CR 301
South Canyon
Profile Mile # 3

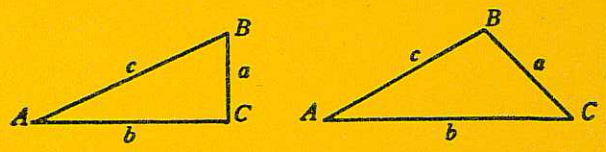
TELEDYNE POST

COLLEGE
FIELD BOOK

48QC-05B

Cache County Engineer
179 N Main
Logan, Utah
84321

FORMULAE FOR SOLVING RIGHT TRIANGLES



$\text{Sin } A = \frac{a}{c} = \text{Cos } B$, $\text{Cot } A = \frac{b}{a} = \text{Tag } B$

$\text{Cos } A = \frac{b}{c} = \text{Sin } B$ $\quad \text{Sec } A = \frac{c}{b} = \text{Cosec } B$

$\text{Tan } A = \frac{a}{b} = \text{Cot } B$ $\quad \text{Cosec } A = \frac{c}{a} = \text{Sec } B$

Given	Required	Solution
A, c	B, a, b	$B = 90° - A, a = C \sin A, b = C \cos A.$
A, b	B, a, c	$B = 90° - A, a = b \tan A, C = \frac{b}{\cos A}.$
A, a	B, b, c	$B = 90° - A, b = a \cot A, C = \frac{a}{\sin A}.$
a, c	A, B, b	$\sin A = \frac{a}{c}, \cos B = \frac{a}{c}, b = \sqrt{(c+a)(c-a)}$
a, b	A, B, c	$\tan A = \frac{a}{b}, \cot B = \frac{a}{b}, c = \sqrt{a^2 + b^2}$

FORMULAE FOR SOLVING OBLIQUE TRIANGLES

Given	Required	Solution
A, a, b	B, c	$\sin B = \frac{b \sin A}{a}, c = \frac{a \sin C}{\sin A}$
A, B, a	b	$b = \frac{a \sin B}{\sin A}$
a, b, C	A, c	$A + B = 180° - C, C = \frac{a \sin C}{\sin A}$
a, b, c	Area	side $\frac{a+b+c}{2}$, area $= \sqrt{s(s-a)(s-b)(s-c)}$
A, b, c	Area	area $= \frac{bc \sin A}{2}$
A, B, C, s	Area	area $= \frac{a^2 \sin B \sin C}{2 \sin A}$

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CR 301 South Canyon

Mile #3 Level Grout
Box Culvert on Davenport Creek
to Sta 123+60 pg 2

Sta 123+00 → Sta 189+00 pg 4-41

Sta	+	HI	HI	ELEV.
TP	12.71	5160.69	0.60	5147.98
TP	11.97	5148.58	1.37	5136.61
TP	12.51	5137.98	0.80	5125.47
BM	12.19	5126.27		5114.08

	+	HI	-	ELEV.
126			4 8	
			4 6	
+50				
125			4 8	
+50			5 8	
124			7 4	
+50			9 2	
123			11 1	
		5160 69		

	+	HI	-	ELEV
+50			4 2	
			(Up 12')	
129			4 3	
			(Up 10' on bank)	
+50			5 5	
128			8 9	
			(Up 10' on bank)	
+50			14.9	
			(On Road)	
T.P.	12 35	5169 92	3 12	5157 57
127			5 5	
+50			5 5	

	+	HI	-	ELEV
133+00				7 0 (Up 1')
132+50				8 8 (Up 2')
132+00				11 2 (Up 3')
TP	7 40	5175 50	1 82	5168 10
131+50				8 5 (Up 4')
	12" CMP		West End	14.9
			East End	12 2
131+00				9 2 (Up 8')
130+50				6 9 (Up 10')
130+00				5 4

P	+	HI	-	ELEV.
+50				18
136				26
			West End	4 95
	24" CMP		East End	1 28
+50				32
135				28
+50				39
134				53
+50				64
				(Down 04 in Ditch)

	+	HI	−	ELEV
140			6 1	
			(45 Road)	
+50			5 8	
139			6 0	
+50			6 5	
138			7 L	
TP	7 15	5182 45	0 20	5175 30
+50			0 1	
137			0 4	

El.	+	HI	-	ELEV
+50			2 4/	
143			4 0/	
+50			6 6/ (5 3/ Road)	
142			11 4/ (4 9/ Road)	
+50			9 5/ (3 5/ Road)	
141			6 7/ (2 7/ Road)	
+50			5 4/ (3 1/ Road)	

21	+	HI	−	ELEV.
147			4 1	
+50			5 2	
146			5 8	
+50			7 1	
145			8 5	
+50			10 5	
I.P.	11 46	5192 10	18 1	5180 64
144			2 0	

	+	HI	−	ELEV
+50			7 6	
150			7 6	
+50			7 6	
149			7 9	
+50			9 1	
T.P.	11 14	5202 98	0 26	5191 84
148			0 0	
+50			2 0	

P.I.	+	HI	−	ELEV
154			4 3	
+50			6 5	
153			8 1	
+50			11 2	
T.P.	13 02	5215 86	0 14	5202 84
152			2 6	
+50			6 6	
151			8 2	

	+	HI	−	ELEV
+50			7 1	
157			8 0	
+50			9 8	
156			11 0	
+50			11 8	
155			12 4	
TP	12 37	5227 27	1 32	5214 54
+50			1 9	

	+	HI	−	ELEV.
161			3.4	
			(1E Road)	
+50			2.0	
160			0.9	
+50			0.8	
159			1.8	
+50			3.8	
158			5.7	

	+	HI	-	ELEV
+50			12 5	
			(5 Ω Road)	
164			10 6	
			(6 6 Road)	
+50			10 4	
			(8 ° Road)	
163			10 2	
+50			11 5	
T.P.	11 26	5235 81	2 72	5224 55
162			3 5	
+50			4 2	
			(2 3 Road)	

??	+	HI	−	ELEV
168			9 8	
+50			10 0	
167			8 6	
+50			4 6	
166			3 0	
+50			3 1	
165			7 2	
			(4 2 Road)	

	+	HI	−	ELEV.
+50			$9\frac{2}{}$	
171			$10\frac{5}{}$	
+50			$12\frac{9}{}$	
T.P.	$12\frac{28}{}$	$5247\frac{93}{}$	$0\frac{16}{}$	$5235\frac{65}{}$
170			$4\frac{1}{}$	
+50			$6\frac{9}{}$	
169			$8\frac{9}{}$	
+50			$9\frac{6}{}$	

	+	HI	−	ELEV	
175			8 5		
+50			9 5		
TP	9 25	5255 63	1 55	5246 38	
174			2 2		
+50			3 5		
173			5 2		
+50			6 3		
172			7 8		

ST	+	HI	-	ELEV
+50			$4\frac{1}{}$	
178			$5\frac{7}{}$	
			(4p $0\frac{5}{}$)	
+50			$8\frac{7}{}$	
177			$12\frac{3}{}$	
T.P.	$12\frac{51}{}$	$5267\frac{48}{}$	$0\frac{66}{}$	$5254\frac{97}{}$
+50			$3\frac{5}{}$	
176			$5\frac{6}{}$	
+50			$7\frac{0}{}$	

	+	HI	-	ELEV
182			5 8	
+50			3 6	
T.P.	2 83	5267 48	2 83	5264 65
181	1 8		(1 8 Road)	
+50	3 3		(1 2 Road)	
180	3 2		(0 8 Road)	
+50			1 7	
179			2 6	

	+	HI	−	ELEV	
+50			4.6		
185			5.6		
+50			6.5		
184			6.9		
+50			7.2		
183			7.9		
+50			7.3		

PT	+	HI	−	ELEV
189			5 7	
BM			0 41	5275 92
Cattle Guard			6 1	
+50			7 3	
188			9 0	
T.P.	10 26	5276 33	1 41	5266 07
+50			2 1	
187			2 5	
+50			3 5	
186			4 2	