

Memo

New Mexico Department of Transportation

SUBJECT: Infrastructure Design Directive
IDD-2007-03
(Policy for Design Quality Assurance Review)

DATE: 30-November-2007

TO: Office of Infrastructure Divisions
Transportation Design Community

FROM: Max Valerio, Chief Engineer,
Office of Infrastructure Divisions

FILE REFERENCE:
PSESHARE:Design Directives

Effective immediately, all internally (DOT) developed design plans will undergo a Design Quality Assurance Review to be conducted by the Design Quality Assurance (DQA) Unit prior to production date submittal. The Assurance Review will be in addition to the Quality Control Review that was implemented by Infrastructure Design Directive IDD-2006-01 Policy for Independent Design Quality Control Reviews dated 1-25-2006. The following serves as guidance for implementation of this program.

The Design Quality Assurance Review will be concurrent to PS&E Review submittal. Design plans, Engineer's Opinion of Probable Cost (EOPC), pertinent project correspondence and a copy of the "Design Quality Control Review Report" shall be submitted to the Design Quality Assurance Unit as part of the PS&E Review distribution.

The Regional Design Managers and District Design Managers will be responsible for developing and coordinating a schedule for the quality review to be performed by the Design Quality Assurance Unit.

The Design Quality Assurance Review is intended to address constructability issues, major items and quantities as well as general format and content of design plans. The review is not intended to serve as a formal verification of the entire plan submittal. The attachment to this directive will provide a listing of areas the Design Quality Assurance Review will focus upon as a minimum review. Complex design projects will require a more in depth review and will be addressed during the scheduling of the review.

The Design Quality Assurance Unit shall schedule a review meeting with the respective responsible Project Development Engineer and Engineering Coordinator and provide an itemized list of items and areas requiring attention discovered during the review. The "Design Quality Assurance Review Report" will be made available to the Regional Design Manager, District Design Manager, DQA Unit Supervisor, Construction Oversight Engineer, FHWA, and the Chief Engineer.

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Responsible Project Development Engineer and Engineering Coordinator will address findings in the "Design Quality Assurance Review Report" and document actions with a "Quality Assurance Report" for the project files and address plan revisions accordingly. As a result of this new directive the PS&E Review meeting will need to be scheduled accordingly in order to allow for revisions and fulfilling production date requirements. Copies will be made available to the Design Regional Manager, District Design Manager, DQA Unit Supervisor, Construction Oversight Engineer, FHWA, and the Chief Engineer.

General Office staff is to utilize the \\aspen\pshare drive to access the Directive. District and Regional Office staff can access the Directive utilizing the appropriate District drive as indicated below:

District 1	\\d1-blade1\D1Design
District 2	\\D2flsv01\public\psesection
District 3	\\D3-blade 1\District 3\PS&E_Section
District 4	\\d4flsv04\designshared
District 5	\\d5flsv02a\d5design
District 6	\\d6flsv06\d6_users\pse_section

In addition, the Directive will reside in the Department's external website. The web address is:

<http://www.nmshtd.state.nm.us>

Attachment

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1/Paul Little

2/Gary Shubert

3/Larry Velasquez

4/Paul Gray

5/John McElroy

6/Larry Maynard

ASSISTANT DISTRICT ENGINEERS

1/Trent Doolittle/Harold Love

2/Ralph Meeks/Ismael Dominguez

3/Mike Plese/Kathy Trujillo

4/Dennis Peralta/Abel Esquibel

5/James Gallegos/Miguel Gabaldon

6/Fernando Trujillo/Lisa Vega

ENGINEERING SUPPORT

1/Frank Guzman

2/Robert Kurtz

3/Terry Doyle

4/Heather Sandoval

5/Phil Gallegos

6/

DISTRICT TECH SUPPORT ENGINEERS

1/Filiberto Castorena

2/Betty Helgeson

3/Ken Murphy/Priscilla Benavides

4/Heather Sandoval (acting)

5/David Martinez

6/Bryan Peters

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2/ Richard Weed

3/Tony Abbo

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Peter Hinckley, URS Greiner Woodward Clyde

William Ventry, Ventry Engineering

Scott Perkins, Wilson & Company

DESIGN QUALITY ASSURANCE REVIEW CHECKLIST

Cover Sheet:

Proper Cover Sheet
Correct Project Number
Correct Control Number

Vicinity Sheet:

Length of Project
B.O.P. & E.O.P. Stationing
Equations
Project Location (Township,Range,Section)
Type of Construction

Index of Sheets:

Listing of sheets (Proper Format)

Summary of Quantities:

Proper categories utilized
Proper Units breakdown
Correct Items utilized

General Notes:

Reference of general notes to item numbers and to sheets in plans
Contradiction to Special Provisions or Project Specific Specifications

Typical Sections:

Profile grade
Design Speed (Scoping Report)
Stationing as it reflects to Surfacing Schedule
Length of Project as it reflects to Vicinity Sheet
Typical Section dimensions & depths as per Lab Report, Scoping Report and Inspection Reports
Transition Stationing/Lengths
Super Elevation Table (verify lengths of Runout & Runoff and full Super-elevated area)

Surfacing Schedule:

Adherence to Materials Lab Recommendations
Station to Station in relation to Typical Section Sheet
Computations & Quantities with Project Totals and Project Use Figures

Estimated Structure Quantities:

Concrete Box Culvert Quantities-Concrete Blanket Quantities

Miscellaneous Quantities:

Earthwork quantities
Proper usage of items vs. work required
Metal Barrier W-Beam (Length & Need)

Plan & Profile

Horizontal Alignment-Adherence to AASHTO Design (Green Book) Current Edition

Design Speed

Curve Data

B.O.P. & E.O.P. & Equation Stationing

Super Elevation Rates & Transition Lengths

Vertical Alignment- Adherence to AASHTO Design (Green Book) Current Edition

Design Speed

Vertical Curve Lengths

Stopping Sight Distance

K-Value

Coverage at Structures and Drainage Features

Turnout Profiles:

Typical Section Template dimensions (skewed or normal)

Turnout grades

Minimum coverage for structures

TCP & CME needs

Profile Grade

Clear Zone

Construction Signing/Traffic Control:

Sequence of Construction

Constructability issues

Structure Placement Sections:

Adherence to Drainage Engineer Recommendations

Constructability (requirement of detour/shoo-fly, one lane closure etc.)

Typical Section Template dimensions (skewed or normal)

Clear Zone

Profile Grade

Minimum Coverage for Structures

TCP & CME needs

Structure Grades

Concrete Blankets versus End Sections

Estimate:

Estimator File

Project Summary (General Information)

Detail Cost Estimate (Item Numbers, Quantities, Unit of Measure etc.)

Estimate Funding

Categories

Pricing Analysis