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Office of the Inspector General

Miami-Dade County

Cover Memorandum

To: George M. Burgess, County Manager

From: Christopher Mazzella, Inspector General

cc: See Distribution List

Date: August 3, 2005

Re: *OIG FINAL AUDIT REPORT (3 of 3) of WASD Contract S-718, Installation or Repair of Force Mains, Water Mains and Associated Systems for a Two-Year Period with County Option to Renew for Two Additional Years on a Yearly Basis*

Attached please find the Office of the Inspector General's (OIG) FINAL AUDIT REPORT regarding the above-captioned matter. Appended and incorporated to this report is the Water and Sewer Department's (WASD) response to the draft version of this report. WASD's response consists of a three-page cover letter and an appendix which addresses each of the audit's findings. WASD also provided the OIG with twenty-seven separate exhibits comprising of cost breakdowns, analyses, correspondence, copies of permits, drawings, specifications, various bid documents, etc. For purposes of consolidation, the OIG has not included them in the final report package, although WASD's list identifying each of the exhibits is attached.

This audit's three findings and recommendations relate to WASD's change order documentation. There is one finding about inadequate record keeping, a second finding about WASD's approval of over \$532,000 of change order amounts without obtaining adequate cost data and a third finding questioning the need for over \$51,000 in change order amounts. There are three (3) recommendations to this report, one for each finding. This report is the third in a series of three (3) audit reports on Contract S-718. The first two reports addressed pre-bid estimates, bid proposals and awards, and contract administration (Report 1) and project completion dates (Report 2).

WASD, in this response, indicates that it has implemented corrective measures addressing the cited deficiencies, including having expanded training for its employees, issuing new procedures, centralizing its record keeping and document control, and processing contractor claims in a timelier manner. WASD's new procedures cover such areas as project record keeping (daily reports, project schedules, etc.) and contractor cost

detail requirements for proposed change order amounts. The OIG is pleased that WASD has established, and continues to implement, new procedures and processes. Nevertheless, the key to success will be senior-level management's close monitoring and proactive involvement in the process to ensure that its directives are being implemented promptly, completely and effectively.

Notwithstanding WASD's general agreement with our report, the OIG has found it necessary to make numerous comments concerning WASD's detailed response contained in its APPENDIX A to WASD's response. In general, the OIG observes that WASD is attempting to rebut the OIG findings and comments and not to justify the subject change orders. The OIG will comment on some of these efforts, but notes with interest that WASD often does not explain how the original conditions cited in its change order justification memos morphed into other conditions. Our concern is that WASD, rather than to initially present factual, authoritative and verifiable conditions justifying change order needs, quantities or prices, instead prepared different conditions. These conditions, when challenged, were shown to lack the verifiable support that we think necessary to justify the change order. In its response, WASD almost never refers back to the statements that it made in the initial justifications. Instead, it takes some of the facts and "repackages" them into a new setting without attempting to explain what it was originally thinking when it approved the change orders and why that thinking has changed. In fact, several key pieces of documentation provided by WASD, in the form of cost analysis and memos to file, were recently prepared in response to auditor concerns and/or findings. The new documentation accompanying WASD's response still does not satisfactorily resolve our concerns.

As such, the OIG has made no material changes to the draft report. We have, however, added a new section in the Introduction of the report which overall addresses WASD's general response. As WASD has also attached a detailed response to each of the audit findings, the OIG, too, has included a rejoinder analyzing WASD's detailed response. This final report, therefore, consists of the OIG's full audit, WASD's response, including its cover letter, detailed response and exhibit list (collectively as Appendix A), and the OIG's rejoinder analysis entitled OIG Appendix B.

And while the OIG and WASD may disagree on the substance of the audit findings itself, it appears overall from its response that WASD agrees with the OIG's recommendations, and that we are in agreement that WASD has room to improve in its documentation detailing procedures justifying its change orders. Since the inception of this audit, WASD has been diligently improving and memorializing its standard processes. The OIG is also very much aware of the emphasis placed by WASD executive staff on the need for continued professional training of its construction management staff. We are confident that these endeavors will result in visible improvements in the near future.

The OIG appreciates the cooperation and assistance shown by WASD representatives to the OIG staff during the audit. The OIG considers this audit as closed, and, at this time, the OIG is not requesting any required written follow-up.

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INTRODUCTION

Results Summary—Report 3

The Miami-Dade County Office of the Inspector General (OIG) audited the Miami-Dade Water and Sewer Department (WASD) contract titled *Installation or Repair of Force Mains, Water Mains and Associated Systems for a Two-Year Period with County Option to Renew for Two Additional Years on a Yearly Basis, Contract S-718*. Our audit focused on whether WASD S-718 work order files were complete. Specifically, the audit focused on whether WASD files contained adequate and accurate records supporting the justification memos accompanying the change orders issued under the contract.

This report is the third in a series of three (3) audit reports on Contract S-718. Specifically, this third report addresses documenting change orders and includes one finding about inadequate record keeping, another finding about WASD's approval of over \$532,000 of change order amounts without obtaining adequate cost data and a third finding questioning the need for over \$51,000 in change order amounts. This report includes three (3) recommendations, one for each finding.

OIG Comments on WASD Summary Response (an addition to the final report)

The OIG respects the dynamic, challenging nature of the construction environment. One of the forces affecting that environment for WASD, and its contractors, is the Florida Department of Transportation (FDOT) and its requirements for working on state roads, including the process that the parties must follow when submitting a project's maintenance of traffic plan and obtaining a lane closure permit. WASD's response describes some of the issues during this process and its plans to mitigate the problems occurring therein.

Notwithstanding the FDOT's ability to make last minute changes, it appears to the OIG that most of the FDOT-related impacts stated by WASD appeared reasonably foreseeable. The use of flowable fill for trench restoration for work on state roads was a constant requirement, at least under the work orders that we reviewed. Can it be that these were the first few instances of this requirement? We think not. Was it unreasonably foreseeable that the FDOT would require that all lanes of a major thoroughfare be open to traffic during normal business hours? We think not.

WASD's project planning and pre-solicitation work must look at all factors prior to preparing the bid package and contract. This is a time when the intangible value of personal experiences and knowledge of prior contract histories possessed by WASD staff should become tangible. This is the time when WASD should carefully examine its prospective contract terms and conditions. The examination must include analyzing bid item specifications, work

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descriptions and unit price compositions to ensure that they are relevant to the proposed work. WASD should not use standardized contract language when it does not fit specific project conditions. The product of this examination should be a contract strict enough to ensure contractor accountability and price certainty, but flexible enough to encompass changing conditions without placing an undue burden on either party. Requiring prospective contractors to propose two (2) prices for pipe installation is an example. WASD mentions this option in the cover letter to its response. This practice, we believe, will be more manageable and less burdensome than having a separate contingent item for flowable fill, which is another WASD proposed alternative.

In summary, we applaud WASD's attempts to improve upon its processes and practices to make them more efficient, effective and economical. However, we caution WASD that its plan, as commendable as it is, imposes a much greater burden on the Department to have complete and accurate construction drawings and a well-conceived target construction plan and schedule, prior to contract preparation and bid solicitation. Consequently, its personnel must manage the entire process proactively. Otherwise, WASD will face an increasing number of contractor delay claims and commensurate delay claim amounts that would otherwise be avoidable.

Prior Reports

In Report 1, the OIG addressed WASD procedures for work order pre-bid estimates, work order bid proposals and awards, contract documentation and the reporting of final contract expended amounts. We reported that WASD's contract administration and payment processes appear to be deficient in several areas, such as those related to its poor documentation and lack of adequate contract oversight. There were four (4) findings with accompanying recommendations. In general, the OIG recommended that WASD establish formal procedures to ensure that it documents adequately both the work process and the work product and that contract amounts expended, are reported accurately. The OIG issued Report 1 on June 30, 2003.

In Report 2, the OIG addressed WASD procedures for establishing and documenting project completion dates, which are essential in determining whether liquidated damages and/or time extensions are applicable. The OIG recommended to WASD that it should revise its contract's *General Covenants and Conditions*, as pertains to blanket contracts, such as the S-718. In addition, the OIG recommended that WASD establish new administrative and field policies, procedures and practices, which clearly establish a more definable point in time that it can use to justify time extensions or to determine a contractor's liability for liquidated damages. The OIG issued Report 2 on August 3, 2004.

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The OIG considers Report 1 and Report 2 findings and recommendations as resolved, pursuant to having received responsive 90-day Status Reports from WASD. In its responses, WASD stated that it agreed with the OIG recommendations and that its actions would include implementing new procedures and revising its contract *General Covenants and Conditions*. On an on-going basis, WASD has been providing the OIG with copies of its newly implemented written procedures and accompanying forms.

GOVERNING AUTHORITY

In accordance with Section 2-1076 of the Code of Miami-Dade County, the OIG has the authority to review past, present, and proposed County and Public Health Trust programs, accounts, records, contracts and transactions. This authority includes conducting contract audits, regardless of whether the contract contains an OIG random audit fee.

The OIG shall have the power to require reports from the Mayor, County Commissioners, County Manager, County agencies and instrumentalities, County officers and employees and the Public Health Trust and its officers and employees regarding any matter within the jurisdiction of the Inspector General.

TERMS USED IN THIS REPORT

County	Miami-Dade County
CPM	Critical Path Method (construction schedule)
CY	Cubic Yard
FDOT	(State of) Florida Department of Transportation
GCC	(Contract S-718) General Covenants and Conditions
LF	Linear Feet
MOT	Maintenance of Traffic (permit)
OIG	(Miami-Dade County) Office of the Inspector General
<i>Request</i>	<i>Request for Extra Work to be Performed</i> (WASD form)
SY	Square Yard
WASD	(Miami-Dade County) Water and Sewer Department

For purposes of brevity, we are not repeating herein the BACKGROUND section originally presented in Report 1.

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AUDIT APPROACH

In this audit, we focused on examining WASD change orders to determine whether their accompanying justification memos correctly, accurately and completely disclosed the reasons underlying the change orders, as well as the cost and time impacts to the projects. To accomplish this, we reviewed the documentation provided to us by WASD comprising its project files. We reviewed these records to seek out answers to our questions about statements made in the WASD justification memos about the two essential elements to a change order—contractor entitlement and change order quantum (including time extension days). We looked to see that the files contained the contract-required records or other information that support one or the other or both of the necessary elements.

WASD has issued seventeen (17) work orders, under Contract S-718, between June 2000 and December 2003. These work orders comprise the original population from which we have selectively chosen our sampled items for this audit. In addition, we used these work orders, as a basis during our two (2) earlier audits. See SCHEDULE A, attached at the end of this report, for a listing of these 17 work orders.

For this audit, we started with the eleven (11) Contract S-718 work orders, amounting to about \$7.3 million, that WASD had awarded between June 2000 and December 2003 and for which it had issued at least one change order. WASD has issued 33 change orders, amounting to almost \$1.4 million, under these 11 work orders. See following table for a more detailed listing of these work orders and their corresponding change orders.

Table 1: Selected Contract S-718 Work Orders and Change Orders

Work Order Count	S-718 Work Order Number	Work Order Award Amount	Change Orders Issued	Change Order Amounts	Revised Work Order Amounts	% Work Order Amount Increases Due To Change Orders
1	1-B	\$694,250	2	\$33,258	\$727,778	5%
2	4-A	\$277,144	4	\$84,207	\$361,351	30%
3	4-B	\$948,284	5	\$460,194	\$1,408,478	49%
4	5-A	\$679,780	1	\$46,714	\$726,494	7%
5	7-A	\$826,354	3	\$408,671	\$1,235,025	49%
6	8-A	\$996,709	6	\$31,101	\$1,027,810	3%
7	8-B	\$1,256,737	6	\$140,167	\$1,396,904	11%
8	8-C	\$241,200	2	\$27,802	\$269,002	12%
9	8-D	\$114,700	1	\$1,509	\$116,209	1%
10	9-A	\$952,486	1	\$77,291	\$1,029,777	8%
11	10-B	\$264,779	2	\$68,959	\$333,738	26%
Totals		\$7,252,423	33	\$1,380,143	\$8,632,566	19%

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We selected three (3) of the work orders (shaded items) based on their change order dollar amounts and/or change order percent impacts (increases) to their original amounts, for our detailed examination. The selected work orders were Nos. 4-A, 4-B and 7-A. Throughout our fieldwork, we met with WASD personnel from its Construction Contracts, Construction Management and its Contracts Oversight Sections to discuss the contents of the files and the information contained within, as well as to gain an understanding of WASD and contractor record keeping practices.

FINDINGS AND RECOMMENDATIONS

There are three findings for this audit. The first finding discusses the lack of adequate documentation in WASD project files. The second finding relates to WASD's handling of instances when WASD agreed after contract award to a substitute labor, equipment and material for the ones covered by the contractor's bid. The third finding presents the OIG's concerns about the propriety of two (2) of the change orders issued under Work Order 4-A. Table 2 below is a detailed listing of the FINDING amounts sorted by change order and FINDING numbers.

Table 2: FINDING Amounts Sorted by Change Order and FINDING Number

Work Order Number	Change Order Number	Change Order Amounts	Change Order Item Number	FINDING No. 1 Amounts	FINDING No. 2 Amounts	FINDING No. 3 Amounts
S-718-4-A	1	\$1,884	1	\$1,884		
	2	\$45,793	1			\$20,592
			2			\$11,793
			3	\$7,875		
			4	\$5,328		
			5	\$205		
	3	\$17,530	1	\$17,530		
	4	\$19,000	1			\$19,000
<i>Subtotals</i>	<i>\$84,207</i>		<i>\$32,822</i>		<i>\$51,385</i>	
S-718-4-B	1	\$223,778	1	\$51,300		
			2	\$23,168		
			3		\$149,310	
	2	\$4,521	1	\$4,521		
			1		\$105,331	
	3	\$108,931	2	\$3,600		
	4	\$8,000	1	\$8,000		
	5	\$114,965	1	\$114,965		
<i>Subtotals</i>	<i>\$460,195</i>		<i>\$205,554</i>	<i>\$254,641</i>		

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Work Order Number	Change Order Number	Change Order Amounts	Change Order Item Number	FINDING No. 1 Amounts	FINDING No. 2 Amounts	FINDING No. 3 Amounts
S-718-7-A	1	\$287,500	1		\$237,500	
			2	\$50,000		
	2	\$13,585	1	\$13,585		
	3	\$107,586	1	\$66,783		
				2		\$40,803
	<i>Subtotals</i>	\$408,671		\$130,368	\$278,303	
Totals		\$953,073		\$368,744	\$532,944	\$51,385

FINDING No. 1 WASD project files are incomplete and often do not contain adequate and accurate records supporting its change order justification memos. Thus, it was difficult, if not impossible for us to analyze many of the change orders to determine whether they were for necessary extra work and priced reasonably. Further, we could not assess whether authorized contract time extensions were appropriate and realistic.

INTRODUCTION TO FINDING 1

There is some fundamental information that should be included as part of a change order justification memo. First, there should be a statement of the need for the extra work. Second, there should be a statement quantifying the cost of the extra work, both in dollars and time. Support for the justification memo must include authoritative, verifiable records that document the agreed-upon factual circumstances requiring the extra work, and the bases for the quantified monetary and time impacts of such work.¹

In addition, it is best if such records are prepared contemporaneously with the identification, quantification and resolution of the change. An otherwise credibly sounding change order justification memo supported by anything less suffers increasingly when supported by lesser and lesser amounts of authoritative, verifiable documentation that was prepared well after the initiating condition.

¹ Instructions To Bidders, *Definitions*, "Extra Work" shall mean and include all work and materials which are not described in and covered by a price stated in the Proposal, but which during the effective period of the Contract, are found by the Engineer to be desirable or necessary to complete the Project satisfactorily and consistent with the general intention of the Contract Documents.

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Authoritative, verifiable departmental records typically include written directives, inspector reports, and internally prepared cost-benefit and delay analyses of the proposed extra work. Authoritative, verifiable contractor records typically include *Daily Reports*, as-built drawings, cost breakdowns of the proposed change(s), construction photographs, critical path method (CPM) schedules and time impact analyses, meeting minutes and the like. In addition, one “partnered” record—the *Request for Extra Work to be Performed*—requires the collective efforts of both the department and the contractor. This required daily record is to be prepared by the parties to document the resources used to perform the extra work.

Unfortunately, WASD change order files too often show that, at some time during the course of the project there, was a breakdown in the record keeping activities the results of which adversely affected the change order process. As a result, less than adequate records support many of the change orders that we reviewed. We believe that there may have been legitimate field conditions and the like causing the need for the change order items. However, we have many questions and issues not answered or resolved due to incomplete WASD record keeping. Record keeping that, if present, would document the need for the change order items, the quantities and prices of said items and the number of additional days granted by the time extensions.

NEED JUSTIFICATIONS

One type of a key missing record is the “written directive.” There are multiple references in the contract documents stating that the specific authorization for all “extra work” is a departmental written directive. Extra work is paid by a change order. Two of these references are the contract’s GCC, Section 4, *Authority of Engineer* and Section 13, *Extra Work and Payment Therefore*. Section 13 emphasizes the importance of the written directive by the following statement that “[b]efore any extra work is begun, a written order from the Engineer to do the work shall be given to the Contractor. No extra work will be paid for unless ordered in writing.”

The written directive is the necessary record to document adequately the need for the extra work and the authorization for the contractor to perform such extra work. This record may also include a statement concerning the Department’s determination about which party should pay the costs associated with the work. The WASD project files reviewed typically did not contain the written directives authorizing the extra work.

Additionally, we acknowledge that on-site oral authorizations for extra work, by an owner representative, are necessary events occurring during many, if not most construction projects. There will always be the need for the owner to authorize timely the contractor to perform extra work under exigent conditions. WASD, however, must promptly record these oral authorizations and issue them as contract documents. A later prepared document, such as the

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change order justification memo, or a later taken action, such as WASD's acceptance of a contractor submitted cost proposal and the like do not suffice to meet this record keeping standard.

COST JUSTIFICATIONS

WASD project files often contained contractor submitted cost proposals for change order items. There is evidence that WASD personnel reviewed the cost data and adjusted some of the proposed costs some of the time. Notwithstanding that WASD often obtained some contractor cost data, our issue is that such data was often incomplete and WASD's analysis thereof was questionable.

In some instances, WASD failed to obtain any cost data about the contractor's proposed prices prior to approving the changes. In addition, WASD's justification memos often correctly described that the extra work was a change in the contractor's means and methods. However, this description was always not consistent with how WASD had agreed to price the change order. In most cases, WASD priced change orders, as if the contractor was seeking payment for additional costs for extra work.

WASD did not make the distinction between circumstances wherein the contractor was asking for additional costs resulting from WASD authorized extra work versus those circumstances wherein it was seeking replacement costs resulting from a self-initiated request to revise its original construction means and methods. This means that WASD typically did not receive credit or recognition from the contractor of its initial bid prices. The contractor may have submitted some cost data showing its new item cost but it would do so without any indication of how this cost related to its original item cost. WASD never obtained this contractor data.

We believe that had WASD looked at certain of the change order items as replacement items, it would have likely recognized the need to account for the contractor's original item costs. This scenario was present in some notable instances (see FINDING No. 2) when the bases for the change order items were contractor requested changes to its original means and methods. We believe that WASD should have compensated the contractor only for the difference between its original bid and its change order costs. WASD should have required the contractor to first identify and quantify all of its labor, equipment and material costs covered by its bid price and, second, to present comparative data for its proposed change order costs. EXHIBIT 1 (attached) is a good example of a contractor-submitted proposal when it was seeking payment for a change in its means and methods.² WASD should have required no less data from this contractor about its original bid price.

² Work Order 4-B, Change Order 1

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Notwithstanding the above discussion, we believe that even as it relates to change order pricing, the practice of segregating a discrete work activity for separate pricing from what originally was a collection of activities covered by a unit price is unwise. One impact is that contractor is allowed to quantify what was previously an un-quantified amount. This sets up the later scenario when the contractor comes back for more of this amount without asking for additional quantities of what was the main bid item. When a contractor is seeking a change in its means and methods that requires a change in a “sub” item, we think that WASD would be better advised to require the contractor to submit detailed cost breakdowns of both its original bid and proposed change order unit costs for the entire bid item, thus allowing WASD to make an “apples to apples” comparison of the amounts. WASD’s change order then would authorize a change to a bid price, as a whole. Prospectively, WASD may consider requiring the contractor to submit its bid proposal based on unit prices for a primary construction means and methods and another unit price for an alternative means and methods.

In addition, WASD, at least once, approved change order item costs as a lump-sum amount and paid it as a lump-sum amount, notwithstanding that these items had bid-established unit prices. This resulted in a questionable circumstance wherein WASD paid the entire change order amount but did not use the contract’s entire original quantity. (See our discussion beginning on page 20 of this report about Work Order 4-A, Change Order No. 2, Item 2 in FINDING No. 3)

TIME EXTENSION JUSTIFICATIONS

Another example of missing records relates to instances wherein WASD grants the contractor a time extension. GCC Section 13 clearly states that non-compensable time extensions will be granted only if the change order work affects the project’s critical path.³ The Specifications, Section 3.01 states “[t]he Contractor shall prepare on electronic media, a critical path method (CPM) [schedule] with emphasis made to construction time and completion.”⁴

In addition, Specifications Section 5.00.3, subsection 4 L, states:

If the ENGINEER finds that the CONTRACTOR is entitled to any extension of the contract completion date, the ENGINEER’S determination as to the

³ A “non-compensable” time extension is one wherein the contractor is not reimbursed or otherwise compensated for its overhead, profit, home office expenses and the like incurred during the stated delay period.

⁴ The cited Specifications sections are taken from those issued for Work Order 4-A. Their content is identical or similar to the Specifications issued for the other work orders, although their numerical reference may differ.

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total number of days extension shall be based upon the current construction progress schedule and all data relevant to the extension.

WASD's change order form itself states:

Additional time may be granted for impact to the critical path schedule of the project . . . A time extension is provided for additional work performed outside the scope of the original Contract which affects the critical path schedule of the contracted work

The references clearly speak to the need for WASD to have in its files the various construction schedules issued during the period of performance. Most importantly, project files should contain comparative data and analyses highlighting the schedule changes necessitated by the extra work. Such data would show what the contractor had planned, in the way of activities, work sequences and durations and what will be its revised plan (revised activities, revised work sequences and revised durations). A revised schedule in these circumstances is required by the Specifications, Section 5.00.3, Subsection 4, *Progress Meetings*.

WASD is obligated by the contract to require this information and other relevant schedule data from the contractor. WASD needs this type of authoritative, verifiable information to support adequately its determination that the extra work affected the project's critical path. WASD project files for two out of the three work orders (Nos. 4-A and 4-B) contained CPM schedules for the project. However, these two files and the third file with no CPM schedule did not contain adequate schedule data and analysis. These records should show the adverse impact—delays—to the project's critical path, in such a manner that connects or correlates the raw data to the actual number of time extension days mentioned in the justification memos for the change orders.

WASD granted a collective total of 280.5 days time extensions for the three work orders based on minimal, if any authoritative schedule data and analysis. See the following table for a listing, by change order, of the total number of days of time extensions granted by WASD. We point out that in two out of the three work orders, the total number of time extension days granted by WASD exceeded the contracts' original periods of performance.

Table 3 on the following page shows these time extensions.

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Table 3: Work Order Nos. 4-A, 4-B and 7-A Time Extensions

Work Order No.	Work Order Amount Awarded	Original Completion Durations	Change Order Time Extensions
S-718-4 A	\$277,144	180 days	21.0 days
S-718-4 B	\$948,284	120 days	124.0 days
S-718-7 A*	\$826,354	120 days	135.5 days
Totals	\$2,051,782	420 days	280.5 days

* No CPM Schedule

OTHER RECORD KEEPING

Request for Extra Work to be Performed

In addition to the above-described records, the contract documents prescribe a specific record keeping requirement on how to document the quantity work. See GCC, Section 4, *Authority of Engineer* and Section 13, *Extra Work and Payment Therefore*. The record keeping requirement for documenting extra work is straightforward but stringent.

The requirement is that the contractor and the owner representative/ inspector prepare a daily record of the extra work and that both parties sign such record. WASD has a standard form just for this purpose titled *Request for Extra Work to be Performed*. The completed *Request* forms document the extra work performed and the quantity of the labor, equipment and materials used.

The *Request* is not a substitute document for a written directive. The *Request* is not a justification of the need for the extra work. The *Request* is not a directive to perform extra work. The *Request* is not a statement on who is responsible for paying for such work. The *Request* is simply a daily “time and materials” record of the resources needed to complete the extra work.

WASD project files typically do not contain the *Request* forms detailing the labor, equipment and materials used to complete the extra work. *Request* forms were completed for only one (1) change order item out of the twenty (20) change order items comprising the eleven (11) change orders that we reviewed.

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Daily Reports

An industry-wide record keeping standard is the requirement for contractor-prepared *Daily Reports*. These *Reports* are required record keeping under Specifications, Section 5.003, Subsection 5A. The contractor shall:

Prepare and submit to the Engineer at regular intervals not exceeding weekly intervals, a daily report recording information concerning events at the site. The daily reports shall contain the following and any other significant information . . . (4) Meetings and significant decisions. (5) Stoppages, delays, shortages, losses. (6) Emergency procedures, field orders. (7) Other events or activities. (Emphasis added)

Contractor-prepared *Daily Reports* were not contained in WASD project files. We believe that after a reading of the cited contract provision, it is understandable why *Daily Reports* are, arguably, one of the most critical records tracking job progress that will be prepared by either party. This is not to say that the contractors did not prepare such reports. It is their absence from WASD files that is a matter of grave concern. We believe that the nonexistence of *Daily Reports* is reason enough alone for WASD to raise serious questions about, if not outright reject, a contractor's change order request.

In addition to contractor-prepared daily reports, WASD has its inspectors prepare their own daily reports. These reports were part of WASD project files. Such a report is an invaluable tool operating as a check and balance on the contractor's construction and record keeping activities. Often, however, these records did not describe or otherwise note those conditions or instances cited in the justification memos as causing the extra work. In addition, these reports often did not mention or otherwise note that the contractor was performing extra work that day. WASD inspector reports are not a replacement for contractor *Daily Reports*.

Accurate, complete and timely daily reports prepared by both the contractor and inspector are key records that fulfill WASD's need and obligation to have authoritative records about field conditions and activities. This need exists regardless of whether there is extra work. We are not directly challenging the credibility or professionalism of either the contractors or WASD and its representatives. However, the presence of these daily records would much enhance the credibility and professionalism of their statements about the need, cost and impact of extra work.

Contractor Extra Work Certification

One last key record that we believe would provide greater assurance as to the authenticity of the contractor's request for a change order is prescribed by GCC, Section 13, that states:

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The Contractor is required to include a statement certifying that this claim [for extra work] is justified and that it is consistent with the Plans and Specifications and he has reviewed all the costs for extra work and has found them to be accurate, fair and reasonable. If extra work is ordered, it shall be included in the Contractor's monthly estimate when Allowance Account funds are available in the Contract for the work actually done. If no allowance account funds are available a change order will be issued.

WASD project files did not include such contractor certifications.

CHANGE ORDER APPROVALS

Change order approvals are not record keeping, per se. They are, however, a major record that must be kept because of what they stand for. Those individuals holding certain senior-level positions have been duly authorized to approve change orders—Chief, Construction Management Section, Chief, Engineering Division, and Assistant Director, Engineering. These are the individuals who have a designated responsibility for ensuring that some basic conditions are met before they approve a change order, to ensure that County resources are not misspent.

We have discussed in some detail in this FINDING, why we believe that support for the justification memo must include authoritative, verifiable records that document the agreed-upon factual circumstances requiring the extra work, and the bases for the quantified monetary and time impacts of such work. The adequacy of the records to meet this standard ultimately rests with these individuals. Their approval signatures not only signify that they believe that this condition has been met but, also, that all other County and departmental policies and procedures have been followed. We see their signatures on all change orders but we did not see that WASD files met the desired condition.

In our FINDING 2 and FINDING 3, we describe certain problematic conditions in more detail. However, both these FINDINGS have as a significant condition inadequate record keeping that precluded a full, thorough analysis of the issues. We believe that there are adequate contract provisions and well-intentioned departmental employees that can, when properly used and directed, produce satisfactory results. This providing of necessary direction, too, is the responsibility of these same individuals and it is a default condition underlying their approval signatures.

Management should challenge the decision-making process, in order to ensure that those recommendations that reach their desk are necessary, serve the public's interest and are adequately supported. Such a practice would go a long way to eliminating most, if not all of the deficiencies that we noted during our audit.

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CONCLUSION TO FINDING 1

This finding describes key record keeping requirements. It is a “global” finding of sorts, in that it applies to all reviewed WASD files. We observed that all of the reviewed WASD files never were completely void of all the described records. However, we also observed that the collective body of records, in these files documenting WASD change orders was too often too sparse.

It is a defining moment in WASD’s project management and contract administration activities when it negotiates change order entitlement and quantum. Accordingly, WASD should take every existing opportunity to avail itself of the contract’s terms and conditions to obtain adequate, accurate and timely information prior to negotiating a change order. WASD should take these steps to ensure that it will be approving a necessary change at a reasonable price and, if necessary, authorizing a reasonable contract time extension.

WASD’s S-718 contract incorporates prudent business practices by requiring the aforementioned records. Enforcing these requirements—both on itself and on the contractor—is critically important to project success and cost control. In our earlier issued Final Audit Report 2 (page 6) on this Contract S-718, the OIG stated that “WASD should not apply lesser documentation standards to work orders issued under this blanket contract that are processed in-house by WASD.” We recognize that these change orders, processed under the blanket contract, are not submitted to the Board of County Commissioners for approval. Nevertheless, the OIG would expect that they are documented, processed and are subject to the same amount of scrutiny and review as those change orders/time extension requests that are submitted to the Board of County Commissioners.

Adequate record keeping practices must become ingrained in WASD’s project management culture and implemented by WASD and contractor alike for every contract, every work order, and every change order. We add to this affirmation, another one concerning the importance of have meaningful signature approvals on all change orders.

Recommendation No. 1

WASD should adopt stricter record keeping practices for itself and enforce contractual record keeping requirements on its contractors in order to:

- Provide a standardized tool for educating its employees and contractor representatives about the “best way” for documenting project activities, which then should also greatly improve both the quantity and quality of the records that may be needed later to adequately justify change order need, item quantities and prices, as well as time extensions; and

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- Assure that the parties comply with contract provisions, help eliminate unnecessary costs and safeguard County resources.

FINDING No. 2 WASD project files do not include any schedules or cost breakdowns comparing the original bid item costs and the costs of substituted materials and/or changes in construction methods. Recovery of “lost savings” due to material substitution or change in construction methods is thwarted by the lack of adequate documentation.

INTRODUCTION TO FINDING 2

The most egregious examples of item substitutions occurred when WASD agreed to a change of backfill material. Backfill is an included item and cost component of larger work units, such as pipe, fire hydrant and water service installations. There are four (4) instances where WASD agreed to change out conventional backfill for flowable fill backfill at a cost of almost \$533,000. (See following table.) This is WASD’s additional cost because it did not receive any credit for the conventional backfill and related labor and equipment costs included in the work order’s original unit prices. WASD touts flowable fill as labor and time saving alternative to the use of conventional backfill, in its justification memos. However, WASD never obtained any credit for such savings when it agreed to substitute the one for the other.

The cost for flowable fill and additional related labor and equipment represents approximately sixty-one (61) percent of the total amount of all change orders issued under Work Order Nos. 4-B and 7-A.

Table 4: Flowable Fill Change Order Item Nos. and Amounts

Work Order No.	Change Order No.	Total Change Order Amount	Flowable Fill Amount	Flowable Fill % of the Total
S-718-4-B	1	\$223,778	\$149,310	
	3	\$108,931	\$105,331	
	Others	\$127,486	\$ - 0 -	
	<i>Subtotal</i>	<i>\$460,195</i>	<i>\$254,641</i>	<i>55%</i>
S-718-7-A	1	\$287,500	\$237,500	
	3	\$107,586	\$40,803	
	Others	\$13,585	\$ - 0 -	
	<i>Subtotals</i>	<i>\$408,671</i>	<i>\$278,303</i>	<i>68%</i>
Totals		\$868,866	\$532,944	61%

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In the four cited instances, WASD justifies the switch by the contractor to flowable fill by stating that the project or the contractor was behind schedule or that there was a need to expedite the project or some combination thereof. Notwithstanding whether WASD had adequately justified the need for the change to flowable fill, there is no information about the conventional backfill and related costs that the contractor included in its original bid.

The *Specifications* for each of these two (2) work orders state, in part:

The price per foot for installing pipe . . . shall be full compensation for the completed pipeline, ready for service, and shall include, but not be limited to . . . placing and compacting backfill

WASD's justification memos ignore the cited contract pricing convention and bid item description of includable work that is the basis for the unit price for pipe installation required by these work orders. Instead, WASD's justification memos imply that flowable fill backfill is a separate, stand-alone item. WASD was justifying an interpretation of the contract wherein backfilling is no longer an activity includable in the contract's comprehensive listing of pipe installation activities and covered by one unit price. In addition, there is similar language used describing the work activities covering fire hydrant and water service connections.

CONCLUSION TO FINDING 2

We believe that WASD was obligated to obtain from the contractor cost breakdowns both for its original bid price and for its proposed change order price prior to approving this change. We believe it significant that there are no WASD records showing a cost-benefit analysis between using flowable fill or conventional backfill. There are no records of whether there was true need to save time or to expedite construction and, if so, how much time the contractor would be saving by using flowable fill. As a result, WASD did not have adequate documentation supporting that it made an informed decision about whether this was a reasonable, justified change, albeit for what appears to be a significantly more costly item, or a contractor "bait and switch" tactic. This means that the contractor used a lower cost alternative to win the work order award and then submitted a higher costing alternative (and likely more profitable one, too) after winning the award.

Recommendation No. 2 (see page 8 previously referencing same).

- WASD should require contractors to provide complete cost data comparing their bid prices with their proposed prices, including necessary cost breakdowns showing labor, equipment and material components, when they request changes to their original construction means and methods.

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Alternatively

- WASD may consider requiring the contractor to submit its bid proposal based on unit prices for a primary construction means and methods (e.g., using standard backfill) and another unit price for an alternative means and methods (e.g., using flowable fill).

FINDING No. 3 WASD approved over \$51,000 in change order amounts that have questionable need bases.

INTRODUCTION TO FINDING 3

WASD awarded Work Order No. 4-A, titled *Installation of 8-inch Ductile Iron Force Main SL 0817 From S.W. 102 Avenue (P.S. 505) To S.W. 98 Court and S.W. 74 Street* to Southeastern Engineering Contractors, Inc., on October 6, 2000. WASD issued the project's *Notice to Proceed*, on October 31, 2000, with an effective date of November 28, 2000. The original work order award totaled \$277,144. WASD approved four (4) change orders, totaling \$84,207, under this work order, for a total revised work order amount of \$361,351, which is a thirty (30) percent increase in the work order amount. The following table shows change order totals, individual item amounts and time extensions granted, as well as the OIG's questioned amounts.

Table 5: Work Order 4-A Change Orders and Questioned Amounts

Change Order No.	Amounts Reviewed	Change Order Item No.	Item Amounts	FINDING No. 3 Questioned Amounts	Time Extensions
1	\$1,884	1	\$1,884		
2	\$45,793	1	\$20,592	\$20,592	
		2	\$11,793	\$11,793	
		3	\$7,875		
		4	\$5,328		
		5	\$205		
3	\$17,530	1	\$17,530		5 days
4	\$19,000	1	\$19,000	\$19,000	16 days
Totals	\$84,207		\$84,207	\$51,385	21 days

The cited change orders are for additional item quantities and costs or time extensions, for which we believe WASD project files, do not support the change order written justifications. We have many questions and issues that could not be or that were unable to be answered or resolved due to incomplete WASD records. If it had been present, these records would have documented the need for change order work items, the increased quantities of said items, the

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agreed upon price for the items and the time extensions granted. In the absence of such documentation, the OIG questions \$51,385 of change order costs authorized under Change Order Nos. 2 and 4.

Change Order No. 2, Item 1

The change order amount was \$20,592. WASD stated in its justification memo (See EXHIBIT 2, Item 1) that FDOT Permit No. 069-00 (See EXHIBIT 3, paragraph 5) required that the trench containing the 8-inch ductile iron force main be restored (i.e., backfilled) using flowable fill. WASD's justification memo continues by stating that "[T]he estimated length of the pipe required for this project was approximately 907 linear feet" and that this length would need restoring by approximately 537 cubic yards of flowable fill. The original work order contingency bid item estimated quantity, however, only provided for 100 cubic yards (CY) of flowable fill. Hence, the alleged need for the "remaining" 400 plus CY of flowable fill.

The justification memo prepared by WASD misleads the reader into thinking: (a) that the FDOT permit somehow caused the contractor to change its planned construction means and methods; (b) that flowable fill, as a backfill material, should be a stand-alone, separately priced item; (c) that there was 907 linear feet of pipe not covered by the work order's original pricing; and (d) that the "remaining" flowable fill's unit price was \$105 per cubic yard (CY) and, in total, would cost \$20,592.

(a) that the FDOT permit somehow caused the contractor to change its planned construction means and methods

FDOT's permit, issued March 13, 2000, states "[F]lowable fill . . . is to be used on paved areas from one (1) foot above the permitted installation to the bottom of the existing asphalt" WASD included a copy of this permit in its solicitation package that it issued to this and the other contractors when soliciting their bids for the subject project. Thus, the contractor was obligated to use flowable fill as the required construction backfill material when working on the state road covered by the FDOT permit.

As presented in the WASD's justification memo, however, the flowable fill requirement would appear to be a subsequent event to the work order bid and award. This is not the case. WASD's justification memo misrepresents the facts and reflects questionable logic. Accordingly, we question WASD's determination of the need for this item.

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(b) that flowable fill, as a backfill material, should be a stand-alone, separately priced item

In the work order solicitation package are *Specifications*, Section 6.05 *COMPACTED BACKFILL* (page 42), that state, in part:

The Contractor shall backfill all trenches and other excavations made in the process of installing pipe. The cost of all backfilling shall be included in the price bid under the various items.

Work Order *Specifications*, Section 8.00 *MEASUREMENT AND PAYMENT* (page 64) description for (bid) item numbers 1 and 2, states, in part:

The price per foot of installing pipe and fittings shall be full compensation for the completed pipeline, ready for service, and shall include, but not be limited to . . . placing and compacting backfill, furnishing additional suitable backfill material, if required

Work Order *Specifications*, Sections 6.05 and 8.00 require that the contractor include in its pipe installation cost, a cost component for backfill. In this case, flowable fill was the required backfill. WASD's justification memo ignores the cited contract pricing convention and bid item description of includable work that is the basis for the unit price for pipe installation required by this work order. Instead, WASD's justification memo treats flowable fill backfill as a separate, stand-alone item. WASD was justifying an interpretation of the contract wherein backfilling is no longer an activity includable in the contract's comprehensive listing of pipe installation activities and covered by one unit price.

In addition, WASD's justification memo does not mention that the cited work order flowable fill item (contingent item No. 10) is not a backfill item, as presented in the original work order. In the original bid proposal, this item was for use to construct a base for permanent paving repairs, "if ordered by the Engineer." This explains the work order's low estimated flowable fill quantity—it takes considerably less flowable fill to construct a paving base—a thickness measured in inches—than it does for backfilling a trench—a thickness measured in feet.

(c) that there was 907 linear feet of pipe not covered by the work order's original pricing

The project description shown on the first page of this project's INVITATION TO PREQUALIFIED CONTRACTORS TO QUOTE states:

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The Project consists of furnishing and installing approximately 2340 linear feet of 8-inch ductile iron force main . . . The Project also includes approximately 324 linear feet of 12-inch D.I. pipe

WASD's justification memo, which states, "[T]he estimated length of the pipe required for this project was approximately 907 linear feet" is misleading because it refers only to that length of pipe, for this project, installed under the state road covered by the FDOT permit. The implication appears to be that, for some unstated reason, the original work scope, work item descriptions and corresponding bid prices did not apply to this length of pipe. This position is not supported by a reasonable interpretation of the contract.

(d) that the "remaining" flowable fill's unit price was \$105 per cubic yard (CY) and, in total, would cost \$20,592

Work order bid item 1 (installing 2,340 LF of 8-inch pipe) and bid item 2 (installing 324 LF of 12-inch pipe) and their estimated quantities shown in the RFP reflected the stated pipe lengths and sizes. The contractor's prices were \$35 per LF and \$39 per LF, respectively. Included in these unit prices but not separately shown, is the contractor's cost for providing all necessary backfill for the project (see above sections).

Other work order item descriptions, estimated quantities and contractor price quotes included those for contingency bid item 10, flowable fill, 100 cubic yard (CY) at \$65 per CY (total \$6,500) and bid item 11, limerock base, 1,778 square yards (SY) at \$16 per SY (total \$28,448). The exact description for contingency bid item No. 10 is "For constructing flowable fill base for State Road permanent paving repairs, if ordered by the Engineer" and for item No. 11 is "For constructing limerock base for Type "II" permanent paving repairs" There is no separate, stand-alone bid item for any kind of backfill, whether it be flowable fill or some other material.

The WASD justification memo statement that, "The Department renegotiated the price for the remaining flowable fill of \$105.00 per cubic yard. . . The total cost for the remaining flowable fill will be \$20,592.00" does not correctly present the actual unit and total costs for the remaining flowable fill. The statements that WASD renegotiated the price for the remaining flowable fill of \$105 per cubic yard and that the total cost is \$20,592 are misleading.

In fact, the net price for all flowable fill for the entire project is \$105 per CY. The price for the change order, i.e., "remaining" flowable fill is actually \$114.31 per CY. WASD records do not document how it "renegotiated" a \$40 per CY price increase (60 percent) in the work order's original bid price for this item (originally \$65 per CY and renegotiated to \$105 per CY), rather than a price decrease as warranted under the contract. The GCC's Article 25, *Scope Of Payment*, states:

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Further, once any unit price item, either major or minor exceeds twenty (20) percent above the quantity stated in the Proposal, the Department will request that the Contractor negotiate a mutually agreeable decrease in the unit price for said item. If necessary, this may result in a negotiated stepped-price structure leading to lesser unit costs as quantities increase (Emphasis added)

WASD's idea of renegotiation appears to be based on the fact that the contractor had originally submitted a price of \$132.83 per CY and that, based on this price, it "renegotiated" a savings of \$27.83 per CY. This price was submitted for this contractor's change order work under Work Order 4-B. This "savings" was misleading when one considers that the "renegotiated" price was \$40 per CY higher than the bid price.

The total cost for the "remaining" flowable fill was \$49,040 and not the \$20,592 stated in the written justification. The larger amount includes the total bid prices for items 10 and 11 totaling \$34,948, plus the cost of the additional flowable fill. WASD justified using this item's amount because the "limerock base for Type II permanent paving repairs will not be used as originally intended" The requested \$20,592 is, in fact, a "plug" number derived by multiplying the revised quantity of 529 CY times \$105 per CY. WASD then subtracted from this product the sum of the work order's total flowable fill base amount of \$6,500 (item 10) and the total limerock base amount of \$28,448 (item 11), totaling \$34,948.⁵

WASD acknowledges, in the justification memo, that it is using funds from one item to pay for another but ignores this fact in its concluding statement, "The total cost for the remaining flowable fill will be \$20,592." A more accurate statement would have been "The total additional cost . . . will be \$20,592." There is nothing inherently wrong with WASD reallocating funds, by way of an approved change order, within a work order from an unused (or under used) item to another, but it should accurately state the conditions causing the change and the impact of this reallocation in its justification memo.

In summary, there is no justification, under the contract, in principle or in good business practice, much less in the facts documented in WASD files to justify the need for the item itself, the quantity of the item requested or for the item price increase. Therefore, the OIG questions the need for this change order item and its approved amount of \$20,592.

Change Order No. 2, Item 2

The work order amount is \$11,793. WASD's justification memo (EXHIBIT 4, Item 2), which states "[T]his contract is part of the Consent Decree Settlement/Agreement which was due to be in service by May 1, 2001. In order to avoid impending DERM penalties, the Department

⁵ (529 CY x \$105/CY) - (\$6,500 + \$28,448) = \$20,597 (\$5 rounding)

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ordered the Contractor to accelerate the progress of the project.” Accelerating the project required the Contractor to alter its planned construction activities, thereby increasing the costs of material and labor.”

Notwithstanding this apparent warning, WASD project files do not contain any documentation supporting the justification memo statements that there was a May 1, 2001 deadline and that there were “impending DERM” (Department of Environmental Resources Management) penalties. Nevertheless, WASD agreed to increase the Contractor’s bid price for three unit-priced items by fifty (50) percent. In addition, there are no documents, such as a written directive, *Daily Reports*, construction schedules and like supporting the conditions described in the justification memo.

There was a WASD/DERM agreement. This agreement was related to a WASD agreement with the federal Environmental Protection Agency (EPA). Under the EPA agreement, WASD needed to complete a specified project by December 31, 2002. WASD issued this work order for work on this companion project that was part of WASD’s agreement with DERM. As a result, this project was tied to the EPA project. This project needed completion so that the EPA project would be on-line in time to meet the EPA agreement deadline. Thus, this project also would need to have a completion date prior to December 31, 2002. In early 2001, the subject project started and was certified as complete on July 9, 2001, or over seventeen (17) months before the December 2002 deadline.

In summary, there are no documents in the WASD project file quantifying how much time was to be saved and how many dollars of DERM penalties were to be avoided. This is understandable because there was no need to accelerate work order performance to meet what was a fictitious early completion deadline.

Notwithstanding that WASD records fail to document the need for this change order, the OIG has other questions surrounding WASD’s justification of the contractor’s increased bid item prices and amounts. For example, WASD files do not have documentation showing how it arrived at the change order amount for these items, totaling \$11,793. WASD negotiated this amount as a lump sum. Typically, the contract’s unit price items stay as unit priced items throughout the contract. This means that the total costs of such items are shown as the products of a given unit of measurement, such as square yards of material, multiplied by a unit price. Not in this case. In this case, there is no apparent correlation between the increased unit prices, the stated quantities and the agreed-upon lump-sum amount. WASD does not include in its justification memo or reflect in its files why it changed three unit price items into one lump-sum amount, as the payment basis for this change order.

In addition, we note that the contractor, in correspondence to WASD justifying this change orders states, “[T]he original quantities for roadway restoration items in our contract were

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reduced considerably. As a result, our present unit prices on these items are not profitable.” (See EXHIBIT 5) Notwithstanding the contractor’s alleged plight, Article 8, *Estimated Quantities*, of the *Invitation to Bid*, states:

The increase or decrease of any quantity shall not be regarded as grounds for an increase in the unit price or in the time allowed for the completion of the work

We take this condition to mean that the contractor is obligated to provide the stated item at the contract price regardless of the actual quantities used during construction, even if the usage is only one item. We believe that the contractor’s argument for price increases was totally without merit.

In addition, we take issue with why WASD paid this change order as a lump sum. The original total cost to supply the estimated quantities for the three (3) bid items mentioned in the contractor’s change order request was at \$49,824. WASD authorized progress payments, in accordance with the contract’s payment terms, to the contractor for these three (3) items totaling only \$17,952. WASD did not pay the contractor the remaining balances, totaling \$31,872. When the proposed (and paid) change order item totaling \$11,793 is added to the prior amount paid (\$17,963), however, the final cost for the three items was \$29,745. The \$11,793 was a negotiated lump-sum amount and not the product of quantity amounts times unit prices, as had been the contract’s original price format. See the following page for a more detailed breakdown of the original and change order costs.

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Table 6: Original and Change Order Unit Prices and Total Amounts Paid Analysis

Original Work Order	Original Estimated Quantity	Original Bid Unit Price	Original Total Item Amount	Paid Quantity	Paid Percentages	Paid Amounts
Bid Item 8	1,330 SY	\$16/SY	\$21,280	541 SY	40.7%	\$8,656
<i>For constructing limerock base for Type "I" permanent paving repairs</i>						
Bid Item 9	2,090 SY	\$8/SY	\$16,720	846 SY	40.5%	\$6,768
<i>For constructing asphaltic concrete surface course for Type "I" permanent paving repairs</i>						
Bid Item 12	1,478 SY	\$8/SY	\$11,824	316 SY	21.4%	\$2,528
<i>For constructing asphaltic concrete surface course for Type "II" permanent paving repairs</i>						
Subtotals			\$49,824	1,703 SY		\$17,952
	4,898 SY	Avg. \$/SY	\$10.17/SY	(\$49,824 ÷ 4,898 SY)		
Negotiated Change Order	Negotiated Quantity	Negotiated Unit Price	Negotiated Lump-Sum Amount			
Bid Item 8		\$24/SY				
Bid Item 9		\$12/SY				
Bid Item 12		\$12/SY				
Subtotals			\$11,793		100.0%	\$11,793
Totals						\$29,745
			(\$29,745 ÷ 1,703 SY)	1,703 SY	Avg. \$/SY	\$17.47/SY

Additional context to this total amount—albeit that it is less than the work order estimated amount for these items—is that the contractor ended up providing anywhere from twenty-one (21) percent to forty-one (41) percent of the original work order total quantities but WASD ended up paying out approximately sixty (60) percent of the original total work order amount (\$29,745 ÷ \$49,824). This disparate variance results from the fact that WASD paid the change order amount as a “lump-sum” without regards to the units actually used in the construction, notwithstanding that this should have been a unit-priced item payable on an as-used basis. We found no justification for WASD changing the pricing convention for these three items from unit prices to one lump-sum amount.

Another way to show the impact of this change order item is to compute an average unit price for the collective items “as bid” and compare that price to the average unit price for the collective items “as paid.” (See above table.) The computed average “as bid” unit price is approximately \$10.17 per SY. The computed average “as paid” unit price is approximately \$17.47 per SY. This approximation shows that the contractor received a benefit of over \$7 per SY above its bid prices because of how WASD handled this change order. Notwithstanding the relatively small quantities of material involved (1,703 SY) and the total amount (\$29,745), WASD should not use this practice when pricing and paying change orders for otherwise unit price items.

OFFICE OF THE INSPECTOR GENERAL
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WASD written justification appears to be nothing more than an attempt to cover up the request from the contractor for more money under the pretext that it was required to accelerate the project. Although the final cost of these change order items were for less money than originally bid, it does not justify WASD's actions in agreeing to pay an additional lump-sum amount for the cited unit priced items. WASD's justifying these alleged contractor cost increases to help it maintain its profitability is an unsupportable business decision, in light of the surrounding circumstances. Therefore, the OIG questions the need for this change order item and its approved amount of \$11,793.

Change Order No. 4, Item 1

The change order is for \$19,000 and grants a 16-day time extension. WASD's written justification, in part states "The process to obtain the [MOT] approval caused the delay in construction, thereby forcing the Contractor to demobilize for 16 days" (see EXHIBIT 6). The contractor states in a letter to WASD, dated December 12, 2001 that it was "forced to demobilize" for a sixteen (16) day period (March 9-25, 2001) because the FDOT delayed in issuing an approved MOT. WASD files show that this delay actually resulted because the contractor did not submit an approvable maintenance of traffic permit (MOT) application.

We note that project records show that the contractor failed to submit an approvable MOT application to the Florida Department of Transportation (FDOT). The contractor, in its original MOT application, gave an estimated start date for its work on State Road 986. However, FDOT approved the MOT "pending revised M.O.T. plans" to be submitted by the contractor. Thus, the contractor could not begin working on the date that it had planned. The contractor filed a revised MOT that FDOT approved and that reflected a new start date. The new date was over two (2) weeks later than the original start date.

A WASD letter, dated March 15, 2001 (See EXHIBIT 7) to the contractor on this issue explains a chronology of events and the contractor's responsibilities. WASD clearly stated its position on this matter at letter's end:

As the Contractor on the above referenced Contract you are responsible to submit a correct M.O.T. plan that complies with F.D.O.T. Standards . . . At this point the Department assumes no responsibility for delays, lost production, or additional cost for demobilization and will not consider any claims regarding the M.O.T.

Apparently, something happened at WASD for it to change its position. Project records do not document this change. We note that this letter was dated contemporaneous with the events in question—March 15, 2001—but that Change Order No. 4 was not prepared until nine months later in January 2002 and not approved until a year later in March 2002.

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Lastly, the change order clearly states that it is an authorization for a non-compensable sixteen (16) day time extension. Notwithstanding, the justification memo statement is that “the Contractor agreed to accept \$19,000.00 as a lump sum compensation for all delays caused by FDOT on this portion of the project.” WASD records show that it paid the contractor, for among other items, overhead costs for 16 days @ \$700/day, totaling \$11,200. This clearly indicates that WASD issued a compensable change order. GCC, Section 13 allows for compensable time extensions but only for costs that are the contractor’s actual labor and equipment stand-by costs. In addition, the Department must provide the contractor with written authorization to standby and both parties must sign a daily record of the stand-by costs.

At any rate, the OIG agrees with WASD’s original position that the contractor was at fault for its additional costs and delay days and that WASD has no responsibility to the contractor for those costs or days. The contractor did not file an approvable MOT causing it to resubmit a revised MOT to FDOT. The resubmittal process was a delaying factor to the onset of construction activities on the state road. Thus, the contractor’s additional costs for the resultant work stoppage are its responsibility. Therefore, the OIG questions the need for this \$19,000 change order item and the 16-day time extension in its entirety.

CONCLUSION TO FINDING 3

The major condition common to these change orders is an obvious disconnect between the documented work conditions and contract requirements with the statements made by WASD in its justification memos for these change orders. It was as if there were two (2) different projects—the one actually taking place and a second one existing in the justification memos. Although each of the change orders is a stand-alone transaction, they all take place in a context of one project. The record keeping required for each change order is only a subset of that required for the project. Such record keeping must result in files containing adequate, accurate and timely information. Moreover, there has to be a consistency between that which is being documented and that which is being reported and acted on, otherwise County funds will be misspent.

Recommendation No. 3

WASD should train its employees in order to educate them about the need to analyze contractor requests for change orders for propriety and accuracy so that their actions will provide a reasonable assurance to the County that project files are adequate, change orders are justified, and that there are no wasted resources and unnecessary change orders.

OFFICE OF THE INSPECTOR GENERAL
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SCHEDULE A

S-718 Work Orders Awarded Between June 2002 and December 2003

	Work Orders Awarded	Contractor's Name	Work Order Award Amount
1	S-718-1 A	Rockwell General Development	\$330,997
2	S-718-1 B	Rockwell General Development	\$694,250
	<i>Subtotal</i>	<i>Rockwell General Development</i>	<i>\$1,025,247</i>
3	S-718-2 A	Stone Paving	\$375,727
4	S-718-2 B	Stone Paving	\$325,000
	<i>Subtotal</i>	<i>Stone Paving</i>	<i>\$700,727</i>
5	S-718-4 A	Southeastern Engineering Contractors	\$277,144
6	S-718-4 B	Southeastern Engineering Contractors	\$948,284
	<i>Subtotal</i>	<i>Southeastern Engineering Contractors</i>	<i>\$1,225,428</i>
7	S-718-5 A	Metro Equipment Service	\$679,780
8	S-718-5 B	Metro Equipment Service	\$346,398
9	S-718-5 C	Metro Equipment Service	\$55,000
	<i>Subtotal</i>	<i>Metro Equipment Service</i>	<i>\$1,081,178</i>
10	S-718-7 A	Fountain Engineering	\$826,354
	<i>Subtotal</i>	<i>Fountain Engineering</i>	<i>\$826,354</i>
11	S-718-8 A	Boys Engineering II, Inc.	\$996,709
12	S-718-8 B	Boys Engineering II, Inc.	\$1,256,737
13	S-718-8 C	Boys Engineering II, Inc.	\$241,200
14	S-718-8 D	Boys Engineering II, Inc.	\$114,700
	<i>Subtotal</i>	<i>Boys Engineering II, Inc.</i>	<i>\$2,609,346</i>
15	S-718-9 A	Lanzo Construction	\$952,486
	<i>Subtotal</i>	<i>Lanzo Construction</i>	<i>\$952,486</i>
16	S-718-10 A	Ric-Man International	\$1,027,674
17	S-718-10 B	Ric-Man International	\$264,779
	<i>Subtotal</i>	<i>Ric-Man International</i>	<i>\$1,292,453</i>
Total			\$9,713,219



COST BREAKDOWN (BY CUBIC YARDS) TO FURNISH AND
 INSTALL FLOWABLE FILL

The following cost breakdown was based in installing approximately 30 c.y. of flowable fill per night which will cover a trench length of ± 120 ft. The time to prepare the trench with 1 foot of compacted back fill over the pipe, place the flowable fill, remove and reinstall traffic plates has been estimated at 5 hours.

Material Costs:

Flowable fill _____	\$48.00/c.y.
Additional per cubic yard at night _____	\$3.00/c.y.
Plant charges per night (\$600.00 + 30 c.y.) _____	\$20.00/c.y.
Environmental & Fuel charges _____	\$0.75/c.y.
Sub-Total _____	\$71.75/c.y.
Sales Tax _____	\$4.66/c.y.
15% CSBE Subcontractor Mark-up _____	\$11.46/c.y.
Add 10% allowed by contract (SEC mark-up) _____	\$8.79/c.y.
Total material cost per c.y. _____	\$96.66/c.y.

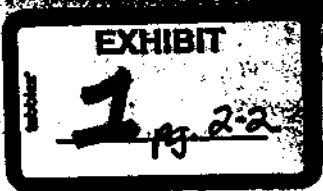
Labor Costs:

1 Foreman (50%); 2.5 hrs. @ \$25.00/hr. _____	\$62.50
Equip. Operator 5 hrs. @ \$20.45/hr. _____	\$102.25
2 Laborers 5 hrs. @ \$11.70 ea./hr. _____	\$117.00
1 Laborers (concrete) 5 hrs. @ \$14.25/hr. _____	\$71.25
Labor burden @ 50% _____	\$176.50
Sub-Total _____	\$529.50
Add 15% allowed by contract _____	\$79.43
Total Labor Cost _____	\$608.93
Labor Cost per cubic yard = \$608.93 + 30 c.y. =	\$20.30

Equip. Costs

1 Backhoe, 5 hrs. @ \$19.00/hr. _____	\$95.00
1 Compactor, 5 hrs. @ \$12.00/hr. _____	\$60.00
Traffic plates (120 ft.), 24 hrs. @ \$5.33/hour _____	\$127.92
Sub-Total _____	\$282.92
Add 10% allowed by contract _____	\$28.29
Total Equip. Cost _____	\$311.21

Equip. cost per cubic yard = \$311.21 + 30 c.y. = \$10.37/c.y.



Miscellaneous:

Disposal of 2 feet of excess fill replaced by flowable fill @ \$5.00/c.y. to load and haul plus 10% mark-up _____ \$5.50/c.y.

Totals:

Materials _____	\$96.66/c.y.
Labor _____	\$20.30/c.y.
Equip. _____	\$10.37/c.y.
Misc. _____	\$5.50/c.y.

GRAND TOTAL: _____ \$132.83/c.y.

*\$105.00 c.y
Negotiated Per Skue
levy on 6/13/01*

Contract No. S-718-4

Blanket Order A

Blanket Contract Change Order No. 2

Page 2 of 3

Contract Work Description

The project consists of furnishing and installing approximately 2,340 lineal feet of 8-inch ductile iron force main from S. W. 102 Avenue (P. S. 505) to S. W. 98 Court and S. W. 74 Street. The project also includes approximately 324 lineal feet of 12-inch ductile iron pipe and fittings, and other appurtenant work in the City of Miami, Miami-Dade County, Florida, in Section 32, Township 54, Range 40.

Justification

The above described change in plans and/or specifications is necessary for the following reasons:

1) According to the special provisions in Paragraph Five of the Florida Department of Transportation's Permit No. 069-00, the trench shall be restored using flowable fill. The estimated length of the pipe required for this project was approximately 907 linear feet. The trench width was four feet and approximately four feet of flowable fill thickness starting one foot above the pipe. This translates into approximately 537 cubic yards of flowable fill. Bid Item No. 10 of the contract documents only provided for 100 cubic yards at \$65.00 per cubic yard. However, an additional 429 cubic yards of flowable fill, at a price of \$48.00 per cubic yard, was necessary in order to properly complete the work. The entire amount of money for Bid Item No. 10, (\$6,500.00), will be paid out. The Department renegotiated the price for the remaining flowable fill of \$105.00 per cubic yard. Since the \$28,448.00 in Bid Item No. 11, proposed for constructing limerock base for Type II permanent paving repairs will not be used as originally intended, the Department will transfer 100% of these unused funds to the Blanket Contract Change Order to pay the Contractor for the remaining flowable fill. The total cost for the remaining flowable fill will be \$20,592.00.

2) This contract is part of the Consent Decree Settlement/Agreement which was due to be in service by May 1, 2001. In order to avoid impeding DERM penalties, the Department ordered the Contractor to accelerate the progress of the project. Accelerating the project required the Contractor to alter their construction techniques, thereby increasing the costs of material and labor. The Department agreed to add 50% to the cost of the following Bid Items:

- | | |
|------------------|--|
| Bid Item No. 8: | Constructing limerock base for Type "I" permanent paving repairs
Original Price: \$16.00/Sq. Yd.
Negotiated Price: \$24.00/Sq. Yd. |
| Bid Item No. 9: | Constructing asphaltic concrete surface course for Type "I" permanent paving repairs
Original Price: \$8.00/Sq. Yds.
Negotiated Price: \$12.00/Sq. Yd. |
| Bid Item No. 12: | Constructing asphaltic concrete surface course for Type "II" permanent paving repairs
Original Price: \$8.00/Sq. Yd.
Negotiated Price: \$12.00/Sq. Yd. |

EXCERPT FROM FDOT UTILITY PERMIT 069-00 UTILITY PERMIT

SPECIAL PROVISIONS FOR PERMIT # 069-0
(SECTION 87055; SR 986, REC. 00 H 690 0021)

1. COORDINATE PRE CONSTRUCTION MEETING WITH MR. GEORGE ROZOS TELEPHONE (305)256-6364, AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO COMMENCEMENT OF WORK.
2. WORKING HOURS WITHIN THE F.D.O.T. RIGHT-OF-WAY SHALL BE BETWEEN THE HOURS OF 9:00 P.M. AND 6:00 A.M., OR AS DIRECTED BY THE DEPARTMENT REPRESENTATIVE PRIOR TO COMMENCEMENT OF WORK.
3. THE PERMITTEE SHALL COORDINATE THE NOTIFICATION OF ANY PROPOSED LANE CLOSURE(S)/TEMPORARY DETOUR(S) AT LEAST TWO (2) WEEKS IN ADVANCE OF THE CLOSURE DATE, BY PROCESSING THE REQUIRED "ANTICIPATED ROADWAY CLOSURE" FORM THROUGH THE DEPARTMENT REPRESENTATIVE.
THE MAINTENANCE OF TRAFFIC PLAN THAT WAS SUBMITTED WITH THE PERMIT APPLICATION IS SUBJECT TO MODIFICATION AT THE PRECONSTRUCTION MEETING.
4. ANY AND ALL DAMAGED SIDEWALK, CURB & GUTTER SHALL BE REPLACED AND/OR CONSTRUCTED ACCORDING TO THE F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS - INDEX 300 (CURRENT EDITION), AND/OR CONSTRUCTED ACCORDING TO THE F.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION - SECTION 522, IN FULL WIDTH, FULL LENGTH SECTIONS.
5. FLOWABLE FILL AS DEFINED IN SECTION 121 OF THE F.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION IS TO BE USED ON PAVED AREAS FROM ONE (1) FOOT ABOVE THE PERMITTED INSTALLATION TO THE BOTTOM OF THE EXISTING ASPHALT OR AS DIRECTED IN THE FIELD BY THE DEPARTMENT REPRESENTATIVE. COPIES OF ALL FLOWABLE FILL TICKETS MUST PROVIDED TO THE DEPARTMENT REPRESENTATIVE PRIOR TO FINAL ACCEPTANCE OF THE PROPOSED WORK.
6. FULL LANE WIDTH RESTORATION WILL BE REQUIRED PRIOR TO FINAL ACCEPTANCE OF THE PROPOSED WORK.
SINCE STATE ROAD 986 WAS RECENTLY RECONSTRUCTED AND IS IN EXCELLENT CONDITION. A FULL LANE WIDTH MILLING AND RESTORATION WITH FRICTION COURSE II OF EACH AFFECTED LANE FOR FIFTY FEET ON EITHER SIDE OF THE PAVEMENT CUT SHALL BE CONSTRUCTED PRIOR TO FINAL ACCEPTANCE OF THE PROPOSED WORK. ANY AFFECTED INTERSECTION. THE RESTORATION SHALL BE A FULL INTERSECTION.
7. BEGINNING ANY WORK WITHIN THE F.D.O.T. RIGHT-OF-WAY ASSOCIATED WITH THIS PERMIT CONSTITUTES ACCEPTANCE OF THESE CONDITIONS.

Contract No. S-718-4

* Order A

Blanket Contract Change Order No. 2

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Contract Work Description

The project consists of furnishing and installing approximately 2,340 lineal feet of 8-inch ductile iron force main from S. W. 102 Avenue (P. S. 505) to S. W. 98 Court and S. W. 74 Street. The project also includes approximately 324 lineal feet of 12-inch ductile iron pipe and fittings, and other appurtenant work in the City of Miami, Miami-Dade County, Florida, in Section 32, Township 54, Range 40.

Justification

The above described change in plans and/or specifications is necessary for the following reasons:

1) According to the special provisions in Paragraph Five of the Florida Department of Transportation's Permit No. 069-00, the trench shall be restored using flowable fill. The estimated length of the pipe required for this project was approximately 907 linear feet. The trench width was four feet and approximately four feet of flowable fill thickness starting one foot above the pipe. This translates into approximately 537 cubic yards of flowable fill. Bid Item No. 10 of the contract documents only provided for 100 cubic yards at \$65.00 per cubic yard. However, an additional 429 cubic yards of flowable fill, at a price of \$48.00 per cubic yard, was necessary in order to properly complete the work. The entire amount of money for Bid Item No. 10, (\$6,500.00), will be paid out. The Department renegotiated the price for the remaining flowable fill of \$105.00 per cubic yard. Since the \$28,448.00 in Bid Item No. 11, proposed for constructing limerock base for Type II permanent paving repairs will not be used as originally intended, the Department will transfer 100% of these unused funds to the Blanket Contract Change Order to pay the Contractor for the remaining flowable fill. The total cost for the remaining flowable fill will be \$20,592.00.

2) This contract is part of the Consent Decree Settlement/Agreement which was due to be in service by May 1, 2001. In order to avoid impeding DERM penalties, the Department ordered the Contractor to accelerate the progress of the project. Accelerating the project required the Contractor to alter their construction techniques, thereby increasing the costs of material and labor. The Department agreed to add 50% to the cost of the following Bid Items:

- | | |
|------------------|--|
| Bid Item No. 8: | Constructing limerock base for Type "I" permanent paving repairs
Original Price: \$16.00/Sq. Yd.
Negotiated Price: \$24.00/Sq. Yd. |
| Bid Item No. 9: | Constructing asphaltic concrete surface course for Type "I" permanent paving repairs
Original Price: \$8.00/Sq. Yds.
Negotiated Price: \$12.00/Sq. Yd. |
| Bid Item No. 12: | Constructing asphaltic concrete surface course for Type "II" permanent paving repairs
Original Price: \$8.00/Sq. Yd.
Negotiated Price: \$12.00/Sq. Yd. |

June 28, 2001

Mr. Steve Levy, Chief
Miami Dade Water & Sewer Dept.
4200 Salzedo Street
Coral Gables, FL 33146

Re: Installation 8" Force Main
S-718-4 ER 46970

THERE SHOULD BE A LETTER OF AUTHORIZATION ATTACHED FROM THE WASA REPRESENTATIVE THAT AGREED TO THIS

Dear Mr. Levy:

For acceleration of Project

The original quantities for roadway restoration items in our contract were reduced considerably. As a result, our present unit prices on these items are not profitable. As an example, the asphalt paving restoration over the trench in DOT's right of way was reduced from seven-foot width to a four-foot width. Our original plans for machine-laid asphalt could not be carried out, instead the asphalt was placed by hand which increased our labor and equipment costs greatly. Our MOT costs were also affected. Based on the above issues, we would like to negotiate the price of the following contract items:

	Original Price	Adjusted Price
Item No. 8, 8" limerock base	\$16.00/s.y.	\$24.00/s.y.
Item No. 9, Asphaltic Concrete Type I	\$8.00/s.y.	\$12.00/s.y.
Item No. 12, Asphaltic Concrete Type II	\$8.00/s.y.	\$19.00/s.y. 12.00

Based on the above unit prices adjustments and using your inspector's final quantities results in an additional amount of \$11,793.00.

Should you need any additional information on these issues please do not hesitate to contact us.

Sincerely,

Ed Dominguez
Ed Dominguez, P.E.
President

ED/vf

OK TO pay
Ed Dominguez
7/12/01

To accelerate the project I agree to add 50% of Items 8, 9, 12. To avoid demer penalties on this project.



Contract No. S-718-4
Work Order A
? No. 46970
Blanket Contract Change Order No. 4
Page 2 of 2

Contract Work Description

The project consists of furnishing and installing approximately 2,340 lineal feet of 8-inch ductile iron force main from S. W. 102 Avenue (P. S. 505) to S. W. 98 Court and S. W. 74 Street. The project also includes approximately 324 lineal feet of 12-inch ductile iron pipe and fittings, and other appurtenant work in the City of Miami, Miami-Dade County, Florida, in Section 32, Township 54, Range 40.

Justification

The above described change in plans and/or specifications is necessary for the following reasons:

Due to heavy traffic conditions along S. W. 72 Street, the Florida Department of Transportation (FDOT) delayed issuing the Maintenance of Traffic permit (MOT) for the second phase of construction. The process to obtain the approval caused a delay in construction, thereby forcing the Contractor to demobilize for 16 days, remobilize, and continue with the work in Sunset Drive (SW 72 Street). Pursuant to the permit being issued, FDOT included several additional requirements to alter, or make significant changes in the MOT permit, further impacting the progress of the work. The Contractor submitted a request for \$33,652.00 to compensate for the delay. After several meetings with Construction Management, the Contractor agreed to accept \$19,000.00 as a lump sum compensation for all delays caused by FDOT on this portion of the project.

Time Extension

The extensions provided only represent the time required to perform additional work to date. Additional time may be required for impact to the critical path schedule of the project. Subsequent review will be performed to identify impact as the impact is realized. Once the total impact of additional work is realized, a time extension will be written on a future Allowance Account and refer to the specific item and previous Allowance Account number. A time extension is provided for additional work performed outside the scope of the original Contract which affects the critical path schedule of the contracted work or previously approved changes. Should additional work be required which does not affect the critical path schedule, no time extension will be granted. Should one item of additional work run concurrent with another item of additional work only time not duplicated can be provided.

A non-compensable time extension is provided for the actual time required to:

- 1) A 16 day non-compensable time extension was granted for this item. This 16 day *non-compensable* time extension revises the contract completion date to June 16, 2001.

History of Allotted Time to Complete the Work

Notice to Proceed Date:	November 28, 2000
Duration:	180 Days
Original Completion Date:	May 26, 2001
Time Extensions:	
BCCO #3:	5 Days
BCCO #4:	16 Days
New Completion Date:	June 16, 2001

March 15, 2001

Mr. Ed Dominguez
Southeastern Engineering Contractors
12054 N. W. 98th Ave.
Hialeah Gardens, Fl. 33018

Ref: Contract # S 718-4 ER # 46970


Dear Mr. Dominguez

In response to your letter dated March 13, 2001, it is imperative that you contact this office immediately at (305)-669-5734 to schedule a meeting to clarify the procedures for submitting a maintenance of traffic plan, (M. O. T.). A meeting was held at the job site with the Florida Department of Transportation, (F. D. O. T.), Inspector, Mr. George Pousa on February 22, 2001. Your barricade company corrected the M. O. T. and re-submitted the plan to Miami-Dade Water and Sewer on February 27, 2001. The F. D. O. T. received the lane closure request, submitted by the Miami-Dade Water and Sewer Department, (M. D. W. A. S. D.), on February 28, 2001. The F. D. O. T. requires a minimum of 14 days to review and respond to M. O. T. submittal. M. D. W. A. S. D. received a phone call from the F. D. O. T. informing us that the M. O. T. will be approved with a few modifications by March 17, 2001 if the M. O. T. is re-submitted with the modifications by March 15, 2001.

As the Contractor on the above referenced Contract you are responsible to submit a correct M. O. T. plan that complies with F. D. O. T. Standards.

At this point the Department assumes no responsibility for delays, lost production, or additional cost for demobilization and will not consider any claims regarding the M. O. T..

Very truly yours,


Nelson Cespedes, C. M. I
Pipeline Construction Unit
Construction Management Section
Engineering Division

cc: J. Chorlog
H. Codispoti
S. Levy
S. Aguiar
File

EXH VIII

OFFICE OF THE INSPECTOR GENERAL
FINAL AUDIT REPORT ON
Miami-Dade Water and Sewer Department
Contract S-718, Installation or Repair of Force Mains, Water Mains and Associated Systems
for a Two-Year Period with County Option to Renew for Two Additional Years on a Yearly Basis
Report 3 of 3

Appendix A

Draft Notification Letter to WASD

WASD's General Response

WASD's Detailed Response to Findings (WASD's Appendix)

WASD's Exhibit List

(Actual exhibits not attached. Please contact the OIG for copies)



Christopher R. Mazzella
Inspector General

Alan Solowitz
Deputy Inspector General

Patra Liu
Assistant Inspector General
Legal Counsel

March 24, 2005

Mr. Bill Brant, P.E., Director
Miami-Dade Water and Sewer Department
3071 SW 38 Avenue, 5th Floor
Miami, Florida 33146

FILE COPY

Dear Mr. Brant:


Attached please find a copy of the Draft Audit Report conducted by the Office of the Inspector General (OIG) of the Water and Sewer Department's (WASD) Contract S-718 *Installation or Repair of Force Mains, Water Mains and Associated Systems*. We are providing this Draft in accordance with the Board of County Commissioners' mandate of advance notification.

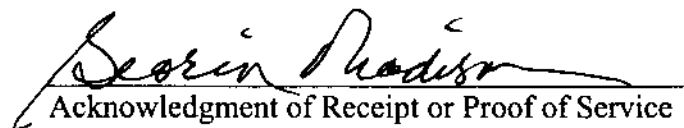
This report is the third and last of a series of three audit reports on Contract S-718. Report 3 covers change orders and time extensions.

The OIG requests your response to this Draft Audit Report. If you would like your response to be included in the Final Audit Report, you must submit it to the OIG by close of business on April 8, 2005. If you wish, you may provide your response by fax to (305) 579-2656.

Please do not hesitate to call should you have any questions.

Yours truly,


Christopher Mazzella
Inspector General


Acknowledgment of Receipt or Proof of Service

3/24/05
Date

cc: Mr. Joseph A. Ruiz, Assistant County Manager



Miami-Dade Water and Sewer Department
 P. O. Box 330316 • 3071 SW 38th Avenue
 Miami, Florida 33233-0316
 T 305-665-7471

MDC-OFFICE OF THE INSPECTOR GENERAL

May 20, 2005

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Mr. Christopher R. Mazzella, Inspector General
 Office of the Inspector General
 Miami-Dade County
 19 West Flagler Street, Suite 220
 Miami, Florida 33130

Re: Response to OIG Draft Audit Report (3 of 3) on Contract S-718

Dear Mr. Mazzella:

This letter is our response to the Draft Audit Report (3 of 3) prepared by your office dated March 24, 2005, regarding the Miami-Dade Water and Sewer Department's (WASD) Contract S-718, *Installation or Repair of Force Mains, Water Mains and Associated Systems*. This report, the third in a series of three, addresses change orders and time extensions.

The Miami-Dade Water & Sewer Department (WASD) wishes to express our thanks to the Office of the Inspector General (OIG) for the professionalism that they exhibited throughout this audit. This was not an easy task for either party to perform due to the retirement of WASD's key construction management personnel who had direct responsibility for these projects. Additionally WASD relocated its offices and records to new headquarters in December, 2001 during the construction and completion of these projects, which undoubtedly resulted in lost or misfiled documents. In spite of these and other obstacles, WASD personnel have made every effort to provide documentation and assistance to make the issues and circumstances that existed at the time of construction as clear as possible.

Answer to Recommendation #1

WASD acknowledges deficiencies in its records on these projects, but has already implemented measures to adopt stricter record keeping practices and implemented extensive training in record keeping and project documentation.

In 2001, the Department implemented a multi-year Certificate program at FIU that requires Construction Managers and Inspectors take courses in a broad range of construction management areas including Principles of Construction Management, Construction Cost Estimating, Construction Site work, Legal Aspects of Construction, Building Codes and Quality Controls, and Construction Scheduling. To date 28 inspectors and project managers have participated in this on-going program.

- ADA Coordination
- Agenda Coordination
- Art in Public Places
- Audit and Management Services
- Aviation
- Building Code Compliance
- Building
- Business Development
- Capital Improvements
- Citizen's Independent Transportation Trust
- Communications
- Community Action Agency
- Community & Economic Development
- Community Relations
- Consumer Services
- Corrections & Rehabilitation
- Countywide Healthcare Planning
- Cultural Affairs
- Elections
- Emergency Management
- Employee Relations
- Enterprise Technology Services
- Environmental Resources Management
- Fair Employment Practices
- Finance
- Fire Rescue
- General Services Administration
- Historic Preservation
- Homeless Trust
- Housing Agency
- Housing Finance Authority
- Human Services
- Independent Review Panel
- International Trade Consortium
- Juvenile Assessment Center
- Medical Examiner
- Metropolitan Planning Organization
- Park and Recreation
- Planning and Zoning
- Police
- Procurement Management
- Property Appraiser
- Public Library System
- Public Works
- Safe Neighborhood Parks
- Seaport
- Solid Waste Management
- Strategic Business Management
- Team Metro
- Transit
- Urban Revitalization Task Force
- Vizcaya Museum and Gardens
- Water and Sewer

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The Department recently completed a Construction Section Policies and Procedures Manual, to be used as a standardized tool, for inspectors and construction managers. The Department recognizes the benefits of a guidance document to ensure consistent and secure project documentation and as such completed this long overdue procedures manual. The manual contains guidance for production and retention of documentation along with checklists to ensure consistency and optimize the inspector's time on the job. The manual specifically addresses daily reports, contractor produced schedules, cost breakdown requirements for claims and the construction manager/inspector roles in the management of the contract. Exhibit 1-3 of the Appendix illustrates the change order procedures listed in the Manual.

In February 2004, the Department instituted an in-house inspector and construction manager training program to provide employees with training in documenting change order justification and project scheduling analysis among other things. This class is held every two weeks and has been very successful with a 95% attendance. In addition to in-house training, outside vendors and suppliers have been used to provide training in areas where they have superior expertise.

After the Department moved to the new headquarters on Douglas, we were able to assign a room for a central filing system for the construction section in order to accommodate all files. The room is attended by a full-time clerk who controls access to the documents. Originals do not leave the room. In late 2004, the Department created a uniform standard for document filing for all units to follow.

Answer to Recommendation # 2

Historically, when a contractor has made a claim to include changed contract means and methods, WASD has required that contractors provide complete cost data comparing construction bid prices with their proposed prices with the corresponding cost breakdowns showing labor, equipment and material components. In these particular projects, much of this documentation did not exist. The Appendix to this report includes documentation showing the propriety of the change orders. Exhibits 2-05 thru 2-08 are typical examples. Since March of 2004, the in-house inspector training program has held 10 sessions on Change Order Documentation, Daily Reports and Document Control Filing. The attached Inspector Training Classes Table (Exhibit 4.0) of the Appendix provides a record of these training sessions.

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In addition, WASD will evaluate on a case-by-case basis the OIG's recommendation to require the contractor to submit his bid proposal based on unit prices for a primary construction means and method and another price for an alternative means and method for flowable fill. Additionally use of a contingent item for a flowable fill substitute for conventional backfill will be considered. In some cases the use of a contingency item to cover substitution of flowable fill for conventional backfill may be just as effective.

Answer to Recommendation #3

The continuing employee training programs already instituted by WASD will provide an opportunity to educate the employees about the need to analyze contractor requests for change orders for propriety and accuracy so that their actions will provide a reasonable assurance to the County that project files are adequate, change orders are justified, and that there are no wasted resources and unnecessary change orders. In addition, the implementation of a central filing system will facilitate the procurement of information necessary to document the change order adequacy and justification. Exhibits 3-2 and 3-3 of the Appendix provide documentation which substantiates the justification used to approve these change orders.

Conclusion

In addition to the implementation of the above mentioned recommendations WASD has included an appendix to the report to clarify the OIG findings and provide justification and substantiation for the decisions made in issuing these change orders.

Sincerely,

A handwritten signature in black ink, appearing to read 'William M. Brant', is written over a horizontal line.

William M. Brant, P.E.
Director

May 20, 2005

APPENDIX TO OIG DRAFT REPORT (3 OF 3) ON CONTRACT S-718

This Appendix provides additional information which will clarify and justify the decision made in issuing these change orders. WASD is confident that after the OIG has had an opportunity to review our response they will recognize that compensation granted to the contractors for the projects in question was justified.

APPROACH TO OUR RESPONSE

We have carefully reviewed the OIG's findings as presented in the audit report. Wherever we agree with the findings we have so noted and acknowledge that we will revise our policies and procedures to avoid future occurrences. Wherever we disagree with the finding we have so noted and offered clarification and explanation in support of our position. The following addresses the three OIG findings in detail:

Finding 1

The OIG identified a number of issues that, according to the report, appear throughout the reviewed contracts. Among the issues identified, a lack of adequate quantification of costs for the extra work and the justification for time extensions is often deficient or not found.

WASD acknowledges the fact that adequate documentation could not be located for some of the S-718 projects. The documents may have been misplaced or may not have been filed. At the time these projects were being constructed, and due to a lack of filing space, there was no central filing system. Each construction manager and inspector kept his own files, and was responsible for making them available in the future. Additionally it is probable that records were lost or misfiled during the December 2001 move. Following the move, a dedicated file room for construction section files was established. More recently a permanent document control person was assigned to control access to all documents. Originals are no longer allowed to leave the room.

Although it is evident that some documentation was missing from the files, WASD is confident that proper and fair compensation was granted to the contractors of the projects in question based on the recreation of the history of the project by interviewing the inspectors and project managers. This is evident in our response to Findings 2 and 3 of this report.

The Department has taken steps to make all personnel aware of documentation requirements, the proper procedures to gather documents and methods used in document control. Many of these procedures can be found in Section 4.0, Item 4.2 of the Procedures Manual, refer to Exhibit "1.1". In addition, we have been holding bi-weekly inspector

training classes since February 2004 in order to review policies and procedures, achieve consistency in documentation and processes within the units and train inspectors and construction managers in construction claims documentation and mitigation. Some of these seminars have been conducted by outside professionals and attended by the OIG personnel at our invitation.

WASD realizes that some of the documentation given to the OIG was not explicit enough for the unfamiliar eye to recognize the validity of the justification used for describing the necessity for the extra work and its price. We acknowledge the fact that some of these justifications and change orders were not prepared contemporaneously with the identification, quantification and resolution of the change. We are putting special emphasis on having the inspectors' improve the timing and quality of their documentation. Inspectors have been trained in our bi-weekly meetings on what to include in the daily reports. The daily report forms are now standardized as shown in Exhibit 1.2 and supervisors are reviewing them for adequacy every week before they are turned in to the document control section for filing. In addition, we are requiring timely responses to letters and claims and not waiting until the end of the project to settle these claims.

The pipeline unit had not been enforcing procurement of daily reports from the contractors on all projects because the Engineer through its construction managers produced their own daily reports, and pertinent photographs to document progress of the jobs. Essentially, information that is required in one is also required in the other. Our inspectors' daily reports include the requirements of Section 500.3 subsection 5A Exhibit 1.3. Field meetings are normally short and documented in the inspectors' daily reports. Field meetings like those with FDOT inspectors and regulatory agency inspectors are typical examples. We agree with the findings that in some of these projects, the inspector daily reports were deficient. We are requiring additional supervision by construction managers who are now responsible for reviewing all of the inspectors' daily reports for completeness and adequacy. In addition the next layer of supervision, the construction unit head, is required to spot check the reports. All reports are now turned in on a weekly basis to the document control unit to be filed by the clerk. The pipeline unit supervisor position has been vacant since the retirement of the last supervisor on September 27, 2002. In the last month, we were able to hire a new pipeline unit supervisor who will be responsible, along with the compliance section, to ensure that adequate documentation is received and archived.

With regards to the assertion that WASD is not making the distinction between circumstances wherein the contractor was asking for additional costs resulting from WASD authorized extra work, versus those circumstances wherein it was seeking replacement costs resulting from a self-initiated request to revise its original construction means and methods, we would like to refer to our response to finding number 3. In our response we demonstrate that WASD's interpretation was correct; that there was a change in the original schedule and construction plan as a result of the unanticipated FDOT requirement to open all lanes of traffic after 6:00 A.M. This change was a direct result of the conditions imposed after the fact by the FDOT inspectors and later reflected in the conditions given to the contractor with the lane closure form. As a result of the change in

the quantity of flowable fill, not anticipated at the time of design, and not adjusted prior to bid at the time the permit was issued, some of the contract bid items would not be considered valid, and would be subject to re-negotiation, as documented in the response to finding #3.

WASD has a change order approval procedure involving the Construction Manager, Construction Section Chief, Design Engineer, Engineering Chief, and Assistant Director for Engineering. Within this process, the change order is analyzed for necessity and cost. WASD again acknowledges that the detailed documentation that the OIG recommends is not in the change order package, but in the process of approval, discussions for sufficiency include reviews of previous bid prices and industry reference standards, etc.

WASD in no way treats blanket change orders with less interest and dedication than those that go before the Board of County Commissioners. WASD through its bi-weekly inspector training meetings, has already started documentation process training. WASD will use the recommendations in this finding in the continued training of our inspectors.

Finding 2

Introduction:

Finding No. 2 in the OIG report is concerned with two work orders, No. 4B (Coral Way project) and No. 7A (1st Street project) bid under Blanket Contract S-718. The OIG did not find adequate documentation in WASD files to allow WASD to make an informed decision on the need for and additional cost of substituting pipeline trench backfilling method and materials from compacted fill (CF) to flowable fill (FF).

WASD relies on the knowledge and experience of its construction management staff and supervisors to manage each project according to contract terms, in compliance with FDOT requirements and to negotiate the cost of the additional work (extras) and/or removed work (credits) required to complete the project. With the Coral Way and 1st Street projects, the trench backfill materials and method substitution was needed to comply with a verbal directive given in the field by FDOT. The additional price paid by WASD included, although not documented in detail, a credit for work removed and an additional cost to compensate the contractor for the changed requirement imposed by FDOT after the contract was awarded. WASD will subsequently show in detail that the credit received and the final price paid on both projects was in accordance with standard industry pricing at the time.

The OIG questions the need and justification to expedite both projects and switch to FF. WASD believes the decision to substitute materials and construction method was required and fully justified to expedite the completion of both work orders. FDOT, as part of their permit, had the option to require WASD to use FF instead of CF. FF minimizes the impact to traffic and assures a well compacted base. FDOT, on both projects, verbally ordered WASD to use FF and furthermore changed the MOT and lane closure conditions after the bid. This requirement was not known at the time of the bid and therefore the contractor had no way of knowing and pricing these changed conditions in his bid.

Work Order 4B (Coral Way)

Need Justification - On the Coral Way project, the contractor based his bid on installing pipe backfill with the CF method as described in the Contract Measurement and Payments Section 01025, Section 1.02, copy attached in Exhibit 2-01. The contractor based his bid per the FDOT permit requirements. The permit was included in the bid documents and is attached as Exhibit 2-02. The FDOT permit gave the contractor the choice of utilizing either FF or CF as a trench backfilling method (Item 5 of the Special Provisions). At a site meeting after the pre-construction meeting, FDOT, WASD and the contractor agreed to utilize FF backfill instead of CF. In attendance at that site meeting from WASD were Jules Durand, Nelson Cespedes, Hugo Tandron Jr., plus the FDOT inspector George Rozos and Rene Hernandez from Southeastern (contractor). The WASD CM recollects that the FDOT inspector said "It has to be flowable fill". WASD's CM Nelson Cespedes questioned this decision because there was no FF provision in the contract and it would increase the cost to WASD. The FDOT inspector's response was that FF was required to minimize impact to local businesses and the motoring public. Although there was no directive from the FDOT in writing, there was correspondence from the contractor to WASD dated June 4, 2001, Exhibit 2-03 attached, which summarized the contractor's interpretations of that field meeting in which these issues were raised. This correspondence was transmitted by WASD to the FDOT. The requirement to use FF was placed on the project after the contractor bid the project.

Cost Justification - The contract documents did not have a separate bid item or unit prices for FF. On June 7, 2001, the contractor submitted a detailed cost breakdown by CY to furnish and install FF according to these changed conditions. The contractor requested an additional \$132.83/CY for this change. The WASD CM reviewed this cost breakdown and negotiated the price to \$105/CY. This was documented directly onto the cost breakdown and signed and dated by the WASD CM on June 13, 2001, see Exhibit 2-04.

The negotiated price of \$105/CY was a reduction to the contractor's original requested amount and WASD believes this compensation to be reasonable and fair for the additional substituted work. Exhibit 2-05 contains a detailed breakdown of credits and additional costs resulting from the substitution of FF for CF. Exhibit 2-06 contains a sketch for the typical trench cross section as bid and as subsequently required by FDOT. Exhibit 2-05 shows a credit for "placing and compacting backfill" which was included under the bid item (Exhibit 2-01) and not performed. For this work (labor and equipment) not done, WASD should have received a credit in the amount of 15.13/CY, see Exhibit 2-07, 2001 CEIA Cost Book, CSI Item No. 2.22204. The estimated cost of the additional work (labor, equipment and materials) from the same reference source is \$139.20/CY. The resultant additional cost to WASD is the difference, or \$124.07/CY. WASD negotiated and ended up paying an additional \$105/CY, or approximately 15% below the standard industry pricing indicated by the referenced source.

Additionally, FDOT maintains a database with average prices paid by FDOT for many items, one of which is FF. Exhibit 2-08 contains FDOT's Item Average Unit Cost from

1/1/02 to 10/31/04. The exhibit shows that FDOT has paid an average of \$141/CY for FF on their projects.

Therefore, WASD believes that the negotiated price of \$105/CY was reasonable and fair compensation for the changed condition and substitution requested by the FDOT after the contract was awarded. The additional price paid by WASD did include a credit, which was originally questioned by the OIG in the report.

Work Order 7A (1st Street)

Need Justification - On the 1st Street project, the contractor based his bid on installing CF trench backfill as described in the Bid Item and corresponding Section 8.0 (Measurement and Payment), Items 1, 2 and 3 of the contract documents, copy attached in Exhibit 2-09. The FDOT permit, included in the bid documents and Exhibit 2-10, gave the contractor the choice of utilizing either FF or CF as a trench backfilling method (Item 14 of the Special Provisions). The contractor was allowed to work between 9 AM and 3:30 PM with a continuous lane closure MOT set-up, based on the FDOT permit.

This project was delayed because the original plans submitted to FDOT with the dry run permit application was questioned by FDOT's Mary Lou Karner, at the pre-construction meeting after the bid and plans had to be revised with the additional information requested. This change in plans caused additional delays to the MOT plan that had to be approved by FDOT prior to the start of the project.

The WASD project was to be completed in advance of a road improvement project by the FDOT. Close coordination was required in order to minimize impact to local businesses and the driving public. A coordination meeting was held in the field on 3/26/02 to discuss delay concerns and set the direction on how to best proceed with the project. The meeting was attended by the WASD CM, Jules Durand, FDOT's Mary Lou Karner, and George De Lanoval, the contractor Freddy Fountain and City of Miami inspector, Patrick Seguin. The parties agreed that utilizing FF would be in the best interest of the public, local businesses and WASD. The WASD CM sent FDOT a letter dated 3/26/02, copy attached as Exhibit 2-11, summarizing discussions held at the meeting. A letter dated 5/8/02, Exhibit 2-12, from the WASD CM to the FDOT CEI Resident Engineer discusses the initial project delays, FDOT's required changes to expedite the project and to confirm that the issues have now been resolved and the project is moving forward.

This change in permit condition resulted in a major change to the scope of the project. The contractor was faced with vastly different conditions than what he based his bid on. The changed conditions required the contractor to use an estimated 2,500 CY of FF in addition to having to dispose of the same quantity of excavated material that was to be placed back into the trench. The FF method was required to complete the project ahead of the FDOT project and alleviate traffic conditions and impact on businesses.

Cost Justification - The contract contains a separate contingent bid item (No. 21) for using 92 CY of FF as backfill on perpendicular cut trenches at a cost of \$100/CY. Exhibit 2-13 contains a copy of the bid item and corresponding description in the Measurement and Payments Section of the contract. The contractor requested to get paid at the same rate (\$100/CY) for the entire substituted FF quantity even though the quantity was significantly increased. As required by the Contract S-718 General Covenants and Conditions, Item 25, Exhibit 2-14 attached, WASD negotiated and reduced the price.

WASD negotiated with the contractor and ultimately paid the contractor \$95.00 per CY, a reduction of \$5/CY from his original request. Exhibit 2-15 contains a detailed breakdown analysis comparing the cost difference between backfilling the trench with CF as opposed to FF. Exhibit 2-15 contains a sketch showing the typical trench cross section and detailed cost breakdown comparison confirming that the credit received by WASD was reasonable for the trench backfill substitution and changed working conditions required to install the pipe.

Exhibit 2-15 shows a credit for "placing and compacting backfill" which was included under the bid item (Exhibit 2-09) and not performed. For this work (labor and equipment) not done, WASD should have received a credit in the amount of 15.13/CY, see Exhibit 2-07, 2001 CEIA Cost Book, CSI Item No. 2.22204. The estimated cost of the additional work (labor, equipment and materials) from the same reference source is \$139.20/CY. The resultant additional cost to WASD is the difference, or \$124.07/CY. WASD negotiated and ended up paying an additional \$95/CY, or approximately 25% below the standard industry pricing indicated by the referenced source. The additional price paid by WASD did include a credit, which was originally questioned by the OIG in the report.

Additionally, FDOT maintains a database with average prices paid by FDOT for many items, one of which is FF. Exhibit 2-08 contains FDOT's Item Average Unit Cost from 1/1/02 to 10/31/04. The exhibit shows that FDOT has paid an average of \$141/CY for FF on their projects.

Summary- Contrary to the OIG's findings, WASD did make an informed decision to substitute FF for CF for trench backfill on work orders 7A and 4B. The substituted work was requested and required by the FDOT in the field after the project was awarded. The resulting claims were negotiated between the contractor and WASD and the resulting additional price paid by WASD was reasonable and fair compensation for the changed conditions.

In the future, WASD agrees with the OIG recommendations to keep more detailed records and require contractors to provide a detailed breakdown when a changed condition or substitution is warranted. This will make it easier to, after the fact, understand the need for the substitution and have a clearer picture of the costs and credits associated with the substitution. WASD will evaluate possible modifications to the contract documents to include unit prices at the time of bid and utilizing alternate bid items in the contract documents. WASD will keep the OIG posted on implementation of these recommendations.

Finding 3

The following narrative is an effort to provide further insight to the OIG regarding the facts and circumstances that were part of construction project S-718-4A (Sunset) which led to the need for \$51,385 in change orders. Our aim is to show that the costs incurred for this project were necessary, reasonable and justified. After the narrative, we address the three change orders in this finding which are as follows:

Change Order #2 item #1 additional flowable fill	\$20,592
#2 item #2 adjustment of quantities	\$11,793
In bid items 8,9 &12	
#4 item #1 compensation for FDOT delays	<u>\$19,000</u>
	\$51,385

FDOT PERMIT IMPACTS

The FDOT permit for this job impacted it in two ways. First, it required flowable fill in excess of the 100 cu yds included as a contingency item in the contract. The Department did not revise the contract quantities in the bid items, after reviewing the permit, prior to bid, to reflect this unanticipated change. Second, the permit did not mention a further restriction to re-open all lanes to the traffic after 6 am each day. This later requirement was communicated to the Department after the submittal of a "lane closure form" as required by the FDOT permit. This form was required to be presented to FDOT for approval prior to construction, after the project was bid and awarded. The FDOT did not specify in the original permit the requirement of opening the lane after 6:00 AM to facilitate traffic. The permit conditions the contractor bid on did not specifically require the opening of the traffic lanes during the hours outside of the 9:00PM to 6:00AM working hours stipulated in the permit. Had the contract shown the correct amount of FF in the bid items, the total contract price would have increased accordingly.

USEPA CONSENT DECREE IMPACTS

This project was the first in a series of projects designed to bring PS 815 into compliance with Paragraph 13(d) of the Second & Final Partial Consent Decree. The required completion date for PS 815 was January 30, 2002. Frequent sewage overflows were caused by three other pumping stations that discharged to the PS#815 collection basin. These three stations 505, 816 and 817 had to be disconnected and diverted to a force main, hence the requirement to construct project S-718-4A.

In order to meet the compliance date of January 30, 2002 for PS 815, a total of four projects had to be completed. The new receiving force main, S-718-4A, had to be completed and in service prior to placing Pump Stations 505, 816 and 817 in service. Only following the work on the three pump stations and subsequent disconnection from

PS 815 collection basin, could PS 815 be certified complete, eliminating the damaging overflow conditions that existed. Careful coordination and allowance for changed conditions were considered in scheduling and implemented at these four projects.

A schedule showing all projects is located in Exhibit 3.1. The schedule indicates the time requirements for each project. Due to the fact that the projects were done independently, with each requiring a separate permitting, procurement and construction process, the Department insisted that sufficient "Float Time" be included in the overall plan as described above, to carry-out the certification of PS 815.

Finding #3

Change Order #2 Item #1

This change order is a direct result of the changing of the contractor schedule and plan precipitated by the Department design unit misinterpretation of the amount of FF cover required by the dry run permit and FDOT's requirement that the lanes of traffic be open after 6:00 AM when the lane closure request was denied.

As is customary, a "Lane Closure Form", consistent with the FDOT permit was submitted following the project award. The lane closure as submitted was denied in order to not affect the traffic on Sunset Drive. This resulted in a substantial change to the contractors' means and methods for the project. Instead of working during the day, maintaining continuous lane closure throughout the project, the working hours were allowed only between 9 PM and 6 AM with all lanes re-opening for traffic the following morning. Impacts to the project included; decreased daily production, increased time requirements to re-set MOT prior to work each night, changed backfill requirements all of which affect job duration.

In addition, during the period that the Department and contractor were negotiating better permit terms with FDOT, the Department directed the contractor to start working on the portion outside of the FDOT jurisdiction, while awaiting the approval of the lane closure form. This work was completed prior to such approval and to minimize a claim for delay, the contractor was asked to demobilize and proceed as a second crew to another WASD project in Coral Way. It took approximately 16 day before the permit was granted and the contractor was asked to remobilize back to the project.

As required by the permit, the 907 linear feet of the contract under FDOT permit required 537 cu yd of flowable fill. Because of the discrepancy in the contract documents, in which only 100 cu yd of flowable fill was allocated (the designer had used 12 inches of flowable fill for the 907 ft of the FDOT trench portion of the project See Exhibit 3.2) and because of the change in the means and methods of construction and schedule dictated by FDOT, the price of the entire amount of flowable fill had to be renegotiated. Even though the quantity of flowable fill in the contract increased, the amount used on a daily basis was much less than that used to bid the job. Under the conditions of the bid, the contractor could have installed 120 ft of pipe per day. With the new conditions imposed by FDOT,

this productivity came down to 40 ft per day. Much of the time between 9 PM and 6 AM had to be used to set, mobilize, set-up traffic control, demobilize, remove the traffic control and install steel plates over the trench to allow traffic to flow after 6 AM.

The Department analyzed the bid price and renegotiated the price in Exhibit 3.3. It was calculated that 537 cu yds were needed. The contractor calculated 529, See Exhibit 3.4 to clarify the conflicting interpretations of the quantity of flowable fill required by the permit. The Department accepted the contractor's quantity and the re-negotiated price of \$105/cu yd would require that \$55,454 be paid for all required flowable fill. The conventional method of backfill and compaction was not used, therefore bid item 11 for limerock base was not used and that money was used to pay for part of the required flowable fill. In addition, the money in item #10 for flowable fill under the original contract condition which was not applicable after the lane closure was denied was also used to pay for it. This left \$20,592 to be paid under Change Order #2, item #1 for the balance.

Finding #3

Change Order #2 Item #2

This change order is also a result of the permit conditions and bid items not being adjusted in the contract prior to award. When flowable fill was required for the trench base, the quantities in items 8, 9 and 12 were not adjusted. Had we adjusted these bid items, this extra cost would have been incorporated in the bid resulting in a higher bid price. On June 28, 2001 the contractor submitted a claim to compensate for the change in these quantities. The actual quantities in the bid items were far less than the quantities in the contract. These items were impacted in the following manner:

Item #8 of the bid proposal 8-inch limerock base for Type I pavement restoration, called for the installation of 1,330 sq yds of which only 541 was installed.

Item #9 of the bid proposal, asphaltic concrete for Type I restoration called for the installation 2,090 sq yds of which only 846 sq yds was installed.

Item #12 of the bid proposal, asphaltic concrete for Type II pavement restoration called for the installation 1,478 sq yds of which only 316 sq yds was installed.

The reductions in quantities installed under item #8,9, and 12 reduce the total contract amount by \$31,972 or approximately 11.5%. Section 25 of the GCC allows for the adjustment or re-negotiation of prices of items impacted more than 200% of their original bid quantity (See Exhibit 3.5)

To compensate the contractor for the reduction of the bid item quantities and the consequent higher cost per unit and avoid a claim that would slow down completion of the project, the construction manager agreed to the re-negotiated unit prices amounting to \$11,793.

Finding #3
Change Order #4 Item #1

This item involves \$19,000 that the Department negotiated with the contractor to compensate for the mobilization, demobilization and overhead expense claim submitted on July 28, 2001.

After experiencing a delay in the FDOT response to the submittal of the lane closure form, the Department required the contractor to start work on the section of the project outside of the 907 ft of FDOT right-of-way. When the contractor finished with that installation, the FDOT lane closure form had not been approved yet and in order to avoid a larger claim, the Department ordered the contractor to move his crew to another project he had with WASD on Coral Way (S-718-4B). This directive impacted the contractor with extra mobilization expenses and additional costs.

On May 1, 2001, the contractor requested additional compensation for this re-mobilization and 16 day time extension see EXHIBIT 3.6. The total compensation requested was \$33,652. The Department negotiated this amount with the contractor to \$19,000. On December 12, 2001 the Department was notified that the contractor agreed with those terms to settle the claim. See Exhibit 3.7. The construction manager prepared an allowance account change order lump sum compensation for all FDOT delays. See Exhibit 3.8.

The contractor had been further delayed 15 days by the change in productivity due to the changed construction means and methods, (See Exhibit 3.9) the contractor did not submit a claim for these additional days, WASD considered this settlement fair and equitable and in the best interest of the County.

REPORT #3 SUMMARY RESPONSE

The permits and maintenance of traffic negotiations with FDOT and Public Works have been affecting our projects in an increasingly significant fashion. Traditionally, both Public Work and FDOT would issue a permit with some conditions at the discretion of the field inspectors or site condition at time of construction.

After the project is awarded and prior to construction, the FDOT and/or Public Works field inspectors may impose additional restrictions and changes to the Maintenance of Traffic plan (MOT). These changes may alter the contractor schedule and means and methods by requiring the use of flowable fill or demanding that work be performed only at night and that the traffic lane be restored by 6 AM at the end of each working day.

In the past, these restrictions have been the cause of changes to the contract because they were not included in the design and bid documents. In order to avoid these changes to the

contract, the Department has negotiated with Public Works to issue a final permit to the contractor which will include all stipulations. In addition, the Department will submit a Maintenance of Traffic Plan for approval by FDOT prior to bid in order to incorporate all conditions specifications and contract requirements.

In addition, we are promoting Joint Project Agreements with both FDOT and Miami-Dade County Public Works so that the road impact is under the full control of those two agencies and the MOT conditions are included as part of their contract for the road project and under their control.

LIST OF EXHIBITS

- 1-1 "Change of Contract Amount or Time" Construction Procedures
- 1-2 Daily Report Form (revised)
- 1-3 Specification Requirements to be included in Daily Reports
- 2-01 Contract Measurement and Payment Section 01025
- 2-02 FDOT Permit (S-718-4B)
- 2-03 Correspondence from contractor (4b) to WASD 06/04/01
- 2-04 Correspondence from contractor (4b) to WASD 06/06/01
- 2-05 Breakdown of Additional Costs to Substitute FF for CF (4b)
- 2-06 Coral Way S-718-4B Trench Profile
- 2-07 Construction Industry Cost Data "CEIA Cost 2001"
- 2-08 FDOT's Item Average Unit Cost from 01/01/02 – 10/31/04
- 2-09 Correspondence from WASD (7a) to FDOT dated 3/26/02
- 2-10 FDOT Permit (1st Street)
- 2-11 Correspondence from WASD to FDOT 3/26/02
- 2-12 Correspondence from WASD to CARNAHAN, PROCTOR & CROSS, INC.
- 2-13 S-718-7A Bid Item and corresponding description
- 2-14 S-718-7A GCC item 25
- 2-15 Detailed Breakdown and Sketch Showing the Typical Trench (7A)
- 3-1 Schedule showing all projects
- 3-2 907 ft Trench Profile
- 3-3 Comparative Analysis
- 3-4 Conflicting Interpretations of the Quantity of Flowable Fill
- 3-5 GCC Adjustment of Item Prices
- 3-6 Contractor Request for Remobilization 5/1/01
- 3-7 Correspondence from contractor to WASD 12/12/01
- 3-8 Analysis of Delay Claim and Unabsorbed Overhead
- 3-9 Analysis of Restricted Lane Opening on project duration

OFFICE OF THE INSPECTOR GENERAL
FINAL AUDIT REPORT ON
Miami-Dade Water and Sewer Department
Contract S-718, Installation or Repair of Force Mains, Water Mains and Associated Systems
for a Two-Year Period with County Option to Renew for Two Additional Years on a Yearly Basis
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Appendix B

OIG's Rejoinder to WASD's Detailed Response to Findings

OIG Comments on WASD Response to Finding 1

Notwithstanding WASD's steps to enhance its change order processing procedures, we find that the many of the comments, explanations and exhibits contained in the Appendix to its response are inadequate. Moreover, we take exception to its characterization that the OIG had an "unfamiliar eye" and, thus, could not "recognize the validity of the justification used for describing the necessity for extra work and its price." It did not take a "familiar eye" to determine that in many cases, records made available to the OIG presumable documenting the need for, and the price and quantity of the change order amounts, were not consistent with the written change order justifications. Conversely, in a number of instances, records did not even exist that we could examine so the "unfamiliar eye" characterization is misplaced.

Nonetheless, after reviewing WASD's response and the new (post-audit) documentation that it prepared to rebut our findings, the OIG still believes that WASD has not yet adequately met basic record keeping standards to justify change order needs or establish the price or quantity amounts thereof. The OIG will discuss this issue throughout its remaining comments.

First, however, the OIG strongly disagrees with WASD's position that it will not require its contractors to prepare daily construction reports. In our report, we explain why this record is so critical and why it is necessary that both the contractor and (WASD's) inspector independently prepare their own daily reports. We understand the contractor's position that it would not want to prepare this report. For the contractor to properly complete the report, it would have to document any circumstances, issues, field conditions, and the like, that could give rise to claims for extra work. We believe that this record-keeping requirement should be enforced as the failure by a contractor to provide required documentation of issues could negate later claims for additional monies.

Therefore, we cannot appreciate why WASD would not want this information directly from the contractor. This information would facilitate the prompt resolution of any such conditions, which may result in extra work and an approved change order, or the denial of the contractor's request. Thus, we reaffirm our position that there is no substitute to requiring both sets of daily reports.

Later, in its response to Finding 1, WASD states that:

WASD again acknowledges that the detailed documentation that the OIG recommends is not in the change order package, but in the process of approval, discussions for sufficiency include reviews of previous bid prices and industry reference standards, etc.

In the above context, WASD shortchanges the basic recordkeeping standard that all County departments should follow during the normal course of business. As a matter of good public procurement practice, detailed documentation is required no matter how

well or how many staff review previous bids and industry standards. WASD staff are obligated to transfer their knowledge and experience to paper, in the form of a accurate and complete written record, rather than just affixing their signatures with a few casual statements to the form.

OIG Comments on WASD Response to Finding 2

Notwithstanding WASD's comments to the contrary, the OIG did not question the need for the subject change orders. Our concern was about the adequacy of change order quantity and cost documentation. We stated:

In the four cited examples, WASD justifies the switch by the contractor to flowable fill by stating that the project or the contractor was behind schedule or that there was a need to expedite the project or some combination thereof. Notwithstanding whether WASD had adequately justified the need for the change to flowable fill, there is no information about the conventional backfill and related costs that the contractor included in its original bid.

Accordingly, our response will focus on WASD's comments about cost justifications.

The OIG based this finding on the lack of documentation supporting the added quantities and WASD's additional costs when switching from conventional backfilling to using flowable fill. We stated that there was inadequate recognition given by the contractor to WASD for its costs relating to its using conventional backfilling methods. WASD, in its response, cites its Exhibits 2-05, 2-06, 2-07 and 2-08, as providing the necessary information for Work Order 4B (Coral Way). What WASD does not mention is that Exhibits 2-05 and 2-06 were prepared specifically to rebut our finding; they were not prepared as part of the original change order justification package. Exhibits 2-07 and 2-08, although apparently available contemporaneous to our audit, were not provided to the OIG despite our requests for such records.

WASD's belated efforts to justify this change order raises more questions about the quantities and costs. For example, the logic underlying its formula's showing how it computed the flowable fill cost, as well as its use of the CEIA Cost Book standards, are problematic. WASD's formula presumes that there is a one-for-one replacement of one cubic yard of conventional backfill with one cubic yard of flowable fill. This may be true, but in its written change order justification, WASD states that the FDOT allowed the contractor to excavate a narrower trench when using flowable fill. "FDOT also agreed to allow the Contractor to use a two foot wide trench for the installation of the pipe in lieu of the five foot wide trench stipulated in the *Specifications Standard Details*." This alternative would mean that there would have been more material excavated under the original plan than flowable fill added under the change order. WASD Exhibit 2-06, however, shows a three-foot wide trench was planned regardless of whether there was

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conventional backfill or flowable fill. Is this an accurate description of the condition? If so, then what about the original written justification, or are these just new conditions?

If the original statement were true, this would indicate that the contractor would be saving time and effort because of the narrower trench. WASD's explanation and formula do not address this issue, but the impact on any credit related to deleted work is obvious, if this condition were, in fact, present. If this condition was not present, as indicated in its Exhibit 2-06, then WASD's original change order justification misrepresented an underlying condition to the change order.

In addition, WASD uses the *CEIA Cost Book* standards to establish price reasonableness for flowable fill. WASD cites the CEIA standard unit price to "Load, haul excavated material not needed ..." valued at \$8.11 per cubic yard plus the standard unit price for "Disposal fee ..." valued at \$58.11 per cubic yard to arrive at a total unit price of \$66.22 per cubic yard for these activities (WASD Exhibit 2-05). This analysis does not equate well with the contractor's proposed price for these activities, as shown in WASD Exhibit 2-04 (page 3 of 3). Therein, under "Miscellaneous" charges the contractor proposes, for the "disposal ... of excess fill ... to load and haul plus 10% mark-up" a unit price of \$5.50 per cubic yard. Understandably, the OIG has a problem understanding why WASD's "standard" costs are over \$60 per cubic yard more than the contractor proposed costs.

The remainder of the CEIA unit price quoted by WASD totals \$72.98 per cubic yard. The balance of the contractor's unit price is \$127.33 per cubic yard. Again, the OIG has a problem understanding why WASD's "standard" costs are, in this instance, about \$55 per cubic yard less than the contractor's proposed costs.

WASD also quotes from FDOT's "Item Average Unit Cost" a flowable fill unit cost of \$140.88 per cubic yard (Exhibit 2-08). Unclear is what this unit cost comprises. It appears that FDOT's price is that charged at the plant with delivery and other charges not included. The contractor's comparable price shown in WASD Exhibit 2-04 (page 2 of 3) is \$48.00 per cubic yard. Without any additional information, we do not know if this is an "apples to apples" comparison or "apples to oranges" comparison. WASD's analysis does not explain the price disparity and the factors that would explain the disparity.

Industry cost standards are one way to benchmark costs for reasonableness. However, they cannot be used blindly and without a reasonable, questioning mind asking relevant questions. Questions such as whether there is actually a comparable benchmark. Another question would be the obvious issue, such as the large price disparities between the standard prices and the contractor's prices, even when the overall amount appears "reasonable."

The OIG does not have the same technically experienced and knowledgeable engineering personnel that WASD possesses; thus, we cannot say one way or the other

what is the correct presentation and reasonable interpretation of the facts surrounding WASD's justification of these change order costs. What we are experienced in, however, is reading what is purported to be a factual presentation and comprehending what we have read. We expect that there will be complete, consistent and relevant information supporting that presentation and a reasonable interpretation thereof. This reasonable expectation was not met during our audit and still has not been met, even after reviewing WASD's response.

WASD's justification for Work Order 7A (1st Street) flowable fill costs is similar to the one that it presented for Work Order 4B. In this case, however, there was a contingent bid item/price for flowable fill for use as trench restoration of \$100 per cubic yard. Notwithstanding this fact, it is unclear whether this price incorporated any credit for not using conventional backfilling methods. We believe that the contractor's price probably did not. Although the negotiated price appears "reasonable" relative to what WASD was paying elsewhere, without any hard data, which WASD itself does not have, we cannot be certain whether it was a reasonable price. Thus, our concerns are the same for this work order, as for the other work order, and need not be restated.

OIG Comments on WASD Response to Finding 3

FDOT Permit Impacts

WASD makes three misleading remarks in this section. WASD states, "First, it [the FDOT permit] required flowable fill in excess of the 100 cu yds included as a contingency item in the contract." This is not true. The FDOT permit required flowable fill as trench restoration for work on the state road, regardless of the quantities needed or whether it was a contract contingency item. WASD set the contract specifications and quantities showing flowable fill as a contingency item with an estimated quantity of 100 cubic yards "for constructing flowable fill base for State Road permanent paving repairs," which is not the same as trench restoration.

WASD's second misleading statement is that "The Department did not revise the contract quantities in the bid items, after reviewing the permit, prior to bid, to reflect the unanticipated change." We question why this would have even been necessary to do. As we pointed out in our report, WASD typically does not quantify conventional backfill or otherwise consider it a stand-alone bid item with its own unit price and estimated quantities. Backfill quantities are irrelevant. The contractor is required to provide whatever is necessary to complete the job. In the subject instance, the necessary quantity was sufficient flowable fill for use as trench restoration on that portion of the work on the state road.

WASD's last misleading statement is, "Had the contract shown the correct amount of FF in the bid items, the total contract price would have increased accordingly." As discussed above, WASD contracts typically do not quantify backfill quantities.

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WASD response is unclear in how it would have shown the “correct amount” of what is typically an unlisted item. Once again, WASD appears to be altering its previously stated change order conditions without regard or explanation as to how it came to its original justification. WASD’s response also fails to address the basic issue raised by the OIG, namely that since the FDOT permit included with the bid package required flowable fill for state road trench restoration, why did WASD agree to a change order for flowable fill for state road trench restoration?

USEPA Consent Decree Impacts

WASD’s original written justification states, “In order to avoid impending DERM penalties, the Department ordered the Contractor to accelerate the progress of the project.” WASD’s written response fails to address what the referenced DERM penalties were, or how much they were or any explanation, for that matter, about the basis for this statement about a penalty. Additionally, WASD does not present any written directive or any kind of record whatsoever that it “ordered the Contractor to accelerate the progress of the project.” Lastly, WASD does not present any authoritative schedule data as evidence as to what it expected in terms of project acceleration at that time. Moreover, WASD, in its response, does not present any such evidence that any project acceleration ever occurred.

**OIG Comments on WASD Response to Finding 3
Change Order #2 Item #1**

Notwithstanding that the OIG does not believe that there was a need for this change order, we also now question WASD’s new explanation describing the quantity needed for this change order. WASD’s response states that: “Even though the quantity of flowable fill in the contract increased, the amount used on a daily basis was much less than that used to bid the job.” This is not true. The total amount of required flowable fill “needed” did increase (it actually more than quintupled from 100 cubic yards to over 500 cubic yards), however, the daily amount remained the same, as shown below.

Daily Pipe Length Installed	Trench Width	Trench Depth	Total Daily Cubic Feet (TDCF)	Total Daily Cubic Yards (TDCF / 27)
120 ft. ¹	3 ft.	1 ft.	360 CF	13.33 CY
40 ft. ²	3 ft.	3 ft.	360 CF	13.33 CY

¹ WASD Exhibit 3-3, page 2 of 3 (original means and methods)

² WASD Exhibit 3-3, page 3 of 3 (change order means and methods)

In summary, WASD paid a 62 percent premium to have over five (5) times the original flowable fill amount installed over three (3) times the length of the original work period. That premium is calculated as the difference between the contractor’s bid price of \$65 per cubic yard for flowable fill versus the contractor’s change order price of \$105 per cubic yard for flowable fill.

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In addition, the OIG notes that all of WASD Exhibits 3-2 and 3-3 and 50 percent of Exhibit 3-4 were prepared in response to the audit finding. We also note that Exhibits 3-2 and 3-3 show what was already evident (and noted in our report)—that flowable fill used for trench restoration is a very costly alternative to conventional backfilling. Moreover, we believe that it would have been more helpful if WASD had prepared an analysis comparing the contractor’s flowable fill bid price of \$65 per cubic yard to the flowable fill change order price of \$105 per cubic yard. As it stands, there is still no justification explaining the \$40 per cubic yard premium paid.

OIG Comments on WASD Response to Finding 3
Change Order #2 Item #2

WASD’s response cites Section 25 of the contract’s GCC allowing for unit price renegotiation for items impacted by more than 200 percent of their original bid quantity. This section would have applied, had the conditions met the criteria. Thus, WASD’s new argument for this change order does not work. We question WASD’s application of this section, in view of the fact that cited bid item quantity impacts, whether “used” or “unused,” were far less than 200 percent, as shown in the next table.

Bid Item	Item Description	Bid Quantity (BQ)	Actual Used Amount	Unused Amounts	BQ x 200%
8	Limerock Base	1,330 SY	541 SY	789 SY	2,660 SY
9	Asphaltic Concrete for Type I Permanent Paving Repairs	2,090 SY	846 SY	1,244 SY	4,180 SY
12	Asphaltic Concrete for Type II Permanent Paving Repairs	1,478 SY	316 SY	1,162 SY	2,956 SY

The OIG reaffirms its finding that there was no need for this change order and its approved amount of \$11,793.

OIG Comments on WASD Response to Finding 3
Change Order #4 Item #1

WASD’s response fails to address a major issue about the original change order conditions addressed in our report. This issue is that WASD’s own engineer rejected the contractor’s claim for delay damages at a time contemporaneous with the condition. WASD apparently cannot explain this so they ignored it. Instead, WASD’s new explanation is that it “ordered the contractor to move his crew to another [WASD] project” that was nearby on Coral Way (S-718-4B) because of the FDOT-related issue, thus causing the contractor to incur additional demobilization/mobilization costs and a 16-day delay. Although this new justification uses some of the same facts, this is not the what WASD stated in its original written change order justification.

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In addition, WASD's Exhibit 3-7 (page 2 of 2) presents its attempt to justify the \$19,000 change order amount. We believe it shows a very generous settlement amount. For example, WASD gives the contractor credit for two (2) "lost" days (16 hours) resulting from work force and equipment demobilization/mobilization. At best, we believe, the contractor may have "lost" eight (8) hours (4 hours per occurrence). Moreover, there was no unabsorbed contractor overhead because it was working on the 4B project, instead of the 4A project. Thus, we believe over \$16,000 of the costs attributed by WASD to the contractor were unallocable to the 4B project. In addition, we note the referenced WASD Exhibit 3-7 was prepared to rebut the audit finding. Additionally, we note that what appears to be the contractor's final construction schedule, dated February 12, 2002, does not show any delay attributable to its demobilization/remobilization during the project.

Lastly, WASD's attempt to explain that the contractor had been delayed an additional fifteen (15) days, due to changed means and methods for which it is not seeking compensation, is without merit. There is no authoritative schedule data showing that the contractor, in fact, lost that amount of time. We note that, in total, WASD granted the contractor a 21-day time extension. Assuming that sixteen (16) of those days were attributable to the aforementioned permit-related issue, there remains only five (5) additional days of delay. WASD's new explanation does not add up.