INDIANA DEPARTMENT OF TRANSPORTATION

STANDARDS COMMITTEE MEETING

Driving Indiana's Economic Growth

REVISED AGENDA

September 17, 2009 Standards Committee Meeting

Revised Proposal to Standards Committee and Standard Drawings for Item No. 03 04/16/09 (2010 SS)

MEMORANDUM

September 02, 2009

TO: Standards Committee

FROM: Lana Podorvanova

RE: Agenda for the September 17, 2009 Standards Committee Meeting

A Standards Committee meeting is scheduled for 9:00 a.m. on September 17, 2009 in the N755 Bay Window Conference Room. Please enter the meeting through the double doors directly in front of the conference room. The following agenda items are listed for consideration.

Page No.

A. GENERAL BUSINESS ITEMS

OLD BUSINESS

(No items on this agenda)

NEW BUSINESS

1. Approval of the August 20, 2009 Minutes

B. CONCEPTUAL PROPOSAL ITEMS

OLD BUSINESS

(No items on this agenda)

NEW BUSINESS

1. Standard Drawing process Mr. Heustis

C. STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS PROPOSED ITEMS

OLD BUSINESS

Item No. 03 04/16/09 (2010 SS)	Ms. Rearick	3
Standard Drawings:		
714-CCSP-01, 02, 03, 04 and 05	THREE SIDED CONCRETE CULVERT SCOUR PROTECTION	
715-PCSP-01	PIPE CULVERT SUMPING PROTECTION	

NEW BUSINESS

Item No. 01 09/17/09 (2010 SS)	Mr. Heustis	14
623-M-039	MOWING CYCLES, STARTING DATES, AND FAILURE TO COMPLETE MOWING ON TIME	

cc: Committee Members (11)
FHWA (2)
ICA (1)

Ms. Rearick
Date: 09/17/09

SPECIFICATION REVISIONS

REVISION TO THE STANDARD DRAWINGS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: IDEM, as a part of the Section 401 permitting process, is now requiring culverts to be sumped in order to allow for uninterrupted movement of stream-bed material through the culverts.

PROPOSED SOLUTION: Revise the Standard Drawings for three-sided-culvert scour protection to allow for passage of natural stream-bed material as required by IDEM. Standard Drawings 714-CCSP-01 through -05 are affected, with a new drawing added. The CCSP series will be numbered as follows:

New	Old	Drawing Subject
01	01	3-Sided, Riprap Method, Span at least 10' but less than 20', plan view
02	03	3-Sided, Riprap Method, Span at least 10' but less than 20', section view
03	01	3-Sided, Riprap Method, Span greater than 20', plan view
04	02	3-Sided, Riprap Method, Span greater than 20', section view
05	04	3-Sided, Base-Slab Method, plan view
06	05	3-Sided, Base-Slab Method, section view

New drawing 715-PCSP-01 is added to show the sump treatment for a pipe culvert.

The proposed revisions will result in less excavation and a reduction in the amount of riprap required. The reduction in excavation and riprap will have a side benefit of a cost reduction for INDOT.

APPLICABLE STANDARD SPECIFICATIONS: None

APPLICABLE STANDARD DRAWINGS: 714-CCSP-01 through -06, 715-PCSP-01

APPLICABLE DESIGN MANUAL SECTION: New section, 31-3.04(07) Culvert Sumping

APPLICABLE SECTION OF GIFE:None

Submitted By: Anne Rearick

Title: Manager, Office of Structural Services

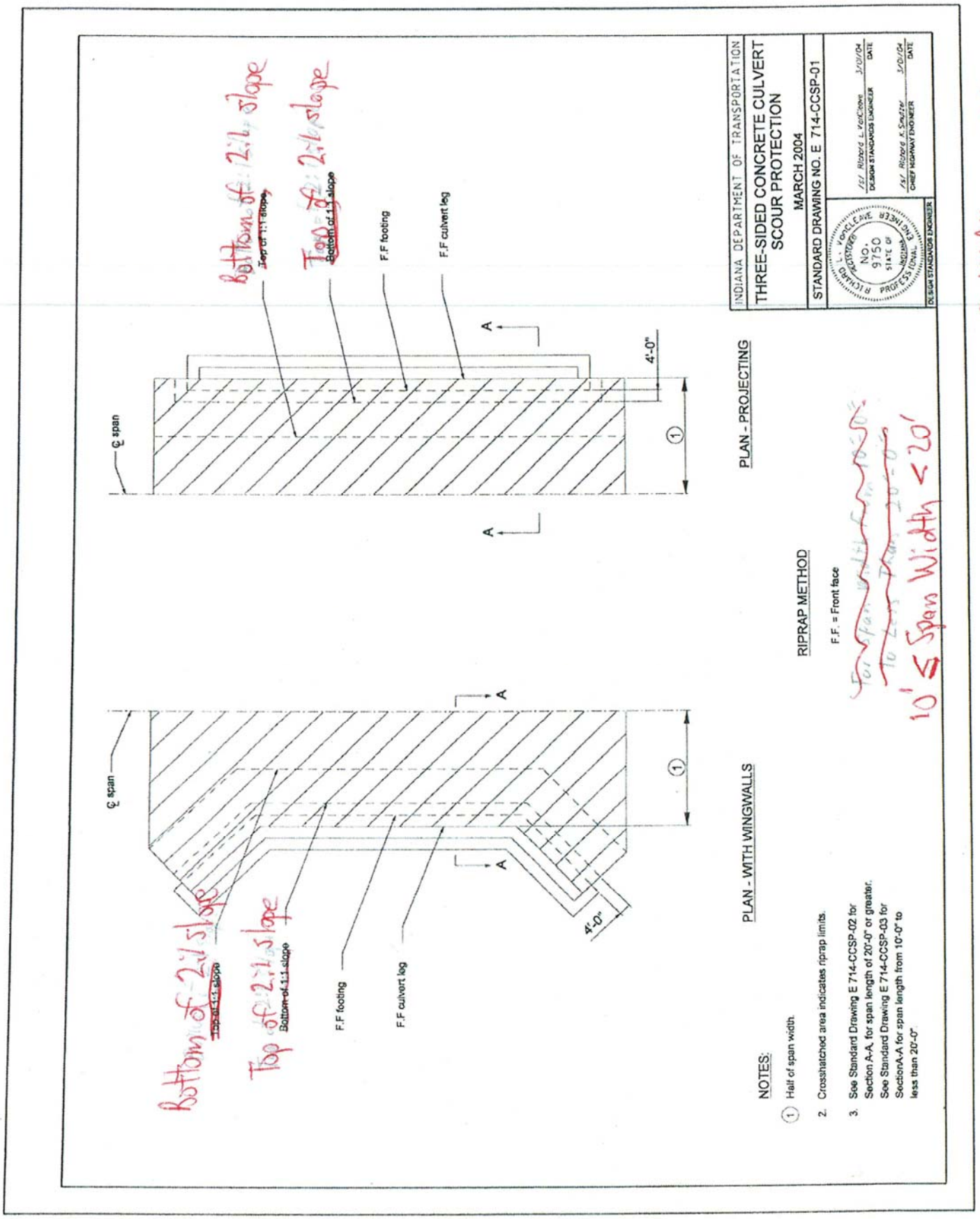
Organization: INDOT

Phone Number: 232-5152

Date: 8-03-09

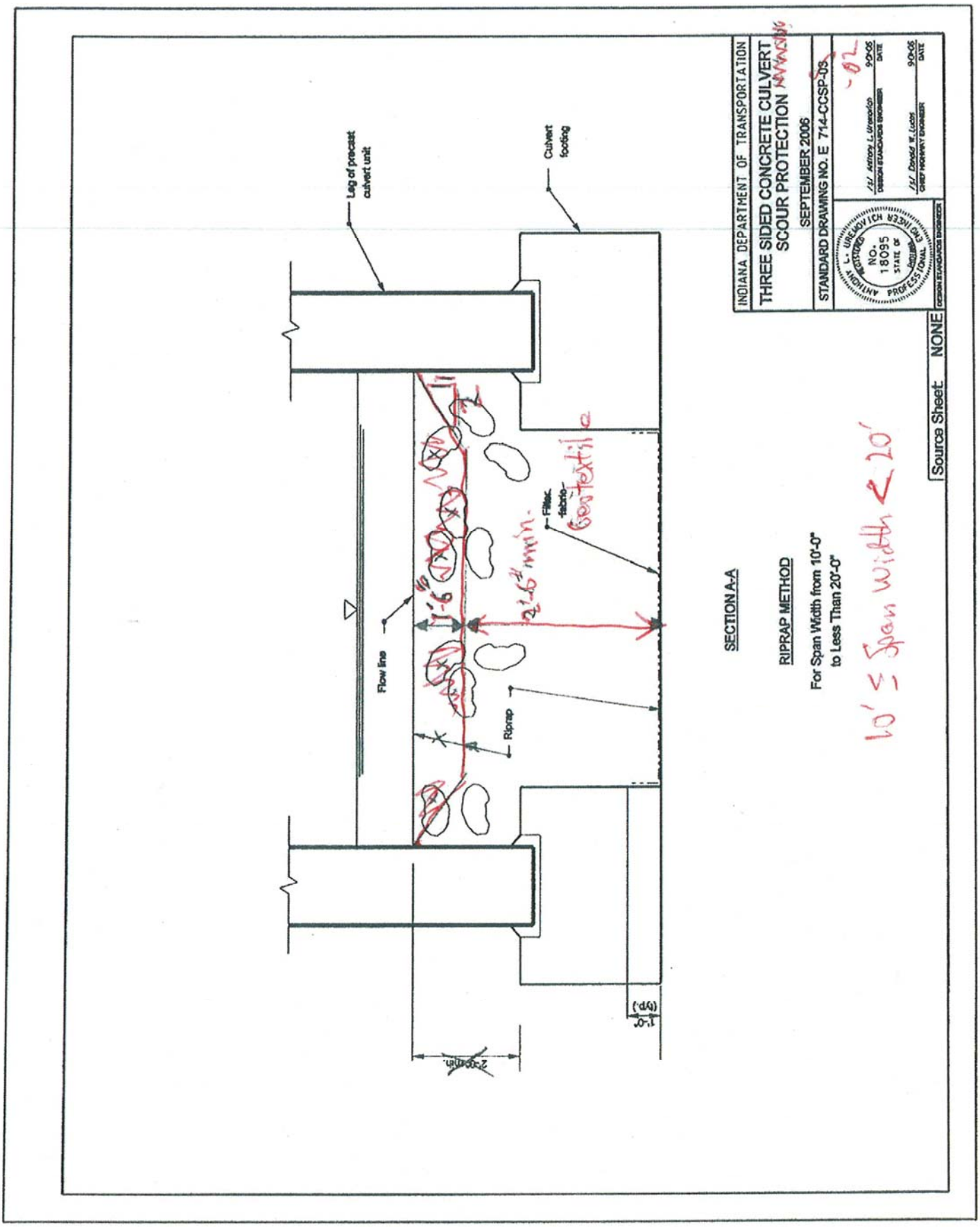
REVISION TO THE STANDARD DRAWINGS

714-CCSP-01 THREE SIDED CONCRETE CULVERT SCOUR PROTECTION



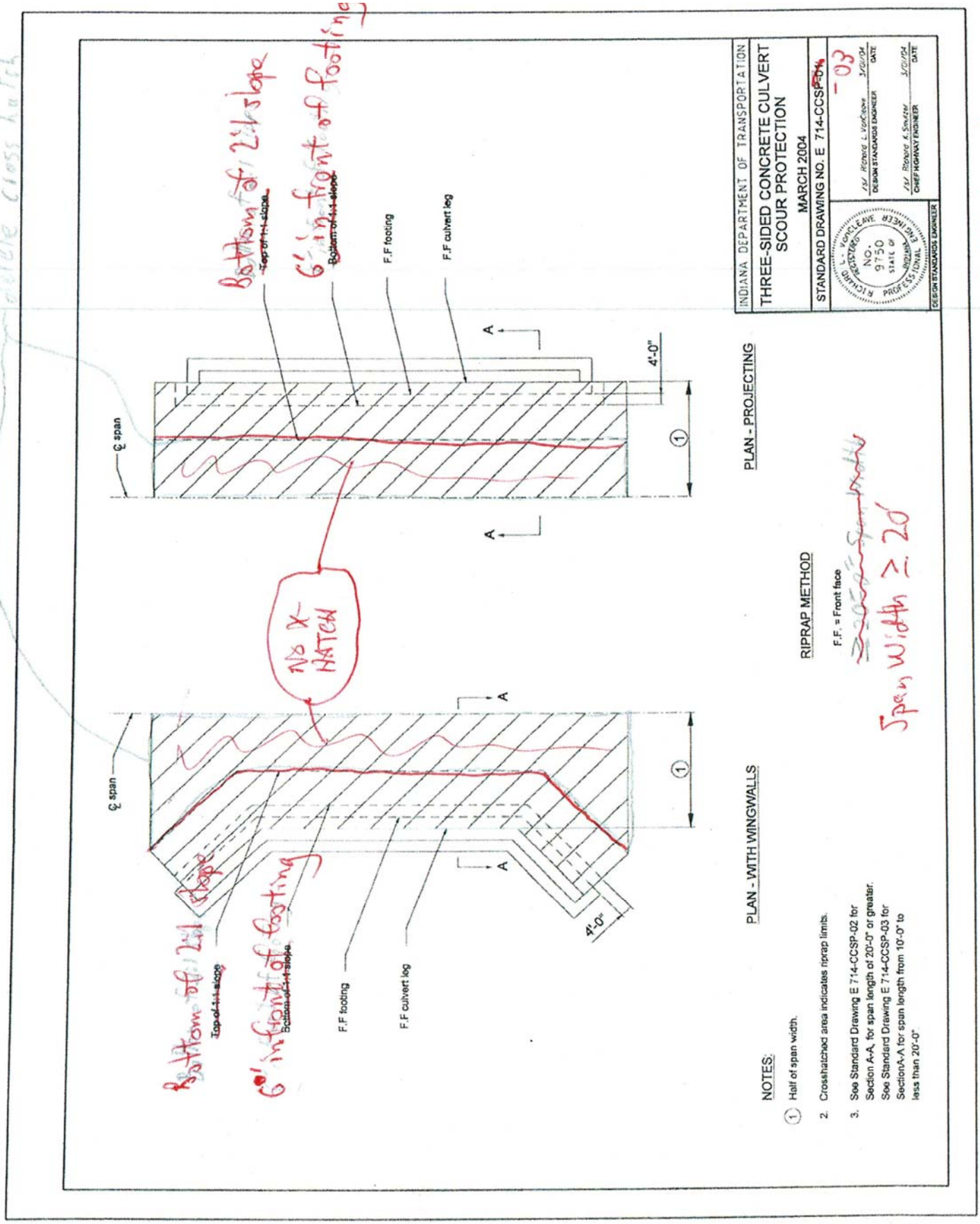
REVISION TO THE STANDARD DRAWINGS

714-CCSP-03 THREE SIDED CONCRETE CULVERT SCOUR PROTECTION



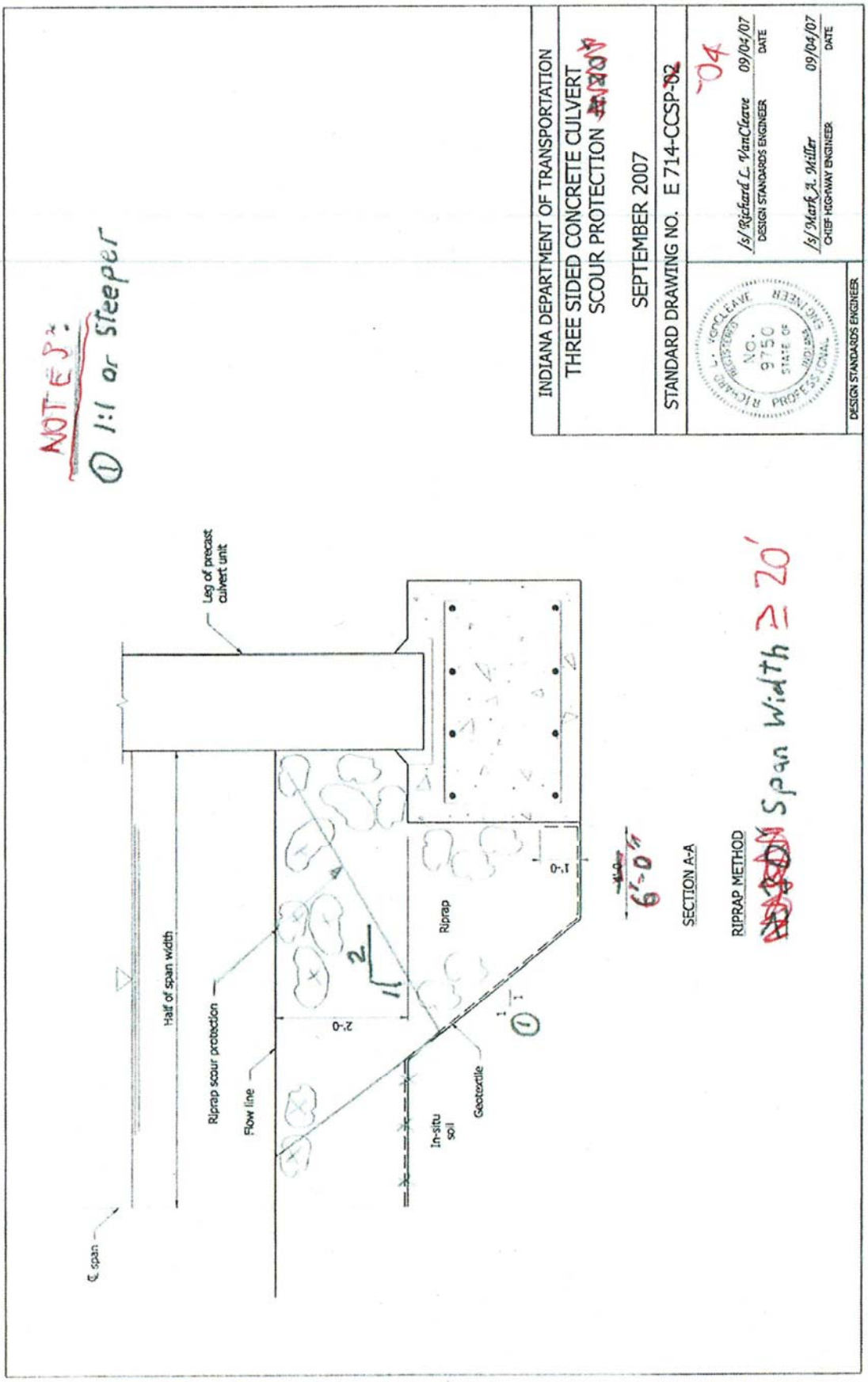
REVISION TO THE STANDARD DRAWINGS

714-CCSP-01 THREE SIDED CONCRETE CULVERT SCOUR PROTECTION



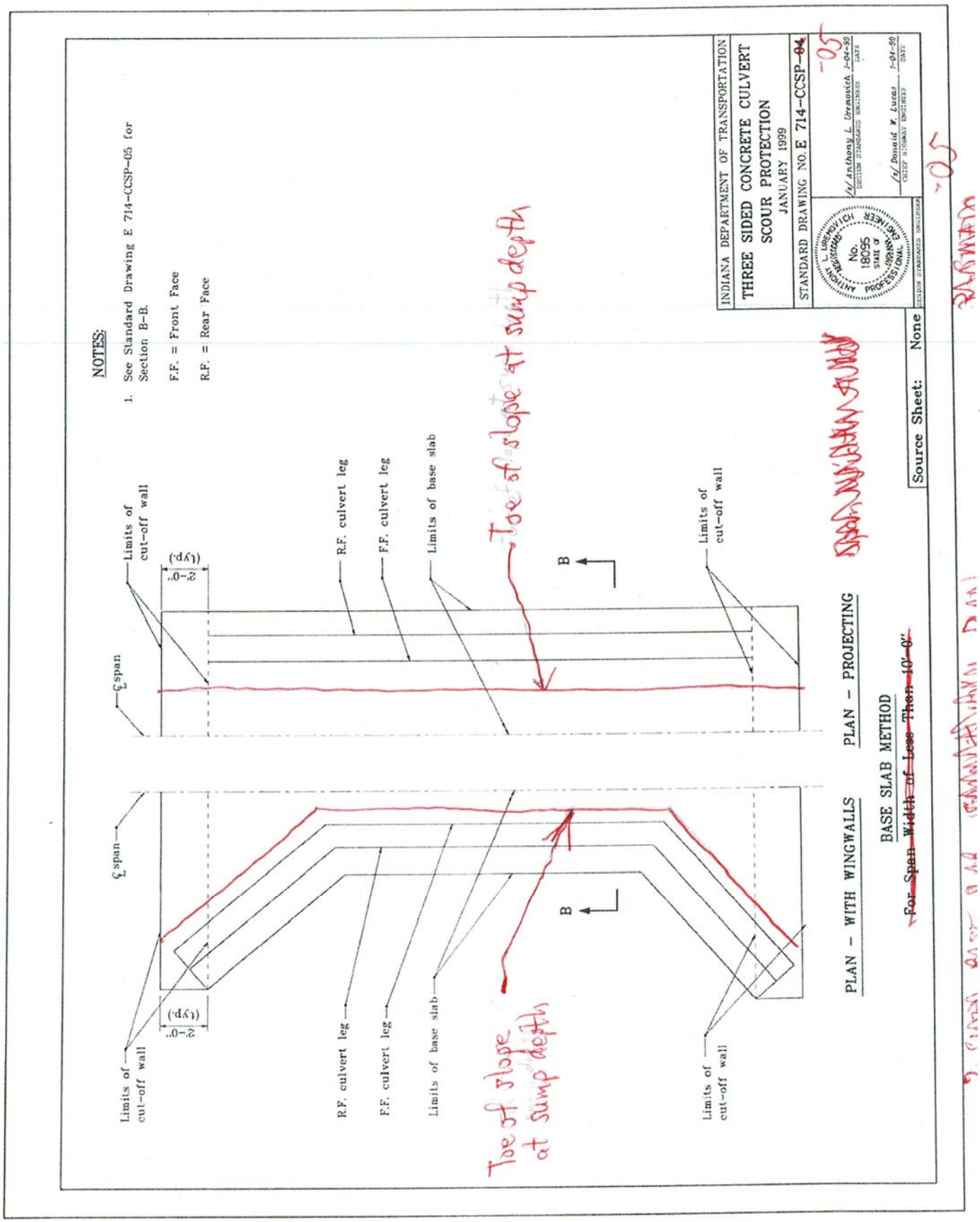
REVISION TO THE STANDARD DRAWINGS

714-CCSP-02 THREE SIDED CONCRETE CULVERT SCOUR PROTECTION



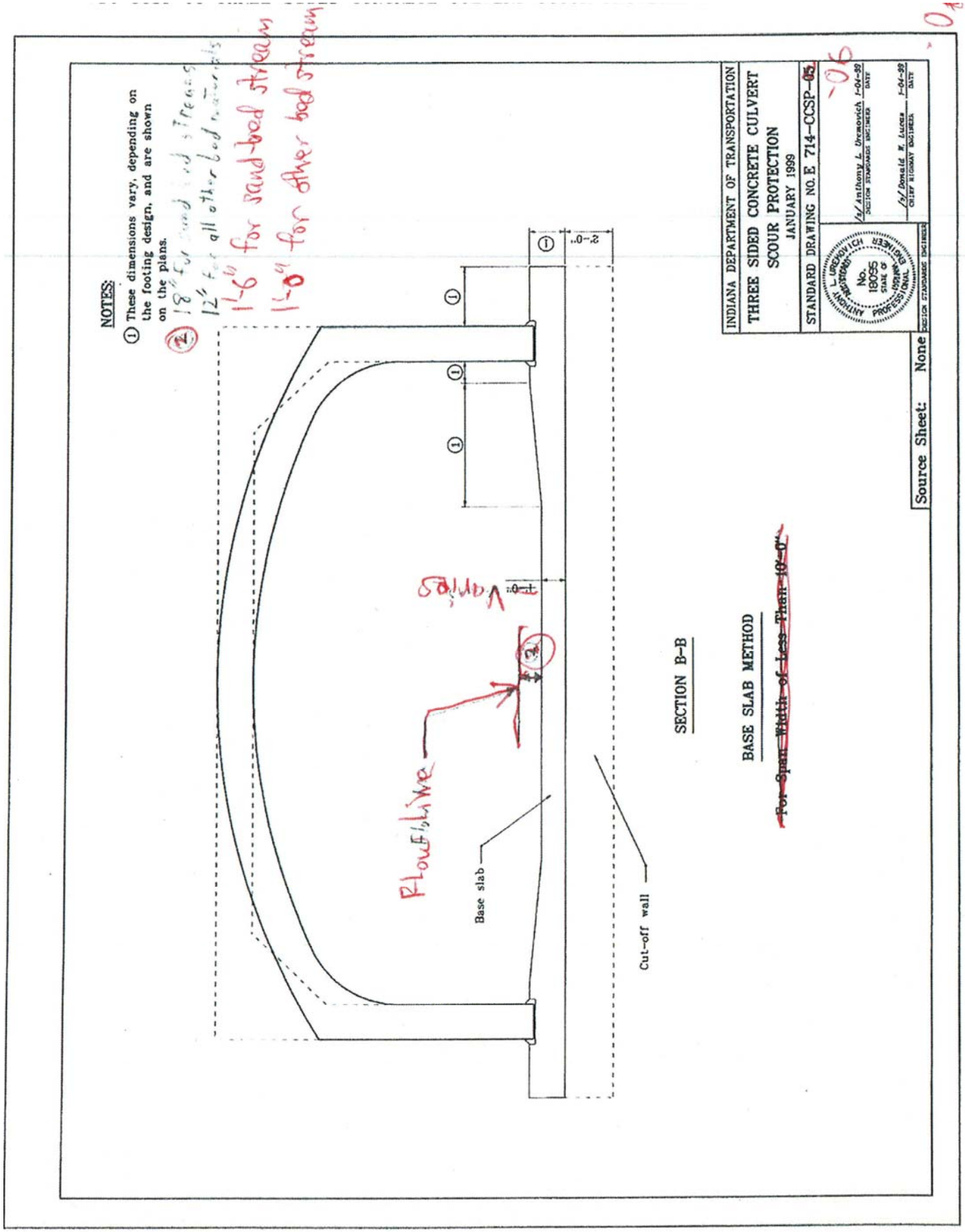
REVISION TO THE STANDARD DRAWINGS

714-CCSP-04 THREE SIDED CONCRETE CULVERT SCOUR PROTECTION



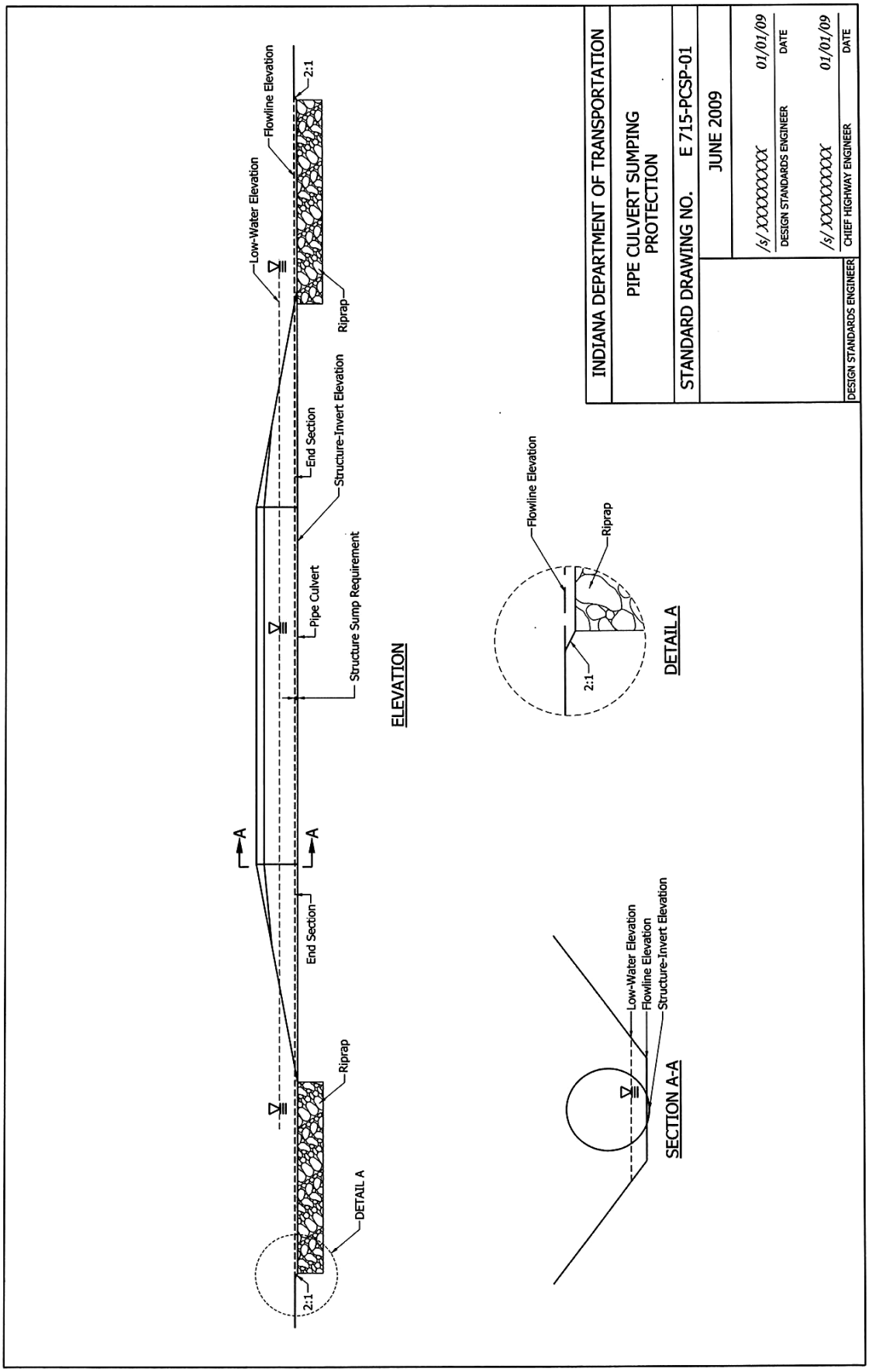
REVISION TO THE STANDARD DRAWINGS

714-CCSP-05 THREE SIDED CONCRETE CULVERT SCOUR PROTECTION



REVISION TO THE STANDARD DRAWINGS

715-PCSP-01 PIPE CULVERT SUMPING PROTECTION



BACKUP No. 1

DESIGN DIVISION. MEMORANDUM

INDIANA DEPARTMENT OF TRANSPORTATION
DESIGN DIVISION
INDIANAPOLIS, INDIANA 46204-2249
INTER-DEPARTMENT COMMUNICATION

August 3, 2009

MEMORANDUM

TO: Anne M. Rearick
Structural Services Manager

FROM: Merril E. Dougherty
Hydraulics Supervisor

SUBJECT: **REVISED** Proposed Standard Drawing Revisions and Design Manual Culvert Policy Change to meet IDEM Culvert Sumping Requirement.

IDEM as part of the 401 permitting process has a requirement that culvert structures be sumped 20%. The proposed changes to the 3-sided concrete culvert standard drawings and the culvert sumping policy changes for Chapter 31 "Culverts" of the IDM have been reviewed by the hydraulics staff, OES and IDEM. The original 20% sumping requirement by IDEM was estimated to cost INDOT $1 million per year. This package reflects the changes I have proposed to the 3-sided culvert scour protection standards drawings to meet the IDEM requirement without any increase in structure size or cost. The sumping requirements for culverts with bottoms reflect the reduced requirements after discussions with IDEM. With these changes implemented it is roughly estimated that it will cost INDOT $300K to $400K per year. This is a significant reduction over the original requirement cost of $1M per year. Designers are currently left with out guidance for addressing the IDEM requirement so it is recommended that the standard drawing recommendation become effective ASAP. The design manual information should apply to projects that are submitted for Stage 1 review after June 1 2009. The information should be transmitted by a standards memorandum.

Thank you for your consideration of this item. If you have any questions please let me know.

MED

cc: file

31-3.04(07) Culvert Sumping

Sumping, for a circular or deformed pipe, or box structure, consists of placing the invert a specified depth below the flow line, so as to be in accordance with IDEM Water Quality Section 401 permit requirements. For a three-sided structure, this consists of treating the stream bed as shown on the INDOT *Standard Drawings*. No increase in rise will be required.

For a pipe or box structure, the required sump is shown in Figure 31-3A(1).

Structure Diameter or Span, *S* (ft)	Sump Required for Stream Bed of Sand (in.)	Sump Required for Stream Bed of Other Soil (in.)
< 4	6	3
$4 \leq S < 12$	12	6
$12 \leq S < 20$	18	12

CULVERT SUMP REQUIREMENT

Figure 31-3A(1)

If the sump shown in Figure 31-3A(1) exceeds 3 in., the structure diameter or rise must be increased by the sump value. The sump area will not be backfilled. It will be allowed to silt in naturally.

Where bedrock or consolidated till is present within the sump depth, the bedrock or till will be excavated such that the invert is placed 3 in. below the surface of the bedrock or till.

For pipes that require end sections, the end sections will be sumped the same depth as required for the pipe.

[P:\Structural Services\Design Memos\09CuSu-dmE.doc]

COMMENTS AND ACTION

714-CCSP-01 THREE SIDED CONCRETE CULVERT SCOUR PROTECTION
714-CCSP-02 THREE SIDED CONCRETE CULVERT SCOUR PROTECTION
714-CCSP-03 THREE SIDED CONCRETE CULVERT SCOUR PROTECTION
714-CCSP-04 THREE SIDED CONCRETE CULVERT SCOUR PROTECTION
714-CCSP-05 THREE SIDED CONCRETE CULVERT SCOUR PROTECTION
715-PCSP-01 PILE CULVERT SUMPING PROTECTION

Other sections containing specific cross references:

Motion:
Second:
Ayes:
Nays:

Action:

Passed as Submitted ___
Revised ___
Withdrawn _____

Recurring Special Provision affected:

___20__ Standard Specifications Book

___Create RSP (No._____)
Effective _____Letting
RSP Sunset Date: _____

___Revise RSP (No._____)
Effective _____Letting
RSP Sunset Date: _____

Standard Sheets affected:
714-CCSP-01
714-CCSP-02
714-CCSP-03
714-CCSP-04
714-CCSP-05

Standard Drawing Effective _____
___Create RPD (No. _____)
Effective _____Letting
_____Technical Advisory

GIFE Update Req'd.? Y___ N___
By - Addition or Revision

Frequency Manual Update Req'd? Y___ N___
By - Addition or Revision

Received FHWA Approval? ___

SPECIFICATION REVISIONS

REVISION TO THE RECURRING SPECIAL PROVISION

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The current Recurring Special Provision 623-M-039 does not properly address how and for how long liquidated damages are to be assessed for the failure to complete mowing cycles within the allotted periods of time. Currently, liquidated damages are charged for each day past the cycle completion date for each mowing cycle. This is in addition to liquidated damages charged for every day past the completion date. However, the current RSP does not address how to handle the situations where an early mowing cycle is completed late at the fault of the Contractor and subsequently impacts the succeeding mowing cycles. Also, the current RSP does not properly address how to handle the situation where the Contractor fails to complete the contract by the contract completion date and as a result the mowing contract carries into the cooler season where it is undesirable to mow for fear of damaging or killing the grass, or even worse carries through the winter months and into the Spring where it would interfere with the new mowing contract and next round of mowing cycles. There has never been an issue, but I think that it would be prudent to rewrite the special provision to address these deficiencies before it ever becomes an issue.

PROPOSED SOLUTION: I propose the changes to Recurring Special Provision 623-M-039 as shown in the attached document.

APPLICABLE STANDARD SPECIFICATIONS: 108.09 and 108.10

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: N/A

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISIONS: 623-M-039

Submitted By: Nathan Butts

Title: Office Area Engineer

Organization: INDOT-LaPorte

Phone Number: (219) 325-7473

Date: 7/31/2009

APPLICABLE SUB-COMMITTEE ENDORSEMENT? N/A

REVISION TO THE RECURRING SPECIAL PROVISION

623-M-039 MOWING CYCLES, STARTING DATES, AND FAILURE TO COMPLETE MOWING ON TIME

623-M-039 MOWING CYCLES, STARTING DATES, AND FAILURE TO COMPLETE MOWING ON TIME

(Revised 07-31-09)

The cycles of work shall be completed as shown below.

CYCLE	APPROXIMATE STARTING DATE	ALLOTTED COMPLETION TIME PER CYCLE
1	_____, 20_____	_____Calendar Days
2	_____, 20_____	_____Calendar Days
3	_____, 20_____	_____Calendar Days

Contract Completion Date: October 31, 20_____

The starting date for each cycle may be adjusted depending on growing conditions and height of grass.

Liquidated damages *for the failure to complete the mowing in the allotted time* will be charged in accordance with 108.09. However, the charge will be $750.00 per calendar day after _____, ~~20~~_____ *the allotted* _____*days* for which the work is not complete for the first cycle. The charge will be $750.00 per calendar day after _____, ~~20~~_____ *the allotted* _____*days* for which the work is not complete for the second cycle. The charge will be $750.00 per calendar day after _____, ~~20~~_____*the allotted* _____ *days* for which the work is not complete for the third cycle.

Liquidated damages for the failure to complete cycle 1 will be allowed to accrue until the mowing cycle is completed or for a maximum of 40 calendar days, whichever occurs first. If after those 40 calendar days cycle 1 is not completed, cycle 1 will be terminated by the Engineer with zero compensation made to the Contractor and cycle 2 will commence as directed by the Engineer.

Liquidated damages for the failure to complete cycle 2 will be allowed to accrue until the mowing cycle is completed or until the contract completion date, whichever occurs first. If cycle 2 is not completed by the contract completion date, cycle 2 and 3 will be terminated by the Engineer with zero compensation made to the Contractor. If the Contractor completes cycle 2, but fails to complete cycle 2 within 40 calendar days of the date of notice to begin mowing, cycle 3 may be terminated by the Engineer with zero compensation to the Contractor.

Liquidated damages for the failure to complete cycle 3 will be allowed to accrue until the mowing cycle is completed or until the contract completion date, whichever

REVISION TO THE RECURRING SPECIAL PROVISION

623-M-039 MOWING CYCLES, STARTING DATES, AND FAILURE TO COMPLETE MOWING ON TIME (CONTINUED).

occurs first. If on the completion date cycle 3 is not completed, cycle 3 will be terminated with zero compensation to the Contractor.

In addition to the liquidated damages detailed above, if the Contractor fails to complete the contract by the contract completion date, a single assessment of $5,000.00 will be assessed as liquidated damages, not as a penalty but as damages sustained. This single assessment of liquidated damages replaces the typical daily assessment as described in Section 108.09.

COMMENTS AND ACTION

623-M-039 MOWING CYCLES, STARTING DATES, AND FAILURE TO COMPLETE MOWING ON TIME

Other sections containing specific cross references:

Motion:
Second:
Ayes:
Nays:

Action:

Passed as Submitted ___
Revised ___
Withdrawn _____

Recurring Special Provision affected:
623-M-039

___20__ Standard Specifications Book

___Create RSP (No._____)
Effective _____Letting
RSP Sunset Date: _____

___ Revise RSP (No._____)
Effective _____Letting
RSP Sunset Date: _____

Standard Sheets affected:

Standard Drawing Effective _____
___Create RPD (No. _____)
Effective _____Letting
_____Technical Advisory

GIFE Update Req'd.? Y___ N___
By - Addition or Revision

Frequency Manual Update Req'd? Y___ N___
By - Addition or Revision

Received FHWA Approval? ___