

**WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DESIGN DIRECTIVE**

**DD-605
DESIGN EXCEPTION POLICY**
April 15, 2004

Attached for your use is the Division of Highways (DOH) Design Exception Policy dated April 15, 2004 which was approved by the Federal Highway Administration (FHWA) on June 18, 2004. It shall be used on all applicable projects.

This DD replaces the current DD-605 and DD-607 and is to be used on all NHS and Non-NHS projects

Attachment

DESIGN EXCEPTION POLICY

INTRODUCTION

This policy has been developed jointly by FHWA and DOH representatives and provides a procedure to be followed for the documentation of design exceptions for all projects.

All new construction or reconstruction projects shall be designed in accordance with the AASHTO criteria. All RRR projects shall be designed in accordance with the current FHWA approved State RRR criteria. Those criteria related to design speed, lane and shoulder widths, bridge widths, structural capacity, horizontal and vertical alignment, grades, stopping sight distance, cross slopes, superelevation, and horizontal and vertical clearances are the controlling criteria that require formal design exceptions when not met. The criteria are included in the attached flowcharts and “Design Exception Justification Report”. These criteria will be referred to throughout this document as the “**13 Controlling Criteria**”. A formal design exception is not required and should not be submitted unless the existing/proposed value for any of the “13 Controlling Criteria” fails when compared to the design values for any of these criteria. The designer should follow “Step 1” of the attached flowchart when determining which design directive to use in establishing design values.

All efforts should be made to adhere to the specified criteria. However, under unusual conditions, it may be necessary to use values that are less than the minimum values that have been established. If lesser values are proposed for use, a Design Exception Justification Report shall be developed and approved. The approved Design Exception Report shall be submitted to Planning Division for filing and inclusion on the straight-line diagrams. A copy of the approved design exception shall be included in the project file.

As stated previously, design exceptions shall only be submitted when one or more of the “13 Controlling Criteria” design values is violated by the existing/proposed values. Design exceptions are not required and shall not be submitted on projects defined as “Maintenance Projects” as shown in the attached flowcharts. The designer should refer to DD-817 “Minor Preventive Maintenance” for guidance in determining which project types are classified as maintenance projects in this regard.

Design policies that are not satisfied and are not one of the “13 Controlling Criteria” shall not be documented and submitted as a formal design exception. These criteria exceptions shall be documented in the project files only.

DESIGN EXCEPTION JUSTIFICATION REPORT

The following information, which affects the design values selected, must be considered and documented as a part of the design exception request: (1) the existing conditions, the minimum design criteria values, the proposed design values, and the criteria source (controlling design directive or AASHTO section) must be identified; and (2) a narrative documenting that the acceptance of the design exceptions is prudent, cost-effective and will not compromise the safety of the traveling public. This narrative will discuss the following items:

1. The effect of the variance from the design criteria on the safety and operation of the facility and safety mitigating measures considered and provided;
2. The compatibility of the design and operation with adjacent sections;
3. Amount and character of traffic using the facility;
4. Accident history (type, location, severity, etc.);
5. Comparative cost of full design criteria versus lower design criteria being proposed, or other practical alternatives;
6. The long term effect of the reduced design criteria versus full design criteria (effect of capacity reduction);
7. Difficulty in obtaining full design criteria (cost, right of way involvement, delay, environmental impacts, etc.);
8. Level of Service for full design criteria versus reduced design criteria; and,
9. Any other design criteria that is not being met, i.e., cumulative effect of more than one standard that is being reduced.

This documentation is essential for each design exception requested.

Design values chosen or being considered, which are exceptions to the appropriate minimum design criteria values, shall be approved as early as possible in the design process prior to considerable detailed design work being accomplished. The Deputy State Highway Engineer - Operations will approve those exceptions necessary on projects that are District "Design Responsibility". The Deputy State Highway Engineer - Development will approve those exceptions necessary on projects that are a Central Office Division "Design Responsibility". FHWA will approve design exceptions on all non-exempt projects, and will review and concur on design exceptions on concurrence projects.

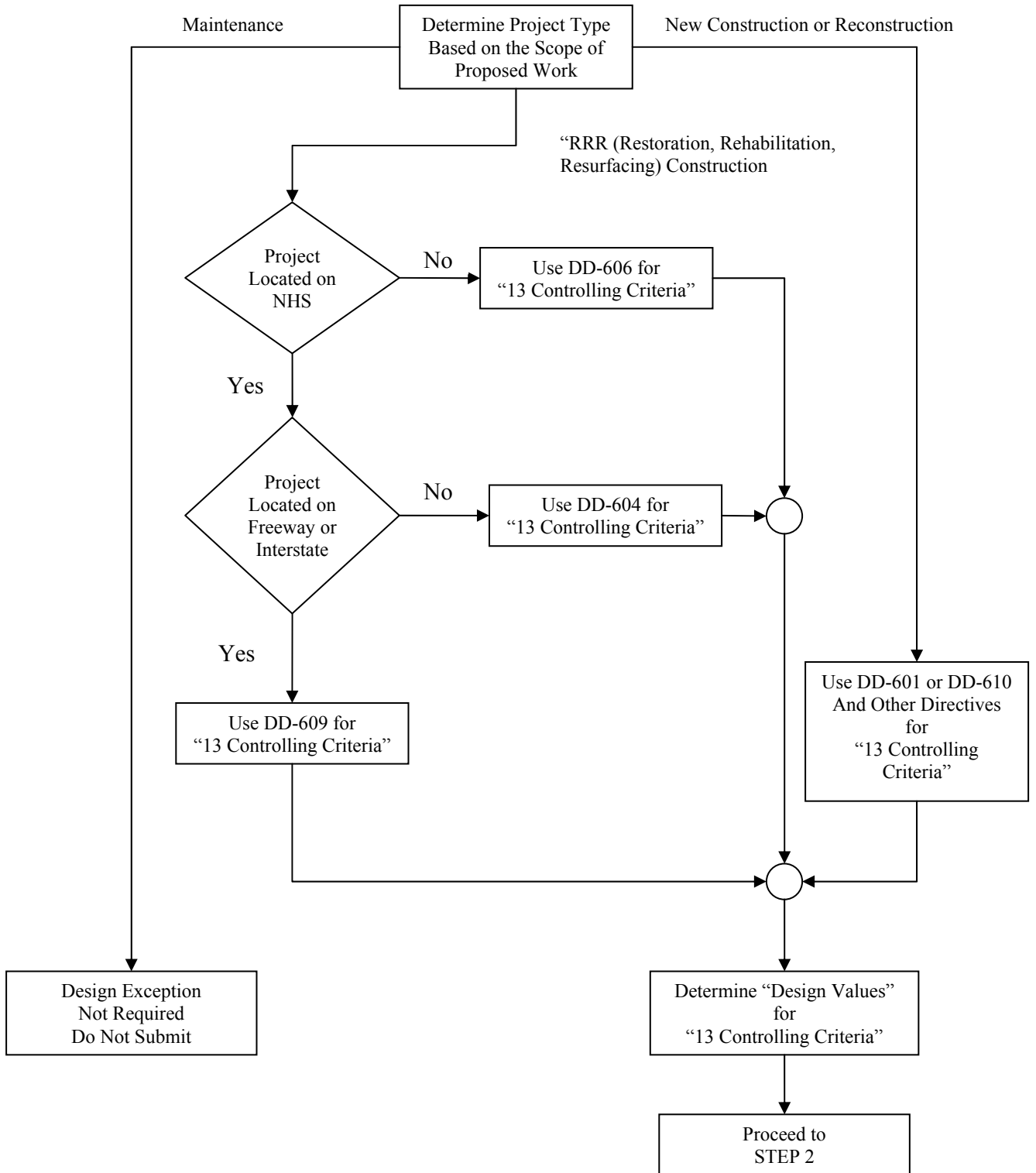
During the design process, a continuing review of exceptions shall be made and any additions or modifications discussed with the agency that approved the exception, FHWA or the DOH, with the results documented and placed in the project files.

Copies of all design exceptions must be submitted to Program Administration Division with the PS&E package and also submitted to Planning Division for filing and inclusion on straight-line diagrams.

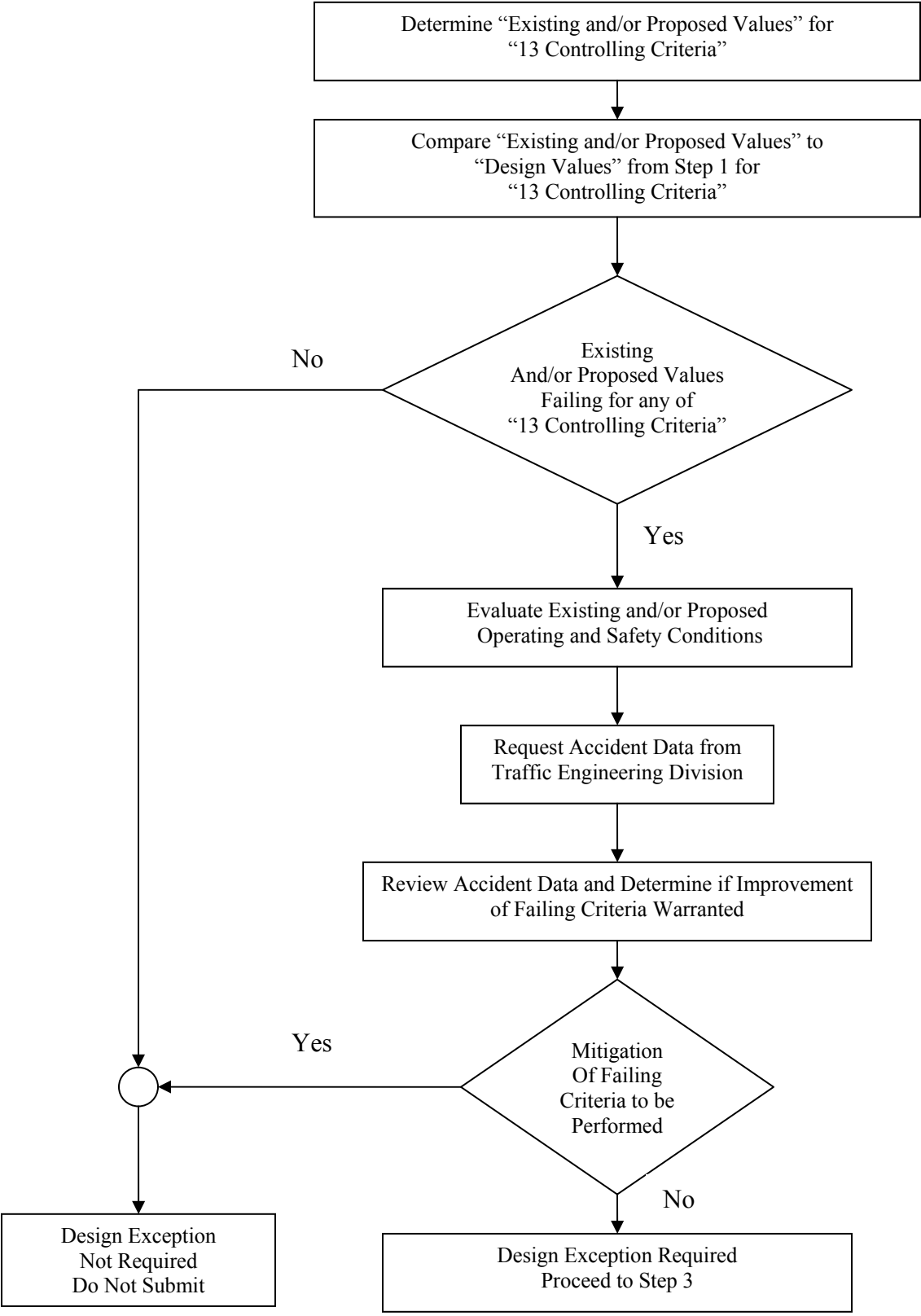
Design exceptions on district projects must be signed by the District Engineer and the Regional Engineer/Operations prior to submitting the PS&E package. Program Administration Division will obtain the signature of the RRR/NHS Coordinator, Deputy State Highway Engineer – Operations, and FHWA (if applicable) and return the original of the approved exception to the District for inclusion in the project file.

Design exceptions on all other projects must be approved prior to submission of the PS&E package to Program Administration Division.

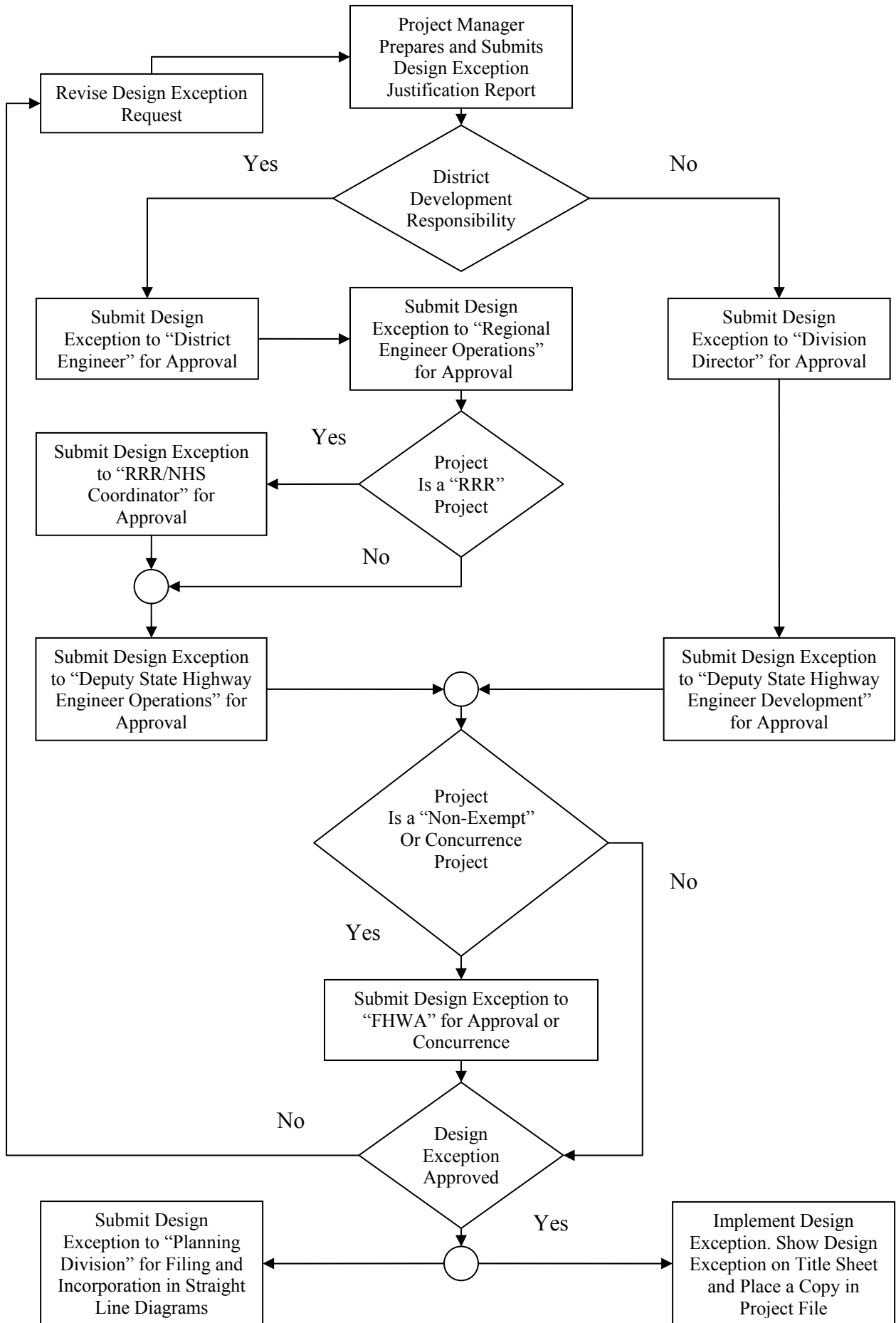
STEP 1: DETERMINE PROJECT “DESIGN VALUES”



STEP 2: DETERMINE IF DESIGN EXCEPTION IS REQUIRED



STEP 3: PREPARE AND SUBMIT DESIGN EXCEPTION FOR APPROVAL



DESIGN EXCEPTION JUSTIFICATION REPORT

PROJECT DATA

State Project No. _____ Date: _____

Federal Project No: _____ County: _____

Project Name: _____

Project Description: _____

WVDOH Representative: _____

FHWA Representative: _____

HIGHWAY ROUTE DATA

- AASHTO Functional Classification
- 1. Urban Rural
 - 2. Arterial Collector Local Road
 - 3. Freeway Divided/Arterial Two-Lane Arterial
 - 4. Interstate

TERRAIN TYPE Level Rolling Mountainous

TRAFFIC DATA Current Year: _____ Design Year: _____
ADT: _____ ADT: _____
DHV: _____ DHV: _____

SPEED LIMIT: _____ POSTED/ REGULATORY

ACCIDENT DATA

Accident Rate: _____

Base Accident Rate (Statewide Average): _____

Nature of Area: _____

DISTRICT DESIGN PROJECTS

DESIGN CRITERIA DATA (Document Only Exceptions)

<u>13 Controlling Criteria</u>	<u>Existing Condition</u>	<u>Minimum Design Criteria</u>	<u>Proposed Value</u>	<u>Criteria Source</u>
1. Design Speed	_____	_____	_____	_____
2. Lane Width	_____	_____	_____	_____
3. Shoulder Width	_____	_____	_____	_____
4. Stopping Sight Distance	_____	_____	_____	_____
5. Horizontal Alignment	_____	_____	_____	_____
6. Vertical Alignment	_____	_____	_____	_____
7. Grade	_____	_____	_____	_____
8. Cross-Slope	_____	_____	_____	_____
9. Superelevation	_____	_____	_____	_____
10. Horizontal Clearance	_____	_____	_____	_____
11. Vertical Clearance	_____	_____	_____	_____
12. Bridge Width	_____	_____	_____	_____
13. Bridge Structural Capacity	_____	_____	_____	_____

APPROVAL SIGNATURES

RECOMMENDED:

APPROVED:

1. _____
District Engineer

_____ **Deputy State Highway Engineer – Operations**

2. _____
Regional Engineer/Operations

_____ **Federal Highway Administration**
(Non-Exempt and Concurrence Projects Only)

3. _____
RRR/NHS Coordinator
(Only on RRR and NHS Projects)

CENTRAL OFFICE DESIGN PROJECTS

DESIGN CRITERIA DATA (Document Only Exceptions)

<u>13 Controlling Criteria</u>	<u>Existing Condition</u>	<u>Minimum Design Criteria</u>	<u>Proposed Value</u>	<u>Criteria Source</u>
1. Design Speed	_____	_____	_____	_____
2. Lane Width	_____	_____	_____	_____
3. Shoulder Width	_____	_____	_____	_____
4. Stopping Sight Distance	_____	_____	_____	_____
5. Horizontal Alignment	_____	_____	_____	_____
6. Vertical Alignment	_____	_____	_____	_____
7. Grade	_____	_____	_____	_____
8. Cross-Slope	_____	_____	_____	_____
9. Superelevation	_____	_____	_____	_____
10. Horizontal Clearance	_____	_____	_____	_____
11. Vertical Clearance	_____	_____	_____	_____
12. Bridge Width	_____	_____	_____	_____
13. Bridge Structural Capacity	_____	_____	_____	_____

APPROVAL SIGNATURES

RECOMMENDED:

APPROVED:

1. _____
Project Manager

Deputy State Highway Engineer – Development

2. _____
Division Director

Federal Highway Administration
(Non-Exempt and Concurrence Projects Only)

