



## Traffic Barrier Guidelines Barrier Warrant Submittal Checklist

Project Identification		
<b>Design Contract Number:</b> <a href="#">Click here to enter text.</a>		
<b>Construction Contract Number:</b> <a href="#">Click here to enter text.</a>		
<b>Project Name:</b> <a href="#">Click here to enter text.</a>		
<b>Route Number:</b> <a href="#">Click here to enter text.</a>		
<b>Mile Post Limits:</b> <a href="#">Click here to enter text.</a>		
<b>Station Limits:</b> <a href="#">Click here to enter text.</a>		
<b>Design Section Engineer (Firm Name):</b> <a href="#">Click here to enter text.</a>		
<b>Prepared by:</b> <a href="#">Click here to enter text.</a>		
<b>Reviewed by:</b> <a href="#">Click here to enter text.</a>		
<b>Project Manager:</b> <a href="#">Click here to enter text.</a>		
Submittal Milestone:	Date:	
<input type="checkbox"/> Concept Meeting	<a href="#">Click here to enter a date.</a>	
<input type="checkbox"/> Preliminary Submittal	<a href="#">Click here to enter a date.</a>	
<input type="checkbox"/> Pre-Final Submittal	<a href="#">Click here to enter a date.</a>	
<input type="checkbox"/> Final Submittal	<a href="#">Click here to enter a date.</a>	

Concept Meeting		
<input checked="" type="checkbox"/>	Data	Comments
<input type="checkbox"/>	Proposed edges of pavement, shoulder, gutter	
<input type="checkbox"/>	Existing guardrail and attenuators	
<input type="checkbox"/>	Proposed/existing retaining walls, noise abatement walls, barrier walls, parapets, abutments, piers	
<input type="checkbox"/>	Proposed/existing sign truss and cantilever sign foundations	
<input type="checkbox"/>	Proposed/existing drainage structures in gutters and in sideslopes	
<input type="checkbox"/>	ITS devices	
<input type="checkbox"/>	Other potential issues/obstacles	
<input type="checkbox"/>	All AOC's labeled	
<input type="checkbox"/>	Stationing	
<input type="checkbox"/>	North arrow	
<input type="checkbox"/>	Bar scale	
<input type="checkbox"/>	Plan Exhibit shall be presented at 1"=50' (1"=100' acceptable for reconstruction projects) true scale on topo or aerial background. (Color aerial preferred) (36" roll plot preferred in manageable lengths)	
<input type="checkbox"/>	Some preliminary cross sections should be available. (Either hard copy or able to be viewed electronically)	
<input type="checkbox"/>	Site condition photos of existing obstacles and existing guardrail installations. (If applicable) (Either hard copy or able to be viewed electronically)	



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<b>Report, General</b> (Not applicable for Concept Meeting)		
<input checked="" type="checkbox"/>	<b>Data</b>	<b>Comments</b>
<input type="checkbox"/>	Full report bound in 3-ring binder	
<input type="checkbox"/>	Revised sheets (only when specifically requested)	
<input type="checkbox"/>	11" x 17" sheets tri-folded	
<input type="checkbox"/>	Include CD containing all files relevant to RSAP analysis.	
<input type="checkbox"/>	Each identified AOC is specifically addressed within report in either Level 0 Table, Level 1 Table, Level 2 Analysis or Level 3 Analysis.	
<input type="checkbox"/>	Brief introductory statement giving an overall scope of work, inclusions and exclusions, assumptions and list of other relevant projects if applicable provided.	
<input type="checkbox"/>	Checklist included with all submittals.	
<input type="checkbox"/>	All proposed elements of BWA match the construction drawings and vice versa.	

<b>Report Cover Sheet</b> (Not applicable for Concept Meeting)		
<input checked="" type="checkbox"/>	<b>Data</b>	<b>Comments</b>
<input type="checkbox"/>	Project description with milepost limits	
<input type="checkbox"/>	Design Contract Number	
<input type="checkbox"/>	Construction Contract Number (If available)	
<input type="checkbox"/>	Submittal Date (Month, Day, Year)	
<input type="checkbox"/>	Submittal Milestone	
<input type="checkbox"/>	Designer Name and Logo	
<input type="checkbox"/>	Prime Consultant, if Designer is a sub-consultant	
<input type="checkbox"/>	Volume Number and Total Volumes (If applicable)	
<input type="checkbox"/>	Professional Engineer's Seal (Final submittal only)	

<b>Table of Contents</b> (Not applicable for Concept Meeting)		
<input checked="" type="checkbox"/>	<b>Data</b>	<b>Comments</b>
<input type="checkbox"/>	Table of Contents (TOC) included	
<input type="checkbox"/>	All pages numbered (Begin after TOC)	
<input type="checkbox"/>	Each AOC/Location is numbered separately	
<input type="checkbox"/>	Reference information included	
<input type="checkbox"/>	TOC provided for each volume of submittal.	



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<b>Disposition</b> (Not applicable for Concept Meeting or Preliminary Submittal)		
<input checked="" type="checkbox"/>	<b>Data</b>	<b>Comments</b>
<input type="checkbox"/>	Disposition of previous comments included with submittal	
<input type="checkbox"/>	Resolutions of significant disagreements with previous comments discussed with reviewer prior to submittal are included in disposition.	

<b>Location Plan</b> (Not applicable for Concept Meeting)		
<input checked="" type="checkbox"/>	<b>Data</b>	<b>Comments</b>
<input type="checkbox"/>	Aerial or Topographic Mapping (1"= 200' Scale)	
<input type="checkbox"/>	Location Identified and Numbered	
<input type="checkbox"/>	Mainline Centerline, Ramp Baselines and Stationing	
<input type="checkbox"/>	Identify all ramps, crossroads, railroads and stream crossings	
<input type="checkbox"/>	Show all Level 0, Level 1, Level 2, and Level 3 AOC's	
<input type="checkbox"/>	Label the stationing of project limits and limits of Tollway jurisdiction.	
<input type="checkbox"/>	Label right-of-way.	

<b>Level 0 Table</b> (Not applicable for Concept Meeting)		
<input checked="" type="checkbox"/>	<b>Level 0 Table</b>	<b>Comments</b>
<input type="checkbox"/>	Area of Concern Numbers	
<input type="checkbox"/>	Description of AOC	
<input type="checkbox"/>	Stationing and Mile Post Location, and Side of Road (Lt./Rt.) shown.	
<input type="checkbox"/>	AOC: Existing, Existing to Remain or Proposed shown	
<input type="checkbox"/>	Reason for no further action	
<input type="checkbox"/>	Distance beyond Clear Zone (if applicable)	



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<input checked="" type="checkbox"/>	<b>Level 1 Analysis</b>	<b>Comments</b>
<input type="checkbox"/>	Existing features that need to be upgraded or repaired shown as in Article 6.14.4. Only includes features that are traversable or can be made traversable. For all items listed as not traversable, recommendations to make traversable provided.	
<input type="checkbox"/>	All existing features have safety treatments verified and described. ( i.e breakaway bases for signs and light poles and safety grates (or pipe runners) for drainage structures, and that all foundations (concrete or helix) are at the proper height above the ground)	
<input type="checkbox"/>	Proposed repairs/recommendations are noted in this table	
<input type="checkbox"/>	Proposed installations are shown in the same table as the existing features	
<input type="checkbox"/>	Proposed items show the proposed safety treatment for each item	
<input type="checkbox"/>	Slope and orientation of all sloped headwalls shown.	
<input type="checkbox"/>	For all signs, mounting type, breakaway bases, location (foreslope or backslope) and slope value indicated.	
<input type="checkbox"/>	For all light poles, whether grading is in accordance with Tollway standard H1 is indicated.	

<input checked="" type="checkbox"/>	<b>Level 2 Analysis</b>	<b>Comments</b>
<input type="checkbox"/>	Each location is a complete stand-alone analysis and includes a data sheet, site plan and cross sections	
<input type="checkbox"/>	Speed profile (as needed)	
<input type="checkbox"/>	AASHTO RDG Table 3-1 with appropriate value(s) circled	
<input type="checkbox"/>	AASHTO RDG Tables 3-2, 5-7, 5-10b (as needed) with appropriate values circled	
<input type="checkbox"/>	Justification for not performing Level 3 Analysis provided (where applicable)	
<input type="checkbox"/>	If analyzing an obstacle influenced by both the mainline and ramp, analyze from both sides and compare.	
<input type="checkbox"/>	When connecting new guardrail to existing, existing guardrail meets TBG Article 9.8.1.	
<input type="checkbox"/>	For slope obstacles, upstream and downstream limits were determined using AASHTO RDG Figure 5-1b (marked copy included in analysis).	
<input type="checkbox"/>	For all breakaway light poles, grading is in accordance with Tollway Standard H1, and barrier clearance distance given matches the values of this standard.	
<input type="checkbox"/>	Minimum guardrail length and maximum gap requirements are met.	



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<b>Data Sheet</b> (Not applicable for Concept Meeting)		
<input checked="" type="checkbox"/>	<b>Data</b>	<b>Comments</b>
<input type="checkbox"/>	Location or AOC Number	
<input type="checkbox"/>	Upstream Station of obstacle	
<input type="checkbox"/>	Upstream Milepost of obstacle	
<input type="checkbox"/>	Offset of obstacle from traveled way (Applies for fixed object only)	
<input type="checkbox"/>	Description of AOC	
<input type="checkbox"/>	Design Year (for rehab. projects, use current year)	
<input type="checkbox"/>	Design Year ADT (for rehab. projects, use current ADT)	
<input type="checkbox"/>	Design Speed at AOC	
<input type="checkbox"/>	Lateral Offset to Barrier, $L_A$ . State how this value was determined if it is not clear.	
<input type="checkbox"/>	Runout Length, $L_R$ (attach AASHTO RDG Table 5-10b with appropriate value circled)	
<input type="checkbox"/>	Clear Zone (attach AASHTO RDG, Table 3-1 with appropriate value(s) circled). If clear zone varies, provide range of stations applicable to each value.	
<input type="checkbox"/>	Clear Zone adjustment factor, if necessary (attach AASHTO Table 3-2 with appropriate value circled)	
<input type="checkbox"/>	Shy line offset when shoulder is less than standard (attach AASHTO RDG, Table 5-7)	
<input type="checkbox"/>	Include photos of existing guardrail installation and of the obstacle being shielded. (required for rehab. contracts and optional for reconstruction)	

<b>Calculation Sheets</b> (Not applicable for Concept Meeting)		
<input checked="" type="checkbox"/>	<b>Data</b>	<b>Comments</b>
<input type="checkbox"/>	Determination of X, Y, PON, and LON	
<input type="checkbox"/>	Determination of downstream barrier condition	
<input type="checkbox"/>	Determination of Barrier Limits	
<input type="checkbox"/>	Barrier Limits Check (where applicable)	
<input type="checkbox"/>	Determination of overlap distance	
<input type="checkbox"/>	Final recommendations, including justification of any design decision made	
<input type="checkbox"/>	Identify guardrail post spacing, post length and terminal types.	
<input type="checkbox"/>	State any adjustments to the final barrier length and the reason for it.	
<input type="checkbox"/>	Identify any objects to be removed from recovery area.	
<input type="checkbox"/>	Provide comparison of proposed vs. existing guardrail (where applicable).	



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<b>Site Plan</b> (Not applicable for Concept Meeting)		
<input checked="" type="checkbox"/>	<b>Data</b>	<b>Comments</b>
<input type="checkbox"/>	1"=50' true scale plan (1"=40' also acceptable) when plotted at 11"x17".	
<input type="checkbox"/>	Sheet should be 11" by whatever length covers the entire AOC plus L <sub>R</sub> (accordion fold to 8½" x 11"). If more than 48" in length, then split into separate sheets. (11" x 17" sheets with matchlines are also acceptable)	
<input type="checkbox"/>	Use AASHTO nomenclature for all terms	
<input type="checkbox"/>	Label L <sub>2</sub> on every sheet	
<input type="checkbox"/>	Label Clear Zone, L <sub>C</sub> on every sheet (where it applies) Clear zone does not transition for one offset to another. . If undefined, labeled as "undefined" with the station range.	
<input type="checkbox"/>	Label auxiliary lane and ramp clear zones (if applicable)	
<input type="checkbox"/>	Label L <sub>R</sub> , L <sub>A</sub> , Y, X where determining the upstream end of barrier. (Labeling X and Y does not apply when X value is negative.)	
<input type="checkbox"/>	Show and label runout path except when AOC is on the inside of a curve, <u>and</u> the formula is used to calculate X.	
<input type="checkbox"/>	L <sub>A</sub> , L <sub>2</sub> , L <sub>C</sub> and Y (calculated) dimensioned from the edge of traveled way	
<input type="checkbox"/>	Y (calculated) only shown at the upstream end of X. (Does not apply when X value is negative.)	
<input type="checkbox"/>	Label Point of Need station. (Does not apply when X value is negative.)	
<input type="checkbox"/>	Show length of gap between individual runs of guardrail (if applicable)	
<input type="checkbox"/>	Dimension paved shoulder width	
<input type="checkbox"/>	Label traffic barrier terminals	
<input type="checkbox"/>	Show recovery area for Type T1 (Special) and Type T1-A (Special) terminals	
<input type="checkbox"/>	Barrier Clearance Distance for all items near the back of guardrail shown	
<input type="checkbox"/>	Label gutter type (if applicable)	
<input type="checkbox"/>	Show stationing (at least two shall be labeled)	
<input type="checkbox"/>	Show PC's and PT's for horizontal curves	
<input type="checkbox"/>	Show curve data for horizontal curves (including design speed, radius and superelevation rate)	
<input type="checkbox"/>	Show traffic flow arrows (one for each lane)	
<input type="checkbox"/>	Dimension pavement widths	
<input type="checkbox"/>	Label Edge of Traveled Way (EOTW)	
<input type="checkbox"/>	Label Edge of Pavement (EOP)	
<input type="checkbox"/>	Dimension between EOTW and EOP	
<input type="checkbox"/>	No cross sections available, foreslope and backslope grades shown.	



**Traffic Barrier Guidelines  
Barrier Warrant Submittal  
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<b>Continued:</b>		
<b>Site Plan</b> (Not applicable for Concept Meeting)		
<input checked="" type="checkbox"/>	<b>Data</b>	<b>Comments</b>
<input type="checkbox"/>	AOC shall be labeled (and hatched if a slope or water obstacle)	
<input type="checkbox"/>	All other AOC's within the limits of the sheet should be labeled	
<input type="checkbox"/>	Label cross roads	
<input type="checkbox"/>	North arrow	
<input type="checkbox"/>	Bar scale	
<input type="checkbox"/>	Line work shall include proposed edges of pavement, shoulders, gutters, and proposed drainage structures, retaining walls, noise abatement walls	
<input type="checkbox"/>	Proposed light poles shall be shown, but conduits, etc, should not be shown	
<input type="checkbox"/>	Utilities should not be shown unless in potential conflict with the proper installation of guardrail or terminals	
<input type="checkbox"/>	Maintenance of traffic, staging, erosion control, landscaping, , etc. should not be shown	
<input type="checkbox"/>	Only Items in the proposed condition (including existing items/ obstacles to remain) are shown.	
<input type="checkbox"/>	For all barrier flared toward the travel way, flare rate indicated, and marked copy of RDG Table 5-9 provided.	



## Traffic Barrier Guidelines Barrier Warrant Submittal Checklist

<b>Summary Site Plan</b> (Not applicable for Concept Meeting)		
<input checked="" type="checkbox"/>	<b>Data</b>	<b>Comments</b>
<input type="checkbox"/>	Show all information required as noted for Site Plans, except L <sub>R</sub> , L <sub>A</sub> , Y, X and the runout path.	
<input type="checkbox"/>	Show length of proposed gap between individual runs of guardrail (if applicable)	
<input type="checkbox"/>	Show calculation of overlapping guardrail runs (can be on a separate calculation sheet)	
<input type="checkbox"/>	All AOC's that are being summarized shall be labeled (and hatched if a slope or water obstacle)	

<b>Cross Sections</b> (For Concept Meeting, See Requirements on Page 1)		
<input checked="" type="checkbox"/>	<b>Data</b>	<b>Comments</b>
<input checked="" type="checkbox"/>	Cross sections with an interval of no more than 100'	
<input type="checkbox"/>	True scale: 1"=20' horizontal and 1"=10' vertical	
<input type="checkbox"/>	Plot on 11" x 17" sheets	
<input type="checkbox"/>	Cross sections needed for entire length of AOC and entire length of L <sub>R</sub> shown	
<input type="checkbox"/>	A cross section is included at the AOC for fixed objects such as sign trusses (cantilever and span), RTMS poles, CCTV camera poles, or any other rigid object that is within 10' of the guardrail. Demonstrate that the guardrail has sufficient clearance behind to deflect properly. The actual distance provided from the back of guardrail post to the near edge of the obstacle shown on the cross section	
<input type="checkbox"/>	Cross sections provided within each AOC analysis (or) Cross sections provided separately from AOC analyses and grouped together.	

<input checked="" type="checkbox"/>	<b>Level 3 Analysis</b>	<b>Comments</b>
<input type="checkbox"/>	Level 3 Analysis includes all of the information and backup required for a Level 2 Analysis	
<input type="checkbox"/>	Each alternative is shown in a site plan (may be shown together on a single plan view if readable)	
<input type="checkbox"/>	Identification and description of each of the alternatives considered	
<input type="checkbox"/>	Backup calculations for initial construction and maintenance costs for each alternative	
<input type="checkbox"/>	A schematic showing all of the RSAP Features in a plan view	
<input type="checkbox"/>	Comparison of the analysis results, discussions and recommendations	





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<input checked="" type="checkbox"/>	<b>Level 3 Analysis</b>	<b>Comments</b>
<input type="checkbox"/>	Recommendation supported by the analysis and backup data	
<input type="checkbox"/>	Crash costs adjusted to current values (TBG Art. 5.6.2)	
<input type="checkbox"/>	All RSAP report pages included in hard copy	
<input type="checkbox"/>	All .rsd files are on disk included in submittal.	

<input checked="" type="checkbox"/>	<b>Speed Profiles</b>	<b>Comments</b>
<input type="checkbox"/>	Speed profiles included for all AOC's within a speed transition area (such as ramps).	
<input type="checkbox"/>	Calculations for acceleration and deceleration distances included.	
<input type="checkbox"/>	Copy of AASHTO Table 10-3 or 10-4 with acceleration and deceleration lengths highlighted included.	
<input type="checkbox"/>	Graphical speed profile plotted at 1"=100' or 1"=200'	
<input type="checkbox"/>	Show curve data for horizontal curves (including design speed, radius and superelevation rate)	

Click here to enter text.

**Design Section Engineer-PM**

Click here to enter a date.

**Date**