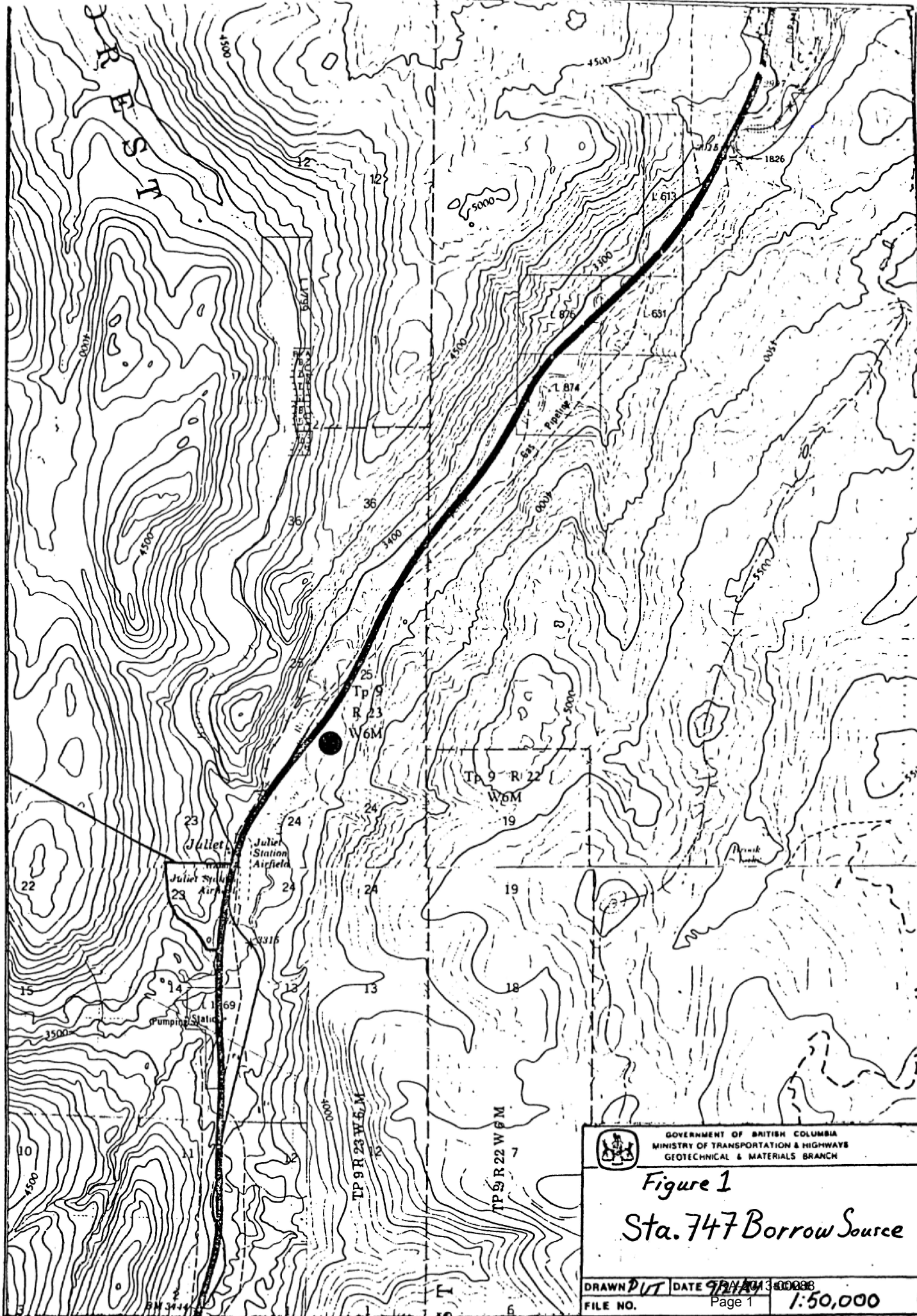




GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

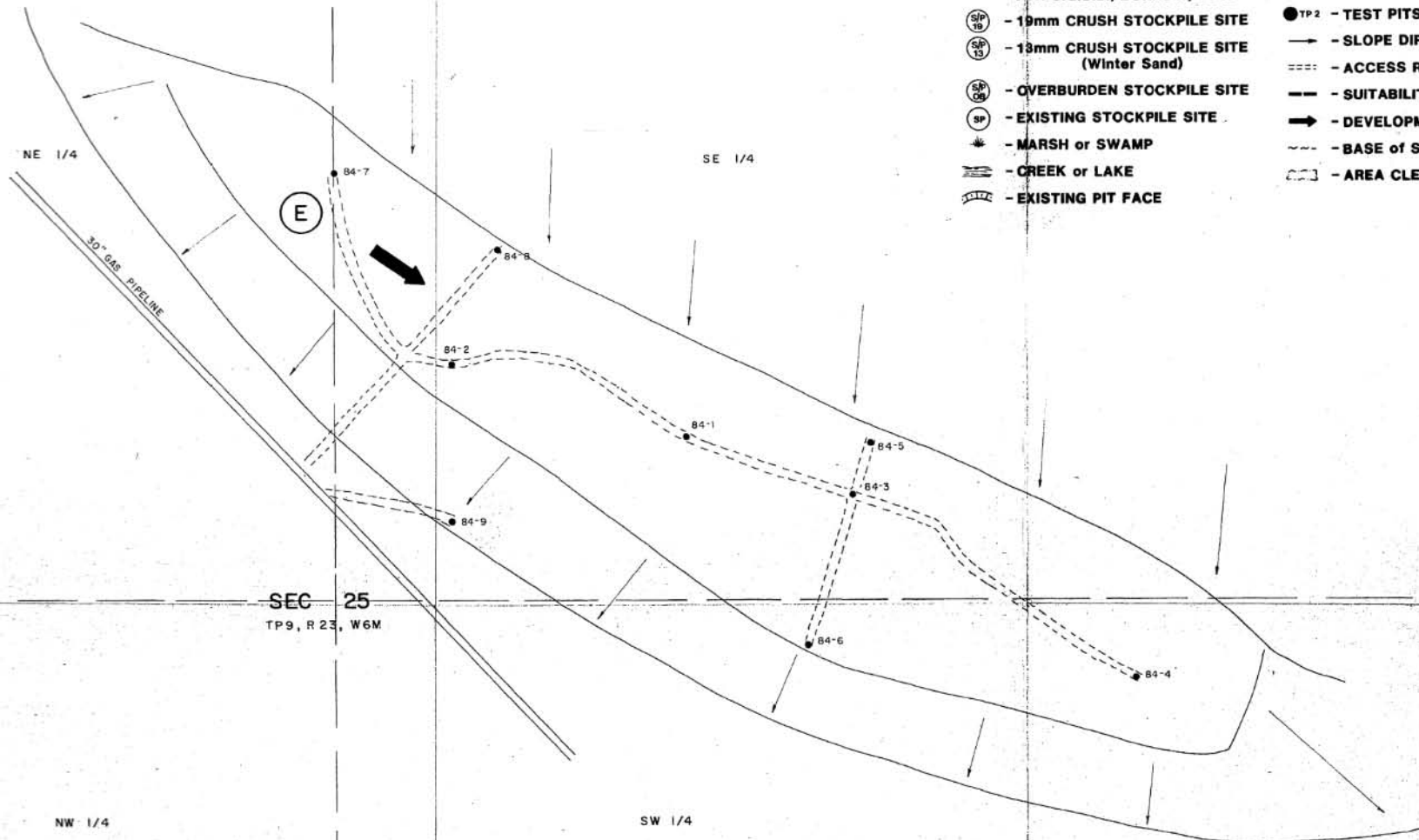
Figure 1
Sta. 747 Borrow Source

DRAWN *PJT* DATE *9/2/83* 000288

FILE NO.

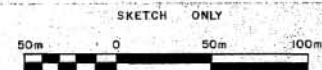
Page 1

1:50,000



LEGEND

- ▲ - PROPOSED CRUSHER or SCREENING PLANT LOCATION
- ⊗ TH2 - TEST HOLES DRILLED IN
- ⊗ TH2 - TEST HOLES DRILLED IN
- TP2 - TEST PITS DUG IN
- TP2 - TEST PITS DUG IN 1984
- - SLOPE DIRECTION
- === - ACCESS ROAD
- - SUITABILITY BOUNDARY
- ➔ - DEVELOPMENT DIRECTION
- - BASE of SLOPE
- - AREA CLEARED of TREES
- SP - 19mm CRUSH STOCKPILE SITE
- SP - 13mm CRUSH STOCKPILE SITE (Winter Sand)
- SP - OVERBURDEN STOCKPILE SITE
- SP - EXISTING STOCKPILE SITE
- SW - MARSH or SWAMP
- - CREEK or LAKE
- - EXISTING PIT FACE



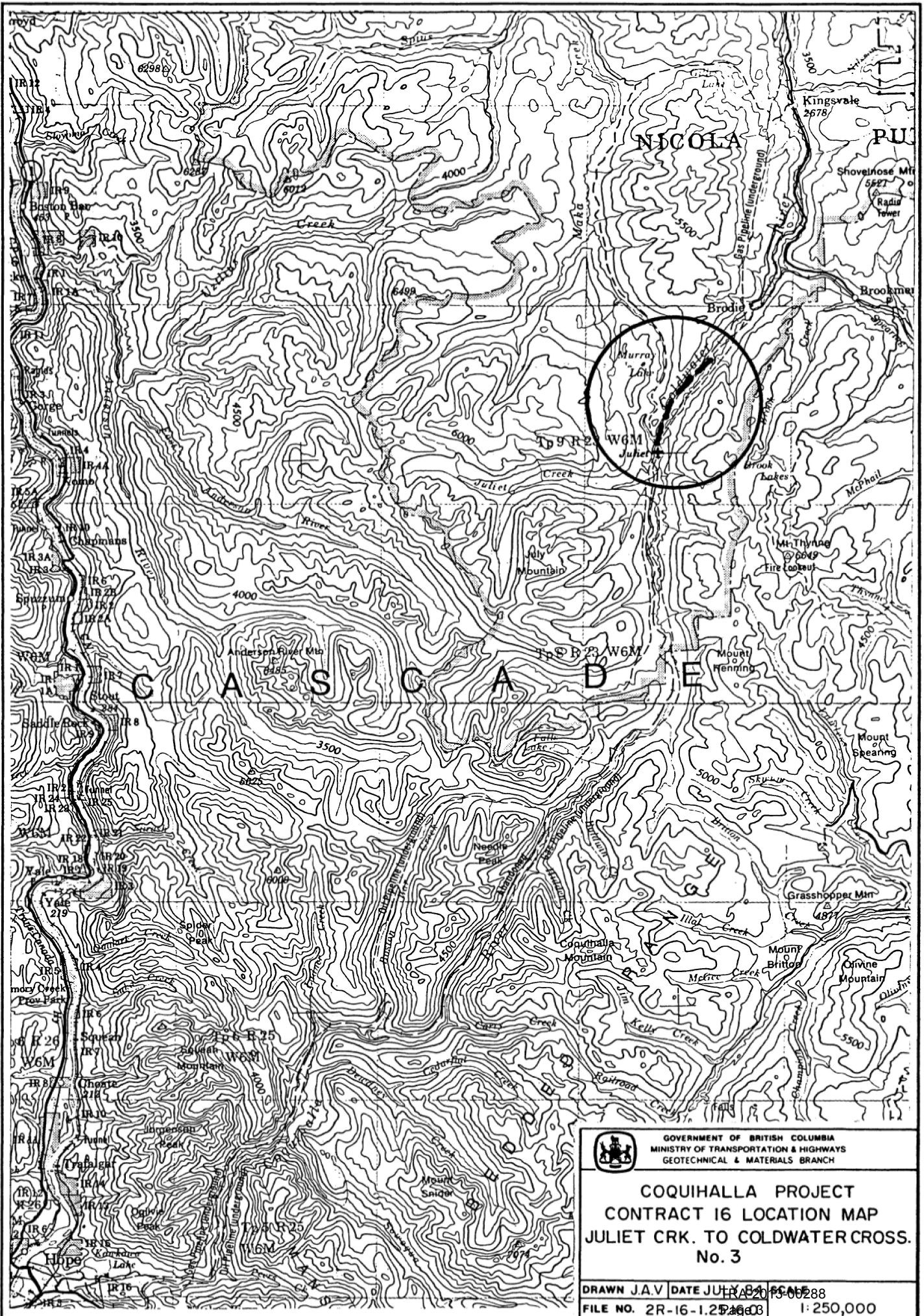
GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

PIT DEVELOPMENT PLAN STA. 747 BORROW PIT

FIGURE 2

REVISIONS			DESIGNED			SCALE: 1 : 2000				
Date	Description	Initial	DRAWN	PVT	BJ	PROJ. NO.	REG. NO.	DRAWING NO.		
			TRACED			FILE NO.		INDEX	NEG. NO.	SHT. NO.
			CHECKED							
			APPROVED			DATE	APPROVED	TRA-2013-00288		
										Page 2

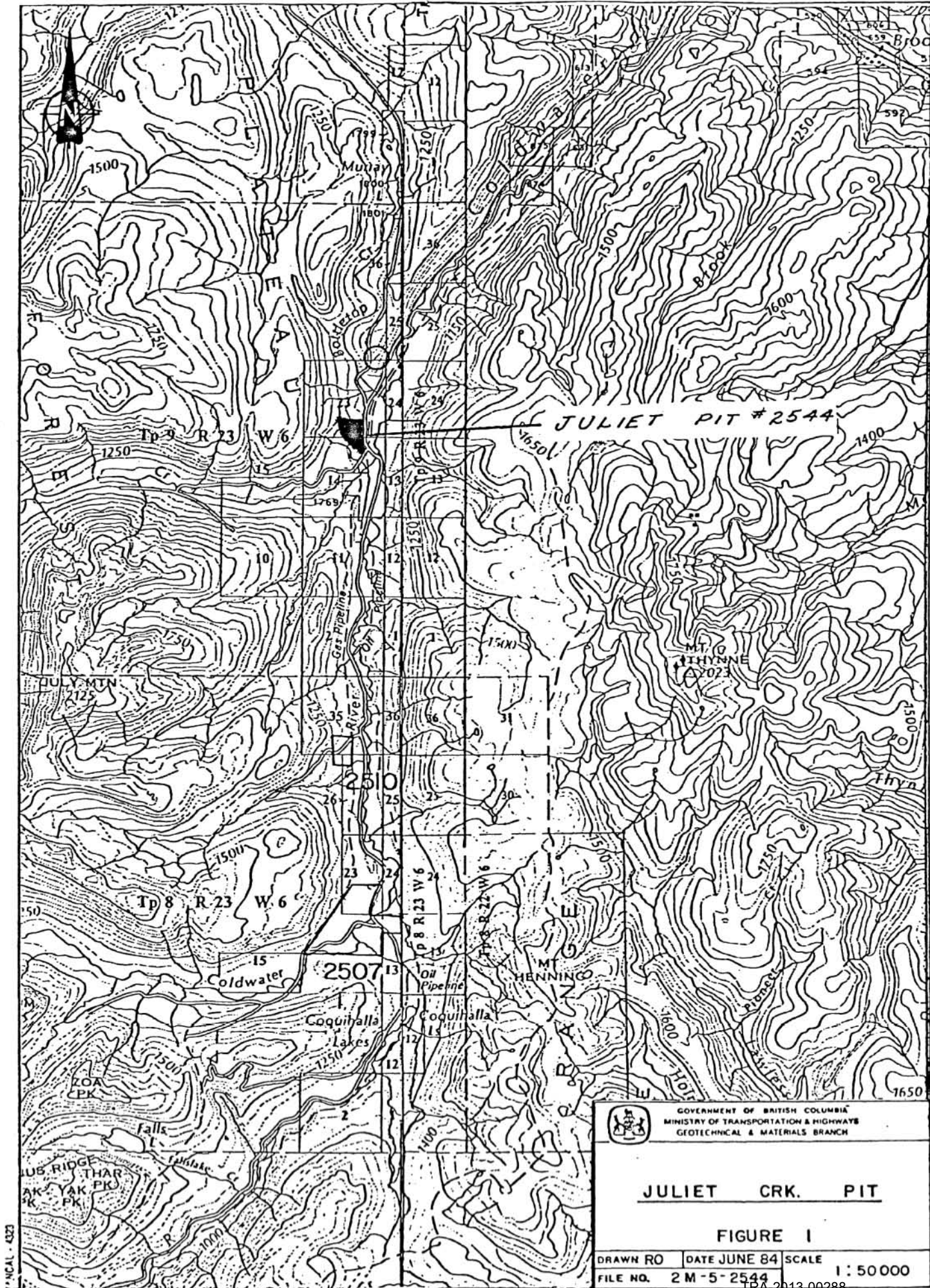
TRA-2013-00288
Page 2



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

**COQUIHALLA PROJECT
CONTRACT 16 LOCATION MAP
JULIET CRK. TO COLDWATER CROSS.
No. 3**

DRAWN J.A.V. / DATE JUL 18/82 / SCALE 1:250,000
FILE NO. 2R-16-1.25-26-03

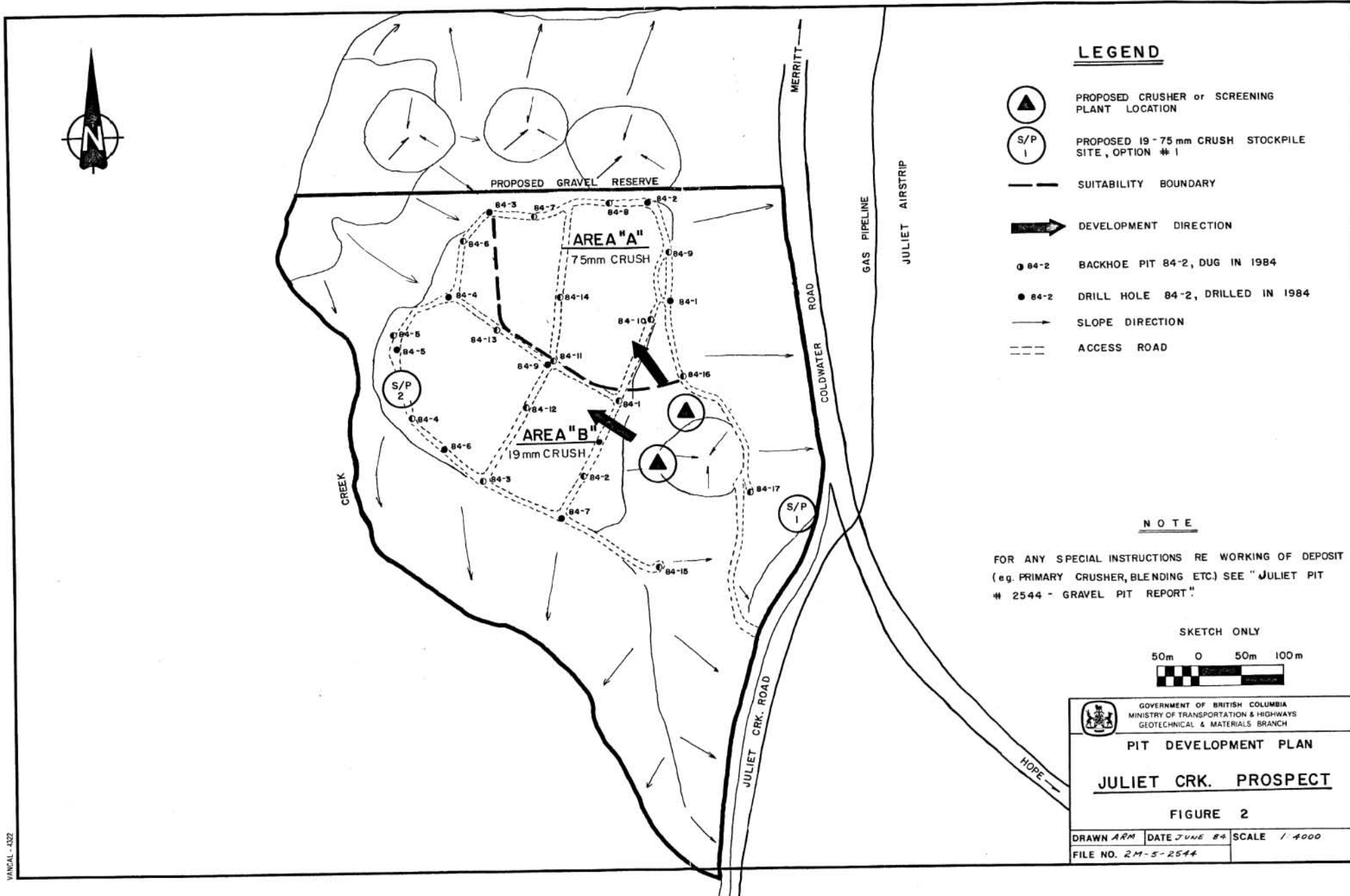


GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

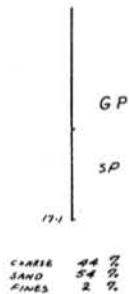
JULIET CRK. PIT

FIGURE I

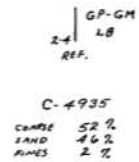
DRAWN RO	DATE JUNE 84	SCALE
FILE NO. 2 M-5-2544		1:50000



TH 84-1



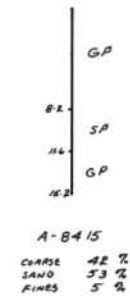
TH 84-2



TH 84-3



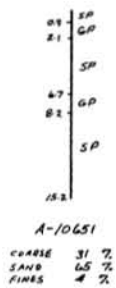
TH 84-4



TH 84-5



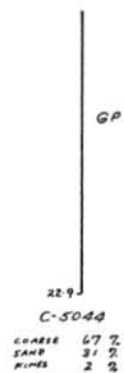
TH 84-6



TH 84-7



TH 84-8

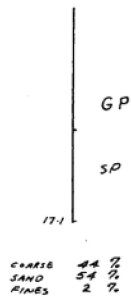


TH 84-9

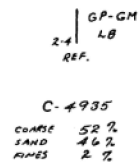


 GOVERNMENT OF BRITISH COLUMBIA MINISTRY OF TRANSPORTATION & HIGHWAYS GEOTECHNICAL & MATERIALS BRANCH		
JULIET PIT # 2544		
DRAWN <i>ARM</i>	DATE <i>JUNE 84</i>	SCALE
FILE NO. <i>2M-5-2544</i>	DEPTH IN METRES	

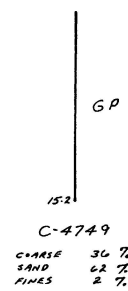
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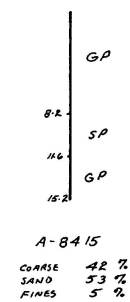
TH 84-2



TH 84-3



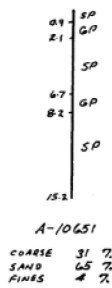
TH 84-4



TH 84-5



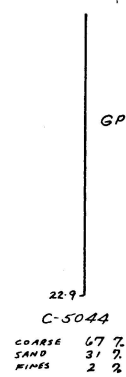
TH 84-6



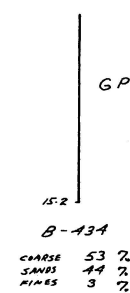
TH 84-7



TH 84-8



TH 84-9



 GOVERNMENT OF BRITISH COLUMBIA MINISTRY OF TRANSPORTATION & HIGHWAYS GEOTECHNICAL & MATERIALS BRANCH		
JULIET PIT # 2544		
DRAWN ARM	DATE JUNE 84	SCALE
FILE NO. 2M-5-2544	DEPTH IN METRES	

Interbedded gravels (GP/GM), sand (SP/SM), and some silt (ML).

150 mm stripping. Organic and saturated materials completely excavated and wasted. Silt pockets excavated 600 mm and wasted - excavation provided with drainage.

Slopes cut at 1 1/2:1 and hydro seeded as soon as possible.

Embankment protection (riprap) against river erosion implemented as outlined in consultant's report.

VISUAL SOIL CLASSIFICATION

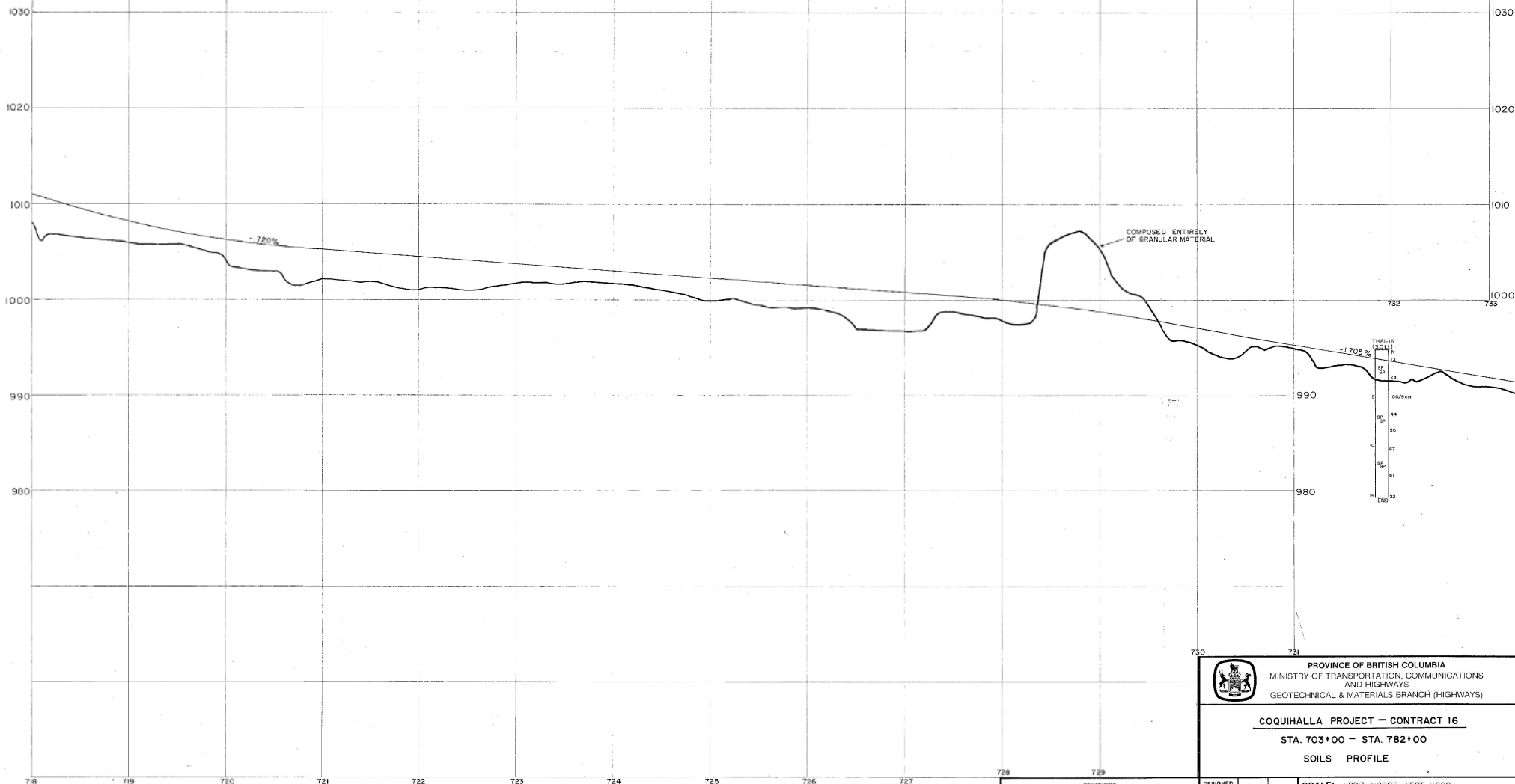
STRIPPING

EXCAVATION CLASSIFICATION

DESIGN SLOPES

GRAVEL DEPTHS

REMARKS



PROVINCE OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION, COMMUNICATIONS
AND HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH (HIGHWAYS)

COQUIHALLA PROJECT - CONTRACT 16

STA. 703+00 - STA. 782+00

SOILS PROFILE

REVISIONS			DESIGNED		SCALE: HORIZ. 1:2000, VERT. 1:200		
Date	Description	Initial	DRAWN	B.A.L.	PROJ. NO.	REG. NO.	DRAWING NO.
			TRACED		FILE NO.	INDEX	NEG. NO.
			CHECKED		APPROVED	DATE	SHT. NO.
			APPROVED			JULY 84	2 OF 5

TRA-2013-00288

Interbedded gravels (GP/GM), sand (SP/SM), and some silt (ML).

150mm stripping. Organic and saturated materials completely excavated and wasted. Silt pockets excavated 600mm and wasted - excavation provided with free drainage.

Slopes cut at 1 1/2:1 and hydro seeded as soon as possible.

Embankment protection (riprap) against river erosion implemented as outlined in consultant's report.

VISUAL SOIL CLASSIFICATION

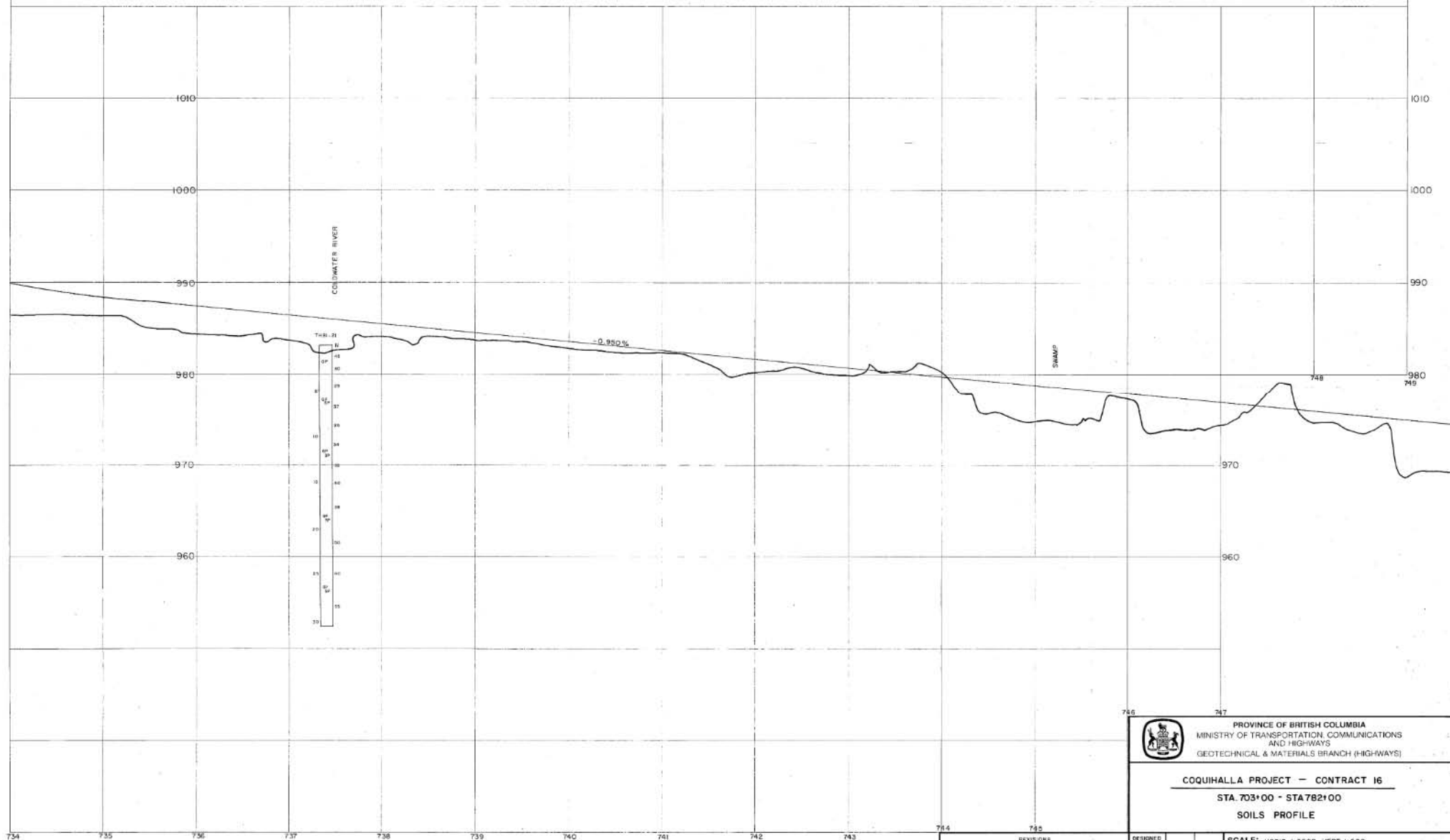
STRIPPING

EXCAVATION CLASSIFICATION

DESIGN SLOPES

GRAVEL DEPTHS

REMARKS



PROVINCE OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION, COMMUNICATIONS
AND HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH (HIGHWAYS)

COQUIHALLA PROJECT - CONTRACT 16

STA. 703+00 - STA 782+00

SOILS PROFILE

REVISIONS			DESIGNED		SCALE: HORIZ. 1:2000, VERT. 1:200				
Date	Description	INITIAL	DRAWN	B.A.L.	PROJ. NO.	REG. NO.	DRAWING NO.		
			TRACED		FILE NO.		INDEX	REG. NO.	SHT. NO.
			CHECKED		APPROVED	DATE			
			APPROVED			JULY 84			3 OF 5

Interbedded gravels (GP/GM), sand (SP/SM), and some silt (ML).

150 mm stripping. Organic and saturated materials completely excavated and wasted. Silt pockets excavated 600mm and wasted - excavation provided with free drainage.

Slopes cut at 1 1/2:1 and hydro seeded as soon as possible.

Embankment protection (riprap) against river erosion implemented as outlined in consultant's report.

VISUAL SOIL CLASSIFICATION

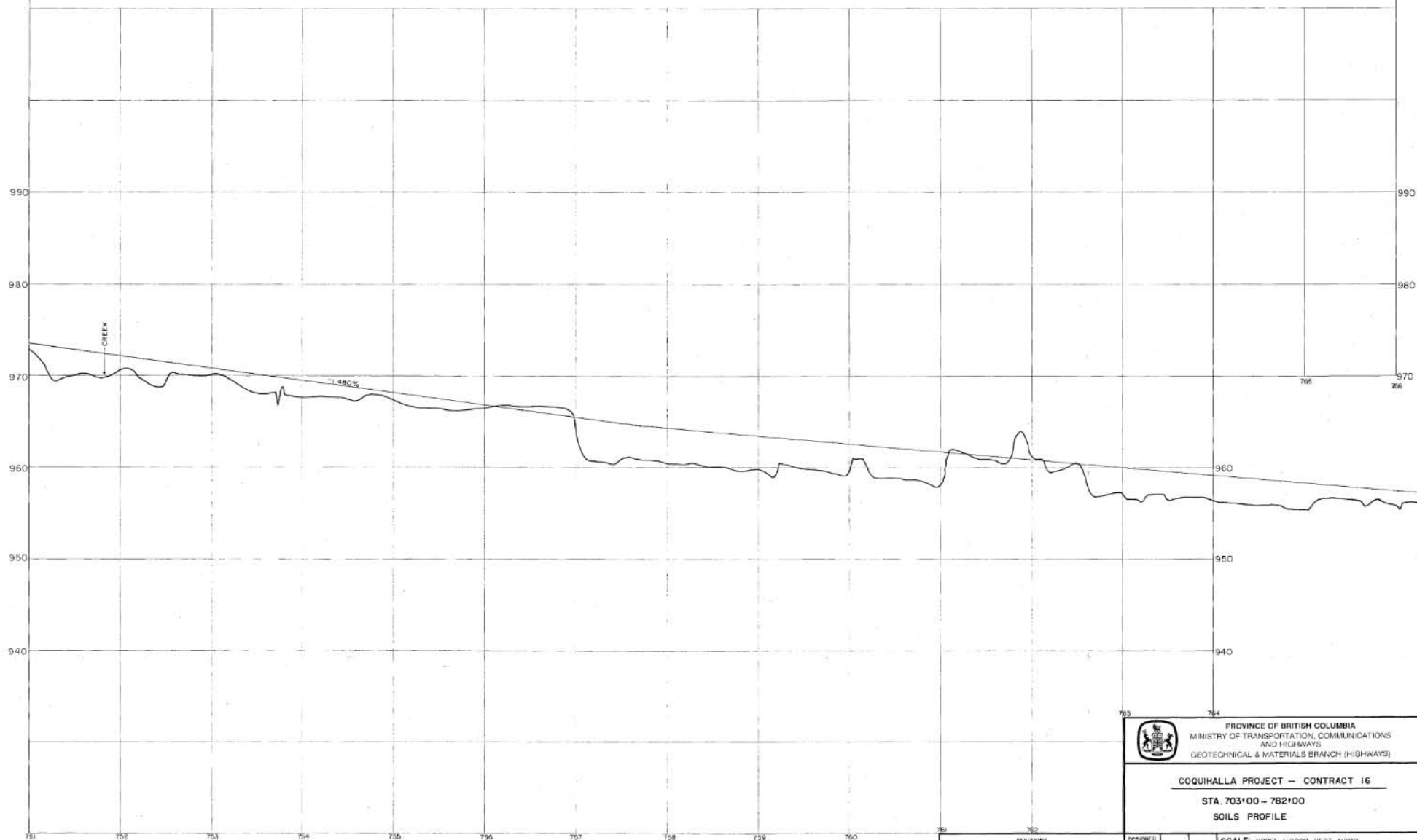
STRIPPING

EXCAVATION CLASSIFICATION

DESIGN SLOPES

GRAVEL DEPTHS

REMARKS



PROVINCE OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION, COMMUNICATIONS
AND HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH (HIGHWAYS)

COQUIHALLA PROJECT - CONTRACT 16

STA. 703+00 - 762+00

SOILS PROFILE

SCALE: HORIZ. 1:2000, VERT. 1:200

REVISIONS				DESIGNED		SCALE: HORIZ. 1:200, VERT. 1:200		DRAWING NO.			
Date	Description	Initial		DRS	S.A.L.	PROJ. NO.	REG. NO.	INDEX	NEG. NO.	SHT. NO.	
				TRACED		FILE NO.					
				CHECKED		DATE					
				APPROVED	DATE	APPROVED					
							JULY 85			4 of 5	

VISUAL SOIL CLASSIFICATION

STRIPPING

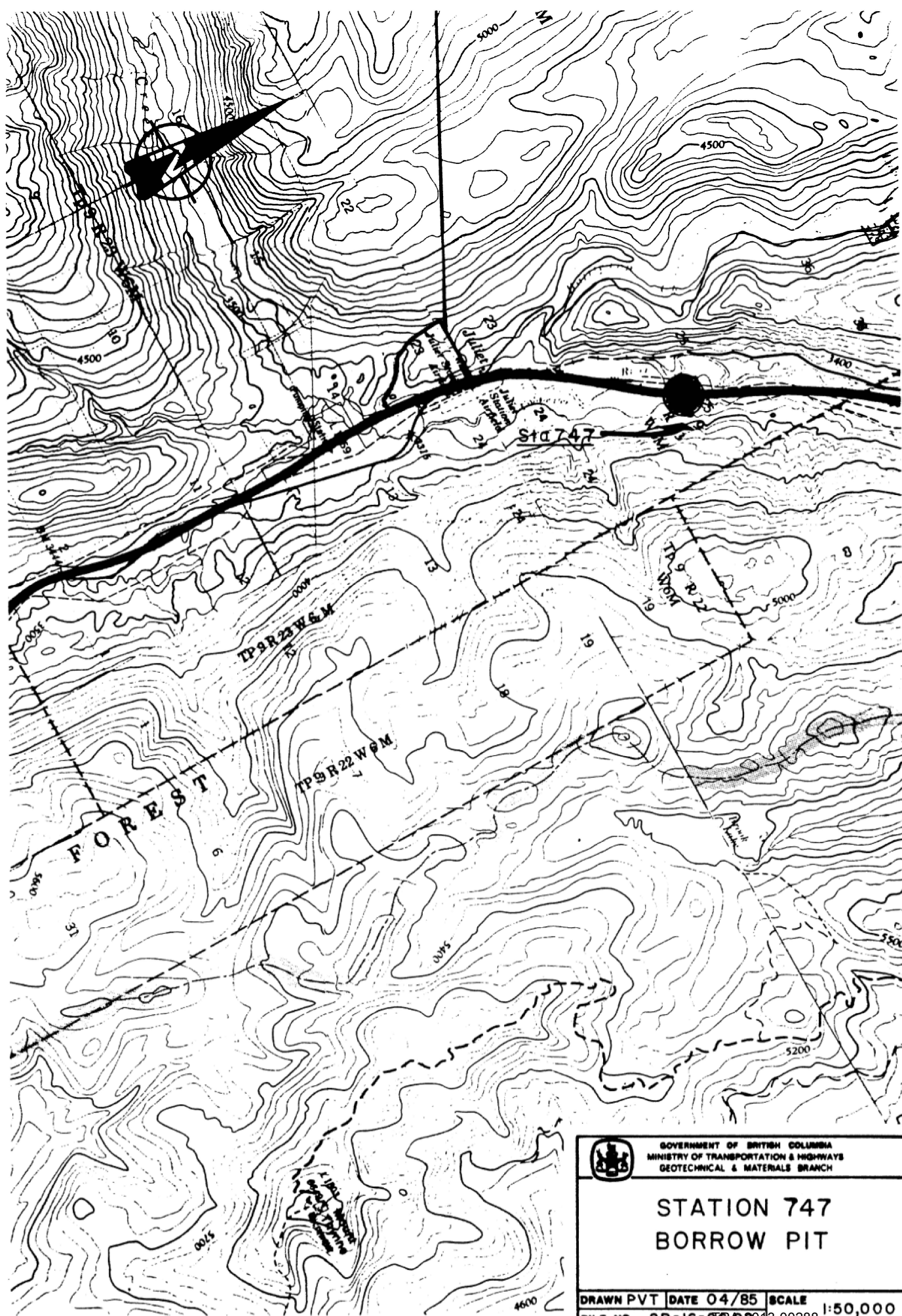
EXCAVATION CLASSIFICATION

DESIGN SLOPES

GRAVEL DEPTHS

REMARKS





VANCA - 4323



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

STATION 747 BORROW PIT

DRAWN PVT	DATE 04/85	SCALE
FILE NO. 2R-16-2602	13-00288	1:50,000



LEGEND



PROPOSED CRUSHER LOCATION



DEVELOPMENT DIRECTION



SUITABILITY BOUNDARY



TEST PIT 2, EXCAVATED IN 1984



TEST HOLE 2, DRILLED IN 1985



SLOPE DIRECTION

WESTCOAST TRANSMISSION GAS PIPELINE R/W PLAN NO CG-434

E COWHALLA HIGHWAY

AREA A

AREA B



SKETCH ONLY



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

PIT DEVELOPMENT PLAN

STATION 747 BORROW
PIT

FIGURE 2

DRAWN PVT
FILE NO.

DATE APR. '85

SCALE
1:2000

TEST HOLE SUMMARY

TP	LAB	SAMPLE#	DEPTH m	mm	GRADATION					Remarks
					MAX SIZE	% > 75mm	GRAVEL	SAND	FINES	
84-1	001	C4740	0-2.4	100	11	40	45	15	8	
	002	C4921	2.4-6.1	250	20	50	45	5	18	
84-2	003	C5043	0-3.0	400	25	50	35	15	16	
	004	C4908	3.0-6.1	125	20	53	45	2	20	
84-3	005	B980	0-4.9	350	11	25	35	40	4	
	006	C4393	4.9-6.1	200	13	46	32	22	19	
84-4	007	9430	0-2.4	450	17	52	38	10	15	
	008	B483	2.4-6.1	200	22	65	28	7	20	
84-5	009	C4924	0-6.1	150	5	33	42	25	12	
84-6	010	C4726	2.1-6.1	150	20	62	36	2	25	
84-7	011	C4686	0-6.1	100	80	60	36	4	16	
84-8	012	C4922	0-6.1	100	80	46	45	9	10	
TH										
85-2	824	C2136	0-6.7	200	10	70	27	3	30	
85-3	825	C2195	0-6.4	200	10	75	21	4	38	
85-4	826	1325	0-3.05	300	10	66	27	7	22	
	827	C247	3.05-7.6	200	10	56	39	5	15	
85-5	828	C2885	0-8.5	200	15	58	36	6	16	
85-6	837	#1	0-7.0	300	10	56	36	8	10	
85-8	829	C3128	0-4.6	75	-	77	18	5	33	
85-9	830	C4696	0-6.1	75	-	60	33	7	10	
	831	B433	6.1-13.1	50	-	30	54	16	5	
85-10	832	C3185	0-5.5	75	-	65	28	7	23	
85-11	836	C4949	1.5-4.6	50	-	40	46	14	11	
	833	C4688	4.6-10.7	75	-	54	37	9	12	
85-12	834	DR70	0-4.6	75	-	58	34	8	14	
85-14	835	C2154	0-4.0	45	-	45	43	12	8	

REMARKS



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

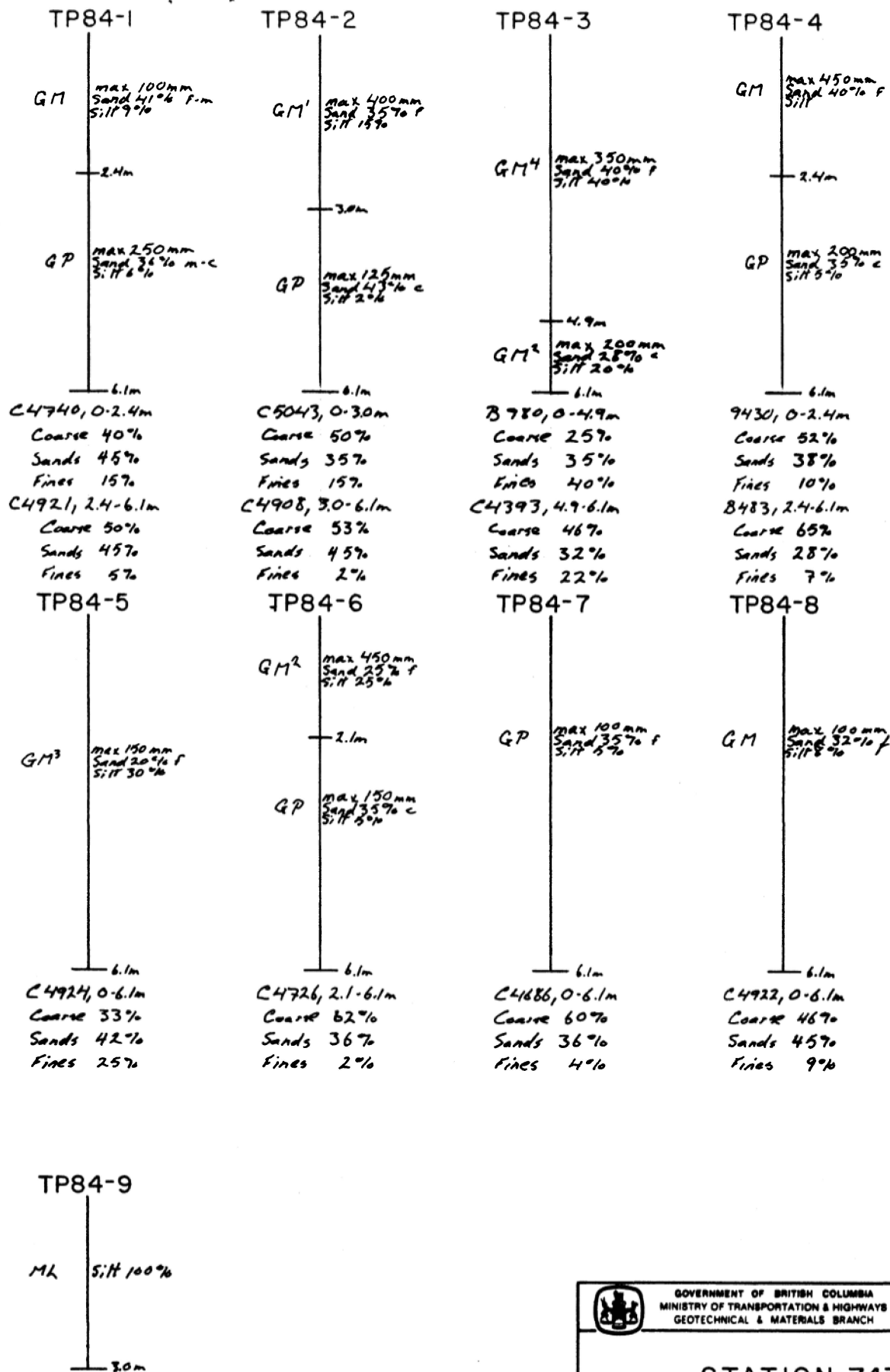
STATION 747 BORROW PIT

DRAWN PVT DATE 04/85

SCALE

FILE NO. 2R-16-26.09

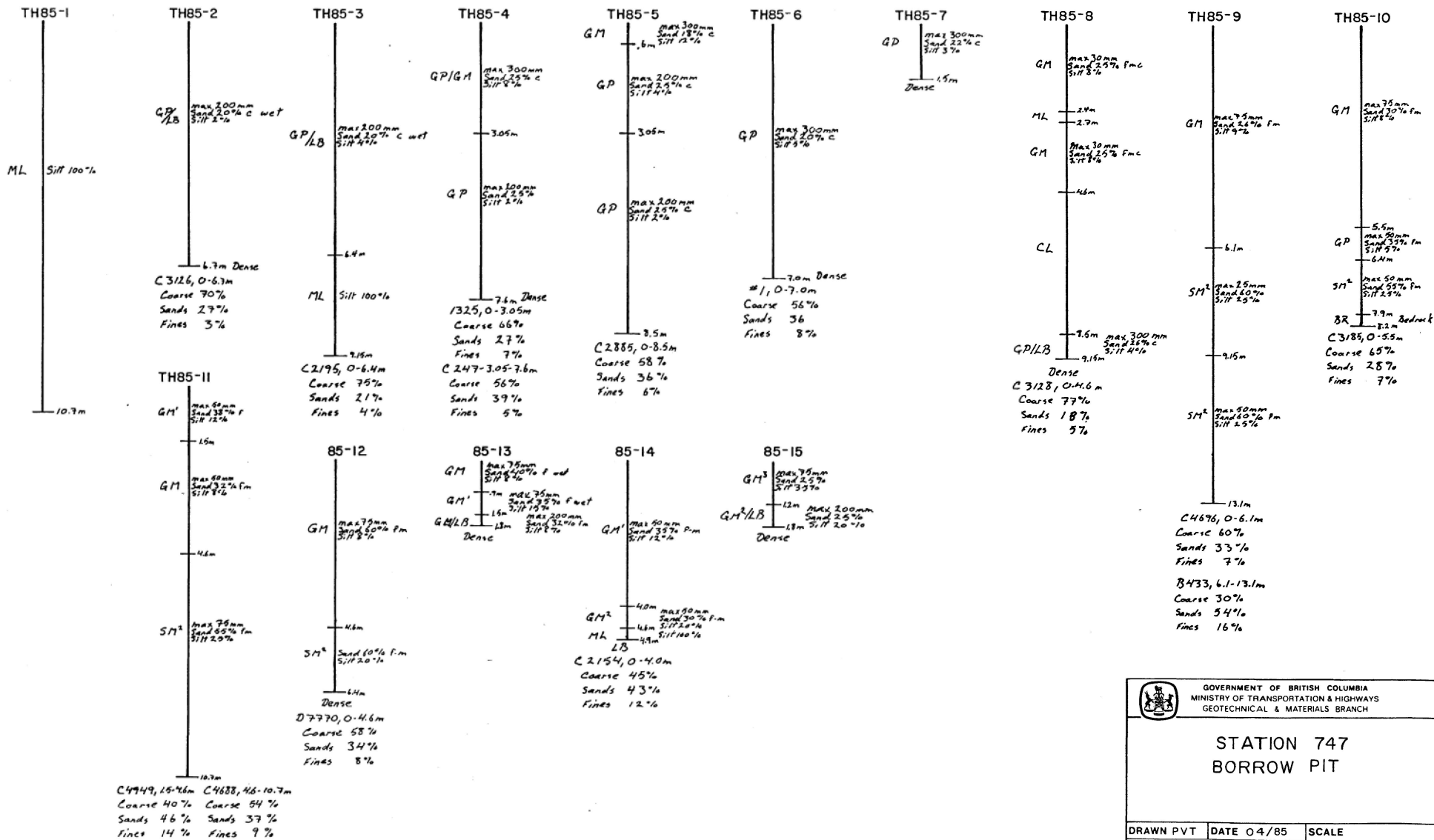
TBA-2013-00288



GOVERNMENT OF BRITISH COLUMBIA
 MINISTRY OF TRANSPORTATION & HIGHWAYS
 GEOTECHNICAL & MATERIALS BRANCH

STATION 747
 BORROW PIT

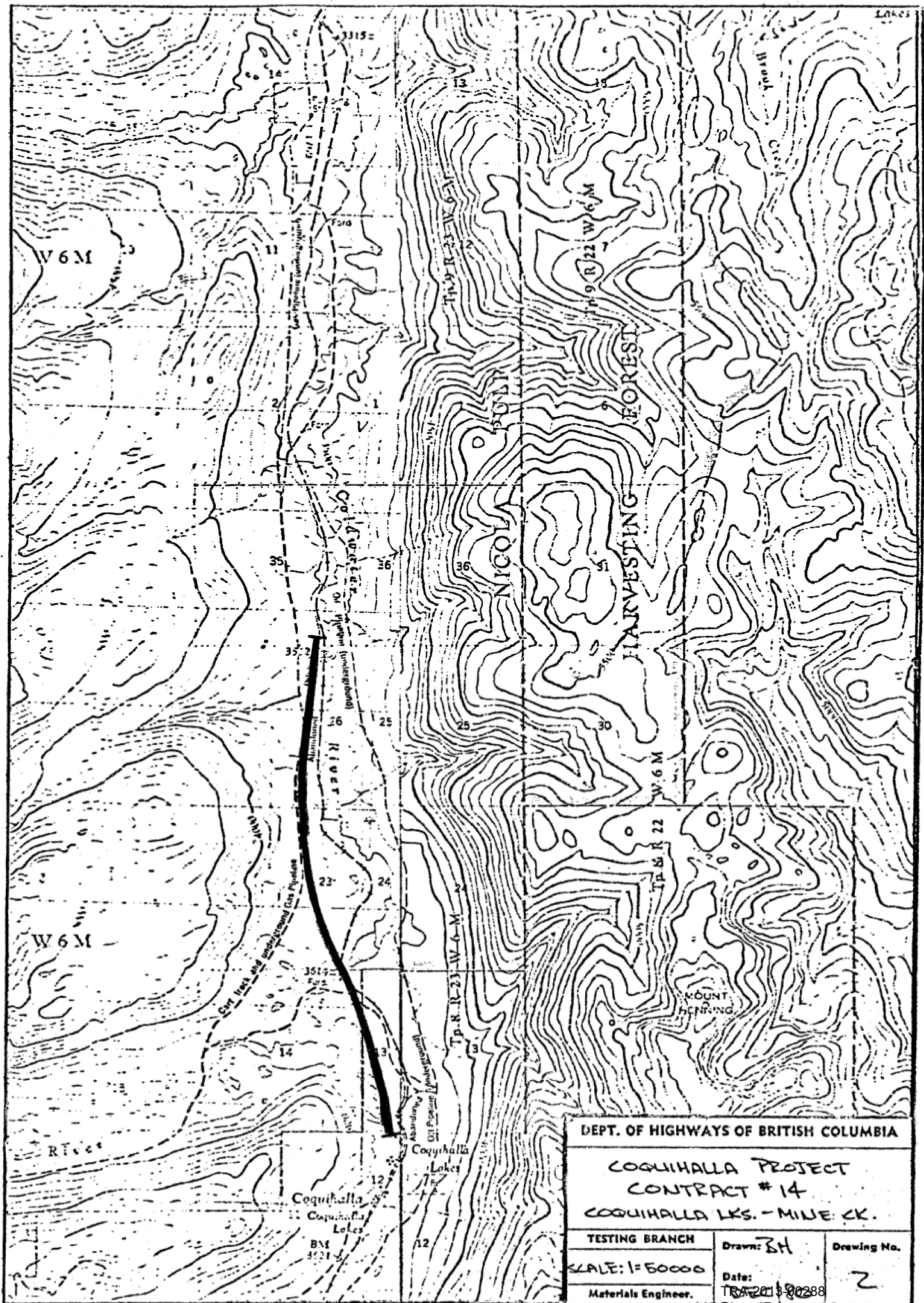
DRAWN PVT DATE 04/85 SCALE 1:10
 FILE NO. 2R-16-28090 13-00288



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

STATION 747 BORROW PIT

DRAWN PVT DATE 04/85 SCALE
FILE NO. 2R-16-26.09



DEPT. OF HIGHWAYS OF BRITISH COLUMBIA

COQUIHALLA PROJECT
CONTRACT # 14
COQUIHALLA LKS. - MINE CK.

TESTING BRANCH

Drawn: BH

Drawing No.

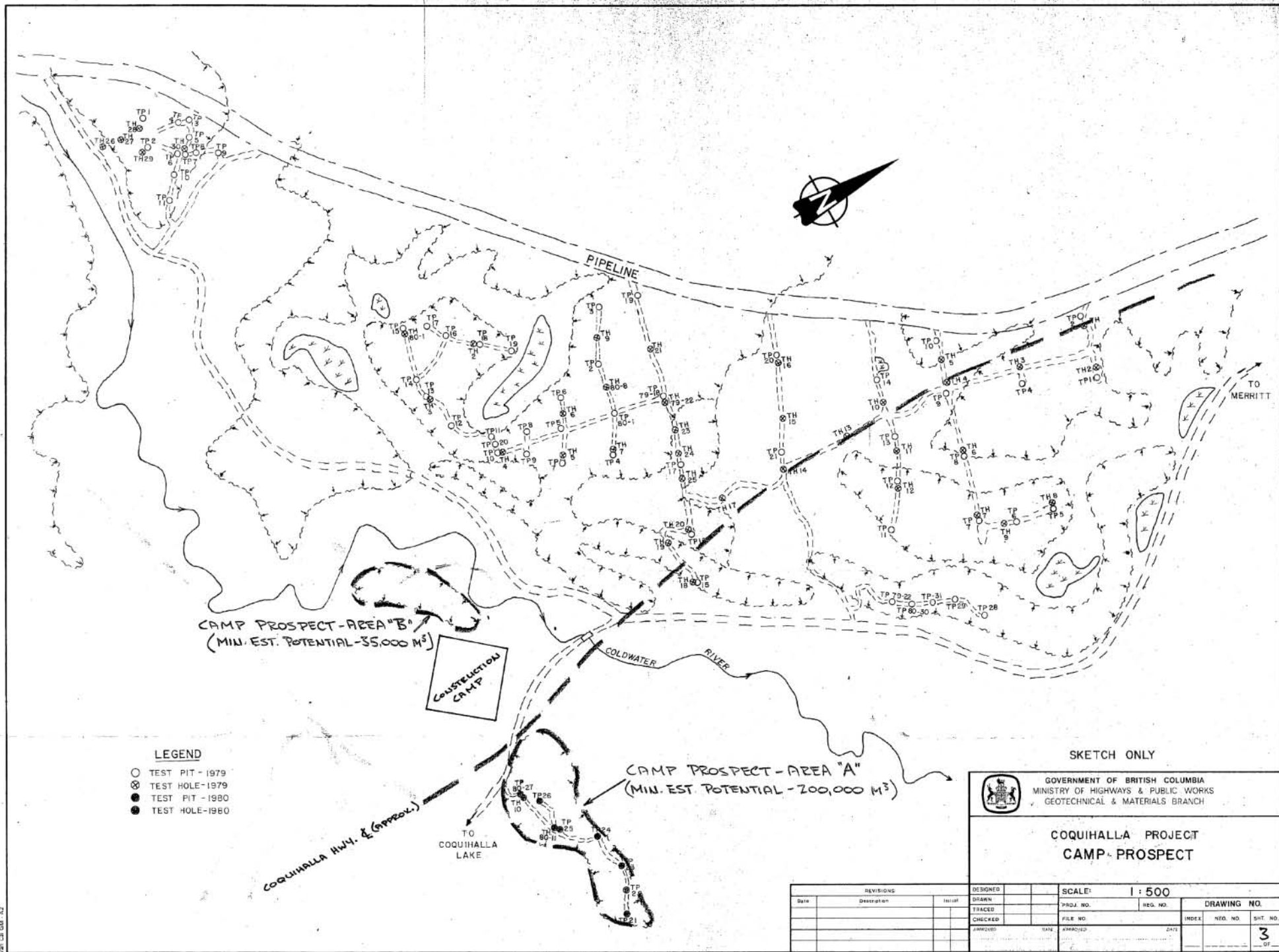
SCALE: 1" = 50000

Date:

Materials Engineer.

TRA 2013 00288

2



TEST HOLE SUMMARY

TH #	Lab #	Sample#	Depth	GRADATION					Remarks
				MAX SIZE	% > 3"	GRAVEL	SAND	FINES	
						%	%	%	
TH'S - 1980									
10			0-35'			29	65	6	8
11			16'-40'			19	80	1	4
Average:						24	72	4	6
TP'S - 1980									
21			1/2' - 10'			34	64	2	15
24			0 - 16'			39	59	2	16
25			0 - 16'			56	42	2	32
26			0 - 17'			39	59	2	11
Average:						36	61	3	18
DEG'S									
TH-10)	Combined		71.5%	loss	1.3%				) good
TH-11)			75.3%	loss	1.5%				)
TP-21)	Combined		37.2%	loss	1.8%				) fair
TP-24)			39.3%	loss	1.6%				)
TP-25)	Combined		34.7%	loss	2.8%				) fair
TP-26)	Combined		45.1%	loss	2.8%				) fair

REMARKS:

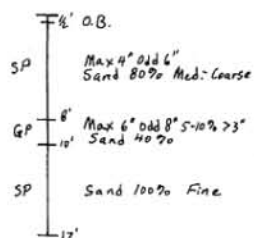


BRITISH COLUMBIA DEPARTMENT OF HIGHWAYS
GEOTECHNICAL AND MATERIALS BRANCH

COQUIHALLA PROJECT
CAMP PROSPECT
AREA "A"

DRAWN		SCALE	Hor	DATE
TRACED		PROJ NO	TRA 2013-00288	
CHECKED		FILE NO	Page 19	
				FILE SKETCH.

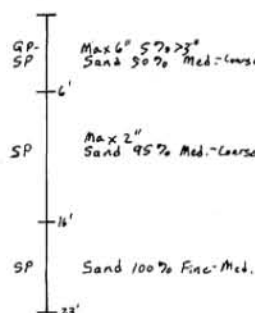
TP 80-21



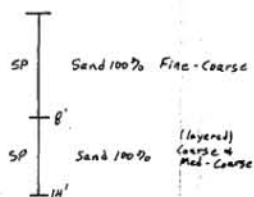
D 7532 (1/2-10')

Coarse 34%
Sand 64%
Fine 2%

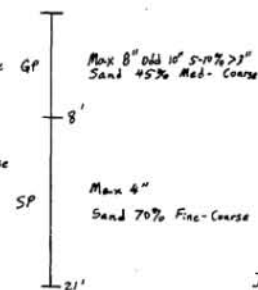
TP 80-22



TP 80-23



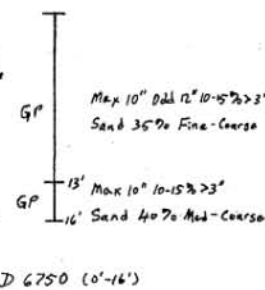
TP 80-24



A 5819 (0'-21')

Coarse 39%
Sand 59%
Fine 2%

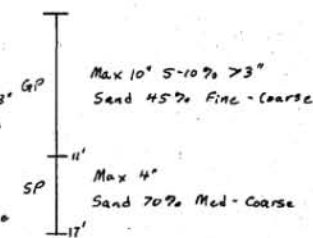
TP 80-25



D 6750 (0'-16')

Coarse 56%
Sand 43%
Fine 1%

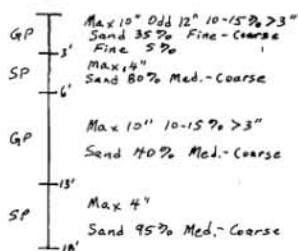
TP 80-26



A 5820 (0'-17')

Coarse 39%
Sand 59%
Fine 2%

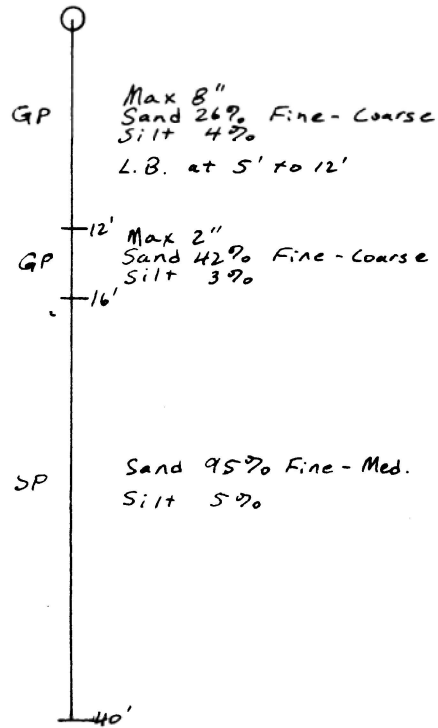
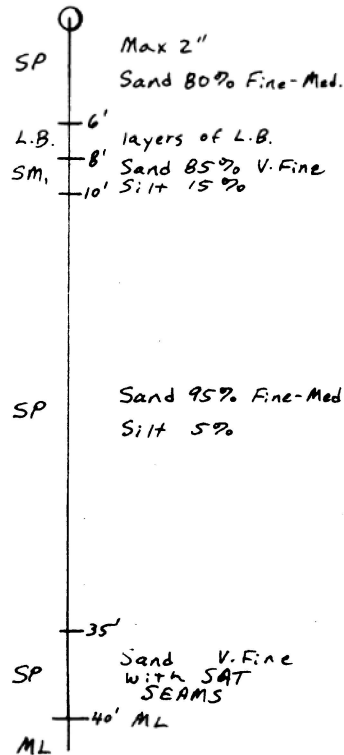
TP 80-27



 GOVERNMENT OF BRITISH COLUMBIA MINISTRY OF HIGHWAYS & PUBLIC WORKS GEOTECHNICAL & MATERIALS BRANCH		
COQUIHALLA PROJECT CAMP PROSPECT AREA 'A'		
DRAWN RNS.	DATE Aug/80	SCALE
FILE NO.		

TH 80-10

TH 80-11



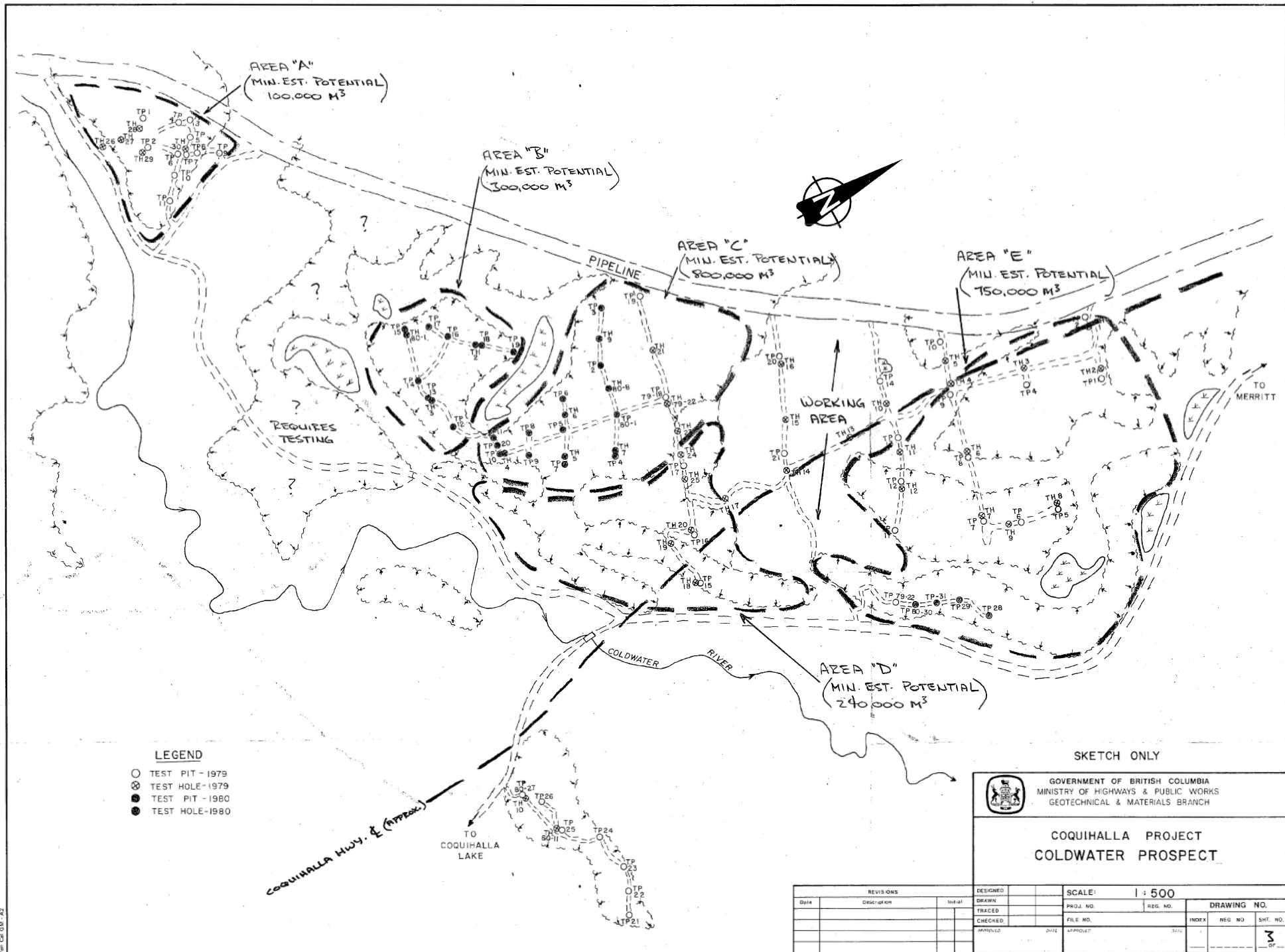
D3877 (0'-35')

Coarse - 30%
Sand - 64%
Fine - 6%

D6716 (16'-40')

Coarse - 19%
Sand - 80%
Fine - 1%

 GOVERNMENT OF BRITISH COLUMBIA MINISTRY OF HIGHWAYS & PUBLIC WORKS GEOTECHNICAL & MATERIALS BRANCH		
COQUHALLA PROJECT CAMP PROSPECT AREA 'A'		
DRAWN RAS.	DATE OCT/80	SCALE
FILE NO.		



TEST HOLE SUMMARY

				GRADATION						
				MAX SIZE	% > 3"	GRAVEL	SAND	FINES	CRUSHING 3/4" - 3"	
Til #	Lab #	Sample#	Depth			%	%	%	%	Remarks
<u>TH'S-1979</u>										
26			0-12'	2"		23	64	13	15	
27			0-12'	3"		38	58	4	14	
28			0-22'	3"		38	56	6	12	
29			1'-21'	3"		38	58	4	13	
30			1'-28'	2"		32	64	4	5	
AVERAGE: (NOT INCLUDING TH 26)						37	59	4	11	
<u>TP'S-1979</u>										
1			6'-12'	9"		49	50	1	23	
2			0-12'	9"		52	47	1	22	
3			0-12'	12"		38	60	2	12	
4			0-12'	6"		51	47	2	20	
5			0-12'	10"		51	47	2	29	
6			3'-12'	6"		24	73	3	8	
7			0-12'	6"		40	58	2	18	
8			0-12'	12"		31	66	3	14	
10			0-12'	6"		34	63	3	12	
11			0-12'	10"		52	46	2	30	
AVERAGE:						42	56	2	19	
<u>DEG'S</u>										
TP 1	COMBINED		59.3%	Loss	2.5%	FAIR-GOOD				
TP 2			58.3%	"	2.5%					
TP 10	COMBINED		59.3%	Loss	2.5%	FAIR-GOOD				
TP 11			67.9%	"	2.4%					

REMARKS:



BRITISH COLUMBIA DEPARTMENT OF HIGHWAYS
GEOTECHNICAL AND MATERIALS BRANCH

COQUIHALLA PROJECT
COLDWATER PROSPECT
AREA 'A'

DRAWN	SCALE	DATE
TRACED	PROJ NO	FILE NO
CHECKED	FILE NO	TRA-2013-00288
APPROVED	Page 23	FILE SKETCH.

TEST HOLE SUMMARY

TH #	Lab #	Sample#	Depth	GRADATION						Remarks
				MAX SIZE	% > 3"	GRAVEL	SAND	FINES	CRUSHING 3/4" - 3"	
						%	%	%	%	
<u>TH 5-1980</u>										
1			1'-40'	1"		13	83	4	2	
2			1'-40'	2"		21	75	4	3	
3			1'-32'	3"		17	78	5	8	
AVERAGE:						17	79	4	4	
<u>TPS-1980</u>										
13			0-19'	6"		37	61	2	15	
14			0-17'	4"		33	64	3	15	
15			0-15'	6"		21	77	2	8	
19			0-15'	6"		43	55	2	17	
AVERAGE:						34	64	2	14	

REMARKS:



BRITISH COLUMBIA DEPARTMENT OF HIGHWAYS
GEOTECHNICAL AND MATERIALS BRANCH

COQUIHALLA PROJECT
COLDWATER PROSPECT
AREA "B"

DRAWN		SCALE	Map	DATE
TRACED		PROJ NO		REG NO
CHECKED		FILE NO		
APPROVED				

FILE
SKETCH

TEST HOLE SUMMARY

Til #	Lab #	Sample#	Depth	GRADATION						Remarks
				MAX SIZE	% > 3"	GRAVEL	SAND	FINES	CRUSHING 3/4" - 3"	
						%	%	%	%	
<u>TH'S-1979</u>										
21			0-19'	6"		48	48	4	21	
22			0-20'	3"		47	50	3	20	
23			0-20'	3"		42	54	4	16	
<u>TH'S-1980</u>										
4			1'-30'	6"		28	67	5	9	
5			1'-40'	3"		38	56	6	14	
6			1'-35'	3"		40	57	3	16	
7			1'-40'	6"		65	32	3	24	
8			1'-40'	3"		43	51	6	15	
AVERAGE: (ALL TH'S)						44	52	4	17	
<u>TP'S-1979</u>										
18			0-10'	8"		48	51	1	20	
19			0-12'	10"		63	36	1	28	
<u>TP'S-1980</u>										
1			0-18'	10"	5-10	53	45	2	24	
2			0-18'	8"	5	47	50	3	19	
4			0-18'	10"	5-10	51	48	1	21	
6			0-18'	8"	5-10	37	61	2	15	
7			0-18'	8"	5-10	54	44	2	27	
8			0-17'	8"	5-10	42	57	1	19	
9			0-17'	8"	5-10	43	56	1	17	
11			0-18'	8"	5	39	59	2	21	
AVERAGE: (ALL TP'S)						48	51	1-2	21	

REMARKS:



BRITISH COLUMBIA DEPARTMENT OF HIGHWAYS
GEOTECHNICAL AND MATERIALS BRANCH

COQUIHALLA PROJECT
COLDWATER PROSPECT
AREA 'C'

DRAWN		SCALE	DATE
TRACED		PAGE NO	REG NO
CHECKED		FILE NO	TRA-2013-00288
		Page 25	FILE
			SKETCH.

TEST HOLE SUMMARY

Ttl #	Lab #	Sample#	Depth	GRADATION						Remarks
				MAX SIZE	% > 3"	GRAVEL	SAND	FINES	CRUSHING 3/4" - 3"	
						%	%	%	%	
AREA "C" - CONT'D.										
<u>DEG.S</u>										
TH 79-21	}	COMBINED	48.3%	Loss	1.6%					FAIR
TH 79-22			45.9%	"	1.8%					
TH 80-5	}	COMBINED	79.3%	Loss	1.5%					GOOD
TH 80-6			76.6%	"	1.4%					
TH 80-7	}	COMBINED	82.1%	Loss	1.3%					GOOD
TH 80-8			76.6%	"	1.3%					
TP 79-18	}	COMBINED	56.3%	Loss	1.3%					FAIR
TP 79-19			45.9%	"	1.8%					
TP 80-2	}	COMBINED	45.9%	Loss	1.1%					FAIR
TP 80-3			43.6%	"	0.8%					
TP 80-6	}	COMBINED	80.7%	Loss	1.2%					GOOD
TP 80-7			75.3%	"	1.0%					

REMARKS:



BRITISH COLUMBIA DEPARTMENT OF HIGHWAYS
GEOTECHNICAL AND MATERIALS BRANCH

COQUIHALLA PROJECT
COLDWATER PROSPECT
AREA 'C'

DRAWN		SCALE	Hor	DATE
TRACED		PROJ NO	TRA 2013-00288	
CHECKED		FILE NO		
APPROVED		Page 26		

FILE
SKETCH.

TEST HOLE SUMMARY

				GRADATION						
				MAX SIZE	% > 3"	GRAVEL	SAND	FINES	CRUSHING 3/4" - 3"	
Til #	Lab #	Sample#	Depth			%	%	%	%	Remarks
<u>TH'S - 1979</u>										
19			0-26'	8"		49	49	2	18	
20			0-30'	6"		70	25	5	25	
<u>TP'S - 1979</u>										
15			0-10'	12"	10-15	54	44	2	32	
16			0-10'	12"	10-15	52	46	2	28	
AVERAGE: (TH'S & TP'S)						56	41	3	26	
<u>DEG.'S</u>										
TH 79-19	} COMBINED		39.3%	LOSS	2.8%					} FAIR
TH 79-20			37.2%	"	2.6%					
TP 79-15	} COMBINED		66.7%	LOSS	2.2%					} FAIR-GOOD
TP 79-16			56.3%	"	2.1%					

REMARKS:



BRITISH COLUMBIA DEPARTMENT OF HIGHWAYS
GEOTECHNICAL AND MATERIALS BRANCH

COQUIHALLA PROJECT
COLDWATER PROSPECT
AREA "D"

DRAWN		SCALE	Map	DATE
TRACED		PROJ NO	RES NO	
CHECKED		FILE NO	TRA-2013-00288	FILE
APPROVED		Page 27		SKETCH.

TEST HOLE SUMMARY

				GRADATION						
				MAX SIZE	% > 3"	GRAVEL	SAND	FINES	CRUSHING 3/4" - 3"	
Til #	Lab #	Sample#	Depth			%	%	%	%	Remarks
<u>THS-1979</u>										
1			0-17'	3"		32	53	15	14	
2			6'-34'	3"		33	62	5	15	
3			1'-42'	3"		36	61	3	15	
7			8'-30'	3"		38	58	4	10	
8			1'-30'	3"		27	71	2	12	
9			2'-24'	3"		29	67	4	10	
AVERAGE: (ALL THS EXCEPT TH1)						33	64	3	12	
<u>TPS-1979</u> (NOTE: SAMPLES DIDN'T INCLUDE SAND LAYERS)										
1			6'-12'	6"		50	49	1	26	
3			4'-10'	6"		53	46	1	28	
4			5'-12'	6"		48	49	3	26	
5			4'-10'	6"		48	51	1	27	
7			7'-11'	6"		31	68	1	10	
9			0-6'	4"		41	56	3	18	
12			0-7'	6"		38	60	2	13	
<u>TPS-1980</u>										
28			0-17'	8"	5	45	52	3	21	
29			0-16'	10"	5-10	53	40	7	12	
30			0-16'	10"	5-10	61	36	3	39	
AVERAGE: (ALL TPS)						47	51	2-3	22	
<u>DEG.'S</u>										
TH 79-2	}	COMBINED	59.3%	Loss	1.7%					FAIR-GOOD
TH 79-9			57.3%	"	1.4%					
TP 79-3	}	COMBINED	63.4%	Loss	2.1%					GOOD
TP 79-4			70.3%	"	1.9%					

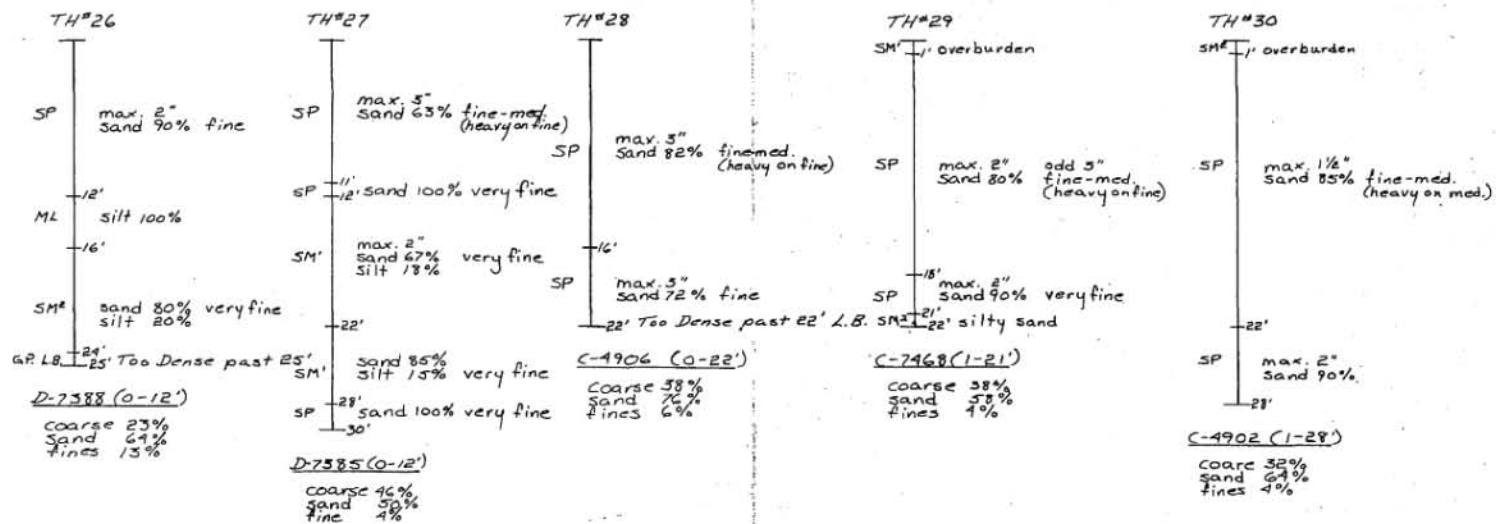
REMARKS:



BRITISH COLUMBIA DEPARTMENT OF HIGHWAYS
GEOTECHNICAL AND MATERIALS BRANCH

COQUIHALLA PROJECT
COLDWATER PROSPECT
AREA "E"

DRAWN		SCALE	Map	DATE
TRACED		PROJ NO	REG NO	
CHECKED		FILE NO	TRA-2013-00288	FILE
APPROVED		Page 28		SKETCH.



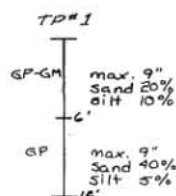
AUGER TH'S - 1979



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF HIGHWAYS & PUBLIC WORKS
GEOTECHNICAL & MATERIALS BRANCH

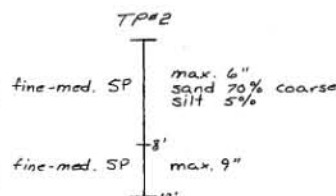
COQUIHALLA PROJECT
COLD WATER PROSPECT
AREA "A"

DRAWN BY BUS DATE NOV/80 SCALE
FILE NO.



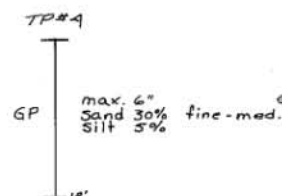
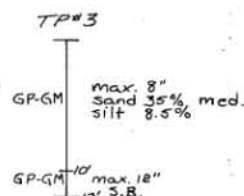
D-7346 (6-12')

coarse 49%
sand 50%
fines 1%



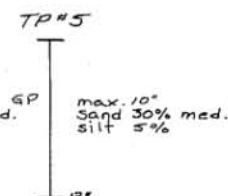
D-7345 (0-12')

coarse 52%
sand 47%
fines 1%



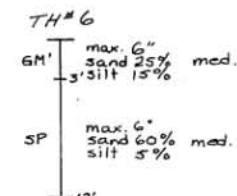
D-7347 (0-12')

coarse 51%
sand 47%
fines 2%



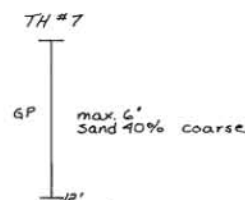
D-7340 (0-12')

coarse 51%
sand 47%
fines 2%



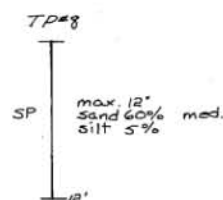
D-7341 (3-12')

coarse 29%
sand 73%
silt 3%



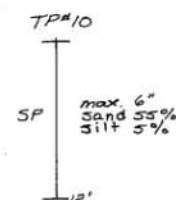
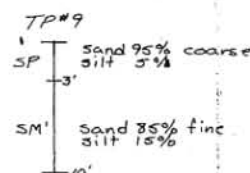
D-7339 (0-12')

coarse 40%
sand 58%
fines 2%



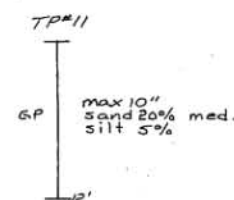
D-7338 (0-12')

coarse 31%
sand 66%
fines 3%



D-7348 (0-12')

coarse 42%
sand 55%
fines 3%



D-7365 (0-12')

coarse 52%
sand 46%
fines 2%

BACK-HOE TPs - 1979



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF HIGHWAYS & PUBLIC WORKS
GEOTECHNICAL & MATERIALS BRANCH

COQUIHALLA PROJECT
COLDWATER PROSPECT
AREA 'A'

DRAWN BY SCALE
DATE Nov/80
FILE NO.

TH#1
 GP-GM max. 3' sand 39% fine silt 6%
 ML 4' silt 100%
 SP-SM max. 2' sand 63% fine silt 7%
 SP sand 100% seams of ML
 ML-LB 17' Dense at 18'
 C-3549 (0-17')
 coarse 32% sand 53% fines 15%

TH#7
 ML 1/2' overburden
 GM' max. 3' sand 28% fine silt 12%
 GP max. 2' sand 48% med.
 SP max. 2' sand fine-med.
 C-4901 (8'-30')
 coarse 38% sand 58% fines 4%

TH#2
 ML 1/2' overburden
 GP max. 3' sand 38% fine
 SP max. 2' sand 90% med.
 GP sand 45% med.-coarse
 SP sand 100% fine-med.
 SP sand 100% fine
 GP max. 1" sand 48%
 D-7556 (1/2-34')
 coarse 33% sand 42% fines 5%

TH#8
 ML 1/2' overburden
 GP max. 3' sand 35% fine-med.
 GP max. 2 1/2' sand 45% fine-med.
 SP max. 1" sand 95% fine-med.
 C-4905 (1/2-32')
 coarse 27% sand 71% fines 2%

TH#3
 ML 1/2' overburden
 GP max. 3' sand 38% fine silt 8%
 GM' max. 2' sand 28% silt 12% fine
 SP max. 3' sand 62% fine
 SP max. 1" sand 75% fine
 C-4912 (1/2-42')
 coarse 36% sand 61% fines 3%

TH#9
 GM' 1/2' max. 3' sand 38% fine silt 12%
 GP max. 2' sand 45% med.
 SP max. 1" sand 95% fine-med.
 C-4913 (2-24')

TH#4
 ML 1/2' overburden
 GM' max. 2' sand 38% fine silt 12%
 SP sand 95% very fine silt 5%
 22'

TH#10
 ML overburden
 GP-LB max. 6" sand 40%
 12' Dense past 12'

TH#5
 ML (dry) sand 25% very fine silt 75%
 SP 15' sand 100% very fine
 ML 15' silt 100%
 (very wet) 17'

TH#11
 GM' max. 3' sand 38% silt 12%
 ML with very fine sand water at 10'
 12'

TH#6
 ML (very wet) sand 20% very fine silt 80% water at 20'
 22'

TH#12
 ML 1/2' overburden
 GM' max. 6" sand 28% fine silt 12%
 SP max. 2 1/2' sand 75% fine
 SM' very fine silty sands
 30'

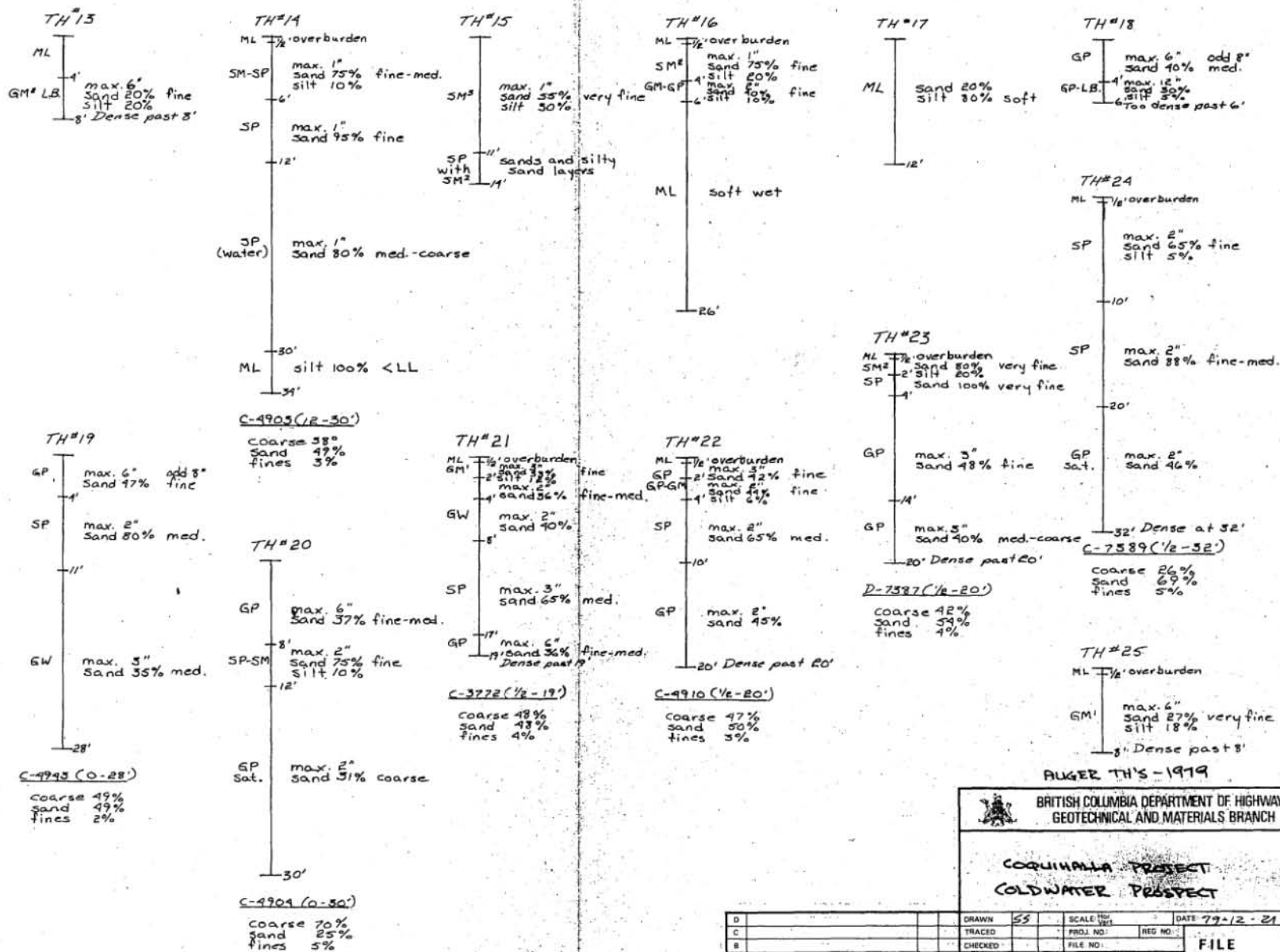
AUGER TH'S - 1979

BRITISH COLUMBIA DEPARTMENT OF HIGHWAYS
 GEOTECHNICAL AND MATERIALS BRANCH.

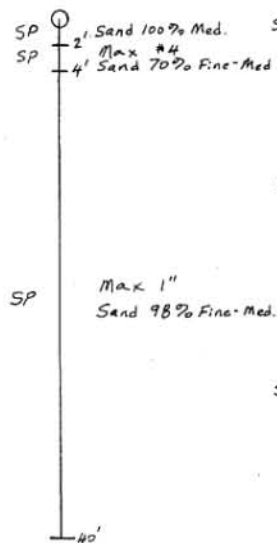
COQUHALLA PROJECT
 COLDWATER PROSPECT

D	DRAWN	SS	SCALE: 1" = 10'	DATE: 7-12-71
C	TRACED		PROJ. NO.	REG. NO.
B	CHECKED		FILE NO.	
A	APPROVED		APPROVED	
	REVISIONS		BY: []	DATE: []

FILE
 SKETCH.

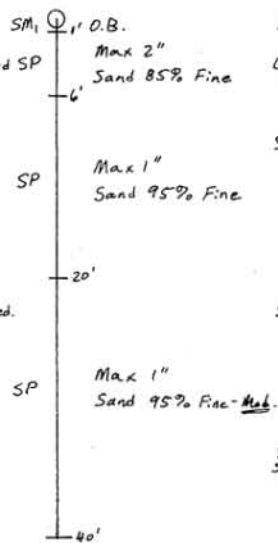


TH 80-1

D 6773 (1'-40')

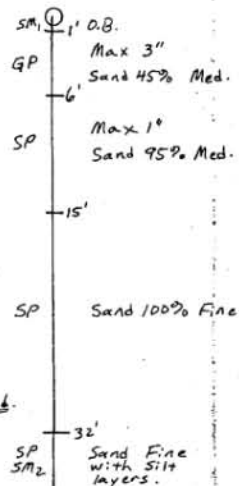
Coarse - 13%
 Sand - 83%
 Fine - 4%

TH 80-2

A 1562 (1'-40')

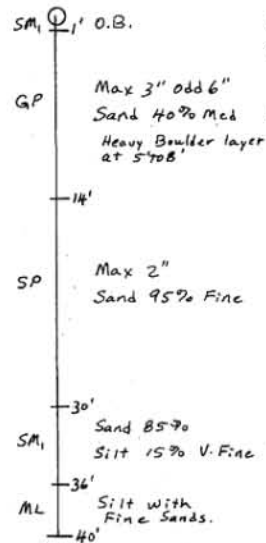
Coarse - 17%
 Sand - 78%
 Fine - 5%

TH 80-3

D 7549 (1'-32')

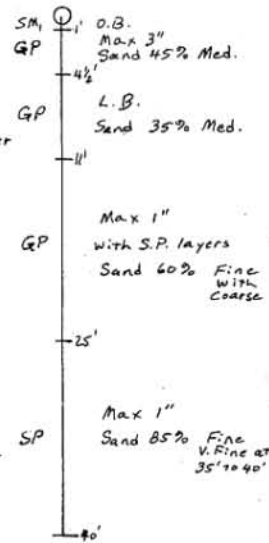
Coarse - 21%
 Sand - 74%
 Fine - 5%

TH 80-4

D 7547 (1'-30')

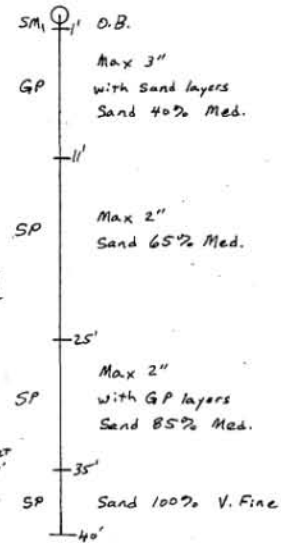
Coarse - 28%
 Sand - 67%
 Fine - 5%

TH 80-5

D 7532 (1'-40')

Coarse - 38%
 Sand - 56%
 Fine - 6%

TH 80-6

D 6787 (1'-35')

Coarse - 40%
 Sand - 47%
 Fine - 3%

RUGER TH'S - 1980



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 MINISTRY OF HIGHWAYS & PUBLIC WORKS
 GEOTECHNICAL & MATERIALS BRANCH

COQUIHALLA PROJECT

COLDWATER PROJECT

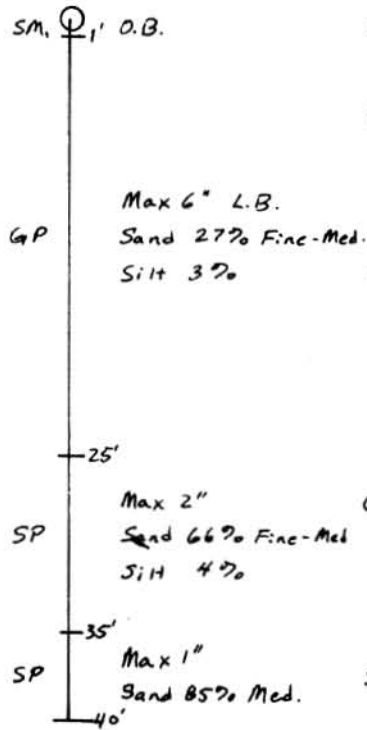
DRAWN RNS DATE OCT/80 SCALE

FILE NO.

TRA-2013-00288

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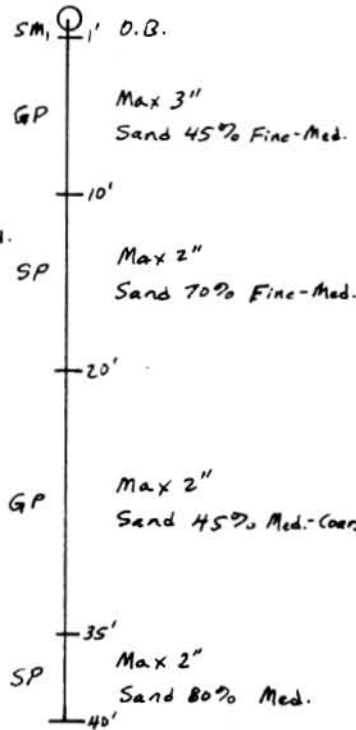
TH 80-7



A 5821 (1'-40')

Coarse - 65%
Sand - 32%
Fine - 3%

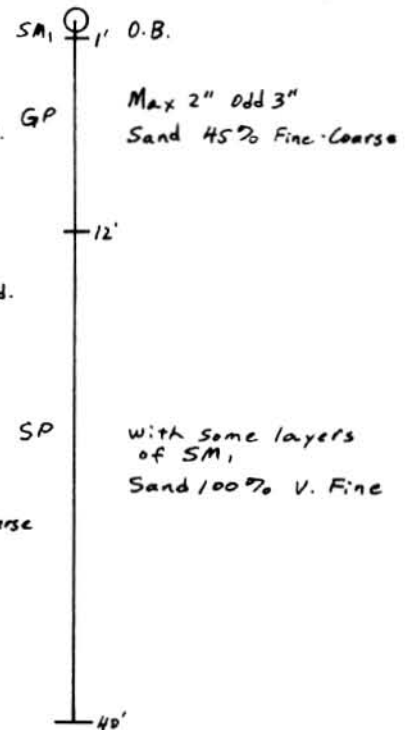
TH 80-8



D 6774 (1'-40')

Coarse - 43%
Sand - 51%
Fine - 6%

TH 80-9



D 7582 (12'-40')

Coarse - 19%
Sand - 74%
Fine - 7%

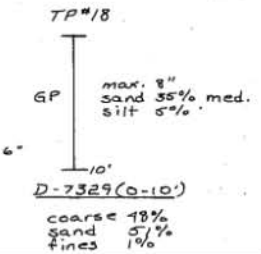
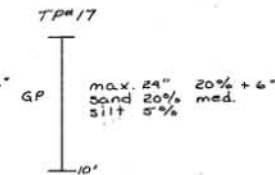
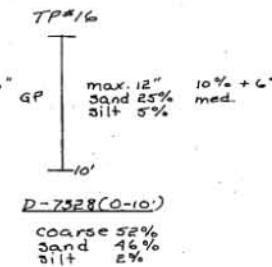
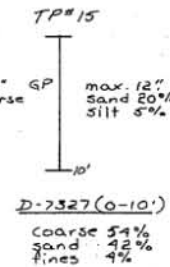
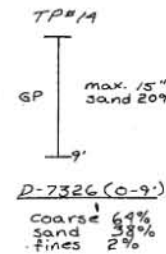
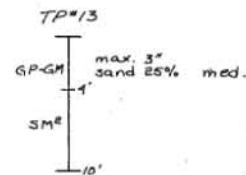
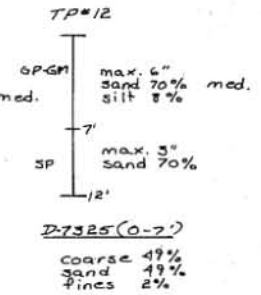
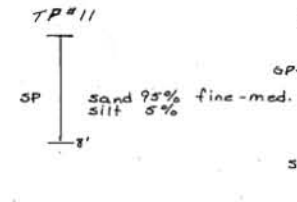
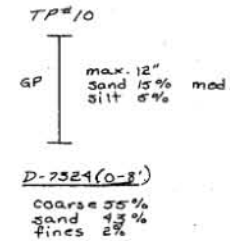
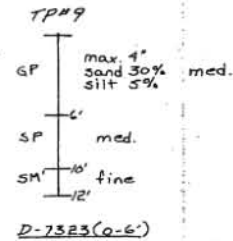
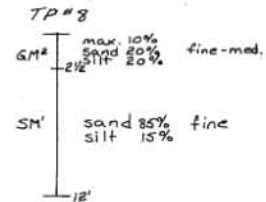
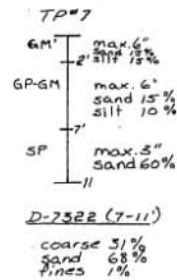
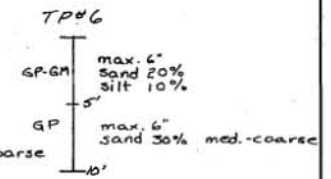
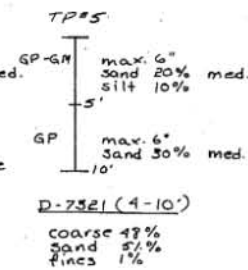
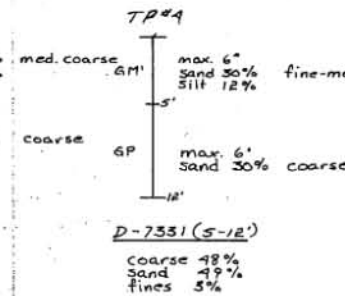
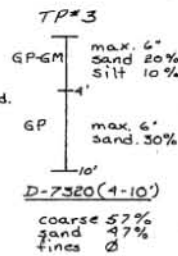
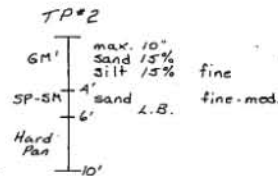
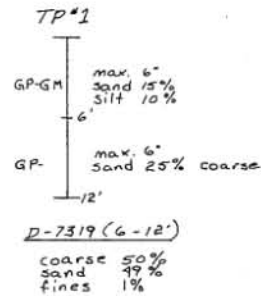
AUGER TH'S - 1980



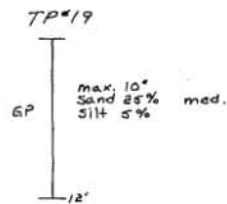
GOVERNMENT OF BRITISH COLUMBIA
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GEOTECHNICAL & MATERIALS BRANCH

COQUIHALLA PROJECT
COLDWATER PROSPECT

DRAWN RNS DATE OCT/80 SCALE
FILE NO.

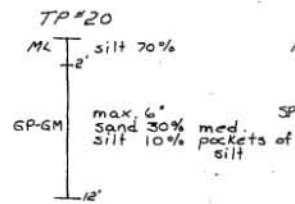


BRITISH COLUMBIA DEPARTMENT OF HIGHWAYS GEOTECHNICAL AND MATERIALS BRANCH			
COQUINHALLA PROJECT COLD WATER PROSPECT			
BACK-HOE TPIs-1979		DATE DEC. 1979	
DRAWN	SS	SCALE	REG. NO.
TRACED		FILE NO.	
CHECKED		APPROVED	
REVISIONS		FILE SKETCH	



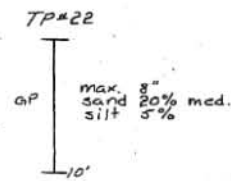
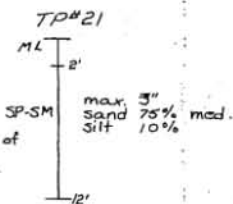
D-73350(0-12')

coarse 63%
sand 36%
fines 1%



D-7337(2-12')

coarse 43%
sand 51%
fines 6%



BACK-HOE TP'S - 1979

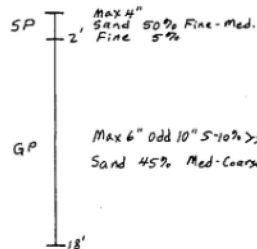


BRITISH COLUMBIA DEPARTMENT OF HIGHWAYS
GEOTECHNICAL AND MATERIALS BRANCH

COQUIHALLA PROJECT
COLDWATER PROSPECT

D		DRAWN	SS	SCALE	1/4" = 1'	DATE	DEC-79
C		TRACED		PROJ. NO.		REG. NO.	
B		CHECKED		FILE NO.			
A		APPROVED					
REVISIONS				FILE SKETCH.			

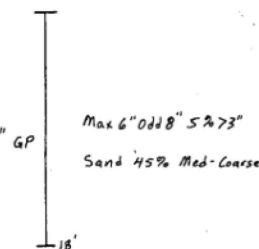
TP 80-1



D 2195 (0'-18')

Coarse 53%
Sand 45%
Fine 2%

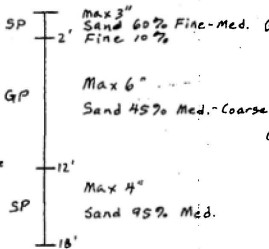
TP 80-2



D 7574 (0'-18')

Coarse 47%
Sand 50%
Fine 3%

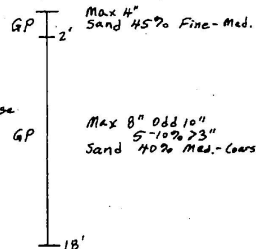
TP 80-3



D 7534 (0'-18')

Coarse 34%
Sand 64%
Fine 2%

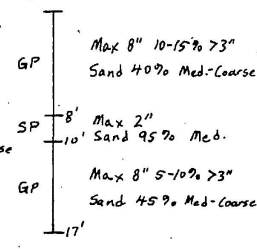
TP 80-4



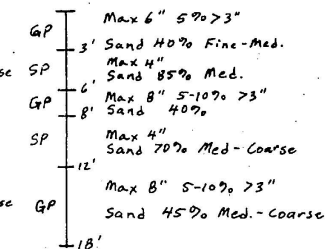
D 2194 (0'-18')

Coarse 51%
Sand 48%
Fine 1%

TP 80-5



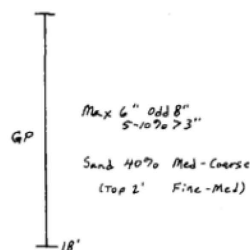
TP 80-6



D 7560 (0'-18')

Coarse 37%
Sand 61%
Fine 2%

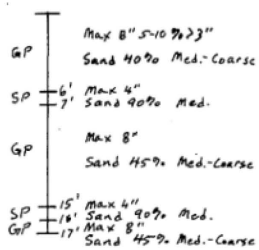
TP 80-7



D 7585 (0'-18')

Coarse 54%
Sand 44%
Fine 2%

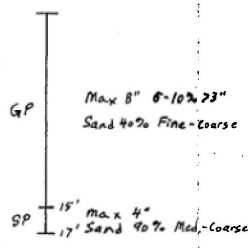
TP 80-8



D 7561 (0'-17')

Coarse 42%
Sand 57%
Fine 1%

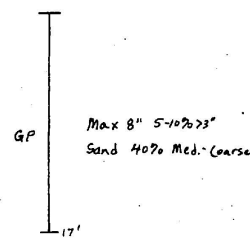
TP 80-9



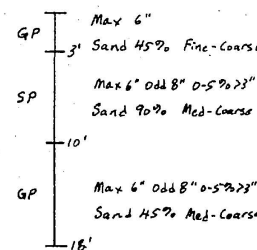
D 7541 (0'-17')

Coarse 43%
Sand 56%
Fine 1%

TP 80-10



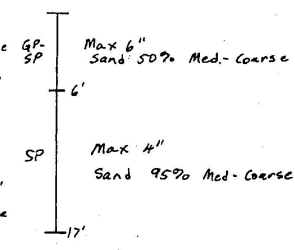
TP 80-11



D 7558 (0'-18')

Coarse 39%
Sand 59%
Fine 2%

TP 80-12



BACK-HOE TP'S - 1980



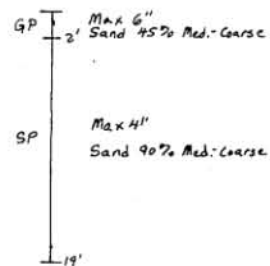
GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF HIGHWAYS & PUBLIC WORKS
GEOTECHNICAL & MATERIALS BRANCH

COQUIMALLA PROJECT

COLDWATER PROSPECT

DRAWN RNS. DATE Aug 180 SCALE
FILE NO.

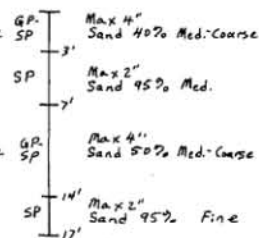
TP 80-13



D 7555 (0'-19')

Coarse 37%
Sand 61%
Fine 2%

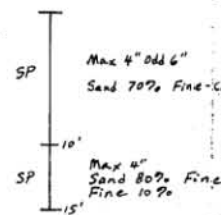
TP 80-14



D 6756 (0'-17')

Coarse 33%
Sand 64%
Fine 3%

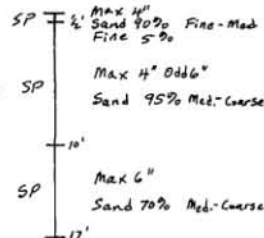
TP 80-15



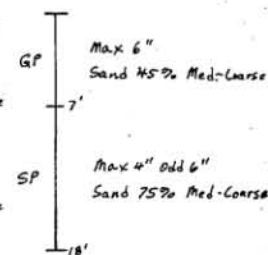
C 3159 (0'-15')

Coarse 21%
Sand 77%
Fine 2%

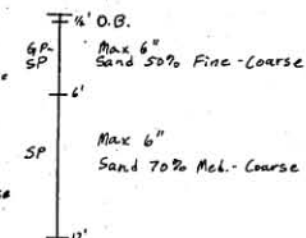
TP 80-16



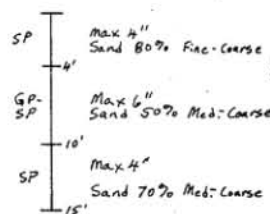
TP 80-17



TP 80-18



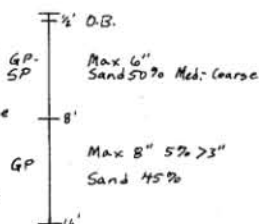
TP 80-19



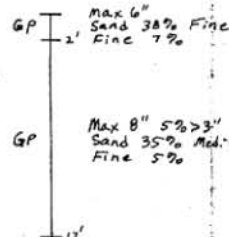
D 6782 (0'-15')

Coarse 43%
Sand 56%
Fine 1%

TP 80-20



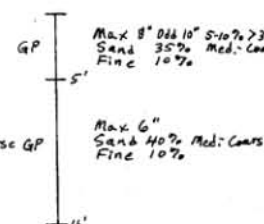
TP 80-28



D 7538 (0'-17')

Coarse 45%
Sand 52%
Fine 3%

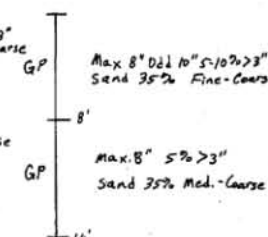
TP 80-29



D 7537 (0'-16')

Coarse 54%
Sand 39%
Fine 7%

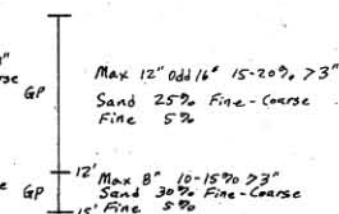
TP 80-30



D 6764 (0'-16')

Coarse 61%
Sand 36%
Fine 3%

TP 80-31



BACK-HOE TPs-1980



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF HIGHWAYS & PUBLIC WORKS
GEOTECHNICAL & MATERIALS BRANCH

COQUHALLA PROJECT

COLDWATER PROSPECT

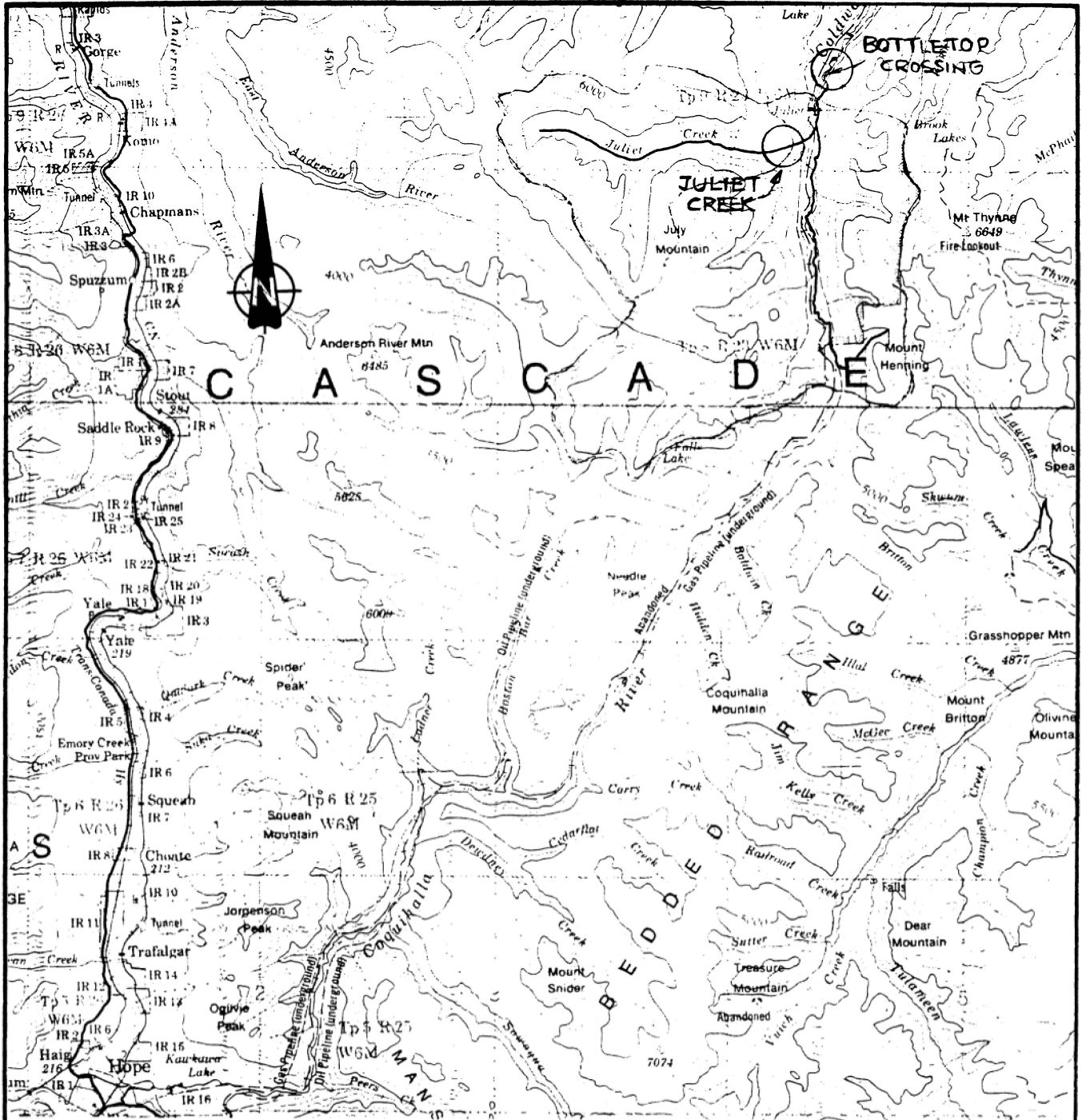
DRAWN PWS. DATE Aug/80 SCALE
FILE NO.

TRA-2013-00288
Page 38

REVISIONS
BY _____ DATE _____

FILE

BY _____ DATE _____
CHECKED BY _____



PREPARED BY:
Robinson

DAMES & MOORE



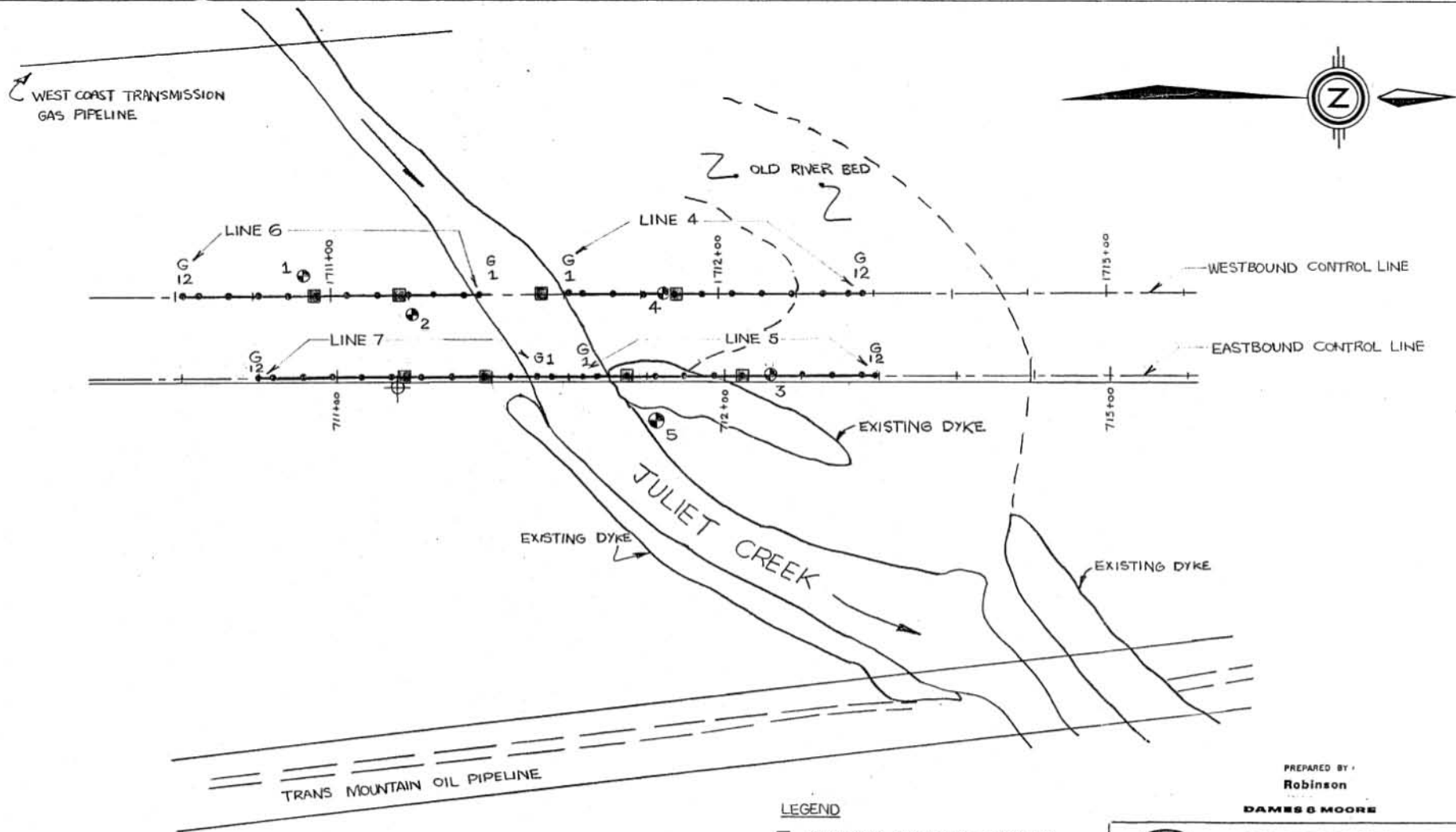
GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

**COQUIHALLA HIGHWAY
CROSSING Nos. 2836 AND 2837
LOCATION PLAN**

PREPARED UNDER THE DIRECTION OF	DATE	SCALE: 1:250,000	HEG. NO.
CONSTRUCTED BY		DRAWN: LL 9/84	CHECKED:
APPROVED FOR USE IN CONSTRUCTION	DATE	EXAMINED AND ACCEPTED	DATE
DIRECTOR OF BRIDGE ENGINEERING		EXECUTIVE DIRECTOR OF BRIDGE ENGINEERING	

TRA-2013-00288

PLATE



⊕ BORING BY MINISTRY OF
HIGHWAY & TRANSPORTATION

LEGEND

- PROPOSED STRUCTURE LOCATION
- ⊕ AS-DRILLED BORING LOCATION
- SEISMIC REFRACTION LINE & GEOPHONE LOCATION

NOTE: DRAWING REFERENCE TO MINISTRY OF
TRANSPORTATION & HIGHWAYS;
JULIET CREEK CROSSING, COQUIHALLA
LAKES - BRODIE

PREPARED BY:
Robinson

DAMES & MOORE

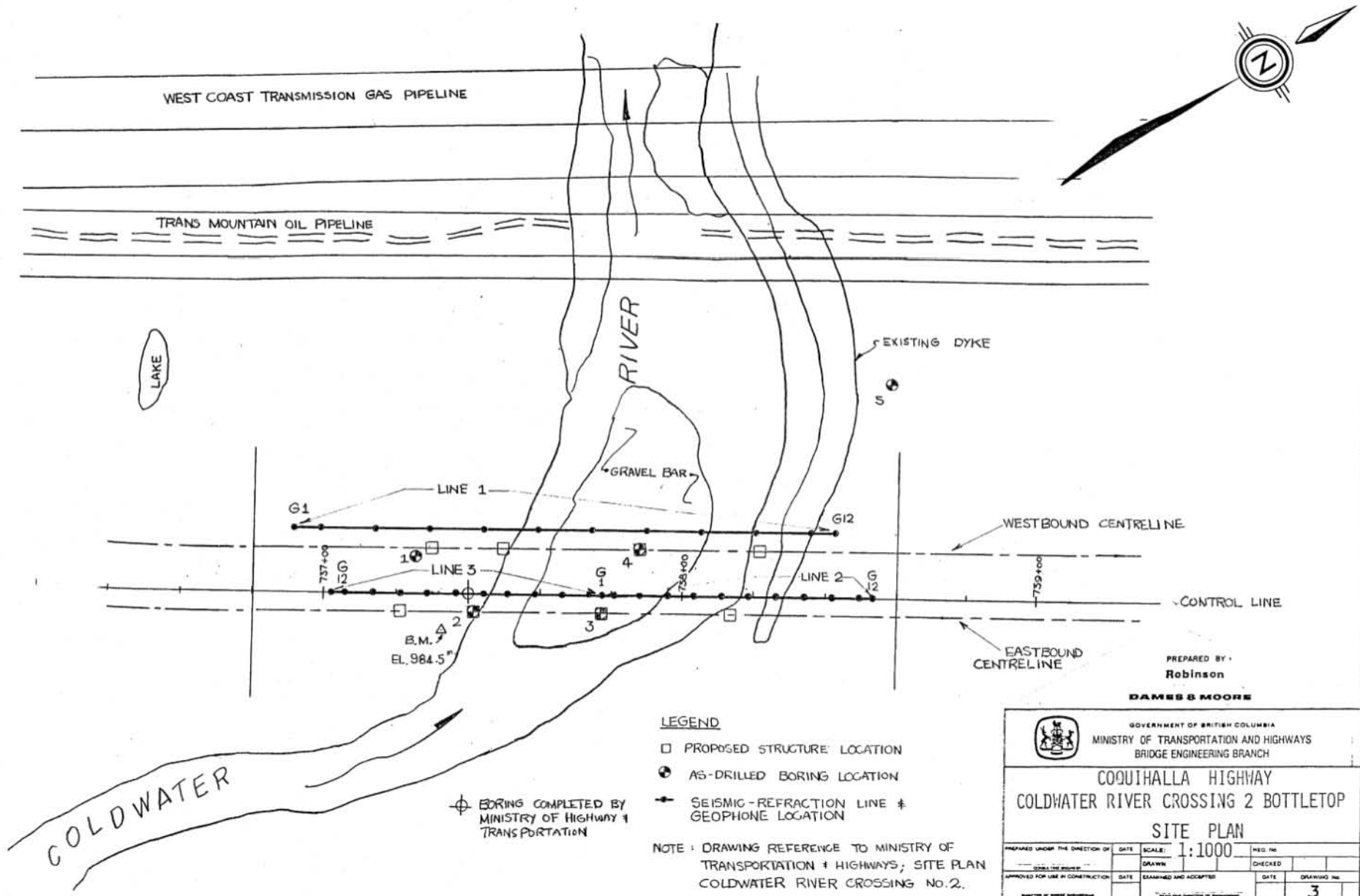


GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

COQUIHALLA HIGHWAY JULIET CREEK CROSSING AND UNDERPASS

SITE PLAN

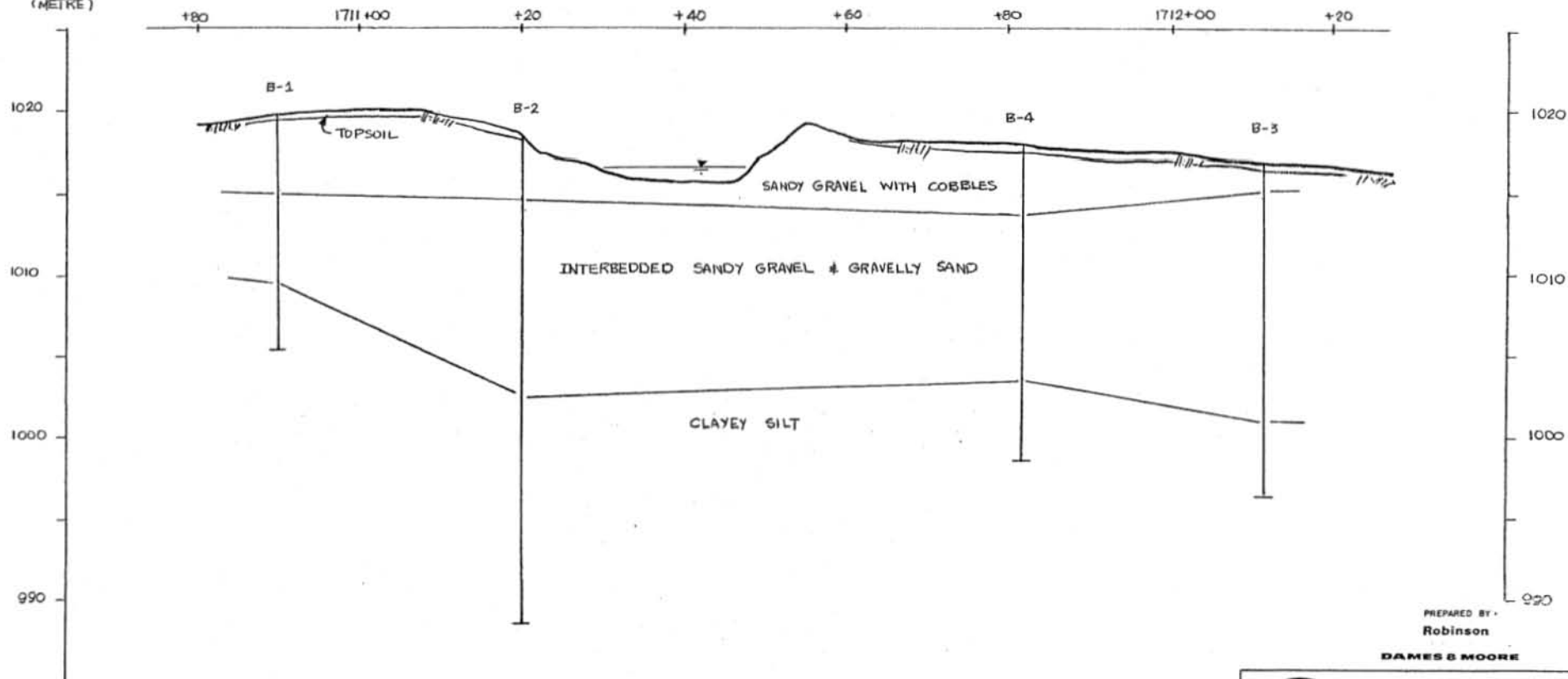
PREPARED UNDER THE DIRECTION OF	DATE	SCALE: 1:1000	REG. NO.
DRAWN	DATE	CHECKED	DRAWING NO.
APPROVED FOR USE IN CONSTRUCTION	DATE	EXAMINED AND ACCEPTED	DATE
DIRECTOR OF BRIDGE ENGINEERING		DEPUTY DIRECTOR OF BRIDGE ENGINEERING	2



SOUTH

NORTH

ELEVATION,
(METRE)



PREPARED BY
Robinson

DAMES & MOORE

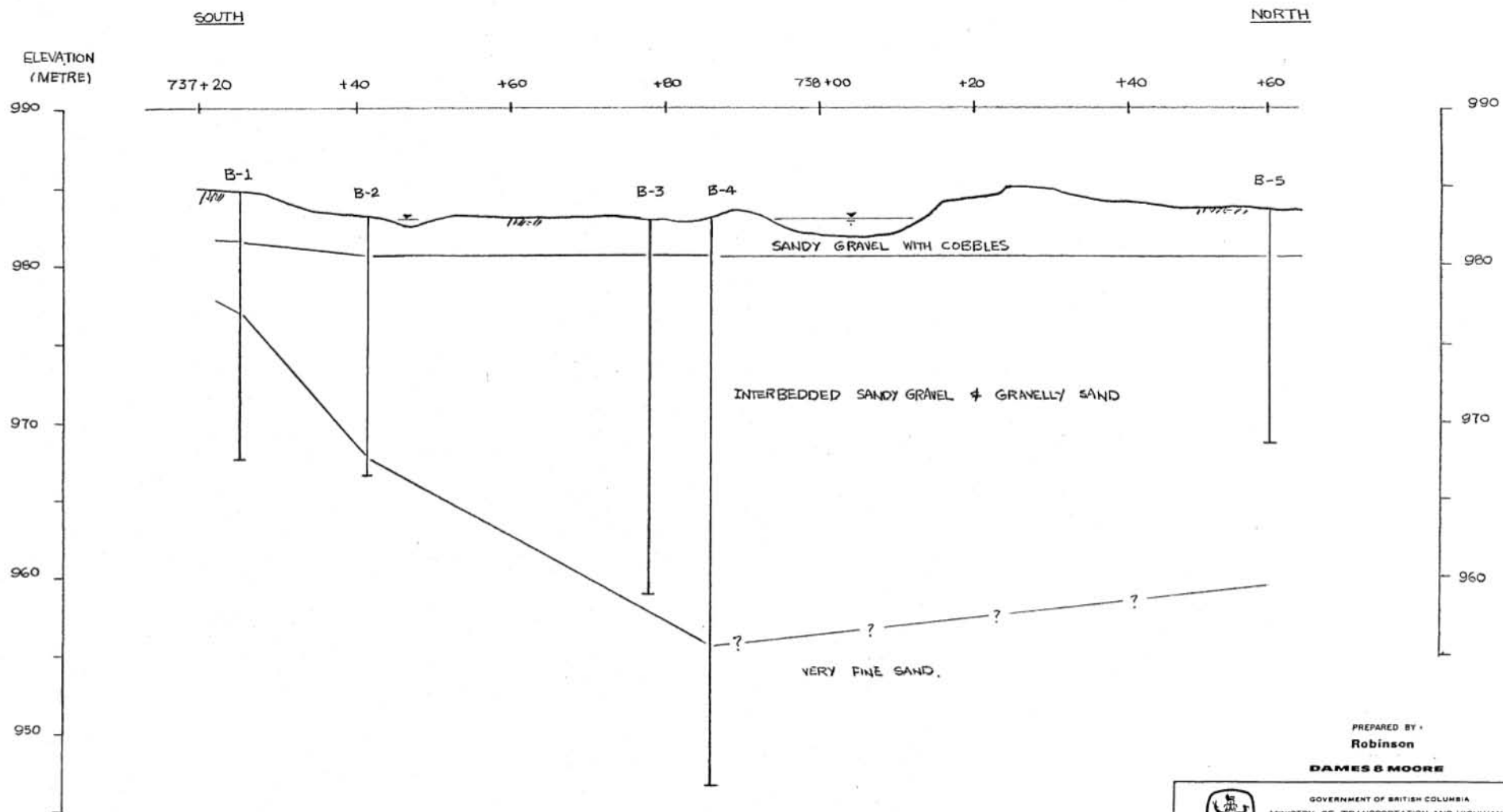
SCALE : HORIZONTAL 1:500
VERTICAL 1:250



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

COQUIHALLA HIGHWAY
JULIET CREEK CROSSING AND UNDERPASS
SOIL PROFILE ALONG WESTBOUND CONTROL LINE

PREPARED UNDER THE DIRECTION OF	DATE	SCALE	REG. NO.
DRAWN	DATE	CHECKED	
APPROVED FOR USE IN CONSTRUCTION	DATE	EXAMINED AND ACCEPTED	DATE
DIRECTOR OF BRIDGE ENGINEERING		BRIDGE ENGINEER	



SCALE: HORIZONTAL 1:500
VERTICAL 1:250

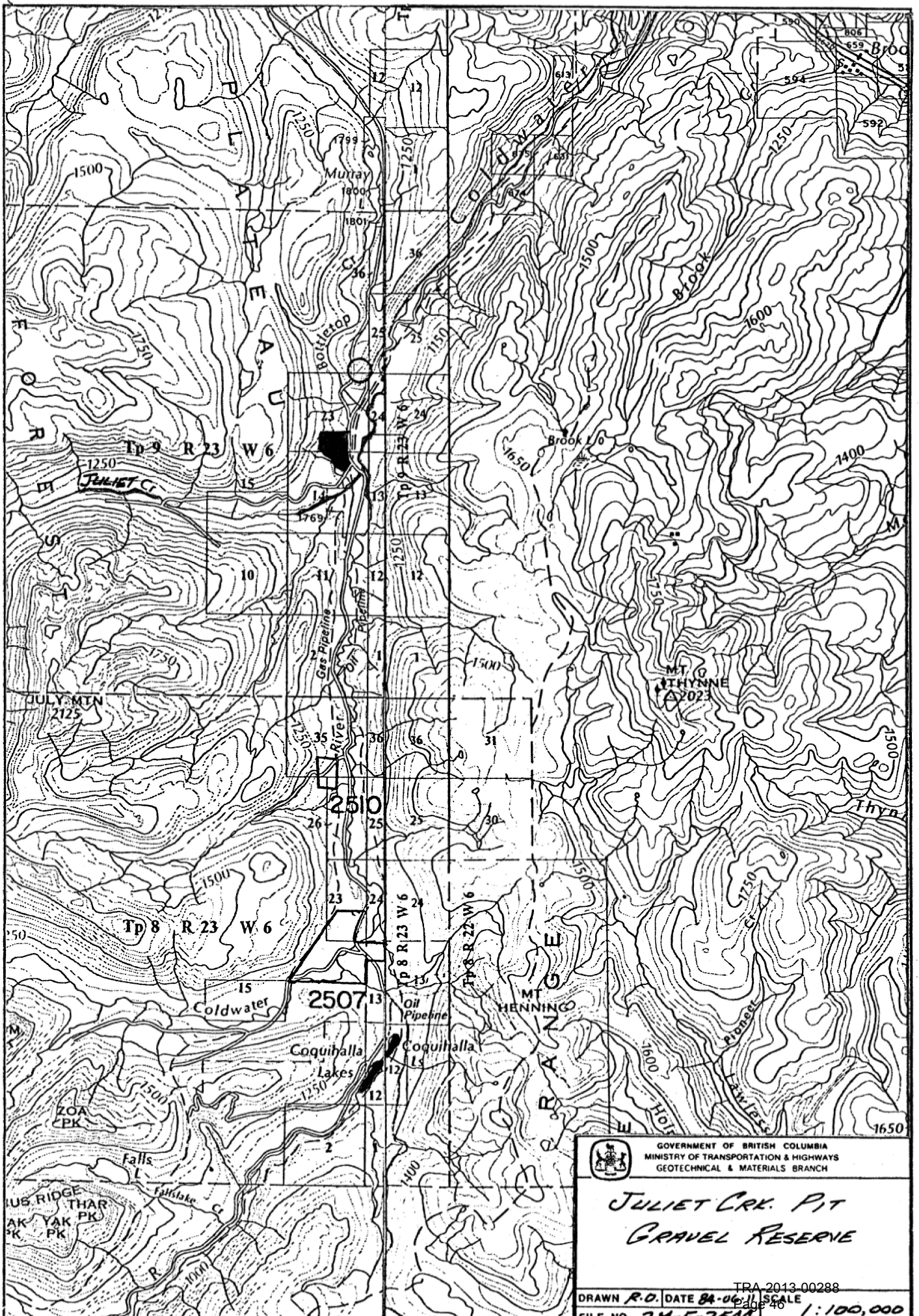
PREPARED BY:
Robinson
DAMES & MOORE



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

COQUIHALLA HIGHWAY
COLDWATER RIVER CROSSING 2. BOTTLETOP
SOIL PROFILE ALONG EASTBOUND CONTROL LINE

PREPARED UNDER THE DIRECTION OF	DATE	SCALE	NEG. NO.
DRAWN	CHECKED		
APPROVED FOR USE IN CONSTRUCTION	DATE	EXAMINED AND ACCEPTED	DATE
			DRAWING NO.
			5



9 R. 23 W. 6 M.

Creek

JULIET CRK

RIVER

AIR STRIP

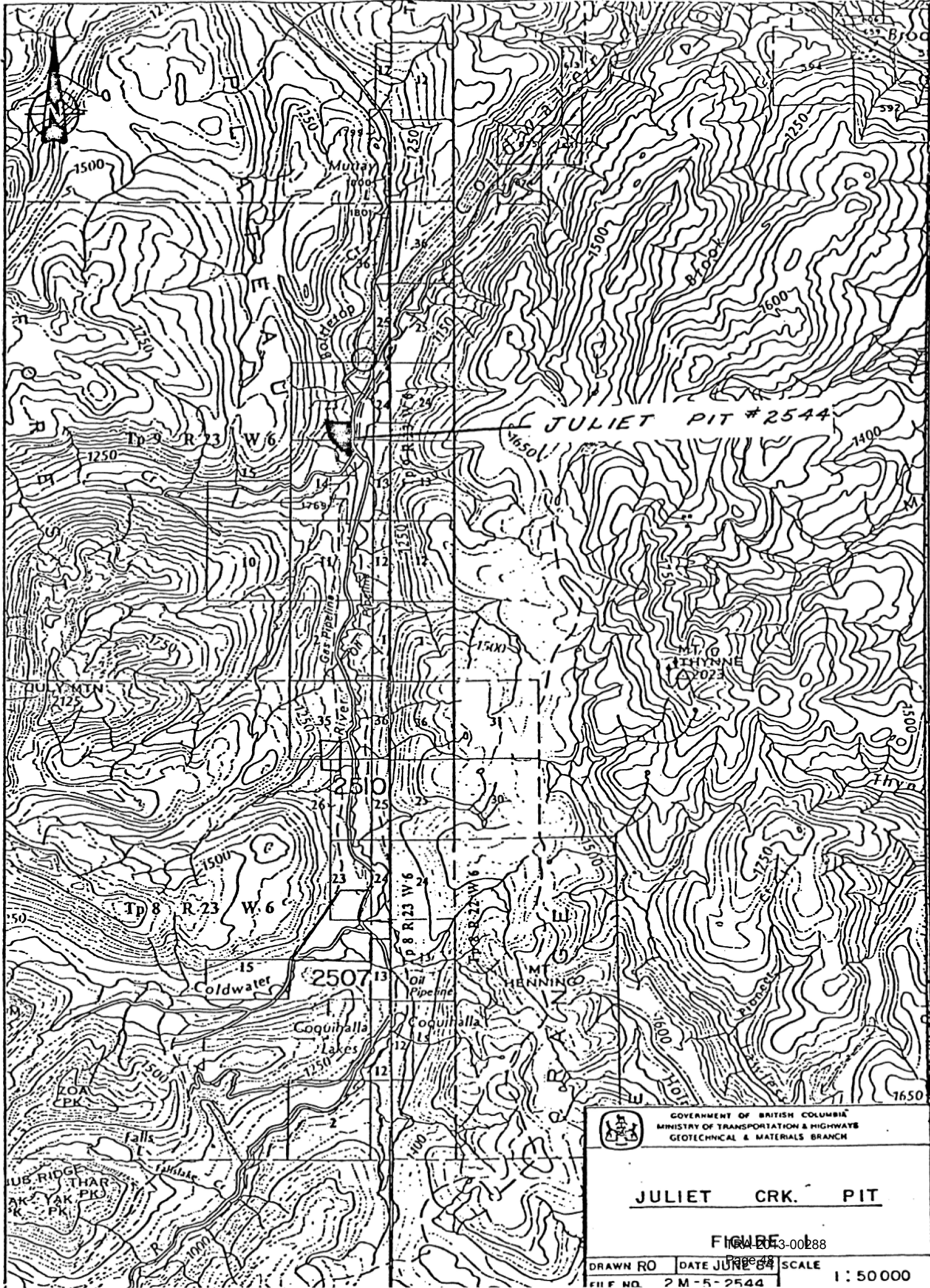
PIPELINES



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

JULIET CRK
GRAVEL RESERVE

DRAWN R.D. DATE 04-06-11 SCALE
FILE NO. 2M-5-2544 1:20,000

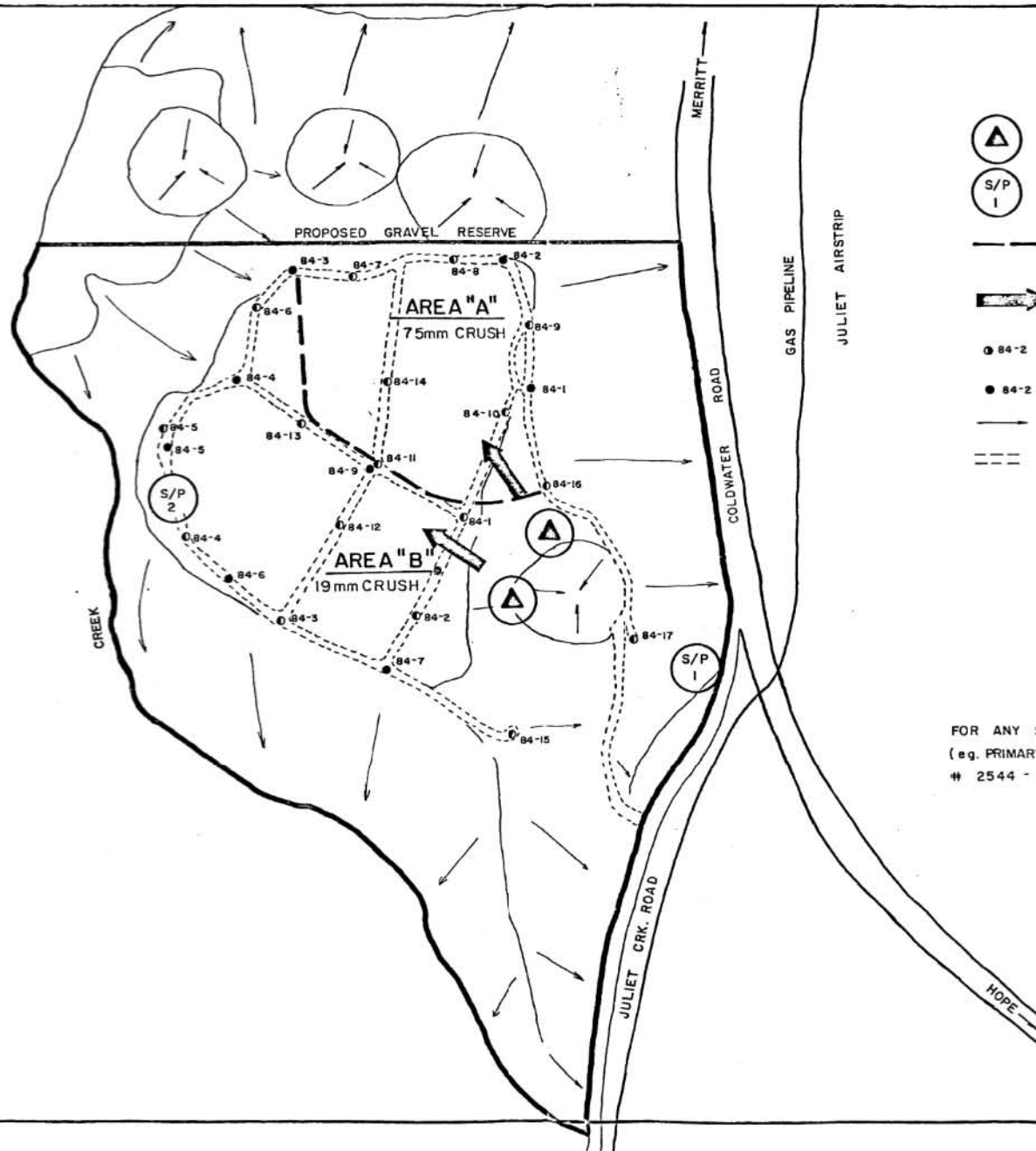


GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

JULIET CRK. PIT

FIGURE 1
DRAWN RO DATE JUNE 84 SCALE 1:50,000

FILE NO. 2 M-5-2544



LEGEND



PROPOSED CRUSHER or SCREENING PLANT LOCATION



PROPOSED 19-75 mm CRUSH STOCKPILE SITE, OPTION #1



SUITABILITY BOUNDARY



DEVELOPMENT DIRECTION



BACKHOE PIT 84-2, DUG IN 1984



DRILL HOLE 84-2, DRILLED IN 1984



SLOPE DIRECTION

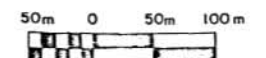


ACCESS ROAD

NOTE

FOR ANY SPECIAL INSTRUCTIONS RE WORKING OF DEPOSIT (e.g. PRIMARY CRUSHER, BLENDING ETC) SEE "JULIET PIT # 2544 - GRAVEL PIT REPORT".

SKETCH ONLY



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

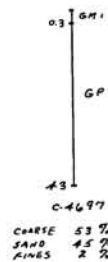
PIT DEVELOPMENT PLAN

JULIET CRK. PROSPECT

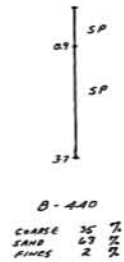
FIGURE 2

DRAWN ARM DATE JUNE 84 SCALE 1:4000
FILE NO. 2M-5-2544

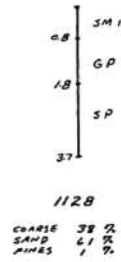
T.P. 84-1



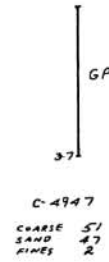
T.P. 84-2



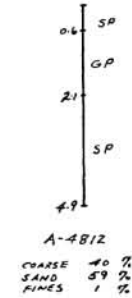
T.P. 84-3



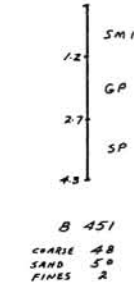
T.P. 84-4



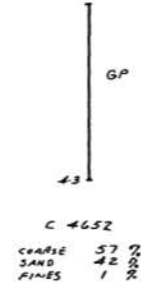
T.P. 84-5



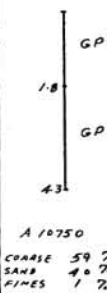
T.P. 84-6



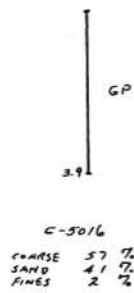
T.P. 84-7



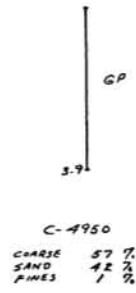
T.P. 84-8



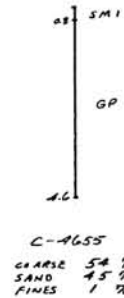
T.P. 84-9



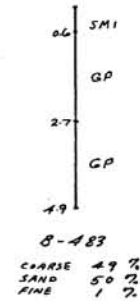
T.P. 84-10



T.P. 84-11



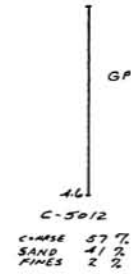
T.P. 84-12



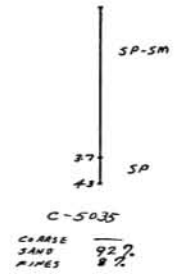
T.P. 84-13



T.P. 84-14



T.P. 84-15

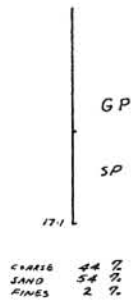


GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

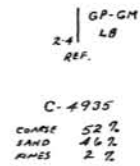
JULIET PIT
2544

DRAWN A.R.M. DATE JUNE 84 SCALE
FILE NO. 2M-5-2544 DEPTH'S IN METRES

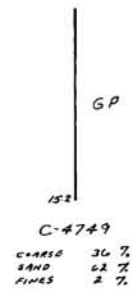
TH 84-1



TH 84-2



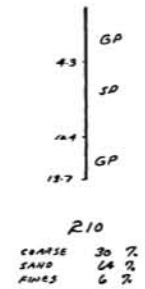
TH 84-3



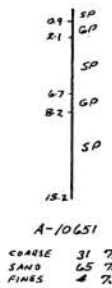
TH 84-4



TH 84-5



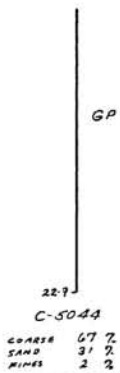
TH 84-6



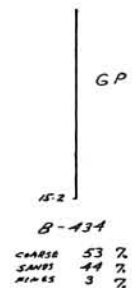
TH 84-7



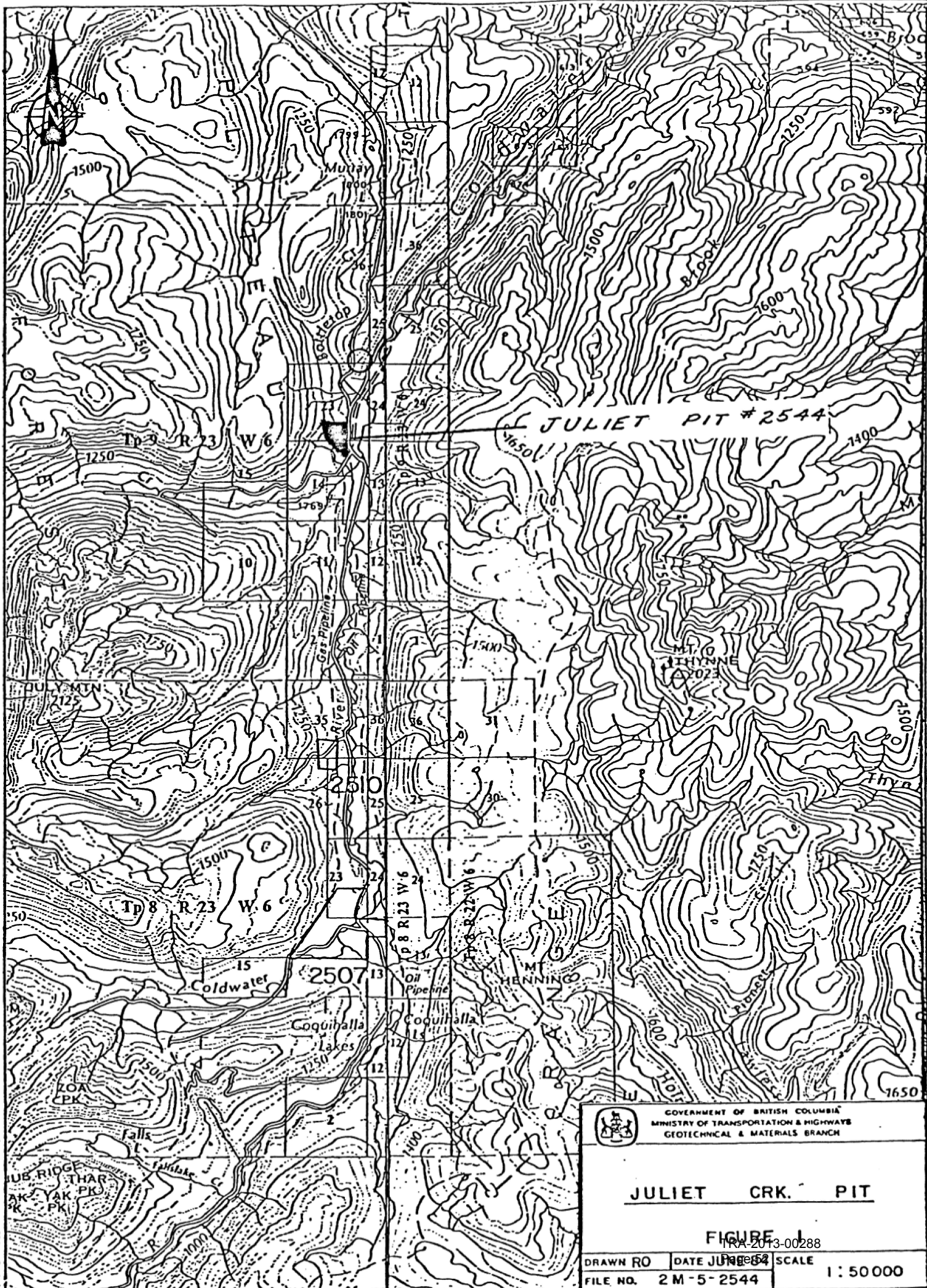
TH 84-8



TH 84-9



 GOVERNMENT OF BRITISH COLUMBIA MINISTRY OF TRANSPORTATION & HIGHWAYS GEOTECHNICAL & MATERIALS BRANCH		
JULIET PIT # 2544		
DRAWN ARM	DATE JUNE 84	SCALE
FILE NO. 2M-5-2544	DEPTH IN METRES	

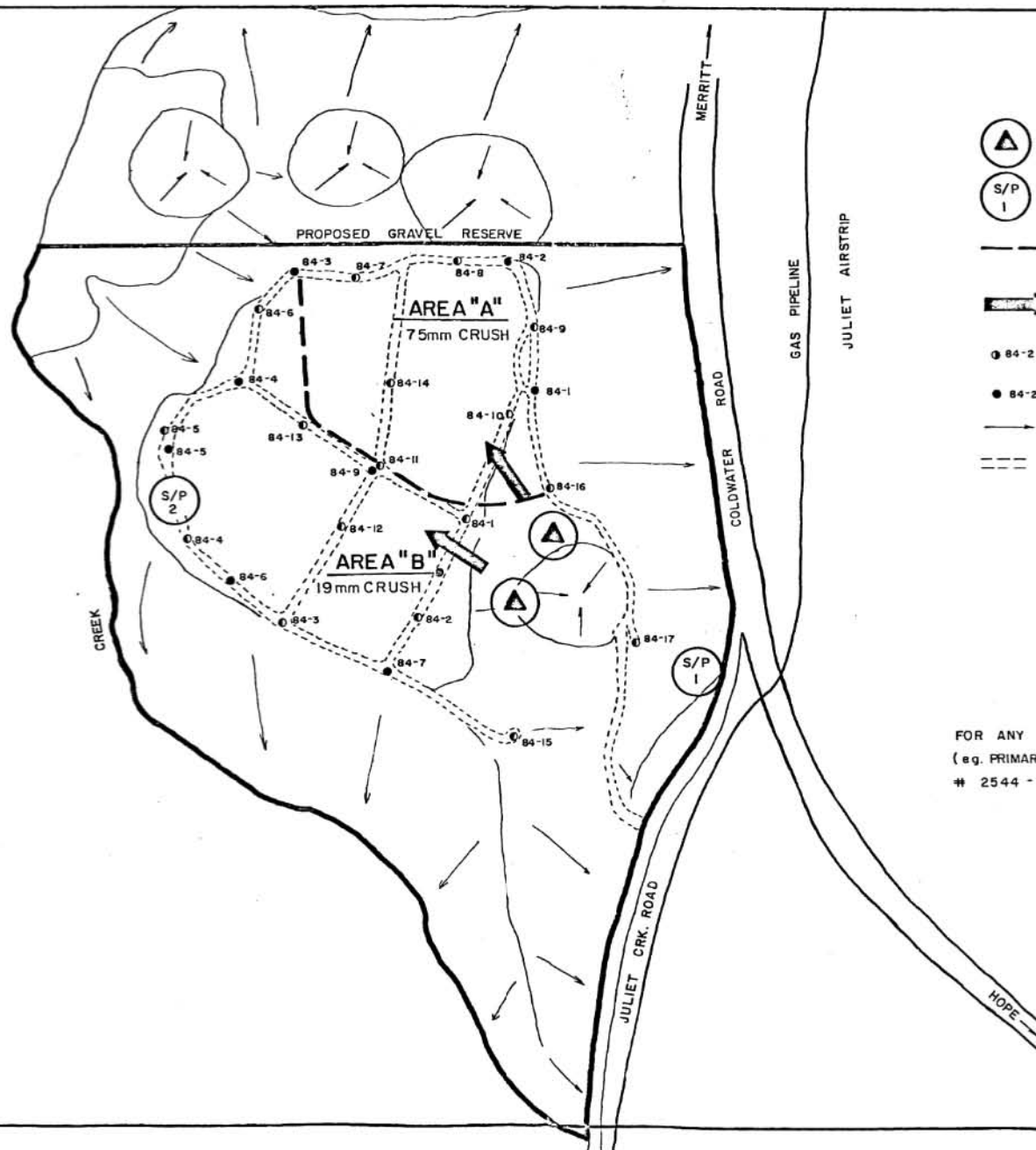


GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

JULIET CRK. PIT

FIGURE 1
TRA-2013-00288

DRAWN RO	DATE JUNE 62	SCALE
FILE NO. 2 M-5-2544		1:50000



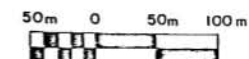
LEGEND

-  PROPOSED CRUSHER or SCREENING PLANT LOCATION
-  PROPOSED 19-75 mm CRUSH STOCKPILE SITE, OPTION # 1
-  SUITABILITY BOUNDARY
-  DEVELOPMENT DIRECTION
-  BACKHOE PIT 84-2, DUG IN 1984
-  DRILL HOLE 84-2, DRILLED IN 1984
-  SLOPE DIRECTION
-  ACCESS ROAD

NOTE

FOR ANY SPECIAL INSTRUCTIONS RE WORKING OF DEPOSIT (e.g. PRIMARY CRUSHER, BLENDING ETC) SEE "JULIET PIT # 2544 - GRAVEL PIT REPORT".

SKETCH ONLY



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

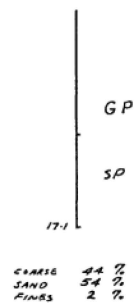
PIT DEVELOPMENT PLAN

JULIET CRK. PROSPECT

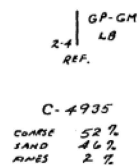
FIGURE 2

DRAWN ARM	DATE JUNE 84	SCALE 1:4000
FILE NO. 2M-5-2544		

TH 84-1



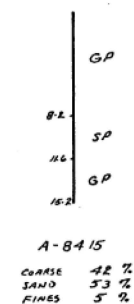
TH 84-2



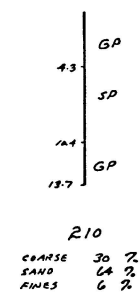
TH 84-3



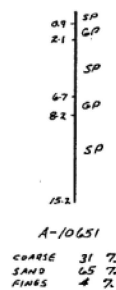
TH 84-4



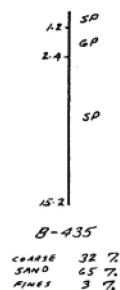
TH 84-5



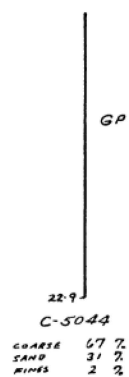
TH 84-6



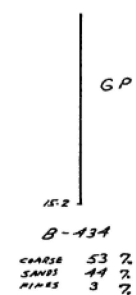
TH 84-7



TH 84-8

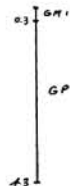


TH 84-9



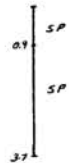
 GOVERNMENT OF BRITISH COLUMBIA MINISTRY OF TRANSPORTATION & HIGHWAYS GEOTECHNICAL & MATERIALS BRANCH		
JULIET PIT # 2544		
DRAWN A.R.M.	DATE JUNE 84	SCALE
FILE NO. 2M-5-2544		DEPTH IN METRES

T.P. 84-1



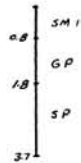
C-4697
 COARSE 53 %
 SAND 45 %
 FINES 2 %

T.P. 84-2



B-440
 COARSE 35 %
 SAND 63 %
 FINES 2 %

T.P. 84-3



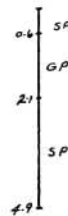
1128
 COARSE 38 %
 SAND 61 %
 FINES 1 %

T.P. 84-4



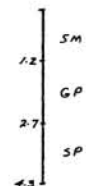
C-4947
 COARSE 51 %
 SAND 47 %
 FINES 2 %

T.P. 84-5



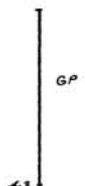
A-4812
 COARSE 40 %
 SAND 59 %
 FINES 1 %

T.P. 84-6



B-451
 COARSE 48 %
 SAND 50 %
 FINES 2 %

T.P. 84-7



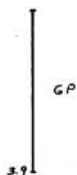
C-4652
 COARSE 57 %
 SAND 42 %
 FINES 1 %

T.P. 84-8



A-10750
 COARSE 59 %
 SAND 40 %
 FINES 1 %

T.P. 84-9



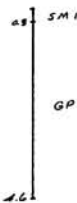
C-5016
 COARSE 57 %
 SAND 41 %
 FINES 2 %

T.P. 84-10



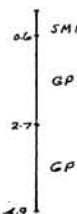
C-4950
 COARSE 57 %
 SAND 42 %
 FINES 1 %

T.P. 84-11



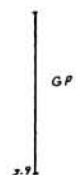
C-4655
 COARSE 54 %
 SAND 45 %
 FINES 1 %

T.P. 84-12



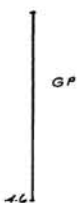
B-483
 COARSE 49 %
 SAND 50 %
 FINE 1 %

T.P. 84-13



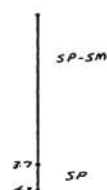
C-5041
 COARSE 59 %
 SAND 40 %
 FINE 1 %

T.P. 84-14



C-5012
 COARSE 57 %
 SAND 41 %
 FINES 2 %

T.P. 84-15



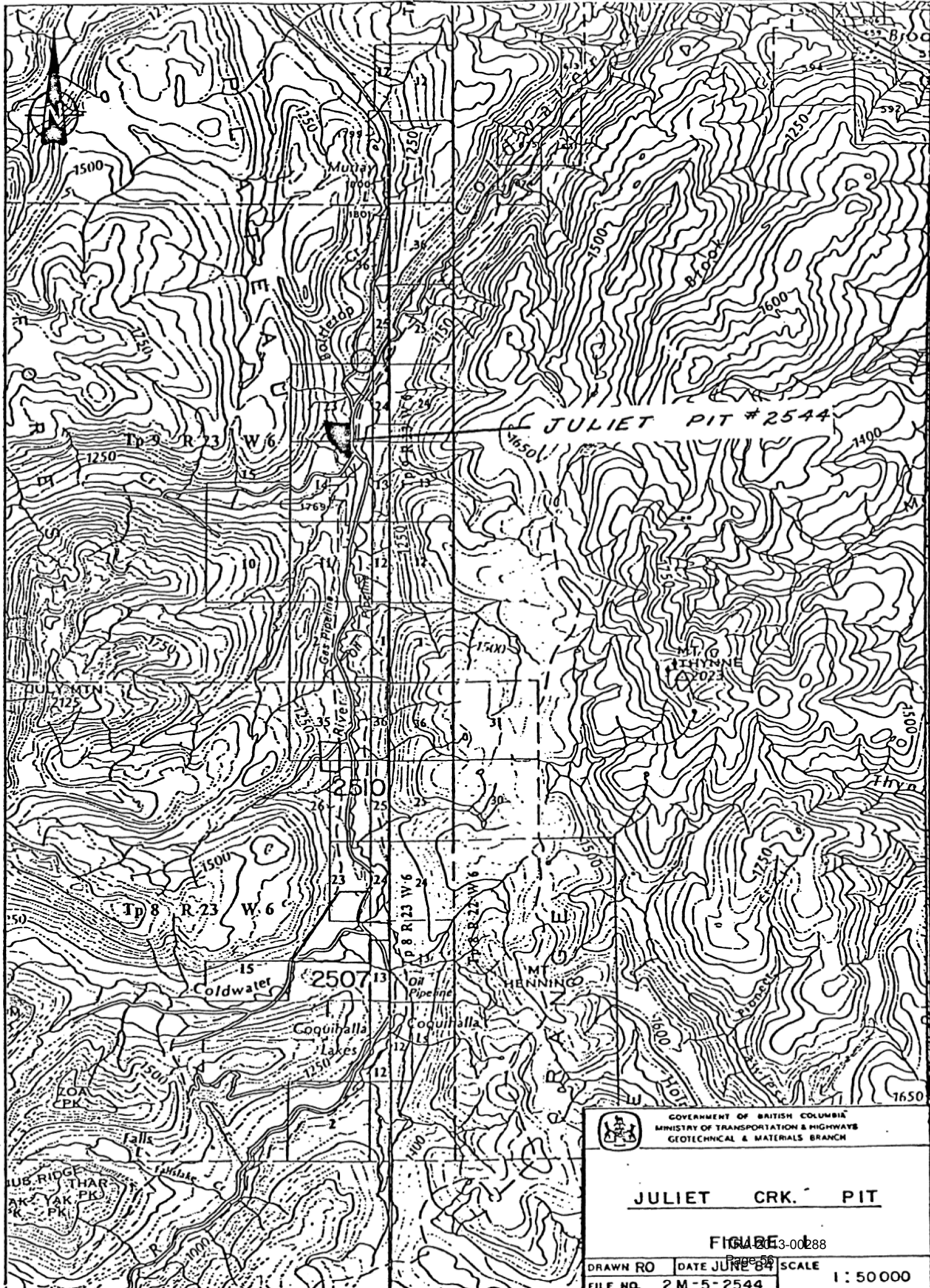
C-5035
 COARSE 92 %
 SAND 8 %
 FINES 0 %



GOVERNMENT OF BRITISH COLUMBIA
 MINISTRY OF TRANSPORTATION & HIGHWAYS
 GEOTECHNICAL & MATERIALS BRANCH

JULIET PIT
 # 2544

DRAWN BY DATE JUNE 84 SCALE
 FILE NO. 2M-5-2544 DEPTH'S IN METRES

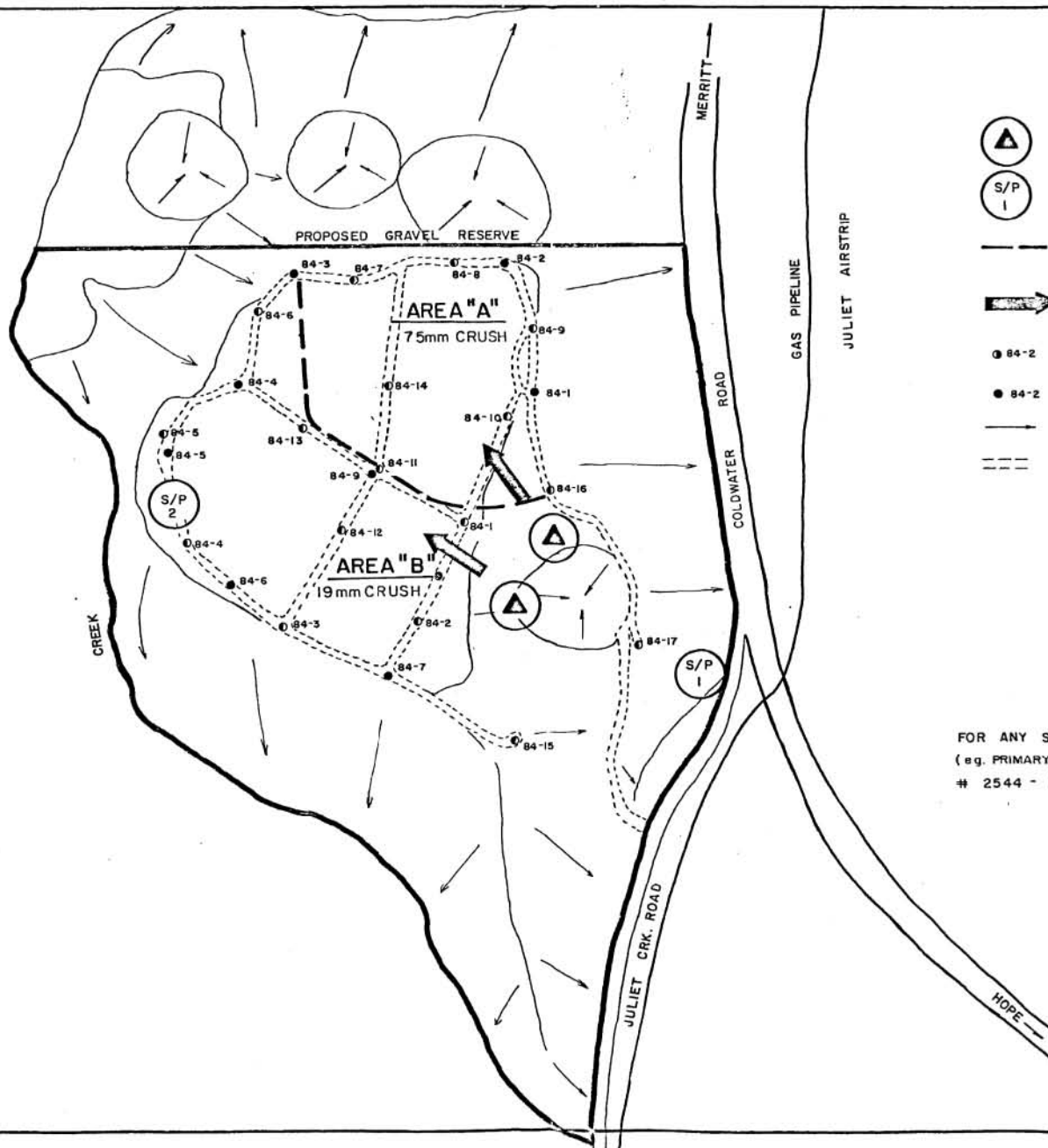


GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

JULIET CRK. PIT

FIGURE 1

DRAWN RO	DATE JUNE 84	SCALE
FILE NO. 2 M-5-2544	Page 56	1:50 000



LEGEND



PROPOSED CRUSHER or SCREENING
PLANT LOCATION



PROPOSED 19 - 75 mm CRUSH STOCKPILE
SITE, OPTION # 1



SUITABILITY BOUNDARY



DEVELOPMENT DIRECTION



BACKHOE PIT 84-2, DUG IN 1984



DRILL HOLE 84-2, DRILLED IN 1984



SLOPE DIRECTION



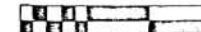
ACCESS ROAD

NOTE

FOR ANY SPECIAL INSTRUCTIONS RE WORKING OF DEPOSIT
(e.g. PRIMARY CRUSHER, BLENDING ETC) SEE "JULIET PIT
2544 - GRAVEL PIT REPORT".

SKETCH ONLY

50m 0 50m 100m



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

PIT DEVELOPMENT PLAN

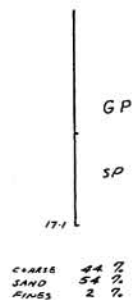
JULIET CRK. PROSPECT

FIGURE 2

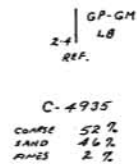
DRAWN ARM DATE JUNE 84 SCALE 1:4000

FILE NO. 2M-5-2544

TH 84-1



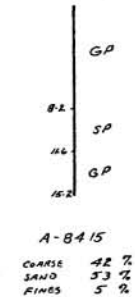
TH 84-2



TH 84-3



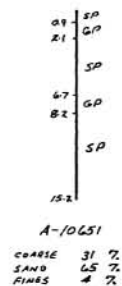
TH 84-4



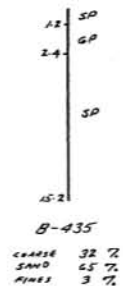
TH 84-5



TH 84-6



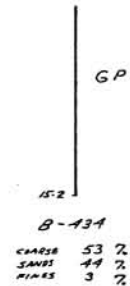
TH 84-7



TH 84-8

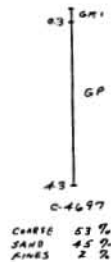


TH 84-9

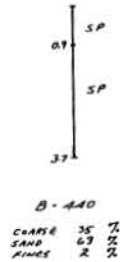


 GOVERNMENT OF BRITISH COLUMBIA MINISTRY OF TRANSPORTATION & HIGHWAYS GEOTECHNICAL & MATERIALS BRANCH		
JULIET PIT # 2544		
DRAWN <i>ARM</i>	DATE <i>JUNE 84</i>	SCALE
FILE NO. <i>2M-5-2544</i>		DEPTH IN METRES

T.P. 84-1



T.P. 84-2



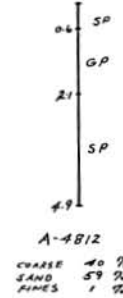
T.P. 84-3



T.P. 84-4



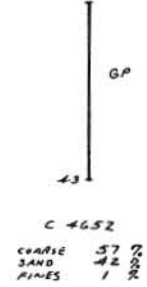
T.P. 84-5



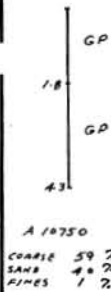
T.P. 84-6



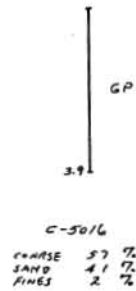
T.P. 84-7



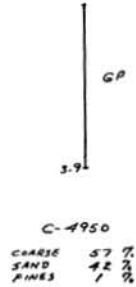
T.P. 84-8



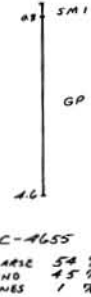
T.P. 84-9



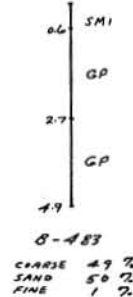
T.P. 84-10



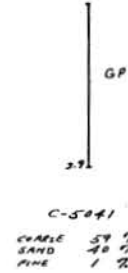
T.P. 84-11



T.P. 84-12



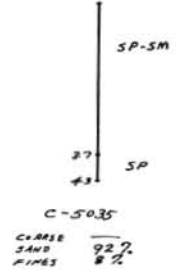
T.P. 84-13



T.P. 84-14



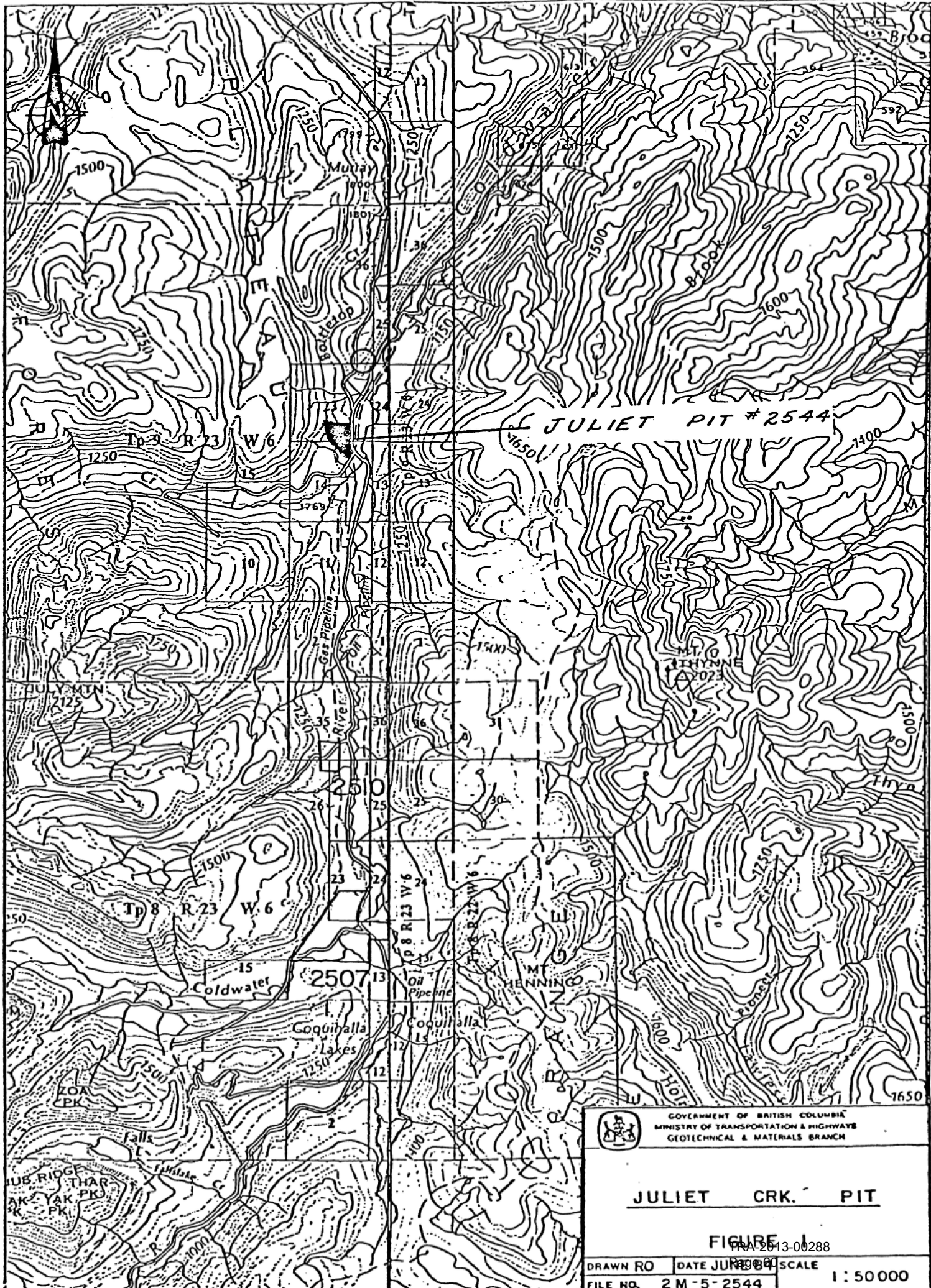
T.P. 84-15



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

JULIET PIT
2544

DRAWN A.R.M. DATE JUNE 84 SCALE
FILE NO. 2M-5-2544 DEPTH'S IN METRES

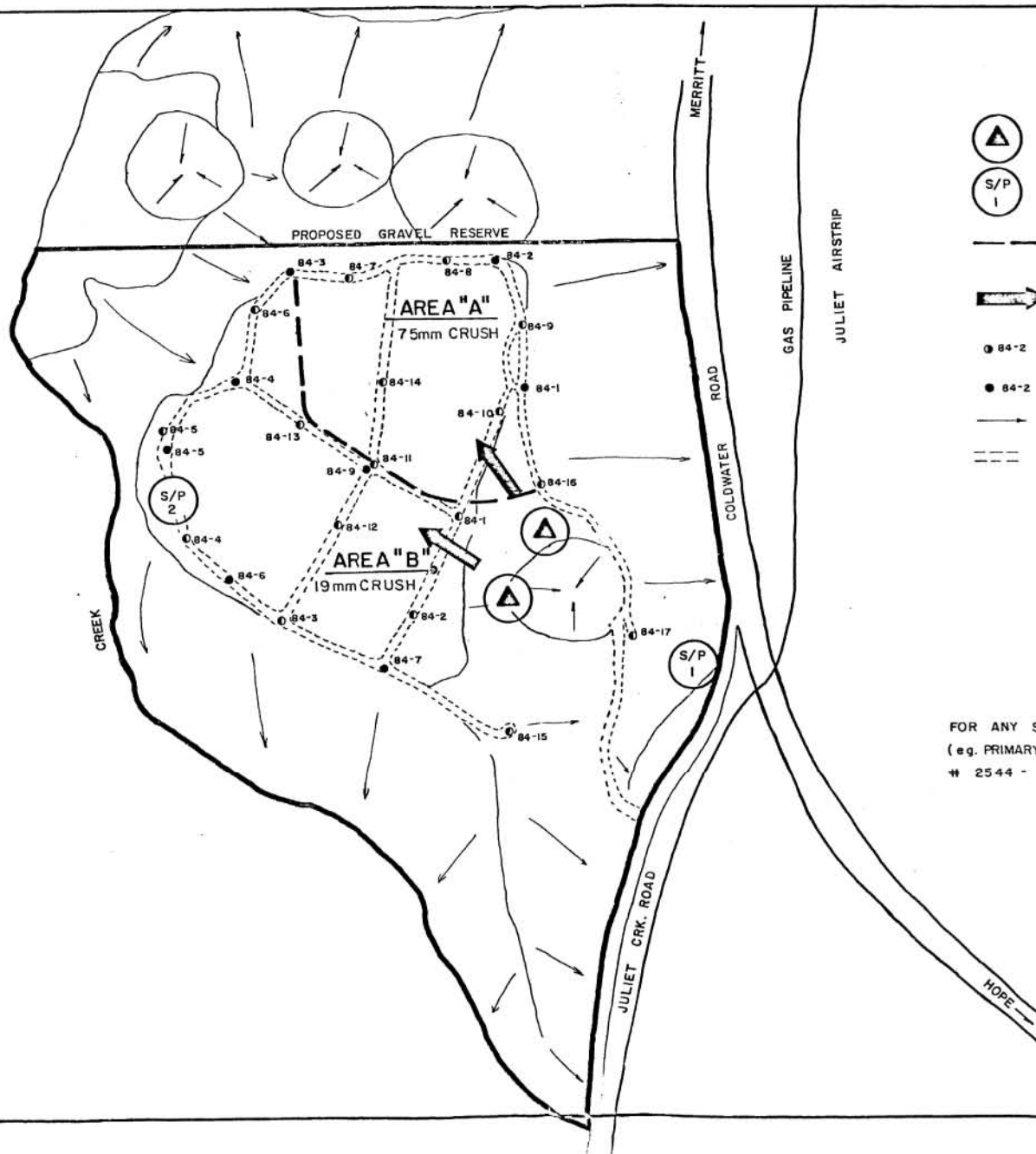


GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

JULIET CRK. PIT

FIGURE 1
HNA 2013-00288

DRAWN RO	DATE JUN 09	SCALE
FILE NO.	2 M-5-2544	1:50000



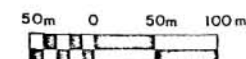
LEGEND

-  PROPOSED CRUSHER or SCREENING PLANT LOCATION
-  PROPOSED 19 - 75 mm CRUSH STOCKPILE SITE, OPTION # 1
-  SUITABILITY BOUNDARY
-  DEVELOPMENT DIRECTION
-  84-2 BACKHOE PIT 84-2, DUG IN 1984
-  84-2 DRILL HOLE 84-2, DRILLED IN 1984
-  SLOPE DIRECTION
-  ACCESS ROAD

NOTE

FOR ANY SPECIAL INSTRUCTIONS RE WORKING OF DEPOSIT (eg. PRIMARY CRUSHER, BLENDING ETC.) SEE "JULIET PIT # 2544 - GRAVEL PIT REPORT".

SKETCH ONLY



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

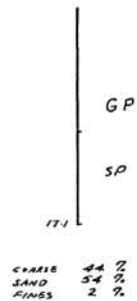
PIT DEVELOPMENT PLAN

JULIET CRK. PROSPECT

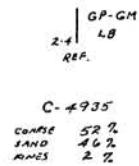
FIGURE 2

DRAWN ARM	DATE JUNE 84	SCALE 1:4000
FILE NO. RM-5-2544		

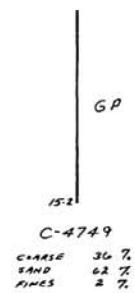
TH 84-1



TH 84-2



TH 84-3



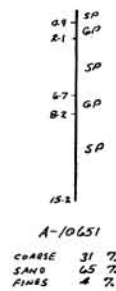
TH 84-4



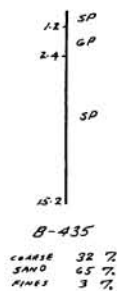
TH 84-5



TH 84-6



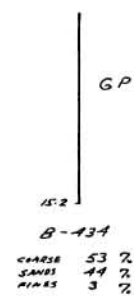
TH 84-7



TH 84-8

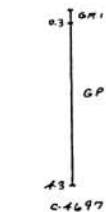


TH 84-9



 GOVERNMENT OF BRITISH COLUMBIA MINISTRY OF TRANSPORTATION & HIGHWAYS GEOTECHNICAL & MATERIALS BRANCH		
JULIET PIT # 2544		
DRAWN <i>ARM</i>	DATE <i>JUNE 84</i>	SCALE
FILE NO. <i>2M-5-2544</i>		DEPTH IN METRES

T.P. 84-1



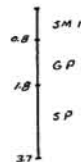
C-4697
COARSE 53 %
SAND 45 %
FINES 2 %

T.P. 84-2



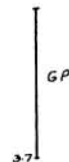
B-440
COARSE 35 %
SAND 63 %
FINES 2 %

T.P. 84-3



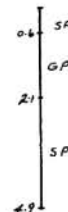
1128
COARSE 38 %
SAND 61 %
FINES 1 %

T.P. 84-4



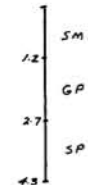
C-4947
COARSE 51 %
SAND 47 %
FINES 2 %

T.P. 84-5



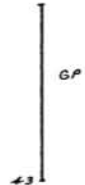
A-4812
COARSE 40 %
SAND 59 %
FINES 1 %

T.P. 84-6



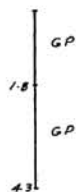
B-451
COARSE 48 %
SAND 50 %
FINES 2 %

T.P. 84-7



C-4652
COARSE 57 %
SAND 42 %
FINES 1 %

T.P. 84-8



A-10750
COARSE 59 %
SAND 40 %
FINES 1 %

T.P. 84-9



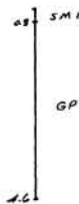
C-5016
COARSE 57 %
SAND 41 %
FINES 2 %

T.P. 84-10



C-4950
COARSE 57 %
SAND 42 %
FINES 1 %

T.P. 84-11



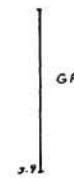
C-4655
COARSE 54 %
SAND 45 %
FINES 1 %

T.P. 84-12



B-483
COARSE 49 %
SAND 50 %
FINE 1 %

T.P. 84-13



C-5041
COARSE 59 %
SAND 40 %
FINE 1 %

T.P. 84-14



C-5012
COARSE 57 %
SAND 41 %
FINES 2 %

T.P. 84-15



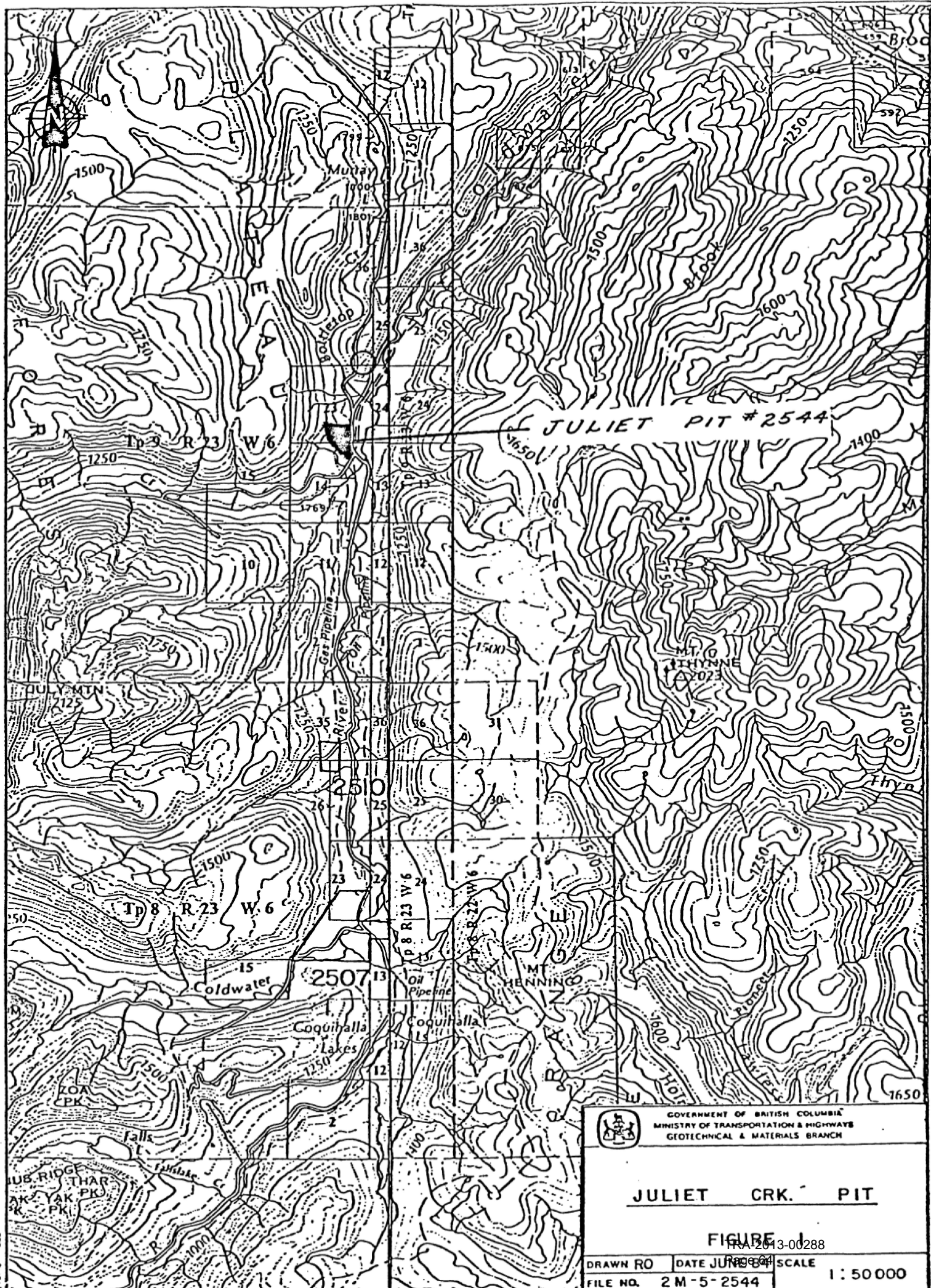
C-5035
COARSE 92 %
SAND 8 %
FINES 0 %



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

JULIET PIT
2544

DRAWN A.R.M. DATE JUNE 84 SCALE
FILE NO. 2M-5-2544 DEPTH'S IN METRES



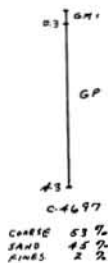
GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

JULIET CRK. PIT

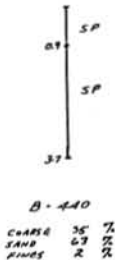
FIGURE 1
TRA 2013-00288

DRAWN RO	DATE JUN 06 2004	SCALE
FILE NO.	2 M-5-2544	1:50 000

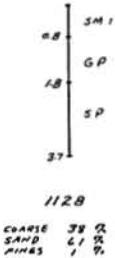
T.P. 84-1



T.P. 84-2



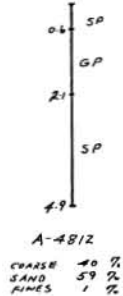
T.P. 84-3



T.P. 84-4



T.P. 84-5



T.P. 84-6



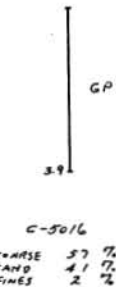
T.P. 84-7



T.P. 84-8



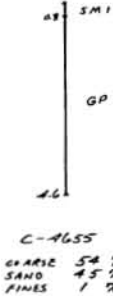
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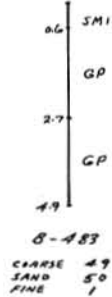
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T.P. 84-11



T.P. 84-12



T.P. 84-13



T.P. 84-14



T.P. 84-15

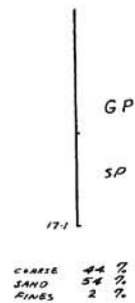


GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

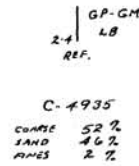
JULIET PIT
2544

DRAWN ARM DATE JUNE 84 SCALE
FILE NO. 2M-5-2544 DEPTH IN METRES

TH 84-1



TH 84-2



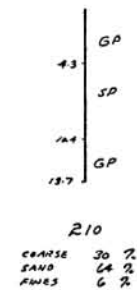
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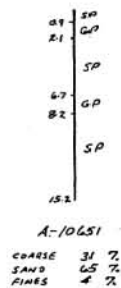
TH 84-4



TH 84-5



TH 84-6



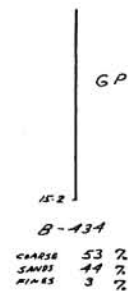
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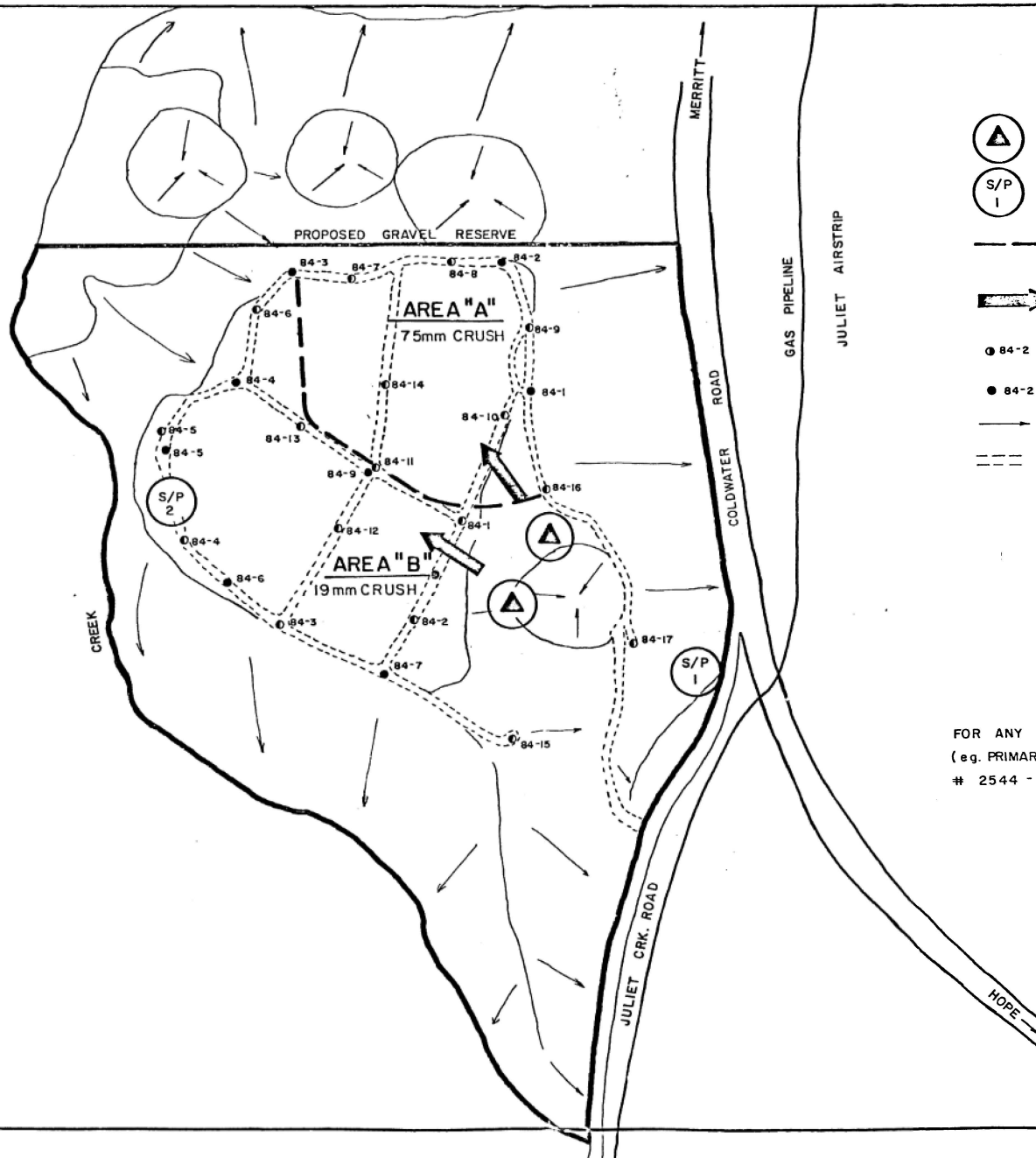
TH 84-8



TH 84-9



 GOVERNMENT OF BRITISH COLUMBIA MINISTRY OF TRANSPORTATION & HIGHWAYS GEOTECHNICAL & MATERIALS BRANCH		
JULIET PIT # 2544		
DRAWN <i>ARM</i>	DATE <i>JUNE 84</i>	SCALE
FILE NO. <i>2M-5-2544</i>		DEPTH IN METRES



LEGEND



PROPOSED CRUSHER or SCREENING
PLANT LOCATION



PROPOSED 19-75 mm CRUSH STOCKPILE
SITE, OPTION #1



SUITABILITY BOUNDARY



DEVELOPMENT DIRECTION



BACKHOE PIT 84-2, DUG IN 1984



DRILL HOLE 84-2, DRILLED IN 1984



SLOPE DIRECTION

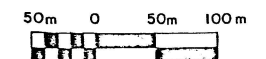


ACCESS ROAD

NOTE

FOR ANY SPECIAL INSTRUCTIONS RE WORKING OF DEPOSIT
(e.g. PRIMARY CRUSHER, BLENDING ETC.) SEE "JULIET PIT
2544 - GRAVEL PIT REPORT".

SKETCH ONLY



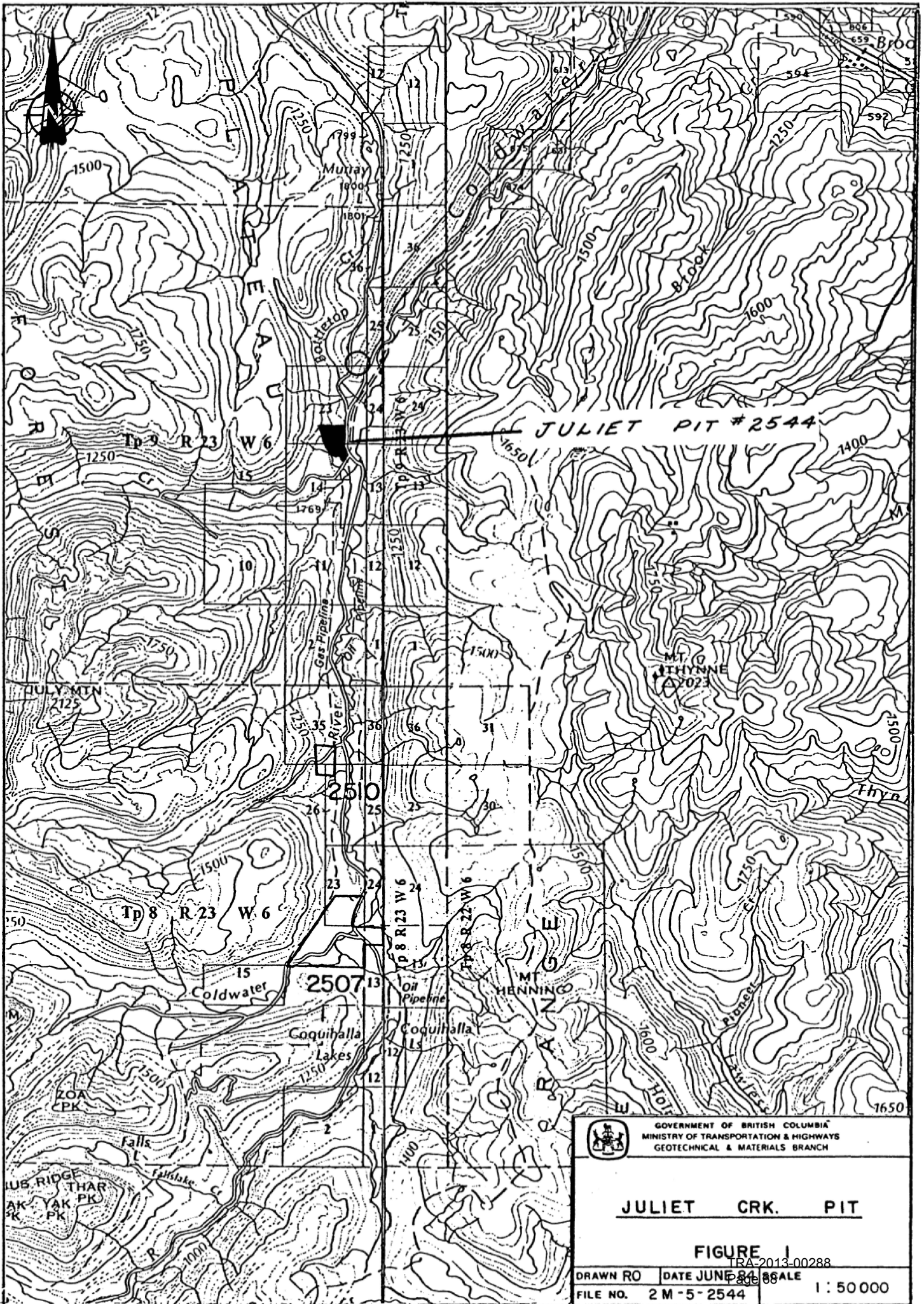
GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

PIT DEVELOPMENT PLAN

JULIET CRK. PROSPECT

FIGURE 2

DRAWN ARM DATE JUNE 84 SCALE 1:4000
FILE NO. 2M-5-2544



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

JULIET CRK. PIT

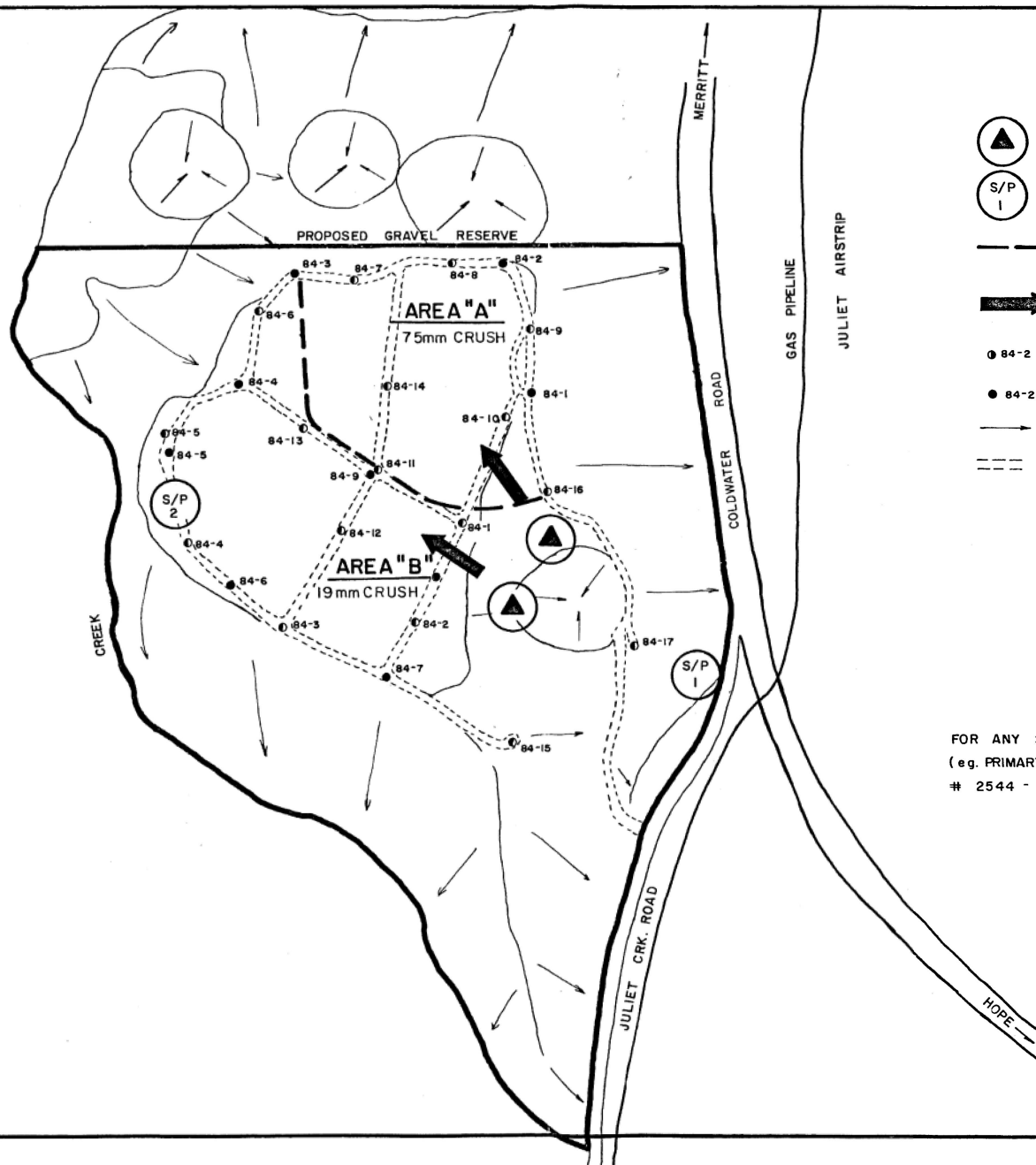
FIGURE 1

TRA-2013-00288

DRAWN RO DATE JUNE 24 2013

FILE NO. 2 M-5-2544

1:50 000



LEGEND



PROPOSED CRUSHER or SCREENING
PLANT LOCATION



PROPOSED 19-75 mm CRUSH STOCKPILE
SITE, OPTION #1



SUITABILITY BOUNDARY



DEVELOPMENT DIRECTION



84-2 BACKHOE PIT 84-2, DUG IN 1984



84-2 DRILL HOLE 84-2, DRILLED IN 1984



SLOPE DIRECTION



ACCESS ROAD

NOTE

FOR ANY SPECIAL INSTRUCTIONS RE WORKING OF DEPOSIT
(eg. PRIMARY CRUSHER, BLENDING ETC.) SEE "JULIET PIT
2544 - GRAVEL PIT REPORT."

SKETCH ONLY



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

PIT DEVELOPMENT PLAN

JULIET CRK. PROSPECT

FIGURE 2

DRAWN ARM	DATE JUNE 84	SCALE 1:4000
FILE NO. 2M-5-2544		

TEST HOLE SUMMARY

[illegible]

REMARKS



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

JULIET PIT
#2544

DRAWN <i>ARM</i>	DATE <i>JUNE 84</i>	SCALE
------------------	---------------------	-------

FILE NO. 2M-5-2544

TRA-2013-00288

Page 70

TEST HOLE SUMMARY

TH	LAB	SAMPLE#	DEPTH M	GRADATION					CRUSHING 19-75 mm	Remarks
				MAX SIZE	% > 75 mm	GRAVEL	SAND	FINES		
C.C.	555	C-4654	0-1.2 m			49	50	1	24	
84-1	556	C-4186	0-1.2			52	42	6	24	S.E. 67.4 %
	557	C-4187	1.2-2.5 m			41	56	3	16	
	558	C-4188	2.5-3.8 m			60	38	2	24	S.E. 77.3 %
	559	C-4189	3.8-5.0 m			56	42	2	29	
	560	C-4190	6.1-7.3 m			43	55	2	22	S.E. 89.7 %
	561	C-4191	8.5-9.8 m			29	70	1	12	
	562	C-4192	12.2-13.4 m			34	65	1	24	S.E. 81.8 %
	563	C-4193	15.9-17.1 m			26	72	2	15	
84-2	610	C4935	0-2.4 m			52	46	2	25	
84-3	611	B781	0-3 m			25	73	2	11	
	612	C4663	3-7 m			25	73	2	10	S.E. 76.2 %
	613	C4684	7-9.1 m			42	53	5	17	
	614	C5024	9.1-12.2 m			33	65	2	11	
	615	C5005	12.2-15.2 m			25	72	3	6	
	616	C4749	0-15.2 m			36	62	2	16	S.E. 78.0 %
84-4	617	C4661	0-3 m			54	43	3	24	
	618	C4687	3-6.1 m			48	49	3	22	
	619	C4657	6.1-8.2 m			43	53	4	24	
	620	C4735	8.2-11.6 m			32	64	4	15	
	621	C5025	11.6-15.2 m			53	44	3	37	
	622	A8415	0-15.2 m			42	53	5	16	
84-5	623	C4737	0.3-2.1 m			55	42	2	31	
	624	C4678	2.1-5.2 m			8	75	17	—	
	625	C4908	5.2-10.4 m			18	80	2	2	
	626	C4738	10.4-12.2 m			28	68	4	13	
	627	C4686	12.2-13.7 m			49	47	4	24	
	628	Z10	0.3-13.7 m			30	64	6	11	

REMARKS

DEG'S

TH 84-1	76.6	1.5	TH 84-1	65.6	1.7
(556)	70.3	1.5	(558)	69.1	1.7
TH 84-3	84.7	1.7	TH 84-1	75.3	1.5
(612)	84.7	1.5	(560)	76.6	1.5
TH 84-3	77.9	0.7	TH 84-1	72.7	1.1
(616)	75.3	1.0	562	75.3	1.2



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

JULIET PIT
2544

DRAWN ARM DATE JUNE 84 SCALE
FILE NO. 2M-5-2544

TEST HOLE SUMMARY

				GRADATION					CRUSHING 19-75 mm	
				MAX SIZE	% > 75 mm	GRAVEL	SAND	FINES		
TH ^m	LAB ^m	SAMPLE#	DEPTH M			%	%	%	%	Remarks
84-6	629	C 4948	0.9-2.1 m			36	61	3	12	
	630	C 4930	3.4-6.7			20	78	2	6	
	631	C 4934	6.7-8.2			32	66	2	6	
	632	B 782	8.2-10.7			35	63	2	11	
	633	A 4800	12.2-15.2			37	60	3	2	
	634	A 10651	0-15.2			31	65	4	10	
84-7	635	C 4924	1.2-2.4			52	46	2	25	
	636	A 4871	3.7-5.5			26	72	2	14	
	637	C 4862	5.5-6.4			29	69	2	13	
	638	C 4746	6.4-12.2			20	79	1	6	S.E. 87.5%
	639	B 735	12.2-15.2			11	87	2	5	
	640	B 435	0-15.2			32	65	3	13	S.E. 79.5%
84-8	641	C 4933	0-0.6			45	53	2	16	
	642	A 553	0.6-4.6			44	53	3	20	
	643	B 980	4.6-10.7			47	51	2	15	
	644	B 742	4.6-10.7			50	48	2	20	
	645	C 4397	12.2-18.3			50	48	2	15	
	646	C 4742	18.3-22.9			62	37	1	23	
	647	C 4739	18.3-21.3			58	41	1	24	
	648	C 5044	0-22.9			67	31	2	12	
84-9	649	C 4740	3-6.1			52	47	1	34	
	650	C 4937	6.1-9.1			66	32	2	21	S.E. 85.0%
	651	100	9.1-12.2			63	36	1	20	
	652	B 733	12.2-15.2			42	55	3	11	
	653	B 434	0-15.2			53	44	3	21	S.E. 64.3%

REMARKS

DEG'S



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

TH 84-7	83.6	1.7	TH 84-9	77.9	1.4
(639)	82.1	1.2	(650)	75.3	1.4
TH 84-7	79.3	1.0	TH 84-9	76.6	1.0
(640)	79.3	1.0	(653)	76.6	0.9

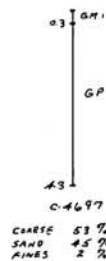
JULIET PIT
2544

DRAWN ARM DATE JUNE 89 SCALE

FILE NO. 2M-5-2544

TRA-2013-00288

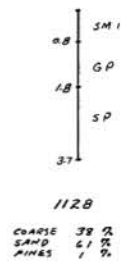
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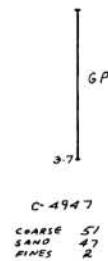
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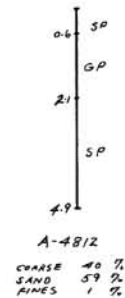
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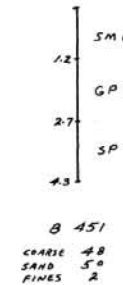
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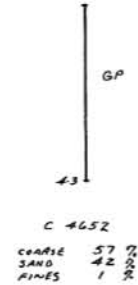
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T.P. 84-6



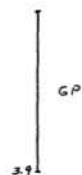
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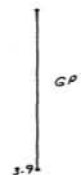
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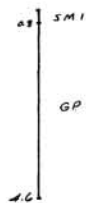
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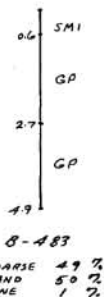
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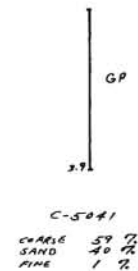
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T.P. 84-12



T.P. 84-13



T.P. 84-14



T.P. 84-15

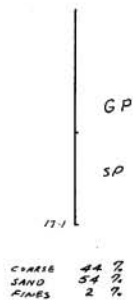


GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION & HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH

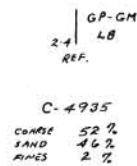
JULIET PIT
2544

DRAWN A.R.M. DATE JUNE 84 SCALE
FILE NO. 2M-5-2544 DEPTH'S IN METRES

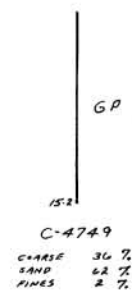
TH 84-1



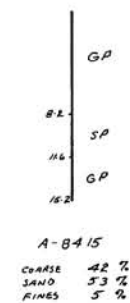
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TH 84-3



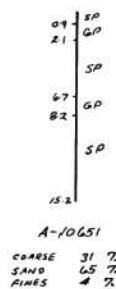
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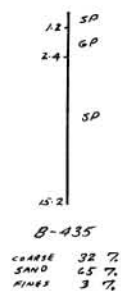
TH 84-5



TH 84-6



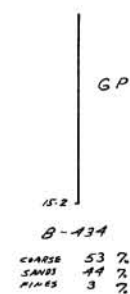
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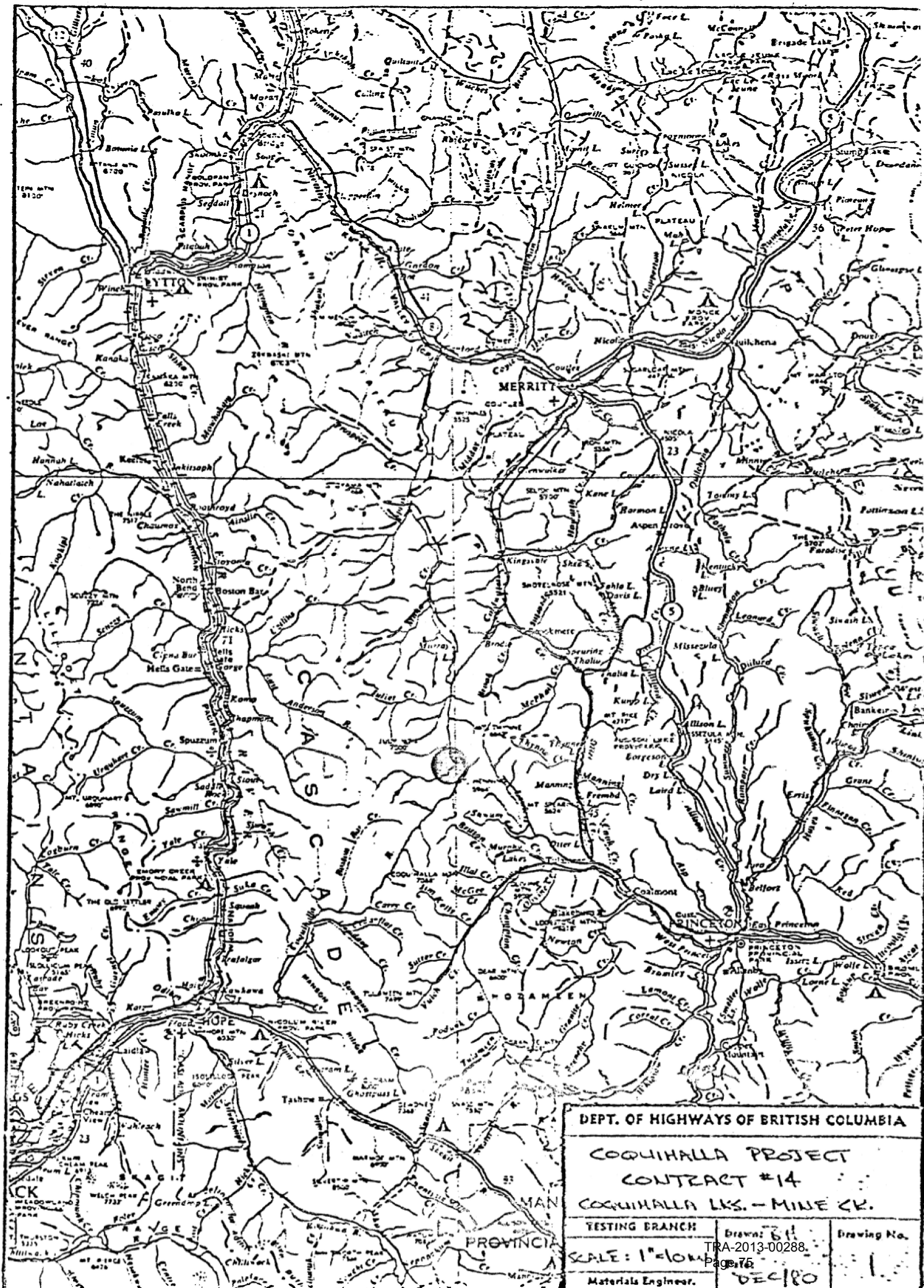
TH 84-8



TH 84-9



 GOVERNMENT OF BRITISH COLUMBIA MINISTRY OF TRANSPORTATION & HIGHWAYS GEOTECHNICAL & MATERIALS BRANCH		
JULIET PIT # 2544		
DRAWN ARM	DATE JUNE 84	SCALE
FILE NO. 2M-5-2544		DEPTH IN METRES



DEPT. OF HIGHWAYS OF BRITISH COLUMBIA

COQUIHALLA PROJECT
CONTRACT #14

COQUIHALLA LKS. - MINE CR.

TESTING BRANCH

DRAWN BY

Drawing No.

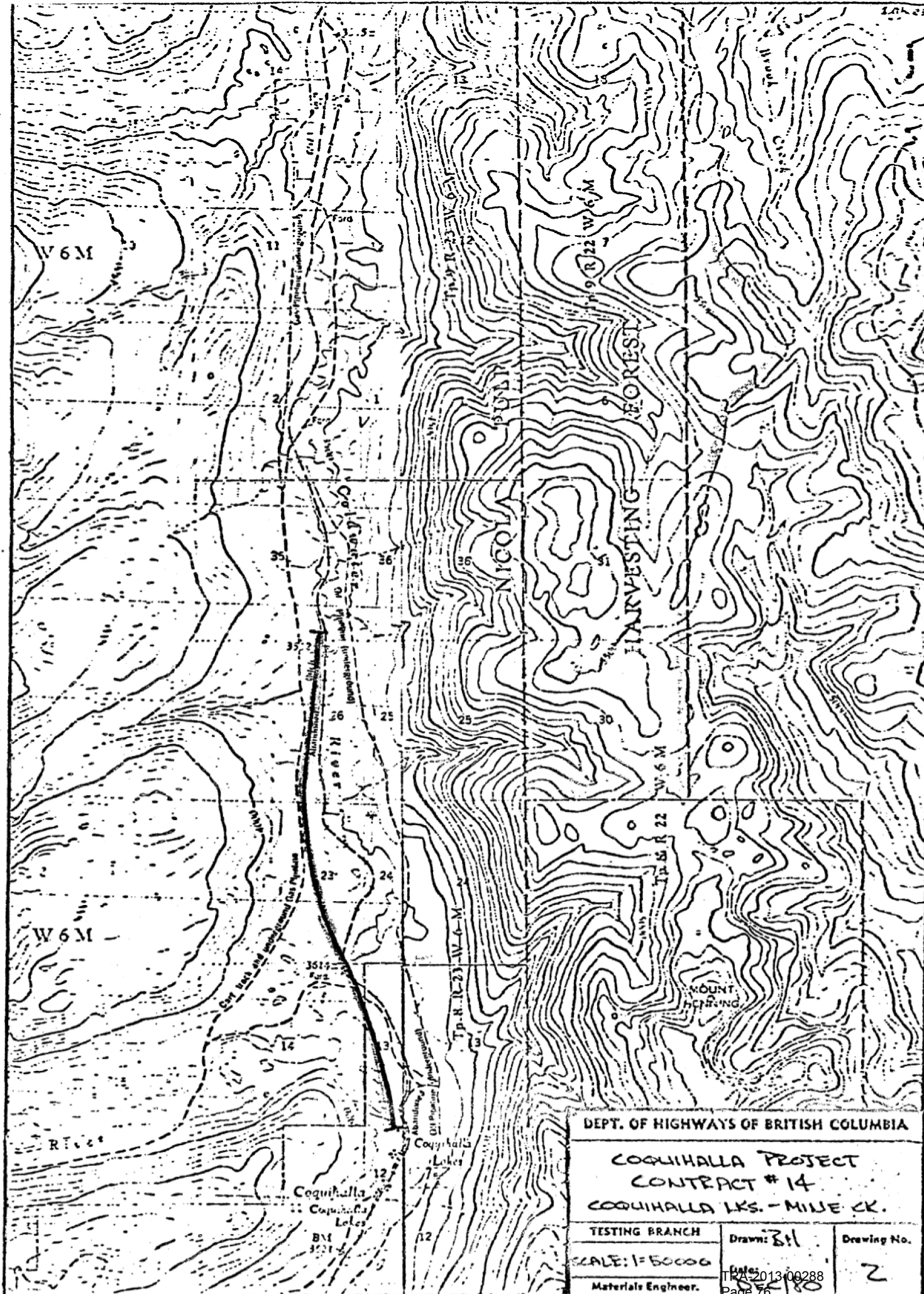
SCALE: 1"=1000'

TRA-2013-00288

Page 76

Materials Engineer.

DEC 180

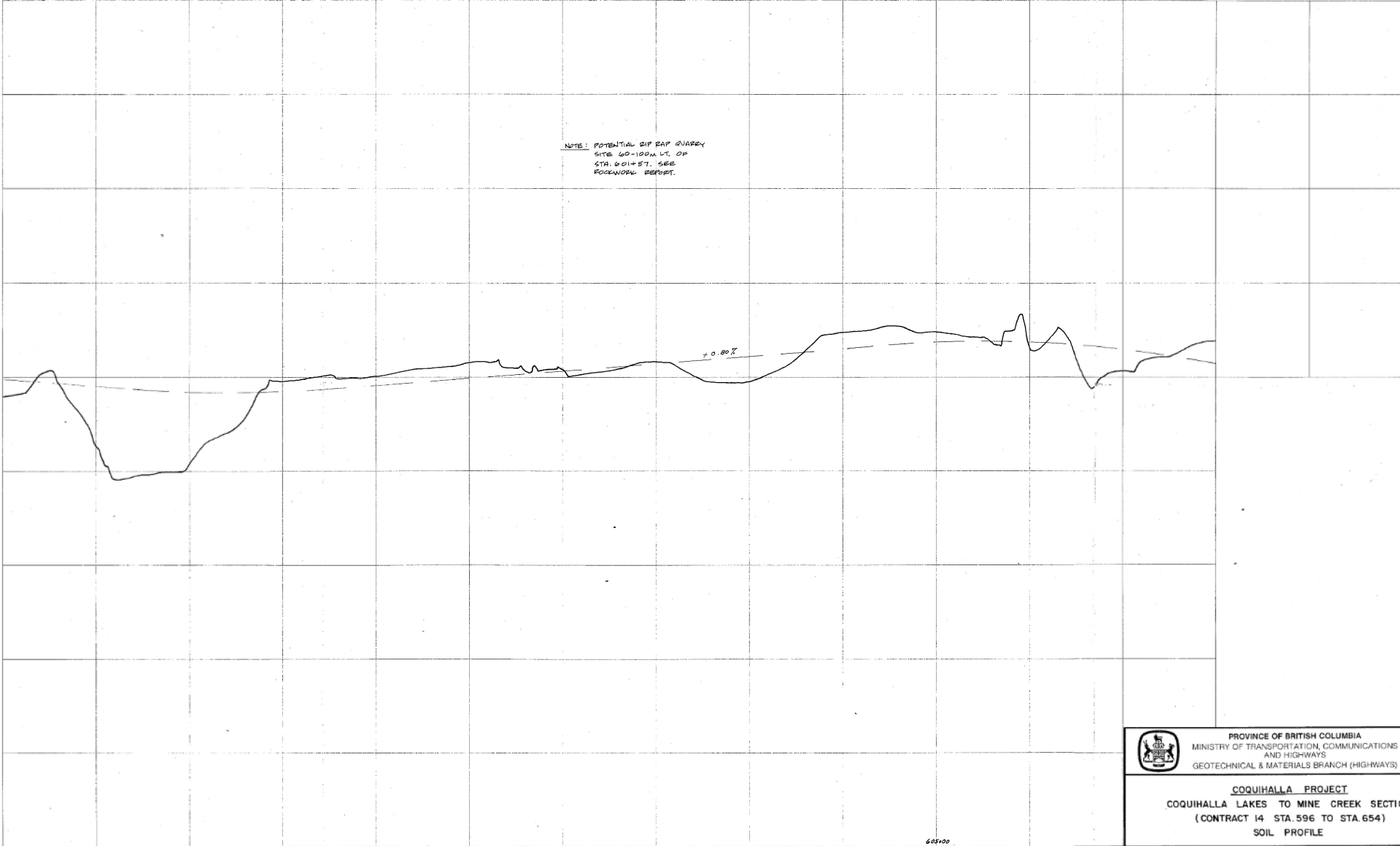


DEPT. OF HIGHWAYS OF BRITISH COLUMBIA

COQUIHALLA PROJECT
CONTRACT # 14
COQUIHALLA LKS. - MIKE CK.

TESTING BRANCH	Drawn: B.H.	Drawing No.
SCALE: 1"=50000	Date: 10/10/80	2
Materials Engineer.	File: TR-2013-00288	
	Page 76	

150mm EXCEPT IN SWAMPY AREAS (SEE SOILS REPORT)				VISUAL SOIL CLASSIFICATION
D TYPE				STRIPPING
A - TYPE				EXCAVATION CLASSIFICATION
VERTICAL				DESIGN SLOPES
SEE PAVEMENT DESIGN REPORT				GRAVEL DEPTHS (S&SB)
				REMARKS



PROVINCE OF BRITISH COLUMBIA MINISTRY OF TRANSPORTATION, COMMUNICATIONS AND HIGHWAYS GEOTECHNICAL & MATERIALS BRANCH (HIGHWAYS)			
COQUIHALLA PROJECT COQUIHALLA LAKES TO MINE CREEK SECTION (CONTRACT 14 STA. 596 TO STA. 654) SOIL PROFILE			
DESIGNED DRAWN CHECKED APPROVED		SCALE: HORIZ. 1"=500' VERT. 1"=20' PROJ. NO. REG. NO. FILE NO. INDEX DES. NO. SHT. NO.	
DATE DESCRIPTION INITIAL		DRAWING NO. 1 OF 6	

TRA-2013-00288

NOTE: STEEP 25% IN SWAMPY AREA (STA 614+70 AREA) AND GRADE IS POSSIBLE.

1.75%

STA 619+50.00

STA 620+30.00

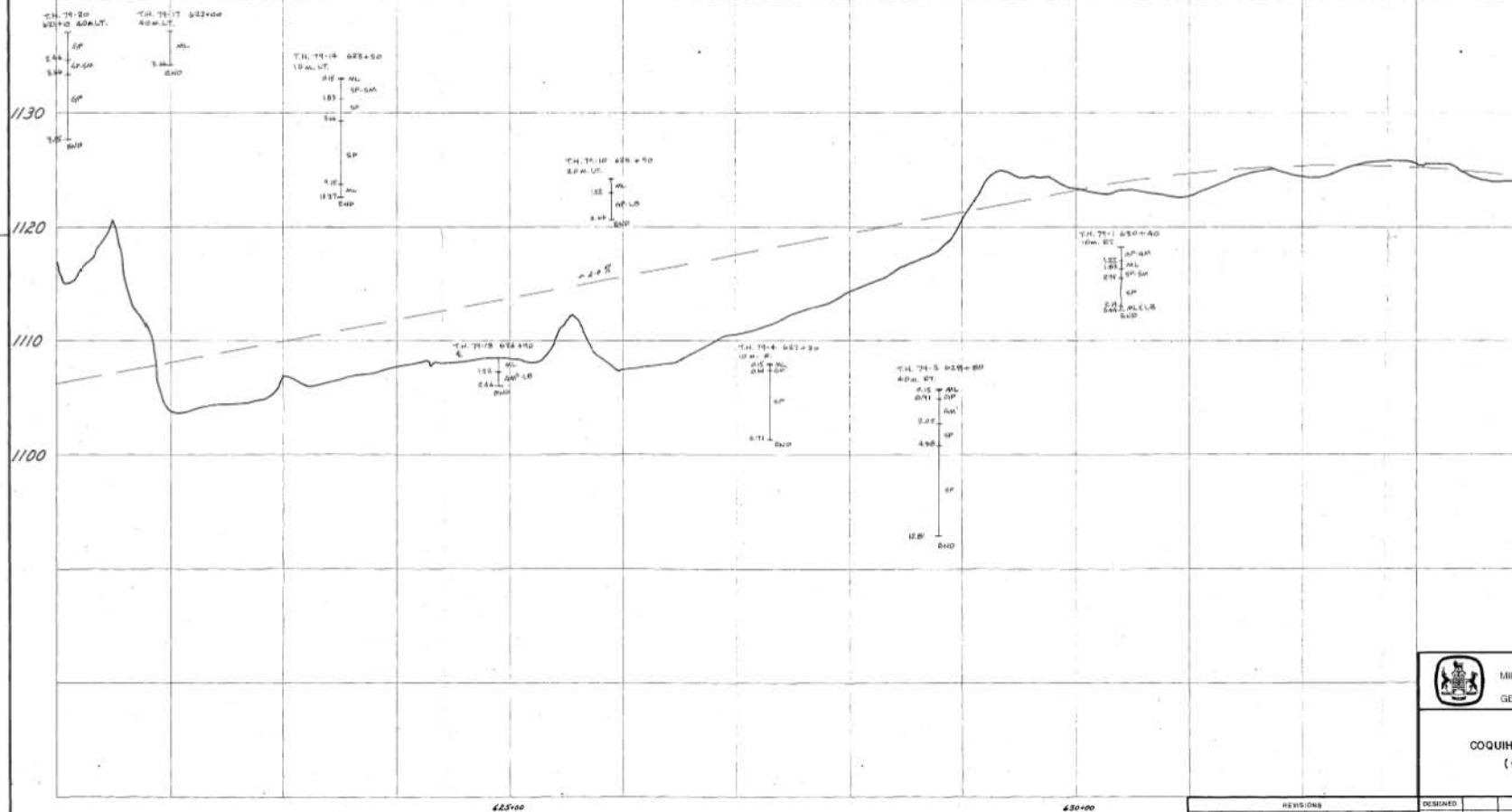
1.5M (1.5M)
1.5M (1.5M)
1.5M (1.5M)
1.5M (1.5M)

PROVINCE OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION, COMMUNICATION AND HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH (HIGHWAYS)

COQUIHALLA PROJECT
COQUIHALLA LAKES TO MINE CREEK SECT
(CONTRACT 14 STA. 596 TO STA. 654)
SOIL PROFILE

TRA 2013 00288
Page 78

	VISUAL SOIL CLASSIFICATION
SDP	STRIPPING
D-TYPE	EXCAVATION CLASSIFICATION
(1%)	DESIGN SLOPES
SBS Pavement Recycled Asphalt	GRAVEL DEPTHS (450)
	REMARKS

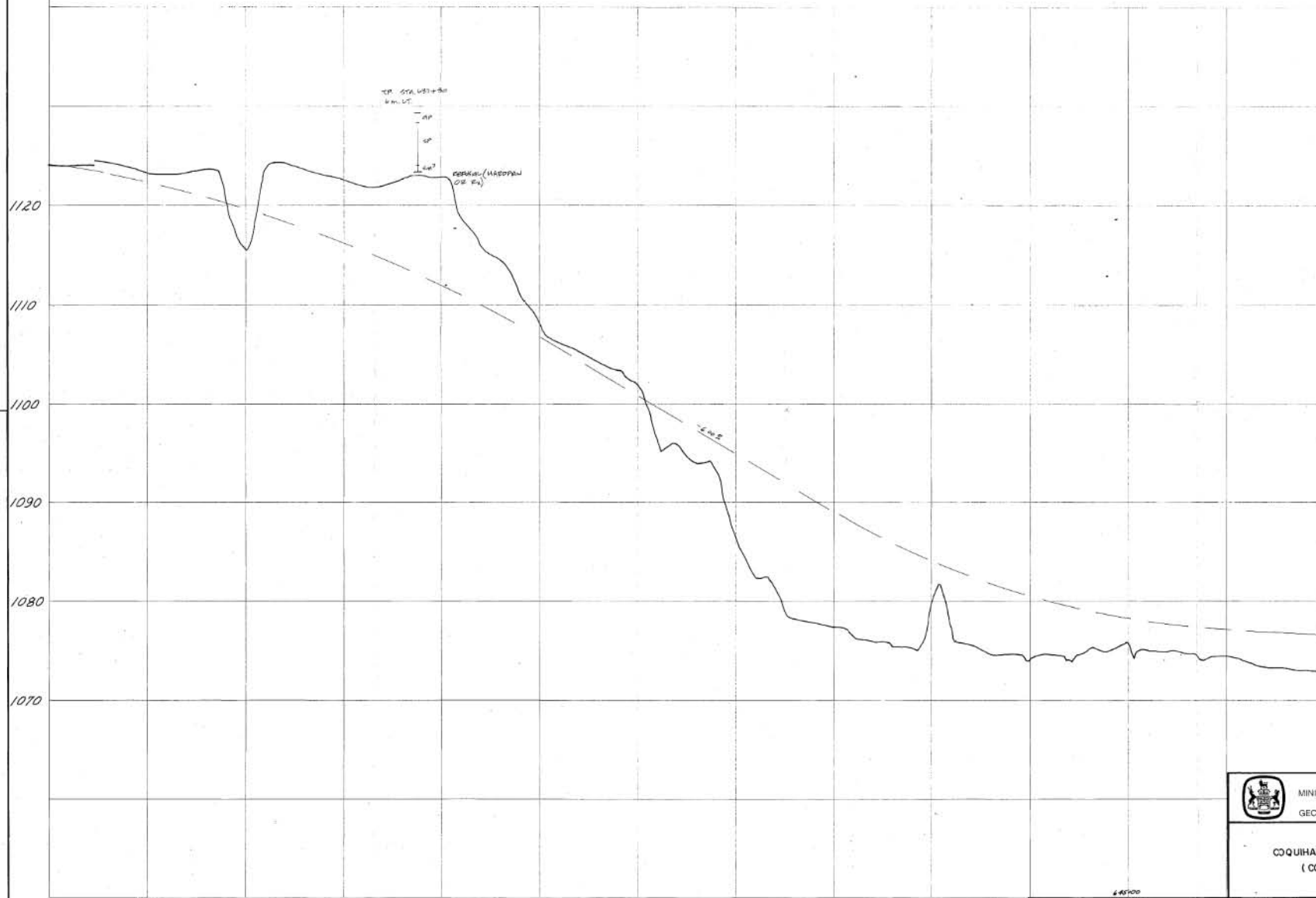


	PROVINCE OF BRITISH COLUMBIA MINISTRY OF TRANSPORTATION, COMMUNICATIONS AND HIGHWAYS GEOTECHNICAL & MATERIALS BRANCH (1 HIGHWAYS)			
	<u>COOQUHALLA PROJECT</u>			
	COOQUHALLA LAKES TO MINE CREEK SECTION (CONTRACT 14 STA.596 TO STA.654) SOIL PROFILE			

DESIGNED		SCALE 1" = 200' HORIZ. 1" = 200' VERT.			
DRAWN	ARM				
TRACED		PROJ. NO.	REG. NO.	DRAWING NO.	
CHECKED		FILE NO.		INDEX	NEED. NO. SHEET NO.
APPROVED	DATE	APPROVED	DATE		

D-TYPE BUT MAY ENCOUNTER
SOME A OR E TYPE AT DEPTH
1/2 IN D OF C TYPE, VERTICAL IN B-TYPE

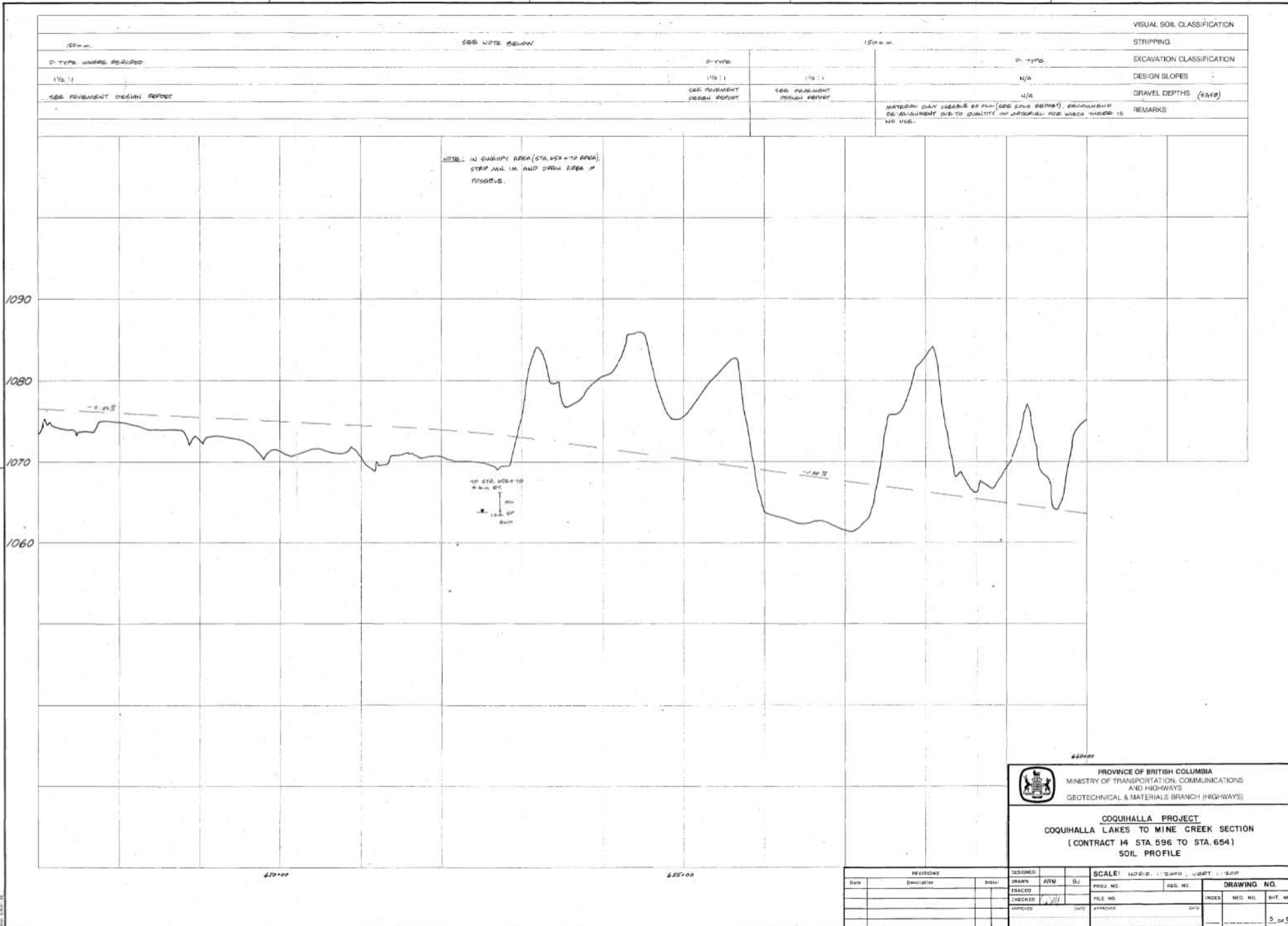
VISUAL SOIL CLASSIFICATION
STRIPPING
EXCAVATION CLASSIFICATION
DESIGN SLOPES
GRAVEL DEPTHS
REMARKS



PROVINCE OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION, COMMUNICATIONS
AND HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH (HIGHWAYS)

COQUIHALLA PROJECT
COQUIHALLA LAKES TO MINE CREEK SECTION
(CONTRACT 14 STA. 596 TO STA. 654)
SOIL PROFILE

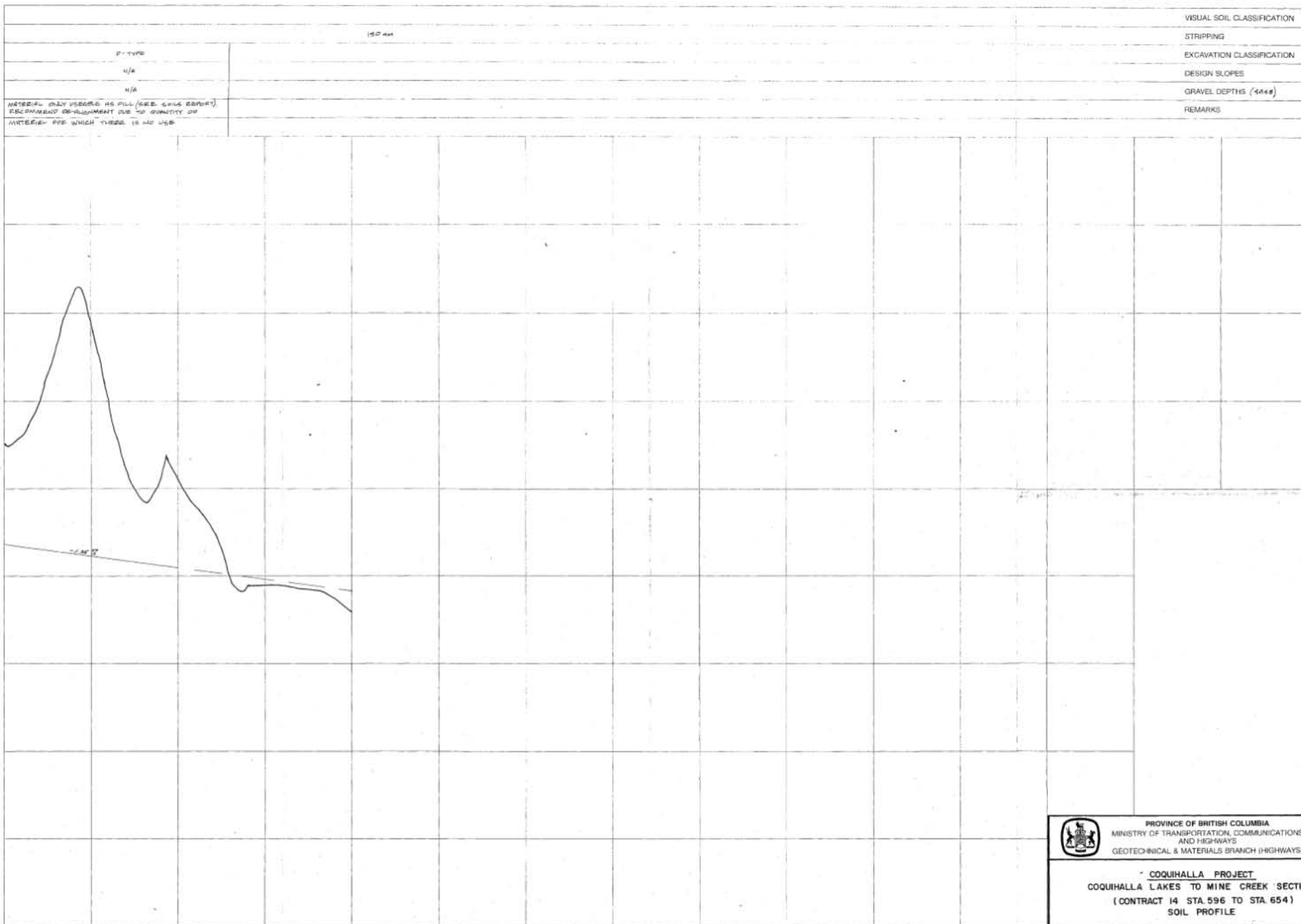
REVISIONS			DESIGNED			SCALE: HORIZ. 1:2000, VERT. 1:200		
Date	Description	Initial	Drawn	ARM	BJ	Proj. No.	Res. No.	Drawing No.
			Checked			File No. <td>Index <td>Reg. No.</td> </td>	Index <td>Reg. No.</td>	Reg. No.
			Approved			Date <td>Date <td>Sht. No.</td> </td>	Date <td>Sht. No.</td>	Sht. No.
								4 OF 6



PROVINCE OF BRITISH COLUMBIA
 MINISTRY OF TRANSPORTATION, COMMUNICATIONS
 AND HIGHWAYS
 GEOTECHNICAL & MATERIALS BRANCH (HIGHWAYS)

COQUIHALLA PROJECT
 COQUIHALLA LAKES TO MINE CREEK SECTION
 (CONTRACT 14 STA. 596 TO STA. 654)
SOIL PROFILE

REVISIONS			DESIGNED			SCALE: HORIZ. 1:2,000, VERT. 1:200		
Date	Description	Initial	DRYAN	ARM	BJ	PROJ. NO.	RES. NO.	DRAWING NO.
			FRACED			FILE NO.		INDEX
			CHECKED			DATE		REV. NO.
			APPROVED					SHEET NO.
								5 OF 8



VISUAL SOIL CLASSIFICATION

STRIPPING

EXCAVATION CLASSIFICATION

DESIGN SLOPES

GRAVEL DEPTHS (4048)

REMARKS



PROVINCE OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION, COMMUNICATIONS
AND HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH (HIGHWAYS)

COQUIHALLA PROJECT
COQUIHALLA LAKES TO MINE CREEK SECTION
(CONTRACT 14 STA 596 TO STA 654)
SOIL PROFILE

REVISIONS			DESIGNED			SCALE: HORIZ. 1:2000 VERT. 1:200			DRAWING NO.		
Date	Description	INITIAL	DRWN	APP	BJ	PROJ. NO.	REG. NO.		INDEX	REG. NO.	SHT. NO.

[illegible][illegible]

Journal of Management Education 35(10) 1033-1046

2011 CLASSIFICATION CHART

SAMPLE TYPE	SHEAR STRENGTH	TESTS
A-AUGER	U-UNCONFINED	M-MECHANICAL
C-CORE	COMPRESSIION	ANALYSIS
D-DENISON	L ₁ -LAB VANE	QRS-TRIAXIAL
S-SPLIT SPOON	F ₁ -FIELD VANE	COMPRESSIION
T-SHELLEY TUBE	R-REMOVED	C-CONSOLIDATION
W-WASH		DS-DIRECT SHEAR
G-GRAB SAMPLE		W _L -LIQUID PLASTIC P LIMITS
		W- MOISTURE CONTENT

BLOWCOUNT = STANDARD PENETRATION TEST (ASTM 1586)

NOTE: FOR LOCATIONS OF BOREHOLES, SEE PLATE 2.

PREPARED BY -
Robinson

DAMES & MOORE

AUG 29 1984



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

COQUIHALLA HIGHWAY
COQUIHALLA RIVER CROSSING NO 2830
LOGS OF BORINGS

D			PREPARED UNDER THE DIRECTION OF	DATE	SCALE: 1"=200'	NEG. NO.	
C					DRAWN	L.L.	JUL 84
B			DESIGNED BY		CHECKED	P.L.	JUL 84
A			APPROVED FOR USE IN CONSTRUCTION	DATE	DRAWING NO.		
REVISIONS			A. 3.				

[illegible][illegible]

MAJOR DIVISIONS			GRAIN SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTION
COARSE GRADES SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELLY CLAY OR CLAYEY GRAVEL		GH	GRAVELLY CLAY OR CLAYEY GRAVEL
	SOFT TOY. OR M. CLAY WITH SOME GRAVEL	GRAVELLY WITH SOME CLAY		GM	GRAVELLY WITH SOME CLAY
	SOFT TOY. OR M. SANDY CLAY	CLAYEY SAND WITH SOME GRAVEL		GC	CLAYEY SAND, SOME GRAVEL
	SAND AND SANDY SOILS	CLEAN SAND WITH SOME GRAVEL		SW	CLEAN SAND, SOME GRAVEL
FINE GRADES SOILS	SOFT TOY. OR M. CLAY WITH SOME SAND	CLAYEY WITH FINE SAND		SM	CLAYEY WITH FINE SAND
	CLAY AND CLAYEY SOILS	CLEAN CLAY WITH SOME SAND		SC	CLEAN CLAY, SOME SAND
	CLAY AND CLAYEY SOILS	CLEAN CLAY WITH SOME SAND		ML	CLEAN CLAY, SOME SAND
	CLAY AND CLAYEY SOILS	CLEAN CLAY WITH SOME SAND		CL	CLEAN CLAY, SOME SAND
FINE GRADES SOILS	CLAY AND CLAYEY SOILS	CLEAN CLAY WITH SOME SAND		UL	CLEAN CLAY, SOME SAND
	CLAY AND CLAYEY SOILS	CLEAN CLAY WITH SOME SAND		MH	CLEAN CLAY, SOME SAND
	CLAY AND CLAYEY SOILS	CLEAN CLAY WITH SOME SAND		CH	CLEAN CLAY, SOME SAND
	CLAY AND CLAYEY SOILS	CLEAN CLAY WITH SOME SAND		PT	CLEAN CLAY, SOME SAND

.....

SOIL CLASSIFICATION CHART

SAMPLE TYPE	SHEAR STRENGTH	TESTS
-------------	----------------	-------

A-AUGER	U-UNCONFINED	M-MECHANICAL
C-CORE	COMPRESSION	ANALYSIS
D-DENISON	L ₁ -LAB VANE	QRS-TRIAXIAL
S-SPLIT SPOON	F ₁ -FIELD VANE	COMPRESSION
T-SHELBY TUBE	R-REMOULDED	C-CONSOLIDATION
W-WASH		DS-DIRECT SHEAR
G-GRAB SAMPLE		W _L -LIQUID PLASTIC
		LIMITS
		W-MOISTURE CONTENT

BLOWCOUNT - STANDARD PENETRATION TEST (ASTM 1586)

NOTE: FOR LOCATIONS OF BOREHOLES, SEE PLATE 2.

PREPARED BY

Robinson

DAMES & MOORE

AUG 29 1984



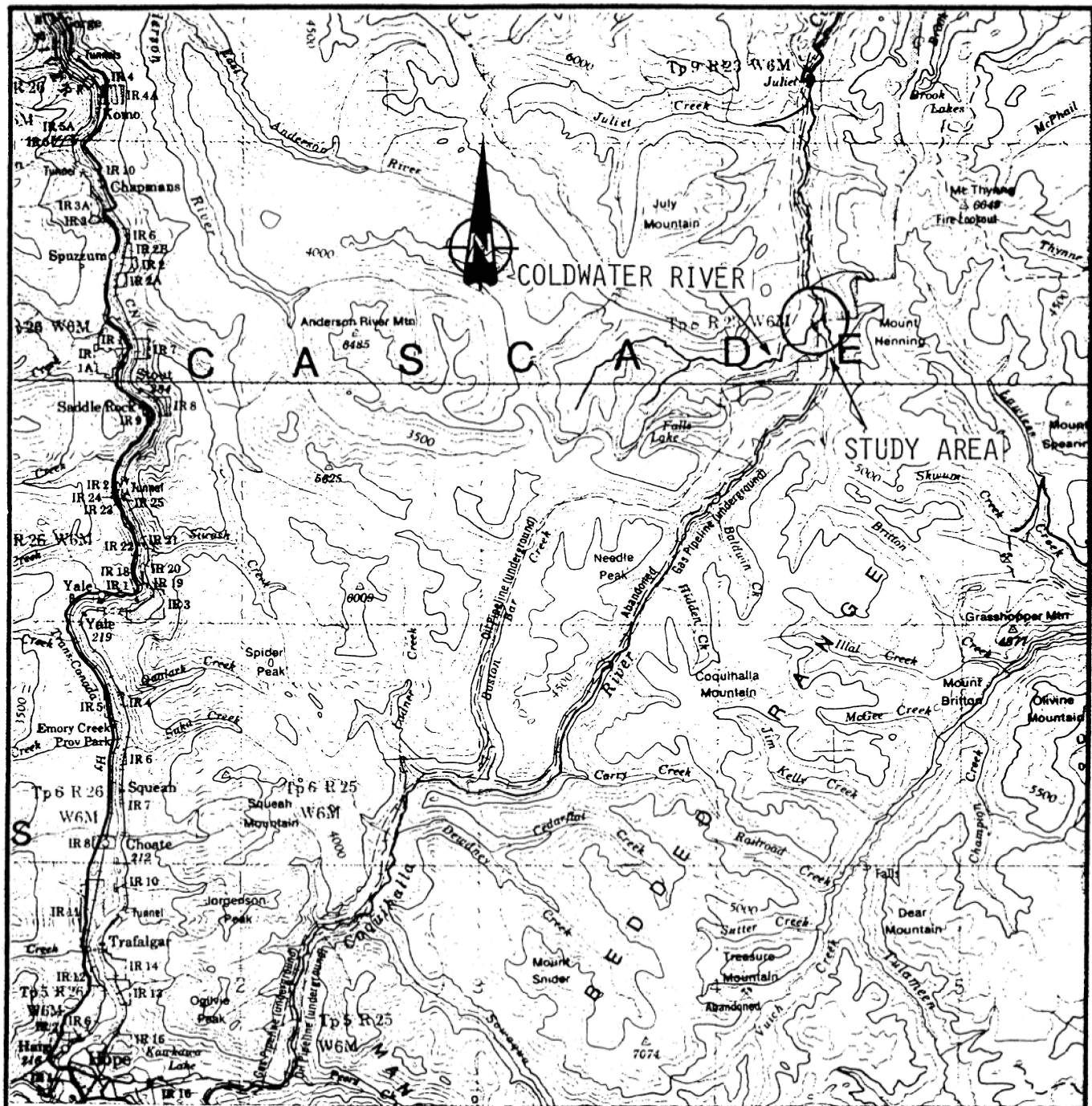
GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

COQUIHALLA HIGHWAY
COQUIHALLA RIVER CROSSING NO 2830
LOGS OF BORINGS

D	REVISIONS 	PREPARED UNDER THE DIRECTION OF	DATE	SCALE: 1" = 200'	NES No		
C			DATE	DRAWN	LL	DATE	CHECKED
B							
A							
REVISIONS		APPROVED FOR USE IN CONSTRUCTION	DATE	EXAMINED AND ACCEPTED		DATE	DRAWING No.
							A-1

TBA 2013 00289 ^{CANC}

Page 84



PREPARED BY:
Robinson

DAMES & MOORE



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

COQUIHALLA HIGHWAY COLDWATER RIVER CROSSING No.2830 LOCATION PLAN

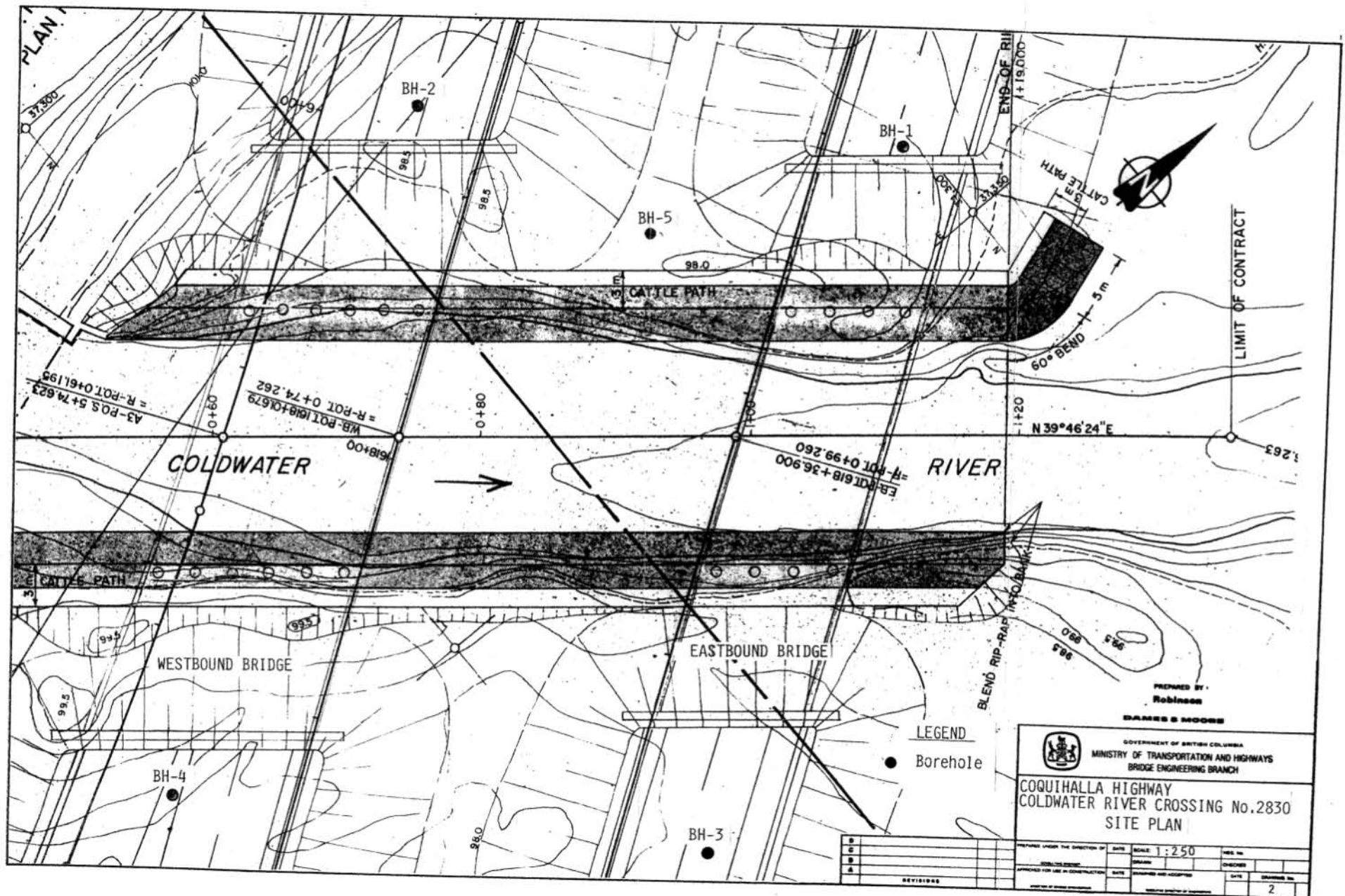
B			
C			
D			
A			
REVISIONS			

PREPARED UNDER THE DIRECTION OF	DATE	SCALE 1:250,000	H&B No.
DESIGNED BY		DRAWN	CHECKED
APPROVED FOR USE IN CONSTRUCTION	DATE	EXAMINED AND ACCEPTED	DATE
DIRECTOR OF BRIDGE ENGINEERING		BRIDGE ENGINEER	

TRA-2013-00288

Page 05

1



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BOIL CLASSIFICATION CHART

A-AUGER	U-UNCONFINED	M-MECHANICAL
C-CORE	COMPRESSION	ANALYSIS
D-DENSON	L ₁ -LAB VANE	ORS-TRIAXIAL
S-SPLIT SPOON	F-FIELD VANE	COMPRESSION
T-SHELBY TUBE	R-REMOULDED	C-CONSOLIDATION
W-WASH		DS-DIRECT SHEAR
G-GRAB SAMPLE		W _L W _p -LIQUID PLASTIC LIMITS
		W-MOISTURE CONTENT

BLOWCOUNT - STANDARD PENETRATION TEST (ASTM 1586)

NOTE: FOR LOCATIONS OF BOREHOLES, SEE PLATE 2

[illegible]

PREPARED BY :
Robinson

DAMES & MOORE

GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

COQUIHALLA HIGHWAY
COQUIHALLA RIVER CROSSING NO 2830
LOGS OF BORINGS

D					PREPARED UNDER THE DIRECTION OF	DATE	SCALE: 1 : 200	REQ. No.	
C					_____	7/17/84	DRAWING	S.L.	7/17/84
B					CONTRA BY: _____			CHECKED	PH
A					APPROVED FOR USE IN CONSTRUCTION	DATE	EXAMINED AND ACCEPTED	DATE	DRAWING No.
REVISIONS									

CANCEL PRINTS BEARING EARLIER SETTING

BOREHOLE						Nº	LOCATION _____		ELEVATION _____	
DRILLER _____		METHOD _____				DATES _____				
DRILLING DETAILS	DEPTH [m]	SAMPLE TYPE	RECOVERY	SOIL STRENGTH	GROUNDS %		INDEX PROPERTIES	CLASSIFICATION	DESCRIPTION	
					FINES	SAND				GRAVEL
WATER IN TANK										
	>10									
	>80									
	>30									

[illegible]

MAJOR DIVISIONS			SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTION
CRACKS CRACKS CRACKS	SPALLS SPALLS SPALLS	CRACKS CRACKS CRACKS		SP SP SP	SPALLS SPALLS SPALLS
	CRACKS CRACKS CRACKS	CRACKS CRACKS CRACKS		CR CR CR	CRACKS CRACKS CRACKS
	CRACKS CRACKS CRACKS	CRACKS CRACKS CRACKS		CR CR CR	CRACKS CRACKS CRACKS
	CRACKS CRACKS CRACKS	CRACKS CRACKS CRACKS		CR CR CR	CRACKS CRACKS CRACKS
	CRACKS CRACKS CRACKS	CRACKS CRACKS CRACKS		CR CR CR	CRACKS CRACKS CRACKS
CRACKS CRACKS CRACKS	CRACKS CRACKS CRACKS	CRACKS CRACKS CRACKS		CR CR CR	CRACKS CRACKS CRACKS
	CRACKS CRACKS CRACKS	CRACKS CRACKS CRACKS		CR CR CR	CRACKS CRACKS CRACKS
	CRACKS CRACKS CRACKS	CRACKS CRACKS CRACKS		CR CR CR	CRACKS CRACKS CRACKS
	CRACKS CRACKS CRACKS	CRACKS CRACKS CRACKS		CR CR CR	CRACKS CRACKS CRACKS
	CRACKS CRACKS CRACKS	CRACKS CRACKS CRACKS		CR CR CR	CRACKS CRACKS CRACKS
CRACKS CRACKS CRACKS	CRACKS CRACKS CRACKS	CRACKS CRACKS CRACKS		CR CR CR	CRACKS CRACKS CRACKS
	CRACKS CRACKS CRACKS	CRACKS CRACKS CRACKS		CR CR CR	CRACKS CRACKS CRACKS
	CRACKS CRACKS CRACKS	CRACKS CRACKS CRACKS		CR CR CR	CRACKS CRACKS CRACKS
	CRACKS CRACKS CRACKS	CRACKS CRACKS CRACKS		CR CR CR	CRACKS CRACKS CRACKS
	CRACKS CRACKS CRACKS	CRACKS CRACKS CRACKS		CR CR CR	CRACKS CRACKS CRACKS

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SOIL CLASSIFICATION CHART

SAMPLE TYPE	SHEAR STRENGTH	TESTS
-------------	----------------	-------

A-AUGER	U-UNCONFINED	M-MECHANICAL
C-CORE	COMPRESSION	ANALYSIS
D-DENSON	L ₂ -LAB VANE	QMS-TRIAXIAL
S-SPLIT SPOON	F-FIELD VANE	COMPRESSION
T-SHELBY TUBE	R-REMOULDED	C-CONSOLIDATION
W-WASH		DS-DIRECT SHEAR
G-GRAB SAMPLE		W _L -LIQUID PLASTIC
		L _P -LIMITS
		W-MOISTURE CONTENT

BLOWCOUNT - STANDARD PENETRATION TEST (ASTM 1586)

NOTE: FOR LOCATIONS OF BOREHOLES SEE PLATE 2

PREPARED BY :
Robinson

DAMES & MOORE



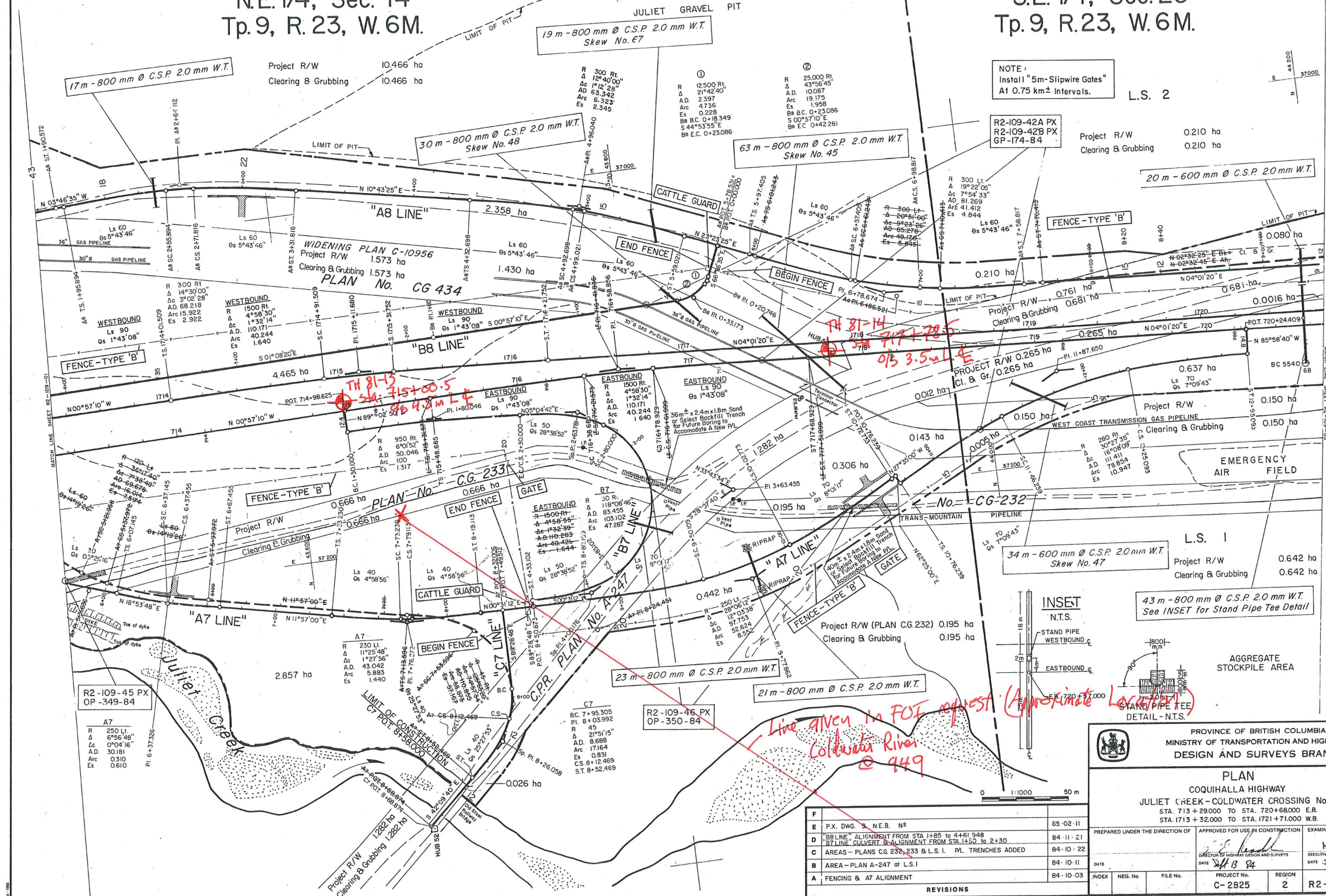
GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

COQUIHALLA HIGHWAY
COQUIHALLA RIVER CROSSING NO 2830
LOGS OF BDRINGS

D		PREPARED UNDER THE DIRECTION OF	DATE	SCALE	1/200	REQ. NO.	
C				DRAWN	LL	JUL 24	CHECKED
B		APPROVED FOR USE IN CONSTRUCTION	DATE	EXAMINED AND ACCEPTED			PH
A							
REVISIONS							

CANCEL PRINTS BEARING EARLIER LETTERS

S.E. 1/4, Sec. 23
Tp. 9, R. 23, W. 6M.



H-181

GEOTECHNICAL and MATERIALS BRANCH – BOREHOLE LOG

Hole No.
81-13

Project COQUIHALLA PROJECT - MINE CREEK TO BRADIE

Location STA 715+00.5 ½ 4.5 m Lt of E

Elevation 1014.750m

Driller J. MURDOCK

Method DIAMOND DRILL

Dates JUNE 21,22/1981

Drilling Details	Depth (FT)	Sample Type	Recovery (IN)	Blowcount	Shear Strength ()	Gradation %			Index Properties			Classification	Description	Other Tests
						Gravel	Sand	Fines	W _L	W _P	W			
JUNE 21, 1981	5	S	14	40		60	30	10				GRGM	Dense, damp, grey, poorly-sorted, sandy gravel. - max. size ¾"	
	10	S	14	32		56 (65)	39 30	5 5				GRGM	Dense, damp, grey, poorly-sorted sand & gravel. - max. size 1"	M
	15	S	9	57		60	30	10				GRGM	Very dense, damp, brown, poorly-sorted, sandy gravel. max. size 1"	
	20	S	24	11		-	-	100				ML		W
	25	S	24	11		-	-	100				ML		W
	30	T	20											
	35	S	24	21		-	-	100				ML		W
	40	S	24	24		-	-	100				ML		W
	45	S	24	37		-	-	100 (- 50 50)				ML		W
	50													

SAMPLE TYPE

A - Auger
C - Core
D - Denison
S - Split Spoon
T - Shelby Tube
W - Wash

SHEAR STRENGTH

U - Unconfined Compression
L_v - Lab Vane
F_v - Field Vane
R - Remoulded
Blowcount - Standard Penetration Test (ASTM 1586)

TESTS

M - Mechanical Analysis
Q, R, S - Triaxial Compression
C - Consolidation
DS - Direct Shear
W_L, W_P - Liquid, Plastic Limits
W - Moisture Content

File No.

2R-16-126.14.08

Drawn

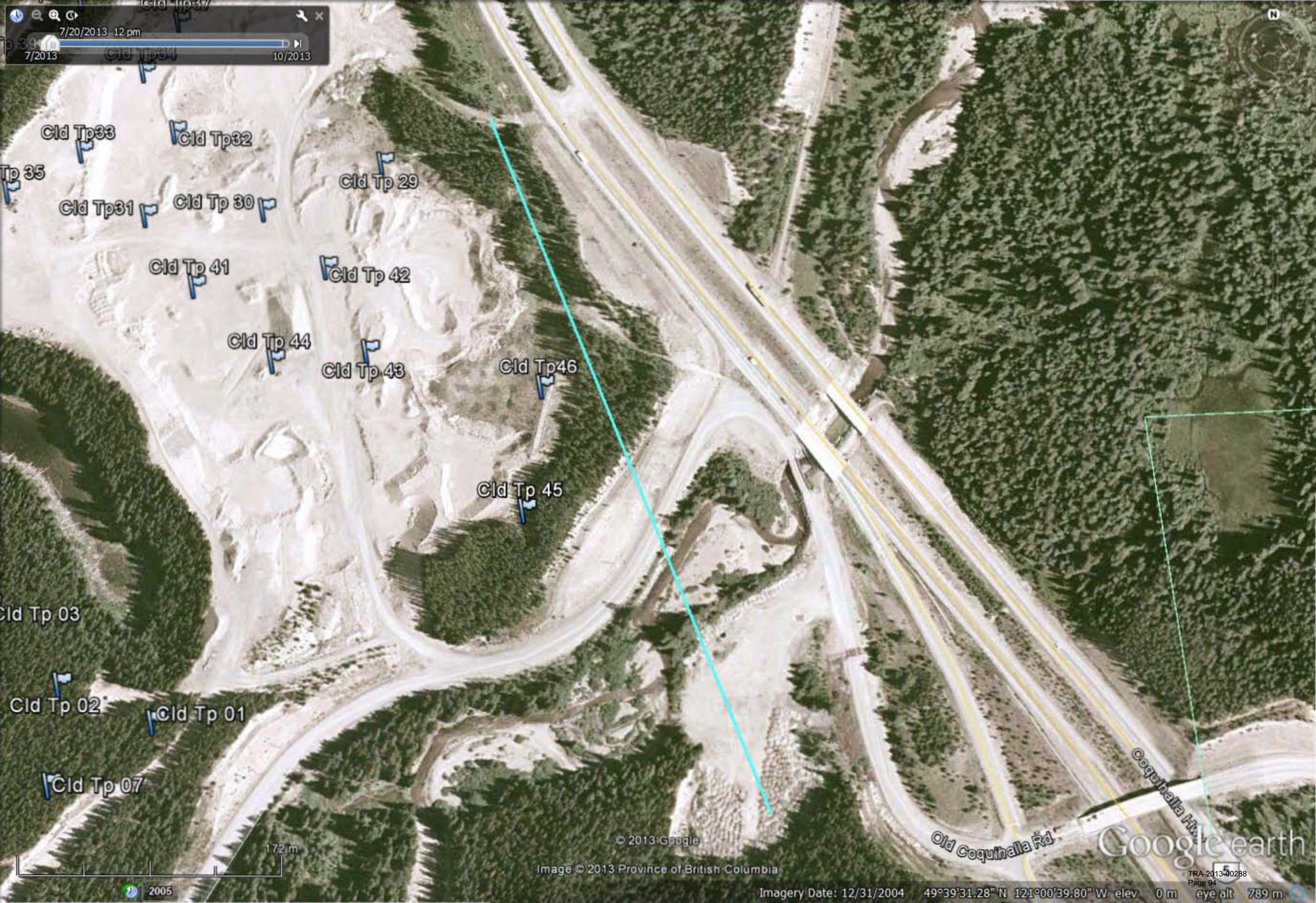
N.L.L.

Sheet 1 of 2

TRA-2013-00288
Page 90

H-181		GEOTECHNICAL and MATERIALS BRANCH – BOREHOLE LOG										Hole No. 81-13				
Project <u>COQUIHALLA PROJECT - MINE CREEK TO BRODIE</u>																
Location _____ Elevation _____																
Driller <u>J. MURDOCK</u> Method <u>DIAMOND DRILL</u> Dates <u>81.06.21-22</u>																
Drilling Details		Depth (FT)	Sample Type	Recovery (IN)	Blowcount	Shear Strength ()	Gradation %			Index Properties			Classification	Description	Other Tests	
▼ Water Table							Gravel	Sand	Fines	W _L	W _P	W				
JUNE 22, 1981 H RODS WITH CARBIDE BIT		55	S	24	42		-	-	100					ML		W
							(-	60	40)							
		60	S	24	31		-	60	40					SM ₄	Dense, damp, brown, poorly-sorted sand & silt.	
		65														
		70	S	24	65		-	90	10					SP-SM	Very dense, damp, brown, poorly-sorted sand with some silt.	M
		75														
		80	S	14	49		-	100	-					SP	Dense, damp, grey, poorly-sorted sand.	
		85														
		90	S	11	33		-	100	-					SP		
		95														
100	S	14	32		-	100	-					SP				
		102'	END													
SAMPLE TYPE			SHEAR STRENGTH			TESTS									File No.	
A - Auger			U - Unconfined Compression			M - Mechanical Analysis									2R-16-1.26.14.08	
C - Core			L _v - Lab Vane			Q, R, S - Triaxial Compression									Drawn	
D - Denison			F _v - Field Vane			C - Consolidation									N. L. L.	
S - Split Spoon			R - Remoulded			DS - Direct Shear									Sheet 2 of 2	
T - Shelby Tube			Blowcount - Standard Penetration Test (ASTM 1586)			W _L , W _P - Liquid, Plastic Limits									TRA-2013-00288	
W - Wash						W - Moisture Content									Page 91	

H-181		GEOTECHNICAL and MATERIALS BRANCH - BOREHOLE LOG										Hole No. 81-14																																																											
Project <u>COQUINHALLA PROJECT - MINE CREEK TO BRODIE</u>																																																																							
Location <u>STA 717. + 78.5 9/3 3.5 m Lt of 2</u>																																																																							
Driller <u>D. ROBERTS</u> Method <u>DIAMOND DRILL</u> Elevation <u>1011.716m</u> Dates <u>81-06-29,30</u>																																																																							
Drilling Details ▼ Water Table		Depth (FT)	Sample Type	Recovery (INS)	Blowcount	Shear Strength ()	Gradation %			Index Properties			Classification	Description	Other Tests																																																								
							Gravel	Sand	Fines	W _L	W _P	W																																																											
JUNE 29 / 81 *		5	S	18	5			60	40					SM _L	Loose, damp, brown, poorly-sorted sand & silt.																																																								
		6'																																																																					
		10	S	10	35			90	5	5					GP	Cobbles with dense, saturated, grey, poorly-sorted gravel with traces of sand & silt. - gravel to 3/4" - cobbles to 4"																																																							
		13'																																																																					
		15	S	16	43			10	80	10					SP-SM	Dense, saturated, grey-brown, poorly-sorted sand with some gravel & silt.																																																							
		20																																																																					
		20	S	16	42			10	80	10					SP-SM	- gravel to 1"																																																							
		25																																																																					
		25	S	12	40			10	80	10					SP-SM																																																								
		27'																																																																					
JUNE 30 / 81		30	S	18	25			20	70	10				SP-SM	Compact, saturated, brown, poorly-sorted, gravelly sand with some silt. - gravel to 1"																																																								
		34'																																																																					
		35	S	16	20			70	20	10					GP-GM	Compact, saturated, brown, poorly-sorted, sandy gravel with some silt. - gravel to 1"																																																							
		39'																																																																					
		40	S	16	33			-	10	90					ML	Very hard grading down to hard, damp brown silt with some sand.	M ₁ W																																																						
		45	S	24	18			-	17	83				ML																																																									
		50																																																																					
		50	S	24	21			-	5	95				ML		M ₁ W																																																							
<table><tr><td colspan="2">SAMPLE TYPE</td><td colspan="2">SHEAR STRENGTH</td><td colspan="2">TESTS</td><td colspan="2">File No.</td></tr><tr><td colspan="2">A - Auger</td><td colspan="2">U - Unconfined Compression</td><td colspan="2">M - Mechanical Analysis</td><td colspan="2">2R-16-126.1408</td></tr><tr><td colspan="2">C - Core</td><td colspan="2">L_v - Lab Vane</td><td colspan="2">Q, R, S - Triaxial Compression</td><td colspan="2">Drawn</td></tr><tr><td colspan="2">D - Denison</td><td colspan="2">F_v - Field Vane</td><td colspan="2">C - Consolidation</td><td colspan="2">N.L.L.</td></tr><tr><td colspan="2">S - Split Spoon</td><td colspan="2">R - Remoulded</td><td colspan="2">DS - Direct Shear</td><td colspan="2">Sheet 1 of 2</td></tr><tr><td colspan="2">T - Shelby Tube</td><td colspan="2">Blowcount - Standard Penetration Test (ASTM 1586)</td><td colspan="2">W_L, W_P - Liquid, Plastic Limits</td><td colspan="2">TRA-2013-00288</td></tr><tr><td colspan="2">W - Wash</td><td colspan="2"></td><td colspan="2">W - Moisture Content</td><td colspan="2">Page 92</td></tr></table>																SAMPLE TYPE		SHEAR STRENGTH		TESTS		File No.		A - Auger		U - Unconfined Compression		M - Mechanical Analysis		2R-16-126.1408		C - Core		L _v - Lab Vane		Q, R, S - Triaxial Compression		Drawn		D - Denison		F _v - Field Vane		C - Consolidation		N.L.L.		S - Split Spoon		R - Remoulded		DS - Direct Shear		Sheet 1 of 2		T - Shelby Tube		Blowcount - Standard Penetration Test (ASTM 1586)		W _L , W _P - Liquid, Plastic Limits		TRA-2013-00288		W - Wash				W - Moisture Content		Page 92	
SAMPLE TYPE		SHEAR STRENGTH		TESTS		File No.																																																																	
A - Auger		U - Unconfined Compression		M - Mechanical Analysis		2R-16-126.1408																																																																	
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W - Wash				W - Moisture Content		Page 92																																																																	



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13-30	0	1.2		Stockpile									
	1.2	5.0	500	GP	52	47	1	150	5	0	0	C	
				GP	54.3	44.8	0.9						
13-31	0	0.5		Stockpile									
	0.5	5.0	499	SP	20	79	1	150	<1	<1	0	C	
				SP	31.2	67.9	0.9						

4 OF 5

AGGREGATE LOG

PROJECT: Cpldewater Pit
PIT #: 0555
DISTRICT: Thompson Nicola

SAMPLED BY: Bryan James
METHOD: Excavator
DATE: September 3-6, 2013

TP	DEPTH		SAMPLE BAG No.	SOILS CLASS	ESTIMATED GRADUATION			ESTIMATED ROCK 75mm				SAND TYPE			REMARKS
	FROM	TO			G	S	F	MAX SIZE	75mm - 150mm	150mm - 375mm	>375mm	F	M	C	
13-32	0	0.3		Stockpile											Lab Sieve
	0.3	5.0	430	SP	40	59	1	250	2	<1	0	C			
				SP	41.1	57.7	1.2								
13-33	0	5.0	479	GP	52	47	1	250	5	<1	0	C			
				GP	50.0	49.4	0.6								
13-34	0	5.0	429	GP	52	47	1	250	5	<1	0	C			Getting wet at bottom
				SP	48.3	50.8	0.9								
13-35	0	4.5	391	SP	30	69	1	250	<1	<1	0	C			Hole stuffing in
				SP	35.0	64.2	0.8								
13-36	0	0.5		GP	52	47	1	150	<1	0	0	C			
	0.5	1.5		Asphalt											
13-37	0	0.01		Asphalt											
	0.01	4.5		SP	20	79	1	250	2	1	0	C			
13-38	0	0.3		TS											
	0.3	5.0	301	GP	65	34	1	250	10	5	0	C			
				GP	56.3	42.6	1.1								
13-39	0	0.3		TS											
	0.3	5.0	302	GP	65	34	1	300	10	5	0	C			
				GP	59.6	39.6	0.8								
13-40	0	0.3		TS											
	0.3	3.5		GP	58	41	1	200	10	5	0	C			
	3.5	4.0	303	SP	30	79	1	100	<1	0	0	C			
	4	5.5		GP	58	41	1	200	10	5	0	C			
				SP	46.1	52.3	1.6								
13-41	0	0.1		Stockpile											
	0.1	4.0		SPSM	20	75	5	12.5				FM			Reject Sand
13-42	0	3.0		SPSM	20	75	5	12.5				FM			Reject Sand
	3.0	4.0		SM2	0	80	20					F			
	4.0	5.0		Rock	100			50							Rounded rock

5 OF 5

AGGREGATE LOG

PROJECT: Coldwater Pit
PIT #: 0555
DISTRICT: Thompson Nicola

SAMPLED BY: Bryan James
METHOD: Excavator
DATE: September 3-6, 2013

TP	DEPTH		SAMPLE BAG No.	SOILS CLASS	ESTIMATED GRADUATION			ESTIMATED ROCK 75mm				SAND TYPE			REMARKS
	FROM	TO			G	S	F	MAX SIZE	75mm - 150mm	150mm - 375mm	>375mm	F	M	C	
13-43	0	0.7		Stockpile											Lab Sieve
	0.7	1.5		SP	20	75	5	12.5				FM			Reject Sand
	1.5	2.5		Rock	100			50							Rounded Rock
	2.5	4.0		SP	0	99	1					F			
13-44	0	5.0		SPSP	0	90	10					F			
13-45	0	0.5		TS											
	0.5	2.5		GP	57	42	1	150	5	0	0	C			
	2.5	3.0	311	SP	20	79	1	25							
	3.0	4.8		GP	57	42	1	300	5	5	0	C			
	4.8	5.5		GPGM	57	35	8	600	5	5	5	C			
				GP	50.6	47.8	1.6								
13-46	0	5.0	312	GP	65	34	1	300	10	15	0	C			
				GP	52.4	45.8	1.8								

OFFICE REVISION

R/W AREA NOTE

Areas shown are within join lines unless followed by (Total). In this case areas include areas on adjoining sheets.

GRAVEL RESERVE

BRIDGES NOT INCLUDED IN CONTRACT

FENCE TYPE "C"

GRAVEL PIT

47m - 1000mm Ø C.S.P. 2.0mm W.T.
Skew No. 129

27m - 1000mm Ø C.S.P. 2.0mm W.T.

20m WIDE TREE SCREEN (Do Not Clear)

FENCE TYPE "C"

24m - 1000mm Ø C.S.P. 2.0mm W.T.

42m - 1000mm Ø C.S.P. 2.0mm W.T.
Skew No. 129

S.E. 1/4, SEC. 23,
T.P. 8, R. 23, W. 6M.

GRAVEL RESERVE

FOR GRAVEL RESERVE DETAILS
SEE DWG. N^o. R2-80-15

FOR RIVER CHANNELIZATION
DETAILS SEE DWG. R2-80-47

(Kettle Valley Ry.)
Project R/W 0.6111 ha.
Clearing 0.6111 ha.
Grubbing 0.6489 ha.
0.6111 ha.

PLAN No A-246



PROVINCE OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION AND HIGHWAYS
DESIGN AND SURVEYS BRANCH

PLAN
COQUIHALLA HIGHWAY
DRY GULCH - MINE CREEK
STA. 618 + 33.000 TO STA. 625 + 000.00
STA. 1618 + 13.000 TO STA. 1625 + 75.000 W.B.

SCALE	1 : 1000	DESIGNED	G.H.L.	DATE	82-5-31
F		CHECKED		DATE	
E					

S.E. 1/4, SEC. 23.
T.P. 8, R. 23, W. 6M.

5.087 ha.
N.E. 1/4, SEC. 23,
Tp. 8, R. 23, W. 6M.

FOR GRAVEL RESERVE DETAILS,
SEE DWG. N^o. R2-80-15

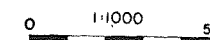
RESERVE

35608 KETTLE VALLEY
RAILWAY R/W
PLAN No. A-246

PROVINCE OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION AND HIGHWAYS
DESIGN AND SURVEYS BRANCH

PLAN

COQUIHALLA HIGHWAY
 DRY GULCH - MINE CREEK-2013-00288
 STA. 625+50.000 TO STA. 632+72.000
 STA. 1625+75.000 TO STA. 1632+56.000 W.B.



SCALE 1 : 1000

DESIGNED **G.H.L.** DATE **82-5-3**

CHECKED _____ DATE _____

1

1

1130
1120
1110
1100

SEE NOTE BELOW

150mm

A-TYPE
VERTICAL

D-TYPE

1:1/2

SEE PAVEMENT DESIGN REPORT

GRAVEL PIT AREA

SEE AGGREGATE REPORT

NOTE: STRIP 0.5m. IN SWAMPY
AREA (STA 614+70 AREA)
AND DRAIN IF POSSIBLE.

T.H. 79-19 620+30
50m. LT.
GP
1.22
SP
3.36
GW
8.54' END

T.H. 79-18 620+30
50m. LT.
GP
1.22
AP-LB
1.83
END

19-20T 619+23.50 BA
4-20T 619+30.00 AM

620+00

610+00

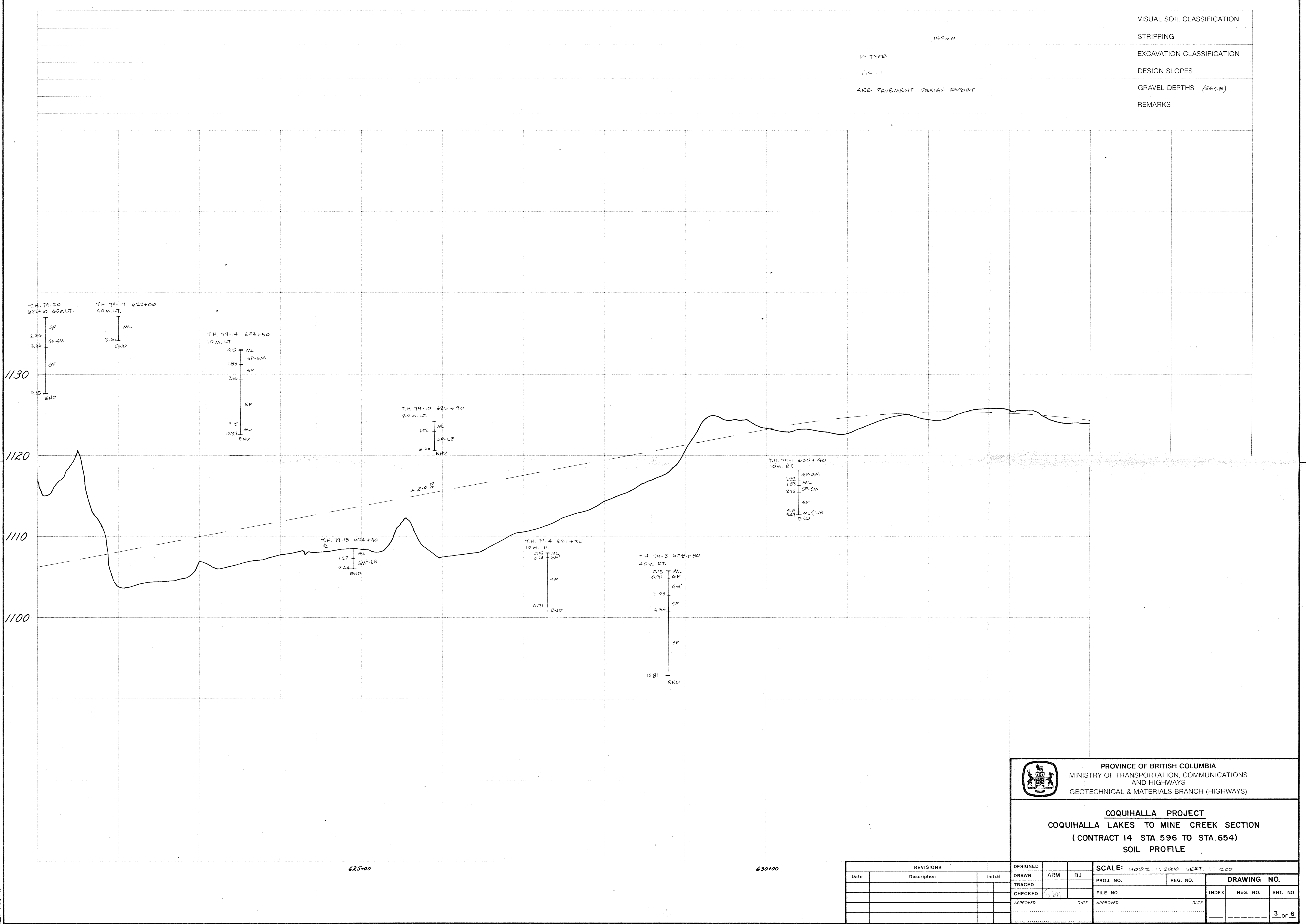
615+00



PROVINCE OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION, COMMUNICATIONS
AND HIGHWAYS
GEOTECHNICAL & MATERIALS BRANCH (HIGHWAYS)

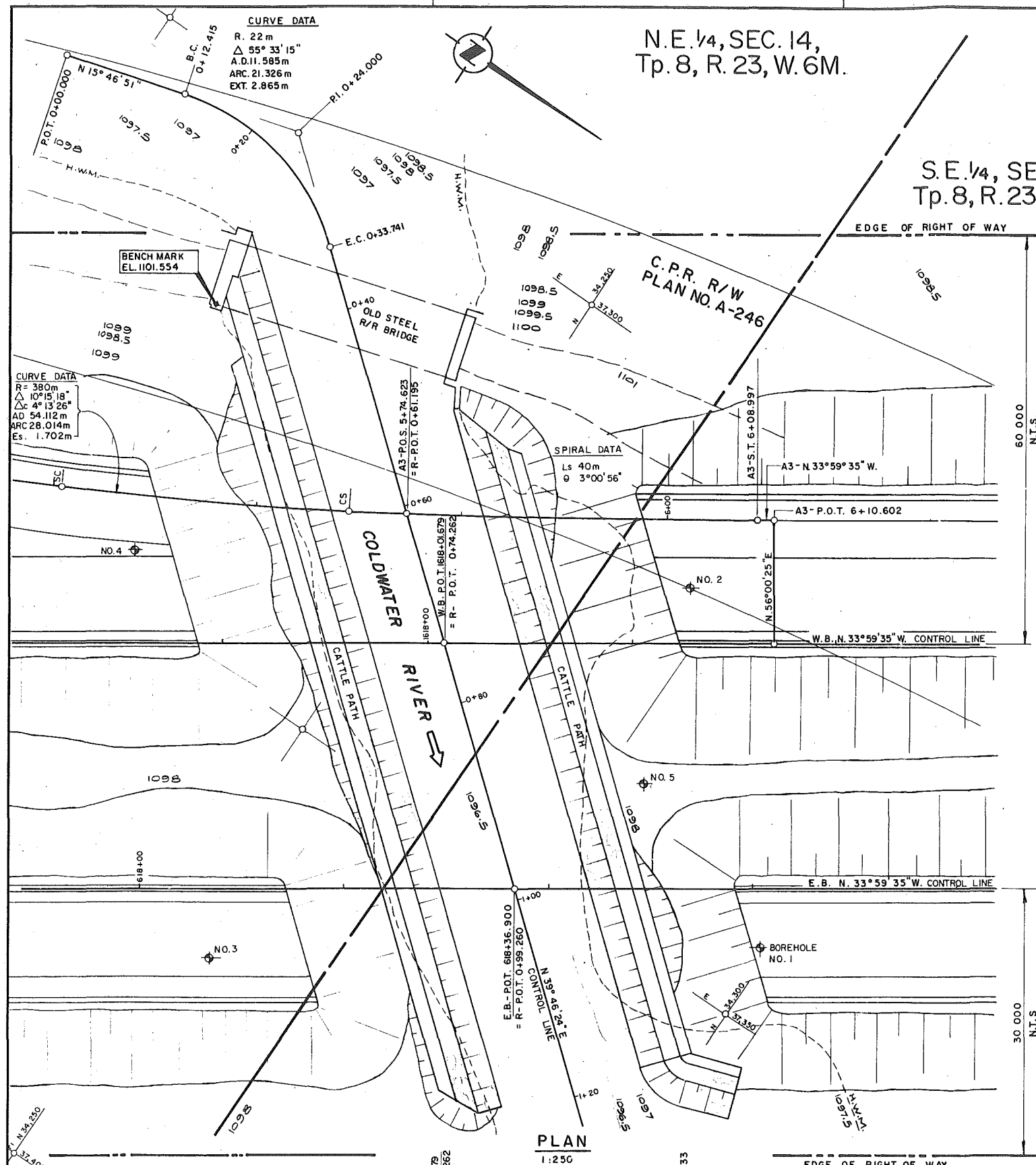
COQUIHALLA PROJECT
COQUIHALLA LAKES TO MINE CREEK SECTION
(CONTRACT 14 STA. 596 TO STA. 654)
SOIL PROFILE

REVISIONS			DESIGNED	ARM	BJ	SCALE: HORIZ. 1:2000 VERT. 1:200		
Date	Description	Initial	DRAWN			PROJ. NO.	REG. NO.	DRAWING NO.
			TRACED			FILE NO.	INDEX	NEG. NO.
			CHECKED					SH. NO.
			APPROVED			DATE	DATE	
								2 OF 6

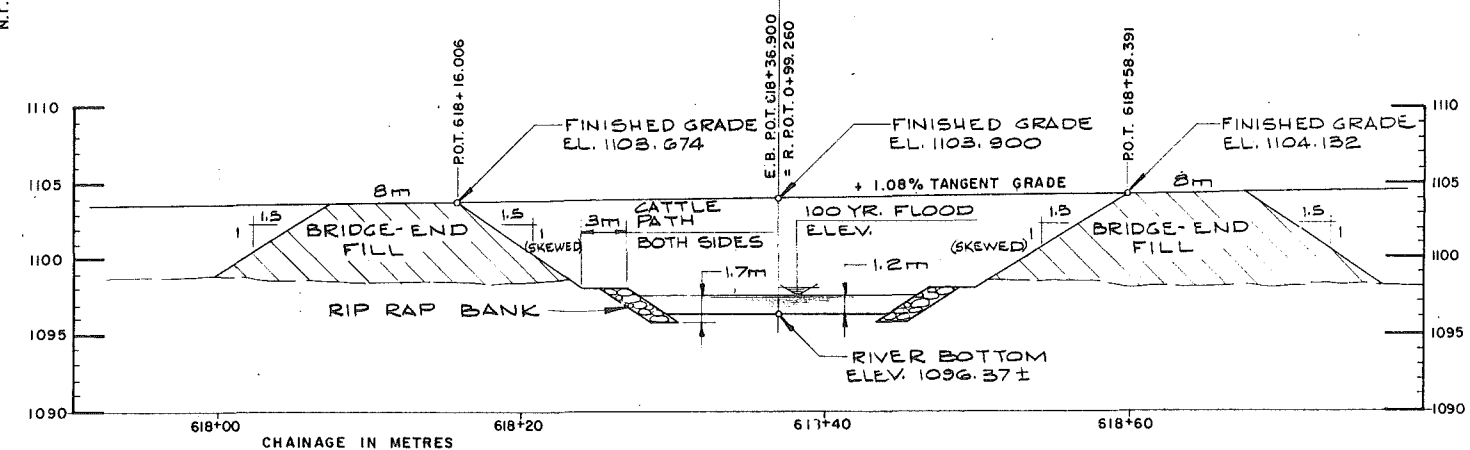
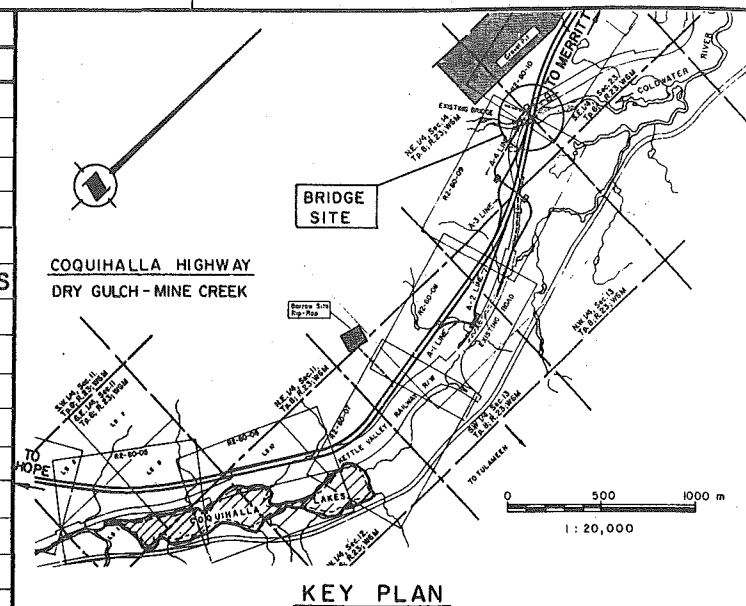


150 mm.	VISUAL SOIL CLASSIFICATION
D-TYPE	STRIPPING
1 1/2 : 1	EXCAVATION CLASSIFICATION
SEE PAVEMENT DESIGN REPORT	DESIGN SLOPES
	GRAVEL DEPTHS (S45B)
	REMARKS

		PROVINCE OF BRITISH COLUMBIA MINISTRY OF TRANSPORTATION, COMMUNICATIONS AND HIGHWAYS GEOTECHNICAL & MATERIALS BRANCH (HIGHWAYS)	
COQUIHALLA PROJECT COQUIHALLA LAKES TO MINE CREEK SECTION (CONTRACT 14 STA. 596 TO STA. 654) SOIL PROFILE			
DESIGNED		ARM	BJ
DRAWN		SCALE: HORIZ. 1:2000 VERT. 1:200	
TRACED		PROJ. NO.	REG. NO.
CHECKED		FILE NO.	DRAWING NO.
APPROVED		DATE	INDEX
		DATE	NEG. NO.
			SHT. NO.
			3 OF 6

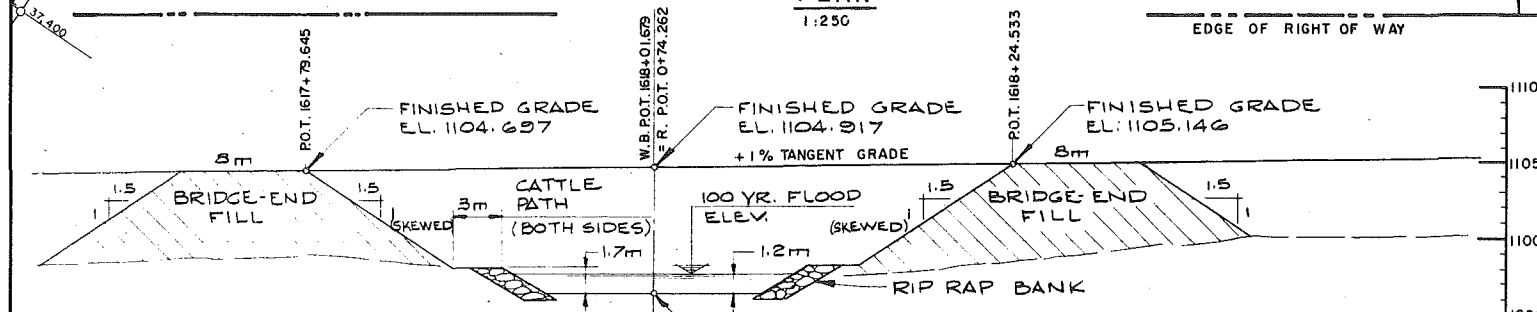


LIST OF DRAWINGS	
DRAWING NO.	TITLE
2830 - 6	SITE PLAN
2830 - 7	GENERAL ARRANGEMENT
2830 - 8	ABUTMENTS
2830 - 9	PIERS
2830 - 10	STRINGER & BEARING LAYOUT
2830 - 11	PRESTRESSED CONCRETE STRINGERS
2830 - 12	DECK DETAILS - SHEET NO. 1
2830 - 13	DECK DETAILS - SHEET NO. 2
2830 - 14	DECK JOINT ASSEMBLIES
2830 - 15	LOGS OF BORINGS - SHEET NO. 1
2830 - 16	LOGS OF BORINGS - SHEET NO. 2



GENERAL NOTES.

- 1) DATUM: GEODETIC.
- 2) SURVEY BENCH MARK IS LOCATED ON WEST END OF OLD RAILROAD BRIDGE NEAR WEST BOUND BRIDGE, ELEV. 1101.554
- 3) SURVEY: DESIGN & SURVEYS, COMPLETED 1978.



KER, PRIESTMAN & ASSOCIATES LTD.			
consulting engineers			
VICTORIA	VANCOUVER	PRINCE RUPERT	
DESIGN	JFP	DATE	SEPT. 1984
DRAWN	GHP	FILE	25203
CHECKED	CN	SCALE	AS NOTED
APPROVED		P. ENG.	



GOVERNMENT OF BRITISH COLUMBIA
 MINISTRY OF TRANSPORTATION AND HIGHWAYS
 BRIDGE ENGINEERING BRANCH

MERRITT DISTRICT
 COQUIHALLA HIGHWAY
 HENNING BRIDGE

TRA 2013-00288

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BOREHOLE NO ONE														
LOCATION STA 618+61					ELEVATION 1103 M.					DATES 84-7-11				
DRILLER SDS					METHOD BECKER HAMMER									
DRILLING DETAILS	DEPTH (m)	SAMPLE TYPE	BLOWCOUNT	SHEAR STRENGTH ()	GRADATION %			INDEX PROPERTIES			CLASSIFICATION	DESCRIPTION	OTHER TESTS	
WATER TABLE					FINES	SAND	GRAVEL	W _L	W _P	W				
	2	G 37			<5	40	58				GW	BROWN SANDY COARSE GRAVEL; SUBANGULAR (DENSE)		
	4	G 37			<5	36	42				SW	BROWN FINE TO COARSE SAND WITH GRAVEL (DENSE)		
	6	G 23									GW	BROWN FINE TO COARSE GRAVEL; SUBANGULAR (DENSE TO V. DENSE)		
	8	G 62												
	10	G 66												
	10	G 38												
												END OF BORING AT 10 M.		
	20													
	30													

BOREHOLE NO TWO														
LOCATION STA 1618+24					ELEVATION 1103 M.					DATES 84-7-11				
DRILLER SDS					METHOD BECKER HAMMER									
DRILLING DETAILS	DEPTH (m)	SAMPLE TYPE	BLOWCOUNT	SHEAR STRENGTH ()	GRADATION %			INDEX PROPERTIES			CLASSIFICATION	DESCRIPTION	OTHER TESTS	
WATER TABLE					FINES	SAND	GRAVEL	W _L	W _P	W				
	2		10								GW	BROWN SANDY COARSE GRAVEL; SUBANGULAR, TRACE ORANGIC (M. DENSE TO DENSE)		
	4		26											
	4		32											
	6		40											
	6		56											
	6		53											
	8		18											
	10		61											
	20													
	30													

MAJOR DIVISIONS			GRAPH SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS LITTLE OR NO FINES		GW	WELL-SORTED GRAVELS, GRAVELLY SANDS, LITTLE OR NO FINES
		POORLY-SORTED GRAVELS, GRAVELLY SANDS, LITTLE OR NO FINES		GP	POORLY-SORTED GRAVELS, GRAVELLY SANDS, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES APPRECIABLE AMOUNT OF FINES		GM	SILT GRAVELS, SILT-CLAY GRAVELS
		CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES		GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
SAND AND SANDY SOILS	CLEAN SAND LITTLE OR NO FINES	WELL-SORTED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES		SW	WELL-SORTED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		POORLY-SORTED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES		SP	POORLY-SORTED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING THROUGH NO. 4 SIEVE	SANDS WITH FINES APPRECIABLE AMOUNT OF FINES		SM	SILT SANDS, SAND-SILT MIXTURES
		CLAYEY SANDS, SAND-CLAY MIXTURES		SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LOW PLASTICITY		ML	HOPELESS SILTS AND VERY FINE SANDS, FINE FINE SANDS OR CLAYS, FINE SANDS OR CLAYS WITH LOW PLASTICITY
		HIGH PLASTICITY		CL	HOPELESS CLAYS OF LOW TO MEDIUM PLASTICITY, HOPELESS CLAYS, SANDY CLAYS, SILTY CLAYS, CLAY SILTS
	SILTS AND CLAYS	LOW PLASTICITY		OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
		HIGH PLASTICITY		MH	ORGANIC SILTS, MEDIUM TO HIGH PLASTICITY, FINE SANDS OR SILTY SANDS
HIGHLY ORGANIC SOILS	SILTS AND CLAYS	LOW PLASTICITY		CH	ORGANIC SILTS OF HIGH PLASTICITY, FAT CLAYS
		HIGH PLASTICITY		OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
	SILTS AND CLAYS	LOW PLASTICITY		PT	PEAT, MUDS, SANDY SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS.

SOIL CLASSIFICATION CHART

SAMPLE TYPE	SHEAR STRENGTH	TESTS
A-AUGER	U-UNCONFINED	M-MECHANICAL
C-CORE	COMPRESSION	ANALYSIS
D-DENISON	L-LAB VANE	QRS-TRIAXIAL
S-SPLIT SPOON	F-FIELD VANE	COMPRESSION
T-SHELBY TUBE	R-REMOULDED	C-CONSOLIDATION
W-WASH		DS-DIRECT SHEAR
G-GRAB SAMPLE		W _L W _P -LIQUID PLASTIC LIMITS
		W-MOISTURE CONTENT

BLOWCOUNT - STANDARD PENETRATION TEST (ASTM 1586)

NOTE
FOR LOCATION OF BORE HOLES SEE DWG. NO.2830-6

BOREHOLE NO THREE														
LOCATION STA 618+07					ELEVATION 1105 M.					DATES 84-7-11				
DRILLER SDS					METHOD BECKER HAMMER									
DRILLING DETAILS	DEPTH (m)	SAMPLE TYPE	BLOWCOUNT	SHEAR STRENGTH ()	GRADATION %			INDEX PROPERTIES			CLASSIFICATION	DESCRIPTION	OTHER TESTS	
WATER TABLE					FINES	SAND	GRAVEL	W _L	W _P	W				
	2	G 18									GW	BROWN COARSE GRAVEL WITH SOME SAND; SUB-ANGULAR (M. DENSE TO DENSE)		
	4	G 26												
	4	G 35												
	6	G 47												
	6	G 39												
	8	G 11												
	8	G 19												
	10	G 10												
	10	G 14												
	12	G 23												
	12	G 20												
	14													
	20													
	30													

BOREHOLE NO FOUR														
LOCATION STA 1617+72					ELEVATION 1104 M.					DATES 84-7-11				
DRILLER SDS					METHOD BECKER HAMMER									
DRILLING DETAILS	DEPTH (m)	SAMPLE TYPE	BLOWCOUNT	SHEAR STRENGTH ()	GRADATION %			INDEX PROPERTIES			CLASSIFICATION	DESCRIPTION	OTHER TESTS	
WATER TABLE					FINES	SAND	GRAVEL	W _L	W _P	W				
	2	G 14									GW	BROWN SANDY COARSE GRAVEL; SUBANGULAR (V. DENSE)		
	2	G 37												
	4	G 68												
	4	G 68												
	6	G 68												
	6	G 63												
	8	G 37												
	8	G 66												
	10	G 37												
	10	G 53												
	20													
	30													

D		
C		
B		
A		
REVISIONS		
KER, PRIESTMAN & ASSOCIATES LTD.		
consulting engineers		
VICTORIA	VANCOUVER	PRINCE RUPERT
DATE	SCALE	FILE NO.



GOVERNMENT OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

MERRITT DISTRICT
COQUIHALLA HIGHWAY 3-00288
HENNING BRIDGE
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BOREHOLE NO FIVE

LOCATION STA 618 + 50 ELEVATION 1098 M
 DRILLER SDS METHOD BECKER HAMMER DATES 84-7-11

DRILLING DETAILS	WATER TABLE	DEPTH (m)	SAMPLE TYPE	BLOWCOUNT	RECOVERY	SHEAR STRENGTH ()	GRADATION %			INDEX PROPERTIES			CLASSIFICATION	DESCRIPTION	OTHER TESTS
							FINES	SAND	GRAVEL	W _L	W _P	W			
		2	G	3									GW	BROWN SANDY COARSE GRAVEL, SUBANGULAR (V.DENSE)	
		4	G	52			<5	22	77				S	GRADED SANDIER (M.DENSE)	
		6	G	20											
		8	G	17											
		10	G	12											
		14	G	14											
		20												END OF BORING AT 9 M.	
		30													

BOREHOLE NO

LOCATION _____ ELEVATION _____
 DRILLER _____ METHOD _____ DATES _____

DRILLING DETAILS	WATER TABLE	DEPTH (m)	SAMPLE TYPE	BLOWCOUNT	RECOVERY	SHEAR STRENGTH ()	GRADATION %			INDEX PROPERTIES			CLASSIFICATION	DESCRIPTION	OTHER TESTS
							FINES	SAND	GRAVEL	W _L	W _P	W			
		10													
		20													
		30													

MAJOR DIVISIONS		GRAPH SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS		GW	WELL-SORTED GRAVEL, GRAVELLY SAND, LITTLE OR NO FINES
			GP	POORLY-SORTED GRAVEL, GRAVELLY SAND, LITTLE OR NO FINES
			GM	SILTY GRAVEL, GRAVEL-SAND, LITTLE OR NO FINES
			GC	CLAYEY GRAVEL, GRAVEL-SAND-CLAY MIXTURES
			SM	SILTY SAND, SAND-SILT MIXTURES
FINE GRAINED SOILS	SAND AND SANDY SOILS		SW	WELL-SORTED SAND, GRAVELLY SAND, LITTLE OR NO FINES
			SP	POORLY-SORTED SAND, GRAVELLY SAND, LITTLE OR NO FINES
			SM	SILTY SAND, SAND-SILT MIXTURES
			SC	CLAYEY SAND, SAND-CLAY MIXTURES
			ML	MODERATE SILTS AND VERY FINE SAND, FINE FLAKY SILT OR CLAY, FINE SAND OR SILT WITH SLIGHT PLASTICITY
HIGHLY ORGANIC SOILS	SILTS AND CLAYS		CL	MODERATE CLAYS OF LOW TO MEDIUM PLASTICITY, HEAVILY CLAYEY SILTS WITH SLIGHT PLASTICITY
			OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
			MH	MODERATE SILTS, MODERATE OR HEAVILY ORGANIC FINE SAND OR SILTY SOILS
			CH	ORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, GRASSY SILTS
HIGHLY ORGANIC SOILS			PT	PEAT, MOSS, BRUSH SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS.

SOIL CLASSIFICATION CHART

SAMPLE TYPE	SHEAR STRENGTH	TESTS
A-AUGER	U-UNCONFINED	M-MECHANICAL
C-CORE	COMPRESSION	ANALYSIS
D-DENISON	L-LAB VANE	QRS-TRIAXIAL
S-SPLIT SPOON	F-FIELD VANE	COMPRESSION
T-SHELBY TUBE	R-REMOULDED	C-CONSOLIDATION
W-WASH		DS-DIRECT SHEAR
G-GRAB SAMPLE		W _L W _P - LIQUID PLASTIC LIMITS
		W - MOISTURE CONTENT

BLOWCOUNT - STANDARD PENETRATION TEST (ASTM 1586)

NOTE
FOR LOCATION OF BORE HOLES SEE DWG.NO.2830-6

BOREHOLE NO

LOCATION _____ ELEVATION _____
 DRILLER _____ METHOD _____ DATES _____

DRILLING DETAILS	WATER TABLE	DEPTH (m)	SAMPLE TYPE	BLOWCOUNT	RECOVERY	SHEAR STRENGTH ()	GRADATION %			INDEX PROPERTIES			CLASSIFICATION	DESCRIPTION	OTHER TESTS
							FINES	SAND	GRAVEL	W _L	W _P	W			
		10													
		20													
		30													

BOREHOLE NO

LOCATION _____ ELEVATION _____
 DRILLER _____ METHOD _____ DATES _____

DRILLING DETAILS	WATER TABLE	DEPTH (m)	SAMPLE TYPE	BLOWCOUNT	RECOVERY	SHEAR STRENGTH ()	GRADATION %			INDEX PROPERTIES			CLASSIFICATION	DESCRIPTION	OTHER TESTS
							FINES	SAND	GRAVEL	W _L	W _P	W			
		10													
		20													
		30													

D C B A	REVISIONS	GOVERNMENT OF BRITISH COLUMBIA MINISTRY OF TRANSPORTATION AND HIGHWAYS BRIDGE ENGINEERING BRANCH
	KER, PRIESTMAN & ASSOCIATES LTD. consulting engineers	
	VICTORIA VANCOUVER PRINCE RUPERT DATE 18-V-1984 SCALE 1:200 FILE NO. 25203	
	MERRITT DISTRICT COQUIHALLA HIGHWAY HENNING BRIDGE	

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