|  |  |
| --- | --- |
| DOTLOGO2 | **Level Two Design Criteria Checklist** |
|  |
| Key Route: |       |
|  |
| Marked Route/Road Name: |       |
|  |
| State Job No.: |       | Contract No.: |       |
|  |
| Functional Classification: |       | Highway Type: |       |
|  |
| County(ies): |       | Project Length: |       |
|  |
| City: |       | Section: |       |
|  |
| Project Location: |       |
|  |
|  |
| **Project Scope of Work** |
|  |
|  | a. | Check the appropriate box. See Section 31-6 for definitions. |
|  |
|  | [ ]  | New construction | [ ]  | \*Reconstruction | [ ]  | \*3R (non-freeway) | [ ]  | \*3R (freeway) |
|  |
|  | [ ]  | 3P | [ ]  | SMART | [ ]  | HSIP | [ ]  | Other |
|  |
|  | *\*Note: May include "Allowed to Remain in Place" criteria.* |
|  | *This form is required for all new construction, reconstruction, and 3R projects.* |
|  |

|  |  |  |
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|  | b. | Provide a brief project description: |
|  |

|  |  |
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|  |       |
|  |

|  |  |
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| Design Criteria | Does the proposed design meet the criteria? |
| (Provide numerical values, where indicated.) | Yes | No | N/A |
| 1. Basic Design Controls (Chapter 31)
 |  |  |  |
| 1. Design speed
 |       | mph (km/h) | [ ]  | [ ]  | [ ]  |
| 1. Stopping Sight Distance (SSD) application for vertical curves (downgrade adjusted SSD used)
 | [ ]  | [ ]  | [ ]  |
| 1. Truck SSD (level) (at specific sites)
 | [ ]  | [ ]  | [ ]  |
| 1. Level of service (mainline)
 | [ ]  | [ ]  | [ ]  |
|       |
| 1. Horizontal Alignment (mainline) (Chapter 32)
 |  |  |  |
| * 1. Horizontal curvature (minimum radius for selected design speed)       feet (meters)
 | [ ]  | [ ]  | [ ]  |
| * 1. Superelevation rates (emax =       %)
 | [ ]  | [ ]  | [ ]  |
| * 1. Superelevation transition lengths
 | [ ]  | [ ]  | [ ]  |
|       |
| * 1. SSD application at horizontal curves (downgrade adjusted SSD used)
 | [ ]  | [ ]  | [ ]  |
| * 1. Superelevation distribution between tangent
 | [ ]  | [ ]  | [ ]  |
| and curve (ratio or percent) |       |
| * 1. “Breakover” of outside shoulder on super-
 | [ ]  | [ ]  | [ ]  |
| elevated curves (percent) |       |
| * 1. Relative longitudinal slope of shoulder to edge of traveled way on high side of S.E. curve
 | [ ]  | [ ]  | [ ]  |
| adjacent to bridge with S.E. |       |
| * 1. Superelevation development at reverse
 | [ ]  | [ ]  | [ ]  |
| curves |       |

|  |  |
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| Design Criteria(Provide numerical values, where indicated.) | Does the proposed design meet the criteria? |
| Yes | No | N/A |
| * 1. Is superelevation transition length located off of bridges and bridge approach pavements?

      | [ ]  | [ ]  | [ ]  |
| * 1. Horizontal stopping sight distance on inside of horizontal curves (Level SSD for passenger cars)
 | [ ]  | [ ]  | [ ]  |
| 1. Vertical Alignment (mainline) (Chapter 33)
 |  |  |  |
| * 1. Maximum grades (in percent)
 | [ ]  | [ ]  | [ ]  |
| * 1. SSD at crest vertical curves (level SSD for passenger cars)
 | [ ]  | [ ]  | [ ]  |
| * 1. SSD at sag vertical curves (level SSD for passenger cars)
 | [ ]  | [ ]  | [ ]  |
| * 1. Minimum grades (in percent) considering drainage
 | [ ]  | [ ]  | [ ]  |
|       |
| * 1. Critical length of grade
 | [ ]  | [ ]  | [ ]  |
|       |
| * 1. Truck-climbing lanes/critical grade analysis
 | [ ]  | [ ]  | [ ]  |
|       |
| * 1. Design criteria for truck-climbing lanes (e.g., lane width and shoulder width)
 | [ ]  | [ ]  | [ ]  |
|       |
| * 1. Minimum length of vertical curves for selected design speed
 | [ ]  | [ ]  | [ ]  |
|       |
| * 1. Maximum length of vertical curves (drainage of curbed facilities and bridges)
 | [ ]  | [ ]  | [ ]  |
|       |
| 1. Cross Section Elements (mainline) (Chapter 34)
 |  |  |  |
| * 1. Lane widths       feet (meters)
 | [ ]  | [ ]  | [ ]  |

|  |  |
| --- | --- |
| Design Criteria(Provide numerical values, where indicated.) | Does the proposed design meet the criteria? |
|  | Yes | No | N/A |
| * 1. Traveled way widening
 | [ ]  | [ ]  | [ ]  |
| * 1. Cross-slopes on through lanes (in percent):
 |  |  |  |
|  Inside lane | Lane 1 |       |  | [ ]  | [ ]  | [ ]  |
|  Outside lanes | Lane 2 |       |  | [ ]  | [ ]  | [ ]  |
|  | Lane 3 |       |  | [ ]  | [ ]  | [ ]  |
|  | Lane 4 |       |  | [ ]  | [ ]  | [ ]  |
|  |  |  |  |
| * 1. Shoulder widths
 |       | feet (meters)(inside) | [ ]  | [ ]  | [ ]  |
|  |       | feet (meters)(outside) | [ ]  | [ ]  | [ ]  |
|  |  |  |  |
| * 1. Design of parking lanes:
 | [ ]  | [ ]  | [ ]  |
| * Cross-slope
 |       | % |  |  |  |
| * Width
 |       | feet (meters) | [ ]  | [ ]  | [ ]  |
|  |  |  |  |
| * 1. Type of curb and gutter used on median
 | [ ]  | [ ]  | [ ]  |
|       |  |  |  |
| * 1. Drainage of raised curb medians:
 | [ ]  | [ ]  | [ ]  |
| * Direction of flow of median surface or
 |  |  |  |
| pavement |       |  |  |  |  |
| * Direction of cross-slope on gutter
 |       | % | [ ]  | [ ]  | [ ]  |
|  |  |  |  |
| * 1. Type of curb and gutter used along outside
 | [ ]  | [ ]  | [ ]  |
| edges of pavement |       |  |  |  |  |
|  |  |  |  |
| * 1. Two Way Left Turn Lane (TWLTL) width:
 | [ ]  | [ ]  | [ ]  |
| * Flush type
 |       | feet (meters) |  |  |  |
| * Traversable type
 |       | feet (meters) | [ ]  | [ ]  | [ ]  |
|  |  |  |  |
| * 1. Median widths:
 | [ ]  | [ ]  | [ ]  |
| * Urban
 |       | feet (meters) |  |  |  |
| * Suburban
 |       | feet (meters) | [ ]  | [ ]  | [ ]  |
| * Rural
 |       | feet (meters) | [ ]  | [ ]  | [ ]  |
|  |  |  |  |
| * 1. Shoulder cross slopes
 |       | % | [ ]  | [ ]  | [ ]  |
| * 1. Fill slopes
 |   :   | (V:H) | [ ]  | [ ]  | [ ]  |

|  |  |
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| Design Criteria(Provide numerical values, where indicated.) | Does the proposed design meet the criteria? |
| Yes | No | N/A |
| * 1. Outside roadway ditch:
 | [ ]  | [ ]  | [ ]  |
| * Slopes
 |   :   | * Depth
 |       |
| * Widths
 |       |  | [ ]  | [ ]  | [ ]  |
| Median ditch: |  |  |  |
| * Slopes
 |       | * Depth
 |   :   | [ ]  | [ ]  | [ ]  |
| * Width
 |       |  | [ ]  | [ ]  | [ ]  |
|  |  |  |  |
| * 1. Cross-section transitions into bridges/
 | [ ]  | [ ]  | [ ]  |
| underpasses |       |
| * 1. Use of mountable curbs (V > 45 mph (70 km/h))
 | [ ]  | [ ]  | [ ]  |
|       |
| * 1. Cross-section transition details (e.g., four-lane
 | [ ]  | [ ]  | [ ]  |
| to two-lane) |       |
| 1. Intersections (Chapter 36)
 |  |  |  |
| * 1. Accommodation of design vehicle
 | [ ]  | [ ]  | [ ]  |
| (identify vehicle) |       |  |
|  |
| * 1. Level of service:
 | [ ]  | [ ]  | [ ]  |
| * Through lanes
 |       |  |
| * Turn lanes
 |       |  | [ ]  | [ ]  | [ ]  |
|  |
| * 1. Skew angle
 | [ ]  | [ ]  | [ ]  |
|       |
| * 1. Profiles
 | [ ]  | [ ]  | [ ]  |
|       |
| * 1. Volume guidelines for turn-lanes:
 | [ ]  | [ ]  | [ ]  |
| * Right-turns
 |       |
| * Left turns
 |       | [ ]  | [ ]  | [ ]  |
|  |
| * 1. Design of right-turn lanes
 |       | [ ]  | [ ]  | [ ]  |
| Design of left-turn lanes |       | [ ]  | [ ]  | [ ]  |

|  |  |
| --- | --- |
| Design Criteria(Provide numerical values, where indicated.) | Does the proposed design meet the criteria? |
| Yes | No | N/A |
|   | Approach taper |       | [ ]  | [ ]  | [ ]  |
| * 1. Turn-lane tapers
 | Departure taper |       | [ ]  | [ ]  | [ ]  |
|  | Bay taper |       | [ ]  | [ ]  | [ ]  |
| * 1. Turning roadway widths
 |       | [ ]  | [ ]  | [ ]  |
| * 1. Turn-lane
 | Deceleration (rural) |       | [ ]  | [ ]  | [ ]  |
| lengths | Storage (urban) |       | [ ]  | [ ]  | [ ]  |
| * 1. Intersection sight distance:
 | [ ]  | [ ]  | [ ]  |
| List criteria and type |       |  |
|  |       |  |
|  |
| * 1. Median opening length
 | [ ]  | [ ]  | [ ]  |
|  |       | feet (meters) |
|  |
| * 1. Minimum corner island size
 | [ ]  | [ ]  | [ ]  |
|  |       | sq. ft (sq. m) |
|  |
| * 1. Does right-turn radius accommodate design vehicle without encroachment?
 | [ ]  | [ ]  | [ ]  |
|       |
| * 1. Driveway widths
 | [ ]  | [ ]  | [ ]  |
|  |       | feet (meters) |
| * 1. Type of traffic control:
 | [ ]  | [ ]  | [ ]  |
| * Two-way stop
 |       |
| * All-way stop
 |       | [ ]  | [ ]  | [ ]  |
| * Traffic signals
 |       | [ ]  | [ ]  | [ ]  |
|  |  |  |  |
| * 1. Is maximum grade exceeded on any approach?
 | [ ]  | [ ]  | [ ]  |
|       |
| * 1. Max. superelevation “e” (in percent) for intersections on curve
 | [ ]  | [ ]  | [ ]  |
|       |
| 1. Interchanges (Chapter 37)
 |  |  |  |
| * 1. Exit terminal
 | Standard type |       | [ ]  | [ ]  | [ ]  |
| Design speed of first curve |       | [ ]  | [ ]  | [ ]  |
| Are any exit terminals located on mainline horizontal curve? |       | [ ]  | [ ]  | [ ]  |

|  |  |
| --- | --- |
| Design Criteria(Provide numerical values, where indicated.) | Does the proposed design meet the criteria? |
| Yes | No | N/A |
| * 1. Entrance terminal
 | Standard type |       | [ ]  | [ ]  | [ ]  |
| Length of tangent after the entering curve |       | [ ]  | [ ]  | [ ]  |
| Design speed of entering curve |       | [ ]  | [ ]  | [ ]  |
| * 1. Design speed of ramp proper
 | [ ]  | [ ]  | [ ]  |
|  |       | mph (km/h) |
|  |
| * 1. Design speed of crossroad
 | [ ]  | [ ]  | [ ]  |
|  |       | mph (km/h) |
|  |
| * 1. Maximum ramp grades:
 | [ ]  | [ ]  | [ ]  |
| * Exit ramp
 |       | % |
| * Entrance ramp
 |       | % | [ ]  | [ ]  | [ ]  |
|  |
| * 1. Ramp pavement width
 | [ ]  | [ ]  | [ ]  |
|       | feet (meters) |
| * 1. Ramp shoulder widths:
 | [ ]  | [ ]  | [ ]  |
| * Left
 |       | feet (meters) |
| * Right
 |       | feet (meters) | [ ]  | [ ]  | [ ]  |
|  |
| * 1. Horizontal ramp curvature in conjunction with selected design speeds
 | [ ]  | [ ]  | [ ]  |
|       |
| * 1. Superelevation development on ramps
 | Superelevation rate |       | [ ]  | [ ]  | [ ]  |
| Transition length |       | [ ]  | [ ]  | [ ]  |
| Distribution between tangent & curve |       | [ ]  | [ ]  | [ ]  |
| * 1. Vertical curvature compliance with selected design speed on ramp
 | [ ]  | [ ]  | [ ]  |
|       |
| * 1. Length of access control at crossroad
 | [ ]  | [ ]  | [ ]  |
|       |
| * 1. Type of traffic control at crossroad:
 | [ ]  | [ ]  | [ ]  |
| * Stop signs
 |       |
| * Traffic signals
 |       | [ ]  | [ ]  | [ ]  |
| * Free flow
 |       | [ ]  | [ ]  | [ ]  |
|  |  |  |  |
| * 1. Is length of crest vertical curve used on crossroad ≥ that required by the selected design speed of crossroad?
 | [ ]  | [ ]  | [ ]  |
|       |

|  |  |
| --- | --- |
| Design Criteria(Provide numerical values, where indicated.) | Does the proposed design meet the criteria? |
| Yes | No | N/A |
| * 1. Are crossroad approach grades through ramp/ crossroad intersections ≤ 2%?
 | [ ]  | [ ]  | [ ]  |
|       |
| * 1. Are ramp/crossroad intersections located on a tangent section of crossroad alignment?
 | [ ]  | [ ]  | [ ]  |
|       |
| * 1. Is decision sight distance available in advance of exit gore?
 | [ ]  | [ ]  | [ ]  |
|       |
| * 1. Is clear recovery area available beyond gore nose?
 | [ ]  | [ ]  | [ ]  |
|       |
| * 1. Level of service:
 | [ ]  | [ ]  | [ ]  |
| * Exit terminal
 |       |  |
| * Entrance terminal
 |       |  | [ ]  | [ ]  | [ ]  |
| * Ramp proper
 |       |  | [ ]  | [ ]  | [ ]  |
| * Weaving area
 |       |  | [ ]  | [ ]  | [ ]  |
| * Ramp/crossroad intersection
 |       |  | [ ]  | [ ]  | [ ]  |
|  |  |  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Upgrade |       | [ ]  | [ ]  | [ ]  |
| Downgrade |       | [ ]  | [ ]  | [ ]  |
| Inside lane |       | [ ]  | [ ]  | [ ]  |
| * 1. Freeway lane drops
 | Location | Outside lane |       | [ ]  | [ ]  | [ ]  |
|  |  | At exit terminal |       | [ ]  | [ ]  | [ ]  |
| Beyond exit terminal |       | [ ]  | [ ]  | [ ]  |
| Taper length |       | [ ]  | [ ]  | [ ]  |

|  |  |  |  |
| --- | --- | --- | --- |
| 1. Roadside Safety (Chapter 38)
 |  |  |  |
| * 1. Horizontal clearances:
 | [ ]  | [ ]  | [ ]  |
| * Clear zones on tangent sections
 |       |
| * Clear zones on outside of horizontal curves
 | [ ]  | [ ]  | [ ]  |
|       |
| * 1. Barrier warrants
 | [ ]  | [ ]  | [ ]  |
|       |
| * 1. Barrier length of need
 | [ ]  | [ ]  | [ ]  |
|       |
| Design Criteria(Provide numerical values, where indicated.) | Does the proposed design meet the criteria? |
| Yes | No | N/A |
| d. Deceleration criteria for impact attenuators | [ ]  | [ ]  | [ ]  |
|       |
| 1. Structure Planning/Geometrics (Chapter 39)
 |  |  |  |
| * 1. Clear roadway bridge widths       feet (meters)
 | [ ]  | [ ]  | [ ]  |
| * 1. Structural capacity of bridges
 | [ ]  | [ ]  | [ ]  |
| * 1. Vertical clearances
 | feet (meters) | [ ]  | [ ]  | [ ]  |
| 1. Pavement Design (Chapter 54)
 |  |  |  |
| * 1. Structural capacity of roadway
 | [ ]  | [ ]  | [ ]  |

Note: Use multiple forms for each roadway within the project.

|  |  |  |  |
| --- | --- | --- | --- |
| Prepared by: |  | Date: |  |
|  | Designer (IDOT or Consultant) Signature |  |  |