INDIANA DEPARTMENT OF TRANSPORTATION

STANDARDS COMMITTEE MEETING MINUTES

Driving Indiana's Economic Growth

July 24, 2006

MEMORANDUM

TO: Standards Committee

FROM: Dannie L. Smith, Secretary

RE: Minutes for the July 20, 2006 Standards Committee Meeting

The Standards Committee meeting was called to order by the Chairman at 9:05 a.m. on July 20, 2006 in the N755 Bay Window Conference Room. The meeting was adjourned at 1:30 p.m.

The following members were in attendance:

Mark Miller, Chairman	Dave Andrewski, Pvmt. Engineering
Shakeel Baig, Dist. Prod.	Bob Cales, Contract Admin.
Ron Heustis, Constr. Management	Jim Keefer, Ft. Wayne Dist.
Dennis Kuchler, State Constr. Engr.	Larry Rust, Traffic Control
Ron Walker, Materials Mgmt.	John Wright, Roadway Services

Also in attendance were the following:

Jeff James, Constr. Mgmt.	Todd Shields, Highway Mgmt.
Dan Smith, Secretary	Brad Steckler, Planning & Prod.
Lee Gallivan, FHWA	Ed Ratulowski, FHWA
Paul Berebitsky, ICI	

Old Business

Item 10-6	Mr. Andrewski	7/20/06	4
305.02	Materials	300-8	
305.04*(e)*	*Cement Concrete Pavement Cracking and Sealing*	300-9	
Action:	Withdrawn		
Item 10-7	Mr. Andrewski	7/20/06	6
305.06	Method of Measurement	300-11	
Action:	Withdrawn		
Item 10-8	Mr. Andrewski	7/20/06	7
305.07	Basis of Payment	300-11	
Action:	Withdrawn		

New Business

Item 14-1	Mr. Wright	7/20/06	8
Design Manual	Procedures for Level One Design Exception		
Action:	Passed as revised		
Item 14-2	Mr. Wright	7/20/06	13
Design Manual	New or Revised Access to the Interstate System		
Action:	Passed as revised		
Item 14-3	Mr. Wright	7/20/06	26
205.07	Basis of Payment	200-52	
Action:	Passed as revised		
Item 14-3a	Mr. Wright	7/20/06	27
205.06	Method of Measurement	200-51	
Action:	Passed as developed at meeting		
Item 14-4	Mr. Wright	7/20/06	28
Standard Drawing	205-TECD-01		
Action:	Passed as revised		
Item 14-5	Mr. Andrewski	7/20/06	31
411	*WARRANTED MICRO-SURFACING*	400-53	
Action:	Withdrawn		
Item 14-6	Mr. Heustis	7/20/06	41
Revise Title From	Contract Services Section		
To	*Contract Administration*		
Action:	Withdrawn		
Item 14-7	Mr. Heustis	7/20/06	42
Revise Title From	Design Division		
To	*District Traffic Engineer*		
Action:	Withdrawn		
Item 14-8	Mr. Heustis	7/20/06	43
Revise Title From	District Materials and Testing Engineer		
To	*District Testing Engineer*		
Action:	Withdrawn		
Item 14-9	Mr. Heustis	7/20/06	44
Revise Title From	District Materials and Tests Engineer		
To	*District Testing Engineer*		
Action:	Withdrawn		
Item 14-10	Mr. Heustis	7/20/06	45
Revise Title From	DMTE		
To	*District Testing Engineer*		
Action:	Withdrawn		
Item 14-11	Mr. Heustis	7/20/06	46
Revise Title From	District Traffic Division		
To	*District Traffic Office*		
Action:	Withdrawn		

Item 14-12	Mr. Heustis	7/20/06	47
Revise Title From	Environment, Planning and Engineering Division Chief		
To	*Environmental Services Manager*		
Action:	Withdrawn		
Item 14-13	Mr. Heustis	7/20/06	48
Revise Title From	Geotechnical Engineer, Materials and Tests Division		
To	*Geotechnical Engineer, Production Management Division*		
Action:	Withdrawn		
Item 14-14	Mr. Heustis	7/20/06	49
Revise Title From	Geotechnical Section		
To	*Geotechnical Engineering Section*		
Action:	Withdrawn		
Item 14-15	Mr. Heustis	7/20/06	50
Revise Title From	Materials and Tests Division		
To	*Office of Materials Management*		
Action:	Withdrawn		
Item 14-16	Mr. Heustis	7/20/06	52
Revise Title From	Operations Support Division		
To	*Technology Deployment Division*		
Action:	Withdrawn		
Item 14-17	Mr. Rust	7/20/06	53
Standard Drawing	801-TCDV-10		
Action:	Passed as developed at meeting		
Item 14-18	Mr. Rust	7/20/06	55
801.15(c)	Temporary Worksite Speed Limit Sign Assembly	800-15	
Action:	Passed as developed at meeting		

cc: Committee Members (11)
FHWA (4)
ICI Representative (1)

REVISION TO 2006 STANDARD DRAWING

SECTION 305, AFTER LINE 13, INSERT AS FOLLOWS:

Coarse Aggregate, Class B or Higher, Size No. 11 904
Coarse Aggregate, Class D or Higher, Size No. 53 904
Coarse Aggregate, Class D or Higher, Size No. 73 904
Epoxy Coated Reinforcing Bars.....910.01(b)9

SECTION 305, AFTER LINE 110, INSERT AS FOLLOWS:

(e) Cement Concrete Pavement Cracking and Seating

The existing pavement shall be cracked with an impact hammer capable of delivering sufficient energy across a pavement lane to satisfactorily crack the pavement as described below. The hammer shall be designed to prevent penetration into or spalling of the existing surface. The cracked pavement shall be seated with a pneumatic-tire roller.

Subsurface drains shall be installed along the edges of pavement in accordance with 718 prior to cutting transverse relief joints.

At least 24 hours prior to the cracking operation, relief joints of 3 to 4 in. (75 to 100 mm) width shall be cut at approximately 1,500 ft (450 m) to 2,000 ft (600 m). The first relief joint shall be located at the beginning of the project and the last relief joint shall be located at the end of the project. The relief joints shall be located in pavement areas that are in sound condition. They shall be cut at the midpoint of two adjacent joints and shall extend across the entire pavement width. The device used to cut the relief joints shall not leave a smooth face on the sides of the relief joint. The relief joint cut shall extend through the concrete pavement, and a maximum of 2 in. (50 mm) into the subbase.

The existing concrete pavement shall be cracked to generate full depth, generally transverse, hairline cracks at a nominal longitudinal spacing of 18 to 24 in. (450 to 600 mm). The impact hammer used for cracking shall not strike directly on existing cracks, joints, or D cracked areas, and shall be operated so that the existing crack or joint becomes a part of the desired cracking pattern. The cracking operation shall begin 24 in. (600 mm) from the first relief joint and proceed toward the next relief joint. The cracking operation shall not create a continuous longitudinal crack. If longitudinal cracking occurs the breaker shall be moved to the next relief joint and the direction of the cracking operation shall be reversed to minimize longitudinal cracking.

The height of the impact hammer shall be approximately 24 in. (600 mm). If this height does not crack the pavement or causes destruction or visible damage to the pavement, the 24 in. (600 mm) dimension may be increased or decreased in 2 in. (50 mm) increments until a cracking pattern determined to be satisfactory is obtained. The Contractor shall furnish and apply water to dampen the pavement to enhance the visual determination of the cracking pattern. Flour may be used in lieu of water if it adequately shows the cracking pattern.

The Contractor shall crack the pavement at night when the ambient and pavement temperatures are lower if the proper crack pattern and spacing cannot be achieved during day light hours.

REVISION TO 2006 STANDARD DRAWING

SECTION 305, CONTINUED.

The Contractor shall apply water onto a section of pavement a minimum of once each day to verify that the specified crack pattern is being maintained. Additional check sections will be required if cracking problems are encountered. Adjustments shall be made to the energy or striking pattern based on the sections checked or the field conditions.

Once the cracking procedure is completed, the relief joints shall be patched in accordance with 506 except that the coarse aggregate shall be Aggregate No. 11 stone, the cement content shall be a minimum of 752 lb/cu yd (446 kg/m^3), and the Department provided spreadsheet is not required.

Retrofit load transfer in accordance with 507.08 shall be used to provide load transfer at each relief joint location except No. 8 epoxy coated reinforcing bars shall be used in place of dowel bars.

A pneumatic-tire rolling device with a body suitable for ballasting to a minimum gross weight (mass) of 40 t (36 Mg) shall be used to seat the cracked pavement after the relief joints have been completed. The rolling device and ballast shall be weighed at certified scales in the presence of the Engineer. The roller shall have four rubber-tired wheels equally spaced across the lane width and mounted in line on a rigid steel frame such that all wheels carry equal loads, regardless of surface irregularities. Three passes of the pneumatic roller shall be made across the cracked pavement. Ballast loading shall be regulated so as to allow the roller to be emptied for crossing bridge structures or other weight-restrictive features.

HMA operations shall be initiated immediately after completion of the cracking and seating operation. The cracked and seated pavement shall not be exposed for more than 15 calendar days before the initial lift of HMA is completed. The HMA surface material shall be completed on the pavement lanes prior to opening to traffic.

Other sections containing specific cross references:

None

General Instructions to Field Employees
Update Required? Y___ N___
By - Addition or Revision

Frequency Manual
Update Required? Y___ N___
By - Addition or Revision

Recurring Special Provisions potentially affected:

305-R-431

Standard Sheets potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

Item No. 10-7
Mr. Andrewski
Date: 7/20/06

REVISION TO 2006 STANDARD DRAWING

SECTION 305, AFTER LINE 150, INSERT AS FOLLOWS:

Cement concrete pavement cracking and seating will be measured by the square yard (square meter). Saw cutting of relief joints will be measured by the linear foot (meter) of joint cut.

Other sections containing specific cross references:

610.05 Pg 600-33

General Instructions to Field Employees
Update Required? Y___ N___
By - Addition or Revision

Frequency Manual
Update Required? Y___ N___
By - Addition or Revision

Recurring Special Provisions potentially affected:

305-R-431

Standard Sheets potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

Item No. 10-8
Mr. Andrewski
Date: 7/20/06

REVISION TO 2006 STANDARD DRAWING

SECTION 305, AFTER LINE 160, INSERT AS FOLLOWS:

Cement concrete pavement cracking and seating will be paid for at the contract unit price per square yard (square meter) complete in place. The cutting of the sawed relief joints will be paid for at the contract unit price for relief joint.

SECTION 305, AFTER LINE 164, INSERT AS FOLLOWS:

Cement Concrete Pavement Cracking and Seating .....SYS (m2)

SECTION 305, AFTER LINE 169, INSERT AS FOLLOWS:

Relief Joint .....LFT (m)

SECTION 305, AFTER LINE 196, INSERT AS FOLLOWS:

The cost of maintaining the cracked and seated pavement in suitable condition for traffic, if required; all labor; equipment; materials; and necessary incidentals shall be included in the cost of cement concrete pavement cracking and seating.

Other sections containing specific cross references:

610.06 Pg 600-33

General Instructions to Field Employees
Update Required? Y___ N___
By - Addition or Revision

Frequency Manual
Update Required? Y___ N___
By - Addition or Revision

Recurring Special Provisions potentially affected:

305-R-431

Standard Sheets potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

Item No. 14-1
Mr. Wright
Date: 7/20/06

DESIGN MANUAL

Procedures for Level One Design Exception

This proposal regulates the authority to approve non-NHS Level One design exceptions to the Production Management Division's Roadway Services Manager or Structural Services Manager, as appropriate. The NHS Level One exceptions will still be concurred in by the Production Management Division Director and approved by the FHWA.

The purpose of the change is to regulate approval for a design process which the Production Management Division Director has determined to be insignificant enough to not always require his/her or FHWA's approval.

This proposal only affects Indiana Design Manual Section 40-8.04. The section has been revised for the agenda with overstrikes and italicized copy in the same manner as a Standard Specifications revision. It will be developed as a Design Memorandum Policy Change statement, though without the overstruck or italic copy, upon Standards Committee approval.

The proposal does not affect the Standard Specifications or Standard Drawings.

Other sections containing specific cross references:

None

General Instructions to Field Employees
Update Required? Y___ N_x__
By - Addition or Revision

Frequency Manual
Update Required? Y___ N_x__
By - Addition or Revision

Recurring Special Provisions potentially affected:

None

Standard Sheets potentially affected:

None

Motion: Mr. Wright
Second: Mr. Kuchler

Action: Passed as revised
Effective - Immediately

Ayes: 9

Revised "accident" to "crash"
Revised Names of offices in 40-8.04

Nays: 0

Received FHWA Approval? Yes

40-8.04 Procedures for Level One Design Exception

The designer will not request an exception to the Level One design criteria until he/she has fully evaluated the impacts of the proposed design (i.e., the exception) and the associated impacts of fully meeting the Level One criteria. The evaluation process shall include obtaining comments from the applicable ~~sections~~ *offices or teams* including the following:

~~1. Design Division Utilities Unit (Supervisor),~~
~~2. Design Division Railroad Unit (Supervisor),~~
~~3. Design Division Hydraulics Unit (Supervisor),~~
~~4. Contracts and Construction Division Standards Section (Manager),~~
~~5. Land Acquisition Division Engineering Section (Manager),~~
~~6. Materials and Tests Division Geotechnical Section (Manager),~~
~~7. Operations Support Division Traffic Specialist, and~~
~~8. Environment, Planning and Engineering Division Engineering Assessment Section (Manager).~~

1. Highway Operations Division, Office of Traffic Engineering;
2. Production Management Division, Office of Environmental Services, Environmental Policy Team;
3. Production Management Division, Office of Geotechnical Engineering;
4. Production Management Division, Office of Real Estate, Property Management Team;
5. Production Management Division, Office of Real Estate, Utilities and Railroads Team;
6. Production Management Division, Office of Structural Services, Hydraulics Team;

After review by the applicable offices or teams, the design exception shall then be routed in the order shown below for further comments, recommendations, and final action.

40-8.04(01) Department Procedures

Each design element not meeting the Level One criteria will require a formal, written INDOT exception. This includes all paving exceptions, S-lines, and traffic maintenance phases. See Figure 40-8B, Level One Design Exception Checklist. An editable version of this document may be found on the Department's website, at www.in.gov/dot/div/contracts/design/dmforms/. All design exceptions for a project may be included in one document. ~~The following will apply~~ *Each of the items described below must be addressed in the order as follows*:

1. All Level One Criteria (Except Handicapped Accessibility). The written design exception request will, at a minimum, address the following:

   a. Project Description. This includes project location, functional classification, description of work, and type of area (residential, commercial, rural, etc.) in which the project is located. *The location of the design exception should be identified by referencing it to the nearest Department-maintained route or other major point such as a county line.*

   b. Design Feature. This is a description of the design feature that does not meet the Department's criteria. *Both the proposed criteria and the Department criteria should be identified, with respective design speeds where applicable. Drawings should be used to explain the criteria if necessary. The reason for the design exception request should be clearly indicated.*

   c. Construction Costs. This is the additional cost to construct the feature to meet the Department criteria. *An abbreviated breakdown of the costs should be included.*

   d. Project Design. This includes the basic design parameters of the project (e.g., current and projected 20-year traffic volumes, design speed, posted speed, percent trucks*, design criteria, terrain, and access control*).

   e. Crash Analysis. In addition to furnishing the computer printout of crash experience for the previous 3-year period, the crash data must be presented as follows:

      (1) It should be summarized and described in general terms (e.g., type, severity, contributing circumstances).

      (2) All available sources (city, county, and state police) must be contacted to obtain the data and be noted in the design exception request.

      (3) The crash experience which is related to the design feature and does not meet Department criteria should be analyzed and evaluated. The evaluation may include, for example, a comparison of the crash rate on the highway to the Statewide rate for that type of facility or may include a statistical analysis of the crash experience at the location of the design feature (e.g., a horizontal curve).

f. Cost-Effective Analysis. A cost-effective analysis should be conducted to justify the proposed design *exception, if applicable (e.g., there are crashes related to the design feature in question*. See Chapter Fifty for more information.

g. Ancillary Impacts. Any adverse effects the design exception will have on any other design elements on or near the project site must be evaluated and documented *(e.g., sight distance on a horizontal curve impacts intersection sight distance at an intersection outside the project limits)*.

h. Safety. The safety impacts of the design exception must be evaluated and documented. *For example, if there were no crashes with the existing condition and the project would match or improve the situation, one could conclude that there would be no increase in crashes.*

i. Remedial Actions. The designer must document the proposed remedial actions which will be implemented to alleviate the retention or construction of the design feature which does not meet Department criteria (e.g., traffic control devices).

j. Other Factors. Other factors which may have an effect on the final recommendation should be discussed. For example:

(1) projected service life of the facility after construction is completed;
(2) compatibility with adjacent sections of the proposed project;
(3) probable time before reconstruction of the section is anticipated; and
(4) environmental and right-of-way impacts of meeting the Department criteria.

The design exception request must contain all of the necessary information or references without requiring the reviewer to obtain additional information (e.g., plan sheets, copies of pages of this Manual that pertain to the design exception request, or copies of pertinent pages of the AASHTO Policy on Geometric Design of Highways and Streets.)

A design exception for a local agency project or a state project involving an element on a local agency's road should be signed by the local elected officials who have jurisdiction of the project or road.

~~Within INDOT, the final approval of the design exception is the responsibility of the Design Division Chief. The request for a design exception will be submitted by Department memorandum to the Design Division Chief for review and~~

~~approval. For further information regarding approval of Level One design exception requests, see the notes or statements associated with the Design Tables in Chapter Fifty-three, Section 54-2.0, and Section 55-3.0.~~

2. Handicapped Accessibility. *[This section is unchanged.]*

3. Design Exception Request Routing and Approval.

For further information regarding approval of Level One design exception requests, see the notes or statements associated with the Design Tables in Chapter Fifty-three, Section 54-2.0, and Section 55-3.0.

a. NHS Route Project. Within INDOT, the final concurrence in the design exception is the responsibility of the Production Management Division director. The design exception request will be submitted by Department memorandum to the Production Management Division director for review and concurrence. Upon concurrence, the Production Management Division director will transmit it for review to the FHWA for approval. An editable version of the cover memorandum, Figure 40-8C, may be found on the Department's website, at www.in.gov/dot/div/contracts/design/dmforms/. The Level One design exception request should be routed for approval as follows:

(1) project manager;
(2) Production Management Division's roadway manager or structural services manager, as applicable;
(3) Production Management Division director; and
(4) FHWA for approval.

b. Non-NHS Route Project. The design exception request will be submitted by Department memorandum to the Production Management Division's roadway manager or structural services manager, as applicable, for review and approval. An editable version of the cover memorandum, Figure 40-8D, may be found on the Department's website, at www.in.gov/dot/div/contracts/design/dmforms/. The Level One design exception request should be routed for approval as follows:

(1) project manager; and
(2) Production Management Division's roadway manager or structural services manager, as applicable, for approval.

Item No. 14-2
Mr. Wright
Date: 7/20/06

DESIGN MANUAL

New or Revised Access to the Interstate System

This is a proposed re-write of Design Manual Section 48-1.03. This has been developed as a result of publication of a Policy Statement in the Federal Register of Feb. 11, 1998. It principally adds two criteria for justification of adding an interchange to the existing Interstate Highway System.

Other sections containing specific cross references:

None

General Instructions to Field Employees
Update Required? Y___ N_x__
By - Addition or Revision

Frequency Manual
Update Required? Y___ N_x__
By - Addition or Revision

Recurring Special Provisions potentially affected:

None

Standard Sheets potentially affected:

None

Motion: Mr. Wright
Second: Mr. Andrewski
Ayes: 9
Nays: 0

Action: Passed as revised
Effective - Immediately
Revised word "accident" to "crash"

Received FHWA Approval? Yes

48-1.03 New or Revised Access to the Interstate System

48-1.03(01) Applicability

Each entrance or exit point to an Interstate route is considered to be an access point. For example, a conventional diamond interchange has four access points, two on-ramps and two off-ramps. Locked-gate access is defined as an access point, and is described in Section 48-1.03(02) Item 9.

Revised access to an Interstate route is considered to be a change in the existing essential form, even though the sheer number of access points does not change. For example, adding a loop on-ramp in concert with a collector-distributor (C-D) roadway linked with a downstream diagonal on ramp to an otherwise conventional diamond interchange, or changing a cloverleaf interchange into a fully directional interchange is considered to be a revised access. Lengthening or adding auxiliary lanes at at-grade ramp terminals with crossroads or ramp-proper lanes is not, nor is converting a single-lane off- or on-ramp to dual-lanes. This is clarified in Sections 48-1.03(02) and 48-1.03(03).

The design of new or revised access must comply with AASHTO's *A Policy on Geometric Design of Highways and Streets*, AASHTO's *A Policy on Design Standards – Interstate System*, and this *Manual*.

Work determined to consist of new or revised access to the existing Interstate System will require development by INDOT to FHWA of a formal Request for New or Revised Access to the Interstate System, commonly referred to as an Interstate Justification (IJ) Study Report. The IJ is a stand-alone document which constitutes a request from INDOT for FHWA approval of new or revised access. The document will demonstrate that reasonable care has been taken in addressing eight criteria described in the *Federal Register* of February 11, 1998, and Section 48-1.03(03), confirming that future traffic operations along the affected Interstate corridor will not be adversely affected by the proposed action. The entire Interstate System in the state is under jurisdiction of INDOT. Only the Department, and not a local public agency or private concern, may develop an IJ and submit it to FHWA for approval.

The requirement for an IJ and such FHWA approval applies only for non-tolled Interstate routes and Interstate toll roads where federal-aid funds have been expended or where the tolled sections have been added to the Interstate System under the requirements of 23 USC 139(a). Access to non-Interstate freeways and to new Interstate highways do not require an IJ. The Department has the authority to approve new or revised access to all other types of routes where federal-aid funds were used to acquire the access control. For this situation, the Department must obtain the value of the access from the appropriate property owner(s) and either credit the federal share under existing disposal requirements, or determine that the net proceeds can be handled in accordance with 23 USC 156. The

Department may request FHWA advice or assistance on the acceptability of these types of new or revised access if desired.

48-1.03(02) Actions Requiring an IJ

The actions that require Department development and FHWA approval of an IJ are as follows:

1. establishing a new freeway-to-freeway (system) interchange;

2. major modification of a freeway-to-freeway interchange; e.g., adding new ramp(s), removing ramp(s) from service, significantly relocating tie-in points (terminals) on the freeway, or, where all movements are not currently accommodated, adding ramps to provide for all movements;

3. establishing a new or revised partial interchange of any form;

4. establishing a new freeway-to-non-freeway (service) interchange;

5. modification of an existing freeway-to-non-freeway (service) interchange, e.g., adding a new ramp, removing a ramp from service, significantly relocating tie-in points (terminals) on mainline freeway or crossroad, or adding or significantly altering collector-distributor (C-D) elements;

6. removal from service of select access points or ramps or an entire interchange;

7. changing the essential type of interchange, e.g., replace conventional diamond with partial cloverleaf;

8. changing the essential form of a ramp, e.g., directional, semi-directional, loop, or diagonal;

9. new or revised locked-gate access, or access via locked gates for privately or publicly employed personnel. Locked-gate access is limited to use by utility or Department personnel and not the general public; or

10. other forms of new or revised access not explicitly listed above, e.g., those rising to a level beyond incidental work.

48-1.03(03) Actions Not Requiring an IJ

The actions that do not require development of an IJ are as follows:

1. changing a single-lane freeway exit or entrance to a two-lane freeway exit or entrance;

2. widening a single-lane on- or off-ramp (ramp proper) to two or more lanes;

3. widening (adding auxiliary lanes to) an on- or off-ramp at its intersection with a crossroad (at-grade terminal) to provide two or more intersection approach lanes;

4. minor horizontal or vertical realignment of a ramp;

5. converting a taper-type on- or off-ramp to one of a parallel-type;

6. increasing the length of an on-ramp acceleration lane or an off-ramp deceleration lane;

7. addition of one or more continuous auxiliary lanes between two adjacent interchange ramps; or

8. other minor actions not explicitly listed above.

An analysis of traffic operation should typically be conducted. The Department should informally consult with the appropriate FHWA Transportation Engineer even if such project is not subject to FHWA oversight.

48-1.03(04) Coordination with National Environmental Policy Act (NEPA) Requirements

When a federal agency is required to make an approval action, regardless of the funding source, the NEPA process must be followed. Therefore, since FHWA approves from INDOT, a formal Request for New or Revised Access to the Interstate System (IJ analysis), the NEPA process must be followed when developing new or revised Interstate access. The NEPA process should proceed concurrently with development and analysis of (existing) Interstate access alternatives to ensure that all decision-making regarding all viable alternatives that are expected to be acceptable by FHWA from a traffic-operations standpoint are analyzed and adequately considered. FHWA final IJ approval can only be obtained after completion of the NEPA process. The intention is to eliminate early alternatives that would not be acceptable from a transportation and safety operations standpoint. The final decision on a preferred and selected alternative is to be made as part of the NEPA process.

48-1.03(05) General Steps in Revising or Adding Access to the Interstate System

There are five major steps that normally should be followed for alternatives' development of IJ development for a more-complex proposed new or revised access to the Interstate System. These proposed actions usually require an Environmental Impact Statement (EIS) or an Environmental Assessment (EA) to complete the NEPA process. The first two steps effectively take place as a forerunner to the formal IJ process. Not all of these decision points are necessary for IJ development for a less-complex proposed new or revised access. In coordination with the appropriate FHWA Project Management Team Leader, some or all of the early decision points may be determined to be unnecessary and that only final approval should be requested. The basic steps, or decision points, are as follows:

1. Development of Alternatives. At the start of alternatives' development for actions that may ultimately require IJ preparation and approval, the Department will meet with FHWA to identify any special process and operational requirements. During the Engineering Assessment phase and early in the NEPA process, one or more alternative functional designs should be examined from primary aspects of traffic operation, safety, and cost-effectiveness in concert with overall social, economic, and environmental consequences. Alternatives that would not function adequately from a safety or traffic operations standpoint should be eliminated. During the NEPA alternatives'-screening process, appropriate intensity-of-alternatives' development should be carried out, along with analysis and coordination with other parties having a stake in the screening and ultimate access decision. The Environment Planning and Engineering Division's Engineering Assessment Section oversees development of IJ activities. The appropriate FHWA Project Management Team will serve as the Department's point of contact for this process of developing and screening alternatives. The Team's Transportation Engineer will represent FHWA in providing opinion and review of alternatives from a transportation-operations standpoint.

2. Concept Approval. A letter requesting concept approval of a new or revised access element will be submitted to FHWA once a single alternative has been identified as the conditionally recommended course of action emerging from the access concept's development phase and ongoing NEPA process. This may occur either before the Draft EIS is approved or before the final EIS, EA, or Categorical Exclusion (CE) is approved. If appropriate, the FHWA Project Management Team Leader will respond in writing within two weeks indicating the acceptability in concept of the recommended alternative and allow for the completion of the appropriate NEPA documentation and preparation of the formal IJ request. This will represent FHWA's Concept Approval, and is FHWA's opinion with respect to the engineering and operational acceptability of the recommend*ed* alternative

based on the information available at that time. FHWA's Concept Approval is given with the understanding that the proposal will be that which is reflected in the final NEPA document, either CE, Finding of No Significant Impact (FONSI), or Record of Decision (ROD).

3. Draft IJ Report Development. The Department will initiate a meeting with FHWA to determine the scope of assessment unique to the particular new or revised access element. The Department will then prepare the draft document, focusing on the eight points of the *Federal Register* of February 11, 1998. The draft IJ will be submitted to the FHWA for comments.

4. Final IJ Submittal. Upon written reply/comments on the draft IJ from FHWA, the necessary revisions should be made. The Department may meet with FHWA to resolve significant issues, and/or upon request from FHWA. The final IJ should not be forwarded to FHWA until the preferred alternative within the context of the NEPA process is identified. By cover letter with the final IJ, the Department will request from FHWA a determination of engineering and operational acceptability of the new or revised access. The letter will also include the status of the NEPA evaluation.

5. Provisional and Final IJ Approval. FHWA will respond in writing within four weeks to INDOT's formal request for approval of new or revised access, effectively approving the final IJ. The letter from FHWA will indicate approval or denial of the request. It is understood that approval of the IJ proposal is provisional, if at that stage the NEPA process has not been fully executed. Upon approval of the final environmental document (CE, FONSI, or ROD), FHWA will issue the Department final IJ approval in writing.

48-1.03(06) Content of the IJ

The Request for New or Revised Access to the Interstate System, or IJ, must address the eight criteria outlined in the *Federal Register* of February 11, 1998, and described below. These criteria will be the focus of attention in the IJ. The IJ must directly respond to the eight criteria, in the order shown below. Other background information may be presented to supplement that core element. A clear description of the proposed new or revised access should be presented, generally in narrative form directing the reader to sketch-plan drawings. All relevant notes, summary printouts, and/or electronic input/output files of traffic operations analysis should be appended to the IJ document, be they from HCM / HCS, or other method of analysis.

Background information should be included that may help explain or support the proposal, including a description of the influence of the area's regional transportation

network, and any known areas of concern, e.g., environmental, safety, related projects, and long-range transportation plans. A crash analysis summary must be included. The analysis must include a summary of crash data for the previous three-year period. There must be a discussion of the anticipated safety impact the access change will have on the Interstate-route mainline and interchange ramps. The analysis must demonstrate that the access change will not compromise safety. Any necessary design exceptions should desirably be identified. In addition, the total estimated cost of the project should be provided. A complex urban project may require a conceptual-stage signing plan if determined to be necessary by FHWA and the Department.

The following lists and clarifies the criteria shown in the *Federal Register* of February 11, 1998. For each of the eight criteria, the first paragraph restates the language in the *Federal Register*, unedited. The subsequent paragraphs serve to clarify the core statement.

1. *Existing Facilities. The existing interchanges and/or local roads and streets in the corridor can neither provide the necessary access nor be improved to satisfactorily accommodate the design year traffic demands while at the same time providing the access intended by the proposal.*

   The IJ should demonstrate that an access point is needed for regional traffic needs and not to solve local transportation needs. It is of utmost importance to maintain the integrity and primary function of the Interstate System. The Interstate facility should not be permitted to become part of the local circulation system but should be maintained as the main regional and inter-state highway it was intended to be. All reasonable measures should be made to provide local access and mobility by means of the non-Interstate network.

   Existing or possible future roads or streets in the vicinity of the Interstate facility should be evaluated or considered for use as connections to existing adjacent interchange ramps, in lieu of adding a new interchange or ramp(s).

2. *Transportation System Management (TSM). All reasonable alternatives for design options, location, and transportation system management type improvements (such as ramp metering, mass transit, and HOV facilities) have been assessed and provided for if currently justified, or provisions are included for accommodating such facilities if a future need is identified.*

   All TSM strategies, including those that involve improvements to the existing non-Interstate roads and streets, should be fully explored in lieu of new or revised access to the Interstate system.

3. *Access Connections and Design. The proposed access connects to a public road only and will provide for all traffic movements, except in only the most extreme circumstances. Less than full interchanges for special purpose access for transit vehicles, for HOVs, or into park and ride lots may be considered on a case-by-case basis. The proposed access will be designed to meet or exceed current standards for federal-aid projects on the Interstate System.*

   Except in the most extreme circumstances, all interchanges should provide for all basic movements. Partial interchanges are generally unacceptable, in part because they have undesirable operational characteristics. Private-road access is not permitted on the Interstate System.

4. *Transportation Land Use Plans. The proposal considers and is consistent with local and regional land use and transportation plans. Prior to final approval, all requests for new or revised access must be consistent with the metropolitan and/or statewide transportation plan, as appropriate, the applicable provisions of 23 CFR 450 and transportation conformity requirements of 40 CFR 51 and 93.*

   Coordination with strategic, long-term transportation plans should be ensured, so as not to have fragmented consideration of revised or added access. The IJ should include a discussion as to how the proposal fits into the overall transportation plans for the area and, if it is an addition to the current plans for the area, how it affects the current plans. The IJ proposal does not have to be included in official transportation plans or approved by metropolitan planning organizations (MPOs) or similar organizations prior to submittal to FHWA. However, if the project is within an MPO area, coordination with the MPO must occur. All such coordination must be completed before FHWA approval of the IJ. This should form part of the normal project development process. The expectation here is that any proposal is considered in view of currently known plans for transportation facilities or land use planning.

5. *Comprehensive Interstate Network Study. In areas where the potential exists for future multiple interchange additions, all requests for new or revised access are supported by a comprehensive Interstate network study with recommendations that address all proposed and desired access within the context of a long-term plan.*

   To the extent practicable, the Department will program, and thus allow coordinated analysis and project development, of logical Interstate segments which may include multiple access sites (interchanges).

6. *Coordination with Transportation System Improvements. The request for a new or revised access generated by new or expanded development demonstrates*

appropriate coordination between the development and related or otherwise required transportation system improvements.

It is incumbent upon the Department and FHWA to ensure that the Interstate System is preserved and improved in an orderly and coordinated manner to serve the public and maintain the essential function of this most important network of national highways. Therefore, if private development is the impetus behind the need for access, it is necessary to coordinate efforts with the private party in order to develop the access to achieve mutual benefits with no safety or operational adverse impacts on Interstate-route users.

7. *Status of Planning and NEPA. The request for new or revised access contains information relative to the planning requirements and the status of the environmental processing of the proposal.*

   Information should be confirmed and reported relative to the status of the planning and NEPA processes with regard to the access request.

8. *Operational Analysis. The proposed access point does not have a significant adverse impact on the safety and operation of the Interstate facility based on an analysis of current and future traffic. The operational analysis for existing conditions shall, particularly in urbanized areas, include an analysis of sections of Interstate to and including at least the first adjacent existing or proposed interchange on each side. Crossroads and other roads and streets shall be included in the analysis to the extent necessary to assure their ability to collect and distribute traffic to and from the interchange with the new or revised access points.*

   Sufficient operational analyses should be made to determine the impact of the revised or new access on the Interstate-route operation. The Transportation Research Board's *Highway Capacity Manual (HCM)* analysis procedures should be used. Analysis based on other methodologies is not acceptable. The *HCM*'s companion software, HCS, may be used. Other software tools that precisely replicate *HCM* methodologies may be used. Analysis by means of other (software) models that do not precisely employ *HCM* equations and logic may be presented but only as supplementary information.

   The operational analysis of the proposed change should be carried out for multiple years, typically to a base year or anticipated open-to-traffic year, and to a design year which is approximately 20 years after the anticipated open-to-traffic year.

   The operational analysis should be extended as far along the mainline and should include adjacent downstream interchanges as necessary to establish the extent and

scope of the impacts. This could be critical in an urban area with many interchanges spaced at less than 1.6 km apart. As a minimum, the operational impact on the mainline Interstate route between the proposed new or revised access and immediately adjacent existing downstream interchanges on either side must be analyzed. The exact adjacent interchanges to be analyzed will be determined jointly by FHWA and the Department. Crossroad analysis is always required at the subject (core) interchange, between, through, and outside of ramp terminals on the crossroad. Analysis of the crossroads of the adjacent downstream interchanges is normally not required in an IJ, unless circumstances dictate otherwise.

Appropriate, sanctioned traffic data provided by the Program Development Division's Traffic Statistics Unit should be used as the basis for operational analysis for the IJ process. The traffic counts and projections should be approved by the Department, developed using acceptable industry and agency standards.

a. Drawings. A dimensioned drawing(s) of preferred scale 1:2000 to 1:4000 should be provided as an attachment to the IJ document. The drawing(s) should show the functional elements of the existing and proposed conditions, including, as applicable, project limits, adjacent interchange(s) along the freeway, adjacent intersections along the crossroad, ramps to be added, ramps to be removed, relocation of ramp gores, configuration, travel lanes, auxiliary lanes, ramp radii, acceleration and deceleration lanes, taper lengths, freeway ramp terminals, and C-D roadways.

   A drawing or series of drawings should be provided showing the traffic volumes for all through and turning movements, as well as data on C-D roadways, local service roads, and origin-destination (O-D) travel particularly for weaving movements. The base-year or open-to-traffic-year AADTs should be identified for the mainline, crossroads, ramps, and intersections. The design year AADTs, morning and evening DHVs, and trucks percentages for each movement should be included.

b. Highway Capacity Analysis. A narrative of the assumptions used and reasons for any changes in the software default values should be included. Results of operational analysis, in the form of service levels for each element of the Interstate-route access facility, and for multiple years and periods of the day, should be clearly presented on a drawing at a scale of 1:2000 to 1:4000.

   The summary results, typically in levels-of-service (LOS), should be provided for each element, e.g., weaving, basic freeway ramp merge and diverge, ramp proper, at-grade signalized and unsignalized ramp terminals

(intersections), crossroad arterial and its intersections in the access influence area for existing (no-build) and proposed (build) conditions in the base year or open-to-traffic year, and in the design year for morning and evening peak periods.

Queue analysis should be provided as part of the traffic operational analysis for those points where significant queuing might be expected, such as at ramp junctions with the crossroad and at major intersections on the crossroad adjacent to at-grade ramp terminals.

All highway capacity and operations calculations must be included in an Appendix to the IJ. If the nature of the project entails a level of traffic operations analysis generating inordinately large volumes of output, the bulk of the hand calculations and printout of the HCS or other software tools may be provided in electronic format (on a compact disc) if desired, rather than on a hardcopy. However, at least 10% of the points checked for LOS must be in hardcopy format. In this case, a variety of points should be selected for the sample to be printed in paper format, especially critical locations. In addition, a hardcopy of all analyzed weaving areas must be included in the Appendix.

Any adjacent interchange, or intersection adjacent to the core access point/interchange, which is found to have a LOS below D for any of its elements, must be clearly identified. The IJ must contain a discussion of the impact this will have, if any, on the new or revised interchange(s) and Interstate-route mainline. Potential mitigation measures to alleviate any adverse impacts to the core access point/interchange must be described to at least a concept level. An alternative would be to describe the mitigation measures in the IJ transmittal letter to FHWA or in a separate correspondence with FHWA.

c. Crossroad Highway Capacity Analysis. Intersections at ramp terminals and along crossroads must be analyzed to determine if they could have a negative impact on Interstate-route operations. Basically, the crossroads must be capable of collecting and distributing traffic to and from the Interstate route.

All stop-controlled and signalized intersections within 400 m of the ramp terminal must be analyzed for traffic operation. It may be necessary to analyze intersections on the crossroad beyond 400 m. In some circumstances it may be beneficial to assess traffic operational conditions 600 m or 800 m beyond the ramp limits. The exact intersections to be

analyzed along the crossroad will be determined jointly by FHWA and the Department.

If the analysis shows that any adjacent intersection will operate at LOS E or F in the design year, a LOS analysis must be done to determine when the adjacent intersection becomes unacceptable, i.e., below LOS D.

Any intersection that is shown to have a LOS E or F in the open-to-traffic year or 7 years beyond must be investigated to at least a concept level to determined what needs to be done to make it operate at LOS of D or better in the design year, e.g., add lanes. In addition, it will be necessary to determine whether the failure is the result of normal traffic growth or the result of the interchange access change. The Department and the responsible local public agency will determine who will be responsible for any necessary intersection improvements outside of the interchange area (to adjacent intersections) and when they will be accomplished. The Department will notify FHWA of the action to be taken either in the IJ, the IJ transmittal letter, or by separate correspondence.

Those intersections which are shown to have a LOS of E or F between years 7 and 20 will be monitored for needed improvements. The IJ, the IJ transmittal letter, or separate correspondence must identify who will be responsible for this activity.

48-1.03(07) FHWA Approval

Approval is required from the FHWA Washington, D.C., Headquarters office (HQ) for the major types of new or revised access requests listed below. Two copies of the Final IJ must be sent to the FHWA Indiana Division Office for those actions of a significant nature requiring coordination with HQ. Advance coordination with HQ may be necessary for certain complex or controversial projects. For these situations, the Department should coordinate directly with the Division Office, specifically, the appropriate Transportation Engineer.

1. FHWA Approval by HQ. HQ approval is required for the types of Interstate System new or revised access as follows:

   a. establishing a new freeway-to-freeway (system) interchange;

   b. major modification of a freeway-to-freeway interchange;

   c. establishing a new partial interchange of any form; or

d. establishing a new freeway-to-non-freeway (service) interchange in a Transportation Management Area (TMA). A TMA is defined as an urbanized area with a current population of more that 200,000 as determined by the most recent decennial census, or as an area for which the TMA designation is requested by the governor and the MPO or affected local officials, and officially designated by the Administrators of the FHWA and the Federal Trade Administration.

2. FHWA Approval by Division Office. One copy of the Final IJ must be sent to the Division Office for approval for the types of Interstate system new or revised access as follows:

a. establishing a new freeway-to-non-freeway interchange not located in a TMA;

b. modification of an existing freeway-to-non-freeway interchange configuration;

c. establishing locked-gate access; or

d. removal from service of ramps or interchanges.

FHWA approval of an IJ is valid for 10 years from the date of the letter granting its final approval. If 10 years have expired before proceeding with construction of the new or revised access, it will be necessary to re-evaluate the IJ. This involves obtaining current traffic data for that time, projecting such data out to 20 years and determining if the originally approved IJ will still provide acceptable levels of service for the new design year. Basically, it will be necessary to repeat the procedures outlined herein and produce a revised IJ for FHWA approval.

Item No. 14-3
Mr. Wright
Date: 7/20/06

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 205, BEGIN LINE 184, DELETE AND INSERT AS FOLLOWS:

The cost of geotextile fabric shall be included in the cost of ~~the~~ *temporary check dam or* sediment trap.

The cost of geotextile fabric, trenching, backfilling, posts, fencing, and all necessary incidentals shall be included in the cost of silt fence.

The cost of No. 5 stone required with temporary check dam, revetment riprap shall be included in the cost of temporary check dam, riprap.

SECTION 205, AFTER LINE 201, INSERT AS FOLLOWS:

The cost of maintenance, except for the removal of sediments, and removal of temporary erosion and sediment control items shall be included in the cost of the respective items.

Other sections containing specific cross references:

None

General Instructions to Field Employees
Update Required? Y___ N_x__
By - Addition or Revision

Frequency Manual
Update Required? Y___ N_x__
By - Addition or Revision

Recurring Special Provisions potentially affected:

Standard Sheets potentially affected:

205-TECD-01

Motion: Mr. Wright
Second: Mr. Cales
Ayes: 9
Nays: 0

Action: Passed as revised
Effective – January 2007 Letting
2008 Standards Specifications Book
2008 Standards Edition

Received FHWA Approval? Yes

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 205, BEGIN LINE 134, INSERT AS FOLLOWS:

205.06 Method of Measurement

Silt fence and straw bale check dams will be measured by the linear foot (meter). Sediment basins will be measured by the units installed complete in place. Revetment riprap check dams, sediment traps, and splashpads will be measured by the ton (megagram). *The measurement of revetment riprap check dam will include the revetment riprap and of the No. 5 stone.* Measurement of sediment traps will include the riprap and the No. 8 filter stone. Temporary mulching will be measured by the ton (megagram).

Other sections containing specific cross references:

None

General Instructions to Field Employees
Update Required? Y___ N_x__
By - Addition or Revision

Frequency Manual
Update Required? Y___ N_x__
By - Addition or Revision

Recurring Special Provisions potentially affected:

None

Standard Sheets potentially affected:

205-TECD-01

Motion: Mr. Wright
Second: Mr. Cales
Ayes: 9
Nays: 0

Action: Passed as developed at meeting
Effective – January 2007 Letting
2008 Standard Specifications

Received FHWA Approval? Yes

Item No. 14-4
Mr. Wright
Date: 7/20/06

REVISION TO 2006 STANDARD DRAWING

205-TECD-01 Temporary Check Dam, Revetment Riprap

Other sections containing specific cross references:

None

General Instructions to Field Employees
Update Required? Y___ N_x__
By - Addition or Revision

Frequency Manual
Update Required? Y___ N_x__
By - Addition or Revision

Recurring Special Provisions potentially affected:

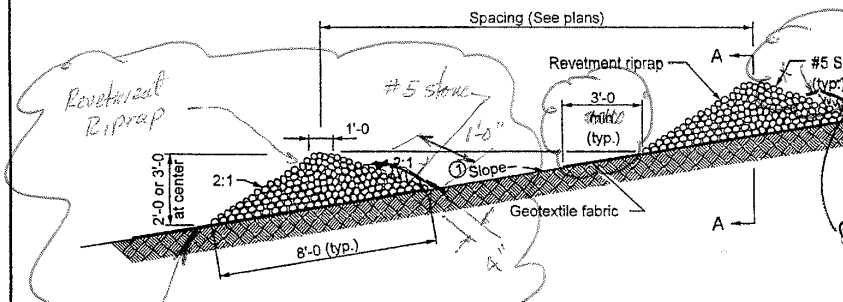
Standard Sheets potentially affected:

See Above

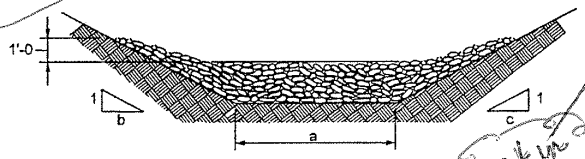
Motion: Mr. Wright
Second: Mr. Cales
Ayes: 9
Nays: 0

Action: Passed as revised
Effective – January 2007 Letting
2008 Standards Specifications Book
2008 Standards Edition

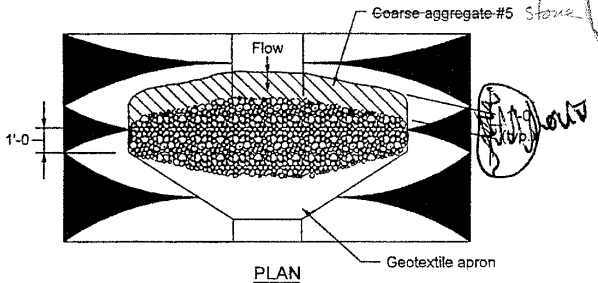
Received FHWA Approval? Yes



ELEVATION



SECTION A-A



PLAN

GENERAL NOTES

① Riprap ditch check dams shall be spaced such that the top of the downstream check dam is at the same elevation as the toe of the adjacent upstream check dam.

2. The volume of coarse aggregate #5 is 1/27 [a + (b + c)] cys.

3. The area of geotextile fabric is 1/9 [12 + 8(b + c)] sys.

Coarse Aggregate #5 Stone

2. The volume of coarse aggregate No. 5 (cys) is as follows:

2 ft at center: $\frac{1}{81}[a + 1.5(b+c)]$

3 ft at center: $\frac{1}{81}[a + 2(b+c)]$

3. The area of geotextile fabric (sys) is as follows:

2 ft at center: $\frac{1}{9}[11a + 18(b+c)]$

3 ft at center: $\frac{1}{9}[11a + 24(b+c)]$

Put in TA

INDIANA DEPARTMENT OF TRANSPORTATION	
TEMPORARY CHECK DAM, REVETMENT RIPRAP	
MARCH 2003	
STANDARD DRAWING NO. E 205-TECD-01	
RICHARD L. VORCLEAVE REGISTERED No. 9750 STATE OF INDIANA PROFESSIONAL ENGINEER — DESIGN STANDARDS ENGINEER	/s/ Richard L VorCleave — DESIGN STANDARDS ENGINEER — 3-03-03 DATE /s/ Richard K Smutzer — CHIEF HIGHWAY ENGINEER — 3-03-03 DATE

INDIANA DEPARTMENT OF TRANSPORTATION

INTER-DEPARTMENT COMMUNICATION

Standards Section – Room N642

Writer's Direct Line
232-6775

April 10, 2006 DRAFT

DESIGN MEMORANDUM No. 06-__
TECHNICAL ADVISORY

TO: **All Design, Operations, and District Personnel, and Consultants**

FROM: **_____**
Anthony L. Uremovich
Design Policy Engineer
Contracts and Construction Division

SUBJECT: **Temporary Revetment Riprap Check Dam**

EFFECTIVE: **_____, 2006, Letting**

The weight (mass) of temporary revetment riprap check dam should be determined as described below.

1. English Units. The weight, W_{RR}, in tons, should be determined by using either of the formulas as follows:

For 2-ft depth, $W_{RR} = 1.5\left[\frac{a}{3} + \frac{(b+c)}{2}\right]$

For 3-ft depth, $W_{RR} = 1.5\left[\frac{a}{2} + (b+c)\right]$

2. Metric Units. The mass, M_{RR}, in megagrams, should be determined by using either of the formulas as follows:

For 0.6-m depth, $M_{RR} = 1.8[0.81a + 0.3645(b+c)]$
For 0.9-m depth, $M_{RR} = 1.8[1.22a + 0.732(b+c)]$

The coarse aggregate No. 5 and geotextile fabric required with this work are not separate pay items.

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 411, BEGIN LINE 1, INSERT AS FOLLOWS:

SECTION 411 – WARRANTED MICRO-SURFACING

411.01 Description

This work shall consist of furnishing materials and the construction of warranted micro-surfacing for rut filling and surface leveling applications in accordance with 105.03.

The Contractor shall be responsible for the warranted micro-surfacing for a period of three (3) years after the date all warranted micro-surfacing is completed and open to unrestricted traffic.

A Quality Control Plan in accordance with 411.16 shall be prepared and submitted to the Engineer at least 15 days prior to commencing micro-surfacing operations.

MATERIALS

411.02 Materials

Materials shall be in accordance with the following:

*Asphalt Emulsion .....As Defined**
*Coarse Aggregates – Class B or Higher **.....904*
*Fine Aggregates***.....904*
Portland Cement, Type I.....901.01(b)
Water.....913.01

* *Polymer Modified Asphalt Emulsion shall be a quick-set, CSS-1h emulsion in accordance with AASHTO M 208 except the cement-mixing test is waived. The polymer material shall be milled or blended into the emulsion or blended into the emulsifier solution prior to the emulsification process. The minimum polymer solids content will be 3.0% based on the residual of the emulsion. Mix set additives shall be added as required to provide control of the quick-set properties. Additional requirements shall be in accordance with the following.*

Characteristics	*Test Method*	*Requirement*
Residue (Note 1)	*AASHTO T 59*	*62+*
Softening Point, °F (°C)	*AASHTO T 53*	*140+ (60+)*
Viscosity @140°F (60°C)	*AASHTO T 202*	*8000+*

NOTE 1.The temperature for this test shall be held below 180°F (82°C). The sample is oven evaporated on a glass plate at 77°F (25°C) for 24 h (forced draft oven). Material is then scraped from the plate with a razor blade tool.

** *The coarse aggregate angularity shall be a minimum of 95% in accordance with ASTM D 5821. The coarse aggregate for rut filling shall be limestone, dolomite, crushed gravel, sandstone, ACBF, or SF.*

*** *The fine aggregate for micro-surface shall be limestone, dolomite, crushed gravel, sandstone, ACBF, or SF. The fine aggregate angularity shall be a minimum of 45 in accordance with AASHTO T 304 Method A. The clay content of the blended aggregate material from the fine and coarse aggregates shall meet a minimum sand equivalency of 50 in accordance with AASHTO T 176. The surface leveling application aggregate type shall be based on the ESAL category as follows:*

Fine Aggregate Type	*Traffic ESALs*		
	< 3,000,000	*< 10,000,000*	*≥ 10,000,000*
Air-Cooled Blast Furnace Slag	*Yes*	*Yes*	*Yes*
Steel Furnace Slag	*Yes*	*Yes*	*Yes*
Sandstone	*Yes*	*Yes*	*Yes*
Crushed Dolomite	*Yes*	*Yes*	*Note 1*
Polish Resistant Aggregates	*Yes*	*Yes*	*Note 1*
Crushed Stone	*Yes*	*No*	*No*
Gravel	*Yes*	*No*	*No*

NOTE 1. Polish resistant aggregate or crushed dolomite may be used when blended with ACBF or sandstone but cannot exceed 50% of the coarse aggregate by weight (mass), or cannot exceed 40% of the coarse aggregate by weight (mass) when blended with SF.

411.03 Design Mix Formula

The Contractor shall submit a Design Mix Formula, DMF, for the specific materials to be used on the project to the District Testing Engineer one week prior to use. The DMF shall state the following (all percentages are based on the dry weight of the aggregate):

(a) source of each individual material
(b) The aggregation gradation shall be in accordance with the following:

Sieve Size	*Leveling*	*Rut Filling*
3/8 in. (9.5 mm)	*100*	*100*
No. 4 (4.75 mm)	*85-100*	*70-90*
No. 8 (2.36 mm)	*50-80*	*45-70*
No. 16 (1.18 mm)	*40-65*	*28-50*
No. 30 (600 µm)	*25-45*	*19-34*
No. 50 (300 µm)	*13-25*	*12-25*
No. 100 (150 µm)	*7-18*	*7-18*
No. 200 (75 µm)	*5-15*	*5-15*

(c) percentage of aggregate
(d) percentage of mineral filler (minimum and maximum)
(e) percentage of water (minimum and maximum)
(f) percentage of mix set additives (if required)
(g) percentage of polymer modified CSS-1h emulsified asphalt
(h) state the quantitative effects of moisture content on the unit weight of the aggregate
(i) results for the tests in the following:

Characteristic	*Test Method ISSA**	*Requirement*
Wet Cohesion *30 Minutes, Min. (Set Time)* *60 Minutes, Min. (Traffic)*	*TB-139***	 *12 kg-cm* *20 kg-cm*
Wet Stripping, Min.	*TB-114*	*90%*
Wet Track Abrasion Loss *60 Minutes Soak, Max.*	*TB-100*	 *536 g/m^2*
Saturated Abrasion *Compatibility, Max*	*TB-144*	 *3g loss*
Mix Time @ 77°F (25°C)	*TB-113***	*Controllable to 120 s*
Mix Time @ 104°F (40°C)	*TB-113***	*Controllable to 35 s*

* *International Slurry Surfacing Association*

** *The TB-139 (set time) and TB-113 (mix time) tests shall be checked at the highest temperature expected during construction. For the TB-113 test at 40°F (104°C), all ingredients and containers shall be preheated.*

411.04 Pre-Paving Coordination

A pre-paving meeting between the Contractor and Engineer will be held on-site prior to beginning work. The agenda for this meeting will include as a minimum:

(a) Contractor's detailed work schedule
(b) traffic control plan
(c) calibration of equipment
(d) Design Mix Formula/Job Mix Formula
(e) inspection and evaluation of the condition and adequacy of equipment, including units for transport of materials
(f) conflict resolution team members

CONSTRUCTION REQUIREMENTS

411.05 Preparation of Surfaces

The Contractor shall be responsible for all surface preparation including cleaning and the removal of all pavement markings and all other work that may affect the performance of warranted micro-surfacing. Drainage structures, monument boxes, water shut-offs, etc., shall be protected during application of material.

411.06 Opening to Traffic

The latex modifier shall be capable of producing an emulsified asphalt paving mixture that cures at a rate, which shall permit traffic on the pavement within one hour after application without damaging the pavement surface.

411.07 Finished Pavement Properties

The surface area shall not contain ripples greater than 1/8 in. (3 mm) measured by a 3 ft (1 m) straight edge. The surface shall not exhibit tear marks greater than 1/2 in. (13 mm) wide and 4 in. (100 mm) long, or a mark greater than 1 in. (25 mm) wide and 1 in. (25 mm) long.

The longitudinal construction joints and lane edges shall coincide with the proposed painted lane lines. Longitudinal joints shall be constructed with less than a 3 in. (75 mm) overlap on adjacent passes and no more than 1/4 in. (6 mm) overlap thickness measured with a 10 ft (3 m) straight edge in accordance with 409.03(f). If

applicable, overlapping passes shall be on the uphill side to prevent ponding of water. Construct neat and uniform transverse joints with no more than a 1/8 in. (3 mm) difference in elevation across the joint as measured with a 10 ft (3 m) straight edge. The edge shall be neat and uniform with no more than 2 in. (50 mm) of horizontal variance in any 100 ft (30 m).

For multiple course applications, the surface of a lane shall not deviate more than 1/4 in. (6 mm) in the wheel path when measured transversely with a 10 ft (3 m) straight edge.

411.08 Warranty

Upon completion of all warranted micro-surfacing and opening to unrestricted traffic, the Warranty Bond shall be in effect for a total of three (3) years. The warranty bond shall be properly executed by a surety company satisfactory to the Department and be payable to the State of Indiana and submitted with the bid.

The warranty bond shall be an amount equal to 100% of the contract total for the warranted micro-surfacing excluding patching or other work included in the contract. The bond is intended to insure completion of required warranty work, including payments for all labor, equipment, materials and closure periods used to remediate any warranted distresses.

Upon the final acceptance of the project, the contractual obligations of the Contractor are satisfied as long as the micro-surfacing continues to meet or exceed the warranted values as defined herein.

All warranty work shall be accomplished in accordance with 411.10. At the end of the warranty period, the Contractor will be released from further warranty work or responsibility, provided all previous warranty work has been satisfactorily completed and approved by the Department.

411.09 Conflict Resolution Team

The scope of the Team includes all issues concerning the warranted pavement relative to the quality control plan, material selection, warranted pavement evaluations, distress indicators, remedial action, and remediation plans.

The Team will consist of two Contractor representatives, two Department (District and Central Office) representatives, and a fifth person mutually agreed upon by both the Department and the Contractor. All costs for the fifth person will be equally shared between the Department and the Contractor. The Team members will be identified in writing at the pre-construction meeting and will be knowledgeable in the terms and conditions of this warranty and the methods used in the measurement and calculation of pavement distress. Should any impasse develop, the Team will render a final recommendation to the Chief Engineer by a majority vote. Each member has an equal vote.

411.10 Warranty Work

During the warranty period, remedial work shall be performed at no cost to the Department and shall be based on the results of pavement distress surveys. Remedial work to be performed and materials to be used shall be a decision of the Contractor with

approval of the Department. Prior to proceeding with any warranty work or monitoring, a Miscellaneous Permit shall be obtained from the Department.

During the warranty period, the Contractor may monitor the warranted micro-surfacing using non-destructive procedures. All proposed remedial action(s) shall be coordinated with the Department.

Coring, milling or other destructive procedures may not be performed by the Contractor, without prior consent of the Department. The Contractor will not be responsible for damages to the pavement as a result of coring, milling or other destructive procedures conducted by the Department.

The Contractor will have the first option to perform the remedial work. If, in the opinion of the Department, the problem requires immediate attention for safety of the traveling public and the Contractor cannot perform the remedial work within 24 hours, the Department has the option to have the remedial work performed by other forces. The Contractor shall be responsible to pay for all the costs incurred. Remedial work performed by other forces will not alter the requirements, responsibilities, or obligations of the warranty.

411.11 Pavement Distress Indicators, Thresholds, and Remedial Action

The Department will use the following pavement distress indicators throughout the warranty period:

(a) Rutting – displacement of the micro-surfacing transversely to create a rut
(b) Delamination – physical separation of the micro-surfacing
(c) Raveling – wearing away of the micro-surfacing
(d) Skid Resistance – friction number

The Department procedures for the measurement, evaluation, and reporting of pavement distresses for warranted micro-surface pavements are contained in 411.17.

The threshold values for each 300 ft (100 m) evaluation section are as follows:

Rut Depth .....6 mm
Delamination.....0.1%
Raveling 0.1%
Friction Number.....average 35, no value less than 25

The Department will monitor the warranted micro-surfacing during the warranty period. A final condition survey will occur and the Contractor will be notified in writing of all required warranty work at least 90 days in advance of the expiration of the Warranty Bond.

If any of the threshold levels are met or exceeded, the Contractor shall recommend remedial action to the Department. After the remedial action is approved, the Contractor shall perform the remedial work.

Remedial action shall be performed on all segments of the project where the threshold levels are met or exceeded. If areas of warranted pavement, which are not within the measured area, are suspected of meeting or exceeding a threshold level, the

Department will conduct a distress survey to see if a threshold level has been met or exceeded.

Remedial action shall be completed by October 1 of the same calendar year as the Contractor is notified that a threshold level has been met or exceeded. If, anytime during the warranty period, 30% or more of the project segment require, or have received remedial action, the entire project shall receive a remedial action as determined by the Contractor and the Department. If an impasse develops, the Team will make a final recommendation.

If remedial action work or elective/preventive action work performed by the Contractor necessitates a corrective action to the pavement markings, adjacent lane(s) or roadway shoulders, such corrective action to the pavement markings, adjacent lane(s), and shoulders shall be the responsibility of the Contractor.

Warranty requirements for all remediation work will be limited to the life of the original contract warranty.

If any of the threshold levels are met or exceeded and the Contractor does not agree to the pavement distress survey results or, the Department does not agree with the proposed remedial action, the Team will provide a recommendation within 30 days.

The Contractor will not be held responsible for distresses that are caused by factors beyond the control of the Contractor. For example, the Contractor will be relieved of the responsibility for the rutting threshold if the cause is not transverse movement of the micro-surfacing. The Contractor shall be responsible for materials and workmanship problems.

411.12 Elective/Preventive Action

Elective/preventive action will be the Contractor's option with the concurrence of the Department.

411.13 Department Maintenance

The Department will perform routine maintenance during the warranty period such as plowing, applying de-icing chemicals, repairs to safety appurtenances, pavement markings, mowing and sign maintenance. The Department, during the warranty period, will perform no routine pavement surface maintenance activities.

411.14 Method of Measurement

Warranted micro-surfacing will be measured by the square yard (square meter). The width of the pavement course will be the width placed. The length will be measured along the centerline of each roadway or ramp.

411.15 Basis of Payment

Warranted micro-surfacing will be paid for at the contract unit price per square yard (square meter) of micro-surface, warranted complete in place.

Payment will be made under:

Pay Item	***Pay Unit Symbol***

Micro-Surfacing, Warranted.....SYD (m2)

The cost of furnishing materials, equipment, labor, and tack coat, if required, and all incidentals shall be included in the cost of micro-surfacing, warranted.

411.16 Quality Control Plan for Warranted Micro-Surfacing

The Contractor shall produce a mixture that will be in compliance with the DMF and the quality control tolerances. The methods described in this section shall be used by the Contractor to measure compliance. The Contractor shall maintain all quality control documentation and make a copy available to the Engineer upon request or at completion of the contract.

(a) Fine Aggregate

The Contractor shall sample from the project stockpile and test for gradation at a rate of one per 500 t (500 Mg) of aggregate used, or a minimum of one per day of mixture production. The quality control tolerances from the DMF are as follows:

Sieve Size	*Tolerance*
No. 4 (4.75 mm)	*± 5.0%*
No. 8 (2.36 mm)	*± 5.0%*
No. 16 (1.18 mm)	*± 5.0%*
No. 30 (600 µm)	*± 5.0%*
No. 50 (300 µm)	*± 4.0%*
No. 100 (150 µm)	*± 3.0%*
No. 200 (75 µm)	*± 3.0%*

(b) Sand Equivalent Test

ASTM D 2419 shall be performed with each applied aggregate gradation. Quality control tolerance is ± 7% of the DMF as established in the mix design.

(c) Asphalt Content

The Contractor shall calculate the percent asphalt content of the mixture from the equipment counter readings randomly, a minimum of three times a day. The quality control single test tolerance is ± 0.5% and the average daily asphalt content is ± 0.2% from the DMF.

(d) Application Rate

The Contractor shall calculate the yield of the course being placed from the equipment counter readings randomly, a minimum of three times a day. The quality control tolerance from the specified application rate is ± 1.8 lb/syd (± 1 kg/m^2).

(e) Documentation

The Contractor shall maintain a daily report, providing the following information.

1. *Control section*
2. *Job number*
3. *Route*
4. *Date*
5. *Air temperature*

6. *Control settings (calibration values, unit weight of emulsion, percent residue of emulsion)*
7. *Beginning and ending intervals*
8. *Counter readings (and beginning, and ending, and total)*
9. *Length, width, total area, aggregate quantity, emulsion quantity*
10. *Percent of each material, percent of asphalt cement, application rate, combined application rate*
11. *Contractor's authorized signature*
12. *Aggregate gradations*
13. *Aggregate delivery tickets*
14. *Asphalt emulsion bill of lading*
15. *Sand equivalent value*

A statement that all material certification, production test reports, quality control charts, test equipment certifications and calibrations, and all other material and/or design or production related records shall be maintained for a period to include the terms of the warranty. The records, either electronic and/or hard copies, shall be maintained in a readily accessible location for access by the Department at any time. Upon completion of the placement, and the opening of the warranted micro-surfacing to traffic, a copy of all records shall be provided to the Department.

411.17 Measurement, Evaluation And Reporting Of Pavement Distress For Warranted Micro-surfacing

The Department will perform routine evaluations of the warranted pavement during the warranty period. During the warranty period, the Contractor has the right, with Department concurrence, to independently review the condition of the warranted pavements for their use and information.

(a) Measurement

The Department will be using the Friction and the Highway Performance Monitoring System (HPMS) programs to evaluate the warranted pavement distress indicators.

1. The Office of Research oversees the friction Testing Program. Warranted pavement friction program will be in accordance with Section 5.3 of the program, dated December 2003 or later.

2. The Planning Division oversees the Highway Performance Monitoring System program.

(b) Evaluation

The Department will evaluate the condition of the pavements on the Interstate system annually and bi-annually for non-Interstate routes for the identified pavement performance indicators. During the warranty period, exclusive of the last year, the evaluations will be conducted in driving lanes throughout the length of the project except for friction testing which will be conducted in the driving and passing lane or middle lane or No. 2 lane for multi-lane facilities. The final year evaluations will be conducted in every lane throughout the length of the project for all pavement performance indicators.

(c) Friction

Friction testing on the warranted micro-surfacing contract section will be by the use of a Locked Wheel Trailer as defined by ASTM E 274 and a smooth tire in accordance with ASTM E 524. Friction tests will be conducted in all lanes at each reference post and at the halfway point between the reference posts. A minimum of 11 tests will be conducted. If the number of tests is less than 11, additional tests will be taken at the quarter point between the reference post and the halfway point. The number of locations will depend on the length of the project. The friction values of each site per lane will be determined.

(d) Rutting

The Department will rate rutting at the time of routine condition survey for the warranted micro-surface.

Sensors on the van will measure the rut depth of each wheel path in an approximation of the measurement obtained using the commonly accepted four-foot straight-edge method. The readings shall be continuous along the length of the segment. The average rut depth of both wheel paths for each 300 ft (100 m) segment will be determined.

The rut measurement will be made with the van using at least three/five readings across the pavement surface. These readings will be taken at the approximate right wheel path center, center of the lane, left wheel path center. The sensors measure the relative height from the sensor to the surface and calculate the rut as the relative differences of the readings.

(e) General Pavement Distresses

The Department will monitor pavement warranty performance for acceptance. Delamination, ravelling, and rutting are measured the entire length of the warranty contract section, but only in the specific lanes. Friction is not sampled continuously in the sections. If any values exceed the thresholds, more detailed testing and inspection may be conducted to determine the extent and limits of the deficiency. All areas outside the tested lanes or sample sections observed to show deficiencies may also be tested and used to determine the pavement warranty acceptability and to verify the uniformity of the quality of the project.

(f) Reporting

1. Friction Testing Evaluation

The Office of Research will prepare a summary report of the results of the testing and submit the results to the Manager, Office of Pavement Engineering.

2. Rutting Testing Evaluation

The Manager, Office of Pavement Engineering will prepare a summary report of the results of the testing.

3. Performance Pavement Distress Indicators Evaluation

The Office of Pavement Engineering will compile the results and determine the acceptability of the sections as compared to the threshold values listed in 411.11. A recommendation will be submitted to the State Construction Engineer for final acceptance/remediation. Final acceptance will not be recommended prior to receipt of the Warranted Project Quality Control Information in accordance with 411.16.

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 411 CONTINUED:

411.18. Final Warranty Acceptance

The State Construction Engineer will review the recommendation and issue a Final Warranty Acceptance letter.

Other sections containing specific cross references:

None

General Instructions to Field Employees
Update Required? Y___ N___
By - Addition or Revision

Frequency Manual
Update Required? Y___ N___
By - Addition or Revision

Recurring Special Provisions potentially affected:

411-R-432

Standard Sheets potentially affected:

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

Item No. 14-6
Mr. Heustis
Date: 7/20/06

REVISION TO 2006 STANDARD SPECIFICATIONS

UPDATE DIVISIONS/SECTIONS TO CONFORM WITH NEW ORGANIZATIONAL CHART

CURRENT NAME:
Contract Services Section

NEW NAME:
Contract Administration

SECTION	PAGE	# OF REFERENCES PER SECTION
101.17(b)	100-5	1
102.01	100-11	1
106.01(a)	100-51	1

Other sections containing specific cross references:

See Above

General Instructions to Field Employees
Update Required? Y___ N___
By - Addition or Revision

Frequency Manual
Update Required? Y___ N___
By - Addition or Revision

Recurring Special Provisions potentially affected:

None

Standard Sheets potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

Item No. 14-7
Mr. Heustis
Date: 7/20/06

REVISION TO 2006 STANDARD SPECIFICATIONS

UPDATE DIVISIONS/SECTIONS TO CONFORM WITH NEW ORGANIZATIONAL CHART

CURRENT NAME:
Design Division

NEW NAME:
District Traffic Engineer

SECTION	PAGE	# OF REFERENCES PER SECTION
922.05(c)9	900-204	2

Other sections containing specific cross references:

See Above

General Instructions to Field Employees
Update Required? Y___ N___
By - Addition or Revision

Frequency Manual
Update Required? Y___ N___
By - Addition or Revision

Recurring Special Provisions potentially affected:

724-B-131
807-T-087
922-T-137

Standard Sheets potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

REVISION TO 2006 STANDARD SPECIFICATIONS

UPDATE DIVISIONS/SECTIONS TO CONFORM WITH NEW ORGANIZATIONAL CHART

CURRENT NAME:
District Materials and Testing Engineer

NEW NAME:
District Testing Engineer

SECTION	PAGE	# OF REFERENCES PER SECTION
211.02	200-70	1

Other sections containing specific cross references:

See Above

General Instructions to Field Employees
Update Required? Y___ N___
By - Addition or Revision

Frequency Manual
Update Required? Y___ N___
By - Addition or Revision

Recurring Special Provisions potentially affected:

None

Standard Sheets potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

Item No. 14-9
Mr. Heustis
Date: 7/20/06

REVISION TO 2006 STANDARD SPECIFICATIONS

UPDATE DIVISIONS/SECTIONS TO CONFORM WITH NEW ORGANIZATIONAL CHART

CURRENT NAME:
District Materials and Tests Engineer

NEW NAME:
District Testing Engineer

SECTION	PAGE	# OF REFERENCES PER SECTION
213.03	200-76	1
213.05	200-76	2
401.05	400-4	1
410.05	400-44	2
904.01	900-26	1
910.18(e)2	900-93	1

Other sections containing specific cross references:

See Above

General Instructions to Field Employees
Update Required? Y___ N___
By - Addition or Revision
Frequency Manual
Update Required? Y___ N___
By - Addition or Revision

Recurring Special Provisions potentially affected:

213-R-446

Standard Sheets potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

Item No. 14-10
Mr. Heustis
Date: 7/20/06

REVISION TO 2006 STANDARD SPECIFICATIONS

UPDATE DIVISIONS/SECTIONS TO CONFORM WITH NEW ORGANIZATIONAL CHART

CURRENT NAME:
DMTE

NEW NAME:
District Testing Engineer

SECTION	PAGE	# OF REFERENCES PER SECTION
101.01	100-1	1 (Delete this line)
501.04	500-1, 2	5
501.04(b)	500-2	3
501.06	500-4	1
502.03	500-17	2
502.03(c)	500-18	2
502.04(b)	500-19	1
506.03	500-38	3
506.03(b)	500-38	1
506.03(c)	500-39	1

Other sections containing specific cross references:

See Above

General Instructions to Field Employees
Update Required? Y___ N___
By - Addition or Revision

Frequency Manual
Update Required? Y___ N___
By - Addition or Revision

Recurring Special Provisions potentially affected:

500-R-515

Standard Sheets potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

Item No. 14-11
Mr. Heustis
Date: 7/20/06

REVISION TO 2006 STANDARD SPECIFICATIONS

UPDATE DIVISIONS/SECTIONS TO CONFORM WITH NEW ORGANIZATIONAL CHART

CURRENT NAME:
District Traffic Division

NEW NAME:
District Traffic Office

SECTION	PAGE	# OF REFERENCES PER SECTION
808.11(e)	800-73	2
808.13	800-75	1

Other sections containing specific cross references:

See Above

General Instructions to Field Employees
Update Required? Y___ N___
By - Addition or Revision

Frequency Manual
Update Required? Y___ N___
By - Addition or Revision

Recurring Special Provisions potentially affected:

808-T-141

Standard Sheets potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

Item No. 14-12
Mr. Heustis
Date: 7/20/06

REVISION TO 2006 STANDARD SPECIFICATIONS

UPDATE DIVISIONS/SECTIONS TO CONFORM WITH NEW ORGANIZATIONAL CHART

CURRENT NAME:
Environment, Planning and Engineering Division Chief

NEW NAME:
Environmental Services Manager

SECTION	PAGE	# OF REFERENCES PER SECTION
916.03(f)	900-139	1

Other sections containing specific cross references:

See Above

General Instructions to Field Employees
Update Required? Y___ N___
By - Addition or Revision

Frequency Manual
Update Required? Y___ N___
By - Addition or Revision

Recurring Special Provisions potentially affected:

None

Standard Sheets potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

Item No. 14-13
Mr. Heustis
Date: 7/20/06

REVISION TO 2006 STANDARD SPECIFICATIONS

UPDATE DIVISIONS/SECTIONS TO CONFORM WITH NEW ORGANIZATIONAL CHART

CURRENT NAME:
Geotechnical Engineer, Materials and Tests Division

NEW NAME:
Geotechnical Engineer, Production Management Division

SECTION	PAGE	# OF REFERENCES PER SECTION
701.04(a)	700-1	1

Other sections containing specific cross references:

See Above

General Instructions to Field Employees
Update Required? Y___ N___
By - Addition or Revision

Frequency Manual
Update Required? Y___ N___
By - Addition or Revision

Recurring Special Provisions potentially affected:

None

Standard Sheets potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

REVISION TO 2006 STANDARD SPECIFICATIONS

UPDATE DIVISIONS/SECTIONS TO CONFORM WITH NEW ORGANIZATIONAL CHART

CURRENT NAME:
Geotechnical Section

NEW NAME:
Geotechnical Engineering Section

SECTION	PAGE	# OF REFERENCES PER SECTION
204.03(b)	200-46	2
204.04(b)	200-48	1
205.03(n)	200-51	1

Other sections containing specific cross references:

See Above

General Instructions to Field Employees
Update Required? Y___ N___
By - Addition or Revision

Frequency Manual
Update Required? Y___ N___
By - Addition or Revision

Recurring Special Provisions potentially affected:

200-R-401
723-R-282f
732-R-310

Standard Sheets potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

REVISION TO 2006 STANDARD SPECIFICATIONS

UPDATE DIVISIONS/SECTIONS TO CONFORM WITH NEW ORGANIZATIONAL CHART

CURRENT NAME:
Materials and Tests Division

NEW NAME:
Office of Materials Management

SECTION	PAGE	# OF REFERENCES PER SECTION
101.17(a)	100-5	1
106.02	100-54	1
215.03	200-80	1
216.03	200-82	1
401.19	400-13	2
401.19(a)	400-14, 15	3
401.19(b)	400-15	2
410.19	400-50	2
410.19(b)	400-51	2
501.28	500-11	1
901.01(b)2a	900-2	1
901.01(b)2b	900-2, 3	2
901.01(b)2c	900-3	2
901.04(b)4	900-9	2
904.01	900-26	1
906.02(a)2d	900-39	1
907.16	900-46	2
910.12	900-82	1
910.18(e)2	900-93	1
912.02	900-111	1
914.04	900-116	1
915.04(f)	900-133	1
917.03	900-140	1
917.04	900-141	2
918.02	900-142	1
918.03	900-143	1

REVISION TO 2006 STANDARD SPECIFICATIONS

UPDATE DIVISIONS/SECTIONS TO CONFORM WITH NEW ORGANIZATIONAL CHART

CURRENT NAME:
Materials and Tests Division (Continued)

Other sections containing specific cross references:

See Above

General Instructions to Field Employees
Update Required? Y___ N___
By - Addition or Revision
Frequency Manual
Update Required? Y___ N___
By - Addition or Revision

Recurring Special Provisions potentially affected:

200-R-401
203-R-360
723-R-282f
731-R-202
733-B-104

Standard Sheets potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

Item No. 14-16
Mr. Heustis
Date: 7/20/06

REVISION TO 2006 STANDARD SPECIFICATIONS

UPDATE DIVISIONS/SECTIONS TO CONFORM WITH NEW ORGANIZATIONAL CHART

CURRENT NAME:
Operations Support Division

NEW NAME:
Technology Deployment Division

SECTION	PAGE	# OF REFERENCES PER SECTION:
809.06	800-77	1
925.02	900-221	2

Other sections containing specific cross references:

See Above

General Instructions to Field Employees
Update Required? Y___ N___
By - Addition or Revision

Frequency Manual
Update Required? Y___ N___
By - Addition or Revision

Recurring Special Provisions potentially affected:

805-T-123
922-T-137

Standard Sheets potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

Item No. 14-17
Mr. Rust
Date: 7/20/06

REVISION TO STANDARD DRAWINGS

801-TCDV-10 Worksite Speed Limit Sign Assembly

1. Replace the R-15b-B (Reduced Speed 45 Ahead) with either W3-5 or W3-5A (symbolic or text diamond shaped 45 MPH Ahead, 48″ x 48″)

2. Add the S4-4 (When Flashing) sign to the “advance warning” sign, same as the worksite assembly sign.

3. Reduce the minimum height to 4′ from edge of pavement to the bottom of the “When Flashing” plaque.

4. There is a duplication – remove the second “Min.”.

Other sections containing specific cross references:

None

General Instructions to Field Employees
Update Required? Y___ N_X__
By - Addition or Revision

Frequency Manual
Update Required? Y___ N_X__
By - Addition or Revision

Recurring Special Provisions potentially affected:

Standard Sheets potentially affected:

See Above

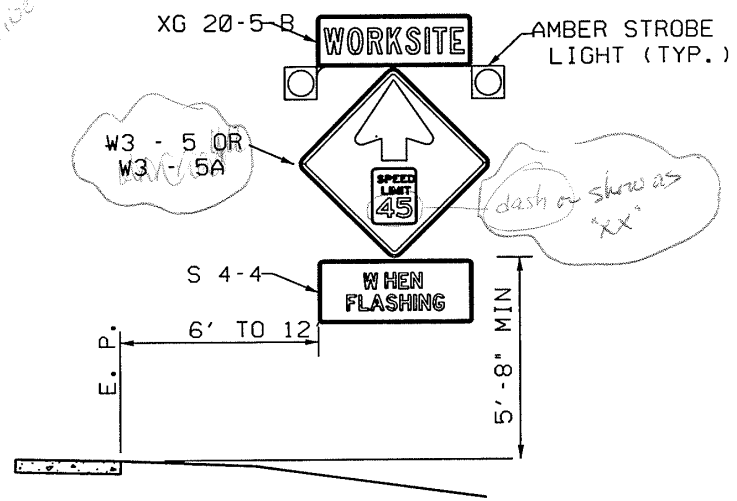
Motion: Mr. Rust
Second: Mr. Cales
Ayes: 9
Nays: 0

Action: Passed as developed at meeting
Effective – January 2007 Letting
2008 Standards Edition

Received FHWA Approval? Yes

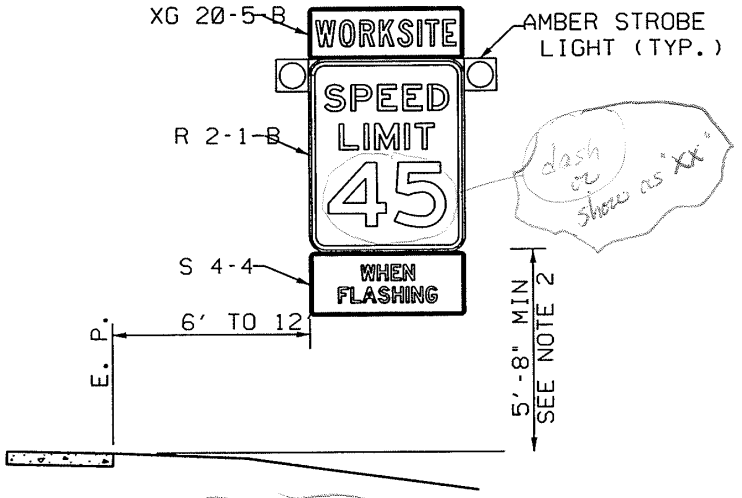
GENERAL NOTES:

1. SIGNS AND SUPPORTS SHALL MEET NCHRP 350 CRASH EVALUATION CRITERIA, IF NOT TRAILER MOUNTED.
2. MOUNTING HEIGHT SHALL BE 7' FOR INTERSTATE APPLICATIONS.



ADVANCE WARNING SIGN

REDUCED SPEED AHEAD



REGULATORY SIGN

WORKSITE SPEED LIMIT

MODIFIED REVISION - 7/20/06

INDIANA DEPARTMENT OF TRANSPORTATION

WORKSITE SPEED LIMIT SIGN ASSEMBLY

SEPTEMBER 2002

STANDARD DRAWING NO. 801-TCDV-10

RICHARD L. VANCLEAVE REGISTERED No. 9750 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGN STANDARDS ENGINEER

/s/ Richard L. VanCleave 9-03-02
DESIGN STANDARDS ENGINEER DATE

/s/ Richard K. Smutzer 9-03-02
CHIEF HIGHWAY ENGINEER DATE

Item No. 14-18
Mr. Rust
Date: 7/20/06

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 801, BEGIN LINE 706,DELETE AND INSERT AS FOLLOWS:

A worksite ~~"Reduced Speed Ahead" sign~~ *reduced speed advance warning sign assembly* shall be placed in advance of the first *worksite speed limit* sign assembly when the reduction in speed limit is greater than 15 mph.

Other sections containing specific cross references:

None

General Instructions to Field Employees
Update Required? Y___ N_x__
By - Addition or Revision

Frequency Manual
Update Required? Y___ N_x__
By - Addition or Revision

Recurring Special Provisions potentially affected:

None

Standard Sheets potentially affected:

See Above

Motion: Mr. Rust
Second: Mr. Cales
Ayes: 9
Nays: 0

Action: Passed as developed at meeting
Effective – January 2007 Letting
2008 Standards Edition

Received FHWA Approval? Yes