U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action ID. _____ County Gates

GENERAL PERMIT (REGIONAL AND NATIONWIDE) VERIFICATION

Property Owner/Agent Barry Wayne Winslow

Address Rt. 1, Box 72
Corapeake, N.C. 27926

Telephone No. (919) 465-8143

Size and Location of project (waterbody, road name/number, town, etc.) @ 2 acres. Located 1/4 mile SW of the intersection of SR 1325 and NC. 32, @ 4 miles north of Sunberry, adjacent to an unnamed tributary to Folly Swamp.

Description of Activity
Clear @ 2 acres (of which 1 acre is wetland) in order to construct hog farm facility.

✓ Section 404 (Clean Water Act, 33 USC 1344) only.

____ Section 10 (River and Harbor Act of 1899) only.

____ Section 404 and Section 10.

NWP 26 Regional General Permit or Nationwide Permit Number.

Any violation of the conditions of the Regional General or Nationwide Permit referenced above may subject the permittee to a stop work order, a restoration order, and/or appropriate legal action.

This Department of the Army Regional General/Nationwide Permit verification does not relieve the undersigned permittee of the responsibility to obtain any other required Federal, State, or local approvals/permits. The permittee may need to contact appropriate State and local agencies before beginning work.

By signature below, the permittee certifies an understanding and acceptance of all terms and conditions of this permit.

Property Owner/Authorized Agent Signature Barry Wayne Winslow

Regulatory Project Manager Signature Henry Wicker

Date 9-20-94 Expiration Date 9-20-96

SURVEY PLATS, FIELD SKETCH, WETLAND DELINEATION FORM, ETC., MUST BE ATTACHED TO THE YELLOW (FILE) COPY OF THIS FORM, IF REQUIRED OR AVAILABLE.

CESAW Form 591
Dec 1993

NOTES: NATIONWIDE PERMITS

1. Qualification for and issuance of a nationwide permit does not relieve the applicant of the need to obtain any other required State or local permits.

2. Should all or part of a proposed activity be located within an Area of Environmental Concern (AEC) as designated by the North Carolina Coastal Resources Commission, a CAMA permit is required from the North Carolina Division of Coastal Management. Should an activity within or potentially affecting an AEC be proposed by a Federal agency, a consistency determination pursuant to 15 CFR 930 must be provided to the North Carolina Division of Coastal Management at least 90 days before the onset of the proposed activity.

3. You should contact the following State agencies to obtain the required State authorizations prior to starting work:

Mr. John Dorney
Water Quality Section
Division of Environmental Management
North Carolina Department of
Environment, Health and
Natural Resources
Post Office Box 27687
Raleigh, North Carolina 27611-7687
Telephone (919) 733-1786

Mr. Steve Benton
Division of Coastal Management
North Carolina Department of
Environment, Health and
Natural Resources
Post Office Box 27687
Raleigh, North Carolina 27611-7687
Telephone (919) 733-2293

STANWOOD WINSLOW & SON

SWINE LAGOON

GATES COUNTY, N. C.

Stanwood Winslow and his Son, of Gates County, are considering building a farrowing house and a nursery house for the raising of swine. They would like to construct a lagoon for both houses that would handle the waste from the animals.

Their farm is located in the Folley Ditch section of Gates County and consist of about 110 acres of cropland and pasture. They also rent other land in the neighborhood. The soils are mainly Lenoir, Coxville and Rains fine sandy loam.

They prefer a flush type system for both houses. The water will be used back from the holding pond.

The farrowing house will accommodate 30 sows and their litter, the nursery will also accommodate 30 sows and their litters up to about 40 pounds in weight.

$$\frac{9.0 \text{ in.} \times 6{,}664}{12 \text{ in./ft.}} = 4{,}998 \text{ cu. ft.}$$

$$4{,}998 \div 27 = \underline{185 \text{ cu. yds.}}$$

4. Volume of 25 year - 24 hr. storm = 6.8 inches

$$\frac{6.8 \text{ in.} \times 6{,}664 \text{ sq. ft.}}{12 \text{ in./ft.}} = 3{,}776 \text{ cu. ft.}$$

$$3{,}776 \div 27 = \underline{140 \text{ cu. yds.}}$$

STANWOOD WINSLOW & SON SWINE LAGOON

GATES COUNTY, N. C.

1. Steady State Live Weight

60 sows at 400 pounds = 24,000
Pigs 8.5 per litter X 20 pounds = 10,200
34,200

2. Required Volume of Water in Lagoon

34,200 pounds/150 pound hog/1 unit
34,200 ÷ 150 = 228 unit
228 unit X 150 = 34,200 cu. ft. ÷ 27 = 1,267 cu. yds.
4 feet spoil - hog house to be on top of spoil maintain minimum of 1 foot freeboard.
Lagoon 90' X 60' X 10' water level at average ground surface with 1:1 side slope.

(90 X 60) + (70 X 40) + (4 X 80 X 50)

$\frac{10 \times 5400 + 2800 + 16000}{162} = \frac{242,000}{162} = 1,494$ cu. yd.

Volume = 1,494 cu. yds. ✓ 1,267

3. 120 Day Pumping Cycle

Period of maximum excess rainfall Nov. 1 - March 1

Edenton, N. C. = 13.0 inches rainfall
Raleigh, N. C. = 4.0 inches evaporation
9.0 inches of excess

Placing spoil 4 feet deep around lagoon with 1:1 side slope

Top area of lagoon = 98' X 68' = 6,664 sq. ft.

Volume of excess rainfall in lagoon

$\frac{9.0 \text{ in.}}{12 \text{ in./ft.}} \times 6,664 = 4,998$ cu. ft.

4,998 ÷ 27 = 185 cu. yds.

4. Volume of 25 year - 24 hr. storm = 6.8 inches

$\frac{6.8 \text{ in.}}{12 \text{ in./ft.}} \times 6,664$ sq. ft. = 3,776 cu. ft.

3,776 ÷ 27 = 140 cu. yds.

5. Volume of Waste Production

.0138 gal./lb./day X 34,200 X 120 day = 56,635 gal.

56,635 ÷ 202 = 280 cu. yds.

6. Total Storage Requirement

1,267 + 185 + 140 + 280 = 1,872 cu. yds.

7. Total capacity of (90' X 60' X 10') lagoon with 4 ft. of spoil and 1:1 side slope (maintaining 1 ft. freeboard)

$\frac{13}{162}$ X (96 X 66) + (70 X 40) + 4 X (83 X 53)

$\frac{13}{162}$ X 6,336 + 2800 + 17,596 = $\frac{347,516}{162}$ = 2,145 cu. yds.

Total Capacity = 2,145 cu. yds.
Total storage required = $\frac{1,872}{273}$ cu. yds.

THIS SIZE IS SATISFACTORY

8. Pump out Pond

Since the required storage is provided for in the lagoon, the pump out pond will provide effluent that is relatively free of solids for flushing the house. The size of the pump out pond should blend in with the lagoon. A pump pond that is 30' X 25' X 8' deep with 1"1 side slope will be adequate. 30' x 25' x 8'

Set the bottom of pipe connecting lagoon and pump out pond approximately 6-12 inches below normal ground and construct spoil dike around this pond.

9. Nitrogen Produced

N = 0.048 X 342,00 lbs. X 365 days = 5,992 lbs.
Assume 50% loss in lagoon
Available N = 5,992 lbs. X .5 = 2,996 lbs.
at 200 lbs. per acre per year. Utilization 15 acres will be required for disposal.

SWINE LAGOON

BARRY & STANWOOD WINSLOW

July 22, 1986

GATES COUNTY

Barry and Stanwood Winslow would like to up date their swine operation and enlarge the animal unit capacity and waste management system.

The existing system accounts for 1,500 cu. yds. of storage in a lagoon and 34,200 lbs. of animals.

The new system will house a total of 216,140 lbs. of animal and will require a volumn of earth moved of 9,756 cu. yds.

This is taking into account that 1,500 cu. yds. is already present at the site.

The old finishing house will be handled in a separate lagoon because it is constructed at ground level and will usually require pumping before flushing can be carried out due to high water and the low level of the flushing floor. This house will house approximately 500 top hogs.

The largest lagoon will provide waste storage for the remaining livestock 175 sows, 10 boars, 24 litters and 500 additional top hogs, a total of 114,440 lbs. of animals.

The old pump out pond will be enlarged and a valve or water flow control device will be placed on the existing pipe to manually regulate water levels from the new large lagoon to the new smaller low level lagoon. Flush water will be taken out of the pumpout pond which will come from the lagoon built for the old finishing floor.

A 6" pipe will be installed between the new small lagoon to the old pump out pond 3 - 4 feet below ground level.

SHEET

SCS-Edenton, N. C.
6/79

DESIGN DATA FOR SWINE WASTE MANAGEMENT SYSTEM

Barry-Standwood Winslow Farm Gates County

Distance to nearest residence (other than owner) _____ Feet

1. Steady State Live Weight

175 sows @ 400 lbs. = 70,000 lbs.
10 boars @ 400 lbs. = 4,000 lbs.
24 litters x 8.5 pigs/litter x 35 lbs = 7140 lbs.
1000 Top Hogs Ave 135
Total steady state live weight = 135,000 lbs.
216,140

2. Required Lagoon Volume (Liquid)

Volume = 114,440 lbs. live weight x *1 ft.^{3}/lb. x 1 Yd.^{3}/27 ft.^{3}

- 34,200 Existing + Lagoon present for

Volume = 4237.03 yd.^{3} (Required volume of liquid)

3. Maintain normal lagoon water level at 1 feet
(~~above~~) (below) average ground.

Lagoon size (for water volume) (from tables or calculations using Prismodial Formula)

Length _____ Width _____ 1/ Depth 10 s s 1:1

Surface area of water = _____ ft. x _____ ft. = 19238 ft.^{2}

Actual volume of water _____ yd.^{3}
(Actual volume must be equal or greater than required volume).

4. Lagoon size from average ground.
~~Length~~ _____ ft. Depth 11 ft. Width _____
Vol. of Excavation 40220 yd3

5. Place spoil as a continuous dike at least 4 ft. high around lagoon (and pump out pond, if needed.)

Area at top of spoil = ____ ft. x _____ ft. = 23703 ft.^{2}

*1 cubic foot per lb. of live weight is minimum for North Carolina. See Tech. Guide Standard 359 for size requirements for odor control.

1/ Minimum depth of anaerobic lagoon is six feet.

6. Temporary Storage Required

Pumping cycle is to be 120 days.

6a. Volume of 25 Year - 24 Hour Storm 2/

Volume = 6.8 in x $\frac{1 \text{ ft.}}{12 \text{ in.}}$ x 23708 ft.^{2}

Volume = 13434 ft.^{3}

NOTE: Use 25 yr- 24 hr. rainfall for your location. This is found in Chapter 2 of the SCS Engineering Field Manual.

6b. Volume of rainfall in excess of evaporation. Use period of time when rainfall exceeds evaporation by largest amount.

Rainfall (11/1) to (3/1) = ____ inches.
Evaporation = ____ inches.
Excess rainfall (Difference) = ____ inches.

Volume = 7 in. x $\frac{1 \text{ ft.}}{12 \text{ in.}}$ x 23708 ft.^{2} 2/ Volume = 13829 ft.^{3}

NOTE: Above information can be found in "Weather and Climate in North Carolina". Agricultural Experiment Station Bulletin 396. Rainfall data is in Table 1. Evaporation is from Figure 12 or Figure 13 depending on location which is most nearly like yours.

6c. Volume of Waste Produced

Volume = 11440 lbs. live weight x .0138 gallons 3/ per lb. per day x 180 days (pumping cycle) x $\frac{1 \text{ Ft.}^3}{7.48 \text{ gal.}}$

Volume = 25335 ft.^{3}

6d. Volume of Wash Water

This is the amount of fresh water used for washing floors or volume of fresh water used for flush systems. Flush systems that recirculate the lagoon water are accounted for in 6c.

Volume = ____ gal./day x ____ days x $\frac{1 \text{ ft.}^3}{7.48 \text{ gal.}}$ Vol.= ____ ft.^{3}

TOTAL REQUIRED TEMPORARY STORAGE

* 6a. 13,434 ft.^{3}	6c. 25335 ft.^{3}
* 6b. 13,829 ft.^{3}	6d. ____ ft.^{3}

Total 52,598 ft.^{3}

*Impounded lagoons or lagoons that do not have all outside water diverted will have to include volume contributed by additional area.

2/ Area at top of spoil.
3/ From Table 1, Circular 569, September, 1973, Extension Service.

7. Depth of Storage Required (Above normal lagoon water elevation.)

Depth required = 52 598 ft.^{3} ÷ 19238 ft.^{2} [4/] Depth required = 2.7 ft.
(Volume from (6))

Elv. top of spoil _____ Depth required = 2.7 ft.
Elv. normal lagoon water level _____ Freeboard = 1.0 ft.
Difference _____ Total Depth Required = 3.7 ft.

NOTE: If the depth of storage plus one foot for freeboard does not exceed difference in elevation of top of spoil and normal lagoon water level, adequate storage has been provided.

8. Amount of Nitrogen Produced

N = .048 lbs./day x $\frac{114440}{100}$ lbs. live weight x 365 days/year.

N = 20,049 lbs./year

Assume 50 percent of N is lost in lagoon due to volatization.
N = 20049 lbs. x .5
N = 10024 lbs. to be disposed of annually if incorporated into soil.

Note: If sprinkler irrigation is used approximately 25 percent additional is lost.

N = 20049 * lbs. x .25 N = 5012 lbs/yr. if sprinkler irrigation system is used.

* Use original amount produced.

9. Land Application of Effluent for N Disposal

Rate of Utilization	Land Required
5012 lbs./300 lb./acre	16 acres
_____ lbs./200 lb/ acre	25 acres
_____ lbs./100 lb./acre	50 acres

10. Application By Irrigation

Soils Blake + Dunbar Crops Corn + Beans
Application Rate - .35 inches per hour
Application Amount - 0.5 inches

Note: Information on application rates and amounts for various soils and crops can be found in the Sprinkler Irrigation Guide - Tech. Guide II-G. Effluent should be applied at a rate so that there is absolute no run-off.

Designed: William P Boone Approved: William P. Boone

4/ Surface area of lagoon at normal water level.

DESIGN DATA FOR SWINE WASTE MANAGEMENT SYSTEM

[illegible] Farm   Gates County

Distance to nearest residence (other than owner) ________ Feet

1. Steady State Live Weight

   ________ sows @ ________ lbs. = ________ lbs.
   ________ boars @ ________ lbs. = ________ lbs.
   ________ litters x ________ pigs/litter x ________ lbs = 67500 lbs.

   500 Top Hogs

   Total steady state live weight = 67500 lbs.

2. Required Lagoon Volume (Liquid)

   Volume = 67500 lbs. live weight x $*\frac{1 \text{ ft.}^3}{\text{lb.}}$ x $\frac{1 \text{ Yd.}^3}{27 \text{ ft.}^3}$

   Volume = 2500 yd.^3 (Required volume of liquid)

3. Maintain normal lagoon water level at 1 feet
   ~~(above)~~ (below) average ground.

   Lagoon size (for water volume) (from tables or calculations using Prismodial Formula)

   Length ________ Width ________ 1/Depth 10 ________ s s [illegible]

   Surface area of water = ________ ft. x ________ ft. = 10,[illegible] ft.^2

   Actual volume of water [illegible] yd.^3
   (Actual volume must be equal or greater than required volume).

4. Lagoon size from average ground.
   Length ________ ft. Depth 11 ft. Width ________
   Vol. of Excavation 3341 yd3

5. Place spoil as a continuous dike at least 3 ft. high around lagoon (and pump out pond, if needed.)

   Area at top of spoil = ________ ft. x ________ ft. = 12,[illegible] ft.^2

*1 cubic foot per lb. of live weight is minimum for North Carolina. See Tech. Guide Standard 359 for size requirements for odor control.

1/ Minimum depth of anaerobic lagoon is six feet.

6. Temporary Storage Required

Pumping cycle is to be 120 days.

6a. Volume of 25 Year - 24 Hour Storm 2/

Volume = 6.8 in x 1 ft. / 12 in. x 12,992 $ft.^2$

Volume = 7362 $ft.^3$

NOTE: Use 25 yr- 24 hr. rainfall for your location.
This is found in Chapter 2 of the SCS Engineering Field Manual.

6b. Volume of rainfall in excess of evaporation. Use period of time when rainfall exceeds evaporation by largest amount.

Rainfall (11) to (3)	=	____ inches.
Evaporation	=	____ inches.
Excess rainfall (Difference)	=	7 inches.

Volume = 7 in. x 1 ft. / 12 in. x 12,992 $ft.^2$ 2/ Volume = 7578 $ft.^3$

NOTE: Above information can be found in "Weather and Climate in North Carolina". Agricultural Experiment Station Bulletin 396. Rainfall data is in Table 1. Evaporation is from Figure 12 or Figure 13 depending on location which is most nearly like yours.

6c. Volume of Waste Produced

Volume = 6750 lbs. live weight x .0138 gallons 3/ per lb. per day x 120 days (pumping cycle) x $1\ Ft.^3$ / 7.48 gal.

Volume = 14,943 $ft.^3$

6d. Volume of Wash Water
This is the amount of fresh water used for washing floors or volume of fresh water used for flush systems. Flush systems that recirculate the lagoon water are accounted for in 6c.

Volume = ____ gal. /day x ____ days x $1\ ft.^3$ / 7.48 gal. Vol.= ____ $ft.^3$

TOTAL REQUIRED TEMPORARY STORAGE

* 6a. 7362 $ft.^3$	6c. 14943 $ft.^3$
* 6b. 7578 $ft.^3$	6d. ____ $ft.^3$

Total 29,883 $ft.^3$

*Impounded lagoons or lagoons that do not have all outside water diverted will have to include volume contributed by additional area.

2/ Area at top of spoil.
3/ From Table 1, Circular 569, September, 1973, Extension Service.

7. Depth of Storage Required (Above normal lagoon water elevation.)

Depth required = 29883 ft.^{3} ÷ 10356 ft.^{2} [4/] Depth required = 2.8 ft.
(Volume from (6))

Elv. top of spoil _____ Depth required = 2.8 ft.
Elv. normal lagoon water level _____ Freeboard = 1.0 ft.
Difference _____ Total Depth Required = 3.8 ft.

NOTE: If the depth of storage plus one foot for freeboard does not exceed difference in elevation of top of spoil and normal lagoon water level, adequate storage has been provided.

8. Amount of Nitrogen Produced

N = .048 lbs./day x $\frac{67500}{100}$ lbs. live weight x 365 days/year.

N = 11823 lbs./year

Assume 50 percent of N is lost in lagoon due to volatization.
N = [illegible] lbs. x .5
N = [illegible] lbs. to be disposed of annually if incorporated into soil.

Note: If sprinkler irrigation is used approximately 25 percent additional is lost.

N = [illegible] * lbs. x .25 N = [illegible] lbs/yr. if sprinkler irrigation system is used.

* Use original amount produced.

9. Land Application of Effluent for N Disposal

Rate of Utilization	Land Required
2957 lbs./300 lb./acre	9.9 acres
_____ lbs./200 lb/ acre	[illegible] acres
_____ lbs./100 lb./acre	29.6 acres

10. Application By Irrigation

Soils [illegible] Crops Corn - Beans
Application Rate - .23 inches per hour
Application Amount - [illegible] inches

Note: Information on application rates and amounts for various soils and crops can be found in the Sprinkler Irrigation Guide - Tech. Guide II-G. Effluent should be applied at a rate so that there is absolute no run-off.

Designed: William P. Boone Approved: William P. Boone

4/ Surface area of lagoon at normal water level.

PRICE QUOTATION

0404

TOM CROCKETT IRRIGATION, INC.

P. O. BOX 390 • 751 E. MAIN ST.
WILLIAMSTON, NC 27892
(919) 792-3121

PLEASE INDICATE THIS NUMBER WHEN ORDERING

DENNIS UTT
P. O. BOX 61
GATESVILLE, NC. 27938

BARRY WINSLOW SYSTEM

DATE	9-28-89
YOUR INQUIRY DATED	
PROPOSED SHIPPING DATE	
TERMS	F.O.B
SALESMAN	
TO BE SHIPPED VIA	PPD. OR COLL

Here is our quotation on the goods named, subject to the conditions noted:

CONDITIONS: *The prices and terms on this quotation are not subject to verbal changes or other agreements unless approved in writing by the Home Office of the Seller. All quotations and agreements are contingent upon strikes, accidents, fires, availability of materials and all other causes beyond our control. Prices are based on costs and conditions existing on date of quotation and are subject to change by the Seller before final acceptance.*

Typographical and stenographic errors subject to correction. Purchaser agrees to accept either overage or shortage not in excess of ten percent to be charged for pro-rata. Purchaser assumes liability for patent and copyright infringement when goods are made to Purchaser's specifications. When quotation specifies material to be furnished by the purchaser, ample allowance must be made for reasonable spoilage and material must be of suitable quality to facilitate efficient production.

Conditions not specifically stated herein shall be governed by established trade customs. Terms inconsistent with those stated herein which may appear on Purchaser's formal order will not be binding on the Seller.

	QUANTITY	DESCRIPTION	PRICE	AMOUNT
	1800'	PR-160 4" PVC used 1800' plus 100' extra	.85	1530.0
	1000'	PR-160 PVC 3" used 750'	.53	530.0
	5480'	PR-160 2" PVC used 2,920'	.27	1479.6
	200'	Sch. 40 1" PVC used 200'	.25	50.0
	2	4" PVC 45 elbow	37.89	75.7
	2	4" PVC 90 elbow	29.08	58.1
	1	4' PVC Female adpt.		15.7
	14	4x2 PVC tee	43.14	603.9
	1	4" PVC Tee		43.1
0	2	4x3 PVC Tee	43.14	86.2
1	1	4x3 PVC Bushing		17.6
2	3	3x2 PVC Bushing	7.90	23.7
3	12	3x1 PVC Tee	25.93	311.1
4	54	2x1 PVC Tee	5.89	318.0
5	1	4" PVC Cap		18.1
6	17	2" PVC Cap	2.99	50.8
7	66	1" PVC 90 Elbow	1.51	99.6
8	66	1" PVC Feamle adpt.	1.22	80.5
9	66	RC 1Qucik coupler w/rubber cover	19.95	1316.7
0	14	F70-A Sprinkler 9/32 NOz.	76.65	1073.1
1	14	ART 1"x18" Riser	3.10	43.4
2	1	4"x10' DISCHARGE Hose w/fittings		187.1
3	1	4"x35' Suction hose		156.6
				8169.4
		Less 80% item 5-18		1442.2
		Less 25% item 19-21		608.3
				6118.8
		Pump Option		
		B2Z p1 10 hp 1 ph elec. pump 1956.00		
32½		JQBLw/3 Cyl. perkins diesel traviler mouted 120 gall fuel tank,		
safety shut		down battery complete hood 7 grill 7500.00		

FORM 20403 RAPIDFORMS, INC., BELLMAWR, N.J. 08031

Note: with the elec pump you can only operate 8 sprinklers at once.

QUOTE VALID FOR _____ DAYS.

BY Vern Parker

TO CONFIRM ORDER, SIGN & RETURN PINK ACCEPTANCE COPY

T-70A 9/32 NOZ. SPRINKLER @ 60 PSI = 18 gpm

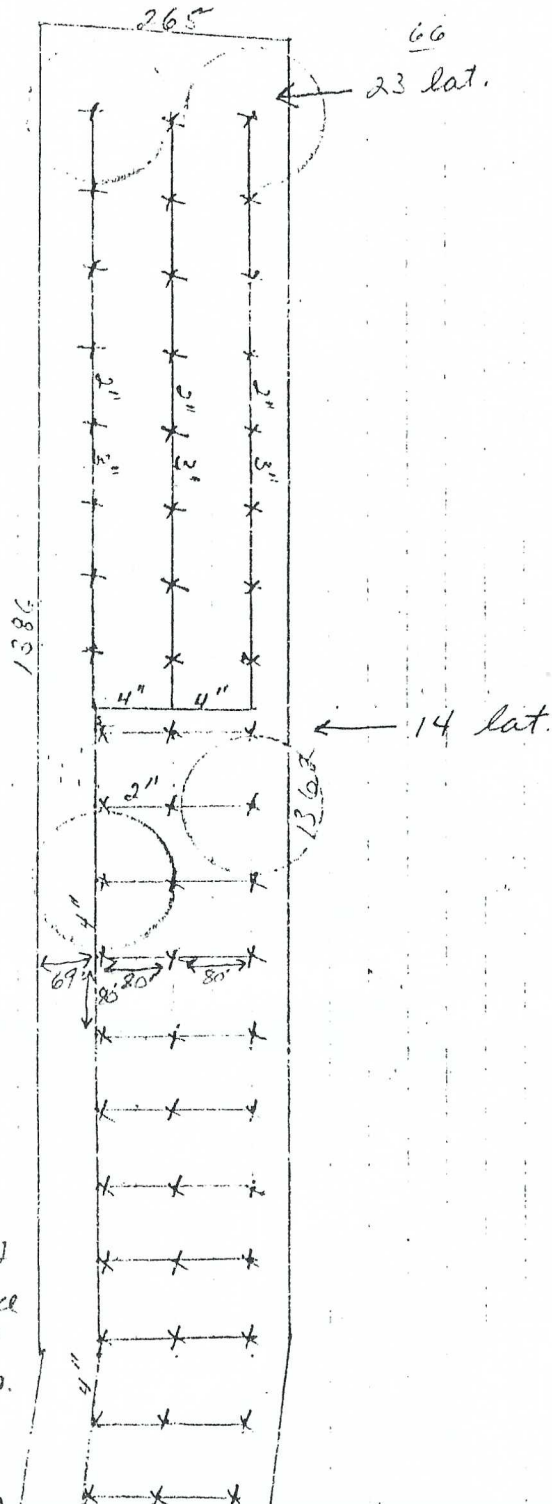
OPERATE 14 SPRINKLERS = 252 gpm

LATERAL & SPRINKLER Spaced 30'

APPLICATION RATE .07" per hr.

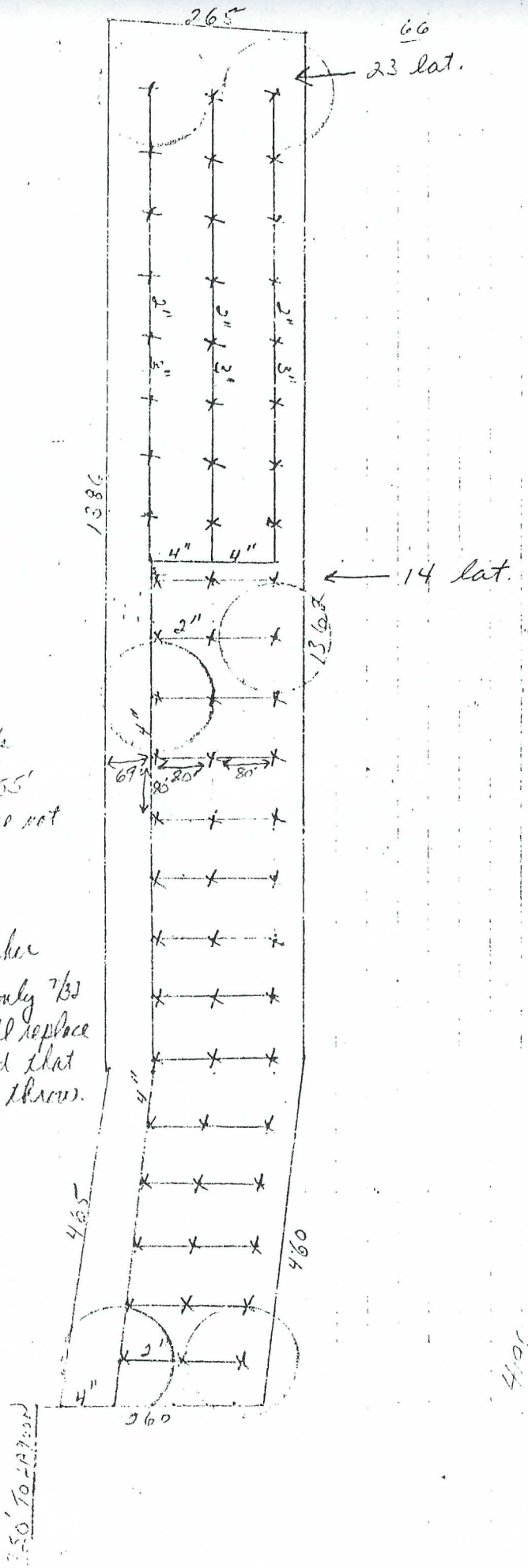
BARRY WINSLOW

9 sprinklers = 162 gpm



4-27-90
sprinkler heads throwing only 55' radii. Edges are not being covered.

1-30-90
Talked to Vern Parker sprinkler heads are only 7/32 instead of 9/32. He will replace these at no charge and that will account for short throws.

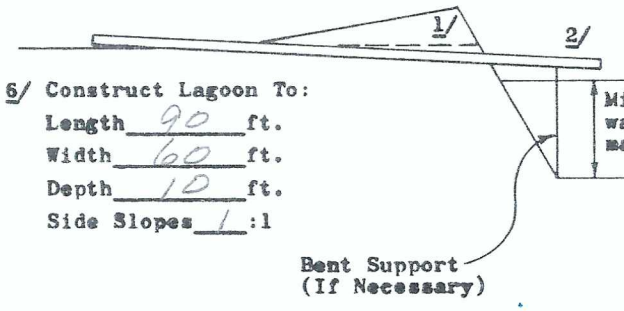


4-27-90
sprinkler heads throwing only 55' radii. Edges are not being covered.

1-30-90
Talked to Vern Packer sprinkler heads are only 7/32 instead of 9/32. He will replace these at no charge and that will account for short throws.

NC-ENG-30
3/74

LOCATION SKETCH



NOTES:

1/ Place spoil continuously around lagoon and holding pond as well as be
4 ~~two (2)~~ ft. high, shape so that spoil slopes away from lagoon and hol

2/ Inlet(s) to be concrete trough(s) or Pipe(s) on 1% minimum grade.

3/ This can be reduced for depths over six feet for anaerobic lagoons pr

4/ Effluent holding pond required unless extra lagoon storage provided a

5/ All storm water should be diverted if at all possible; however, if th
holding pond.

6/ When lagoon or holding pond is constructed using an embankment, use m
in Engineering Standard 359. NC-ENG-13 may be used for embankme

For layout and Construct

LAGOON:

Distance from nearest residence: 1000' Soils: Lenoir F.S.L

Type Lagoon: ANAEROBIC Kind of Animals: SWINE Number of Animal Units: 228

3/ Required Surface Area: ____ Units x ____ ft.^{2}/unit = ____ ft.^{2}

Required Volume: 34200 LBS ~~Units~~ x 1 ft.^{3}/unit x $\frac{1 \text{ yd.}^3}{27 \text{ ft.}^3}$ = 1267 cu yd

Inlet: 8" Diameter PVC Pipe or Concrete Trough; Bent Support TREATED POST

Outlet: 8" Diameter PVC Pipe with Elbow or Tee.

EFFLUENT HOLDING POND: 4/

5/ ~~Volume Requirements for Waste and Wash Water: ____ gals./day/animal x ____ Animals~~

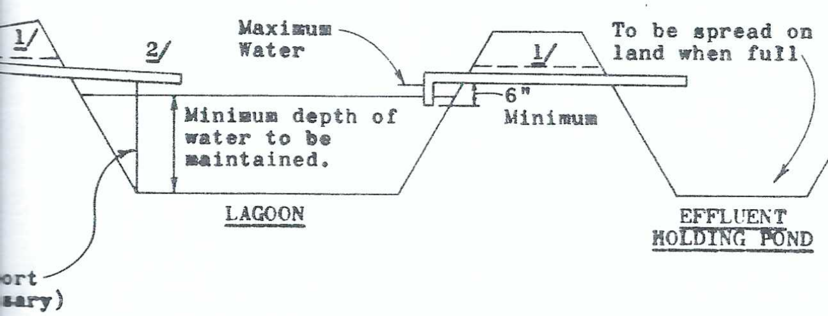
x 120 days (pumping cycle) x ~~$\frac{1 \text{ yd.}^3}{202 \text{ gal.}}$~~ = 605 yd.^{3} 3+4+5 = 605

LAND DISPOSAL:

Land Area 15 ac.; Application Rate 200 LB PER AC. ~~in./hr.~~; Frequency of Application ANNUALY

FERTILIZATION & SEEDING RATES: (All Disturbed Areas)

Lime AS PER SOIL TEST; Fertilizer 10-10-10 1000 LB PER AC.; Seed FESCUE 50 LB AC. Mulch SMALL GRAIN STRAW



6/ Construct Holding Pond To:

Length 30 ft.

Width 25 ft.

Depth 8 ft.

Side Slopes 1 :1

d as well as between lagoon and holding pond a minimum depth of
lagoon and holding pond, fertilize and vegetate.

imum grade.

obic lagoons provided volume requirements are met.

rage provided and arrangements made for pumping directly from lagoon.

however, if this is not possible it must be provided for in the

bankment, use minimum top width, side slopes, and freeboard as stated
ed for embankment details).

t and Construction Check, see Engr. Field Book ____, Page ____.

LAGOON FOR ANIMAL WASTE

STANWOOD WINSLOW & SON Farm

GATES County, N. C.

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed M.W. Lawrence Date 7/7/78 Approved by [illegible]
Title Con. Tech.

Drawn ____ Title ____

Traced ____ Sheet No. ____ of ____ Drawing No

Checked ____

CES 3-74

Stanwood Winslow

Lagoon

final design

Lagoon side slopes 1:1

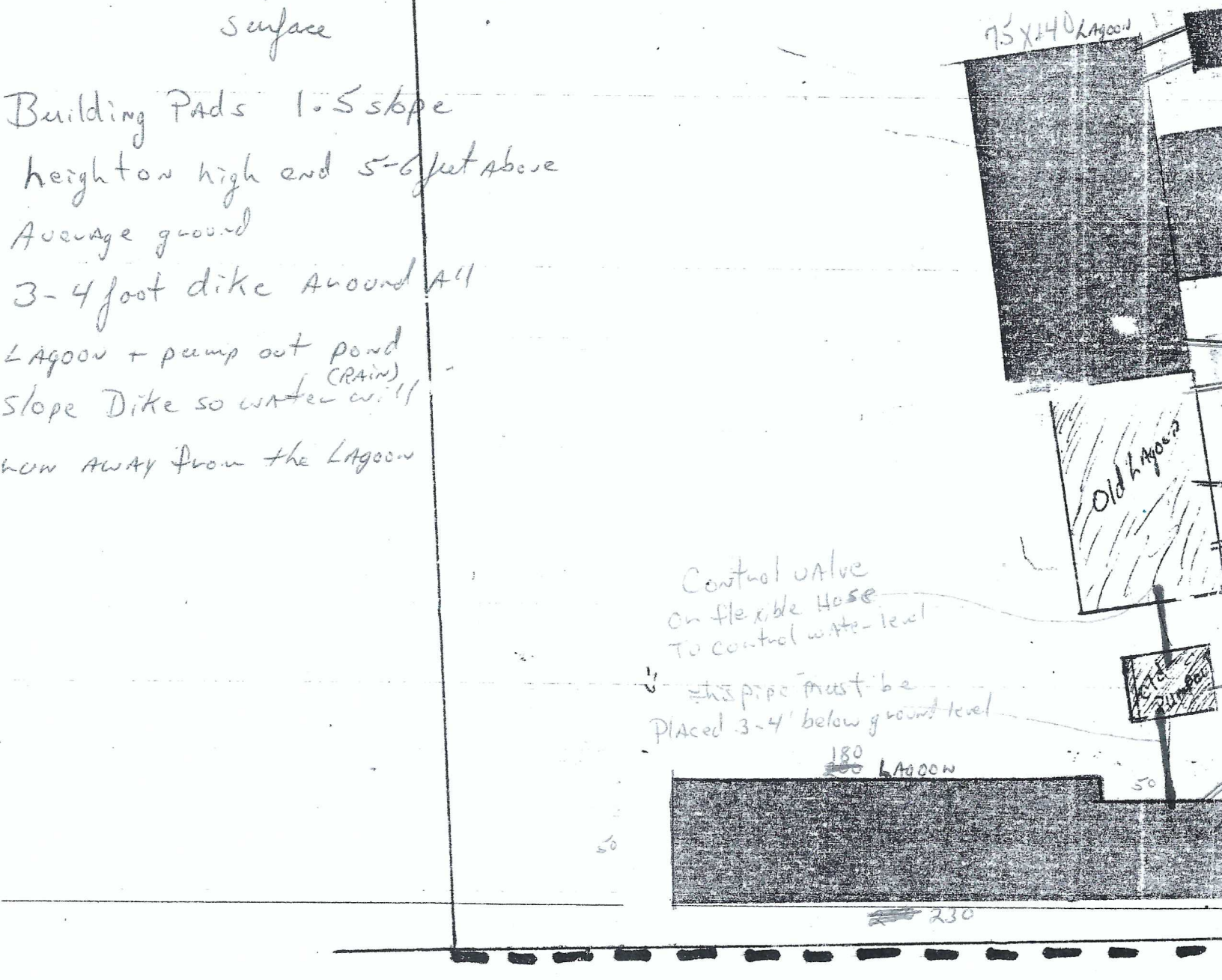
depth — 11 feet deep from ground surface

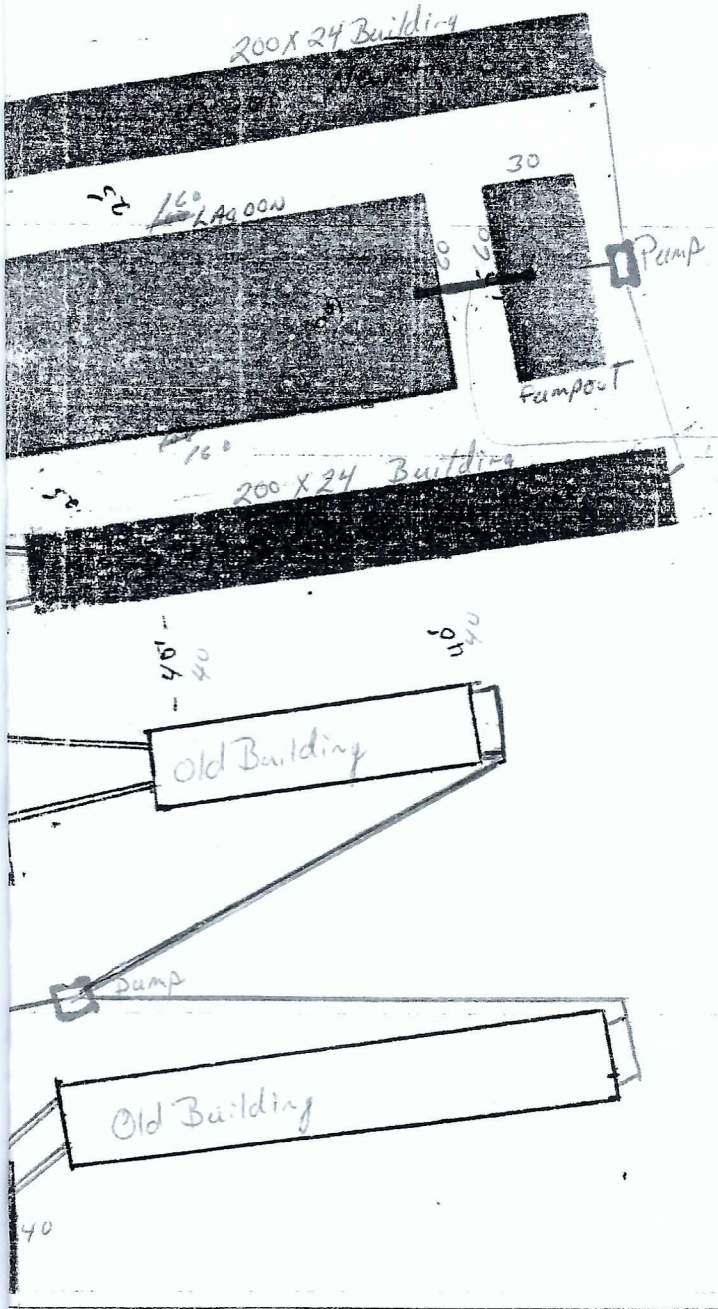
Building Pads 1.5 slope

height on high end 5-6 feet above Average ground

3-4 foot dike around all Lagoon + pump out pond

slope Dike so water (RAIN) will flow away from the Lagoon





Approx 1" = 60'

Place pipe 3' below ground level

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