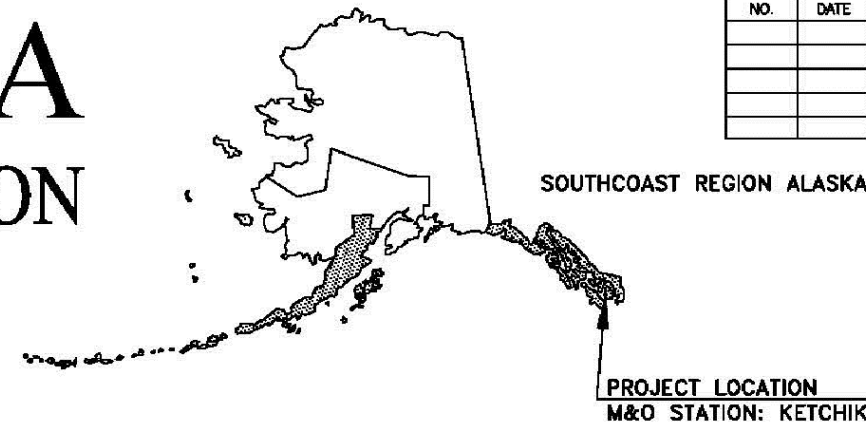


FILE: B8857-KTN-Final PS&E-A.dwg
 DATE: 4/23/2020 14:05
 LAYOUT: A1 - TITLE SHEET
 DESIGNED: BAG
 CHECKED: LCA
 DRAFTED: KKN

STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES



NO.	DATE	REVISIONS	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0003189/Z686570000	2020	A1	35
			CDS ROUTE: 291510	MILEPOINT: 0.36 TO 0.38			
			LATITUDE: 55°22'30"N	LONGITUDE: 131°43'36"E			
			CDS ROUTE: 291400	MILEPOINT: 6.82 TO 6.94			
			LATITUDE: 55°18'01"N	LONGITUDE: 131°33'26"E			

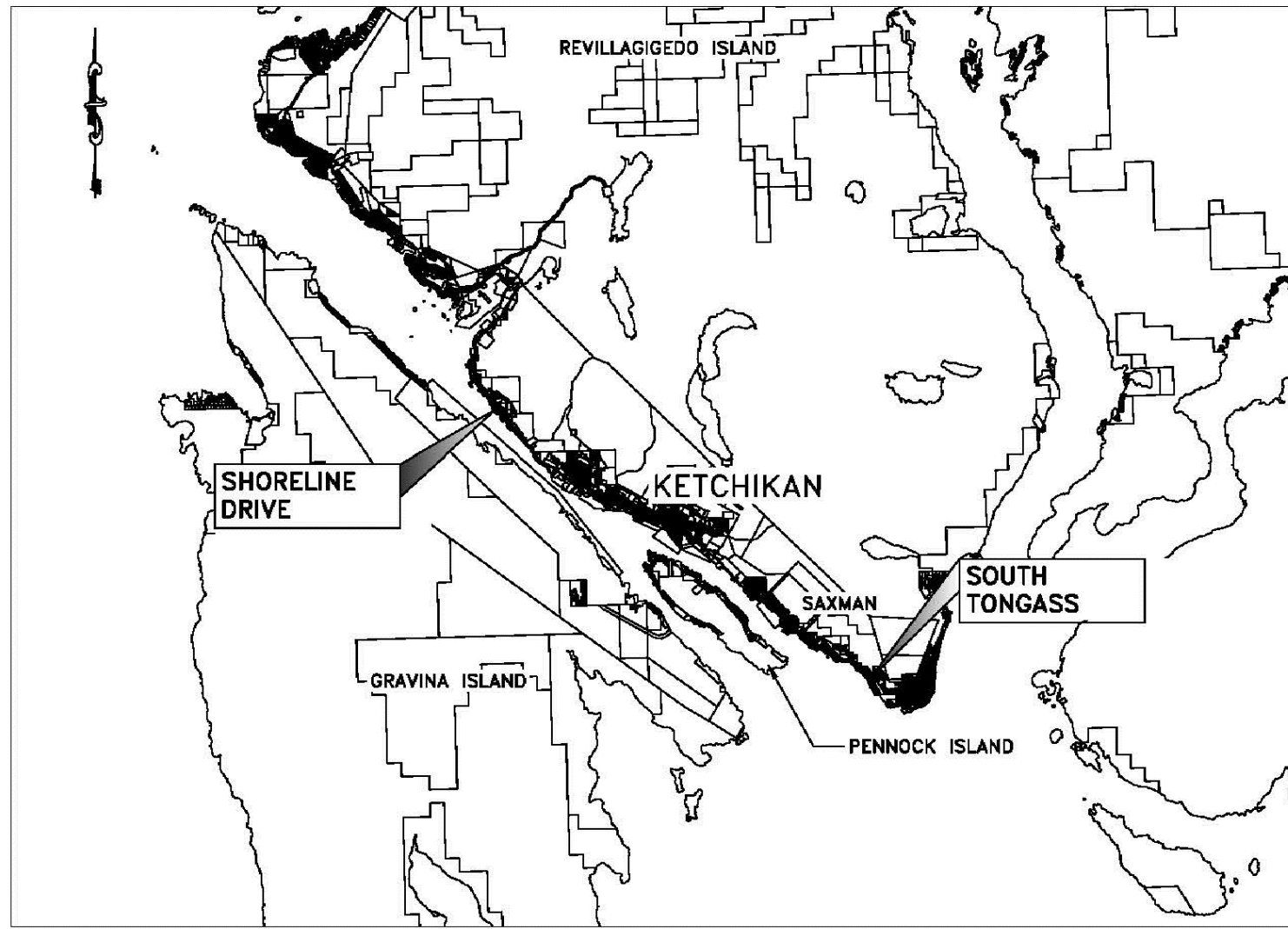
PROPOSED HIGHWAY PROJECT

KETCHIKAN - SOUTHCOAST REGIONWIDE NON-NHS SLOPE STABILIZATION PROJECT NO. 0003189/Z686570000

GRADING AND SIDE SLOPE STABILIZATION

PROJECT SUMMARY		
	SHORELINE DR	S. TONGASS HWY
LENGTH OF SLOPE STABILIZATION	100'	450'
LENGTH OF PROJECT	200'	750'

DESIGN DESIGNATIONS		
ROADWAY NAME	SHORELINE DR	S. TONGASS HWY
PROJECT TYPE	PREVENTIVE MAINTENANCE	PREVENTATIVE MAINTENANCE
FUNCTIONAL CLASS	LOCAL ROAD	MINOR ARTERIAL
ADT (2017)	235	1,563
DESIGN SPEED (mph)	25	45



The undersigned hereby certifies that this duplicated document is an exact and true copy of the original.

Jessica Puskala

December 08, 2020

As-Builts
 Start Date - 3/01/21
 End Date - 11/04/21
 PE - Raphael Betit
 Contractor - Advanced Blasting
 Superintendent - Dylan Saunders

USE THESE PLANS IN CONJUNCTION WITH THE STATE OF ALASKA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2017 EDITION AND THE PROJECT SPECIAL PROVISIONS.

STATE OF ALASKA	
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES 6860 GLACIER HIGHWAY, JUNEAU, AK 99801 (907) 465-1763	
APPROVED:	
<i>[Signature]</i>	5/08/20
REGIONAL PRECONSTRUCTION ENGINEER	DATE
KIRK MILLER, P.E.	
CONCUR:	
<i>[Signature]</i>	5/08/20
REGIONAL DIRECTOR	DATE
D. LANCE MEARIG, P.E.	

FILE 66657-KTN-Final F3&E-A.dwg DATE 4/23/2020 14:05 LAYOUT A2 - SHEET LAYOUT DESIGNED BAG CHECKED LCA DRAFTED KKN

GENERAL NOTES:

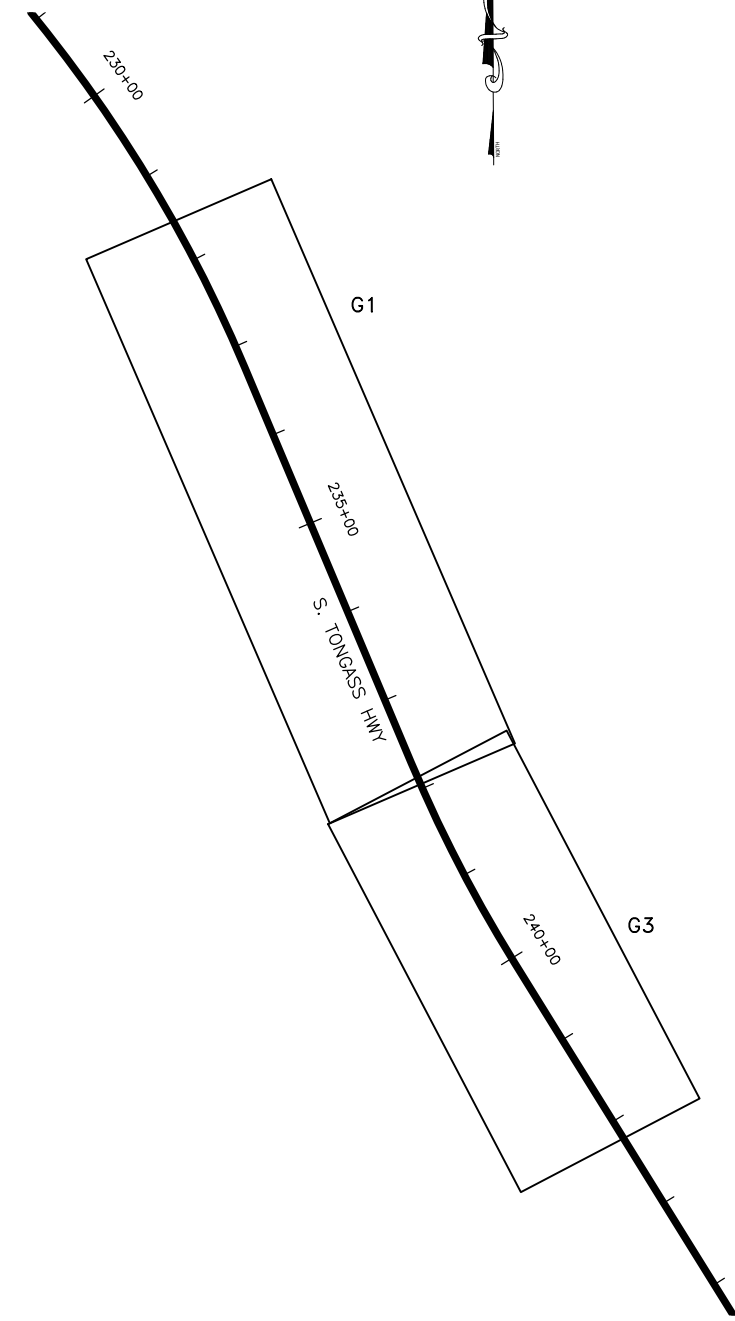
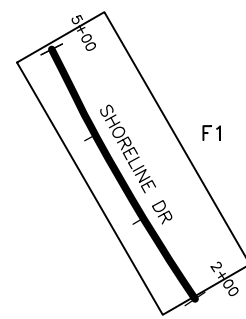
1. CONTAIN ALL CONSTRUCTION WITHIN THE RIGHT-OF-WAY. DO NOT DISPOSE OF EXCESS MATERIAL WITHIN THE RIGHT-OF-WAY, UNLESS SPECIFICALLY CALLED FOR IN THE PLANS, OR AS DIRECTED BY THE ENGINEER.

ABBREVIATIONS:

- CL CENTER LINE
- EP EDGE OF PAVEMENT
- H HORIZONTAL
- LT LEFT
- RT RIGHT
- NOM NOMINAL
- ROW RIGHT-OF-WAY
- STA STATION
- UE UNDERGROUND EASEMENT
- V VERTICAL

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0003189/Z686570000	2020	A2	35

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
A1	TITLE SHEET
A2-A3	LEGEND & SHEET LAYOUT INDEX
A4-A5	SURVEY CONTROL
B1-B2	TYPICAL SECTIONS
C1	ESTIMATE OF QUANTITIES
D1	SUMMARY TABLES
E1-E8	DETAILS
F1-F2	SHORELINE DRIVE
G1-G4	SOUTH TONGASS (4.5 & 4.6 MILE)
XS01-XS12	CROSS SECTIONS



PLANS DEVELOPED BY:
 LANDSLIDE TECHNOLOGY
 10250 SW GREENBURG RD,
 SUITE 111 PORTLAND, OR
 97223 (503)452-1200
 AECL238440



Record Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge, the project as constructed.

STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

KETCHIKAN - SOUTHCOAST REGIONWIDE NON-NHS SLOPE STABILIZATION

P.E. *Benjamin A. George*
 INDEX, SHEET LAYOUT, AND ABBREVIATIONS

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0003189/Z686570000	2020	A3	35

	RECOVERED	SET
BLM MONUMENT		
GLO MONUMENT		
USC&GS MONUMENT		
PRIMARY MONUMENT		
CENTERLINE MONUMENT IN CASING		
PRIMARY R.O.W. MONUMENT		
BEARING OBJECT		
MISCELLANEOUS MONUMENT		
LINE OF SIGHT MONUMENT		
CONCRETE R.O.W. MONUMENT		
BENCHMARK		
REBAR AND CAP		
REBAR		
IRON PIPE		
PK NAIL		
SPIKE		
HUB AND TACK		
CONSTRUCTION CENTERLINE		
MICELLANEOUS CENTERLINE		
STATION EQUATION	$\frac{L}{L} = \frac{L^2 + 48 + 97.23 \text{ POT BK} = 0}{0} = \frac{L^2 + 48 + 97.23 \text{ PC AHD} = 0}{0}$	
PROJECT RIGHT-OF-WAY LINE		
EXISTING RIGHT-OF-WAY LINE		
EXISTING PROPERTY LINE		
CONTROLLED ACCESS LINE		
EXISTING EASEMENT LINE		
PROPOSED EASEMENT LINE		
PROPOSED CUT SLOPE LIMIT		
PROPOSED FILL SLOPE LIMIT		
SECTION LINE		
1/4 SECTION LINE		
1/16 SECTION LINE		
TOWNSHIP & RANGE LINE	$\frac{T. 2 \text{ N.}}{T. 1 \text{ N.}} \quad \frac{E. 1 \text{ E.}}{E. 2 \text{ E.}}$	
MEANDER LINE		

	EXISTING	PROPOSED
SANITARY SEWER (FLOW DIRECTION →)		
FUEL LINE		
GAS LINE		
WATER LINE		
METER, VALVE, FIRE HYDRANT		
EXISTING STORM DRAIN (FLOW DIRECTION →)		
PROPOSED STORM DRAIN		
FIBER OPTIC LINE		
DIRECT BURIAL TELEPHONE CABLE		
DIRECT BURIAL ELECTRIC CABLE		
ELECTRIC LINE (OVERHEAD)		
POWER POLE LINE		
JOINT USE POWER & TELEPHONE		
TELEPHONE POLE LINE		
POLE ANCHOR		
STUB POLE (POWER OR TELEPHONE)		
TELEPHONE DUCT		
TELEPHONE PEDESTAL		
BURIED CABLE MARKER		
PIPELINE MARKER OR VALVE		
CATCH BASIN OR DROP INLET		
MANHOLE		
SANITARY SEWER CLEAN OUT		
RIPRAP		
SPECIAL DITCH CENTERLINE		
HIGH TIDE LINE		

	EXISTING	PROPOSED
ROADWAY/PAVEMENT EDGE		
FENCE		
CURB AND GUTTER		
DETECTABLE WARNINGS		
GUARDRAIL		
CULVERT PIPE		
SIGN		
MAILBOX		
RAILROAD TRACKS		
RAILROAD DEVICES		
TREE LINE		
WATER BOUNDARY		
ORDINARY HIGH WATER LINE		
FLOW CENTERLINE		
FLOW DIRECTION		
WETLANDS		
EXISTING BUILDINGS		
POST OR BOLLARD		
WELL OR MONITORING WELL		
SEPTIC PIPE		
FUEL TANK FILL PIPE/VENT		
SATELLITE DISH		
TEST HOLE		
CONIFER TREE		
DECIDUOUS TREE		
GRAVE		
THERMOSIPHON		
PARKING METER		
VEHICLE PLUG-IN		
DELINEATOR/GUIDE MARKER		

	EXISTING	PROPOSED
JUNCTION BOX, TYPE IA		
JUNCTION BOX, TYPE II		
JUNCTION BOX, TYPE III		
SIGNAL FACE, VEHICULAR		
SIGNAL FACE, BACKPLATE		
SIGNAL FACE, LEFT TURN, BACKPLATE		
SIGNAL FACE, PEDESTRIAN		
LOOP DETECTOR		
VIDEO DETECTOR		
RADAR DETECTOR		
OPTICOM DETECTOR		
PEDESTRIAN PUSH BUTTON		
SIGNAL POST W/O MAST ARM		
SIGNAL POLE W/MAST ARM		
SIGNAL CONTROLLER		
LOAD CENTER		
LUMINAIRE		
RIGID METAL CONDUIT		
SCALING AREAS		
STABILIZATION AREAS		
UNDERGROUND EASEMENT		
TEMPORARY CONSTRUCTION EASEMENT		
CLEARING AREA		
STABILIZATION-ROCK BOLT		
DRAIN HOLE		
DISTURBED INVASIVE SPECIES AREA		

- H = HOUSE
- G = GARAGE
- M = MERCHANT/STORE
- B = BARN
- S = SHED
- P = PRIVY
- SS = SERVICE STATION
- W = WAREHOUSE
- D = DECK

PROJECT LEGEND

SCALING AREAS		- - - S - - - S - - - S - - -
STABILIZATION AREAS		RB — RB — RB
UNDERGROUND EASEMENT		— UE — UE — UE —
TEMPORARY CONSTRUCTION EASEMENT		— — — —
CLEARING AREA		• • • • •
STABILIZATION-ROCK BOLT		(RB)
DRAIN HOLE		(H)
DISTURBED INVASIVE SPECIES AREA		↓ ↓ ↓ ↓ ↓

PLANS DEVELOPED BY:
 LANDSLIDE TECHNOLOGY
 10250 SW GREENBURG RD,
 SUITE 111 PORTLAND, OR
 97223 (503)452-1200
 AECL238440



Record Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge, the project as constructed.

STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

KETCHIKAN - SOUTHCOAST REGIONWIDE NON-NHS SLOPE STABILIZATION

P.E. *Raphael Betz*

LEGENDS AND SYMBOLS

DRAWING LOCATION: Q:\SEA\68857\SV\CD\BASEMAPS\KTN_Sidek_SCS_032520.dwg
 DATE: 3/25/2020 16:39
 TIME: 16:39
 LAYOUT: SITE 1
 SCALE: XREFS
 DESIGNED: J.PAPO
 CHECKED: D.GONDOV
 DRAFTER: J.PAPO

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0003189/Z686570000	2020	A4	35



MONUMENT NOTES:

- IF ANY PAIR OF CONTROL POINTS DISAGREES FROM PUBLISHED VALUE BY MORE THAN 1:10,000 HORIZONTALLY OR VERTICALLY THEN A THIRD NETWORK POINT MUST BE TIED TO ASCERTAIN WHICH POINT IS IN ERROR OR HAS BEEN DISTURBED.
- WHETHER LISTED OR NOT, ALL PROPERTY MONUMENTS, PROPERTY MARKERS, OR ACCESSORIES THAT WILL BE DISTURBED OR BURIED SHALL BE REFERENCED PRIOR TO BEING DISTURBED, AND RE-ESTABLISHED IN THEIR ORIGINAL HORIZONTAL POSITION AND A RECORD OF MONUMENT FORM IN ACCORDANCE WITH A.S.34.65.040 SHALL BE SUBMITTED TO THE CONSTRUCTION ENGINEER FOR REVIEW PRIOR TO RECORDING. COORDINATE VALUES LISTED ARE FOR INFORMATIONAL PURPOSES AND SHOULD BE USED TO RESET MONUMENTS ONLY AS A LAST RESORT.

HORIZONTAL AND VERTICAL CONTROL STATEMENT:
 COORDINATES LISTED ARE NAD83(2011) ALASKA STATE PLANE COORDINATE SYSTEM ZONE 1 U.S. FEET. ALL BEARINGS AND DISTANCES ARE GRID AND DERIVED FROM TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM. THE VERTICAL DATUM IS NAVD88 DERIVED FROM ELLIPSOIDAL HEIGHTS AND NATIONAL GEODETIC SURVEY GEOID MODEL 12B.

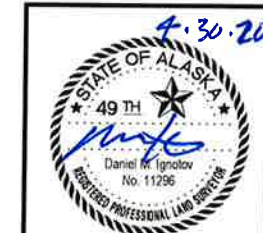
SHORELINE DRIVE ALIGNMENT						
SEGMENT	STATION	NORTHING	EASTING	DISTANCE	BEARING	STATION
L1	2+00.00	1298869.24	3089488.04	23.68	N33° 38' 37"W	2+23.68
L2	2+23.68	1298888.95	3089474.92	24.57	N33° 12' 47"W	2+48.25
L3	2+48.25	1298909.51	3089461.46	25.96	N31° 54' 16"W	2+74.21
L4	2+74.21	1298931.55	3089447.74	25.09	N32° 01' 15"W	2+99.29
L5	2+99.29	1298952.82	3089434.44	23.02	N30° 58' 15"W	3+22.31
L6	3+22.31	1298972.56	3089422.59	25.56	N30° 08' 52"W	3+47.88
L7	3+47.88	1298994.66	3089409.76	24.71	N30° 05' 11"W	3+72.59
L8	3+72.59	1299016.04	3089397.37	24.05	N28° 49' 14"W	3+96.63
L9	3+96.63	1299037.11	3089385.78	17.37	N28° 18' 15"W	4+14.00
L10	4+14.00	1299052.40	3089377.54	9.25	N28° 18' 15"W	4+23.25
L11	4+23.25	1299060.55	3089373.16	24.95	N26° 12' 29"W	4+48.20
L12	4+48.20	1299082.93	3089362.14	24.57	N26° 27' 55"W	4+72.77
L13	4+72.77	1299104.92	3089351.19	25.44	N26° 56' 35"W	4+98.21
L14	4+98.21	1299127.61	3089339.66	1.79	N26° 53' 52"W	5+00.00

Existing Property Shore Line Drive					
Point #	Northing	Easting	Description	Station	Offset
1001	1298802.02	3089610.15	BC3.25"_LAILB-WC	N/A	N/A
1002	1299101.82	3089390.24	BC3.25"_BPR_S1268/S1832_RW	4+52.59	33.58R
1013	1299255.40	3089588.28	BC3.25"_FND_RWL6/L5	4+99.71	279.54R
1014	1299120.68	3089697.29	BC3.25"_FND_RWL5/L6	3+07.96	311.76R
1015	1299150.85	3089490.21	BC3.25"_FND_RW	4+51.92	144.92R
1500	1298871.73	3089421.26	REBAR	2+38.66	54.33L

ALL PROPERTY MONUMENTS IN THIS EXISTING PROPERTY TABLE SHALL BE PRESERVED AND REFERENCED PRIOR TO DISTURBANCE AND REPLACED AT THEIR ORIGINAL HORIZONTAL POSITION. A RECORD OF MONUMENT FORM IN ACCORDANCE WITH A.S.34.65.040 SHALL BE SUBMITTED TO DOT&PF PROJECT ENGINEER FOR REVIEW PRIOR TO RECORDING FOR EACH MONUMENT.

Survey Control Shore Line Drive						
Point #	Northing	Easting	Elevation	Description	Station	Offset
5	1298878.62	3089465.96	36.55	ALCAP2"_SET_DOT	2+20.04	13.18L
6	1299439.67	3089176.21	28.14	MAG/WASH_SET_DOT	N/A	N/A
502	1299049.01	3089371.31	31.45	MAG_SET	4+13.97	7.09L
503	1299114.18	3089337.36	29.96	MAG_SET	4+87.28	8.13L

ALL SURVEY CONTROL MONUMENTS IN THIS TABLE ARE PROVIDED STRICTLY FOR SURVEY CONTROL. SHOULD ANY OF THEM BE DESTROYED DURING CONSTRUCTION THEY SHALL NOT BE REPLACED.



Record Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge, the project as constructed.
 STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
 6860 Glacier Highway Juneau, Ak. 99801
 (907) 465-1763
 KETCHIKAN-SOUTHCOAST REGION WIDE NON-NHS SLOPE STABILIZATION
 P.E. *Raphael Pettit*
 SHORELINE DRIVE SITE PLAN

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0003189/Z686570000	2020	A5	35

DRAWING LOCATION: D:\SEA\88657\3\1\3\1\BASEMAPS\KTN_Slides_SCS_032520.dwg
 DATE TIME: 3/25/2020 16:39
 LAYOUT: SITE 4
 SCALE:
 XREFS:
 DESIGNED: J.P.A.P.
 CHECKED: D.A.O.
 DRAFTER: J.P.A.P.



Survey Control South Tongass 4.5 Mile						
Point #	Northing	Easting	Elevation	Description	Station	Offset
1	1272290.46	3125695.92	28.72	ALCAP3.25" _FND_SHMON	241+26.00	14.31R
2	1273159.88	3125311.68	33.88	ALCAP3.25" _FND_SHMON	231+76.49	13.53L
1005	1272585.29	3125561.68	32.58	ALCAP3.25" _FND_SHMON	238+02.26	13.39L

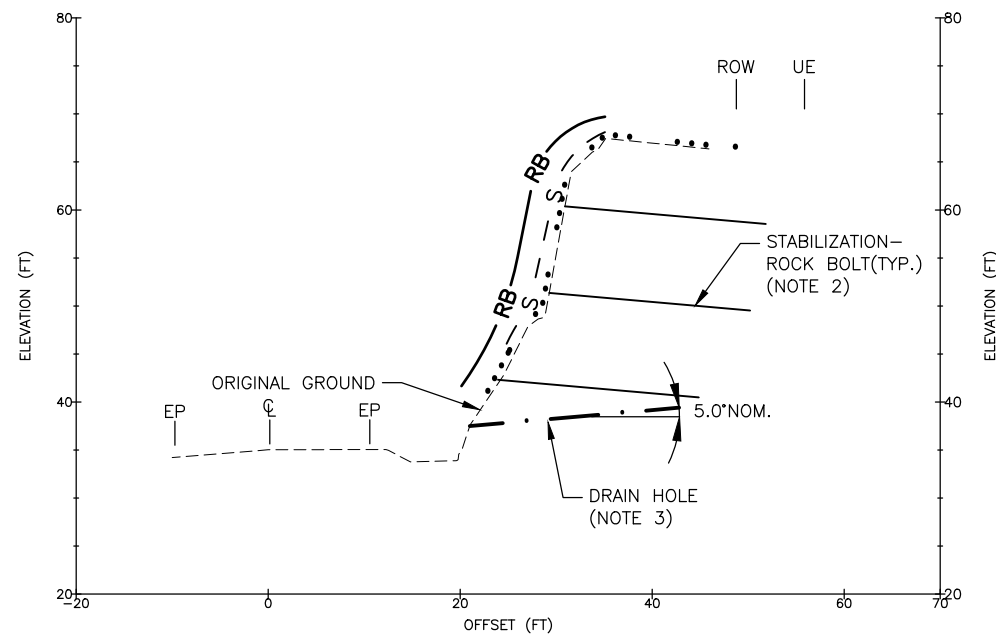
EXISTING SHOULDER MONUMENTS SHALL BE PRESERVED IN PLACE IF AT ALL POSSIBLE. IF NECESSARY SHOULDER MONUMENTS SHALL BE REFERENCED PRIOR TO DISTURBANCE AND REPLACED AT THEIR ORIGINAL HORIZONTAL POSITION. A RECORD OF MONUMENT FORM IN ACCORDANCE WITH A.S.34.65.040 SHALL BE SUBMITTED TO DOT&PF PROJECT ENGINEER FOR REVIEW PRIOR TO RECORDING FOR EACH MONUMENT.



Record Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge, the project as constructed.
 STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
 6860 Glacier Highway Juneau Ak. 99801
 (907) 465-1763
 KETCHIKAN-SOUTHCOAST REGION WIDE NON-NHS SLOPE STABILIZATION
 P.E. Raphael Bett
 SOUTH TONGASS 4.5 & 4.6 MILE SITE PLAN

FILE 66657-KTN-Final_PSE-B.dwg DATE 4/23/2020 13:50 LAYOUT B1 - TYP. SECTION DESIGNED BAG CHECKED LCA DRAFTED KKN

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0003189/Z686570000	2020	B1	35



1 SHORELINE DRIVE TYPICAL SECTION
 B1 SCALE: NOT TO SCALE
 STA 2+80 TO 3+20, RT

- NOTES:
1. PROJECT PROVIDED LEGEND ON SHEET A3.
 2. STABILIZATION-ROCK BOLT. DETAILS SHOWN ON SHEET E1.
 3. DRAIN HOLES NOMINALLY 25 LF. SPACING PROVIDED ON SHEETS F2.

PLANS DEVELOPED BY:
 LANDSLIDE TECHNOLOGY
 10250 SW GREENBURG RD,
 SUITE 111
 PORTLAND, OR 97223
 (503)452-1200
 AECL238440



Record Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge, the project as constructed.

STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

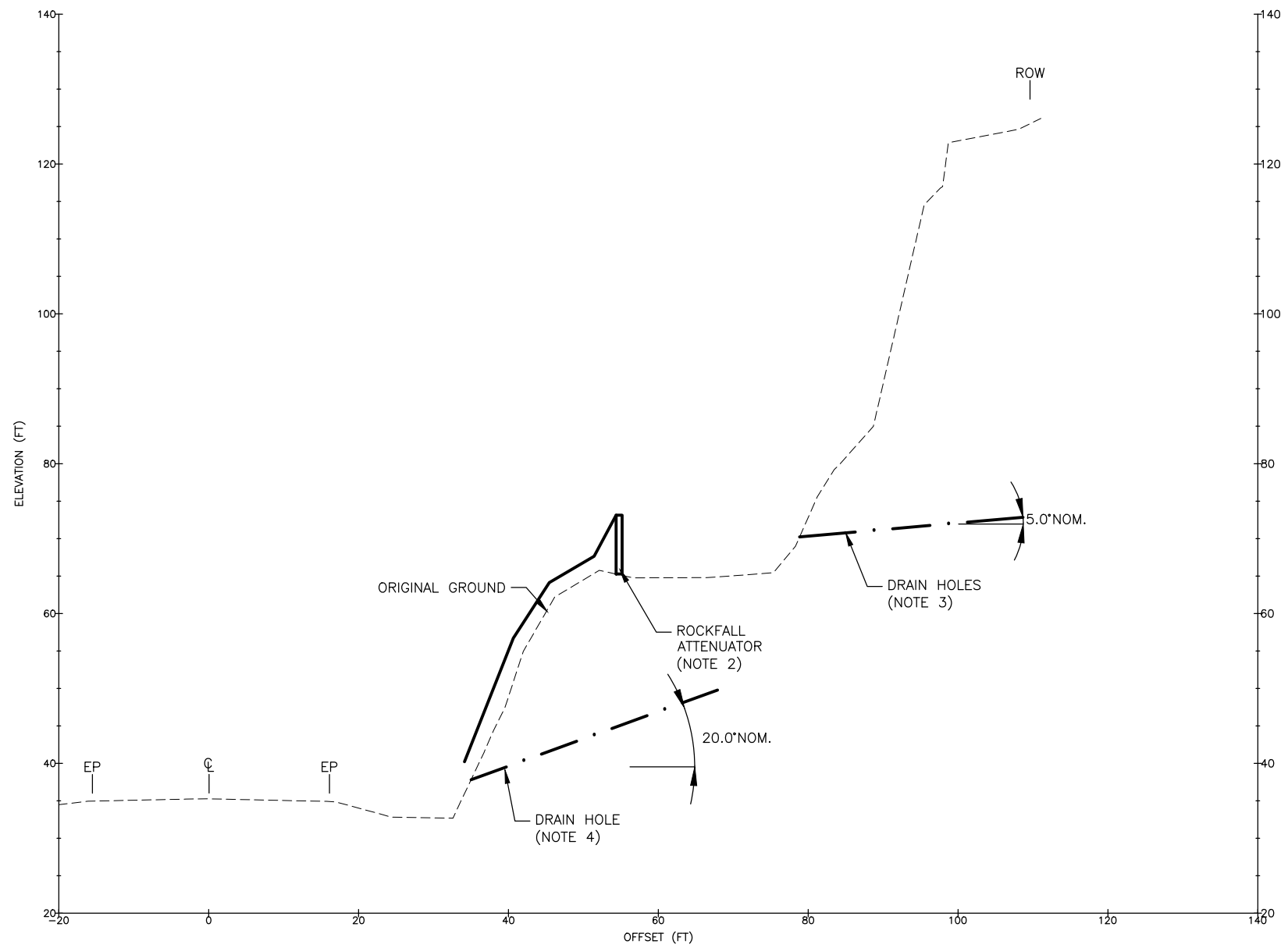
KETCHIKAN - SOUTHCOAST REGIONWIDE NON-NHS SLOPE STABILIZATION

P.E. Raphael Betit

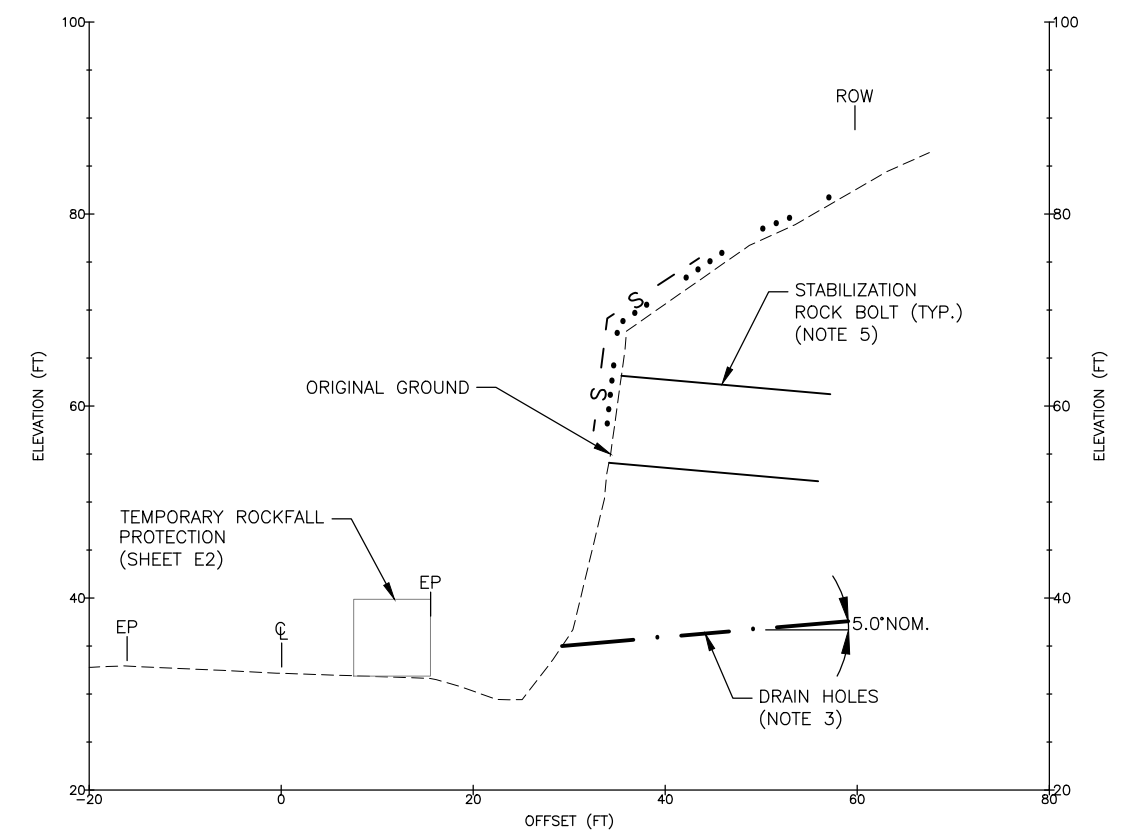
TYPICAL SECTIONS

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0003189/Z686570000	2020	B2	35

FILE 68657-KTN-Final_PSE-B.dwg DATE 4/23/2020 13:50 LAYOUT B2 - TYP. SECTION DESIGNED BAG CHECKED LCA DRAFTED KKN



1 SOUTH TONGASS 4.5 MILE TYPICAL SECTION
 SCALE: NOT TO SCALE
 STA 233+10 TO 235+90, LT



2 SOUTH TONGASS 4.6 MILE TYPICAL SECTION
 SCALE: NOT TO SCALE
 STA 239+25 TO 239+60, LT

NOTES:

1. PROJECT LEGEND ON SHEET A3.
2. ROCKFALL ATTENUATOR DETAILS SHOWN ON SHEETS E3-E8.
3. DRAIN HOLES NOMINALLY 25 LF. SPACING PROVIDED ON SHEETS G2 AND G4.
4. DRAIN HOLES NOMINALLY 35 LF. SPACING PROVIDED ON SHEETS G2 AND G4.
5. STABILIZATION-ROCK BOLT. DETAIL SHOWN ON SHEET E1.

Record Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge, the project as constructed.

PLANS DEVELOPED BY:
 LANDSLIDE TECHNOLOGY
 10250 SW GREENBURG RD,
 SUITE 111
 PORTLAND, OR 97223
 (503)452-1200
 AECL238440



STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

KETCHIKAN - SOUTHCOAST
 REGIONWIDE NON-NHS SLOPE
 STABILIZATION
 P.E. Raphael Betit
 TYPICAL SECTIONS

FILE: 66657-KTN-Final_PSE-C.dwg | DATE: 4/22/2020 10:33 | LAYOUT: C1 - QUANTITIES | DESIGNED: BAG | CHECKED: LCA | DRAFTED: KKN

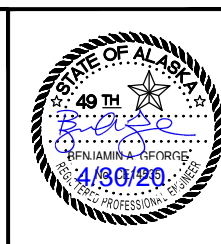
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0003189/Z686570000	2020	C1	35

ESTIMATE OF QUANTITIES				
ITEM NO.	2017 SSHC ITEM NO.	ITEM DESCRIPTION	PAY UNIT	TOTAL QUANTITY
201.0010.0000	201(4B)	HAND CLEARING	LUMP SUM	ALL REQUIRED
201.2001.0000	§201	INVASIVE PLANT SPECIES CONTROL, REMOVAL AND DISPOSAL	SQUARE YARD	520
203.0012.0000	203(12)	DRAIN HOLES	LINEAR FOOT	1010
203.2023.0000	§203	ROCKFALL MITIGATION, ATTENUATOR	SQUARE YARD	1410
203.2025.0000	§209	ROCKFALL MITIGATION, TEMPORARY ROCKFALL PROTECTION	LUMP SUM	ALL REQUIRED
203.2033.0000	203(13)	STABILIZATION - ROCK BOLT	LINEAR FOOT	300
203.2042.0000	§207	STABILIZATION, ROCK SLOPE SCALING	HOUR	80
303.2003.0000	§203	DITCH RECONDITIONING	LINEAR FEET	670
640.0001.0000	640(1)	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	ALL REQUIRED
640.0004.0000	640(4)	WORKER MEALS AND LODGING, OR PER DIEM	LUMP SUM	ALL REQUIRED
641.0001.0000	641(1)	EROSION, SEDIMENT AND POLLUTION CONTROL ADMINISTRATION	LUMP SUM	ALL REQUIRED
641.0003.0000	641(3)	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL	LUMP SUM	ALL REQUIRED
641.0005.0000	641(5)	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL DIRECTIVE	CONTINGENT SUM	ALL REQUIRED
641.0006.0000	641(6)	WITHHOLDING	CONTINGENT SUM	ALL REQUIRED
642.0001.0000	642(1)	CONSTRUCTION SURVEYING	LUMP SUM	ALL REQUIRED
643.0002.0000	643(2)	TRAFFIC MAINTENANCE	LUMP SUM	ALL REQUIRED
643.0013.0000	643(13)	TEMPORARY CRASH CUSHION	EACH	4
643.0023.0000	643(23)	TRAFFIC PRICE ADJUSTMENT	CONTINGENT SUM	ALL REQUIRED
643.0025.0000	643(25)	TRAFFIC CONTROL	CONTINGENT SUM	ALL REQUIRED
643.0032.0000	§643	FLAGGING	CONTINGENT SUM	ALL REQUIRED
643.2005.0000	§643	PUBLIC INFORMATION PROGRAM	LUMP SUM	ALL REQUIRED
643.2018.0000	§643	PORTABLE BARRIER	LINEAR FOOT	1075

Original Contract		Final Contract	
QUANTITY	AMOUNT	QUANTITY2	AMOUNT2
1.00	\$ 10,000.00	1	\$ 10,000.00
520.00	\$ 7,800.00	536.8	\$ 8,052.00
1,010.00	\$ 9,090.00	1109	\$ 9,981.00
1,410.00	\$ 218,550.00	1162.51	\$ 180,189.05
1.00	\$ 15,000.00	1	\$ 15,000.00
1.00	\$ 15,000.00	1	\$ 15,000.00
300.00	\$ 69,000.00	364	\$ 83,720.00
80.00	\$ 20,000.00	26.94	\$ 6,735.00
670.00	\$ 17,996.20	794.5	\$ 21,340.27
1.00	\$ 57,000.00	0.9	\$ 51,300.00
1.00	\$ 24,200.00	1	\$ 24,200.00
1.00	\$ 10,000.00	1	\$ 10,000.00
1.00	\$ 10,000.00	1	\$ 10,000.00
1.00	\$ 75,000.00	1	\$ 75,000.00
4.00	\$ 24,000.00	8	\$ 48,000.00
1.00	\$ 1.00	0	\$ -
30,900.00	\$ 30,900.00	11411.6	\$ 11,411.60
47,000.00	\$ 47,000.00	35380	\$ 35,380.00
1.00	\$ 1,500.00	1	\$ 1,500.00
1,075.00	\$ 77,400.00	1320.8	\$ 95,097.60

Record Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge, the project as constructed.

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STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

KETCHIKAN - SOUTHCOAST
 REGIONWIDE NON-NHS SLOPE
 STABILIZATION
 P.E. *Raphael Bett*
 ESTIMATE OF QUANTITIES

FILE 68657-KTN-Final_PSE-D.dwg | DATE 4/27/2020 17:19 | LAYOUT D1 - VOLUMES | DESIGNED BAG | CHECKED LCA | DRAFTED KKN

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0003189/Z686570000	2020	D1	35

201.0010.0000 HAND CLEARING					
SHEET	FROM STATION	TO STATION	OFFSET	CLEARING AREA (ACRE)	REMARKS
F1-F2	2+80	3+20	20-50' RT	0.03	SHORELINE DRIVE
G3-G4	239+35	239+80	25-55' RT	0.06	SOUTH TONGASS 4.6 MILE
			TOTAL:	0.09	ACRE

*FOR INFORMATION ONLY

203.2033.0000 STABILIZATION - ROCK BOLT			
SHEET	LOCATION	LENGTH (LF)	REMARKS
B1, F1-F2	SHORELINE DRIVE	150	
B2, G3-G4	SOUTH TONGASS 4.6 MILE	150	
	TOTAL:	300	LF

Total rock bolt length increased by 58' for a total of 208'.

Total rock bolt length for 4.6 mile increased by 6' for total of 156'.

201.2001.0000 INVASIVE PLANT SPECIES CONTROL, REMOVAL AND DISPOSAL				
SHEET	FROM STATION	TO STATION	AREA (SY)	REMARKS
G1	233+00	236+50	340	
G3	238+50	240+50	180	
		TOTAL:	520	SY

203.2042.0000 STABILIZATION, ROCK SLOPE SCALING				
SHEET	FROM STATION	TO STATION	HOURS (HR)	REMARKS
B1, F1-F2	2+95	3+05	40	SHORELINE DRIVE
B2, G3-G4	239+25	239+60	40	SOUTH TONGASS 4.6 MILE
		TOTAL:	80	HR

203.0012.0000 DRAIN HOLES				
SHEET	FROM STATION	TO STATION	LENGTH (LF)	REMARKS
B1, F1-F2	3+00	3+20	75	3, 25' DRAINS
B2, G1-G2	233+00	236+00	660	11, 25' DRAINS (UPPER BENCH); 11, 35' DRAINS (LOWER BENCH)
B2, G3-G4	238+70	240+20	275	11, 25' DRAINS
		TOTAL:	1010	LF

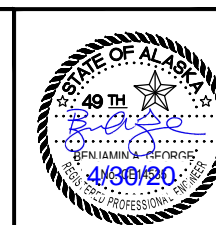
303.2003.000 DITCH RECONDITIONING				
SHEET	FROM STATION	TO STATION	LENGTH (LF)	REMARKS
F1	2+30	4+00	170	SHOELINE DRIVE
G1	233+00	236+00	300	SOUTH TONGASS 4.5 MILE
G3	238+50	240+50	200	SOUTH TONGASS 4.6 MILE
		TOTAL:	670	LF

203.2023.000D ROCKFALL MITIGATION, ATTENUATOR				
SHEET	FROM STATION	TO STATION	AREA (SY)	REMARKS
G1-G2	233+12	235+85	1410	
		TOTAL:	1410	SY

203.2025.0000 ROCKFALL MITIGATION, TEMPORARY ROCKFALL PROTECTION			
SHEET	LOCATION	LENGTH (LF)	REMARKS
E2, F1	SHORELINE DRIVE	55	
E2, G3	SOUTH TONGASS 4.6 MILE	95	
	TOTAL:	150	LF

*FOR INFORMATION ONLY

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Record Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge, the project as

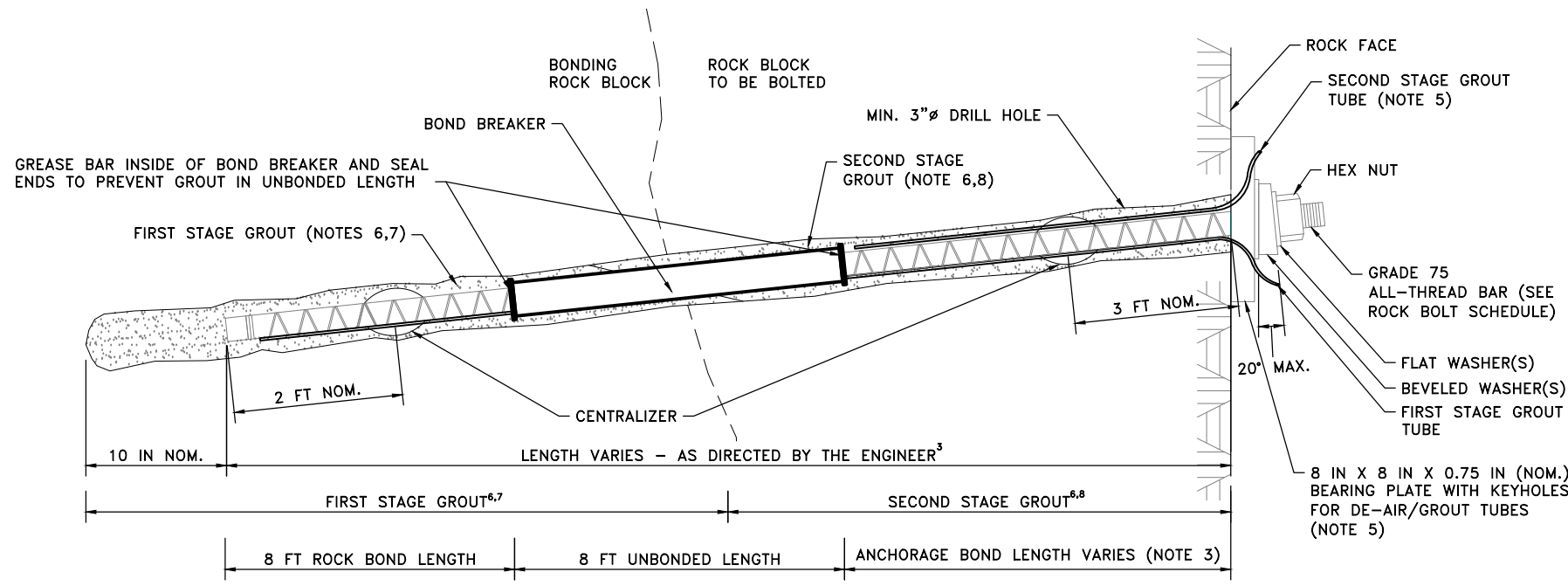
STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

KETCHIKAN - SOUTHCOAST
 REGIONWIDE NON-NHS SLOPE
 STABILIZATION

P.E. Raphael Betit
 SUMMARY TABLES

FILE 68657-KTN-Final_PSD-E.dwg DATE 4/27/2020 16:55 LAYOUT E1 - ROCK BOLT DESIGNED BAG CHECKED LCA DRAFTED KKN

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0003189/Z686570000	2020	E1	35



ROCK BOLT SCHEDULE						
GRADE	BAR SIZE ⁴	BOND LENGTH	UNBONDED LENGTH	ANCHORAGE LENGTH ³	TEST LOAD	LOCK-OFF LOAD
75	#8	8 FEET	8 FEET	VARIES	48 KIPS	40 KIPS

LOAD TESTING CYCLE (ALL ROCK BOLTS)		
STEP	LOAD (KIPS)	PROCEDURES
1	-	CHECK FIRST STAGE GROUT LEVEL BEFORE LOAD TESTING, SUPPLEMENT GROUTING AS NECESSARY
2	48	TENSION BOLT TO TEST LOAD, HOLD FOR 10 MINUTES, MONITOR TENSION
3	40	REDUCE TENSION TO LOCK-OFF LOAD, TIGHTEN BOLT HARDWARE OBSERVING REDUCTION IN TENSION, RELEASE JACK PRESSURE
4	42	PERFORM LIFT-OFF TEST, OBSERVE BOLT HARDWARE RELAXATION AT ≥ 40 KIPS, RETIGHTEN BOLT HARDWARE, RELEASE JACK PRESSURE

- NOTES:**
1. INSTALL ROCK BOLTS AT THE LOCATIONS, ORIENTATIONS, AND LENGTHS AS DETERMINED BY THE ENGINEER IN THE FIELD. APPROXIMATE BOLT LOCATIONS SHOWN ON SHEETS F1 AND G3. LOCATIONS TO BE CONFIRMED AFTER SCALING IS COMPLETE.
 2. BOND LENGTH REQUIRES MINIMUM 3 INCH HOLE DIAMETER. CONTRACTOR IS RESPONSIBLE FOR MODIFYING BOND LENGTHS TO SUIT THEIR SELECTED DRILLING TECHNIQUE AND HOLE DIAMETER.
 3. MINIMUM ANCHORAGE LENGTH IS 9 FEET AND MINIMUM TOTAL BOLT LENGTH IS 25 FEET.
 4. USE BARS CAPABLE OF BEING COUPLED TO ALLOW ADJUSTMENT TO LENGTH, IF NECESSARY.
 5. ORIENT THE ONE KEYHOLE ON THE BEARING PLATE UPWARD FOR MAXIMUM GROUT RETENTION DURING SECOND STAGE GROUTING.
 6. INSTALL ROCK BOLTS WITH GROUT SOCKS TO MITIGATE GROUT LOSS. WATER-FILLED HOLES SHOULD BE ANTICIPATED.
 7. FIRST STAGE GROUT TO FILL BOND LENGTH AND HALF OF UNBONDED LENGTH.
 8. SECOND STAGE GROUT ROCK BOLT FOLLOWING SUCCESSFUL TESTING AND LOCK-OFF.

1
E1
ROCK BOLT DETAIL
SCALE: NOT TO SCALE

Record Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge, the project as constructed.

STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

KETCHIKAN - SOUTHCOAST REGIONWIDE NON-NHS SLOPE STABILIZATION

P.E. *Raphael Betit*

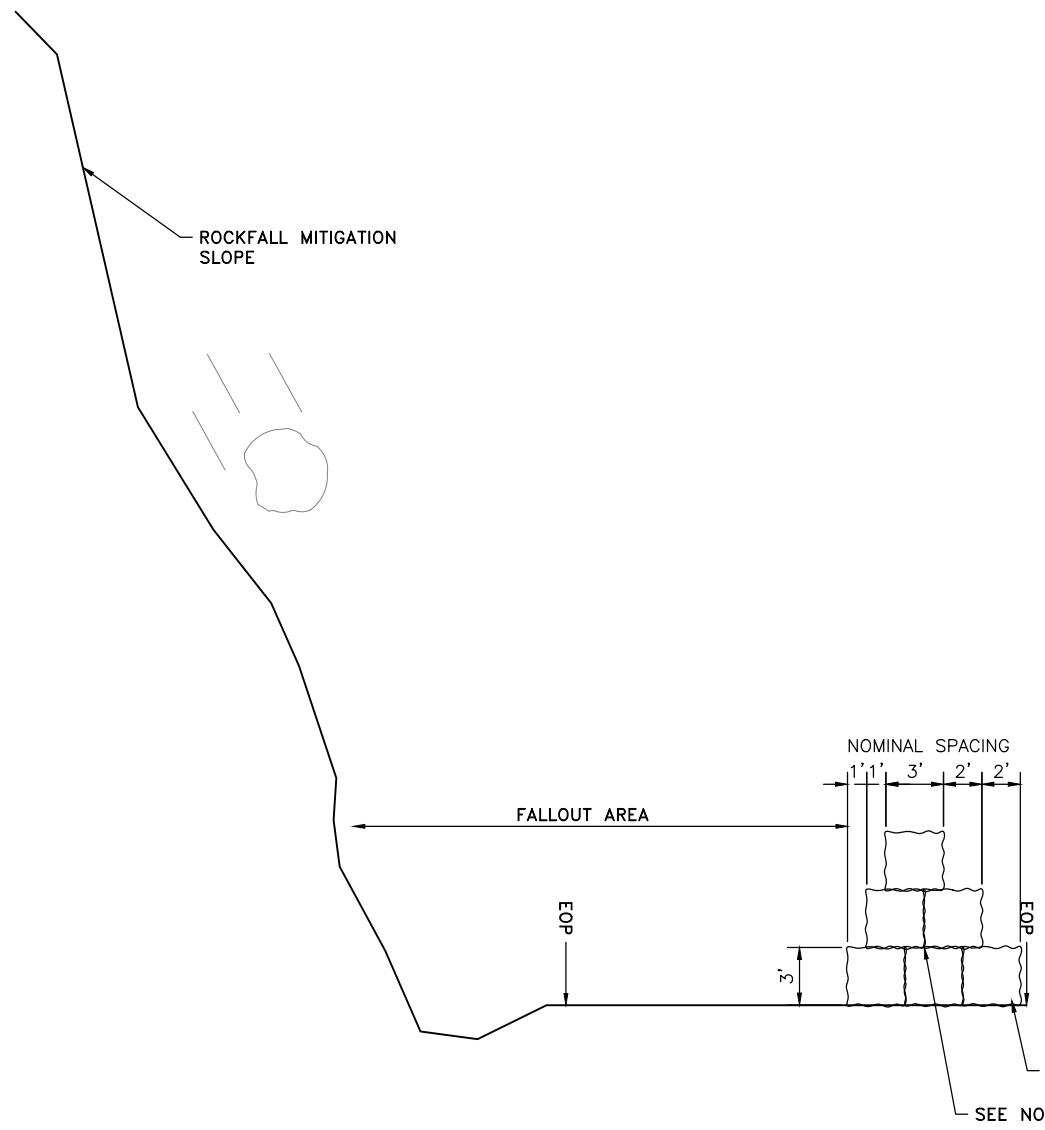
ROCK BOLT AND BERM DETAILS

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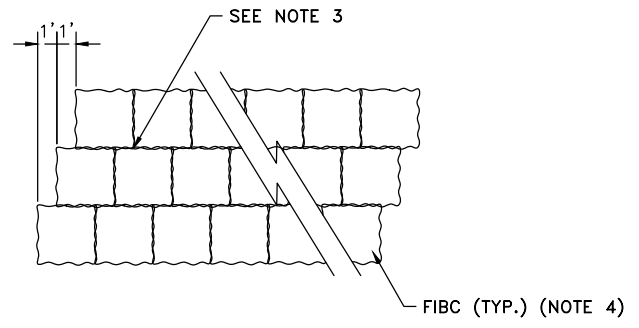


FILE 66657-KTN-Final_PSD-E.dwg DATE 4/27/2020 16:55 LAYOUT E2 - TEMP. BARR. DESIGNED BAG CHECKED LCA DRAFTED KKN

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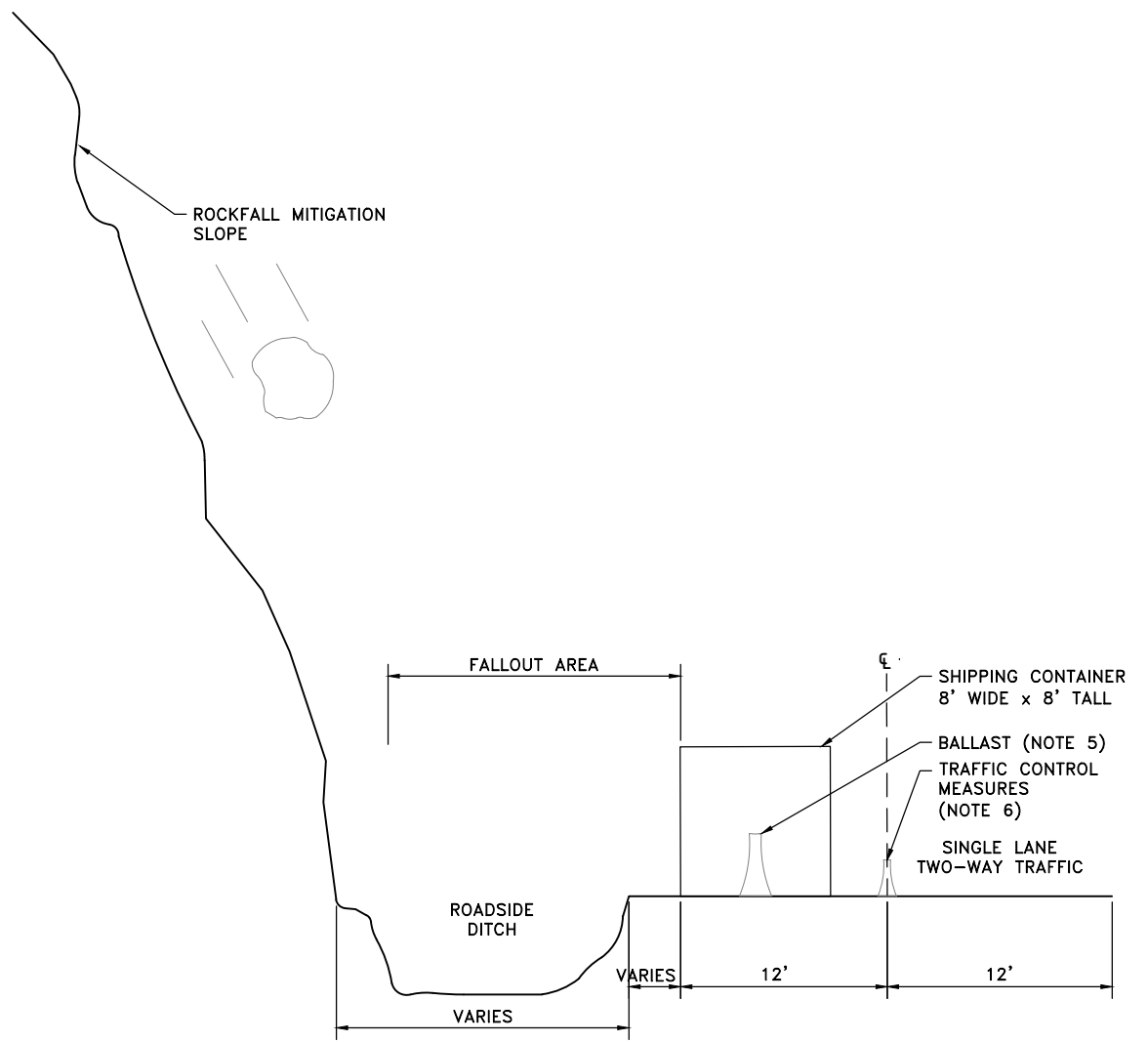


1 SECTION VIEW (NOTES 1 AND 2)
E2 SCALE: NOT TO SCALE



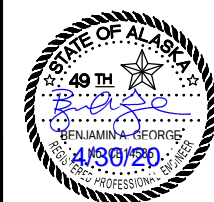
2 ELEVATION VIEW
E2 SCALE: NOT TO SCALE

- NOTES:**
1. INSTALL AND MAINTAIN TEMPORARY ROCKFALL PROTECTION TO PROTECT ADJACENT RESIDENTIAL PROPERTY AS SHOWN ON SHEETS F1, AND G3.
 2. CONTINUOUSLY MONITOR THE SLOPE WITHIN THE ACTIVE WORK ZONE AND TEMPORARY ROCKFALL PROTECTION (TRP) AREA WHILE PERFORMING ON-SLOPE WORK. IMMEDIATELY HALT ON-SLOPE WORK AND ADJUST THE TRP OR ON-SLOPE WORK PROCEDURES IF THE TRP FAILS TO CONTAIN ALL ROCKFALL DEBRIS AND MATERIALS FROM THE SLOPE.
 3. OFFSET ALL VERTICAL AND HORIZONTAL SEAMS NOMINALLY 1-FOOT.
 4. TRP AT SHORELINE DRIVE CAN BE CONSTRUCTED WITH FLEXIBLE INTERMEDIATE BULK CONTAINER (FIBC) FILLED WITH SOIL OR CRUSHED ROCK OR CONCRETE BLOCKS. REPLACE DAMAGED SACKS OR BLOCKS AS NEEDED OR AS DIRECTED BY THE PROJECT ENGINEER.
 5. PLACE 1,000 LBS. OF BALLAST WEIGHT PER FOOT OF SHIPPING CONTAINER INSIDE EACH CONTAINER DURING USE OF TRP AT SOUTH TONGASS HWY. IN ACCORDANCE WITH SECTION 209-3.03.
 6. TRAFFIC CONTROL PLANS TO BE DEVELOPED BY THE CONTRACTOR.



3 SECTION VIEW (NOTES 1 AND 2)
E2 SCALE: NOT TO SCALE

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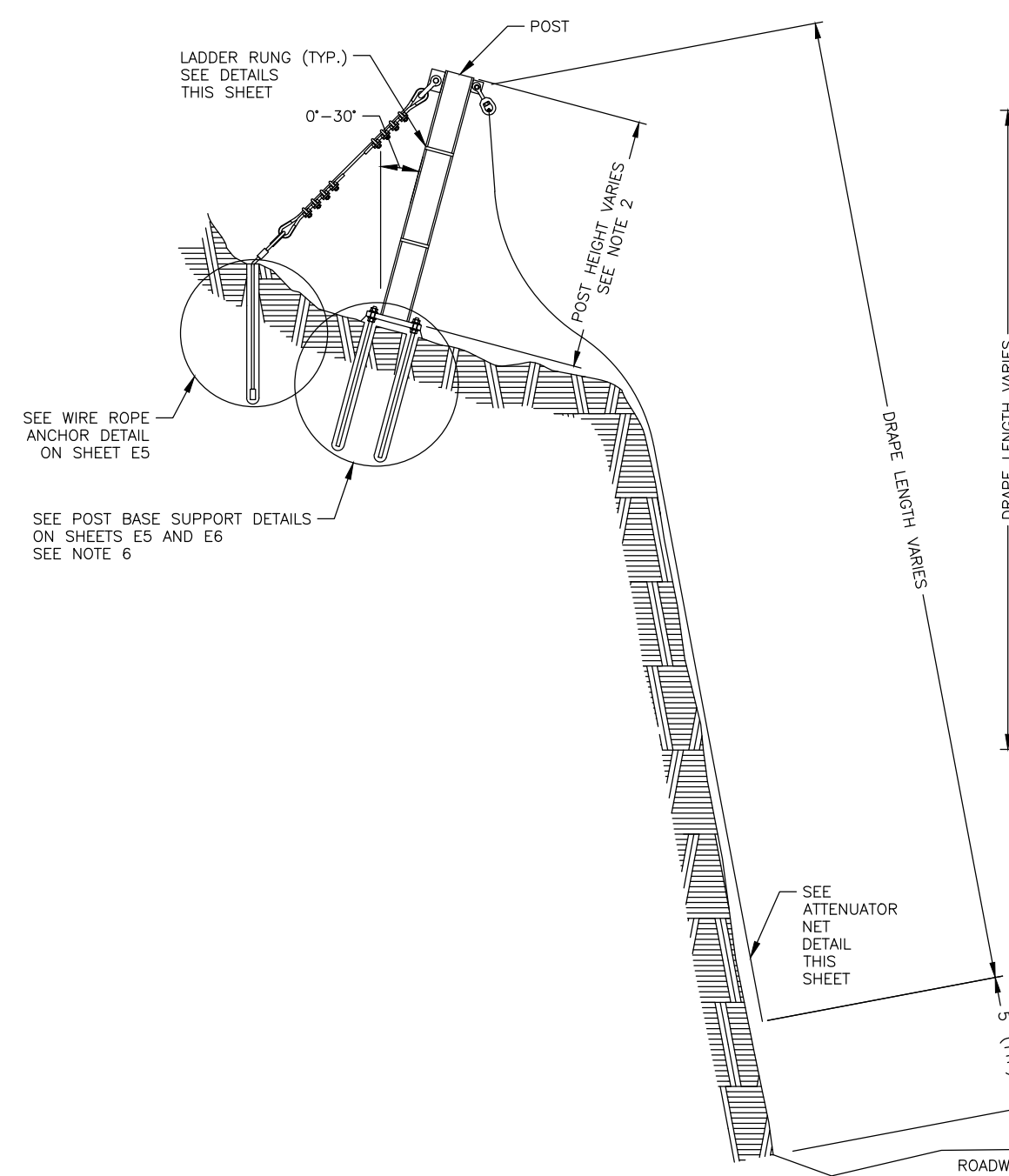


Record Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge, the project as constructed.

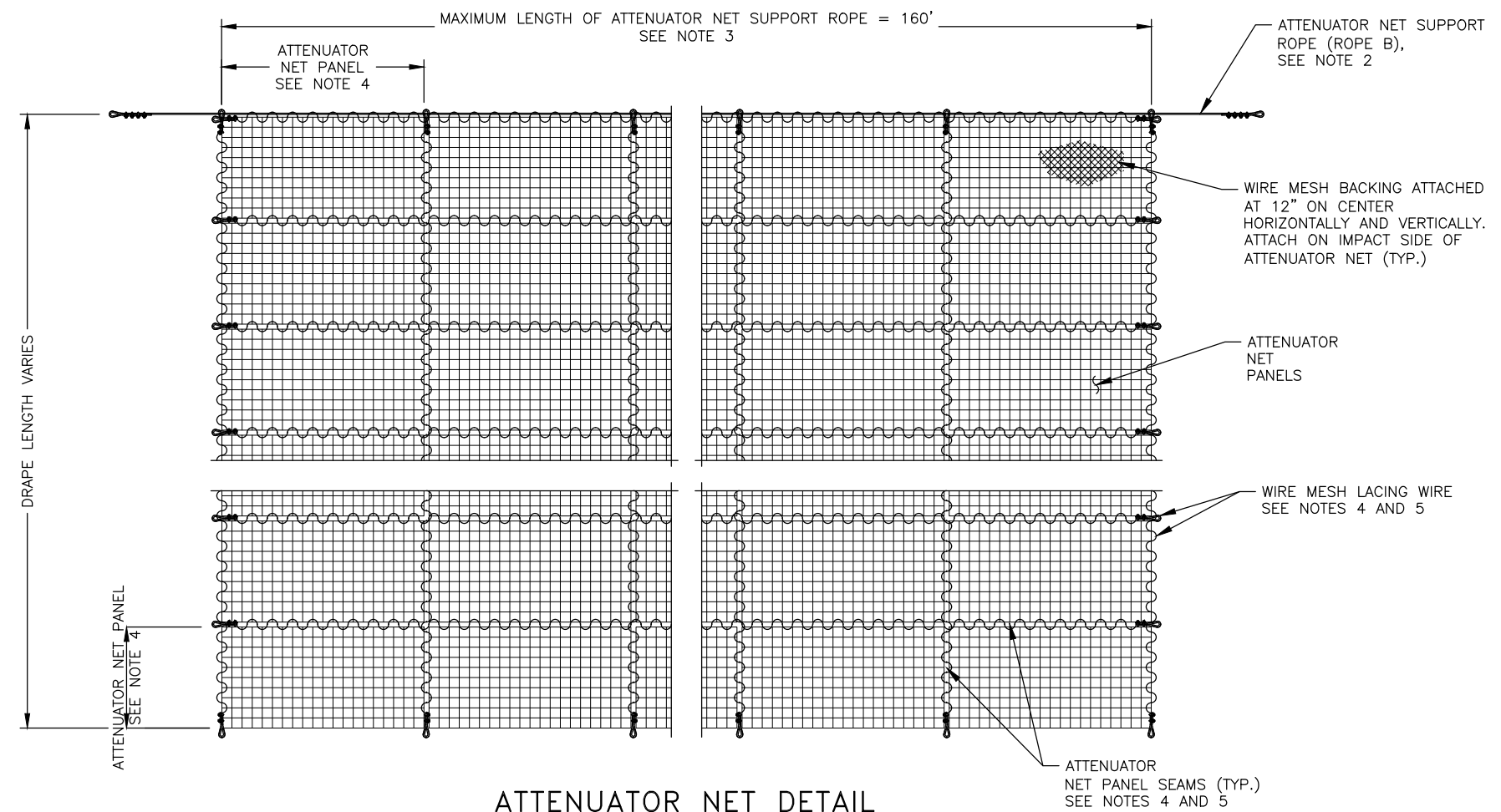
STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

KETCHIKAN - SOUTHCOAST
REGIONWIDE NON-NHS SLOPE
STABILIZATION
P.E. *Raphael Betit*
TEMPORARY ROCKFALL PROTECTION

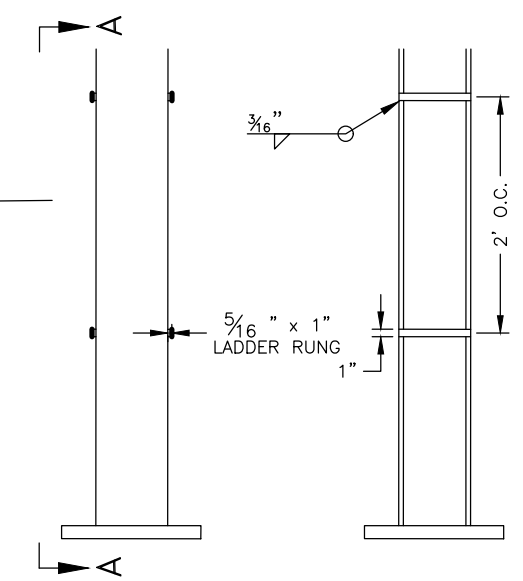
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0003189/Z686570000	2020	E3	35



ATTENUATOR TYPICAL CROSS SECTION



ATTENUATOR NET DETAIL



LADDER RUNG DETAIL VIEW A-A
SEE NOTE 7

NOTES:

1. PROVIDE MATERIAL AND WORKMANSHIP IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
2. POST HEIGHT AND ROPE B LENGTH FOR ATTENUATORS VARY AS SHOWN ON THE ATTENUATOR INSTALLATION SCHEDULE.
3. MAXIMUM ATTENUATOR NET SUPPORT ROPE LENGTH IS 160'. (I.E. 4 POST SPACINGS AT 40'). TERMINATE ATTENUATOR NET SUPPORT ROPE AT A CONNECTION OR END POST.
4. LACE THE SEAMS BETWEEN NET PANELS WITH A MIN. 5/16" DIA. WIRE ROPE THROUGH EACH SQUARE OF THE NET. LACING DETAILS SHOWN ON E8.
5. LOOP THE END OF EACH LACING WIRE ROPE ON ITSELF AND TERMINATE WITH A MIN. OF (2) 5/16" WIRE ROPE CLIPS OR IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
6. INSTALL POSTS AT APPROXIMATE ELEVATIONS SHOWN ON THE ROCKFALL ATTENUATOR INSTALLATION SCHEDULE. IF EXCAVATION IS REQUIRED, MODIFY POST BASE SUPPORT SYSTEM TO INSTALL POST AT BASE ELEVATIONS SHOWN.
7. INSTALL LADDER RUNGS ON BOTH SIDES OF THE ATTENUATOR POSTS AT 2' O.C. SPACING. INSTALL TOP RUNG 48" MAX. FROM TOP OF POST.

Record Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge, the project as constructed.

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STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

KETCHIKAN - SOUTHCOAST
REGIONWIDE NON-NHS SLOPE
STABILIZATION

P.E. *Raphael B. Petit*

ROCKFALL ATTENUATOR DETAILS

FILE 68657-KTN-Final_PSM-E03-E05.dwg DATE 4/27/2020 16:06 LAYOUT E3 DESIGNED BAG CHECKED LCA DRAFTED KKN

FILE: 68657-KTN-Final_PSM-E03-E05.dwg | DATE: 4/28/2020 9:02 | LAYOUT: E4 | DESIGNED: BAG | CHECKED: LCA | DRAFTED: KKN

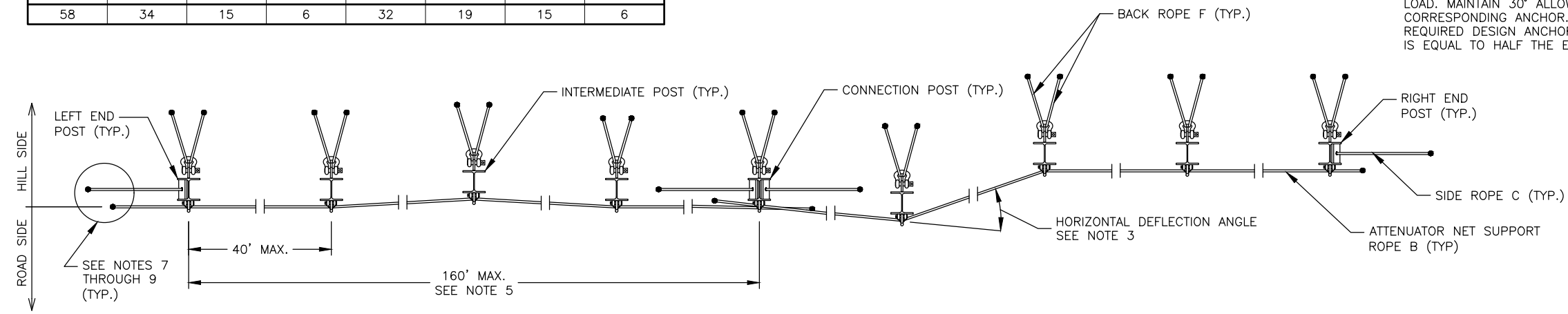
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0003189/Z686570000	2020	E4	35

END AND CONNECTION POST INSTALLATION SCHEDULE ^{4,5,6}														
END & CONNECTION POSTS		POST ANCHORAGE			ATTENUATOR NET SUPPORT ROPE CONNECTION					SIDE ROPES CONNECTION				BACK ROPE
HEIGHT	SIZE	PLATE A	WELD A _f ⁴	WELD A _w ⁴	ROPE B ⁵	PLATE B	HOLE B (DIA)	WELD B ⁴	SWIVEL B ⁶	ROPE C	PLATE C	HOLE C (DIA)	WELD C ⁴	ROPE F
10'	W8x40	¾"x16"x1'-4"	⅞"	¼"	¾"	1"x4"x0'-6"	1¼"	½"	1"	¾"	½"x4"x0'-7"	1¾"	⅝"	¾"

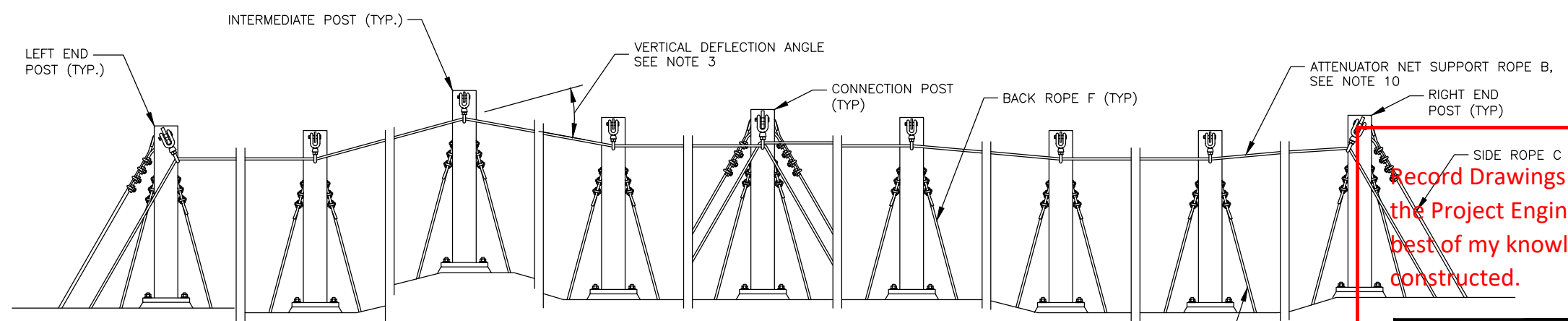
INTERMEDIATE POST INSTALLATION SCHEDULE ^{2,3,4,5,6}										
INTERMEDIATE POSTS ^{2,3}		POST ANCHORAGE			ATTENUATOR NET SUPPORT ROPE CONNECTION					BACK ROPE
HEIGHT	SIZE	PLATE D	WELD D _f ⁴	WELD D _w ⁴	ROPE B ⁵	PLATE E	HOLE E (DIA)	WELD E ⁴	SWIVEL E ⁶	ROPE F
10'	W8x35	¾"x16"x1'-4"	⅝"	¼"	¾"	½"x3"x0'-3½"	1"	⅝"	⅞"	¾"

WIRE ROPE ANCHORS ^{7,8,9,10}							
ROPE B ¹⁰		ROPE C AND ROPE F (PER ROPE)					
DESIGN LOAD (KIPS)	TEST LOAD (KIPS)	MIN. EMBEDMENT LENGTH(FT)		DESIGN LOAD (KIPS)	TEST LOAD (KIPS)	MIN. EMBEDMENT LENGTH(FT)	
		SOIL	ROCK			SOIL	ROCK
58	34	15	6	32	19	15	6

- NOTES:**
- PROVIDE MATERIAL AND WORKMANSHIP IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
 - MAXIMUM SPACING BETWEEN POSTS IS 40' EXCEPT WHERE SHOWN IN THE PLANS OR APPROVED BY THE ENGINEER. IF THE POST EXCEEDS 40', CONNECTION OR END POSTS ON EACH SIDE OF THE LONG SPAN ARE REQUIRED SO THE ATTENUATOR SUPPORT ROPE CAN BE ANCHORED AT EACH END OF THE LONG SPAN.
 - LOCATE POSTS AS SHOWN IN THE PLANS AND INSTALLATION SCHEDULE. MAINTAIN HORIZONTAL AND VERTICAL DEFLECTION ANGLES LESS THAN 30°. IF THE DEFLECTION IN ANY DIRECTION EXCEEDS 30°, A CONNECTION OR END POST IS REQUIRED SO THE ATTENUATOR NET SUPPORT ROPE CAN BE ANCHORED AT THE DEFLECTION POINT.
 - CONDUCT ALL WELDING IN THE FACTORY.
 - MAXIMUM ATTENUATOR NET SUPPORT ROPE LENGTH IS 160' (I.E. 4 POST SPACINGS AT 40'). TERMINATE ATTENUATOR NET SUPPORT ROPE AT A CONNECTION OR END POST.
 - USE JAW END TYPE SWIVELS.
 - MINIMUM EMBEDMENT LENGTHS WERE ESTIMATED ASSUMING A 6" DIA. HOLE IS ADVANCED IN SOIL AND A 3" DIA. DRILL HOLE IS ADVANCED IN ROCK.
 - CONDUCT ANCHOR TESTING AS DESCRIBED IN THE SPECIAL PROVISIONS TO VERIFY MINIMUM EMBEDMENT LENGTHS ARE SUFFICIENT FOR THE SPECIFIED ANCHOR LOADS.
 - EMBEDMENT LENGTHS AND HOLE DIAMETER CAN BE ADJUSTED BY THE CONTRACTOR IF ANCHOR TESTING SHOWS THE PROPOSED LENGTH(S) ARE SUFFICIENT FOR THE SPECIFIED LOADS.
 - FOR ROPE B, TWO WIRE ROPE ANCHORS WITH INDIVIDUAL TAG LINES MAY BE USED AS AN ALTERNATIVE TO A SINGLE WIRE ROPE ANCHOR IN ORDER TO ACHIEVE THE REQUIRED DESIGN LOAD. MAINTAIN 30° ALLOWABLE ANGLE BETWEEN THE TAG LINES AND THE AXIS OF THE CORRESPONDING ANCHOR. USE ANCHORS AND TAG LINES WITH MINIMUM OF 60% OF THE REQUIRED DESIGN ANCHOR LOAD FOR A SINGLE ANCHOR. MINIMUM SPACING BETWEEN ANCHORS IS EQUAL TO HALF THE EMBEDMENT LENGTH OF ROPE B ANCHOR.



PLAN

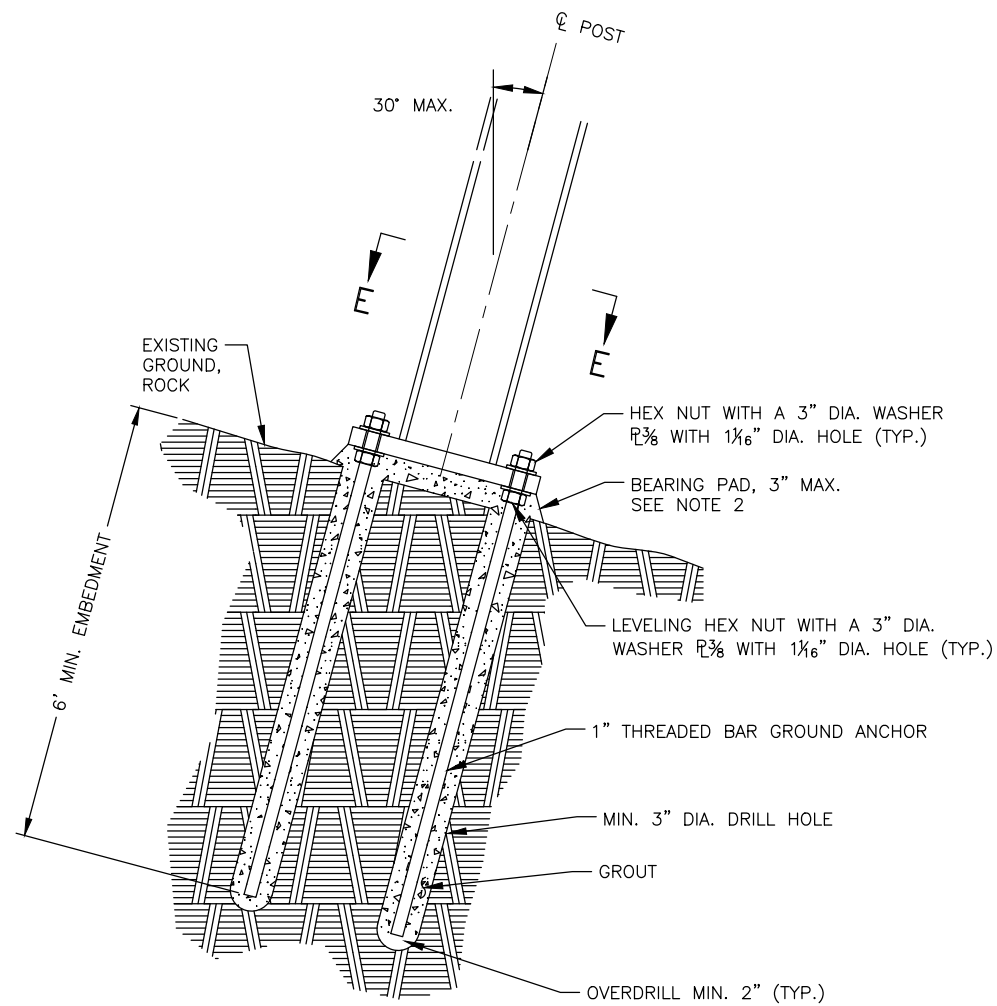


ELEVATION
ATTENUATOR NET NOT SHOWN

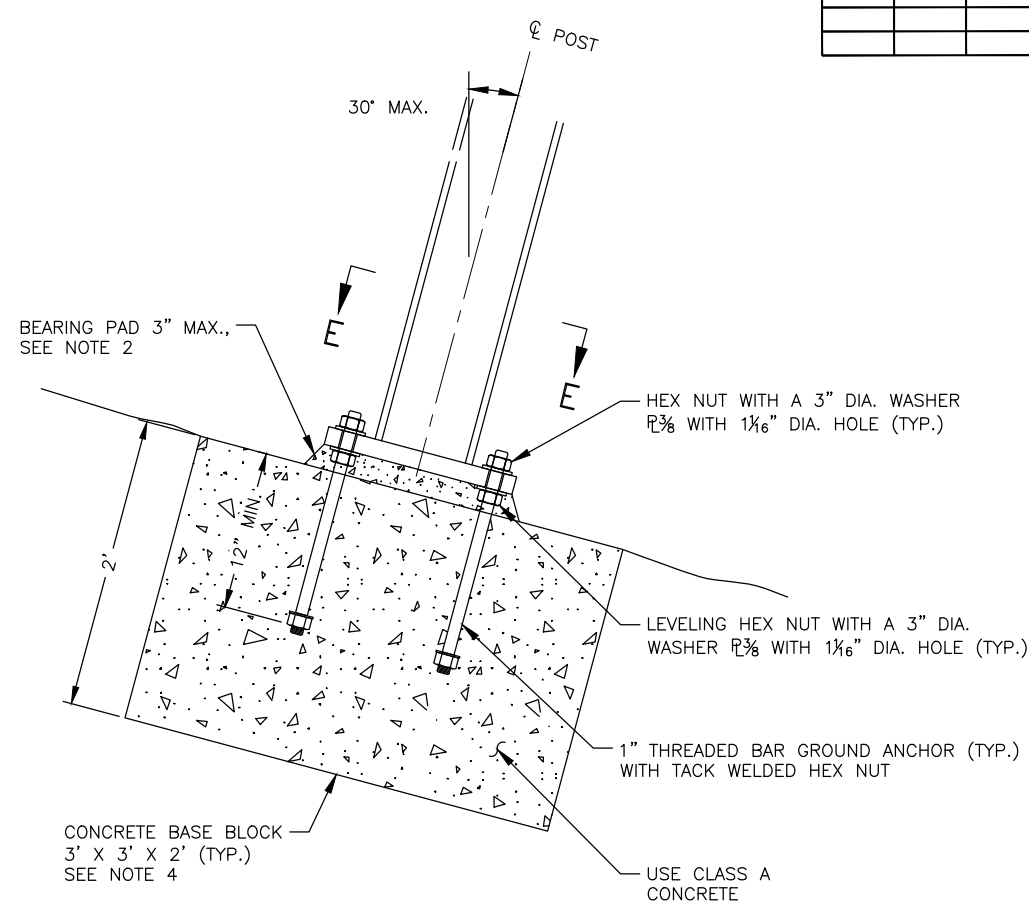
Record Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge, the project as constructed.

PLANS DEVELOPED BY: LANDSLIDE TECHNOLOGY 10250 SW GREENBURG RD, SUITE 111 PORTLAND, OR 97223 (503)452-1200 AECL238440		STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES KETCHIKAN - SOUTHCOAST REGIONWIDE NON-NHS SLOPE STABILIZATION ROCKFALL ATTENUATOR DETAILS
P.E. <i>Raphael</i>		

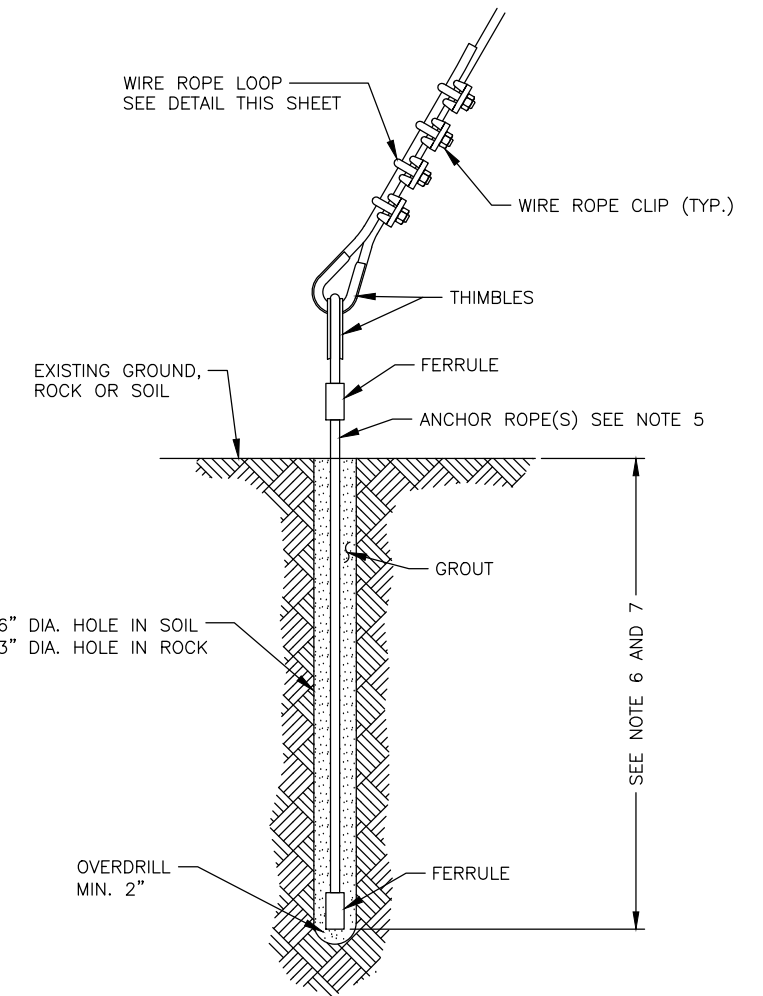
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			ALASKA	0003189/Z686570000	2020	E5	35



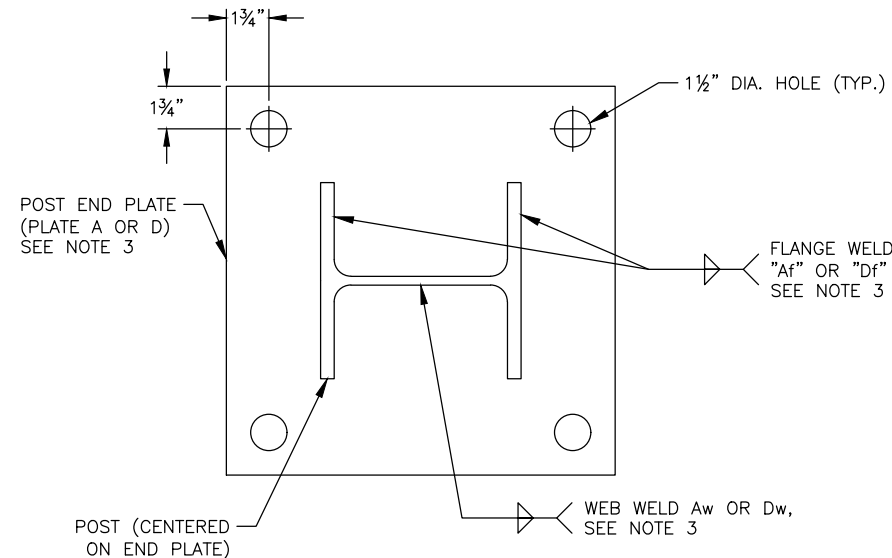
POST BASE SUPPORT
DETAIL - ANCHORAGE IN ROCK



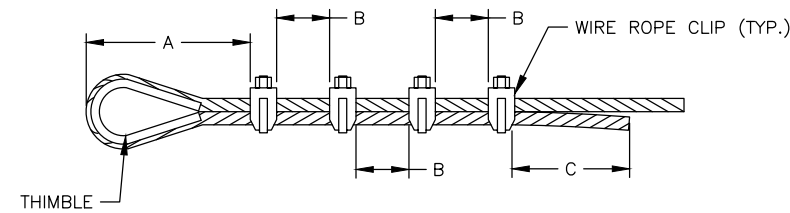
POST BASE SUPPORT DETAIL - ANCHORAGE
IN SOIL SLOPES LESS THAN 2H:1V



WIRE ROPE ANCHOR DETAIL



SECTION E-E



WIRE ROPE LOOP DETAIL

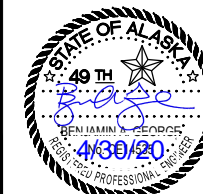
SEE NOTE 8

NOTES:

1. PROVIDE MATERIAL AND WORKMANSHIP IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
2. BEARING PAD NOT REQUIRED IF BEARING SURFACE IS FLAT.
3. FOR PLATE AND WELD SIZES, REFER TO THE ROCKFALL ATTENUATOR INSTALLATION SCHEDULES ON SHEET E4. CONDUCT ALL WELDING IN THE FACTORY.
4. USE THIS POST ANCHORAGE DESIGN ONLY FOR SOIL SLOPES FLATTER THAN 2H:1V (~28°). SEE THE ROCKFALL ATTENUATOR DETAILS (SHEET E6) FOR POST ANCHORAGE IN SOIL SLOPES 2H:1V AND STEEPER.
5. PROVIDE ANCHOR ROPE(S) OF ADEQUATE SIZE TO DEVELOP THE ULTIMATE WIRE ROPE ANCHOR CAPACITIES LISTED ON THE ROCKFALL ATTENUATOR DETAILS (SHEET E4) IN BOTH ROCK AND SOIL ANCHORING CONDITIONS.
6. MINIMUM EMBEDMENTS AND ANCHOR LOAD REQUIREMENTS PROVIDED ON SHEET E4.
7. CONDUCT PROOF TESTING AS DESCRIBED IN THE SPECIAL PROVISIONS TO VERIFY MINIMUM EMBEDMENT LENGTHS ARE SUFFICIENT TO PROVIDE DESIGN LOADS ON SHEET E4.
8. COMPLY WITH MANUFACTURER'S SPECIFICATIONS (AS BASED ON ROPE SIZE/DIAMETER) FOR THIMBLE SELECTION, NUMBER OF CLIPS, CLIP SIZE, DISTANCES A, B AND C.

Record Drawings have been reviewed by
C. J. Proctor, Registered Professional Engineer
and represent to the best of my knowledge, the project as
constructed.

PLANS DEVELOPED BY:
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STATE OF ALASKA DEPARTMENT OF TRANSPORTATION
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KETCHIKAN - SOUTHCOAST
REGIONWIDE NON-NHS SLOPE
STABILIZATION

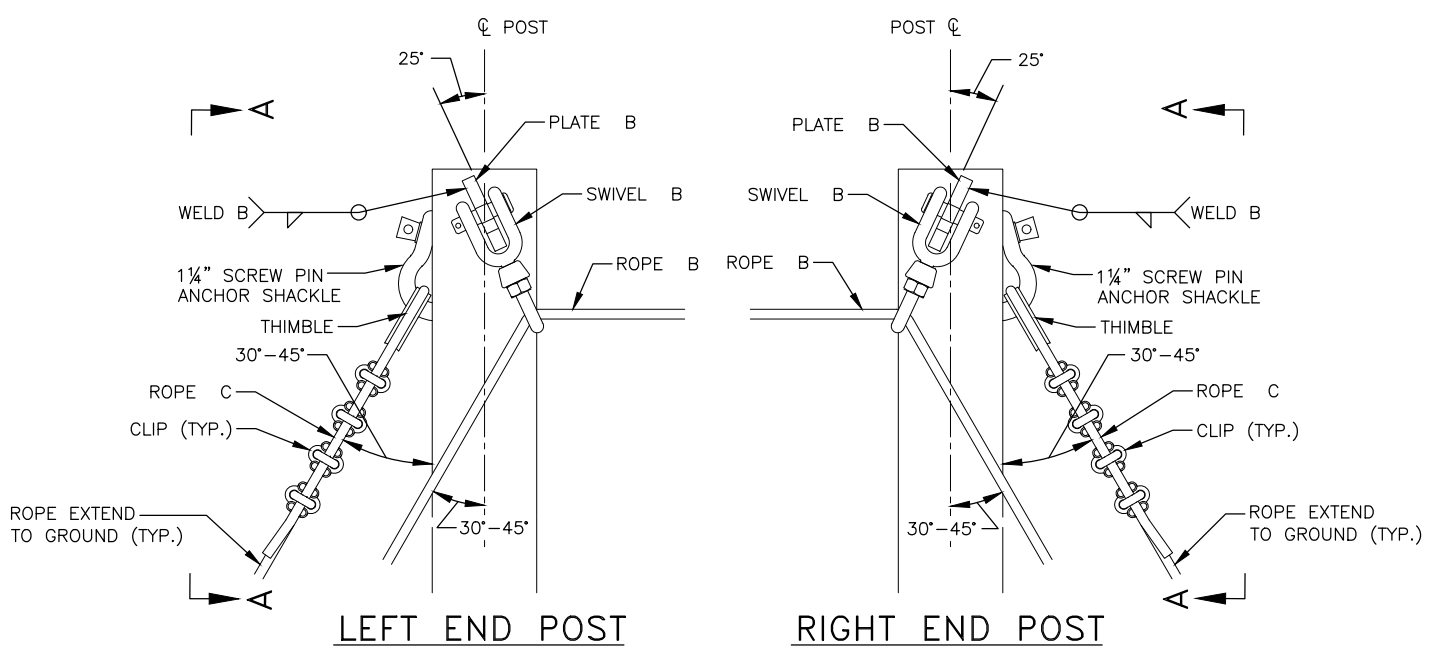
P.E. *Raphael Betit*

ROCKFALL ATTENUATOR DETAILS

FILE 68657-KTN-Final_PSM-E03-E05.dwg DATE 4/27/2020 16:06 LAYOUT E5 DESIGNED BAG CHECKED LCA DRAFTED KKN

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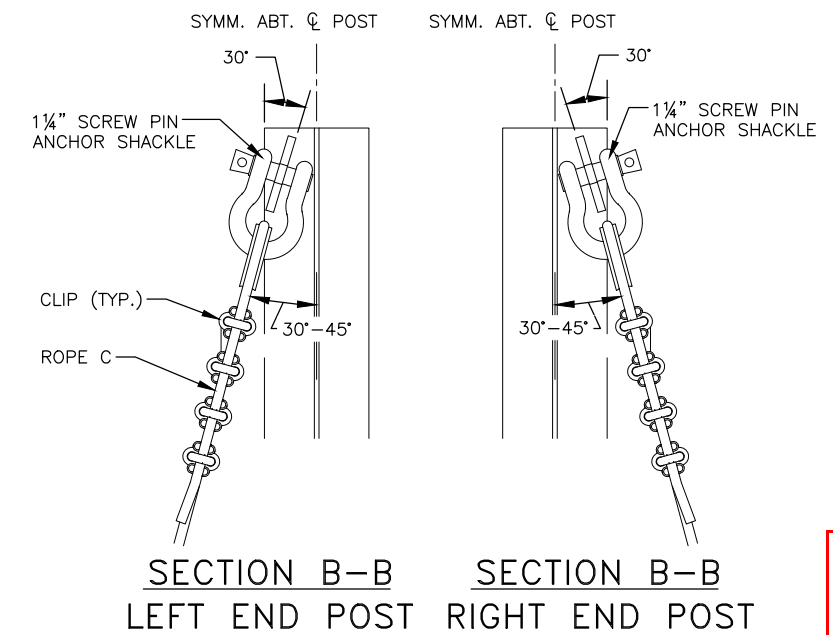
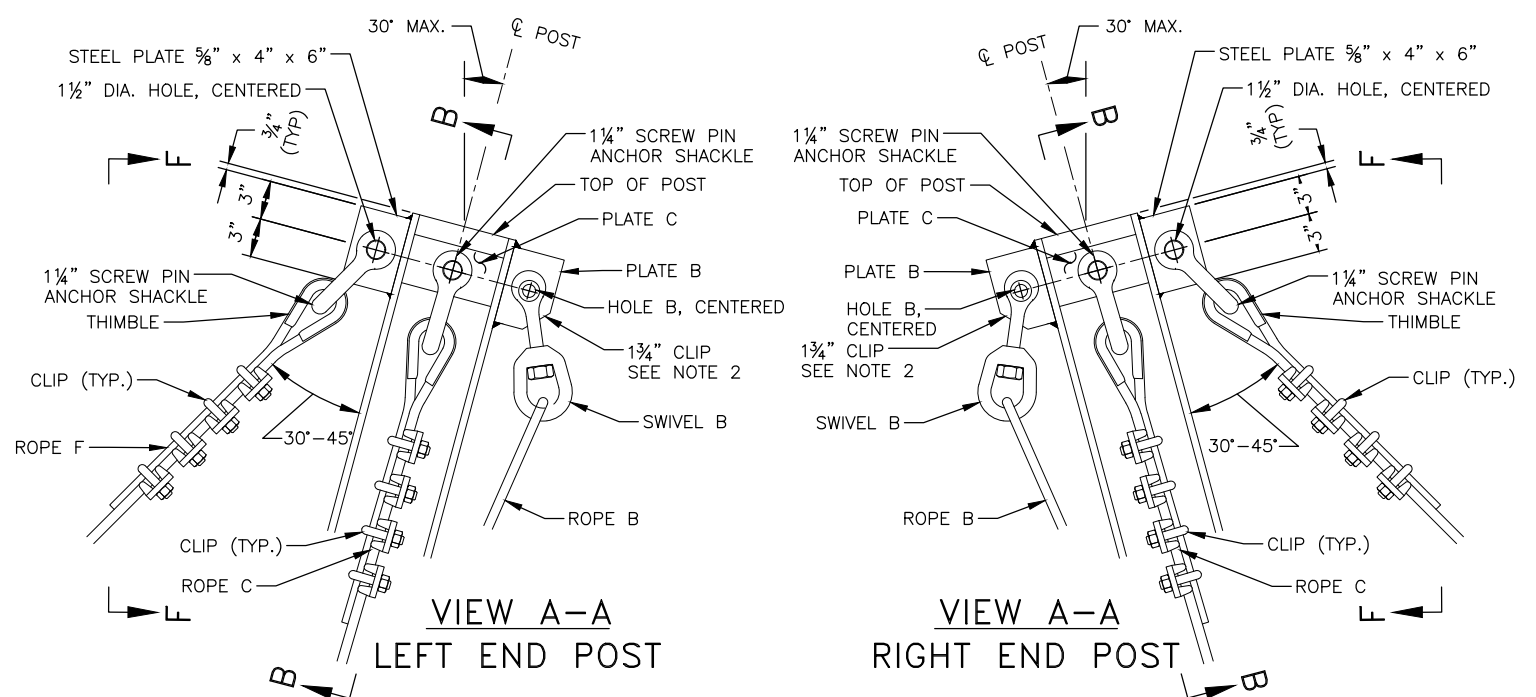
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 DATE: 4/27/2020 17:20
 LAYOUT: EG
 DESIGNED: BAG
 CHECKED: LCA
 DRAFTED: KKN



ROCKFALL ATTENUATOR INSTALLATION SCHEDULE

LOCATION	ATTEN. NO.	PLAN LENGTH (LNFT)	POST NO.	STATION	OFFSET (FT)	ELEV. AT POST BASE (FT)	POST HEIGHT (FT)	POST TYPE	TOTAL AREA (SY)
SOUTH TONGASS HWY 4.5 MILE	A	275	1	235+85	50	54	10	END (RIGHT)	1,410
			2	235+50	55	57	10	INTERMEDIATE	
			3	235+18	53	60	10	INTERMEDIATE	
			4	234+85	52	65	10	INTERMEDIATE	
			5	234+50	54	65	10	CONNECTION	
			6	234+15	58	66	10	INTERMEDIATE	
			7	233+85	55	65	10	INTERMEDIATE	
			8	233+47	54	64	10	INTERMEDIATE	
			9	233+12	51	67	10	END (LEFT)	

* FOR INFORMATION PURPOSES ONLY



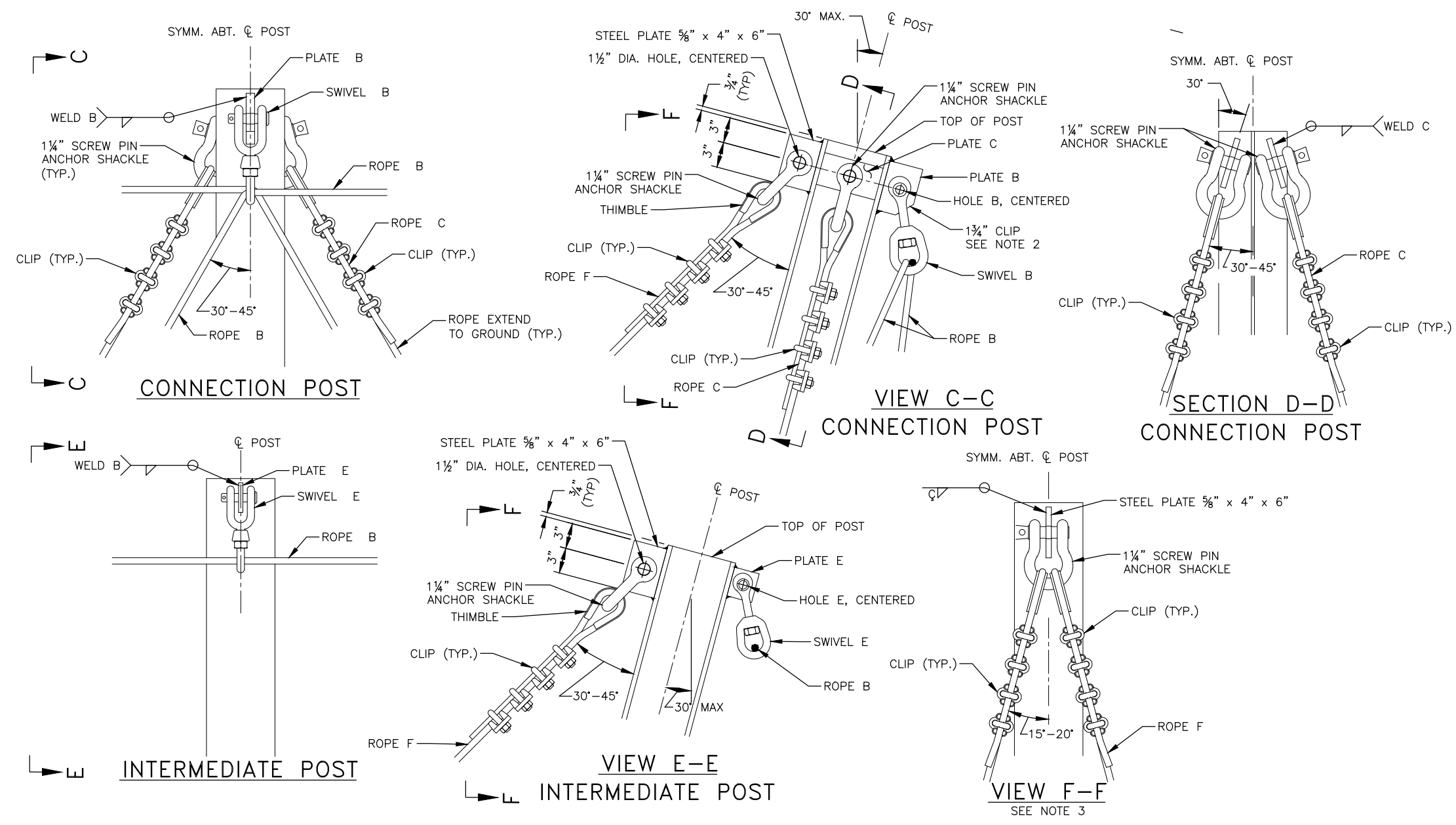
Record Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge, the project as shown.

STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
 KETCHIKAN - SOUTHCOAST REGIONWIDE NON-NHS SLOPE STABILIZATION
 P.E. *Raphael Petit*
 ROCKFALL ATTENUATOR DETAILS

PLANS DEVELOPED BY:
 LANDSLIDE TECHNOLOGY
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 (503)452-1200
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0003189/Z686570000	2020	E7	35

FILE: 68657-KTN-Final_PSM-E06-E07.dwg | DATE: 4/27/2020 17:20 | LAYOUT: E7 | DESIGNED: BAG | CHECKED: LCA | DRAFTED: KKN



NOTES:

1. PROVIDE MATERIAL AND WORKMANSHIP IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
2. CLIP THE LOWER CORNER OF PLATE B BY 1 3/4" TO FACILITATE SWIVEL INSTALLATION.
3. VIEW APPLIES TO ALL POSTS. ROPES C AND B NOT SHOWN FOR CLARITY.

Record Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge, the project as constructed.

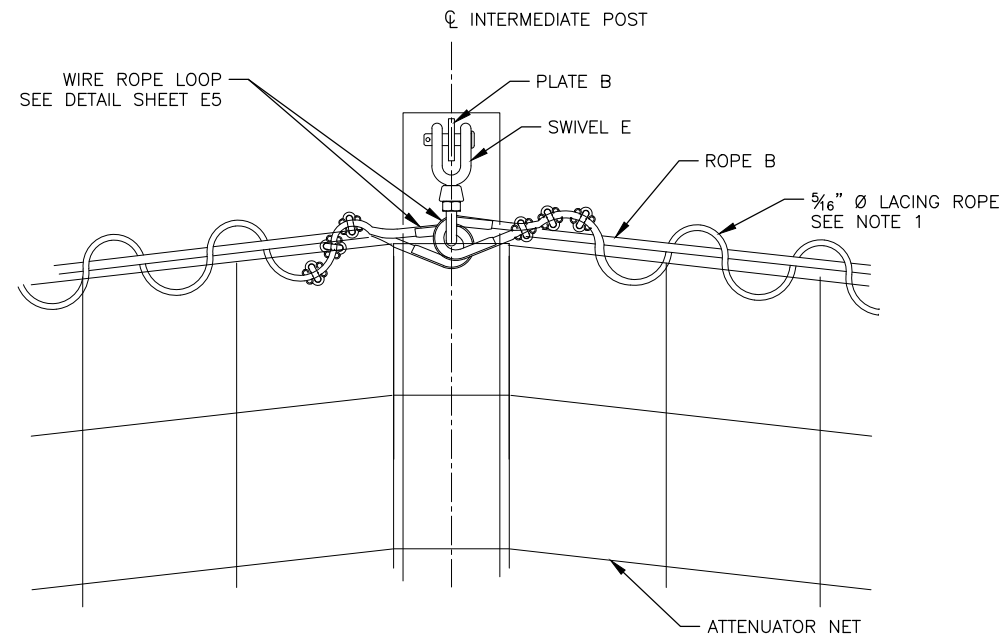
PLANS DEVELOPED BY:
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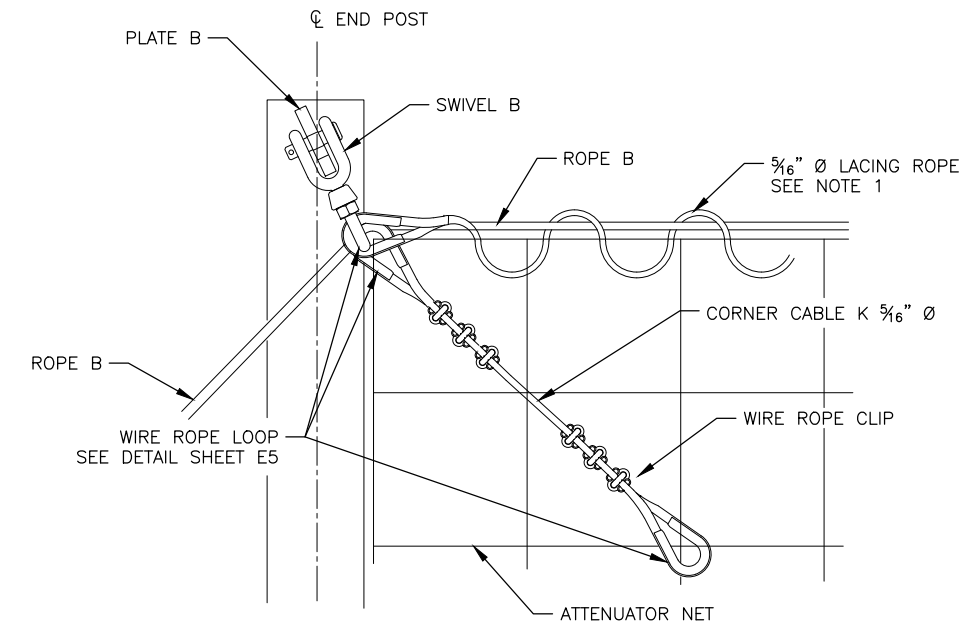
STATE OF ALASKA DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES

KETCHIKAN - SOUTHCOAST
 REGIONWIDE NON-NHS SLOPE
 STABILIZATION
 P.E. *Raphael Betit*
 ROCKFALL ATTENUATOR DETAILS

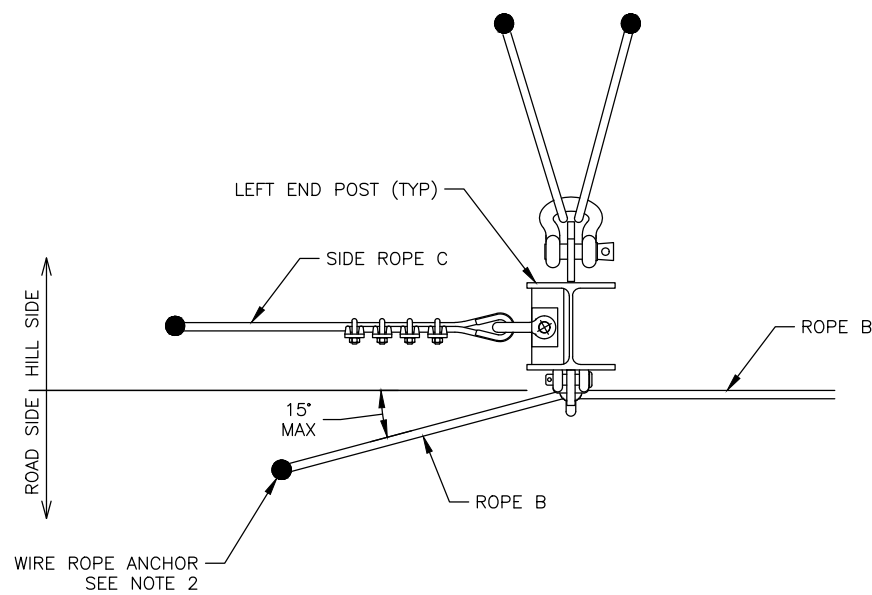
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0003189/Z686570000	2020	E8	35



LACING ROPE TO INTERMEDIATE AND CONNECTION POSTS



LACING ROPE TO END POST



PLAN VIEW

ATTENUATOR NET SUPPORT ROPE B
HORIZONTAL DEFLECTION ANGLE

NOTES:

1. ATTACH LACING ROPE TO SWIVELS E OR B.
2. LOCATE ROPE B ANCHOR UP TO 15' FROM THE HORIZONTAL LINE OF THE SWIVEL FOR ROPE B.
3. COMPLY WITH THE MANUFACTURER'S SPECIFICATIONS (AS BASED ON ROPE SIZE/DIAMETER) FOR THE THIMBLE SELECTION, NUMBER OF CLIPS, CLIP SIZE, DISTANCES A, B, C AND REQUIRED TORQUE. SEE SHEET E5 FOR WIRE ROPE LOOP DETAIL.

FILE: 68657-KTN-Final_PSM-E08.dwg DATE: 4/27/2020 17:23 LAYOUT: E8 DESIGNED: BAG CHECKED: LCA DRAFTED: KKN

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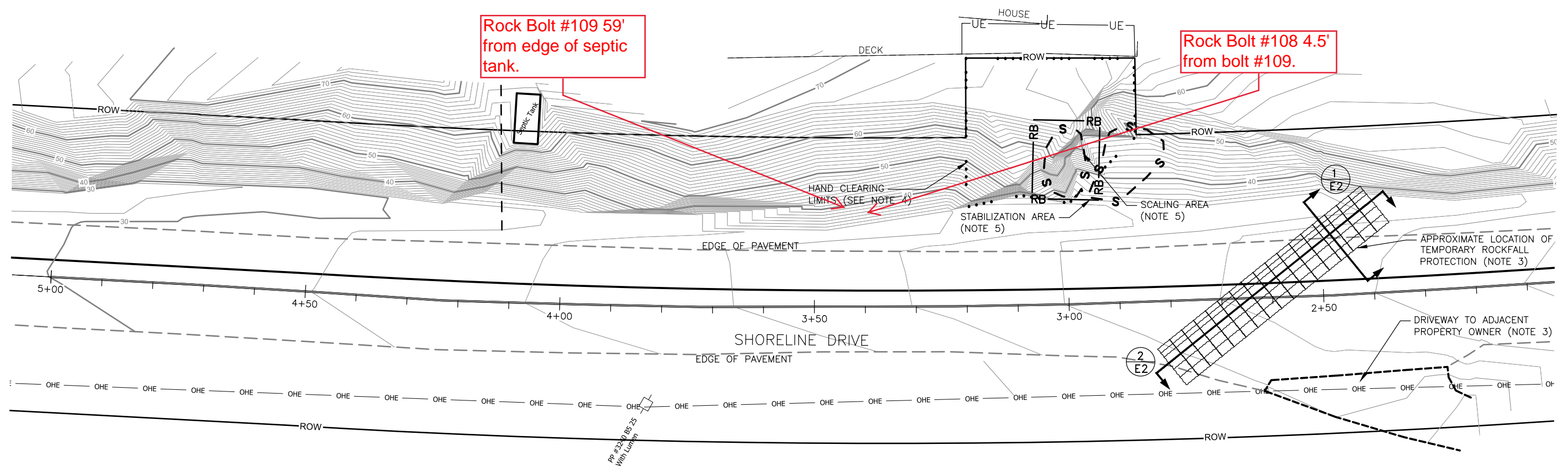


Record Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge, the project as shown.

STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
KETCHIKAN - SOUTHCOAST REGIONWIDE NON-NHS SLOPE STABILIZATION
P.E. *Raphael Betit*
ROCKFALL ATTENUATOR DETAILS

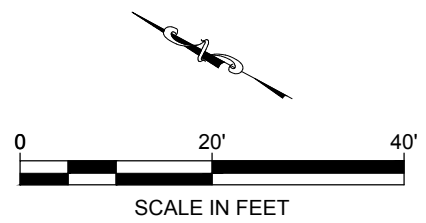
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0003189/Z686570000	2020	F1	35

FILE: 68657-KTN-F1.dwg | PS&E-F.dwg | DATE: 4/27/2020 16:55 | LAYOUT: F1 - SHORELINE | DESIGNED: BAG | CHECKED: LCA | DRAFTED: KKN



Rock Bolt #109 59' from edge of septic tank.

Rock Bolt #108 4.5' from bolt #109.



- NOTES:
- PROJECT LEGEND PROVIDED ON SHEET A3.
 - APPROXIMATE STATIONING DEVELOPED DURING FIELD RECONNAISSANCE IN JUNE 2017.
 - MAINTAIN TEMPORARY ROCKFALL PROTECTION (TRP) THROUGHOUT ALL ON-SLOPE WORK TO PROTECT THE ADJACENT PROPERTY OWNER. PROVIDE ACCESS TO DRIVEWAY THROUGHOUT WORK. DETAILS OF TRP ARE PROVIDED ON SHEET E2. TRAFFIC CONTROL BY CONTRACTOR. MAINTAIN POSITIVE DRAINAGE ALONG EASTERN (LT) EOP BELOW TRP.
 - HAND CLEAR AREA SHOWN OR AS DIRECTED BY THE ENGINEER. DO NOT GRUB. LIMITS MAY BE ADJUSTED BY THE ENGINEER AS WORK PROCEEDS.
 - SCALING AND STABILIZATION DETAILS SHOWN ON THE MITIGATION ANNOTATED PHOTOGRAPH (SHEET F2) AND TYPICAL SECTION (SHEET B1). LIMITS MAY BE ADJUSTED BY THE ENGINEER AS WORK PROCEEDS.

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Record Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge, the project as shown on these drawings.

STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

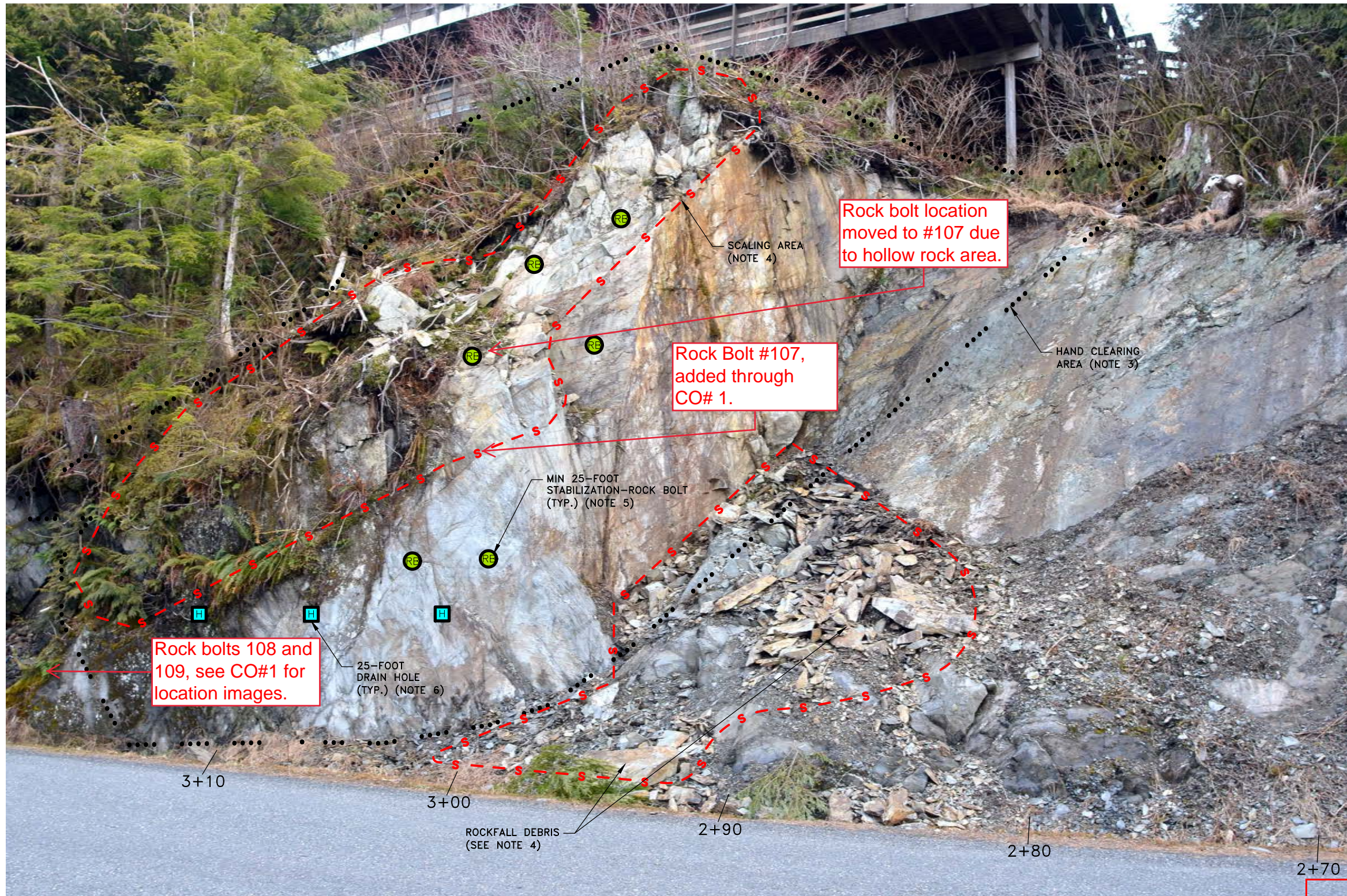
KETCHIKAN - SOUTHCOAST REGIONWIDE NON-NHS SLOPE STABILIZATION

P.E. *Raphael Betit*

SHORELINE DRIVE SITE PLAN

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0003189/Z686570000	2020	F2	35

FILE: 68657-KTN-Final_PSD-E.dwg | DATE: 4/27/2020 16:55 | LAYOUT: F2 - SHORELINE | DESIGNED: BAG | CHECKED: LCA | DRAFTED: KKN



NOTES:

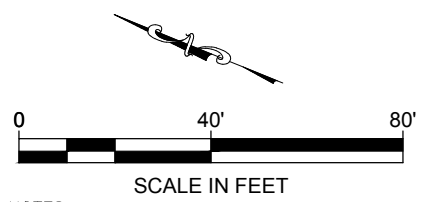
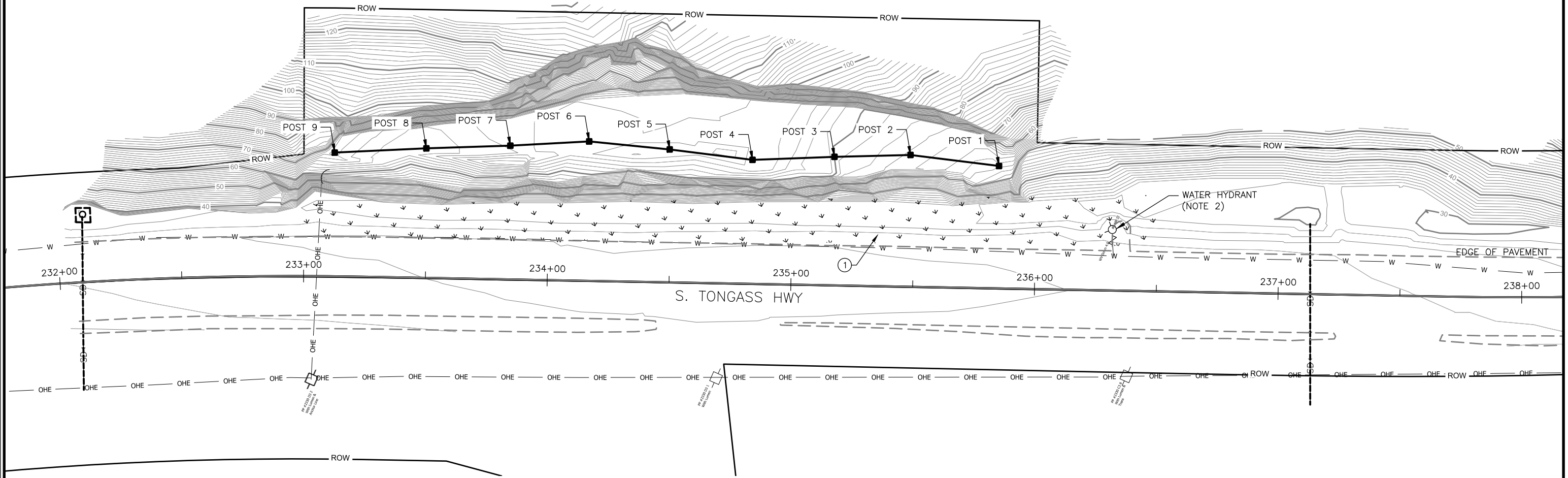
1. PROJECT LEGEND PROVIDED ON SHEET A3.
2. STATIONING SHOWN IS APPROXIMATE
3. HAND CLEAR AREA SHOWN AND UPSLOPE SCALING ACCESS AREA FROM STA 2+80 TO 3+20. LIMITS MAY BE ADJUSTED BY THE ENGINEER AS WORK PROCEEDS.
4. SCALE AND REMOVE ROCKFALL DEBRIS FROM AREAS SHOWN. LIMITS MAY BE ADJUSTED BY THE ENGINEER AS WORK PROCEEDS.
5. ROCK BOLT LOCATIONS, ORIENTATIONS AND LENGTHS ARE APPROXIMATE. THESE MAY BE CHANGED DURING CONSTRUCTION BY THE ENGINEER BASED ON SCALING RESULTS AND ENCOUNTERED SUBSURFACE CONDITIONS. DETAILS SHOWN ON SHEET E1.
6. INSTALL DRAIN HOLES NOMINALLY 5 FEET APART BETWEEN STA 3+00 AND 3+20. LOCATION TO BE APPROVED BY THE ENGINEER.

Record Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge, the project as

PLANS DEVELOPED BY: LANDSLIDE TECHNOLOGY 10250 SW GREENBURG RD, SUITE 111 PORTLAND, OR 97223 (503)452-1200 AECL238440		STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES KETCHIKAN - SOUTHCOAST REGIONWIDE NON-NHS SLOPE STABILIZATION P.E. <i>Benjamin George</i> SHORELINE DRIVE MITIGATION ANNOTATED PHOTOGRAPH
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0003189/Z686570000	2020	G1	35

FILE: 68657-KTN-Final_PSE-F.dwg | DATE: 4/27/2020 16:55 | LAYOUT: G1 - SO. TONG | DESIGNED: BAG | CHECKED: LCA | DRAFTED: KKN



INVASIVE SPECIES SUMMARY		
POINT NUMBER	SPECIES PRESENT	AREA DISTURBED (SQ. YD.)
1	OXEYE DAISEY	340

- NOTES:**
- PROJECT LEGEND PROVIDED ON SHEET A3.
 - PRESERVE AND PROTECT THE 12" WATER MAIN, HYDRANT AND 1" DIAMETER HDPE PURGELINE LOCATED IN THE DITCH LINE.

Record Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge, the project as constructed.

STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

KETCHIKAN - SOUTHCOAST
REGIONWIDE NON-NHS SLOPE
STABILIZATION

P.E. *Raphael Petit*
SOUTH TONGASS 4.5 MILE
SITE PLAN

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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0003189/Z686570000	2020	G2	35

FILE 68657-KTN-Final_PSD-E.dwg | DATE 4/27/2020 16:55 | LAYOUT G2 - S.TONG | DESIGNED BAG | CHECKED LCA | DRAFTED KKN



- NOTES:
1. PROJECT LEGEND PROVIDED ON SHEET A3.
 2. STATIONING SHOWN IS APPROXIMATE.
 3. INSTALL DRAIN HOLES NOMINALLY 25 FEET APART BETWEEN STA 233+00 AND 236+00 ON THE BENCH AND NEAR ROADWAY GRADE. ADJUST HOLE LOCATION 5-10 FEET AWAY FROM EXISTING DRAIN HOLES NEAR THE ROADWAY GRADE, AS NECESSARY. LOCATIONS TO BE APPROVED BY THE ENGINEER.

Record Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge, the project as constructed.

STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

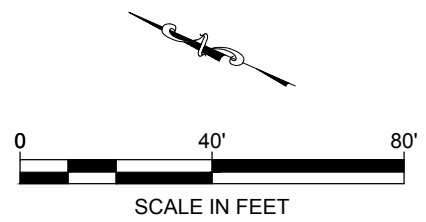
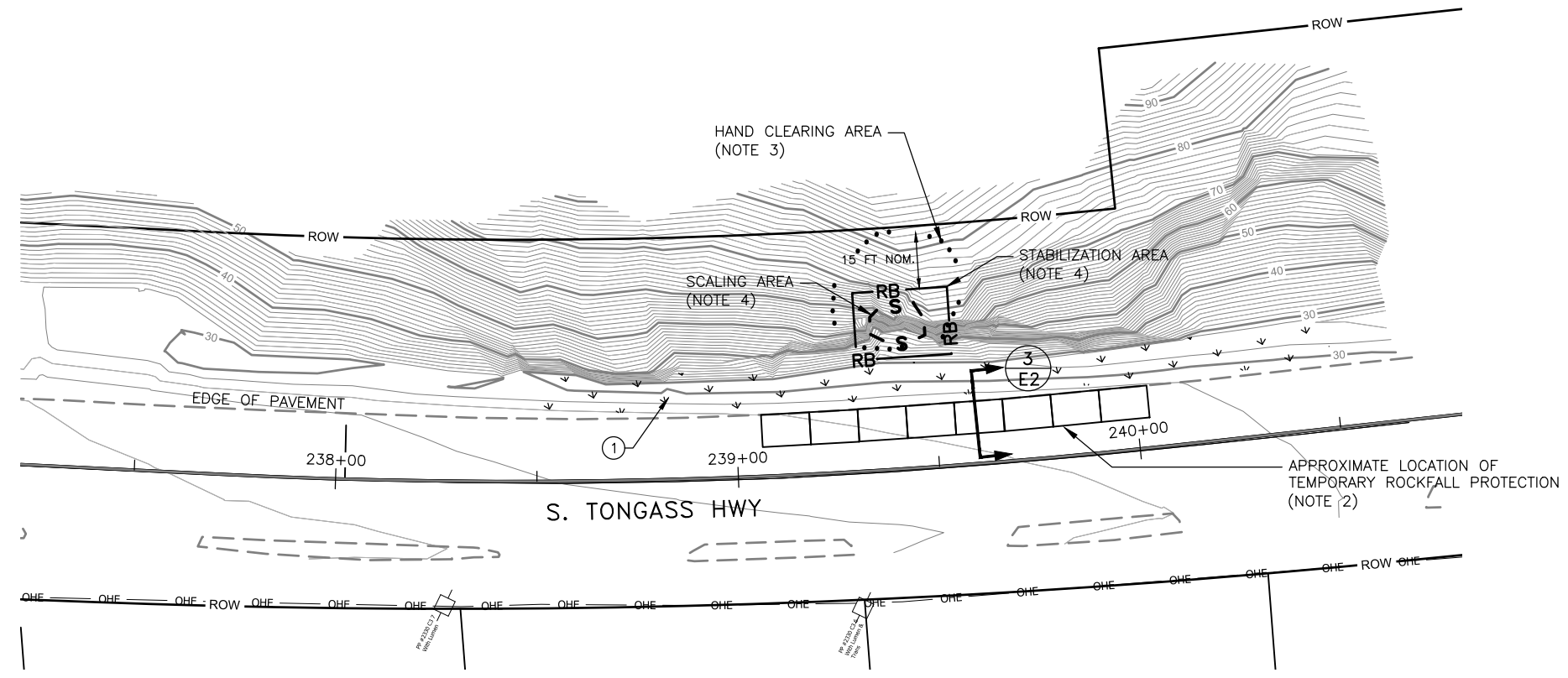
KETCHIKAN - SOUTHCOAST
 REGIONWIDE NON-NHS SLOPE
 STABILIZATION
 P.E. *Raphael Pettit*
 SOUTH TONGASS 4.5 MILE
 MITIGATION ANNOTATED PHOTOGRAPH

PLANS DEVELOPED BY:
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0003189/Z686570000	2020	G3	35

FILE 68657-KTN-Final_PSE-F.dwg | DATE 4/27/2020 16:55 | LAYOUT G3 - SO - TONG | DESIGNED BAG | CHECKED LCA | DRAFTED KKN



- NOTES:**
- PROJECT LEGEND PROVIDED ON SHEET A3.
 - MAINTAIN TEMPORARY ROCKFALL PROTECTION (TRP) BELOW ACTIVE WORK ZONES AS WORK PROGRESSES. DETAILS OF TRP PROVIDED ON SHEET E2.
 - HAND CLEAR AREA SHOWN. DO NOT GRUB. LIMITS MAY BE ADJUSTED BY THE ENGINEER AS WORK PROCEEDS.
 - SCALING AND STABILIZATION DETAILS SHOWN ON MITIGATION ANNOTATED PHOTOGRAPH (SHEET G4) AND TYPICAL SECTION (SHEET B2). LIMITS MAY BE ADJUSTED BY THE ENGINEER AS WORK PROCEEDS.

INVASIVE SPECIES SUMMARY		
POINT NUMBER	SPECIES PRESENT	AREA DISTURBED (SQ. YD.)
1	OXEYE DAISEY	180

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Record Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge, the project as

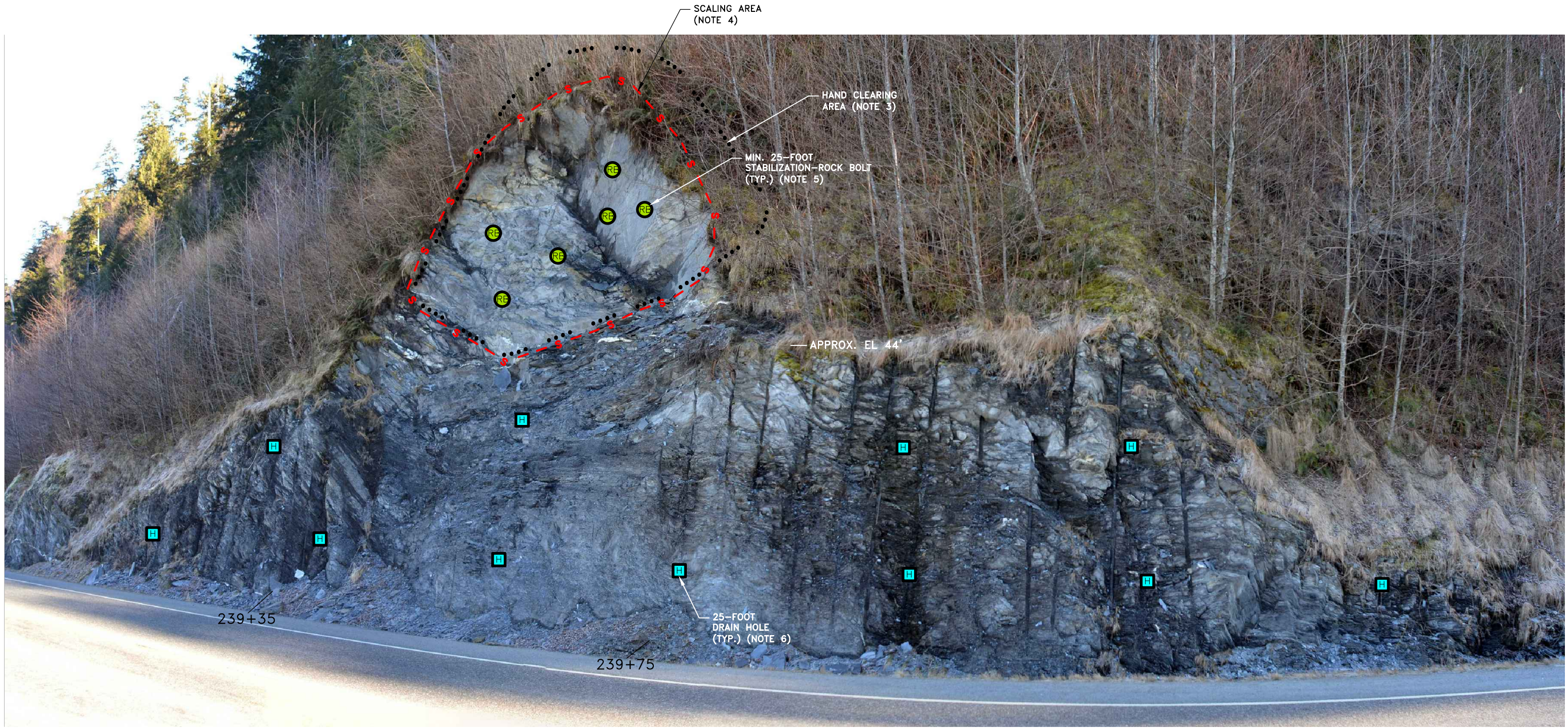
STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

KETCHIKAN - SOUTHCOAST REGIONWIDE NON-NHS SLOPE STABILIZATION

P.E. *Benjamin George* 4 MILE SITE PLAN

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0003189/Z686570000	2020	G4	35

FILE 68657-KTN-Final_PSD-E.dwg | DATE 4/27/2020 16:55 | LAYOUT 64 - S.TONG | DESIGNED BAG | CHECKED LCA | DRAFTED KKN



- NOTES:**
1. PROJECT LEGEND PROVIDED ON SHEET A3.
 2. STATIONING SHOWN IS APPROXIMATE.
 3. HAND CLEAR AREA SHOWN AND UPSLOPE SCALING ACCESS AREA FROM STA 239+25 TO 239+60. LIMITS MAY BE ADJUSTED BY THE ENGINEER AS WORK PROCEEDS.
 4. SCALING LIMITS MAY BE ADJUSTED BY THE ENGINEER AS WORK PROCEEDS.
 5. ROCK BOLT LOCATIONS, ORIENTATIONS AND LENGTHS ARE APPROXIMATE. THESE MAY BE CHANGED DURING CONSTRUCTION BY THE ENGINEER BASED ON SCALING RESULTS AND ENCOUNTERED SUBSURFACE CONDITIONS. DETAILS SHOWN ON SHEET E1.
 6. INSTALL DRAIN HOLES NOMINALLY 20 FEET APART BETWEEN STA 238+70 AND 240+20. LOCATIONS TO BE APPROVED BY THE ENGINEER.

Record Drawings have been reviewed by the Project Engineer and represent to the best of my knowledge, the project as

STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

KETCHIKAN - SOUTHCOAST
REGIONWIDE NON-NHS SLOPE
STABILIZATION

P.E. *Raphael Petit*
SOUTH TONGASS 4.6 MILE
MITIGATION ANNOTATED PHOTOGRAPH

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