

April 24, 2012

REPORT TO COUNCIL

TO THE COMMISSIONER:

Transmitted herewith is the Certificate of Completion, Acknowledgement, Receipt & Certification, Maintenance Bond, and Final Payment Application with Michels Corporation, Project No. E09039, Contract No. 30000424.

Notice to Proceed was issued on April 21, 2009 with a contract length of 630 days.


The Contractor completed the work on January 4, 2012, seven days before the expiration of the contract on January 11, 2012.


Change Order(s) 1 through 25 increased the contract amount by \$11,348,831.36 and extended the contract time by 277 days.

Ordinance No. 183844, attached, was passed by Council on June 2, 2010 authorizing an increase in the contract to \$28,000,000.00, for additional work and compensation for Project No. E09039. Ordinance No. 184194, attached, was passed by Council on October 27, 2010 authorizing an additional increase to \$32,000,000.00 for the contract.

The amount to be paid on Final Payment Application is \$1,000.00 for the remaining retainage withheld for the project. The final contract amount is \$30,708,619.36, which is approximately 58% over the original bid of \$19,353,144.00.

It is recommended that the Council approve the Certificate of Completion and Maintenance Bond, accept the project, and authorize payment of the Final Payment Application.


Dean Marriott
Bureau Director


William Ryan
Chief Engineer

TO THE COUNCIL:

The Commissioner of Public Affairs concurs with the above report, and

RECOMMENDS

That the Council approve the Certificate of Completion, accept the Acknowledgement, Receipt & Certification and Maintenance Bond, accept the project, and authorize payment of the Final Payment Application.

Respectfully submitted,

Dan Saltzman
Commissioner of Public Affairs

ORDINANCE No. 183844

Amend Ordinance to correct concurrence requirement for change order for the Portsmouth Force Main Segment 2 construction contract Project No. E09039 (Ordinance; amend Ordinance No. 183705)

The City of Portland ordains:

Section 1. The Council finds:

1. Ordinance No. 183705 passed Council on April 21, 2010 authorizing additional change order authority to the Bureau of Environmental Services Director or his designee.
2. City Council indicated support for authorizing this authority in their discussion during the April 14, 2010 hearing and at the second reading on April 21, 2010 the motion was made and passed through Council vote.
3. The ordinance passed, but the provision in Section 1, Paragraph a. of the directives that grants this authority is inconsistent with City Code Chapters 5.33.040(A.6) and 5.33.060(B), that require the concurrence of both the bureau director and the Chief Procurement Officer for contract amendments exceeding 25% of the original contract amount.

NOW, THEREFORE, the council directs:

- a. Ordinance No. 183705, Section 1.a of the Council directives is amended to read as follows:

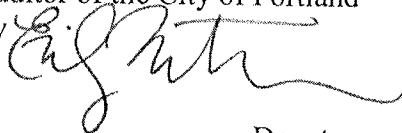
The Director of the Bureau of Environmental Services or designee is authorized to increase Contract No. 30000424 with Michels Corporation for the purpose described in Section 1, up to a revised contract amount of \$28,000,000, provided the Chief Procurement Officer concurs.

- b. All other terms and provisions of Ordinance No. 183705 remain the same and are not affected by this amendment.

Passed by the Council, JUN 02 2010
Dan Saltzman
Commissioner of Public Affairs

Paul Gribbon
May 10, 2010
WBS No. E09039 - ord

LaVonne Griffin-Valade
Auditor of the City of Portland

By 
Deputy

ORDINANCE No.

184394

Authorize additional change order authority to the Director of the Bureau of Environmental Services or his designee for the Portsmouth Force Main Segment 2 construction contract Project No. E09039 (Ordinance; Contract No. 30000424)

The City of Portland ordains:

Section 1. The Council finds:

1. Michels Corporation is constructing the Portsmouth Force Main Segment 2 under Contract No. 30000424, effective April 21, 2009.
2. Ordinance No. 183705 passed Council on April 21, 2010 authorizing additional change order authority to the Bureau of Environmental Services Director or his designee up to a total contract amount of \$28,000,000.
3. The project's Geotechnical Baseline Report described the ground conditions along the tunnel alignment for contractors' information in preparing bids for the construction contract.
5. During the initial mining under Waud Bluff, Michels Corporation encountered ground conditions, specifically cobbles and boulders, which were not encountered during ground investigation in preparation of the Geotechnical Baseline Report. These ground conditions have required the procurement of an alternate tunnel boring machine. Consequently, additional change order authority is necessary to compensate Michels Corporation for the time and cost involved in this differing site condition in excess of the bureau's current change order authority.
6. The requested change order authority is an additional \$4,000,000 which includes a revised contract amount of \$30,460,088 plus an additional 5% contingency over the remaining work for a total contract authority of \$32,000,000. Funds are available in the Sewer System Operating Fund, FY10-11 Budget, Bureau of Environmental Services, WBS No. E09039.

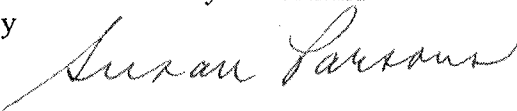
NOW, THEREFORE, the council directs:

- a. The Director of the Bureau of Environmental Services or designee is authorized to increase Contract No. 30000424 with Michels Corporation for the purpose described in Section 1, up to a revised contract amount of \$32,000,000, provided the Chief Procurement Officer concurs.
- b. The Mayor and Auditor are hereby authorized to draw and deliver warrants chargeable to the Sewer System Operating Fund Budget when demand is presented and approved by the proper authority.

Passed by the Council, OCT 27 2010
Dan Saltzman
Commissioner of Public Affairs

Christa Overby
October 4, 2010
WBS No. E09039 - ord

LaVonne Griffin-Valade
Auditor of the City of Portland
By


Deputy

Project No. E09039

CERTIFICATE OF COMPLETION

for the construction of Portsmouth Force Main Segment 2 Project

according to the provisions of Bid/Ordinance No. 109235 Contract No. 30000424

Name of Contractor: Michels Corporation

Contract Signed: April 13, 2009

Contract Expires: January 11, 2012

Contract Completed: January 4, 2012

Delinquent - 0 - days

This work was inspected as to quality and quantity of work done in construction and found to have been completed, in compliance with the plans, specifications, and requirements under the above named Ordinance.

Will Fyfe
Construction Division Manager

4/24/12
Date

Will Fyfe
Chief Engineer

4/24/12
Date

Chita Dwyer
Construction Project Manager

4/24/12
Date

I hereby certify that I have completed my contract work under the above numbered Contract and furnished the materials and performed the work in accordance with the plans and specifications.

James Kabet
Contractor

GENERAL MANAGER
Title

4/5/12
Date



CITY OF PORTLAND
ENVIRONMENTAL SERVICES

WILLAMETTE RIVER CSO TUNNEL PROGRAM

211 SE Caruthers, Suite 200, Portland OR 97214

Telephone: 503-823-2902

MEMORANDUM

DATE: April 23, 2012

TO: Toni Anderson, Deputy Auditor
Chris Richard, BES Accounting

FROM: William F. Ryan, Chief Engineer

CC: Christa Overby, Construction Project Manager
Project File
Constructware/Pay App 142

SUBJECT: Portsmouth Force main (PFM) Segment 2, Project No. E09039
Michels Corporation, Vendor No. 110782, Contract No. 30000424
FINAL Release of Retainage

Our records indicate that the current retainage held in escrow by Union Bank, the escrow agent for Michels Corporation, is \$1,000.

The City acknowledges receipt of the Acknowledgement, Release and Certification form and an approved Maintenance Bond, and Council has approved the Certificate of Completion, therefore, the City agrees to a FINAL release of retainage in the amount of \$1,000. Please arrange for release of retainage in that amount.

If you have any questions or need additional information, please contact Lori Foster at 3-7781.

William F. Ryan 4/24/12
Approval Signature Date

ACKNOWLEDGEMENT, RELEASE AND CERTIFICATION**1. Acknowledgement**

Contractor acknowledges that amount earned is \$30,708,619.36 on Contract No. 30000424 Final payment of \$1,000 Remains to be made by the City of Portland.

2. Release:

Except for the amount of the final payment that remains to be paid, Contractor releases the City of Portland, its officers, agents and employees from any and all other claims for additional compensation that it does or might have as a result of its performance of work on this contract

3. Certification

Contractor certifies that:

- a) All work required by this Contract is complete;
- b) All amounts due for labor, materials and all other obligations under this Contract were paid by the Contractor except for any payments due after Final Payment by Owner is paid;
- c) All actions for injuries or damages arising out of its operations and work were fully and finally settled, or are fully covered by insurance protecting the Contractor, the City of Portland, its officers, agents and employees, and any additional insurance required by the contract; and
- d) Any claim brought against the Contractor by an employee, subcontractor, or supplier has been fully and finally settled, or if not resolved, is fully covered and payable by the Contractor's performance and payment bond, or, if no bond was required, by the Contractor itself, in the event that such claim is correct.


Signature

Michels Corporation
817 W. Main Street
Brownsville, WI 53006

APPROVED AS TO FORM


CITY ATTORNEY 4/16/12

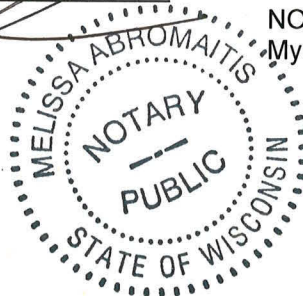
GENERAL MANAGER

Title

State of WISCONSIN)
County of WAUKESHA) ss:

This instrument was acknowledged before me on April 15, 2012 (date),
by JAMES KABAT (name) as GENERAL MANAGER (title)
of MICHEL'S CORPORATION (company).

NOTARY PUBLIC FOR WISCONSIN (State)
My Commission Expires:



MAINTENANCE/WARRANTY BOND

KNOW ALL MEN BY THESE PRESENTS that we, Michels Corporation, as Principal, and Continental Casualty Company, a corporation organized and existing under the laws of the State of Illinois, and duly authorized to transact a surety business in the State of Oregon, as surety, are held and firmly bound unto the CITY OF PORTLAND, a municipal corporation of the State of Oregon, in the penal sum of \$*SEE BELOW Dollars (\$6,141,724.00), lawful money of the United States of America, for the payment whereof well and truly to be made, we and each of us, jointly and severally, bind ourselves, our and each of our heirs, executors, administrators successors and assign, firmly by these presents.

THE CONDITION OF THIS BOND IS SUCH:

THAT WHEREAS the Principal did on the (3/17/2009), enter into Contract with the City of Portland for , that was completed on (01/04/2012), which requires a two-year Maintenance and Warranty as described in Section 00150.96 of the City of Portland Standard Construction Specifications, and which Contract hereby is made a part hereof as if fully copied herein;

NOW THEREFORE, if the Principal herein shall faithfully and truly observe the terms, provisions, conditions, stipulations, directions, and requirements of said contract and shall in all respects, whether the same be enumerated herein or not, faithfully comply with the same and shall assume the defense of, indemnify and save harmless the City of Portland, its officers, agents, and employees from all claims, liabilities, loss, damage or injury which may have been suffered or claimed to have been suffered to persons or property directly or indirectly resulting from or arising out of the operations or conduct of said Principal or any subcontractor in the performance of the work under said contract and shall indemnify and make whole the City for any injury or damage to any street, highway, avenue, or road or any part thereof, resulting from the operations or conduct of said Principal or any subcontractor in connection with performance or conduct of the work under said contract, and shall in all respects faithfully keep and observe all of said terms, provisions, conditions, stipulations, directions, and requirements, then this obligation is void, otherwise, it shall remain in full force and effect.

WITNESS our hand and seals this 4th day of April, 2012

Contractor: Michels Corporation

BY: James Kabat
TITLE: General Manager

Surety: Continental Casualty Company

By: Esther C. Jimenez
Attorney-In-Fact Esther C. Jimenez

APPROVED AS TO FORM
APPROVED

James H. Van Dyke
City Attorney CITY ATTORNEY 4/16/12

* (\$6,141,724.00) Six Million One Hundred Forty One Thousand Seven Hundred Twenty Four Dollars and NO/100 Cents

STATE OF ILLINOIS

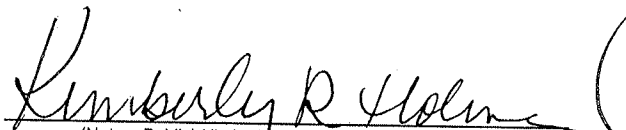
SS:

COUNTY OF DUPAGE

SURETY ACKNOWLEDGEMENT (ATTORNEY-IN-FACT)

On this 4th day of April in the year 2012 before me, Kimberly R. Holmes, a Notary Public in and for said County and state, residing therein, duly commission and sworn, personally appeared Esther C. Jimenez, known to me to be the duly authorized Attorney-in-Fact of the Continental Casualty Company and the same person whose name is subscribed in the foregoing instrument as Attorney-in-Fact of the said Company and she duly acknowledged to me that she signed and sealed the said instrument for the Continental Casualty Company thereto as Surety.

IN WITNESS WHEREOF, I have hereunto set my official seal the day and year in this certificate first above written.

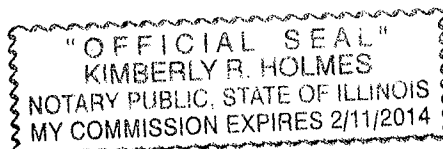

(Notary Public) Kimberly R. Holmes in and for

Will County

State of Illinois

My Commission expires: February 11, 2014

(Seal)



POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company (herein called "the CNA Companies"), are duly organized and existing insurance companies having their principal offices in the City of Chicago, and State of Illinois, and that they do by virtue of the signatures and seals herein affixed hereby make, constitute and appoint

Karen A Ryan, Esther C Jimenez, William P Weible, William Cahill, Deborah A Campbell, Kimberly R Holmes, Kimberly Sawicki, Leigh Ann Francis, Mary Anne Sylos, Melissa Newman, Individually

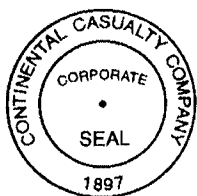
of Lisle, IL, their true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on their behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind them thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of their insurance companies and all the acts of said Attorney, pursuant to the authority hereby given is hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law and Resolutions, printed on the reverse hereof, duly adopted, as indicated, by the Boards of Directors of the insurance companies.

In Witness Whereof, the CNA Companies have caused these presents to be signed by their Senior Vice President and their corporate seals to be hereto affixed on this 1st day of February, 2012.



Continental Casualty Company
National Fire Insurance Company of Hartford
American Casualty Company of Reading, Pennsylvania

Stathy Darcy Senior Vice President

State of Illinois, County of Cook, ss:

On this 1st day of February, 2012, before me personally came Stathy Darcy to me known, who, being by me duly sworn, did depose and say: that she resides in the City of Glenview, State of Illinois; that she is a Senior Vice President of Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company described in and which executed the above instrument; that she knows the seals of said insurance companies; that the seals affixed to the said instrument are such corporate seals; that they were so affixed pursuant to authority given by the Boards of Directors of said insurance companies and that she signed her name thereto pursuant to like authority, and acknowledges same to be the act and deed of said insurance companies.



My Commission Expires September 17, 2013

Eliza Price Notary Public

CERTIFICATE

I, Mary A. Ribikawskis, Assistant Secretary of Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company do hereby certify that the Power of Attorney herein above set forth is still in force, and further certify that the By-Law and Resolution of the Board of Directors of the insurance companies printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said insurance companies this 4th day of April, 2012.



Continental Casualty Company
National Fire Insurance Company of Hartford
American Casualty Company of Reading, Pennsylvania

Mary A. Ribikawskis Assistant Secretary

Authorizing By-Laws and Resolutions

ADOPTED BY THE BOARD OF DIRECTORS OF CONTINENTAL CASUALTY COMPANY:

This Power of Attorney is made and executed pursuant to and by authority of the following By-Law duly adopted by the Board of Directors of the Company.

"Article IX—Execution of Documents"

Section 3. Appointment of Attorney-in-Fact. The Chairman of the Board of Directors, the President or any Executive, Senior or Group Vice President may, from time to time, appoint by written certificates attorneys-in-fact to act in behalf of the Company in the execution of policies of insurance, bonds, undertakings and other obligatory instruments of like nature. Such attorneys-in-fact, subject to the limitations set forth in their respective certificates of authority, shall have full power to bind the Company by their signature and execution of any such instruments and to attach the seal of the Company thereto. The Chairman of the Board of Directors, the President or any Executive, Senior or Group Vice President or the Board of Directors, may, at any time, revoke all power and authority previously given to any attorney-in-fact."

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company at a meeting duly called and held on the 17th day of February, 1993.

"Resolved, that the signature of the President or any Executive, Senior or Group Vice President and the seal of the Company may be affixed by facsimile on any power of attorney granted pursuant to Section 3 of Article IX of the By-Laws, and the signature of the Secretary or an Assistant Secretary and the seal of the Company may be affixed by facsimile to any certificate of any such power and any power or certificate bearing such facsimile signature and seal shall be valid and binding on the Company. Any such power so executed and sealed and certified by certificate so executed and sealed shall, with respect to any bond or undertaking to which it is attached, continue to be valid and binding on the Company."

ADOPTED BY THE BOARD OF DIRECTORS OF AMERICAN CASUALTY COMPANY OF READING, PENNSYLVANIA:

This Power of Attorney is made and executed pursuant to and by authority of the following By-Law duly adopted by the Board of Directors of the Company.

"Article VI—Execution of Documents"

Section 3 Appointment of Attorney-in-Fact. The Chairman of the Board of Directors, the President or any Executive or Senior Vice President may, from time to time, appoint by written certificates attorneys-in-fact to act in behalf of the Company in the execution of policies of insurance, bonds, undertakings and other obligatory instruments of like nature. Such attorneys-in-fact, subject to the limitations set forth in their respective certificates of authority, shall have full power to bind the Company by their signature and execution of any such instruments and to attach the seal of the Company thereto. The Chairman of the Board of Directors, the President or any Executive or Senior Vice President or the Board of Directors may at any time revoke all power and authority previously given to any attorney-in-fact."

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company at a meeting duly called and held on the 17th day of February, 1993.

"Resolved, that the signature of the President or any Executive, Senior or Group Vice President and the seal of the Company may be affixed by facsimile on any power of attorney granted pursuant to Section 2 of Article VI of the By-Laws, and the signature of the Secretary or an Assistant Secretary and the seal of the Company may be affixed by facsimile to any certificate of any such power and any power or certificate bearing such facsimile signature and seal shall be valid and binding on the Company. Any such power so executed and sealed and certified by certificate so executed and sealed shall, with respect to any bond or undertaking to which it is attached, continue to be valid and binding on the Company."

ADOPTED BY THE BOARD OF DIRECTORS OF NATIONAL FIRE INSURANCE COMPANY OF HARTFORD:

This Power of Attorney is made and executed pursuant to and by authority of the following By-Law duly adopted by the Board of Directors of the Company.

"Article VII—Execution of Documents"

Section 3. Appointment of Attorney-in-Fact. The Chairman of the Board of Directors, the President or any Executive or Senior Vice President may, from time to time, appoint by written certificates attorneys-in-fact to act in behalf of the Company in the execution of policies of insurance, bonds, undertakings and other obligatory instruments of like nature. Such attorneys-in-fact, subject to the limitations set forth in their respective certificates of authority shall have full power to bind the Company by their signature and execution of any such instruments and to attach the seal of the Company thereto. The Chairman of the Board of Directors, the President or any Executive, Senior Vice President or the Board of Directors, may, at any time, revoke all power and authority previously given to any attorney-in-fact."

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company at a meeting duly called and held on the 17th day of February, 1993.

"RESOLVED: That the signature of the President, an Executive Vice President or any Senior or Group Vice President and the seal of the Insurance Company may be affixed by facsimile on any power of attorney granted pursuant to the Resolution adopted by this Board of Directors on February 17, 1993 and the signature of a Secretary or an Assistant Secretary and the seal of the Insurance Company may be affixed by facsimile to any certificate of any such power, and any power or certificate bearing such facsimile signature and seal shall be valid and binding on the Insurance Company. Any such power so executed and sealed and certified by certificate so executed and sealed, shall with respect to any bond or undertaking to which it is attached, continue to be valid and binding on the Insurance Company."



BUREAU OF ENVIRONMENTAL SERVICES

FINAL PROJECT REPORT

FY 2009 – FY 2011



Portsmouth Force Main Segment 2 Project

Job No. E09039

Bid No. 109235

Contract No. 30000424

February 29th, 2012



Figure 1: Portsmouth Force Main Segment 2 Tunnel

By: Christa Overby, P.E.

PROJECT STAFF:

Contractor:	Michels Corporation
Construction Manager:	Christa Overby
BES Inspection:	Curt Obermeyer, Shaun O'Brian, Eugene Milton, Justin Brown, Ray Janssen
Project Technician:	Kim Wieneke
Design Manager:	Gary Irwin/Patty Nelson
Design Consultant:	Brown and Caldwell with Jacobs Associates (Sub) for Tunnel Design

FINAL PROJECT STATUS:

Notice to Proceed:	April 21, 2009
Scheduled Contract Time:	630 Calendar Days
Scheduled Completion:	January 11, 2011
Additional Contract Time:	277 Calendar Days
Revised Completion:	October 15, 2011
Substantial Completion:	November 7, 2011
Days Delinquent:	-23- Calendar Days
Final Completion:	January 4, 2012
Original Contract Amount:	\$19,353,144.00
Change Orders:	\$11,348,831.36
Quantity Increase:	NA
Final Amount Earned:	\$30,708,619.36, which is 58% over the original Contract amount.

The City completed inspection of the tunnel and force main system on November 7th, 2011. Construction of the restoration work at the sites was completed and accepted as of January 4th, 2012

CHANGE ORDERS:

There were 25 change orders issued on this project. The change orders totaled 58% of the original contract amount.

OCO Log

Project : [E09039] PFM Segment 2 Construction

View Date: 2/9/2012

Sorting No.

Items Displayed 23

Project	OCO No.	Description	Date	Budget Status	Submitted	Approved
PFM Segment 2 Construction						
	001	Union Pacific Railroad Permit Contract #30000424	6/10/2009	Completed	-	-
	002	VAU Air/Vac Vault Piping Contract No. 30000424	7/6/2011	Completed	\$15,116.09	\$15,116.09
	003	FM BAS Open Cut Changes Contract	5/10/2011	Completed	\$54,890.22	\$54,890.22

OCO Log

Project : [E09039] PFM Segment 2 Construction

View Date: 2/9/2012

		#30000424				
	004	TUN Changed Ground Conditions Contract #30000424	2/5/2010	Completed	\$2,248,152.54	\$1,420,000.00
	005	TUN Changed Ground Conditions Contract #30000424	4/8/2010	Completed	\$383,339.29	\$383,339.29
	006	SHA NORTH Vent Pipe Modifications Contract #30000424	10/3/2011	Approved	(\$1,415.52)	(\$1,415.52)
	007	TUN Changed Ground Conditions Contract #30000424	5/24/2010	Completed	\$671,532.35	\$671,532.35
	008	TUN Changed Ground Conditions Contract No. 30000424	6/17/2010	Completed	\$229,053.45	\$229,053.45
	009	TUN Changed Ground Conditions Contract No. 30000424	6/9/2010	Completed	\$152,454.03	\$152,454.03
	010	TUN Changed Ground Conditions Contract No. 30000424	7/21/2010	Completed	\$156,432.34	\$156,432.34
	011	TUN TBM Global Settlement Contract No. 30000424	8/13/2010	Completed	\$5,634,044.54	\$5,634,044.54
	012	SHA NORTH Bubbler Tubes Contract No. 30000424	6/13/2011	Completed	\$46,209.31	\$46,209.31
	014	TUN TBM Global Settlement Contract No. 30000424 - Final Payment	11/17/2010	Completed	\$2,200,488.33	\$2,200,488.33
	015	TUN Hillside Restoration Contract No. 30000424	1/27/2011	Completed	\$87,294.66	\$87,294.66
	016	ALL General Conditions Record Drawings Contract No. 30000424	4/20/2011	Completed	-	-
	017	SHA NORTH Vault and Bubbler Tube Modifications Contract No. 30000424	8/8/2011	Completed	\$131,700.25	\$131,700.25
	018	SHA NORTH Bubbler Panels and Carbon Scrubber Contract No. 30000424	9/9/2011	Completed	\$153,406.22	\$153,406.22
	020	FM BAS Geotech Fabric under AC Base Contract No. 30000424	12/16/2011	Completed	\$635.55	\$635.55
	021	SHA SOUTH Vault Hatch Drain Modifications Contract No. 30000424	1/25/2012	Approved	\$617.13	\$617.13
	022	SHA NORTH Seal FRP Panels Contract No. 30000424	1/25/2012	Approved	\$159.60	\$159.60
	023	SHA NORTH Cess Pool Repairs Contract No. 30000424	1/23/2012	Approved	\$11,471.30	\$11,471.30
	024	SHA NORTH Remove Concrete Island Contract No. 30000424	12/19/2011	Completed	\$1,402.28	\$1,402.28
	025	SHA Additional Restoration Work Contract No. 30000424	1/25/2012	Approved	\$6,643.94	\$6,643.94
PFM Segment 2 Construction Total					\$12,183,627.90	\$11,355,475.36

COMPARISON WITH FINAL DESIGN REPORT:

The completed project meets the goals and design criteria established prior to advertisement of bids.

PROJECT BACKGROUND:

The City of Portland signed an Amended Stipulation and Final Order (ASFO) in August 1994. This document calls for the City to control its 55 combined sewer outfalls by December 1, 2011 with intervening major deadlines for specific portions of the work to be complete. One of the last portions of this required work, is the completion of the Portsmouth Force Main.

The Portsmouth Force Main (PFM) Project includes approximately 16,000 linear feet of a single force main system, which will convey up to 120 million gallons per day of combined sewage from the Swan Island CSO Pump Station (SIPS) to the existing 72-inch diameter Portsmouth Tunnel in North Portland. The project is divided into two segments, Segment 1 (separate Contract) and Segment 2 as described below.

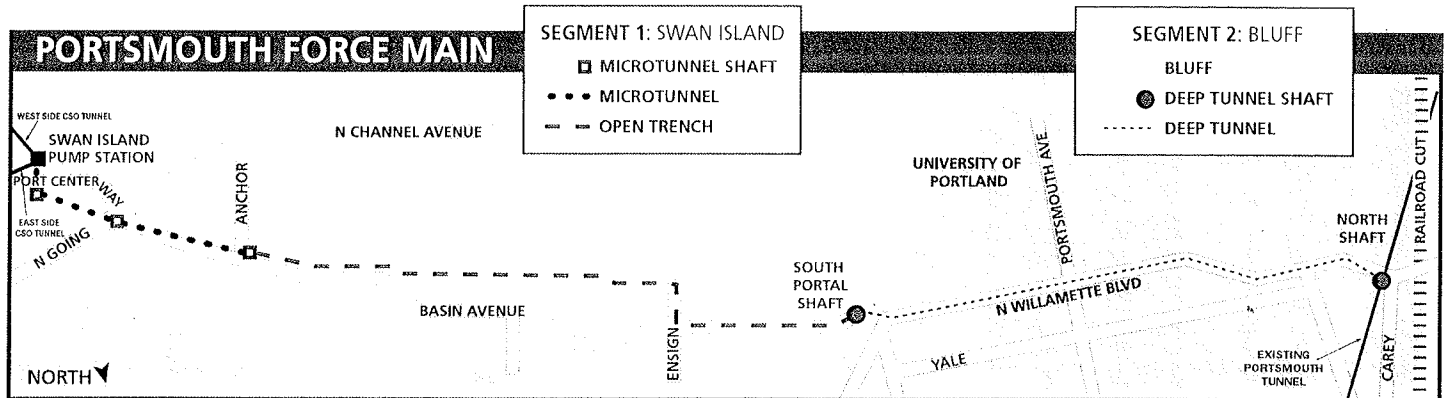


Figure 2: PFM Segment 1 and 2 Alignment

PROJECT DESCRIPTION AND OBJECTIVES:

Segment 2 consists of a force main, which extends 150 feet from the N. Basin Avenue cul-de-sac connection to the South Portal Shaft and then approximately 6,000 feet northwestward via tunnel to the North Portal Shaft. This work contains the following project elements:

- Approximately 150 feet of open-cut steel pipeline from South Portal Shaft to Segment 1 pipeline.
- Connection to Segment 1 pipeline.
- Installation of one air/vacuum vault at the South Portal Shaft.
- Construction of the South Portal Shaft and Access Structure, approx. 16 feet deep.
- 125-foot long cased crossing beneath Union Pacific Railroad (UPRR) tracks adjacent to South Portal Shaft.
- Approximately 5,850 feet of excavated, two-pass tunnel, which contains a 66-inch ID fiberglass reinforced polymer (Hobas) force main pipe.
- Construction of the North Shaft and Access Structure located at the tunnel alignment terminus. The North Shaft is a 20-foot finished ID, 112-foot deep and directly overlies the existing Portsmouth Tunnel.
- Connection to the existing Portsmouth Tunnel at the North Portal Shaft.



Figure 3: PFM Seg 2 Overview of Alignment

SUGGESTIONS FOR IMPROVEMENT:

1. The Geotechnical Exploration Plan was developed during design to allow drilling to be completed in two phases. During Phase 1, one roto sonic boring was identified at the top of the bluff to characterize the bluff soil conditions. However, the boring location was not on the selected tunnel alignment but was considered to be representative of the three alternative alignments and was located out of the Willamette Blvd traffic zone. Phase 2 borings were located to fill in the gaps and gather information needed to better define mixed face conditions. During the final adjustments of the phase 2 borings, a horizontal boring was proposed to determine whether buried trestles existed under the railroad tracks at the toe of the slope and the adjustment of borings were considered to better define the transition/interface of the Troutdale Formation at the tunnel zone. The horizontal boring was not performed based on the project teams conclusion that the GBR could reflect this project risk. During tunnel construction, a significant over-run of boulders was encountered than what was baselined in the GBR (the GBR baselined 40 boulders however 1,118 boulders were removed). On future projects, when significant topographic changes are encountered, it would be advised to pursue other geotechnical investigative options to better define the geology transitions and ground conditions, including the suggested horizontal boring, ground penetrating radar or additional roto sonic borings and ensure that borings are placed along the final alignment where feasible. In addition, when performing a tunnel design with significant geotechnical requirements, it would be beneficial to have flexibility built into the design consultant contracts to provide a means for additional borings to be added to the scope of work as authorized by the Owner. Based on our experience during construction, the horizontal boring and additional roto sonic borings would have provided better data on the boulder conditions encountered in the hillside and would have allowed a better characterization of ground conditions in the Geotechnical Baseline Report.

2. In specifying requirements for the tunneling operations, there was a debate whether or not to be prescriptive on the machine requirements or more general. In the end, the project team decided to proceed with developing Contract Documents that allowed the Contractor flexibility in choosing the tunnel excavation method. The Contractor selected an earth pressure balance machine for this work. The cutting tools were not configured properly to excavate the large number of boulders encountered and the machine relied solely on pulling boulders through the face of the machine. The Contractor had a plan for removing the baseline quantity of boulders but it became apparent early on that the ground loss that occurred while dealing with the boulders encountered was not considered in the Contractor's selection of tunneling equipment. Since boulders were anticipated, it would have been beneficial to provide more specific requirements for the tunnel machine to handle the boulders and/or require the Contractor to submit a specific work plan for pulling boulders through the face in advance of tunneling, including measures for stabilizing the ground around the boulder as the boulder is being removed. This could have assisted with procuring a more appropriate machine for dealing with the boulders or for at least having a plan in place to reduce the time to implement the ground stabilization measures required to advance and ultimately retrieve the machine.
3. At the North Shaft, the PVC Arrow-Lock liner proved very difficult to install in the channel. Due to the circular nature of the channel and the geometry of the two channels coming together, the liner had to be cut in small triangles and then applied over the concrete channel. A fast-drying epoxy mastic was first installed so that the liner properly adhered to the concrete. The liner strips were then quickly installed in small increments to fit the geometry of the channel while minimizing wrinkles and the seams of each strip were then welded together. While the liner did get applied correctly, it was very difficult and took twice as long to install than planned during construction on an already time-critical project. In lieu of the PVC Arrow-Lock product, suggest researching a more easily applied spray-on product for complicated geometry applications in channels where flow lines come together to help prevent corrosion of the concrete where necessary.
4. Additional work was added into the PFM Seg 2 Contract at the North Shaft for the installation of bubbler tubes, bubbler/RMC panels, power and an odor control system because the design of this work was not completed on time as part of another BES project. Therefore, this work was added in as a change order to the PFM Seg 2 Contract in order to get this work completed by the Dec. 1, 2011 ASFO deadline. We paid extremely high costs to the contractor for this work as we had no negotiating power since the only option was to have our contractor complete this work with very little time left before the deadline. Adding large amounts of work into an already tightly scheduled contract is difficult and will result in higher costs.
5. The existing cess pool at the North Shaft was shown on the drawings in a location based on an old plumbing record sketch. It was discovered during construction of the bubbler tube and temporary power work to be approximately 10 feet away from where it was shown on the drawings and was damaged during construction; therefore requiring repairs. When the additional vent vault and bubbler tube construction work was added into the PFM Segment 2 contract, it would have been beneficial to require the Contractor to pothole the cess pool to determine its exact location prior to constructing the additional features.
6. At the North Shaft, the installation of the top cap had very tight installation tolerances (within $\frac{1}{4}$ "). When placing the top cap, it was discovered that the rim of the North Shaft was not level. Therefore, the top cap had to be removed and the rim was bush hammered to obtain a more level surface. The result is that the top slab had a slightly irregular offset with the surrounding concrete (approx. $\frac{1}{2}$ " in the worst location). It would have been better to specify more robust QA/QC requirements for the survey of project components such as this with tight installation tolerances to ensure a better fit.

ITEMS THAT WORKED WELL:

1. Cooperation between construction and inspection staff, the designer, and the contractor went extremely well. Good communication and partnering with the contractor helped deal with the tunneling issues by coming up with an innovative solution to resolve the Differing Site Condition encountered during the tunneling. When it was evident that we were encountering boulders well above the quantity described in the GBR (See Figure 4) and the boulders could not be effectively extracted through the machine face without causing loss of ground in the surrounding soils, BES construction staff, the designer, and the contractor all worked together to come up with a solution and agree on a plan for moving forward. The project team agreed that the best way to proceed was to retrieve the Lovat TBM from under the hillside by grouting a zone around the machine, then jacking a steel casing into the hillside around the existing tunnel and pulling the machine out through the South Portal Shaft (See Figures 5 and 6). This method proved very effective and the machine was successfully retrieved and replaced with a diggershield (See Figure 8), a more appropriate tunneling machine and method for the boulders encountered.
2. Lessons learned from the Segment 1 project on the vaults (i.e. vault design and the drainage) were incorporated into the Segment 2 project ahead of the work with time to agree on pricing.
3. Coordination with the pump station staff for the shut downs on the Guilds Lake Pump Station went well and were planned ahead of time to facilitate the tie-in work at the North Shaft.
4. The contractor and public involvement staff maintained good communication with the neighborhood which helped when obtaining a Noise Permit to extend work hours to ensure project completion on time.
5. The contractor was required to perform a mock-up of the Hobas Pipe assembly and brought a representative from Hobas on site to assist with the mock-up of the pipe installation/connection procedure. During this mock-up, ideas were discussed between the pipe manufacturer, the contractor and BES staff for improving the procedure. Subsequent to this, the Hobas pipe installation went really well inside the tunnel with minimal damage to the pipe.
6. The Contract Documents required the Contractor to consistently check and maintain the tunnel alignment and provide alignment data on a daily basis. The Contractor used a VMT system to consistently log the location of the machine and provide data daily. As a quality control check, the Contractor bored a 6" hole from the ground surface through the existing tunnel to ensure the tunnel was on the correct alignment prior to the last curve into the North Shaft for retrieval. The Contractor then surveyed the alignment of the tunnel using this down hole and made some minor adjustments to the machine heading prior to reaching the North Shaft. As a result, the machine entered the North Shaft on the correct alignment within the break-in window of the liner plate shaft wall.

FUTURE CIP OR O&M ISSUES:

BES Pump Station Design and Operations staff will monitor how well the Odor Control System (Carbon Canister) at the North Shaft performs over the next 6 months. The damper specified and installed as part of the system, allowed a minor amount of air to escape per the Contract Specifications. However, this does allow a slight odor to escape from the system at the odor control vault. If this odor is an issue once the operation of the system is fine-tuned and finalized, the damper may be replaced with a full-closure check valve as part of the Portsmouth Odor Control Project at the North Shaft. The requirements and details for this valve have already been researched and provided to the Portsmouth Odor Control Project design team. This project is being constructed in summer 2012 and Brenda Sherwood is the Project Manager.

BES operations will also be required to monitor the performance of the PVC liner at the base of the North Shaft for signs of delamination.

FACILITIES ACCEPTANCE REPORT:

This project does not require a Facilities Acceptance Report.

RECORD DRAWINGS:

Record drawings have been reviewed and accepted by the BES inspector. They were checked and transmitted to CADD on February 1st, 2012. Copies were sent to the main file, Locates, and to the Designer.

PROJECT PHOTOS:

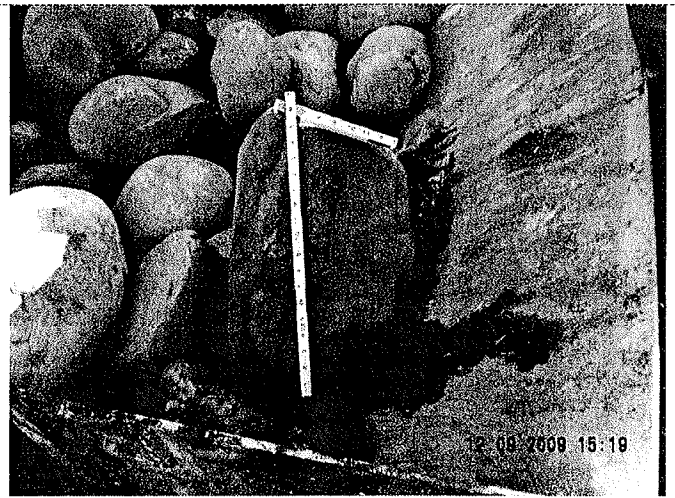
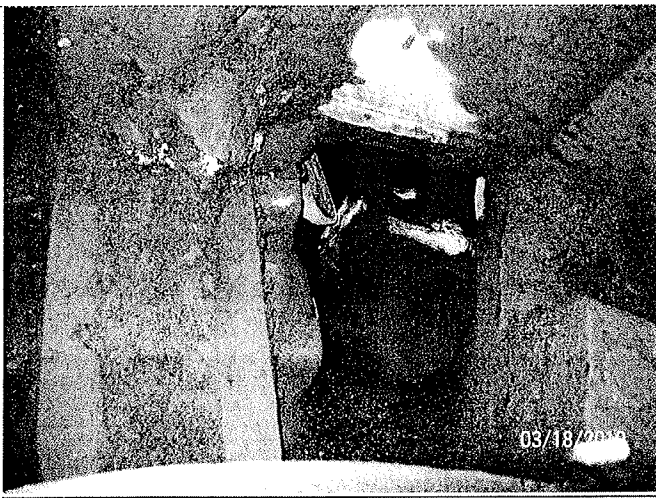


Figure 4: Boulders Encountered During Tunneling

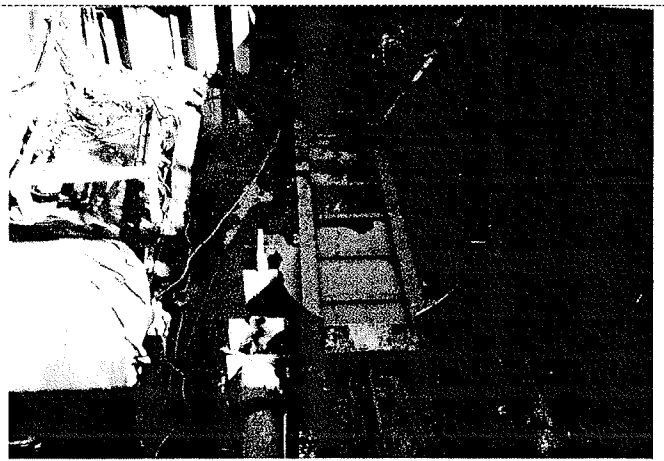
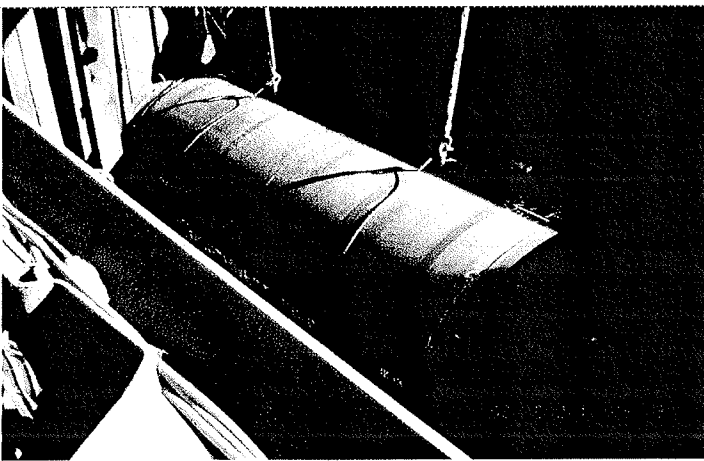


Figure 5: Jacking Steel Casing Around Existing Tunnel

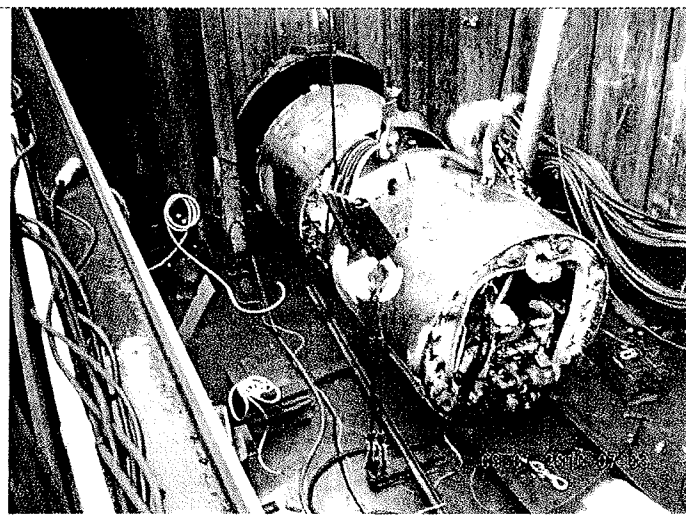


Figure 6: Retrieving Lovat TBM from South Portal Shaft

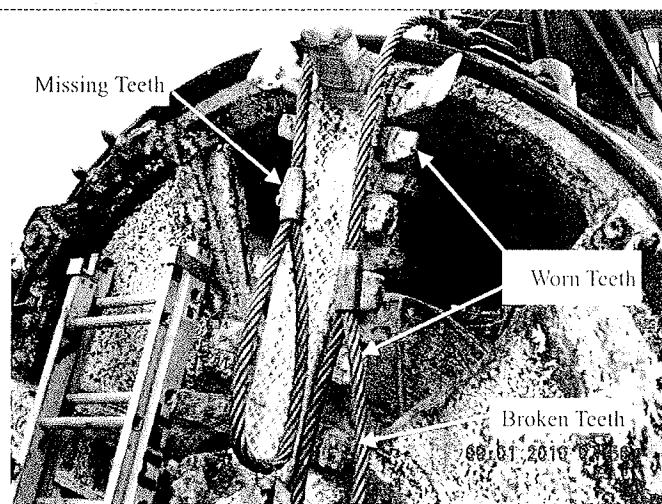


Figure 7: Lovat Cutterhead Wear

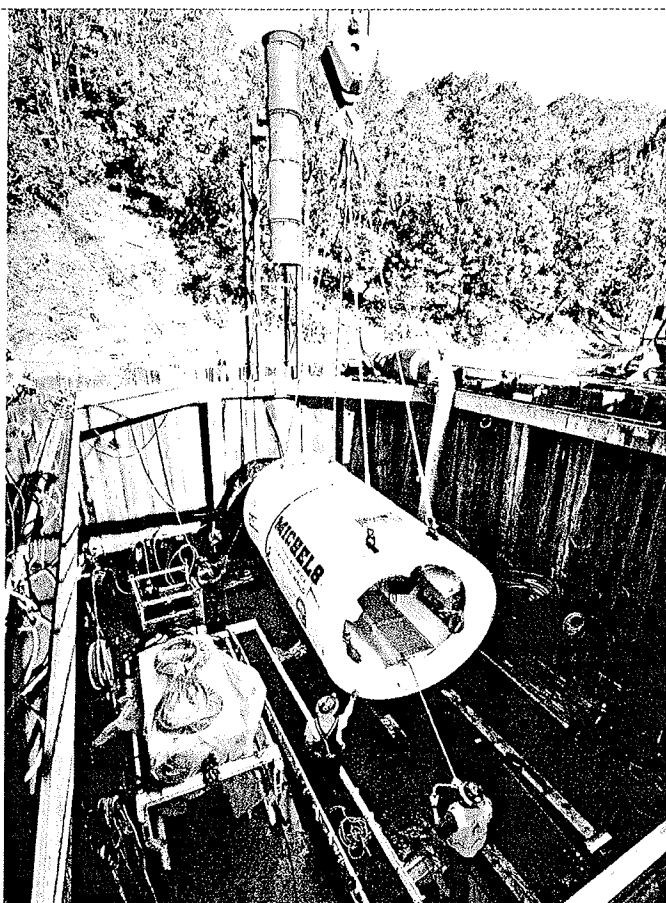


Figure 8: Lowering Diggershield in South Portal Shaft

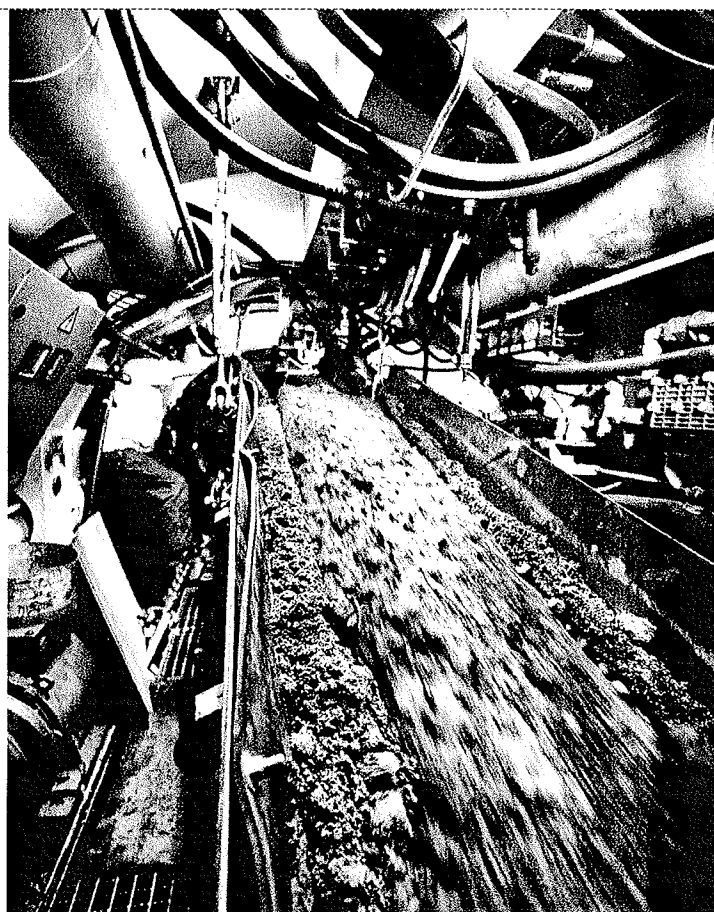


Figure 9: Mining Activities Inside Machine



Figure 10: Grouted Zone at Beginning of Diggershield Excavation



Figure 11: Ground Conditions at Front of Diggershield

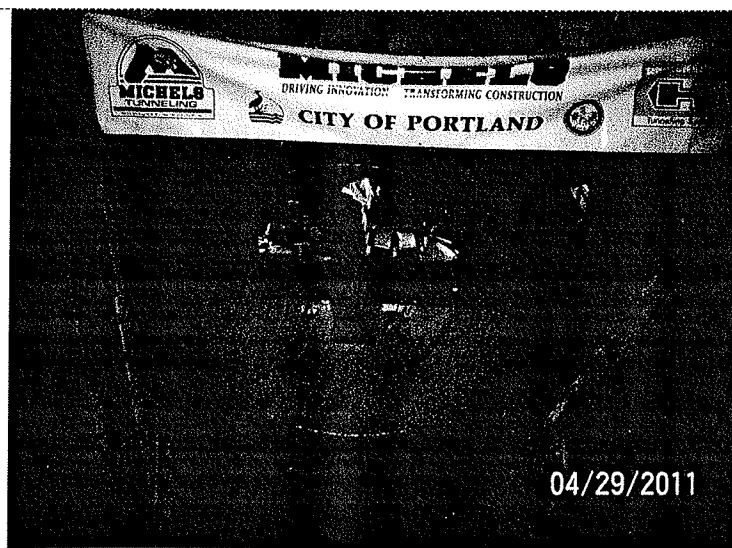


Figure 12: Diggershield Hole-Through at the North Shaft



Figure 13: Looking North into Tunnel at back of Gantry

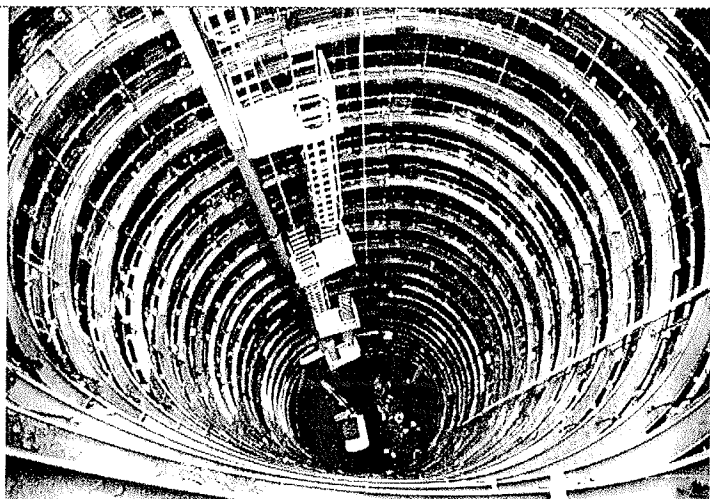


Figure 14: North Shaft Elliptical Liner Plate Construction Around Extg Portsmouth Tunnel

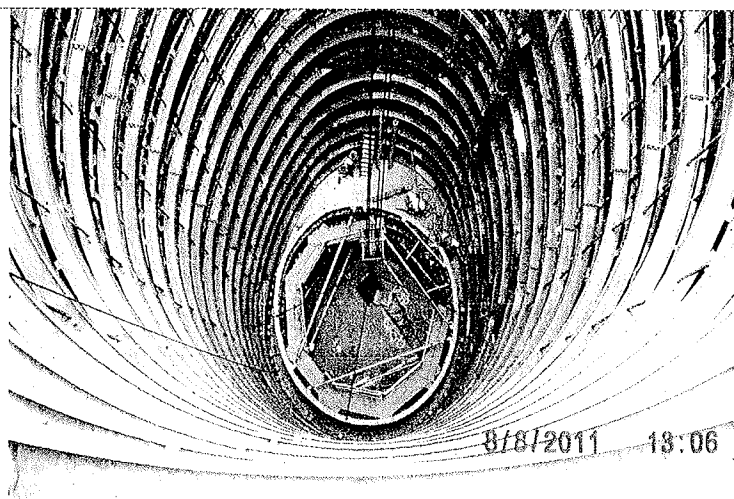


Figure 15: North Shaft Concrete Build Out

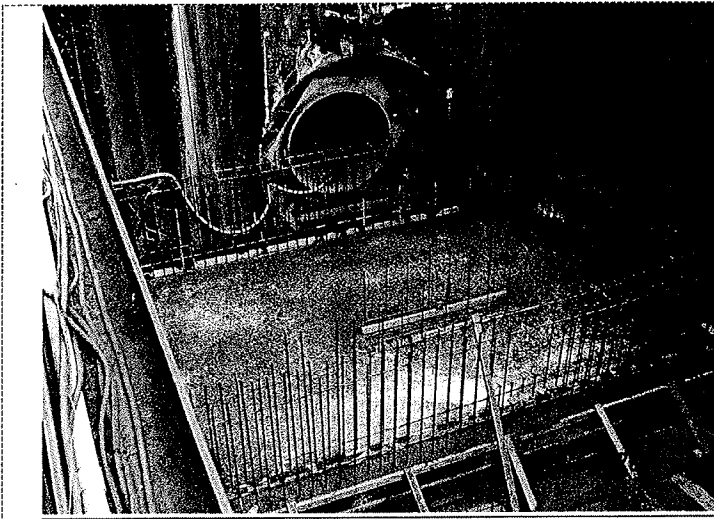


Figure 16: South Access Shaft Concrete Floor Pour

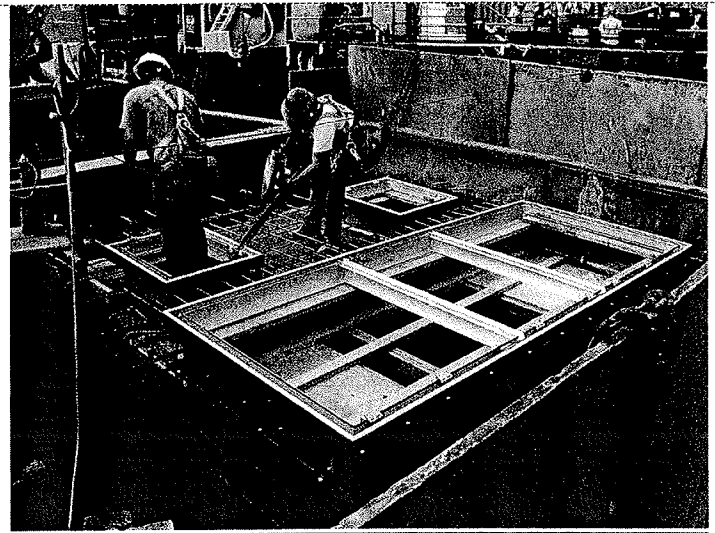


Figure 17: South Portal Air/Vac Vault Rebar and Hatch Frame Installation

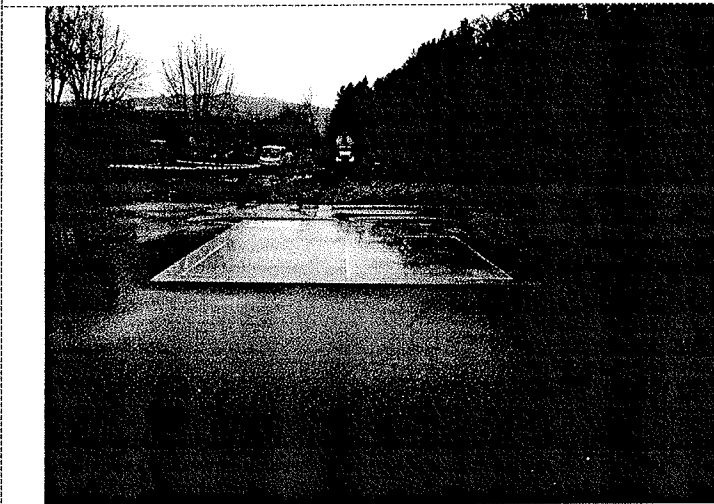


Figure 18: South Shaft Site Restoration



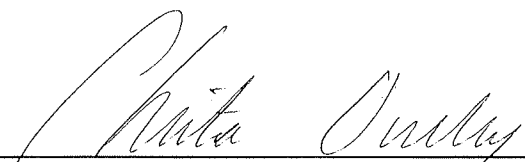
Figure 19: North Shaft Site Restoration

PROJECT COST:

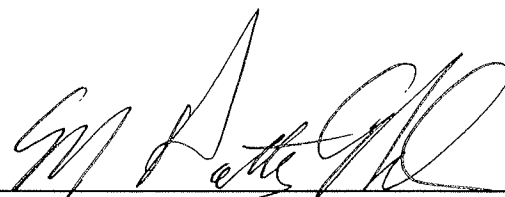
- Final amount earned by Michels Corporation for this work is \$30,708,619.36. This is the same as the adjusted Contract Amount of \$30,708.619.36.
- The current life budget in PIPER for the entire Portsmouth Force Main Segment 1 and 2 Projects (Primary Project No. E06902) is \$76,248,201. The PFM Segment 2 construction contract accounted for 52% of the costs for a Segment 2 Project budget of \$39,649,064.52. Based on the costs to date, and final contract amount, the project costs are \$38,188,873.11, or 3.7% under budget.
- In comparison to the Construction Cost, the percentages of costs allocated during the Construction Phase are: 3.56% for Construction Management and 4.14% for inspection.

PROJECT COST (continued):

PHASE	PFIRS / SAP Code	Description of Work	PFIRS Cost	SAP Cost	Total Cost (PFIRS + SAP)	% of Total Cost	% of Total Const. Cost
Construction	C21	Const. Mgmt.	\$279.33	\$1,091,475.91	\$1,091,755.24	2.86%	3.56%
	C27	Safety & OSHA		\$33,502.79	\$33,502.79	0.09%	0.11%
	C30	Inspection	\$8,198.91	\$1,262,944.19	\$1,271,143.10	3.33%	4.14%
	C41	Survey		\$7,420.65	\$7,420.65	0.01%	0.02%
	C42	MTL		\$140,303.59	\$140,303.59	0.55%	0.69%
	C44	Modeling		\$0.00	\$0.00	0.00%	0.00%
	C47	Public Involvement	\$20,941.64	\$27,630.00	\$48,571.64	0.13%	0.16%
	C71	Planting & Monitoring		\$710.58	\$710.58	0.01%	0.00%
	39, C73	Misc. Costs	\$28.49	\$328,069.44	\$328,097.93	0.83%	1.07%
	31, 51	Survey, MTL, & Testing	\$14,162.30	\$0.00	\$14,162.30	0.04%	0.5%
Purchase/ Improvement	C60	Michels Corporation		\$30,708,619.36	\$30,708,619.36	80.41%	100.00%
Start/ Close	S21	Const. Mgmt.		\$517.31	\$517.31	0.00%	0.00%
	S30	Inspection		\$708.99	\$708.99	0.00%	0.00%
	L65, 70	Land Acquisition	\$176,751.16	\$801,882.62	\$978,633.78	2.56%	3.19%
	S71	Planting & Monitoring		\$2,630.33	\$2,630.33	0.00%	0.00%
	S73	Misc. Costs		\$97.64	\$97.64	0.00%	0.00%

GRAND TOTAL: \$38,188,873.11


Christa Overby P.E., Construction Manager



Patty Nelson P.E., Design Project Manager

cc: Jaime De La Garza, Bill Ryan, Mark Hutchinson, Patty Nelson, Neil Choate
Curt Obermeyer, Scott Gibson, MTL, Main File, Trim File

Job No. E09039
Job Title: Portsmouth Force Main Segment 2 Project
Contractor: Michels Corporation
Inspector: Curt Obermeyer

PIPE COMPLETION

No. _____ Partial _____ Final X

On _____ the pipe laying on this job was completed in the following locations:

and this phase of the job can be placed in service.

The "As-built" for this phase of the job was turned in on. February 2, 2012

Christa Overby

Construction Project Manager

Applications may be received and permits issued for house connections to the above listed sewers.

Distribute copies to:

Development Assistance	B299/5000
Bureau of Maintenance	B316/Engr. Support
BES Accounting	B106/1000

JOB COMPLETION

The subject job has been completed.

Specified Completion Date: January 11, 2012

Completion Date: January 4, 2012

Christa Overby

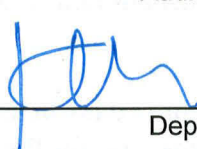
Construction Project Manager

Distribute copies to:

Bureau of Maintenance	B316/Engr. Support
BES Accounting	B106/1000

Agenda No.
REPORT NO.
 Title

Accept completion of Portsmouth Force Main Segment 2 Project and authorize final payment to Michels Corporation, Project No. E09039 (Report); Contract No. 36000424)

INTRODUCED BY Commissioner/Auditor: Commissioner Saltzman	CLERK USE: DATE FILED <u>MAY 03 2012</u>
COMMISSIONER APPROVAL Mayor—Finance and Administration - Adams Position 1/Utilities - Fritz Position 2/Works - Fish Position 3/Affairs - Saltzman Position 4/Safety - Leonard [signature]	LaVonne Griffin-Valade Auditor of the City of Portland By:  Deputy
BUREAU APPROVAL Bureau: Bureau of Environmental Service Bureau Head: Dean Marriott Prepared by: Christa Overby Date Prepared: April 24, 2012	ACTION TAKEN: MAY 09 2012 ACCEPTED
Financial Impact Statement Completed <input checked="" type="checkbox"/> Amends Budget <input type="checkbox"/> Not Required <input type="checkbox"/>	
Portland Policy Document If "Yes" requires City Policy paragraph stated in document. Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Council Meeting Date May 9, 2012	
City Attorney Approval	

AGENDA TIME CERTAIN <input type="checkbox"/> Start time: ____ Total amount of time needed: ____ (for presentation, testimony and discussion)
CONSENT <input checked="" type="checkbox"/>
REGULAR <input type="checkbox"/> Total amount of time needed: ____ (for presentation, testimony and discussion)

FOUR-FIFTHS AGENDA	COMMISSIONERS VOTED AS FOLLOWS:		
		YEAS	NAYS
1. Fritz	1. Fritz	<input checked="" type="checkbox"/>	
2. Fish	2. Fish	<input checked="" type="checkbox"/>	
3. Saltzman	3. Saltzman	<input checked="" type="checkbox"/>	
4. Leonard	4. Leonard	<input checked="" type="checkbox"/>	
Adams	Adams	<input checked="" type="checkbox"/>	