



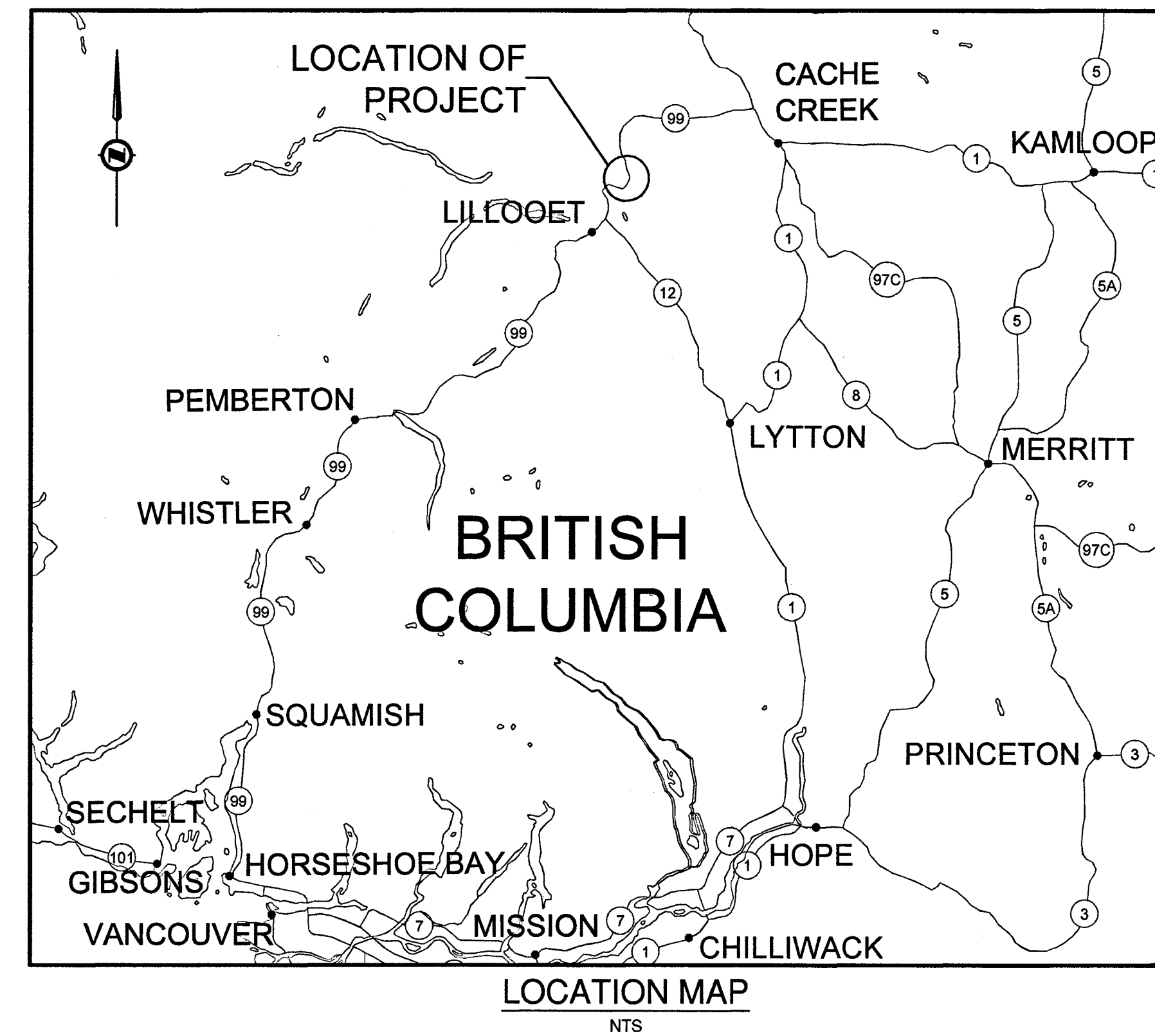
Ministry of  
Transportation  
and Infrastructure

PROJECT NO. 23880-0002

**HIGHWAY 99  
TEN MILE SLIDE  
ADVANCED ANCHOR WORK**

## HIGHWAY 99 TEN MILE SLIDE ADVANCED ANCHOR WORK DRAWING INDEX

DRAWING No.	DESCRIPTION
R2-1046-000	COVER PAGE
R2-1046-001	LOCATION MAP AND DRAWING INDEX
R2-1046-002	LEGEND
R2-1046-101	SITE PLAN
R2-1046-102	SLIDE STABILIZATION - PLAN
R2-1046-103	HIGHWAY GRADING - PLAN AND PROFILE
R2-1046-104	ANCHOR BENCH A AND B - PLAN AND PROFILE
R2-1046-201	SLIDE STABILIZATION - TYPICAL SECTION
R2-1046-202	TYPICAL CONSTRUCTION SEQUENCE
R2-1046-203	EXCAVATION AND GRADING - TYPICAL SECTIONS AND DETAILS
R2-1046-204	ACCESS RAMP AND ACCESS TRAIL - PLAN AND PROFILES
R2-1046-205	ACCESS RAMP AND ACCESS TRAIL - SECTIONS
R2-1046-301	SOIL ANCHOR DETAILS
R2-1046-302	SOIL ANCHOR LOCATIONS
R2-1046-303	PRECAST ANCHOR BLOCK DETAILS
R2-1046-401	EXISTING SITE INVESTIGATIONS AND INSTRUMENTATION - PLAN
R2-1046-402	INSTRUMENTATION - PLAN AND DETAILS



NOTES:  
 1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.  
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X:\PROJECTS\0272 MOT\FOUNTAIN SLIDE CAD\PRODUCTION\FC\20180511\_AAW\001.DWG



REV	DATE	REVISIONS	SIGNATURE
1	2019-05-14	ISSUED FOR RECORD	RNK

**BRITISH COLUMBIA**  
 MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE  
 SOUTHERN INTERIOR REGION  
 HIGHWAY ENGINEERING AND GEOMATICS

SENIOR DESIGNER: **R.N. KOSTASCHUK**  
 DATE: 2019-05-14

DESIGNED: \_\_\_\_\_ RNK DATE: 2018-08-13  
 QUALITY CONTROL: \_\_\_\_\_ RNK DATE: 2018-07-10  
 QUALITY ASSURANCE: \_\_\_\_\_ MAP DATE: 2018-07-10  
 DRAWN: \_\_\_\_\_ NAK DATE: 2019-05-14

**LOCATION MAP AND DRAWING INDEX**

HIGHWAY 99  
 TEN MILE SLIDE ADVANCED ANCHOR WORK

FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
2806	23880-0002	R2	R2-1046-001	1

# LEGEND

## EXISTING SYMBOLS

- AERIAL UTILITIES**
- POWER POLE
- GEOTECHNICAL**
- BOREHOLE
  - HISTORICAL BOREHOLE (NOTE 2)
  - SLOPE INCLINOMETER (INACTIVE)
  - PIEZOMETER WITH SLOPE INCLINOMETER OR SHAPE ACCEL ARRAY (INACTIVE)
  - PIEZOMETER WITH SLOPE INCLINOMETER (ACTIVE PIEZOMETER)
  - SNC VAPOUR WELL (ACTIVE)
  - MP4 MONITORING POINT (ACTIVE)
  - DATA LOGGER (ACTIVE)
- STRUCTURAL**
- FT01 X SOIL ANCHOR (NOTE 3)
  - CN MICROPILE (NOTE 2)
  - FT03-L X SOIL ANCHOR WITH LOAD CELL
  - CSM PANEL AS-BUILT LOCATION
- EXISTING LINE TYPES**
- HYDRAULIC**
- CULVERT
- UTILITIES**
- BC HYDRO CABLE
- GEOTECHNICAL**
- EXISTING GROUND SURFACE
  - INTERPRETED BOTTOM OF BASAL SHEAR ZONE
  - INTERPRETED TOP OF UNDIFFERENTIATED GLACIAL SEDIMENT
  - APPROXIMATE LANDSLIDE DISPLACEMENT BOUNDARY
- BOUNDARIES**
- RIGHT OF WAY
  - PROPERTY LINE

## SYMBOLS FOR CONSTRUCTION

- GEOTECHNICAL AND STRUCTURAL**
- △ BENCH WORKING POINT
  - ⊗ NEW SOIL ANCHOR
  - B41-L ⊗ NEW SOIL ANCHOR WITH LOAD CELL
  - ANCHOR BLOCK
  - ANCHOR FREE STRESSING LENGTH
  - ANCHOR BOND LENGTH
- LINE TYPES FOR CONSTRUCTION**
- FEATURES**
- FINAL GRADE
  - SITE CLEARING AND GRUBBING LIMIT
- BOUNDARIES**
- SITE LIMIT
  - EXISTING EAST ACCESS ROAD TO BE USED FOR CONSTRUCTION
- UTILITIES**
- CULVERT

## EXCAVATION, GRADING AND DRAINAGE

- PATTERNS**
- ▨ EXCAVATION
  - ▩ TYPE D FILL
  - ▩ HIGH FINES SURFACING AGGREGATE (HFSA)
  - ▩ CLASS 10 RIP RAP

### PRIMARY SURVEY CONTROL

Project: Ten Mile Slide Stabilization				Date: 2017-03-21		Origin: 82C157		Tack Point: L003		ACSF: 0.999640
Horizontal Datum: UTM Z10 NAD 83 CSRS					Vertical Datum: CGVD28 HT2.0					
POINT ID	Local Northing	Local Easting	Ortho. Ht	UTM Northing	UTM Easting	Ellip. Ht	Pt Scale Factor	Survey Method	Comment	
TACKPT	622126.449	580633.540		5622126.449	580633.540	0.000	-	-	-	
82C157	616060.904	575085.576	251.668	5616063.088	575087.573	236.801	0.999632	CONTROL	MONUMENT	
82C165	621751.225	580135.005	396.767	5621751.360	580135.184	382.029	0.999619	STATIC	MONUMENT	
88H4224	624727.398	581862.735	420.781	5624726.462	581862.292	406.147	0.999619	STATIC	MONUMENT	
L003	622126.449	580633.540	342.067	5622126.449	580633.540	327.350	0.999629	STATIC	REBAR	

#### SURVEY NOTE:

ALL LOCAL COORDINATES ARE DERIVED BY FIRST SCALING FROM THE TACK POINT AND THEN REMOVING THE MILLIONTH DIGIT FROM THE NORTHING. To calculate local coordinates manually, or with software that is unable to use a tack point, or if a match to adjacent projects is required, the applied Northing and Easting shifts must be recorded here.

Northing Shift      -5002024.694      Local Northing = (UTM Northing/ACSF)+Northing Shift  
 Easting Shift      -209.103      Local Easting = (UTM Easting/ACSF)+Easting Shift

NOTES: Combined scale factor of 0.999640 is meant to better fit with existing monitoring work by Binnie. Rounded to 6 decimal places for simplicity.

- NOTES:**
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE MINISTRY REPRESENTATIVE SHOULD UNCERTAINTIES ARISE WITH THE DRAWINGS, SCOPE, AND/OR TECHNICAL SPECIFICATIONS.
  - THE LOCATIONS OF EXISTING CN MICROPILES AND HISTORICAL BOREHOLES ARE APPROXIMATE, AND NOT BASED ON AS-BUILT SURVEY DATA.
  - THE AS-CONSTRUCTED LOCATION OF EACH EXISTING ANCHOR BLOCK ON ANCHOR ROW A IS APPROXIMATE AND ANCHOR BLOCKS HAVE MOVED DOWN SLOPE SIGNIFICANTLY SINCE CONSTRUCTION DUE TO SLIDE MOVEMENT.
  - BGC DOES NOT WARRANT OR GUARANTEE, NOR ACCEPT ANY RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE AS-CONSTRUCTED INFORMATION SUPPLIED BY OTHERS CONTAINED IN THIS DRAWING. BGC ACKNOWLEDGES THAT BASED ON THE AS-CONSTRUCTED INFORMATION PROVIDED, IF ACCURATE AND COMPLETE, AND THE PERIODIC CONSTRUCTION MONITORING OBSERVATIONS BY BGC, THE AS-CONSTRUCTED SYSTEM SUBSTANTIALLY COMPLIES WITH THE ORIGINAL DESIGN INTENT.



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BRITISH COLUMBIA  
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R.N. KOSTASCHUK  
 SENIOR DESIGNER  
 DATE 2019-05-14

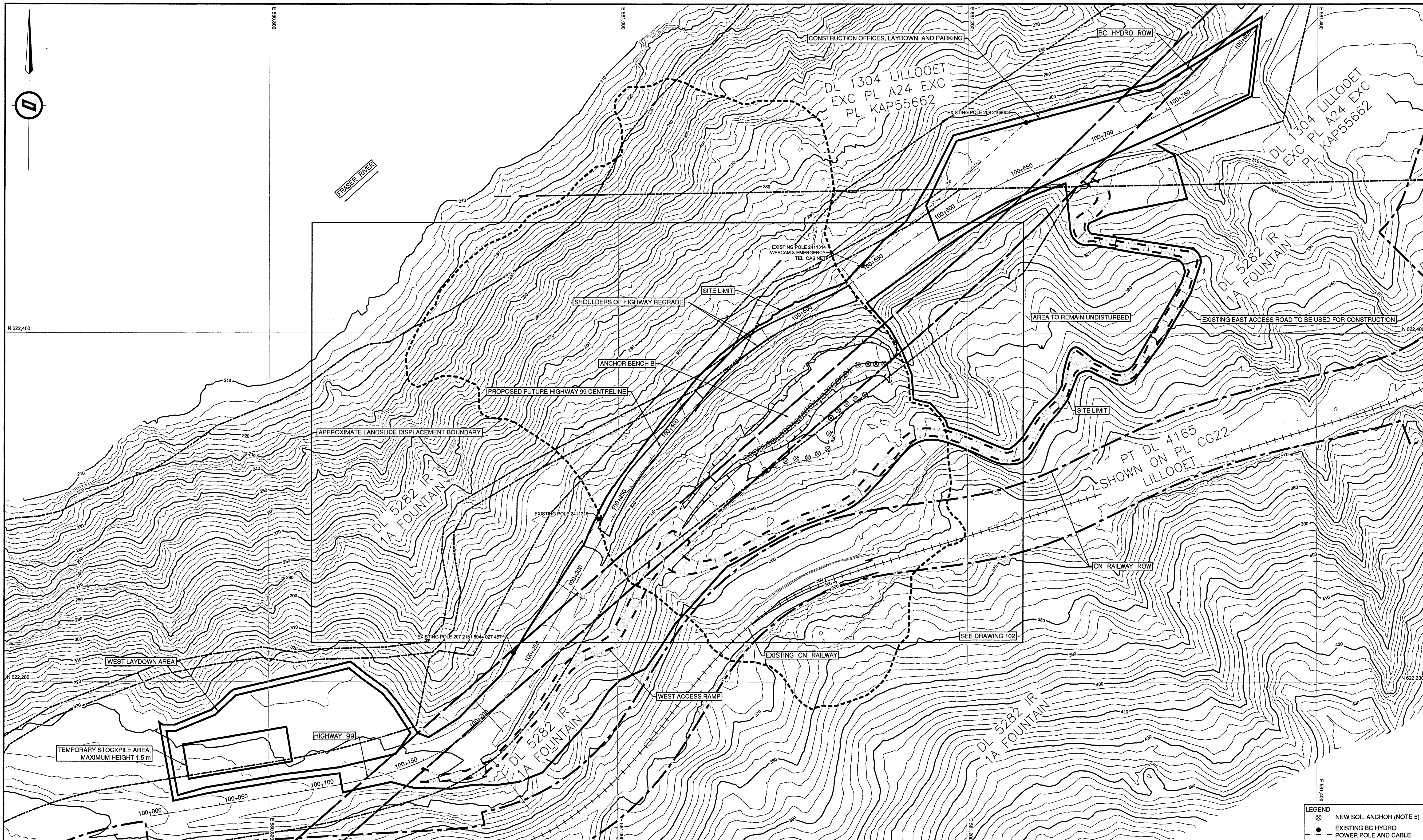
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 DRAWN: AH DATE 2019-08-13

### LEGEND

HIGHWAY 99  
 TEN MILE SLIDE ADVANCED ANCHOR WORK

FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
2806	23880-0002	R2	R2-1046-002	1





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 3. BASE TOPOGRAPHIC DATA BASED ON FOUNTAIN VALLEY/TEN MILE SLIDE BASEPLAN PROVIDED BY THE BC MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE, DATED JANUARY 5, 2019. HIGHWAY AND BENCH B SURVEY PROVIDED BY KIEWIT SONS ULC DATED JANUARY 12 AND 14, 2019 RESPECTIVELY. LIDAR CAPTURED WEST ACCESS RAMP AS-BUILT SURFACE. CONTOUR INTERVAL IS 2.0 m.  
 4. PROJECTION IS IN LOCAL GRID.  
 5. SOIL ANCHOR AS-BUILT LOCATIONS PROVIDED BY KIEWIT SONS ULC DATED FROM DECEMBER 19, 2018 TO JANUARY 12, 2019 (SEE DRAWING 302).  
 6. BGC DOES NOT WARRANT OR GUARANTEE, NOR ACCEPT ANY RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE AS-CONSTRUCTED INFORMATION SUPPLIED BY OTHERS CONTAINED IN THIS DRAWING. BGC ACKNOWLEDGES THAT BASED ON THE AS-CONSTRUCTED INFORMATION PROVIDED, IF ACCURATE AND COMPLETE, AND THE PERIODIC CONSTRUCTION MONITORING OBSERVATIONS BY BGC, THE AS-CONSTRUCTED SYSTEM SUBSTANTIALLY COMPLIES WITH THE ORIGINAL DESIGN INTENT.

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REV	DATE	REVISIONS	SIGNATURE		
1	2019-05-14	ISSUED FOR RECORD	RNK		

BRITISH COLUMBIA  
 MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE  
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 HIGHWAY ENGINEERING AND GEOMATICS

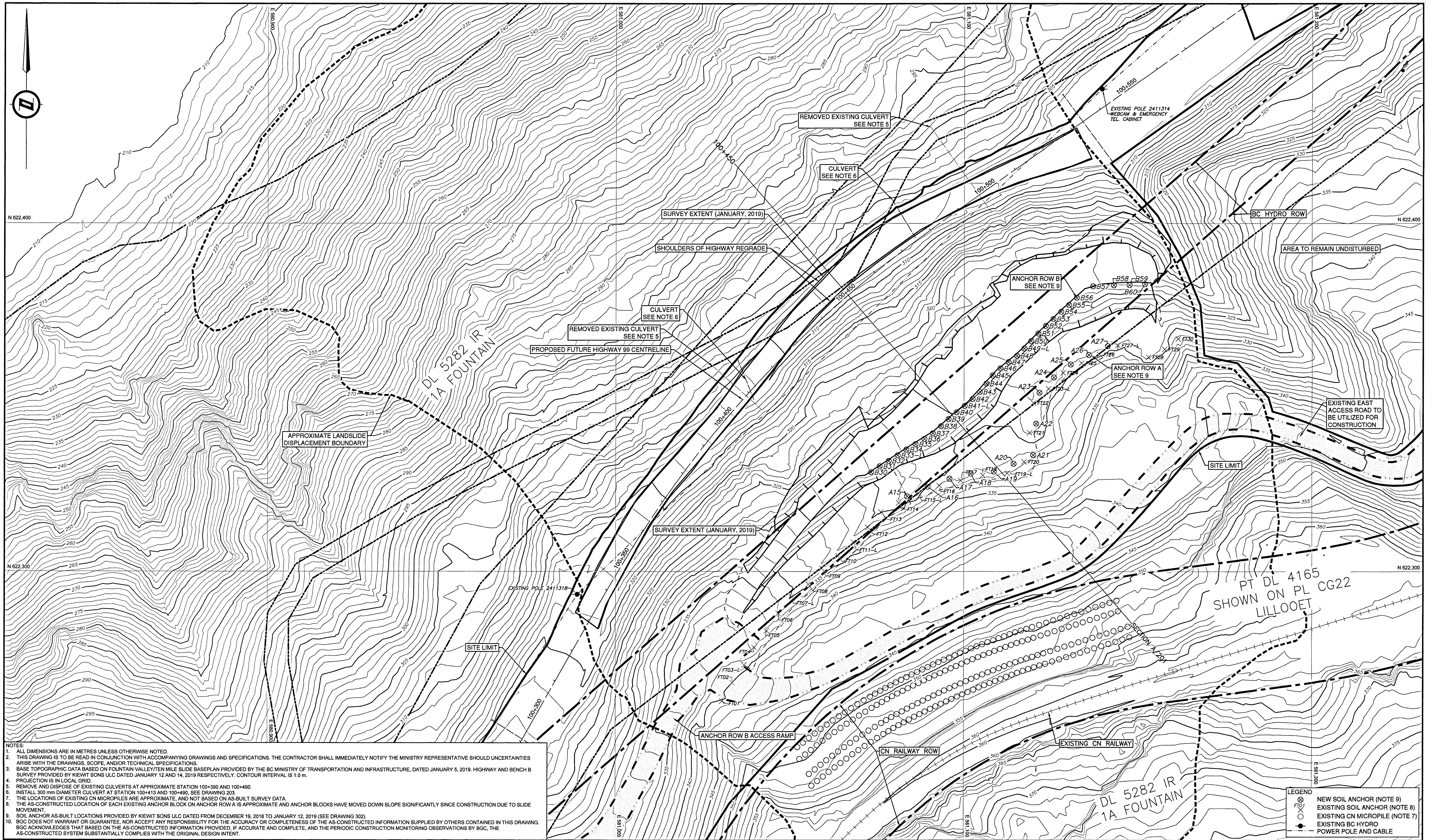
R.N. KOSTASCHUK  
 SENIOR DESIGNER  
 DATE 2019-05-14

DESIGNED: RNK DATE 2018-08-13  
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 QUALITY ASSURANCE: MJP DATE 2018-07-10  
 DRAWN: AH DATE 2018-08-13

SITE PLAN  
 HIGHWAY 99  
 TEN MILE SLIDE ADVANCED ANCHOR WORK

FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
2806	23880-0002	R2	R2-1046-101	1





NOTES:

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4. PROJECTION IS IN LOCAL GRID.
5. REMOVE AND DISPOSE OF EXISTING CULVERTS AT APPROXIMATE STATION 100+390 AND 100+490.
6. INSTALL 300 mm DIAMETER CULVERT AT STATION 100+413 AND 100+490. SEE DRAWING 203.
7. THE LOCATIONS OF EXISTING CN MICROPILES ARE APPROXIMATE, AND NOT BASED ON AS-BUILT SURVEY DATA.
8. THE AS-CONSTRUCTED LOCATION OF EACH EXISTING ANCHOR BLOCK ON ANCHOR ROW A IS APPROXIMATE AND ANCHOR BLOCKS HAVE MOVED DOWN SLOPE SIGNIFICANTLY SINCE CONSTRUCTION DUE TO SLIDE MOVEMENT.
9. SOIL ANCHOR AS-BUILT LOCATIONS PROVIDED BY KIEWIT SONS ULC DATED FROM DECEMBER 19, 2018 TO JANUARY 12, 2019 (SEE DRAWING 302).
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LEGEND

- NEW SOIL ANCHOR (NOTE 9)
- EXISTING SOIL ANCHOR (NOTE 8)
- EXISTING CN MICROPILE (NOTE 7)
- EXISTING BC HYDRO
- POWER POLE AND CABLE

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REV	DATE	REVISIONS	SIGNATURE	DATE	
1	2019-05-14	ISSUED FOR RECORD	RNK	2019-05-14	

BRITISH COLUMBIA  
 MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE  
 SOUTHERN INTERIOR REGION  
 HIGHWAY ENGINEERING AND GEOMATICS

R.N. KOSTASCHUK  
 SENIOR DESIGNER  
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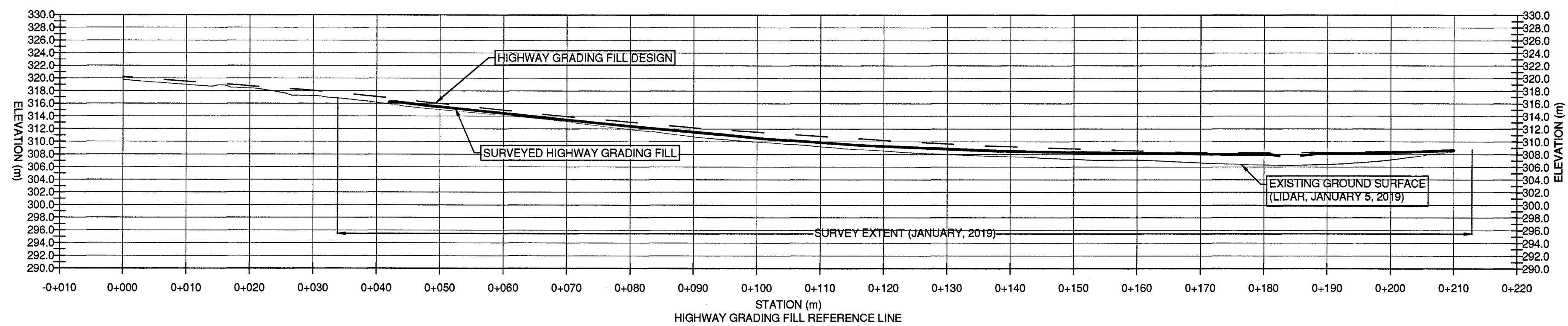
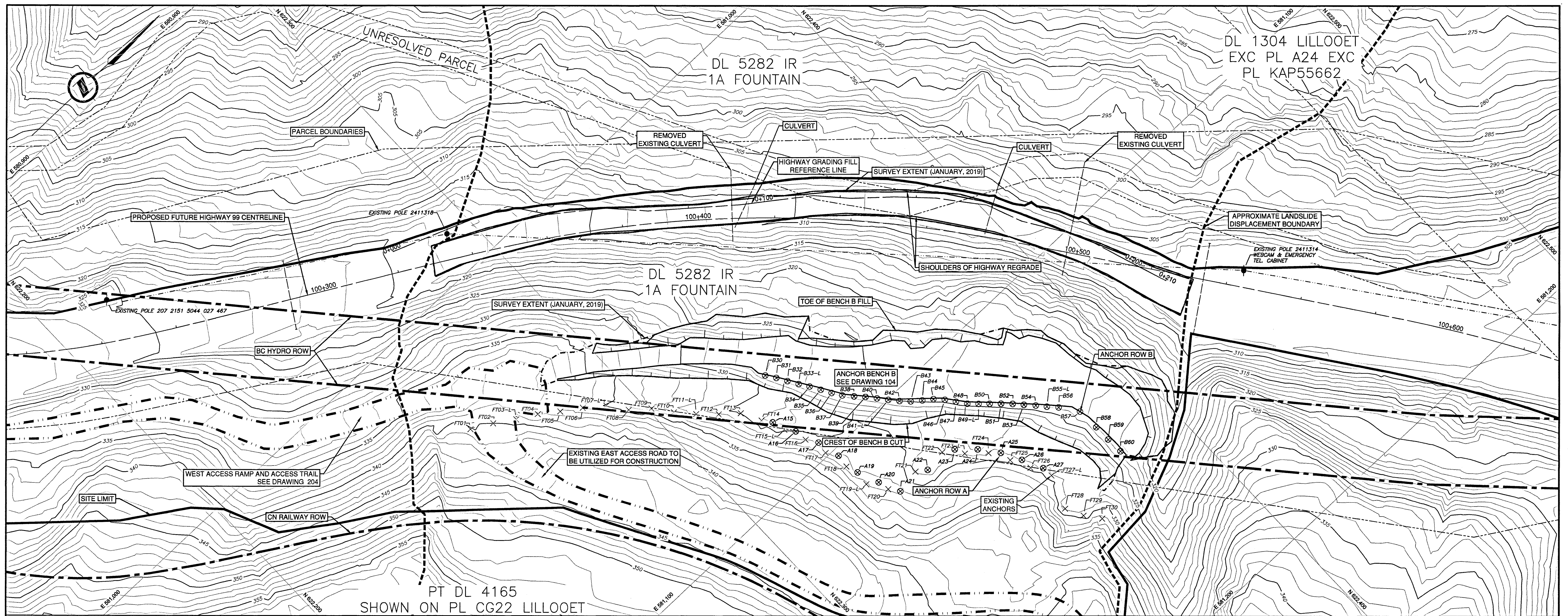
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SLIDE STABILIZATION - PLAN

HIGHWAY 99  
 TEN MILE SLIDE ADVANCED ANCHOR WORK

FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
2806	23880-0002	R2	R2-1046-102	1





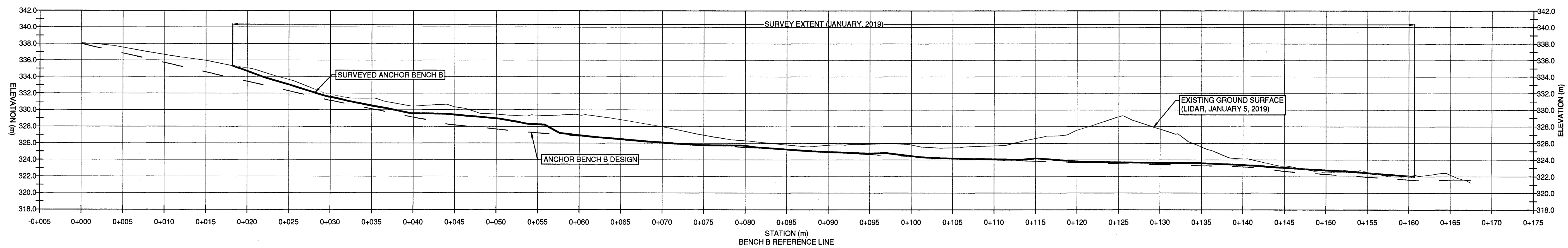
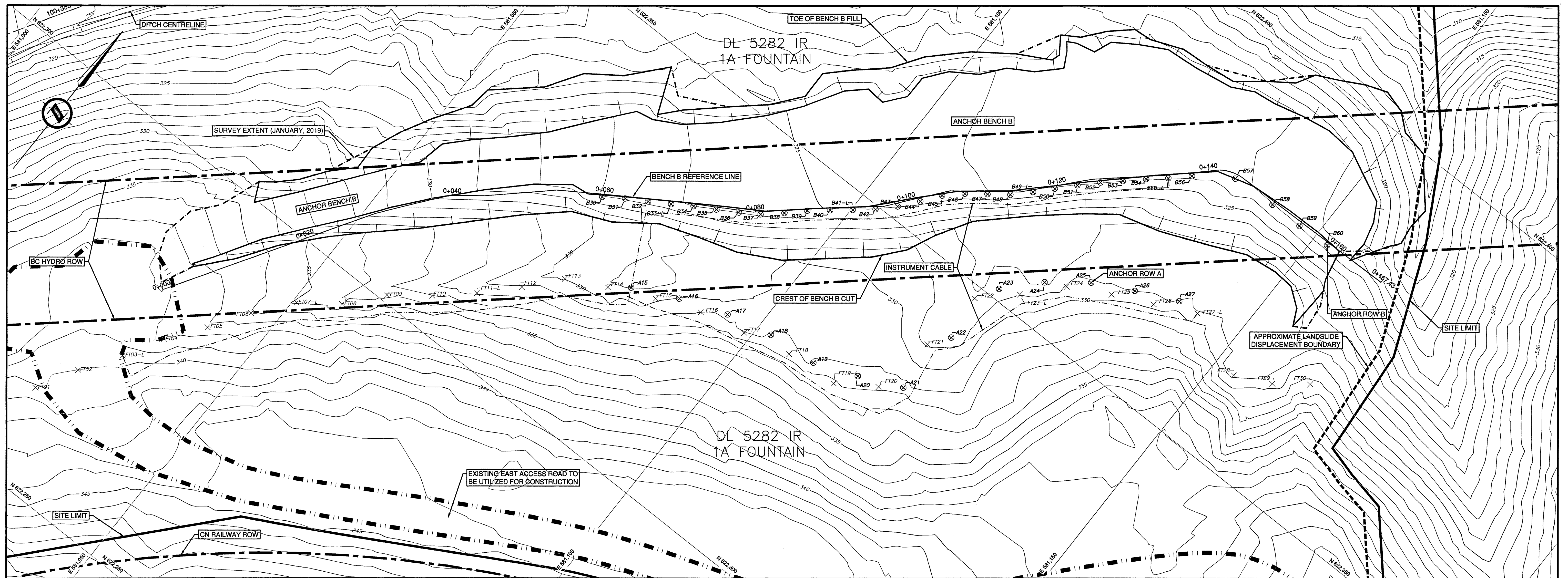
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LEGEND

	NEW SOIL ANCHOR (NOTE 6)
	EXISTING SOIL ANCHOR
	EXISTING BC HYDRO
	POWER POLE AND CABLE

	SCALE 0 5 1:500 25m CAD FILENAME: 103 DATE: 2019-05-14	BRITISH COLUMBIA MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE SOUTHERN INTERIOR REGION HIGHWAY ENGINEERING AND GEOMATICS	<b>HIGHWAY GRADING - PLAN AND PROFILE</b> HIGHWAY 99 TEN MILE SLIDE ADVANCED ANCHOR WORK																						
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REV	DATE	REVISIONS	SIGNATURE																						
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LEGEND	
	NEW SOIL ANCHOR (NOTE 6)
	EXISTING SOIL ANCHOR (NOTE 5)

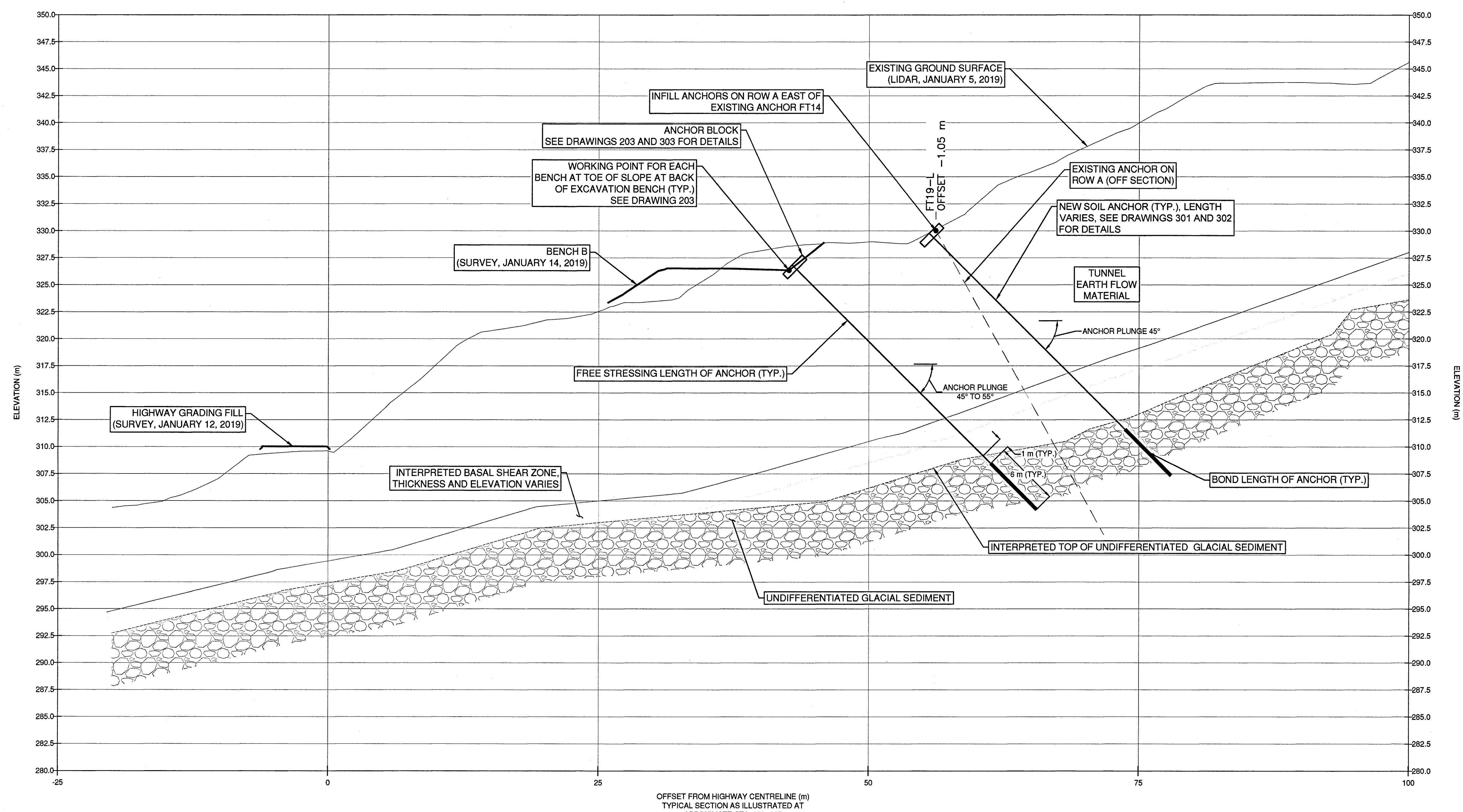
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1	2018-12-28	ANCHOR BENCH B UPDATED	RNK
2	2019-05-14	ISSUED FOR RECORD	RNK

BRITISH COLUMBIA  
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R.N. KOSTASCHUK  
 SENIOR DESIGNER  
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ANCHOR BENCH A AND B - PLAN AND PROFILE				
HIGHWAY 99 TEN MILE SLIDE ADVANCED ANCHOR WORK				
FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
2806	23880-0002	R2	R2-1046-104	2



LEGEND	
	FINAL GRADE
	INTERPRETED BOTTOM OF BASAL SHEAR ZONE
	INTERPRETED TOP OF UNDIFFERENTIATED GLACIAL SEDIMENT
	ANCHOR BLOCK
	ANCHOR FREE STRESSING LENGTH
	ANCHOR BOND LENGTH
	EXCAVATION
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 3. EXISTING GROUND PROFILE BASED ON FOUNTAIN VALLEY/TEN MILE SLIDE BASEPLAN PROVIDED BY THE BC MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE, DATED JANUARY 5, 2019, HIGHWAY AND BENCH B SURVEY PROVIDED BY KIEWIT SONS ULC DATED JANUARY 12 AND 14, 2019 RESPECTIVELY. BENCH B AND HIGHWAY GRADING WERE COMPLETED AFTER JANUARY 5, 2019 LIDAR.  
 4. BGC DOES NOT WARRANT OR GUARANTEE, NOR ACCEPT ANY RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE AS-CONSTRUCTED INFORMATION SUPPLIED BY OTHERS CONTAINED IN THIS DRAWING. BGC ACKNOWLEDGES THAT BASED ON THE AS-CONSTRUCTED INFORMATION PROVIDED, IF ACCURATE AND COMPLETE, AND THE PERIODIC CONSTRUCTION MONITORING OBSERVATIONS BY BGC, THE AS-CONSTRUCTED SYSTEM SUBSTANTIALLY COMPLIES WITH THE ORIGINAL DESIGN INTENT.



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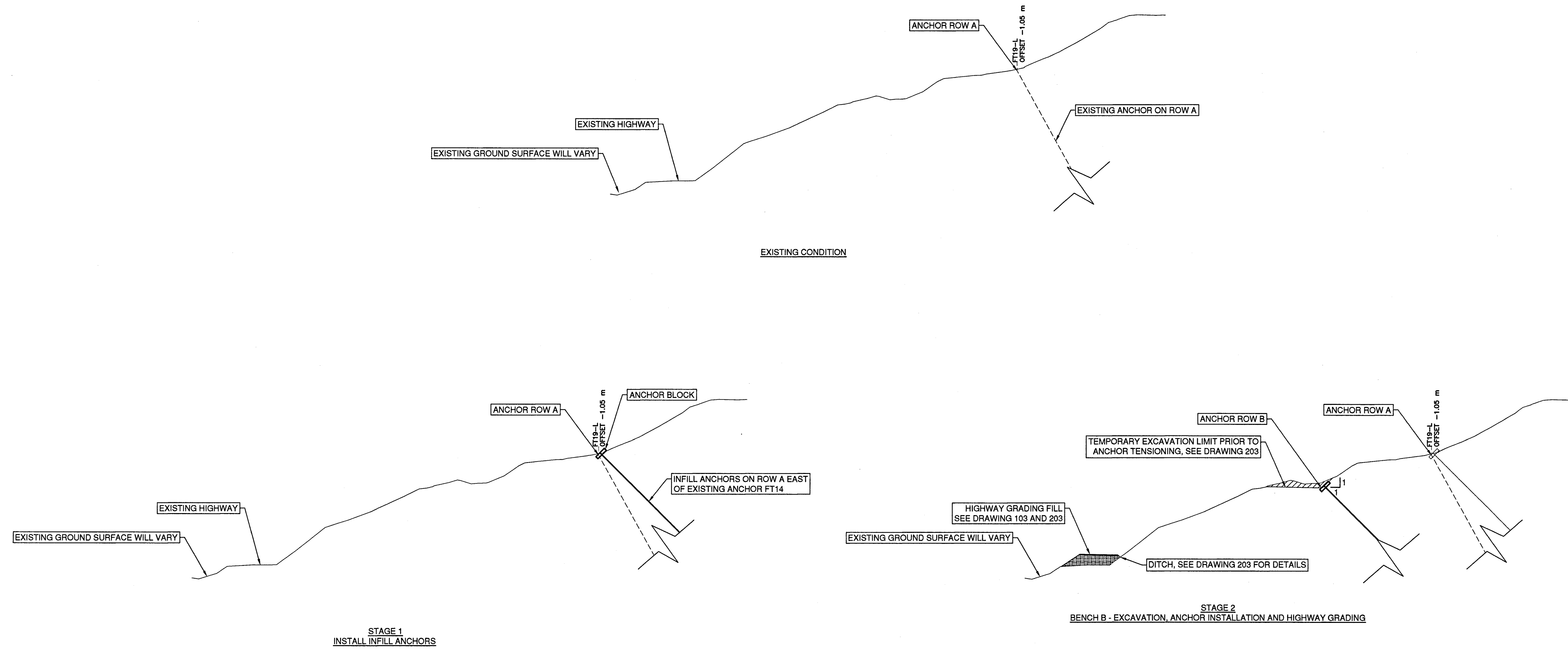
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SENIOR DESIGNER: R.N. KOSTASCHUK  
 DATE: 2019-05-14

SLIDE STABILIZATION - TYPICAL SECTION				
HIGHWAY 99 TEN MILE SLIDE ADVANCED ANCHOR WORK				
STA. 100+450.00				
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TYPICAL CONSTRUCTION SEQUENCE  
ILLUSTRATED FOR APPROXIMATE STATION 100+450



- NOTES:
- 2.0. CONSTRUCTION SEQUENCE REQUIREMENTS:
- 2.1. SOIL ANCHORS AND ANCHOR BENCHES SHALL BE CONSTRUCTED IN A TOP-DOWN SEQUENCE.
  - 2.2. WITHIN 8 HOURS PRIOR TO DRILLING EACH ANCHOR HOLE, DE-TENSION EXISTING ANCHORS TO ZERO LOAD THAT ARE LOCATED WITHIN 4 M OF THE ANCHOR TO BE DRILLED, AND RE-TENSION THE EXISTING ANCHORS WITHIN 8 HOURS OF COMPLETING DRILLING.
  - 2.3. EACH SOIL ANCHOR SHALL BE TESTED, LOADED AND LOCK-OFF WITHIN 7 DAYS OF COMPLETING ANCHOR INSTALLATION, UNLESS SPECIFIED OTHERWISE BY THE MINISTRY REPRESENTATIVE.
  - 2.4. EACH ROW OF SOIL ANCHORS SHALL BE COMPLETED, INCLUDING ANCHOR TESTING, LOADING AND LOCK-OFF, TO A MINIMUM LENGTH OF 90 METRES ALONG THE BENCH BEFORE COMMENCING EXCAVATION AND CONSTRUCTION OF THE NEXT ANCHOR BENCH DOWN THE SLOPE. AS CONSTRUCTION PROCEEDS FROM THE TOP DOWN, THE CONSTRUCTION OF EACH BENCH AND ROW OF ANCHORS MUST LAG BEHIND THE ROW ABOVE BY 50 METRES MINIMUM UNTIL ALL OF THE SOIL ANCHORS IN THE ROW ABOVE ARE COMPLETED. FOR EACH ROW OF SOIL ANCHORS, ALL ANCHORS SHALL BE INSTALLED AND TENSIONED TO THE LOCK-OFF LOAD WITHIN 30 DAYS OF COMMENCING CONSTRUCTION OF THE FIRST ANCHOR ON THE ROW.
  - 2.5. THE CONTRACTOR SHALL SUBMIT DETAILED SEQUENCING PLANS FOR EACH ROW OF SOIL ANCHORS, AS PART OF THE CONSTRUCTION WORK PACKAGE.

LEGEND	
	ANCHOR BLOCK
	ANCHOR FREE STRESSING LENGTH
	ANCHOR BOND LENGTH
	EXCAVATION
	TYPE D FILL

- NOTES:
- 1.1. GENERAL
- 1.2. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
  - 1.3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE MINISTRY REPRESENTATIVE SHOULD UNCERTAINTIES ARISE WITH THE DRAWINGS, SCOPE AND/OR TECHNICAL SPECIFICATIONS.
  - 1.4. BGC DOES NOT WARRANT OR GUARANTEE, NOR ACCEPT ANY RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE AS-CONSTRUCTED INFORMATION SUPPLIED BY OTHERS CONTAINED IN THIS DRAWING. BGC ACKNOWLEDGES THAT BASED ON THE AS-CONSTRUCTED INFORMATION PROVIDED, IF ACCURATE AND COMPLETE, AND THE PERIODIC CONSTRUCTION MONITORING OBSERVATIONS BY BGC, THE AS-CONSTRUCTED SYSTEM SUBSTANTIALLY COMPLIES WITH THE ORIGINAL DESIGN INTENT.



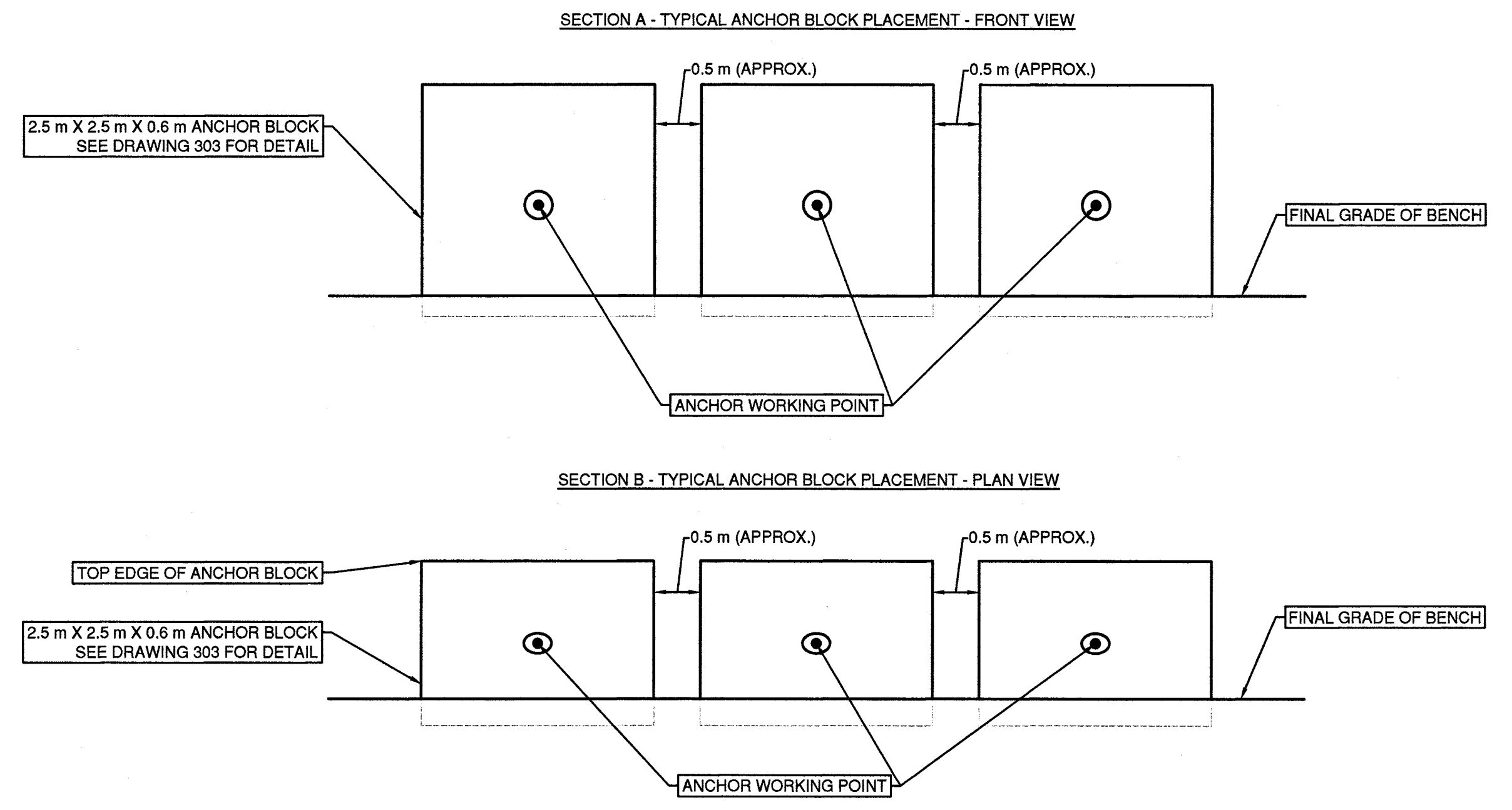
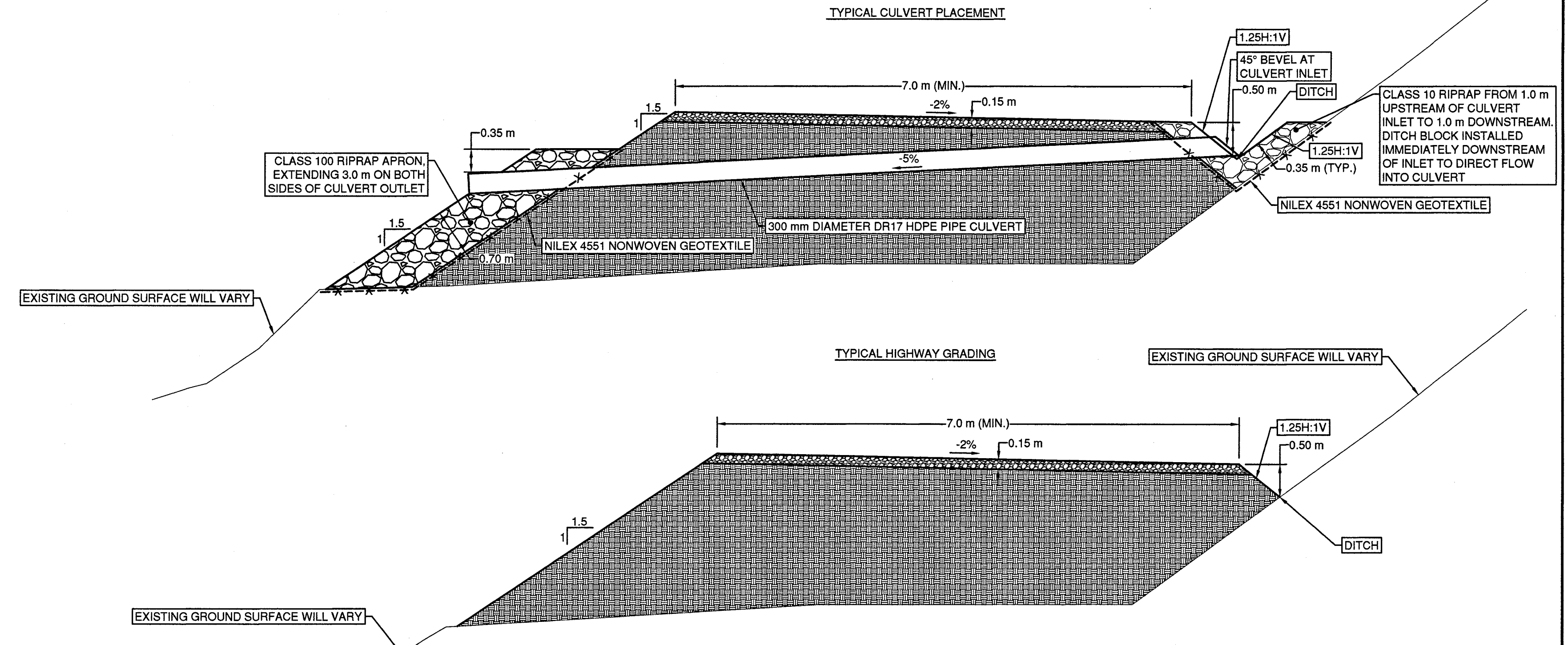
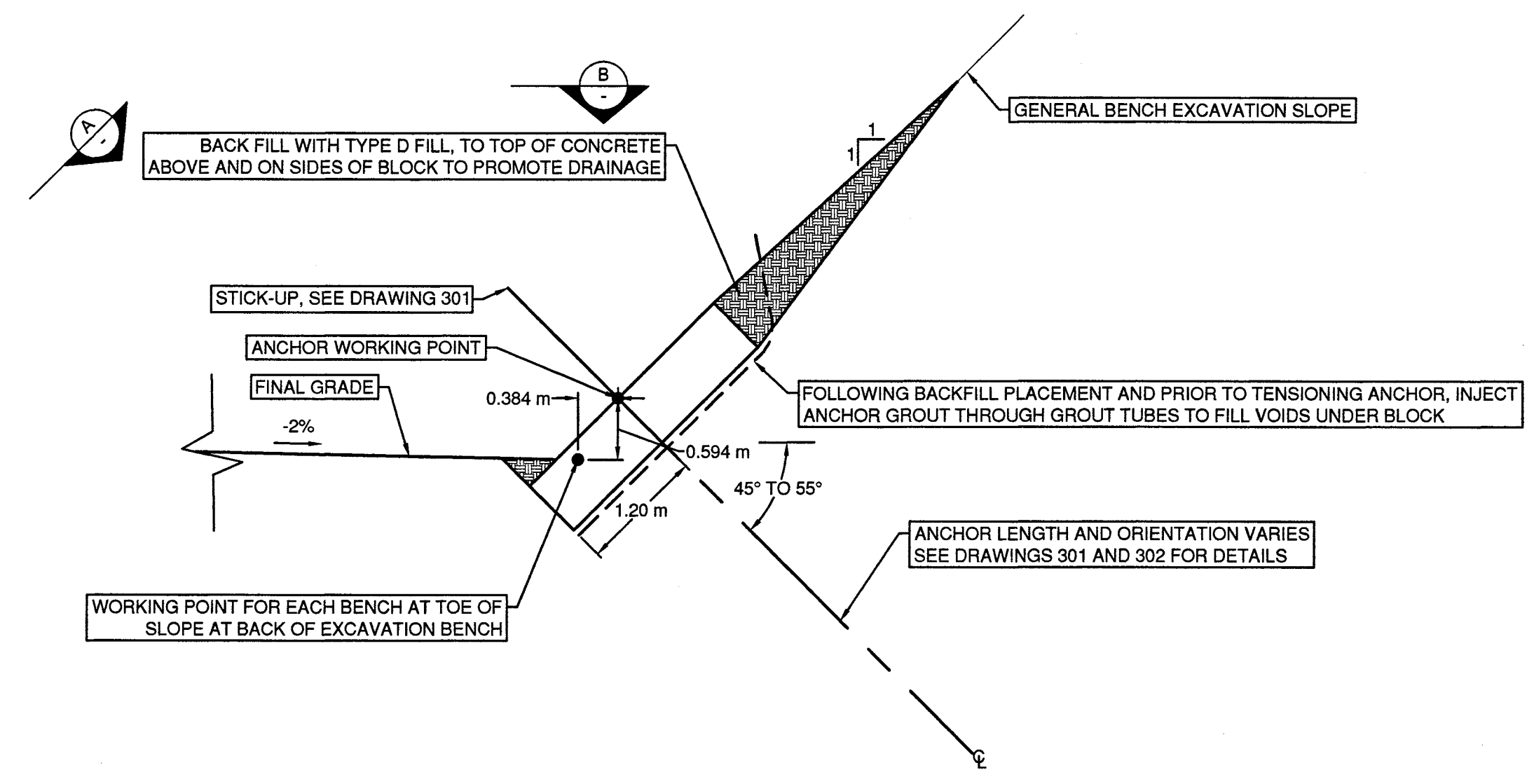
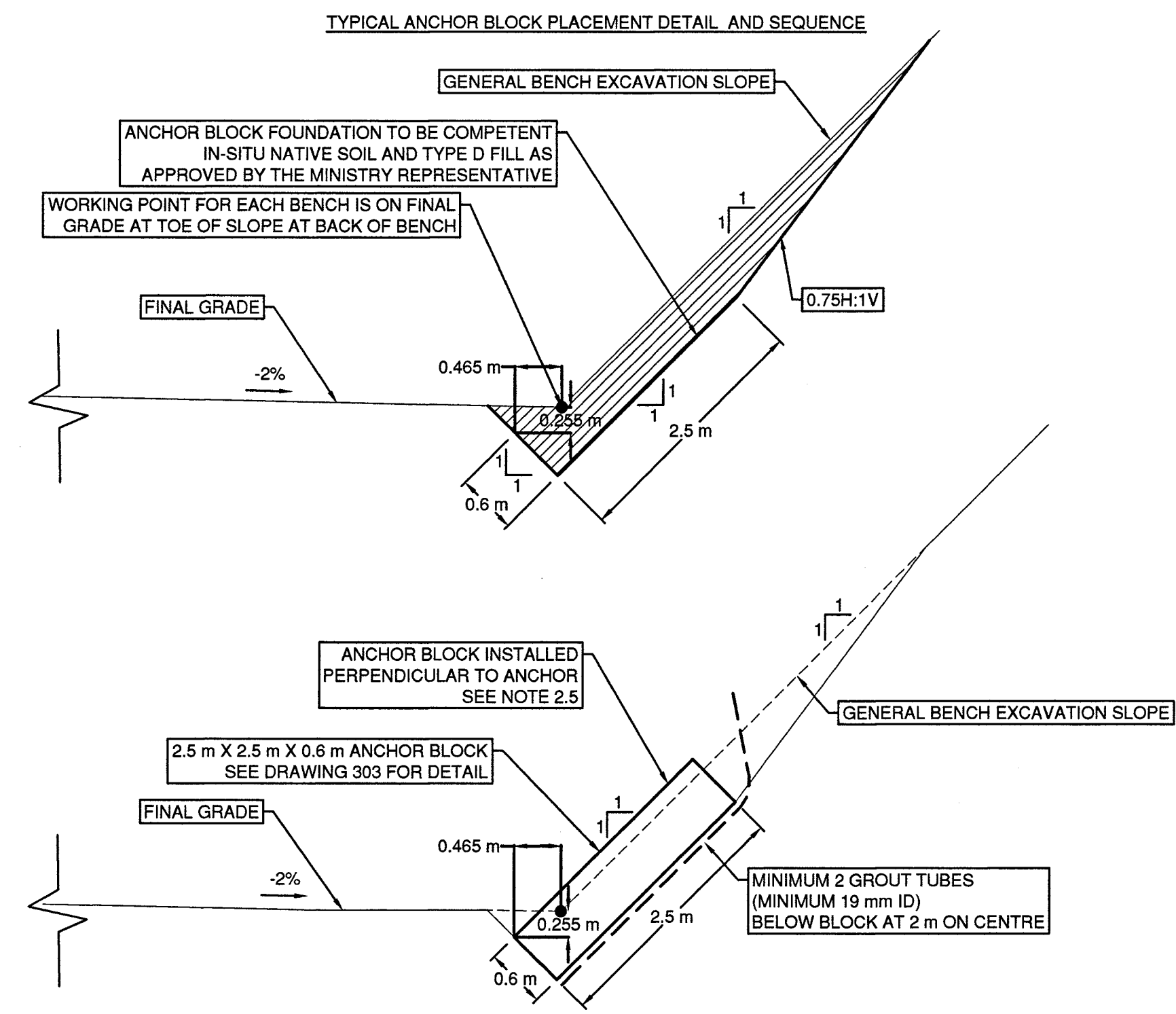
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REV	DATE	REVISIONS	SIGNATURE
1	2019-05-14	ISSUED FOR RECORD	RNK

BRITISH COLUMBIA  
MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE  
SOUTHERN INTERIOR REGION  
HIGHWAY ENGINEERING AND GEOMATICS

R.N. KOSTASCHUK  
SENIOR DESIGNER  
DATE 2019-05-14

DESIGNED: RNK DATE 2018-08-13  
QUALITY CONTROL: MAP DATE 2018-07-10  
QUALITY ASSURANCE: MJP DATE 2018-07-10  
DRAWN: AH DATE 2018-09-13

TYPICAL CONSTRUCTION SEQUENCE				
HIGHWAY 99 TEN MILE SLIDE ADVANCED ANCHOR WORK				
FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
2806	23880-0002	R2	R2-1046-202	1



NOTES:  
2.0. ANCHOR BLOCK PLACEMENT

- 2.1. THE CONTRACTOR SHALL MAKE ALL PRACTICAL EFFORTS TO LIMIT EXCAVATIONS FOR ANCHOR BLOCKS.
- 2.2. THE BOTTOM OF THE EXCAVATION IS TO BE GRADED AND COMPACTED WITH A HOE PACK AS DIRECTED BY THE MINISTRY REPRESENTATIVE TO REPAIR SOFT AREAS, PROVIDE A UNIFORM QUALITY OF SUBGRADE AND TO FORM A FLAT SURFACE FOR THE ANCHOR BLOCK FOUNDATION. CARE SHALL BE TAKEN NOT TO DISTURB THE PREPARED FOUNDATION SURFACE PRIOR TO PLACING THE ANCHOR BLOCK.
- 2.3. IN THE EVENT THE EXCAVATED SUBGRADE IS NOT SUITABLE, IT WILL BE AT THE DISCRETION OF THE MINISTRY REPRESENTATIVE TO SUB-EXCAVATE UNSUITABLE SOIL AND REPLACE IT WITH APPROVED TYPE D FILL, THAT IS COMPACTED TO 95 PERCENT OF STANDARD PROCTOR DENSITY.
- 2.4. THE EXCAVATION BASE SHALL BE APPROVED BY THE MINISTRY REPRESENTATIVE PRIOR TO COMMENCING PLACEMENT OF THE ANCHOR BLOCK.
- 2.5. INSTALL THE ANCHOR BLOCK PERPENDICULAR TO THE ORIENTATION OF ANCHOR BAR ±2°.
- 2.6. BACKFILL AND FILL FOR EARTH EMBANKMENTS SHALL CONSIST OF APPROVED TYPE D FILL, AS DETERMINED BY THE MINISTRY REPRESENTATIVE, PLACED IN ACCORDANCE WITH SS 201.37 FOR EARTH EMBANKMENTS WITH MAXIMUM 200 mm THICK LOOSE LIFTS. AROUND THE ANCHOR BLOCK, COMPACT WITH HOE PACK TO 95 PERCENT OF STANDARD PROCTOR DENSITY.
- 2.7. FOLLOWING BACKFILL PLACEMENT AND PRIOR TO TENSIONING ANCHOR, INJECT ANCHOR GROUT THROUGH GROUT TUBES TO FILL VOIDS UNDER BLOCK.

LEGEND	
	EXCAVATION
	TYPE D FILL
	HIGH FINES SURFACING AGGREGATE (HFSA)
	RIPRAP

NOTES:  
1.1. GENERAL  
1.2. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.  
1.3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE MINISTRY REPRESENTATIVE SHOULD UNCERTAINTIES ARISE WITH THE DRAWINGS, SCOPE, AND/OR TECHNICAL SPECIFICATIONS.  
1.4. FINAL ANCHOR BLOCK POSITION WILL DEPEND ON SETTLEMENT OF THE BLOCK DURING ANCHOR LOAD TESTING.  
1.5. SEE DRAWINGS 301 AND 302 FOR ANCHOR DETAILS.  
1.6. BGC DOES NOT WARRANT OR GUARANTEE, NOR ACCEPT ANY RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE AS-CONSTRUCTED INFORMATION SUPPLIED BY OTHERS CONTAINED IN THIS DRAWING. BGC ACKNOWLEDGES THAT BASED ON THE AS-CONSTRUCTED INFORMATION PROVIDED, IF ACCURATE AND COMPLETE, AND THE PERIODIC CONSTRUCTION MONITORING OBSERVATIONS BY BGC, THE AS-CONSTRUCTED SYSTEM SUBSTANTIALLY COMPLIES WITH THE ORIGINAL DESIGN INTENT.

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	REV	DATE	REVISIONS	SIGNATURE
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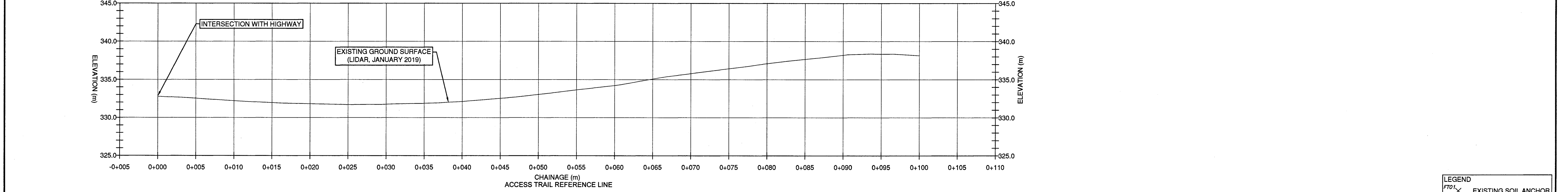
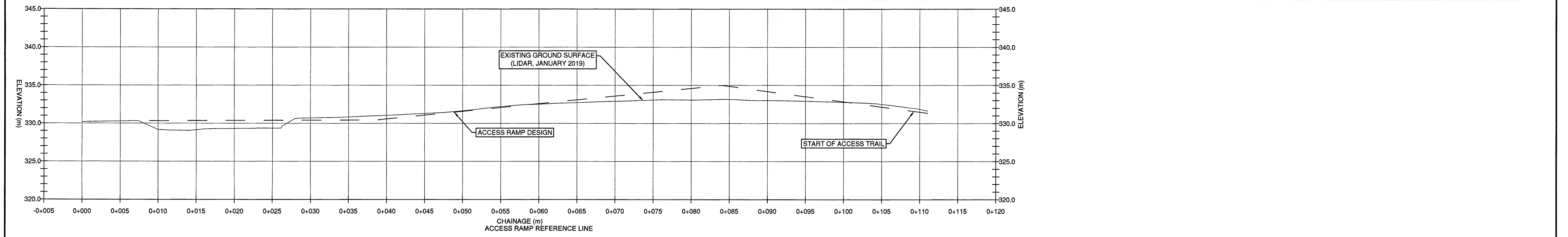
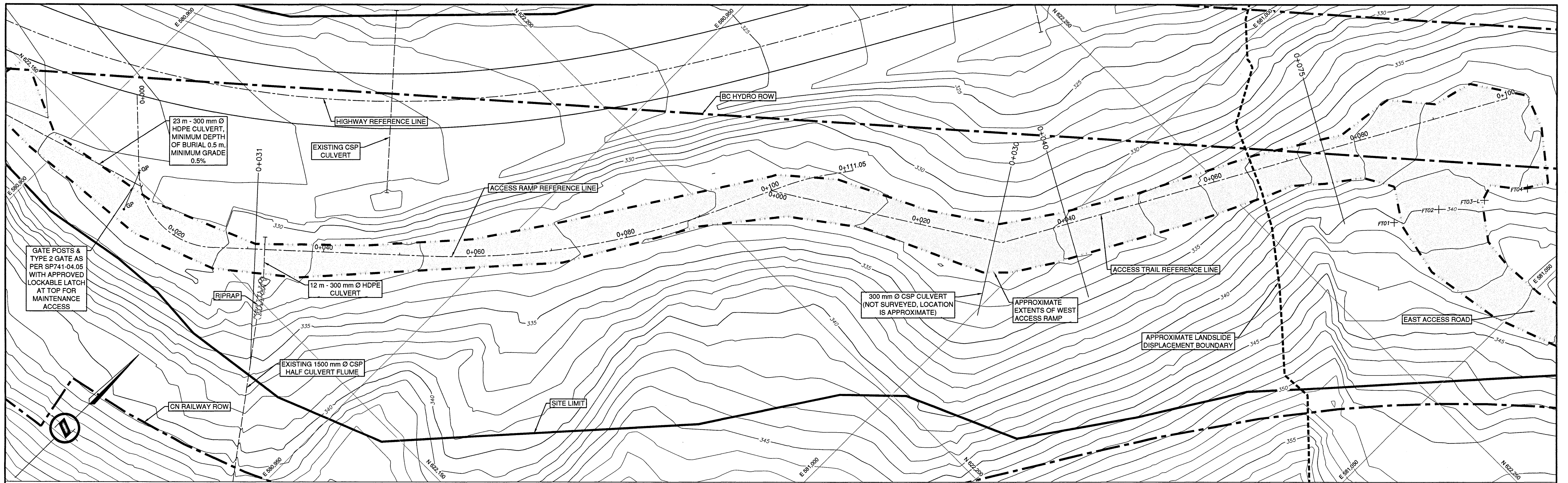
BRITISH COLUMBIA  
MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE  
SOUTHERN INTERIOR REGION  
HIGHWAY ENGINEERING AND GEOMATICS

R.N. KOSTASCHUK  
SENIOR DESIGNER  
DATE 2019-05-14

DESIGNED: RNK DATE 2018-06-18  
QUALITY CONTROL: MAP DATE 2018-07-10  
MJP DATE 2018-07-10  
DRAWN: AH DATE 2018-09-18

EXCAVATION AND GRADING - TYPICAL SECTIONS AND DETAILS				
HIGHWAY 99 TEN MILE SLIDE ADVANCED ANCHOR WORK				
FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
2806	23880-0002	R2	R2-1046-203	1





LEGEND  
 FT01 X EXISTING SOIL ANCHOR

NOTES:  
 1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.  
 2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE MINISTRY REPRESENTATIVE SHOULD UNCERTAINTIES ARISE WITH THE DRAWINGS, SCOPE, AND/OR TECHNICAL SPECIFICATIONS.  
 3. BASE TOPOGRAPHIC DATA BASED ON FOUNTAIN VALLEY/TEN MILE SLIDE BASEPLAN PROVIDED BY THE BC MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE, DATED JANUARY 5, 2019. LIDAR CAPTURED WEST ACCESS RAMP AS-BUILT SURFACE. CONTOUR INTERVAL IS 1.0 m.  
 4. PROJECTION IS IN LOCAL GRID.  
 5. BGC DOES NOT WARRANT OR GUARANTEE, NOR ACCEPT ANY RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE AS-CONSTRUCTED INFORMATION SUPPLIED BY OTHERS CONTAINED IN THIS DRAWING. BGC ACKNOWLEDGES THAT BASED ON THE AS-CONSTRUCTED INFORMATION PROVIDED, IF ACCURATE AND COMPLETE, AND THE PERIODIC CONSTRUCTION MONITORING OBSERVATIONS BY BGC, THE AS-CONSTRUCTED SYSTEM SUBSTANTIALLY COMPLIES WITH THE ORIGINAL DESIGN INTENT.

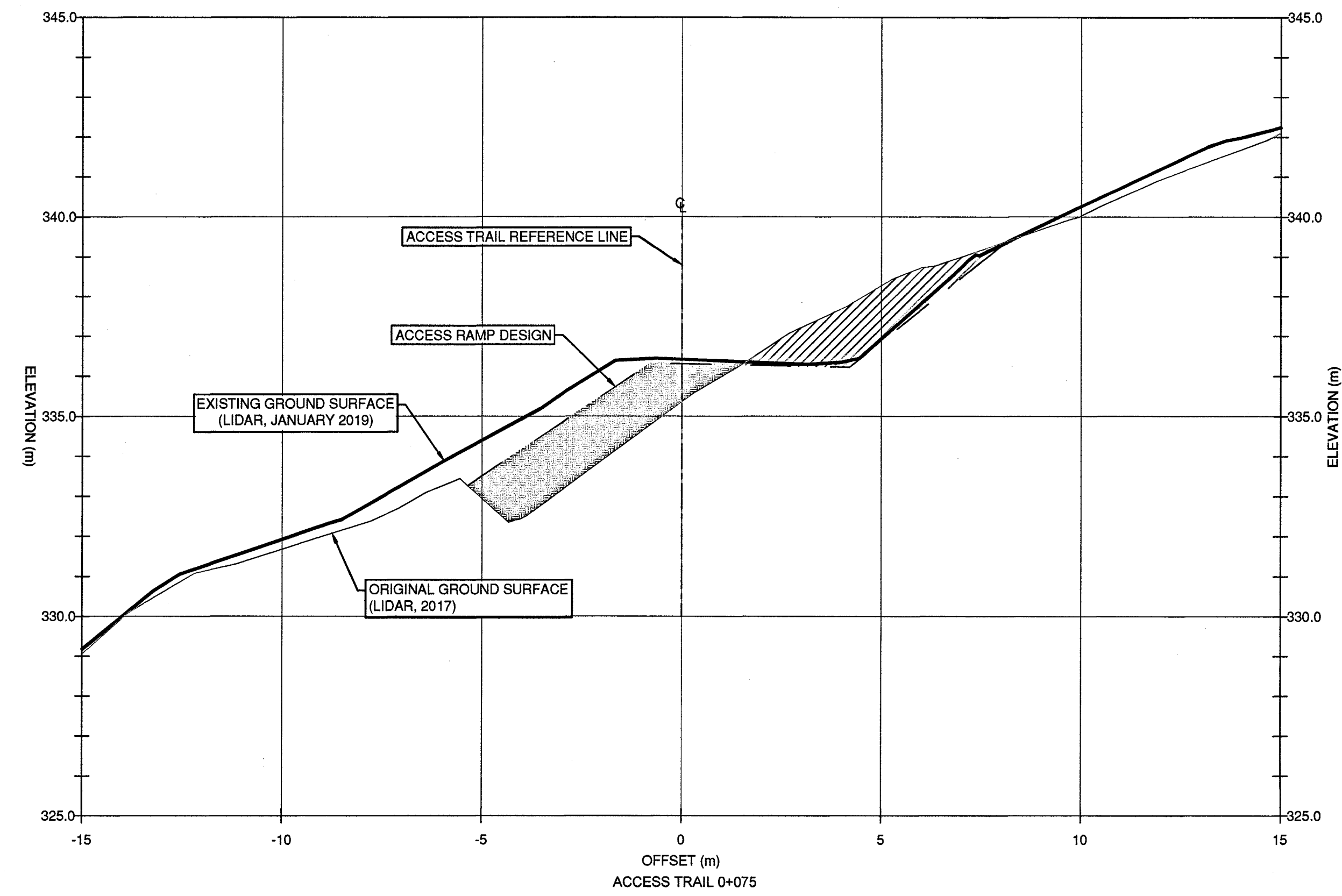
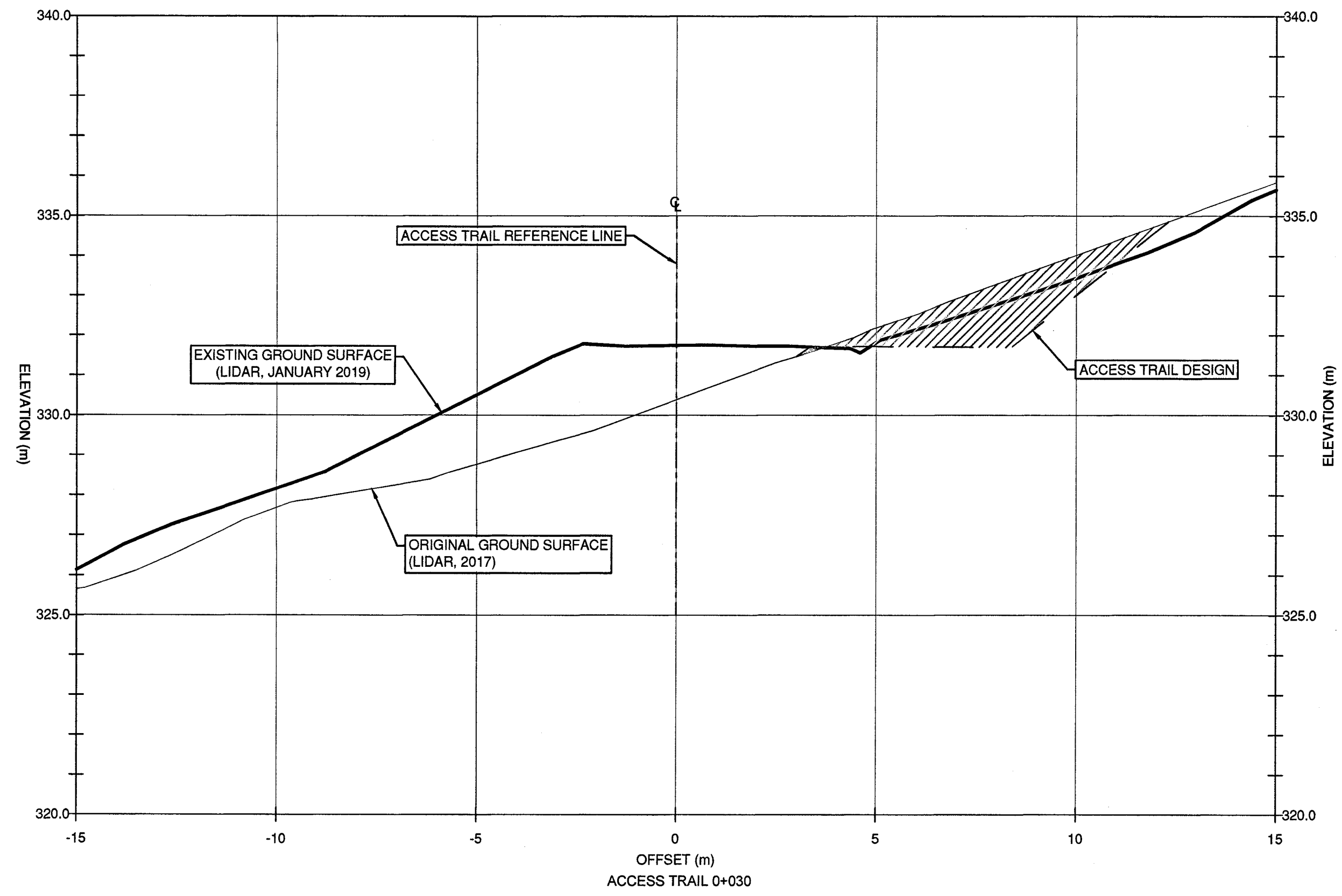
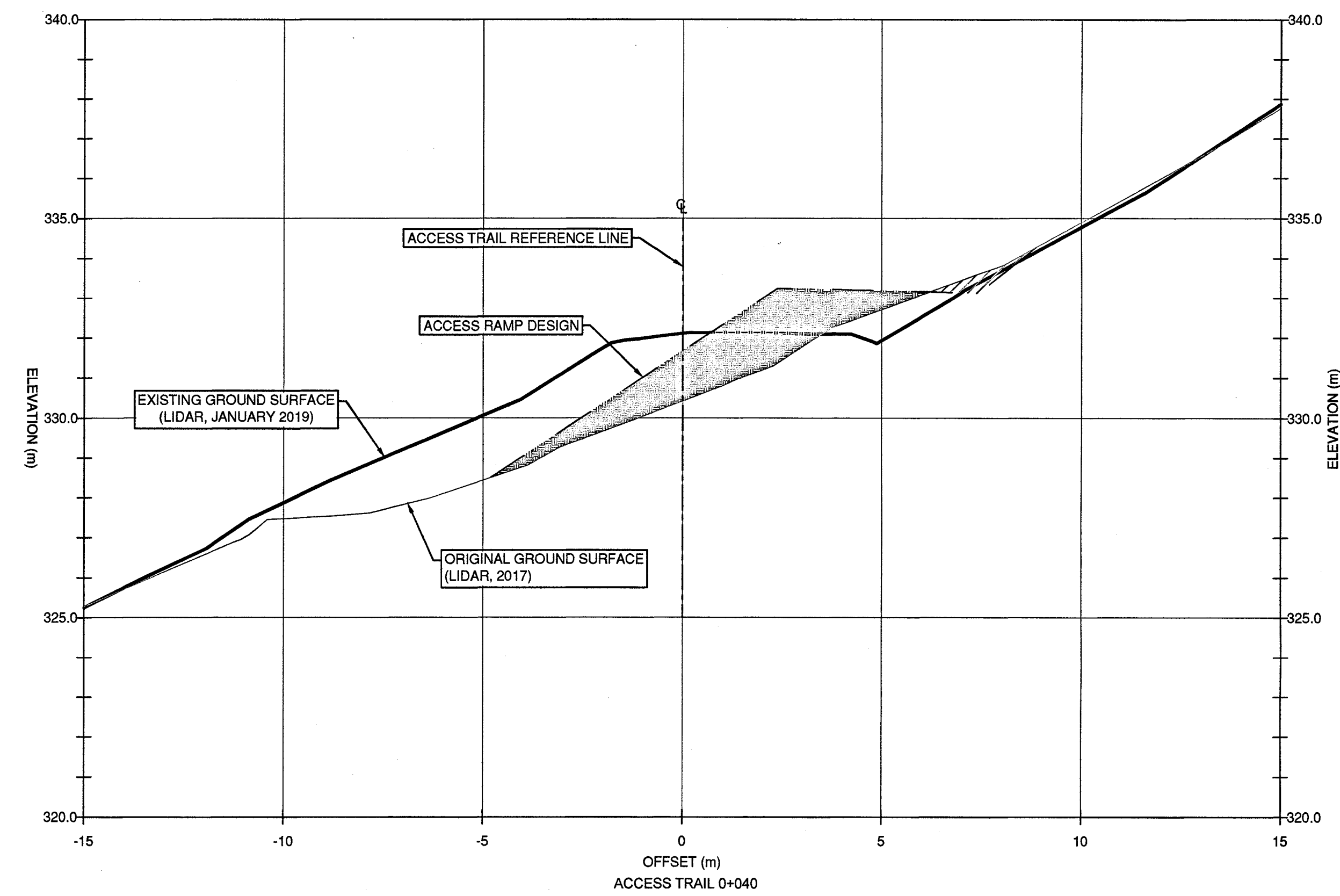
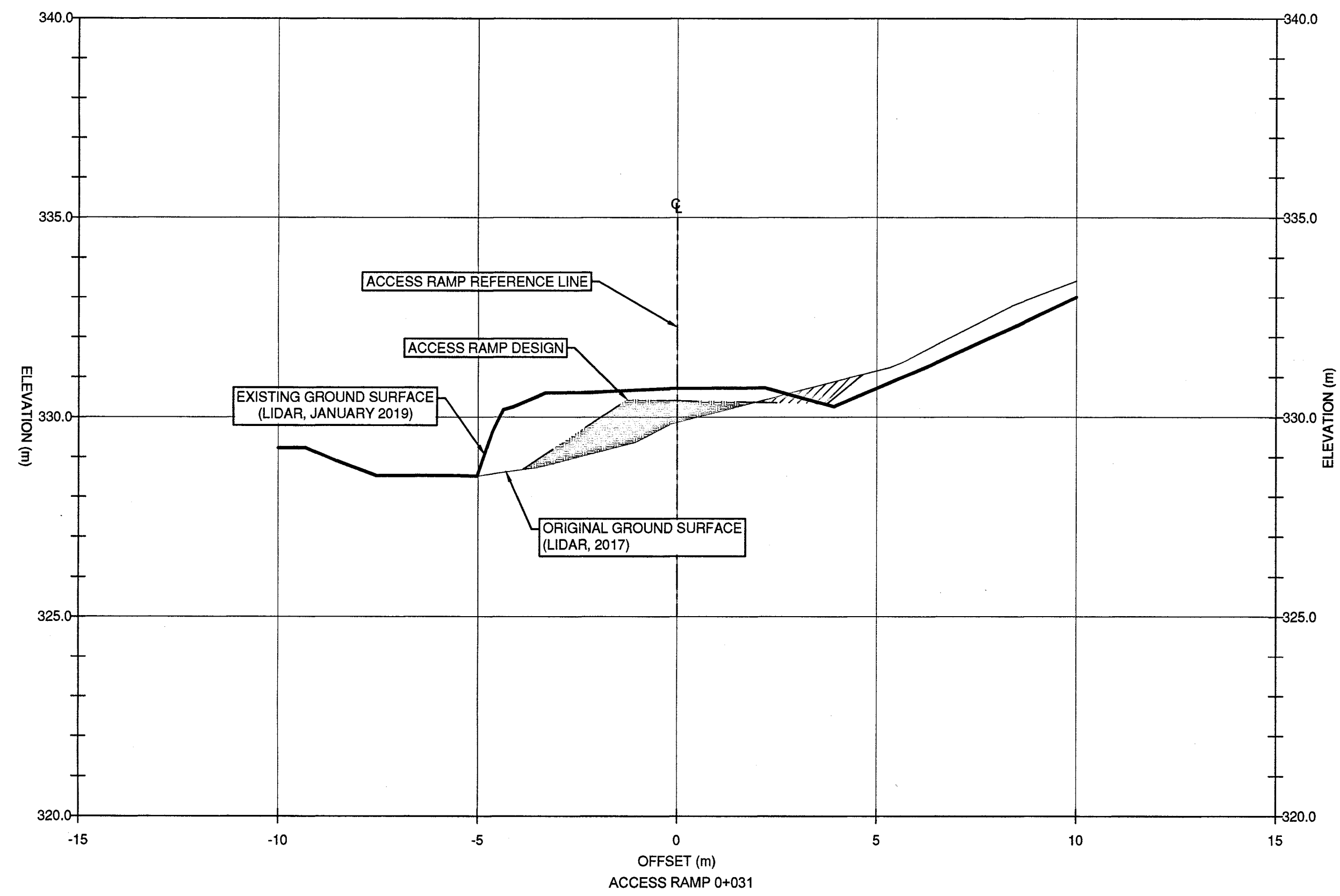
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		REV	DATE	REVISIONS	SIGNATURE
1	2019-05-14	ISSUED FOR RECORD		RNK	

MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE  
 SOUTHERN INTERIOR REGION  
 HIGHWAY ENGINEERING AND GEOMATICS

DESIGNED: RNK DATE: 2018-11-23  
 QUALITY CONTROL: MT DATE: 2018-11-23  
 QUALITY ASSURANCE: MJP DATE: 2018-11-23  
 DRAWN: AH DATE: 2018-11-23

**R.N. KOSTASCHUK**  
 SENIOR DESIGNER  
 DATE: 2019-05-14

<b>ACCESS RAMP AND ACCESS TRAIL - PLAN AND PROFILES</b> HIGHWAY 99 TEN MILE SLIDE ADVANCED ANCHOR WORK		FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
		2806	23880-0002	R2	R2-1046-204	1



LEGEND

	EXCAVATION
	TYPE D FILL

NOTES:  
 1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.  
 2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE MINISTRY REPRESENTATIVE SHOULD UNCERTAINTIES ARISE WITH THE DRAWINGS, SCOPE, AND/OR TECHNICAL SPECIFICATIONS.  
 3. EXISTING GROUND PROFILE BASED ON FOUNTAIN VALLEY TEN MILE SLIDE BASEPLAN PROVIDED BY THE BC MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE, DATED JANUARY 5, 2019. LIDAR CAPTURED WEST ACCESS RAMP AS-BUILT SURFACE.  
 4. BGC DOES NOT WARRANT OR GUARANTEE, NOR ACCEPT ANY RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE AS-CONSTRUCTED INFORMATION SUPPLIED BY OTHERS CONTAINED IN THIS DRAWING. BGC ACKNOWLEDGES THAT BASED ON THE AS-CONSTRUCTED INFORMATION PROVIDED, IF ACCURATE AND COMPLETE, AND THE PERIODIC CONSTRUCTION MONITORING OBSERVATIONS BY BGC, THE AS-CONSTRUCTED SYSTEM SUBSTANTIALLY COMPLIES WITH THE ORIGINAL DESIGN INTENT.



SCALE 0 1 1:100 5m

CAD FILENAME: 205  
 DATE: 2019-05-14

REV	DATE	REVISIONS	SIGNATURE
1	2019-05-14	ISSUED FOR RECORD	RNK

BRITISH COLUMBIA  
 MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE  
 SOUTHERN INTERIOR REGION  
 HIGHWAY ENGINEERING AND GEOMATICS

R.N. KOSTASCHUK  
 SENIOR DESIGNER  
 DATE: 2019-05-14

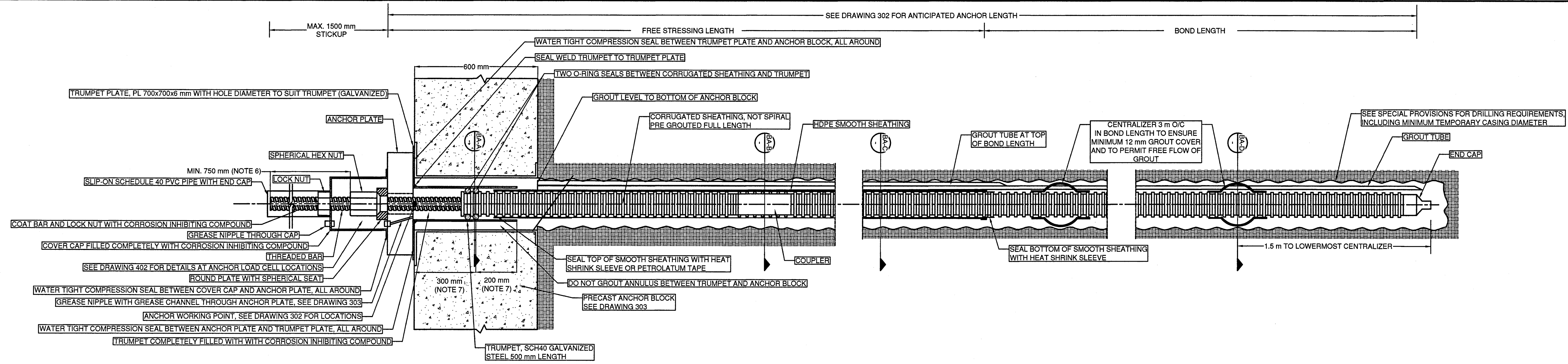
DESIGNED: RNK DATE: 2018-11-23  
 QUALITY CONTROL: MT DATE: 2018-11-23  
 QUALITY ASSURANCE: MJP DATE: 2018-11-23  
 DRAWN: AH DATE: 2018-11-23

ACCESS RAMP AND ACCESS TRAIL - SECTIONS

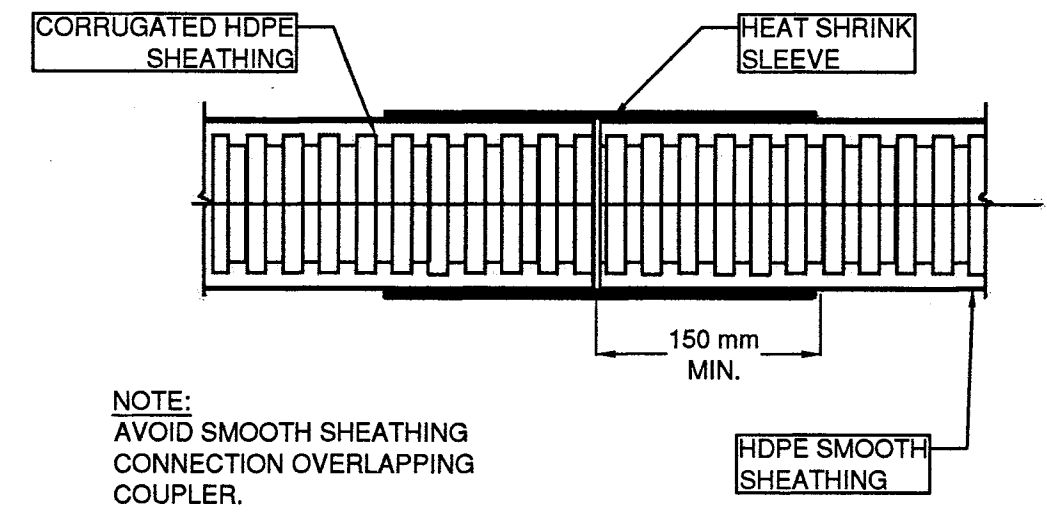
HIGHWAY 99  
 TEN MILE SLIDE ADVANCED ANCHOR WORK

FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
2806	23880-0002	R2	R2-1046-205	1





**HDPE SMOOTH SHEATHING CONNECTION DETAIL**  
NTS



**COUPLER DETAIL IN FREE STRESSING LENGTH**  
NTS

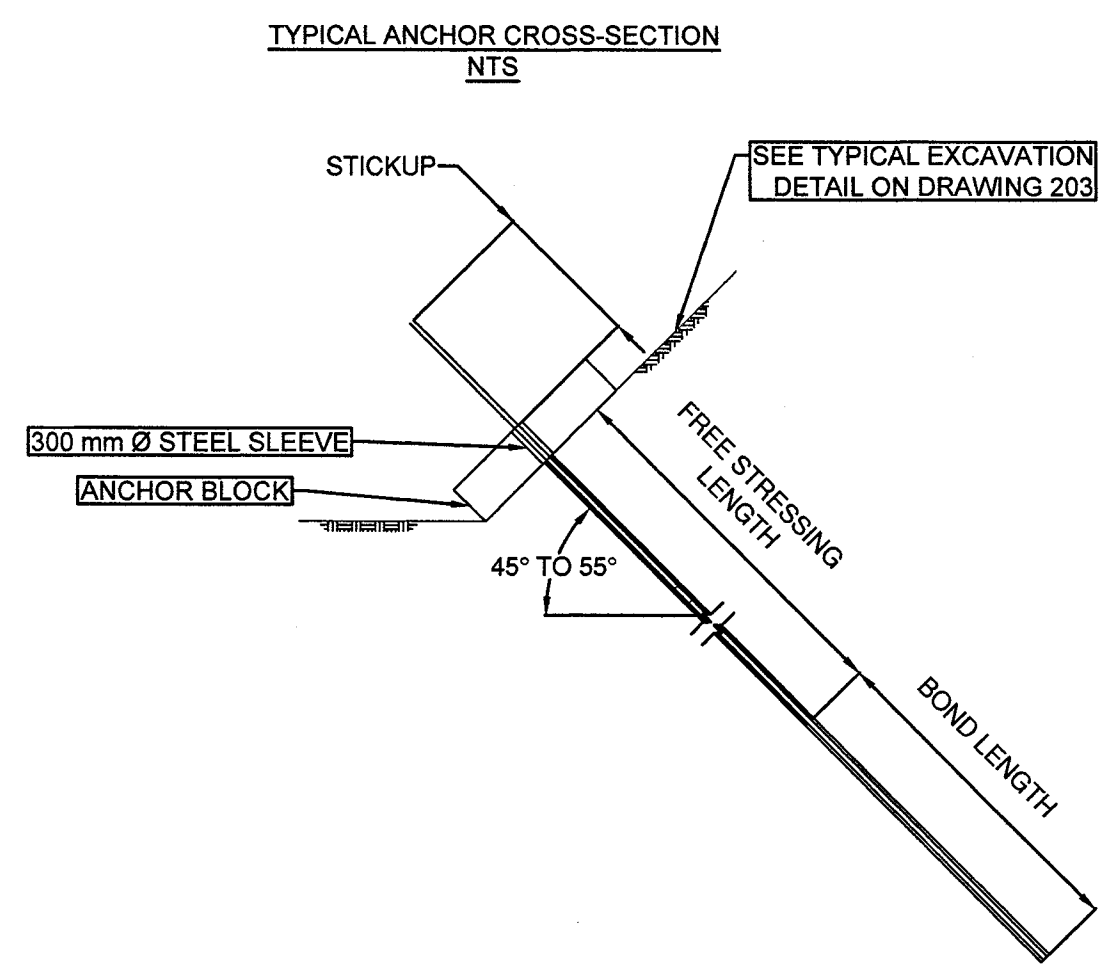
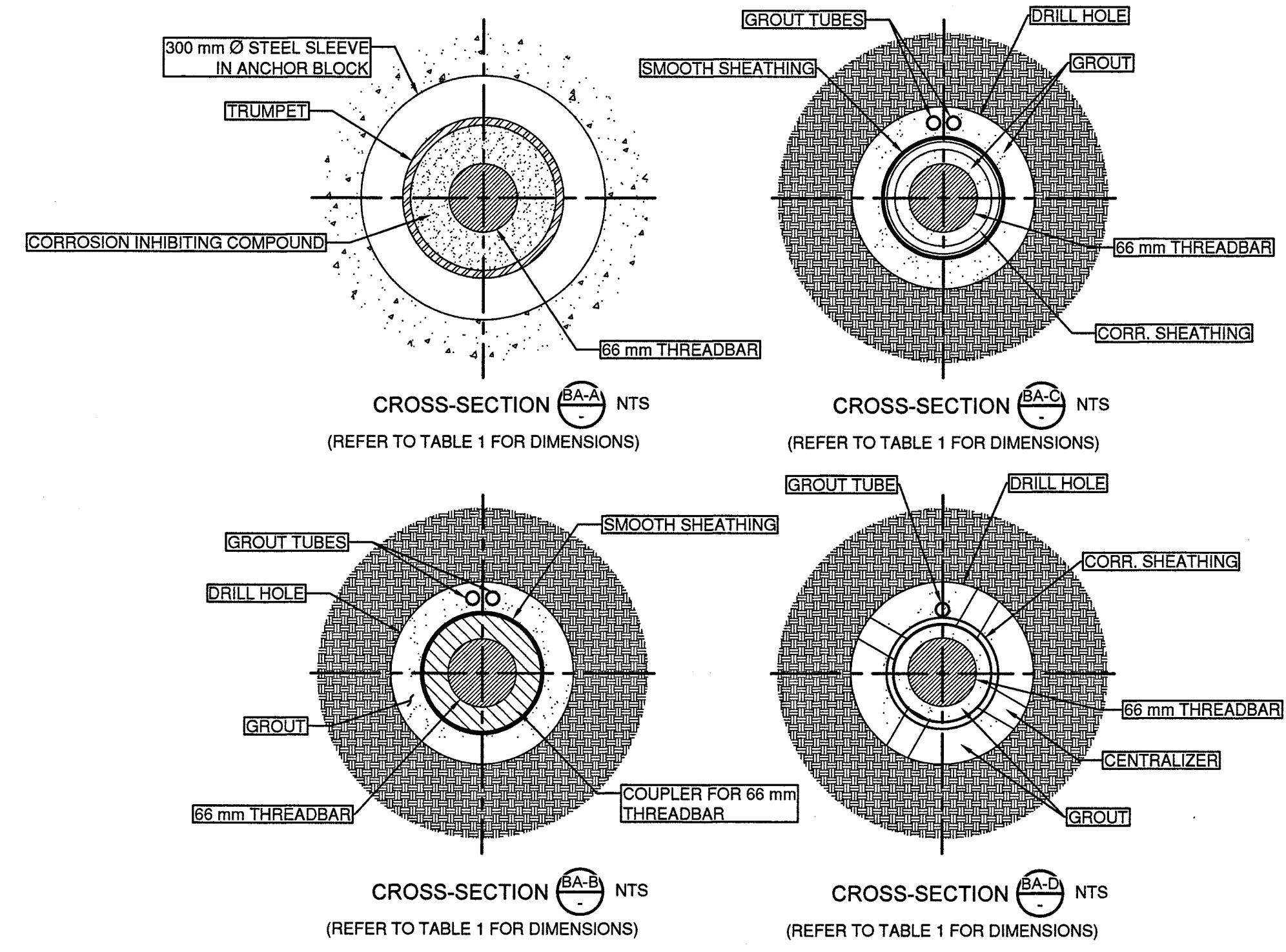
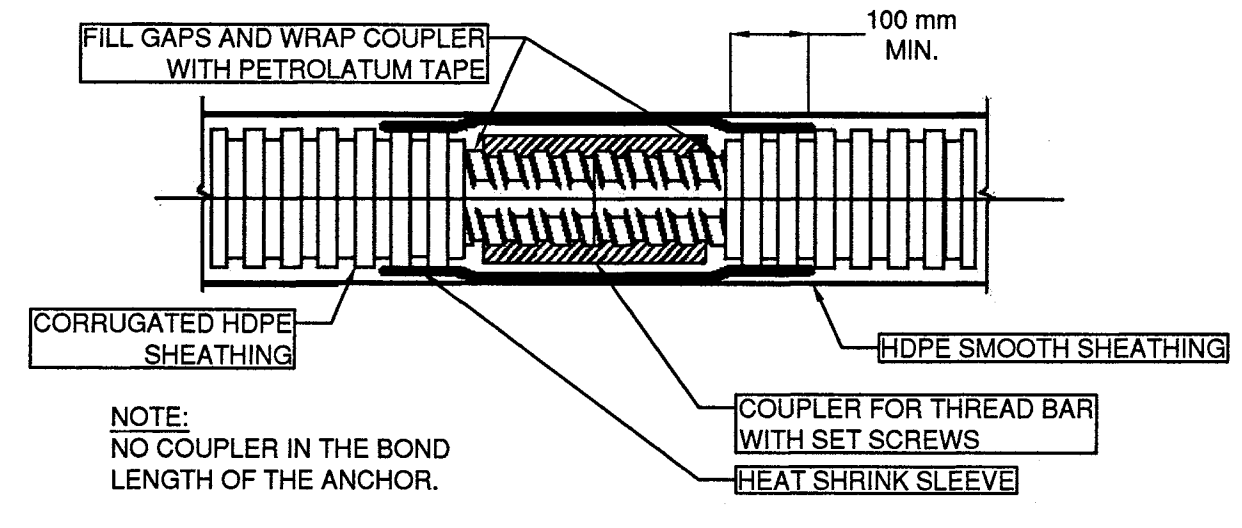


TABLE 1 - ANCHOR DETAILS

DOUBLE CORROSION PROTECTION (DCP)	DCP CORROSION PROTECTION CAP REQUIRED?	THREADBAR DIAMETER DESIGNATION (mm)	THREADBAR MINIMUM ULTIMATE TENSILE STRENGTH (MPa)	PLUNGE (DEGREES BELOW HORIZONTAL)	BOND LENGTH, L <sub>b</sub> (mm) (NOTE 3)	FREE STRESSING LENGTH, L <sub>f</sub> (mm) (NOTE 3)	MINIMUM ULTIMATE TENSILE LOAD (kN)	DESIGN LOAD (kN)	LOCK-OFF LOAD (kN)	SMOOTH SHEATHING DIAMETER OD (mm)	CORRUGATED SHEATHING DIAMETER OD (mm)	COUPLER HOUSING DIAMETER OD (mm)
Y	Y	66	1,035	45° TO 55°	6000	FREE STRESSING LENGTH TO EXTEND FROM THE BOTTOM OF THE HEX NUT TO 1.0 m (MIN.) BELOW THE CONTACT WITH THE UNDIFFERENTIATED GLACIAL SEDIMENT	3,440	2,050	1,500	NOTE 8	NOTE 8	NOTE 8

NOTES:  
 1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.  
 2. SEE SPECIAL PROVISIONS FOR ANCHOR CONSTRUCTION SPECIFICATION.  
 3. DEPTH TO THE TOP OF THE BOND ZONE WILL BE DETERMINED BY THE MINISTRY REPRESENTATIVE.  
 4. CORROSION PROTECTION CAP DESIGN SUBJECT TO MINISTRY REVIEW AND ACCEPTANCE.  
 5. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE MINISTRY REPRESENTATIVE SHOULD UNCERTAINTIES ARISE WITH THE DRAWINGS, SCOPE, AND/OR TECHNICAL SPECIFICATIONS.  
 6. DIMENSION SHOWN IS AT THE TIME OF INITIAL LOCK-OFF. IF THIS DISTANCE IS REDUCED TO LESS THAN 300 mm DUE TO REPEATED ANCHOR RE-TENSIONING, REPORT IMMEDIATELY TO THE MINISTRY REPRESENTATIVE.  
 7. DIMENSIONS SHOWN ARE PRIOR TO APPLYING TENSION TO THE ANCHOR.  
 8. DIMENSIONS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS AND SPECIAL PROVISIONS.  
 9. BGC DOES NOT WARRANT OR GUARANTEE, NOR ACCEPT ANY RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE AS-CONSTRUCTED INFORMATION SUPPLIED BY OTHERS CONTAINED IN THIS DRAWING. BGC ACKNOWLEDGES THAT BASED ON THE AS-CONSTRUCTED INFORMATION PROVIDED, IF ACCURATE AND COMPLETE, AND THE PERIODIC CONSTRUCTION MONITORING OBSERVATIONS BY BGC, THE AS-CONSTRUCTED SYSTEM SUBSTANTIALLY COMPLIES WITH THE ORIGINAL DESIGN INTENT.

**BGC**

SCALE: NOT TO SCALE

CAD FILENAME: 301  
DATE: 2019-05-14

REV	DATE	REVISIONS	SIGNATURE
1	2019-05-14	ISSUED FOR RECORD	RNK

BRITISH COLUMBIA  
 MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE  
 SOUTHERN INTERIOR REGION  
 HIGHWAY ENGINEERING AND GEOMATICS

R.N. KOSTASCHUK  
 SENIOR DESIGNER  
 DATE: 2019-05-14

DESIGNED: RNK DATE: 2018-08-13  
 QUALITY CONTROL: MAP DATE: 2018-07-10  
 QUALITY ASSURANCE: MJP DATE: 2018-07-10  
 DRAWN: AH DATE: 2018-08-13

**SOIL ANCHOR DETAILS**

HIGHWAY 99  
 TEN MILE SLIDE ADVANCED ANCHOR WORK




FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
2806	23880-0002	R2	R2-1046-301	1

ANCHOR WORKING POINT LOCATIONS (RECORD, SEE NOTE 5)						
NAME	ELEVATION (m)	NORTHING (m)	EASTING (m)	LENGTH (m)	AZIMUTH (DEGREES)	PLUNGE (DEGREES)
A15	328.83	622321.58	581083.72	33.65	143.1	-45.0
A16	329.61	622324.36	581089.57	32.55	142.1	-43.5
A17	330.00	622326.66	581095.85	36.55	144.8	-46.0
A18	330.63	622328.11	581101.96	33.55	145.8	-45.5
A19	330.79	622328.70	581108.61	33.55	144.6	-43.5
A20	331.32	622330.93	581114.29	34.35	142.1	-43.0
A21	331.18	622333.45	581119.93	36.45	142.2	-45.0
A22	328.08	622342.51	581120.78	33.55	144.7	-44.0
A23	327.81	622351.42	581121.73	35.35	144.4	-43.0
A24	327.63	622355.80	581125.88	38.45	143.9	-44.5
A25	328.50	622359.55	581130.71	38.45	147.9	-45.0
A26	329.19	622362.27	581135.88	37.65	144.1	-46.5
A27	329.00	622364.83	581141.31	35.45	144.2	-45.5
B30	327.22	622328.55	581073.37	36.55	142.7	-50.0
B31	326.90	622330.24	581075.84	32.25	144.4	-50.0
B32	326.80	622331.80	581078.44	33.60	144.6	-45.0
B33	326.58	622333.40	581081.03	35.55	144.3	-45.0
B34	326.39	622335.04	581083.50	35.60	141.6	-46.0
B35	326.15	622336.57	581086.13	32.70	144.8	-46.0
B36	326.04	622338.07	581088.68	34.55	142.7	-46.5
B37	325.94	622339.66	581091.08	35.55	141.7	-46.0
B38	325.72	622341.74	581093.42	32.45	139.0	-46.0

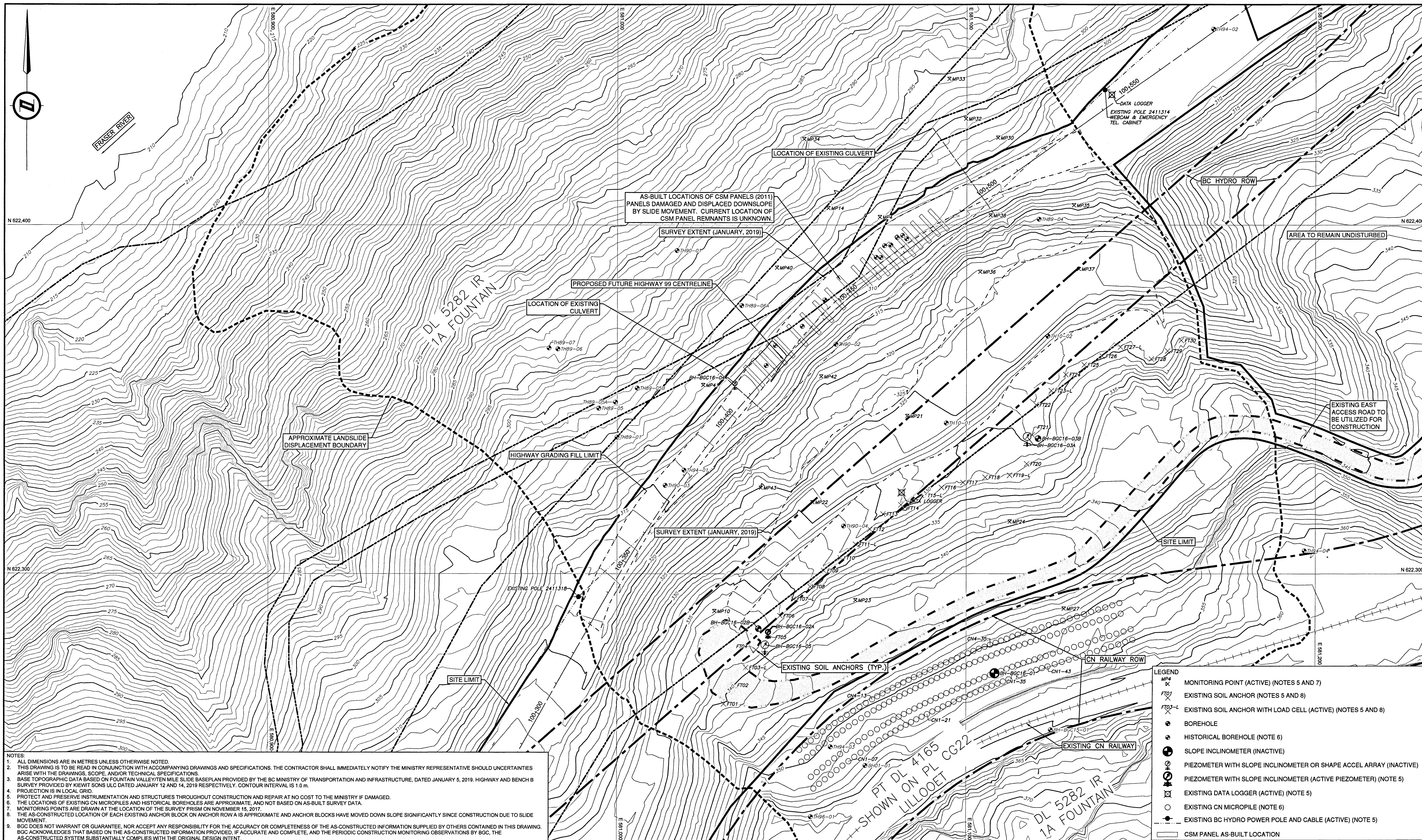
ANCHOR WORKING POINT LOCATIONS (RECORD, SEE NOTE 5)						
NAME	ELEVATION (m)	NORTHING (m)	EASTING (m)	LENGTH (m)	AZIMUTH (DEGREES)	PLUNGE (DEGREES)
B39	325.42	622343.82	581095.58	34.65	138.7	-46.0
B40	325.30	622345.74	581097.90	32.55	139.7	-46.0
B41	325.19	622347.61	581100.22	33.55	138.8	-46.0
B42	325.02	622349.54	581102.48	32.70	139.3	-45.5
B43	324.81	622351.63	581104.56	32.55	138.2	-45.0
B44	324.63	622354.00	581106.47	31.55	140.3	-45.0
B45	324.59	622356.36	581108.25	32.65	137.1	-46.0
B46	324.40	622358.42	581110.44	32.45	140.1	-45.0
B47	324.33	622360.21	581112.83	33.55	139.0	-45.0
B48	324.29	622361.99	581115.23	34.45	139.7	-45.0
B49	324.15	622364.12	581117.34	33.55	140.5	-46.0
B50	324.00	622366.25	581119.30	33.45	137.5	-45.0
B51	323.95	622368.44	581121.37	33.45	137.1	-44.0
B52	323.88	622370.61	581123.50	33.50	138.9	-43.5
B53	323.89	622372.59	581125.69	35.55	138.7	-45.0
B54	323.72	622374.70	581127.95	34.45	140.0	-45.0
B55	323.70	622376.61	581130.17	34.45	138.5	-45.0
B56	323.33	622378.73	581132.42	34.55	141.1	-45.0
B57	323.07	622382.01	581137.08	31.65	171.7	-54.0
B58	322.60	622382.33	581143.02	31.55	178.4	-54.0
B59	322.33	622382.38	581147.52	32.55	177.6	-49.0
B60	321.99	622382.63	581151.98	31.65	179.0	-45.0

NOTES:

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- SEE DRAWING 301 FOR ANCHOR DETAILS AND DIMENSIONS. ACTUAL ANCHOR LENGTHS WILL VARY BASED ON DEPTH TO TOP OF UNDIFFERENTIATED GLACIAL SEDIMENTS AS INDICATED ON DRAWING 301.
- THE AS-CONSTRUCTED LOCATION OF EACH EXISTING ANCHOR BLOCK ON ANCHOR ROW A IS APPROXIMATE AND ANCHOR BLOCKS HAVE MOVED DOWN SLOPE SIGNIFICANTLY SINCE CONSTRUCTION DUE TO SLIDE MOVEMENT. WHERE NEW SOIL ANCHORS AND ANCHOR BLOCKS ARE CONSTRUCTED TO INFILL THE EXISTING ANCHORS, SURVEY THE LOCATION OF THE ANCHOR WORKING POINT FOR EACH EXISTING SOIL ANCHOR. THE WORKING POINT FOR EACH NEW INFILL SOIL ANCHOR SHALL BE AT THE MIDPOINT BETWEEN THE WORKING POINT OF THE EXISTING ADJACENT SOIL ANCHORS, AND AS DIRECTED BY THE MINISTRY REPRESENTATIVE. THE MINISTRY REPRESENTATIVE MUST REVIEW AND APPROVE EACH ANCHOR WORKING POINT LOCATION PRIOR TO EXCAVATION TO INSTALL THE ANCHOR BLOCK.
- SOIL ANCHOR AS-BUILT LOCATIONS PROVIDED BY KIEWIT SONS ULC DATED FROM DECEMBER 19, 2018 TO JANUARY 12, 2019. ANCHOR LENGTH IS MEASURED FROM THE ANCHOR TIP TO THE BOTTOM OF THE HEX NUT.
- BGC DOES NOT WARRANT OR GUARANTEE, NOR ACCEPT ANY RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE AS-CONSTRUCTED INFORMATION SUPPLIED BY OTHERS CONTAINED IN THIS DRAWING. BGC ACKNOWLEDGES THAT BASED ON THE AS-CONSTRUCTED INFORMATION PROVIDED, IF ACCURATE AND COMPLETE, AND THE PERIODIC CONSTRUCTION MONITORING OBSERVATIONS BY BGC, THE AS-CONSTRUCTED SYSTEM SUBSTANTIALLY COMPLIES WITH THE ORIGINAL DESIGN INTENT.

	SCALE NOT TO SCALE	CAD FILENAME: 302 DATE: 2019-05-14	 <b>MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE</b> SOUTHERN INTERIOR REGION HIGHWAY ENGINEERING AND GEOMATICS	<b>SOIL ANCHOR LOCATIONS</b> HIGHWAY 99 TEN MILE SLIDE ADVANCED ANCHOR WORK STA. 100+430 TO 100+510.000																																											
	<table border="1" style="width: 100%;"> <thead> <tr> <th>REV</th> <th>DATE</th> <th>REVISIONS</th> <th>SIGNATURE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2019-05-14</td> <td>ISSUED FOR RECORD</td> <td>RNK</td> </tr> </tbody> </table>	REV		DATE	REVISIONS	SIGNATURE	1	2019-05-14	ISSUED FOR RECORD	RNK	<table border="1" style="width: 100%;"> <thead> <tr> <th>DESIGNED</th> <th>RNK</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>2018-08-13</td> </tr> </tbody> </table>	DESIGNED	RNK	DATE			2018-08-13	<table border="1" style="width: 100%;"> <thead> <tr> <th>QUALITY CONTROL</th> <th>MAP</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>2018-07-10</td> </tr> </tbody> </table>	QUALITY CONTROL	MAP	DATE			2018-07-10	<table border="1" style="width: 100%;"> <thead> <tr> <th>QUALITY ASSURANCE</th> <th>MJP</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>2018-07-10</td> </tr> </tbody> </table>	QUALITY ASSURANCE	MJP	DATE			2018-07-10	<table border="1" style="width: 100%;"> <thead> <tr> <th>DRAWN</th> <th>AH</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>2018-08-13</td> </tr> </tbody> </table>	DRAWN	AH	DATE			2018-08-13	<table border="1" style="width: 100%;"> <thead> <tr> <th>FILE NUMBER</th> <th>PROJECT NUMBER</th> <th>REG</th> <th>DRAWING NUMBER</th> <th>REV</th> </tr> </thead> <tbody> <tr> <td>2806</td> <td>23880-0002</td> <td>R2</td> <td>R2-1046-302</td> <td>1</td> </tr> </tbody> </table>	FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV	2806	23880-0002	R2
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NOTES

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4. PROJECTION IS IN LOCAL GRID.
5. PROTECT AND PRESERVE INSTRUMENTATION AND STRUCTURES THROUGHOUT CONSTRUCTION AND REPAIR AT NO COST TO THE MINISTRY IF DAMAGED.
6. THE LOCATIONS OF EXISTING CN MICROPILES AND HISTORICAL BOREHOLES ARE APPROXIMATE, AND NOT BASED ON AS-BUILT SURVEY DATA.
7. MONITORING POINTS ARE DRAWN AT THE LOCATION OF THE SURVEY PRISM ON NOVEMBER 15, 2017.
8. THE AS-CONSTRUCTED LOCATION OF EACH EXISTING ANCHOR BLOCK ON ANCHOR ROW A IS APPROXIMATE AND ANCHOR BLOCKS HAVE MOVED DOWN SLOPE SIGNIFICANTLY SINCE CONSTRUCTION DUE TO SLIDE MOVEMENT.
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LEGEND	
MP4	MONITORING POINT (ACTIVE) (NOTES 5 AND 7)
FT01	EXISTING SOIL ANCHOR (NOTES 5 AND 8)
FT03-L	EXISTING SOIL ANCHOR WITH LOAD CELL (ACTIVE) (NOTES 5 AND 8)
●	BOREHOLE
○	HISTORICAL BOREHOLE (NOTE 6)
⊕	SLOPE INCLINOMETER (INACTIVE)
⊕	PIEZOMETER WITH SLOPE INCLINOMETER OR SHAPE ACCEL ARRAY (INACTIVE)
⊕	PIEZOMETER WITH SLOPE INCLINOMETER (ACTIVE PIEZOMETER) (NOTE 5)
⊗	EXISTING DATA LOGGER (ACTIVE) (NOTE 5)
○	EXISTING CN MICROPILE (NOTE 6)
—	EXISTING BC HYDRO POWER POLE AND CABLE (ACTIVE) (NOTE 5)
—	CSM PANEL AS-BUILT LOCATION

SCALE	0 5 1:500 25m	CAD FILENAME	401
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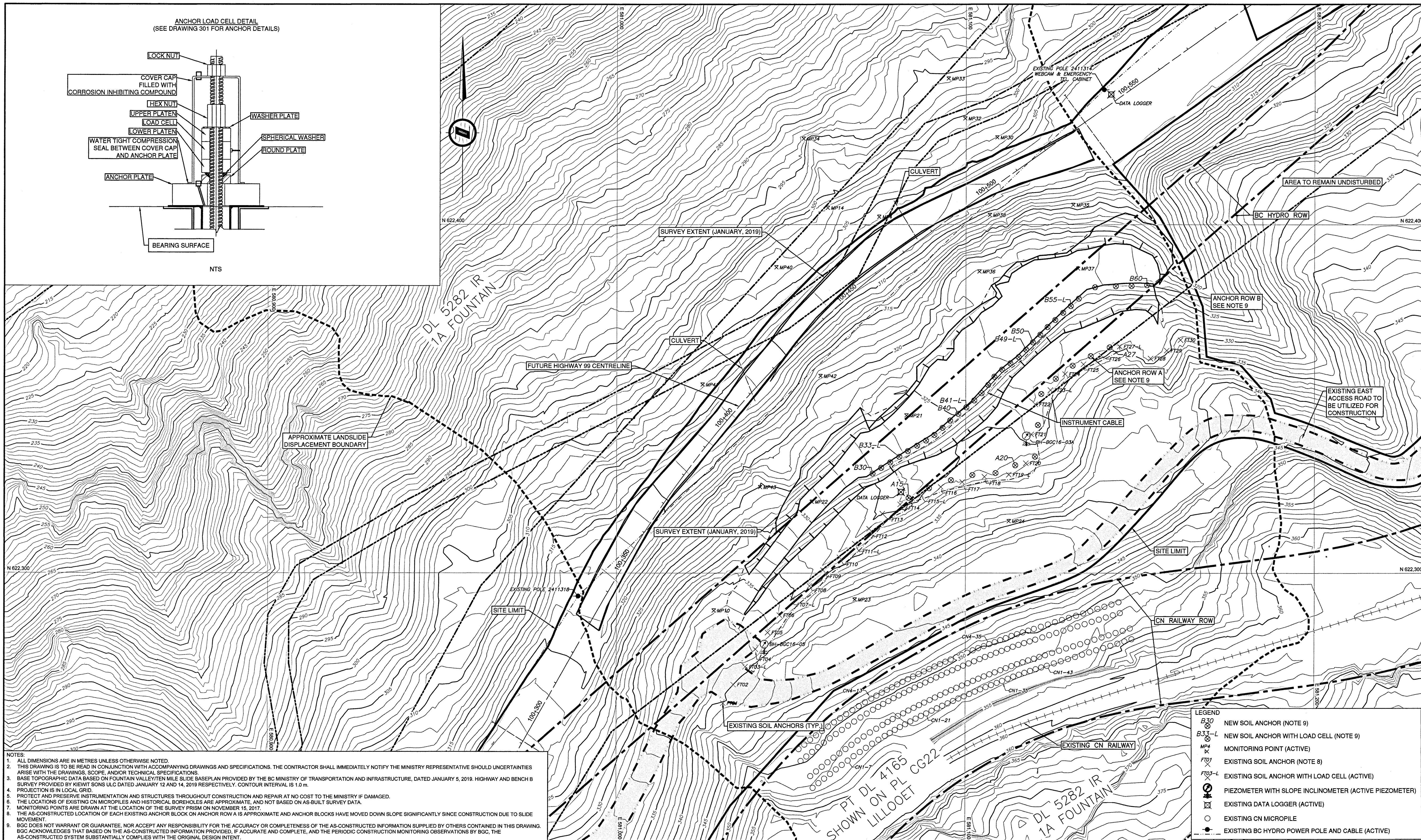
BRITISH COLUMBIA  
MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE  
SOUTHERN INTERIOR REGION  
HIGHWAY ENGINEERING AND GEOMATICS

R.N. KOSTASCHUK  
SENIOR DESIGNER  
DATE 2019-05-14

DESIGNED: RNK DATE 2018-08-13  
QUALITY CONTROL: MAP DATE 2018-07-10  
QUALITY ASSURANCE: MJP DATE 2018-07-10  
DRAWN: AH DATE 2018-08-13

EXISTING SITE INVESTIGATIONS AND INSTRUMENTATION - PLAN				
HIGHWAY 99 TEN MILE SLIDE ADVANCED ANCHOR WORK				
FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
2806	23880-0002	R2	R2-1046-401	1





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**LEGEND**

- B30 ○ NEW SOIL ANCHOR (NOTE 9)
- B33-L ○ NEW SOIL ANCHOR WITH LOAD CELL (NOTE 9)
- MP4 × MONITORING POINT (ACTIVE)
- FT01 × EXISTING SOIL ANCHOR (NOTE 8)
- FT03-L × EXISTING SOIL ANCHOR WITH LOAD CELL (ACTIVE)
- ⊗ PIEZOMETER WITH SLOPE INCLINOMETER (ACTIVE PIEZOMETER)
- ⊗ EXISTING DATA LOGGER (ACTIVE)
- EXISTING CN MICROPILE
- EXISTING BC HYDRO POWER POLE AND CABLE (ACTIVE)

SCALE 0 5 1:500 25m

CAD FILENAME: 402

DATE: 2019-05-14

REV	DATE	REVISIONS	SIGNATURE
1	2019-05-14	ISSUED FOR RECORD	RNK

BRITISH COLUMBIA  
MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE  
SOUTHERN INTERIOR REGION  
HIGHWAY ENGINEERING AND GEOMATICS

R.N. KOSTASCHUK  
SENIOR DESIGNER  
DATE: 2019-05-14

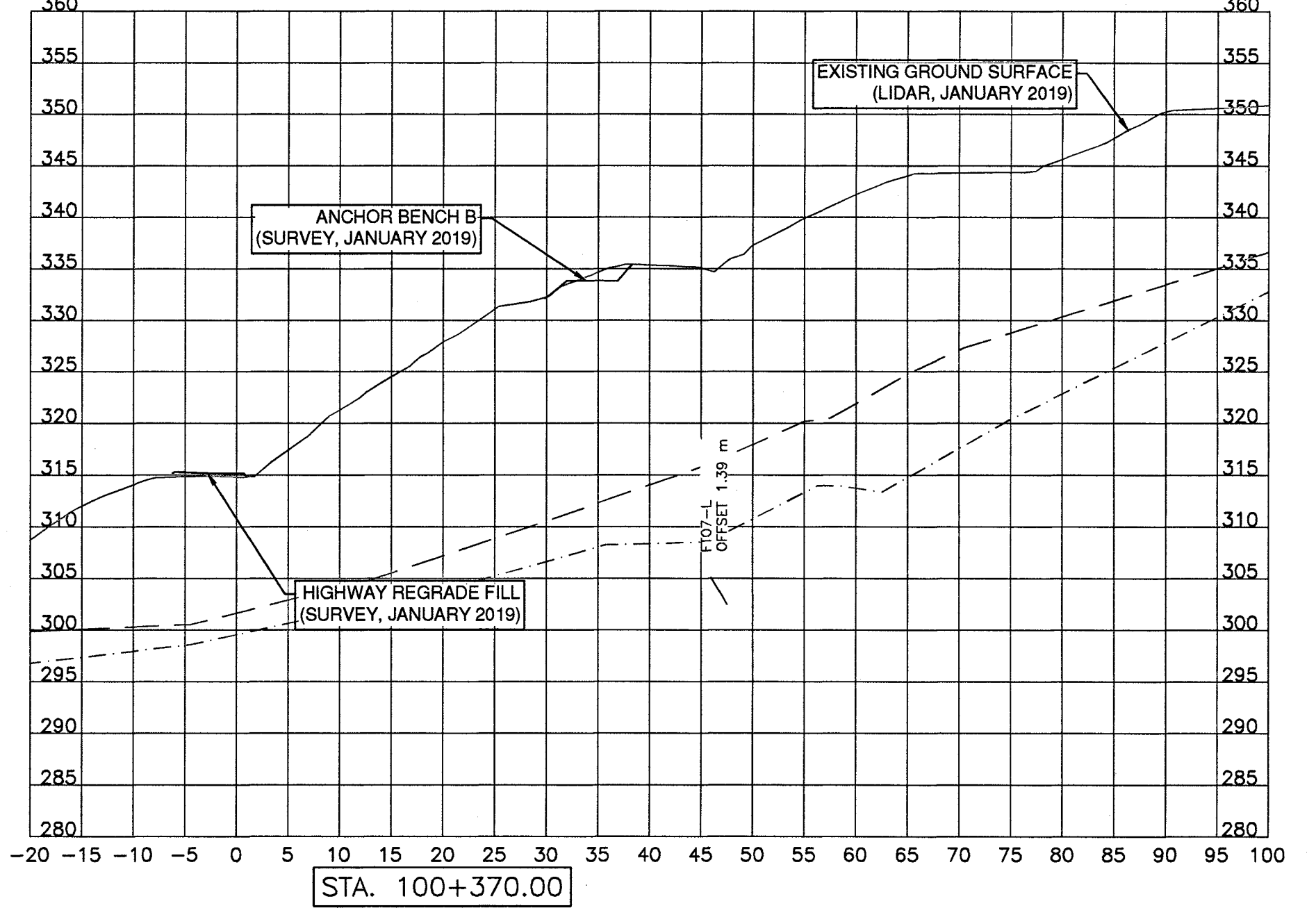
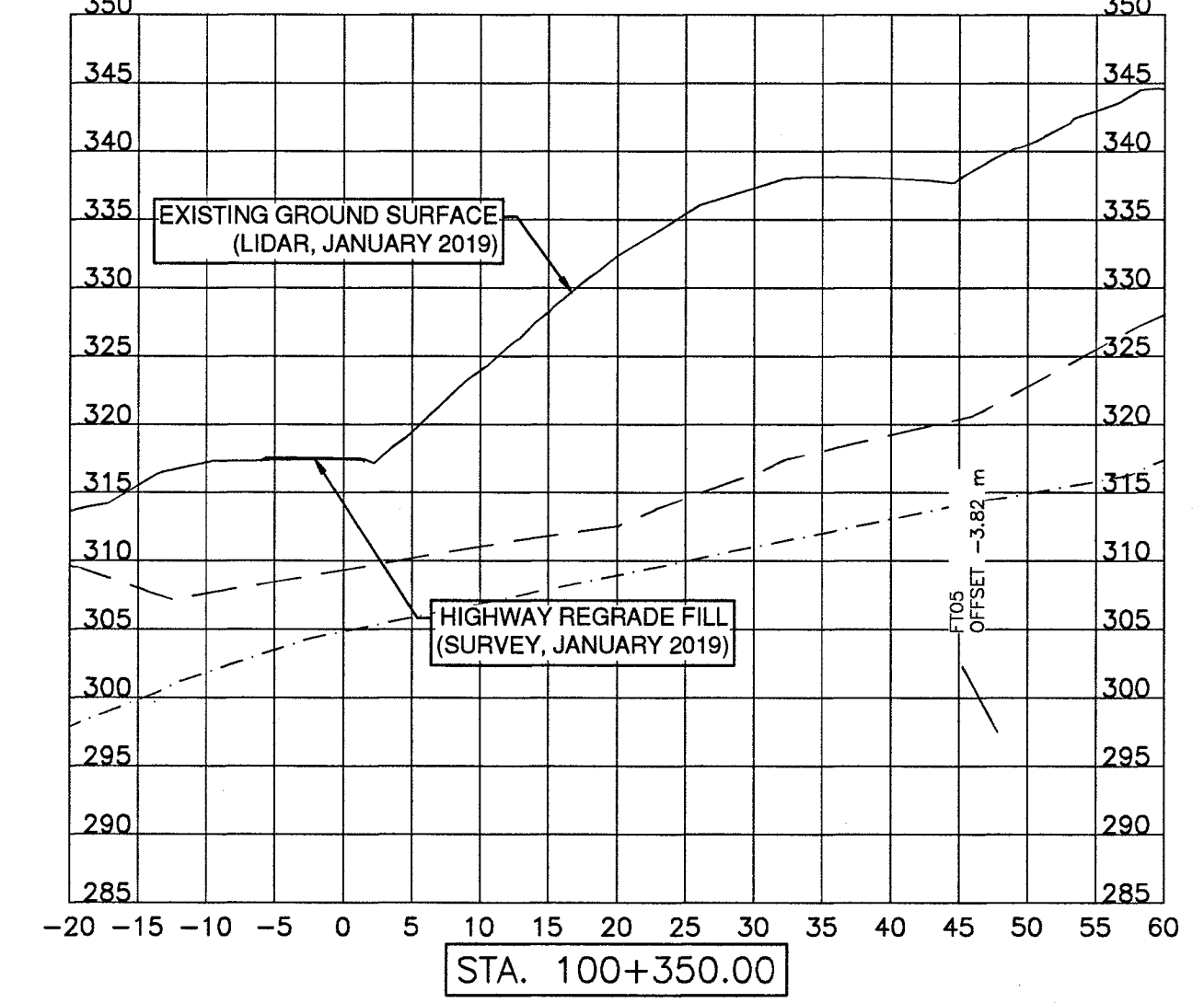
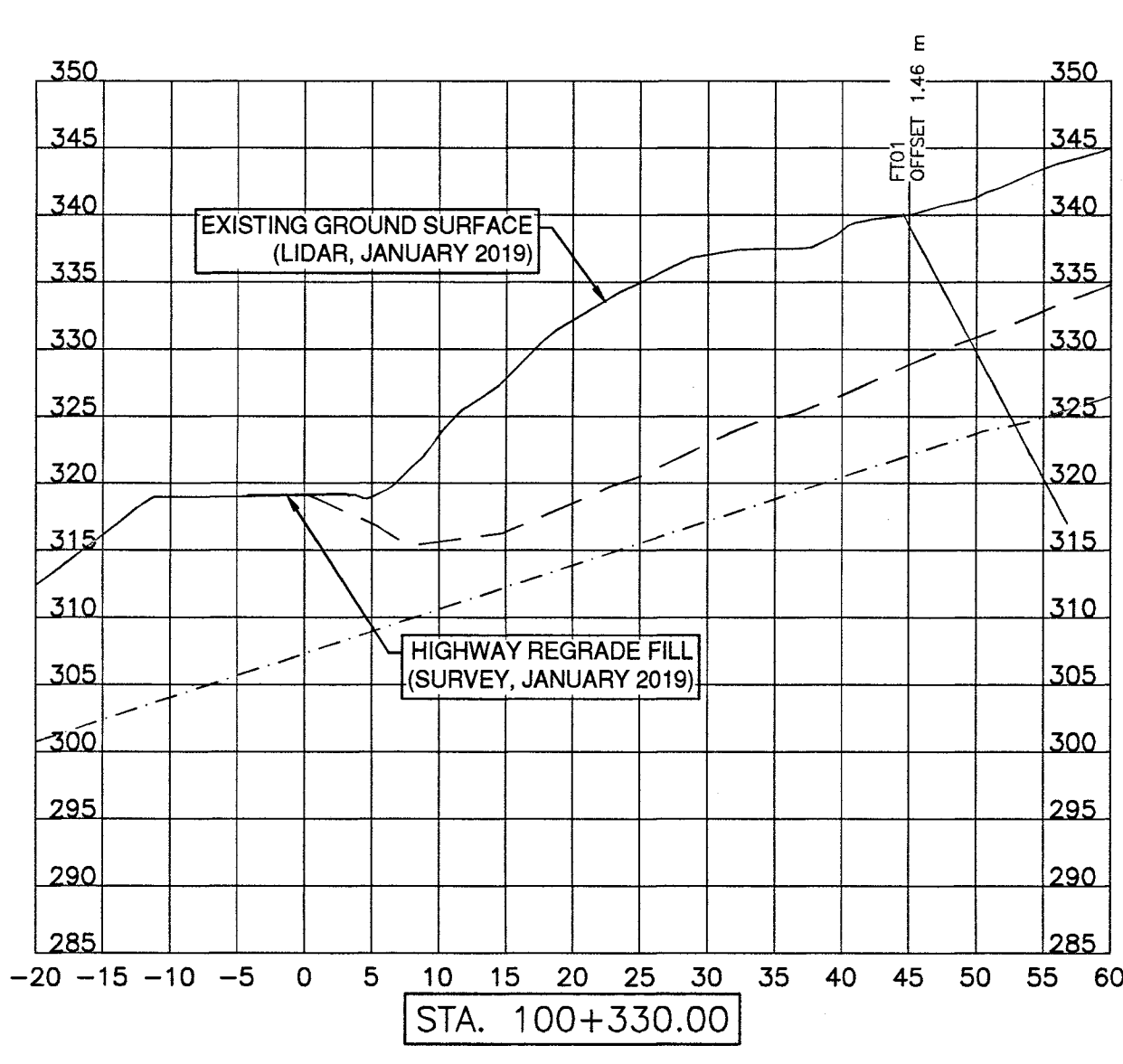
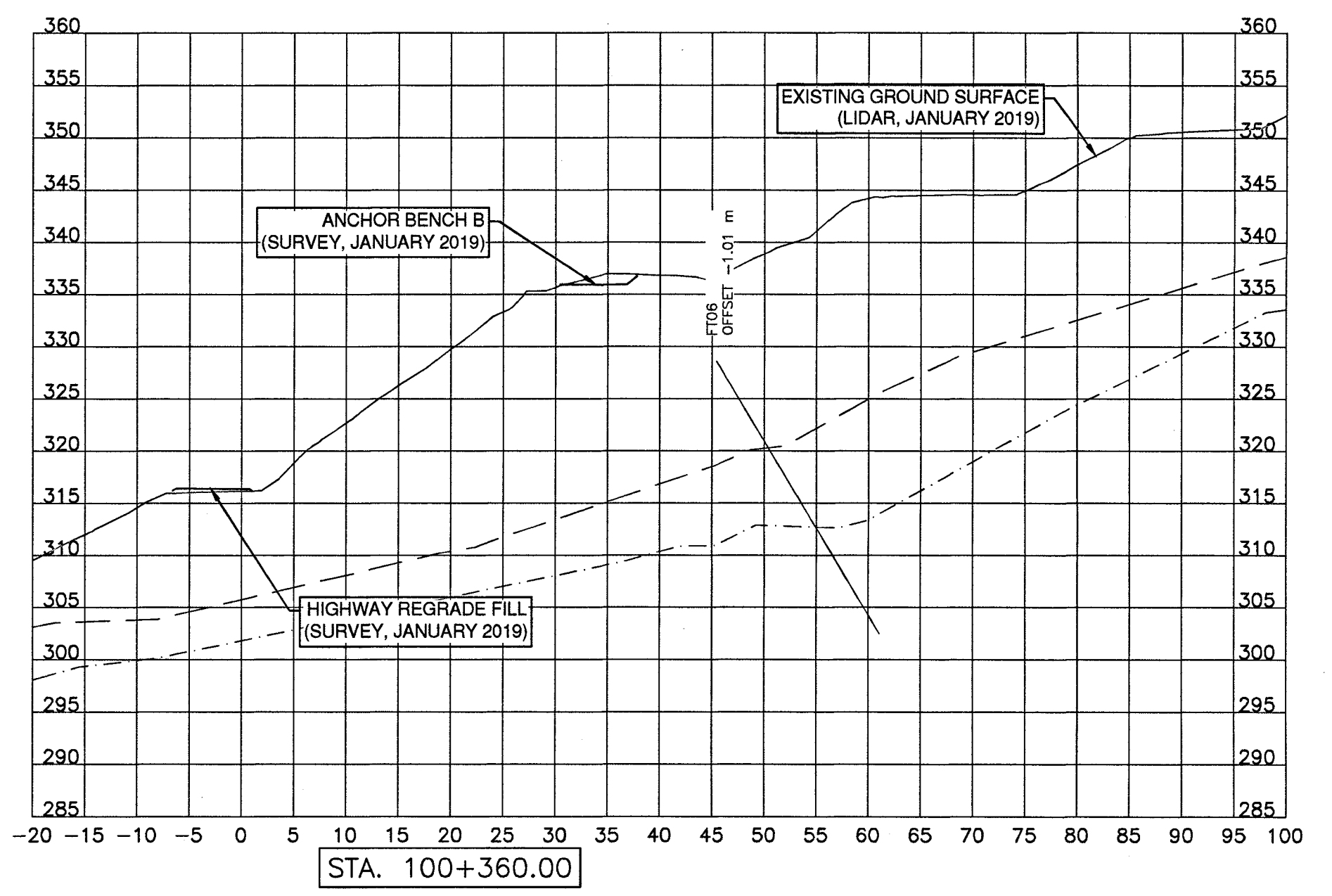
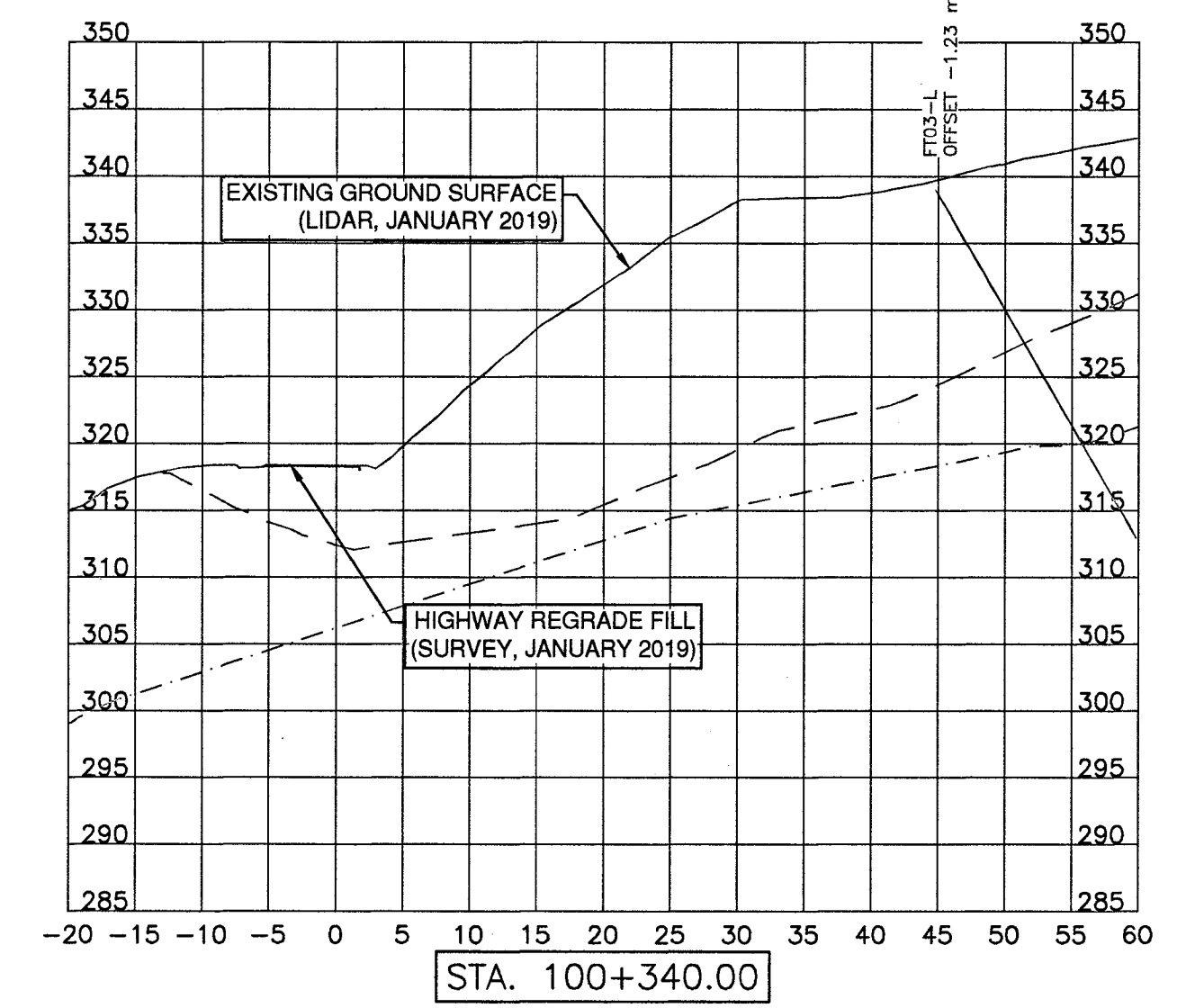
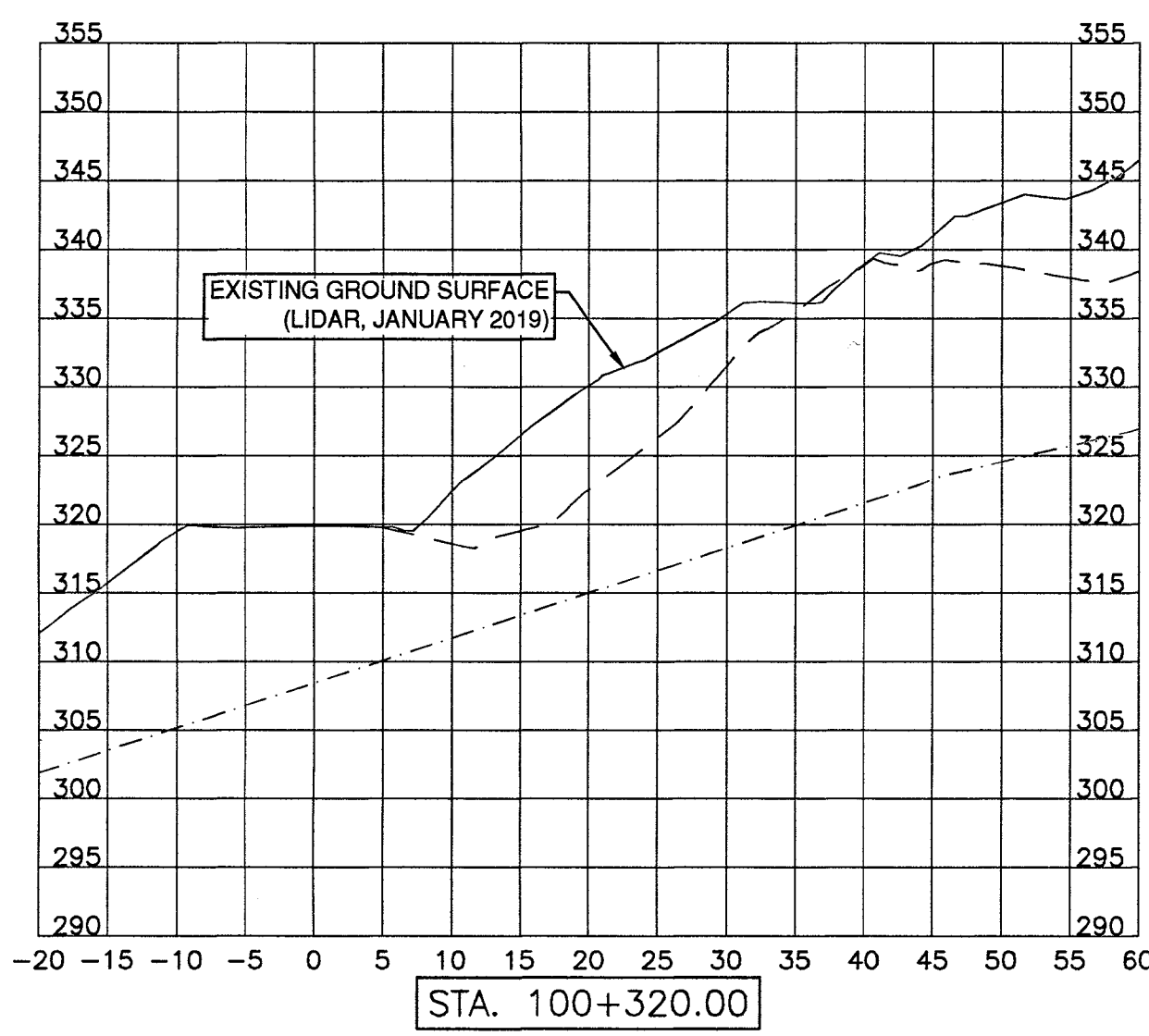
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QUALITY ASSURANCE: MJP DATE: 2018-07-10  
DRAWN: AH DATE: 2018-08-13

**INSTRUMENTATION - PLAN AND DETAILS**

HIGHWAY 99  
TEN MILE SLIDE ADVANCED ANCHOR WORK

FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
2806	23880-0002	R2	R2-1046-402	1





**LEGEND**

- INTERPRETED BOTTOM OF BASAL SHEAR ZONE
- INTERPRETED TOP OF UNDIFFERENTIATED GLACIAL SEDIMENT
- ANCHOR BLOCK
- ANCHOR FREE STRESSING LENGTH
- ANCHOR BOND LENGTH

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SCALE 0 5 1:500 25m

CAD FILENAME: 501-504  
DATE: 2019-05-14

REV	DATE	REVISIONS	SIGNATURE
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**BRITISH COLUMBIA**  
MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE  
SOUTHERN INTERIOR REGION  
HIGHWAY ENGINEERING AND GEOMATICS

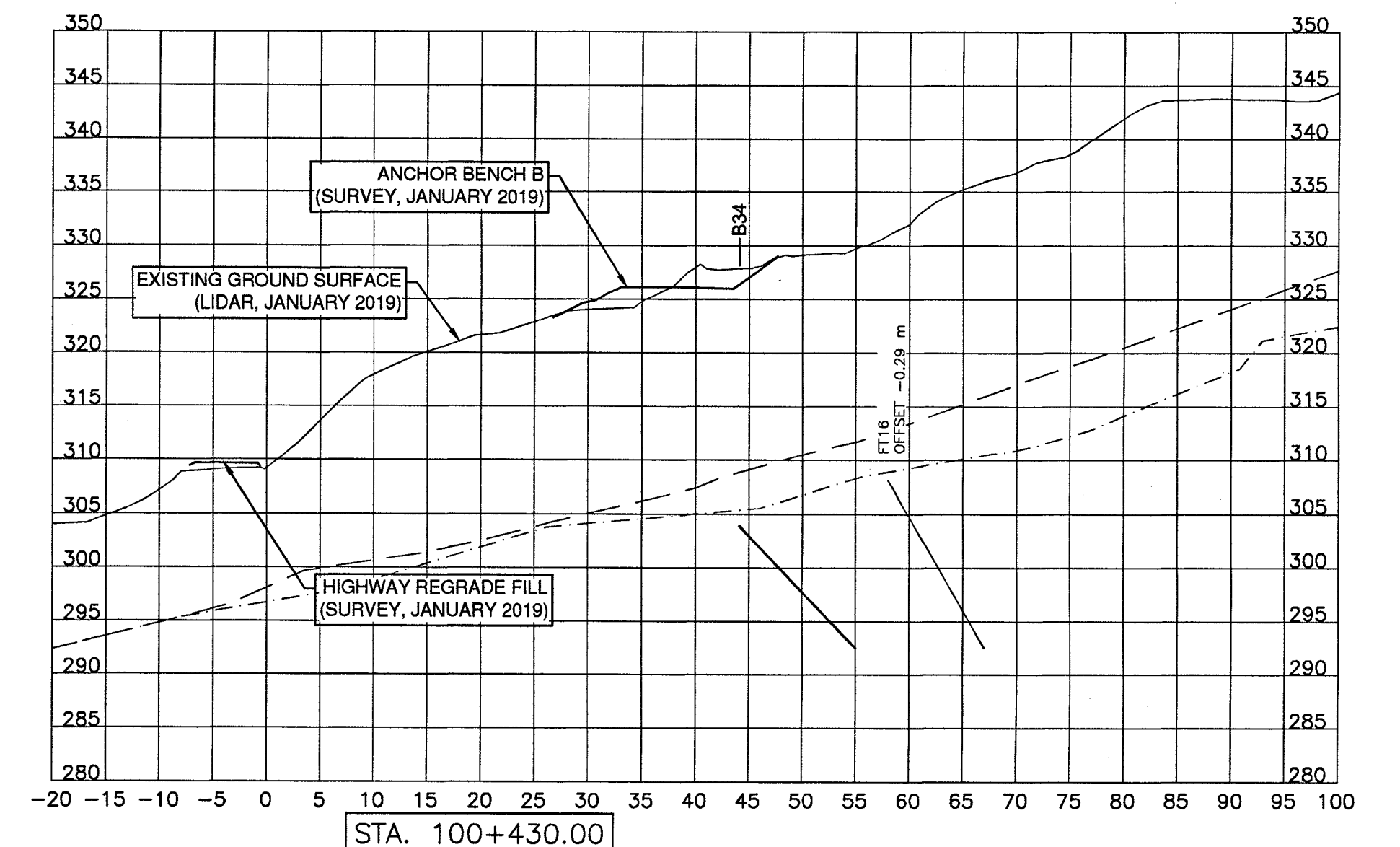
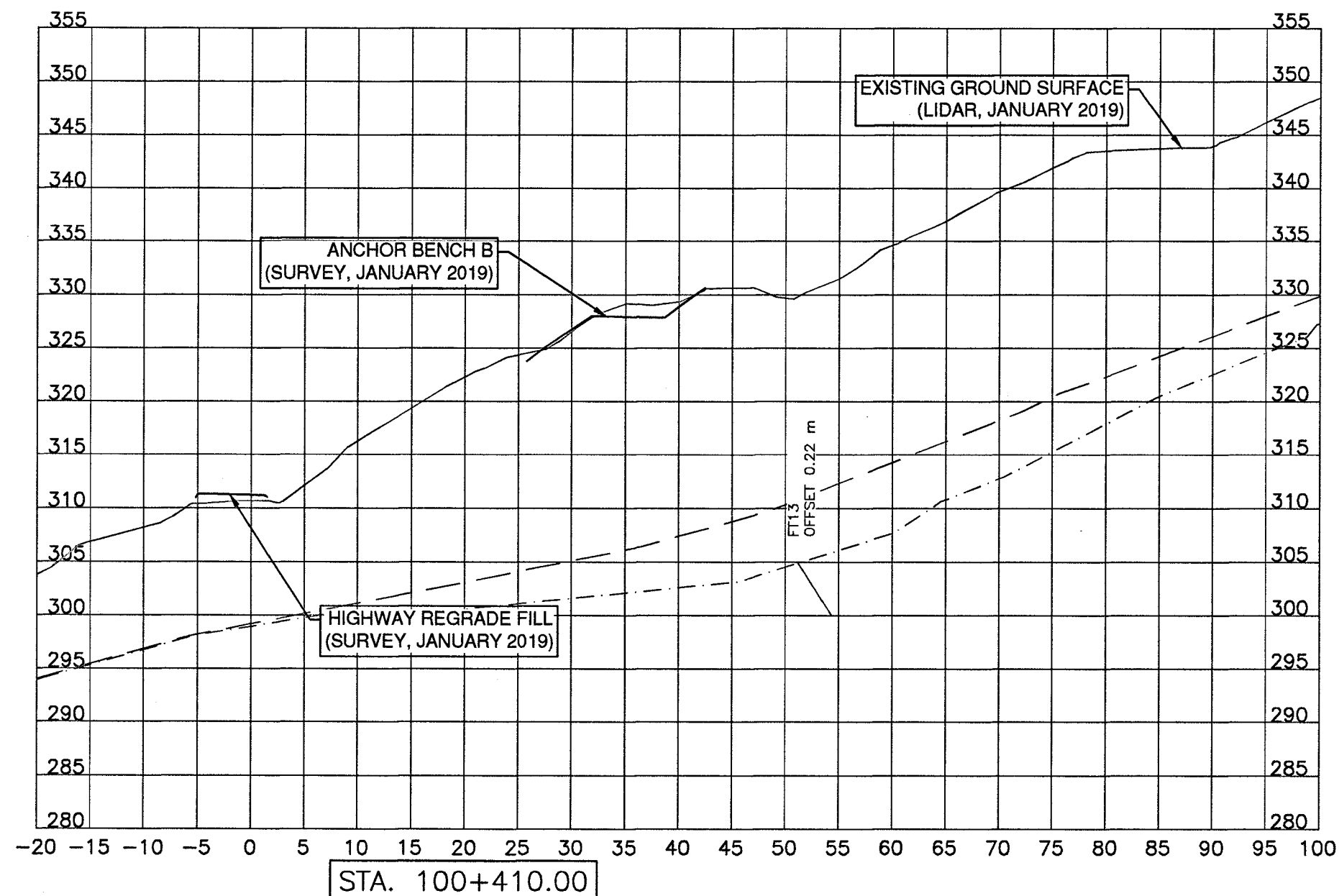
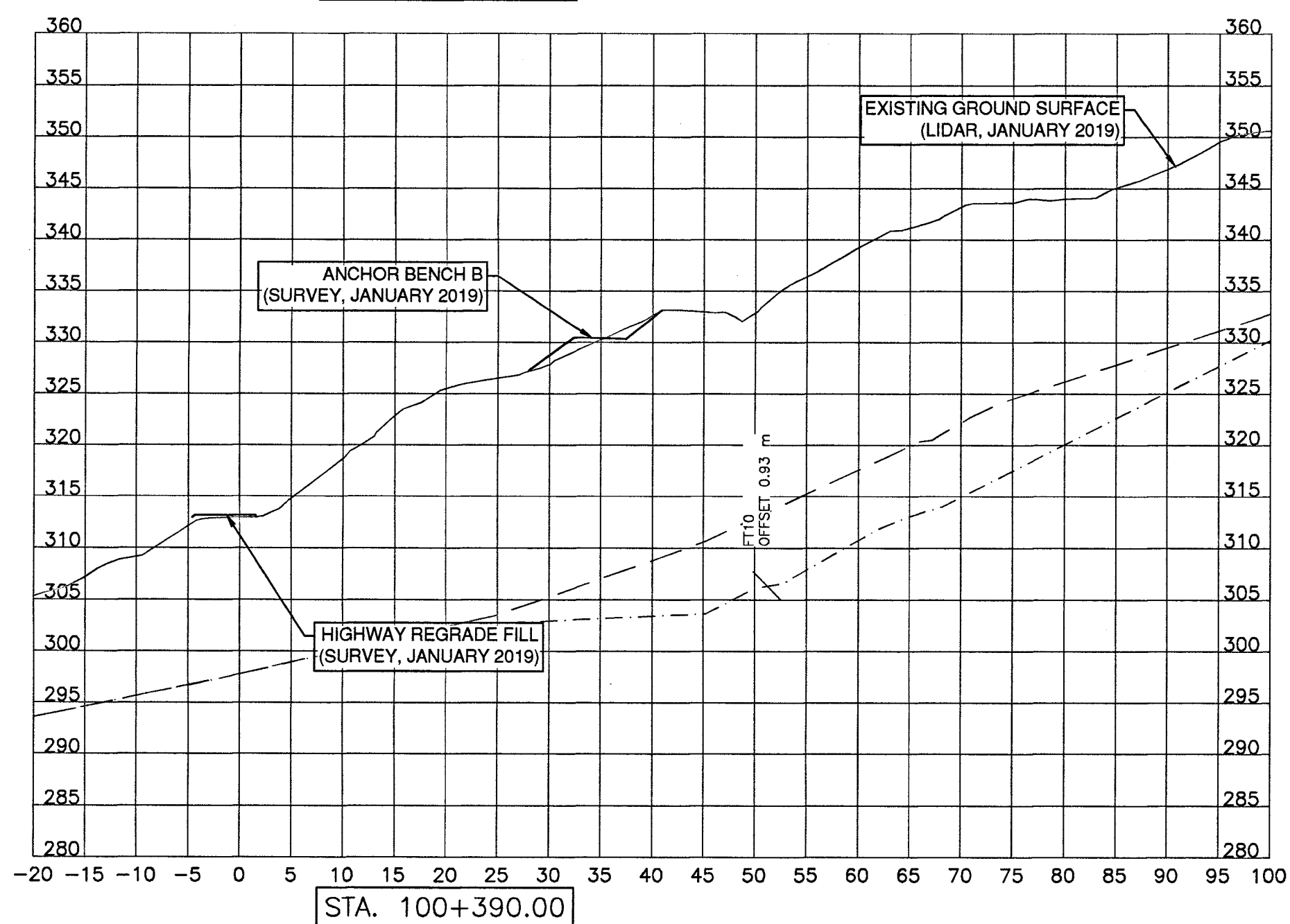
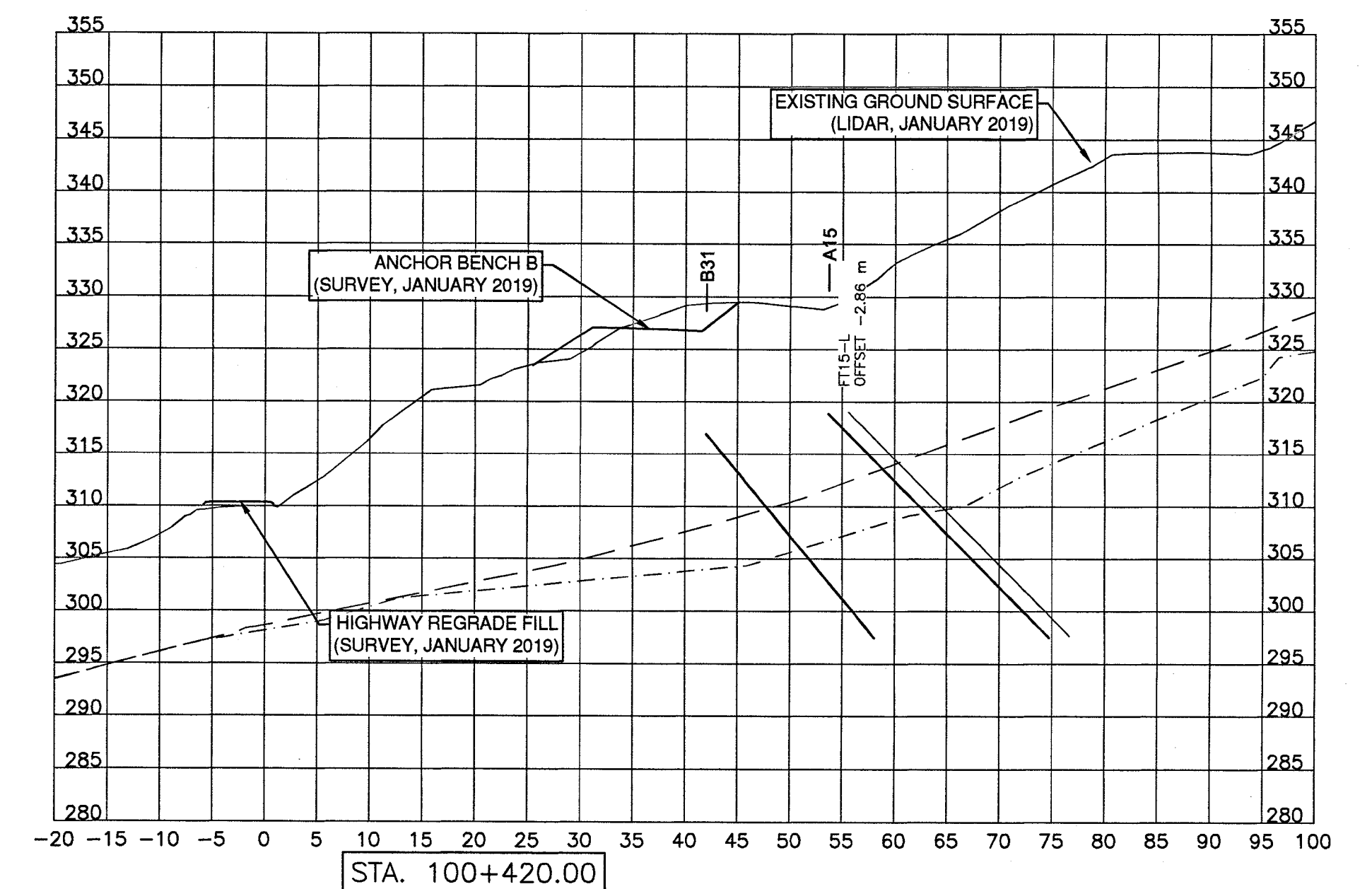
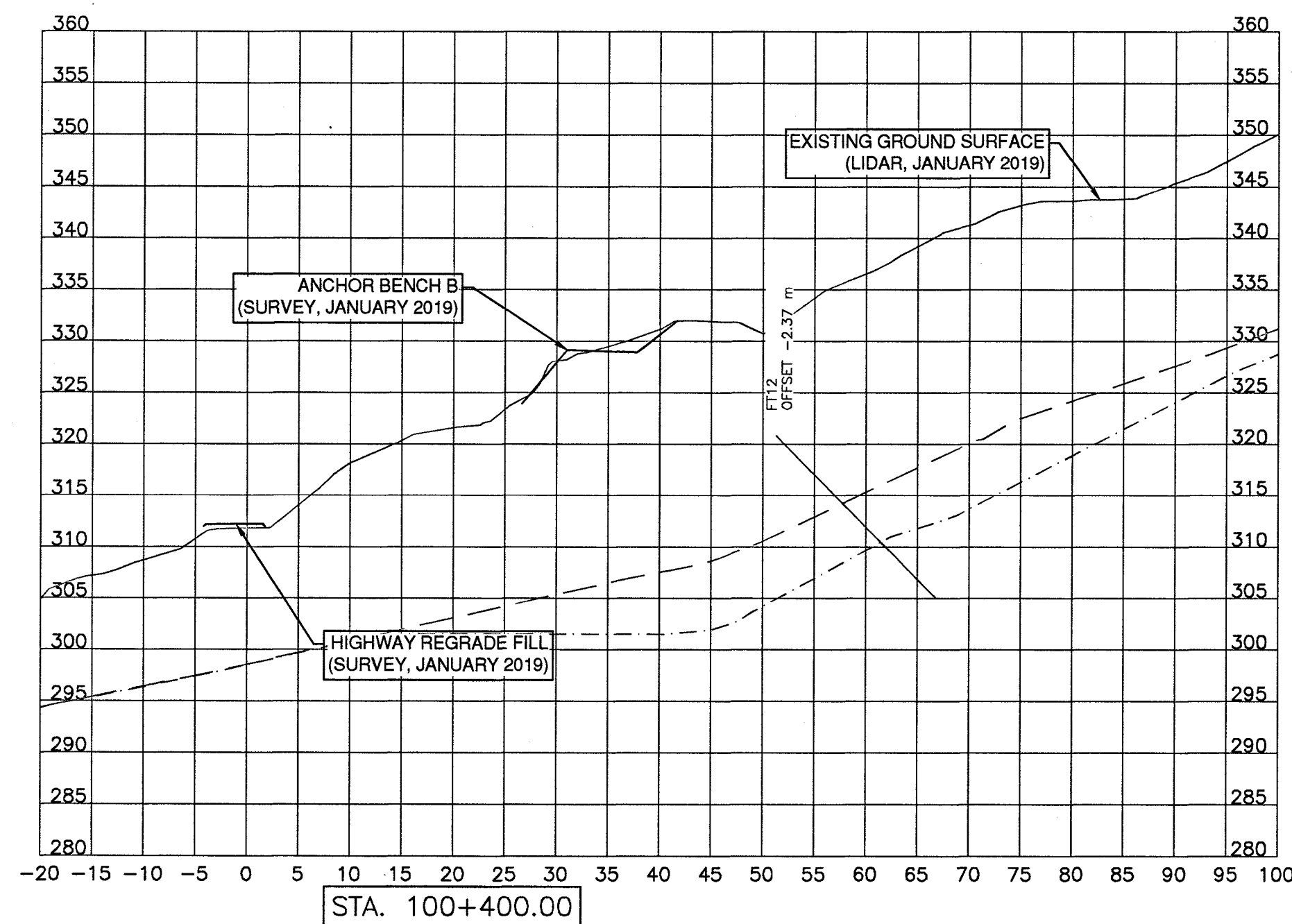
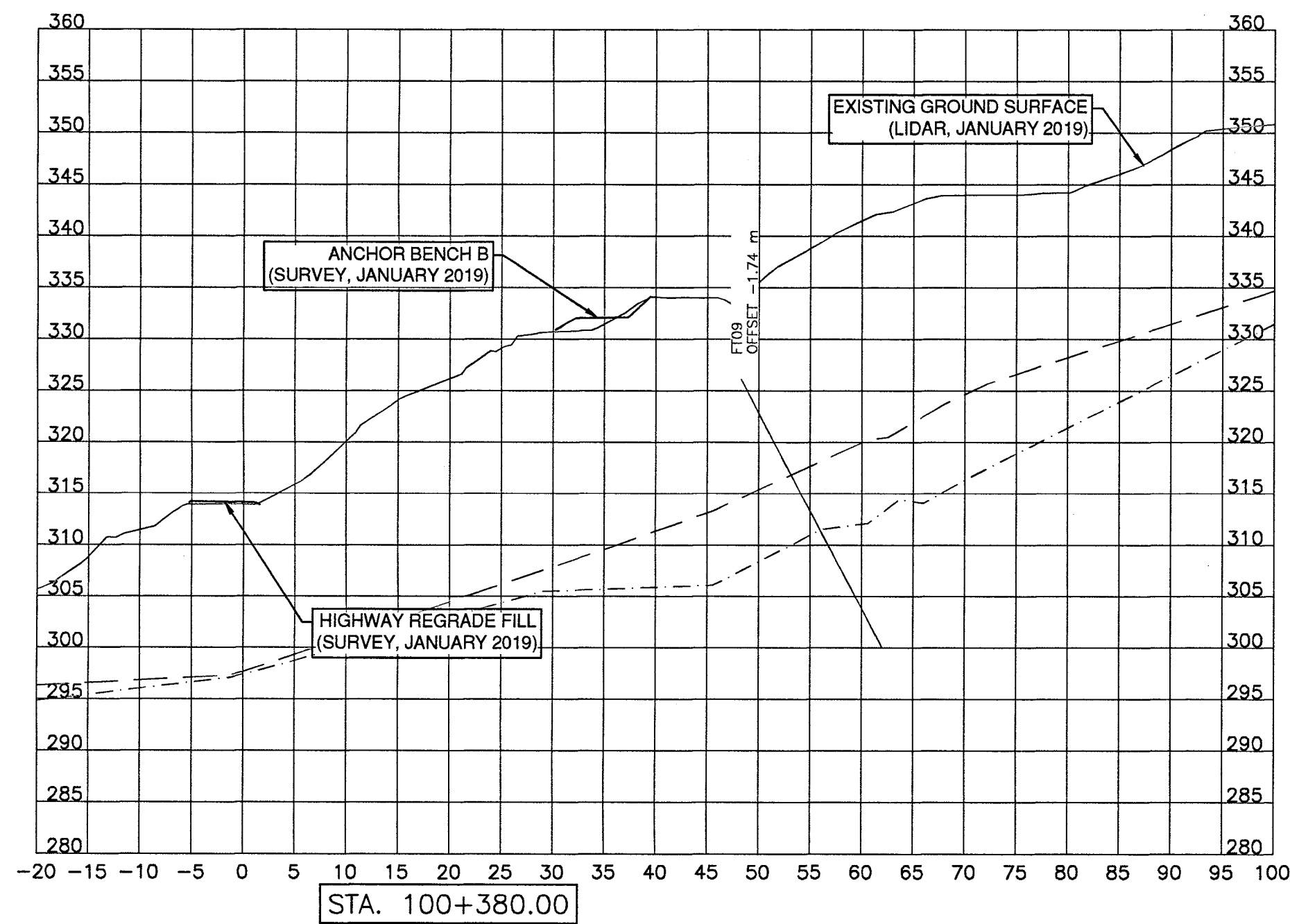
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QUALITY ASSURANCE: MJP DATE: 2018-07-10  
DRAWN: AH DATE: 2018-08-13

**R.N. KOSTASCHUK**  
SENIOR DESIGNER  
DATE: 2019-05-14

**SLIDE STABILIZATION AND HIGHWAY GRADING - SECTIONS (SHEET 1 OF 4)**

HIGHWAY 99  
TEN MILE SLIDE ADVANCED ANCHOR WORK  
STA. 100+300.000 TO 100+370.000

FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
2806	23880-0002	R2	R2-1046-501	1



LEGEND

- INTERPRETED BOTTOM OF BASAL SHEAR ZONE
- INTERPRETED TOP OF UNDIFFERENTIATED GLACIAL SEDIMENT
- ANCHOR BLOCK
- ANCHOR FREE STRESSING LENGTH
- ANCHOR BOND LENGTH

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SCALE 0 5 1:500 25m

CAD FILENAME 801-504

DATE 2019-05-14

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1	2019-05-14	ISSUED FOR RECORD	RNK

BRITISH COLUMBIA

MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE

SOUTHERN INTERIOR REGION

HIGHWAY ENGINEERING AND GEOMATICS

R.N. KOSTASCHUK

SENIOR DESIGNER

DATE 2019-05-14

DESIGNED RNK DATE 2018-08-13

QUALITY CONTROL MAP DATE 2018-07-10

QUALITY ASSURANCE MJP DATE 2018-07-10

DRAWN AH DATE 2018-08-13

SLIDE STABILIZATION AND HIGHWAY GRADING - SECTIONS (SHEET 2 OF 4)

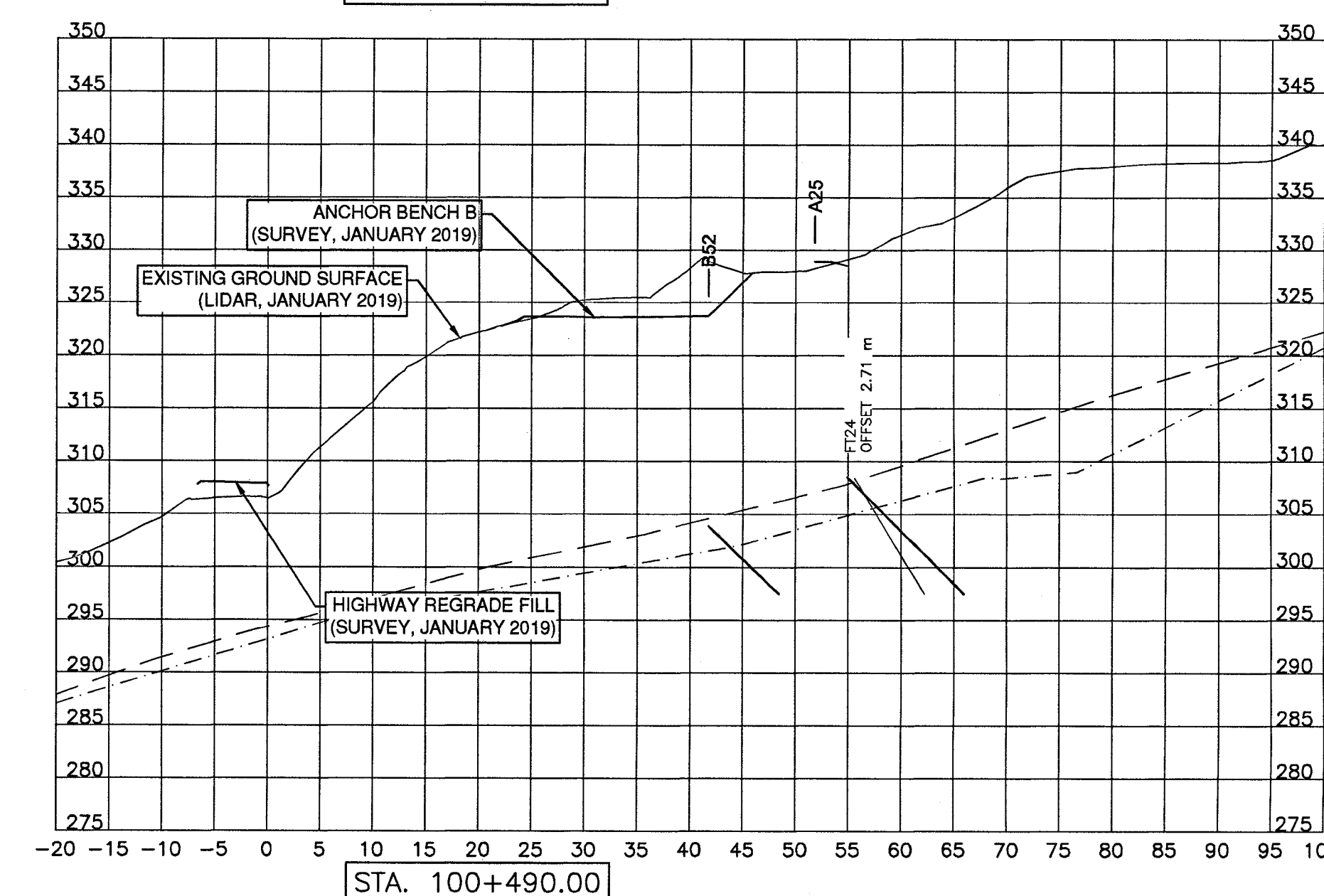
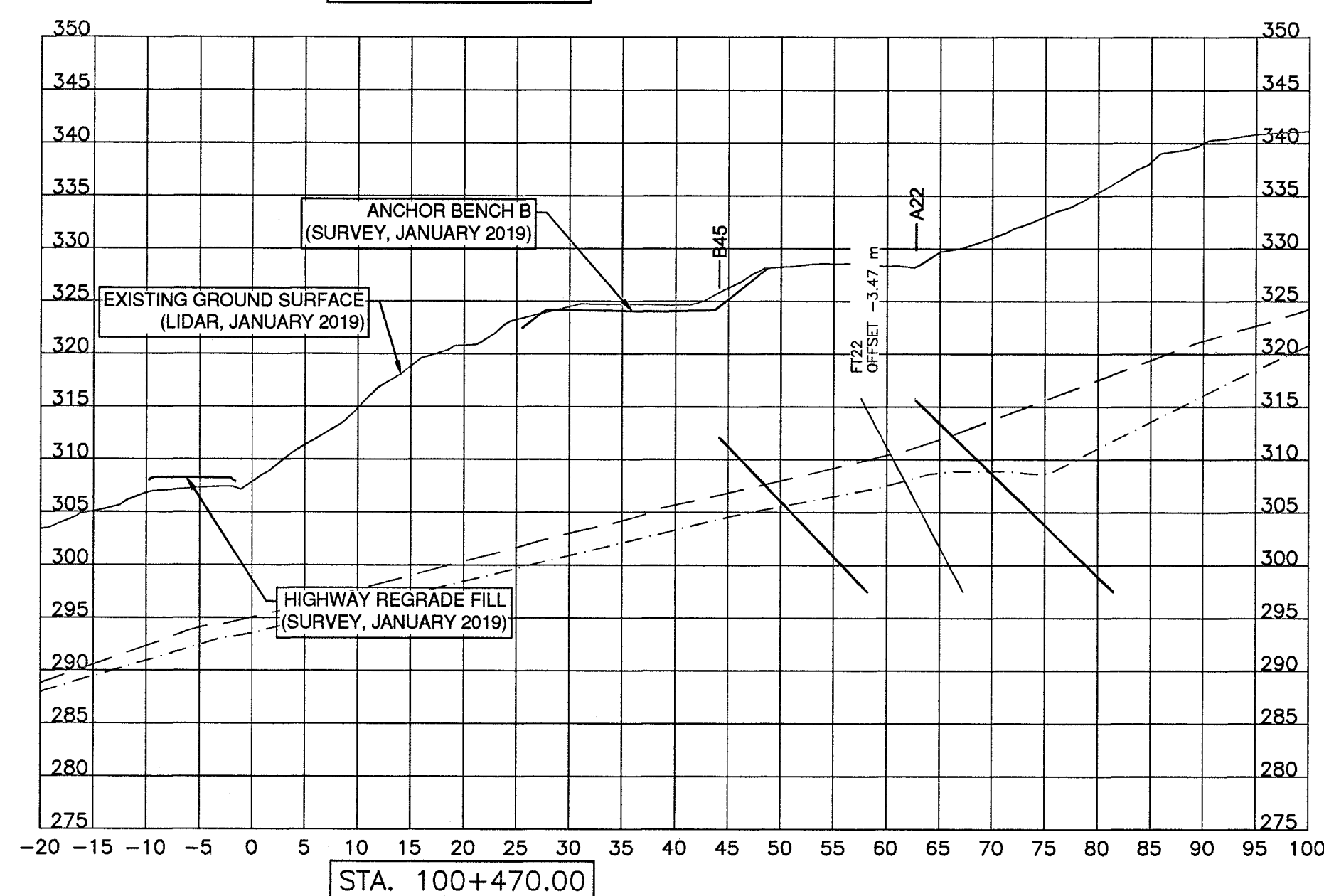
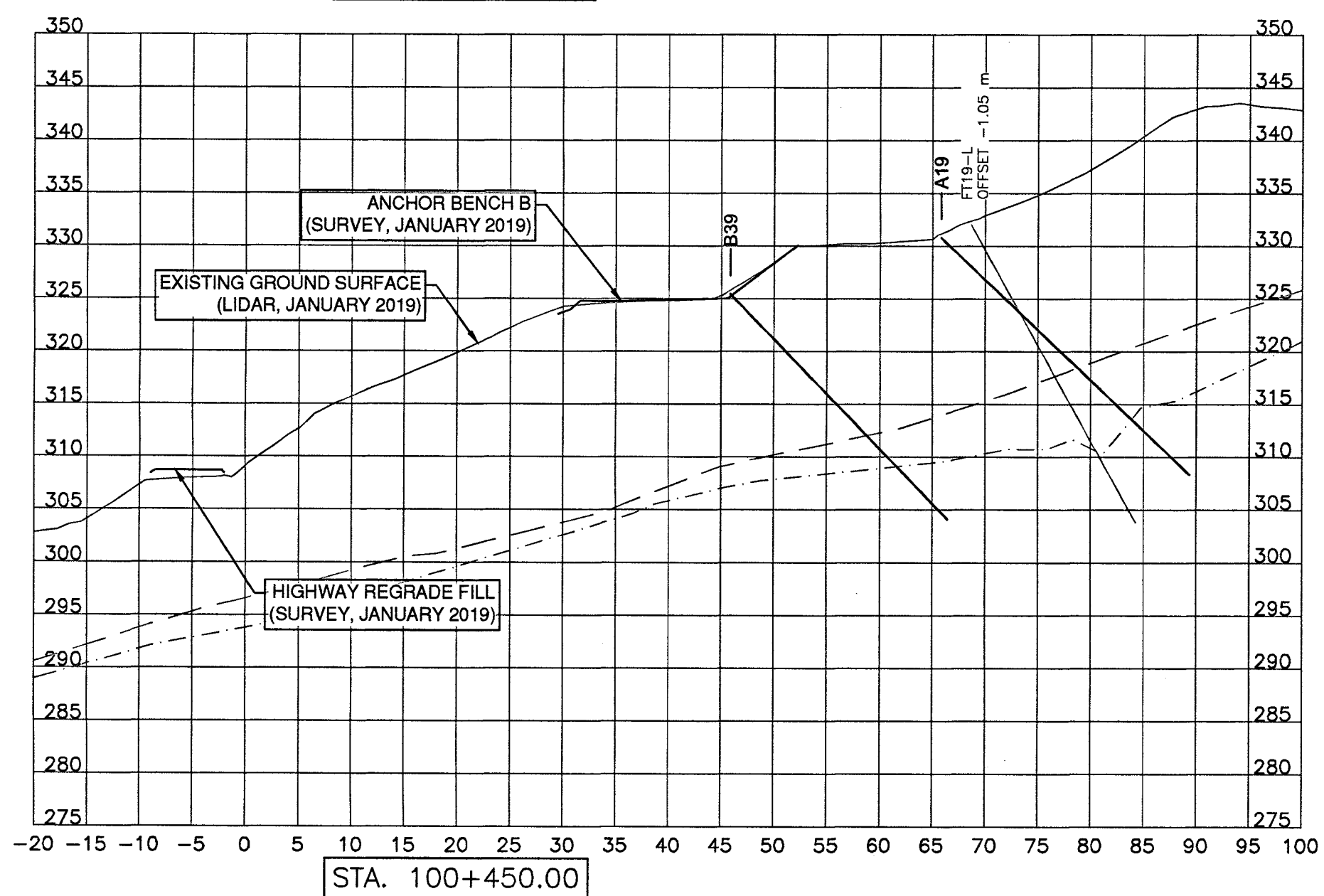
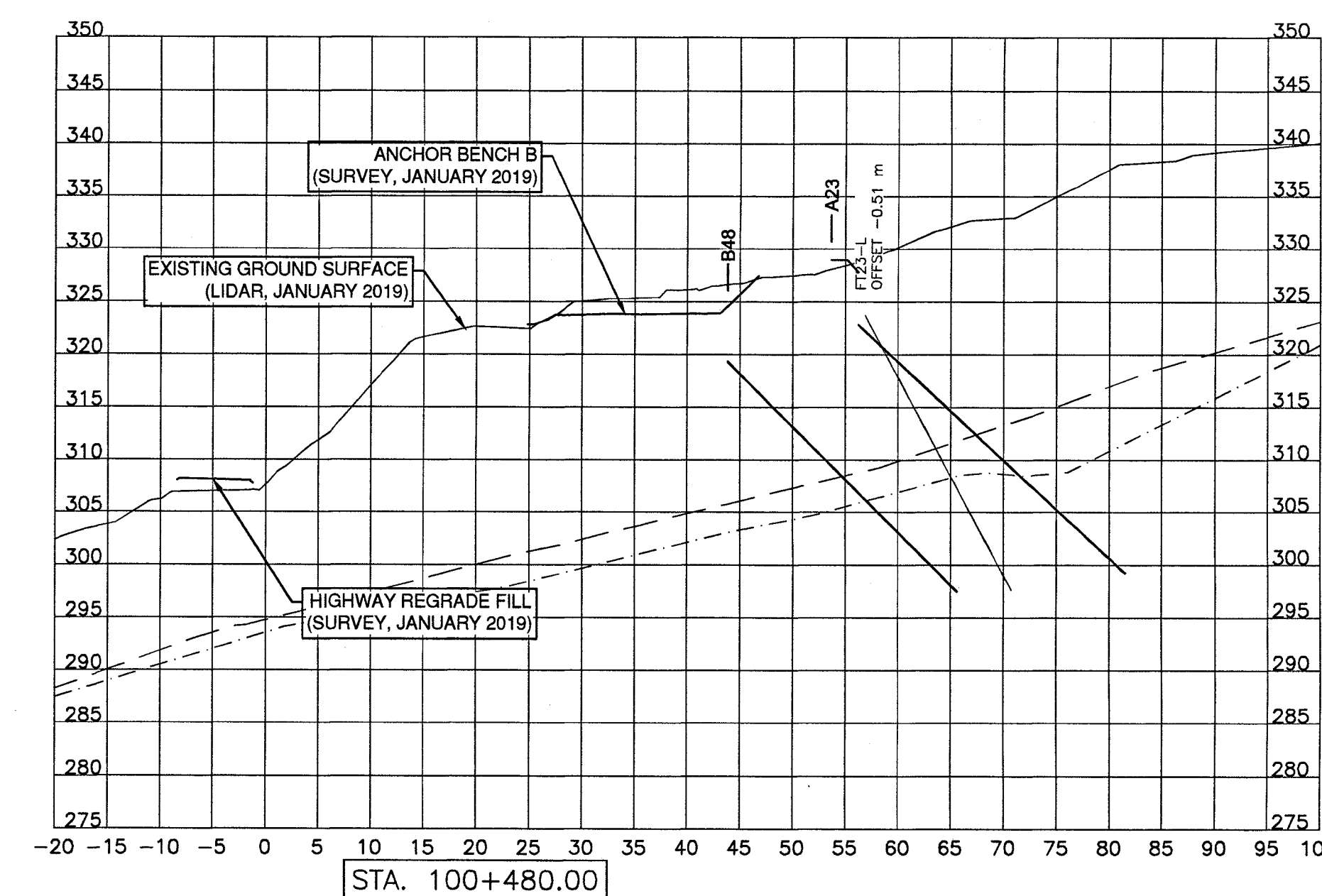
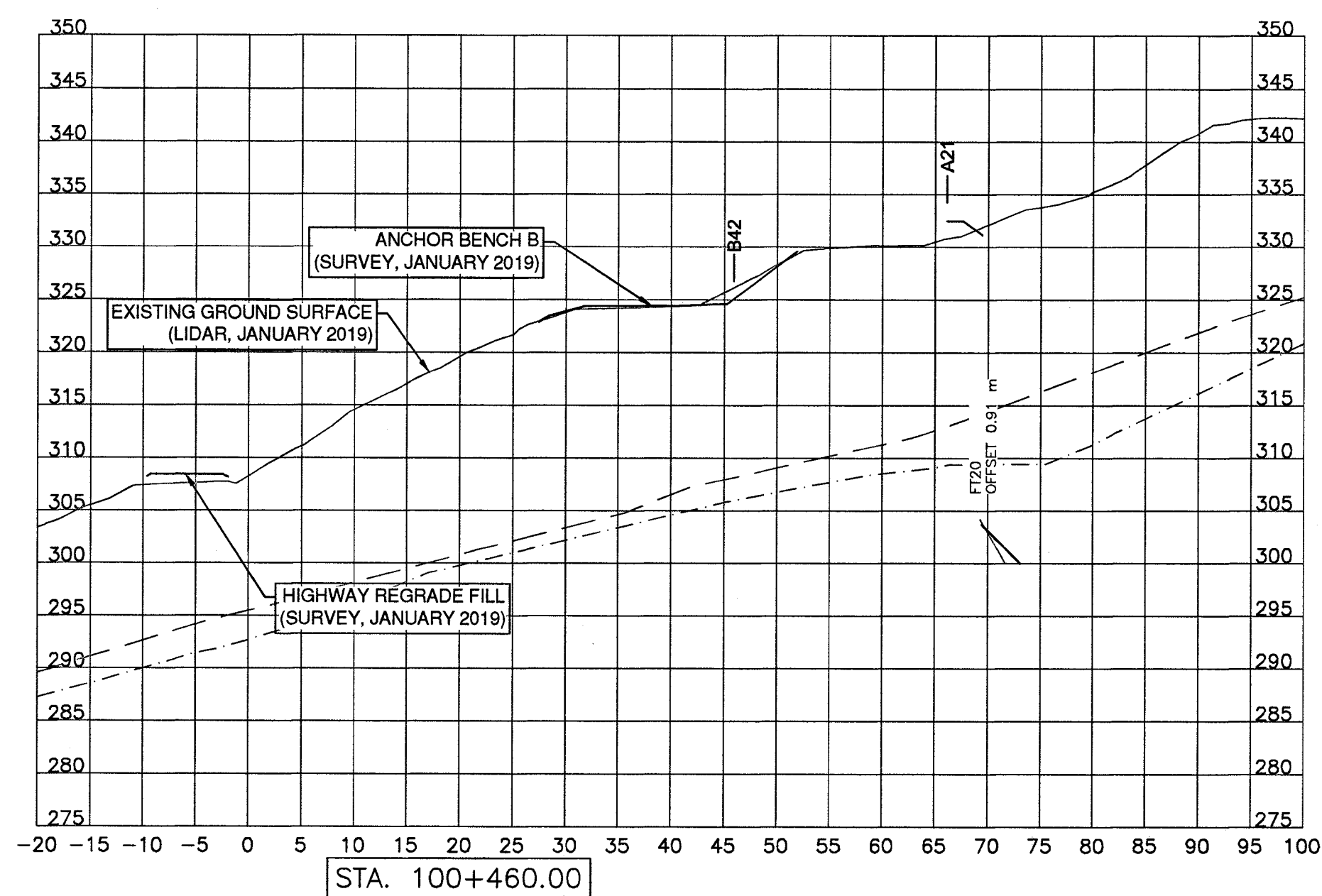
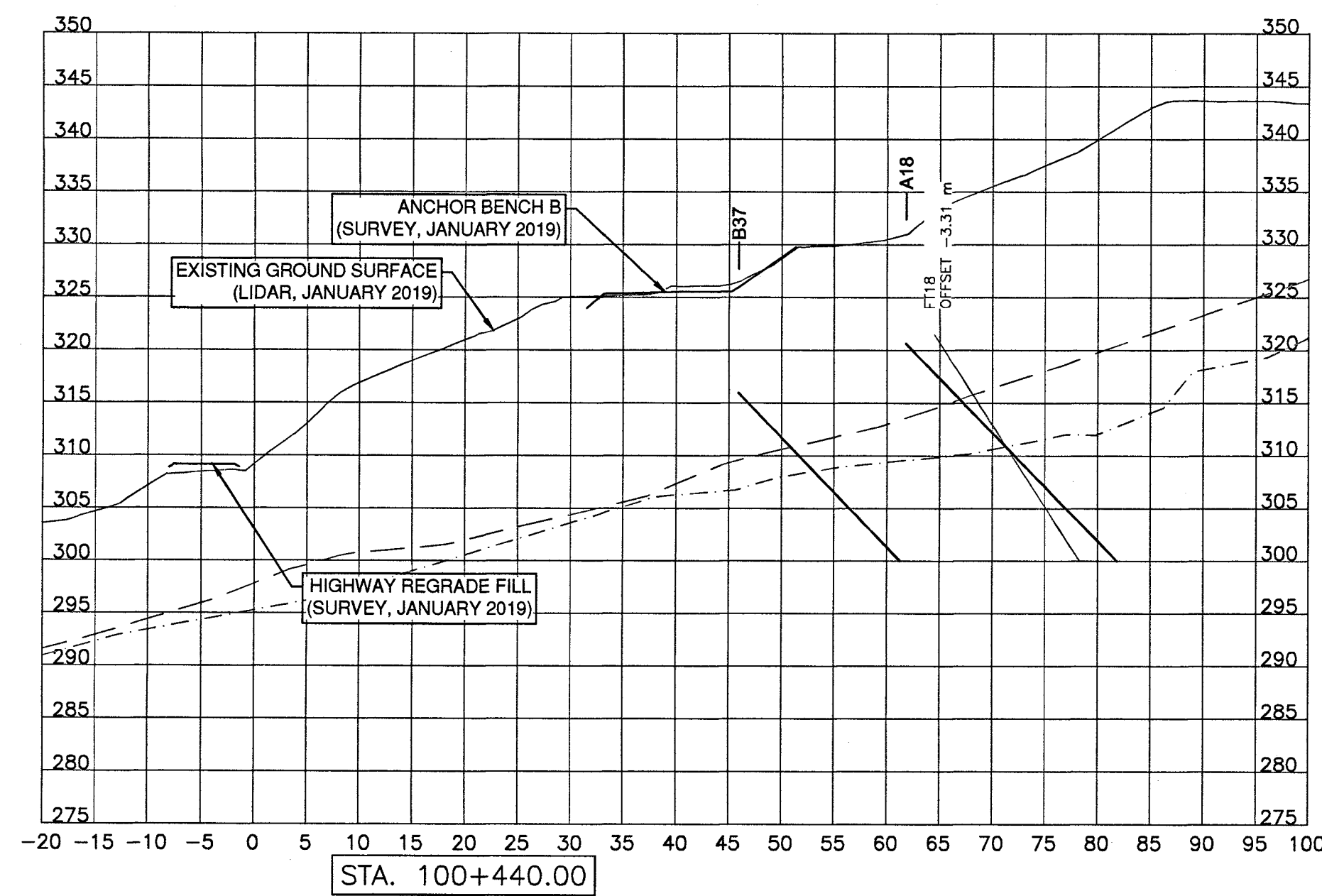
HIGHWAY 99

TEN MILE SLIDE ADVANCED ANCHOR WORK

STA. 100+380.00 TO 100+430.00

FILE NUMBER	PROJECT NUMBER	REG	DRAWING NUMBER	REV
2806	23880-0002	R2	R2-1046-502	1





**LEGEND**

- INTERPRETED BOTTOM OF BASAL SHEAR ZONE
- INTERPRETED TOP OF UNDIFFERENTIATED GLACIAL SEDIMENT
- ANCHOR BLOCK
- ANCHOR FREE STRESSING LENGTH
- ANCHOR BOND LENGTH

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CAD FILENAME: 501-504  
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**BRITISH COLUMBIA**

MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE  
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HIGHWAY ENGINEERING AND GEOMATICS

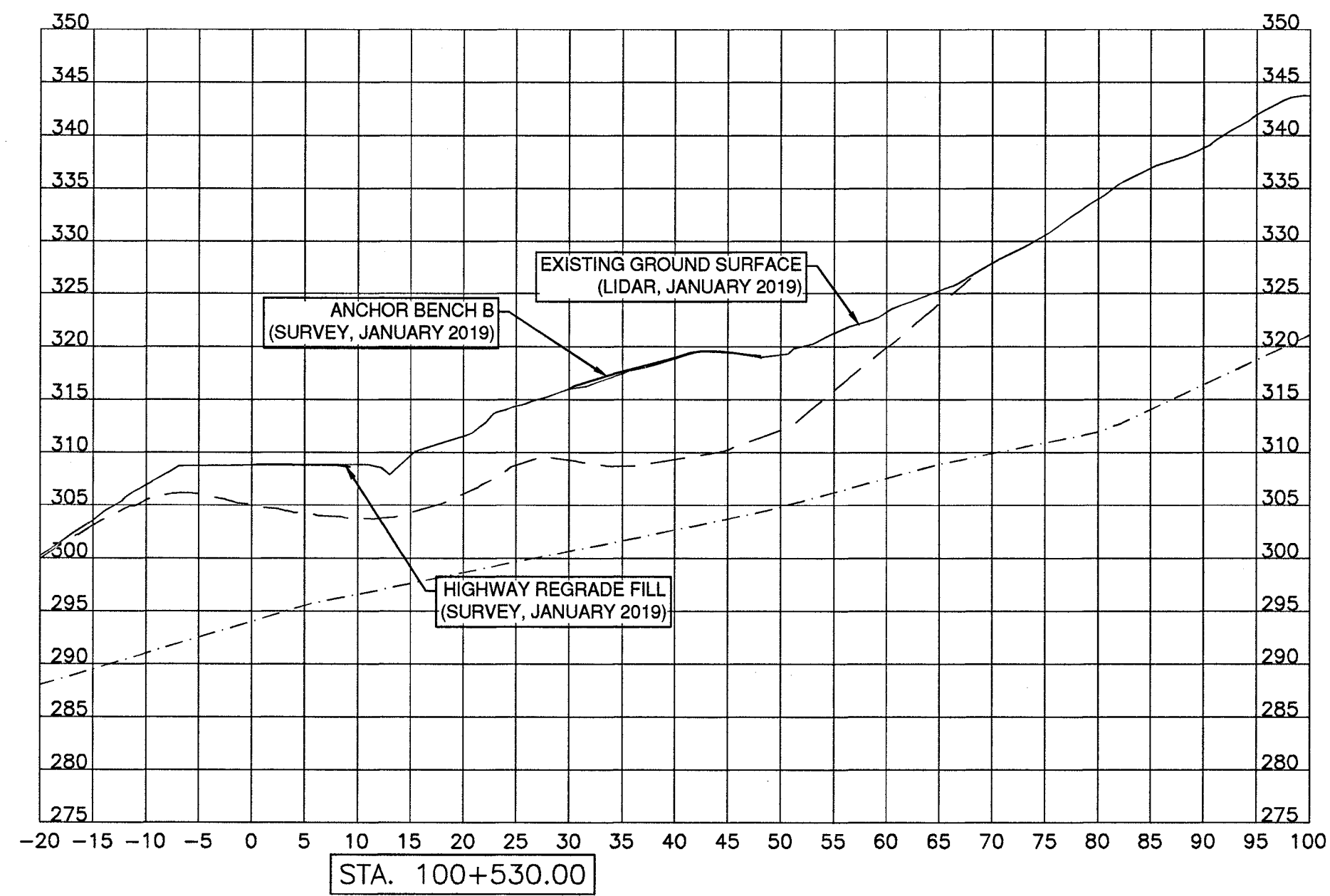
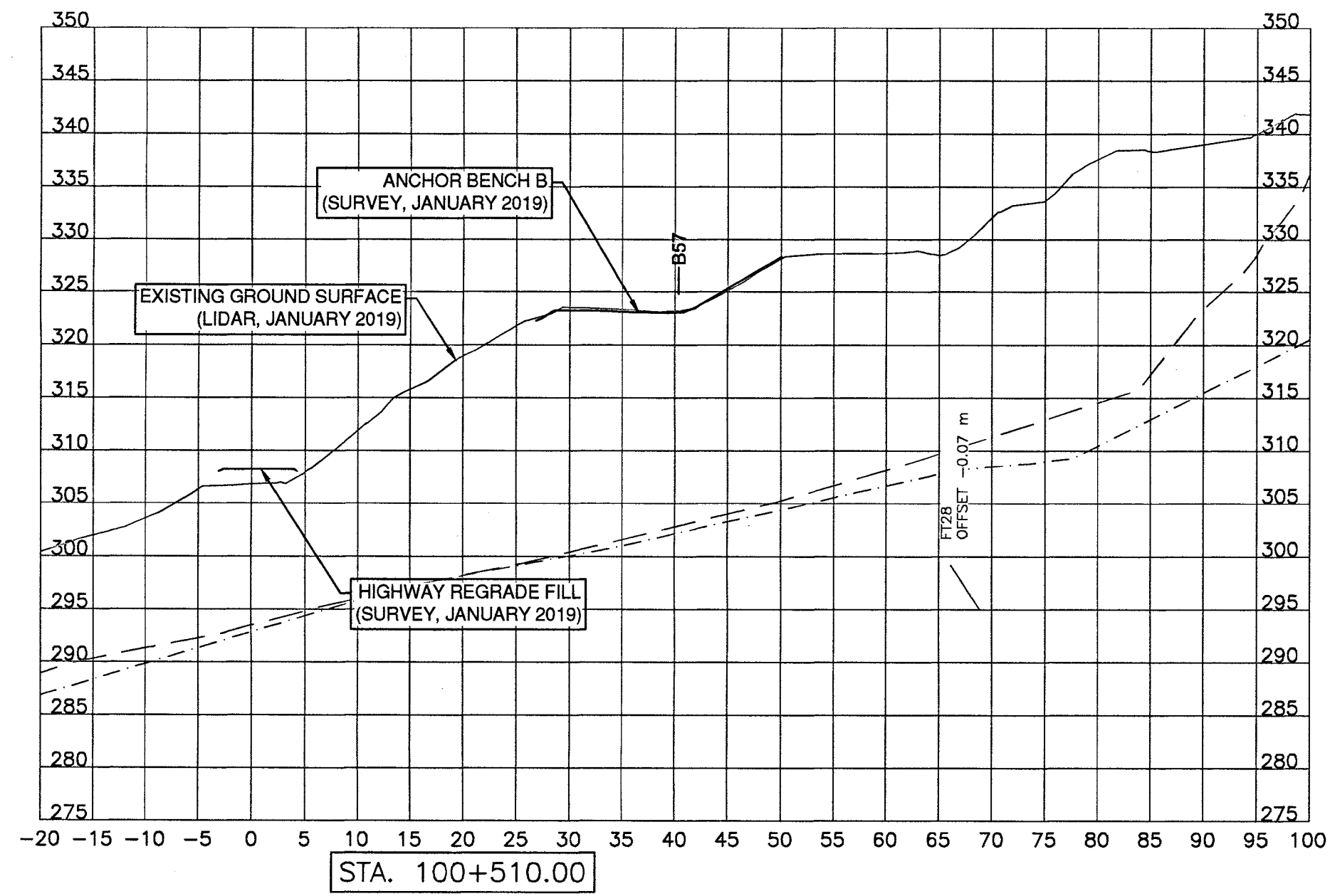
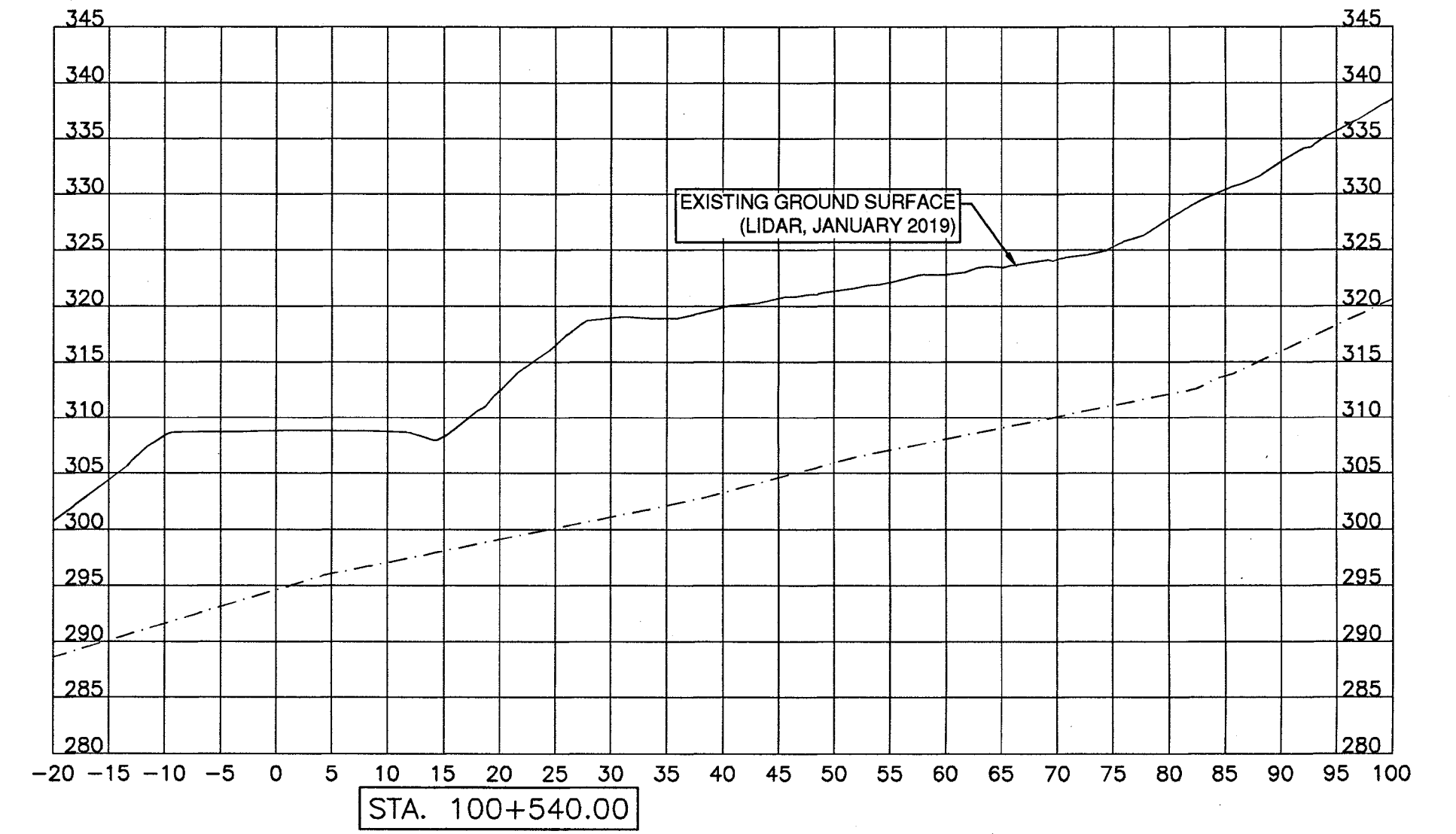
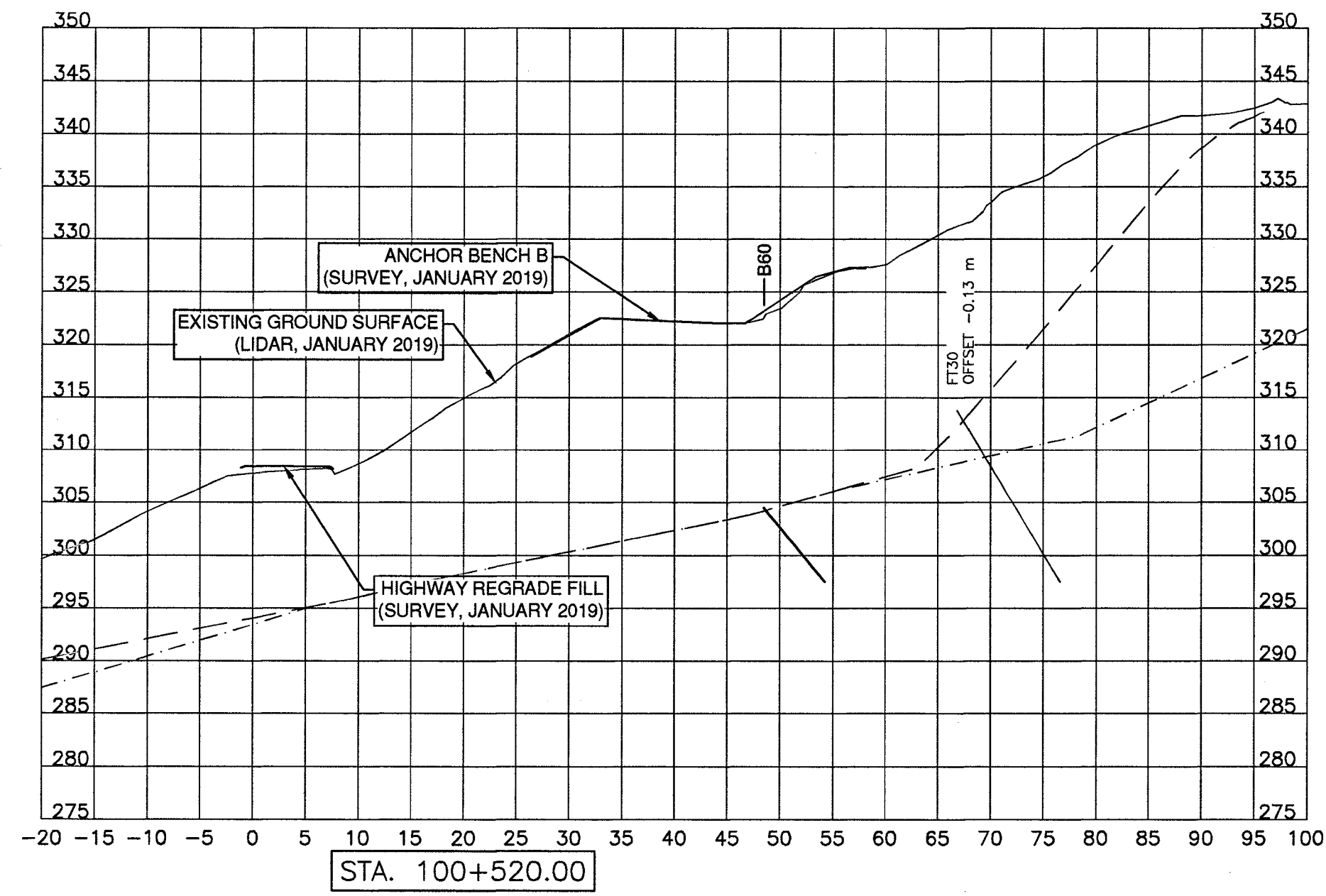
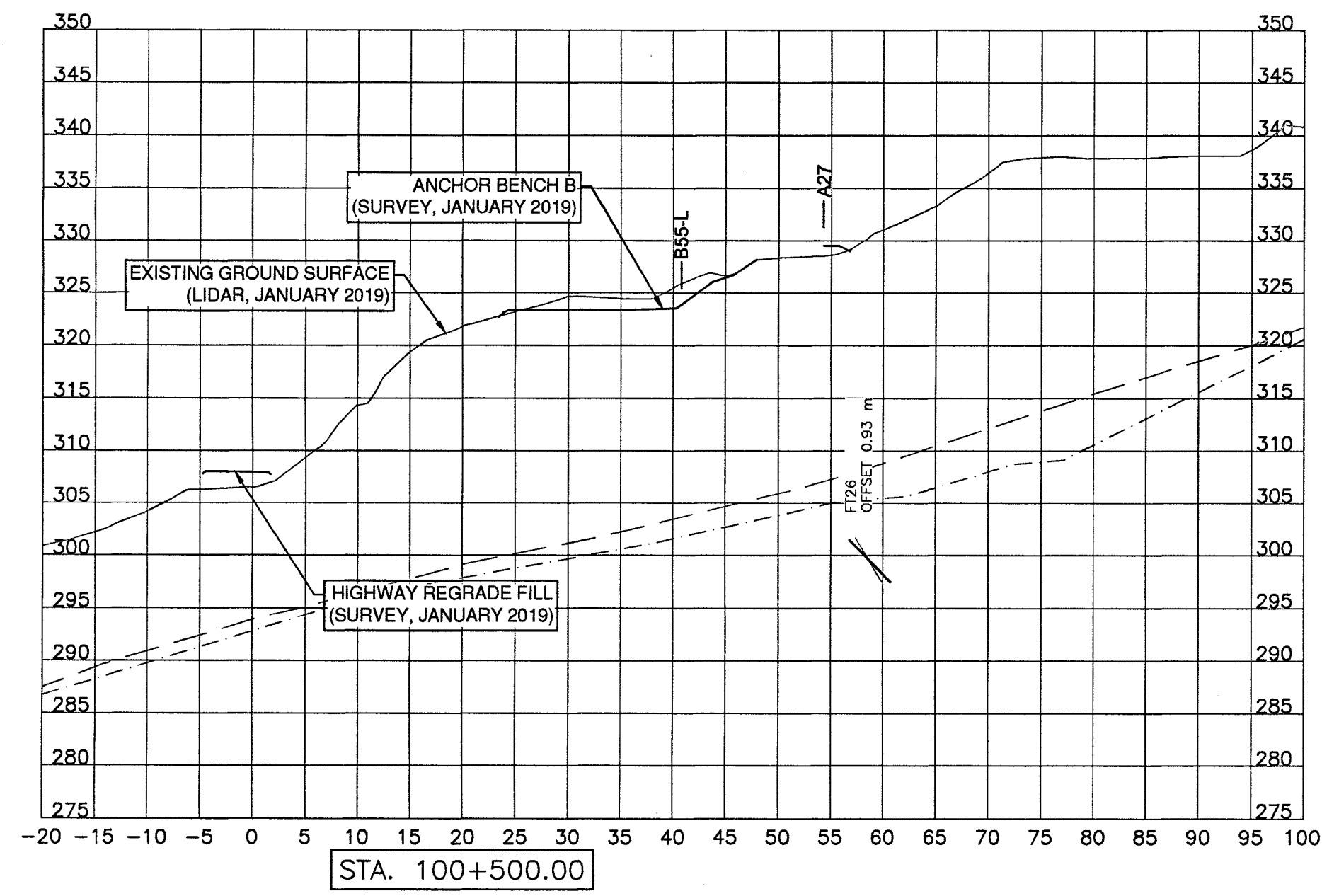
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**R.N. KOSTASCHUK**  
SENIOR DESIGNER  
DATE: 2019-05-14

**SLIDE STABILIZATION AND HIGHWAY GRADING - SECTIONS (SHEET 3 OF 4)**

HIGHWAY 99  
TEN MILE SLIDE ADVANCED ANCHOR WORK

FILE NUMBER: 2806  
PROJECT NUMBER: 23880-0002  
REG: R2  
DRAWING NUMBER: R2-1046-503  
REV: 1



LEGEND	
	INTERPRETED BOTTOM OF BASAL SHEAR ZONE
	INTERPRETED TOP OF UNDIFFERENTIATED GLACIAL SEDIMENT
	ANCHOR BLOCK
	ANCHOR FREE STRESSING LENGTH
	ANCHOR BOND LENGTH

NOTES:  
 1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.  
 2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE MINISTRY REPRESENTATIVE SHOULD UNCERTAINTIES ARISE WITH THE DRAWINGS, SCOPE, AND/OR TECHNICAL SPECIFICATIONS.  
 3. EXISTING GROUND SURFACE PROFILE BASED ON ON FOUNTAIN VALLEY/TEN MILE SLIDE BASEPLAN PROVIDED BY THE BC MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE, DATED JANUARY 5, 2019. HIGHWAY AND BENCH B SURVEY PROVIDED BY KIEWIT SONS ULC DATED JANUARY 12 AND 14, 2019 RESPECTIVELY. LIDAR CAPTURED WEST ACCESS RAMP AS-BUILT SURFACE, BENCH B AND HIGHWAY GRADING WERE COMPLETED AFTER THE JANUARY 5, 2019 LIDAR.  
 4. ANCHOR BLOCK LOCATIONS AND ANCHOR ORIENTATIONS ARE REPRESENTATIONS OF THE NEAREST ANCHOR AND BLOCK TO EACH SECTION. SEE DRAWING 302 FOR ANCHOR LOCATION AND ORIENTATION DETAILS.  
 5. THE TYPICAL SECTION AT EACH STATION IS DRAWN PERPENDICULAR TO THE CENTRELINE OF PROPOSED FUTURE HIGHWAY 99.  
 6. BGC DOES NOT WARRANT OR GUARANTEE, NOR ACCEPT ANY RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE AS-CONSTRUCTED INFORMATION SUPPLIED BY OTHERS CONTAINED IN THIS DRAWING. BGC ACKNOWLEDGES THAT BASED ON THE AS-CONSTRUCTED INFORMATION PROVIDED, IF ACCURATE AND COMPLETE, AND THE PERIODIC CONSTRUCTION MONITORING OBSERVATIONS BY BGC, THE AS-CONSTRUCTED SYSTEM SUBSTANTIALLY COMPLIES WITH THE ORIGINAL DESIGN INTENT.

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SCALE		0 5 1:500 25m	
CAD FILENAME		501-504	
DATE		2019-05-14	
REV	DATE	REVISIONS	SIGNATURE
1	2019-05-14	ISSUED FOR RECORD	RNK

BRITISH COLUMBIA  
 R.N. KOSTASCHUK  
 SENIOR DESIGNER  
 DATE 2019-05-14

MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE  
 SOUTHERN INTERIOR REGION  
 HIGHWAY ENGINEERING AND GEOMATICS  
 DESIGNED: RNK DATE: 2018-09-13  
 QUALITY CONTROL: MAP DATE: 2018-07-10  
 MJP DATE: 2018-07-10  
 DRAWN: AH DATE: 2018-08-13

SLIDE STABILIZATION AND HIGHWAY GRADING - SECTIONS (SHEET 4 OF 4)				
HIGHWAY 99				
TEN MILE SLIDE ADVANCED ANCHOR WORK				
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