

Type.... Design Storms
Name.... ORANGE County
File.... \\S10svr01\M\p\0403734\STORM\
Storm... TypeIII 24hr Tag: 1

Page 2.03
Event: 1 yr

DESIGN STORMS SUMMARY

Design Storm File, ID = ORANGE County

Storm Tag Name = 1

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 1 yr
Total Rainfall Depth= 2.9000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 2

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 2 yr
Total Rainfall Depth= 3.5000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 5

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 4.5000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 10

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 10 yr
Total Rainfall Depth= 5.5000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 25

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 25 yr
Total Rainfall Depth= 6.5000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Type... Design Storms
Name... ORANGE County
File... \\S10svr01\M\p\0403734\STORM\
Storm... TypeIII 24hr Tag: 1

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Event: 1 yr

DESIGN STORMS SUMMARY

Design Storm File, ID = ORANGE County

Storm Tag Name = 50

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 50 yr
Total Rainfall Depth= 7.0000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 100

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 8.0000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

File.... \\S10svr01\M\p\0403734\STORM\BASHER_KILL_PROPOSED.PPW

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TIME OF CONCENTRATION CALCULATOR
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Segment #1: Tc: TR-55 Sheet

Mannings n .1500
Hydraulic Length 100.00 ft
2yr, 24hr P 3.5000 in
Slope .150000 ft/ft

Avg.Velocity .40 ft/sec

Segment #1 Time: .0697 hrs

Segment #2: Tc: TR-55 Shallow

Hydraulic Length 646.00 ft
Slope .063000 ft/ft
Unpaved

Avg.Velocity 4.05 ft/sec

Segment #2 Time: .0443 hrs

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Total Tc: .1141 hrs
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File.... \\S10svr01\M\p\0403734\STORM\BASHER_KILL_PROPOSED.PPW

Tc Equations used...

==== SCS TR-55 Sheet Flow =====

$$Tc = (.007 * ((n * Lf)**0.8)) / ((P**.5) * (Sf**.4))$$

Where: Tc = Time of concentration, hrs
n = Mannings n
Lf = Flow length, ft
P = 2yr, 24hr Rain depth, inches
Sf = Slope, %

==== SCS TR-55 Shallow Concentrated Flow =====

Unpaved surface:

$$V = 16.1345 * (Sf**0.5)$$

Paved surface:

$$V = 20.3282 * (Sf**0.5)$$

$$Tc = (Lf / V) / (3600sec/hr)$$

Where: V = Velocity, ft/sec
Sf = Slope, ft/ft
Tc = Time of concentration, hrs
Lf = Flow length, ft

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TIME OF CONCENTRATION CALCULATOR
.....

Segment #1: Tc: TR-55 Sheet

Mannings n .1500
Hydraulic Length 100.00 ft
2yr, 24hr P 3.5000 in
Slope .270000 ft/ft

Avg.Velocity .50 ft/sec

Segment #1 Time: .0551 hrs

Segment #2: Tc: TR-55 Shallow

Hydraulic Length 92.00 ft
Slope .315000 ft/ft
Unpaved

Avg.Velocity .906 ft/sec

Segment #2 Time: .0028 hrs

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Total Tc: .0580 hrs

Calculated Tc < Min.Tc:
Use Minimum Tc...
Use Tc = .0833 hrs
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Tc Equations used...

==== SCS TR-55 Sheet Flow =====

$$Tc = (.007 * ((n * Lf)**0.8)) / ((P**.5) * (Sf**.4))$$

Where: Tc = Time of concentration, hrs
n = Mannings n
Lf = Flow length, ft
P = 2yr, 24hr Rain depth, inches
Sf = Slope, %

==== SCS TR-55 Shallow Concentrated Flow =====

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved surface:
V = 20.3282 * (Sf**0.5)

$$Tc = (Lf / V) / (3600sec/hr)$$

Where: V = Velocity, ft/sec
Sf = Slope, ft/ft
Tc = Time of concentration, hrs
Lf = Flow length, ft

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TIME OF CONCENTRATION CALCULATOR
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Segment #1: Tc: TR-55 Sheet

Mannings n .4000
Hydraulic Length 100.00 ft
2yr, 24hr P 3.5000 in
Slope .080000 ft/ft

Avg.Velocity .14 ft/sec

Segment #1 Time: .1966 hrs

Segment #2: Tc: TR-55 Shallow

Hydraulic Length 840.00 ft
Slope .110000 ft/ft
Unpaved

Avg.Velocity 5.35 ft/sec

Segment #2 Time: .0436 hrs

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Total Tc: .2402 hrs
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Tc Equations used...

==== SCS TR-55 Sheet Flow =====

$$Tc = (.007 * ((n * Lf)^{0.8}) / ((P^{.5}) * (Sf^{.4}))$$

Where: Tc = Time of concentration, hrs
n = Mannings n
Lf = Flow length, ft
P = 2yr, 24hr Rain depth, inches
Sf = Slope, %

==== SCS TR-55 Shallow Concentrated Flow =====

Unpaved surface:
V = 16.1345 * (Sf^{0.5})

Paved surface:
V = 20.3282 * (Sf^{0.5})

$$Tc = (Lf / V) / (3600sec/hr)$$

Where: V = Velocity, ft/sec
Sf = Slope, ft/ft
Tc = Time of concentration, hrs
Lf = Flow length, ft

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TIME OF CONCENTRATION CALCULATOR
.....

Segment #1: Tc: TR-55 Sheet

Mannings n .1500
Hydraulic Length 100.00 ft
2yr, 24hr P 3.5000 in
Slope .175000 ft/ft

Avg.Velocity .42 ft/sec

Segment #1 Time: .0656 hrs

Segment #2: Tc: TR-55 Shallow

Hydraulic Length 645.00 ft
Slope .168000 ft/ft
Unpaved

Avg.Velocity 6.61 ft/sec

Segment #2 Time: .0271 hrs

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Total Tc: .0927 hrs
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Tc Equations used...

==== SCS TR-55 Sheet Flow =====

$$Tc = (.007 * ((n * Lf)**0.8)) / ((P**.5) * (Sf**.4))$$

Where: Tc = Time of concentration, hrs
n = Mannings n
Lf = Flow length, ft
P = 2yr, 24hr Rain depth, inches
Sf = Slope, %

==== SCS TR-55 Shallow Concentrated Flow =====

Unpaved surface:
 $V = 16.1345 * (Sf**.5)$

Paved surface:
 $V = 20.3282 * (Sf**.5)$

$$Tc = (Lf / V) / (3600sec/hr)$$

Where: V = Velocity, ft/sec
Sf = Slope, ft/ft
Tc = Time of concentration, hrs
Lf = Flow length, ft