

OKLAHOMA DEPARTMENT OF TRANSPORTATION

DATE: March 16, 2001  
TO: Distribution List  
FROM: George Raymond, Construction Engineer  
SUBJECT: CONSTRUCTION CONTROL DIRECTIVE NO. 010316

POST - CONSTRUCTION REVIEW PROCESS

A process for Post-Construction Reviews has been developed jointly by the Department and the FHWA and is being implemented by this Directive. Attached is a copy of the Final Process Review Report, Post-Construction Review Guidelines, Post-Construction Review Feedback Questionnaire Forms and the first list of proposed projects in each Field Division designated for Tier 1 or Tier 2 reviews.

The purpose of these reviews will be to improve the Department's design and construction processes by providing the designers the opportunity to review completed projects and to discuss aspects of the project with the construction personnel upon the project's completion. These reviews should provide benefits to the Department, including reduced recurring field changes and quantity overruns, improved constructibility and traffic sequencing of future projects and cross-functional training to all participants.

As discussed in detail in the attached Report and Guidelines, the largest scale review is a Tier 1 review which will be conducted by the Post-Construction Review Coordinator on designated projects once or twice a year. A smaller scale review which is the Tier 2 review, will be conducted on designated projects by the Division Construction Engineer or Resident Engineer. The list of designated projects will be determined by the Post-Construction Review Committee annually. The Tier 3 reviews are the opportunity for the Field Division to provide feedback on any project that is completed which had issues that the field personnel feel could be improved. For the Tier 3 reviews, a Feedback Questionnaire would be completed and submitted to the Construction Division for distribution.

For further information on recommended attendees, project criteria, coordinator of reviews, submittal of feedback report and other details, please refer to the attached Guidelines and Report.

  
George Raymond, PE  
Construction Engineer

**PROCESS REVIEW  
OF THE  
OKLAHOMA DEPARTMENT OF TRANSPORTATION**

**POST-CONSTRUCTION REVIEW**

**BY THE  
OKLAHOMA DEPARTMENT OF TRANSPORTATION  
AND THE  
FEDERAL HIGHWAY ADMINISTRATION**

**September 29, 2000**

# POST-CONSTRUCTION REVIEW

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## OVERVIEW

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A team was established to develop procedures for carrying out reviews of completed projects. The purpose of these reviews would be to improve the Oklahoma Department of Transportation's (ODOT) design and construction processes by providing the designers and specialists the opportunity to review completed projects and to discuss aspects of the project with the construction personnel. These reviews should provide many benefits to the Department, including reducing recurring field changes and quantity overruns, improving the constructibility and traffic sequencing of future projects, and providing cross-functional training to all participants.

Team Sponsors:     Pete Byers                     ODOT Assistant Director of Operations  
                                 Maiser Khaled                     FHWA Engineering & Operations Team  
                                     Leader

Team Members:       Steve Mills                     FHWA Area Engineer  
                                 Richard Jurey                     FHWA Area Engineer  
                                 George Raymond                 ODOT Construction Engineer  
                                 Brian Schmitt                     ODOT Assistant Roadway Design Engineer

The team initially met on April 4, 2000, to begin developing recommendations for these reviews, and met several times since then to discuss and work out details of the reviews. On June 13, 2000, the team met and agreed on our recommendations for the reviews. This report details our recommendations.

## DISCUSSION

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The size and scope of the post-construction reviews were discussed extensively. It was felt that a large scale review that included representatives from all involved ODOT divisions (including Planning and Right-of-Way) would be the most effective at bringing out process changes. However, due to the resources involved with this type review, only a limited number could be held each year. Conversely, a small scale review that involved only the principal designers and the construction personnel would require relatively few resources and a much larger number could be held each year. Also, an informal small scale review would likely be better at facilitating productive discussions on specific elements of the project.

Project selection was also discussed. It was agreed that for the large scale reviews, the more complicated projects with the highest cost should be selected. It was also agreed that for both the large and small scale reviews, the projects that have the highest potential for future cost savings should be selected. It was decided that projects that are part of multi-project corridor projects should be selected. Any recommendations from the review could be immediately implemented into future project within that corridor.

## **RECOMMENDATIONS**

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1. The team recommends that both large and small scale reviews be held as outlined in the Post-Construction Review guidelines in Attachment 1. We refer to the large scale reviews as Tier 1 reviews and the small scale reviews as Tier 2 reviews. Tier 3 reviews are discussed in Recommendation 7.
2. The team recommends that the Feedback Questionnaire developed by this team be completed at both the Tier 1 and Tier 2 reviews. The Feedback Questionnaire is included as Attachment 2.
3. The team recommends that a Post-Construction Review Coordinator be appointed and a Post-Construction Review Committee be established. We recommend that the duties and responsibilities of the Post-Construction Review Coordinator and the Post-Construction Review Committee be as follows:
  - a. The committee will meet yearly (January) to determine the projects that will meet the criteria for Tier 2 reviews in the upcoming year. The committee will then select two projects for Tier 1 reviews.
  - b. On a yearly basis, the Post-Construction Review Coordinator will inform each ODOT Field Division through the Construction Engineer of the projects in his/her division that will require a Tier 1 or a Tier 2 review according to the established guidelines.
  - c. For the Tier 1 reviews, the Post-Construction Review Coordinator will coordinate with the Field Division to determine the appropriate attendees for that specific review and ensure completion of the feedback questionnaire from both the Residency and the Contractor. The Post-Construction Review Coordinator will be responsible for coordinating, scheduling, and facilitating the Tier 1 reviews.
  - d. For completed Tier 1 reviews, the Post-Construction Review Coordinator will compile the completed questionnaires, prepare minutes of the meeting, and detail any recommendations made. This report will be distributed to all attendees, the ODOT Senior Staff, and the FHWA Division Administrator. The report will be completed and distributed within 14 days of the review being held.
  - e. On a yearly basis (August), the committee will meet a second time to review the status of the program. Completed questionnaires will be reviewed; recommendations from potential projects will be discussed and reported to the Senior Staff for further review and implementation. The number of completed and non-completed Tier 2 reviews will be reported for each Field Division, and any necessary changes to this program will be recommended.
4. The team recommends that the committee include the Post-Construction Review Coordinator, a representative from Roadway Design, a representative from Construction, and a representative from FHWA.

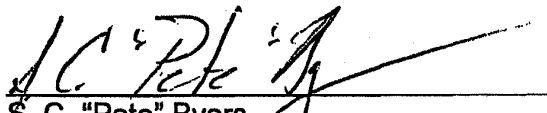
5. The team recommends that the projects for Tier 2 reviews be determined from set criteria and that the Field Divisions be accountable for ensuring that the required reviews are completed.
6. The team recommends that the Field Divisions coordinate, schedule, and lead the Tier 2 and Tier 3 reviews. For these reviews, the Field Division will forward the completed feedback questionnaires to the Construction Division for distribution. Tier 2 reviews will be distributed to all attendees, the Post-Construction Review Coordinator, the Assistant Director–Operations, the Assistant Director–Preconstruction, and the FHWA Division Administrator.
7. The team recommends that the Field Divisions should be encouraged to provide feedback to the Central Office on any issues that feel could be improved. The Feedback Questionnaire developed by this team should be used as a format for providing that feedback. We refer to the Field Division independently initiating and completing the Feedback Questionnaire as a Tier 3 review. Tier 3 reviews will be distributed to the Post-Construction Review Coordinator and the Roadway Design Engineer.

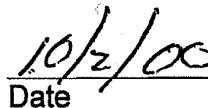
## IMPLEMENTATION PLAN


- ▶ Senior Staff will establish a Post-Construction Review Committee with the responsibilities and duties as detailed above within 14 days after Sponsor Approval. Phil Loafman has been appointed as the Post-Construction Review Coordinator
- ▶ The committee should meet in October to determine the projects which meet the criteria for a Tier 2 review and select one project for a Tier 1 review for the current calendar year. Starting in October 2000, Tier 2 reviews should be performed on projects meeting the stated criteria.
- ▶ The Process Review Team will perform a follow-up review in March 2001.

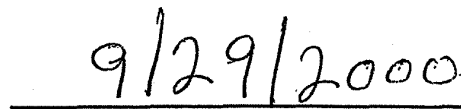
## SPONSOR APPROVAL

We concur with the seven recommendations and authorize the implementation of the plan proposed by the team.

  
\_\_\_\_\_  
S. C. "Pete" Byers  
Assistant Director of Operations  
Oklahoma Department of Transportation

  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Maisei Khaled  
Engineering & Operations Team Leader  
Federal Highway Administration

  
\_\_\_\_\_  
Date

#16895

POST-CONSTRUCTION REVIEW GUIDELINES					
Tier	Purpose	Project Criteria	Recommended Attendees	Format / Comments	Approximate Number
1	Process Changes	1. NHS corridor projects* with construction costs > \$10 million.	<ol style="list-style-type: none"> <li>1. Post-Construction Review Coordinator.</li> <li>2. Field Division (Division Construction Engineer, Division Maintenance Engineer, Division Traffic Engineer, Resident Engineer and Inspectors).</li> <li>3. Roadway Design (Assistant Design Engineer, Project Engineering Manager, and other involved designers and specialists as required. Selection of specialists should be based on feedback from field.).</li> <li>4. Construction Division (Assistant Division Engineer).</li> <li>5. Traffic Division (Project Engineering Manager).</li> <li>6. Bridge Division (Project Engineering Manager).</li> <li>7. Planning Division (Environmental Coordinator, if environmental commitments are involved).</li> <li>8. Right-of-Way Division (Utility Project Coordinator, if significant utility concerns are involved.).</li> <li>9. Design Consultant (As applicable).</li> <li>10. FHWA (Area Engineer and specialists as required).</li> <li>11. Others as requested by Field Division (Materials Division, Research Division, etc.).</li> </ol>	<ul style="list-style-type: none"> <li>• Separate Post-Construction meeting to discuss the project in depth.</li> <li>• Should be coordinated and facilitated by the Post-Construction Review Coordinator.</li> <li>• Review to be held within 30 days of Final Inspection.</li> <li>• Contractor will complete feedback form prior to review.</li> <li>• Contractor attendance at review is not recommended.</li> <li>• Report completed by Post-Construction Review Coordinator within 14 days of review.</li> </ul>	<p>Two projects meeting the stated criteria will be selected each year.</p> <p>No more than one project per division per year will be selected.</p> <p>Selection will be made by the Post-Construction Review Committee.</p>
2	Project Specific Changes and Training	<ol style="list-style-type: none"> <li>1. Rest of NHS corridor projects.*</li> <li>2. GTP corridor projects.*</li> </ol>	<ol style="list-style-type: none"> <li>1. Field Division (Division Construction Engineer, Resident Engineer and Inspectors).</li> <li>2. Roadway Design (Project Engineering Manager and involved designers at the Engineering Manager's discretion).</li> <li>3. Design Consultant (As applicable).</li> <li>4. FHWA.</li> </ol>	<ul style="list-style-type: none"> <li>• Hold same day as final inspection.</li> <li>• Field Division and Roadway complete feedback form together.</li> <li>• Led by Division Construction Engineer or Resident Engineer.</li> <li>• Contractor will complete feedback form prior to meeting.</li> <li>• Contractor attendance at review is not recommended.</li> <li>• Feedback forms immediately forwarded to Construction Division upon completion of the review.</li> </ul>	<p>1-4 per Field Division per year.</p> <p>8-32 per year total.</p> <p>Projects will be determined by the Post-Construction Review Coordinator.</p>
3	Feedback from Field	<ol style="list-style-type: none"> <li>1. At Field Division's discretion.</li> <li>2. As requested by Central Office.</li> </ol>	No meeting held.	<ul style="list-style-type: none"> <li>• Resident completes feedback form and submits it to construction division for distribution.</li> <li>• Designers respond as necessary or when a response is requested.</li> <li>• Feedback forms can be submitted throughout a project's duration.</li> </ul>	No set criteria.

Projects with adjoining projects in 5-year plan.

#16453



# Oklahoma Department of Transportation

Date: \_\_\_\_\_

To: Construction Engineer

From:

Subject: Post-Construction Review Feedback Questionnaire for:

Project No. and J/P: \_\_\_\_\_

Location and County: \_\_\_\_\_

Project Description: \_\_\_\_\_

Tier:      1       2       3

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Attendees:

Signature: \_\_\_\_\_

Attachment: Completed Feedback Questionnaire

## Post-Construction Review Feedback Questionnaire

Tier:      1       2       3

This questionnaire is intended to provide constructive feedback to the designers on recently completed projects. For "YES" responses, provide complete explanations and suggestions on improving the process or preventing recurring problems. Attach additional pages if necessary.

Project No. and J/P:		County:		Division:	
				YES	NO
1	Were there any Change Orders on this project that will likely recur on future projects?				
2	Were there any significant quantity overruns or underruns on this project that will likely recur on future projects?				
3	Were there any delays on this project that will likely recur on future projects?				
4	Were any problems encountered in the use of the recommended sequence of construction or with construction traffic control?				
5	Did the intent of any plan notes or special provisions become points of contention with the contractor or inspection personnel?				
6	Will any of the project features create maintenance problems?				
7	Were there any distinguishing or unique features (such as Indian Issues, Wetlands, Hazardous Material, etc.) that could have been handled differently by design?				
8	Was anything handled differently on this project (such as a different method of payment for a particular item, or new special provision, special details, etc.)?				
Additional Comments:					
Name			Organization / Title		

November 8, 2000

PROPOSED PROJECTS FOR TIER 2 POST CONSTRUCTION REVIEWS

DIVISION	PROJECT NUMBER	COUNTY	HIGHWAY	CONTRACT AMT
1	IMY-40-6(236)240	OKMULGEE	I-40	\$8,742,765.37
2	NHY-17N(28)	PUSHMATAHA	SH-3	\$5,620,917.23
3	BRFY-62C(238)	PONTOTOC	SH-1	\$2,299,894.37
4	IMY-35-3(248)128	OKLAHOMA	I-35	\$11,470,281.25
4	NHY-10N(10)/BRFY-10N(19)	CANADIAN	US-281	\$11,586,914.19
5	NH-9N(001)/NH-9N(002)	KIOWA	US-183	\$5,080,927.21
6	CIP-147N(35)IP	MAJOR	US-412	\$5,696,599.19
6	NHY-8N(005)	TEXAS	US-54	\$7,835,005.31
7	CIP-110N(29)(33)	CARTER	US-70	\$5,806,995.79
8	CIP-172N(61)IP	TULSA	US-169	\$2,963,065.40
8	CIP149N(19)IP	MAYES	US-69	\$3,175,592.89

PROPOSED PROJECTS FOR TIER 1 POST CONSTRUCTION REVIEWS

1	IMY-40-6(236)240	OKMULGEE	I-40	\$8,742,765.37
3	NHY-12N(005)	SEMINOLE	SH-99	\$10,276,919.69

NOTE: THE PROJECT IN DIVISION 1 WILL BE EITHER A TIER 1 OR 2 DEPENDING ON WHEN THE PROJECT IN DIVISION 3 IS SCHEDULED TO BE COMPLETED.

OKLAHOMA DEPARTMENT OF TRANSPORTATION

DATE: February 12, 2001  
TO: Distribution List  
FROM: George Raymond, Construction Engineer  
SUBJECT: CONSTRUCTION CONTROL DIRECTIVE NO. 010212


CONTRACTOR'S RAILWAY FLAGGING CERTIFICATE

The contractual requirements for ensuring that payment has been made to Railway Companies for flagging has been modified for the 1999 Standard Specifications for Highway Construction. This Directive provides the authority to utilize the method specified in Section 104.19 of the 1999 Standard Specifications on projects that were let under earlier specifications with no further action.

Under Section 107.20 of previous specifications, the method to ensure payments were made to Railway Companies required that the "Contractor provide satisfactory evidence that he has wholly reimbursed the Railway Company for flagging services". Historically, the Department's procedure was that the Residency would issue a Final Acceptance Date and initiate a Final Estimate for a project and the Construction Division would try to get a Railroad Release with the assistance of Rail Programs Division prior to approving the Final Estimate for payment. This method created a problem in the amount of time required to get the Release and the necessity of getting the Final Estimate approved and to the Comptroller to make the final payment to the Contractor. This new method does not conflict with the previous specifications, rather it clarifies what "satisfactory evidence" may be used.

For future and current projects that require Railroad Flagging, the Residency will require a "notarized certificate by Contractor that he/she has wholly reimbursed the Railway Company for flagging services" prior to issuing the Final Acceptance Date in accordance with Section 104.19 of the 1999 Standard Specifications. For your convenience, an attached Form ODOT-RR010212 has been developed for the Residency to send to the Contractor to complete and return to the Resident Engineer which will satisfy the intent of the specification. Upon its return to the Resident Engineer, copies of the "Contractor's Railway Flagging Certificate" shall be distributed by the Residency to the distribution list shown at the bottom of the Form ODOT-RR010212.

Future Final Estimates on projects which require Railroad Flagging that are submitted to the Construction Division should include the notarized certificate. The Railroad Release will no longer be required from the Railway Companies.

  
George Raymond, PE  
Construction Engineer

### CONTRACTOR'S RAILWAY FLAGGING CERTIFICATE

From: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date: \_\_\_\_\_

To: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Subject: Project \_\_\_\_\_  
Job Piece Number \_\_\_\_\_  
County \_\_\_\_\_

Railway Company Name: \_\_\_\_\_

Dear \_\_\_\_\_ :  
(Resident Engineer's Name)

I (we) hereby certify that \_\_\_\_\_ has paid the Railway  
(Contractor's Company Name)  
Company for the cost of all railroad flagging required by the Railway Company as stated in the contract. I further certify that I am authorized to sign this Certification and to bind this company as to this matter.

The above information is true and correct to the best of my knowledge.

\_\_\_\_\_  
(Authorized Signature)

\_\_\_\_\_  
(Social Security No. or Federal ID No.)

STATE OF OKLAHOMA                    )  
  ) §:  
COUNTY OF \_\_\_\_\_                )

On the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally appeared \_\_\_\_\_ to me known to be the person(s) named herein and who executed the foregoing document and acknowledge to me that \_\_\_\_\_ voluntarily executed the same.

My Commission Expires:  
\_\_\_\_\_, 20\_\_\_\_

\_\_\_\_\_  
(Notary Public)

- Distribution to be made by Resident Engineer:
- Division Engineer
  - Construction Engineer
  - Rail Programs Division
  - Railway Company
  - File