

ENGINEER & STREET
DIARY



343 (A)

1974 - 1975

82 0020

Weatherproof Field Book

"Rite in the Rain" paper
32 pages

4⁵/₈" x 7¹/₄"

Keuffel & Esser Co., Morristown, N. J. 07960 Made in U.S.A.

Nov. 18, 1974

Rain

29 Putting up fence for control
of stock.

Gfk

Nov. 19 - 1974

10.74

To meet to work.

Gfk

3.50

Nov. 20 - Fair

27 Started moving fence and
crispanting asphalt road.

Nov. 21, 1974 - Fair

27 State man on job to take
samples of gravel ground,
putting in pipe for business
and begging his ditch.
26+50 Sent to Ramon Island part
about 100 yds today

Gfk

4

Nov. 22 - 1974

Rain -

No work.

Called Electric Co. in Smithfield
on pole in front of Casmer's.
They said they would come at
and look.

Gfk

Nov. 26, 1974

Fair

Hauling. Many back at work -
I was on the scale in AM.
Taking out a lot of peat
for Casmer gave permission
to get Substanc on his lot
if necessary. Removing fence, etc.

Gfk

Nov. 26 1974 -

Fair

Hauling to end road pole given will
need to remove material there also.
Many weighing part of day - weather
rest of day.
told Chuck we need another 100' of
18" pipe.

Gfk

Nov 27, 1974 Cloudy & Cold.
32+00 Hauling between holes and
Completed haul road to 14th.
Police made them change over
to 14th.

31+50 Talked to Clark about putting
road along slope. Needed to
to let to put it in
pits properly.

31+00 0.63

GJM

11-28- Holiday

30+50 2.47

11-29-74 Clear Cold.
Laying pipe, 22" dia
digging ditch to drain at
same location.

30+00

Removing Black material
from 216t.

29+50

GJM

5
12-2-74 Clear & Clear.
Equipment so cold, had a late
start. Frost about 6" thick.
Excavating holes and hauling.
May let pit.
Discussion progress with Clark.
Looks like crusher will not be
in until January.

GJM

Dec 3, 1974 Clear & Cold.
Hauling Gravel, Holes about
Clear.

GJM

Dec 4, 1974 Warm - showers
Hauling gravel. Finished pipe
at 216 E. Holes pretty well
filled. Talked to Mr. Gussman
about extra dirt. He still wants
it.

GJM

+

Dec 5, 1974 Rain Snow was

34+00 2 hrs set stakes on grade
for full 1/2 mile.
Rest of day on 343(5)

34+50 3.42

GPK

Dec 6, 1974 Fair + Cold
No work on job.

34+00 4.66

GPK

Dec 9 - 1974 Fair Cold.

33+50

Hauling material in late PM
at South end of job.

GPK

33+00

Dec 10, 1974 Cold + Fog
Hauling and placing soil
mass.

GPK

32+50

5.79

6

Dec 11, 1974 Cloudy - snow in PM

Hauled 1/2 day, closed down for
weather and frozen ground.

Frost about 6" thick.

Reminded Chuck to take care of
dormer + fence.

GPK

+

-

Tues Apr. 15, 1975

Cloudy - Wind

Sta. 204+08

4.59

Installed 18" x 96' C. Alum. Pipe

37+50

4.93

27+00

5.66

26+50

6.90

36+00 0.04

35+50 1.40

7

Apr. 16, 1975 - Rain AM - Fair PM

18" x 293' Alum. Pipe for Irrig.

Installing 18" Alum. Pipe Sta 206+05 to 208+50 Et.

205' in Place

Apr. 17, 1975I - Snow

8

41+00 5.09

No Work

40+50 5.12

40+00 5.16

39+50 5.35

39+00

8.85

38+50

4.74

Apr. 18, 1975 - Fair - (Showers PM)
Installing 18" x 193 C. Alum Pipe at
Sta 206+05 ft to 208+80 ft.
246' in place

4+50

9.00

48+00

10.83

42+50 2.45

47+00 3.63

41+50 4.43

9
Apr. 21, 1975 Fair
Started installation on 18" x 240'
C. Alum Pipe Sta. 208+82 ft to
Sta 210+97 ft.

240' in place

Apr. 22, 1975 Cloudy
208±82 Rt. to 210±97 Lt.
Installing 18" x 240' CA Pipe

200' in Place

45±00

5.59

44±50

5.97

Apr. 23, 1975 Rain

10

220±53 - Installed 18" x 100' CA Pipe - Irrig
Stopped work at 11:38 Due to Rain

+
Apr 24, 1971 Fair

57+00 4.66

No work

49+00 4.11

49+00 8.38

48+50 4.66

48+00 3.97

47+50 3.11

Apr. 25, 1971

Rain & Snow

11

No work on this project.

Apr 28, 1975 Cloudy - Fair

Patrol & Scraper Finishing grade

~~Patrol~~

Scraper hauling gravel from 343(4)
to 343(3)

52:00 4.12

51:30 4.47

51:00 4.77

50:50 4.72

Apr 29, 1975 Cloudy - Fair

12

Patrol & Scraper Finishing grade

Scraper Hauling gravel from 343(4)
to 343(3)

Apr 30, 1975 Fair
Patrol & Scraper Finishing
56+ Sub-Grade

55+50

55+00

54+50

54+00

53+50

May 1, 1975 Fair
~~Apr. 1, 1975~~ Fair
Placing 18'x

at Sta 229+70

May 2, 1975

Fair

Installed 12" x 120' Per. A Pipe
Lt. of Sta. 216+12 to 217+32

58+50

58+00

57+50

57+00

56+50

May 5, 1975

Fair

14

No Work

May 6, 1975 Cloudy - Fair

Bk Hoe Constructing 1st Ditch
on Rt. at 10th W & 14th N.

Excavating for Dev. box at
Sta. 208+52 Lt.

5-7-75

Rain

15

Bk Hoe Excavating Side Dr. Ditches
on Rt Side Sta 226+

Motor Patrol Finishing ^{sub.} grade

Thurs.

5-8-75 Rain Showers

Patrol Cutting Slopes & Finishing Grade

Bk-hoe Excavating Side Dr. Ditch Sta 222+
to 224+

ABC Forming Dev. boxes

Sta 206+06 LT & 208+82 RT

Poured Concrete 4:30 PM

Fri

5-9-75 Fair

16

Bk-hoe Sub Excavated old Ditch on
So. Side 14th N.

$$\frac{95' \times 7' \times 2' = \text{C.Y.}}{27}$$

Mon

5-12-75 Cloudy - Fair

Set Pre-cast Conc. Dev Box at
Sta 208+82 and Connected Pipes

3k-hoe Excavating mud out of old
Ditch Sta 206± to 209±

Patrols Grading & Sloping Intersection
at 14th No.

5-13-75 Fair Warm

17

Patrols & Loader Finishing Slopes
& Sub-Grade

5-14-75 Fair

Finishing Sub. Grade & Slopes
10th No to Sta 211+

5-15-75 Fair

Backfilling 18" Pipes Sta 208+82

Set Side Drain Pipe at Sta
212+35 RT. 12" x 30' C.A. Pipe

Placed Side Drain Pipe at Sta
214+50 RT. 12" x 24' C.A. Pipe

Placed Side Drain Pipe at Sta
218+00 RT. 12" x 20' C.A. Pipe

18

5-16-75 - Cloudy - Fair

Placed 12" x 20' CA Pipe at Sta
227+00 Rt.

Constructing Approaches & Removing
Concrete Walls & Footings 229+

Hauled 1 load Pit Run gravel to
Sta 229+4. (Approx. 30 Ton load.)

Hauled 4 loads Pit Run gravel to
Cheese Plant Area.

5-19-75 Cloudy, Rain & Snow PM¹⁹

Placing Crushed Gravel Base
East Windrow 14th No. to ~~207+70~~ 204+55
Center " 14th No. to 207+70

Crusher Not Running

Fence Crew on Job in AM
No. fence constructed

5-20-75 Cloudy

Motor Patrol Laying Base Gravel

Trucks not ~~run~~ Hauling today.

Fence Crew worked about 2 hrs.

5-21-75 Rain

20

Fence Crew on Project Digging Post
holes.

No Gravel Hauled Today.

-5-22-75 Showers in AM
Completed 1st Course Base gravel

Fence crew on Project in AM
Left Project about 11 AM
No work on Fence

5-27-75 Fair - Light Showers
in PM 21

Put all but 3 loads on final
lift of base today.

pipe for well casing delivered for 36"
30" instead of 24". I told Jack O.K.

Told Jack to reroll shoulders.

5-28-75 Fair - windy
Finished base except for Road
approaches.

Young Gussner wanted some
leveling in his field next to road.
I told him no to anything out
side the R/W. Jack agreed to fit him
up with the laser.

Fence crew showed up this morning,
working on Lt. 190 to 230.

Temporary fence and will pour
concrete for posts tomorrow.

5-29-75 - Fair + warm

22

Fence crew placing concrete on
gab-poles.
Cut out capped well pipes.
Hauled base for Driveways
and sloping up.

5-30-75 Fair + warm

Fence crew put up rest of fence posts,
piled 1 1/2 loads of hay in Goswams
properly - to be deducted.

6-2-75 cloudy - warm

23
installing well system, poured
bases and installed 4" section -
10' best on plans. I told them
to leave off 10' piece which was
all cut on threaded anyway.

6-3-75 warm
Intermittent Showers.

Finished well installation.
Grading and shaping. Dug
out soft spots.
Fence crew stretching fence and
putting up stays.

6-4-75 Clear + warm

24

Fence crew hanging gates
and pulling 6 1/2' posts on
one side.
Dressing and shaping and
putting rolling drive ways.

6-5-75 warm + clear

Fence crew pulled 6 1/2' stakes
and replaced with 7' ones.

Dug holes for brace posts.

Contactor cut off well
conduit one foot to look better

Equipment leaving job

25

293
180
54

Portington 12 x 20

11 "

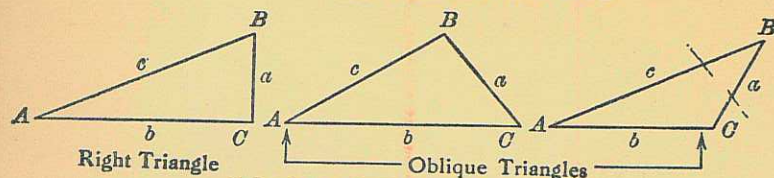
11 "

11 "

11 "

227 + cd

TRIGONOMETRIC FORMULAS



Solution of Right Triangles

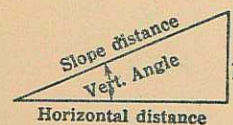
For Angle A. $\sin = \frac{a}{c}$, $\cos = \frac{b}{c}$, $\tan = \frac{a}{b}$, $\cot = \frac{b}{a}$, $\sec = \frac{c}{b}$, $\text{cosec} = \frac{c}{a}$

Given	Required	Formulas
a, b	A, B, c	$\tan A = \frac{a}{b} = \cot B$, $c = \sqrt{a^2 + b^2} = a \sqrt{1 + \frac{b^2}{a^2}}$
a, c	A, B, b	$\sin A = \frac{a}{c} = \cos B$, $b = \sqrt{(c+a)(c-a)} = c \sqrt{1 - \frac{a^2}{c^2}}$
A, a	B, b, c	$B = 90^\circ - A$, $b = a \cot A$, $c = \frac{a}{\sin A}$
A, b	B, a, c	$B = 90^\circ - A$, $a = b \tan A$, $c = \frac{b}{\cos A}$
A, c	B, a, b	$B = 90^\circ - A$, $a = c \sin A$, $b = c \cos A$

Solution of Oblique Triangles

Given	Required	Formulas
A, B, a	b, c, C	$b = \frac{a \sin B}{\sin A}$, $C = 180^\circ - (A + B)$, $c = \frac{a \sin C}{\sin A}$
A, a, b	B, c, C	$\sin B = \frac{b \sin A}{a}$, $C = 180^\circ - (A + B)$, $c = \frac{a \sin C}{\sin A}$
a, b, C	A, B, c	$A + B = 180^\circ - C$, $\tan \frac{1}{2}(A - B) = \frac{(a - b) \tan \frac{1}{2}(A + B)}{a + b}$ $c = \frac{a \sin C}{\sin A}$
a, b, c	A, B, C	$s = \frac{a + b + c}{2}$, $\sin \frac{1}{2}A = \sqrt{\frac{(s - b)(s - c)}{bc}}$ $\sin \frac{1}{2}B = \sqrt{\frac{(s - a)(s - c)}{ac}}$, $C = 180^\circ - (A + B)$
a, b, c	Area	$s = \frac{a + b + c}{2}$, $\text{area} = \sqrt{s(s - a)(s - b)(s - c)}$
A, b, c	Area	$\text{area} = \frac{bc \sin A}{2}$
A, B, C, a	Area	$\text{area} = \frac{a^2 \sin B \sin C}{2 \sin A}$

REDUCTION TO HORIZONTAL



Horizontal distance = Slope distance multiplied by the cosine of the vertical angle. Thus: slope distance = 319.4 ft. Vert. angle = $5^\circ 10'$. Since $\cos 5^\circ 10' = .9959$, horizontal distance = $319.4 \times .9959 = 318.09$ ft.
Horizontal distance also = Slope distance minus slope distance times (1 - cosine of vertical angle). With the same figures as in the preceding example, the following result is obtained. Cosine $5^\circ 10' = .9959$. $1 - .9959 = .0041$. $319.4 \times .0041 = 1.31$. $319.4 - 1.31 = 318.09$ ft.

When the rise is known, the horizontal distance is approximately the slope distance less the square of the rise divided by twice the slope distance. Thus: rise = 14 ft., slope distance = 302.6 ft. Horizontal distance = $302.6 - \frac{14 \times 14}{2 \times 302.6} = 302.6 - 0.32 = 302.28$ ft.