Table NC6-4: Piedmont and Coastal Plain Regions of North Carolina – General Design Parameters

22 [4]	Very poorly drained Coastal Plain soils with loamy surface layers and friable loamy subsoils.	3.0+	1.3 2.2 3.0 3.7 4.5	0.40	0.45	Annual & Perennial Flowers Azaleas & Camellias Corn, field Gladioli Ladino clover & grass or mixed hay Nursery Crops, 1st yr. Nursery Crops, 2nd yr. Peas, field Irish Potatoes Small Grain or Soybeans Vegetables, Group 1 Vegetables, Group 2 Vegetables, Group 3 Vegetables, Group 4	1.0 2.0 2.5 1.0 1.5 1.0 2.0 1.5 1.5 2.0 1.0 1.5 1.5 2.0	0.65 1.50 1.85 0.65 1.10 0.65 1.50 1.10 1.10 1.50 0.65 1.10 1.10 1.50	0.14 0.18 0.22 0.14 0.24 0.16 0.18 0.18 0.20 0.18 0.14 0.14 0.18 0.18	5 8 8 5 5 4 8 6 5 8 5 8 6 8	0.87 2.00 2.47 0.87 1.47 0.87 2.00 1.47 1.47 2.00 0.87 1.47 1.47 2.00
23 [4]	Poorly drained Coastal Plain and terrace soils with loamy surface layers and firm plastic clayey subsoils.	3.0+	1.6 2.5 3.3 4.2 5.0	0.30	0.35	Annual & Perennial Flowers Azaleas & Camellias Cotton Corn, field Gladioli Ladino Clover & Grass Nursery Crops, 1st yr. Nursery Crops, 2nd yr. Peas, field Small Grain or Soybeans Vegetables, Group 1 Vegetables, Group 2 Vegetables, Group 3 Vegetables, Group 4	1.0 2.0 2.5 2.5 1.0 1.5 1.0 2.0 1.5 2.0 1.0 1.5 1.5 2.0	0.80 1.65 2.10 2.10 0.80 1.25 0.80 1.65 1.25 1.65 0.80 1.25 1.25 1.65	0.14 0.18 0.20 0.22 0.14 0.24 0.16 0.18 0.18 0.18 0.14 0.14 0.18 0.18	6 9 10 10 6 5 5 9 7 9 6 9 7 9	1.07 2.20 2.80 2.80 1.07 1.67 1.07 2.20 1.67 2.20 1.07 1.67 1.67 2.20
24 [4]	Very poorly drained Coastal Plain and terrace soils with loamy surface layers and firm plastic clay subsoils.	3.0+	1.6 2.5 3.2 4.0 5.0	0.35	0.40	Annual & Perennial Flowers Azaleas & Camellias Cotton Corn, field Gladioli Ladino Clover & Grass Nursery Crops, 1st yr. Nursery Crops, 2nd yr. Irish Potatoes Small Grain or Soybeans Vegetables, Group 1 Vegetables, Group 2 Vegetables, Group 3 Vegetables, Group 4	1.0 2.0 2.5 2.5 1.0 1.5 1.0 2.0 1.5 2.0 1.0 1.5 1.5 2.0	0.80 1.60 2.00 2.00 0.80 1.25 0.80 1.60 1.25 1.60 0.80 1.25 1.25 1.60	0.16 0.18 0.21 0.23 0.15 0.23 0.17 0.18 0.20 0.18 0.15 0.15 0.18 0.18	5 9 9 9 5 5 5 9 6 9 5 8 7 9	1.07 2.13 2.67 2.67 1.07 1.67 1.07 2.13 1.67 2.13 1.07 1.67 1.67 2.13
25 [4]	Poorly drained Coastal Plain, flats, and terrace soils with organic materials over clayey, loamy, or sandy marine deposits.	3.0+	2.3 3.0 3.7 4.4 5.1	0.30	0.35	Corn, field Small Grain or Soybeans Vegetables, Group 1 Vegetables, Group 2 Vegetables, Group 3 Vegetables, Group 4	2.5 2.0 1.0 1.5 1.5 2.0	2.20 1.85 1.15 1.50 1.50 1.85	0.23 0.18 0.15 0.15 0.18 0.18	9 10 8 10 8 10	2.93 2.47 1.53 2.00 2.00 2.47

Following is an example of how Tables NC6-1 through NC6-4 can be used to obtain general irrigation design data for each region.

Sample Irrigation System Planning Calculations for Mountain Area:

Soil:	Rosman - The Table NC6-1 lists this soil in Group 10
Crop:	Tobacco – See this crop listing in Table NC6-3, column 7
Column 8:	Depth of Moisture Replacement is 1.5 feet
Column 9:	Moisture Replacement by each Irrigation cycle is 1.3 inches
Column 10:	Design Moisture Use Rate is 0.16 inches per day
Column 11:	Irrigation Frequency for Peak Use Rate is 8 days
Column 12:	Planned Irrigation Application Amount is 1.73 inches (75 % Irr. Efficiency)
Column 5:	The maximum irrigation application rate that cannot be exceeded is 0.5 inches per hour (bare soil condition)

Sample Irrigation System Planning Calculations for Piedmont and Coastal Area:

Soil:	Appling – The Table NC6-2 lists this soil in Group 4
Crop:	Tobacco – See this crop listing in Table NC6-4, column 7
Column 8:	Depth of Moisture Replacement is 1.5 feet
Column 9:	Moisture Replacement by each Irrigation cycle is 1.05 inches
Column 10:	Design Moisture Use Rate is 0.18 inches per day
Column 11:	Irrigation Frequency for Peak Use Rate is 6 days
Column 12:	Planned Irrigation Application Amount is 1.4 inches (75 % Irr. Efficiency)
Column 5:	The maximum irrigation application rate that cannot be exceeded is 0.35 inches per hour (bare soil condition)

Note that the above data is very generalized and are for planning purposes. All assumptions, such as irrigation efficiencies, soil AWC, and crop rooting depths, should be verified as correct for this site design. The input data should be verified with site-specific data which may require field measurements or lab testing. The irrigation designer is responsible to see that all calculations are correct for the design, even those taken from tables and charts included here or elsewhere. The irrigator and designer are encouraged to use Irrigation Scheduling computer software to more accurately define when and how much to irrigate. More accurate determinations of water use (evapotranspiration), deep percolation (deep losses from rooting zone), and soil moisture recharge (from rainfall or irrigation) can be made using the Irrigation Scheduling computer software or spreadsheets.

The soil and its irrigation limitations were discussed earlier in this section and are given in Table NC6-1 and NC6-2. If a field contains more than one soil, the most restrictive soil must be determined. Also, the crop, AWC, MAD, maximum allowable application rates, usable rooting depth, net and gross application amount, and irrigation frequency were discussed and determined in the above examples. Assumptions, such as crop rooting depth, should be verified with the grower and any other knowledgeable sources for local irrigation systems. A field investigation is strongly recommended to the designer/ planner to insure all design assumptions are valid.

Identify potential alternative irrigation systems suitable to the site and determine the recommended system. Discuss the recommended and alternative irrigation systems with the

grower/user. Once the irrigation system is determined, specifics to that system must then be determined.

Irrigation efficiency for different types of irrigation systems vary, but generally run between 50 and 95 percent. Determine gross irrigation water requirements with the expected irrigation efficiency of the selected irrigation system (Tables NC6-1 and NC6-2 assume 75%). Computer programs such as the NRCS SPAW model can be used to assess historic weather data to determine estimated daily/weekly/monthly/yearly irrigation water consumption that would have been expected with this irrigation system and planned crop. Calculation of design sprinkler irrigation system capacity (generally in gpm) can be computed using an equation presented and discussed earlier in this chapter.

See Table NC4-1 for the minimum irrigation water supply capacity per acre that is recommended. A water supply should be able to meet maximum crop irrigation demands for at least 8 out of 10 years. Crops grown in North Carolina generally need about 6 to 10 inches of irrigation per year to supplement the natural rainfall during a growing season (NC Cooperative Extension Service, Pub. No. AG 452-4, Irrigation Scheduling to Improve Water- and Energy-Use Efficiencies, June 1996; NC State University, Tobacco Irrigation Costs for the Piedmont and Coastal Plains of NC, updated 2007; NC Cooperative Extension Service, Animal Waste Management Systems, Chapter 5: Proper Application of Liquid Animal Waste-Type A, Draft Copy, 1997).

Determine sprinkler spacing, nozzle size(s), head type, discharge, operating pressure, wetted diameter, average application rate, and performance characteristics. For some systems, the manufacturer may be utilized for determining the best layouts for their irrigation system.

Determine number of sprinklers in an irrigation set (zone) required to meet system capacity requirements; number of laterals needed for a selected time of set; set spacing; and moves per day (if applicable). Center pivot systems are generally designed by the equipment dealer using a computer program supplied by each center pivot system manufacturer. These designs should be reviewed to assure the proposed application provides adequate water to satisfy the needs of the crop(s), match the available water capacity of the soil, and that it does not have negative impacts on field or farm resources such as soil erosion, offsite sedimentation, and pollution of surface and ground water.

Evaluate design. Does it meet the objective and purpose(s) identified by the grower/user.

Make necessary adjustments to meet layout conditions so the system fits the field, soils, crops, water supply, environmental concerns, and the desires of the irrigation decision-maker. Consider a buffer between the irrigation system spray area and any flowing water such as streams or grassed waterways. Direct access of cropping field runoff to any perennial stream should be avoided and may violate state laws.

Finalize sprinkler irrigation system design and layout. Determine lateral size(s) based on number of heads, flow rate, pipeline length, and allowable pressure loss differential between the first and last sprinkler head. Determine if pressure or flow regulators are needed. Determine minimum operating pressure required in mainline(s) at various critical locations on the terrain.

Determine mainline sizes required to meet pressure and flow requirements according to the number of operating laterals. This includes diameter, pipe material, mainline location, and type of valves and fittings. It involves hydraulic calculations, basic cost-benefit relationships, and potential pressure surge evaluations for pipe sizes and velocities selected. Thrust blocks

should be considered at any change in flow direction or pipe size. Mainline operating pressure measured at the discharge side of each lateral outlet valve, should be within 10 percent of the design lateral operating pressure. It is recommended that velocity be no greater than five feet per second (1.52 m/s) in mainline and lateral pipes to help prevent pipe damage from water hammer during flow changes such as valve operation or pump drive power failure. Check main line pipe sizes for power economy. Compare pumping cost versus pipe size initial cost on annual basis.

Total Dynamic Head (TDH) is the sum of all the heads (static, pressure, friction, etc.) that a pump must operate against at a given flow rate. Determine maximum and minimum TDH required for critical lateral location conditions. Determine total accumulated friction loss in mainline, elevation rise from pump to extreme point in the fields, water surface to pump impeller (lift), column loss with vertical turbine pumps, and miscellaneous losses (fittings, valves, elbows) at the pump and throughout the system. Add 10% more to TDH and increase flow rates somewhat for system wear.

Determine maximum and minimum pumping plant capacity using required flow rate and TDH. Estimate brake horsepower for the motor or engine to be used. Insure irrigation system has a method of filling and draining mainlines and laterals. Filling and draining should be done so that a water hammer does not occur. A water hammer can be very damaging to the system. Fill and drain velocities over one foot per second should be avoided. Long runs of pipe can experience water hammers, especially when run on a slope, and may require flow restrictors to slow flow.

Select pump and power unit for maximum operating efficiency within range of operating conditions. Use pump performance curves prepared for each make and model of pump. Every pump has a different set of performance (characteristic) curves relating to operating head (pressure) output and discharge capacity. Select pumps and power units for maximum operating efficiency within the full range of expected operating conditions. Only pump capacity and TDH requirements are recommended to be provided to the user. Never select a pump based on horsepower alone. Let a pump dealer select the appropriate motor or engine and pump to fit the conditions. Availability of a pump dealer for providing maintenance and repair should be considered by the operator. Buying a used pump without first checking pump characteristic curves for that specific pump is seldom satisfactory. A pump needs to match the required capacity and TDH for efficient and economic performance. An inefficient operating pump increases operating costs by using needless excess energy.

Prepare final layout and operation, maintenance, and irrigation water management plans. Include methods of determining when and how much to irrigate (irrigation scheduling) which should reduce irrigation waste from over-application and better meet the crop water needs. A method or plan to measure and track field moisture levels (useful with irrigation scheduling) should be recommended to the grower/user. Provide recommendations and plans for at least one water measuring device to be installed in the system for water management purposes. Record keeping is recommended and should include date, rainfall, irrigation amount, flow meter reading (start and finish), soil moisture level/deficit, and hours of operation for each field/set, as a minimum.

Design procedures and examples are provided in more detail in NRCS NEH, Section 15, Chapter 11, Sprinkle Irrigation. Manufacturer literature is readily available and most useful in selection of sprinkler head models, nozzle sizes, and discharge at various pressures. North

Carolina Wastewater Irrigation Design Parameters Worksheets (see Appendix B) can be used to identify and document site specific information for any irrigation system.

The following details of design and materials should accompany all irrigation designs:

1. A scale drawing of the proposed irrigation system which includes hydrant locations, travel lanes, pipeline routes, thrust block locations and buffer areas where applicable.
2. Assumptions and computations for determining total dynamic head and horsepower requirements.
3. Computations used to determine all mainline and lateral pipe sizes.
4. Sources and/or calculations for determining application rates.
5. Computations used to determine the size of thrust blocks and illustrations of all thrust block configurations required in the irrigation system.
6. Manufacturer's specifications for the irrigation pump, traveler, and sprinkler(s).
7. Manufacturer's specifications for the irrigation pipe and/or USDA-NRCS standard for Irrigation Water Conveyance, NC Field Office Technical Guide, Section IV, Practice Code 430-DD.
8. Operation and Maintenance Plan, including procedures such as start-up, shutdown, winterization, and regular maintenance of all equipment.

The final drawings, design details, and assumptions should be discussed with the grower/user to insure they are familiar with the design features and limitations of the irrigation system. The Operation and Maintenance Plan should be covered item by item with the grower/user, especially if they have limited irrigation experience.

A post-installation field calibration should be discussed with the grower/user. The post-installation field calibration is used to assess distribution uniformity and application rates to verify they are consistent with the design and manufacturer's specifications. See NRCS NEH Part 652, Irrigation Guide, Chapter 9, Irrigation Water Management, for more information on post-installation evaluations for water use and efficiency of the irrigation system. Also discuss visual observations that are to be noted and system adjustments that may be required. This can be situations such as ponding, runoff, or erosion occurring in the irrigated field during, and often at the end of an irrigation cycle. Application rate and/or set time should probably be adjusted since ponding and runoff are to be avoided. Pipe vibrations or movements, under- or over-powered sprinklers, varying speeds of movement, excessive leaking, outflow in subsurface drains, and any other unusual observations should be noted and discussed with the manufacturer and/or the system designer.

The above gives a general approach for designing a sprinkler irrigation system. The reader should also review the NRCS NEH Part 652, Irrigation Guide, Chapter 6, Irrigation System Design, for additional information and Design Worksheets. Specific design steps for each irrigation system type can be found in this reference, as well as design charts and tables which may be useful. Other chapters from the NRCS NEH Part 652, Irrigation Guide, may also be helpful for more information on specific tasks, such as Chapter 11, Economic Evaluations.

APPENDIX A

Following are some excerpts from the 2007 Fact Sheet for North Carolina agriculture. You will note some of the numbers vary from information given in this guide. This is not a discrepancy, but an indicator of how variable numbers can be, depending on the data collection and evaluation methods.

North Carolina State Fact Sheet

USDA Economic Research Service: http://www.ers.usda.gov/statefacts/
Data updated July 3, 2007

Population, Income, Education, and Employment

Population			
	Rural *	**Urban ***	**Total**
Year			
1980	2,083,621	3,796,474	5,880,095
1990	2,217,336	4,411,301	6,628,637
2000	2,563,889	5,485,424	8,049,313
2006 (latest estimates)	2,703,195	6,153,310	8,856,505
More information on North Carolina population • County-level Population Data • Rural Population and Migration Briefing Room • Contact John Cromartie, 202-694-5421.			

Income			
	Rural *	**Urban ***	**Total**
Per-capita income (2005 dollars)			
2004	25,990	32,634	30,571
2005	26,447	33,088	31,041
Percent change	1.8	1.4	1.5
Earnings per job (2005 dollars)			
2004	31,898	43,077	40,156
2005	32,147	43,233	40,360
Percent change	0.8	0.4	0.5
Poverty rate (percent)			
1979	17.7	13.2	14.8
1989	16.0	11.4	13.0

1999	14.9	11.1	12.3
2004 (latest model-based estimates)	15.6	13.1	13.8

More information on North Carolina poverty rates
• County-level Poverty Data
• Rural Income, Poverty, and Welfare Briefing Room
• See important notes about decennial and model-based intercensal poverty estimates
• Contact Robert Gibbs, 202-694-5423

Education (Persons 25 and older)			
	Rural *	**Urban ***	**Total**
Percent not completing high school			
1980	52.4	41.1	45.2
1990	37.1	26.4	30.0
2000	27.3	19.2	21.9
Percent completing high school only			
1980	27.0	28.4	27.8
1990	30.7	28.1	29.0
2000	32.2	26.7	28.4
Percent completing some college			
1980	11.5	15.0	13.8
1990	20.8	25.0	23.6
2000	26.0	27.8	27.2
Percent completing college			
1980	9.2	15.5	13.2
1990	11.4	20.4	17.4
2000	14.5	26.3	22.5

More information on North Carolina education
• County-level Education Data
• Rural Labor and Education Briefing Room
• Contact Robert Gibbs, 202-694-5423

Employment			
	Rural *	**Urban ***	**Total**
Total number of jobs			
2004	1,304,697	3,688,351	4,993,048
2005	1,326,656	3,792,856	5,119,512

Unemployment rate (percent)			
2005	5.9	4.9	5.2
2006	5.5	4.5	4.8
More information on North Carolina unemployment rates • County-level Unemployment and Median Household Income Data • Rural Labor and Education Briefing Room • Contact Lorin Kusmin, 202-694-5429			
Percent employment change			
2003-2004	2.5	1.7	1.9
2004-2005	1.2	2.5	2.1
2005-2006	2.0	3.9	3.4
Percent of 2002 employment in farm and farm-related jobs			
Total	20.4	15.1	16.5
Production	3.6	1.1	1.8
Farm inputs	0.3	0.2	0.2
Processing & marketing	5.6	2.9	3.6
Wholesale & retail trade	9.8	10.0	9.9
More information on farm employment • Farm and Farm-Related Employment data • Contact Tim Parker, 202-694-5435			

* Urban and rural (metro and nonmetro) defintions are based on the Office of Management and Budget (OMB) June 2003 classification. See Measuring Rurality: New Definitions in 2003 for more information.

More information on socioeconomic conditions
• Rural Emphasis Page
• Contact Tim Parker, 202-694-5435.

Farm Characteristics

1992, 1997 and 2002 Census of Agriculture			
	1992	**1997**	**2002**
Total land area (million acres)	31.18	31.18	31.17
Total farmland (million acres)	8.94	9.44	9.08
Percent of total land area	28.7	30.3	29.1
Cropland (million acres)	5.58	5.70	5.47
Percent of total farmland	62.4	60.4	60.3
Percent in pasture	15.0	16.2	12.2
Percent irrigated	1.9	2.6	4.4

Harvested Cropland (million acres)	4.00	4.27	4.31
Woodland (million acres)	2.61	2.79	2.52
Percent of total farmland	29.3	29.5	27.8
Percent in pasture	19.4	18.3	18.8
Pastureland (million acres)	0.38	0.42	0.61
Percent of total farmland	4.2	4.5	6.7
Land in house lots, ponds, roads, wasteland, etc. (million acres)	0.37	0.53	0.48
Percent of total farmland	4.1	5.7	5.3
Conservation practices			
Farmland in conservation or wetlands reserve programs (million acres)	0.09	0.15	0.18
Percent of total farmland	1.0	1.6	2.0
Average farm size (acres)	172	160	168
Farms by size (percent)			
1 to 99 acres	61.2	66.3	67.1
100 to 499 acres	31.2	26.9	25.6
500 to 999 acres	4.9	4.1	4.0
1000 to 1,999 acres	2.0	1.9	2.2
2,000 or more acres	0.7	0.8	1.0
Farms by sales (percent)			
Less than $9,999	51.7	59.7	63.7
$10,000 to $49,999	23.0	18.0	15.9
$50,000 to $99,999	7.0	4.9	4.1
$100,000 to $499,999	14.0	10.9	9.7
More than $500,000	4.0	6.5	6.6
Tenure of farmers			
Full owner (farms)	29,242	35,904	34,489
Percent of total	56.4	60.7	64.0

Part owner (farms)	17,572	18,231	16,030
Percent of total	33.9	30.8	29.7
Tenant owner (farms)	5,040	4,985	3,411
Percent of total	9.7	8.4	6.3
Farm organization			
Individuals/family, sole proprietorship (farms)	45,273	51,913	48,672
Percent of total	87.3	87.8	90.3
Family-held corporations (farms)	1,415	2,084	1,652
Percent of total	2.7	3.5	3.1
Partnerships (farms)	4,750	4,663	3,209
Percent of total	9.2	7.9	6.0
Non-family corporations (farms)	174	196	171
Percent of total	0.3	0.3	0.3
Others - cooperative, estate or trust, institutional, etc. (farms)	242	264	226
Percent of total	0.5	0.4	0.4
Characteristics of principal farm operators			
Average operator age (years)	54.7	54.8	56.1
Percent with farming as their primary occupation	52.8	45.6	58.7
Men (persons)	47,914	53,874	48,574
Women (persons)	3,940	5,246	5,356

More information on farm characteristics
• Census of Agriculture
• Contact NASS Customer Service, 1-800-727-9540.

Data from the 1992 Census of Agriculture is not adjusted for coverage. See Coverage Adjustment from NASS.

Farm Financial Indicators

Farm income and value added data		
	2004	2005
Number of farms	52,000	52,000
	Thousands $	
Final crop output	3,043,352	2,561,592
+ Final animal output	5,341,791	5,589,570
+ Services and forestry	1,821,111	1,832,847
= Final agricultural sector output	10,206,253	9,984,009
- Intermediate consumption outlays	5,090,539	5,141,167
+ Net government transactions	77,299	1,030,025
= Gross value added	5,193,013	5,872,867
- Capital consumption	527,452	544,371
= Net value added	4,665,561	5,328,496
- Factor payments	1,679,356	1,712,062
Employee compensation (total hired labor)	549,859	576,825
Net rent received by nonoperator landlords	850,870	813,024
Real estate and nonreal estate interest	278,627	322,213
= Net farm income	2,986,205	3,616,434
More information on farm income • Farm Income Data • Farm Income and Costs Briefing Room • Contact Roger Strickland, 202-694-5592.		

Farm balance sheet	
• Estimation of State-level Balance Sheets has been suspended. See the Farm Balance Sheet data page for more information.	

Top Commodities, Exports, and Counties

Top 5 agriculture commodities, 2005			
	Value of receipts thousand $	**Percent of state** total farm receipts	**Percent of US value**
1. Broilers	2,231,782	27.0	10.7
2. Hogs	2,099,170	25.4	14.0
3. Greenhouse/nursery	975,142	11.8	6.0
4. Turkeys	491,832	6.0	15.6
5. Tobacco	407,590	4.9	37.2
All commodities	8,264,020		3.5
More information on North Carolina's top agriculture commodities • Leading commodities for cash receipts • Contact Larry Traub, 202-694-5593.			

Top 5 agriculture exports, estimates, FY 2006		
	Rank among states	**Value - million $**
1. Tobacco unmfd.	1	407.2
2. Live animals and meat	6	350.0
3. Poultry and products	3	281.8
4. Cotton and linters	7	272.9
5. Other	10	246.6
Overall rank	9	2,045.1
More information on agricultural exports • State Export Data • Agricultural Trade Briefing Room • Contact Nora Brooks, 202-694-5211.		

Top 5 counties in agricultural sales 2002		
	Percent of state total receipts	**Million $**
1. Duplin County	10.3	715.3
2. Sampson County	9.7	675.7
3. Wayne County	4.6	317.7
4. Union County	3.8	261.3
5. Bladen County	3.7	254.6
State total		6,961.7
More information on agricultural sales • Census of Agriculture • Contact NASS Customer Service, 1-800-727-9540.		

Data Source: Prepared by Economic Research Service, USDA, Washington, DC.

APPENDIX B – Wastewater Irrigation Design Parameters Worksheet

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
4405 Bland Road
Raleigh N. C. 27609
919-790-2886

October 9, 1995

NORTH CAROLINA BULLETIN NO. 210-6-1

SUBJECT: ENG - Irrigation Design Parameters Worksheet

Purpose: To provide a worksheet for irrigation design parameters to be supplied by the irrigation dealer and installer.

Expiration Date: September 30, 1996

Attached is a copy of a new worksheet the purpose of which is to communicate site specific irrigation information between field office personnel and the irrigation system designer/supplier. Table 1 sets forth the site specific field parameters and is to be completed by the Field Office personnel. The remaining tables are to be completed by the designer and a copy returned to the Field Office. Only minimal information is required and it is the responsibility of the designer to consider all relevant factors for each particular site and address them as appropriate.

This worksheet is a result of joint efforts of many NRCS and DSWC folks from across the state.

This use of this worksheet is optional, but it is highly recommended that this form or a similar form by utilized.

Additional copies of this worksheet may be obtained from your Area Office

Harry J. Gibson
State Conservation Engineer

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