

## Design Memorandum No. 08-2005

TO: Engineering Offices and Divisions  
Districts  
Consulting Engineers

FROM: Mark S. Gaydos, P.E. - Design Engineer

DATE: October 17, 2005

Design Manual Reference:

Section I-11.02

Revision

Supplemental

SUBJECT: REVISIONS TO NDAC TITLE 28 FOR PROFESSIONAL ENGINEERS AND  
LAND SURVEYORS

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### Introduction

This memorandum provides guidance for implementing the Administrative rule changes resulting from the North Dakota State Board of Registration for Professional Engineers and Land Surveyors revisions to NDAC Title 28.

### Implementation

The use of this guidance is to be implemented immediately.

### Guidance

This memorandum will give guidance on sealing, signing, and dating final plans, change orders, project concept reports, and other reports. Only engineering documents that are final products should be sealed, signed and dated. Preliminary engineering documents should be labeled with descriptions, e.g., "Not for Construction", "Preliminary", "Draft", "PS&E Plans".

#### 1. Final Plans

Final plans are typically prepared by Design/Bridge Division, districts, or consultants.

##### A. Design/Bridge Division Plans

Plans developed in the central office shall be prepared using Digital Interplot (DIP). The lead designer is responsible for obtaining all sections of the plans including traffic safety, traffic control, roadway design, structural, etc. The lead designer will coordinate the plan preparation and will be responsible for assembling the final plans.

A paper or “hard copy” and an electronic copy of the final plans shall be submitted to the Planning and Programming Division (Kathleen Bien). The hard copy will be considered as the original copy and will be sealed, signed and dated. The seal shall be either with the rubber stamp or of the crimp type. The signature and date should be with blue ink to help distinguish the original from copies. All the plan sheets except cross sections, table of contents, pit plats, quantity sheets, and haul road restrictions, shall be sealed, signed and dated by the project designer or their direct supervisor. In addition, the title sheet of the design plans will be sealed, signed and dated by the Design Engineer or Design Program Manager as the overall coordinator. Also, the title sheet of the structural plans will be sealed, signed and dated by the Bridge Engineer or their Assistant as the overall coordinator. This plan set will be considered the original set of plans and will be stored at the DOT central office. If FHWA has full involvement in the project, an additional copy of the plans is submitted to the Planning and Programming Division to forward to FHWA.

In addition to the original hard copy, the plans shall be submitted electronically to the Planning and Programming Division. This electronic plan set should not have the seal, signature or date included; however, it will be replaced with the electronic distribution statement, “This document was originally issued and sealed by \_\_\_\_\_, Registration Number PE-\_\_\_\_\_, on \_\_\_\_\_ and the original document is stored at the North Dakota Department of Transportation.” Using DIP, a black and white PDF and a color PDF should be created and placed in the Planning and Programming Division’s (Kathleen Bien) transfer directory. Also for long term archiving, the color copy should be exported to archiving on our intranet website.

A copy of the plans may be distributed in two methods. First, all paper or hard copy reproductions of the plans that are distributed shall contain a reproduction of the seal, signature and date. Secondly, the plans may also be distributed electronically; however, the plans must contain the electronic distribution statement as described above.

#### B. District Plans

The district lead project designer is responsible for obtaining all sections of the plans including traffic safety, traffic control, roadway design, structural, etc. The district lead designer will coordinate the plan preparation and will be responsible for assembling the final plans.

A paper or “hard copy” of the final plans shall be submitted to the Consultant Administration Section (Clay Sorenson) for processing. The hard copy will be considered as the original copy and will be sealed, signed and dated. The seal shall be either with the rubber stamp or of the crimp type. All the plan sheets except cross sections, table of contents, pit plats, quantity sheets, and haul road

restrictions, shall be sealed, signed and dated by the district lead project designer or their direct supervisor. In addition, the title sheet of the design plans will be sealed, signed and dated by the District Engineer or Assistant District Engineer as the overall coordinator. This plan set will be considered the original set of plans and will be stored at the DOT central office. If FHWA has full involvement in the project, the district shall submit an additional copy of the plans to the Consultant Administration Section (Clay Sorenson). Clay Sorenson will take the hard copy or copies to the Office of Project Development (Francis Ziegler) for review and approval. After approval, the plan sets are submitted to the Planning and Programming Division (Kathleen Bien).

#### C. Consultant Plans

The consultant will coordinate and assemble the final plans. This may require getting sections of the plans that are not included in their contract, such as structure plans or guardrail plans, from the NDDOT assigned technical support and assembling all the sections into one plan set.

The consultant shall submit a paper or "hard copy" of the final plans to the assigned technical support person. This hard copy will be considered as the original copy and will be sealed, signed and dated. The seal shall be either with the rubber stamp or of the crimp type. All plan sheets except for the cross sections, table of contents, pit plats, quantity sheets, haul road restrictions and plans prepared by the DOT, shall be sealed, signed and dated by the consultant. This sealed, signed and dated set of plans will be considered the original set of plans and will be stored at the DOT central office. If FHWA has full involvement in the project, the consultant shall submit an additional copy of the plans to the technical support individual. The technical support person will take the hard copy or copies to the Office of Project Development for review and approval. After approval, the plan sets are submitted to the Planning and Programming Division (Kathleen Bien).

In addition to submitting the hard copies, the consultant shall submit the electronic files to the technical support person.

#### 2. Standard Drawings

The standard drawings are located on the department's website. The original hard copy is sealed, signed and dated by the Design Engineer and is stored in the Traffic Safety Section of the Design Division. Copies of these original standard drawings are located in the file storage located in the Design Division. The lead project designer, the Consultant Administration Section or the technical support person will place the appropriate copies of the standard drawings from the Design Division file storage into the proper location of

the hard copy of the plans. These standard drawings should be added prior to submitting the plans to the Planning and Programming Division.

The standard drawings on the department's website shall not have the seal, signature or date on the drawings but shall have the electronic distribution statement as described earlier. The electronic plan set that is submitted shall include the electronic copy of the standard drawings.

### 3. Change Orders

Construction phase revisions after the bid opening that are required as a result of plan error, plan omissions, changes in field conditions, contractor requests, etc. are typically handled through the change order process. These changes will be processed in three different manners, which are: (A) construction phase revisions that do not need to be sealed, signed and dated; (B) construction phase revisions that would be sealed, signed and dated by the project engineer; and (C) construction phase revisions that would need to be sealed, signed and dated by the original registrant. These construction phase revisions need to be evaluated to determine if they affect the functional design or are within the inherent variability from design in normal construction practices.

#### A. Construction phase revisions that do not need to be sealed, signed or dated:

Some construction phase revisions that are administrative changes that do not affect either the design or physical features of the project do not require to be sealed, signed or dated. Examples of these changes would include changes regarding contract time, changes concerning partnering, changes resulting from differing funding sources, etc. These changes would be processed by the project engineer and would not need to be sealed, signed or dated.

#### B. Construction phase revisions that would be sealed, signed and dated by the project engineer:

Construction phase revisions that are within the inherent variability of normal construction practices and do not affect the functional design requirement, need to be sealed, signed and dated by the project engineer or their direct supervisor. Examples of these types of changes include changes in horizontal or vertical alignment to bike paths or sidewalks, minor changes to pipe grades, minor changes to ditch width, minor changes to inslopes, etc. These revisions are sealed, signed and dated by the project engineer and included in the change order. The project engineer needs to revise the project "as built" drawings to ensure that all the project changes are reflected on the final "as built" plans.

#### C. Construction phase revisions that would need to be sealed, signed and dated by the original registrant:

Construction phase revisions that are outside of inherent variability or result in a functional design change need to be sealed, signed and dated by the original registrant, unless the original registrant is “not able.” The original registrant is defined as being “not able” if they were a consultant who designed the project but their contractual responsibility has expired or if the original registrant is no longer employed with the DOT. In either case, the DOT may authorize another duly registered individual to make the revisions to sealed documents and to seal, sign and date the revisions. A duly registered individual making changes to final sealed documents must assume responsible charge and reseal the directly related final documents. Examples of these types of revisions include structural changes, lane width, shoulder width, specification changes, stopping sight distance, guardrail, superelevation, etc. The original sealed, signed and dated revisions are sent to the district project engineer. The project engineer will prepare the change order and include the sealed, signed and dated revisions. The project engineer needs to also revise the project “as built” drawings to ensure that all the project changes are reflected on the final “as built” plans.

The project engineer or their direct supervisor typically determines which revisions will require sealing, signing and dating and who’s seal would be required. If the project engineer is uncertain of the inherent variability of a change or functional design, they should discuss the details of the revision with the original registrant from the appropriate division (Design, Bridge, Materials and Research). Following are specific examples of construction phase revisions and who would seal, sign and date the revisions.

1. A roadway was widened, milled and blended, and surfaced with HBP. The plans required a two inch thickness of HBP in phase one followed up with a surfacing project the following year (phase two). After the first winter, the district staff noticed some problems with the phase one surfacing. Materials and Research was asked to investigate and determined that an insufficient depth of HBP was placed in phase one. Their recommendation was to place more surfacing in phase two of the project to get a total HBP thickness to match the original thickness recommendation. Because the thickness recommendation did not change from the original design, the plan revisions should be sealed, signed and dated by the project engineer or their direct supervisor. The district should modify the “as built” drawings to reflect the changes from the change order.
2. A roadway was reconstructed and the plans showed that an underdrain system was to be installed. The plans were inadvertently silent on the backfilling details for the underdrain trench. The contractor stated that they would install the pipe and trench section as described in the specifications book (two feet deep and 1 ½ feet wide). Materials and

Research recommended the entire trench should be completely backfilled with Class 45 material. The plan revision sheets should be prepared by the Design Division staff and sealed, signed and dated by the Design Division lead designer or their direct supervisor. The district should modify the “as built” drawings to reflect the changes from the change order.

3. The joints at the bridge ends of the I-94 and State Street structure are failing. To remedy the failed joints, plan revisions are required. The Design Division should prepare and seal, sign and date the revisions to the guardrail, signals and traffic control. The original sealed hard copy is submitted to the Bridge Division. The Bridge Division will prepare the revisions to the structure and the bridge approach slabs. These revisions would be sealed, signed and dated by the lead bridge designer or their supervisor. The original sealed, signed and dated revisions are submitted to the district project engineer. The district will prepare the change order and include the sealed plan revisions. The district should modify the “as built” drawings to reflect the changes from the change order.

4. Project Concept Reports (PCRs)

Project Concept Reports are typically prepared by Design/Bridge Division, Districts, or consultants.

- A. Design/Bridge Division PCRs

After the draft PCR is prepared, it is distributed to the appropriate distribution list for comments. The PCR author incorporates the comments and the responses into the final PCR. The principal author or their direct supervisor shall seal, sign and date the certification page (the first page following the cover page) of the final PCR and submit the report to the Office of Project Development. The Office of Project Development (OPD) submits the report to the Deputy Director of Engineering for decisions. The final PCR, with decisions, is returned to OPD and OPD will submit the final PCR to FHWA and request environmental clearance. After the environmental clearance is received, OPD will place the original sealed, signed and dated final PCR into the files located at OPD and distributes electronic copies of the final PCR to the appropriate distribution list.

- B. District PCRs

The process that the districts use to prepare the PCR is similar to the central office except that the final report is sent by the district to the Consultant Administration Section and they will forward the report to OPD. The final report will be sealed, signed and dated by the district’s principal PCR author or their direct supervisor.

C. Consultant PCRs

After the consultant has completed the draft PCR, the consultant will submit an electronic copy of the PCR to the technical support person for distribution. The PCR comments should be returned to the assigned project technical support person. The technical support individual reviews the comments and forwards the appropriate comments to the project consultant. The consultant staff will prepare responses to the comments to be included in the final PCR. The consultant principal author or their direct supervisor shall seal, sign and date the certification page of the final PCR and submit the report to the technical support person. The technical support individual will forward the report to OPD for review and approval. From this step on, the PCR approval and distribution process is the same as it is for central office prepared PCRs.

5. Other Reports

The DOT and their consultants prepare many other engineering reports such as traffic operation reports, safety reviews, bridge preliminary concept input, hydraulic analysis, linear soil survey recommendations, bridge soil boring recommendations, pavement designs, etc. The cover or single introductory sheet of these reports shall be sealed, signed and dated by the principal report author or their direct supervisor. The original hard copy of these reports will be stored at the DOT central office.

**Questions**

Any questions regarding the content or implementation of the memorandum should be referred to Roger Weigel, Design Division, 701-328-4403, or Ron Henke, Design Division, 701-328-4445.

**Approved**

\_\_\_\_\_/s/\_\_\_\_\_  
Francis G. Ziegler, P.E. - Director, Office of Project Development

10/18/05  
Date