TR-55 TIME-OF-CONCENTRATION WORKSHEET

Route:       Project No.:       Location:

Designer:      Date:

Checked By:       Date:

Present  Developed

*Tc*  *Tt*  Through subarea

A map, schematic, or flow-segments description is attached.

|  |  |  |
| --- | --- | --- |
| Sheet Flow, applies to *Tc* only Segment ID |  |  |
| 1. Surface description, see Figure 202-2B |  |  |
| 2. Manning’s roughness coeff., *n*, see Figure 202-2B |  |  |
| 3. Flow length, *L* (total *L* ≤ 100 ft) | ft | ft |
| 4. Two-year 24-h rainfall | in. | in. |
| 5. Land slope, *s* | ft / ft | ft / ft |
| 6. | h | h |

Total *Tt* in line 6 for both segments =       h

|  |  |  |
| --- | --- | --- |
| Shallow Concentrated Flow Segment ID |  |  |
| 7. Surface description, paved or unpaved |  |  |
| 8. Flow length, *L* | ft | ft |
| 9. Watercourse slope, s | ft / ft | ft / ft |
| 10. Average velocity, *V*, see Figure 202-2D | ft / s | ft / s |
| 11. | h | h |

Total *Tt* in line 11 for both segments =       h

|  |  |  |
| --- | --- | --- |
| Channel Flow Segment ID |  |  |
| 12. Cross-sectional flow area, *a* | ft2 |  |
| 13. Wetted perimeter, *Pw* | ft | ft |
| 14. Hydraulic radius, *r* = *a*/*Pw* | ft | ft |
| 15. Channel slope, *s* | ft / ft | ft / ft |
| 16. Manning’s roughness coeff., *n*, see Figure 202-2C |  |  |
| 17. | ft / s | ft / s |
| 18. Flow length, *L* | ft | ft |
| 19. | h | h |

Total *Tt* in line 19 for both segments =       h

20. Add *Tt* in lines 6, 11, and 19 to get watershed or subarea *Tc* or *Tt* =       h