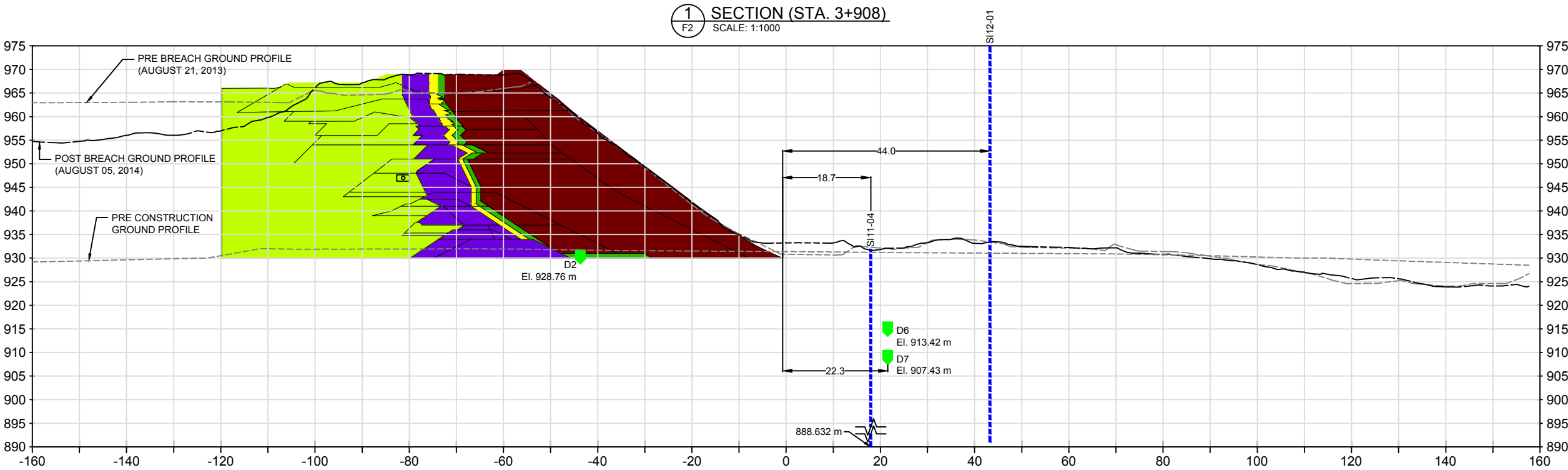
NOTES:

- REFERENCES CAN BE FOUND IN SUMMARY TABLES IN ATTACHMENT 2.
- CROSS-SECTIONS "D" AND "G" ARE AMEC SECTION LOCATIONS.
- CROSS-SECTIONS "1" AND "4" ARE PANEL SECTION LOCATIONS.

PRE-BREACH PIEZOMETER
AND INCLINOMETER LOCATIONS IN BREACH AREA

MOUNT POLLEY INDEPENDENT EXPERT ENGINEERING INVESTIGATION AND REVIEW PANEL

DESIGNED	DRAWN
PJW	NAK
APPROVED	
D. VAN ZYL	
DATE	DWG. No.
DECEMBER 23, 2014	F2



LEGEND:

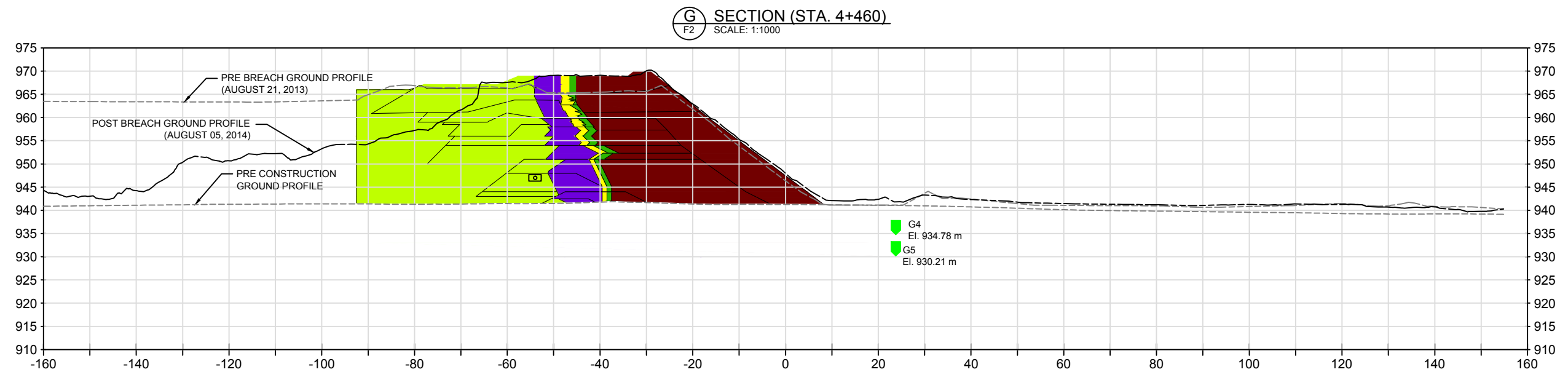
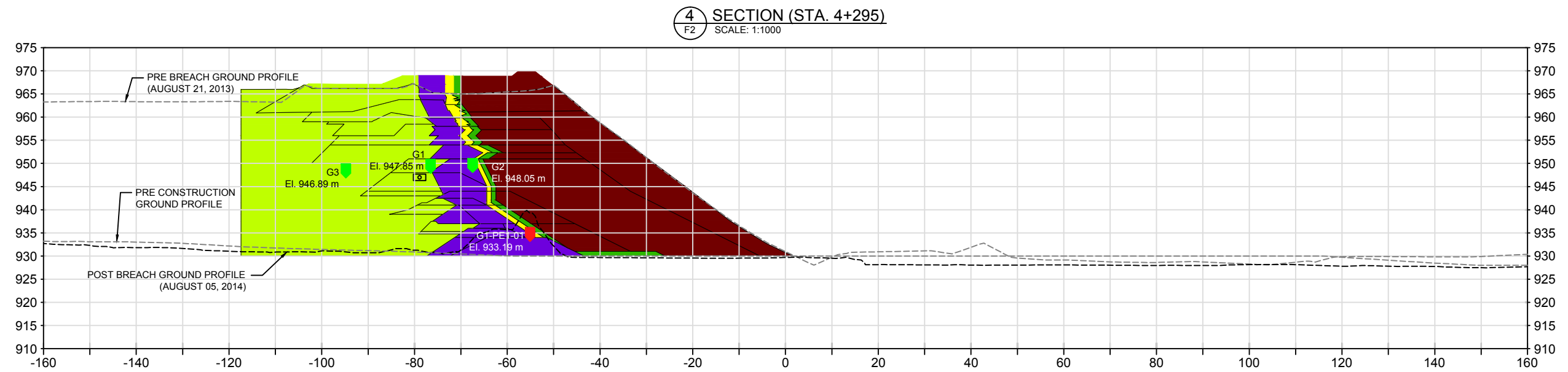
- PIEZOMETER
- PIEZOMETER (NOT READ SINCE END OF CONSTRUCTION 2013 OR EARLIER)

NOTES:

- REFERENCES CAN BE FOUND IN SUMMARY TABLES IN ATTACHMENT 2.
- UPSTREAM DRAIN ELEVATION = 946.3 m.

INSTRUMENTATION SECTIONS NEAR BREACH AREA	DESIGNED P JW	DRAWN NAK
	APPROVED D. VAN ZYL	
	DATE DECEMBER 23, 2014	DWG. No. F3

MOUNT POLLEY INDEPENDENT EXPERT ENGINEERING INVESTIGATION AND REVIEW PANEL



LEGEND:

- ▼ PIEZOMETER
- ▼ PIEZOMETER (NOT READ SINCE END OF CONSTRUCTION 2013 OR EARLIER)

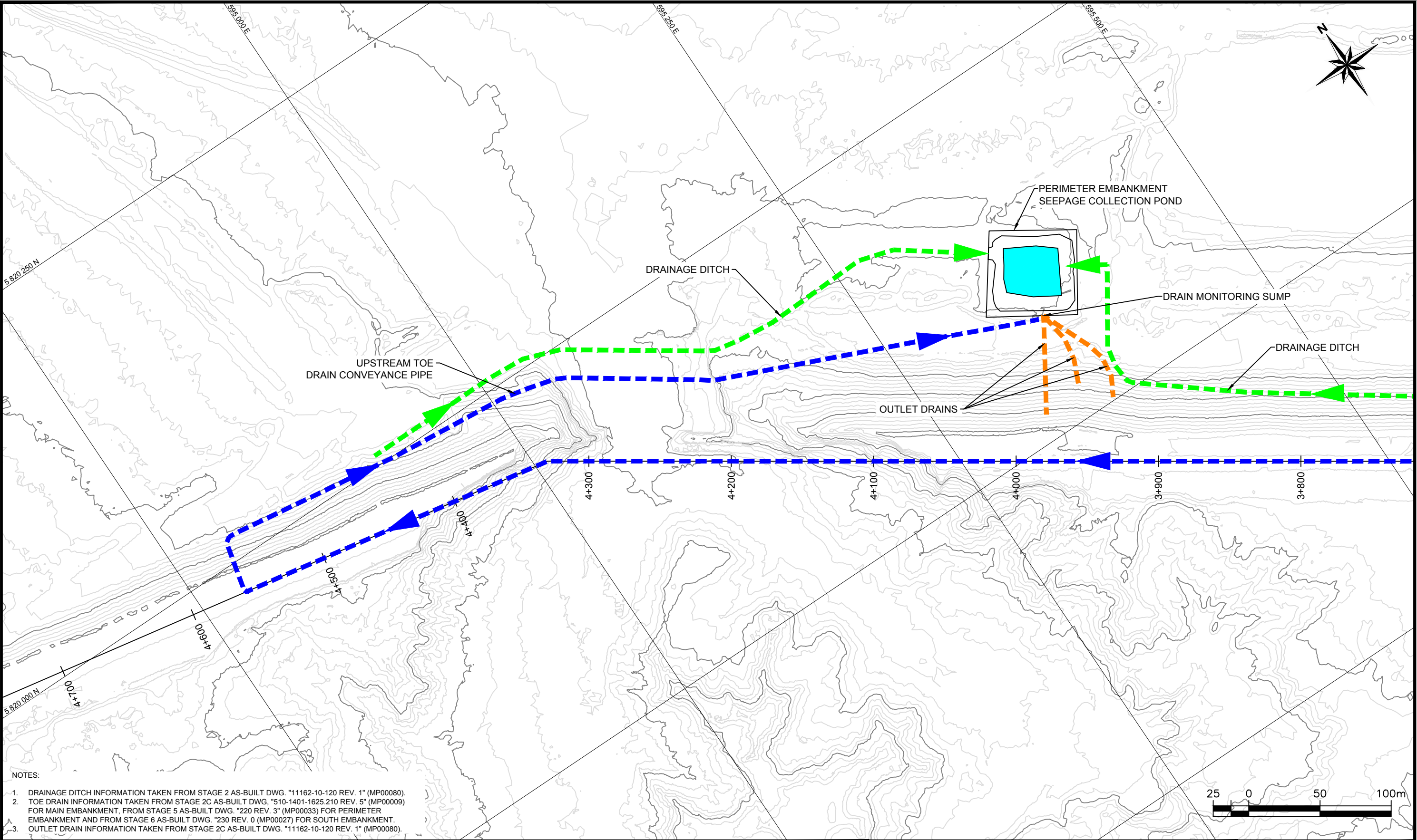
NOTES:

- REFERENCES CAN BE FOUND IN SUMMARY TABLES IN ATTACHMENT 2.
- UPSTREAM DRAIN ELEVATION = 946.3 m.

INSTRUMENTATION SECTIONS NEAR BREACH AREA

MOUNT POLLEY INDEPENDENT EXPERT ENGINEERING INVESTIGATION AND REVIEW PANEL

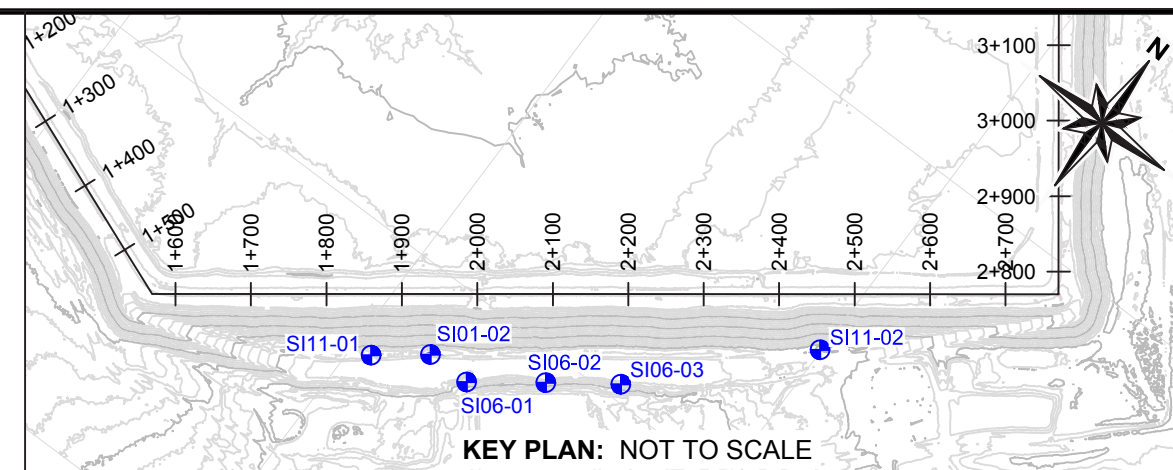
DESIGNED PJW	DRAWN NAK
APPROVED D. VAN ZYL	
DATE DECEMBER 23, 2014	DWG. No. F4



LEGEND:	
	DRAINAGE DITCH
	TOE DRAIN
	OUTLET DRAIN

SEEPAGE COLLECTION ELEMENTS NEAR BREACH AREA	
MOUNT POLLEY INDEPENDENT EXPERT ENGINEERING INVESTIGATION AND REVIEW PANEL	

DESIGNED PJW	DRAWN NAK
APPROVED D. VAN ZYL	
DATE JANURARY 06, 2015	DWG. No. F5



1. "HOWEVER, INCLINOMETER SI01-02 IS SHOWING SLIGHT DEVIATIONS (LESS THAN 3 mm) AT AN APPROXIMATE DEPTH OF 10 m BELOW GROUND IN THE LACUSTRINE SILTS. THIS IS BEING CLOSELY MONITORED BY MPMC WHO HAVE INCREASED THE MONITORING FREQUENCY OF THE INCLINOMETERS TO WEEKLY. MPMC HAS ALSO EXPANDED THE BUTTRESS AT THE MAIN EMBANKMENT AS A RESULT OF THE MEASURED DISPLACEMENTS IN SI01-02. THE EXPANSION OF THE BUTTRESS APPEARS TO HAVE BEEN EFFECTIVE AS NO ADDITIONAL DISPLACEMENTS HAVE BEEN MEASURED IN INCLINOMETER SI01-02". (MP00034, 2009 ANNUAL INSPECTION REPORT - FOR STAGE 6A, KP).
2. STAGE 6A BUTTRESS TO EL. 918 m, TOP OF STAGE 6A EL. 954 m. ORIGINAL SURFACE ELEVATION OF BORING FOR INCLINOMETER INSTALLATION EL. 917.3 m. EMBANKMENT HEIGHT ABOUT 37 m WHEN FIRST MOVEMENT OBSERVED.
3. SI01-02 WAS RE-INITIALIZED JUNE 29, 2013 AFTER EXTENDING THE CASING 2.9 m. "PRIOR TO THE EXTENSION, DISPLACEMENT WAS NOTED TO BE 5 mm OVER 6 MONTHS. AFTER THE EXTENSION THROUGH THE REST OF 2013, DISPLACEMENT WAS NOTED TO BE ABOUT 4 mm". (MP00044, 2013 AS-BUILT AND ANNUAL REVIEW REPORT, AMEC).
4. TOP ELEVATION OF EMBANKMENT EL. 967 m ACCORDING TO PAGE 5 OF REPORT MP00044. ON DRAWING 2013AB.03 - MAIN EMBANKMENT AS-BUILT SECTION A 92+060 TOP ELEVATION IS SHOWN AS 966 m. ON DRAWING 2013AB.04 - PERIMETER EMBANKMENT SECTION D (3+990) TOP ELEVATION IS SHOWN AS 967 m WITH THE NOTE "2013 AS-BUILT CREST ELEVATION VARIES". A SIMILAR NOTE IS INCLUDED ON THE DRAWING FOR THE SOUTH EMBANKMENT.
5. TOP OF BUTTRESS SEEMS TO BE AT ABOUT EL. 926 m IN MINE EMBANKMENT SECTION A. EMBANKMENT HEIGHT ABOUT 41 m ABOVE BUTTRESS WHEN THE MOVEMENT OCCURRED.

DESIGNED DNR	DRAWN NAK
APPROVED D. VAN ZYL	
DATE JANUARY 23, 2015	DWG. No. F6

