GENERAL

Detailed engineering plans of the proposed embankment, spillway(s), and reservoir on the reverse side of this sheet are part of these specifications.

All facilities for impounding water shall comply strictly with all rules and regulations of the Alabama State Board of Health laws, Alabama Department of Environmental Management, and EPA or other pertinent regulations.

RESPONSIBILITIES OF

A. LANDOWNERS:
The landowner is responsible for obtaining all required permits. The landowner must acquaint himself with these plans and specifications to determine that the completed structure will fulfill his present and future needs. Inspection during construction will be the responsibility of the landowner. The landowner is responsible to request inspection assistance from NRCS personnel.

B. CONTRACTOR:
The contractor is to be acquainted with the provisions of these plans and specifications, conditions at the site that may affect the schedule of operation, and the location and meaning of all stakes on the site. All benchmarks, grade and line stakes must be left undisturbed and protected by the contractor to facilitate construction and inspection.

C. U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE
The United States and its employees are in no manner a party to any verbal or written contract between the landowner and the contractor. NRCS employee(s), within limit of personnel available, will assist the landowner with inspection and advise on technique during construction to assure satisfactory compliance with the plans and specifications.

SPECIFICATIONS FOR CONSTRUCTION OF PONDS AND RESERVOIRS

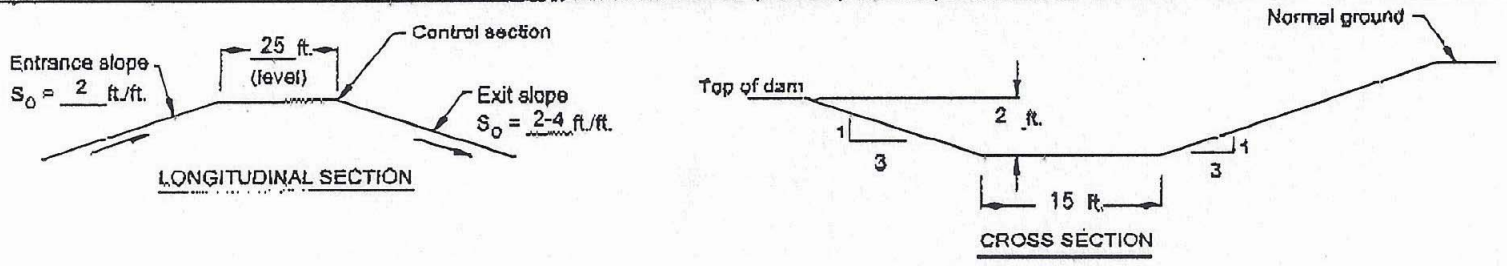
CLEARING: All trees and brush shall be cut as close to the ground as practical and removed from the site before water is impounded. Combustible material must be disposed of by burning, burying at approved locations, or removed from the site and stacked.
FOUNDATION PREPARATION: The foundation area shall be cleared of all trees, stumps, and debris. All topsoil containing excessive amounts of organic material shall be removed. All sharp breaks shall be sloped to not steeper than 1:1 and the foundation thoroughly scarified before placement of the embankment fill.
CUTOFF TRENCH: A cutoff trench shall be excavated to the depth, bottom width, and side slopes shown on the plans or as staked in the field. The cutoff trench shall be backfilled in layers not to exceed 8 inches in thickness. Standing water shall be removed from the trench before backfilling is started.
SPILLWAY AND BORROW EXCAVATION: Spillway(s) will be excavated in undisturbed earth and conform to the grades, bottom width, and side slopes shown on the plans. All borrow areas shall be graded so as to be well drained and protected from erosion by the use of diversions or other conservation measures. Side slopes of borrow areas shall be left in such condition that establishment of vegetation, mowing, and maintenance operations will be facilitated. Surface soils excavated and saved from the foundation, spillway, and borrow areas shall be placed on the dam, borrow areas, and spillway to facilitate establishment of vegetation.
EMBANKMENT CONSTRUCTION: The material placed in the embankment shall be free of sod, roots, stones over 6 inches in diameter, and other objectionable materials. The fill material shall be placed and spread over the entire fill, starting at the lowest point of the foundation, in layers not to exceed 8 inches in thickness. Construction of the fill shall be undertaken only at such time that the moisture content of the fill material will permit satisfactory compaction. Special equipment will be used when the required compaction cannot be contained by routing of the construction equipment.
FILL MATERIAL: Fill material shall be taken from borrow areas designated by the technician. The NRCS technician will advise the contractor regarding the maximum allowable depth of cut in each borrow area. In the event this depth is exceeded in the impoundment area, it shall be the responsibility of the contractor, to cover the exposed area with a minimum of 2 feet of impervious material.
PIPE CONDUIT: The pipe conduit barrel shall be placed on a firm foundation to the grade specified. Select backfill material shall be placed around the pipe and its component parts in layers not exceeding 4 inches and each successive layer thoroughly hand compacted. Mechanical compaction with the hand equipment shall continue until 2 ft. of fill is over the pipe. When a pipe is required, the riser must be installed completely before final inspection and certification of practice is made. The inlet of the riser should be protected by a trash rack or sleeve.
ANTI-SEEP COLLARS OR DRAINAGE DIAPHRAGM: Anti-seep collars or drainage diaphragm will be of materials and dimensions, and located as specified.
VEGETATION: Adapted vegetation shall be established on all exposed surfaces of the embankment, spillway, borrow, and spoil areas as soon as possible after construction. Vegetation will be applied as critical area planting and will include seedbed preparation, seeding, liming, fertilizing, and when needed mulching.
EROSION AND SEDIMENT CONTROL: During construction, erosion will be minimized and sediment controlled according to guidelines in Alabama Guide Sheet AL378B, Erosion Control During Farm Pond Construction.

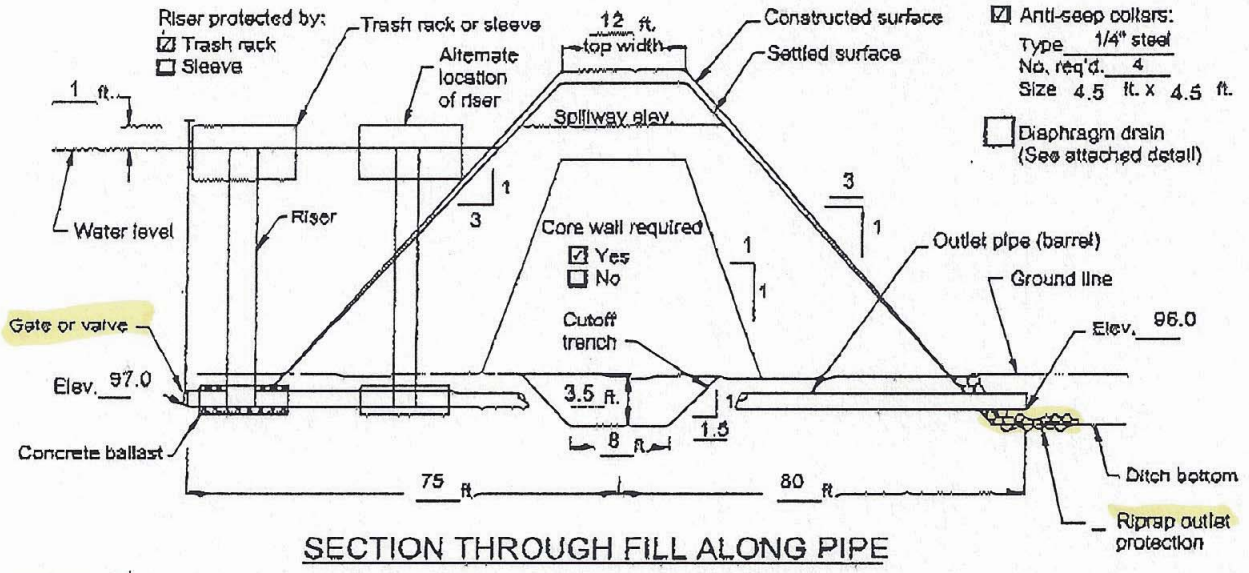
U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

AL-ENG-2
August 2007

EARTHFILL POND PLAN

EMERGENCY SPILLWAY LOCATED (RIGHT) ☑ (LEFT) ☐ SIDE OF DAM





SECTION THROUGH FILL ALONG PIPE

Description of Bench Mark Nail in large oak (30" diameter) downstream from dam centerline on upper right abutment.

TBM Elev. 100.00 Water Level Elev. 113.8 Spillway Elevation 114.8
Top of Dam Elev. (Constructed) 117.8 (Settled) 116.8
Surface Area 2.2 Ac. Max. Fill 19.8 Ft.

POND CAPACITY

Hill: 0.40 x 2.2 Ac. x 16.8 Ft. = 14.8 AF
Levee: Max. – Ft. + Min. – Ft. / 2 x 2.2 Ac. = 0.0 AF
Water Use Irrigation
Ref. No. 2008 AWEP Contract No. 794101092WN

VEGETATION PLAN

Salvage and Spread Surface Soil Over the Dam, Spillway, and Disturbed Area: 1.5 Ac. Total

ITEM	TYPE	RATE		AMOUNT	
Lime	Agricultural	3	Tn./Ac	4.5	Tons
Fert.	8-24-24	400	Lb./Ac.	600	Lbs.
Seed	Tall Fescue	50	Lb./Ac.	75	Lbs.
	White Clover	3	Lb./Ac.	4.5	Lbs.
			Lb./Ac.	0	Lbs.
			Lb./Ac.	0	Lbs.
Mulch	Straw or Tame Hay	1.5	Tn/Ac.	2.25	Tons

Prepare Land 4-6 In. deep after lime and fertilizer are spread.
Place Fescue Seed 1/2 In. Deep and Clover Seed 1/4 In. Deep.
Inoculate Legume Seed at Rate Specified on Inoculant Package.
Planting Date: September 1 through November 1

BILL OF MATERIALS

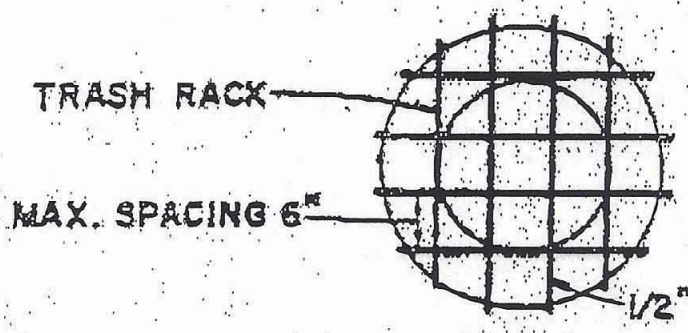
155 Ft. of 6 In. Smooth Steel (1/4" steel) Pipe (Riser)
17~~5~~ Ft. of 10 In. Smooth Steel (1/4" steel) Pipe (Barrel)
– Ft. of – In. – Pipe
(1) 15 In. x 3 Ft. Trash Rack
(–) ___ In. x ___ Ft. Sleeve
(–) ___ In. x ___ In. x ___ In. Tee
(1) 6 In. x ___ Headgate or ✓ In. Valve
(4) ___ Anti-Seep Collars 4.5 Ft. x 4.5 Ft.
5200 Cu. Yds. Embankment Fill
415 Cu. Yds. Cutoff Excavation
0.3 Cu. Yds. Concrete for Ballast
(2 Ft. x 2 Ft. x 2 Ft.)
3 - 3.5 Ac. Clearing
(–) ___ In. x ___ Ft. Treated Post

RE

NRCS	EARTHFILL POND PLAN (CLASSES I & II)	Date: 7/13/2010	Drawing Number	Sheet No.
	PROJECT: Jerome Lanning, AWEP COUNTY, St. Clair	Designed: Larry J. McCray Drawn: Larry J. McCray Checked: Joe Perrett Approved: Larry J. McCray		1 of 2

NOTE: ALTERNATE TRASH RACK OF EXPANDED METAL, HAVING OPENINGS OF 1 5/8" X 3 7/16" TO BE REMOVABLE

1/ DIAMETER OF PIPE OR BARREL

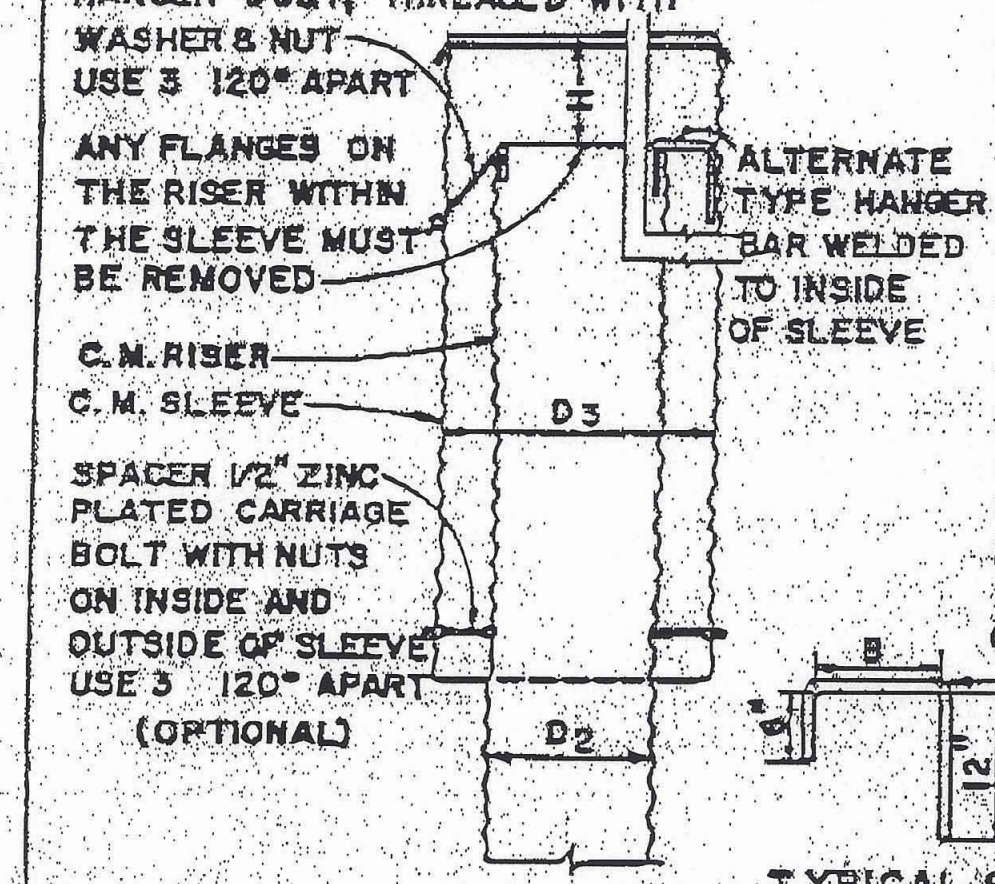


PLAN

DIAMETERS (INCHES)			
1/ D_1	D_2	D_3	MIN. H (FT.)
4	6	10	0.5
6	8	12	0.5
8	10	15	1.0
10	12	18	1.0
12	18	24	1.0
15	21	30	1.0
18	24	36	1.5
24	30	48	1.5
30	36	54	1.5

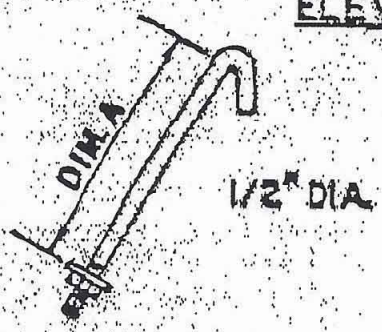
THE ABOVE TABLE OF DIFFERENT SIZES OF RISERS AND RISER SLEEVES ARE SUCH THAT THE RISER PIPE WILL FLOW AT FULL CAPACITY FROM DEEP WATER FLOW

* NOTE THAT THE DIMENSION H INCREASES THE MINIMUM DIFFERENCE IN ELEVATION BETWEEN RISER CREST AND EMERGENCY SPILLWAY CREST IN SOME CASES



ELEVATION

TYPICAL SECTION
ALTERNATE HANGER BOLT



TYPICAL SECTION
HANGER BOLT

TRASH RACK AND DEEP WATER RELEASE FOR FARM POND RISERS

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Exhibit AL11-1. Corrugated Metal or Smooth Steel Trash Rack and Deep Water Release Sleeve for Ponds.

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

NRCS-ENG-538
5-86 (REDRAWN 7-01)

SOIL INVESTIGATION TO DETERMINE SUITABILITY OF PROPOSED POND SITE

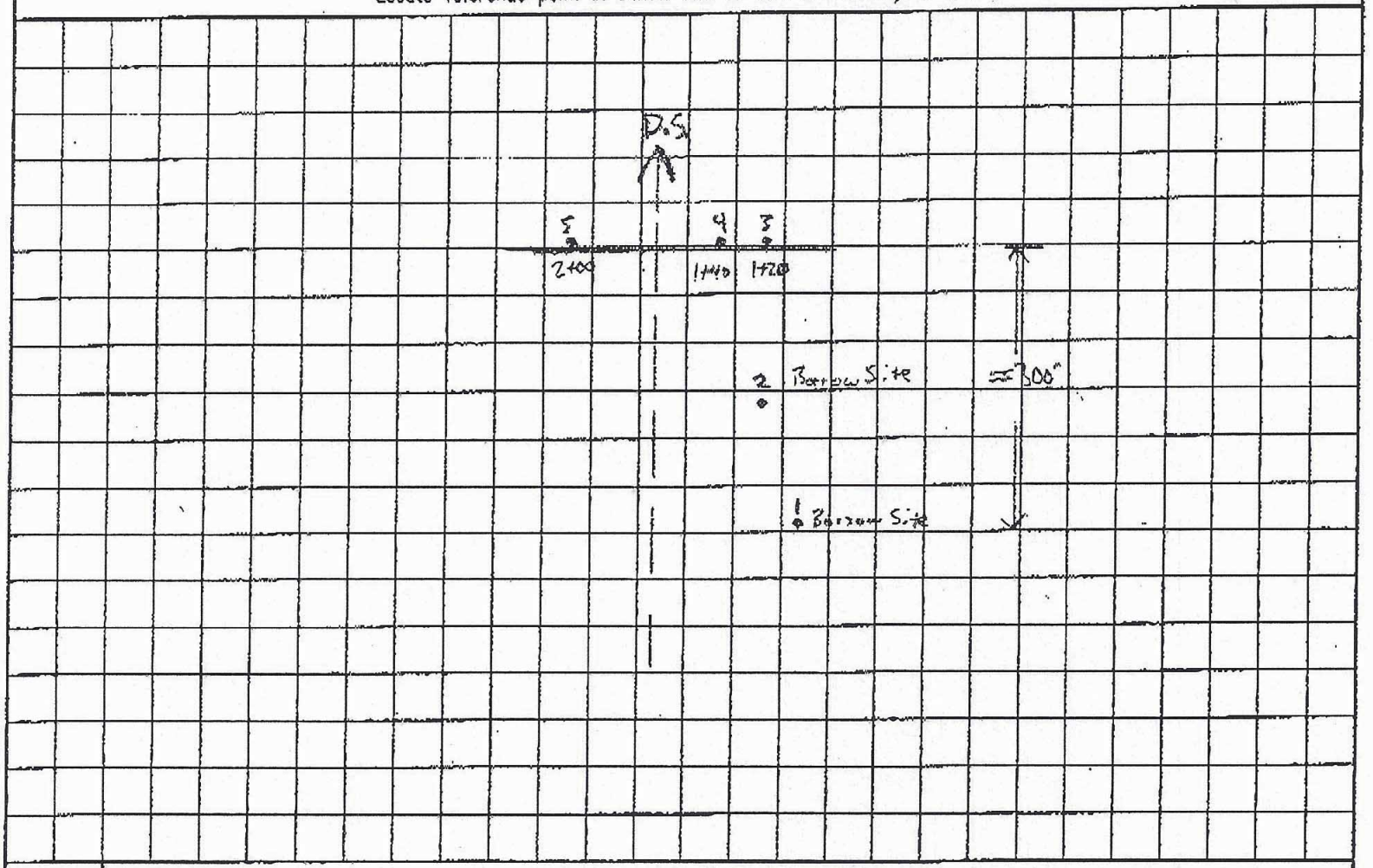
FARMERS NAME Leroy Lanning — DISTRICT St. Clair Co.
DATE 6/1/2010 — COUNTY St. Clair Co.
NRCS PHOTO SHEET NO. — WORK UNIT St Clair Co.

WATERSHED AREA MEASUREMENTS (Pond)
CROPLAND 2.6 ACRES — PASTURE 1.9 ACRES
WOODLAND 14.9 ACRES — TOTAL 19.4 ACRES

A - Hazard Class
II - S.A.C
POND CLASS

Rod Goode
WORK UNIT CONSERVATIONIST

SKETCH OF PROPOSED POND SHOWING WHERE BORINGS WERE MADE (Approx. scale 1 in.=_____ft.)
Locate reference point in center line of dam and identify on sketch



SHOW DEPTH SCALE	BORING NUMBER AND PROFILE (Make and list dam-site and spillway borings first — then ponded area and borrow pit borings — separate with vertical red line. (Continued on back where necessary) Show water table elevations on dam-site borings.)																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
0-1	CL	SM	SM	SM	SM																					
1-2	CL	CL	SC	SM/SC	SC																					
2-3	CL	SM	SM/SM	SM/SC	SP																					
3-4	Rock		SP	SM/SC	SC																					
4-5			Rock	SM	S.S. Rock																					
5-6				Rock																						

BORINGS MADE BY MILTON TUCK — SIGNATURE AND TITLE Milton Tuck RSJ

TYPES OF MATERIAL ENCOUNTERED IN BORINGS
(Use one of systems below)

UNIFIED CLASSIFICATION

GW – Well graded gravel; gravel, sand mix
GP – Poorly graded gravels
GM – Silty gravels; gravel–sand–silt mix
GC – Clayey gravels; gravel–sand–clay mix
SW – Well graded sands; sand–gravel mix
SP – Poorly graded sands
SM – Silty sand
SC – Clayey sands; sand–clay mixtures
ML – Silts; silty, v. fine sands; sandy or clayey silt
CL – Clays of low to medium plasticity
CH – Inorganic clays of high plasticity
MH – Elastic silts
OL – Organic silts and silty clays, low plasticity
OH – Organic clays, medium to high plasticity

USDA CLASSIFICATION

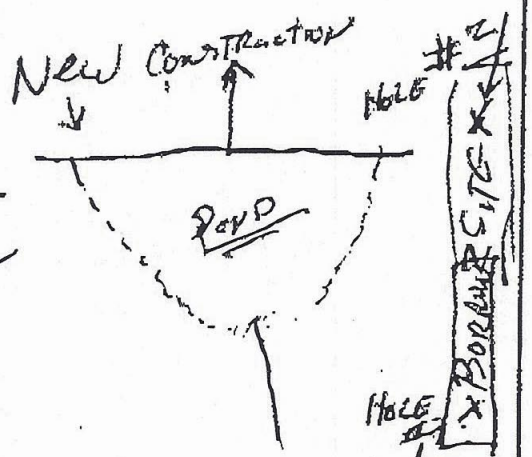
g – gravel
s – sand
vfs – very fine sand
sl – sandy loam
fsl – fine sandy loam
l – loam
gl – gravelly loam
si – silt
sil – silt loam
cl – clay loam
sicl – silty clay loam
scl – sandy clay loam
sic – silty clay
c – clay.

1. Suitable material for embankment is available ☑ YES ☐ NO (Indicate where located on the sketch on reverse side)

REMARKS: THE BORROW AREA IS SOME WHAT SUITABLE (MATERIAL NEED TO BE MIX AND PACKED WELL IN THE CORE)

2. Explain hazards requiring special attention in design (Seepage, spring, rock, etc.)

NEED TO BE CAREful with the building BECAUSE OF ROCK AND ROCK STRUCTURE UNDER SOIL MATERIAL



GENERAL REMARKS: THE AREA HAS ROCK AND COULD NOT GO THROUGH IT WITH AN AUGER. THE SOIL BORING WILL SHOW THE DEPTH TO ROCK. BORROW SITE LOOKS FAIR FOR CORE MATERIALS. NEEDED A BACK HOE TO INVESTIGATE THE ROCK STRUCTURE.

Milton Tuck RSS

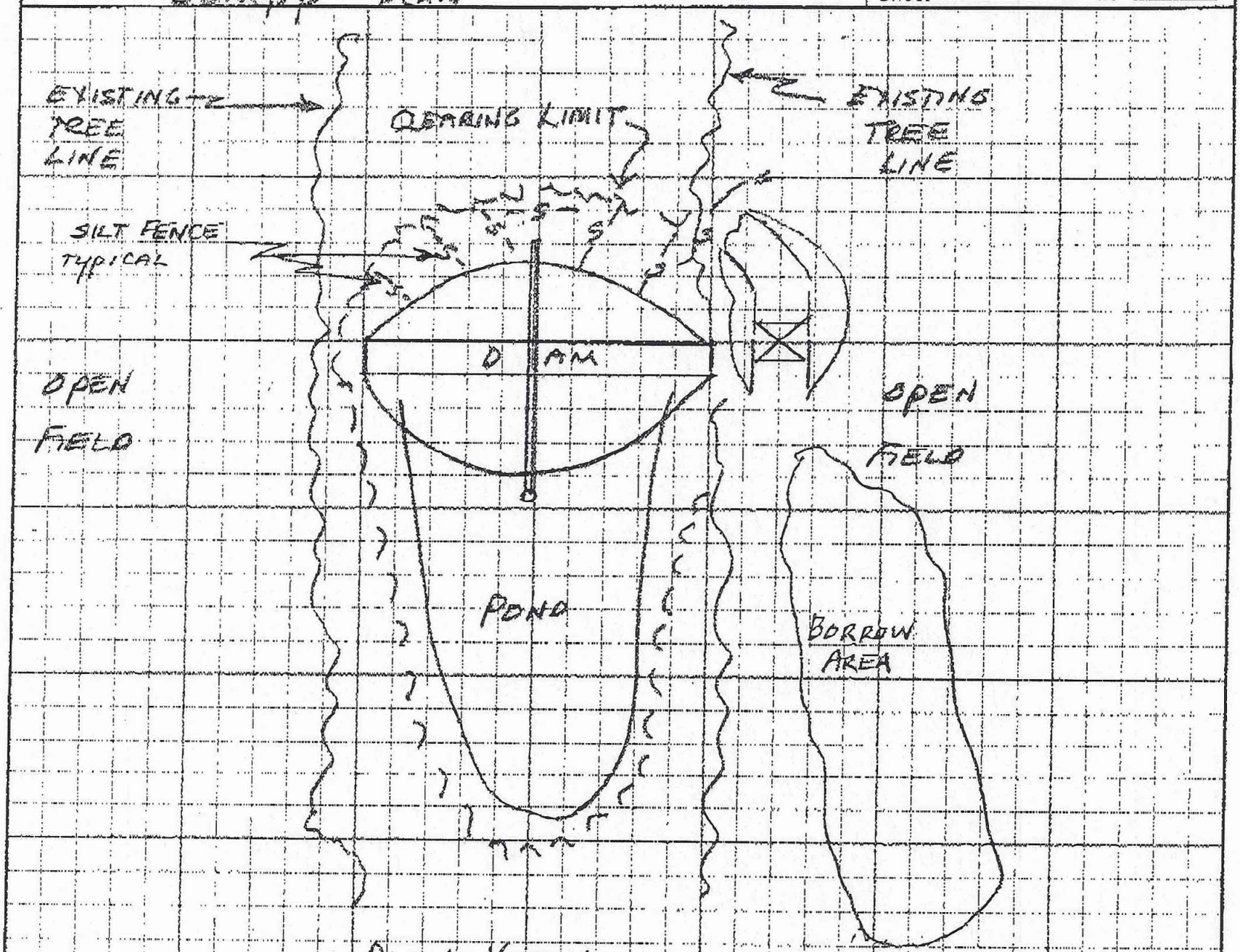
27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54

Computation Sheet

NRCS-ENG-523A Rev. 6-2002

U.S. Department of Agriculture
Natural Resources Conservation Service

State	Project			
ALABAMA	JEROME LANNING - ST. CLAIR CO. AL			
By	Date	Checked by	Date	Job No.
McCAY, L.J.	7/15/2010			
Subject				Sheet 6 of 24
CEMPP PLAN				



PLAN VIEW

NOTES: 1) DRAWING NOT TO SCALE
2) FOLLOW CONSTRUCTION SEQUENCE AS OUTLINED ON SHEETS NO ___ AND ___ OF ___
3) INSTALL SILT FENCE AT LOCATIONS SHOWN PRIOR TO BEGINNING EARTHMOVING ACTIVITIES. IN ACCORDANCE WITH SHEETS NO ___ THROUGH ___ OF ___.