



**Internal Audit Division
Finance Department
DeKalb County**

**WATERSHED MANAGEMENT
DEPARTMENT**

FINAL REPORT

**SR 155 – CANDLER ROAD:
CONTRACT # 13-902587
REVIEW**

January, 2016

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TRANSMITTAL MEMORANDUM

DATE: January 28, 2016
TO: Margaret Britton, Special Projects Manager-Infrastructure
FROM: Cornelia Louis, Deputy Director of Finance-Internal Audit (DIA)
SUBJECT: SR155 – Candler Road, Waterline Replacement, Landscaping and Resurfacing
RE: Kemi Construction Company, Inc – Construction Contract# 13-902587 Review


Attached is the report of SR155 – Candler Road – Contract# 13-902587 Review. The issues raised in the report were discussed with you during the Exit Conference on January 28, 2016.

As is customary with our audit work, we do not include the auditee's comments in our report.

However, you may consider sending your comments or response directly to Zachary Williams, Chief Operating Officer/Executive Assistant.

If you have any questions about the audit or this report, please feel free to contact me at 404-371-2639.

Sincerely,


Cornelia Louis

cc: Appendix D



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EXECUTIVE SUMMARY

Background

In March 2013 contract # 13-902587 (herein after referred as Contract) was approved between DeKalb County (here after referred to as the County) and Kemi Construction Company, Inc. (herein after referred to as Kemi) for Kemi to replace the water line along SR155 – Candler Road, Decatur, as well as the related landscaping and resurfacing of Candler Road. The contract was initially valued at \$7,168,892. On August 12, 2014, the Board of Commissioners approved a change order request, due to a scope change, to extend the term of the contract until December 31, 2015 and increase the total contract amount by \$1,068,000.

Work for the contract began in August 2013 and continued until July 2014; the waterline replacement portion of the project was managed and funded by the Watershed Management Department, Engineering and Asset Management Division, while the Public Works Department, Transportation Division was responsible for the landscaping and resurfacing portion of the project. During this period, Kennedy Engineering firm (herein referred to as Kennedy) provided part-time oversight/project management for some of the County's construction projects, which included the Candler Road project. For a period, due to funding issues, no oversight/project management was provided for the Candler Road project. Due to the lack of effective project oversight, the County was no longer able to ensure value for money and timely project completion. As a result, in July 2014 the County suspended all activity of the Candler Road project.

In November 2014, project activities were resumed. The overall responsibility for the waterline replacement, landscaping, and resurfacing portions of the project, was reassigned to the Watershed Management Department, Capital Improvements Project Division (CIP). To address earlier concerns and improve oversight, Kennedy was contracted to provide full-time project oversight, which included daily inspections, monitoring of Kemi and their subcontractors, and review/certification of Kemi's application for progress payments.

By July 2015, it was determined by Kennedy that Kemi was unable to complete the 36-Inch Water Main Installation portion of the contract. Subsequently, Kemi agreed to refund DeKalb County the \$736,890 previously invoiced/paid by the County for the 36-Inch pipe installation.

As of January 2016, CIP personnel reported that the project is substantially complete and that the project is currently in the closeout phase with final inspection/completion anticipated by



January/February 2016. At the date of this report the signed/approved Certificate of Final Completion for the project was not provided to the DIA for review.

Given the significant value of the contract and the importance of the project, the Division of Internal Audit (DIA) was asked to conduct a review of the oversight process for contract # 13-902587, including concerns about the method used to calculate the percentage of project completion.

Objective and Approach

The primary purpose of the review and this report is to determine the effectiveness and efficiency of the current oversight and monitoring processes implemented by the County. Specifically, our review objectives included:

- Determining if the current method of determining Percentage of Project Completion is appropriate.
- Assessing if vendor invoices/amounts paid reconcile with the amounts and prices specified in the contract payment schedule.
- Assessing the adequacy of supporting documentation provided by the contractor to support invoice/payment applications. Also, determining if there is evidence of review and sign-off by the project manager as to the satisfactory completion of work.

The scope of the review was limited to the project activity/billing periods November 2014 to November 2015. This includes Kemi invoices numbered 14 to 26 which were provided during the period April to December 2015. This review was **not** intended to provide assurance as to the numerical accuracy and/or reasonableness of amounts of consumed labor and material claimed on Kemi invoices or the percentage of work completed. This review focused on the evaluation of the processes the County has in place to effectively oversee the Contract and ensure that Kemi delivered on contract obligations effectively and efficiently.

Our methodology included consideration of County policies and procedures, relevant better practices; a review of the Contract; contractor invoices and supporting documentation; and discussions with key County personnel.



Please see **Appendix B** for further details on our engagement scope and approach.

Summary of Observations/Conclusion

In general, controls and procedures are in place to support effective oversight and monitoring of the Contract. We found the County used a third-party project manager (Kennedy) as the key oversight mechanism. The Kennedy reviews and certifies each application for payment/invoice submitted by Kemi, attesting to the reasonableness and accuracy of amounts of material and labor consumption and project progress completion reported by Kemi. Furthermore, the method used to calculate the percentage of project completion is appropriate and within Generally Accepted Accounting Principles (GAAP) for large construction contracts.

However, based on our review the following opportunities were identified:

- Continue to improve oversight of construction projects to ensure that non-performance of the contract is identified in a timely manner and prior to approving substantial payments for disbursement.
- Strengthen evidentiary documentation to the County and the Project Manager oversight activities.

Please see pages 6 – 11 for a summary of our observations.

Overall Recommendation and Next Steps

The CIP Division should consider documenting better practices and improvement opportunities, identified during this project and noted in this report, for strengthening oversight for future construction projects.

Summary Management Response

The Watershed Management Department, Capital Improvements Project Division agrees with the DIA's observations noted in this report and will continue to work to enhance the County's oversight of construction contracts within the CIP Division.



Approvals:

Original Signed by:

Cornelia Louis

Cornelia Louis

Deputy Director of Finance

Internal Audit Division

Department of Finance

DeKalb County



SUMMARY OF OBSERVATIONS

Based on the documents reviewed and discussions with key stakeholders, the following are our observations:

1. Determining appropriate methods for calculating Percentage of Project Completion

1.1 Determining Percentage of Project Completion is reasonable

GAAP allows two main accounting methods for construction contracts, the Completed Contract method, and the Percentage of Completion method. The completed contract method recognizes revenue upon completion of the contract, that is, the contractor is paid when the contract is complete. The percentage of completion method recognizes revenue over the life of the contract. The contractor receives interim payments based on percentage of work completed to date.

The contract with Kemi and the County utilized the percentage of completion method to determine revenue earned and percentage of work completed to date by Kemi. GAAP requires that the percentage of completion method be used for financial and tax accounting by larger construction companies for long-term contracts. Its justification relies largely on the matching principle in accounting, where revenues and expenses are matched in the applicable accounting period. Three main methods can be used to calculate the percentage of work completed: the Cost-to-cost method, *Units-of-delivery method* and the *Efforts-expanded method*. Based on the documents reviewed and discussions with CIP personnel, Kemi utilized the *cost-to-cost method*, which is briefly described below (*Please see the Appendix C for a description of the other methods*).

Cost-to-cost method. This is a comparison of the contract cost incurred to date to the total expected contract cost. The costs of items already purchased for a contract, but have not yet been installed/used are not to be included in the determination of the percentage of completion of a project, unless they were specifically produced for the contract.

$$\% \text{ complete} = \text{Total construction costs to date} / \text{Total estimated costs of contract}$$

We found this method to be appropriate method for calculating the percentage of project completion and one that is supported by GAAP. However, this method is subject to potential fraudulent activity, usually to over-estimate costs incurred for a billing period, and therefore, revenue that can be claimed by the contractor. Detailed documentation of project milestones,



onsite monitoring, and project management and completion status can mitigate the possibility of fraud, but cannot eliminate it.

The following review objectives and procedures focus on determining the existence and reasonable effectiveness of the procedures in place by the County to mitigate the risk of fraud. The DIA however, does not provide any assurance that no fraudulent activity occurred.

Recommendations;

Watershed Department should continue to ensure that the method used by the vendor for calculating percentage of project completion is appropriate, based on nature of project, total project costs, and length of time to complete project.

2. Assessing if paid invoices/amounts reconcile with the amounts and prices specified in the contract payment schedule.

During the period April 2015 to December 2015, Kemi submitted thirteen (13) invoices/applications for pay. The invoices covered project activities period from November 2014 up to November 2015. As of December 2015, Kemi has invoiced a total of \$7,691,499.22.

2.1 Reconciliation of amounts claimed with contract stated values

The unit prices of material/labor used during a billing period should be consistent with the agreed upon unit prices stated in the contract. A random sample of four (4) of the nine invoices and supporting documentation were reviewed. We compared the item number, description of work, and unit prices shown on the Summary of Work completed/cost incurred during the billing period, attached to each pay application against the corresponding values stated in the contract payment schedule. We found the values to be consistent.

Furthermore, from each of the sampled invoices, we recalculated the top (4) four items with the highest costs, to check the arithmetic accuracy of the billing amounts claimed, using:

Quantity of items used during the period **X** the contract unit price = **expected total cost for billing period**



The results, “expected total cost for billing period,” were then compared against the costs actually claimed on the application of pay/invoice for that period. Our testing indicated no variations for the reviewed sample.

2.2 Verification of recovery of the \$736,890 due the County for non-performance

The Contract required Kemi to install 2,541 Linear Feet (LF) of 36-Inch pipe¹ for a total cost of \$747,330 (included in total contract value.) As of November 2014, Kemi invoiced \$736,890 (98.6% of total item cost) for materials and labor costs incurred relating to the 36-Inch pipe installation. However, after numerous water pressure tests failed, Kemi was unable to complete the installation of the 36-Inch pipe to contract specifications. In July 2015, Kemi agreed to reimburse the County the \$736,890 previously paid.

The process for recouping the funds was a combination of keeping the 10% of funds retained from each invoice up to invoice # 22. In addition, four invoices² were each reduced by \$60,000, totaling \$240,000, less the \$24,000 (10% retainage) for an actual credit of \$216,000. As per the application for payments/Invoices paid to date, the following outlines the monies recovered.

Kemi agreed to refund the amount paid by the County for the 36-Inch pipe installation through credits and retainage as follows:

a. Total Retainage from Transportation (Landscaping) Portion -B	\$274,365.67 ³
b. Total Retainage from Watershed (Water Pipe replacement) Portion -A	\$357,798.72
c. Credit back to the DeKalb County	<u>\$216,000.00</u>
Total -	\$848,164.39
Less Amount Owed to DeKalb County	<u>(\$736,890.00)</u>
Balance	\$111,274.39⁴

The numerous attempts and subsequent failure by Kemi to correct the problems with the 36-Inch pipe installation is an indication that Kemi may not have been fully qualified to install the 36-Inch

1 Line item 670-1360 of contract cost schedule attached to invoices

2 Invoices # 19 to 22, billing periods April through July on Line Item 670-1360

3 Matched to Invoice 25 as well as certificate of completion.

4 The balance does not necessarily represent the final amount due to Kemi as the Certificate of Final Completion was not reviewed by the DIA.



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pipe. Furthermore, Kemi was paid almost 100% of the 36-Inch pipe cost before it was determined that the installation was a failure, exposing the County to a potential significant financial loss, operational risk of failure to meet a key project target and the inconvenience to residents and business during the failed installation process.

Recommendations:

- We recommend solicitations for future contracts require that contractors demonstrate previous experience in successfully performing all required tasks before selecting the contractor.
- Watershed Management Department should continue to improve oversight of construction projects to ensure that non-performance of the contract is identified in a timely manner and prior to approving substantial payments for disbursement.

3. Assessing the adequacy of supporting documentation provided by the contractor to support invoices/payments as well as determining if there is evidence of review and sign-off by the project manager as to the satisfactory completion of work.

3.1 Assessing the adequacy of supporting documentation provided

Better practices require that invoices for payment should be supported by additional information necessary to justify amounts claimed on the invoice. Furthermore, the GAAP requires that for the percentage completion method, claim for payments (revenue recognition) by the contractor should be supported by a detail break down of costs incurred for the current period relative to total estimated cost for the project. We reviewed the application for pay packages submitted by Kemi. In most cases, they included the following supporting documentation:

- Attestation letter from Project Manager (Kennedy) that confirms review and approval of the percentage of completion, and quantities of material/labor consumed for the billing period;
- Application for pay/invoice and contractor certified summary of work completed/cost incurred for both the Landscaping/resurfacing and Waterline Replacement portions of the project;
- Schedule of cost incurred for current billing period;
- Report on the monthly Utilization of Local Small Business Enterprise (LBSE) and Disadvantaged Business Enterprise (DBE);
- As-built engineering drawings for the project indicating the work done for that period,
- Contractor Certified Payroll;
- Project Schedule indicating stage of completion;
- Invoices for materials consumed during that period as applicable, and
- Dated photographs of the project billing period. (*See Appendix D for sample Construction site photos.*)



We found the documentation provided to be reasonable in supporting claims for the billing periods.

3.2 Assessing the Adequacy of Project Oversight

Better practices for construction management require projects to be supervised and managed on an ongoing basis. Ongoing oversight helps to validate the claims made by the contractor as it relates to costs incurred and percentage of work completed and also supports the final review and approval of applications for pay/ invoices prior to payment.

Review of Application and Certification for Payment

Based on a review of documentation provided and discussions with CIP personnel, Kennedy was contracted by the County to provide ongoing oversight of the Contract performance. Kennedy provided an attestation letter, for each invoice/application for payment submitted by Kemi, indicating their review of the documents and approval for payment by County. The attestation letters were signed-offed by the vice president of Kennedy indicating an appropriate level of accountability. Kennedy forwarded the reviewed invoices and supporting documents to the County's Public Works Department- Transportation Division and Watershed Management Department - CIP. However, we found that the individual pages/sections of application for payment package were not signed/initialed and/or dated to show evidence of review and date of review. Without a date and initial, it is difficult to determine if all pieces of the package were reviewed. There is a potential risk that not all documents in the application of pay package were reviewed/verified, which may result in inaccurate and/or unverified information used to support applications for payments.

Onsite Inspections and Testing

In addition, Kennedy utilized various subcontractors to perform daily and monthly inspections of various aspects of the projects. For example, Accura Engineering and Consulting Services, Inc. conducted tests of the waterline and concrete. They also performed daily inspections and provided documented reports/updates on Kemi's progress, test results, general inspection observations, including photographs, to the County.

Based on discussions, CIP personnel also performed site visits for approximately two hours daily to monitor progress and help verify contract performance reported by Kemi and Kennedy. CIP personnel provide status updates at weekly meetings and a spreadsheet was prepared that highlighted who performed site visits, the date of the visit, and a brief description of the project



status. However, there is an opportunity to provide more detail documentation of CIP personnel's activities and observations. Detailed documentation of observations made directly by the County personnel would provide additional evidence of the County's level of project oversight; help validate contract performance and aid later review of project oversight activities.

Recommendations:

While the current oversight procedures are reasonable, the following opportunities exist for improvement and application to future projects:

- The project manager should sign/initial and date each document/section of the contractor's applications for pay and supporting documentation as evidence that all supporting documents were reviewed.
- County personnel should provide regular documented reports detailing direct inspections and observations, similar to inspection reports provided by Kennedy and its subcontractors. This will provide evidence that can help validate the attestation by both the contractors and the project manager. It will also aid later review of project oversight activities.



Appendix A – Acknowledgements

We appreciate the cooperation and assistance we received from the Watershed Management Department, Capital Improvements Project Division personnel during the course of this review.

Conducted by:

Lavois Campbell
Principal Auditor
Finance Department - Internal Audit Division

Reviewed by:

Cornelia Louis
Deputy Director of Finance
Finance Department - Internal Audit Division



Appendix B – Engagement Objectives and Scope

Engagement Objectives

The primary purpose of the review and this report is to determine the effectiveness and efficiency of the current oversight and monitoring process implemented since the project management was transferred to the CIP division. Specifically our objectives included:

- Assessing adequacy of supporting documentation provided by the contractor to support invoices/payments as well as determining if it shows evidence of review and sign-off by the project manager as to the satisfactory completion of work.
- Assessing if vendor submitted invoices/amounts paid reconcile with the amounts and prices specified in the contract payment schedule.
- Determine if the current method of determining Percentage of Project Completion is appropriate

Engagement Scope

The scope of the review was limited to the project activity/billing periods November 2014 to November 2015 this includes Kemi invoices numbered 14 to 26. This review was not intended to provide assurance as to the numerical accuracy and reasonableness of amounts of consumed labor and material claimed on contractor invoices or the percentage of work completed. This review focused on the evaluation of the processes the County has in place to effectively oversee the Contract and ensure that the Kemi is delivering on contract obligations effectively and efficiently.

Our methodology included consideration of County policies and procedures and relevant better practices; review of Contract, contractor invoices and supporting documentation, and discussions with key County personnel.



Appendix C – Accounting for Long Term Contracts

This appendix provides further information to support observations for objective number one, addressing the concerns of the audit requestor regarding the appropriateness of the method being used by contractor to calculate percentage of project completion.

Although there was never an individual FASB (Financial Accounting Standards Board's Statement) or APB (Accounting Principles Board's Opinion) on the accounting for construction contractors, for decades three publications issued by the AICPA (American Institute of Certified Public Accountants) have constituted GAAP for construction accounting:

1. ARB (Accounting Research Bulletin) No. 45: Long-Term Construction-Type Contracts (1955);⁴
2. SOP (Statement of Position) 81-1: Accounting for Performance of Construction-Type and Certain Production-Type Contracts (1981);⁵
3. AICPA Audit and Accounting Guide, Construction Contractors.⁶

These pronouncements permitted the use of two different accounting methods for the treatment of construction contracts:

1. Percentage of Completion;
2. Completed Contract.

1. Overview of the Percentage of Completion Method⁷

The percentage of completion method involves, as the name implies, the ongoing recognition of revenue and income related to longer-term projects. By doing so, the seller can recognize some gain or loss related to a project in every accounting period in which the project continues to be active. The method works best when it is reasonably possible to estimate the stages of project completion on an ongoing basis, or at least to estimate the remaining costs to complete a project.

Conversely, this method should not be used when there are significant uncertainties about the percentage of completion or the remaining costs to be incurred. The estimating abilities of a contractor should be

⁴ Governmental Accounting Standards Board - <http://www.gasb.org/>

⁵ Financial Accounting Standards Board - <http://www.fasb.org/>

⁶ [AICPA.org](http://www.aicpa.org)

⁷ <http://www.accountingtools.com/percentage-of-completion>



considered sufficient to use the percentage of completion method if it can estimate the minimum total revenue and maximum total cost with sufficient confidence to justify a contract bid.

The ability to create dependable contract estimates may be impaired when there are conditions present that are not normally encountered in the estimating process. Examples of these conditions include a contract that does not appear to be enforceable, there is litigation, or when related properties may be condemned or expropriated. In these situations, use the completed contract method instead.

In essence, the percentage of completion method allows you to recognize as income that percentage of total income that matches the percentage of completion of a project. The percentage of completion may be measured in any of the following ways:

- **Cost-to-cost method.** This is a comparison of the contract cost incurred to date to the total expected contract cost. The cost of items already purchased for a contract but which have not yet been installed should not be included in the determination of the percentage of completion of a project, unless they were specifically produced for the contract. Also, allocate the cost of equipment over the contract period, rather than up-front, unless title to the equipment is being transferred to the customer.
- **Efforts-expended method.** This is the proportion of effort expended to date in comparison to the total effort expected to be expended for the contract. For example, the percentage of completion might be based on direct labor hours, machine hours, or material quantities.
- **Units-of-delivery method.** This is the percentage of units delivered to the buyer to the total number of units to be delivered under the terms of a contract. It should only be used when the contractor produces a number of units to the specifications of a buyer. The recognition is based on:
 - For revenue, the contract price of units delivered
 - For expenses, the costs reasonably allocable to the units delivered

Use the same measurement method for similar types of contracts. Doing so improves the consistency of the percentage of completion results over time.

When the contractor has difficulty deriving the estimated cost to complete a contract, base the recognition of profit on the lowest probable profit, until the profit can be estimated with more accuracy. In cases where it is impractical to estimate any profit, other than to be assured that a loss will not be incurred, assume a zero profit for revenue recognition purposes; this means that revenues and expenses should be recognized in equal amounts until more accurate estimates can be made. This approach is better than



the completed contract method, since there is at least some indication of economic activity that spills over into the income statement prior to project completion.

The steps needed for the percentage of completion method are as follows:

1. Subtract total estimated contract costs from total estimated contract revenues to arrive at the total estimated gross margin.
2. Measure the extent of progress toward completion, using one of the methods described above.
3. Multiply total estimated contract revenue by the estimated completion percentage to arrive at the total amount of revenue that can be recognized.
4. Subtract the contract revenue recognized to date through the preceding period from the total amount of revenue that can be recognized. Recognize the result in the current accounting period.
5. Calculate the cost of earned revenue in the same manner. This means multiplying the same percentage of completion by the total estimated contract cost, and subtracting the amount of cost already recognized to arrive at the cost of earned revenue to be recognized in the current accounting period.

Example of the Percentage of Completion Method

Logger Construction Company is building a maintenance facility on a military base. Logger has thus far accumulated \$4,000,000 of costs related to the project, and billed the customer \$4,500,000. The estimated gross margin on the project is 20%. Therefore, the total of expenses and estimated gross profit for the project is:

$$\$4,000,000 \text{ Expenses} \div (1 - 0.20 \text{ Gross margin}) = \$5,000,000$$

Since this figure is higher than the to-date billings of \$4,500,000, Logger can recognize additional revenue of \$500,000, using the following journal entry:

	<u>Debit</u>	<u>Credit</u>
Unbilled contract receivables	500,000	
Contract revenue earned		500,000

Logger should also recognize a proportional amount of expense to offset the amount of revenue recognized, for which the calculation is:



\$500,000 Additional contract revenue × (1 – 0.20 Gross margin) = \$400,000

2. Completed Contract Method⁸

The completed contract method is used to recognize all of the revenue and profit associated with a project only after the project has been completed. This method is used when there is uncertainty about the collection of funds due from a customer under the terms of a contract.

This method yields the same results as the percentage of completion method, but only after a project has been completed. Prior to completion, this method does not yield any useful information for the reader of a company's financial statements. However, the delay in income recognition allows a business to defer the recognition of related income taxes.

In addition, since revenue and expense recognition only occurs at the end of a project, the timing of revenue recognition can be both delayed and highly irregular. Given these issues, the method should only be used under the following circumstances:

- When it is not possible to derive dependable estimates about the percentage of completion of a project; or
- When there are inherent hazards that may interfere with completion of a project; or
- When contracts are of such a short-term nature that the results reported under the completed contract method and the percentage of completion method would not vary materially.

If a contract is being accounted for under this method, record billings issued and costs incurred on the balance sheet during all periods prior to the completion of the contract, and then shift the entire amount of these billings and costs to the income statement upon completion of the underlying contract. A contract is assumed complete when the remaining costs and risks are insignificant.

If there is an expectation of a loss on a contract, record it at once, even under the completed contract method; do not wait under the end of the contract period to do so.

Example of the Completed Contract Method

Logger Construction Company is building housing for a disaster relief agency, and is doing so at great speed, so that displaced citizens can move in as soon as possible. Logger's management expects that the entire facility will be complete in just two months. Given the short duration of the project, Logger elects

⁸ <http://www.accountingtools.com/completed-contract-method>
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to use the completed contract method. Accordingly, Logger compiles \$650,000 of costs on its balance sheet over the period of the project, and then bills the customer for the entire \$700,000 fee associated with the project, recognizes the \$650,000 of expenses, and recognizes a \$50,000 profit.



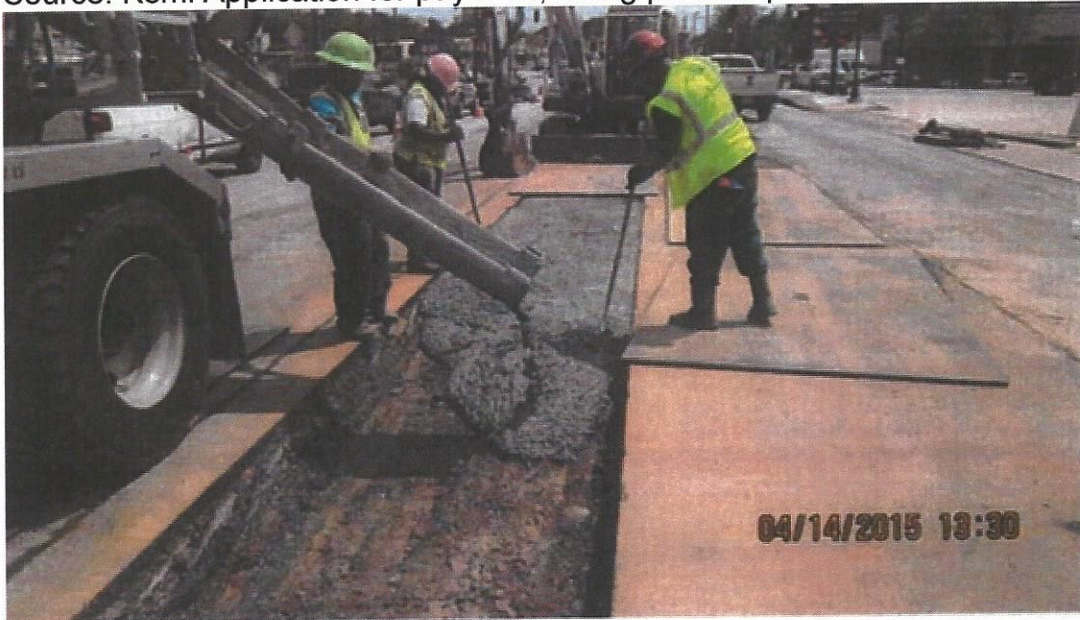
Appendix D – Sample Construction Site Photos

Source: Application for Pay # 16, billing period January 2015





Source: Kemi Application for pay # 19, billing period April 2015





APPENDIX E – DEFINITIONS AND ABBREVIATIONS

Acronyms and Abbreviation

CIP	Capital Improvement Projects
DIA	Division of Internal Audit
LSBE	Local Small Business Enterprise
DBE	Disadvantaged Business Enterprise (DBE)
SR	State Route
LF	Linear Feet
GAAP	General Accepted Accounting Principles



APPENDIX F – DISTRIBUTION LIST

This report has been distributed to the following individuals:

DeKalb County Board of Commissioners

Lee May, Interim Chief Executive Officer

Zachary L. Williams, Chief Operating Officer/ Executive Assistant

Scott A. Towler, Director of Watershed Management

Virginia Rutledge, Financial Consultant

Margaret Britton, Special Projects Manager, Infrastructure Division

Wendell Brown, Senior Consultant, CIP Division, Watershed Management Department

David W. Pelton, Engineering Supervisor, Public Works Department, Transportation Division

Claudette Leak, Assistant to the Chief Operating Officer