STANDARD NOTE SAMPLES FOR ORDINARY ON-FARM WORK

The following sample notes illustrate the format for several types of surveys used for ordinary on-farm activities. The intent of these samples is to illustrate SCS notekeeping methods, format, identification, content, and completeness.

In a limited number of instances the sample notes include design information for the simpler projects. These design data were used only for illustration and do not establish design criteria.

Each set of notes is preceded by explanatory statements which should be studied carefully.

Figure 2-1 Sheet 1 of 6

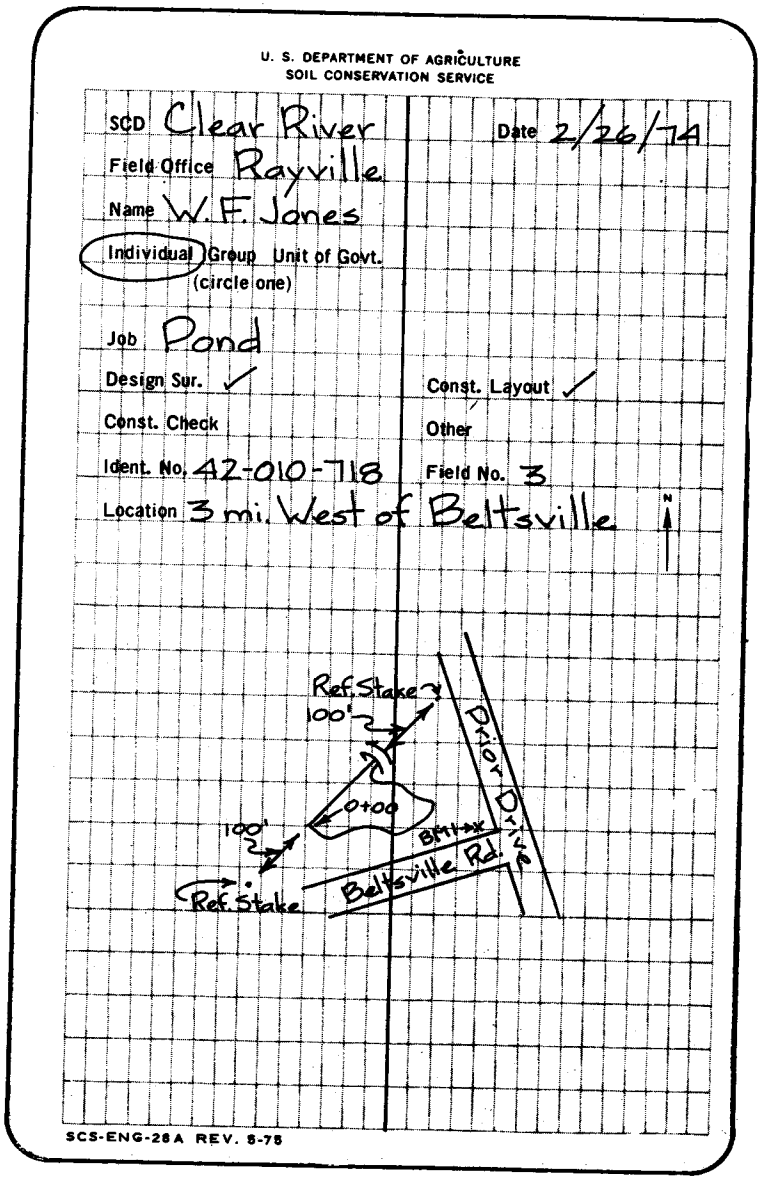


FIGURE 2-1

Engineering Notes for Pond Dam

Design and Construction Layout Survey

These notes are for a small pond dam that was designed and staked for construction during one trip to the field. The design survey and the construction layout survey were combined in one operation.

A reference hub was set at spillway elevation and the following information was given to the landowner for use by him and the contractor:

1. Total fill height (design height plus allowance for settlement) at each station as measured form the reference hub.
2. Spillway dimensions and its elevation in relation to the reference hub.
3. Top width of fill.
4. Side slopes of fill.
5. Standard specifications for site preparation and placement of fill.

Soil investigations and fill volume computations were made and recorded in accordance with State procedures.

Sta.	B.S.	H.I.	F.S. or Grade Rod	Elev. or Planned Elev.	Settlement = 10% ℄ H.
BM1	2.80	102.80		100.00	
0+00			+0.8	102.0	
0+85			+0.8	102.0	0.5
1+00			+0.8	102.0	0.9
1+35			+0.8	102.0	0.8
2+00			+0.8	102.0	0.5
2+45			+0.8	102.0	0.2

SCS-ENG-29 (5-70)

GPO : 1970 O—385-053

W.F. Jones Pond — J. Gibbs — 1
Design & Const. Layout — K. Hill 2/26/74

Design Data

D.A. 8.0 ac. Q=18 (ES-1027)
Elev. top dam = 102.0 top width = 8.0'
Earth spillway 10.0' x 2.0 2:1 S.S.
Spillway elev. 100.0
Add 10% to ℄ H for settlement

Left ℄ Right
(downstream) (upstream)
2:1 3:1

20d nail in root of 12" maple in fence corner 200' E. of S. end of dam.

Left (downstream) 2:1		Right (upstream) 3:1			
F=0.0		F=0.0		F=0.0	
0.8		0.8		0.8	
4.0		0.0		4.0	
F=6.6		F=5.0		F=4.2	
6.4		5.8		5.0	
15.2		0.0		16.6	
F=9.2		F=9.1		F=8.2	
10.0		9.9		9.0	
22.4		0.0		28.6	
F=8.8		F=7.9		F=7.2	
9.6		8.7		8.0	
21.6		0.0		25.6	
F=4.8		F=4.7		F=2.4	
5.6		5.5		3.2	
13.6		0.0		11.2	
F=3.3		F=2.0		F=1.0	
4.1		2.8		1.8	
10.6		0.0		7.0	

Figure 2-1 Sheet 2 of 6

Sta.	B.S.	H.I.	F.S. or Grade Rod	Elev. or Planned Elev.	Settlement = 10% ℄ H.
		102.80			
2+50	End fill		0.8	102.0	0.0
2+61	Spillway ℄		2.8	100.0	
	Slope Stakes - Spillway				
0+00			2.8	100.0	
0+12			2.8	100.0	℄ Dam Sta. 2+61 @ 90°
0+25			2.8	100.0	
TBM1			2.81	99.99	OK.

1976—0-200-611

W. F. Jones Pond
Design & Const. Layout

2

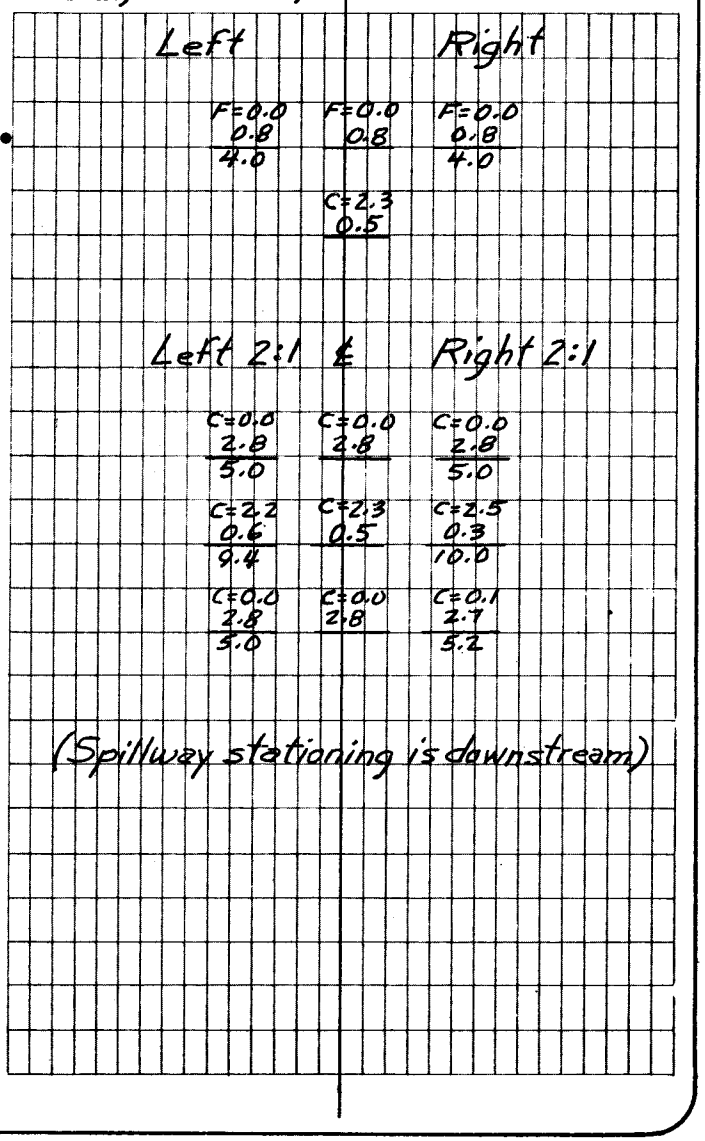


FIGURE 1

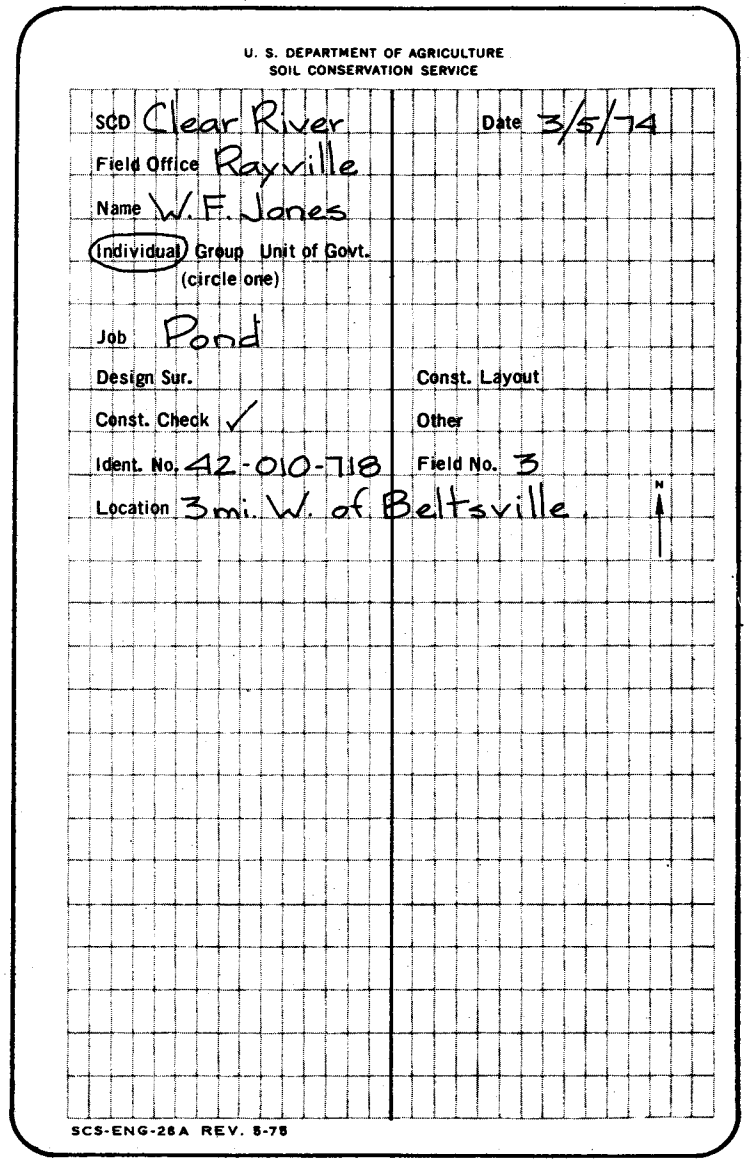
Engineering Notes for Pond Dam

Construction Check Survey

To expedite the construction check survey, the following information was taken from the plans and listed in the field notebook where it would be convenient for reference: (This was done before any survey work was started.)

Sta.	Planned Elev.	Planned Elev. + 10% of $\overline{CL}$ Height
0 + 00	102.0	
0 + 85	102.0	102.5
1 + 35	102.0	102.8
2 + 00	102.0	102.5
2 + 45	102.0	102.2
2 + 50	102.0	
2 + 51.6	102.2	
2 + 56	100.0	
2 + 61	100.0	
2 + 66	100.0	
2 + 71	102.5	

The constructed fill was uniform in appearance, therefore, only ane cross section was taken.


U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SCD Clear River Date 3/5/74

Field Office Rayville

Name W.F. Jones

(Individual) Group Unit of Govt.
(circle one)

Job Pond

Design Sur. Const. Layout

Const. Check ✓ Other

Ident. No. 42-010-718 Field No. 3

Location 3mi. W. of Beltsville. N

SCS-ENG-28A REV. 8-78

Figure 2-1 Sheet 4 of 6

Sta.	B.S.	H.I.	F.S. or Grade Rod	Elev. or Planned Elev.	Planned Elev. + 10% ℄ H.
BM1	3.81	103.81		100.00	
0+00			+1.8		102.0
0+85			+1.3		102.5
1+35			+1.0		102.8
2+00			+1.3		102.5
2+45			+1.6		102.2
2+50	End Fill		+1.8		102.0
2+52	Edge Spillway Cut		+1.6	102.2	
2+57	Bottom Spillway		+3.8	100.0	
2+62	℄ Spillway		+3.8	100.0	
2+67	Bottom Spillway		+3.8	100.0	

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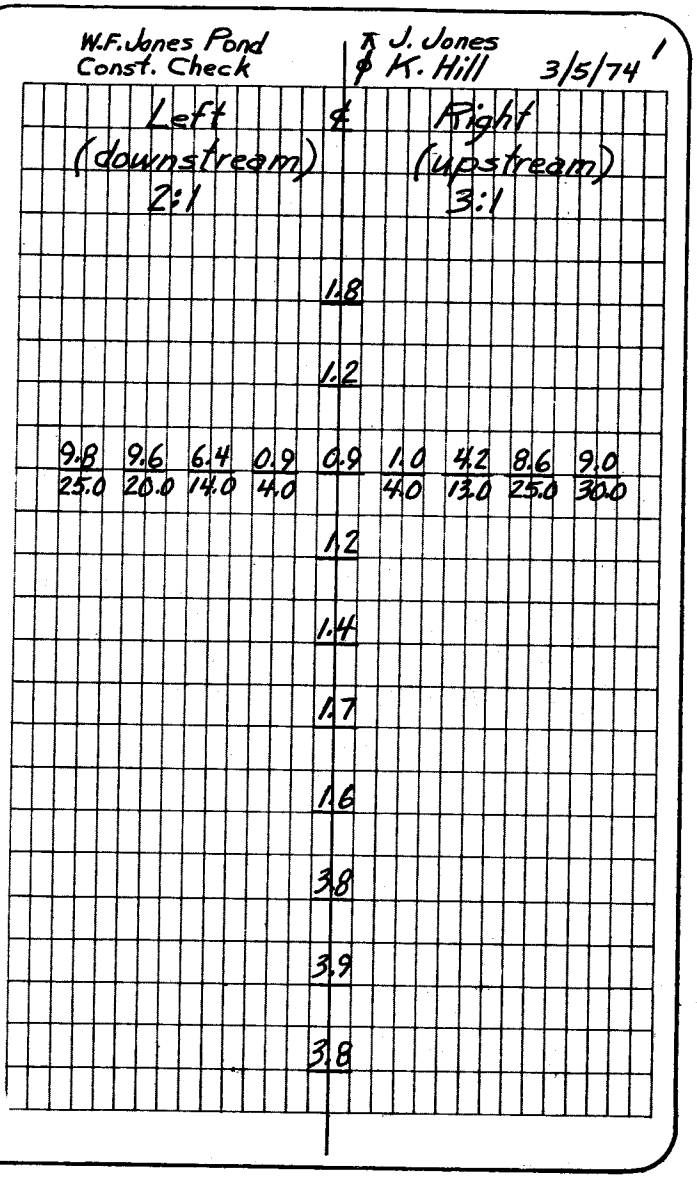


Sta.	B.S.	H.I.	F.S. or Grade Rod	Elev. or Planned Elev.
		103.81		
2+72	Edge Spillway cut.		+1.3	102.5
TP	3.87	104.42	3.26	100.55
BM1			4.42	100.00
	7.68		7.68	OK.

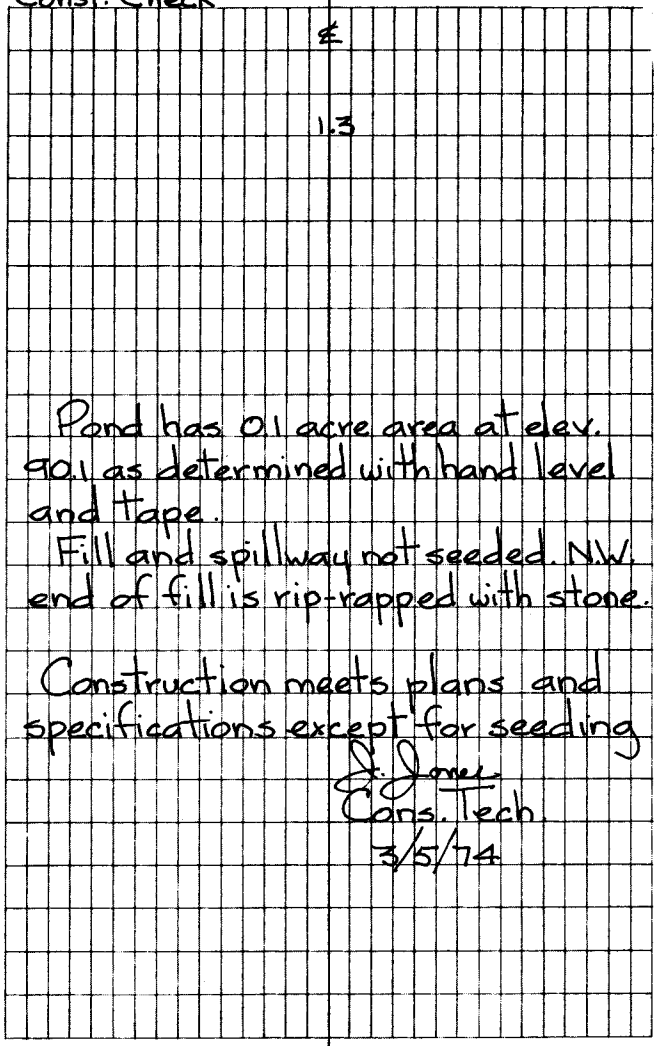
Note: Normally rod readings are sufficient for checkout but complex or large dams may require a plotted section.

SCS-ENG-29 (5-70)

GPO : 1970 O—385-053

W.F. Jones Pond
Const. Check

2



Pond has 0.1 acre area at elev. 90.1 as determined with hand level and tape.

Fill and spillway not seeded. N.W. end of fill is rip-rapped with stone.

Construction meets plans and specifications except for seeding

E. Jones
Cons. Tech.
3/5/74

Figure 2-1 Sheet 6 of 6

Figure 2-2 Sheet 1 of 15

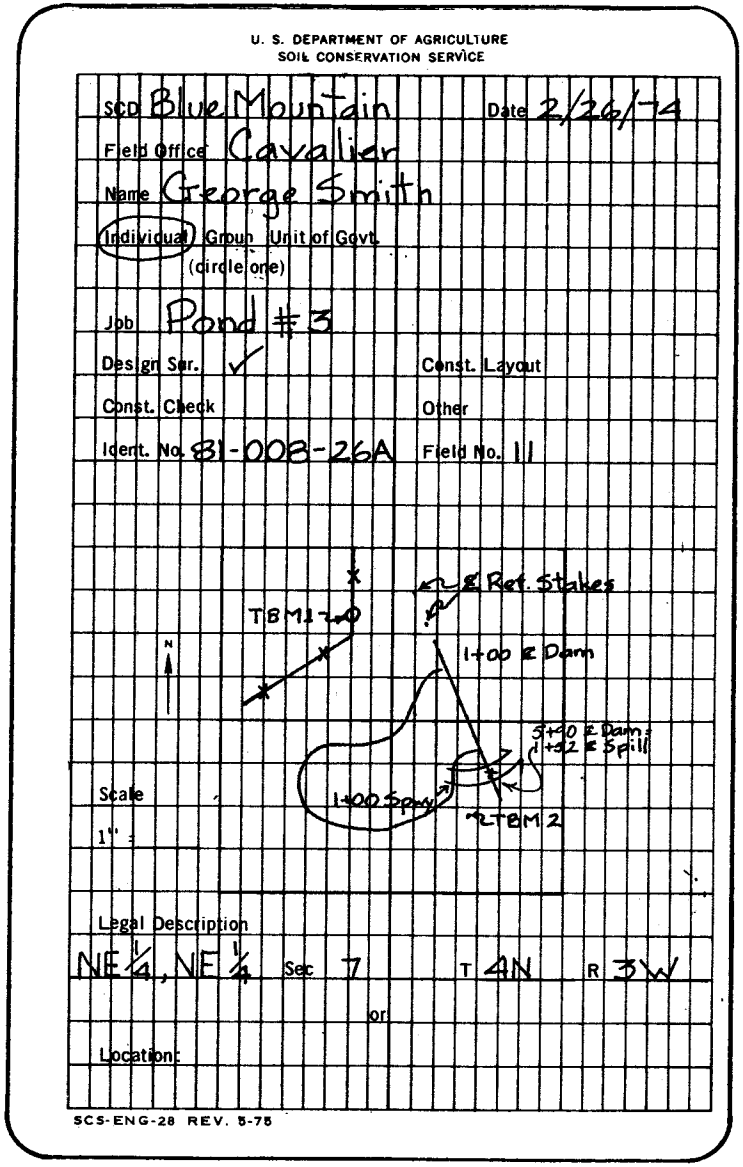
FIGURE 2-2

Engineering Notes for Pond Dam and Spillway

Design Survey

These notes illustrate a job where the design survey was made by a survey party and the plans and specifications prepared from the notes by an engineer.

Soil investigations and hydrologic studies were made and recorded in accordance with Service standards and procedures for the State.



Sta.	B.S.	H.I.	F.S. or Grade Rod	Elev. or Planned Elev.
BM1	6.71	106.71		100.00
1+00				
2+00				
2+39				
TP1	1.32	96.17	11.86	94.85
		(96.2)		
2+83				
3+00				
3+35				
4+00				
TP2	11.82	106.46	1.53	94.64
		(106.5)		
4+69				

SCS-ENG-29 (5-70)

GPO : 1970 O—385-053

Geo. Smith Pond #3 Dam — Design Survey — J. Doe, R. Rowe — 2/26/74

Left ℄ Right

1" steel axle in fence 200' N.W. of NW. end of dam ℄

105.8 / 0.9 / 15	105.9 / 0.8 / 0	105.9 / 0.8 / 15			
105.5 / 1.2 / 15	105.5 / 1.2 / 0	105.6 / 1.1 / 15			
94.8 / 11.9 / 29	95.1 / 11.6 / 0	95.8 / 10.9 / 13	98.2 / 8.5 / 23	98.9 / 7.8 / 46	
92.2 / 4.0 / 36	91.4 / 4.8 / 19	93.5 / 2.7 / 0	95.3 / 0.9 / 15	94.6 / 1.6 / 27	94.4 / 1.8 / 49
87.7 / 8.5 / 68	85.3 / 10.9 / 31	88.0 / 8.2 / 0	87.7 / 8.5 / 17	88.6 / 7.6 / 40	88.9 / 7.3 / 80
84.3 / 11.9 / 60	86.2 / 10.0 / 20	85.0 / 11.2 / 0	87.4 / 8.8 / 20	85.9 / 10.3 / 42	86.7 / 9.5 / 80
93.5 / 2.7 / 45	95.9 / 0.3 / 15	94.3 / 1.9 / 0	94.6 / 1.6 / 15	96.0 / 0.2 / 46	95.4 / 0.8 / 70
95.3 / 1.2 / 40	95.8 / 10.7 / 30	96.0 / 10.5 / 0	96.3 / 10.2 / 35	96.7 / 9.8 / 50	

Figure 2-2 Sheet 2 of 15

Figure 2-2 Sheet 3 of 15

Sta.	B.S.	H.I.	F.S. or Grade Rod	Elev. or Planned Elev.
		106.46		
5+00		(106.5)		
5+27				
5+50				
TP3	5.73	110.87	1.32	105.14
		(110.9)		
5+65				
5+72				
5+90				
6+00				
6+50				
BM2	0.33	110.34	0.86	110.01

SCS-ENG-29 (5-70)

GPO : 1970 O—385-053

Geo. Smith Pond #3 Design Surv. Dam

2

Left ℄ Right

96.3 / 10.2 / 35	96.8 / 9.7 / 25	100.1 / 6.4 / 10.0	97.4 / 9.1 / 0	95.4 / 11.1 / 15	98.1 / 8.4 / 35	99.3 / 7.2 / 50
	100.4 / 6.1 / 25	101.0 / 5.5 / 15	101.3 / 5.2 / 0	101.5 / 5.0 / 20	101.9 / 4.6 / 35	
	104.7 / 1.8 / 25	104.8 / 1.7 / 15	105.0 / 1.5 / 0	105.1 / 1.4 / 15	105.4 / 1.1 / 30	

106.4 / 4.5 / 0

104.6 / 6.3 / 0

105.2 / 6.7 / 0

105.9 / 6.0 / 0

109.2 / 1.7 / 0

Spike in base of lone elm.

Sta.	B.S.	H.I.	F.S. or Grade Rod	Elev. or Planned Elev.
		110.34		
TP1	4.87	105.00	10.21	100.13
1+00	Starting Sta.			
TP2	9.60	110.95 (110.9)	3.65	101.35
1+40				
1+52 = Sta. 5+90 ℄ Dam				
2+00				
TP3	0.84	100.56 (100.6)	11.23	99.72
2+40				
2+56				
TP4	1.76	92.18	10.14	90.42

SCS-ENG-29 (5-70)

GPO : 1970 O—385-053

Geo. Smith Pond #3
Design Surv.
Emergency Spillway

3

Left ℄ Right

		98.6 / 6.4 / 30	98.5 / 6.5 / 0	98.7 / 6.3 / 25	
108.9 / 2.0 / 55	108.6 / 2.3 / 15	105.0 / 5.9 / 9.0	104.0 / 6.9 / 0	104.7 / 6.2 / 9	105.2 / 5.7 / 51
	106.4 / 4.5 / 25	104.5 / 6.4 / 18	105.2 / 5.7 / 0	105.9 / 5.0 / 10	107.8 / 3.1 / 25
	103.6 / 7.3 / 30	101.6 / 9.3 / 12	100.3 / 10.6 / 0	101.0 / 9.9 / 15	103.9 / 7.0 / 30
	96.5 / 4.1 / 30	95.4 / 5.2 / 20	94.4 / 6.2 / 0	95.2 / 5.4 / 20	96.3 / 4.3 / 30
	94.4 / 6.2 / 52	93.2 / 7.4 / 15	92.9 / 7.7 / 0	93.1 / 7.5 / 15	94.2 / 6.4 / 30

Figure 2-2 Sheet 4 of 15

Sta.	B.S.	H.I.	F.S. or Grade Rod	Elev. or Planned Elev.	
		92.18			
3+00		(92.2)			
3+42					
TP5	11.48	102.49	1.17	91.01	
BM1			2.51	99.98	
	54.46		54.48		
Correct elev. BM1 = 100.00					
		Diff. =		.02	OK.
Adjust elev. BM2 = .01				110.00	Adjusted J. Doe

SCS-ENG-29 (5-70)

GPO : 1970 O—385-053

Geo. Smith Pond #3
Design Surv.
Emergency Spillway

4

Left		℄	Right	
90.2	89.5	88.8	89.6	90.0
2.0	2.7	5.4	2.6	2.2
30	18	0	20	35
	85.5	85.0	85.3	
	6.7	7.2	6.9	
	32	0	30	

FIGURE 2-2

Engineering Notes for Pond Dam and Spillway

Construction Layout

To expedite the construction layout survey the following information was taken from the plans and listed in the field notebook.

1. Planned elevation of top of embankment at each station and the allowance for settlement. In this example, settled heights are shown. See Chapter 3 for an example using constructed heights.

2. Planned top width of embankment.

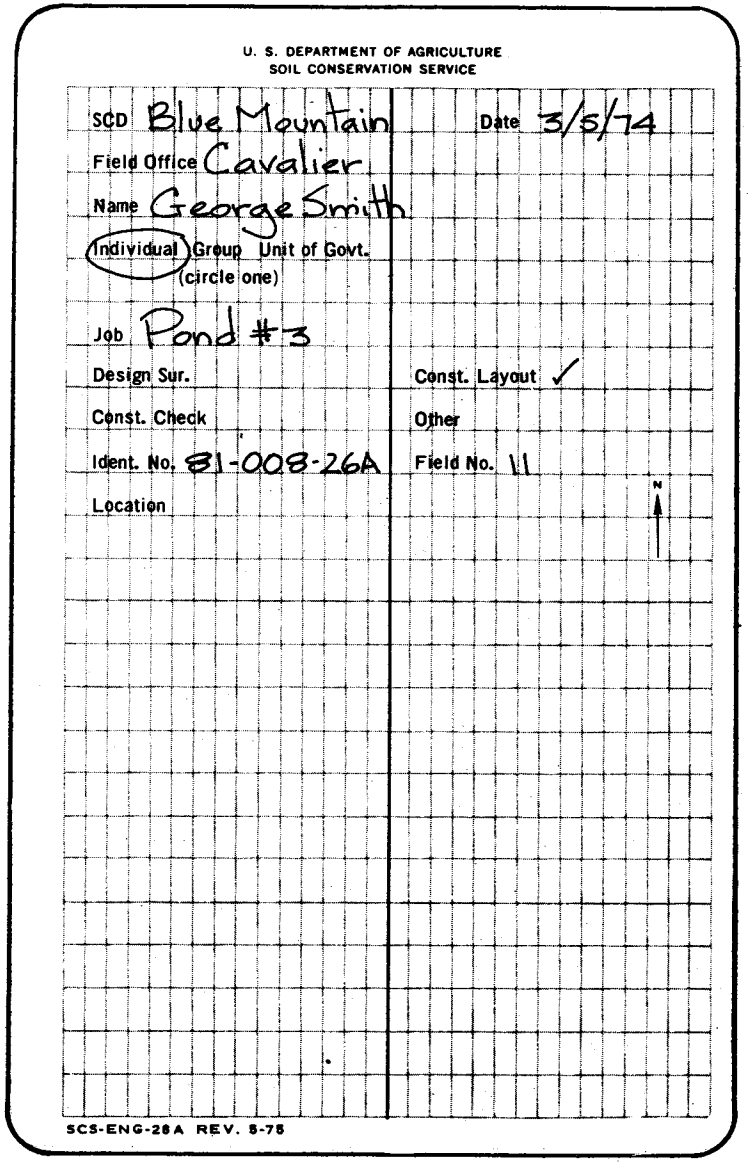
3. Planned elevation of bottom of excavation for the conduit at upper end, lower end, and intermediate points.

4. Planned elevation of emergency spillway at several points.

5. Dimensions of emergency spillway.

This information is also useful in construction check survey.

After the job was staked a reference hub was set at emergency spillway crest elevation so contractor could make preliminary checks for completion before calling on the Soil Conservation Service for final check-out.


U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SCD Blue Mountain Date 3/5/74

Field Office Cavalier

Name George Smith

Individual Group Unit of Govt.
(circle one)

Job Pond #3

Design Sur. Const. Layout ✓

Const. Check Other

Ident. No. 81-008-26A Field No. 11

Location

N

SCS-ENG-28A REV. 8-75

Figure 2-2 Sheet 6 of 15

Figure 2-2 Sheet 7 of 15

Sta.	B.S.	H.I.	F.S. or Grade Rod	Elev. or Planned Elev.	Settlement ± 5% ℄ H.
BM1	7.42	107.42		100.00	
2+05	N.W. end dam		+2.4	105.0	0.0
2+39			+2.4	105.0	0.5
TP1	0.15	95.31	12.26	95.16	
2+83			-9.7	105.0	0.6
3+00			-9.7	105.0	0.9
3+35			-9.7	105.0	1.0
TP2	11.88	106.32	0.87	94.44	
4+00			+1.3	105.0	0.5
4+69			+1.3	105.0	0.5

SCS-ENG-29 (5-70)

GPO : 1970 O-385-053

Geo. Smith Pond #3
Const. Layout
Dam

J. Doe
R. Rowe 3/5/74

Left 2:1 ℄ Right 3:1

Top elev. 105.0 Top width 12'.

1" steel axle in fence line 200' N.W. of N.W. end of dam.

F=0.0 2.4 6.0	F=0.0 2.4 0.0	F=0.0 2.4 6.0
F=10.1 12.5 26.2	F=9.9 12.3 0.0	F=6.8 9.2 26.4
F=13.3 3.6 32.6	F=11.5 1.8 0.0	F=10.5 0.8 37.5
F=18.8 9.1 43.6	F=17.0 7.3 0.0	F=16.2 6.5 54.6
F=20.7 11.0 47.4	F=20.0 10.3 0.0	F=19.6 9.9 64.8
F=11.2 12.5 28.4	F=10.7 12.0 0.0	F=8.3 9.6 30.9
F=9.2 10.5 24.4	F=9.0 10.3 0.0	F=8.7 10.0 32.1

Sta.	B.S.	H.I.	F.S. or Grade Rod	Elev. or Planned Elev.	Settlement = 5% ± H.
		106.32			
5+27			+1.3	105.0	0.2
5+50	S.E. end dam		+1.3	105.0	0.0
BM1			6.31	100.01	
	19.45		19.44		
	Correct elev. TBM1 =			100.00	
			Diff. =	0.01	OK.

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Geo. Smith Pond #3
Const. Layout
Dam

2

Left	℄	Right
F=4.0	F=3.7	F=3.5
5.3	5.0	4.8
14.0	0.0	16.5
F=0.1	F=0.0	F=0.0
1.4	1.3	1.3
6.2	0.0	6.0

Note: See Figure 3-9 for stripping and core trench notes if they are to be measured.

Figure 2-2 Sheet 8 of 15

Sta.	B.S.	H.I.	F.S. or Grade Rod	Elev. or Planned Elev.	
BM1	0.18	100.18		100.00	
TP1	1.24	89.70	11.72	88.46	
0+00	At riser		+4.2	85.5	
0+23	℄ dam		+4.0	85.7	
0+48			+4.3	85.4	
0+75			+4.7	85.0	
TP2	11.87	101.10	0.47	89.23	
BM1			1.09	100.01	
	13.29		13.28		
	Correct elev.		BM1 =	100.00	
			Diff. =	0.01	OK.

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Geo. Smith Pond #3
Const. Layout
Principal Spwy. Excav.

3

Left ℄ Right

See Page 1.
(tube at right ∠ to ℄ Dam Sta. 3+00)

C+1.2
3.0
0

C+2.3
1.7
0

C+2.8
1.5
0

C+2.7
2.0
0

Sta.	B.S.	H.I.	F.S. or Grade Rod	Elev. or Planned Elev.	
BM2	1.02	111.02		110.00	
TP1	4.02	107.54 (107.5)	7.50	103.52	
1+05	Starting Sta.		+8.4	99.1	
1+40			+7.1	100.4	
1+52			+7.1	100.4	
2+00			+10.5	97.0	
TP2	3.92	100.60	10.86	96.68	
2+56			+7.7	92.9	
TP3	11.03	111.01	0.62	99.98	
BM2			1.03	109.98	
	19.99		20.01		
	Correct elev. BM2 =			110.00	
		Diff. =		0.02	OK.

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Geo. Smith Pond #3
Const. Layout
Emergency Spwy.

4

Left & Right

Spike in base of lone elm.

Bottom width = 20.0'

Side slopes = 2:1

C=0.1 8.3 10.2	C=0.0 8.4 0	C=0.0 8.4 10.0
C=4.7 2.4 19.4	C=3.6 3.5 0	C=4.3 2.3 18.6
C=3.5 1.6 21.0	C=4.8 2.3 0	C=5.1 2.0 20.2
C=4.6 5.9 19.2	C=3.3 7.2 0	C=4.0 6.5 18.0
C=0.0 7.7 10.0	C=0.0 7.7 0	C=0.1 7.6 10.2

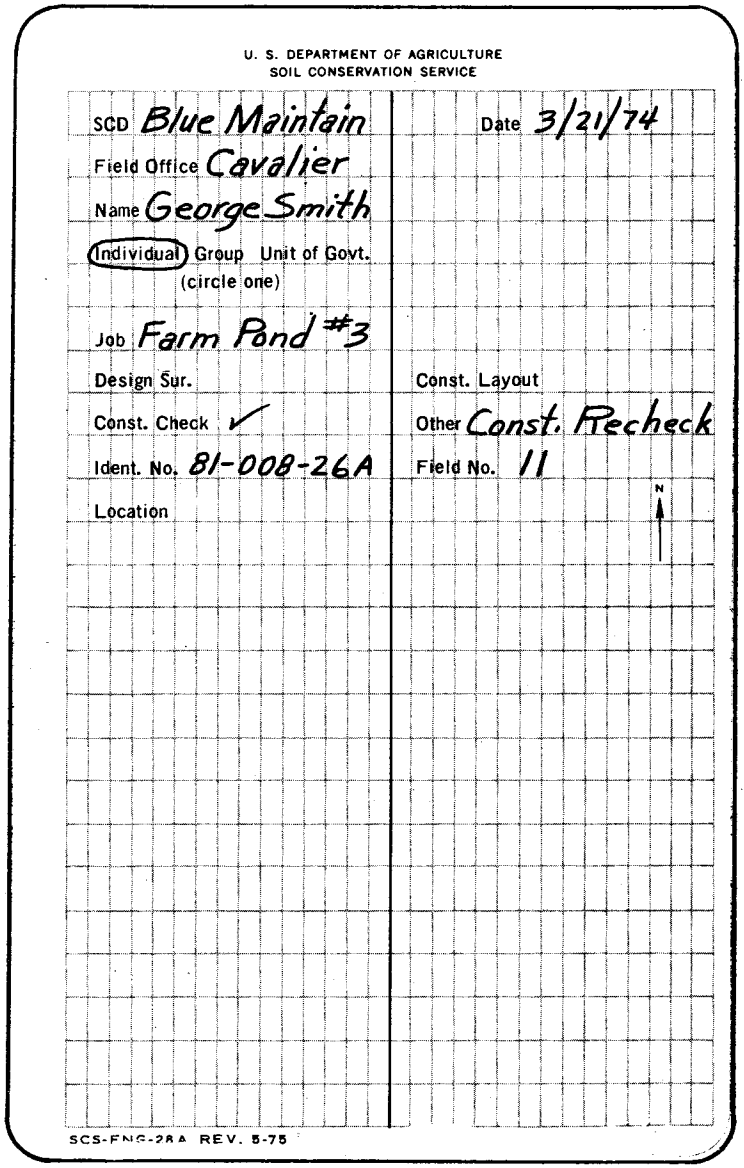
Figure 2-2 Sheet 10 of 15

FIGURE 2-2

Engineering Notes for Pond Dam and Spillway

Construction Check Survey

These notes illustrate the standard Soil Conservation Service format for a fill that is too high to be checked from one instrument set up. To expedite the construction check survey necessary dimensions, stations and elevations are taken from the plans and entered in the field notebook for ready reference.


U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SCD Blue Maintain Date 3/21/74

Field Office Cavalier

Name George Smith

(Individual) Group Unit of Govt.
(circle one)

Job Farm Pond #3

Design Sur. Const. Layout

Const. Check ✓ Other Const. Recheck

Ident. No. 81-008-26A Field No. 11

Location N

SCS-ENG-28A REV. 5-75

Sta.	B.S.	H.I.	F.S. or Grade Rod	Elev. or Planned Elev.	Planned elev. + 5% ± H.
	Upper portion of dam				
BM1	7.51	107.51		100.00	
2+05			+2.5		105.0
2+39			+2.0		105.5
2+83			+1.8		105.7
3+00			+1.5		106.0
3+35			+1.5		106.0
Side Shot			10.1	97.4	
4+00			+2.0		105.5
4+69			+2.0		105.5
5+27			+2.3		105.2
5+50			+2.5		105.0

SCS-ENG-29 (5-70)

GPO : 1970 O—385-053

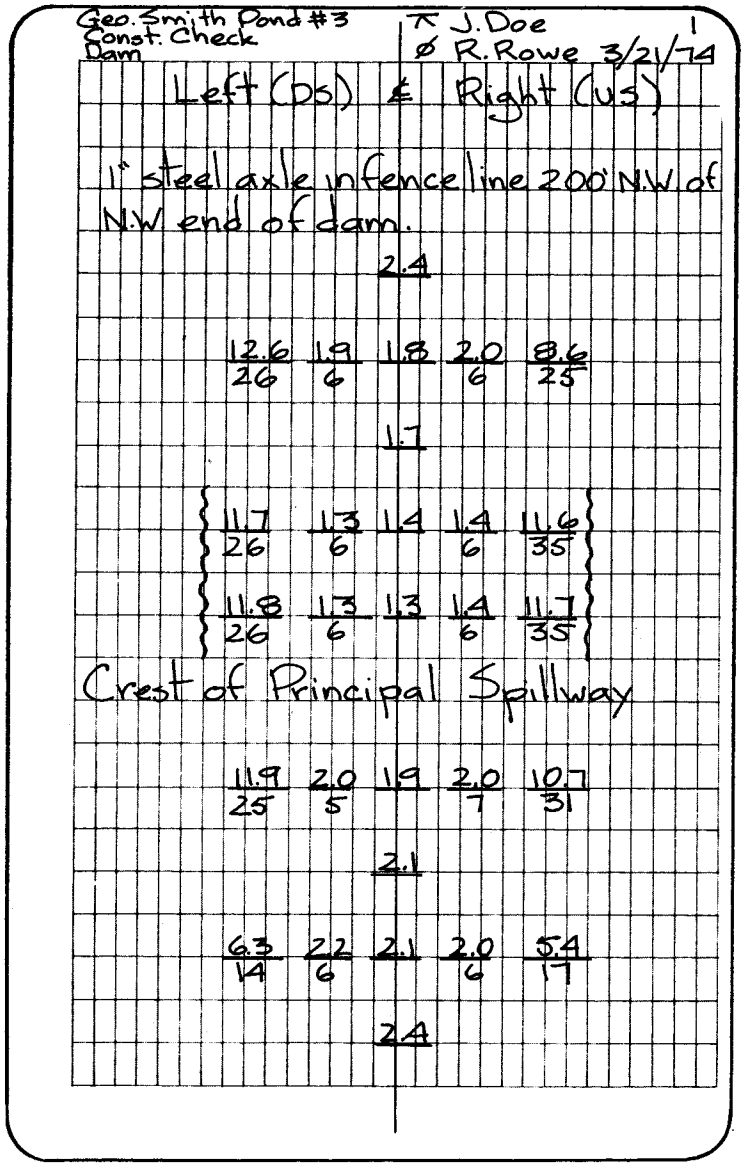


Figure 2-2 Sheet 12 of 15

Sta.	B.S.	H.I.	F.S. or Grade Rod	Elev. or Planned Elev.
Lower portion of dam - downstream				
		107.51		
TP1	1.21	97.01	11.71	95.80
3+00				
Side Shot			12.0	85.0
3+35				
	Lower portion of dam upstream			
TP2	11.66	107.59	1.08	95.93
TP3	1.29	97.10	11.78	95.81
3+00				
3+35				
TP4	11.31	107.31	1.10	96.00
BM1			7.29	100.02
	37.10		37.08	

SCS-ENG-29 (5-70) 70 0-385-053

Correct elev. BM1 = 100.00
Diff. = 0.02 OK.

Geo. Smith Pond #3 Const. Check Dam
℄ J. Doe
℄ R. Rowe 3/21/74
2

Left (DS) ℄ Right (US)

10.8 / 44

Downstream invert of principal S.W.

12.7 / 48

8.3 / 55

12.7 / 66

Sta.	B.S.	H.I.	F.S. or Grade Rod	Elev. or Planned Elev.	
BM2	0.80	110.80		110.00	
TP1	2.02	101.11	11.71	99.09	
1+80			+2.7	98.4	
2+00			+4.1	97.0	
2+20			+5.6	95.5	
TP2	11.80	111.80	1.11	100.00	
BM2			1.79	110.01	
	14.62		14.61		
Correct elev. BM2=				110.00	
		Diff =		0.01	OK.

SCS-ENG-29 (5-70)

GPO : 1970 O-385-053

Geo. Smith Pond #3
Const. Recheck
Spillway

⊼ J. Doe
Ø Geo. Smith

4
3/22/74

Left ℄ Right

Spike in base of lone elm.

2.6/10	2.7	2.6/10
4.1/10	4.1	4.1/10
5.5/10	5.6	5.5/10

Construction meets plans and specs.

J. Doe
Engr. Tech.
3/22/74

Figure 2-2 Sheet 14 of 15

Sta.	B.S.	H.I.	F.S. or Grade Rod	Elev. or Planned Elev.	
BM 2	0.80	110.80		110.00	
TP 1	2.02 ~~21.02~~	101.11	11.71	99.09	
1+80			+2.7	98.4	
2+00			+4.1	97.0	
2+20			+5.6	95.5	
TP 2	11.80	111.80	1.11	100.00	
BM 2			1.79	110.01	
	14.62		14.61		
	Correct elev. TBM 2 =			110.00	
		Diff =		0.01	OK.

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Geo. Smith Pond #3 Const. Recheck Spillway — T J. Doe, ϕ Geo. Smith 3/22/74 — 4

Left ℄ Right

Spike in base of lone elm.

Left	℄	Right
2.6 / 10	2.7	2.6 / 10
4.1 / 10	4.1	4.1 / 10
5.5 / 10	5.6	5.5 / 10

Construction meets plans and specs.

J. Doe
Engr. Tech.
3/22/74