

**FIELD  
NOTES**

 **TELEDYNE POST**

**AND  
HYDE PARK BRIDGE**

**COLLEGE  
FIELD BOOK**

**48QC-05B**

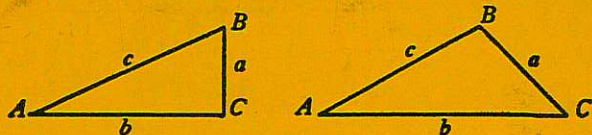
---

**PROJECT  
05-03(05)  
DIARY**

05-03(05)  
HYDE PARK BR



### FORMULAE FOR SOLVING RIGHT TRIANGLES



$$\sin A = \frac{a}{c} = \cos B, \quad \cot A = \frac{b}{a} = \text{Tag } B$$

$$\cos A = \frac{b}{c} = \sin B, \quad \sec A = \frac{c}{b} = \text{Cosec } B$$

$$\tan A = \frac{a}{b} = \cot B, \quad \text{cosec } A = \frac{c}{a} = \sec B$$

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

### FORMULAE FOR SOLVING OBLIQUE TRIANGLES

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

## INDEX

1

PAGE	DESCRIPTION	DATE
5-9	DIARY	
10, 11	GRADE CHECK	4-1-76
12-30	DIARY	



.27 sq. Ft.

.20 FOR TIES (52)

\$1.50 FOR FORM OIL - 5 gal. ?



March 30, 1976

sunny and warm

removed existing bridge this morning  
flat bed truck and backhoe arrived  
at 8:15 am 2 laborers and 1 backhoe  
operator. Gas company came by and it  
was agreed to leave gas line in  
the same place and to raise it to  
the top of the abutment wall.

Talked to Mr. Savage, explained  
the plans and specs. He left to  
go to the bank at 9:30 am. Mr.

Savage arrived back at 10:30 am

Began digging to find footings at  
11:30 am we found no footings at  
all total wall depth is 5 feet.

The Gas company came at 11:30 and  
began to dig around their gas line.

The backhoe broke down at noon

1:30 pm got Terry Thurston's backhoe  
to locate water line. asked Terry Thurston  
to continue to dig and clear out  
the area around the abutments

Found a 1" pipe could find no reference  
to it. The pipe was broken and nothing  
happened so it was disregarded

5

March 30, 1976

~~March 30, 1976~~ began today by  
repairing the deck and stringers of  
the existing bridge

got the loan of a large backhoe <sup>from Henderson</sup> a  
GC 120 he removed the the existing  
abutments arrived at 2:15, slide one  
chunk of concrete into fence - bend 2  
poles and slide fence in approx 1 ft.

Terry Thurston left at 2:30 pm but  
will be available if we need him.

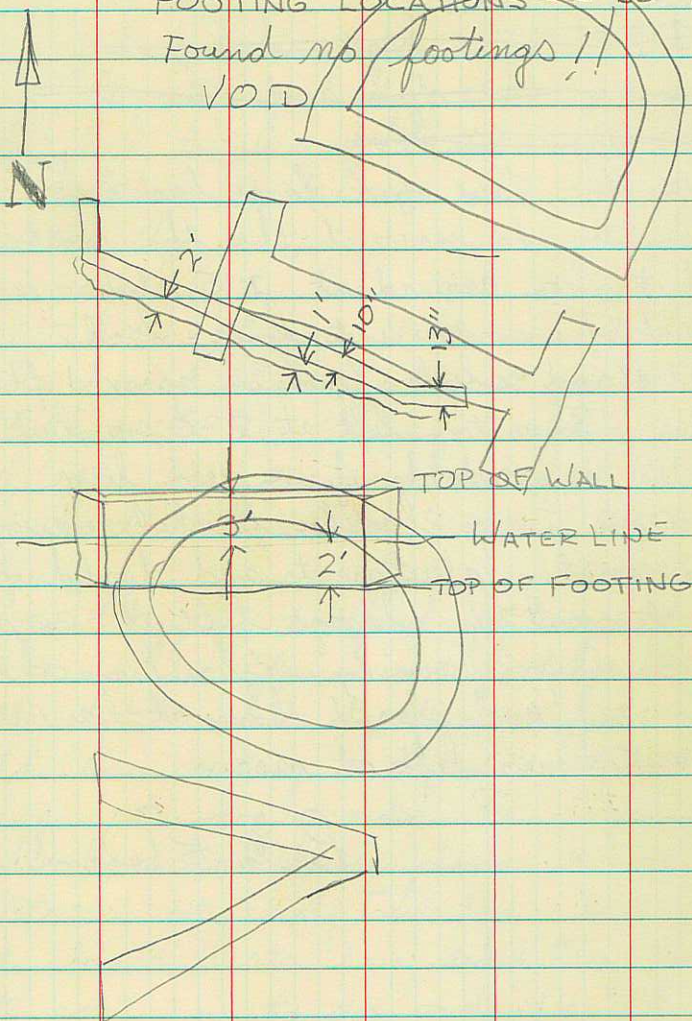
3:30 pm Large backhoe finished removing  
the existing abutments and loaded up  
to leave. Mr. Savage left at 3:30 pm

Picked up warning signs from the  
County and placed them at barriers.  
County men left at noon.

Preston B Ward



6

PBW  
FOOTING LOCATIONS 3-30-76

7

MARCH 31, 1976 Warm and sunny  
arrived at 8:00 am today Malan  
Savage and one man arrived at 8:00  
Backhoe arrived at 9:00 am Began  
excavating on south side for footings  
10:00 am Backhoe cleared north side of  
bridge to let water flow more freely  
Malan Savage left to get relief for  
the project Terry Thurston's backhoe  
finished excavation at 11:00 am  
Glen left to get a pump at 11:10  
The county Backhoe arrived at  
1:00 today and cleared out some  
of the muck in the excavation.  
ordered one load of Pit run gravel  
for the footing base. 2:00 gravel  
arrived and was dumped into the  
excavation Backhoe left at 2:45 and  
Savage's worker left at 3:00  
set grade numbers every  
10 feet. (see page 3) finished  
work today at 3:00 pm

Preston B. Ward



STA.	-	HI	+	ELEV	DIFF
7	96			4497L	
6	100			4496Z	
5	90			4497Z	
4	89			4497B	
3	90			4497Z	1.2
2	92			4497E	
1	92			4497E	
		4506Z	720		

ELEV OF FOOTING  
BOTTOM 4496.50

BM #1 ELEV 4499.51  
Hub by fence 720  
06 71

April 1, 1976  
windy and cloudy -  
I stopped to get some string arrived  
at 8:15 am Malan Savage was  
here. at 8:30 two county men  
came in a pick-up - Glen and  
a state highway man came to  
look at the project checked elev  
for excavator (see page 10) got Terry  
Thurston's Backhoe and cut down  
to grade. He arrived at 10:00 and  
left at 11:00 we began to set  
some grade stakes at 11:00. finished  
at 11:30 with the side east of  
water line began to pump  
water from west section (see  
page 10 for grade stakes) Malan  
Savage left at 12:00 from County  
work. at 12:30 one of his men  
came to work. Mr Savage said he  
used his truck to get rebar for the  
jct and to get lumber for a total  
of 145 miles - 120 miles for rebar in  
Ogden and 25 miles for wood in  
Harrison. County Backhoe arrived and  
filled trench with borrow - TO PAGE 12



HUB #	-	HI	+	ELEV	FILL/CUT
-------	---	----	---	------	----------

GRADE STAKES 4-1-76

FOOTING ELEV.	44965				
2W	113			44954	F.1
1W	110			44952	F.8
4	110			44952	F.8
3	110			44952	F.8
2	111			44956	F.9
1	110			44957	F.8
		450669			NEED TO READ
		410			102
					63
					27

GRADE STRING CHECK 4-1-76

STRING ELEV is	449998	C 35		
FOOTING ELEV.	449650			
EAST END	639			
			449928	
WEST END	645		449922 (+.06)	
		450637	686	
				BM 449951

REF. POINT ELEV. 4-1-76 11

HUB	-	HI	+	ELEV
-----	---	----	---	------

503 26  
496 50  
11 76

02  
975  
45

EAST HUB	633			449936
				390
				450826
				44
WEST HUB	542			450020
				119
		450569	618	1016
		7548		965

92 BM 449951  
9850  
3



4-1-76

one dump truck load of borrow arrived at 2:30 pm and carried off one load of waste. 3:30 Began putting in frames for footings. State Highway man stopped by to see when we would pour. 3:45 all the County men left for the day. continued to work on the frames left site at 4:30. Weather was wind, cloudy and cold.

Preston B. Ward

13

4-2-76

Sunny and mild today with 1" of new snow on the ground. Began today by tying in steel for south side footing. One of Savage's men was here. Malan Savage arrived at about 8:00. State Highway man came. He expressed concern of over the water line. it was decided to chip off the concrete to make it level on top the pour of over it. 9:30 3 county men arrived and began chipping at the concrete water line. Glen ~~drove~~ brought a tool to cut the rebar. In putting in the bars it was found that the angles weren't square enough. So Savage's man and one county man bent the bars on a sharper angle. it was decided to heat bend one side of the bars and leave the other side as is. Glen came and made the decision. Malan Savage returned to the job site at 10:30. I ordered 5 yds of type AA concrete from Johnson's to be delivered at 1:00 pm today. 2 county men left to go to the store.



at 11:30 am Rented a generator  
 a vibrator and an elect. hammer  
 1:00 pm concrete arrived. Savage washed  
 down the rebar to remove all mud.  
 1:15 concrete tests and samples  
 were taken by state. Slump was  
 2 1/2" and air was 4.7%. Finished pouring  
 concrete at 1:30 pm. Malan Savage  
 left from job at 1:30 pm. Received bill  
 from Johnson's for concrete. Bought  
 6 Bails of straw @ 75¢ per bail  
 from Parley Balls. Savage's man left  
 today at 2:30 pm. He took with  
 him the torch so it can be used  
 tomorrow, at 2:45 the county men  
 left the job site. They took  
 back the generator the vibrator  
 and the elect. hammer.

Preston B. Ward

APRIL 3, 1976

One of Savage's men arrived at 8:00  
 and began to remove the forms  
 around south foot with my consent  
 Malan Savage arrived at 9:15 am  
 today and began to clean off  
 the footing. He brought with him  
 some forms for the abutment wall.  
 They started to tie steel at  
 9:30, the steel was placed 1 ft.  
 from the bottom then 18" and 16"  
 for the top. Malan Savage left  
 at 10:00 and said he would  
 be back this afternoon. Finished  
 putting in steel for the abutment wall  
 at 12:00 left for the day.

Preston Ward



APRIL 5, 1976

Savage and one man arrived at 7:00 am this morning. Savage put ~~25~~<sup>25</sup> miles on his truck <sup>and trailer</sup> Sat. and worked 2 hours. The weather was cloudy and cool. Began today by forming up abutment wall. 11:00 the County men left to get a vibrator and a generator. The cement was ordered for 1:00 pm. Today from Johnson's. Concrete arrived at 1:25 pm 1:30 Tests on the concrete were taken. ~~NOID 3~~ SLUMP. 2 1/4" Concrete truck left at 2:30 pm. 2 county men worked from 8:30 am till 3:00 They took back with them the generator and the vibrator.

Savage and his man left at 3:00 also Savage put 50 miles on his truck with 2 trips to Hyrum. Left project at 3:30 pm

Preston B. Ward

arrived at the office the air test results came in it was 5.2%

17

APRIL 6, 1976

wet, cloudy, cool

Savage and 1 man arrived at 7:00 and began to remove forms on South wall. 8:15 two county men arrived and helped with forms 8:15 county backhoe arrived and began excavation on North side. Neil Williams arrived at 8:00 and helped to set offset points on the north side. He left at 8:35 am. Savage left project at 10:00 and put 6 miles on his truck. Terry Thurston's Backhoe arrived at 10:00 to excavate the north side. a fence blocked the way on the North side. Apparent owner is Jack Croft. We couldn't find him so it was decided to remove the fence and when finished restore ~~at~~ the area as it was. Terry Thurston's Backhoe left at 12:30 today. He finished digging the north side. Received 1 load of Gravel For fill at 2:00, Second load of



April-6, 1976

gravel arrived at 2:30 pm. The county backhoe left at 3:30 and the 2 county men left at 3:45. They took back the pump. Malan Savage's man left at 4:00. I left at 4:30

Preston B. Ward

19

April 7, 1976

Alan & Wain arrived at 8:00, one of Savage's men was here. county men arrived at 9:00. Two pick-up trucks and 3 men. They brought with them an air hammer and compressor to remove the concrete around the water line. State highway man came. Talked of revising the plans. Talked also with Mr. Jack Croft owner of adjacent land. He said that our trespass was okay. Took back the air hammer at 10:30. STATE HIGHWAY MAN CHECKED CERT OF COMPLY. FOR STEEL. STEEL GR. WAS 40 ON CERT. CHECKED STEEL MARKINGS AND IT WAS GR. 60. WILL HAVE TO SEND BACK CERT. FOR REVISION. SET FOOTING GRADE AT 11:30. DECIDED THAT IF WE NEED TO RAISE THE DECK ELEV ON No. SIDE WE WOULD INCREASE ABUTMENT WALL HEIGHT. AT NOON THERE WERE 2 COUNTY MEN AND ONE OF SAVAGE'S MEN. WITH 1 PICK-UP. 1:30 ordered 5 yds concrete from Johnson's. concrete arrived at 3:15



took a slump test and it fell  
4" sent truck back Arrived  
at 4:15 took tests: air 6% slump 3"  
finished pouring at 4:30. County  
men left at 4:45. Savage's man  
left at 5:30.

Left job at 5:30.

Preston B Ward

rented wiper and gen. from  
Time rental place

Preston Ward

21

April 8, 1976

WARM SUNNY

I ARRIVED AT 8:00 ONE OF SAVAGE'S  
MEN WAS HERE AT 7:00 BEGAN TO REMOVE  
FORMS FROM NORTH FOOTING. County  
men arrived at 8:15 began to  
tie in steel for North wall  
Put up FORMS FOR NORTH WALL  
Got CURRING COMPOUND FROM  
JOHNSON'S. The County men left  
at 12:45. I left at 1:00. Savage's  
man left at 1:30.

Preston Ward

Mylan Savage came at 8:15  
then left to get a carpenter's  
level. He put in 1 hour

PBW



APRIL 9, 1976

RAINY, COOL

ARRIVED AT JOB SITE AT 8:00. NO ONE  
HERE YET. CEMENT ORDERED FROM  
JOHNSON'S AT 9:00. SAUSAGE'S MAN  
ARRIVED AT 8:00 JUST AFTER I DID.

MALAN SAVAGE ARRIVED AT 8:15 AM  
AND LEFT TO GET A CARPENTER'S

LEVELS SHORTLY AFTER. Two county  
men arrived at 9:00 with a

GENERATOR AND VIBRATOR. CONCRETE  
DRIVED AT 9:20. TESTS WERE TAKEN  
AIR 5% SLUMP  $1\frac{3}{4}$ ". MYLAN SAUSAGE  
LEFT FOR THE DAY AT 11:00. THE

COUNTY MEN LEFT AT 11:00 TO GET  
AN ELECTRIC HAMMER AND TAKE BACK THE  
VIBRATOR. CEMENT TRUCK LEFT AT 10:45  
SAUSAGE'S MAN LEFT AT 11:30 TODAY

COUNTY MEN BROUGHT ELECT. HAMMER  
AT 11:30 AND LEFT JOB SITE AT  
12:00.

I LEFT AT 12:00.

Preston P. Ward

23

april 10, 1976

Mylan Savage and Allen Schenk  
arrived and removed forms on  
the north side. Allen Schenk  
worked 5.5 hours, and Mylan  
Savage worked 2 hours. Mylan  
repacked his truck and trailer for  
a total of 19 hours.

Preston Ward



April 22, 1976 Partly cloudy

State highway called about concrete. They broke a cylinder at 7 days at 3890#.

Arrived at 8:00. County backhoe, County loader, one dump truck, one flat bed, and one pickup were here. and 5 operators for the equipment. Rented a compactor at 8:00 today to compact fill. at 4:00 we finished filling both sides of the bridge. a total of 10 loads of gravel was brought to the job site.

Total hours worked

16' cat. loader 8 hrs.	} and operators except compactor
int. B. hoe 8 hrs.	
ford dump truck 8 hrs.	
chess. flat bed 8 hrs.	
pick-up truck 8 hrs.	
and compactor 8 hrs.	

Piston Ward

25

April 23, 1976 Sunny

BEGAN WORK AT 8:00 BY HAULING AWAY THE DEBRIS AROUND JOB SITE.

COUNTY FRONT END LOADER AND OPERATOR  
COUNTY BACKHOE AND OPER. PICK-UP AND LABORER  
AND 2 COUNTY DUMP TRUCKS AND DRIVERS WERE ON THE JOB BY 8:30 AM. DUMP TRUCKS AND LOADER LEFT AT 9:30. COUNTY LABORER LEFT ~~AT~~ AT 1:00 WITH THE PICK-UP.

FINISHED DRESSING UP AREA AT 2:00

COUNTY BACKHOE LEFT AT 2:00

TOTAL FOR THE DAY. \*

FRONT END LOADER 2 hrs.

2 DUMP TRUCKS 2 hrs.

1 PICK-UP TRUCK 5 hrs.

BACK HOE 6 hrs.

\* hours INCLUDE TRAVEL TIME.



CONCRETE TEST BREAKS

SOUTH WALL

# 1	5977 lbs.	28 DAYS
2	5906 lbs.	"

NORTH WALL

3	5234 lbs.	"
4	5270 lbs.	"
5	5477 lbs.	"
6	3890 lbs.	7 DAYS



June 21, 1976 Fair - Warm

1 man + Flatbed, went to Salt Lake and picked up Guard Rail. Men from Boyer assisted in placing as part of their contract. 2 of Sali's men installed rail.

Labour -

Truck Driver 10 hrs @

Labour 2 hrs @

Equip

Flatbed 10 hrs.

Materials

50' Guard rail posts

29

June 21, 1976 Fair + Warm

putting in posts and assembling guard rail.



June 25, 1976 Fair + Warm

Made Temporary Connection  
and opened Bridge.

Back hoe, Two Trucks and  
drivers.

Labor-

Back hoe opn 4 @ 4.15

TK Driver 4 @ 4.63

4 @ 3.25

Labor 4 @ 0.10

Equipment

back hoe 4 @ 16.30

Trucks 8 @ 9.65

Gravel 50 cy @ 1.50 = 75.00



