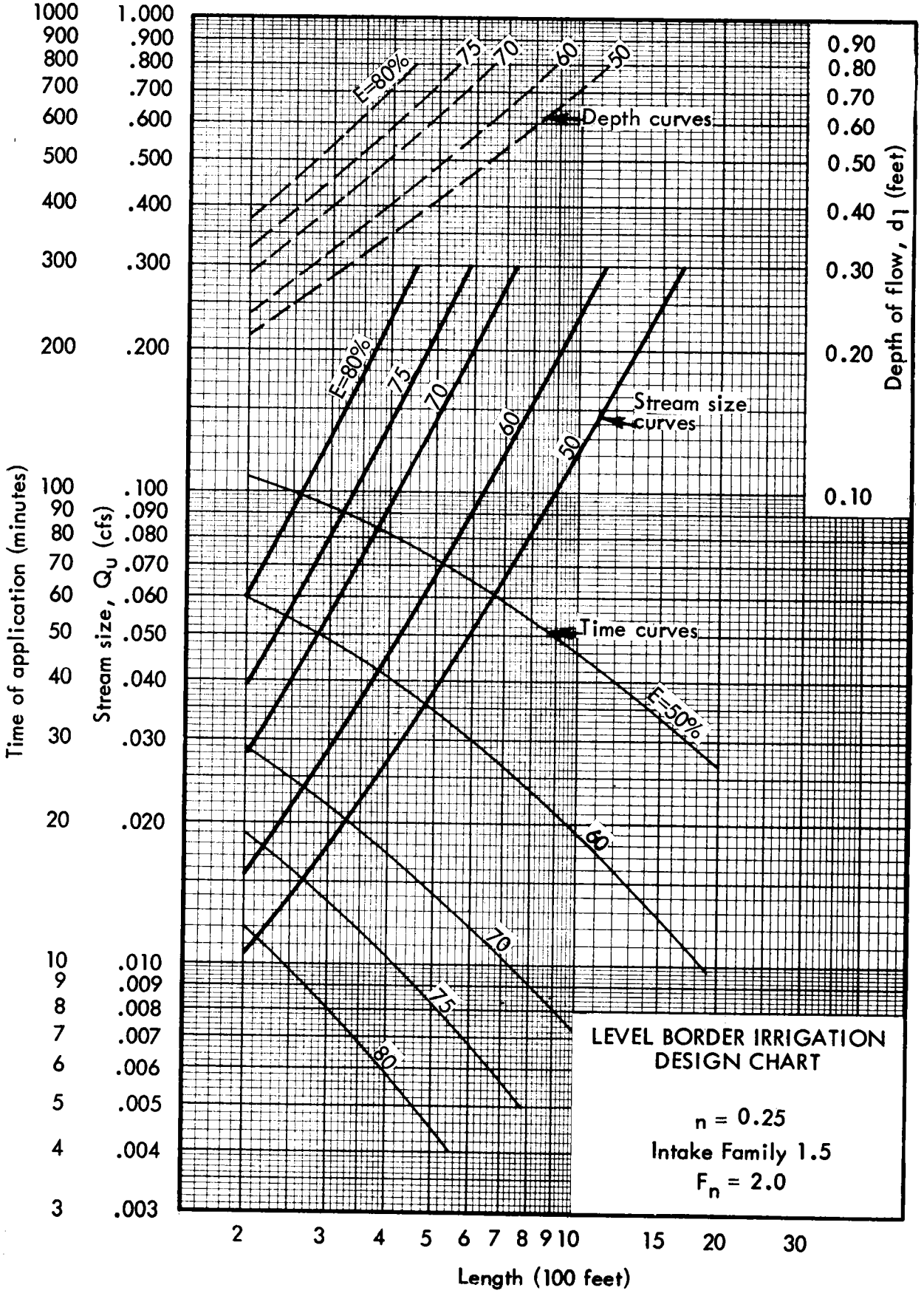
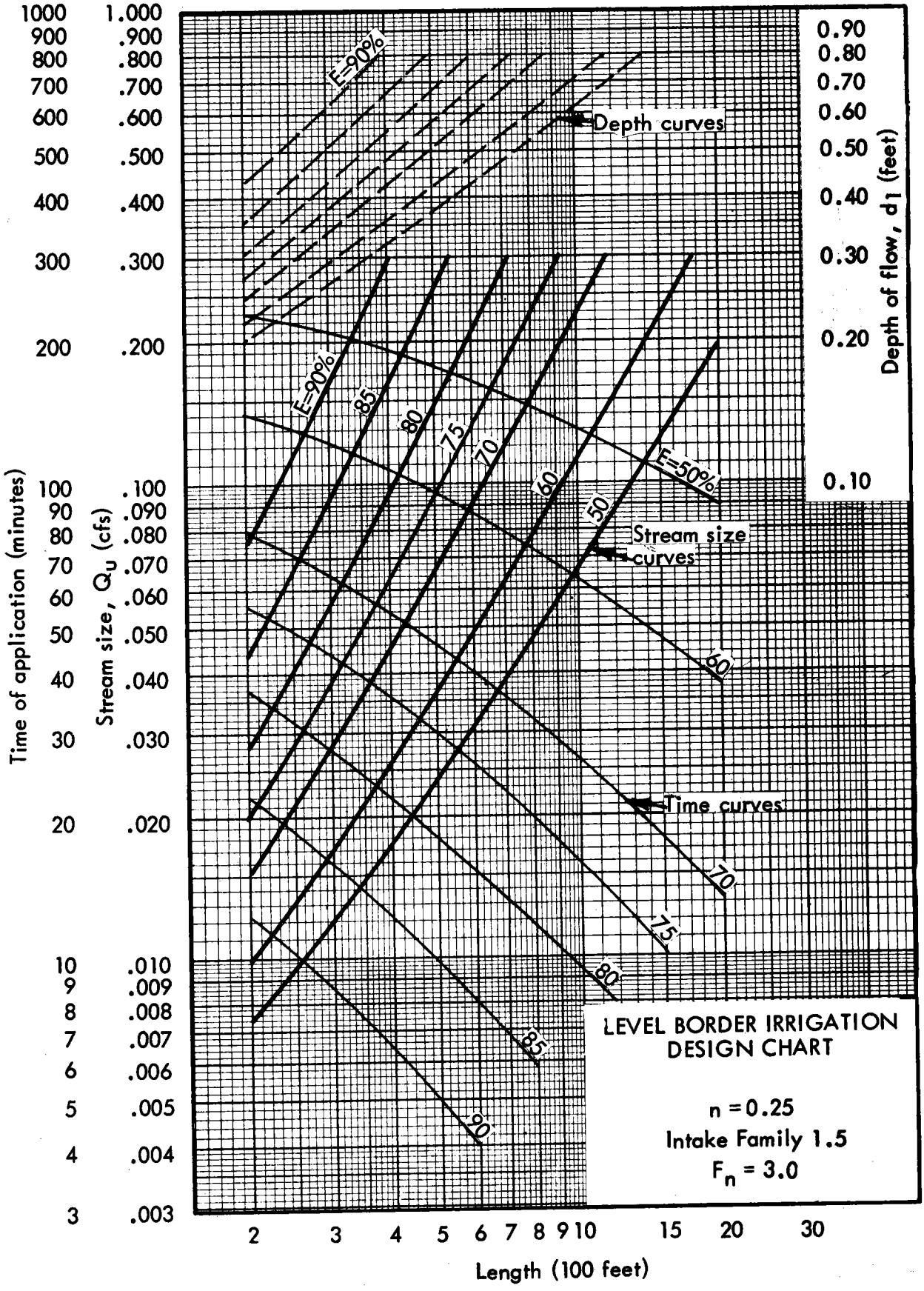
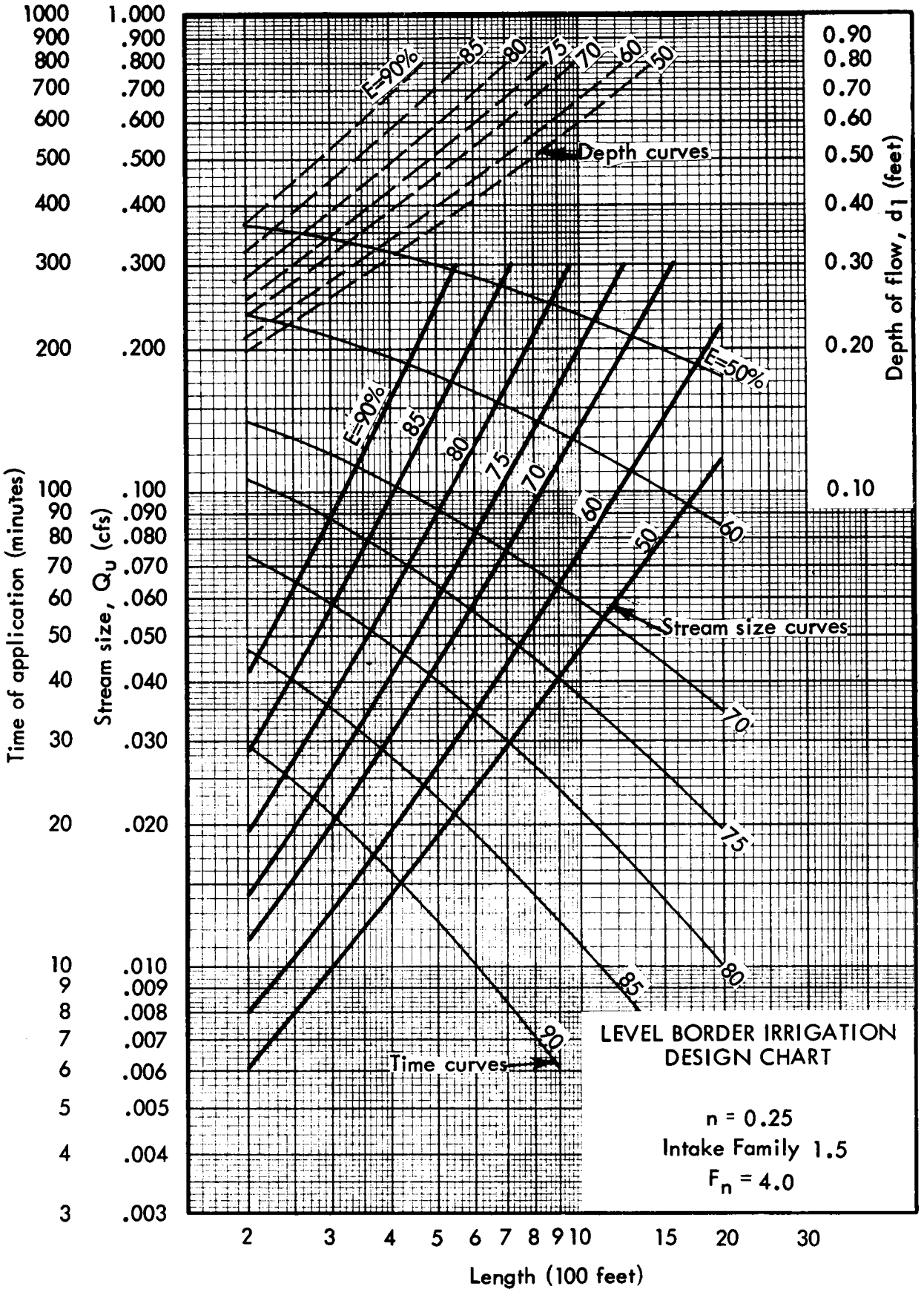
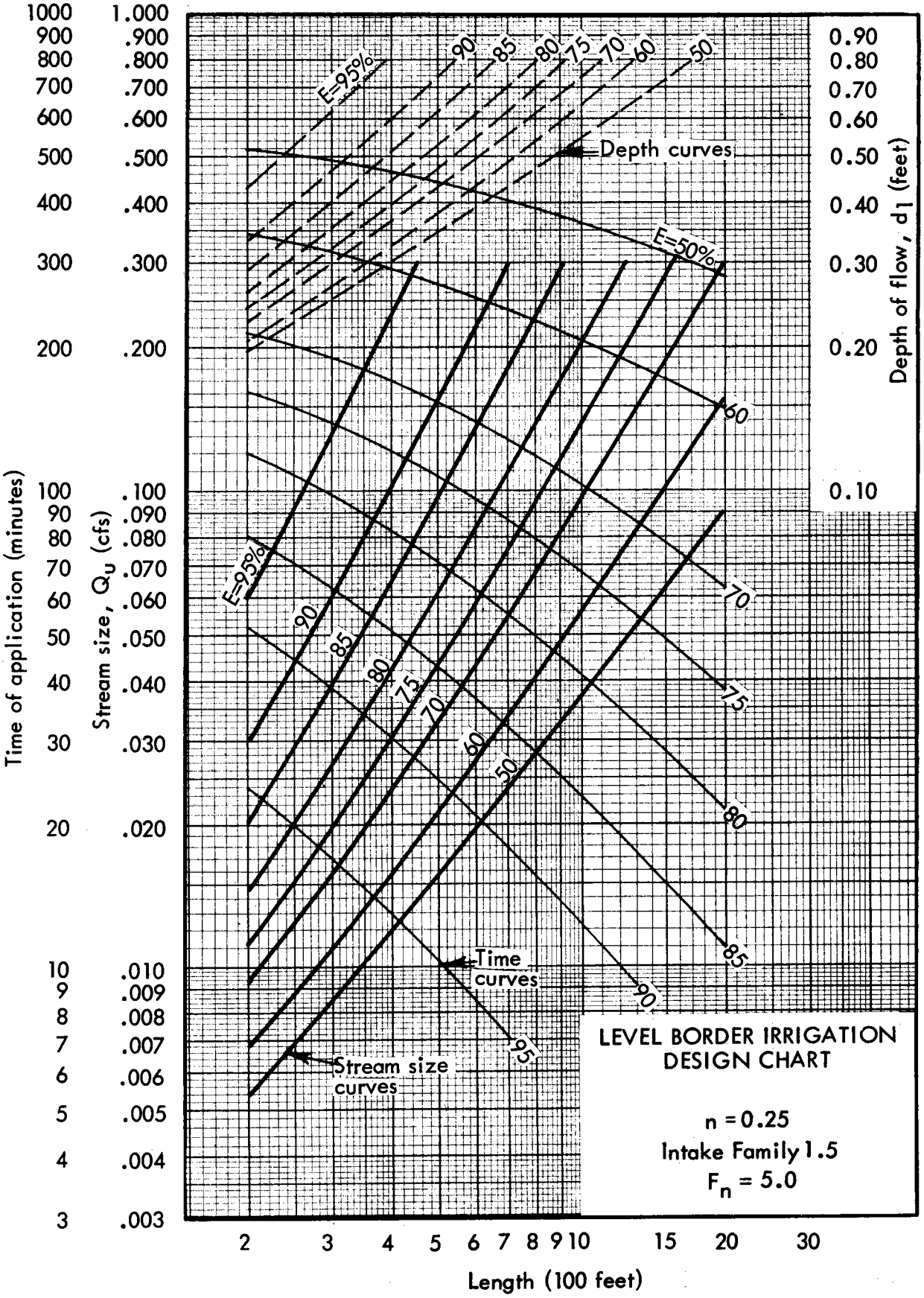
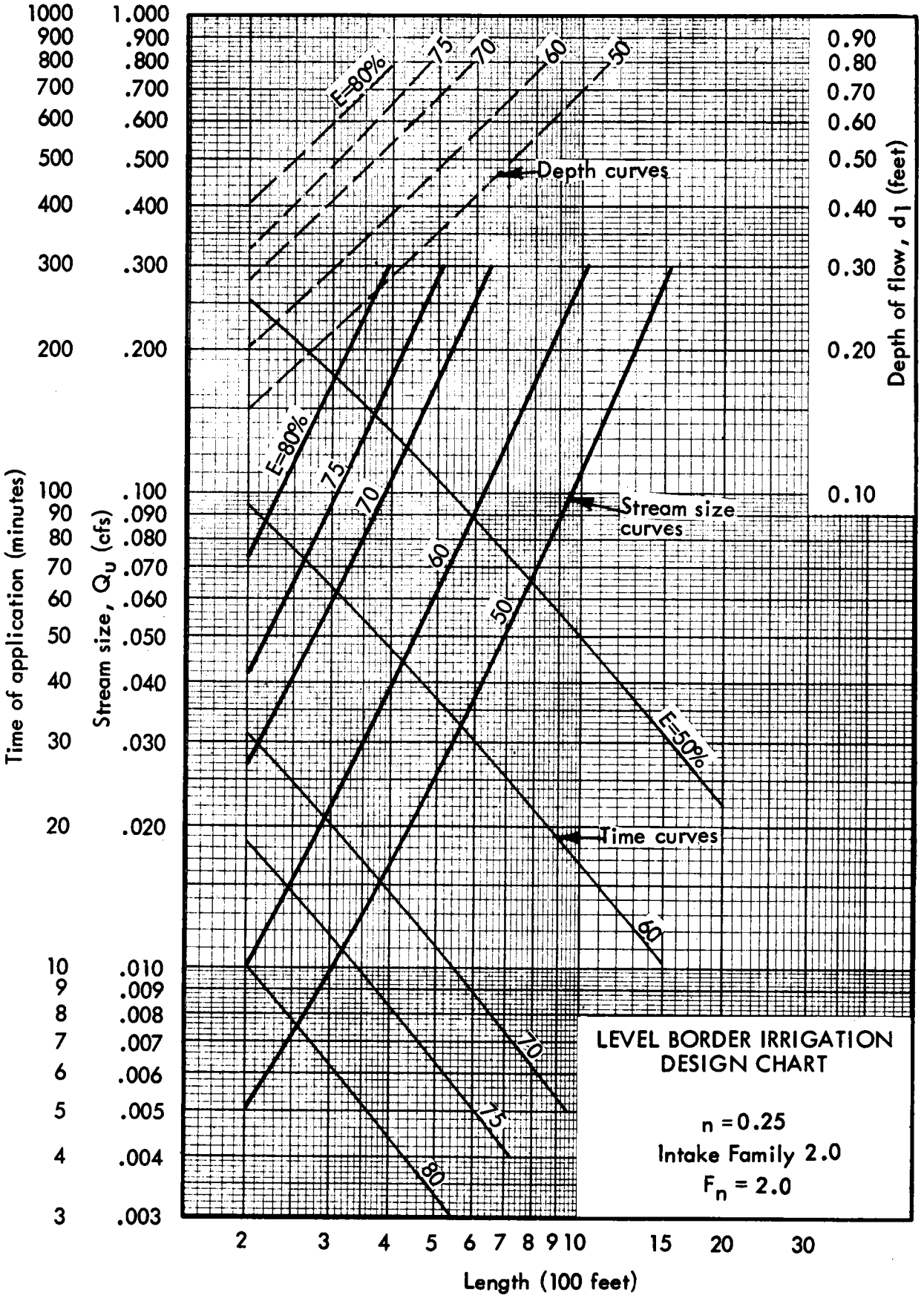
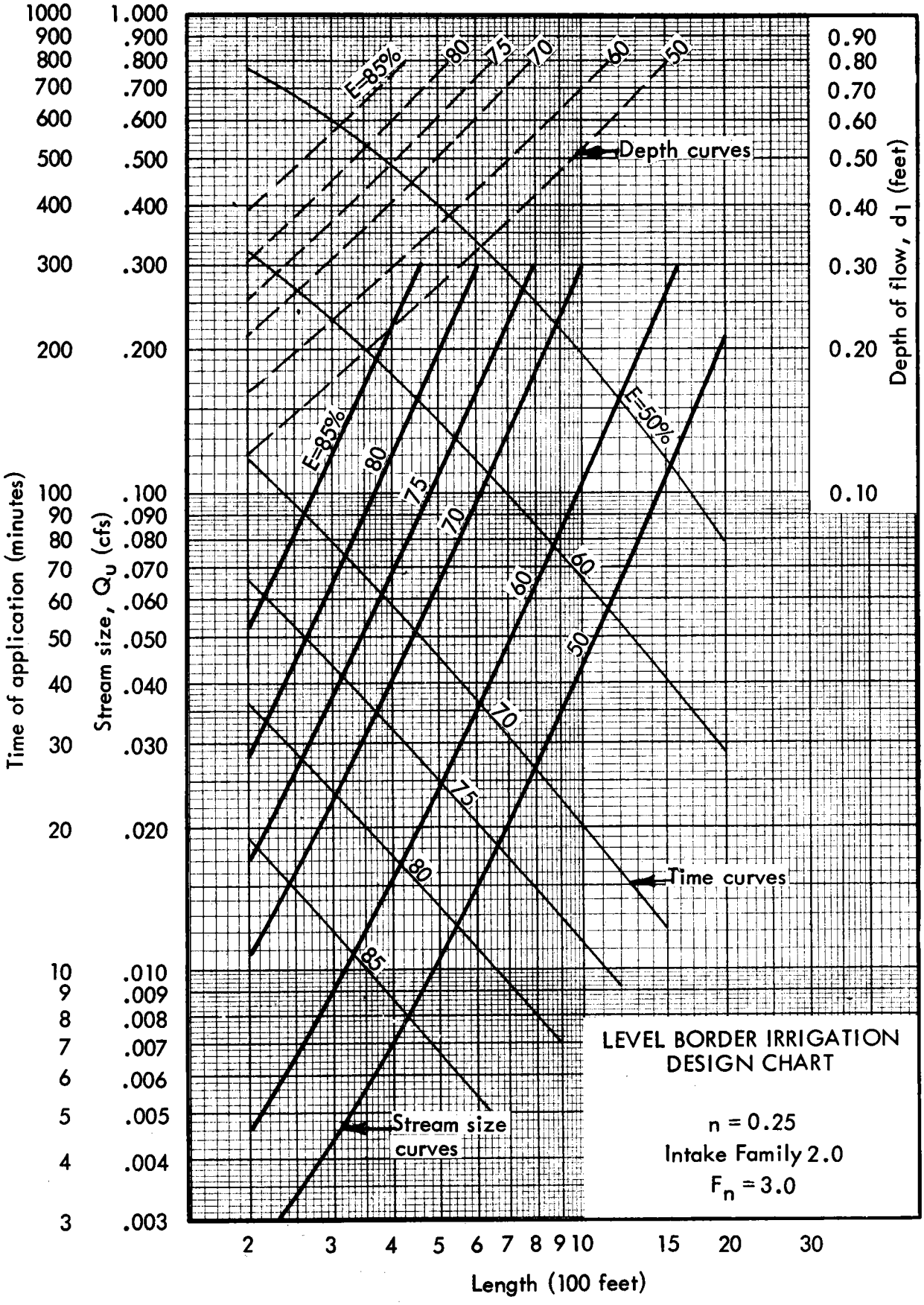

Time of application (minutes)
Stream size, Q_u (cfs)
Depth of flow, d_1 (feet)
Length (100 feet)
Depth curves
Stream size curves
Time curves
E=80%
75
70
60
50
E=50%
LEVEL BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 1.5
F_n = 2.0

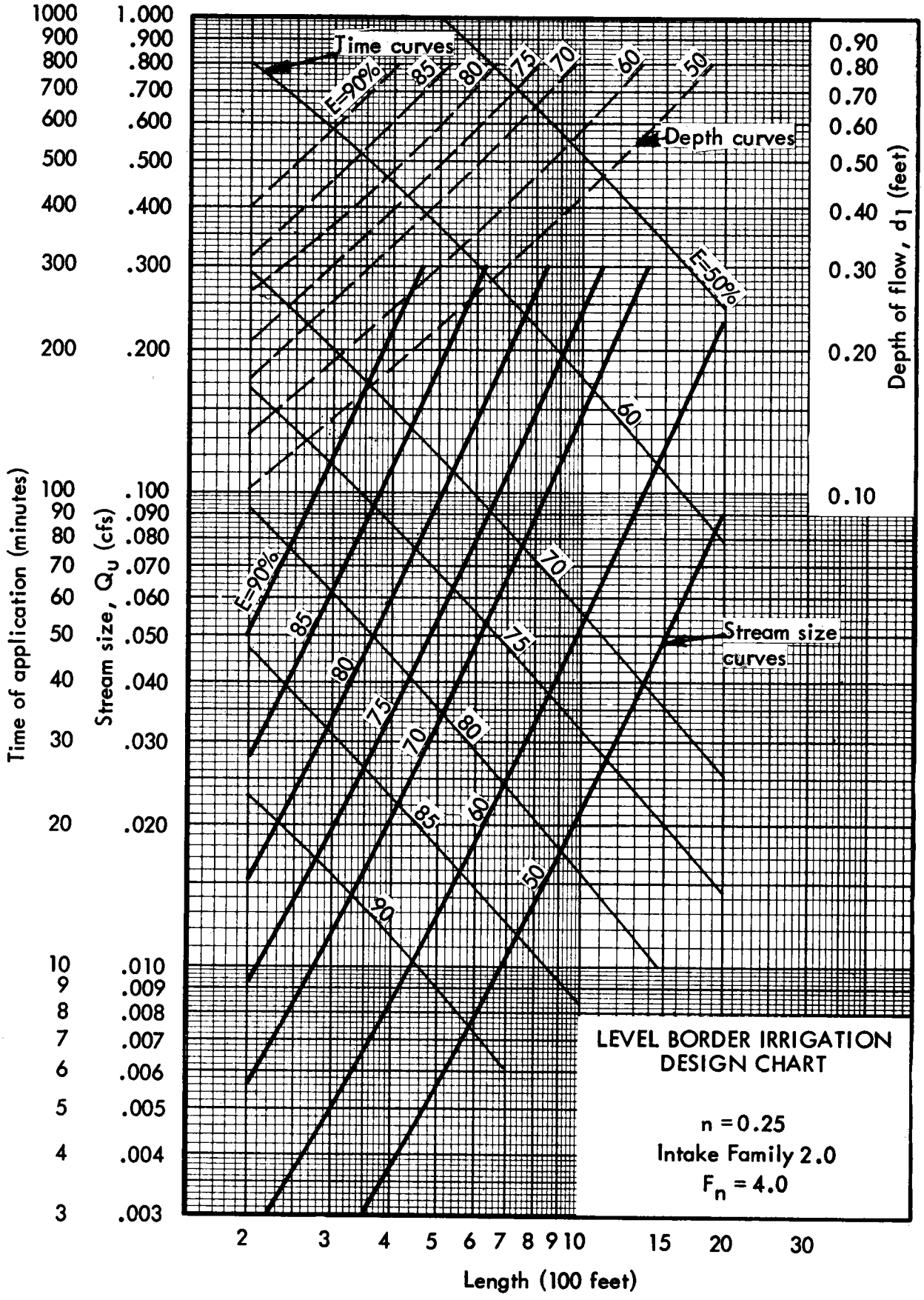

Time of application (minutes)
Stream size, Q_u (cfs)
Depth of flow, d_1 (feet)
Length (100 feet)
Depth curves
Stream size curves
Time curves
E=90%
E=50%
LEVEL BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 1.5
F_n = 3.0

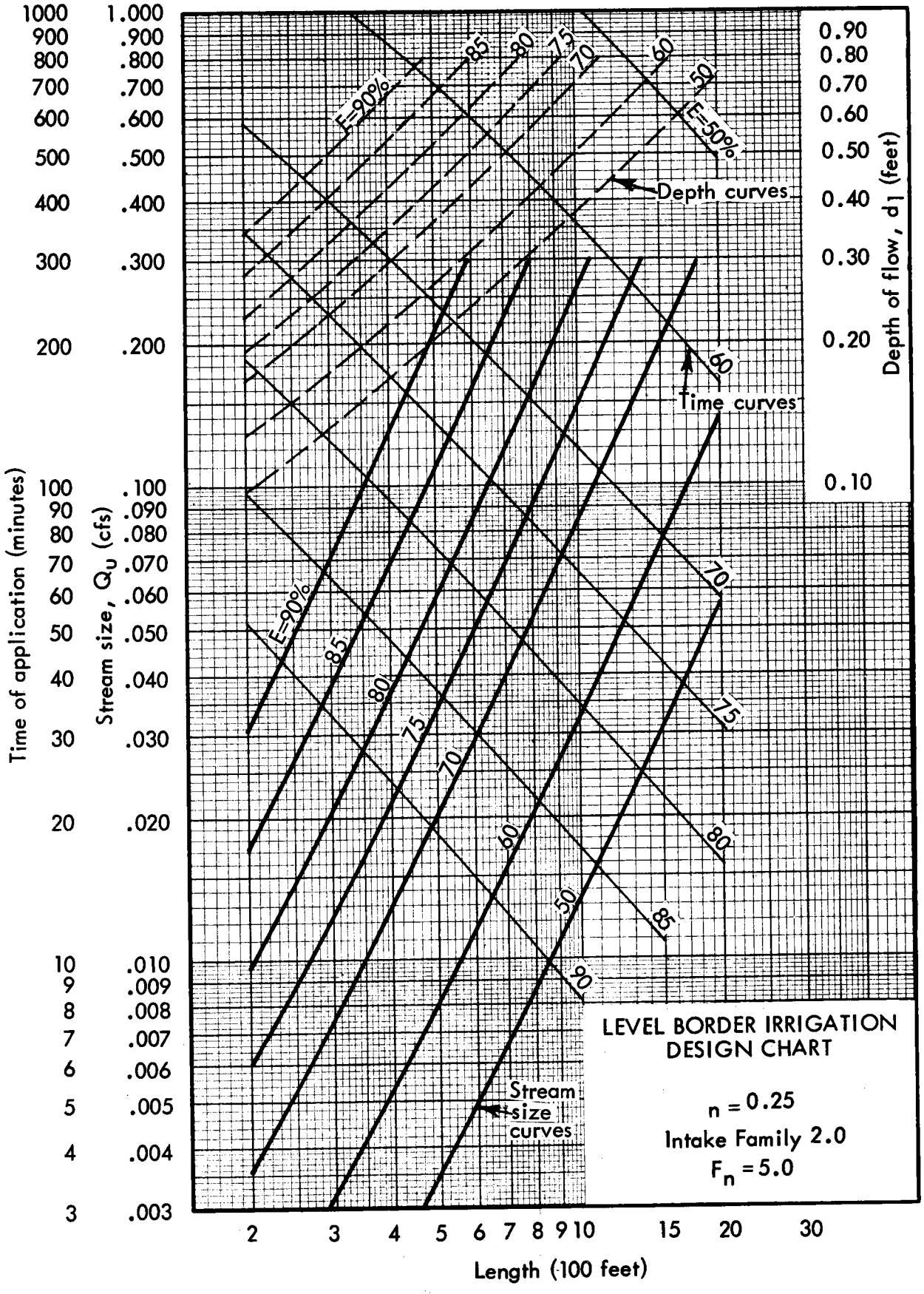

Time of application (minutes)
Stream size, Q_u (cfs)
Depth of flow, d_1 (feet)
Length (100 feet)
Depth curves
Stream size curves
Time curves
E=90%
85
80
75
70
60
50
E=50%
LEVEL BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 1.5
F_n = 4.0

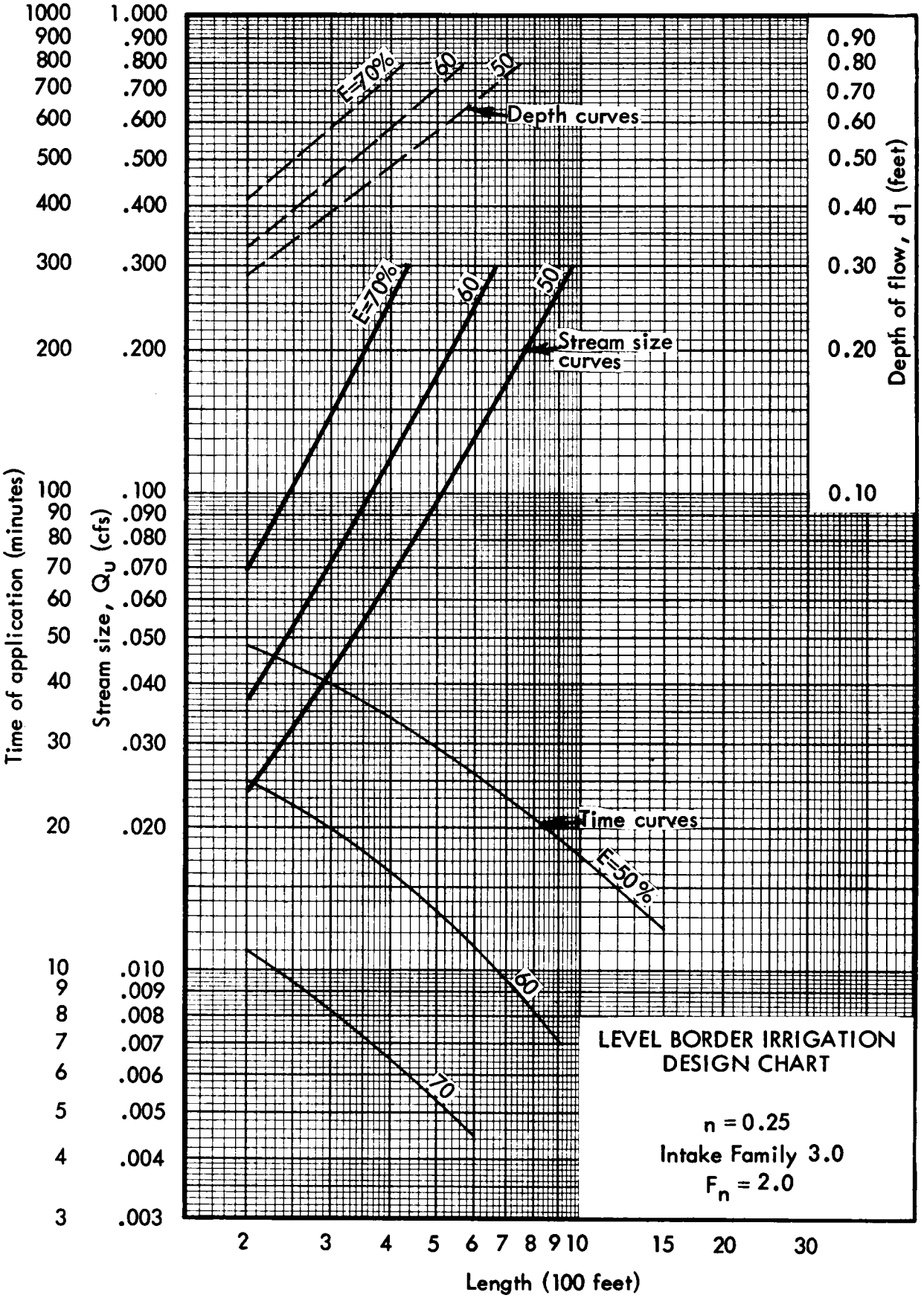

LEVEL BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 1.5
F_n = 5.0
Time of application (minutes)
Stream size, Q_u (cfs)
Depth of flow, d_1 (feet)
Length (100 feet)
Depth curves
Time curves
Stream size curves
E=95%
E=50%
90
85
80
75
70
60
50

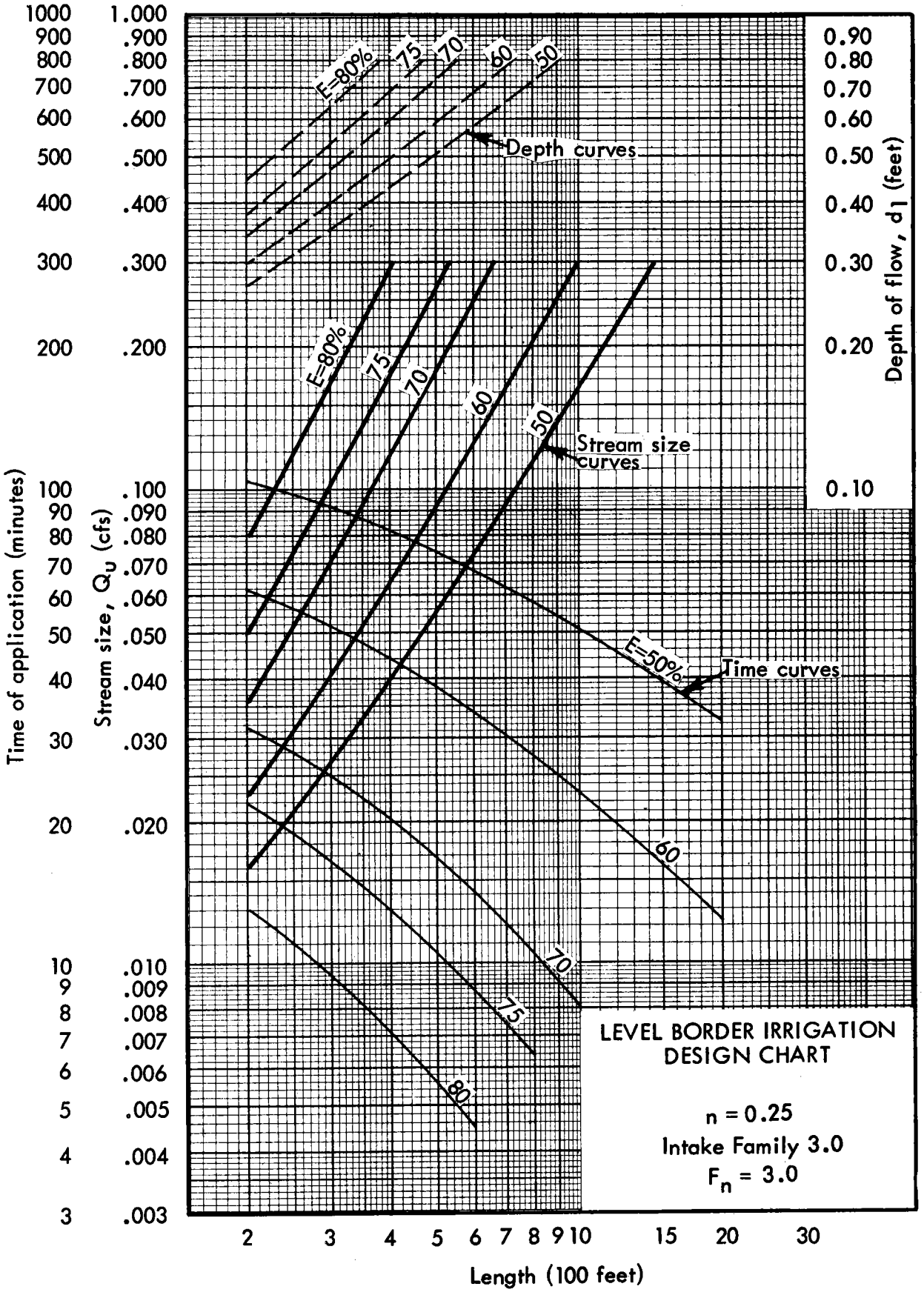

Time of application (minutes)
1000
900
800
700
600
500
400
300
200
100
90
80
70
60
50
40
30
20
10
9
8
7
6
5
4
3
Stream size, Q_u (cfs)
1.000
.900
.800
.700
.600
.500
.400
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
Depth of flow, d_1 (feet)
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
E=80%
75
70
60
50
Depth curves
Stream size curves
E=50%
Time curves
80
LEVEL BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 2.0
F_n = 2.0
2
3
4
5
6
7
8
9
10
15
20
30
Length (100 feet)

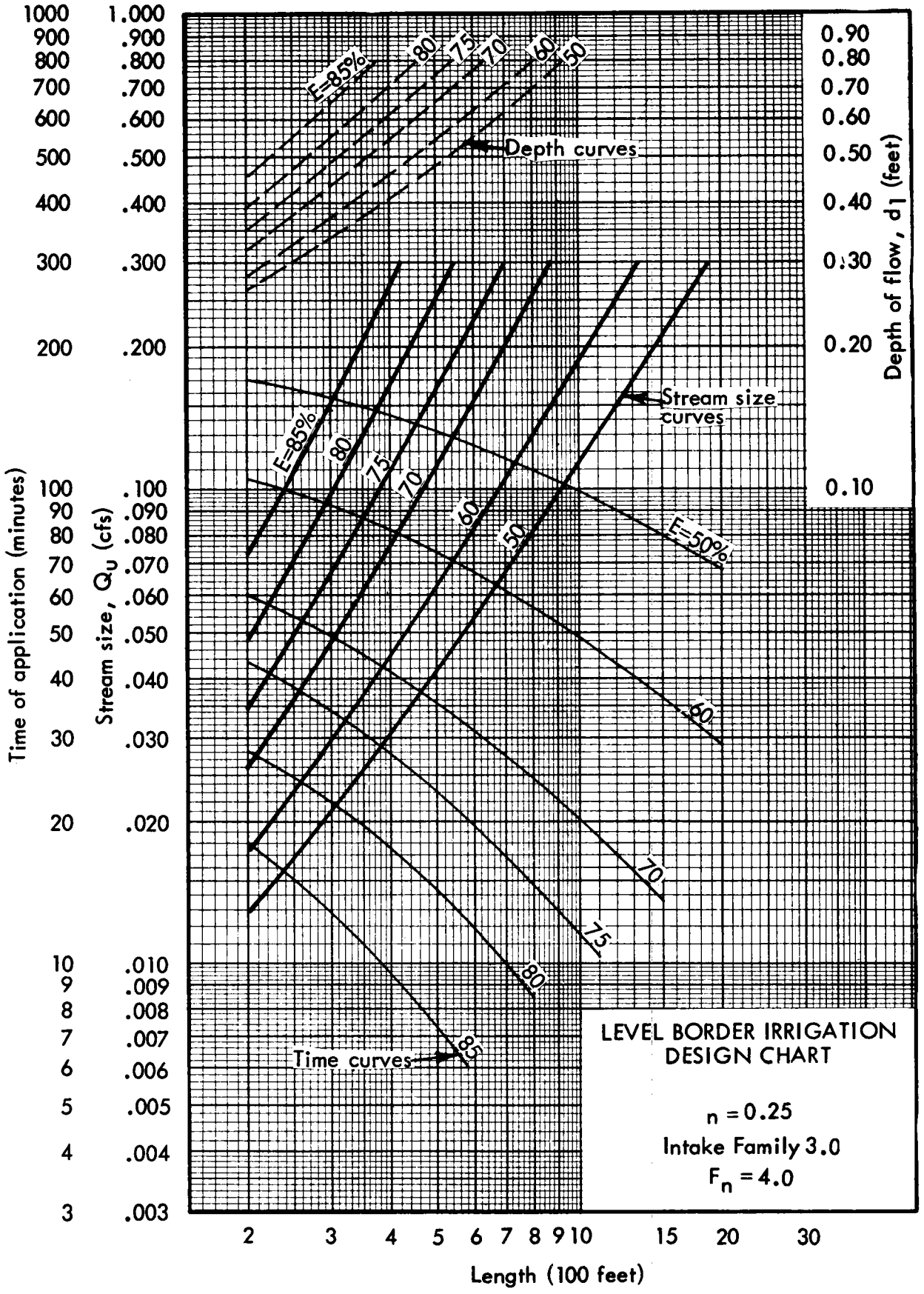

LEVEL BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 2.0
F_n = 3.0
Time of application (minutes)
Stream size, Q_u (cfs)
Depth of flow, d_1 (feet)
Length (100 feet)
Depth curves
Time curves
Stream size curves
E=85%
E=50%
80
75
70
60
50
85

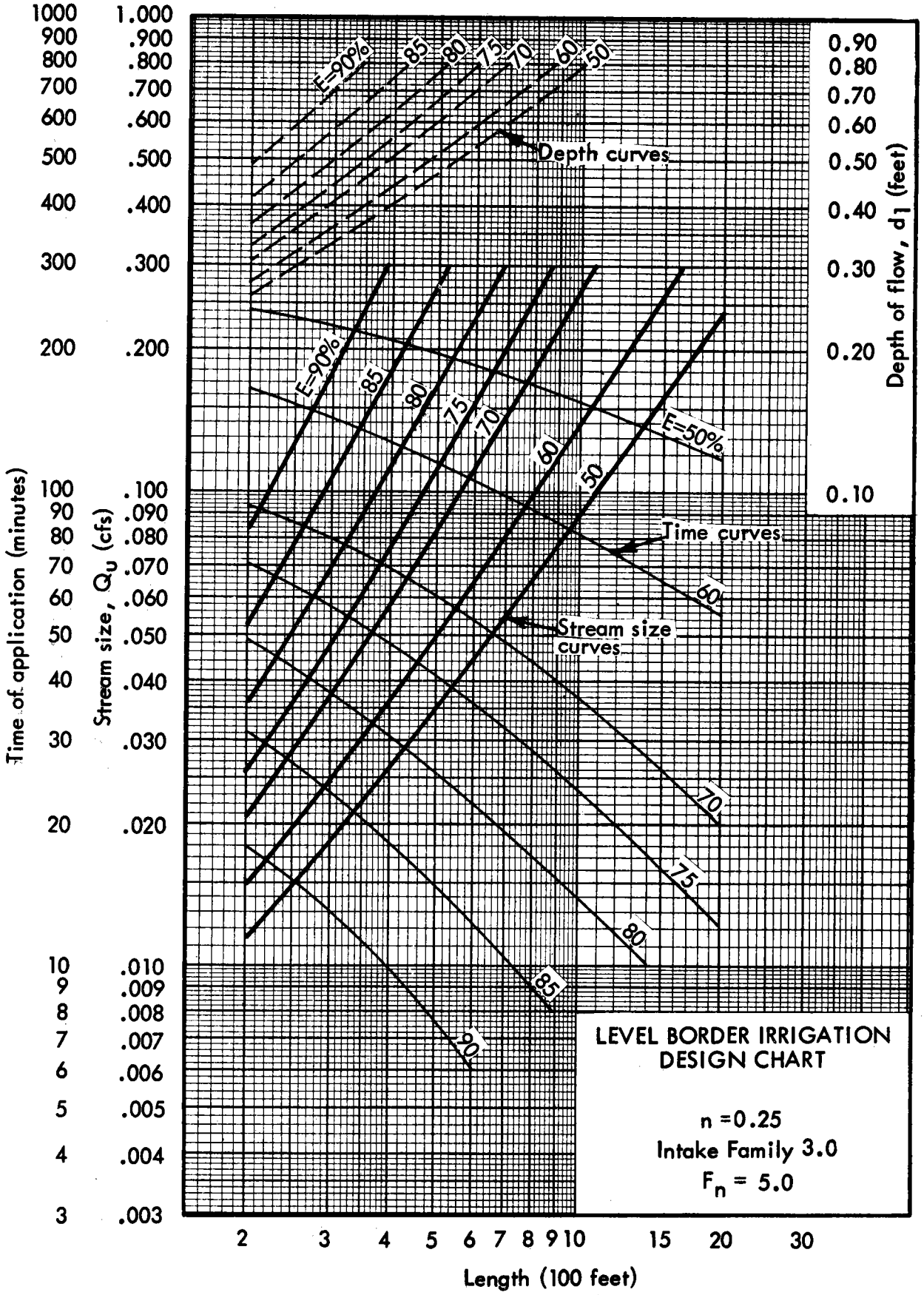

Time curves
Depth curves
Stream size curves
E=90%
85
80
75
70
60
50
E=50%
Time of application (minutes)
Stream size, Q_u (cfs)
Depth of flow, d_1 (feet)
Length (100 feet)
LEVEL BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 2.0
F_n = 4.0

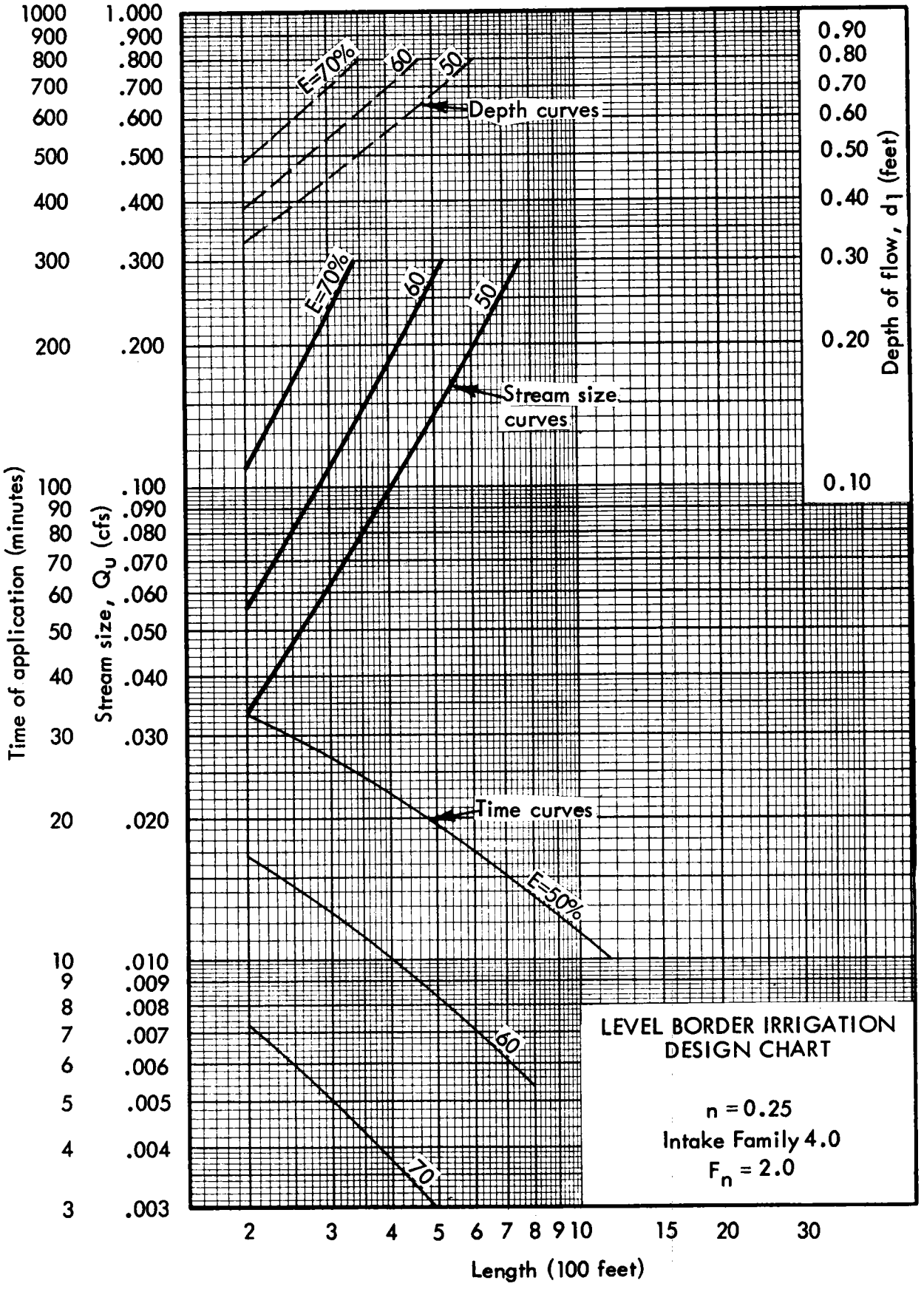

LEVEL BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 2.0
F_n = 5.0
Time of application (minutes)
Stream size, Q_u (cfs)
Depth of flow, d_1 (feet)
Length (100 feet)
Depth curves
Time curves
Stream size curves
E=90%
E=50%
1000 1.000
900 .900
800 .800
700 .700
600 .600
500 .500
400 .400
300 .300
200 .200
100 .100
90 .090
80 .080
70 .070
60 .060
50 .050
40 .040
30 .030
20 .020
10 .010
9 .009
8 .008
7 .007
6 .006
5 .005
4 .004
3 .003
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
2 3 4 5 6 7 8 9 10 15 20 30

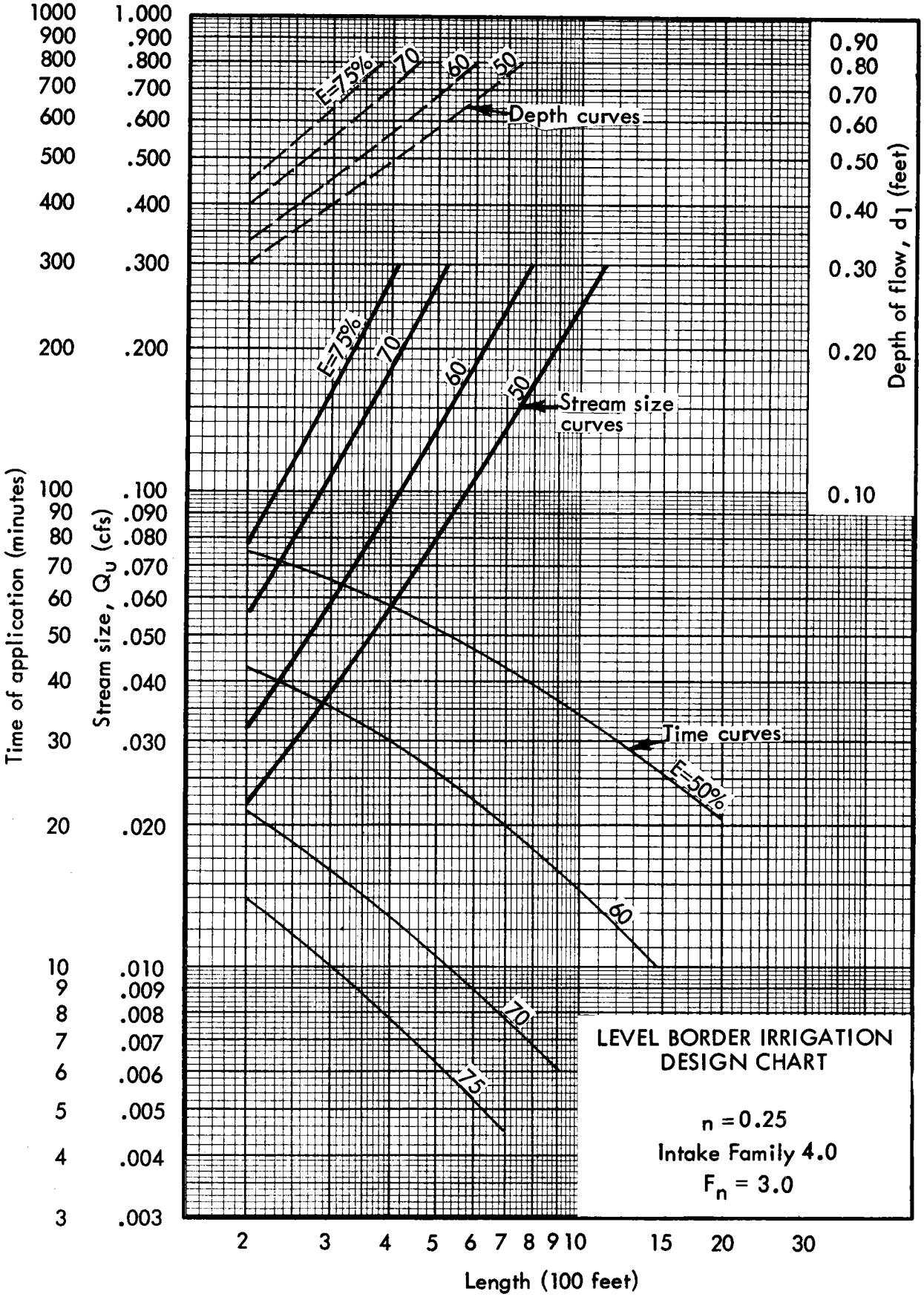

LEVEL BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 3.0
F_n = 2.0
Depth curves
Stream size curves
Time curves
E=70%
60
50
E=50%
70
Time of application (minutes)
Stream size, Q_u (cfs)
Depth of flow, d_1 (feet)
Length (100 feet)
1000 900 800 700 600 500 400 300 200 100 90 80 70 60 50 40 30 20 10 9 8 7 6 5 4 3
1.000 .900 .800 .700 .600 .500 .400 .300 .200 .100 .090 .080 .070 .060 .050 .040 .030 .020 .010 .009 .008 .007 .006 .005 .004 .003
0.90 0.80 0.70 0.60 0.50 0.40 0.30 0.20 0.10
2 3 4 5 6 7 8 9 10 15 20 30

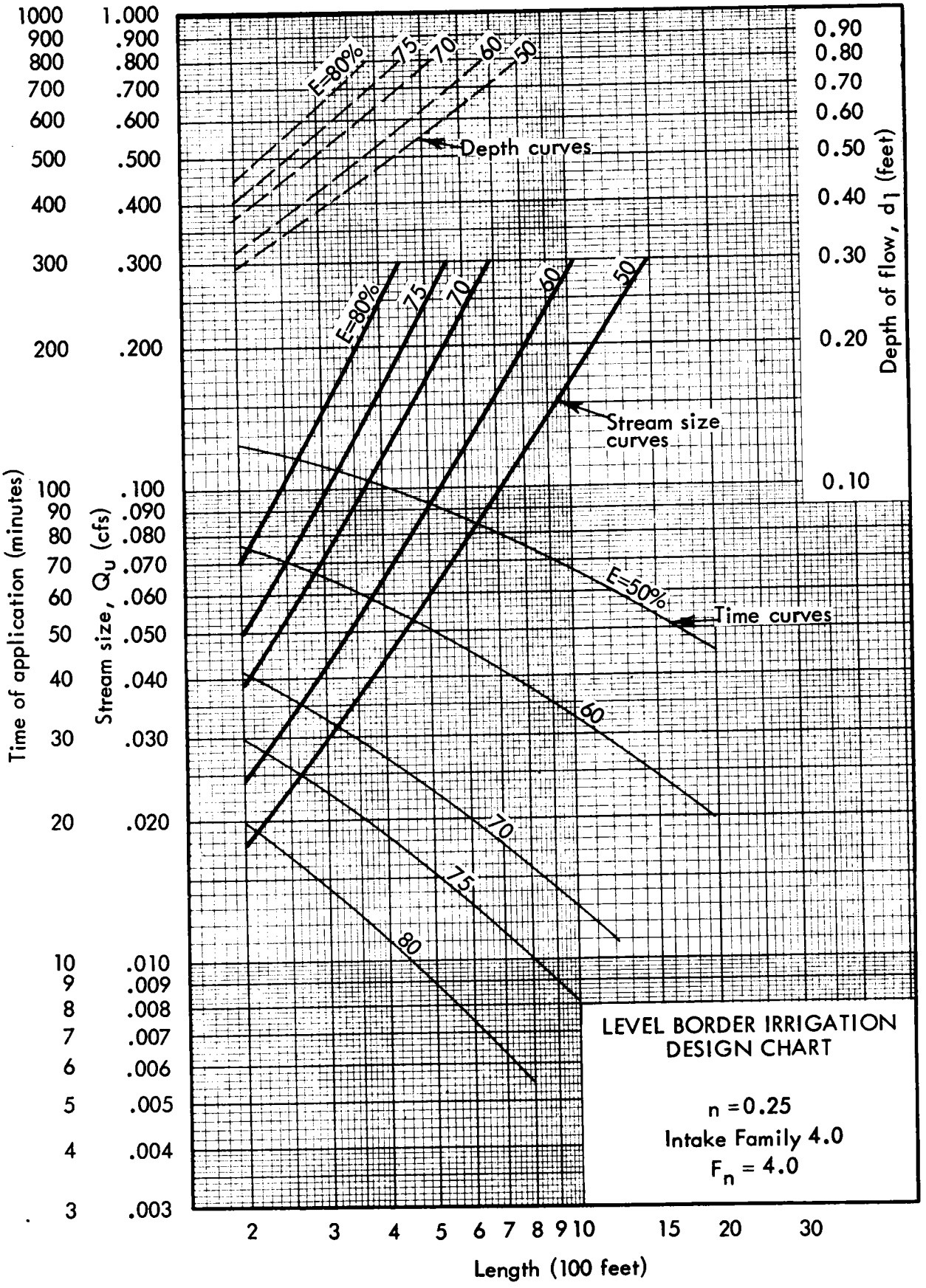

Time of application (minutes)
Stream size, Q_u (cfs)
Depth of flow, d_1 (feet)
Length (100 feet)
Depth curves
Stream size curves
Time curves
E=80%
75
70
60
50
E=50%
LEVEL BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 3.0
F_n = 3.0

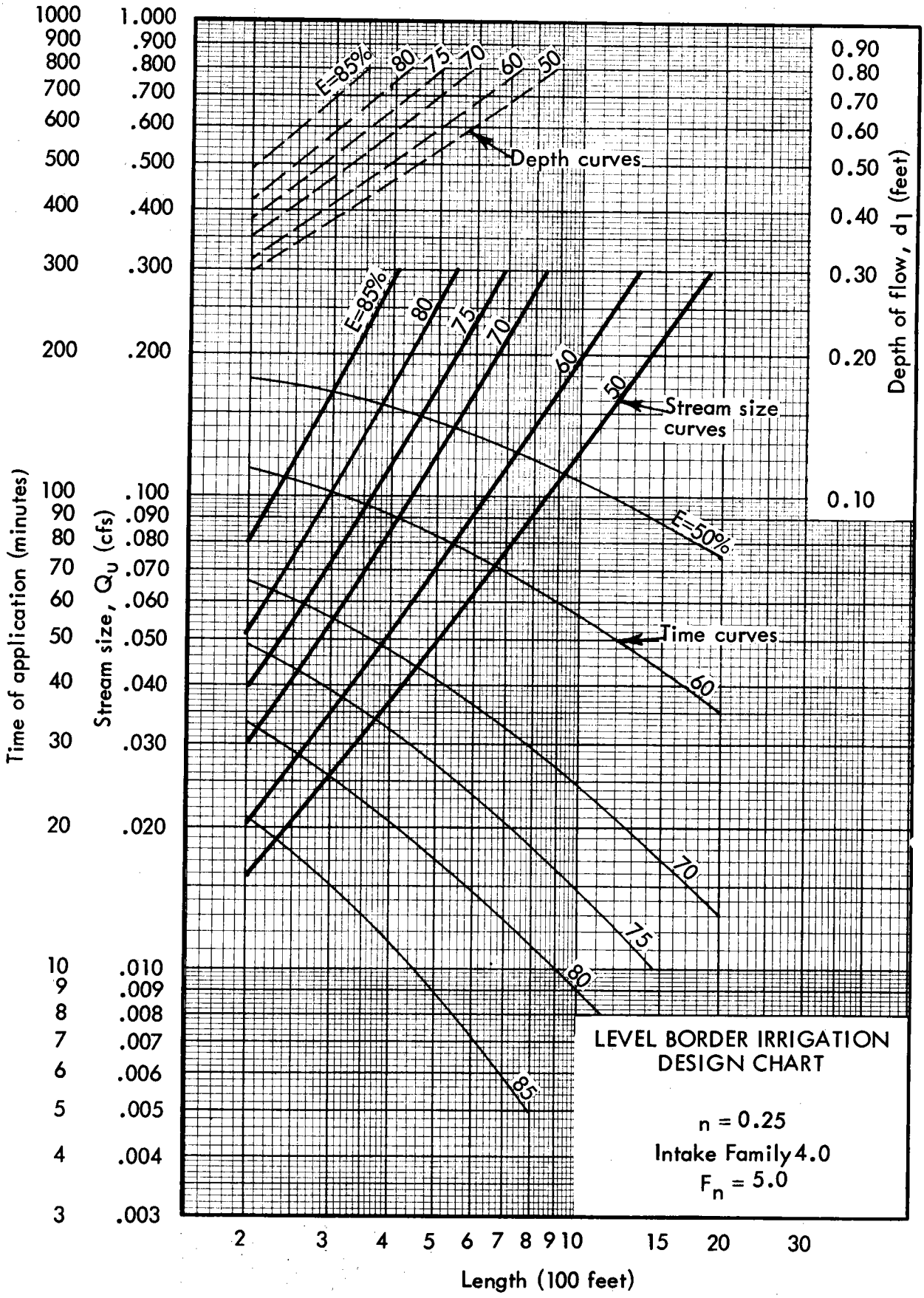

LEVEL BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 3.0
F_n = 4.0
Depth curves
Stream size curves
Time curves
E=85%
80
75
70
60
50
Time of application (minutes)
Stream size, Q_u (cfs)
Depth of flow, d_1 (feet)
Length (100 feet)

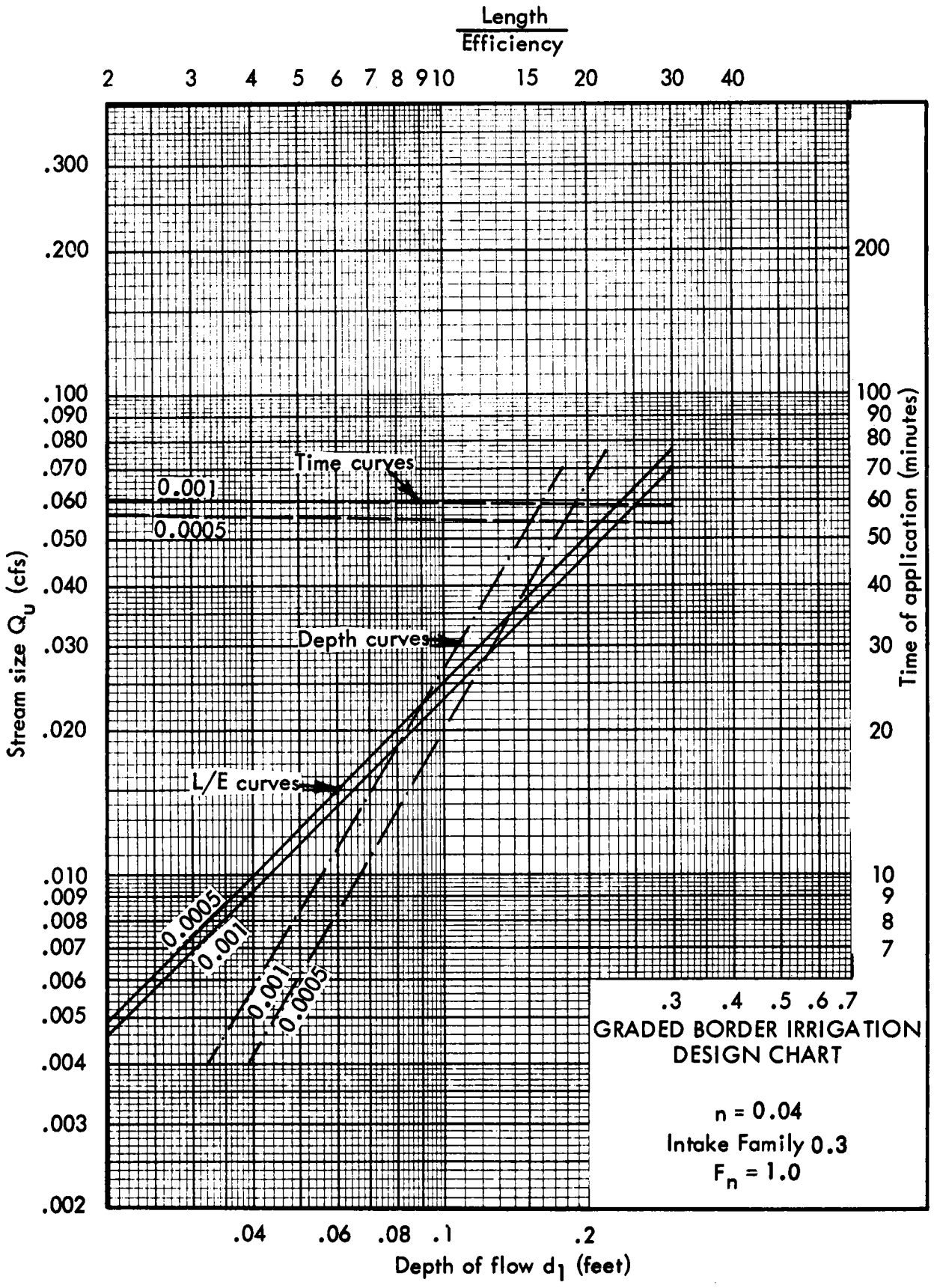

LEVEL BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 3.0
F_n = 5.0
Depth curves
Time curves
Stream size curves
E=90%
85
80
75
70
60
50
Time of application (minutes)
Stream size, Q_u (cfs)
Depth of flow, d_1 (feet)
Length (100 feet)

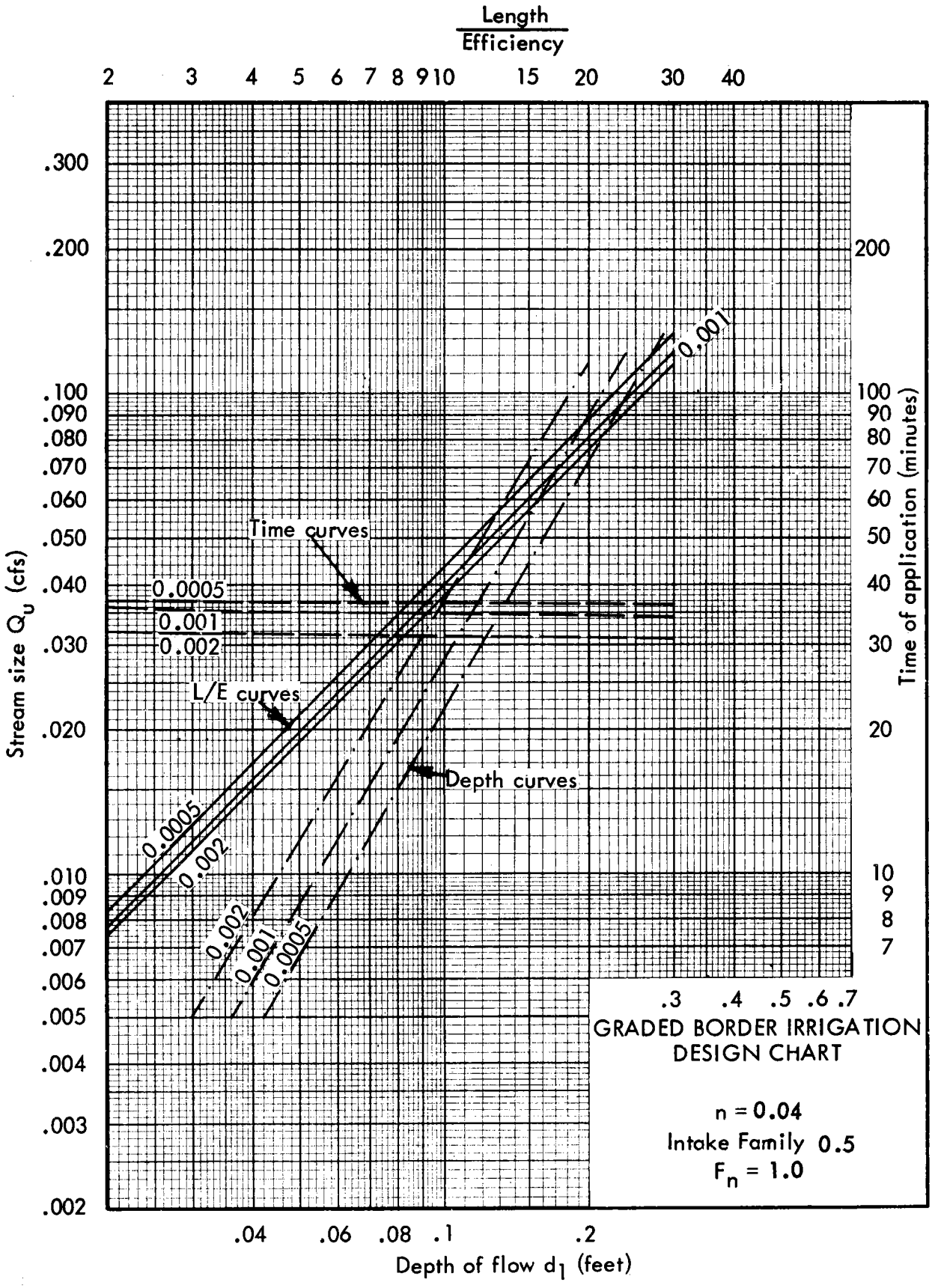

LEVEL BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 4.0
F_n = 2.0
Depth curves
Stream size curves
Time curves
E=70%
60
50
E=50%
70
Time of application (minutes)
Stream size, Q_u (cfs)
Depth of flow, d_1 (feet)
Length (100 feet)
1000 900 800 700 600 500 400 300 200 100 90 80 70 60 50 40 30 20 10 9 8 7 6 5 4 3
1.000 .900 .800 .700 .600 .500 .400 .300 .200 .100 .090 .080 .070 .060 .050 .040 .030 .020 .010 .009 .008 .007 .006 .005 .004 .003
0.90 0.80 0.70 0.60 0.50 0.40 0.30 0.20 0.10
2 3 4 5 6 7 8 9 10 15 20 30

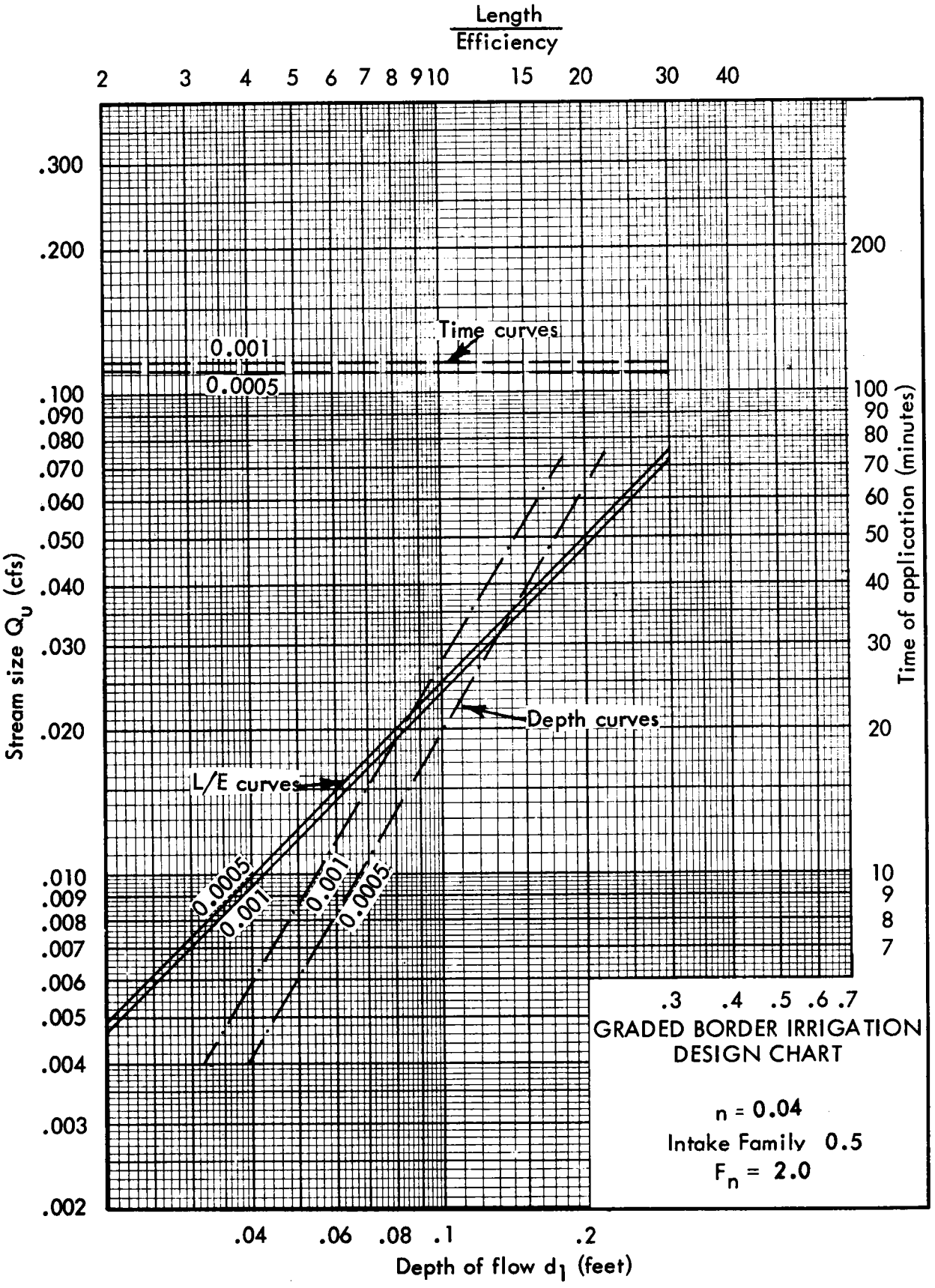

LEVEL BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 4.0
F_n = 3.0
Depth curves
E=75%
70
60
50
Stream size curves
Time curves
E=50%
60
70
75
Time of application (minutes)
Stream size, Q_u (cfs)
Depth of flow, d_1 (feet)
Length (100 feet)
1000 1.000
900 .900
800 .800
700 .700
600 .600
500 .500
400 .400
300 .300
200 .200
100 .100
90 .090
80 .080
70 .070
60 .060
50 .050
40 .040
30 .030
20 .020
10 .010
9 .009
8 .008
7 .007
6 .006
5 .005
4 .004
3 .003
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
2 3 4 5 6 7 8 9 10 15 20 30

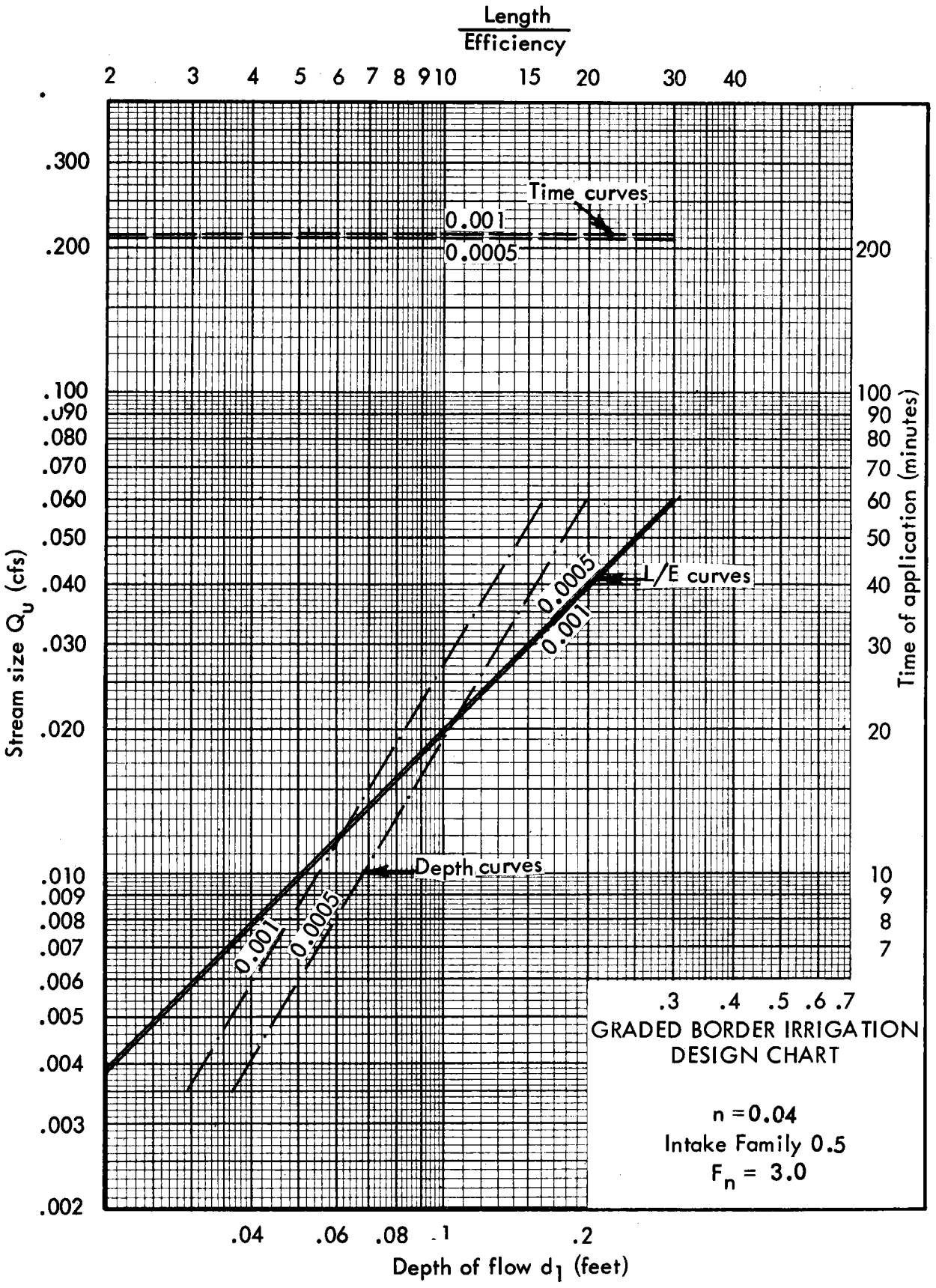

Time of application (minutes)
Stream size, Q_u (cfs)
Depth of flow, d_1 (feet)
Length (100 feet)
Depth curves
Stream size curves
Time curves
E=80%
75
70
60
50
E=50%
80
LEVEL BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 4.0
F_n = 4.0

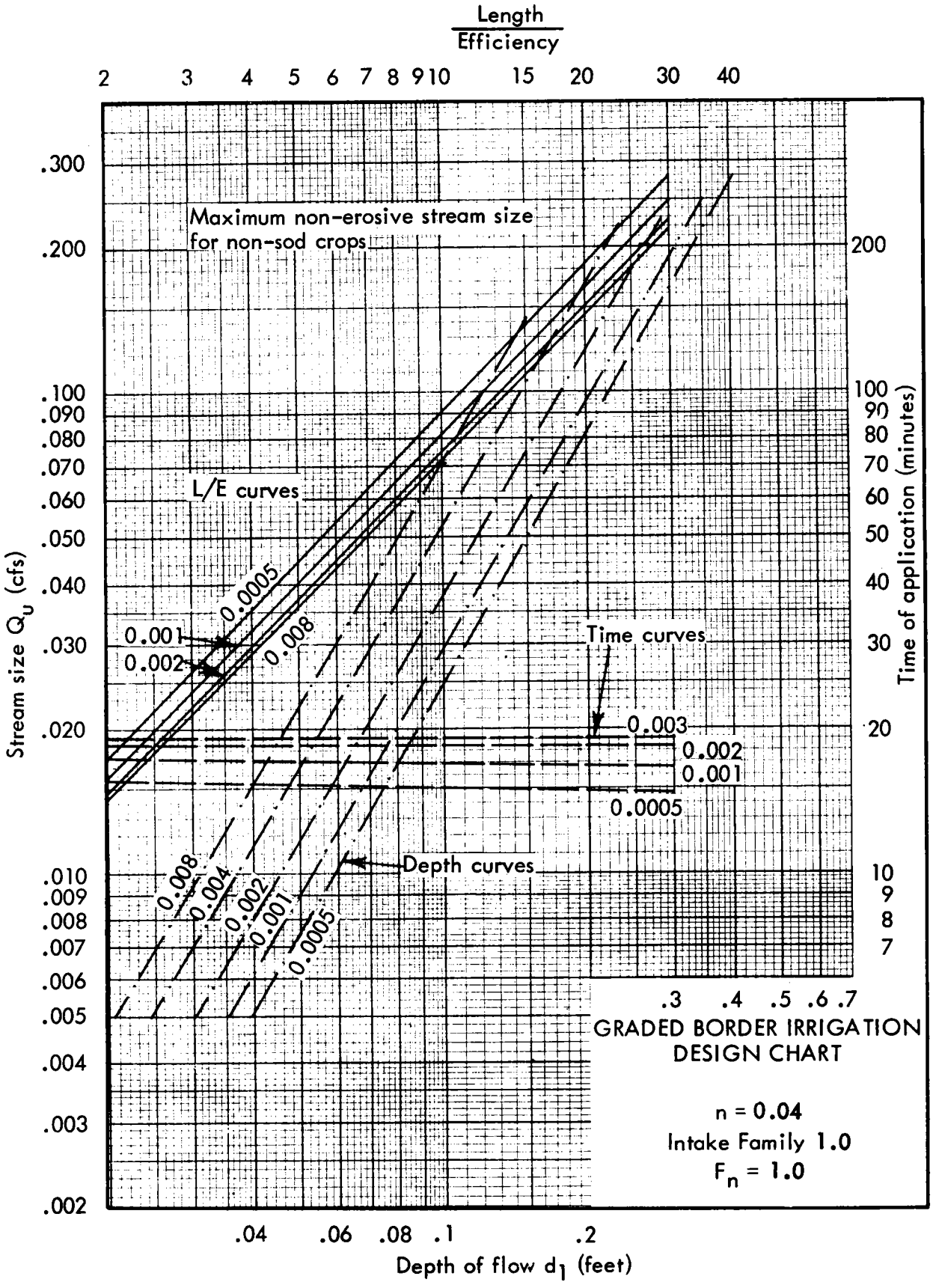

LEVEL BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 4.0
F_n = 5.0
Depth curves
E=85%
80
75
70
60
50
Stream size curves
Time curves
E=50%
85
Time of application (minutes)
Stream size, Q_u (cfs)
Depth of flow, d_1 (feet)
Length (100 feet)
1000
900
800
700
600
500
400
300
200
100
90
80
70
60
50
40
30
20
10
9
8
7
6
5
4
3
1.000
.900
.800
.700
.600
.500
.400
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
2
3
4
5
6
7
8
9
10
15
20
30

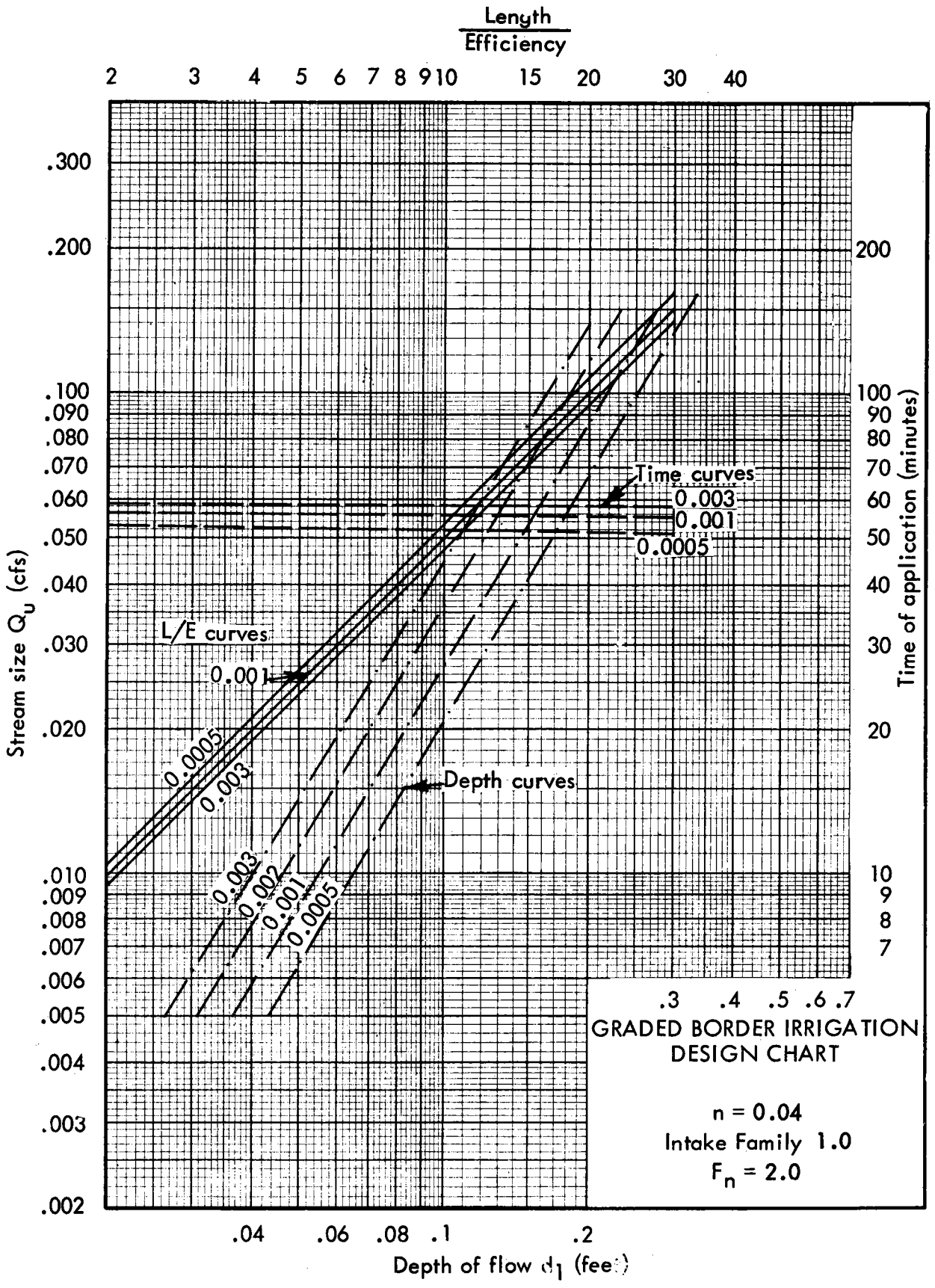

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
Time curves
0.001
0.0005
Depth curves
L/E curves
0.0005
0.001
0.001
0.0005
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.04
Intake Family 0.3
F_n = 1.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

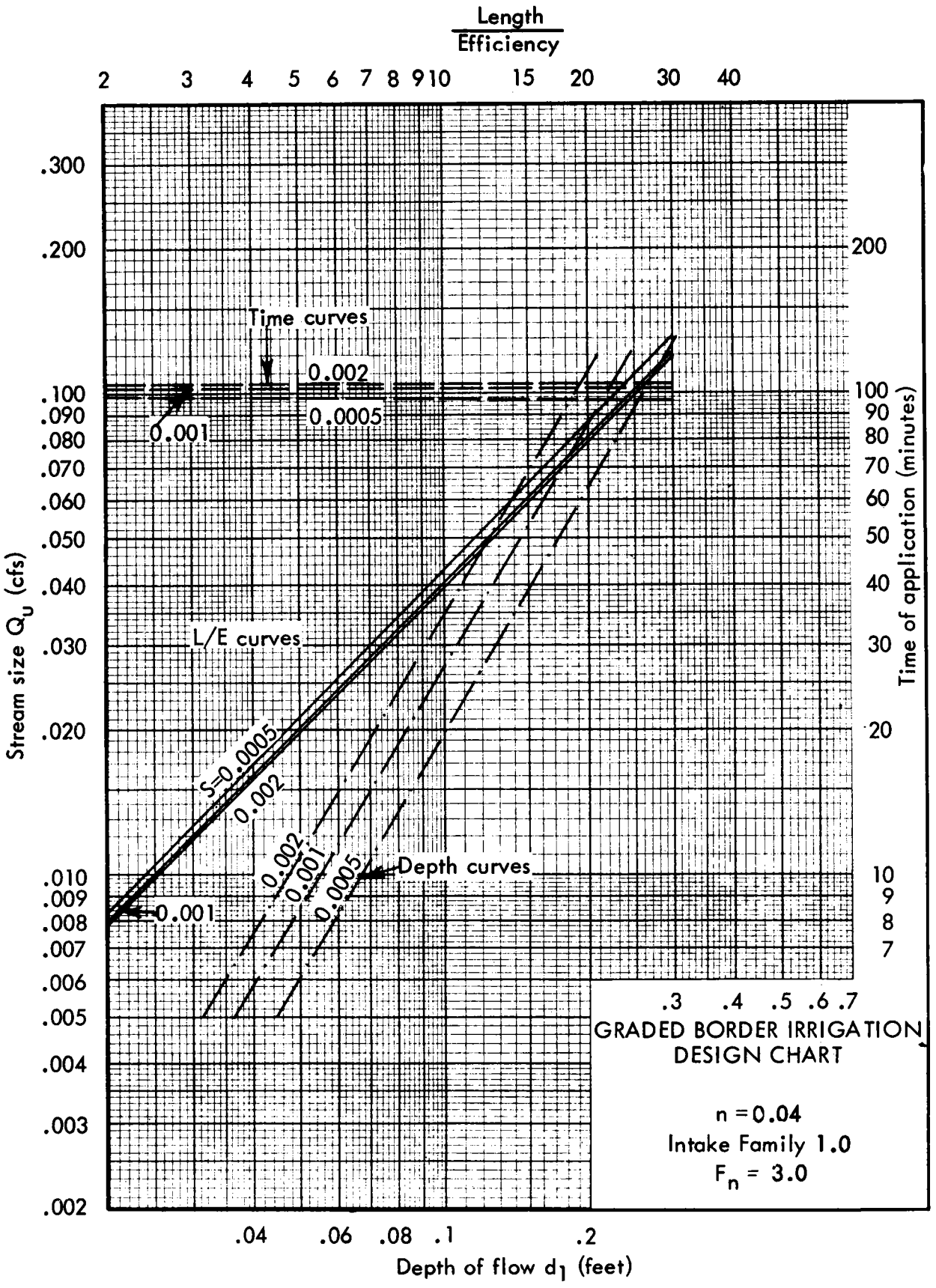

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
Time curves
L/E curves
Depth curves
0.0005
0.001
0.002
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.04
Intake Family 0.5
F_n = 1.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

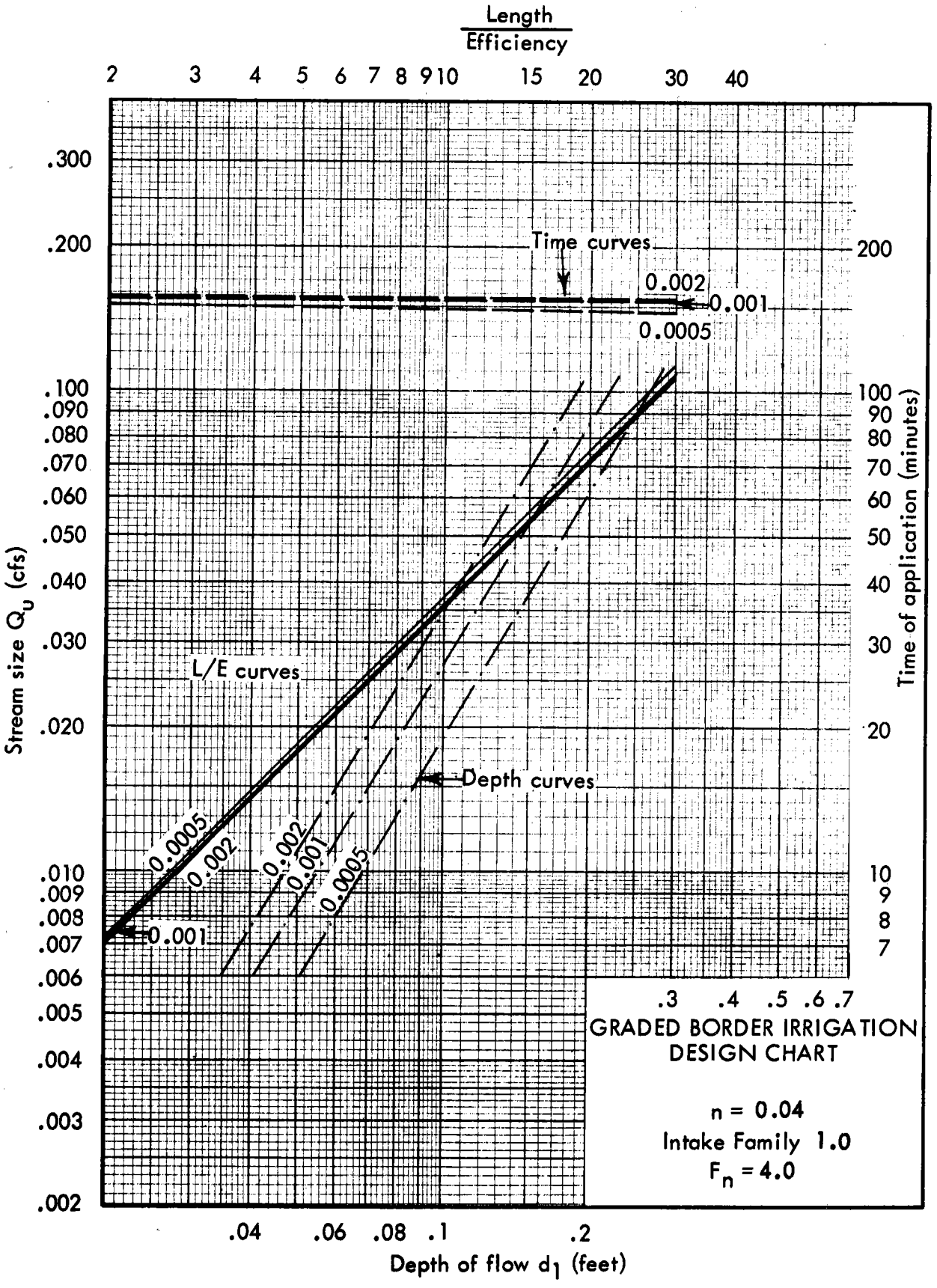

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
Time curves
0.001
0.0005
Depth curves
L/E curves
0.0005
0.001
0.001
0.0005
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.04
Intake Family 0.5
F_n = 2.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

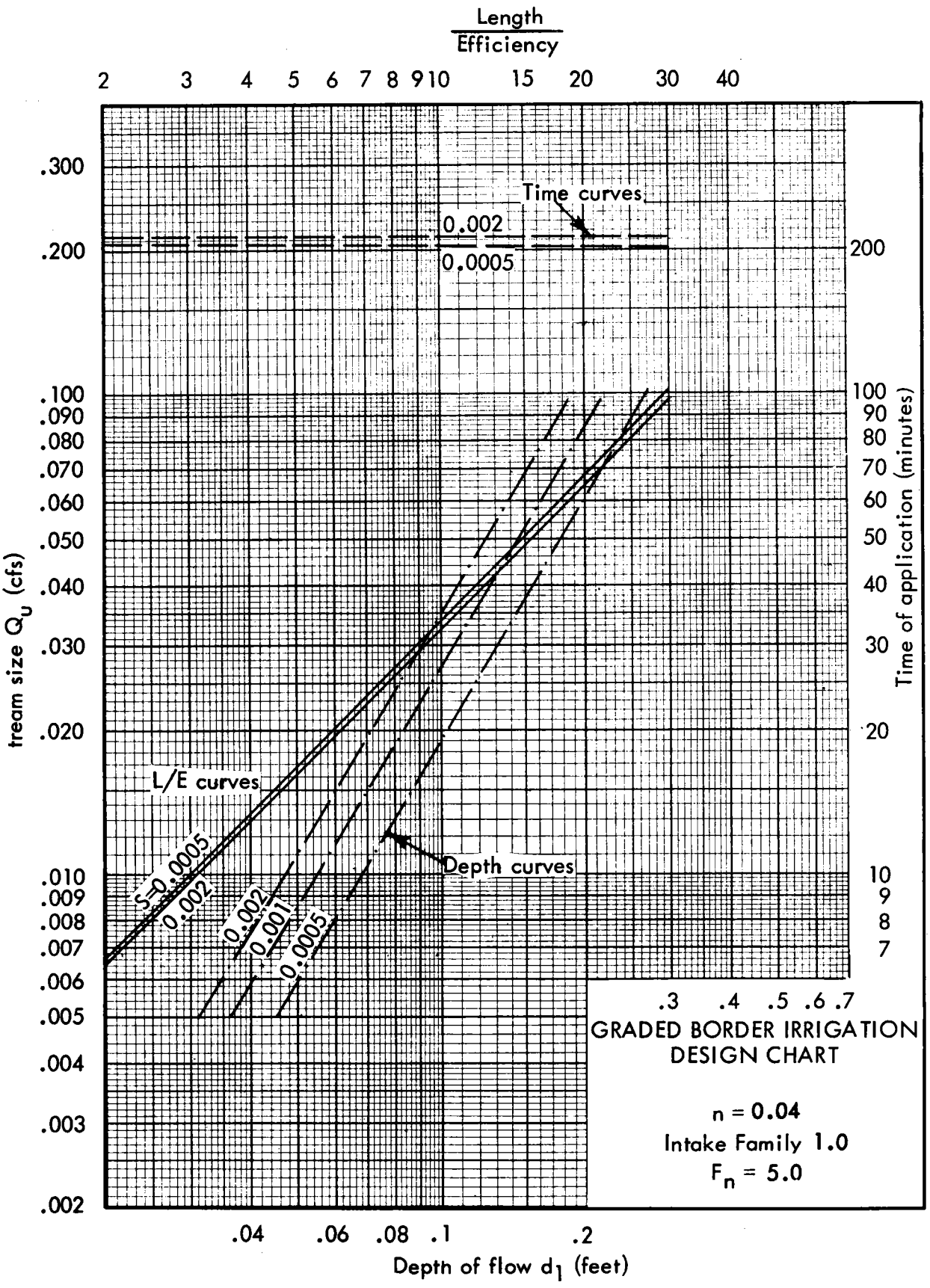

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
Time curves
0.001
0.0005
L/E curves
0.0005
0.001
Depth curves
0.001
0.0005
Stream size Q_u (cfs)
.300 .200 .100 .090 .080 .070 .060 .050 .040 .030 .020 .010 .009 .008 .007 .006 .005 .004 .003 .002
Time of application (minutes)
200 100 90 80 70 60 50 40 30 20 10 9 8 7
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.04
Intake Family 0.5
F_n = 3.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

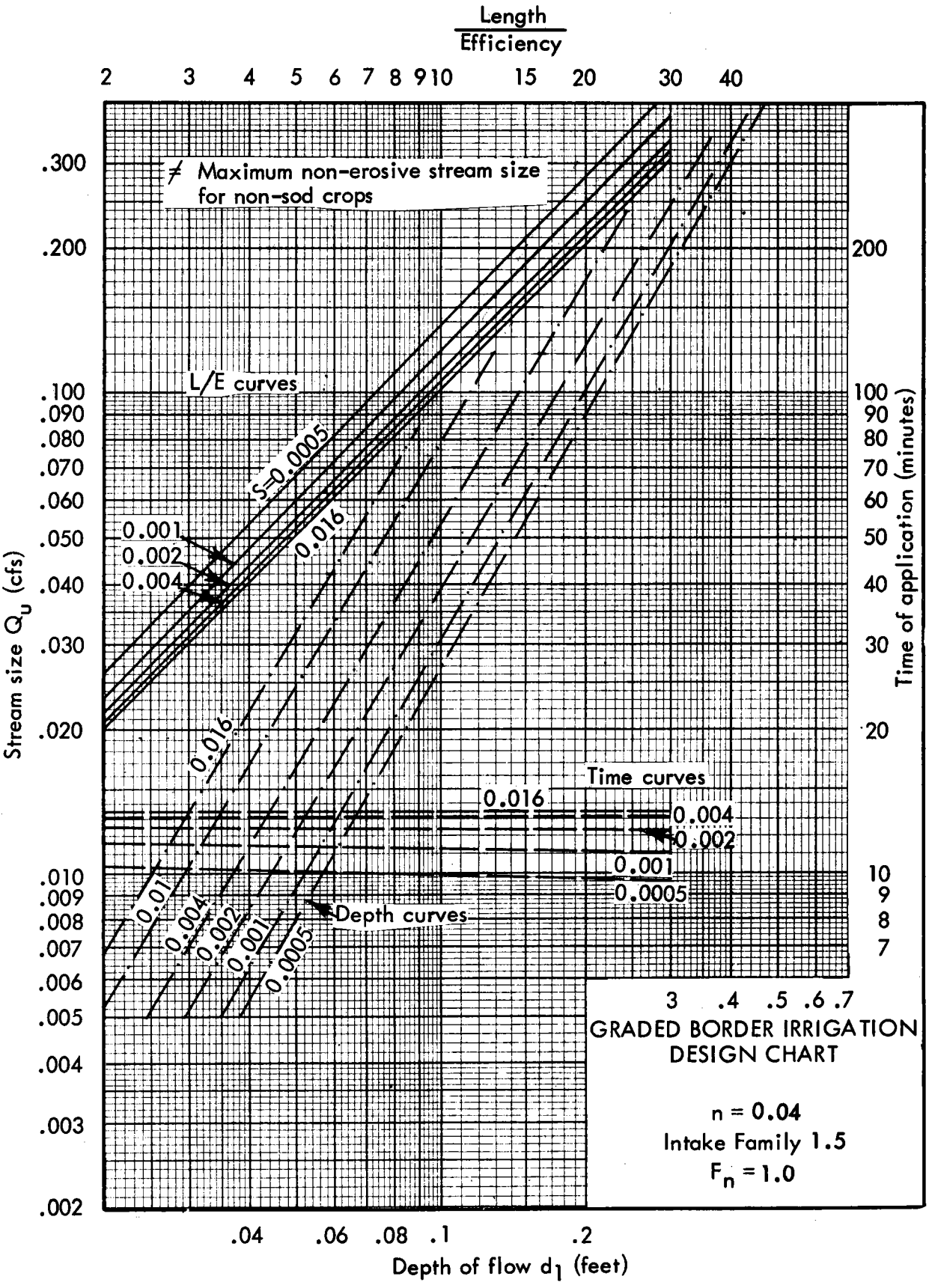

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
Maximum non-erosive stream size for non-sod crops
L/E curves
0.0005
0.001
0.002
0.008
Time curves
0.003
0.002
0.001
0.0005
Depth curves
0.008
0.004
0.002
0.001
0.0005
Stream size Q_u (cfs)
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Time of application (minutes)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.04
Intake Family 1.0
F_n = 1.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

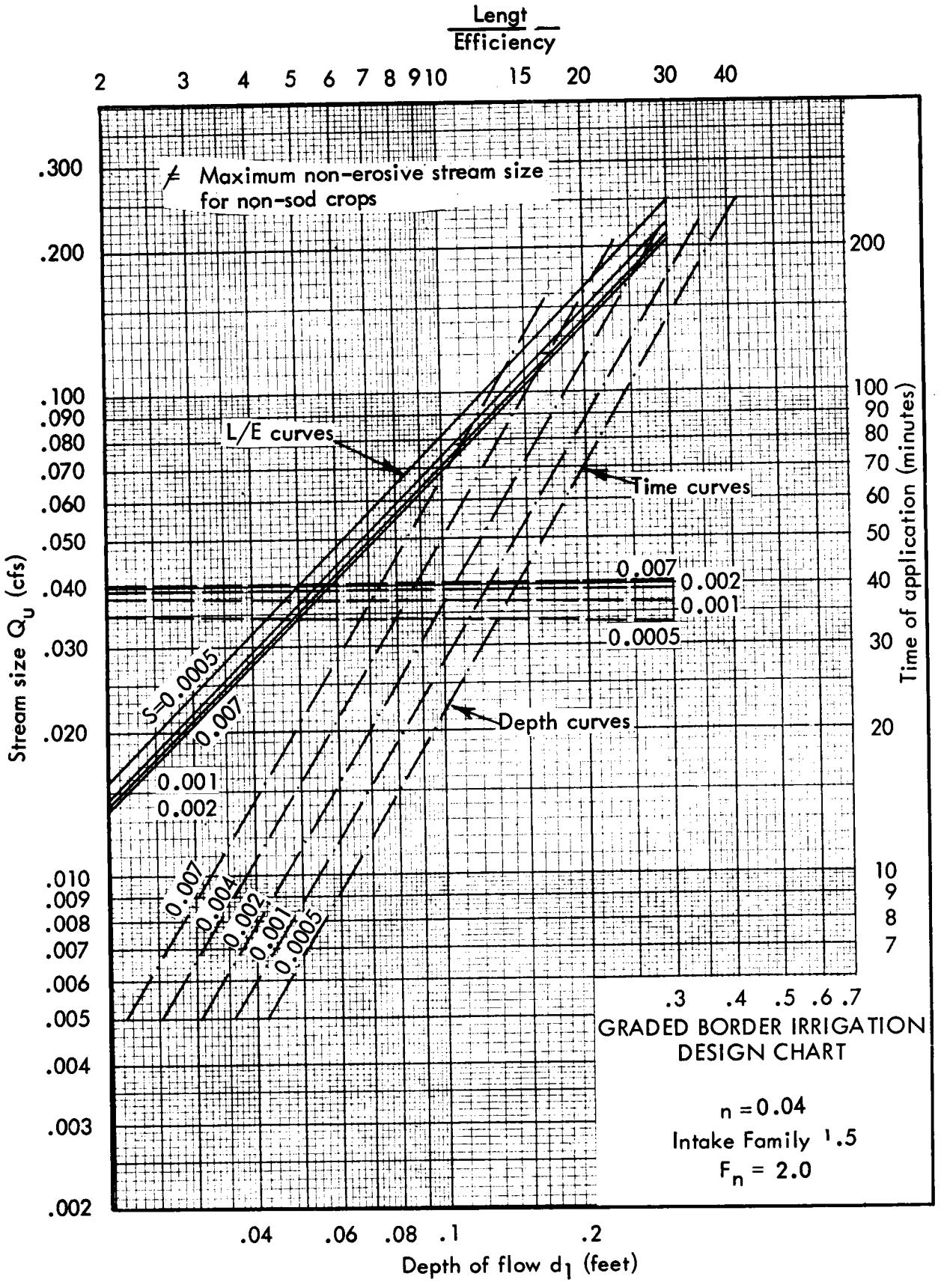

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
Time curves
0.003
0.001
0.0005
L/E curves
0.001
0.0005
0.003
Depth curves
0.003
0.002
0.001
0.0005
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION
DESIGN CHART
n = 0.04
Intake Family 1.0
F_n = 2.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

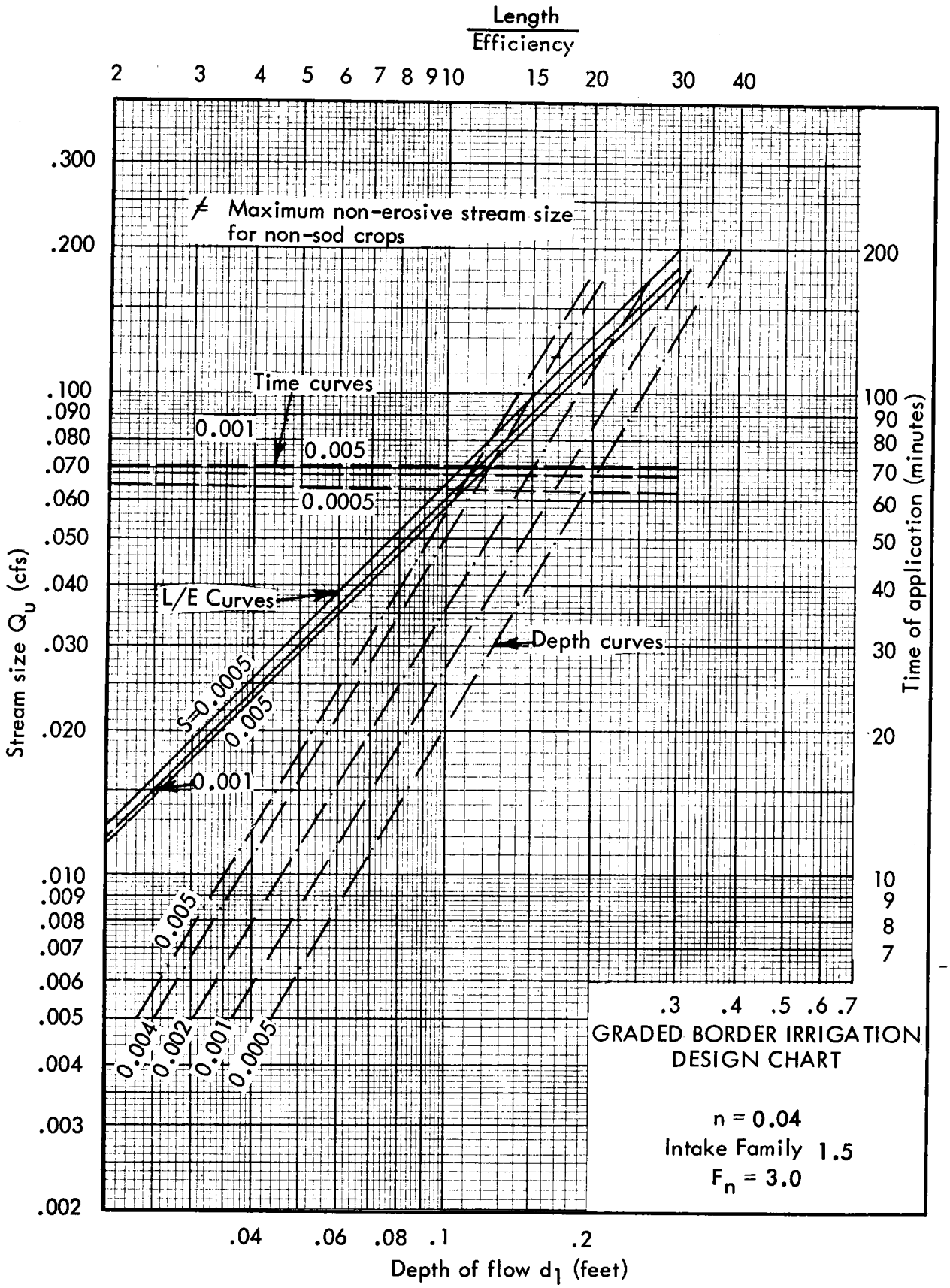

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
Time curves
0.002
0.0005
0.001
L/E curves
S=0.0005
0.002
0.002
0.001
0.0005
Depth curves
0.001
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION
DESIGN CHART
n = 0.04
Intake Family 1.0
F_n = 3.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

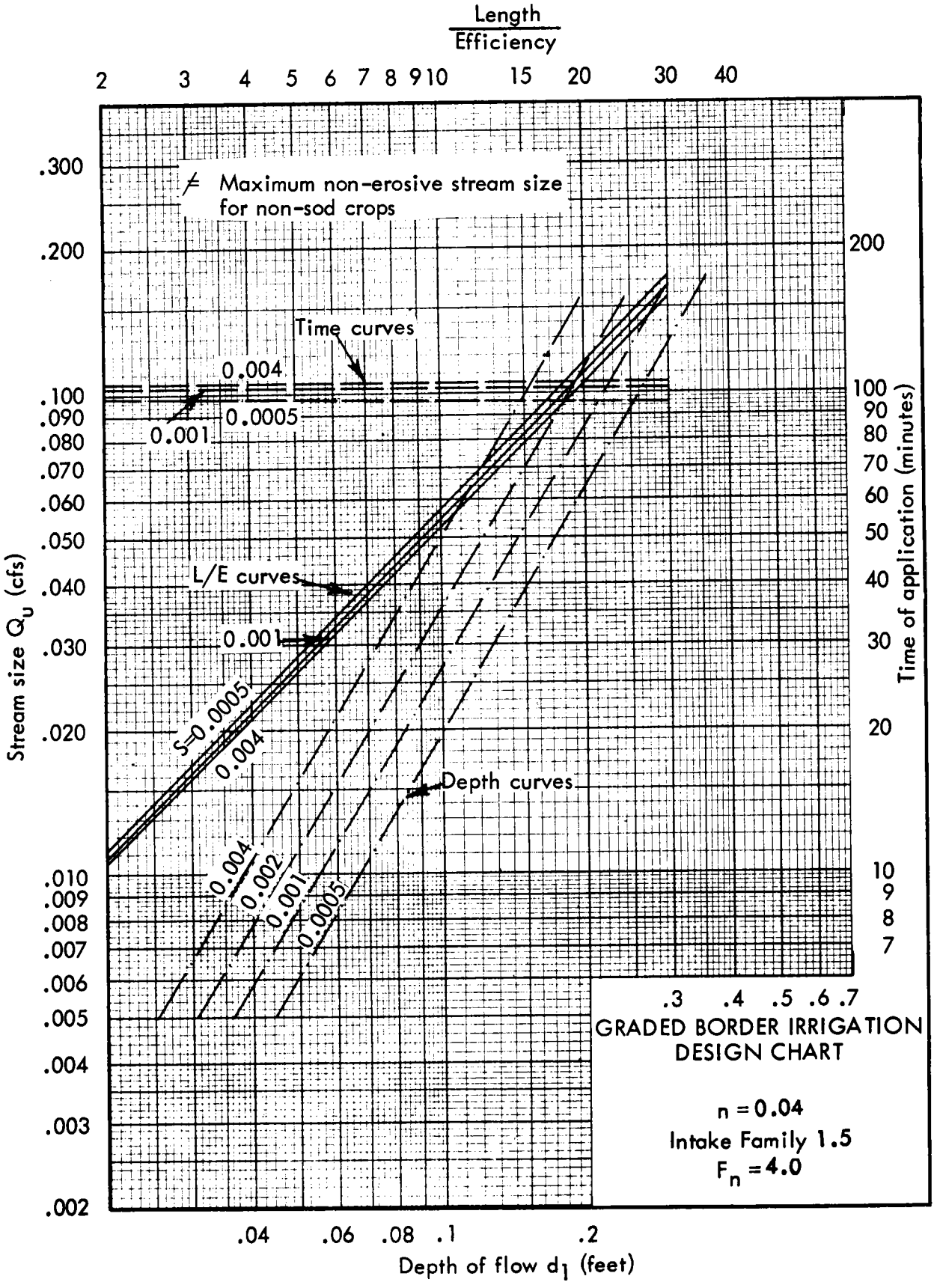

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
Time curves
0.002
0.001
0.0005
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
L/E curves
Depth curves
0.0005
0.002
0.001
0.0005
0.001
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.04
Intake Family 1.0
F_n = 4.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

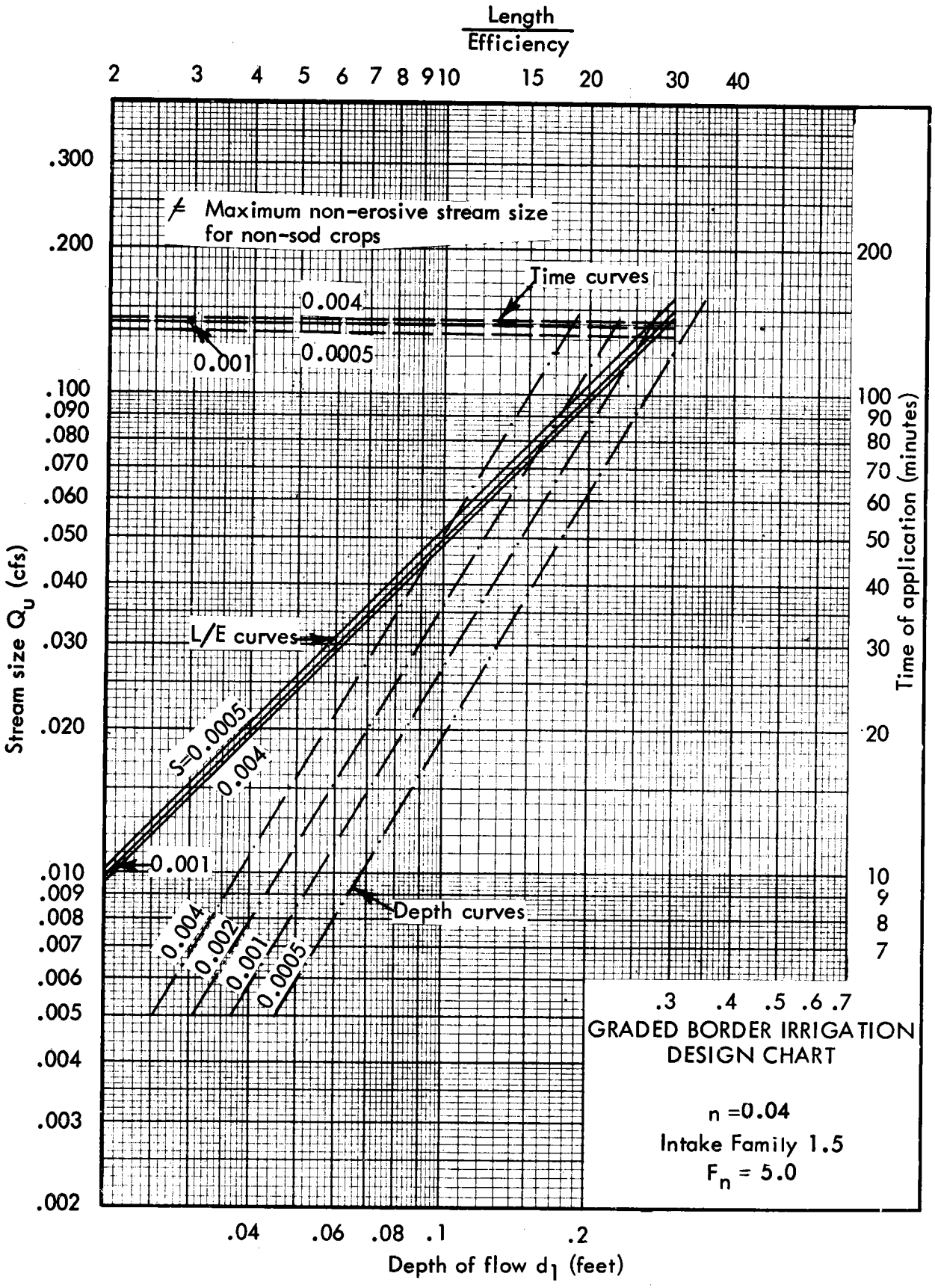

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
Time curves
0.002
0.0005
L/E curves
S=0.0005
0.002
0.002
0.001
0.0005
Depth curves
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
tream size Q_u (cfs)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.04
Intake Family 1.0
F_n = 5.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

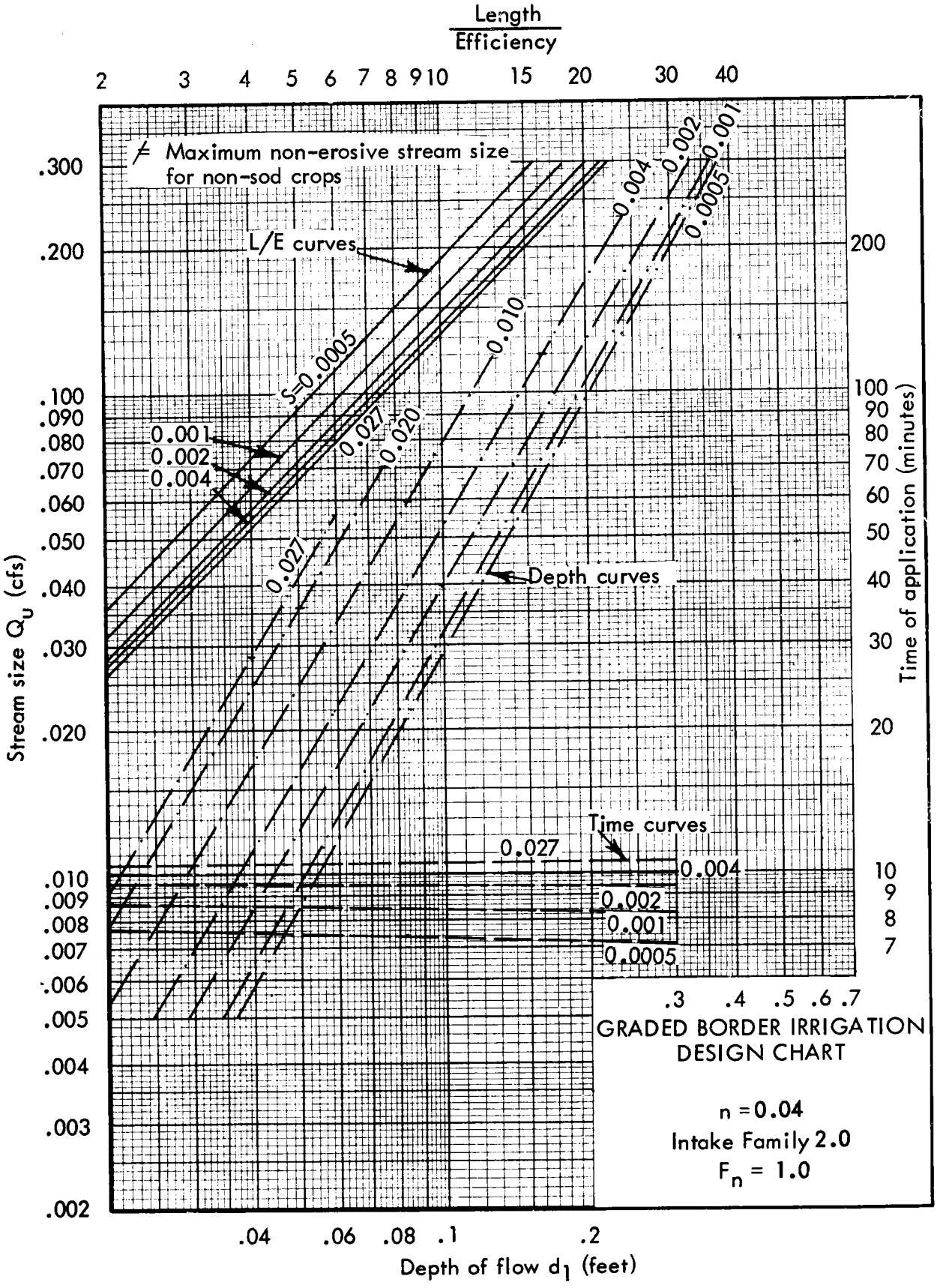

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
≠ Maximum non-erosive stream size for non-sod crops
L/E curves
S=0.0005
0.001
0.002
0.004
0.016
0.016
Time curves
0.016
0.004
0.002
0.001
0.0005
0.01
0.004
0.002
0.001
0.0005
Depth curves
Stream size Q_u (cfs)
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Time of application (minutes)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.04
Intake Family 1.5
F_n = 1.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

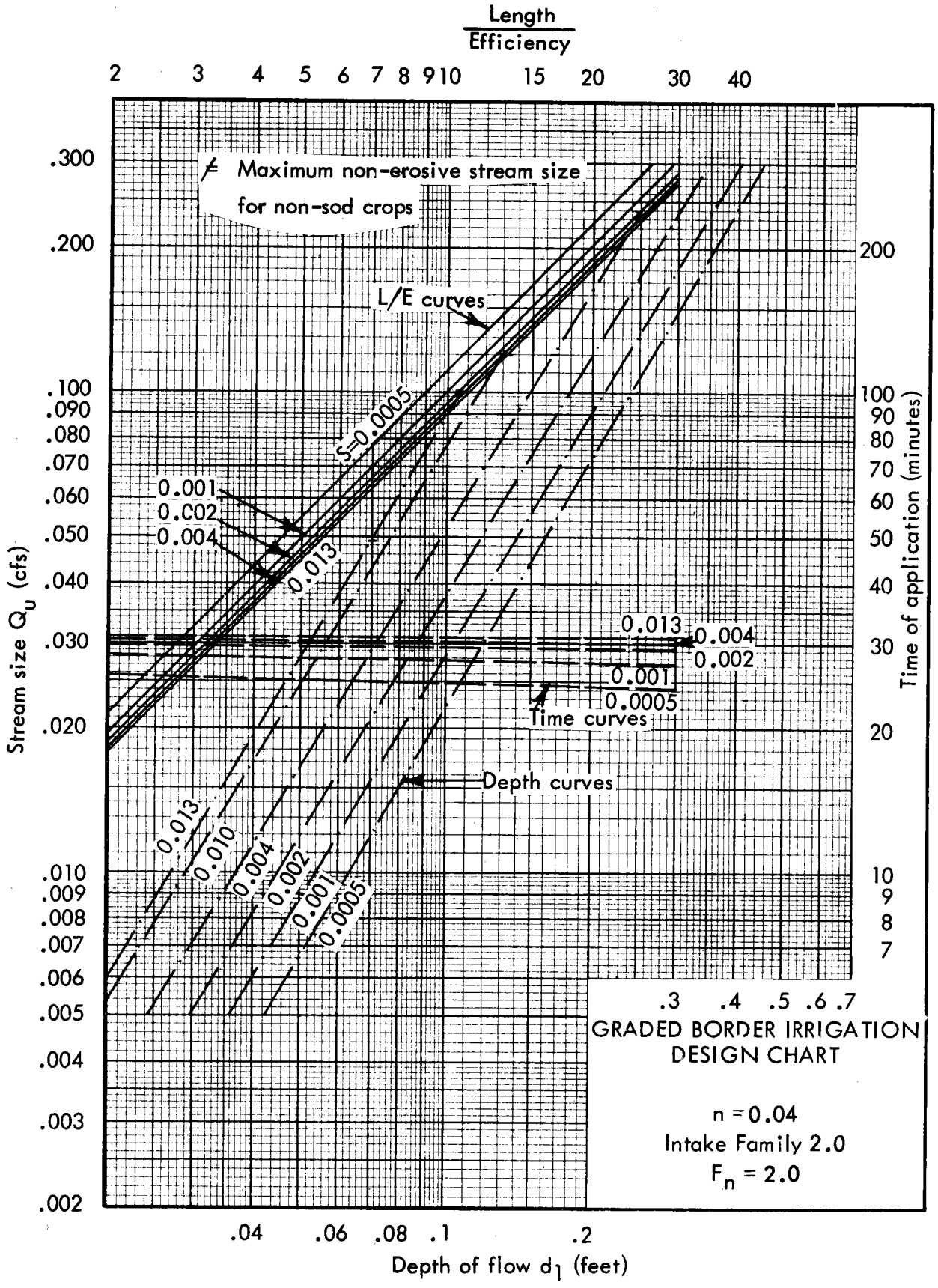

Lengt
Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
≠ Maximum non-erosive stream size for non-sod crops
L/E curves
Time curves
Depth curves
S=0.0005
0.007
0.001
0.002
0.0005
0.004
Stream size Q_u (cfs)
.300 .200 .100 .090 .080 .070 .060 .050 .040 .030 .020 .010 .009 .008 .007 .006 .005 .004 .003 .002
Time of application (minutes)
200 100 90 80 70 60 50 40 30 20 10 9 8 7
.04 .06 .08 .1 .2 .3 .4 .5 .6 .7
Depth of flow d_1 (feet)
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.04
Intake Family 1.5
F_n = 2.0

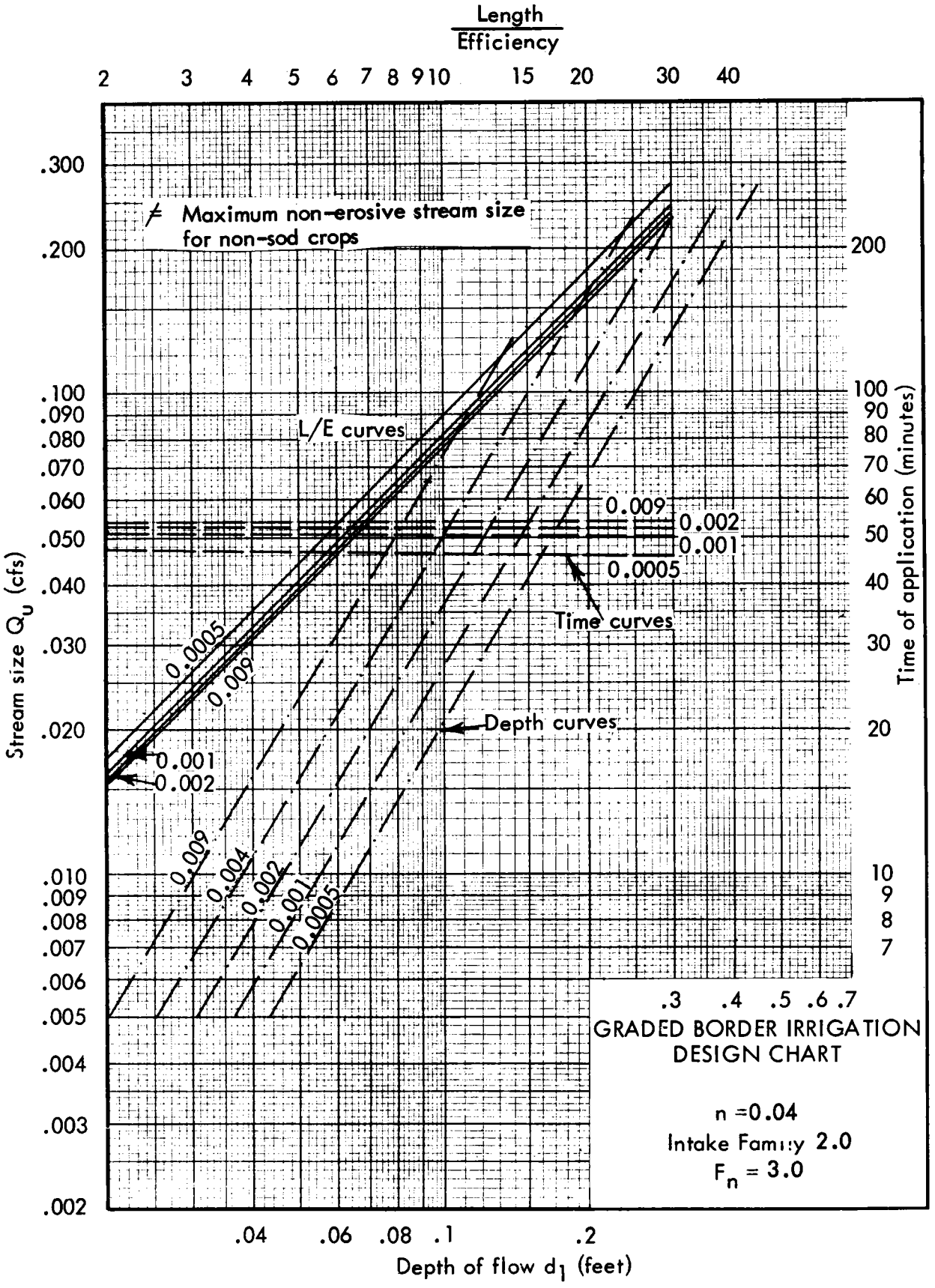

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
≠ Maximum non-erosive stream size for non-sod crops
Time curves
0.001
0.005
0.0005
L/E Curves
Depth curves
S=0.0005
0.005
0.001
0.005
0.004
0.002
0.001
0.0005
Stream size Q_u (cfs)
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Time of application (minutes)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.04
Intake Family 1.5
F_n = 3.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

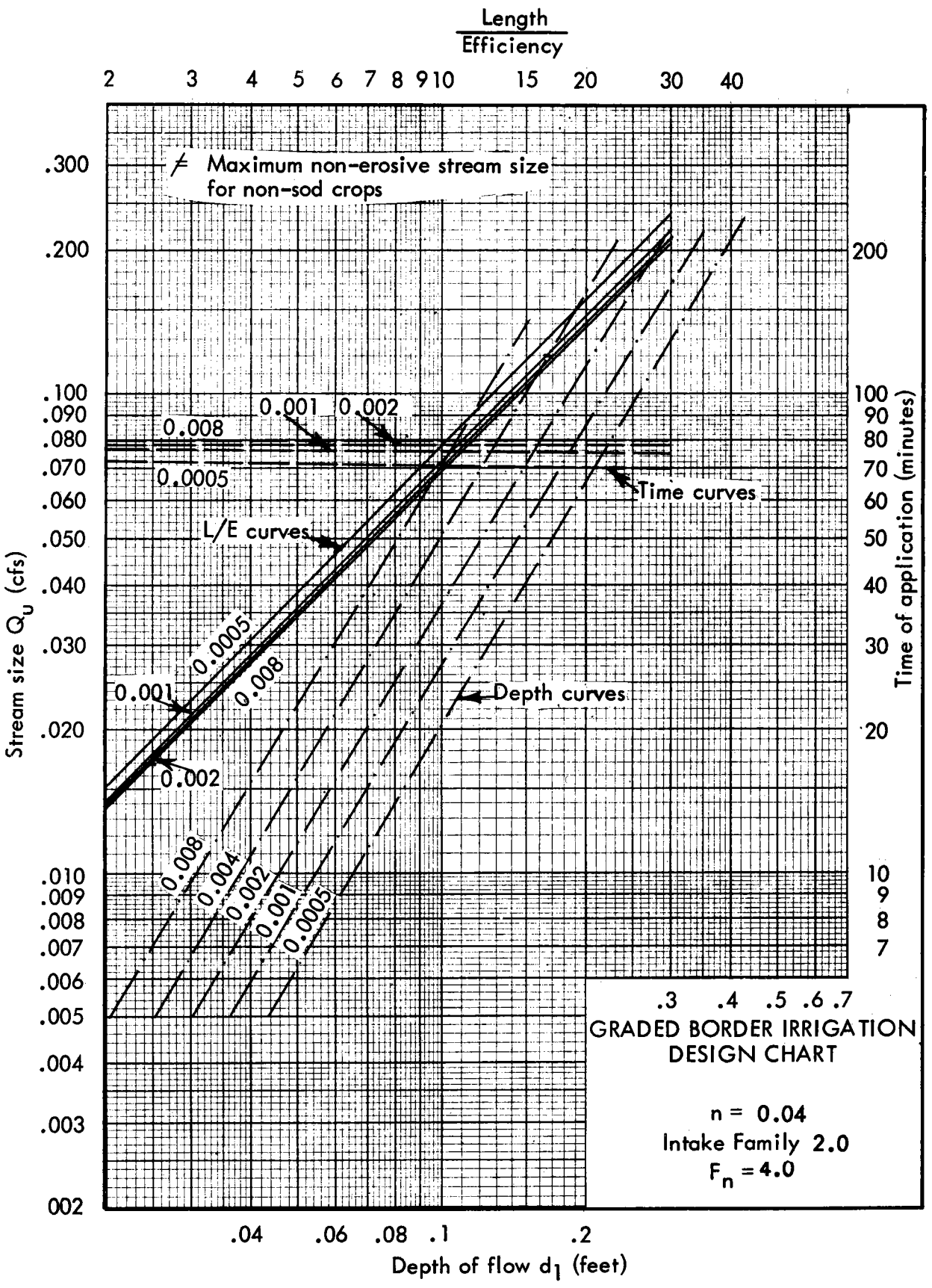

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
Maximum non-erosive stream size for non-sod crops
Time curves
0.004
0.0005
0.001
L/E curves
0.001
S=0.0005
0.004
Depth curves
0.004
0.002
0.001
0.0005
Stream size Q_u (cfs)
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Time of application (minutes)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.04
Intake Family 1.5
F_n = 4.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

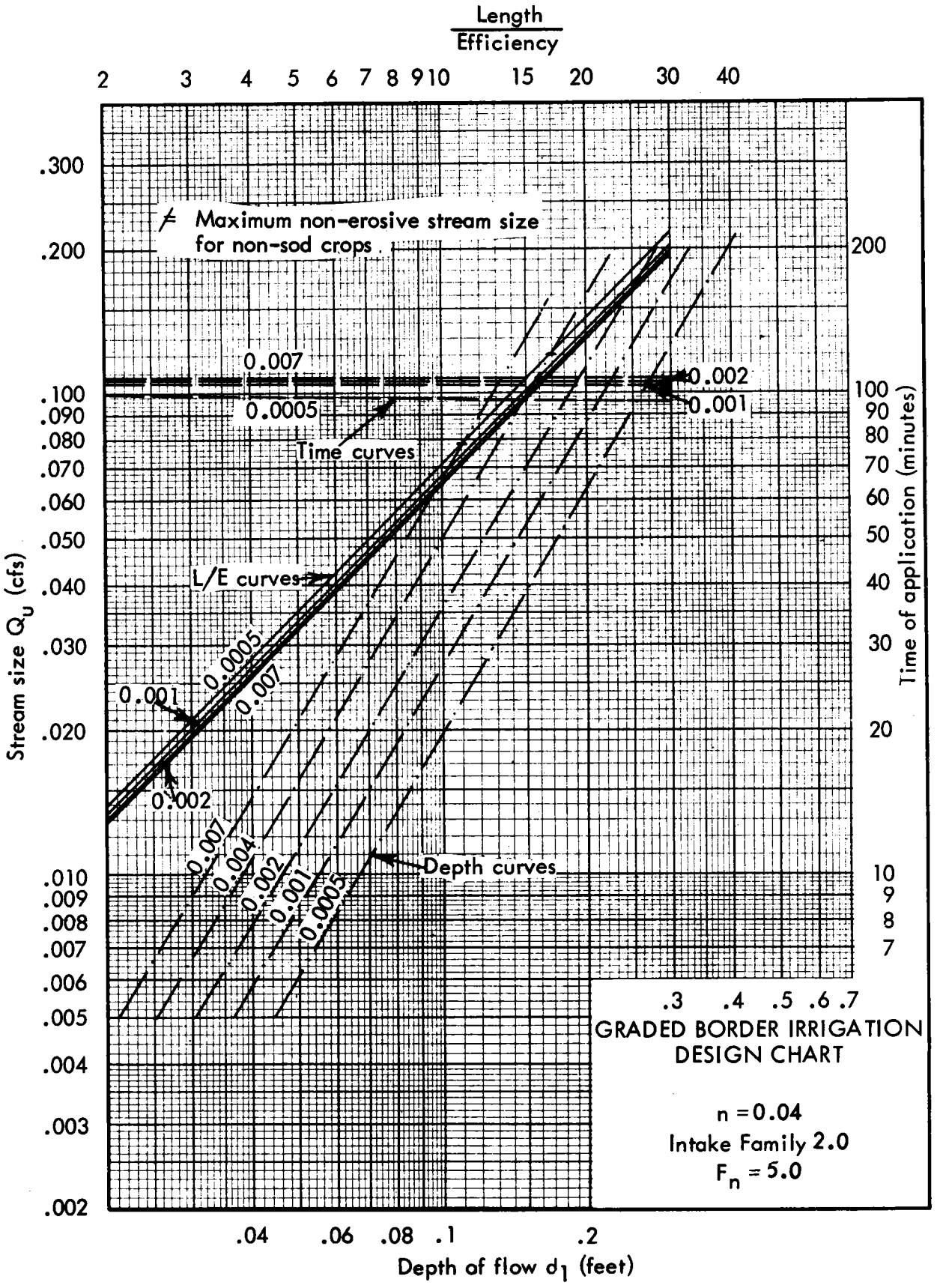

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
Maximum non-erosive stream size for non-sod crops
Time curves
0.004
0.0005
0.001
L/E curves
S=0.0005
0.004
0.001
Depth curves
0.004
0.002
0.001
0.0005
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n =0.04
Intake Family 1.5
F_n = 5.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

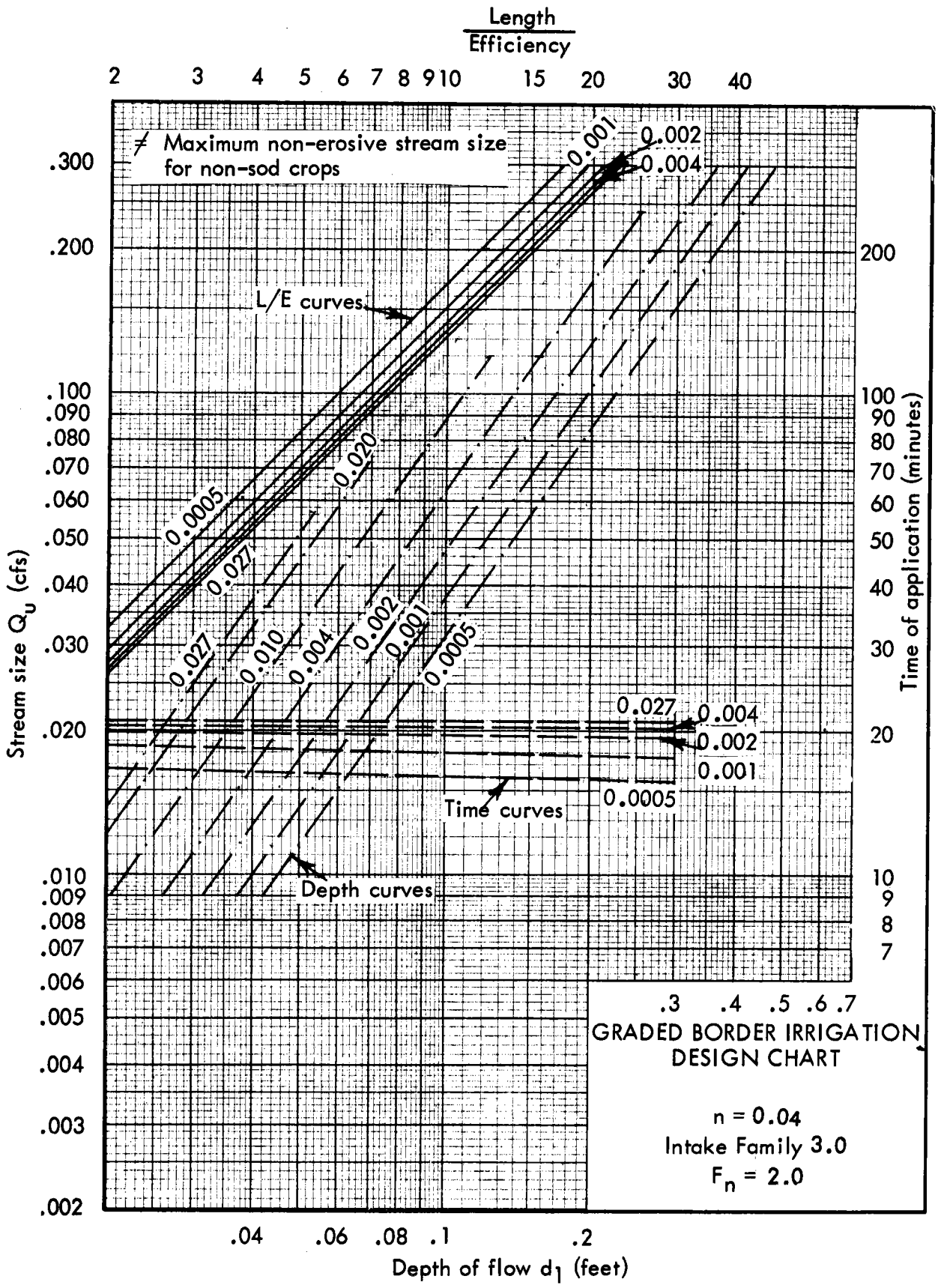

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
≠ Maximum non-erosive stream size for non-sod crops
L/E curves
S=0.0005
0.001
0.002
0.004
0.027
0.020
0.010
0.004
0.002
0.001
0.0005
Depth curves
Time curves
0.027
0.004
0.002
0.001
0.0005
Stream size Q_u (cfs)
.300 .200 .100 .090 .080 .070 .060 .050 .040 .030 .020 .010 .009 .008 .007 .006 .005 .004 .003 .002
Time of application (minutes)
200 100 90 80 70 60 50 40 30 20 10 9 8 7
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.04
Intake Family 2.0
F_n = 1.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

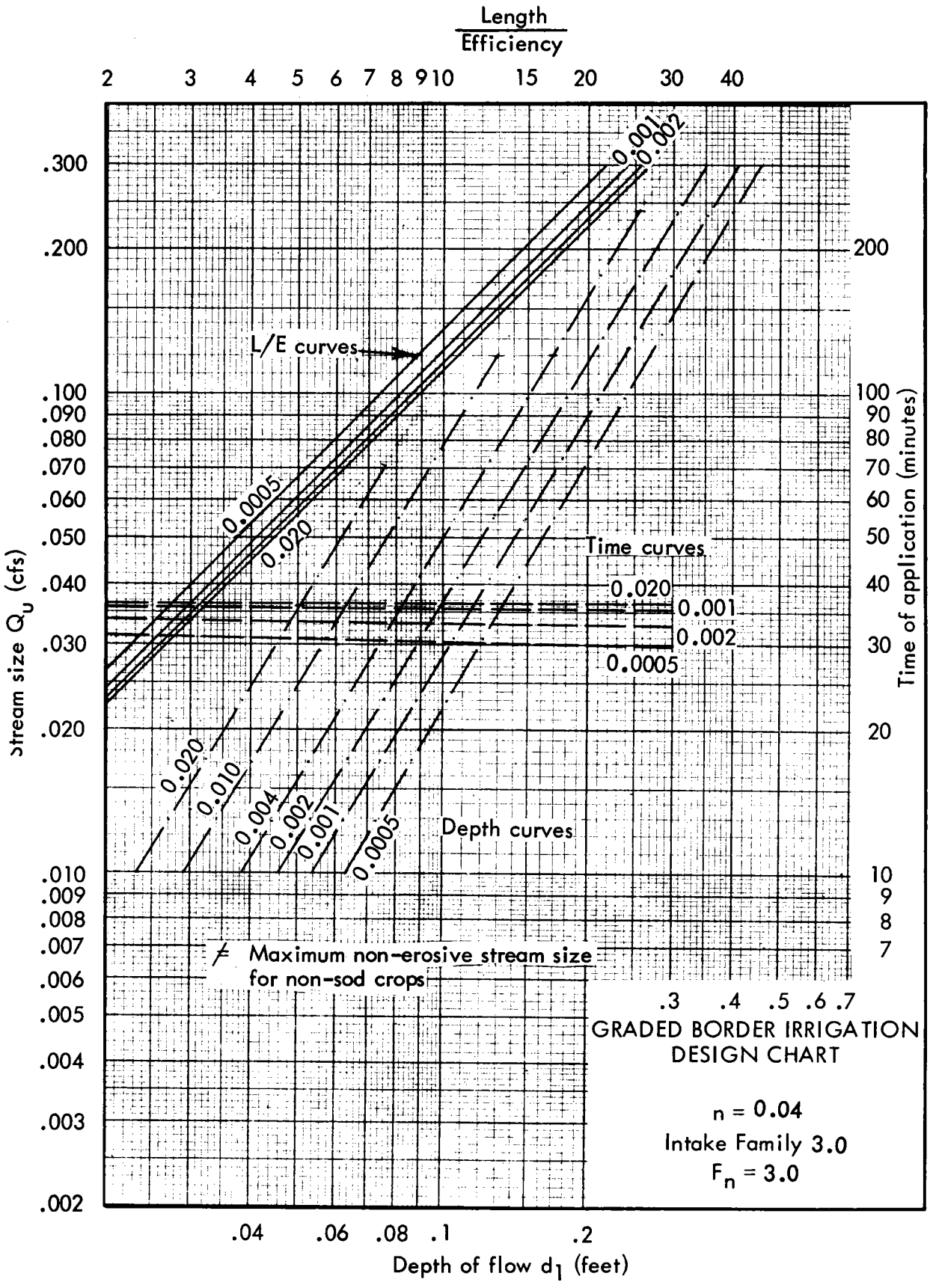

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
≠ Maximum non-erosive stream size for non-sod crops
L/E curves
S=0.0005
0.001
0.002
0.004
0.013
0.013
0.004
0.002
0.001
0.0005
Time curves
Depth curves
0.013
0.010
0.004
0.002
0.001
0.0005
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.04
Intake Family 2.0
F_n = 2.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

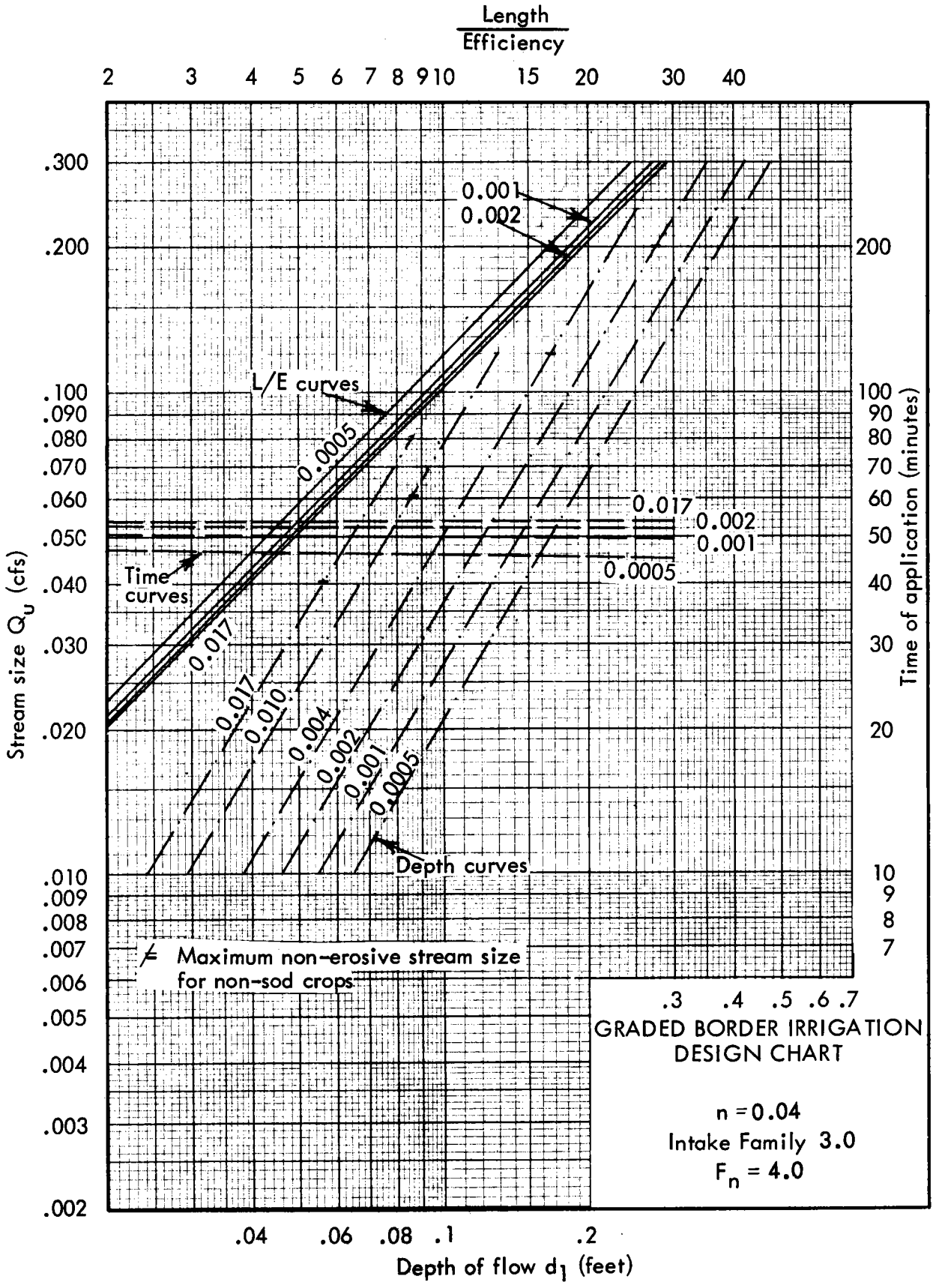

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
Maximum non-erosive stream size for non-sod crops
L/E curves
0.009
0.002
0.001
0.0005
Time curves
Depth curves
0.0005
0.009
0.001
0.002
0.009
0.004
0.002
0.001
0.0005
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.04
Intake Family 2.0
F_n = 3.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

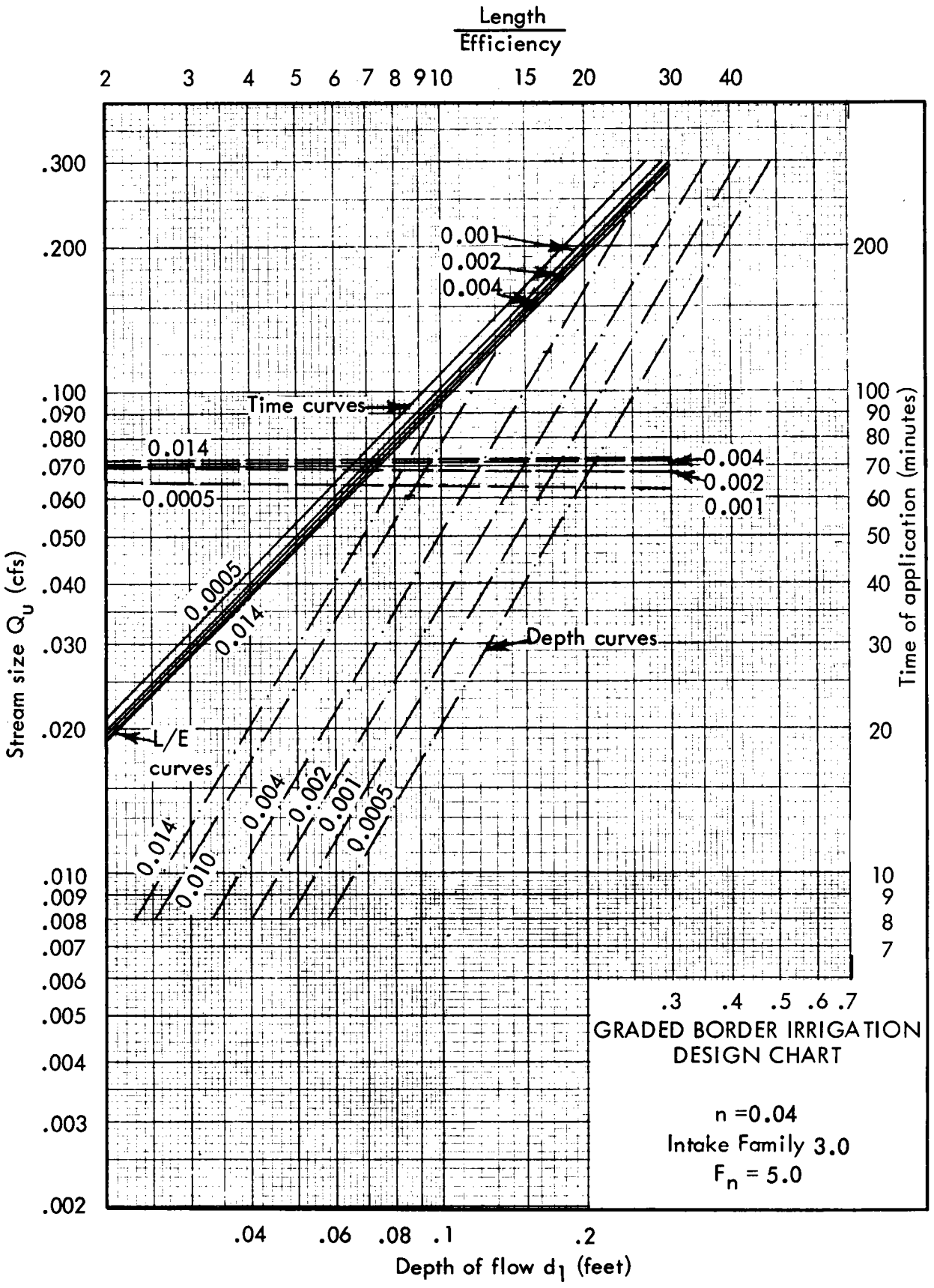

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
≠ Maximum non-erosive stream size for non-sod crops
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
002
200
100
90
80
70
60
50
40
30
20
10
9
8
7
0.008
0.001
0.002
0.0005
L/E curves
Time curves
Depth curves
0.0005
0.008
0.001
0.002
0.008
0.004
0.002
0.001
0.0005
Stream size Q_u (cfs)
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.04
Intake Family 2.0
F_n = 4.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

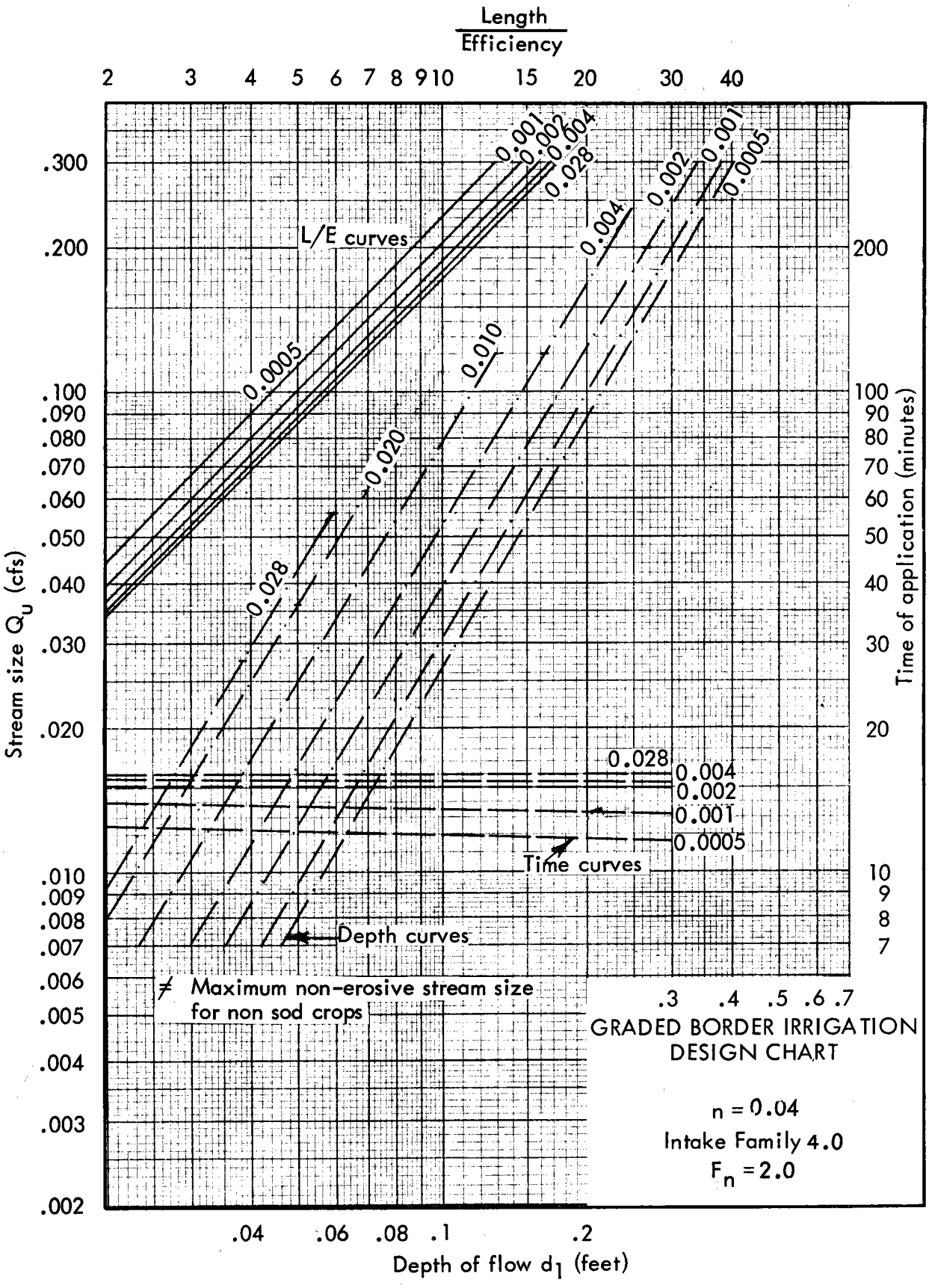

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
Maximum non-erosive stream size for non-sod crops
0.007
0.0005
0.002
0.001
Time curves
L/E curves
0.0005
0.007
0.001
0.002
0.007
0.004
0.002
0.001
0.0005
Depth curves
Stream size Q_u (cfs)
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Time of application (minutes)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.04
Intake Family 2.0
F_n = 5.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

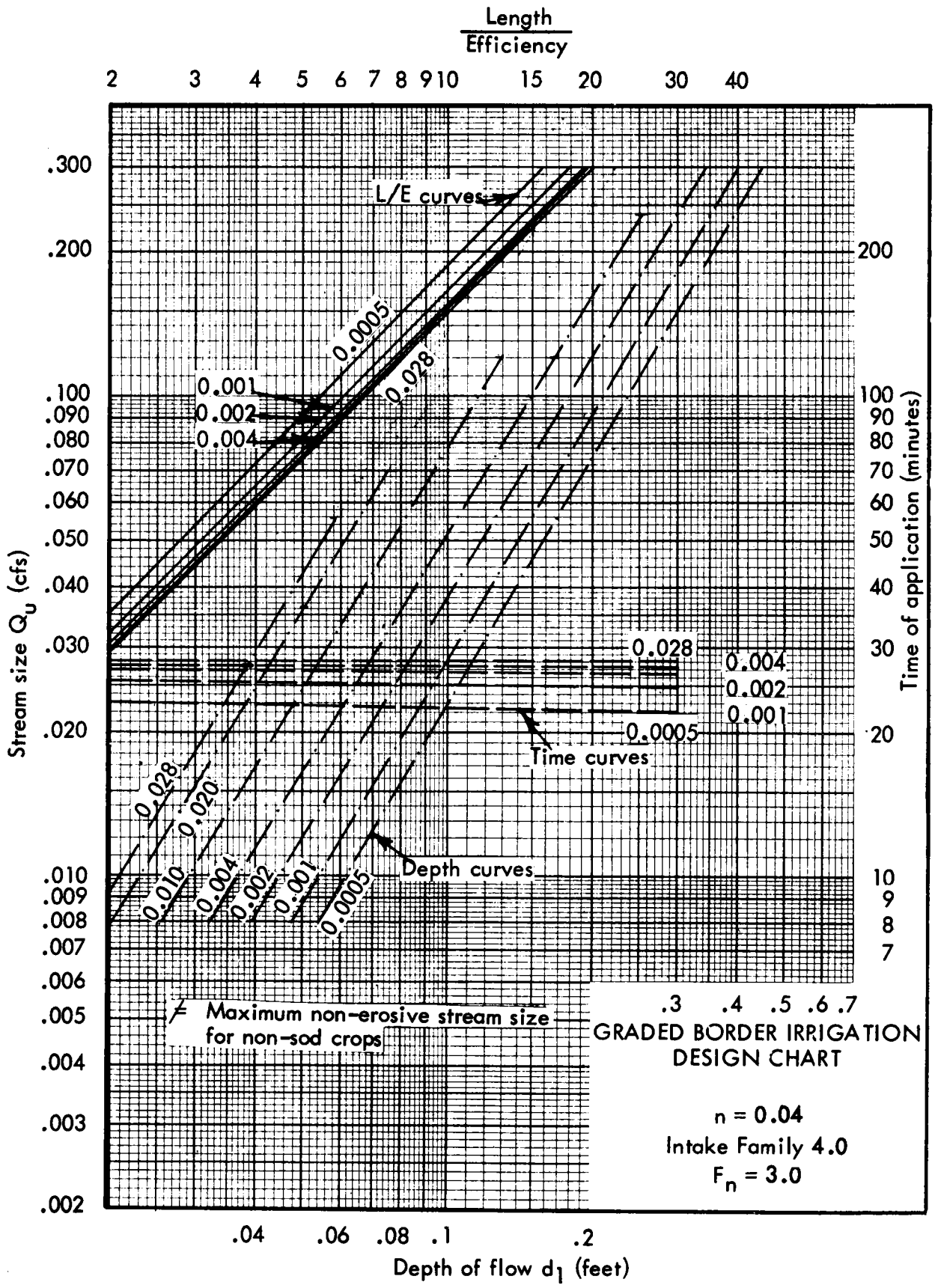

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
≠ Maximum non-erosive stream size for non-sod crops
0.001
0.002
0.004
L/E curves
0.0005
0.027
0.020
0.027
0.010
0.004
0.002
0.001
0.0005
0.027
0.004
0.002
0.001
0.0005
Time curves
Depth curves
Stream size Q_u (cfs)
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Time of application (minutes)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.04
Intake Family 3.0
F_n = 2.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

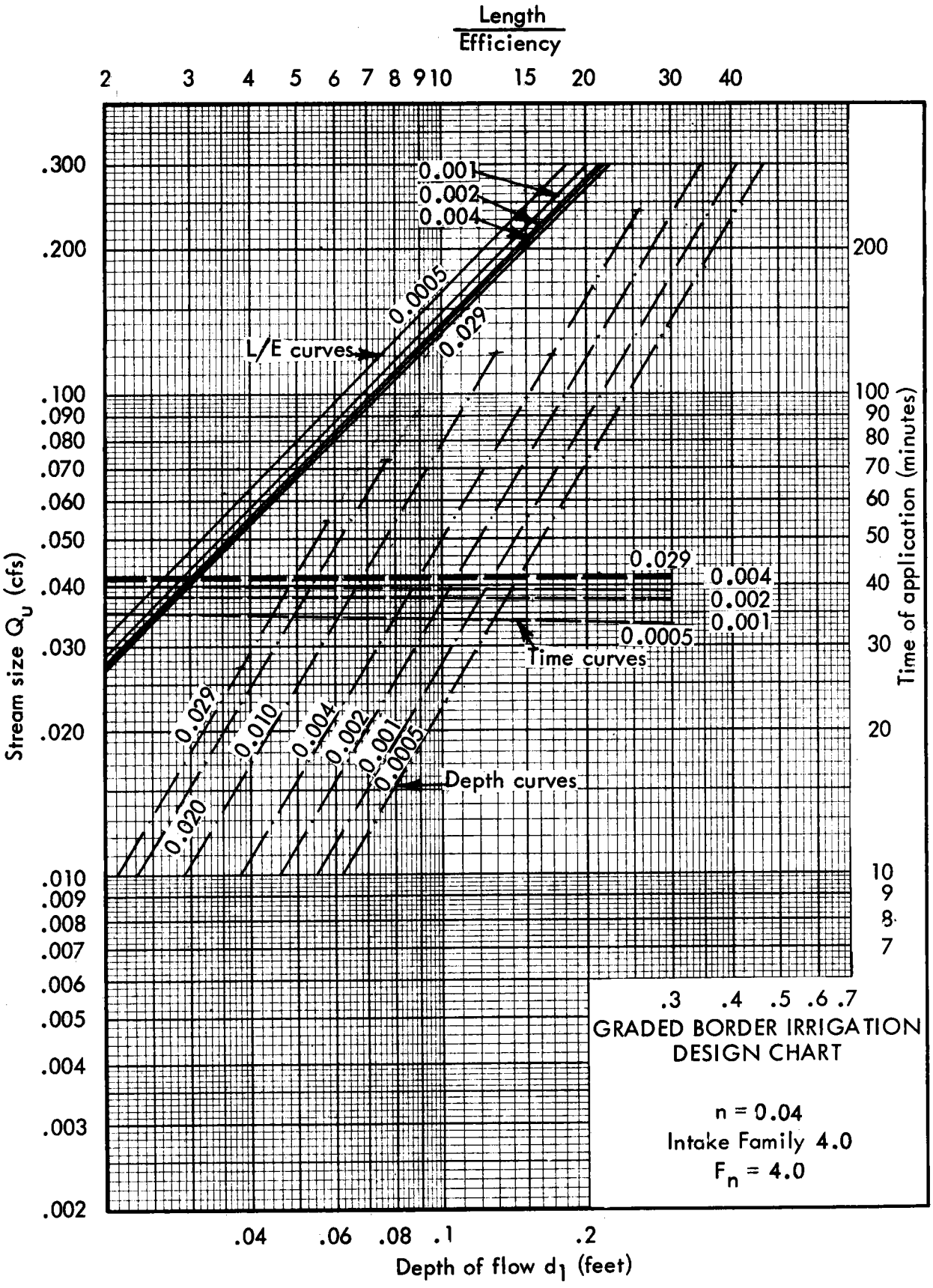

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
0.001
0.002
L/E curves
0.0005
0.020
Time curves
0.020
0.001
0.002
0.0005
0.020
0.010
0.004
0.002
0.001
0.0005
Depth curves
≠ Maximum non-erosive stream size for non-sod crops
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.04
Intake Family 3.0
F_n = 3.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

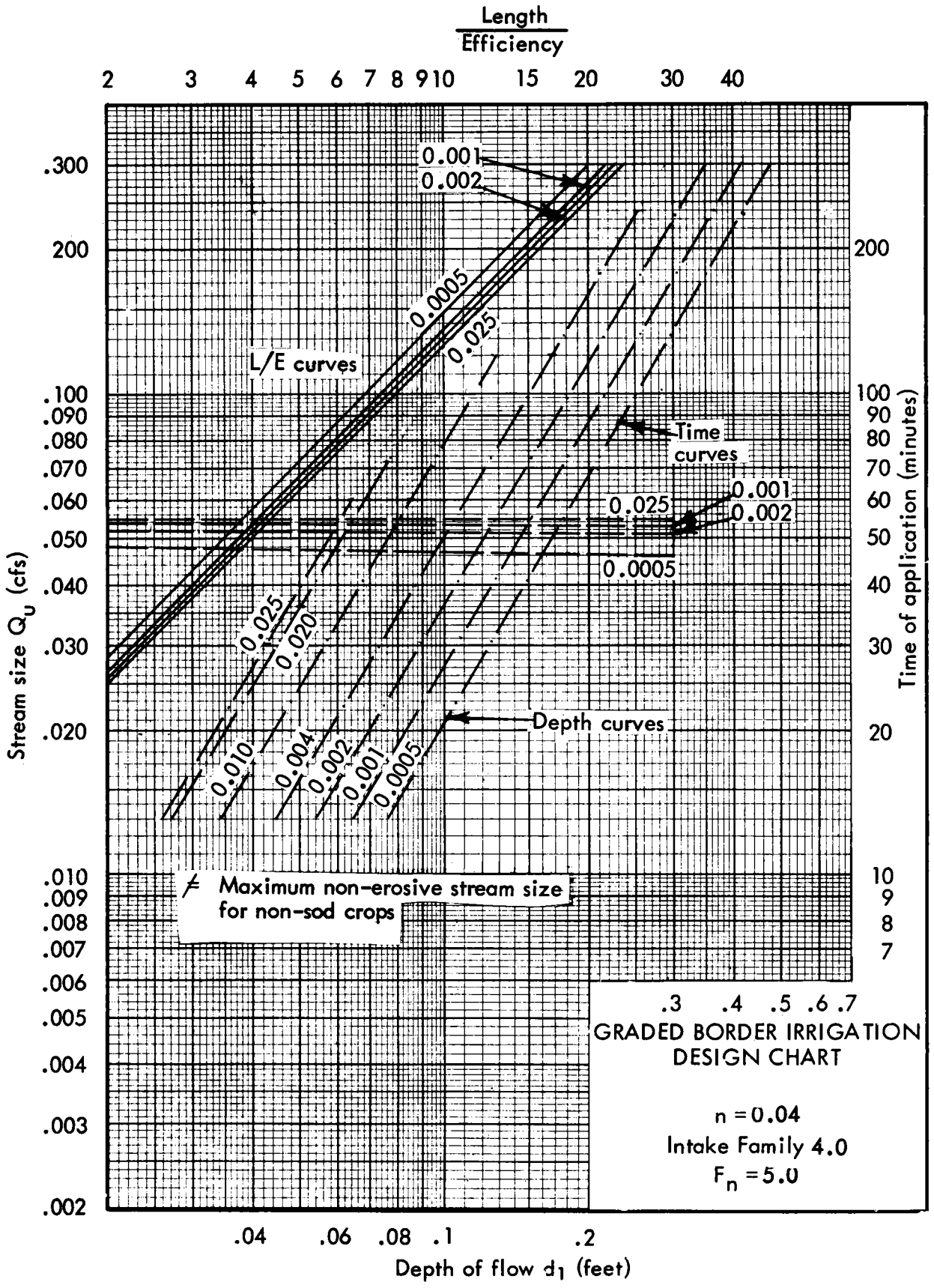

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
0.001
0.002
L/E curves
0.0005
0.017
0.002
0.001
0.0005
Time curves
0.017
0.017
0.010
0.004
0.002
0.001
0.0005
Depth curves
≠ Maximum non-erosive stream size for non-sod crops
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.04
Intake Family 3.0
F_n = 4.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

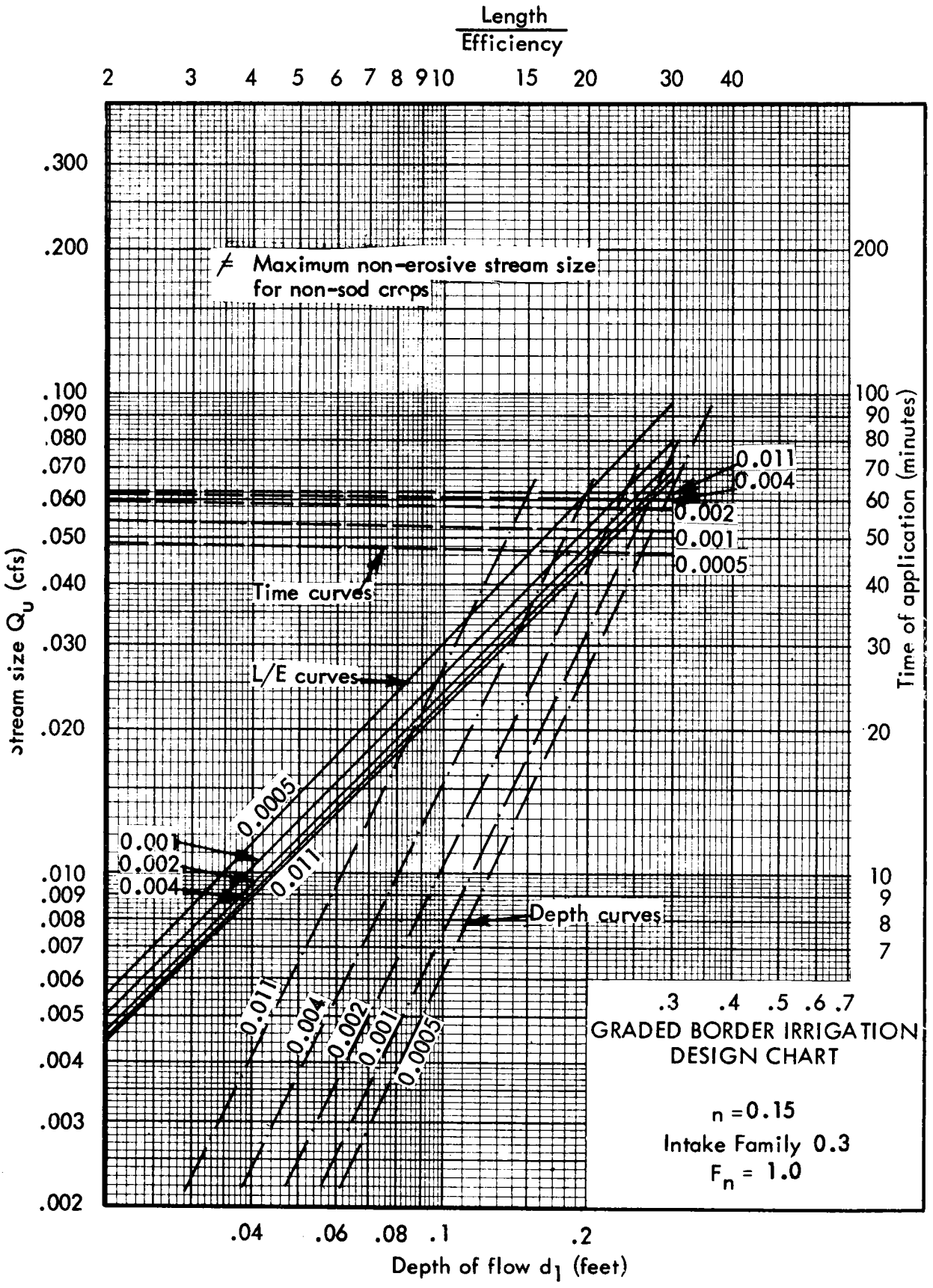

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
0.001
0.002
0.004
Time curves
0.014
0.0005
0.004
0.002
0.001
0.0005
0.014
Depth curves
L/E curves
0.014
0.010
0.004
0.002
0.001
0.0005
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n =0.04
Intake Family 3.0
F_n = 5.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

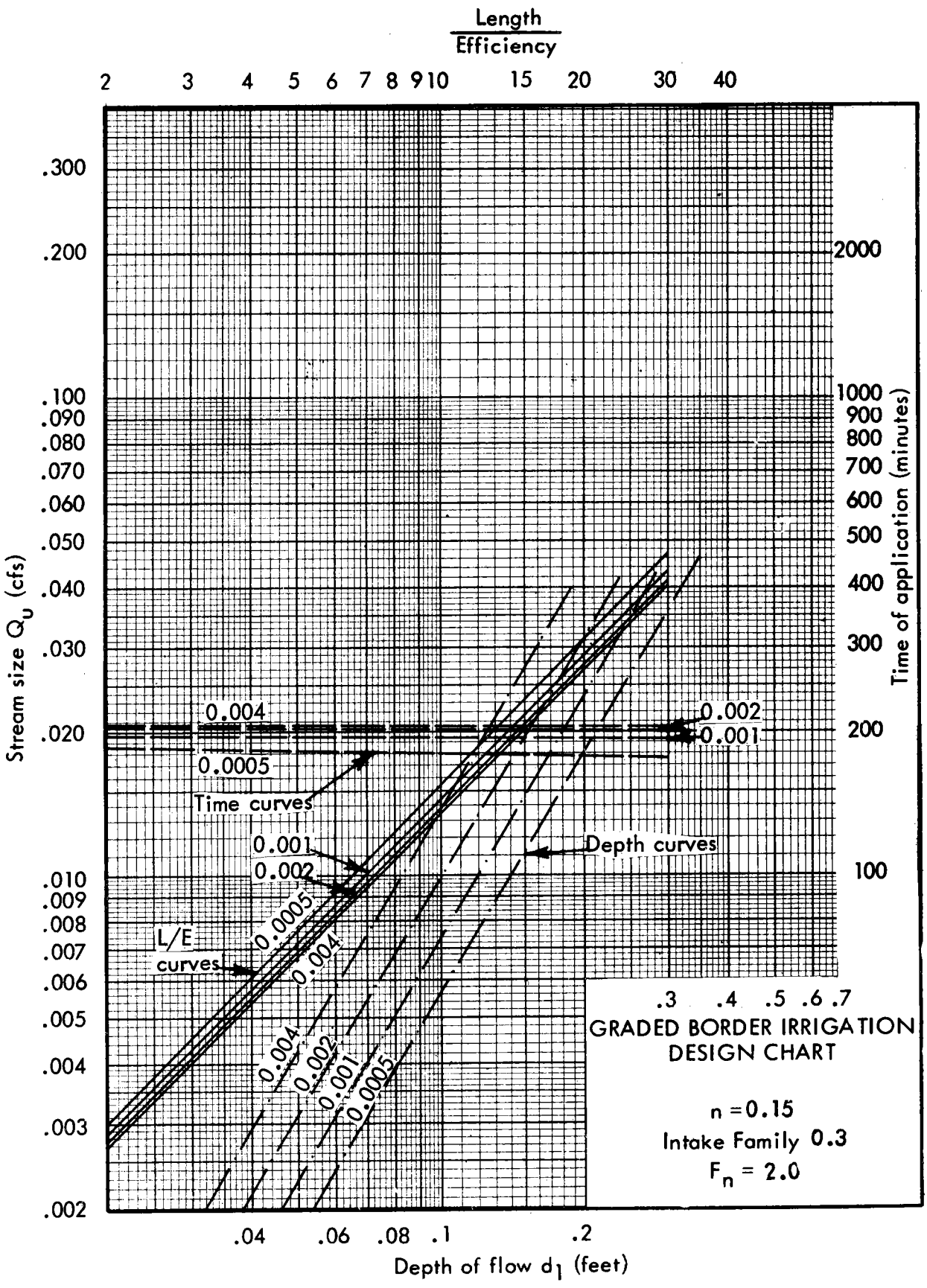

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
L/E curves
0.001
0.002
0.004
0.028
0.004
0.002
0.001
0.0005
0.0005
0.010
0.020
0.028
0.028
0.004
0.002
0.001
0.0005
Time curves
Depth curves
≠ Maximum non-erosive stream size for non sod crops
Stream size Q_u (cfs)
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Time of application (minutes)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.04
Intake Family 4.0
F_n = 2.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

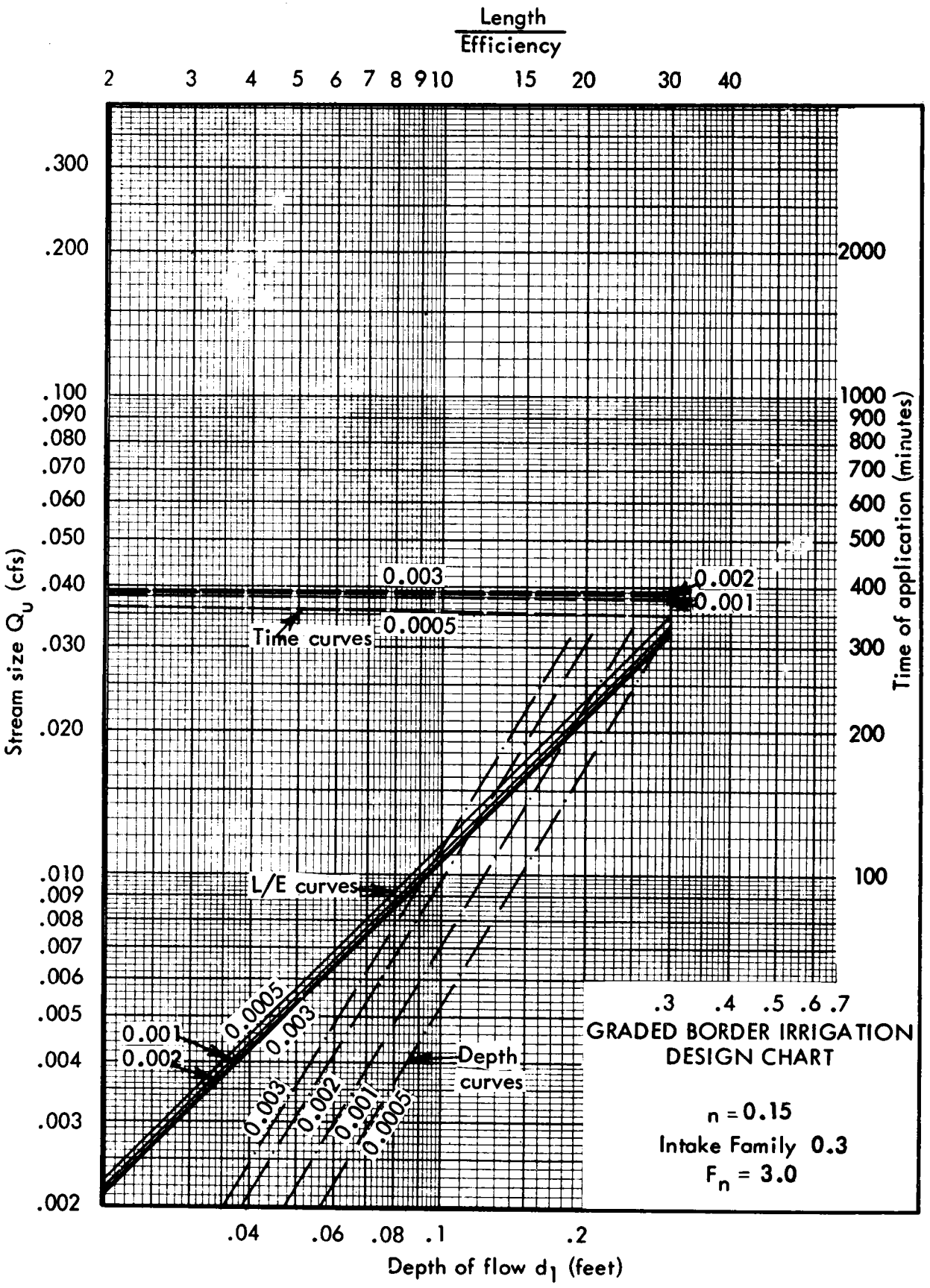

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
L/E curves
0.0005
0.028
0.001
0.002
0.004
0.028
0.004
0.002
0.001
0.0005
Time curves
0.028
0.020
0.010
0.004
0.002
0.001
0.0005
Depth curves
Maximum non-erosive stream size for non-sod crops
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.04
Intake Family 4.0
F_n = 3.0
Stream size Q_u (cfs)
.300 .200 .100 .090 .080 .070 .060 .050 .040 .030 .020 .010 .009 .008 .007 .006 .005 .004 .003 .002
Time of application (minutes)
200 100 90 80 70 60 50 40 30 20 10 9 8 7
.3 .4 .5 .6 .7
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

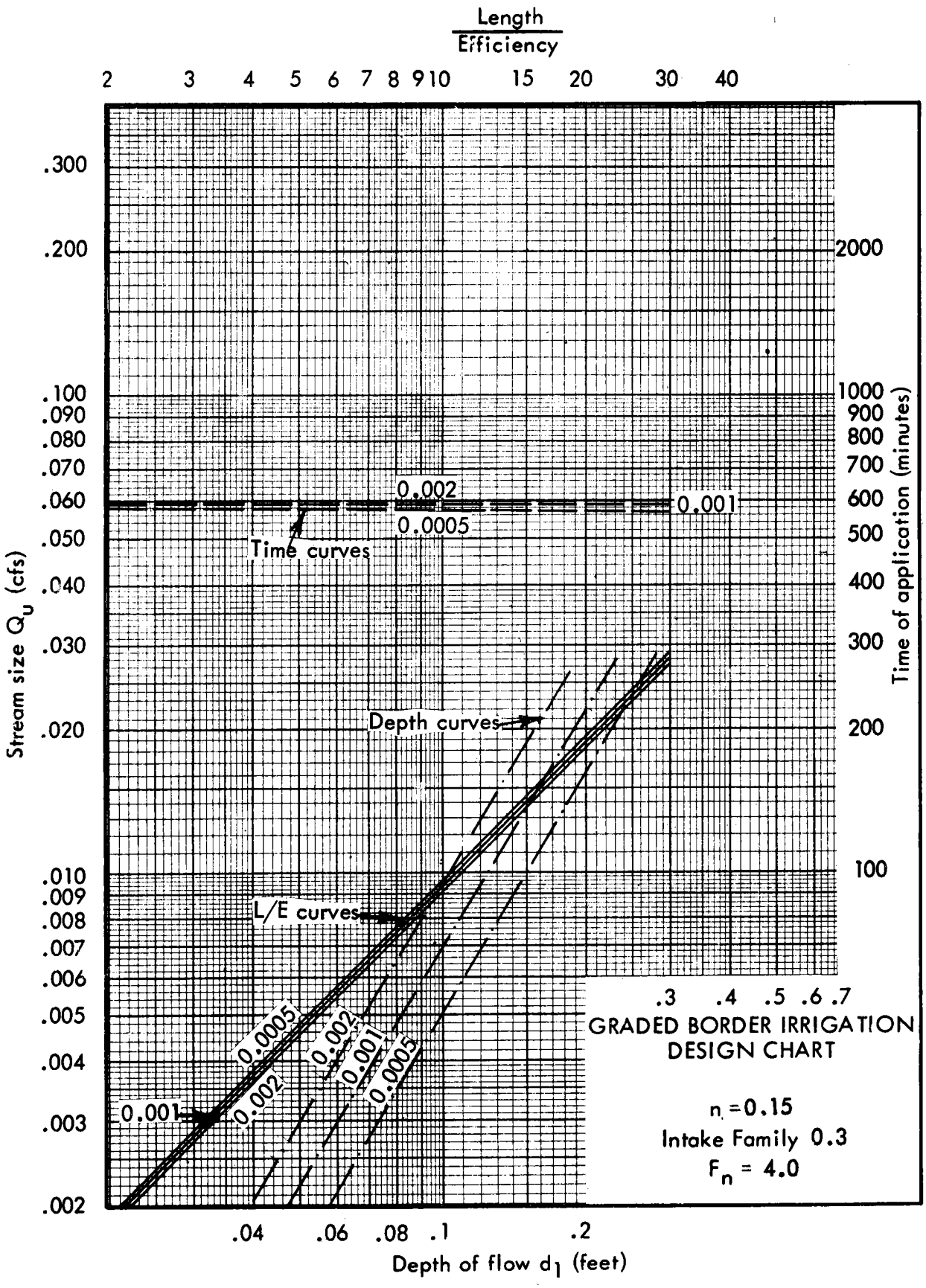

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
0.001
0.002
0.004
0.0005
0.029
L/E curves
0.029
0.004
0.002
0.001
0.0005
Time curves
0.029
0.020
0.010
0.004
0.002
0.001
0.0005
Depth curves
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION
DESIGN CHART
n = 0.04
Intake Family 4.0
F_n = 4.0

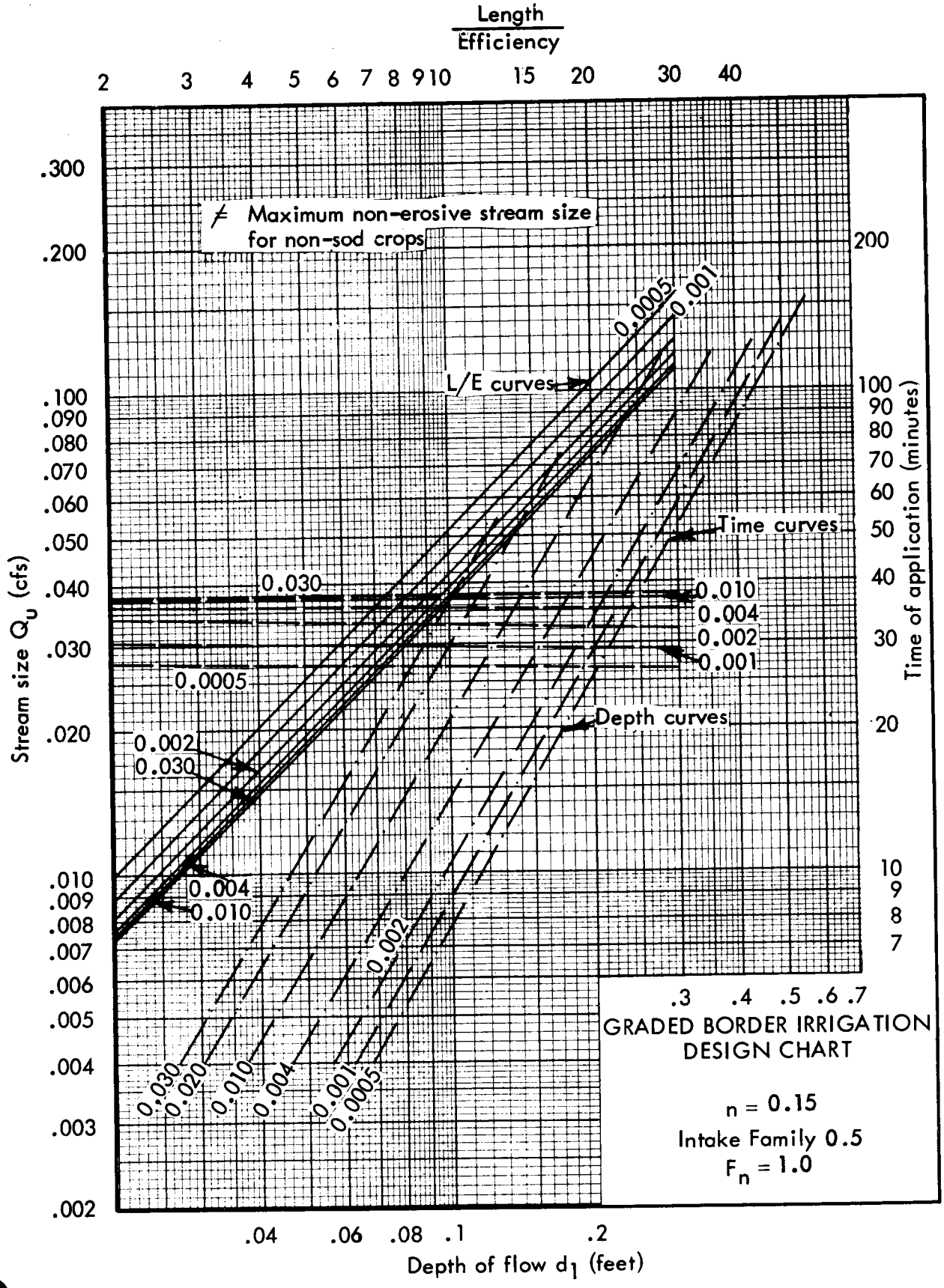

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)
.3 .4 .5 .6 .7
0.001
0.002
0.0005
0.025
L/E curves
Time curves
0.025
0.001
0.002
0.0005
0.025
0.020
0.010
0.004
0.002
0.001
0.0005
Depth curves
≠ Maximum non-erosive stream size for non-sod crops
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.04
Intake Family 4.0
F_n = 5.0

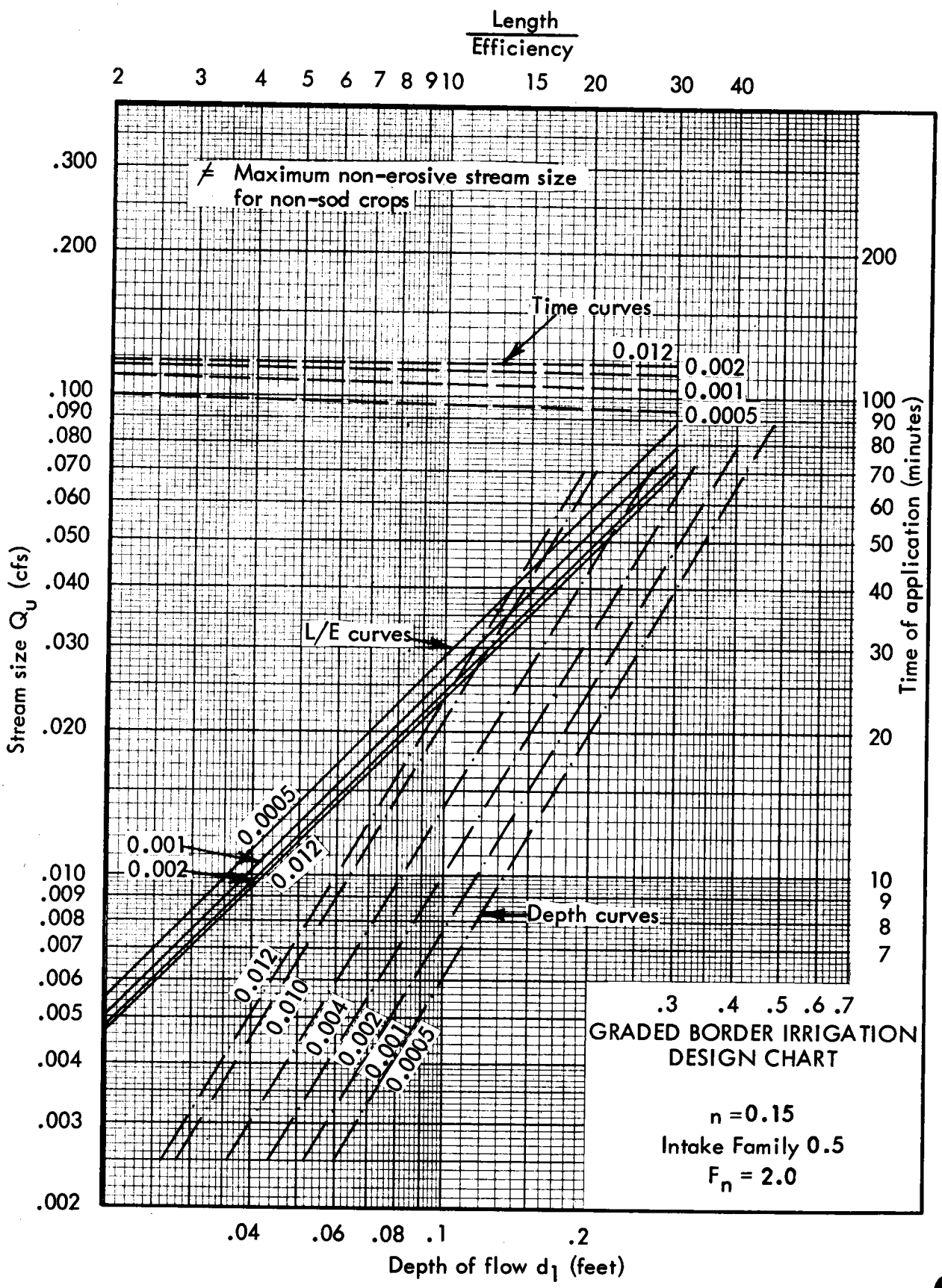

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
≠ Maximum non-erosive stream size for non-sod crops
Time curves
L/E curves
Depth curves
0.011
0.004
0.002
0.001
0.0005
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 0.3
F_n = 1.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

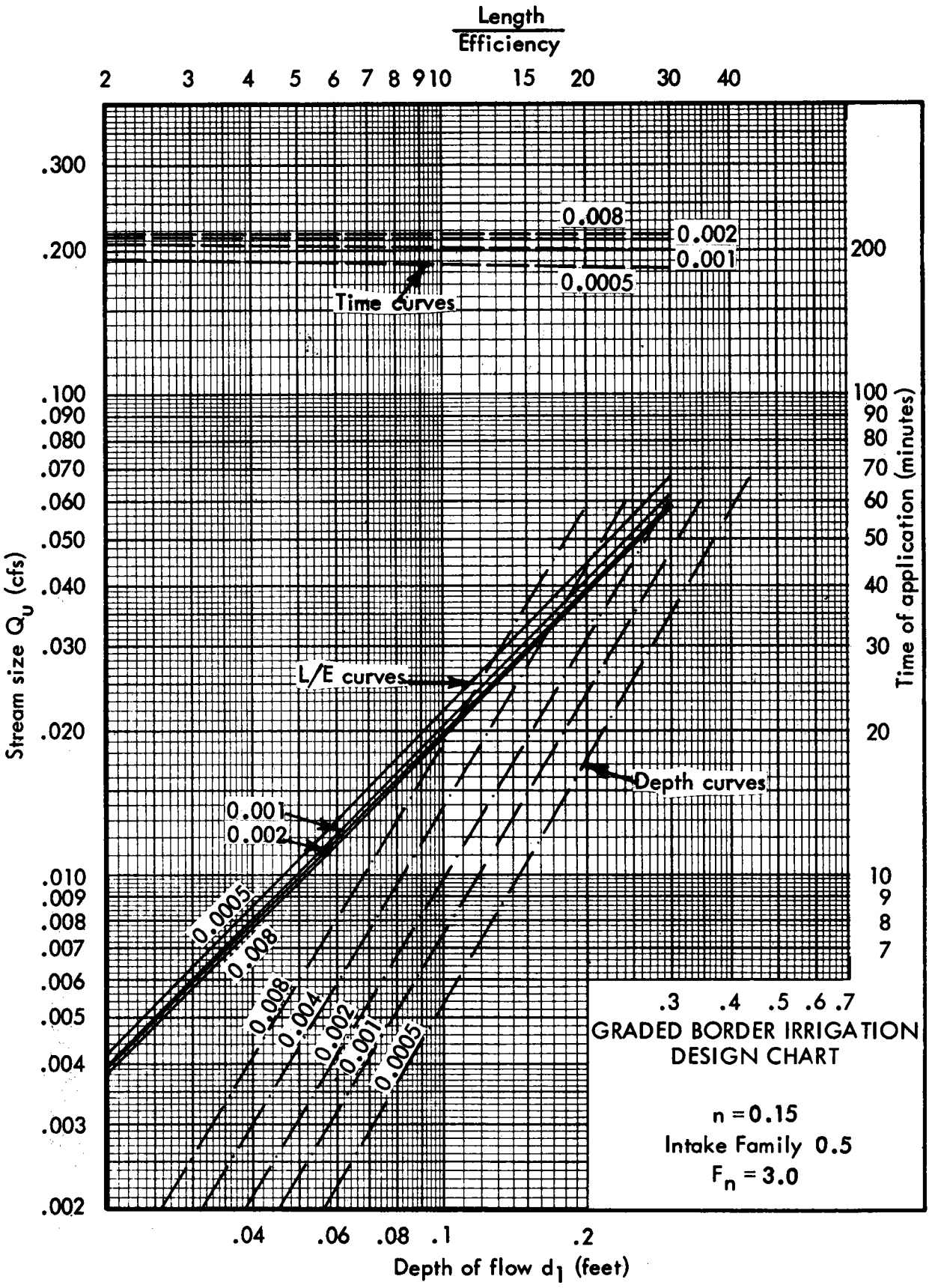

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
2000
1000
900
800
700
600
500
400
300
200
100
Time of application (minutes)
0.004
0.0005
Time curves
0.002
0.001
0.001
0.002
Depth curves
L/E curves
0.0005
0.004
0.004
0.002
0.001
0.0005
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 0.3
F_n = 2.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

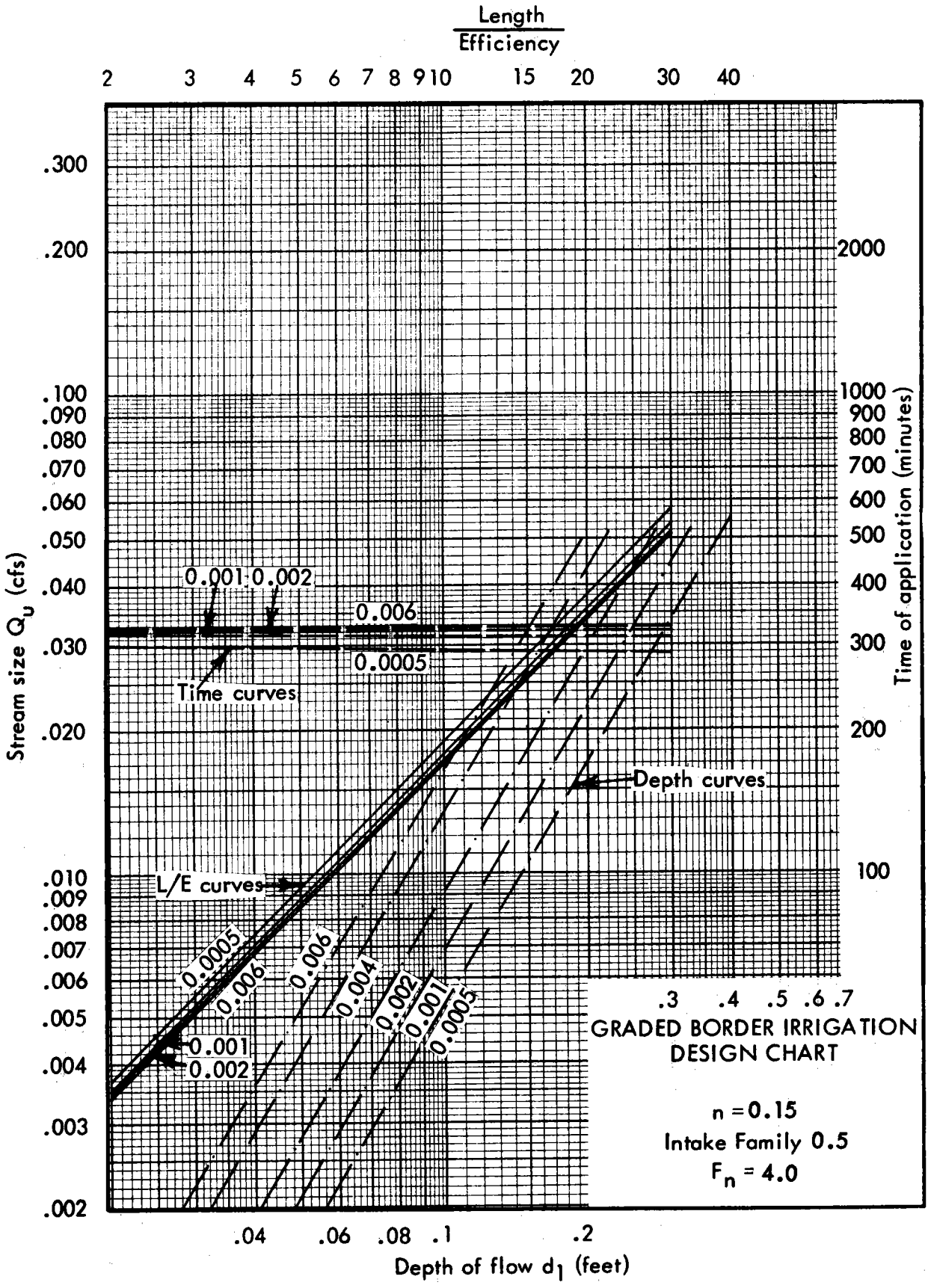

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
2000
1000
900
800
700
600
500
400
300
200
100
Time of application (minutes)
0.003
0.002
0.001
0.0005
Time curves
L/E curves
0.0005
0.003
0.001
0.002
0.003
0.002
0.001
0.0005
Depth curves
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 0.3
F_n = 3.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

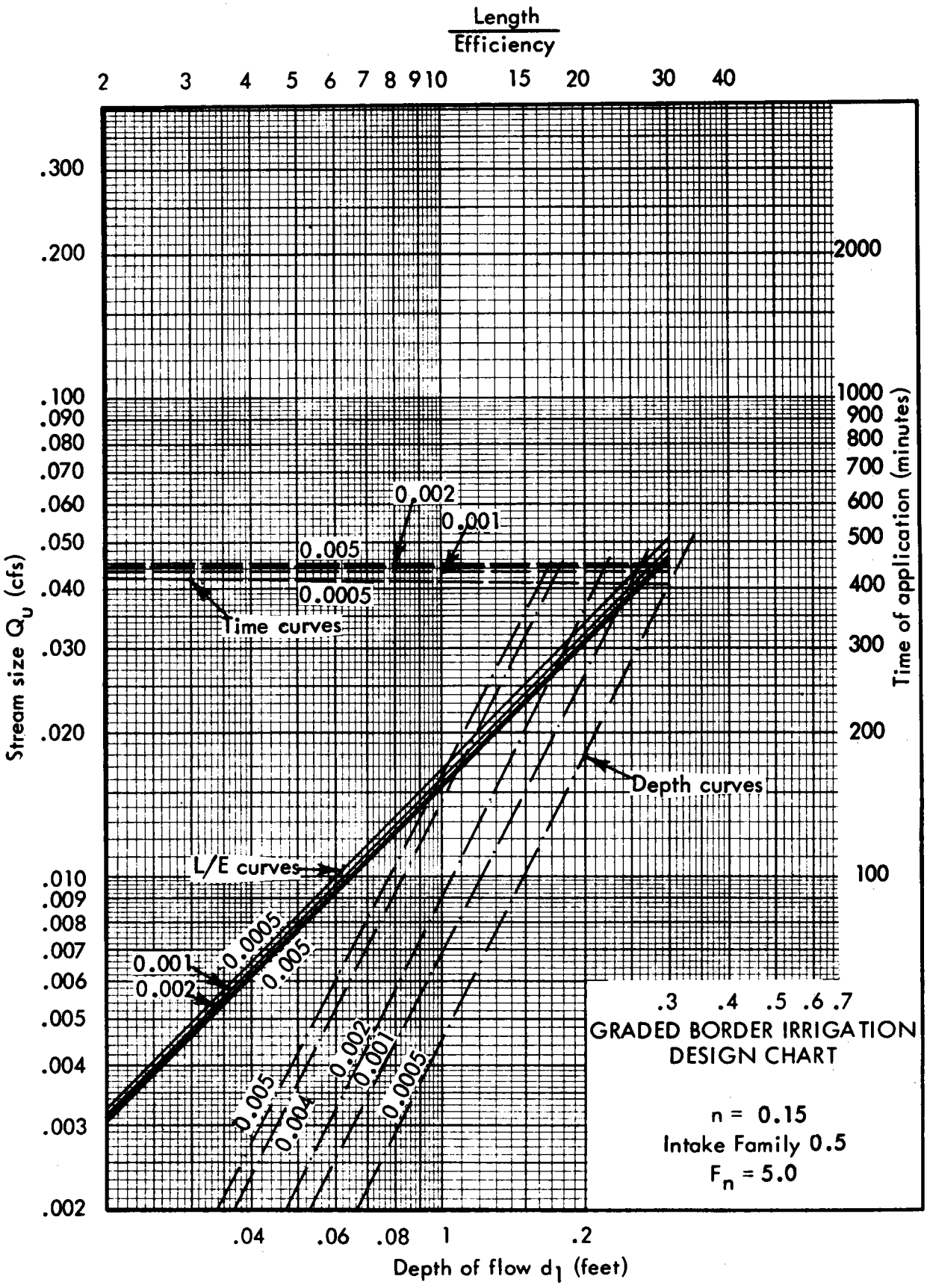

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
2000
1000
900
800
700
600
500
400
300
200
100
Time of application (minutes)
0.002
0.0005
0.001
Time curves
Depth curves
L/E curves
0.0005
0.002
0.001
0.0005
0.002
0.001
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION
DESIGN CHART
n = 0.15
Intake Family 0.3
F_n = 4.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

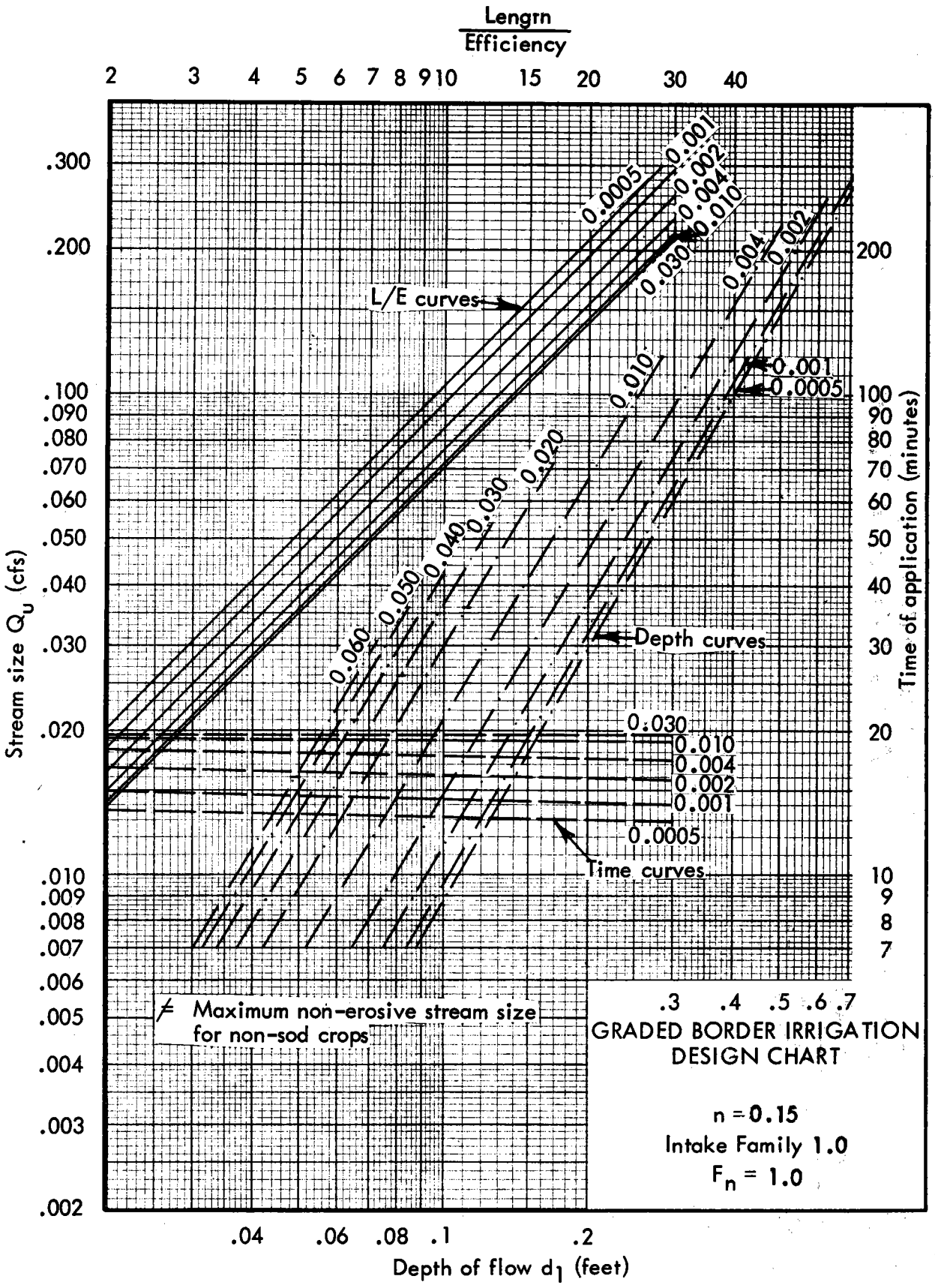

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
≠ Maximum non-erosive stream size for non-sod crops
L/E curves
Time curves
Depth curves
0.0005
0.001
0.030
0.010
0.004
0.002
0.001
0.0005
0.002
0.030
0.004
0.010
0.002
0.030
0.020
0.010
0.004
0.001
0.0005
Stream size Q_u (cfs)
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Time of application (minutes)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 0.5
F_n = 1.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)


Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
≠ Maximum non-erosive stream size for non-sod crops
Time curves
0.012
0.002
0.001
0.0005
L/E curves
0.0005
0.001
0.002
0.012
Depth curves
0.012
0.010
0.004
0.002
0.001
0.0005
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 0.5
F_n = 2.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

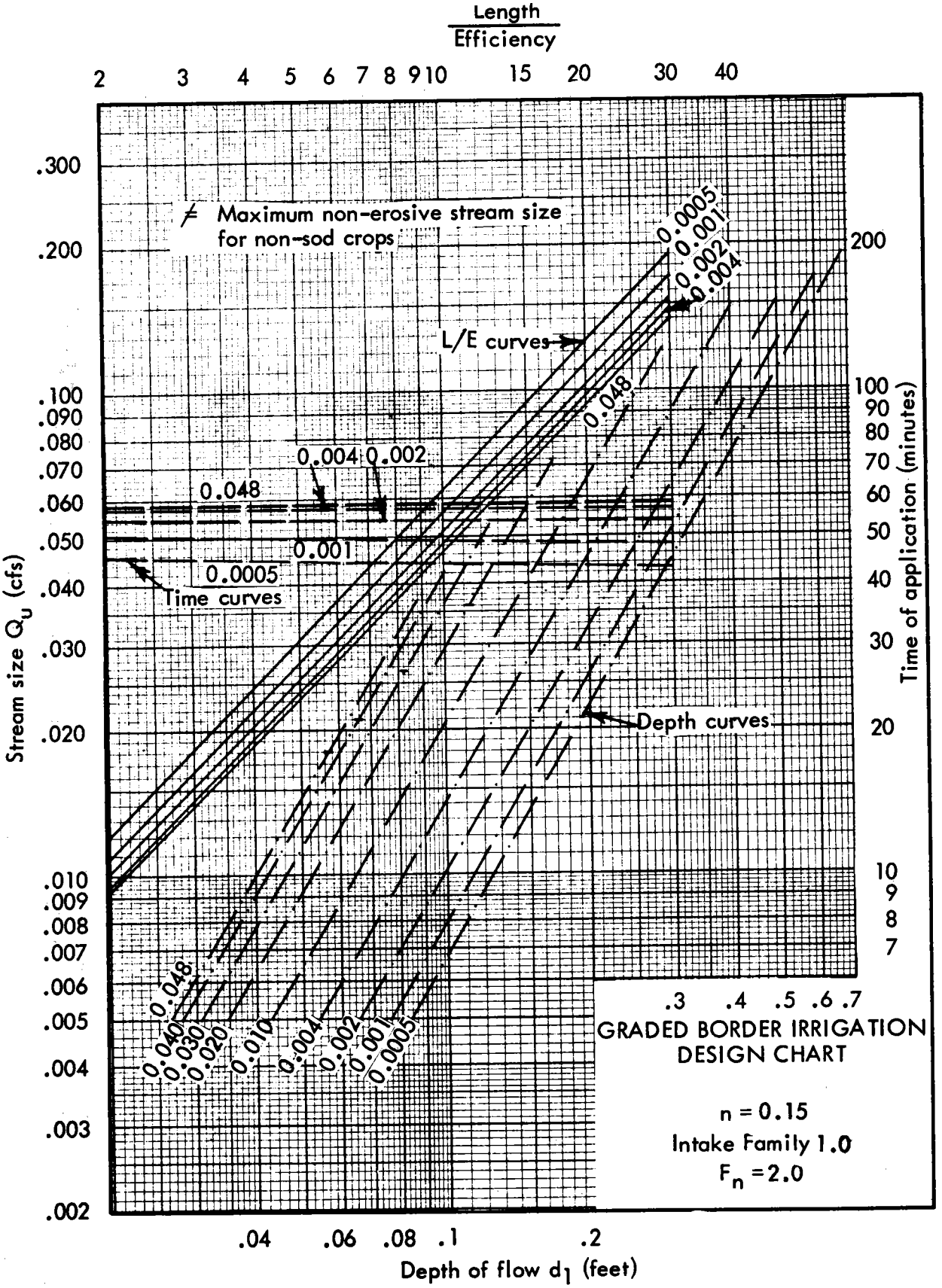

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
0.008
0.002
0.001
0.0005
Time curves
L/E curves
Depth curves
0.001
0.002
0.0005
0.008
0.008
0.004
0.002
0.001
0.0005
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION
DESIGN CHART
n = 0.15
Intake Family 0.5
F_n = 3.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

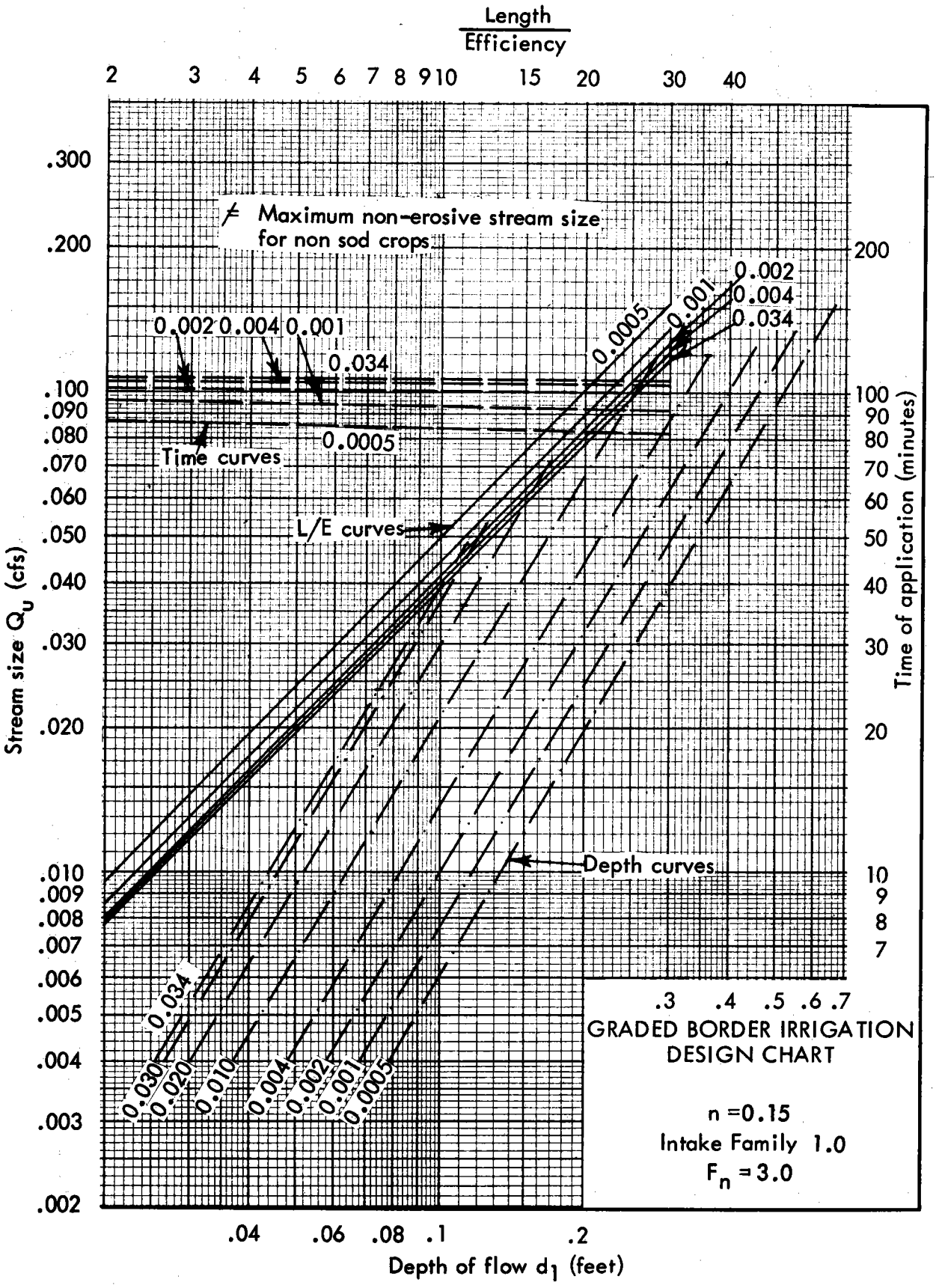

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
2000
1000
900
800
700
600
500
400
300
200
100
Time of application (minutes)
0.001 0.002
0.006
0.0005
Time curves
Depth curves
L/E curves
0.0005
0.006
0.006
0.004
0.002
0.001
0.0005
0.001
0.002
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 0.5
F_n = 4.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

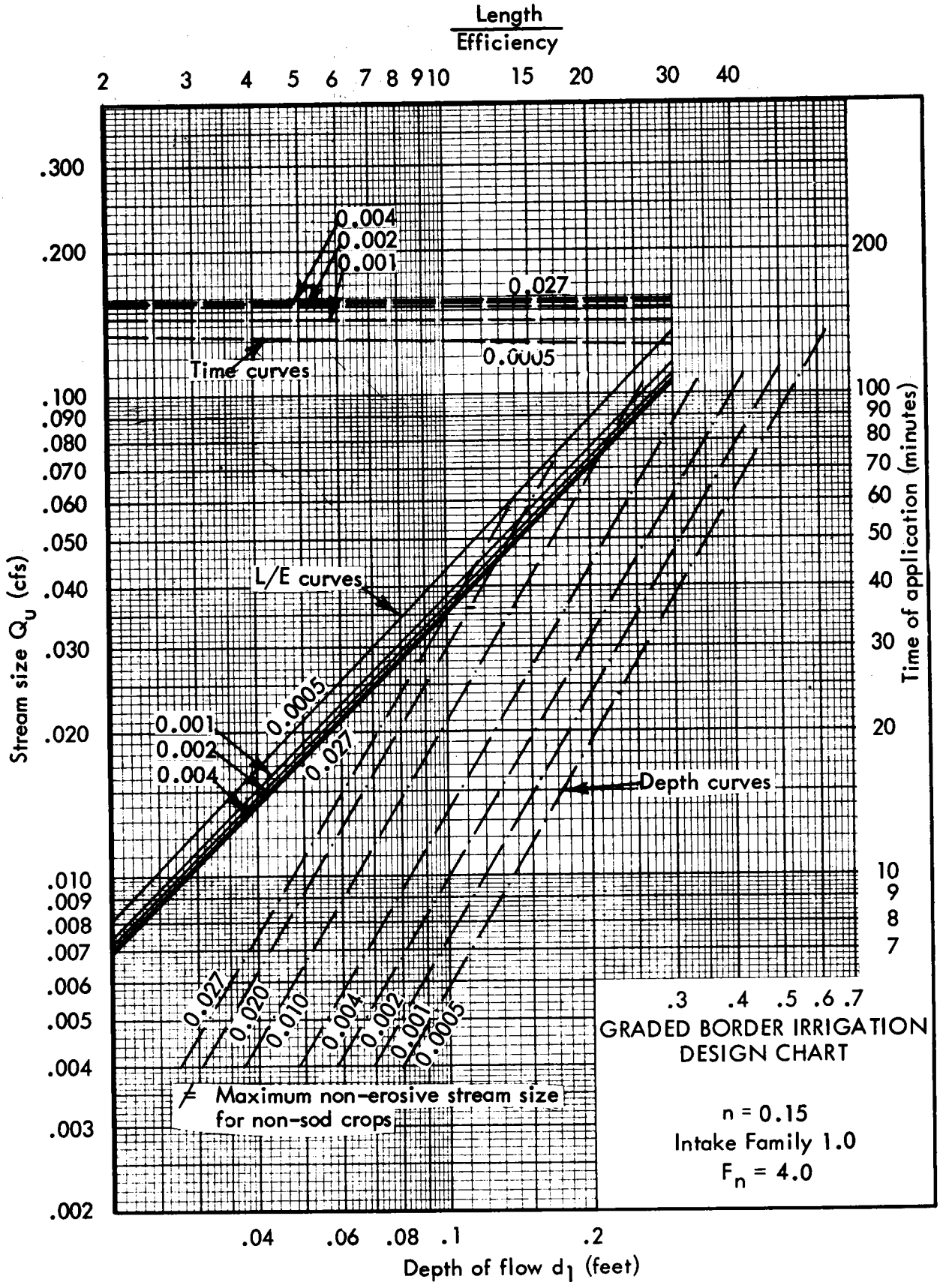

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
2000
1000
900
800
700
600
500
400
300
200
100
Time of application (minutes)
Stream size Q_u (cfs)
0.002
0.001
0.005
0.0005
Time curves
Depth curves
L/E curves
0.0005
0.005
0.001
0.002
0.005
0.004
0.002
0.001
0.0005
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION
DESIGN CHART
n = 0.15
Intake Family 0.5
F_n = 5.0
.04 .06 .08 1 .2
Depth of flow d_1 (feet)

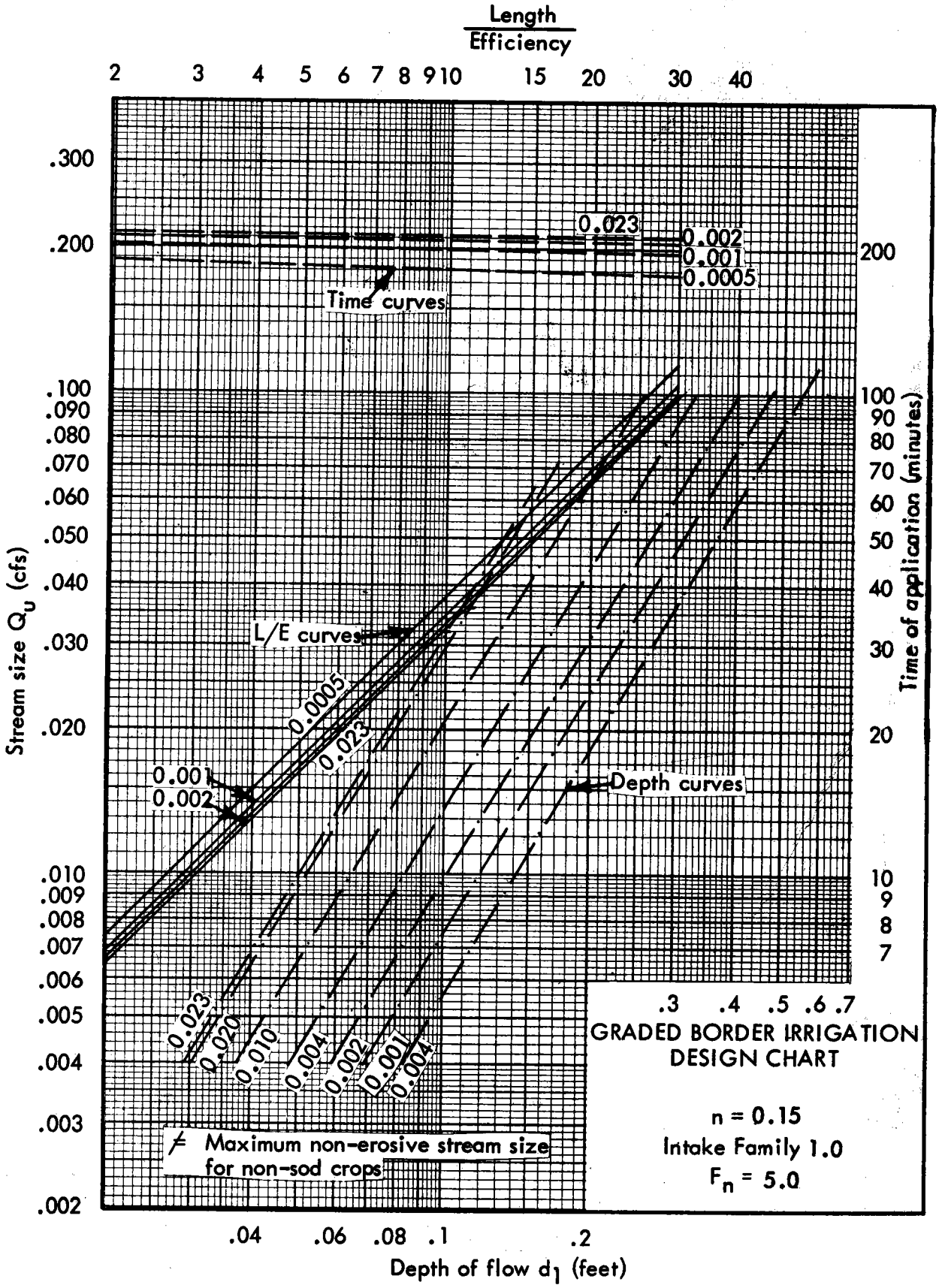


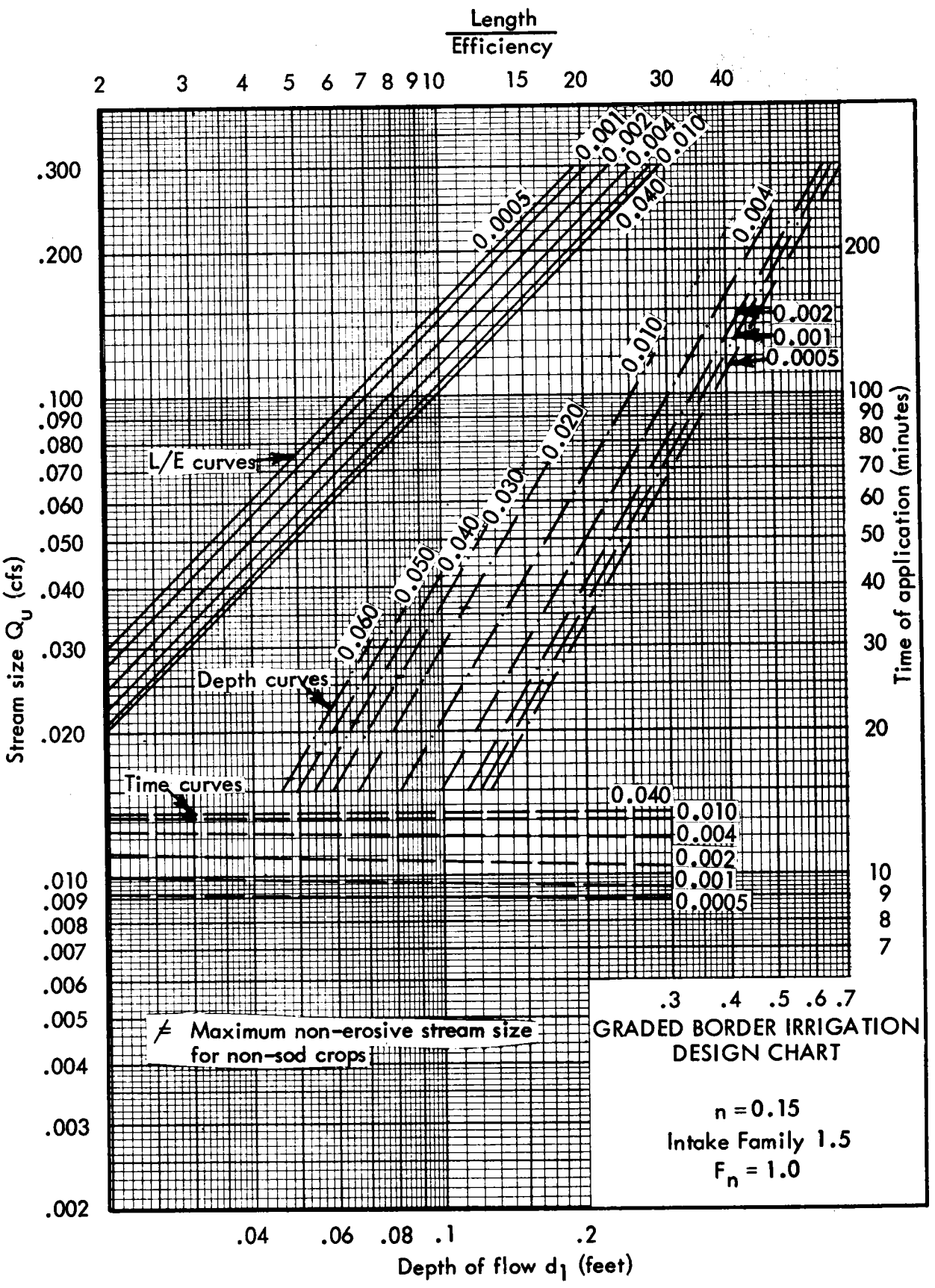
Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
Stream size Q_u (cfs)
.300 .200 .100 .090 .080 .070 .060 .050 .040 .030 .020 .010 .009 .008 .007 .006 .005 .004 .003 .002
Time of application (minutes)
200 100 90 80 70 60 50 40 30 20 10 9 8 7
L/E curves
Depth curves
Time curves
0.0005 0.001 0.002 0.004 0.010 0.030
0.060 0.050 0.040 0.030 0.020 0.010 0.004 0.002 0.001 0.0005
≠ Maximum non-erosive stream size for non-sod crops
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 1.0
F_n = 1.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

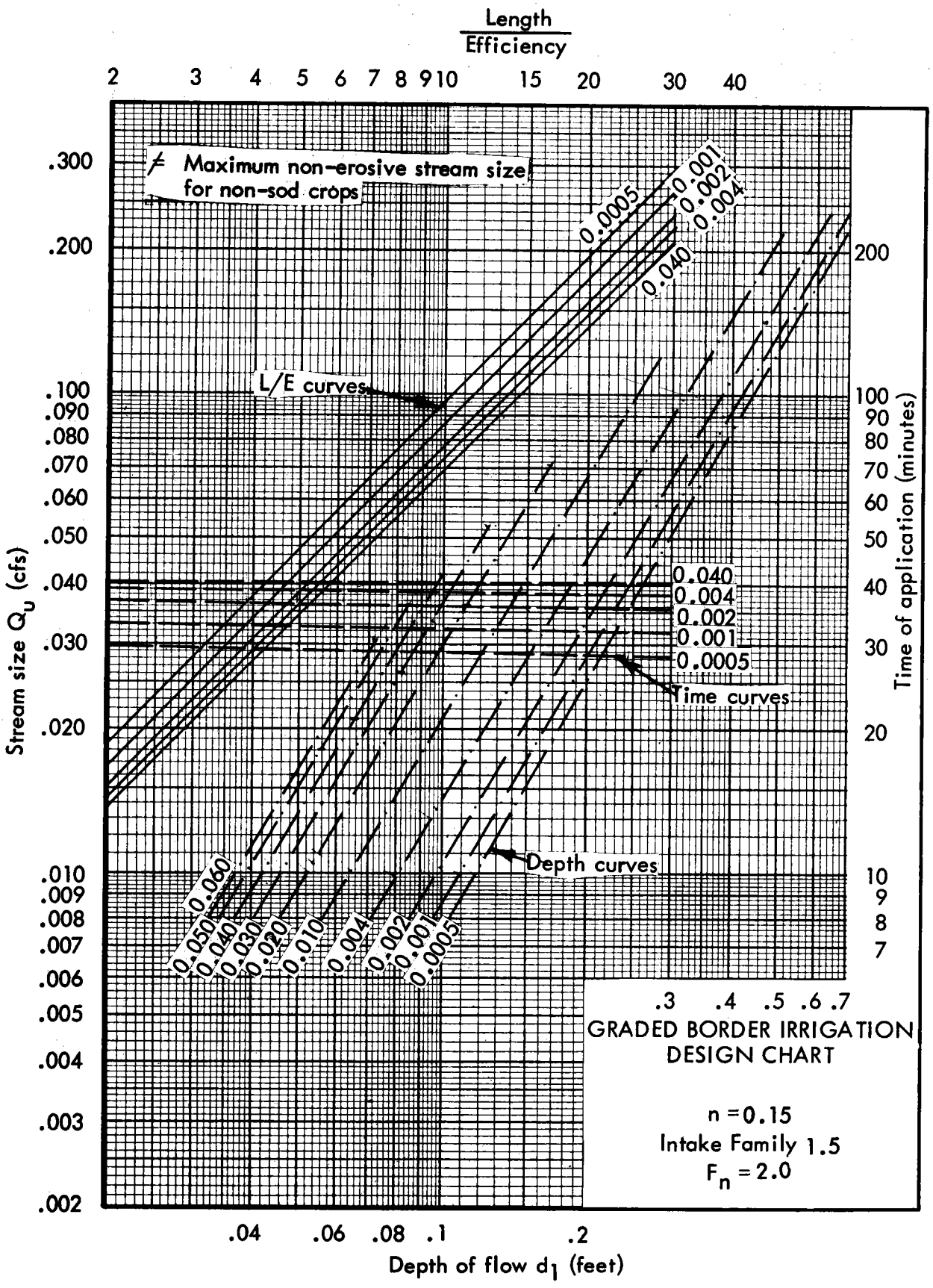

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
≠ Maximum non-erosive stream size for non-sod crops
L/E curves
Time curves
Depth curves
0.0005
0.001
0.002
0.004
0.048
0.040
0.030
0.020
0.010
Stream size Q_u (cfs)
.300 .200 .100 .090 .080 .070 .060 .050 .040 .030 .020 .010 .009 .008 .007 .006 .005 .004 .003 .002
Time of application (minutes)
200 100 90 80 70 60 50 40 30 20 10 9 8 7
.04 .06 .08 .1 .2 .3 .4 .5 .6 .7
Depth of flow d_1 (feet)
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 1.0
F_n = 2.0

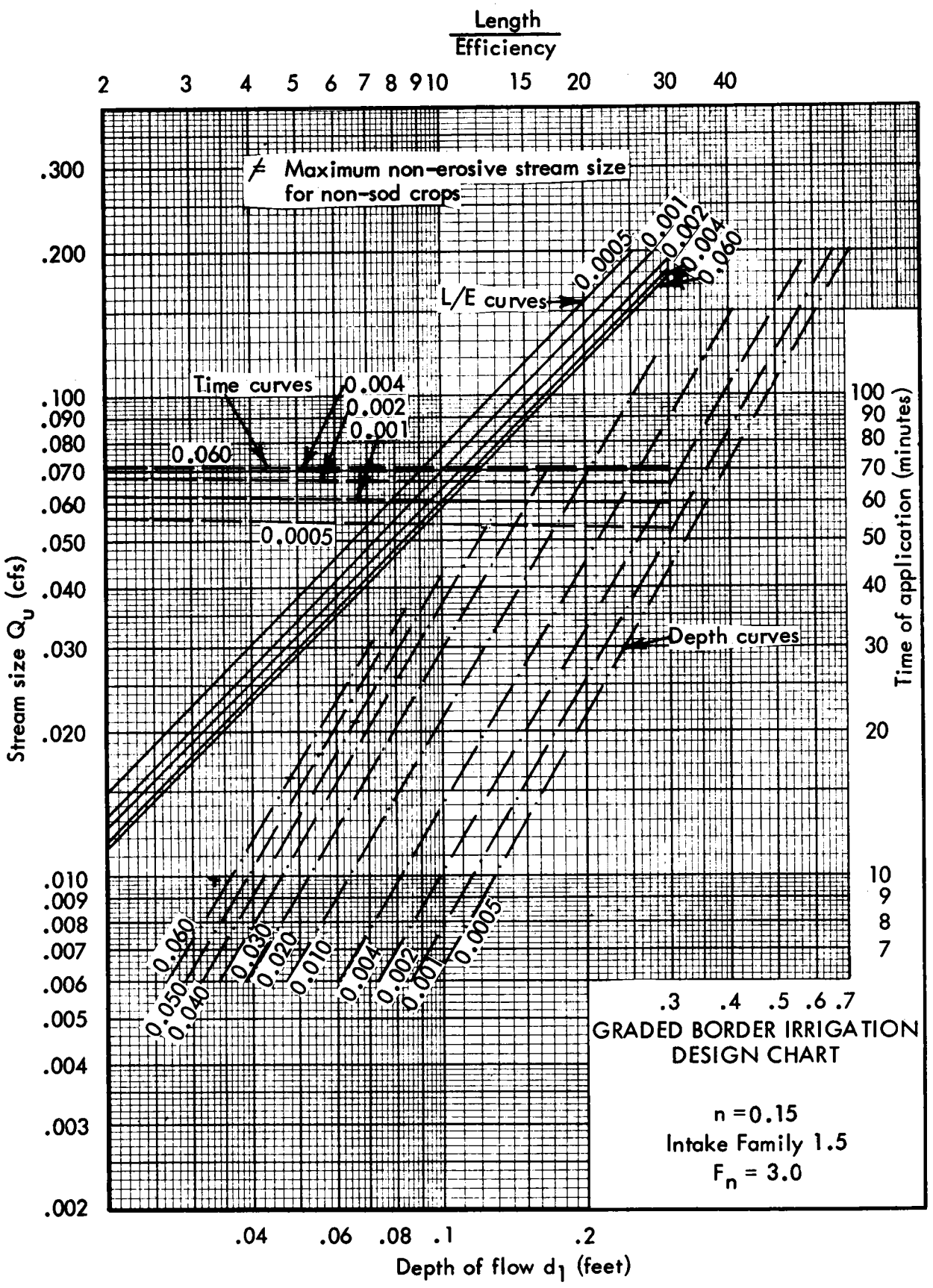

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
≠ Maximum non-erosive stream size for non sod crops
0.002 0.004 0.001
0.034
0.0005
Time curves
L/E curves
0.0005
0.001
0.002
0.004
0.034
Depth curves
0.034
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 1.0
F_n = 3.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

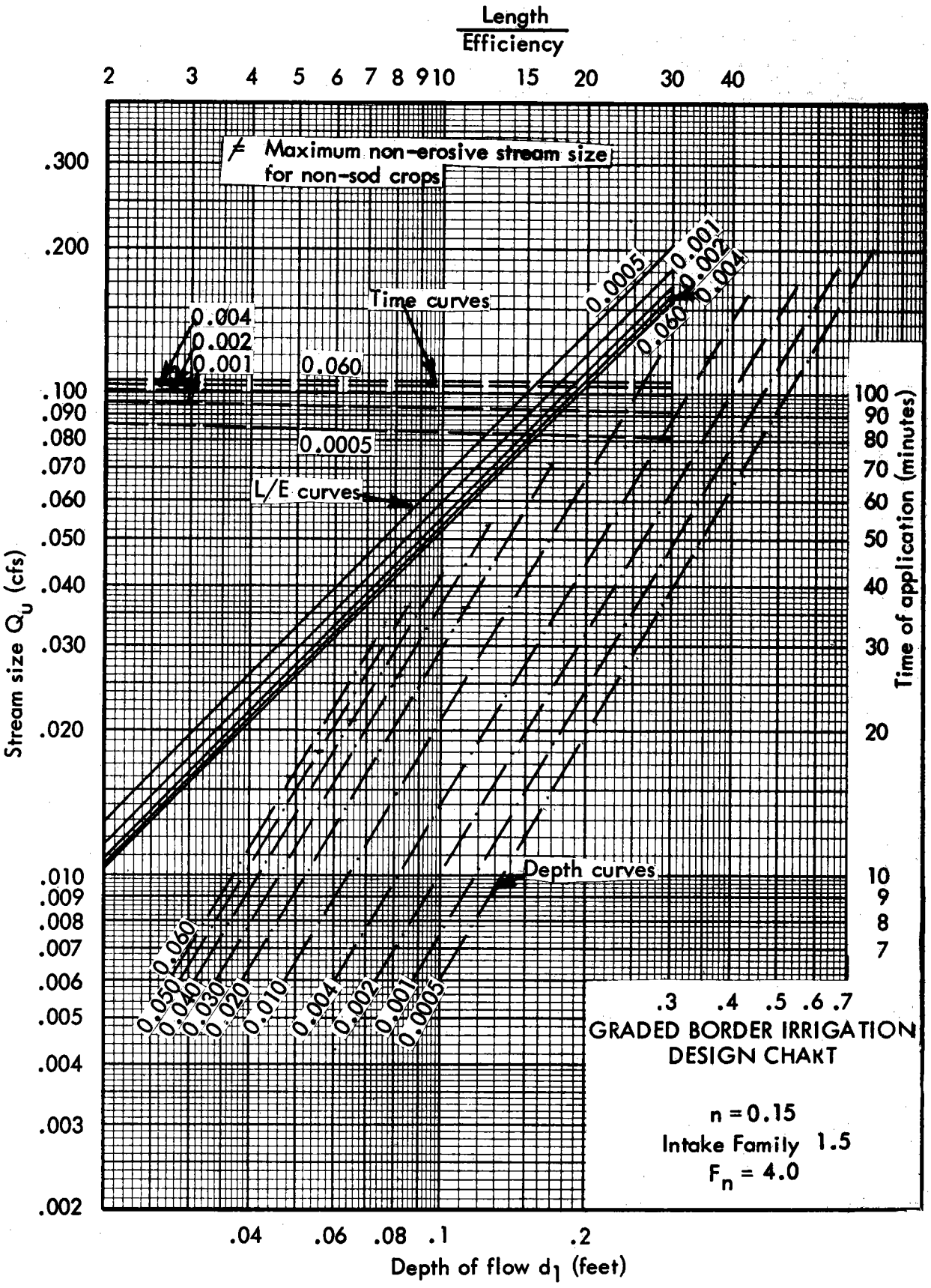

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
0.004
0.002
0.001
0.027
0.0005
Time curves
L/E curves
0.001
0.002
0.004
0.0005
0.027
Depth curves
0.027
0.020
0.010
0.004
0.002
0.001
0.0005
≠ Maximum non-erosive stream size for non-sod crops
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 1.0
F_n = 4.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

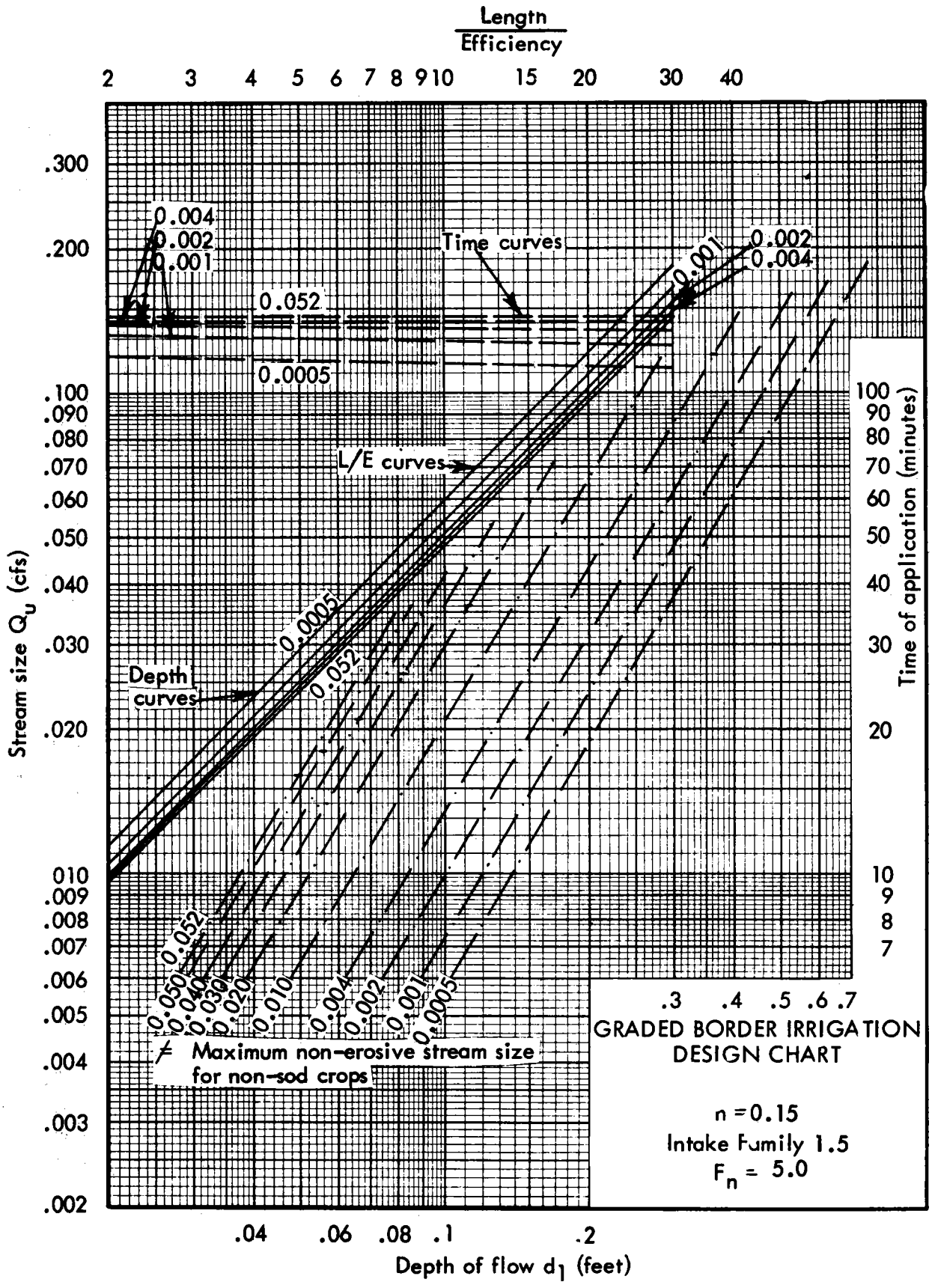

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
0.023
0.002
0.001
0.0005
Time curves
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
L/E curves
0.0005
0.023
0.001
0.002
Depth curves
0.023
0.020
0.010
0.004
0.002
0.001
0.004
≠ Maximum non-erosive stream size for non-sod crops
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 1.0
F_n = 5.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

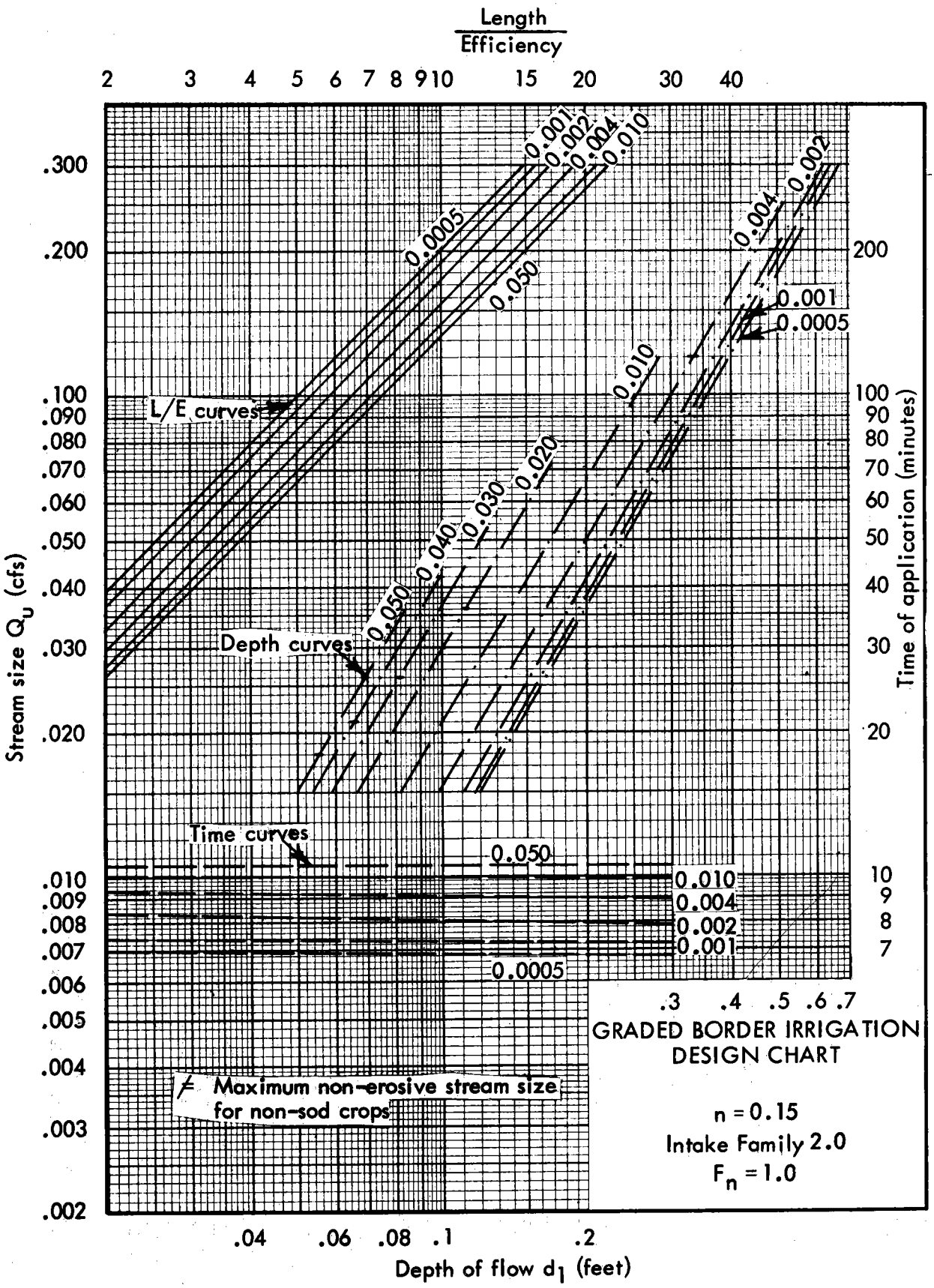

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)
.3 .4 .5 .6 .7
L/E curves
Depth curves
Time curves
0.0005
0.001
0.002
0.004
0.010
0.040
0.020
0.030
0.050
0.060
≠ Maximum non-erosive stream size for non-sod crops
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 1.5
F_n = 1.0

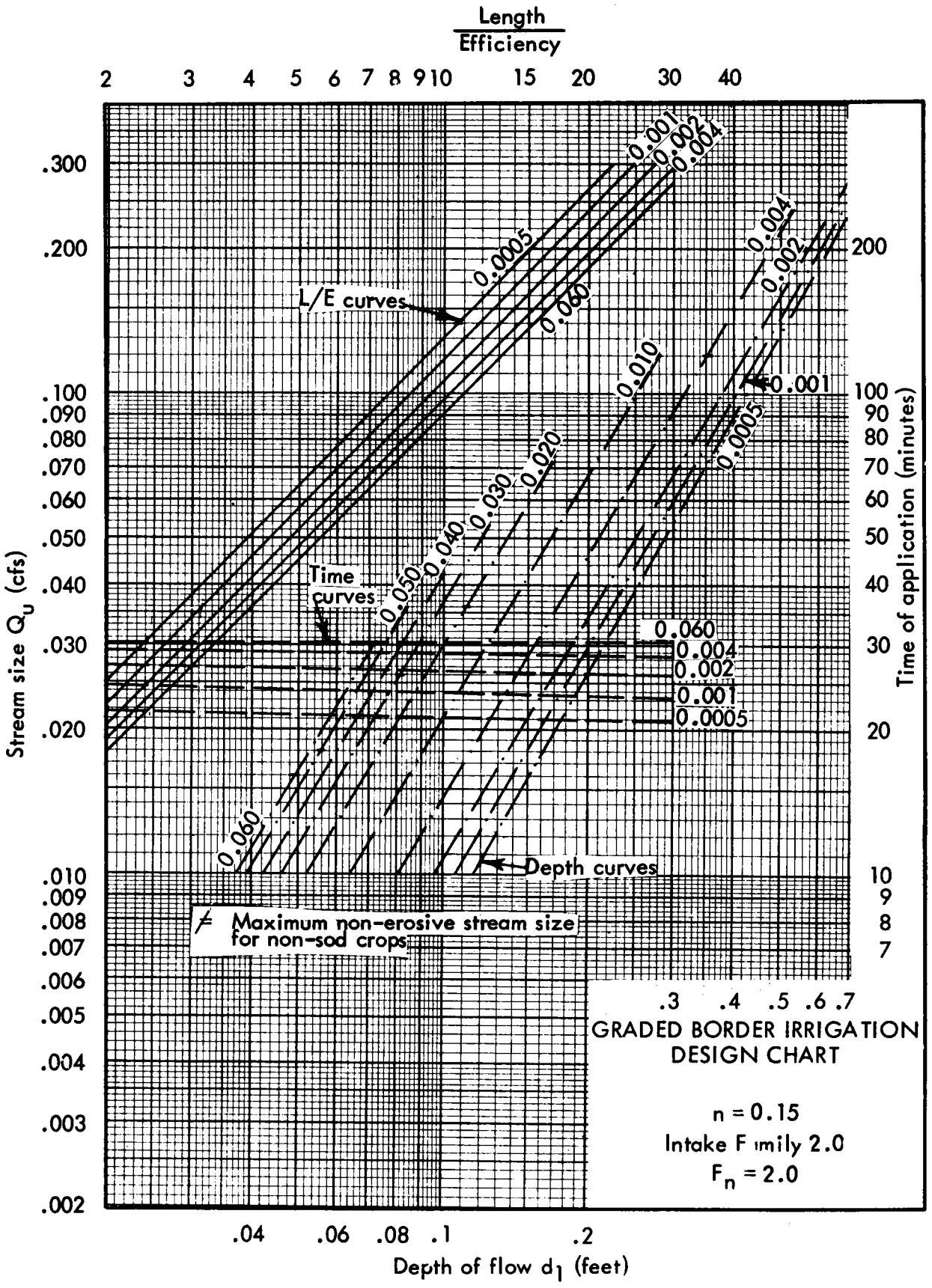

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
≠ Maximum non-erosive stream size for non-sod crops
0.0005
0.001
0.002
0.004
0.040
L/E curves
0.040
0.004
0.002
0.001
0.0005
Time curves
Depth curves
0.060
0.050
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 1.5
F_n = 2.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

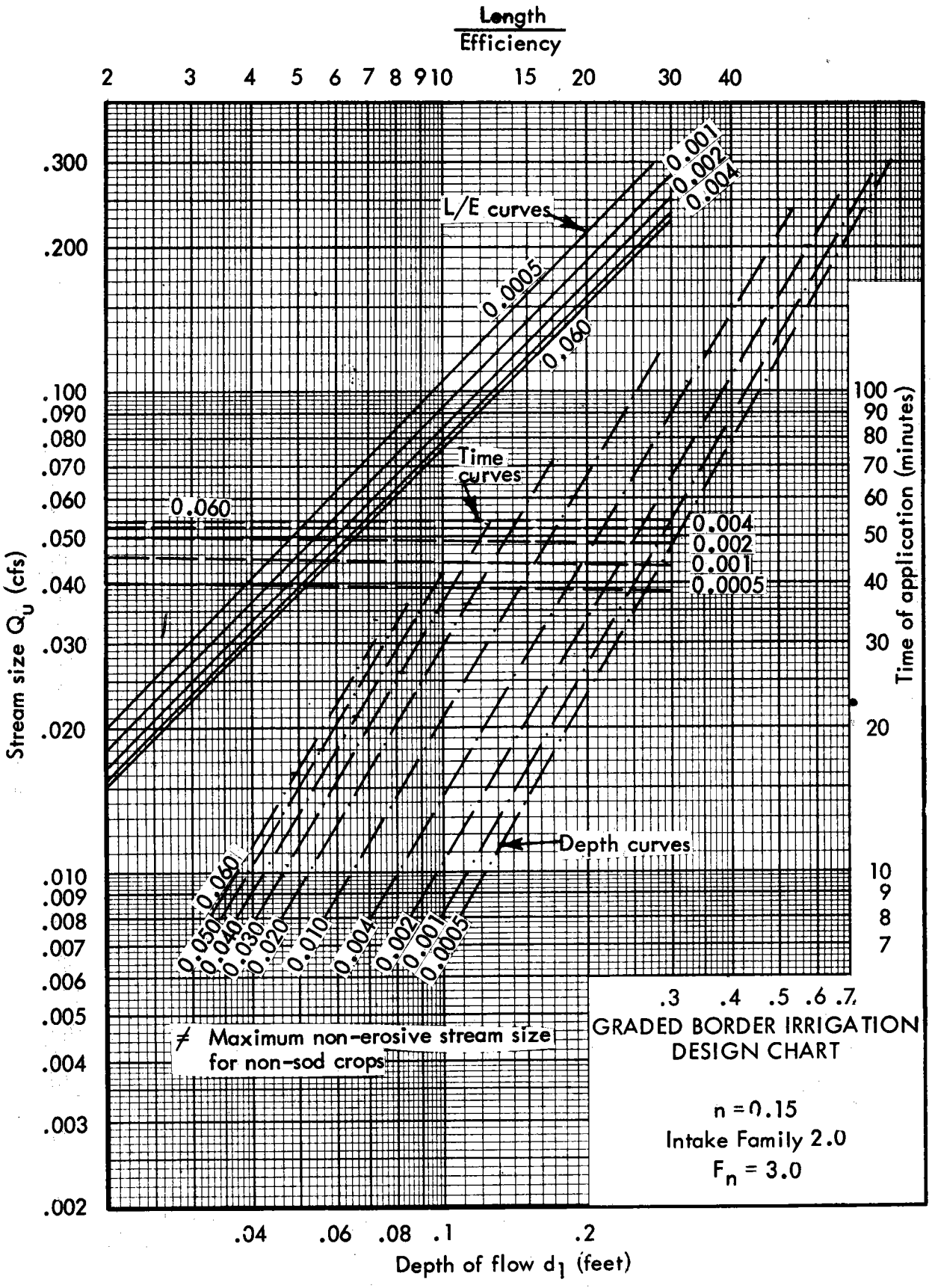

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
Maximum non-erosive stream size for non-sod crops
L/E curves
0.0005
0.001
0.002
0.004
0.060
Time curves
0.004
0.002
0.001
0.060
0.0005
Depth curves
0.060
0.050
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
Stream size Q_u (cfs)
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Time of application (minutes)
100
90
80
70
60
50
40
30
20
10
9
8
7
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 1.5
F_n = 3.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

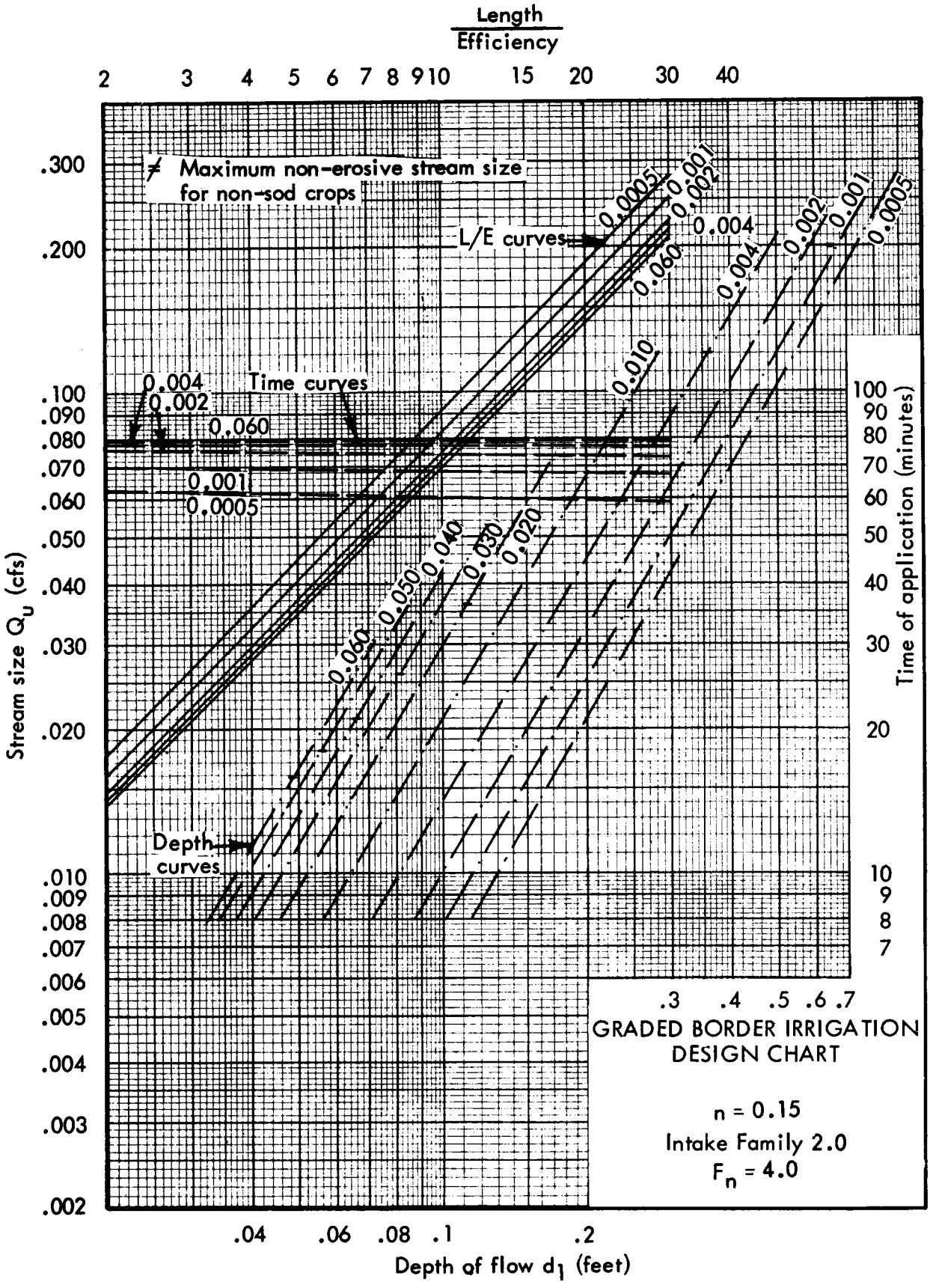

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
≠ Maximum non-erosive stream size for non-sod crops
Time curves
L/E curves
Depth curves
0.004
0.002
0.001
0.060
0.0005
0.0005
0.001
0.002
0.004
0.060
0.050
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
Stream size Q_u (cfs)
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Time of application (minutes)
100
90
80
70
60
50
40
30
20
10
9
8
7
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 1.5
F_n = 4.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

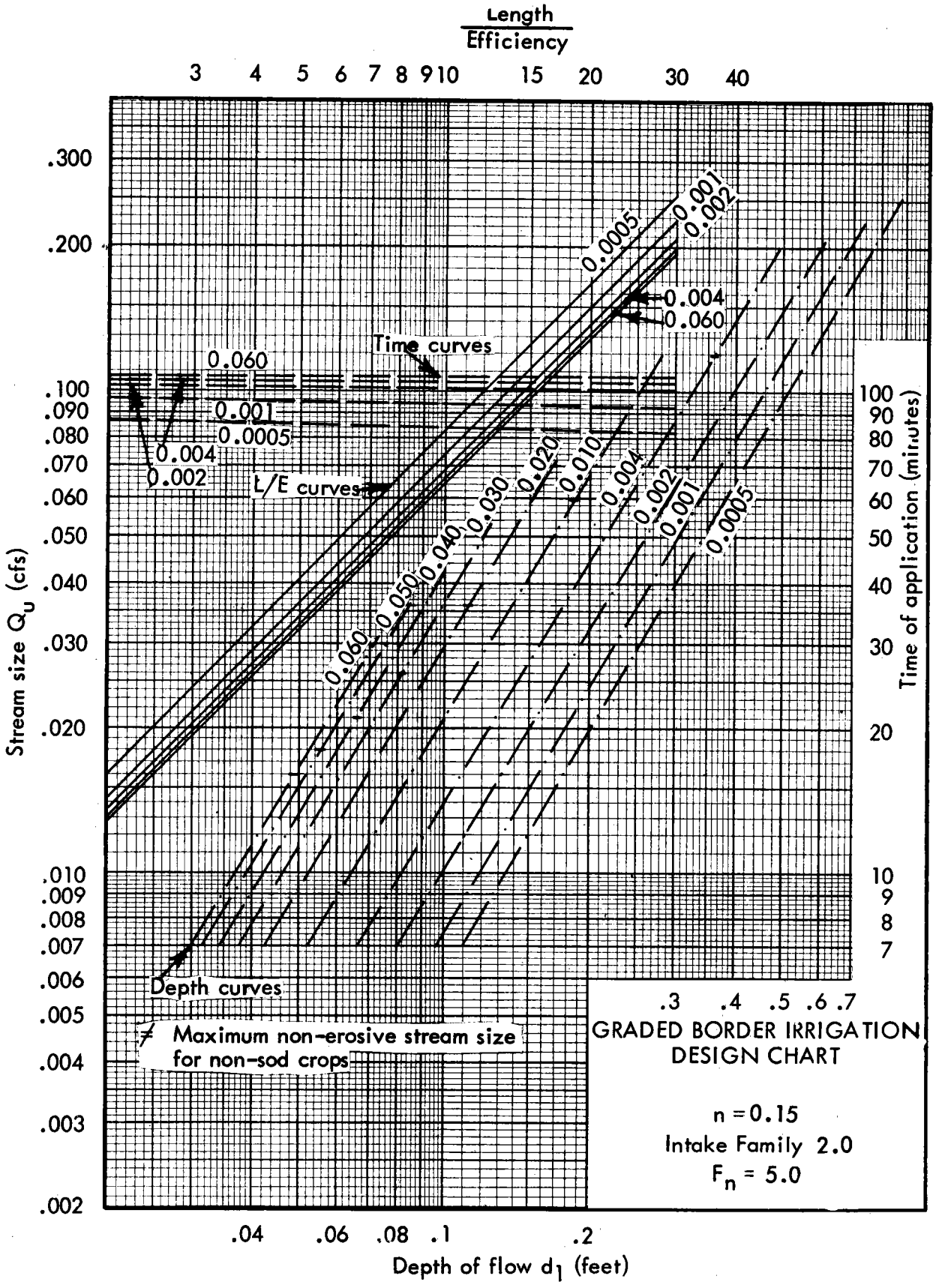

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
0.004
0.002
0.001
0.052
0.0005
Time curves
0.001
0.002
0.004
L/E curves
0.0005
0.052
Depth curves
0.050
0.052
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
≠ Maximum non-erosive stream size for non-sod crops
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 1.5
F_n = 5.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

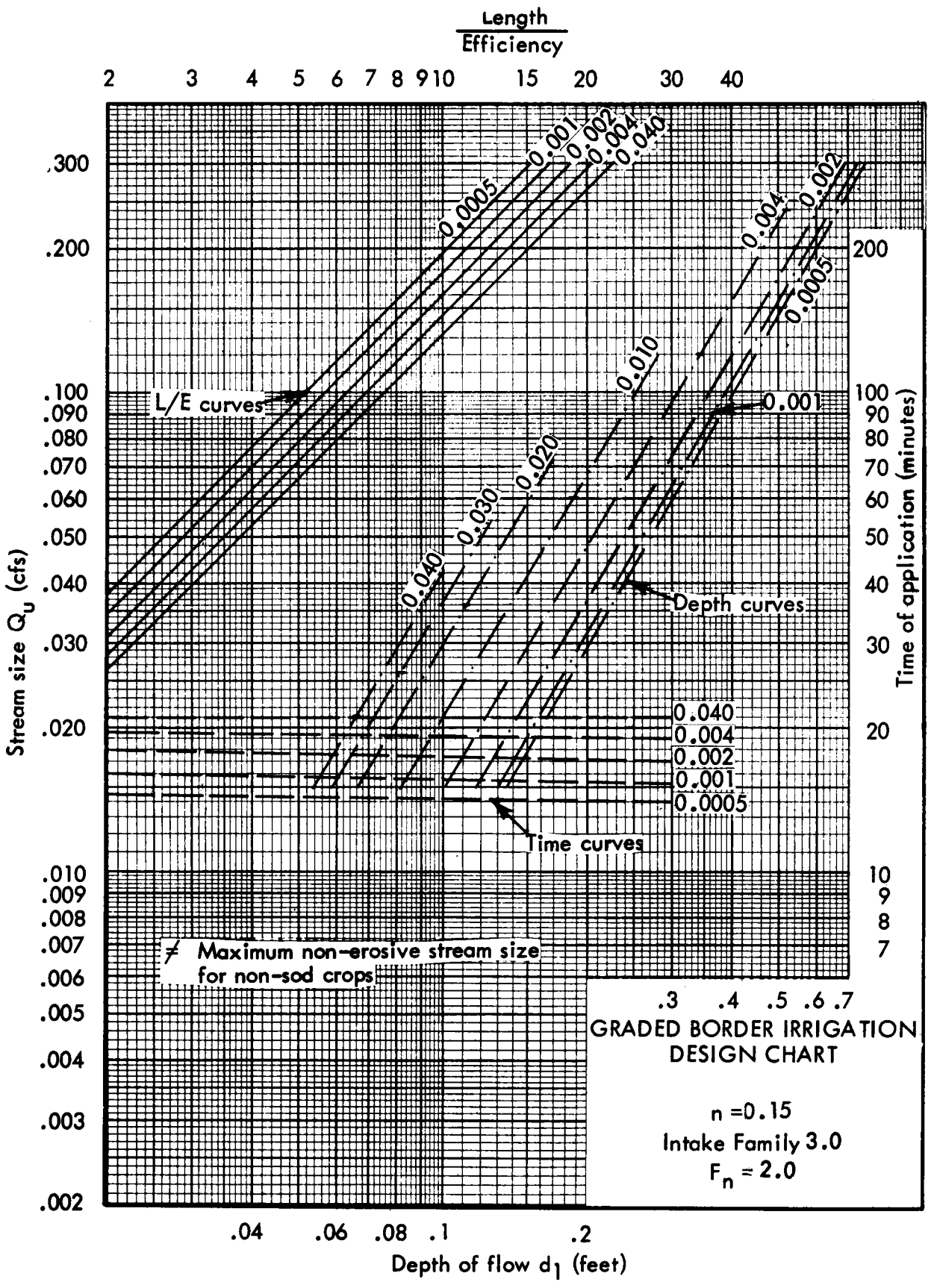

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
L/E curves
Depth curves
Time curves
0.001
0.002
0.004
0.010
0.0005
0.050
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.050
0.010
0.004
0.002
0.001
0.0005
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION
DESIGN CHART
n = 0.15
Intake Family 2.0
F_n = 1.0
Maximum non-erosive stream size for non-sod crops

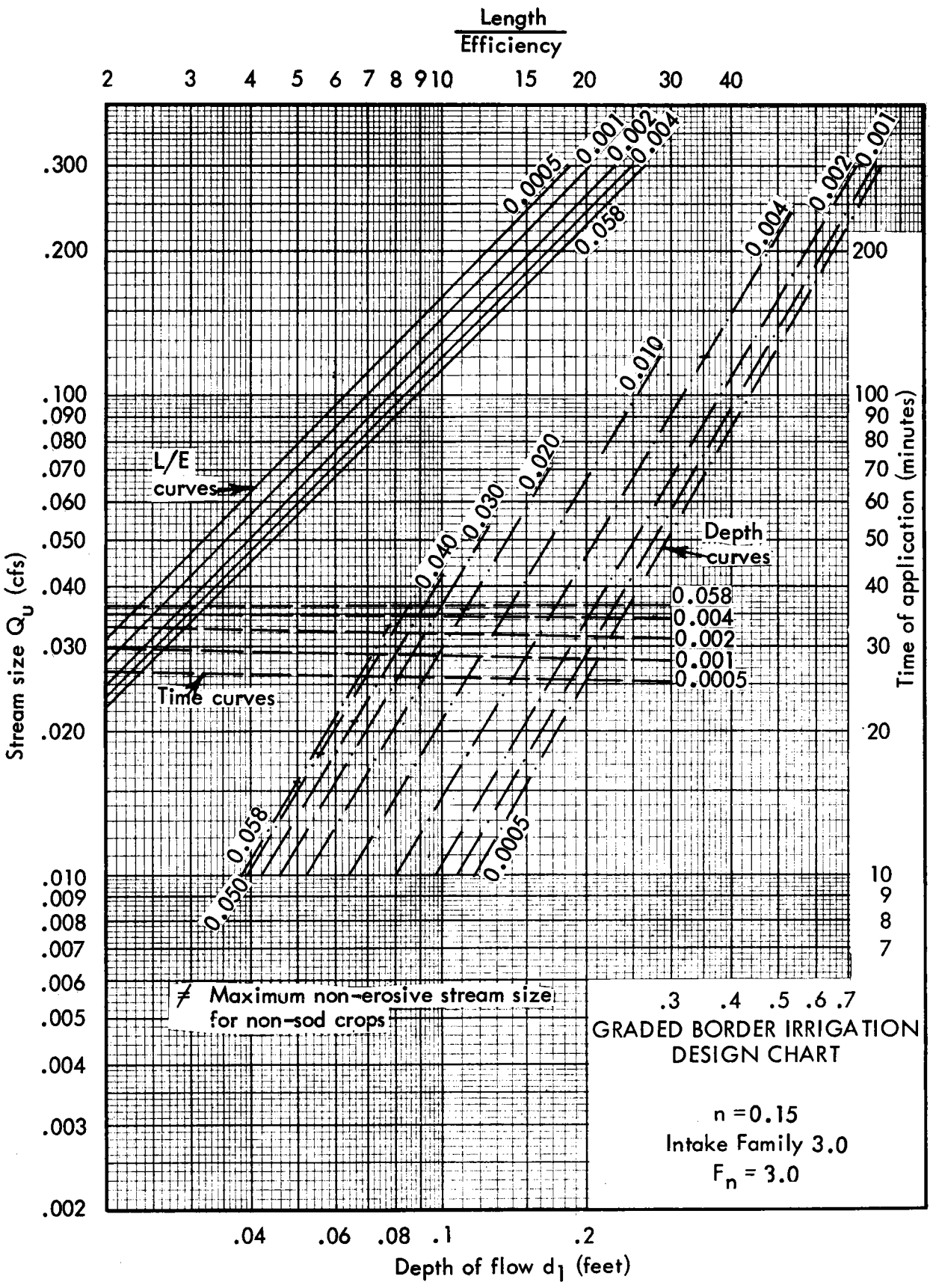

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
L/E curves
Time curves
Depth curves
0.001
0.002
0.004
0.0005
0.060
0.010
0.020
0.030
0.040
0.050
0.060
0.004
0.002
0.001
0.0005
0.060
Maximum non-erosive stream size for non-sod crops
Stream size Q_u (cfs)
.300 .200 .100 .090 .080 .070 .060 .050 .040 .030 .020 .010 .009 .008 .007 .006 .005 .004 .003 .002
Time of application (minutes)
200 100 90 80 70 60 50 40 30 20 10 9 8 7
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 2.0
F_n = 2.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

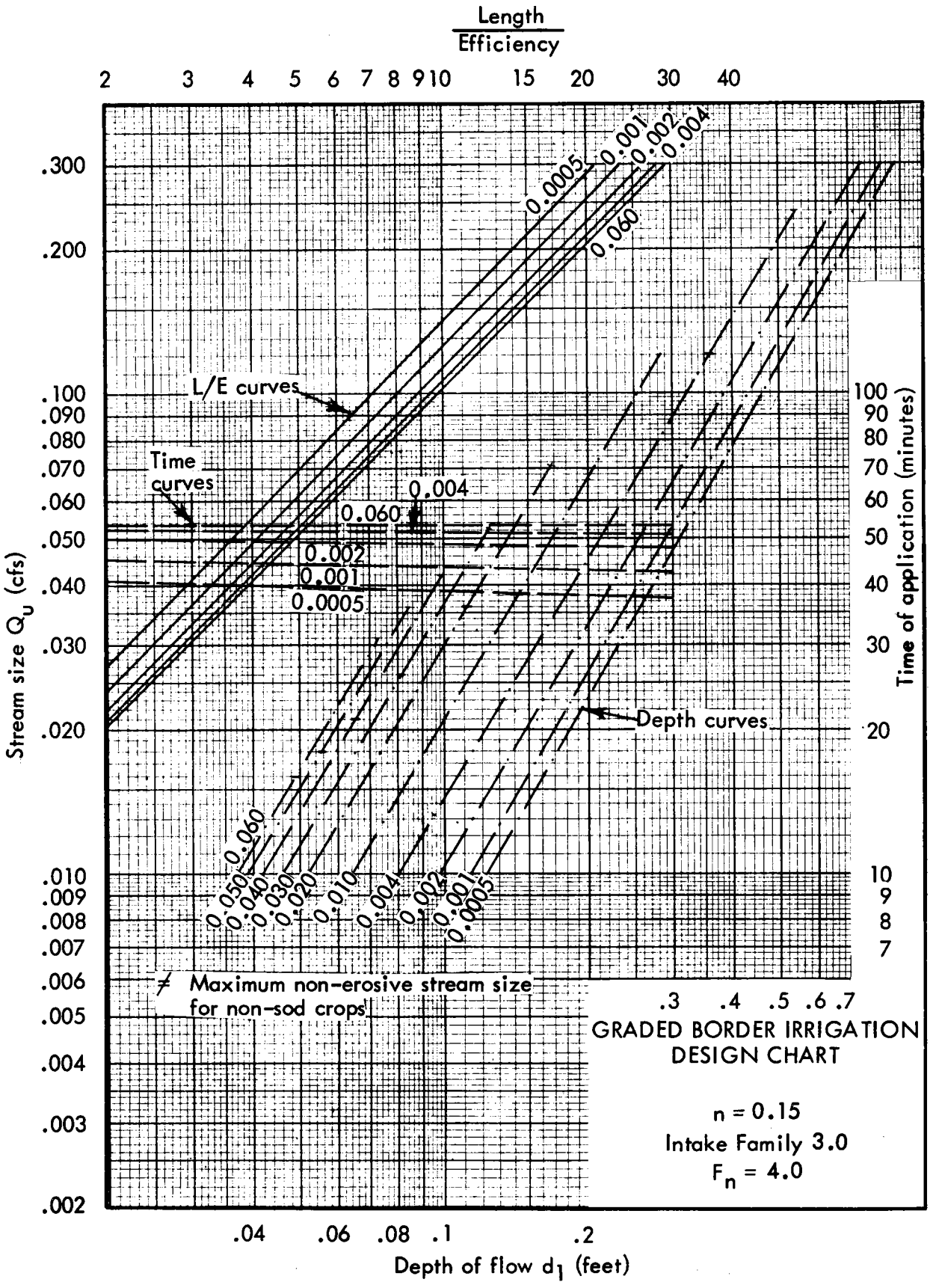

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
L/E curves
0.001
0.002
0.004
0.0005
0.060
Time curves
0.060
0.004
0.002
0.001
0.0005
Depth curves
0.060
0.050
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
≠ Maximum non-erosive stream size for non-sod crops
Stream size Q_u (cfs)
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Time of application (minutes)
100
90
80
70
60
50
40
30
20
10
9
8
7
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 2.0
F_n = 3.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

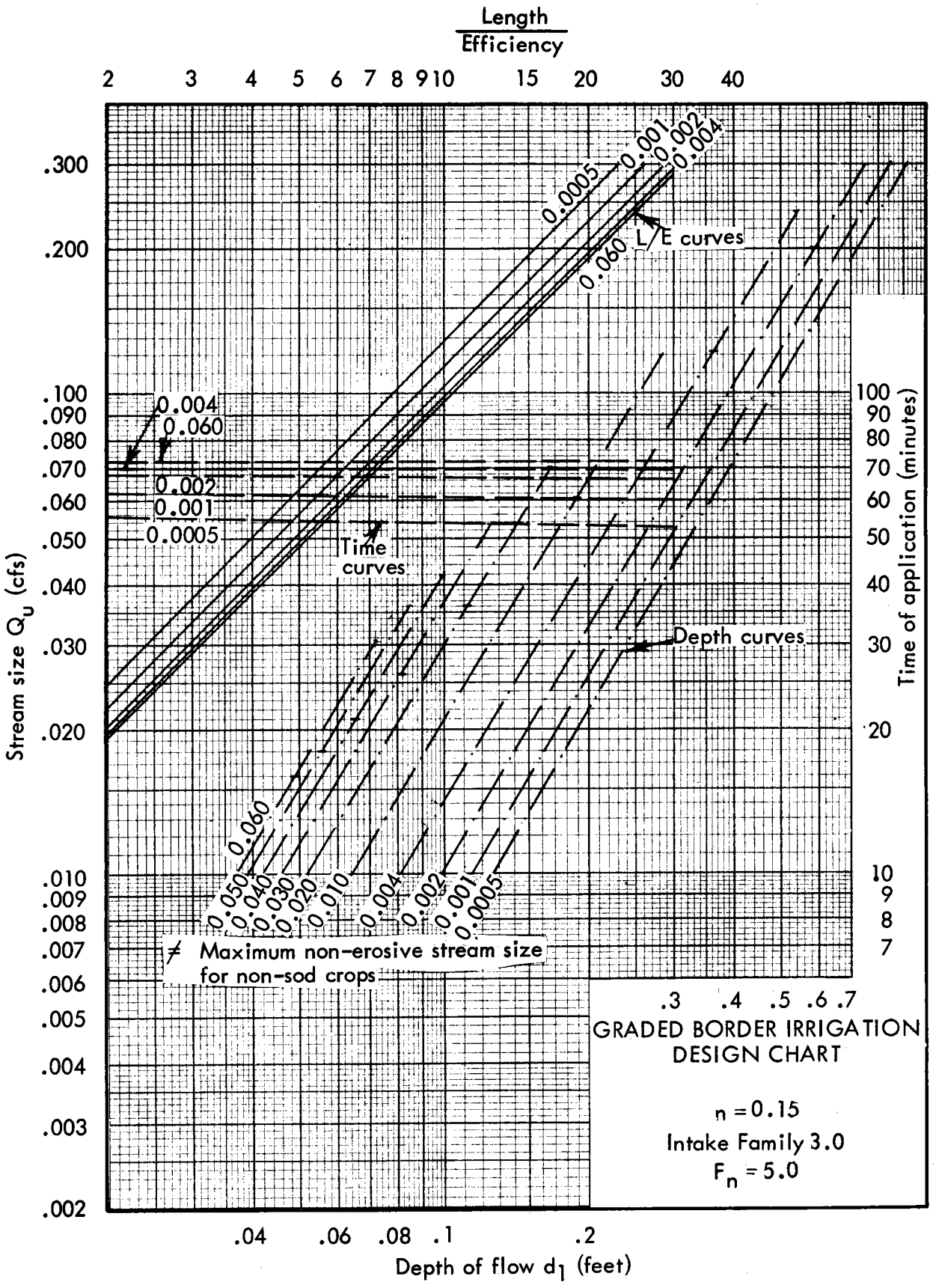

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
≠ Maximum non-erosive stream size for non-sod crops
L/E curves
0.0005
0.001
0.002
0.004
0.060
0.010
Time curves
0.004
0.002
0.060
0.001
0.0005
0.060
0.050
0.040
0.030
0.020
Depth curves
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 2.0
F_n = 4.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

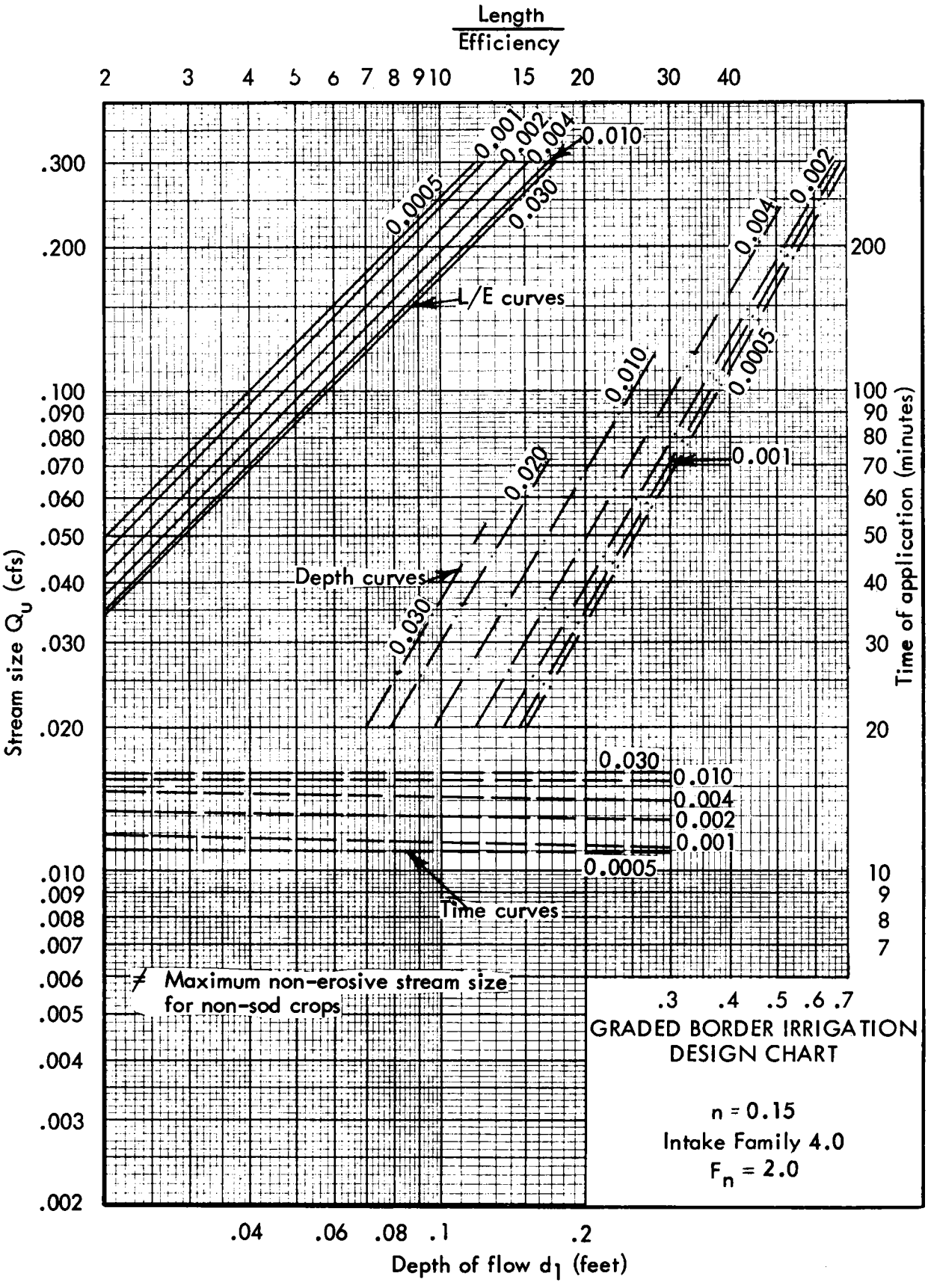

Length / Efficiency
3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
Time of application (minutes)
100 90 80 70 60 50 40 30 20 10 9 8 7
Time curves
L/E curves
Depth curves
0.060
0.001
0.0005
0.004
0.002
0.0005
0.001
0.002
0.004
0.060
0.060
0.050
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
≠ Maximum non-erosive stream size for non-sod crops
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 2.0
F_n = 5.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

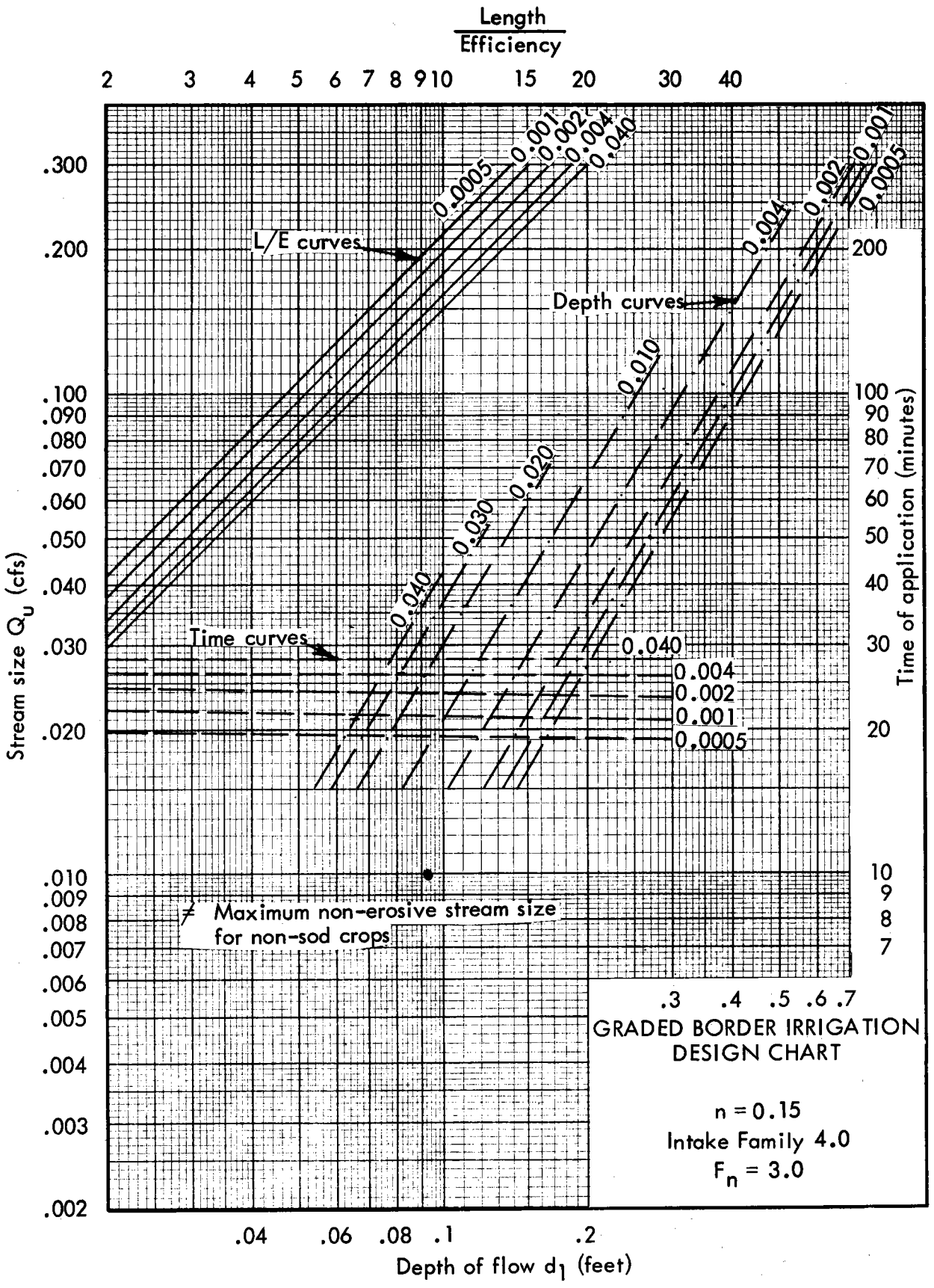

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
0.0005
0.001
0.002
0.004
0.040
L/E curves
0.010
0.020
0.030
0.040
0.001
Depth curves
0.040
0.004
0.002
0.001
0.0005
Time curves
≠ Maximum non-erosive stream size for non-sod crops
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 3.0
F_n = 2.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

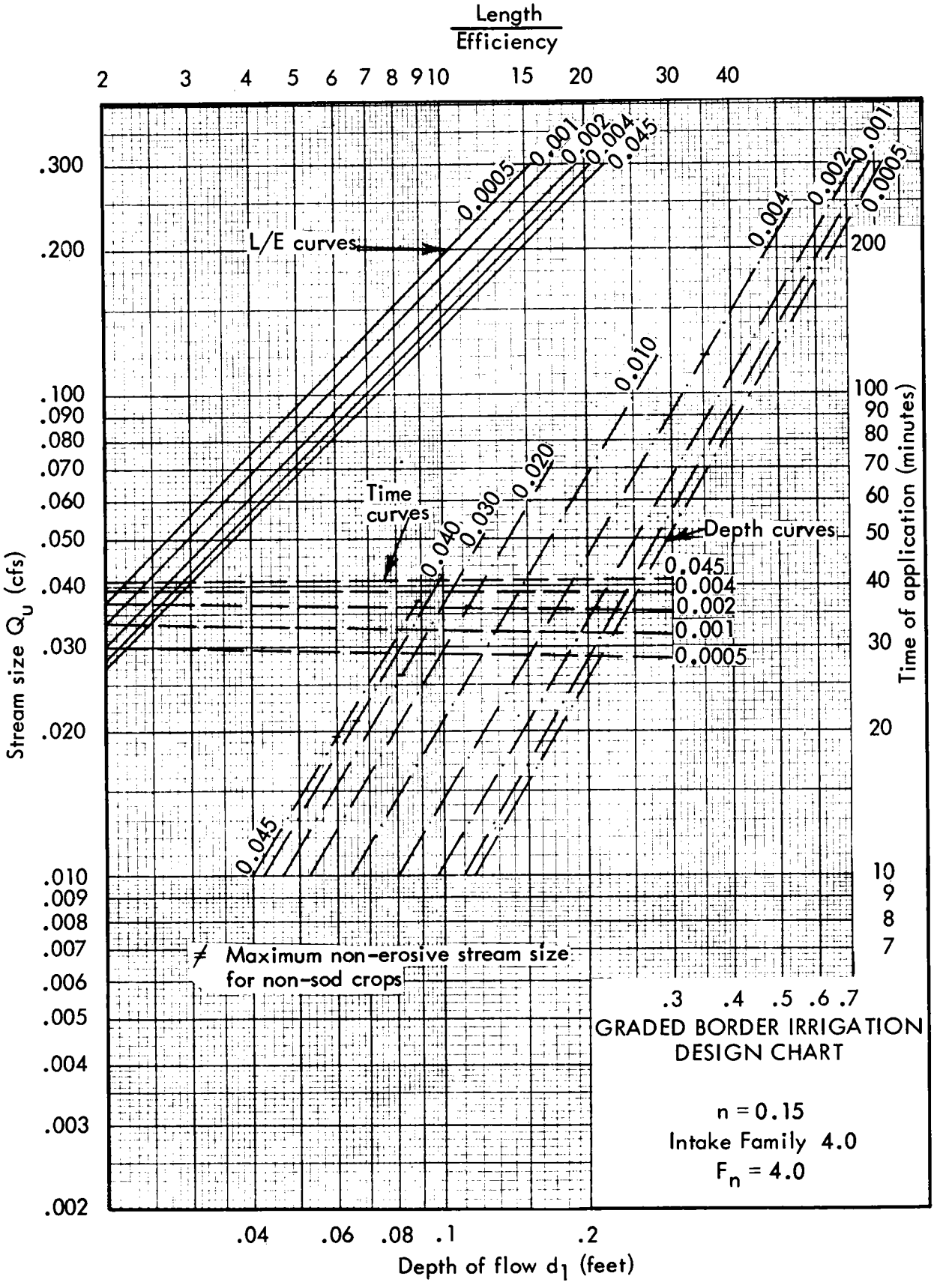

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
100
90
80
70
60
50
40
30
20
10
9
8
7
200
Time of application (minutes)
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)
.3 .4 .5 .6 .7
L/E curves
Time curves
Depth curves
0.0005
0.001
0.002
0.004
0.058
0.010
0.020
0.030
0.040
0.050
≠ Maximum non-erosive stream size for non-sod crops
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 3.0
F_n = 3.0

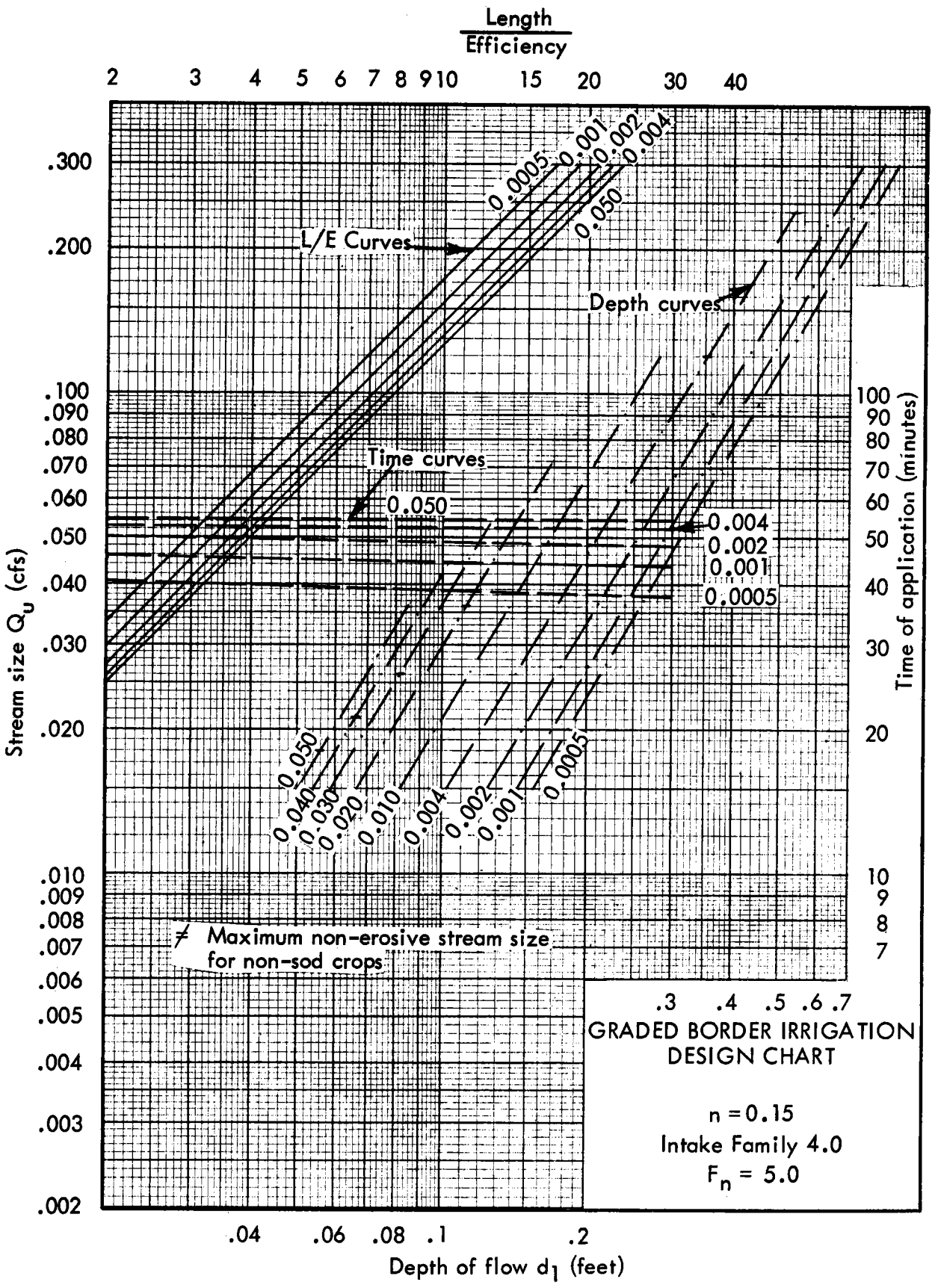

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
L/E curves
Time curves
0.0005
0.001
0.002
0.004
0.060
0.004
0.060
0.002
0.001
0.0005
Depth curves
0.060
0.050
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
≠ Maximum non-erosive stream size for non-sod crops
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 3.0
F_n = 4.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

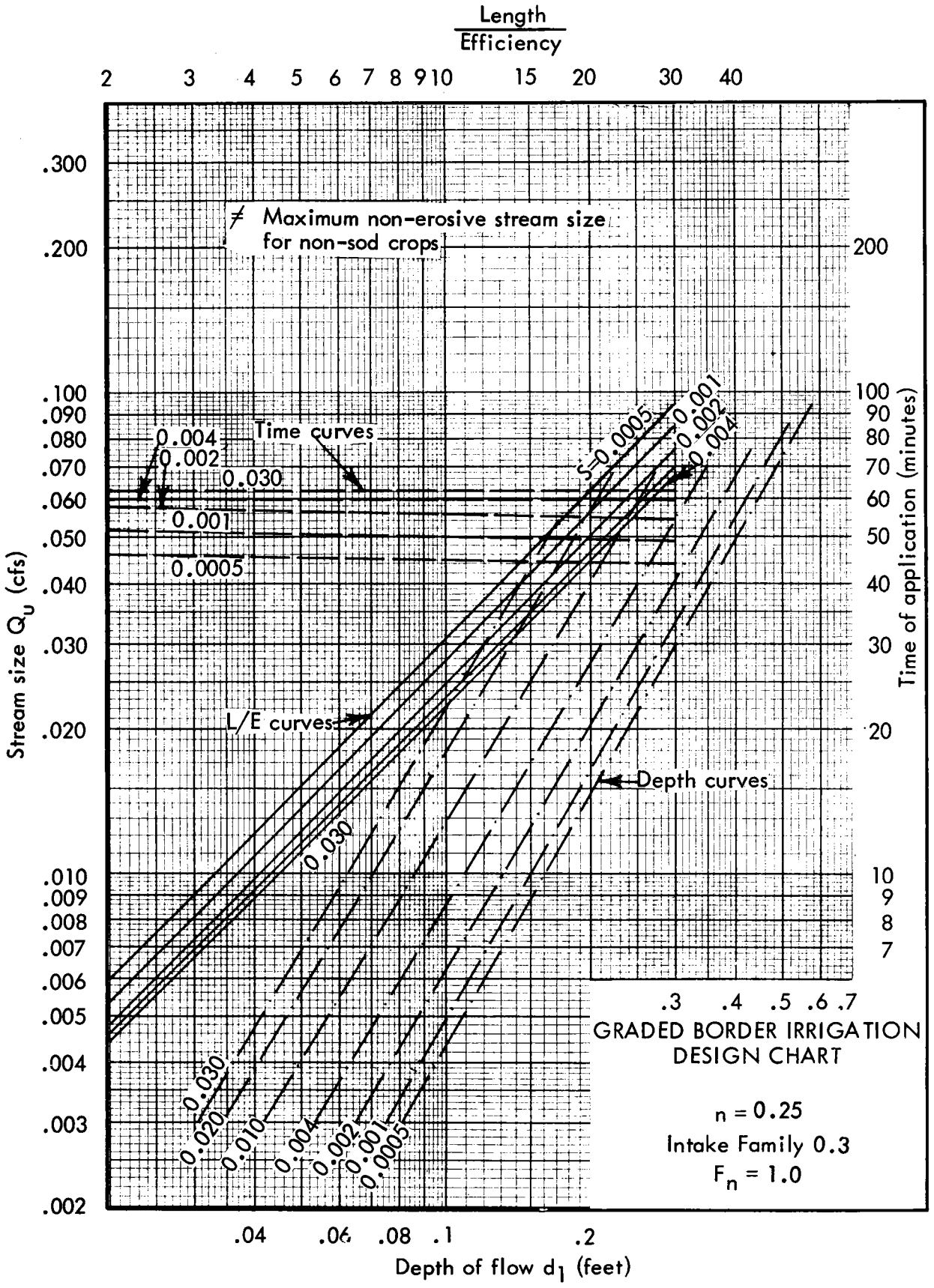

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
0.0005
0.001
0.002
0.004
0.060
L/E curves
0.004
0.060
0.002
0.001
0.0005
Time curves
Depth curves
0.060
0.050
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
≠ Maximum non-erosive stream size for non-sod crops
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 3.0
F_n = 5.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

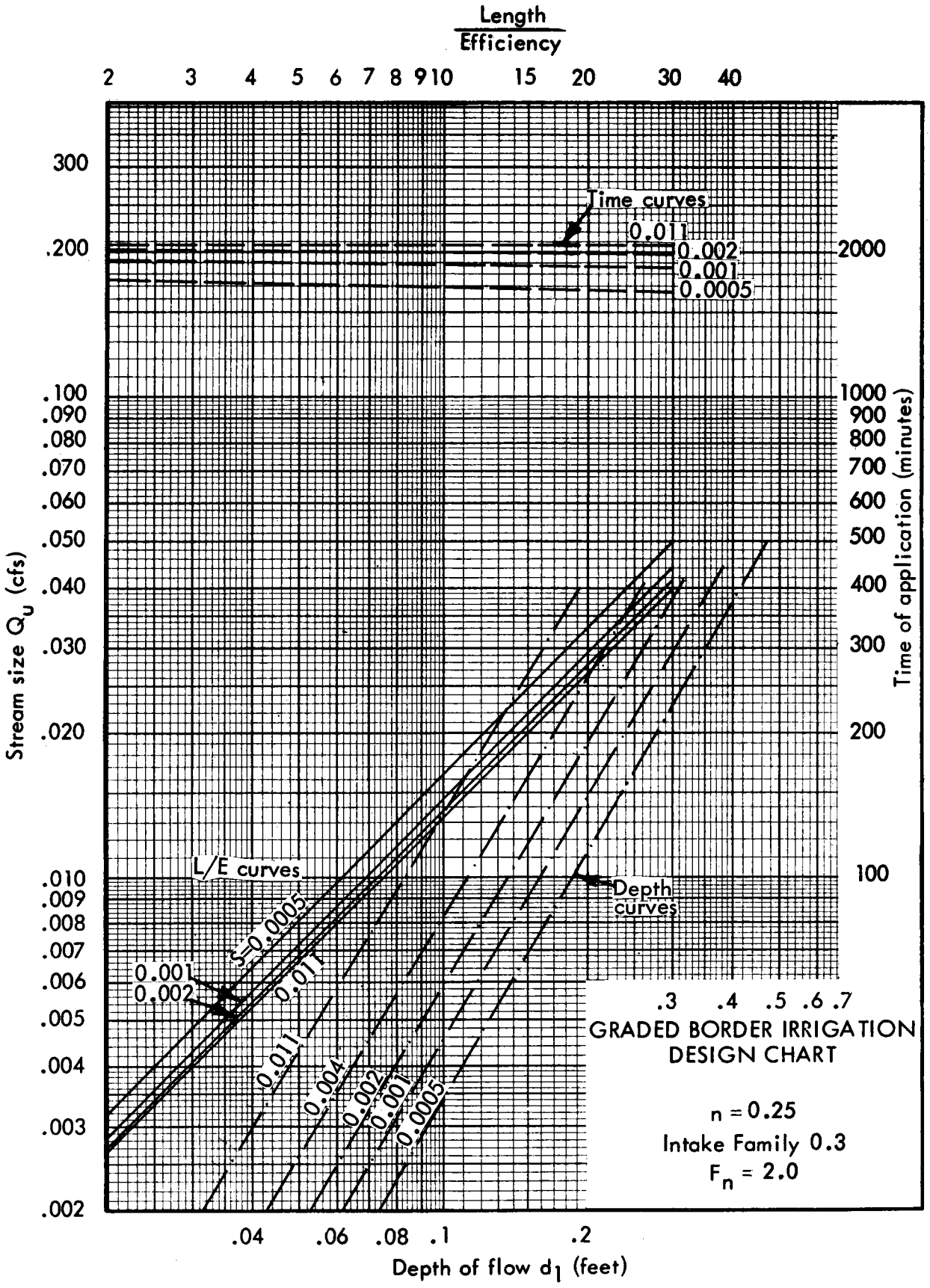

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
0.0005
0.001
0.002
0.004
0.010
0.030
L/E curves
0.020
Depth curves
Time curves
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
≠ Maximum non-erosive stream size for non-sod crops
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 4.0
F_n = 2.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

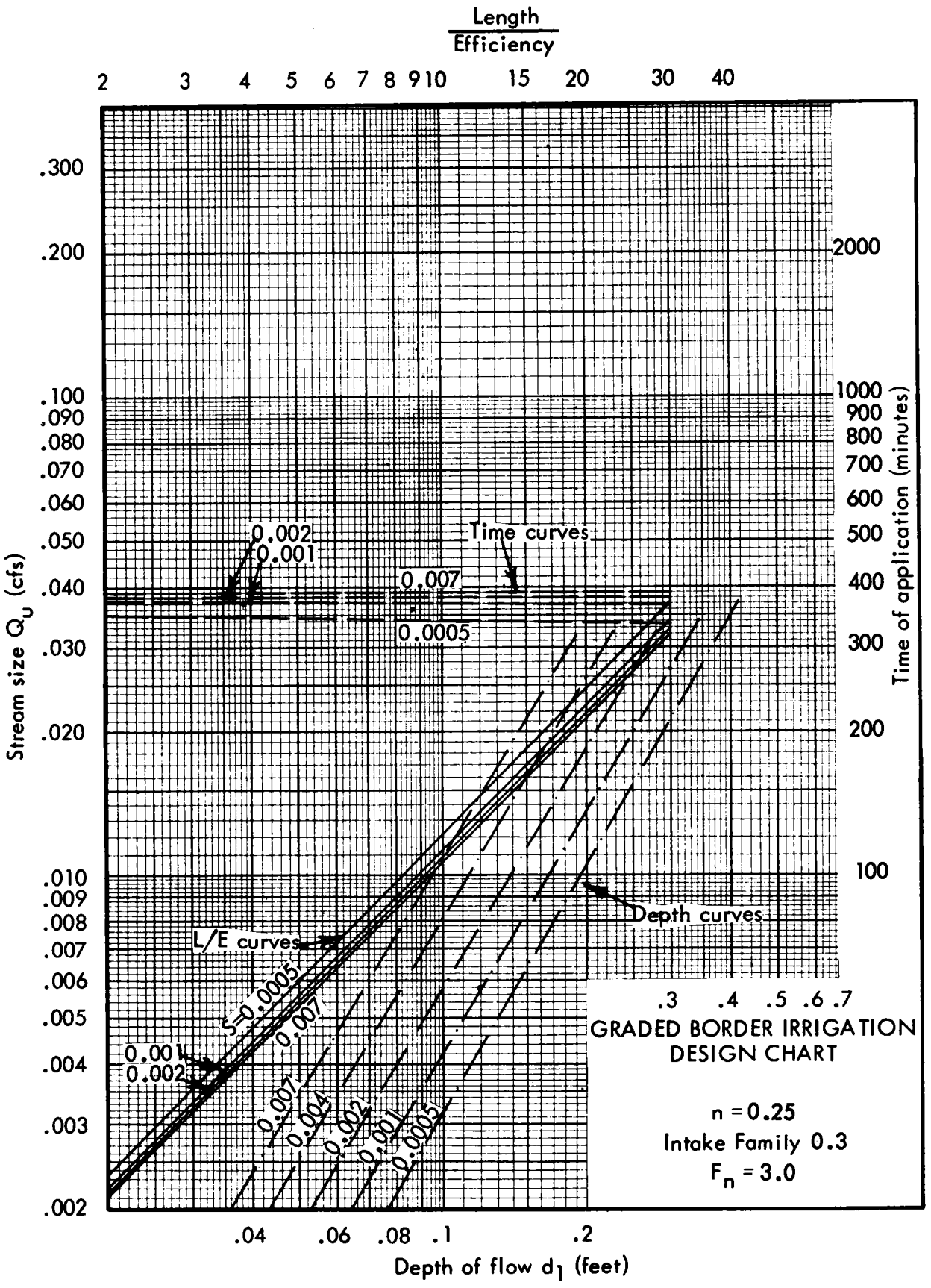

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
L/E curves
0.0005
0.001
0.002
0.004
0.040
Depth curves
0.004
0.002
0.001
0.0005
0.010
0.020
0.030
0.040
Time curves
0.040
0.004
0.002
0.001
0.0005
≠ Maximum non-erosive stream size for non-sod crops
Stream size Q_u (cfs)
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Time of application (minutes)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 4.0
F_n = 3.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

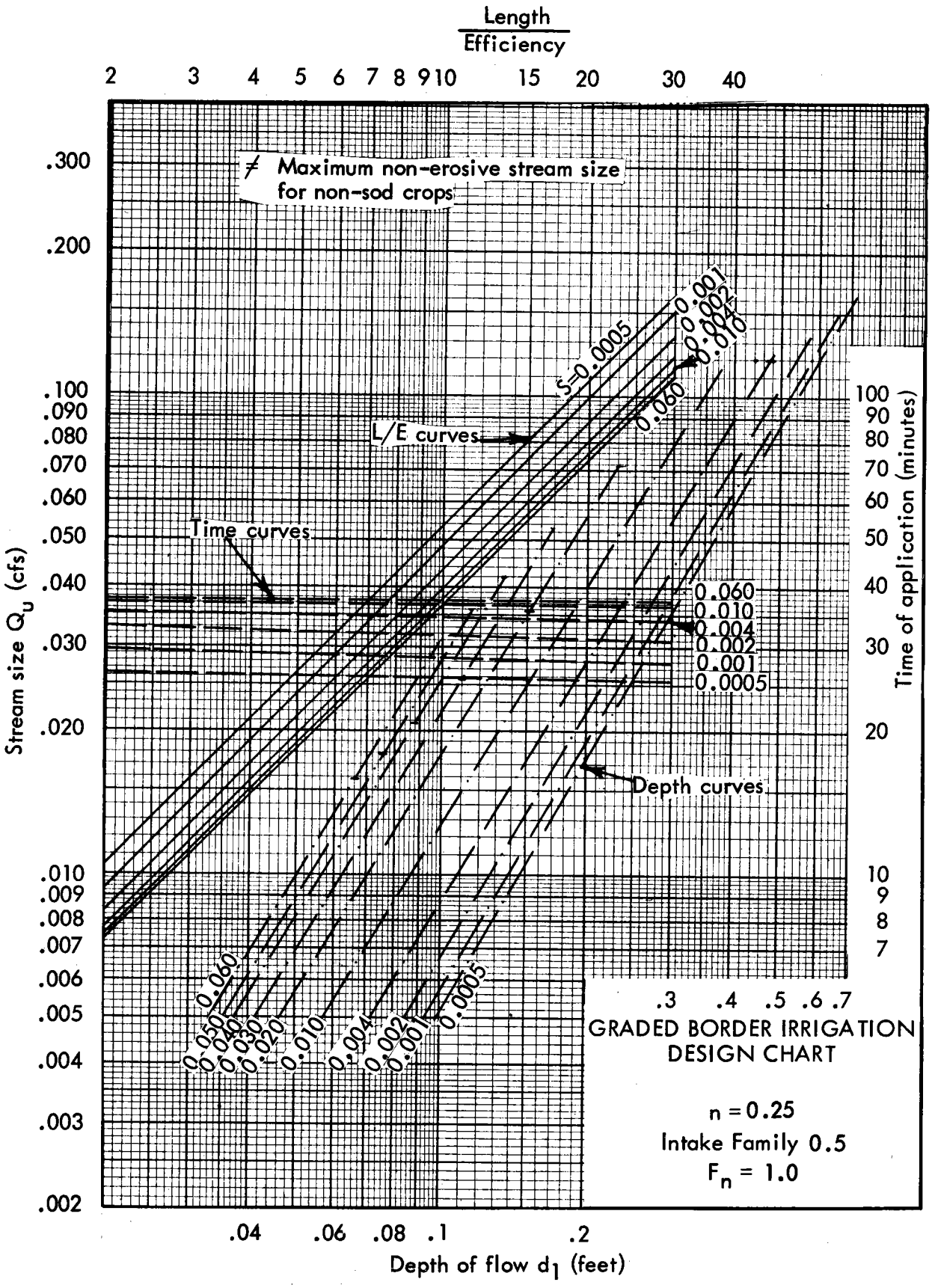

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
L/E curves
0.0005
0.001
0.002
0.004
0.045
Time curves
0.010
0.020
0.030
0.040
0.045
Depth curves
0.045
0.004
0.002
0.001
0.0005
≠ Maximum non-erosive stream size for non-sod crops
Stream size Q_u (cfs)
.300 .200 .100 .090 .080 .070 .060 .050 .040 .030 .020 .010 .009 .008 .007 .006 .005 .004 .003 .002
Time of application (minutes)
200 100 90 80 70 60 50 40 30 20 10 9 8 7
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 4.0
F_n = 4.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

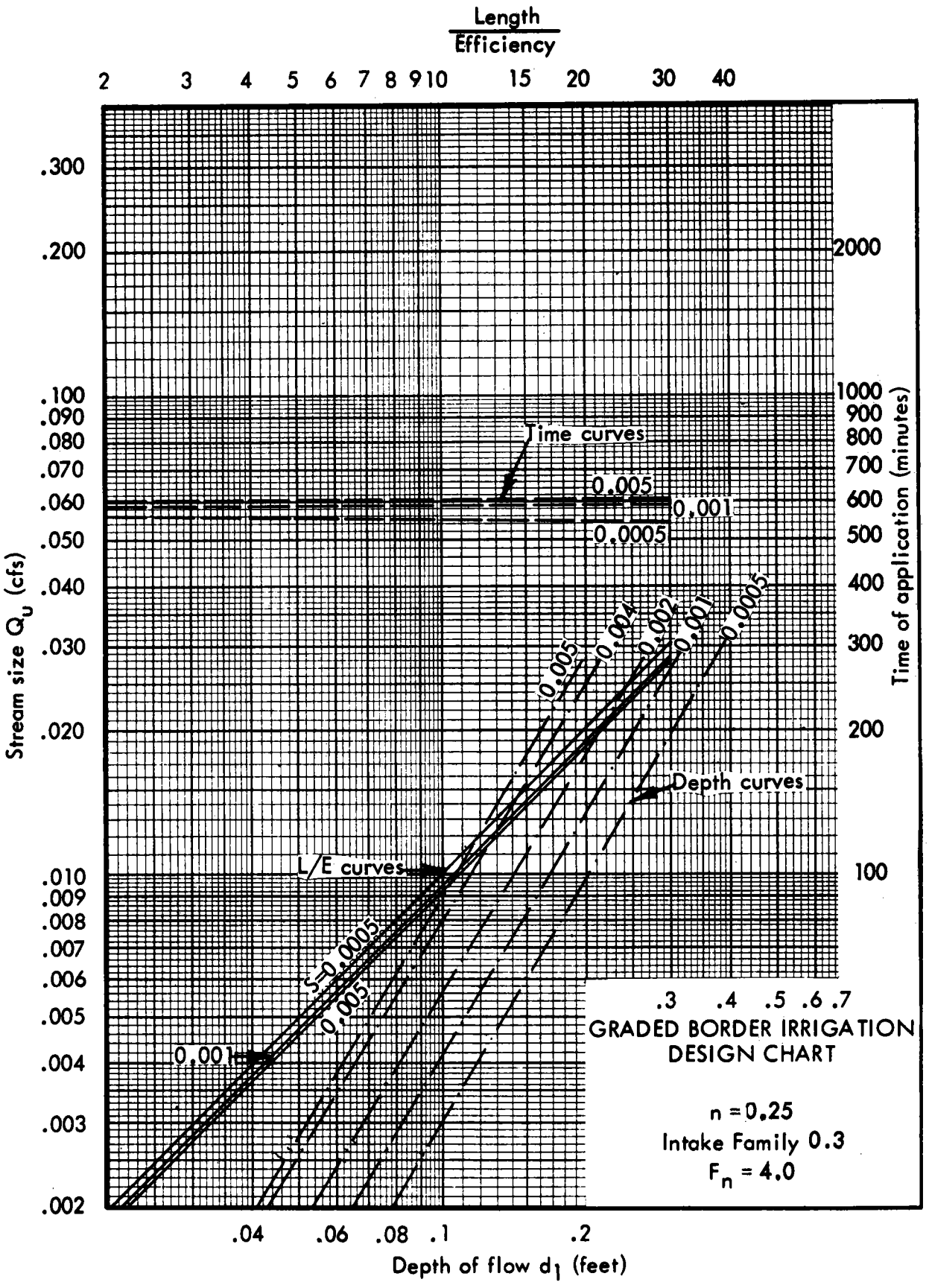

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
L/E Curves
0.0005
0.001
0.002
0.004
0.050
Depth curves
Time curves
0.050
0.004
0.002
0.001
0.0005
0.050
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
≠ Maximum non-erosive stream size for non-sod crops
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.15
Intake Family 4.0
F_n = 5.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

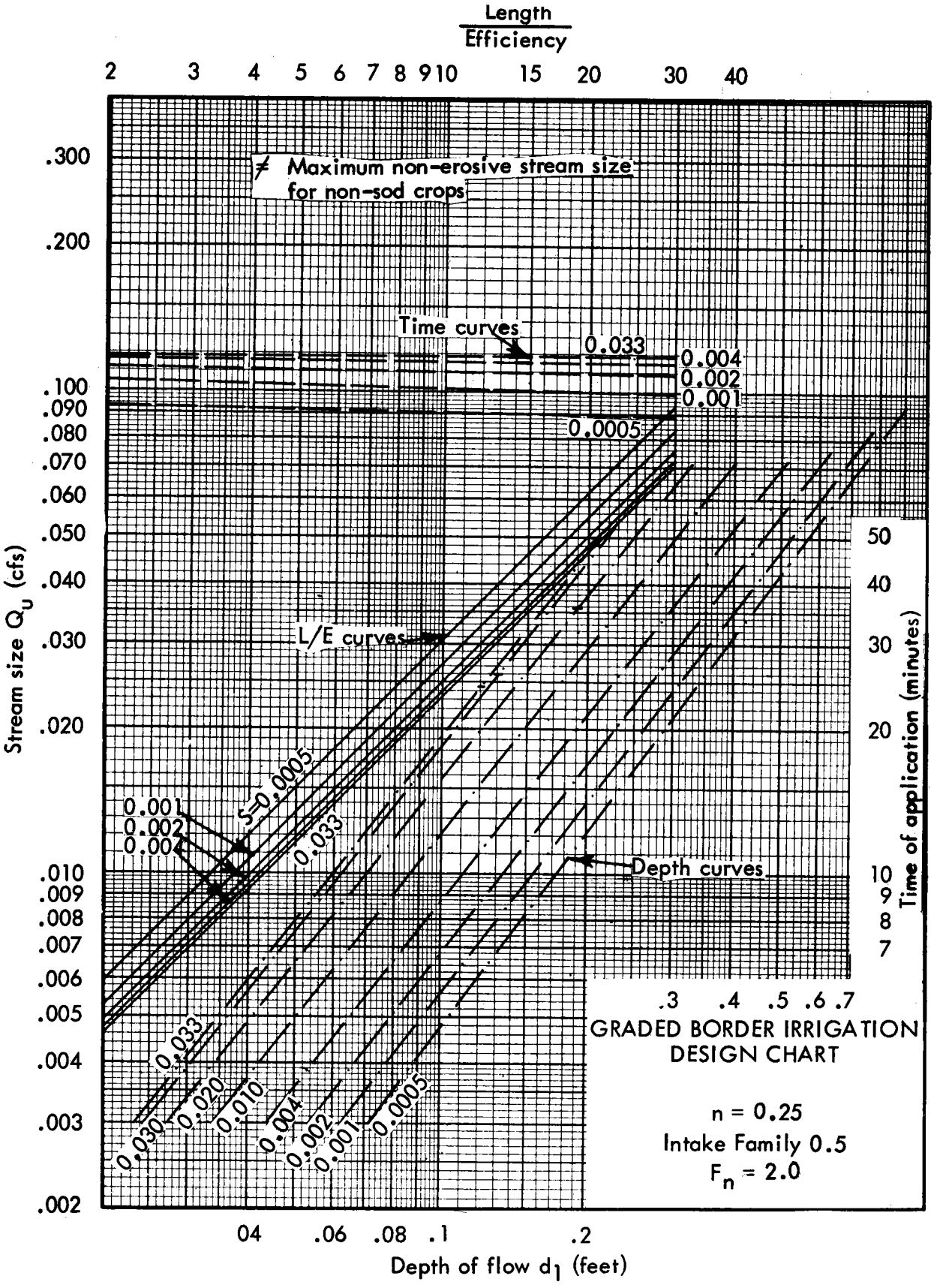

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
≠ Maximum non-erosive stream size for non-sod crops
Time curves
0.004
0.002
0.030
0.001
0.0005
S=0.0005
0.001
0.002
0.004
L/E curves
Depth curves
0.030
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
Stream size Q_u (cfs)
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Time of application (minutes)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 0.3
F_n = 1.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

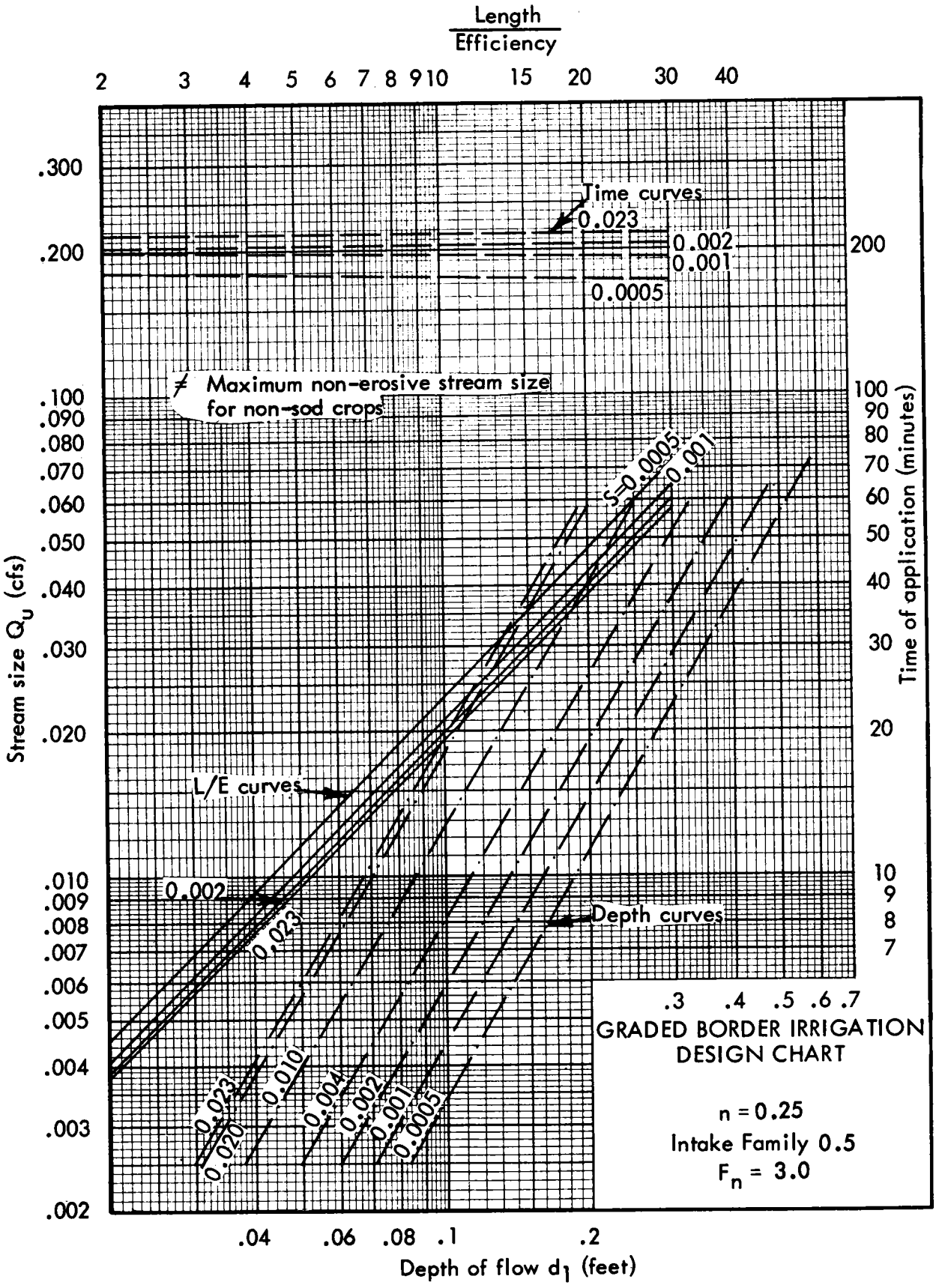

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
Time curves
0.011
0.002
0.001
0.0005
L/E curves
S=0.0005
0.001
0.002
0.011
0.004
0.002
0.001
0.0005
Depth curves
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 0.3
F_n = 2.0
Stream size Q_u (cfs)
300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Time of application (minutes)
2000
1000
900
800
700
600
500
400
300
200
100
.3 .4 .5 .6 .7
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

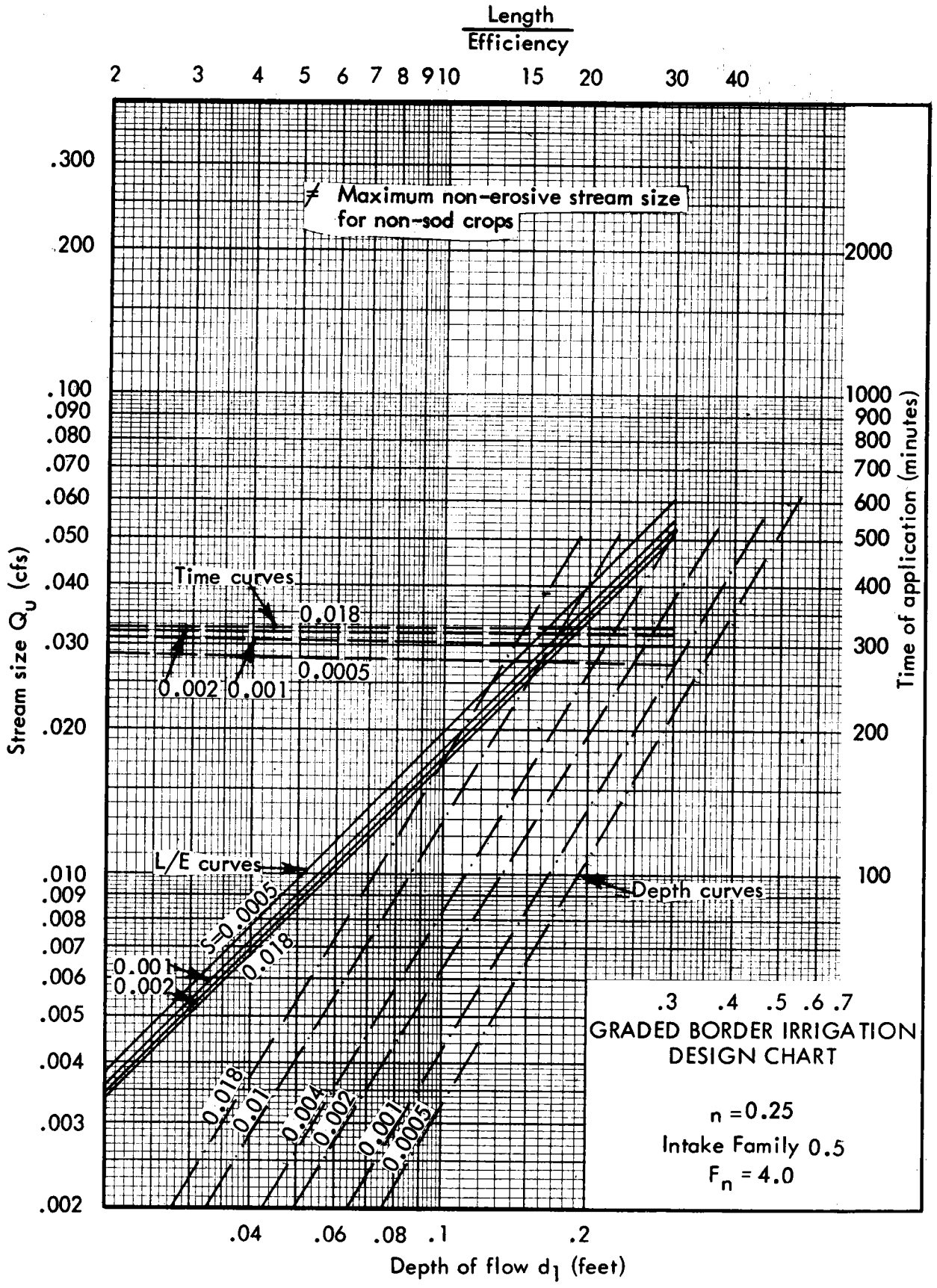

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
2000
1000
900
800
700
600
500
400
300
200
100
Time of application (minutes)
0.002
0.001
0.007
0.0005
Time curves
Depth curves
L/E curves
S=0.0005
0.007
0.001
0.002
0.007
0.004
0.002
0.001
0.0005
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION
DESIGN CHART
n = 0.25
Intake Family 0.3
F_n = 3.0

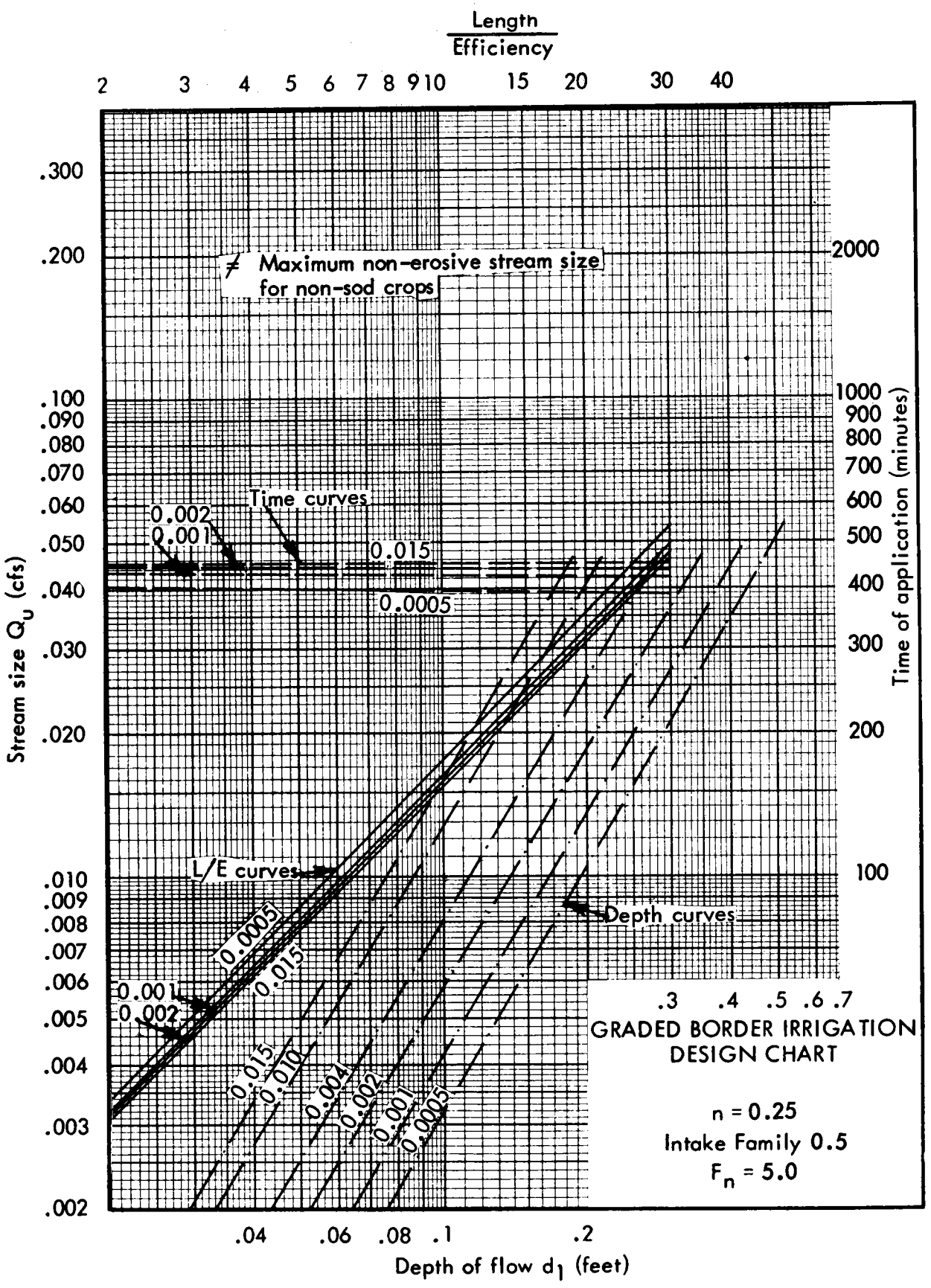

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
≠ Maximum non-erosive stream size for non-sod crops
S=0.0005
0.001
0.002
0.004
0.010
0.060
L/E curves
Time curves
Depth curves
0.060
0.010
0.004
0.002
0.001
0.0005
0.060
0.050
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 0.5
F_n = 1.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

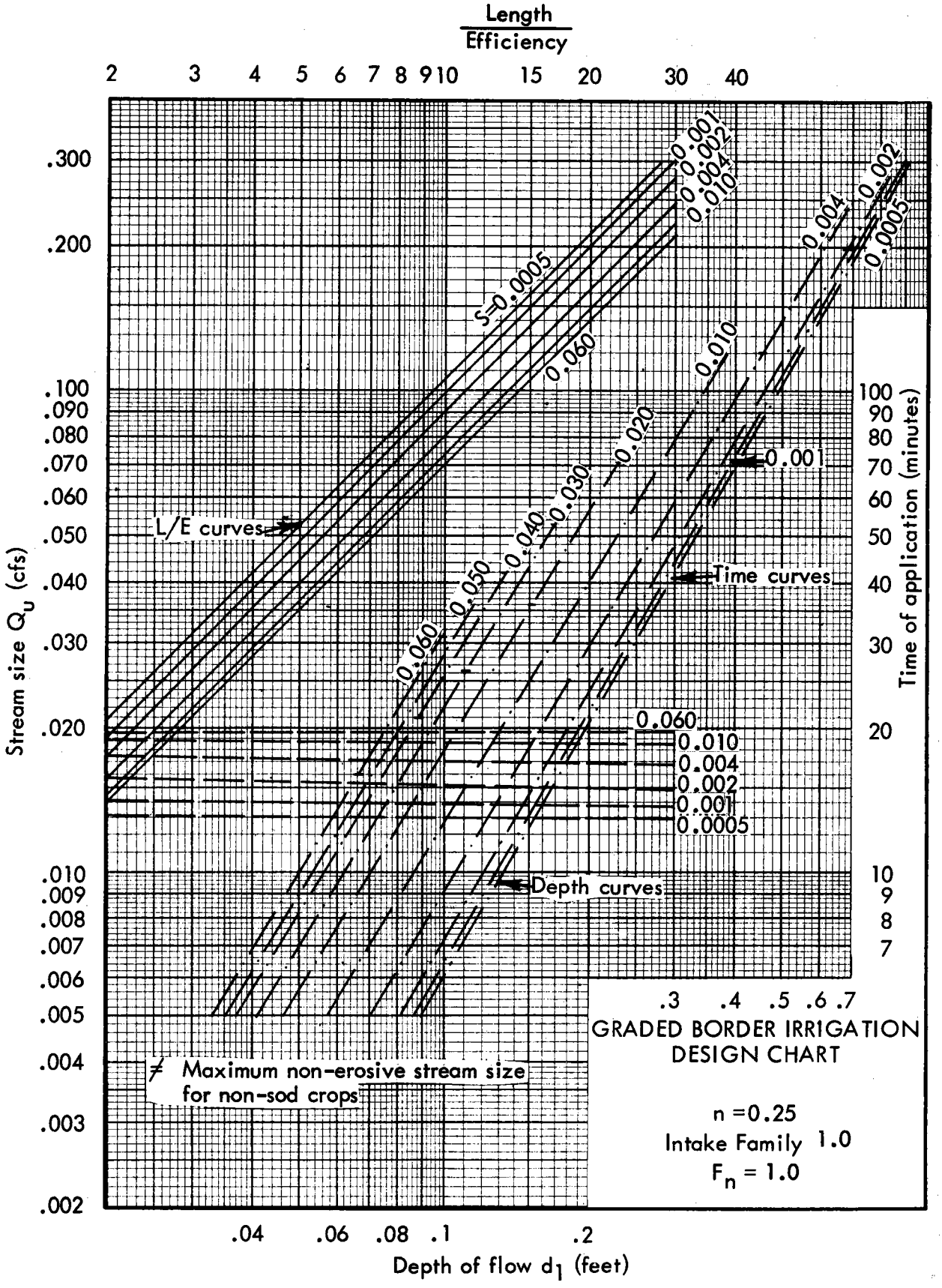

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
2000
1000
900
800
700
600
500
400
300
200
100
Time of application (minutes)
Time curves
0.005
0.001
0.0005
0.005
0.004
0.002
0.001
0.0005
Depth curves
L/E curves
S=0.0005
0.0005
0.001
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 0.3
F_n = 4.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

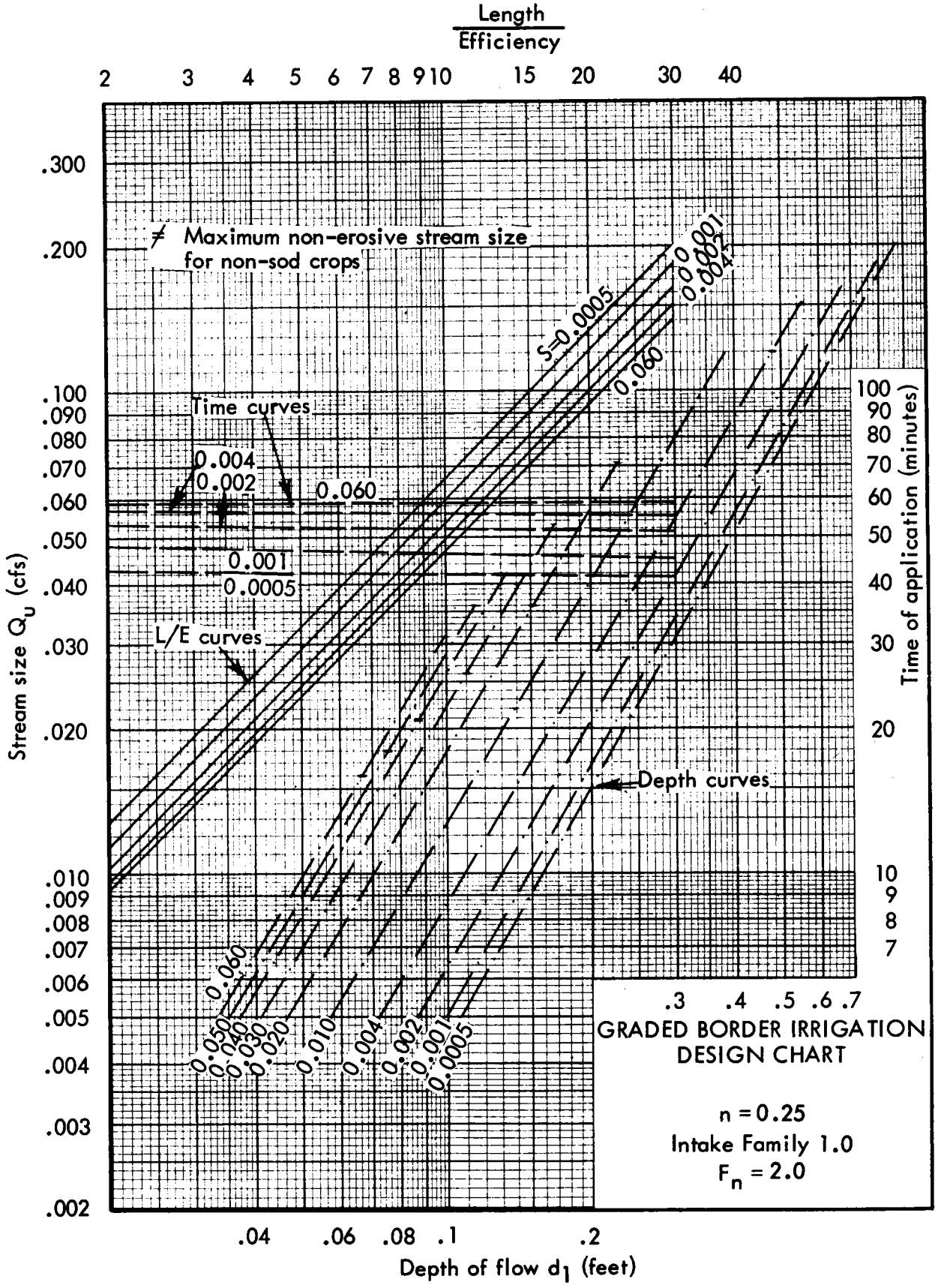

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
≠ Maximum non-erosive stream size for non-sod crops
Time curves
0.033
0.004
0.002
0.001
0.0005
L/E curves
S=0.0005
0.001
0.002
0.004
0.033
Depth curves
0.033
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
Stream size Q_u (cfs)
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Time of application (minutes)
50
40
30
20
10
9
8
7
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 0.5
F_n = 2.0
04 .06 .08 .1 .2
Depth of flow d_1 (feet)

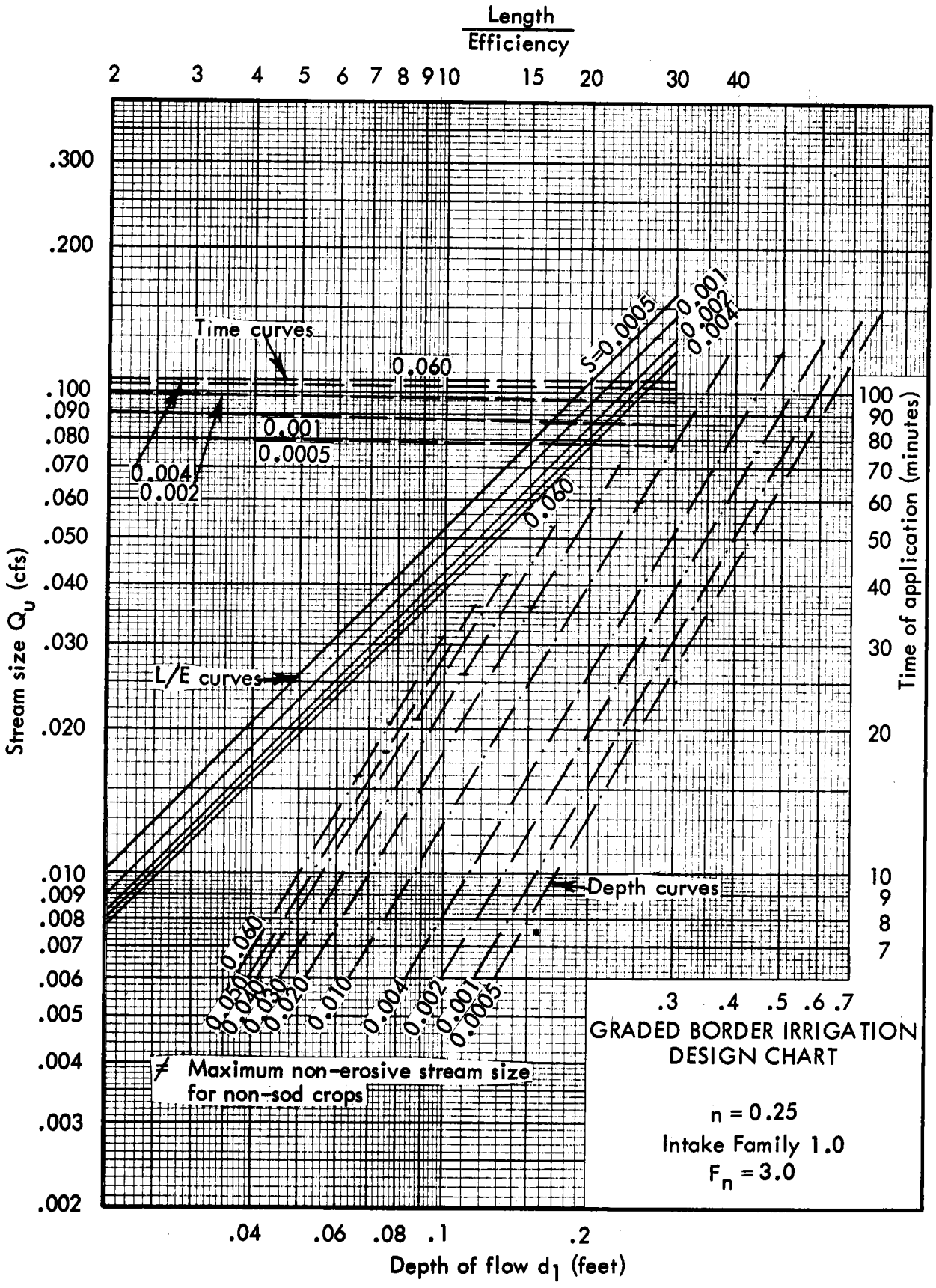

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
Time curves
0.023
0.002
0.001
0.0005
Maximum non-erosive stream size for non-sod crops
S=0.0005
0.001
L/E curves
0.002
0.023
Depth curves
0.023
0.020
0.010
0.004
0.002
0.001
0.0005
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 0.5
F_n = 3.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

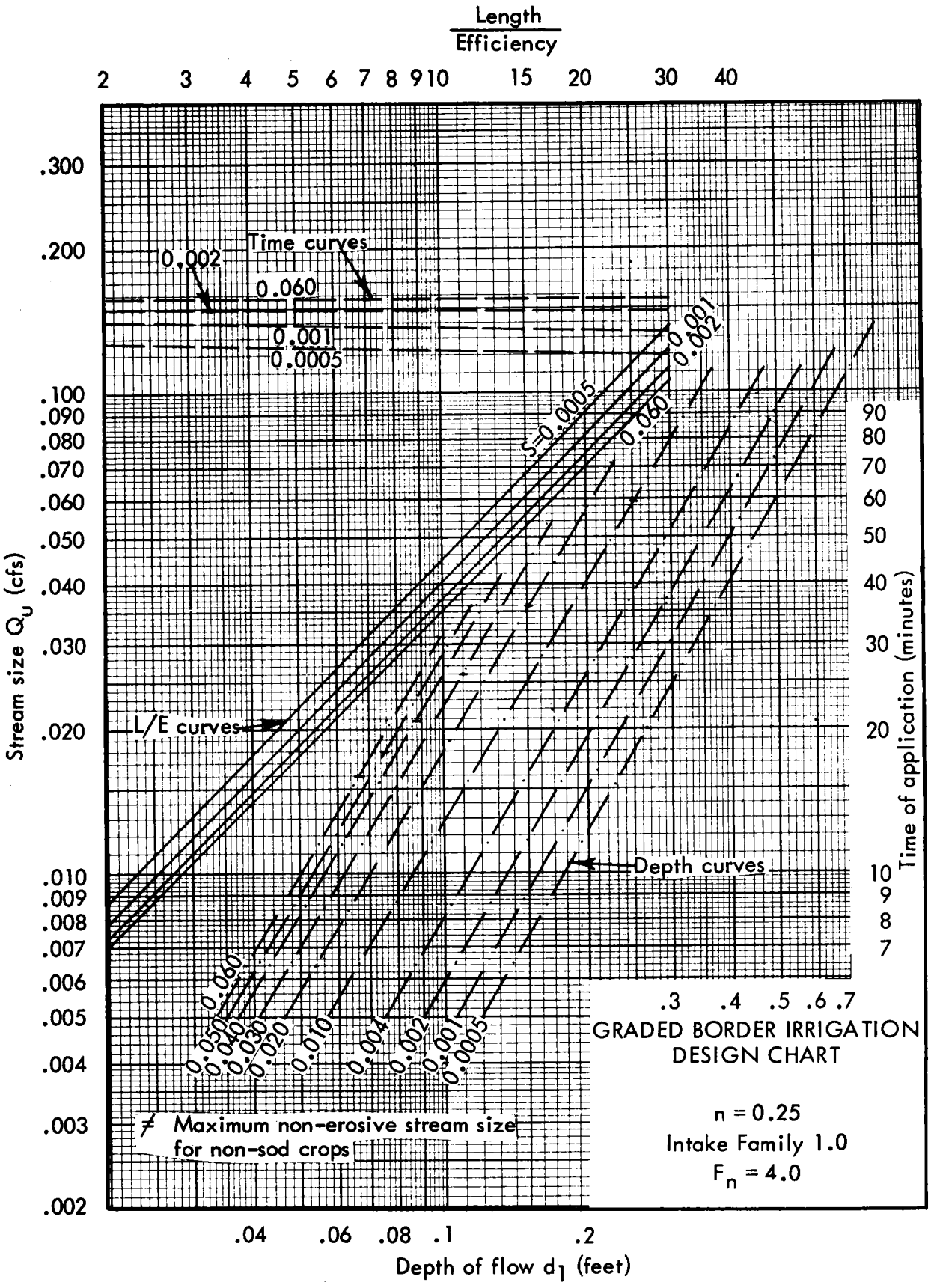

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
≠ Maximum non-erosive stream size for non-sod crops
Time curves
0.018
0.0005
0.002 0.001
L/E curves
Depth curves
S=0.0005
0.018
0.001
0.002
0.018
0.01
0.004
0.002
0.001
0.0005
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
2000
1000
900
800
700
600
500
400
300
200
100
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 0.5
F_n = 4.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

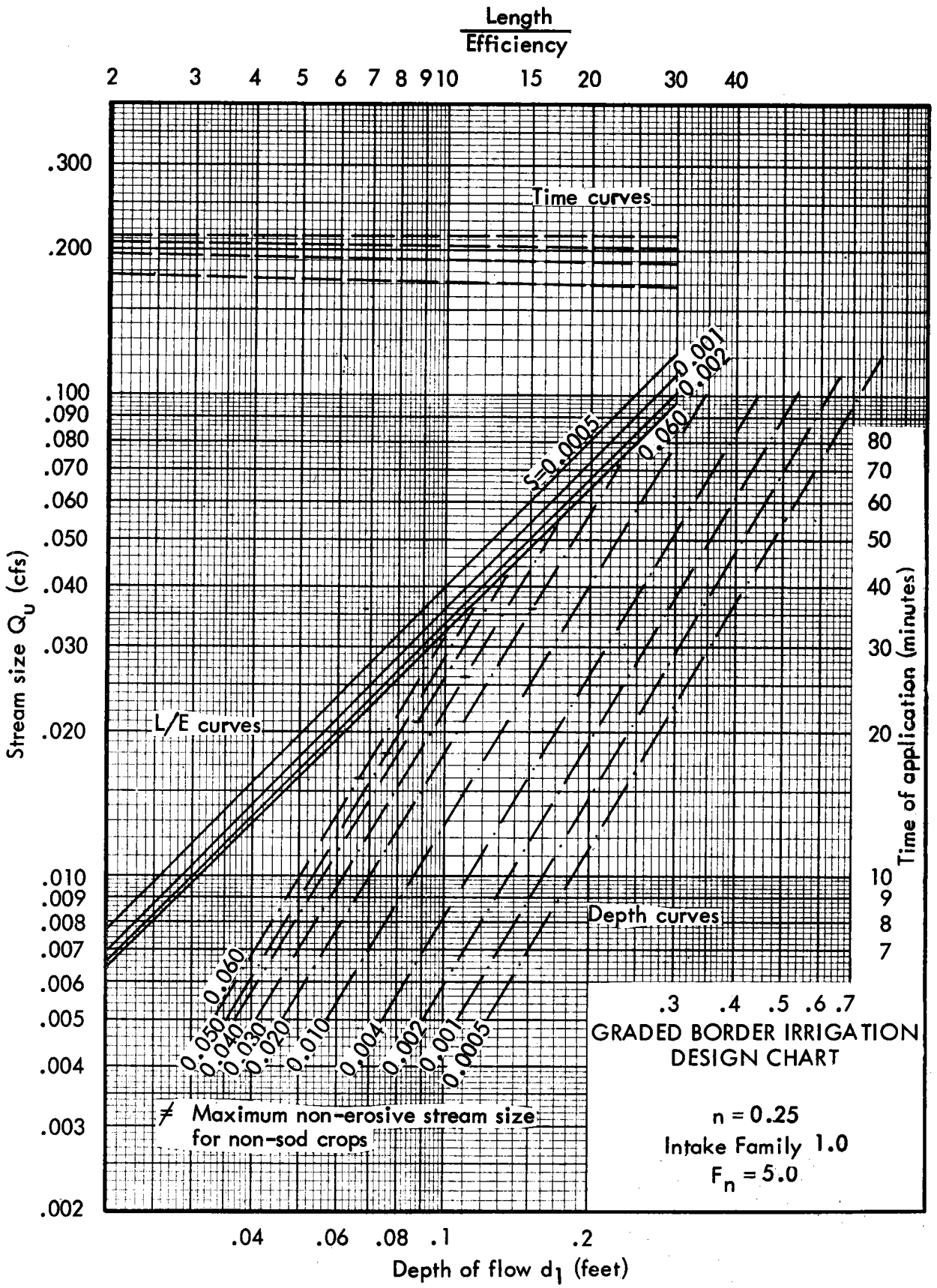

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
Maximum non-erosive stream size for non-sod crops
Time curves
0.002
0.001
0.015
0.0005
L/E curves
Depth curves
0.0005
0.015
0.001
0.002
0.015
0.010
0.004
0.002
0.001
0.0005
Stream size Q_u (cfs)
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Time of application (minutes)
2000
1000
900
800
700
600
500
400
300
200
100
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 0.5
F_n = 5.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

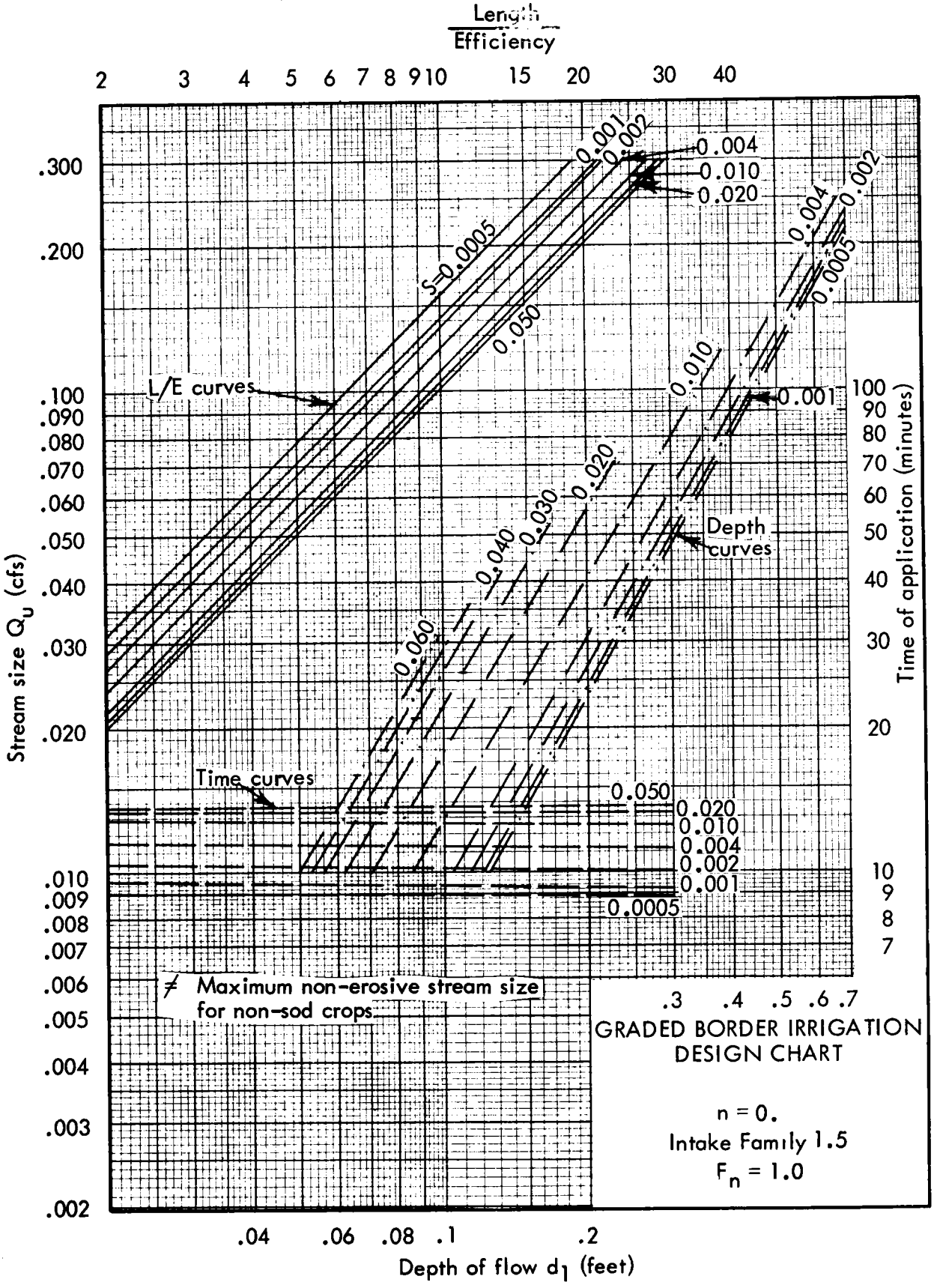

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
S=0.0005
0.001
0.002
0.004
0.010
0.060
L/E curves
0.020
0.030
0.040
0.050
0.060
0.010
0.004
0.002
0.001
0.0005
Time curves
Depth curves
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
≠ Maximum non-erosive stream size for non-sod crops
n =0.25
Intake Family 1.0
F_n = 1.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

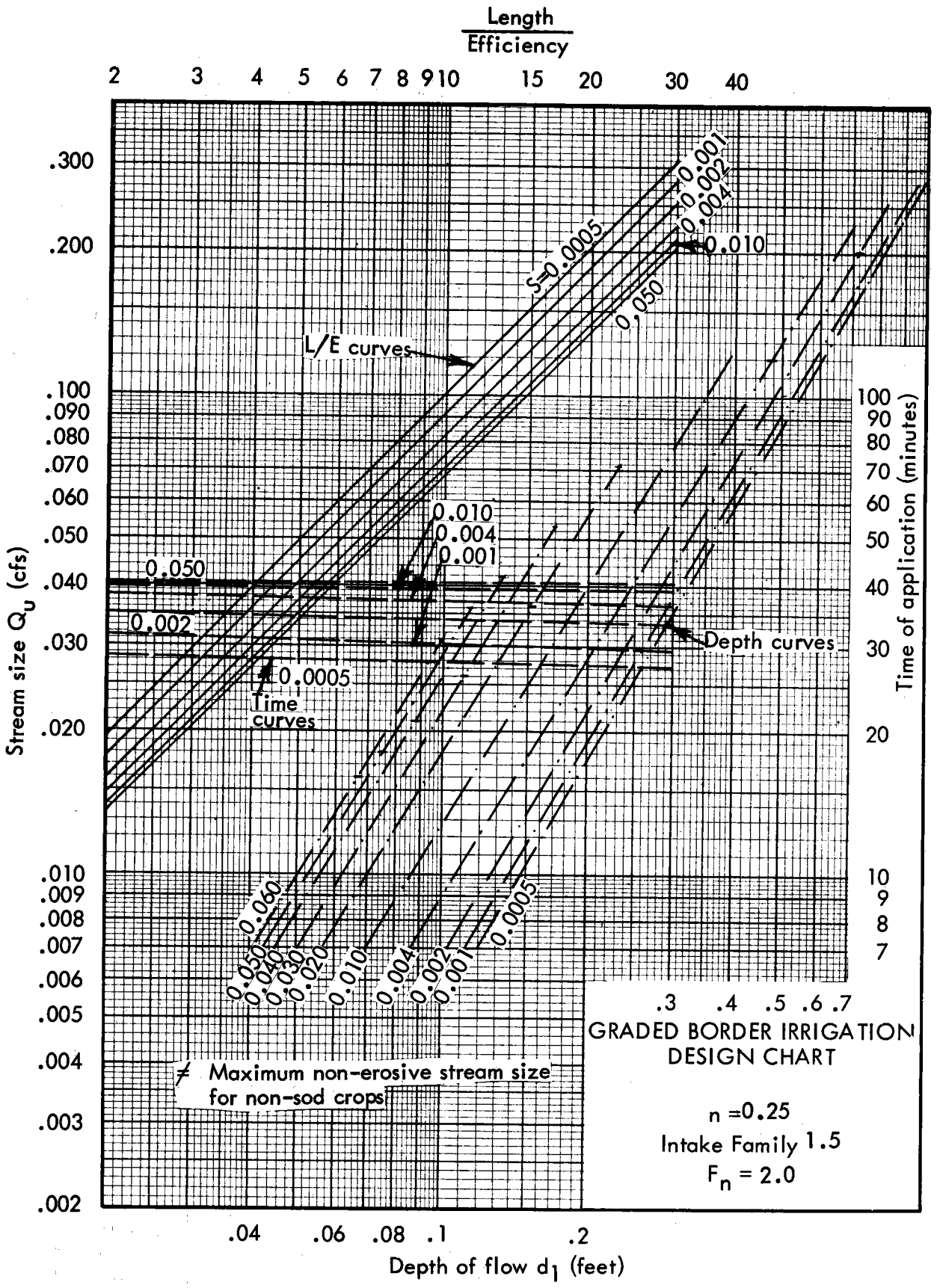

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
≠ Maximum non-erosive stream size for non-sod crops
S=0.0005
0.001
0.0042
0.060
Time curves
0.004
0.002
0.060
0.001
0.0005
L/E curves
Depth curves
0.060
0.050
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
Stream size Q_u (cfs)
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Time of application (minutes)
100
90
80
70
60
50
40
30
20
10
9
8
7
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 1.0
F_n = 2.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

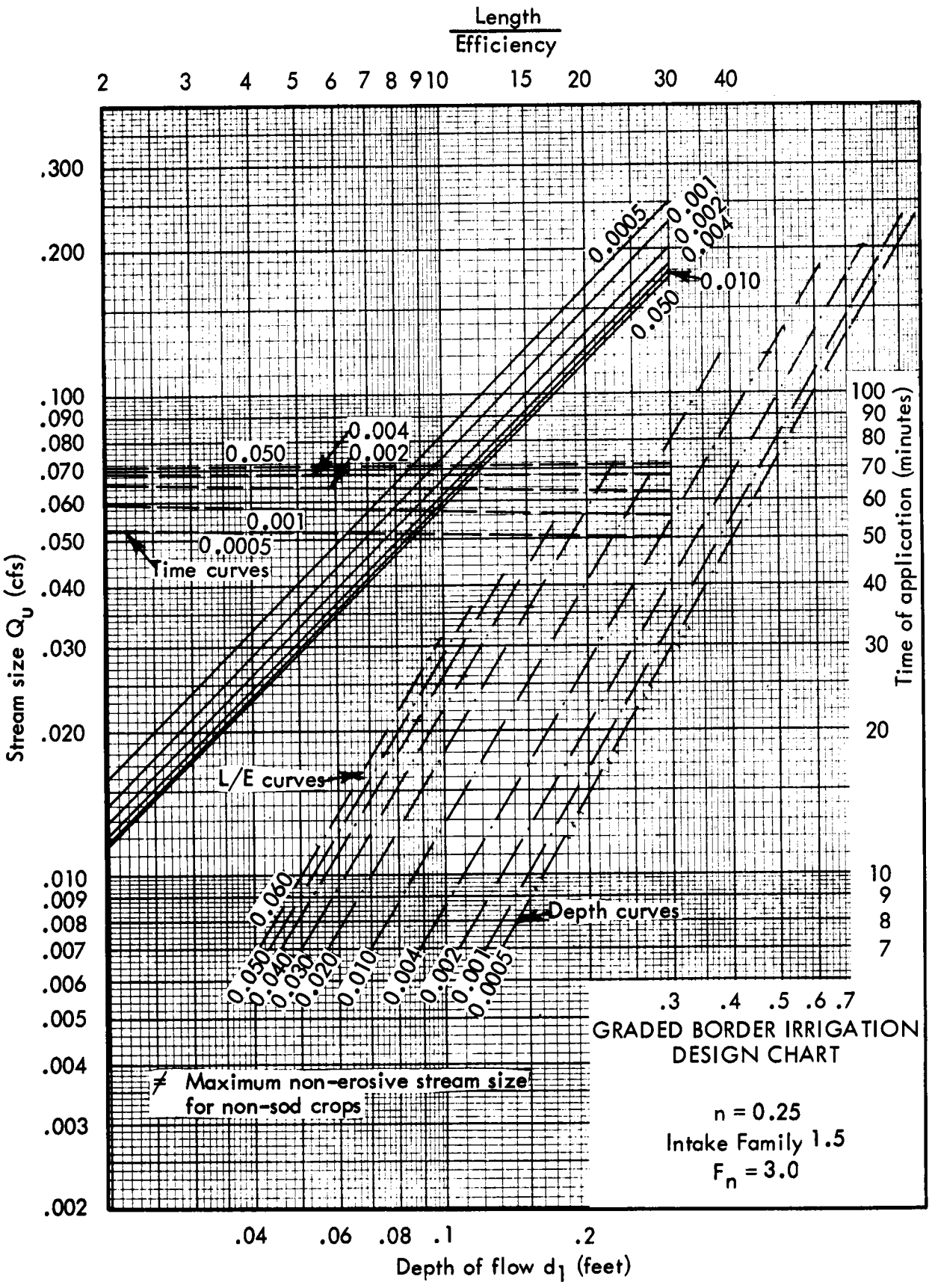

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
Time curves
0.060
0.001
0.0005
0.004
0.002
S=0.0005
0.001
0.002
0.004
0.060
L/E curves
Depth curves
0.060
0.050
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
≠ Maximum non-erosive stream size for non-sod crops
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 1.0
F_n = 3.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

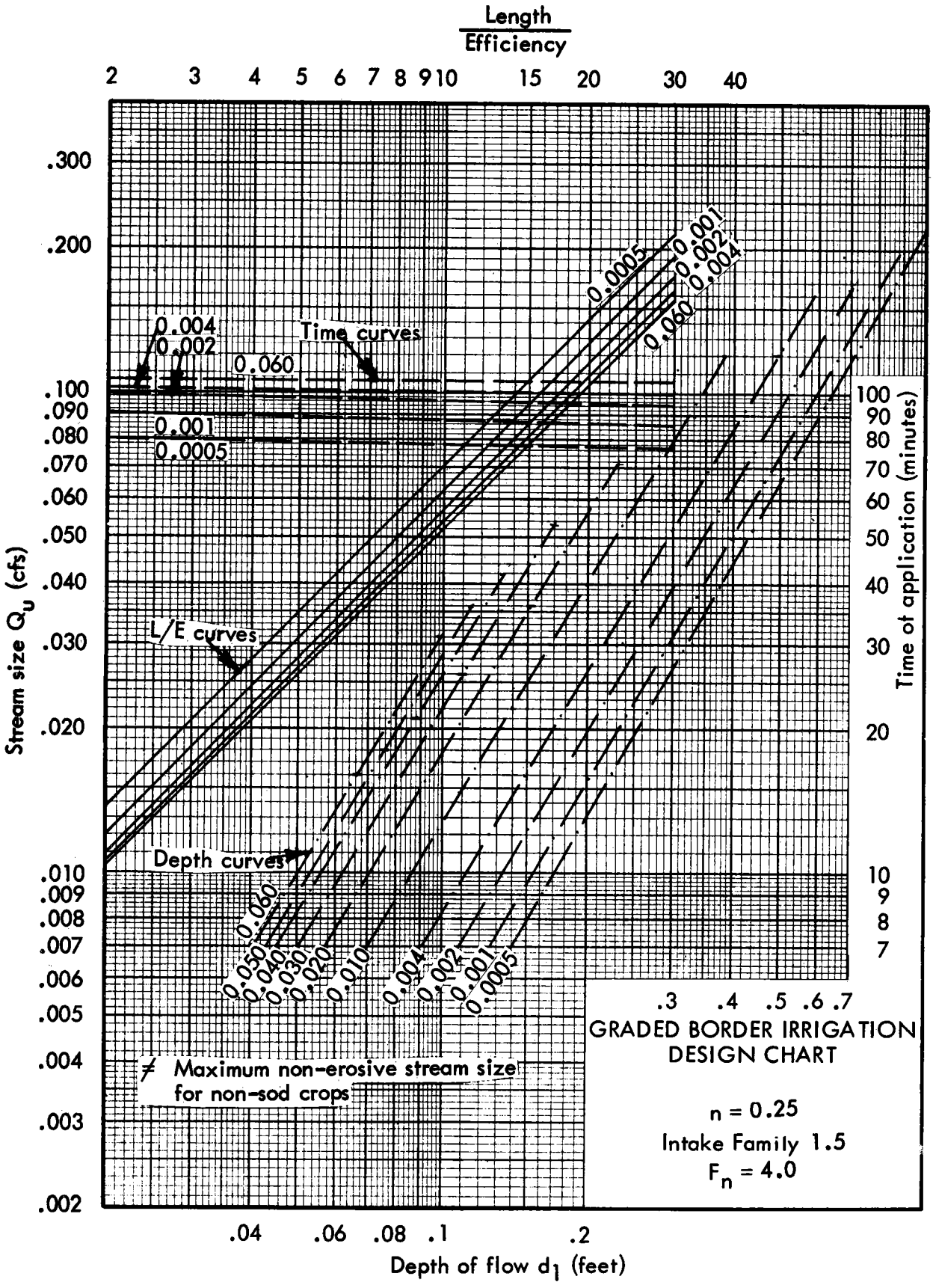

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
Time curves
0.002
0.060
0.001
0.0005
S=0.0005
0.060
0.001
0.0021
L/E curves
Depth curves
0.060
0.050
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
≠ Maximum non-erosive stream size for non-sod crops
Stream size Q_u (cfs)
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Time of application (minutes)
90
80
70
60
50
40
30
20
10
9
8
7
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 1.0
F_n = 4.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

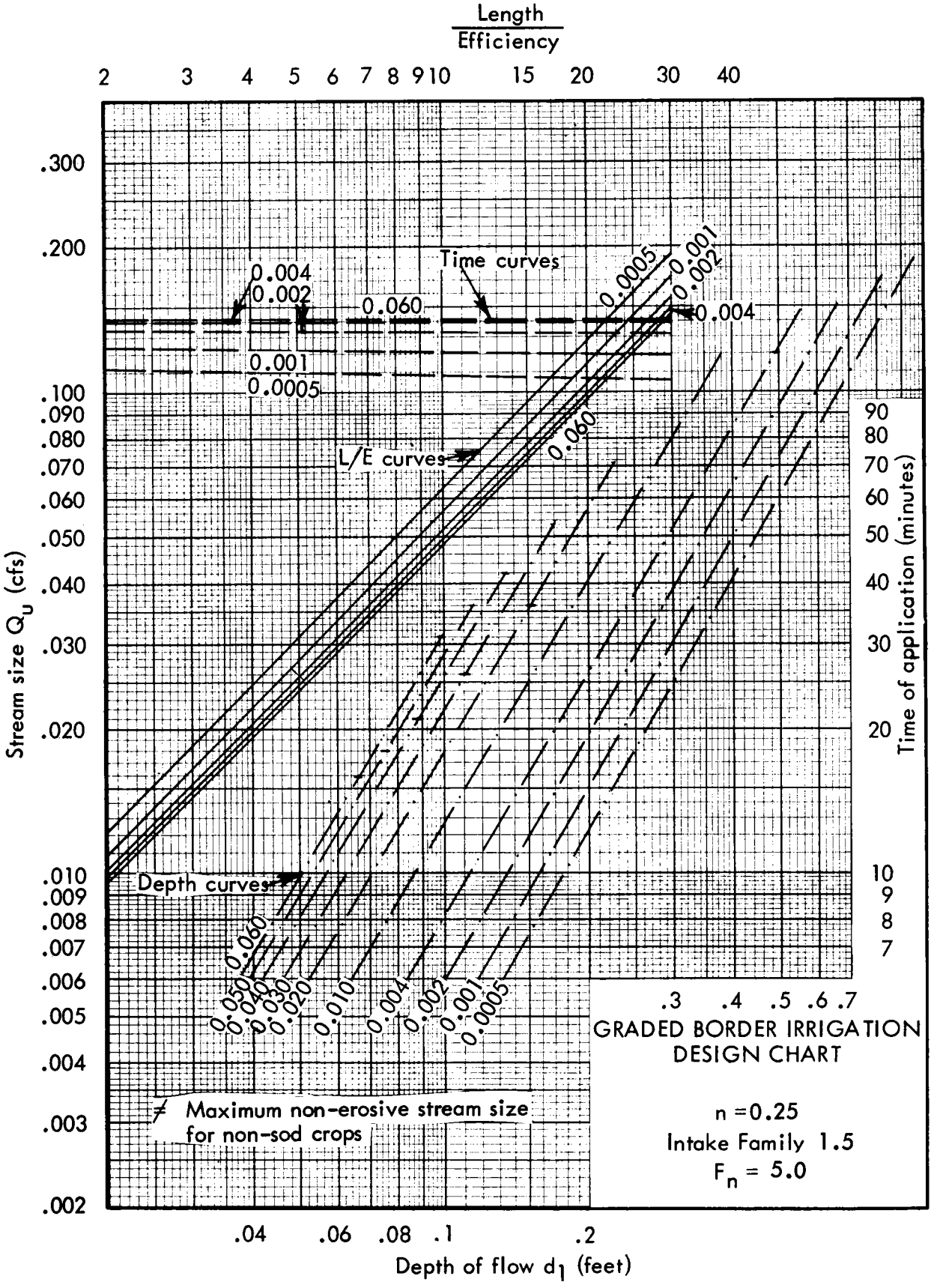

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
Time curves
L/E curves
Depth curves
S=0.0005
0.001
0.002
0.060
0.050
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
≠ Maximum non-erosive stream size for non-sod crops
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 1.0
F_n = 5.0
Stream size Q_u (cfs)
.300 .200 .100 .090 .080 .070 .060 .050 .040 .030 .020 .010 .009 .008 .007 .006 .005 .004 .003 .002
Time of application (minutes)
80 70 60 50 40 30 20 10 9 8 7
.3 .4 .5 .6 .7
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

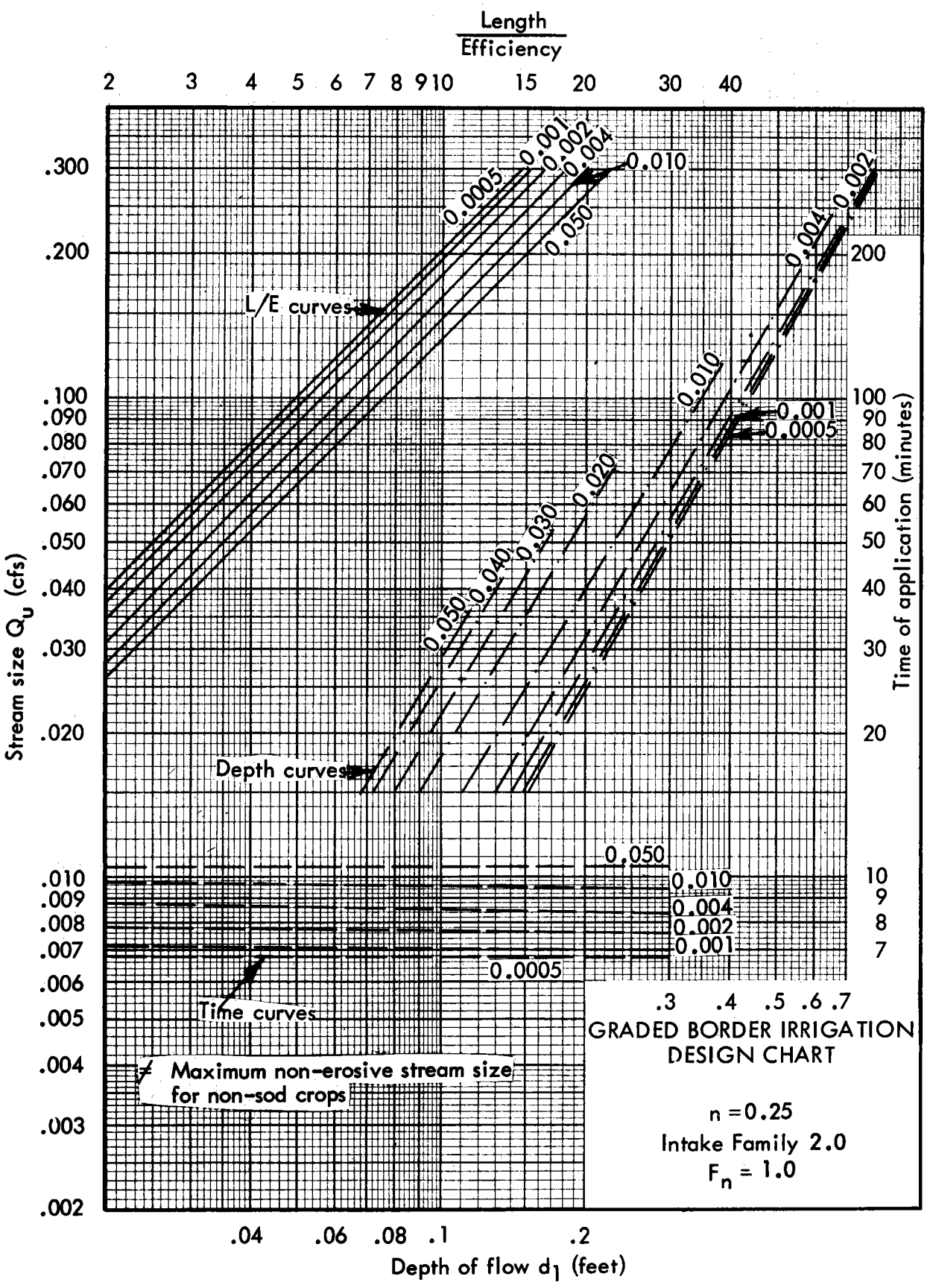

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
L/E curves
S=0.0005
0.001
0.002
0.004
0.010
0.020
0.050
0.060
0.040
0.030
0.020
0.010
0.001
0.004
0.002
0.0005
Depth curves
Time curves
0.050
0.020
0.010
0.004
0.002
0.001
0.0005
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
≠ Maximum non-erosive stream size for non-sod crops
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.
Intake Family 1.5
F_n = 1.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

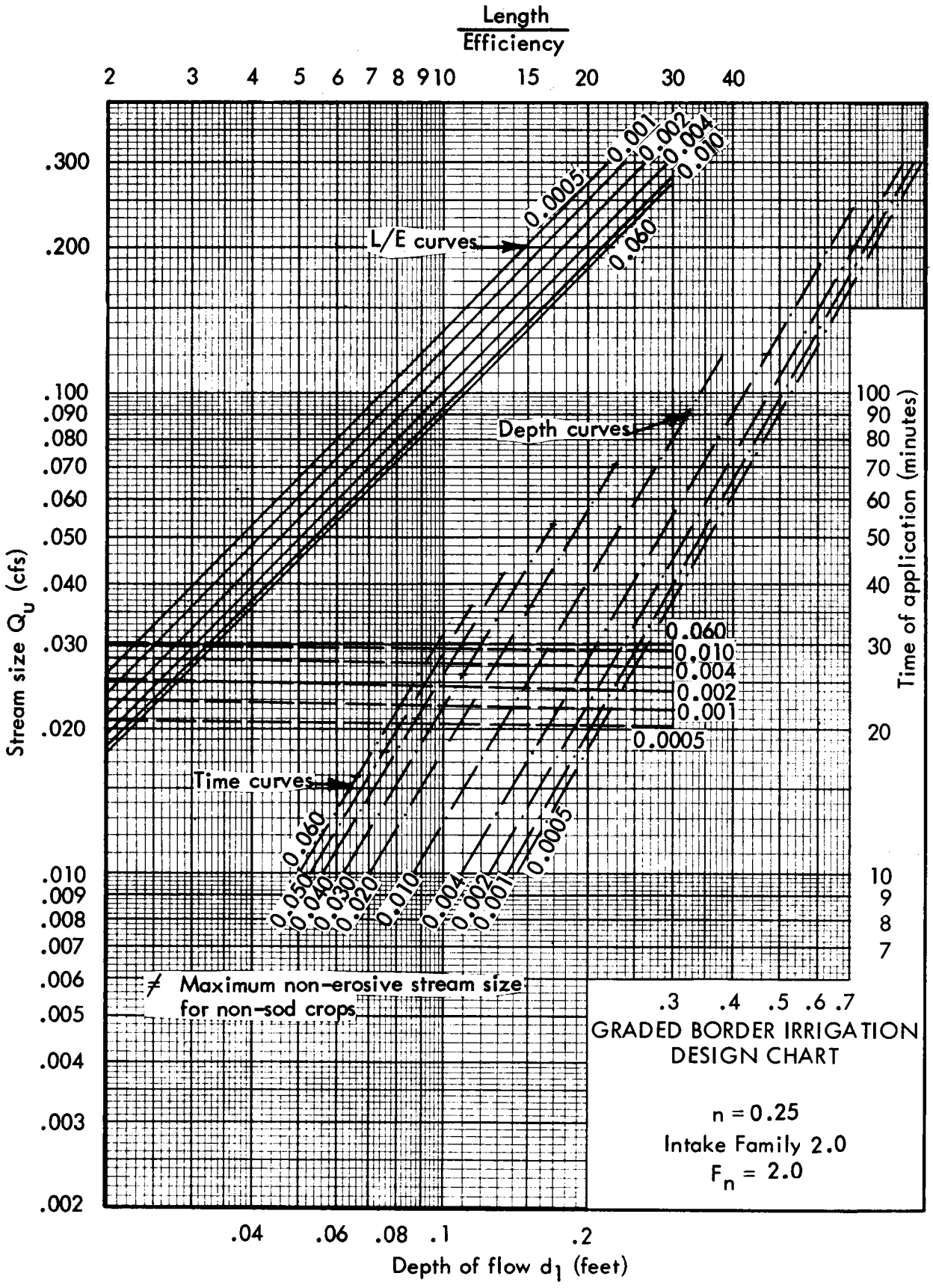

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)
100 90 80 70 60 50 40 30 20 10 9 8 7
Time of application (minutes)
.3 .4 .5 .6 .7
S=0.0005
0.001
0.002
0.004
0.010
0.050
L/E curves
0.010
0.004
0.001
0.050
0.002
0.0005
Time curves
Depth curves
0.060
0.050
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
≠ Maximum non-erosive stream size for non-sod crops
GRADED BORDER IRRIGATION DESIGN CHART
n =0.25
Intake Family 1.5
F_n = 2.0

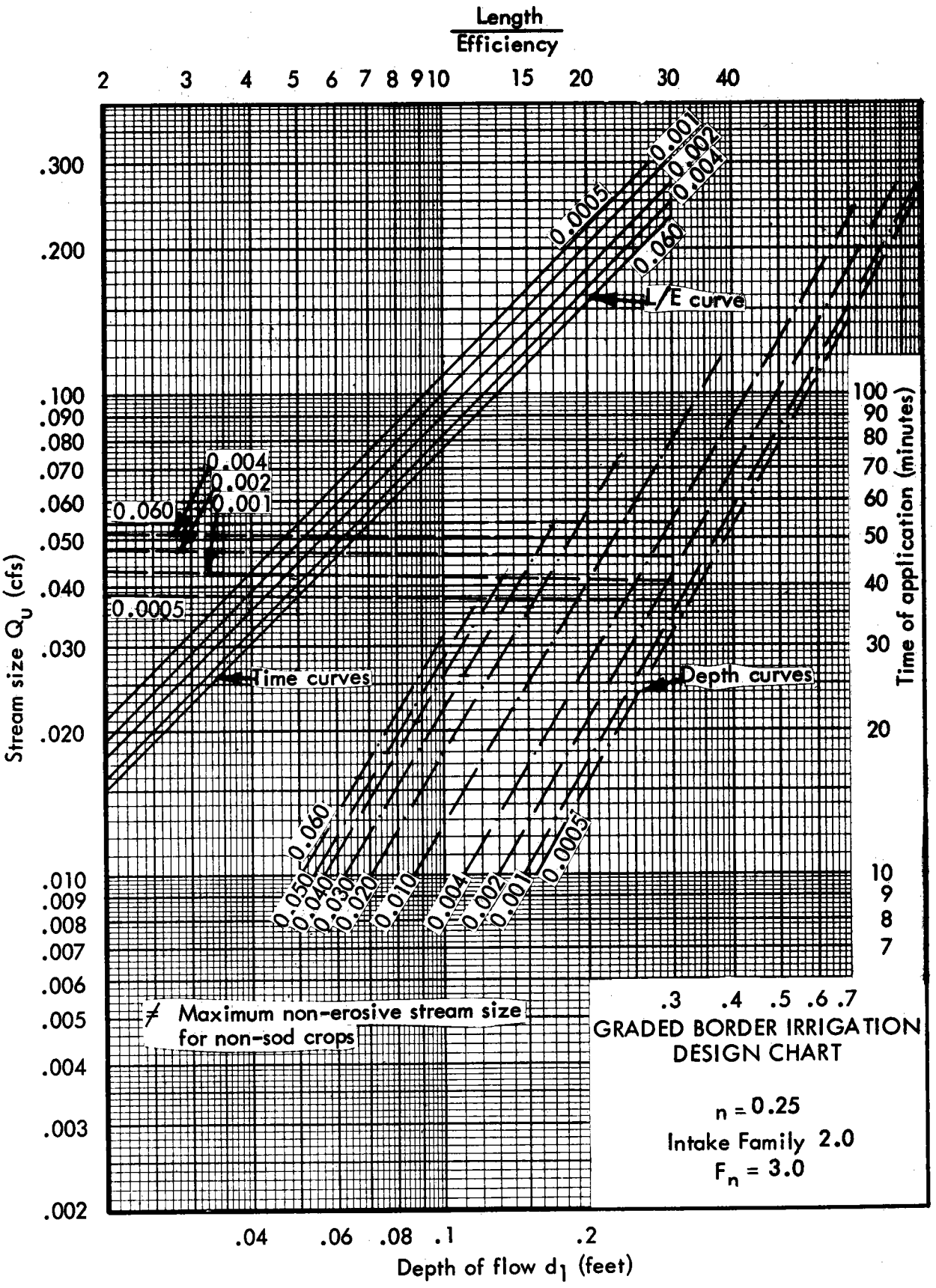

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
0.0005
0.001
0.002
0.004
0.010
0.050
0.004
0.002
0.050
0.001
0.0005
Time curves
L/E curves
0.060
0.050
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
Depth curves
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION
DESIGN CHART
≠ Maximum non-erosive stream size
for non-sod crops
n = 0.25
Intake Family 1.5
F_n = 3.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

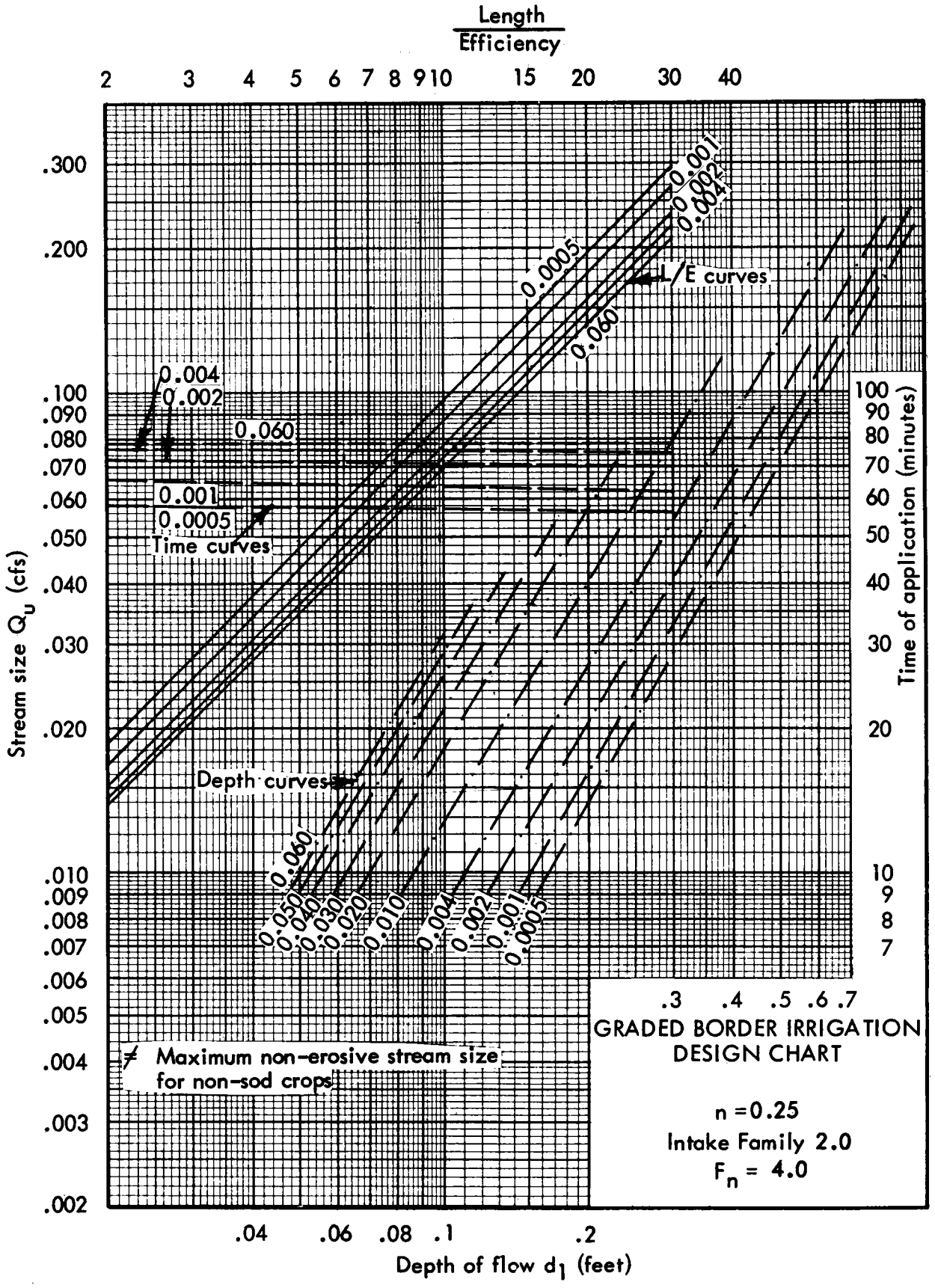

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
0.004
0.002
0.060
0.001
0.0005
Time curves
L/E curves
Depth curves
0.0005
0.001
0.002
0.004
0.060
0.060
0.050
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
≠ Maximum non-erosive stream size for non-sod crops
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 1.5
F_n = 4.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

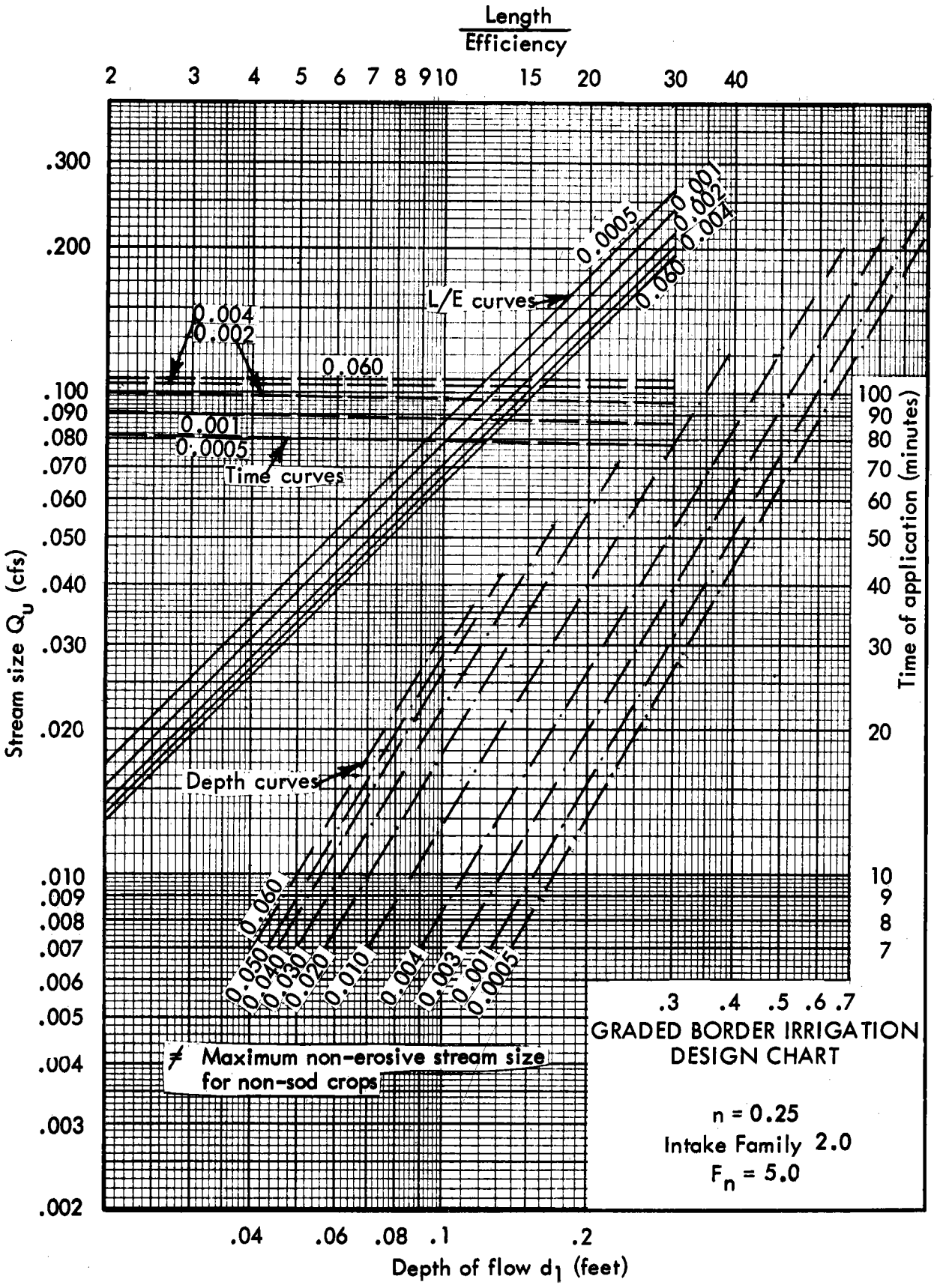

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
Time curves
0.004
0.002
0.060
0.001
0.0005
0.0005
0.001
0.002
0.004
0.060
L/E curves
Depth curves
0.060
0.050
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
≠ Maximum non-erosive stream size for non-sod crops
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 1.5
F_n = 5.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

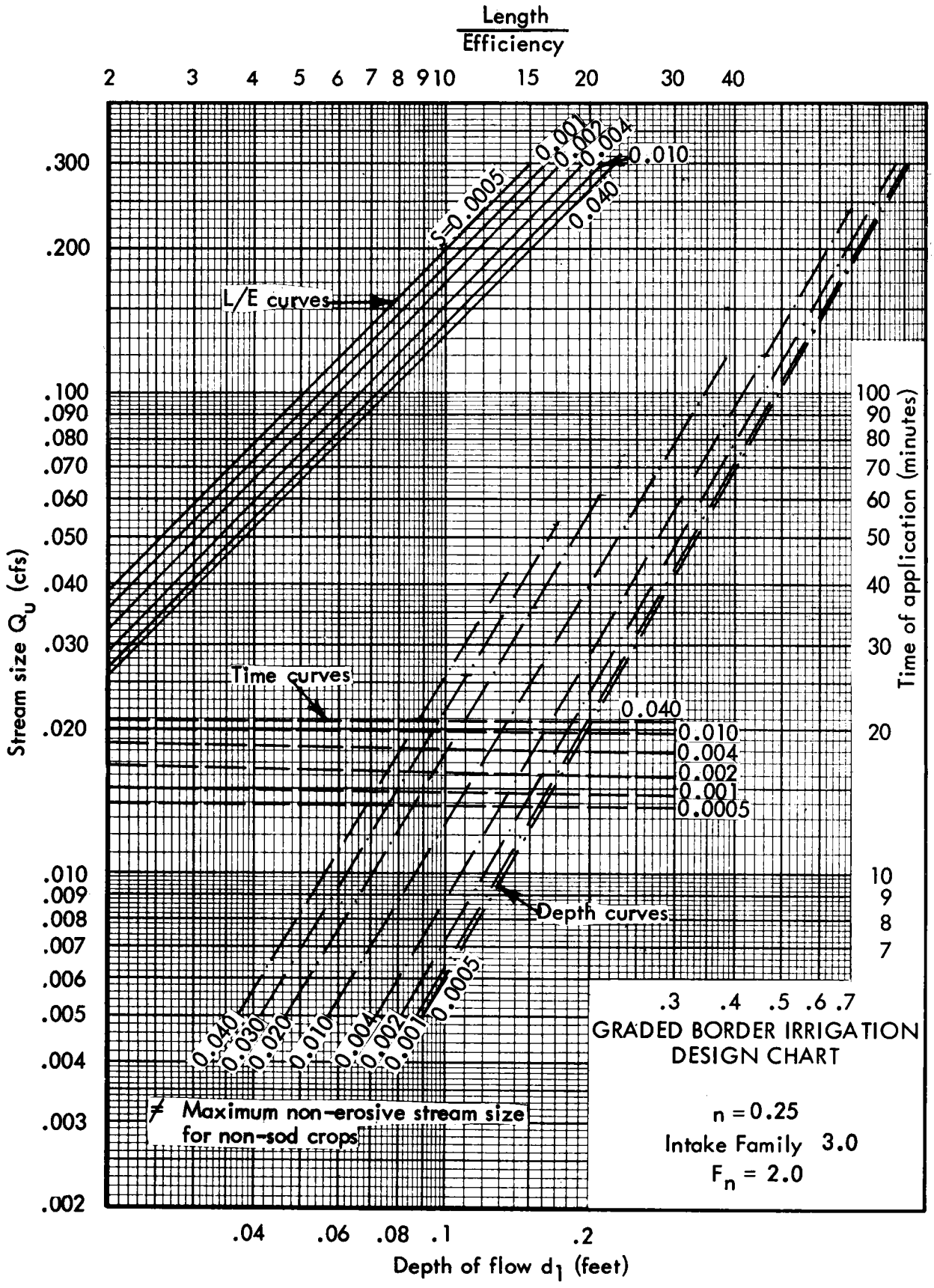

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
L/E curves
0.0005
0.001
0.002
0.004
0.010
0.050
0.002
0.004
0.010
0.001
0.0005
0.020
0.030
0.040
0.050
Depth curves
0.050
0.010
0.004
0.002
0.001
0.0005
Time curves
Maximum non-erosive stream size for non-sod crops
200
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 2.0
F_n = 1.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

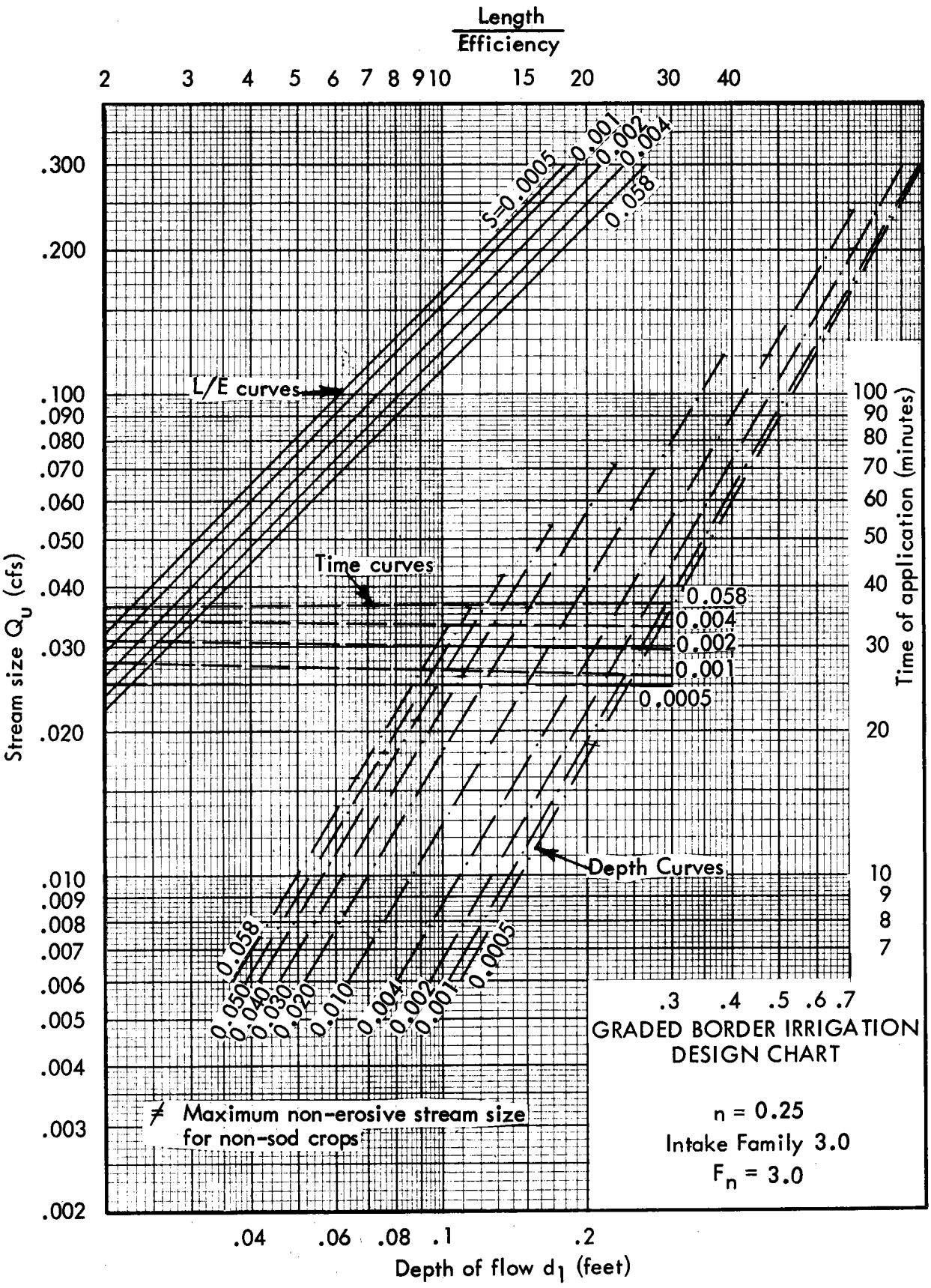

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
L/E curves
0.0005
0.001
0.002
0.004
0.010
0.060
Depth curves
0.060
0.010
0.004
0.002
0.001
0.0005
Time curves
0.060
0.050
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
≠ Maximum non-erosive stream size for non-sod crops
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 2.0
F_n = 2.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)

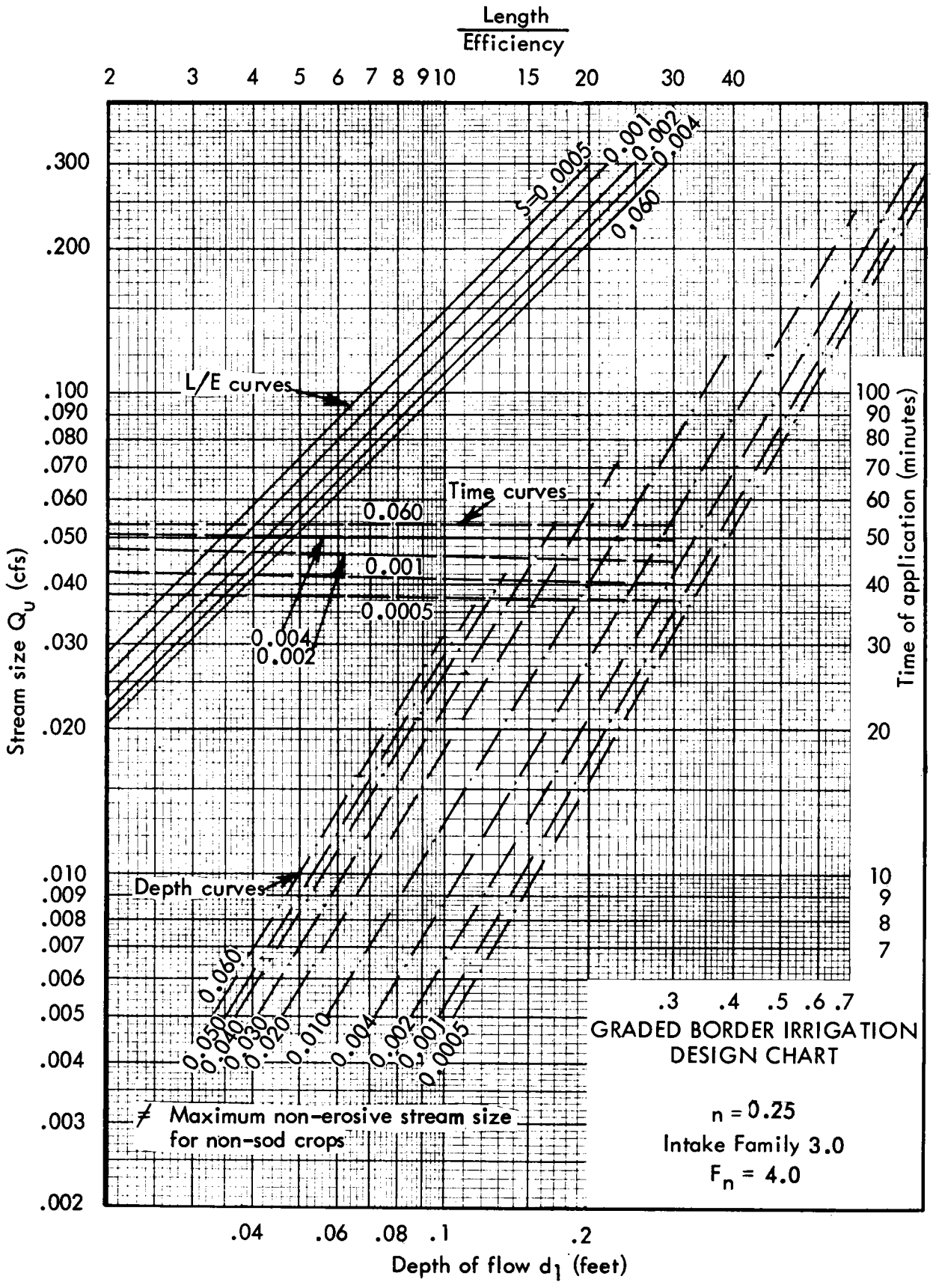

Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
0.001
0.002
0.004
0.005
0.060
L/E curve
0.004
0.002
0.001
0.060
0.0005
Time curves
Depth curves
0.060
0.050
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
≠ Maximum non-erosive stream size for non-sod crops
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 2.0
F_n = 3.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)


Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
0.0005
0.001
0.002
0.004
0.060
L/E curves
0.004
0.002
0.060
0.001
0.0005
Time curves
Depth curves
0.060
0.050
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 2.0
F_n = 4.0
≠ Maximum non-erosive stream size for non-sod crops
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)


Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
L/E curves
0.0005
0.001
0.002
0.004
0.060
0.004
0.002
0.060
0.001
0.0005
Time curves
Depth curves
0.060
0.050
0.040
0.030
0.020
0.010
0.004
0.003
0.001
0.0005
≠ Maximum non-erosive stream size for non-sod crops
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 2.0
F_n = 5.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)


Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
S=0.0005
0.001
0.002
0.004
0.010
0.040
L/E curves
Time curves
Depth curves
0.040
0.010
0.004
0.002
0.001
0.0005
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
≠ Maximum non-erosive stream size for non-sod crops
Stream size Q_u (cfs)
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Time of application (minutes)
100
90
80
70
60
50
40
30
20
10
9
8
7
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 3.0
F_n = 2.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)


Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
S=0.0005
0.001
0.002
0.004
0.058
L/E curves
Time curves
Depth Curves
0.058
0.004
0.002
0.001
0.0005
0.058
0.050
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION
DESIGN CHART
n = 0.25
Intake Family 3.0
F_n = 3.0
≠ Maximum non-erosive stream size for non-sod crops
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)


Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
S=0.0005
0.001
0.002
0.004
0.060
L/E curves
Time curves
0.060
0.001
0.0005
0.004
0.002
Depth curves
0.060
0.050
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
≠ Maximum non-erosive stream size for non-sod crops
Stream size Q_u (cfs)
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Time of application (minutes)
100
90
80
70
60
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40
30
20
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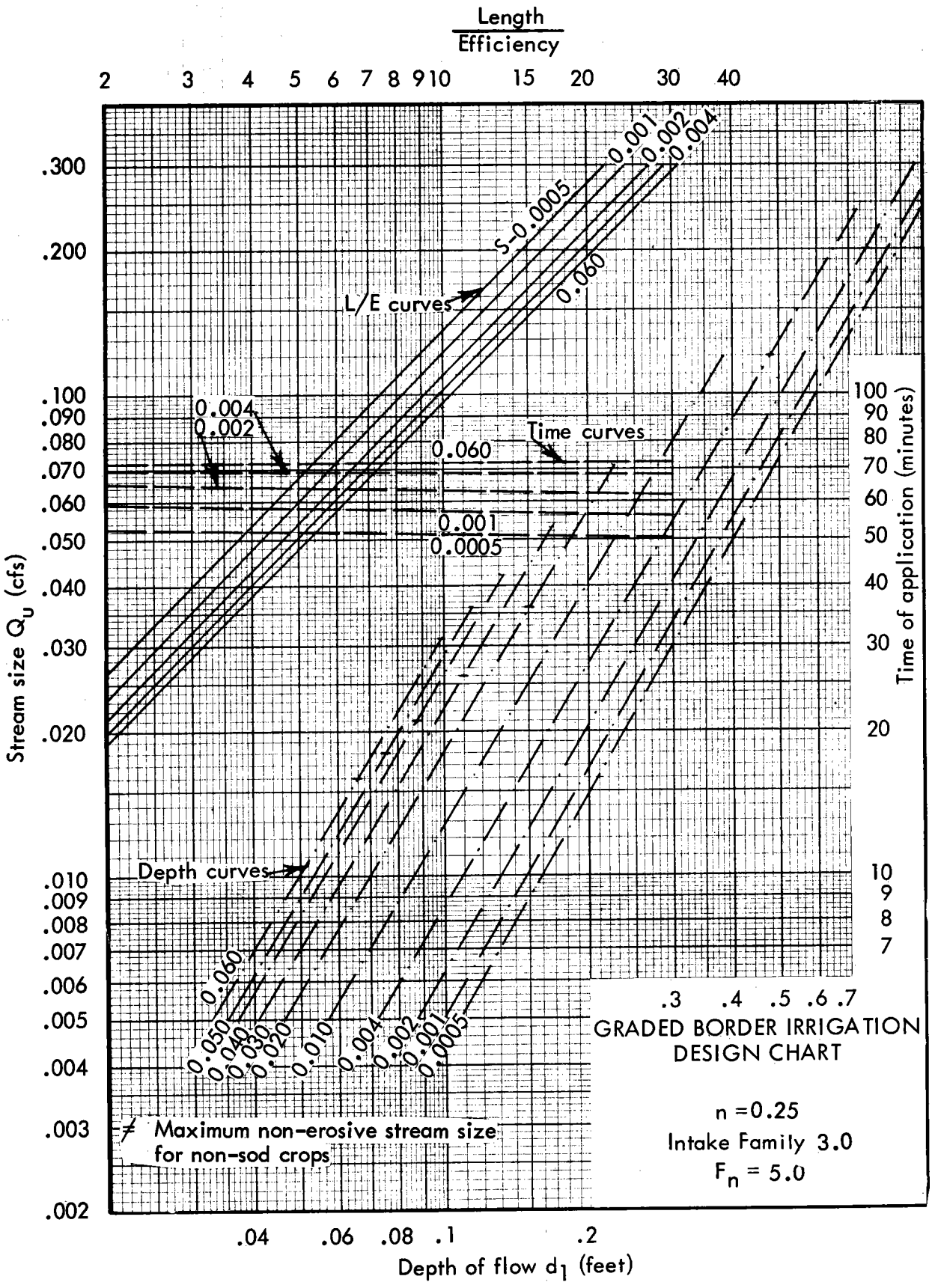
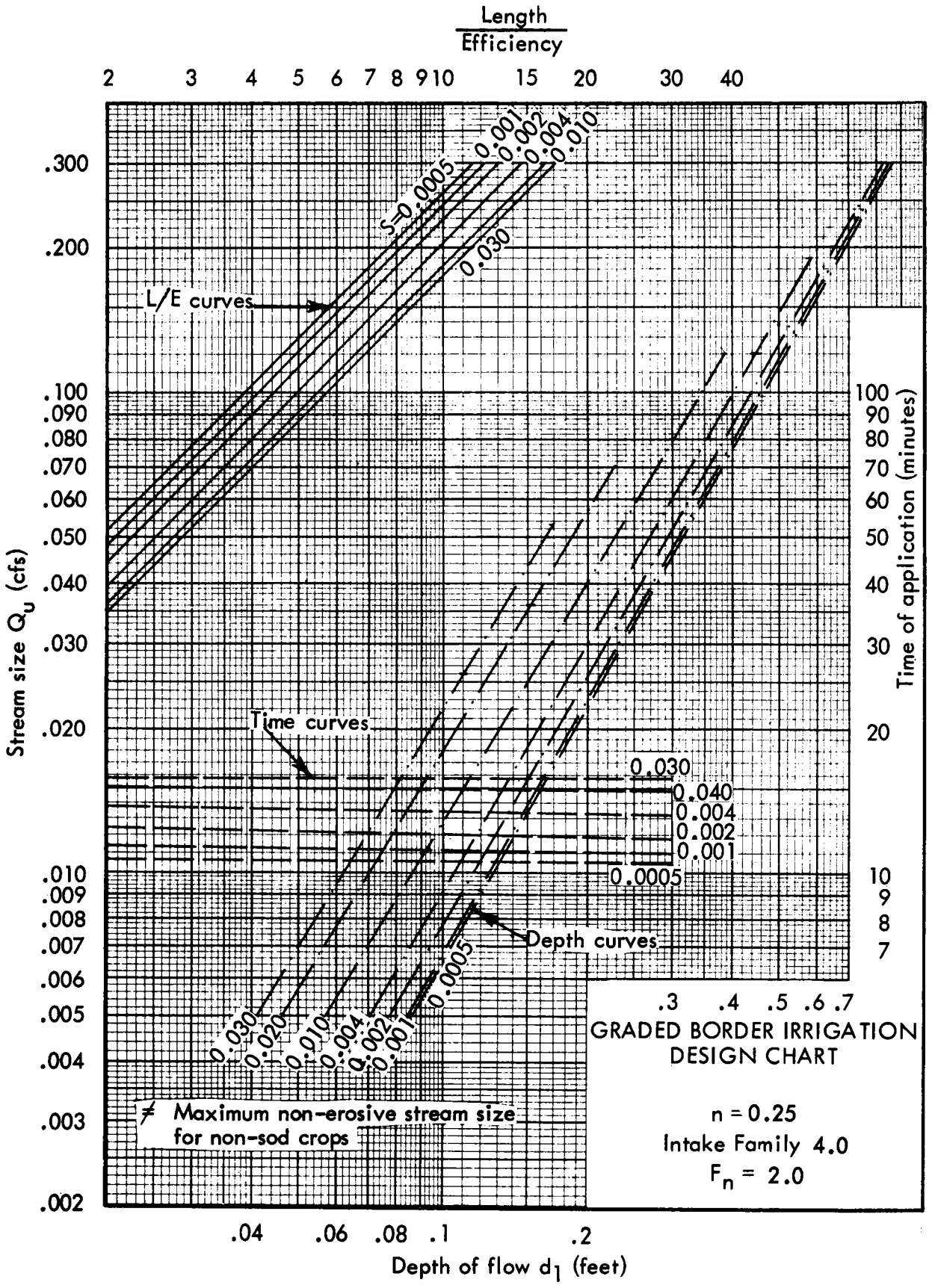
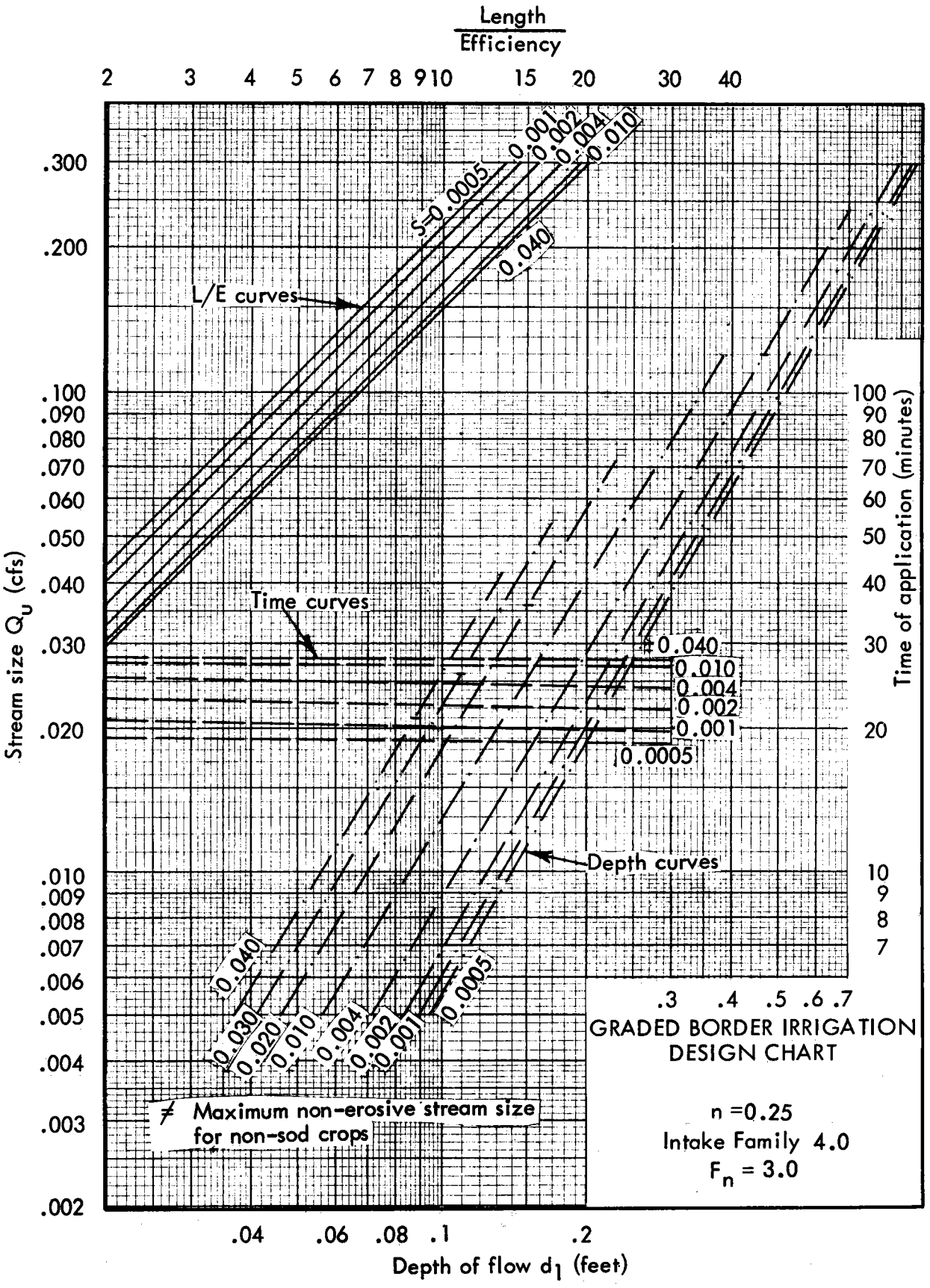
8
7
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 3.0
F_n = 4.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)


Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
.300
.200
.100
.090
.080
.070
.060
.050
.040
.030
.020
.010
.009
.008
.007
.006
.005
.004
.003
.002
Stream size Q_u (cfs)
S-0.0005
0.001
0.002
0.004
0.060
L/E curves
0.004
0.002
Time curves
0.060
0.001
0.0005
Depth curves
0.060
0.050
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
≠ Maximum non-erosive stream size for non-sod crops
100
90
80
70
60
50
40
30
20
10
9
8
7
Time of application (minutes)
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 3.0
F_n = 5.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)


Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
S=0.0005
0.001
0.002
0.004
0.010
0.030
L/E curves
Time curves
Depth curves
0.030
0.040
0.004
0.002
0.001
0.0005
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
≠ Maximum non-erosive stream size for non-sod crops
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 4.0
F_n = 2.0
Stream size Q_u (cfs)
.300 .200 .100 .090 .080 .070 .060 .050 .040 .030 .020 .010 .009 .008 .007 .006 .005 .004 .003 .002
Time of application (minutes)
100 90 80 70 60 50 40 30 20 10 9 8 7
.3 .4 .5 .6 .7
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)


Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
S=0.0005
0.001
0.002
0.004
0.010
0.040
L/E curves
Time curves
Depth curves
0.040
0.010
0.004
0.002
0.001
0.0005
0.040
0.030
0.020
0.010
0.004
0.002
0.001
0.0005
≠ Maximum non-erosive stream size for non-sod crops
Stream size Q_u (cfs)
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Time of application (minutes)
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8
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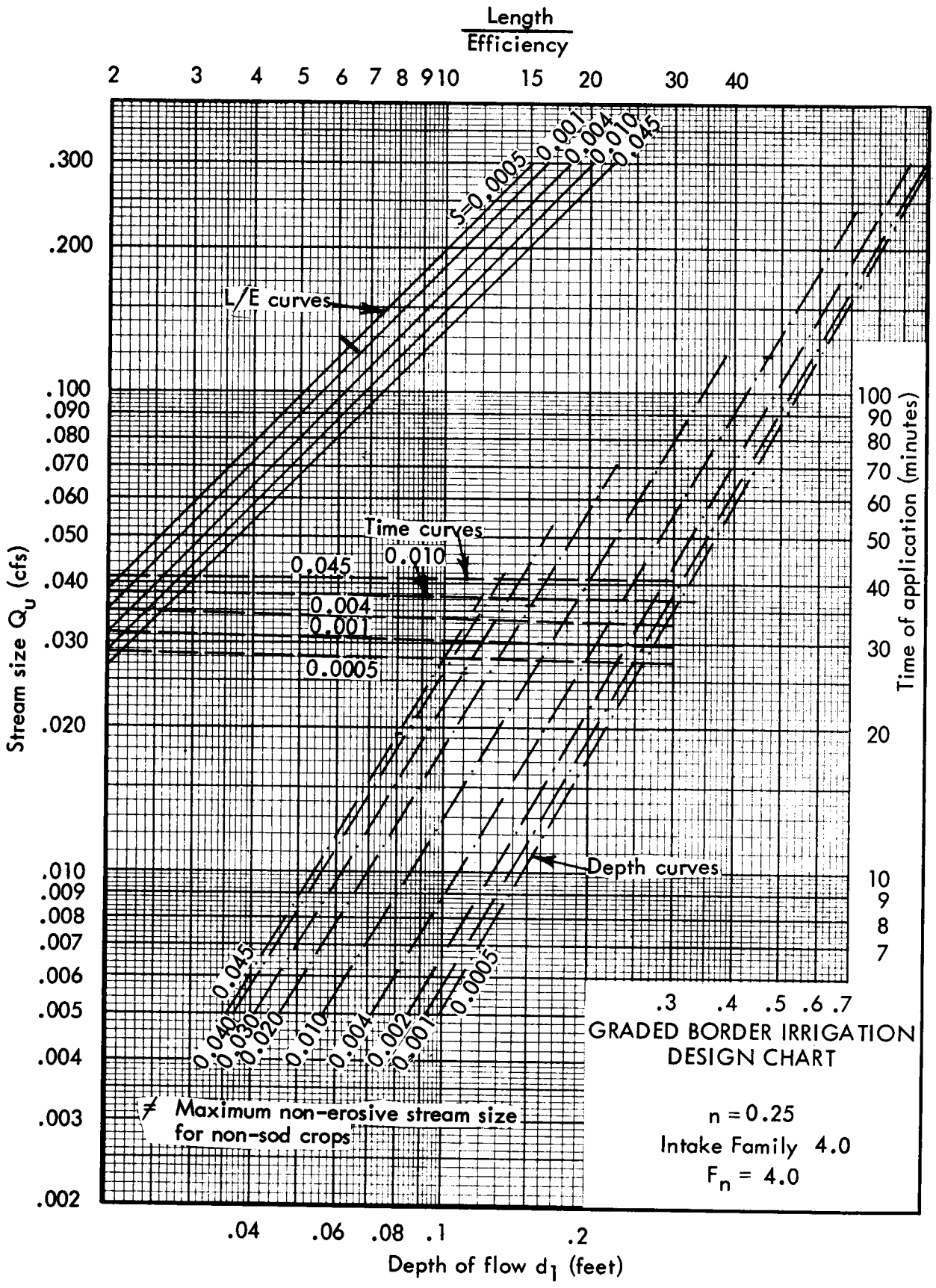
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n =0.25
Intake Family 4.0
F_n = 3.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)


Length / Efficiency
2 3 4 5 6 7 8 9 10 15 20 30 40
S=0.0005
0.001
0.004
0.010
0.045
L/E curves
Time curves
0.045
0.010
0.004
0.001
0.0005
Depth curves
0.045
0.040
0.030
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0.010
0.004
0.002
0.001
0.0005
Maximum non-erosive stream size for non-sod crops
Stream size Q_u (cfs)
.300
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.100
.090
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.050
.040
.030
.020
.010
.009
.008
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.004
.003
.002
Time of application (minutes)
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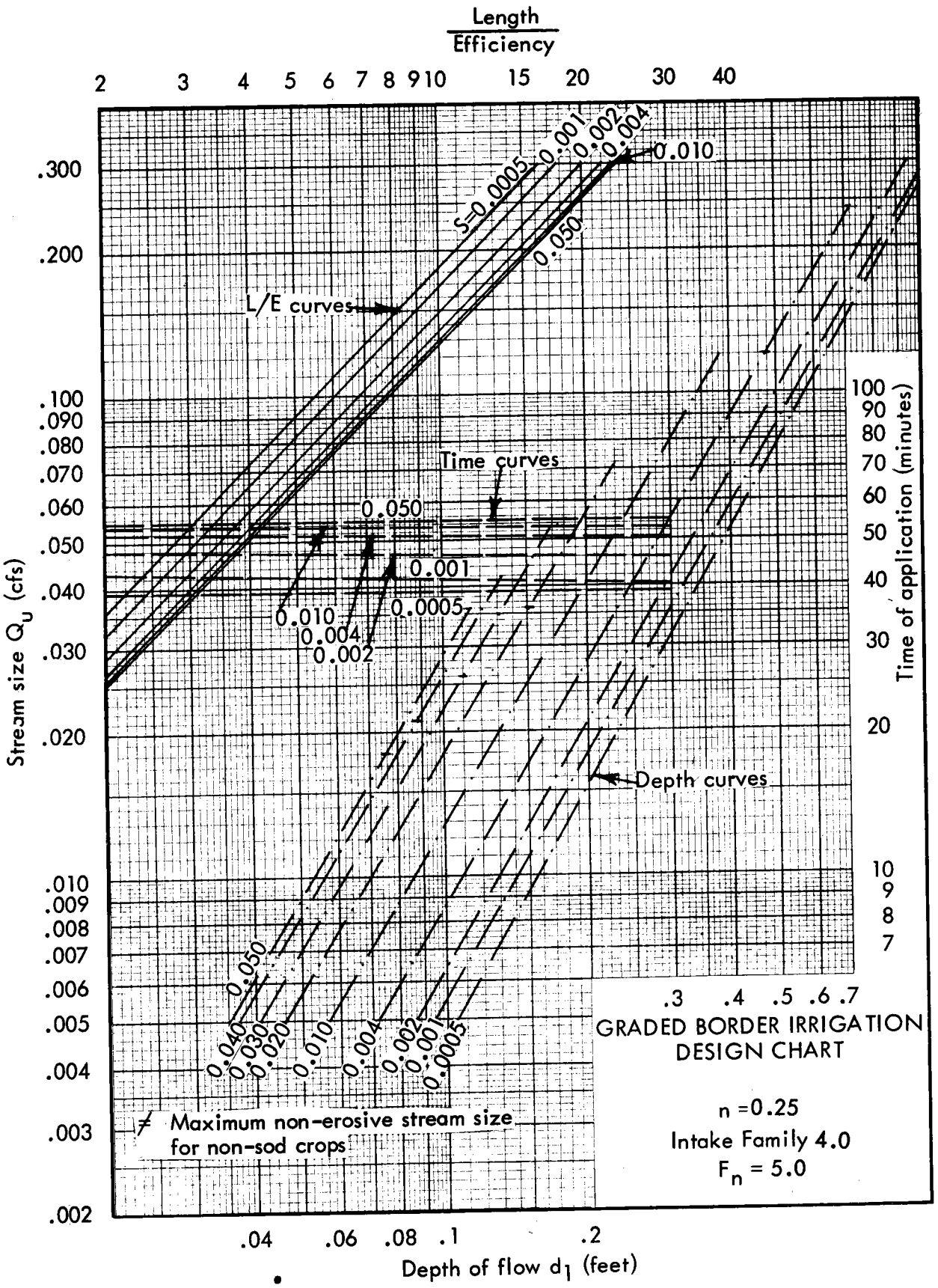
30
20
10
9
8
7
.3 .4 .5 .6 .7
GRADED BORDER IRRIGATION DESIGN CHART
n = 0.25
Intake Family 4.0
F_n = 4.0
.04 .06 .08 .1 .2
Depth of flow d_1 (feet)



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