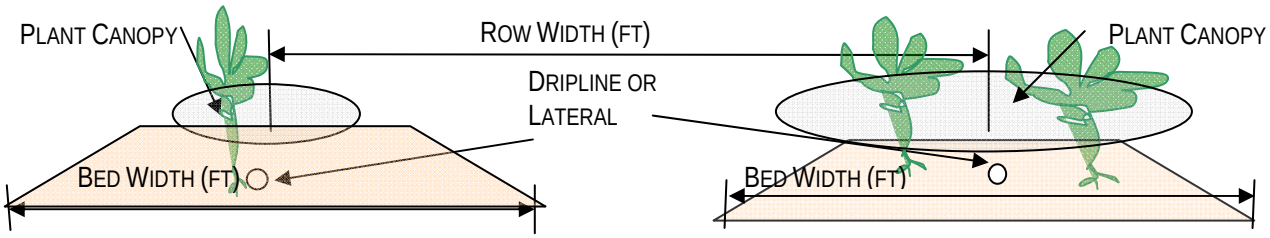
U.S. DEPARTMENT OF AGRICULTURE Natural Resources Conservation Service	**ESTIMATE AVERAGE DAILY CROP WATER USE, APPLICATION RATE AND DURATION FOR MICROIRRIGATION SYSTEM**	WVENG WS441C 11/06/08

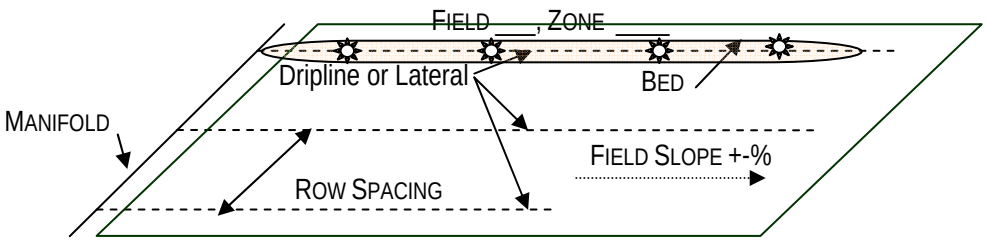
Land Operator _____Date _____
District _____County _____ Field Office _____
Prepared By _____, Checked By _____, Approved By _____

DETERMINE THE AVERAGE DAILY PLANT CONSUMPTIVE WATER USE FOR A SPECIFIC CROP (ADPCUSP*), TOTAL LATERAL LENGTH (TLL) FOR EACH ZONE AND THE ZONE APPLICATION VOLUME (ZAV), FIELD OR ZONE MICRO-IRRIGATION APPLICATION RATE (ZAR) AND THE ZONE DURATION OF IRRIGATION (ZDI) BASED ON SPECIFIC MICRO-IRRIGATION LATERAL. EVALUATE EACH FIELD AND /OR ZONE SEPARATELY AND GATHER THE FOLLOWING INFORMATION.

FIELD # , ZONE #					
CROP					
ADPCU* - IN/DAY					
CDC*					
ADPCUSC*- IN/DAY = ADPCU X CDC					
RL (AVERAGE ROW LENGTH) - FT					
NR (NUMBER OF ROWS)					
TLL (TOTAL LATERAL LENGTH)-FT = RL X NR					
BW (BED WIDTH) FT					
CD (MATURE PLANT CANOPY DIAMETER) - FT					
RW (ROW WIDTH) -FT					
MAX. ROW SLOPE +-% (1%,2%,>3%)					
MATURE ROOT DEPTH*** -INCH					
PLANT/TREE SPACING IN BED -INCH					
ZAV (ZONE APPLICATION VOLUME)-GAL/DAY = ADPCUSC X BW (OR CD) X TLL X 0.623					
TYPE OF MULCH (PLASTIC, STRAW, ETC.)					
* REFER TO WV ENG 441-A WORKSHEET; **BW OR CD WHICH EVER IS GREATER , *** REFER TO WV ENG 441-D					



MANIFOLD, LATERAL AND FIELD LAYOUT



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MICRO-IRRIGATION SYSTEM EMITTER OR DRIP TAPE MANUFACTURER INFORMATION AND SPECIFICATIONS

EMITTER OR DRIP TAPE MANUFACTURER _____ ITEM # _____

LATERAL OR DRIPLINE :

OUTSIDE DIAMETER _____INCH, INSIDE DIAMETER _____INCH, WALL THICKNESS _____ MIL OR _____MM

ALLOWABLE LATERAL SLOPE (+ UPHILL, - DOWNHILL) _____%, MAXIMUM RUN LENGTH _____ FT

EU (EMISSION UNIFORMITY) _____% (TYPICALLY 90%)

TYPE OF EMITTER***:

IN-LINE _____ , POINT SOURCE____ ,

NON-PRESSURE COMPENSATING _____, PRESSURE COMPENSATING____,

ES (EMITTER SPACING) _____INCH, FILTER REQ. _____ MESH, _____ MICRONS,

EFR (EMITTER FLOW RATE) _____GAL/HR @ ____ PSI ; $EFR = \frac{DLF\ (GAL/MIN)\ X\ ES(IN)\ X\ 60(MIN/HR)}{100(FT)\ X\ 12(IN/FT)}$

DLF (DRIP LINE FLOW)PER 100') _____ GAL/MIN /100' @ ____PSI $DLF = \frac{EFR(GAL/HR)\ X\ 100\ (FT)\ X\ 12(IN/FT)}{ES(IN)\ X\ 60(MIN/HR)}$

FIELD # , ZONE #					
ZAR (ZONE APPLICATION RATE) -GAL/MIN. $= \frac{TLL\ X\ EFR\ X\ 0.20}{ES}$					
MIN. PUMP DISCHARGE (1.25 X ZAR)					
ZDI (ZONE DURATION OF IRRIGATION)-HR/DAY = $\frac{ZAV\ X\ 100}{ZAR\ X\ EU\%\ X\ 60}$					
COMMENTS:					

***NOTE: POINT SOURCE EMITTER- IF MULTIPLY EMITTERS ARE REQUIRED PER PLANT, ADJUST ACCORDINGLY

NUMBER OF ____ EMITTER DISCHARGE POINTS PER PLANT PROVIDES _____ GPH/PLANT/DAY @ ____ IN SPACING

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Sketch of micro irrigation system layout, pump station, location of fields, zones, north arrow, scale, summits, lows, main, sub-main, manifold, lateral lines, valves, etc. (or attach sheet):